LevelOne

FCS-1030

10/100Mbps IP Network Camera

User's Manual

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Before You Use This Product

The use of surveillance devices may be prohibited by law in your country. The FCS-1030 Network Camera is not only a high-performance web-ready camera but also can be part of a flexible surveillance system. It is the user's responsibility to ensure that the operation of such devices is legal before installing this unit for its intended use.

It is important to first verify that all contents received are complete according to the list in the "Package Contents" chapter. Take notice of the warnings in "Quick installation guide" before the Network Camera is installed, then carefully read and follow the instructions in the "Installation" chapter to avoid damages due to faulty assembly and installation. This also ensures the product is used properly as intended.

The Network Camera is a network device and its use should be straightforward for those who have basic network knowledge. The "Troubleshooting" chapter in the Appendix provides remedies to the most common errors in set up and configuration. You should consult this chapter first if you run into a system error.

The Network Camera is designed for various applications including video sharing, general security/surveillance, etc. The "How to Use" chapter suggests ways to best utilize the Network Camera and ensure proper operations. For the creative and professional developers, the "URL Commands of The Network Camera " chapter serves to be a helpful reference to customize existing homepages or integrating with the current web server.

For paragraphs preceded by ⚠ the reader should use caution to understand completely the warnings. Ignoring the warnings may result in serious hazards or injuries.

Warning Before Install

○ Power off the Network Camera as soon as it is found smoking or smelt unusual.

⚠ Contact your distributor when such cases happen.

○ Keep the Network Camera away from the water. If the Network Camera is wet, power off immediately.

🚫 Contact your distributor when such cases happen.

○ Do not place the Network Camera around the heat sources, such as television or oven.

○ Refer to your user's manual for the operating temperature.

○ Keep the Network Camera away from the direct sunlight.
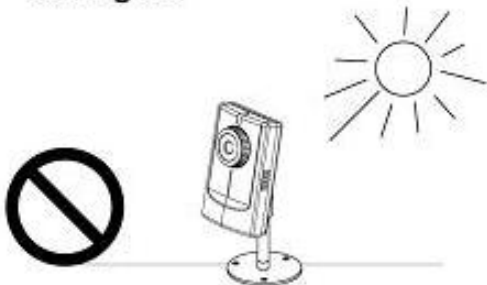
○ Do not place the Network Camera in high humid environments.

○ Do not place the Network Camera on unsteady surfaces.
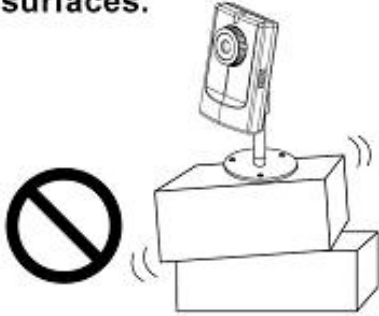
○ Do not touch the Network Camera when it's lightening.

○ Do not disassemble the Network Camera.

○ Do not drop the Network Camera.

○ Do not insert any object into the Network Camera, such as needles.

Package Contents

Network Camera

Power adapter

Camera stand

Software CD

Installation

In this manual, "User" refers to whoever has access to the FCS-1030 Network Camera, and "Administrator" refers to the person who can configure the Network Camera and grant user access to the camera.

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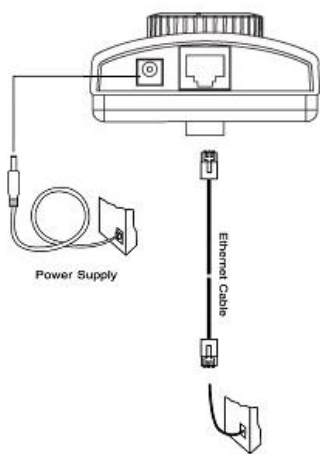
Please verify that your product package contains all the accessories listed in the foregoing Package Contents. Depending on the user's application, an Ethernet cable may be needed. The Ethernet cable should meet the specs of UTP Category 5 and not

⚠ Connect the power adapter jack to the Network Camera before plugging in to the power socket. This will reduce the risk of accidental electric

Upon powering up, the device runs through a self-test procedure and the front LEDs will blink between green and red a few times. If self-test passes, the LED will be green and the Network Camera will standby for getting IP address. After getting IP Address, the LED will blink green every second. If self-test fails the red LED will blink several times. Refer to Appendix A for troubleshooting.

Software installation

The following are steps for the software installation.

STEP 1 **Put the Installation disk into the CD-ROM drive, and the installation should start automatically. If the installation does not start, click on "Start" on the lower left corner of your screen, open "My Computer" and double click on the CD-ROM icon. The Installation Wizard Installation Window will appear.**

STEP 2 **There are links on this page, including Install Software, User's Manual and Customer Homepage. Click on "Install Software" to enter Install Software page.**
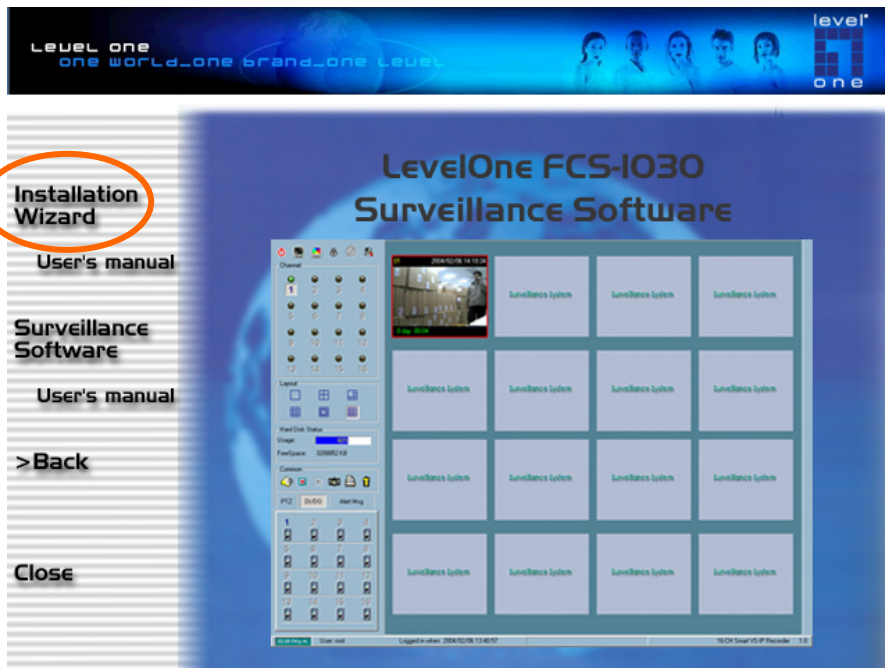
STEP 3 There are links on this page, including Installation Wizard, User's Manual and Surveillance Software. Click on "Installation Wizard" to launch the setup program.
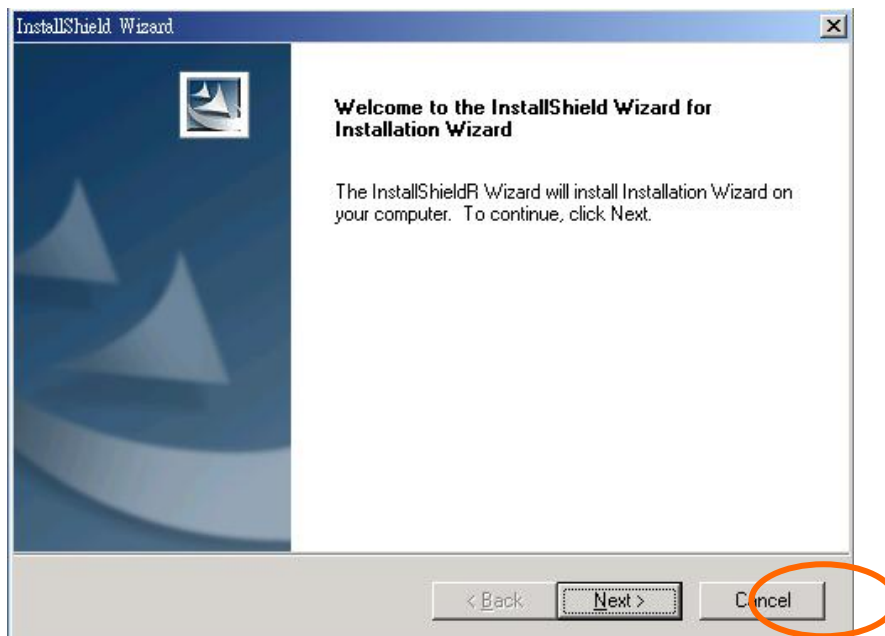
STEP 4 **Select the installation directory for this application software and click on "Next". You can also change the installation directory from the default directory by clicking on "Browse…"**
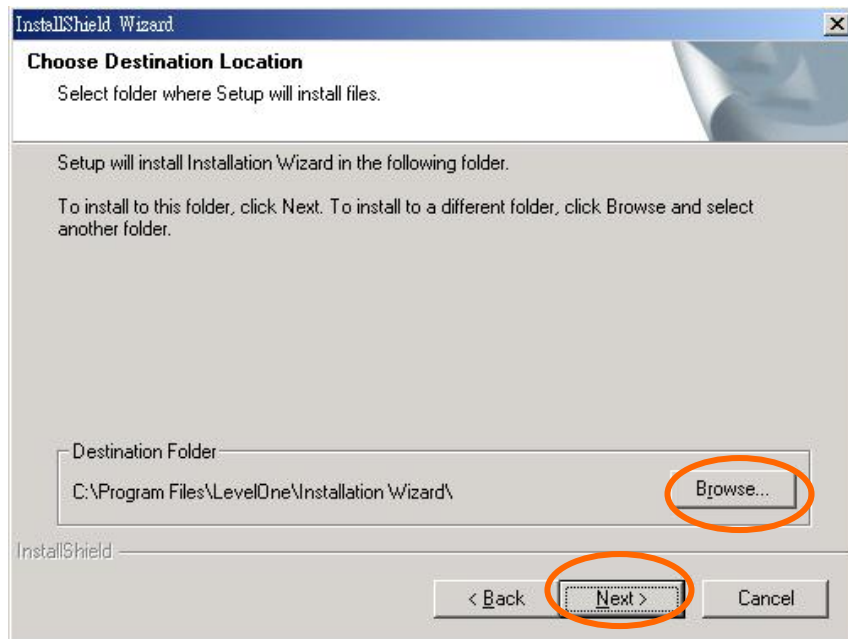
STEP 5 **Select a program folder to install the application software into and then click on "Next".**
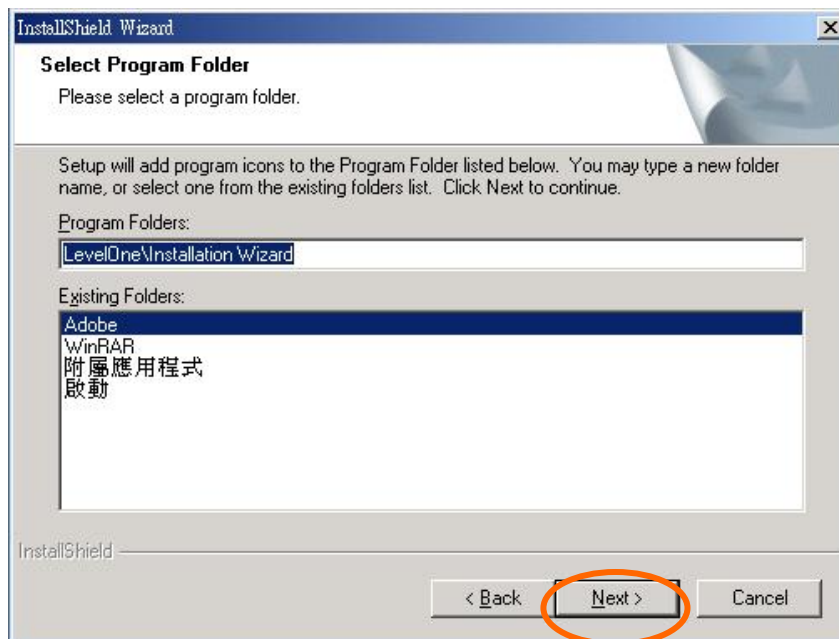
STEP 6 **Click on "Finish" to finish installation. This completes the installation.**
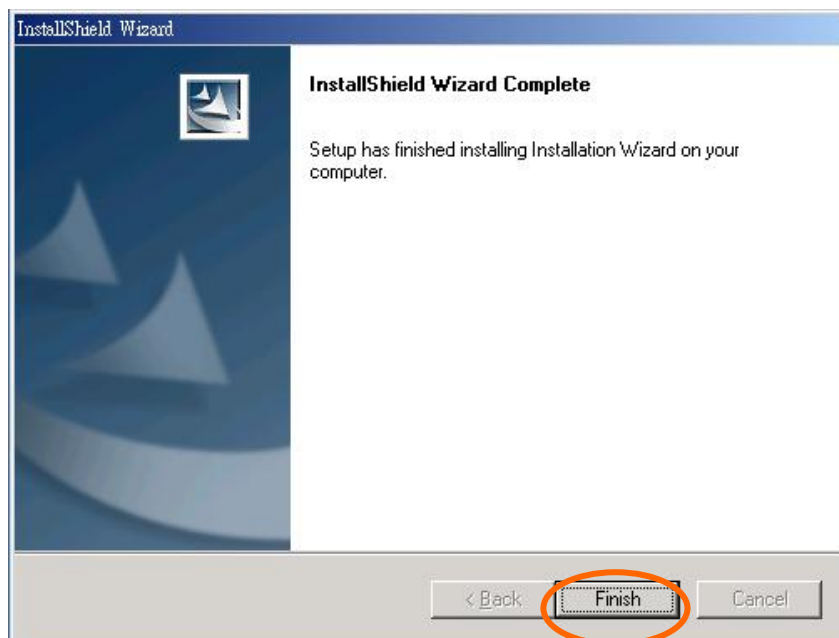
Using Installation Wizard

User Interface

Once you run the Installation Wizard, you will see the user interface. You can click on the device list to select a device. The three buttons (Setup, Upgrade, and Reset to default) won't be enabled until you select at least one device.

Installation wizard allows you to setup or upgrade multiple devices (of the same model) at the same time. If you selected different models, then the buttons will be disabled. There are five buttons on the bottom of the main page, and five buttons on the left panel of the main page.

Action buttons

Search Click on this button to clean up the device list and search all devices on the within the same subnet again. It will take about 5 seconds.

Add To setup or upgrade the devices which can not be found by Installation Wizard, please click on this button to add them manually. Click on this button will popup a dialog. You can input the IP address and click on Ok to add the device into the device list.

Remove Click on this button will remove all the selected devices from the device list. The devices that you remove might be show up again if you click the search button or add them into list manually.

Uncheck All While you selected several devices, this button allows you to uncheck all the selected devices by one click instead of uncheck

the selected devices one by one.

Link to selected device(S) Click on this button will open the web browsers to link to all the selected devices. (One browser per device)

Function buttons

Setup Click on this button to modify the settings of the selected devices. For more detail, please refer to 0 Setup.

Upgrade Click on this button to upgrade the firmware of the selected devices. For more detail, please refer to 0 Upgrade.

Reset to default Click on this button to reset the selected devices to default settings.

Exit

Click on this button to close the Installation Wizard.

About Click on this button to get information about the Installation Wizard.

Setup

When you select one or multiple devices (of the same model) , the "Setup" button will be enabled. Click on it to modify the settings of the selected device(s). After clicking on the "Setup" button, Installation Wizard will try to connect to the selected device(s). If the authentication is failed, it will popup a dialog) to ask for correct password and http port number.

The default password is the MAC address of your own FCS-1030, which marks

at the bottom label of each device.

Please enter the MAC address with capital letters.

System Setting

After connected to the selected device(s), it will switch to system setting page.

Previous **Click on this button to back to the previous page or main page**

Next **Click on this button to keep the settings and go to the next page.**

Skip **Click on this button to discard the settings of the current page and go to the next page.**

Change root password

To change the administrator's password, type the new password in both root password and confirm password text boxes identically. What is typed will be displayed as asterisks for security purposes. The maximum password is 14 characters.

Adjust date and time

There are three ways to adjust system date and time. The easiest way is to make Network Camera "Sync with computer time**". The second way** "Manual" **is to set the date and time manually by entering new values. Notice the format in the related field while typing. The third way** "Automatic" **is to make Network Camera automatically synchronize with timeservers over the Internet every**

hour.

Network Setting

In this page, you can change the server's IP address, subnet mask, default router, primary dns, and secondary dns.

Fix the IP address

Check "Reset IP address at next boot**" will force Network Camera to reconfigure its IP address whenever it reboot. If you want the Network Camera to use a fixed IP, please uncheck the "**Reset IP address at next boot**" and assign a valid IP**

address. If you select more than one device, changing the IP address is not allowed and the IP address field will be disabled.

Basic Network Settings

You can setup the network setting by this page. Usually this is no need to be changed, if you do change it please make sure you input the correct setting or the device may not be reachable.

Upgrade

When you select one device or multiple devices (of the same model), the "Upgrade" **button will be enabled. Click on it to upgrade the firmware of the selected device(s). After click on the** "Upgrade" **button, Installation Wizard will try to connect the selected device(s). If the authentication is failed, it will popup a dialog to ask for the correct password and http port number.**
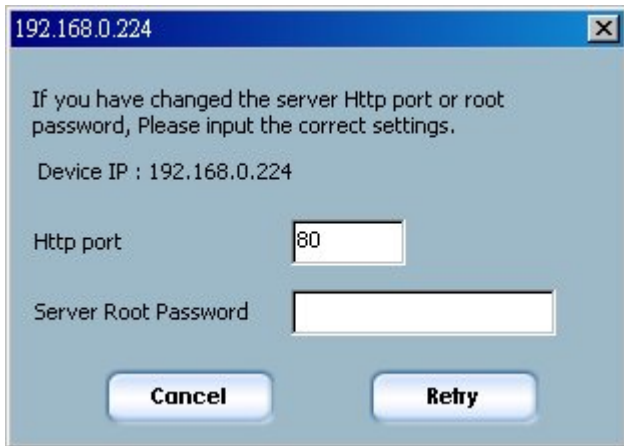**The default password is the MAC address of your own FCS-1030, which marks at the bottom label of each device.**
Please enter the MAC address with capital letters.
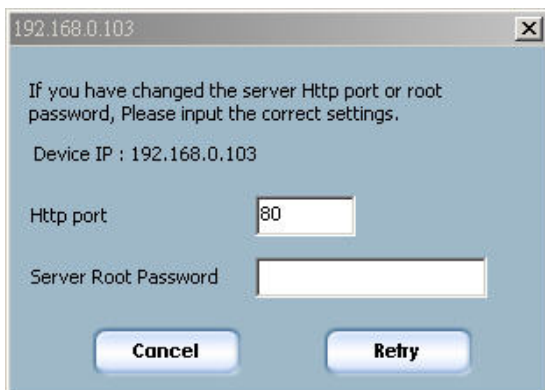
Device Information

After connected to the selected device, it will display.

Package Information

The package information will show the information about the file that you selected.

Firmware version: **The version number of the selected firmware.**

Supported script version: **The maximum script version that firmware can support.**

Web page version: **The version number of the web page.**

Script version: **Script version used by web page and server script.**

Viewer plugin version: **The version number of the viewer plugin.**

Upgrade plugin version: **The version number of the upgrade plugin**

Supported language: **The language that the selected file supports.**

File Selection

You can use the file combolist to browse the file that you want upgrade onto the selected device(s). After selecting the file, Installation Wizard will check whether the file you selected is correct. If it is correct, then the package information will display the information about the file and enable the "Upgrade" **button. Therefore you can click on the button to upgrade the firmware. If it is not correct, then it will popup a warning message.**

Upgrade

Click on the "Upgrade" **button to upgrade the firmware of the selected device(s). It will popup the dialog to show the progress of the upgrading process.**
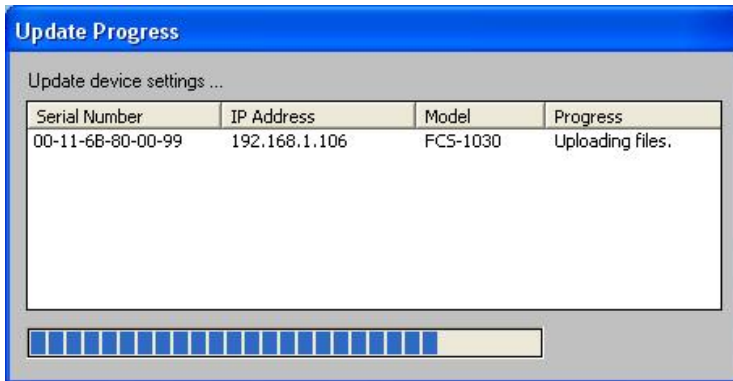
After the upgrade process is done. Click "Done" **to finish.**
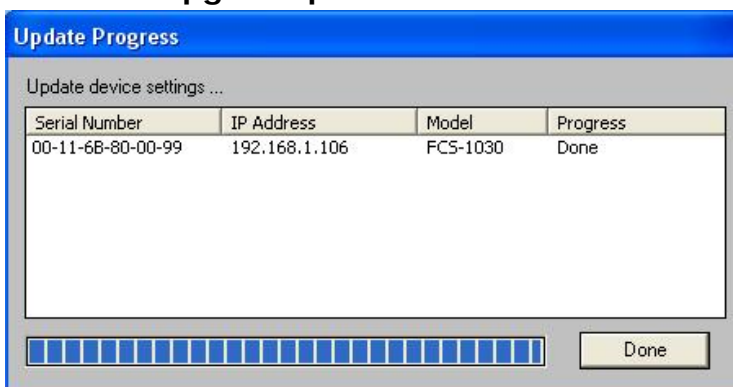
How to Use

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. Upon successful authentication, the following figure is displayed.

The foreground is the login window and the background shows the message if authentication fails. The user may check the option box to save the password for future convenience.　This option is not available to the Administrator for obvious reason.

After successful linkage, the authentication window should pop up.
The default user name is root.
The default password is the MAC address of your own FCS-1030, which marks
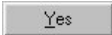
at the bottom label of each device.

Please enter the MAC address with capital letters.
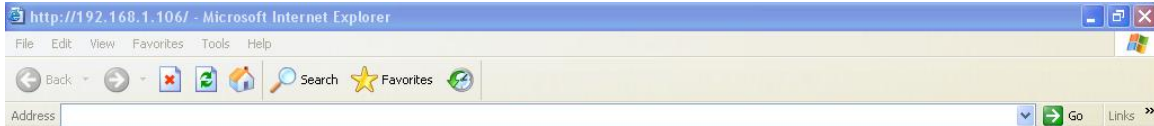
Installing plug-in

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. 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 [Yes] **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.**

Primary user's capability

Main Screen with Camera View

The main page layout has two parts:

Configuration functions: **The camera can be configured using these user interfaces.**

Camera View: **What the camera sees.**

Click on the configuration link to the left of the image window to enter the configuration page.
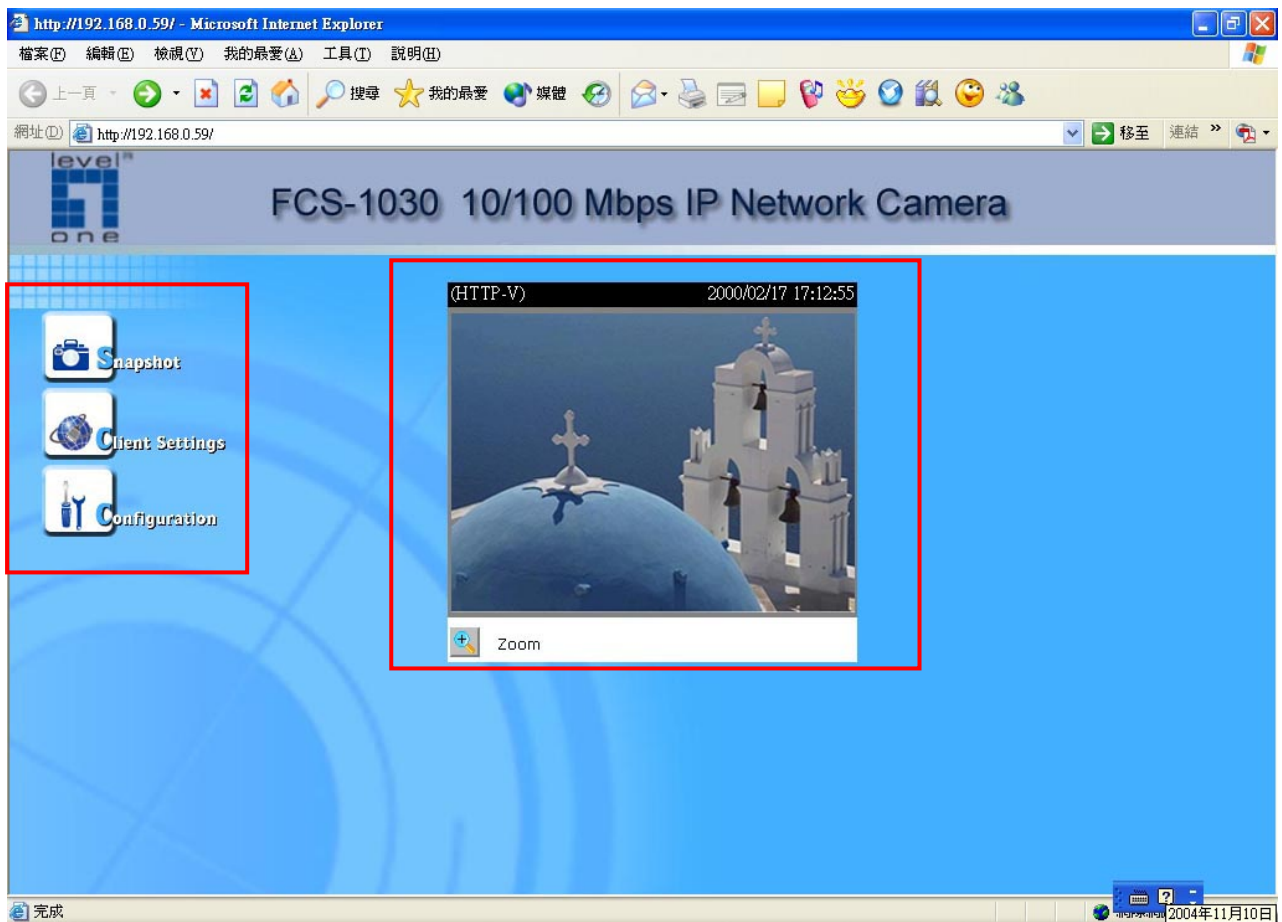
Digital Zoom

Click on the magnifier icon under the camera view then the digital zoom control panel will be shown. Uncheck "Disable digital zoom" and use the slider control to change the zoom factors.
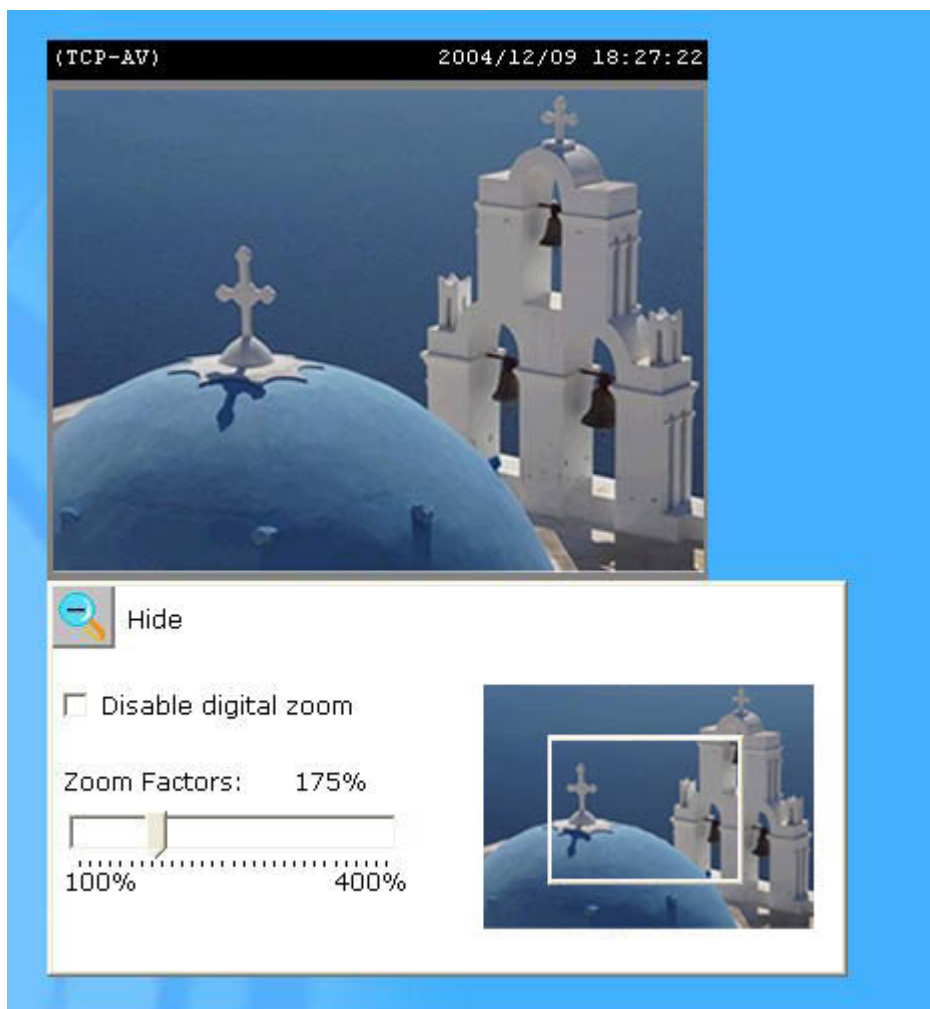
Snapshot

Click on "Snapshot"**, web browser will pop up a new window to show the snapshot. Users can point at the snapshot and click the right button of mouse to save it.**
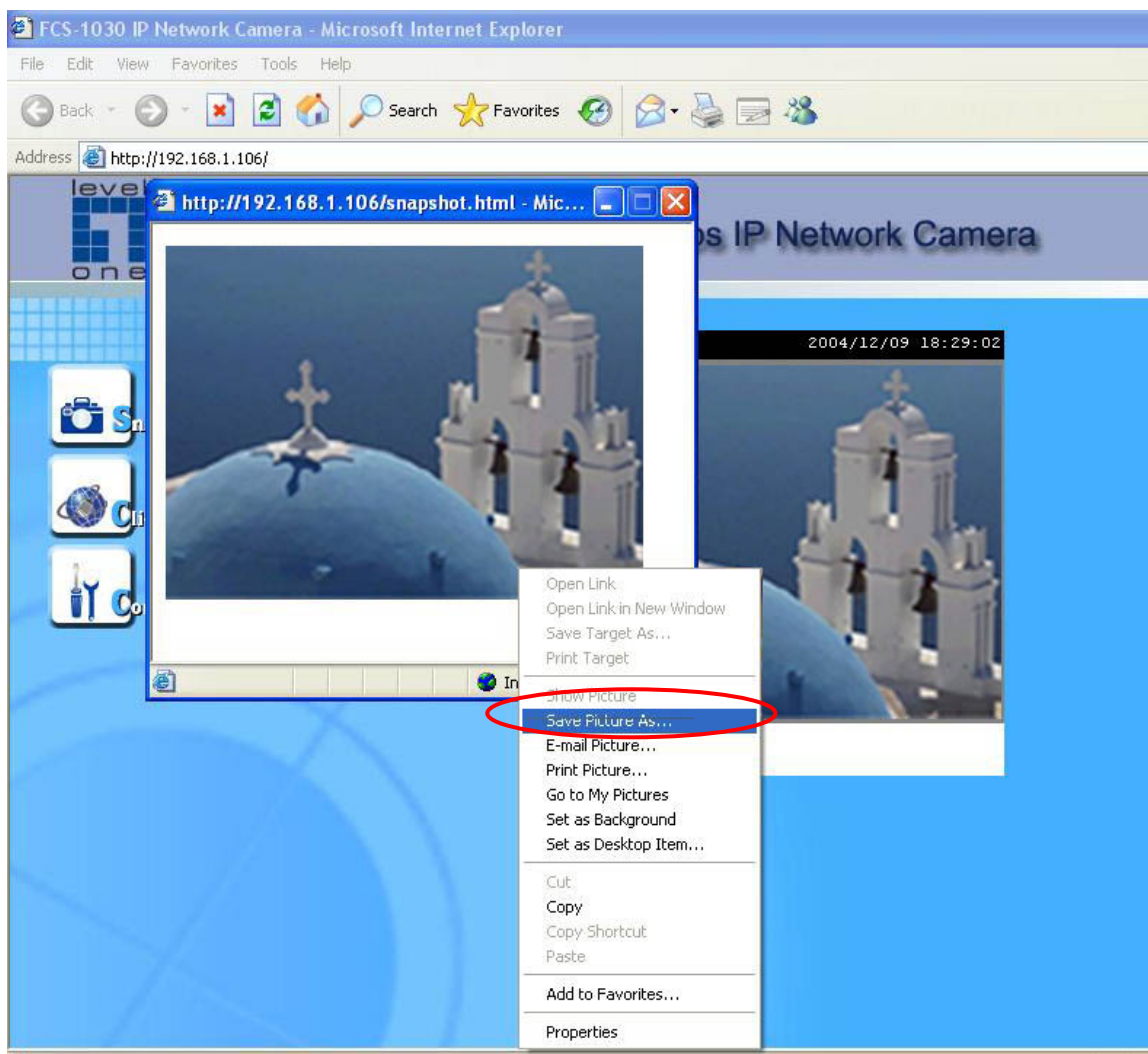
Client settings

At the initial access to the "Connection type" page in Windows, the web browser will ask for a new plug-in installation, the plug-in being the Network Camera. This plug-in has been registered for certification and can be used to change the parameters at the client's site. The user may click on ⬚ Yes ⬚ **to install the plug-in. If the web browser does not allow the user to complete the installation, check the Internet security to lower the security level or contact your IT or networking supervisor.**
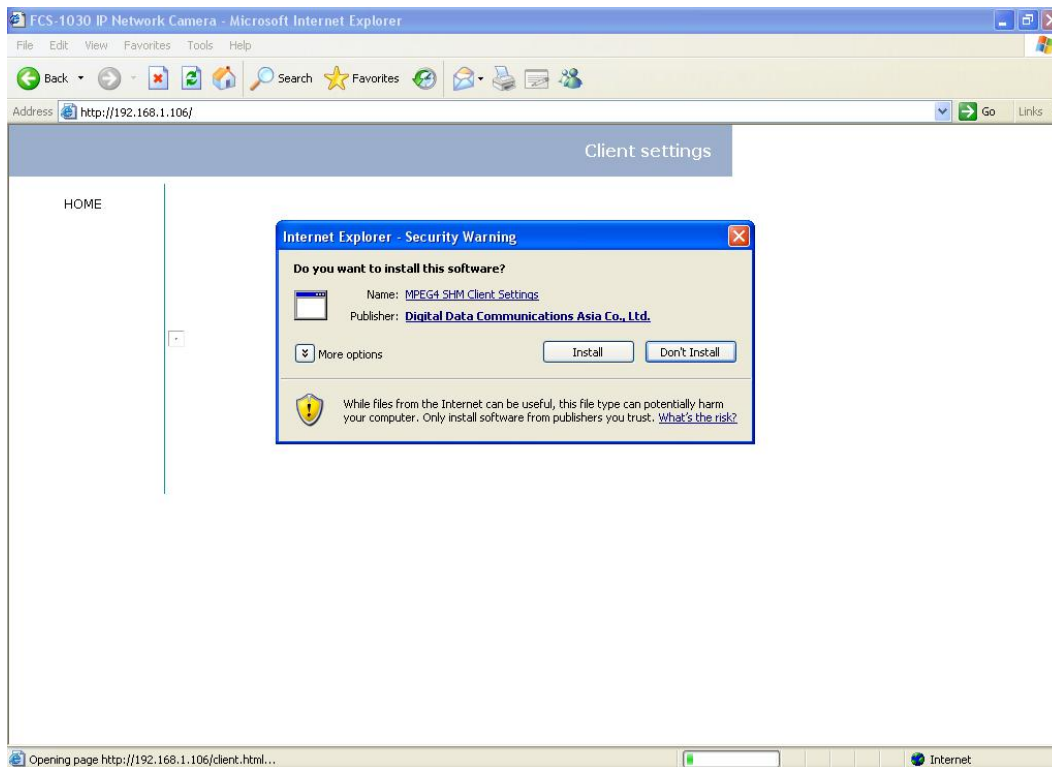
There are two settings for the client side. One is "Media Option" **for users to determine if audio should be muted. The other is** "Protocol Option" **which allows choices on connection protocol between client and server. There are three protocols choices to optimize your usage - UDP, TCP and HTTP.**

The UDP **protocol allows for more real-time audio and video streams. However, some packets may be lost due to network burst traffic and images may be obscured.**

The TCP **protocol allows for less packet loss and produces a more accurate video display. The downside with this protocol is that the real-time effect is worse than that with the UDP protocol.**

The HTTP **protocol must be selected if the network is protected by a firewall and it only allows HTTP Port (80) to be opened. In this mode, audio will not be sent and only video is operational. If no special need is required, UDP protocol is recommended. Generally speaking, the client's choice will be in the order of UDP → TCP → HTTP. After the Network Camera is connected successfully, "Protocol Option" will indicate the selected protocol. The selected protocol will be recorded in the user's PC and will be used for the next connection. If the network environment is changed, or the user wants to**

let the web browser to detect again, manually select the UDP protocol, save, and return HOME to re-connect.
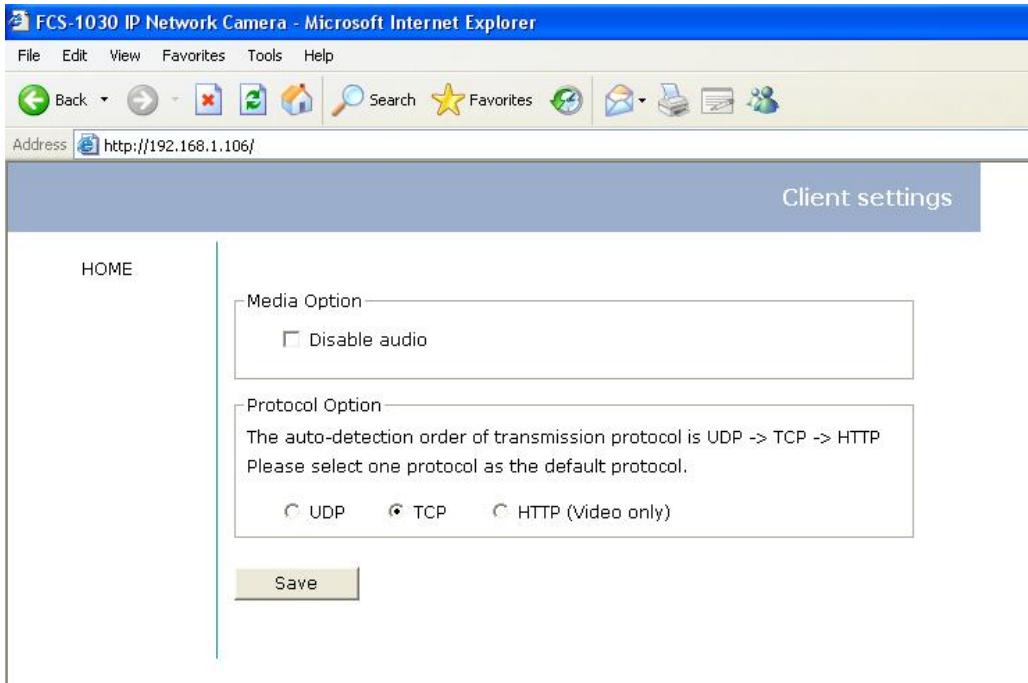
<url> *http://<Network Camera>/protocol.html*

<Network Camera> is the domain name or the original IP address of the Network Camera.

Administrator's capability

Fine-tuning for Best Performance

Best performance generally equates to the fastest image refresh rate with the best video quality, and at the lowest network bandwidth as possible. The three factors, "Maximum frame rate", "Fix bit rate", and "Fix quality" on the Video Configuration page, are correlative to allow for achieving the best performance possible.
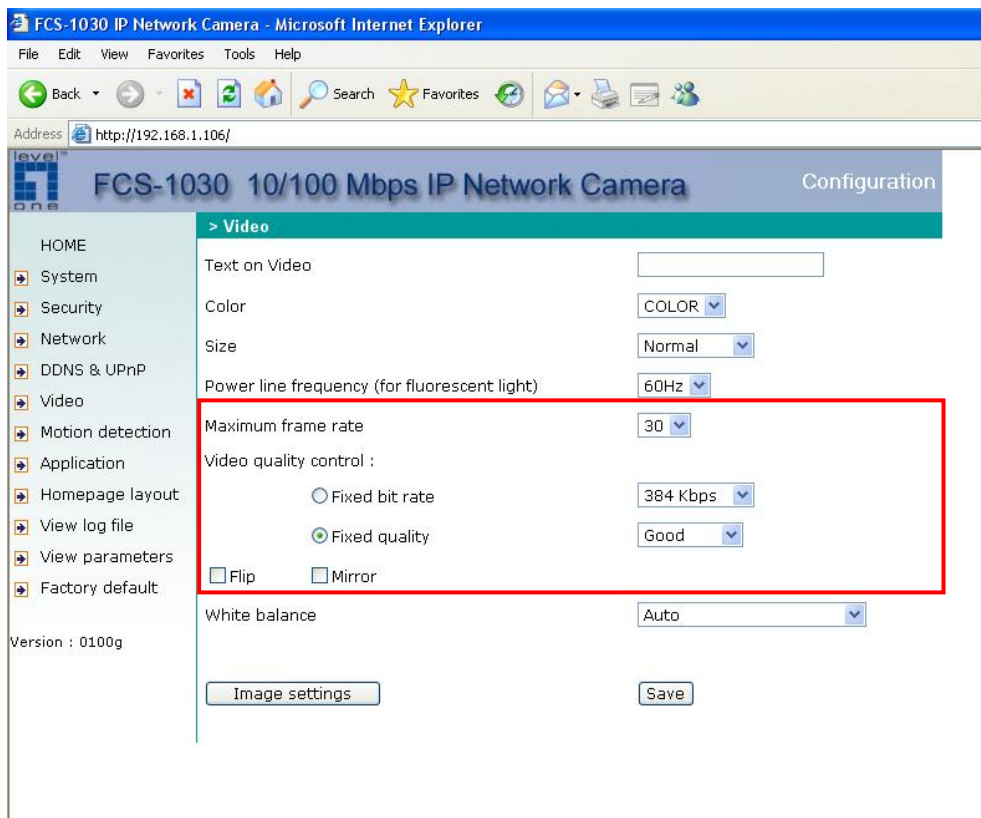
For Best Real-time Video Images
To achieve good real-time visual effect, the network bandwidth should be large enough to allow a transmission rate of greater than 20 image frames per second. If the broadband network is over 1 Mbps, set the "Fix bit rate" to 1000Kbps or 1200Kbps, and set "Fix quality" at the highest quality. The maximum frame rate is 30. If your network bandwidth is more than 384Kbps,

you can fix the bit rate according to your bandwidth and set the maximum frame rate to 30 fps. If the images vary dramatically in your environment, you may want to slow the maximum frame rate down to 20 fps in order to lower the rate of data transmission. This allows for better video quality and the human eyes cannot readily detect the differences between those of 20, 25, or 30 frames per second. If your network bandwidth is below 384 Kbps, set the "Fix bit rate" according to your bandwidth and try to get the best performance by fine-tuning with the "Maximum frame rate". In a slow network, greater frame rate results in blur images. Another work-around is to choose "Half" in the "Size" option for better images, or "Halfx2" for a larger image view. Video quality performance will vary somewhat due to the number of users viewing on the network; even when the parameters have initially been finely tuned. Performance will also suffer due to poor connectivity because of the network's burst constraint.

Only Quality Images Will Do
To have the best video quality, you should set "Fix quality" at "Detailed" or "Excellent" and adjust the "Maximum frame rate" to match your network's bandwidth. If your network is slow and you receive "broken" pictures, go to the TCP protocol in "Connection type" and choose a more appropriate mode of transmission. The images may suffer a time delay due to a slower connection. The delay will also increase with added number of users.

Somewhere Between Real-time and Clear Images
If you have a broadband network, set "Fix quality" at "Normal" or better, rather than setting "Fix bit rate". You can also fix the bandwidth according to your actual network speed and adjust the frame rate.   Start from 30 fps down for best results but not below 15 fps.   If the image qualities are not improved, select a lower bandwidth setting.

Opening accounts for new users

Protect Network Camera by passwords

The Network Camera is shipped without any password by default. That means everyone can access the Network Camera including the configuration as long as the IP address is known. It is necessary to assign a password if the Network Camera is intended to be accessed by others. Type a new word twice in ① to enable protection. This password is used to identify the administrator. Then add an account with user name and password for your friends in ②. Network Camera can provide twenty accounts for your valuable customers or friends. Each account identifies the access right rather than the real visitor. That allows multiple visitors share the same account of different level. An

option to access DI/DO is provided for each account. Some users may need to prohibit from controlling your attached devices. You may delete some users from ③.

More flexible options for viewers ④

The first option allows anyone uses "demo" as the user name to view without password. The Administrator can also decide if more viewers are allowed to watch the video if the viewers exceed the limit. The overloaded viewers will have snapshot mode instead.

Change homepage layout
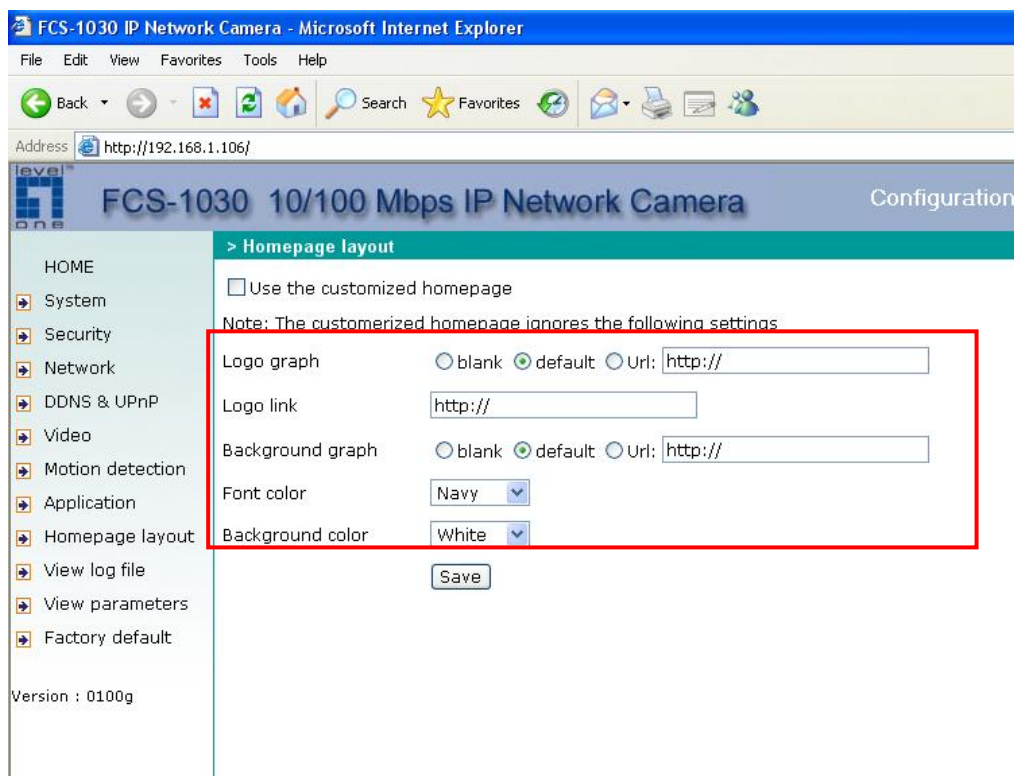
How to change the font color

1. Click on "Configuration" on homepage,

2. Click on "Homepage layout" at the left column,

3. Find "Font color" and pull down the list to choose any color you like,

4. Click on "Save" button.

* The font color is better to contrast with the background.

How to change the background

1. Click on "Configuration" on homepage,

2. Click on "Homepage layout" at the left column,

If you want to display simple color without any image,

3. Find "Background graph" and choose "blank",

4. Find "Background color" and pull down the list to choose any color you like,

5. Click on "Save" button.

* The background color is better to contrast with the font.

If you want to use the image from another web site as background,

3. Find "Background graph" and choose "Url",

4. Type the URL of the image on the Internet in the edit box, for example, "http://dgl.microsoft.com/thumbnails/j023/j0235217(t).gif",

5. Click on "Save" button.

If you want to change the default background image stored in the Network Camera,

3. Find "Background graph" and choose "default",

4. Click on "Save" button,

5. Prepare an image file with size less than 131000 bytes and rename it to wallppr.jpg,

6. Open an FTP client program and connect to the Network Camera. The user name and password is as same as the Administrator's.

7. Transfer wallppr.jpg in local folder to the Network Camera,

8. Close the FTP program and reload the homepage of the Network Camera.

How to change the image logo at the upper left corner of homepage

1. Click on "Configuration" on homepage,

2. Click on "Homepage layout" at the left column,

If you want to remove any logo,

3. Find "Logo graph" and choose "blank",

4. Click on "Save" button.

If you want to use the image from another web site as logo,

3. Find "Logo graph" and choose "Url",

4. Type the URL of the image on the Internet in the edit box, for example, "http://dgl.microsoft.com/thumbnails/j023/j0234430(t).gif",

5. Click on "Save" button.

If you want to change the default logo stored in the Network Camera,

3. Find "Logo graph" and choose "default",

4. Click on "Save" button,

5. Prepare an image file with size less than 65000 bytes and rename it to logo.gif,

6. Open an FTP client program and connect to the Network Camera. The user name and password is as same as the Administrator's.

7. Transfer logo.gif in local folder to the Network Camera,

8. Close the FTP program and reload the homepage of the Network Camera.

If you want to add hyperlink to the logo image,

3. Find "Logo link" and type the hyperlink in the edit box, for example, http://www.mywebsite.com,

4. Click on "Save" button.

How to design my own homepage to replace the current one

1. Prepare your own homepage with size less than 65000 bytes and rename it to user.htm,

2. Insert the html codes of video object, the bold Italian text in the following example, into the appropriate position in user.htm. Note that the codes of video object must be copied exactly the same including the letter case.

```
****** Example homepage begin ******
<html>
<head>
<title>Example – custom homepage</title>
</head>
<body background="/pic/wallppr.jpg">
<p>
  <a href="/setup/config.html">
  <img
src="http://dgl.microsoft.com/thumbnails/j023/j0234430(t).gif"
align="left" width="64" height="64">
  </a>
  <font size="7" face="Comic Sans MS" color="#FF0000">
Network Camera Demo
</font>
</p>
<p align="left">
<!-- Copy the next bold line to where you want to show the image coming
from Network Camera. This line is remark only and is hidden on
homepage. //-->
<OBJECT ID=VAMCtrl></OBJECT>
</p>
</body>
</html>
```

3. Open an FTP client program and connect to the Network Camera. The user name and password is as same as the Administrator's.

4. Transfer user.htm in local folder to the Network Camera,

5. Close the FTP program and reload the homepage of the Network Camera,

6. Click on "Configuration" on homepage,

7. Click on "Homepage layout" at the left column,

8. Check "Use the customized homepage".

9. Click on "Save" button and return to homepage.

* The user.htm only provides plain text content that scripts and URL of external resources can be used to adorn the homepage. Refer to tutorials of writing HTML and scripts.

⚠ If the customized homepage goes wrong and cannot display, link to the "Homepage layout" page, "http://<IP address of Network Camera>/setup/layout.html", to disable "Use the customized homepage".
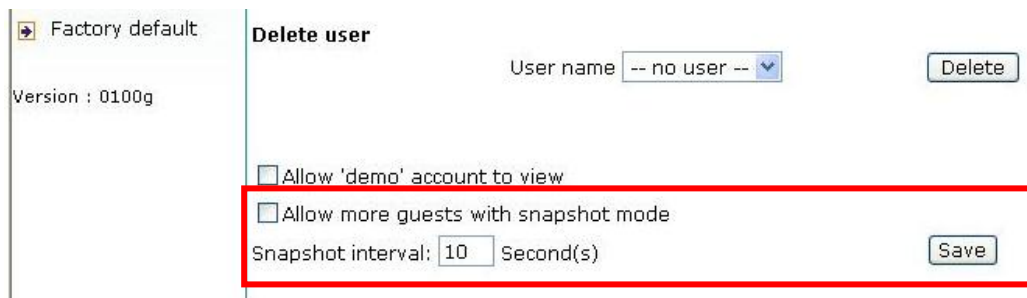
Build a multimedia web attraction site

Demo on multiple sites – mid-scale service

The Network Camera can allow ten visitors on-line simultaneously. After Installation, focus the Network Camera on any view you would like friends to share and tell the visitors to type in the web browser address. Caution: You may want to maintain your visitor's list in the security configuration page to block out unexpected visitors. No need to have the geeks' skill and equipments, no need to find suitable software.

Product demo for e-business – large-scale service

If the number of visitors has exceeded the limit, the Network Camera can allow the "overload" viewers to see the snapshots in JPEG mode, on the homepage. These are still images and will be refreshed periodically and automatically. It needs a script function supported by the web browser.

1. Click on "Configuration" on homepage,

2. Click on "Security" at the left column,

3. Go to the page bottom and check "Allow more viewers with snapshot mode",

4. Set the snapshot interval to refresh the still image automatically. The longer the snapshot interval is, the better the snapshot mode works for more viewers.

If you want to expand to allow in more viewers, the host server should be able to handle large network traffic, which must handle the picture refreshing from the Network Camera.

If the web space has FTP service,
Set the Network Camera as an FTP client to upload the pictures. The access to the Network Camera will be independent of the number of viewers and the picture quality will remain constant.

1. Click on "Configuration" on homepage,
2. Click on "Network" at the left column,
3. Fill the FTP related settings including server, user name and password, as well as the upload path if specified by the web space,
4. Click on save and wait for system restart,
5. Click on "Application" at the left column,
6. Select "Sequential operation" and set the interval,
7. Select FTP without date time suffix as the upload method and click on save,
8. The image file uploaded to the web space is named "video.jpg". Check if the file is successfully uploaded to the correct folder,
9. Prepare a homepage with the embedded image reference to the image file uploaded via FTP in advance.

If the web space has no FTP service,
An auto-refresh homepage can be used to periodically poll the newest image from the Network Camera. It is most efficient if using a free web space provider as the FTP service may be limiting.
1. Prepare an auto-refresh homepage like the following example. The URL of image is http://"IP address of the Network Camera"/cgi-bin/video.jpg. Modify the IP address according to your Network Camera. Define the refresh interval according to your network bandwidth for best result. If the refresh rate is too fast and there is a large number of visitors, this may overload the Network Camera and slows the response.

```
****** Example homepage begin ******
<html>
<head>
<title>Example - auto refresh</title>
</head>
<body background="/pic/wallppr.jpg">
<p align=left>
  <font size="7" face="Comic Sans MS" color="#FF0000">
  Network Camera Demo
  </font>
</p>
<p align=left>
<!-- Begin of scripts to auto refresh the image. Change the IP address in
the image URL and refreshrate if necessary. //-->
<script language=javascript>
var image="http://192.168.0.203/cgi-bin/video.jpg";           //IMAGE
URL
var refreshrate=5;                //SECONDS BETWEEN REFRESH
var imgwidth=352;                //IMAGE WIDTH
var imgheight=240;                //IMAGE HEIGHT (NTSC:240; PAL:288)
function refresh(){
document.images["pic"].src=image+"?"+new Date();
setTimeout('refresh()', refreshrate*1000);}
document.write('<img       src="'+image+'"       height="'+imgheight+'"
width="'+imgwidth+'" name="pic">');
if(document.images)window.onload=refresh;
</script>
<!-- End of scripts to auto refresh the image. //-->
</p>
</body>
</html>****** Example homepage end ******
```

Build a security application

The Administrator can use the built-in motion detection to monitor any movement to perform many useful security applications. To upload the snapshots, users can choose either email or FTP according to user's needs. Both e-mail and FTP use the network settings on the network page. Refer to the definition section for detail configuration.

Click on "Configuration" **on homepage,**
Click on "Motion detection" **at the left column,**
Check "Enable motion detection",
Click on new to have a new window to monitor video,
Type in a name to identify the new window,
Use the mouse to click, hold, and drag the window corner to resize or the title bar to move,
Fine-tune using the "Sensitivity" and "Percentage" fields to best suit the camera's environment. Higher "Sensitivity" detects the slighter motion. Higher "Percentage" discriminates smaller objects,
Clicking on "Save" enables the activity display. Green means the motion in the window is under the watermark set by Administrator and red means it is over the watermark,
Click on "Application" **at the left column,**
Check the weekdays as you need and give the period of "Snapshots begin**" time and "**Snapshots end**" time to monitor the motion detection every day,**
Check the "Send out the snapshot while motion detection".
Set the delay before detecting next motion **to avoid continuous false alarms following the original event,**
Set the delay to take snapshots after motion **to capture the direction of the moving objects,**
Check the window name set in step 5,
Check the way to upload snapshot,
Click on save to validate.

Software revision upgrade

Customers can obtain the up-to-date software from the web site. An easy-to-use Upgrade Wizard is provided to upgrade the Network Camera with just a few clicks. The upgrade function is opened to the Administrator only. To upgrade the system, follow the procedures below.

1. Download the firmware file named "FLASH.BIN" from the appropriate product folder.

2. Run the Upgrade Wizard and proceed following the prompts. Refer to the instructions of the Upgrade Wizard for details.

3. The whole process will finish in a few minutes and it will automatically restart the system.

⚠ **If power fails during the writing process of Flash memory, the program in the memory of the Network Camera may be destroyed permanently. If the Network Camera cannot restart properly, ask your dealer for technical service**

Definitions in Configuration

Only the Administrator can access system configuration. Each category in the left column will be explained in the following pages. The bold texts are the specific phrases on the Option pages. The Administrator may type the URL below the figure to directly enter the frame page of configuration. If the Administrator also wants to set certain options through the URL, read the reference appendix for details.
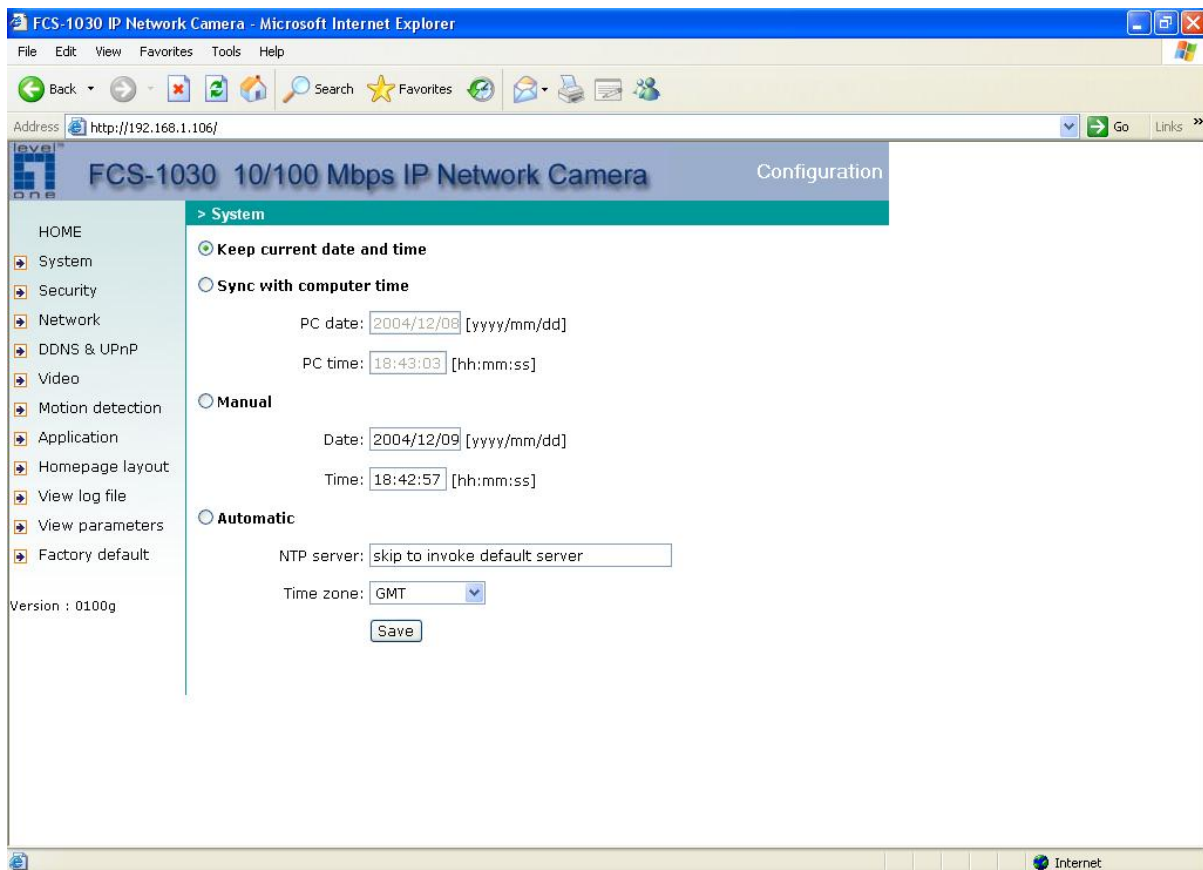
<url> *http://<Network Camera>/setup/config.html*

<Network Camera> is the domain name or original IP address of the Network Camera.

System parameters

"Keep current date and time" **Click on this to reserve the current date and time of the Network Camera. An internal real-time clock maintains the date and time even when the power of the system is turned off.**

"Sync with computer time" **Synchronizes the date and time of the Network Camera with the local computer. The read-only date and time of the PC is displayed as updated.**

"Manual" **Adjust the date and time according to what is entered by the Administrator. Notice the format in the related fields while doing the entry.**

"Automatic" **Synchronize with the NTP server over the Internet whenever the Network Camera starts up. It will fail if the assigned time-server cannot be reached.**

"NTP server" **Assign the IP address or domain name of the time-server. Leaving the text box blank connects the Network Camera to the default time-servers.**

"Time zone" **Adjust the time with that of the time-servers for local settings.**

Remember to click on Save **to immediately validate the changes. Otherwise, the correct time will not be synchronized.**

Security settings

"Root password" **Change the Administrator's password by typing in the new password identically in both text boxes. The typed entries will be displayed as asterisks for security purposes. After pressing** [Save]**, the web browser will ask the Administrator for the new password for access.**

"Add user" **Type the new user's name and password and press** [Add] **to insert the new entry. The new user will be displayed in the user name list. There is a maximum of twenty user accounts.**

"Delete user" **Pull down the user list to find the user's name and press** [Delete] **to complete.**

"Allow 'demo' account to view" **Click this to permit anyone who types in "demo" as user name. No password is needed for demo account. Note that a demo account is restricted to view only.**

"Allow more viewers with snapshot mode" **There can only be a maximum of 10 users to simultaneously view the video. This option allows for the 11th viewer on, the overloaded viewers, to see only still images. These still images are automatically refreshed by the interval defined below. This feature must be supported by the java script capability of the web browsers.**

"Snapshot interval" **defines the refresh rate of the still image in the homepage seen by the overloaded viewers.**

Network settings

Any changes made on this page will restart the system in order to validate the changes. Make sure every field is entered correctly before clicking on Save **.**

"Reset IP address at next boot"**, the default status is checked to get IP address automatically at the server start. Therefore, once the network settings, especially the IP address, have been entered correctly, uncheck this option.**

General

"IP address" **This is necessary for network identification.**

"Subnet mask" **This is used to determine if the destination is in the same subnet. The default value is "255.255.255.0".**

"Default router" **This is the gateway used to forward frames to destinations in a different subnet. Invalid router setting will fail the transmission to destinations in different subnet.**

"Primary DNS" **The primary domain name server that translates hostnames into IP addresses.**

"Secondary DNS" **Secondary domain name server that backups the Primary DNS.**

SMTP

When the SMTP server support SMTP authentication, users need to give the valid user name and password to send email via the server.

"SMTP (mail) server 1" **The domain name or IP address of the external email server.**

"User name of SMTP 1" **This granted user name on the external email server.**

"Password of SMTP 1" **This granted password on the external email server.**

"Recipient email address 1" **The email address of the recipients for snapshots or log file. Multiple recipients must be separated by semicolon, ';'.**

"SMTP (mail) server 2" **The domain name or IP address of another email server once the previous server is unreachable.**

"User name of SMTP 2", **granted user name on the backup email server.**

"Password of SMTP 2", **granted password on the backup email server.**

"Recipient email address 2" **The email address of the recipients for the backup server.**

"Sender email address", **the email address of the sender.**

FTP

"Local FTP server port" **This can be other than the default port 21. The user can change this value from 1 to 65535. After the changed, the external FTP client program must change the server port of connection accordingly.**

"1st FTP server" **The domain name or the IP address of the external FTP server. The following user settings must be correctly configured for remote access.**

"1st FTP user name" **Granted user name on the external FTP server.**

"1st FTP password" **Granted password on the external FTP server.**

"1st FTP remote folder" **Granted folder on the external FTP server. The string must conform to that of the external FTP server. Some FTP servers cannot accept preceding slash symbol before the path without virtual path mapping. Refer to the instructions for the external FTP server for details. The folder privilege must be open for upload.**

"Primary FTP passive mode" **The Network Camera is located inside the network protected by a firewall, data connection for FTP may be prohibited. By selecting passive mode, the FTP can bypass the rule and allow snapshot upload to proceed. If the passive mode is selected, the Network Camera can automatically attempt for active mode, if the external FTP server does not support passive mode.**

"2nd FTP server" **The domain name or IP address of the external FTP server.**

"2nd FTP user name" **Granted user name on the backup FTP server.**

"2nd FTP password" **Granted password on the backup FTP server.**

"2nd FTP remote folder" **Granted folder on the backup FTP server.**

"Secondary FTP passive mode" **Passive mode setting for the backup FTP server.**

HTTP

"Http port" **This can be other than the default Port 80. Once the port is changed,**

the users must be notified the change for the connection to be successful. For instance, when the Administrator changes the HTTP port of the Network Camera whose IP address is 192.168.0.100 from 80 to 8080, the users must type in the web browser "http://192.168.0.100:8080" instead of "http://192.168.0.100".

Streaming

"Control channel port" **This can be something other than the default port 5001 in order to work with the port opened by the firewall.**
"Audio channel port" **This can be something other than the default port 5002 in order to work with the port opened by the firewall.**
"Video channel port" **This can be something other than the default port 5003 in order to work with the port opened by the firewall.**
"Improve audio quality in low bandwidth environment" **If the Network Camera seems to work in a low bandwidth network environment, the user can use this option to see if audio quality can be improved by sacrificing some real-time synchronization.**
"Mute" **This can force the transmission protocol to HTTP and disable audio.**

⚠ **Some invalid settings may cause the system failing to respond. Change the configuration only if necessary and consult with your network supervisor or experienced users for correct settings. Once the system has lost contact, refer to Appendix A for reset and restore procedures.**

DDNS and UPnP settings

"Enable DDNS" **This option turns on the DDNS function.**

"Provider" **The provider list contains four hosts that provide DDNS services. Please connect to the service provider's website to make sure the service charges.**

"Host name" **If users wants to use DDNS service, this field must be filled. Please input the hostname that is registered in the DDNS server.**

"Username/E-mail" **The Username or E-mail field is necessary for logging in the DDNS server or notify users of the new IP address.** Note: **when this field is input as** "Username" **the following field must be input as** "Password".

"Password/Key" **Please input the password or key to get the DDNS service.**

"Enable UPnP" **This turns on or off the UPnP function. When UPnP is turned off, the camera cannot be found through network neighbors in MS Windows XP. If the UPnP network component is installed in Windows XP, the hostname of the Network Camera will be shown with bracketed IP address in the Network neighbors. Ex: Network Camera (192.168.0.96). That is: The hostname of the Network Camera is "*Network Camera*", and the IP address of the Network Camera is *192.168.0.96.***

"Save" **Click on the button to save current settings for the DDNS service and UPnP function.**

Network Camera provides a free DDNS service. Administrators can choose safe100.net in the "Providers" field to use it. At the first time, Administrators must register an account for it.

Video codec parameters

"Text on video" **The text will be displayed in the black bar above the video window with a timestamp. The timestamp is captured from the date and time of the Network Camera that is maintained by a built-in real-time clock.**

"Color" **Select either for color or monochrome video display.**

"Size" **There are five options for three video sizes.** "Half" **is the quarter size of** "Normal". "Half x 2" **has the same video size as** "Normal" **but of a lesser quality, while consuming less network bandwidth.** "Normal" **is the quarter size of**

"Double". "Normal x 2" **has the same video size as** "Double" **but of a lesser quality, while consuming less network bandwidth.**
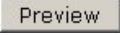
"Power line frequency (for fluorescent light)", **the fluorescent light will flash according to the power line frequency that depends on local utility. Change the frequency setting to eliminate uncomfortable flash image when the light source is only fluorescent light.**

There are three dependent parameters provided for video performance adjustment. "Maximum frame rate" **This limits the maximal refresh frame rate, which can be combined with the** "Video quality control" **to optimize bandwidth utilization and video quality. If the user wants to fix the bandwidth utilization regardless of the video quality, choose** "Fix bit rate" **and select the desired bandwidth. The video quality may be poor due to the sending of maximal frame rate within the limited bandwidth when images are moving rapidly. Consequently, to ensure detailed video quality (quantization rate) regardless of the network, it will utilize more bandwidth to send the maximal frames when images change drastically.**

"Flip" **Vertically rotate the video.**

"Mirror" **Horizontally rotate the video. Check options both if the Network Camera is installed upside down.**

"White balance" **Adjust the value for best color temperature.**

Image settings **Click on this button to pop up another window to tune** "Brightness", "Contrast", "Hue" **and** "Saturation" **for video compensation. Each field has eleven levels ranged from -5 to +5. In** "Brightness" **and** "Contrast" **fields the value 0 indicates auto tuning. The user may press** Preview **to fine-tune the image. When the image is O.K., press** Save **to set the image settings.** Restore **Click on this to recall the original settings without incorporating the changes.**

Motion detection

"Enable motion detection" **Check this option to turn on motion detection.**

New **Click on this button to add a new window. At most three windows can exist simultaneously. Use the mouse to click, hold, and drag the window frame to resize or the title bar to move. Clicking on the 'x' at the upper right-hand corner of the window to delete the window. Remember to save in order to validate the changes.**

Save **Click on this button to save the related window settings. A graphic bar will rise or fall depending on the image variation. A green bar means the image variation is under monitoring level and a red bar means the image variation is over monitoring level. When the bar goes red, the detected window will also be outlined in red. Going back to the homepage, the monitored window is hidden but the red frame shows when motion is detected.**

"Window Name" **The text will show at the top of the window.**

"Sensitivity" **This sets the endurable difference between two sequential images.**

"Percentage" **This sets the space ratio of moving objects in the monitoring window. Higher sensitivity and small percentage will allow easier motion detection.**

The following figure shows the screen when **Save** **is clicked. The monitoring window has been outlined in red and the graphic bar goes red since the goldfish is moving.**

> Motion detection

☐ Enable motion detection

Window Name:

levelone

Sensitivity:

90%

Percentage:

18%

New   Save

Application settings

Weekly schedule

"Sun" ~ "Sat" **Select the days of the week to perform the following operations.**
"Snapshots begin at" **Set the time to start operations.**
"Snapshots stop at" **Set the time to stop operations.**
Setting identical begin time and stop time means 24-hour operation.
"All the time except for the above schedule" **Set the schedule all the time except for the above in a week.**

Send out the snapshot while motion detection

"Delay second(s) before detecting next motion" **Set the time delay before restarting to check on the triggering condition when the current condition is triggered.**
"Take snapshots at second(s) after motion" **After the camera has taken a snapshot when a condition is triggered, another snapshot will be taken after this configured interval, in seconds.**
"Trigger condition" **There are three windows for motion detection each can be assigned a name. If motion detection has not been set up,** "undefined" **will be shown instead of the window title. If this happens, clicking on "Motion detection" and a note will show to direct the User to the configuration page for motion detection.**

Sequential operation

"Snapshot every second(s)" The **Network Camera will send snapshots at the specified intervals to the external server using the method selected below. Remember: This operation is still subject to the conditions set in the weekly schedule.**
"Send snapshots by email" **This selects the uploading method following the intervals set above. The snapshot named "video.jpg" will be attached in the**

email with the subject title "Periodic snapshots".

"Send snapshots by FTP" **The snapshots will be uploaded to the external FTP server with the file name defined in the next option. This can also be used to refresh the captured images stored in the external web server to build creative homepages.**

"FTP put snapshots with date and time suffix" **This option sets up the snapshot capture date and time, which can be used to easily differentiate the snapshot file names in either the sequential or event operation. For instance, "video@20030102030405.jpg" means the JPEG image was captured in the year 2003, January the 2nd, at 3 o'clock, 4 minute, and 5 second. If this suffix is omitted, the file named "video.jpg" on the external FTP server will be refreshed at the specified interval.**

Homepage layout settings

"Use the customized homepage", **check this option to use "user.htm" uploaded by the Administrator instead of the default one. Refer to the section "Administrator's capability" for detail usage. The following options related to the default homepage will not affect the "user.htm".**

"Logo graph", **the logo located at the upper left corner of homepage can be hidden, the default one that can be changed by the Administrator, or any image on the Internet that can be located via URL. The default logo is stored in memory and can be changed by FTP. The maximal size is 32000 bytes. Though the file name is fixed to "logo.gif", the image can be any file format as long as the web browser can read it. Refer to the section "Administrator's capability" for how to change the default logo.**

"Logo link", **when users click on the logo image, a   new window will pop up to show the homepage of the given URL. Clear the URL will disable the link function.**

"Background graph", **the background image can be hidden to show the background color only, the default one that can be changed by the Administrator, or any image on the Internet that can be located via URL. The default background image is stored in memory and can be changed by FTP. The maximal size is 131000 bytes. Though the file name is fixed to "wallppr.jpg", it can be any file format as long as the web browser can read it. Refer to the section "Administrator's capability" for how to change the background image.**

"Font color", **pull down the list to select any color for the text in the homepage.**

"Background color", **pull down the list to select any color for the homepage background. It can be seen when the background image is not displayed.**

Viewing system log

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

Viewing system parameters

Click on this link on the configuration page to view the entire system's parameter set. The content is the same as those in CONFIG.INI.

Factory default

Click on this link on the configuration page to restore the factory default settings. Any changes made so far will be lost and the system will be reset to the initial factory settings. After clicking on the "OK" button and make confirmation, the system will restart and require the installer program to set up the network again.

Appendix

A. Troubleshooting

Status LED

After powering up, the Network Camera performs a self-diagnostic to detect any hardware defects. The following table lists the LED patterns in general. In case of any fatal error, the LED will blink in a pattern other than those below.

Condition	LED color
During self-diagnostic after power on	**Blink in interchanged green and red**
Ethernet signal is lost	**Steady red till Ethernet is detected**
Before network is setup	**Steady green till IP address is confirmed**
After network is setup	**Blink green every second**
Network is setup and audio is disabled	**Blink green every 4 seconds**
Any hardware failure	**Other patterns**

Reset and restore

There is a button in the back of the Network Camera. It is used to reset the system or restore the factory default settings. Sometimes resetting the system sets the system back to normal state. If the system problems remain after reset, restore the factory settings and install again.

RESET: Click on the button.

RESTORE: 1. Press on the button continuously.

2. Wait for self-diagnostic to run twice.

⚠ **Restoring the factory defaults will erase any previous settings. Reset or restore the system after power on.**

B. Frequently asked questions

Q **What if I forget my password?**
A **After the Administrator's password is assigned, every access to the Network Camera needs authentication. If you are one of the managed users, you have to ask the Administrator for the password. If you are the Administrator, there is no way to recover the root password except for restoring factory default. Refer to Appendix A for the procedures.**

Q **Why can I not watch video from the Network Camera after it is authenticated?**
A **There are many possible scenarios regarding this problem,**
1. If you have just installed the Network Camera and are unable to watch the video, check if the heartbeat LED is blinking or the lens cap is removed. If the heartbeat LED is dim, perform the software installation again.
2. If the Network Camera is well installed and you are accessing the Network Camera for the first time using Internet Explorer, adjust the security level of Internet Explorer to allow installation of plug-ins.
3. If the problem still exists after adjusting, and the message over the image window is showing "connecting", the network traffic may be too crowded.

Q **What is the plug-in for?**
A **The plug-in provided by the Network Camera is used to display motion pictures and audio in Internet Explorer. If your system does not allow installation of any plug-in software, the security level of the web browser may need to be lowered. It is recommended that you consult your network supervisors in your office regarding adjustment of the security level. Software installation may be regulated in some offices.**

Q **Why is the timestamp different from the system time of my PC or notebook?**
A **The timestamp is based on the system time of the Network Camera. It is maintained by a real-time clock inside and can be automatically synchronized with the time server if the Network Camera is connected to the Internet and the function is enabled. Differences of several hours may result from the time**

zone setting.

Q Can I install it on ceiling?

A Yes. There are flip and mirror options in video configuration page to correct the images for upside down installation.

Q The image is not clear enough.

A Rotate the lens to adjust the focus after the Network Camera is installed in the proper position. The image settings and white balance can be fine tuned to achieve the best visual effect. Also notice the power line frequency must match the local utility to synchronize and minimize the effect of flickering florescent lights.

Q Why does the image not refresh regularly?

A Some anti-virus programs filter the received web content. It takes time to perform data examination and affect the streaming application such as the Network Camera. However it only affects the HTP mode of the Network Camera. If the network allows only HTTP mode, disable the web filtering function of the anti-virus program temporarily. During the period, users should be aware of the risk of malicious network activity.

Q I have opened motion detection windows but it cannot work.

A If the motion detection windows are setup and names are given, check to see if the function is checked at the first line. While it is enabled, adjust the sensitivity and percentage to monitor the level indicator for best results.

Q I cannot hear any sound while watching.

A If there is "V_ONLY" shown above the image, click on connection type to uncheck "Disable audio". If there is "V" shown instead of "AV", the sound card in your PC may not properly installed. If "AV" is shown, check the audio source of the Network Camera.

Q How many users are allowed to watch the Network Camera at the same time?

A Too many users requesting the real-time multimedia content will jam the network. For best results, the Network Camera is designed to accommodate

maximum ten (10) users to watch and listen to the Network Camera at the same time. For a larger number of users, it is recommended to build another web server to host the retrieving contents from the Network Camera.

Q How fast is the video rate of the Network Camera?
A The MPEG4 codec engine can process 30 frames per second internally. However the total performance is subject to many coefficients as follows:
1. Network throughput,
2. Bandwidth share,
3. Number of users,
4. The complicated/detailed objects and movement in view,
5. The level of your PC or notebook computer that is responsible for displaying images.
In general, the transfer rate in a general local network environment can achieve over 200 kilobytes per second and approximately 10 to 20 pictures per second from a regular environment.

Q How can I keep the Network Camera as private as possible?
A The Network Camera is designed for surveillance purposes and has many flexible interfaces. The user authentication and special confirmation in installation can keep the Network Camera from unauthorized access. You may also change the HTTP port to non-public number. The demo account is good to separate guests from normal users and thus you can easily block guests anytime. You can check the system log to examine any abnormal activities and trace the origins.

Q Why can I not access the Network Camera when I setup some options in the application?
A Since the Network Camera is a "network device", any incorrect network settings will make it unreachable. If this happens, restore the factory default settings following the procedures in Appendix A.

C. URL commands of the Network Camera

For some customers who already have their own web site or web control application, the Network Camera can be easily integrated through convenient URLs. This section lists the commands in URL format corresponding to the basic functions of the erase Network Camera.

Capture update Snapshot of JPEG image

/cgi-bin/video.jpg?size=<value>
The Network Camera will return the most up-to-date snapshot in JPEG format. The value of size can be 1, 2 and 3. 1 means half, 2 means normal and 3 means double. If users do not set the size in this command, the snapshot size will be the same as the setting of video option.

Query status of the digital input

/cgi-bin/getdi.cgi
The Network Camera will return the status of digital input.

Drive the digital output

/cgi-bin/setdo.cgi?do=<state>
The state is either "H", or "L"."H" means high, that is NC is connected with COMMON and "L" means low that is NO is connected with COMMON.
For instance, typing http://192.168.0.201/cgi-bin/setdo.cgi?do=h in the address bar of the web browser will command the Network Camera, with IP address of 192.168.0.201, to set digital output to connect to NC with COMMON.

Restore factory default settings

/setup/restore.cgi
The Network Camera will automatically restart after restoring factory default configurations.

Restart system

/setup/reset.cgi
Restart the Network Camera without warning.

Page URL

The configuration page has a frame layout including an option list frame and an option page frame. Referenced URLs, except for the configuration page, direct users to the option page frame only. Some pages, such as image quality setting and preset setting, are opened in new windows for preview.
Only the Administrator can access these URLs.

Homepage name	Referenced URL
connection type page	/client.html
configuration page	/setup/config.html
system option	/setup/system.html
security option	/setup/security.html
network option	/setup/network.html
DDNS and UPnP option	/setup/ddns.html
video option	/setup/video.html
motion detection	/setup/motion.html
image quality option	/setup/image.html
application option	/setup/app.html
homepage layout option	/setup/layout.html
system log	/setup/logfile.html
system parameters	/setup/parafile.html
set factory default	/setup/factory.html

System resource URL

There are some images used on the homepage when the homepage layout is in image mode. The Administrator may use the following links to show the images saved in the Network Camera on another page.

Resource name	Referenced URL
system logo image	/pic/logo.gif
background image	/pic/wallppr.jpg

General format of command URL

Every configuration can be set through URL with POST method by the Administrator only.
<general format>
URL[?[name=value][&name=value]......]
<method>
POST
<authorized user>
root

System configuration URL

URL: /setup/system.cgi

NAME	VALUE	DESCRIPTION
host	<text string shorter than 40 characters>	system name
method	keep	keep date and time unchanged
	auto	use NTP server to synchronize
	manu	directly adjust date and time
date	<yyyy/mm/dd>	year, month and date separated by slash
time	<hh:mm:ss>	hour, minute and second separated by colon
ntp	<domain name or IP address>	NTP server
zone	-12 ~ 12	time zone, 8 means GMT +8:00

Security configuration URL

URL: /setup/security.cgi

NAME	VALUE	DESCRIPTION
rootpass	<text string shorter than 16 characters>	change root password
username	<text string shorter than 16 characters>	add new user
userpass	<text string shorter than 16 characters>	new user's password
deluser	<text string shorter than 16 characters>	existing user name
action	<blank>	validate demo users with "open"
open	yes	grant for demo account
	no	prohibit for demo account
slow	Yes	allow more guests with snapshot mode
	no	forbid more guests with snapshot mode
selay	0 ~ 99	snapshot interval

Network configuration URL

URL: /setup/network.cgi

NAME	VALUE	DESCRIPTION
reset	yes	enable installation at next boot
	no	disable installation at next boot
ip	<IP address>	Network Camera's IP address
subnet	<IP address>	subnet mask
router	<IP address>	default gateway
dns1	<IP address>	primary DNS server
dns2	<IP address>	secondary DNS server

smtp1	<domain name or IP address>	primary SMTP server
smtp1Usr	<string shorter than 63 characters>	user name for primary SMTP server
smtp1pass	<string shorter than 15 characters>	password for primary SMTP server
mail1	<string shorter than 80 characters>	mail recipient address
smtp2	<domain name or IP address>	secondary SMTP server
smtp2Usr	<string shorter than 63 characters>	user name for secondary SMTP server
smtp2pass	<string shorter than 15 characters>	password for secondary SMTP server
mail2	<text string shorter than 80 characters>	mail recipient address
retmail	<text string shorter than 80 characters>	return email address
ftpp	<number less than 65535>	FTP port
ftp1	<domain name or IP address>	primary FTP server
ftpuser1	<text string shorter than 63 characters>	user name for primary FTP server
ftppass1	<text string shorter than 15 characters>	password for primary FTP server
ffd1	<text string shorter than 40 characters>	upload folder in primary FTP server
Pasv1	yes	access FTP server in passive mode
	no	access FTP server in active mode
ftp2	<domain name or IP address>	secondary FTP server
ftpuser2	<text string shorter than 63 characters>	user name for secondary FTP server

ftppass2	<text string shorter than 15 characters>	password for secondary FTP server
ffd2	<text string shorter than 40 characters>	upload folder in secondary FTP server
Pasv2	yes	access FTP server in passive mode
	no	access FTP server in active mode
http	<number less than 65535>	HTTP port
cport	<number less than 65535>	control Channel port
aport	<number less than 65535>	audio Channel port
vport	<number less than 65535>	video Channel port
band	yes	optimal for the low bandwidth
	no	keep the original way
mute	yes	disable audio
	no	enable audio

DDNS & UPnP configuration URL

URL: /setup/ddns.html

NAME	VALUE	DESCRIPTION
enddns	anything	Enable DDNS function. This option must be resent whenever the URL is called, if DDNS function is to be enabled.
provider	1	DynDNS.org(Dynamic)
	2	DynDNS.org(Custom)
	3	TZO.com
	4	dhs.org
host	<text string shorter than 63 characters>	The hostname of the Network Camera
usermail	<text string shorter than 63 characters>	The login username of DDNS server or the email address registered in DDNS server.

passkey	<text string shorter than 20 characters>	The login password of DDNS server or the key given by the DDNS server.
enupnp	anything	Enable UPnP function. This option must be resent whenever the URL is called, if UPnP function is to be enabled.

Video configuration URL

URL: /setup/video.cgi

NAME	VALUE	DESCRIPTION
text	<text string shorter than 16 characters>	enclosed caption
color	B/W	monochrome
	<other than B/W>	color
size	1	half
	2	half x 2
	3	normal
	4	normal x 2
	5	double
mode	50Hz	synchronize with 50Hz utility
	60Hz	synchronize with 60Hz utility
quality	fixb	fix bit rate
	<other than fixb>	fix quantization
quan	1	lowest quality of video
	2	lower quality of video
	3	normal quality of video
	4	higher quality of video
	5	highest quality of video
bitrate	64000	set bit rate to 64K bps
	128000	set bit rate to 128K bps
	256000	set bit rate to 256K bps

	384000	set bit rate to 384K bps	
	512000	set bit rate to 512K bps	
	768000	set bit rate to 768K bps	
	1000000	set bit rate to 1000K bps	
	1200000	set bit rate to 1200K bps	
frame	1	set maximum frame rate to 1 fps	
	2	set maximum frame rate to 2 fps	
	3	set maximum frame rate to 3 fps	
	5	set maximum frame rate to 5 fps	
	10	set maximum frame rate to 10 fps	
	15	set maximum frame rate to 15 fps	
	20	set maximum frame rate to 20 fps	
	25	set maximum frame rate to 25 fps	
	30	set maximum frame rate to 30 fps	
flip	yes	flip image	
	no	normal image	
mirror	yes	mirror image	
	no	normal image	
wb	1	auto white balance	
	2	fixed indoor(2800K)	
	3	fixed fluorescent 1(3600K)	
	4	fixed fluorescent 2(4000K)	
	5	fixed outdoor(6000K)	

Image quality configuration URL

URL: /setup/image.cgi

NAME	VALUE	DESCRIPTION

brightness	<-5 ~ 5>	adjust brightness of image
contrast	<-5 ~ 5>	adjust contrast of image
hue	<-5 ~ 5>	adjust hue of image
saturation	<-5 ~ 5>	adjust saturation of image
preview	<not required>	not save the parameters
restore	<not required>	recall the original settings
save	<not required>	save the parameters

Application configuration URL

URL: /setup/app.cgi

NAME	VALUE	DESCRIPTION
emode	<not required>	Upload snapshot when motion detected
smode	<not required>	sequential mode application
smethod	mail	upload snapshots by email
	ftp	upload snapshots by FTP
suffix	<not required>	FTP file with date and time suffix
delay	<integer>	seconds delay to detect next event
inter	<integer>	seconds delay to capture post-event
motion1	< not required >	set motion window1 as trigger condition
motion2	< not required >	set motion window2 as trigger condition
motion3	< not required >	set motion window3 as trigger condition
sinter	<integer>	seconds interval for sequential mode
sbegin	<hh:mm:ss>	time to start sequential mode
send	<hh:mm:ss>	time to stop sequential mode

Homepage layout configuration URL

URL: /setup/layout.cgi

NAME	VALUE	DESCRIPTION
cuslogo	blank	hide logo
	def	use default logo
	url	use image from URL
logourl	<text string shorter than 80 characters>	URL of image for logo
linkurl	<text string shorter than 80 characters>	URL to link when clicking on logo
cusback	blank	hide background image
	def	use default background
	url	use image from URL
backurl	<text string shorter than 80 characters>	URL of image for background
fcolor	<0 ~ 15>	color index for font
bcolor	<0 ~ 15>	color index for background

D. Technical specifications

- System
CPU: Trimedia PNX1300
RAM: 16MB SDRAM
ROM: 2MB FLASH ROM

- Networking
Protocol
TCP/IP, HTTP, SMTP, FTP, DDNS, UPnP , Telnet, NTP, DNS and DHCP
Physical
10 baseT or 100 baseT Fast Ethernet auto negotiation

- Video
Algorithm supported
MPEG4(short header mode) for streaming video
JPEG for still image
Features
Adjustable image size, quality and bit rate
Time stamp and text overlay
3 motion detection windows
Resolution
Up to 30/25 frames at 160x120
Up to 30/25 frames at 320x240
Up to 10 frames at 640x480

- Camera Specification
1/4 inch color CMOS sensor
Resolution: 640x480
AGC, AWB, AES
Electronic shutter: 1/60 ~ 1/15000 second

- Lens
Fixed focal with fine tuning, 4.0mm, F2.0

- Audio
Bite rate: 24Kbps
Supporting audio mute

- Microphone
Omni-directional
Frequency: 50 – 16000Hz
S/N ratio: more than 60dB

- LED indicator
Dual color status indicator

- Dimension
28.6mm(D) * 72.8mm(W) * 115.2mm(H)

- Weight
NET. 215g

- Power
Input: 100-240VAC, 50/60Hz, 0.4A
Output: 5VDC, 2A

- Operating Environment
Temperature: 0-50℃/32-122℉
Humidity: 95%RH

- EMI & Safety
CE, FCC

- Viewing system requirement
Operating system
Microsoft Windows 98SE/ME/2000/XP
Browser
Internet Explorer 5.x or above

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