



FCS-1141

H.264 1.3-Megapixel PoE Network Camera



User Manual

Ver1.3

# **Table of Contents**

<b>1. Overview .....</b>	<b>3</b>
1.1 Features .....	3
1.2 Package Contents .....	4
<b>2. Introduction of IP Camera .....</b>	<b>5</b>
2.1 Camera Dimensions .....	5
2.2 Connectors on the Rear Board .....	6
<b>3. Preparations for IP Camera Setup .....</b>	<b>8</b>
3.1 System Requirements .....	8
3.2 Installation .....	8
3.3 Accessing IP Camera .....	10
Using recording software.....	14
Installing DC Viewer Software Online.....	15
<b>4. Configuration &amp; Operation .....</b>	<b>17</b>
4.1 Browser-based Viewer Introduction .....	17
4.2 Home Page.....	18
4.3 System Related Settings.....	20
4.3.1 Host Name and System Time Setting.....	21
4.3.2 Security .....	22
4.3.3 Network.....	25
4.3.4 DDNS.....	30
4.3.5 Mail .....	31
4.3.6 FTP .....	32
4.3.7 Application (Excluding Compact IP Dome) .....	33
4.3.8 Motion Detection .....	39
4.3.9 Storage Management.....	43
4.3.10 Recording.....	45
4.3.11 File Location.....	46
4.3.12 Iris Adjustment (Excluding Compact IP Dome) .....	47
4.3.13 View Log File.....	48
4.3.14 View User Information .....	49
4.3.15 View Parameters .....	51
4.3.16 Factory Default.....	52
4.3.17 Software Version .....	53
4.3.18 Software Upgrade .....	54
4.3.19 Maintenance.....	57
4.4 Video and Audio Streaming Settings .....	58
4.4.1 Video Resolution and Rotate Type .....	58
4.4.2 Video Compression .....	61

4.4.3	Video OCX Protocol .....	63
4.4.4	Video Frame Skip.....	64
4.4.5	Video Mask .....	65
4.4.6	Audio Mode and Bit Rate Settings.....	66
4.5	Camera Settings.....	68
4.5.1	Exposure Setting .....	69
4.5.2	White Balance Setting .....	70
4.5.3	Backlight Setting .....	71
4.5.4	Brightness Setting .....	71
4.5.5	Sharpness Setting .....	72
4.5.6	Contrast Setting .....	72
4.5.7	Saturation Setting.....	72
4.5.8	Digital Zoom Setting .....	72
4.5.9	IR Function.....	72
4.5.10	WDR Function.....	73
4.5.11	3DNR Function.....	73
4.5.12	TV System Setup .....	73
4.6	Logout .....	74
<b>Appendix A: Technical Specifications .....</b>		<b>75</b>
<b>Appendix B: Internet Security Settings.....</b>		<b>77</b>
<b>Appendix C: DC Viewer Download Procedure .....</b>		<b>80</b>
<b>Appendix D: Install UPnP Components.....</b>		<b>82</b>

# 1. Overview

Following high standard of Megapixel IP Camera, the HD WDR IP Camera holds pioneer image setting functions to provide the best image quality. Adopting superior Sony image sensor, the IP Camera is highly sensitive and has good low-light performance.

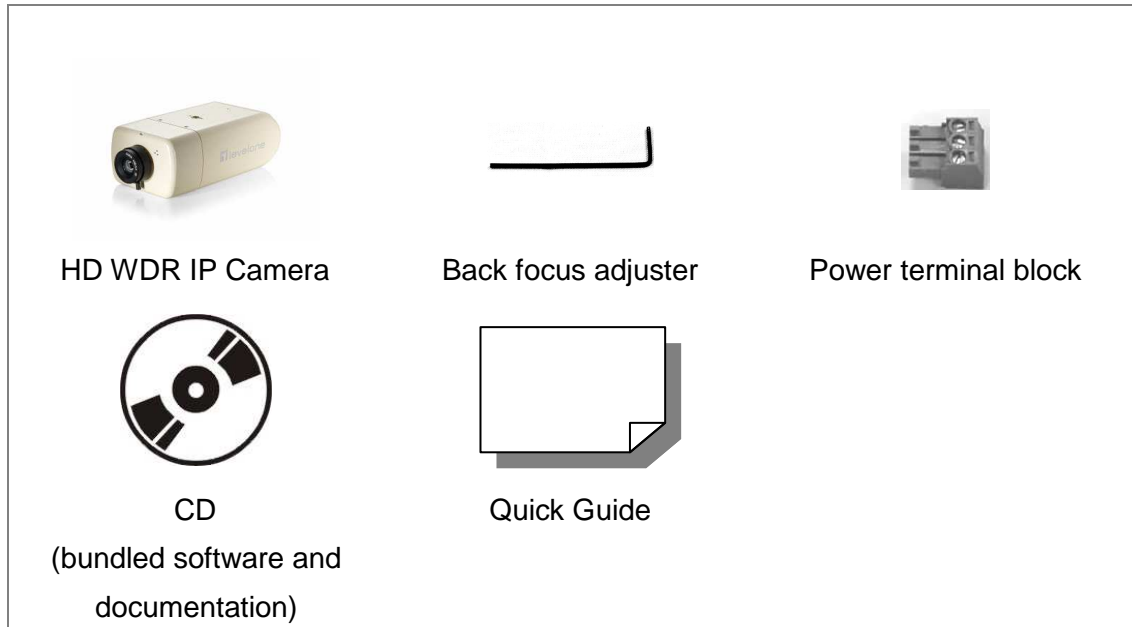
In addition to MPEG-4 and MJPEG real time streaming, the HD WDR IP Camera develops superior H.264 codec to smoothly transfer High Definition surveillance data through Internet without distortion. The built-in Wide Dynamic Range (WDR) function allows getting crystal images even in extreme condition; this feature enhances the camera's performance in installations include shops, banks, parking lots, factories and building surveillance.

## 1.1 Features

- Sony Progressive Scan CCD sensor
- HD 720p real-time at dual streaming
- H.264, MJPEG and MPEG-4 compression
- Integrated real-time WDR
- 2D / 3D Noise Reduction
- Motion Detection
- Privacy Masks
- Day/Night (ICR)
- Micro SD support
- BNC analog output

## 1.2 Package Contents

The HD WDR IP Camera's standard package contains the items as shown below. Contents will vary among different models. Please check the list as follows for details.

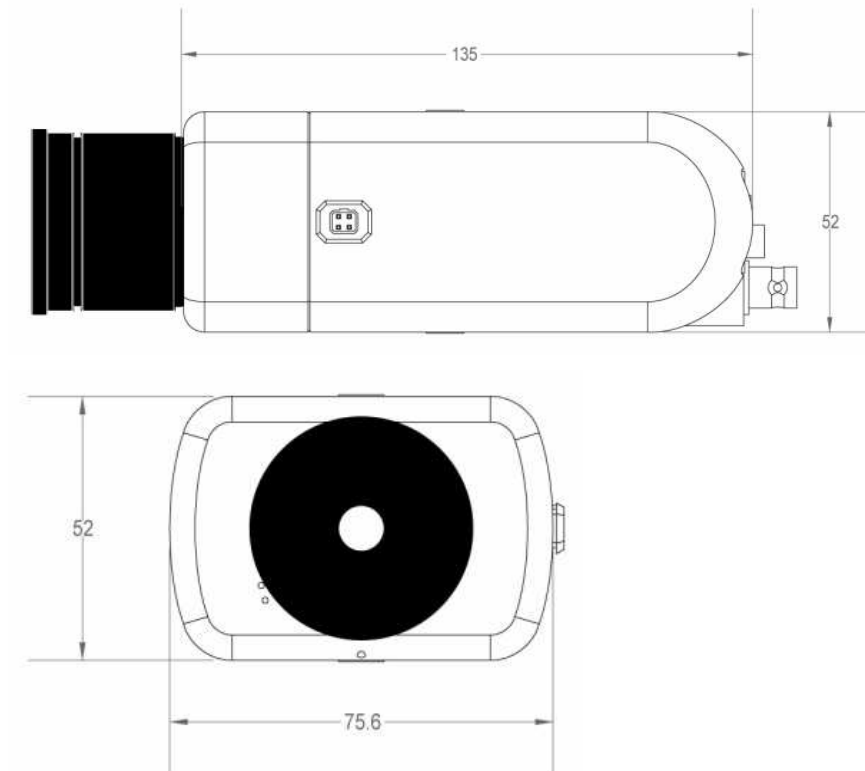


## 2. Introduction of IP Camera

This chapter will provide the camera dimensions for reference before installation. Definition of each connector on the camera's rear board will also be specified.

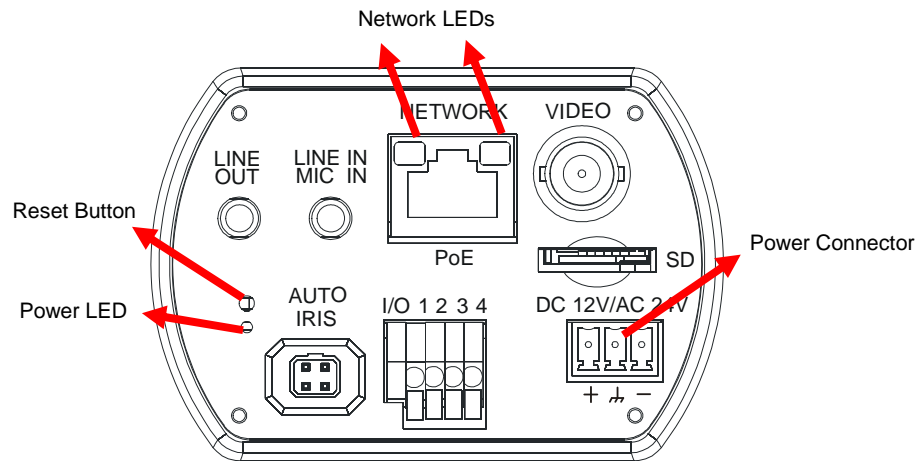
### 2.1 Camera Dimensions

The IP Camera's dimensions are as shown below:



## 2.2 Connectors on the Rear Board

The diagram below shows the IP Camera's rear board. Definition for each connector will be given as follows.



### **Line Out & Line In / Mic In ports**

For two-way audio transmission

### **Power LED**

Green light indicates good power connection.

### **Reset Button**

Press and hold the button for 5 seconds, and then the camera will reset to factory defaults. After around 30 seconds, reconnect the camera by entering its default IP address: 192.168.0.250, in the URL bar.

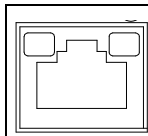
### **Auto Iris Lens Connector**

For use with auto iris lens

### **Network (with PoE) Connector**

RJ45 connector for LAN connection

### **Network LEDs**



Green Link Light indicates good network connection.  
Orange Activity Light flashes for network activity indication.

### **I/O Terminal Connector**

For alarm connection (see section [3.2 Installation—Alarm Application](#))

### **BNC Connector**

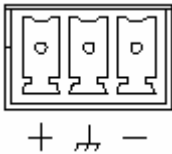

For video output

### **Micro SD Card Slot**

For video and snapshots storage

### **AC 24V/DC 12V Connector**

Please refer to the table below for wiring of AC 24V and DC 12V camera with the supplied power cable.

	+	AC 24V: Power-1	DC 12V: Power
		AC 24V: Earth GND	DC 12V: Reserved
	—	AC 24V: Power-2	DC 12V: GND



## 3. Preparations for IP Camera Setup

This chapter outlines information about system requirements for IP Camera operation, procedures of camera connection, and login to the camera.

### 3.1 System Requirements

To perform the IP Camera via web browser, please ensure your PC is in good network connection, and meet system requirement as described below.

Items	System Requirement
<b>Personal Computer</b>	1. Intel® Pentium® M, 2.16 GHz or Intel® Core™2 Duo, 2.0 GHz 2. 2 GB RAM or more
<b>Operating System</b>	Windows VISTA or Windows XP
<b>Web Browser</b>	Microsoft Internet Explorer 6.0 or later
<b>Network Card</b>	10Base-T (10 Mbps) or 100Base-TX (100 Mbps) operation
<b>Viewer</b>	ActiveX control plug-in for Microsoft IE

### 3.2 Installation

Please follow the instructions below to complete IP Camera installation.

#### Lens Mounting: CS Mount Lens

#### Power Connection

Please refer to section [2.2 Connectors on the Rear Board](#) for power wiring. Additionally, if using PoE, make sure Power Sourcing Equipment (PSE) is in use in the network.

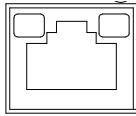
#### Ethernet Cable Connection

Use of Category 5 Ethernet cable is recommended for network connection; to have best transmission quality, cable length shall not exceed 100 meters. Connect one end of the Ethernet cable to the RJ-45 connector of the IP Camera, and the other end of the cable to the network switch or PC.



**NOTE:** In some cases, you may need use an Ethernet crossover cable when connecting the IP Camera directly to the PC.

Check the status of the link indicator and activity indicator LEDs; if the LEDs are unlit, please check LAN connection.

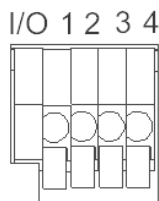


Green Link Light indicates good network connection.

Orange Activity Light flashes for network activity indication.

### **Alarm Application**

The camera equips one alarm input and one relay output for alarm application. Refer to alarm pin definition below to connect alarm devices to the IP Camera if needed.



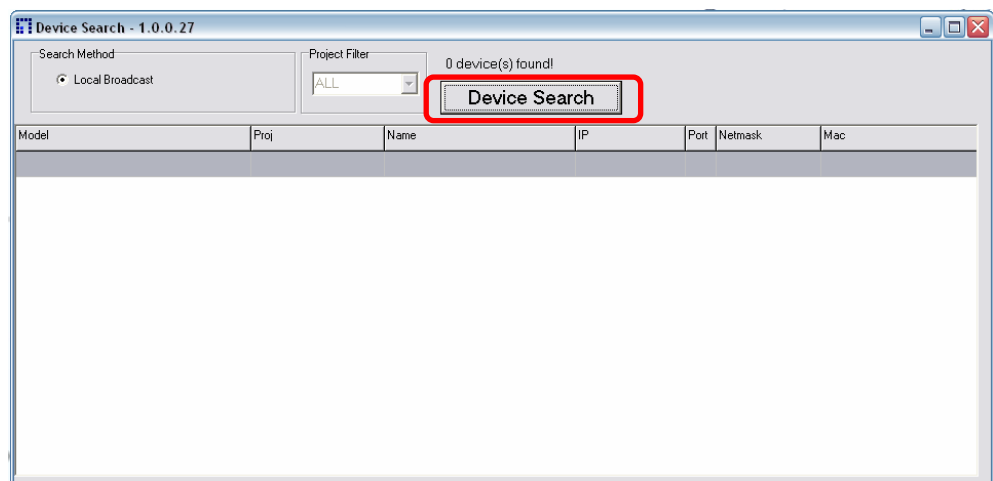
1. Output+
2. Output-
3. Input+
4. Input-

### 3.3 Accessing IP Camera

For initial access to the IP Camera, users can search the camera through the installer program: DeviceSearch.exe, which can be found in “DeviceSearch” folder in the supplied CD.

#### Device Search Software Setup

**Step 1:** Double click on the program Device Search.exe (see the icon below); its window will appear as shown below. Then click the “Device Search” button.

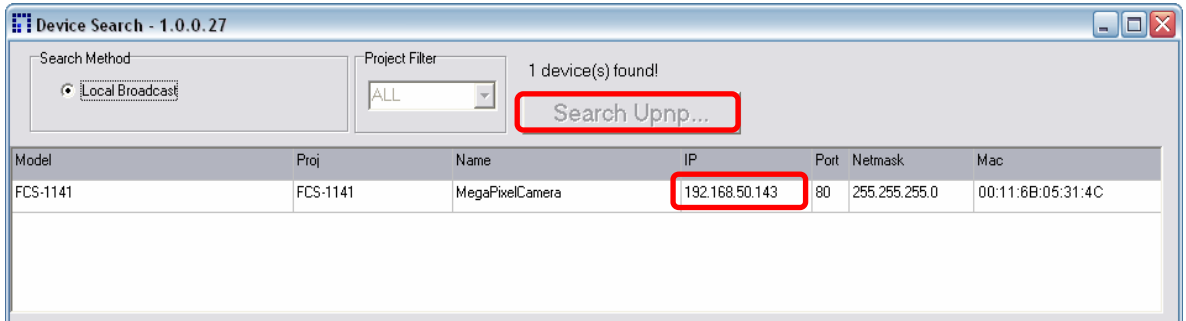


**Step 2:** The security alert window will pop up. Click “Unblock” to continue.

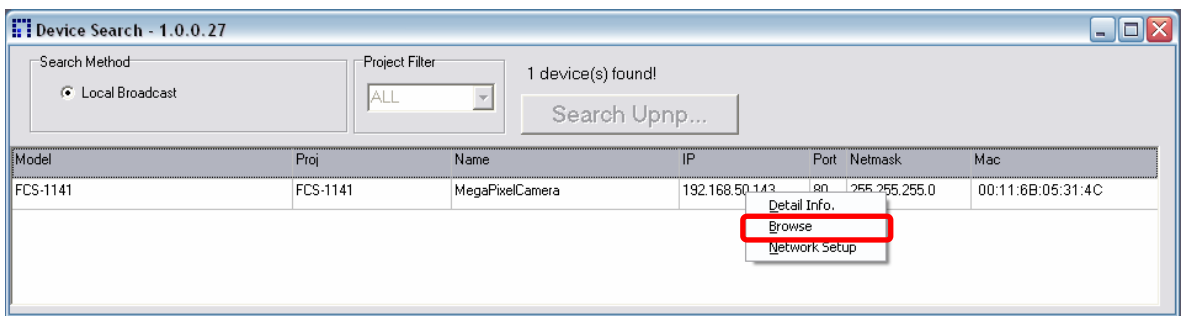


## Device Search

**Step 3:** Click “Device Search” again, and all the finding IP devices will be listed in the page, as shown in the figure below. The IP Camera’s default IP address is: **192.168.0.250**.



**Step 4:** Double click or right click and select “Browse” to access the camera directly via web browser.



**Step 5:** Then the prompt window of request for entering default username and password (as shown below) will appear for login to the IP Camera.



The default login ID and password for the Administrator are:

Login ID	Password
root	



**NOTE:** ID and password are case sensitive.



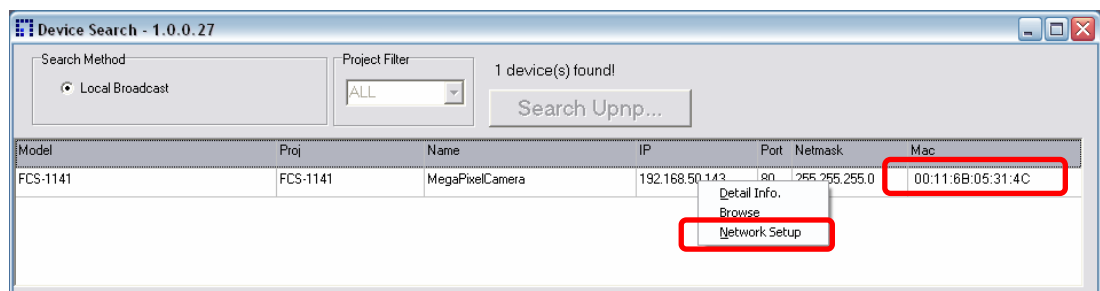
**NOTE:** It is strongly advised that administrator's password be altered for the security concerns. Refer to section [4.3.2 Security](#) for further details.

Additionally, users can change the IP Camera's network property, either DHCP or Static IP directly in the device finding list. Refer to the following section for changing the IP Camera's network property.

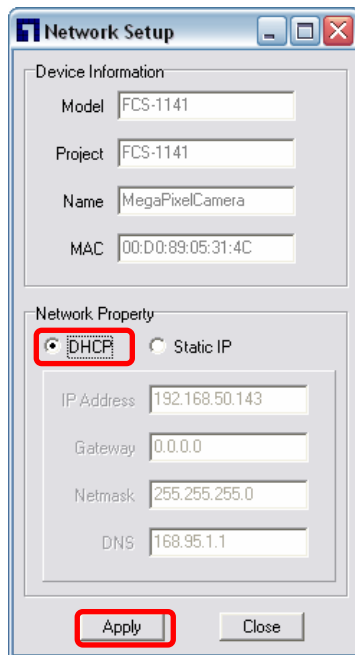
### **Example of Changing IP Camera's Network Property**

Users can directly change an IP Camera's network property, ex. from static IP to DHCP, in the finding device list. The way to change the IP Camera's network property is specified below:

**Step 1:** In the finding device list, click on the IP Camera that you would like to change its network property. On the selected item, right click and select "Network Setup." Meanwhile, record the IP Camera's MAC address, for future identification.



**Step 2:** The "Network Setup" page will come out. Select "DHCP," and press "Apply" button down the page.



**Network Setup**

Device Information

Model: FCS-1141

Project: FCS-1141

Name: MegaPixelCamera

MAC: 00:D0:89:05:31:4C

Network Property

☒ DHCP ☐ Static IP

IP Address: 192.168.50.143

Gateway: 0.0.0.0

Netmask: 255.255.255.0

DNS: 168.95.1.1

Apply Close

**Step 3:** Click “OK” on the Note of setting change. Wait for one minute to re-search the IP Camera.

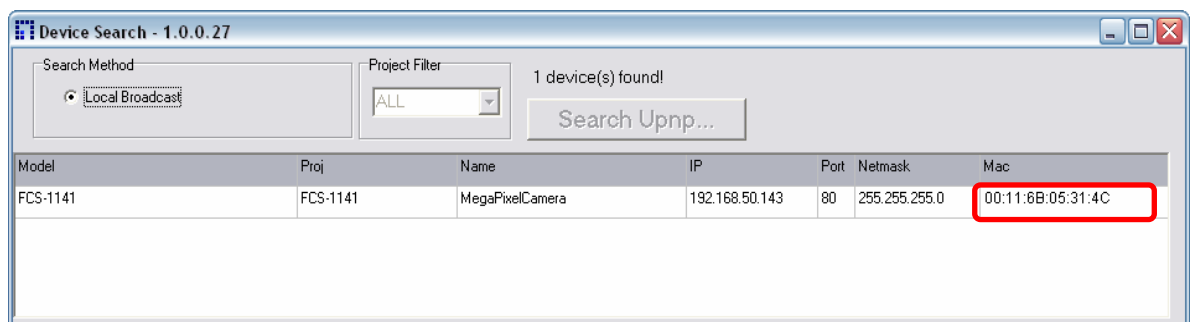


**Note**

Control package sent.  
Please try to re-search the device after one minute.

確定

**Step 4:** Click the “Device Search” button to re-search all the devices. Then select the IP Camera with the correct MAC address. Double click on the IP Camera, and the login window will come out.



**Device Search - 1.0.0.27**

Search Method: ☒ Local Broadcast

Project Filter: ALL

1 device(s) found!

Search Upnp...

Model	Proj	Name	IP	Port	Netmask	Mac
FCS-1141	FCS-1141	MegaPixelCamera	192.168.50.143	80	255.255.255.0	00:11:6B:05:31:4C

**Step 5:** Enter User name and Password to access the IP Camera



## Using recording software

The product software CD also contains recording software-IP CamSecure, allowing simultaneous monitoring and video recording for multiple Network Cameras. Please install the recording software; then launch the program to add the Network Camera to the Channel list. For detailed information about how to use IP CamSecure, please refer to the user's manual of the software or download it at <http://global.level1.com>.



## Installing DC Viewer Software Online

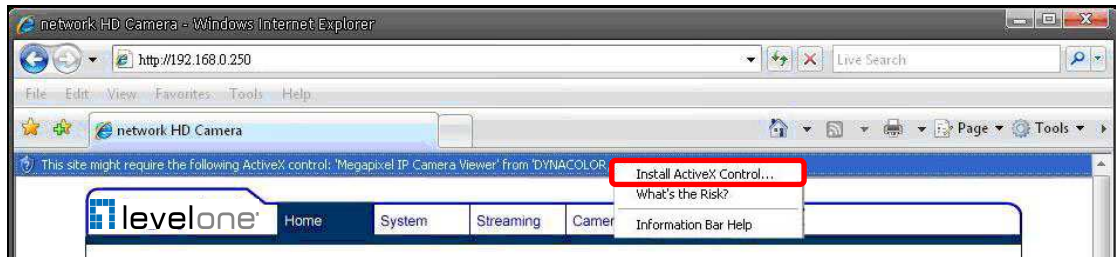
For the initial access to the IP Camera, a client program, DC Viewer, will be automatically installed to your PC when connecting to the IP Camera.

If the Web browser doesn't allow DC Viewer installation, please check the Internet security settings or ActiveX controls and plug-ins settings (see



[Appendix B: Internet Security Settings](#)) to continue the process.

The Information Bar (just below the URL bar) may come out and ask for permission to install the ActiveX Control for displaying video in browser (see the figure below). Right click on the Information Bar and select “Install ActiveX Control...” to allow the installation.

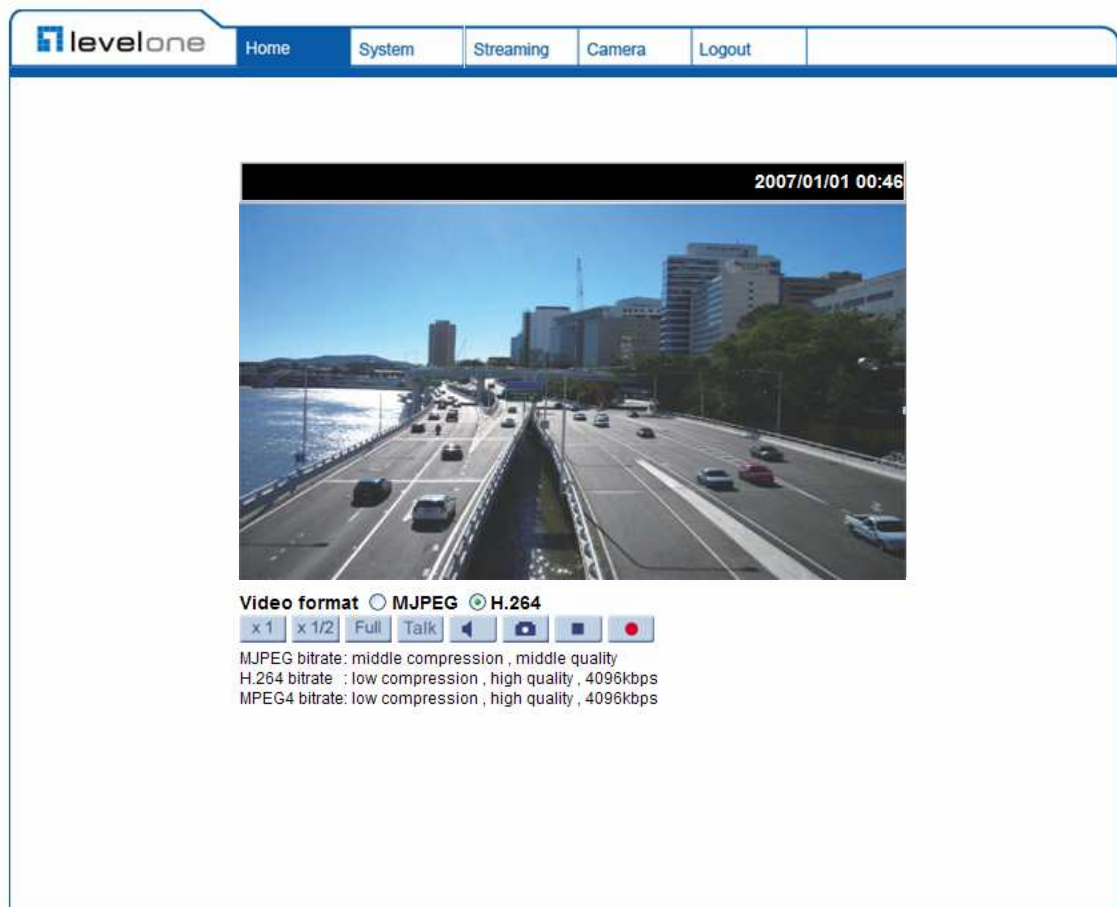


Then the security warning window will pop up. Click “Install” to carry on software installation.



Click “Finish” to close the DC Viewer window when download is finished. For the detailed software download procedure, please refer to [Appendix C: DC Viewer Download Procedure](#).

Once login to the IP Camera, users will see the Home page as shown below:



**NOTE:** Please note that the function buttons will vary depending on the camera model.

### **Administrator/User Privileges**

“Administrator” represents the person who can configure the IP Camera and authorize users access to the camera; “User” refers to whoever has access to the camera with limited authority, i.e. entering Home and Camera setting pages.

### **Image and Focus Adjustment**

The image displays on the Home page when successfully accessing to the IP Camera. Adjust zoom and focus as necessary to produce a clear image.

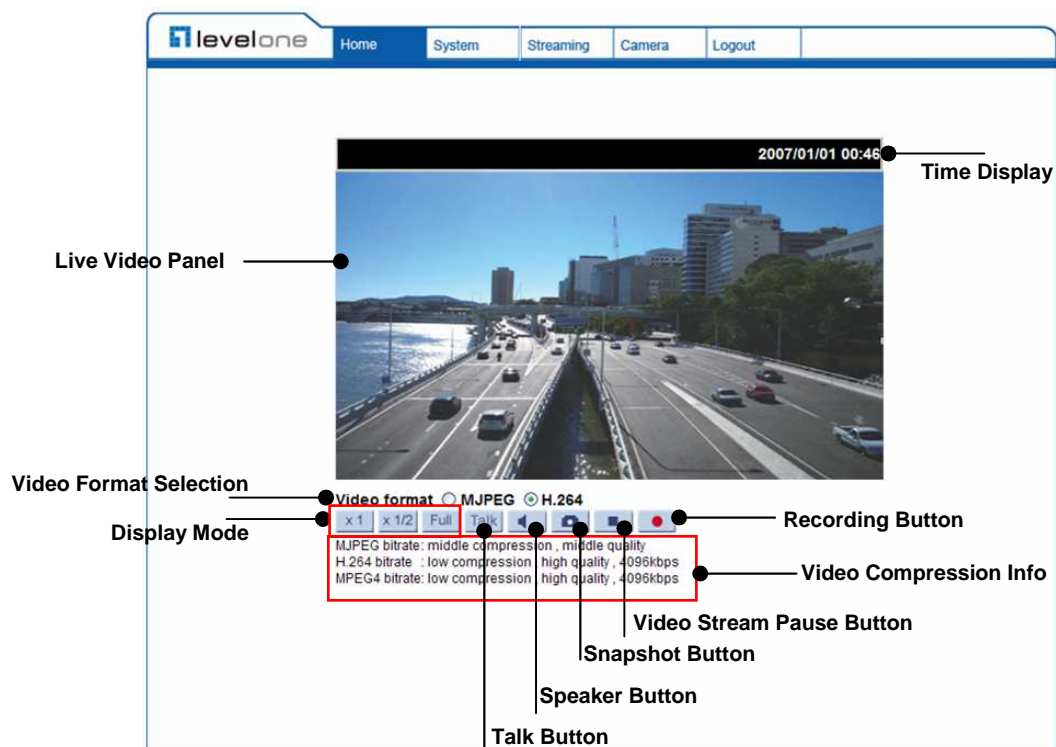
## 4. Configuration & Operation

The IP Camera is provided with a user-friendly browser-based configuration interface, and a free bundled IP CamSecure Lite for record and playback video. In this chapter, information about main page introduction, system related settings and camera settings will be described in detail.

For further information about IP CamSecure, please refer to IP CamSecure user manual.

### 4.1 Browser-based Viewer Introduction

The figure below shows the main page of the IP Camera user interface.



**NOTE:** Please note that the function buttons will vary depending on the camera model.

There are five tabs: Home, System, Streaming, Camera and Logout on the top of the viewer.

#### Home

Users can monitor live video of the targeted area.

### **System setting**

Administrator can set host name, system time, root password, network related settings, etc. Further details will be interpreted in section [4.3 System Related Settings](#).

### **Streaming setting**

Administrator can modify video resolution and rotate type and select audio compression mode in this page.

### **Camera setting**

Users can adjust various camera parameters, including <Exposure>, <White Balance>, <Brightness>, <Sharpness>, <Contrast> and <Digital Zoom>.

### **Logout**

Click on the tab to re-login the IP Camera with another username and password.

## **4.2 Home Page**

In the Home page, there are several function buttons right down the displayed image.





**NOTE:** Please note that the function buttons will vary depending on the camera model.

### **Screen Size Adjustment**

Image display size can be adjusted to x1/2 and full screen.

### **Digital Zoom Control**

In the full screen mode, users can implement digital zoom by rotating the mouse wheel (for zoom in/out) and dragging the mouse into any direction.

### **Talk button** (on/off)

Talk function allows the local site to talk to the remote site. Click on the button to switch it to on/off. Please refer to section [4.3.2 Security: Add user >> Talk/Listen](#) for further details. This function is only open to “User” who has been granted this privilege by the Administrator.



**NOTE:** This function is only available for the Box Camera and Vandal Proof IP Dome.

### **Speaker button** (on/off)

Press the Speaker button to mute/activate the audio.



**NOTE:** This function is only available for the Box Camera and Vandal Proof IP Dome.

### **Snapshot button**

Press the button, and the JPEG snapshots will automatically be saved in the appointed place. The default place of saving snapshots is: C:\. To change the storage location, please refer to section [4.3.11 File Location](#) for further details.

### **Video Streaming Pause/Restart button** (pause/restart)

Press the pause button to disable video streaming, the live video will be displayed as black. Press the restart button to show the live video again.

### **Recording button** (on/off)

Press the button and the recordings from the Live View will be saved to the location specified in the “File Location” (snapshot) page; see section [4.3.11 File Location](#) for further details.

## 4.3 System Related Settings

The figure below shows all categories under the “**System**” tab. Each category in the left column will be explained in the following sections.



**NOTE:** The “System” configuration page is only accessible by Administrator.

**levelone** Home System Streaming Camera Logout

**System**

Host Name : MegaPixelCamera

Time zone : GMT+00:00 Gambia, Liberia, Morocco, England

☐ Enable daylight saving time

time offset: 01:00:00

Start date: Jan 1st Sun Start time: 00:00:00

End date: Jan 1st Sun End time: 00:00:00

☒ Sync with computer time

PC date: 2010/07/06 [yyyy/mm/dd]

PC time: 16:24:00 [hh:mm:ss]

☒ Manual

Date: 2007/01/01 [yyyy/mm/dd]

Time: 00:00:00 [hh:mm:ss]

☐ Sync with NTP server

NTP server: 0.0.0.0 [host name or IP address]

Update interval: Every hour

Save

## 4.3.1 Host Name and System Time Setting

Press the first category: <System> in the left column; the page is shown as below.

The screenshot shows the 'levelone' web interface. The top navigation bar includes 'Home', 'System', 'Streaming', 'Camera', and 'Logout'. The left sidebar lists various system categories, with 'System' highlighted by a red rectangle. The main content area is titled 'System' and contains the following settings:

- Host Name :** MegaPixelCamera
- Time zone :** GMT+00:00 Gambia, Liberia, Morocco, England (dropdown menu)
- ☐ **Enable daylight saving time**
  - time offset: 01:00:00
  - Start date: Jan 1st Sun Start time: 00:00:00
  - End date: Jan 1st Sun End time: 00:00:00
- ☐ **Sync with computer time**
  - PC date: 2010/07/06 [yyyy/mm/dd]
  - PC time: 16:24:00 [hh:mm:ss]
- ☒ **Manual**
  - Date: 2007/01/01 [yyyy/mm/dd]
  - Time: 00:00:00 [hh:mm:ss]
- ☐ **Sync with NTP server**
  - NTP server: 0.0.0.0 [host name or IP address]
  - Update interval: Every hour (dropdown menu)

A 'Save' button is located at the bottom of the settings area.

### Host Name

The name is for camera identification. If alarm function (see section [4.3.7 Application](#)) is enabled and is set to send alarm message by Mail/FTP, the host name entered here will display in the alarm message.

### Time Zone

Select the time zone you are in from the drop-down menu.

### Enable Daylight Saving Time (DST)

To enable DST, please check the item and then specify time offset and DST duration. The format for time offset is [hh:mm:ss]; for instance, if the amount of time offset is one hour, please enter "01:00:00" into the field.

### Sync With Computer Time

Select the item, and video date and time display will synchronize with the PC's.

## **Manual**

The Administrator can set video date, time and day manually. Entry format should be identical with that shown next to the enter field.

## **Sync with NTP Server**

Network Time Protocol (NTP) is an alternate way to synchronize your camera's clock with a NTP server. Please specify the server you wish to synchronize in the enter field. Then select an update interval from the drop-down menu. For further information about NTP, please see the web site: [www.ntp.org](http://www.ntp.org).

### **4.3.2 Security**

Click the category: <Security>, and the page is shown as the figure below.

The screenshot displays the LevelOne web interface. The top navigation bar includes 'Home', 'System', 'Streaming', 'Camera', and 'Logout'. The left sidebar lists various system settings, with 'Security' highlighted by a red rectangle. The main content area is titled 'Security' and contains the following sections:

- Root Password:** Fields for 'Root password' and 'Confirm password', both masked with dots, and a 'Save' button.
- Add User:** Fields for 'User name' and 'User password', and checkboxes for 'I/O access' (checked), 'Camera control', 'Talk', and 'Listen'. An 'Add' button is present.
- Manage User:** A dropdown menu for 'User name' currently showing '-- no user --', with 'Delete' and 'Edit' buttons.

## **Root password**

Change the administrator's password by inputting the new password in both text boxes. The input characters/numbers will be displayed as dots for security purposes. After clicking <Save>, the web browser will ask the Administrator for the new password for access. The maximum length of the password is 14 digits.





**NOTE:** The following characters are valid: A-Z, a-z, 0-9, !#\$%&'-.@^\_~.

### **Add user**

Type the new user's name and password and click <Add> to add the new user. Both user name and password can be up to 16 characters. The new user will be displayed in the user name list. There is a maximum of twenty user accounts. Each user can be assigned the privileges of “**Camera control**”, “**Talk**” and “**Listen**”.

- **I/O access**

This item supports fundamental functions that enable users to view video when accessing to the camera.

- **Camera control**

This item allows the appointed User to change camera parameters on the Camera Setting page.

- **Talk/Listen**

Talk and Listen functions allow the appointed user in the local site (PC site) communicating with, for instance, the administrator in the remote site.



**NOTE:** The Compact IP Dome does not have Talk function.

### **Manage User**

#### **Delete user**

To delete a user, pull down the user list, and select the user name you wish to delete. Then click <Delete> to remove it.

#### **Edit user**

Pull down the user list and select a user name. Click <Edit> to edit the user's password and privilege.



**NOTE:** It is required to enter the User password as well as select the function open to the user. When finished, click <Save> to modify the account authority.



### 4.3.3 Network

Click <Network> in the left column, and the page will display as shown below.

The screenshot shows the 'levelone' web interface. On the left, a vertical menu lists various system settings: System, Security, Network (highlighted with a red box), DDNS, Mail, FTP, Application, Motion detection, Storage management, Recording, File location, Iris adjustment, View log file, View user information, View parameters, Factory default, Software version, Software upgrade, and Maintenance. The main content area is titled 'Network' and is divided into three sections: 'General', 'Advanced', and 'UPnP Setting'. In the 'General' section, the 'Get IP address automatically' option is selected with a radio button. Below this, there are input fields for IP address (192.168.0.99), Subnet mask (255.255.255.0), Default gateway (192.168.0.254), Primary DNS (0.0.0.0), and Secondary DNS (0.0.0.0). The 'Use fixed IP address' option is also present but not selected. Below the 'General' section, the 'Advanced' section contains input fields for Web Server port (80), RTSP port (554), and MJPEG over HTTP port (8008), with a 'Save' button. The 'UPnP Setting' section at the bottom has a checked checkbox for 'Enable UPnP', an unchecked checkbox for 'Enable UPnP port forwarding', an input field for 'Friendly name' (FCS-1141), and a 'Save' button.

Users can choose to connect to the IP Camera with fixed or dynamic (DHCP) IP address. The IP Camera also provides PPPoE support for users who connect to the network via PPP over Ethernet (PPPoE).

#### **Get IP address automatically (DHCP)**

The camera's default setting is "Use fixed IP address". Please refer to the previous section

### [3.3 Accessing IP Camera](#) for login with the default IP address.

If select “**Get IP address automatically**”, after the IP Camera restarts, users can search it through the installer program: DeviceSearch.exe, which can be found in “DeviceSearch” folder in the supplied CD.



**NOTE:** Please make the record of the IP Camera’s MAC address, which can be found in the label of the camera, for identification in the future.

#### **Use fixed IP address**

To setup static IP address, select “**Use fixed IP address**” and move the cursor to the IP address blank (as indicated below) and insert the new IP address, ex. 192.168.7.123; then go to the Default gateway (explained latter) blank and change the setting, ex. 192.168.7.254. Press “Save” to confirm the new setting.

The screenshot displays the 'levelone' web interface. On the left is a navigation menu with options: System, Security, Network, DDNS, Mail, FTP, Application, Motion detection, Storage management, Recording, File location, Iris adjustment, View log file, View user information, View parameters, Factory default, Software version, Software upgrade, and Maintenance. The main content area is titled 'Network' and has a 'General' tab selected. Under 'General', the 'Use fixed IP address' radio button is selected. Below it, three input fields are shown: 'IP address' (192.168.7.123), 'Subnet mask' (255.255.255.0), and 'Default gateway' (192.168.7.254). These three fields are each enclosed in a red rectangular box. Below these fields are 'Primary DNS' and 'Secondary DNS' fields, both set to 0.0.0.0. Further down, the 'Use PPPoE' radio button is unselected, and there are empty input fields for 'User name' and 'Password'. A 'Save' button is located below the 'Password' field and is also enclosed in a red rectangular box. Below the 'General' section is the 'Advanced' section, which includes 'Web Server port' (80), 'RTSP port' (554), and 'MJPEG over HTTP port' (8008), each with a 'Save' button. At the bottom is the 'UPnP Setting' section, which has 'Enable UPnP' checked, 'Enable UPnP port forwarding' unchecked, and a 'Friendly name' field containing 'FCS-1141' with a 'Save' button below it.

When using static IP address to login to the IP Camera, users can access it either through “DeviceSearch” software (see [3.3 Accessing IP Camera](#)) or input the IP address in the URL bar and press “Enter”.



- **IP address**  
This is necessary for network identification.
- **Subnet mask**  
It is used to determine if the destination is in the same subnet. The default value is "255.255.255.0".
- **Default gateway**  
This is the gateway used to forward frames to destinations in different subnet. Invalid gateway setting will fail the transmission to destinations in different subnet.
- **Primary DNS**  
Primary DNS is the primary domain name server that translates hostnames into IP addresses.
- **Secondary DNS**  
Secondary DNS is a secondary domain name server that backups the primary DNS.

### Use PPPoE

For the PPPoE users, please enter the PPPoE Username and Password into the fields, and click on the "Save" button to complete the setting.

### Advanced

- **Web Server port**  
The default web server port is 80. Once the port is changed, the user must be notified the change for the connection to be successful. For instance, when the Administrator changes the HTTP port of the IP Camera whose IP address is 192.168.0.100 from 80 to 8080, the user must type in the web browser "http://192.168.0.100:8080" instead of "http://192.168.0.100".

- **RTSP port**

RTSP port could be set from 1 to 65535. (Normal Setting Port: 554, 1024 ~65535)

- **MJPEG over HTTP port**

The default setting of HTTP Port is 8008; setting range: 1024 ~65535.

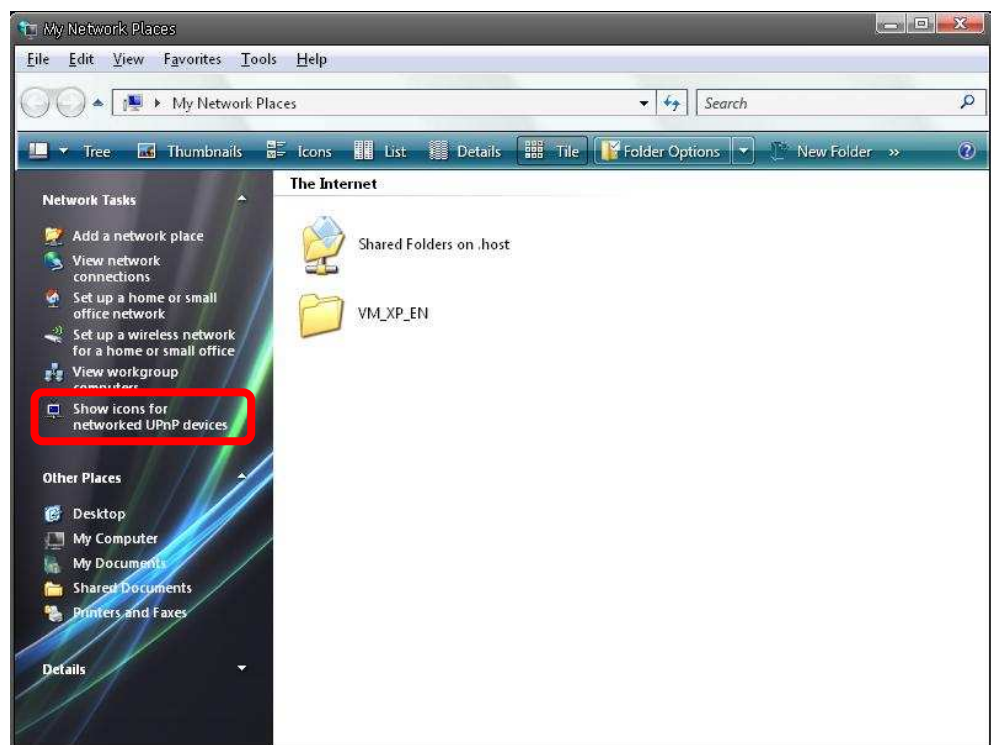


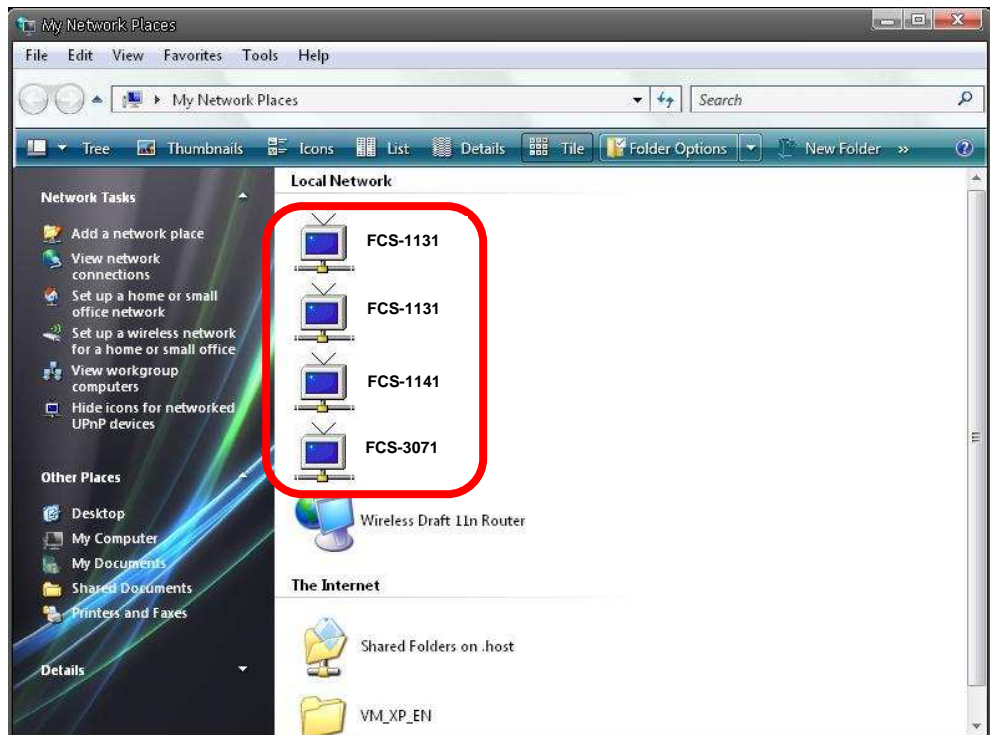
**NOTE:** Be aware to choose the different port from the one set for the web server port.

### UPnP Setting

- **Enable UPnP**

When the UPnP is enabled, whenever the IP Camera is presented to the LAN, the icon of the connected IP Camera will appear in My Network Places to allow for direct access as shown below.





**NOTE:** To enable this function, please make sure the UPnP component is installed on your computer. Please refer to Appendix E: Install UPnP Components for UPnP component installation procedure.

- **Enable UPnP port forwarding**

When the UPnP port forwarding is enabled, the IP Camera is allowed to open the web server port on the router automatically.



**NOTE:** To enable this function, please make sure that your router supports UPnP and it is activated.

- **Friendly name**

Set the name for the IP Camera for identity.

#### **4.3.4 DDNS**

Dynamic Domain Name System (DDNS) allows a host name to be constantly synchronized with a dynamic IP address. In other words, it allows those using a dynamic IP address to be associated to a static domain name so others can connect to it by name.



levelone

Home System Streaming Camera Logout

System

Security

Network

**DDNS**

Mail

FTP

Application

Motion detection

Storage management

Recording

File location

Iris adjustment

View log file

View user information

View parameters

Factory default

Software version

Software upgrade

Maintenance

**DDNS**

**Dynamic DNS**  
Use Dynamic DNS If You Want To Use Your DDNS Account.

☐ Enable DDNS

Provider: DynDNS.org(Dynamic) ▼

Host name:

Username/E-mail:

Password/Key:

Save

### **Enable DDNS**

Check the item to enable DDNS.

### **Provider**

Select one DDNS host from the provider list.

### **Host name**

Enter the registered domain name in the field.

### **Username/E-mail**

Enter the username or e-mail required by the DDNS provider for authentication.

### **Password/Key**

Enter the password or key required by the DDNS provider for authentication.

## **4.3.5 Mail**

The Administrator can send an e-mail via Simple Mail Transfer Protocol (SMTP) when an alarm is triggered. SMTP is a protocol for sending e-mail messages

between servers. SMTP is a relatively simple, text-based protocol, where one or more recipients of a message are specified and the message text is transferred. The configuration page is shown as follows:

The screenshot shows the 'levelone' web interface. The top navigation bar includes 'Home', 'System', 'Streaming', 'Camera', and 'Logout'. The left sidebar lists various system settings, with 'Mail' highlighted by a red rectangle. The main content area is titled 'Mail' and contains an 'SMTP' section. This section has two identical sets of configuration fields for SMTP servers. Each set includes: '1st SMTP (mail) server', '1st SMTP (mail) server port' (with '25' entered), '1st SMTP account name', '1st SMTP password', and '1st recipient email address'. A '2nd' set of these fields is also present. At the bottom, there is a 'Sender email address' field and a 'Save' button.

Two sets of SMTP can be configured. Each set includes SMTP Server, Account Name, Password and E-mail Address settings. For SMTP server, contact your network service provider for more specific information.

### 4.3.6 FTP

The Administrator can set as sending alarm message to a specific File Transfer Protocol (FTP) site when an alarm is triggered. Users can assign alarm message to up to two FTP sites. The FTP setting page is shown below. Enter the FTP details, which include server, server port, user name, password and remote folder, in the fields. Press “Save” when finished.

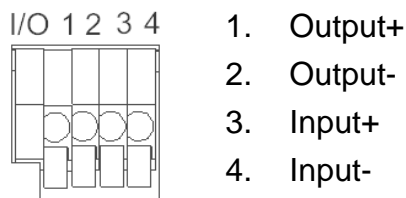
The screenshot shows the 'levelone' web interface. The top navigation bar includes 'Home', 'System', 'Streaming', 'Camera', and 'Logout'. The left sidebar contains a list of menu items: System, Security, Network, DDNS, Mail, **FTP** (highlighted with a red box), Application, Motion detection, Storage management, Recording, File location, Iris adjustment, View log file, View user information, View parameters, Factory default, Software version, Software upgrade, and Maintenance. The main content area is titled 'FTP' and contains the following configuration fields:

FTP	
Built-in FTP server port	21
1st FTP server	
1st FTP server port	21
1st FTP user name	
1st FTP password	
1st FTP remote folder	
<input type="checkbox"/> 1st FTP passive mode	
2nd FTP server	
2nd FTP server port	21
2nd FTP user name	
2nd FTP password	
2nd FTP remote folder	
<input type="checkbox"/> 2nd FTP passive mode	
Save	

### 4.3.7 Application (Excluding Compact IP Dome)

The IP Camera (Box Camera and Vandal Proof Dome) equips one alarm input and one relay output for cooperating with alarm system to catch events' images. Refer to alarm pin definition below to connect alarm devices to the IP Camera if needed. The alarm configuration page is also shown below.

#### Alarm Pin Definition



**levelone** Home System Streaming Camera Logout

**System**

**Application**

**Alarm Switch**

☒ Off ☐ On

**Alarm Type**

☐ Normal close ☒ Normal open

**Alarm Output**

☒ Output high ☐ Output low

**Triggered Action**

☒ Enable alarm output ☐ Record stream to sd card

☐ Send message by FTP ☐ Send message by E-Mail

☐ Upload image by FTP ☐ Upload image by E-Mail

**File Name**

File name :

☒ Add date/time suffix

☐ Add sequence number suffix (no maximum value)

☐ Add sequence number suffix up to  and then start over

☐ Overwrite

## Alarm Switch

The Administrator can enable or disable the alarm function.

## Alarm Type

Select an alarm type, “Normal close” or “Normal open,” that corresponds with the alarm application.

## Alarm Output

Define alarm output signal “high” or “low” as the normal alarm output status according to the current alarm application.

## Triggered Action (Multi-option)

The Administrator can specify alarm actions that will take when the alarm is triggered. All options are listed as follows:

- **Enable Alarm Output**

Select the item to enable alarm relay output.

- **Send Alarm Message by FTP/E-Mail**

The Administrator can select whether to send an alarm message by FTP and/or E-Mail when an alarm is triggered.

- **Upload Image by FTP**

Select this item, and the Administrator can assign a FTP site and configure various parameters as shown in the figure below. When the alarm is triggered, event images will be uploaded to the appointed FTP site.

The screenshot displays the 'levelone' web interface. On the left is a navigation menu with items like System, Security, Network, DDNS, Mail, FTP, Application, Motion detection, Storage management, Recording, File location, Iris adjustment, View log file, View user information, View parameters, Factory default, Software version, Software upgrade, and Maintenance. The main content area is titled 'Application' and contains several sections: 'Alarm Switch' (Off/On), 'Alarm Type' (Normal close/Normal open), 'Alarm Output' (Output high/Output low), and 'Triggered Action'. In the 'Triggered Action' section, 'Upload image by FTP' is checked and highlighted with a red rectangle. Below this, there are fields for 'FTP address' (FTP1), 'Pre-trigger buffer' (5 frames), and 'Post-trigger buffer' (5 frames). There are also checkboxes for 'Continue image upload', 'Upload for 1 sec', 'Upload during the trigger active', and 'Image frequency' (Max. fps). At the bottom, the 'File Name' section shows 'image.jpg' and options for adding date/time suffix, sequence number suffix, or overwriting. A 'Save' button is at the bottom.

- **Record Stream to SD Card**

Select the item, and the alarm-triggered recording will be saved into your Micro SD card.

The screenshot shows the 'levelone' web interface with the 'Application' tab selected. The left sidebar contains a menu with items like System, Security, Network, DDNS, Mail, FTP, Application, Motion detection, Storage management, Recording, File location, Iris adjustment, View log file, View user information, View parameters, Factory default, Software version, Software upgrade, and Maintenance. The main content area is titled 'Application' and contains several sections: 'Alarm Switch' (Off/On), 'Alarm Type' (Normal close/Normal open), 'Alarm Output' (Output high/Output low), 'Triggered Action' (Enable alarm output, Record stream to sd card, Pre-trigger buffer, Upload for, Upload during the trigger active), 'File Name' (File name, Add date/time suffix, Add sequence number suffix, Add sequence number suffix up to, Overwrite), and a 'Save' button. The 'Record stream to sd card' option is checked and highlighted with a red box.



**NOTE:** Please make sure the local recording (with Micro SD/SDHC card) is activated so that this function can be implemented. See section [4.3.10 Recording](#) for further details.

- **Upload Image by E-Mail**

Select this item, and the Administrator can assign an e-mail address and configure various parameters as shown in the figure below. When the

alarm is triggered, event images will be sent to the appointed e-mail address.

The screenshot shows the 'levelone' web interface with the 'System' tab selected. The left sidebar contains a menu with options like System, Security, Network, DDNS, Mail, FTP, Application, Motion detection, Storage management, Recording, File location, Iris adjustment, View log file, View user information, View parameters, Factory default, Software version, Software upgrade, and Maintenance. The main content area is titled 'Application' and contains several sections: 'Alarm Switch' (Off/On), 'Alarm Type' (Normal close/Normal open), 'Alarm Output' (Output high/Output low), and 'Triggered Action'. The 'Triggered Action' section is highlighted with a red box and includes the following options: 'Enable alarm output' (checked), 'Send message by FTP' (unchecked), 'Upload image by FTP' (unchecked), 'Record stream to sd card' (unchecked), 'Send message by E-Mail' (unchecked), 'Upload image by E-Mail' (checked), 'E-Mail address' (E-Mail 1), 'Pre-trigger buffer' (5 frames), 'Post-trigger buffer' (5 frames), 'Continue image upload' (unchecked), 'Upload for 1 sec' (selected), 'Upload during the trigger active' (unchecked), and 'Image frequency' (Max. fps). Below this, the 'File Name' section shows a text input field with 'image.jpg' and radio button options for 'Add date/time suffix', 'Add sequence number suffix (no maximum value)', 'Add sequence number suffix up to 0 and then start over', and 'Overwrite'. A 'Save' button is at the bottom.



**NOTE:** Make sure SMTP or FTP configuration has been completed. See section [4.3.5 Mail](#) and [4.3.6 FTP](#) for further details.

### **File Name**

Enter a file name in the blank, ex. image.jpg. The uploaded image's file name format can be set in this section. Please select the one that meets your requirements.

- **Add date/time suffix**  
File name: imageYYMMDD\_HHNNSS\_XX.jpg  
Y: Year, M: Month, D: Day  
H: Hour, N: Minute, S: Second  
X: Sequence Number
- **Add sequence number suffix (no maximum value)**

File name: imageXXXXXXXX.jpg

X: Sequence Number

- **Add sequence number suffix (limited value)**

File Name: imageXX.jpg

X: Sequence Number

The file name suffix will end at the number being set. For example, if the setting is up to “10,” the file name will start from 00, end at 10, and then start all over again.

- **Overwrite**

The original image in the FTP site will be overwritten by the new uploaded file with a static filename.

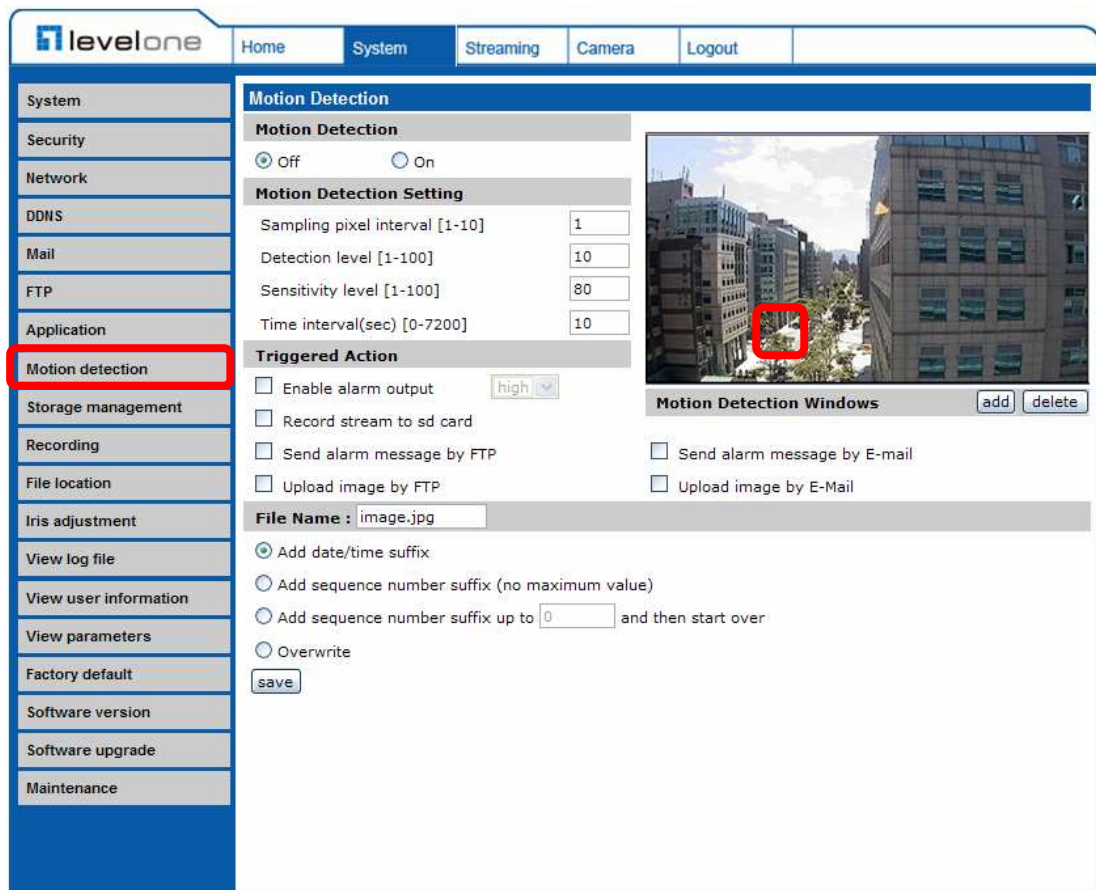
**Save**

After complete all the settings mentions above, please click on the Save button to save all the settings in this page.



### 4.3.8 Motion Detection

Motion Detection function allows detecting suspicious motion and triggering alarms when motion volume in the detected area reaches/exceeds the determined sensitivity threshold value.



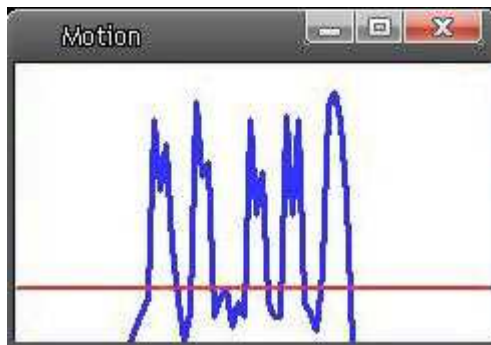
In the Motion Detection setting page, there is a frame (**Motion Detection Window**) displayed on the Live Video Pane. The Motion Detection Window is for defining the motion detection area. To change the size of the Motion Detection Window, move the mouse cursor to the edge of the frame and draw it outward/inward. Moving the mouse to the center of the frame can shift the frame to the intended location.

Up to 10 Motion Detection Windows can be set. Press the “add” button under the Live Video Pane to add a Motion Detection Window. To cancel a Motion Detection Window, move the mouse cursor to the selected Window, and click on the “delete” button.

If Motion Detection function is activated, the pop-off window (Motion) with indication of motion will be shown.



When motion is detected, the signals will be displayed on the Motion window as shown below.



Detailed settings of Motion Detection are described as follows:

### **Motion Detection**

You will be able to turn on/off Motion Detection in System section. Default setting is Off.

### **Motion Detection Setting**

Users could adjust various parameters of Motion Detection in this section.

- Sampling pixel interval [1-100]:  
The default value is 10, which means system will take one sampling pixel for every 10 pixel.
- Detection level [1-100]:  
The default level is 10. The item is to set detection level for each sampling pixel; the smaller the value, the more sensitive it is.

- **Sensitivity level [1-100]:**  
The default level is 80, which means if 20% or more sampling pixels are detected differently, system will detect motion. The bigger the value, the more sensitive it is. Meanwhile, when the value is bigger, the red horizontal line in the motion indication window will be lower accordingly.
- **Time interval (sec) [0-7200]:**  
The default interval is 10. The value is the interval between each detected motion.

### **Triggered Action (Multi-option)**

The Administrator can specify alarm actions that will take when motion is detected. All options are listed as follows:

- **Enable Alarm Output**  
Check the item and select the predefined type of alarm output to enable alarm relay output when motion is detected.



**NOTE:** This option is excluded in the Compact IP Dome Camera.

- **Record stream to SD Card**  
Select this item, and the Motion Detection recording will be stored in Micro SD/ SDHC card when motion is detected.



**NOTE:** Please make sure the local recording (with Micro SD/ SDHC card) is activated so that this function can be implemented. See section [4.3.10 Recording](#) for further details.

- **Send Alarm Message by FTP/E-Mail**  
The Administrator can select whether to send an alarm message by FTP and/or E-Mail when motion is detected.
- **Upload Image by FTP**  
Select this item, and the Administrator can assign a FTP site and configure various parameters as shown in the figure below. When motion is detected, event images will be uploaded to the appointed FTP site.

☒ Upload Image by FTP

FTP address FTP1 ▾

Pre-trigger buffer 5 frames ▾

Post-trigger buffer 5 frames ▾

☐ Continue image upload

☒ Upload for 1 sec

☐ Upload during the trigger active

Image frequency Max. ▾ fps

- **Upload Image by E-Mail**

Select this item, and the Administrator can assign an e-mail address and configure various parameters as shown in the figure below. When motion is detected, event images will be sent to the appointed e-mail address.

☒ Upload Image by E-Mail

E-Mail address E-Mail 1 ▾

Pre-trigger buffer 5 frames ▾

Post-trigger buffer 5 frames ▾

☐ Continue image upload

☒ Upload for 1 sec

☐ Upload during the trigger active

Image frequency Max. ▾ fps



**NOTE:** Make sure SMTP or FTP configuration has been completed. See section [4.3.5 Mail](#) and [4.3.6 FTP](#) for further details.

### **File Name**

The uploaded image's filename format can be set in this section. Please select the one that meets your requirements.

### **Save**

Click the Save button to save all the Motion Detection settings mentioned above.

## 4.3.9 Storage Management

Users can implement local recording to the Micro SD/SDHC card.



**NOTE:** Please format the Micro SD/SDHC card first before recording starts.

The screenshot shows the 'levelone' web interface with a sidebar menu on the left and a main content area on the right. The sidebar menu includes items like System, Security, Network, DDNS, Mail, FTP, Application, Motion detection, **Storage management** (highlighted with a red box), Recording, File location, Iris adjustment, View log file, View user information, View parameters, Factory default, Software version, Software upgrade, and Maintenance. The main content area is titled 'Storage Management' and contains three sections: 'Device information' showing SD card details (Device type: SD card, Free space: 0 KB, Total size: 0 KB, Status: No, Full: No), 'Device setting' with a 'Format device' button, and 'Disk cleanup setting' with options to enable automatic disk cleanup and specify removal criteria (older than 1 day(s) and 85% full). A 'Recording list' section at the bottom is currently empty, with columns for 'FileName' and 'Size', and buttons for 'Remove', 'Sort', and 'download'.

### Device information

If a Micro SD/SDHC card is installed, the card information such as the memory capacity and status will be shown at Device Information section.

### Device setting

Press the “Format” button to format the memory card.

### Disk cleanup setting

Users can enable automatic recordings cleanup by specifying the time and storage limits

### Recording List

Each video file on the Micro SD/SDHC card will be listed in the Recording list as shown below.

Recording list	
FileName	Size
M_20100514_142625.avi	3783 KB
M_20100514_142637.avi	3542 KB
M_20100514_142648.avi	3873 KB
M_20100514_153014.avi	4357 KB
R_20070103_172925.avi	49634 KB
<div>Remove Sort download</div>	

- **Remove**

To remove a file, select the file first, and then press the “Remove” button.

- **Sort:**

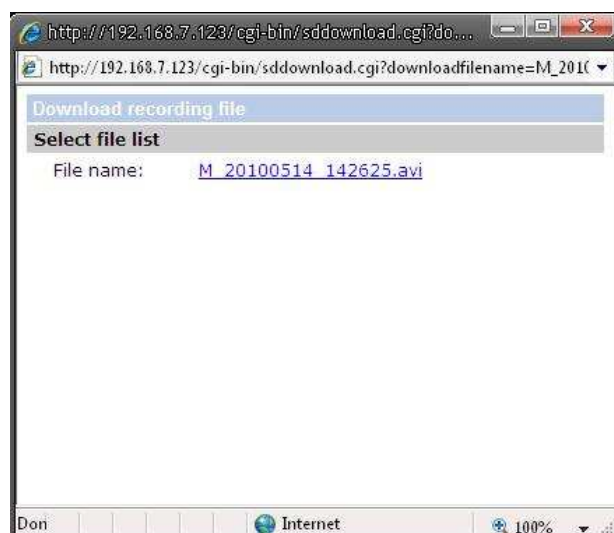
Press the “Sort” button, and the files in the Recording list will be listed in name and date order.



**NOTE:** The capital letter A/M/R appears in the very beginning of a file name denotes the sort of the recording: A stands for Alarm, M stands for Motion, and R stands for regular recording.

- **Download:**

To open/download a video clip, select the file first, and then press the “download” button below the Recording list field. The selected file window will pop up as shown below. Click on the AVI file to directly play the video in the player or download it to a specified location.



## 4.3.10 Recording

In the Recording setting page, users can specify the recording schedule that fits the present surveillance requirement.

The screenshot displays the 'levelone' web interface. The top navigation bar includes 'Home', 'System', 'Streaming', 'Camera', and 'Logout'. The left sidebar lists various system settings, with 'Recording' highlighted by a red rectangular box. The main content area is titled 'Recording' and contains a 'Recording Schedule' section. This section offers three radio button options: 'Disable' (selected), 'Always', and 'Only during time frame'. Below these, there are checkboxes for each day of the week (Sun, Mon, Tue, Wed, Thu, Fri, Sat). Additionally, there are input fields for 'Start time' and 'Duration', both currently set to '00:00'. A 'Save' button is located at the bottom of the configuration area.

### **Activating Micro SD/SDHC Card Recording**

Two types of schedule mode are offered: Always and Time Frame setting. Users can setup the time frame to fit the recording schedule or choose “Always” to activate Micro SD/SDHC Card Recording all the time.

Please click on the “Save” button for confirming the schedule mode.

### **Terminating Micro SD/SDHC Card Recording**

Select “Disable” to terminate the recording function.

### 4.3.11 File Location

Users can specify a storage location for the snapshots and recording. The default setting is: C:\. Once confirm the setting, press “Save,” and all the snapshots and recording will be saved in the designate location.



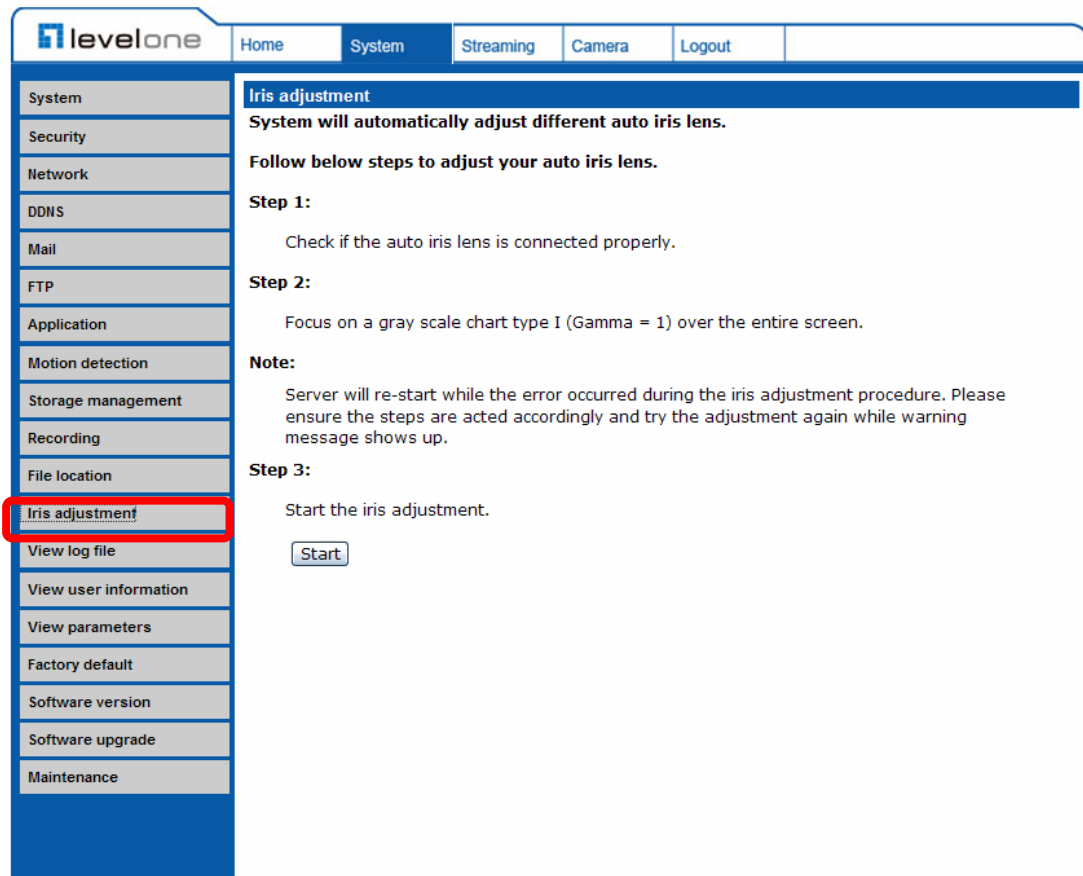
**NOTE:** Please make sure the selected file path contains valid characters such as letters and numbers.

The screenshot displays the 'levelone' web interface. On the left is a vertical sidebar menu with various system settings. The 'File location' option in this menu is highlighted with a red rectangular border. The main content area on the right is titled 'File Location' and contains the instruction 'Set the destination of snapshot photos and recorded video files'. Below this, there is a label 'All files stored at:' followed by a text input field containing 'C:\'. To the right of the input field is a 'Select' button. Below the input field is a 'Save' button. The top navigation bar includes links for 'Home', 'System', 'Streaming', 'Camera', and 'Logout'.



### 4.3.12 Iris Adjustment (Excluding Compact IP Dome)

For users who use Auto-iris lens, when it is required to implement iris adjustment, please refer to the Iris adjustment procedure in the setting page to adjust iris.



The screenshot displays the 'levelone' web interface. The top navigation bar includes 'Home', 'System', 'Streaming', 'Camera', and 'Logout'. A left sidebar lists various system settings, with 'Iris adjustment' highlighted by a red rectangle. The main content area, titled 'Iris adjustment', provides instructions for adjusting the auto iris lens. It states that the system will automatically adjust the lens and lists three steps: Step 1 (check connection), Step 2 (focus on a gray scale chart), and Step 3 (start adjustment). A 'Start' button is located at the bottom of the instructions.

**levelone** Home System Streaming Camera Logout

**Iris adjustment**

System will automatically adjust different auto iris lens.

Follow below steps to adjust your auto iris lens.

**Step 1:**

Check if the auto iris lens is connected properly.

**Step 2:**

Focus on a gray scale chart type I ( $\Gamma = 1$ ) over the entire screen.

**Note:**

Server will re-start while the error occurred during the iris adjustment procedure. Please ensure the steps are acted accordingly and try the adjustment again while warning message shows up.

**Step 3:**

Start the iris adjustment.

### 4.3.13 View Log File

Click on the link to view the system log file. The content of the file provides useful information about configuration and connections after system boot-up.

The screenshot displays the levelone web interface. The top navigation bar includes links for Home, System, Streaming, Camera, and Logout. On the left, a vertical menu lists various system settings: System, Security, Network, DDNS, Mail, FTP, Application, Motion detection, Storage management, Recording, File location, Iris adjustment, View log file (highlighted with a red rectangle), View user information, View parameters, Factory default, Software version, Software upgrade, and Maintenance. The main content area, titled 'System log', shows a list of system events with timestamps and descriptions. The log entries are as follows:

Timestamp	Event Description
[Mon Jan 1 00:00:00 2007]	--Network interface initialized start
[Mon Jan 1 00:00:12 2007]	--Network interface initialized end
[Mon Jan 1 00:00:12 2007]	--Subnet Mask = 255.255.255.0
[Mon Jan 1 00:00:12 2007]	--Host IP = 192.168.50.143
[Mon Jan 1 00:00:12 2007]	--Gateway =
[Mon Jan 1 00:00:12 2007]	--MAC address = 00:D0:89:05:31:4C
[Mon Jan 1 00:00:30 2007]	--connect by root@192.168.50.115
[Mon Jan 1 00:00:34 2007]	--connect by root@192.168.50.115
[Mon Jan 1 00:01:03 2007]	--connect by root@192.168.50.115
[Mon Jan 1 00:01:23 2007]	--connect by root@192.168.50.115
[Mon Jan 1 00:01:23 2007]	--connect by root@192.168.50.115
[Mon Jan 1 00:01:30 2007]	--connect by root@192.168.50.115
[Mon Jan 1 00:01:30 2007]	--connect by root@192.168.50.115
[Mon Jan 1 00:02:57 2007]	--connect by root@192.168.50.115

## 4.3.14 View User Information

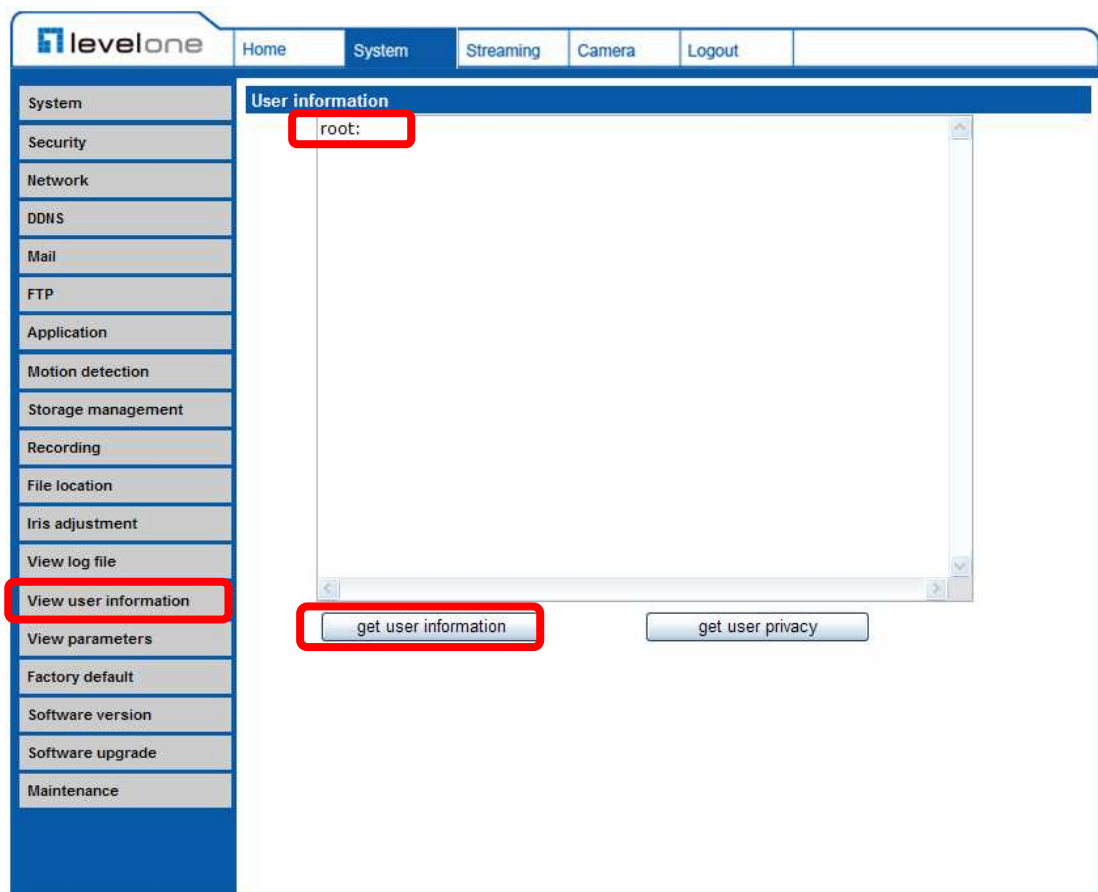
The Administrator can view each added user's login information and privileges (see [4.3.2 Security](#)).

### View User Login Information

All the users in the network will be listed in the “User information” zone, as shown below. As the figure below shows:

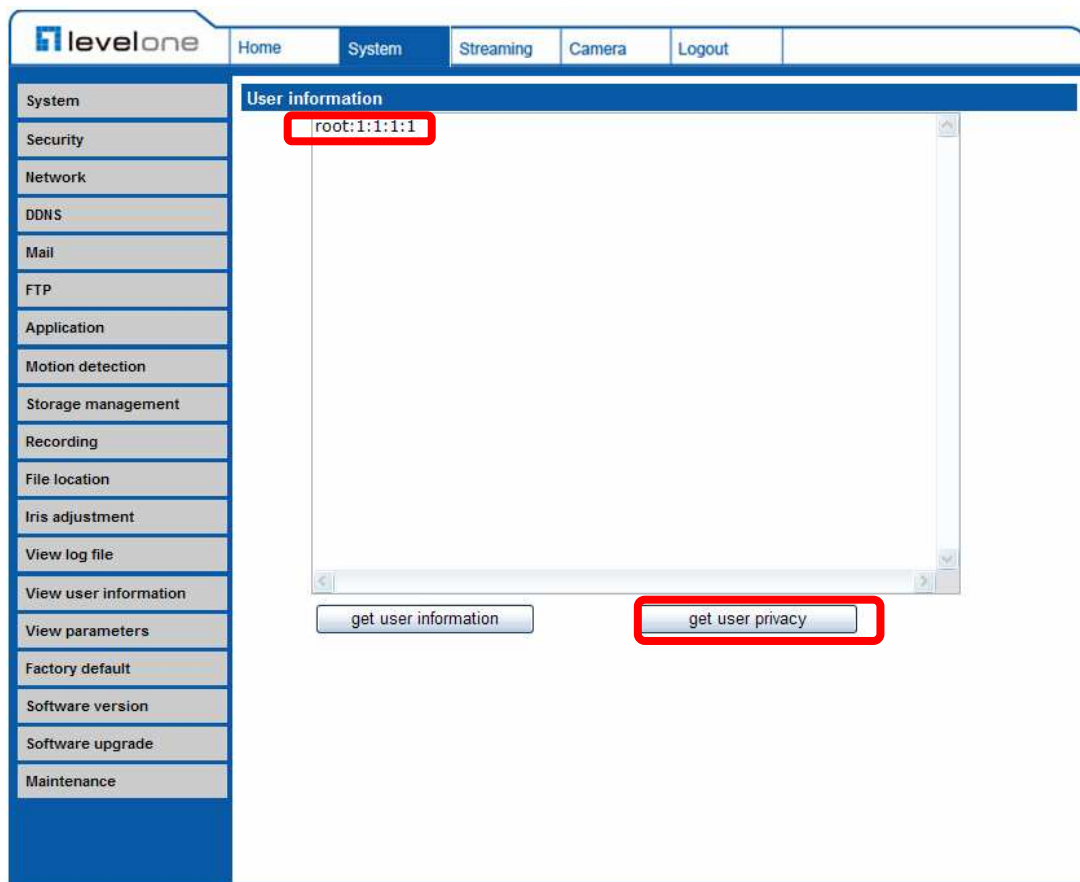
**root:**

It indicates that one user's login username is: root, and password is blank .



## View User Privilege

Press “get user privacy” down the page, and the Administrator can view each user’s privileges.



As the figure above shows:

**User: 1:1:0:1**

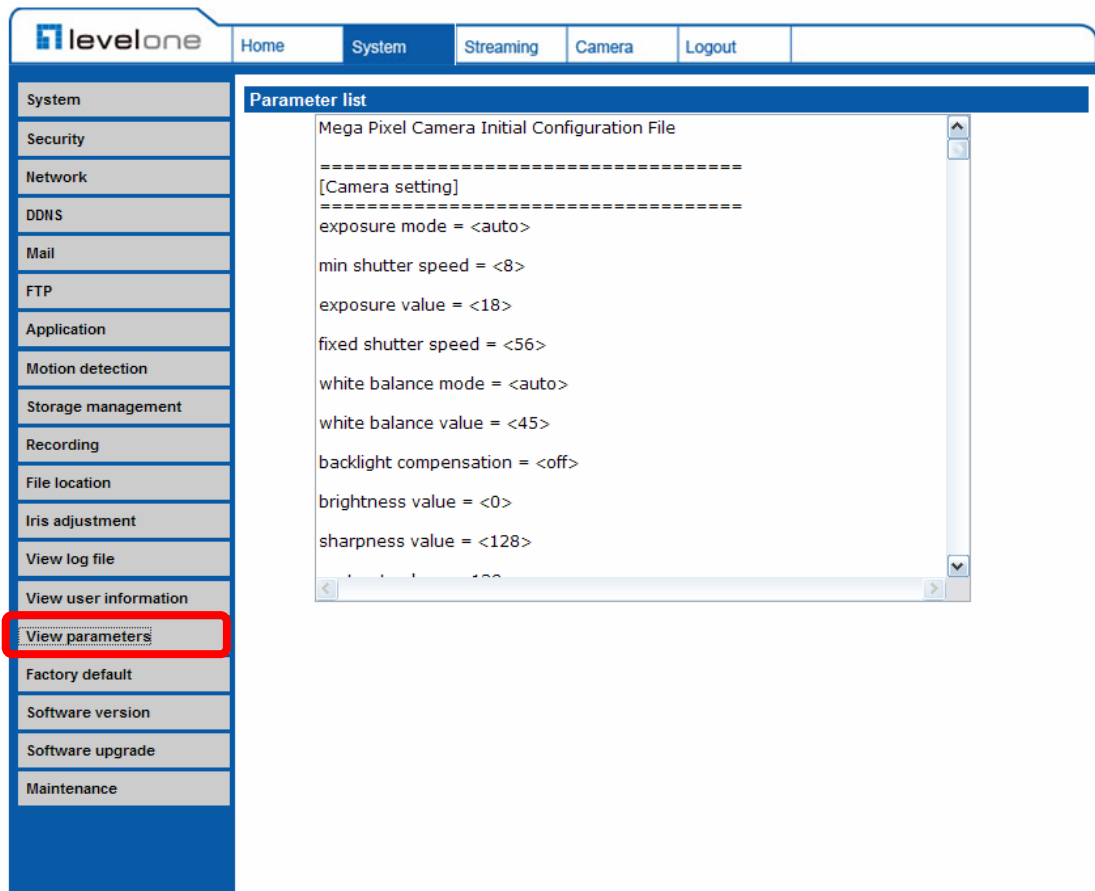
1:1:0:1= I/O access: Camera control: Talk: Listen (see [4.3.2 Security](#))

<input checked="" type="checkbox"/> I/O access	<input checked="" type="checkbox"/> Camera control
<input type="checkbox"/> Talk	<input checked="" type="checkbox"/> Listen

Therefore, it denotes the user is granted privileges of I/O access, Camera control and Listen.

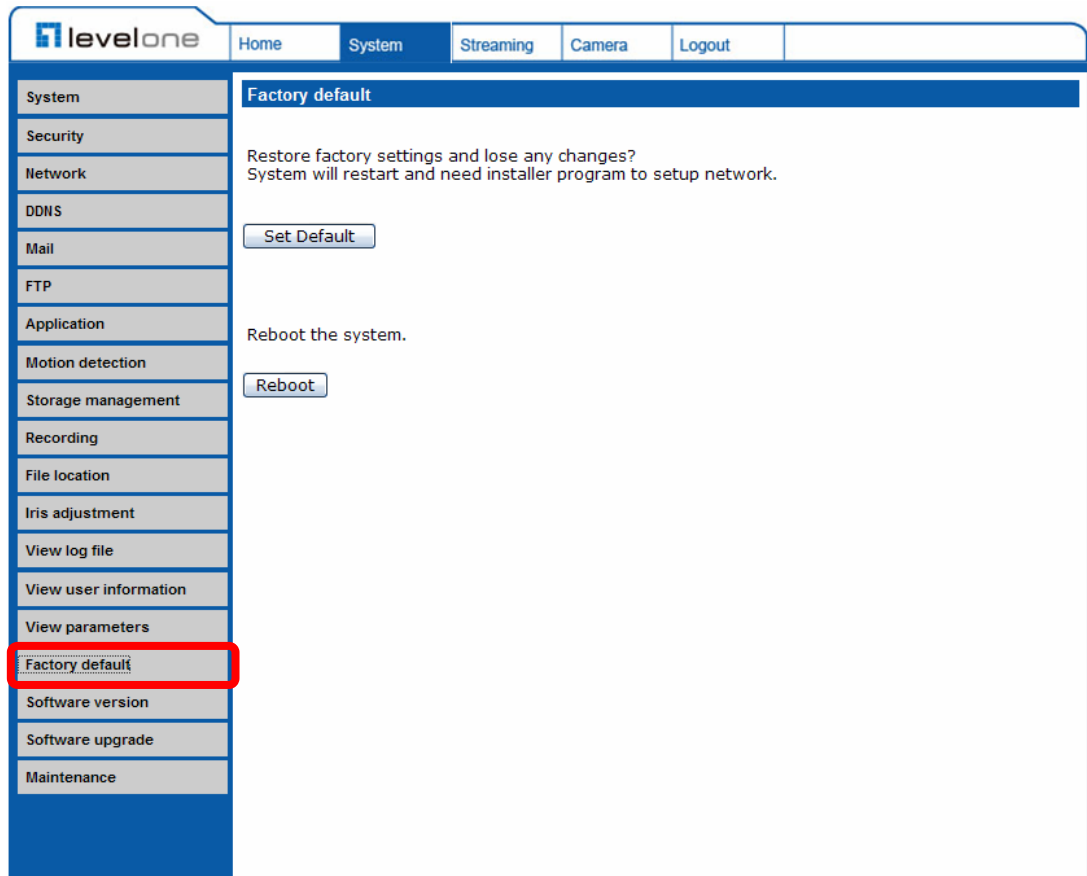
### 4.3.15 View Parameters

Click on this item to view the entire system's parameter setting.



## 4.3.16 Factory Default

The factory default setting page is as shown below. Follow the instructions to reset the IP camera to factory default setting if needed.



### Set Default

Click on the “Set Default” button to recall the factory default settings. Then the system will restart in 30 seconds.



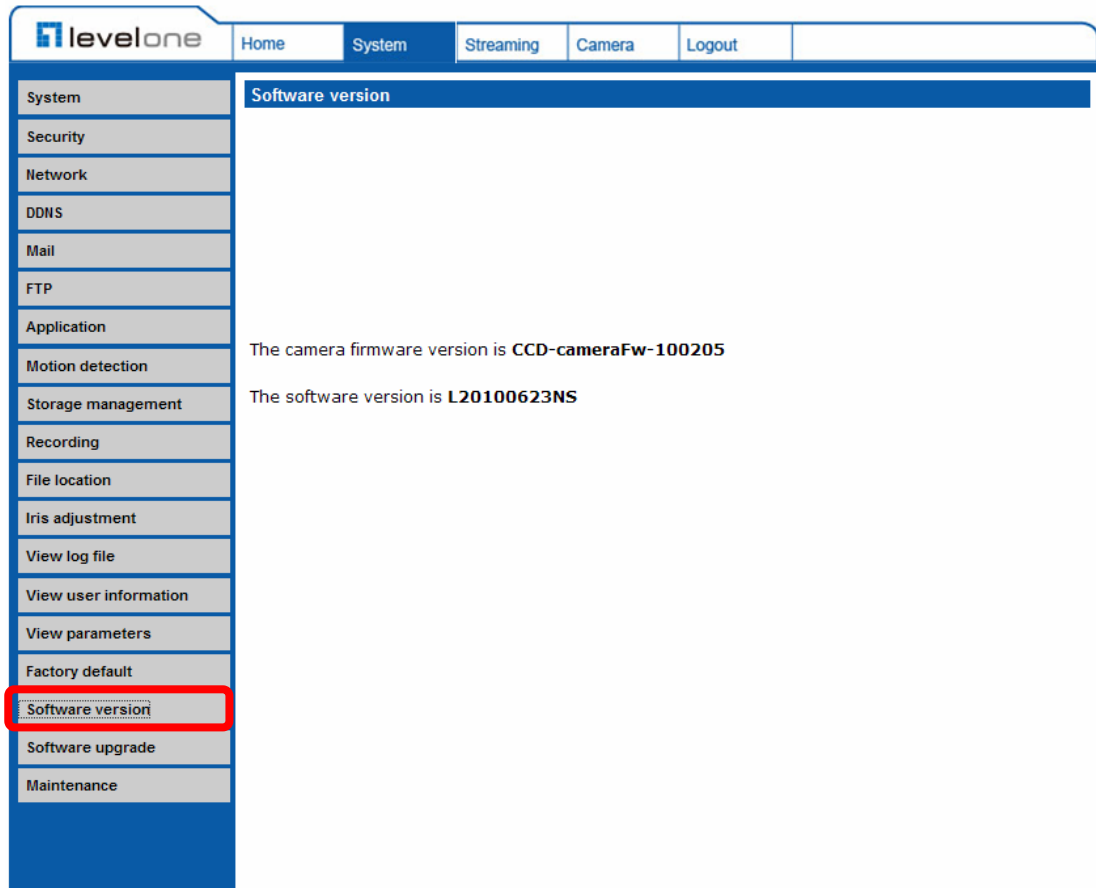
**NOTE:** The IP address will be restored to default.

### Reboot

Click on the “Reboot” button, and the system will restart without changing the current settings.

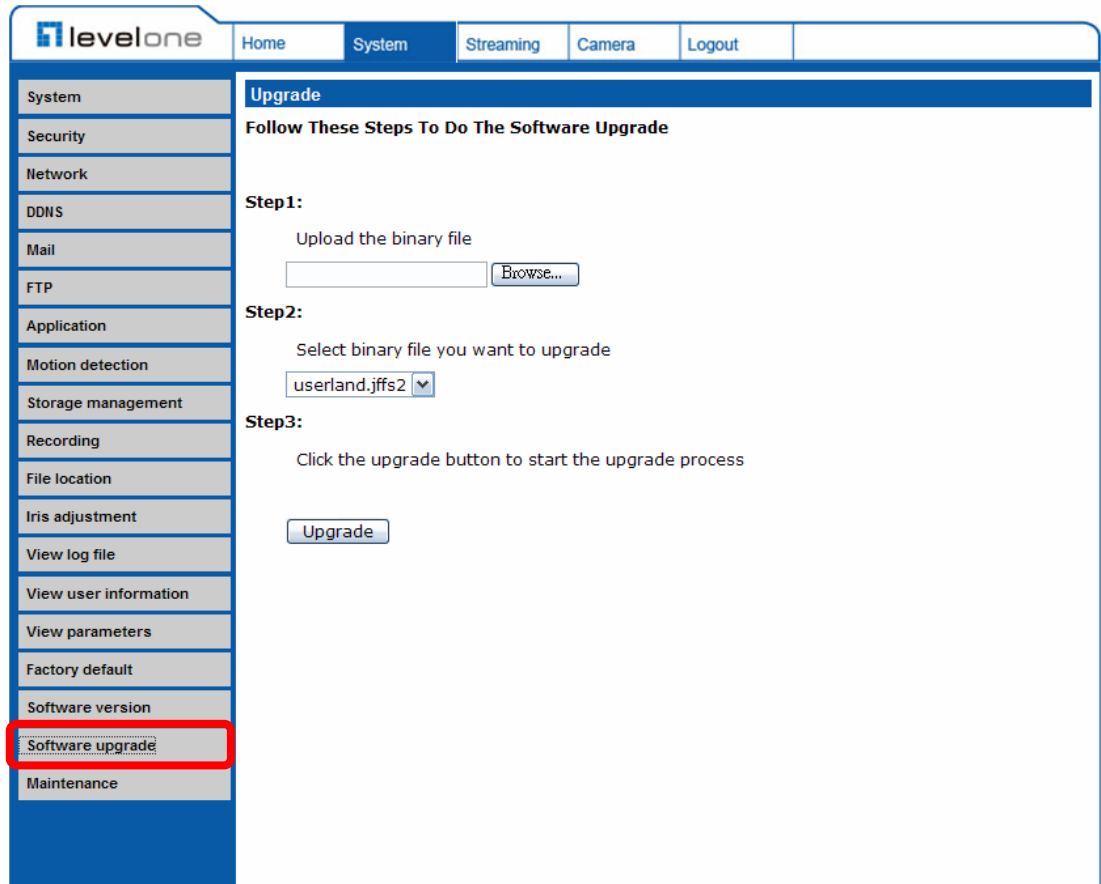
### 4.3.17 Software Version

The software version of the IP Camera is displayed in the software version page, which is shown below.



### 4.3.18 Software Upgrade

Software upgrade can be carried out in the “Software Upgrade” page as shown below.



The screenshot displays the LevelOne web interface. On the left, a vertical sidebar contains a list of system management options. The 'Software upgrade' option is highlighted with a red rectangular border. The main content area is titled 'Upgrade' and provides instructions for performing a software upgrade. It is divided into three steps: Step 1 involves uploading a binary file, with a text input field and a 'Browse...' button; Step 2 involves selecting a binary file from a dropdown menu, which currently shows 'userland.jffs2'; Step 3 instructs the user to click an 'Upgrade' button to start the process.

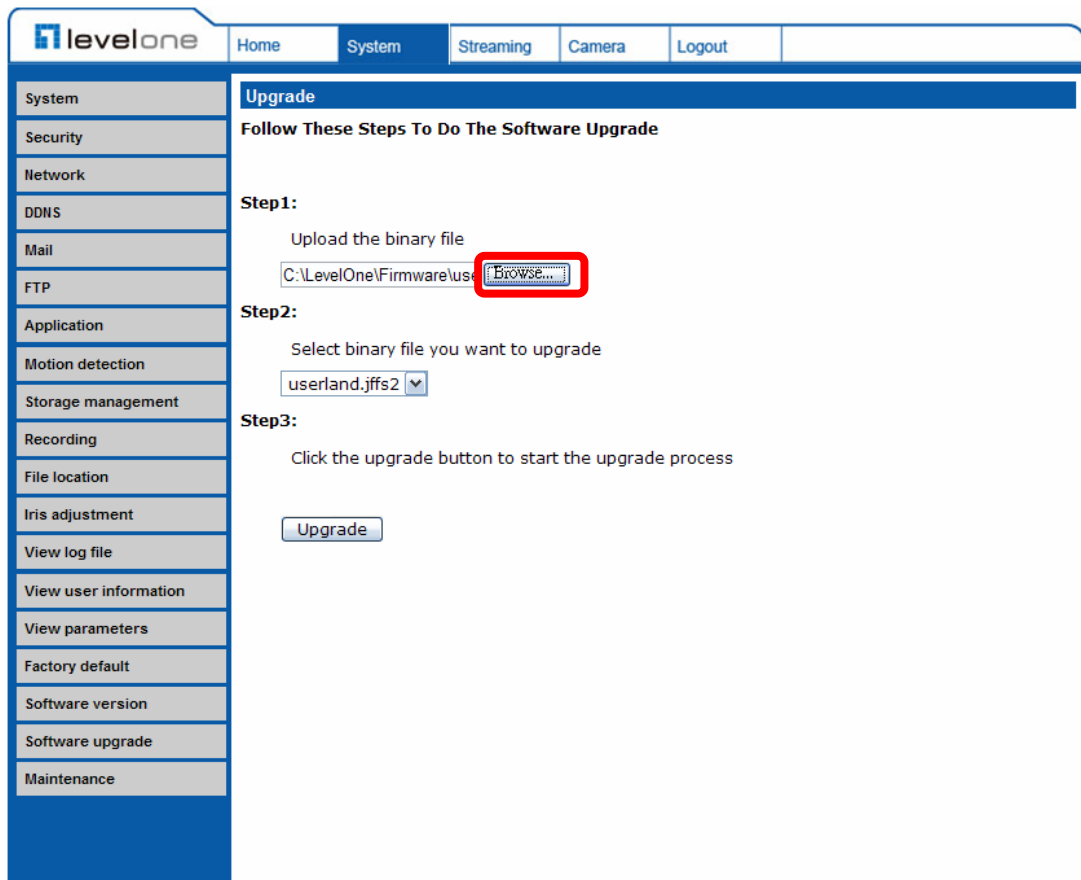


**NOTE:** Make sure the upgrade software file is available before carrying out software upgrade.

The procedure of software upgrade is like the following:



**Step 1:** Click “Browse” and select the binary file to be uploaded, ex. Userland.jffs2.



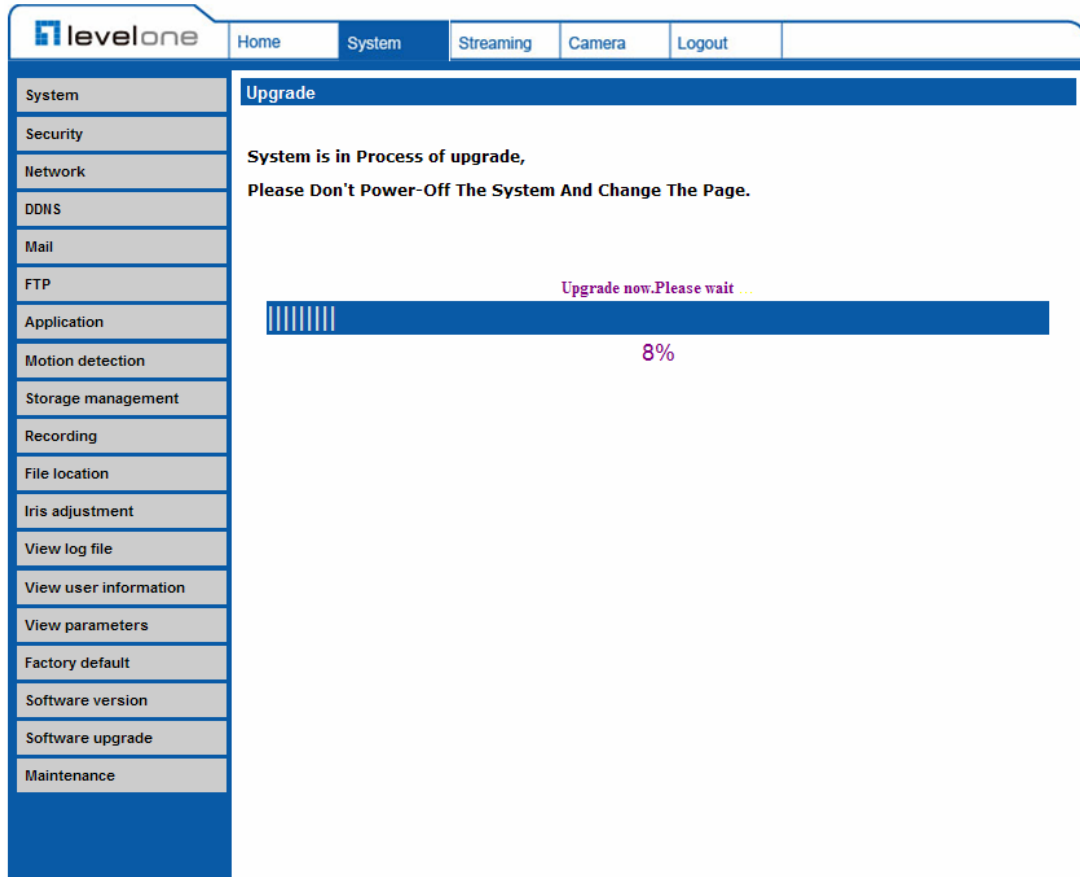
The screenshot shows the LevelOne web interface. The top navigation bar includes links for Home, System, Streaming, Camera, and Logout. A left sidebar contains a list of system settings: System, Security, Network, DDNS, Mail, FTP, Application, Motion detection, Storage management, Recording, File location, Iris adjustment, View log file, View user information, View parameters, Factory default, Software version, Software upgrade, and Maintenance. The main content area is titled "Upgrade" and contains the instruction "Follow These Steps To Do The Software Upgrade". It outlines three steps: Step 1: Upload the binary file, with a text input field showing "C:\LevelOne\Firmware\us" and a "Browse..." button highlighted with a red rectangle; Step 2: Select binary file you want to upgrade, with a dropdown menu showing "userland.jffs2"; and Step 3: Click the upgrade button to start the upgrade process, with an "Upgrade" button below.



**NOTE:** Do not change the upgrade file name, or the system will fail to find the file.

**Step 2:** Pull down the upgrade binary file list and select the file you want to upgrade; in this case, select “userland.jffs2.”

**Step 3:** Press “Upgrade”. The system will first check whether the upgrade file exists or not, and then begin to upload the upgrade file. Subsequently, the upgrade status bar will display on the page. When it runs to 100%, the upgrade process is finished.



After the upgrade process is finished, the viewer will return to Home page.

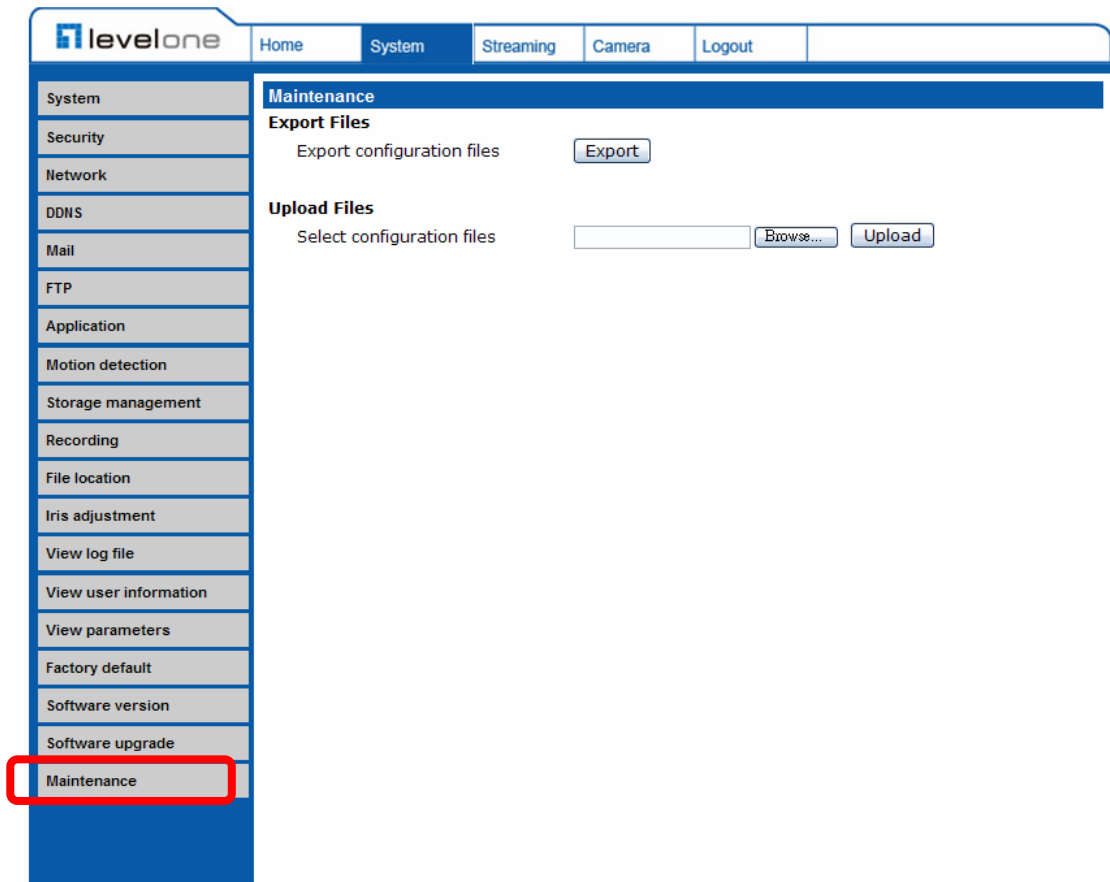
**Step 4:** Close the video browser.

**Step 5:** Click “Control Panel”, and then double click “Add or Remove Programs.” In the “Currently install programs” list, select “DCViewer” and click the button “Remove” to uninstall the existing DC Viewer.

**Step 6:** Open a new web browser, re-login the IP Camera, and then allow the automatic download of DC Viewer.

## 4.3.19 Maintenance

Users can export configuration files to a specified location and retrieve data by uploading an existing configuration file to the IP Camera.



### Export

Users can save the system settings by exporting the configuration file (.bin) to a specified location for future use. Press the “Export” button, and the popup File Download window will come out as shown below. Click “Save” and specify a desired location for saving the configuration file.



## Upload

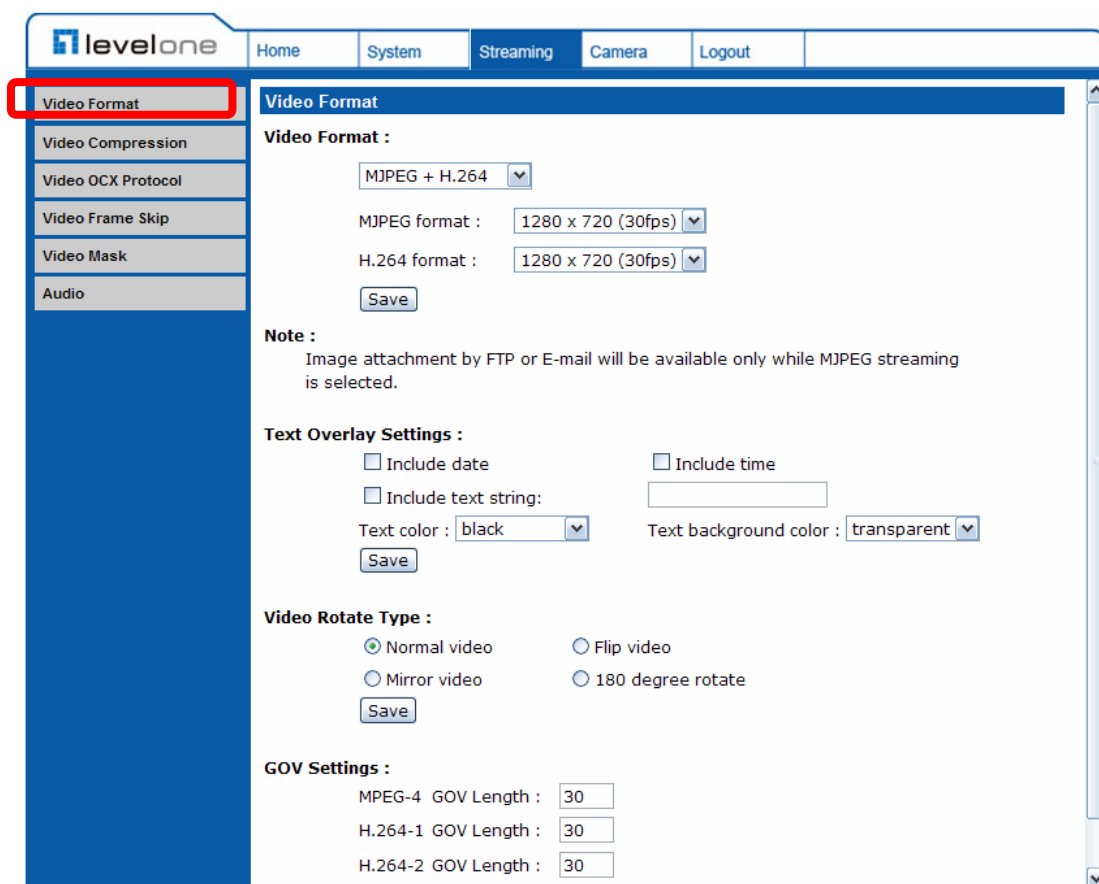
To copy an existing configuration file to the IP Camera, please first click on “Browse” to select the configuration file, and then press the “Upload” button for uploading.

## 4.4 Video and Audio Streaming Settings

Press the tab “Streaming” in the top of the page, and the configurable video and audio items will display in the left column. In Streaming, the Administrator can configure specific video resolution, video compression mode, video protocol, audio transmission mode, etc. Further details of these settings will be specified in the following sections.

### 4.4.1 Video Resolution and Rotate Type

The video setting page is shown below:



The screenshot displays the LevelOne web interface for video streaming settings. The top navigation bar includes links for Home, System, Streaming (selected), Camera, and Logout. On the left sidebar, the 'Video Format' option is highlighted with a red box. The main content area is titled 'Video Format' and contains several sections:

- Video Format :** A dropdown menu is set to 'MJPEG + H.264'. Below it, 'MJPEG format :' is set to '1280 x 720 (30fps)' and 'H.264 format :' is also set to '1280 x 720 (30fps)'. A 'Save' button is present.
- Note :** A text block stating: 'Image attachment by FTP or E-mail will be available only while MJPEG streaming is selected.'
- Text Overlay Settings :** Includes checkboxes for 'Include date', 'Include time', and 'Include text string:'. Below these, 'Text color :' is set to 'black' and 'Text background color :' is set to 'transparent'. A 'Save' button is at the bottom.
- Video Rotate Type :** Features radio buttons for 'Normal video' (selected), 'Flip video', 'Mirror video', and '180 degree rotate'. A 'Save' button is at the bottom.
- GOV Settings :** Includes input fields for 'MPEG-4 GOV Length : 30', 'H.264-1 GOV Length : 30', and 'H.264-2 GOV Length : 30'.

### **Video Format**

The IP Camera provides various video dual streaming formats like the following:

- MJPEG + H.264
- MJPEG + MPEG-4
- MJPEG + BNC
- H.264 + H.264
- H264 + BNC

Resolution for MJPEG & H.264 format includes:

- 1280 x 960 (CCD)
- HD 720p: 1280 × 720 (25/30fps)
- D1: 720 × 480 (25/30fps)
- VGA: 640 × 480 (25/30fps)
- QVGA: 320 × 240 (25/30fps)
- CIF: 352 × 240 (25/30fps)
- QCIF: 176 × 144 (25/30fps)

Click “Save” to confirm the Video Format setting.

### **Text Overlay Settings**

Users can select the items to display data including date/time/text on the live video pane. The maximum length of the string is 20 alphanumeric characters

Click “Save” to confirm the Text Overlay setting.

### **Video Rotate Type**

Users can change video display type if necessary. Selectable video rotate types include Normal, Flip, Mirror and 180 degree. Differences among these types are illustrated as below.

Suppose the displayed image of IP camera is shown as the figure below.



To rotate the image, users can select “Flip”, for instance. Then the displayed image will be reversed as shown below.



The following is descriptions for different video rotate type.

- **Flip**  
If select <Flip>, the image will be rotated vertically.
- **Mirror**  
If select <Mirror>, the image will be rotated horizontally.
- **180 Degree**  
Selecting <180 Degree> will make the image 180° counter-/clockwise inversed.

Click “Save” to confirm the setting.

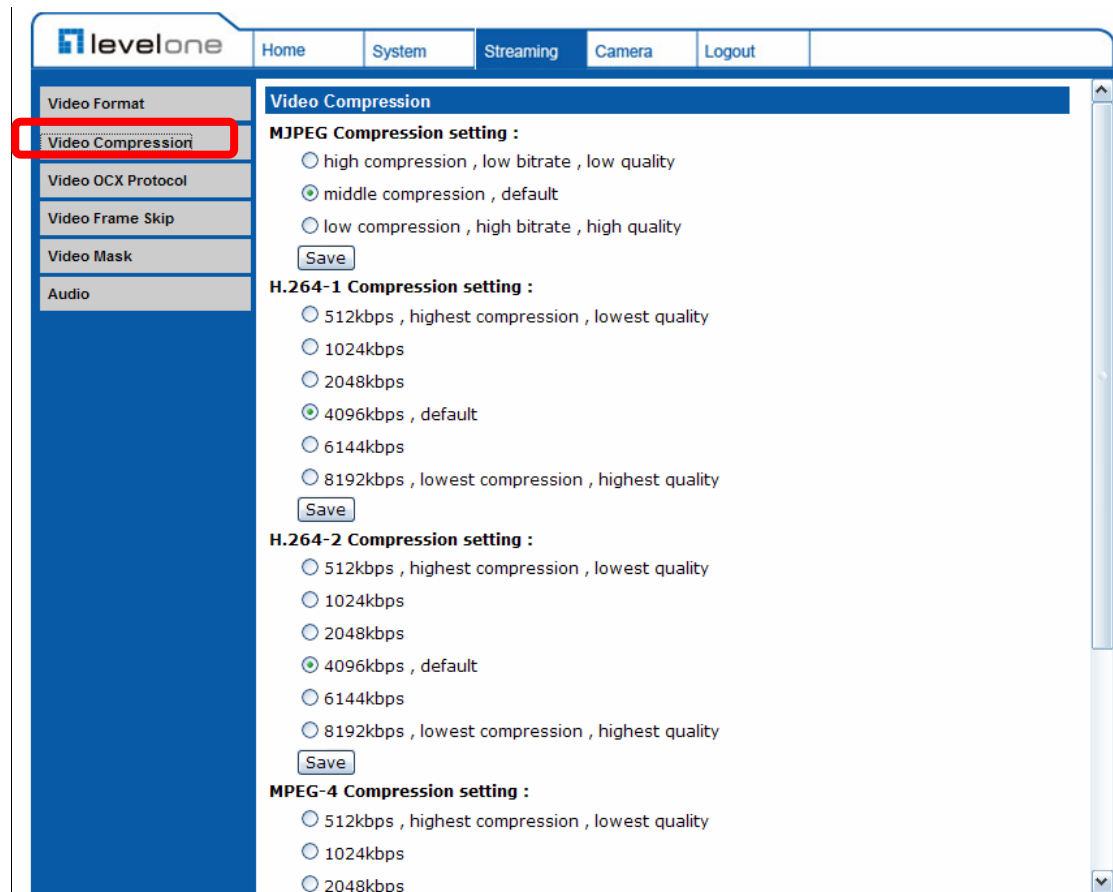
### **GOV Settings**

Users can set the GOV length to determine the frame contracture (I-frames and P-frames) in a video stream for saving bandwidth. Longer GOV means decreasing the frequency of I-frames.

Click “Save” to confirm the GOV setting.

## 4.4.2 Video Compression

Users can select a proper MJPEG/H.264/MPEG-4 compression mode in the video compression page (see the figure below), depending on the surveillance applications.



Users can also decide whether to display compression information on the Home page.

Click "Save" to confirm the video compression settings.

## CBR Mode Setting

levelone Home System Streaming Camera Logout

Video Format  
Video Compression  
Video OCX Protocol  
Video Frame Skip  
Video Mask  
Audio

☒ 4096kbps , default  
☐ 6144kbps  
☐ 8192kbps , lowest compression , highest quality

**H.264-2 Compression setting :**  
☐ 512kbps , highest compression , lowest quality  
☐ 1024kbps  
☐ 2048kbps  
☒ 4096kbps , default  
☐ 6144kbps  
☐ 8192kbps , lowest compression , highest quality

**MPEG-4 Compression setting :**  
☐ 512kbps , highest compression , lowest quality  
☐ 1024kbps  
☐ 2048kbps  
☒ 4096kbps , default  
☐ 6144kbps  
☐ 8192kbps , lowest compression , highest quality

☒ Display compression information in the home page

**CBR mode setting :**  
☐ enable MPEG-4 CBR mode  
☐ enable H.264-1 CBR mode  
☐ enable H.264-2 CBR mode

The CBR (Constant Bit Rate) mode could be the preferred bit rate mode if the bandwidth available is limited. It is important to take account of image quality while choosing to use the CBR mode.



### 4.4.3 Video OCX Protocol

In the Video OCX protocol setting page, users can select RTP over UDP, RTP over TCP, RTSP over HTTP or MJPEG over HTTP, for streaming media over the network. In the case of multicast networking, users can select the Multicast mode. The page is shown as follows.

The screenshot shows the 'levelone' web interface with the 'Streaming' tab selected. On the left sidebar, the 'Video OCX Protocol' option is highlighted with a red rectangle. The main content area is titled 'Video OCX Protocol' and contains the following settings:

- Video OCX protocol setting :**
  - ☒ RTP over UDP
  - ☐ RTP over RTSP(TCP)
  - ☐ RTSP over HTTP
  - ☐ MJPEG over HTTP
  - ☐ Multicast mode
- Multicast IP Address:
- Multicast MPEG-4 Video Port:
- Multicast H.264-1 Video Port:
- Multicast H.264-2 Video Port:
- Multicast MJPEG Video Port:
- Multicast Audio Port:
- Multicast TTL:
- 
- Note:**

This page only applies to video streams going to a DC Viewer.

Video OCX protocol setting options include:

- RTP over UDP / RTP over RTSP(TCP) / RTSP over HTTP / MJPEG over HTTP

Select a mode according to your data delivery requirements.

- Multicast Mode  
Enter all required data, including multicast IP address, MPEG-4 video port, H.264 video port, MJPEG video port, audio port and TTL into each blank.

Click "Save" to confirm the setting.

## 4.4.4 Video Frame Skip

Video frame skipping is for saving bandwidth, if necessary. The setting page is shown below.

The screenshot shows the 'levelone' web interface. The top navigation bar includes 'Home', 'System', 'Streaming', 'Camera', and 'Logout'. The left sidebar contains a menu with 'Video Format', 'Video Compression', 'Video OCX Protocol', 'Video Frame Skip' (highlighted with a red box), 'Video Mask', and 'Audio'. The main content area is titled 'Video Frame Skip' and contains four sections: 'MJPEG Frame Skip', 'H.264-1 Frame Skip', 'H.264-2 Frame Skip', and 'MPEG-4 Frame Skip'. Each section has four radio button options: 'No skipping, default' (selected), 'Frame skipping at 2 frame internal', 'Frame skipping at 5 frame internal', and 'Frame skipping to 1 frame'. A 'Save' button is located at the bottom of each section.

MJPEG/H.264/MPEG-4 Frame Skip options include:

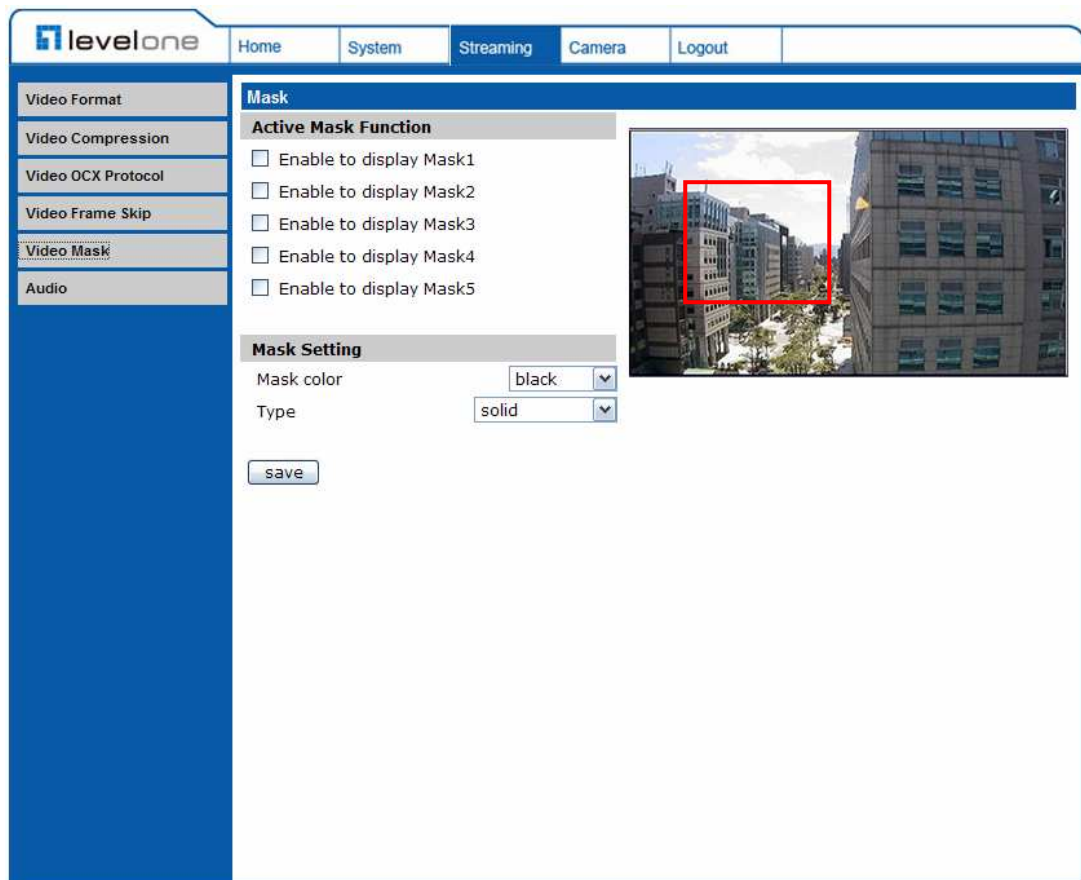
- No skipping, default
- Frame skipping at 2 frame internal
- Frame skipping at 5 frame internal
- Frame skipping to 1 frame (highest frame loss rate)



**NOTE:** Higher frame skipping rate will decrease video smoothness.

## 4.4.5 Video Mask

There are up to five video masks can be set by users.



### Active Mask Function

- **Add A Mask**

Check a Video Mask checkbox, and a red frame will come out in the Live Video pane at the right side. Use the mouse to drag and drop to adjust the mask's size and place it on the target zone.



**NOTE:** It is suggested to set the Video Mask twice bigger than the object.

- **Cancel a mask**

Uncheck the checkbox of the Video Mask meant to be deleted, and the selected mask will disappear from the Live Video pane instantly.

### Mask Setting

- **Mask color**

The selections of Mask color include red, black, white, yellow, green, blue, cyan, and magenta.

- **Type**

Select to change the mask type as solid or transparent.

## 4.4.6 Audio Mode and Bit Rate Settings

The audio setting page is shown below. In the Audio page, the Administrator can select one transmission mode and audio bit rate.

The screenshot shows the 'levelone' web interface. The top navigation bar includes 'Home', 'System', 'Streaming', 'Camera', and 'Logout'. The left sidebar menu lists 'Video Format', 'Video Compression', 'Video OCX Protocol', 'Video Frame Skip', 'Video Mask', and 'Audio' (which is highlighted with a red rectangle). The main content area is titled 'Audio' and contains the following settings:

- Transmission Mode:** Radio buttons for Full-duplex (Talk and listen simultaneously), Half-duplex (Talk or listen, not at the same time), Simplex (Talk only), Simplex (Listen only), and Disable (selected).
- Server Gain Setting:** Input gain and Output gain, both set to 3 via dropdown menus.
- Bit Rate:** Set to uLAW via a dropdown menu.
- A 'Save' button is located at the bottom of the settings area.

### Transmission Mode

- **Full-duplex (Talk and Listen simultaneously)**

In the Full-duplex mode, the local and remote sites can communicate with each other simultaneously, i.e. both sites can speak and be heard at the same time.



**NOTE:** This option is only available in Box Camera and Vandal Proof Dome.

- **Half-duplex (Talk or Listen, not at the same time)**

In the Half-duplex mode, the local/remote site can only talk or listen to the other site at a time.



**NOTE:** This option is only available in Box Camera and Vandal Proof Dome.

- **Simplex (Talk only)**

In the Talk only Simplex mode, the local/remote site can only talk to the other site.



**NOTE:** This option is only available in Box Camera and Vandal Proof Dome.

- **Simplex (Listen only)**

In the Listen only Simplex mode, the local/remote site can only listen to the other site.

- **Disable**

Select the item to turn off the audio transmission function.

### **Server Gain Setting**

Set the audio input/output gain levels for sound amplification. The audio gain values are adjustable from 1 to 6. The sound will be turned off if the audio gain is set to “Mute”.

### **Bit Rate**

Selectable audio transmission bit rate include 16 kbps (G.726), 24 kbps (G.726), 32 kbps (G.726), 40 kbps (G.726), uLAW (G.711) and ALAW (G.711). Both uLAW and ALAW signify 64 kbps but in different compression formats. Higher bit rate will let higher audio quality and require bigger bandwidth.

Click “Save” to confirm the setting.

## 4.5 Camera Settings



The figure below is the camera configuration page. Details of each parameter setting are described in the following subsections.



levelone Home System Streaming Camera Logout

Exposure  
White Balance  
Backlight off SET  
Brightness 1 SET  
Sharpness 6 SET  
Contrast 6 SET  
Saturation 6 SET  
Digital Zoom x1 SET  
IR function Auto SET  
WDR Function Off SET  
3DNR Off SET  
TV System 30 fps(NTSC) SET

2007/01/01 03:54

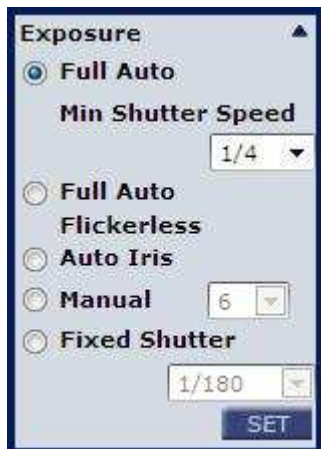
Video format ☐ MJPEG ☒ H.264  
x 1 x 1/2 Full Talk     
MJPEG bitrate: middle compression , middle quality  
H.264 bitrate : low compression , high quality , 4096kbps  
MPEG4 bitrate: low compression , high quality , 4096kbps



**NOTE:** Camera settings and function buttons will vary depending on the camera model.

## 4.5.1 Exposure Setting

The Exposure pull-down menu is shown as follows:



The exposure is the amount of light received by the image sensor and is determined by the width of lens diaphragm opening (iris adjustment), the amount of exposure by the sensor (shutter speed) and other exposure parameters. With this item, users can define how the Auto Exposure function works.

Each exposure mode is specified as follows:

### **Full Auto Mode**

In this mode, the camera's Shutter Speed, IRIS and AGC (Auto Gain Control) control circuits work together automatically to get consistent video output level. The minimum shutter speed range is from 1 to 1/30 sec. (NTSC) and from 1 to 1/25 sec. (PAL) with 6 options. Users could select suitable shutter speed according to the environmental illumination.



**NOTE:** The minimum shutter speed set in the Full Auto Mode will be applied to **Full Auto Flickerless Mode** and **Auto Iris Mode**.

### **Full Auto Flickerless Mode**

Television scanning (PAL & NTSC) and power supply systems (AC 50 & 60 Hz) are not the same in different countries and regions. Users might find flickering situation displayed on the screens because the devices are working under different frequency systems. With Auto Flickerless function, users could reduce the symptom.



**NOTE:** The minimum shutter speed will vary depending on the setting in **Full Auto Mode**.

### **Auto Iris**

In this mode, the exposure gives priority to the auto iris. Shutter speed and AGC circuit will function automatically in cooperating with IRIS to get consistent exposure output.



**NOTE:** The minimum shutter speed will vary depending on the setting in **Full Auto Mode**.

### **Manual Mode**

In this mode, users can select a number between 1 and 15; bigger number means slower shutter. Once change the value, please press <SET> to confirm the new setting.

### **Fixed Shutter Mode**

In this mode, fixed shutter speed could be selected from the dropdown menu. The shutter speed range is from 1 to 1/10000 sec. with 16 options. Users could select suitable shutter speed according to the environmental illumination.

## **4.5.2 White Balance Setting**

The White Balance pull-down menu is shown as follows:



A camera needs to find reference color temperature, which is a way of measuring the quality of a light source, for calculating all the other colors. The unit for measuring this ratio is in degree Kelvin (K). Users can select one of the White Balance Control modes according to the operating environment. The following table shows the color temperature of some light sources for reference.



Light Sources	Color Temperature in K
Cloudy Sky	6,000 to 8,000
Noon Sun and Clear Sky	6,500
Household Lighting	2,500 to 3,000
75-watt Bulb	2,820
Candle Flame	1,200 to 1,500

### **Auto Mode**

The Auto Balance White mode is suitable for environment with light source having color temperature ranging from 3200 ~ 7600K.

### **Indoor/outdoor Mode**

Select for indoor or outdoor mode.

### **Manual Mode**

In this mode, users can change the White Balance value manually. Users can select a number between 1 ~ 11, and press <SET> to confirm the new setting.

## **4.5.3 Backlight Setting**



Based on various lighting situations, users could select to turn on or off the function of backlight compensation to optimize the video quality. The default value of Backlight is Off.

## **4.5.4 Brightness Setting**



Users can adjust the image's brightness by adjusting the item. To increase video brightness, select a bigger number. Press <SET> to confirm the new setting.

### 4.5.5 Sharpness Setting



Increasing the sharpness level can make the image looked sharper; especially enhance the object's edge. Press <SET> to confirm the new setting.

### 4.5.6 Contrast Setting



Camera image contrast level is adjustable, ranging from 1 to 11.

### 4.5.7 Saturation Setting



Camera image saturation level is adjustable; please select ranging from 1 to 11.

### 4.5.8 Digital Zoom Setting



The camera's digital zoom is adjustable from x1 to x16. Press <SET> to confirm the new setting.

### 4.5.9 IR Function



With the IR cut filter, the IP Camera can still catch clear image at night time or in low light conditions. Press <SET> to confirm the new setting.

### 4.5.10 WDR Function



The Wide Dynamic Range (WDR) function is for solving high contrast or changing light issues so that enhances better video display. The WDR is adjustable from level 1 to 4. Higher level of WDR represents wider dynamic range, so that the IP Camera can catch a greater scale of brightness.

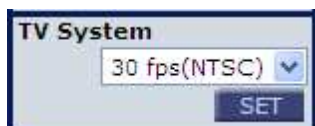
Press <SET> to confirm the new setting.

### 4.5.11 3DNR Function



With 3D Noise Reduction (3DNR) function, the IP Camera can deliver more clear images in low-light conditions.

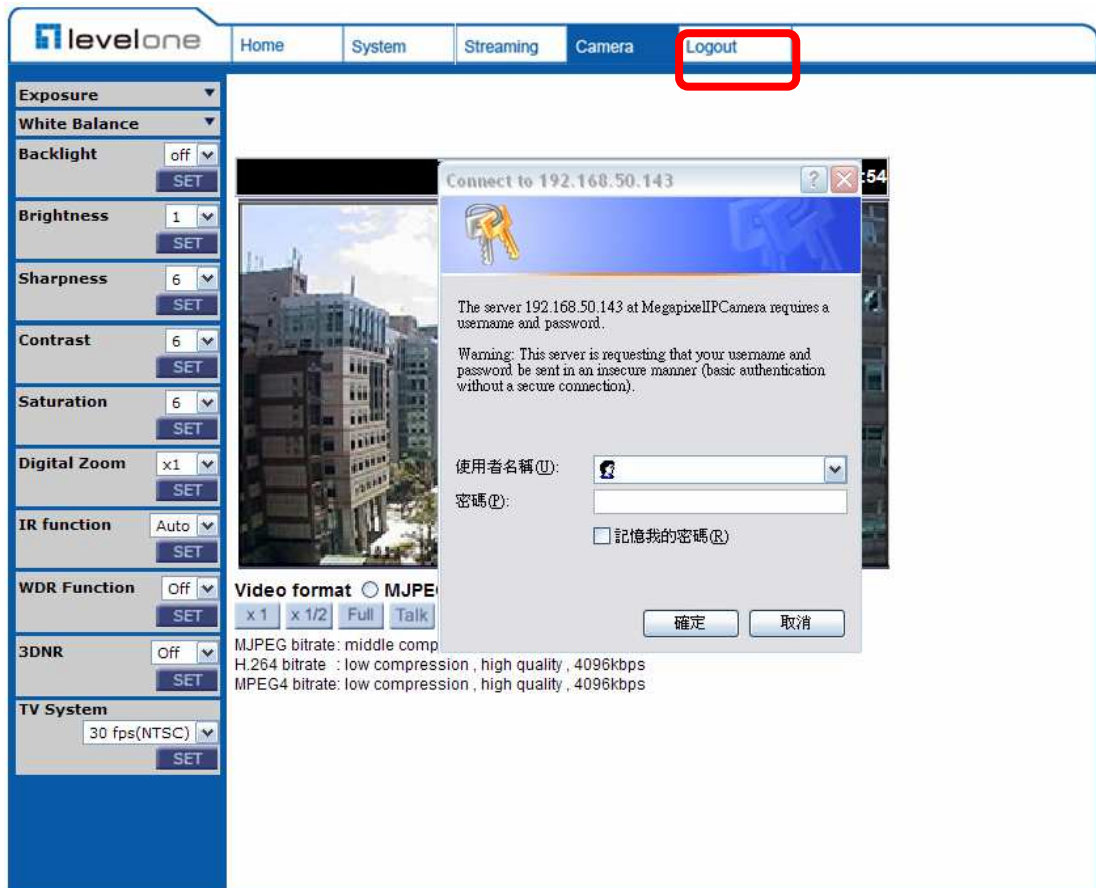
### 4.5.12 TV System Setup



Select the video format that matches the present TV system.

## 4.6 Logout

Press the tab “Logout” in the top of the page, and the login window will pop up. This enables login with another user name.



## Appendix A: Technical Specifications

Camera		
Image Sensor		1/3" Sony Progressive CCD
Picture Elements		1280(H) x 960 (V)
Minimum Illumination	Color	0.03 lux @ F1.2
	B/W	0.001 lux @ F1.2
Shutter Speed		1~ 1/10000 sec.
White Balance		Manual / ATW (1500 ~ 15000K)
Lens		
Lens Mount		CS mount Lens
Operation		
Video Compression		H.264 Baseline / MJPEG / MPEG-4
Video Streaming		Simultaneously, H.264 + MJPEG
		Simultaneously, MPEG-4 + MJPEG
		Simultaneously, MJPEG + BNC
		Simultaneously, H.264 + H.264
		Simultaneously, H.264 + BNC
Resolution	H.264	1280 x 960 / HD 720p / D1 / VGA / QVGA / CIF / QCIF
	MJPEG	1280 x 960 / HD 720p / D1 / VGA / QVGA / CIF / QCIF
	MPEG-4	1280 x 960 / HD 720p / D1 / VGA / QVGA / CIF / QCIF
Frame Rate		1280 x 960 @ 12.5/15 fps, 720p @ 25/30 fps
Image Setting	Brightness	Manual
	Exposure	Auto / Manual / Fixed Shutter
	Backlight	On / Off
	Sharpness	Manual
	Contrast	Manual
	White Balance	Auto / Manual / Indoor / Outdoor
	Digital Zoom	1x ~ 16x
	Image Rotation	Flip, Mirror, and 180° Rotate
	WDR	Off / 4 Level Adjustment
	3D Noise Reduction	On / Off
	Privacy Mask	On / Off
	Privacy Mask Type	Mosaic, Transparent, Color
	ICR (Optional)	Auto / On / Off
Audio	Two-way Audio	Line out, Line in / Mic in
	Compression	G.711 / G.726
Alarm	Input	5V 10kΩ pull up

	Output	Photo relay output 300VDC/AC
<b>Network</b>		
Interface		10/100 Mb Ethernet (RJ-45)
Protocol		TCP/IP, UDP, RTP, RTSP, HTTP, ICMP, FTP, SMTP, DHCP and IGMP
Password Levels		User and Administrator
Internet Browser		Internet Explorer (6.0+)
User Account		20
<b>Mechanical</b>		
Connectors	Power	3 pins terminal block
	Ethernet	RJ-45
	Micro SD	SDHC support
	Audio	Stereo phone jack, $\varnothing$ 3.5mm
	Alarm	4 pins terminal block
	Auto Iris	DC drive
	Analog Video	1.0 Vp-p / 75 $\Omega$ , BNC
LED Indicator		Power, Link, ACT
<b>General</b>		
Operating Temperature		0°C ~ 50°C Humidity: 10% to 90%, no condensation
Power Source		DC12V/AC24V/PoE
Power Consumption		6 W
Certificate		CE, FCC, RoHS Compliant
Dimension		125 x 82 x 52 mm (L x W x H) (w/o lens)
Weight		360 g (0.80 lbs)

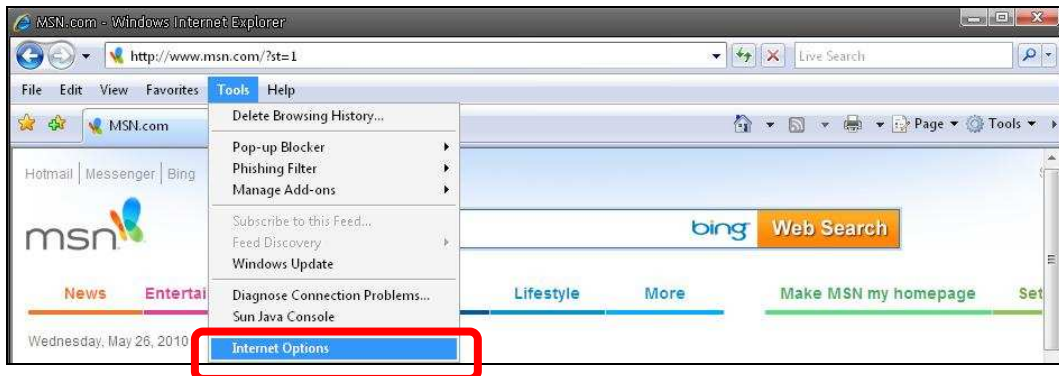
## Appendix B: Internet Security Settings

If ActiveX control installation is blocked, please either set Internet security level to default or change ActiveX controls and plug-ins settings.

### Internet Security Level: Default

**Step 1:** Start the Internet Explorer (IE).

**Step 2:** Select <Tools> from the main menu of the browser. Then Click <Internet Options>.



**Step 3:** Click the <Security> tab, and select <Internet>.



**Step 4:** Down the page, press “Default Level” (see the figure above) and click “OK” to confirm the setting. Close the browser window, and open a new one later when accessing the IP Camera.

### **ActiveX Controls and Plug-ins Settings**

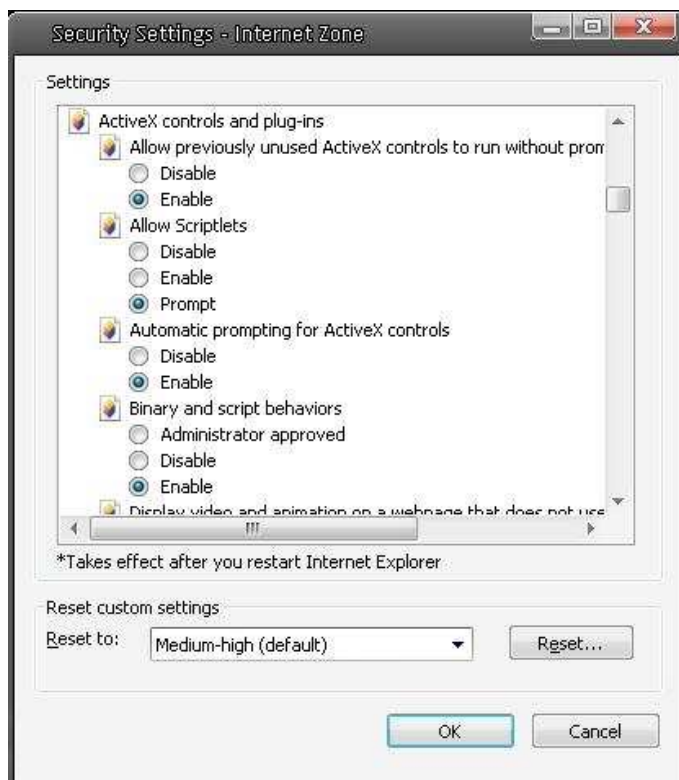
**Step 1~3:** Refer to the previous section above.

**Step 4:** Down the page, press “Custom Level” (see the figure below) to change ActiveX controls and plug-ins settings.





The Security Settings screen is displayed as below:



**Step 5:** Under “ActiveX controls and plug-ins”, set ALL items (as listed below) to <Enable> or <Prompt>.

**ActiveX controls and plug-ins settings:**

1. Automatic prompting for ActiveX controls
2. Binary and scrip behaviors
3. Download signed ActiveX controls
4. Download using ActiveX controls
5. Initialize and script ActiveX not marked as safe
6. Run ActiveX controls and plug-ins
7. Script ActiveX controls marked safe for scripting

**Step 6:** Click <OK> to accept the settings and close the <Security> screen.

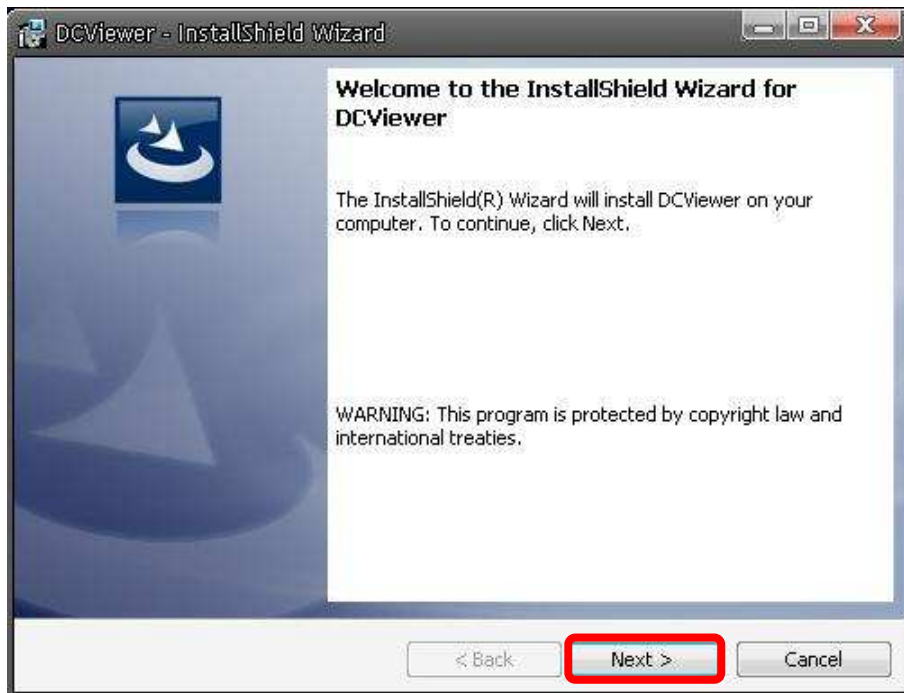
**Step 7:** Click <OK> to close the Internet Options screen.

**Step 8:** Close the browser window, and restart a new one later for accessing the IP Camera.

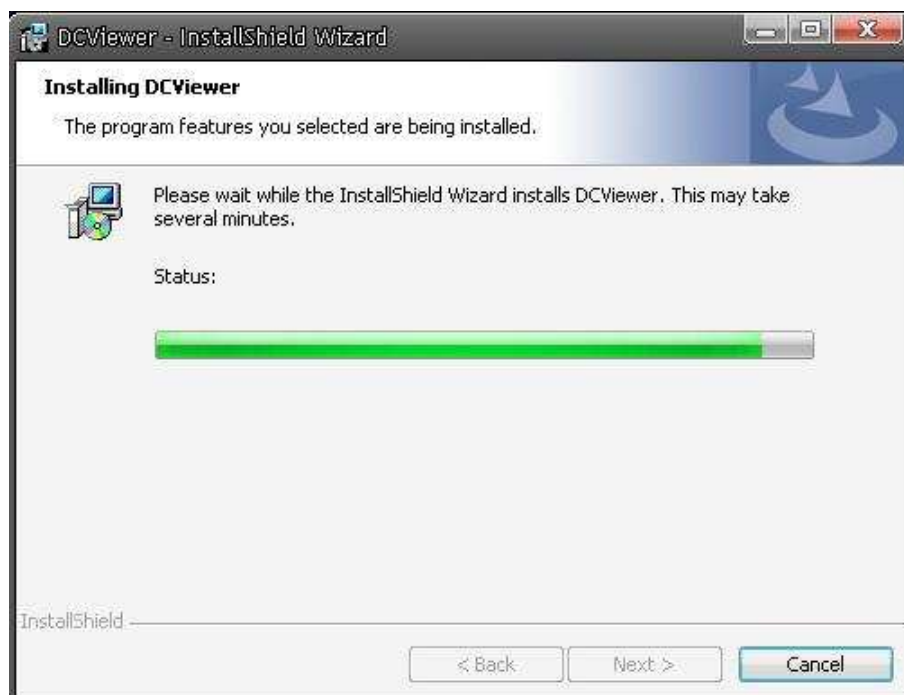
## Appendix C: DC Viewer Download Procedure

The procedure of DC Viewer software download is specified as follows.

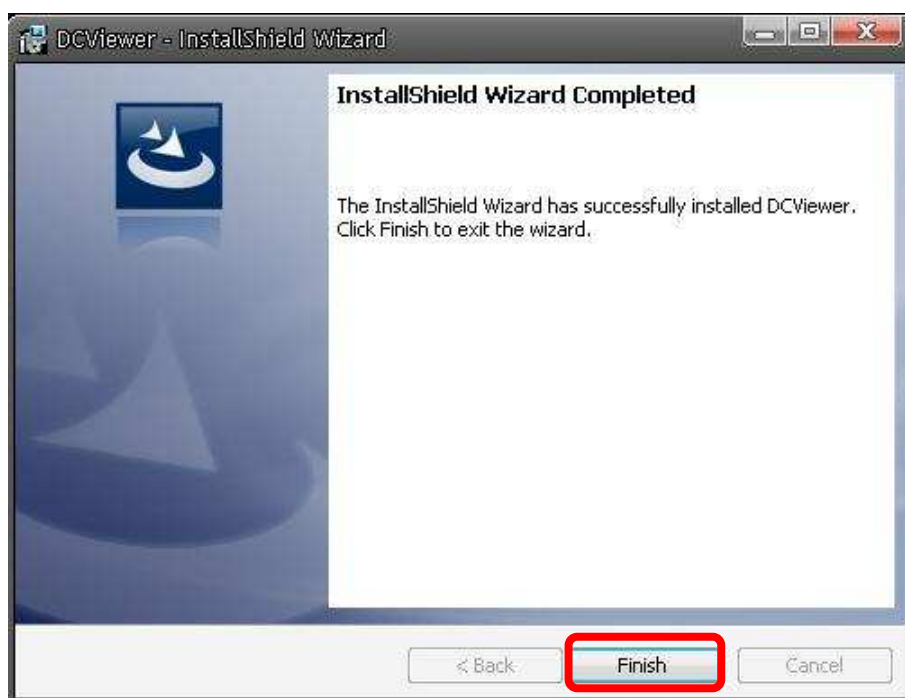
**Step 1:** In the DC Viewer installation page, click “Next” for starting installing.



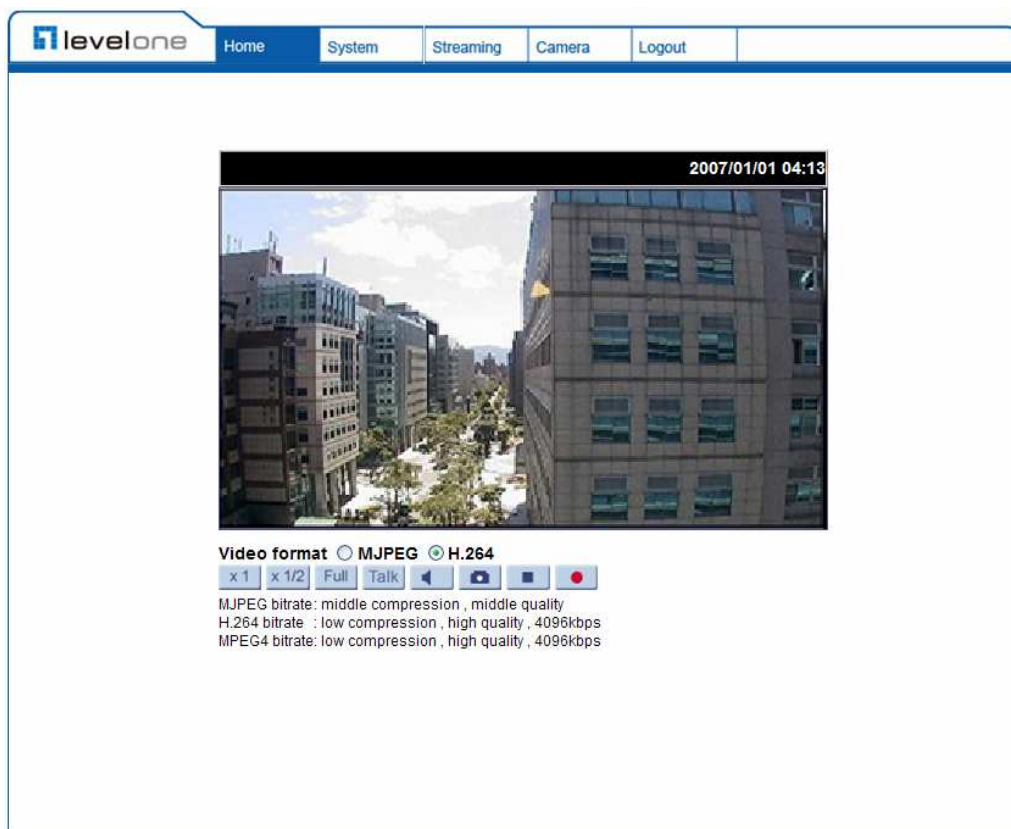
**Step 2:** Setup starts. Please wait for a while until the loading bar runs out.



**Step 3:** Click “Finish” to close the DC Viewer installation page.



Then, the IP Camera's Home page will display as follows:

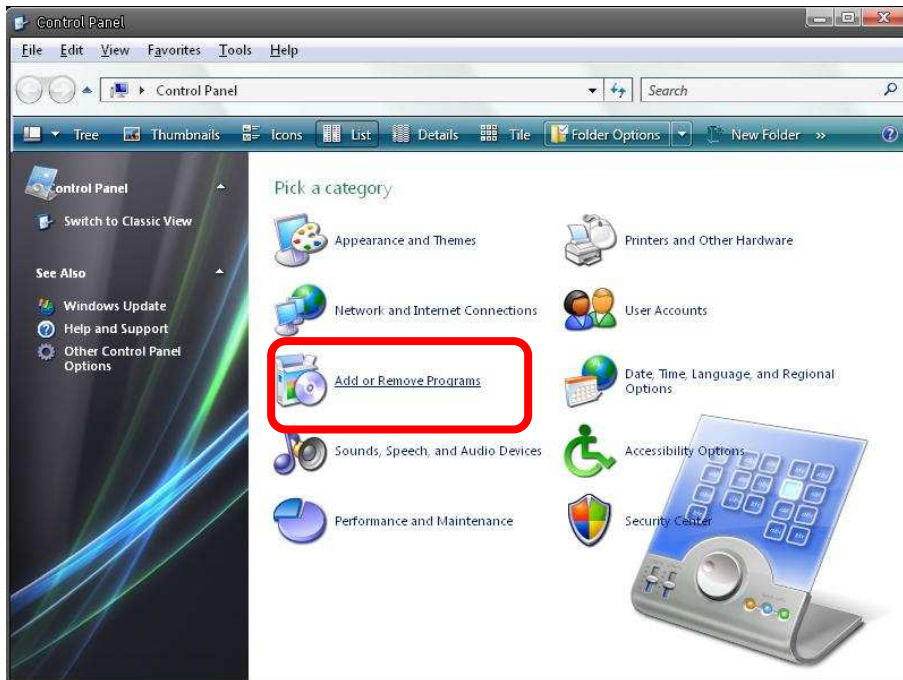


**NOTE:** Please note that the function buttons will vary depending on the camera model.

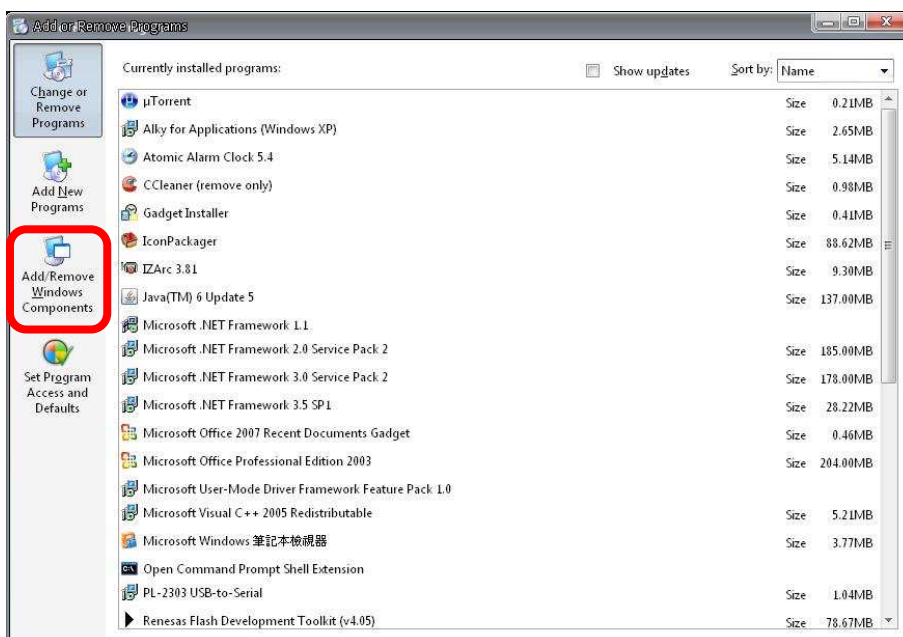
## Appendix D: Install UPnP Components

Please follow the instructions below to install UPnP components.

**Step 1:** Go to “Start”, click on “Control Panel”, and then double click “Add or Remove Programs”.



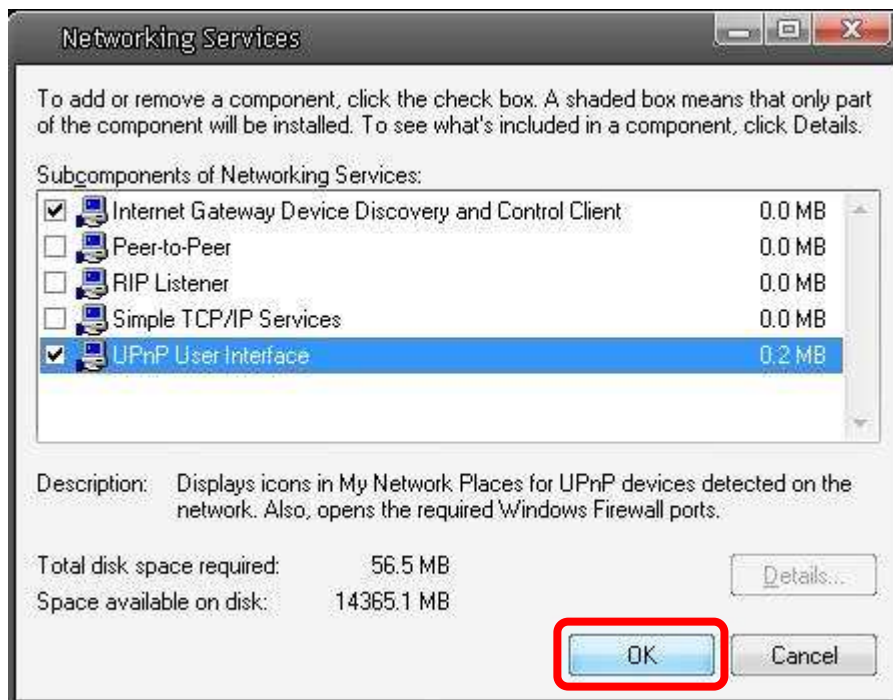
**Step 2:** Click on “Add/Remove Windows Components” in the Add or Remove Programs page.



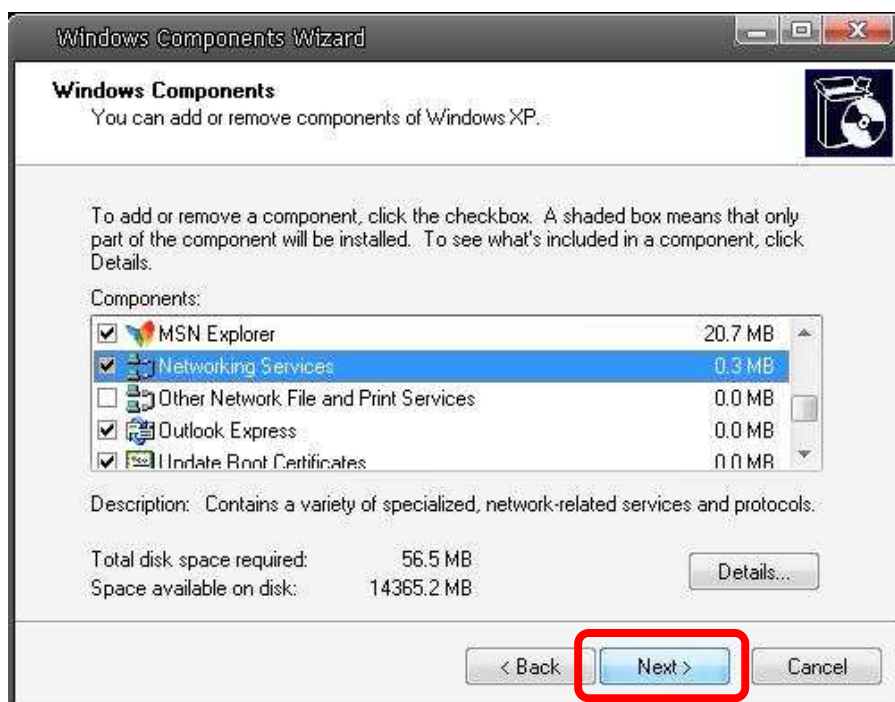
**Step 3:** Select “Networking Services” from the Components list in the Windows Components Wizard window, and then click “Details”.



**Step 4:** Select “UPnP User Interface” in the Networking Services’ subcomponents list and then click “OK”.



**Step 5:** Click “Next” in the Windows Components Wizard page.



**Step 6:** Click “Finish” to complete installation.

