infinity electronics

IP Video

Network Video Recorder
User Manual

V1.0
2016-03

1 Important Safeguards and Warnings

Electrical safety

All installation and operation should conform to your local legal and electrical safety codes. We assume – and will not accept – any liability or responsibility for any fires, injuries or electrical shocks caused by improper handling, transportation, misuse or installation.

Transportation security

Heavy stress, violent vibrations and close proximity to water should all be avoided during transportation, storage, installation and use.

Installation

Keep upright at all times and handle with care

Do not connect power to the NVR before installation is complete

Do not place objects on top of the NVR

Qualified engineers only

Only qualified and certified engineers (as designated by Infinity Electronics Ltd) are permitted to work on this NVR. No operation, installation, configuration, support inspection or other works can be carried out otherwise.

Infinity Electronics Ltd will not be held liable – and will accept no responsibility – for any problems caused by attempted repairs, inspections, modifications or configuration by unauthorised engineers.

Environment

The NVR should be stored in a cool, dry place away from direct sunlight as well as away from flammable or explosive substances.

This product should be transported, stored and operation within the specified environmental conditions.

Accessories

Be sure to only use certified Infinity Electronics accessories with this product, such as those that ship within the box.

Lithium battery

Improper use of the battery could result in fire, explosion or personal injury. When replacing the battery, please ensure an exact same model is used as the replacement.

2 Declaration

This manual is for reference only. Information in this manual is correct at the time of printing however in due course, due to advancements and developments, the information herein may contain inaccurate data or printing error.

The products described in this manual may be updated at any time without warning. Screenshots in the manual are not taken from a “live” operating machine and are only for display.

If in doubt, obtaining a copy of the latest procedure or the additional document, please contact with your reseller.

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3 Product Introduction

3.1 Product Overview

Infinity Network Video Recorders (herein referred to as NVRs) are a series of high performance recording units, composing of H.264 video compression, high-capacity hard disk storage support, TCP/IP transmission, ONVIF 2.x support, running on an embedded Linux operating system and also supporting a variety of other advanced technologies in the electronic security industry. The greatest care is administered to provide a very reliable recording platform.

This product complies with the GB 20815-2006 standard for video security surveillance digital video recording promulgated by the State. A wide variety of third party cameras can be used with this NVR by using ONVIF and/or RTSP.

This NVR series supports single image live screens, multiple-tiled-window display, recorded local storage (schedule recording and event/alarm driven), remote control, USB mouse support with shortcut menu operation, and remote management/control function.

3.2 Feature

Real-time monitoring

Multiple video signal interfaces with support for TV, VGA or HDMI output simultaneously.

Compression function

H.264 video compression standard with G.711 audio compression

Recording function

Support schedule, manual, alarms/events, motion detection. Recording is achieved on up to 2x SATA hard disks (no current limits on capacity per drive) with USB and network (FTP) backup support as well.

Video playback function

Support for multiple camera simultaneous playback, fast-forward playback, slower playback and frame-by-frame playback. Video playback can display the exact time of a given incident. Visual display of recording is done so via the time-line retrieving page for quick searching.

Camera control and alarm

The NVR and connected cameras can be managed and controlled by an IR remote control and/or USB mouse. Various types of alarm devices can be connected to models that boast alarm I/O (I/O only present on some models). Dynamic detection, video loss, video block, multiple alarm output and scene lighting control can be achieved.

Communication Interface

The NVR has 2x USB 2.0 high-speed interfaces or an eSATA interface (eSATA only present on some models).

Network

Support TCP/IP, UDP, RTP/RTSP, DHCP, PPPOE, DDNS, NTP P2P and PoE 15W. Support real-time network monitoring, video playback, control and management functions; built-in WEB Server, you can directly access through a browser.

Intelligent analysis

Some NVR models support one or two channels of Intelligent Video Analytics, including Face detection and perimeter analytics

4 Read First

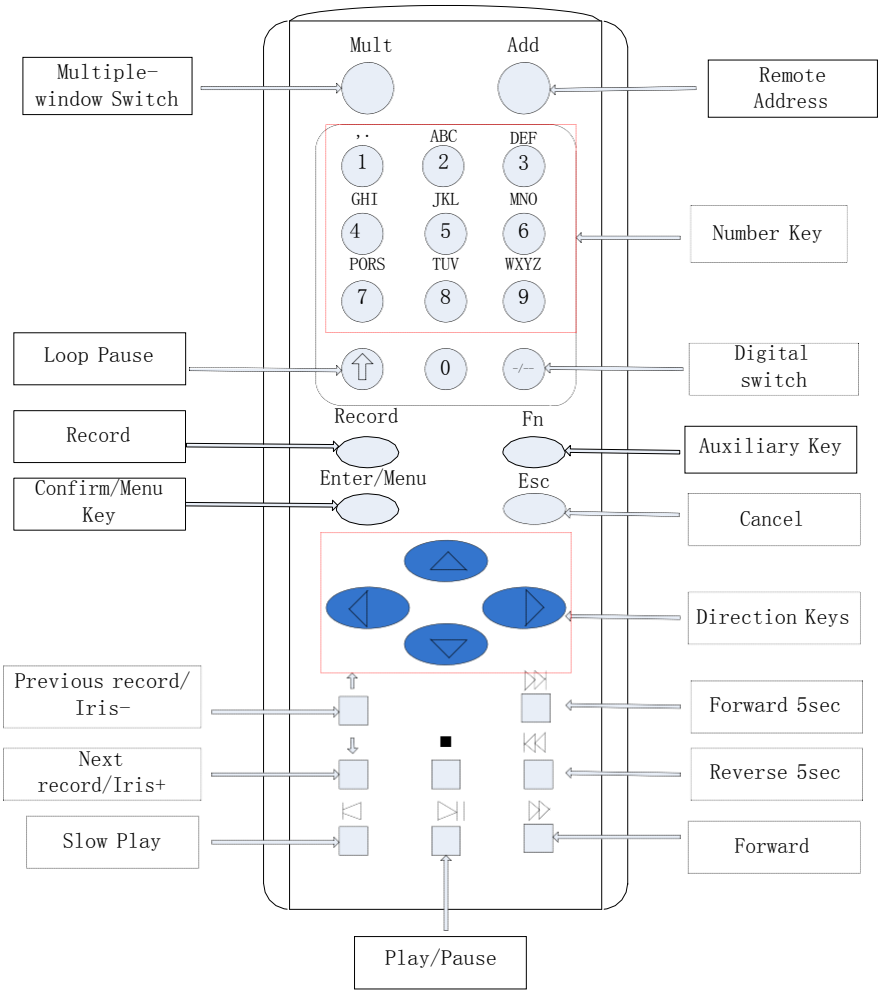
4.1 Front Panel

No	Name	Icon	Function
1	Power	Power	Power button, press this button to boot up or shut down DVR/NVR.
2	Shift	Shift	1. In input Box, switch input methods; 2. Switch TAB;
3	Number Key	1~9	1. Number Input(in number mode); 2. English character Input(in English mode); 3. Switch channel (in 1-ch mode)
4	Input number more than 10	+10	Enter a digital larger than 10, press two-digit number: 1. Press the tens digit; 2. Press digital switch button; 3. Press ones digit.
5	Up/Down	^ v	1.Assistant function such as PTZ menu; 2.In monitor mode, switch between multiple-window and one-window; 3. Activate the digital input box increase or decrease the number; 4.Active pull-down menu to switch the drop-down box options; 5. Activate checkbox to change status;
6	Left/Right	< >	1. Shift current activated control, and then move left and right; 2. In monitor mode, switch channel.
7	ESC	ESC	Go to previous menu, or cancel current operation.
8	Enter	ENTER	1. Confirm current operation; 2. Go to OK button; 3. Go to menu.
9	Function Key		Shortcut function with FN key.

10	Auxiliary	Fn	1. One-window monitor mode, click this button to display assistant function: PTZ control and image color; 2. Detection areas setting(like in motion detection setup), working with Fn and direction keys to realize setup; 3. In text mode, click it to delete the character before the caret(if there is no shift on the front panel, it can switch input methods), press this button for 1.5sec to clear all of the characters; 4. In playback mode, switch the full screen;
11	Play/Pause	▶	1. Go to SEARCH interface; 2. In PTZ channel: ZOOM+; 3. In normal playback click this button to pause playback; 4. In pause mode, click this button to resume playback.
12	Shuttle(outer ring)		In real-time monitor mode it works as left/right direction key.
13	Jog(inner dial)		In real-time monitor mode it works as up/down direction key.

4.2 Remote Control

The remote control interface is shown as below:



Name	Icon	Function
Multiple-Window Switch	Mult	Switch between multiple-window and one-window.
Remote Address	Add	Click it to input device number, so that you can control it.
Number Key	0~9	1.input numbers^in number mode˅ 2.input English character^in English mode˅ 3.switch channel^one-window
Loop Pause		Pause the loop state.
Digital Switch	-/--	Enter a digital larger than 10, press two-digit number: 1. Press the tens digit; 2. Press digital switch button; 3. Press ones digit.
Record	Record	1. Start or stop record manually. 2. In PTZ interface, click this button system can go to the Preset interface
Auxiliary Key	Fn	1. One-window monitor mode, click this button to display assistant function: PTZ control and image color; 2. Detection areas setting(like in motion detection setup), working with Fn and direction keys to realize setup; 3. In text mode, click it to delete the character before the caret(if there is no shift on the front panel, it can switch input methods), press this button for 1.5sec to clear all of the characters; 4. In playback mode, switch the full screen; 5. Realize other special functions.
Confirm/Menu Key		1. Confirm current operation; 2. Go to OK button; 3. Go to menu.
ESC	ESC	Go to previous menu, or cancel current operation.
Direction Key		1.Assistant function such as PTZ menu; 2.In monitor mode, switch between multiple-window and one-window; 3. Activate the digital input box increase or decrease the number; 4.Active pull-down menu to switch the drop-down box options; 5. Activate checkbox to change status;
	/	1. Shift current activated control, and then move left and right; 2. In monitor mode, switch channel; 3.Assistant function such
Previous record/Iris-		1.In playback mode, playback the previous video; 2.In PTZ mode, Iris-.

Next record/Iris+		1.In playback mode, playback the next video; 2.In PTZ mode, Iris+.
Forward 5sec	⏭	In playback mode, forward 5sec.
Reverse 5sec	⏮	In playback mode, reverse 5sec.
Slow Play		Multiple slow play speeds or normal playback.
Forward		Various forward speeds and normal speed playback.
Stop	■	In normal playback click this button to stop playback.
Play/Pause		1. Go to SEARCH interface; 2. In PTZ channel: ZOOM+; 3. In normal playback click this button to pause playback; 4. In pause mode, click this button to resume playback.

To control the NVR via IR Remote:

First activate the remote control: point the remote control and the designated NVR, ensure the NVR starts successfully, aim the remote control to control the hard disk video recorder, press the "Add" button, input device ID (between (1-999), then press ENTER to determine can control the corresponding number of hard disk video recorder.

4.3 The Mouse

In addition to front panel keys and remote control menu, the user can use a mouse to control the NVR. Insert the mouse interface into the USB interface.

Left Click

Left click to enter the right menu or the main interface. Left click to access the menu option.
Perform the operations instructions of the control.
Change the state of the checkbox or dynamic detection blocks. Pop up a drop-down list when left click.
In the state of PTZ 3D control, left drag the area to achieve regional enlarging or reducing.

Double Click

Double click to play video.
Double click to make the screen full or exit.

Right Click

Right click to pop up the right menu in the real-time monitoring screen. Exit the current interface without saving.

Scroll Wheel

Scroll the mouse wheel to change the value in the digital box. Switch the option of the combination box.

Scroll back and forth to achieve the zoom function of channels and PTZ 3D.

Mouse Move

Select controls of the current coordinates to move.

Mouse Drag

Select area to detect.

Select area to shelter.

Select zooming function of PTZ control.

4.4 The Input Method

Click the mouse to complete the input. "<- "represents the backspace and "_ "represents a space.

In the input box, you can select figures, symbols, English The input interface of English

figures

The input interface of other characters

4.5 Icon

4.5.1 The Screen Icons

The channel is recording.

The video of the channel is lost.

Motion detection occurs.

The channel is in monitoring and locked status.

Adjust the size of the logo of the local audio output.

Allow screens to round of the Tour.

4.5.2 Operation Icons

→Not selected.

→Be selected.

→The drop - down button OK →Leave the interface.
Cancel →Cancel the settings.
Select →Set parameters.
Save →Save parameters.
Default →Restore the factory settings.
App. →Apply current settings to the system.
Copy →Copy current settings to other channels.
Set →Enter the configuration interface.
Process →Select and configure the processing operation triggered by video detection or alarm.

5 Installation

5.1 Unpacking Inspection

When you receive the product, check contents according to the packing list in the box.

5.2 HDD Installation

Installation Preparation

Prepare a Cross head Screwdriver.

⚠ *Note: HDD quantity by each model's specifications shall be final, current max HDD capacity up to 64 TB.*

Steps

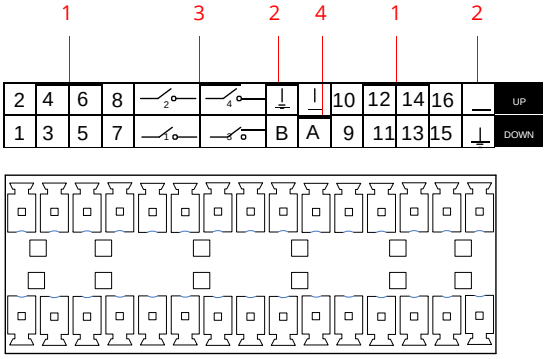
Remove the metal top cover by removing two screws from the sides of the cover. Place the hard disks on a flat table and tighten the screws.
Connect the power and the data lines to the HDD. Reinstall the metal top cover and tighten the screws.

Caution

Only use the HDD specified by the manufacturer.
The HDD will be formatted automatically during booting and it may cause data loss.
The total duration of video data saved is decided by the HDD's capability and the recording parameters (recording setup, encoding setup). Please refer to the form in chapter 11.5.

5.3 Alarm/PTZ/Control Keyboard Interface

Alarm/PTZ/Control Keyboard Interface

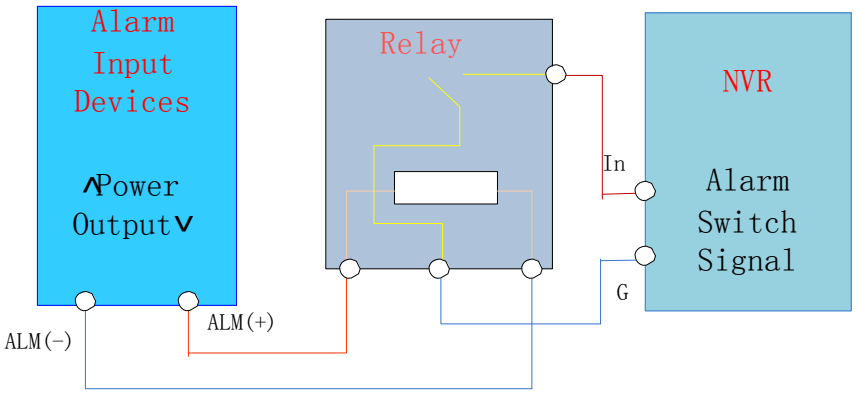


No	Name	Instructions
1	Alarm Input	Connect the positive end (+) of the alarm input device to the alarm input port (ALARM IN
2	GND	Connect the negative end (-) of the alarm input device to the
3	Alarm Output	Connect the alarm device
4	RS-485	485 communication port. They are used to control devices such as PTZ. Please parallel connect 120TΩ between A/B cables if

- Different models support different alarm input ports. Please refer to the specifications sheet for detailed information.
- Slight difference may be found on the alarm port layout.

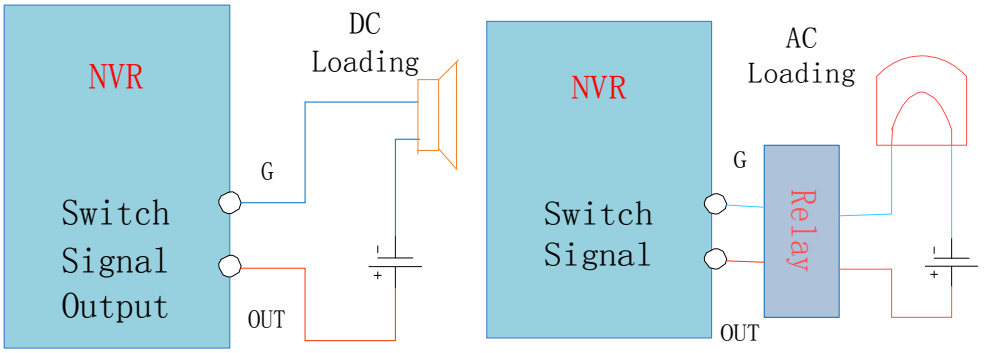
Examples of alarm input connections

The alarm input is the switch quantity input. If the alarm input signal is not switch quantity signal but voltage signal, refer to the following connection:



Examples of alarm output connections

When the alarm output connect with DC and AC load, please refer to the connection.



See details 7.2.5.

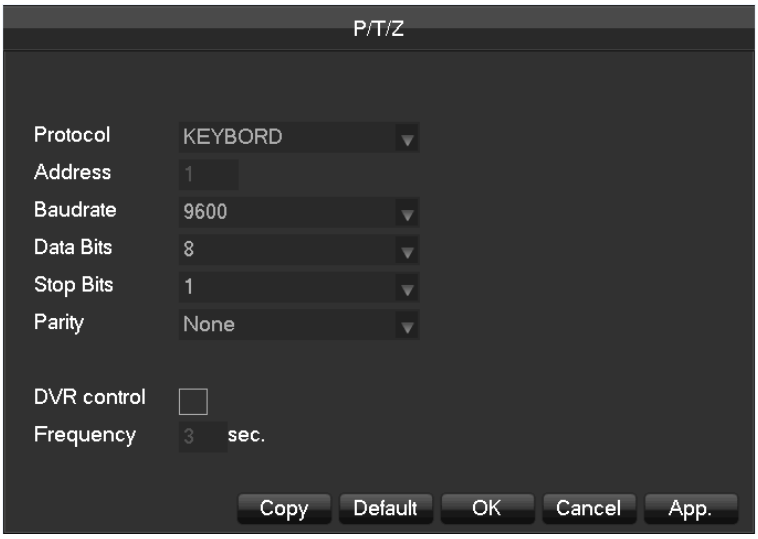
The Connection of the P/T/Z

The A, B interface of the PTZ decoder connect with A and B interfaces of the recorder's RS-485. 120Ω resistors should be paralleled in the remote A, B lines to reduce the distortion of the signal if a larger number of PTZs are connected.

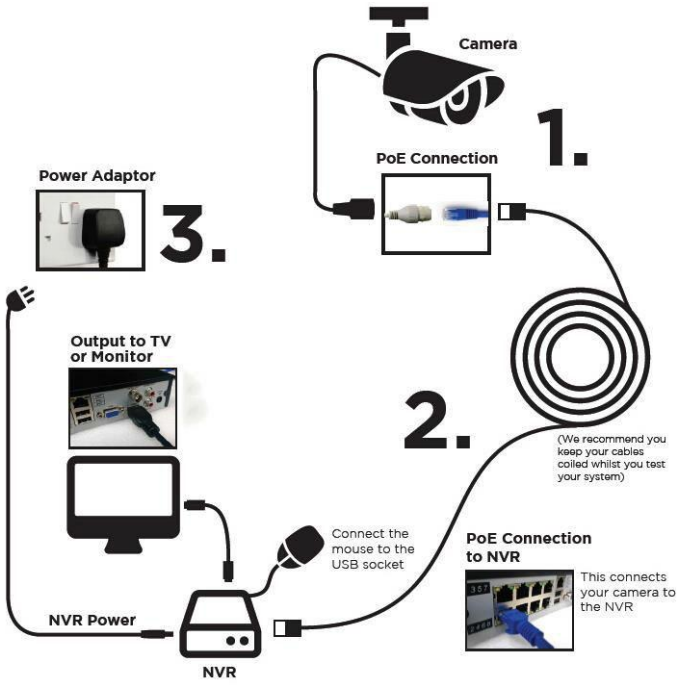
See details 7.2.4.

Keyboard

The A, B interface of the Keyboard connect with A and B interfaces of the recorder's RS-485 .**[MAIN MENU]**Í**[CONFIGURATION]**Í**[P/T/Z]**, Protocol choose KEYBORAD. See below.



5.4 POE Connection



- Non-safe voltage 48V, please pay attention to electrical safety. Supply the NVR with the 12V DC power.
  Note: some models are powered by mains only, 12V DC power applies to select models
- IP Camera should support POE.
- The theoretical distance of POE power supply should below 100 meters.

6 Basic Operations Guide

6.1 Power On and Off

6.1.1 Power On

Install the DVR/NVR correctly (as above) and then connect the power. The DVR/NVR LED should light up and the DVR/NVR will boot automatically.

The DVR/NVR will then automatically detect any connected hardware (cameras, monitors, etc.), this process should last about 30 Seconds. When this process has been completed the DVR/NVR will enter the multi-screen real-time surveillance mode.

If your hard drive is not properly connected, the following message will appear on your screen.

⚠ *Note: Please do not use any type of power supply which is different from the power supply included*

6.1.2 Power Off (Shutdown)

Right mouse click Í**[Main Menu]**Í**[Shutdown]**

⚠ *Note: Only change or attempt to reconnect the hard disk drive after shutting down the DVR/NVR.*

6.1.3 Restart

Right mouse click Í**[Main Menu]**Í**[Shutdown]**Í**[Restart system]**

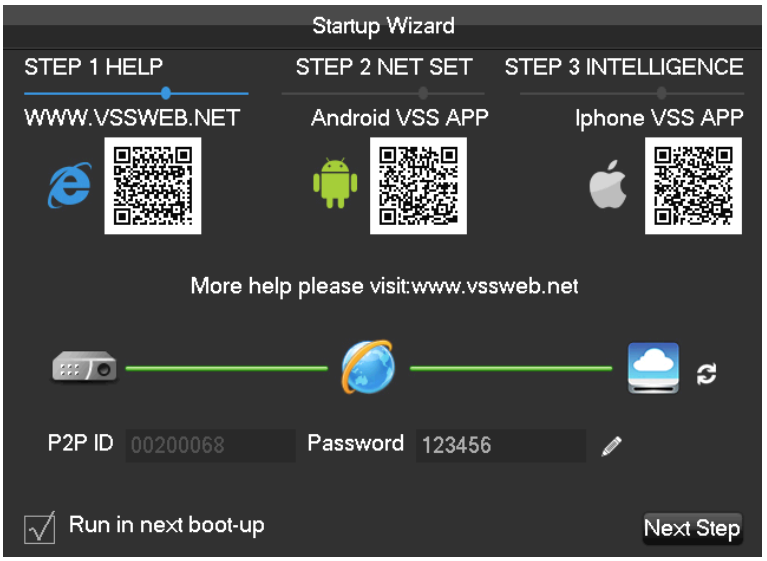
6.1.4 Power recovery

Reboot after an outage or forceful shutdown, DVR will save the record before outage and return to the normal operation mode.

6.2 Start-up wizard

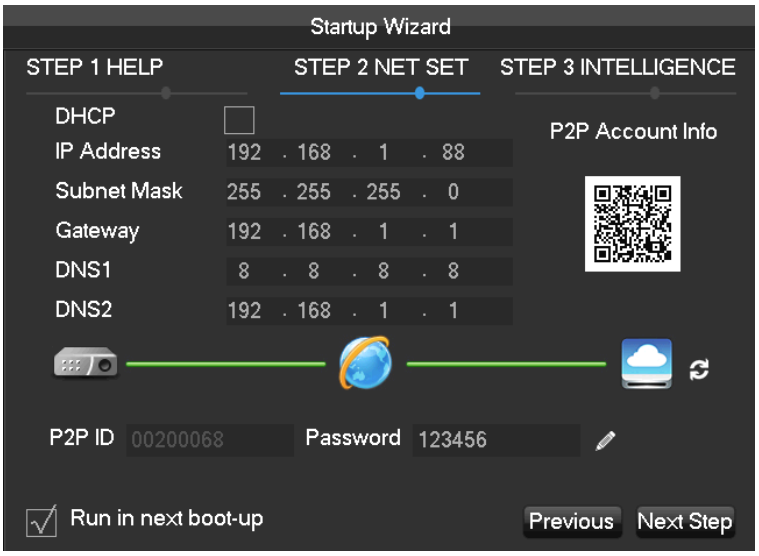
Quickly configuration, including P2P account&password setting, network configuration, intelligent mode selection.

Help Information



[QR code]From left to right: Web access address, Android APP address, iphone APP address.
[Network Connection Status]The current network status.
[P2P]P2P account&password setting.
[Start-up wizard]Tick Start-up wizard Enable.

Network configuration



[DHCP]Tick DHCP Enable.

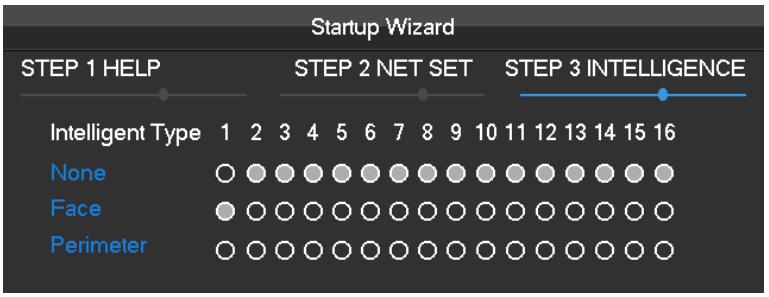
[IP address]Enter the number or press up&down button ∧∨ to change the IP address and **[Subnet Mask]**and**[Gateway]**

[First DNS Server]DNS server IP.

[Alternate DNS Server]DNS alternate IP.

[QR code]Scan it and shows P2P account, login with mobile APP.

Intelligent mode selection



[Intelligent mode selection] Intelligent mode selection.

6.3 Add Device

If the device supports IPC, should be added to IPC first. We offer three ways to add. And support many different protocols.

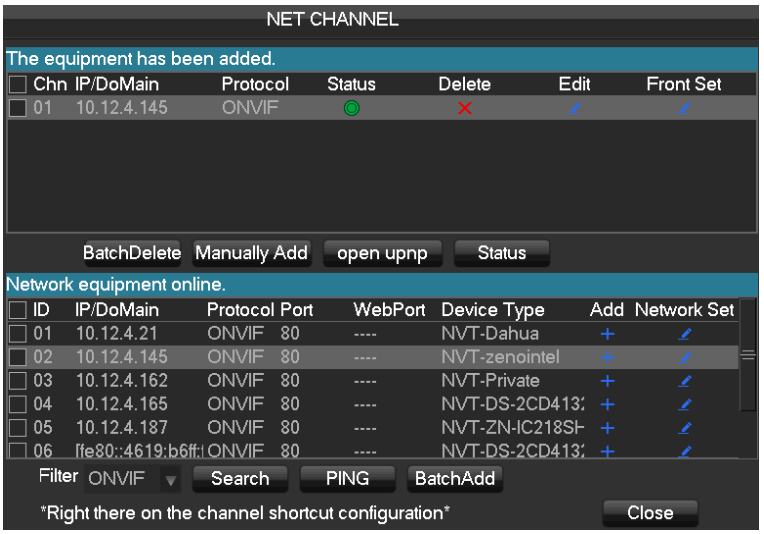
6.3.1 Adding Menu

There are three ways to login**[NET channel Management]**

Living preview, click the left mouse button + and login **[NET channel Management]**

Living preview，click the button below **[NET channel Management]**

[Main Menu]Í[Configuration]Í[NET channel Management



We provide three ways to add device, automatically, network searching, manually add the device.

6.3.2 Automatically added

No configuration, the device is automatically added.

[Main Menu]Í[Configuration]Í[NET channel Management]Í[Open UPNP]

⚠ *Note: The device should support UPNP and should be in the same LAN.*

6.3.3 Searching Added

Search all the IPC that can be added via the network and then choose to add. Do the following:

Enter**[NET channel Management]**

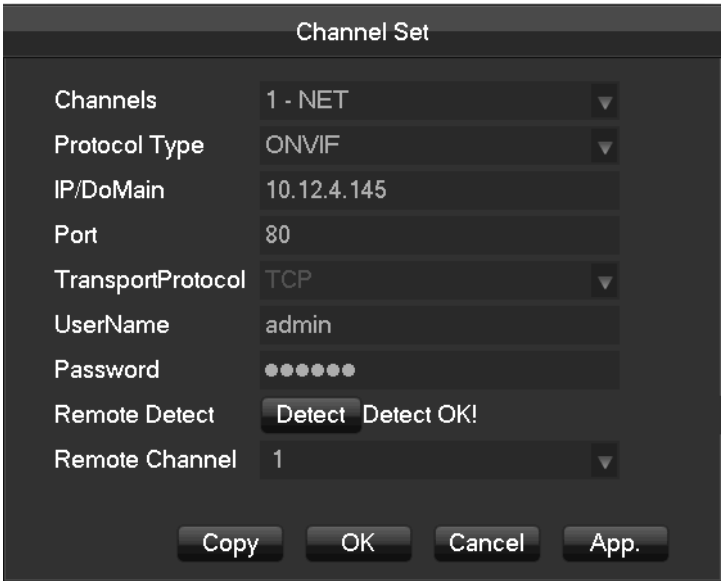
Click**[Filter]**to choose protocol

Click**[Search]**

Click+ to add device or Right click**[Add to]**choose the channel you want or tick the devices you want to add,then click**[BatchAdd]**DŽ

6.3.4 Add Device Manually

Enter Channel Set menu.



[Channels]Choose one channel.

[Protocol]Choose protocol supported by the device.

[IP/ Domain Name] Input front device IP address or domain name.

[Port]Input front device TCP port.

[Username] Input front device username. **[Password]** Input front device password.

[Remote Detect]After completing the above settings, click detect button to check connection status.

[Remote Channel]When the front device includes multiple channels, choose one channel for it.

Click “App” button to finish.

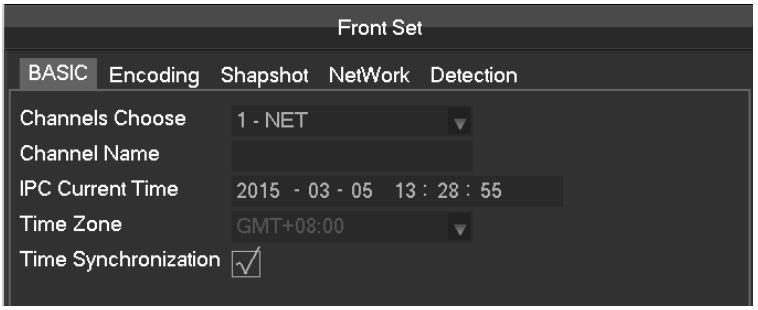
6.3.5 Modify channel configuration

Enter Net channel Management menu.
Click “Edit ” button of
device. Click “OK” button to
finish.

6.3.6 Configure Front Device

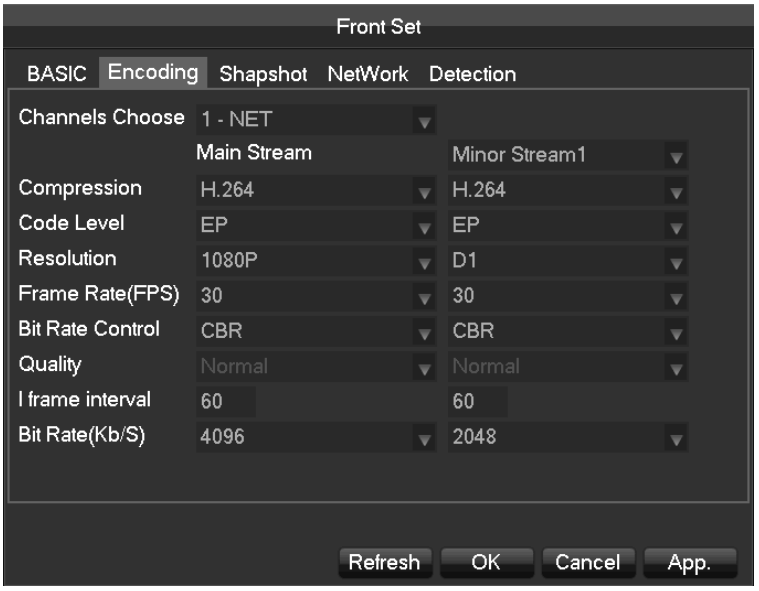
Basic configuration, encoding configuration, snapshot, network and motion detection of front device can be set in NVR.
Enter Net Channel Management menu.
Click “Front Set ” button of device.

BASIC



[Channel Choose]Choose a channel.
[Channel Name]Modify current channel
name. **[IPC Current Time]**Set IPC tine.
[Time Zone]Set time zone.
[Time Sync]Enable IPC time sync with NVR.

Encoding



[Channels Choose]Choose one channel.

[Code Level]H.264

[Resolution] choose main resolution and sub resolution.

[Frame Rate] 1～25FPS/PAL,1～30FPS/NTSC

[Bit Rate Control]Choose CBR or VBR. When choose CBR, bit rate can be set. When choose VBR, image quality can be set.

[I frame interval]Set interval of adjacent frames. Max is 150.

[Bit Rate]Choose 1280,1536,1792,2048,3072,4096,5120,6144,7168,8192 or set by yourself.

Snapshot

Refer to 7.2.1 about more details.

Network

[Channels Choose]Choose one channel.

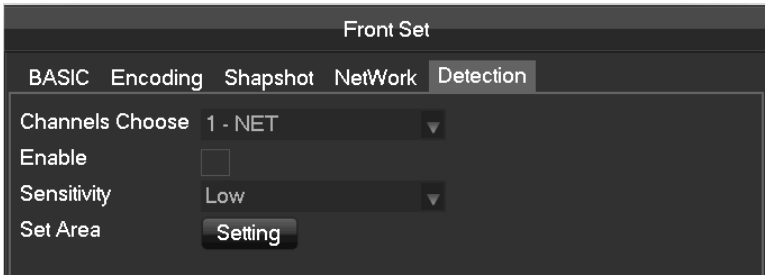
[IP Address][Subnet Mask][Gateway]Set IP address, subnet mark and gateway for the device.

[First DNS Server]Set DNS server IP address.

[Alternate DNS Server]Set standby DNS server IP address.

[MAC/Serial] Show MAC address of front device.

Detection



[Channels Choose]Choose one channel.

[Enable]Enable motion detect alarm or not.

[Sensitivity]Set sensitivity level for motion detection.

[Set Area] Set area for motion detection.22*18 area can be set.

⚠ *:Make sure that protocol for front device supports motion detect function.All settings are for front device.*

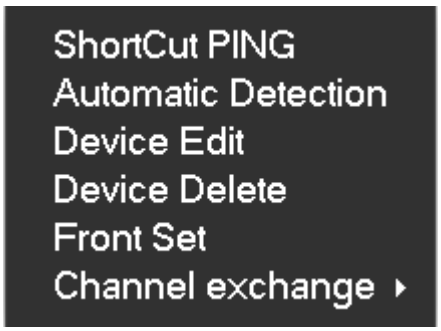
6.3.7 Delete Front Device

Enter Net Channel Management menu.

Click delete button or right click “device delete” to delete one device. Checkmark several device and click “Batch Delete” to finish delete.

6.3.8 Others

Right click in added device.



[PING]Check network status of the current channel.
[Automatic Detection]Check connection status of the current channel.
[Device Edit]Refer to 6.3.3 about more details.
[Device Delete]Delete device.
[Front Set] Refer to 6.3.4 about more details.
[Channel exchange]Exchange position of channels.

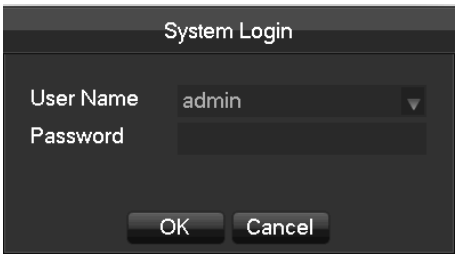
Right click device that hasn't be add.

[Add To]Add device.
[PING] Check network status of the current channel.
[Network Set]Refer to 6.3.3 about more details.

6.4Log in/Log out

Log in

Right click to log in menu. Enter username and password.



Default users

User Type	Name	Default Password
Administrator	admin	123456
User	user	123456
Hidden	default	

:If input incorrect password three times, device will sound. If input incorrect password five times, account will be locked. For security purposes, please change the default password and the user name.

Log out

1. **When over the standby time, log out automatically.**
   2. Enter [Main Menu]-[Shutdown]-[Log out]

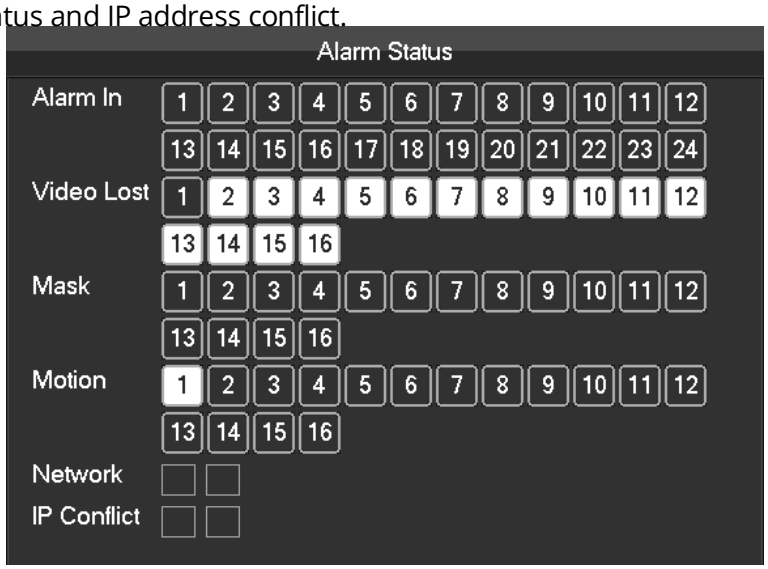
6.5 Preview

6.5.1 Live Preview

In live monitoring, there are date, time, channel name, recording status and alarm status.

Control screen switching by front panel, remote controller and mouse.

When alarm occurs, it will show message like external alarm, video loss, video blind, motion detect, network status and IP address conflict.

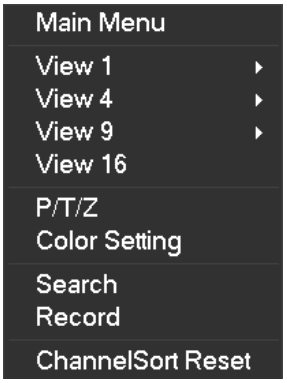


Quick Operation

Switch single or multiple	Double left click in screen to single channel and Double left click to return
Adjust channel order	Drag the channel to the wanted position
Add device	Click [+] in one channel to enter add menu. Please refer to 6.3.2 about more

6.5.2 Right Click Menu

Enter real-time monitoring and right click menu.



Screen Division

Choose single screen, four screens, nine screens or sixteen screens to view.

PTZ Control

Configure PTZ. Please refer to 7.2.4 and 6.3about more details for analog camera and IP camera.

After done configuration, click "PTZ Control" in corresponding channel to control PTZ.

Direction, steps, zoom, focusing, iris, preset points, cruising between points, patrols, sweeping the boundary, calling an auxiliary switch, light switch, horizontal rotation of PTZ can be controlled. <SIT> means quick location button. Make sure that the protocol supports this function. After enter the page, click a point in screen.PTZ will turn to the point and move the point to centre of screen. Besides, It also supports 4 to 16 times zooming when drag mouse in the quick location page.

The **[Step]** is mainly used to control directions. The figure can be set from 1 to 8. Click or to adjust zooming, sharpness and brightness.

PTZ can control eight directions. But front panel only can control up, down, right, left.

[Present]Enter present figure in box and click "Present" button to call present function.

[Tour]Enter cruise figure in box and click "Cruise" button to call cruise between points function.

[Pattern]Enter patrol figure in box and click "Patrol" button to call patrol function.

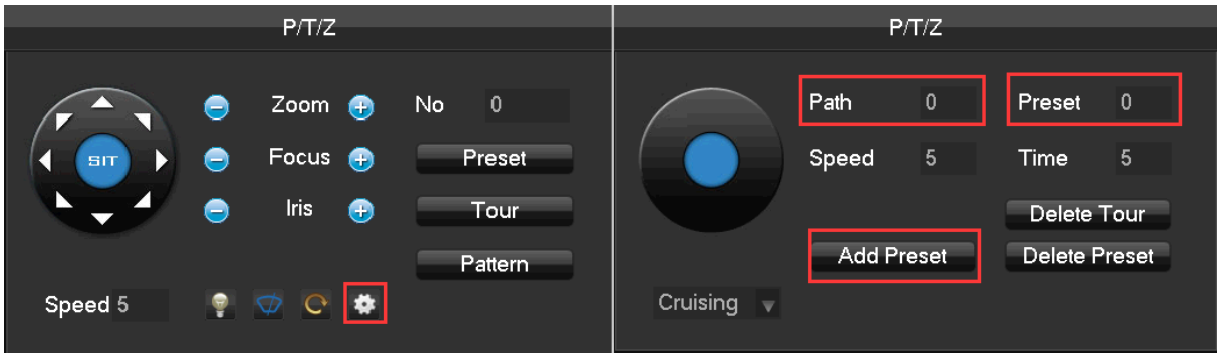
Note: grey button means it don't support the function.

Configure [Present]

Present is for recording the next position, which is marked by a figure. Call the figure to enable present function.

Configure [Tour]

Tour includes several present points and is marked by a figure. When call the figure, present point will run one by one.

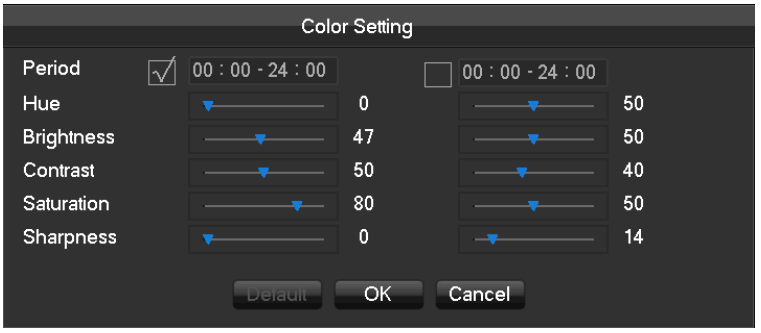


Configure [Pattern]

Pattern is consisted of PTZ rotation path and is marked by a figure. Call the figure to enable patrol function.

Color Setting

Adjust the specified screen (single screen) image color hue, brightness, contrast, saturation, gain and white-level parameters set two time periods according to the local environment difference between day and night for each adjustment period set, the device will automatically switch to the best video quality.



[Period]Two periods can be set according to ambient light during the day and night, device will automatically switch configuration time. Need to select the Enable box.

[Hue]Adjust according to image color cast

[Brightness]Visual image brightness, according to the environment, reduces or increases the brightness of the image brightness to make the image relatively clear.

[Contrast]Adjust image of black and white in proportion, the greater ratio, the brighter image.

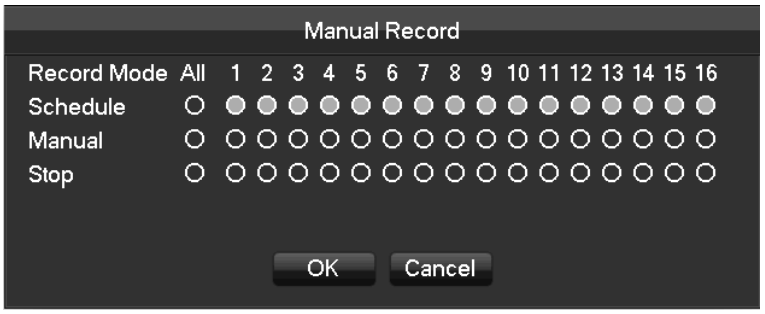
[Saturation]Image color purity, the greater value, the more colorful images.

⚠ Note: Different mode different function

Manual

Record

In real-time monitoring screen, right click and select[record]to enter the interface.



[Manual]It has the highest priority and corresponding channels will record for whole days after chosen.

[Schedule]Record according to recoding configuration.

[Stop]Stop recording.

To change a channel state of the video, at first check the video channel state is in selected or not, then use the mouse to click, or use **[]**and**[]**to find the channel and use **[]**and**[]**to switch the video channel state.

Note: Select all channel and enable can change the video state of all channels at the same time.

Reset the channel order

Click to reset the default channel order.

6.5.3 Task Bar

Enter from the main menu and provide some quick operation.

The Screen Switching

To implement screen switch function

Above single, four, nine and sixteen channel.

PTZ control

Brings up the PTZ control Menu

Refer to 6.4.2 PTZ control of the right-click menu.

Record Search

- Click to select the Searching interface Refer to 6.5 Search

Manual Record

Click to select manual record interface

Refer to 6.4.2 Manual record of the right-click menu.

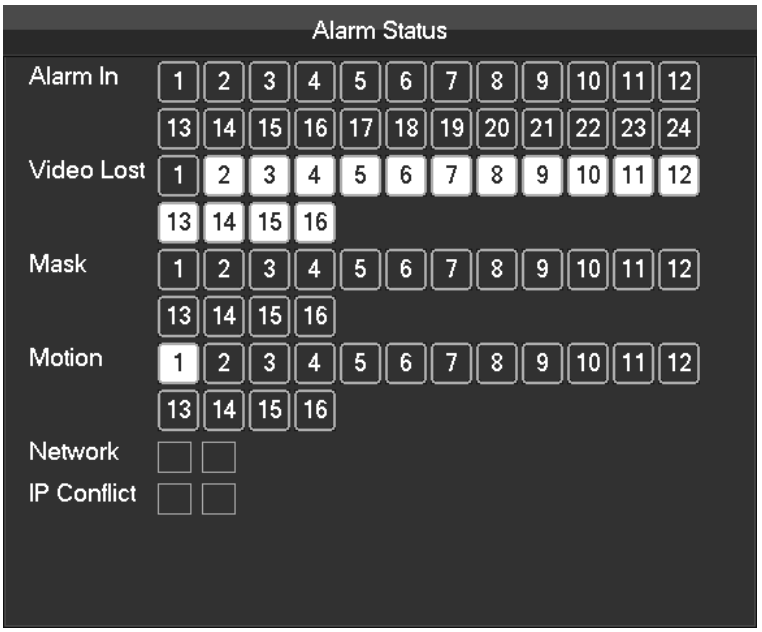
NET Channel Management

Click to enter Net channel

interface Refer to 6.3

Alarm Status

Check the recent alarm status, click to show the following alarm message



Alarm output

Alarm output menu

Refer to 7.2.5 Alarm output of Alarm menu

Intelligent window switch

Intelligent window switch

When the system is face/perimeter analysis status, click to close the intelligent window in the right side of real-time monitoring screen and click again to open it.

Conceal function

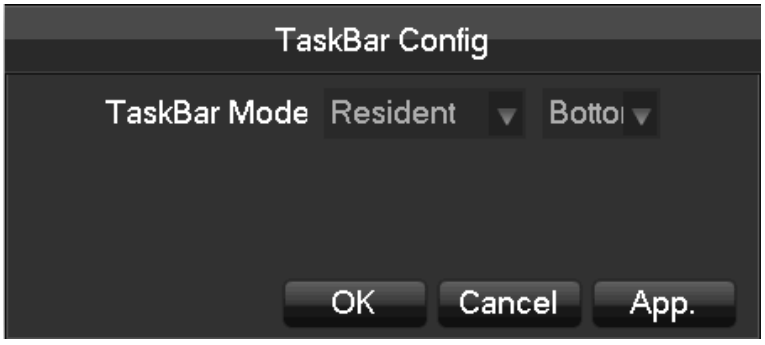
Color setting

Refer to 6.4.2 Color setting of the right-click menu.

Reset the channel order

Click to reset the default channel order.

Taskbar Configuration

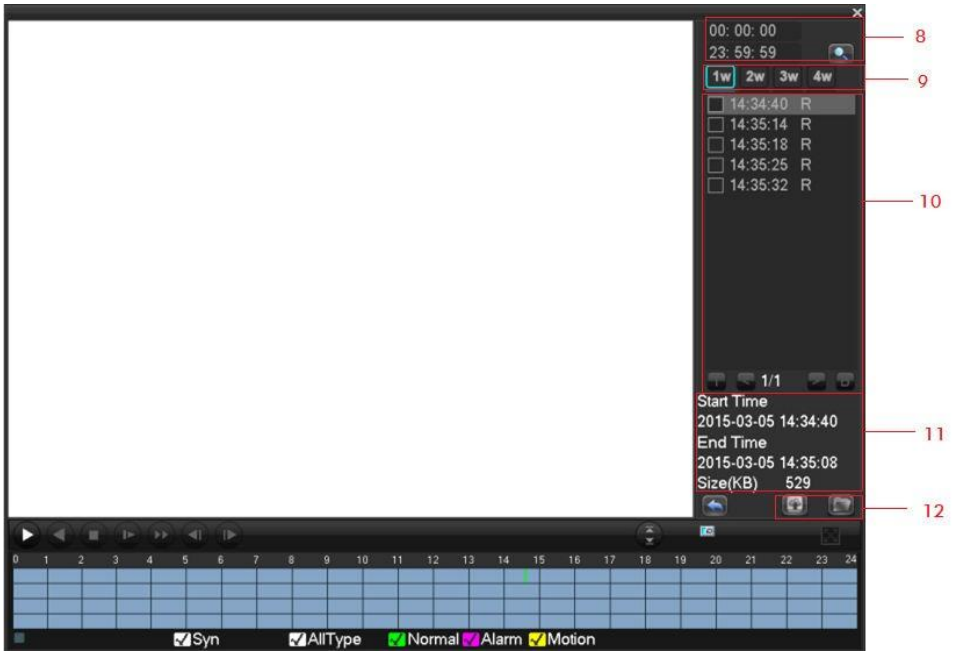


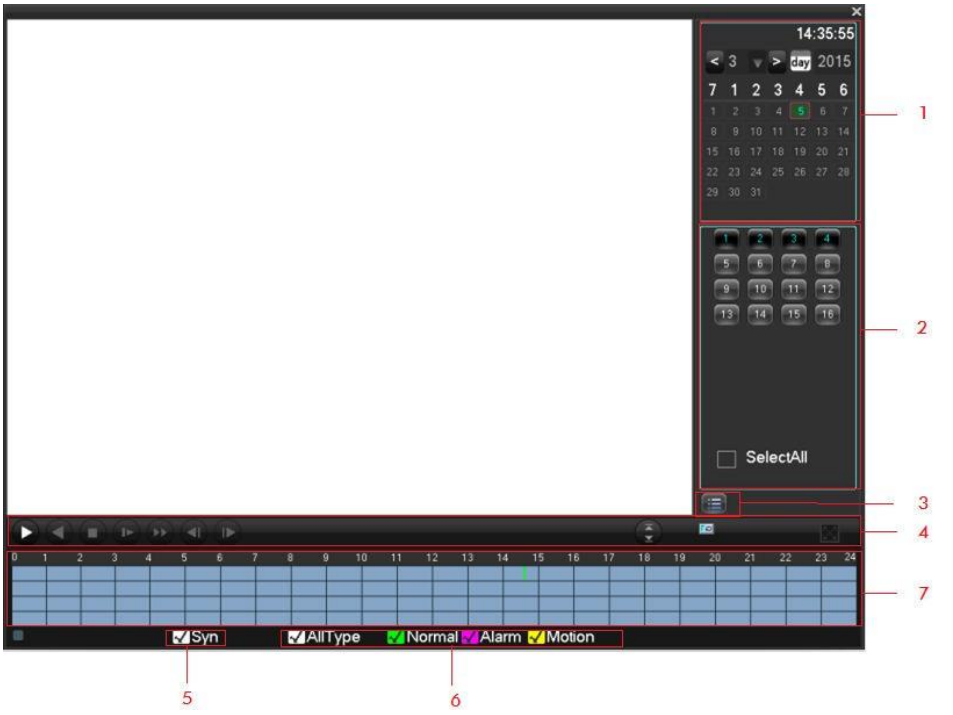
[Task Bar Mode]Choice of Resident or Automatically, Choice of Bottom and TOP.

6.6 Search

6.6.1 Search

In real-time monitoring screen, right click and select**[search]**to enter the searching interface.





Record Search interface description:

Index	Type	Description
1	Choose the date	Select the time and date to search records.
2	Select channels	Choose the channels for querying.
3	List	Display the list of recording files.
4	Playback controls	It can achieve a full screen, circle playback, stopping / playing, pausing, fast playing, slow playing and the
5	Synchronization	Achieve the playback of each channel's record is of
6	Recoding mode	Choose searched recording mode, including All type,
7	Time bar	Show the status information of channels' video recording
8	Choose the time	Search the records based on the starting time.
9	Channel number	Select the channel number.
10	The list of records	128 video records are shown in the list. Type: R—normal record, A—alarm record, M—motion detection record.
11	Details of the file	Display the start time, end time, and the size of the
12	Backup	Choose a channel in which the record plays back.

Playback Control:

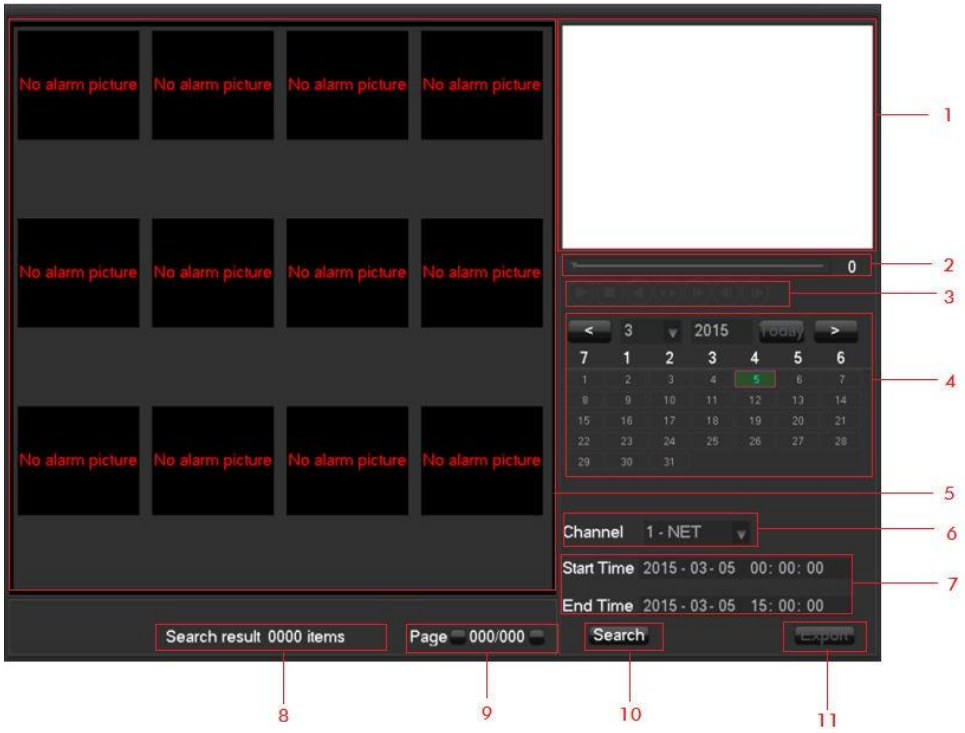
Key	Description	Remark
Video playback: Fast-forward Key	Under playback mode, pressing this key, you can get a variety of fast cycle switching speeds; fast-forward button can be used as slow-release	Actual rate play based on version
Video playback : Slow key	Under playback mode, pressing this key, switch cyclically support a variety of slow-release rate, slow release button can be used as fast-	
Play/pause►/□	Play/pause switch when slow-play	
Backward: Backward key	Single left click backward key	To play backwards and single click again to stop back run under common playback Rewind or single-
Manual single frame playbac	single frame playback by clicking |and| when common playback pause	

Note:

1.The player playback control bar shows file playback speed, channel, time, playback progress and other information.

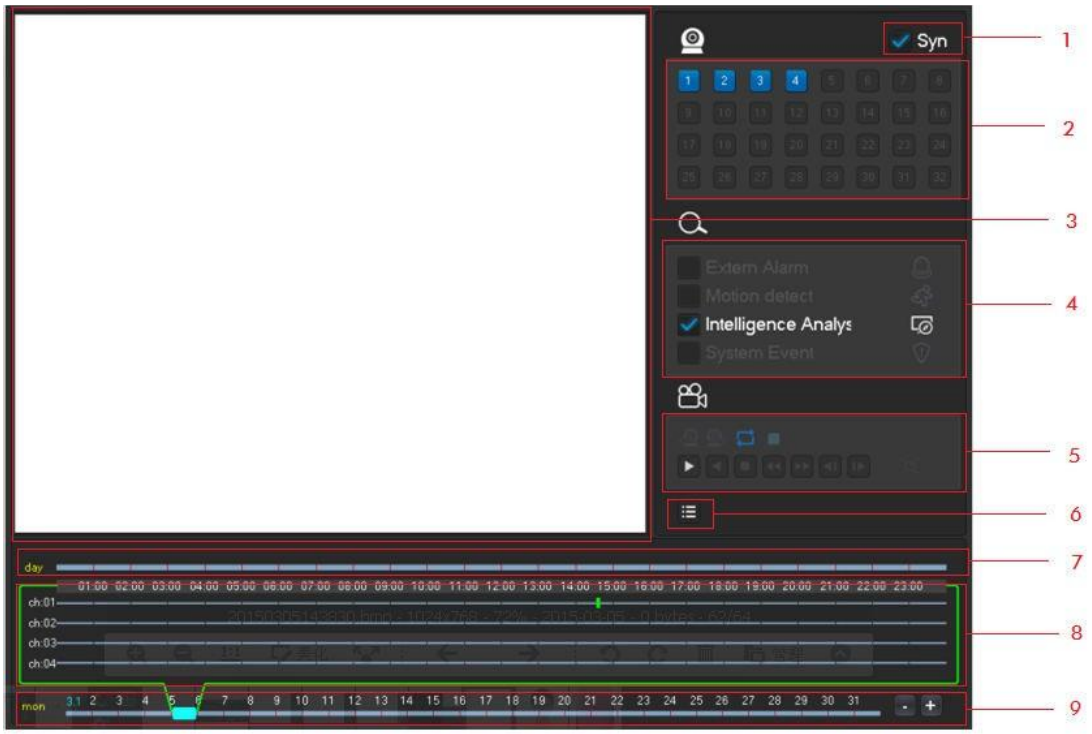
2.Playback speed and rewind function are related to DVR version, and please prompt on the player panel shall prevail.

6.6.2 Face Search



Index	Type	Description
1	Play windows	Play the video.
2	Play Timeline	Display the progress bar of the current event
3	Playback control	stopping / playing, pausing, fast playing, slow playing and
4	Calend	Select the date to search
5	Face list	Show the all face images of the channel in the query
6	Channel number	Select the channel number.
7	Choose the time	Search the records based on the starting time and
8	Face Statistic	Display the total number of face images and pages of the
9	Page number	Display the current page and the total number of pages.
10	Search	Click to search.
11	Export	Export all the face images of the current page..

6.6.3 Perimeter Search

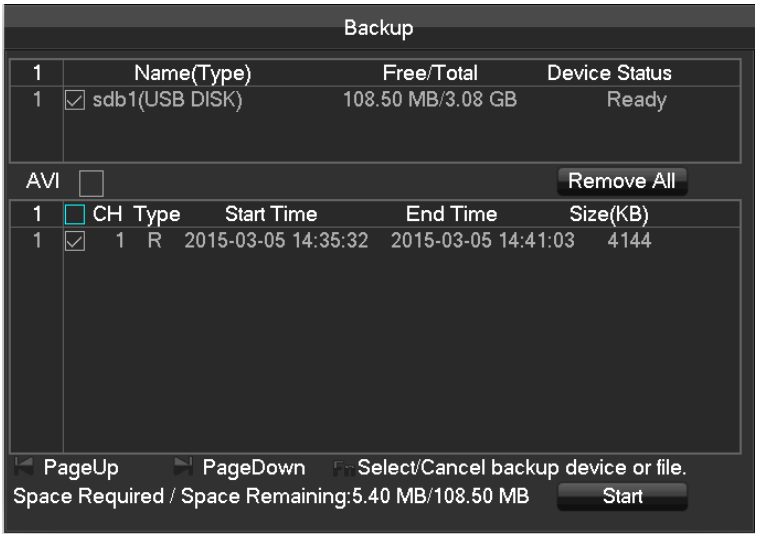


Index	Type	Description
1	Synchronization	Playback of each channel's of synchronization.
2	Choose channels	Select channels desired to query records.
3	Play windows	Play the video, it support most 4 channel playback a the
4	Event Type	Select the event area,forward/reverse cross
5	Playback control	It can achieve a full screen, circle playback, stopping / playing, pausing, fast playing, slow playing and the
6	List	Display the list of recording files..
7	Event Line	Show all the events and corresponding time.
8	Time Bar	The Scrolling up and down of the mouse can adjust time
9	Time Line	Display the date of current time bar, click the +,-to adjust.

6.7 Record Backup

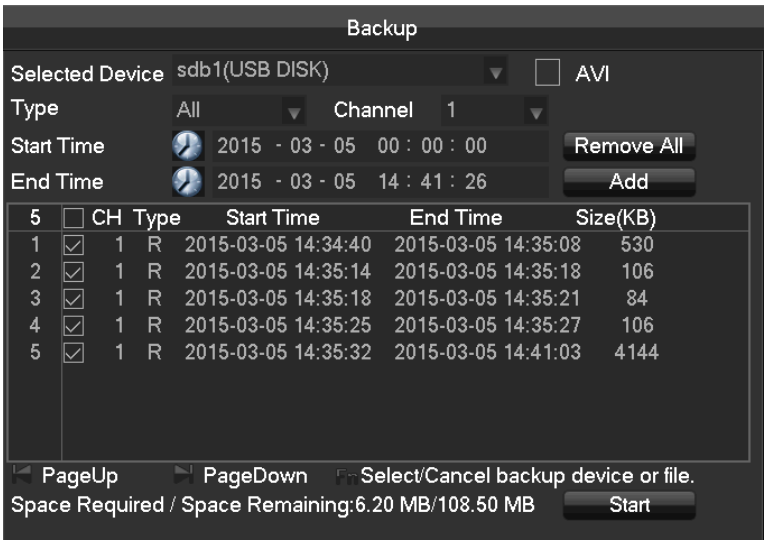
Interface description

Connect an External ←SB device with the ←SB port to backup in the "Record Backup" menu.



[Detect]Identify external USB device and display the device information.

[Backup]Tick the external device and click[Backup]to enter the backup menu .



[Cancel]delete all data in USB backup device

Backup Operations

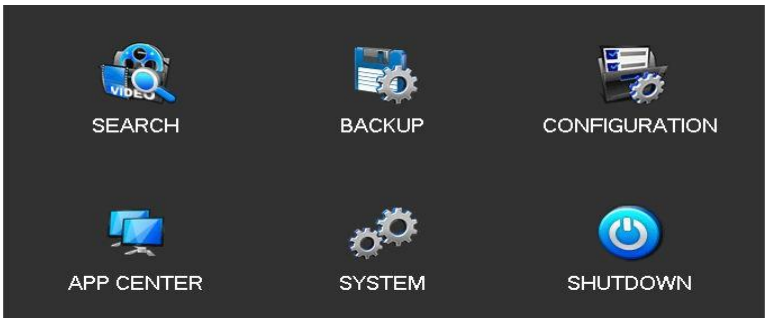
Connect an External USB device with the USB port, click[Detect]to Identify external USB device, click**[Backup]**to enter the backup menu ,select the record start -stop time and click to add files in list, click**[Start]**to backup and display time remaining.

⚠Note: USB backup carry player automatically. This operation probably cause permanent data loss.

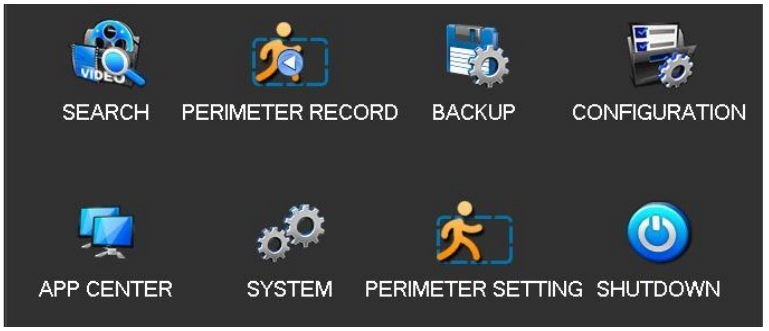
7 Local Configuration

7.1 The Introduction of the Main Menu

The main menu is shown as the following interface:



[Search]Search records by types, channels, time and playback records.
[Backup]backup management.
[Configuration]Including Net channel, Channel, Schedule, PTZ, Alarm and RS232. **[APP Center]**Set up multiple extended functions, including cloud storage, P2P, Email etc. **[System]**Set basic, display, storage, abnormity, status, maintain, account and Network etc..
[Shutdown]Log off the user menu, turn off the machine, restart the system, and switch user and other operations. The intelligent perimeter menu is shown as the following interface:



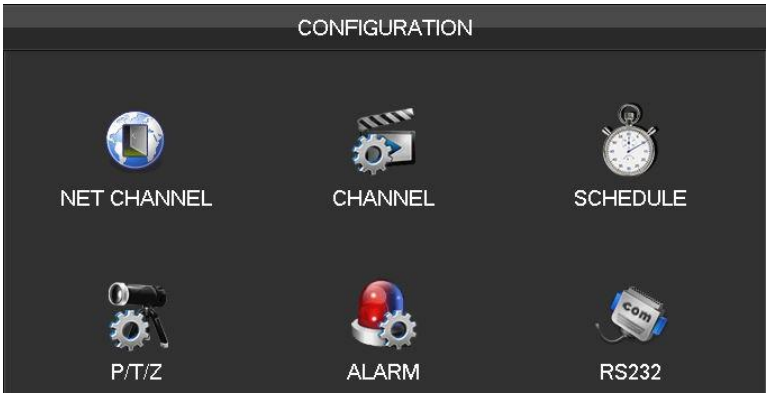
[Perimeter Record]Playback based on the events time bar: including external alarm, motion detection, intelligent and system event information .
[Perimeter Setting]Rules of the perimeter and Alarm linkage configuration. The intelligent Face menu is shown as the following interface:

[Face Search]Search the face image and video in the HDD.

[Face]Configure the face algorithm of the channel.

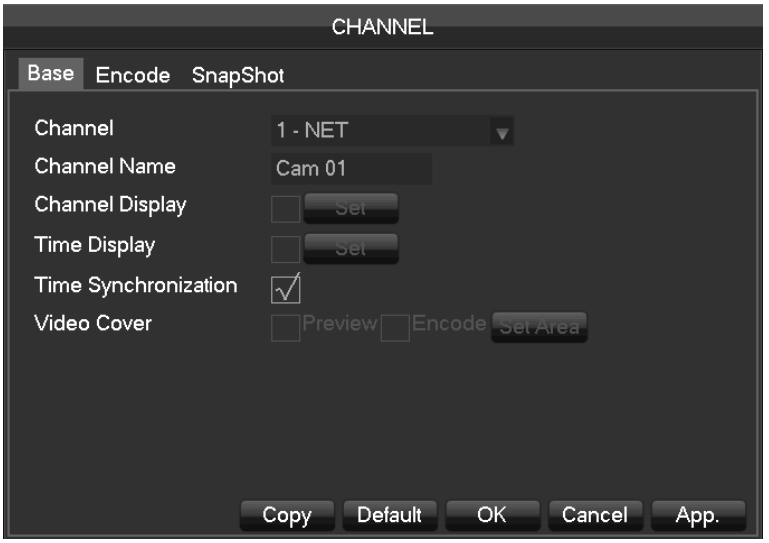
7.2 CONFIGURATION

[MAIN MENU] left click to**[CONFIGURATION]**.



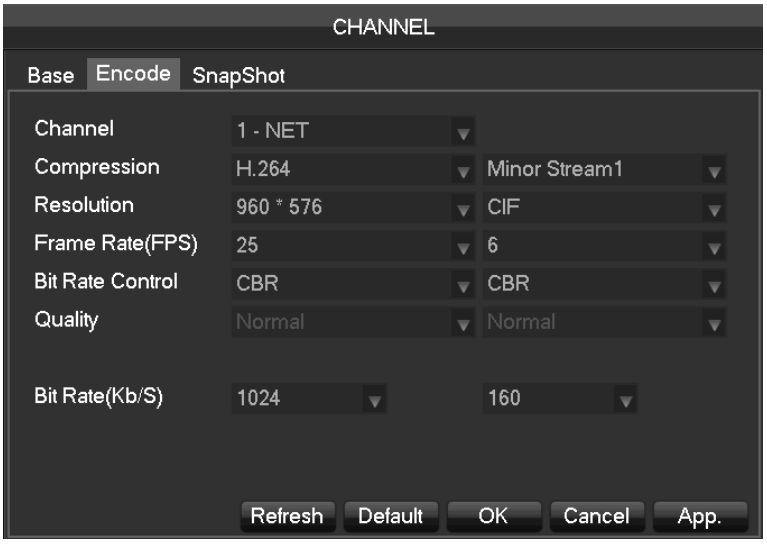
7.2.1 CHANNEL Setting

Base



[Channel]to choose the channel no. which needs setting-
[Channel Name]to set the channel name if in need-
[Channel Display]to set the channel name's display place on the picture-
[Time Display]to set the time's display place on the picture-
[Time Synchronization]to synchronize the time with net channel and device-
[Video Cover]to set some special area which needs special protection while preview and recording.

Encode



[Channel]to choose which channel to set;

[Compression]H.264

[Resolution]there are multiple resolution to choose for main stream. Sub steam too. Users can set the parameter according to their needs.

[Frame Rate]PAL: 1fps-25fps; NTSC: 1fps-30fps.

⚠ *Note:main stream, sub stream and frame rate are vary depending on devices and firmware version.*

[Bit Rate Control]It includes fixed stream and variable stream. Under fixed stream, user can set encode stream, while under variable stream, user can choose 6 class of image quality, lowest, lower, low, middle level, higher, highest.

Snapshot

[Channel]Select a channel.

[Mode]Trigger: Crawl images when alarm. Click to enable the function.

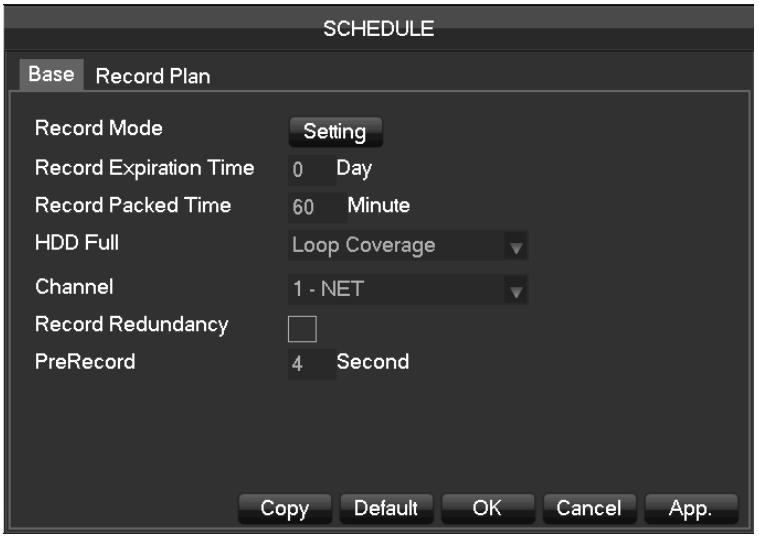
[Image size]choose different resolution for snapshot.

[Image Quality]There are 6 levels of quality.

[Snapshot frequency]set highest capture rate for single channel，1/2/3/4/5/6/7/8 s/pc.

7.2.2 Recording setting

Base



[Video mode]Record automatically, manually or not record. **[Video expiration time]**The figure is between 0 to 365. **[Video package time]**The figure is between 5 to 120 minutes.
[HDD full]Overwrite or stop recording.
[Channel]Select a channel.
[Video redundancy]Open or close the redundant recording.
[Prerecorded]The figure is between 0 to 30 seconds.

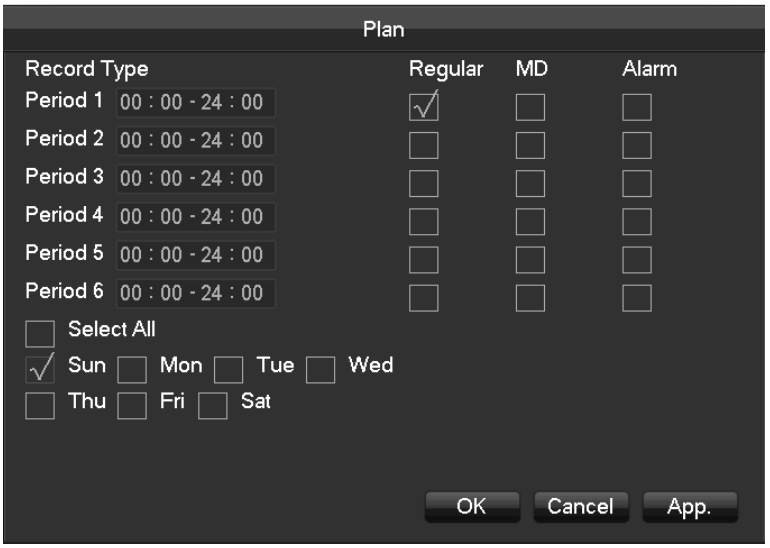
Recording plan

.

[Channel]select a channel. Green shows normal recording, Yellow shows motion detection, and Red shows Alarm.

Users can set or change setting according to date. **[Copy]** copy the setting to other channels.

Click **[Set]** and enter into plan editing picture



[Period]set the recording period, there will be 6 period to choose;

[Regular]regular recording

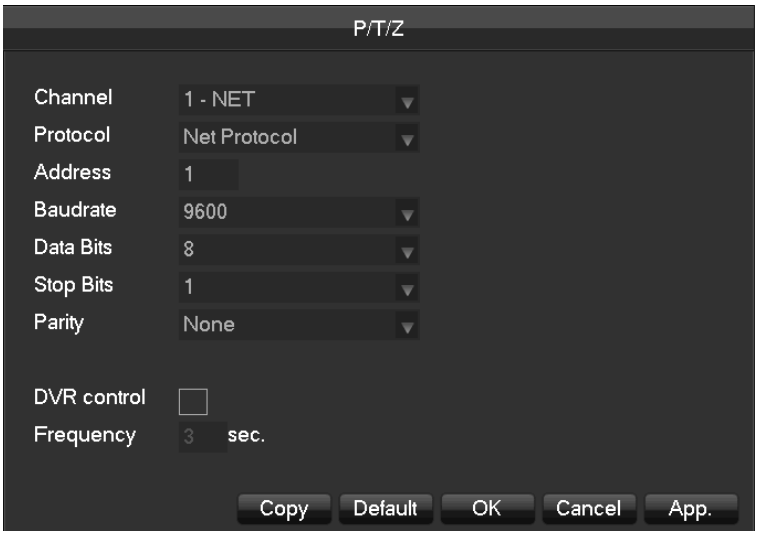
[MD]motion detection recording

[Alarm]alarm recording

7.2.3 PTZ setting

User can set PTZ channel, protocol, address, baudrate etc. Please make sure the PTZ address and connection is

correct between PTZ's A, B wire and recorder's A, B wire.



[Channel]select a channel with PTZ camera

[Protocol]select PTZ camera's PTZ protocol(such as: PELCOD)

[Address]set address, the default is 1^ *Note:this address must be the same with PTZ, otherwise the PTZ can not be controlled*v

[Baudrate]Select the baud rate. Default is 9600.

[Data Bits]default: 8

[Stop Bits]default: 1

[Parity]default: None

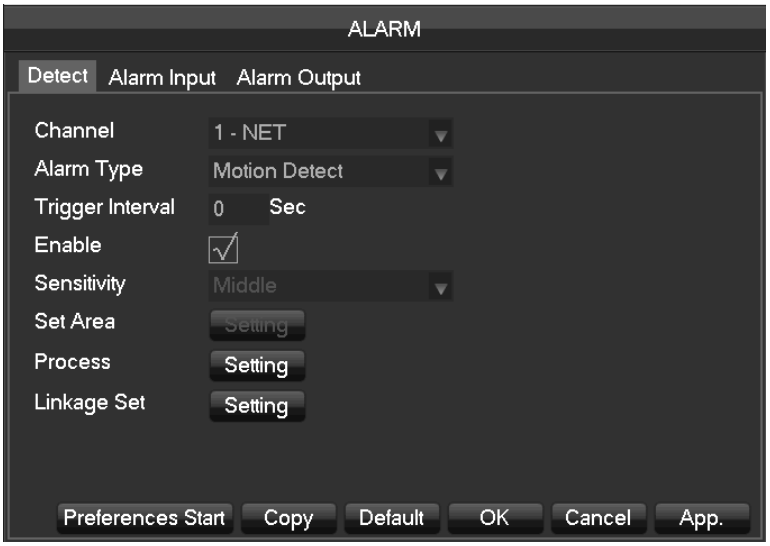
[DVR control]click to enable

[Frequency]default: 3seconds, users can set any digits between 1~30 seconds

7.2.4 Alarm

Video detect

[Main menu]-**[Alarm]**-**[Detect]**, shows below:



[Channel]Select a channel.

[Alarm type]motion detection, video loss and video blind.

[Motion detection]detect the motion in the picture, and send alarm according to setting.

[Video loss]detect the video loss and send alarm according to setting.

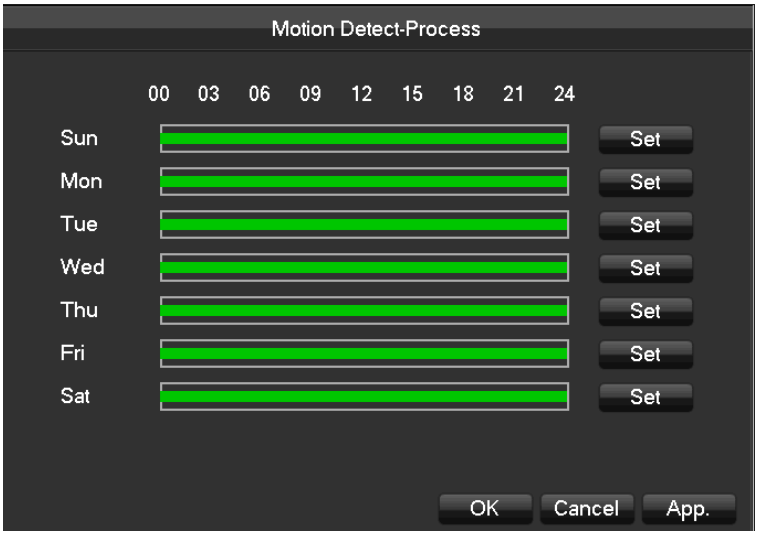
[Video blind]detect the video which was covered and send alarm according to setting.

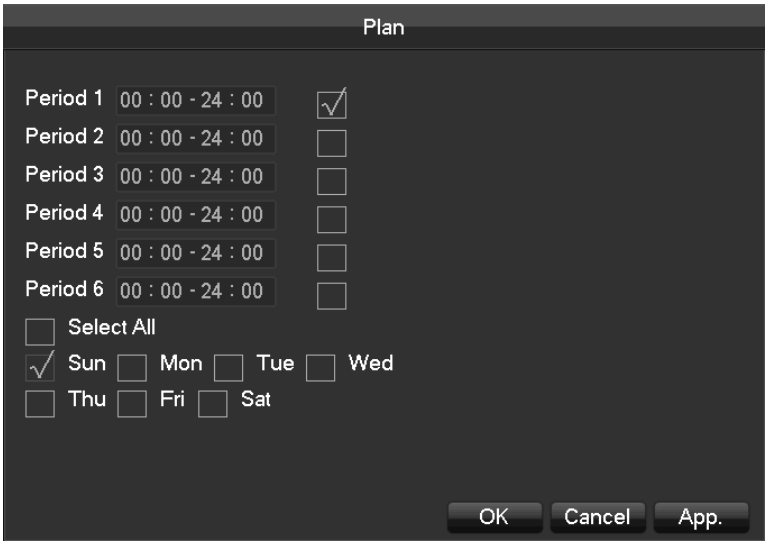
[Enable]control the alarm open and close

[Sensitivity]highest, higher, middle, low, lower, lowest

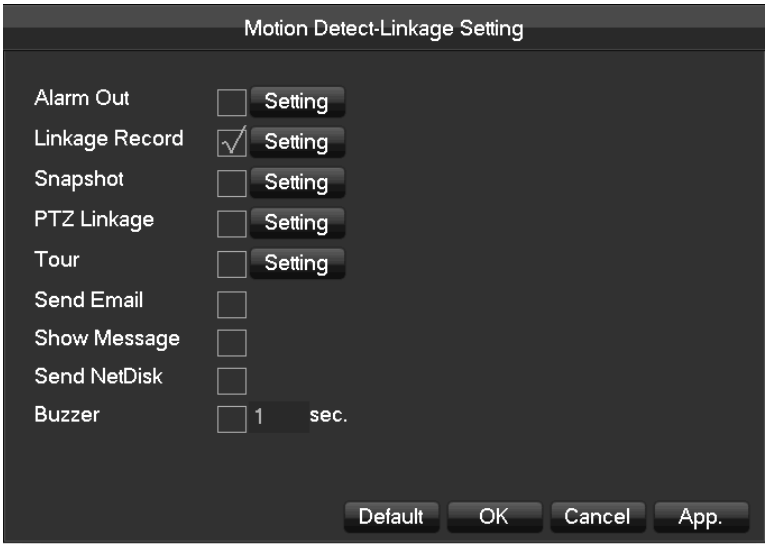
[Set area]there are totally 22*18=396 area can be set, which needs motion detection.

[Process]Set the alarming time, linkage and the handling method.





[Linkage Set]When a alarm occurs, you can set linkage of records, PTZ, touring and snapshot.

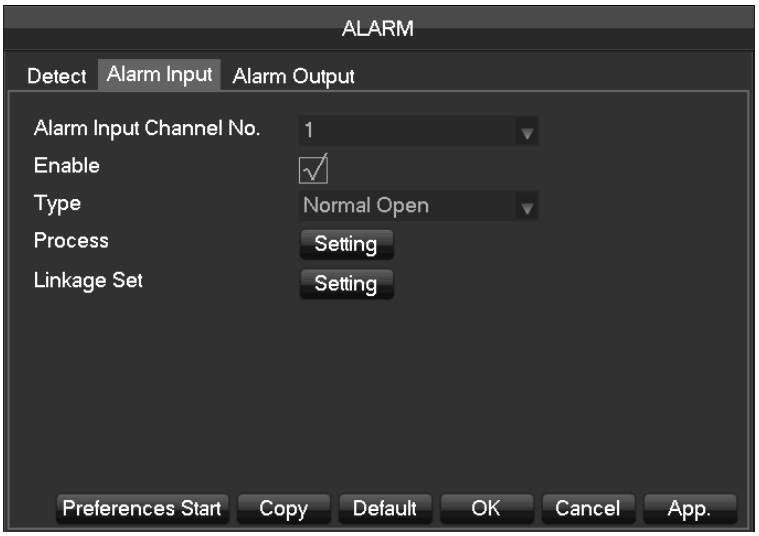


[Preview] it will show a test on the current setting

[Copy]copy the setting to other channels

Alarm input

[Main menu]-[Alarm]-[Alarm input]



[Alarm input channel No.]:select a channel **[Enable]**:control the open and close of alarm **[Type]**:choose Normal open and Normal close

[Process]![**Linkage set]**:take 7.2.5 video detection as reference.

Alarm Output

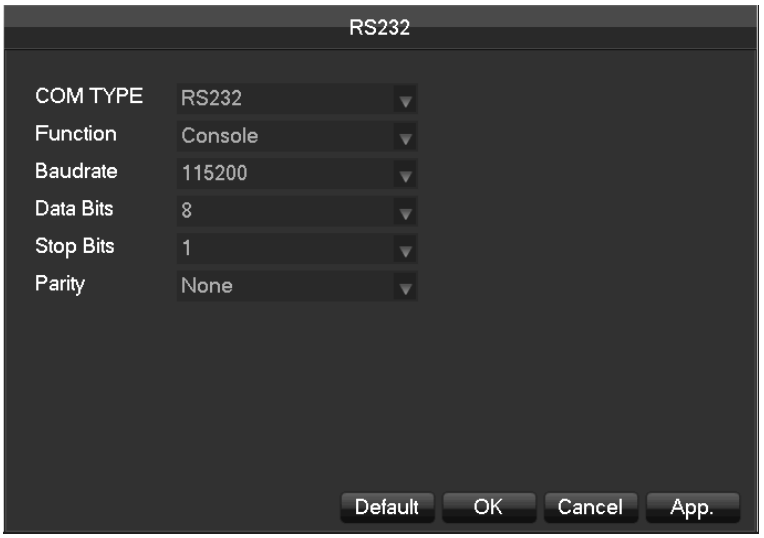
On the real time preview picture, right click and choose **[Alarm output],** or enter**[Main menu]-[Alarm]-[Alarm output]**

[Schedule]Alarm output is controlled by the device's linkage setting.

[Manual]Alarm output is on and the status is active. **[Stop]**Alarm output is off and the status is inactive. **[Status]**Current status of alarm output

⚠ *Note:some models do not have alarm output, please refer to some relative data sheet.*

7.2.5 RS232



[Function]Select the appropriate serial protocol

[Regular]used to update firmware and adjust

[Keyboard]used specialized keyboard to control the device by serial port

[Transparent serial port] used to transmit serial port data transparently

[Net keyboard]use specialized keyboard to control the device through network

[PTZ] connect with matrix

Note:some models do not have RS-232 serial port, please refer to some relative data sheet.

[Baudrate]select the relative length of baud rate

[Data Bits]default: 8

[Stop Bits]default: 1

[Parity]default: None

7.3 Application

[DDNS] check the device setting through domain name

[Email]set the sender's email SMTP server IP address, port, username, password and sender's mail box, mail SSL

encryption.

[P2P] setting of P2P transmission

[Cloud] bind with cloud storage service and set synchronization rule.

7.3.1 DDNS

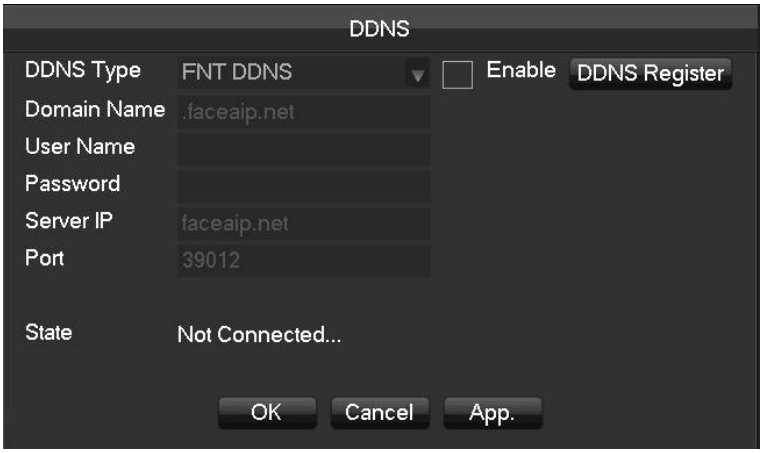
Summary

Dynamic DNS is a kind of system which point internet domain name to variable IP. According to the rule of internet domain name, domain name must associate with the fixed IP address. Dynamic DNS provide a fixed Name server for the dynamic domain, and then guide the domain search to the IP address of dynamic user through Name server, which can make the outside user connect to the dynamic user's ←RL.

FNT DDNS

FNT DDNS is built-in professional dynamic DNS service in our network DVR.You can register directly in the device .Specific steps are as following.

[Main menu]-[Network]-[Application]-[DDNS]，choose FNT DDNS



1、Select FNT DDNS and Enabled it.

2、Input one user name, there will be a domain name generated auto. Domain name = user name.faceaip.net. 3、Input the password

4、Click "Register" button. If the domain name is not registered, it will pop up a message that connect DDNS

server successfully otherwise it will prompt that the registration is failed.

Suggestion: you'd best change the DNS server in basic configuration to the router's DNS server 5、Click the "ok" button to complete the settings.

No-ip DDNS

Register

Register new account at www.no-ip.com

Embedded DVR/NVR Setting

Open **[Main Menu]→[APP Centre]→[DDNS]**, choose NO-IP DDNS. Refer to the following configuration、

Name	Configuration
DDNS type	NO-IP DDNS
Host IP	dynupdate.no-ip.com
port	80
Domain name	xxx.xxx.org^xxx、domain name created^
User name	xxx^user name registered^
password	xxxxxx^password registered^

Dyndns DDNS

Register

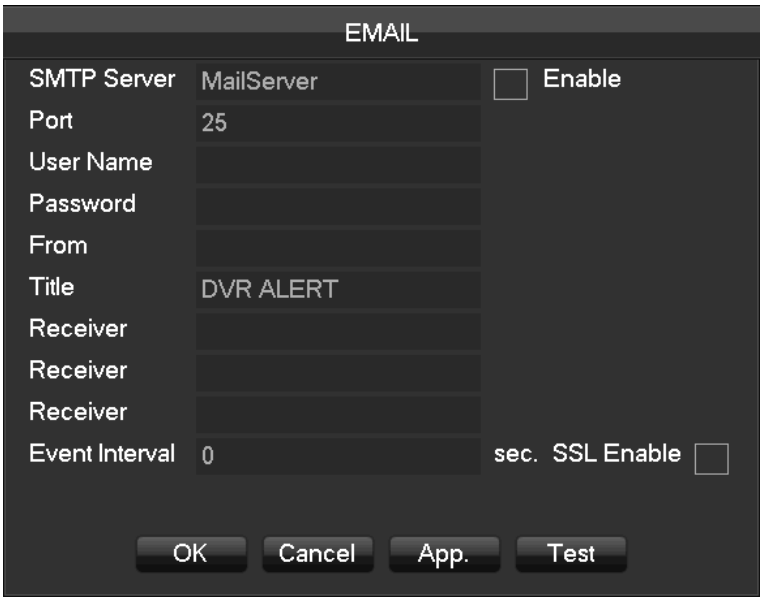
Register new account at www.dyndns.com

Embedded DVR/NVR Setting

Open **[Main Menu]→[APP Centre]→[DDNS]**, choose NO-IP DDNS. Refer to the following configuration.

Name	Configuration
DDNS type	Dyndns DDNS
Host IP	Members.dyndns.org
port	80
Domain name	xxx.xxx.com^xxx.domain name created^
User name	xxx^user name registered^
password	xxxxxx^password registered^

7.2.6 Email



Input sender mailbox SMTP server IP, port, username, password and address, email SSL encryption. Mail title supports input Chinese, English words and Arabic numbers, 32 characters maximum. Support three receivers and SSL encrypted mailboxes at most.

7.2.7 P2P

[Enable]Open/Close P2P function

[Transfer Mode]Network transfer strategy, choose Quality priority or Fluency priority

[Account Reuse]enable it supports multiple users log in the same device

[Device ID]display device

ID **[Password]**device

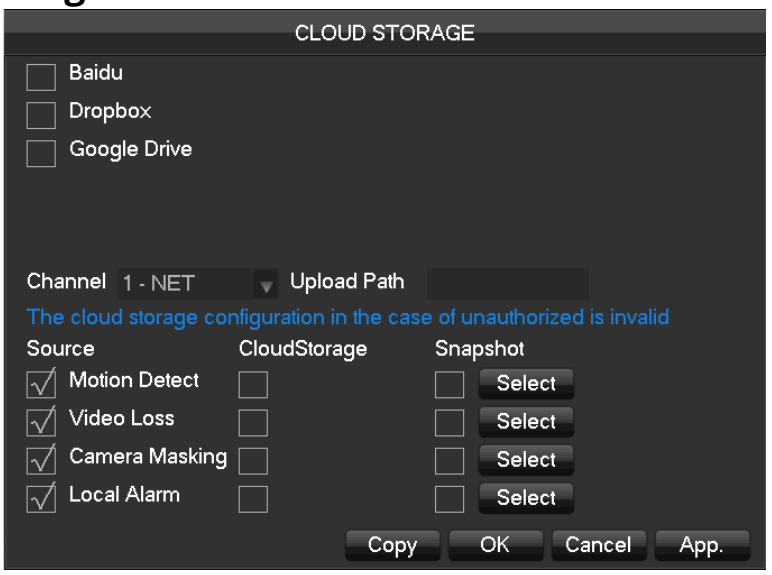
password **[Local Port]**set

local port

[P2P Server URL]P2P server URL

[State]current connection state

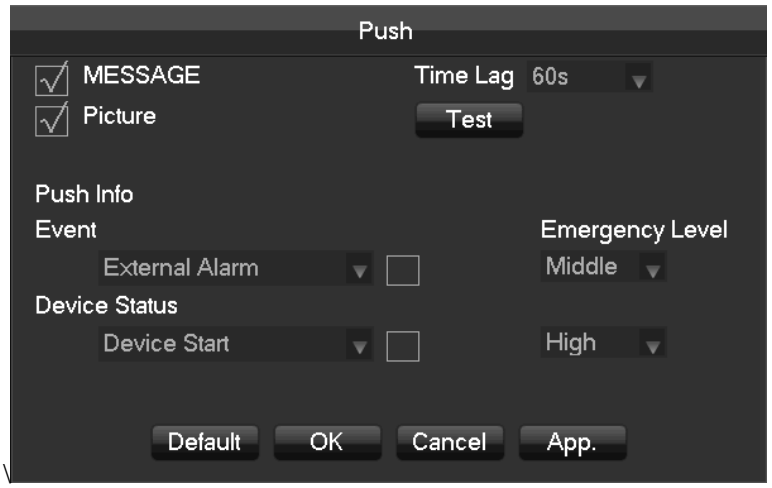
7.2.8 Cloud storage



Support Baidu, Dropbox and Google Drive three kinds cloud storage.

Apply corresponding cloud storage account and bind it. User can only select one kind account.

7.2.9 PUSH



[Message]Open/Close the push function.

[Picture]Push the message with a picture attachment **[Time Lag]** message push interval, 60/90/120 in option. **[Test]** Click to send push test information.

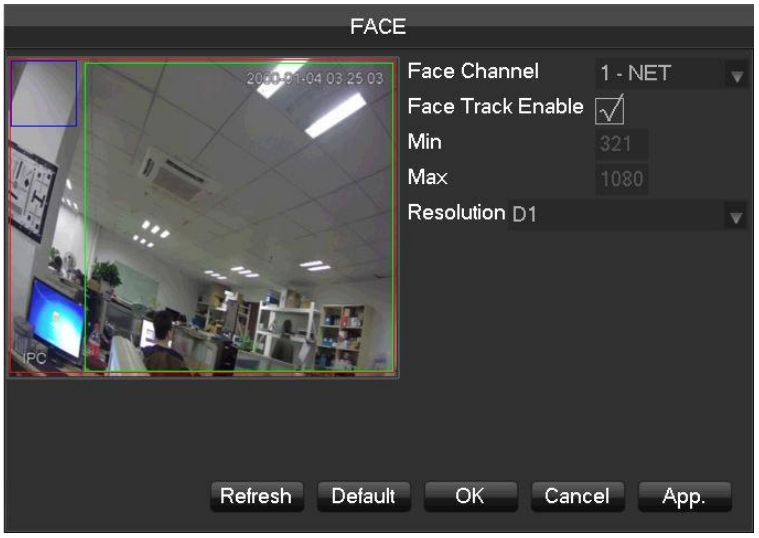
[Event] Open/Close the push of events, including external alarm, face detection, perimeter alarm.

[Device Status] Open/Close the abnormal information of device, including equipment start, no hard disk, hard disk error, recording start/stop.

[Emergency Level] the level of the push, including high, middle, low.

7.3 Intelligent function configuration

7.3.1 Face detection configuration



[Face Track Enable] enable to open the face tracking function

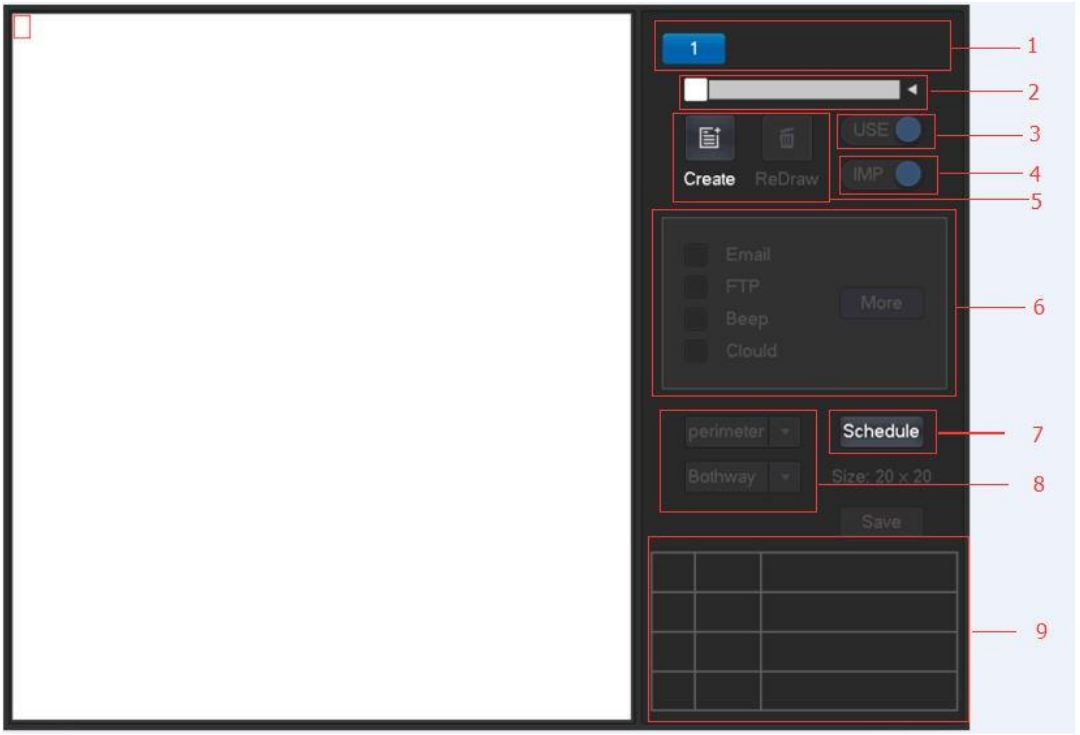
[Min] blue square means the minimum face detection area. When the face is smaller than the minimum detection area, it can't be detected. Please set the size according to the actual usage scenarios.

[Max] green square means the maximum face detection area. When the face is bigger than the maximum detection area, it can't be detected. Please set the size according to the actual usage scenarios.

[Resolution] set different analysis resolution according to the front-end highest resolution. For example, if front-end device supports 1080P, the local device can be set into 1080P, 720P, D1 or CIF resolution.

[Red Square] red square means the detection area, once set, the device only detects this face detection area. False positives and under reporting can be reduced effectively by setting the detection area.

7.3.2 Perimeter Intrusion detection configuration



No.	Configuration	Description
1	Channel selection	Choose the channel need setting
2	Rule naming	Rule naming and set the rule line color
3	enable	Open/close the current rule
4	Capture enable	Open/close picture capture function
5	Create/delete	Create new rule/draw new line
6	Linkage setting	Linkage setting of the current rule
7	Arming/disarming	Arming/disarming setting
8	Direction setting	Detection direction setting
9	Rules list	Display all the created detection rules

7.4 System setting

7.4.1 Basic setting

Get into the [Bacical] menu under [Configuration]

[System Time] set the HD record system time

Note:please click the"save" button to save the time after setting

[Daylight Saving Time (DST)] **E**nable the function and click "Set" to enter the local DST starting and ending time setting.

[Date Format]Modify the date display format **[Date Separator]**Select the separator for date **[Time Format]** 24 hr or 12 hr display mode **[Time Zone]**Select the time zone

[Language]Select language (different models have different language choice)

[Auto Logout]set menu stand-by time from 0-60 min. O min means no standby; if set a time, system will logout auto after this period time and user need to login again.

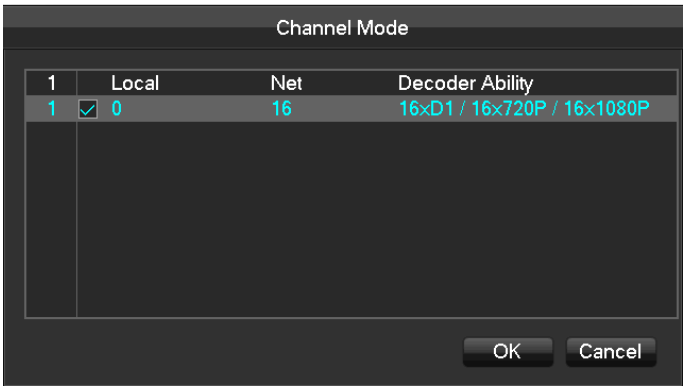
[DVR No.]←sed for a remote control or keyboard control multiple devices. Please click "Ad" button on remote control and input the corresponding DVR number to operate.

[Video Standard]PAL/NTSC (must keep the same with the front-end camera)

[Startup Wizard] enable switch, open/close the startup wizard interface

[Device Name] used together with the push, display this device name in the alarm message received in iPhone.

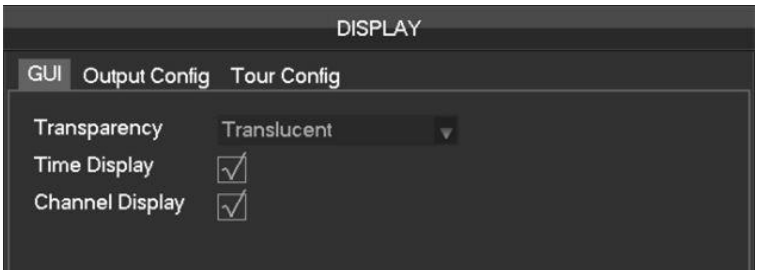
[Channel mode]The selection of local channels and network channels.



Select hybrid or NVR mode according the menu prompt and save. Reboot the device after channel mode modification. Channel mode introduces the device recording ability under different modes. Real recording ability needs refer to the detailed device specification.

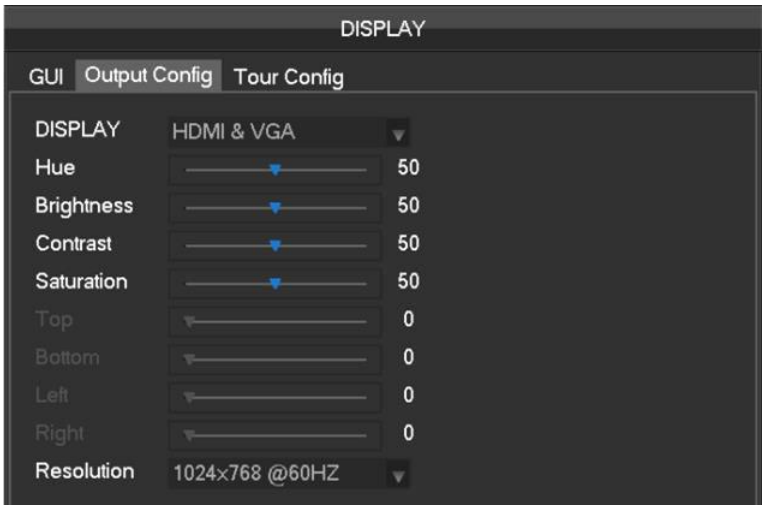
7.4.2 Video output

GUI Display



[Menu Transparency] adjust menu transparency , four degrees
[time display] enable switch for time displayed in live view
[channel display] enable switch for channel name displayed in live view

Output mode

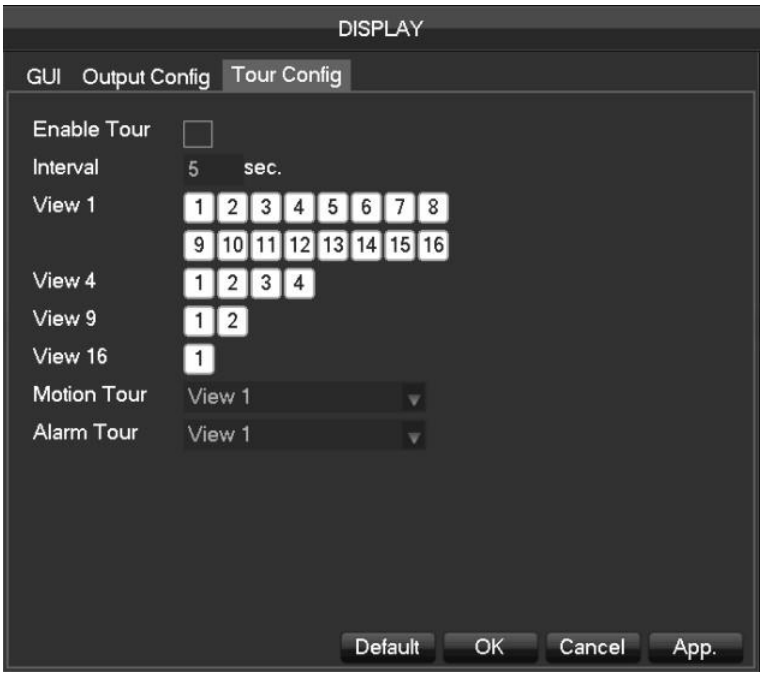


[Display]CVBS/HDMI&VGA
Under CVBS mode, user can adjust the monitor or TV hue, brightness, contrast and saturation. You can also adjust the right TV output area when the displayed image is not full or beyond the

scope of the monitor. Under HDMI&VGA mode, user can only adjust the monitor hue, brightness, contrast and saturation.

[Resolution]select the VGA output resolution and refresh rate, total includes 1024×720@60Hz 、1024×768@60Hz、1280×1024@60Hz、 1366×768@60Hz and 1920×1080@60Hz five choices.

Tour Configuration



[Enable Tour]Enable switch

[Interval] Ttour interval time is 5-120s

[View]It includes single screen, four-, nine-, sixteen-screen.

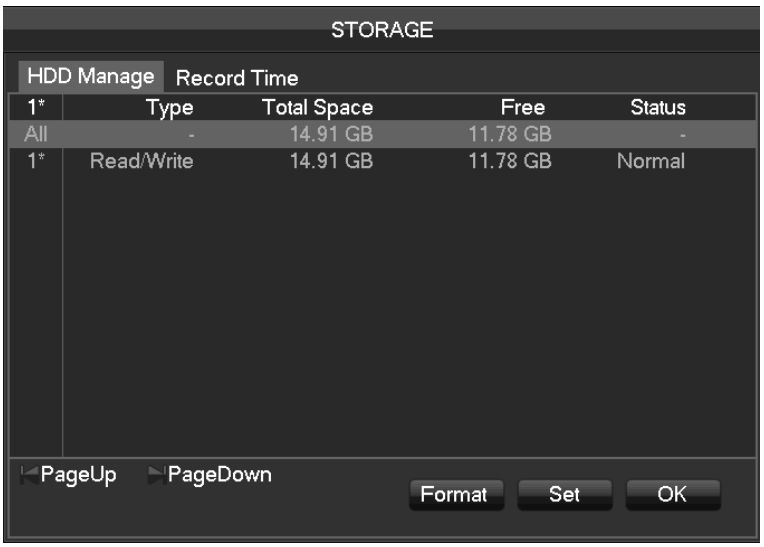
[Motion Tour]Set the motion detection tour mode

[Alarm Tour]Set the alarm tour mode

7.4.3 Storage management

HDD management

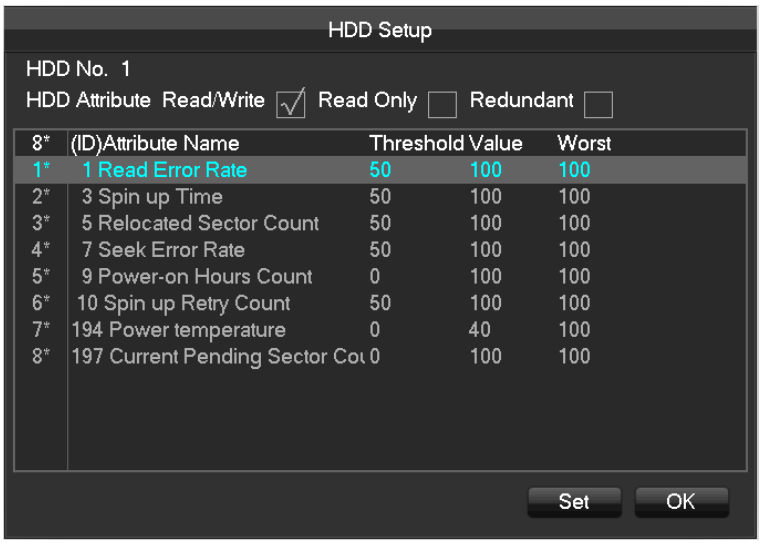
Show the current HDD capacity, spare capacity and working status in the DVR/NVR



[Format]Format one HDD, user must have appropriate permissions

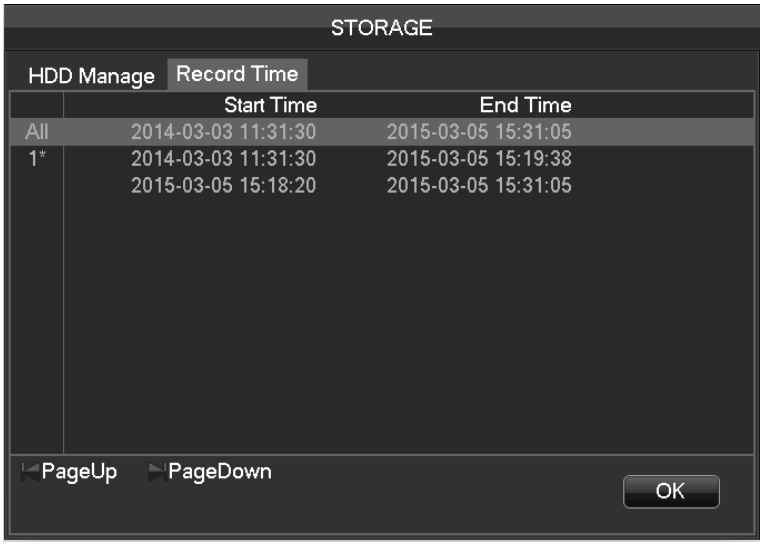
Note: Hard disk format operation results in the loss of video data

[Set]Set HDD as read-write, read only or redundancy mode. Video data can be protected from covering under read only mode. It supports HDD S.M.A.R.T smart detection at the same time.



Record time

Show the record starting and ending time in the device HDD



7.4.4 ABNORMITY

[Exception type]

[No Disk]Alarm when HDD is not present or cannot be detected.

[Disk low Space]Alarm when hard disk capacity is lower than setting.

[Network Failure]Alarm when network is not connected.

[IP Conflict]Alarm when IP address conflict.

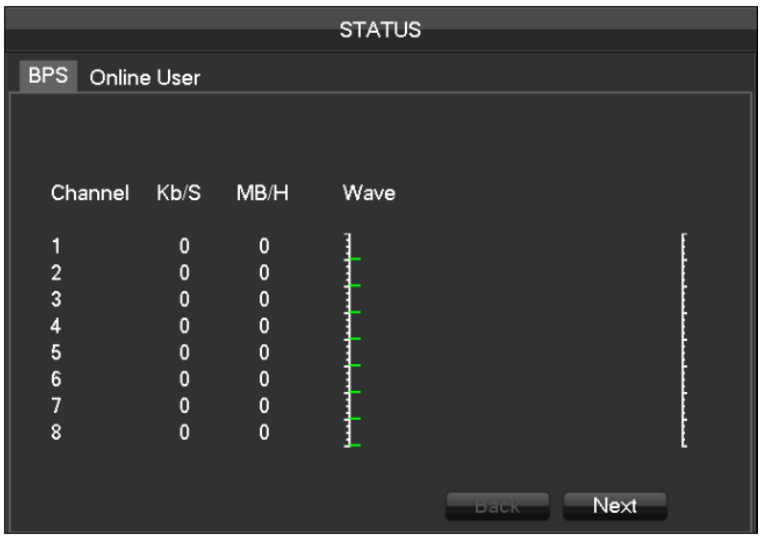
[Disk Error]Alarm when there is error in reading and writing hard disk.。

Process

[Alarm Output]、**[linkage record]**、**[snapshot]**、**[Send Email]**、**[show message]**、**[Send to network drive]**、**[buzzer]**

7.4.5 System Status

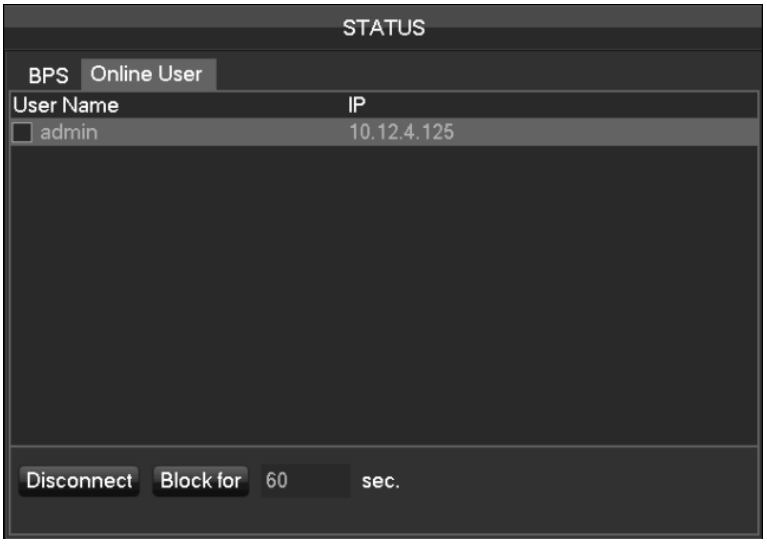
stream statistics



[stream statistics]Provide capacity size of video files for reference, stream statistics for each channel, waveform display.

Noted： *This statistic is an estimate only for reference*

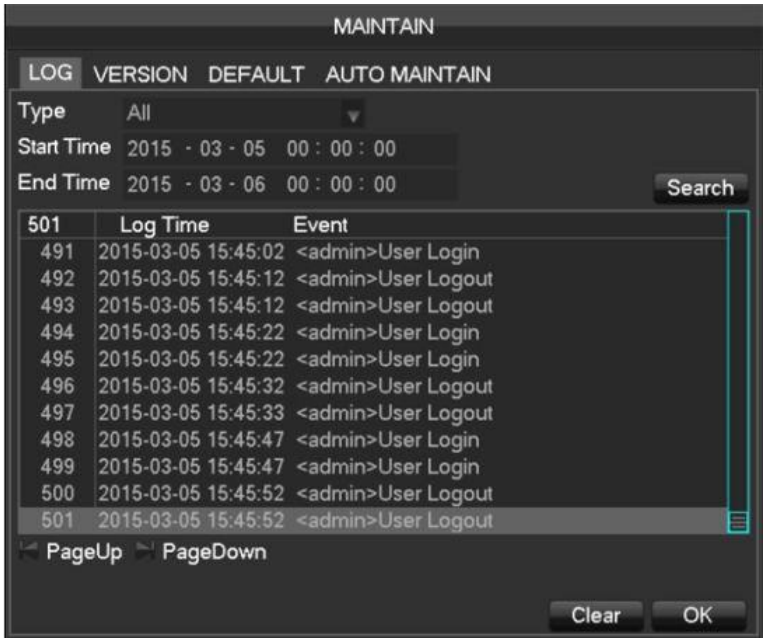
Online user



[Online user]Online users can view the current status, disconnect and shielding.

7.4.6 Maintain

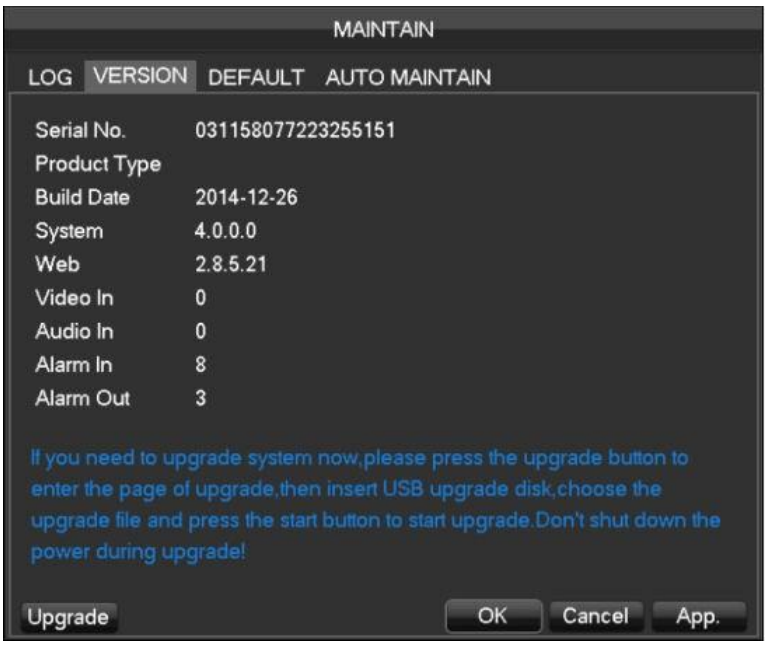
System Logs: Display system logs, convenient for users to check.



Log information can be divided into system operation, configuration operation, data management, alarm event, record operation, user management, log clear, file operations.

Select the type and time of the query, press the Find button, the system displays the log records in a list, and click the Backup button export backup logging onto your computer.

Version

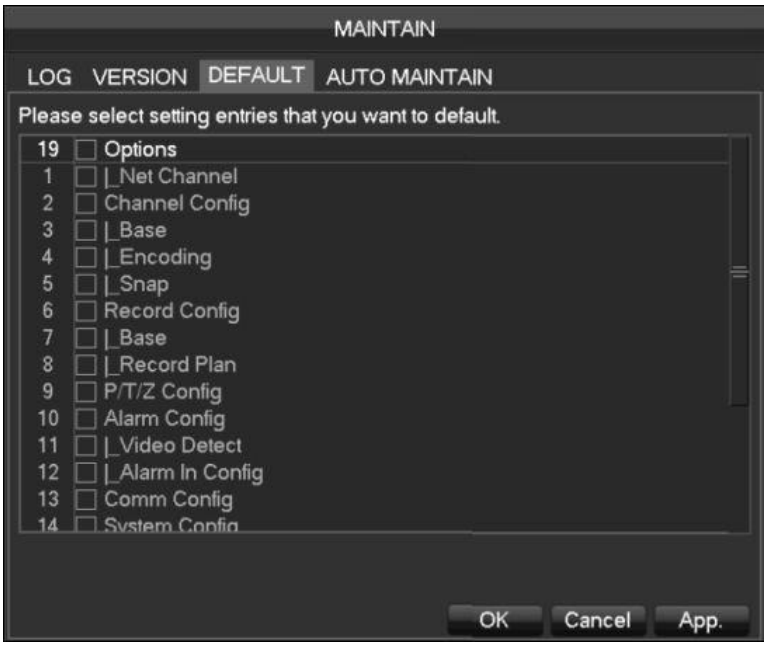


[Version]Display device serial number, system hardware features, software version and release date information.
[Upgrade]System software can be upgraded: Insert a USB storage device, click Upgrade.

Noted： System upgrade may cause the DVR can not start properly, please Operation under the guidance of

Default

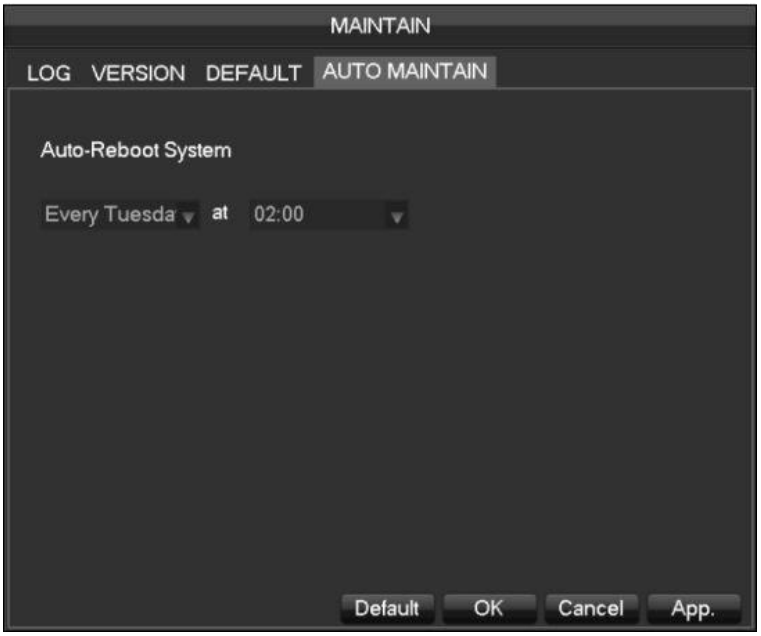
[Default]System back to the default configuration factory state (specific items recovered optional)



Noted：Menu color, language, time and date format, video format, IP address, user accountsand so on will not be restored.

Auto Maintain

[Auto maintain]Set the desired the project of automatic maintenance.



7.4.7 Account

Basic Considerations of User Management:

- The following user names and user group names, etc., character and length consisting up to six bytes, the invalid string is trailing spaces. Legal characters: letters, numbers, underscores, minus sign, point, other characters are not allowed to use .
- the number of users and groups is not limited，User Group increased or delete according to user-defined:: The factory settings are user \ admin two groups. Users can set their own related group, the group of users can be freely re-assign permissions at the group permissions.
- user management using two methods of user and group,, Group name and the user name cannot be repeated,, each user must belong to a group, a user can belong to only one group.
- There are three users: admin, user, and hidden default initialization. The factory password for first two are 123456. admin default user permissions are high at the factory, and the factory default user as a low privileged user, only for monitoring, playback.
- hidden default: This user system for internal use and cannot be deleted. When local is in "no user is logged" state, the system will automatically log in with this account. Users can modify this account permission to do what free login can do.
  - Enter to the menu interface of increase user, Enter your user name and password, select belongs to which group, and select whether to reuse this user. Reuse means that the account can be used simultaneously, multiple clients can use the account.。

[Add User]Increases users within the group and settings user access control.
[Modify User]Modify the user and settings user access control.
[Add Group]Add group and settings group access control

Enter into the menu interface of Increase the group, determine the group name, select 83 access control, left click mouse button to confirm, save the new user group.

[Modify Group]To modify the group attribute which already exists.
[Modify Password]To modify the password of user account.

Select the user，enter old password then enter new password and confirm

Click**[confirm]**button to make sure modify password.

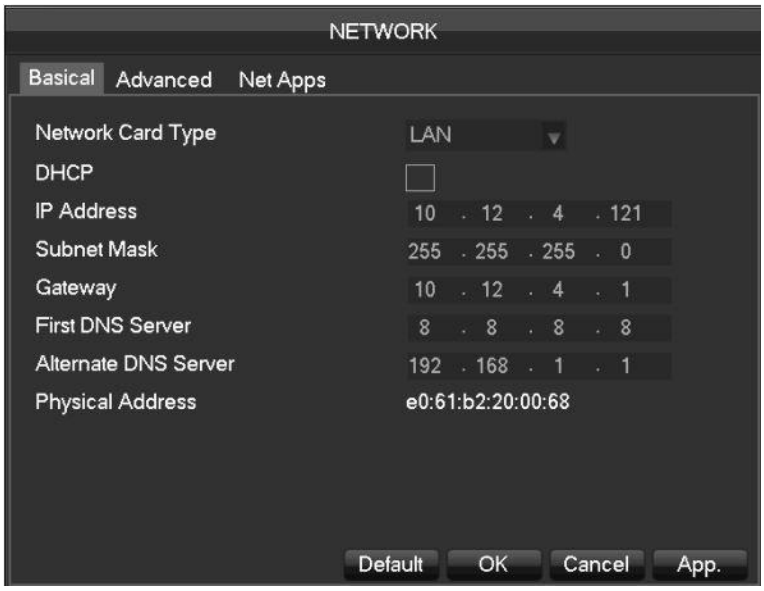
The password can be set 1-6. Beginning and ending spaces is invalid password, you can have a space in the middle.

Users which has User Account Control permission can change their own passwords, can also modify other users' passwords.

7.4.8 Network

Network configuration interface can set the DVR network parameters. DVR factory default IP address is 192.168.1.88. The menu contains the network settings of basic setup, advanced settings and network service

Basical



[Network Card Type]LAN 1、2 can be selected by Dual LAN equipment

[DHCP]Automatic search IP function. When you open the DHCP IP / Mask / Gateway cannot be located, if the current DHCP in effect, the IP / Mask / Gateway DHCP display values obtained can be found in the network state

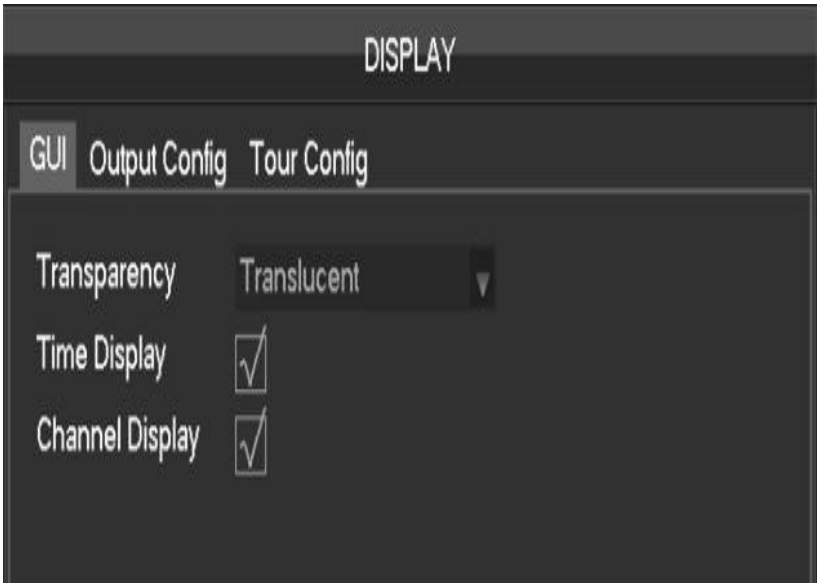
[IP Address]Use（▲▼）[redacted] and

[First DNS Server]DNS server IP

[**Alternate DNS Server**]DNS alternate IP

[redacted]

Advanced



[TCP port]8000 as default, Can set the port according to the actual needs of the user.。

[HTTP port]80 as default。

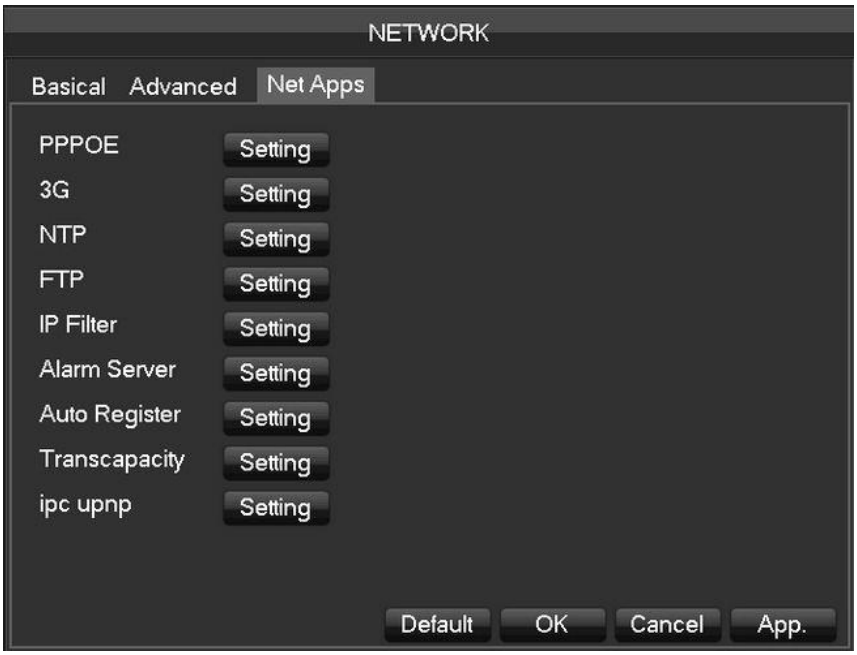
[UDP port]8001 as default, Can set the port according to the actual needs of the user.。 。

[RTP/RPSP port]554 as default。

[UPnP]Protocol can turned on port mapping by the router automatically, when using this feature, make sure UPnP is enabled on the router function。

[Multicast]Multicast IP address range restrictions in the following figure, the multicast port number is not restricted。

Network



[PPPOE]Select Enable switch to turn on the PPPOE dial-up service of the device。

Enter ISP（Internet service provider） provide the saving of user, password for PPPoE

after open IE。

[3G]Support 3G card dial-up to provide remote access device features。

[NTP]Select Enable switch to turn on the NTP protocol support, can be with SNTP communication server to realize automatic calibration function。

Host IP: Enter the IP of NTP service NTP

Port：Supports TCP transport only, port is limited only 123。

Update cycle: interval time is 1 minute or more, the maximum update period is set to 65,535 minutes。

Time zone： London GMT+0 Berlin GMT +1 Cairo GMT +2 Moscow GMT +3 New Delhi GMT +5 Bangkok GMT +7 Hong Kong&Beijing GMT +8 Tokyo GMT +9 Sydney GMT +10 Hawaii GMT-10 Alaska GMT-9 Pacific Time GMT-8 US Mountain Time GMT-7 US Central Time GMT-6 US East Time GMT-5 Atlantic Time GMT-4 Brazil GMT-3 Atlantic

[FTP]Select the Enable box to make the protocol enable， to enter the FTP settings menu。

Two kinds of FTP upload file types are video files and pictures, set up an FTP server address, port, remote directories and so on. When remote directory is empty, the system will automatically create a different folder by IP, time, channel。

User name, password to access the FTP username and password.

Set upload file size, you need to upload the file channel, time, type, etc.

Set upload length which upload to FTP server file length, if less than the set value, the entire video file upload; If more than the set value, upload take part from the beginning and set the value of consistency, the file later omitted; setting a value of 0, then upload the entire video file.

Different channels can be set two different time periods, three types of video recording.

[IP Permissions] for permission to access the DVR IP rights management. When choosing the white list, the list indicates that only the IP to connect this DVR. The list of supported 64 IP settings. If the selected item is not ticked, no restrictions on access to the device's IP.

[Alarm Center] alarm interface for customers to reserve the use of self-development.

[Network transmission capacity]

[Number of network user connections] number of connections: 0-10, if you set o means the network does not allow users to connect ; the maximum number of connections is 10.

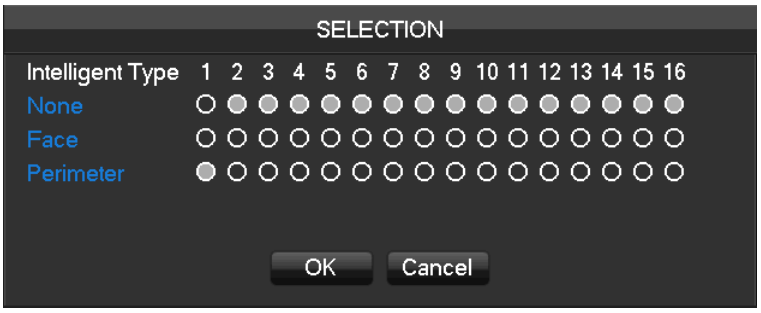
[Number of network Monitoring connections] the number of connections is recommended: 0-32, this need to tick to start this function. Real-time video over the network for browsing, the number of connections depending on network bandwidth, the number greater , the larger the network load, will impact of video playback fluency.

[Number of ownload Internet connections] the number of connections to download recommendations: 0-8, this need to tick to start this function

[Network transmission QoS] smooth network transmission quality priority or image quality priority or adaptive, depending on the setting, the network adjusts the stream automatically.

7.4.9 Selection

Select the Smart mode of device operation



Select the face or perimeter at in need intelligent channels,.。
Support 1ch. Face detection or 2ch.perimeter intrusion detection

8 WEB Access

8.1 WEB Operation

8.1.1 Network Connection

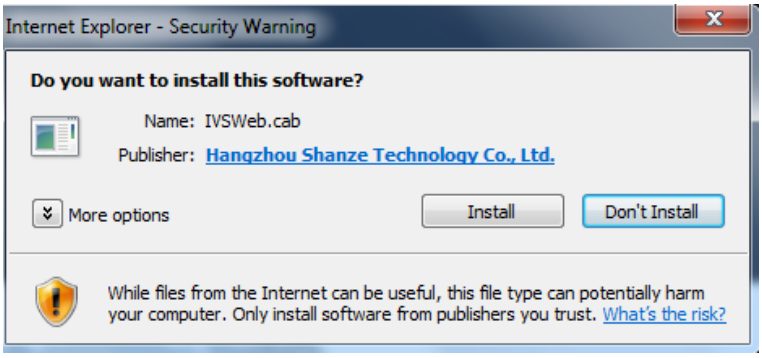
7000 series to check network connection by LCD on front panel, "" refers connection error；

8000 Series check B-Lamp on front panel, light indicates connection, othervise connection error 。
Set IP, subnet mask and gateway for computer and DVR. Please assign the same segment IP address without router, need to set the appropriate subnet mask and gateway with router.

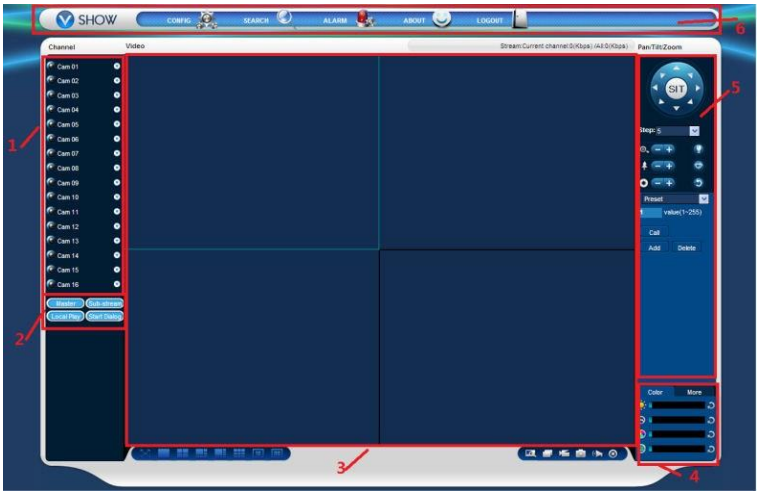
8.1.2 The control installation and the user login logout

Users can remote access to DVR by Internet Explorer, assuming you have a correct network configuration.
The following interface will pop up when you access the IP address in Internet Explorer.

Install ActiveX: Right click and choose install. If installation is blocked by Windows, please add the IP as a trusted site or lower your Internet Explorer security settings to allow this.
The following interface will popup when you input your username, password and click "Login". Interface like Diagram 5-3 Web Interface when user login successfully. Click "Exit" to quit.



Will be displayed in Compatibility View option is checked on all websites。

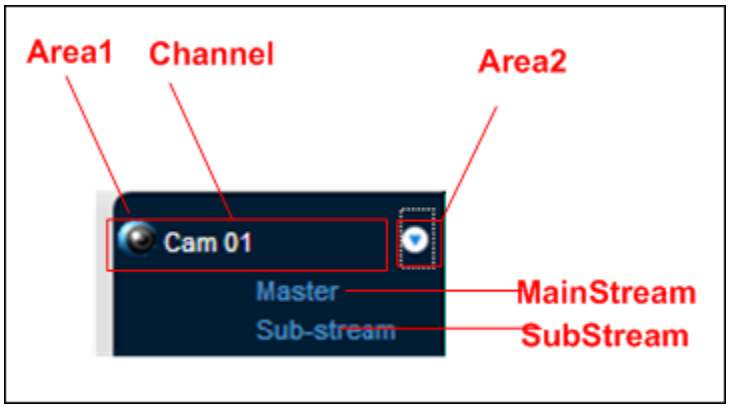


WEB Interface

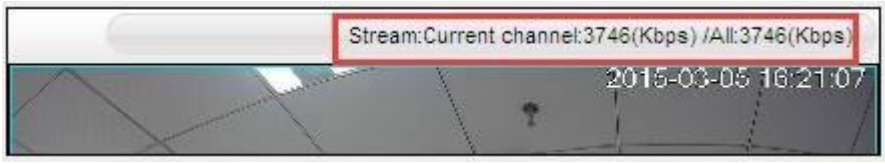
Index	Name	
1	Channel	
2		
3		
4	Image color & other	Other: reboot
5	PTZ control	
6	Menu	exit, etc.

8.1.4 The Real

Into the WEB interface, select the focus window in live window, the focus window has a light blue border. From the left channel column select channel, as shown in the following interface.


Area1
Channel
Area2
Cam 01
Master
Sub-stream
MainStream
SubStream

Click on 2 area in upper right corner can choose open / close the channel of the main stream or secondary stream, shows the current DVR's IP and rate information.



Lower left corner shows the current video channel name.
Upper right corner shows the current video time information.

Click “ ”（Lower left corner of the display window）to switch between single screen and multi-screen.

Lower right corner of the display window is function keys, as the following interface. Refer to area zoom,

Multi-screen switch: switch from single screen to multi-screen and vice versa.。

Local record: save and record video to a local HDD while in a live view. Set recording path in configuration.。

Capture: capture of the present channel, set the path in “other.。

Sound: on/off sound.。

Off video: off the focus window video.

8.1.5 PTZ Control

Set protocol]）
Control PTZ direction, step size, zoom, IRIS, preset, tour, pattern, border scan, light, wiper, auto pan, etc.
Step size controls PTZ direction and speed, e.g. step size 8 is moved faster than step size 1.
Eight direction rotations: up, down, right, left, up-left, up-right, lower left, lower right.

Border scan

Operation: select the camera line scan of the left/right margin by direction button, and click the Settings button in

Preset

Tour

Operation: select “Tour”; Point between the first cruise line cruise input box value. And input numbers in “Path” and “preset”. Click[Add Preset]to add one preset in the cruise path, and repeat to add additional presets. Click

Pattern

Operation: Click “Pattern” in order to record an automated pattern. Then, go back to the PTZ controls in order to

AUX

On/off one of AUX

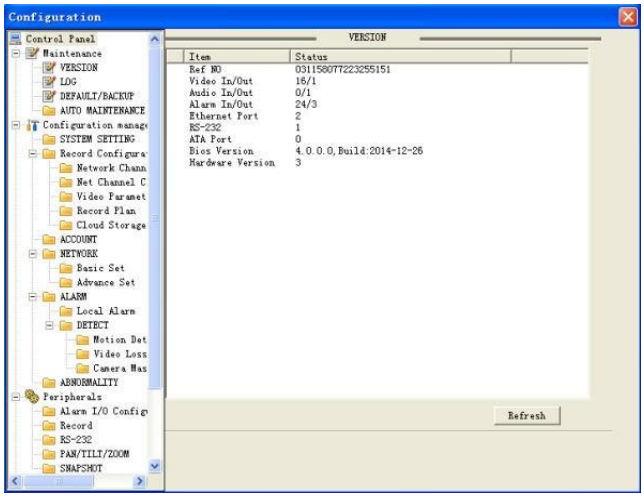
Wiper

On/off wiper under protocol

8.1.6 Configuration

Access DVR local configuration menu by click “System Setting”, the further details please refer。

[Local operation guide]



8.1.7 Search Record

Click “Search record” to open the search interface (错误!未找到引用源。), can search and operate record, alarm, motion, local record

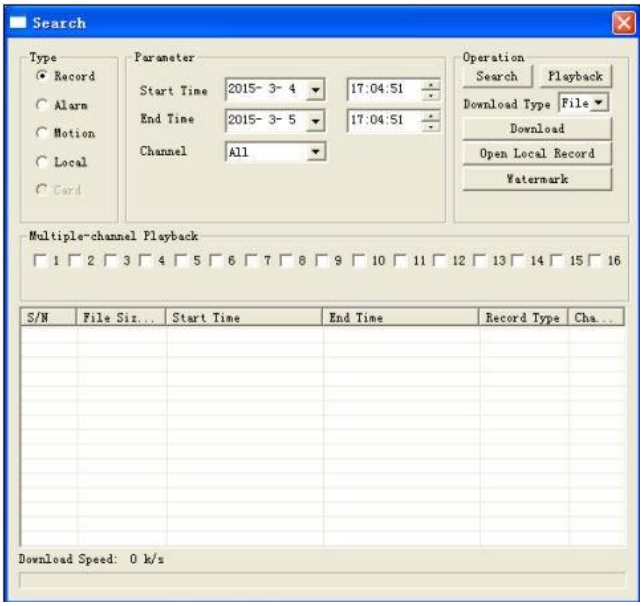
Search record

By selecting the record type, start and end times, and click the check button, get a list of files on the DVR. Select

Play

Double click a search result to play in video window. Control the playing video by the control keys on the bottom. At this point, the bottom of the video window will display the video control buttons, video playback can be controlled.

Download: select a searched video to download to local. The download speed and percentage are displayed on the bottom of the screen.



8.1.8 Alarm Configuration

Click the [Alarm -11.

If need warning message displayed and real-time pop up on the WEB interface , open the [monitor alarm], and select the appropriate type of alarm.

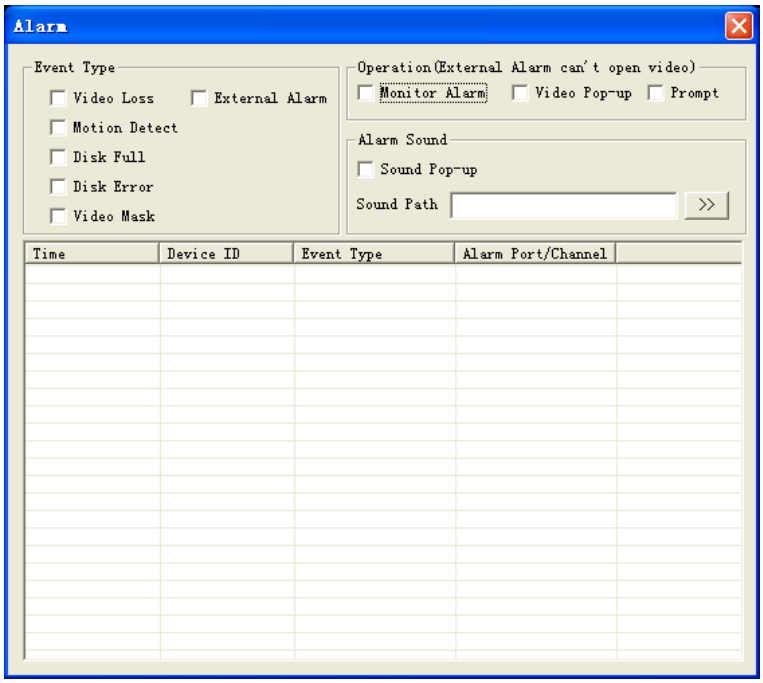
Choose type of alarm on menu, monitor video loss, motion detection, disk full, disk error, video mask, external alarm.

Click [Video Pop-up], open the video loss, motion detection, hard disk full, hard disk failure, video block, video encoder alarm pop-up linkage.

Click

Click

file in WAV format.



8.1.9 About

WEB Controls version information show here.

9 PC/Platform Client Access

Pls refer《V2.0 User Manual》

10 Appendix

10.1 Port Mapping

Port mapping is mapping a port of outside web host's IP address to a machine inside web, and provide the service. When user connects to the port of the IP, the server will automatically map the request to the corresponding machine inside LAN. With this function, we can map many ports of a machine's IP address to different machines' different ports inside web. The port mapping can also have other special agent functions, like POP, SMTP, Telnet and so on. Theoretically, it can provide more than sixty thousand ports. For example, if we want to map a web server which has an IP address of 192.168.111.10, we just need to input the IP address and TCP port 80 into the port mapping chart of the router. There are two ways to map the port: UPnP function automatically map and modify the router's port mapping chart by manual.

10.1.1 UPNP Function

In order to get connection to the Embedded DVR through Public network, we need to set the Router to cross the NAT of Embedded DVR. UPnP can make the NAT cross automatically by the UPnP agreement of Embedded DVR, and don't have to set the Router.

The first step

Connect the Router to the network, get to the Menu of the Router, set the Router, and enable the UPnP Function. Routers made by different manufacturers may have some difference, please refer to the specification carefully before setting the Router.

The second step

Connect the Embedded DVR to the Router; the configuration will automatically gain the IP address or static IP. After setting up the IP, click the Advanced. And get to the XXX, ports and multicast etc. choose to open the Enable at the]

The third step

Enter into the Router management interface; detect the port if there is already a Port mapping. If there is, it shows UPnP setting's finished.

The forth step

Input the IP address in IE, and add port number of the Embedded DVR, for example: 155.157.12.227:81. If you want to enter by the Client Software, use the TCP port offered by the outer net.

ports of embedded DVR into different ports numbers. Otherwise, it will choose the embedded DVR port set preceded as the first choice.

10.1.2 Port mapping Manually

The first step

Connect the Embedded DVR to the Router, set the static IP.

The second step

Log in Router, enter into the configuration menu of Router, and set the menu. Then get to port, set the IP distributed by the Embedded DVR, and set the rule of port mapping, add HTTP and TCP port into mapping list.

Default access ports of Embedded DVR include HTTP port 80 and TCP port 8000, if the ports are occupied by the other devices, please modify the default port of the Embedded DVR into other vacant ports.

The third step

Input the public net IP address in the IE, and add the port number of the Embedded DVR you want to access after the IP, for example: http://155.157.12.227:81. If you want to access by Client Software, you can use the outer net TCP port directly.

10.2 Voice Intercom

10.2.1 Summarize

Embedded DVR Bidirectional Talk: user can talk to remote client software or Web via DVR audio input and output ports; user can listen voice from Client Software and WEB via DVR audio output ports.

Two types of bidirectional talk — sharing and standalone —for different models, exact info please refer to specifications.

◦

10.2.2 Configuration

Local configuration

Connect a microphone to the MIC input port, connect loudspeaker to the audio output port.

If no standalone MIC input port, please connect microphone to the number 1 audio input port

Remote PC Configuration

Connect microphone and loudspeaker to computer.

Enable bidirectional talk in IMS software or WEB.

10.3 HDD S.M.A.R.T

S.M.A.R.T: "Self-Monitoring, Analysis and Reporting Technology"

S.M.A.R.T HDD can analysis head, disc, motor, circuit operation, history and default security values via monitor instruction in HDD and surveillance software in host. Alarm will be sent to user automatically when the value is outside the scope of the security situation.

Detection parameters of Seagate HDD for example are divided into seven: ID detection code, Attribute

ID detection code is not the only; manufacturer can use different ID code or increase or decrease its quantity according to the detected parameter's quantity.

For example: the ID detection code of WEASTERN DIGITAL's product is "04", parameter is Start/Stop Count,

Attribute Description: name of detection item. Manufacturer can increase or decrease。 As ATA standard update constantly, sometimes different models in same brand maybe different ,but must ensure major test items specified in S.M.A.R.T .(although different manufacturers have specific naming convention ,the essence of monitoring is the same.)

1 Read Error Rate
2 Spin up Time
4 Start/Stop Count
5 Relocated Sector Count
7 Seek Error Rate
9 Power-on Hours Count
10 Spin up Retry Count
194 Power temperatures
195 ECC on the Fly count
197 Current Pending Sector Count
198 Disconnection beyond repair
199 CRC cyclic redundancy check
200 Write Error Count

It is specified by manufacturer calculated through a specific formula. If there is a attribute value lower than the threshold, which means HDD become unreliable and data stored is very easy to lose. Composition and size of reliable attribute values is different for different HDD. It should be noted that, ATA standard only provides some SMART parameters; it does not provide a specific value. "Threshold" value is determined by manufacturers based on products' features. Thus, results tested by manufacturer provided detection software is very different from

Attribute value is the maximum normal value; the general range is from 1 to 253. Typically, the maximum

attribute value is 100 (for IBM, Quantum, and Fujitsu) or 253 (for Samsung). Of course, there are some exceptions, for example, some models produced by Western Digital have two different attribute values, and

5、 Worst

Worst value is the largest non-normal value in HDD's running. It is a value calculate for HDD's cumulative running, it is constantly refreshed according to running cycle, and very closed to the threshold. Whether the HDD is normal by S.M.A.R.T analysis is based on the comparison with threshold. The maximum value appear when new HDD start to use, which would continue to decrease with the everyday use or error happen. Consequently, larger attribute values mean better quality and higher reliability; smaller values mean more possibility of failure increases.

6 、Dates

7、Status

It is current statues of HDD's every attribute after analyzing and comparing above attribute values by S.M.A.R.T, also is important information to judge HDD healthy or not.

There are three statuses: Normal, Alarm and Error—which is closely related with Pre-failure/advisory BIT.

10.4 Hard disk problem

Use Detection Tool provided by the HDD manufacturer to detect the Function of HDD to solve data problem.

a) Get into www.seagate.com， -1:

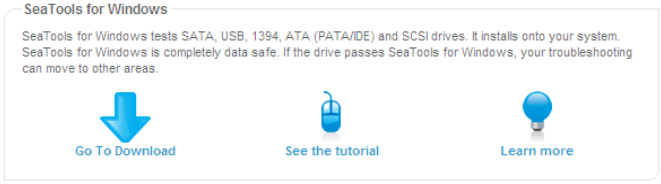


Diagram 10-1 Seagate download

b) Double-click to install downloaded file, click installed file to detect the HDD information on PC.

c) Choose the HDD for detection (other manufacturer's hard disk suitable too).

How to detect WDC HDD

a) Get into www.wdc.com , choose WD support / download / SATA&SAS / WD Caviar / GP, download software as Diagram 10-2 WD Download

Diagram 10-2 WD Download

b) Click Icon to hard disk detection after downloading.

c) Double click hard desk in device list, as Diagram 10-3 WD Detection:

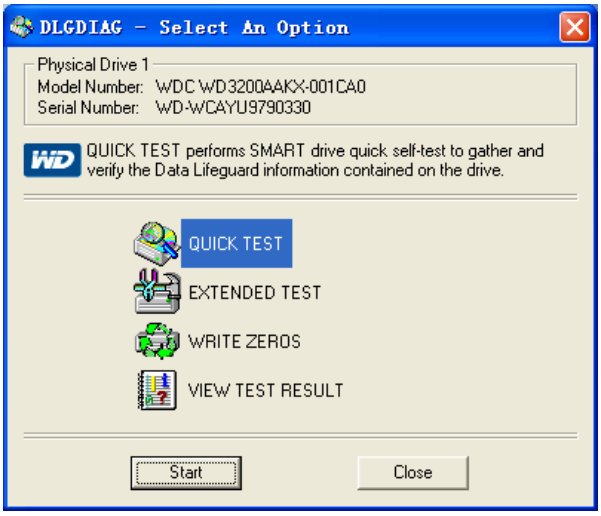


Diagram 10-3 WD Detection

10.5 HDD Capacity Calculation

Reference of HDD Capacity Calculation

The first time install DVR, please check if the HDD has installed.

The capacity of the HDD

There is no limitation of capacity of single HDD to DVR, please choose the HDD according to the saving time.

The choose of the Capacity

Computational formula of HDD Capacity:

Whole HDD Capacity = number of the channels × time in need (hour) × spent of HDD Capacity per hour (MB/hour)

Similarly we can have the formula of recording time:

$$Recording\,time \quad \frac{(MB)}{\qquad\qquad\qquad\qquad}$$

Note: 1GB=1000MB, not 1GiB=1024MiB, so HDD capacity shown in Base Configuration under HDD

Management less than real marked.
File size per hour (CBR).

Form 10-1 record file size

Bit Rate	File	Bit Rate	File	Bit Rate	File
96k	42M	320k	140M	896k	393M
128k	56M	384k	168M	1.00M	450M
160k	70M	448k	196M	1.25M	562M
192k	84M	512k	225M	1.50M	675M
224k	98M	640k	281M	1.75M	787M
256k	112M	768k	337M	2.00M	900M

File size is more unpredictable when VBR style, please refer to the real size of recording file.

10.6 Terms

Dual-stream

Dual-stream: one high bit rate stream for the local HD store, QCIF/CIF/2CIF/DCIF/4CIF coding, other low bit rate stream for network transmission, such as QCIF / CIF coding,

I Frame

I frame: intra frame image, remove redundant information to compress the transmittal data, also called key frames.

B Frame

B frame: According to time redundant of the source image sequence previously encoded frame and account the

P Frame

P-frame: according to image frame lower than the previous 'time redundant to compress transmittal data, also

Bright parts and dark parts in particular can be seen very clearly at the same time. Wide dynamic range is a ratio

S. M. A. R. T

SMART (Self Monitoring, Analysis and Reporting Technology): now widely used in hard disk data security technology, monitoring system analysis Motor, circuit, HDD and disk head when HDD working, warn when

CVBS

BNC

Coaxial cable connector, composite video signals or audio signals, commonly use 75 ohm connectors. BNC welding and should pay attention to weld strength and remove burrs, or the signal wire and shield's contact will lead to a substantial attenuation of signal strength

10.7 FAQ

Possible reasons:

1. The system has been damaged from a bad DVR update.
2. There is a problem with the DVR main board error, please contact supplier.
3. There is an HDD error.

Possible reasons:

1. Check for batteries in remote control, especially positive and Negative.
2. Check for batteries' power.
3. Check if remote receiver is obscured.

3

Possible reasons:

1. RS-485 cable connection error, A, B ports are inversely connected;
2. PTZ decoder, protocol, baud rate, address are incorrect;
3. Parallel connect a 120Ω resistance to resolve signal reflex caused by too many PTZs on the line.
4. The RS-485 on the DVR is defective

Blurred screen in preview mode

Possible reasons:

Please make sure your cameras match your video format selected in the General menu. E.g. camera is NTSC

Possible reasons:

1. Procedure error, reboot the DVR
2. HDD error, test or change out the HDD

3.

Possible reasons:

1、check the physical network connection is correct.
2、check the DVR network configuration parameters.
3、check whether IP conflicts exist in network.

Possible reasons:

1 、Player installation error.
2 、The USB or HDD device has an error.

3 、

Possible reasons:

Close IE explore, enter into the tool bar

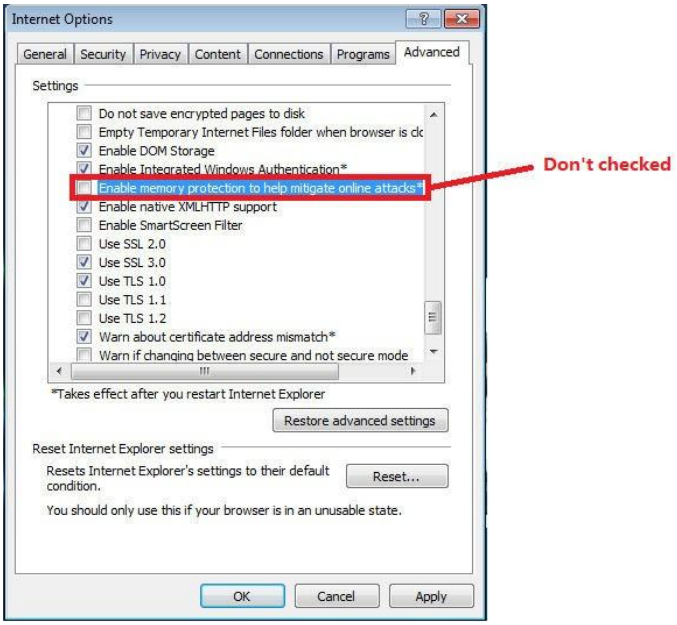


Diagram 10-4 IE tool bar