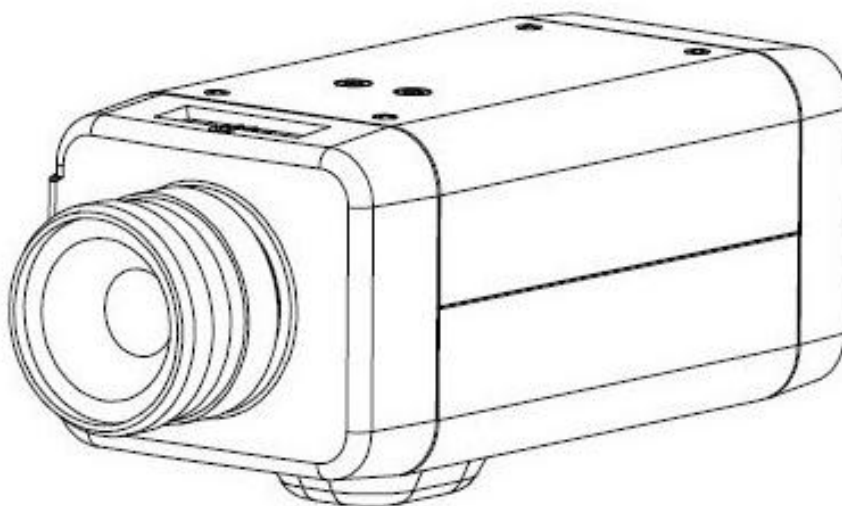




HD IP CAMERA

VN-T16U

INSTRUCTIONS



Thank you for purchasing this product.
Before operating this unit, please read the "INSTRUCTIONS", "QUICK GUIDE" and "SAFETY PRECAUTIONS" carefully to ensure the best possible performance.




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- Product names of other companies described in this manual are trademarks or registered trademarks of the respective companies. Symbols such as TM, ® and © are omitted in this manual.
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Cautions and Warnings

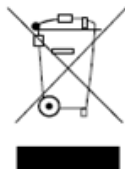
	CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN		THIS SYMBOL INDICATES THAT DANGEROUS VOLTAGE CONSTITUTING A RISK OF ELECTRIC SHOCK IS PRESENT WITHIN THE UNIT.
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE THE COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.			THIS SYMBOL INDICATES THAT IMPORTANT OPERATING AND MAINTENANCE INSTRUCTIONS ACCOMPANY THIS UNIT.

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.

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.

AVC and MPEG-4 Visual Patent Portfolio License

AVC Patent Portfolio License

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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

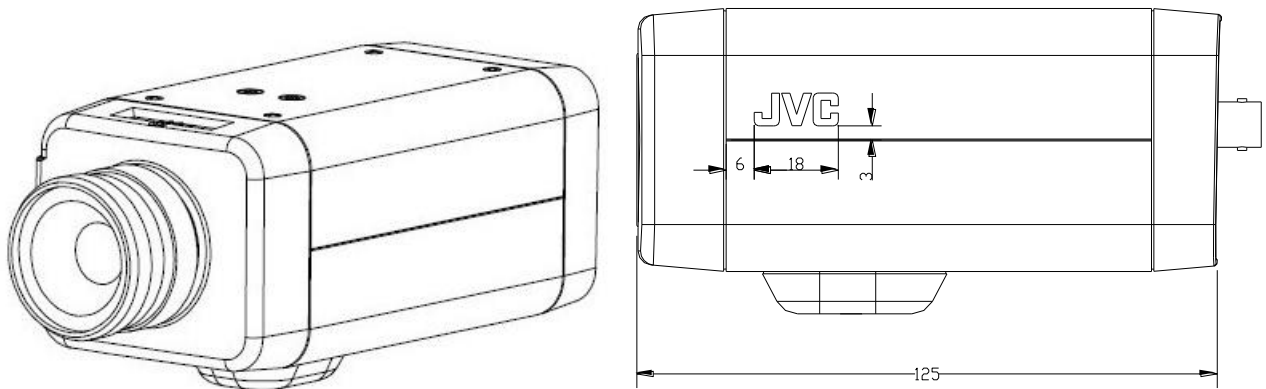
This document contains the following chapters:

- [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.

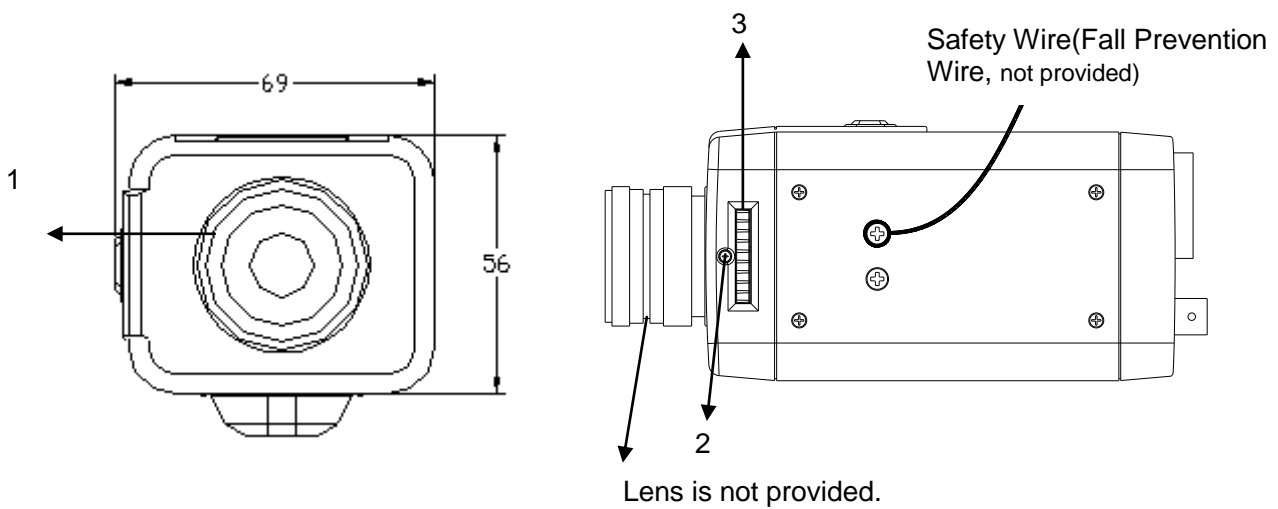
2 Product Overview

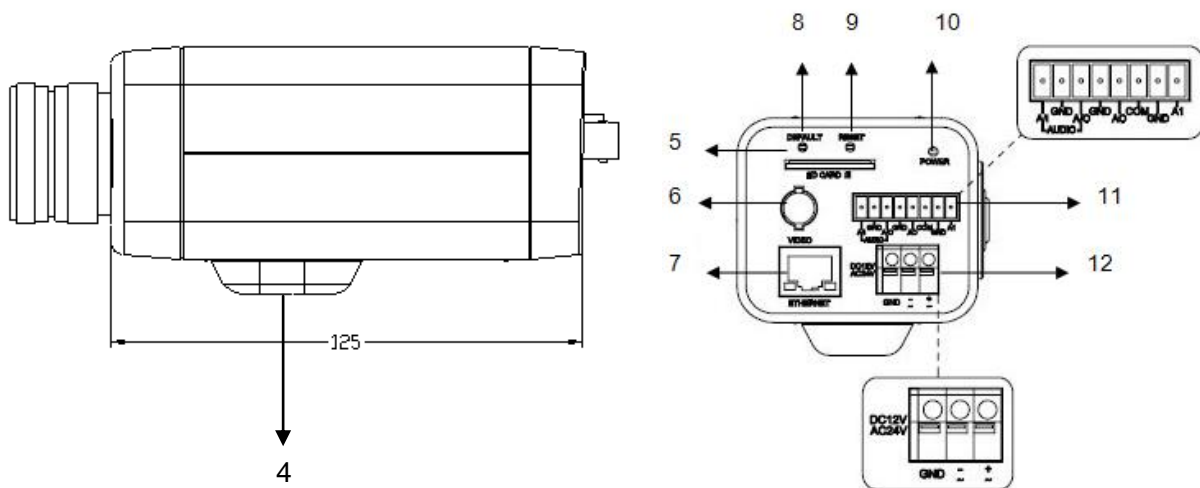
Camera Parts and Definitions

Camera Overview



Camera Parts and Definitions





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	

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

Operating Precautions

◆ **Do not install the camera in following places.**

- In a place exposed to rain or moisture.
- In a place with vapor or oil, for example in a kitchen.
- When the ambient temperature rises above or falls below the acceptable range (from -10°C to 50 °C).
- In a place at which corrosive gases are emitted.
- Near a source of radiation, X-rays, strong radio waves or magnetism.
- In a place subject to vibration.
- In a place with excessive dirt.

◆ **Maintenance**

Wipe the camera with a dry, soft cloth to remove any dirt. Do not use benzene or thinner to wipe the camera. Doing so may melt the surface or cause it to fog. For tough stains, wipe with a neutral detergent diluted with water, followed by wiping with a dry cloth.

◆ **Power supply**

Please make sure the power source is DC12V / AC24V / PoE. Only connect the camera to this power system.

When using AC24V power supply, do not connect the AC24V cable to commercial power supply. If it is connected by mistake, the internal circuit may be damaged. Do not use the camera and make sure to send it to the nearest JVC dealer for inspection.

◆ **Real time clock**

The real time clock of the camera will be initialized by power off over 3 days. In such case, please set date/time manually, or set NTP server. If the real time clock is initialized, event log, data in SD card, and mail sent by the camera do not show correct time.

◆ **SD card**

SD card is fragile and not reliable for long term use. Our company will not be liable for damages resulting from the use of SD card. Frequent back up of data is recommended. Data of SD card will be lost by troubles below.

- Electrical or Mechanical Shock to SD card.
- Power off or ejecting of SD card during recording.
- Rewriting times exceeds upper limit of the SD card (The upper limit depends on grade of the SD card.)

◆ **Energy Conservation**

When the camera is not in use for a long time, turn off the power for safety and energy conservation reasons.

◆ **Copyright Protection**

- With the exception of the user being the copyright holder or when permission such as for duplication has been granted by the copyright holder, permission is required in principle for the duplication, modification, or transmission of copyrighted material.
- Unauthorized duplication, modification, or transmission of copyrighted material may constitute a copyright infringement, and the user may be liable to compensate for any damages. When using copyrighted material, be sure to check the license agreement of the copyrighted material thoroughly.
- When rights or rights holders are involved with regard to the targeted duplicating subject, permission may be required for shooting or using (processing) it. Be sure to check the licensing conditions thoroughly.

◆ **Disclaimer**

We will not be responsible for any inconveniences or disturbances caused in the event of privacy invasion as a result of camera footages of this product.

◆ **Others**

Because the camera controls auto exposure by shutter speed, flicker can be shown by fluorescent light. To reduce the flicker, please select PAL mode if the power is 50Hz, or NTSC mode if the power is 60Hz. (Refer to INSTRUCTIONS “4 Overview of Navigation and Controls” - “Video Type”).

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.

Please check the items in accordance with the list.

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.) The thickness of the wire's end of camera side should be less than 1 mm.

Caution

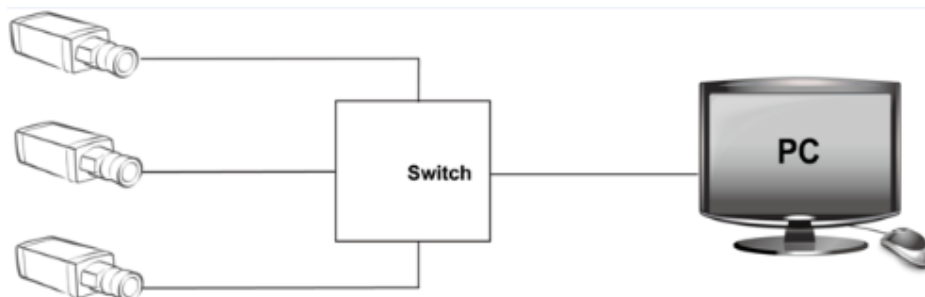
Must be isolated camera and the wall/ceiling which are connected by a Safety Wire (Fall Prevention Wire).

Network Camera Diagram

Connection type 1:



Connection type 2:



Hardware and Software Requirements

Computer

Windows XP or Windows 7 as OS

Internet Explorer Version 6.0-9.0

CPU: Intel Pentium 4 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

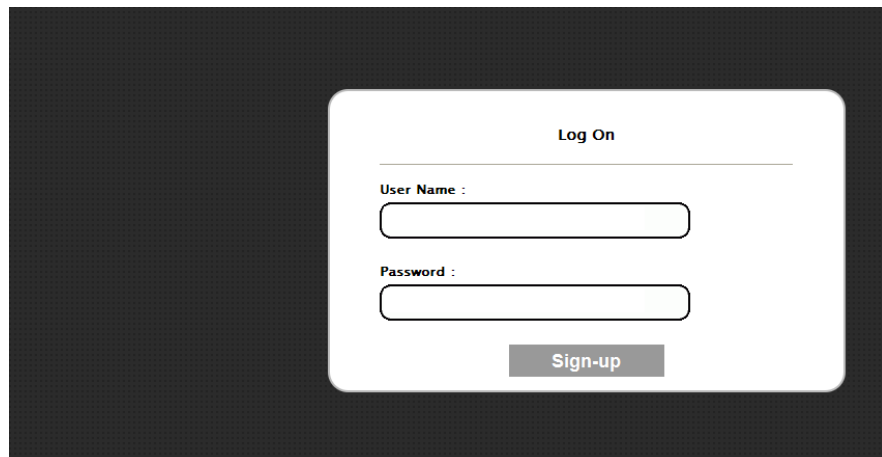
This is a network-based camera and must be assigned an IP address first. The camera's default IP address is 192.168.0.2 and sub mask is 255.255.255.0. To change IP address, open Network Settings page described later.

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**.

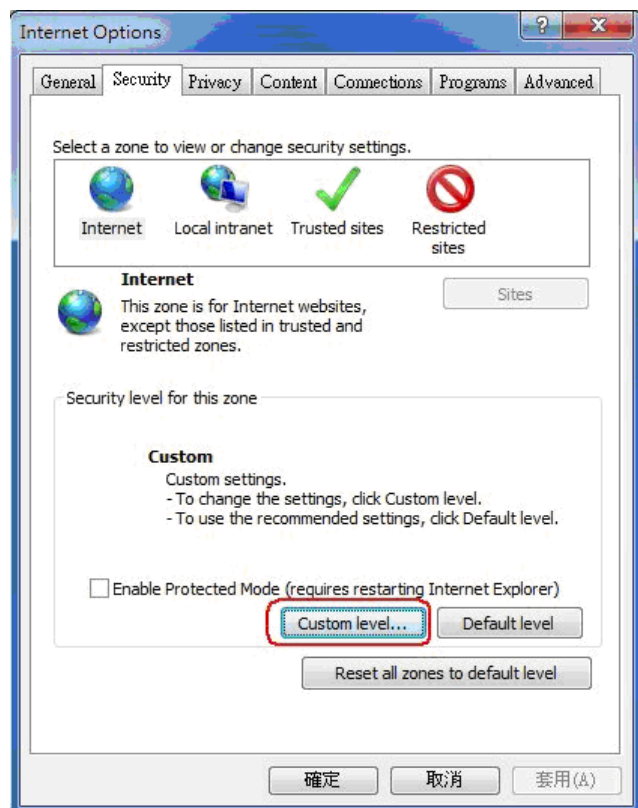
b. When a proxy server is used, click Internet Options on the Tools menu of Internet Explorer, select Connections tab, click LAN settings button, and set proxy server.

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

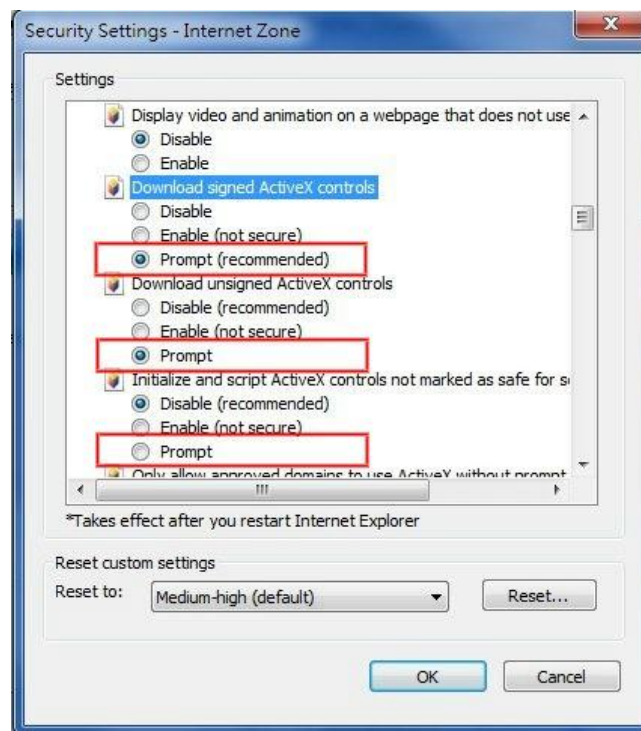
- On **tool** menu, click **Internet Option**.
- Press the **Security** tab.
- If the camera operates inside the intranet, click the **Intranet** icon. If the camera operates on the Internet, click the **Internet** icon.
- Click **Custom Level**. This will open the **Security Settings – Internet Zone** screen.
- Scroll down to the **ActiveX controls and plug-ins** radio buttons and enable all of them as shown in the illustrations:
- In Windows 7 only, Click **【Tools】** → **【Internet Options】** → **【Security】**
 - ✓ Enable Protected Mode (require restarting Internet Explorer) → Unchecked



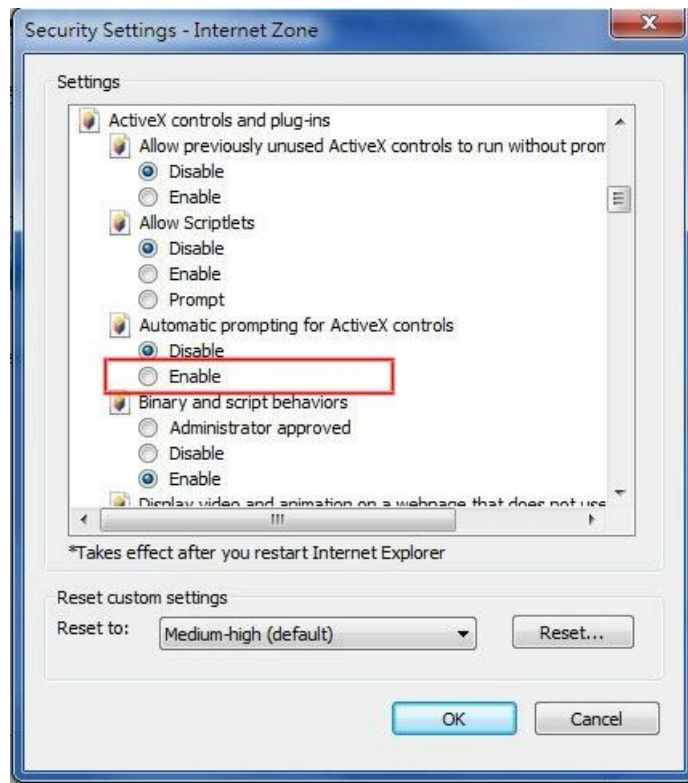
- Click **【Tools】** → **【Internet Options】** → **【Security】** → **【Custom level】**



- 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

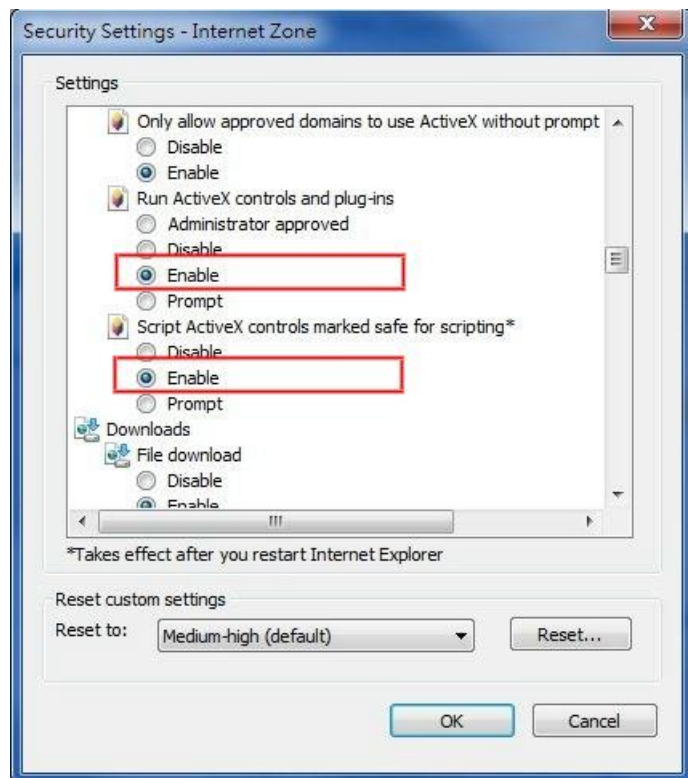


【Automatic prompting for ActiveX controls】 → Enable



【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.

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

Basic

Figure 4-1 Basic

Image Colour

Automatic Exposure: Manual

Level: 5 (1 ~ 10)

Day-Night Settings: Color

Brightness adjustment: 128 (0 ~ 255)

contrast: 128 (0 ~ 255)

Saturation: 128 (0 ~ 255)

Shutter Speed: 1/50 sec

Manual Gain: 0 dB

AWB: ON

R Gain: 31 (0 ~ 255)

B Gain: 27 (0 ~ 255)

D Gain: 32 (0 ~ 255)

Noise Reduction: 1 (0 ~ 8)

Sharpness: 100 (0 ~ 255)

Back Light Compensation(BLC): OFF

Picture

Picture Flip: ☐ ON ☒ OFF

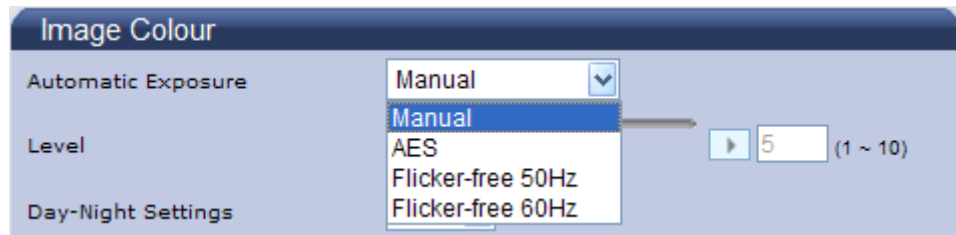
Picture Mirror: ☐ ON ☒ OFF

Reset to Default Save

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.

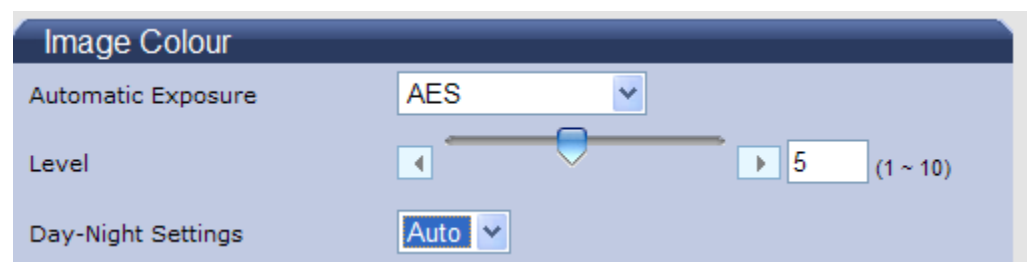
Level

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

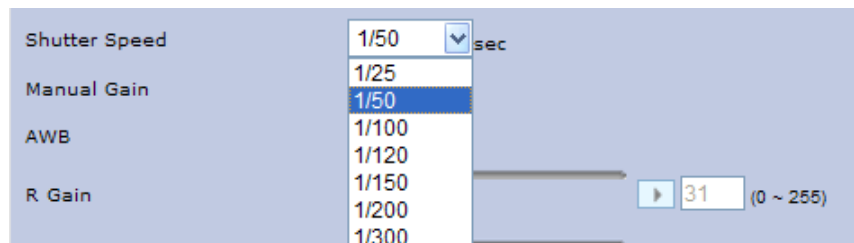
Saturation describes the difference of a color from the gray of the same lightness. Increasing saturation deepens the colors of your images, making reds redder and blues bluer. You can adjust picture saturation level from 0 to 255.

Figure 4-4 Brightness adjustment, Contrast, Saturation



Shutter Speed

Figure 4-5 Shutter Speed

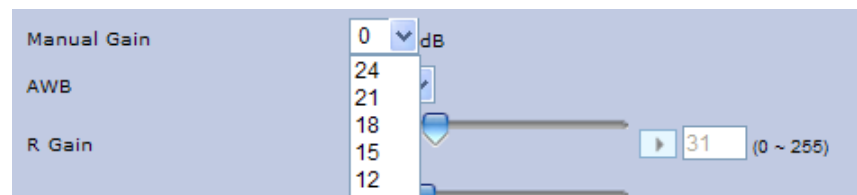


Set desired Shutter Speed from 1/25s to 1/10000s. When video type is PAL, the Shutter Speed can be set at 1/25, 1/50, 1/100, 1/120, 1/150, 1/200, 1/300, 1/500, 1/750, 1/1500, 1/5000 and 1/10000s. When video type is NTSC, the Shutter Speed can be set at 1/30, 1/60, 1/100, 1/120, 1/150, 1/200, 1/300, 1/500,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

Manual Gain

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

Figure 4-6 Manual Gain



AWB

Figure 4-7 AWB



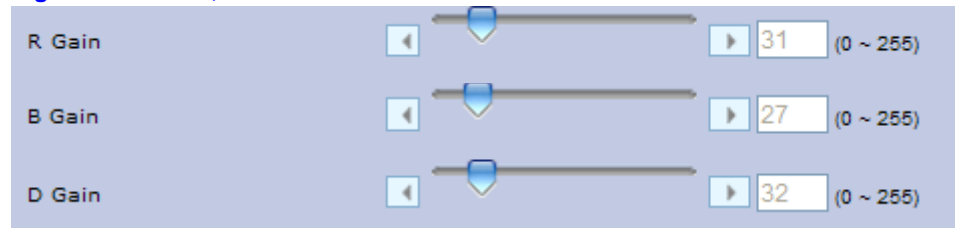
Set the white balance values to meet the environment condition for best color rendition.

“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



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. It allows adjusting RGB 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



Sharpness

Figure 4-10 Sharpness



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



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

Figure 4-12 Picture



The screenshot shows a web interface for camera settings. The title bar is 'Picture'. Below it, there are two settings: 'Picture Flip' and 'Picture Mirror'. Each has two radio buttons: 'ON' and 'OFF'. For 'Picture Flip', the 'OFF' button is selected. For 'Picture Mirror', the 'OFF' button is also selected.

Setting	ON	OFF
Picture Flip	<input type="radio"/>	<input checked="" type="radio"/>
Picture Mirror	<input type="radio"/>	<input checked="" type="radio"/>

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.

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

Figure 4-13 Encoder No. 1

The screenshot shows the 'Encoder No. 1' configuration window. It includes the following settings:

- Compression Format:** H.264 (dropdown)
- Resolution:** 720p (dropdown)
- Frame Rate:** 30 (slider, range 1 ~ 30)
- Rate control mode:** Constant bitrate (selected, radio button)
- Compression Ratio:** Standard (dropdown)
- Quality Value:** 16 (slider, range 1 ~ 31)
- Bit Rate:** 6M (dropdown)
- GOP:** 30 (slider, range 1 ~ 30)
- Profile:** High profile (dropdown)

Table below elaborates the above figure.

Table 4-1 Compression

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	<p>The frame rate is displayed per second.</p> <p>PAL: H.264 single stream: 1080P, 720P, D1, 4CIF, CIF, VGA, QVGA @ max 25fps MPEG4/MJPEG: VGA, QVGA @ max 25fps</p> <p>NTSC: H.264 single stream: 1080P, 720P, D1, 4CIF, CIF, VGA, QVGA @ max 30fps MPEG4/MJPEG: VGA, QVGA @ max 30fps</p>

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 256K, 512K, 1M, 2M, 3M, 4M, 6M and 8M b/s. When resolution is not 1080P or 720P, 4M is the maximum.
GOP	1-30	Select the GOP (Group of pictures) number from 1 to 30. 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 30. GOP will be differed by fps setting. The maximum GOP is differed by Bit Rate setting.
Profile	Baseline High Profile	Selectable (H.264 only)

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

Figure 4-14 Encoder No.2

The screenshot shows the 'Encoder No.2' configuration window. It includes the following settings:

- Compression Format:** H.264 (dropdown)
- Resolution:** D1 (dropdown)
- Frame Rate:** 30 (range 1 ~ 30)
- Rate control mode:** Constant bitrate (selected)
- Compression Ratio:** Standard (dropdown)
- Quality Value:** 16 (range 1 ~ 31)
- Bit Rate:** 3M (dropdown)
- GOP:** 30 (range 1 ~ 30)
- Profile:** High profile (dropdown)

Buttons at the bottom: 'Reset to Default' and 'Save'.

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/640x360/QVGA	1) Encoder No.1: 720p; Encoder No.2: D1, 640x360, 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. PAL: H.264/MJPEG/MPEG-4: D1, QVGA @ max 25fps NTSC: H.264/MJPEG/MPEG-4: D1, QVGA @ max 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 256K, 512K, 1M, 2M, 3M, and 4M b/s.
	512K	
	1M	
	2M	
	3M	
	4M	
GOP	1-30	Select the GOP (Group of pictures) number from 1 to 30. 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 30. 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

- 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.

Table 4-3 Compression correlations of resolution and stream

Encoder No.1		Encoder No.2	Encoder No.1		Encoder No.2	Encoder No.1		Encoder No.2
H264	1080P							
H264	720P	MJPEG D1	MPEG4 720P	MJPEG D1	MJPEG 720P	MJPEG 720P	H264 D1	
H264	720P	MJPEG 640x360	MPEG4 720P	MJPEG 640x360	MJPEG 720P	MJPEG 720P	H264 640x360	
H264	720P	MJPEG QVGA	MPEG4 720P	MJPEG QVGA	MJPEG 720P	MJPEG 720P	H264 QVGA	
H264	720P	MPEG4 D1	MPEG4 720P	H264 D1	MJPEG 720P	MJPEG 720P	MPEG4 D1	
H264	720P	MPEG4 640x360	MPEG4 720P	H264 640x360	MJPEG 720P	MJPEG 720P	MPEG4 640x360	
H264	720P	MPEG4 QVGA	MPEG4 720P	H264 QVGA	MJPEG 720P	MJPEG 720P	MPEG4 QVGA	
H264	720P	H264 D1						
H264	720P	H264 640x360						
H264	720P	H264 QVGA						
H264	D1	MJPEG D1	MPEG4 D1	MJPEG D1	MJPEG D1	MJPEG D1	MPEG4 D1	
H264	D1	MJPEG 4CIF	MPEG4 D1	MJPEG 4CIF	MJPEG D1	MJPEG D1	MPEG4 4CIF	
H264	D1	MJPEG CIF	MPEG4 D1	MJPEG CIF	MJPEG D1	MJPEG D1	MPEG4 CIF	
H264	D1	MPEG4 D1	MPEG4 D1	MPEG4 D1	MJPEG D1	MJPEG D1	H264 D1	
H264	D1	MPEG4 4CIF	MPEG4 D1	MPEG4 4CIF	MJPEG D1	MJPEG D1	H264 4CIF	
H264	D1	MPEG4 CIF	MPEG4 D1	MPEG4 CIF	MJPEG D1	MJPEG D1	H264 CIF	
H264	D1	H264 D1	MPEG4 D1	H264 D1				
H264	D1	H264 4CIF	MPEG4 D1	H264 4CIF				
H264	D1	H264 CIF	MPEG4 D1	H264 CIF				
H264	4CIF	MJPEG D1	MPEG4 4CIF	MJPEG D1	MJPEG 4CIF	MJPEG 4CIF	MPEG4 D1	
H264	4CIF	MJPEG 4CIF	MPEG4 4CIF	MJPEG 4CIF	MJPEG 4CIF	MJPEG 4CIF	MPEG4 4CIF	
H264	4CIF	MJPEG CIF	MPEG4 4CIF	MJPEG CIF	MJPEG 4CIF	MJPEG 4CIF	MPEG4 CIF	
H264	4CIF	MPEG4 D1	MPEG4 4CIF	MPEG4 D1	MJPEG 4CIF	MJPEG 4CIF	H264 D1	
H264	4CIF	MPEG4 4CIF	MPEG4 4CIF	MPEG4 4CIF	MJPEG 4CIF	MJPEG 4CIF	H264 4CIF	
H264	4CIF	MPEG4 CIF	MPEG4 4CIF	MPEG4 CIF	MJPEG 4CIF	MJPEG 4CIF	H264 CIF	
H264	4CIF	H264 D1	MPEG4 4CIF	H264 D1				
H264	4CIF	H264 4CIF	MPEG4 4CIF	H264 4CIF				
H264	4CIF	H264 CIF	MPEG4 4CIF	H264 CIF				
H264	CIF	MJPEG D1	MPEG4 CIF	MJPEG D1	MJPEG CIF	MJPEG CIF	MPEG4 D1	
H264	CIF	MJPEG 4CIF	MPEG4 CIF	MJPEG 4CIF	MJPEG CIF	MJPEG CIF	MPEG4 4CIF	
H264	CIF	MJPEG CIF	MPEG4 CIF	MJPEG CIF	MJPEG CIF	MJPEG CIF	MPEG4 CIF	
H264	CIF	MPEG4 D1	MPEG4 CIF	MPEG4 D1	MJPEG CIF	MJPEG CIF	H264 D1	
H264	CIF	MPEG4 4CIF	MPEG4 CIF	MPEG4 4CIF	MJPEG CIF	MJPEG CIF	H264 4CIF	
H264	CIF	MPEG4 CIF	MPEG4 CIF	MPEG4 CIF	MJPEG CIF	MJPEG CIF	H264 CIF	
H264	CIF	H264 D1	MPEG4 CIF	H264 D1				
H264	CIF	H264 4CIF	MPEG4 CIF	H264 4CIF				
H264	CIF	H264 CIF	MPEG4 CIF	H264 CIF				
H264	VGA	MJPEG VGA	MPEG4 VGA	MJPEG VGA	MJPEG VGA	MJPEG VGA	MPEG4 VGA	
H264	VGA	MJPEG QVGA	MPEG4 VGA	MJPEG QVGA	MJPEG VGA	MJPEG VGA	MPEG4 QVGA	
H264	VGA	MPEG4 VGA	MPEG4 VGA	MPEG4 VGA	MJPEG VGA	MJPEG VGA	H264 VGA	
H264	VGA	MPEG4 QVGA	MPEG4 VGA	MPEG4 QVGA	MJPEG VGA	MJPEG VGA	H264 QVGA	
H264	VGA	H264 VGA	MPEG4 VGA	H264 VGA				
H264	VGA	H264 QVGA	MPEG4 VGA	H264 QVGA				
H264	QVGA	MJPEG VGA	MPEG4 QVGA	MJPEG VGA	MJPEG QVGA	MJPEG QVGA	MPEG4 VGA	
H264	QVGA	MJPEG QVGA	MPEG4 QVGA	MJPEG QVGA	MJPEG QVGA	MJPEG QVGA	MPEG4 QVGA	
H264	QVGA	MPEG4 VGA	MPEG4 QVGA	MPEG4 VGA	MJPEG QVGA	MJPEG QVGA	H264 VGA	
H264	QVGA	MPEG4 QVGA	MPEG4 QVGA	MPEG4 QVGA	MJPEG QVGA	MJPEG QVGA	H264 QVGA	
H264	QVGA	H264 VGA	MPEG4 QVGA	H264 VGA				
H264	QVGA	H264 QVGA	MPEG4 QVGA	H264 QVGA				

Table 4-4 Lower frame rate limitation for H.264 and MPEG4

- When choosing **CBR**, some conditions will be disabled based on different resolution setting.

Bit Rate vs Frame Rate (Resolution=1080P, 720P)					
Bit Rate	Frame rate				
	5	4	3	2	1
8M	OK	N/A	N/A	N/A	N/A
6M	OK	N/A	N/A	N/A	N/A
4M	OK	OK	N/A	N/A	N/A
3M	OK	OK	N/A	N/A	N/A
2M	OK	OK	OK	OK	OK
1M	OK	OK	OK	OK	OK
512K	OK	OK	OK	OK	OK
256K	OK	OK	OK	OK	OK

Bit Rate vs Frame Rate(Resolution<=D1)					
Bit Rate	Frame rate				
	5	4	3	2	1
4M	OK	OK	N/A	N/A	N/A
3M	OK	OK	N/A	N/A	N/A
2M	OK	OK	OK	OK	OK
1M	OK	OK	OK	OK	OK
512K	OK	OK	OK	OK	OK
256K	OK	OK	OK	OK	OK

- When choosing **VBR**, some conditions will be disabled based on different resolution setting.

Quality value vs Frame Rate (Resolution=1080p, 720p)					
Quality value	Frame rate				
	5	4	3	2	1
$q \geq 17$	OK	N/A	N/A	N/A	N/A
$8 \leq q \leq 16$	OK	OK	N/A	N/A	N/A
$q \leq 7$	OK	OK	OK	OK	OK

Quality value vs Frame Rate(Resolution<=D1)					
Quality value	Frame rate				
	5	4	3	2	1
$q \geq 17$	OK	OK	N/A	N/A	N/A
$q \leq 16$	OK	OK	OK	OK	OK

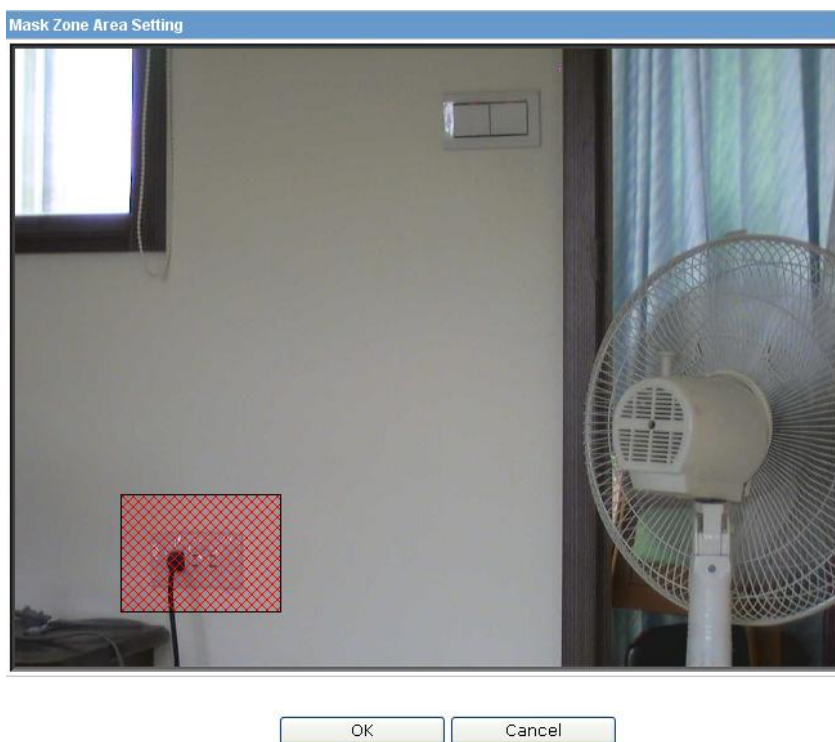
Mask Zone

- 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.

Figure 4-15 Mask Zone

Camera - Mask Zone Settings

Enable	No.	Mask Zone
<input checked="" type="radio"/> ON <input type="radio"/> OFF	1	<input type="button" value="Set Mask Zone"/>
<input checked="" type="radio"/> ON <input type="radio"/> OFF	2	<input type="button" value="Set Mask Zone"/>
<input checked="" type="radio"/> ON <input type="radio"/> OFF	3	<input type="button" value="Set Mask Zone"/>
<input checked="" type="radio"/> ON <input type="radio"/> OFF	4	<input type="button" value="Set Mask Zone"/>



Note:

Max 4 masks can be set on the screen.

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

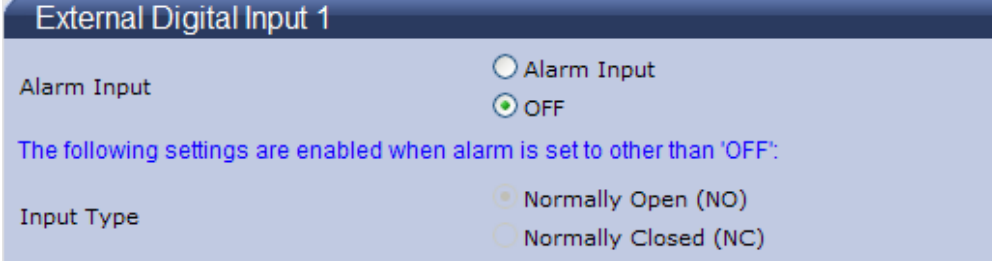
Alarm

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.

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

Figure 4-16 External Digital Input1



External Digital Input 1

Alarm Input ☐ Alarm Input ☒ OFF

The following settings are enabled when alarm is set to other than 'OFF':

Input Type ☒ Normally Open (NO) ☐ Normally Closed (NC)

Motion Detection Settings

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

Figure 4-17 Motion Detection Settings



Motion Detection Settings

Motion Detection ☒ ON ☐ OFF

Area

Sensitivity 71 (1 ~ 100)

Object 20 (1 ~ 100)

- 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 Object size 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

Alarm Output

Alarm Mode ☐ OFF ☒ Event

Output Hold Time 5 seconds

Figure 4-19 Output Hold Time

Output Hold Time 5 seconds

0
5
10
15
30

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

Conditions

Conditions ☐ Event ☒ Alarm ☐ Motion ☐ Network Loss

Overwrite

Overwrite ☐ ON ☒ OFF

SD Free Capacity

Free Capacity : 0.00G

Recording by Alarm

Recording Time: 5 s

Overwrite: OFF

SD Free Capacity

Free Capacity :

SD card can record H264 or MPEG4 stream.
H264 is the preferred source for recording.
If both primary and secondary stream are H264, system will choose the primary stream.

Recording by Motion

Recording Time: 5 s

Users can choose recording conditions between Event and Network Loss. When users select “Event”, 2 more selections will be effective and Recording Time can be selectable in 5s, 10s, 15s, 20s, 25s, 30s, 35s, 40s, 45s, 50s, 55s or 60s.

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.
- If Encoder No.1 is 1080P or 720P, 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.

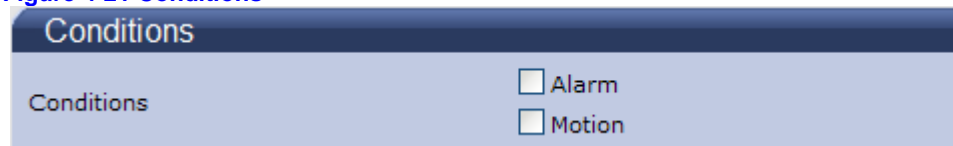
Cheap SD memory cards are not reliable. Expensive SD memory cards are recommended for data safety.

E-mail Notification

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

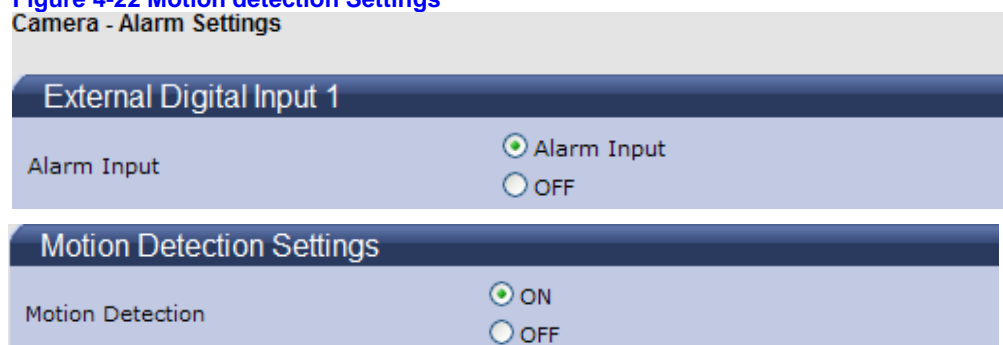
Conditions

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.

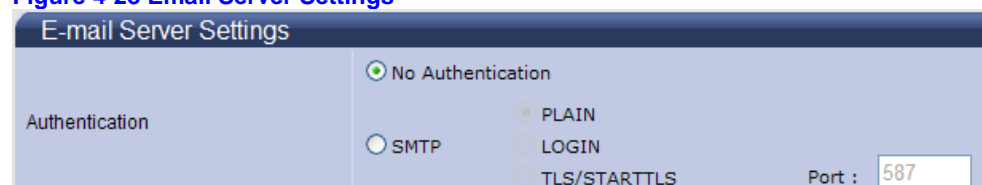
Figure 4-22 Motion detection Settings



Email Server Settings

Authentication Settings

Figure 4-23 Email Server 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

Figure 4-24 Choosing TLS/START TLS



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.

Figure 4-25 Email Information

E-mail Server (SMTP)

The following 3 items are enabled when 'SMTP' is selected

E-mail User ID

Password

Password (Confirm)

Administrator E-mail Address

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

Mail to

Send to Administrator ☒ ON ☐ OFF

No.	E-mail Address	Send Condition	
		Alarm	Motion
1	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>

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

The screenshot shows a web interface for audio settings. It is divided into two main sections: 'Audio Input' and 'Audio Output'. Each section has a header bar with the section name. Below each header, there are two rows of settings. The first row is for enabling or disabling the feature, with radio buttons for 'ON' (selected) and 'OFF'. The second row is for the level, with a dropdown menu currently set to 'Mid'. At the bottom of the interface, there are two buttons: 'Reset to Default' and 'Save'.

Audio Input

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

Figure 4-28 Audio Input

This screenshot shows the 'Audio Input' section of the settings interface. It includes a header 'Audio Input', a row for 'Audio Input' with 'ON' (selected) and 'OFF' radio buttons, and a row for 'Audio Input Level' with a dropdown menu set to 'Mid'.

Audio Output

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

Figure 4-29 Audio Output

This screenshot shows the 'Audio Output' section of the settings interface. It includes a header 'Audio Output', a row for 'Audio Output' with 'ON' (selected) and 'OFF' radio buttons, and a row for 'Audio Output Level' with a dropdown menu set to 'Mid'.

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

Note

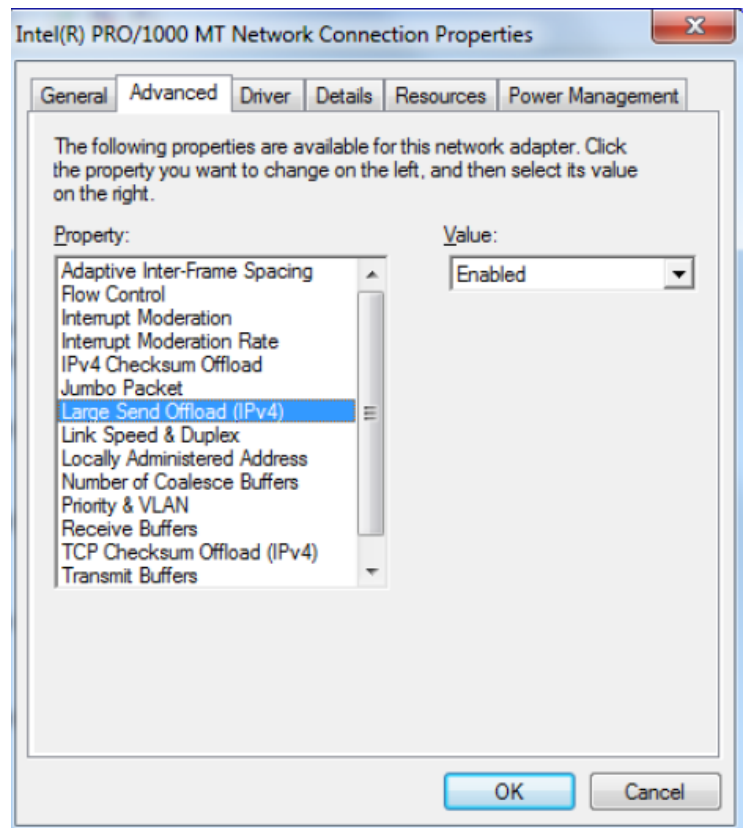
Please click the "Save" button to save your settings. You can also click the left button "Reset to Default" to set all the data and options as defaults.

When enabled audio output to "ON", there are audio issue of the sound is disconnected under a few part of Windows 7 environments.

In order to solve audio issue, we suggest to you change a driver settings as follows.

1. Jumbo Frame
--> Set to "Disable"
2. Large Send Offload (IPv4)
--> Set to "Disable"

Caution



Network Settings

Basic

Basic

Figure 4-30 Network basic

The screenshot shows a 'Network' configuration window. Under the 'Mode' section, 'DHCP (Automatically obtain IP address)' is selected with a radio button, while 'Manual (Manually use the following IP address)' is unselected. Below this, there are input fields for 'IP Address' (192.168.81.115), 'Subnet Mask' (255.255.255.0), 'Default Gateway' (192.168.81.254), 'Primary DNS' (168.95.192.1), and 'Secondary DNS' (168.95.1.1). At the bottom, there is a 'Live Stream' section with a 'Protocol' dropdown menu currently set to 'TCP'.

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: 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.

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)
- Https: This is Https port number. We recommend using the default Https. If you need to change the default Https, please contact your system administrator. Options: 1025 to 65535 (443 is the default).

The screenshot shows a 'Port' configuration window. It contains two input fields: 'Port' with the value '80' and a note '(Input 80 or a value between 1025 and 65535)', and 'Https' with the value '443' and a note '(Input 443 or a value between 1025 and 65535)'.

Note

Https is performed for setting or getting parameters, not for video/audio stream.

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.

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: [masked]

Password (Confirm): [masked]

Max. Simultaneous Connections: 10

Reset to Default Save

Note

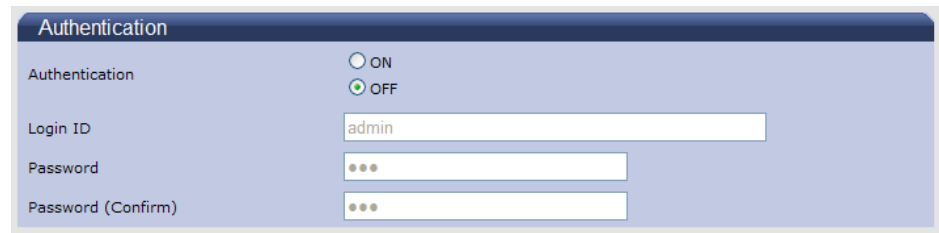
Please click the “Save” button to save your settings. You can also click the left button “Reset to Default” to set all the data and options as defaults.

RTSP

Authentication

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

Figure 4-32 Authentication



The Authentication configuration interface shows a title bar 'Authentication'. Below it, there are two radio buttons: 'ON' and 'OFF', with 'OFF' selected. There are three text input fields: 'Login ID' with the value 'admin', 'Password' with three dots, and 'Password (Confirm)' with three dots.

Encoder No.1 & Encoder No.2

Figure 4-33 Encoder No.1 & Encoder No.2



The figure shows two sets of configuration interfaces for Encoder No.1 and Encoder No.2. Each set has a title bar and several configuration fields.

Encoder No.1 (Top):

- Transfer Type: ☐ Multicast ☒ Unicast
- RTSP Port: 554 (1 - 65535)
- Video Port: 5000 (1 - 65535)
- Audio Port: 5002 (1 - 65535)

Encoder No.2 (Middle):

- Transfer Type: ☐ Multicast ☒ Unicast
- RTSP Port: 555 (1 - 65535)
- Video Port: 5010 (1 - 65535)
- Audio Port: 5012 (1 - 65535)

Encoder No.1 (Bottom):

- Transfer Type: ☒ Multicast ☐ Unicast
- RTSP Port: 554 (1 - 65535)
- Video Multicast Address: 231.0.0.222 (224.0.1.1 ~ 239.255.255.254)
- Video Port: 5000 (1 - 65535)
- Audio Multicast Address: 231.0.0.222 (224.0.1.1 ~ 239.255.255.254)
- Audio Port: 5002 (1 - 65535)
- Metadata Multicast Address: 231.0.0.222 (224.0.1.1 ~ 239.255.255.254)
- Metadata Port: 5004 (1 - 65535)

Encoder No.2 (Bottom):

- Transfer Type: ☒ Multicast ☐ Unicast
- RTSP Port: 555 (1 - 65535)
- Video Multicast Address: 231.0.0.224 (224.0.1.1 ~ 239.255.255.254)
- Video Port: 6000 (1 - 65535)
- Audio Multicast Address: 231.0.0.224 (224.0.1.1 ~ 239.255.255.254)
- Audio Port: 6002 (1 - 65535)
- Metadata Multicast Address: 231.0.0.224 (224.0.1.1 ~ 239.255.255.254)
- Metadata Port: 6004 (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

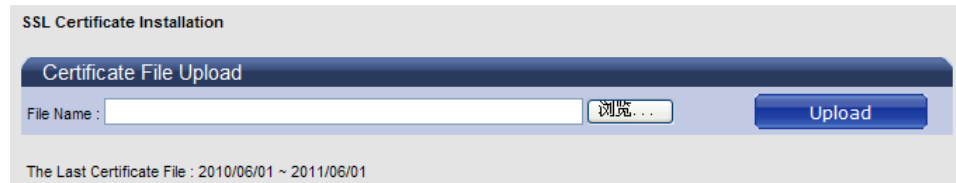
rtsp://(ip address):(port2)/livestream

Note

When you use Multicast, please set the Default Gateway on Network setting.

Https

Figure 4-34 Certificate File Upload

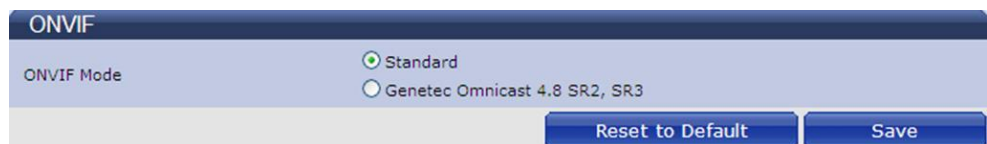


The screenshot shows a web interface titled "SSL Certificate Installation". Below the title is a section labeled "Certificate File Upload". It contains a text input field for "File Name :", a "浏览..." (Browse...) button, and an "Upload" button. At the bottom of the section, it displays "The Last Certificate File : 2010/06/01 ~ 2011/06/01".

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

ONVIF

Figure 4-35 ONVIF



The screenshot shows a web interface titled "ONVIF". Below the title is a section labeled "ONVIF Mode". It contains two radio button options: "Standard" (which is selected) and "Genetec Omnicast 4.8 SR2, SR3". At the bottom of the section are two buttons: "Reset to Default" and "Save".

There're 2 ONVIF Modes for your selection:
Standard or Genetec Omnicast 4.8 SR2, SR3.

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:

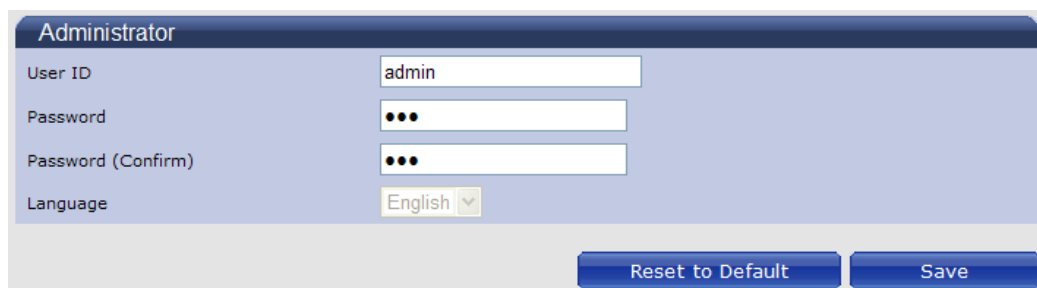
User ID: **admin**

Password: **jvc**

Language: English

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

Figure 4-36 Administrator



The screenshot shows a web interface titled "Administrator". It contains four input fields: "User ID" with the value "admin", "Password" with three dots, "Password (Confirm)" with three dots, and "Language" with a dropdown menu showing "English". At the bottom right, there are two buttons: "Reset to Default" and "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.

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.

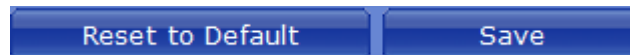
Figure 4-37 User Setting 1



The screenshot shows a web interface titled "User Settings 1". It contains four input fields: "User ID" with the value "user", "Password" with three dots, "Password (Confirm)" with three dots, and "Language" with a dropdown menu showing "English".

Finally, click Save to save the settings.

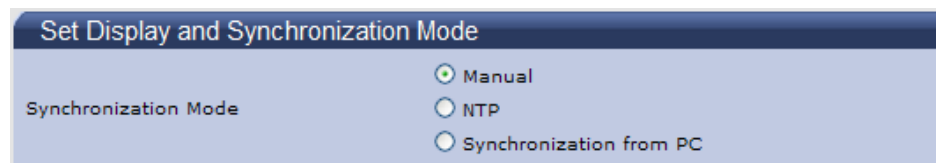
Figure 4-38 Reset



Date/Time

Set Display and Synchronization Mode

Figure 4-39 Date and Time

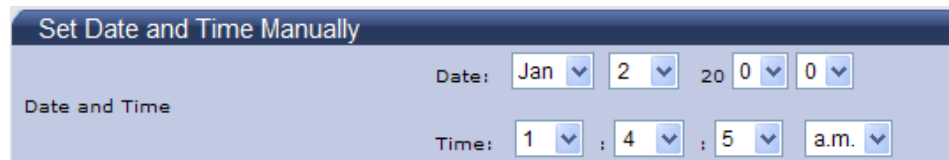


The user can choose Synchronization Mode here from three different types.

Set Date and Time Manually

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

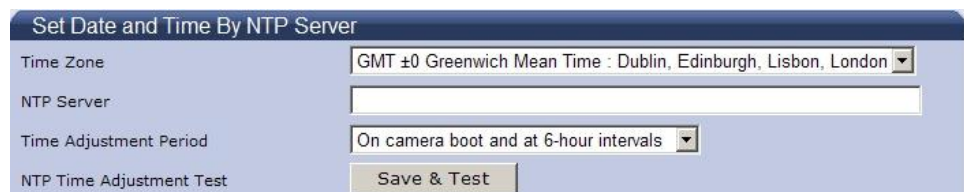
Figure 4-40 Set Date and Time Manually



Set Date and Time by NTP Server

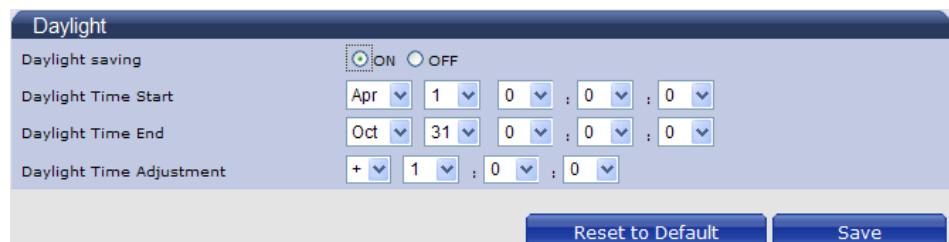
1. Time Zone: Select the time zone where your camera is located.
2. NTP Server: Select NTP in the Synchronization Mode. If "NTP" is selected, the date and time will be synchronized by the NTP server. Note: Please make sure disable SD recording function before you enable NTP synchronization mode.
3. Time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

Figure 4-41 Set Date and Time By NTP Server



Daylight

Figure 4-42 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.

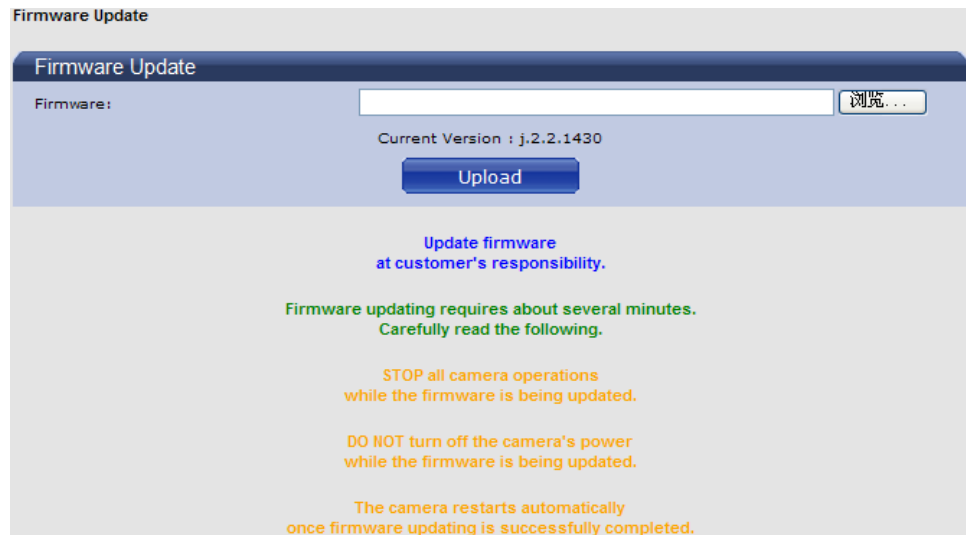
Note

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.

Figure 4-43 Firmware Update



The screenshot shows the 'Firmware Update' web interface. At the top, there's a title bar 'Firmware Update'. Below it, a 'Firmware:' label is next to a text input field and a '浏览...' (Browse...) button. Underneath the input field, it says 'Current Version : j.2.2.1430'. A large blue 'Upload' button is centered below this. The main content area has a light gray background with several lines of text: 'Update firmware at customer's responsibility.' in blue, 'Firmware updating requires about several minutes. Carefully read the following.' in green, and three lines of orange text: 'STOP all camera operations while the firmware is being updated.', 'DO NOT turn off the camera's power while the firmware is being updated.', and 'The camera restarts automatically once firmware updating is successfully completed.'

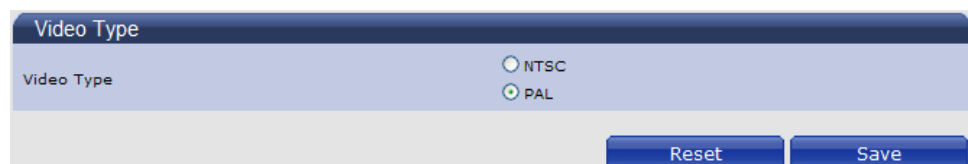
Configuration

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



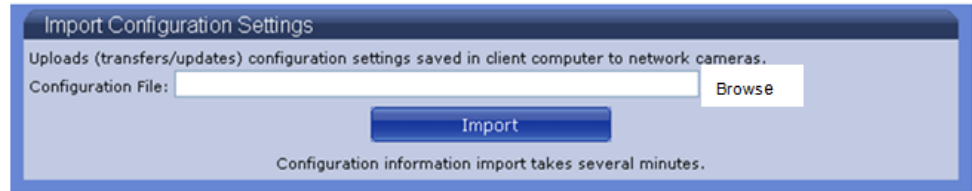
The screenshot shows the 'Video Type' web interface. It has a title bar 'Video Type'. Below it, the label 'Video Type' is followed by two radio buttons: 'NTSC' and 'PAL'. The 'PAL' radio button is selected. At the bottom right, there are two blue buttons: 'Reset' and 'Save'.

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

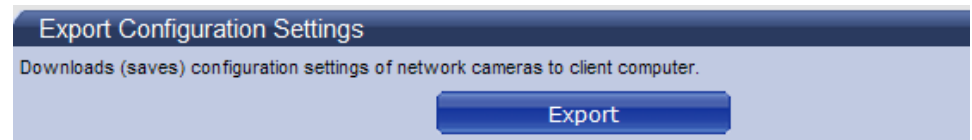


The screenshot shows a web interface titled "Import Configuration Settings". Below the title, it says "Uploads (transfers/updates) configuration settings saved in client computer to network cameras." There is a text input field labeled "Configuration File:" followed by a "Browse" button. Below this is a large blue "Import" button. At the bottom, a note states "Configuration information import takes several minutes."

Export Configuration Settings

This function is designed to export configuration settings to the client computer.

Figure 4-46 Export Configuration Settings

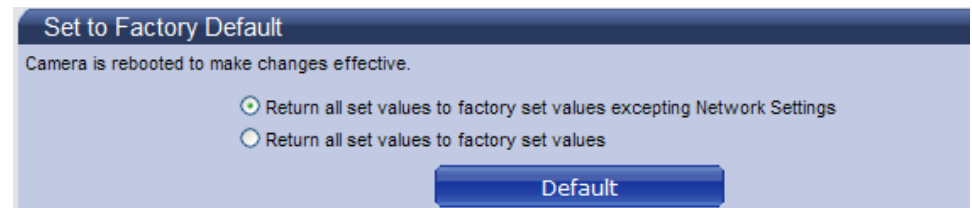


The screenshot shows a web interface titled "Export Configuration Settings". Below the title, it says "Downloads (saves) configuration settings of network cameras to client computer." There is a large blue "Export" button.

Set to Factory Default

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

Figure 4-47 Set to Factory Default



The screenshot shows a web interface titled "Set to Factory Default". Below the title, it says "Camera is rebooted to make changes effective." There are two radio button options: "Return all set values to factory set values excepting Network Settings" (which is selected) and "Return all set values to factory set values". Below these options is a large blue "Default" button.

Network Camera Reboot

This function is designed to reboot the camera.

Figure 4-48 Network Camera Reboot

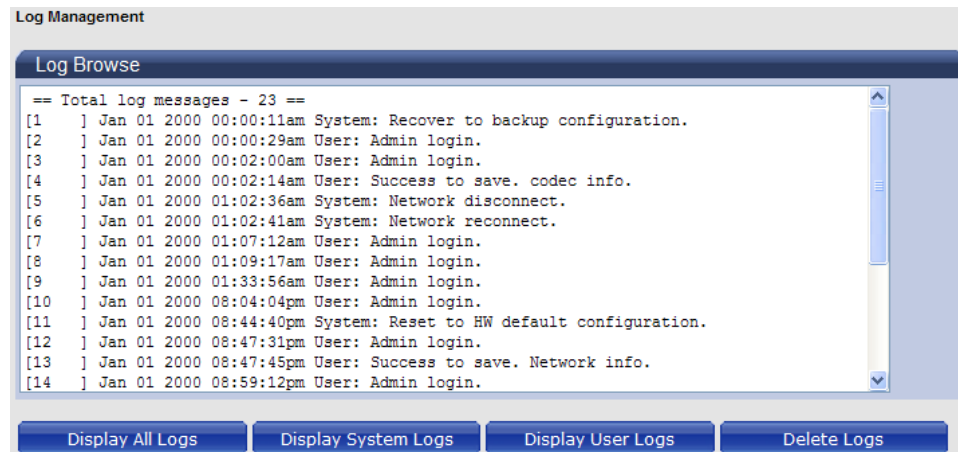


The screenshot shows a web interface titled "Network Camera Reboot". There is a large blue "Reboot" button.

Event Log

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

Figure 4-49 Log Browse

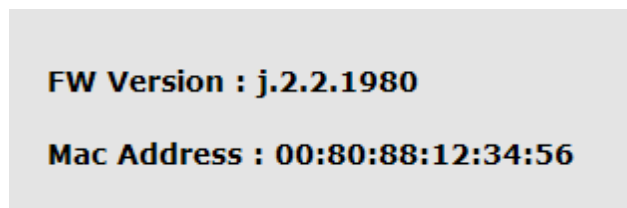


This window is sample.

Information

FW version and MAC address will be shown.

Figure 4-50 FW version and MAC address

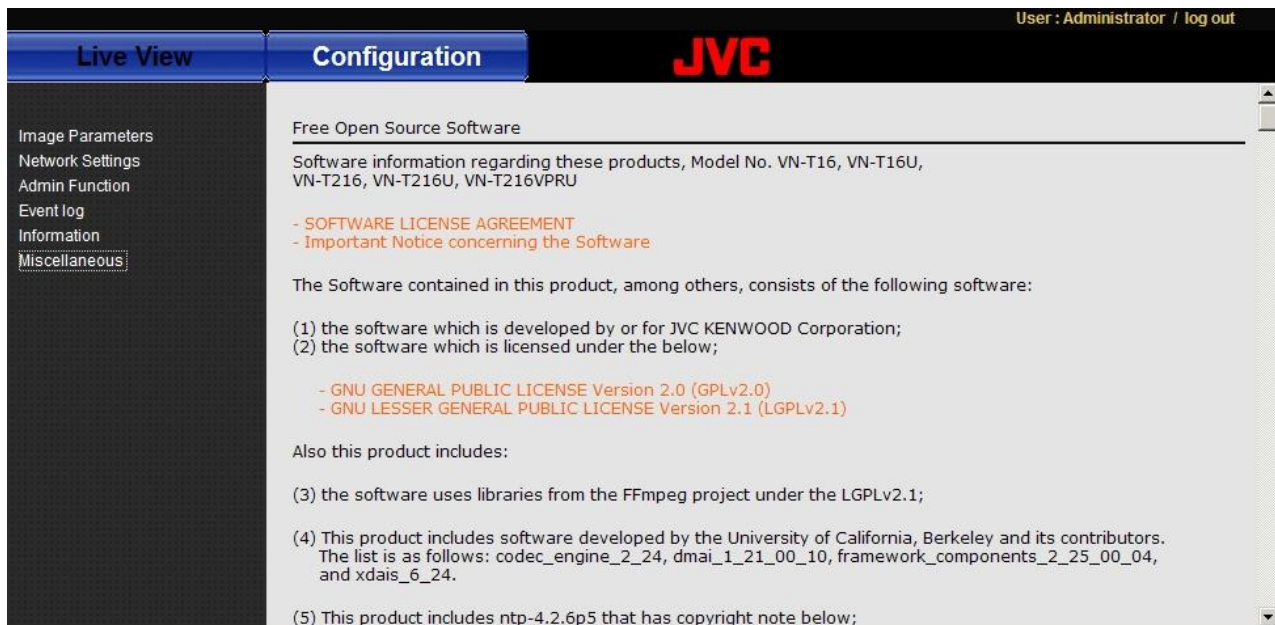


The displayed numbers are sample.

Miscellaneous

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

Figure 4-51 Miscellaneous



Free Open Source Software

Software information regarding these products, Model No. VN-T16, VN-T16U, VN-T216, VN-T216U, VN-T216VPRU

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- 31. [34]Craig Leres <leres@ee.lbl.gov> 4.4BSD port, ppsclock, Magnavox GPS clock driver
 - 32. [35]George Lindholm <lindholm@ucs.ubc.ca> SunOS 5.1 port
 - 33. [36]Louis A. Mamakos <louie@ni.umd.edu> MD5-based authentication
 - 34. [37]Lars H. Mathiesen <thorinn@diku.dk> adaptation of foundation code for Version 3 as specified in RFC-1305
 - 35. [38]Danny Mayer <mayer@ntp.org> Network I/O, Windows Port, Code Maintenance
 - 36. [39]David L. Mills <mills@udel.edu> Version 4 foundation: clock discipline, authentication, precision kernel; clock drivers: Spectracom, Austron, Arbiter, Heath, ATOM, ACTS, KSI/Odetics; audio clock drivers: CHU, WWV/H, IRIG
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3. The use of the Licensed Software shall be limited to personal purpose, and the Licensed Software shall not be distributed, licensed or sub-licensed whether it is for commercial purpose or not.
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Article 3 Conditions for Grant of License

1. When the User transfers the Product, it may also transfer the license to use the Licensed Software embedded in the Product (including any related materials, updates and upgrades) on condition that no original, copies or related materials continue in the possession of the User, and that the User shall cause the transferee to comply with this Software License Agreement.
2. The User shall not carry out reverse engineering, disassembling, decompiling or any other code analysis works in connection with the Licensed Software.

Article 4 Right pertaining to the Licensed Software

Any and all copyrights and other rights pertaining to the Licensed Software and related documents shall belong to JVC KENWOOD Corporation or the original holder of the right who granted to JVC KENWOOD Corporation the license or sublicense for the Licensed Software (hereinafter the "Original Rightholder"), and the User shall

not be entitled to any right other than the license granted hereunder, in respect of the Licensed Software and any related documents.

Article 5 Indemnification of JVC KENWOOD Corporation

1. Neither JVC KENWOOD Corporation nor the Original Rightholder shall be liable for any damage incurred by the User or any third party due to the exercise of the license granted to the User under this Agreement, unless otherwise restricted by law.
2. JVC KENWOOD Corporation will offer no guarantee for the merchantability, convertibility and consistency with certain objective of the Licensed Software.

Article 6 Liability to Third Party

If any dispute has arisen with any third party due to an infringement upon a copyright, patent or any other intellectual property right that was caused by the User's use of the Licensed Software, the User shall settle such dispute at its own cost and hold JVC KENWOOD Corporation and the Original Rightholder harmless from any inconvenience it may cause.

Article 7 Confidentiality

The User shall keep the confidentiality of such portion of the Licensed Software, related documents thereof or any other information to be granted under this Agreement, as well as the conditions of this Agreement as has not yet entered the public domain, and shall not disclose or divulge the same to any third party without approval of JVC KENWOOD Corporation.

Article 8 Termination

In case the User falls under any of the events described in the following items, JVC KENWOOD Corporation may immediately terminate this Agreement or claim that the User compensates for the damage incurred by JVC KENWOOD Corporation due to such event:

- (1) when the User violated any provision of this Agreement; or
- (2) when a petition has been filed against the User for an attachment, provisional attachment, provisional disposition or any other compulsory execution.

Article 9 Destruction of the Licensed Software

If this Agreement is terminated pursuant to the provision of Article 8, the User shall destroy the Licensed Software, any related documents and copies thereof within two (2) weeks from such date of termination.

Article 10 Protection of Copyright

1. The copyright and all the other intellectual property rights relating to the Licensed Software shall belong to JVC KENWOOD Corporation and the Original Rightholder, and in no event shall they be under the ownership of the User.
2. The User shall, whenever it uses the Licensed Software, comply with any laws relating to the copyright and other intellectual property rights.

Article 11 Export Restriction

1. It is prohibited to export the Licensed Software and any related documents outside the country of the User (including transmission thereof outside the country of the User via Internet or other communication tools).
2. The User shall understand that the Licensed Software shall be subject to the export restrictions adopted by the country of User and any other countries.
3. The User shall agree that the software will be subject to any and all applicable international and domestic laws (including the export control regulation of the country of User and any other countries, and any restrictions

concerning the end-users, the use by end-users and importing countries to be provided by the country of User and any other countries, and any other governmental authorities).

Article 12 Miscellaneous

1. In the event any part of this Agreement is invalidated by operation of law, the residual provisions shall continue in force.
2. Matters not stipulated in this Agreement or any ambiguity or question raised in the construction of this Agreement shall be provided or settled upon good-faith consultation between JVC KENWOOD Corporation and the User.
3. JVC KENWOOD Corporation and the User hereby agree that this Agreement is governed by the laws of Japan, and any dispute arising from, and relating to the rights and obligations under, this Agreement shall be submitted to the exclusive jurisdiction of the Tokyo District Court for its first instance.

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<http://www3.jvckenwood.com/english/download/gpl/> (JVC KENWOOD Corporation English website)

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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
Auto Iris Control	AES (Automatic Electric Shutter)
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: 0.5 A / AC 120 V max)
IP Specifications	
Video Compression	H.264 & MPEG4 & MJPEG
Video Streaming	Single Encode: 1080P (max.) Dual Encode: 720P + D1 (max.)
Resolution	NTSC: 1080P(1920 x 1080), 720P(1280 x 720), D1(720 x 480), 4CIF(704 x 480), VGA(640 x 480), 640 x 360, 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), 640 x 360, CIF(352 x 288), QVGA(320 x 240)
Image Frame Rate	PAL: Up to 25 fps NTSC: Up to 30 fps

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 6.0-9.0, CPU: Intel Pentium 4 2.4 GHz or equivalent AMD, Memory: 1 GB 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 Conformant
Onboard Storage	SDHC (class 10 is recommended)
Electrical	
Power Supply	PoE IEEE 802.3af Class 0, DC 12 V, AC 24 V
Power Consumption	PoE 0.13 A, DC 12 V 550 mA
Mechanical	
Dimension	56 mm(H) x 69 mm(W) x 125 mm(L)
Weight	390 g
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	20 % to 90 % (without condensation)
Storage Temperature	-20 °C to 60°C

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