

# User Manual

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## H.264 Standalone DVR

ZMD-DT-SCN4

ZMD-DT-SCN8

**zmodo**

For further help, please visit [www.zmodo.com](http://www.zmodo.com)

## Welcome

Thank you for purchasing our DVR!

This manual is designed to be a reference tool for the installation and operation of your system.

Here you can find information about this series DVR features and functions, as well as a detailed menu tree.

Before installation and operation please read the following safeguards and warnings carefully!

## Important Safeguards and Warnings

Do not place the heavy object on the DVR.

Do not let any solid or liquid fall into or infiltrate the DVR.

Please brush the printed circuit boards, connectors, fans, machine box and so on regularly. Before the dust cleaning please switch off the power supply and unplug it.

Do not disassemble or repair the DVR by yourself. Do not replace the electronic components by yourself.

## Environment

Please place and use the DVR between 0°C and 40°C. Avoid direct sunlight. Stay away from heat source.

Do not install the DVR in damp environment.

Do not use the DVR in smoky or dusty environment.

Avoid collision or strong fall.

Please insure the DVR level installation in a stable workplace.

Please install in ventilated place. Keep the vent clean.

Use within the rating input and output scope.

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# 1. Production Introduction

## 1.1 Product overview

The series DVR is designed specially for security and defense field which is an outstanding digital surveillance product. It introduces embedded LINUX operating system which is more stable. It introduces standard H.264mp video compressed format and G.711A audio compressed format which insures the high quality image, low error coding ratio and single frame playing. It introduces TCP/IP network technology which achieves the strong network communication ability and telecommunication ability.

The series DVR can be used individually or online applied as a part of a safety surveillance network. With the professional network video surveillance software it achieves the strong network communication ability and telecommunication ability.

The series DVR can be applied in the bank, telecom, electric power system, judicial system, transportation, intelligent housing, factory, storehouse, water conservancy and so on.

## 1.2 Main functions

### Real-time surveillance

- Analog interface VGA interface and HDMI interface (Optional).
- Surveillance functions through monitor or display.
- The phone wireless monitor function.

### Storage

- Non-working hard disk dormancy processing which is convenient to radiate heat, reduce power and extend the life-span.
- Special storage format which insures the data safety.

### Compression

- Real-time compression by individual hard disk which insures the audio and video signal stable synchronization.

### Backup

- Through SATA interface and USB interface such as USB equipment, removable hard disk and so on.

- Through net download the files in the hard disk.

### **Playback**

- Individual real-time video recording as well as searching, playback, network surveillance, recording check, downloading and so on.
- Multi-channel playback mode.
- Zoom at arbitrary region.

### **Net operating**

- Through net tele-surveillance in the real time.
- Remote control PTZ.
- Remote checks the recording and real-time playback.

### **Alarm linkage**

- Only one channel relay alarm output which is convenient for the alarm linkage and light control at the spot.
- protecting circuits at the alarm input and output interface which protects the main machine from damage.

### **Communication interface**

- RS485 interface which fulfills the alarm input and PTZ control.
- Standard Ethernet network interface which fulfills the telecommuting function.
- IPC signal input function.
- With USB interface, 3G and WIFI wireless network connection (Optional).

### **Intelligent features**

- Mouse action function.
- Fast copy and paste operating for the same setting.
- Support cloud access technology (Access Address: [www.dvrcenter.net](http://www.dvrcenter.net)), Make network monitoring more easily (Optional).
- DVR/HVR/NVR function 3-in-1 design, A video signal input can receive multi-mode.
- Support analog signal, network HD signal.

## 2. Open-package check, Products understanding and cable connection

### 2.1 Open-package check

When you receive the DVR, please check first.

First, please check whether there is any visible damage to the package appearance. The protective materials used for the package of the DVR can protect most accidental clashes during transportation.

Then, please open the box and get rid off the plastic protective materials. Check whether there is any visible damage to the DVR appearance.

At last, please open the machine crust and check the data wire in the front panel, power wire, the connection between the fan power and the main board.

**Note:** Please carefully check the bottom or back on the product type and consistency. Label affixed by the base plate or on the rear panel, Label, has a very important significance, please protect. When contact with our customer service, will need you to provide label type and serial number.

### 2.2 The rack installation

The specification of machine box is standard 1U.It can be installed in the standard frame.

Installation approach and notice:

1. Make sure the house temperature under 40°C(104°F).
2. Keep the DVR away from other equipments at least 15 centimeters(6 inches).
3. Frame installation from bottom to top.
4. If installing multiple components in the frame, take precaution to avoid the overload of the jack.

### 2.3 Understanding of the front panel

Front panel button operation function table (Note: This manual is a generic manual, Please prevail in kind).

No	Button name	Mark	Function
1	Shift function button	SHIFT	Shift in the number button, character button and other function button during the user under input state
2	Direction button	▼ ▲	Remove the cursor

			Add or decrease number during the user edit state
			Change the setting in the menu
			Surveillance pictures, into the single channel or multi-channel image surveillance.
		< >	Remove the cursor when the main menu or submenu is popped
			Remove the cursor during the playback mode
			Enter former or after channel surveillance during single surveillance image
Main menu/Confirm button	ENTER	Confirm	
		Enter main menu or next grade menu	
3	Cancel button	ESC	Back to the above level menu or cancel operation in the operation menu
			Back to the real-time surveillance during the playback state
4	Play previous file button	⏮	Play previous video during the playback state
5	Play next file button	⏭	Play next video during the playback state
6	Slow play	⏪	Play in the multi-low or regular speed video during the playback state
7	Fast play	⏩	Play in the multi-fast or regular speed video during the playback state
8	Playback/pause button	⏸/⏮	Playback the video or pause during the playback state
9	Play/pause button	⏭/⏸	Play the video or pause during the playback state
10	Recording button	REC	Start/stop the video recording manually. With the direction button choose the channel in the recording control menu
11	Recording search button	SEARCH	Search recording files
12	PTZ control button	PTZ	Enter PTZ setting, PTZ control
13	USB interface	USB	Connect USB device. Eg: USB flash drive, mouse etc.
14	Power switch button	POWER	Power switch button
15	Remote controller receiver	IR	Receiving remote control signal
16	HDD indicator light	HDD	HDD is during working state if lighted



17	HDD information button	INFO	Check HDD information, state
18	Alarm indicator light		Trigger alarm if lighted
19	Pause button	STOP	Stop playing recording file
20	Channel 1 button		Display channel 1 image
21	Channel 2 button		Display channel 2 image
22	Channel 3 button		Display channel 3 image
23	Channel 4 button		Display channel 4 image
24	All channels button		Display all channels
25	Single channel display button		Single surveillance image preview according to referred number
26	Network connection indicator light	/LINK	Network connects normally if lighted
27	Backup button	BACKUP	Back up recording files
28	Power indicator light		Power is connected if lighted
29	Recording indicator light		DVR is recording if lighted

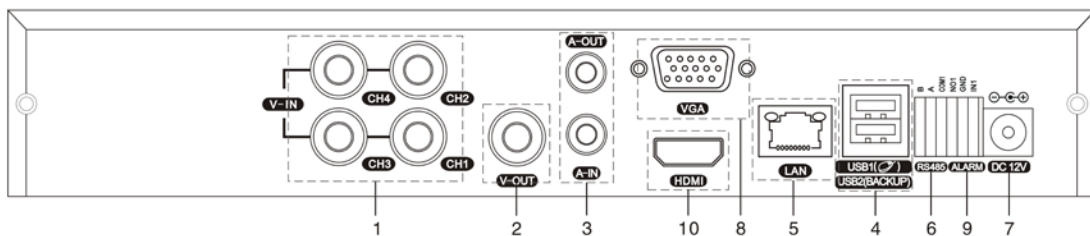
Table 2.1 Front panel button operation function table

## 2.4 Understanding of the rear panel

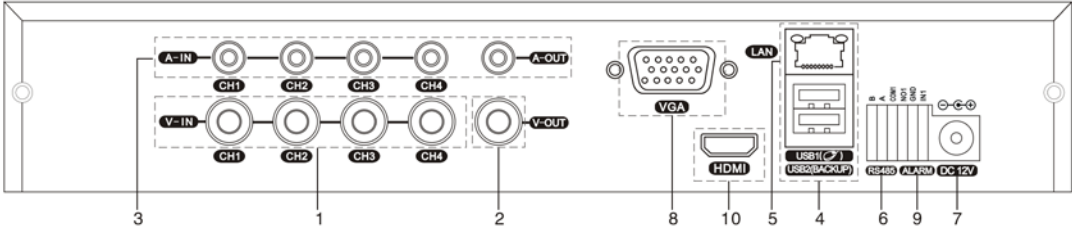
Note: Below are rear panels of some of our representative models. Pls take the real object as final, these are

Just for reference.

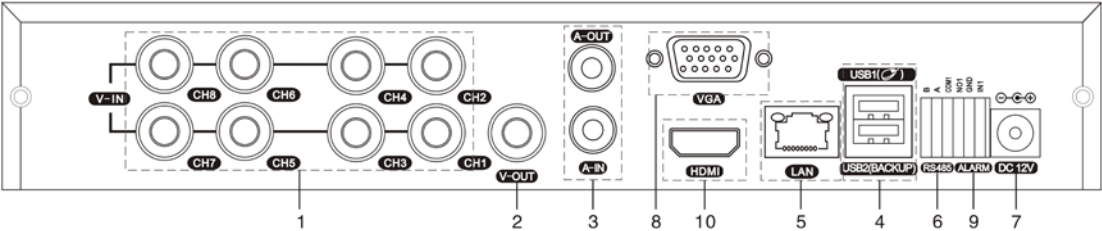
### 4CH DVR panel 1



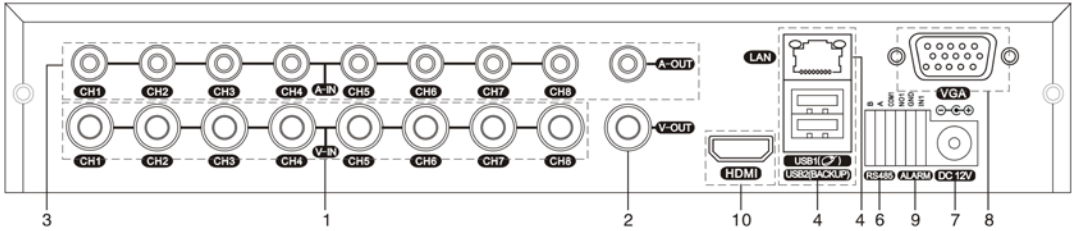
### 4CH DVR panel 2



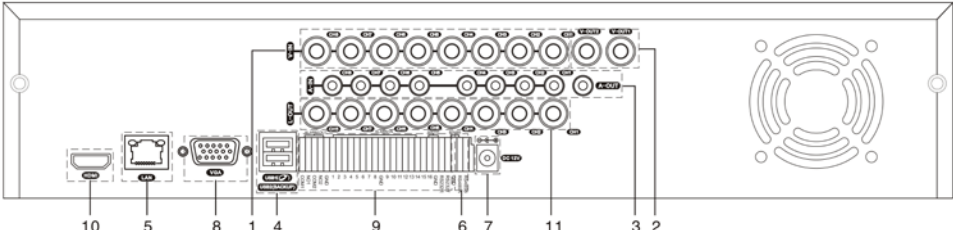
8CH DVR panel 1



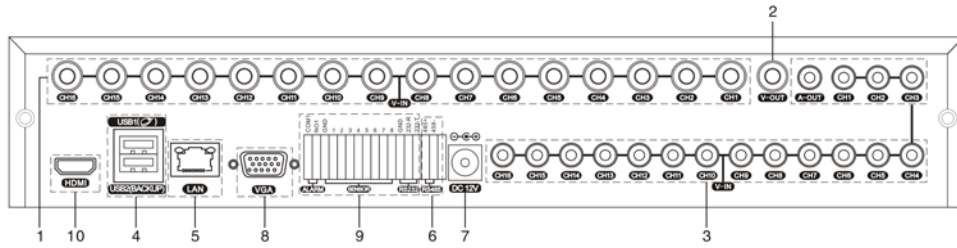
8CH DVR panel 2



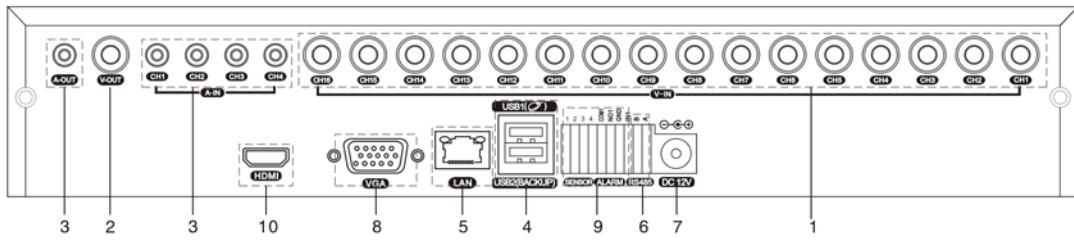
8CH DVR panel 3



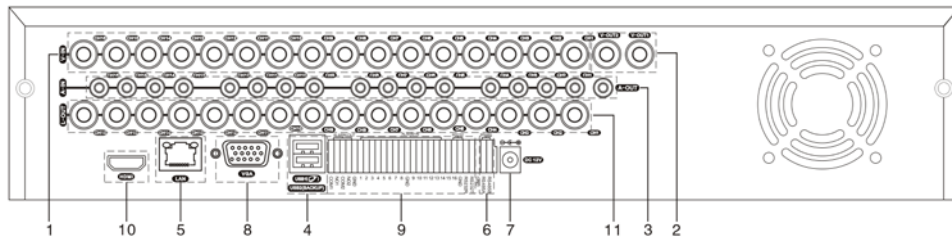
16 CH DVR panel 1



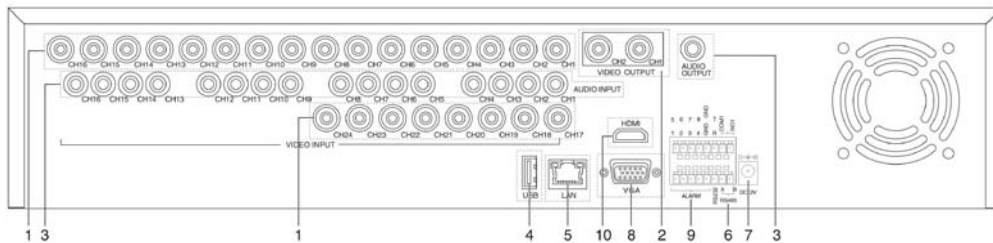
16CH DVR panel 2



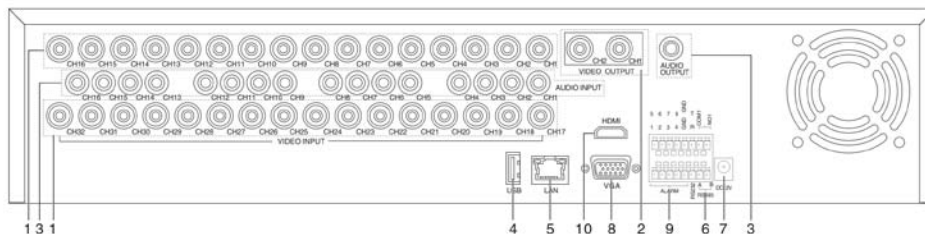
16CH DVR panel 3



24CH DVR panel



32CH DVR panel

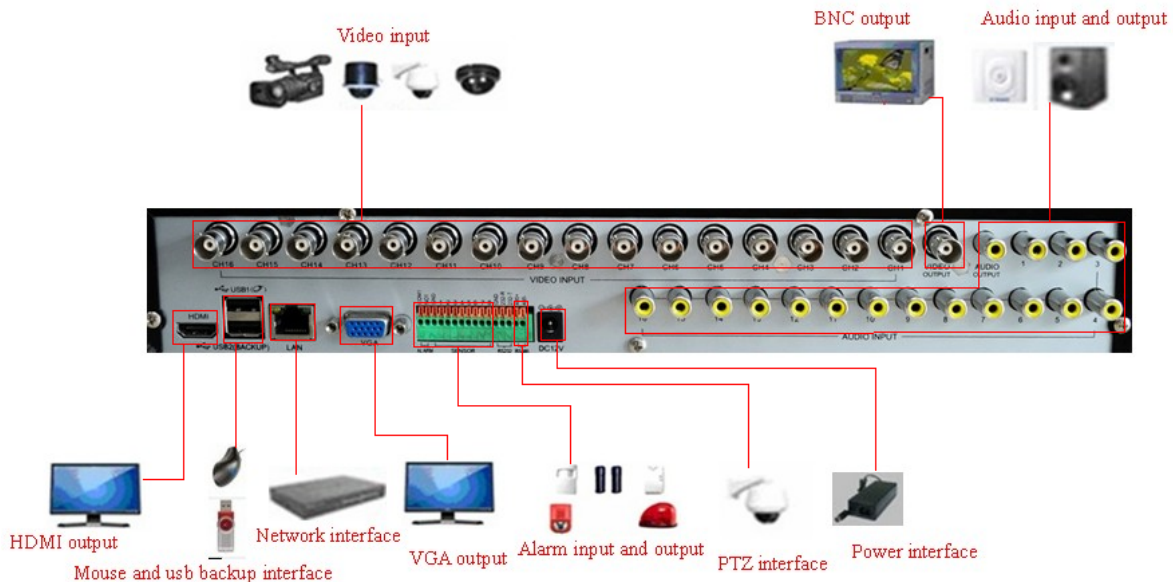


- (1) Video input            (2) Video output            (3) Audio input/ audio output            (4) USB interface
- (5) Network interface    (6) RS-485 interface video    (7) Power jack                            (8) VGA output
- (9) Alarm input/alarm output    (10) HDMI interface            (11) Loop out output

Note: Some models have front panel USB interface, this interface with the top of the rear panel USB

port are mutually exclusive, only one interface is effective at the same time. USB at the bottom of rear panel is independent and effective.

2.5 Installation connections sketch map (16CH DVR as an example the following, please prevail in kind).



Picture 2.1 Installation connections sketch map

## 2.6 Audio and video input and output connections

### 2.6.1 Video input connections

A. Analogue video signal: The video input port is BNC connector plug. The demand of input signal is PAL/NTSC BNC ( $1.0V_{P-P}$ ,  $75\Omega$ ).

The video signal must be accorded with the state standard which has the high signal to noise ratio, low aberration and low interference. The image must be clear and has natural color in the appropriate brightness.

B. Network HD video signal: The network HD video input port is RJ45 port, this signal comes from other network video device (such as IPC or other DVR). And it needs to be configured in Mode shift and Number channel item.

#### Insure the camera signal stable and credible

The camera should be installed in the appropriate location where is away from backlighting and low illumination or adopts the better backlighting and low illumination compensation.

The ground and power supply of the camera and the DVR should be shared and stable.

#### Insure the transmission line stable and credible

The video transmission line should adopt high quality coaxial pair which is chosen by the transmission distance. If the transmission distance is too far, it should adopt shielded twisted pair, video compensation equipment and transmit by fiber to insure the signal quality.

The video signal line should be away from the electro magnetic Interference and other equipments

signal lines. The high voltage current should be avoided especially.

#### **Insure the connection stable and credible**

The signal and shield lines should be firm and connected credible which avoid false and joint welding and oxidation.

#### **2.6.2 Video output device selection and connection**

The video output is divided into PAL/NTSC BNC (1.0VP-P, 75Ω) and VGA output(selective configuration).And HDMI output( HDMI is optional).

When replace the monitor by the computer display, there are some issues to notice.

- 1、 Do not stay in the turn-on state for a long time.
- 2、 Keep the computer display normal working by demagnetizing regularly.
- 3、 Stay away from the electro magnetic Interference.

TV is not a credible replacement as a video output. It demands reducing the use time and control the power supply and the interference introduced by the nearby equipments strictly. The creep age of low quality TV can lead to the damage of other equipments.

#### **2.6.3 The audio signal input**

Audio port is RCA connection.

The input impedance is high so the tone arm must be active.

The audio signal line should be firm and away from the electro magnetic Interference and connected credible which avoid false and joint welding and oxidation. The high voltage current should be avoided especially.

#### **2.6.4 Audio output**

Commonly the output parameter of DVR audio signal is greater than 200mv 1KΩ (BNC) which can connect the low impedance earphone and active sound box or other audio output equipments through power amplifier. If the sound box and the tone arm can not be isolated, howling phenomena is often existed. There are some methods to deal with the above phenomena.

- 1、 Adopt better directional tone arm.
- 2、 Adjust the sound box volume to be under the threshold that produces the howling phenomena.
- 3、 Use fitment materials that absorb the sound to reduce reflection of the sound.
- 4、 Adjust the layout of the sound box and the tone arm.

### **2.7 Alarm input and output connections (Some models without this function, please prevail in kind)**

**Please note the following:**

#### **1 、 Alarm input**

- A. Alarm input is grounding alarm input.
- B. Alarm input demand is the grounding voltage signal.
- C. When the alarm is connected with two DVRs or connected with DVR and other equipments, it

should be isolated by relay.

## 2、Alarm output

Alarm output cannot be connected with high-power load (no more than 1A).When forming the output loop it must prevent the big current from relay damage. Use the contact isolator when there is a high-power load.

## 3、Front equipment grounding note

Bad grounding can lead to the burnout of the chip.

## 4、Alarm input type unlimited

The DVR alarm output port is constant opening type.

### 2.7.1 Alarm Input port explain

The grounding and the com port of the alarm sensor are parallel (The alarm sensor is external power supply).

The grounding of the alarm and the DVR should be shared.

The NC port of the alarm sensor must be connected with the DVR alarm input port.

The grounding of the power supply and the alarm sensor must be shared when used in external power supply.

### 2.7.2 Alarm Output port explain

Switch alarm output (normally open contact), external alarm device requires a power supply.

In order to avoid voltage overload and damage the host, attached please refer to relay parameter list, see table 2.2.

Type: JRC-27F		
Interface material	silver	
rating (resistance load)	Rating switch capacity	30VDC 2A, 125VAC
	maximal switch power	125VA 160W
	maximal switch	250VAC, 220VDC
	maximal switch current	1A
isolation	Homo-polarity	1000VAC 1minute
	Inhomo-polarity	1000VAC 1 minute
	Interface and winding	1000VAC 1 minute
Surge voltage	Homo-polarity	1500VAC (10×160us)
Turn-on time	3ms max	
Turn-off time	3ms max	
longevity	mechanical	50×106 MIN (3Hz)
	electric	200×103 MIN (0.5Hz)
Environment	-40~+70°C	

Table 2.2 Parameter list

## 2.8 PTZ Decoder, The ball machine connection

A、 The grounding of the PTZ decoder and DVR must be shared otherwise the common-mode voltage will lead to the PTZ control failure. The shielded twisted pair is recommended.



B、 Avoid the entrance of high voltage. Make the layout reasonably. Take precaution from the thunder.

C、 In the outlying end connect 120Ω resistance paralleled to reduce the inflection and insure the signal quality.

D、 The RS485 +, - lines of DVR can not connected with other RS485 output equipments paralleled.

E、 The voltage between the +, - lines of the decoder must be less than 5V.

F、 Connect the 485 lines of the speed dome with the DVR 485 interface.

G、 Connect the speed dome video cable with the DVR video input.

## 3. Basic operation

### 3.1 Starting up

Plug the power supply and turn on the power supply switch. Power supply indicator light shining indicates turning on the video recorder. After the startup you will hear a beep. The default setting of video output is multiple-window output mode. If the startup time is within the video setting time, the timing video recording function will start up automatically. Then the video indicator light of corresponding channel is shining and the DVR is working normally.

**Note: 1. Make sure that the input voltage corresponds with the switch of the DVR power supply.**

**2. Power supply demands: 220V±10% /50Hz-60Hz.**

Suggest using the UPS to protect the power supply under allowable conditions.

### 3.2 Shutdown

There are two methods to turn off the DVR. Soft-switching: Entering “desktop shortcut menu” and choosing “logout” in the “shutdown” option; Hard-switching: Press the power button on the front panel or rear panel power switch can switch power.

Notice:

1、 Auto resume after power failure

If the DVR is shut down abnormally, it can automatically backup video and resume previous working status after power failure.

2、 Replace the hard disk

Before replacing the hard disk, the power supply switch in the real panel must be turned off.

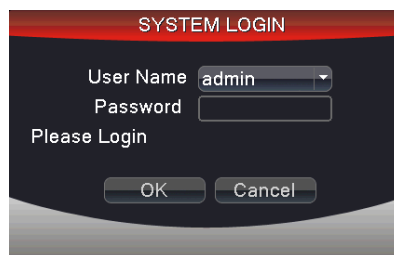
3、 Replace the battery

Before replacing the battery, the setting information must be saved and the power supply switch in the real panel must be turned off. The DVR uses button battery. The system time must be checked regularly. If the time is not correct you must replace the battery, we recommend replacing the battery every year and using the same battery type.

**Note:** The setting information must be saved before replacing the battery otherwise information will lose.

### 3.3 Login

When the DVR boots up, the user must login and the system provides the corresponding functions with the user right. There are 3 user settings: **admin**, **guest** and **default**. Select the default User Name "admin", enter the default Password "111111". **admin** as the super user. **guest** and **default** are the common users at the factory presetting.



Picture 3.1 SYSTEM LOGIN





**Password protection:** If the password is continuous wrong three times, the alarm will start. If the password is continuous wrong five times, the account will be locked. (After reboot or half an hour, the account will be unlocked automatically).

For your system security, please modify the username & password after first login. (Chapter 4.7.5 Account).

### 3.4 Preview

You can right click mouse to choose the switch between the windows.

The system date, time and channel name are shown in each viewing window. The surveillance video and the alarm status are shown in each window.

1		Recording status	3		Video loss
2		Motion detect	4		Camera lock

List 3.1 Preview icon

### 3.5 Desktop shortcut menu

In preview mode you can right click mouse to get a desktop shortcut menu, as picture 3.2. The menu includes: **Main Menu**, **Playback**, **Record Mode**, **PTZ control**, **High-speed PTZ**, **Color Setting**, **Output Adjust**, **Info**, **Logout**, **View 1**, **View 4**, **View 9**, **View 16** and **Hide**.





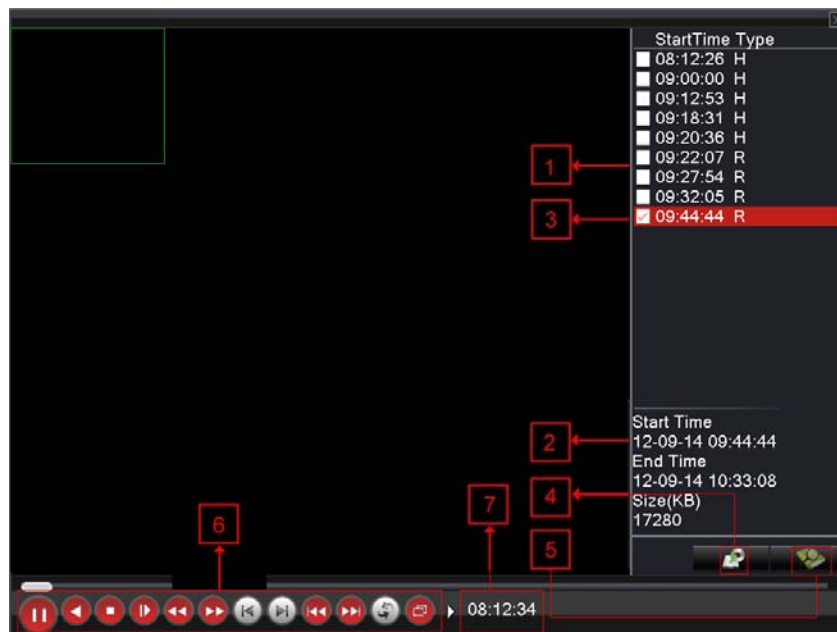
Picture 3.2 Desktop shortcut menu

### 3.5.1 Playback

Play the video files in the hard disk.

Select " desktop shortcut menu "→ "playback"→ "search"→"play" appear as shown in Figure 3.3; in the video file list select the file will appear "backup" button, the selected files to be backed up as shown in figure 3.4.

**Note:** The hard disk that saves the video files must be set as read-write or read-only state. (Please refer to Chapter 4.7.1 for HDD Manage).



Picture 3.3 Playback

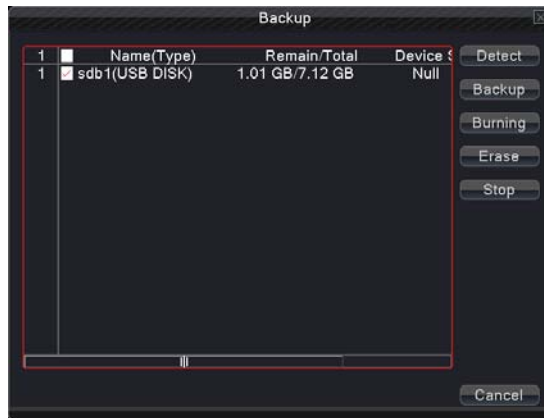
- |                   |                     |                        |                |
|-------------------|---------------------|------------------------|----------------|
| 1. listed files   | 2. file information | 3. file backup option  | 4. file backup |
| 5. file searching | 6. playback control | 7. Playback state hint |                |

**listed files:** Look up the listed files that accord with the searching criteria.

**file information:** Look up the found file information.

**file backup option:** Choose the file to backup.

**Note:** Before the file backup, must be installed a enough storage device; If the backup is terminated, the already backup can playback individually.



Picture 3.4 Backup

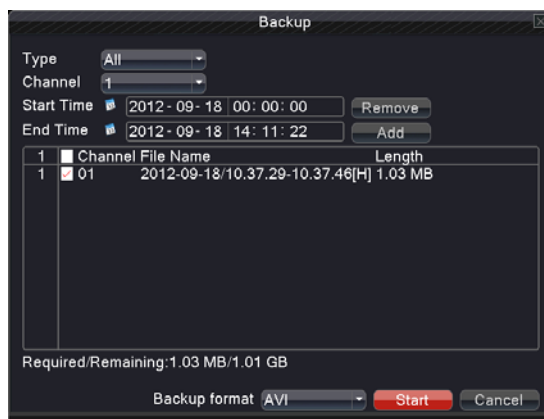
**Detect:** Detect the storage connected with the DVR such as USB hard disk or USB Flash memory disk, etc. (USB-RW)

**Burning:** burn the files.

**Erase:** Choose the file to delete and click erase to delete the file.

**Stop:** Stop the backup.

**Backup:** Click “Backup” button and the dialog box is popped up. You can choose the backup file according to the type, channel and time.



Picture 3.5 backup

**Remove:** Clear the file information.

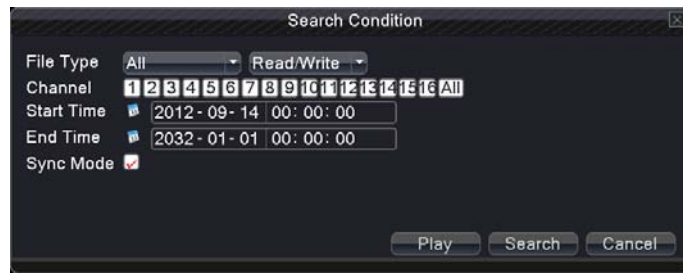
**Add:** Show the file information satisfying the set file attributes.

**Start/Pause:** Click the play button to start the backup and click the pause button to stop the backup.

**Cancel:** During backup you can exit the page layout to carry out other functions.

**Back format:** H.264 and AVI format are optional.

**【file searching】** Search the file according to the searching parameter.



Picture 3.6 file searching

**File type:** Select the playback file type.

**Channel:** Select the playback channel, also can choose other channels to simultaneously play back.

**Start Time:** Search video files to set the starting time.

**End time:** Set the video file to search the end of time.

Synchronization Mode: to realize multi-channel playback synchronously.

【playback control】 Refer to the following sheet for more information.

Button	Function	Button	Function
	Play/Pause		Backward
	Stop/Close		Fast back play
	Full screen		Fast play
	Previous frame		Next frame
	Previous file		Next file
	Circulation		

List 3.6 Playback control key list

**Note:** Frame by frame playback is only performed in the pause playback state.

**Operation hint:** Display the function of the cursor place.

### Special Functions:

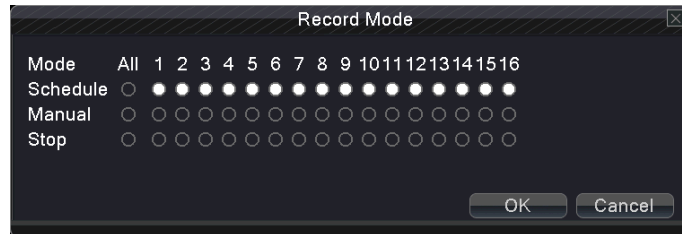
**Accurate playback:** Input time (h/m/s) in the time column and then click play button. The system can operate accurate playback according to the searching time.

**Local zoom:** When the system is in single-window full-screen playback mode, you can drag your mouse in the screen to select a section and then left click mouse to realize local zoom. You can right

click mouse to exit.

### 3.5.2 Record Mode

Please check current channel status: “●” means it is in recording status.



Picture 3.7 record mode

**Schedule:** It records according to the set parameters in “main menu” and “record”→“record plan”.

**Manual:** Click the all button and the according channel is recording no matter the channel in any state.

**Stop:** Click the stop button and the according channel stops recording no matter the channel in any state.

### 3.5.3 PTZ Control

Operation interface is as followed. The functions include: PTZ direction control, step, zoom, focus, iris, and setup operation, patrol between spots, trail patrol, boundary scan, assistant switch, light switch, level rotation and so on.

**Note** : 1. Decoder 485+、485- line connects with DVR 485+、485- line. The connection is right.

2. Click “main menu”→“system”→“PTZ Config” to set the PTZ parameters.



3. The PTZ functions are decided by the PTZ protocols.





Picture3.8 PTZ Control

**Speed:** Set the PTZ rotation range. Default range: 1 ~ 8.

**Zoom:** Click  /  button to adjust the zoom multiple of the camera.

**Focus:** Click  /  button to adjust the focus of the camera.

**Iris:** Click  /  button to adjust the iris of the camera.

**Direction control:** Control the PTZ rotation. 8 directions control is supportive. (4 directions in Front panel is supportive).

**PTZ Trace:** Full-screen show channel image. Left press mouse and control PTZ to rotate orientation. Left press mouse and then rotate the mouse to adjust the zoom multiple of the camera.

**Set:** Enter the function operation menu.

**Page Switch:** Switch between different windows.

## Special Functions:

### 1、Preset

Set a location for the preset, calls the preset points, PTZ automatically turns to the setting position.

#### 1) Preset option

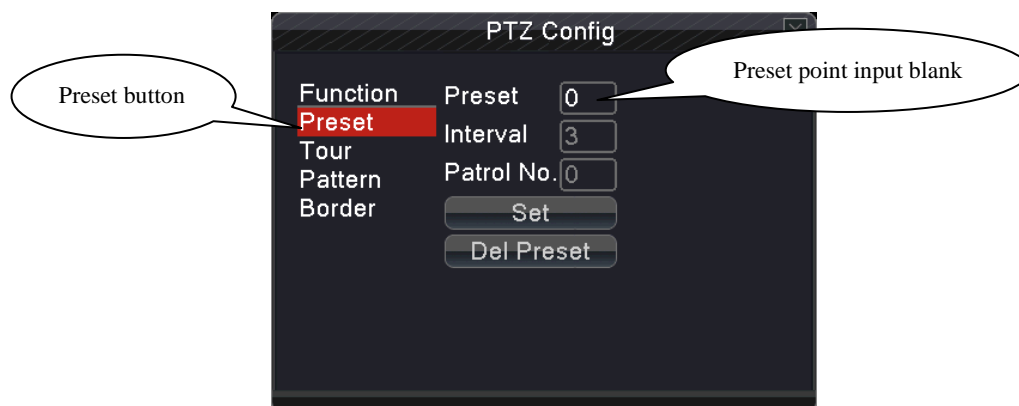
Set a location for the preset, procedure is as follows:

Step1: in Picture 3.8, click the Direction button will turn into preset position, click the Settings button to enter Picture 3.9.

Step 2: click the Preset button, and then write the preset points in the input blank.

Step 3: click Set button, return the Picture 3.8 Complete setup, that is the preset points and preset position corresponds.

**Remove Preset:** Input preset points, click Remove button, remove the preset.

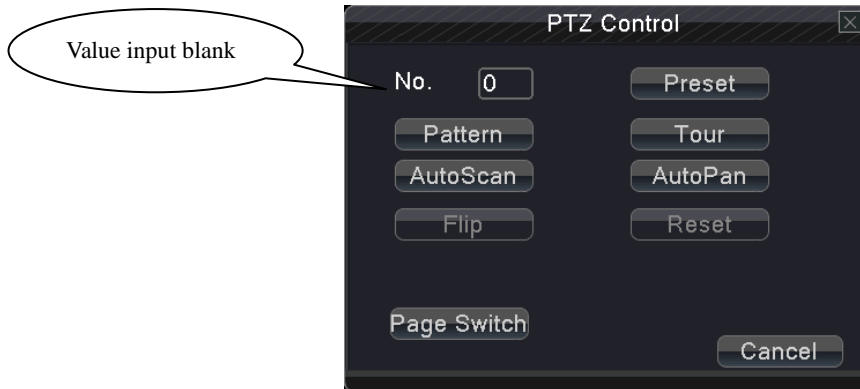


Picture 3.9 Preset Settings

#### 2) Preset Point Calls

In Picture 3.8, click Page Shift button, enter PTZ control interface as shown in Picture 3.10. In

the input blank, write the preset points, then click Preset button, PTZ turn to the corresponding preset point.



Picture 3.10 PTZ Control

## 2、tour

Multiple preset points connected cruise lines, call cruise between points, the PTZ run around on the line

### 1) Cruise Between Points Settings

Cruise lines are connected by multiple preset points, setting procedure is as follows:

Step1: In Picture 3.8, the Direction key will turn PTZ to designated location, click Settings button to enter Picture 3.11.

Step 2: click Cruise buttons, the write proper value into the Cruise Line and Preset Points blank, then click Add Preset Points button, complete setting (also can add and delete cruise line which has been set up).

Step 3: repeat step1 and step2, until set out all the preset designated cruise lines.

**Remove Preset:** Please input preset value in the blank, click Remove Preset button, then remove the preset points.

**Remove Cruise Line:** Input the number of cruise line, click Remove Cruise Lines button, then remove the cruise lines set.



Picture 3.11 Tour

## 2) The Calls of Cruise between Points

In Picture 3.8, click Page Shift button, enter PTZ control menu as shown in Picture 3.10. Please input the number of cruise in the value blank, then click Cruise between Points button, PTZ begins to work on the cruise line. Click Stop button to stop cruise.

## 3、 pattern

PTZ also can work on the preset scan line repeatedly.

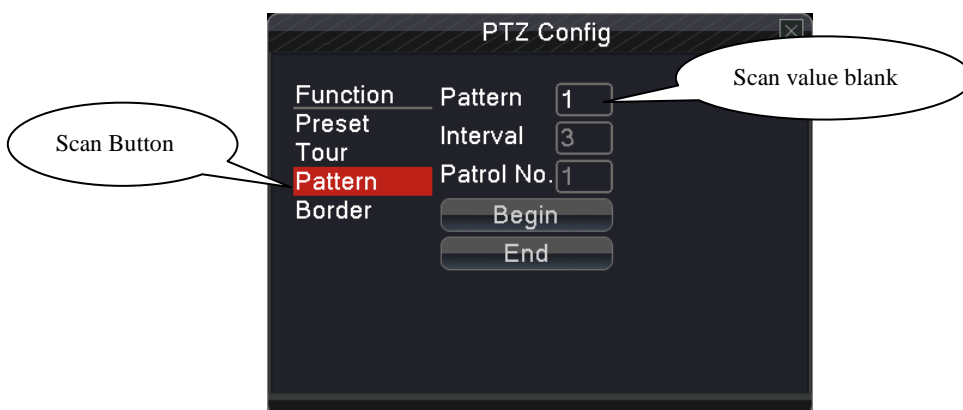
### 1) Scan setup

Step1: In Picture 3.8, click Setup button ,enter Picture 3.12.

Step2: Click Scan button, the input proper value in the scan value blank;

Step3: Click Start button, enter Picture 3.8, here you can set the following items: Zoom, Focus, Aperture, Direction and so on. Click Setup button to go back Picture 3.12;

Step4: Click End button to complete setup. Click the right button of the mouse to exit.



Picture 3.12 Pattern

### 2) Scan Calls

In Picture 3.8, click Page Shift button, then enter PTZ control menu as shown in Picture 3.10. Please input the number of scan in the value blank , then click Scan button, PTZ begins to work on

the scan line . Click Stop button to stop.

#### 4、 Auto scan

In the horizontal line, set up a line, called linear sweep, PTZ repeated according to the route setting operation.

##### 1) Line scan settings

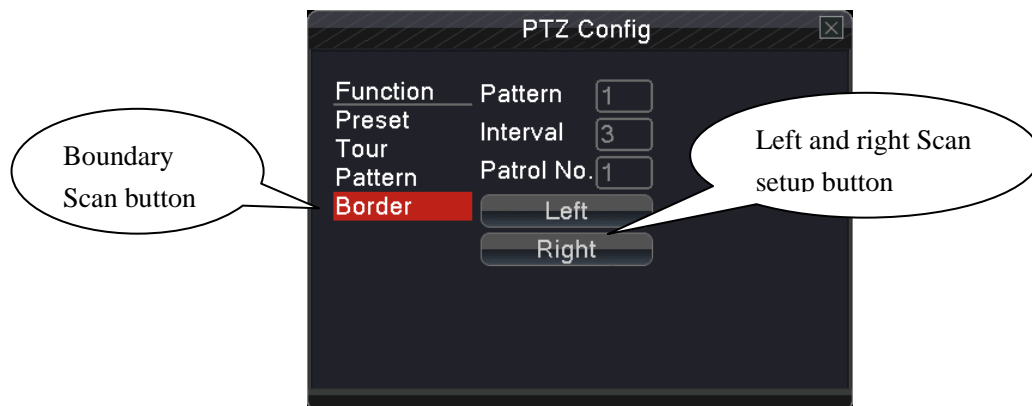
Step1: In Picture 3.8, click Direction button to turn the PTZ to preset direction, then click Setup button enter Picture 3.13, select the left boundary, return to Picture 3.8;

Step2: Please click direction arrows to adjust PTZ direction, click Setup button enter Picture3.13, then select the right boundary, return to Picture 3.8;

Step3: Complete setup, that is the position of left and right boundary

**Note: The left and right borders in the same horizontal line will be based on PTZ in the opposite direction from the left border points along the border point of rotation to the right to carry out spin cycle;**

Not in the same horizontal line around the border, PTZ is only connected with the left border points, the level of trajectories as the right border of the end point in the opposite direction from the left border points along the border point of rotation to the right to carry out spin cycle.



Picture 3.13 Border

##### 2) Line scan call

In Picture 3.8, click Page Switch button, then enter PTZ control menu as shown in Picture 3.10. Please input the number of scan in the value blank , then click Scan button, PTZ begins to work on the scan line . Click Stop button to stop.

#### 5、 Auto pan

Click Auto pan button, PTZ begins to rotate horizontally (relative to the original position of the camera). Click the Stop button to stop.



## 6、 Flip

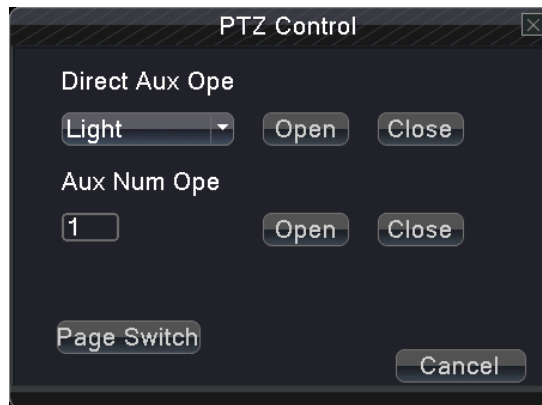
Click on Flip button, PTZ turn around.

## 7、 Reset

PTZ restart, all the data clears to 0.

## 8、 Page Switch

In Picture 3.10, click Page Switch button into Picture3.14, setting auxiliary function. Auxiliary number matches auxiliary switch on the decoder.



Picture 3.14 Auxiliary Function Control

**Intuitive Auxiliary Operation:** choose auxiliary equipment, select Open or Close button, switch control;

**Auxiliary Number:** The operation of corresponding auxiliary switch according to PTZ agreement;

**Page Switch:** In Picture 3.14, click Page Switch button enter the Picture 3.8 PTZ Main Menu , the menu itself can be control by the menu control buttons

### 3.5.4 High-Speed PTZ

After choosing, it displays the chosen channel to full screen. Click left button of mouse, can control the PTZ to fast move and orientation. And can adjust cameras' magnification factor by move mouse roller

### 3.5.5 Color Setting

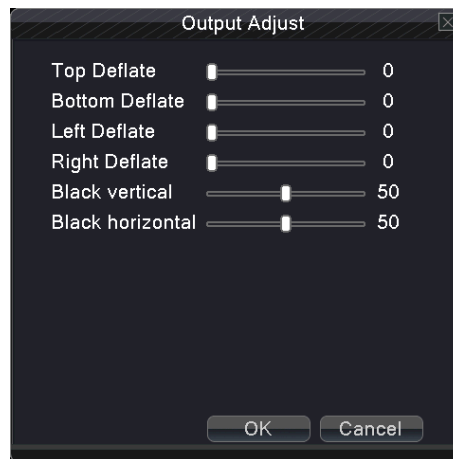
Set the selective image parameters (current channel for single window display and cursor place for multi-window display). You can use the desktop shortcut menu and enter the interface. The image parameters include: tonality, brightness, contrast, saturation. You can set different parameters at different time sections.



Picture 3.15 Color Setting

### 3.5.6 Output Adjust

Adjust output area parameters.



Picture 3.16 Output adjust

### 3.5.7 Info

System Information menu items include: **Version, HDD Info, BPS, LOG, Online Users.**

#### 3.5.7.1 Version

Display the basic information such as hardware information, software version, MAC, issue data and SerialNo and so on.

Note 1: The SerialNo is needed when using cloud technology, please enter the SerialNo correctly when using cloud technology to do remote control, or you can't login.

Note 2: MAC is the MAC address of the device, also is the device mark when login by device with ARSP service; please enter the MAC address correctly when using ARSP service to do remote control, or you can't login.



Picture 3.17 Edition information

### 3.5.7.2 HDD Info

Display the hard disk state: hard disk type, overall capability, residual capability, the recording time and so on.



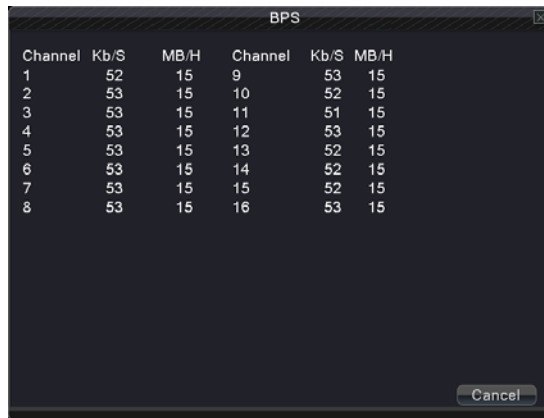
Picture 3.18 hard disk information

**Notice:** “O” means that the hard disk is normal. “X” means that the hard disk is broken-down.- means that there is no hard disk. If user needs to change the damaged hard disk, you must shut down the DVR and take up all the damaged hard disks then install a new one.

“\*” behind serial number means the current working disk such as 1\*. If the corresponding disk is damaged, the information will display “?”.

### 3.5.7.3 BPS

Display the code stream (Kb/S) and hard disk capability (MB/H) in real time.



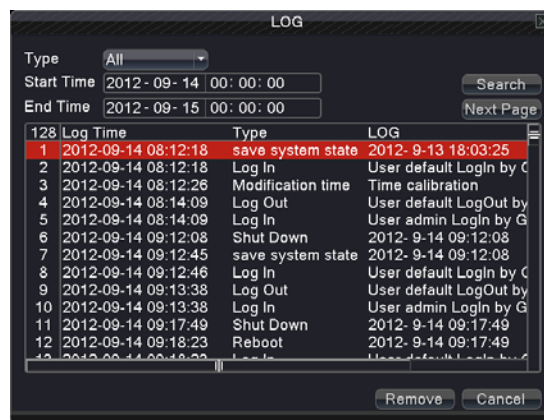
Channel	Kb/S	MB/H	Channel	Kb/S	MB/H
1	52	15	9	53	15
2	53	15	10	52	15
3	53	15	11	51	15
4	53	15	12	53	15
5	53	15	13	52	15
6	53	15	14	52	15
7	53	15	15	52	15
8	53	15	16	53	15

Picture 3.19 Code stream statistics

### 3.5.7.4 LOG

Look up system log according to the set mode.

**Log information** include: system operation, configuration operation, data management, alarm affair, recording operation, user management, and file management and so on. Set the time section to look up and click the look up button. The log information will display as a list. (One page is 128 items) Press **Page up** or **Page down** button to look up and press **delete** button to clear all the log information.

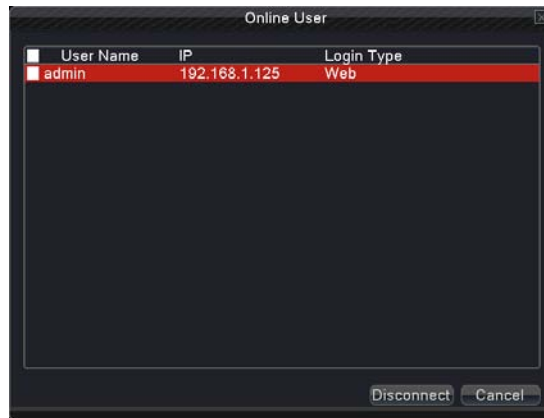


Log Time	Type	LOG
1 2012-09-14 08:12:18	save system state	2012-9-13 18:03:25
2 2012-09-14 08:12:18	Log In	User default LogIn by C
3 2012-09-14 08:12:26	Modification time	Time calibration
4 2012-09-14 08:14:09	Log Out	User default LogOut by
5 2012-09-14 08:14:09	Log In	User admin LogIn by G
6 2012-09-14 09:12:08	Shut Down	2012-9-14 09:12:08
7 2012-09-14 09:12:45	save system state	2012-9-14 09:12:08
8 2012-09-14 09:12:46	Log In	User default LogIn by C
9 2012-09-14 09:13:38	Log Out	User default LogOut by
10 2012-09-14 09:13:38	Log In	User admin LogIn by G
11 2012-09-14 09:17:49	Shut Down	2012-9-14 09:17:49
12 2012-09-14 09:18:23	Reboot	2012-9-14 09:17:49

Picture 3.20 log information

### 3.5.7.5 Online User

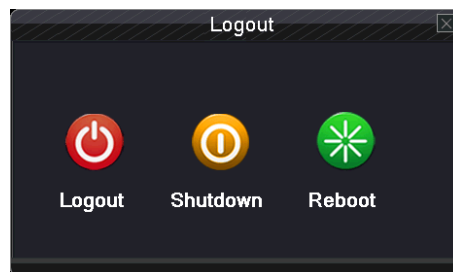
Look up the network user information in the local DVR. You can choose the network user and cut the connection. Then the user is locked until next boot-strap.



Picture 3.21 online user.

### 3.5.8 Logout

Logout, shutdown the system or reboot up.



Picture 3.22 shutdown

**Logout:** Quit the menu. Offer password next entrance.

**Shutdown:** Quit the system. Turn off the power supply.

When press the shut down button, there is schedule hint. After three seconds, the system is shut down. Cancel midway is of no effect.

**Reboot:** Quit the system. Reboot up the system..

### 3.5.9 View 1

Choose the wanted single screen to surveillance

### 3.5.10 View 4

Choose the wanted four screens to surveillance

### 3.5.11 View 9

Choose the wanted nine screens to surveillance

### 3.5.12 View 16

Choose the wanted sixteen screens to surveillance

### 3.5.13 Hide

Hide the shortcut menu on desk

## 4. Main Menu

When User login, right click mouse, the shortcut menu will appear at the bottom of the screen, then left click the first item to enter the main menu interface. As picture 4.1 shows.



Picture 4.1 Main menu

Note: Click “FN” on remote controller can shift different setting interface of main menu.

### 4.1 Main Menu navigation

Main Menu	Sub menu	Function
General	Language	Set language of DVR
	Video Standard	Set PAL or NTSC
	Resolution	Set output resolution

	System time	Set system time, date format, data separator, time format, daylight saving time
	HDD full	When the hard disk is full, set the system on the hard drive of what kind of operation (Set to stop or overwrite).
	DVR No	DVR number is used to remote control DVR
	Transparency	Adjust the transparency of operating menu
	Tour	Set whether to tour of all channels
Record	Channel	Choose related channel to record or set network parameters
	Set	Recording parameter (main stream) and network parameters (extra stream) illustrate.
	Video/Audio	Set whether to record video and audio simultaneously
	Resolution	Set recording resolution
	Frame Rate(FPS)	Set recording FPS
	Bit Rate Type	Set whether recording stream changes automatically according to image changes
	Quality	Adjust recording quality, six grades are optional
	Bit Rate(Kb/S)	Set recording stream statics under fixed stream state
	Record plan	Set DVR's recording plan
Network	Net Link Mod	Set automatically get or manually enter IP address
	IP address	Set IP address
	Subnet Mask	Set subnet mask
	Gateway	Set default gateway
	Primary DNS	Set Preferred DNS
	Secondary DNS	Set spare DNS
	Media port	Set port for recording network transmission
	HTTP port	Set HTTP port

	Net Service	Set basic network parameters, DHCP,DNS parameters, network high speed download and PPPOE, NTP, Email, IP purview, DDNS parameter, FTP, Wireless Config, Mobile Monitor, UPNP, Wi-Fi, RTSP
Alarm	Motion Detect	Set motion detect alarm channel, sensitivity, area, linkage parameters: defending time section, alarm output, screen hint, recording, PTZ, patrol
	Video Blind	Set camera mask alarm channel, sensitivity, linkage parameters: defending time section, alarm output, screen hint, recording, PTZ, patrol
	Video Loss	Set video loss alarm channel, linkage parameters: defending time section, alarm output, screen hint, recording, PTZ, patrol
	Alarm Input	Set alarm input channel, equipment type, linkage parameters: defending time section, alarm output, screen hint, recording, PTZ, patrol
	Alarm output	Set alarm mode: configuration, manual, stop.
	Abnormality	Set Abnormity disposal, support five abnormity matters
Switch	Channel Type	Switch between analog channels and digital channels
System	HDD manage	Set appointed hard disk as read-write disc, read-only disc or redundant disc, clear data, resume data, format HDD and so on
	PTZ config	Set channel, PTZ protocol, address, baud rate, date bit, stop bit, check
	GUI Display	Set channel name, preview hint icon state, transparency, cover area, time title, channel time fold and Set patrol mode and interval time
	Backup	Backup recording files
	Account	Modify user, team or password. Add user or team. Delete user or team.
	Device Info	Provision of equipment interface device information to facilitate the understanding of our customers use.
	Restore	Restore default settings. Can also choose the general settings, encoding settings, video settings, alarm settings, network settings, network services, preview, playback, serial port settings and user management for recovery.
	Auto Maintain	Users can set the device to automatically reboot the system on their own time, and automatically delete the file set time period.
	Upgrade	Upgrade to the DVR software system
	Import/Export	Import/export configuration files, or export log information



## 4.2 General

On the system of general information configuration.



Picture 4.2 General

**Language:** choose related operating language

**Video standard:** Set DVR's video system (PAL or NTSC are optional)

**Resolution:** Set output resolution

**System time:** Set DVR's current system date &time, time format

**HDD full:** Stop: the hard drive is full, stop recording.

Select overwrite: when the hard drive is full, overwrite the earliest recording files.

**DVR No:** using under the situation that one remote controller control many DVRs. Only click "ADD" on remote control and enter local number, the related DVR can respond.

Re: when "Local No "is "0", it will response the same series DVRS's operation

**Transparency:** Adjust the transparency or operating menu

**Tour:** set screen tour display,  shows tour was opened. Single screen, four screens, eight screens, nine screens, sixteen screens etc. separate mode and mixed mode tour are optional.



Picture 4.3 Tour setting

## 4.3 Record

Set recording parameter (main stream) and network parameter (extra stream) of video and audio signal.

Set DVR's recording plan.

**Note:** There is at least one read-write hard disk.



Picture 4.4 Record config

**Channel:** Choose the corresponding channel number to set the channel. Choose the all option to set the entire channels.

**Set:** Recording parameter (main stream) and network parameters (extra stream) illustrate

**Video/Audio:** Set whether to record video and audio simultaneously.

**Resolution:** Set recording resolution. The Higher resolution, the better recording quality, occupies more HDD capacity. Conversely, the lower resolution, the worse recording quality, occupies less HDD capacity.

**Frame Rate (FPS):** set recording FPS; the higher recording FPS, the better fluency of recording images and occupies more HDD capacity. Conversely, the lower recording FPS, the worse fluency of recording images and occupies less HDD capacity.

**Bit Rate Type:** Set whether recording stream changes automatically according to image changes  
Adjust recording quality, six grades are optional

**Quality:** Adjust the video quality, grade six kinds of optional.

**Bit Rate (Kb/S):** set recording stream statics under fixed stream state; The Higher Stream statics, the better recording quality and occupies more HDD capacity. Conversely, the

lower Stream statics, the worse recording stream statics quality and occupies less HDD capacity.

**Recording plan:** Set DVR's recording plan



Picture 4.5 Recording Plan

**Channel:** Choose the corresponding channel number to set the channel. Choose the all option to set the entire channels.

**Redundancy:** Choose the redundancy function option to implement the file double backup function. Double backup is writing the video files in two hard disks. When you do the double backup, make sure that there are two hard disks installed. One is read-write disk and the other is redundant disk. (Pls refer 4.7.1 HDD manage to have detailed setting methods)

**Length:** Set the time length of each video file. 60minutes is default value (A maximum of 120 minutes).

**Pre Record:** Record 1-30 seconds before the action. (Time length is decided by the code stream)

**Mode:** Set video state: configuration, all or stop.

**Schedule:** Record according to the set video type (common, detection and alarm)and time section.

**Manual:** after choosing manual button, the related channel will carry common recording whatever state the current channel is.

**Stop:** Click the stop button and the according channel stops recording no matter the channel in any state.

**Week:** set (Monday to Sunday) or full week to record, it will just record in set days

**Period:** Set the time section of common recording, the recording will start only in the set range.

**Recording type:** Set recording type: regular, detection or alarm.

**Regular:** Perform the regular recording in the set time section. The video file type is "R".

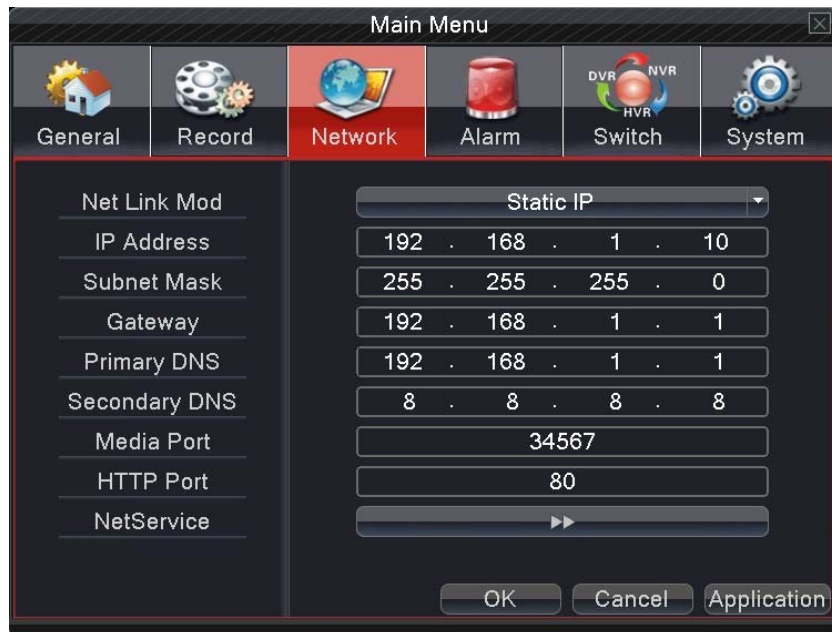
**Detect:** Trigger the "motion detect", "camera mask" or "video loss" signal. When above alarm is set as opening recording, the "detection recording" state is on. The

video file type is “M”.

**Alarm:** Trigger the external alarm signal in the set time section. When above alarm is set as opening recording, the “detection recording” state is on. The video file type is “A”.

**Note:** related alarm function setting, pls refer 4.5 alarm function to have detailed setting ways

## 4.4 Network



Picture 4.6 network setup

**Net Link Mod:** Set automatically gets or manually enters IP address

**IP address:** Set the IP address. Default: 192.168.1.10.

**Subnet Mask:** Set the subnet mask code. Default: 255.255.255.0.

**Gateway:** Set the default gateway. Default: 192.168.1.1.

**Primary DNS:** Set Preferred DNS

**Secondary DNS:** Set spare DNS

**Media port:** Set port for recording network transmission

**HTTP port:** Default: 80.

**Net Service:** set all network service. Pls refer 4.4.1 network service to have detailed setting ways.

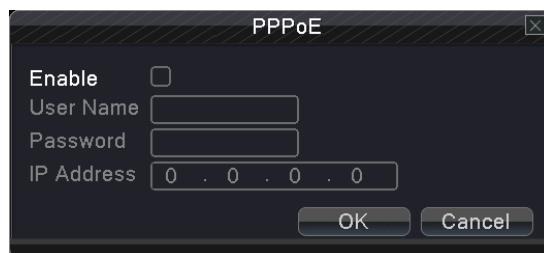
### 4.4.1 Net Service

Advanced network functions on the configuration, double-click the Net Service button to enter the Picture 4.7 interface, first select the Network Services entry and click the Settings button, or double-click the service parameter configuration items.



Picture 4.7 network service

## 【PPPoE setup】

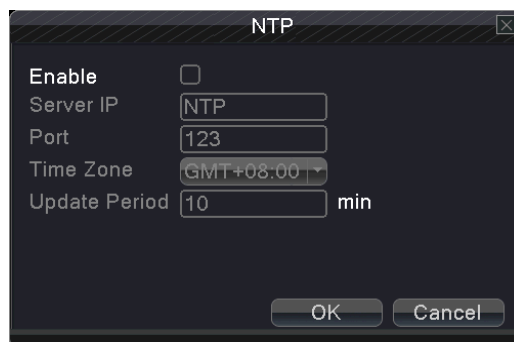


Picture 4.8 PPPOE

Input the user name and password that ISP (Internet service provider) provides. After saving it reboot up your system. Then the DVR will build a network connection based on PPPoE. The IP address will change into dynamic IP address after above operation is well done.

Operation: After PPPoE dialing successfully look up the IP address in the IP address and obtain the current IP address. Then use this IP address to visit the DVR through user port.

## 【NTP setup】



Picture 4.9 NTP

**Server IP:** Enter the NTP server address.

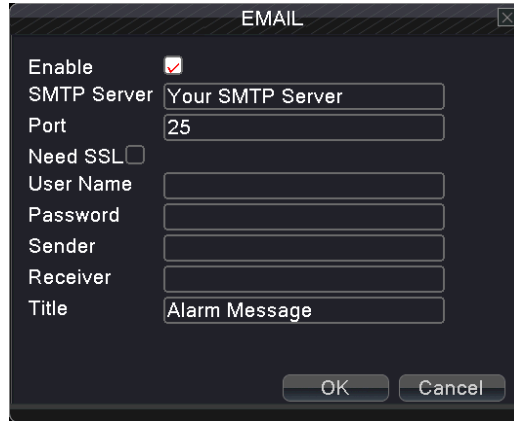
**Port:** Default: 123. You can set the port according to NTP server.

**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 American mountain time GMT-7 American mid time GMT-6 American eastern time GMT-5 Atlantic time GMT-4 Brazil GMT-3 Atlantic mid time GMT-2.

**Update Period:** The same with the NTP server check interval. Default: 10minutes.

#### 【EMAIL setup】

If the alarm is turned on or the alarm linkage photos are taken, send an email about the alarm information and the photos to appointed address.



Picture 4.10 EMAIL

**SMTP server:** For example, SMTP server address of 126 email is: smtp.126.com.

**Port:** Email server port number.

**Need SSL:** Decide whether using Secure Socket Layer protocol to login.

**User Name:** Apply the email server user name.

**Password:** Input the password corresponding to the user.

**Sender:** Set the email sender address.

**Receiver:** Send the email to appointed receivers when the alarm is turned on. You can set three receivers at most, and each receiver separate by “;”( Semicolon + Space), receiver and sender can use same email.

**Title:** The subject of the message, you can set your own.

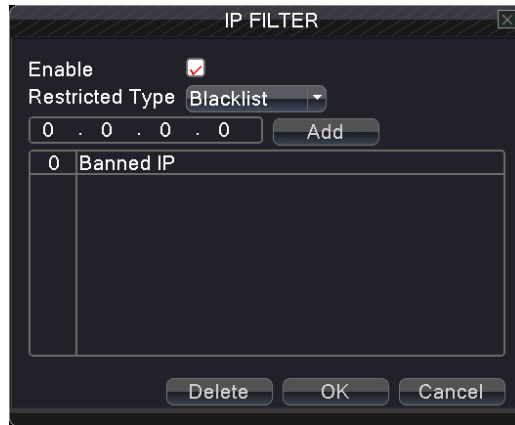
#### 【IP FILTER】

When choosing the white list, only the listed IP address can connect the DVR. The 64 IP addressed are supportive in the list.

When choosing the black list, the listed IP address can not connect the DVR. The 64 IP addressed are supportive in the list.

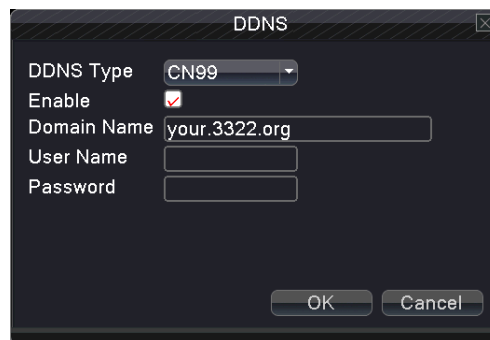
You can delete the set IP address by √ in the options.

**Note:** When the same IP address is in the white and black list at the same time, the black list precedence is higher.



Picture 4.11 IP purview

## 【DDNS】



Picture 4.12 DDNS

**DDNS Type:** choose DDNS supplier

**Domain name:** Provide the domain name registered by DDNS.

**User name:** Provide the account registered by DDNS.

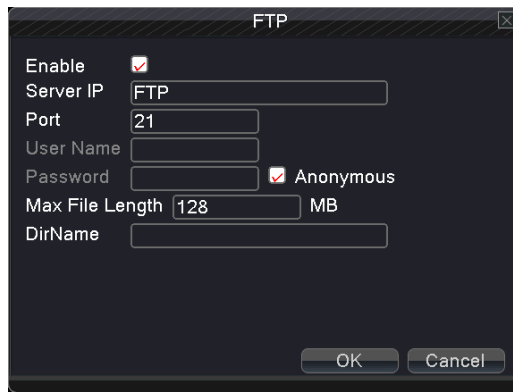
**Password:** Provide the password registered by DDNS.

When the DDNS is successfully configured and start, you can connect the domain name in the IE address column to visit.

**Note:** The DNS setup must be configured correctly in the network setup.

## 【FTP】

FTP used when there get alarm, or alarm linkage to recording, snap pictures, you can specify the FTP server to upload video and capture specific images.



Picture 4.13 FTP

**Enable:** Select , enable the FTP function.

**Server IP:** FTP server's IP address

**Port:** FTP port, default port 21.

**User name:** Permission to log FTP user name.

**Password:** User's password.

**Max File Length:** Upload files for each package the max length, default is 128M.

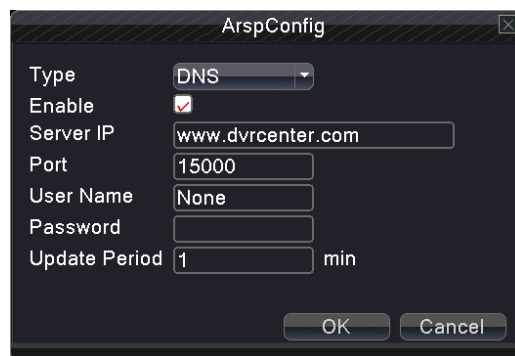
**Dir Name:** Upload file directory.

#### 【ARSP】

After enable this function, when login ARSP server and choose "login by device", you just need to enter MAC to do remote network viewing. No need to apply domain name

Note 1: MAC can be got in "desktop shortcut menu" → "info" → "version"

Note 2: after setting ARSP, also need to do relative port forward setting (it can be done in router, to realize by enabling DMZ function and directing to this device, or by setting port forward manually, also can enable router and UPNP function synchronously to realize port forward)



Picture 4.14 ARSP

**Enable:** select , enable the ARSP function.

**Type:** Default type is DNS

**Server IP:** set default server address: [www.dvrcenter.com](http://www.dvrcenter.com).

**Port:** device service default port: 15000.

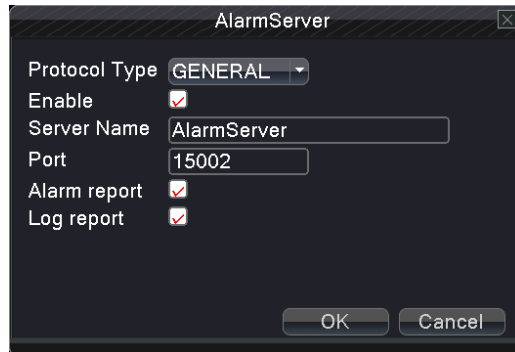


**User name:** Enter the ARSP server registered user name.

**Password:** enter user's password.

**Update Period:** Synchronize with ARSP server time, default: 1 minute.

#### 【Alarm Server】



Picture 4.15 Alarm

**Enable:** Select , enable the alarm server function.

**Protocol Type:** set default alarm protocol type to be GENERAL.

**Server Name:** set alarm server domain name.

**Port:** set port number.

**Alarm report:**  means being chosen, this function can send alarm matters to alarm server.

**Log report:**  means being chosen, this function can send alarm log to alarm server.

#### 【Wireless config】

Dial-up Internet access through 3G card to realize the client access device, the device configuration

(Note: only for some models)



Picture 4.16 Wireless config

**Enable:** Select , enable the Wireless function.

**Type:** Dial type, the default auto.

**Wireless AP:** 3G access point, the default OK.

**Dial Number:** 3G dial-up number, the default OK

**User Name:** Dial-up of 3G User Name.

**Password:** Dial-up user's password.

**IP Address:** Dial-up IP address number obtained.

#### 【Mobile monitor】

Accessing by mobile phone need to map the port on the Router. Monitoring and operating DVR with protocol.



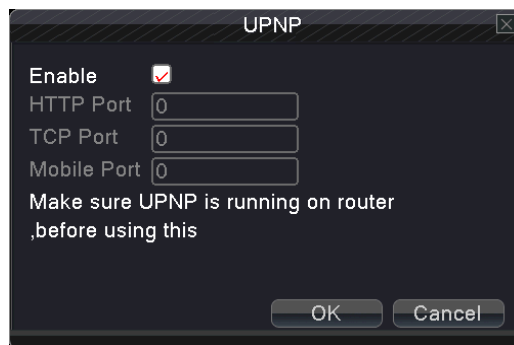
Picture 4.17 Mobile monitor

**Enable:** Select , enable the Mobile phone function.

**Port:** Port for mobile phone view, need mapping the port on Router.

#### 【UPNP】

UPNP protocol will be automatic port forwarding on the Router, before use this feature, make sure UPNP feature is enabled on the router.



Picture 4.18 UPNP

**Enable:** Select , enable the Mobile phone function.

**HTTP Port:** Need to add the port number while browsing by IE

**TCP Port:** While use the client software to monitor, required by the port number

**Mobile Port:** Mobile phone monitoring through the port number

#### 【Wi-Fi】

Connect to wireless router by wireless module. View the device with IP under the condition that DVR has been connected to WIFI module.



Picture 4.19 Wi-Fi

**Search:** Click “search” button to get available wireless network.

**Enable:** Select , enable the Wi-Fi function

**SSID:** name of wireless LAN automatically fit the connected wireless device

**Password:** wireless network password

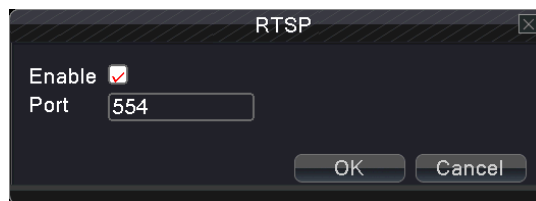
**IP address:** Set the IP address. Default: 192.168.1.10.

**Subnet mask:** Set the subnet mask code. Default: 255.255.255.0.

**Gateway:** Set the default gateway. Default: 192.168.1.1.

#### 【RTSP】

RTSP protocol



Picture 4.20 RTSP

**Enable:** Select , enable the RTSP function

**Port:** set RTSP server port number

## 4.5 Alarm

Alarm functions include: **Motion Detect**, **Video Blind**, **Video Loss**, **Alarm Input**, **Alarm Output** and **Abnormality**.

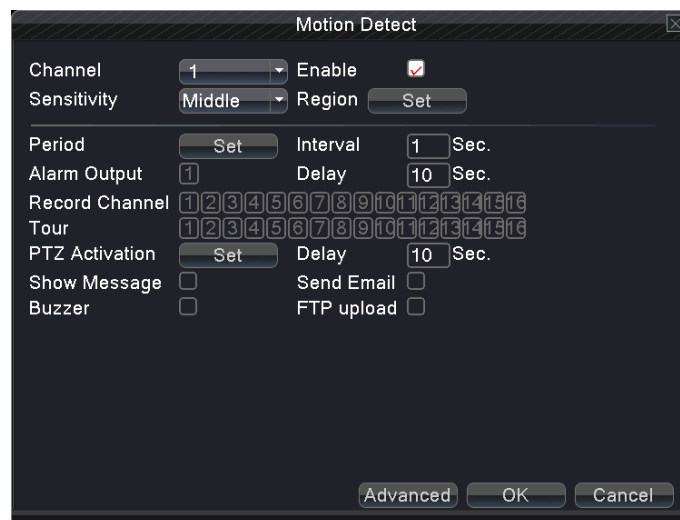


Picture 4.21 Alarm

#### 4.5.1 Motion Detect

When system detects the motion signal that reaches the set sensitivity, the motion detect alarm is on and the linkage function is turned on.

Note: click advanced button can back to upper page, to display surveillance screen, copy, default, recording setup



Picture 4.22 motion detect

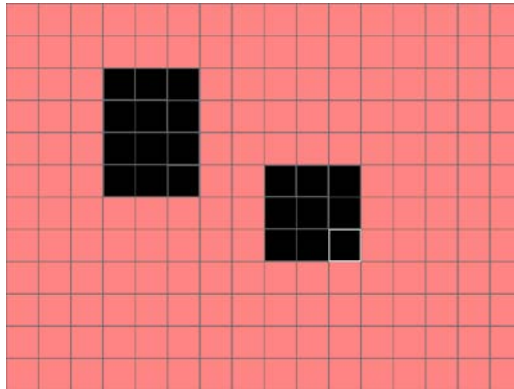
**Channel:** Choose the set motion detect channel.

**Enable:**  means that the motion detect function is on.

**Sensitivity:** Choose in the six options according to the sensitivity.

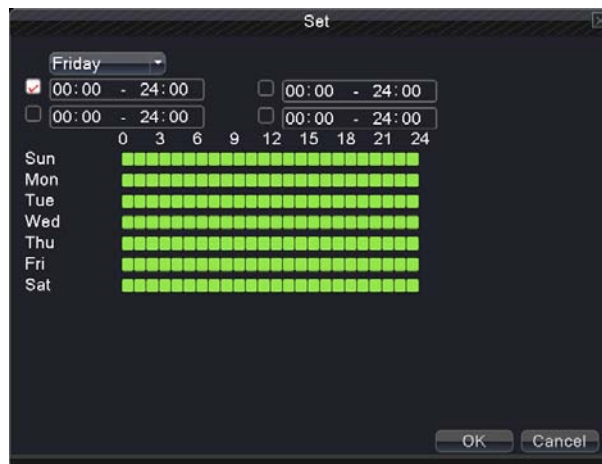
**Region:** Click setup and enter the set area. The area is divided into PAL22X18. Green block means

the current cursor area. Yellow block means the dynamic detect defensive area. Black block means the unfenced area. You can set the area as followed, Drag the mouse and draw the area.



Picture 4.23 set the area

**Period:** Trigger the motion detect signal in the set time section. You can set according to week or set uniformly. Each day is divided into four time sections.  means the set is valid.



Picture 4.24 set the time section

**Interval:** Only one alarm signal is turned on even there are several motion detect signals in the set interval.

**Alarm output:** Start the external equipment of corresponding linkage alarm when the motion detect alarm is turned on.

**Delay:** Delay a few moments and stop when the alarm state is turned off. The range is 10~300 seconds.

**Record channel:** Choose the recording channel (multiple option supportive). Trigger the video signal when the alarm is turned on.

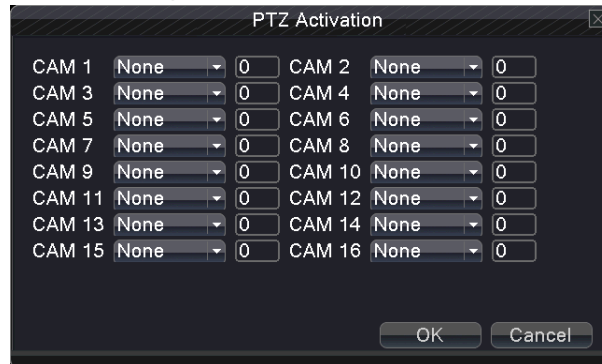
**Note:** Set in the "main menu" → "record" → "record plan" and perform the linkage recording. And set "desktop shortcut menu" → "record mode" to be configured, motion detect linkage recording can work

**Tour:** choose the recording channel, which will tour preview with single screen when have alarm

signal

【PTZ Activation】 Set the PTZ linkage when the alarm is turned on.

**Note:** using PTZ linkage, need to set preset, cruise between points and scan etc. parameters in “desktop shortcut menu” → “PTZ control” → “setting”.



Picture 4.25 PTZ activation

**Delay:** After alarm stop, the extended period of time to stop alarm recording, the range is 10~300 seconds.

**Show Message:** Pop the alarm information dialog box in the local host computer screen.

**Send Email:**  means sending an email to user when the alarm is turned on.

**Note:** if sending email, need to do relative setting in “main menu” → “network setting” → “network service”

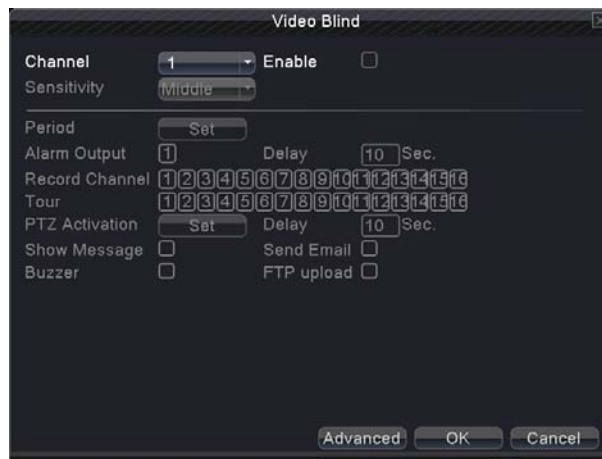
**Buzzer:** Alarm occurs, the equipment issue "Didi" the sounds of two long ring.

**FTP upload:** Alarm occurred while sending alarm events to the FTP server.

**Note:** if FTP sending, need to do relative setting in “main menu” → “network” → “net service”

#### 4.5.2 Video Blind

When the video image is influenced by outer environment or bad brightness and reaches the set sensitive parameter, the video blind function is turned on and the linkage function is turned on.

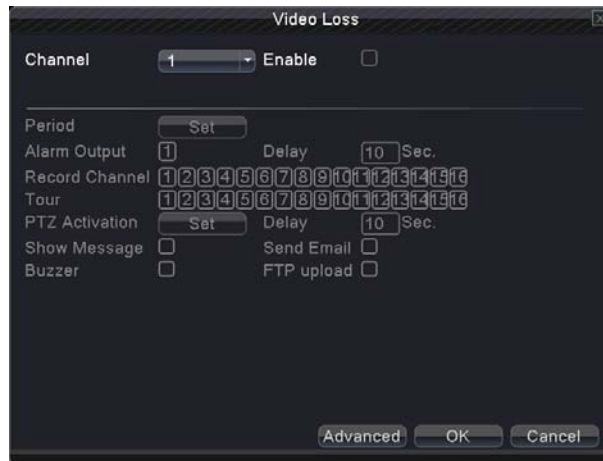


Picture 4.26 Video Blind

Set method: refer to Chapter 4.5.1. Motion Detect.

### 4.5.3 Video Loss

When the equipment can not obtain the channel video signal, the video loss alarm is turned on and the linkage function is turned on.

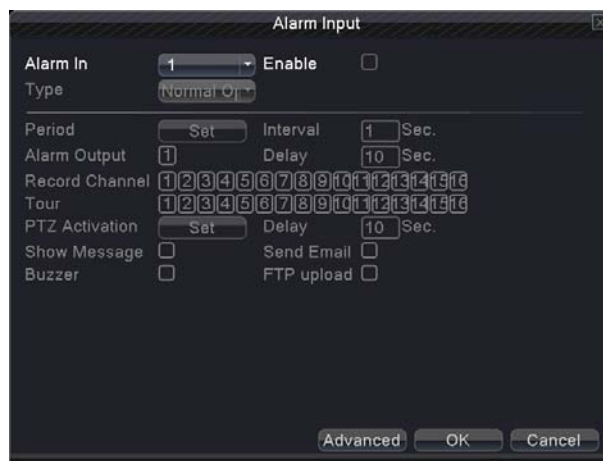


Picture 4.27 video loss

Set method: refer to Chapter 4.5.1. Motion Detect

### 4.5.4 Alarm input

When the equipment obtains the external alarm signal, the alarm function is turned on.

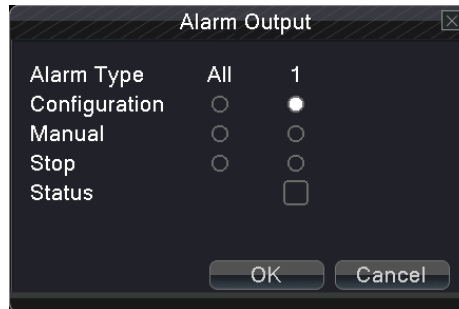


Picture 4.28 alarm input

Set method: refer to Chapter 4.5.1. Motion Detect

#### 4.5.5 Alarm output

Control alarm output state of all channels



Picture 4.29 alarm output

**Configuration:** Alarm is on according to the configuration. **All:** Click the all button and the according channel is alarming no matter the channel in any state.

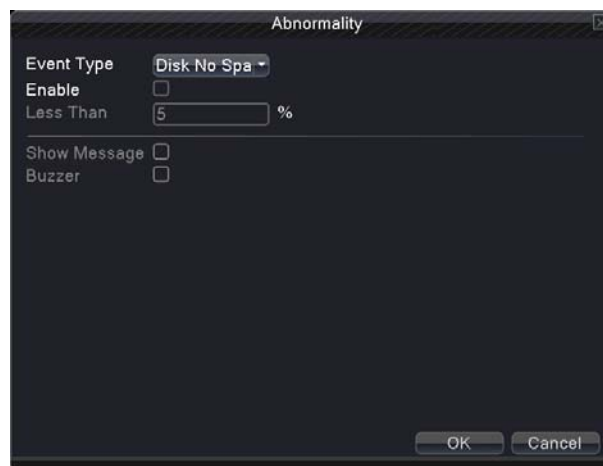
**Manual:** whatever state it is, the relative channel output alarm signal after choosing manual button

**Stop:** Click the stop button and the according channel stops alarming no matter the channel in any state.

**Status:**  means this channel has alarm output, otherwise without.

#### 4.5.6 Abnormality

It will buzz and appear screen prompts once no disk, HDD wrong, no disk space, network cut, IP conflict etc. happens, which is convenient for customers to know DVR abnormality.



Picture 4.30 Abnormality

**Event Type:** Choose abnormality type, support five matters

**Enable:** Select , enable these three settings

**Less than:** this item can be set only when matter type choose no disk space, set percent (1-99).

When HDD space reach this setting limitation, DVR will have cue as following two ways:

**Show Message:** Show message: pop up message frame on DVR screen



**Buzzer:** DVR will buzz when alarm occurs

## 4.6 Switch

This combines the functions of DVR/HVR/NVR together, can receive multi-type signal input

Support:

1. Support pure analog input (DVR type)
2. support analog + network HD video input ( HVR type, this can be used under the situation that needs traditional analogue effect+ several network HD effect, which especially suited to upgrade the current analogue project.

3. Support pure network HD video input (NVR type, used under the situation that all channels need HD effect)

Customers can switch DVR/HVE/NVR type according to their demands

Warning

- 1: Don't switch the channel mode if not necessary, once changed, the original related date maybe lost even cause the machine to normal use
- 2: Pls don't operate this function if non-professional

### Channel Type

Switch among DVR/HVR/NVR type

Operating process as below:

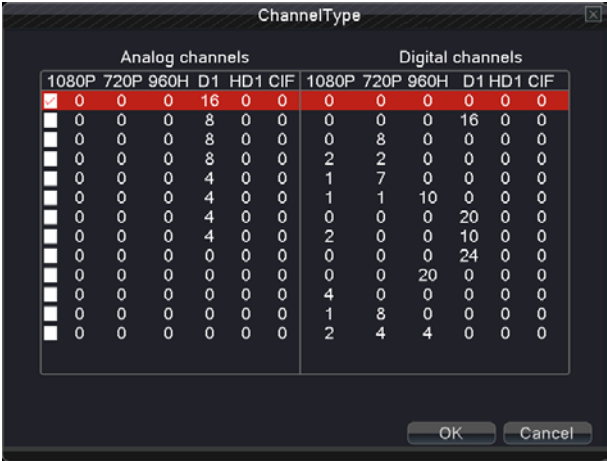
1. Choose "main menu" → "switch", show as picture 4.31



Picture 4.31 Switch

2. In channel type list, there are many channel type combination ways available (as picture 4.32).In analogue channels, the numbers under resolutions means the maximum analogue channels which can

be connected under that resolution. In digital channels, the numbers under resolutions means the maximum IP camera or other network device channels which can be connected under that resolution. Customers can choose any of the combination according to their demands. Click "OK" to finish DVR/HVR/NVR type shift (needs restart when shifting)



Picture 4.32 Channel Type

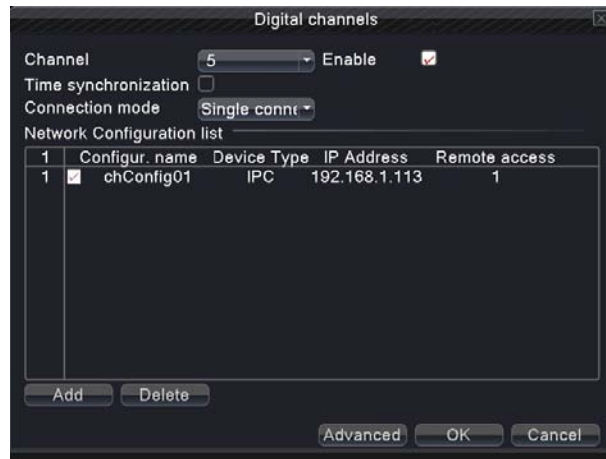
3. After DVR restart, "switch" menu as picture 4.33



Picture 4.33 Switch

**Digital channels**

Used to bind signals of the channels which video input type is digital network HD signal (signal can be IPC, DVR, NVR etc.)



Picture 4.34 Digital Channel

**Channel:** choose the channel number which needs to be bind

**Enable:** select , enable this function

**Time synchronization:** set local device time to be synchronized with bind device

**Connection mode:**

Single connection: only can bind one network device to display that channel

Multi- connections: can bind many network devices to tour display the channel. After choosing connection, you also can set interval between tours of different network device.

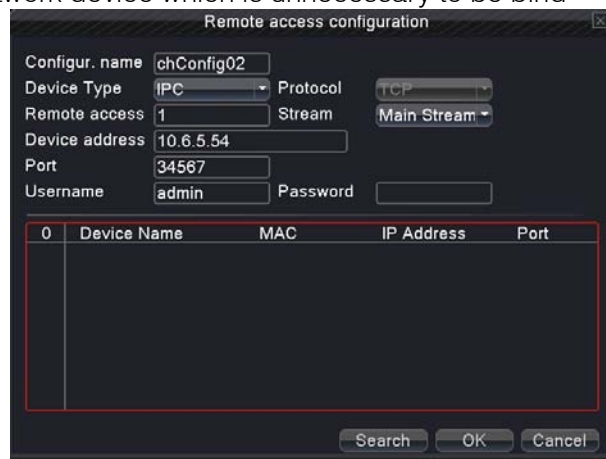
**Network configuration list:** shows that have added all network device name, type, IP address, remote channel information to that channel

Note: Network device be chosen in  network configuration list, , which stand for device was bind with this

channel; conversely, it means unbinding (it needs to bind many network device under multi-connection type.)

**Add:** add new network device for this channel (show as picture 4.35)

**Delete:** delete network device which is unnecessary to be bind



Picture 4.35 remote access configuration

**【remote access configuration】**

To configure remote network device name, device type, channel, address, port, user name and password

**Configuration name:** set network device name

**Device type:** set network device type

**Remote access channel:** when device type is DVR or NVR, you need to set specific DVR or NVR channel number which signal get. When device type is IPC, default "1"

**Stream:** set main stream or sub stream to connect the network device

**Device address:** set IP address of the network device

**Port:** set port number of the network device

**User name:** set user name to login the network device

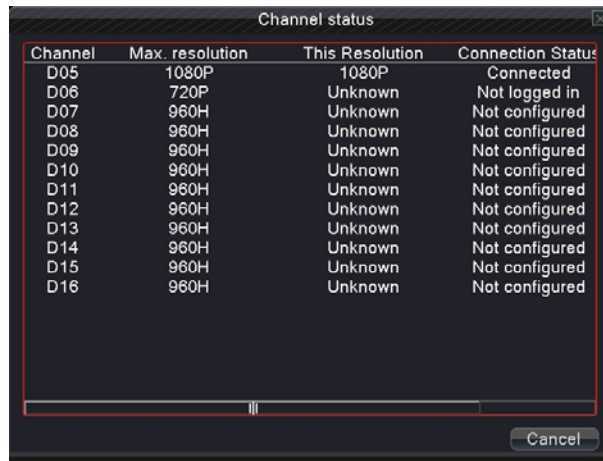
**Password:** set password of network device

**Search:** system automatically search available network device in LAN (which is convenient to add new network device)

**Note:** when binding signal to all digital channels, need to make sure resolution of the bind network device is lower than the maximum resolution of the digital channel, or the images can't be displayed.

**【Channel status】**

Show the maximum resolution of all digital channels, connected signal resolution and connection status. (4.36)



Channel	Max. resolution	This Resolution	Connection Status
D05	1080P	1080P	Connected
D06	720P	Unknown	Not logged in
D07	960H	Unknown	Not configured
D08	960H	Unknown	Not configured
D09	960H	Unknown	Not configured
D10	960H	Unknown	Not configured
D11	960H	Unknown	Not configured
D12	960H	Unknown	Not configured
D13	960H	Unknown	Not configured
D14	960H	Unknown	Not configured
D15	960H	Unknown	Not configured
D16	960H	Unknown	Not configured

Picture 4.36 channel status

## 4.7 System

Set the system parameters such as HDD Manage, PTZ Config, GUI Display, Backup, Account, Device Info, Restore, Auto Maintain, Upgrade and Import/Export.



Picture 4.37 System

### 4.7.1 HDD Manage

Configure and manage the hard disk. The menu displays current hard disk information: hard disk number, input port, type, status and overall capability.

The operation include: setup the write-read disk, read-only disk, redundant disk, hard disk format, resume default. Choose the hard disk and click the right function button to execute.

**Read/Write:** The equipment can read data but can not write data.

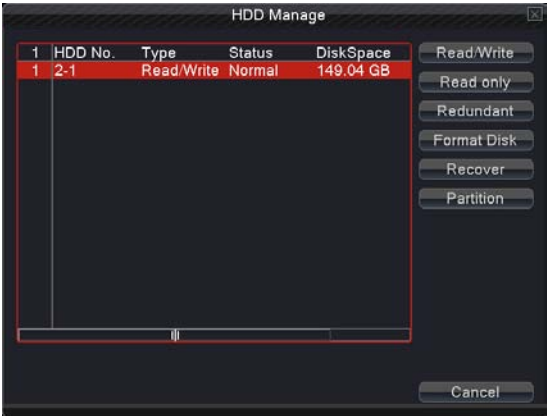
**Read only:** The equipment can read data but can not write data.

**Redundant:** Double backup the video files in the write-read disk.

**Format Disk:** All statics lose after format disk

**Recover:** Can recover wrong state HDD.

**Partition:** For hard disk partition setting, can be divided into two kinds of partition video and screen shots



Picture 4.38 HDD Manage

## 4.7.2 PTZ Config



Picture 4.39 PTZ Config

**Channel:** Choose the dome camera input channel.

**Protocol:** Choose the corresponding dome protocol. (PELCOD as an example)

**Address:** Set as the corresponding dome address. Default: 1.

**Baud rate:** Choose the corresponding dome baud rate length. You can control the PTZ and camera.  
Default: 115200.

**Date bit:** Include 5-8 options. Default: 8.

**Stop bit:** Include 2 options. Default: 1.

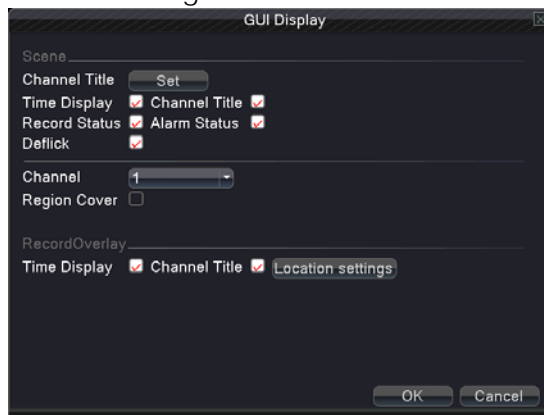
**Check:** Include odd check, even check, sign check, blank check. Default: void.

Note: parameters of protocol, address, baud rate should be consistent with relative PTZ or dome. Or PTZ and dome can be controlled.

## 4.7.3 GUI Display

GUI display includes scene and record overly

**Scene:** the information in local preview: including channel name, time title, channel title, recording status, alarm status, deflick, and channel region cover.



Picture 4.40 GUI display

**Channel name:** Click the channel name modify button and enter the channel name menu. Modify

the channel name. The 16 Chinese characters and 25 letters are supportive.

**Time title:**  means the selective state. Display the system data and time in the surveillance window. **Channel title:**  means the selective state. Display the system channel number in the surveillance window.

**Recording status:**  means the selective state. Display the system recording status in the surveillance window.

**Alarm status:**  means the selective state. Display the system alarm status in the surveillance window.

**Deflick:** select , enable this function.

**Channel:** select the channel number which needs to have region cover

**Region cover:** select , enable this function. Click region button, enter relative channel, user can choose the size of region cover, a channel can maximum set four regions (the video output is black of the covered region)

#### 【record overlay】

**Time tile:** select , enable this function. Show time and date on screen overlay

**Channel title:** select , enable this function, show channel title on screen overlay.

**Position setting:** adjust position of time title and channel title of screen.

### 4.7.4 Backup

You can backup the video files to external storage through setup.

**Note:** The storage must be installed before the file backup. If the backup is terminated, the already copy files can be playback individually. If the backup is stop midway, the already copy files also can be playback individually.



Picture 4.41 Backup

**Detect:** Detect the storage connected with the DVR such as hard disk or universal disk.

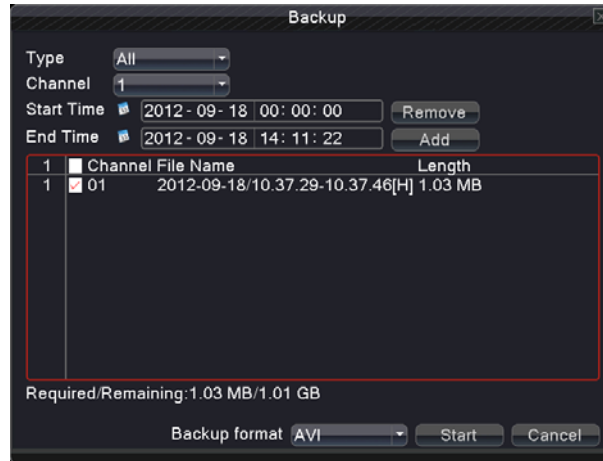
**Backup:** Click “backup” button and the dialog box is popped up as picture 4.41. You can choose

the backup file according to the type, channel and time.

**Rewrite:** to rewrite the needed files

**Erase:** Choose the file to delete and click erasure to delete the file.

**Stop:** Stop the backup.



Picture 4.42 Backup

**Remove:** Clear the file information.

**Add:** Show the file information satisfying the set file attributes.

**Start/pause:** Click the play button to start the backup and click the pause button to stop the backup.

**Cancel:** During backup you can exit the page layout to carry out other functions.

**Backup format:** h.264 and AVI are optional

#### 4.7.5 Account

Manage the user purview.

**Note:** 1. The char length is 8 bytes at most for the following user and user team name. The blank ahead or behind the char string is invalid. The middle blank in the char string is valid. Legal char include: letter, number, underline, subtraction sign, and dot.

2. There is no limit in the user and user team. You can add or delete the user team according to user definition. The factory setup include: user\admin. You can set the team as you wish. The user can appoint the purview in the team.

3. The user management include: team/ user. The team and the user name can not be the same. Each user only belongs to one team.





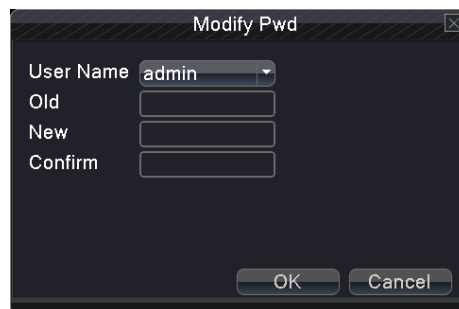
Picture 4.43 user management

**Modify user:** Modify the existed user attribute.

**Modify team:** Modify the existed team attribute.

**Modify password:** Modify the user password. You can set 1-6 bit password. The blank ahead or behind the char string is invalid. The middle blank in the char string is valid.

**Note:** The user who possess the user control purview can modify his/her own or other user password



Picture 4.44 modify password

**Add user:** Add a user in the team and set the user purview. Enter the menu interface and input the user name and password. Choose the team and choose whether cover using the user. Cover using means that the account can be used by multiple users at the same time.

Once choose the team the user purview is the subclass of the team.

We recommend that the common user's purview is lower than the advanced user.



Picture 4.45 add user

**Add Group:** Add a user Group and set the purview. There are 52 different purviews: shut down the equipment, real time surveillance, playback, recording setup, video file backup and so on.



Picture 4.46 add group

**Delete user:** Delete the current user. Choose the user which need to delete.(The default user cannot delete).

**Delete Group:** Delete the current team (there is no need to ensure that the team users). In Picture 4.25, click the delete team button in Picture 4.29, select the need to remove the team, click the delete button. Choose the team and click delete team button.

**Refresh:** to refresh the delete and added item.



Pictures 4.47 delete Group

#### 4.7.6 Device Info

Provide information of device port.

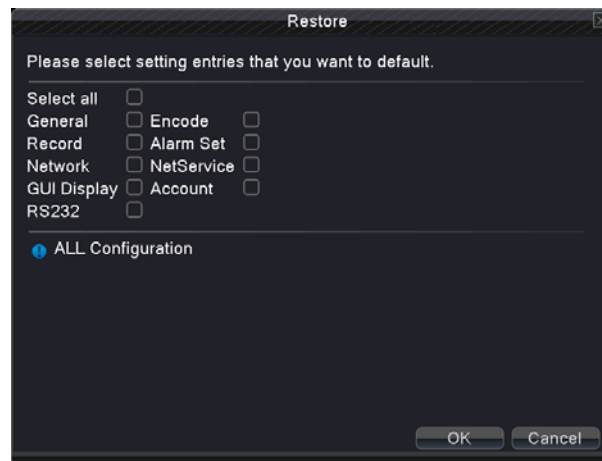


Picture 4.48 Device Information

#### 4.7.7 Restore

The system resume to the default setup. You can choose the items according to the menu.

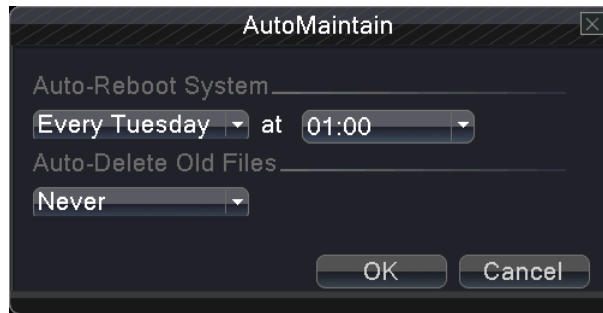
**Note:** restore configuration will not affect local device mode (device operates original mode after restore to default no matter the device was in DVR/HVR/NVR type before. And will not affect the parameters which were set in “main menu” → “switch” → “digital channel”



Picture 4.49 resume default

#### 4.7.8 Auto Maintain

Users can set the device to automatically reboot the system and automatically delete the file set time period.



Picture 4.50 Auto Maintain

#### 4.7.9 Upgrade

To upgrade DVR software system



Picture 4.51 upgrade

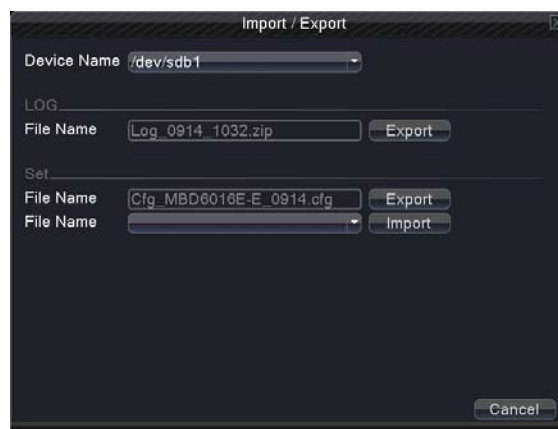
**Upgrade:** choose USB interface.

**Upgrade file:** choose the file which need upgraded

#### 4.7.10 Import/Export

Import/export log information and system parameters.

Note: importing and exporting will affect local device type (whatever type the device was in DVR/NVR/HVR type before importing, the device will operate the current recording type after importing)



Picture 4.52 Import/Export

**Device name:** choose USB interface

**File name:** choose the importing file

## 5. Network access settings and cloud technology introduced

### 5.1 LAN access settings

#### 1、 Network connection

1. Before the WEB operation, need to connect this device with the network.
2. Enter DVR “main menu” → “network” to set correct IP address, subnet mask and gateway port default (the IP segment of the device should be the same with PC computer, if disconnected, pls check device IP was connected successfully.)

#### 2、 Login

Step 1: after connecting successfully, then you can login to view.

Open a web browser; enter the IP address of the login device in the address bar. As the device with IP address 192.168.1.10, HTTP port 80 for example, then enter: <http://192.168.1.10> in the address bar and connections.

If HTTP port is not 80, such as 81, then need to add port when viewing, as: <http://192.168.1.10:81>

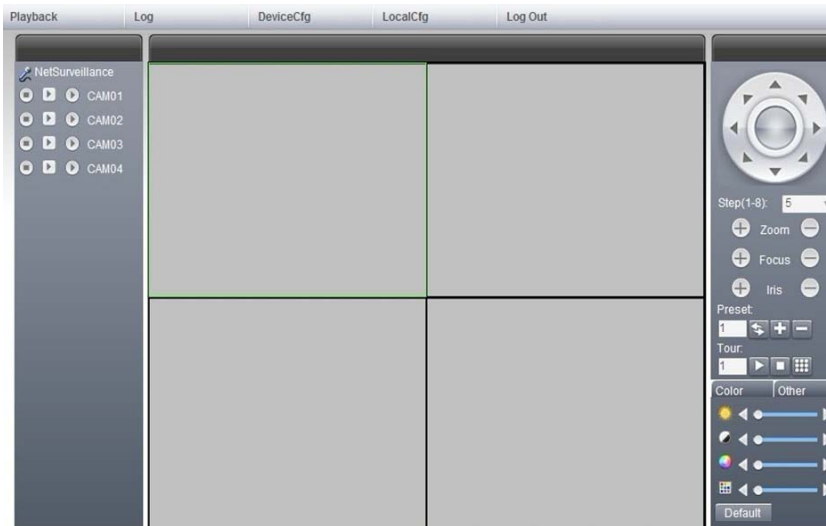
Note: If the PC connects the device at first time, when open system, the security warning will pop up whether to accept the WEB control web. cab, please choose to accept the user, the system will automatically identify the installation. (If the system is prohibited to download, please confirm whether you have other prohibited controls to download plug-ins, and reduce the IE security level, permit unsigned plug-in to operate. Connection as shown below will pop up after the success of the interface.



Picture 5.1 WEB Login interface

**Step 2:** Login. Enter the user name and password, the company factory default administrator user name admin, password is 111111. After login, please promptly change the administrator password.

Login is successful, display the interface as shown below.



Picture 5.2 WEB control interface

### 3、 WEB Control

In Picture 5.2 WEB control interface to operate WEB.

#### 1、 Menu Segment

Choose the preview mode;

#### 2、 Playback

Enter into the playback mode, support 4channel playback at the same time;

#### 3、 Log

Display the log information;

#### 4、 Local Configure

For WEB-side alarm settings, and checking the version information of WEB system;

#### 5、 Channel Control

Select the control channel, the cursor is located in the window at controlled access, click the right mouse button, select the corresponding channel function operation; When the cursor at the upper right corner of the channel, right-click, select the corresponding channel stream type.

## 5.2 Cloud technology functions and using introduction

Cloud technology is the latest network remote access technology; with cloud technology, without any complex network settings to achieve remote access easily.

Note: Some of the devices don't have this function, pls prevail in kind.

### 一、 Main features of cloud technology

#### 1. One step to realize DVR Internet, operating easily and conveniently.

No need to have professional network knowledge, DDNS and port mapping; instantly connect just

use and review.

## 2. Self network combination, self balance, high reliance

Without center server, system is independent of any server point; the fore-end device will automatically choose the cloud server which has best connectivity according to the real network situation of all cloud servers, which to make sure the lowest network delay and file loss rate minimum.

## 3. Intelligent network QOS strategy, to bring fluent user experience.

Completely new and upgraded network QOS calculate rule, which can intelligently and automatically adapt to current network situation. Combined with the dual stream technology, can smoothly transmit video image in very low network bandwidth (less than 128kbps) condition, bring the perfect user experience.

## 4. Economic benefits, cost reduction:

More and more original DDNS free of charge carriers, no longer offer free domain name service, so cloud technology presented no domain concept, customers are not required to register the DDNS domain name, just use the unique series number of the device can use the cloud services platform.

## 5. All network interworking:

Solve for dial-up access to IP which is the operator network address and WAN cannot access problems.

## 二、WAN remote access & Cloud technology use

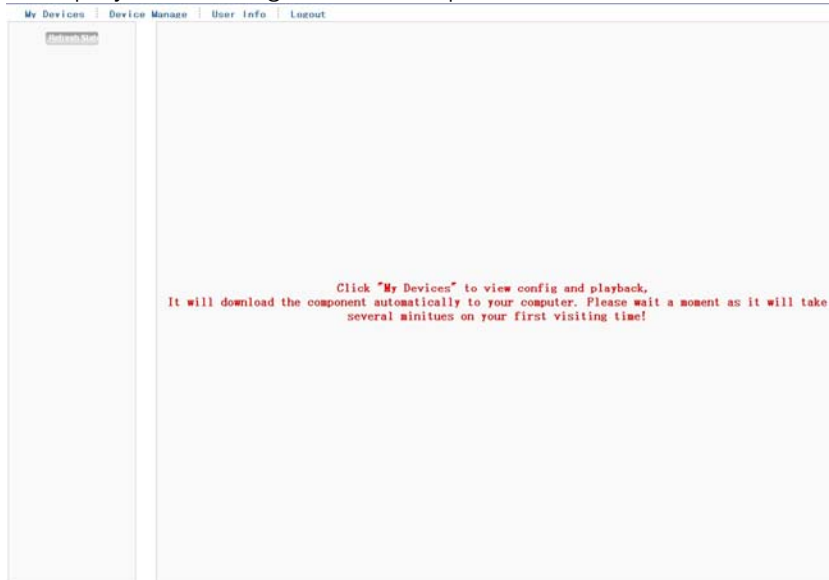
Open web browser, enter cloud access website: [www.dvrcenter.net](http://www.dvrcenter.net) . Login interface as picture 5.3:

Picture 5.3 login

There are two ways to remote control the device with cloud technology:

1. Device: enter SerialNo of DVR can realize remote access (way to get SerialNo: start up and choose "desktop shortcut menu" → "info" → "version")

2. User: need to register a user name, and then enter the user name and password to login; need to add the device after login (enter “device management” page can finish adding device); after finish adding device, the added device will appear in the left column of “my devices”. Click on the current equipment for preview, playback, configuration and operation



Picture 5.4 Remote operation

### 5.3 Client CMS software operation

CMS software is used on the same PC, support control multiple DVRs at the same time.

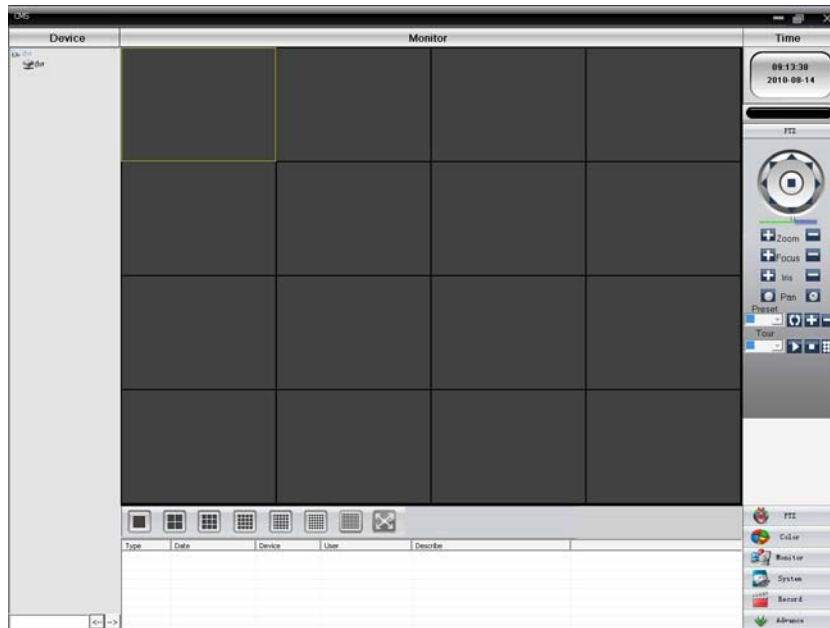
Please take out the CD-ROM in the accessories, copy the CMS install software in the CD-ROM. After installation on the local PC, double click the “CMS”, open the control interface appears in Picture 5.3, default password is 111111, the client can set the login password (**Note: The password for the CMS client password, DVR login password is 111111**).



Picture 5.5 CMS login

After enter into CMS interface, shown in Picture 5.4:






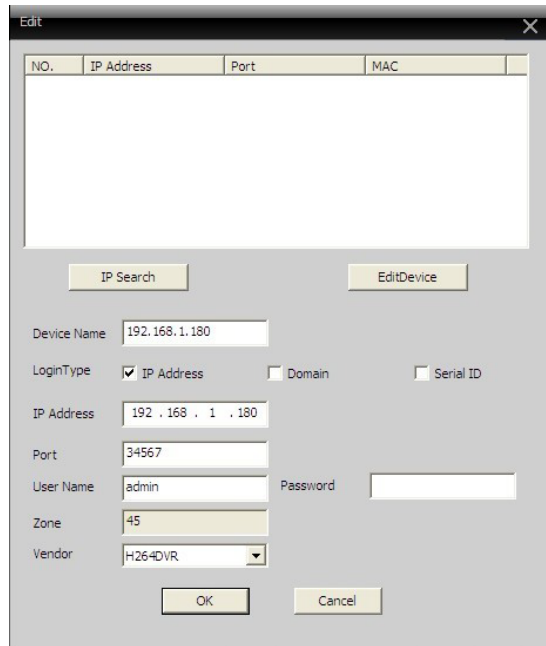
Picture 5.6 CMS control interface

Click the right corner of "System" settings, switch to the control of management options as below:





Picture 5.7 manage

First click  to add a domain, region name are free to take, after determining the list of selected regional areas to create a domain name, select  add device as shown below:

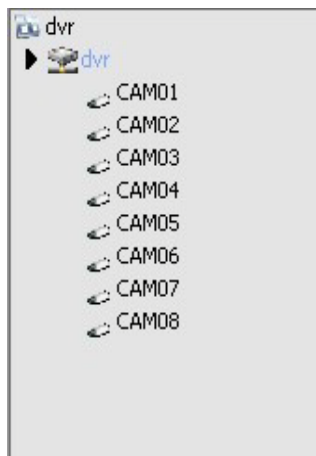


Picture 5.8 edit

As the follow prompts to input the DVR device requires information, confirmed and adding successful, repeat the above operation, can be added to multiple DVR equipment, management and monitoring operations.

If you want to modify the equipment which have added before, selected the modify the DVR at first, then click the  icon to modify the parameters, but also can delete the DVR which added on the regional list already for  deletion.

After completed add DVR these steps, click the label of the right corner for real-time monitoring, switch to multi-monitor screen interface, double-click the top left column of the DVR channel device can carry out real-time monitoring.



Picture 5.9 device

## 5.4 Mobile Phone Monitoring

This device supports the user to use the phone for remote video surveillance operation. Use extra stream technology to do mobile phone monitoring. Support channel switching and multi-channel monitoring simultaneously.(Android phone system as an example).

Step one: DVR settings. The “main menu”→“record”, enable extra stream;

Step two: Install the matching mobile phone monitoring software. Obtain corresponding client software from the optical disc (the client software of Android smart phone is vMEyeSuper.apk) and install on the phone;

Step three: after successful installation, find and run the corresponding client software from “start”→“program” of the mobile phone ( it is vMEyeSuperhe on Android mobile phone), as picture 5.10;



Picture 5.10 Mobile client interface 1.

Step four: click the device list on picture 5.10, enter IP address, device name, user name, password, port of the monitoring device.

**Device Name:** set by user;

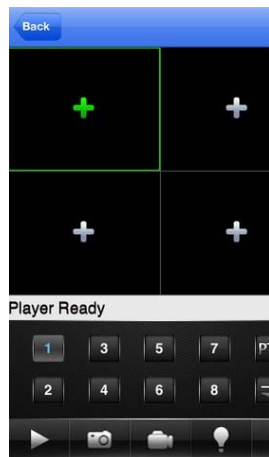
**User name:** user name to login DVR;

**Password:** password to login DVR;

**Server:** IP address of DVR;

**Port:** default port is 34567;

Click OK after finish adding, as picture 5.11 shown below. Choose the channel which need to be monitored, preview screen will display properly.



Picture 5.11 Mobile client interface 2.

**Note:** If the DVR is in LAN when monitoring, the mobile phone need to connect wireless router to access the device;

The corresponding client software for different mobile phone system is shown as below (please refer auxiliary software in the optical disk because of different version):

Mobile phone client of the third version of Symbian S60 is: MEYE\_SB\_S60\_3rd.sisx

Mobile phone client of the fifth version of Symbian S60 is: MEYE\_SB\_S60\_5rd.sisx

Mobile phone client of Android system is: vMEyeSuper.apk

Mobile phone client of Blackberry system is: MEYE\_RIM.cod

Mobile phone client of Apple system is: vMEye (please search and install in Appstore)

**Note:** Mobile phone monitoring software can also support cloud technology access.

## 6. FAQ and use and maintenance

### 6.1 FAQ

If the problems are not listed, please contact the local service or call the HQ service. We are willing to offer the service.

#### 1、 The DVR cannot boot up normally.

Possible reasons are as followed:

- 1 The power supply is not correct.
- 2 Switch power supply line is not in good connection.
- 3 Switch power supply is damaged.
- 4 The program updating is wrong.
- 5 The hard disk is damaged or the hard disk lines are broken.
- 6 The front panel is damaged.
- 7 The main board of the DVR is damaged.

2、 **The DVR reboots automatically or stops working after boot up a few minutes.**

Possible reasons are as followed:

- 1 The input voltage is not stable or too low.
- 2 The hard disk is damaged or the hard disk lines are broken.
- 3 The power of the switch power supply is low.
- 4 Frontal video signal is not stable.
- 5 Bad heat radiator or too much dust or bad running circumstance for the DVR.
- 6 The hardware of the DVR is damaged.

3、 **System can not detect hard disk.**

Possible reasons are as followed:

- 1 The hard disk power supply line is not connected.
- 2 The cables of the hard disk are damaged.
- 3 The hard disk is damaged.

The SATA port of main board is damaged.

4、 **There are no video outputs in single channel, multiple channels and all channels.**

Possible reasons are as followed:

- 1 The program is not matched. Please update the program.
- 2 The image brightness is all 0. Please resume the default setup.
- 3 There is no video input signal or the signal is too weak.
- 4 The channel protection or the screen protection is set.
- 5 The hardware of the DVR is damaged.

5、 **Real-time image problems such as the image color or the brightness distortion.**

Possible reasons are as followed:

- 1 When using the BNC output, the option between the N mode or PAL mode is wrong and the image becomes black and white.
- 2 The DVR is not matched the monitor impedance.
- 3 The video transmission distance is too far or the loss of the video transmission line is too large.
- 4 The color and brightness setting of the DVR is wrong.

6、 **I can not find the video files in local playback mode.**

Possible reasons are as followed:

- 1 The data line of the hard disk is damaged.
- 2 The hard disk is damaged.
- 3 Update the different program with the origin program files.
- 4 The video files to search are covered, or search time is wrong, please refer to the device

display time.

- 5 The recording is not on.

**7、 The local playback video is not clear.**

Possible reasons are as followed:

- 1 The recoding image quality is too bad.
- 2 The reading program is wrong. Reboot up the DVR.
- 3 The data line of the hard disk is damaged.
- 4 The hard disk is damaged.
- 5 The hardware of the DVR is damaged.

**8、 There is no audio signal in the surveillance window.**

Possible reasons are as followed:

- 1 It is not an active tone arm.
- 2 It is not an active sound box.
- 3 The audio lines are damaged.
- 4 The hardware of the DVR is damaged.

**9、 There is audio signal in the surveillance window but mo audio signal in the playback state.**

Possible reasons are as followed:

- 1 Setting issues: the audio option is not chosen.
- 2 The according channel is not connected with the video.

**10、 The time is wrong.**

Possible reasons are as followed:

- 1 Setting is wrong.
- 2 The battery is in bad connection or the voltage is too low.
- 3 The oscillation is damaged.

**11、 The DVR can not control the PTZ.**

Possible reasons are as followed:

- 1 There is something wrong with the frontal PTZ.
- 2 The setting, connection or the installation of the PTZ decoder is not correct.
- 3 The connections are not correct.
- 4 The PTZ setting of the DVR is not correct.
- 5 The protocols of the PTZ decoder and the DVR are not matched.
- 6 The address of the PTZ decoder and the DVR are not matched.
- 7 When multiple decoders are connected, the far port of the PTZ decoder line A (B) must connect a 120 $\Omega$  resistance to reduce the reflection otherwise the PTZ control is not stable.

8 The distance is too far.

**12、 The motion detect is not working,**

Possible reasons are as followed:

- 1 The time range set is not correct.
- 2 The motion detect area set is not correct.
- 3 The sensitivity is too low.
- 4 Limited by some hardware edition.

**13、 I cannot login via web.**

Possible reasons are as followed:

- 1 The system is windows 98 or windows me. We recommend updating to windows 2000sp4 or higher edition or installing the software for low edition.
- 2 ActiveX is hold back.
- 3 The edition is not exceeded dx8.1. Update the display card driver.
- 4 Network connection failure.
- 5 Network setting issues.
- 6 Invalid password or user name.
- 7 The user edition is not matched the DVR program edition.

**14、 The image is not clear or there is no image in network preview state or video file playback state.**

Possible reasons are as followed:

- 1 Network is not stable.
- 2 The user machine is resource limited.
- 3 Choose the play-in-team mode in the network setup of DVR.
- 4 The region shelter or channel protection is set.
- 5 The user has no surveillance purview.
- 6 The real-time image of the hard disk recording machine itself is not clear.

**15、 Network connection is not stable.**

Possible reasons are as followed:

- 1 Network is not stable.
- 2 IP address is conflicted.
- 3 MAC address is conflicted.
- 4 The network card of the computer or the hard disk recording machine is bad.

**16、 There is something wrong with the USB backup or writing a CD.**

Possible reasons are as followed:

- 1 The rewritable machine and the hard disk are shared the same data lines.
- 2 The data is too much. Please stop recording and backup.

- 3 The data exceeds the backup storage.
- 4 The backup equipment is not compatible.
- 5 The backup equipment is damaged.

**17、 The keyboard can not control the DVR.**

Possible reasons are as followed:

- 1 The serial port of the DVR is not set correctly.
- 2 The address is not correct.
- 3 When multiple transformers are connected, the power supply is not large enough. Please give each transformer individual power supply.
- 4 The distance is too far.

**18、 Alarm can not be recessional.**

Possible reasons are as followed:

- 1 The setting of the alarm is not correct.
- 2 The alarm output is turned on manually.
- 3 The input machine is damaged or the connections are not correct.
- 4 There are some problems for specific program edition, Please update the program.

**19、 Alarm is not working.**

Possible reasons are as followed:

- 1 The setting of the alarm is not correct.
- 2 The connection of the alarm is not correct.
- 3 The alarm input signal is not correct.
- 4 An alarm is connected with two loops synchronously.

**20、 The remote controller is not working,**

Possible reasons are as followed:

- 1 The remote control address is not correct.
- 2 The remote control distance is too far or the angle is too large.
- 3 The battery is used up.
- 4 The remote controller or the front panel of the recording machine is damaged.

**21、 The storage time is not enough.**

Possible reasons are as followed:

- 1 Front camera quality is bad. The lens is too dirty. The camera is in backlighting installation.
- 2 The hard disk capacity is not enough.
- 3 The hard disk is damaged.

**22、 The downloading files can not play.**

Possible reasons are as followed:



- 1 There is no media player.
- 2 There is no DX8.1 software or higher edition.
- 3 There is no DivX503Bundle.exe file to play AVI video files.
- 4 The DivX503Bundle.exe and ffdshow-2004 1012 .exe files must be installed in the windows xp system.

**23、 I can not remember the advanced code or network code in the local menu operation.**

Please contact the local service or call the HQ service. We will offer the service according the machine type and the program edition.

**24、 Q: I can't login cloud platform**

Possible reasons are as followed:

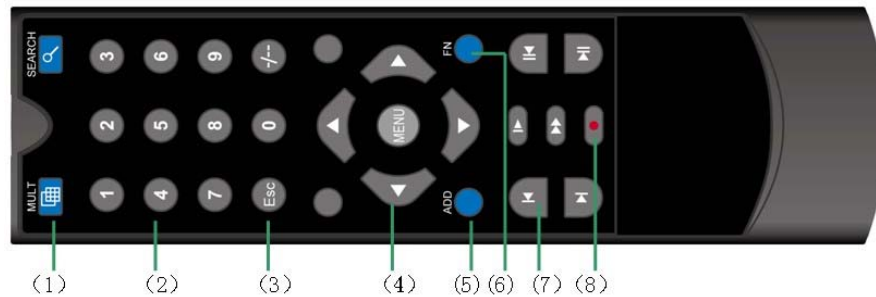
- 1 It sets DMZ main board to other IP address in router (there is no need to set DMZ main board when using cloud platform)
- 2 IP address and DNS server setting incorrectly.
- 3 Check whether series number of the device is correct.

## 6.2 Use and maintenance

- 1 Please brush printed circuit boards, connectors, fans, machine box and so on regularly.
- 2 Please keep the grounding well done to prevent the video or audio signal interfered and the DVR from static or inductive electricity.
- 3 Do not pull out the video signal line or RS-232 port or RS-485 port with the power on.
- 4 Do not use the TV in the local video output port (VOUT) of DVR. It will damage the video output circuit easily.
- 5 Do not turn off the switch directly. Please use the turn-off function in the menu or press the turn-off button in the panel (3 seconds or longer) to protect the hard disk.
- 6 Please keep the DVR away from heat resource.
- 7 Please keep the DVR ventilated for better heat radiator.

Please check the system and maintain regularly.

## Appendix 1. Remote controller operation



Serial number	Name	Function
1	Multi-window button	Same function as Multi-window button in the front panel
2	Numeric button	Code input/number input/channel switch
3	【Esc】	Same function as 【Esc】 button in the front panel
4	Direction button	Same function as direction button in the front panel
5	ADD	Input the number of DVR to control it
6	FN	Assistant function
7	Record control	Control the record
8	Record mode	Same function as “Record mode”

## Appendix 2. Mouse operation

\*Take right hand as an example

The mouse in USB connection is supportive.

Operation	Function
Double left click	Double click one item in the file list to playback the video
	Double click the playback video to zoom in or out the screen
	Double click the channel to make it full screen display

	double click again to resume the multi-window display
Left click	Choose the according function in the menu
Right click	Pop desktop shortcut menu in preview state
	Current shortcut menu in the menu
Press middle button	Add or subtract number in the number setting
	Switch the items in the combo box
	Page up or down in the list
Move mouse	Choose the widget or move the item in the widget
Drag mouse	Set the motion detect area
	Set the cover area

### Appendix 3. Hard Disk capability calculation

Make sure the hard disk installed to install the DVR for the first time. Pay attention to the IDE hard disk lines connection.

#### 1、 Hard disk capability

There is no limit for recording machine. We recommend 120G~2000G size to keep better stability.

#### 2、 Overall capability option

The hard disk capability formula is:

Overall capability (M) =channel number\*time (hour) \*capability in an hour (M/hour)

The recording time formula is:

Recording time (hour) =  $\frac{\text{overall capability (M)}}{\text{Capability in an hour (M/hour) *channel number}}$

Capability in an hour (M/hour) \*channel number

The DVR introduces the MPEG4/H.264 compression technology. Its dynamic range is very large so the hard disk capability calculation is based on the estimation values of each channel creating files in an hour.

#### Example:

The video files in each channel need 200M capability in an hour. For 4 channels and one month (24hours a day) the needed hard disk capability is: 4channel\*30days\*24hours\*200M/hour=576G. So it will need one 500G hard disks.



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