

# User Manual

# INTRODUCTION

TH971F1/W is a 1.3MP IP Camera with embedded system software. It is with compression and video processing functions. Its main function is for image data collection, H.264 image data compression, Internet data transmission and video data processing, which can transmit real time image and voice through wired or wireless network.

TH971F1/W adopts digital processing unit with faster arithmetic speed, which can compress clearer image with bigger size. It uses advanced operating system and video compression algorithms to attain more delicate image and better image transferring fluency. This model employs embedded server that completely breaks away from PC platform, to enable higher system scheduling efficiency. Its code is flashed in the camera, which can have more stable system operation. It supports remote image visiting through Web browser (Internet Explore). It also supports dynamic IP address to realize image transmission.

Features:

- Be based on Hisilicon platform, cost-effective 1.3MP IP Camera
- Support 1CH Video at 25fps/s
- Use H.264 video compression standard
- Use embedded Web Server, supports IE monitoring, configuration setting and upgrade
- Can auto adjust Video frame rate according to bandwidth in Internet
- Support vary code rate. It can limit video image compression bit rate when setting image quality
- Support snapshot and local recording
- Support dynamic detection (Can set area and sensitivity)
- Support 10/100M ethernet interface
- Support multi-user access simultaneously
- Support timing maintenance function
- Support WEB configuration
- Support OSD
- Support client remote monitoring software
- Support CMS platform
- Support mobile monitoring

Suggested PC basic configuration: Quad core CPU 3.0GHz, 4G of memory, 512M discrete graphics, 2.1 sound card, Windows2000/XP/2003/7/8, Microsoft IE 7.0~11.0.

This manual is edited and based on current version(20150411). We'd appreciate your understanding for any inaccurate or incomplete information in this manual due to software update, modification or upgrade. The manual will upgrade periodically without notice.

## FCC Certification Requirements

Caution: Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons.

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# 1. VIDEO BROWSING

## 1.1 Device Connection

The connection schematic diagram for entire system framework of TH971F1/W is as figure 1.1. Connect the computer and the device directly by switch or by network cable and configure network parameter as follow: a) the default IP address of device is 192.168.0.123, net mask is 255.255.255.0 (To ensure the IP cam IP address, please use IPC Client software to search. If device is offline after adding, please add 0 network segment for PC); b) IP camera and PC net mask setting should be same. Then operating as follow: “Start”-“Run”-enter “cmd”, then enter “ping 192.168.0.123” and press “Enter” key. Make sure network is working properly. Please refer to below figure 1.2 to 1.5. If network is disconnected, please check the network connection.

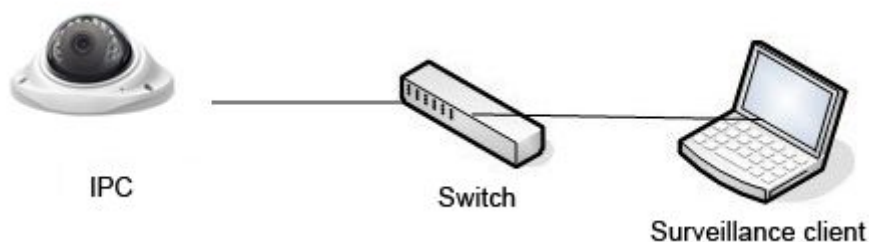


Figure 1.1 Network Connection Diagram

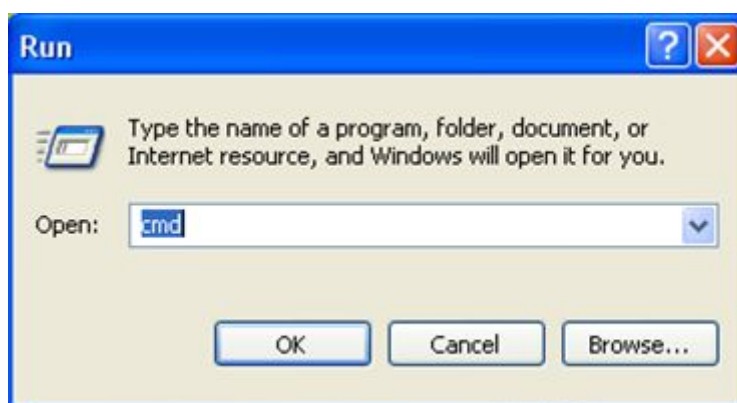


Figure 1.2 “cmd” Command

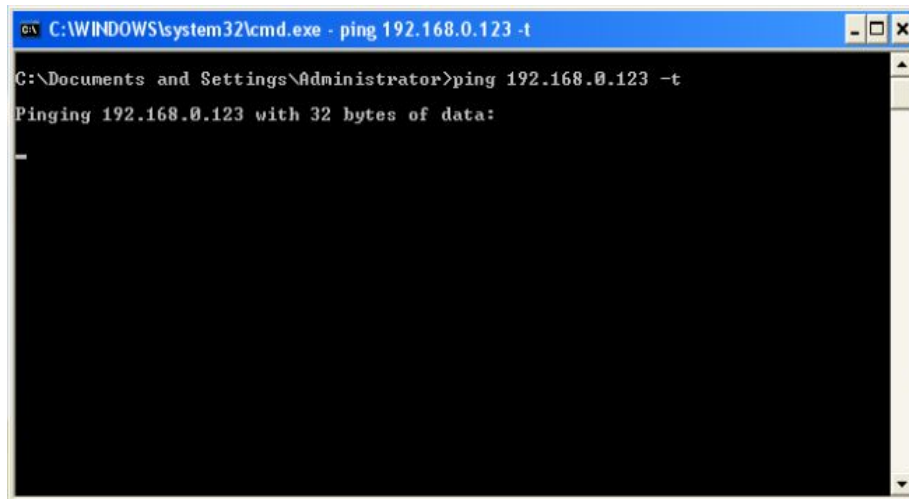


Figure 1.3 Enter “ping 192.168.0.123 -t”

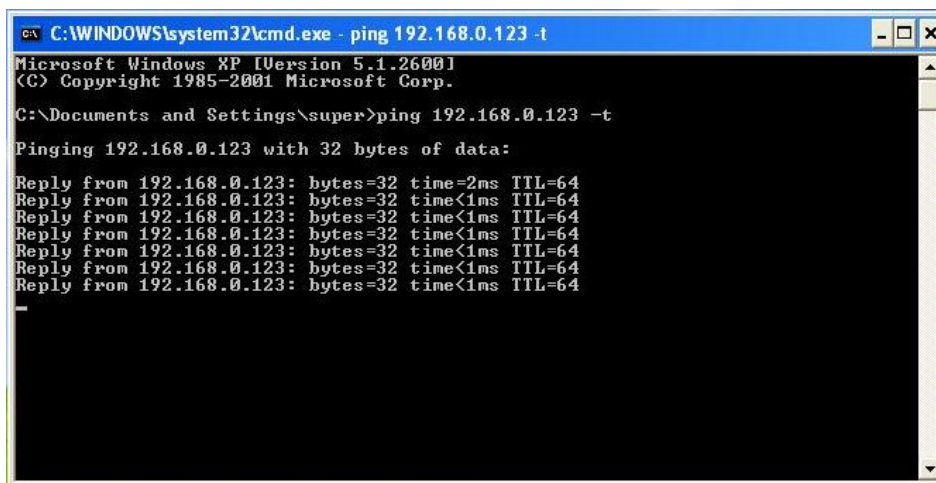


Figure 1.4 Press “Enter” and Network is Connected

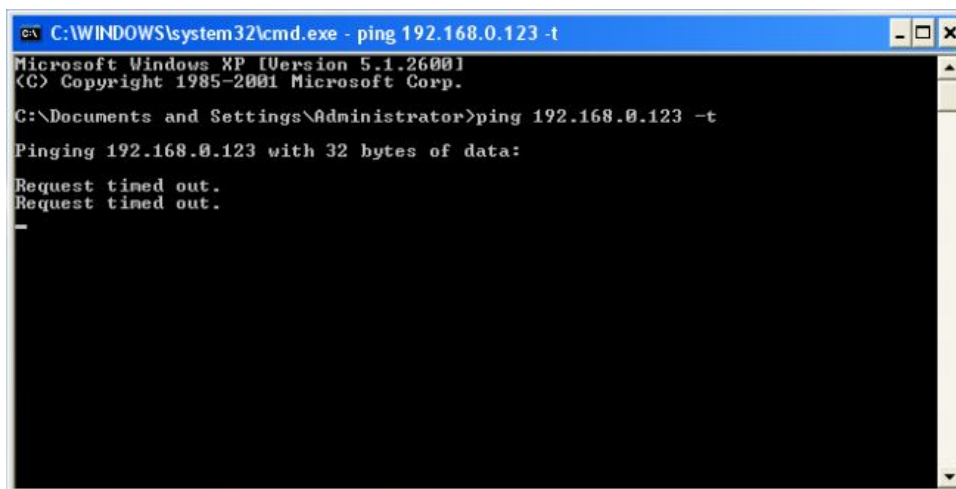


Figure 1.5 Press “Enter” and Network is Disconnected

## 1.2 ActiveX Installation

After all the device are connected and network parameter configuration are finished, power on the IPC. One minute later, open the IE browser, and enter the IP address, then press “Enter”. It will pop out the log-in interface as figure 1.9. If this is the first time to access the device by browser, it will prompt that you need to install ActiveX Control first. Steps are as follows:

- a. After entering IP address, it will pop out the interface as figure1.6. This is because our control is not legalized by IE, but it makes no difference. Click the button “OK”.



Figure 1.6 Security Warning

- b. Then comes out the message says that: “Please install the plug!”. Click “OK” to install.



Figure 1.7 Please Install the Plug

- c. After that, some version of IE Browser will pop out the installation window as figure 1.8. If figure 1.6 is not coming out, in the bottom of the browser, there is a line of writing says that: “Please install the plug!”, click it, it will link to the interface of ActiveX installation and install.



Figure 1.8 Installation Window

- d. According to prompt message to install the ActiveX step by step. Please note that, during the installation, you must close all browser windows, otherwise the installation maybe fail.



- e. After successful installation, open the browser again, then enter the IP address and press “Enter” key, it will come out the log-in interface as figure 1.9.



Figure 1.9 Log-in Interface

**Notice:**

1. During the installation of controls, users need install according prompt message due to different browser versions. Some Anti-virus software may prompt that there are security risks, this is because our ActiveX control does not have safety certification, but in fact there is no security risk. Those prompt messages can be ignored.
2. Before installation, you must close all browser windows, otherwise the installation maybe fail. It is recommended to clear your browser's cache and then re-install.

In the log-in interface, enter the correct user name and password. The default user name and password of IPC are “admin” and “123456”. Then click the button of “Login”, then you can log-in successfully. In the log-in interface, there is a link to install controls and you can choose interface language also. There are five languages to choose, which are Simplified Chinese, Traditional Chinese, English, Russian, Turkish, Korean and Czech language.


## 1.3 Video Browsing


After successful log-in, you will enter the interface of video browsing. The video browsing interface is made up of three parts: the function button located at the top of the zone, the video window located at the lower right and the function control panel area located at the lower left.





Figure 1.10 Video Browsing


- a. Function button: include Config and Quit two buttons. Click the button of Config then come out the interface of config. Click the button of Quit then you will log out.
- b. Video display window: when you are playing real-time stream, you can choose playing sub-stream or main- stream by yourself. And double-click the window the video will play in full screen.
- c. Function control panel:

**Play Video** : when the middle triangle is red , means there is video stream; when it is white, it means there is no stream.

**Stop Play** : click this button, video will stop and clear window.

**Snapshot** : click this button, can take snapshot of the current video screen. Pictures default saved in the path of C disk, and creates a new folder named as today' date. Save path can be modified by yourself.

**Record** : click this button, the device will record. Button flicker means recording. Record default saved in the path of C disk, and creates a new folder named as today' date. Save path can be modified by yourself. It should be noted that when the free space is less than 2G, record is unavailable.

**Voice** : if this device is with audio function and enabled it, click this button, you can talk between PC and the device. Button flicker means in the talk.

**Save Path:** configure the save path of snapshot and recording. If snap pictures or records, system will auto-create a new folder named as current date in the set path. Please note that save path will not be saved when log out.

**Stream Setting:** to choose to display in main stream or in sub stream.

**Buffering:** the higher the bit rate, the fluency the video. But it may influence the time-lapse video. In poor network environment, can choose whether you want to have fluent video or you want to keep the real-time.

In the main interface, click the button of “Config” to pop out the dialog of “Remote Config”. Then you can configure the parameter of Network, Media, PTZ, Storage, Alarm, system and so on.

## 2. NETWORK

### 2.1 Network Status

Click [Network]-[Network Status], you can check the current network status information. it will display interface as figure 2.1. The Network Status window shows the device network information and cloud server logging status.

In wired network, it shows Ethernet Setting configuration. When you need to modify, you can click Ethernet Setting to modify. Cloud logging status is the IP camera logging status in the cloud server. Only P2P version IPC has this function. IPC connects to cloud server requires that the IPC must connect to the Internet. If the device is not connected to Internet, the Network ID will be blank. When the device is connected to cloud server, it will log-in automatically. After log-in successfully, server will assign a cloud ID and creates a QR code. This ID can be and only be used for mobile viewing and remote visiting. You can download an APP in mobile to scan the QR code.

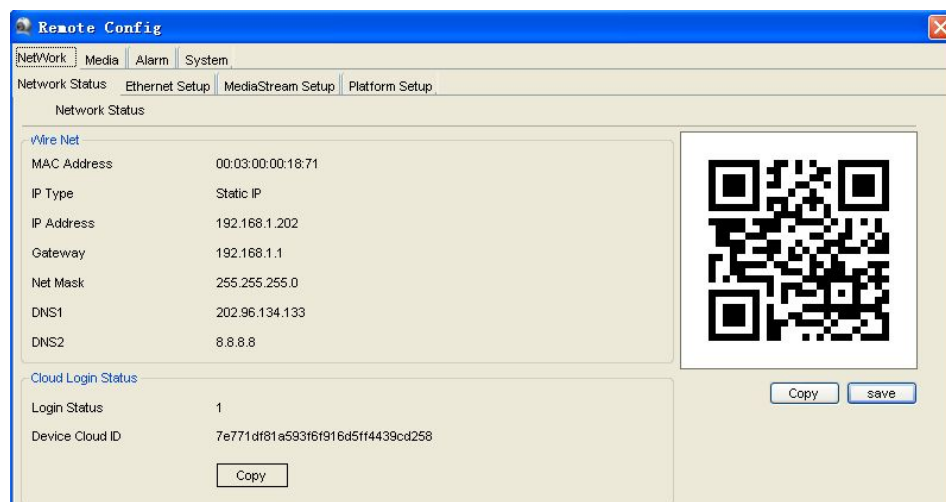


Figure 2.1 Network Status

### 2.2 Ethernet Setup

[Ethernet Setup] is to set network parameter of this device. The setup parameter will show in the interface of [Network Status].

**MAC Address** is hardware address of the device. Please do not change the MAC address. You can only save the legitimate and correct MAC address. Otherwise, it will shows error message.

When you access the device you need to use its **IP address**. You can modify the IP address by IP search software or other tools. Make sure the device IP address and the PC IP address are in the same network segment, but not the same. After reset IP address the device will reboot, then use the

modified IP address to access the device. Illegal IP address cannot be saved and will have error message.

**Net mask** matches with IP address to distinguish network address and local address, usually set it as 255.255.255.0. Illegal net mask cannot be saved and will have error message.

**Gateway** is a point between two networks such as router. Set the gateway as router IP address. The gateway and IP address must in the same network segment.

**DNS** server address is the host IP address running in the domain server, which provided by the local network operators. When you don't know how to set it, you can search in the internet, or you can enter 8.8.8.8 which is commonly used in the world. When DNS server address is wrong, the IP camera can not be connected to WAN, but it will not affect its use in LAN.

**DHCP** is a network protocol in LAN. Enable DHCP function, the device can obtain IP address automatically in LAN. But achieving this function must ensure that your router enables DHCP function also.

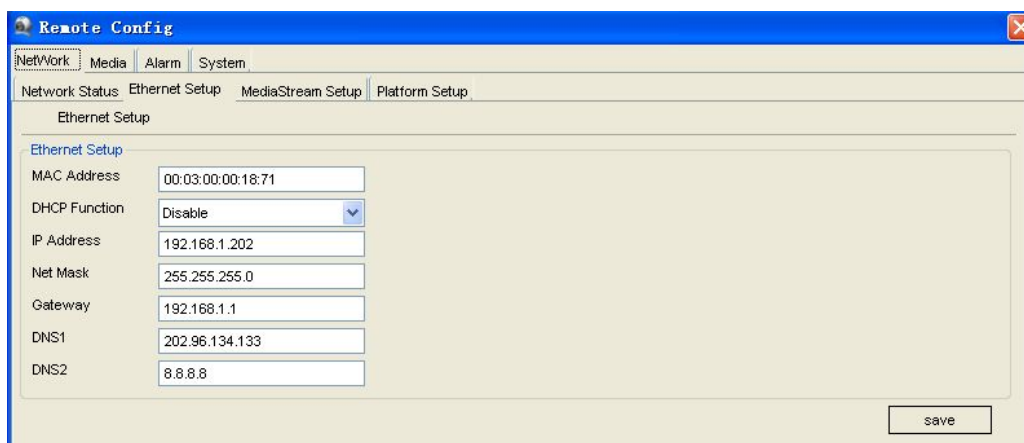


Figure 2.2 Ethernet Setup

## 2.3 WIFI Config (Only Effective for WIFI Cameras)

WIFI setup as figure 2.3. First you need to set wireless router called AP for short.

When set the WIFI network parameter of wireless router, such as TP-LINK (the type is TL-WR941N), first enter setup interface, enable wireless function and SSID broadcast, custom the SSID which is the name of this WIFI, choose wireless channel. WIFI mode usually choose 11n only or 11bgn mixed, also you can set by yourself; Fill other parameters according to the actual situation.

The encryption of WIFI is to ensure security. Different router has different encryption methods. Please according to your own needs and the system prompt messages to set it.

**WIFI Config**

Enable WIFI	Disable	SSID	Quality	Encrypt Type	Level
Work Mode	Station				
ESSID					
MAC Mode	802.11b/g/n				
Region	CN				
BitRate	Auto				
Encrypt	None				
Encrypt Type	AES				
Auth Mode	WPA2PSK				
Password					
DHCP Function	Disable				
IP Address					
Net Mask					
Gateway					
Enable Ping Watch Dog	Disable				
Ping IP Address					
Ping Time Interval	3				
Ping Maximum Timeout	10				

Click 'Search' button to search wifi AP.Double click list to select AP.

Key Index:

Second(s)

Figure 2.3 WIFI Config

After configured wireless router, we can start configure the WIFI parameter of device. Enter the interface of [WIFI Setup], there are four function areas: AP search, WIFI config, WIFI network and ping watch dog.

The interface of AP search as figure 2.4, click the button of “search”, device will auto-search available WIFI access point in local network and show in the list, as figure 2.5. This list detailed shows SSID, quality, encrypt type, level and other information of each AP, user could make a choice through those parameters. Double click will automatically fill AP information into WIFI configuration list.

SSID	Quality	Encrypt Type	Level

Click 'Search' button to search wifi AP. Double click list to select AP.

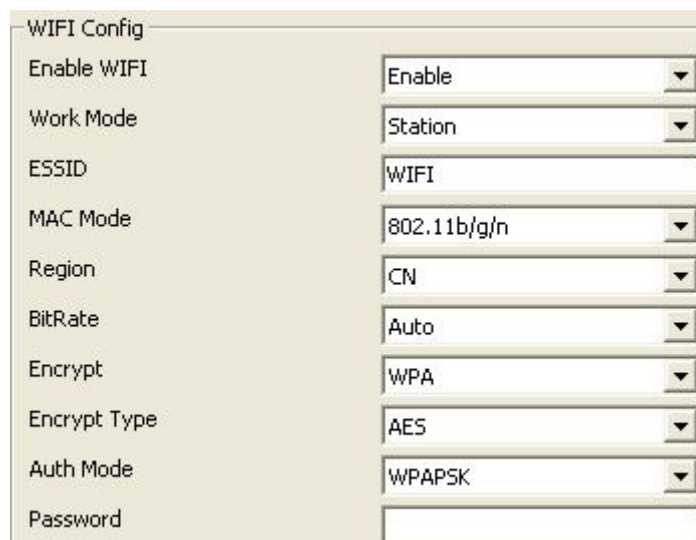
Search

Figure 2.4 AP search interface

SSID	Quality	Encrypt Type	Level
dlink_lhq	42	WEP	51
Tenda_387F50	47	AES	57
WIFIAP	47	TKIP	57
huangli	37	AES	45
ZTE-7184A8	100	TKIP	100
TP-LINK_419084	37	AES	45
ChinaNet-IDFT	37	TKIP	45
linksys	68	TKIP	81

Figure 2.5 AP information list





WIFI Config	
Enable WIFI	Enable
Work Mode	Station
ESSID	WIFI
MAC Mode	802.11b/g/n
Region	CN
BitRate	Auto
Encrypt	WPA
Encrypt Type	AES
Auth Mode	WPAPSK
Password	

Figure 2.6 click AP, automatically fill information

The interface of WIFI Config as figure 2.7, when use the function of AP search, double-clicking can auto add the configuration of WIFI parameter, but if the AP you added enable encrypt, you need enter the right password.

You can also manually enter the information to add AP. First enable WIFI function. Values of ESSID, MAC mode, region, bit rate and encryption-related information please according to the setting of wireless router.



WIFI Config	
Enable WIFI	Disable
Work Mode	Station
ESSID	
MAC Mode	802.11b/g/n
Region	CN
BitRate	Auto
Encrypt	None
Encrypt Type	AES
Auth Mode	WPAPSK
Password	

Figure 2.7 the interface of WIFI configuration

When device connects with WIFI and without wired network, you can access it by wireless IP address. Manual set or use DHCP function can get wireless IP address. When enable DHCP, the wireless router must enable DHCP too, otherwise the device can't get IP address.



DHCP Function	Disable
IP Address	
Net Mask	
Gateway	

Figure 2.8 the configuration of WIFI network

To avoid device drops in the case of abnormal, we can enable the function of ping watch dog. Right fill ping IP address, ping time interval, ping maximum timeout and save, then during the operation of the device, it will every time interval ping IP address once, if request timed out, the timer add one, otherwise, set to 0. If the value of timer bigger than maximum timeout, device will reboot automatic.

Enable Ping Watch Dog	Disable	
Ping IP Address		
Ping Time Interval	3	Second(s)
Ping Maximum Timeout	10	

Figure 2.9 ping watch dog configuration

### Notice:

Only when the device is properly connected with a WIFI module, you can see [WIFI Setup].

## 2.4 Media Stream Setup

Media Stream Setup is as figure 2.10.

**Authentication:** When enable the function, if a third party software (e.g. VLC) need to access the device, you need to enter user name and password. When disable, you can directly access the device without authentication.

**Media Access Port:** when the device video port access the device, if the media access port is not correct, you cannot see any video. Mobile APP access port is media access port +2. I.e. If the device media access port is 554, then mobile access port is 556.

**Media Access Protocol:** the transmission protocol, TCP is reliable choice while UDP is unreliable choice. When network status is very good, you can use UDP to lower the delay. When network status is poor, you can use TCP to get more fluent video.

**PTZ Control Port:** when PTZ control port is not correct, the device that added in the software will be offline and cannot do PTZ operation.

**Web Access Port:** the default web access port is 80. When the web access port is not 80, you need to add the port after the IP address. E.g. If the IP address is 192.168.0.123, web access port is 8080, then the address for IE is http://192.168.0.123:8080

**Note:** Media Access Port, Media Access Protocol, Web Access Port should satisfy the below conditions:

1. Cannot be same
2. Cannot use commonly used port (e.g. 3000)
3. When the set up port is not keep in default, it need to be in the range of (1000, 65536).



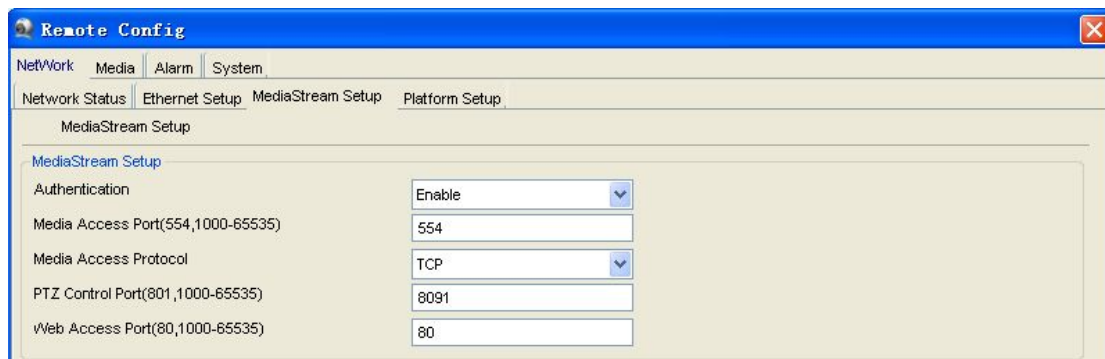


Figure 2.10 Media Stream Setup

## 2.5 Platform Setup

**(This function is ineffective!)**

Platform Setup is as figure 2.11.

When Enable the function, you need to enter correct “Server IP” and “Server Port”.If this is the first time to connect with the server, you need to add the device in the server. Only by doing this you can see the device in the server.

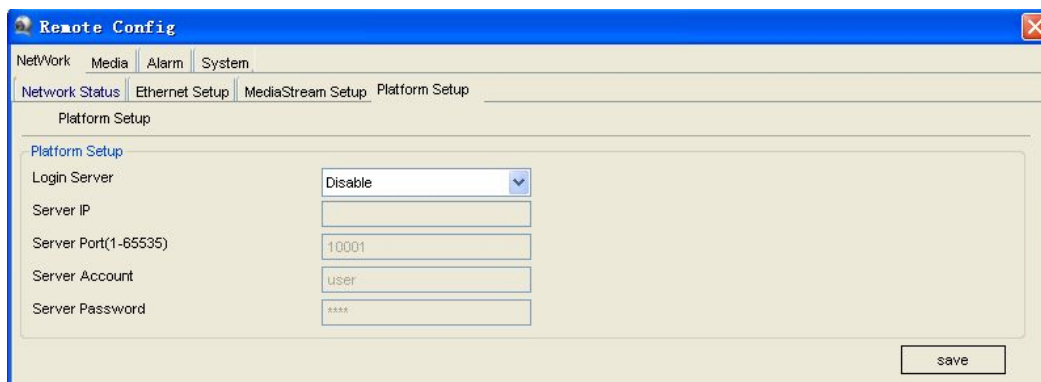


Figure 2.11 Platform Setup

## 3. MEDIA

### 3.1 Video Capture

Video Capture includes two sides: IRCUT Setting and Video Capture.

**IRCUT Mode:** active mode, day and night, passive, manual and inverse passive.

IRCUT Setting	
IRCUT Mode	active
Keep color	No
Sensitivity(0-100)	50
Start time of Night	18:00:00
End time of Night	8:00:00

Figure 3.1 IRCUT Setting

- a. **Active:** The working principle of active mode is that it use module to set control signal to control the light board, according light intensity auto switch color and black/white picture;
- b. **Day and Night:** Day and night mode is by setting night start time and night end time, after enabled, during the set time, video always in black/white; The setup time is defined by the device time. So the IRCUT switch time is defined by the device time.
- c. **Passive:** Passive mode use level control signal that send from light board to control the switch of module IRCUT;
- d. **Manual:** Manual mode is to switch day or night mode manually.
- e. **Inverse Passive:** The principle of inverse passive is the same with passive, but has opposite result. I.e. When in passive mode, the video is color, but in inverse passive is black and white.

The function of “Keep color” means even if in black/night mode the video also colorful. “Sensitivity” is only function in active mode.

Video capture (as figure 3.2) setup include “Brightness”, “Saturation”, “Sharpness”, “Contrast”, “Backlight Control” and so on , different country with different “Video Format”, in China just PAL format.

You can adjust the progress bar to set the parameter of “Brightness”, “Saturation”, “Sharpness”, “Contrast” and “Backlight Control”, range can be 0-255. High “Saturation” means color distinction is more obvious; High “Contrast” means the effect is more obvious. It supports video flip function. Enable horizontal flip, the video will horizontal rotate 180 degree. Enable vertical flip, video will vertical rotate 180 degree. All the parameters must adjust according to the physical environment.



Figure 3.2 Video Capture

## 3.2 Time and Title

Time and title Setup is a setup that displayed on video browsing. User can self-defined title information, setup time and title display location.

Time and title are displayed in the video window, when disable it, the OSD information will be hidden.

**Overlap information** is to set if display the resolution or bit rate information or not. There are four options: “Disable” means don’t display, “Resolution” means display the resolution information only, “Bit rate” means display the bit rate information only, “Resolution and Bit rate” means both display.

There are 5 time/title positions, time and title display position to be in different horizontal position.

There are 8 time format, you can choose under preference.

The max length of the title message is 31 byte. Do not forget to save it!

Title Message supports multi-line display. When enter “^”, it will split automatically.

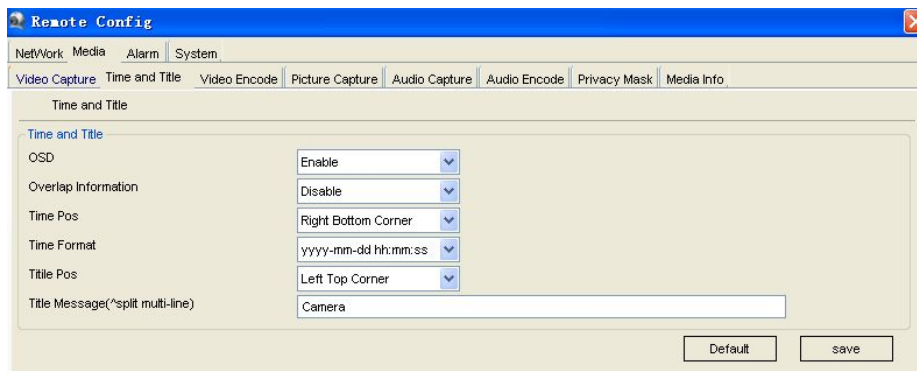


Figure 3.3 Time and Title

### 3.3 Video Encode

Video encode includes two sides: Video Encode Parameter Setup and Video Encode Advanced Parameter Setup.

Video has two streams, one is main stream another is sub stream, the encode format of both are H.264.

Main stream of TH971F1/W has 4 resolution, they are 960P, 720P, D1 and VGA. Sub stream has 11 resolutions to set.

To get better video in different network bandwidth environment, we use bit rate control method. When the information of the video increase imminently but the bandwidth is limited, you can choose variable bit rate (called VBR for short) to ensure the quality of video. When the network bandwidth is stable, you can choose constant bit rate (called CBR for short), it might have mosaic and shake. The third method is called CVBR, it give priority to CBR and compatible with VBR. So you should choose control method according to the network environment.

I frame is the key frame in video encode. In poor network bandwidth environment, if I frame interval is too big, the quality of video will be poor, even can not receive real video. In a good network environment, there is no limit to set it. You can get the optimal value by previewing the setting effect.

Higher frame rate means more fluent video. Lower frame rate may cause picture update slow and bad interactive sense, so the suggestion setting is higher than 20.

Bit rate related to the speed of network transmission, that is to say how many kb information it could transfer every second. Because the resolution of main stream is multiple times more than sub stream, bigger data information needed to transfer per second, It will require bigger bit rate. The main stream “Bit rate” is recommended to set at least 500 kbps. The sub-stream bit rate should not be smaller than 50kbps. Small bit rate will have poor image. Do not forget to save it!

	Main Stream	Sub Stream
Encode Format	H264	H264
Resolution	960P	480X360
Bitrate Control	CBR	CBR
I Frame Interval	100 s(1-200)	50 s(1-200)
Bitrate	3500 kbps(500-8000)	400 kbps(50-2000)
Frame Rate	25	25

Figure 3.4 Video Encode

Base profile: when device need to access supported embedded NVR, you must enable base profile. But if enabled it, the video maybe with the problem of update slowly, so, if not must, it suggested to disable.

Private date: When the video is not smooth, enable it will make this problem be improved.

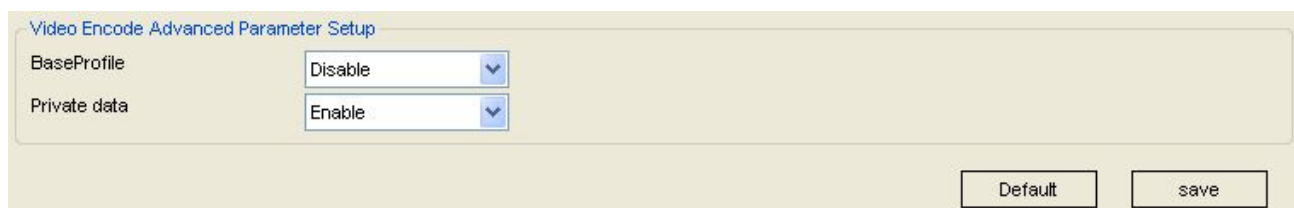


Figure 3.5 Video Encode Advanced Parameter Setup

User could click the button of “default” to set all parameter as default value, only after click “save” you can save your setting.

### 3.4 Picture Capture

In this interface, “Picture Source”, “Picture Quality” and “Capture Speed” need to be set.

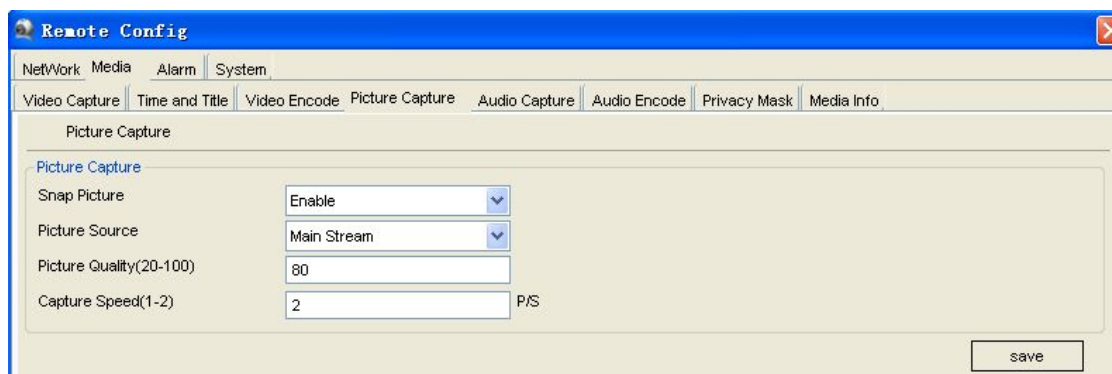


Figure 3.6 Picture Capture

Picture source include “Main Stream” and “Sub Stream”; Picture quality range from 20 to 100. Capture speed between 1 and 2, means 1 or 2 pictures per second.

### 3.5 Audio Capture (Only can be effective if IPC have audio function)

Only audio volume related to audio capture. Volume range from 1 to 100, you can enter number manually or drag the slider. Do not forget to save it!

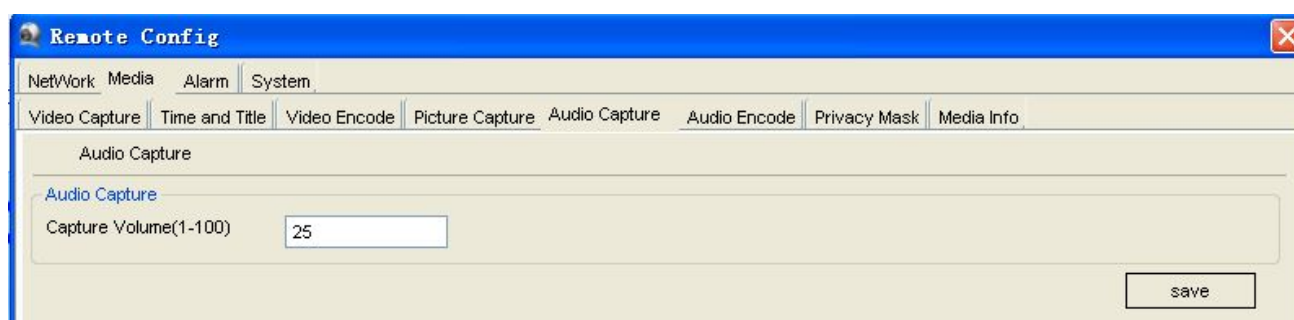


Figure 3.7 Audio Capture

### 3.6 Audio Encode (Only can be effective if IPC have audio function)

Audio Encode is to set enable audio encode, encode type, sample rate, bit rate. Hisilicon series only supports G.711 encoding type. Only when you enable audio encode you can capture audio and you can hear from device.



Figure 3.8 Audio Encode

### 3.7 Privacy Mask

If you hope that some areas in the video to be hidden, you can set privacy mask area. You can respectively configure four privacy mask areas for main stream and sub stream. Every privacy mask area is determined by four coordinate values X, Y, W and H. The area being privacy masked will be black screen whether in real-time stream or in record.

If the privacy mask area need to be modified or removed, you can click “Clear”. After clearing, all the setting will be 0.

Privacy Mask				
Main Stream Privacy Mask setting				
Area 1	X: 0	Y: 0	W: 0	H: 0
Area 2	X: 0	Y: 0	W: 0	H: 0
Area 3	X: 0	Y: 0	W: 0	H: 0
Area 4	X: 0	Y: 0	W: 0	H: 0
Sub Stream Privacy Mask setting				
Area 1	X: 0	Y: 0	W: 0	H: 0
Area 2	X: 0	Y: 0	W: 0	H: 0
Area 3	X: 0	Y: 0	W: 0	H: 0
Area 4	X: 0	Y: 0	W: 0	H: 0

Figure 3.9 Privacy Mask Setting

### 3.8 Media Info

In this interface, the main duty is display the status of video encodes.

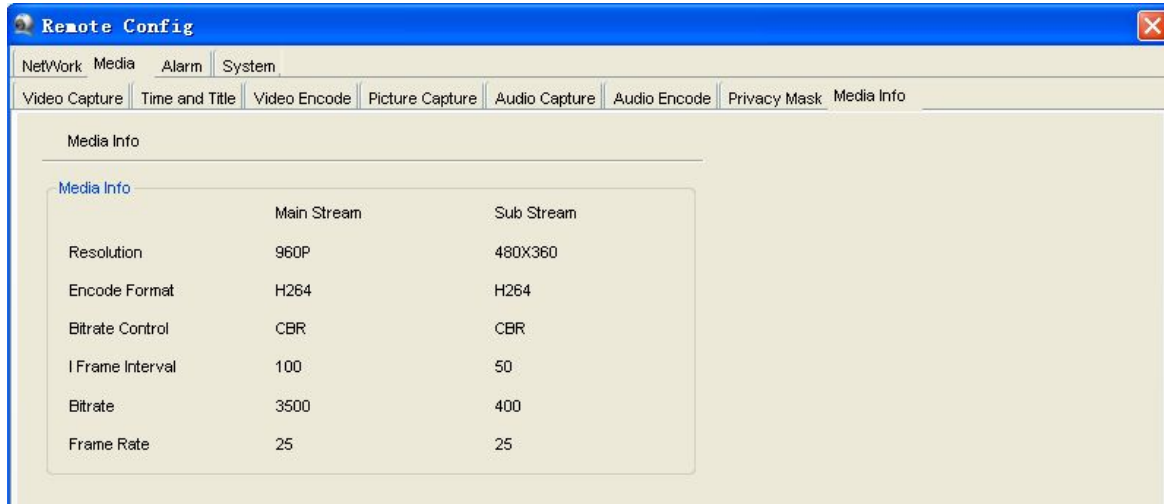


Figure 3.10 Media Info

## 4. STORAGE

**(This function is ineffective)**

### 4.1 Storage Management

#### 4.1.1 Uninstall of Storage Device

“Uninstall” means remove the storage from the device in a safe way to prevent data from destruction. Choose the storage device that you want to uninstall, click the button of “uninstall”, it will pop-up a dialog as figure 4.2. Click “OK” it will uninstall this storage device. Once uninstall a storage device, it will stop using. If you want to use it again, you can restart the camera.

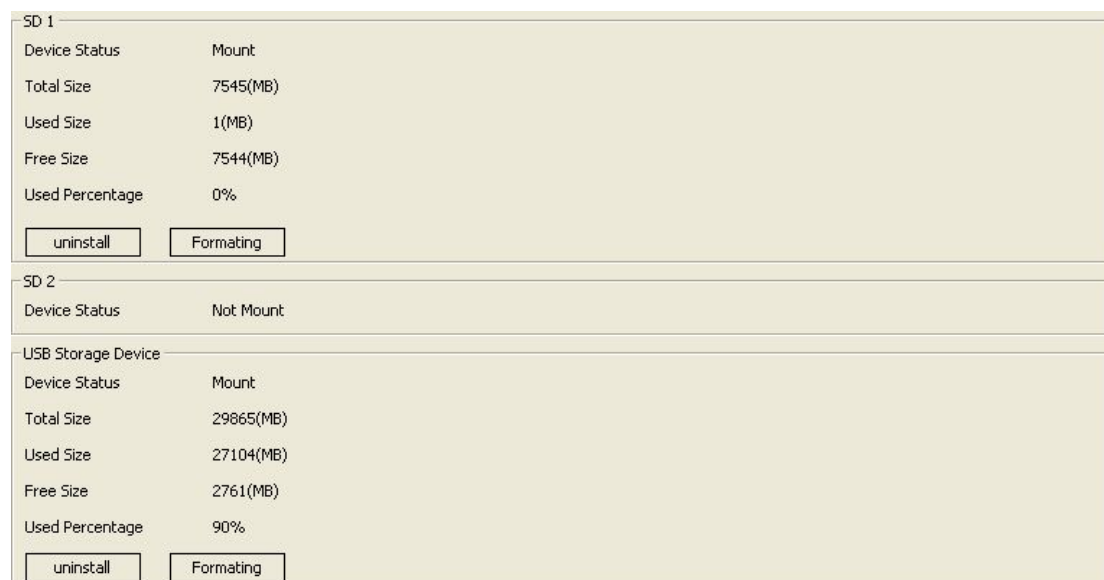


Figure 4.1 Storage Information

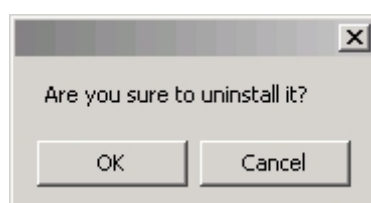


Figure 4.2 if ensure to uninstall storage device?

#### 4.1.2 Formatting of Storage Device

If the camera has connected a storage device, but can't install it, we can format this storage first. Choose the storage device that you want to format, click the button of



“formatting”, then will pop-up a dialog as figure 4.3. Click “OK” it will format this storage device. Once format a storage device, the data in this storage device will all lose and can’t do any restoration, so if there is some important data you’d better transfer it to other place.

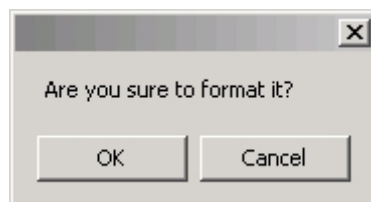


Figure 4.3 if ensure to format storage device?

## 4.2 Storage Setting

### 4.2.1 Basic Setup

The basic setup of storage setting is as figure 4.4.

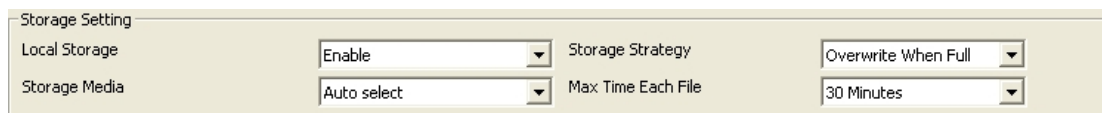


Figure 4.4 basic setup

**Local Storage:** here must set “enable” then the recorded and snap picture can be saved..

**Storage Strategy:** the treatment when the storage space is not enough. It has two choices: stop record when the storage space is full or overwrite the old record when it is full. The system will auto overwrite the oldest recording file.

**Storage Media:** to select the storage order of storage devices. A camera could connect three storage devices at all, they are SD1, SD2 and USB, so there are seven choices include the choice of auto select. You can select the order by yourself.

**Max Time Each File:** when the configuration is schedule record, it refers to the record time of each record file. There are three choices. To limit record time can avoid too large record which may open slowly or can not playback.

### 4.2.2 Motion Alarm Record

The setting of motion alarm record is as figure 4.5. Once enable this function, when there is motion alarm, the device will record according to the configuration.

Motion Alarm Record	Enable	
Video Stream	Main Stream	
Video Format	AVI	
Media Type	Audio and Video	
Prerecord Time(1-5)	5	Second(s)
Record Time(10-600)	60	Second(s)
Upload to FTP	Disable	
Send To Email	Disable	

Figure 4.5 Motion Alarm Record

**Motion Alarm Record:** only when it enables others parameters can be changed.

**Video Stream:** there are two choices “Main Stream” and “Sub Stream”. Main stream has clearer stream, but record same time needs more storage space, so you can choice per requirement

**Video Format:** only AVI.

**Media Type:** “Audio and Video” means the record file you will get with sound. The premise is that your camera with the function of audio and there is audio input, moreover, the camera has enable the function of audio encode. When the camera is without audio, the only choice is “Video”.

**Prerecord Time:** before start record, camera saves date in temporary buffer, once start record, then call those dates, this is the function of pre-record. The most prerecord time our camera supports is 5 seconds.

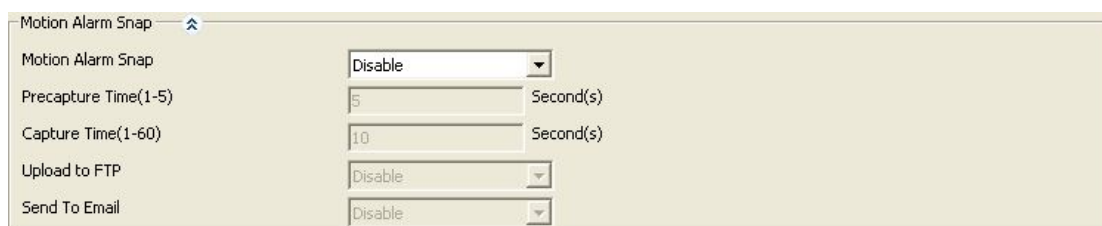
**Record Time:** time of a record file, range from 10 seconds to 600 seconds.

**Upload to FTP:** when you configure parameter of FTP correctly, enable this function, when end record, camera will send this record file to server.

**Send to Email:** when you configure the parameter of SMTP correctly, enable this function, when end record, camera will send this record to the mailbox.

### 4.2.3 Motion Alarm Snap

When there is motion alarm, if the storage space is not enough or you don't need to record, but you need know what cause this alarm, you can choose the function of motion alarm snap. Enable this function, when there is motion alarm, camera will snap picture according to the configuration.



Motion Alarm Snap	
Motion Alarm Snap	Disable
Precapture Time(1-5)	5 Second(s)
Capture Time(1-60)	1.0 Second(s)
Upload to FTP	Disable
Send To Email	Disable

Figure 4.6 Motion Alarm Snap

**Motion Alarm Snap:** only when it enables others parameters can be changed.

**Precapture Time:** before start snap, camera saves date in temporary buffer. Once start snap, then call those dates, this is the function of pre-capture. The most pre-capture time our camera supports is 5 seconds.

**Capture Time:** time of a snap picture, usually one second per picture.

**Upload to FTP:** when you configure parameter of FTP correctly, enable this function, when end snap, camera will send this picture to server.

**Send to Email:** when you have right configured parameter of SMTP, enable this function, when end snap, camera will send this picture to the mailbox.

It should be noticed that, when you enable motion alarm snap, want to get picture, you must enable the function of picture capture first. Enter the interface of [Media] - [Picture Capture], ensure “Snap Picture” is enabled, others parameters please refer to section 3.4

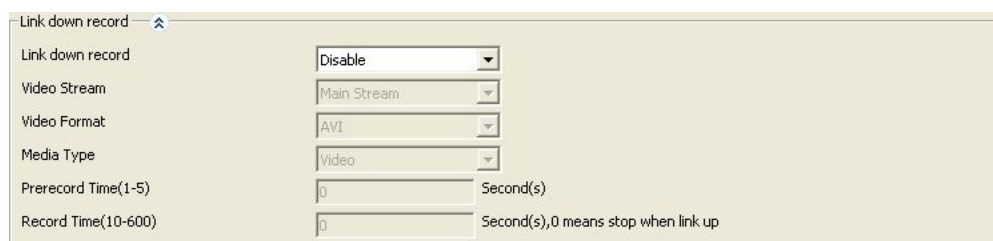


Picture Capture	
Snap Picture	Enable
Picture Source	Sub Stream
Picture Quality(20-100)	80
Capture Speed(1-2)	2 P/S

Figure 4.7 Picture Capture

#### 4.2.4 Link Down Record

Network camera achieves the function of surveillance by network, but sometime the network maybe disconnect. To avoid lose important information during this time, the camera has the function of link down record.



Link down record	
Link down record	Disable
Video Stream	Main Stream
Video Format	AVI
Media Type	Video
Prerecord Time(1-5)	0 Second(s)
Record Time(10-600)	0 Second(s), 0 means stop when link up

Figure 4.8 Link Down Record

**Link Down Record:** only when it enables others parameters can be changed.

**Video stream:** there are two choices “Main Stream” and “Sub Stream”. Main stream has clearer stream, but record same time needs more storage space, so you can choose per requirement.

**Video Format:** only AVI.

**Media Type:** “Audio and Video” means the record file you will get with sound. The premise is that your camera with the function of audio and there is audio input, moreover, the camera has enable the function of audio encode. When the camera is without audio, the only choice is “Video”.

**Prerecord Time:** before start record, camera saves date in temporary buffer, once start record, then call those dates, this is the function of pre-record. The most prerecord time our camera supports is 5 seconds.

**Record Time:** time of a record file, range from 10 seconds to 600 seconds.

#### 4.2.5 Link Down Capture

When links down, if the storage space is not enough or you need not record, but you need to view the video now, you can choose the function of link down capture. The configure interface of link down capture as figure 4.9. Enable this function, when links down, camera will capture picture according to the configuration.

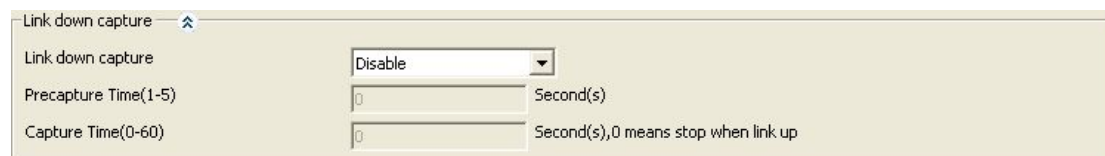


Figure 4.9 Link Down Capture

**Link Down Capture:** only when it enables others parameters can be changed.

**Precapture Time:** before start snap, camera saves date in temporary buffer. Once start snap, then call those dates, this is the function of pre-capture. The most pre-capture time our camera supports is 5 seconds.

**Capture Time:** time of a snap picture, usually one second one picture.

#### 4.2.6 Schedule Record

Motion alarm record (snap) and IO alarm record (snap) is triggered by relevant alarm, we call them alarm record. In addition, camera supports another form of record (snap). it doesn't need any triggering conditions, once enable, the camera will record (snap) according to the configuration. We call it schedule record (snap).

It should be noticed that schedule record (snap) and motion alarm record cannot be

enable in the same time.

Schedule Record

Enable: Disable

Video Stream: Main Stream

Video Format: AVI

Record Type: Video and Audio

Capture Interval(1-3600): 1 Second(s)

Upload to FTP: Disable

Send To Email: Disable

Period: Sunday From: 0:00:00 To: 23:59:59 Add

Period	Date	Start Time	End Time
0	Monday	0: 0: 0	24: 0: 0

Figure 4.10 Schedule Record

**Enable:** only when it enables others parameters can be changed.

**Video Stream:** there are three choices “Main Stream”, “Sub Stream” and “snap picture”. When you choose “Main Stream” or “Sub Stream”, you will get record file, otherwise, you will get picture.

**Video Format:** according the different video stream, there is different video format. Video file is “AVI”; Snapshot is “JPG”.

**Record Type:** “Audio and Video” means the record file you will get with sound, so video without sound. But this not means that you choose “Audio and video”, you will get record file with sound. The premise is that your camera with the function of audio and there is audio input, moreover, the camera has enable the function of audio encode. If it is snapshot, the record type is “Snap Picture”.

**Capture Interval:** when the “Video stream” is “snap picture”, this option can be set, i.e. how long device snaps a picture.

**Upload to FTP:** when the “Video stream” is “snap picture”, this option can be set. When you configure the parameter of FTP correctly, enable this function, when end record, camera will send this record file to server.

**Send to Email:** when the “Video stream” is “snap picture”, this option can be set. When you configure the parameter of SMTP correctly, enable this function, when end record, camera will send this record to the mailbox.

**Record Time Setting:** to set the time of schedule record (snap). It consists of date, start time and end time. After set a record time, click the button of “Add”, then this record time will show in below list. A camera can add twenty-four record time most. Once enable schedule record, during the setting time, device will record (snap) according to the configuration.

**Notice:**

1. The record or snap is the function of device that does not depend on network. So, once you enable record or snap, and set parameter in the right way, when the device is power on, it will record or snap according to the configuration.
2. If there is no storage device, camera can't do front-end record.
3. If there is no storage device but enable snap picture, and enable "Upload to FTP" or "Send to Email", if the configuration of FTP or SMTP is right, camera can snap picture and send to server or the mailbox.

## 4.3 Storage Device Information

In the interface of storage device information, detail shows device status, total size, used size, free size and used percentage for every storage device.

SD 1	
Device Status	Mount
Total Size	7545(MB)
Used Size	1(MB)
Free Size	7544(MB)
Used Percentage	0%
SD 2	
Device Status	Not Mount
USB Storage Device	
Device Status	Mount
Total Size	29865(MB)
Used Size	27104(MB)
Free Size	2761(MB)
Used Percentage	90%

Figure 4.11 Storage Device Info

## 5. ALARM

### 5.1 Motion Alarm

The setting of motion alarm is as figure 5.1.

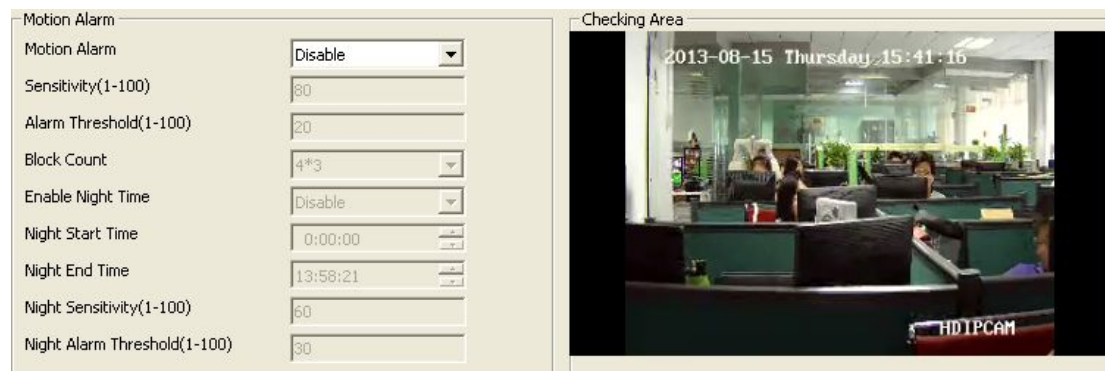


Figure 5.1 Motion Alarm

**Motion Alarm:** only when it enables others parameters can be changed.

**Sensitivity:** the sensitivity of motion detection. The bigger the value, the easier to trigger alarm.

**Alarm Threshold:** to measure whether to trigger alarm or not when the video changes. The smaller the value, the easier to trigger alarm.

**Block Count:** to select the way to divide video. After divided, only the video change in the area that surrounded by red box (selected box) will trigger motion alarm.

**Enable Night Time:** when the camera is working, under same motion detection condition, may need to have different result in day and night time. This can be achieved by the function of “Enable night time”. Once enable it, during the setting time, night parameter makes function. If there is a conflict between standard time and night time, it will follow the night parameter.

**Night Start Time:** the start time that night parameter makes function.

**Night End Time:** the end time that night parameter makes function.

**Night Sensitivity:** the sensitivity of night parameter.

**Night Alarm Threshold:** the alarm threshold of night parameter.

After set related parameter of motion detection, you need to set alarm time, this function can be achieved by motion detect alarm schedule, as figure 5.2.

Period	Date	Start Time	End Time
0	Every day	0:0:0	24:0:0

Figure 5.2 Motion Detect Alarm Schedule

The period number is auto create. One device can add up to 24 alarm period. A period consists of date, start time and end time. After set an alarm time, click the button of “Add”, then this alarm time will show in the list. The time among different period cannot be conflict, or can’t add successfully, as figure 5.3. You can’t modify a period, when the added time has question, you can delete it and add a new period. The deleting step is click this period, right-click the mouse, then come out an option of “Delete”, click it.

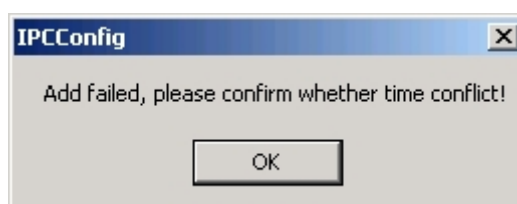


Figure 5.3 Time Conflict

Alarm output is another way for alarm. Enable “alarm output” and connect external device for output such as speaker, flash lamp Etc, to tell surveillance person that there is a motion alarm. Parameters you need to set as follows: enable alarm output or not, alarm output port, alarm output type and alarm duration. After set those parameters, click the button of “Save”, the setting will make function.

Figure 5.4 Alarm Output

## 5.2 Video Lost Alarm (This function is ineffective!)

Too many reasons can cause video lost, such as disconnect video cable. In this case, we can enable “Video Lost alarm” for reminding.



Video Lost Alarm	
Alarm Enable	<input type="text" value="Enable"/>
Alarm Output	
Alarm Output	<input type="text" value="Disable"/>
Alarm Output Port	<input type="text" value="Port 1"/>
Alarm Output Type	<input type="text" value="High"/>
Alarm Duration(0-60)	<input type="text" value="10"/> Second(s)

Figure 5.5 Video Lost Alarm

## 6. SYSTEM

### 6.1 Account Manage

In order to better manage device, we add functions of adding user, modifying user, deleting user and dividing different permission to different user.

The screenshot shows a window titled "Account Manage". It contains a table with three columns: "Username", "User Group", and "User Status". The first row shows "admin", "Administrator", and "Enable". Below the table are three radio buttons: "Add User" (selected), "Modify User", and "Delete User". Below these are five form fields: "Username" (text input), "Password" (text input), "Confirm Password" (text input), "User Group" (dropdown menu showing "Operator"), and "User Status" (dropdown menu showing "Enable").

Username	User Group	User Status
admin	Administrator	Enable

☒ Add User   ☐ Modify User   ☐ Delete User

Username:   
Password:   
Confirm Password:   
User Group:   
User Status:

Figure 6.1 Account Manage

#### 6.1.1 Add User

Steps of adding a user as follows: first select “Add User”; Second enter the username, password and confirm password; Third select the user group and user status; Last click the button of “Save”, then add a user successfully.

This screenshot shows the "Account Manage" window with the "Add User" radio button selected. The form fields are filled with: Username "aa", Password "\*\*\*\*\*", Confirm Password "\*\*\*\*\*", User Group "Operator", and User Status "Enable". A modal dialog box titled "IPCConfig" is overlaid on the right, asking "You sure you want to perform the operation?" with "OK" and "Cancel" buttons.

☒ Add User   ☐ Modify User   ☐ Delete User

Username:   
Password:   
Confirm Password:   
User Group:   
User Status:

IPCConfig  
You sure you want to perform the operation?  
OK Cancel

Figure 6.2 add user

When add user the username and password can't be null, and the password and confirm password must be the same. User group is to limit user's privilege: administrator without any limit; Operator can change configuration information but

can't view device status information; Viewer can view device info but cannot do any operation. User status is to set the effectiveness of user, when enable, the added user can log-in successfully. If disable, the added username and password cannot log-in. Do not forget to save settings!

### 6.1.2 Modify user

When need modify the information of a user, we can use the function of modify user. When modify user information, the username can't be modified.

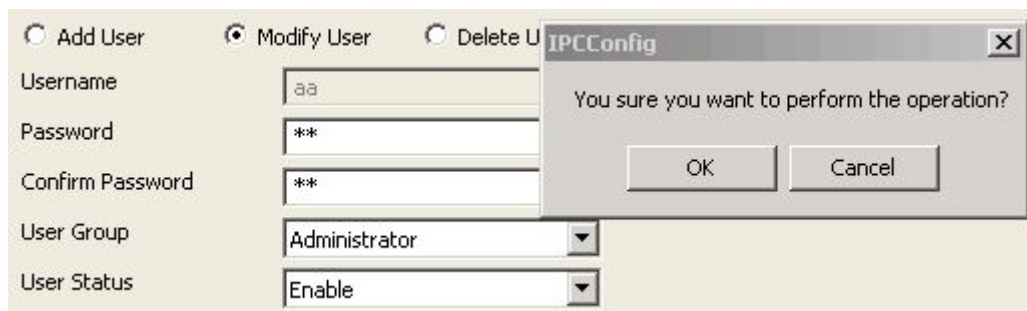


Figure 6.3 Modify User

In the user list, click the modified user, the user information will show below, then select "Modify User". The username displays gray, and can't be modified. You can modify others information, after modification, click the button of "Save", then user information modified successfully.

### 6.1.3 Delete user

When a user no longer use, we can delete it. Select "Delete User", you can achieve this function. It should be noticed that when delete user, you can't delete the user that are logging, that is to say, you can't delete yourself.

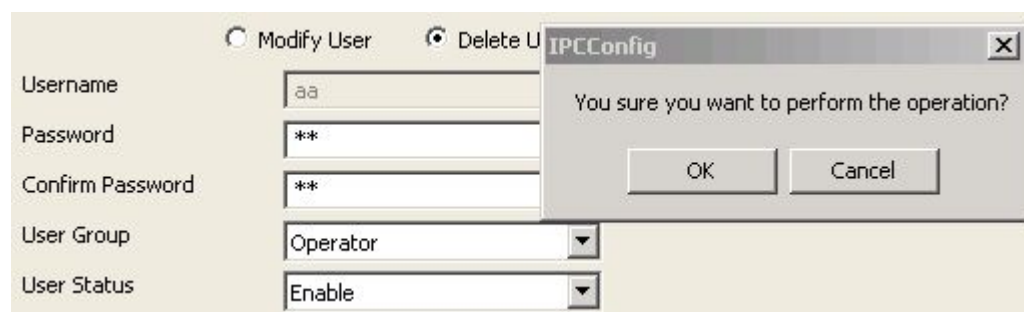


Figure 6.4 Delete User

In the user list, click the user that needs to be deleted, the user information will show below, then select "Delete user". Click the button of "Save", the user will be deleted. Deleted user will no longer show in user list, and can't use its username and password to log-in the device.

## 6.2 Time Setup

There are two types of update mode in this system. One is “Manual”, another is “NTP Server”.

**NTP server** is a protocol that syncs the time of device. It can make device synchronization with the server or clock source, which can provide high precision time correction. Select “NTP Server”, right set the device’s time zone, the IP address of NTP server, the port of NTP server, random set “Refresh Time”, after saved device will with the function of time synchronization. It should be noticed that, the default configuration of NTP Synchronization is use network to achieve this function, so you must ensure the device can connect to internet first.

The screenshot shows the 'Time Setup' window with the following fields:

- Update Mode:** A dropdown menu set to 'NTP Server'.
- Time Zone:** A dropdown menu set to '(GMT+08:00)'.
- NTP IP:** A text input field containing 'time.windows.com'.
- NTP Port(1-65535):** A text input field containing '123'.
- Refresh Time(60-999999):** A text input field containing '60', with a unit label 'Second(s)' to its right.

Figure 6.5 Time Setup- NTP Server

**Manual** means that enter year, month, day, hour, minute, second and saved, then the device’s time is manually entered time. When select “Manual”, there is a function named “Synchronize with the Local Time”, select it will make the device time syncing your PC time.

The screenshot shows the 'Time Setup' window with the following fields:

- Update Mode:** A dropdown menu set to 'Manual'.
- Time Zone:** A dropdown menu set to '(GMT+08:00)'.
- Time:** A text input field containing '2013-08-15 17:07:06'.
- Synchronize With The Local Time:** An unchecked checkbox.

Figure 6.6 Time Setup- Manual

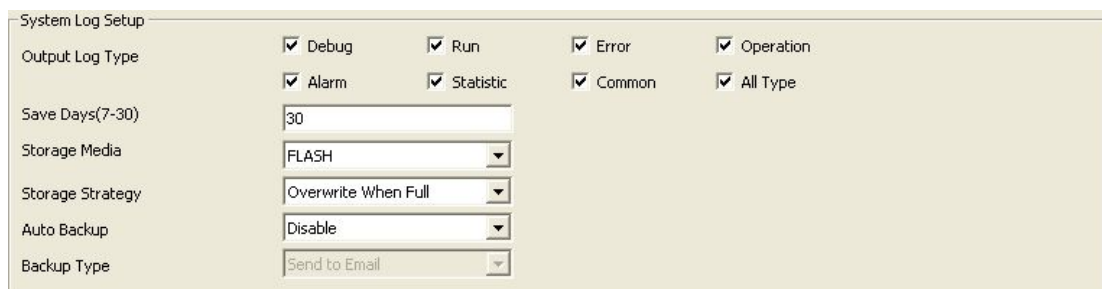
## 6.3 Log Setup

Log is operation record during device operation. The **output log type** that device supports are “Debug”, “Run”, “Error”, “Operation”, “Alarm”, “Statistic” and “Common”, you can select according to actual needs.

**Save day** means a log file can save for how many days, once set, when the log file saved bigger than this value, it will be deleted.

**Storage strategy** is to choose from when the storage space is full, device deletes the oldest log file or stops record new log file.

**Auto backup** is to set when device deletes a log file, send this log file to FTP or SMTP, achieve this function need you had right configured parameters of FTP or SMTP.



The 'System Log Setup' window contains the following configuration options:

- Output Log Type:** Checkboxes for Debug, Run, Error, Operation, Alarm, Statistic, Common, and All Type, all of which are checked.
- Save Days(7-30):** A text input field containing the value '30'.
- Storage Media:** A dropdown menu with 'FLASH' selected.
- Storage Strategy:** A dropdown menu with 'Overwrite When Full' selected.
- Auto Backup:** A dropdown menu with 'Disable' selected.
- Backup Type:** A dropdown menu with 'Send to Email' selected.

Figure 6.7 System Log Setup

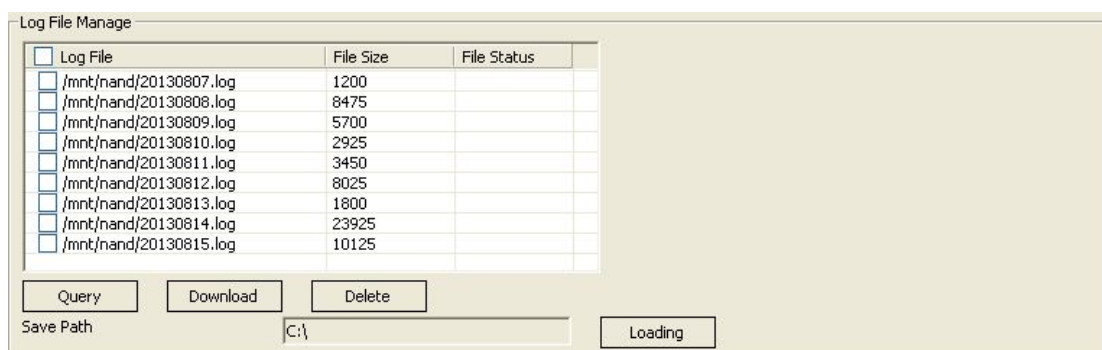
## 6.4 Log File Manage

Log file Management have three options: query, download and delete.

Clicking the button of “**Query**” can query all log file in this device, and will show in the above list.

Select one or more log file, click the “**Download**” button, those log file will download to local computer. You can change the save path by yourself, but once you log out, the setting will not be saved.

Select one or more log file, click the “**Delete**” button, those log file will be deleted. After deletion, the log file can not recover.



The 'Log File Manage' window displays a table of log files with the following data:

Log File	File Size	File Status
<input type="checkbox"/> /mnt/nand/20130807.log	1200	
<input type="checkbox"/> /mnt/nand/20130808.log	8475	
<input type="checkbox"/> /mnt/nand/20130809.log	5700	
<input type="checkbox"/> /mnt/nand/20130810.log	2925	
<input type="checkbox"/> /mnt/nand/20130811.log	3450	
<input type="checkbox"/> /mnt/nand/20130812.log	8025	
<input type="checkbox"/> /mnt/nand/20130813.log	1800	
<input type="checkbox"/> /mnt/nand/20130814.log	23925	
<input type="checkbox"/> /mnt/nand/20130815.log	10125	

Below the table are three buttons: 'Query', 'Download', and 'Delete'. At the bottom, there is a 'Save Path' field containing 'C:\' and a 'Loading' button.

Figure 6.8 Log File Manage

## 6.5 System Maintenance

The interface of system maintenance has three parts: configuration file manage, system update and system restore.

The interface of configuration file manage is as figure 6.9, it supports the function of uploading and downloading configuration file.

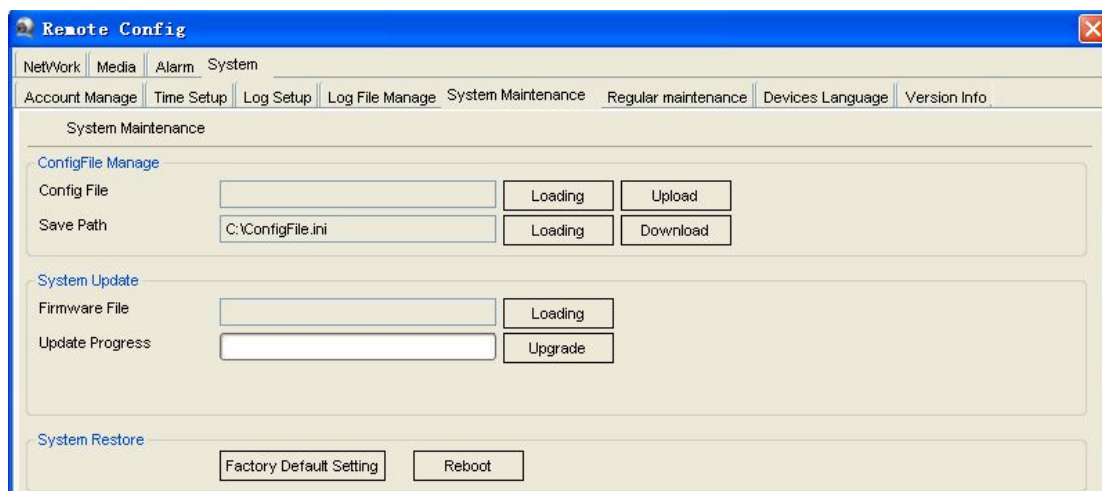


Figure 6.9 System Maintenance

When upload configuration file, you need to select a file from local computer. While uploading, device will judge the format of this file, when the format matches, system will prompt as figure 6.10. If you click the button of “OK”, then begin uploading and overwriting configuration. After that, device will auto reboot. The whole process lasts about one minute, during this time, please do not cut off the power of device. When the format not match, system will prompt as figure 6.11, because now just judges the file name not file content, so if you are sure the selected file is configuration file, you can click “OK” to continue. This step system will judge the content of your file, if in fact it’s a configuration file, it will upload success, or come out the prompt as figure 6.12.

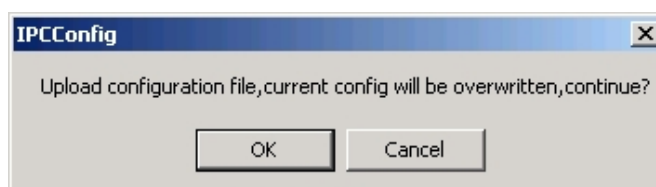


Figure 6.10 if be sure to upload configuration?

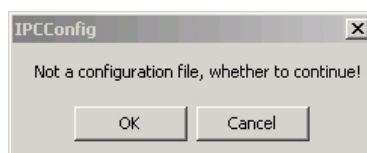


Figure 6.11 the file format not match

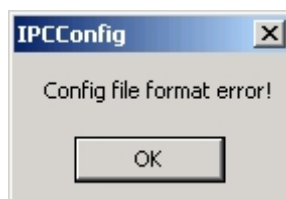


Figure 6.12 the file format error

When download configuration file, you need set “Save Path” first. System default path is “C:\”, when you need to change it, click the button of “Loading”, and select a path in your local computer. After setting the save path, click “Download” button, then can achieve the configuration file download function.

The interface of “System Update” is as figure 6.13. Click “Loading” button, jump to local computer, select a firmware file that needs to update, as figure 6.14, click the button of “Open”, then the file path auto written in the text box which behinds the “Firmware File”, click “Upgrade” button, update beginning. The firmware update include three stages: First is the upload of firmware file, as figure 6.15; Then is firmware upgrade, while this step, system will countdown; Last is device restart, after restart system will auto jump to the interface of log-in. From begin to end, it about continues two minutes, during this time, please do not cut off the power of device.

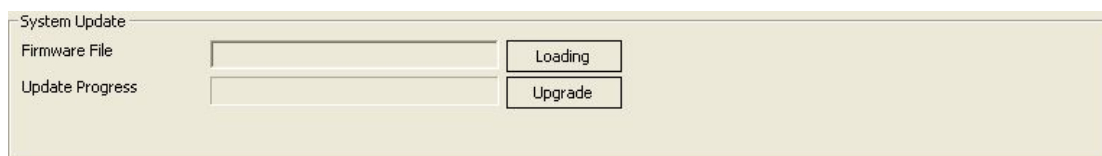


Figure 6.13 system update

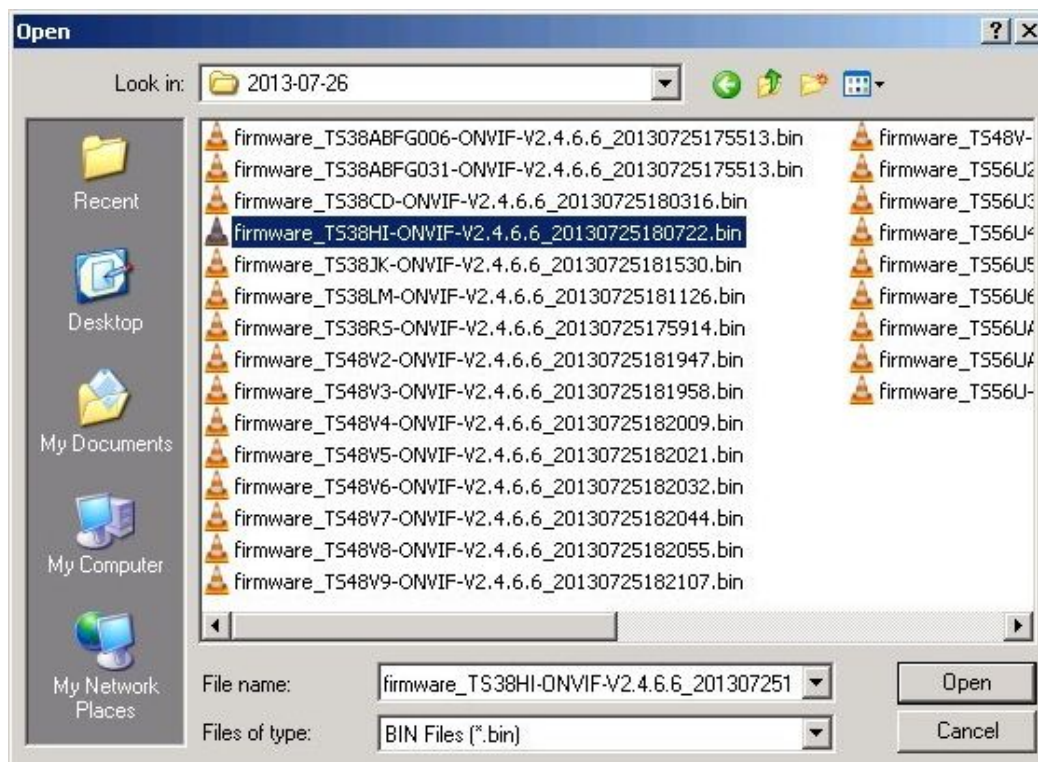


Figure 6.14 select the firmware file



Figure 6.15 firmware file uploading

The interface of “System Restore” is as figure 6.16. It includes two functions: factory default setting and reboot. If device recover to factory default setting, the current configuration information such as IP address, video parameter etc, will recover to default and can not regain again, so before you use this function, please think carefully.

System reboot will stop all processes of device, after rebooting, system will jump to the interface of log-in.

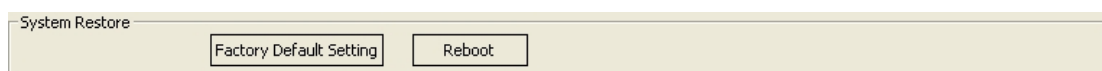


Figure 6.16 System restore interface

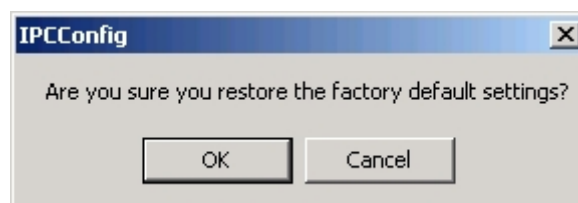


Figure 6.17 are you sure to restore the factory default setting?

## 6.6 Regular Maintenance

The function of “Regular Maintenance” can make device auto reboot in setting time. To achieve this function you need to set maintenance date and maintenance time, you can set the device reboot every day or reboot one time in one week. The function of regular maintenance can make device initializing some functions when device running too long. And it can extend device using life.

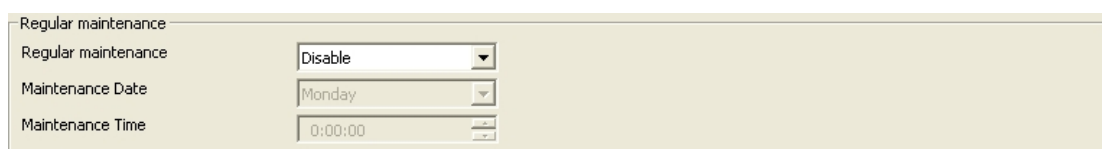


Figure 6.18 regular maintenance

## 6.7 Devices Language

This version supports five languages: Simplified Chinese, Traditional Chinese, English, Russian and Turkish language. Select the language you need, click the button of “save”, then set language successfully. After that, system will auto jump to log-in interface. When you access this device again, the log-in interface is the language here you set.



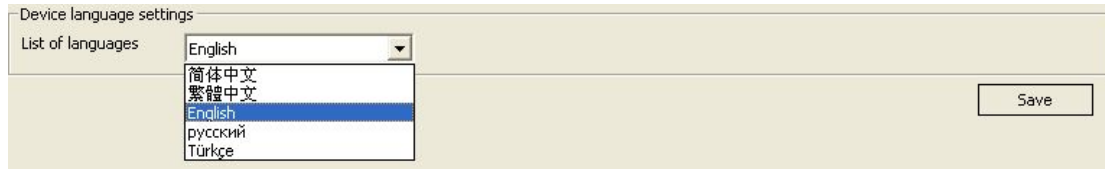


Figure 6.19 Device Language setting

## 6.8 Version Info

In this interface you can view kernel version, file system version, serial number and web control version.

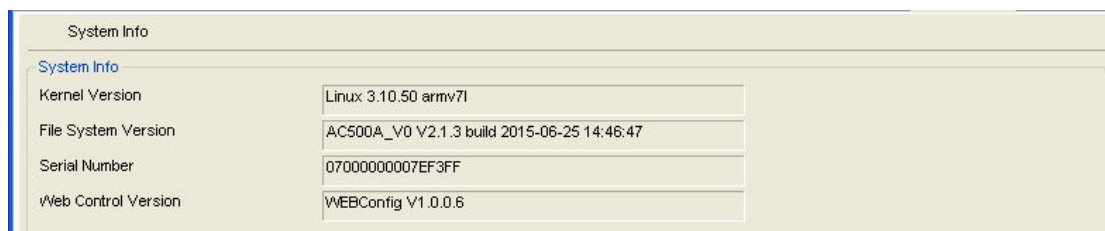


Figure 6.20 System Info