Network Video Recorder

User Manual

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Chapter 1 Installation

1.1 NVR Installation

During installation of the NVR：

- Ensure the device is installed in a well-ventilated, dust-free environment.
- The device is designed for indoor use only.
- Keep all liquids away from the device.
- Ensure environmental conditions meet factory specifications.
- Power down the device before connecting and disconnecting accessories and peripherals.

1.2 Hard Disk Installation

Before you start:

Disconnect the power from the NVR before installing a hard disk drive(HDD). A factory recommended HDD should be used for this installation.

Tools Required: Screwdriver.

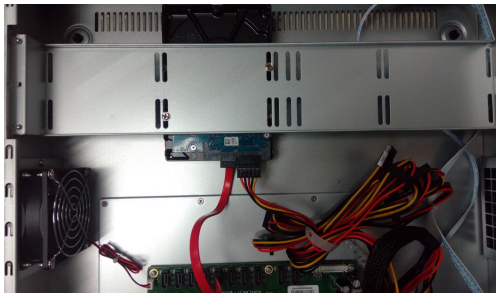
NVR with 4 or 8 HDD

Steps：

(1) Remove the cover from the NVR by unfastening the screws on the rear panel.

(2) Insert the hard disk along the slot and fasten it.

(3) Connect the power & data cable to the NVR and HDD.



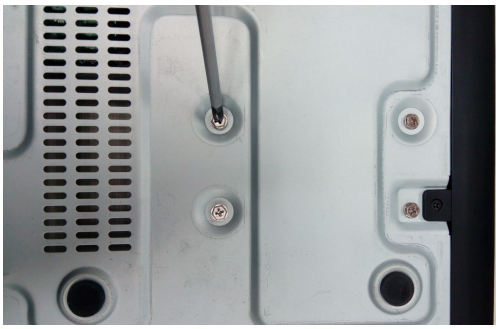
(4) Close the cover and fasten it with the screws.

NVR with 1 or 2 HDD

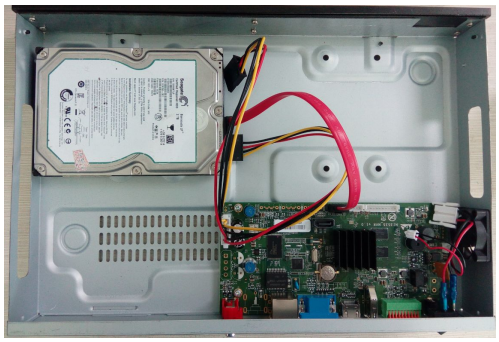
Steps：

(1) Remove the cover from the NVR by unfastening the screws on the side and rear panel.

(2) Fasten the HDD with the screws on the bottom.



(3) Connect the power & data cable to the NVR and HDD.



(4) Close the cover and fasten it with the screws.

Chapter 2 Getting Started

2.1 Start up and Shutdown

2.1.1 Start up

Plug in the power cord, press the power switch, the power indicator light should turn bright. The device will begin to start. After the device starts up, the video output defaults to multiple screen output mode.

2.1.2 Shutdown

Option 1: Press the power key on front panel to shutdown the device(should be supported by the device).

Option 2: Click **Start→Shutdown→Confirm (**Prompt: It is recommended to use this way, in order to avoid damage to the device when suddenly powered off.)

Figure 2.1 Shutdown Menu

2.2 Login

If NVR first start-up or has logged out, you must login the device before operating the menu and other functions,as shown in figure 2.2.

Figure 2.2 Login Interface

Steps:

1. Click **Start** button on the top of screen.
2. Click **Login** in the drop-down menu.
3. Input the **Password** in the pop-up interface(Default password: 888888).
4. Click **Login** to log in.

2.3 Using Guide

The Guide starts once login, as shown in figure 2.3.

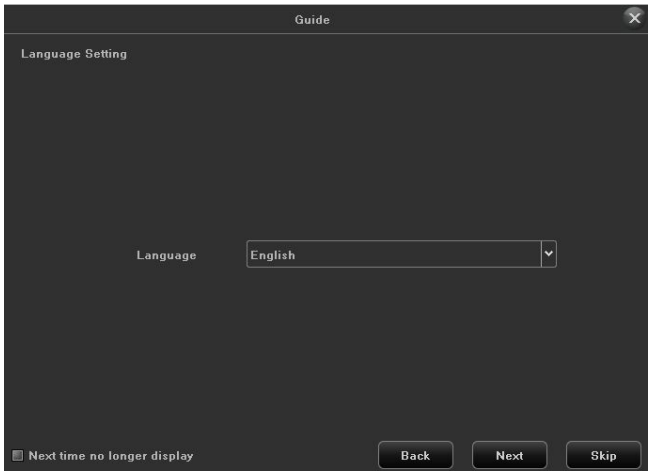


Figure 2.3 Language Setting

Operating the Guide

1）The Guide can walk you through some basic settings of the NVR. If you don't want to use the Guide at that moment, click the button. You can also choose to use the Guide next time by leaving the "Next time no longer display" check-box unchecked.

2）Click **Next** button to enter the Display Setting window, as shown in figure 2.4.

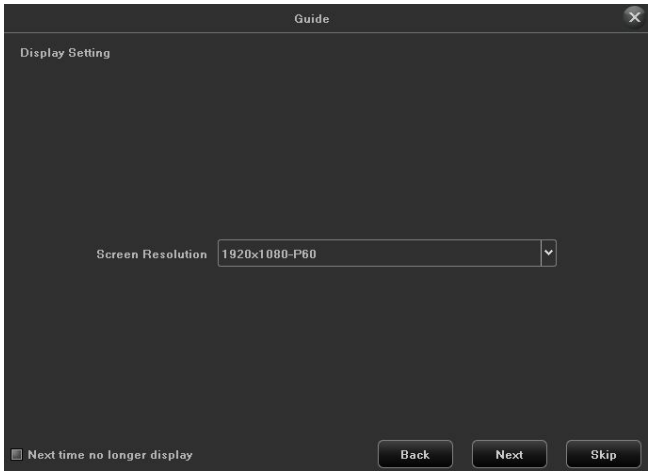


Figure 2.4 Resolution Setting

3）After the display setting, click **Next** button to enter the Network Setting window, as shown in figure 2.5.

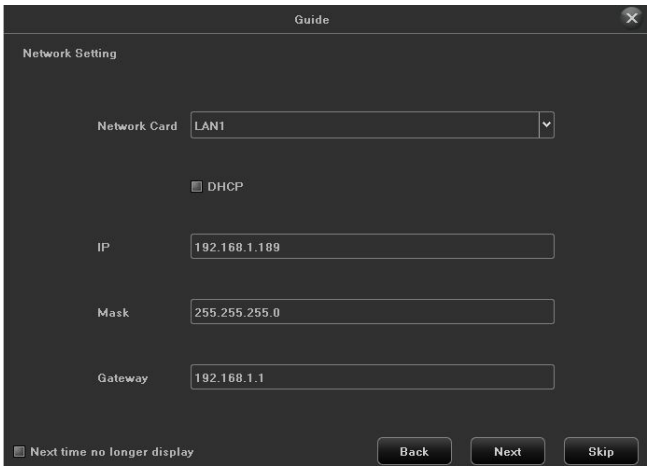


Figure 2.5 Network Setting

4）After the network setting, click **Next** button to enter the QR Code interface, as shown in figure 2.6.

Figure 2.6 Qr Code

5）Click **Finish** to complete the Guide setup.

2.4 Menu operation

After the user login successfully, according to the interface of the upper toolbar to perform associated settings,as shown in figure 2.7.

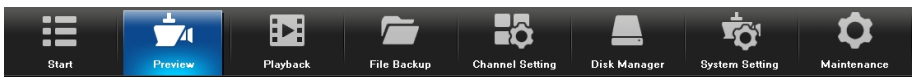


Figure 2.7 Menu Operation

2.4.1 Begin setup

Click the icon, it will pop-up the interface as show in figure 2.8.

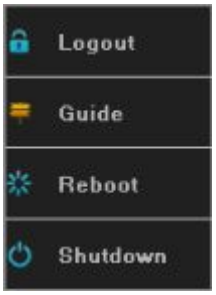


Figure 2.8 Begin Setup

1）Logout: Click **Logout** button, can exit the current user.

2）Guide: Click **Guide** button, it will pop-up boot wizard setting interface, simply configure language, display resolution, basic network parameters, and mobile phone app to access the QR Code display.

3）Reboot: Click **Reboot** button and confirm, the device will automatically reboot.

4）Shutdown: Click **Shutdown** button and confirm, the device will automatically shutdown.

Chapter 3 Preview

3.1 Introduction of Preview

Preview shows you the video image getting from each camera in real time. The NVR will automatically enter live view mode when powered on, as shown in figure 3.1.

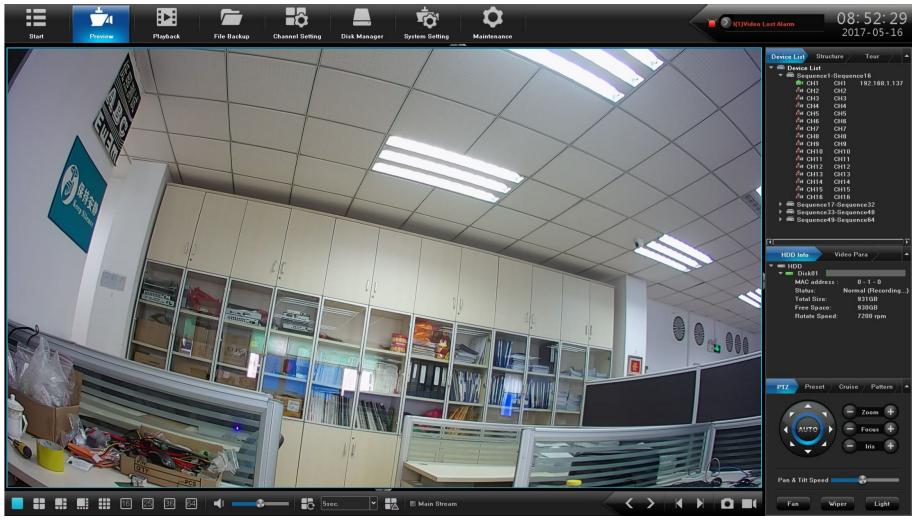


Figure 3.1 Preview Interface

Channel Preview Icons

In the Preview mode, there are hide icons on the screen of each channel, which shows when you move the mouse to the bottom of channel.

Table 3.1 Preview Icon Description

Icons	Description	Icons	Description
	Open/Close PTZ		Show/Hide Smart detection
	Snapshot		Open/Close Voice Intercom
	Open/Close Channel Audio		Manual Recording On/Off
	Instant Playback		

3.2 Operations in Preview Mode

In preview mode, there are many functions provided. The functions are listed below.

(1) Real-time alarm information

On the top right corner, there is a real-time alarm information, as shown in figure 3.2.

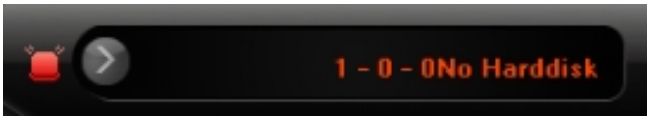


Figure 3.2 Alarming

When you click , it will pop-up the alarm information, as shown in figure 3.3.

Figure 3.3 Alarm Information

When you click , it will hide the real-time alarm information.

(2) Other functions

Table 3.2 Other Function Description

Icons	functions	Icons	Description
	1 Split Screen		4 Split Screen
	6 Split Screen		8 Split Screen
	9 Split Screen		16 Split Screen
	25 Split Screen		36 Split Screen
	64 Split Screen		Sound Adjust
	Cruise on Setting		Linkage Preview
	Display Main Stream		Page Up/Page Down
	Last/Next Group		Capture all preview channel
	All preview channel manual record setting		

3.3 Using the Mouse in Preview

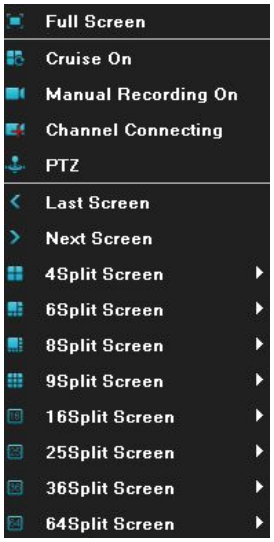


Figure 3.4 Right Click Menu

Table 3.3 Right Click Function Description

Name	Description
Full Screen	Quick enter full screen mode.
Cruise On/Off	Open/Close cruise.
Manual Recording On/Off	Open/Close manual record.
Channel Connecting	Quick enter IP Camera Management interface.
PTZ	Open the PTZ interface
Last Screen	Switch to the previous screen.
Next Screen	Switch to the next screen.
4 Split Screen	Select and enter 4 Split Screen mode.
6 Split Screen	Select and enter 6 Split Screen mode.
8 Split Screen	Select and enter 8 Split Screen mode.
9 Split Screen	Select and enter 9 Split Screen mode.
16 Split Screen	Select and enter 16 Split Screen mode.
25 Split Screen	Select and enter 25 Split Screen mode.
36 Split Screen	Select and enter 36 Split Screen mode.
64 Split Screen	Select and enter 64 Split Screen mode.

3.4 Right Tool Bar

（1）Images play mode

There are three kinds of play mode，as shown in figure 3.5, preview picture can show according to "Device List", "Structure" and "Tour" preview as required，the default play mode is "device list", note that, “Structure”and "Tour"can be used only when they are configured in advance, see below the detailed operation, channel configuration section.

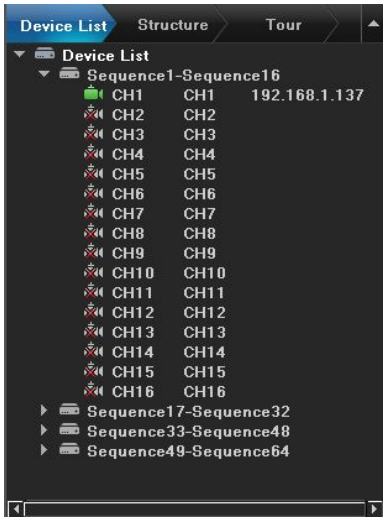


Figure 3.5　Device List

（2）Disk information

Can real-time to view the hard disk status, it’s convenient to view when connect multiple hard disk,as shown in figure 3.6.

Figure 3.6　HDD Info

（3）Video parameter

May revise the brightness, contrast, saturation and hue of the channel that the current mouse selected, one click to restore the default value when necessary,as shown in figure 3.7.

Figure 3.7 Video Parameter

（4）PTZ/Preset/Cruise/Pattern

Please confirm whether the related parameters setting is correct before control the PTZ.After setting up parameters, select the channel to be controlled in the preview interface, then control the direction of the lens, focal length, focus, aperture amplification and narrow in PTZ operation interface， and adjust the speed of PTZ, as shown in figure 3.8. See below the detailed operation of PTZ control part.

Figure 3.8 PTZ

3.5 Channel Exchange

Select a channel, drag to another channel, it will pop-up prompt dialog box, as shown in figure 3.9.

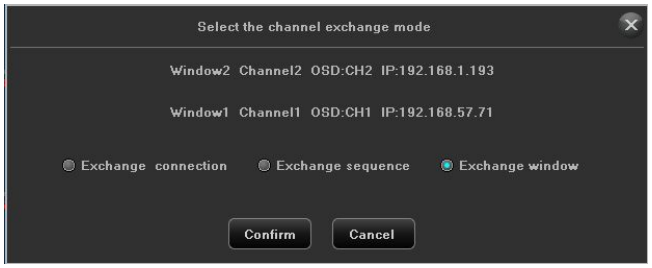


Figure 3.9 Channel Exchange

There are three ways to exchange channels:

（1）Exchange channel connection, at the same time, all configuration swaps;

（2）Exchange channel order, exchange the preview position , the device list information changes at the same time;

（3）Exchange window position, exchange the preview position, the device list information no change at the same time.

Chapter 4 Playback

4.1 Instant Playback

Purpose:

Playback the recorded video files of a specific channel in the live view mode.

Steps:

Choose a channel in live view mode and click the button in the bottom of the channel,as shown in figure 4.1.

Figure 4.1 Instant Playback

4.2 Playback by Normal Search

4.2.1 Recording Playback

Click icon to enter the Playback interface, as shown in figure 4.2.

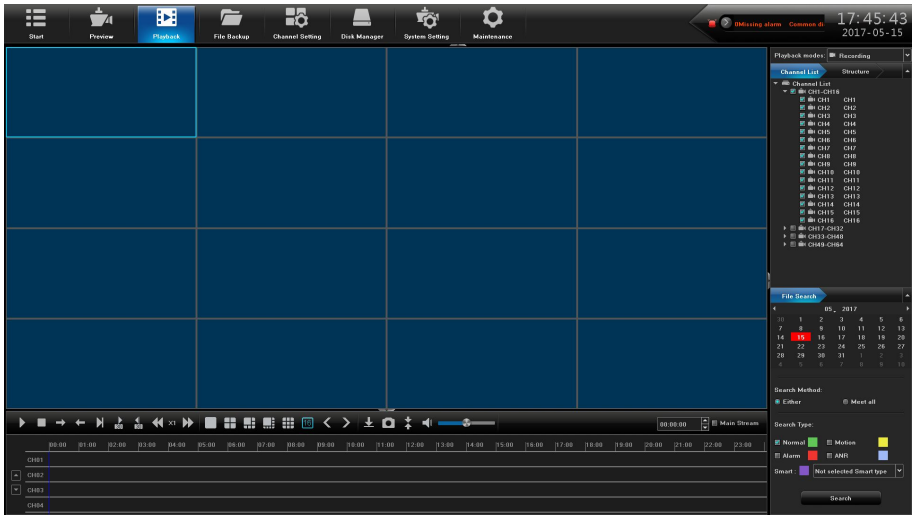


Figure 4.2 Normal Playback Interface

Playback by time

Purpose:

Playback video files recorded in specified time duration. Multi-channel simultaneous playback is supported.

Steps:

1）Enter **playback** interface.

2）Check the check-box of channel(s) in the channel list and then double-click to select a date on the calendar.

3）Click the button to start playback, as shown in figure 4.3 .

Figure 4.3 Video Playback

Note:

If there are record files for that camera in that day, in the calendar, the icon for that day is displayed as 6 7 8. Otherwise it is displayed as 6 7 8

Playback Interface

You can use the toolbar in the bottom part of Playback interface to control playing progress, as shown in figure 4.4.

Figure 4.4 Playback Toolbar

Table 4.1 Detailed Explanation of Playback Toolbar

Button	Operation	Button	Operation
	Play/Stop		Stop
	Playback forward		Playback backward
	Single frame		30 seconds forward/backward
	Speed Down		Speed Up
	1 Split Screen		4 Split Screen
	6 Split Screen		8 Split Screen
	9 Split Screen		16 Split Screen
	Page Up/Page Down		Backup
	Capture		Hide/Show the progress bar
	Sound Adjust		

4.2.2 Playback by Event Search

Purpose:

Playback record files on one or several channels searched out by event type (e.g. alarm detection, motion).

Steps:

1）Enter the Playback interface.

2）Select the Retrieving type: There are many types you can select,such as Count Alarm, Motion, Across the line, Regional, Alarm detection and object left/Loss etc. .

3）Click the **Search** button to get the search result information.

4）Click button to playback the file.

4.2.3 Playback Pictures

Purpose:

The captured pictures stored in the HDDs of the device can be searched and viewed, as shown in figure 4.5.

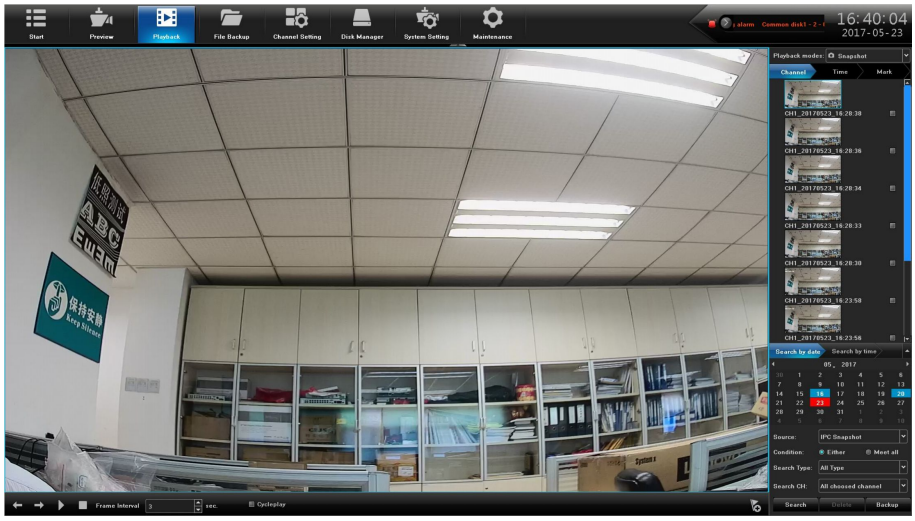


Figure 4.5 Picture Playback

Steps:

1）Enter playback interface.

2）Select playback modes: Snapshot.

3）Select Search by day or Search by time.

4）Select Picture source: IPC Snapshot(preview snapshot) or Playback Snapshot.

5）Choose Condition: Meet random or Meet all.

6）Select Retrieving type.

7）Select Search Channel.

8）Click **Search** button to search for the capture picture.

9）Check the check-box after the picture listed, then click to view the picture.

10）The toolbar in the bottom of playback interface can be used to control playing process.

Table 4.2 Detailed Explanation of Playback Toolbar

Button	Function	Button	Function
	Play/Stop		Stop
	Next picture		Last picture

Note:

Click the check-box of the picture listed, then click Backup button, can enter the Snapshot back-up interface, as shown in figure 4.6.

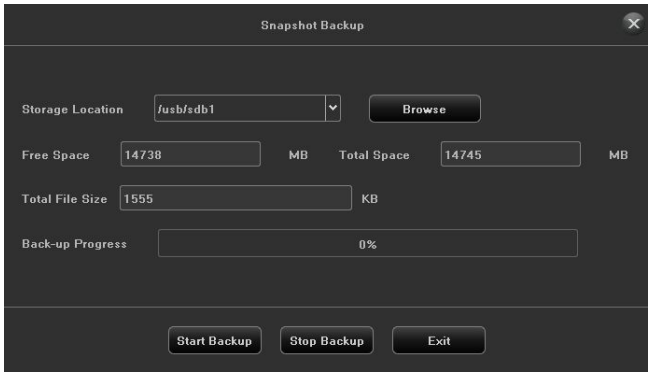


Figure 4.6 Snapshot Backup

4.2.4 Playback External File

Purpose:

Perform the following steps to look up and playback files in the external devices,as shown in figure 4.7.

Figure 4.7 External File Playback Interface

Steps:

1）Enter the playback interface.

2）Select playback modes: External file.

3）Click the **Refresh** button to refresh the file listed.

4）Select and click the button to playback it. And you can adjust the playback speed by clicking and .

Chapter 5 PTZ Controls

5.1 Configuring PTZ Settings

Follow the procedure to set the parameters for PTZ. The configuring of the PTZ parameters should be done before you control the PTZ camera.

Steps:

1）Enter the PTZ Setting interface,as shown in figure 5.1;

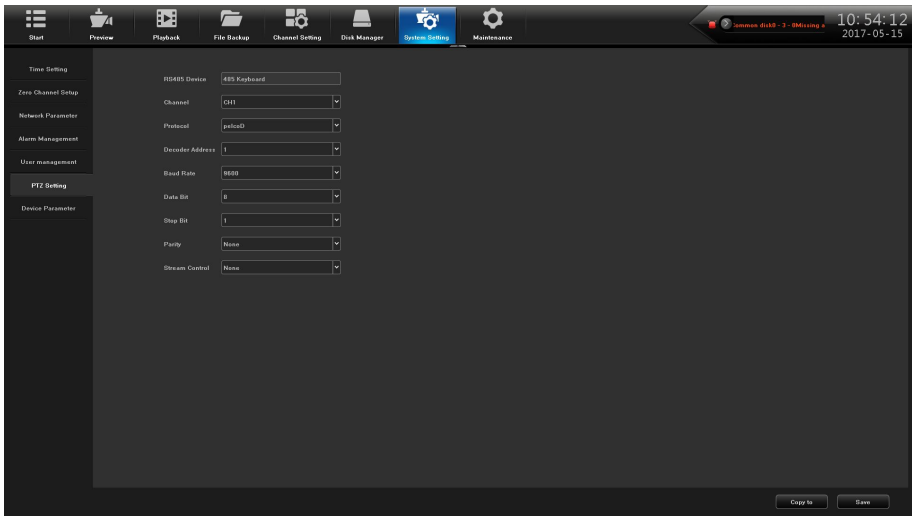


Figure 5.1 PTZ General Setting Interface

2）Set the parameter of PTZ：

（1）**Channel:** Choose the channel.

（2）**Protocol:** Choose the protocol for your PTZ.

（3）**Decoder Address:** Choose the decoder address.

（4）**Baud Rate:** Select the baud rate.

（5）**Data Bit:** Select the data bit.

（6）**Stop Bit:** Select the stop bit.

（7）**Parity:** Select the verify, Non Parity by default.

（8）**Stream Control:** Select the stream control, No Flow Control by default.

3）Click **Save** button to save the settings.

5.2 Setting PTZ Preset, Cruise, Pattern&Linear Scan

Before you start:

Please make sure that the preset, cruise and pattern should be supported by PTZ protocols,as shown in figure 5.2.

Figure 5.2 PTZ Setting Interface

5.2.1 Preset Setting

Follow the steps to set the Preset location which you want the PTZ camera to point to when an event takes place.

Steps:

1) Use the directional button to wheel the camera to the location where you want to set preset, and the zoom and focus operations can be recorded in the preset as well.

2) Setting the name of preset, click button to save the preset. Repeat the above steps to save more presets.

5.2.2 Cruise Setting

Purpose:

Cruise can be set to move the PTZ to different locations and have it stay there for a set duration before moving on to the next location. The locations are corresponding to the presets. The presets can be set following the steps above in **Preset Setting**.

Steps:

1）Select cruise No. in the drop-down list of cruise.

2）Click the button to add key points for cruise,as shown in figure 5.3.

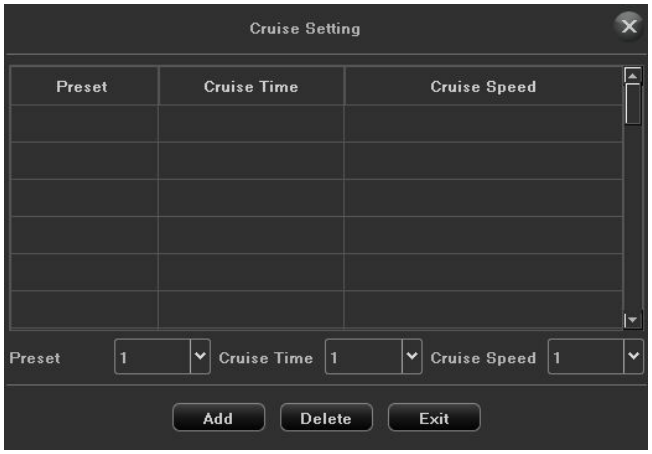


Figure5.3 Cruise Setting

3）Configure key point parameters, such as the key point No., duration of staying for one key point and speed of cruise. The key point is corresponding to the preset. The Key Point No. determines the order at which the PTZ will follow while cycling through the cruise. The **Cruise time** refers to the time span to stay at the corresponding key point. The **Cruise Speed** defines the speed at which the PTZ will move from one key point to the next.

4）Click the **Add** button to add the next key point to the patrol.

5）After finish setting, click **Exit** button.

5.2.3 Pattern Setting

Purpose:

Patterns can be set by recording the movement of the PTZ. You can call the pattern to make the PTZ movement according to the predefined path.

Steps:

1) Choose pattern number in the drop-down list.

2) Click button to begin and click corresponding buttons in the control panel to move the PTZ camera, then click button to end. The movement of the PTZ is recorded as the pattern.

5.2.4 Linear Scan Setting

Steps：

1）Select a number, use the directional button to wheel the camera to the location where you want to set starting point, click button.

2）Wheel the camera to the location where you want to set end point, click button.

3）Click , the PTZ camera will move from the starting point to the end point.

Chapter 6 File Backup

Purpose:

The record files can be backup to various devices, such as USB devices (USB flash drives, USB HDDs).

Click icon to enter the local backup interface,as shown in figure 6.1.

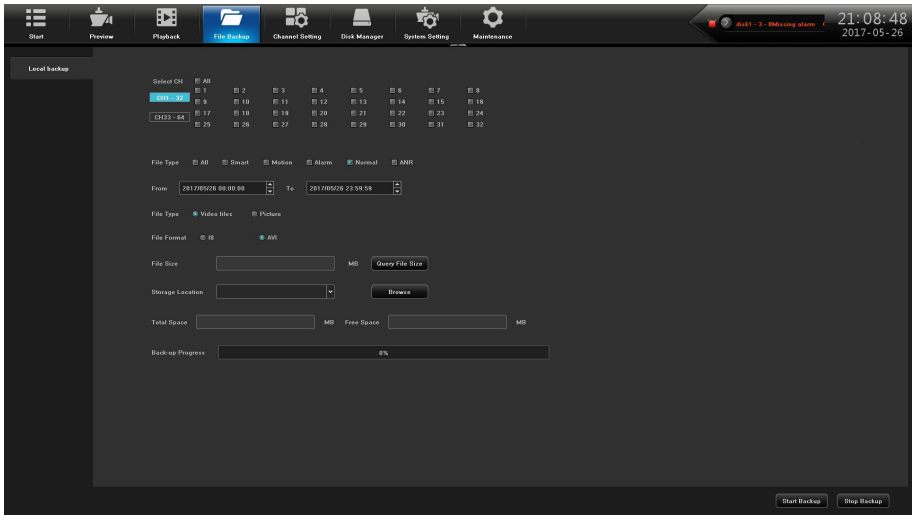


Figure 6.1 Backup Interface

6.1 Picture Backup

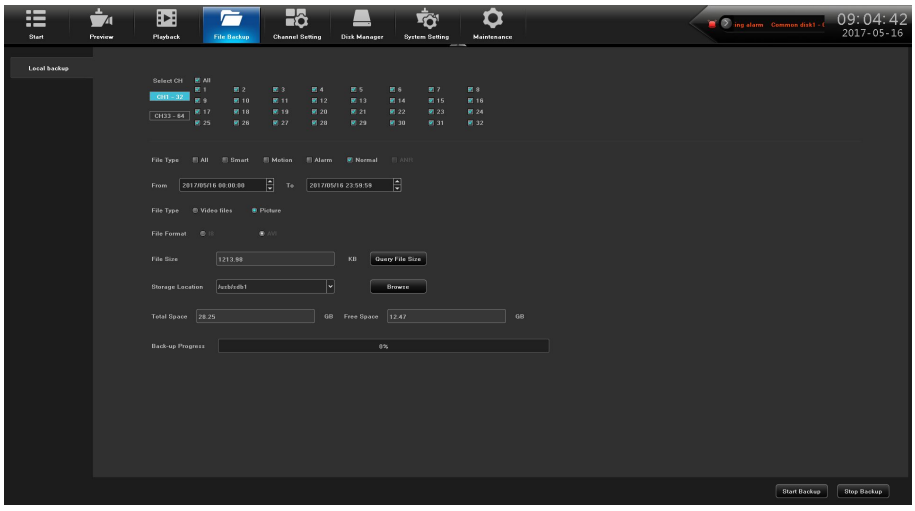


Figure 6.2 Picture Backup Interface

Steps:

1）Select the Channel to backup.

2）Select the File Type:Picture.

3）Set the time of file to backup.

4）Click **Query File Size** button to view the file size.

5）Click **Browse** button to scan the USB device.

6）Click **Start Backup** button to start the backup, show as following picture.

7）After finish, click **Confirm**.

6.2 Video File Backup

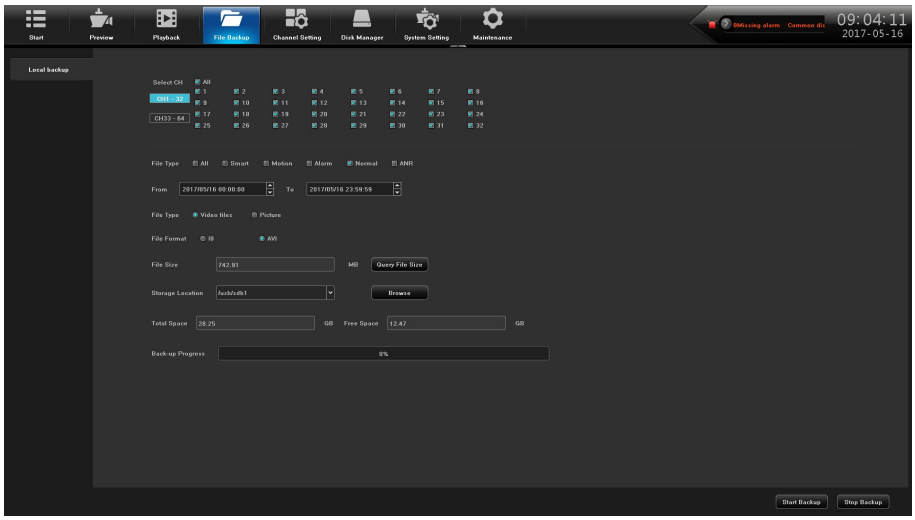


Figure 6.3 Video Backup Interface

Steps:

1）Select the Channel to backup.

2）Set the time of file to backup.

3）Select the File Type:Video.

4）Select the File Format.

5）Click **Query File Size** button to view the file size.

6）Click **Browse** button to scan the USB device.

7）Click **Start Backup** button to start the backup, show as following picture.

8）After finish, click **Confirm**.

Chapter 7 Channel Setting

7.1 Adding IP Cameras

Purpose:

Before you can get live video or record the video files, you should add the network cameras to the connection list of the device.

Before you start:

Ensure the network connection is valid and correct, and the IP camera to add has already been activated.

Steps:

1）Click icon, enter into the Channel Connecting interface,as shown in figure 7.1.

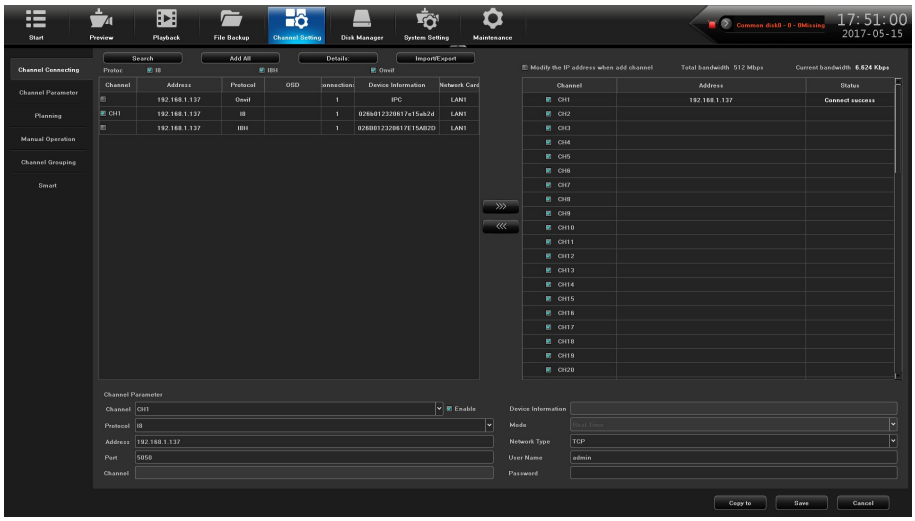


Figure 7.1 Quick Adding IP Camera Interface

2）Click **Search** button, it will automatically search all the IP cameras connected to the NVR.

3）Select the detected IP camera and click the button to add it directly, and you can click the **Search** button to refresh the online IP camera manually.

4）Or you can choose to custom add the IP camera by editing the parameters in the corresponding text field and then click the **Save** button to add it,as shown in figure 7.2.

Figure 7.2 Custom Adding IP Camera Interface

7.2 Channel Parameter

7.2.1 Display Setting

Purpose:

You can configure the OSD(On-screen Display) settings for the camera, including camera name, date /time, etc.

Steps:

1）Enter the OSD Configuration interface.

Channel Setting ->Channel Parameter ->Display Setting

2）Select the channel of camera to configure OSD settings.

3）Local Channel Name setting.

- Check the check-box before **Show Local Channel Name**, then enter the Local Channel Name in the text field.
- Click **Save** button, the name that enter will show on the screen. You can use the mouse to click and drag the text frame on the window to adjust the OSD position.

4）IP Camera Name setting(should be supported by the camera).

- Check the check-box before **Show Channel Name**, then enter the Channel Name in the text field.
- Click **Save** button, the name that enter will show on the screen, You can use the mouse to click and drag the text frame on the window to adjust the OSD position,as shown in figure 7.3.

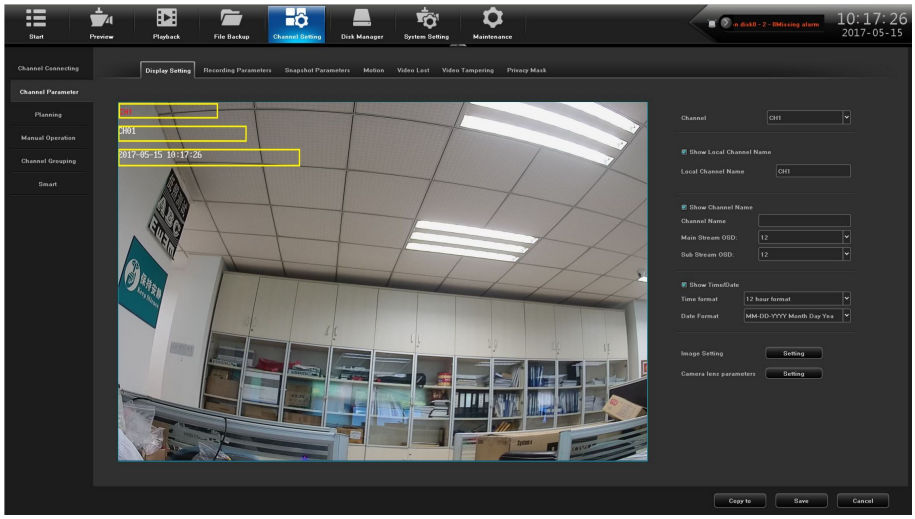


Figure 7.3　OSD Configuration Interface

5）Select the Date & Time Format(should be supported by the camera).

6）Image Setting: Adjust the Brightness, Contrast, Saturation and Hue of the channel, as shown in figure 7.4.

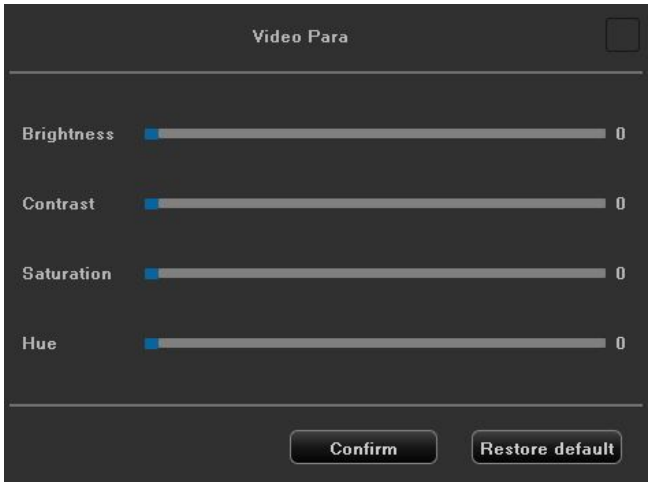


Figure 7.4 Image Setting Interface

- Camera Lens Parameters Setting: Set the channel Camera Lens Parameters, as shown in figure 7.5.

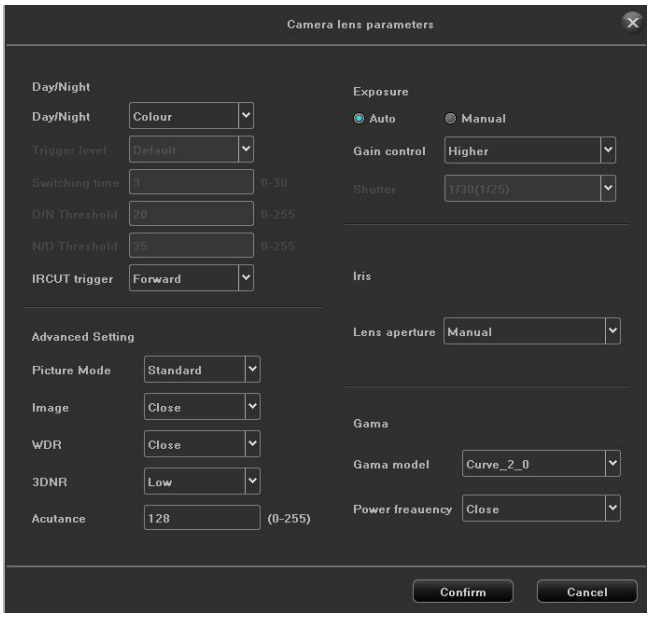


Figure 7.5 Camera Lens Parameters Setting Interface

- Click **Save** button to save the settings.

7.2.2 Recording Parameters

Purpose:

Sometimes you need to edit the channel Camera recording parameters for better image.

Steps:

1）Enter the recording parameters interface,as shown in figure 7.6.

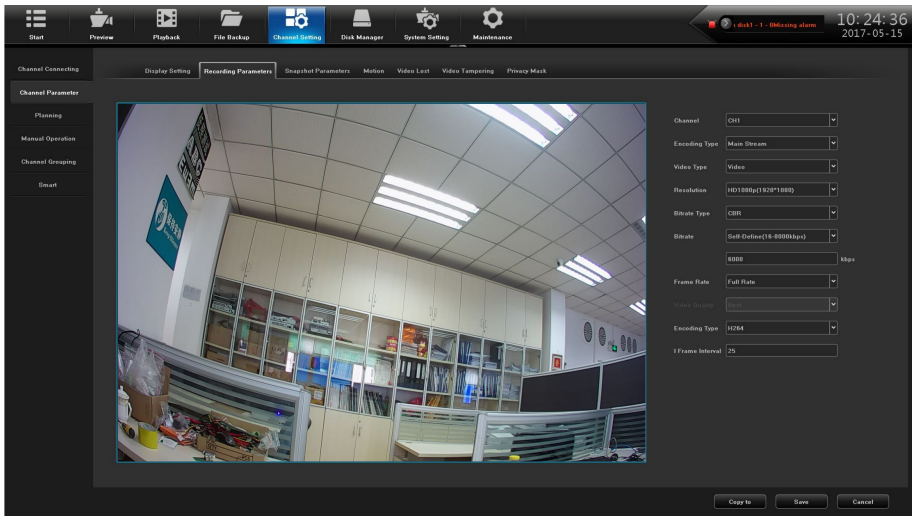


Figure 7.6 Recording Parameter

2）Set the video parameter：

（1）**Channel:**Select the channel of camera to configure the encoding type.

（2）**Encoding Type:** Select Main Stream or Sub Stream.

（3）**Resolution:** Select the video resolution.

（4）**Bitrate Type:** CBR & VBR can be selected.

（5）**Bitrate:** Set the Bit-Rate.

（6）**Frame Rate:** Select the frame rate.

（7）**I Frame Interval:**default 25.

3）Click **Save** button to save the settings.

7.2.3 Snapshot Parameters

Can set the resolution of the local snapshot and relevant parameters.The interface is shown in figure 7.7.

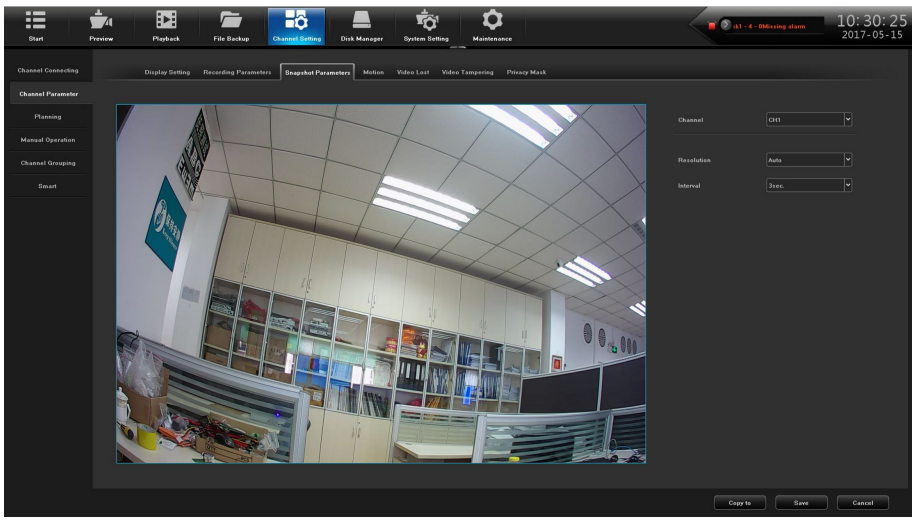


Figure 7.7 Snapshot Parameters

7.2.4 Motion

Motion detection interface is shown in figure 7.8, can set the related parameters of motion detection.

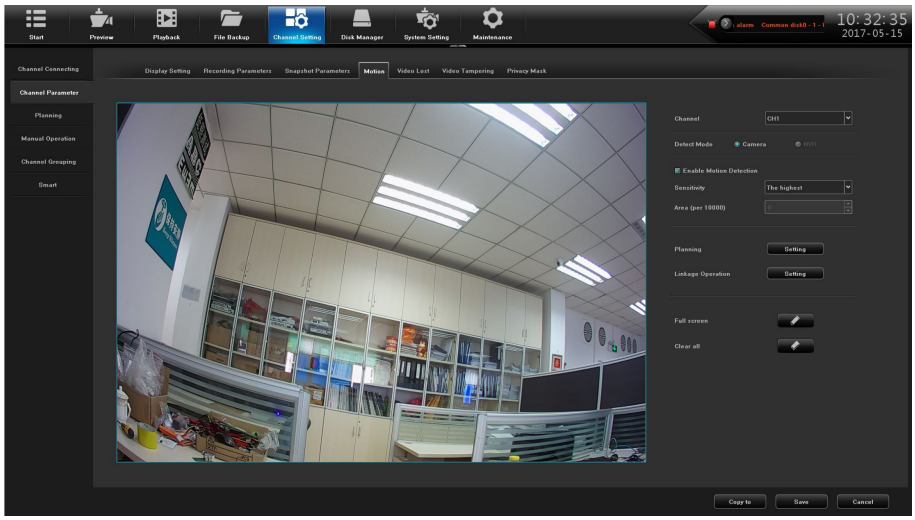


Figure 7.8 Motion

（1）**Detect Mode**：The default is "Camera"，when NVR support smart（smart detection），can switch mode to "NVR";

（2）**Sensitivity**：Can increase the accuracy of the motion detection trigger after setting up reasonably;

（3）**Zone setting**：Hold the left mouse button directly in the picture，drag to the area that needs motion detection, the red plaid area is the selected motion detection area, as shown in figure 7.9;

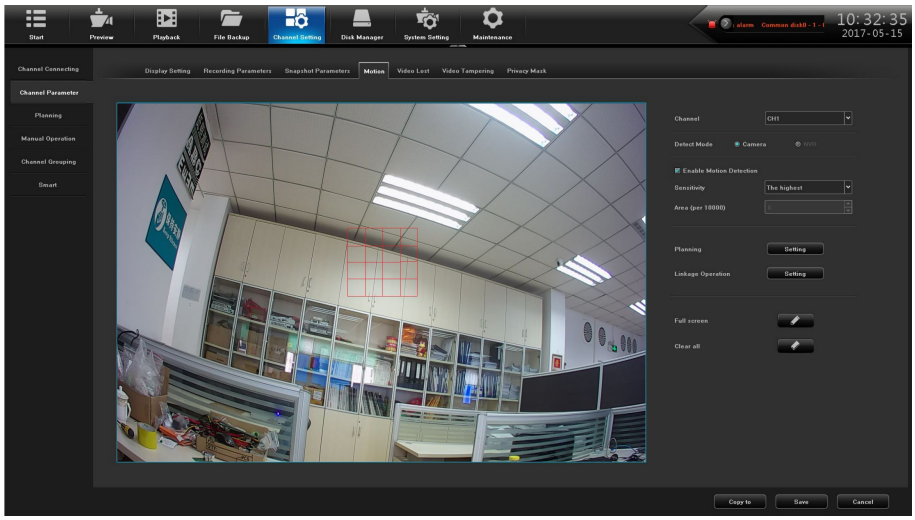


Figure 7.9 Zone Setting

（4）**Planning**：Set the schedule that needs arming, as shown in figure 7.10;

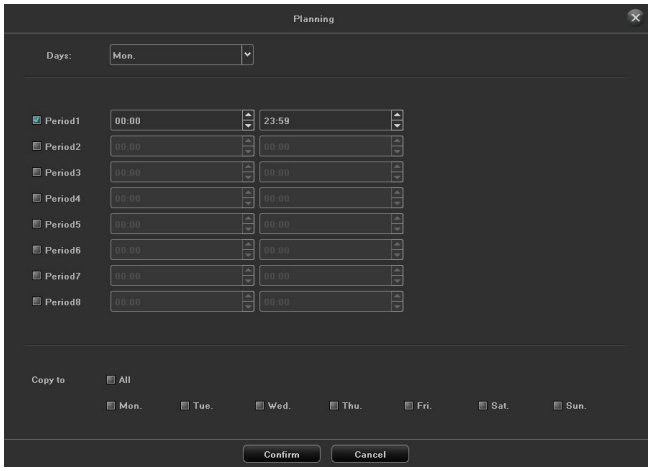


Figure 7.10 Planning

（5）**Linkage Operation**：Choose the mode that needs linkage，as shown in figure 7.11.

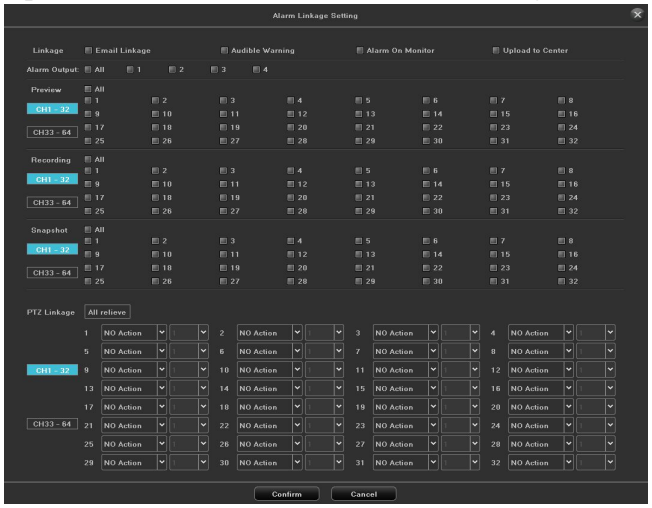


Figure 7.11 Linkage

（6）**Full screen**：One click to set the whole screen area for motion detection area;

（7）**Clear all**：One click to clear the motion detection area on the screen set before.

7.2.5 Video Lost

Video lost configuration interface, as shown in figure 7.12.

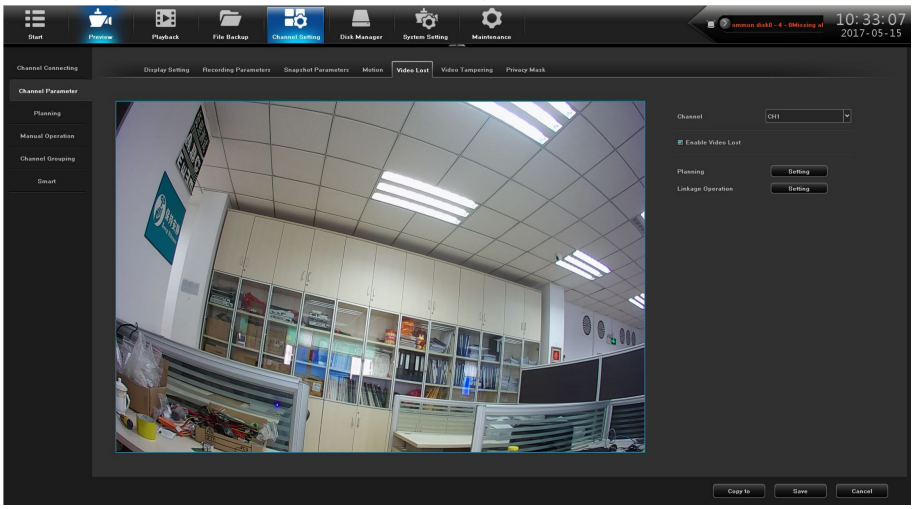


Figure 7.12 Video Loss

（1）**Channel：** Choose the channel number;

（2）**Planning：** Set the arming schedule of video loss, as shown in figure 7.13.

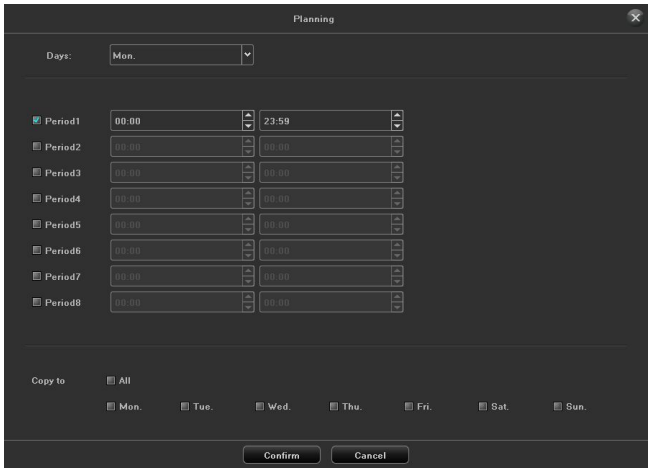


Figure7.13 Planning

（3）**Linkage：** Set the linkage mode, as shown in figure 7.14.

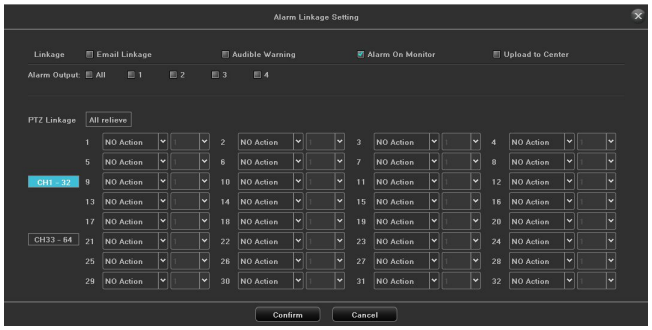


Figure7.14 Linkage

7.2.6 Video Tampering

Purpose:

Trigger alarm when the lens is covered and take alarm response action(s).

Steps:

1）Enter Video Mask Alarm interface of channel parameter and choose a channel you want to setup Video Mask Alarm,as shown in figure 7.15.

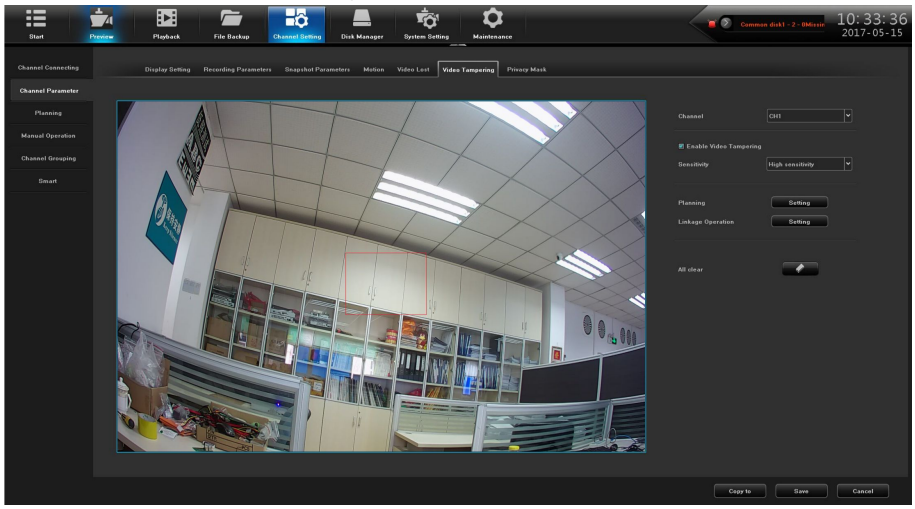


Figure7.15 Video Tampering

2）Set the video mask alarm handling action of the channel.

- Check the check-box of **Enable Video Tampering**.
- Select the sensitivity.
- Use the mouse to draw an area you want to detect video mask.

3）Setup the planning of the channel,as shown in figure 7.16.

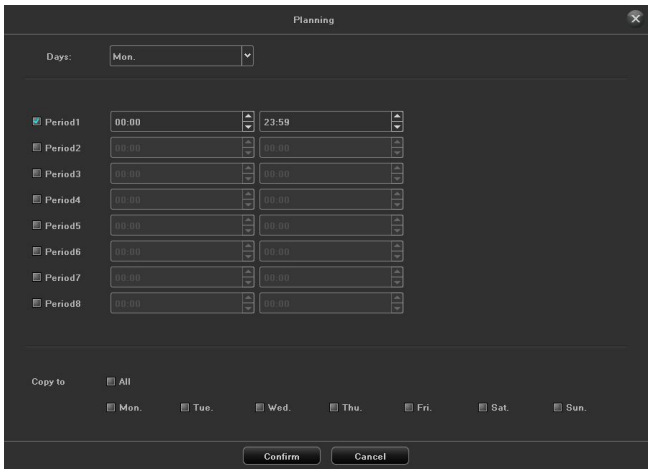


Figure 7.16 Planning

4）Setup the linkage operation of the channel, as shown in figure 7.17.

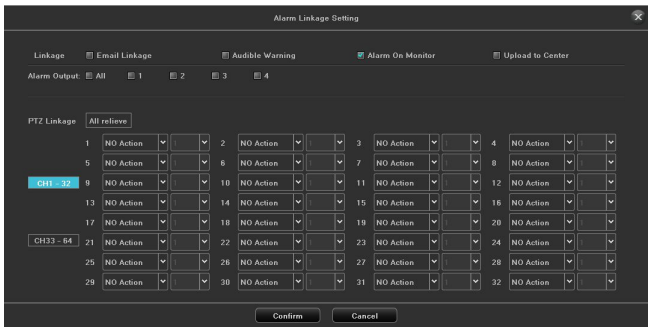


Figure 7.17 Linkage

5）Click **Save** button to save the settings.

Note： Onvif protocol can't support video tampering.

7.2.7 Privacy Mask

Purpose:

You are allowed to configure the four-sided privacy mask zones that cannot be viewed by the operator. The privacy mask can prevent certain surveillance areas to be viewed or recorded.

Steps:

1）Enter the **Privacy Mask Settings** interface, as shown in figure 7.18.

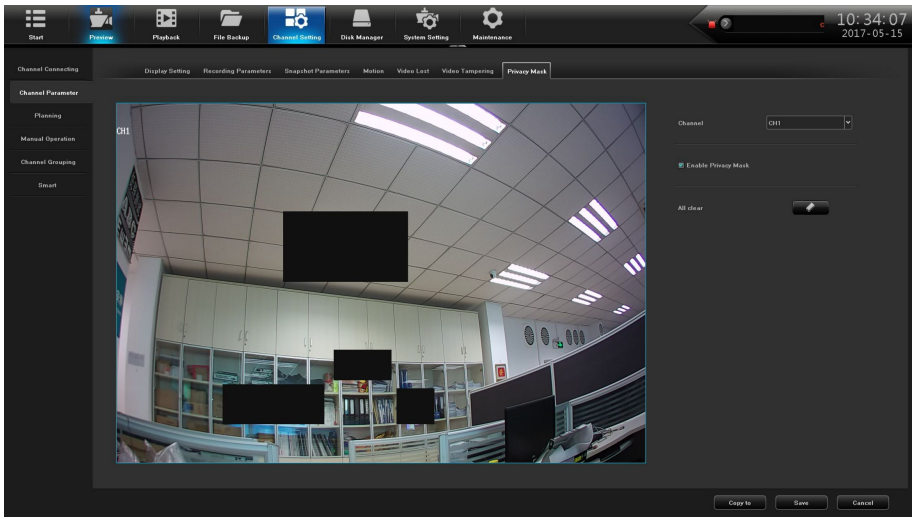


Figure 7.18 Video Mask

2）Select the camera to set privacy mask.

3）Click the check-box of **Enable Privacy Mask** to enable this feature.

4）Use the mouse to draw a zone on the window, up to 4 privacy mask zones can be configured and the size of each area can be adjusted.

5）The configured privacy mask zones on the window can be cleared by clicking the button.

6）Click the **Save** button to save the settings.

Note：Onvif protocol can't support privacy mask.

7.3 Planning

7.3.1 Recording Setting

Before you start:

Make sure that the HDD has already been installed. If not, please install a HDD.

Steps:

1）Enter the **Recording Setting** interface to configure the recording parameters,as shown in figure7.19.

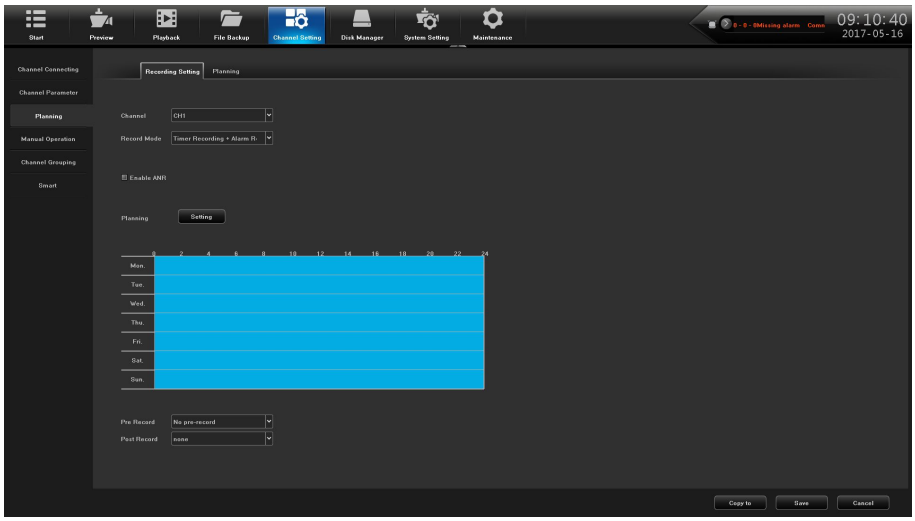


Figure 7.19 Record Setting Interface

- Select the Channel you want to configure.
- Select the Record Mode.
- Click **Setting** button to set the record time, as shown in figure 7.20.

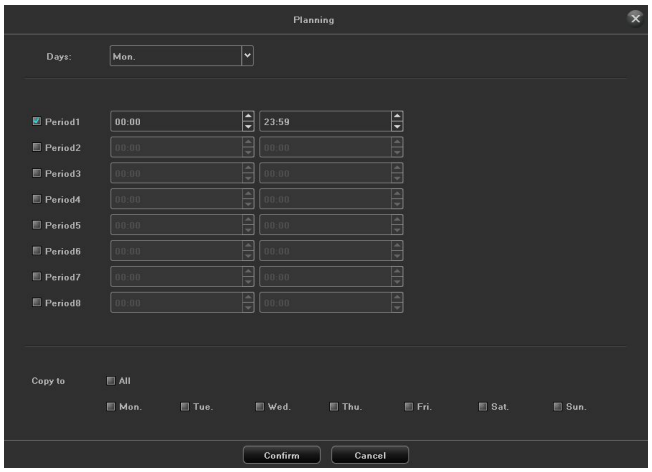


Figure 7.20 Arming Schedule

- Pre-Record: The time you set to record before the scheduled time or event.
- Recording Delay: The time you set to record after the scheduled time or event.

Note:Use the **Copy to** button to do the same setting to the channel needed.

7.3.2 Planning

Planning interface，as shown in figure 7.21.

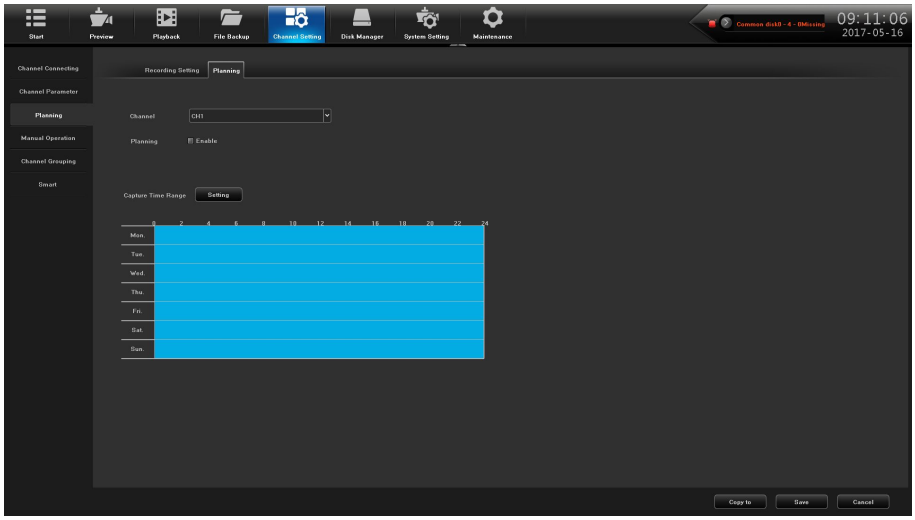


Figure 7.21 Planning Interface

（1）**Channel**：Set the channel number;

（2）**Planning**：Check to enable the timing capture;

（3）**Capture Time Range**：Set time intervals of timing capture according to the need, as shown in figure 7.22.

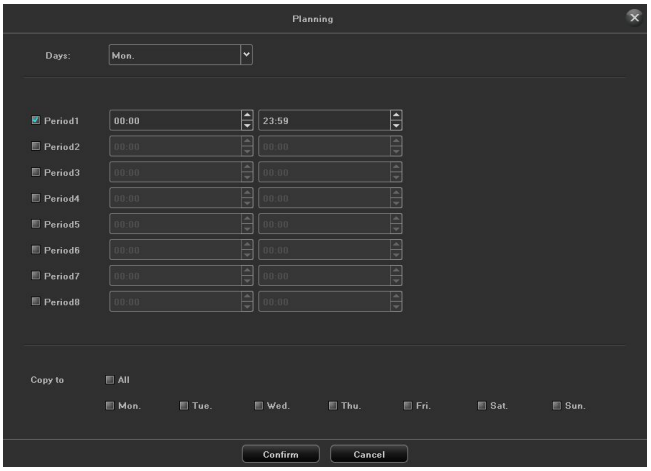


Figure 7.22 Planning

Note:Use the **Copy to** to do the same setting to the channel needed.

7.4 Manual Operation

7.4.1 Manual Recording

The Manual Recording Interface,as shown in Figure 7.23.

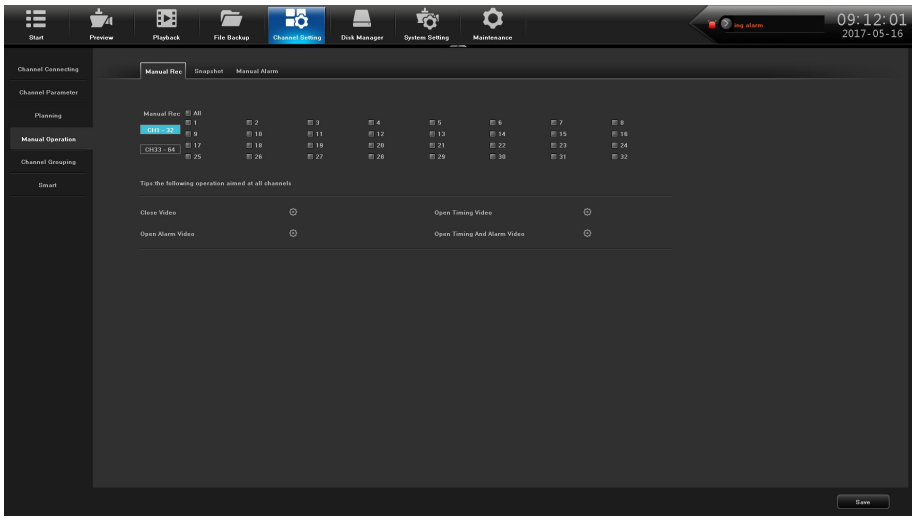


Figure 7.23 Manual Recording

7.4.2 Snapshot

The snapshot interface,as shown in Figure 7.24.

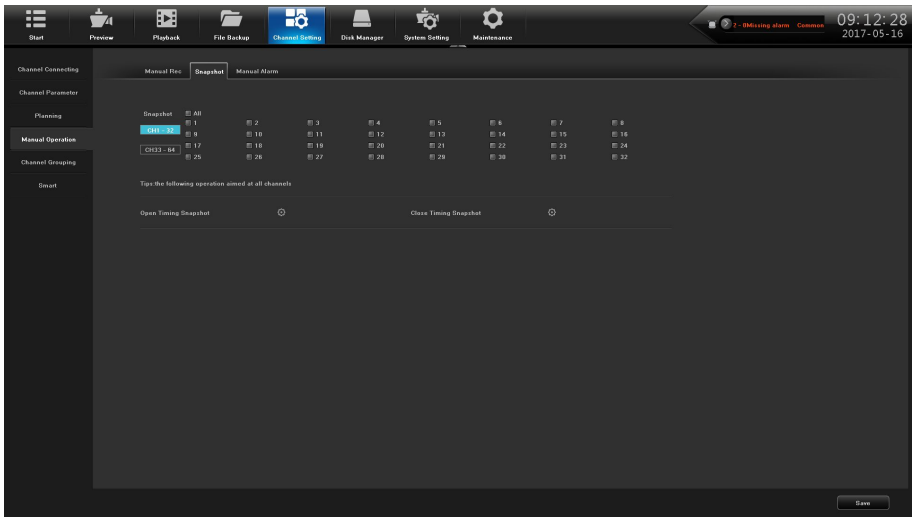


Figure 7.24 Snapshot

7.4.3 Manual Alarm

The manual alarm interface,as shown in Figure 7.25.

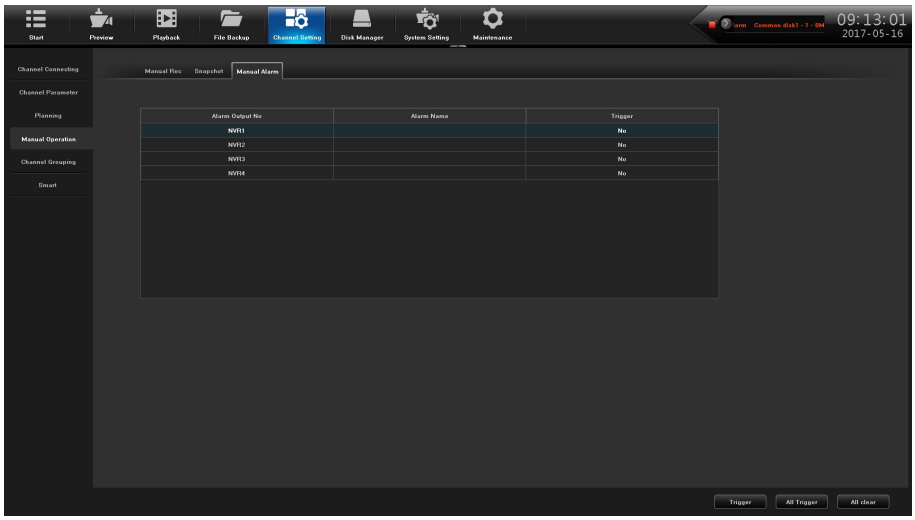


Figure 7.25 Manual Alarm

7.5 Channel Grouping

7.5.1 Structure

The role of setting organizational structure is to group the channel and preview, can group according to a standard, as shown in figure 7.26, that is group according to the region, the same channel can be divided into different groups according to the needs.

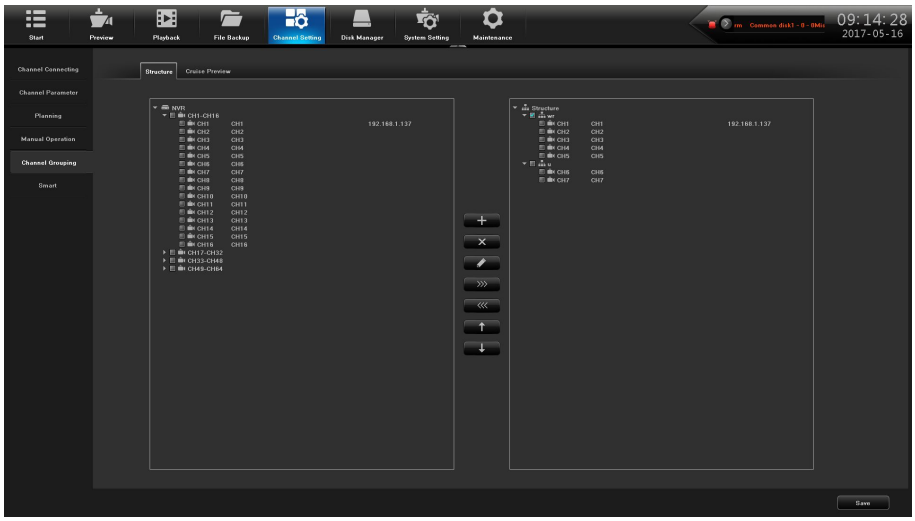


Figure 7.26 Organizational Structure

Icon function is shown in table 7.1:

Table 7.1 Icon function

Icon	Functional description	Icon	Functional description
	Create group		Delete group
	Modify the group name		Add group
	Remove the channel		Move up
	Move down		

7.5.2 Cruise Preview

Cruise preview setting is similar to above organizational structure settings, also be grouped according to a certain standard, it's convenient for preview to conduct loop rotation operation, the setting interface is shown in figure 7.27.

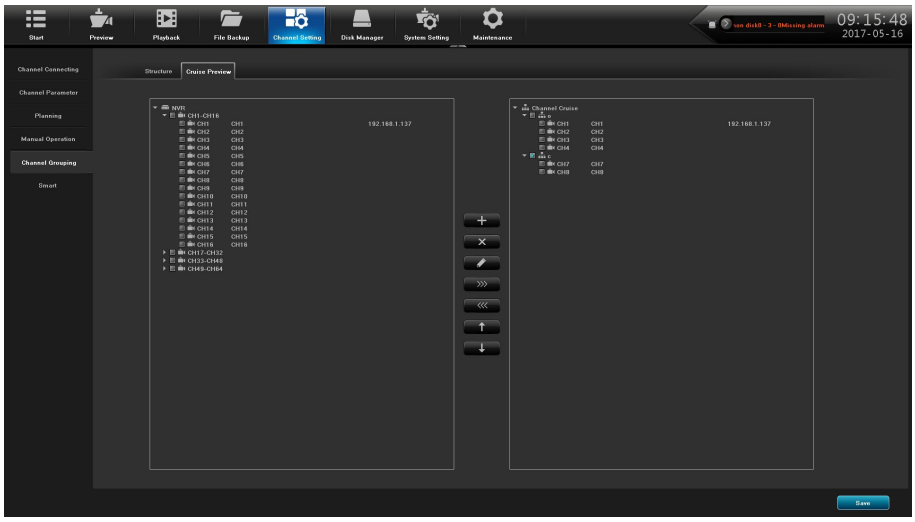


Figure7.27 Cruise Preview

Chapter 8 Disk Management

Click

icon, entering into the disk backup interface, there are three modules in this interface, the following instructions, respectively.

8.1 Storage Management

The information on the page explains in detail the situation of the current NVR receive the hard disk, as shown in figure 8.1, the device connects 1 hard disk, and is in normal state video recording.

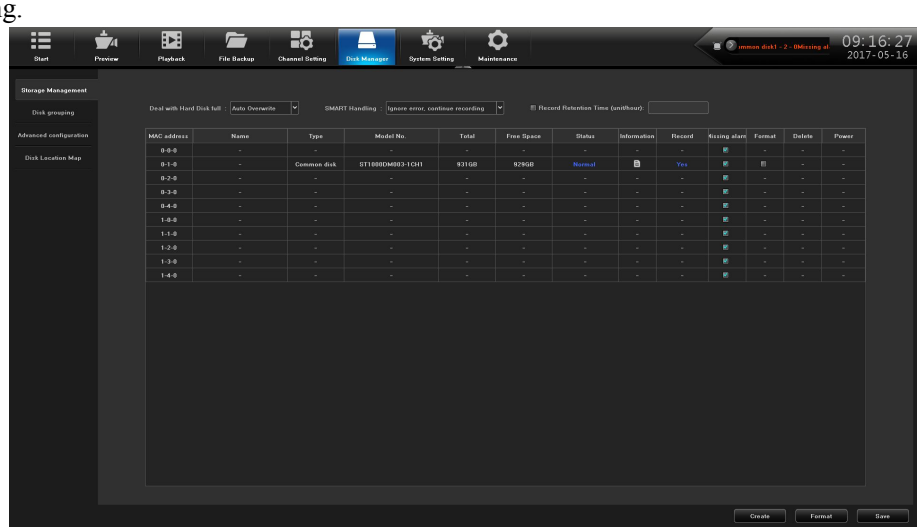


Figure 8.1 Storage Management

（1）Deal with Hard Disk full：There are "Auto Overwrite" and "Stop Recording" two ways, the default is "Auto overwrite";

（2）**SMART Handing**： There are "Ignore error, continue recording" and "Error happen, stop recording" two ways;

（3）**SMART information**： click icon will pop-up the SMART information list of current hard disk;

（4）**Missing alarm**：Detect that the SATA port will give an alarm if there is no hard disk connected;

（5）**Format**：Check the hard disk which needs to be formatted, then click the

button.（Note：when the status is “Need to be formatted”, only when the corresponding hard disk only when finish formatting corresponding hard disk, can the hard disk continue video, note: please don't do other operation in the process of formatting）

8.2 Disk Group

（1）Auto Grouping

The system default is video in accordance with the "Auto grouping", that is to say， all channel video defaulted to write video data in a hard disk， switch to next hard disk after finish video, if the NVR connect only one hard disk, namely, in accordance with the type of storage management page in the "video post-processing" selected，cover the history video or stop video.

Note that, when the channel of device video is more than 32CH and connect multiple hard disk, to ensure the efficiency and performance of hard disk， default to video in 2 hard disk, video in one hard disk first 32CH of the video channel, the remaining channel video in another hard disk video.

（2）Manual Grouping

Manual grouping function is to group the channel，the channel of different group can video in different hard disk， and each channel can be set quotas， as shown in figure 8.2.

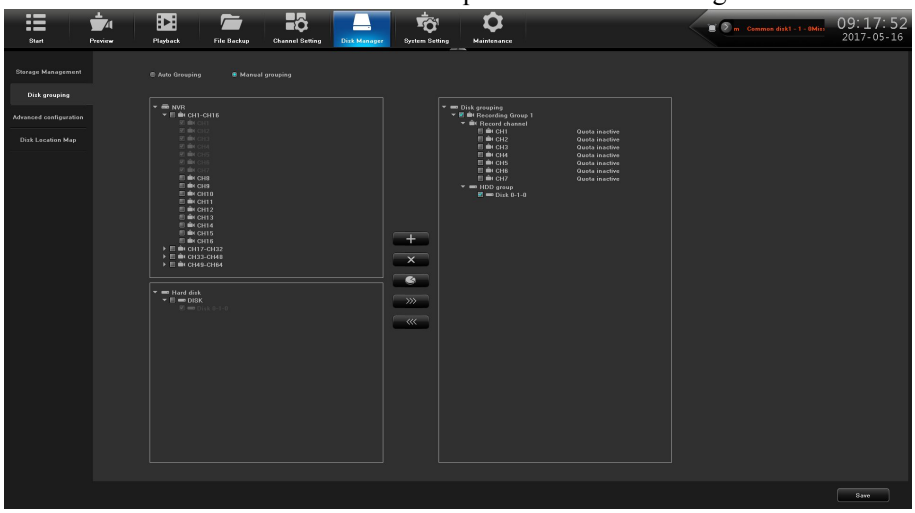


Figure 8.2 Manual Grouping

Above the middle column function button respectively are“Create a group”, “delete the group”, “quota setting”, “Right move to add channels to group”, “Left move to delete channels to group”，note that，the channel preview without being added into the group won’t video，the hard disk without being grouped is free hard disk，there would be no writing data.

Note：when manually group, it may clear the history video in the hard disk, please be careful when operating, to avoid irreparable harm.

8.3 Advanced Configuration

Advanced configuration，as shown in figure 8.3, check in the hard disk mode “enable RAID”, can enable the clone function, when one of the hard disk is damaged, it will automatically copy the current video to other hard disk, to ensure that the file will not lost.

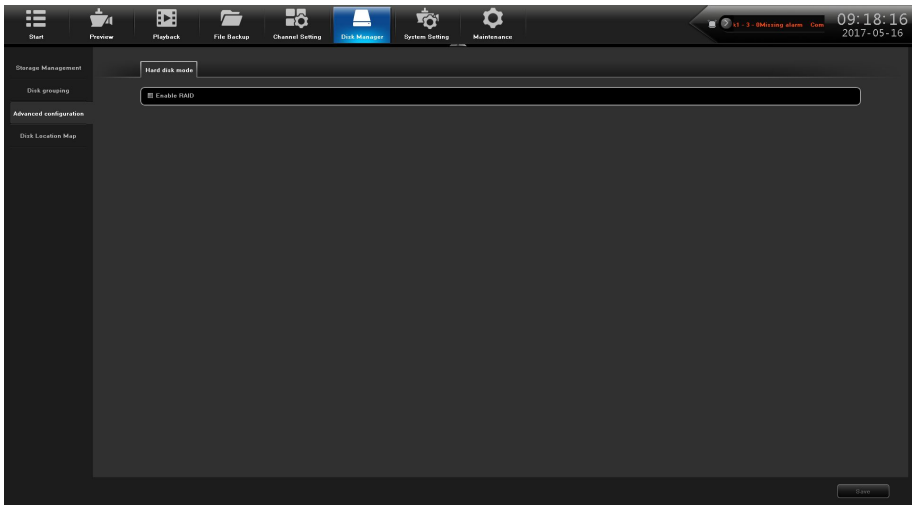


Figure 8.3 Advanced Configuration

8.4 Disk Location Map

This page shows the product main board picture, as shown in figure 8.4, it identified the corresponding physical serial number of sata port, if certain hard dis need to replace, just compare the image to find corresponding sata hard drive. (Note：photos are for reference only, the specific is in kind prevail）

Figure 8.4 Disk Location Map

Chapter 9 System Maintenance

Click

icon， can enter the system maintenance interface， this part includes six parts altogether，note the following instructions:

9.1 System Information

Can view the device information，stream info and online users.

9.1.1 Device Information

Device information interface， as shown in figure 9.1, can view the versions of hardware and software.

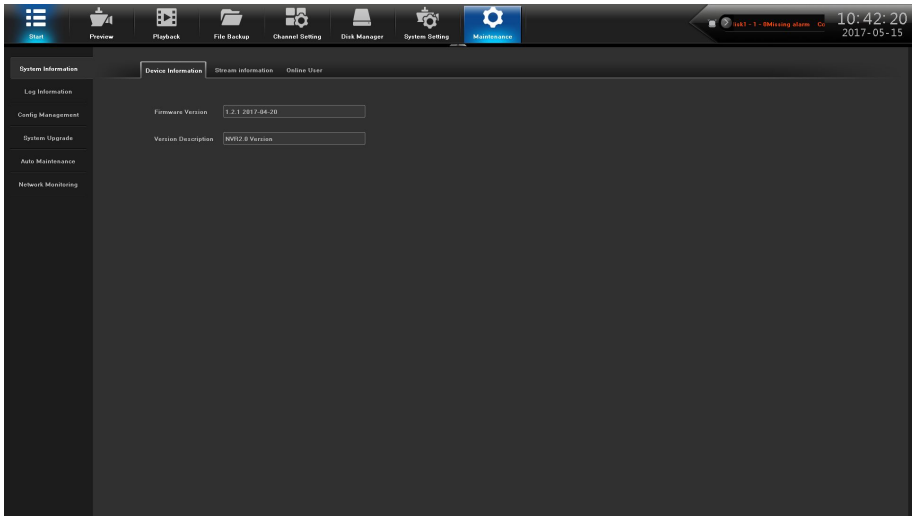


Figure 9.1 Device Information

9.1.2 Stream Information

View the stream status of the current device, as shown in figure 9.2.

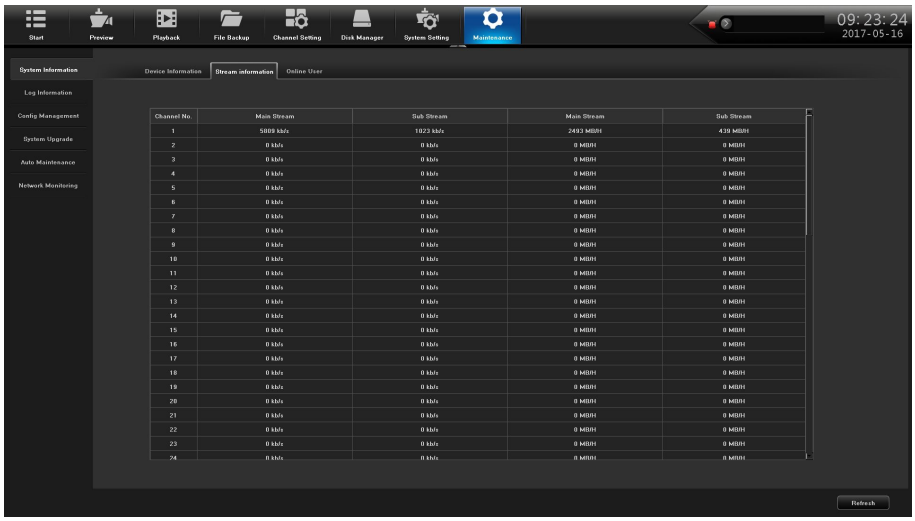


Figure 9.2 Stream Information

9.1.3 Online Users

View the information of current logged in user，as shown in figure 9.3, including: user name, login time, login IP, login method, and so on.

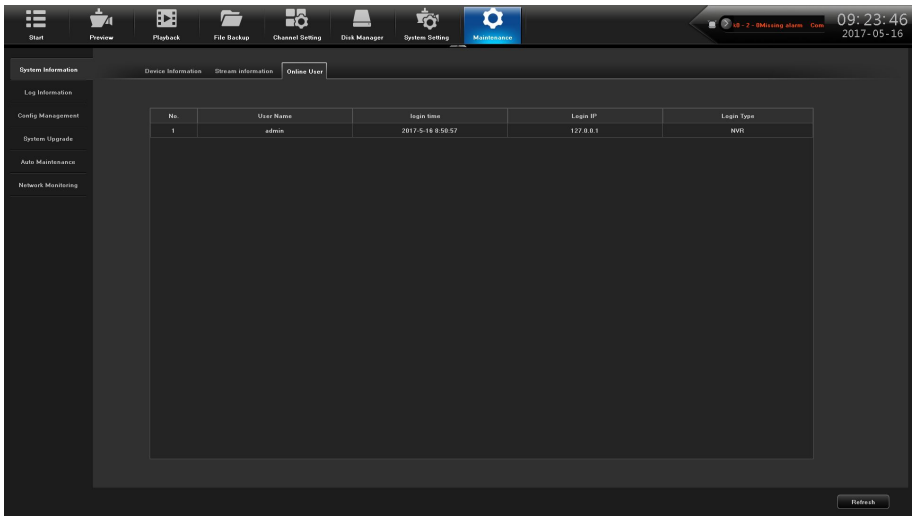


Figure 9.3 Online Users

9.2 Log Information

Click Search icon, the interface is shown in figure 9.4, can view the system log.

Figure 9.4 Log Information

（1）**Log Main Types:**Can choose "Operate", “Exception”, “Alarm”, “All Types”;

（2）**Sub Type:**Select to sub type;

（3）**Start Time:**Set the start time;

（4）**End Time:**Set the end time;

（5）**Export all log:**The log information can be imported into the storage devices;

（6） **Export query results:**Can import the current query log information into the storage devices according to the needs.

9.3 Configuration Management

As shown in figure 9.5, can export the configuration, import configuration and restore the default operation.

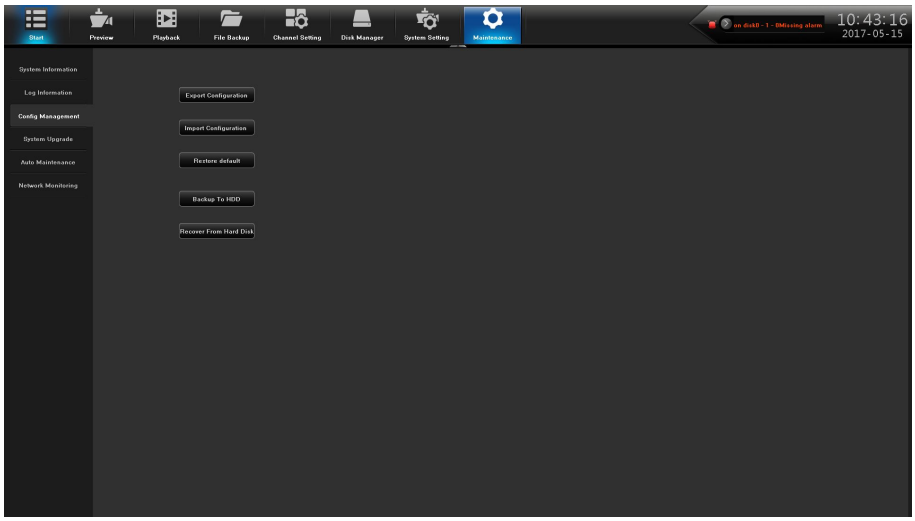


Figure 9.5 Configuration Management

9.4 System Upgrade

As shown in figure 9.6, it can be divided into “NVR upgrade” and “IPC upgrade”.

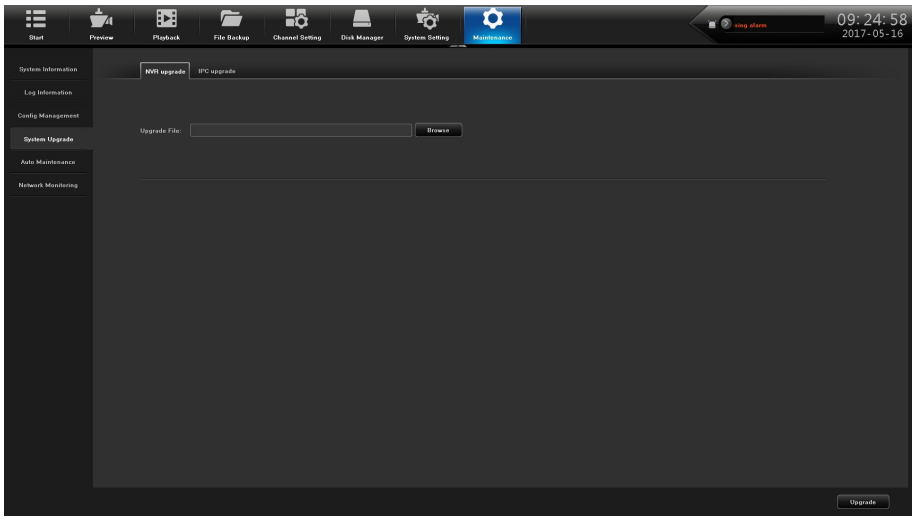


Figure 9.6 System Upgrade

（1）**NVR upgrade:** Click “browse”, select to upgrade the file， and then, the system will automatically restart after upgrading;

（2）**IPC upgrade:** Click “search”, select IPC, click upgrade, then complete the IPC upgrading.

Note: when upgrading IPC, the common.sh file and upgrade package need to be put in the same directory，otherwise unable to upgrade.

9.5 Auto Maintenance

Can set the maintenance mode, as shown in figure 9.7.You can select the maintenance mode in this interface.(The default mode is disable)

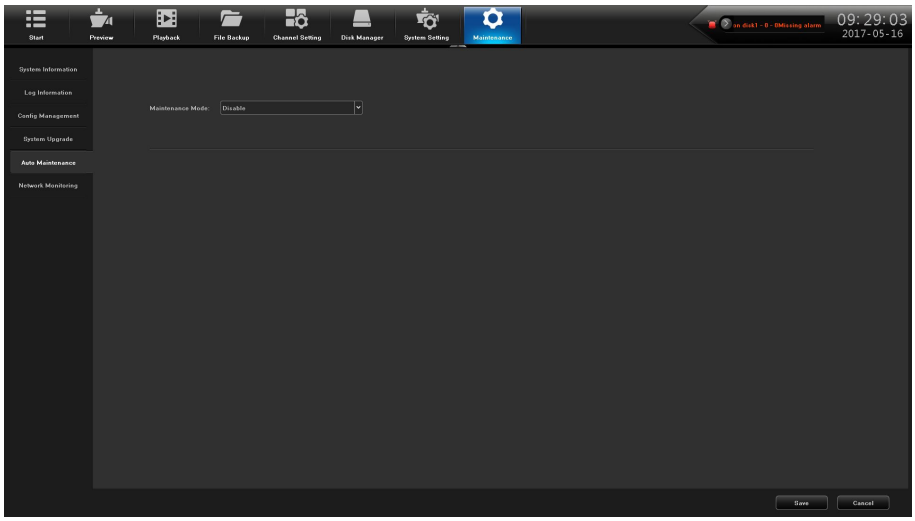


Figure 9.7 Auto Maintenance

9.6 Network Monitoring

9.6.1 Network Flow

As shown in figure 9.8, can monitor the network traffic of the current device.

Figure 9.8 Network Flow

9.6.2 Network Test

The network test interface, as shown in figure 9.9.

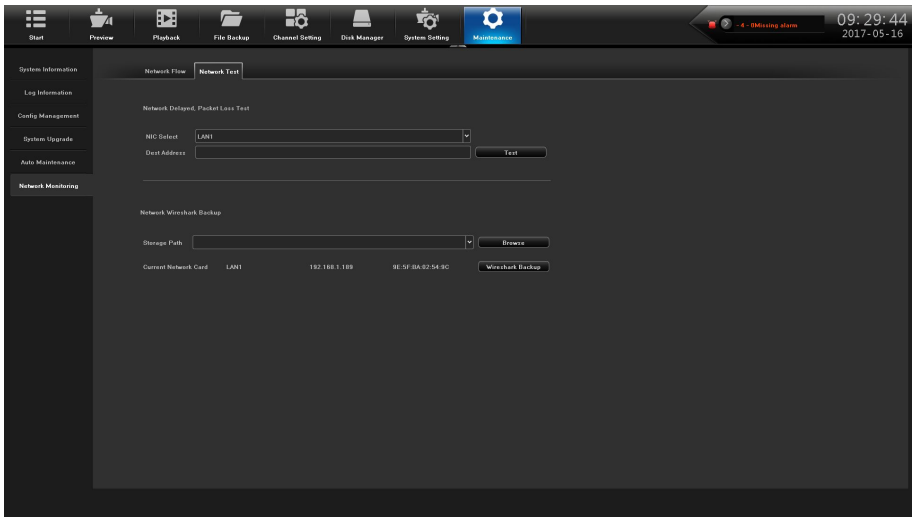


Figure 9.9 Network Test

（1）**NIC Select:**Select the network card，the default is network card 1;

（2）**Dest Address**：Input the network address that needs to be tested;

（3）**Network Wireshark Backup**：Click **browse**, set up storage paths, click **Wireshark backup**, then complete the backup.

Chapter 10 System Configuration

Click

icon, enter the system configuration interface, the interface has seven modules, the following description respectively.

10.1 Time Setting

10.1.1 Device Time

Time settings interface, as shown in figure 10.1, can set the device time, time zone selection.

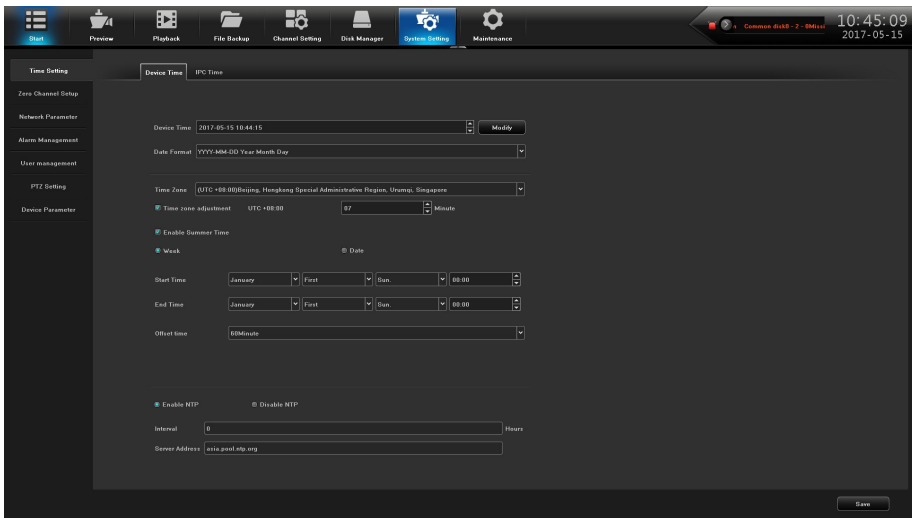


Figure 10.1 Time Setting

（1）**Device time**：Can manually modify the device time, set the time，click **Modify**，then save time;

（2）**Data Format:**Set the data format;

（3）**Time zone:S**witch time zones, the page will pop up a new date and time, there is daylight saving time function part time zone, the time zone is with functions of fine-tuning;

（4）**Enable Summer Time**：Click to **Enable Summer Time**, just need to finish setting the start and end time;

（5）**NTP**：Enable/Disable NTP（the device need to access network）.

10.1.2 IPC Time

The IPC time set interface,as shown in figure 10.2.

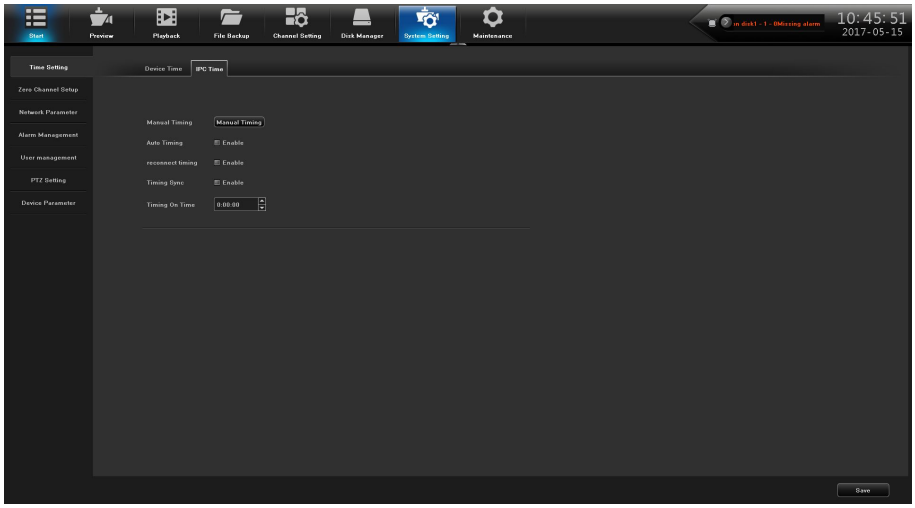


Figure 10.2 IPC Time

（1）**Manual Timing:**Click Manual Timing button,adjust the IPC time as same as device time.

（2）**Auto Timing**：Enable the auto timing, the IPC will be timing when it is different to the device time.

（3）**Reconnect Timing:**Enable the reconnect timing, the IPC will be timing after reconnect to device.

（4）**Timing Sync:**Enable the Timing sync, the IPC will be timing on the time you setting.

（5）**Timing On Time:**Set the time customers.

10.2 Channel Zero Setting

10.2.1 Global Setting

Global setting interface is shown in figure 10.3, then set the related channel information after enable the parameter configuration.

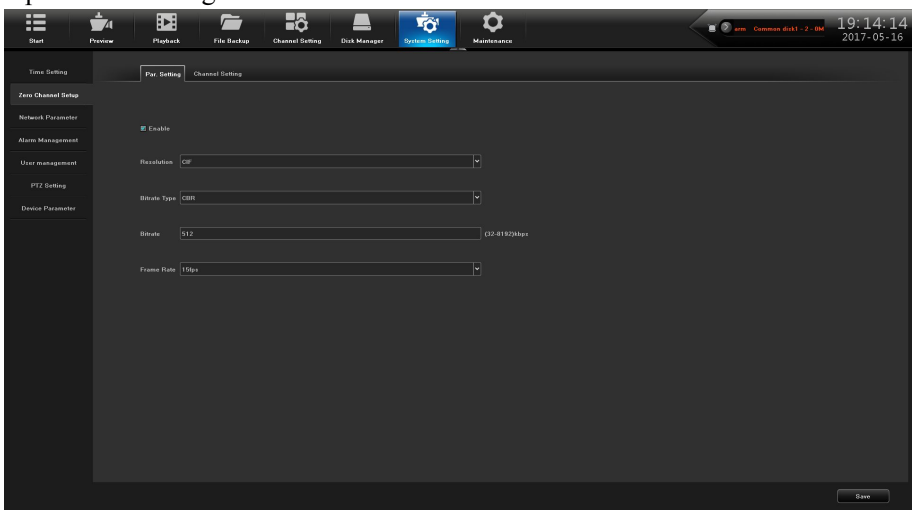


Figure 10.3 Parameter Configuration

（1）**Resolution**：Set the video resolution;

（2）**BitRate Type**：Choose the bit rate type，the default is CBR;

（3）**BitRate**：Set the bit rate upper limit;

（4）**Video frame rate**：set the frame rate according to the requirements.

10.2.2 Channel Setting

The Channel setting Interface, is shown in figure 10.4.

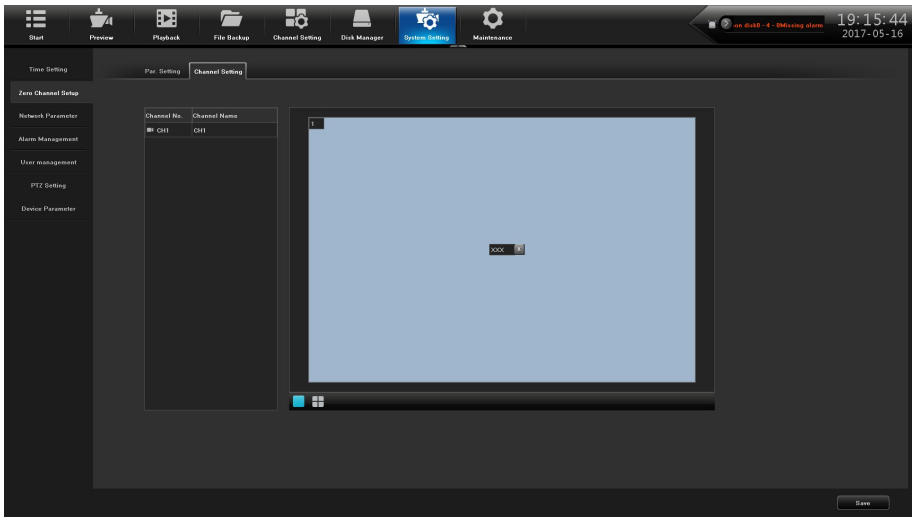


Figure 10.4 Channel Configuration

10.3 Network Parameter

The module has 5 pages, the following description respectively.

10.3.1 Basic Setting

The network Setting interface is shown in figure 10.5, then can set the IP parameters.

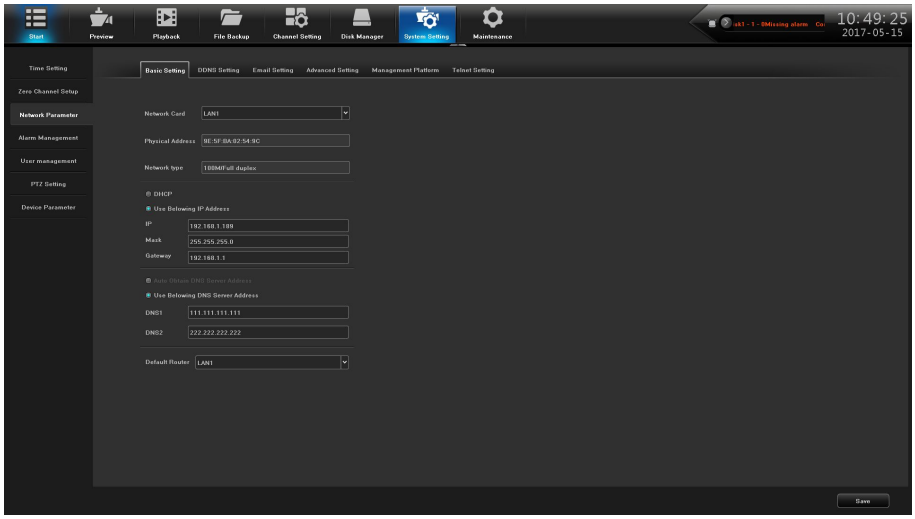


Figure10.5 Basic Setting

（1）**Network card**：According to the need can choose a different card type;

（2）**Physical Address**： Show the physical address of the the current network interface, unchangeable;

（3）**DHCP**： When open it, IP/mask/the gateway can not be set, if the current DHCP is effective, then it will obtain new IP/mask/gateway the router assigned（remote login need to use the new IP address), if it doesn't take effect, IP/mask/gateway will still show the previous address（can use the old IP address to remotely login equipment）;

（4）**IP**：Set the IP address, the default IP of the network card 1 is 192.168.1.189, the default IP of the network card 2 is 192.168.2.189;

（5）**Mask**：Set the mask;

（6）**Gateway**：Set the gateway address.

10.3.2 DDNS Setting

The default is "disable DNS" status，Each set column can not be set，it needs to switch to the "enable DNS" status，as shown in figure 10.6, note that，this function need to ensure that device can normal access network when using.

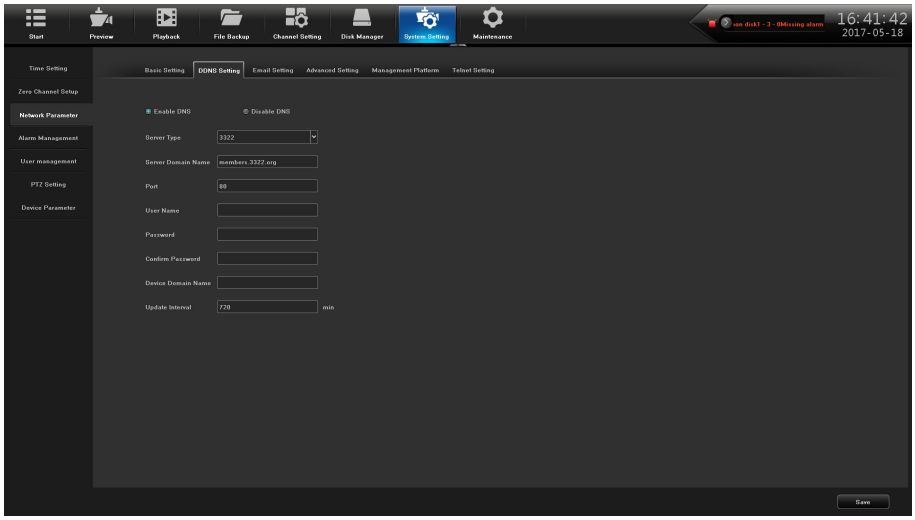


Figure10.6　DDNS Setting

（1）**Server Type**：there are 5 types of the defaulted list;

（2）**Server Domain Name**：Each server type is corresponding to the existing default server domain name;

（3）**Port**：Each server type is corresponding to the existing default port;

（4）**The User Name and Password**：Manually enter the correct user name and password;

（5）**Device Domain Name**：Manually enter the correct domain name（After the function is OK, you can use the domain name remote access device）;

（6）**Update Interval**：Set the update interval time.

10.3.3 Email Setting

The settings in this page is used with "Email Linkage" in the "Linkage Setting ", the sender email address and password, the recipient email address, SMTP server address and port information need to input correctly in the corresponding field according to the requirements of the format, here are other additional features on the page, as shown in figure 10.7.

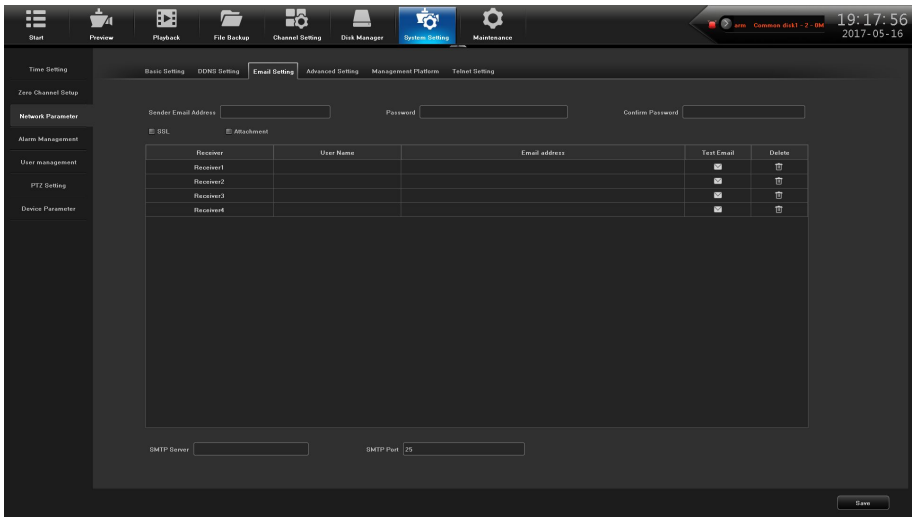


Figure 10.7 Email Setting

（1）Fill in the multiple recipient mailbox, the sender email address will send E-mail to multiple recipients mailbox at the same time ;

（2）Check function, the mail the recipient received in his mailbox is with attachments, the attachment content is linkage capture file of the corresponding channel （zip format）;

（3）Click the "test mail"corresponding field icon, Let the sender mailbox to send mail to the recipient's mailbox, the success or failure will pop-up tips.

Notice： use Email linkage function need to ensure a good network environment, then the device can smoothly access external network.

10.3.4 Advanced Setting

The Advanced Setting interface, as shown in figure 10.8.

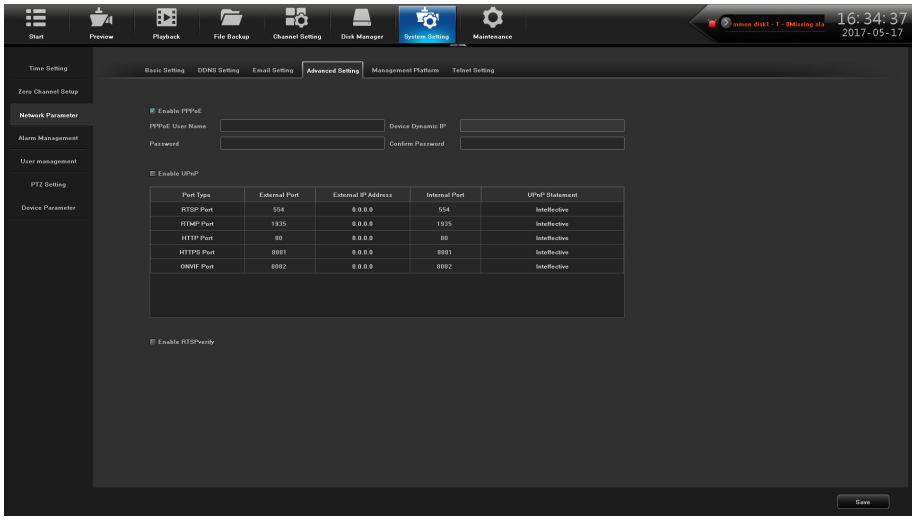


Figure 10.8 Advanced Setting

（1）Enable PPPoE

Need to fill in the correct PPPoE user name and password，if the network connect，can obtain the dynamic address of the device.

（2）Enable UPnP

Defaulted RTSP、RTMP、HTTP、HTTPS and ONVIF port numbers are respectively 554、

1935、80、8081 and 8082, port numbers can be modified（modifying the internal port need to restart the device to take effect）, UPnP status is defaulted to ineffective state, it will obtain the external IP address after take effect.

10.3.5 Management Platform

This page is the enable interface of the platform agreement, as shown in figure 10.9, defaulted to enable Fseye and Web Server protocol（Support the device remotely login）, other services enable according to the need. note that，enable/disable parts of service need to restart the device.

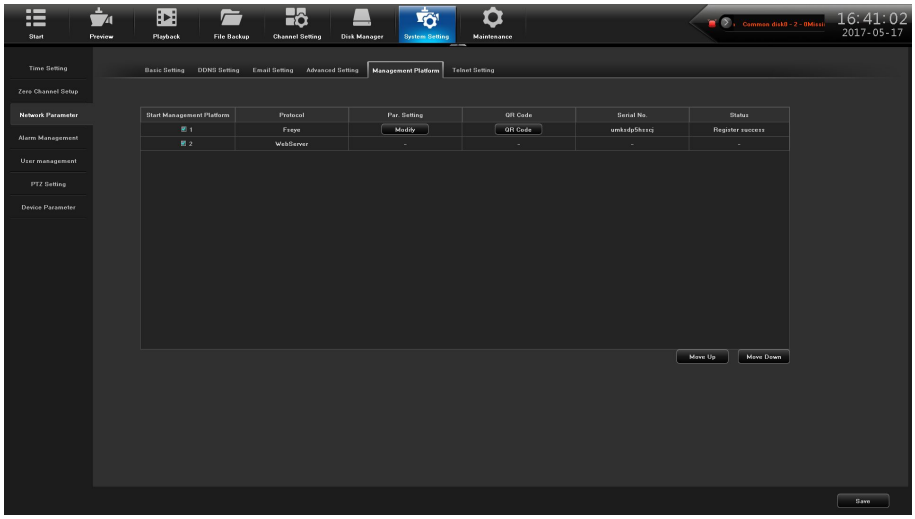


Figure 10.9 Management platform

（1）Click

icon，can modify Fseye protocol parameters configuration，as shown in figure 10.10.

Figure10.10 Modify

（2）Click

icon, can view Fseye QR code，as shown in figure 10.11.

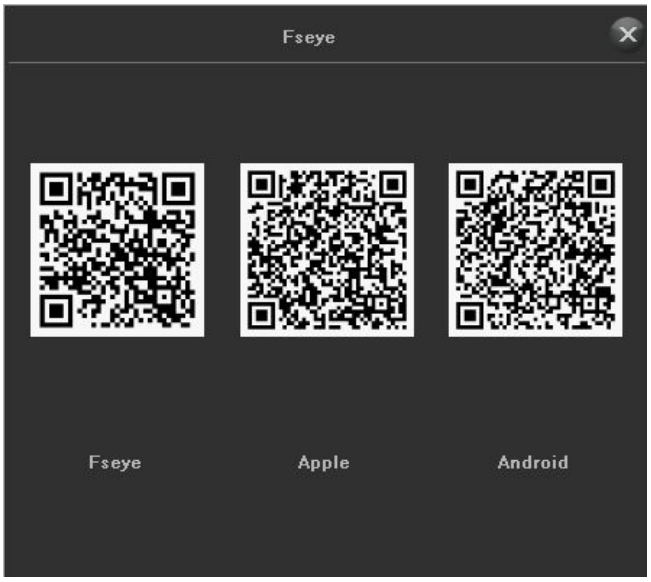


Figure 10.11 QR Code

10.4 Alarm Management

There are 4 pages of this module , the following instructions respectively.

10.4.1 Alarm Input

The Alarm input interface, as shown in figure 10.12.

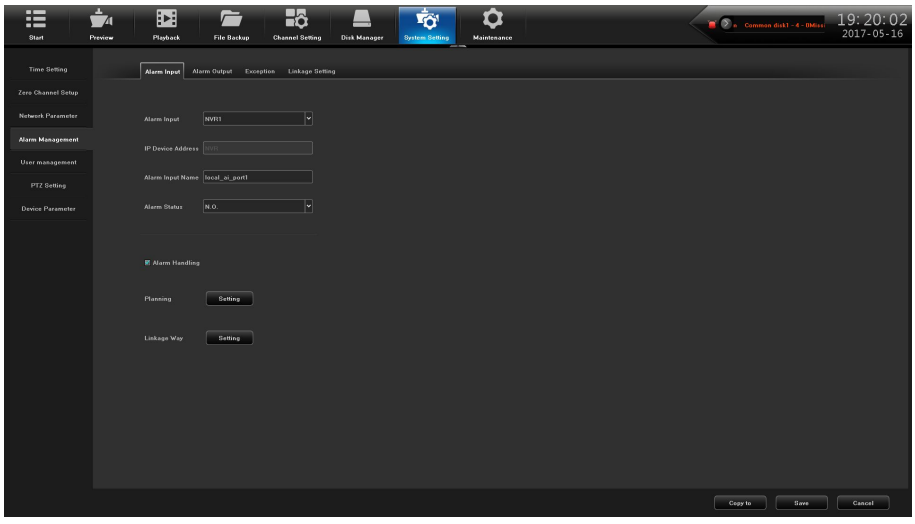


Figure 10.12 Alarm Input

（1）**Alarm Input**：Select channel;

（2）**Alarm Input Name**：edit alarm name;

（3）**Alarm Status**：set the alarm state, the default value is always open;

（4）**Arming Planning**：set the arming schedule,as shown in figure 10.13;

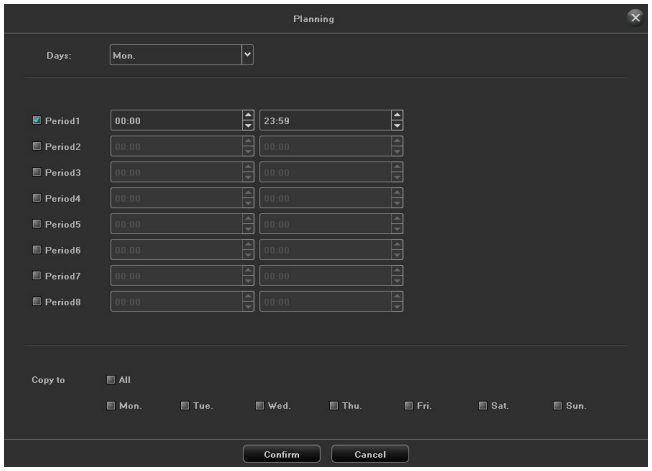


Figure10.13 Arming schedule

（5）**Linkage Way**：choose the type of alarm linkage,as shown in figure 10.14;

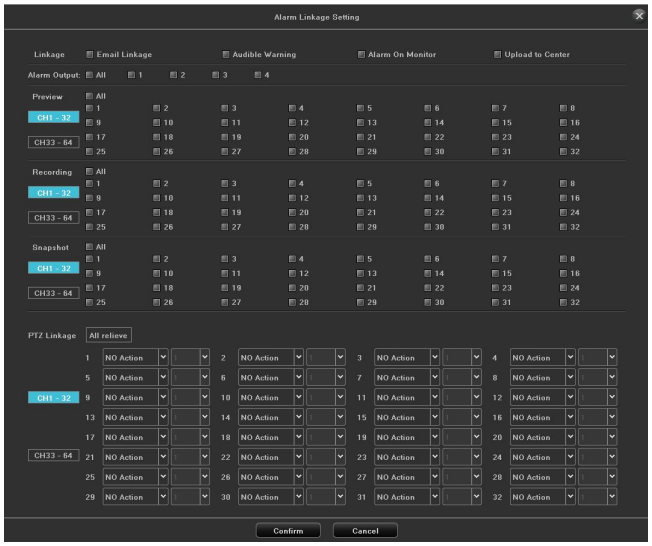


Figure 10.14 Linkage mode

（6）**Copy to**：copy the above configuration to other channels;

10.4.2 Alarm Output

The Alarm Output interface, as shown in figure 10.15.

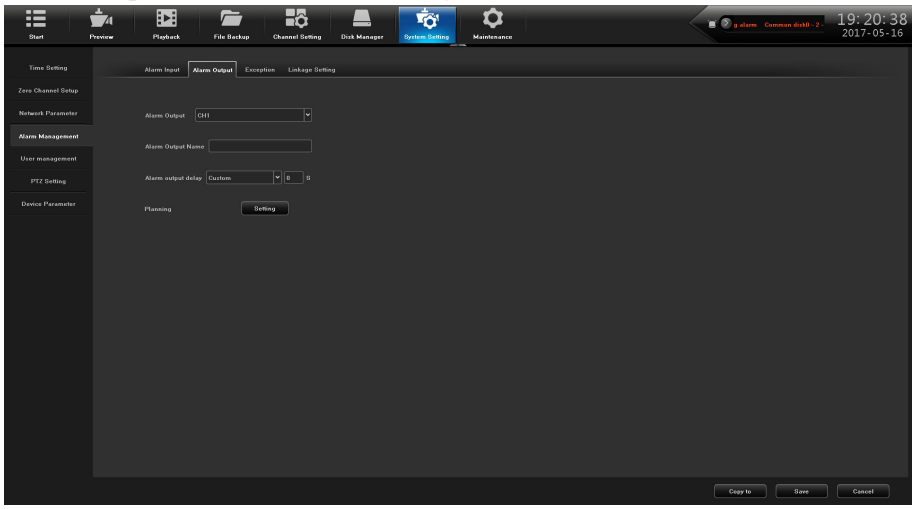


Figure 10.15 Alarm Output

（1）**Alarm Output**：Choose the channel number that needs to set;

（2）**Alarm Output Name**：Set the alarm output name;

（2）**Alarm output delay**：choose the alarm output delay time or custom settings;

（3）**Planning**：choose the time interval that needs arming schedule, as shown in figure 10.16.

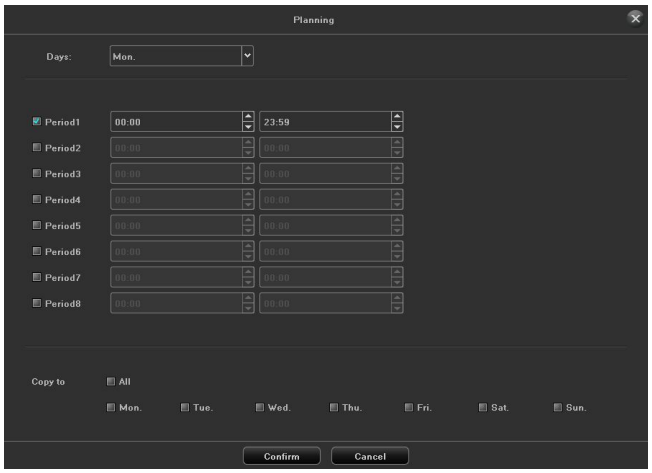


Figure 10.16 Arming Schedule

（4）**Copy to**：copy the above configuration to other channels.

10.4.3 Exception

The Abnormal Setting interface, as shown in figure 10.17.

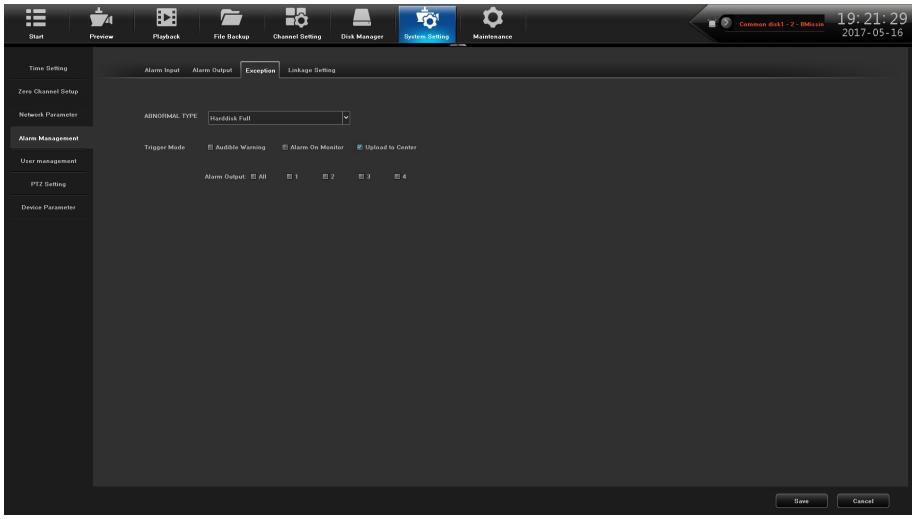


Figure10.17 Abnormal Setting

（1） **Abnormal Type**：There are 6 type for choice，respectively are “Harddisk Full”, “No Harddisk”, “The network hard disk dropped”, “HDD Smart Faulty”, “Network Disconnected”、“IP Conflict”;

（2）**Trigger Mode**：All types of trigger mode default to open“ Alarm On Monitor” and “Upload to Center”, “The network hard disk dropped” default to open “Audible Warning”.

10.4.4 Linkage Setting

You can query/add/modify/delete on this page all alarm types and all channel linkage configuration information，as shown in figure 10.18.

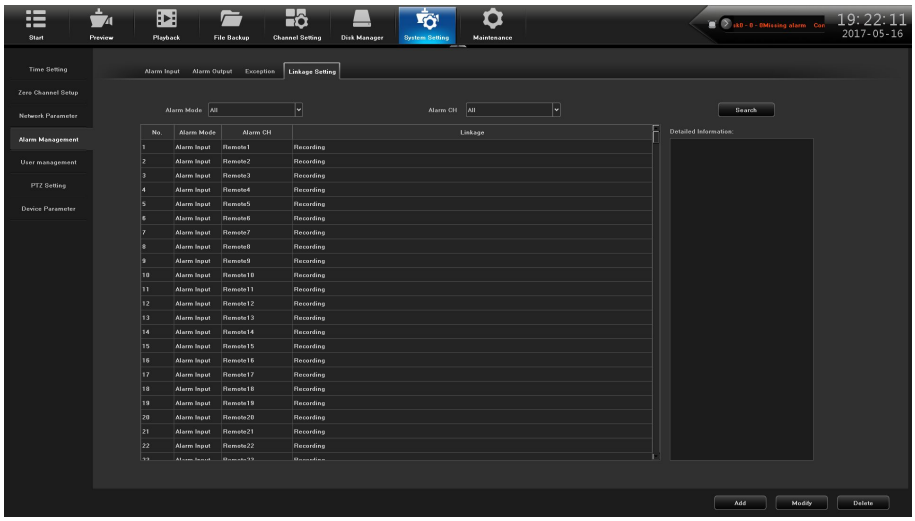


Figure10.18 Linkage Setting

（1）**Alarm Mode**：set the alarm type, including “alarm input”, “motion detection”, “video mask”;

（2）**Alarm CH**：choose the alarm channel;

（3）**Search**：click Search icon，then it can show alarm information;

（4）**Add**：click Add to open the linkage configuration, as shown in figure 10.19;

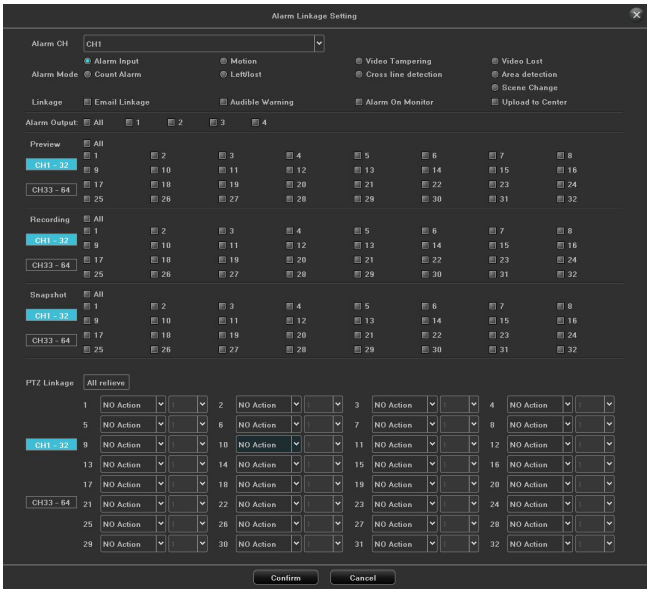


Figure10.19 Alarm Linkage

（5）**Modify**：select a set of alarm information，click Modify icon，can modify the alarm configuration， as shown in figure 10.20;

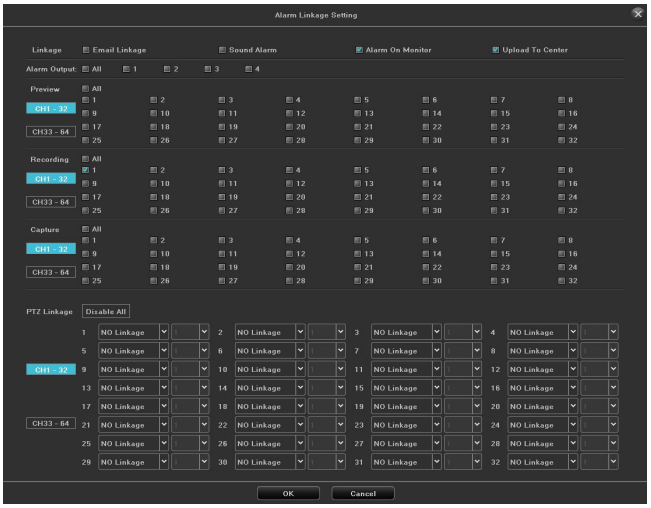


Figure 10.20 Modify

（6）**Delete information**：select a set of alarm information，click Delete icon，delete the information.

10.5 User Management

User management interface is shown in figure 10.21, you can modify the user information and users permission.

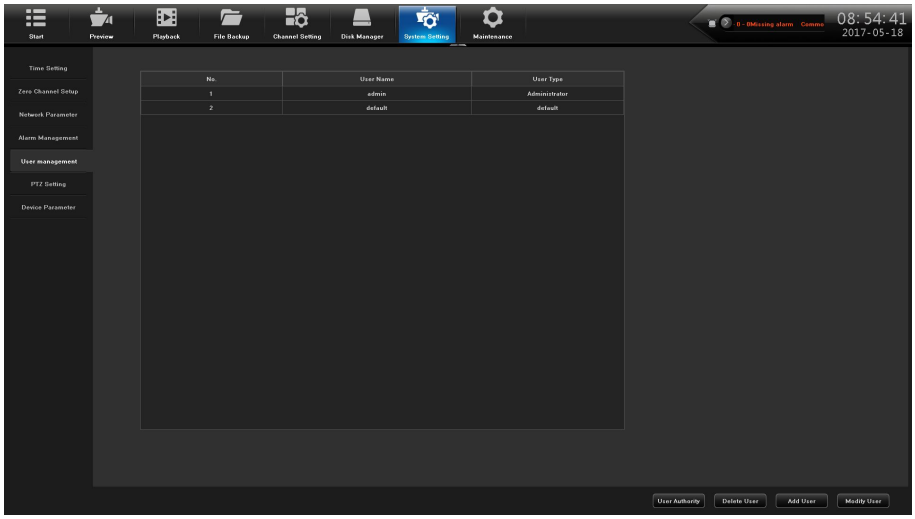


Figure 10.21 User Management

（1）**Modify Users**：modify the selected users information, as shown in figure 10.22;

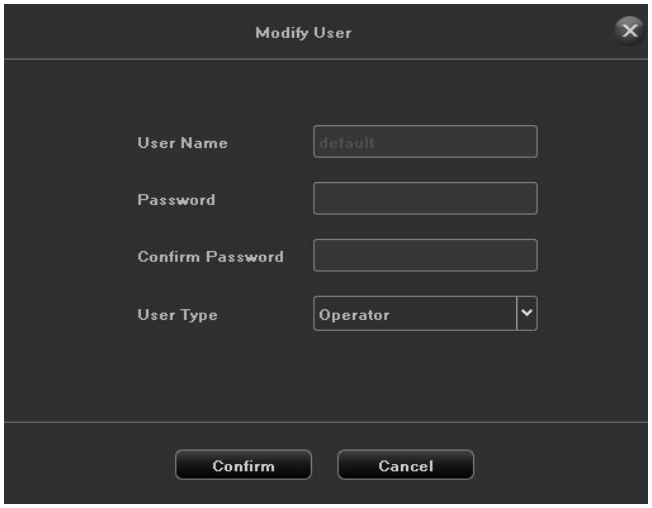


Figure 10.22 Modify users

（2）**Add User**： add a new user, as shown in figure 10.23, fill in the user name and password;

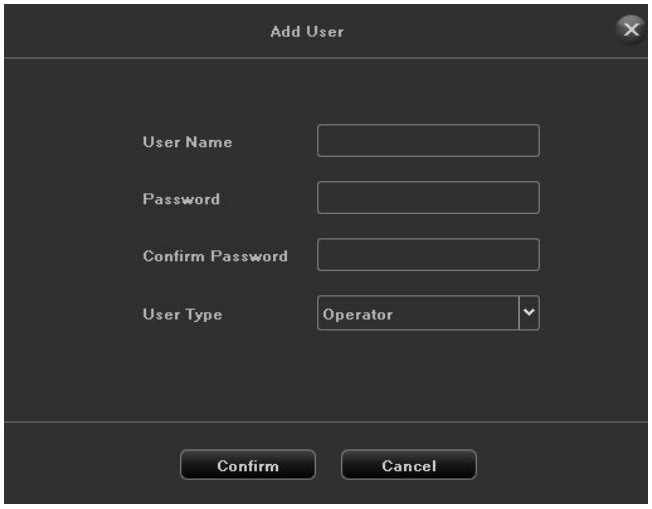


Figure 10.23 Add User

（3）**Delete users**：can delete the selected users（except admin and default users）;

（4）**User Authority**：set the selected users permission，as shown in figure 10.24.

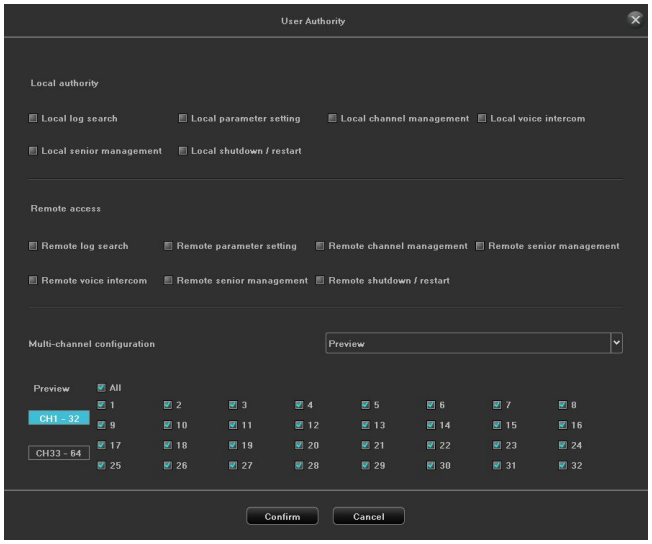


Figure 10.24 User Authority

10.6 PTZ Setting

This page is PTZ parameter setting interface, as shown in figure 10.25, only when the parameter is set correctly, can the PTZ run normally.

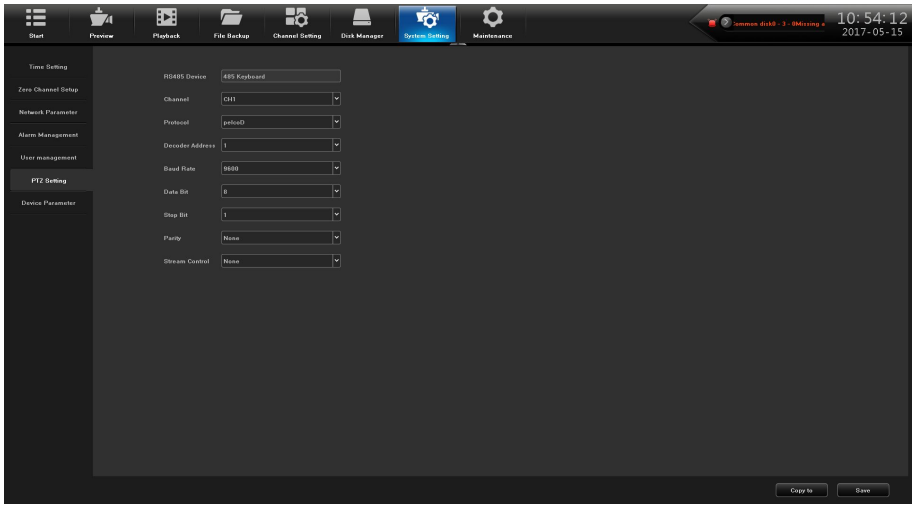


Figure10.25 PTZ Setting

（1）**RS485 device**：show the accessed 485 devices;

（2）**Channel**：choose the channel number;

（3）**Protocol**：2 protocol optional，pelecoD and pelcoP;

（4）**Decoder Address**：choose the decoder address;

（5）**Baud Rate**：Select baud rate;

（6）**Data Bit**：set data bits;

（7）**Stop Bit**：set stop bits;

（8）**Parity**：No Parity, Odd Parity, Even Parity, the default value is No Parity;

（9）**Stream Control**： no flow control, software flow control, hardware flow control optional，the default value is no flow control.

10.7 Device Parameter

The Device Parameter interface, as shown in figure10.26.

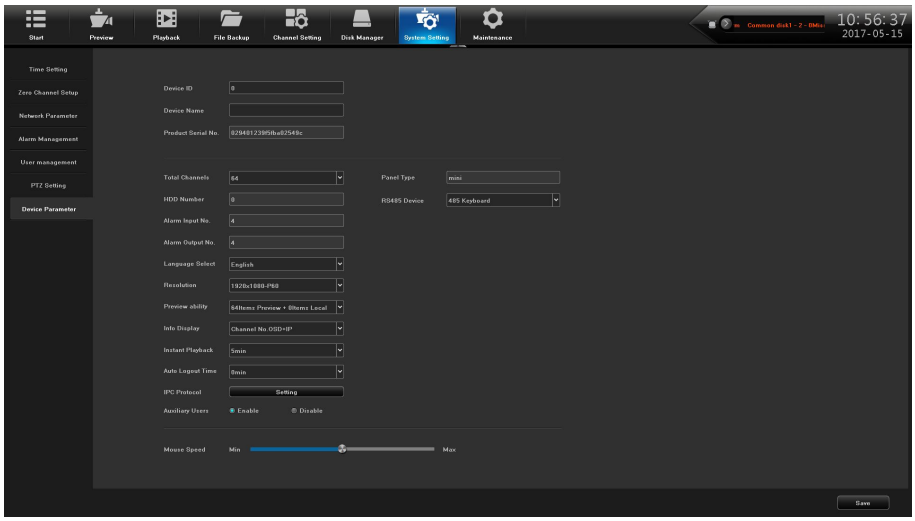


Figure 10.26 Device Setting

（1）**Device ID**：Namely device number，default to 0;

（2）**Device name**：Can edit the device name，default to blank;

（3）**Product Serial No**：Show the product serial number;

（4）**Total Channels**： Show the max preview channel number, different model support different max channels;

（5）**HDD Number**：Show the number of hard disk access;

（6）**Alarm Input NO.**：Namely the alarm input channel;

（7）**Alarm Output NO.**：Namely alarm output channels;

（8）**Language Select**： Can modify the system language of NVR, need to restart to take effect;

（9）**Resolution**：Can modify the local monitor resolution of NVR（need monitor support）,it come into effect immediately after modified;

（10）**Preview ability**：Preview max same screen display channels the device supported and the max intelligent detection channel numbers（different models of NVR,different ability）, need to restart to take effect;

（11）**Info Display**： There are 4 kinds of display mode, the preview interface device list refresh in time after modify successfully;

（12）**Instant Playback**：There are 5 kinds of time choice, it come into effect immediately after modified;

（13）**RS485 Device**：Set the 485 control mode, default to None;

（14）**IPC Protocol**： Selective to enable the protocol, click **Setting** button, as shown in figure 10.27;

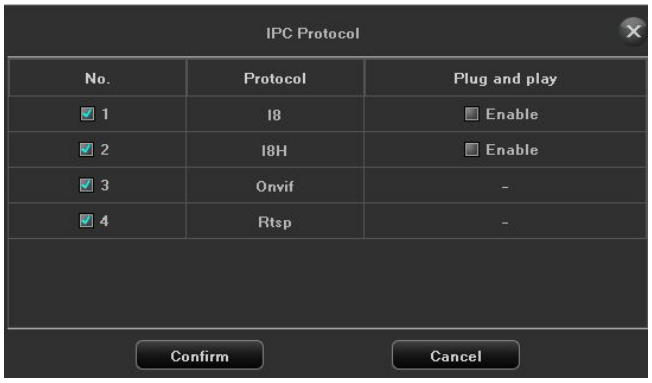


Figure10.27　IPC protocol Management

（15）**Auxiliary User**：Open/close function, default to close, restart device to open;

（16）**Mouse Speed**：Adjust the speed of the mouse, it come into effect immediately.

Chapter 11 Smart Analysis

Smart analysis is the vital function of 2.0NVR, and this chapter will give clear and specific instructions in terms of intelligent performance, process and parameter configuration.

11.1 Brief Introduction

The current Smart performance of NVR2.0 includes:

（1） Behavior analysis: target count, item detection, regional testing, virtual warning line.

（2） Scene change detection.

Note:

The behavior analysis can support both front-end and local detection modes (based on the actual capacity of the product); scene changes only support the local detection mode.

11.2 Enable Smart Analysis

Some NVR models disable local smart by default. To enable smart analysis, first open the device parameters interface and set the preview capability to the mode with smart analysis, as shown in Figure 11.1.

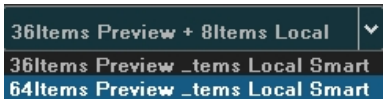


Figure11.1 Model

Note: Currently NVR2.0 smart function only supports I8H protocol, so only when I8H protocol accesses IPC can the front-end detection be turned on.

11.3 Function Configuration

11.3.1 Detect Mode

As shown in Figure 5.2, there are "IPC front-end detection" and "NVR local detection" mode, the default is the former. The IPC front-end detection mode requires the IPC front-end to support smart detection. If IPC front-end detection is not supported, the NVR Local Detection mode is then selected.

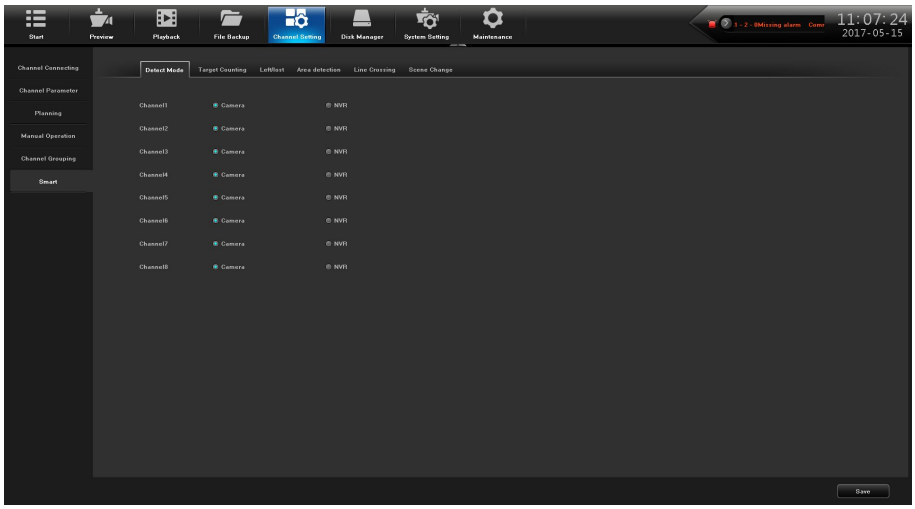


Figure11.2 Detection Mode

11.3.2 Behavior Analysis

Behavior analysis includes the following functions: target counting, object detection, area detection, virtual warning line.

The target triggering rule is based on the center of the target's lower edge (except height limit detection), which is generally the position of the human foot. So when setting the detection line or detection area, the line / area should not be suspended in the air.

The minimum height of the target should not be less than 1/32 of the image height; the minimum width should not be less than 1/64 of the image width; the maximum width of the proposed object should not exceed 1/4 of the image width; the maximum height should not exceed 1/2 of the image height;

Set the detection line or the detection area, do not appear too close to the target location; It also requires the scope view of camera can not be too small, the target can not be too large.

Precautions:

(1) Camera installation: to install vertically, to maintain static, to avoid occlusion of vision, to make height appropriate (higher than two meters);

(2) Scene selection: to ensure adequate lighting, reduce the complexity of the scene, try avoid areas that may affect the accuracy, such as the detection area where there are leaves shaking, severe shadows, birds, insects and more, try to avoid Glass, floor tiles, lake and other reflective scene selection;

(3) Alert area requirements: the warning area used for intelligent analysis is required to exceed more than 1/8 of the video screen area; if it is cordon, the distance between the sides of the line should exceed the image width or 1/4 of the height.

- Target counting

The purpose of this page is to configure the relevant parameters so that the target count alarm occurs when a moving object whose proportion is larger strides the set detection line to obtain the number set by the detection rules, as shown in figure 11.3. The following describes the parameters of the pages on the set method.

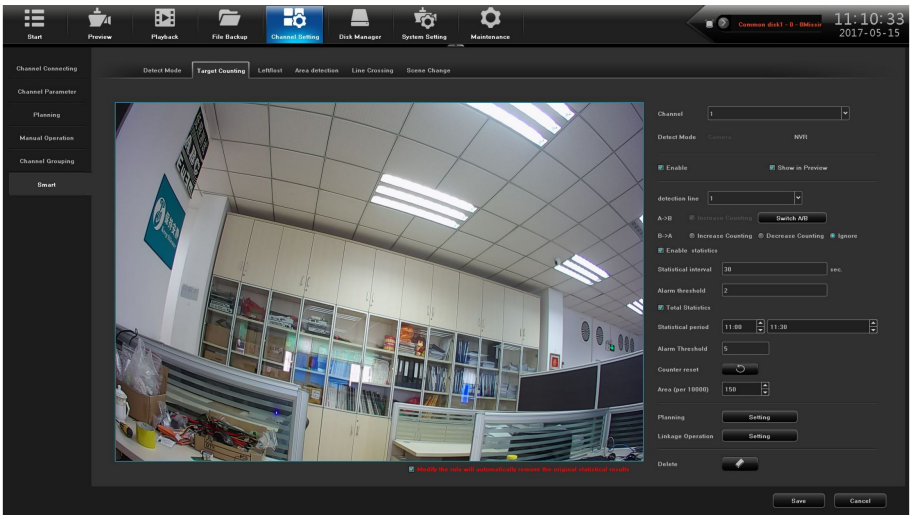


Figure11.3 Target Counting

（1）**Channel**: Select the channel;

（2）**Detect Mode**: Divided into front-end and local, the two models to the actual capacity of the product subject, selecting the front-end mode requires front-end access to IPC support, selecting the local model requires equipment support;

（3）**Enable**: Check to enable the target count;

（4）**Show in Preview**: When enabled, you can see the detection line and the statistical result in the preview interface.

（5）**Detection line**: Each screen can be set up to four detection lines, directly on the screen drag the left mouse button to draw the line, release the left button, right-click to complete the drawing line, the completion of the detection line on both sides were AB Area, the upper side will display the statistical results;

（6）**A-> B**: Acquiesce is A area to B area to increase counting, A / B area location on both sides of detection line can be exchanged;

（7）**B-> A**: "Increment Count" or "Flow Count Result = 'A-> Count of B' + 'B-> Count of A'", "Count Down" > Count of B '-' B-> Count of A ", 'Ignore' or 'Count of flow statistics' ='

（8）**Area**: Only when size of Moving objects in the screen is larger than the size of the set can it be used as a "target", when setting the center of the screen will appear a yellow dotted rectangle frame as a reference;

（9）**Traffic Statistics**: Enable statistics, you can set the "Traffic Statistics interval and Alarm threshold".

（10）**Total Statistics**: After the opening you can be set "statistical time and total alarm threshold";

（11）**Planning**: That is, set the deployment time, the default is all-day deployment;

（12）**Linkage Operation**: You can enter the linkage configuration page when the alarm is triggered, and perform the linkage configuration operation;

（13） **Delete**: Click to clear the screen to set the history setting line.

In accordance with the above settings, every 30s account for 150 times the number of objects through the detection line 2, trigger the alarm, as shown in figure 11.4 and 11.5 is the pre-alarm and alarm occurs when the real-time preview screen.

Figure 11.4 Pre-alarm

Figure 11.5 Alarming

◆ Goods detection

The purpose of this page is to configure the relevant parameters, so that more than the proportion of objects in the set detection area lost / left over time detection time that goods detection alarm. As shown in figure 11.6, the following describes the main parameters on the page set method.

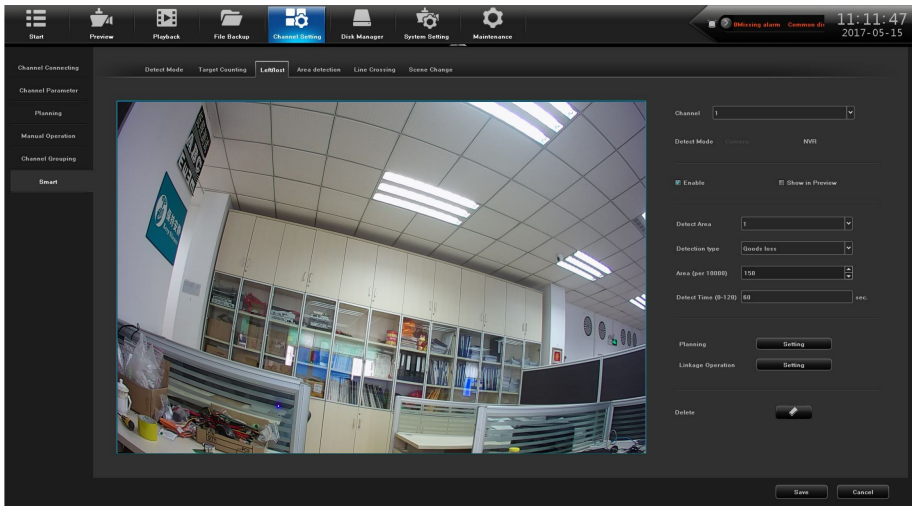


Figure11.6 Goods detection

（1） **Channel:** Select the channel;

（2） **Detect Mode:** Divided into front-end and local, two models to the actual capacity of the product subject, select the front-end mode requires front-end access to IPC support, select the local mode requires device support.

（3） **Enable:** Check to enable the target count;

（4） **Show In Preview:** When enabled, you can see the detection line and the statistical result in the preview interface.

（5） **Detect Area:** Each screen can be set up to 4 detection area, drag the mouse directly on the screen to draw the line, release the left button, move the mouse again to form a second left-click line, and then click Right after the automatic closure of the formation of the region is the detection area (to set up a qualified area at least manually draw two lines);

（6） **Detection Type:** "Goods loss", "Goods left", "Goods loss or left" three types;

（7） **Area:** Moving objects in the screen than the size of the set when the size can be used

as "items";

（8） **Detect Tme:** detected items lost / left more than this time to trigger the alarm;

In accordance with the above settings, in the channel screen, the proportion of more than 150 items in the detection area disappeared more than 30s, triggered object detection alarm, alarm before and after the real-time preview screen, respectively, as shown in figure 11.7 and figure 11.8. (Which identifies the blue rectangle that is missing the area where the goods)

Figure11.7 Pre-alarm

Figure 11.8 Alarming

◆ Area Detection

The purpose of this page is to configure the relevant parameters, so that more than the proportion of moving objects, enter / leave / hovering in the set detection area, over time detection zone detection alarm occurs. Interface shown in figure 11.9, the following page describes the main parameters of the setting method.

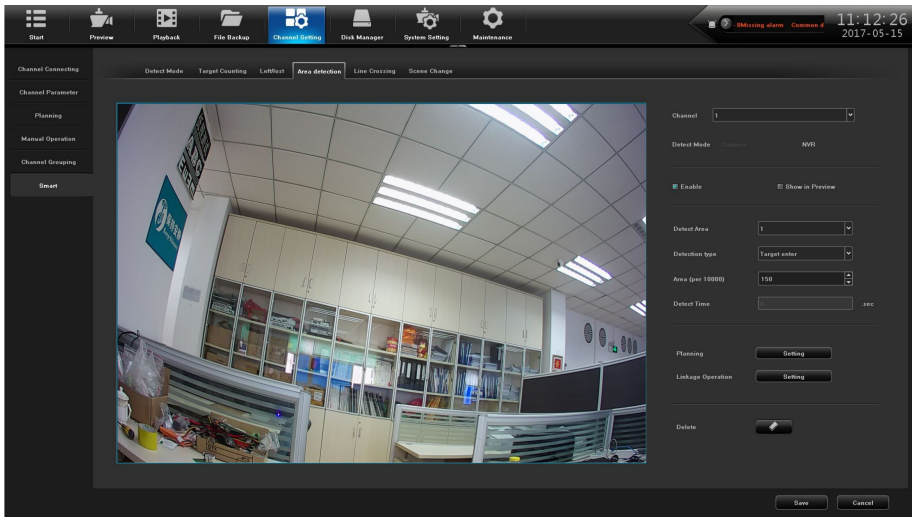


Figure 11.9　Area Detection

（1）**Channel:** Select the channel;

（2）**Detect Mode:** divided into front-end and local, the two models to the actual capacity of the product subject, select the front-end mode requires front-end access to IPC support, select the local mode requires the device support;

（3）**Enable:** Set whether to enable zone detection function;

（4）**Show In Preview:** Set whether to display the set rules and test results in the preview interface;

（5）**Detect area:** the screen with the mouse to draw the area;

（6）**Detection type:** there are "target to enter", "target to leave", "target to enter or leave", "target wandering" 4;

（7）**Area:** moving objects in the screen than the size of the set when the size can be used as a "target";

（8）**Detect Time:** detect the target activity more than this time to trigger the alarm;

According to the above setting, the moving object (automobile) occupying over 150 in the channel picture has entered the detection area for more than 5s, triggering an area detection alarm, as shown in Figure 11.10, which is the preview real-time picture Color rectangular box that is identified into the area of the target).

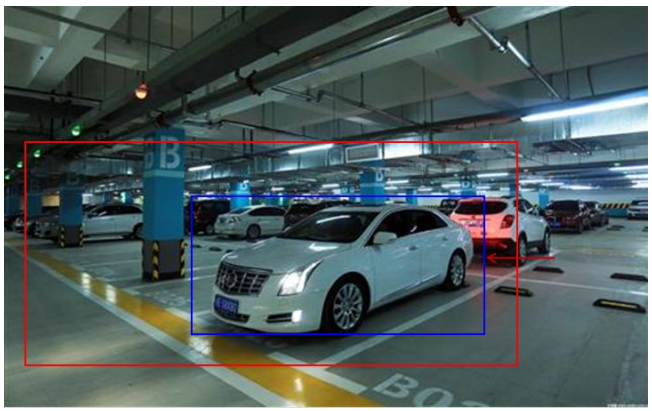


Figure 11.10　Area Detection

◆ Line Crossing

The purpose of this page is to configure the relevant parameters, so that more than the proportion of moving objects, across the set of test lines, the virtual alarm immediately alarm line. The following describes the main parameters of the page setting method.

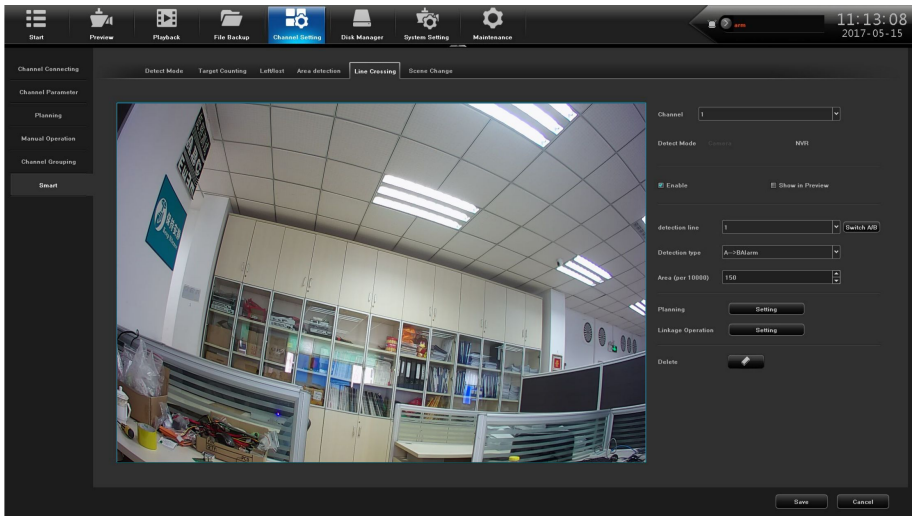


Figure 11.11 Line Crossing

（1）**Channel:** Select the channel;

（2）**Detect Mode:** Divided into front-end and local, two models to the actual capacity of the product subject, select the front-end mode requires front-end access to IPC support, select the local mode requires the device support;

（3）**Enable:** Set whether to enable zone detection function.

（4）**Show In Preview:** Set whether to display the set rules and test results in the preview interface;

（5）**Detection Line:** On the screen with the mouse to draw the test line, a key exchange A / B;

（6）**Detection Type:** There are two types: "A-> B Alarm" and "A <-> B Alarm"

（7）**Area:** Filter out less than the proportion of the set of moving objects.

According to the above settings, in this picture of a channel， accounted for more than 30 of the moving object， across the detection line from A region to B area，triggered area detection alarm，as shown in figure 11.12 is the alarm occurs real-time preview images (where the detection line or the red and green are blinking alternately, and the alarm is triggered, And the blue rectangle moves with the target crossing the cordon).

Figure 11.12 Line Crossing

11.3.3 Scene Change

Figure 11.13 shows the situation where the front-end IPC detects a change in the screen caused by human or environmental factors, such as the camera being deflected, the camera being blocked, and the camera's angle or position being changed.

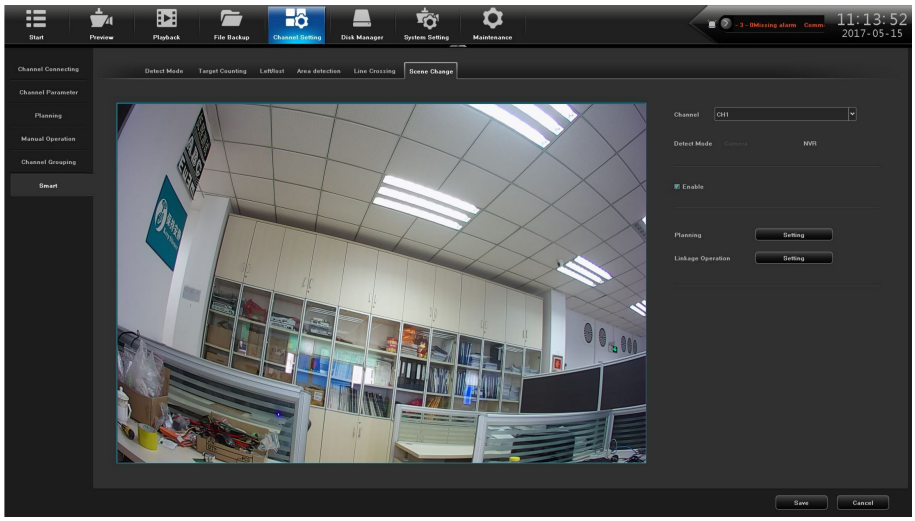


Figure 11.13 Scene Change

（1）**Channel:** select the channel;

（2）**Detect Mode:** only local detection mode is supported, and local device support is required;

（3）**Enable:** set whether to turn on scene change function.

11.4 Planning and Linkage Operation

11.4.1 Planning

Click the Setup button of the Arming Schedule to schedule the arming schedule. Arming time can be set using the copy function for a whole week or a certain day of the week a period of time, set up after the click OK to save, as shown in figure 11.14.

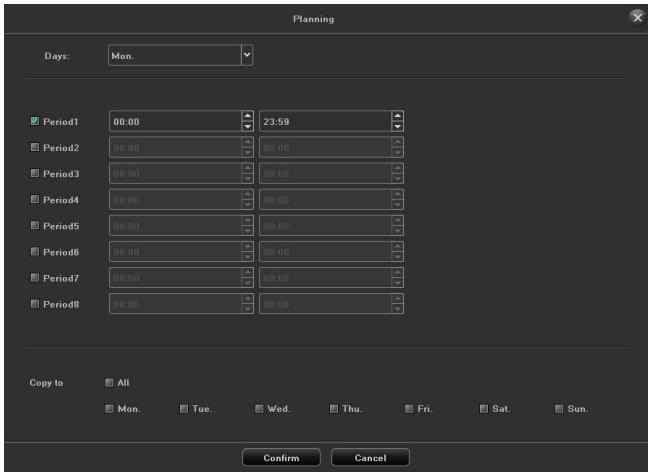


Figure 11.14 Planning

11.4.2 Alarm Linkage Setting

Click the linkage setting button, and select the alarm linkage in the pop-up linkage configuration interface, as shown in Figure 11.15.

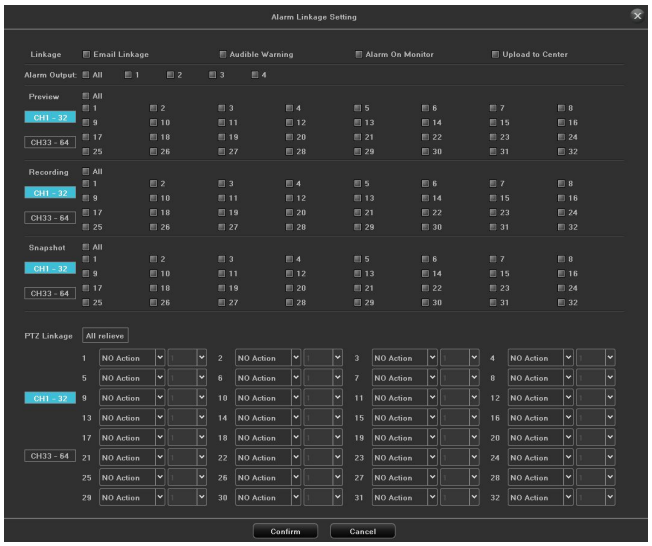


Figure 11.15 Alarming Linkage Setting

（1）**Linkage:** select mail linkage, sound alarm, monitor alarm, upload center in four ways; The following four ways:

a) Mail linkage: this method needs to set a valid mail box in the Email parameter of the device, and fill in a valid mail sending and receiving server and port number. With this condition, if the alarm is triggered, the mailbox will be received in real time. alarm information;

b) Audible alarm: check to indicate that the buzzer will sound when alarm occurs;

c) Monitor alarm: the alarm information will be displayed in the alarm information field of the local device in real time.

d) Upload Center: The alarm information will be displayed in real time on the Web end or platform alarm information bar of the device.

（2）**Alarm Output**: When the alarm output is triggered by the device,

（3）**Preview**: Select one, several or all selected channel linkage, in the preview interface to open the preview linkage, if the alarm triggered, the selected channel screen will automatically pop up;

（4）**Recording**: select one, several or all selected channel linkage, alarm triggered, the selected channel will be real-time video;

（5）**Snapshot**: select one, a few or all selected channel linkage, alarm trigger, the selected channel will be real-time capture;

（6）**PTZ Linkage**: PTZ equipment needs to be connected to the equipment. When the alarm is triggered, the preset point, cruise or trajectory alarm of the PTZ equipment can be linked, or click Cancel to cancel the PTZ linkage.

Set the linkage mode, click **Confirm** to save.

Appendix List of Compatible HDD already tested

Manufacture	Capacity	Model
TOSHIBA	1.0TB	DT01ABA100VOCT-2015
	1.0TB	DT01ABA100VMAY-2015
	2.0TB	DT01ABA200VFEB-2015
Seagate	1.0TB	ST1000VM002
	1.0TB	ST1000DM003
	2.0TB	ST2000VX000
WD	500GB	WD5000AVDS-63U7B1
	2.0TB	WD20PURX-64P6ZY0
	3.0TB	WD30PURX-64P6ZY0