JVC

VN-T16/U

HD IP CAMERA

INSTRUCTIONS

Contents

Contents of this manual

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- Design, specifications and other contents described in this manual are subject to change for improvements without prior notice.

Cautions and Warnings
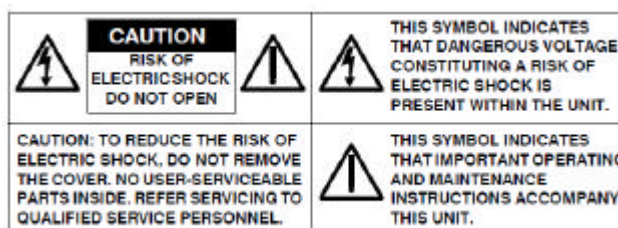
Installation and servicing should be performed only by qualified and experienced technicians to conform to all local codes and to maintain your warranty.

> **DC12V /AC 24V models require the use of CSA Certified/UL Listed Class 2 power adapters to ensure compliance with electrical safety standards. Power over Ethernet (PoE) should meet the IEEE802.3af PoE standards.**

This product is intended to be supplied by a Listed Direct Plug-In Power Unit marked "Class 2" or Listed Adapter marked "L.P.S." (or "Limited Power Source") or PoE and rated output DC 12V, 0.55A minimum or AC 24V, 60Hz, 0.55A minimum or 48Vdc, 0.13A minimum. (for USA)

WEEE (Waste Electrical and Electronic Equipment).
Correct disposal of this product (applicable in the European Union and other European countries with separate collection systems). This product should be disposed of, at the end of its useful life, as per applicable local laws, regulations, and procedures.

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Caution	Connect only one camera to the power line, AC24V/DC12V. Do not share the power line with other equipment. The power cable between power source and the camera must be under 3 m.

Caution	When powering the camera from AC24V, a UPS source should be considered to ensure satisfactory performance.

FCC Compliance Statement

Information to the user: This equipment has been tested and found to comply with the limits for a Class A 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 instruction manual, 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. For example, try reorienting or relocating the receiving antenna, increasing the separation between the equipment and receiver, or connecting the equipment to an outlet on a different circuit.

Caution	Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This Class A digital apparatus complies with Canadian ICES-003.

Manufacturer's Declaration of Conformance

Europe

The manufacturer declares that the equipment supplied with this INSTRUCTIONS is compliant with the essential protection requirements of EMC directive 2004/108/EC and General Product Safety Directive GPSD 2001/95/EC, conforming to requirements of standards EN61000-6-3:2007 for emissions, EN 50130-4 for immunity.

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1 About This Document

This INSTRUCTIONS is designed to be a reference tool for the installation and operation your system including the camera's features, functions and detailed explanation of the menu tree.

Overview of Contents

This document contains the following chapters:

- Chapter 2, Product Overview, introduces the main functions and system requirements of the camera.

- Chapter 3, Installation and Connections, provides detailed instructions on installing the camera and connecting wires.

- Chapter 4, Overview of Navigation and Controls, introduces how to navigate in the main menu window and operate the controls.
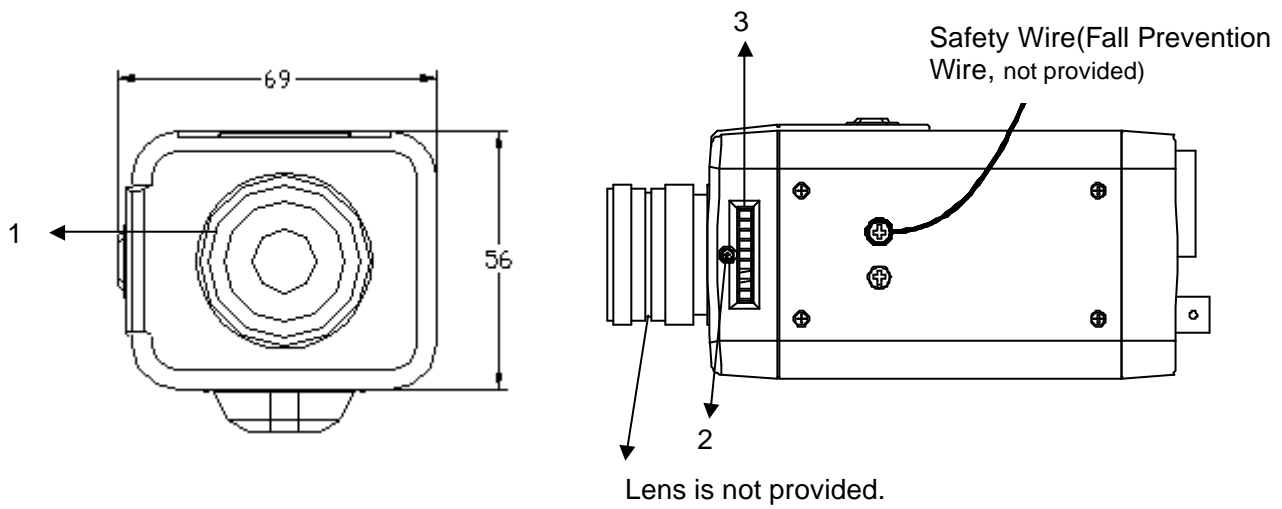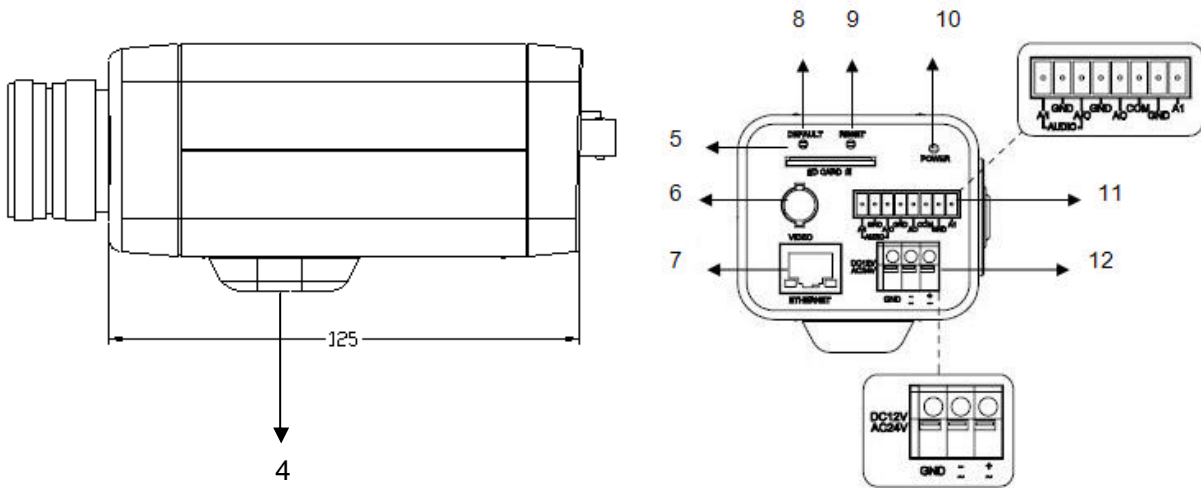
2 Product Overview

Camera Parts and Definitions

Camera Overview

Camera Parts and Definitions

Safety Wire(Fall Prevention Wire, not provided)

Lens is not provided.

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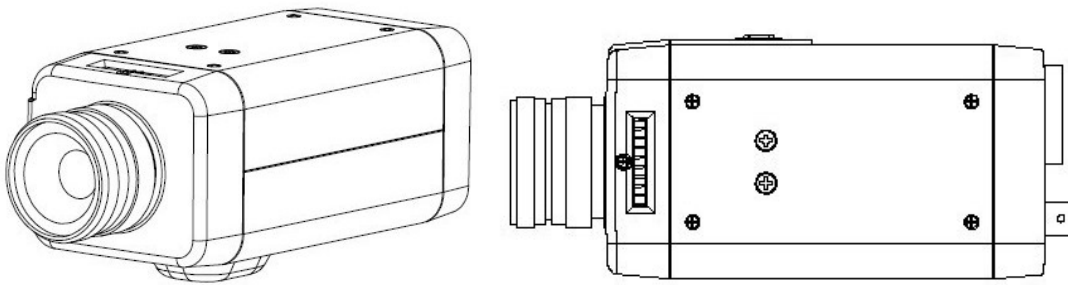
1. CS mount: connect the lens with the camera

2. Screw: lock Back focus Adjustment

3. Back focus Adjustment

4. Base: connect the camera with the tripod

5. SD card slot: insert a SD card into this slot for recording and storage

6. Video: not supported (for factory use only)

7. RJ45 Ethernet Connector/ PoE: insert the RJ45 cable for network connection. It also supports PoE (Power over Ethernet).

8. Default Button: reset all of the camera parameters to factory default by pressing for 5 seconds.

9. Reset Button: restart the system.

10. Power Indicator: Red light indicates power connection.

11. I/O Connector: Input/Output Connector

12. Power Terminal

Note	Connectors and field wiring terminals for external Class 2 circuits provided with marking indicating minimum Class of wiring to be used. Class 2 shall be marked adjacent to the field wiring terminals

	A/I	Audio in
	GND	
	A/O	Audio out
	GND	
	AO	Alarm out
	COM	
	AI	Alarm in
	GND	

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3 Installation and Connections

This chapter describes the installation and connection of the Box Camera.

Before You Begin

Please read this INSTRUCTIONS carefully before you install and operate the camera.

Unpack Everything

- **HD IP Camera**
- **WARRANTY CARD**
- **SAFETY PRECAUTIONS**
- **QUICK GUIDE**
- **8-PIN TERMINAL BLOCK** for alarm input/output
- **CD-ROM** containing INSTRUCTIONS and IP Finder software

Equipment Required

The following tools might help you to complete the installation:

- Drill
- Screwdrivers
- Wire cutters

Camera Installation

> **Note**   All the installation and operations here should conform to your local electricity safety rules.

Checking Unpacked Camera

When you receive the camera from the shipping agency, please check whether there is any visible damage to its appearance. The protective materials used for the package of the camera can protect most accidental clashes during transportation. Then you can open the box to check the accessories.

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Please check the items in accordance with the list on the warranty card. Finally you can remove the protective film of the camera.

Mounting

1. Attach the camera to a pending mount.

Insert the screws on the camera stand into either of the screw holes on the base. Then tighten them up.

2. Mount the camera onto the ceiling/wall and fasten it securely.
3. Connect the Safety Wire (Fall Prevention Wire, not supplied) to the camera and the wall/ceiling.

|	
Warning	To prevent the camera from falling off, ensure that it is connected to a firm place (ceiling slab or channel) using a Safety Wire (Fall Prevention Wire is not supplied).
	Pay also careful attention to the length, strength, wiring, and material (insulating properties) of a Safety Wire (fall prevention wire) to be used. The length should be as short as possible within the permissible range of the mounting length. The wire should be strong enough to withstand the total weight of this product and the fixer. (Pay also attention to the finishing at the end of the wire.)

Caution	Must be isolated camera and the wall/ceiling which are connected by a Safety Wire (Fall Prevention Wire).

Network Camera Diagram

Connection type1:

Connection type 2:

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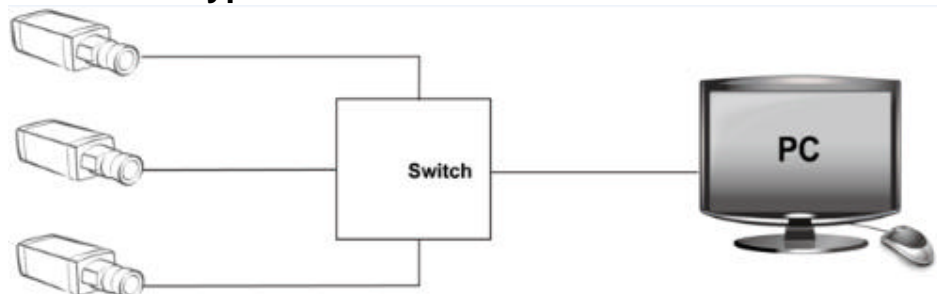
Hardware and Software Requirements

Computer

Windows XP or Windows 7 as OS

Internet Explorer Version 6.0-8.0

CPU: Intel Pentium IV *X*2 2.4 GHz or equivalent AMD

Memory: 1G or above

Display adapter

Support DirectX9 for example

NVIDIA GeForce 6 Series above

ATI Mobility Radeon 9500 above.

Power Supply

This camera requires a DC12V / AC24V / PoE power supply. Please make sure you use the correct power supply before connecting to the camera.

Network Connector

Please use the RJ45 network connector for connecting the camera to your computer or switch.

Switch

If you want to monitor several cameras, the switch is required.

Caution	To avoid damage to the camera, never connect more than one type of power supply (PoE IEEE802.3 Ethernet Class 0 or DC12V or AC24V power plug) at the same time. If using PoE, this camera is to be connected only to PoE networks without routing to external equipments.

Connecting the Camera to a Personal Computer

Setting IP

This is a network-based camera and must be assigned an IP address first. The camera's default IP address is 192.168.0.2 and sub mask is 255.255.255.0. To change IP address, open Network Settings page described later.

If your network uses a DHCP server, an IP address can be assigned automatically from the DHCP server by enabling DHCP in the Network Settings page described later.

Connecting the Camera to a Personal Computer

1. Connect the network cable to the camera and then turn on the camera's power.

2. Set the personal computer's IP address. The camera's default IP address is 192.168.0.2 and sub mask is 255.255.255.0.

3. Check that the camera and computer are connected by pinging the IP address you have set. To do this, start a command prompt (Windows: from the Start Menu, select Program. Then select Accessories and choose Command Prompt.) Type "Ping 192.168.0.2". If the message "Reply from…" appears, it means the connection is done.

4. Start Internet Explorer and enter IP address: **192.168.0.2**). A login window will appear. Enter the default user name: **admin** and password: **jvc** to log in.

Figure 3-1 Log on Screen
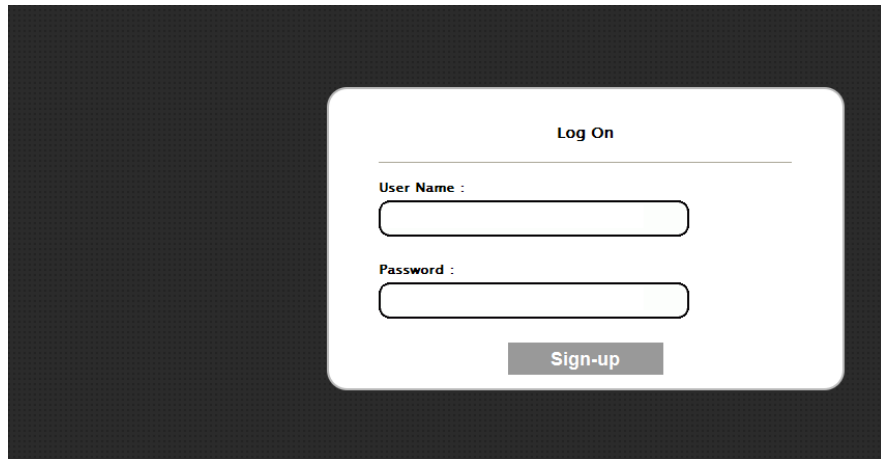
5. Images of the camera can be viewed through Internet Explorer. Before viewing, follow these steps to enable the display.

a. Enable Cookies as shown below:
- In Internet Explorer, click **Internet Options** on the **Tools** menu.
- On the **Privacy** tab, move the settings slider to **Low** or **Accept All Cookies**.
- Click **OK**.

b. When a proxy server is used, click Internet Options on the Tools menu of Internet Explorer, select Connect tab, click LAN button, and set proxy server.

c. Change **Security** in Internet options as shown below:

- On **tool** menu, click **Internet Option**.
- Press the **Security** tab.
- If the camera operates inside the intranet, click the **Intranet** icon. If the camera operates on the Internet, click the **Internet** icon.
- Click **Custom Level**. This will open the **Security Settings – Internet Zone** screen.
- Scroll down to the **ActiveX controls and plug-ins** radio buttons and enable all of them as shown in the illustrations:

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- In Windows 7 only, Click   Tools   ➔   Internet Options   ➔   Security
    - Enable Protected Mode (require restarting Internet Explorer) ➔ Unchecked
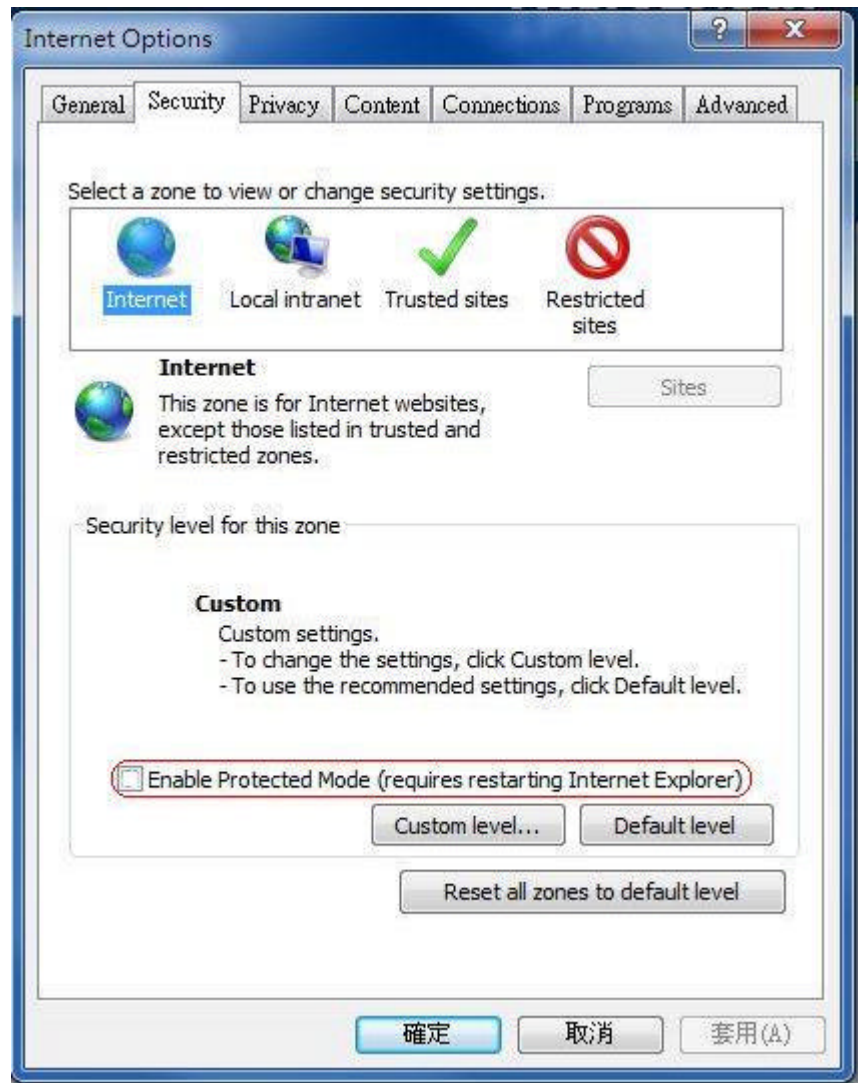
- Click Tools ➔ Internet Options ➔ Security ➔ Custom level
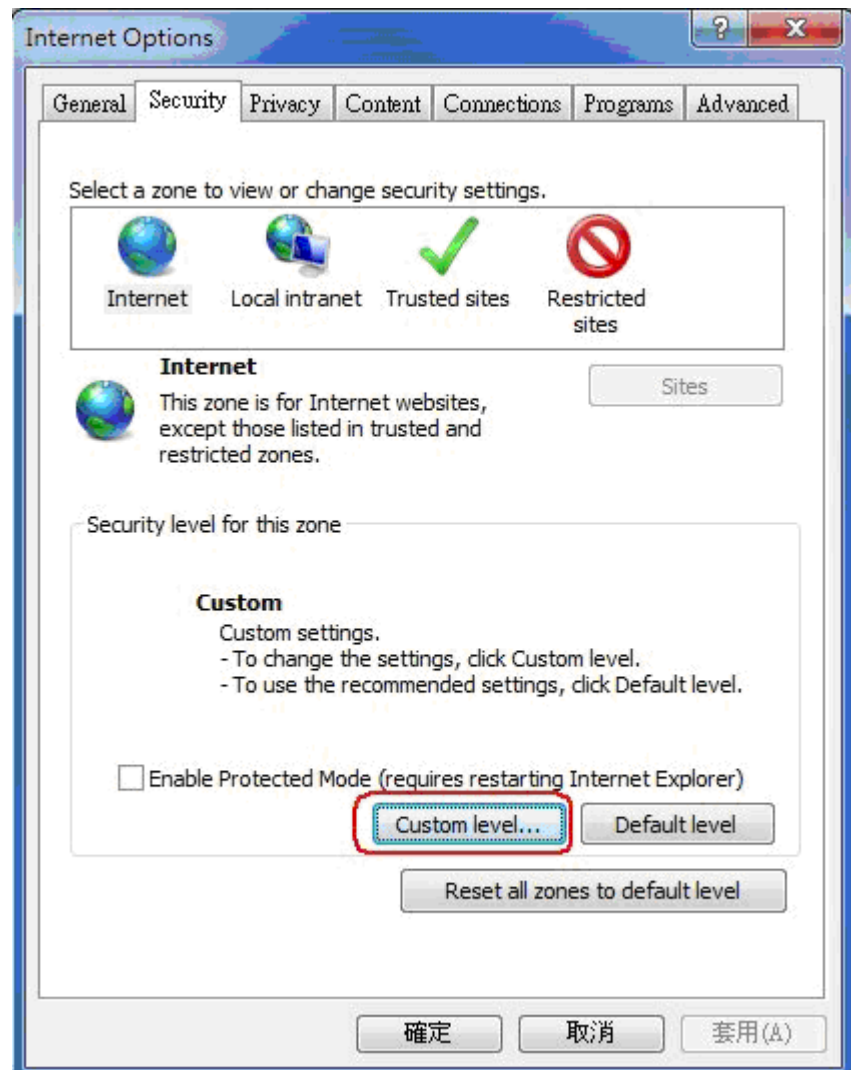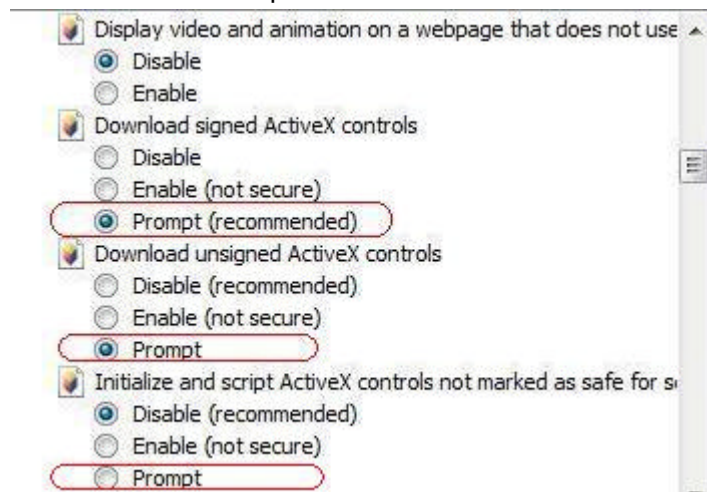
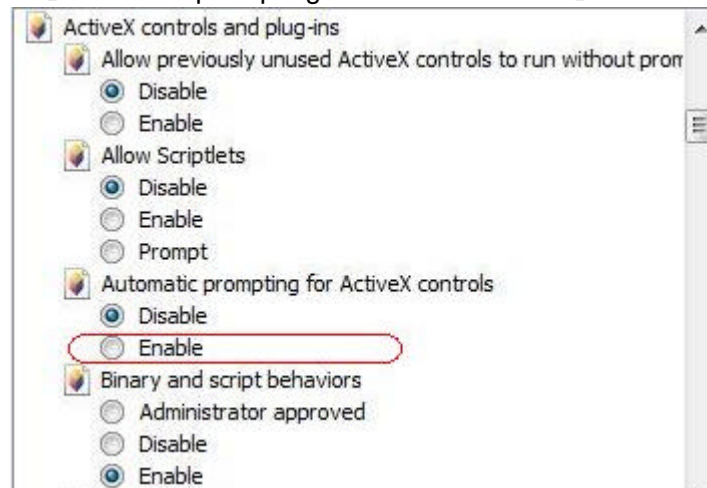- Modify the configuration of IE's security setting as follow:

Download signed ActiveX controls   ➔ Prompt (recommended)
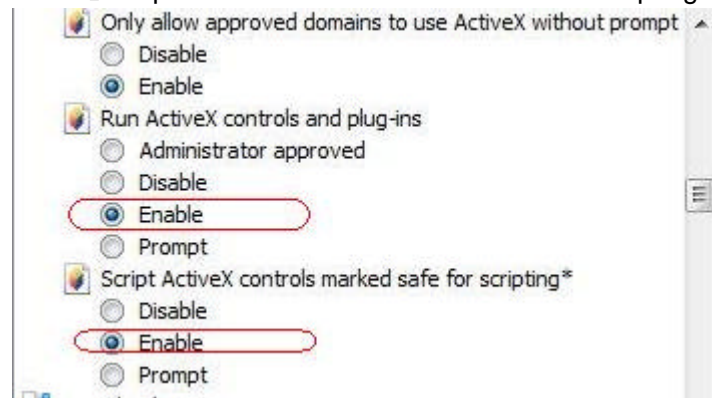Download unsigned ActiveX controls   ➔ Prompt
Initialize and script ActiveX not marked as safe for scripting   ➔ Prompt

Automatic prompting for ActiveX controls   ➔ Enable

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- Run ActiveX controls and plug-ins ➔ Enable
- Script ActiveX controls marked safe for scripting* ➔ Enable

6. Type your setting IP address into the browser.

7. Then you should be able to see the camera image screen.

4 Overview of Navigation and Controls

Live View

Live view is designed for general users to control the camera. In the left list it displays:

- Full Screen: Set Full screen
- One shot: take a picture from live view
- Audio In: get audio and output from PC. This menu is appeared by setting of Audio.
- Audio Out: send audio and output from camera. This menu is appeared by setting of Audio.
- Size 1:1
- Encoder No.1: Three streams are available for selection among H.264, MPEG-4 and MJPEG by setting of Encoder No.1.
- Encoder No.2: This menu is appeared by setting of Encoder No.2.

Figure 4-1 Live View
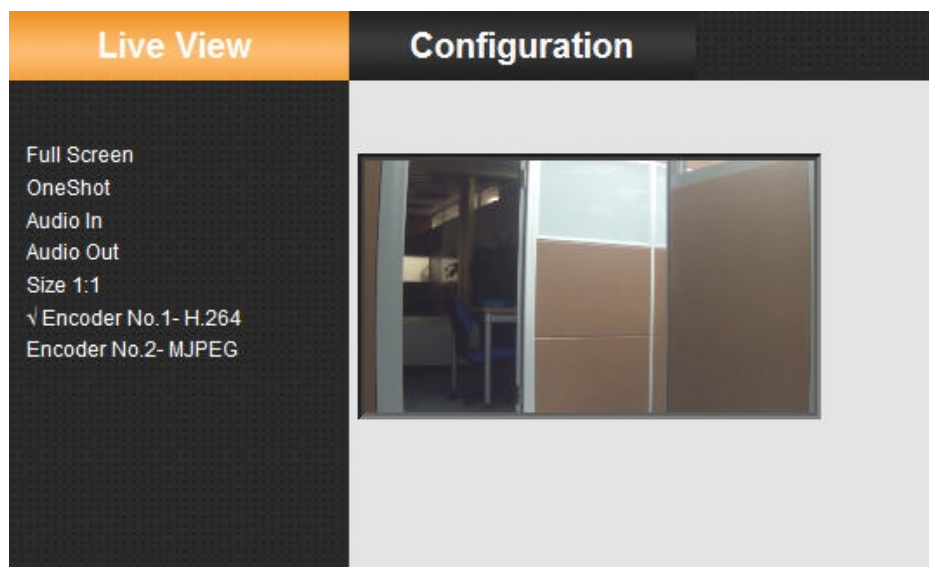
Note Keep the zoom level of IE as 100% to display normal live view.

Image Parameters

You can setup Basic Setting, Image Compression, Alarm, FTP, E-mail, SD. Recording and Audio for your network IP camera by clicking on network setting on setting menu.

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Basic

Figure 4-1 Basic

Image Color

Automatic Exposure

Figure 4-2 Automatic Exposure
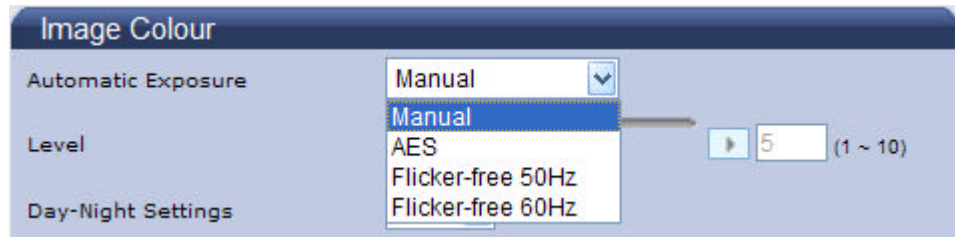
Automatic Exposure controls the light intensity of picture. There are four types for adjustment. You can select Manual, AES (Automatic Electronic Shutter), Flicker-free 50Hz and Flicker-free 60Hz for the camera depending on your application conditions. When choose the Manual, the Shutter Speed can be adjusted.

Note: This camera controls shutter speed for automatic exposure.

Level

Set Automatic Exposure target from 1 to10.   This function is working on AES mode.

Day-Night Settings

Set DAY/NIGHT function. Move the cursor to select the Auto, Color, or BW mode. If selected Color mode, you can force the camera to stay in DAY (COLOR) mode at all day. If selected BW mode, you can force the camera to stay in BW (NIGHT) mode at all day.

Figure 4-3 Day-Night Settings
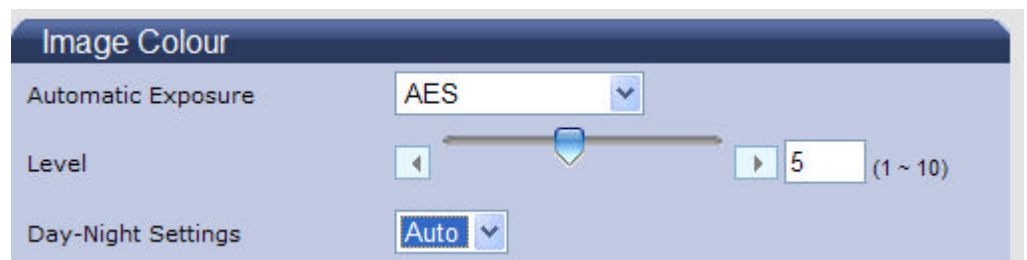
Brightness adjustment

Set picture brightness. You can adjust brightness level from 0 to 255.
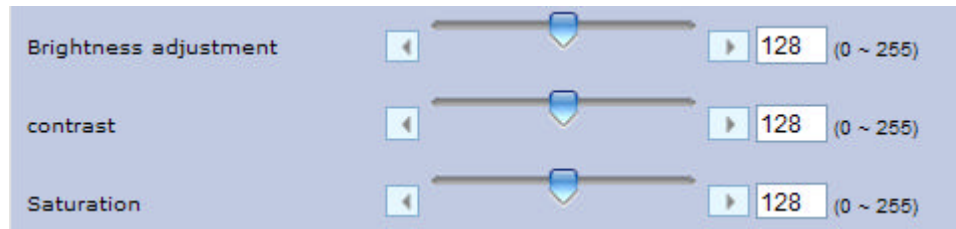
Contrast

Set picture contrast. You can adjust contrast level from 0 to 255.
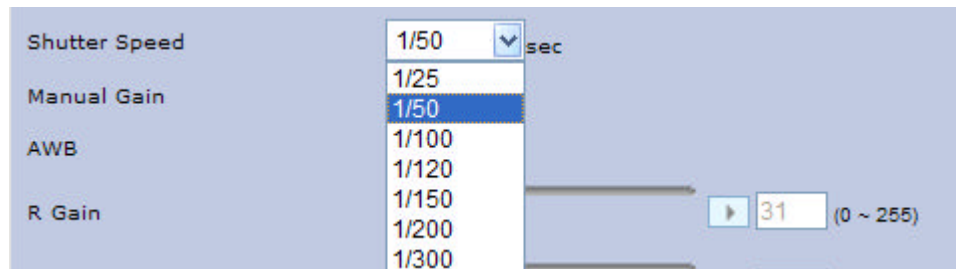
Saturation

Saturation describes the difference of a color from the gray of the same lightness. Increasing saturation deepens the colors of your images, making reds redder and blues bluer.   You can adjust picture saturation level from 0 to 255.

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Brightness adjustment	◄	▲	►	128	(0 ~ 255)
contrast	◄	▲	►	128	(0 ~ 255)
Saturation	◄	▲	►	128	(0 ~ 255)

Shutter Speed

| Shutter Speed | 1/50 ▼ sec |
	1/25
Manual Gain	1/50
	1/100
AWB	1/120
	1/150
R Gain	1/200
	1/300

Set desired Shutter Speed from 1/25s to 1/10000s. When video type is PAL,the Shutter Speed can be set at 1/25, 1/50, 1/100, 1/120, 1/150, 1/200, 1/300, 1/500, 1/750, 1/1500, 1/5000 and 1/10000s. When video type is NTSC,the Shutter Speed can be set at 1/30, 1/60, 1/100, 1/120, 1/150, 1/200, 1/300, 1/500, 1/750, 1/1500, 1/5000 and 1/10000s.

Manual Gain

Set Manual Gain value from 0 to 24dB.The increment is 3.

Manual Gain	0 ▼ dB
	24
AWB	21
	18
R Gain	15	31	(0 ~ 255)
	12

AWB

| AWB | ON ▼ |
| R Gain | ◄ | ► | 31 | (0 ~ 255) |
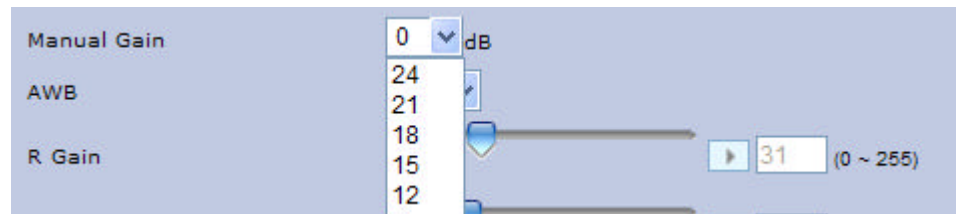
Set the white balance values to meet the environment condition for best color rendition.

"ON": The color of camera is automatically adjusted according to external lighting condition (ATW: Auto Tracking White Balance).

"OFF": Adjustable by user manually, this is useful for some specific conditions which AWB may be unaffordable to perform correctly. You can set the current R/B/D color temperature manually.

R Gain, B Gain & D Gain

Figure 4-8 R Gain, B Gain & D Gain

R Gain	◄	◆	►	31	(0 ~ 255)
B Gain	◄	◆	►	27	(0 ~ 255)
D Gain	◄	◆	►	32	(0 ~ 255)
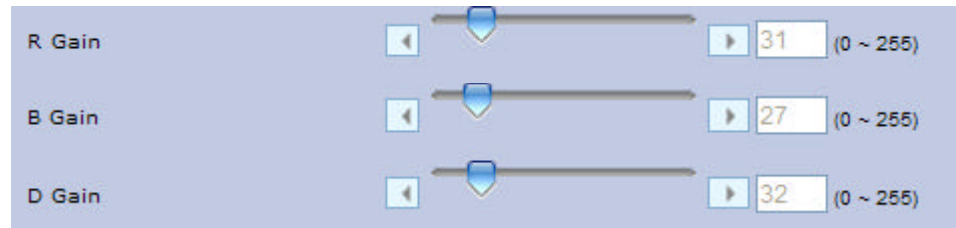
Set manual gain value of R Gain, B Gain, and D Gain from 0 to 255. This function is applied for manual lens only.

The red(R) gain is used to adjust the red color of the viewing image. It allows adjusting red gain manually according to user requirement, ranging from 0 to 255.

The blue (B) gain is used to adjust the blue color of the viewing image. It allows adjusting blue gain manually according to user requirement, ranging from 0 to 255.

The D gain is used to adjust the overall intensity of R gain and B gain. It allows adjusting blue gain manually according to user requirement, ranging from 0 to 255.

Noise Reduction

You can set up the Noise Reduction value from 0-8.

Figure 4-9 Noise Reduction

| Noise Reduction | ◄ | ◆ | ► | 2 | (0 ~ 8) |

Sharpness

Figure 4-10 Sharpness

| Sharpness | ◄ | ◆ | ► | 100 | (0 ~ 255) |

Increasing the sharpness value will sharpen the edges and small feature of camera images. You can set a Sharpness value for images from 0 to 255.

Backlight Compensation(BLC)

Figure 4-11 Backlight Compensation

| Back Light Compensation(BLC) | OFF ▼ |
| | OFF |
| Picture | ON |

Users can choose to turn this function ON or OFF.

Back Light Compensation is a function that achieves the brightness of whole area to an optimum image level. Due to the intense light coming from the back

of objects in the area expected to view, areas desired to see become dark and invisible. Therefore, this function is essential.

Picture
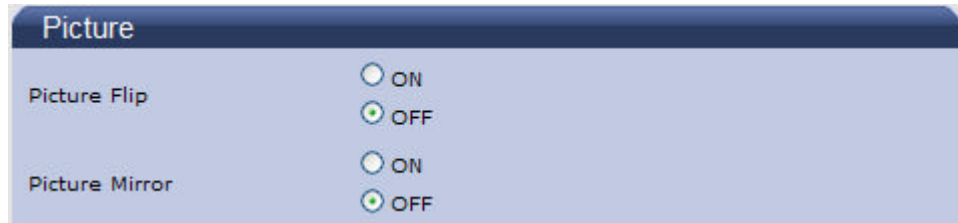
Picture Flip

Set image to be upside or down. Select "ON" or "OFF" to activate or deactivate the flip function.

Picture Mirror

Set image to be left or right. Select "ON" or "OFF" to activate or deactivate the mirror function.

Note	Please click the "Save" button to save your settings. You can also click the left button "Reset to Default" to set all the data and options as defaults.

Compression

- Select Compression.
- Configure the options as described in the table below.
- Click Save.
- Dual streams: Both Encoder No.1 & No.2 are available for selection.
- Functions of MJPEG, MPEG-4 and H.264 are effective. The video signal sent to the Web-Client from the camera has a number of settings that can be edited which affects the video as it's displayed in the Web-Client. The Compression Settings view enables you to configure settings such as Resolution, Frame Rate and Picture Quality. Besides, the network camera supports dual streams (for display and storage), should be configured separately.

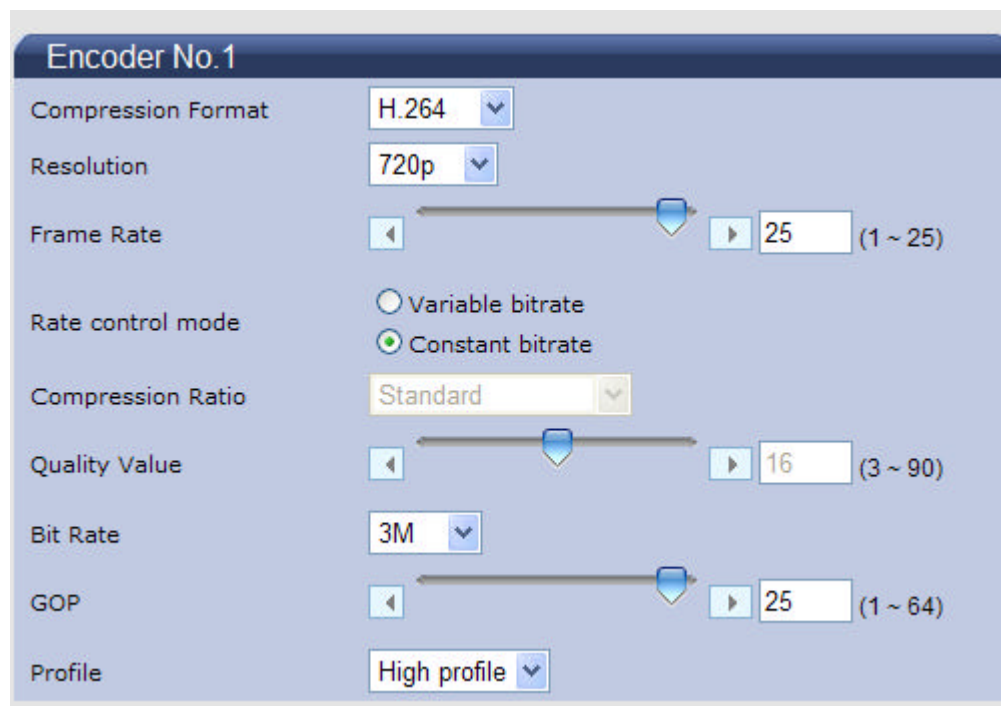20

1   The user interface of Encoder No.1 is as follows:

Table below elaborates the above figure.

Compression		
Item	**Function Choice**	**Remark**
Encoder No.1		
Compression Format	MJPEG	Set a default compression mode.
	MPEG4	
	H.264	
Resolution	1080P	1080P is the highest resolution and, QVGA is the lowest resolution. 1080p only support H.264.
	720P	
	D1	
	4CIF	
	VGA	
	CIF	
	QVGA	
Frame Rate	PAL:1—25 NTSC:1--30	The frame rate is displayed per second. PAL: H.264 single stream: 1080P, 720P,D1, 4CIF, CIF, VGA, QVGA@25fps MPEG4/MJPEG: VGA, QVGA,@25fps NTSC: H.264 single stream: 1080P, 720P,D1, 4CIF, CIF, VGA,

		QVGA @30fps MPEG4/MJPEG: VGA, QVGA, @30fps
Rate control mode	Variable bit rate	Choose the Bit Rate control selection based on user requirements.
	Constant bit rate	
Compression Ratio	Customized mode Low Mid-low Standard Mid-high High	Low: this setting produces highest image quality while the file size increases. High: this setting produces lowest image quality while the file size decreases.
Quality value	MJPEG : 3-90 ; MPEG4 & H264 : 1-31	selectable
Bit Rate	256K 512K 1M 2M 3M 4M 6M 8M	It's optional only when constant bit rate is chosen. Select the desired bit rate including 256, 512, 1M, 2M, 3M ,4M,6M and8M kb/s. When resolution is not 1080P nor 720P, 4M is the maximum.
GOP	1-64	Select the GOP (Group of pictures) number from 1 to 64.If the number is bigger, recovery of the lost frames will be more difficult; If the number is smaller, it will increase the bite rate obviously and aggravate the network load The default value is 25. GOP will be differed by fps setting. The maximum GOP is differed by Bit Rate setting.
Profile	Baseline High Profile	Selectable (H.264 only)

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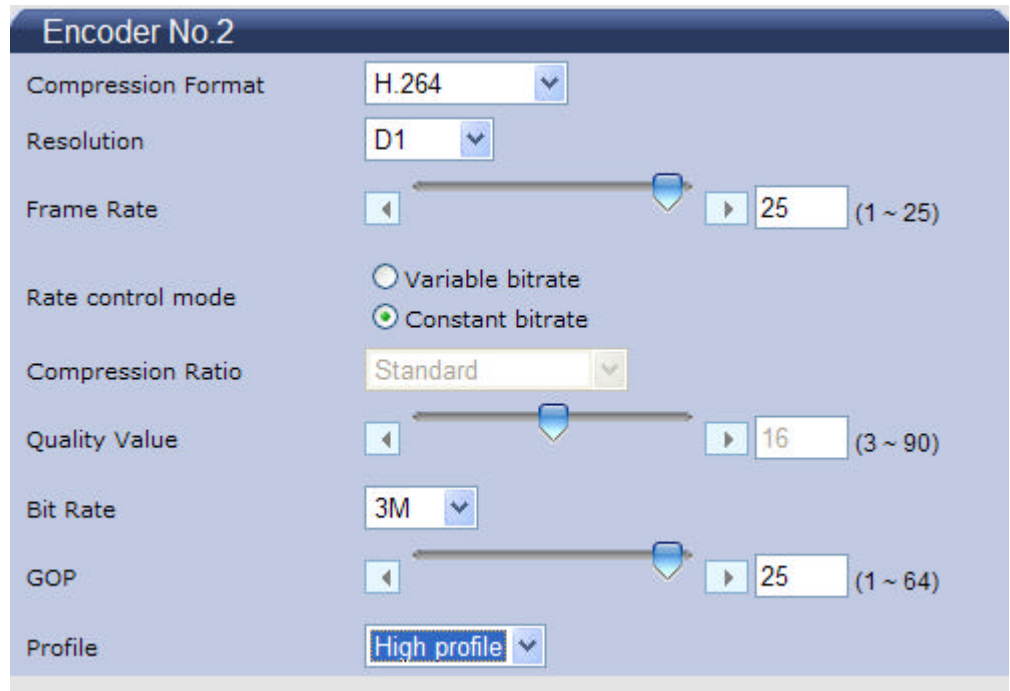**2 The user interface of Encoder No.2 is as follows:**

Figure 4-14 Encoder No.2

Table below elaborates the above figure.

Table 4-2 Compression

Compression		
Item	**Function Choice**	**Remark**
Encoder No.2		
Compression Format	MJPEG	Set H.264, MJPEG or MPEG4 as a default compression mode.
	MPEG4	
	H264	
	no streaming	
Resolution	D1/4CIF/CIF/VGA/QVGA	1) Encoder No.1: 720p; Encoder No.2: D1/QVGA. 2) Encoder No.1: VGA, QVGA; Encoder No.2: VGA, QVGA. 3) Encoder No.1: D1, 4CIF, CIF. Encoder No.2: D1, 4CIF, CIF.
Frame Rate	PAL:1--25 NTSC:1--30	The frame rate that is displayed per second.

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		PAL: H.264/MJPEG/MPEG-4: D1, QVGA@25fps NTSC: H.264/MJPEG/MPEG-4: D1, QVGA@30fps
Rate control mode	variable bit rate	Choose the Bit Rate control selection based on user requirements.
	constant bit rate	
Compression Ratio	Customized mode Low Mid-low Standard Mid-high High	Low: this setting produces highest image quality while the file size increases. High: this setting produces lowest image quality while the file size decreases.
Quality value	MJPEG : 3-90 ; MPEG4 & H264 : 1-31	selectable
Bit Rate	256K	Select the desired bit rate including 256,512,1M,2M,3M,and 4M kb/s.
	512K	
	1M	
	2M	
	3M	
	4M	
GOP	1-64	Select the GOP (Group of pictures) number from 1 to 64.If the number is bigger, recovery of the lost frames will be more difficult; If the number is smaller, it will increase the bite rate obviously and aggravate the network loading. The default value is 25. GOP will be differed by fps setting. The maximum GOP is differed by Bit Rate setting.
Profile	Baseline High Profile	Selectable (H.264 only)

Note The GOP and FPS of H.264: 1080P/720P, MPEG4: 720P can't be setting lower than 5.

Note
- If live view display abnormal after changing Camera's resolution, please adjust your computer's resolution.
- Please click the "Save" button to save your settings. You can also click the left button "Reset to Default" to set all the data and options as defaults.

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Table 1

Encoder No.1		Encoder No.2	
H264	1080P		
H264	720P	MJPEG	D1
H264	720P	MJPEG	QVGA
H264	720P	MPEG4	D1
H264	720P	MPEG4	QVGA
H264	720P	H264	D1
H264	720P	H264	QVGA
H264	D1	MJPEG	D1
H264	D1	MJPEG	4CIF
H264	D1	MJPEG	CIF
H264	D1	MPEG4	D1
H264	D1	MPEG4	4CIF
H264	D1	MPEG4	CIF
H264	D1	H264	D1
H264	D1	H264	4CIF
H264	D1	H264	CIF
H264	4CIF	MJPEG	D1
H264	4CIF	MJPEG	4CIF
H264	4CIF	MJPEG	CIF
H264	4CIF	MPEG4	D1
H264	4CIF	MPEG4	4CIF
H264	4CIF	MPEG4	CIF
H264	4CIF	H264	D1
H264	4CIF	H264	4CIF
H264	4CIF	H264	CIF
H264	CIF	MJPEG	D1
H264	CIF	MJPEG	4CIF
H264	CIF	MJPEG	CIF
H264	CIF	MPEG4	D1
H264	CIF	MPEG4	4CIF
H264	CIF	MPEG4	CIF
H264	CIF	H264	D1
H264	CIF	H264	4CIF
H264	CIF	H264	CIF
H264	VGA	MJPEG	VGA
H264	VGA	MJPEG	QVGA
H264	VGA	MPEG4	VGA
H264	VGA	MPEG4	QVGA
H264	VGA	H264	VGA
H264	VGA	H264	QVGA
H264	QVGA	MJPEG	VGA
H264	QVGA	MJPEG	QVGA
H264	QVGA	MPEG4	VGA
H264	QVGA	MPEG4	QVGA
H264	QVGA	H264	VGA
H264	QVGA	H264	QVGA

Table 2

Encoder No.1		Encoder No.2	
MPEG4	720P	MJPEG	D1
MPEG4	720P	MJPEG	QVGA
MPEG4	720P	H264	D1
MPEG4	720P	H264	QVGA
MPEG4	D1	MJPEG	D1
MPEG4	D1	MJPEG	4CIF
MPEG4	D1	MJPEG	CIF
MPEG4	D1	MPEG4	D1
MPEG4	D1	MPEG4	4CIF
MPEG4	D1	MPEG4	CIF
MPEG4	D1	H264	D1
MPEG4	D1	H264	4CIF
MPEG4	D1	H264	CIF
MPEG4	4CIF	MJPEG	D1
MPEG4	4CIF	MJPEG	4CIF
MPEG4	4CIF	MJPEG	CIF
MPEG4	4CIF	MPEG4	D1
MPEG4	4CIF	MPEG4	4CIF
MPEG4	4CIF	MPEG4	CIF
MPEG4	4CIF	H264	D1
MPEG4	4CIF	H264	4CIF
MPEG4	4CIF	H264	CIF
MPEG4	CIF	MJPEG	D1
MPEG4	CIF	MJPEG	4CIF
MPEG4	CIF	MJPEG	CIF
MPEG4	CIF	MPEG4	D1
MPEG4	CIF	MPEG4	4CIF
MPEG4	CIF	MPEG4	CIF
MPEG4	CIF	H264	D1
MPEG4	CIF	H264	4CIF
MPEG4	CIF	H264	CIF
MPEG4	VGA	MJPEG	VGA
MPEG4	VGA	MJPEG	QVGA
MPEG4	VGA	MPEG4	VGA
MPEG4	VGA	MPEG4	QVGA
MPEG4	VGA	H264	VGA
MPEG4	VGA	H264	QVGA
MPEG4	QVGA	MJPEG	VGA
MPEG4	QVGA	MJPEG	QVGA
MPEG4	QVGA	MPEG4	VGA
MPEG4	QVGA	MPEG4	QVGA
MPEG4	QVGA	H264	VGA
MPEG4	QVGA	H264	QVGA

Table 3

Encoder No.1		Encoder No.2	
MJPEG	720P	H264	D1
MJPEG	720P	H264	QVGA
MJPEG	D1	MPEG4	D1
MJPEG	D1	MPEG4	4CIF
MJPEG	D1	MPEG4	CIF
MJPEG	D1	H264	D1
MJPEG	D1	H264	4CIF
MJPEG	D1	H264	CIF
MJPEG	4CIF	MPEG4	D1
MJPEG	4CIF	MPEG4	4CIF
MJPEG	4CIF	MPEG4	CIF
MJPEG	4CIF	H264	D1
MJPEG	4CIF	H264	4CIF
MJPEG	4CIF	H264	CIF
MJPEG	CIF	MPEG4	D1
MJPEG	CIF	MPEG4	4CIF
MJPEG	CIF	MPEG4	CIF
MJPEG	CIF	H264	D1
MJPEG	CIF	H264	4CIF
MJPEG	CIF	H264	CIF
MJPEG	VGA	MPEG4	VGA
MJPEG	VGA	MPEG4	QVGA
MJPEG	VGA	H264	VGA
MJPEG	VGA	H264	QVGA
MJPEG	QVGA	MPEG4	VGA
MJPEG	QVGA	MPEG4	QVGA
MJPEG	QVGA	H264	VGA
MJPEG	QVGA	H264	QVGA

Mask Zone

- Enable button "ON", then click "Set Mask Zone" to start mask setting.
- Use mouse to drag a mask rectangle on the screen, click "OK" to complete the selection.
- Click "Save" to enable the mask setting.

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Figure 4-15 Mask Zone
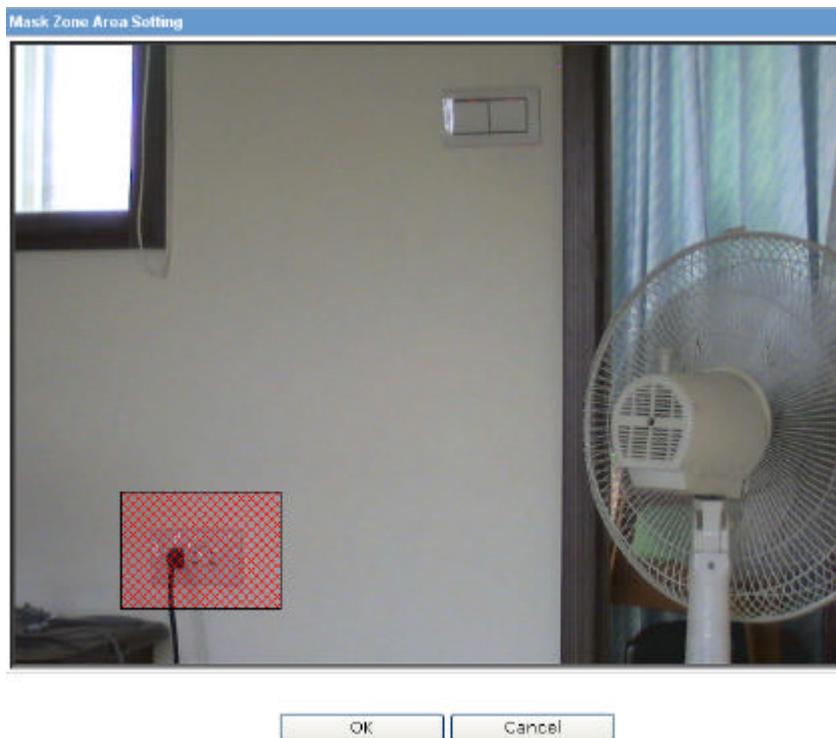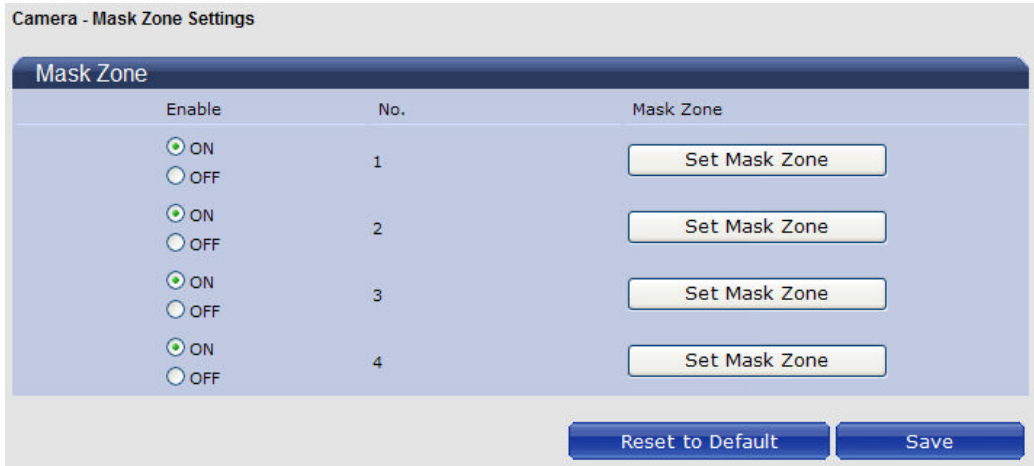
Note:

Max 4 masks can be set on the screen.

The maximum size of a mask is 15% of the screen. *.*

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Alarm

External Digital Input 1

When alarm input is connected, the camera triggers an alarm only when the normal state (open or closed) changes. Connect external devices such as sirens or flashing lights to the alarm output connector to signal users of the camera that an alarm is activated.

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1　　Alarm Input
Set the Alarm Input as "Alarm Input" or "OFF".
2　Input Type
Choose Normally Open or Normally Close
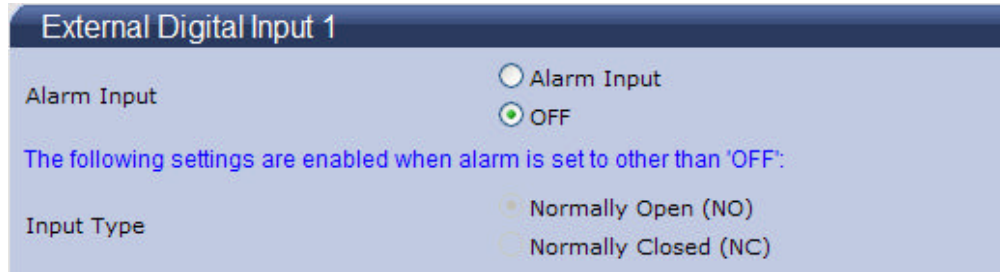
Motion Detection Settings

This function is designed to record video when the camera detects a motion.

Figure 4-17 Motion Detection Settings
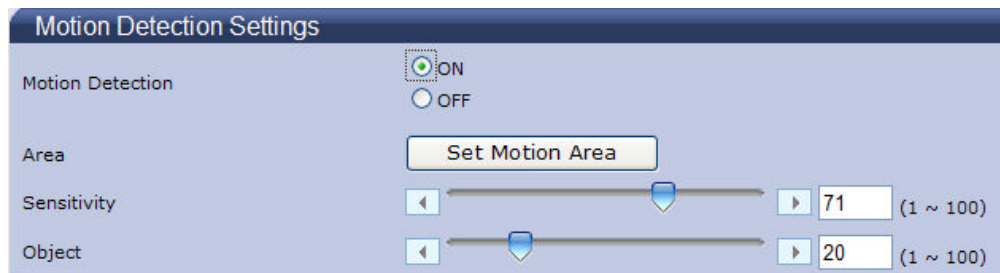
- Motion Detection ： Users can choose to use this function or not by selecting "ON" or "OFF"

- Area： Set the area you want to trigger motion detection when there is something moving in your selected area.

- Sensitivity： Users can choose different levels of sensitivity which are 1~100.

- Object: Users can choose different levels of Object which are 1~100.

Alarm Output

- Alarm Mode: Set the Alarm Mode as Event. By alarm input or motion detect, alarm output works.
- Output Hold Time: Users can choose the hold time of alarm which can be 0s, 5s, 10s, 15s and 30s.

Figure 4-18 Alarm Output
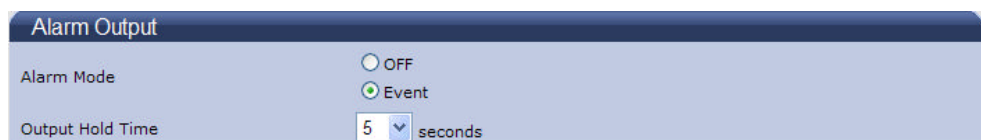
Figure 4-19 Output Hold Time

Note	Please click the "Save" button to save your settings. You can also click the left button "Reset to Default" to set all the data and options as defaults.

SD Recording

Confined SD recording priority: alarm > motion > network loss.

This function is designed for storing video on the SD card. Insert SD memory card before power on.   One stream of camera must be selected MPEG4 or H.264. Otherwise, SD recording function will be set "OFF" automatically.

Figure 4-20 SD Recording

Users can choose recording conditions between Event and Network Loss. When users select "Event", 2 more selections will be effective.

SD Free Capacity

It shows the free capacity of the SD card.

- H.264 is the preferred source for recording.

- If both Encoder No.1 and Encoder No.2 are H.264, the stream will choose the Encoder No.2 as recording source.

- SD recording can be enabled only when user choose the following 5 combinations.

Note

NO.	Encoder No.1	Encoder No.2
1	H.264 1080p	No streaming
2	H.264 720p	H.264 D1
3	H.264 720p	H.264 QVGA
4	H.264 720p	No streaming
5	MPEG4 720p	No streaming

Notes of SD memory card:

FAT32 format is available.

After stopping record, eject SD memory card.

Keep power during SD recording.

Cheap SD memory cards are not reliable. Expensive SD memory cards are recommended for data safety.

E-mail Notification

You can receive alarm and motion information by setting your E-mail account.

Conditions

Figure 4-21 Conditions
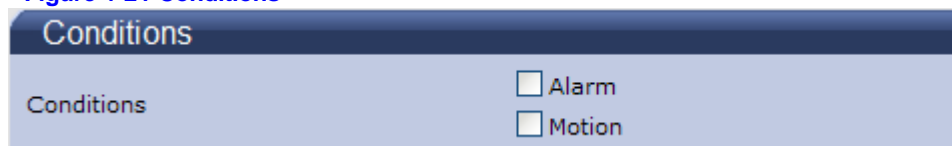
You can choose the form of the E-mail Notification of Alarm and Motion, but if choosing "Motion", should set Motion Detection as "on" in Alarm settings. And if choosing "Alarm", should set Alarm Input as "Alarm Input" in Alarm settings. See the picture below.
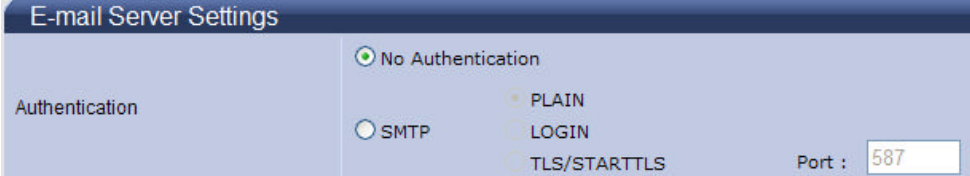
Figure 4-22 Motion detection Settings

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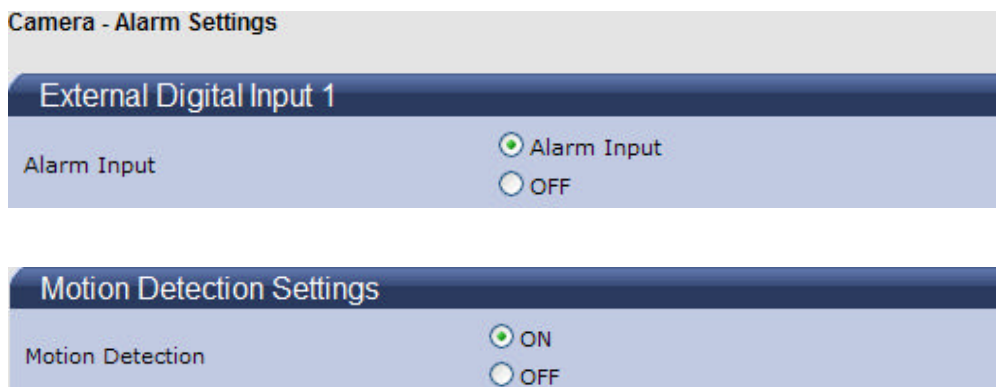
Email Server Settings

Authentication Settings

Select an authentication type.

1. No Authentication: no restrict rule

2. SMTP: Simple Mail Transfer Protocol (SMTP) is an Internet standard for electronic mail (E-mail) transmission across Internet Protocol (IP) networks.

3. PLAIN: PLAIN is the name of a registered SASL authentication mechanism, which serves as a parameter to the AUTH command. The PLAIN authentication mechanism is described in RFC 2595. PLAIN is the least secure of all the SASL authentication mechanisms, since the password is sent unencrypted across the network.

4. LOGIN: The LOGIN mechanism is supported by Microsoft's Outlook Express, as well as by some other clients.

5. TLS/START TLS: when select this item you can change the data beside it

E-mail Server (SMTP): Enter your outgoing mail server (SMTP).

E-mail User ID: Input your E-mail account ID number.

Password: Input your E-mail account password.

Password (Confirm): Confirm your E-mail password.

Administrator E-mail Address: Input the E-mail address which you want the email to be sent to.

Press "save & test E-mail" button to save your setting and to test your E-mail setting.

Mail to

This function is designed to send multiple users when the alarm in or motion detection function is set.

Figure 4-26 Mail to

If "Send to Administrator" is set to "ON" when a motion happens, the E-mail server will always send a mail to the administrator. And E-mails can also be sent to multiple users when a motion occurs.

Note	Please click the "Save" button to save your settings. You can also click the left button "Reset to Default" to set all the data and options as defaults.

Audio

You can set up your audio setting by enabling audio input and output.

Figure 4-27 Audio Settings

Audio Input

• Audio Input: Set to "ON" when receiving audio from a microphone connected to the camera.
• Audio Input Level: Select among High, Mid and Low.

Figure 4-28 Audio Input

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Audio Output

- Audio Output: Set to "ON" when delivering audio to a speaker connected to the camera,
- Audio Output Level: Select among High, Mid and Low

Note: Audio Input/Output can have some noise and delay.

Note	Please click the "Save" button to save your settings. You can also click the left button "Reset to Default" to set all the data and options as defaults.

Network Settings

Basic

Basic

Network

- IP Address: Input your IP address here when you select "Manual".
- Subnet Mask: Please use default number: 255.255.255.0. If the subnet mask is not properly configured, the camera may not be able to communicate with other devices on the network.
- Default Gateway: leave it blank as default setting. It is unnecessary to enter Default Gateway if it is not used. Ask your Network Administrator for Default Gateway information.
- Primary DNS: (same as above)
- Secondary DNS: (same as above)

Live Stream

- Protocol: This is used by Live View.
          Users can select TCP or Http protocol.

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Port

- Port: This is Http port number of WEB server in the camera. When Http is selected for Live Stream Protocol, Live View also uses the port number. We recommend using the default port; if you need to change the default port, please contact your system administrator. Options: 1025 to 65535 (80 is the default). After changing the port number, enter URI with the port number to IE. (Example: 192.168.0.2:8080)
- Http: This is Http port number.   We recommend using the default Http if you need to change the default Http, please contact your system administrator. Options: 1025 to 65535 (443 is the default).

Port		
Port	80	(Input 80 or a value between 1025 and 65535)
Https	443	(Input 443 or a value between 1025 and 65535)

FTP Server

In this page, you can activate a FTP Server to visit SD card for SD recording result.

- Click "ON" to activate the FTP function. Then you should follow the following procedures to set up related settings. Or "OFF" to disable the FTP function and you can skip the following procedures.
- Enter a login ID if you activate the FTP function.
- Enter a password associated with a login ID.
- Re-enter the password to confirm it.
- Determine the number of maximum connections by selecting a number from the drop-down list in the Max Simultaneous Connections field. Note: This parameter is the max of FTP Client connections, not the max of IE Window's connections.
- Enter ftp://<Login ID>:<Password>@<ip-address> in Windows Explorer, then you will find the SD recording result.

    The original setting is ftp://admin:jvc@192.168.0.2 When you're visiting the SD recording files, date and time of record refers to the folder's and file's name.

Figure 4-31 FTP Sever Settings

FTP Server Settings	
FTP Function	○ ON ⊙ OFF
Login ID	admin
Password	•••
Password (Confirm)	•••
Max. Simultaneous Connections	10 ▾

Reset to Default   Save

Note	Please click the "Save" button to save your settings. You can also click the left button "Reset to Default" to set all the data and options as defaults.

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RTSP

Authentication

You should enter the Login ID, Password and Password (confirm) if select "ON".

Figure 4-32 Authentication

Authentication	
Authentication	○ ON ⊙ OFF
Login ID	admin
Password	•••
Password (Confirm)	•••

Multicast Address

You could choose the value from 224.0.0.23 to 239.255.255.254.

Figure 4-33 Multicast Address

Multicast Address		
Multicast Address	231.0.0.222	(224.0.0.23 ~ 239.255.255.254)

Encoder No.1 & Encoder No.2

Figure 4-34 Encoder No.1 & Encoder No.2

Encoder No.1		
Transfer Type	○ Multicast ⊙ Unicast	
RTSP Port	554	(1 - 65535)
Video Port	5000	(1 - 65535)
Audio Port	5002	(1 - 65535)
Encoder No.2		
Transfer Type	○ Multicast ⊙ Unicast	
RTSP Port	555	(1 - 65535)
Video Port	5010	(1 - 65535)
Audio Port	5012	(1 - 65535)

Please choose desired options and value and remember to click "save" button to save all your settings.

Note: RTSP URIs for Encoder No.1 & Encoder No.2 are:

rtsp://(ip address):(port1)/livestream

rtsp://(ip address):(port2)/livestream

Https

Figure 4-35 Certificate File Upload

Users can upload certificate here: Click "Browse", it will pop out a window then you can choose the file that you want to upload.

Admin Function

Administrator

Press the item-Administrator Function on setting menu. You can setup system password.

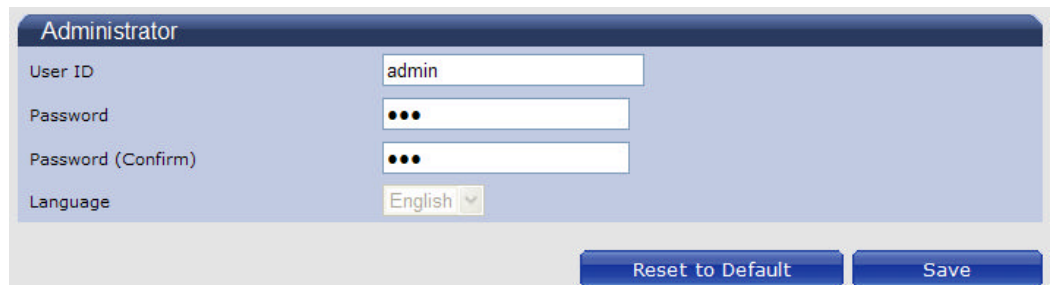The default setting for system Admin ID and password is:

User ID: **admin**

Password: **jvc**

Language: English

You can enter your own Admin ID and password at this field.

Figure 4-36 Administrator

Note	Please click the "Save" button to save your settings. You can also click the left button "Reset to Default" to set all the data and options as defaults.

User List

Besides administrator, guests can access the camera under authorization from system administrator by ID and password controller. However, User1~5 are allowed to review the live picture only. Without authorization, any operation will be forbidden.

- The default guest's login name and password are "**user**" and "**jvc**".
- Enter a guest's User ID in the User ID field.
- Enter a password associated with a guest's User ID
- Re-enter the password again to confirm it.

Finally, click Save to save the settings.

Figure 4-38 Reset

Date/Time

Set Display and Synchronization Mode

Figure 4-39 Date and Time

The user can choose Synchronization Mode here from three different types.

Set Date and Time Manually

Set up the camera's date and time in the Set Date and Time Manually field.

Figure 4-40 Set Date and Time Manually

Set Date and Time by NTP Server

1. Time Zone: Select the time zone where your camera is located.
2. NTP Server: Select NTP in the Synchronization Mode. If "NTP" is selected, the date and time will be synchronized by the NTP server. Note: Please make sure disable SD recording function before you enable NTP synchronization mode.
3. Time Adjustment Period :Users can choose time adjustment intervals
4. Finally click "Save &Test"

Figure 4-41 Set Date and Time By NTP Server

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Daylight

Daylight Saving

Select "ON" to activate the daylight-saving function if you are in a daylight saving time zone (effective for NTP mode only), and then choose the starting time ,ending time and time adjustment.

Note	Please click the "Save" button to save your settings. You can also click the left button "Reset to Default" to set all the data and options as defaults.

Update

You can update system firmware if the update file is available. It is the customer's responsibility to update firmware. All camera motions will shut down during firmware update. Close any other screens before starting a firmware update. Never disconnect power and LAN cable during the firmware update process. Rebooting the camera after firmware update may take approx. 15 minutes. After you finish FW update, please reboot your computer first time. Be careful, power can't be shut down when you're updating firmware. Otherwise, it will cause FW update failure and you have to call back to maintenance.
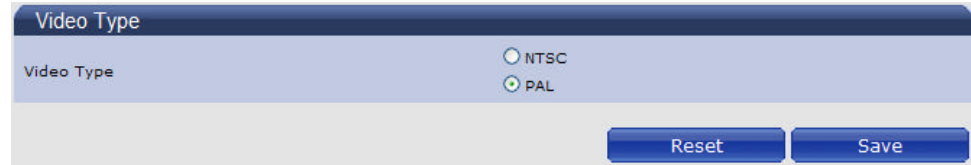
Configuration

Video Type

Users can select "NTSC" or "PAL" according requirement.

Flicker by fluorescent light can be reduced by selecting PAL mode if the public power is 50Hz, or NTSC mode if the power is 60Hz.

Figure 4-44 Video Type

Note: Analog video output is not available.

Import Configuration Settings

This function is designed to upload configuration setting from the client computer to network cameras.
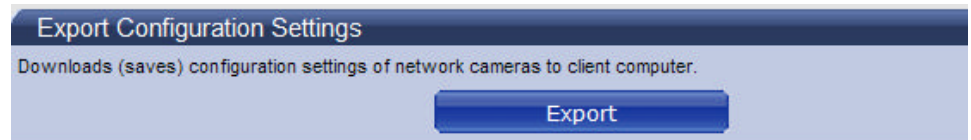
Figure 4-45 Import Configuration Settings

Export Configuration Settings

This function is designed to export configuration settings to the client computer.
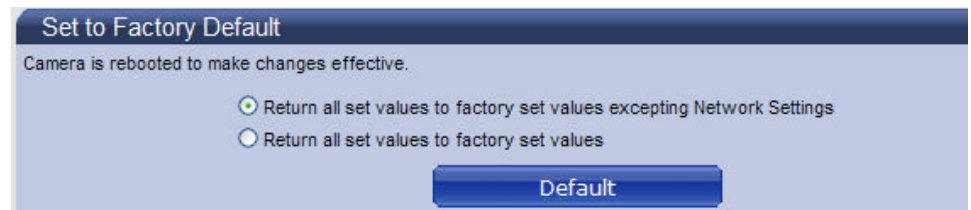
Figure 4-46 Export Configuration Settings

Set to Factory Default

This function is designed to reset all configuration settings into factory default.

Figure 4-47 Set to Factory Default

Network Camera Reboot

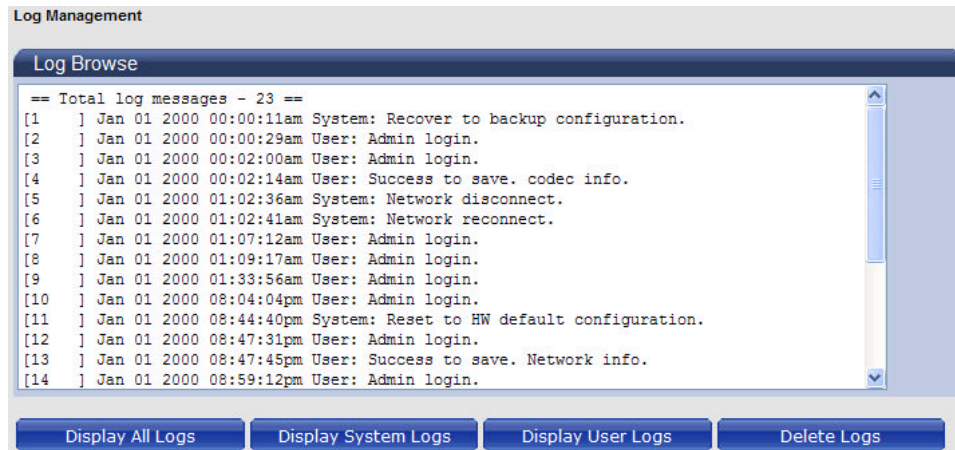This function is designed to reboot the camera.

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Figure 4-48 Network Camera Reboot

Event Log

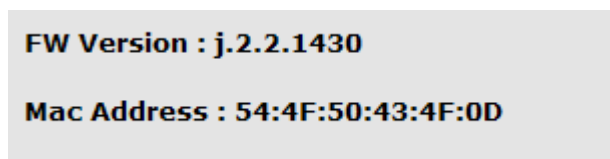Click the buttons to display the desired logbooks or to delete all logs.

Figure 4-49 Log Browse

Information

FW version and MAC address will be shown.

Figure 4-50 FW version and MAC address

FW Version : j.2.2.1430

Mac Address : 54:4F:50:43:4F:0D

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Miscellaneous

Click the button. This camera contains free open source code.

Figure 4-51 Miscellaneous

5 Specifications

Operational Specifications	
Image device	1/2.7-type Mega-pixel CMOS sensor
Sensitivity	Color:0.6 lx, B/W: 0.6 lx (50% F1.2)
Day/Night	Easy D/N
Auto Gain Control	Off/On, selectable
White Balance	ATW (2800K~ 8500K) and Manual
Electric Shutter	PAL:1/25~1/10000 sec NTSC: 1/30~1/10000 sec
Noise Reduction	Yes
Motion detection	Yes
Lens Mount	1/3-type CS mount (with easy back focus adjustment)
BLC	Yes
Audio	Line in/out
Alarm	1 in / 1 out (Alarm out spec: 0.5A / AC 120V max)
IP Specifications	
Video Compression	H.264 & MPEG4 & MJPEG
Video Streaming	Real time stream: 1080P H.264 or 720P H.264+D1 or D1+D1 Independent controllable frame rate and bandwidth. Constant or variable bitrate control
Resolution	NTSC: 1080P(1920 x 1080), 720P(1280 x 720), D1(720 x 480), 4CIF(704 x 480), VGA(640 x 480), CIF(352 x 240), QVGA(320 x 240) PAL: 1080P(1920 x 1080), 720P(1280 x 720), D1(720 x 576), 4CIF(704 x 576), VGA(640 x 480), CIF(352 x 288), QVGA(320 x 240)
Image Frame Rate	PAL: Up to 25fps NTSC: Up to 30fps

Security	**Multiple user access levels with password protection**
Users	**1 Administrator, 5 users**
Video Access from Web Browser	**Full control of all camera settings available to administrator**
Minimum_Web Browsing Requirements	**Windows XP or Windows 7 as OS,** **Internet Explorer Version 6.0-8.0,** **CPU: Intel Pentium IV X2 2.4 GHz or equivalent AMD,** **Memory: 1G or above**
Supported Protocols	**IPv4, Http, TCP, RTSP, RTP, ICMP, UDP, IGMP, RTCP, FTP, DNS, DHCP, ARP**
Network interface	**RJ-45,100BASE-TX/10BASE-T,** **FULL/HALF/Auto negotiation**
Surveillance Protocol	**ONVIF Compatible (pass compliance test tool)**
Onboard Storage	**SDHC (suggest class 10)**
Electrical	
Power Supply	**PoE IEEE 802.3af Class 0, DC12V, AC24V**
Power Consumption	**PoE 0.13A, DC12V 550mA**
Mechanical	
Dimension	**56mm(H) x 68mm(W) x 125mm(L)**
Weight	**390g**
Connectors	**Power Input: Spring terminal** **Network: RJ45 connector** **Audio In/out: removable terminal block** **Alarm In/out: removable terminal block**
Environmental	
Operating Temperature	**-10°C to 50°C**
Operating Humidity	**0% to 90%**
Storage Temperature	**-20°C to 60°C**

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