



LevelOne

User Manual

FCS-1122
Megapixel PoE
Network Camera

Ver 1.0

Table of Contents

Before You Use This Product.....	5
Package Contents	5
Product Overview	6
Device Appearance Description	7
LED Behavior	8
Extension I/O Terminal Block.....	9
Hardware Reset.....	10
System Requirements	11
Camera Connection.....	12
Check Network Settings	21
Add Password to prevent Unauthorized Access	21
Authentication.....	22
Installing plug-in.....	22
Camera/Video/Audio.....	26
Camera.....	26
Video	28
Audio	31
Multicast	32
Network	33
IP Setting	33
UPnP.....	34
DDNS (dynamic domain name service)	34
Easy Link.....	36
HTTP/HTTPS	36
Event 38	
Motion Detection	38
Notification setting	39
Scheduled Event	42
DI/DO.....	43
System.....	44
System Log	44
Date & Time Settings	44
Device Information	46
Maintenance.....	47
User Management	47

IP Filter	48
Firmware Upgrade	48
Configuration	48
Reset to default.....	49
Reboot	49

Default Settings

IP Address	DHCP
Username	admin
Password	admin

General Public License

This product incorporates open source code into the software and therefore falls under the guidelines governed by the General Public License (GPL) agreement.

Adhering to the GPL requirements, the open source code and open source license for the source code are available for free download at <http://global.level1.com>.

If you would like a copy of the GPL or other open source code in this software on a physical CD medium, LevelOne (Digital Data Communications) offers to mail this CD to you upon request, for a price of US\$9.99 plus the cost of shipping.

Before You Use This Product

In many countries, there are laws prohibiting or restricting the use of surveillance devices.

This Network Camera is a high-performance, web-ready camera which can be part of a flexible surveillance system. It is the user's responsibility to ensure that the operation of this camera is legal before installing this unit for its intended use.

Upon opening the product's package, verify that all the accessories listed on the "Package Contents" are included. Before installing the Network Camera, read the warnings in the "Quick Installation Guide" to avoid misuse. When installing the Network Camera, carefully read and follow the instructions in the "Installation" chapters to avoid damages due to faulty assembly or installation.

Package Contents

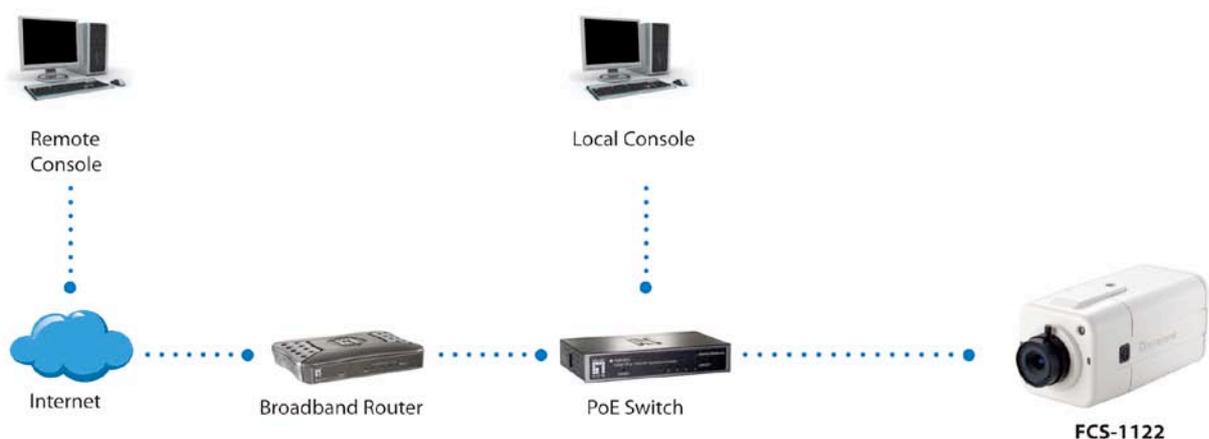
- Network Camera
- CS mount Lens
- Camera Stand
- Power Adapter
- Quick Installation Guide
- CD Manual/utility

Product Overview

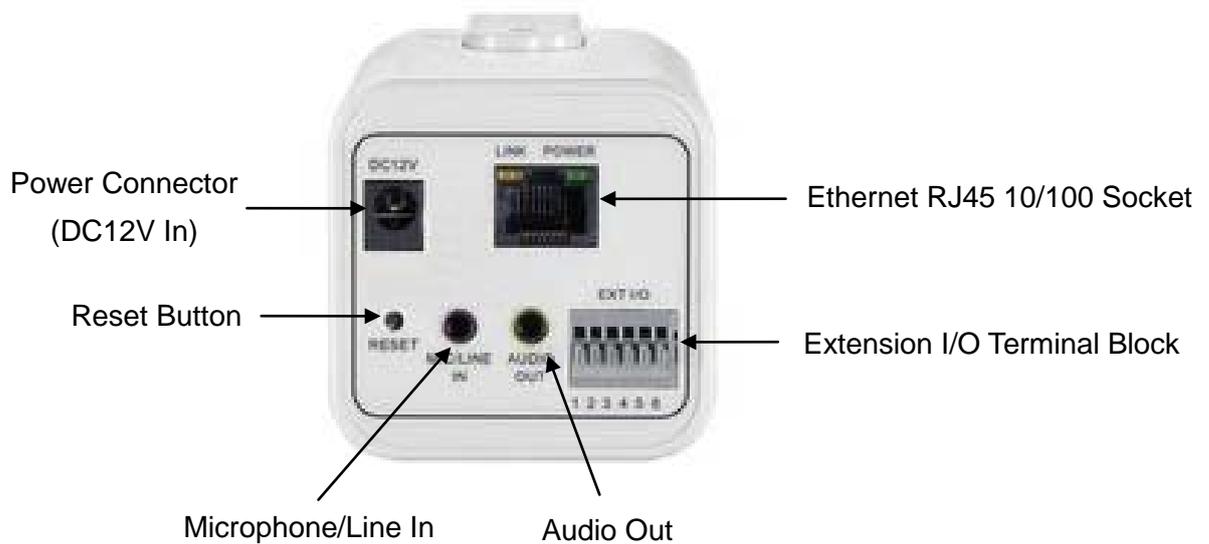
The LevelOne FCS-1122 IP camera offers reliable and excellent video quality solution for 24-hour surveillance application. The camera offers highly efficient H.264 video compression, which reduces bandwidth and storage requirements without compromising image quality. M-JPEG and MPEG-4 are also supported for flexibility. Users can view live, motion image from anywhere by web browser or mobile phone via Internet or 3G network respectively.

With the megapixel progressive sensor this camera delivers extremely clear and detailed images that CCTV cameras cannot offer. FCS-1122 receives power through the same cable as for data transmission (PoE). This makes installation easy because there is no external power supply needed.

For easy setup, “Easy Installation Wizard” makes the configuration simple even for users without IT background. The LevelOne IP camera simplifies the hardware and software installation by flexible design and multiple applications. In other words, the FCS-1122 is not only for normal home security but also suitable for professional surveillance demand such as bank, office building, and factory applications.



Device Appearance Description

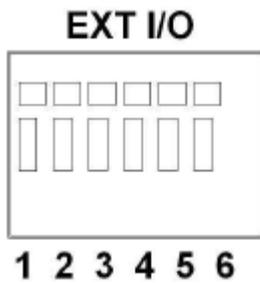


LED Behavior

Function	LED Behavior	Description	Remark
Status	<p>On Off</p> <p>0.2 0.2 0.2 0.2 ... seconds</p>	Hardware failure	Front Left (Green)
Status	Steady On	<ol style="list-style-type: none"> Restoring settings Normal Operation 	Front Left (Green)
Status	Unlighted	<ol style="list-style-type: none"> Power Off Power On till System setup 	The LED can be configured to be unlighted during normal operation
Status	<p>On Off</p> <p>1 1 1 1 ... seconds</p>	While F/W upgrading	Front Left (Green)
Link	Blinking	Blinking while network connection in progress	Rear Left (Orange)
Link	Unlighted	No connection	Rear Left (Orange)
Power	Steady On	Normal Operation	Rear Right (Green)
Power	Unlighted	Power off	Rear Right (Green)

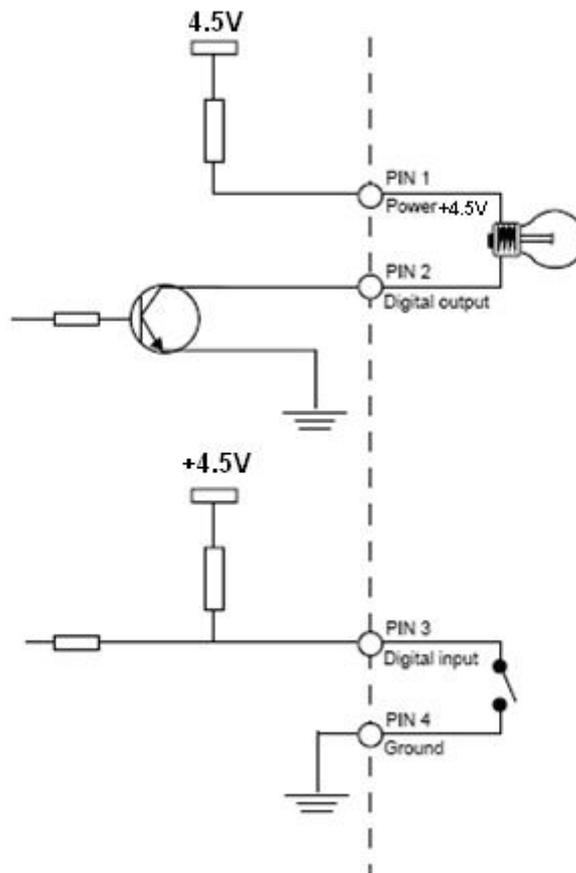
Extension I/O Terminal Block

The Network Camera provides an extension I/O terminal block which is used to connect external input/output devices. The pin definitions are listed as below.



Pin	Function
1	Power +4.5V
2	Digital Output
3	Digital Input
4	Ground
5	RS-485 -
6	RS-485 +

DI/DO Diagram



Hardware Reset



The Reset Button can be used to reboot the camera or restore it to factory default settings. If the camera experiences a problem, rebooting the camera may correct the problem. If the problem remains, please restore the camera to factory default settings and reinstall the software.

To Reboot - Press and hold the Reset Button for one second using a paper clip or thin object. Wait for the camera to reboot.

To Restore – Press and hold the Reset Button for ten seconds until the LED light turns off. When successful restored, the LED will be green during normal operation.

Installation

System Requirements

Operating System:

Microsoft Windows XP Home Edition SP2

Microsoft Windows XP Professional SP2

Computer:

IBM PC/AT Compatible

CPU:

Pentium 3GHz or faster

Memory:

1024 MB or more

Monitor:

1024 x 768 pixels or more, 24-bit True color or better

Network Interface:

10/100Mbps Network interface card must be installed

Web Browser:

Microsoft Internet Explorer 6.0 SP2

CD-ROM Drive:

It is necessary to read the operating instructions in the provided CD-ROM.

Adobe Reader:

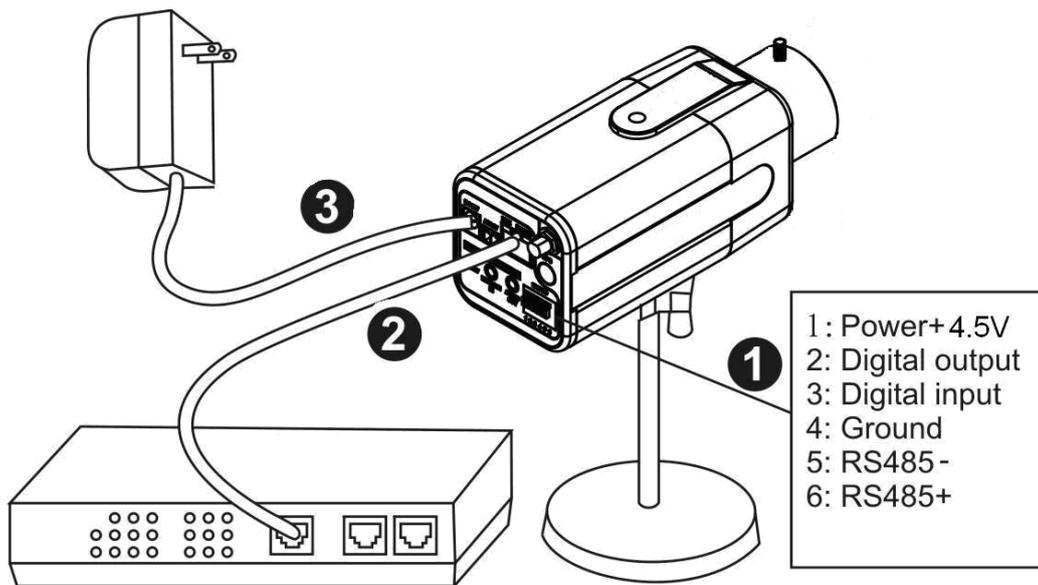
It is necessary to read the operating instructions in the provided CD-ROM.

- Audio function will not be working if a sound card is uninstalled on PC. Audio may be interrupted depending on the network environment.

Camera Connection

Basic Connection (Without PoE)

- 1.1 If you have external devices such as sensors and alarms, please make connections with extension I/O terminal block.
- 1.2 Connect the camera to a switch via Ethernet cable.
- 1.3 Connect the supplied power cable from the camera to the power outlet.



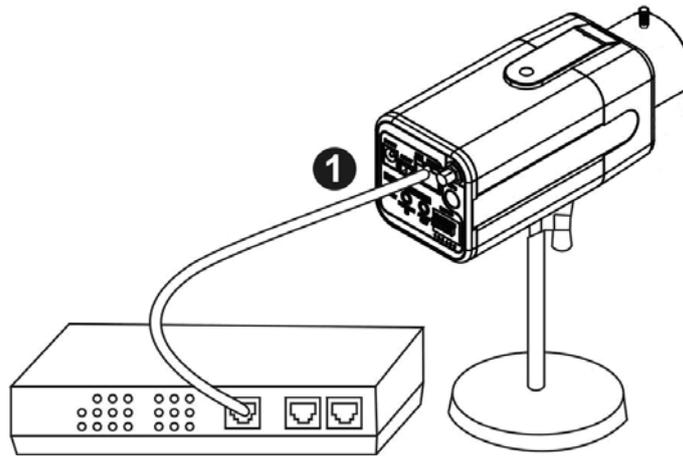
Please check your product package contains all the accessories listed in the foregoing Package Contents. Depending on the user's application, an Ethernet cable may be needed. The Ethernet cable should meet the specs of UTP Category 5 and not exceed 100 meters in length.

Upon powering up, the power LED will become lighted first and then the device will go through booting process. The link LED will be steady amber for getting IP address. After getting IP Address, the link LED will blink orange while network connection is processing.

Power over Ethernet (PoE) Connection

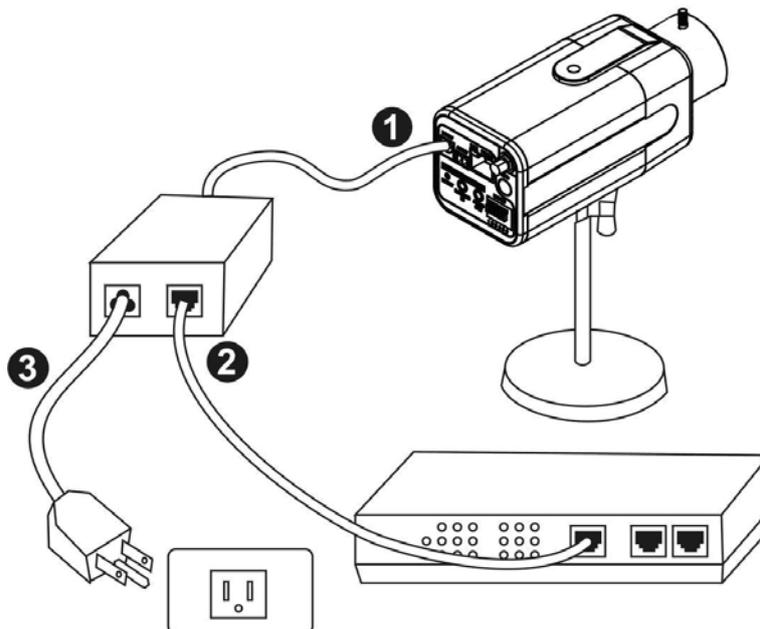
1.1. When connecting to PoE-enabled switch

The camera is PoE compliant and please connects the camera to a PoE-enabled switch via single Ethernet cable.



1.2. When connecting to a non-PoE switch

Please connect the camera to a non-PoE switch via PoE Injector (optional).

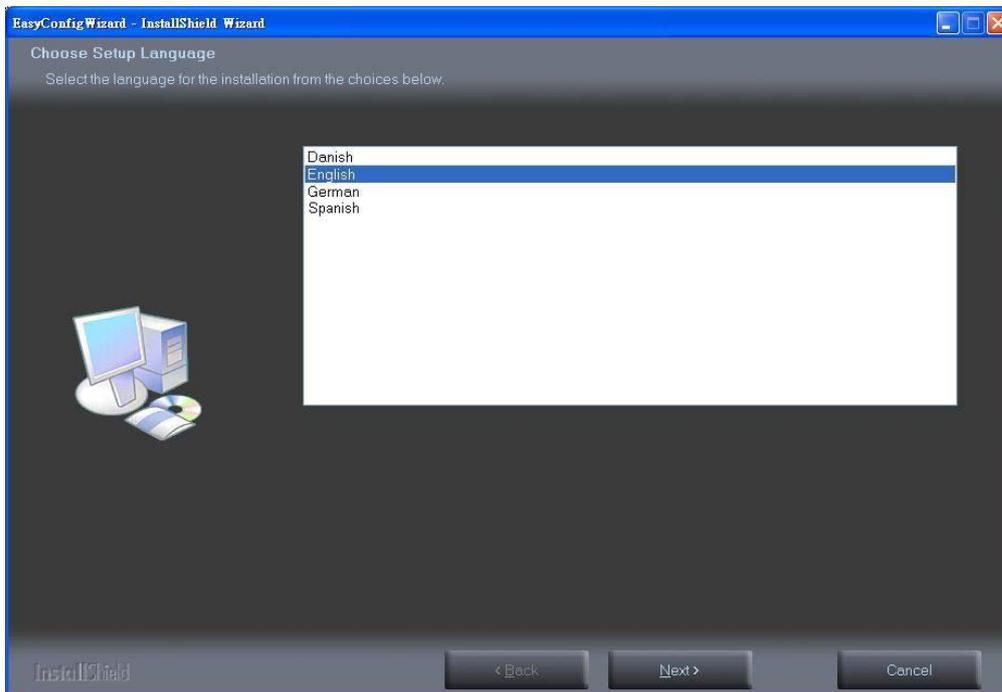


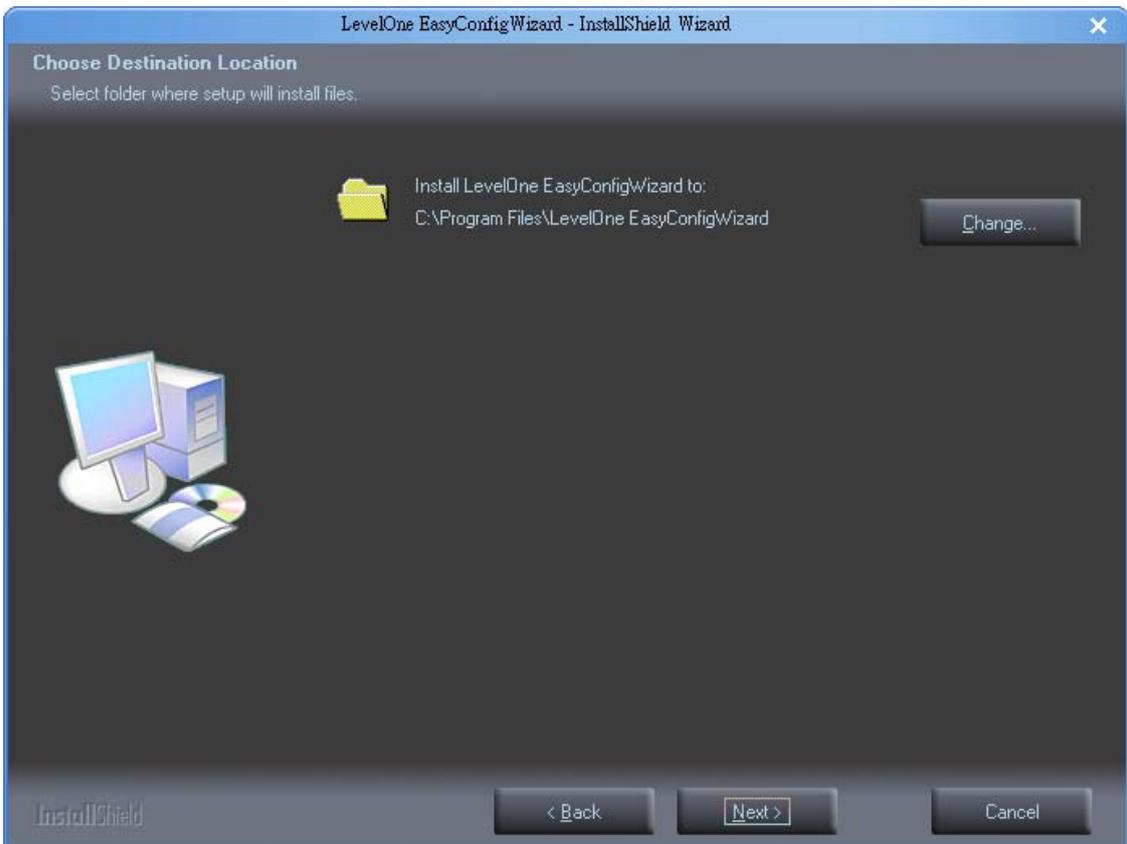
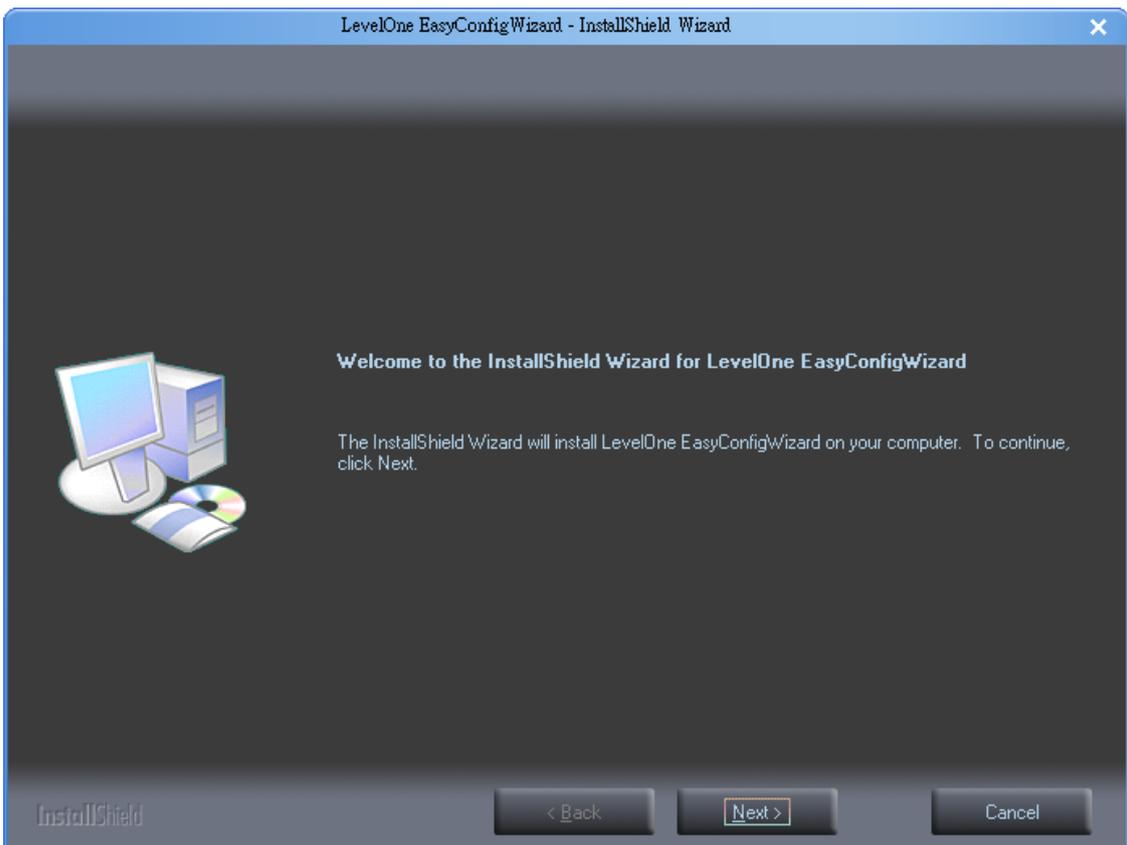
Software installation

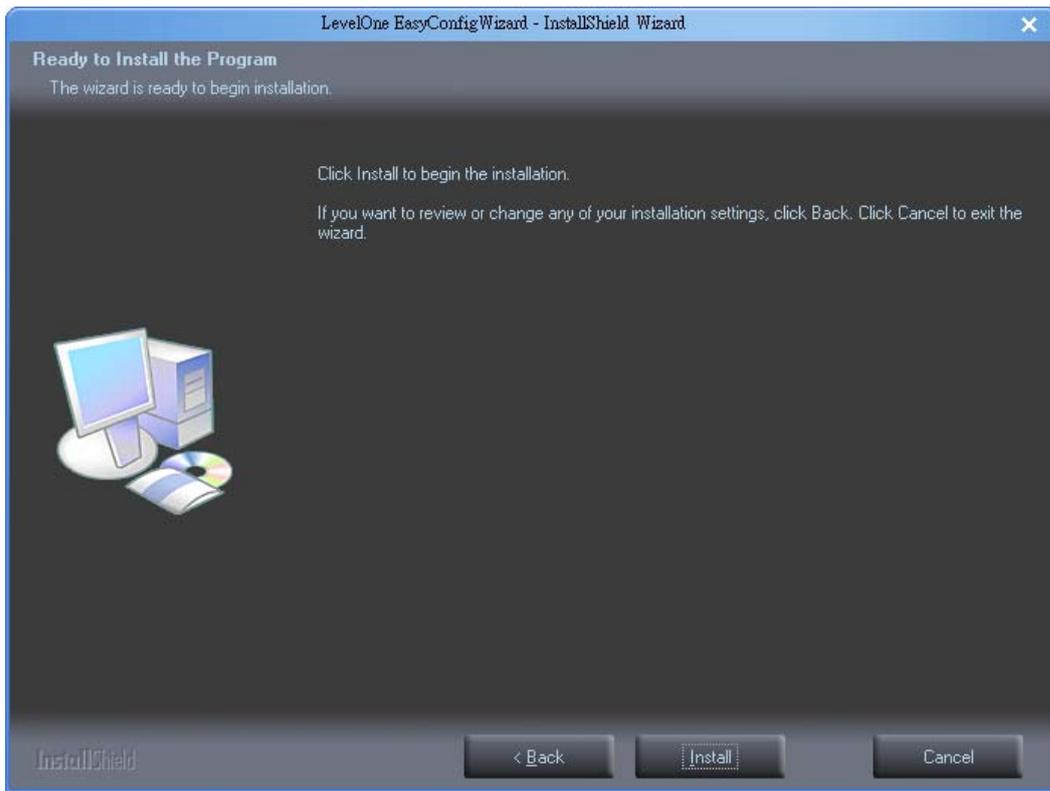
In this manual, "User" refers to whoever has access to the Network Camera, and "Administrator" refers to the person who can configure the Network Camera and grant user access to the camera.

After hardware connection checking, the users can run the Installation Wizard program included in the product CDROM to automatically search for the Network Camera in the Intranet. There may be many Network Cameras in the local network. Users can differentiate the Network Cameras with the serial number. The serial number is printed on the labels on the carton and the bottom of the Network Camera body.

1. Insert the Installation CD into the CD-ROM driver. Click install and shows the welcome screen. Follow the steps to install the Installation wizard on user's computer.



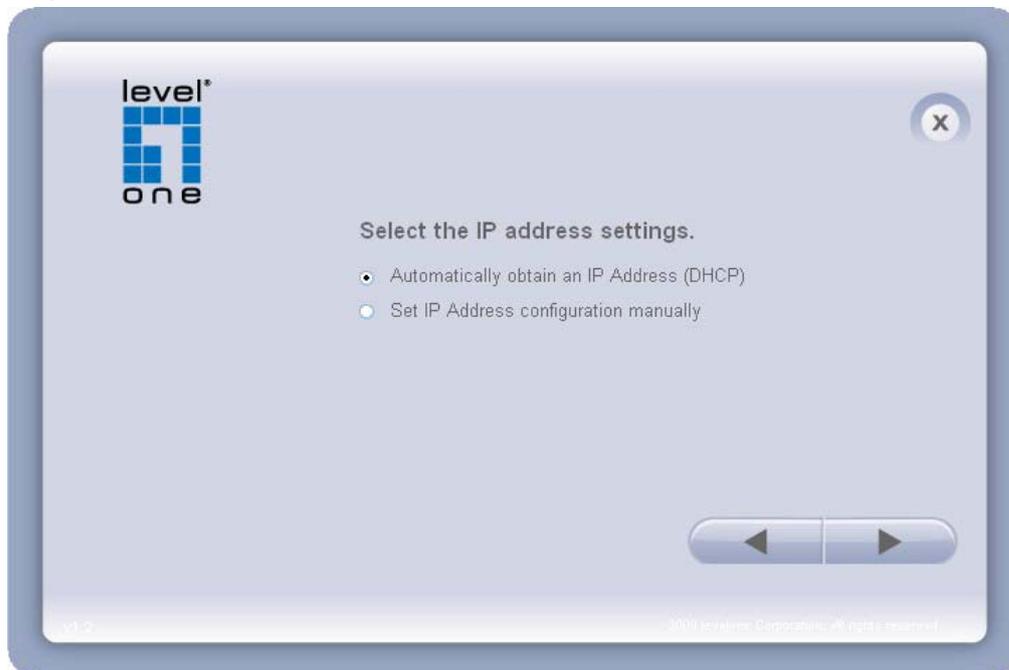






4. Setting the Network Camera IP address

User can either select simple mode or professional mode for network camera IP setting. If simple mode is selected, the easy configuration program will set up the connection automatically. If professional mode is selected, the user will need to configure the IP manually, The DHCP setting is recommended. If user wants to set IP address manually, please refer to the product user manual.





Select the IP address settings.

- Automatically obtain an IP Address (DHCP)
- Set IP Address configuration manually



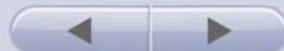
V1.2

©2009 levelone Corporation. All rights reserved.

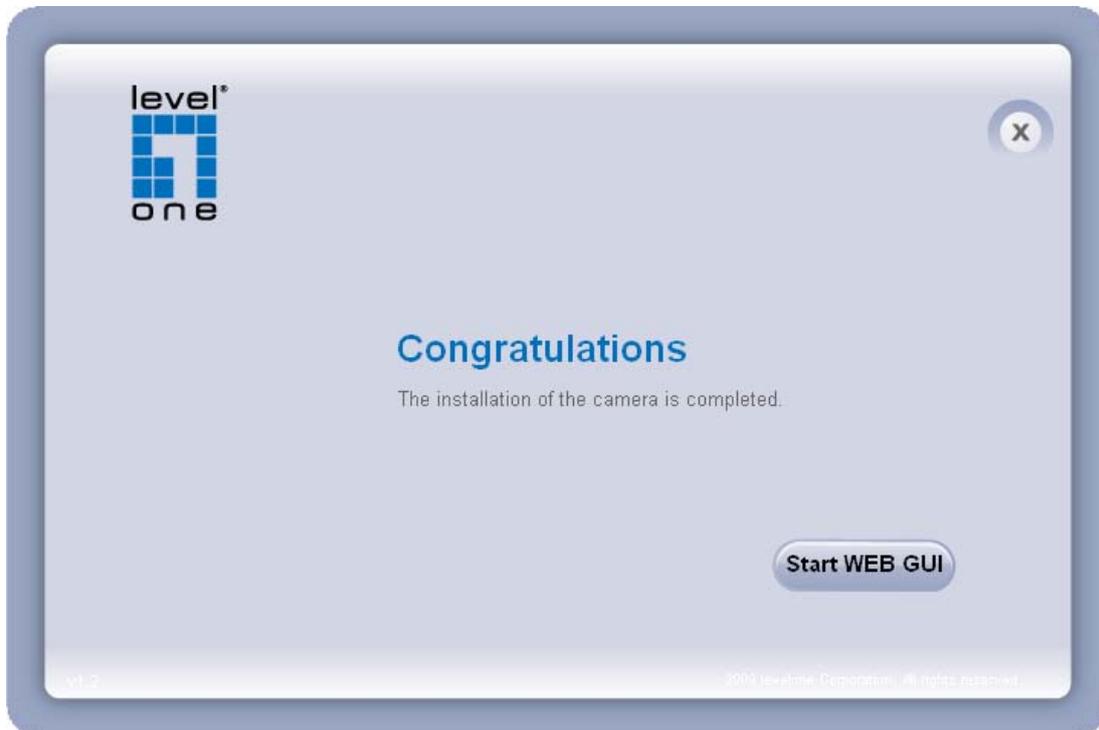


Enter the Static IP Address to configure IP Camera.

IP Address	<input type="text" value="192 . 168 . 50 . 144"/>
Subnet Mask	<input type="text" value="255 . 255 . 255 . 0"/>
Gateway	<input type="text" value="192 . 168 . 50 . 1"/>
DNS1	<input type="text" value="168 . 95 . 1 . 1"/>
DNS2	<input type="text" value="61 . 31 . 233 . 1"/>



5. After finish setting, the connection successful or fail showed. If connection failed, user can either try again or quit the installation. User can either select "Start Web GUI" to continue or click "X" on the top right of the screen to finish the installation.



Once installation is completed, the Administrator should proceed to the next section "Access to the Network Camera" for necessary checks and configurations.

Access to the Network Camera

Check Network Settings

The Network Camera can be connected either before or immediately after software installation onto the Local Area Network. The Administrator should complete the network settings on the configuration page, including the correct subnet mask and IP address of gateway and DNS. Ask your network administrator or Internet service provider for the detail information.

Add Password to prevent Unauthorized Access

The Administrator should immediately implement a new password as a matter of prudent security practice. The user name and password for the Administrator are assigned as “**admin/password**”. Once the Administrator’s password is saved, the Network Camera will ask for the user’s name and password before each access. The Administrator can set up a maximum of ten (10) user accounts. Each user can access the Network Camera except to perform system configuration. Once the password is changed, the browser will display an authentication window to ask for the new password. **Once the password is set, there is no provision to recover the Administrator’s password. The only option is to restore to the original factory default settings.**

Authentication

After opening the Web browser and typing in the URL of the Network Camera, a dialogue window pops up to request a username and password. The user name and password for the Administrator are assigned as “**admin/admin**”.

Installing plug-in

For the initial access to the Network Camera in Windows, the web browser may prompt for permission to install a new plug-in for the Network Camera on the Internet Explorer.

Permission request depends on the Internet security settings of the user’s PC or notebook.

If the highest security level is set, the computer may prohibit any installation and execution attempt. This plug-in has been registered for certificate and is used to display the video in

the browser. Users may click on  to proceed. If the web browser does not

allow the user to continue to install, check the Internet security option and lower the security levels or contact your IT or networking supervisor for help.



Live View

The screenshot displays the web interface for the Level One FCS-1122 Megapixel PoE Network Camera. At the top, the Level One logo is on the left, the camera model 'FCS-1122 Megapixel PoE Network Camera' is in the center, and a language dropdown menu is set to 'English'. Below this is a navigation bar with 'Stream 1' selected under 'Channels', 'HTTP' under 'Protocol', and 'Camera Name: FCS-1122-5911' on the right. The main content area is split into two parts. On the left is a live video feed showing a white Stormtrooper figurine on a desk with technical documents. The video player interface includes a timestamp '2012/08/23', resolution 'H.264 1280x800', and a 'Playing' status. On the right is a 'Camera Control Panel' with three sliders for 'Brightness', 'Mic Volume', and 'Speaker Volume'. Below the sliders are buttons for play/pause, stop, camera icon, zoom in/out, pan, and mute/unmute. A copyright notice 'Copyright © Digital Data Communications GmbH.' is visible at the bottom right of the interface.

Live View is the default page that opens when accessing the Network Camera. Live video is displayed directly in the browser window.

- **Stream1/Stream2 Channels**

The network camera offers simultaneous dual stream for optimized quality and bandwidth. Go to Configuration → Camera/Video/Audio → Video to configure the codec compression and video resolution or refer to the Video configuration page..

- **HTTP/TCP/UDP protocol**

HTTP – This unicast method can be used to traverse firewalls. Firewalls are commonly configured to allow the HTTP protocol, thus allowing RTP to be tunneled.

TCP - This protocol guarantees the complete delivery of streaming data and provides better video quality. The downside of using this protocol is that the quality of its real-time effect is less than that of the UDP protocol.

UDP - This protocol allows for more real-time audio and video streams. However, network packets may be lost due to network burst traffic and images may be broken. Activate UDP connection time-sensitive responses are more important than video quality.



Recording on/off: shows the status of recording video



MIC on /off: shows the status of MIC volume.



Speaker on/off: Displays the status of the Speaker

- **Brightness** - Drag the slider bar to adjust the image brightness level.
- **Mic volume** - Drag the slider bar to adjust the microphone volume.
- **Speaker volume** - The built-in speaker will play sound from an audio clip from the computer microphone when it is enabled.

For more Audio settings, please refer to the Audio configuration page.



Play or Stop: Click this button to play or stop the video.



Recording: Click this button to record video to your computer.



Snapshot: Click this button to capture and save still images.



Digital Zoom: Click this button to enable the zoom operation.



Mirror: horizontally reflect the display of the live video.



Flip: vertically reflect the display of the live video.



Real Size: click this button to view the object in real size. Press this button again to switch back to normal mode.



Full Screen: Click this button to switch to full screen mode. Press “Esc” key to switch back to normal mode.



Mute: Turn off the sound



Talk: To communicate through the camera using the computer MIC.



Set Default: Reset to default settings.



NOTE: The <Video Control Panel> function has no effect on the recorded video.

Whatever changes made to the <Video Control Panel> **will not** be applied to the recorded video.

Configuration

Click <Configuration> on the main page to change the camera settings pages.

Camera/Video/Audio

Camera

The screenshot shows the configuration page for a Level One FCS-1122 camera. The interface includes a top navigation bar with the Level One logo, the model name 'FCS-1122 Megapixel PoE Network Camera', and a language dropdown set to 'English'. Below the navigation bar is a sidebar with categories: Camera/Video/Audio (with sub-items: Camera, Video, Audio, Multicast), Network (with sub-items: IP Settings, UPnP, DDNS, Easy Link, HTTP/HTTPS), Event (with sub-items: Motion Detection, Notification Setting, Scheduled Event, DI/DO), System (with sub-items: System Log, Date and Time, Device Information), and Maintenance (with sub-items: User Management, IP Filter, Firmware Upgrade, Configuration, Reset to Default, Reboot). The main content area is titled 'Camera' and displays a live video feed of a Stormtrooper figurine. To the right of the video are four sliders for Brightness, Contrast, Sharpness, and Saturation. Below these are several settings panels: Exposure Control (with radio buttons for Sport, Normal, Night Vision, and User Defined), Auto Iris (with a checkbox for Enabled), Mirror and Flip (with checkboxes for Mirror and Flip), Flicker Free (with radio buttons for Outdoor Mode, Indoor Mode - 50Hz, and Indoor Mode - 60Hz), True Day & Night (with radio buttons for Auto and Manual), Light Sensor (showing 'Current detected value: 141' and a 'Threshold' dropdown set to 25), and Color Effect (with radio buttons for Auto, Color, and Black & White). At the bottom of the settings panel are 'Test in Full Screen', 'Apply', and 'Reset' buttons.

Camera Setting

Brightness: Drag the slider bar to adjust the image brightness level ranging from -5 to +5.

Contrast: Drag the slider bar to adjust the image contrast level ranging from -5 to +5.

Sharpness: Drag the slider bar to adjust the image sharpness level ranging from -5 to +5.

Saturation: Drag the slider bar to adjust the image saturation level ranging from -5 to +5.

Exposure Control: Select exposure level automatically or manually.

Auto Iris: Enable Auto Iris

Mirror and Flip

Mirror: Enable to horizontally reflect the display of the live video.

Flip: Enable to vertically reflect the display of the live video.

Flicker-Free: While flicker-free technology eliminates the problem of flicker, it can cause slight judder on fast moving images or blurring problems; fast scrolling text for example may blur.

True Day & Night

Auto: The Network Camera automatically removes the filter by judging the level of ambient light.

Manual: the Network Camera switches off the IR cut filter at all times for the sensor to accept the infrared light, thus helps improve low light sensitivity.

Color Effect: Select to display color or black and white video streams.

Click **Apply** or **Reset** to take effect.

Video

You can set up two separate streams for the Network Camera for different viewing devices.

Video

Stream	Video Overlay	RTSP Server	Save File Folder
Stream 1			
Enabled	<input checked="" type="checkbox"/>		
Video Codec	H.264 ▼		
Video Resolution	1280x800(WXGA) ▼		
Frame Rate	15 fps ▼		
<input checked="" type="radio"/> Quality <input type="radio"/> Bitrate	Low ▼		
Quick setting	<input type="button" value="For Mobile Streaming"/>		
Stream 2			
Enabled	<input checked="" type="checkbox"/>		
Video Codec	MJPEG ▼		
Video Resolution	1280x800(WXGA) ▼		
Frame Rate	30 fps ▼		
<input checked="" type="radio"/> Quality <input type="radio"/> Bitrate	Highest ▼		
HTTP Transport	<input type="checkbox"/>		
Quick setting	<input type="button" value="For Mobile Streaming"/>		
<input type="button" value="Apply"/>		<input type="button" value="Reset"/>	

Stream 1 & Stream 2

Video Codec: The Network Camera offers three choices of video codec standards for real-time viewing: H.264, MPEG-4 and MJPEG.

Video Resolution: select from the drop down list to choose the best resolution that fit your need.

Frame Rate: Select from the drop down list of the frame rate, which ranges from 2 to 30 fps when H.264 or MJPEG is selected. Only 3 to 15 fps can be chosen when MPEG-4 is selected. Set the frame rate higher for a smoother video quality.

Video quality and bit rate: User can either choose “quality” or “bitrate” to control the video quality with video codec at H.264 or MPEG4. Only “quality” can be chosen when video codec at MJPEG is selected. Set the bitrate higher for a better video quality. However, high bitrate may cost high network bandwidth resources.

Quick setting: Optimize setting for mobile streaming.

Click **Apply** or **Reset** to take effect.

Video

Stream	Video Overlay	RTSP Server	Save File Folder
Timestamp			
Enabled	<input checked="" type="checkbox"/>		
Position	Left-Bottom ▼		
Text			
Enabled	<input type="checkbox"/>		
Position	Left-Top ▼		
Text	<input type="text"/>		

The video overlay only takes effect in stream 1

Video Overlay: Check to enable the timestamp function and select display position from the drop-down list if user wants date and time to be shown on the screen of the live video. User may also enable and enter the video description in text box; and select display position from the drop-down list if user wants to make a note about the network camera.

Click **Apply** or **Reset** to take effect.



NOTE: The video overlay only takes effect in stream 1.

Video

The screenshot shows a configuration window with four tabs: Stream, Video Overlay, RTSP Server (selected), and Save File Folder. The RTSP Server tab contains a form with two fields: 'Port' with a text input containing '554', and 'Authentication' with a dropdown menu set to 'NONE'. Below the form are two buttons: 'Apply' and 'Reset'.

To utilize RTSP authentication, the user must first set a password for the camera.

RTSP (Real-Time Streaming Protocol) controls the delivery of streaming media. By default the port number is set to 554.

Authentication: Depending on the network security requirements, the camera provides two types of security settings for streaming via RTSP protocol: NONE and DIGEST.

If DIGEST authentication is selected, user credentials are encrypted using MD5 algorithm, thus providing better protection against unauthorized access.

Click **Apply** or **Reset** to take effect.

Video Configuration

The screenshot shows a configuration window with four tabs: Stream, Video Overlay, RTSP Server, and Save File Folder (selected). The Save File Folder tab contains two sections: 'Recording Folder' and 'Snapshot Folder'. Each section has a 'Path' text input field containing 'C:\My Documents\IPCam' and a 'Browse' button. Below these sections are two buttons: 'Apply' and 'Reset'.

Save file folder

Recording folder path: The destination for saving the recording video files. Click browse to specify the saving path.

Snapshot folder path: The destination for saving the snapshot files. Click browse to

specify the saving path.

Click **Apply** or **Reset** to take effect.

Audio

The administrator can set up two separate streams for the camera for different viewing devices. The administrator can enable or disable the audio function on either stream. If audio enable is selected, select the Audio codec from the drop-down menu.

Audio

The screenshot shows a web interface with two tabs: "Stream" and "Advanced Settings". The "Advanced Settings" tab is active. Below the tabs, there are two sections for "Stream 1" and "Stream 2". Each section has an "Enabled" checkbox (checked) and an "Audio Codec" dropdown menu (set to "G.711"). At the bottom of the interface, there are "Apply" and "Reset" buttons.

Click **Apply** or **Reset** to take effect.

Audio

The screenshot shows a web interface with two tabs: "Stream" and "Advanced Settings". The "Advanced Settings" tab is active. Below the tabs, there are three sections: "Camera MIC", "Camera Speaker", and "Echo Cancellation". The "Camera MIC" section has a "MIC Type" dropdown menu (set to "Built-in MIC"). The "Camera Speaker" section has an "Enabled" checkbox (checked) and a "Volume" dropdown menu (set to "50%"). The "Echo Cancellation" section has an "Enabled" checkbox (checked). At the bottom of the interface, there are "Apply" and "Reset" buttons.

Mic Type: Choose mic input, Built-in or Line in.

Camera Speaker: If the speaker is enabled, select the volume from the drop-down menu.

Echo Cancellation Enabled: Enable to avoid an echo.

Click **Apply** or **Reset** to take effect.

Multicast

Multicast addressing is a network technology for the delivery of information to a group of destinations simultaneously using the most efficient strategy to deliver the messages over each link of the network only once, creating copies only when the links to the multiple destinations split. You can either enable or disable the stream1 or stream 2 for the Network Camera. The default value for multicast address and port are 234.1.2.3 and 10000. Use different port number for different stream. Use default value is recommended if you are not sure how to setting.

Multicast

The screenshot shows a configuration interface for Multicast. It has a blue header with the word "Multicast". Below the header, there are two sections for "Stream 1" and "Stream 2". Each section contains an "Enabled" checkbox (which is unchecked), a "Multicast Address" field with four sub-inputs (234, .1, .2, .3), and a "Port" field. For Stream 1, the port is 10000. For Stream 2, the port is 20000. At the bottom of the interface, there are two buttons: "Apply" and "Reset".

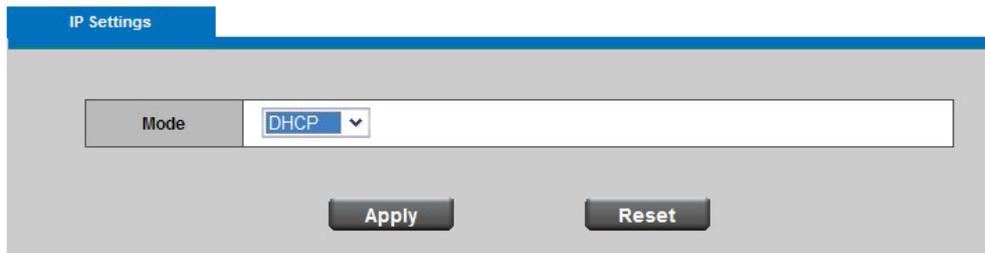
Click **Apply** or **Reset** to take effect.

Network

IP Setting

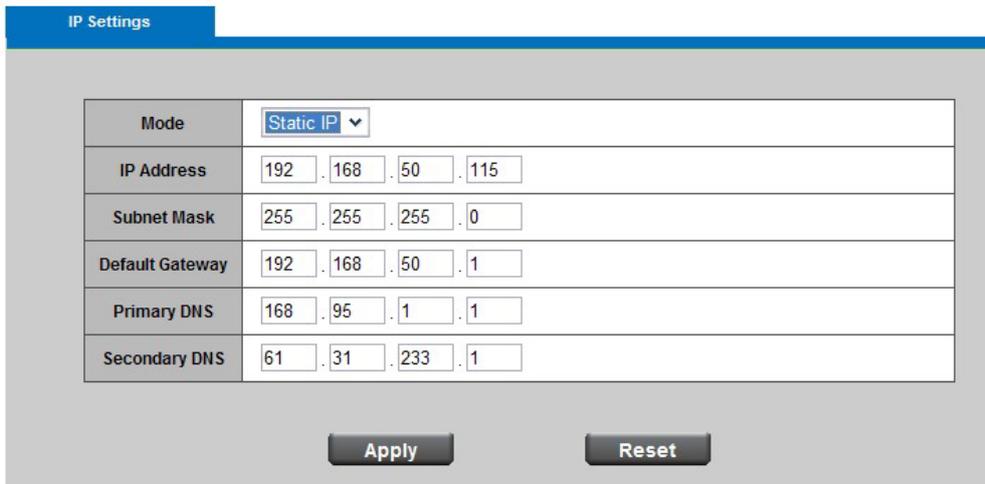
IP Setting: This section explains how to configure wired network connection for the Network Camera. There are several ways to setup the Network Camera over the Internet. The first way is to obtain an available dynamic IP address assigned by a DHCP server. The second way is to utilize a static IP. The third way is to use PPPoE.

IP Settings



The screenshot shows the 'IP Settings' configuration page. At the top, there is a blue header with the text 'IP Settings'. Below the header, there is a form with a 'Mode' dropdown menu set to 'DHCP'. At the bottom of the form, there are two buttons: 'Apply' and 'Reset'.

IP Settings

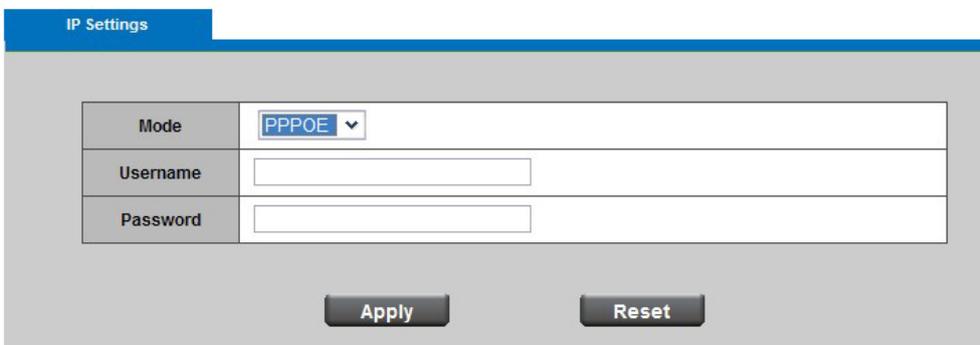


The screenshot shows the 'IP Settings' configuration page with the 'Mode' dropdown menu set to 'Static IP'. The form contains several fields for network configuration:

Mode	Static IP
IP Address	192 . 168 . 50 . 115
Subnet Mask	255 . 255 . 255 . 0
Default Gateway	192 . 168 . 50 . 1
Primary DNS	168 . 95 . 1 . 1
Secondary DNS	61 . 31 . 233 . 1

At the bottom of the form, there are two buttons: 'Apply' and 'Reset'.

IP Settings



The screenshot shows the 'IP Settings' configuration page with the 'Mode' dropdown menu set to 'PPPoE'. The form contains two input fields: 'Username' and 'Password'. At the bottom of the form, there are two buttons: 'Apply' and 'Reset'.

DHCP: Get IP address automatically. Select this option to obtain an available dynamic IP address assigned by a DHCP server each time the camera is connected

to the LAN.

Static IP: Select this option to manually assign a static IP address to the Network Camera. Enter the static IP address, Subnet mask, Default Gateway, Primary and Secondary DNS provided by your ISP.

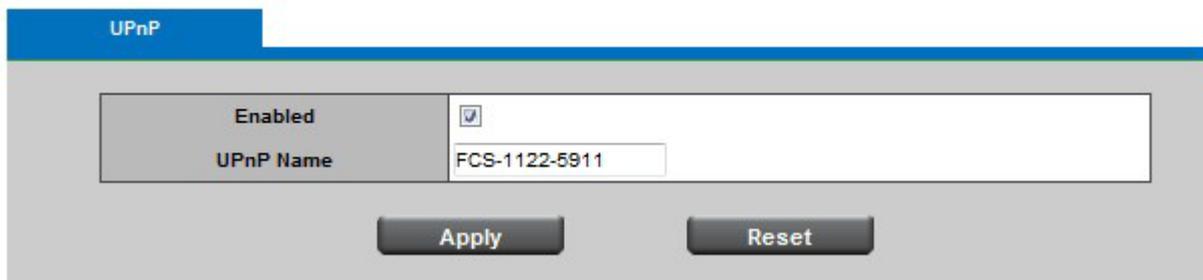
PPPoE (Point-to-point over Ethernet): Choose this connection type if you are connected to the Internet via a DSL Line. Note that to utilize this feature, it requires an account provided by your ISP. Enter the user name and password provided by your ISP.

Click **Apply** or **Reset** to take effect.

UPnP

Only UPnP discovery supported. Enable this function to allow the user to search for devices of interest on the network. Enter the UPnP name as you wish to show on the intranet.

UPnP



The screenshot shows a configuration panel for UPnP. At the top left, there is a blue tab labeled 'UPnP'. Below the tab, there is a section with a grey background. On the left, there is a label 'Enabled' with a checked checkbox. Below it, there is a label 'UPnP Name' and a text input field containing 'FCS-1122-5911'. At the bottom of the panel, there are two buttons: 'Apply' and 'Reset'.

Click **Apply** or **Reset** to take effect.

DDNS (dynamic domain name service)

DynDNS: Enable the DDNS service allows your Network Camera, especially when assigned with a dynamic IP address, to have a fixed host and domain name. Note that before utilizing this function; please apply a dynamic domain account first. Enter the username, password and hostname when enabled the DDNS.

DDNS

DynDNS	TZO
Enabled	<input type="checkbox"/>
Username	<input type="text"/>
Password	<input type="text"/>
Hostname	<input type="text"/>

Click **Apply** or **Reset** to take effect.

TZO: TZO is one kind of the DDNS providers. User can refer to the [TZO.com](http://www.tzo.com/): visit <http://www.tzo.com/> to apply a dynamic domain account when selecting this DDNS provider. Enter the e-mail address, password and domain name when enabled the TZO.

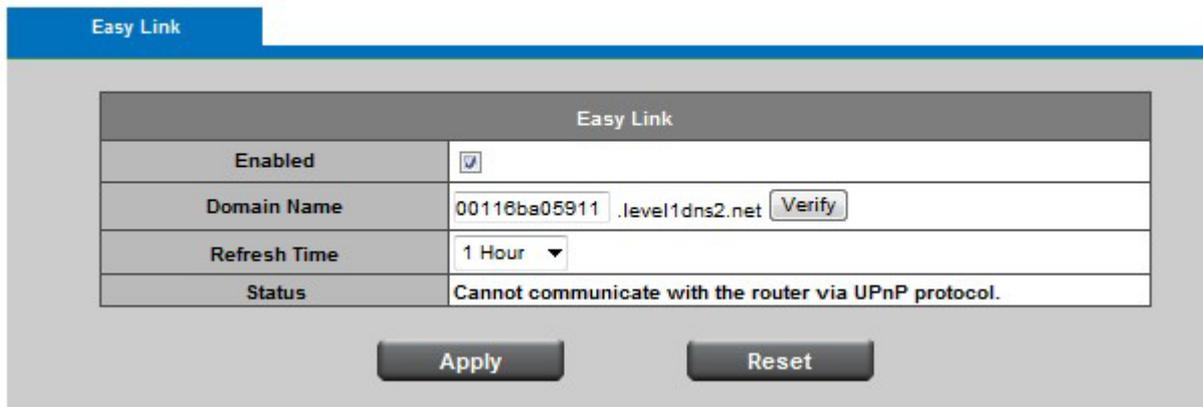
DDNS

DynDNS	TZO
Enabled	<input type="checkbox"/>
E-mail Address	<input type="text"/>
TZO Password	<input type="text"/>
Domain Name	<input type="text"/>

Click **Apply** or **Reset** to take effect.

Easy Link

Easy Link



The screenshot shows a configuration page titled "Easy Link". It contains a table with the following fields:

Easy Link	
Enabled	<input checked="" type="checkbox"/>
Domain Name	00116ba05911 .level1dns2.net <input type="button" value="Verify"/>
Refresh Time	1 Hour
Status	Cannot communicate with the router via UPnP protocol.

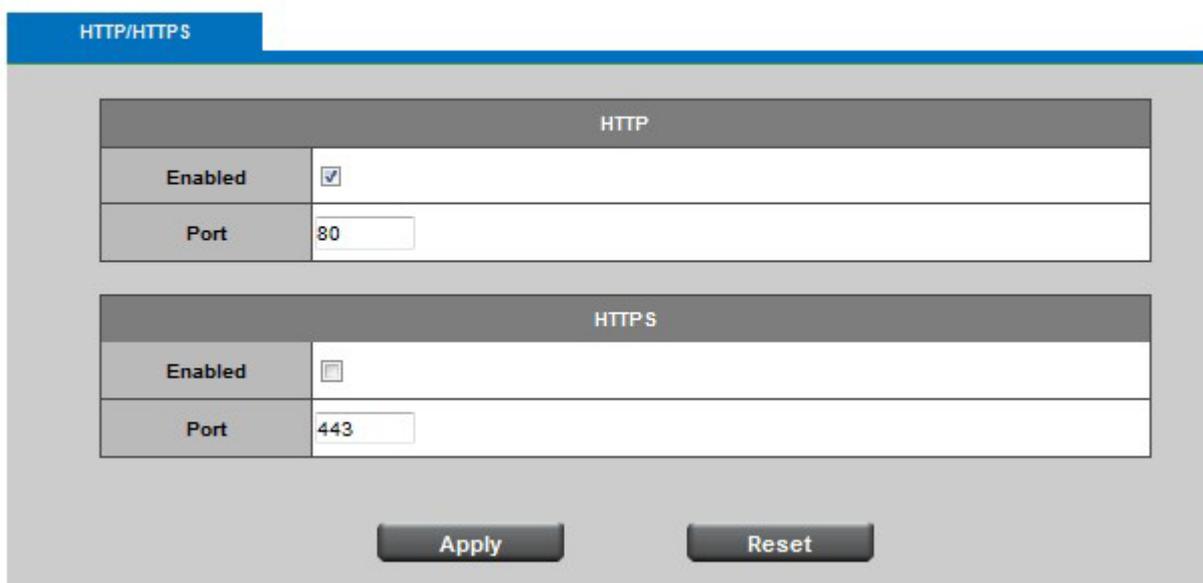
At the bottom of the form are two buttons: "Apply" and "Reset".

Easy Link: the IP camera had bundle with free Level1DNS™ service that allows user to remote access the IP camera via internet. The default domain name is MAC address, you can also register your own name on-line but it have to check the available first. The status will show the connection with Level1DNSTM service.

Notice: Please make sure the internet connection is ready first!

HTTP/HTTPS

HTTP/HTTPS



The screenshot shows a configuration page titled "HTTP/HTTPS". It contains two sections:

HTTP

Enabled	<input checked="" type="checkbox"/>
Port	80

HTTPS

Enabled	<input type="checkbox"/>
Port	443

At the bottom of the form are two buttons: "Apply" and "Reset".

HTTP(HyperText Transfer Protocol): This protocol allows for TCP protocol quality without having to open specific ports for streaming. Users inside a firewall can utilize this

protocol to allow streaming data through.

HTTPS (Hypertext Transfer Protocol over SSL): This protocol allows authentication and encrypted communication over SSL (Secure Socket Layer). It helps protect streaming data transmission over the Internet on a higher security level than HTTP.

Event

Motion Detection

Motion can be detected by measuring change in speed or vector of an object or objects in the field of view. This section explains how to configure the Network Camera to enable motion detection. There are three motion detection windows can be configured.

Motion Detection

The screenshot displays the 'Motion Detection' configuration page. It features a video preview window on the left showing an office environment with a red box indicating a detection region. On the right, the 'MD Region Setting' panel is visible, containing three window selection options (Win 1, Win 2, Win 3), an 'Enable Windows 1' checkbox, and sliders for 'Sensitivity' and 'Threshold'. A note below the sliders states: 'After enabling the Motion Detection Window, drag the mouse on preview video to indicate the detecting region.' At the bottom of the panel are 'Apply' and 'Reset' buttons.

Detection Setting: Select and enable the motion detection windows function. Easier to trigger event by higher the sensitivity value and lower the Threshold value.

Notification: To react in response to particular events. A typical application is that when a motion is detected, the Network Camera sends buffered images to a FTP server, SMTP or Samba as notifications. In this page, you can specify which notification messages will be sent when a trigger is activated.

Motion Detection

The screenshot shows a web interface for Motion Detection settings. At the top, there are two tabs: "Detection Setting" and "Notification". The "Notification" tab is selected. Below the tabs, there are four notification options, each with a checkbox and a label: "FTP Notification", "Samba Notification", "SMTP Notification", and "HTTP Notification". The "HTTP Notification" checkbox is checked. At the bottom of the notification list, there are two buttons: "Apply" and "Reset".

Click **Apply** or **Reset** to take effect.

Notification setting

When an event is triggered, you can specify what kind of action will be performed. You can configure the Network Camera to send video streaming URL, or video clip to your email address, FTP site or samba.

FTP: File Transfer Protocol (FTP) is often used as an application component to automatically transfer files for program internal functions. Select to send the media files to a FTP server when a trigger is activated. Enter the FTP IP address or hostname; by default, the FTP port server is set to 21, enter account name and password to configure the setting.

Notification Settings

The screenshot shows the "Notification Settings" interface. At the top, there are four tabs: "FTP", "SMTP", "Samba", and "HTTP". The "FTP" tab is selected. Below the tabs, there is a form with the following fields:

Server Selection	Primary FTP Server
FTP Address	IP Address [0] [0] [0] [0]
FTP Port	21
Account Name	
Account Password	
Attachment	<input type="checkbox"/> Video Clip

At the bottom of the form, there are two buttons: "Apply" and "Reset".

Click **Apply** or **Reset** to take effect.

SMTP: Select to send the media files via Email when a trigger is activated.

From: Enter the email address of the sender.

To: Enter the email address of the recipient. Many recipients are separated by commas.

My name: The title shown in the email.

Subject: Enter the subject of the email.

Attached: There are two choices of media types available: video streaming URL and video clip.

SMTP Server and port number: Enter the server host name and port number of the email server.

Authentication: Select the authentication type from the drop-down list.

Email Account: Enter the user name of the email account if necessary.

Email Password: Enter the password of the email account if necessary.

Notification Settings

FTP	SMTP	Samba	HTTP
From	<input type="text"/>		
To	<input type="text"/>		
CC	<input type="text"/>		
My Name	<input type="text"/>		
Subject	<input type="text"/>		
Attachment	<input type="checkbox"/> Video Streaming URL <input type="checkbox"/> Video Clip		
Server Selection	Primary Email Server <input type="button" value="v"/>		
SMTP Server	<input type="text"/>		
SMTP Port	25 <input type="text"/>		
Authentication	LOGIN <input type="button" value="v"/>		
Email Account	<input type="text"/>		
Email Password	<input type="text"/>		
<input type="button" value="Apply"/> <input type="button" value="Reset"/>			

Click **Apply** or **Reset** to take effect.

Samba: Select to send the network file system media files via network neighborhood when a trigger is activated.

IP Address: Enter the IP address of the samba server.

Hostname: Enter the domain name of the samba server.

User Name: Enter the user name of the samba server.

Password: Enter the password of the samba server.

Workgroup: Enter the workgroup of the samba server.

Share DIR: Enter the share DIR of the samba server.

Notification Settings

FTP	SMTP	Samba	HTTP
Server Address	IP Address <input type="text"/> 0 <input type="text"/> 0 <input type="text"/> 0 <input type="text"/> 0		
User Name	<input type="text"/>		
Password	<input type="text"/>		
WorkGroup	<input type="text"/>		
Share DIR	<input type="text"/>		
<input type="button" value="Apply"/> <input type="button" value="Reset"/>			

Click **Apply** or **Reset** to take effect.

Notification Setting

FTP	SMTP	Samba	HTTP
URL	<input type="text"/>		
Message	<input type="text"/>		
User Name	<input type="text"/>		
Password	<input type="text"/>		
<input type="button" value="Apply"/> <input type="button" value="Reset"/>			

HTTP: Select this option to send the media files via an HTTP notification when an event is triggered.

URL - Specify the URL to send HTTP requests. The URL is normally written as:

`http://ip_address/ notification.cgi?parameter`

ip_address – type the IP address or host name of the HTTP host.

Parameter – type the notification parameter if necessary.

Example

URL - http://192.168.1.1/xxxx.cgi

Message - name1=value1&name2=vlaue2

Result - http://192.168.1.1/xxxx.cgi? name1=value1&name2=vlaue2

Ex:

https://192.168.1.1/notification.cgi?event=MD&camera=FB-100A

Message - Enter the message notification that will be sent when an event is triggered.

Enter the user name and password if necessary.

Scheduled Event

You can setup your camera to send snapshots to you continuously at any given time period.

Scheduled Event

Event

Schedule						
Enabled	Name	Event	Start	Duration	Date	Action
<input type="checkbox"/>	FCS-1122	Snapshot	00:00	1440	Sun, Mon, Tue, Wed, Thu, Fri, Sat	<input type="button" value="Edit"/> <input type="button" value="Delete"/>

Enabled	<input type="checkbox"/>
Name	<input type="text" value="FCS-1122"/>
Event	Snapshot ▾
	Send Snapshot to <input type="text" value="FTP"/> Snapshot Interval <input type="text" value="180"/> Second (60~86400)
Times	Start <input type="text" value="00"/> : <input type="text" value="00"/> ~ Duration <input type="text" value="1440"/> Minutes
Date	Sun <input checked="" type="checkbox"/> Mon <input checked="" type="checkbox"/> Tue <input checked="" type="checkbox"/> Wed <input checked="" type="checkbox"/> Thu <input checked="" type="checkbox"/> Fri <input checked="" type="checkbox"/> Sat <input checked="" type="checkbox"/> <input type="button" value="Update"/> <input type="button" value="Cancel"/>

DI/DO

DI/DO

DI/DO	
Digital Input	Low (Current status: High)
Digital Output	Grounded Duration 5 Sec (Current status: High)

Apply Reset

Digital Input: Select Digital Input to have the profile management controlled by an external sensor. Select profiles from the drop down menu. Profiles will change according to different trigger voltage levels.

Digital Output: The DO socket allows the IP camera to send output to an external device. While executing the DO notification action, the IP camera drives voltage on the connected DO wire to the triggering voltage level for X number of seconds. The connected external device will then be triggered for X number of seconds.

Triggered Voltage Level - OPEN or GROUND

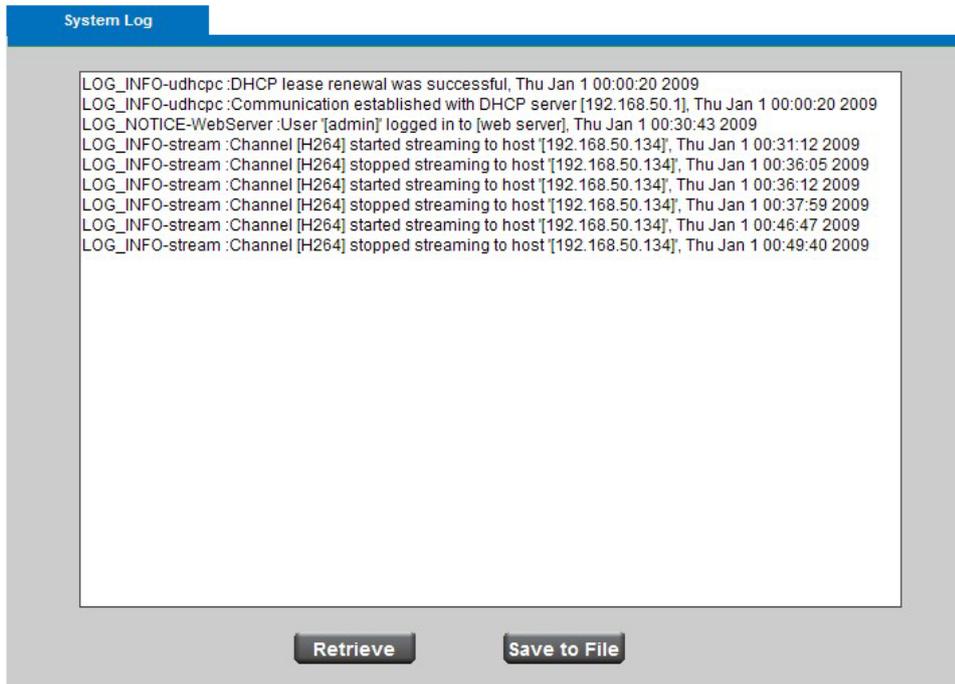
Users should select the option according to the specification of their external device.

Click **Apply** or **Reset** to take effect.

System

System Log

System Log



The screenshot shows a web interface for viewing system logs. At the top, there is a blue header with the text "System Log". Below the header is a large white rectangular area containing a list of log entries. At the bottom of the interface, there are two buttons: "Retrieve" and "Save to File".

```
LOG_INFO-udhcpd:DHCP lease renewal was successful, Thu Jan 1 00:00:20 2009
LOG_INFO-udhcpd:Communication established with DHCP server [192.168.50.1], Thu Jan 1 00:00:20 2009
LOG_NOTICE-WebServer :User [admin] logged in to [web server], Thu Jan 1 00:30:43 2009
LOG_INFO-stream :Channel [H264] started streaming to host [192.168.50.134], Thu Jan 1 00:31:12 2009
LOG_INFO-stream :Channel [H264] stopped streaming to host [192.168.50.134], Thu Jan 1 00:36:05 2009
LOG_INFO-stream :Channel [H264] started streaming to host [192.168.50.134], Thu Jan 1 00:36:12 2009
LOG_INFO-stream :Channel [H264] stopped streaming to host [192.168.50.134], Thu Jan 1 00:37:59 2009
LOG_INFO-stream :Channel [H264] started streaming to host [192.168.50.134], Thu Jan 1 00:46:47 2009
LOG_INFO-stream :Channel [H264] stopped streaming to host [192.168.50.134], Thu Jan 1 00:49:40 2009
```

This page displays the system's log in chronological order. The system log is stored in the Network Camera's buffer area and will be overwritten when reaching a certain amount.

Click **Retrieve** to retrieve the log, or click **Save to file** to save the file in the specify location.

Date & Time Settings

Manual: The user can enter the date and time manually.

NTP: Select to update the time with the NTP server on hourly, daily, weekly, or monthly basis.

NTP Server 1 and Server 2: Enter the address of the NTP server

Time Zone: Select the local time zone from drop-down menu.

Daylight Saving: Enable this option to automatically update for Daylight Savings Time.

Date and Time

Date and Time	
Time Synchronization	
Mode	<input type="radio"/> Set Manually <input checked="" type="radio"/> Synchronize with NTP server
NTP Server1	<input type="text" value="tick.stdtime.gov.tw"/>
NTP Server2	<input type="text" value="clock.stdtime.gov.tw"/>
TimeZone	
TimeZone	<input type="text" value="(GMT+8:00)Hong Kong"/>
Country	<input type="text" value="User Defined"/>
Offset	Hours: <input type="text" value="+0"/> Minutes: <input type="text" value="00"/>
Daylight Saving Time	
Daylight Saving	<input checked="" type="radio"/> Disabled <input type="radio"/> Enabled <input type="text" value="Manual"/>
Type	<input type="text" value="Date"/>
Start Date	Month: <input type="text" value="1"/> Day: <input type="text" value="1"/>
End Date	Month: <input type="text" value="1"/> Day: <input type="text" value="1"/>
<input type="button" value="Apply"/> <input type="button" value="Reset"/>	

Click **Apply** or **Reset** to take effect.

Device Information

System Information: To view all the system information about the network camera.

Device Information

System Information	Network Settings	Video/Audio Settings
Lan MAC Address	00:11:8b:a0:59:11	
Firmware Version	v1.0.0.43	
Firmware Release	08/21/2012 13:05	
Product Name	FCS-1122	
Model Number	1122	
Company Name	Level One	
Comments	Megapixel PoE Network Camera	
UPnP Name	FCS-1122-5911	

Network Setting: To view all the network setting information about the network camera.

Device Information

System Information	Network Settings	Video/Audio Settings
IP Setting Type	DHCP	
IP Address	192.168.50.116	
Subnet Mask	255.255.255.0	
Default Gateway	192.168.50.1	
Primary DNS	168.95.1.1	
Secondary DNS	61.31.233.1	
UPnP	Enabled	
DynDNS	Disabled	
TZO	Disabled	

Video/Audio Setting: To view all the video/audio setting information about the network camera.

Device Information

System Information	Network Settings	Video/Audio Settings
Stream 1		
Video Codec	H264	
Video Resolution	1280x800(WXGA)	
Video Frame Rate	15 fps	
Video Quality	Low	
Audio Codec	G.711	
Multicast IP	N/A	
Stream 2		
Video Codec	MJPEG	
Video Resolution	1280x800(WXGA)	
Video Frame Rate	30 fps	
Video Quality	Highest	
Audio Codec	G.711	
Multicast IP	N/A	

Maintenance

User Management

This section explains how to enable password protection and create multiple accounts.

Privilege Setting: Enter the new user’s name and password. Select the privilege for new user account. Click **Add** to take effect. The administrator account name is “admin”, which is permanent and can not be deleted.

Access rights are sorted as following (Viewer, Administrator and Remote Viewer). Only administrators can access the Configuration page. Viewers can access the main page for live viewing only. The privilege of Remote Viewer is same as viewer except TCP protocol can only be selected for live viewing page. Administrators can add up to 10 user accounts. You also can change user’s access rights or delete user accounts. Select an existing account to modify and make necessary changes; then click **Update** or **Delete** to take effect.

User Management

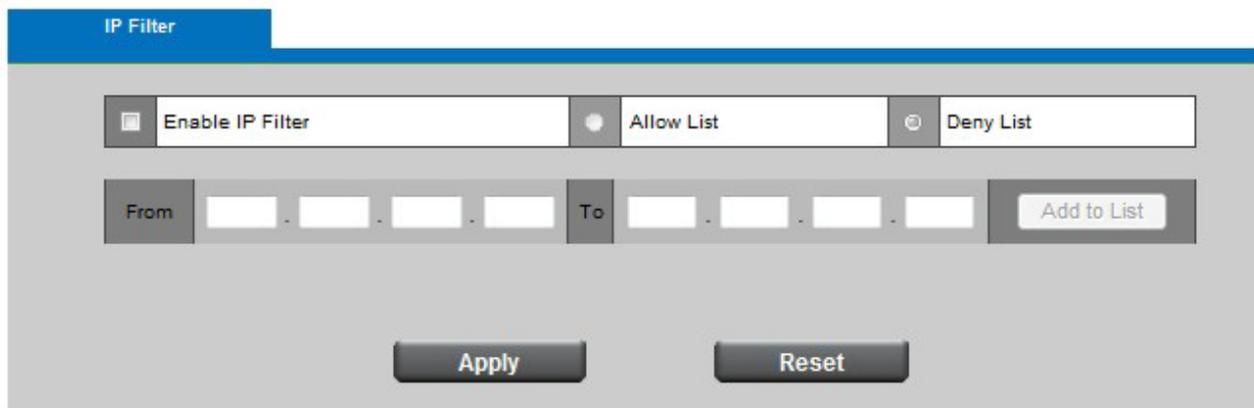
The screenshot shows a web interface for user management. At the top, there is a blue header with the text "User Management". Below the header, there is a grey panel with a checkbox labeled "Enabled" and an "Apply" button. Below this panel is a table with 10 rows and 5 columns: Index, User Name, Password, Confirm Password, and Privilege. The first row shows an "admin" user with "Administrator" privilege. The remaining 9 rows show empty fields for "User Name", "Password", and "Confirm Password", and "Viewer" privilege. Each row has three buttons: "Add", "Delete", and "Update".

Index	User Name	Password	Confirm Password	Privilege	Action
1	admin	Administrator ▾	Add Delete Update
2				Viewer ▾	Add Delete Update
3				Viewer ▾	Add Delete Update
4				Viewer ▾	Add Delete Update
5				Viewer ▾	Add Delete Update
6				Viewer ▾	Add Delete Update
7				Viewer ▾	Add Delete Update
8				Viewer ▾	Add Delete Update
9				Viewer ▾	Add Delete Update
10				Viewer ▾	Add Delete Update

IP Filter

IP Filter: Enable the IP filter and set of allow or deny IP address range to server. Click **Add to list** to add the IP range to the IP filter list.

IP Filter



The screenshot shows the 'IP Filter' configuration page. At the top, there is a blue header with the text 'IP Filter'. Below the header, there are three main sections: 1. A row of three controls: a checkbox labeled 'Enable IP Filter', a radio button labeled 'Allow List', and a radio button labeled 'Deny List'. 2. A row for defining an IP range: a 'From' label followed by four input fields for IP octets, a 'To' label followed by four input fields for IP octets, and an 'Add to List' button. 3. Two large buttons at the bottom: 'Apply' and 'Reset'.

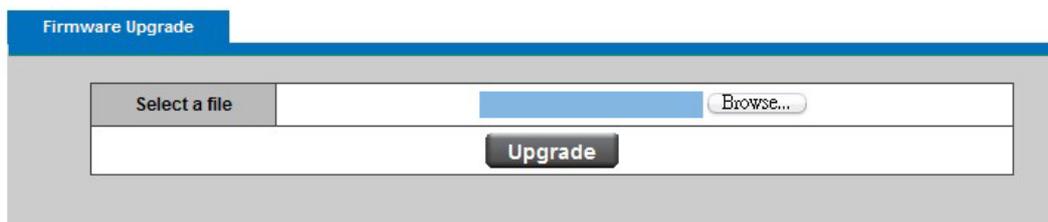
Click **Apply** or **Reset** to take effect.

Firmware Upgrade

This feature allows you to upgrade the firmware on your Network Camera. It takes about few minutes to complete the process. Note that do not power off the Network Camera during the upgrade.

Upgrade: Click **Browse...** and specify the firmware file. Click **Upgrade**. The Network Camera starts to upgrade and will reboot automatically when the upgrade completes.

Firmware Upgrade



The screenshot shows the 'Firmware Upgrade' configuration page. At the top, there is a blue header with the text 'Firmware Upgrade'. Below the header, there is a single row containing: 1. A 'Select a file' label, 2. An empty text input field, 3. A 'Browse...' button, and 4. An 'Upgrade' button.

Configuration

This feature allows you to export/import the configuration files of the network camera.

Import/Export: Click **export** to pop up a dialog to indicate the location and file to export.

Click **browse** to indicate the location and file of the camera configuration and click **import**

to import the configuration file back into the network camera.

Configuration

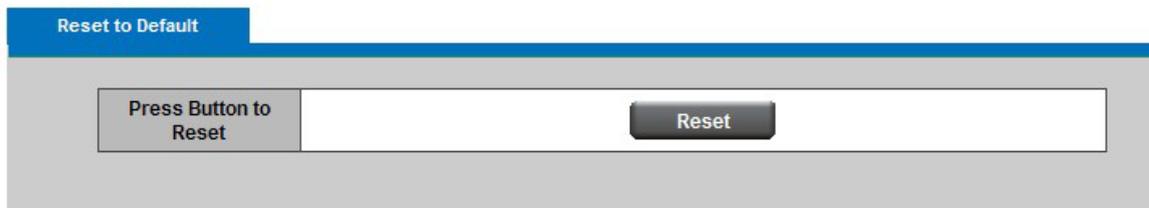


The screenshot shows a web interface for configuration. At the top, there is a blue tab labeled "Import / Export". Below this, there is a table with two rows. The first row is for "Export" and contains a button labeled "Export". The second row is for "Import" and contains the text "Please browse a file to import" followed by a text input field and a "Browse..." button. Below the input field is another button labeled "Import".

Reset to default

Click **Reset to Default** to restore the network camera to factory default setting.

Reset to Default



The screenshot shows a web interface for "Reset to Default". At the top, there is a blue tab labeled "Reset to Default". Below this, there is a large white rectangular area. On the left side of this area, there is a grey box with the text "Press Button to Reset". On the right side, there is a button labeled "Reset".

Reboot

This feature will reboot the camera. Click Apply to begin. A message will pop up asking "The device will reboot. Are you sure?" Click "OK" to continue. The camera will take about one minute to reboot.

Reboot



The screenshot shows a web interface for "Reboot". At the top, there is a blue tab labeled "Reboot". Below this, there is a large white rectangular area. On the left side of this area, there is a grey box with the text "Press Button to Reboot". On the right side, there is a button labeled "Reboot".