User Manual

IP Camera (Network Camera)

V1.0

Contents

Important Safeguards and Warnings

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 cleaning the dust, please switch off the power supply and unplug the camera.

Do not disassemble, repair, or replace the components of the DVR yourself.

Environment

- Please use the IP camera at temperatures between -10 °C and 60 °C and humidity less than 9%.
- Do not use the IP camera in smoky or dusty environments.
- Avoid collisions or strong falls.
- Please ensure level installation of the IP Camera in a stable workplace.
- Please install in a ventilated and clean environment.
- Use within the rating input and output scope.

Applicable products

This manual is applicable for all the IP Camera series from our company, including the indoor box type, IR waterproof type, whelk type, dome type, and home-use robot type.

Special announcement

The content in this manual incorporates the most updated information. If something needs to be changed in the manual, no special notice will be provided.

If you have any questions or requirements, please feel free to contact us at any time.

Chapter 1 Product Introduction

1.1 Product Summary

The DVR series, which is designed specifically for security and defense purposes, is an outstanding digital surveillance product. It uses an embedded LINUX operating system, which is more stable. It also uses the standard H.264 mp video compressed format and G.711A audio compressed format, which ensures high image quality, low error coding ratio, and single-frame playback. In addition, it utilizes TCP/IP network technology, which enables it to achieve strong network communication ability and telecommunication ability.

The IPC can be used online as part of a safety surveillance network. Using professional network video surveillance software, it has strong network communication and telecommunication capabilities. In addition, the IPC can also be used on its own.

It can be used for remote monitoring of assets such as:

- ATMs, bank counters, supermarkets, factories, etc.
- Foster care centers, public gardens, schools, etc.
- Intelligent gate control systems.
- Intelligent building and residential management systems.
- Unattended systems, such as electricity generation and telecom base stations.
- Outdoor devices to monitor bridges, tunnels, and transportation status.
- Production lines and warehouse controls.
- 24-hour monitoring for road transportation.
- Remote monitoring of forests, water sources, and rivers.
- Airports, train stations, bus stops, etc.

1.2 Main Functions of the Product

Real-time Surveillance

- With its analog output interface, surveillance can be performed through monitors, DVRs, etc.

Storage

- Maximum storage of the TF card is 32G (part of model support) for local storage of snapshot images.

- Remote storage of snapshots via CMS software or the my eye platform.
- Storage data uses a dedicated format and cannot be modified, making the data safe

Compression Format

- Audio and video signal is compressed by individual hardware components to make the images and sound synchronously stable.

Backup Function

- Client-side pc can download files from the TF card for back-up via the network.

Video Playback Function

- Full real-time record, search, net surveillance, video search, download, etc.
- Supports playback modes such as fast-play, slow-play, etc.
- Can perform partial enlargement of any area

Network Operation Function

- Remote surveillance via network (including mobile)
- Remote PTZ control
- Remote video search and real-time playback.

Alarm Linkage Function

- Alarm link to record, snapshot, send e-mail, etc.

Telecom Interface

- RS485 interface for PTZ control.
- Ethernet port for remote access function, remote upgrade, and maintenance.

Intelligent Operation

- To perform the same operation on the menu, copy and paste operations can be used.

Chapter 2 Product check and cable connection

2.1 Open Case Checking

When you receive this product, first check that the model no. On product is the same as what you ordered. Then, check for obvious damage on the packing. The protective material used for packing can protect from most collisions during transportation. Finally, take out the IPC and remove the protective covers to check for obvious damage.

2.2 TF Card Installation

Remark: Please check if the model you purchased supports TF cards. For primary use, first install the TF card.

For normal functioning, a TF card with a minimum space of 4G and maximum of 32G is required. Some IPCs, such as the robot type, can have the TF card inserted directly from outside. For other IPCs that support TF cards, the case needs to be opened and the TF card needs to be installed in the TF card location.

2.3 Installation on Brace

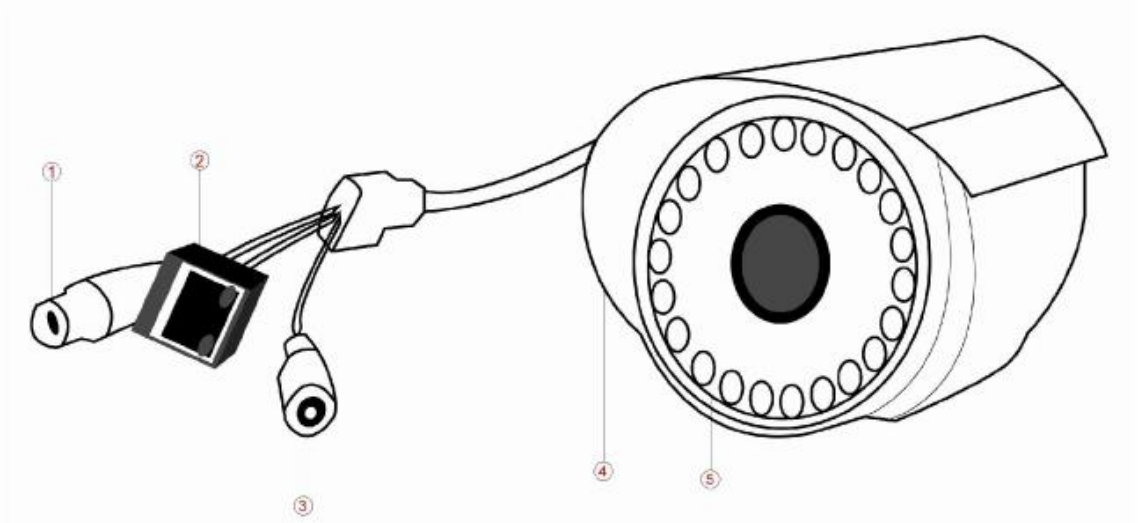
The IPC uses a standard case, and therefore, it can be installed using a standard brace.

Installation steps and precautions:

1. Ensure that the environmental temperature is between -10°C~60°C and humidity is less than 90%.
2. Ensure the brace is installed stably and firmly.
3. For outdoor installation, possibility of severe weather needs to be carefully considered.
4. When installing multiple devices on the same line, please take protective measure to avoid over load of the line.

2.4 Interface illustration

IR-Waterproof, Whelk and Dome type interface illustration



1. Video Output
2. Network
3. DC 12V power supply
4. Waterproof Housing
5. IR Light

2.5 Video Output Connection

Choose and Connect the Video Output Device

1. BNC Output

The BNC video output is PAL/NTSC BNC (1.0VP-P, 75Ω), which can be connected to a monitor or integrated surveillance equipment such as a DVR.

The BNC output only supports the preview of the monitor image.

Ensure the transmission link is stable and reliable

The video transmission line should adopt a high-quality coaxial pair determined by the transmission distance. If the transmission distance is very large, a shielded twisted pair should be adopted with video compensation equipment and transmission by fiber to ensure good signal quality.

The video signal line should be kept away from electromagnetic interference and the signal lines of other equipment. In particular, high voltage currents should be avoided.

Ensure that the connection is stable and credible

The signal and shield lines should be firm and connected. Avoid false and joint welding and oxidation.

2. Network Output

Connect to LAN and WAN via a common standard, using the PC that is in the same LAN line as the IPC using software or IE browser for setting parameters, real-time preview,

remote playback, download, etc.

When the monitor is replaced by a computer display:

1. Do not run it for a long time periods; this will help in extending the life of the device.

2. Regularly degauss to ensure that the monitor works normally.

3. Keep the device away from with severe electromagnetic interference.

A TV is not a credible replacement for the video output. It demands reducing the use time and strict control of the power supply and interference produced by nearby equipment. The creepage of low quality TV can lead to the damage of other equipment.

Chapter 3 IE log-in Basic Operation

Note: grey keys mean they are not supported

3.1 Boot

Connect to power. Then the IPC will auto boot.

Remark:

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

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

Consider using a UPS to ensure continuous power supply under allowable conditions.

3.2 Reboot

The reboot of the IPC can be a soft reboot or hard reboot. For soft reboot, please enter [**Devicecfg**] > [**Advanced**] and choose [**reboot**]. For hard reboot, cut-off the power supply and reconnect the power to reboot the device.

To illustrate

1. Power-off and recover function

If the IPC undergoes an abnormal shut-down while it is recording, after reboot, it will auto-save the information recorded before the shutdown and revert to its status before shutdown.

2. Change TF card

When replacing the TF card, first cut-off the power.

3. Change battery

If the IPC is using a button cell battery, the system time needs to be checked regularly. If the time is not accurate, then the battery needs to be replaced. We suggest replacing the battery with the same model once a year by a professional.

3.3 Log-in

When device turns on normally, the user needs to log-in before operation. The system will use the authority of the log-in user to provide the related functionality.

Default IP address: 192.168.1.10, subnet mask: 255.255.255.0, gateway: 192.168.1.1

When the device is ex-fty, there are 3 preset users: admin, guest, and default. The default user requires no password, the admin user is preset as a super-authority user. The guest and default

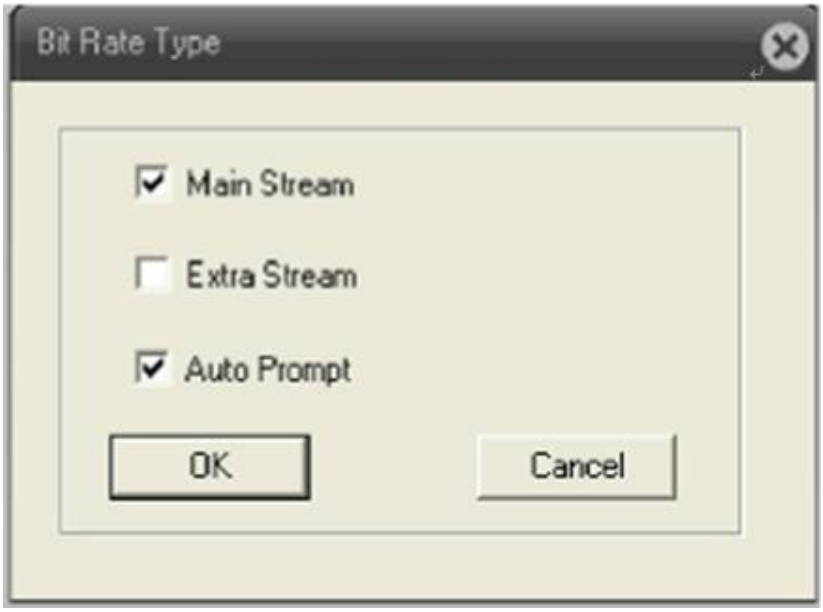
users have the authority to preview and playback, the admin and guest users can modify passwords but not authority, and default is the default log-in user who can modify authority but not passwords.

Pic 3.1 Log-in

For safety, when logging-in for the first time, go to "Account" to modify the User Name and Password (see 4.5.2 HDD Account).

3.4 Log-in

After logging-in successfully, the "Bit Rate Type" pop-up will appear, as shown in pic 3.2. From here, the user can choose "Main Stream" or "Extra Stream" for the preview and also click  at the left side of preview page to set it.



Pic 3.2 Bit Rate Type

The preview page shows the date, time, and channel title.

3.5 Settings Menu

In preview mode, click 

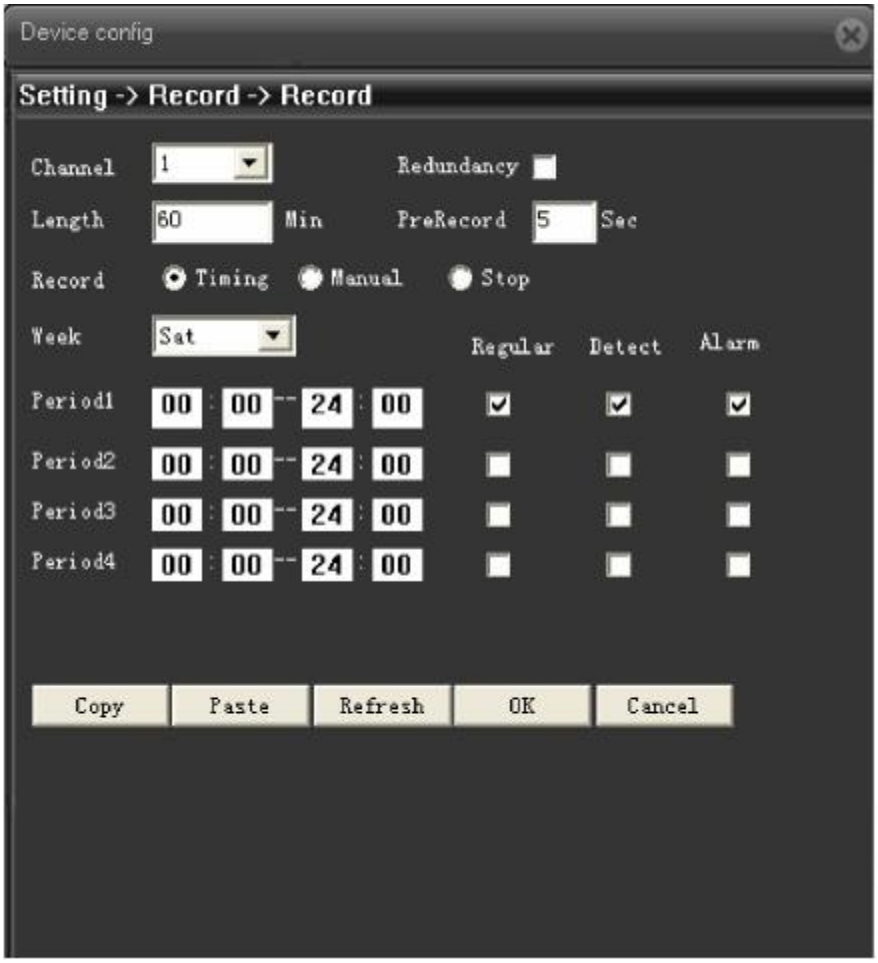
on the top. A pop-up will appear as shown pic 3.3. The Settings menu the following functions: Record, Alarm, System, Advanced, and Info. Click the icon at the bottom to get to the next related menu.

Pic 3.3 Shortcut Menu

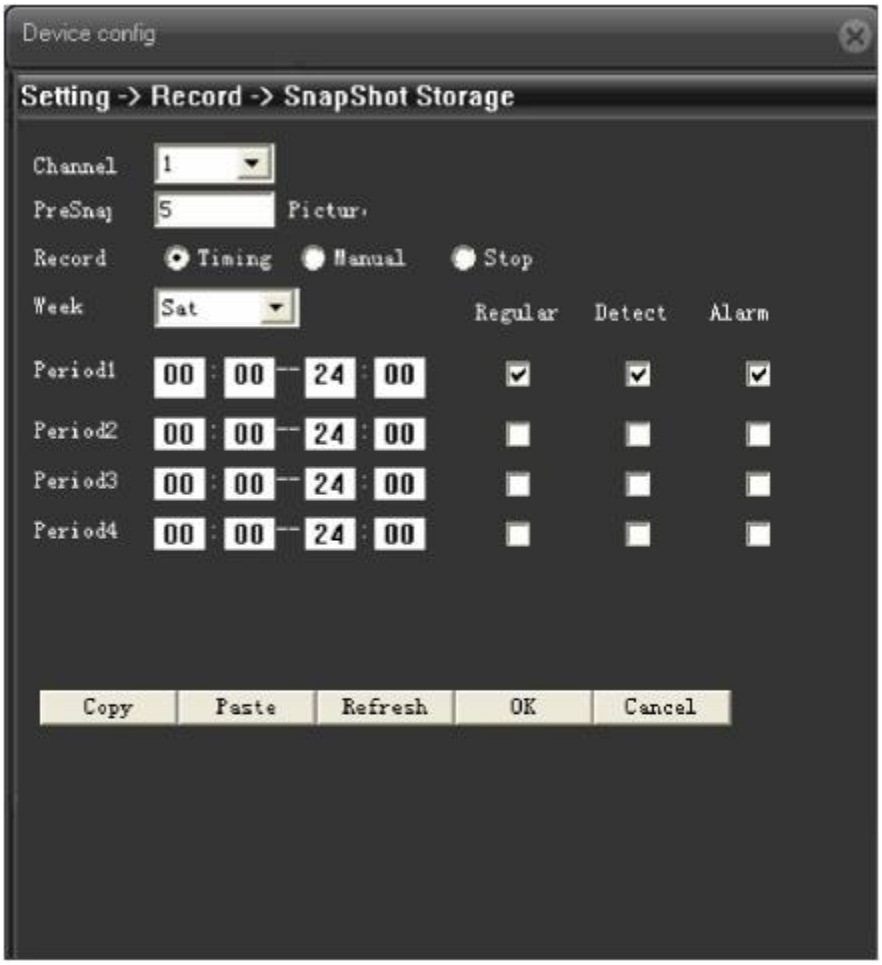
3.5.1 Record

The record function includes device record and snapshot settings.

A TF card should be installed to use Record setting function.



Pic 3.4 Record Setting



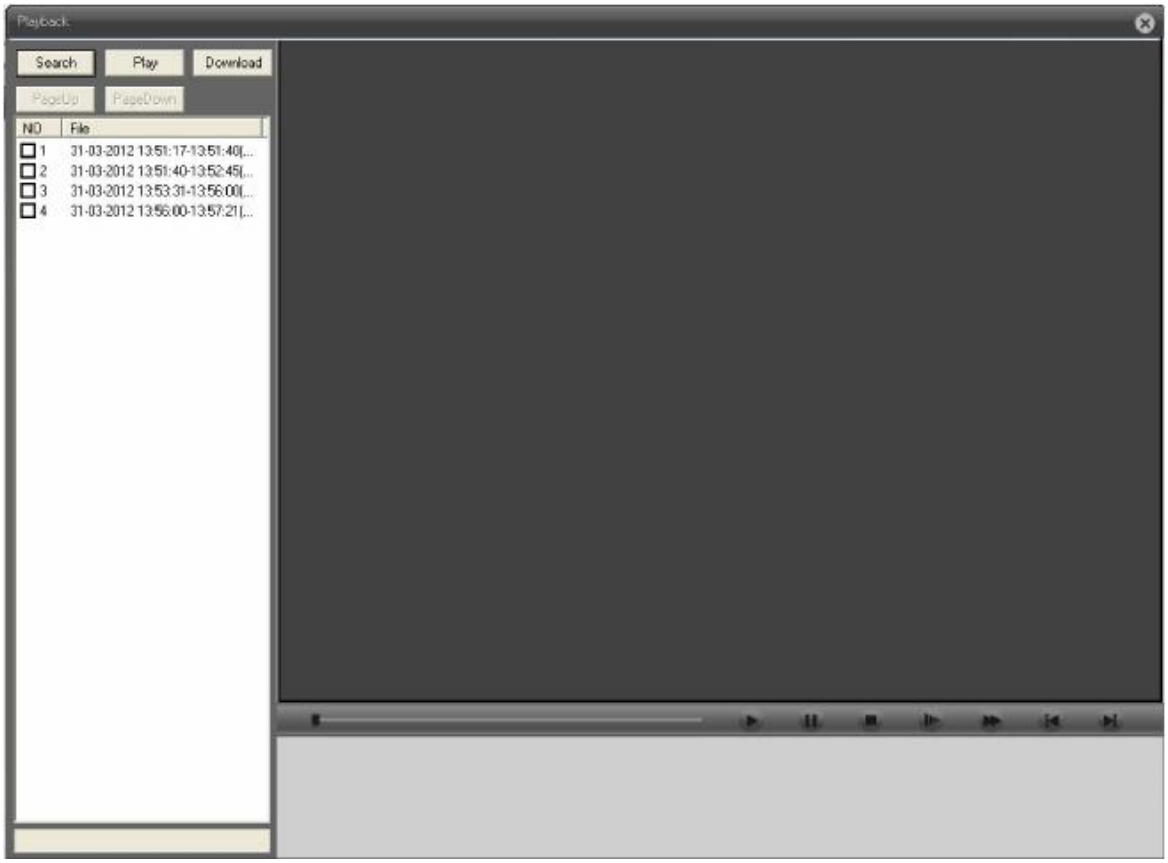
Pic 3.5 Snapshot Setting

3.5.2 Playback

To play the video file in the TF card, click 

at the upper left side of the monitor page to enter the video playback page.

Remark: for normal playback, the TF card used for video storage should be set to read/write or read only (please refer to HDD manage).



Pic 3.6 Playback

Playback Control Button

Button	Function	Button	Function
	Play		Pause
	Stop		Slow-play
	Fast-play		Previous frame
	Next frame		

Chart 3.1 Playback Control Button List

Remark: Playback by frame should be under the status of playback pause.

[**Operate tips**] to show function of the button when the cursor points to it.

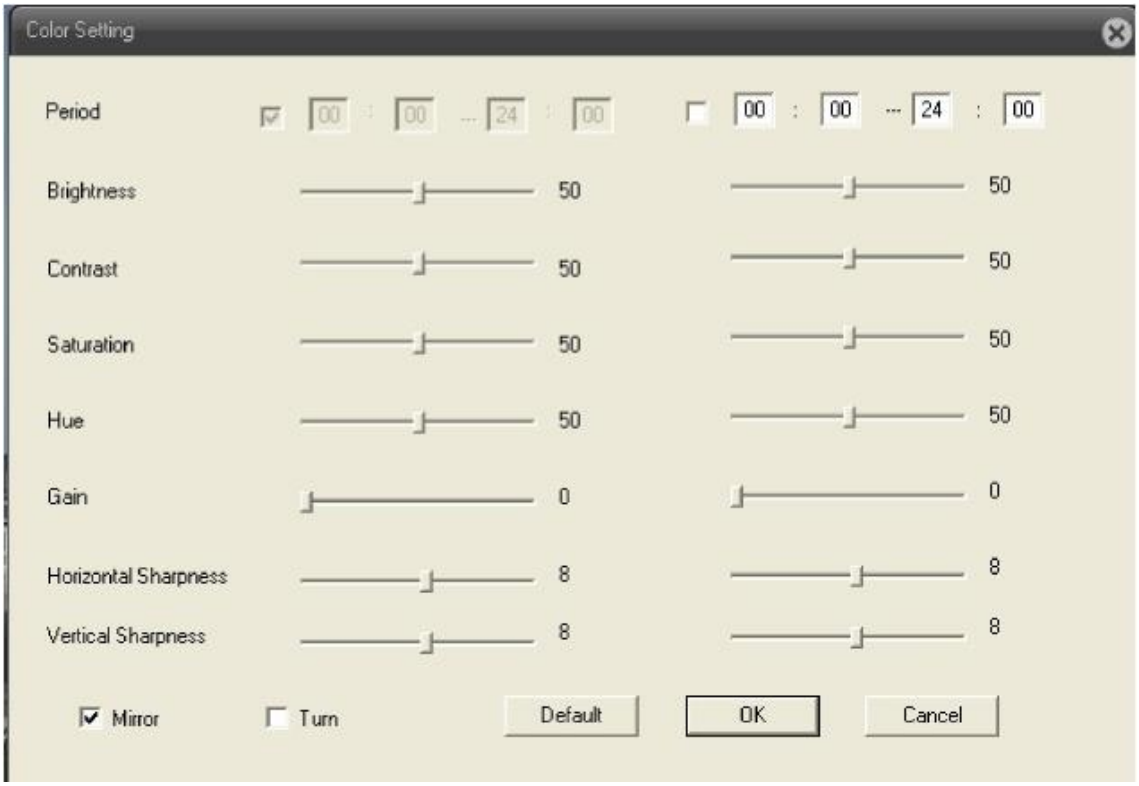
Special feature:

Partial Enlargement: During single-view full screen playback, use the right button to choose any area in the image and click the left button in the chosen area to enlarge the area; double

click the left button to exit.

3.5.3 Image Color

Set the image parameter of the chosen channel (in single view preview, it should be the current channel; in multi-view preview, it should be the channel where the cursor is). The page can be entered through the shortcut menu. The image parameters include brightness, contrast, saturation, hue, gain, and horizontal and vertical sharpness. Based on requirements, different image parameters can be set for different periods.

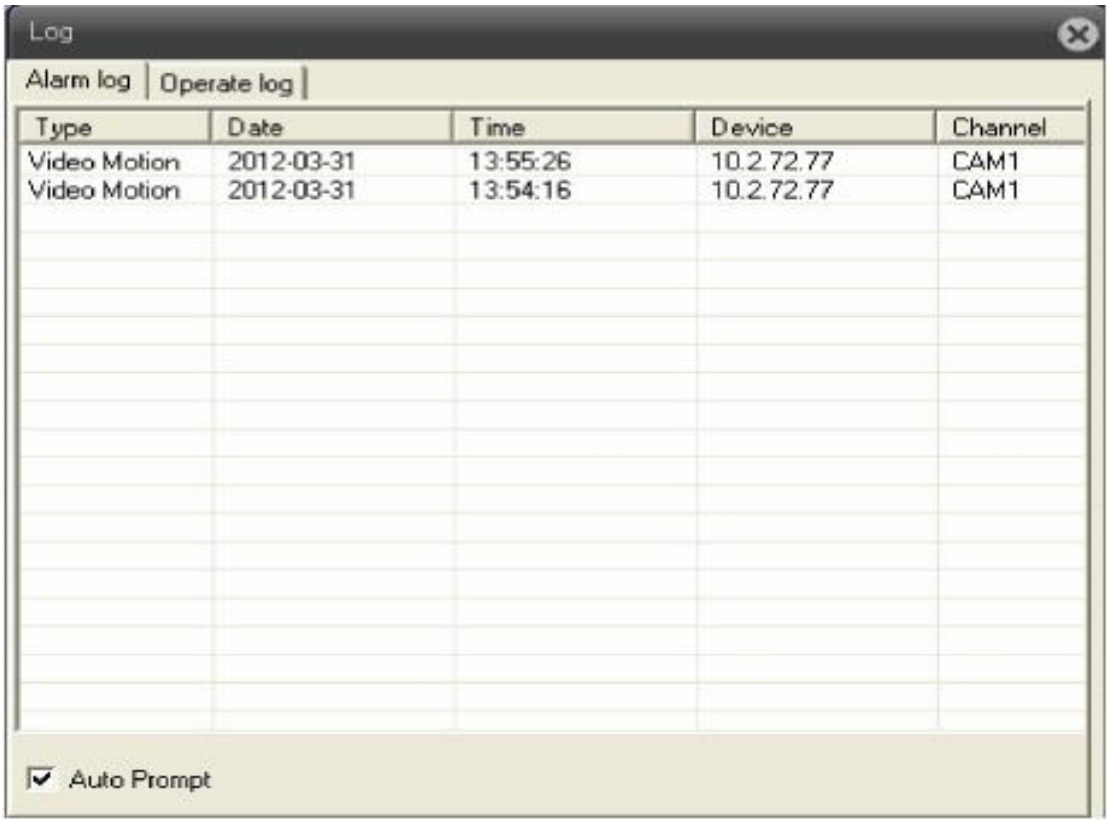


Pic 3.7 Color Setting

3.6 Log

Shows alarm information and operation record; if 

at the lower left side is checked, a pop-up window will appear automatically when an alarm occurs.



Pic 3.8 Log Information

Chapter 4 Main Menu

4.1 Main Menu Description

Main Menu	Submenu	Function summary
Record	Record	Set record config, record type, record period, etc.
	Snapshot	Set snapshot period, type, etc.
Alarm	Video Motion	Set motion detect alarm channel, sensitivity, area, linkage parameters: alarm output, snapshot, recording, PTZ, email sending, ftp upload, etc.
	Video Blind	Set video blind alarm channel, sensitivity, linkage parameters, alarm output, snapshot, recording, PTZ, email sending, ftp upload, etc.
	Video Lost	Set video lost alarm channel and linkage parameters: alarm output, recording, snapshot, PTZ, email sending, FTP upload, etc.
	Alarm Input	Set alarm input channel and linkage parameters: alarm output, recording, snapshot, PTZ, email sending, FTP upload, etc.
	Alarm Output	Set alarm mode: configuration, manual, and stop.
	Abnormal	Storage device does not exist, not enough space, access storage device fail, IP conflict, abnormal network alarm.
System	General	Set system time, data format, language, hard disk full time operation, machine number, video format, output mode, summertime, stay time.
	Encode	Set encode mode: encode mode, resolution, frame rate, bit rate, image quality, code stream value, I frame interval parameter, video/audio enable.
	Network	Set basic net parameter, and DHCP, DNS parameter, auto-gain IP address, network high-speed download, net transmission tactics.
	Net Service	ARSP, Mobile monitor,UPNP,FTP,WiFi,3G,alarm center, RTSP, PPPOE, NTP, email, IP authority, DDNS parameter, etc.
	GUI Display	Set channel title, cover area, time title, channel time overlap and position.

	PTZ Config	Set channel, PTZ protocol, address, baud rate, data bit, stop bit, parity.
	RS485	Set protocol, address, baud rate, data bit, stop bit, parity.
	RS232	Set serial port function, baud rate, data bit, stop bit, parity.
	Camera Parameter	Exposure mode, Day/Night mode, backlight compensation, Auto iris, profile, AE reference, AGC, slow shutter, IR_CUT, Image, Over-turn, anti-flicker, etc.
Advanced	HDD Manage	Perform operations on the TF card, such as set read/write, read only, etc., redundant, format disk, recover, partition, etc..
	Account	Modify user, group, or password. Add user or group. Delete user or group.
	Auto Maintain	Set auto reboot system, time to auto delete file.
	Default	Restore setting status of: regular, encode, record, alarm, network, net service, GUI display, serial settings, account manage.
	Import & Export	Config import, Config export, Log export.
	Upgrade	To perform net upgrade via IE or client software.
	Reboot	IPC soft reboot.
Info	HDD Info	Show total space of HDD, type, space left, record time, etc.
	Log	Can search the log based on record type and time; can clear the log information.
	Version	Show alarm input output, system version, build date, etc..

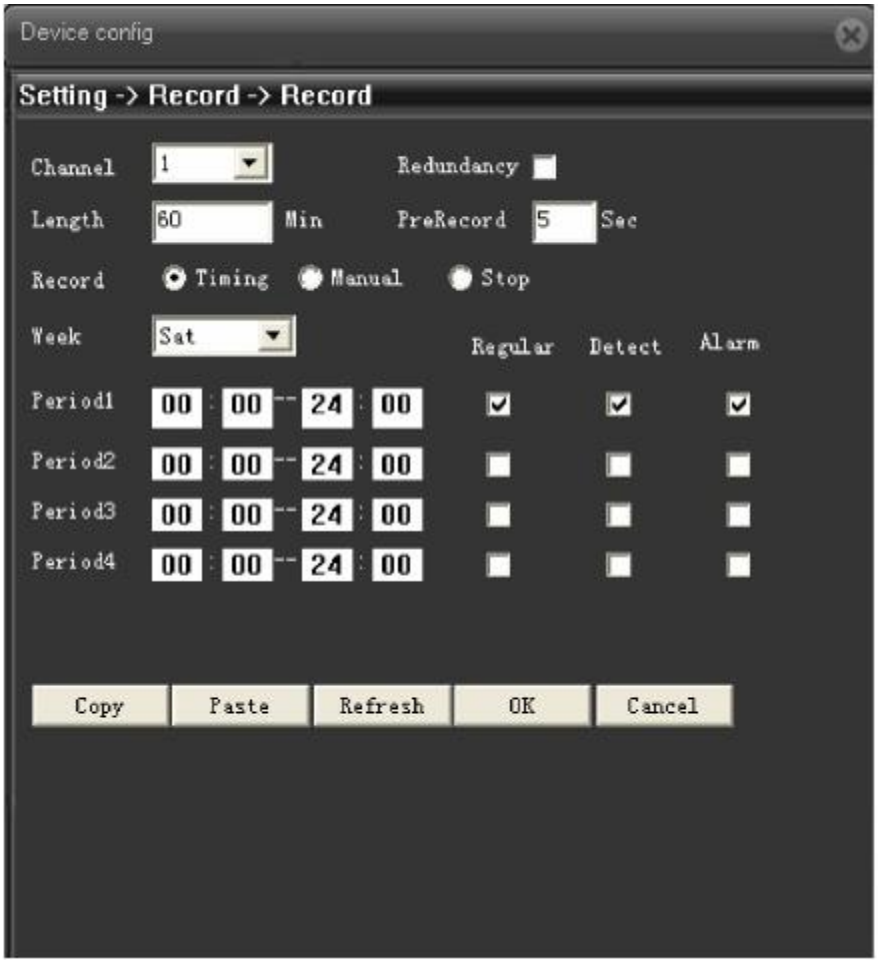
4.2 Record

Device performs recording operations, including Record & Snapshot.

4.2.1 Record Setting

Set the IPC parameters. When first turned on, the system's default setting is to record for 24 hours. You can go to [**Device Config**] > [**Record**] > [**Record**] for the related settings.

Remark: Devices installed with TF cards set to Read/Write can perform normal record operations (for details please refer to 4.5.1 HDD Manage)



Pic 4.1 Record Settings

[**Length**] to set the length of each recording file between 1-120 min; the default is 60min.

[**PreRecord**] to record 1-30s before any motion happens (time length may vary slightly due to bit rate).

[**Record control**] set record type: timing, manual, and stop.

- **Timing**: Record according to the set video type (regular, detect, and alarm) and time period.
- **Manual**: Click **the** button and the recording channel will record irrespective of the state of the channel.
- **Stop**: Click the stop button and the recording channel stops recording irrespective of the state of the channel.

[**Period**] Set the time section for common recording, The recording will start only in the set range.

[**Record type**] Set the recording type: regular, detect, or alarm.

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

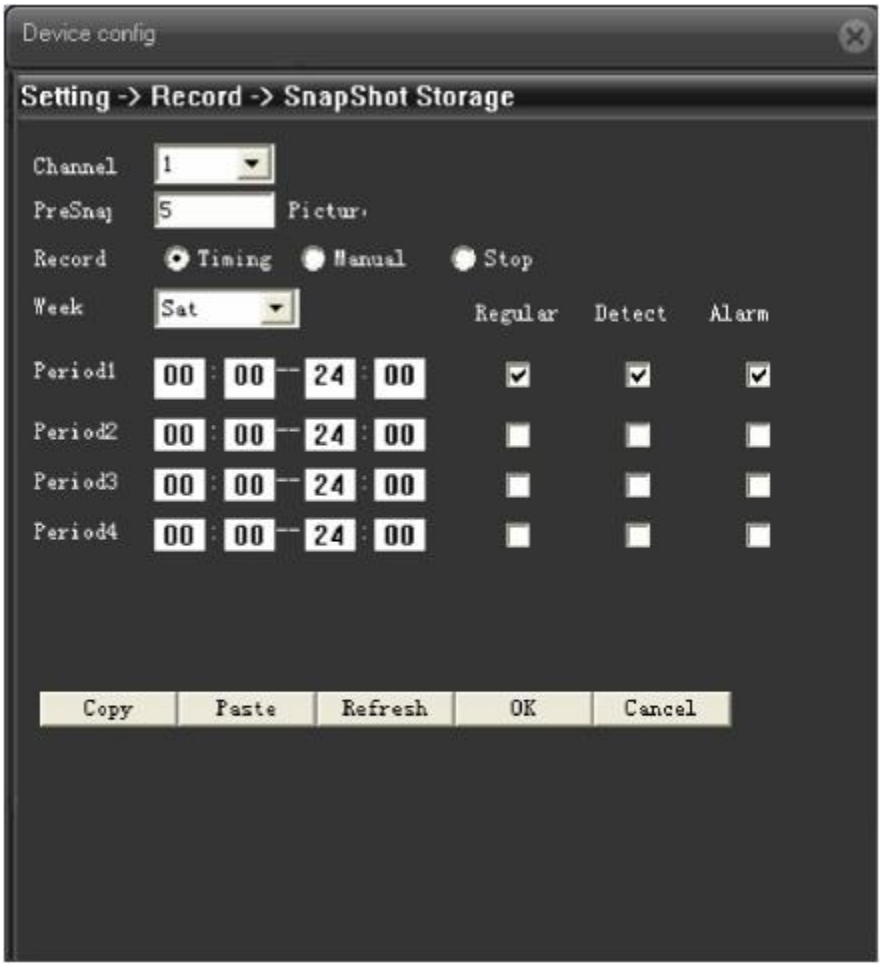
- **Detect**: Trigger the “motion detect”, “camera mask” or “video loss” signal. When the above alarm is set as the opening recording, the “detection recording” state is on. The video file type is “M”.
- **Alarm**: Trigger the external alarm signal in the set time section. When the above alarm is set as the opening recording, the “detection recording” state is on. The video file type is “A”.
- **Remark**: For the related alarm setting, please refer to 4.3 Alarm Function.

4.2.2 Snapshot Storage

Setup snapshot parameters for different channels. The default setting is for 24 hours continuous snapshot recording.

Please go to Main Menu > Record > Snapshot Storage for appropriate settings.

Remark: For a device installed with a TF card and set partition, the snapshot size should be more than 1G for the device to normally capture snapshots (for more details, refer to 4.5.1 HDD Manage).



Pic 4.2 Snapshot Setting

[**PreSnapshot**] to take a snapshot or more but less than 30 before recording begins; the default is 5.

[**Record**] Set the record type: "Timing", "Manual" and "Stop"

Timing: Takes a snapshot according to the record type (regular, detect, and alarm) and period.

Manual: Irrespective of the current status, once "manual" is chosen, related channels will take snapshots.

Stop: Irrespective of the current status, once "stop" is chosen, snapshots will stop being taken at related channels.

[**Period**] Set the normal record period; the device by default starts-up with only snapshot storage at a set period.

[**Type**] Three types: regular, detect, and alarm

[**Record type**]Three types: regular, detect and alarm

- **Regular**: snapshot at set period
- **Detect**: snapshot at set period when motion is detected, video blind and video loss, which are preset for snapshots, is enabled.
- **Alarm**: snapshot at a set period when the alarm preset for snapshots is enabled.

Note: for the related alarm functions, refer to 4.3 Alarm Function.

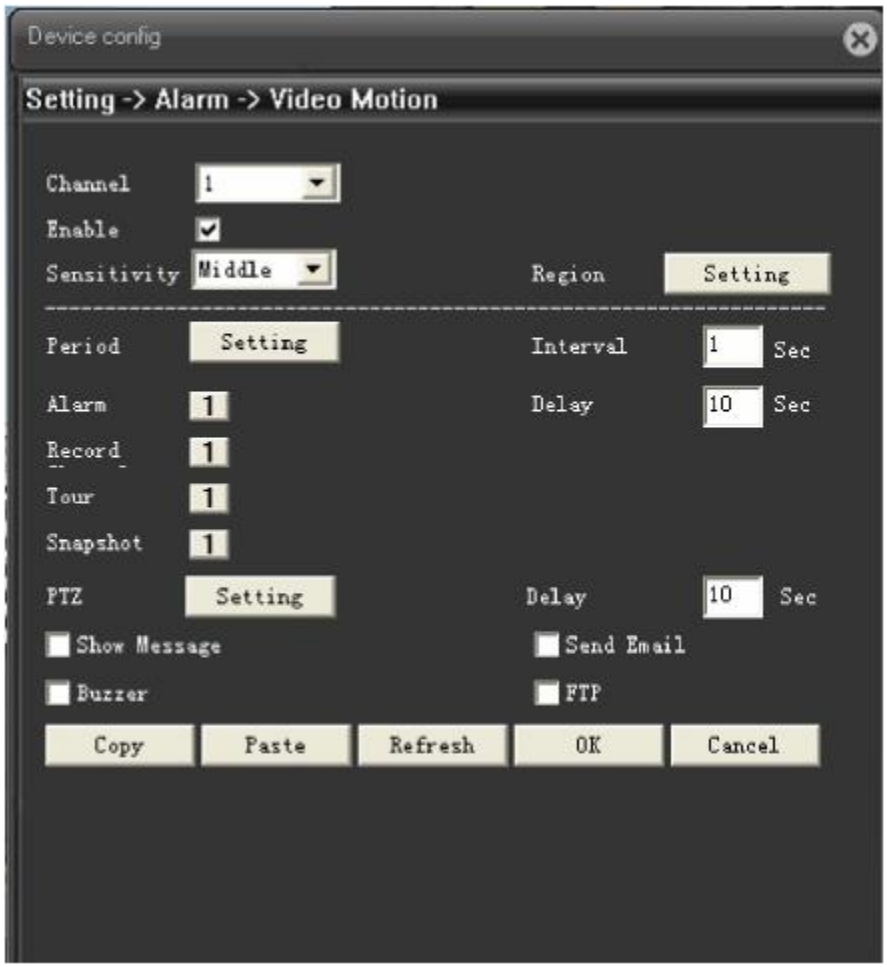
4.3 Alarm Function

Alarm functions include motion detect, video blind, video loss, alarm input and alarm output, and abnormal dealing.

Pic 4.3 Alarm Function

4.3.1 Motion Detection

When system detects a motion signal that reaches the set sensitivity, the motion detection alarm and related functions are enabled.



Pic 4.4 Motion detection setting interface

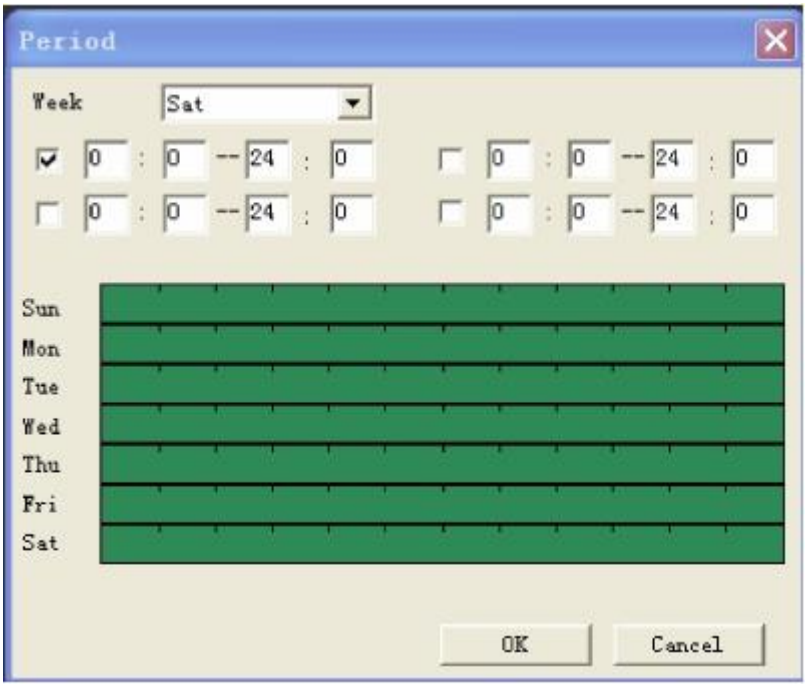
[**Enable**] Ticking the checkbox enables motion detection. Then, the related setting can be set.

[**Sensitivity**] has six grades: The higher the sensitivity, the easier is motion detected.

[**Region**] Click **Setting**, enter the setting region of PAL22X18, light blue region is the region where motion is detected; in the dark blue region, motion is not detected (show the monitor page) (see pic 4.5). Press the left mouse button and drag it to the required region (by default, movement is monitored for the entire region).

Pic 4.5 Region Setting

[**Period**] Triggers the motion detection signal in the set time (see pic 4.6). You can set it to a week or uniformly. Each day is divided into four time sections. Selecting ☑ makes the setting active.



Pic 4.6 Period Setting

[**Interval**] Only one alarm signal is generated even if there are several motion-detected signals in the set interval of 0 second ~ 600 seconds.

[**Alarm Output**] Activate the external connected alarm when the motion-detected alarm is activated.

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

[**Record Channel**] When an alarm is activated, the system records this channel.

Remark:

- To link record, you need to enable motion detection of a related period in [**Record Setting**] > [**Snapshot**] select snapshot; When an alarm occurs, the system will send a snapshot signal to this channel.
- To link snapshot, you need to enable motion detection of a related period in [**Record Setting**] > [**PTZ Linkage**] When an alarm occurs, link the PTZ of the related channel setting (see pic 4.7).
- To link the PTZ, the related parameters need to be set at [**System**] > [**PTZ Control**]; set the preset point, cruise between points, interval, etc..

Pic 4.7 PTZ Linkage

[**Delay**] When alarm has stopped, recording will last some seconds (10~300 s) and then stop.

[**Send Email**] Selecting this will send an email to the user when an alarm occurs. For sending email, related settings need to be set at [**Net service**].

[**FTP upload**] Selecting this will send the recorded file or snapshot to the specified location when an alarm occurs. To enable FTP upload, related settings need to be set at [**Net Service]**.

4.3.2 Video Blind

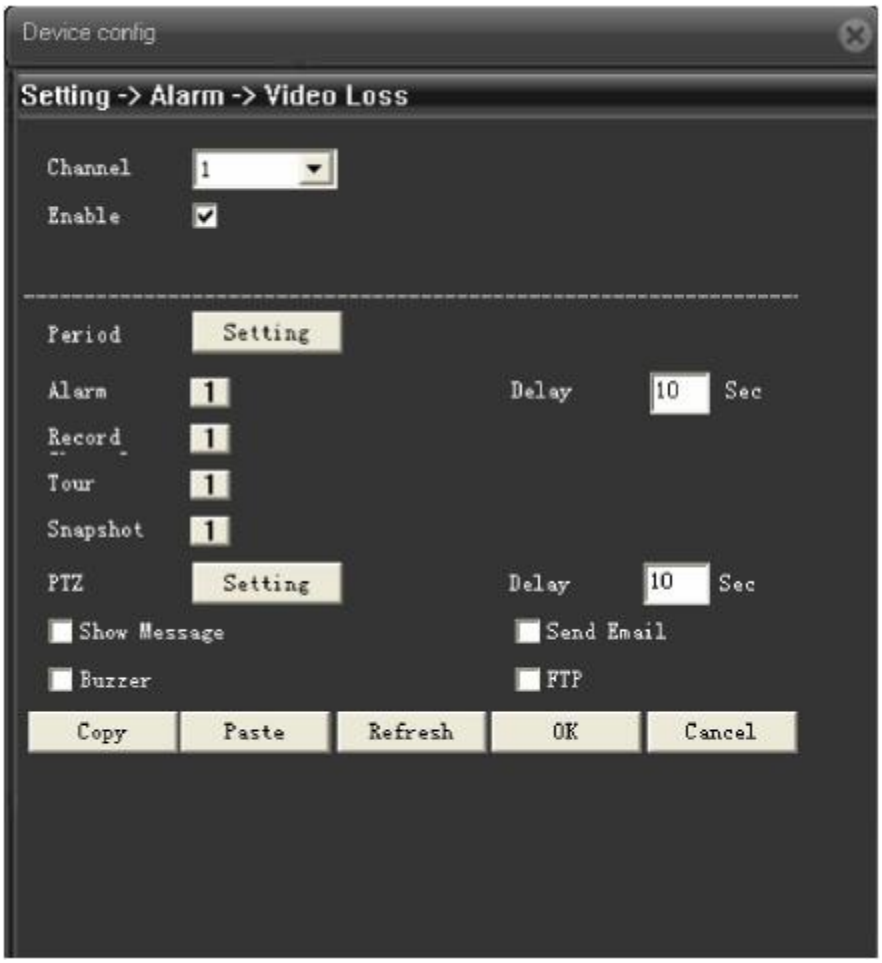
When the video image is influenced by environmental factors such as bad brightness or when the specified sensitivity parameter is reached, the camera mask function is turned on and the linkage function is enabled.

Pic 4.8 Video Blind

Setting details: refer to 4.3.1 Motion Detection.

4.3.3 Video Lost

When the equipment does not receive the channel's video signal, the video-loss alarm is activated and the linkage function is enabled.



Pic 4.9 Video Lost

Setting details: refer to 4.3.1 Motion Detection.

4.3.4 Video Lost

Here, the software and hardware of the current device can be detected. When abnormal issues are detected, the device will make the necessary corrections.

Pic 4.10 Abnormal

[**Event type**] Select the event type in the drop-down list.

[**Enable**] Select the checkbox to enable this. To open the abnormal deal function, this setting is valid only if the checkbox is selected.

4.4 System Setting

Here, parameters for the following functions can be set: General, Encode, Network, Net service, GUI display, PTZ config, RS485, RS232, Camera parameters.

4.4.1 General

Pic 4.11 General Settings

[**System Time**] Set the current date and time of the IP Camera.

[**Date Format**] Seect the date showing format; options are:year/month/date, month/date/year, and date/month/year.

[**Date Separator**] Choose the list separator for the data format.

[**Time Format**] Choose time format options (24-hour or 12 hour).

[**Language**] At present, 29 languages are supported including simplified Chinese, Tradition Chinese, English, Bosnian, Finnish, French, Greek, Hungarian, Italian, Japanese, Germany, Polish, Portuguese, Russian, Spanish, Thai, Turkish, Vietnamese, Romanian, Brazilian, Indonesian, Swedish, Arabic, Bulgarian, Czech, and Hebrew

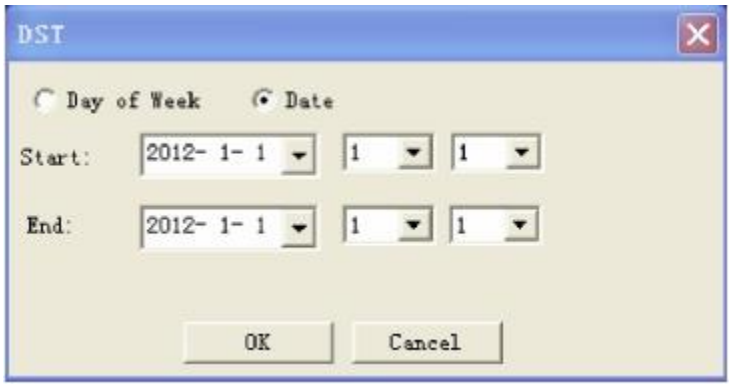
[**HDD full**] Choose **Stop Record** to stop recording when the TF card is full;

Choose **Over Write** to record over the previous files when TF card is full.

[**Video Standard**] Supports PAL and NTSC.

[**DST**] Select the DST checkbox and then click [**Setting**]. A pop-up will appear, as shown in pic 4.12 & pic 4.13, in which the start and end time for the surveillance can be entered.

Pic 4.12 DST (week) Setting

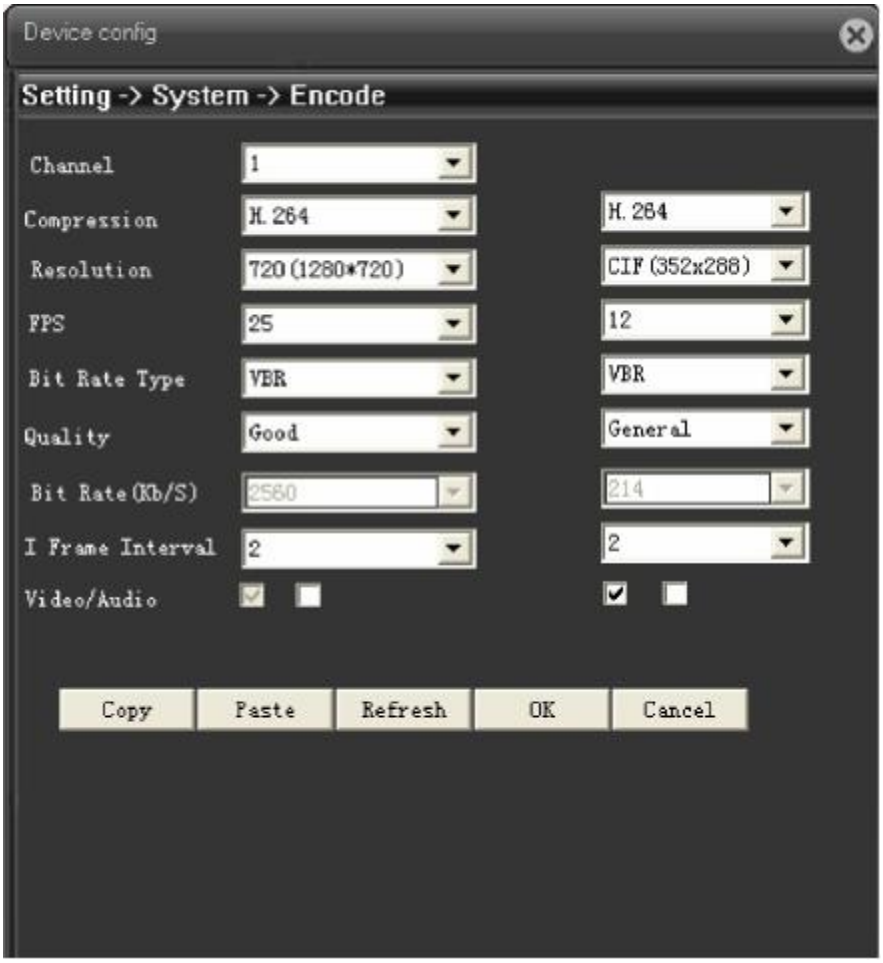


Pic 4.13 DST (date) Setting

4.4.2 Encode

Set video/audio encode parameters, including image parameters of record file, remote monitor, etc. Left part is to set the encode parameter of each separated channel, right part is to set encode parameter of extra stream, dual stream is using one high bit rate stream for local high definition storage, support D1/HD1/CIF/QCIF encode, one low bit rate stream (QCIF encode) for net transmission, in order to maintain local storage and remote net transfer. Dual stream both considering to image quality and transmission quality under the current band bottleneck, and can breakthrough it, base on the bandwidth to flexibly choose stream format, to reach local high definition storage and low stream for net transmission back end.

Remark: Main application of extra stream: to do multi-channel real-time monitor, and mobile monitor when the network if poor.



Pic 4.14 Encode Setting

Encode setting

[**Compression**] Standard H.264MP.

[**Resolution**] Shows the resolution types: D1/HD1/CIF/QCIF.

[**Frame Rate**] Adjustable; the real-time standard is: PAL, 25 fps; NTSC 30 fps.

[**Bit Rate Type**] You can choose CBR or VBR, six image quality grades can be chosen under the VBR type, and then the bit rate value can be manually chosen under the CBR type.

[**Image Quality**] Set the bit rate value to change the image quality. If supporting facilities are available, the larger bit rate values will result in better image quality.

Bit Rate Reference Span: D1 (512~2560kbps), HD1 (384~2048kbps), CIF(64~1024kbps) ,QCIF(64~512kbps).

[**Frame Interval**] you can choose between 2 seconds~12 seconds;

[**Audio/Video**] the icon was all ticked, means audio & video combine stream.

Extra Stream

Extra stream is used for client side monitoring and mobile monitoring.

The resolution, frame rate, stream control, and bit rate value are identical to those of the individual channel.

The resolution and bit rate statistics of each product are shown below.

R5003L

PAL: VGA (512 kbps ~ 2048kbps), CIF(64 kbps ~1024kbps), QCIF(64 kbps ~512kbps), QVGA(256 kbps ~1024kbps),QQVGA(64 kbps ~512kbps)

NTSC: VGA(512 kbps ~2048kbps), CIF(64 kbps ~1024kbps), QCIF(64 kbps ~512kbps), QVGA(256 kbps ~1024kbps), QQVGA(64 kbps ~512kbps)

5003L

PAL: VGA (512~2048kbps), CIF(64~1024kbps), QCIF(64~512kbps), QVGA(256~1024kbps), QQVGA(64~512kbps)

NTSC: VGA(512~2048kbps), CIF(64~1024kbps), QCIF(64~512kbps), QVGA(256~1024kbps), QQVGA(64~512kbps)

6004L

PAL: D1(512~2560kbps), HD1(384~2048kbps), CIF(64~1024kbps), QCIF(64~512kbps)

NTSC: D1(512~2560kbps), HD1(384~2048kbps), CIF(64~1024kbps), QCIF(64~512kbps)

6006L

PAL: D1(512~2560kbps), CIF(64~1024kbps) , QCIF(64~512kbps), 960H(896~4096kbps)

NTSC: D1(512~2560kbps), CIF(64~1024kbps), QCIF(64~512kbps), 960H(896~4096kbps)

5010L

PAL: 720(1024~4096kbps)

NTSC: 720(1024~4096kbps)

5013L

PAL: 1080P(676~5415kbps), 720(1024~4096kbps)

NTSC: 1080P(578~4630kbps), 720(1024~4096kbps)

6013L

PAL: 720(1024~4096kbps), D1(512~2560kbps), CIF(64~1024kbps)

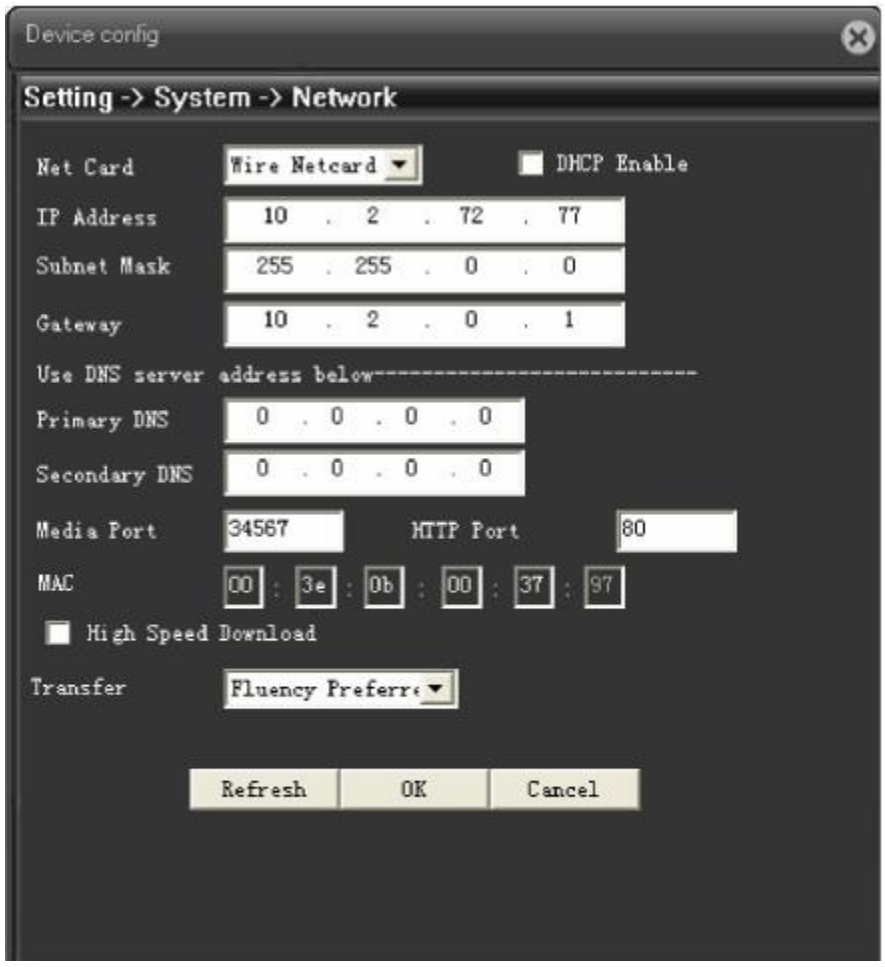
NTSC: 720(1024~4096kbps), D1(512~2560kbps), CIF(64~1024kbps)

5020L

PAL: 1080P(994~7954kbps), 720(1024~4096kbps)

NTSC: 1080P(1024~8192kbps) , 720(1024~4096kbps)

4.4.3 Network



Pic 4.15 Network Setting

[**Net Card**] you can choose wired net card.

[**DHCP Enable**] to auto get IP address(not suggested.

Remark: need to set up DHCP server in advanced.

[**IP Address**] set IP address of device, default IP address is 192.168.1.10.

[**Subnet Mask**] set subnet mask of device, default subnet mask is 255.255.255.0.

[**Default Gateway**] set default gateway of device, default gateway is 192.168.1.1.

[**DNS Setting**] 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.

[**TCP Port**] default is 34567.

[**HTTP Port**] default is 80.

[**High Speed Download**] Network high speed download.

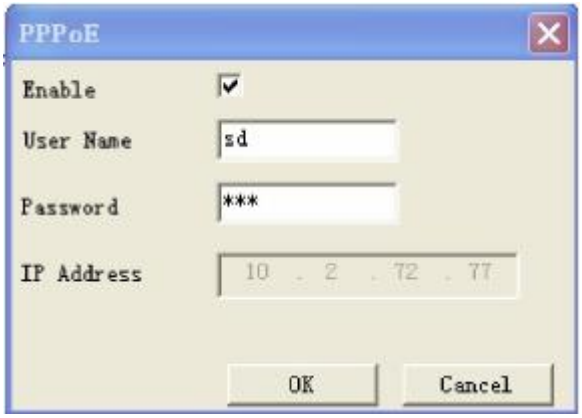
[**Transfer Policy**] there are 3 policies, adaptive, quality preferred, fluency preferred. Base on different setting, code stream is auto-adjusted, adaptive is eclectic between quality and fluency, also considers fluency when the quality is not greatly influenced. Fluency preferred and adaptive is valid only when the extra stream is enabled, if extra stream is not enabled, it will base on network status to adjust quality preferred.

4.4.4 Net Service

To configure advanced network functions, double click any item to set its parameters.

Pic 4.16 Net Service

[**PPPoE Setting**]



Pic 4.17 PPPOE

Enable

Enter the user name and password provided by the ISP (Internet Service Provider), save it, and reboot Device. After the reboot, the IPC will automatically connect to the network through PPPoE, if it is successful [**IP Address**] will be changed to the dynamic WAN IP that is obtained.

Operation: After the PPPoE dials-up successfully, check [**IP Address**] to get the current IP of the device, then access the device through this IP from the client's side.

[**NTP**]

Pic 4.18 NTP Setting

For this, NTP needs to be installed at the IPC.

Enable: Selecting the checkbox activates the setting.

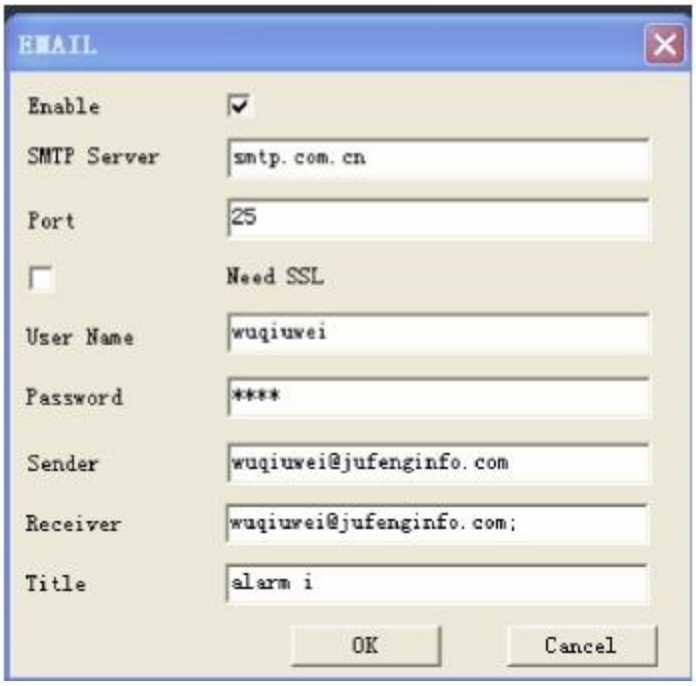
Server IP: Enter the IP of the PC installed with the NTP server.

Port: The default NTP port is 123.The port No. can be set to the actual 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; US mountain time GMT-7; US central time GMT-6 US; eastern time GMT-5; Atlantic time GMT-4; Brazil GMT-3; Atlantic central GMT-2.

Update Period: The same as that of the NTP server. The default is 10 min.

[**EMAIL**] The EMAIL setting is used to send alarm information and snapshot picture/s to the appointed mailbox when the alarm is linked to the snapshot/s.



Pic 4.19 EMAIL Setting

SMTP Server: Enter the address of the email server; this can be an IP address or domain name. If it is a domain name, the DNS needs to be accurate for the domain name to be recognized.

Port: Enter the email server port number.

SSL: Decide whether Secure Socket Layer protocol should be used to login.

User Name: Enter the email server's user name.

Password: Enter the password of the user.

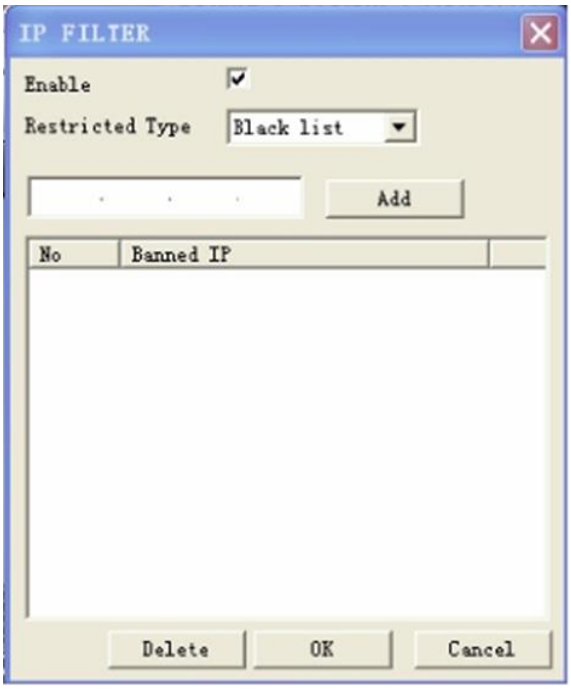
Sender: Ender the sender's email sender address.

Receiver: Enter the email of the receivers who receive an email when an alarm is activated. The maximum number of receivers that can be added is three.

Title: This can be anything you want.

[**IP Authority Setting**] When the white list is chosen, only the IP in the list can connect to the IP

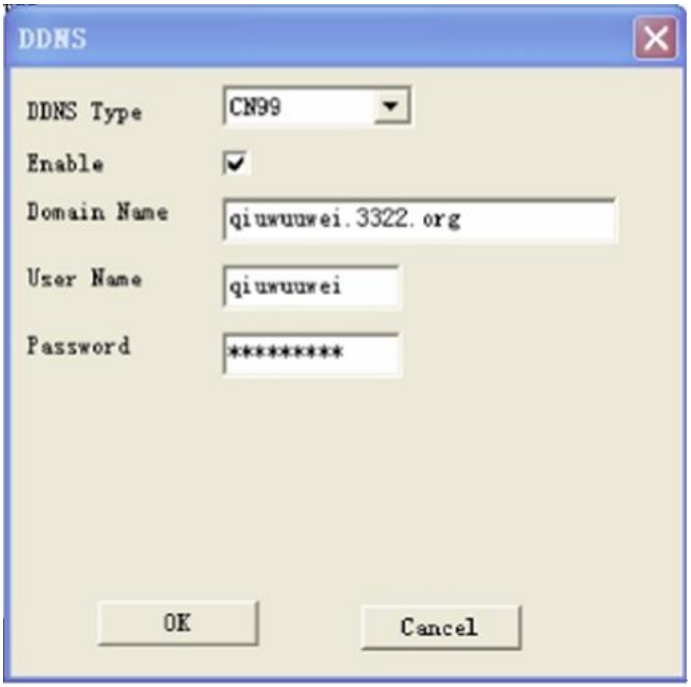
camera; The list can support 64-bit IP settings. When the black list is chosen, the IP in the list cannot access the IP camera via the network; the list can support 64-bit IP settings. An IP can be deleted by selecting it and then clicking Delete.



Pic 4.20 IP authority Setting (black list)

Pic 4.21 IP authority Setting(white list)

[**DDNS**]



Pic 4.22 DDNS Setting

To connect to the server via dynamic domain name, choose the DDNS type.

Host domain Name: Provide the domain name in which the DDNS was registered.

Server domain name: The domain name that hosts the server.

User name: Provide the registered user name for the DDNS.

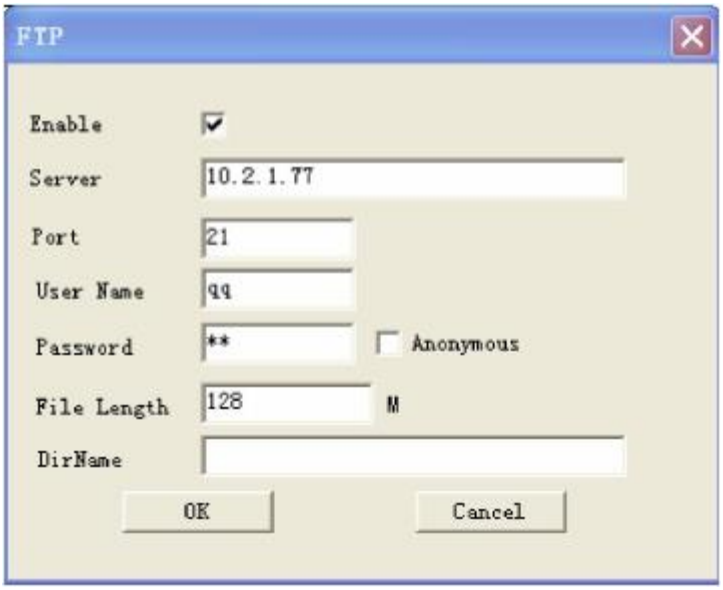
Password: Provide the registered password for the DDNS.

When the DDNS is successfully configured and activated, the domain name can be entered in the IE address column.

[**FTP Setting**]

FTP is available only when an alarm occurs or when an alarm activates the video record or snapshot function.

When this occurs the recorded file or snapshot will be sent to the FTP server.



Pic 4.23 FTP Setting

[**Enable**] Clicking Enable makes all the settings available.

[**Host IP**] Enter the IP address of the FTP server.

[**Port**] Enter the domain port of the FTP. By default, it is 21.

[**User Name**] User name for the FTP.

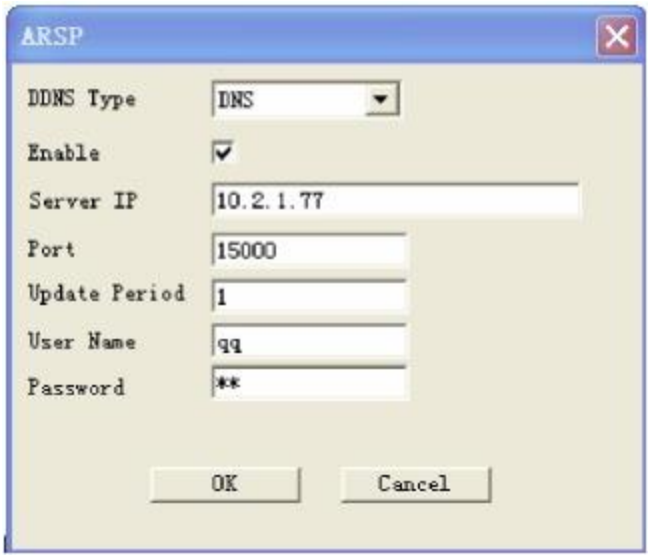
[**Password**] Password for the FTP.

[**Cryptonym**] When the checkbox is selected, no user name and password needs to be set.

[**Max File Length**] Max length for upload files; the default is 128M.

[**Remote Path**] The directory to which the file should be uploaded. For this, the user needs to have the authority to upload files to the server.

[**ARSP**] Startup DDNS server to add devices and manage them in the DDNS server.



Pic 4.24 ARSP Setting

[**DDNS Type**] Choose DNS.

[**Enable**] Selecting the checkbox activates the settings.

[**Server IP**] IP address of the DDNS server.

[**Port No**] Port No. of the device (corresponding to the listening port of the DDNS).

[**User Name**] User name for the device to log-in to the DDNS.

[**Password**] Password for the above user name.

[**Update Period**] Time interval synchronizing the device to the DDNS. The DDNS server needs to be configured for this.

[**Alarm Server**] When an alarm occurs, alarm information is sent to the alarm server.

Pic 4.25 Alarm Server Setting

[**Protocol**] The protocol type is “GENERAL”.

[**Enable**] Select the checkbox to activate the settings.

[**Server IP**] IP address of the Alarm Server.

[**Port No**] Port no. of the device.

[**Alarm Report**] Selecting the checkbox sends alarm information to the server.

[**Log Report**] Selecting the checkbox sends the alarm reports to the server.

[**Mobile monitor setting**]

To connect to the device via mobile phone, router mapping of this port should be performed CMS should be used to monitor and operate it by the respective protocol.

Pic 4.26 Mobile Monitor Settings

[**Enable**] Selecting the checkbox activates this function.

[**Port**] Port no. for mobile monitoring. Router mapping needs to be done to monitor the device via mobile devices.

[**UPNP**] UPNP protocol is used for auto-port forwarding to a router. For this, UPNP needs to be enabled on the router.

Pic 4.27 UPNP Setting

[**Enable**] Selecting the checkbox activates this function.

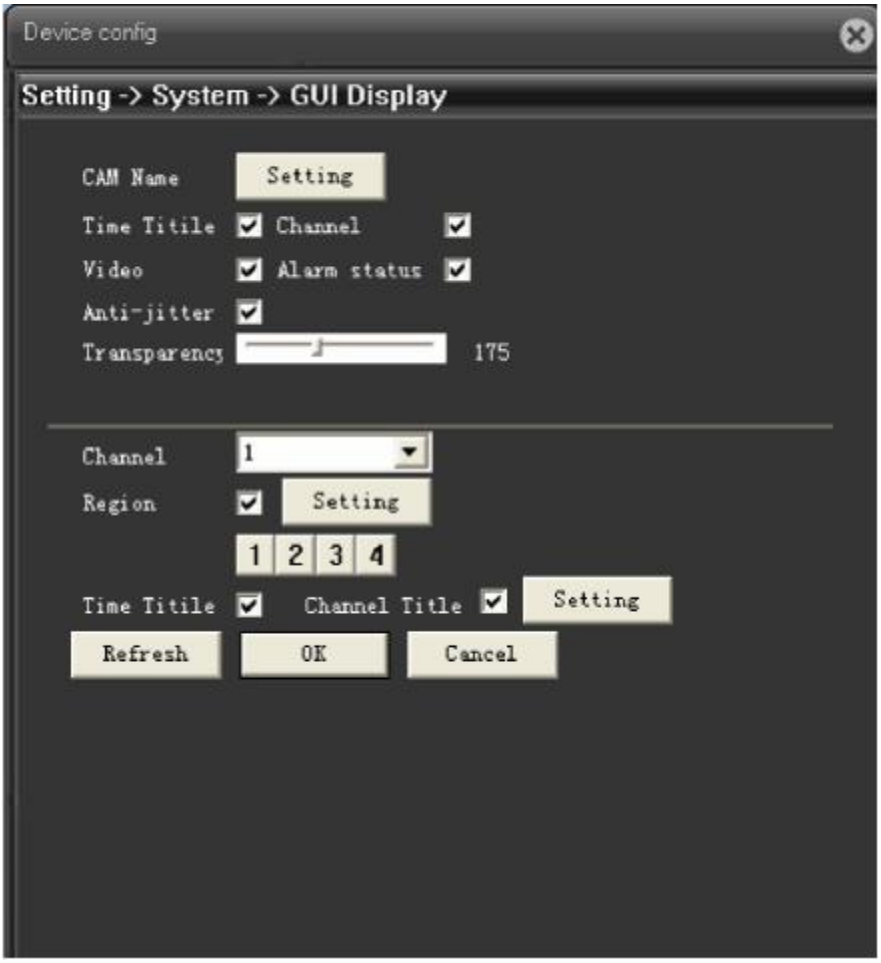
[**HTTP**] Router will automatically distribute the HTTP ports for the device. This port is required for IE viewing.

[**TCP**] Router will automatically distribute the TCP port for the device. This port is required when monitoring via CMS.

[**Mobile Port**] Router will automatically distribute the mobile port for the device. This port is required for monitoring via mobile device.

4.4.5 GUI Display

This interface includes settings for the following: **Channel name, Time title, Channel title,** and **Region cover**.



Pic 4.28 GUI Display

[**Channel Name**] Click the channel name modify button and enter the channel name menu. Modify the channel name. The 16 Chinese characters and 25 letters are supportive.

[**Time Title**] Selecting the checkbox shows the system time on monitoring page.

[**Channel Title**] Selecting the checkbox shows the channel No. on monitoring page.

[**Record Status**] Selecting the checkbox shows the record status on the monitoring page.

[**Alarm Status**] Selecting the checkbox shows the alarm status on the monitoring page.

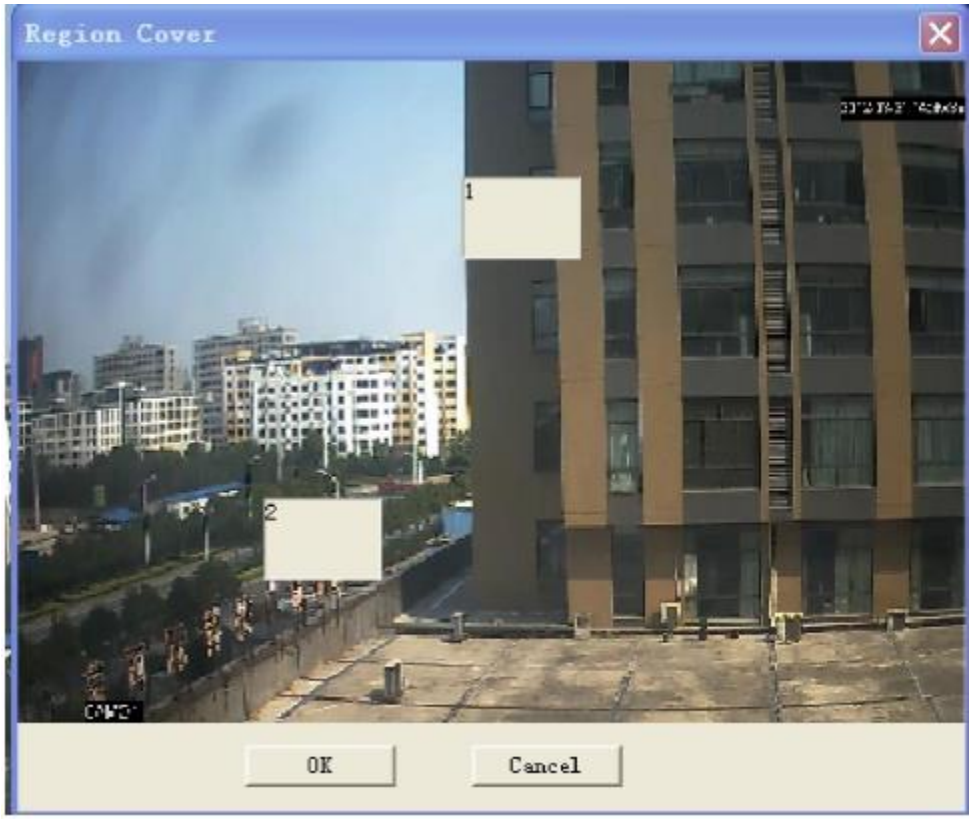
[**Transparency**] Choose the transparency of the background image (span within 128~255).

[**Resolution**] Set the resolution of the monitor.

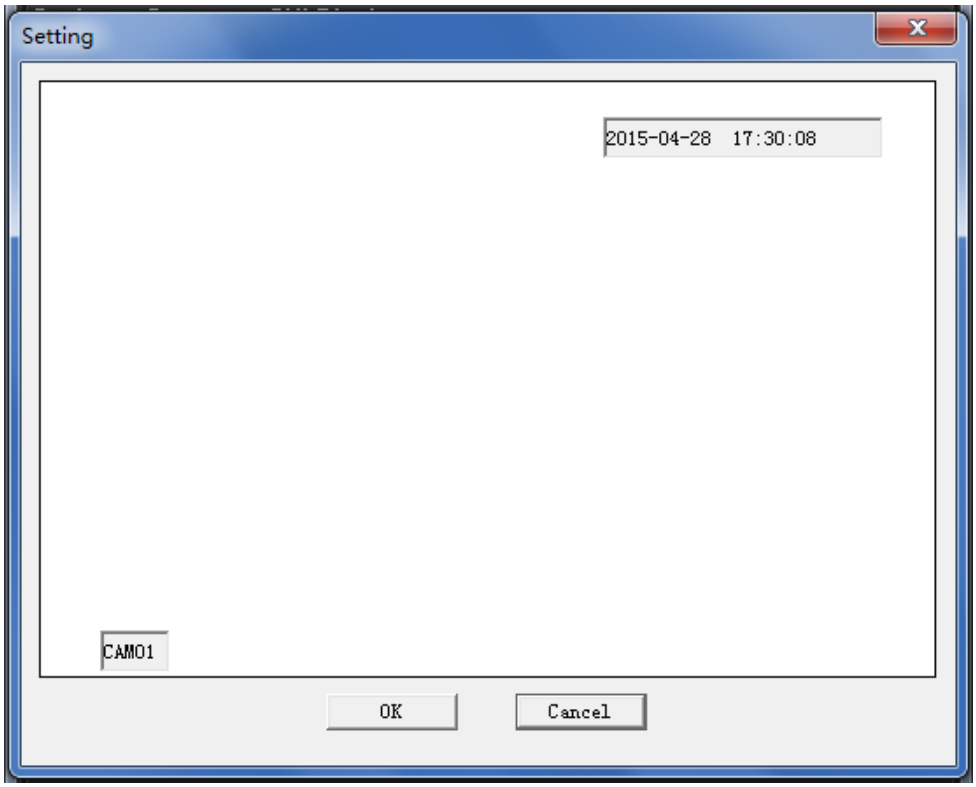
[**Channel**] Choose the channel No. for the encode output.

[**Region Cover**] Select the checkbox. Choose the number of regions to be covered. Then click Settings and enter the related channel no. The mouse can be used to select any area size for monitoring (the video output of the monitored region should be in black).

[**Time Title**] [**Channel Title**]Select the checkboxes to show the time and channel No. and their position.

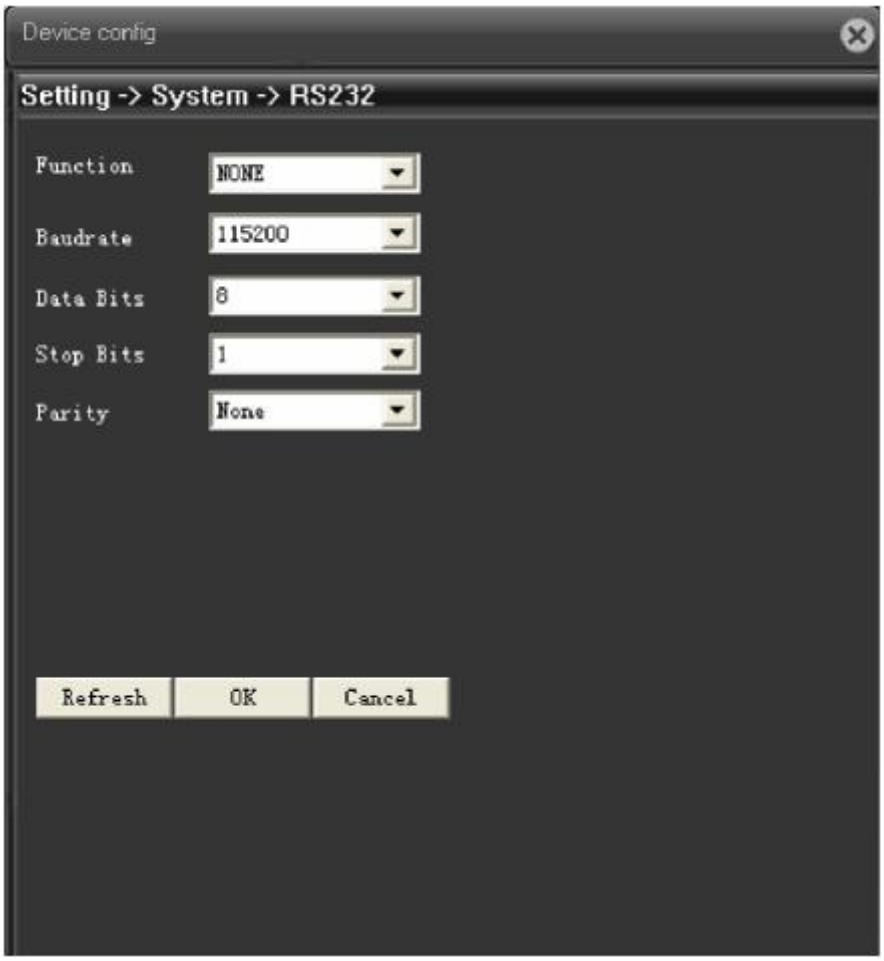


Pic 4.29 Region Covered Settings



Pic 4.30 Channel and Time Title Setting

4.4.6 RS232



Pic 4.31 RS232

[**Serial Port Function**] Common serial port is used to debug and update the program or set-up specific serial ports.

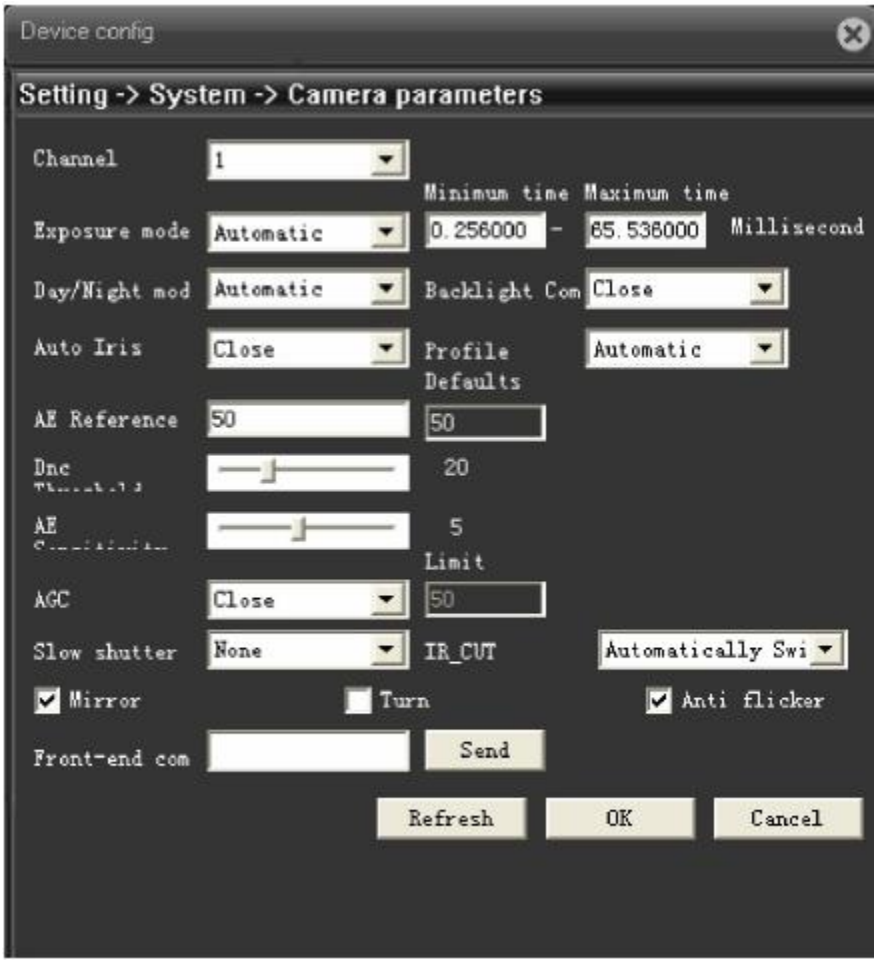
[**Baud Rate**] Choose the corresponding baud rate length.

[**Data Bits**] Includes 5 ~ 8 options.

[**Stop Bits**] Includes 2 options.

[**Parity**] Includes odd, even, mark, and space.

4.4.7 Camera Parameters



Pic 4.32 Camera Parameters

[**Expose**] Choose **Automatic** (0.1 millisecond–80 millisecond) or **Manual**(1/25, 1/50, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000); The default is **Automatic**.

[**Day/Night Mode**] Options are **Auto/Color/Black** and **White**; Default is **Auto**.

[**Backlight Compensation**] Select **On** or **Off**.

[**Auto Iris**] Select **On** or **Off**.

[**Profile**] Options are indoor, outdoor, and auto; the default is auto.

[**AE Reference**] Options are integers between 0 ~ 100; Default is 50.

[**AGC**] Select **On** or **Off**; the range is between 0 ~ 100.

[**Slow Shutter**] Options are **None**, **Low**, **Medium**, and **High**; The default is **None**.

[**IR_CUT**] Options are **Automatically Switch** or IR **Synchronous Switch**; The default is **Automatically Switch**.

[**Mirror Image**] Selecting the checkbox results in a mirror image.

[**Over Turn**] Selecting the checkbox inverts the image.

[**Anti-flicker**] Selecting the checkbox enables anti-flickering.

[**Front-end Command**] Fill in a command and send it out; the front end of the IP camera will carry out this Command.

4.5 Advanced

The Advanced menu includes HDD Manage, Account, Auto Maintain, Default, Import & Export, Upgrade, and Reboot.

4.5.1 HDD Manage

Describe the configuration of the TF card installed in the device. The menu shows the information of the current TF card, including **Type**, **Status**, **Total Capacity**, and **Operations To TF Card** including: **Set Read/Write**, **Read Only**, **Redundant**, **Format Disk**, **Recover**, **Partition**, etc. Select the TF card and then click the function button on the right side.

Note: **Read/Write**: In this mode, data can be read from and written to the card.

Read Only: In this mode, data can only be read from the card.

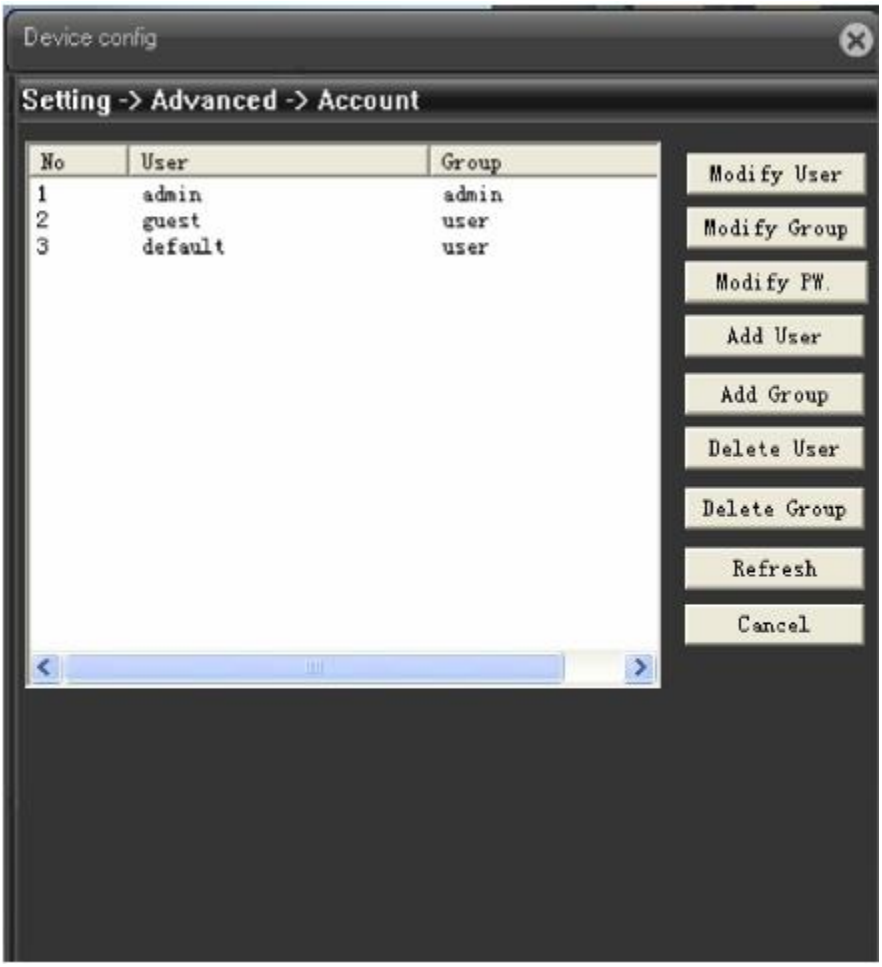
Pic 4.33 HDD Manage

4.5.2 HDD Account

Manages User Authority

Note:

1. The maximum character length for user name and team name is 8 bytes. Leading and ending blank characters are invalid, but blanks in between the character string are allowed. Allowed characters are letters, numbers, underlines, subtraction sign, and dots.
2. There is no limit in the number of users or user groups. The factory setup includes user\admin. The user can manage the permissions of the group.
3. The user management includes group/ user. The group and user name cannot be the same. Each user can only belong to one group.



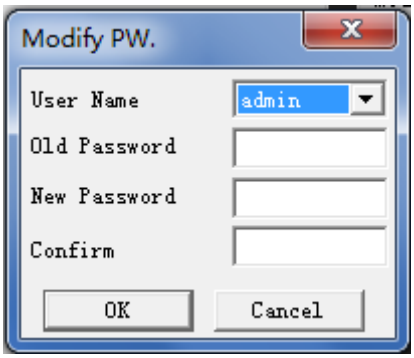
Pic 4.34 Account

[**Modify User**] Modify the existing users' attribute.

[**Modify Group**] Modify the existing teams' attributes.

[**Modify Password**] Modify the users' passwords. You can set a 1–6 bit password. Leading and ending blank characters are invalid, but blanks in between the character string are allowed.

Note: The user with user control authority can modify his/her own or other users' passwords.

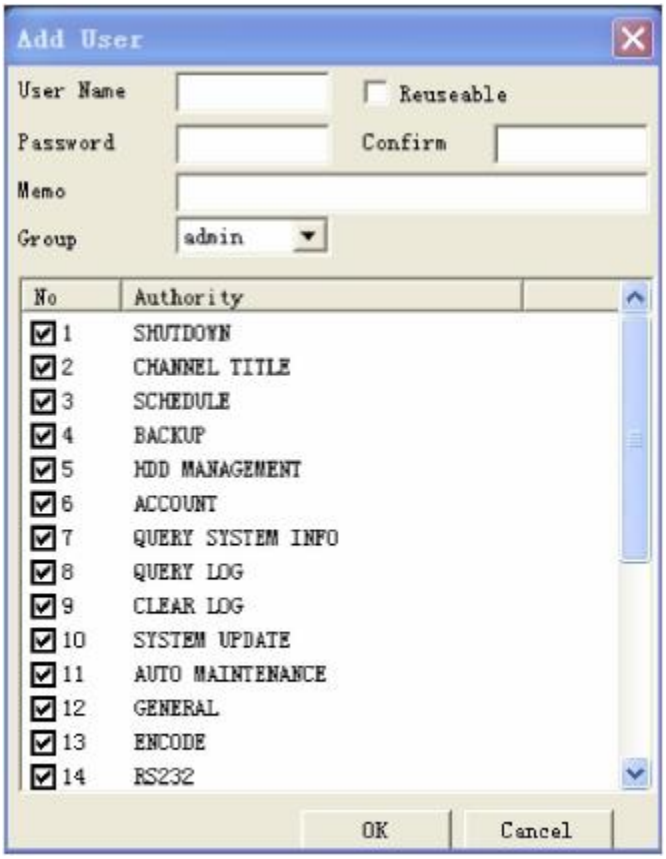


Pic 4.35 Modify Password

[**Add User**] Add a user and set the user's permissions. 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.

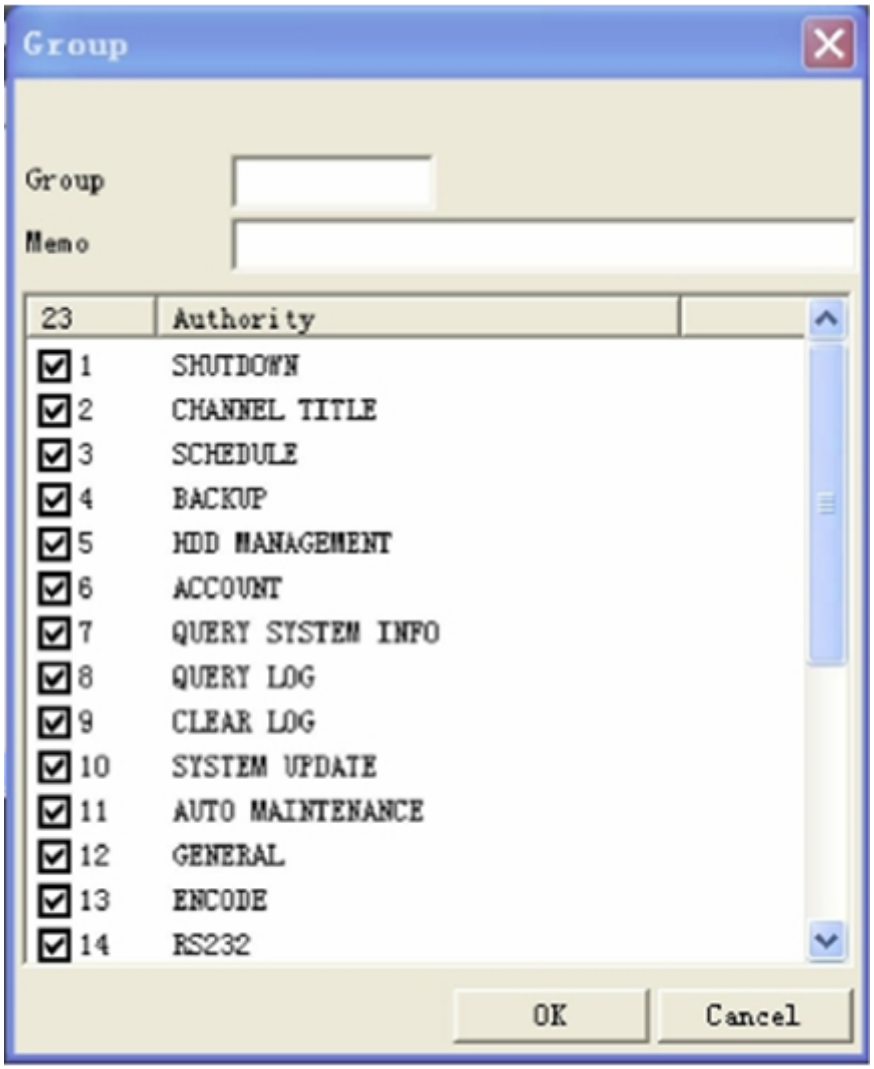
Once choose the team the user purview is the subclass of the team.

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



Pic 4.36 Add User

[**Add Group**] Add a user group and set its permissions. There are 36 different permissions including **Shut Down the Equipment**, **Real time Surveillance**, **Playback**, **Recording Setup**, **Video File Backup**, and so on.



Pic 4.37 Add Group

[**Delete User**] Delete the current user. Choose the user and click **Delete User**.

[**Delete Group**] Delete the current group. Choose the group and click **Delete Group**.

Pic 4.38 Delete Group

4.5.3 Auto-maintain

The user can set the auto reboot time and auto file deleting time limit.

Pic 4.39 Auto Maintain

4.5.4 Default

Use this option to restore the system to its default state.

Pic 4.40 Default

4.5.5 Upgrade

Pic 4.41 System Upgrade

[**Upgrade File**] Use this to upgrade the system via IE or client software.

4.5.6 Reboot

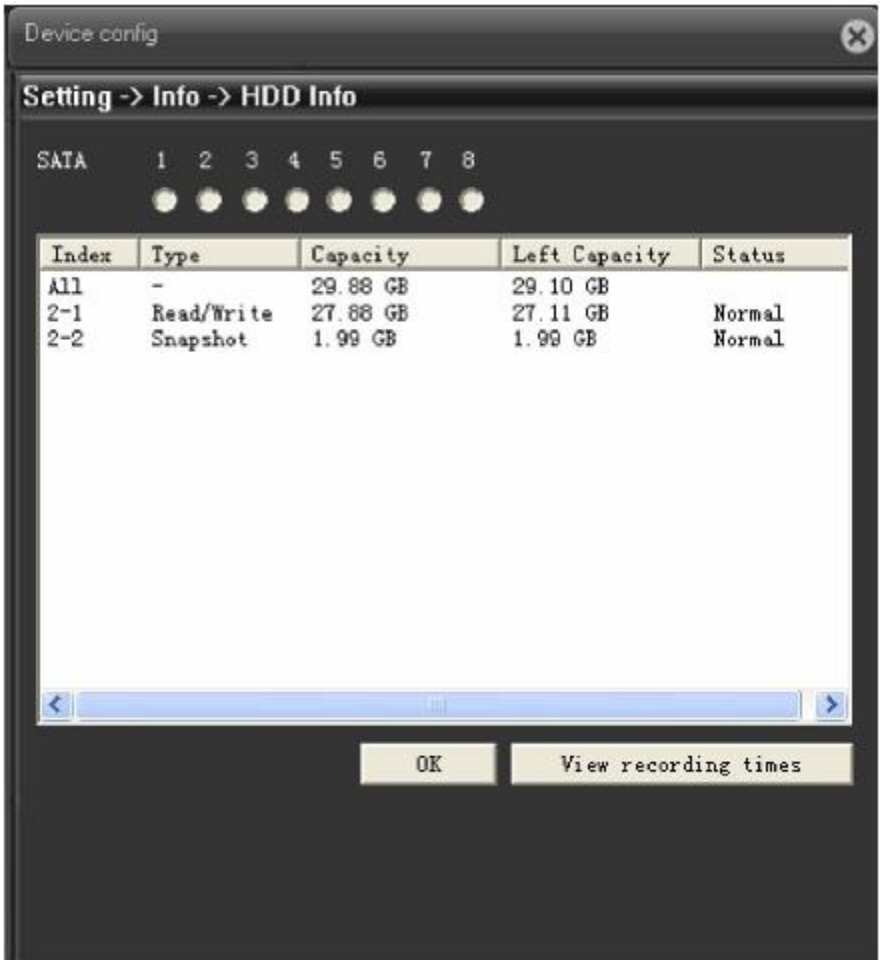
Use this to reboot the IP camera.

4.6 Device Info

Show device information, including HDD info, Log and Version.

4.6.1 HDD Manage

Display the hard disk information, including **Type**, **Overall Capability**, **Residual Capability**, **Recording Time** and so on.



Pic 4.42 HDD Info

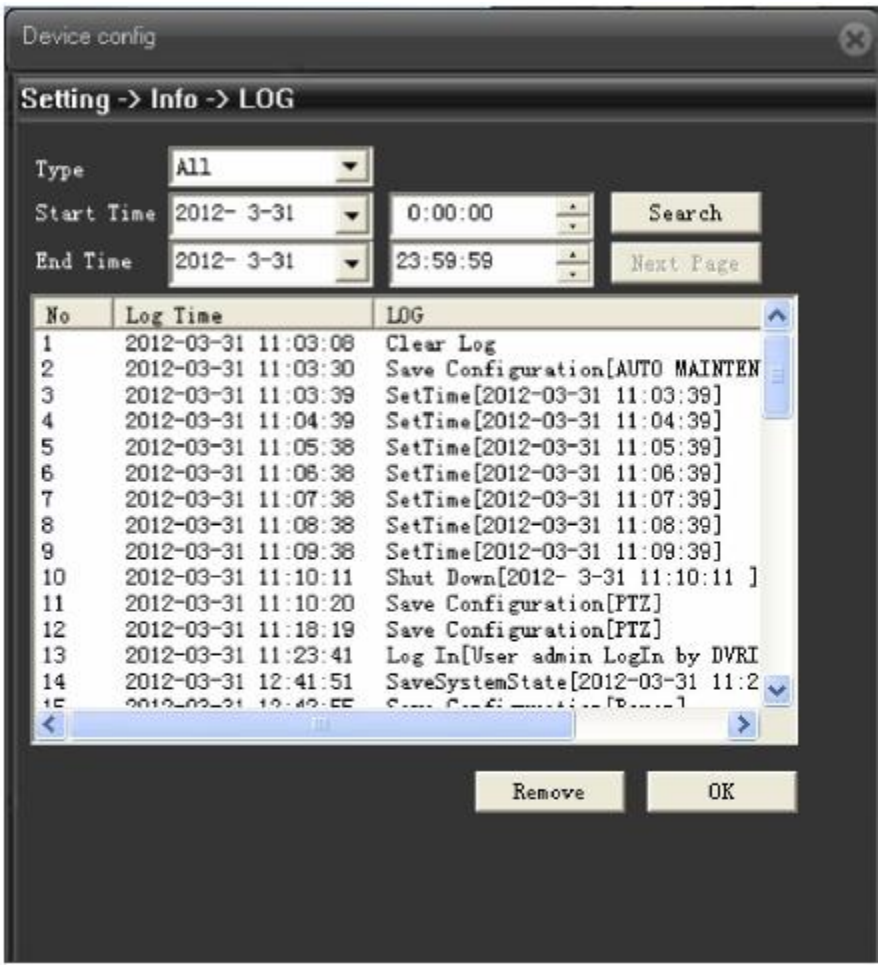
Note: None means that the hard disk is functioning normally. " X" means that the hard disk is not working, " – " means that there is no hard disk. If the user needs to change the damaged hard disk, the DVR should be shut-down, damaged hard disks should be removed, and the new hard disk should be installed. "*" behind serial number indicates that it is the current working disk. If the corresponding disk is, this will show as "?".

4.6.2 Log

Use this to check log information.

LOG Type can be divided into **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 contains 128 items). Click **Page Up** or **Page Down** to navigate and click **Delete** to clear all the log information.



Pic 4.43 Log Info

4.6.3 Version

Displays basic information such as Hardware Information, Firmware Version, Built Date, Serial No. and so on.

Pic 4.44 Version Info

Chapter 5 FAQ & Maintenance

5.1 FAQ

If the problem encountered is not included below, please contact our local technical support or call customer care.

1. Q. Why is the HISILICON LOG is displayed on the image?

   A. Please use the new PLAY SDK (installed with the new CMS software).

2. Q. Why is there a dark corner in the lens?

   A. 1/3 lens only supports the CS lens to be more than or equal to 6MM; this can be resolved by replacing it with a 1/2.5 or 1/2 lens (C mount lens requires the addition of a CS adapter ring).

3. Q. Why is the image color biased towards red?

   A. When the device is placed in dark areas, the IR light is always turned on. Compared to CMOS, the CCD is less influenced by IR light, and under the same conditions, the CCD is slightly biased towards red.

4. Q. Why is there is a smear following moving objects?

   A. When slow shutter speed is enabled, the frame rate is not sufficient. To achieve good images under low illumination conditions, the slow shutter speed is auto-enabled. If the exposure time is over 40 milliseconds, a smear following moving objects may occur. To prevent this, deactivate the slow shutter via CMS or WEB.

5. Q. Why is the firmware upgrade failing?

   A. Few firmware were unofficially released with bugs and will not be able to upgrade via port 34567. However, they can upgrade via port 34561. This is the reserve port for network upgrading.

6. Q. Why is the system not booting?

   A. a. Use the upgrade tool to see if you can find the IP address.

   b. Check the monitor to see if an image appears from the analog output, whether the IP

address is overlapping, etc.

c. If images are received from the analog output, but the IP address cannot be found, check the web connection interface to search for the IP address. Also, check power supply to the analog output. In addition, check the network indicator.

7. Q. I performed an IPC reboot after powering-off. I used CMS to access, but failed, and cannot find the device.

   A. Use the CMS to connect to it after rebooting.

8. Q. I performed a partition on the SD, but after reboot, there is only one partition.

   A. a. Make sure the total space of the SD card is over 2G, and that the space for recording is over 2G.

   b. Choose "always recording" to record a file to the SD card, then play it to see if it is alright.

   c. Pull out the SD and insert it into a PC, and copy and compress the file. Then, check if the file can be decompressed and played back.

9. Q. How much space does do the settings 30W D1 960H 130W 200W use for one hour?

   A. This is related to image quality. Different image quality with different bit rate that is showed out, such as D1, default is 1Mbps 1M(1 second) *60*60/8=450M /hour, regularly, SD card for recording, suggest to set motion detect and alarm record and front side, other recording to be save at back side.

10. Q. Monitor image is abnormal (too bright, image flicker, poor backlight compensation, etc.)

    A. a. Use the image color from the client-side and integrate it with the local environment for best results.

    b. Adjust the camera parameters on the client side for best results.

11. Q. The UPNP function is not working

    A. a. If the target router function is stable, use a TP-LINK router.

    b. The target router should have the UPNP function enabled.

    c. The IP address of camera and router should be in the same network segment.

    d. After enabling the UPNP function of the camera, reboot the device.

e. reboot the target router.

12. Q. The NTP function in net service is not working.

    A. Enable the related function in the NTP server.

13. Q. Cannot find the recent video file if we set client-side recording via CMS.

    A. If the client side is recording, the file will not be seen. First stop recording and then the file can be seen.

14. Q. Cannot log-in from the client-side after the IP address is revised. The error message received is " log-in over time and cannot find the device."

    A. a. Ensure there is no IP conflict or MAC conflict

    b. Log-out from the client-side log-in again after 10s.

15. Q. The WIFI function of the IP camera is not working.

    A. a. Check that the Wi-Fi module and device are connected correctly.

    b. Check that the target router supports WIFI and that it is enabled.

    c. Check that the password for the router and device input is correct.

    d. Check that the WIFI module used is of the 3070 series.

    e. Check that the IP address of the device is in the same network segment.

16. Q. When setting the language via CMS, the language does not change.

    A. a. Language setting in regular is regarding the web side, not related to CMS

    b. CMS client side config – language in regular config is to set language of CMS.

17. Q. Camera cannot connect to the PTZ

    A. The client-side PTZ config protocol, address, etc should be the same as that of the connected PTZ.

18. Q. Cannot find the video file in the SD card.

    A. a. At present only the Kingston SD card is supported.

b. Check if the SD card can be detected.

c. Check if the SD card is successfully format.

d. Check if the searching period is the same as the time period of device, since –B series how no real-time itself, need timing via client side.

e. If the SD card has a snapshot partition, then the snapshot files can be found.

f. Set the partition of the SD card to Read/Write.

g. Set over-write on the client-side when the SD card is full.

19. Q. Cannot find the Log Information at the client-side.

A. Ensure the searching period contains log information and that it is not deleted.

20. Q. Unable to upgrade 5013 and 5020 via the internet.

A. a. Firmware created before October cannot be upgraded via the 34567 port, but only the 34561 port.

b. If upgrading via the 34561 port, the resolution needs to be lower than 720P.

21. Q. Camera loses frames in dark environments.

A. Slow shutter speed is enabled by default to increase the exposure time in darker environments. This can be deactivated via CMS.

22. Q. Monitor image from the camera is not clear.

A. a. Manually adjust the lens to make the image clear.

b. Set resolution to be the best level in encode config.

c. Set image quality to maximum in CBR, or the bit rate value to maximum in CBR.

5.2 Maintenance

1. Please clean the printed circuit boards, connectors, fans, machine box, and so on regularly.

2. Please ensure good grounding to prevent interference with the video or audio signals.

3. Do not disconnect the video signal line or RS-232 port or RS-485 port with the power on.

4. Please keep the IPC away from heat resource, and regularly investigate system and maintenance.