User's installation and operation Manual

Important Safeguards and Warding

Do not place heavy objects on the DVR.

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

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

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

Environment

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

Do not install the DVR in the 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 defence 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

·spot interface、analog interface、VGA interface and HDMI interface， surveillance function through monitor or display.

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-playback mode

·zoom at arbitrary region

Net operating

·through net tele-surveillance in the real time

·tele-PTZ control

·tele-recording check and real-time playback

Alarm linkage

·Alarm activated video record,tour ,message,buzzer,e-mail,ftp

Communication interface

·RS485 interface which fulfills the alarm input and PTZ control

·RS232 interface which can extend keyboard connection to realize master,as well as with computer serial port connection for system maintenance and upgrade,and matrix control and so on.

·standard ethernet network interface which fulfills the telecommuting function

Intelligent operating

·mouse action function

·fast copy and paste operating for the same setting

2 Open-package check and cable connections

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.he 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.

1.Front panel and rear panel

- The key function specification in the front panel and the interface specification in the real panel are in the specification.
- Please check the product type in the front panel whether is accordant with the product type you order.

The label in the real panel is very important for the after service. Please protect it carefully. When you contact us for after service, please provide the product type and serial number in the label.

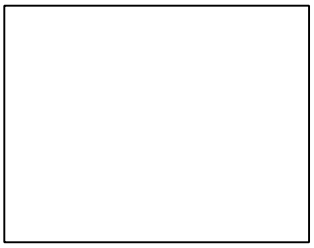
2.Check

After open the cover,you should check if it has obvious damage trace,also please check the front panel data cable,power cord and motherboard's connection are loose or not.

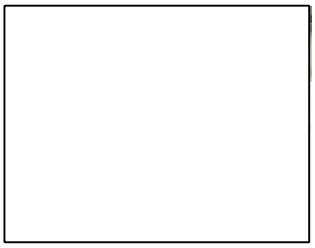
2.2 Hard disk installation

For the first use,please install the hard disk,this machine box can install two hard disk(no limited capacity).

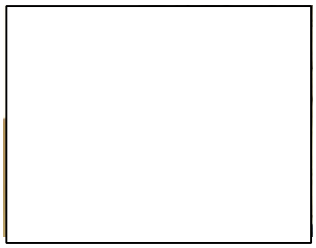
①disassemble the screw



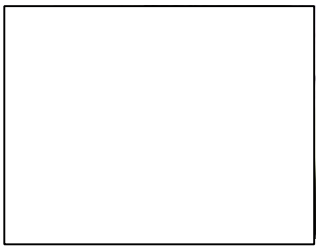
②disassemble the cover



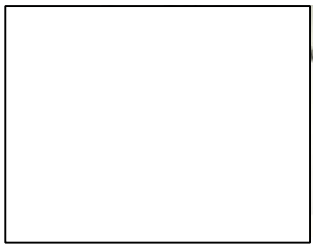
③fix the screw of hard disk



④fix the screw of hard disk



⑤connect the data wire



⑥connect the power wire

⑦cover the machine

⑧fix the cover

2.3 Shelf installation

This product chassis specification for the standard 1u,so it can be installed in the standard shelf.

Installation steps and attention items:

1、Make sure the temperature in the room lower then 35℃ (95°f).

2、Keep the equipment have 15cm(6 inches)space around in order to air's circulation.

3、From bottom to shelf installation.

4、When multiple components install in the frame，please take preventive measures to avoid power socket overload..

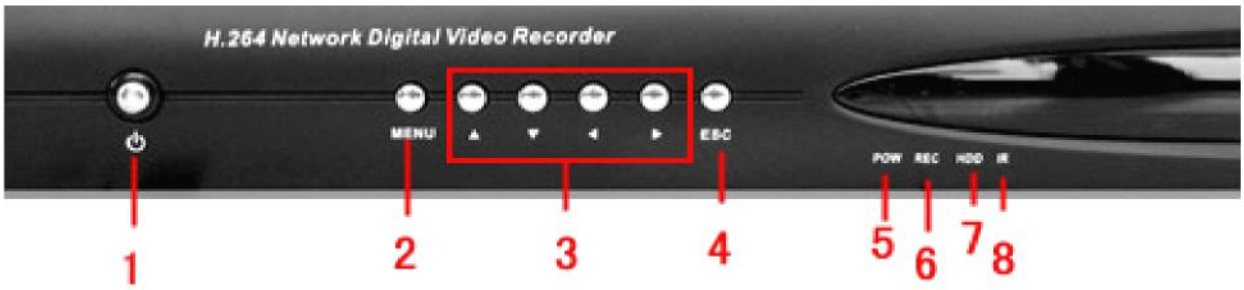
2.4 Front panel

The front panel of T series

(1) Power indicator light (2) Record indicator light (3)Alarm indicator light

(4) ESC (5) Menu (6)Direction &Enter

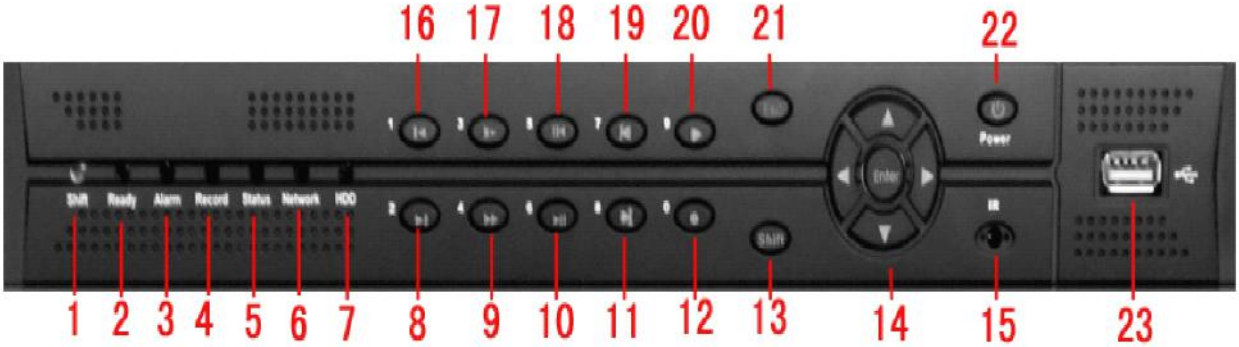
The front panel of A series



(1) Power switch (2)Menu (3) Direction (4) ESC

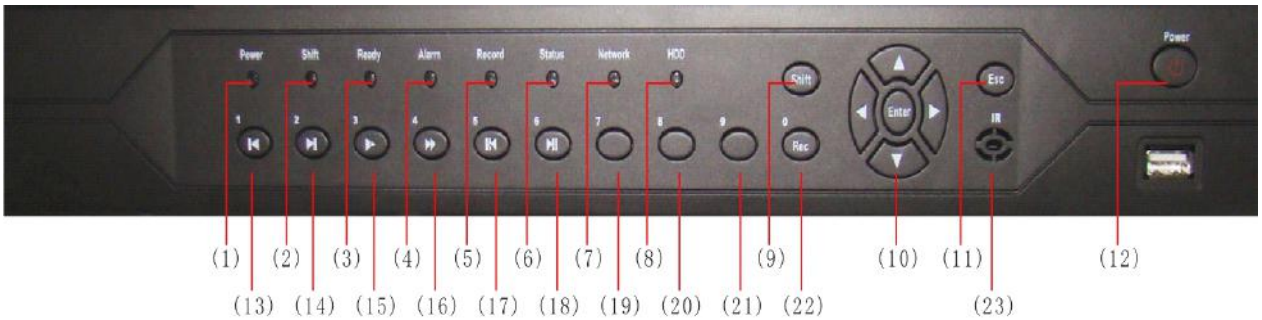
(5)Power indicator light (6) Record indicator light (7)HDD indicator light (8) IR remote receiver

The front panel of C series



(1) Shift indicator light	(2) System indicator light	(3) Alarm indicator light	(4) Record indicator light
(5) Outside operation indicator light	(6) network indicator light	(7)HDD indicator light	(8) Next File
(9) Fast Play	(10) Play Pause	(11) Next Frame	(12)Record
(13) Function Switching	(14) Direction&Enter	(15) IR remote receiver	(16) Previous File
(17) Slow Play	(18) Backwards Pause	(19) Previous Frame	(20) Play
(21) ESC	(22) Power switch	(23) USB	

The front panel of E series

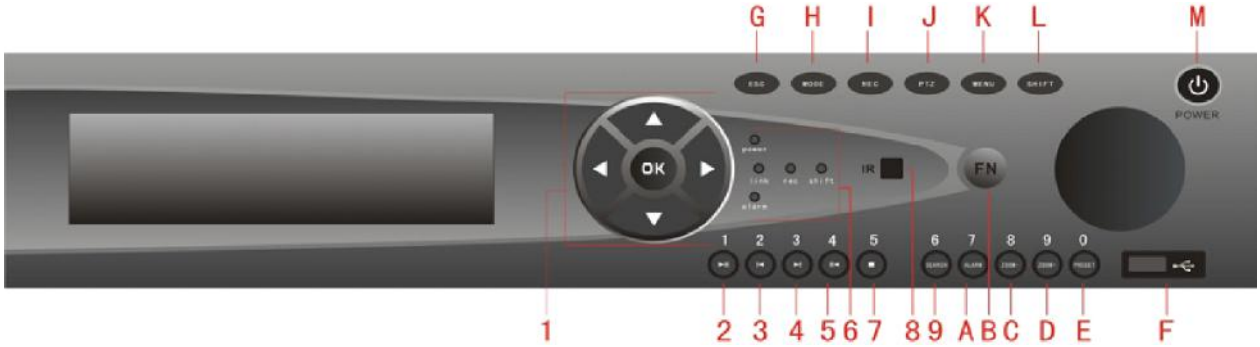


(1) Power indicator light	(2) Shift indicator light	(3) System operation indicator light	(4) Alarm indicator light
(5) Record indicator light	(6) Outside operation indicator light	(7) Network indicator light	(8) HDD indicator light
(9) Function switch	(10) Direction&Enter	(11) ESC	(12) Power switch
(13) Previous File	(14) Next File	(15) Slow Play	(16) Fast Play
(17) Backward Pause	(18) Play Pause	(19) 7	(20) 8
(21) 9	(22) Record	(23) IR remote receiver	

The front panel of F series

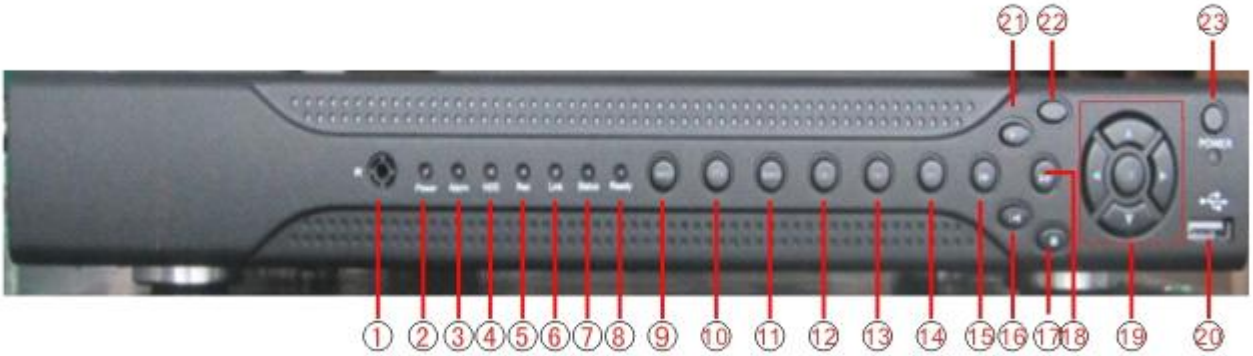
(1)	Play/Pause/5	(2)	Slow Play/6	(3)	Fast Play/7	(4)	Playback pause/8
(5)	Playback stop/9	(6)	Record	(7)	Power switch	(8)	USB
(9)	Main Menu/0	(A)	Screen switch/1	(B)	Record search/2	(C)	PTZ control/3
(D)	Assist/4	(E)	Shift	(F)	Cancel	(G)	IR remote receiver
(H)	Direction&Enter	(I)	Light indicator				

The front panel of K series



(1) Direction&Enter	(2) Play pause/1	(3) Previous File/2	(4) N e x t F i l e 3
(5) Playback pause/4	(6) Light indicator	(7) Playback stop/5	(8)IR remote receiver
(9) Record search/6	(A) Alarm Output/7	(B) Assist	(C)Zoom o u t /8
(D)Zoom i n /9	(E) Preset point setup/0	(F) USB	(G) Cancel
(H)Screen Switch	(I) Record	(J) PTZ	(K) Main Menu
(L) shift	(M) Power Switch		

The front panel of D series



(1)IR remote receiver (2)Power indicator light (3)Alarm indicator light (4)Keyboard indicator light
(5)Record indicator light(6)Network indicator light (7)Status indicator light (8)function indicator light
(9)Return main menu (10)PTZ (11)Playback (12)Previous File
(13)Next file (14)Record (15)Slow Play (16)Playback pause
(17)Fast Play (18)Play back Stop (19)Direction$Enter (20)USB
(21)Stop Play (22)ESC (23)Power Switch

2.5 Rear panel

The rear panel of T series

1	Video Input	2	Video Output	3	Audio Output
4	Audio Input	5	VGA	6	Network
7	USB	8	Power Input		

The rear panel of A series

5004A-B

1	Video Input	2	Video Output	3	VGA
4	Audio Output	5	Audio Input	6	Network
7	USB	8	RS485	9	Power

5008A-B

***this model of device's interface is the same as 5004A-B's,just four more video input**

The rear panel of C series

5004C-B

1	Video Input	2	Video Output	3	VGA
4	Audio Input	5	Audio Output	6	Network
7	USB	8	RS485	9	Power

5004C-S

1	Video Input	2	Video Output	3	12V Output
4	Audio Input				

***other interface of this model are similar as 5004C-B**

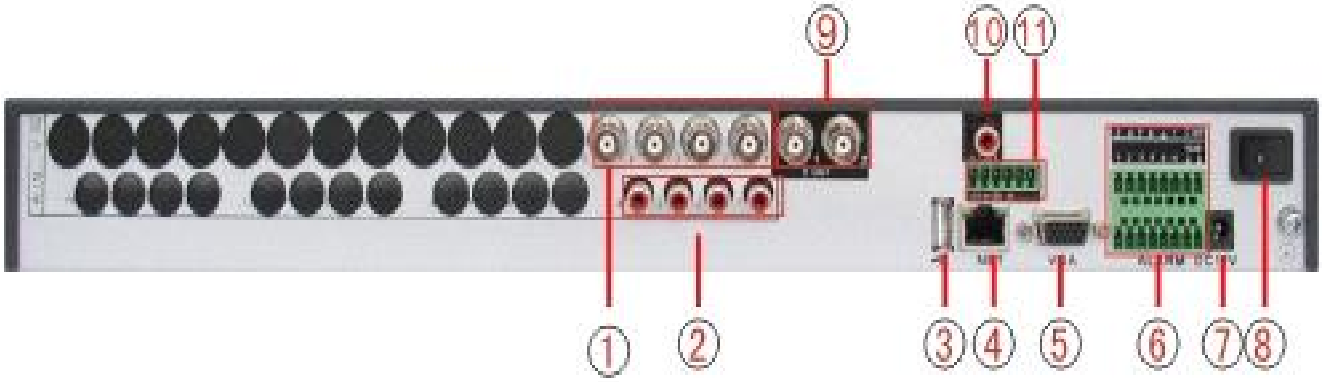
5008C-S

5008C-C

5016C-S

5016C-C

The rear panel of E series



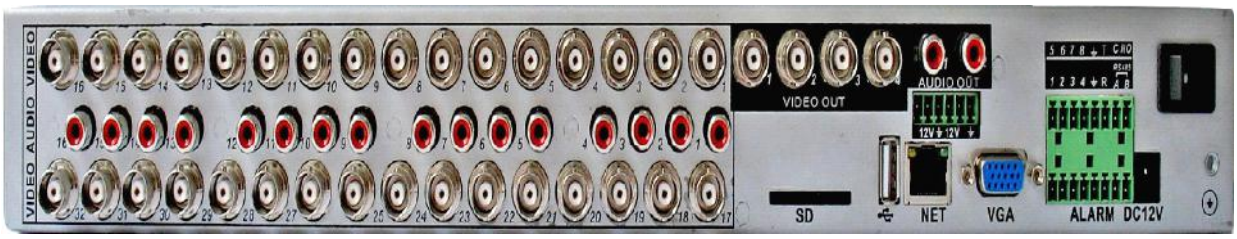
5004E-S

1	Video Output	2	Audio Input	3	USB
4	Network	5	VGA	6	External Interface
7	Power Supply	8	Switch	9	Video Output
10	Audio Output	11	12V Input		

***other model 's interface are same as 5004E-S**

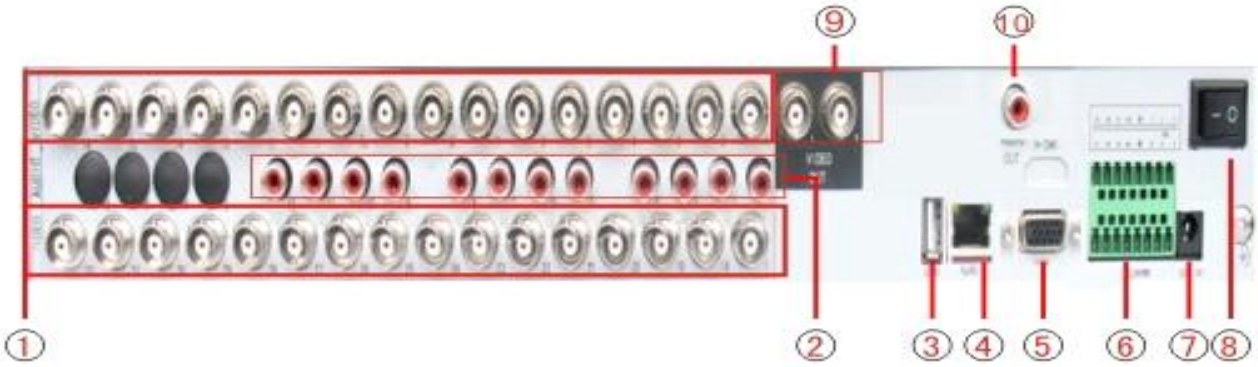
5008E-S

5016E-S



5032E-S

The rear panel of F series

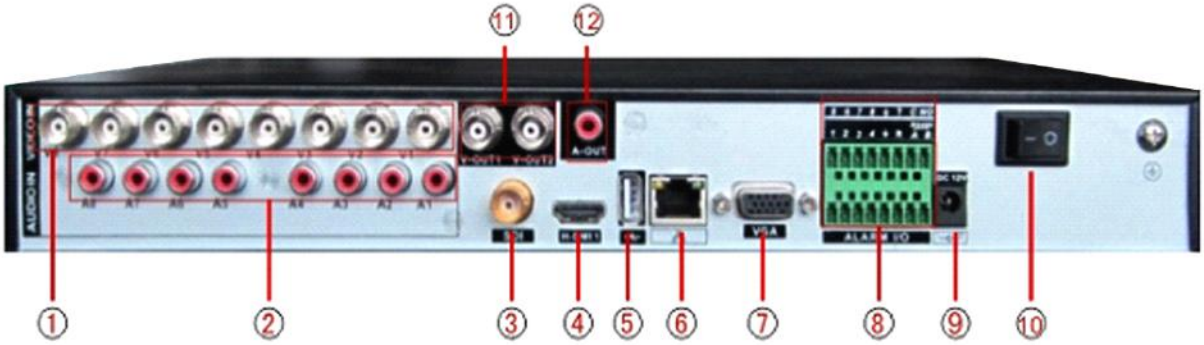


1	Video Input	2	Audio Input	3	USB
4	Network	5	VGA	6	External Interface
7	Power Supply	8	Switch	9	Video Output
10	Audio Output				

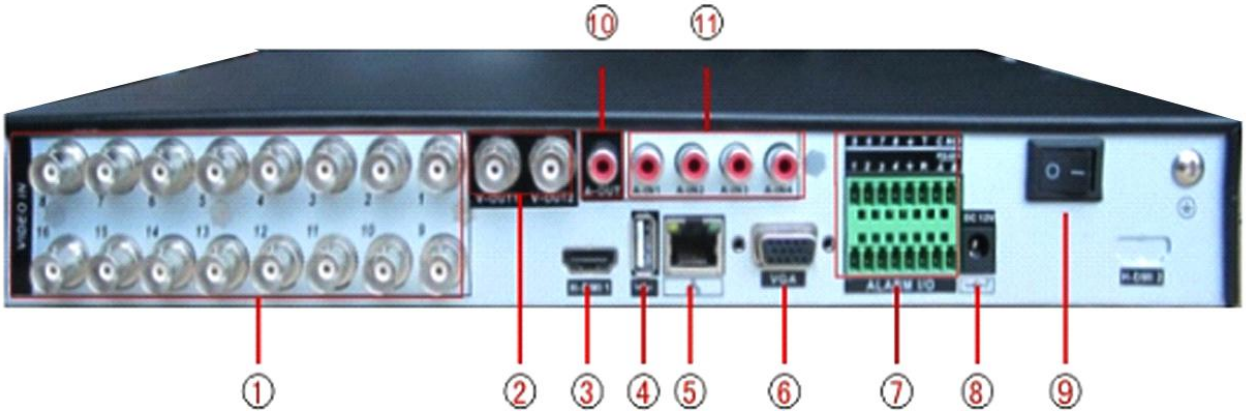
The rear panel of K series

1	Power Switch	2	Power Supply	3	Fan
4	Video Input	5	VGA	6	Network
7	USB	8	External Interface	9	External Interface
10	Audio Output	11	Video Output	12	HDMI

The rear panel of D series



1	Video Input	2	Audio Input	3	SDI
4	HDMI	5	USB	6	Network
7	VGA	8	External Interface	9	Power Supply
10	Power Switch	11	Video Output	12	Audio Output



1	Video Input	2	Video Output	3	HDMI
4	USB	5	Network	6	VGA
7	External Interface	8	Power Supply	9	Power Switch
10	Audio Input	11	Audio Output		

***this series products have same rear panel**

5008D-EH

2.6 Audio and video input and output connections

2.6.1 Video input connections

The video input port is BNC connector plug. The demand of input signal is PAL/NTSC BNC(1.0V_{P-P},75Ω).

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.

Insure the vidicon signal stable and credible

The vidicon 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 vidicon 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 connections and options

The video output is divided into PAL/NTSC BNC(1.0V_{P-P},75Ω) and VGA output(selective

configuration).

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 creepage of low quality TV can lead to the damage of other equipments.

2.6.3 SDI video input

Only part models of 6000 series support SDI encode for 1080P

2.6.4 Audio signal input

Audio port is BNC 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.

2.6.5 Audio signal 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

Before connecting the device,please pay attention to follow situations:

***note:T series have no alarm input/output functions.**

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 can not 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.PTZ decoder connections

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 485 AB lines of DVR can not connected with other 485 output equipments paralleled.

E. The voltage between the AB lines of the decoder must be less than 5V.

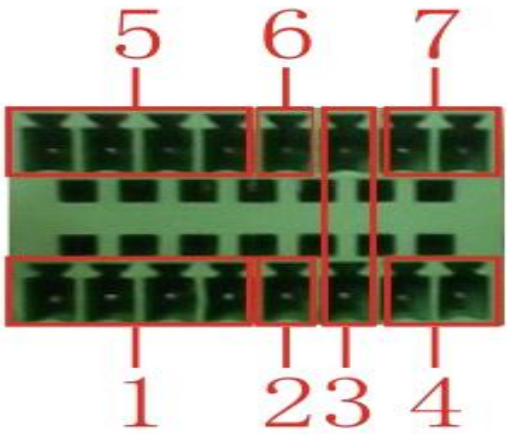
4.Front equipment grounding note

Bad grounding can lead to the burnout of the chip.

5.Alarm input type unlimited

The DVR alarm output port is constant opening type.

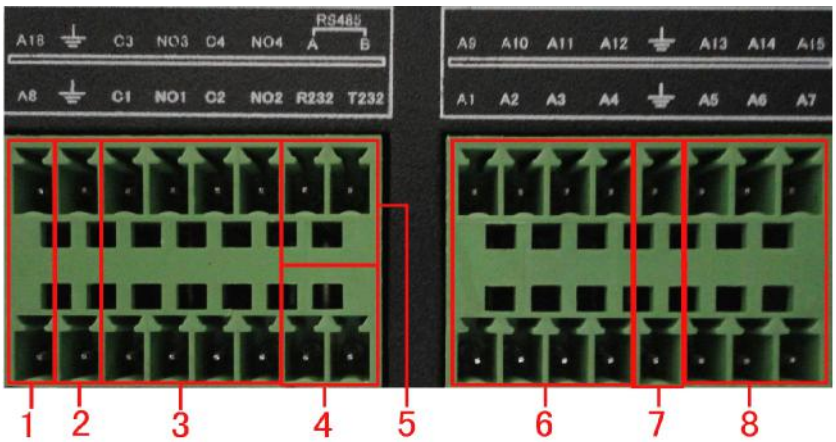
eight external alarm interface



(1) alarm input 1,2,3,4 (2) ground (3) RS232 (4) RS485 (5) alarm input 5,6,7,8

(6) ground (7) alarm output

sixteen external alarm interface



①⑥⑧alarm input ②⑦ground ③alarm output ⑤RS485 ④RS232

Parameter	meaning
G	grounding
R,T	RS232 port
A,B	485communciate interface which is connected with the recording control equipments such as the decoder

2.7.1 Alarm input port specification

8 channels alarm input. Alarm input type unlimited.

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 specification

2 channels alarm output. There is external power supply when using the external alarm equipment.

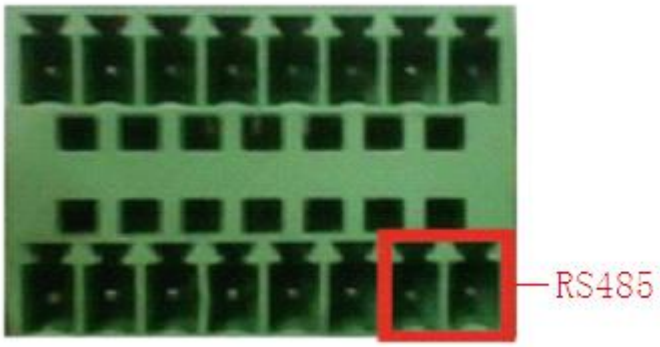
Please refer to the relay relevant parameters to avoid the overload that damages main machine.

2.7.3 Alarm output port relay parameters

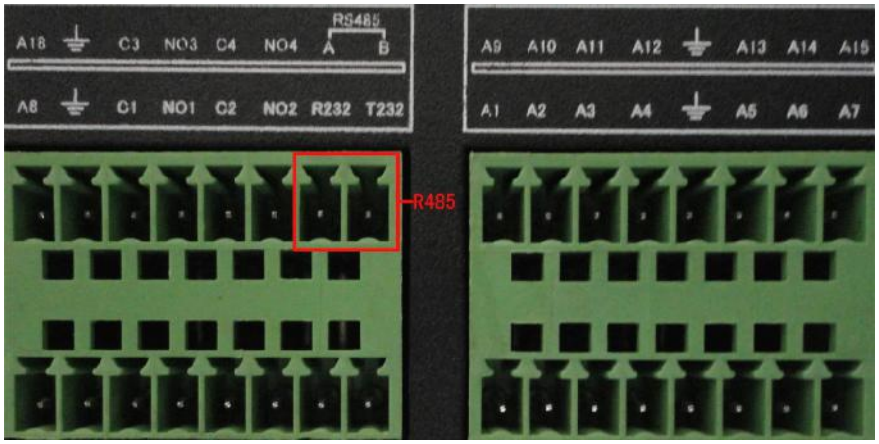
Type：JRC-27F		
Interface material	silver	
rating (resistance load)	Rating switch capacity	30VDC 2A, 125VAC 1A
	maximal switch power	125VA 160W
	maximal switch voltage	250VAC, 220VDC
	maximal switch current	1A
isolation	Homo-polarity interface	1000VAC 1minute
	Inhomo-polarity	1000VAC 1 minute
	Interface and winding	1000VAC 1 minute
Surge voltage	Homo-polarity interface	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℃	

2.8 Speed dome connections

1.Connect the 485 lines of the speed dome with the DVR 485 interface.



the 485 interface of eight external alarm



the 485 interface of sixteen external alarm

2.Connect the video line with the DVR video input.

3.Electrify the speed dome

3 Basic operation

Note: The button in gray display indicates nonsupport.

3.1 Turn on

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.

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

3.1 Turn off

There are two methods to turn off the DVR. Entering [main menu] and choosing [turn off] in the [turn off the system] option is called soft switch. Pressing the power supply switch is called hard switch.

Illumination:

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 System Login

When the DVR boots up, the user must login and the system provides the corresponding functions with the user purview.There are three user settings. The names are **admin**, **guest** and **default** and these names have no password. **Admin** is the super user purview; guest and **default**'s permissions are preview and video playback. User **admin** and **guest**'s password can be revised, while their permissions can't be revised; user **default** is the default login user whose permission can be revised but not its password.

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. (Through reboot or after half an hour, the account will be unlocked automatically).

For your system security, please modify your password after first login.

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.

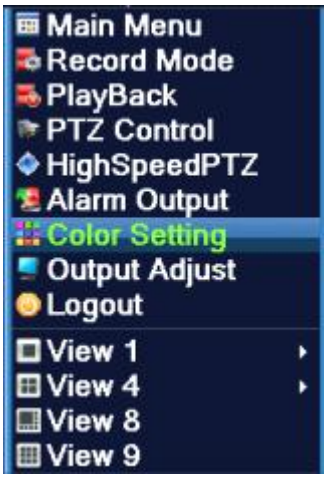
1		Recording status	**3**		Video loss
2		Motion detect	**4**		Camera lock

Table 3.1 Preview icon

3.5 Desktop shortcut menu

In preview mode you can right click mouse to get a desktop shortcut menu,as the picture 3.2 shows.The menu includes: **main menu, record mode, playback, PTZ control, High Speed PTZ, Alarm Output, color Setting, Output adjust, Logout, view mode shift ,spot.**

***Only partial model of 6000 series support Spot**



Shortcut menu in full analog(DVR)/Hybrid(HVR) mode

Shortcut menu in full digital(NVR) mode

Picture 3.2 Shortcut Menu

***compare to analog/hybrid mode's shortcut menu,the full digital mode do not have color setting function.**

3.5.1 Main menu

When you login, the system main menu is shown as below.

Picture3.3 Main Menu

3.5.2 Playback

There are two methods for you to play the video files in the hard disk.

1、 In the desktop shortcut menu.

2、 Main menu>Record->Playback

Note: The hard disk that saves the video files must be set as read-write or read-only state.(4.5.1).

Picture 3.4 video playback

1. Playback control 2. Operation hint 3. file searching

4. listed files 5. file information

【Listed files】Look up the listed files that accord with the searching criteria.

【File information】Look up the found file information.

【Playback control】See detail in below chart

Key	Function	Key	Function
/	Play/Pause		Backward play
	Slow forward		Fast forward
	Previous frame		Next frame
	Previous file		Next file
	Round play		Full screen
	Stop		

Picture 3.5 Playback control key

Note: play under frame by frame, the playback status should be paused firstly.

【Operation tips】show function of the key that cursor placed.

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.

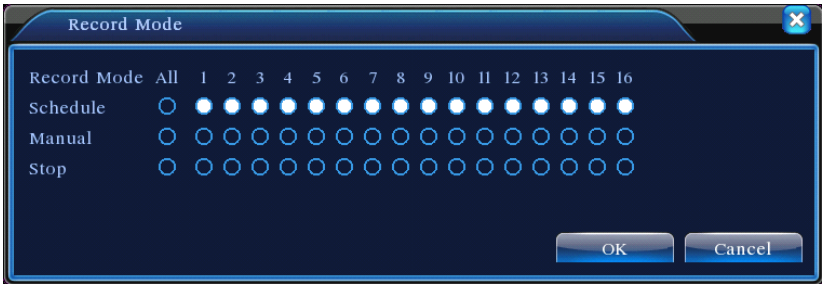
Local zoom： When the system is in single-window full-screen playback mode, you can drag your mouse in the screen to select a section and then left click mouse to realize local zoom. You can right click mouse to exit.

Note: When current resolution of the channel is over Max resolution, to playback this channel, will show a Red "X".

3.5.3 Record Control

Please check current channel status: "○" means it is not in recording status, "●" means it is in recording status.

You can use desktop shortcut menu or click [main menu]> [recording function]> [recording set] to enter the recording control interface.



Picture 3.8 Record Mode

【Schedule】Record according to the configuration.

【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.

3.5.4 Alarm output

Please check current channel status: "○" means it is not in alarming status, "●" means it is in alarming status.

You can use desktop shortcut menu or click [main menu]> [alarm function]> [alarm output] to enter the alarm output interface.

***T series no alarm output**

Picture 3.9 alarm output

【Configuration】Alarm is on according to the configuration.

【Manual】Click the all button and the according channel is alarming no matter the channel in any state.

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

3.5.5 PTZ control

***T series no PTZ function**
***PTZ control is a little different between hybrid mode & full digital mode:**
Digital channel – the digital channel need link PTZ, the remote device should connect with PTZ and with protocol correctly set also.
Analog channel – Only when the device is connect with PTZ and configure protocol correctly is ok.

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

Note1. Decoder A(B)line connects with DVR A(B)line. The connection is right.

2. Click [main menu] >[system configuration] >[PTZ setup] to set the PTZ parameters.

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

Picture 3.10 PTZ setup

【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.

【Hide】Current interface will be temporarily hidden after click it.

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

【High speed PTZ】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 pages.

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 3.10, click the Direction button will turn into preset position , click the Settings button to enter Picture 3.11.

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

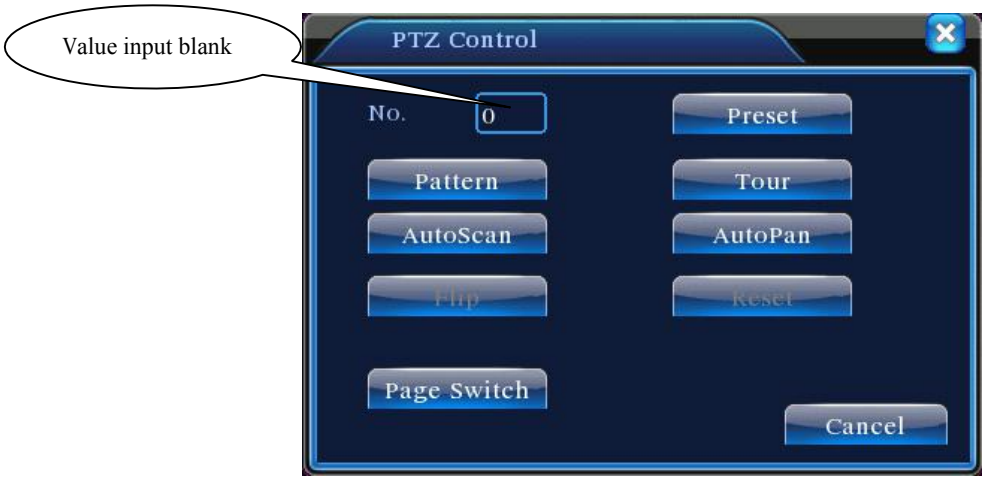
Step 3: click Settings button, return the Picture 3.10 Complete setup, that is the preset points and preset position corresponds.

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

Picture 3.11 Preset Settings

2）Preset Point Calls

In Picture 3.10, click Page Shift button, enter PTZ control interface as shown in Picture 3.12. In the input blank, write the preset points, then click Preset button, PTZ turn to the corresponding preset point.



Picture 3.12 PTZ Control

2、Cruise between Points

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

1）Cruise Between Points Settings

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

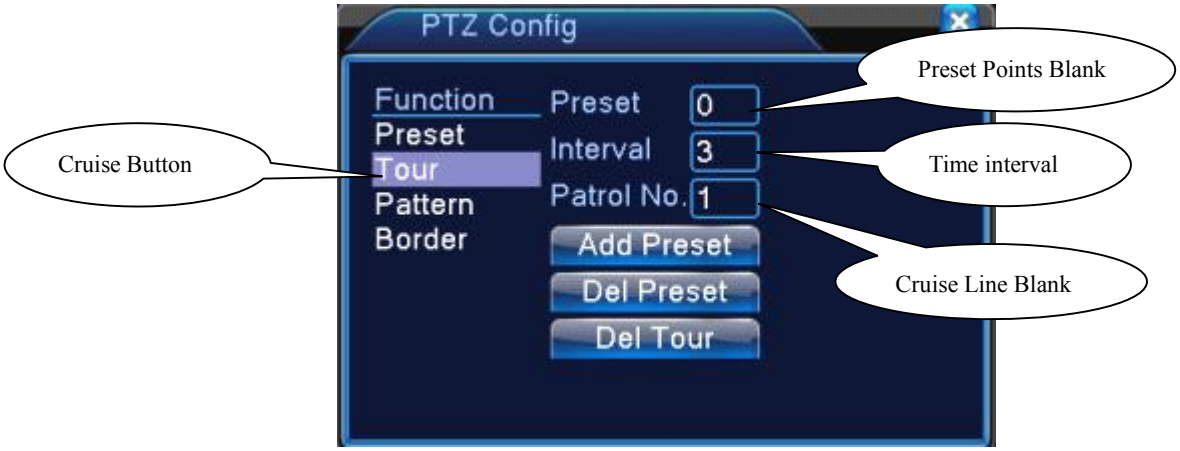
Step1: In Picture 3.10, the Direction key will turn PTZ to designated location , click Settings button to enter Picture 3.13,

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 3.13 Cruise Between Points Settings

2）The Calls of Cruise between Points

In Picture 3.10, click Page Shift button, enter PTZ control menu as shown in Picture 3.12. 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、Scan

PTZ also can work on the preset scan line repeatedly.

1）Scan setup

Setting steps:

Step1: In Picture 3.10, click Setup button ，enter Picture 3.14；

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

Step3: Click Start button, enter Picture3.10 ， here you can set the following items: Zoom,Focus,Aperture,Direction and so on. Click Setup button to go back Picture 3.14

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

Picture 3.14 Scan Setup

2）Scan Calls

In Picture 3.10, click Page Shift button, then enter PTZ control menu as shown in Picture 3.12. 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、Boundary Scan

In a horizontal line，set up a line，call scan，PZT repeat operation according to the route

1）**Boundary Scan setup**

Set a period of horizontal curve for PTZ search path,the steps are as follows:

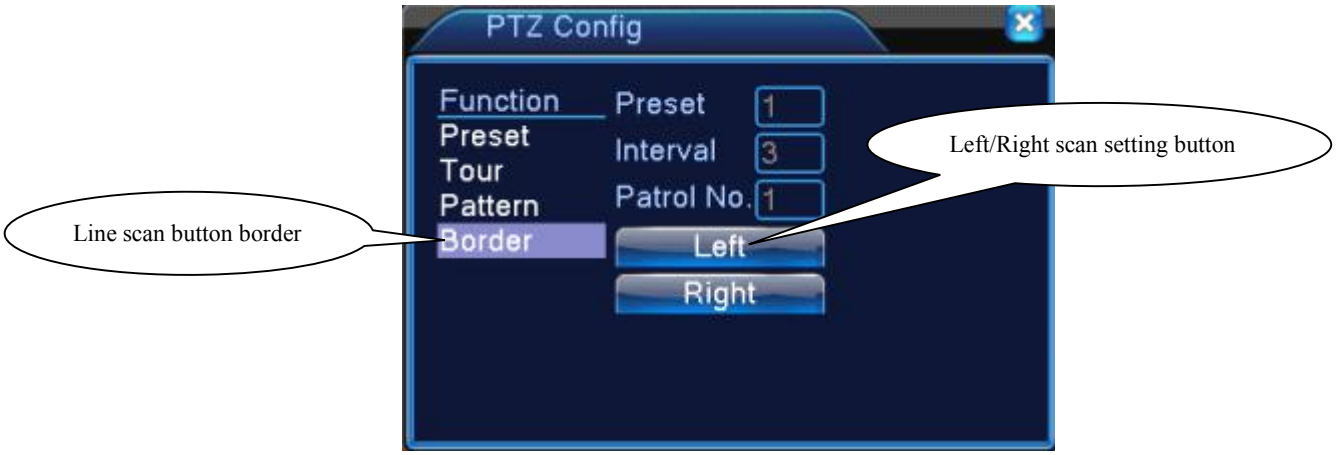
Step1：In Picture 3.10, click Direction button to turn the PTZ to preset direction, then click Setup button enter Picture 3.15, select the left boundary, return to Picture 3.10;

Step2：Please click direction arrows to adjust PTZ direction, click Setup button enter Picture3.15, then select the right boundary ,return to Picture 3.10;

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

Note:when the left and right scan in one horizontal,the PTZ will cycle rotate from left scan along the reverse direction to the right scan.

When the left and right scan not in the same horizontal ,the PTZ will regard the end of horizontal line which connect to left scan as right scan,cycle rotate from left scan along the reverse direction to the right scan.



Picture 3.15 Boundary Scan Setup

2）Boundary Scan Calls

In Picture 3.10, click Page Shift button, then enter PTZ control menu as shown in Picture 3.12. 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、Horizontal Rotating

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

6、Rotate

Click on horizontal Rotating button, PTZ turn around.

7、Reset

PTZ restart, all the data clears to 0.

8、Page Shift

In Picture 3.12, click Page Shift button into Picture3.16, setting auxiliary function. Auxiliary number corresponding to auxiliary switch on the decoder.

Picture 3.16 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；

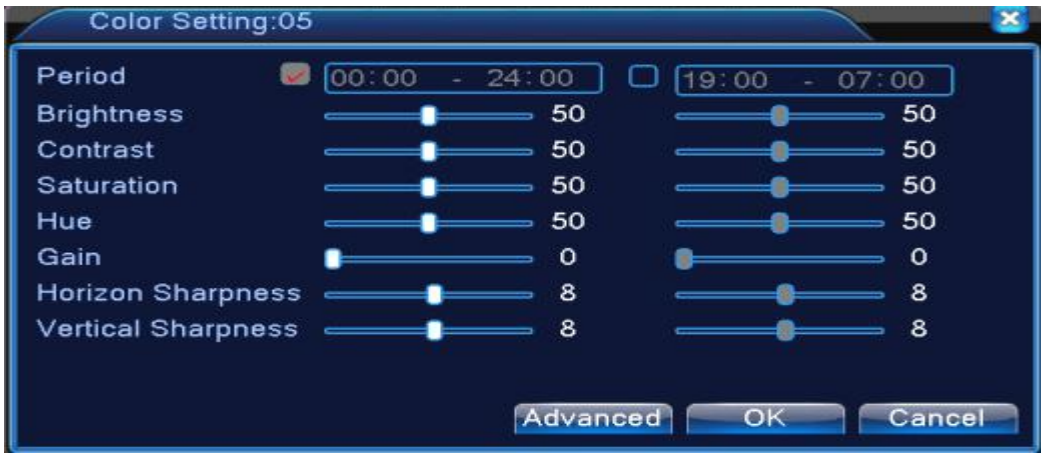
【Page Shift】In Picture 3.16，click Page Shift button enter the Picture 3.17 PTZ Main Menu , the menu itself can be control by the menu control buttons

3.5.6 Color setting

***color setting only apply for Hybrid(HVR)/full analog(DVR) mode,and only analog channel can 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.



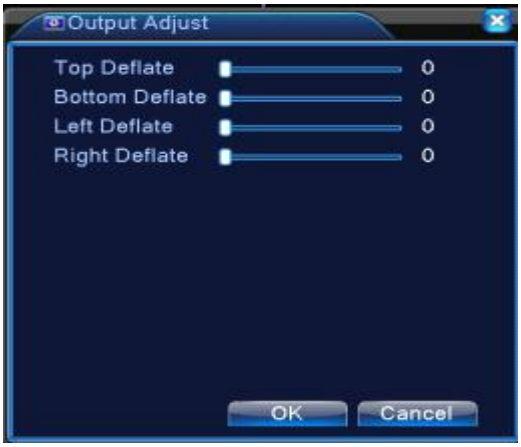
Picture 3.18 Color Setting

3.5.7 Output Adjust

***Hybrid mode is with black margin vertical & horizontal, while full digital mode without.**

Adjust TV output area parameters. You can use the desktop shortcut menu or enter [main menu]> [management tools]> [Output adjust].

Hybrid(HVR) Mode



full digital(NVR) mode

Picture 3.19 Output Adjust

Note: The black margin vertical & horizontal at output adjust of hybrid mode is only effect to analog channel.

3.5.8 Logout

Logout, shut down the system or reboot up. You can use the desktop shortcut menu or enter [main

menu].

Picture 3.20 Logout/Shutdown/Reboot the system

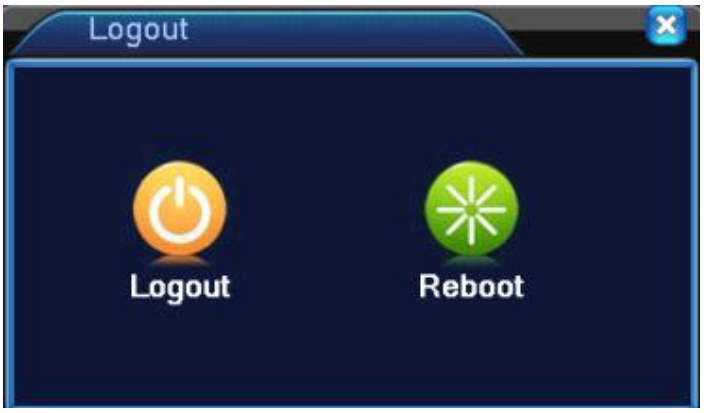
【logout】Quit the menu. Offer password next entrance.

【shut down】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.

***Note：T series have no shutdown function.**



T series logout

3.5.9 Window switch

Preview in single window/four windows/eight windows/nine windows/sixteen windows according to your choice.

Note：different video input number have different switchable preview picture.

3.6.0 Spot

Only part products of 6000 series support this function.the first BNC interface regard as Spot interface,the user can switch to Spot output image segmentation mode through shortcut menu.After connect to this BNC interface,no matter what operation in VGA,the TV only output the device's preview screen, no GUI interface.

Preview in single window/four windows/sixteen windows according to your choice.

Note：Different video input number have different preview screen.

4 Main menu

4.1 Main menu navigation

Main menu	Sub menu	Function
Record	Config	Set the recording configuration, recording type, recording time section
	playback	Set recording search, recording play, video file storage
	Storage	Set screen capture period, type ,etc. **Note：T series and 6000 series have no this function**
	backup	Detect backup device, format device, back the selective files
Alarm	Motion detection	Set motion detect alarm channel, sensitivity, area, linkage parameters: defending time section, alarm output, screen hint, recording, screen shot, PTZ, patrol, buzz, email and FTP upload
	Video blind	Set camera mask alarm channel, sensitivity, linkage parameters: defending time section, alarm output, screen hint, recording, screen shot , PTZ, patrol, buzz, email and FTP upload
	Video loss	Set video loss alarm channel, linkage parameters: defending time section, alarm output, screen hint, recording, screen shot , PTZ, patrol, buzz, email and FTP upload
	Alarm input	Set alarm input channel, equipment type, linkage parameters: defending time section, alarm output, screen hint, recording, screen shot , PTZ, patrol, buzz, email and FTP upload **Note：T series have no this function**
	Alarm output	Set alarm mode: configuration, manual, shut down **Note：T series have no this function**
	Exception handling	No HDD, HDD error, HDD capacity not enough, network cut, IP Conflict, linkage parameters, screen hint or buzz.

	Intelligent analysis	Set algorithm rule: trajectory display、sensitivity、minimum pixel、alert mode，and setting linkage parameters:period、alarm output、the screen prompt、record、PTZ、tour、buzzer、EMAIL、FTP upload. **Note: 6000 series support this function**
System configuration	General configuration	Set system time, data format, language, hard disk full time operation, machine number, video format, output mode, summertime, stay time
	Encode configuration	Set main (extra) coding parameter: code mode, resolving ability, frame rate, code stream control, image quality type, code stream value, frame between value, video/audio enable, **Note： only Hybrid mode and full analog mode have encode configuration.**
	Network configuration	Set basic network parameters, DHCP and DNS parameters, network high speed download
	NetService	PPPOE、NTP、Email、IP purview、DDNS parameter
	GUI display	Set channel title, preview hint icon state, transparency, cover area, time title, channel title fold. **Note： only analog channel can set channel name,region cover ,time title,channel title fold.**
	PTZ configuration	Set channel, PTZ protocol, address, baud rate, date bit, stop bit, check **Note：Hybrid mode shows PTZ configuration,T series have no this function.**
	RS485 Device	Set serial port function, baud rate, date bit, stop bit, check **Note：Full digital mode shows : RS485 Device**
	Serial port Configuration (RS232)	Set serial port function, baud rate, date bit, stop bit, check **Note：T series have no this function**
	Tour	Set patrol mode and interval time
	Spot	Set Spot tour mode and time interval **Note：only partial products of 6000 series support.**

	Digital	Set channel mode, check channel status and configure the digital channel, etc. **Note：only HVR and 6000 series support**
Management tools	Hard disk management	Set appointed hard disk as read-write disc, read-only disc or redundant disc, clear data, resume date and so on
	User management	Modify user, team or password. Add user or team. Delete user or team.
	Online user	Break the connection with the already login user. Lock the account after break until booting up again.
	Output adjust	Adjust upside, downside, nearside, starboard distance, black margin vertical & horizontal **Note：only analog channel have black margin vertical & horizontal**
	Automatic maintenance	Set automatic reboot system and automatic deleting files.
	Restore	Resume setup state: common setup, code setup, recording setup, alarm setup, network setup, network service, preview playback, serial port setup, user management
	Upgrade	upgrade with external device(like USB)
	Device Info	device hardware configuration and message
	Import/Export	Export the device's log or configuration to external device(like USB flash disk);Input the configuration with external device(like USB flash disk).
System information	Hard disk information	Display hard disk capability and recording time
	BPS	Display code stream information
	Log information	Clear all log information according to the log video and time
	Edition information	Display edition information

Shut down		Logout, shut down or reboot **Note：T series have no shut down function**

4.2 Record

Operations related to record, including: Record, Playback, Backup, Screen shot(only Hybrid mode and full analog have)

4.2.1 Record Configuration

Set the recording parameters in the surveillance channel. The system is set 24 hours consecutive recording in the first startup. You can enter [main menu]> [recording function]> [recording setup] to set.

Note: There is at least one read-write hard disk.（refer to chapter 4.5.1）

Picture 4.1 Record Configuration

【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. (refer to 4.5.1)

【Length】Set the time length of each video file. 60minutes is default value.

【Pre-Record】Record 1-30 seconds before the action. (time length is decided by the code stream)

【Record mode】Set video state: schedule, manual or stop.

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

Manual: Click the 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.

【Period】Set the time section of common recording, The recording will start only in the set range.

【Record 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: Refer to chapter 4.3 to set corresponding alarm function.

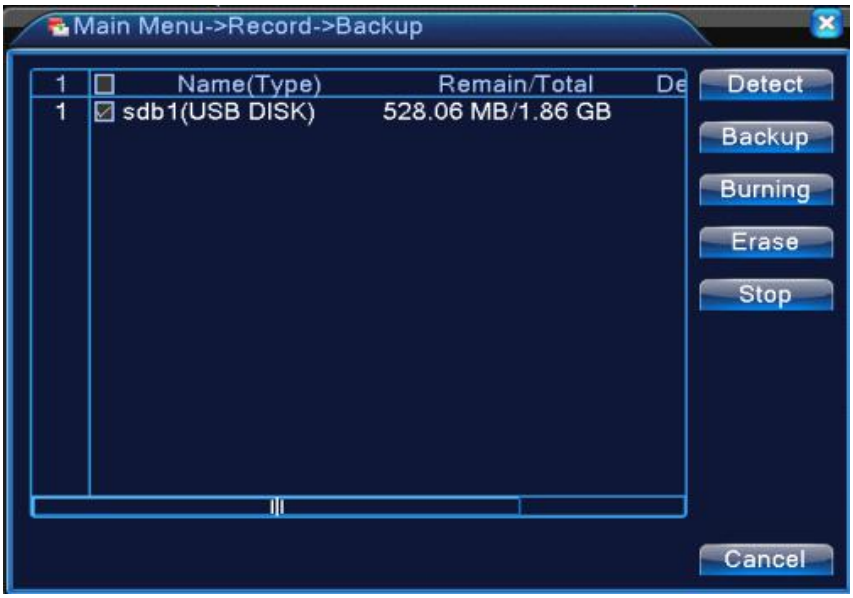
4.2.2 Playback

Refer to chapter 3.5.2.

4.2.3 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 backup can playback individually.



Picture 4.2 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. You can choose the backup file according to the type, channel and time.

Picture 4.3 Backup

Remove：Clear the file information.

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

Backup format：configurate the backup file format,according to require,can choose H264 AVI

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

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

【Burning】the file will be burned synchronously after click it.

【Erase】Choose the file to delete and click erasure to delete the file.

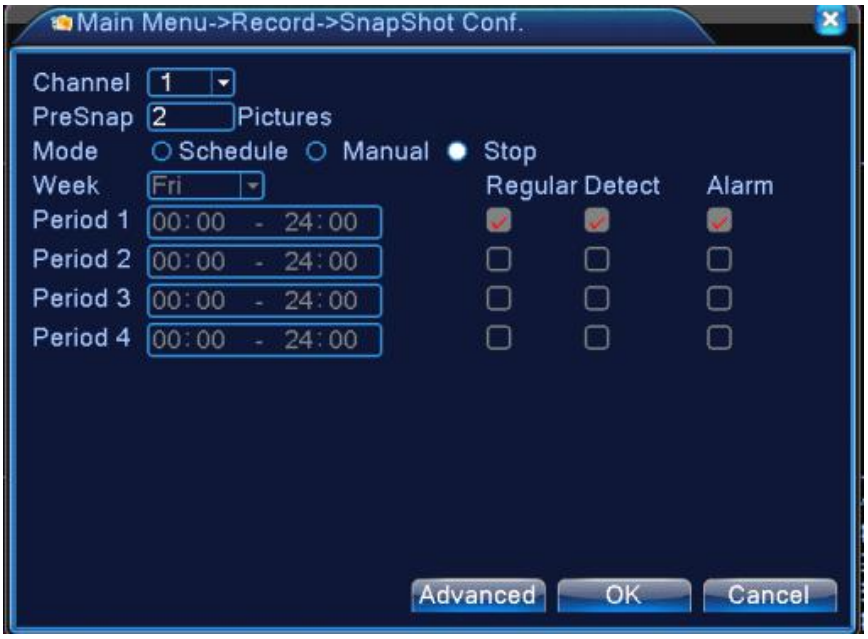
【Stop】Stop the backup.

4.2.4 Snapshot Storage

***Note：part products have this function.**

Setup snapshot parameters for different channels.At first time it's set for 24hours snapshot continuously,please go to Main Menu--Record--Snapshot Storage for appropriate setting.

Note:If normal snapshot storage,please setup snap at Main Mend--advanced--snapshot(please refer to chapter 4.5.1 HDD Manager)



Picture 4.2 snapshot storage

【Channel】Select the related channel to set,click"all"to set all channels.

【Presnap】Setup presnap picture quantity before recording,default is 5 pieces

【Record】Set record status."Schedule","Manual"and"Stop".

Schedule：Realise snapshot according to record type(regular,detect and alarm)and period

Manual：No matter what the present channel is in a state,once choose"manual"button,it will have snapshot at related channels.

Stop：No matter what the present channel is in a state,once choose "stop"button,it will stop snapshot at related channels.

【Period】Set normal record period,it only startup Snapshot Storage at set period.

【Type】Three types:regular,detect and alarm.

Regular：snapshot at set period.

Detect：snapshot at set period when motion detect,video blind and video loss which are preset for snapshot enable.

Alarm：snapshot at set period when alarm in which is preset for snapshot enable.

Note:for related alarm function,please refer to chapter 4.3.

4.3 Alarm Function

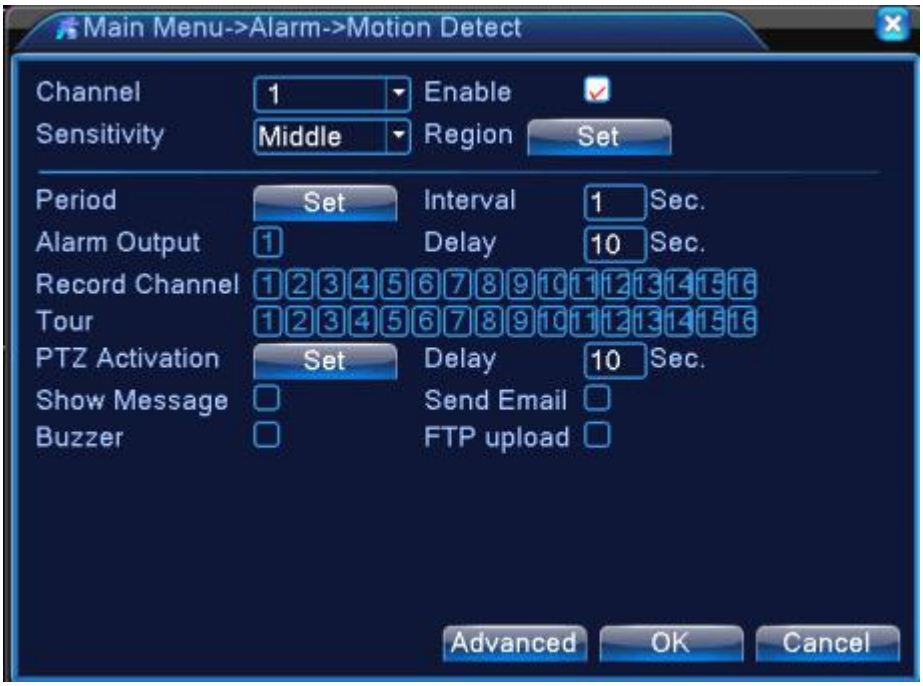
Alarm functions include: motion detect,video blind, video loss, alarm input and alarm output, **abnormality、intelligent analysis.**

4.3.1 Motion Detect

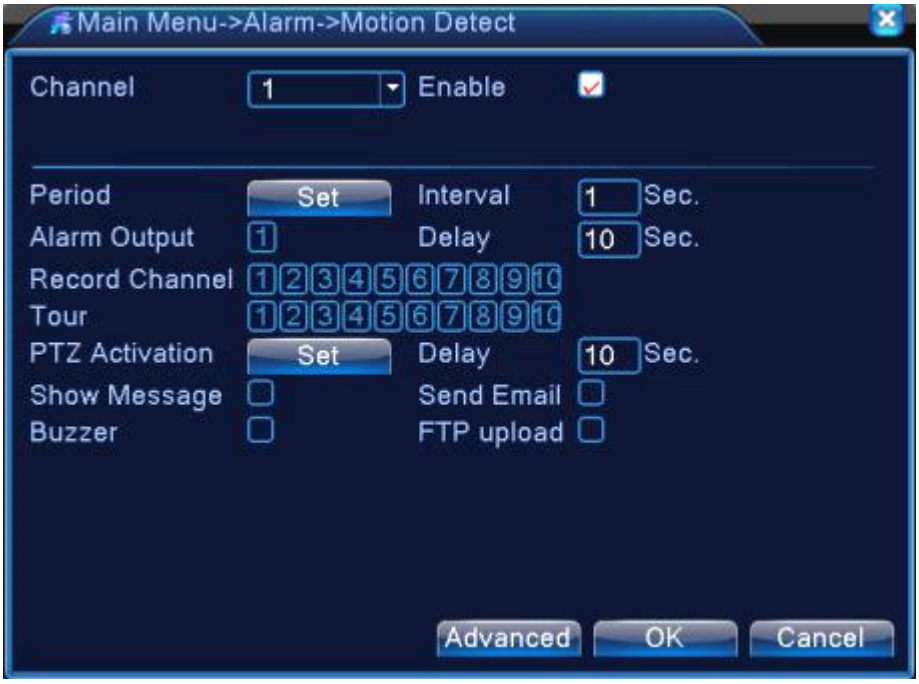
When system detects the motion signal that reaches the set sensitivity, the motion detect alarm is on and the linkage function is turned on.

Note: "Advanced" button is the same as right click.

***Motion detect function is different between Hybrid mode & Full digital mode:**
Digital channel: not only to enable motion detect function at local side, but also to enable the remote device that was connected. when remote device detect motion movement, local side will start alarm recording, otherwise this function is not enable.
Hybrid mode: only need to enable motion detect function at local side.



Video detect in Hybrid mode



Video detect in full digital(NVR) mode

Pic 4.4

【Channel】Choose the set motion detect channel.

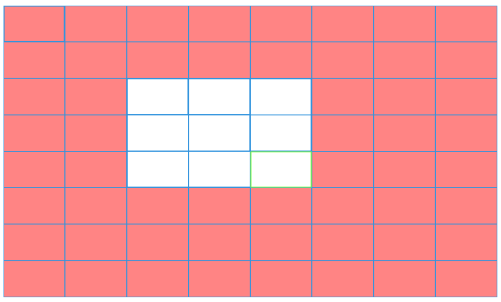
【Enable】■ means that the motion detect function is on.

【Sensitivity】Choose in the six options according to the sensitivity.
.

Note: Only the motion detect under hybrid mode/ full analog mode have this function of setting sensitivity, and also only the analog channel can set region.

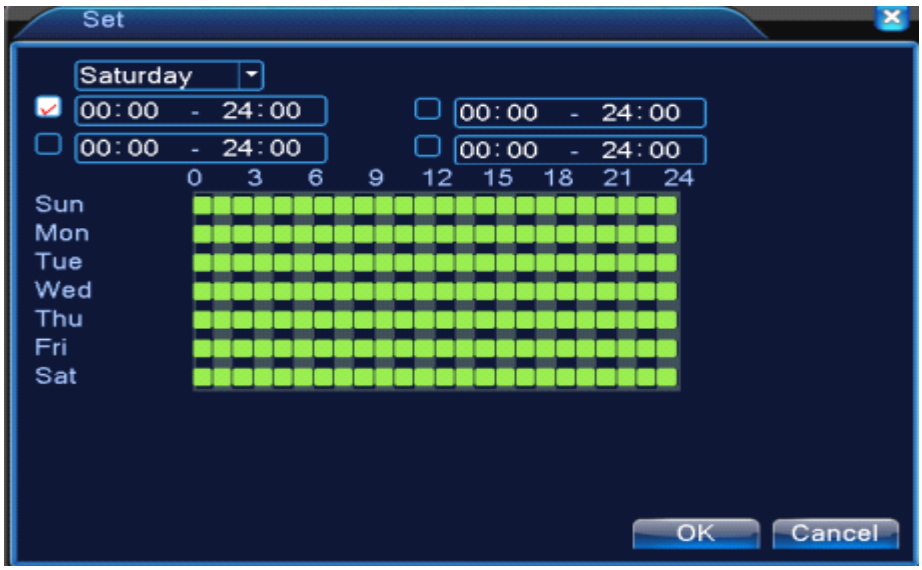
【Region】Click [set] to enter the set area. The area is divided into PAL22X18. Red block means the motion detect defensive area. White block means the unfenced area. You can set the area as followed, Drag the mouse and draw the area. Default: all selected blocks are detection area.

Note: Only the motion detect under hybrid mode/full analog mode have this function of setting region, and also only the analog channel can set region.



Picture 4.5 Region

【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 valid.



Picture 4.6 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 [recording setup] and perform the linkage recording. Start detecting video files in the corresponding time section.

【Tour】■ means that the selective channel is single window alternate patrol preview. The interval is set in the [Main Menu]>[System] > [Tour].

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

***Hybrid mode, PTZ link to the related PTZ information of analog channel, While digital channel model, the PTZ is link to the related PTZ information on the remote device connected.**

Note：to link PTZ, need go [Shortcut menu]->[PTZ control] to set preset point, cruise between points & interval time, etc.

Picture 4.7 PTZ Activation under hybrid mode

【Delay】When alarm is over,recording will last some seconds(10~300sec),then stop.

【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: Set in the [NetService] and send email.

【FTP upload】to tick it, the video & picture of related record channel & snapshot channel will be uploaded to assigned position.

Note：FTP upload need be set at [Netservice]

【Buzz】When alarm happens, device will come out with buzz.

4.3.2 Video Blind

When the video image is influenced by the environment such as bad brightness or reaching the set sensitivity parameter, the camera mask function is turned on and the linkage function is turned on.

***Same as motion detect function, video blind is different between Hybrid mode & Full digital mode:**

Digital channel: not only to enable video blind function at local side, but also to enable the remote device that was connected. when remote device with video blind, local side will start alarm recording, otherwise this function is not enable.

Hybrid mode: only need to enable video loss function at local side.

Note: "Advanced" button is the same as right click.

Video Blind in Hybrid mode

Video blind in full digital(NVR) mode

Pic 4.8 Video blind

Set method: refer to chapter 4.3.1. Motion detect

4.3.3 Video Loss

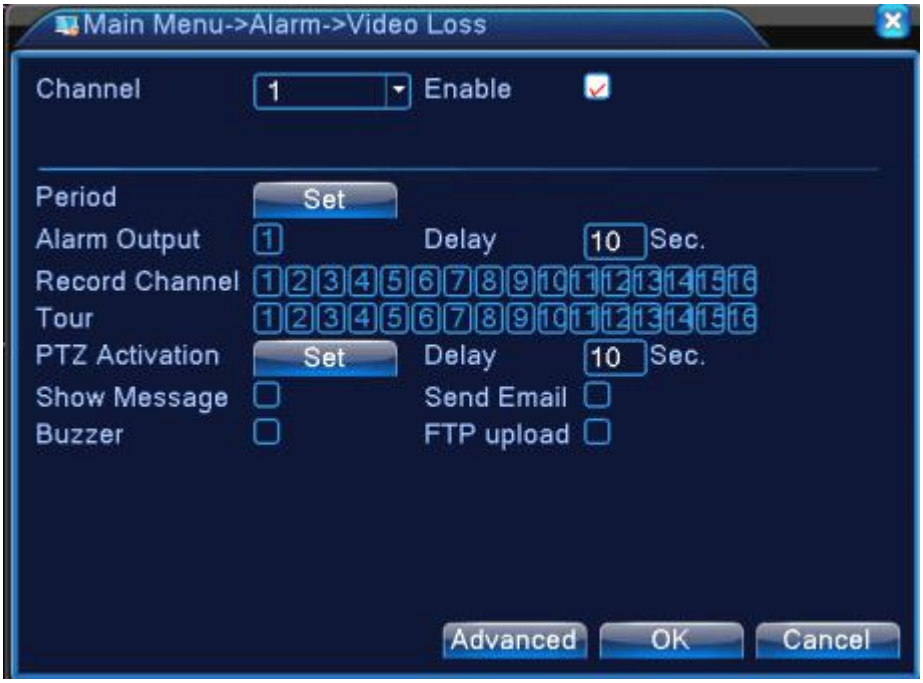
When the equipment can not obtain the channel video signal, the video loss alarm is turned on and the linkage function is turned on.

***Same as motion detect function, video loss is different between Hybrid mode & Full digital mode:**

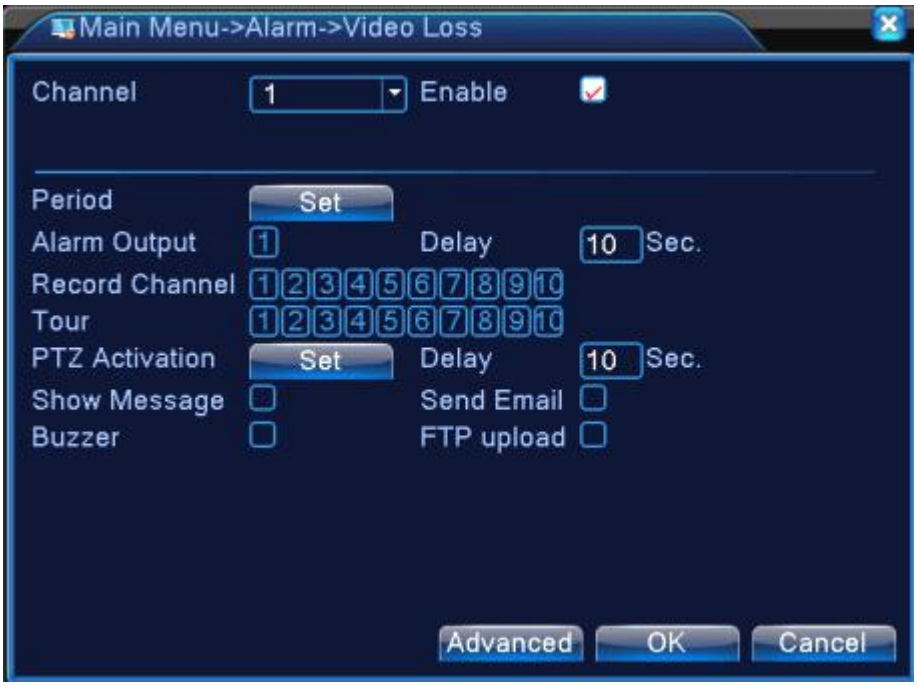
Digital channel: not only to enable video loss function at local side, but also to enable the remote device that was connected. when remote device with video loss, local side will start alarm recording, otherwise this function is not enable.

Hybrid mode: only need to enable video loss function at local side.

Note: "Advanced" button is the same as right click.



Video loss in Hybrid(HVR) mode



Video loss in full digital(NVR) mode

Pic 4.9 Video loss

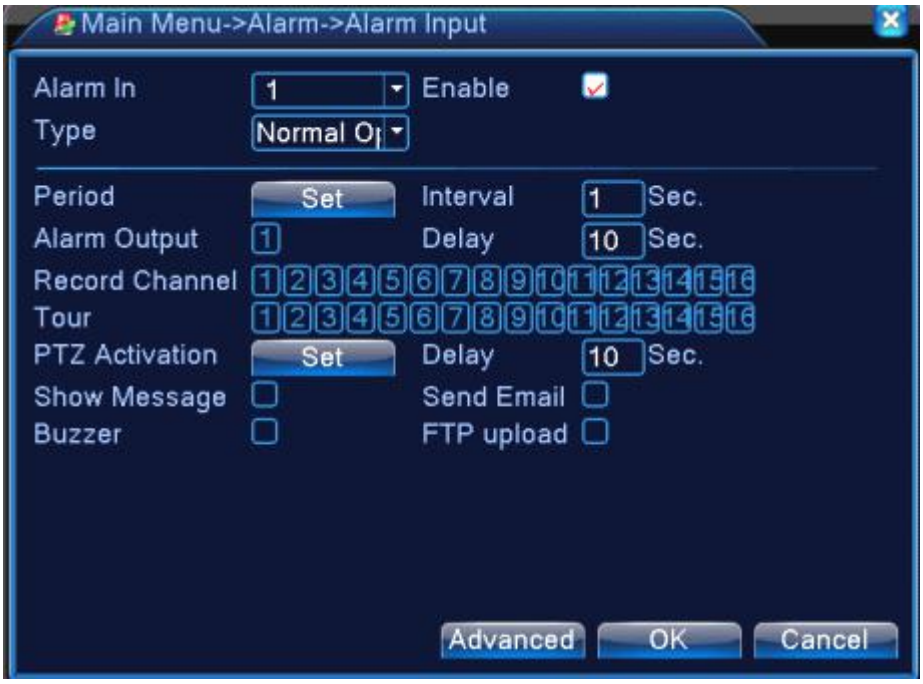
Set method: refer to chapter 4.3.1. Motion detect

4.3.4 Alarm input

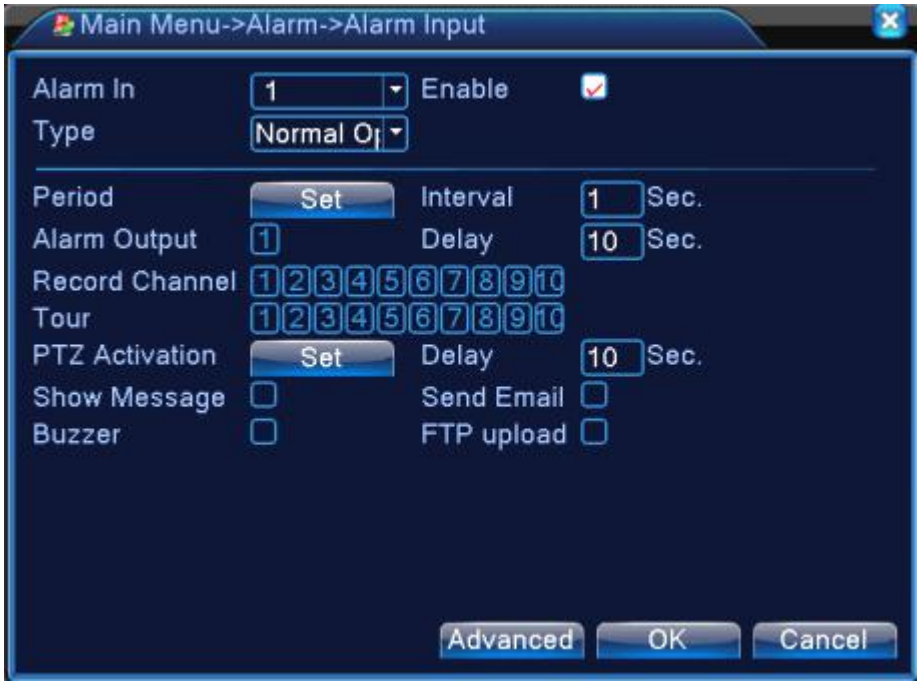
When the equipment obtains the external alarm signal, the alarm function is turned on.

***Alarm input is the same between hybrid mode & full digital mode, function enable, when it was set normal, only need to connect alarm sensor at alarm input port on local side, the alarm information is occurring, and will link to related setting functions at the same time**

Note: "Advanced" button is the same as right click.



Alarm input in Hybrid(HVR) mode



Alarm input in NVR mode

Pic 4.10 Alarm input

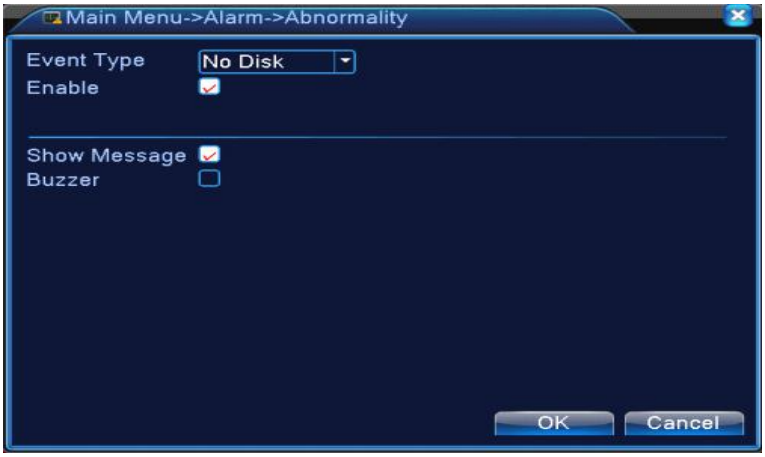
Set method: refer to chapter 4.3.1. Motion detect

4.3.5 Alarm output

Refer to chapter 3.5.4.

4.3.6 Abnormal

Analysing and inspecting current software and hardware of the device: When some abnormal events happen,the device will make a relative answer such as show message and buzzer.



Picture 4.11 Abnormal

【Event Type】 selecting abnormity you want to inspect

【Enable】 Select it to make sure abnormal function workable

【Show message】 Automatically alarm cue dialog box come out of the main screen

【Buzzer】 Device will have one long nosie “di” while alarm is happening

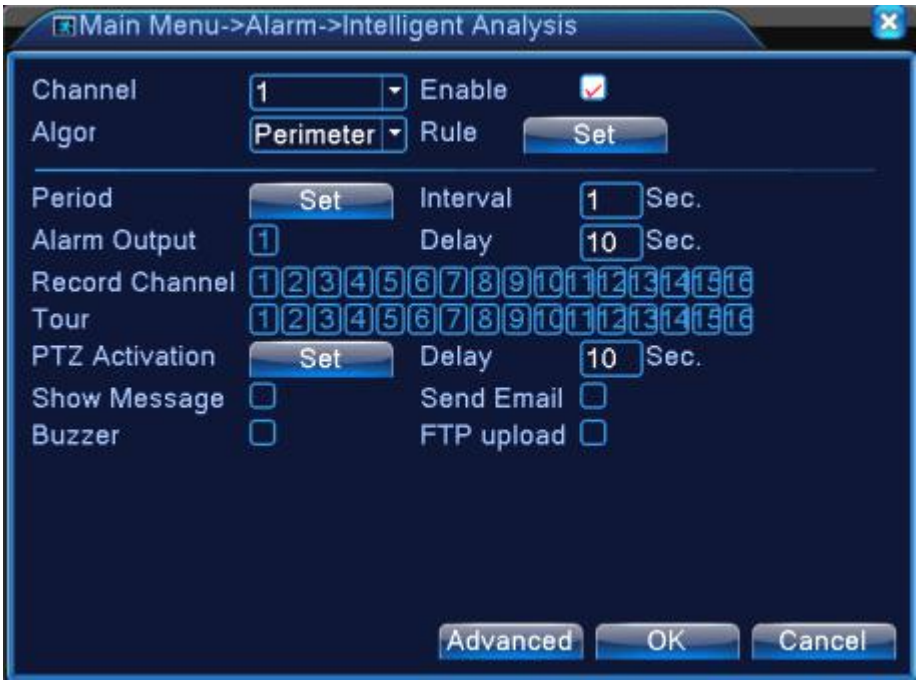
4.3.7 Intelligent analysis

***Note: only part of product support this function at present。**

To analyze the video image, when system detect object that meet pre-set algorithm rules and fit set flexibility and minimum image distance, will trigger video analysis alarm, and enable the linkage function.

***only the 1st channel of full analog mode and hybrid mode can support this function, and if**

this function is enabled, then video blind is invalid.



Pic 4.12 Intelligent analysis setting page

【Channel No.】only shows by "1"，at present, only the 1st channel with maximum resolution of 1080P in the full analog(DVR) mode and hybrid(HVR) mode

【Enable】tick it to enable the video analysis function, then can go for further setting,

【Algorithm rule】at drop-down box Perimeter alert / Items care / Video Diagnosis to choose the algorithm rule of detection,

【Rule】choose different algorithm rules, the related setting page is different.

Cordon:

- **Show traces** tick it to enable, when alarm triggers, there will be red box around moving objects.；
- **Sensitivity** , base on different requirement, there are 3 options in the drop-down box High / Middle / Low；
- **Minimum image distance** range between 0~30 %，the more flexible the less image distance.；
- **Alert way** there are 2 kinds：cordon and warning area. **Cordon**：Can set 3 prohibited directions: bidirectional prohibited, from top to bottom (from left to right), from bottom to top (from right to left), when the setting cordon is too slope, show with from left to right / from right to left, otherwise will be from top to bottom / from bottom to top, when the moving object meet preset cordon rules, the alarm will be triggered; **Warning area:** can set 3 kinds of prohibited directions: bidirectional prohibited,

enter and leave, when the moving object meet preset warning area rules, alarm will be triggered.

- **Rules** click **setting**，enter rule setting page, right click mouse, choose add, use mouse to fix two or more point, and then connect them to form a line or a irregular region, after that a box of prohibited direction options will come out, choose one of them, right click mouse, click Yes, return to previous page, click Yes, alarm rules setting is finished.

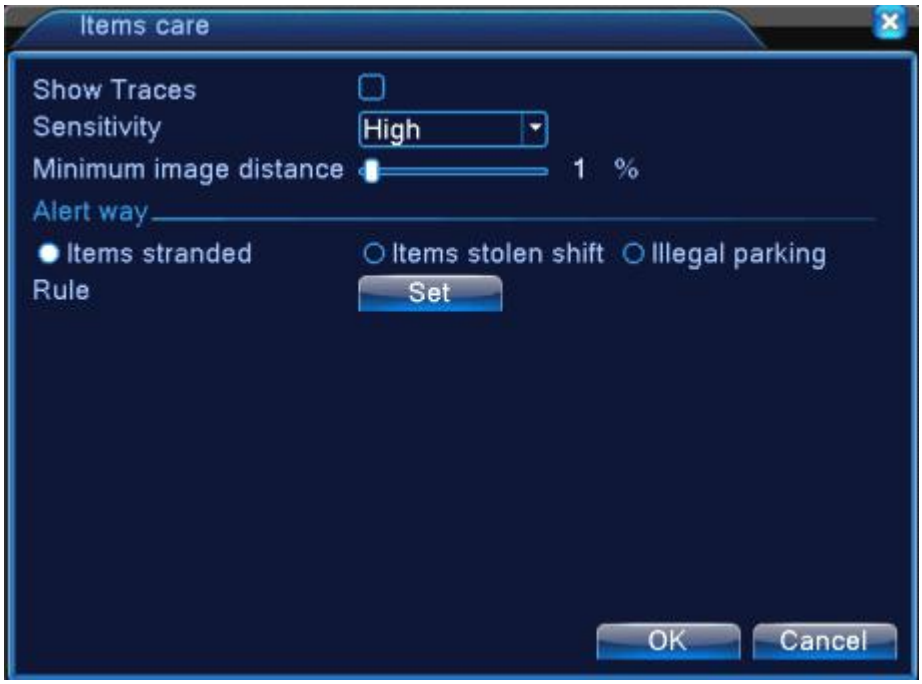
Pic 4.13 rules setting - cordon

Items care:

- **Show traces** tick it to enable, when this function is triggered, there will be read box shows around the moving object
- **Sensitivity** , base on different requirement, there are 3 options in the drop-down box

- **Minimum image distance** range between 0~30 %，the more flexible the less image distance.
- **Alert way:** three modes: Items stranded、Items stolen、Illegal parking.Items stranded:object appears within warning area, and the size of object meet the rules of minimum image distance, alarm will be triggered. Items stolen:object disappears within warning area, and the size of object meet the rules of minimum image distance, alarm will be triggered；Illegal parking:this way is similar with Items stranded.
- **Rules** click **setting,**enter the setting page of rule, right click mouse, choose add, use mouse to fix several points and then connect them to form a irregular region, right click mouse, click Yes, return to

previous page, click Yes, alarm rule setting if finished.

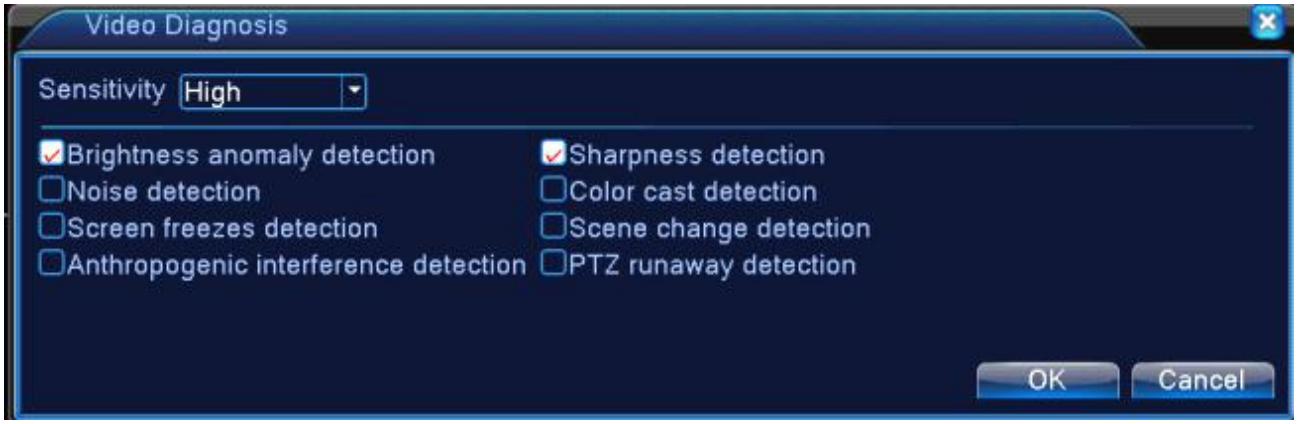


Pic 4.14 rule setting - items care

Video diagnosis:

- **Sensitivity** , base on different requirement, there are 3 options in the drop-down box

;
- **Detection type:** there are 8 kinds of detection type: Brightness anomaly detection、 Sharpness detection、Noise detection、Color cast detection、Screen freezes detection、Scene change detection、Anthropogenic interference and PTZ runway detection.Can choose one or more types if necessary, when video detect selected type, the alarm will be triggered.



Pic 4.15 rule setting page of video diagnosis

The setting way of set / withdraw garrison time period and linkage parameter, please refer to chapter“4.3.1 motion detection”

For example： enable video analysis function, algorithm rules is **PEA**, the alert way in the rule is **Cordon**, prohibited direction is bidirectional, when a moving object across this warning line, alarm is triggered, see below pic4.16

Pic 4.16 the alarm image regarding one of the video analysis

Video Teaching
http://v.youku.com/v_show/id_XNDY5Mjc0OTcy.html ,cordon
http://v.youku.com/v_show/id_XNDY5Mjc3MjAw.html ,warning area
http://v.youku.com/v_show/id_XNDY5Mjc4ODg4.html ,items stranded
http://v.youku.com/v_show/id_XNDY5Mjc4MDA0.html ,items stolen shift

4.4 System setup

Set the system parameters such as **General, Encode（under Hybrid/full analog mode）、Network, Net service、GUI display、PTZ configure/RS485 device、RS232、Tour setup、Spot and digital**。

4.4.1 General

Picture 4.17 General setup

【System time】Set the system data and time.

【Date format】Choose the data format: YMD, MDY, DMY.

【Date Separator】Choose list separator of the data format.

【Time Format】Choose time format: 24-hour or 12-hour.

【Language】support 29 language at present:**Arabic,Czech,English,Finnish,Greek,Indonesian,Italian,,Japanese,Portuguese,Russian,Thai,T-Chinese,S-Chinese,Turkish,Brazilian,Bulgarian,Farsi,French,German,Hebrew,Hungarian,Polish,Romanian,Spanish,Swedish,Vietnamese**

【HDD full】Choose stop record: Stop recording when the hard disk is full.

Choose overwrite: Cover the earliest recording files and continue recording when the hard disk is full.

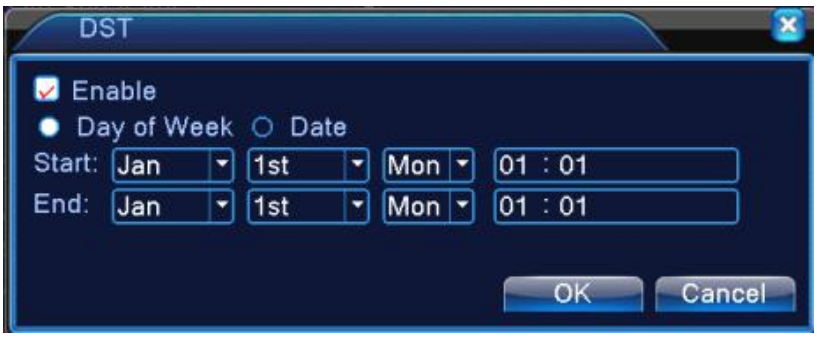
【DVR No.】Only when the address button in the remote controller and the corresponding DVR number is matched, the remote operation is valid.

【Video Standard】PAL or NTSC.

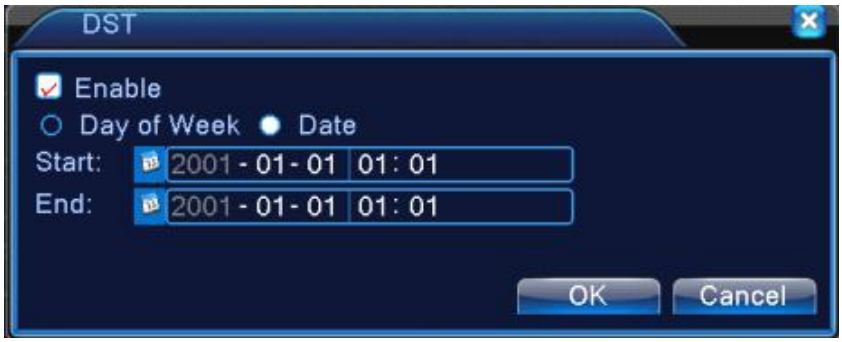
【Auto Logout】Set the latency time in 0-60. 0 means no latency time.

【Machine Name】Can setting the device's name.

【DST】Choose the summer time option and pop the dialog box as followed.



Picture 4.18 DST (week)



Picture 4.19 DST (date)

4.4.2 Encode setup

***only 6000 series and HVR (other products only have analog channel) under Hybrid mode/full analog mode ,it has encode setup function,encode settings is for analog channel only.**

Set the video/audio code parameter: video file, remote monitoring and so on. Set every main stream parameter in the left part, and set the extra stream parameter in the right part.

Note: extra stream introduces video compression technique which was applying for multi-channel playback simultaneously, Dial-up multi-channel real-time monitor under poor bandwidth, or mobile monitor and so on.

Picture 4.20 Encode setup

Independent channel code setting

【Channel】Choose the channel number.

【Compression】Standard H.264 main profile.

【Resolution】Resolution type:1080P/720P/960H/D1/ HD1/CIF / QCIF.

【Frame Rate】P:1 frame/s~25 frame/s; N: 1 frame/s~30 frame/s

【Bit Rate Type】You can choose limited code stream or variable code stream. When you choose the variable code stream there are six image quality options.under the limited code stream，you can choose the code stream manually；

【Bit Rate】Set the code stream value to modify the image quality. The larger code stream value the better image quality.

1080P(1024~8192kbsp) 720P(1024~4096kbps) 960H(869~4096kbps) D1 （ 512~2560kbps ） HD1 （384~2048kbps） CIF（64~1024kbps）, QCIF(64~512kbps)

【Frame Interval】can choose the range 2~12s

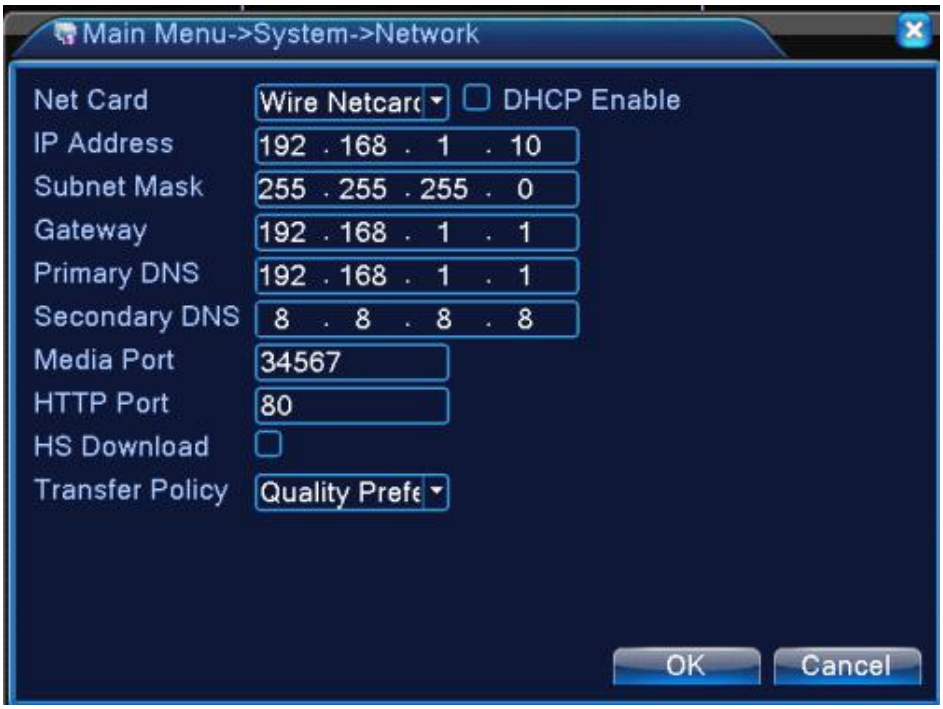
【 Video/Audio 】 When the icons are all in reverse displayed, the video file is video and audio multiplex stream.

Extra stream Settings

【Extra stream】is used for client side monitoring & mobile monitoring.

【Channel title】select channel title and then to choose whether need enable video & audio. The resolution, frame rate, bit rate type settings is the same as main stream.

4.4.3 Network setup



Picture4.21 Network

【Net Card】You can choose cable network card or wireless network card.

【DHCP Enable】Obtain IP address automatically(not suggested)

Note：DHCP server is preinstalled.

【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.

【DNS setup】Domain Name Server. It translates the domain name into IP address. The IP address is offered by network provider. The address must be set and reboot then it works.

【Media port】Default: 34567.

【HTTP port】Default: 80.

【HS Download】

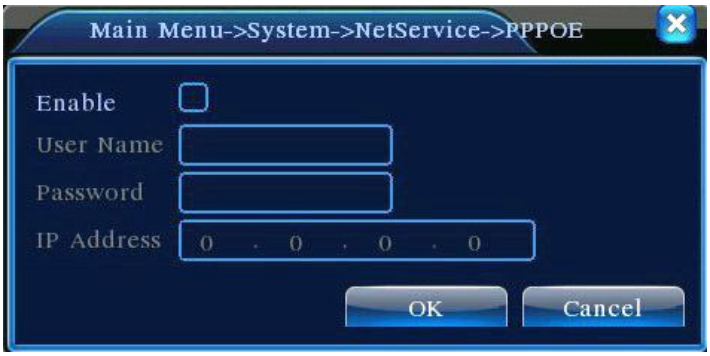
【Transfer Policy】There are three strategies: self-adaption, image quality precedence and fluency precedence. The code stream will adjust according to the setup. Self-adaption is the tradeoff between the image quality precedence and fluency precedence. Fluency precedence and self-adaption are valid only when the assistant code stream is turned on. Otherwise image quality precedence is valid.

4.4.4 NetService

Choose the network service option and click the set button to configure the advanced network functions or double click the service button to configure the parameters.

Picture 4.22 NetService

【PPPoE setup】



Picture4.23 PPPOE

Enable：Reverse■ means choose,setting can become effective.

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 4.24 NTP

The NTP server must be installed in the PC.

Enable：Reverse■mean choose，setting can become effective.

Host computer IP: Input the IP address installed NTP server.

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 Hongkong 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 4.25 EMAIL

SMTP server: Email server address. It could be an IP address or domain name. Domain name can be translated only it is the correct DNS configuration.

Port: Email server port number.

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.

Title: You can set as you wish.

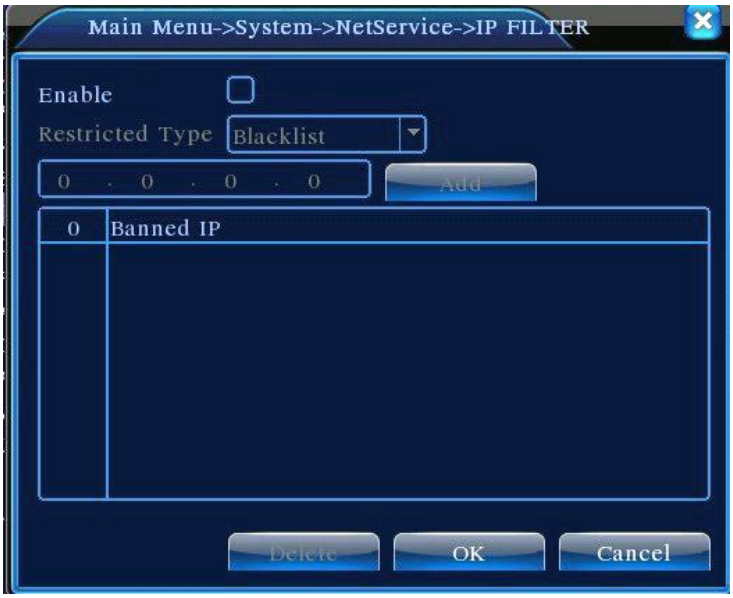
【IP Filter setup】

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.

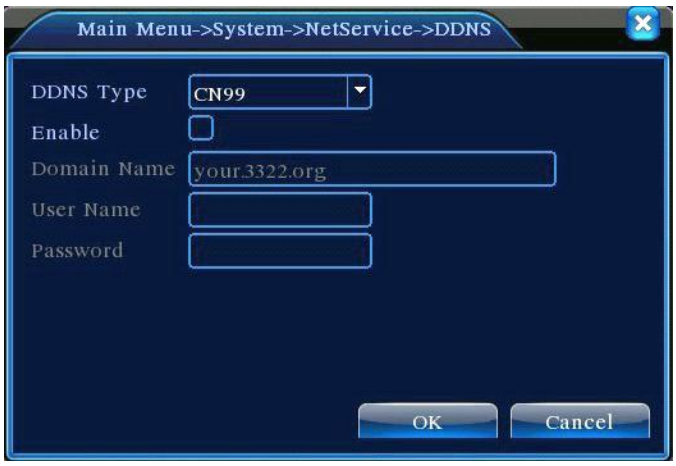
You can delete the set IP address by √ in the options.

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



Picture 4.26 IP FILTER

【DDNS】



Picture 4.27 DDNS setup

It is the abbreviation of dynamic domain name server.

Local domain name：Provide the domain name registered by DDNS.

User name：Provide the account registered by DDNS.

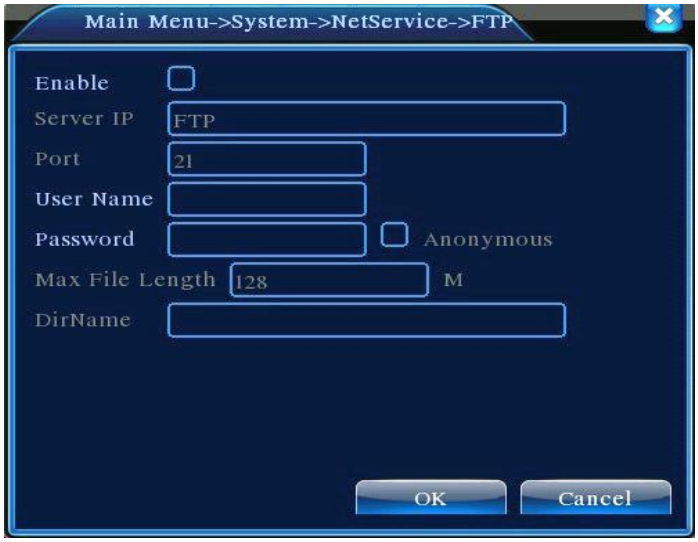
Password：Provide the password registered by DDNS.

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 setup】

FTP is available only when alarm happens,or alarm activates record and snapshot,it will upload related record and snapshot pictures to FTP server.



Picture 4.28 FTP setup

【Enable】Click Enable,then all settings will be available

【Server IP】IP address for FTP server

【Port】Domain Port of FTP,default 21

【User Name】User name of FTP

【Password】Password of user

【Anonymous】: enable anonymous,no need setting user name and password

【Max File Length】Max length for upload files at every packed,default 128M

【Dir Name】: The directory of upload file.

Note: The user should be with authority to upload files.

【ARSP】

Startup DDNS server to add devices and manage it in the DDNS server

Picture 4.29 ARSP

[Type] choose "DNS"

[Enable]: ■ means it is chosen

[Sever IP]: IP address of DDNS server

[Port]: Port No. of device, related DDNS server listen port

[User name] the user name that device can log in DDNS server

[Password] the password related to the user name.

[Refresh cycle]：Time interval between device and DDNS when chynchronously.

Note: Please set up server before using DDNS.

【Alarm center】

When alarm occurring, report alarm information to alarm server.

Pic: 4.30 alarm server setting

【Protocol type】GENERAL

【Enable】To tick it means enable.

【Server IP】IP address of Alarm Server

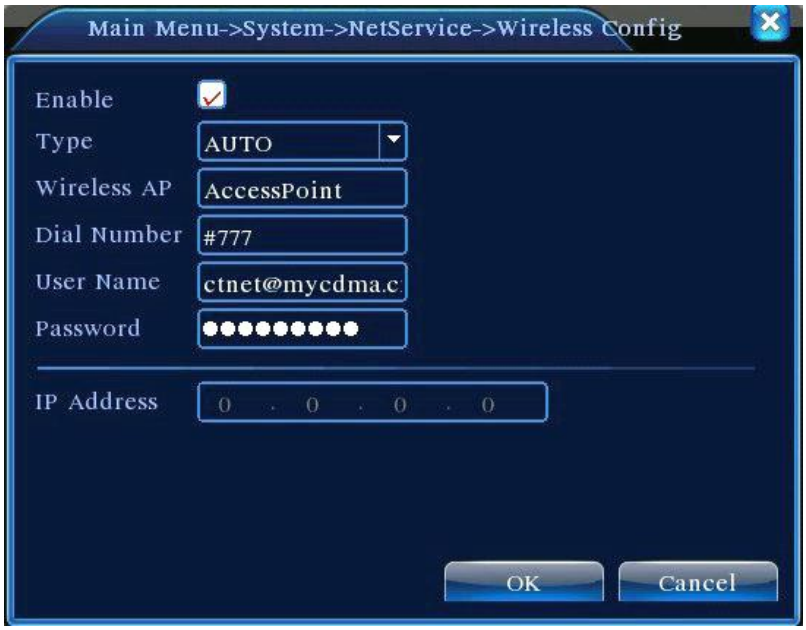
【Port】Device Port No.

【Alarm Report】Tick it means to report alarm information to server.

【Log Report】Tick it, means to report log to server.

【Wireless Config】

ADSL through 3G net card,use CMS to visit and config the device



Picture 4.31 Wireless Config

【Enable】Choose Enable to make all settings available

【Type】Dial type,default AUTO

【Wireless AP】3G access point

【Dial Number】3G Dial Number

【User Name】User name of 3G

【Password】Password of dial user

【IP Address】IP address,got from dial

Note：parts of A series and T series don't support this function.

【Mobile Monitor Setup】

To visit the device by mobile,please make a router mapping of this port and use CMS to monitor and operate it by protocol.

Picture 4.32 Mobile Monitor Setup

【Enable】 Select it to make sure abnormal function workable

【Port】 It’s a port of mobile monitoring which you need to make a router mapping of if want to visit

it by mobile

【UPNP】

UPNP protocol is to realize auto port forwarding on router, precondition of using this function is to make sure the UPNP function of router is enabled.

Picture 4.33 UPNP

【Enable】Choose Enable to make sure all UPNP settings available

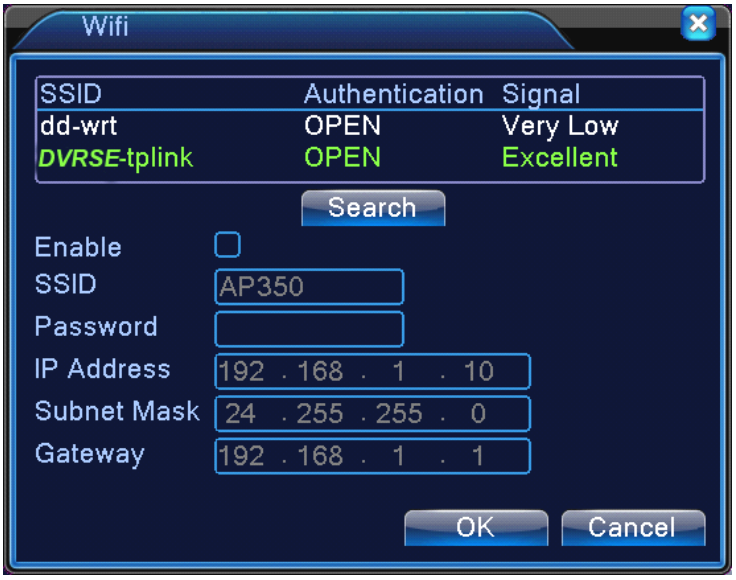
【HTTP】Route will automatically distribute HTTP port for the device,when IE viewing,it need this port

【TCP】Router will automatically distribute TCP port for the device,when monitoring via CMS,it need this port.

【Mobile Port】Router will automatically distribute Mobile Port for the device,when mobile monitor,it need this port.

【WIFI】

DVR connect to wireless router via WIFI module, then to visit it through IP address, the precondition of using this function is to make sure the DVR have connected with WIFI modern.



Pic 4.34 WIFI configure

【Search】: click【search】to search all the available wireless device in current range.

【enable】: tick it to enable firstly, then go for further setting.

【auto obtain IP address】: tick it to enable, device will auto obtain a WIFI IP.

【SSID】: wireless LAN name, auto match to the wireless device u connected.

【Password】: wireless network password of router;

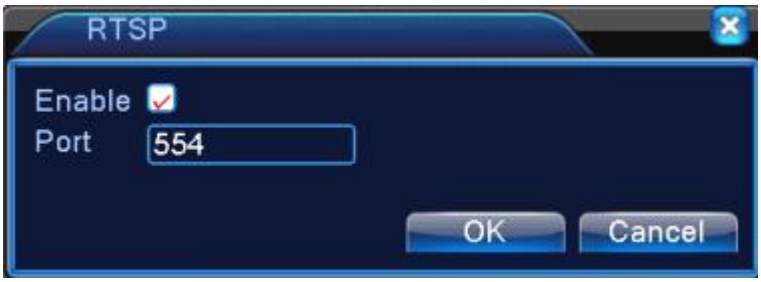
【IP address】: to set the IP address of device, default is 192.168.1.12

【subnet mask】:set subnet mask of device, default is 255.255.255.0

【gateway】: set gateway of device, default is 192.168.1.1

【RTSP】

To do surveillance via cross-browser (Safari, Firefox, Google chrome) and VLC software. **This function only for monitor but can not control the device.**



Pic 4.35 RTSP setting

【Enable】: ■ means enable, tick it firstly before setting.

【Port】: the default port is 554

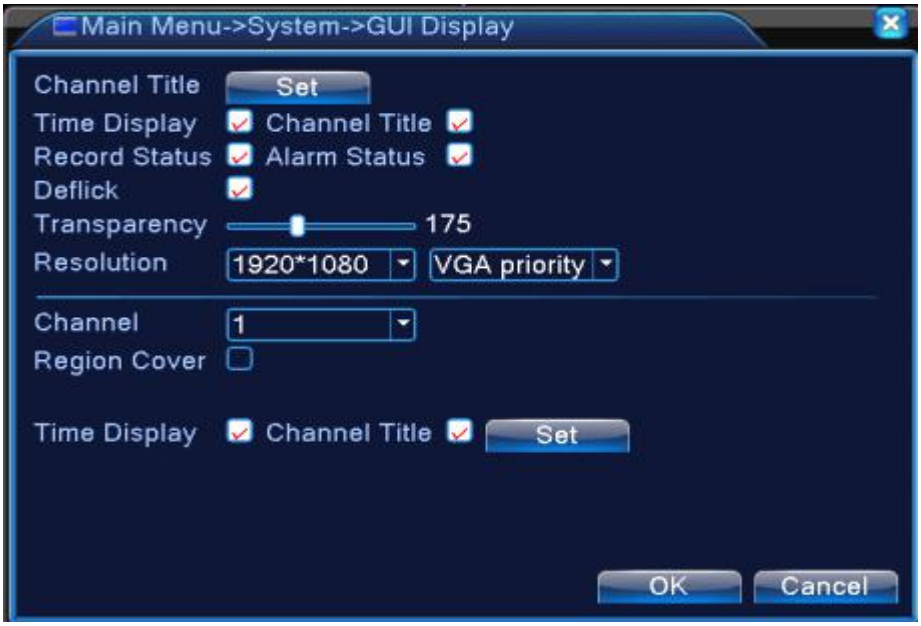
4.4.5 GUI Display

Configure the video output parameters including the front output mode and encode output mode.

Front output：In the local preview mode include: channel title, time display, channel display, record status, alarm status, transparency and region cover.

Encode output：In the network surveillance and video file mode include: channel title, time display, channel display, record status, alarm status, transparency and region cover.

***Remark:Only 6000 series product support preview resolution - 1920*1280(1080P)**



The GUI display page under hybrid(HVR) mode and all analog(DVR) mode

The GUI display page under full digital(NVR) channel

Pic 4.36 output mode

【Channel Title】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 Display】means the selective state. Display the system data and time in the surveillance window.

【Channel display】means the selective state. Display the system channel number in the surveillance window.

【Record 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.

【Transparency】Choose the background image transparency. The range is 128~255.

【Resolution】set display resolution.

【Channel】Choose the set code output channel number.

【Region Cover】means the selective state. Click the cover area button and enter the corresponding channel window. You can cover the arbitrary using mouse. (Black region is for output)

【Time display】and 【Channel display】 set the display position of channel title and time title.

***the channel no., region cover, time title and channel title setting function exist at output mode only when the device is under hybrid(HVR) mode or full analog(DVR) mode.**

4.4.6 PTZ device /RS485 device

*** when under hybrid mode/full digital mode, it shows with PTZ device and RS485 device,**

Pic 4.37 PTZ configure

【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.（Note： The address must be consistent with the dome address.）

【Baudrate】Choose the corresponding dome baud rate length. You can control the PTZ and vidicion. Default: 115200.

【Data bits】Include 5-8 options. Default: 8.

【Stop bits】Include 2 options. Default: 1.

【Parity】Include odd check, even check, sign check, blank check. Default: void.

***When under full digital mode, it will show RS485 device.**

4.38 RS485 device

【Protocol】choose related protocol of brand model(for example: DaHua)；

【Address】set with corresponding address, default is 1；

【Baud rate】choose bard rate that related device use, default is 115200；

【Data bits】including 5-8 options，default is 8；

【Stop bits】including 2 options, default is 1；

【Parity】Include odd check, even check, sign check, blank check. Default: void.

Remark：when analog channel existing, there will be PTZ and RS485 at PTZ setting, if device is all digital(NVR) mode, it will show RS485 only.

4.4.7 RS232

***T series do NOT support this function.**

Pic 4.39 serial port setting

【Serial Port Function】Common serial port is used to debug and update program or set up specific serial port.

【Baud rate】Choose the corresponding baud rate length.

【Data bits】Include 5-8 options.

【Stop bits】Include 2 options.

【Parity】Include odd, even, mark, space, default is none.

4.4.8 Tour

Set the patrol display. ■ means that the tour mode is enable. You can choose the single-view, four-view, six-view of single mode tour or hybrid mode tour.

Pic 4.40 tour configure

【interval】Set the patrol switch interval. The set range is 5-120 seconds.

【alarm tour】set the interval to shift alarm tour, range is 5-120 seconds, choose return when alarm ends, when alarm link to tour, system will auto shift to six-view after alarm finished.

Remark：at preview mode, click upper right icon / can turn on / off tour（ mean turn on, mean turn off）.

4.4.9 Spot configure

***Remark: only part of 6000 series product can support this function**

To set TV tour display with sport port, ■means enable mode tour, you can choose single-view, four-view, nine-view for single mode tour or hybrid mode tour. When tour enables, no matter what u operate on VGA side, there is only the spot tour image output on TV side, no GUI displayed,

Pic 4.41 Spot configure

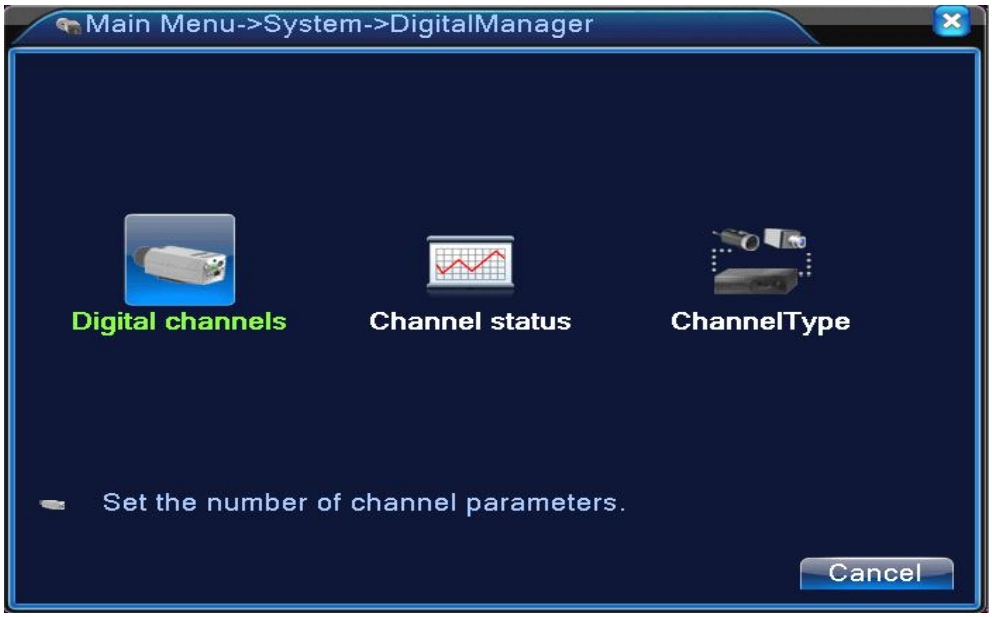
【interval】Set the patrol switch interval. The set range is 5-120 seconds.

4.5.0 Channel manage

***Remark：only HVR and 6000 series product support this function.**

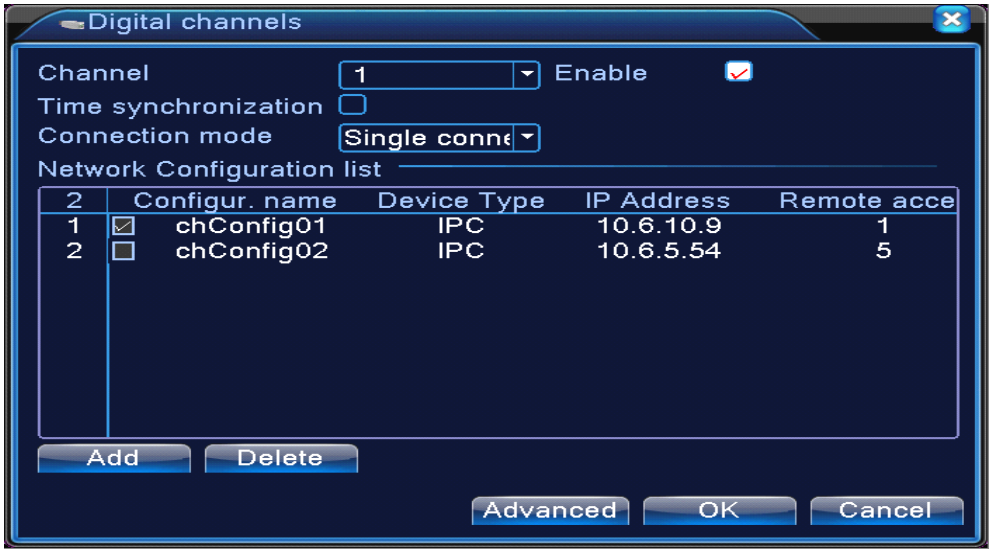
Digital manage including digital channel, channel status, and channel mode **(Remark: there is only analog mode if device is under full analog mode)**:

Channel manage page under all analog(DVR) mode

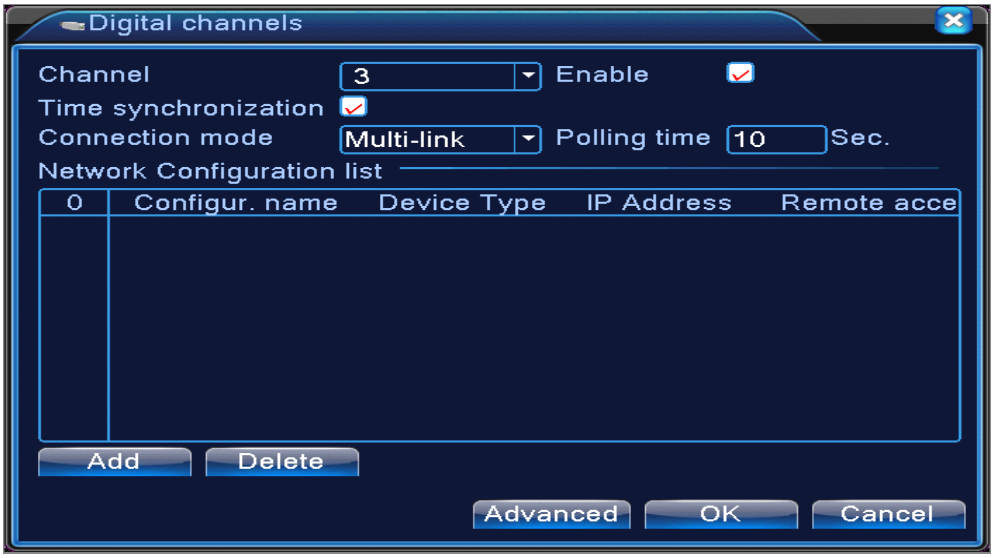


Channel manage page under Hybrid(HVR) mode / full digital(NVR) mode
Pic 4.42 channel manage interface

Digital channel:



Single link page of digital channel



Multi-linkage page of Digital channel

Pic 4.43 digital channel interface

【Channel】select channel title

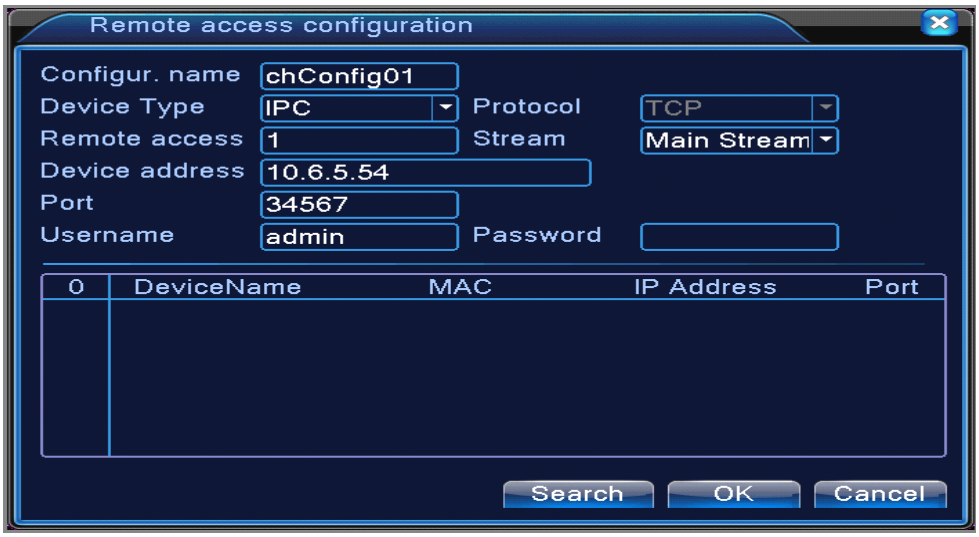
【Enable】Open digital channel, tick enable, then can do related settings

【Time Synchronization】Tick it means the time of this channel and device is the same.

【Connection Mode】can be singe connect or multi-ink, multi-link modes can connect to several devices, device will be tour displayed one by one, tour interval can be set, no less then 10s;

【Delete】If the user want to change device, select the existing device, click delete will be ok.

【Add】click add will come out below page to add new device



Pic 4.44 remote channel configure page

【Configure Name】device is with default configure title, user can revise it if necessary；

【Device Type】3 types: IPC、DVR、HVR，user can choose as what you like, default is IPC；

【Protocol】Default is TCP

【Remote channel】User can input remote channel title from the device that you want to connect remotely

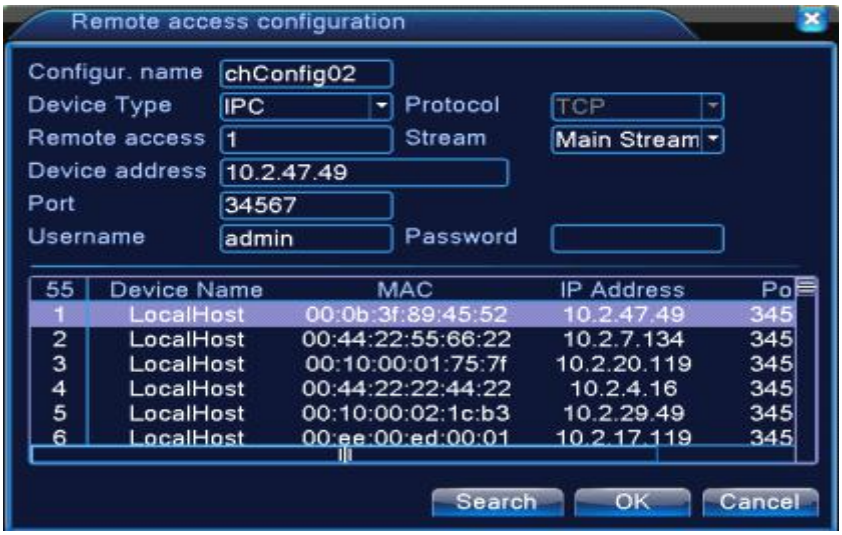
【Stream】Default is main stream, do not support extra-stream at present；

【Device address】IP address of device.

【Port】Default is 34567

【User name】Default is admin

Remark: click 【search】will show all the devices that searched out, user can choose any of the device that you like.

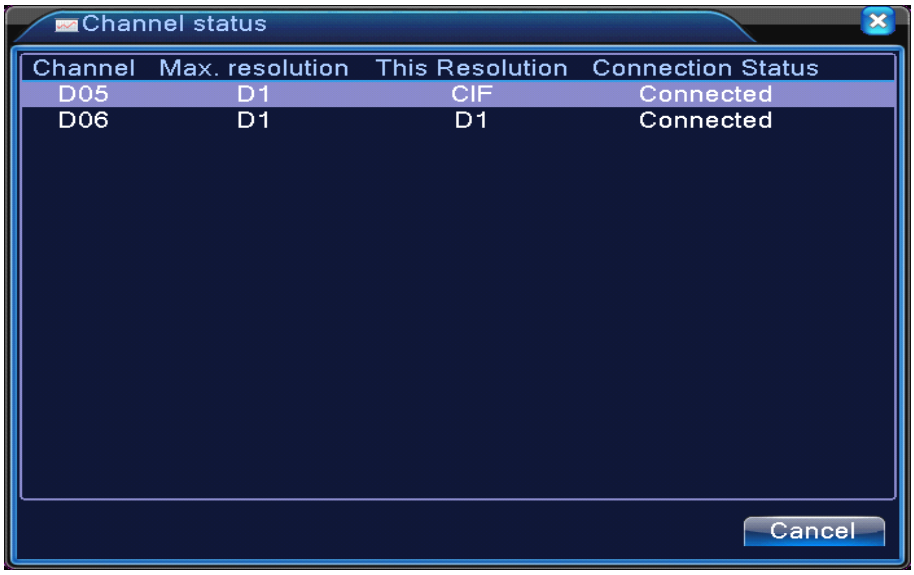


Pic 4.45 the device list searched under remote channel setting

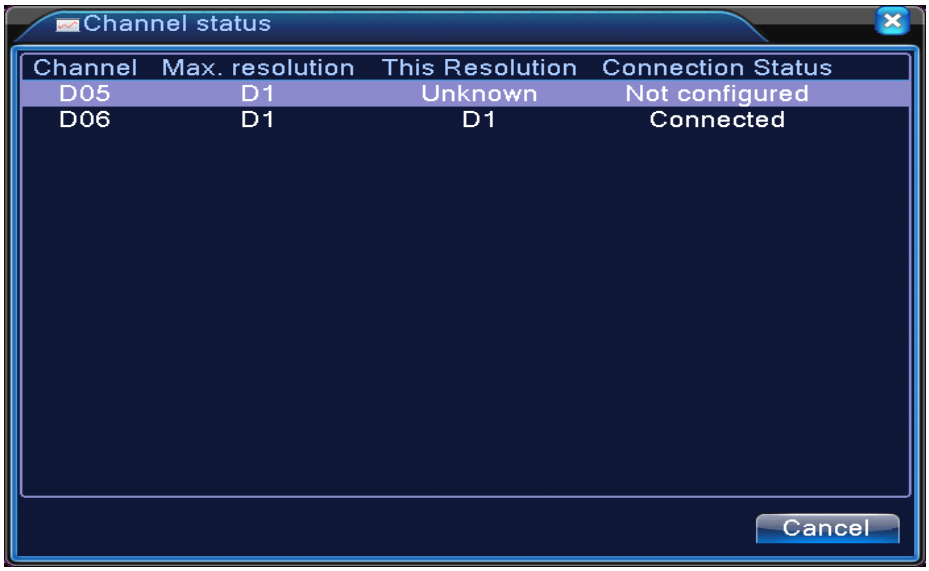
Channel Status:

channel status is to show the status of all the digital channel When there is what existing, status including Max Resolution, This Resolution, Connection Status.

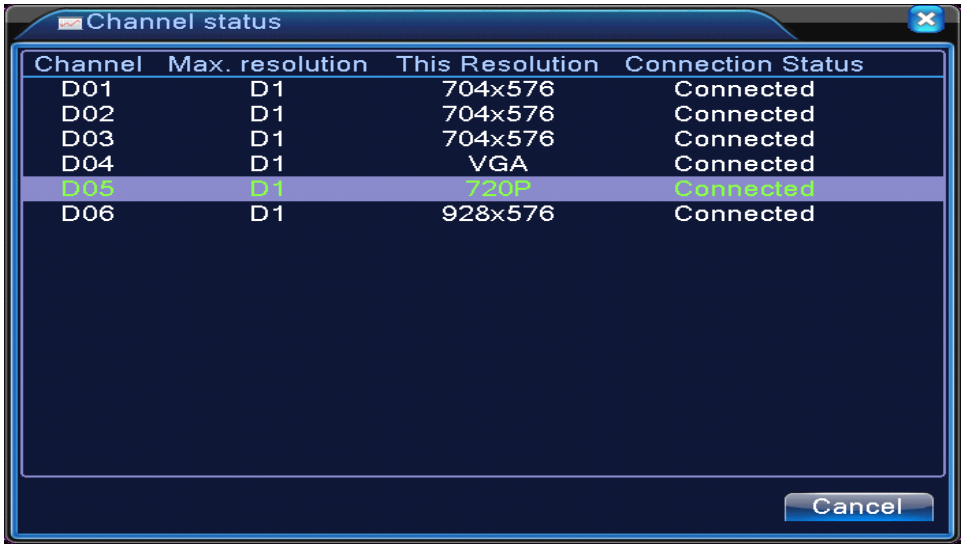
For example: The channel status for 4+2 mode is as below:



When a channel is added with device but it is not enable, you will see as below:

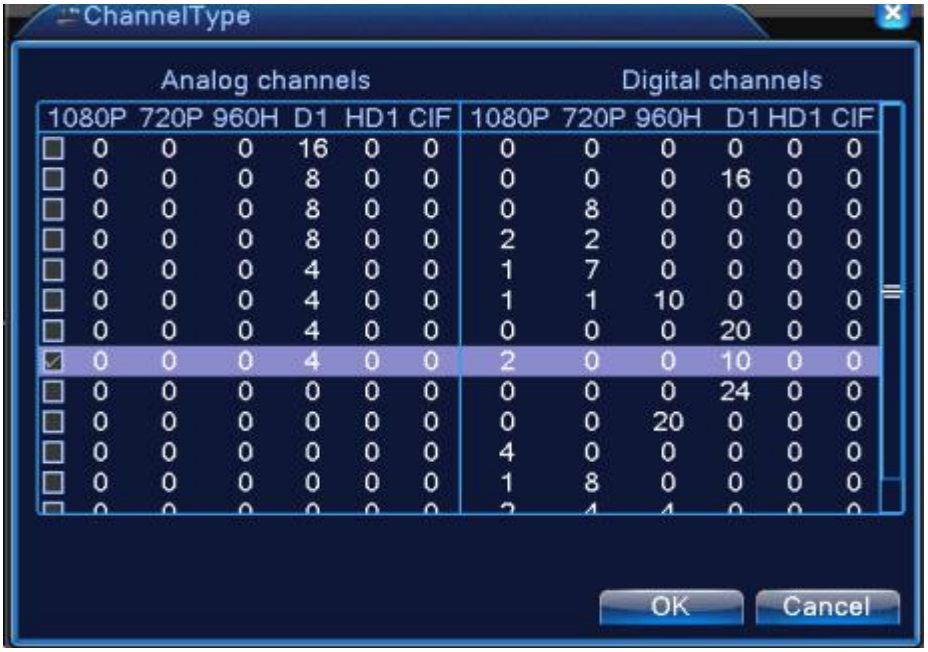


Channel status interface under full digital(NVR) mode (One of the channel without device)



Remark: when the current resolution is over the max resolution that the channel supported, then a red "X" will be shown on the preview image, for example: Under full digital channel mode, Max resolution of channel 3 is D1, if it was connected to a device with resolution over D1 (such as 960H), you will see below pic:

Channel mode:



Remark: this series of product with full analog channel mode, hybrid mode and full digital mode, and different model with different channel mode, user can shift the mode freely if necessary.

4.5 Advanced

Manage tools menu including: HDD manage, account manage, online user, output adjust, auto maintain, upgrade.

4.5.1 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.

Note：Read/Write Disk: The equipment can write or read data.

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

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

Pic 4.46 HDD manage

4.5.2 Account

Manage the user purview.

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

2. There is no limit in the user and user group. You can add or delete the user group 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 group.

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

Pic 4.47 account management

【Modify User】Modify the existed user attribute.

【Modify Group】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.

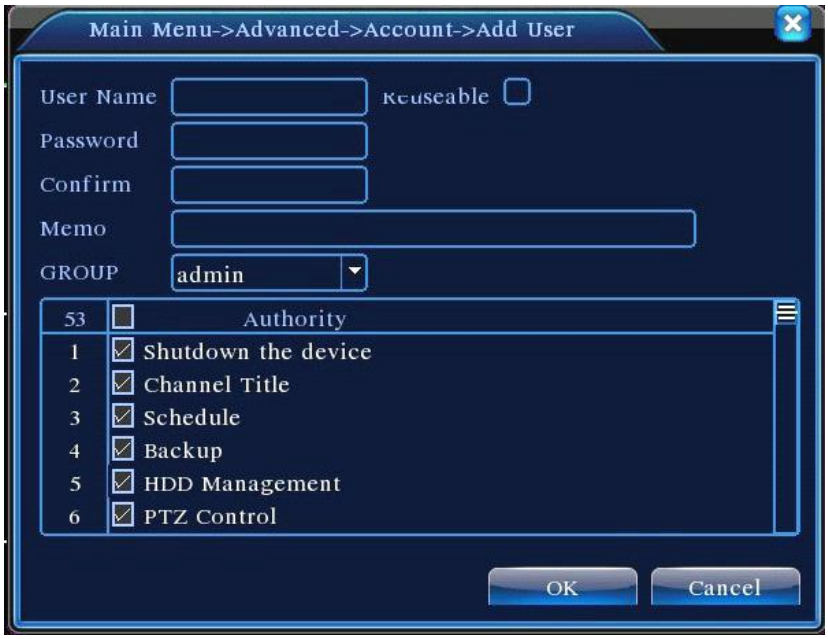
Note：The user who possess the user control purview can modify his/her own or other users password

Pic 4.48 modify password

【Add user】Add a user in the group 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.



Pic 4.49 Add User

【Add Group】Add a user group and set the purview. There are 33 different purviews: shut down the equipment, real time surveillance, playback, record setting, video backup and so on.

Pic 4.50 add group

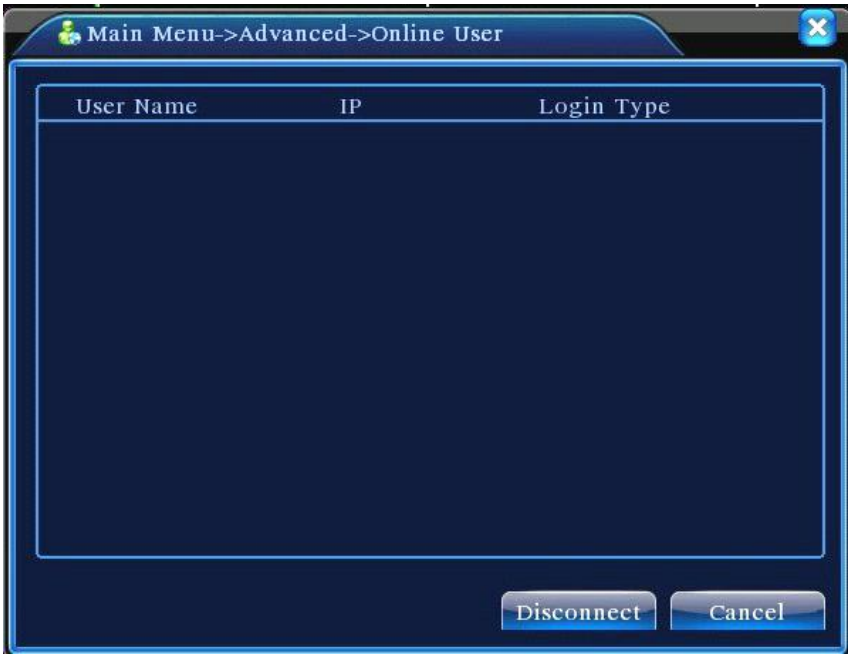
【Delete User】Delete the current user. Choose the user and click delete user button.

【Delete Group】Delete the current group. Choose the group and click delete group button.

Pic 4.51 Delete Group

4.5.3 Online user

To check the information of network user that connected with local device, also can tick the selected user to break up connection,（make √ at the box），then the user will be frozen after connection stopped, and will not log in until device reboot.



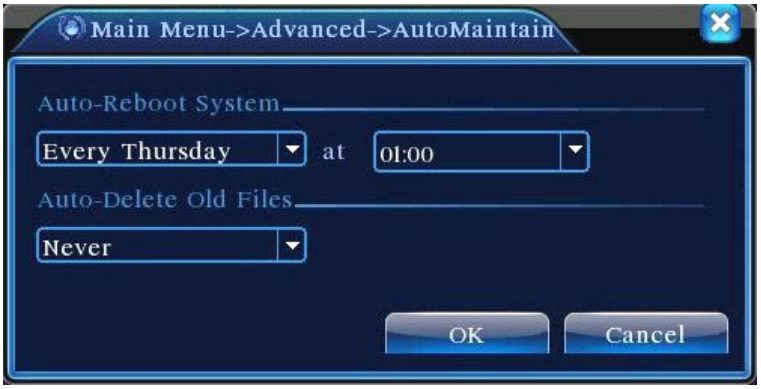
Pic 4.52 online user

4.5.4 TV adjust

Refer to chapter 3.5.7 .

4.5.5 Auto Maintain

The user can set the time to auto reboot and auto delete file.



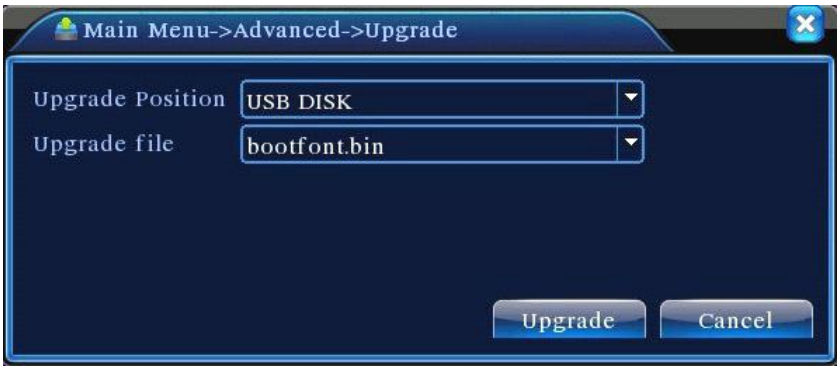
Picture 4.39 Auto maintain

4.5.6 Restore

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

Pic 4.54 restore to default

4.5.7 Upgrade



Pic 4.55 Upgrade

【Upgrade】**choose USB interface.**

【Upgrade file】**choose the upgrade file.**

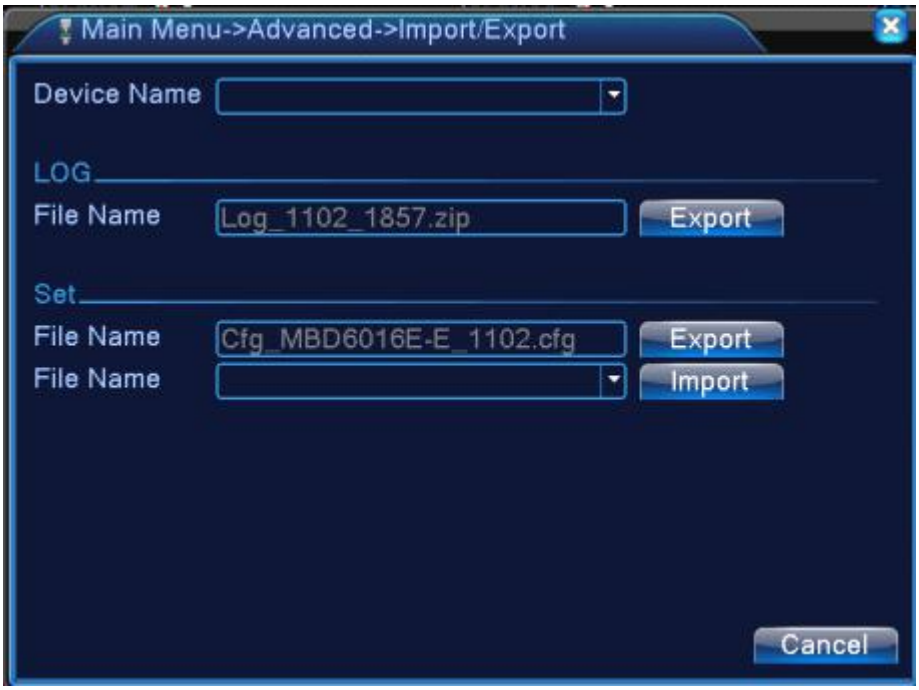
4.5.8 Device Info

Provide device interface info like audio in,alarm in/out to be conveniently used for user.

Pic 4.56 device info

4.5.9 Import / Export

Users can export the log info and the configure file from device to connected flash stick, and also can import related configure file from flash stick to settings, which greatly bring convenience to the customers.



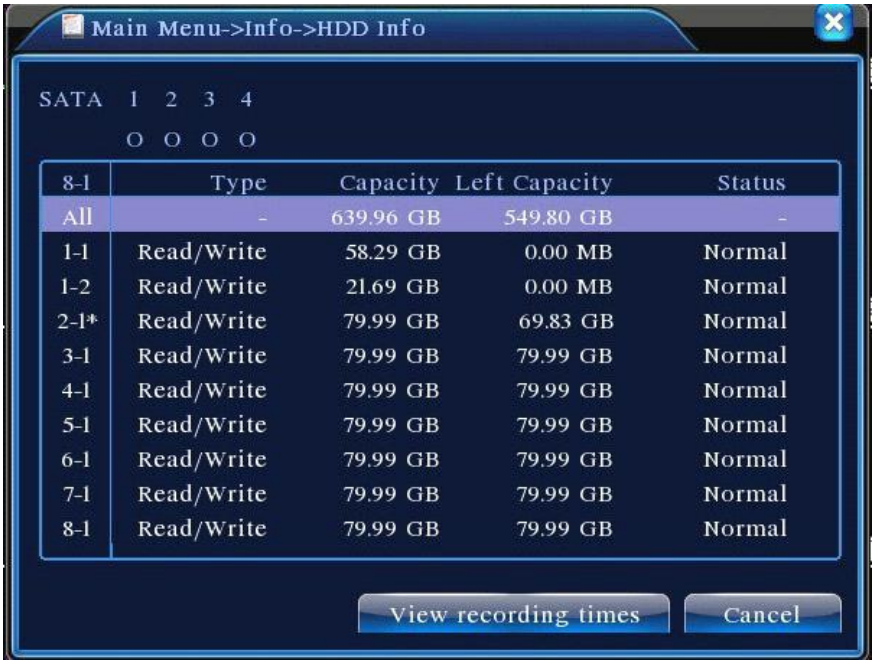
4.57 Import / Export interface

4.6 Info

Display the hard disk information, including HDD info, code stream statistic, log info, version info

4.6.1 HDD info

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



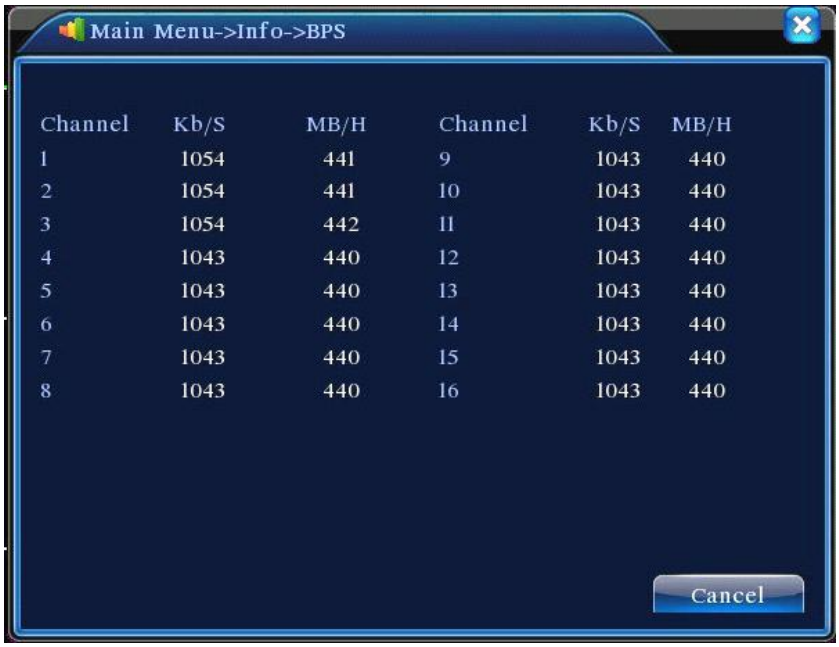
Pic 4.58 HDD info

Tips：○ means that the hard disk is normal. X means that the hard disk is broken-down.- means that there is no hard disk. If the user need 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 show "？".

4.6.2 BPS

Display the code stream（Kb/S）and hard disk capability （MB/H）in real time. It displays as the wave sketch map.



Channel	Kb/S	MB/H	Channel	Kb/S	MB/H
1	1054	441	9	1043	440
2	1054	441	10	1043	440
3	1054	442	11	1043	440
4	1043	440	12	1043	440
5	1043	440	13	1043	440
6	1043	440	14	1043	440
7	1043	440	15	1043	440
8	1043	440	16	1043	440

Pic 4.59 BPS

4.6.3 LOG

To search log information base on the set search mode.

Log information include: system operation, configuration operation, data management, alarm affair, recording operation, user management, 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.

Pic: 4.60 Log information

4.6.4 Version

Display the basic information such as hardware information, software version, issue date, serial number , NAT status and so on.

Pic 4.61 version information

4.7 Shut down system

Refer to chapter 3.5.8.

Chapter 5: Cloud Technology Basic Operation

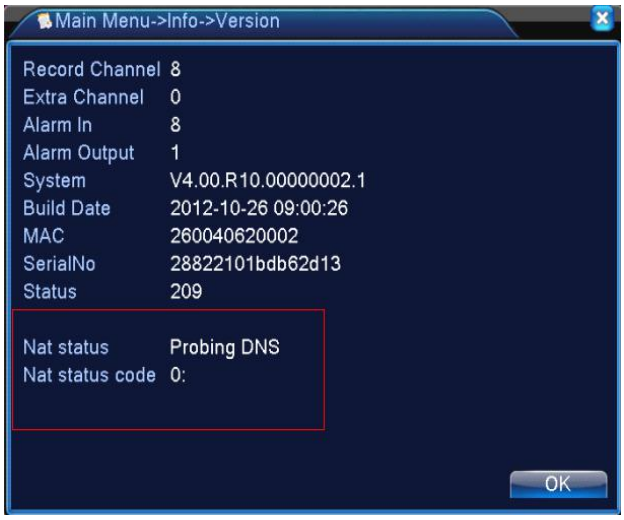
5.1 Cloud technology monitor

Cloud technology make the device one step on net, greatly bring convenience for customer to monitor via wide area network, this technology is using the serial no to visit device.

***Remark：the device that using cloud technology should be in the WAN(Wide Area Network)firstly.**

➢ **Check the connecting status of cloud technology**

Connect device to WAN firstly, then enter【Main menu】>【Info】>【Version】to check whether the device successfully connect to the cloud server or not.



Connect failed interface

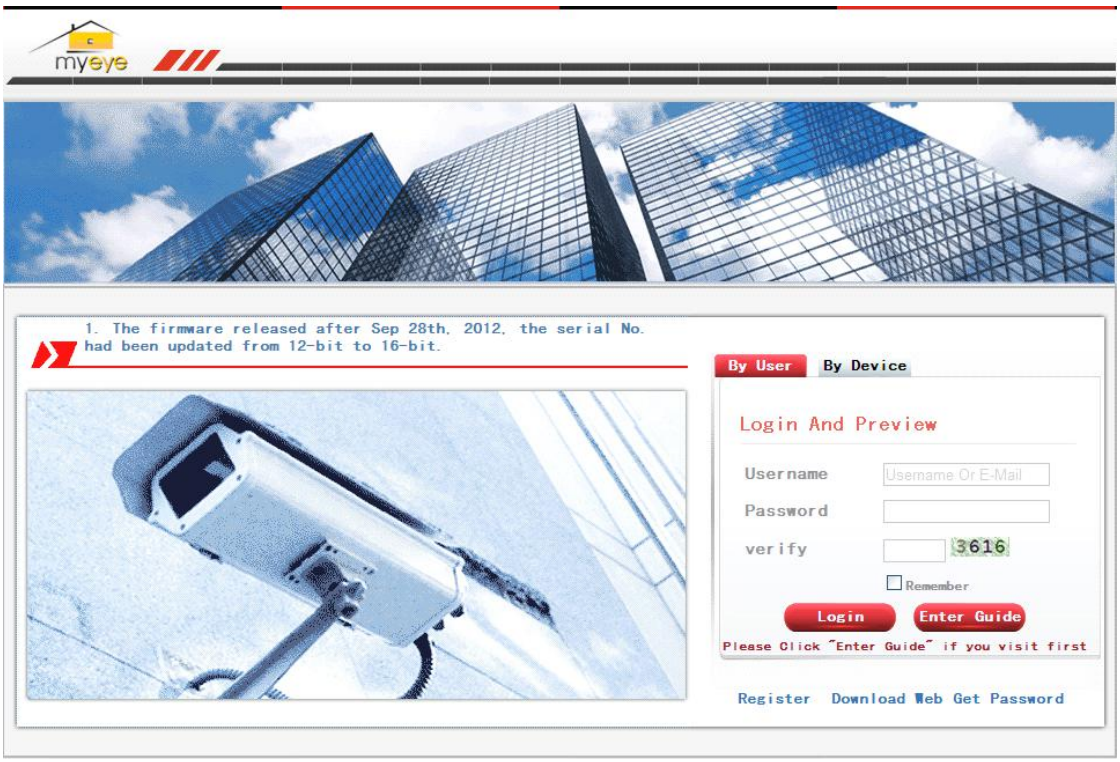
successfully connect interface

Pic 5.1 cloud technology server connection status

➢ **Log in cloud server**

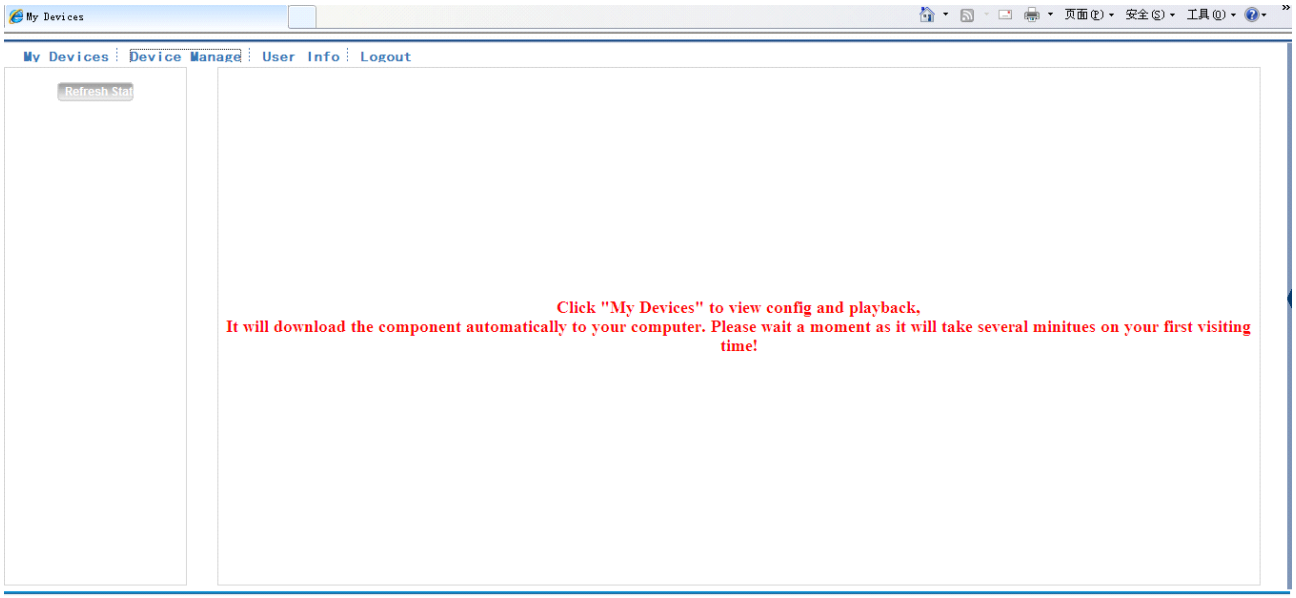
Visit http://xmeye.net to see below log in page, it devided into two mode: **by user** and **by device**, user can base on their need to log in freely.

***Remark: to log in "by user", the user need to register at the first time.**



- **Log in by user**

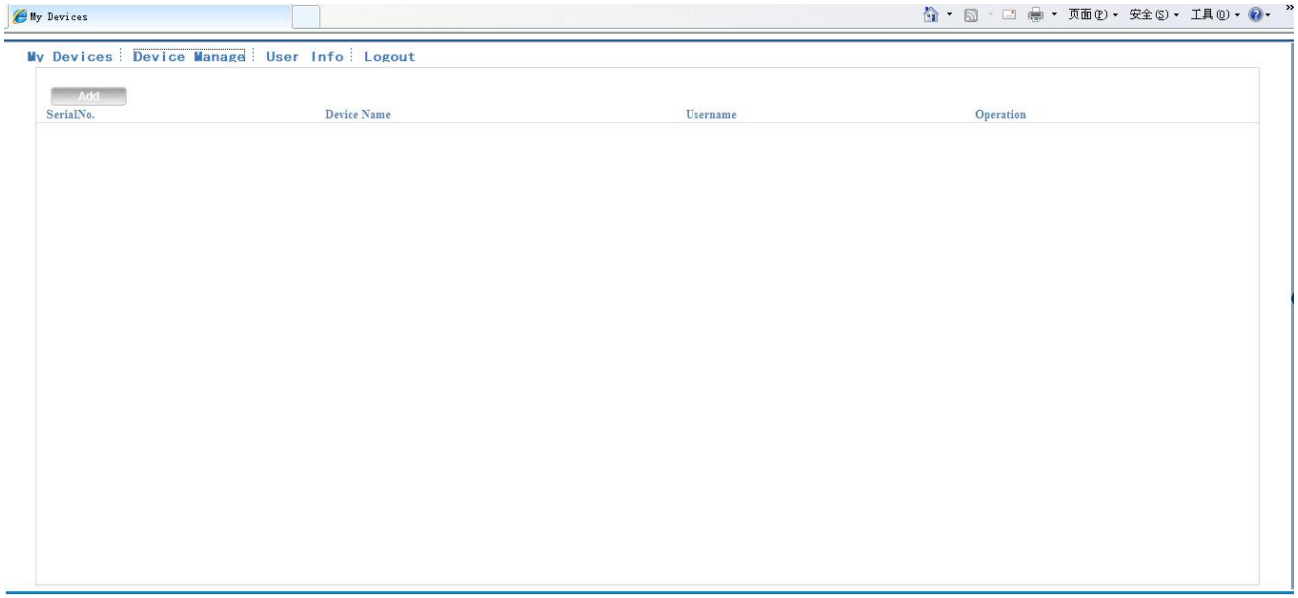
Customer use their registered user name and password to log in, will see below interface



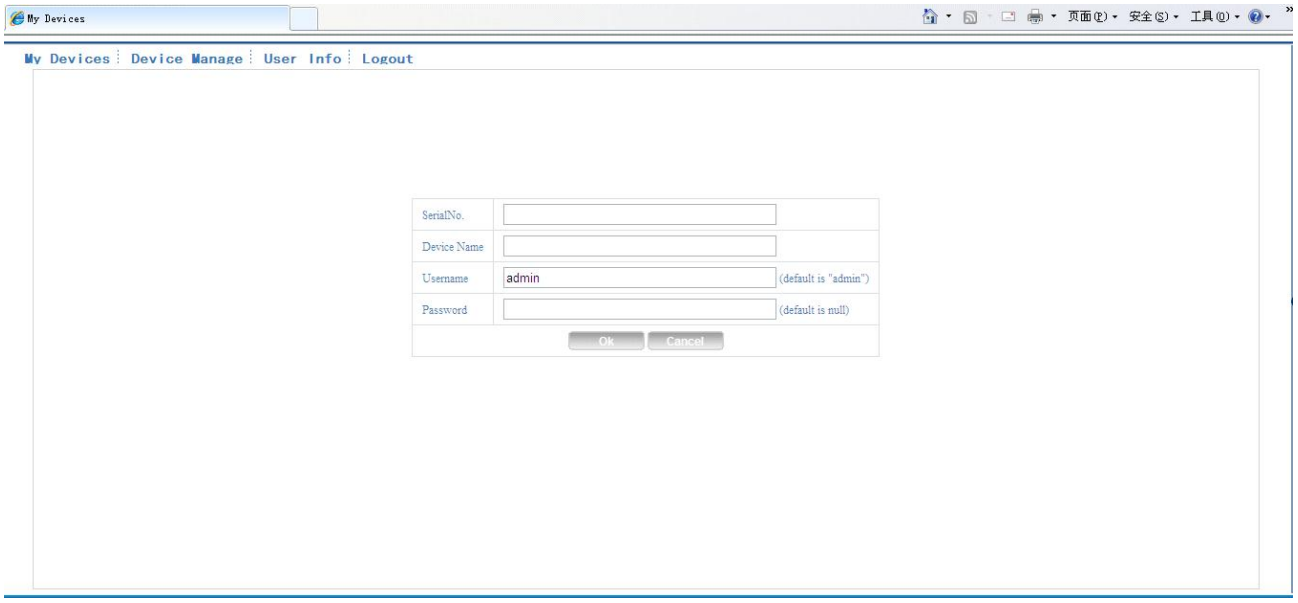
Pic 5.3 cloud technology operation interface

Device manage

Mainly use to add device, click “add”to add the serial number of device to be monitored.



Pic 5.4 device manage interface

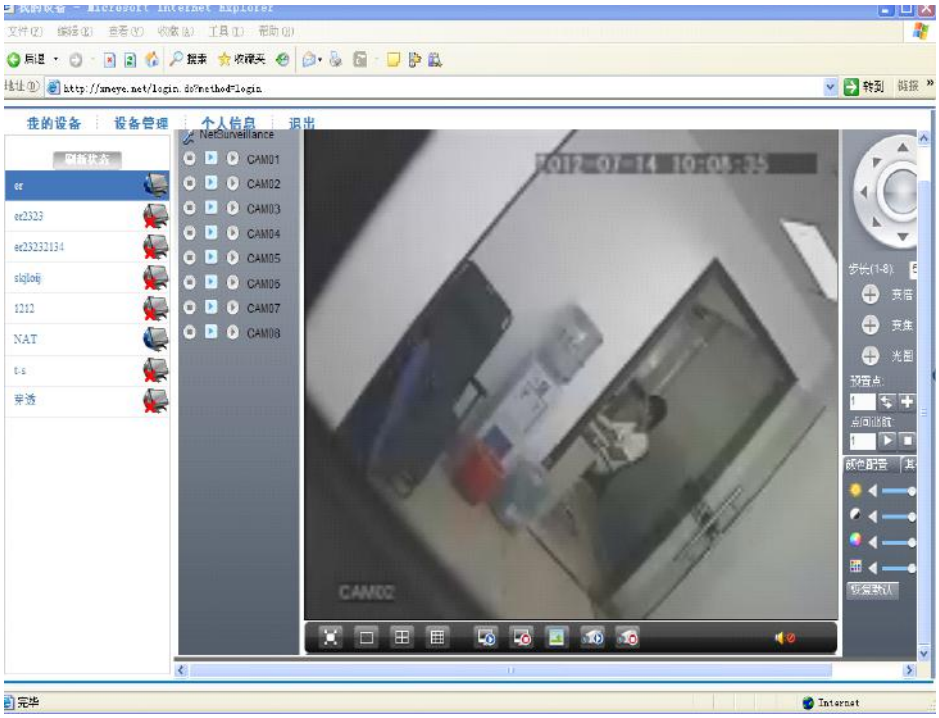


Pic 5.5 add interface at device manage

***Remark：in pic 5.5, the user name means the user name of monitored device, password means the password of related user.**

My Device

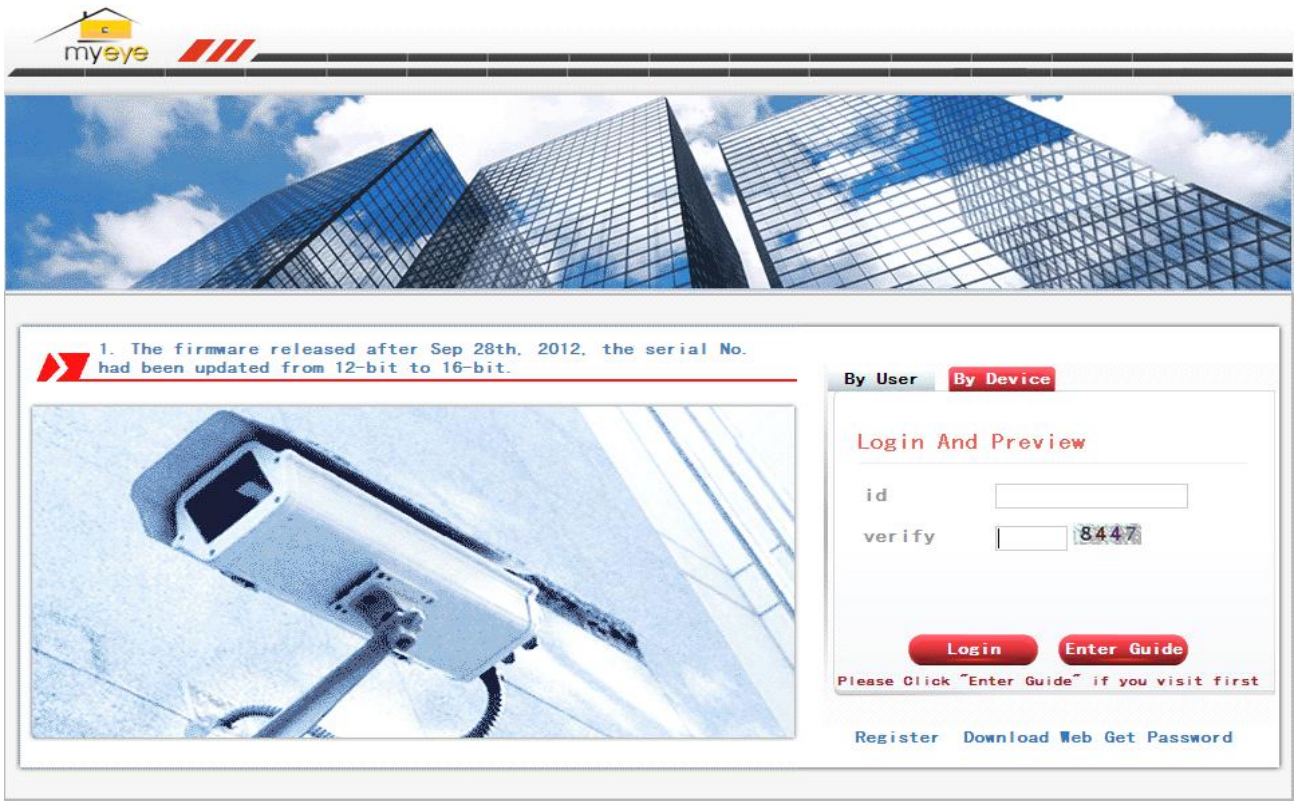
Mainly show all the added device here, click the on-line device name, can access to control this device accordingly.



Pic 5.6 monitor page - log in by user

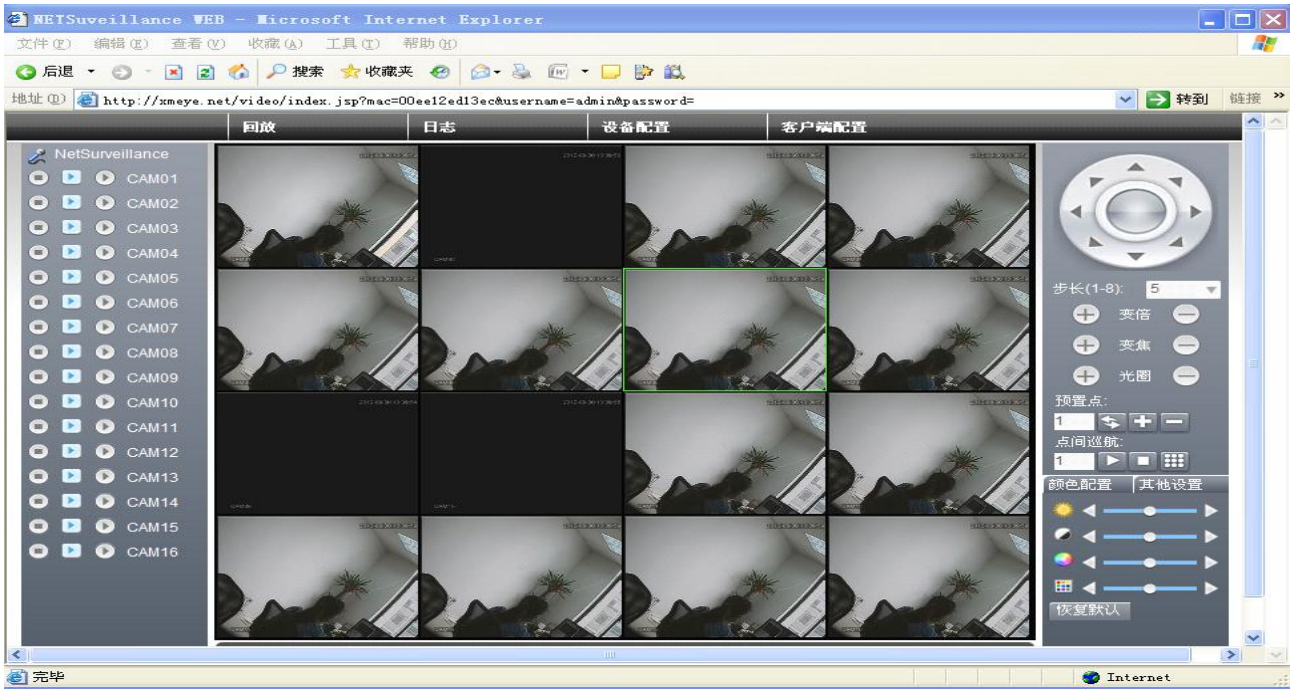
***Remark：the icon of“✕” means offline, the device do not connect to server successfully.**

➢ **Log in by device**



Pic 5.7 interface of log in by device

Input the serial number of device and the verify code to monitor and control the device directly.



Pic: 5.8 monitor page - log in by device

6 FAQ 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 can not 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.

4 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 restore 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 look up are covered.

5 The recording is not on.

7、 The local video is not clear.

Possible reasons are as followed:

1 The 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 Ω 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 can not login via web or CMS.

Possible reasons are as followed:

1 The system is windows 98 or win me. We recommend updating to windows 2000sp4 or higher Version or installing the software for low edition.

2 ActiveX is hold back.

3 The version 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 CMS is not matched the DVR program version.

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 net card of the DVR 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 A 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 vidicon quality is bad. The lens is too dirty. The vidicon is in backlighting installation.

2 The hard disk capability 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 password 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、 Can not see the preview picture the digital channel

Possible reasons are as followed:

1 Did not add device

2 The device of related channel was not enable

3 The device of related channel was not selected.

4 The selected device did not connect to video sources

5 The channel title of selected remote device is not exist.

6 Stream for remote channel was set by extra stream.

7 User name & password not matched

8 directly input with IP address or port No. incorrectly when adding device.

9. The resolution of added device is too large to display by the monitor.

25、 Click “search” why not search out any of the device.

Possible reasons are as followed:

1 There is no other device exist in the Local area network

2 The subnet mask setting incorrectly on Network settings.

26、 The snapshot at alarm function was enable, why not catch picture

Possible reasons are as followed:

1 HDD manage without partition for snapshot.

2 Partition for snapshot is 0

3 The snapshot function is not enable on record-> storage of related channel.

27、 The time shows on digital channel is not the same as local side:

Enable the time synchronous function of digital channel.

28、 Can not see preview picture of analog channel

Possible reasons are as followed:

1 The camera did not connect to video interface

2 The device did not connect to video source

3 Video source is broken.

29、Picture will be frozen when multi-connection and shift devices.

Picture come out from digital channel need few seconds, shift device means to show new picture, so it needs several seconds to buffer.

6.2 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.

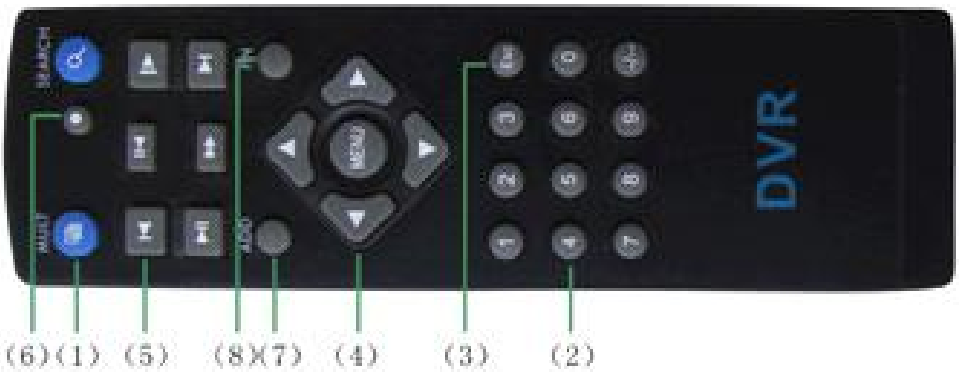
5 Do not turn off the switch directly. Please use the turn-off function in the menu or press the turn-off button in the panel (3 seconds or longer) to protect the hard disk.

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	Record control	Control the record
6	Record mode	Same function as “Record mode”
7	ADD	Input the number of DVR to control it
8	FN	Assistant function

Appendix 2.Mouse operation

***Take right hand as an example**

The mouse in USB connection is supported.

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 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~250G 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:

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

The DVR introduces the 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:

For one piece 500G HDD,real time CIF for recording,it will keep recording for about 25 days.HDD spaces per channel is 200M/H,if 4channels real time CIF at 24hours recording uninterrupted,it can last:500G/(200M/H*24H*4ch)=26 days