AVACOM
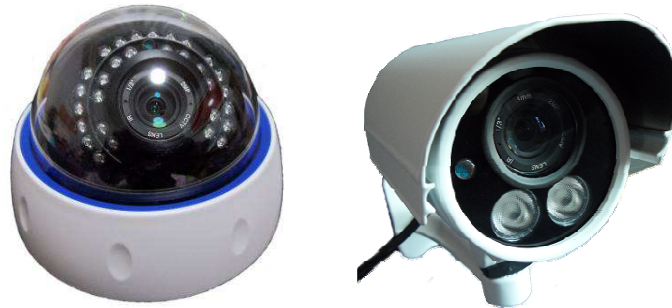
H60 Series

H.264 HD IP Camera

User Manual

Feb-2014   V100R001

Statement

If after consulting the user manual you cannot solve the problem, please call our support center about the solutions. We reserve the right to update the manual content without notice.

Notice

1. Installation Environment

- Keep away from fire, heat source, direct sunlight or dust.
- Avoid using in damp environments, the range for operational humidity is below 90%RH.
- Avoid using in very hot or very cold environments, the reference range for operational temperatures is:

  H60xx: -5°C ~ +50°C or 23°F ~ 122°F

  H60xx-L: -20°c ~ +50°c or -4°F ~ 122°F

  H60xx-LL: -40°c ~ +50°c or -40°F ~ 122°F

2. Transport and Handling

- The package is well-designed to ensure camera safety during the delivery, so please do not change the packaging.
- Do not move the IP cameras from overheated to supercooled condition frequently, otherwise it will frost and shorten the service life.
- Do not move the item when is power on, otherwise the main board might be damaged.

⚠️ Notice:

1. Please check the power supply before it is used.
2. Be careful not to drop the camera or subject it to strong impacts or shocks.
3. Do not directly touch the optical components for the image sensor, if necessary, please use a clean cotton cloth with alcohol and wipe the dirt gently;
4. Do not aim the camera directly into the sun or at other intense light sources that could affect the image quality or shorten the service life for the image sensor.
5. Keep away from laser when in use, the image sensor can be damaged.
6. If the equipment is not working properly, please contact the customer service center, do not disassemble or modify the equipment in any way. （Problems caused by unauthorized modification or repair should be at your own risk.）

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1 Product introduction

1.1 Product summary

Thank you for choosing Avacom IP camera. The IP Camera combines a high quality digital video camera with wireless/wired network connectivity and a powerful web server to bring clear video to your desktop, laptop or smart phone from anywhere on your local network or over the Internet. It is suitable for house, apartment, shops, office buildings, etc.

Main features：

♦ The video is compressed by H.264 main/baseline profile. There are five video resolutions available for different models:1080P/960P/720P/D1/CIF.

♦ Infrared LED for night vision covers 100 feet area allowing 24 hours monitoring;

♦ Support IEEE 802.11b/g/n protocol.

♦ Support motion detection/ video blind/ video loss alarm, alarm information sent by email and/or FTP.

♦ Supports Plug and Play setting.

♦ Built-in web server with graphical user interface.

♦ Supports DDNS. When the IP Camera is connected to the internet this URL can be used to visit the device.

♦ Supports Windows IE, Safari, Firefox, Chrome.

♦ Supports Android, iPhone/iPad

1.2 Included in the box

Type \ Accessory	Power adaptor	CD	Cable	Bracket	Antenna
H602x	12V	√	√		
H602xW	12V	√	√		Internal Antenna

H608x	12V	√	√	√	
H608xA	12V	√	√	√	
H608xW	12V	√	√	√	√
H608xAW	12V	√	√	√	√

Note:

Please check carefully that all listed items are included in the package. If anything is missing, please contact seller's customer support.

1.3 Front & Side View

Ambient
Light Sensor

IR LED

Lens

Power Input

RJ45

Antenna

Lens

Ambient
Light Sensor

IR LED

Power Input

RJ45

Antenna Connector
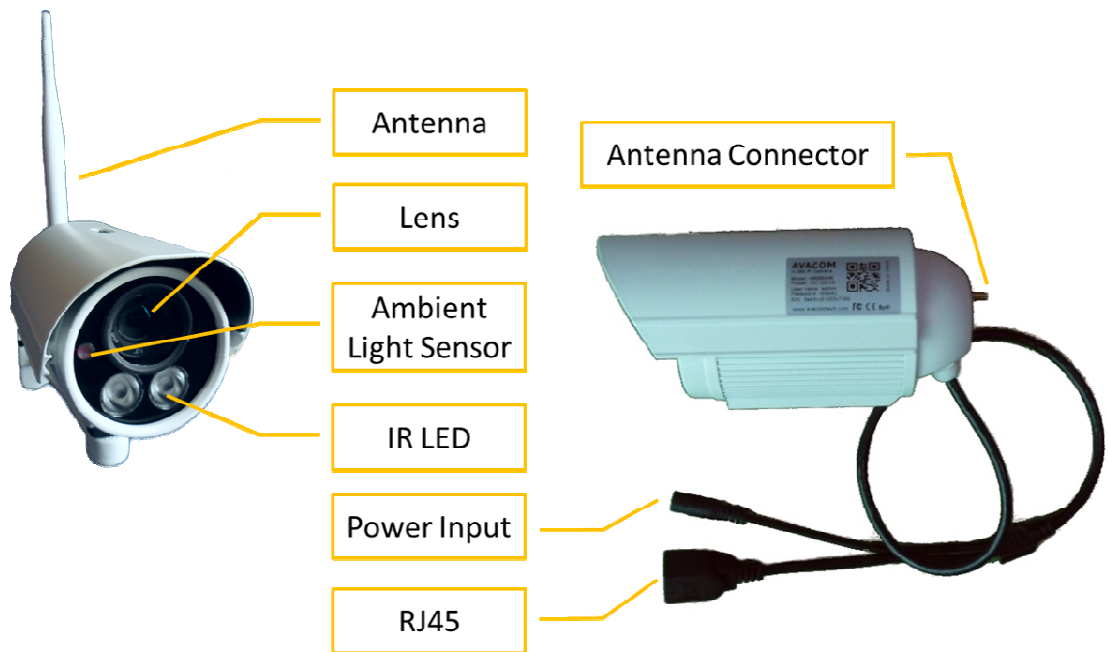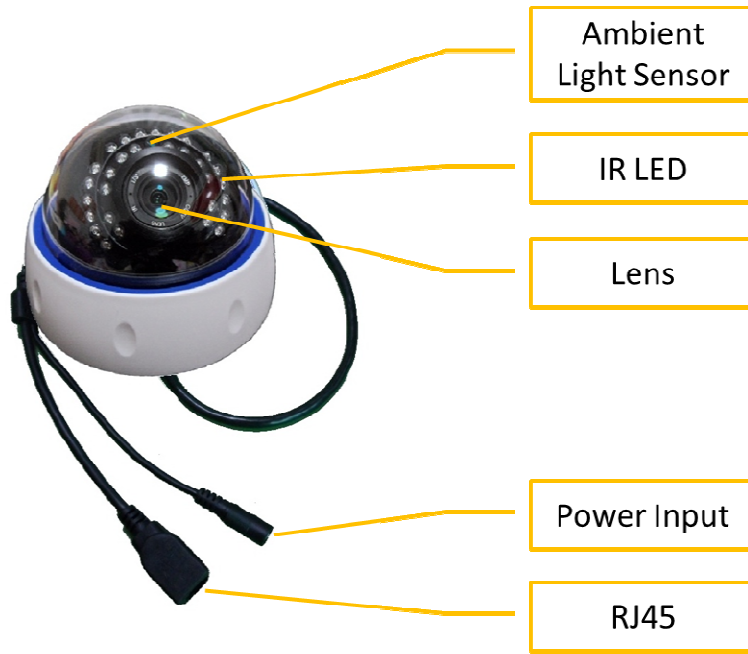
2 Installation Guide

2.1 Wired connection to LAN

Plug in the 12V power supply and connect the camera to wireless router Ethernet port with the network cable. Connect your computer to the same router via cable or wireless, as shown in Figure 1.

Figure 1

2.2 Logging into the Camera

On a Windows PC, insert CD into computer CD-ROM drive or visit www.avacomtech.com to find "H60_ Device_Manager.exe", double click "H60_ Device_Manager.exe" to install the software, run "DeviceManager.exe".
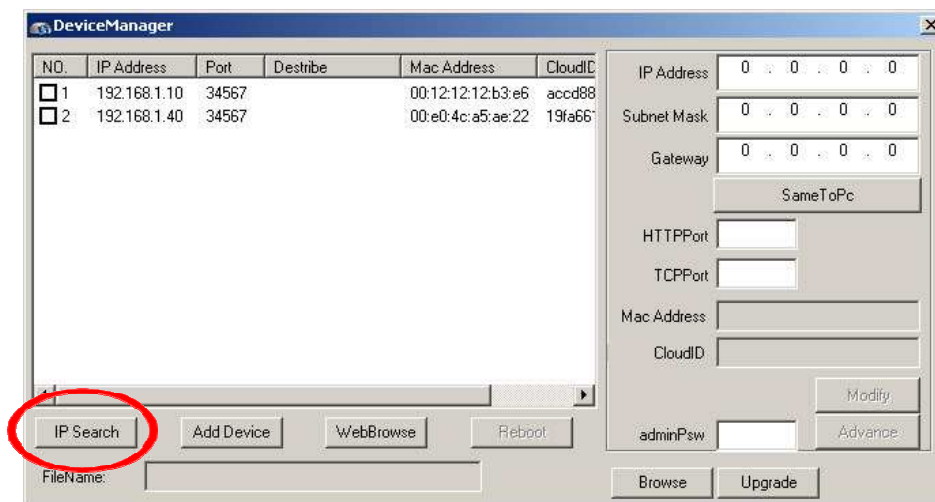
1) Click "IP Search";
2) Choose the camera then click "WebBrowse". Then you can run Internet Explorer.
3) Enter user name and password for the device, the default user name is "admin", default password is blank;

Note：

1) DHCP is enabled in factory default for standalone cameras, but disabled for the camera for NVR systems. In the NVR system the camera IP address is set to fixed IP, the fixed IP address can be found on camera label.

2) DHCP server may assign 2 IP address for wireless camera, one IP address for RJ45 network card, another IP address for WiFi network card.
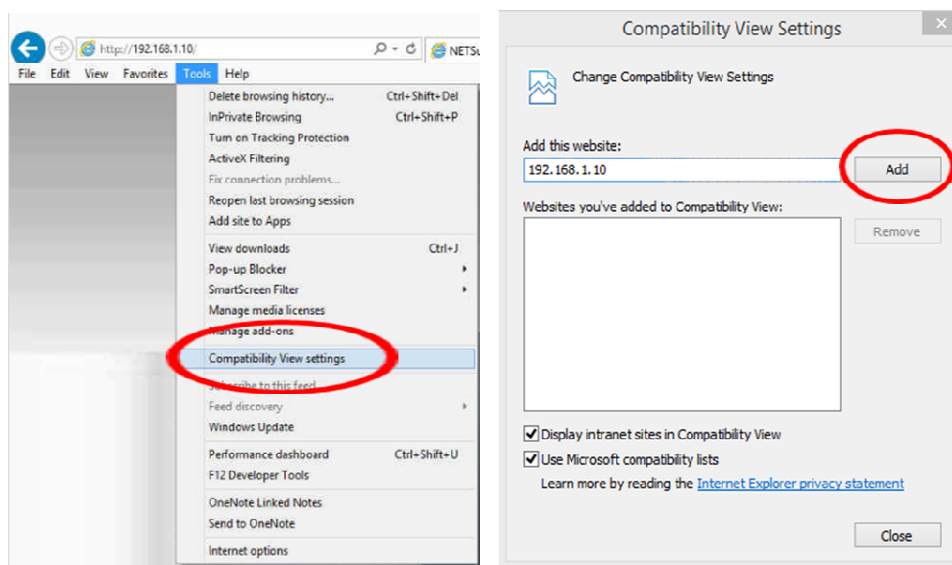
Figure 3

3) Windows7/8/8.1 may block the IP address, you may need to change "Compatibility View Settings" on Internet Explorer's tools menu to add the IP address to compatibility lists. See Figure 3

4) For privacy concerns, please change user name and password after login.
    Please reference 2.4.5.2 Setting-Advanced-Account.

5) For Safari/Firefox/Chrome, the browse can login the camera and preview video, but cannot access the setting menu.

2.3 Preview video

After logging you may select main stream or sub stream to preview video, you can also

switch the main stream or sub stream by click [ ] [ ] on the top left corner on the screen.

| Playback | Log | DeviceCfg | LocalCfg | Log Out |

NetSurveillance
CAM01

Bit Rate Type

☑ Connect all video(Main Stream)

☐ Connect all video(Extra Stream)

☑ Auto Prompt

OK   Cancel
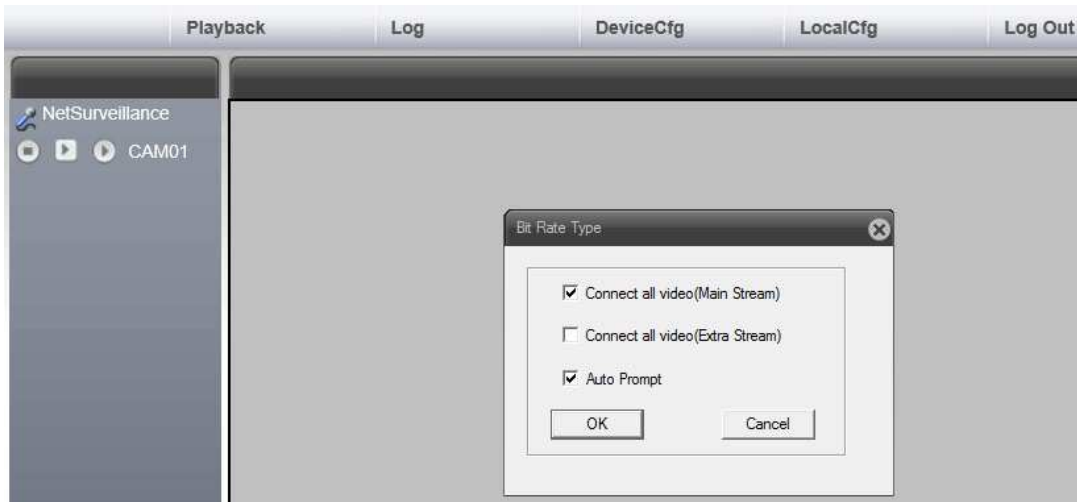
Digital Zoom: In preview mode, press mouse left button and drag the mouse to select any zone
on video window, release left button and move mouse to select zone, click left button, the select
zone will be enlarged to full window.

2.4 Setting Menu

In preview mode, click DeviceCfg , device config window popup, enter sub menus by clicking

, the sub menu includes: Record, Alarm,System,Advanced, Info.

Device config

Setting -> Record

Record   SnapShot

2.4.1 Setting menu features list:

Main Menu	Sub Menu	Features
Record	Record	Not supported on H60xx
	Snapshot	Not supported on H60xx
Alarm	Video Motion	Set motion detection alarm channel, sensitivity, area, and set the alarmed parameters: alarm output, record, snapshot, PTZ, EMAIL, FTP upload etc.
	Video Blind	Set video blind alarm channel, sensitivity, and set the alarmed parameters: alarm output, record, snapshot, PTZ, EMAIL, FTP upload etc.
	Video Loss	Set video loss alarm channel, sensitivity, and set the alarmed parameters: alarm output, record, snapshot, PTZ, EMAIL, FTP upload etc.
	Alarm Input (GPIO)	Not supported on H60xx
	Alarm Output (GPIO)	Not supported on H60xx
	Abnormal	Storage device not exist Storage space lack alarm Storage device access failure IP conflict Net abort
System	General	System Time Time Zone Date Format Date Separator DST(Daylight Saving Time) Time Format Language HDD Full DVR No. Video Standard Auto Logout
	Encode	Channel Compression Resolution FPS Bit Rate Type Quality Bit Rate(Kb/S) I Frame Interval Video/Audio
	Network	DHCP

		IP Address
		Subnet Mask
		Gateway
		DNS server
		Media Port, HTTP Port
		Transfer Policy
	Net Service	IP Filter
		DDNS
		EMAIL
		PPPoE
		ARSP
		Wireless(2G/3G)
		Mobile Monitor
		UPNP
		FTP
		WiFi
		Alarm Server
		RTSP
		DAS
		Cloud
		PMS
	GUI Display	Camera Name
		Time Title
		Channel Title
		Overlay Parameters
	PTZ Config	Not supported on H60xx
	RS232	RS232 function, baud rate, data bits, stop bits, parity
	Camera Parameters	Exposure Mode
		Day/Night Mode
		BLC(Back Light Compensation)
		Auto Iris
		Profile
		AE Reference
		DNC(Day/Night Convert) Threshold
		DWDR(Digital Wide Dynamic Range)
		AE Sensitivity
		AGC'
		Slow Shutter
		IR_CUT Mode
		Day Noise Reduction Level
		Night Noise Reduction Level
		Mirror/Flip
		Anti Flicker
		IR Filter Swap

Advanced	HDD Manage	Not supported on H60xx
	Account	Modify User
		Modify Group
		Modify PassWord
		Add User
		Add Group
		Delete User
		Delect Group
	Auto Maintain	Auto reboot system schedule
		Auto delete old file
	Default	Select setting entries to default
	Import Export	Configuration data import
		Configuration data export
		Log export
	Reboot	Remote reboot
	Upgrade	Software upgrade
Info	HDD Info	Not supported on H60xx
	Log	Log information
	Version	Software release information
		Serial ID
		NAT status

2.4.2 Setting->Record
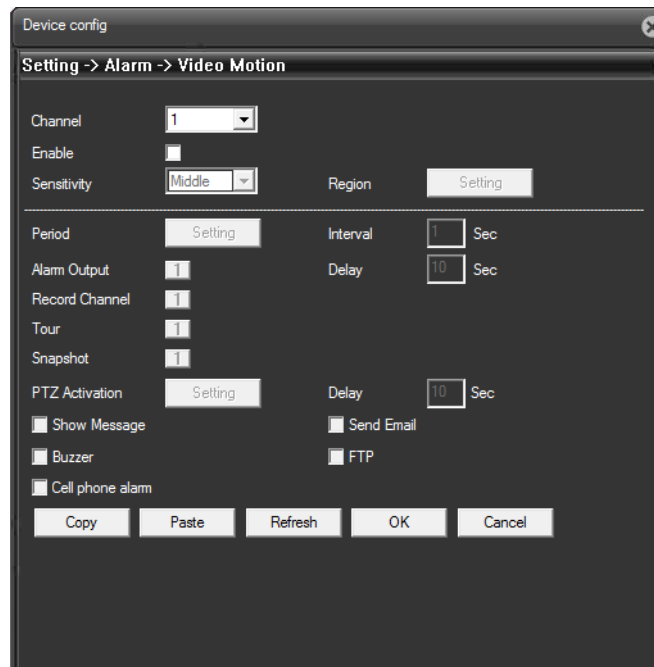
SD card is needed. Not supported on H60xx cameras.

2.4.3 Setting->Alarm

Setup video motion detection, video blind alarm, video loss alarm, GPIO alarm input, GPIO alarm output, system abnormal alarm.

2.4.3.1 Setting->Alarm->Video Motion

By analyzing the video image the system detects a movement that reaches a preset threshold level and a motion detection alarm is triggered.


[Enable] Enable motion detection, then set parameters accordingly.

[Sensitivity] Select the sensitivity level accordingly.

[Region] Push mouse left button to select or unselect the detection area, light blue area is the Detection Zone, the area without color is the Exclusion zone.

[Period] Within the preset time frame, the device will enable motion detection alarm. The time frame can be set day by day or weekly. Up to four time periods per day can be set. Select the check box to effective the time period.
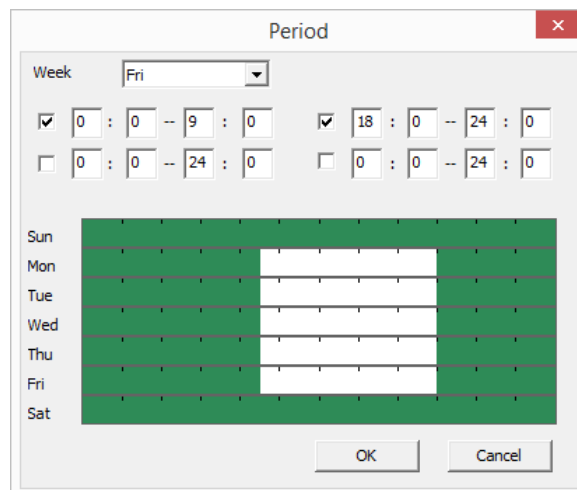
[Interval] Set time interval between 0~600s, only one alarm will be armed in the time interval even if multiple motion detectios were triggered.

[Alarm Output] Not supported on H60xx cameras.

[Delay] After the alarm is triggered, to delay the alarm for an extended period of time. Set delay time between 10~300s.

[Record Channel] Not supported on H60xx cameras.

[Tour] Not supported on H60xx cameras.

[Snapshot] Not supported on H60xx cameras.

[PTZ Activation] Not supported on H60xx cameras.

**[Delay]** Not supported on H60xx cameras.

[Send Email] sending email to notify the user when the alarm were triggered.

   Note: Need to setup email account in [System]->[Network Services]->[email].

[FTP] Not supported on H60xx cameras.

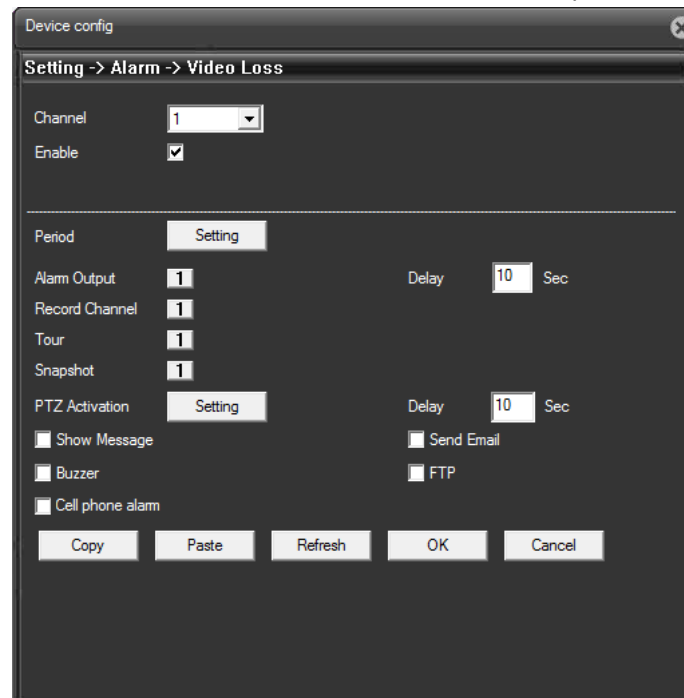## 2.4.3.2 Setting->Alarm->Video Blind

When the ambient light is dark, the brightness of the selected area of the image is below a preset threshold, the video blind alarm will be triggered.
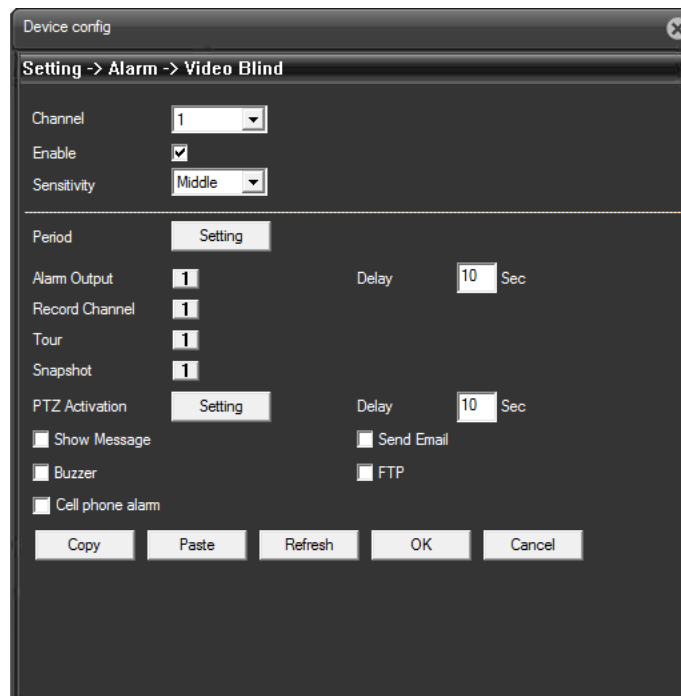
Parameter setting method: reference to chapter "2.4.3.1 Setting->Alarm->Video Motion"

2.4.3.3 Setting->Alarm->Video Loss

When the device is unable to obtain video signal, the video loss alarm will be triggered.

Device config

Setting -> Alarm -> Video Loss

Channel   [1   ▼]

Enable   ☑

Period   [Setting]

Alarm Output   [1]   Delay   [10]   Sec
Record Channel   [1]
Tour   [1]
Snapshot   [1]
PTZ Activation   [Setting]   Delay   [10]   Sec
☐ Show Message   ☐ Send Email
☐ Buzzer   ☐ FTP
☐ Cell phone alarm

[Copy] [Paste] [Refresh] [OK] [Cancel]

Parameter setting method: reference to chapter "2.4.3.1 Setting->Alarm->Video Motion"

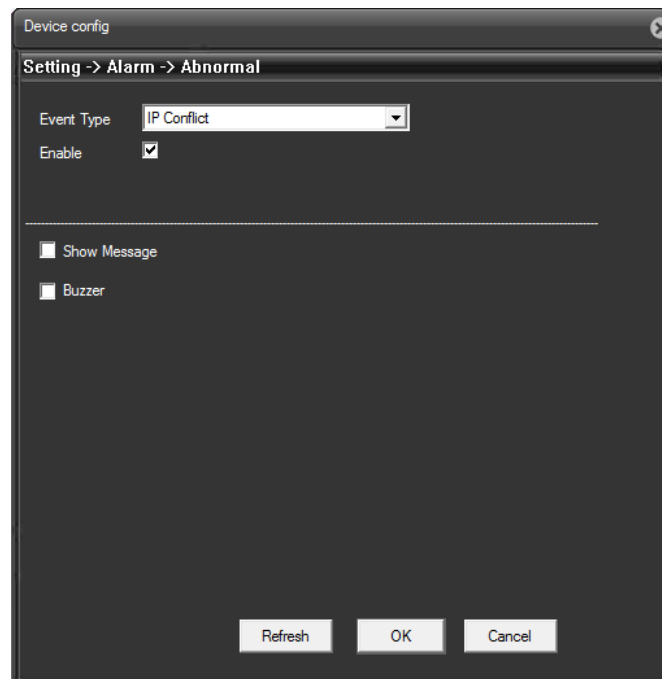## 2.4.3.4 Setting->Alarm->Alarm Input
Not supported on H60xx cameras.

2.4.3.5 Setting->Alarm->Alarm Output
Not supported on H60xx cameras.

2.4.3.6 Setting->Alarm->Abnormal
When the device detected software or hardware anomalies, abnormal alarm will be triggered.

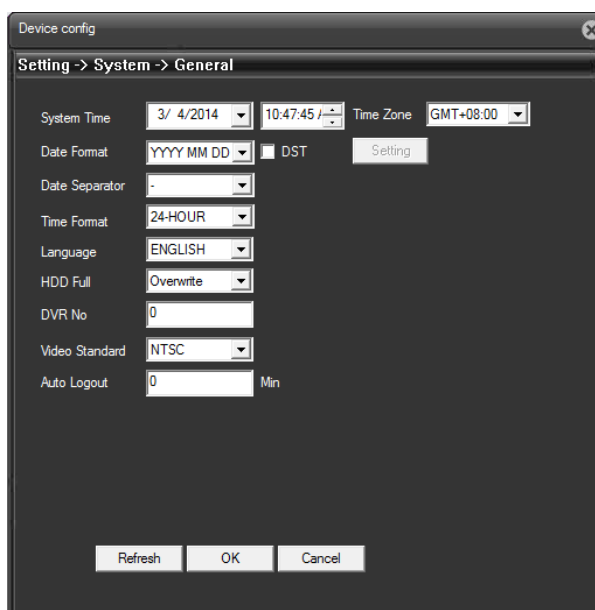**[Event Type]** Select the alarm event in the drop-down box.

[Enable] Select the check box ☑ to enable abnormal detection.

2.4.4 Setting->System

Setup General, Video Encode, Network, Net Service, GUI Display, PTZ Configuration, RS232, Camera Parameters.

2.4.4.1 Setting->System->General

[System Time] Set the device date and time.

[Date Format] Select date display format.

[Data Separator] Select the separator for date display.

[DST] Setup Daylight Saving Time start and stop date.

[Time Format] Select 24-hour or 12- hour clock ;

[Language] Select the device GUI language.

[HDD Full] Not supported on H60xx cameras.

[DVR No.] Not supported on H60xx cameras.

[Video Standard] Select PAL or NTSC format.

[Auto Logout] Set the automatic logout time between 0~600 minutes.

2.4.4.2 Setting->System->Encode

Set the video/audio encoding parameters for main stream and sub stream including Resolution, Frame rate, Bit Rate Type, Quality level, I Frame Interval, H.264 compression profile, enable/disable main stream audio, enable/disable sub stream video or audio.

Usually main stream be used for Network Video Recorder or PC viewing from LAN, sub stream be used for viewing form mobile phone on WWAN(3G/4G wireless network)
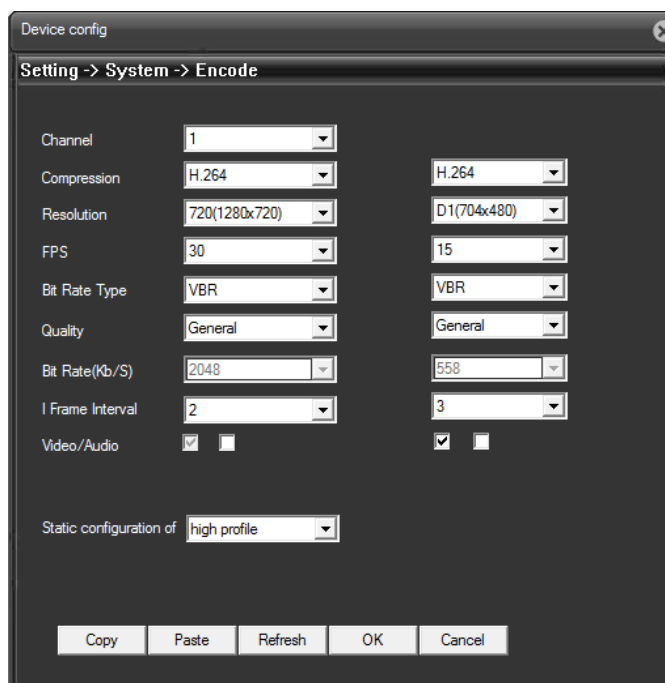
Compression

Resolution

FPS

Bit Rate Type

Quality

Bit Rate(Kb/S)

I Frame Interval

Video/Audio

[Channel] Select "1" or "All"

[Compression] Video encoding standard H.264 main profile.

[Resolution] Select resolution for main stream or sub stream, 1080(1920*1080), 960(1280*960), 720(1280*720), D1(704*480), CIF(352*240).

[FPS] For PAL system select 1~25 PFS, for NTSC system select 1~30 FPS.

[Bit Rate Type] Select CBR or VBR. ON CBR mode "Quality" can be selected between "Worst" to "Best" level, on VBR mode "Bit Rate" can be selected between 34~7954kbps.

[I Frame Interval] I frame interval range is between 2 ~ 12s. Set small I frame interval for wired network to improve video quality, set large I frame interval for wireless network to reduce network bandwidth.

[Video/Audio] Enable/disable main stream audio, enable/disable sub stream video or audio. Audio is not supported by H602x/H608x.

Bit rate range for different resolution:

Resolution	PAL System	NTSC System
1080P	994~7954kbps	1024~8192kbps
720P	1024~4096kbps	1024~4096kbps
D1	512~2560kbps	512~2560kbps
CIF	64~1024kbps	64~1024kbps

2.4.4.3 Setting->System->Network

[DHCP]   DHCP is enabled in factory default for standalone camera.

DHCP is disabled in factory default for NVR system, the fixed IP address can be found on camera label.

Disable DHCP after the camera obtains IP address/subnet mask/gateway/DNS parameters from router.

[IP Address]   The IP address for camera RJ45 port.

[Subnet Mask]   The subnet mask for camera RJ45 port.

[Gateway]   The gateway IP address.

[DNS]   Domain Name Service IP address.

[Media Port]   The default port is 34567.

[HTTP Port]   The default port is 80.

[Transfer Policy] Adaptive mode compromises on the video quality and fluency. Adaptive and Fluency Preferred mode become effective when sub stream be enabled. Quality Preferred mode become effective if the sub stream is not enabled.
Network Priority mode will not optimize transfer policy by camera.

2.4.4.4 Setting->System->Net Service
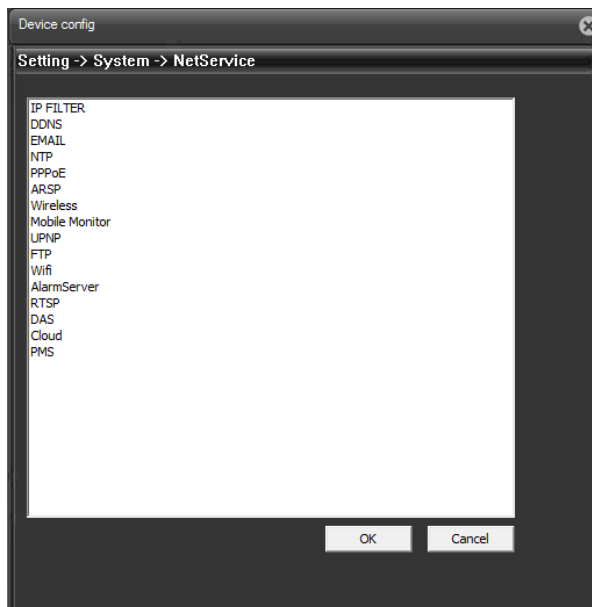
[IP Filter]   When white list is enabled, only the listed IP address can access the camera. White list supports up to 64 IP address.

When black list is enabled, the listed IP address cannot access the camera. Black list supports up to 64 IP address.

[DDNS]   Setup DDNS account provide by DDNS service provider.

[EMAIL]   The camera will send alarm message when alarm is triggered.

Setup sender email account's SMTP server name or IP address, port number, enable SSL if needed, user name, password, sender email address, receiver email address. The receiver address can set up to 3 recipients.

Alarm message format is:

```
Alarm event: Motion DetectEnd
Alarm Begin Time: 2014-03-04 16:05:20
Alarm input channel No.: CAM01(1)
Alarm device name: LocalHost
Sender IP address: 192.168.1.10
```

Note:

H602x/H608x camera will not send snapshot or video with alarm message.

[PPPoE] Enter the PPPoE username and password obtained from ISP (Internet service provider), save and reboot the camera. After rebooting the camera will automatically establish a network connection with PPPoE mode, the camera IP address will be assigned to the dynamic WAN IP address obtained from ISP.

[ARSP] Add the camera to DNS server for device management if using built-in free DDNS.

Select DNS, select "Enable" check box, enter DDNS server IP address, port number (same as DDNS server "Service Listen-on Port"), update period, user name and password.

[Wireless] 2G/3G WWAN access, not supported on H60xx cameras.

[Mobile Monitor] Not supported on H60xx cameras.

[UPNP] Default is disable. To enable UPNP, make sure the router UPNP is enabled, then enter the port numbers assigned by router.

[FTP] Not supported on H60xx cameras.

[WiFi] Setup WiFi SSID and password for H60xxW/AW camera. Connect antenna to camera before setting WiFi.

Search the SSID of the WiFi network, check "Enable", enter WiFi password, than save the setting.

Reboot the camera, disable DHCP after the camera obtains IP address/subnet mask/gateway/DNS parameters from router.

If the camera comes with NVR system, the DHCP is disabled on factory default.

[Alarm Server]　　Not supported on H60xx cameras.

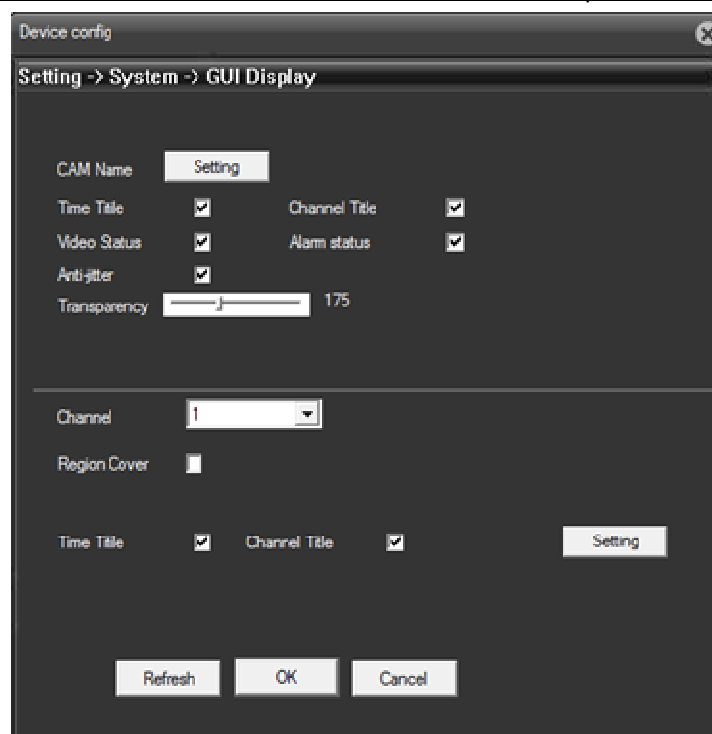**[RTSP]**　Enable RTSP, default port is 554.

[DAS]　Not supported on H60xx cameras.

[Cloud]　Enable Cloud, default MTU is 1280 byte.

[PMS]　Not supported on H60xx cameras.

2.4.4.5 Setting->System->GUI Display

Overlay setting for Camera Name, Time Title, Channel Title.

[CAM Name]   Enter setting menu to change camera name, supports maximum 25 characters

[Time Title]   Enable "Time Title" check box to display system date and time on preview video.

[Channel Title]   Enable "Time Title" check box to display channel title on preview video.

[Video Status]   Not supported on H60xx cameras.

[Alarm Status]   Enable "Alarm Status" check box to display alarm status on preview video.

[Alarm Status]   Enable "Anti-jitter" check box.

[Transparency]   Adjust transparency between 128~255.

[Region Cover]   Supports 4 region cover, click region 1~4 button,

 enter "setting" menu to adjust the size and location for each region.

[Time Title & Channel Title Setting]   Enable "Time Title" and "Channel Title" check boxes, entering "Setting" menu to drag "Time Title" or "Channel Title" to desired location.
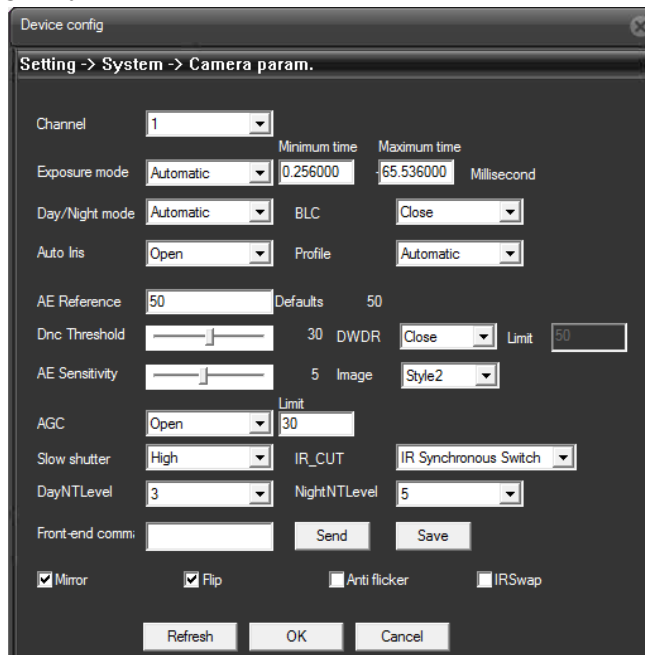
2.4.4.6 Setting->System->PTZ Configuration

Not supported on H60xx cameras.

2.4.4.7 Setting->System->RS232

Not supported on H60xx cameras.

2.4.4.8 Setting->System->Camera Parameters

[Exposure Mode] In automatic mode exposure time range is between 0.1~80ms, in manual mode exposure time can be set to 1/60, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/1000ms, default is automatic mode.

[Day/Night Mode] Automatic mode will set color mode on daytime and black & white mode at night, color mode display color image only, black & white mode display black & white image only.

[BLC] Close or open Back Light Compensation

[Auto Iris] Close or open automatic electronic Iris.

[Profile] Select indoor, outdoor or automatic mode, default is automatic mode.

[AE Reference] Set automatic exposure coefficient between 0~100, default is 50.

[DNC] Set Day/Night Convert Threshold between 10~50, default is 30.

[DWDR] Open or close Digital Wide Dynamic Range, the range is between 0~100.

[AE Sensitivity] Set automatic exposure sensitivity between 1~10, default is 5.

[AGC] Open or close AGC, the range is between 0~100.

[Slow Shutter] Select None/Low/Medium/High slow shutter, higher slow shutter produce better night vision.

[IR_CUT Mode] Select "IR Synchronous Switch" or "Automatically Switch", on "IR Synchronous Switch" mode the IR CUT filter will synchronous with IR LED light.

[DayNTLevel] Select Day Noise Reduction Level between 0~5, 0 disable noise reduction, 1 reduce less noise, 5 reduce more noise.

[NightNTLevel] Select Night Noise Reduction Level between 0~5, 0 disable noise reduction, 1 reduce less noise, 5 reduce more noise.

[Mirror/Flip] Enable the check box to turn the image up-side-down for H602x camera.

[Anti Flicker] Enable the check box to avoid image flickering under a periodic light source.

[IRSwap] Enable the check box to reverse IR Filter status.

2.4.5 Setting->Advanced

The advanced menu supports HDD manage, account setting, automatic maintain, default setting, parameters import & export, reboot, upgrade features.


2.4.5.1 Setting->Advanced->HDD Manage

Not supported on H60xx cameras.

2.4.5.2 Setting->Advanced->Account

The account menu maintains user permissions.
Note:
1. User name and user group names contain 8 characters, including: letters, numbers, underscores, hyphens, point, do not allow the use of other characters.
2. The number of users and groups is not limited.
3. Group names and user names cannot be repeated, each user must belong to a group, a user can only belong to one group.
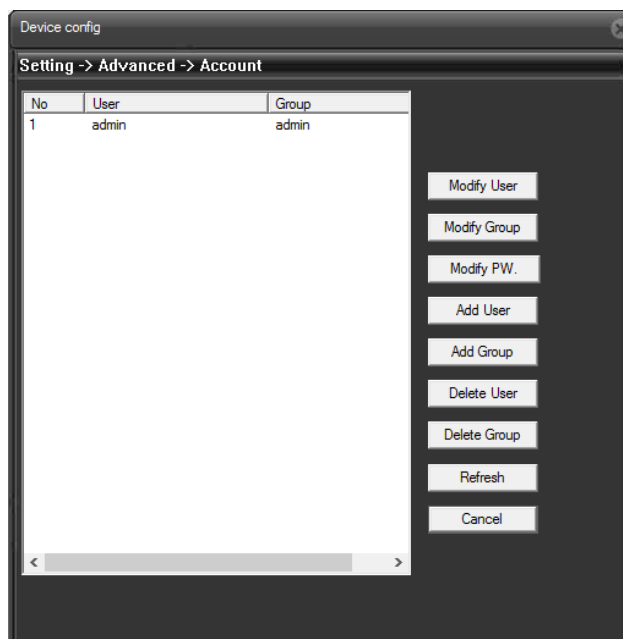
[Modify Users] Modify the properties of an existing user.

[Modify Group] Modify the properties of an existing group.

[Modify Password] Modify user account password, the password can be set to the length of 1~6 digits or characters.

[Add Users] Add new user in the group and set permissions for the user.

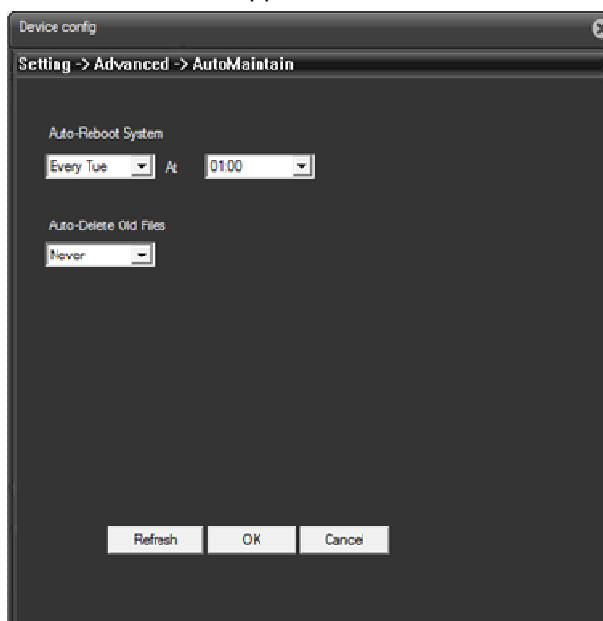**[Add Group]** Add a new group and set the permissions for the group.

[Delete User] Delete existing users.

[Delete Group] Delete the existing group (make sure no user in the group).

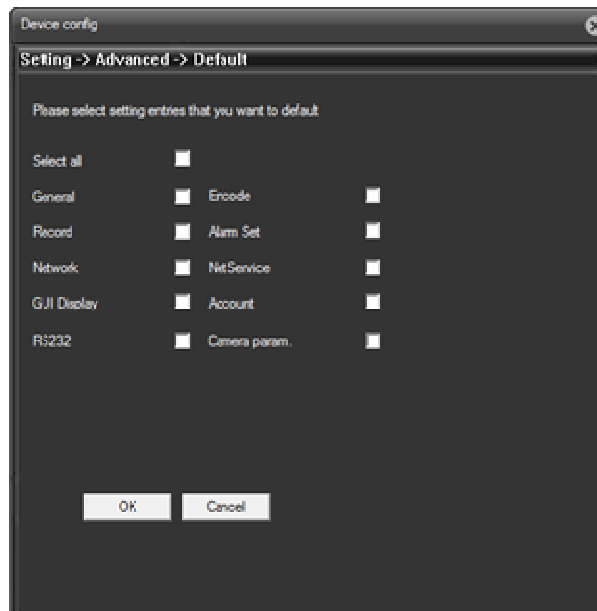## 2.4.5.3 Setting->Advanced->Auto Maintain

Schedule the automatic reboot time or disable automatic reboot.

Automatic delete old files is not supported on H60xx cameras.

2.4.5.4 Setting->Advanced->Default

Restore factory default configuration (according to the selected item)
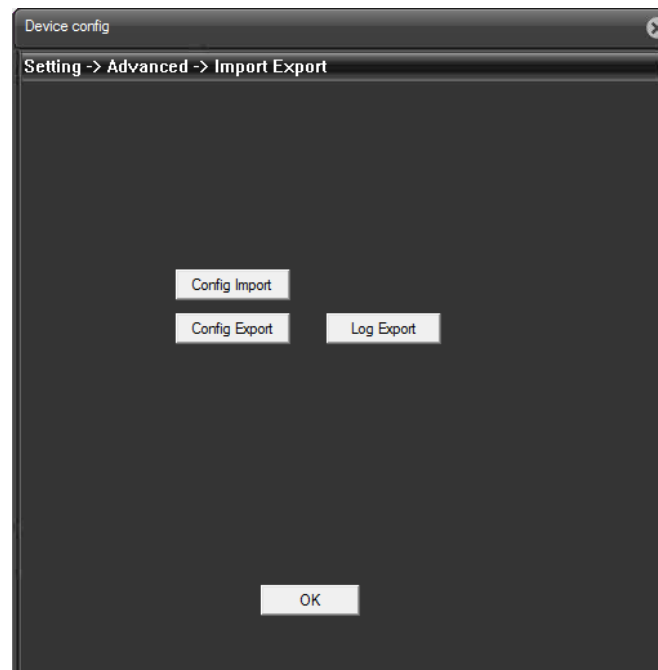

2.4.5.5 Setting->Advanced->Import Export

Import configuration file from the specified directory.

Export configuration file to the specified directory.

Export log files to the specified directory.

2.4.5.6 Setting->Advanced->Reboot

Remote reboot the camera.

2.4.5.7 Setting->Advanced->Upgrade
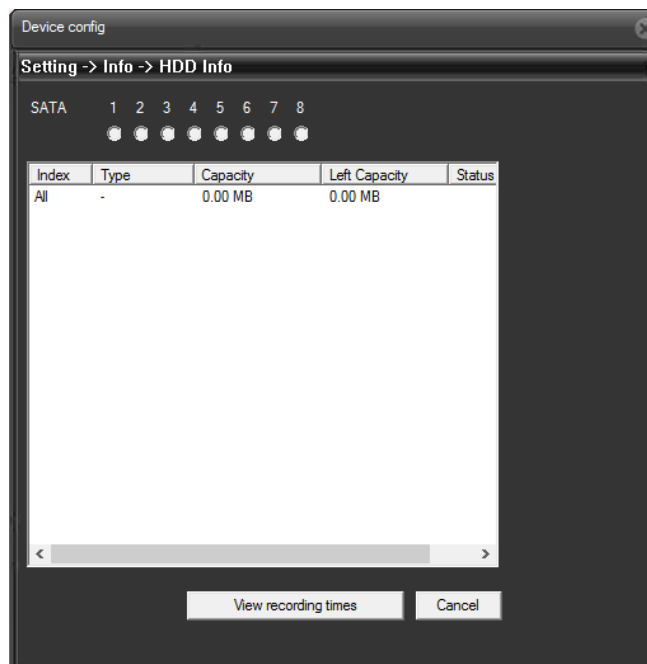
Upgrade the camera firmware.

2.4.6 Setting->Info

Display the camera information, including: storage, log, software version.

2.4.6.1 Setting->Info->HDD Information

Displays the status of the installed hard disk (SD card), including the hard disk (SD card) type, total capacity, remaining capacity, status, hard disk recording time and other information.
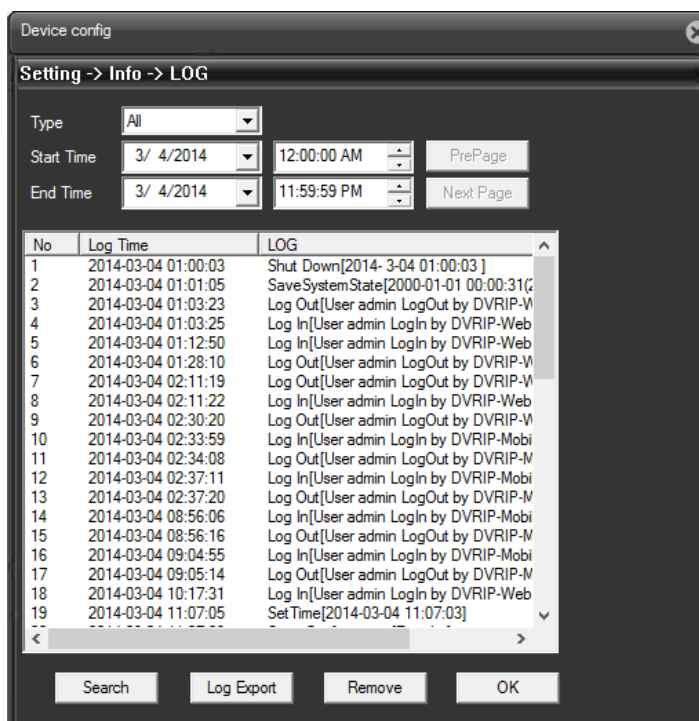

Note:

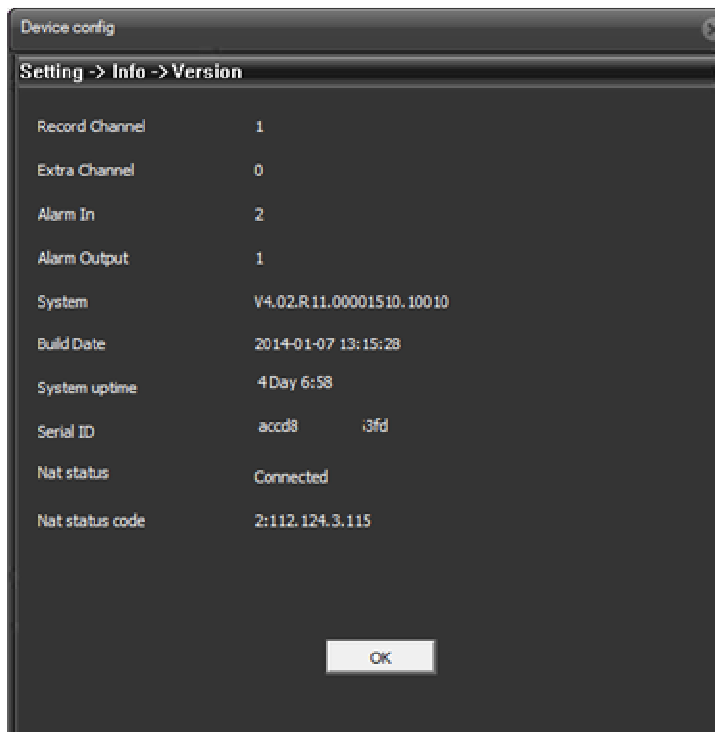Hard disk (SD card) is not supported on H60xx cameras.

2.4.6.2 Setting->Info->Log

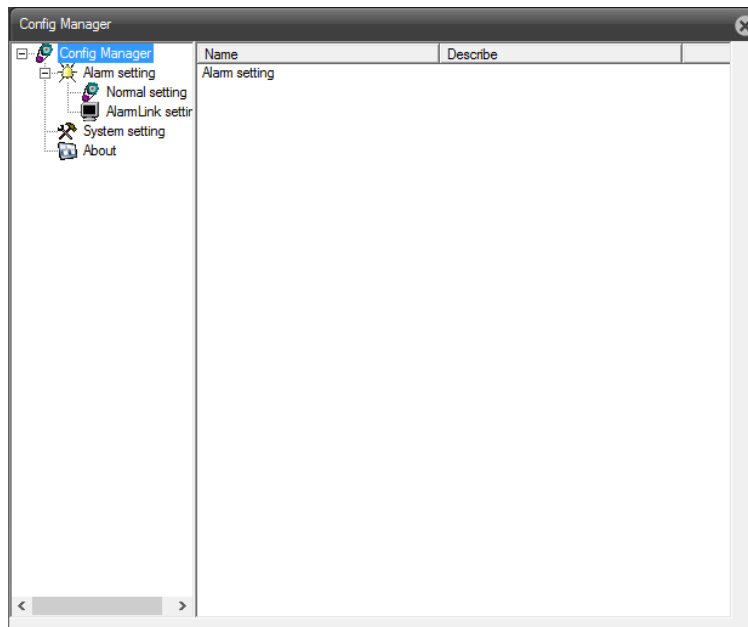Displays, remove or export log records.

2.4.6.3 Setting->Info->Log

Display the camera information, including: hardware configuration, software version, release time and serial number information.
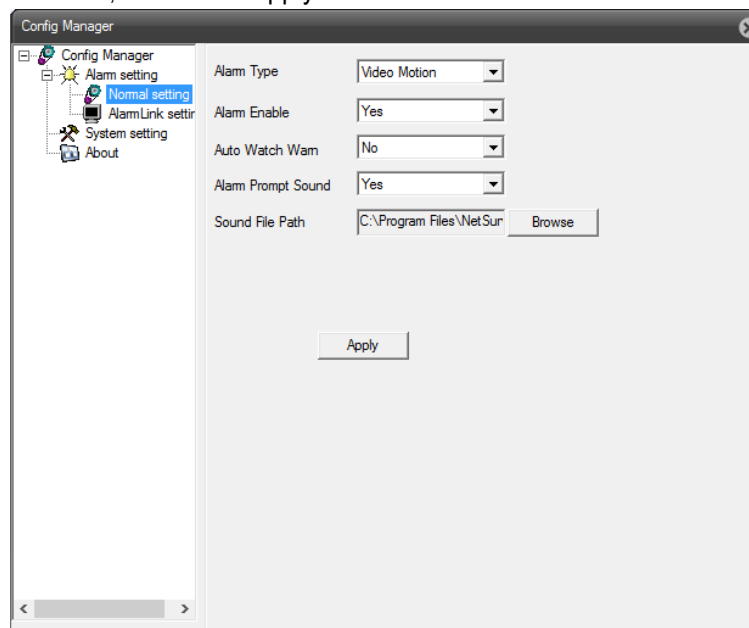
2.5 PC Client Configuration Manager

On preview mode, click **LocalCfg**, configuration manager window popup.
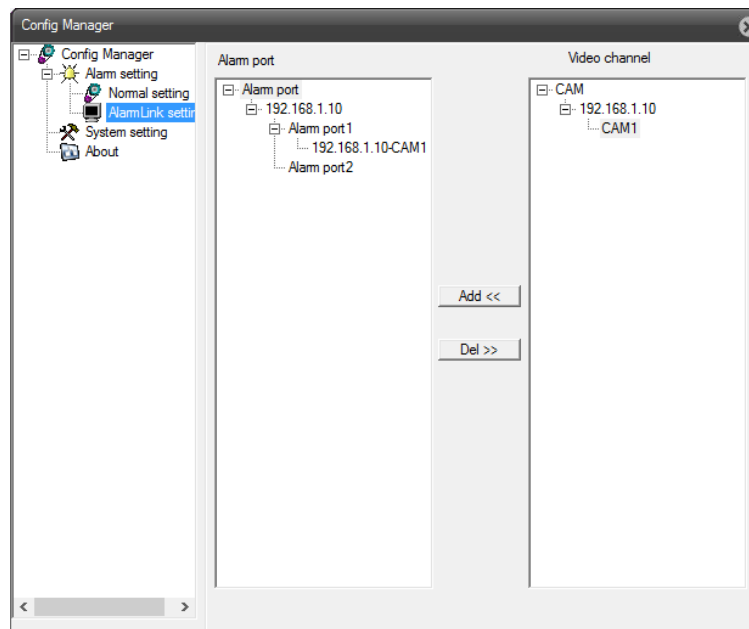

2.5.1 Config Manger->Alarm Setting->Normal Setting

Select "Video Motion", "Video Loss", "Video Blind alarm" for "Alarm Type", then select "YES" for "Alarm Enable", "Alarm Prompt Sound", and select alarm audio file for "Sound File Path", then click "Apply" button.

2.5.2 Config Manger->Alarm Setting->Alarm Link Setting

Add "Video Channel" to "Alarm Port".

2.5.3 Config Manger->System Setting

Not supported on H60xx cameras.

3 Specifications

H602x / H608x

Item	Sub-Item	Description
Image Capture	Sensor	1/4" CMOS sensor , 1280 x 720 pixels, with IR-CUT dual filter
	Lens	f=4mm,6mm,8mm,12mm F=1.2 (H6020) f=4mm,6mm,8mm,12mm F=1.6 (H6080) f=2.8mm,4mm,6mm,12mm F=1.6 (H6080A)
	Viewing angle	Up to 90°@2.8mm lens Up to 65°@4mm lens
	Min ambient light	Color 0.5Lux(IR off), Black/White 0Lux(IR on)
Illumination	Control Mode	Day/Night automatic switch
	Source	2pcs 850nm HP IR LEDs, 100 feet night vision(H6080) 4pcs 850nm HP IR LEDs, 100 feet night vision(H6080A) 30pcs 850nm IR LEDs, 60 feet night vision(H6020)
Video/Audio	Resolution	1280*720/ 640*360/ 320*180
	Compression	H.264 tri streaming
	Frame Rate	1~30fps
	Bit Rate	128kbps ~ 4096kbps
	Image Rotation	Mirror / Flip
	Audio Compression	ADPCM
Network	Network Protocol	TCP/IP, UDP/IP, HTTP, SMTP, FTP, DHCP, DDNS, UPNP, NTP, PPPOE, P2P
	Wireless Protocol	IEEE 802.11B/G/N, WEP & WPA/WPA2 Encryption (H6020W, H6080W, H6080AW)
Other Features	Plug & Play	Ease of use, setting up camera via QR code
	Video control	Frame Rate/Bit Rate/ Resolution/Brightness/Contrast
	Alarm	Motion Detection
		Video Blind
		Video Loss
	Alarm Actions	Email
	User Permissions	Multiple levels
	Date/ Time Setting	Supports network time synchronization
	DDNS	Free DDNS account provided by manufacturer
	Mobile APP Compatible	iOS, Android

	Browsers Compatible	IE, Safari, Firefox
	Software Upgrading	Firmware upgrading from network
Interface	Ethernet	10Base-T/100base-TX
	WiFi Antenna	Internal antenna (H6020W)
Physical	Net Weight	12 oz (H6020,H6020W)
		15 oz (H6080,H6080W,H6080AW)
	Dimension	5 inch(L)*5 inch(W)*4 inch(H) (H6020,H6020W)
		3.1inch(L)*3.1inch(W)*5.5inch(H)(H6080,H6080W,H6080AW)
Operation	Power Supply	12VDC , with 100~240V AC/DC adapter
	Power consumption	<6W (H6020,H6020W)
		<8W (H6080,H6080W,H6080AW)
		<18W (H6080x-L)
		<30W (H6080x-LL)
	Temperature	23°F~122°F (-5~50°C)
		-4°F~122°F (-20~50°C) (H6080x -L)
		-40°F~122°F (-40~50°C) (H6080x -LL)
	Humidity	10% ~ 90% non-condensing
Certification	Certification	FCC, CE, RoHS