

TP-LINK®

User Guide

TL-SC3430N

Wireless N H.264 Megapixel Surveillance Camera



COPYRIGHT & TRADEMARKS

Specifications are subject to change without notice. **TP-LINK®** is a registered trademark of TP-LINK TECHNOLOGIES CO., LTD. Other brands and product names are trademarks or registered trademarks of their respective holders.

No part of the specifications may be reproduced in any form or by any means or used to make any derivative such as translation, transformation, or adaptation without permission from TP-LINK TECHNOLOGIES CO., LTD. Copyright © 2012 TP-LINK TECHNOLOGIES CO., LTD.

All rights reserved.

<http://www.tp-link.com>

FCC STATEMENT



This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/ TV technician for help.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

This device may not cause harmful interference.

This device must accept any interference received, including interference that may cause undesired operation.

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

CE Mark Warning



This is a class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

CONTENTS

Package Contents	1
Chapter 1 Safety Instructions	2
Chapter 2 Minimum System Requirement & Product Feature	3
2.1 System Requirement	3
2.2 Product Features	3
2.3 Physical Overview	4
2.4 Mount the Camera	6
2.5 Hardware Connection	7
Chapter 3 Using IP Camera via Web Browser	9
3.1 Obtain the IP Address	9
3.2 Windows Web Browser.....	11
3.3 Mac Web Browser	12
Chapter 4 Operating IP Camera via Mobile Phone	15
4.1 Mobile Phone Viewing	15
4.2 Using IP Camera via iPhone.....	15
Chapter 5 Configuration of Main Menu	17
5.1 Live View	17
5.2 Setting.....	18
5.3 Client Setting	19
5.4 Image Setup	20
Chapter 6 Setting-Basic	21
6.1 System.....	21
6.2 Camera	24
6.3 Network.....	33
6.4 Security.....	48
Chapter 7 Setting-Advanced	51
7.1 FTP Client.....	51
7.2 SMTP	55
7.3 Network Storage	59
7.4 Memory Card	64
7.5 HTTP event.....	69
7.6 Schedule.....	74
7.7 Alarm Buffer	75
7.8 Motion Detection.....	76
7.9 Audio Detection	76
7.10 System Log	77
Appendix 79	
A. Frame-rate and Bitrate Table – Help to set IP Camera with your network environment to access Internet.	79
B. Storage Requirement Table - Help to set Recording Storage System.....	84
C. System Requirement – Help to setup System	87

Europe – EU Declaration of Conformity.....89
Federal Communication Commission Interference Statement92

Package Contents

The following items should be found in your package:

- TL-SC3430N Wireless N H.264 Megapixel Surveillance Camera
- Power Adapter
- Mounting Bracket with three screws, a Lock Ring, a Brace and a Base Plate
- RJ45 Cable
- Quick Installation Guide
- Resource CD, including:
 - This User Guide
 - Application Guide
 - Other helpful information

 **Note:**

Make sure that the package contains the above items. If any of the listed items is damaged or missing, please contact your distributor.

Chapter 1 Safety Instructions

➤ Before you use this product

This product has been designed with safety in mind. However, the electrical products can cause fires which may lead to serious body injury if not used properly. To avoid such accidents, be sure to heed the following.

➤ Legal Caution

Video and audio surveillance can be forbidden by laws that vary from country to country. Check the laws in your local region before using this product for surveillance purposes.

➤ Don't open the housing of the product

Don't try to open the housing or remove the covers, for it may expose you to dangerous voltage or other hazards.

➤ Don't use the accessories not recommend by the manufacturer

➤ Heed the safety precautions

Be sure to follow the general safety precautions and the "Operation Notice."

➤ Operation Notice - Operating or storage location

Avoid operating or storing the Camera in the following locations:

- Extremely hot or cold places
(Operating temperature: 0 °C to + 40 °C [32 °F to 104°F])
- Exposed to direct sunlight for a long time, or close to heating equipment (e.g., near heaters)
- Close to water (e.g., near a bathtub, kitchen sink, laundry tub)
- Close to sources of strong magnetism
- Close to sources of powerful electromagnetic radiation, such as radios or TV transmitters
- Locations subject to strong vibration or shock

➤ In case of a breakdown

In case of system breakdown, discontinue use and contact your authorized dealer.

➤ In case of abnormal operation

- If the unit emits smoke or an unusual smell,
- If water or other foreign objects enter the cabinet, or
- If you drop the unit or damage the cabinet: 1. Disconnect the cable and the connecting cables.
2. Contact your authorized dealer or the store where you purchased the product.

➤ Transportation

When transporting the camera, repack it as originally packed at the factory or in materials of equal quality.

➤ Ventilation

To prevent heat buildup, do not block air circulation around the device.

➤ Cleaning

- Use a soft, dry cloth to clean the external surfaces of the device. Stubborn stains can be removed using a soft cloth dampened with a small quantity of detergent solution, then wipe dry.
- Do not use volatile solvents such as alcohol, benzene or thinners as they may damage the surface.

Chapter 2 Minimum System Requirement & Product Feature

2.1 System Requirement

For normal operation and viewing of the network camera, it's recommended that your system meets these minimum requirements for proper operation:

Item	Requirements
CPU	Pentium 4 2.8GHz (or equivalent AMD)
Graphic Card	256 MB RAM graphic cards(or equivalent on-board graphic cards)
RAM	1G
Operating System	Windows 2000 / Windows 2003 / Windows XP / Windows Vista / Windows 7
Web Browser	Internet Explore 6 or higher

 **Note:**

Please keep updating the latest Windows software and service package. (Ex: Net Framework, Windows Media Player, Enhance ActiveX Security)

2.2 Product Features

These easy-to-follow instructions make it quick and simple for setup and operation, so you'll also soon be enjoying the benefits of these product features:

SYSTEM	
Resolutions	H.264 / MPEG-4 / Motion JPEG: 4 resolutions from 1280 x 1024 to 320 x 240 via API and configuration web page 3GPP: 2 resolutions from 320 x 240 to 160 x120 via compatible cellphone.
Screen Resolution	Higher than 1024 * 720 pixels
Compressing format	H.264 / MPEG-4 / Motion JPEG
Frame Rate	Up to 15 fps at 1280 x 1024 Up to 30 fps at 640 x 480
Image settings	Rotation: Mirror, Flip, Mirror Flip
	Brightness / Contrast / Saturation / Sharpness/ Exposure
	Overlay capabilities: time, date, text and privacy image
Image snapshot	Yes
Video Recording	Yes
Full Screen Viewing	Yes
Digital Zoom	10x digital
Audio	Two-way (full / half duplex) with built-in microphone

	Audio compression: G.711 μ law, a law, and AMR
Mobile Phone Live View	Through 2.5 WAP, 3GPP, 3G Streaming, and 3G Browser
Alarm Sending	FTP Client / SMTP / Network Storage / Memory Card / HTTP event
Security	Password Protecton / HTTPS encryption / IP Filter
Alarm Buffer	Recording image and audio file pre-and-post disconnection up to 5 sec.
Supported protocols	Bonjour, TCP/IP, DHCP, PPPoE, ARP, ICMP, FTP, SMTP, DNS, NTP, UPnP, RTSP, RTP, HTTP, TCP, UDP, 3GPP/ISMA RTSP
Simultaneous Connection	Up to 10 users
Operating conditions	0°C ~ 40 °C (32°F ~ 104 °F)
HARDWARE	
Lens	F1.9, 4.5mm Megapixel board lens
Audio Output	1
Power	12V DC, 1A, Max 12W
Wireless	IEEE 802.11b/g/n (for wireless model) Up to 150 Mbps
SD/SDHC Card Slot	Supports SD/SDHC memory card
WPS	1 (Wi-Fi Protected Setup)

2.3 Physical Overview

2.3.1 Front View



Focus Adjustment Ring: Adjust the focus ring to get a clear image.

Network LED Indicator: It lights up when the IP Camera is well connected to the network. It flashes when there are data being transmitted.

Power LED Indicator

- **Red:** The IP Camera boots up.
- **Blue:** The IP Camera is working.

Built-in Microphone: The location where the voice from your partner comes out.

SD/SDHC Card Slot: Supports SD/SDHC memory card.

2.3.2 Bottom view



➤ **Power Connector:** The power connector is where you connect the power adapter.

➤ **RESET:** Please take the following steps to reset the camera to its defaults.

Keep the camera powered on, then press and hold the **Reset** button for more than 15 seconds. Afterwards release it, and the Camera will be restored to factory defaults after rebooting.

➤ **Audio Out:** The Audio Out port is where the speaker is connected.

➤ **LAN (Network Connector):** Through this port, you can connect the IP Camera to your computer or the other Ethernet network devices.

➤ **WPS:** Press this button to quickly establish a connection between the Camera and the router supporting WPS (Wi-Fi Protected Setup).

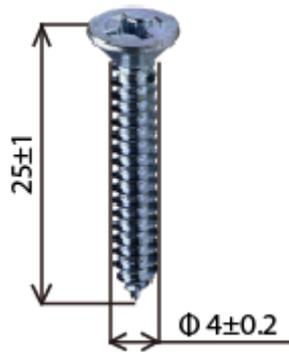
Step 1. Press the WPS button on the router supporting WPS for 2 seconds.

Step 2. Press the WPS button on the Camera within 2 minutes.

- **Lock Ring:** It is used to adjust the angle of the Camera.
- **Base Plate:** It is used to support the Camera and can be fixed to a flat surface with the supplied screws.

2.4 Mount the Camera

2.4.1 The Screw Size



There are three supplied screws for mounting the Camera. The length of the screws is 25 ± 1 mm and the diameter is 4 ± 0.2 mm.

2.4.2 Wall and Ceiling Mount

1. Use the three supplied screws to fix the base plate to a flat surface.
2. Loosen the lock ring to adjust the desired angle of the Camera.
3. Tighten the lock ring.

There are two ways to mounting the Camera on the wall. See the following two pictures.

(1) Ceiling Mount



(2) Wall Mount

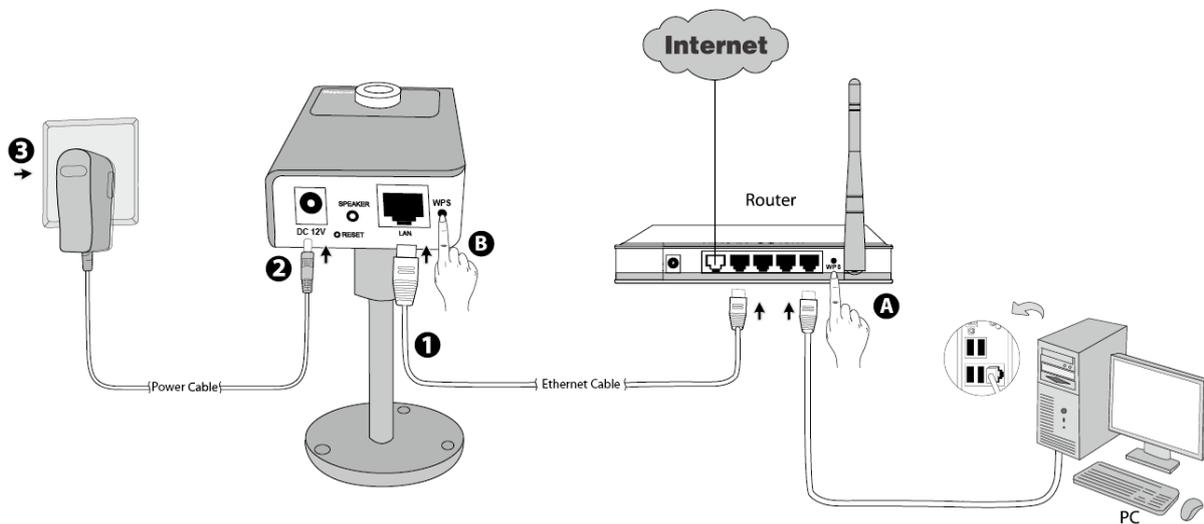


2.5 Hardware Connection

Before proceeding, confirm that your PC is connected to your router and can access the Internet. Make sure that your router's DHCP feature is enabled. If not, please refer to your router's instruction to enable it.

For TL-SC3430N, if your router supports WPS (Wi-Fi Protected Setup), you can also use WPS to setup a wireless connection quickly. You can also choose **Wired Connection**.

Please connect the Camera according to the following steps.



2.5.1 Method 1: Wired Connection

1. Connect the Camera to the LAN network (Router or Switch) via Ethernet cable.
2. Connect the power adapter cord to the DC In jack.
3. Plug the power adapter into the power outlet.

2.5.2 Method 2: WPS Connection

Power on the Camera and make sure that the Power LED is blue before WPS Connection. Then take the following steps.

- A. Press the WPS button on the router supporting WPS for 2 seconds.
- B. Press the WPS button on the Camera within 2 minutes.

After you press the WPS button on the Camera, the Power LED will turn purple and flash, and when the WPS Connection is established successfully, it will return blue.

Chapter 3 Using IP Camera via Web Browser

3.1 Obtain the IP Address

1. Insert the provided CD into your CD-ROM driver. The Setup Wizard will automatically pop up on your computer's screen as shown in the figure below.



Figure 3-1

2. Choose the **Intelligent IP Installer**, and then the next screen appears. Click on **Intelligent IP Installer** to begin the installation.



Figure 3-2

3. After the installation is finished, click **Start > All Programs > TP-LINK > Intelligent IP Installer** to start using the program.

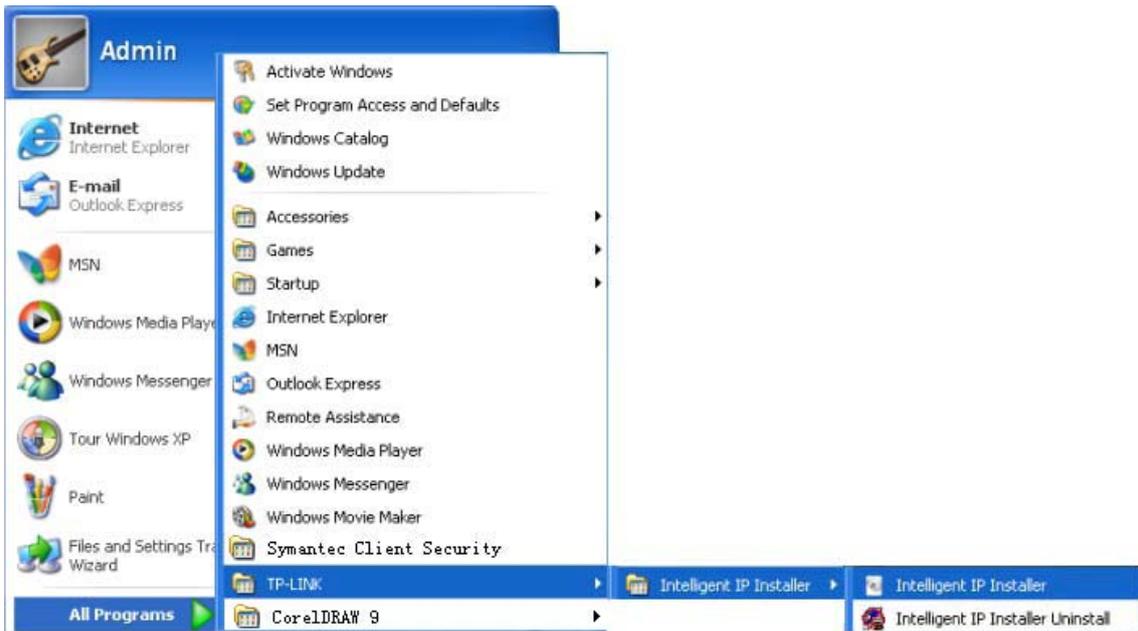


Figure 3-3

4. The following screen will then display. Click the **Search** button to search Network Cameras in the network; it displays Network Cameras information including IP Address.

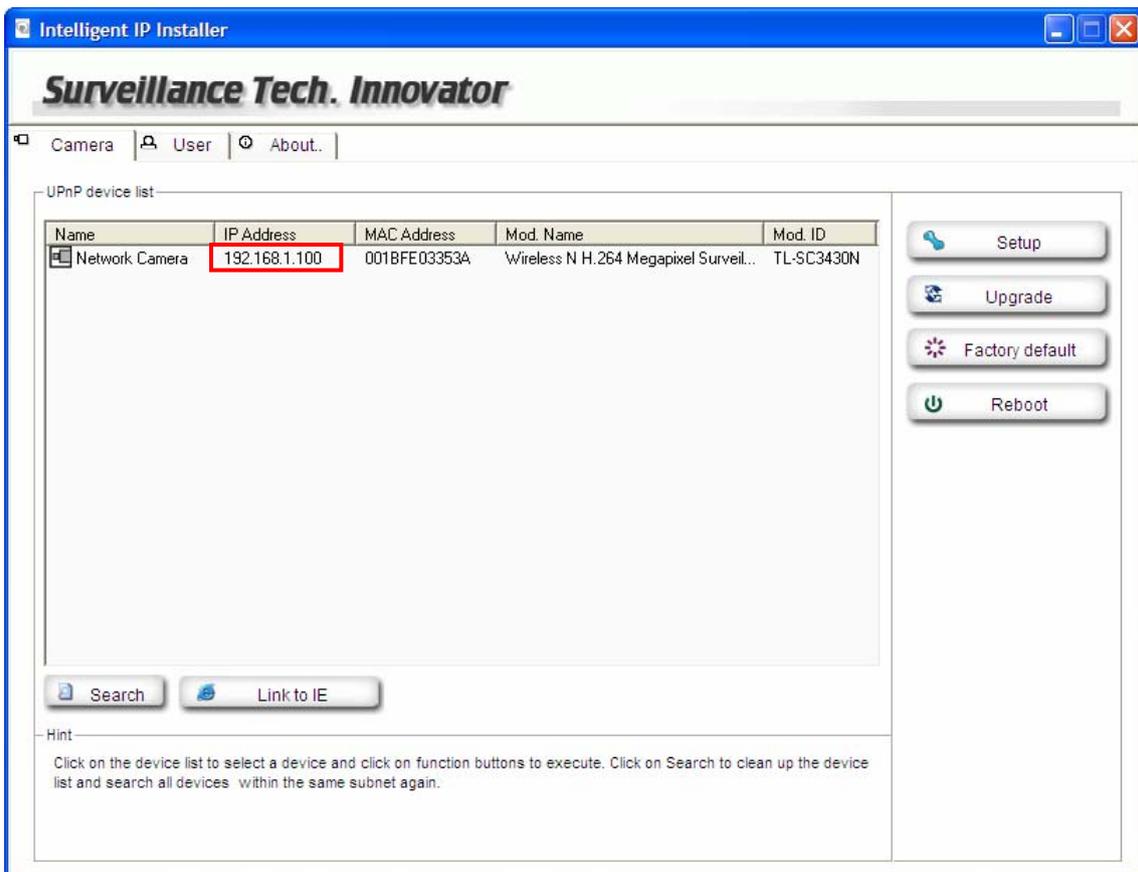


Figure 3-4

3.2 Windows Web Browser

The configuration of browser is similar in Windows XP/Vista/7. Here we take IE browser in Windows XP for example.

- 1 Click **Link to IE** button in Figure 3-4 directly. You can also launch your web browser and then enter the IP address or host name of the IP camera in the Location / Address field of your browser.



Note:

If you only want to view the video without accessing Setting screen, enter "http://<IP>/index2.htm" as your web URL.

- 2 Use the default User name **admin** and default Password **admin**.

Note:

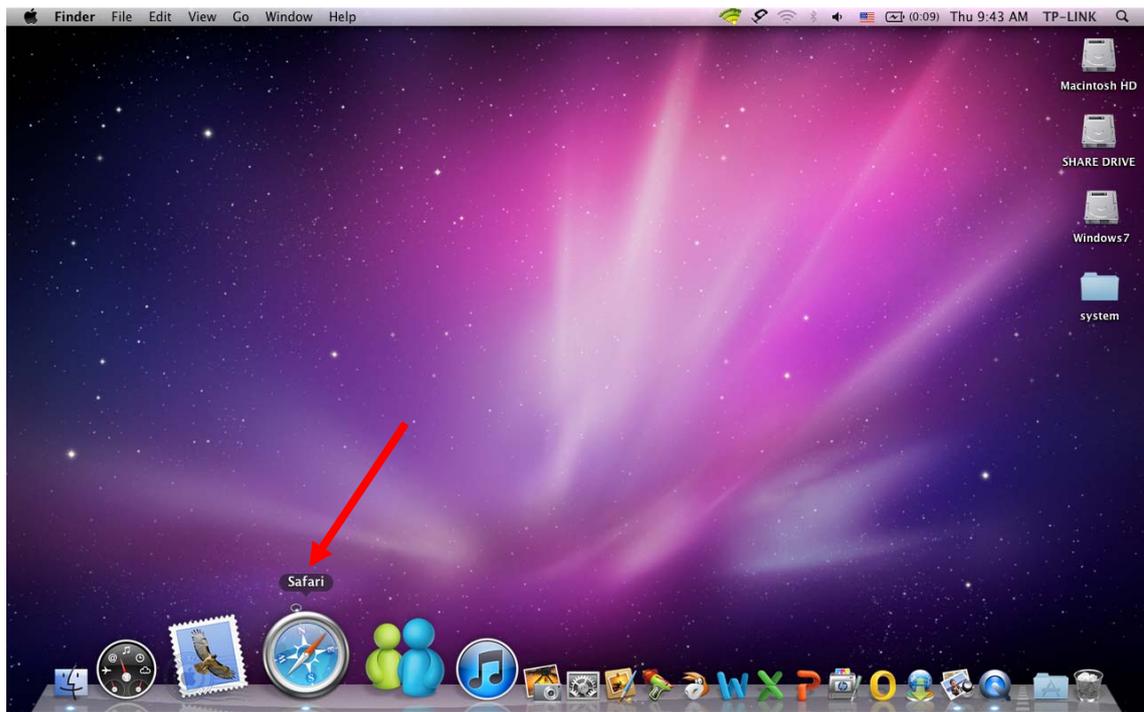
The default User name "admin" and the Password "admin" are set at the factory for the administrator. You can change them in the Account Menu. (Please check "**Setting** → **Basic** → **Security** → **Account**")



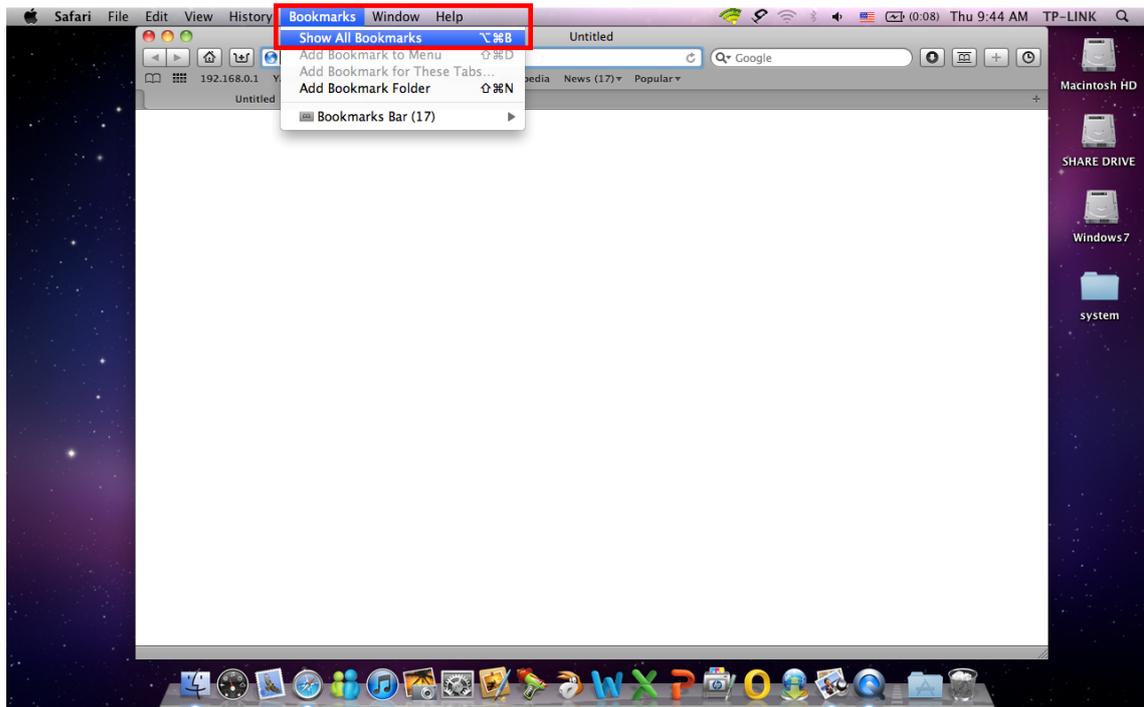
- 3 The monitor image will be displayed in your browser. In the far left side of main configuration are **Setting**, **Client Setting**, and **Image Setup**.

3.3 Mac Web Browser

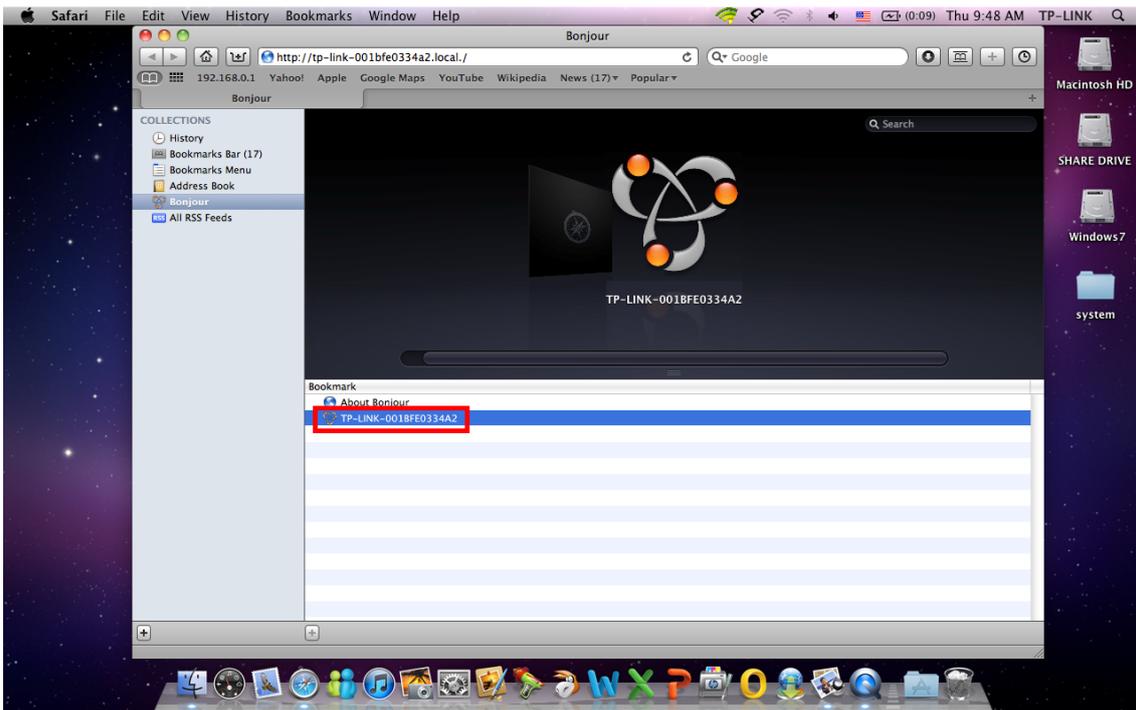
- 1 Click the **Safari** icon.



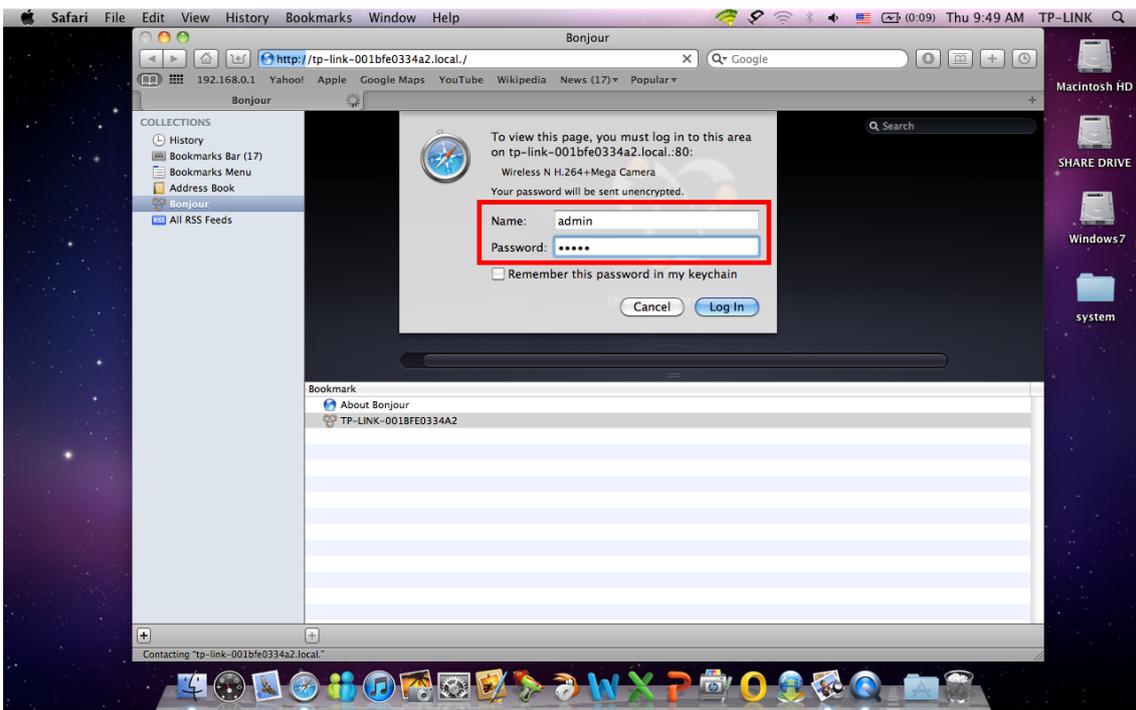
- 2 After the home page appears, click **Bookmarks** and then choose **Show All Bookmarks**.



- 3 Click **Bonjour** on the left of the following screen. Double click the Mac address of the Camera in the bookmark list. For example, **TP-LINK-001BFE0334A2**.



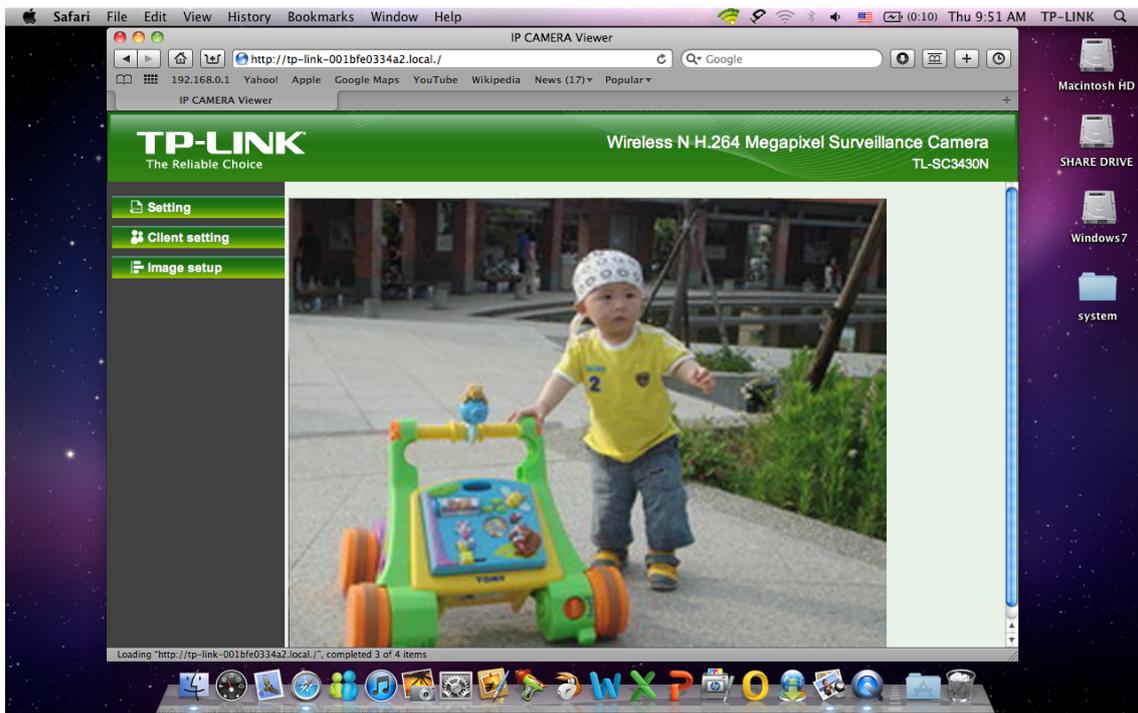
- 4 Enter the default Name **admin** and default Password **admin**. Click **Log In**.



Note:

The default user name “admin” and the password “admin” are set at the factory for the administrator. You can change them in the Account Menu. (Please check “**Setting** → **Basic** → **Security** → **Account**”)

- 5 The monitor image will be displayed in your browser. In the far left side of main configuration are **Setting, Client Setting** and **Image Setup**.



Chapter 4 Operating IP Camera via Mobile Phone

4.1 Mobile Phone Viewing

4.1.1 3G Mobile Phone Streaming Viewing

For 3G mobile phone viewing, type “**rtsp://<IP>:<PORT>/video.3gp**” into your 3G Streaming Link. <IP> is the Public IP address of your IP Camera; <PORT> is the RTSP port of your IP Camera (Default value is 554.) Example: `rtsp://100.10.10.1:554/video.3gp`

 **Note:**

You can also use RTSP clients (RealPlayer, VLC, QuickTime Player...etc.) to view RTSP streaming, just type in “**rtsp://<IP>:<PORT>/video.3gp**” as the Player URL.

4.1.2 2.5G Mobile Phone WAP Viewing

For 2.5G mobile phone viewing, type “**http://<IP>/mobile.wml**” into your 2.5G WAP Browser. <IP> is the Public IP address of your IP Camera.

4.1.3 2.5G Mobile Phone Browser Viewing

For 2.5G mobile phone viewing, type “**http://<IP>/mobile.htm**” into your 2.5G Web Browser. <IP> is the Public IP address of your IP Camera.

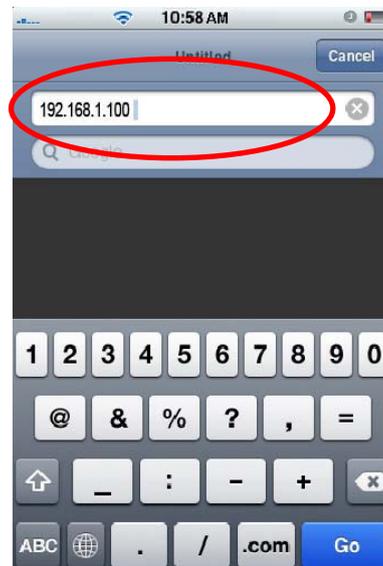
4.2 Using IP Camera via iPhone

You can use TP-LINK Web User Interface via iPhone. Please follow the setting process below. Then you can use TP-LINK Web UI via iPhone.

1. Select Safari function



2. Enter IP address in your web link.



3. Enter name and password.
Default values are both admin.
Then click Log in



4. The TP-LINK User Interface and live image will show up in the middle of the screen.

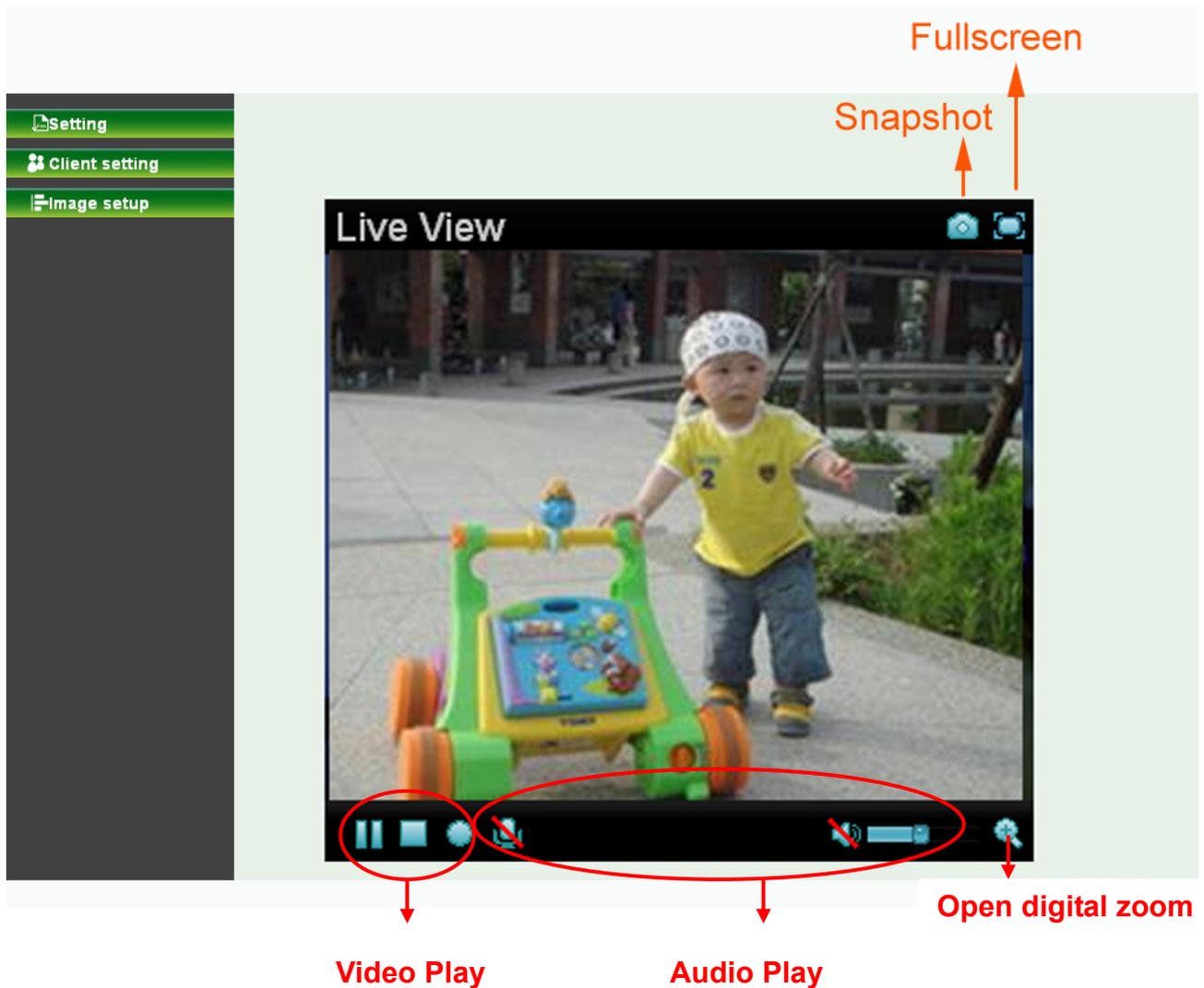


Note: It will show continuous snapshots not a real time video streaming. Therefore, the recording feature is disabled.

Chapter 5 Configuration of Main Menu

In the left side of main configuration are **Setting**, **Client setting** and **Image setting**.

In the right side, you can control Live View in your main Browser. The functions include: **Snapshot**, **Open digital zoom**, **Audio**, and **Video Play**.



5.1 Live View

5.1.1 Snapshot

You can capture a still image shot by clicking the Camera icon and save it in the operating computer.

Symbols	Meaning
	a snapshot window appears after clicking the icon
Save	Save the picture captured by snapshot into your computer
Close	Return to the view screen
	full Screen

5.1.2 Digital zoom in / out the image via the monitor window

- Click  to display the digital zoom in window.
- Pull the  to adjust the digital zoom range, and it will be showed on the above window.
- Use the left click of your mouse to move to anywhere in the window area.

5.1.3 Video play buttons

Symbols	Meaning
	Pause the current video
	Play the video
	Stop the current video
	Record the current video

 **Note:**

Concerning the recording storage requirement of your hard disk, please refer to the **CHAPTER 9. APPENDIX / B. Storage Requirement Table.**

5.1.4 Audio buttons

Symbols	Meaning	Note
	Speakers turned on	mean the speakers of your computer are turned on to transmit the sounds from the connected IP camera(s)
	Speakers turned off	mean the speakers of your computer are turned off to transmit the sounds from the connected IP camera(s)
	Mute off	mean you can broadcast to the connected IP camera(s) via the Ethernet using your microphone
	Mute on	mean you can't broadcast to the connected IP camera(s) via the Ethernet using your microphone
	Volume control bar	mean you can adjust the sound volume by the control bar

5.2 Setting

This function is only for the Administrator. Click “Setting” on the home page of web user interface to get into the **Basic** and **Advanced Settings** menu.

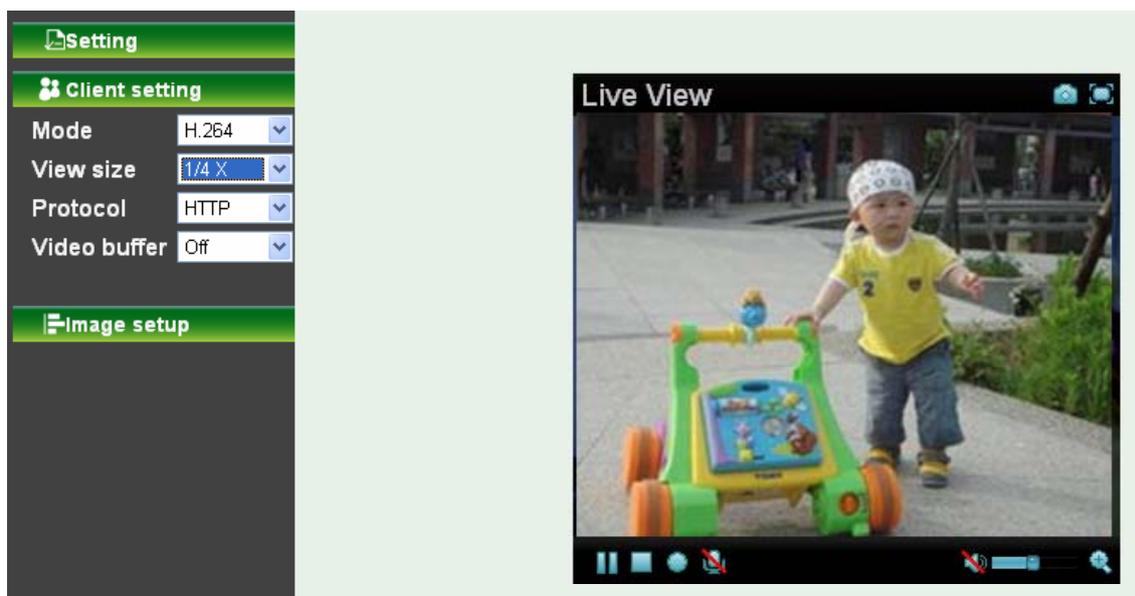


Click **Basic** folder, there are sub-folders including **System**, **Camera**, **Network**, and **Security**. For more information, you can see **Chapter 6**.

Click **Advanced** folder, there are sub-folders including **FTP Client**, **SMTP**, **Network Storage**, **Memory Card**, **HTTP event**, **Schedule**, **Alarm buffer**, **Motion detection**, **Audio detection**, and **System Log**. For more information, please see **Chapter 7**.

5.3 Client Setting

This function is only for the client. Click this button to control **Mode**, **View size**, **Protocol**, and **Video buffer**.



5.3.1 Mode

Click the pull-down box to choose video compression mode of **LIVE VIEW** among **H.264**, **MPEG4**, and **JPEG**.

Note:

As long as the operating system not able to afford loading under H.264 mode, please downgrade the mode to MPEG-4 or MJPEG.

5.3.2 View Size

Select the desired view size of image resolution among **1/4X**, **1/2X**, and **1X**.

5.3.3 Protocol

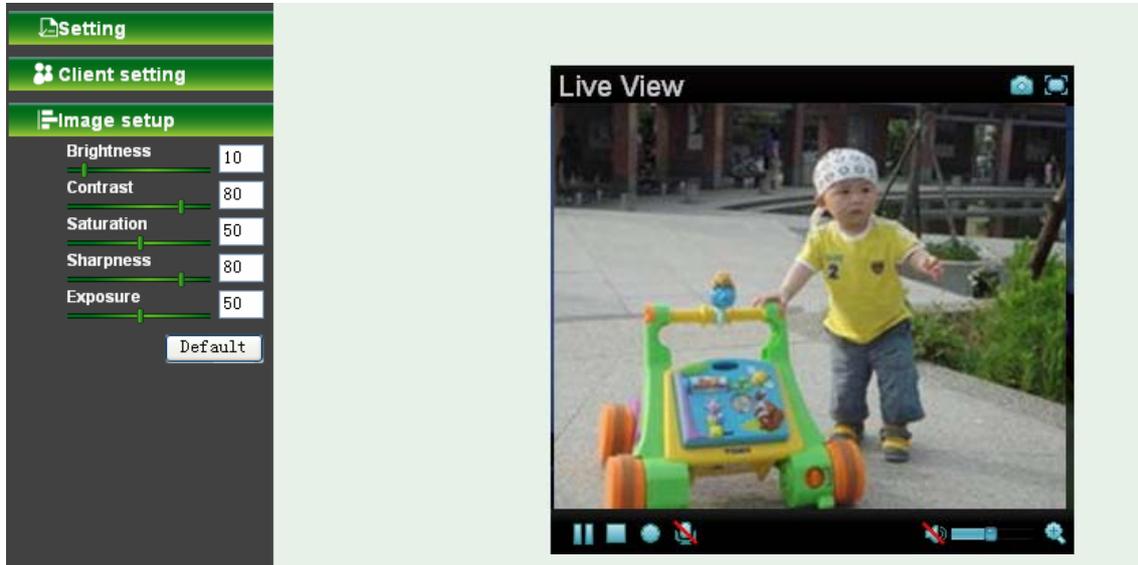
Select the transferring protocol among **TCP**, **UDP**, and **HTTP**.

5.3.4 Video Buffer

Turn the Video Buffer function **On / Off**. The Video Buffer function makes the streaming more smooth in unsteady network environment, but might cause a little delay in live viewing.

5.4 Image Setup

The tool bar can be adjusted to optimize video **Brightness, Contrast, Saturation, Sharpness** and **Exposure**.



5.4.1 Brightness

The value range is 0~99. The higher value the brightness is, the brighter the image is.

5.4.2 Contrast

The value range is 0~99. The contrast is a measure of a display system, defined as the ratio of white to black that the system is capable of producing. The higher value the contrast is, the more delicate of color you can have.

5.4.3 Saturation

The value range is 0~99. The saturation of a color is determined by a combination of light intensity and how much it is distributed across the spectrum of different wavelengths. The higher value the saturation is, the more colorful the image will be.

5.4.4 Sharpness

The value range is 0~99. It applies image processing techniques to adjust the sharpness of live view. However, the higher the value is, more the noise is.

5.4.5 Exposure

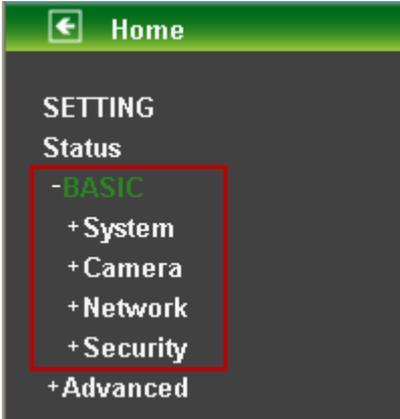
The value range is 0~99. The higher value the exposure is, the brighter the image is.

5.4.6 Default

After the adjustment of all setting, you can still click Default to make the setting back to the original setting.

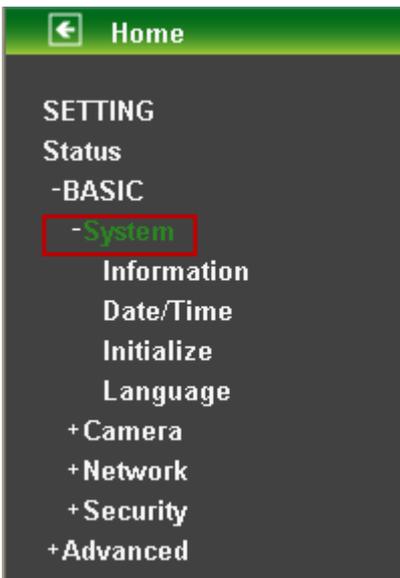
Chapter 6 Setting-Basic

Click the **Basic** folder to display the sub folders including **System**, **Camera**, **Network**, and **Security**.



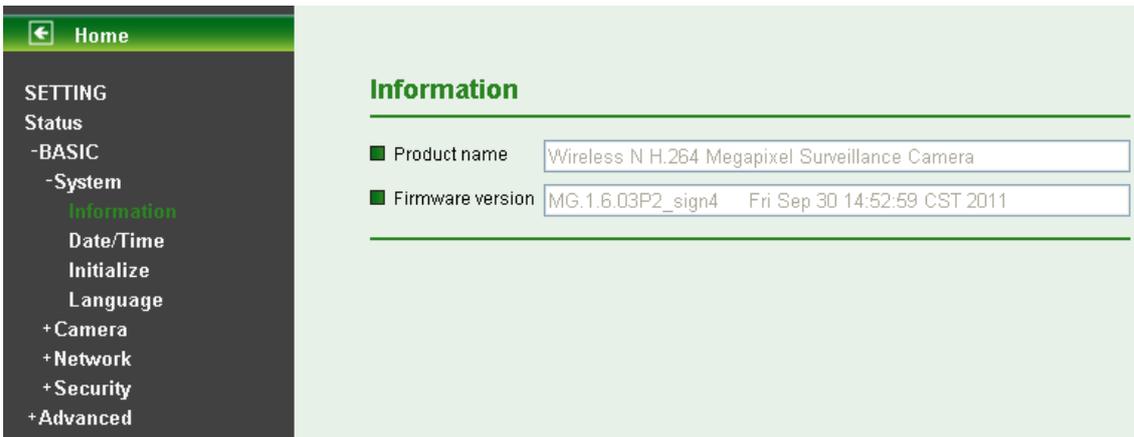
6.1 System

Click the folder of System to display the sub-folders including **Information**, **Date / Time**, **Initialize**, and **Language**.



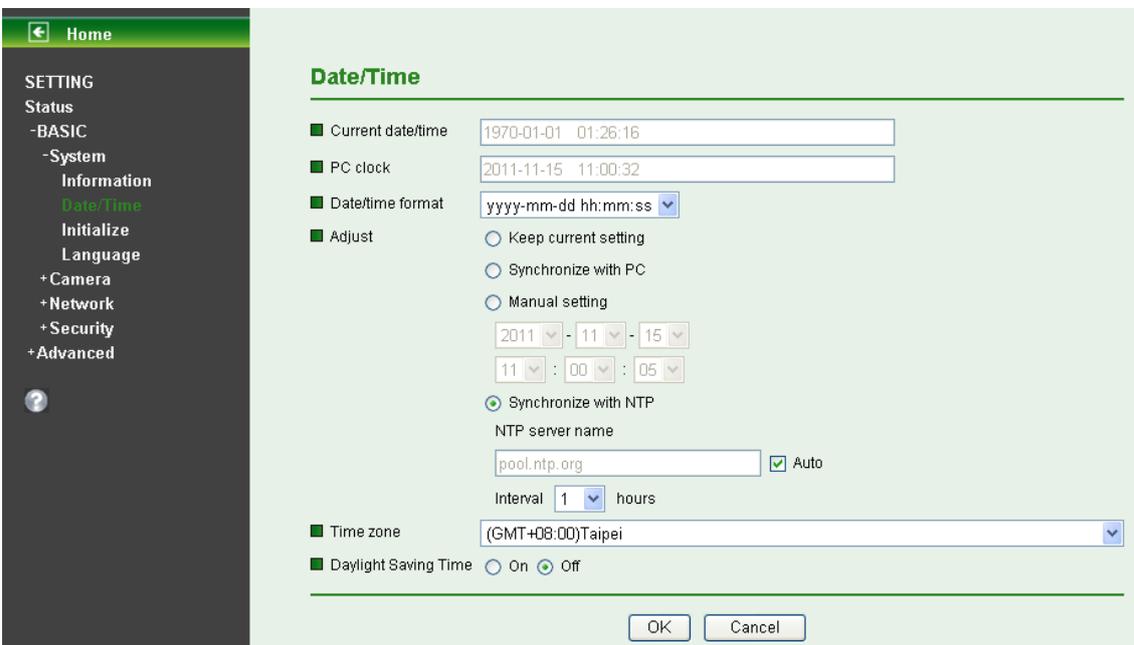
6.1.1 Information

The Information screen provides the product factory information which includes **Product Name**, **Firmware Version**.



6.1.2 Date / Time

The Date/ Time screen displays all options of time setting.



- **Current Date / Time:** This displays the current date and time of this IP Camera.
- **PC Clock:** This displays the date and time of the monitoring PC clock.
- **Date / Time Format:** You can click the pull down box to select different time display formats.

Note:

If you would like the Date / Time information shows on the Live View screen, please check “**Setting** → **Basic** → **Camera** → **General** → **Date / Time**” to execute the setting.

- **Adjust:** You can select one of those four adjusting modes for your IP Camera.
 - **Keep current setting:** Select this mode to keep the current date and time of this IP Camera.
 - **Synchronize:** Select this mode to keep the date and time of this IP Camera is the same as the monitoring PC.
 - **Manual setting:** Select this mode to adjust manually the date and time of this IP Camera.
 - **Synchronize with NTP:** Specify the NTP server name and the Refresh Interval to synchronize the date and time of this IP Camera with those of the time server, known as the NTP server.
- **Time Zone:** Select the Time Zone format of Greenwich Mean Time among different cities. The

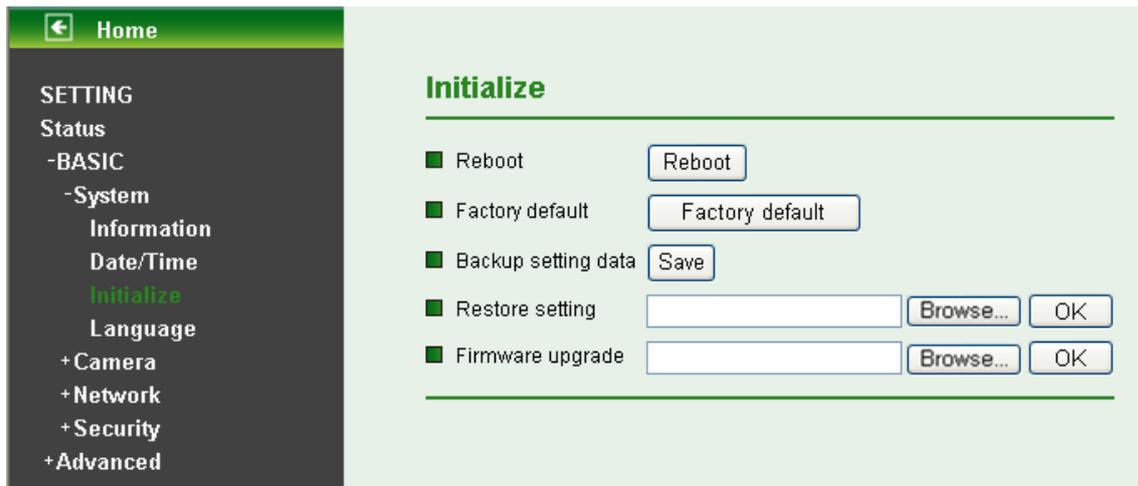
time display will be the same as the current date / time option.

- **Daylight Saving Time:** There are two modes to choose for setting up daylight saving time.
 - **By Date:** Set the start and end time by select month, day, hour, and minute.
 - **By Week Number:** Set the start and end time by select month, week, hour, and minute.

 **Note:**

The NTP server (Network Time Protocol) is the time server which is an Internet standard protocol built on the top of TCP / IP. This assures accurate synchronization to the millisecond of computer clock times in a network of computers.

6.1.3 Initialize

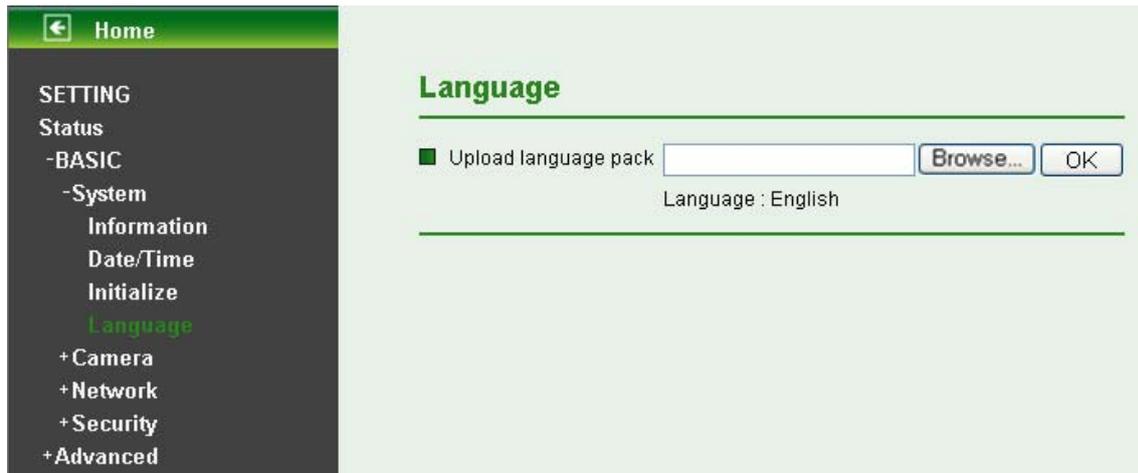


- **Reboot:** Click this button to reboot this IP Camera. A confirmation dialogue will appear and then click **“OK”** to execute. It takes one minute to complete the reboot process.
- **Factory Default:** Click this button to recover this IP Camera to the factory default setting. A confirmation dialogue will appear and then click **“OK”** to execute. The network indicator on this IP Camera will start to blink. This IP Camera will reboot automatically after completing adjustments to the default setting. Don't turn off this IP Camera until the device reboots.
- **Backup Setting:** You can save the setting data of this IP Camera into a file. Click **“Save”** and follow the instructions on the browser to save the setting data file to the location you specified.
- **Restore Setting:** Download the saved setting data of this IP Camera. Click **“Browse”** and select saved file. Click **“OK”** and this IP Camera is adjusted according to the loaded data and then restarted.
- **Firmware Update:** Update the device software. Click **“Browse”** and select the file for updating. A confirmation dialogue will appear. Click **“OK”** to start. This IP Camera will reboot upon completion.

 **Note:**

When updating the firmware version, please use the file specific for the model. Otherwise, some problems may occur. Unless the updating completed, please don't turn off the power or disconnect the network.

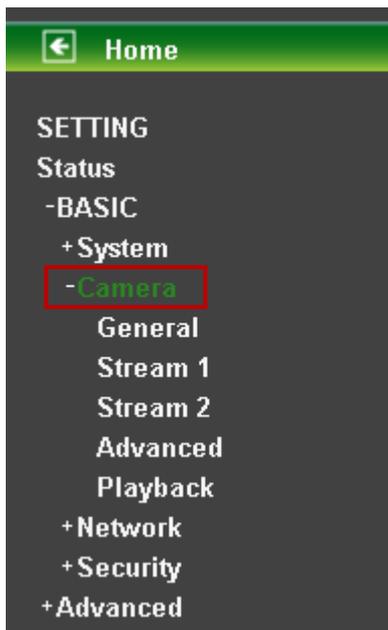
6.1.4 Language



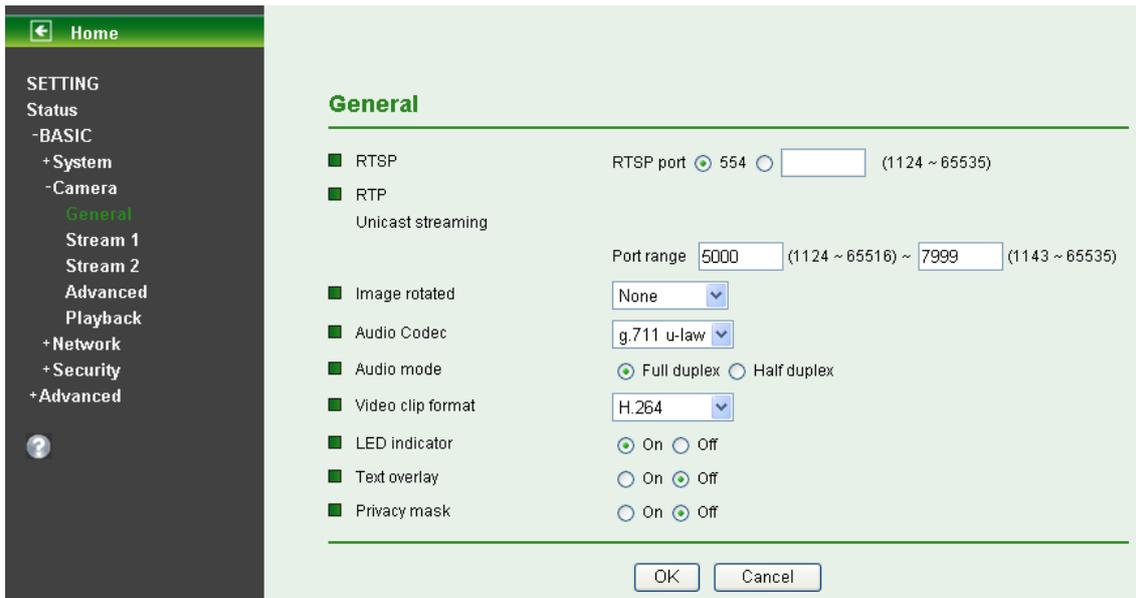
- **Upload Language Pack:** Clicking “Browse” and selecting the file for updating, the present language display of WEB User Interface could be changed. A confirmation dialogue will appear. Click “OK”, then the update will be applied immediately. The default language is “English”.

6.2 Camera

Click the folder of Camera to display the sub folders including **General**, **Stream 1**, **Stream 2**, **Advanced** and **Playback**.



6.2.1 General



- **RTSP:** The default value is 554. If the IP Cameras connected with router and installed outside are over 2 sets and all of them need support RTSP, please fill some value in the blank space in the range from 1024 to 65535.
- **RTP Unicast streaming:** The default value of port range is 5000 ~ 7999 and can be changed from 1024 to 65535.

Note:

Under Unicast streaming mode, streaming video is delivered from the Camera to a single client device.

- **Image rotated:** Select the screen display “None”, “Flip”, “Mirror”, or “Mirror + Flip.”
- **Audio Codec:** Select one audio codec among G.711 U-law / G.711 A-law / AMR Audio / Off.
 - **G.711 U-law:** one codec for “Computer Audio”, used in North America & Japan areas.
 - **G.711 A-law:** another codec for “Computer Audio”, used in Europe and the rest of the world.
 - **AMR Audio:** an audio codec of the third generation communication for MOBIL
 - **Off:** Select Off, audio file won’t be transmitted by IP CAM.
- **Audio Mode:** You can select Full duplex or Half duplex.
 - **Full duplex:** Select it for simultaneous communication in both direction between the connected administrator and IP CAM. It means both parties can speak and be heard at the same time.
 - **Half duplex:** Select it for communication in both directions, but only one direction at a time (not simultaneously). It means one party begins receiving a signal, it must wait for the transmitter to stop transmitting, before replying. Therefore, once one party speak, he can’t hear any voice from the other party, just like the communication by radio set.
- **Video Clip Format:** Select RECORDING compression format H.264 or MPEG-4.
 - **MPEG-4:** MPEG-4 has the advantage of sending a lower volume of data per time unit across the network (bit-rate) compared to Motion JPEG and therefore provides a relatively high image quality at a lower bit-rate (bandwidth usage).
 - **H.264:** H.264 provides higher compression rate than MPEG-4. Thus, H.264 can decrease the bandwidth usage and further apply on 3G. However, H.264 will occupy more system resources than MPEG-4. As long as the operating system appears operating difficulties under H.264 format, please change to select MPEG-4.
- **LED Indicator:** The status of the LED indicators on the Camera. It’s turned on by default.

- **Text Overlay:** Some information can be showed on the display screen, such as Date / Time and user-defined text. And the background color can be chosen.
- **Privacy Mask:** A specific area of the video image can be covered.

6.2.2 Stream 1

The screenshot displays the configuration page for Stream 1 in H.264 format. The left sidebar contains a navigation menu with categories like 'SETTING', 'Status', '-BASIC', '+System', '-Camera', 'General', 'Stream 1', 'Stream 2', 'Advanced', 'Playback', '+Network', '+Security', and '+Advanced'. The main content area is titled 'Stream 1 H.264' and includes the following settings:

- Viewer authentication:** Radio buttons for 'On' and 'Off' (selected).
- Multicast streaming:** Radio buttons for 'On' and 'Off' (selected).
- Multicast address:** Text input field containing '228.0.0.1'.
- Video port:** Radio buttons for 'Auto' and a text input field (selected).
- Audio port:** Radio buttons for 'Auto' and a text input field (selected).
- Time-To-Live:** Text input field containing '15'.
- Image Size:** Dropdown menu showing '1280x1024'.
- Frame rate:** Dropdown menu showing '15' fps.
- Quality:** Radio buttons for 'Auto' and 'Fixed quality' (selected), with a dropdown menu showing 'Detailed'.
- Fixed bitrate:** Radio button for 'Fixed bitrate' (not selected), with a dropdown menu showing '6M' bps.
- IP interval:** Dropdown menu showing 'Auto'.

At the bottom of the configuration area, there are 'OK' and 'Cancel' buttons.

- **Viewer Authentication:**
 - **On:** If the viewer authentication is On, the users will be requested to key-in username and password when using QuickTime Player to have live viewing.
 - **Off:** If the viewer authentication is Off, you can have live viewing on computer by QuickTime Player after entering "rtsp://ip:port/video.h264" on the URL column directly.

- **Multicasting Streaming** (if it's on):
 - **Multicast Address:** The multicast server address will appear automatically.
 - **Video / Audio Port:** Specify the transmission port number of the video data, from 1124 to 65534.
 - **Time-To-Live:** Set the maximum TTL that multicast can pass through.

 **Note:** **Time-To-Live** option determines the maximum length of time (measure as the number of network routers that can be passed before data arrives at its destination or is dropped) within which a multicast packet must reach its destination.

- **Image Size:** Specify the image size when the network camera transmits. Choose one among 1280 x 1024, 1280 x 720, 640 x 480, and 320 x 240.
- **Frame Rate:** Set the frame rate of H.264 image. Choose one value among 2, 3, 4, 5, 7, 10, 15,

20, 25, and 30 fps. The unit “fps” stands for “frames per second”.

 **Note:**

The frame rate is up to 15 fps at 1280x1024, and up to 30 fps at 640x480. However, if you would like choose frame rate over 15 fps, the IMAGE SIZE of H.264/MPEG-4/MJPEG setting page has to been selected 320x240 or 640x480 at the same time.

➤ **Quality:**

- **Auto:** The quality and bitrate will be adjusted automatically according to the frame rate.
- **Fixed Quality:** Select the value of quality among Medium, Standard, Good, Detailed and Excellent.
- **Fixed Bitrate:** Set the bitrate of H.264 image transmission for a line. Select one among 64Kbps, 128Kbps, 256Kbps, 384Kbps, 512Kbps, 768Kbps, 1Mbps, 1.5 Mbps, 2 Mbps, 3 Mbps, 4 Mbps, 5 Mbps, and 6 Mbps.

 **Note:**

Concerning how to select the suitable image quality for Fixed Quality or Fixed Bitrate, please refer to the **APPENDIX / A. Frame-rate & Bitrate Table**.

- **IP Interval:** It's the ratio of i-frame & p-frame. Select one among 1, 5, 10, 15, 30, 60, and 120. The ratio smaller, the streaming smoother.

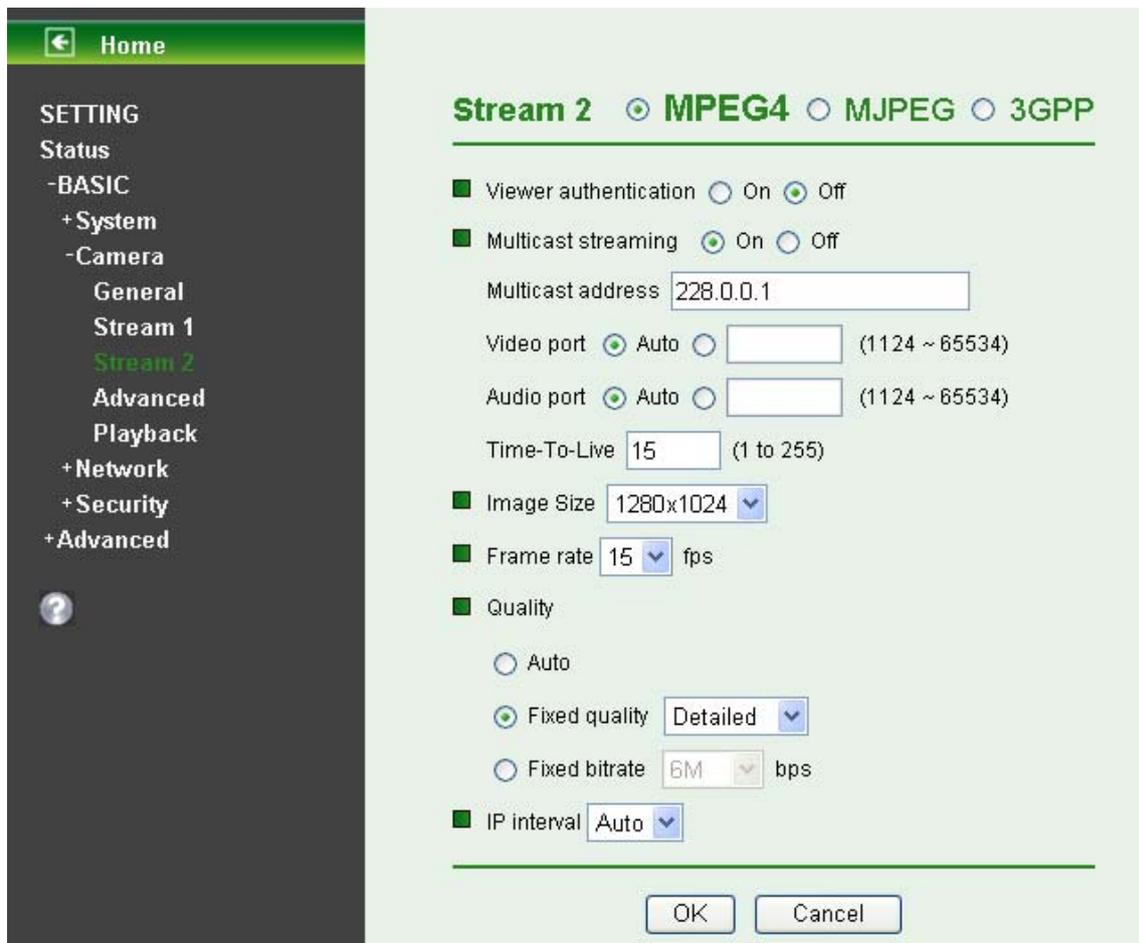
 **Note:**

1. The IP interval value means a ratio of “ P-frame / I-frame “ in a certain section of frame sequences. The ratio lower, the live view clear. However, live view will lag if the bandwidth isn't big enough. In this situation, you have to choose another bigger IP interval value to solve the problem.
2. If Video Clip Format of General Menu (go “**Setting** → **Basic** → **Camera** → **General**”), which is for recording compression, is chosen H.264, the IP interval option will appear “Auto” automatically and can't select. The limit is for avoiding damaging the recording quality of 5 seconds temporary-saved video recorded on FTP server.

6.2.3 Stream 2

There are three modes in Stream 2: MPEG4, MJPEG, and 3GPP.

I. MPEG4



➤ **Viewer Authentication:**

- **On:** If the viewer authentication is **On**, the users will be requested to key-in username and password when using QuickTime Player to have live viewing.
- **Off:** If the viewer authentication is **Off**, you can have live viewing on computer by QuickTime Player after entering “rtsp://ip:port/video.mp4” on the URL column directly.

➤ **Multicasting Streaming** (if it's on):

- **Multicast Address:** Specify the multicast server address.
- **Video / Audio Port:** Specify the transmission port number of the video data, from 1124 to 65534.
- **Time-To-Live:** Set the maximum TTL that multicast can pass through.

Note:

Time-To-Live option determines the maximum length of time (measure as the number of network routers that can be passed before data arrives at its destination or is dropped) within which a multicast packet must reach its destination.

- **Image Size:** Specify the image size when the network camera transmits. Choose one among 1280 x 1024, 1280 x 720, 640 x 480, and 320 x 240.
- **Frame Rate:** Set the frame rate of the MPEG-4 image. Choose one from 2, 3, 4, 5, 7, 10, and 15 fps. The unit “fps” stands for “frames per second.”

Note:

The frame rate is up to 15 fps at 1280x1024.

➤ **Quality:**

- **Auto:** The quality and bitrate will be adjusted automatically according to the frame rate.

- **Fixed Quality:** Select the value of quality among Medium, Standard, Good, Detailed and Excellent.
- **Fixed Bitrate:** Set the bitrate of MPEG-4 image transmission for a line. You can select one value among 64Kbps, 128Kbps, 256Kbps, 384Kbps, 512Kbps, 768Kbps, 1Mbps, 1.5 Mbps, 2 Mbps, 3 Mbps, 4 Mbps, 5 Mbps, and 6 Mbps.

Note:

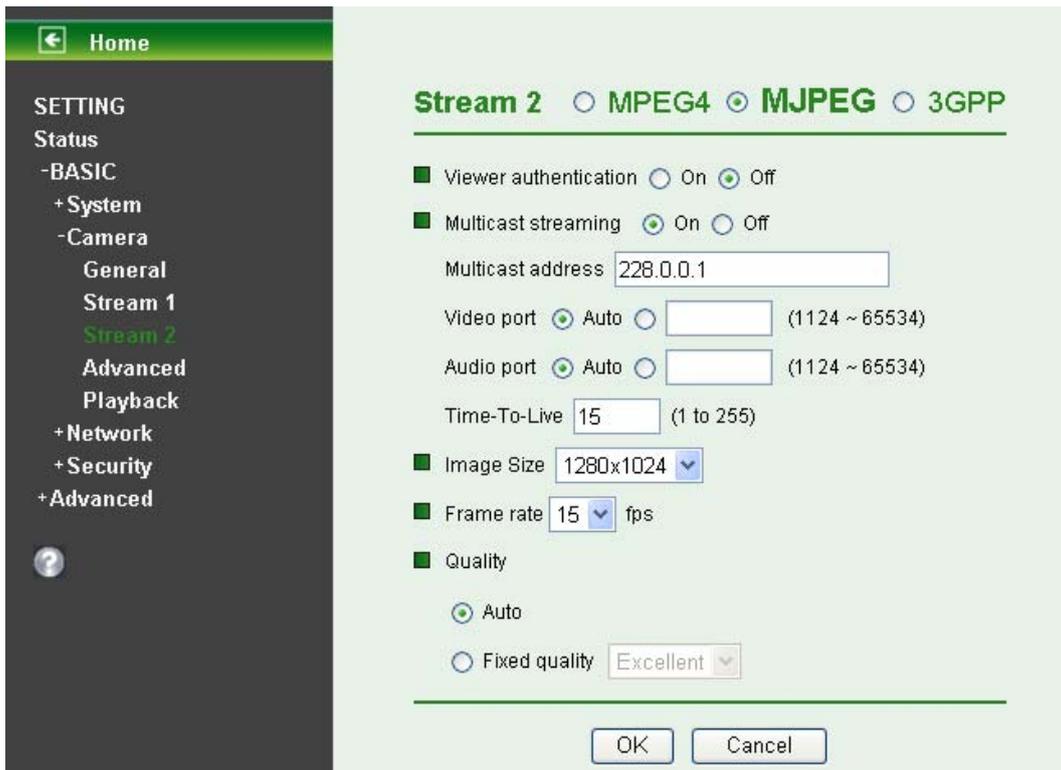
Concerning how to select the suitable image quality for Fixed Quality or Fixed Bitrate, please refer to the APPENDIX / A. Frame-rate & Bitrate Table.

- **IP interval:** It's the ratio of i-frame & p-frame. You can select one among Auto, 5, 10, 15, 30, 60, and 120. The ratio smaller, the streaming smoother.

Note:

1. The IP interval value means a ratio of "P-frame / I-frame" in a certain section of frame sequences. The ratio lower, the live view clear. However, live view will lag if the bandwidth isn't big enough. In this situation, you have to choose another bigger IP interval value to solve the problem.
2. If Video clip format of General Menu, which is for recording compression, is chosen MPEG-4, the IP interval option will appear "Auto" automatically and can't select. The limit is for avoiding damaging the recording quality of 5 seconds temporary-saved video recorded on FTP server.

II. MJPEG



➤ **Viewer Authentication:**

- **On:** If the viewer authentication is **On**, the users will be requested to key-in username and password when using QuickTime Player to have live viewing.
- **Off:** If the viewer authentication is **Off**, you can have live viewing on computer by QuickTime Player after entering "rtsp://ip:port/video.mjpg" on the URL column directly.

➤ **Multicasting streaming (if it's on):**

- **Multicast Address:** Specify the multicast server address.

- **Video / Audio Port:** Specify the transmission port number of the video data, from 1124 to 65534.
- **Time-To-Live:** Set the maximum TTL that multicast can pass through.

 **Note:**

Time-To-Live option determines the maximum length of time (measure as the number of network routers that can be passed before data arrives at its destination or is dropped) within which a multicast packet must reach its destination.

- **Image Size:** Specify the image size when the network camera transmits. Choose among 1280 x 1024, 1280 x 720, 640 x 480, and 320 x 240.
- **Frame Rate:** Set the frame rate of the MJPEG image. Choose one among 1, 2, 3, 4, 5, 7, 10, and 15 fps. The unit “fps” stands for “frames per second”.

 **Note:**

The frame rate is up to 15 fps at 1280x1024.

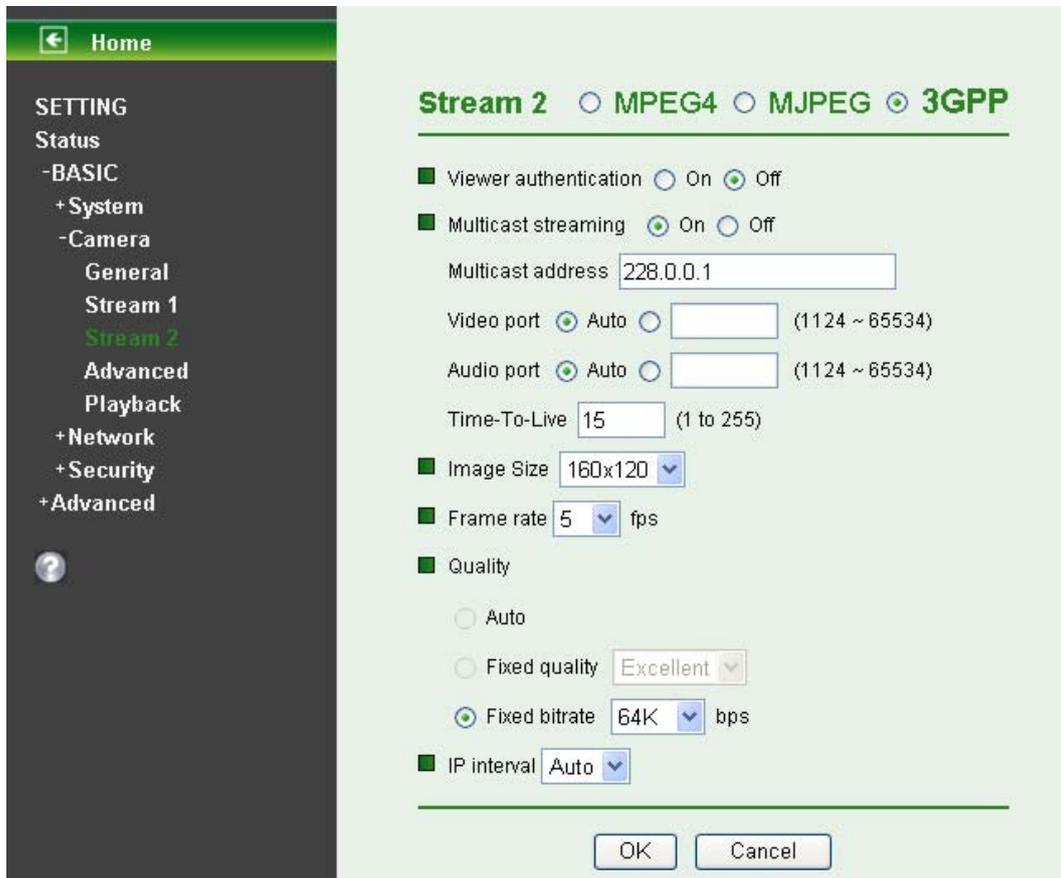
➤ **Quality:**

- **Auto:** The quality and bit rate will be adjusted automatically according to the frame rate.
- **Fixed Quality:** Select the value of quality among Medium, Standard, Good, Detailed and Excellent.

 **Note:**

Concerning how to select the suitable image quality for Fixed Quality or Fixed Bitrate, please refer to the **APPENDIX / A. Frame-rate & Bitrate Table**.

III. 3GPP



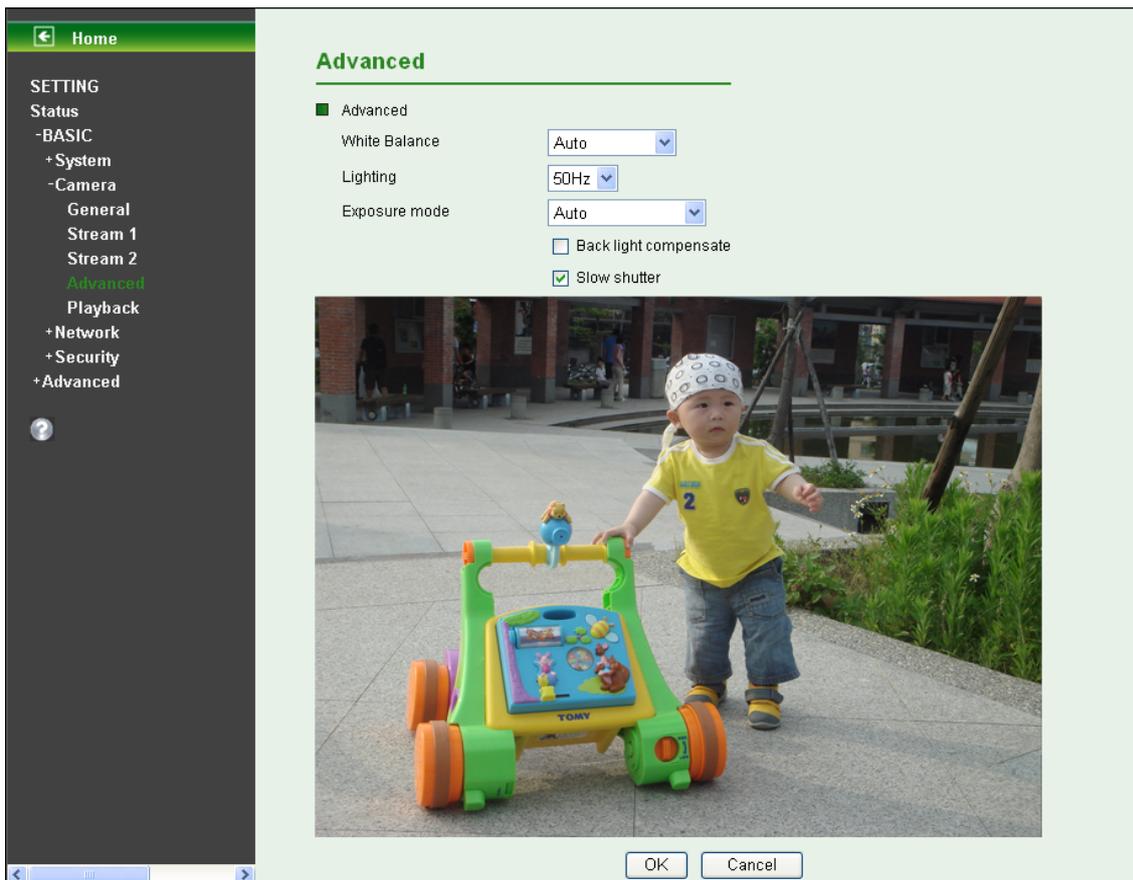
➤ **Viewer Authentication:**

- **On:** If the viewer authentication is **On**, the users will be requested to key-in username and password when using QuickTime Player to have live viewing.
 - **Off:** If the viewer authentication is **Off**, you can have live viewing on computer by QuickTime Player after entering “rtsp://ip:port/video.3gp” on the URL column directly.
- **Image Size:** Image size for 3GPP is 320 x 240 or 160 x 120.
- **Frame Rate:** Set the frame rate of the 3GPP image. Choose one between 5 or 10 fps.
- **Quality:**
- **Auto:** The quality and bit rate will be adjusted automatically according to the frame rate.
 - **Fixed Quality:** This item here can't be selected.
 - **Fixed Bitrate:** Set the bitrate of 3GPP image transmission for a line. You can select one among 256Kbps, 128Kbps, 64Kbps, 48Kbps, 32Kbps and 16Kbps.
- **IP Interval:** It's the ratio of i-frame & p-frame. You can select one among Auto, 5, 10, 15, 30, 60, and 120. The ratio smaller, the streaming smoother.

 **Note:**

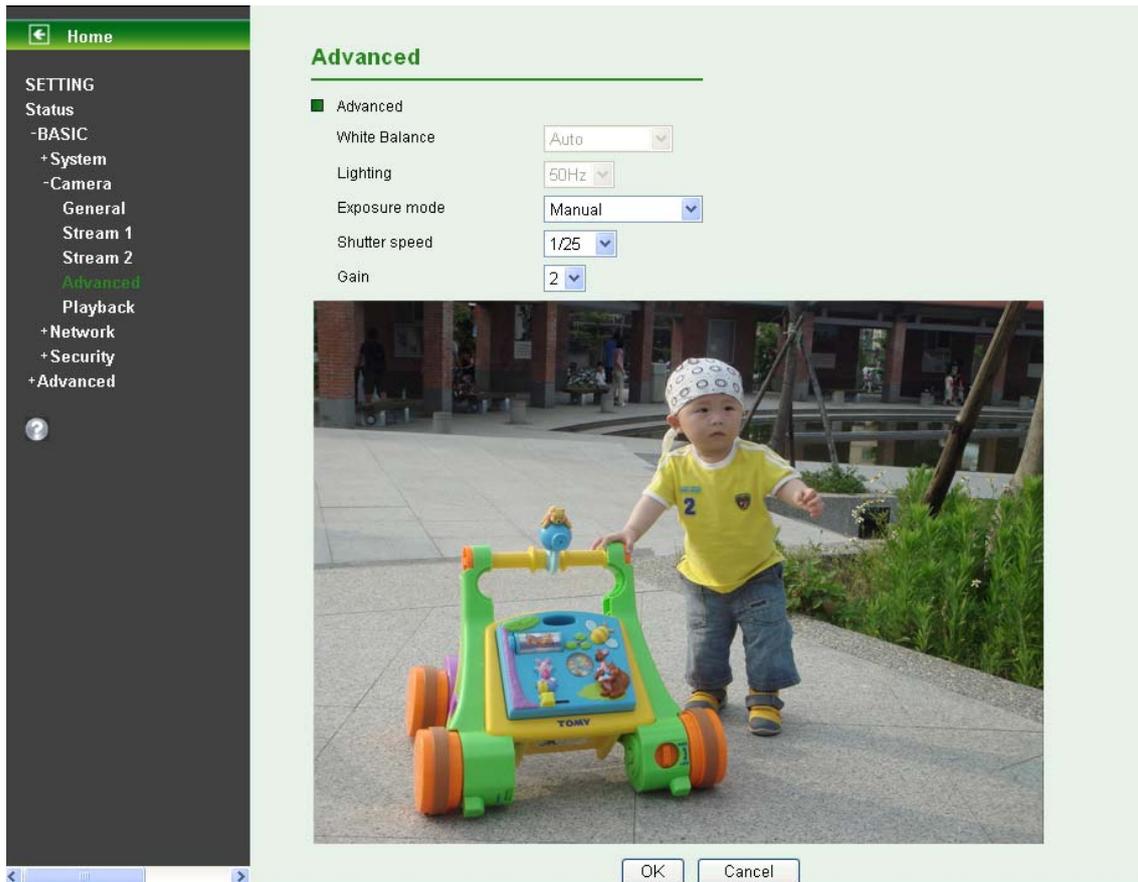
The IP interval value means a RATIO of “P-frame / I-frame” in a certain section of frame sequences. The ratio lower, the live view clear. However, live view will lag if the bandwidth isn't big enough. In this situation, you have to choose another bigger IP interval value to solve the problem.

6.2.4 Advanced



- **White Balance:** Choose the white balance among **Auto**, **Florescent**, **Incandescent**, **Sunny** and **Cloudy**.
- **Lighting:** The default setting of lighting environment is **Auto**. However, you may also choose **50** or **60** Hz upon the lighting environment of your country.
- **Exposure Mode:** Choose **Auto**, **High Speed Mode**, or **Manual** upon the capture environment.

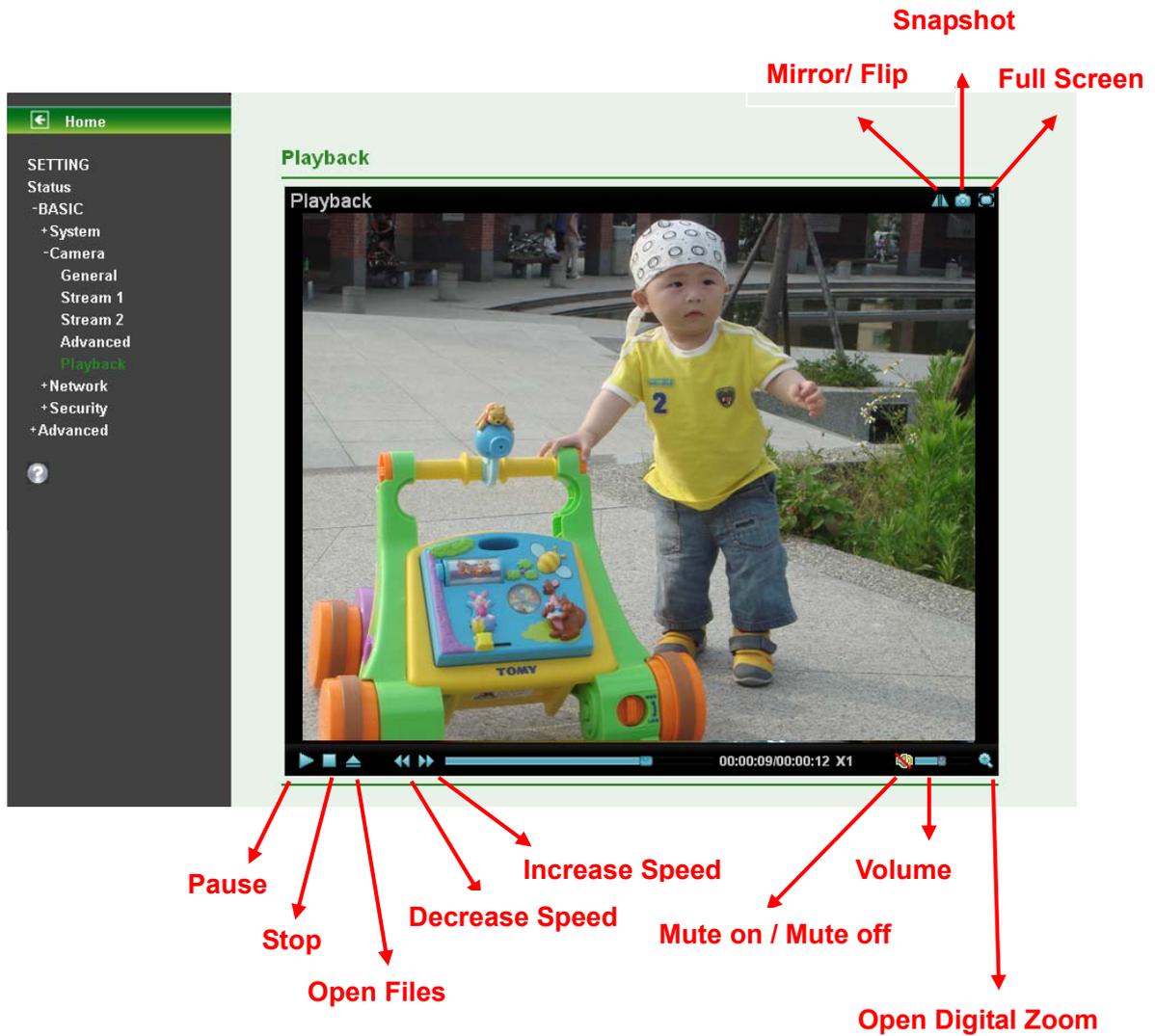
- **Auto:** Choose Auto and you have 3 options to adjust the exposure condition.
 - ✓ **Back Light Compensate:** Click it on and it helps avoid problems in situations where the main subject ends up being too dark, such as when shooting people or other subjects in front of a bright background.
 - ✓ **Slow Shutter:** Click it on and the range of shutter speed will be from 1/5 to 1/120 sec. It will adjust the shutter speed automatically and helpful to capture the clear image when shooting in a dark place.
- **High Speed Mode:** Choose High Speed Mode and the shutter speed will be close 1/120 sec. as far as possible to help to capture the motion image of sports or high-speed phenomena.
- **Manual:** Choose Manual and you can select options, including **Shutter Speed** and **Gain**.



- ✓ **Shutter Speed:** The default value is 1/30 sec. and you can select the value among 1/4, 1/6, 1/12, 1/30, 1/60, and 1/120 sec.
- ✓ **Gain:** The default value is 2 and the value is adjustable among 0~9. It will influence the brightness of the image. The more the value is, the brighter the image is. However, the higher gain value might cause more noise.

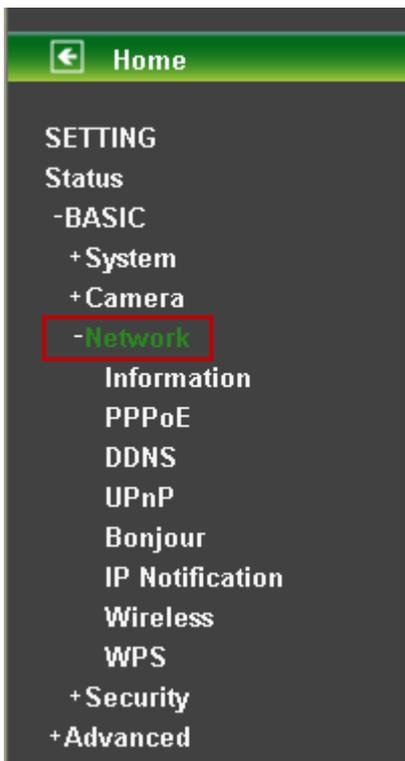
6.2.5 Playback

Click the button of “**Open Files**” and select the video file recorded previous, and you can look for the desired image. Then, you can have the live view in the screen. The function of each button is as below illustration:



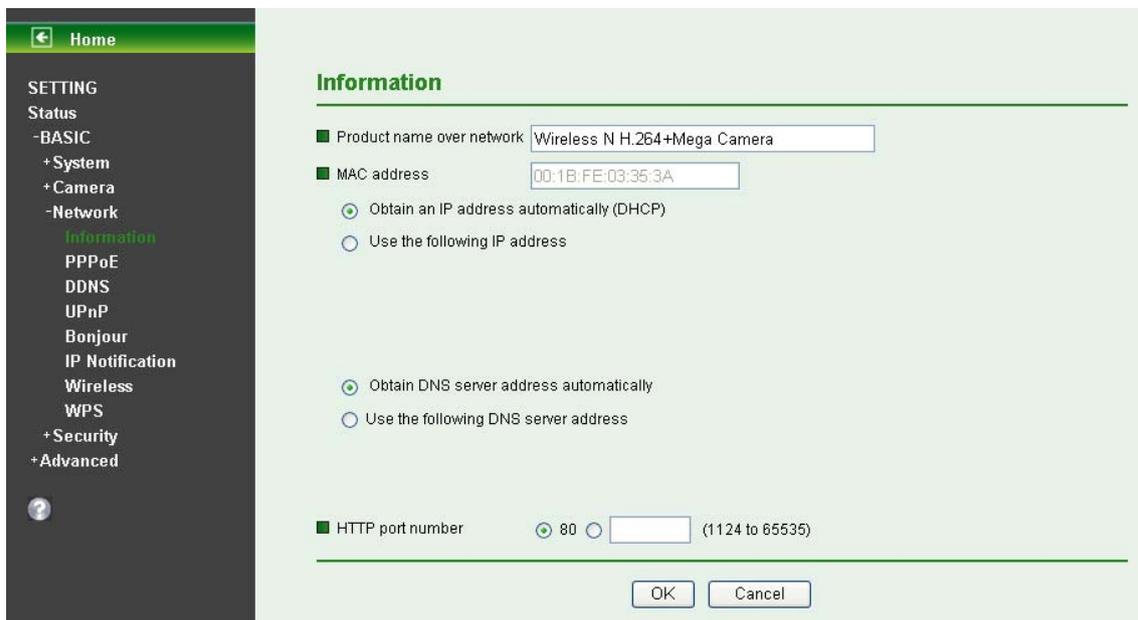
6.3 Network

Click the folder of Network to display the sub folders including **Information**, **PPPoE**, **DDNS**, **UPnP**, **Bonjour**, **IP Notification**, **Wireless** and **WPS**.



6.3.1 Information

Display the MAC address of the device.



- **Obtain an IP address automatically (DHCP):** If a DHCP server is installed on the network, to select this while the IP address is assigned by the DHCP server.
- **Obtain DNS server address automatically:** Select this to obtain the address of DNS server automatically.

The screenshot shows the 'Information' tab in the network settings. The 'Product name over network' is 'Wireless N H.264+Mega Camera'. The 'MAC address' is '00:1B:FE:03:35:3A'. Under 'Use the following IP address', the IP address is '192.168.1.106', the subnet mask is '255.255.255.0', and the default gateway is '192.168.1.100'. Under 'Use the following DNS server address', the primary DNS server is '192.168.1.100' and the secondary is '0.0.0.0'. The 'HTTP port number' is set to '80'.

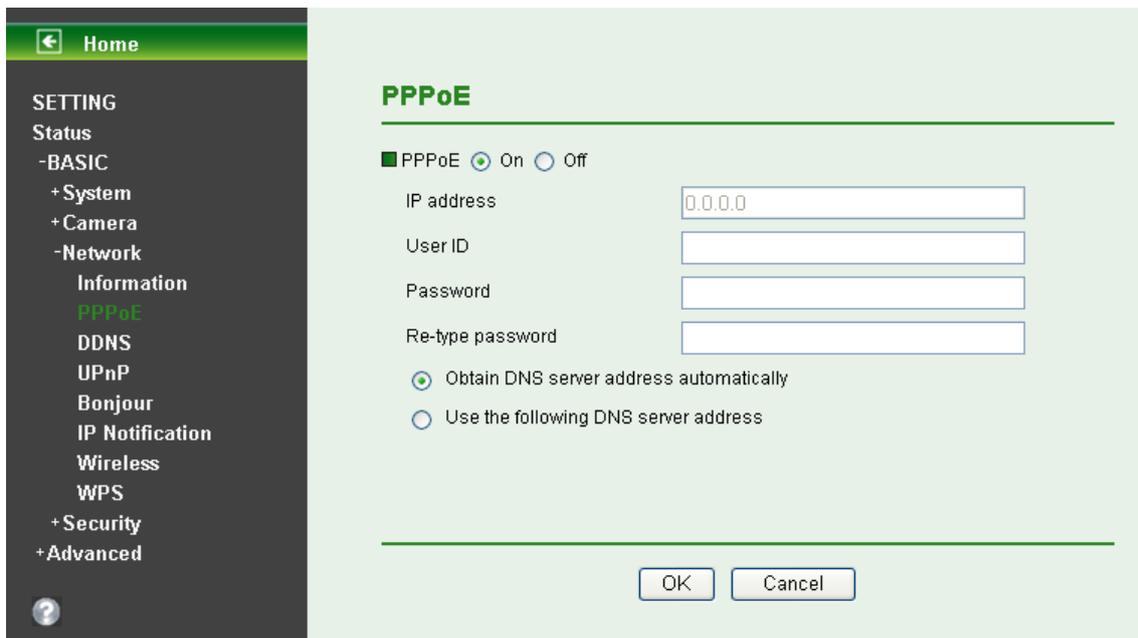
- **Use the following IP address:** Select this option when the fixed IP address is set.
 - **IP address:** Enter the IP address of the device.
 - **Subnet mask:** Enter the subnet mask.
 - **Default gateway:** Enter the default gateway.
- **Use the following DNS server address:** Select this when you set the fixed address as the IP address of DNS server.
 - **Primary DNS server:** Enter the IP address of the primary DNS server.
 - **Secondary DNS server:** Enter the IP address of the secondary DNS server, if necessary.
- **HTTP Port Number:** Select **80** in general situations. If you want to use a port number other than **80**, select the text box and enter a port number between 1024 and 65535.
 - When you have set the HTTP port number to a number other than 80 on the Network Setting screen in the Setup Program, access the device by typing the IP address of the device on the web browser as follows: Example: when HTTP port number is set to 2000 <http://192.168.1.100:2000/>

Note:

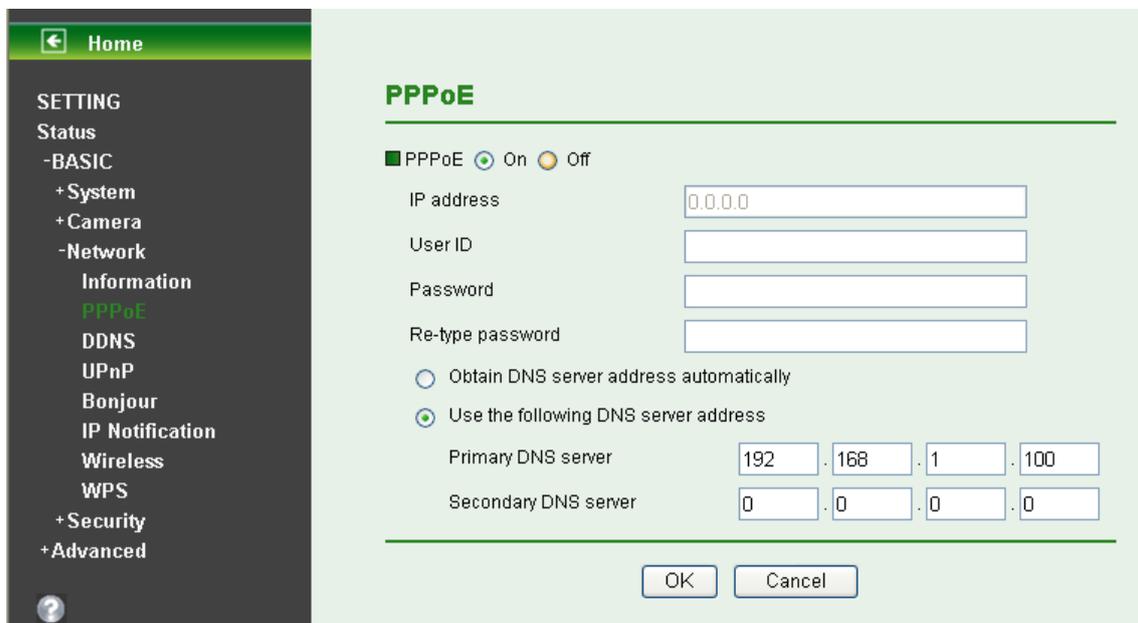
- 1) The IP Camera needs to be rebooted after it finishes changing the network setting completely.
- 2) If you connect the IP Camera with your computer directly, the default network domain of camera is 192.168.1.xx

6.3.2 PPPoE

If your ISP provides Dynamic IP with authentication by username and password, type all PPPoE information in this part. When using the PPPoE function, you need to turn on the DDNS or IP Notification function at same time.



- **IP Address:** The IP address obtained at the PPPoE connecting with network.
- **User ID:** Enter the user ID for authentication necessary for PPPoE connections. Type it up to 64 characters.
- **Password:** Enter the password for authentication necessary for PPPoE connections. Type it up to 32 characters.
- **Re-type Password:** Re-type the password to confirm.
- **Obtain DNS server address automatically:** Select this to obtain the address of DNS server automatically.
- **Use the following DNS server address:** Select this when you set the fixed address as the IP address of DNS server.



- **Primary DNS server:** Enter the IP address of the primary DNS server.
- **Secondary DNS server:** Enter the IP address of the secondary DNS server.

Note:

- 1) PPPoE (Point-to-Point Protocol over Ethernet): PPPoE is a network protocol for encapsulating

Point-to-Point Protocol frames inside Ethernet frames. PPPoE connection is used mainly with ADSL service where individual users connect to the ADSL transceiver (modem) over Ethernet work. It is also widely used in XDSL (digital subscriber line such as ADSL, VDSL or SDSL)

- 2) The IP Camera needs to be rebooted after it finishes changing the network completely. For more details, please refer to [Section 6.1.3 Initialize](#).
- 3) The IP Camera with Intelligent IP Installer can't be found after PPPoE is active, but you can get the IP address of the Camera by IP Notification function. For the details, please refer to [Section 6.3.6 IP Notification](#).
- 4) If the IP Notification function is not configured to report the IP address of the Camera, you can reset the Camera to its factory default settings by pressing the Reset button. Then the Camera can be found by Intelligent IP Installer.

6.3.3 DDNS (Dynamic DNS)

DDNS is a system which allows the domain name data held in a name server to be updated in real time. The most common use for DDNS is allowing an internet domain name to be assigned to a computer with a varying / dynamic IP Address. This makes it possible for other sites on the internet to establish connection to the machine without needing to track the IP Address themselves.

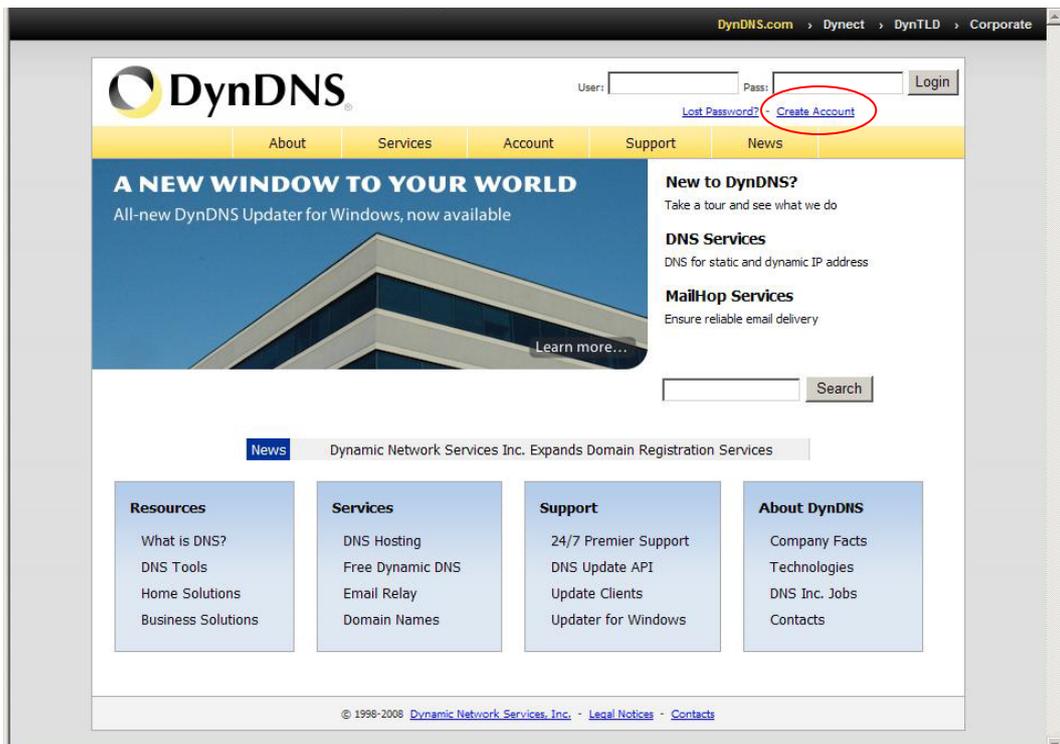
The screenshot shows the DDNS configuration page. On the left is a navigation menu with 'DDNS' selected. The main content area has a title 'DDNS' and a status indicator 'DDNS On'. Below this are several input fields: a dropdown for 'Server name' (http://www.dyndns.org), a text box for 'User ID' (ipcamera), two masked text boxes for 'Password' and 'Re-type password', a text box for 'Host name' (ipcamera.homeip.net), and radio buttons for 'Periodical Update' (Auto selected, Periodical 5 min). At the bottom are 'OK' and 'Cancel' buttons.

- **Server Name:** Choose the DDNS Server from the list.
- **User ID:** Enter the user ID for authentication necessary for DDNS connections. Type it up to 64 characters.
- **Password:** Enter the password for authentication necessary for DDNS connections. Type it up to 32 characters.
- **Re-type Password:** Re-type the password to confirm.
- **Host Name:** Enter the host name that is registered to the DDNS server.

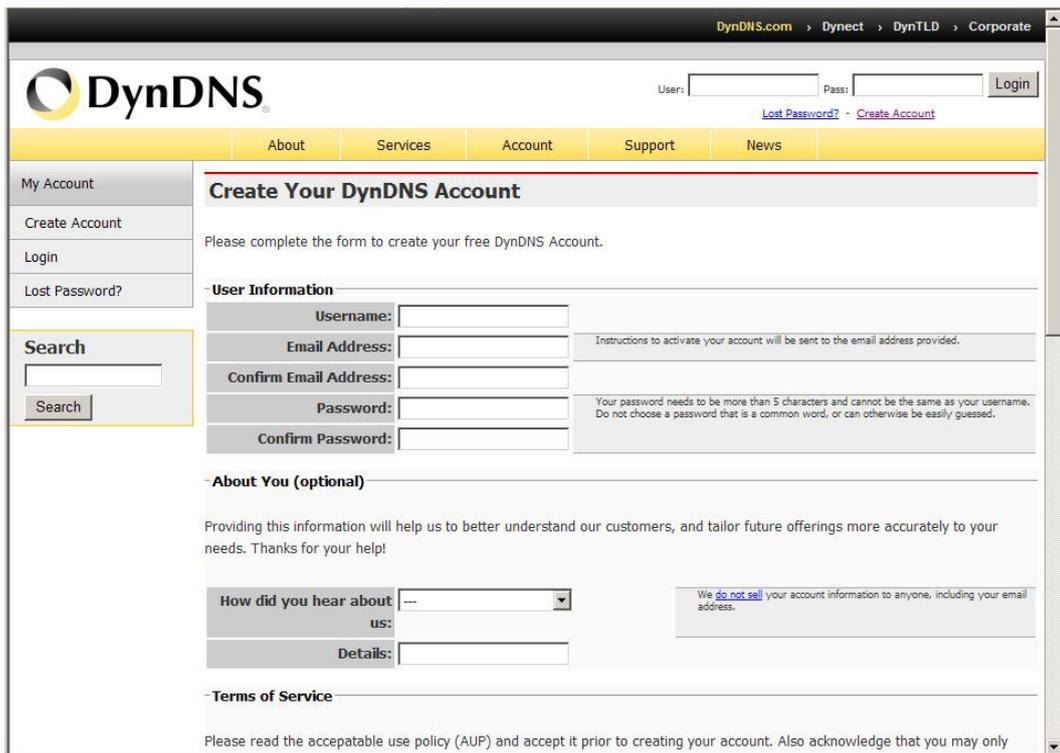
Note:

How to apply DDNS username and Host name? You can apply DDNS username and Host name by the following steps:

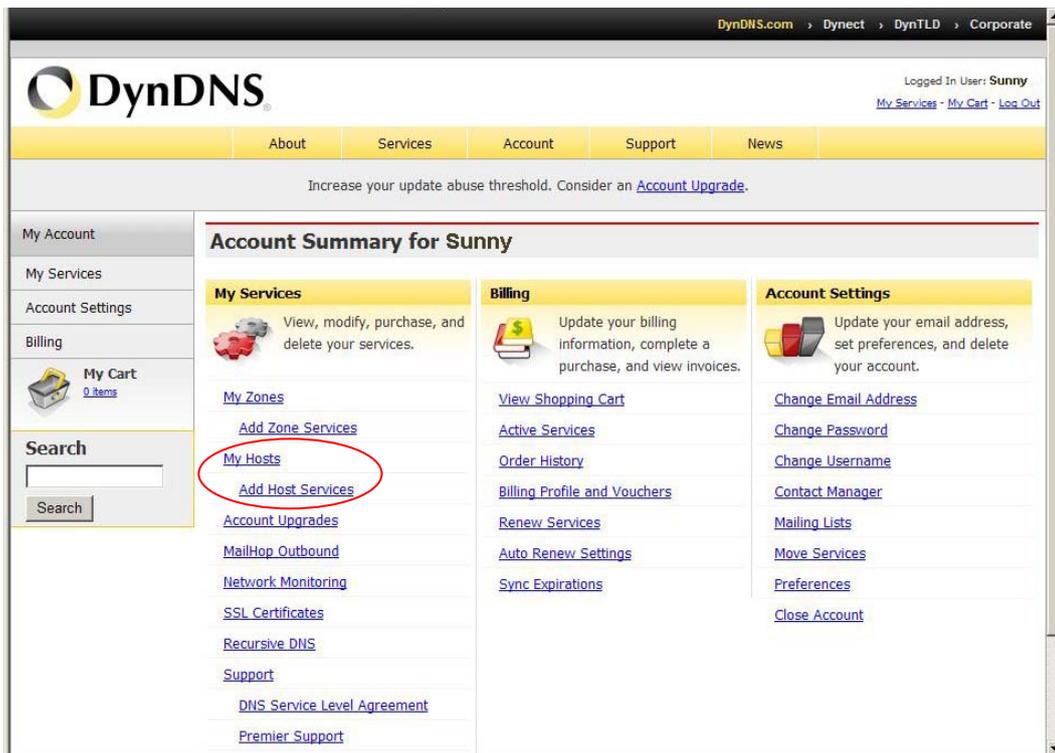
1. Login <http://www.dyndns.org>, click the **Creat Account**.



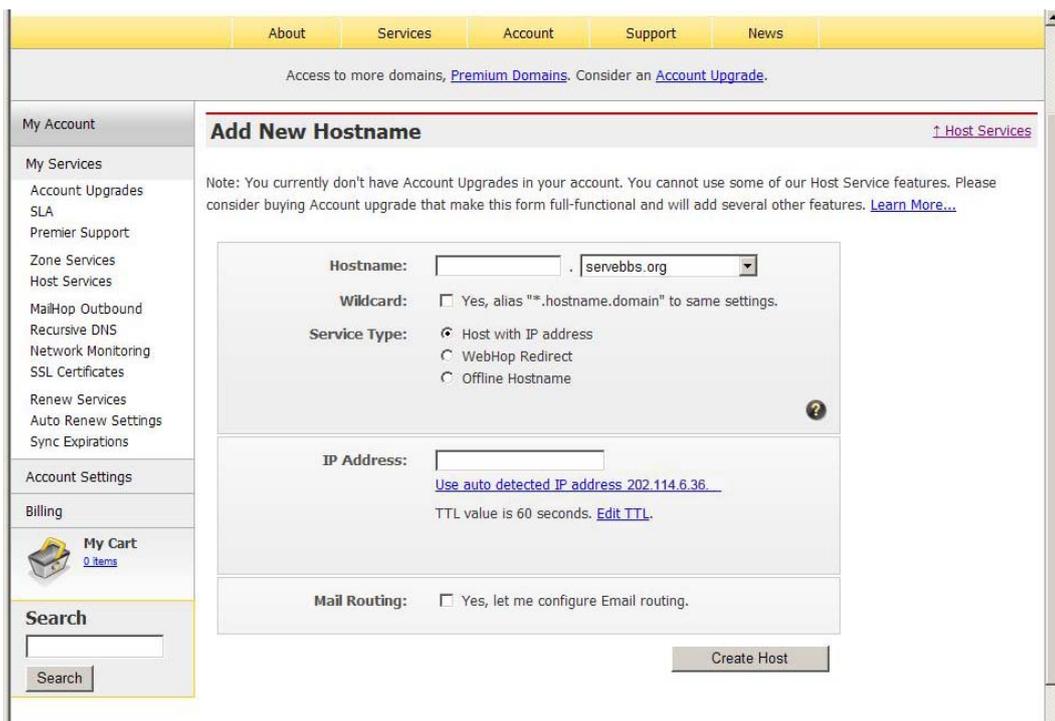
2. Input all information and follow step by step with DynDNS.



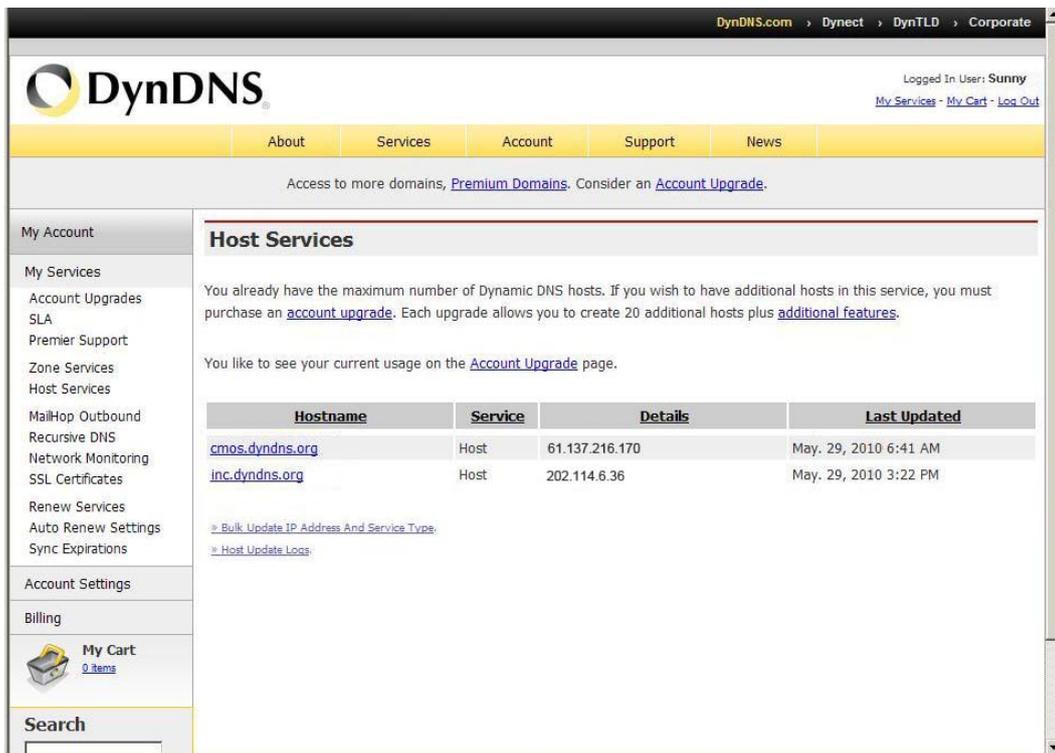
3. Login with new account and click **Account** → **My Hosts** → **Add Host Services**.



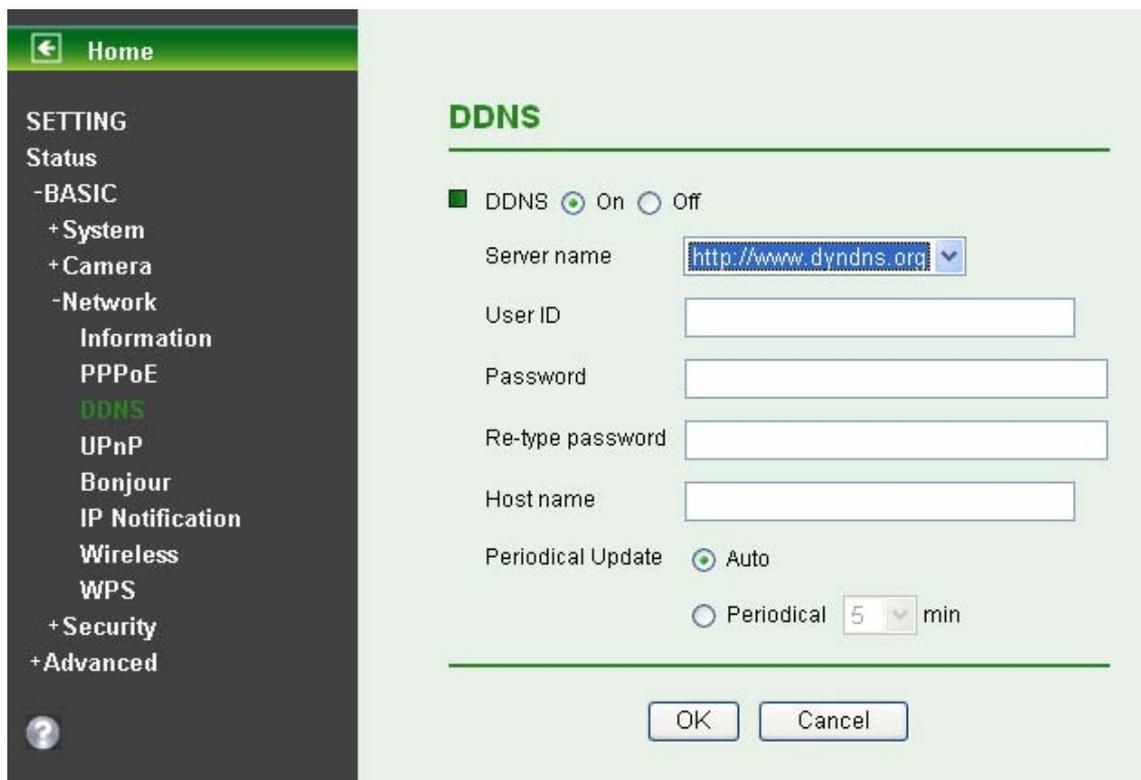
4. Type domain in the **Hostname** field and select **sub-domain**.



5. After typing information, check your DDNS service

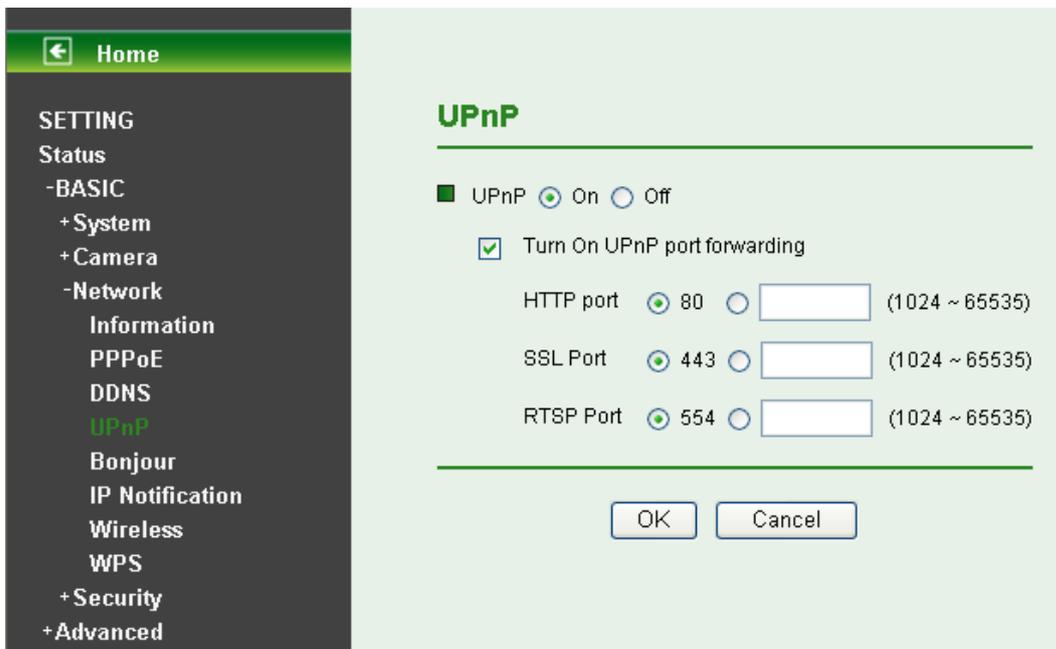


6. Type your DDNS User ID, Password and Host name in **Setting** → **Network** → **DDNS**. After completing setting, reboot IP Camera.



6.3.4 UPnP (Universal Plug and Play)

If you have a Router to access to internet and the Router supports UPnP IGD function, you need to turn on the UPnP Port Forwarding function.



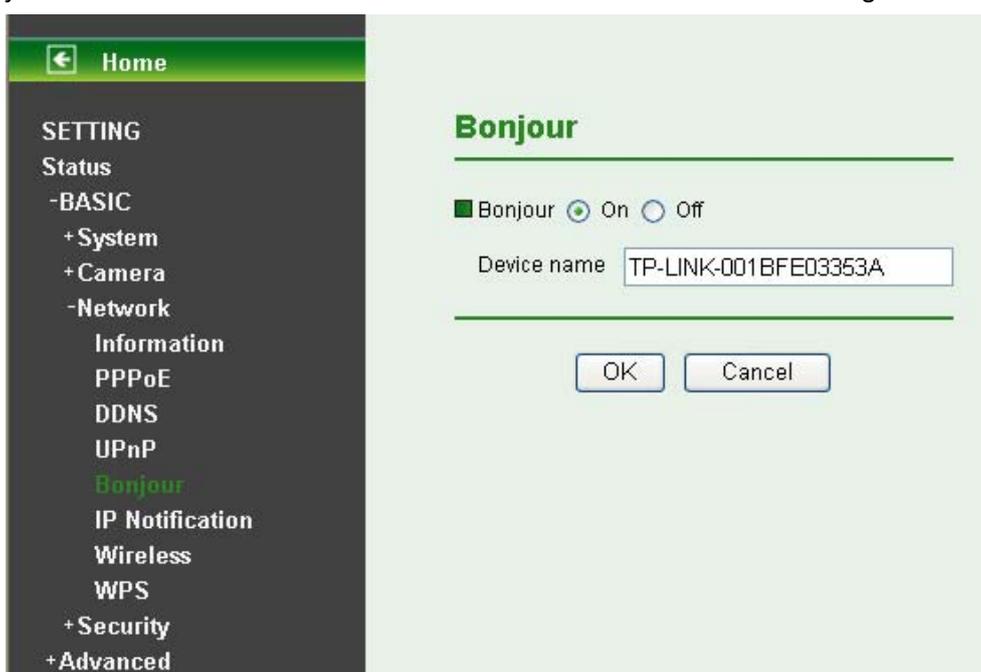
- **HTTP Port:** Enter the HTTP port number and default HTTP port is 80.
- **SSL Port:** Enter the SSL port number and default SSL port is 443.
- **RTSP Port:** Enter the RTSP port, default value is 554 for computer view.

Note:

UPnP (Universal Plug and Play): UPnP is a set of computer network protocol. It allows devices to connect seamlessly and simplify the implementation of networks in the home and corporate environments.

6.3.5 Bonjour

Bonjour, also known as zero-configuration networking, enables automatic discovery of computers, devices, and services on IP networks. Bonjour uses industry standard IP protocols to allow devices to automatically discover each other without the need to enter IP addresses or configure DNS servers.



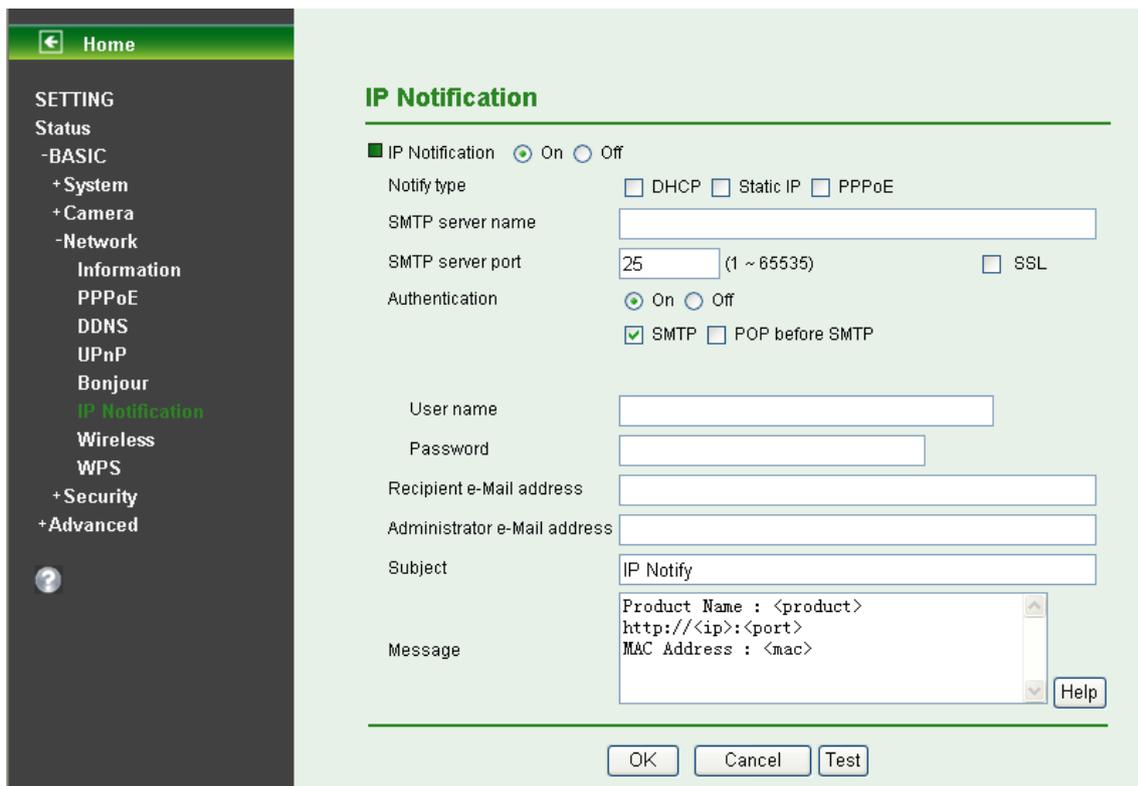
- **Device Name:** Enter Device Name you wish.

 **Note:**

How to use Bonjour in your Windows Browser UI? Please check the link below:
<http://www.apple.com/support/downloads/bonjourforwindows.html>

6.3.6 IP Notification

Once **IP Notification** is set to "On", the Camera will automatically send an e-mail notification to tell users its updated network parameters if the network settings about IP address, network connection type, HTTP port or wireless connection is changed or completed. (Some settings will take effect after rebooting.)



- **Notify Type:** You can select the notify type among DHCP, Static IP, and PPPoE. When the network settings related to the chosen notify type are changed, an e-mail notification will be sent to inform you of the updated network information of the Camera.
- **SMTP Server Name:** Type the SMTP server name up to 64 characters, or the IP address of the SMTP server.
- **SMTP Server Port:** You can set port number from 1~65535 according to your mail server. The default value is 25.
 - **Security setting:** Tick SSL box if the mail server you use has security restriction.

 **Note:**

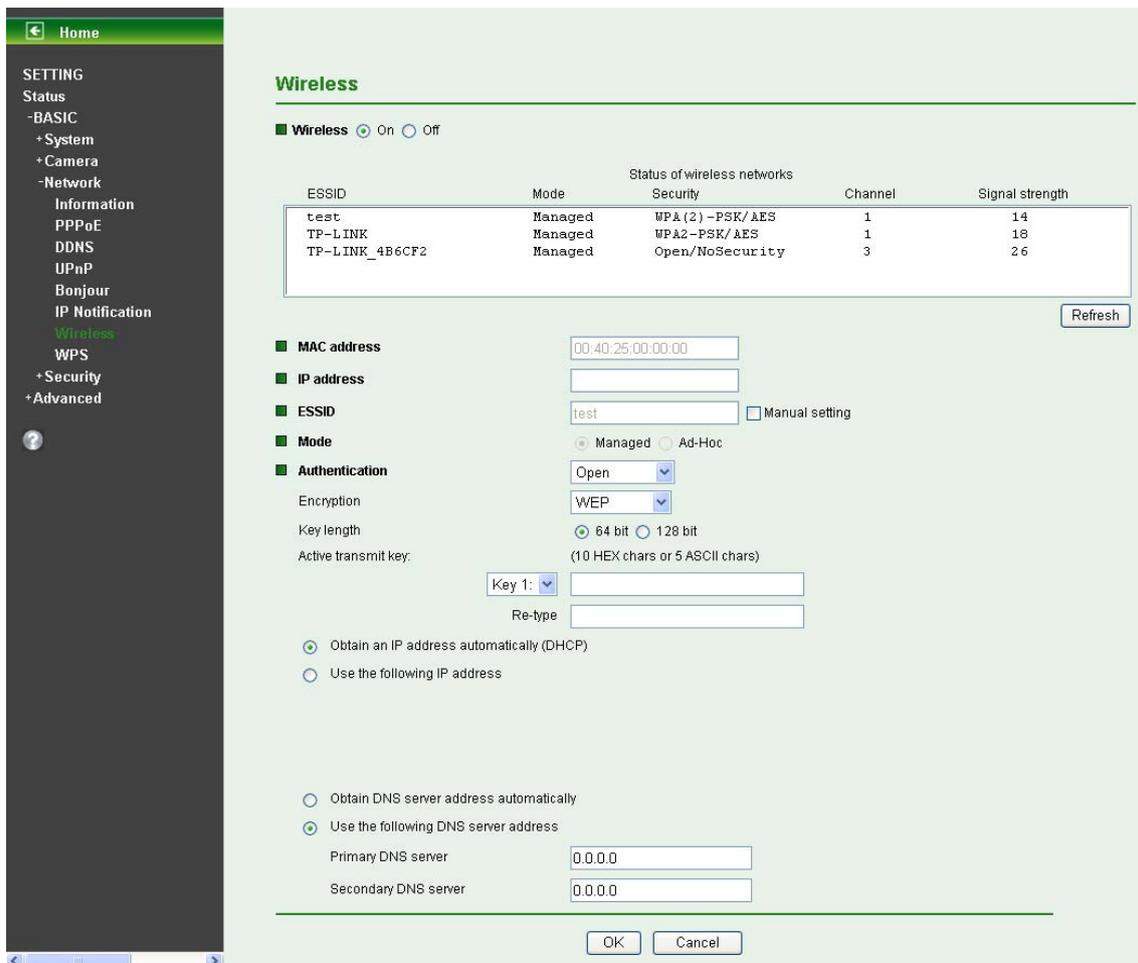
If you use g-mail as your mail server, you should set 25 as your port number and tick SSL box.

- **Authentication:** Select the authentication required when you send an email.
 - **Off:** Select if no authentication is necessary when an email is sent.
 - **On:** When authentication is necessary for sending an e-mail, there are three options: **SMTP**, **POP before SMTP** or **Both**.

- **SMTP:** Select if SMTP authentication is necessary for sending e-mail.
- **POP before SMTP:** Select if POP before SMTP authentication is necessary for sending e-mail.
 - ✓ **POP server name:** It is necessary when the **POP before SMTP** is selected in **Authentication**. Type the POP (receiving mail) server name up to 64 characters, or type the IP address of the POP server. This setting is necessary when the SMTP server which sends e-mails performs authentication using the POP user account.
 - ✓ **User name, Password:** Type the user name and password of the user who has the mail account. This setting is necessary when the SMTP server which sends e-mails performs authentication.
- **Recipient E-mail Address:** Type the recipient e-Mail address up to 64 characters. You can specify up to three recipient E-mail addresses.
- **Administrator E-mail Address:** Type the Administrator e-Mail address up to 64 characters. This address is used for reply mail and sending system messages from the SMTP server.
- **Subject:** Type the subject/title of the e-Mail up to 64 characters. With respect to mail which is sent according to the IP notification.
- **Message:** Type the text of the E-mail up to 384 characters. Default value provides network information including IP, Port, MAC, Model, Firmware Version and Web Version.

6.3.7 Wireless

The wireless network has to be set up by using cable network connection. After setting the Camera correctly, the wireless function can work without cable network connection. Wireless settings must be the same as the access point or ad-hoc device. When changing the settings they should always be made first in the Camera and then in the wireless access point. This ensures that the Camera is always accessible when making changes.



➤ Status of Wireless Networks

The list above is the result of network scan. The network currently linked to will be shown in blue. The following information is provided.

- **ESSID** - The name of a wireless network (or ad-hoc device). If the same name occurs several times this means that several access points for that network were found. The Camera cannot be configured to only associate with one particular access point.
- **Mode** - Shows if the network type is Managed (access point or router) or Ad-Hoc (another client).
- **Security** - Shows which type of security the network uses. See below for the security types supported by the Camera.
- **Channel** - Shows the wireless channel currently in use.
- **Signal strength** - Shows the signal strength.
- **Refresh**: Click the **Refresh** button to rescan the existing wireless networks in the local area.

➤ Wireless Setting

These settings decide how the Camera is connected to the wireless network.

- **MAC address** – This displays the MAC address of the IP Camera.
- **IP address** – Displays the IP address of the IP Camera. It displays blank, 0.0.0.0 or an IP Address. When it is blank, the Camera doesn't establish physical link with access point. The 0.0.0.0 means that physical link is established, and that IP Camera is trying to get the IP address. When it displays an IP address, users can use wireless network.

- **ESSID (ESSID is sometimes written as SSID)** - This is the name of the wireless network to which the Camera is ready to connect. The field accepts up to 32 alphanumeric characters. The name must be exactly the same as that used in the wireless access point; otherwise, the connection will not be established.

Leaving this field blank means the Camera will attempt to access the nearest unsecured network. There are two methods to enter the ESSID field.

- ✓ Method 1: Click the desired wireless network in the network list above, then the field will display the ESSID of that network.
- ✓ Method 2: Tick the box “Manual Setting” behind the field, then enter the ESSID.

- **Mode** – The Managed option means the Camera will attempt to connect to an access point. The Ad-hoc option allows the Camera to connect to other wireless device clients.

- **Authentication** – The authentication of the wireless network. All the parameters for authentication must be the same as that of the desired AP or Router. **64/128-bit WEP, WPA-PSK** and **WPA2-PSK** encryption security are supported by the Camera. Click the desired wireless network in the network list above, the corresponding option will be selected as same as that of the desired AP or Router automatically. Here we select the first item in the network list above for example to introduce how to join in a wireless network.

Select the first item, the figure will display as shown below:

ESSID	Mode	Security	Channel	Signal strength
test	Managed	WPA (2) - PSK / AES	1	14
TP-LINK	Managed	WPA2-PSK/AES	1	18
TP-LINK_4B6CF2	Managed	Open/NoSecurity	3	26

MAC address

IP address

ESSID Manual setting

Mode Managed Ad-Hoc

Authentication

Encryption

Passphrase

Re-type

(64 HEX chars or 8 to 63 ASCII chars)

Obtain an IP address automatically (DHCP)

Use the following IP address

IP address

Subnet mask

Default gateway

Use the following DNS server address

Primary DNS server

Secondary DNS server

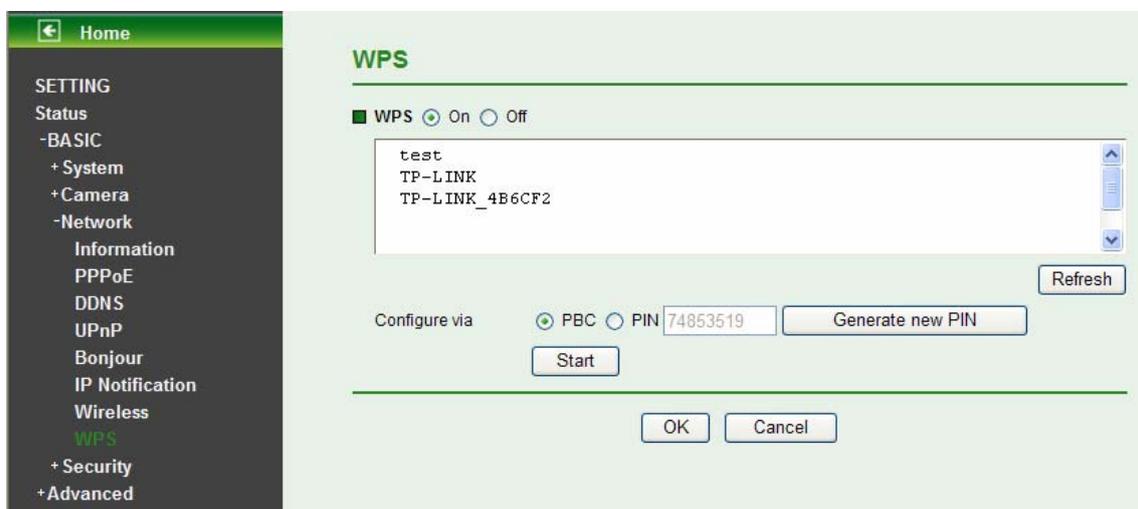
- ✓ **Encryption** – Keep this option the same with that of network **test**.
- ✓ **Passphrase** - Enter the desired AP/ Router’s password here.
- ✓ **Re-type** – Enter the password above again to confirm it.

- ✓ **Obtain an IP address automatically (DHCP)** – If a DHCP server is installed and enabled on the network, to select this for the IP address can be assigned by the DHCP server.
- ✓ **Use the following IP address** - Select this when the fixed IP address is set.
 - ✧ **IP address:** Enter the IP address of the Camera, which must be in the same subnet with that of the desired AP/ Router.
 - ✧ **Subnet mask:** Enter the subnet mask.
 - ✧ **Default gateway:** Enter the default gateway.
- ✓ **Obtain DNS server address automatically** - If you select **Obtain an IP address automatically (DHCP)** above, this entry will display in the figure. Select this to obtain the address of DNS server automatically.
- ✓ **Use the following DNS server address** - Select this when you set the fixed address as the IP address of DNS server.
 - ✧ **Primary DNS server:** Enter the IP address of the primary DNS server.
 - ✧ **Secondary DNS server:** Enter the IP address of the secondary DNS server, if necessary.

6.3.8 WPS

WPS (Wi-Fi Protected Setup) function allows you to add a new wireless device to an existing network quickly.

If the router supports Wi-Fi Protected Setup (WPS) or Quick Setup Security (QSS), you can establish a wireless connection between wireless IP Camera and router using either Push Button Configuration (PBC) method or PIN method.

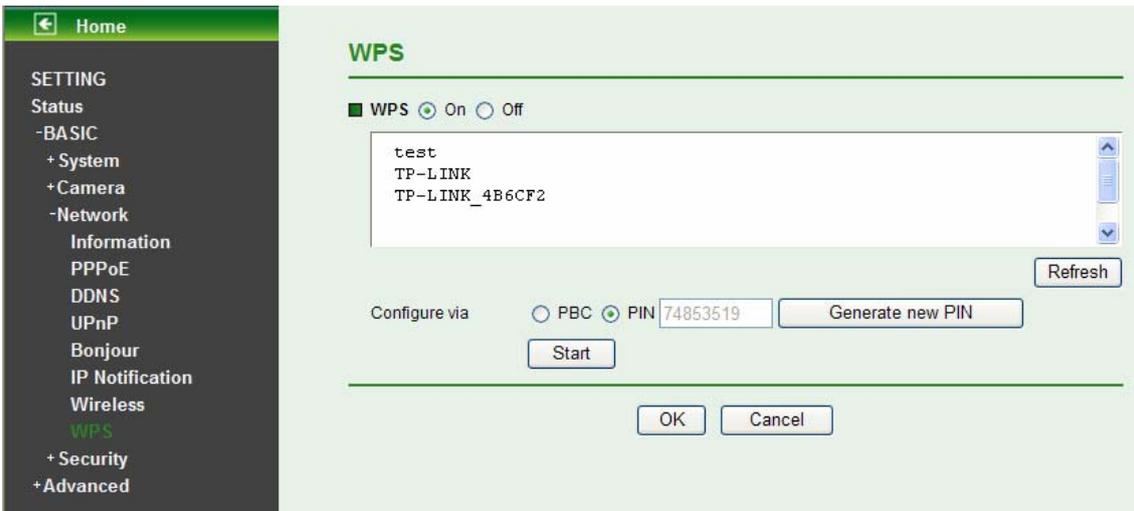


I. PBC (Push Button Configuration) method

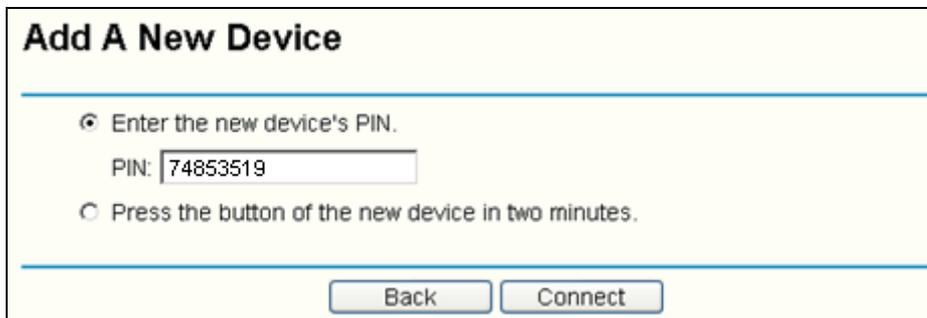
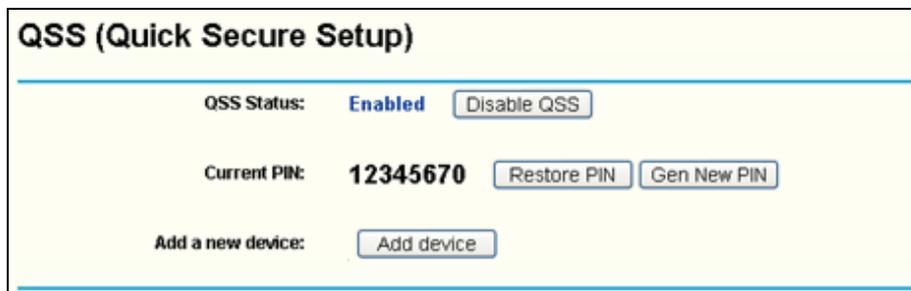
1. Press the QSS button of the router.
2. Press the **WPS** button on the Camera in two minutes.

II. PIN method

1. Firstly, check **PIN** in the following screen. You can also click the **Generate new PIN** to get a new PIN.

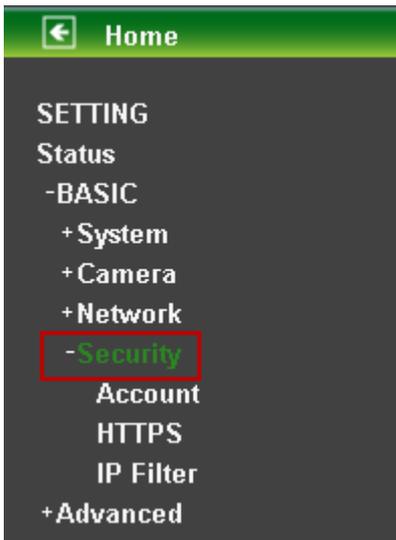


2. Secondly, open the router's Web-based Utility and click **QSS** link on the left of the main menu. Then the following screen will appear. Click **Add device**. And then select **Enter the new device's PIN** and enter the PIN value of the Camera, click **Connect**.



6.4 Security

Click the folder of **Security** to display the sub folders including **Account**, **HTTPS**, and **IP Filter**.



6.4.1 Account

The device fault account and password setting is “admin / admin”. That means everyone who knows IP address can access the device including all configuration. It is necessary to assign a password if the device is intended to be accessed by others.

User ID	User name	Password	Re-type Password	Viewer mode
Administrator	admin	•••••	•••••	Admin
User 1				Admin
User 2				Admin
User 3				Admin
User 4				Admin
User 5				Admin
User 6				Admin
User 7				Admin
User 8				Admin
User 9				Admin

Viewer authentication On Off

OK Cancel

- **User Name:** Set a user name between 4-16 characters.
- **Password:** Set a password between 4-16 characters.
- **Re-type Password:** Re-type the password to confirm.
- **Viewer Mode:** Set the user mode among Admin, Operator, and Viewer. Different viewer mode has different limits of authority.
 - The Admin mode has all authority of configuration.
 - The Operator mode can not only view the Live View but also control the PTZ (only for PTZ models).

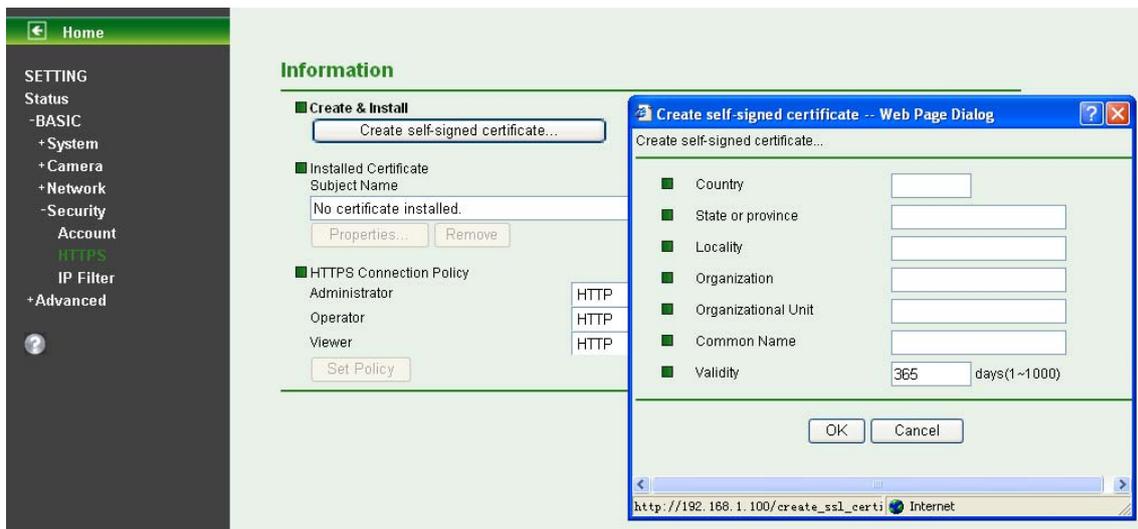
- The Viewer mode only can view the Live View.
- **Viewer Authentication:** Select whether the authentication is needed when users access to live view.
 - **On:** Authentication is required to let different users have different levels of permission to access the Camera view.
 - **Off:** Authentication is not required to access the Camera. Check **Off** and select one (among **Admin**, **Operator** and **Viewer**) from the pull-down list as the permission, then all users can view directly the video with the default permission without entering username and password.
 - * If you want to have a higher authority than the default, you can key in appropriate username and password in the diag box that pops up when performing advanced operations that are only allowed by the higher authority.

6.4.2 HTTPS

HTTPS is a URL scheme used to indicate a secure HTTP connection. It is syntactically identical to the `http://` scheme normally used for accessing resources using HTTP. Use an `https://URL/` with a different default TCP port (443) and an additional encryption/authentication layer between the HTTP and TCP. You can use the IP Camera through HTTPS easily by using `https://` instead of `http://`.



- **Create & Install:** Create a self-signed certificate for HTTPS to recognize.
- **Installed Certificate:** Display or remove the properties of the installed certificate.
- **HTTPS Connection Policy:** Set HTTPS connection policy for different level of users.
- To use the HTTPS encryption, please set up **“Create self-signed certificate”** for the first time you use the HTTPS function, and then set up the connection policy for different users.

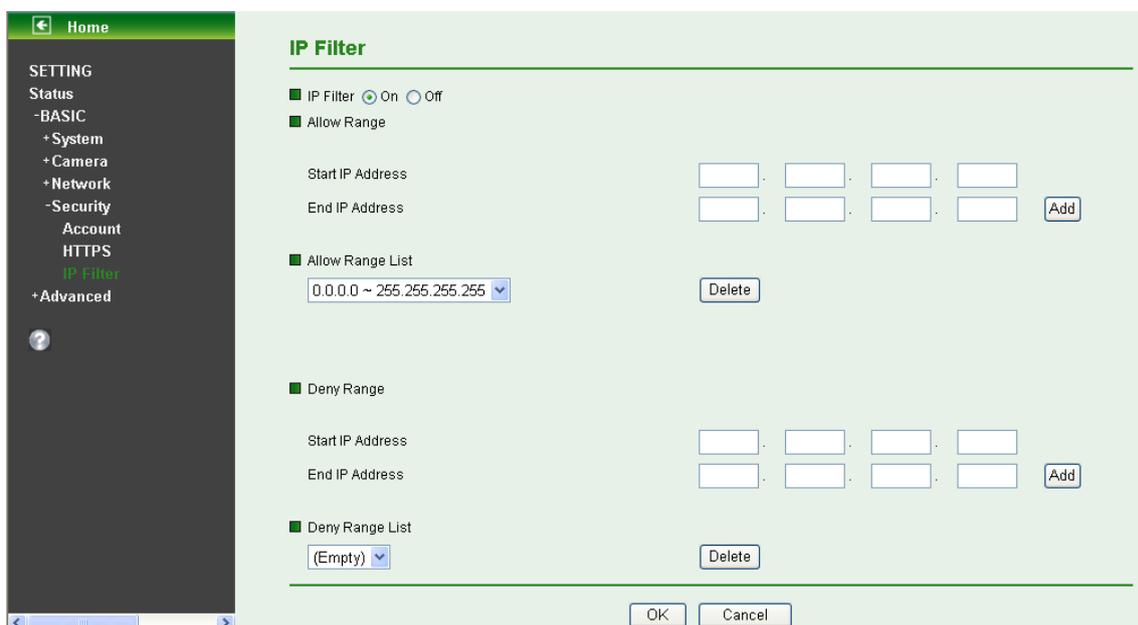


Note:

When enable HTTPS with RTSP on mode, the IP Camera only protect the setting such as username and password and do not protect video and audio. When enable HTTPS with RTSP off mode, the IP Camera will protect all setting including video and audio.

6.4.3 IP Filter

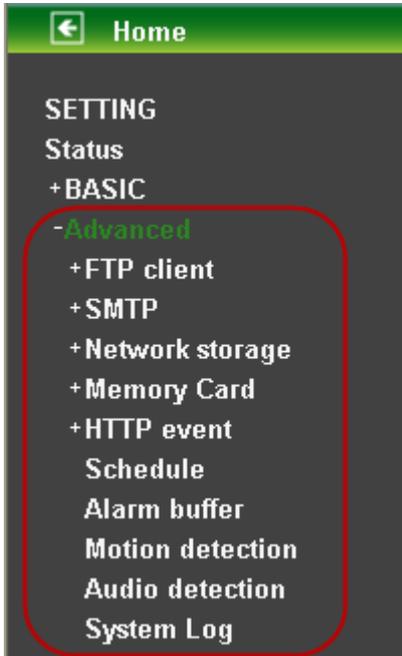
IP Filter provides the function of controlling the range of IP address, similar with firewall service. This feature can only be applied to the users with the right of Operator or Viewer except the Admin users.



- **IP Filter:** Select if you would like to have IP filter function.
- **Allow Range:** The default range is from 0.0.0.0 to 255.255.255.255. Enter the “Start IP address” and “End IP address” in the range, then you can add a new allow range in allow range list.
- **Allow Range List:** Except the default range 0.0.0.0~255.255.255.255, the list allows to add four more sets of allow range at most.
- **Deny Range:** You can define the deny range by entering “Start IP address” and “End IP address”.
- **Deny Range List:** You can define not more than five sets of deny range in the list.

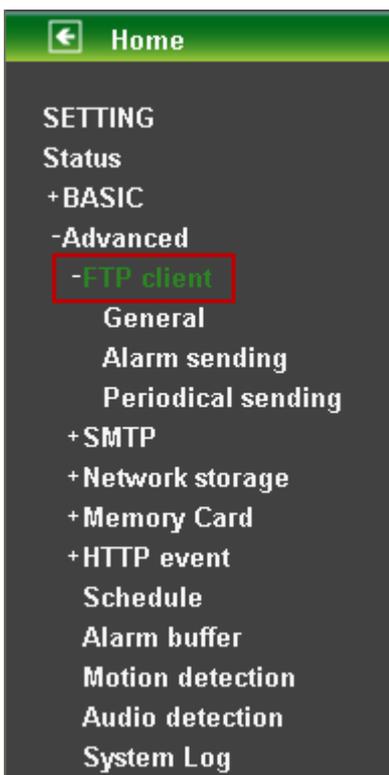
Chapter 7 Setting-Advanced

Click the folder of Advanced to display the sub folders including **FTP client**, **SMTP**, **Network storage**, **Memory Card**, **HTTP event**, **Schedule**, **Alarm buffer**, **Motion detection**, **Audio detection**, and **System Log**.



7.1 FTP Client

Use this menu to set up for capturing and sending an image or video clip to an FTP server. By using FTP client function, you can send files which has been shot and recorded linked with the external sensor input or with the built-in motion detection function to FTP server. FTP client setting menu is composed of three tabs: **General**, **Alarm Sending** and **Periodical Sending**.



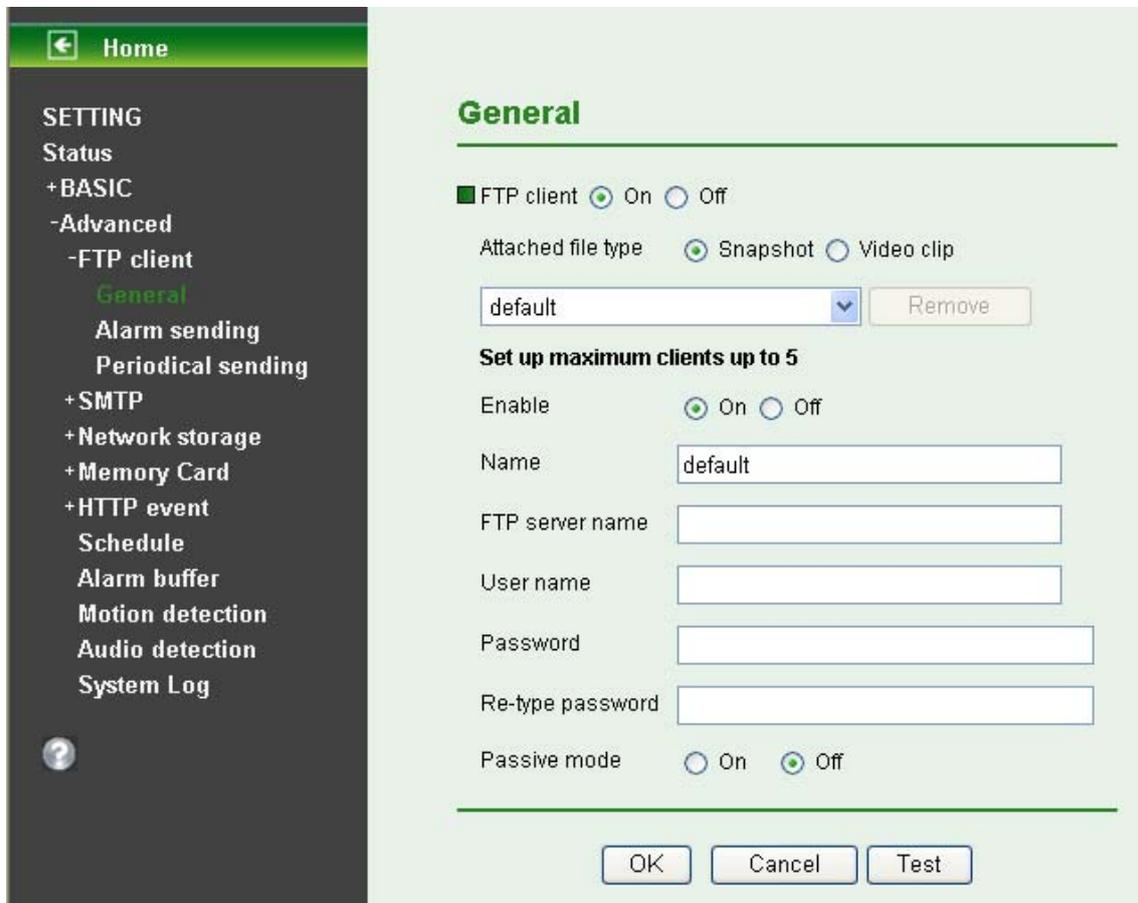
7.1.1 General

Select **On** when you use FTP function. The FTP client Setting screen appears.

Select **Off**, when you do not wish to use the FTP client function.

Note:

The frame rate and operability on the main viewer may decrease while a file is being transmitted by the FTP client function.

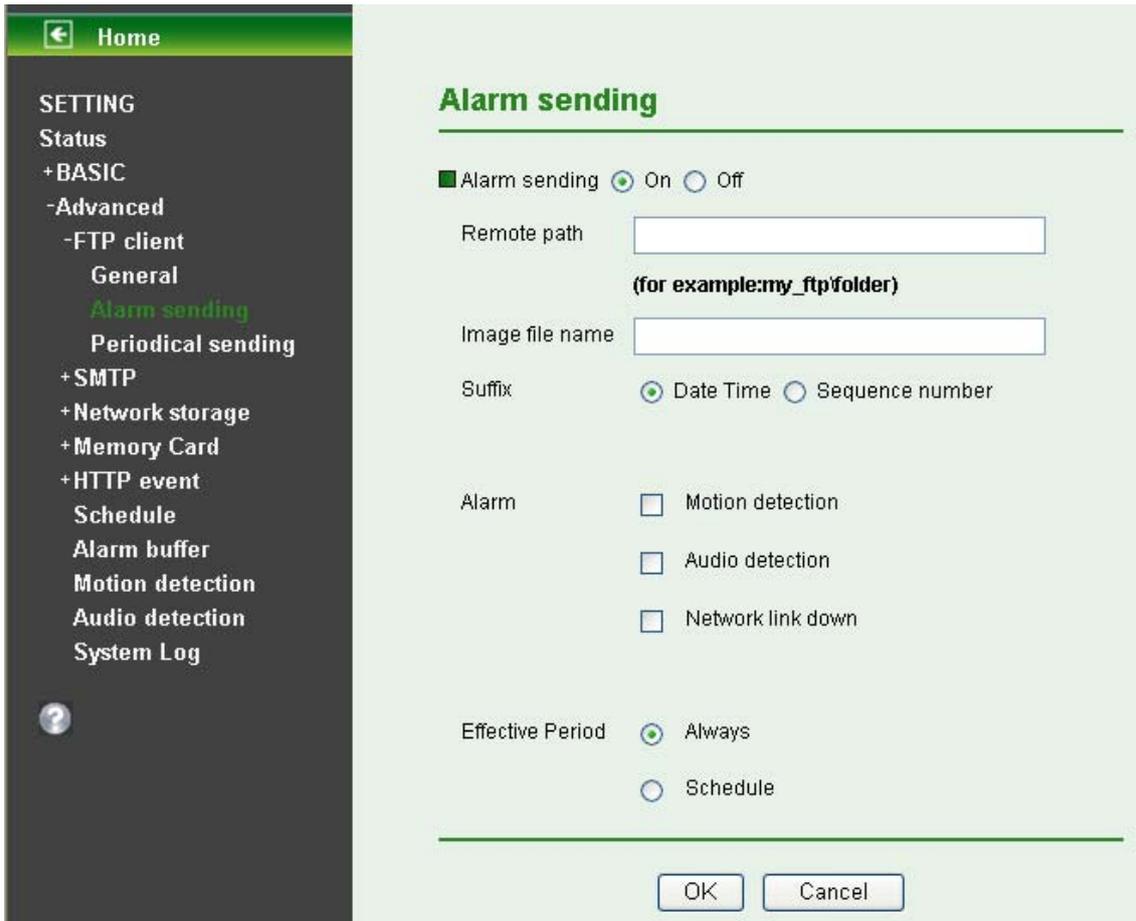


- **Attached file Type:** You can choose snapshot or video clip for alarm sending. Select “Snapshot,” one snapshot will be transmitted to the specified FTP server while motion detection / audio detection triggered. Select “Video clip,” one 5-seconds video clip will be transmitted.
-
- **Name:**
- **FTP Server Name:** Type the FTP server name to upload still images up to 64 characters, or the IP address of the FTP server.
- **User Name:** Type the user name for the FTP server.
- **Password:** Type the password for the FTP server.
- **Re-type Password:** To confirm the password, type the same characters as you typed in the Password box.
- **Passive Mmode:** Set whether you use the passive mode of FTP server or not when connecting to FTP server. Select **On** to connect to FTP server using the passive mode.
- **Test:** After setting the FTP server information, you can tick the test key to test if the connection between IP CAM and FTP server works.

7.1.2 Alarm Sending

Set to forward a snapshot or video clip file to the specified FTP server linked with the alarm detection by

the external sensor input or by the built-in motion detection function. Select **On** to send the file to FTP server linked with the alarm detection.



- **Remote Path:** Type the path to the destination in FTP server up to 64 characters.
- **Image File Name:** Type the file name you want to assign to the files when sending to the FTP server. You can use up to 10 alphanumeric characters, - (hyphen) and _ (underline) for naming.
- **Suffix:** Select a suffix to add to the file name
 - **Date & time:** The date & time suffix is added to the Image file name. The date/time suffix consists of lower two-digits of year (2 digits), month (2 digits), date (2 digits), hour (2 digits), minute (2 digits), second (2 digits), and consecutive number (2 digits), thus 14-digit number is added to the file name.
 - **Sequence number:** A consecutive number of 10 digits between 1 and 4294967295 and two fixed digits 00 is added to the Image file name.
 - **Sequence number clear:** Click **Clear** and the suffix of the sequence number returns to 1.
- **Alarm**
 - **Motion Detection:** Click it on for using **Motion Detection** function as a sensor. You can set motion detection function at the motion detection function screen.

Note:
You can set motion detection at motion detection screen. (Please go “**Setting** → **Advanced** → **Motion Detection** → **Setting**”)
 - **Audio Detection:** Click it on for using **Audio Detection** function as a sensor. You can set audio detection function at the audio detection function screen.

Note:
You can set audio detection at audio detection screen. (Please go “**Setting** → **Advanced**

→**Audio Detection** → **Setting**")

- **Network Link Down:** Click it on to receive a snapshot or a video clip while network link down. If **Attached File Type** (go "**Setting** → **Advanced** → **FTP Client** → **General**") was clicked as **video clip**, you can use **Alarm Buffer** function as a sensor. It's for recording audio file in the IP CAM before and after disconnected network.

 **Note:**

You can set alarm buffer at alarm buffer screen. (Please go "**Setting** → **Advanced** → **Alarm Buffer** → **Setting**")

➤ **Effective Period:** Set the period when the periodical sending is effective.

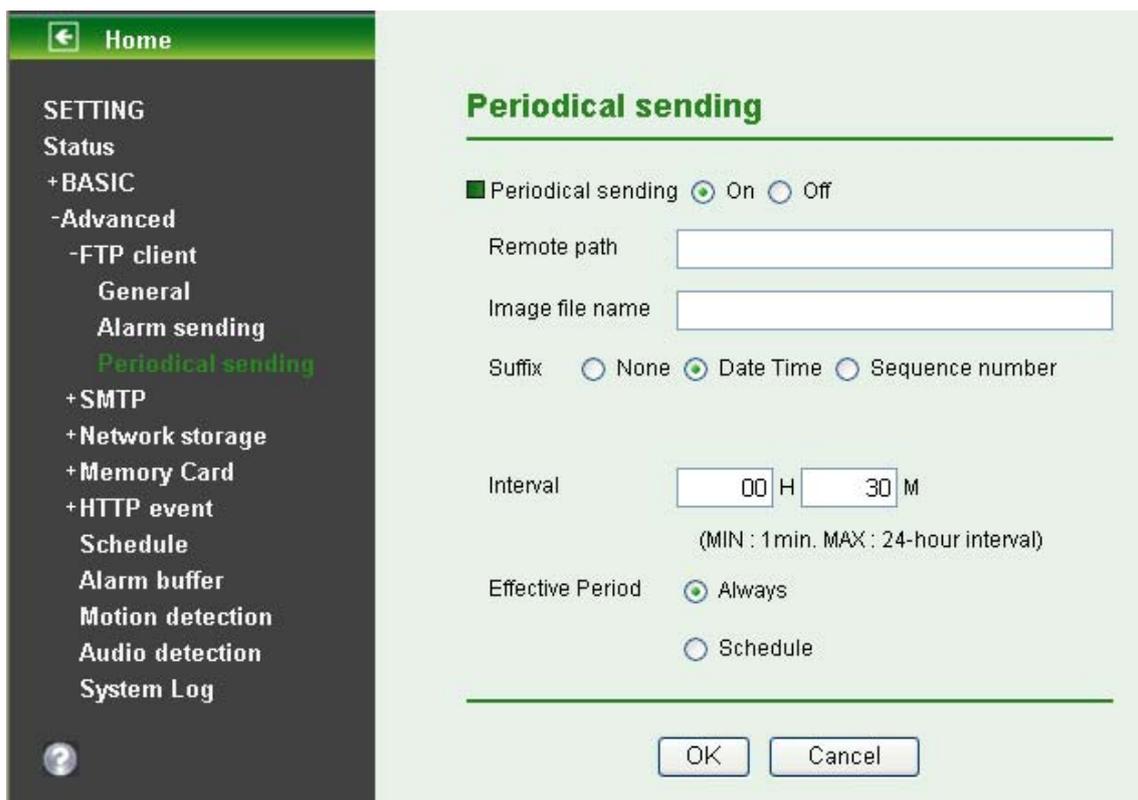
- **Always:** The periodical sending is always effective.
- **Schedule:** You can specify the period when the periodical sending is effective in the Schedule setting in the other section.

 **Note:**

You can set schedule function at schedule screen. (Please go "**Setting** → **Advanced** → **Schedule** → **Setting**")

7.1.3 Periodical Sending

Select **On**, you can set to send an image file to FTP server periodically.



The screenshot shows the 'Periodical sending' configuration screen. On the left is a dark sidebar menu with a 'Home' button at the top. The menu items include: SETTING, Status, +BASIC, -Advanced, -FTP client, General, Alarm sending, Periodical sending (highlighted in green), +SMTP, +Network storage, +Memory Card, +HTTP event, Schedule, Alarm buffer, Motion detection, Audio detection, and System Log. A question mark icon is at the bottom of the sidebar. The main content area has a light green background and is titled 'Periodical sending'. It features a 'Periodical sending' toggle set to 'On'. Below are input fields for 'Remote path' and 'Image file name'. The 'Suffix' section has radio buttons for 'None', 'Date Time' (selected), and 'Sequence number'. The 'Interval' is set to '00 H 30 M' with a note '(MIN : 1 min. MAX : 24-hour interval)'. The 'Effective Period' has radio buttons for 'Always' (selected) and 'Schedule'. At the bottom are 'OK' and 'Cancel' buttons.

- **Remote Path:** Type the path to storage location of FTP server which you have authorized.
- **Image File Name:** Type the file name of snapshot or video clip up to 10 alphanumeric characters, - (hyphen) and _ (under score).
- **Suffix:** Select a suffix to be added to the file name.
 - **None:** The name of the sent file will be the Image file name.
 - **Date & time:** The date & time suffix is added to the Image file name. The date & time suffix consists of lower two-digits of year (2 digits), month (2 digits), date (2 digits), hour (2 digits), minute (2 digits) and second (2 digits), and consecutive number (2 digits), thus 14-digit

number is added to the file name.

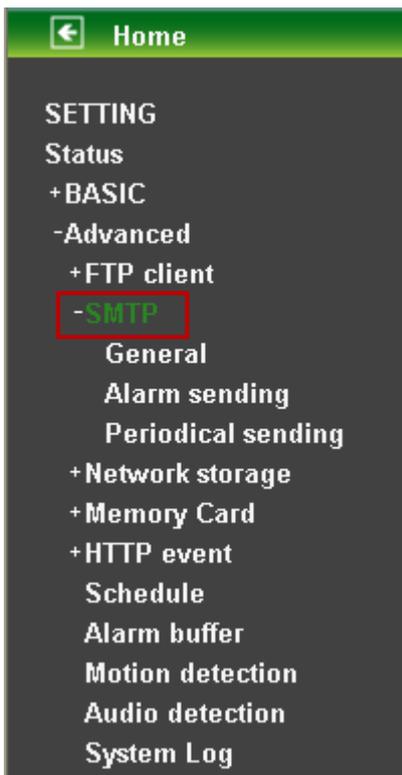
- **Sequence number:** A **consecutive** number is added to the Image file name.
 - **Sequence number clear:** Click **Clear** and the suffix of the sequence number returns to 1.
- **Interval:** Set the periodical sending is effective interval. Min value is 1 min and Max value is 24 hour.
- **Effective Period:** Set the period when the periodical sending is effective.
- **Always:** The periodical sending is always effective.
 - **Schedule:** You can specify the period when the periodical sending is effective in the schedule setting in the other section. **Please check “Setting → Advanced → Schedule →Setting”.**

 **Note:**

You can set schedule function at schedule screen. (Please go “**Setting → Advanced → Schedule → Setting**”)

7.2 SMTP

Set the SMTP menu when you want to send an image or video clip via e-mail. By using Mail (SMTP) function, you can send a mail with attached file which has been shot linked with the external sensor input or with the built-in motion detection function. The file can also be sent periodically. E-Mail (SMTP) setting menu is composed of three tabs, **General**, **Alarm Sending** and **Periodical Sending**.



7.2.1 General

Select **On** when you use the SMTP function. The common setting options are displayed below. Select **Off**, if you do not wish to use the E-mail (SMTP) function.

 **Note:**

The Setting of general part will be the same as IP Notification. (Please check “**Setting → Basic →**

Network → IP Notification”)

The screenshot shows the 'General' settings page for IP Notification. The left sidebar contains a menu with options like 'Home', 'SETTING', 'Status', '+BASIC', '-Advanced', '+FTP client', '-SMTP', 'General', 'Alarm sending', 'Periodical sending', '+Network storage', '+Memory Card', 'Periodical sending', '+Network storage', '+Memory Card', '+HTTP event', 'Schedule', 'Alarm buffer', 'Motion detection', 'Audio detection', and 'System Log'. The main content area is titled 'General' and features the following settings:

- e-Mail (SMTP):** On Off
- SMTP server name:** [Text input field]
- SMTP server port:** [Text input field with value 25] (1 ~ 65535) SSL
- Authentication:** On Off
 - SMTP POP before SMTP
- POP server name:** [Text input field]
- User name:** [Text input field]
- Password:** [Text input field]
- Recipient e-Mail address:** [Text input field] **Support for up to 3 users. Separate multiple recipients by ";".**
- Administrator e-Mail address:** [Text input field]
- Attached file type:** Snapshot Video clip
- Subject:** [Text input field]
- Message:** [Text area]

At the bottom of the page, there are three buttons: 'OK', 'Cancel', and 'Test'.

- **SMTP Server Name:** Type the SMTP server name up to 64 characters, or the IP address of the SMTP server.
- **SMTP Server Port:** You can set port number from 1~65535 according to your mail server. The default value is 25.
 - **Security setting:** Tick SSL box if the mail server you use has security restriction.

Note:

If you use g-mail as your mail server, you should set 25 as your port number and tick SSL box.

- **Authentication:** Select the authentication required when you send an email.
 - Off: Select if no authentication is necessary when an email is sent.
 - On: When authentication is necessary an e-mail is sent, select one of the authentication methods from the followings.
- **SMTP:** Select if SMTP authentication is necessary for sending e-mail.
- **POP Before SMTP:** Select when POP before SMTP authentication is necessary for sending e-mail.

Note:

When you set to On, be sure to select either or both SMTP or / and POP before SMTP.

- **POP server name:** It is necessary when the **POP before SMTP** is selected in **Authentication**. Type the POP (receiving mail) server name up to 64 characters, or type the IP address of the POP server. This setting is necessary when the SMTP server which sends e-mails performs authentication using the POP user account.
- **User name, Password:** Type the user name and Password of the user who has the mail account. This setting is necessary when the SMTP server which sends e-mails performs authentication.
- **Recipient E-mail Address:** Type the recipient e-Mail address up to 64 characters. You can specify up to three recipient E-mail addresses.
- **Administrator E-mail Address:** Type the Administrator e-Mail address up to 64 characters.

This address is used for reply mail and sending system messages from the SMTP server.

- **Attached File Type:** You can choose snapshot or video clip for alarm sending. Select “Snapshot,” one snapshot will be transmitted to the administrator’s e-mail address while motion detection / audio detection triggered. Select “Video Clip,” one 5-seconds video clip will be transmitted.
- **Subject:** Type the subject/title of the e-Mail up to 64 characters. With respect to mail which is sent according to the alarm detection when **Alarm sending** of the alarm tab is set to **On**, the characters standing for the sensor type added to the subject.
- **Message:** Type the text of the E-mail up to 384 characters. (A line break is equivalent to 2 characters.)
- **Test:** After setting the SMPT server information, you can tick the test key to test if the connection between IP CAM and the SMPT server works.

7.2.2 Alarm Sending

Set to send the mail with connection to the alarm detection by the external sensor input or by the built-in motion detection function. Select On to send the image file to SMTP server linked with the alarm detection.

The screenshot shows a web interface for configuring alarm sending. On the left is a dark sidebar menu with a 'Home' button at the top. The menu items include: SETTING, Status, +BASIC, -Advanced, +FTP client, -SMTP, General, Alarm sending (highlighted in green), Periodical sending, +Network storage, +Memory Card, +HTTP event, Schedule, Alarm buffer, Motion detection, Audio detection, and System Log. A question mark icon is at the bottom of the sidebar. The main content area is titled 'Alarm sending' and contains the following settings:

- Alarm sending:** On Off
- File attachment:** On Off
- Image file name:** [Empty text input field]
- Suffix:** None Date Time Sequence number
- Sequence number clear:** [Clear button]
- Alarm:**
 - Motion detection [Motion detection button]
 - Audio detection [Audio detection button]
 - Network link down
- Effective Period:** Always Schedule [Schedule button]

At the bottom of the main area are [OK] and [Cancel] buttons.

- **Alarm Sending:** Select **On** to set to send mail with connection to the alarm detection.
- **File Attachment:** Set whether an image file is attached to the mail sent or not. When **On** is selected, the image file made by the settings below is attached. When **Off** is selected, only the message is sent.
- **Image File Name:** Type the file name you want to assign to the file attached to a mail. You can use up to 10 alphanumeric, - (hyphen) and _ (underscore) for naming.
- **Suffix:** Select a suffix to add to the file name
 - **None:** The name of the sent file will be the Image file name.

- **Date & time:** The date & time suffix is added to the Image file name. The date & time suffix consists of lower two-digits of year (2 digits), month (2 digits), date (2 digits), hour (2 digits), minute (2 digits) and second (2 digits), and consecutive number (2 digits), thus 14-digit number is added to the file name.
- **Sequence number:** A **consecutive** number is added to the Image file name.
- **Sequence number clear:** Click **Clear** and the suffix of the sequence number returns to 1.

➤ Alarm

- **Motion Detection:** Click it on for using **Motion Detection** function as a sensor. You can set motion detection function at the motion detection function screen.

Note:

You can set motion detection at motion detection screen. (Please go “**Setting** → **Advanced** → **Motion Detection** → **Setting**”)

- **Audio Detection:** Click it on for using **Audio Detection** function as a sensor. You can set audio detection function at the audio detection function screen.

Note:

You can set audio detection at audio detection screen. (Please go “**Setting** → **Advanced** → **Audio Detection** → **Setting**”)

- **Network Link Down:** Click it on to receive a snapshot or a video clip while network link down. If **Attached File Type** was clicked as **video clip** (go “**Setting** → **Advanced** → **FTP Client** → **General**”) , you can using **Alarm buffer** function as a sensor. It's for recording audio file in the IP CAM before and after disconnected network.

Note:

You can set alarm buffer at alarm buffer screen. (Please go “**Setting** → **Advanced** → **Alarm Buffer** → **Setting**”)

➤ **Effective Period:** Set the period when the periodical sending is effective.

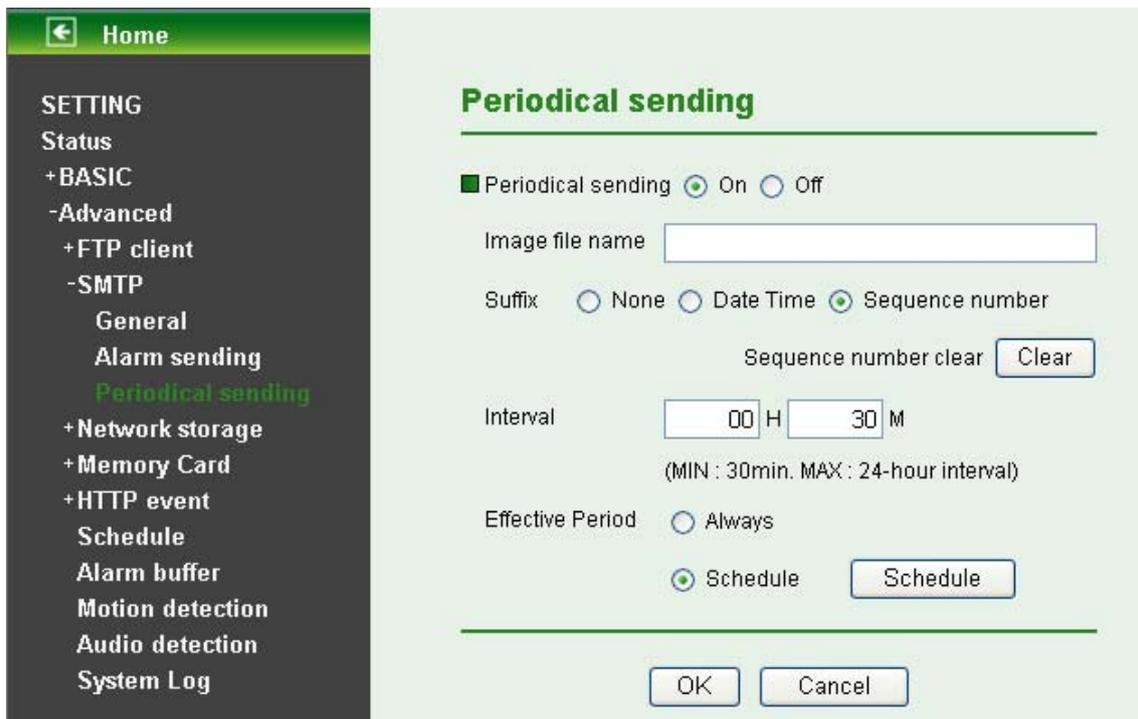
- **Always:** The periodical sending is always effective.
- **Schedule:** You can specify the period when the periodical sending is effective in the Schedule setting in the other section.

Note:

You can set schedule function at schedule screen. (Please go “**Setting** → **Advanced** → **Schedule** → **Setting**”)

7.2.3 Periodical Sending

You can set to send an image file by SMTP server periodically by selecting **On** to send the image file by SMTP server linked with setting period.



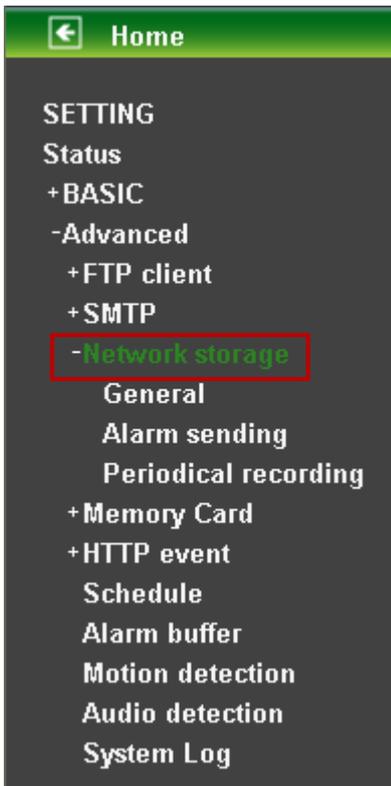
- **Image File Name:** Type the file name of the image sent by SMTP up to 10 alphanumeric characters, - (hyphen) and _ (under score).
- **Suffix:** Select a suffix to be added to the file name sent by SMTP.
 - **Date & time:** The date & time suffix is added to the Image file name. The date & time suffix consists of lower two-digits of year (2 digits), month (2 digits), date (2 digits), hour (2 digits), minute (2 digits) and second (2 digits), and consecutive number (2 digits), thus 14-digit number is added to the file name.
 - **Sequence number:** A consecutive number is added to the Image file name.
 - **Sequence number clear:** Click **Clear** and the suffix of the sequence number returns to 1.
- **Interval:** Set the effective interval of periodical sending. Min value is 1 min and Max value is 24 hour.
- **Effective Period:** Set the period when the periodical sending is effective.
 - **Always:** The periodical sending is always effective.
 - **Schedule:** You can specify the period when the periodical sending is effective in the schedule setting in the other section. **Please check “Setting → Basic → Advanced → Schedule → Setting.”**

 **Note:**

You can set schedule function at schedule screen. (Please go “**Setting → Advanced → Schedule → Setting**”)

7.3 Network Storage

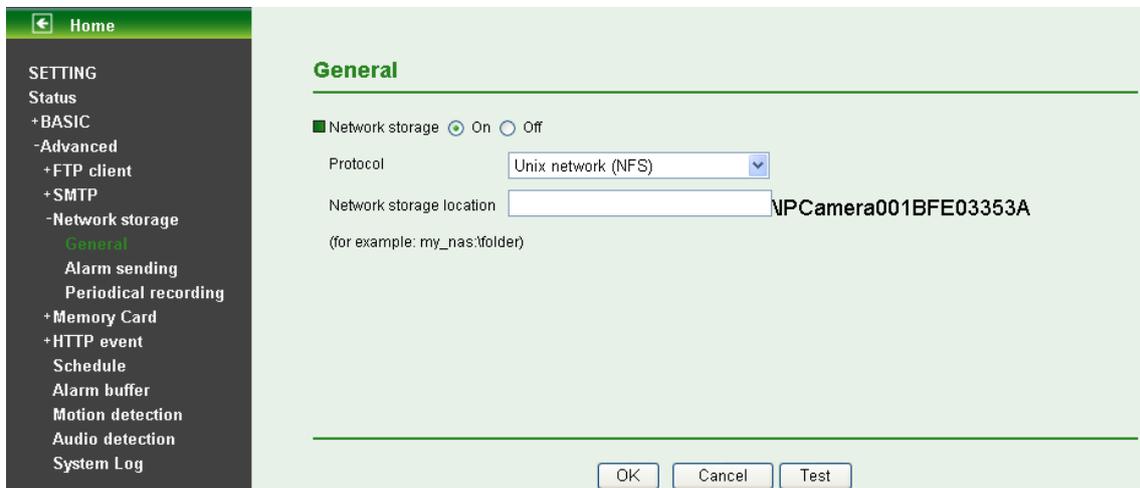
Network storage provides the storage function for saving image files to the specified computer and folder connected with the operating computer.



7.3.1 General

Select On if you would like to use the network storage function. Then choose one protocol between Windows network (SMB/CIFS) and Unix network (NFS).

➤ **Protocol- Unix Network (NFS):**



- **Network storage location:** Type the IP or name of specified computer and folder. For example, //IP/folder name or // my_nas:/folder name.

➤ **Protocol- Windows network (SMB/CIFS):**

- **Network Storage Location:** Type the IP or name of specified computer and folder. For example, \\IP\folder name or \\my_nas\folder name.
- **Workgroup:** Type the name of workgroup which the operating computer belongs.
- **User Name:** Type the name of workgroup. (If none, please leave it blank.)
- **Password:** Type the password for workgroup. (If none, please leave it blank.)
- **Re-type password:** Re-type password for workgroup.

Note:

If the recording video file is assigned to be stored in a low-speed device (ex. low-speed USB storage disk), there might be some problems to complete the storage.

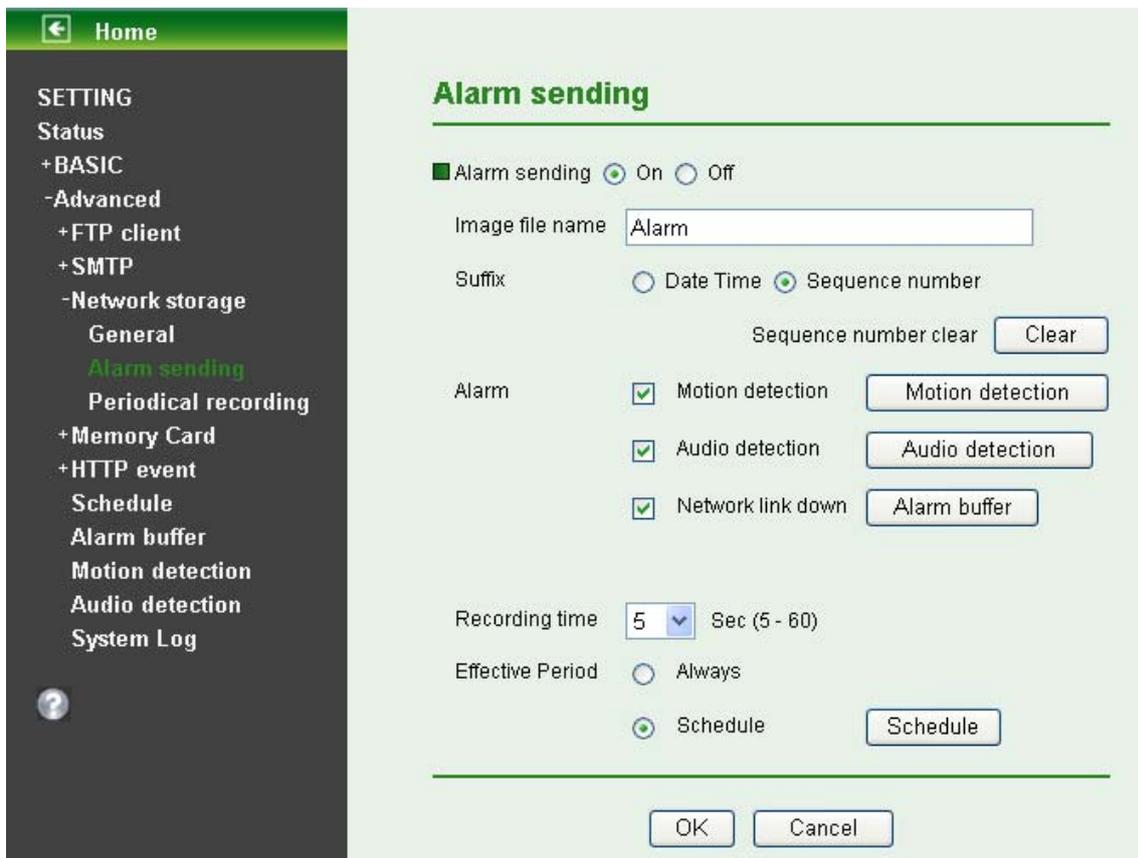
How to set up the network sharing?

In the following description, we take Windows XP for example to explain how to set up the network sharing. The detailed setup is different in various operation systems. If you have any trouble in setting the network sharing, please ask the Technical Support of Microsoft for help.

You can create a simple Samba network sharing drive on your Windows PC by right-clicking a folder, selecting **Sharing and Security...**, and selecting **Share this folder**. Enter a **Share name** you would like to use for the folder, and then check the below box for **Allow network users to change my files**. After completing the corresponding configurations of the Camera, you can click the **Test** button to test your settings.

7.3.2 Alarm Sending

Set to transmit the snapshot or video clip file with connection to the alarm detection by the external sensor input or by the built-in motion detection function. Select On to send the file to network storage location linked with the alarm detection.



- **Alarm Sending:** Select **On** to set to send files with connection to the alarm detection to network storage.
- **Image File Name:** Type the file name you want to assign to the file to attach a mail. You can use up to 10 alphanumeric, - (hyphen) and _ (underscore) for naming.
- **Suffix:** Select a suffix to add to the file name
 - **Date & time:** The date & time suffix is added to the Image file name. The date & time suffix consists of lower two-digits of year (2 digits), month (2 digits), date (2 digits), hour (2 digits), minute (2 digits) and second (2 digits), and consecutive number (2 digits), thus 14-digit number is added to the file name.
 - **Sequence number:** A **consecutive** number is added to the Image file name.
 - **Sequence number clear:** Click **Clear** and the suffix of the sequence number returns to 1.
- **Alarm:**
 - **Motion Detection:** Click it on for using **Motion Detection** function as a sensor. You can set motion detection function at the motion detection function screen.

Note:
You can set motion detection at motion detection screen. (Please go “**Setting** → **Advanced** → **Motion Detection** → **Setting**”)
 - **Audio Detection:** Click it on for using **Audio Detection** function as a sensor. You can set audio detection function at the audio detection function screen.

Note:
You can set audio detection at audio detection screen. (Please go “**Setting** → **Advanced** → **Audio Detection** → **Setting**”)
 - **Network Link Down:** Click it on to receive a video clip while network link down. It's for recording video file in the IP CAM before and after disconnected network.

 **Note:**

You can set alarm buffer at alarm buffer screen. (Please go “**Setting** → **Advanced** → **Alarm Buffer** → **Setting**”)

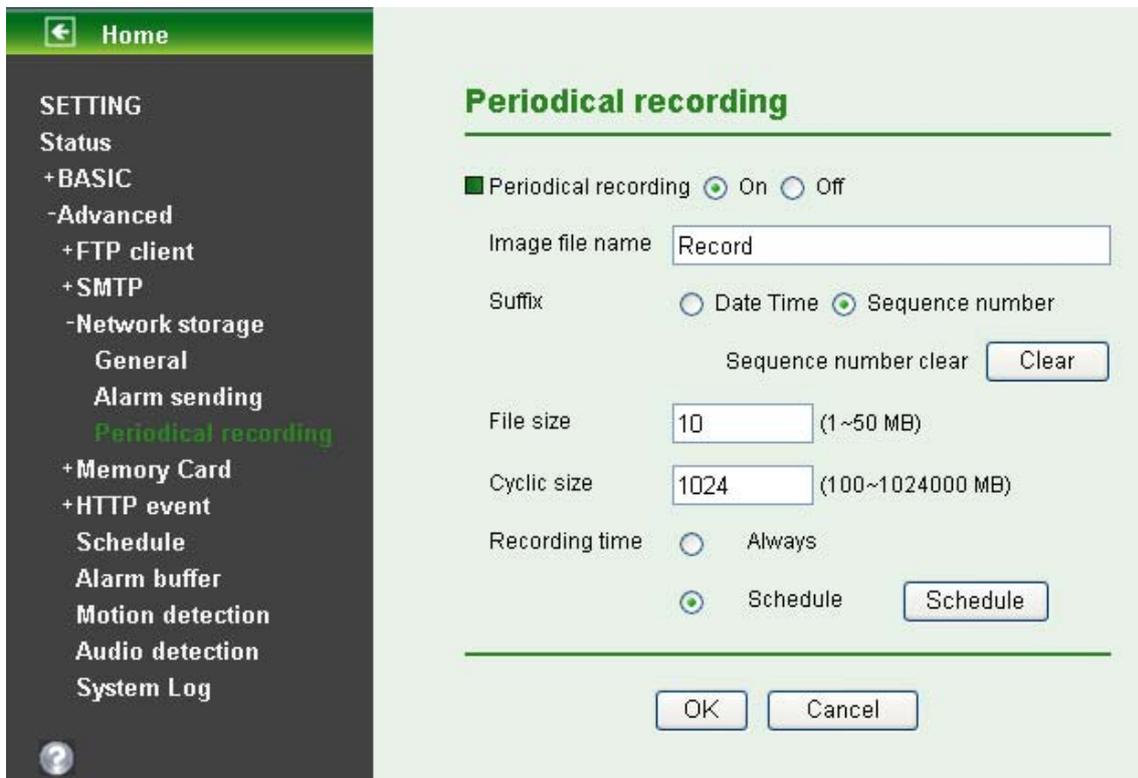
➤ **Effective Period:** Set the period when the periodical sending is effective.

- **Always:** The periodical sending is always effective.
- **Schedule:** You can specify the period when the periodical sending is effective in the Schedule setting in the other section.

 **Note:**

You can set schedule function at schedule screen. (Please go “**Setting** → **Advanced** → **Schedule** → **Setting**”)

7.3.3 Periodical recording



You can set up to transmit image files to the network storage location periodically by selecting **On**.

- **Image file name:** Type the file name you want to assign to the file transmitted to the network storage location. You can use up to 10 alphanumeric, - (hyphen) and _ (underscore) for naming.
- **Suffix:** Select a suffix to add to the file name
 - **Date & Time:** The date & time suffix is added to the Image file name. The date & time suffix consists of lower two-digits of year (2 digits), month (2 digits), date (2 digits), hour (2 digits), minute (2 digits) and second (2 digits), and consecutive number (2 digits), thus 14-digit number is added to the file name.
 - **Sequence number:** A **consecutive** number is added to the Image file name.
 - **Sequence number clear:** Click **Clear** and the suffix of the sequence number returns to 1.
- **File Size:** The file size of image or video clip transmitted to the network storage location can't over 50MB.
- **Cyclic Size:** The total amount of files transmitted to the network storage location has to be in the range from 100 to 1024000MB.

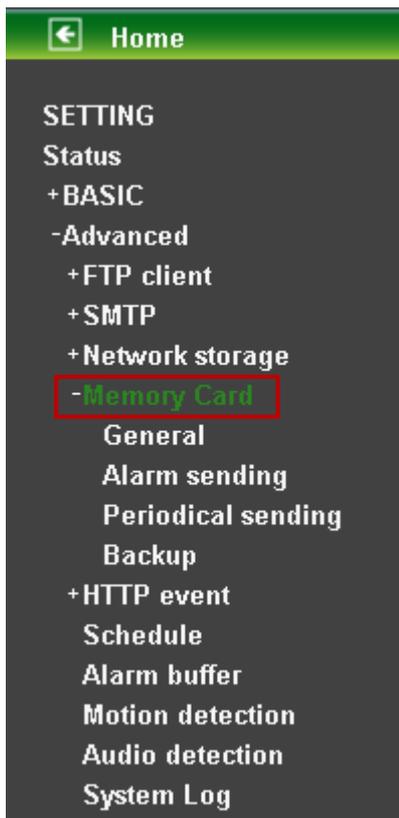
- **Recording Time:** Set the period when the periodical recording is effective.
 - **Always:** The periodical recording is always effective.
 - **Schedule:** You can specify the period when the periodical recording is effective in the Schedule setting in the other section.

 **Note:**

You can set schedule function at schedule screen. (Please go “**Setting** → **Advanced** → **Schedule** → **Setting**”)

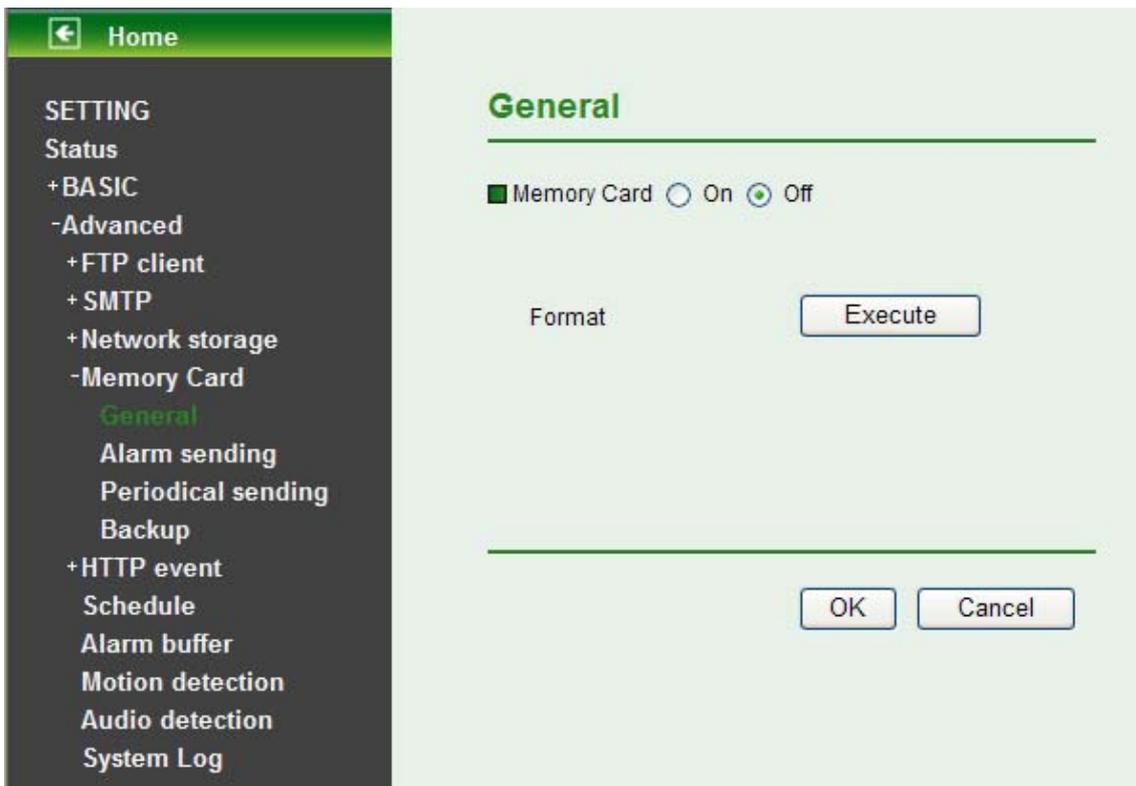
7.4 Memory Card

Memory card provides the storage function for saving image files. Memory Card setting menu is composed of four tabs: **General**, **Alarm Sending**, **Periodical Sending** and **Backup**.

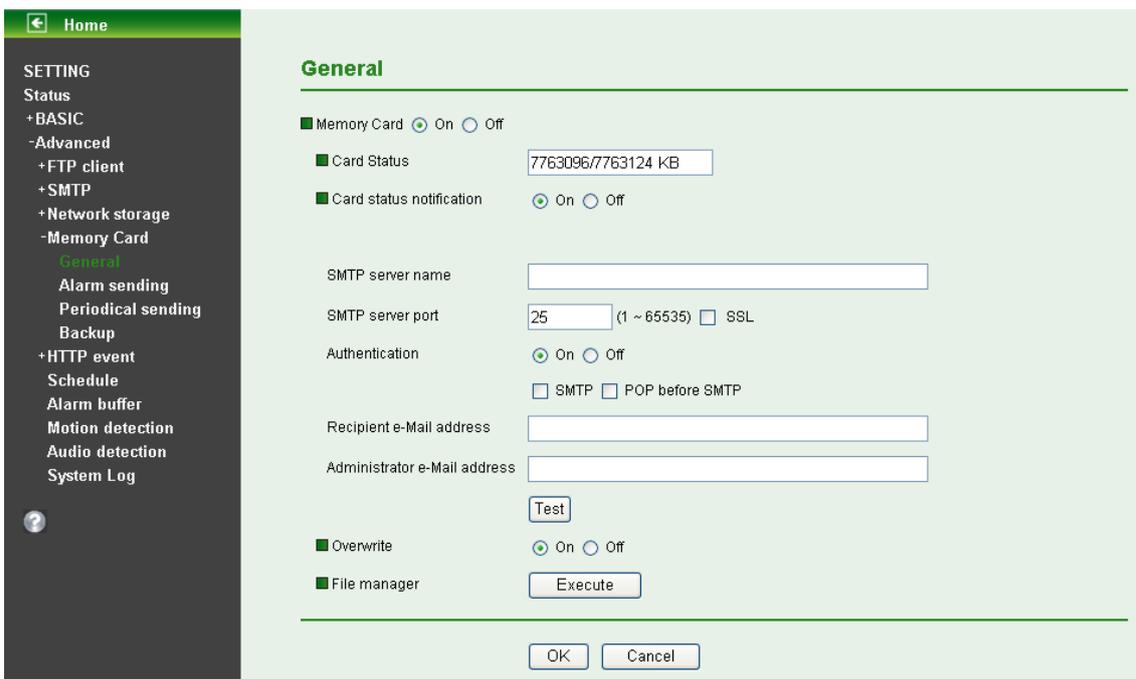


7.4.1 General

Click General, and the corresponding function page will display shown as the following figure. With the memory card slotted in the SD Card Slot, select “**On**” when you want to use the memory card to save images. Then click “**OK**” and the common setting options are displayed below. Select **Off**, if you do not wish to use memory card. You can’t select **On** or **Off** if there is no memory card in the SD Card Slot.



- **Format:** Click **Execute** to clear up the data in memory card.



- **Card Status:** The free space and capacity of memory card.
- **Card status notification:** Select **On** to enable card status notification.
 - **SMTP server name:** Type the SMTP server name using up to 64 characters, or the IP address of the SMTP server.
 - **SMTP server port:** You can set port number from 1~65535 according to your mail server. The default value is 25.
 - **Authentication:** Select the authentication required when you send an email.
 - ✓ **Off:** Select this function if no authentication is necessary for sending e-mail.

- ✓ **On:** If authentication is necessary for sending e-mail, select one of the authentication methods from the followings.

SMTP: Select if SMTP authentication is necessary for sending e-mail.

POP Before SMTP: Select when POP before SMTP authentication is necessary for sending e-mail.

- **Recipient E-mail Address:** Type the recipient e-Mail address using up to 64 characters. You can specify up to three recipient E-mail addresses.
 - **Administrator E-mail Address:** Type the Administrator e-mail address using up to 64 characters. This address is used for replying mail and sending system messages from the SMTP server.
 - **Test:** After setting the SMPT server information, you can tick the **test** key to test if the connection between IP CAM and the SMPT server works.
- **Overwrite:** Select On to disable capacity warning and overwrite your memory card when free space is not enough.
- **File manager:** Click “Execute” to manage your memory card.

IPCamera001BFE03353A/		
Folder	File name	Size
Alarm/		
Backup/		
Period/		

7.4.2 Alarm sending

Set to transmit the snapshot or video clip file with connection to the alarm detection by the external sensor input or by the built-in motion detection function. Select **On** to send the file to memory card location linked with the alarm detection.

Alarm sending

■ Alarm sending On Off

Image file name

Suffix Date Time Sequence number

Sequence number clear

Alarm Motion detection

Audio detection

Network link down

Recording time Sec (5 - 60)

Effective Period Always Schedule

- **Alarm Sending:** Select **On** to set to send files with connection to the alarm detection to memory card.
- **Image File Name:** Type the file name you want to assign to the file to attach a mail. You can use up to 10 alphanumeric, - (hyphen) and _ (underscore) for naming.
- **Suffix:** Select a suffix to add to the file name
 - **Date & time:** The date & time suffix is added to the Image file name. The date & time suffix consists of lower two-digits of year (2 digits), month (2 digits), date (2 digits), hour (2 digits), minute (2 digits) and second (2 digits), and consecutive number (2 digits), thus 14-digit number is added to the file name.
 - **Sequence number:** A **consecutive** number is added to the Image file name.
 - **Sequence number clear:** Click **Clear** and the suffix of the sequence number returns to 1.
- **Alarm:**
 - **Motion Detection:** Click it on for using **Motion Detection** function as a sensor. You can set motion detection function at the motion detection function screen.

 **Note:**
You can set motion detection at motion detection screen. (Please go "**Setting** → **Advanced** → **Motion Detection** → **Setting**")
 - **Audio Detection:** Click it on for using **Audio Detection** function as a sensor. You can set audio detection function at the audio detection function screen.

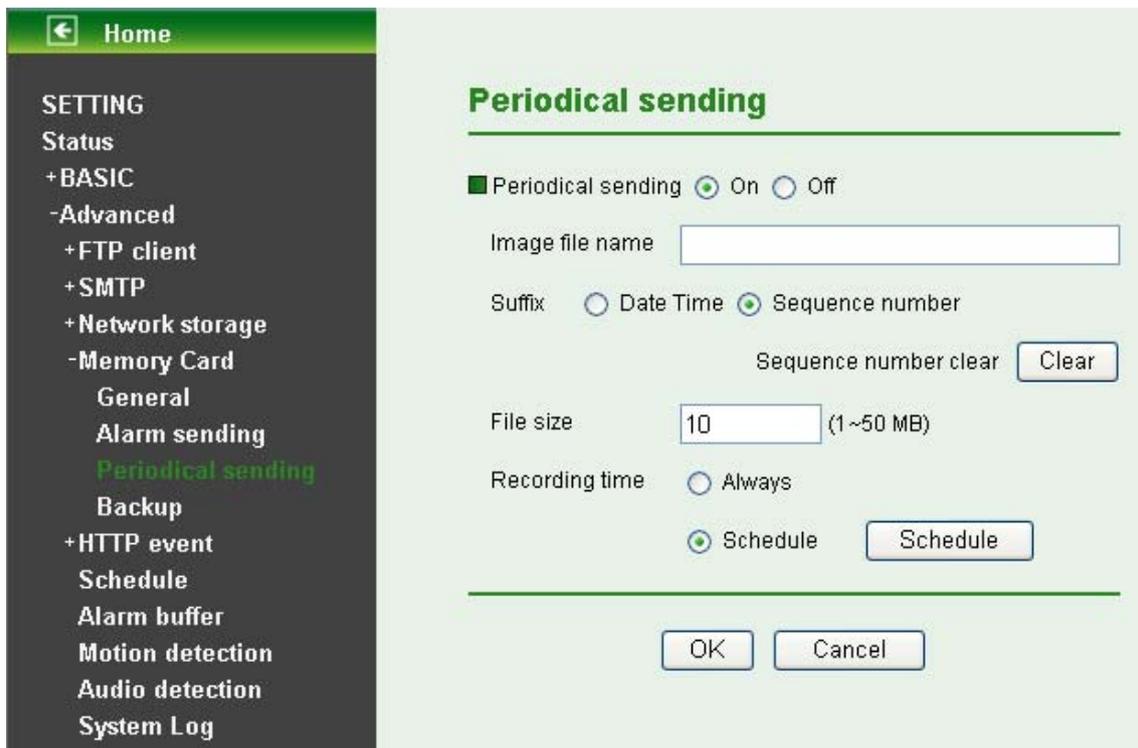
 **Note:**
You can set audio detection at audio detection screen. (Please go "**Setting** → **Advanced** → **Audio Detection** → **Setting**")
 - **Network Link Down:** Click it on to receive a video clip while network link down. It's for recording video file in the IP CAM before and after disconnected network.

 **Note:**
You can set alarm buffer at alarm buffer screen. (Please go "**Setting** → **Advanced** → **Alarm Buffer** → **Setting**")
- **Effective Period:** Set the period when the periodical sending is effective.
 - **Always:** The periodical sending is always effective.
 - **Schedule:** You can specify the period when the periodical sending is effective in the Schedule setting in the other section.

 **Note:**
You can set schedule function at schedule screen. (Please go "**Setting** → **Advanced** → **Schedule** → **Setting**")

7.4.3 Periodical sending

Select **On**, you can set to send an image file to memory card periodically.



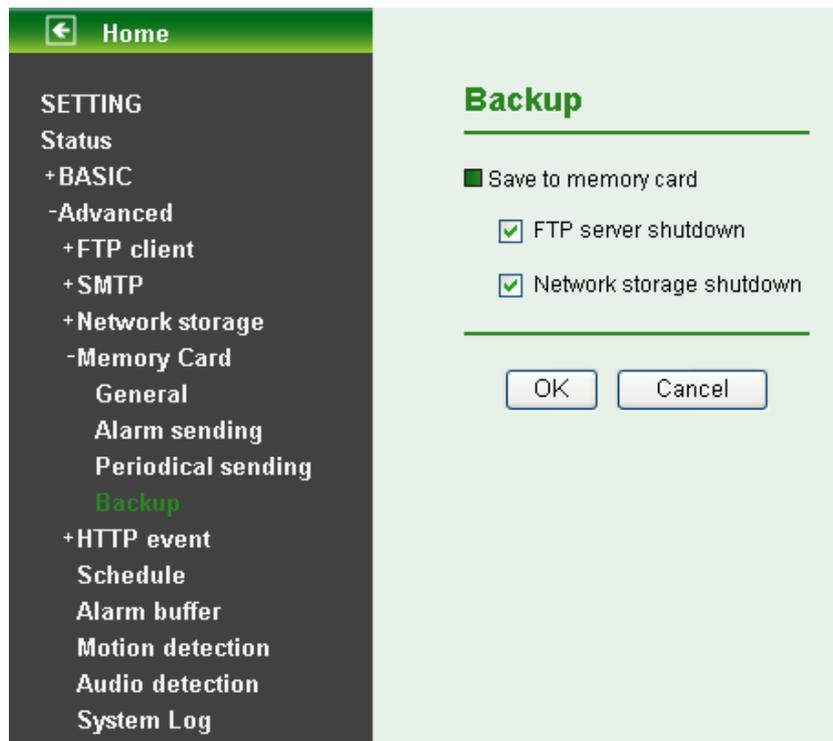
- **Image File Name:** Type the file name of the image sent by SMTP up to 10 alphanumeric characters, - (hyphen) and _ (under score).
- **Suffix:** Select a suffix to be added to the file name sent by SMTP.
 - **Date & time:** The date & time suffix is added to the Image file name. The date & time suffix consists of lower two-digits of year (2 digits), month (2 digits), date (2 digits), hour (2 digits), minute (2 digits) and second (2 digits), and consecutive number (2 digits), thus 14-digit number is added to the file name.
 - **Sequence number:** A consecutive number is added to the Image file name.
 - **Sequence number clear:** Click **Clear** and the suffix of the sequence number returns to 1.
- **File Size:** The file size of image or video clip transmitted to the network storage location can't over 50MB.
- **Recording Time:** Set the period when the periodical recording is effective.
 - **Always:** The periodical recording is always effective.
 - **Schedule:** You can specify the period when the periodical recording is effective in the Schedule setting in the other section.

 **Note:**

You can set schedule function at schedule screen. (Please go "**Setting** → **Advanced** → **Schedule** → **Setting**")

7.4.4 Backup

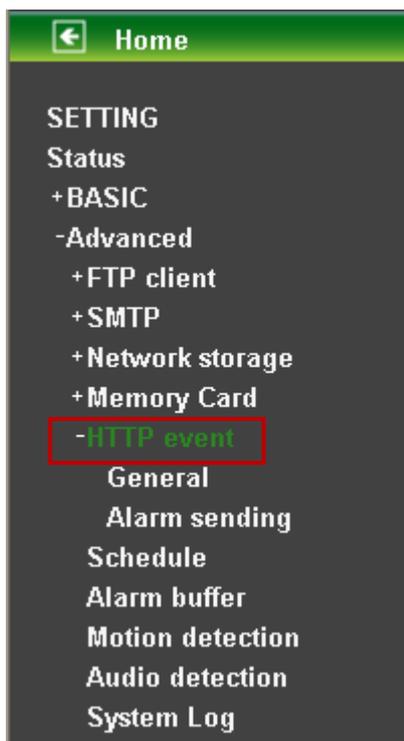
The Backup feature can save images to memory card when FTP server or network storage is shut down.



- **FTP server shutdown:** Backup files to memory card when FTP server is shut down.
- **Network storage shutdown:** Backup images to memory card when network storage is shut down.

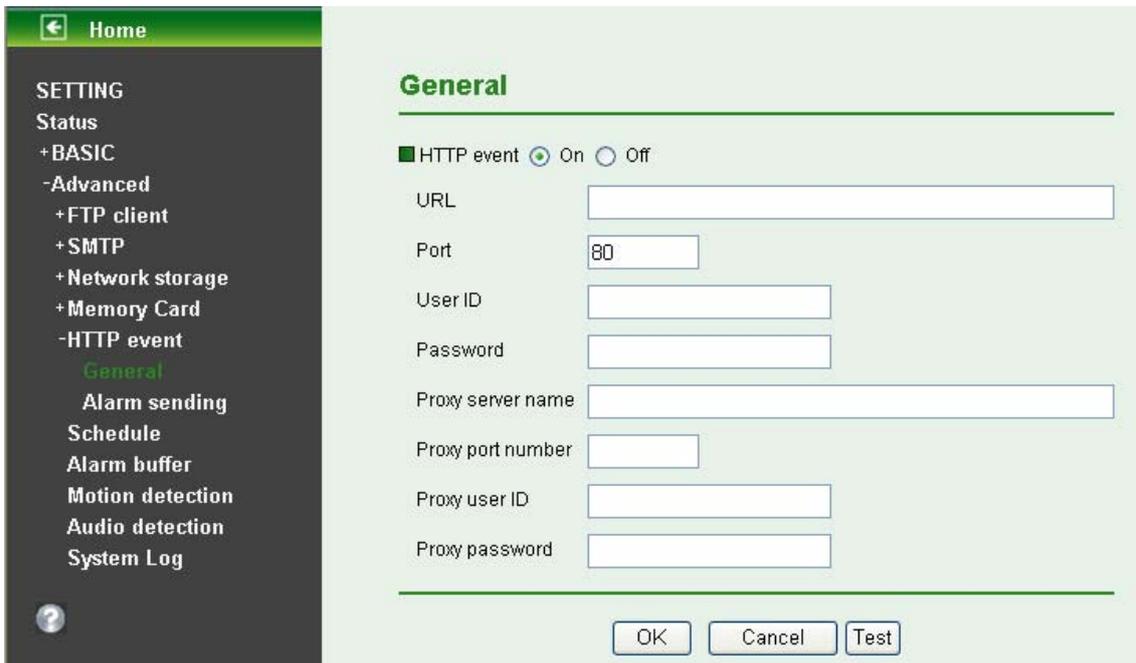
7.5 HTTP event

Use this menu to set up for capturing and sending images to an HTTP server. By using HTTP client function, you can send the image file and audio file which has been shot and recorded linked with the built-in motion detection function to HTTP server. HTTP client setting menu is composed of two items, **General** and **Alarm sending**.



7.5.1 General

Select **On** when you use the HTTP function. The common setting options are displayed below. Select **Off**, if you do not wish to use the HTTP function.

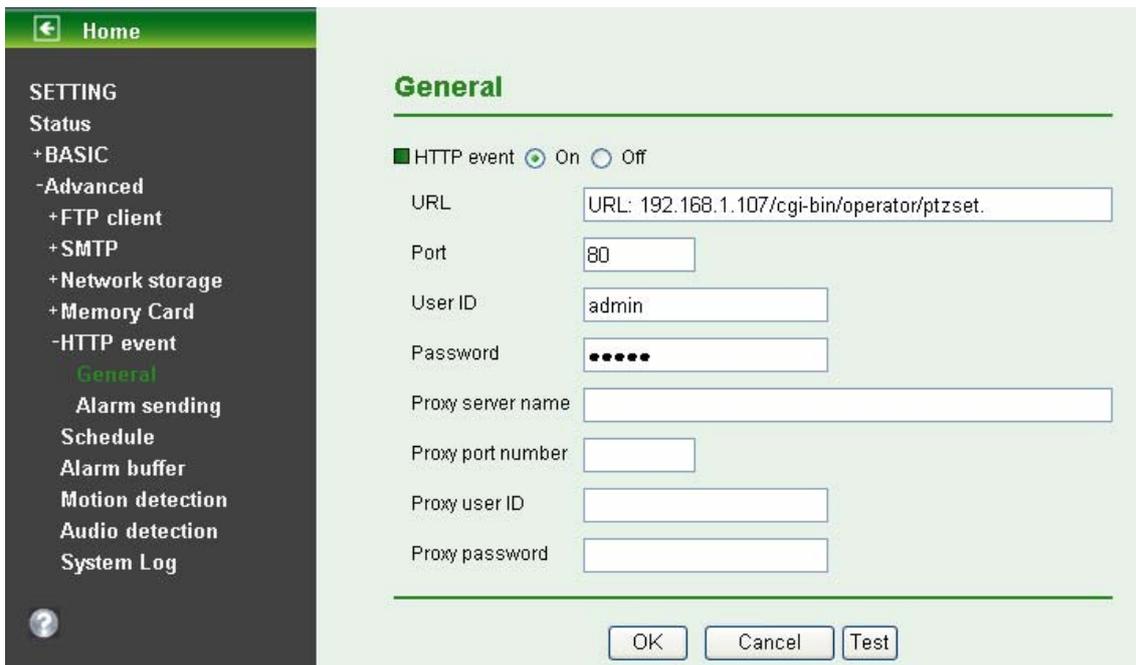


The screenshot shows the 'General' settings page. On the left is a navigation menu with 'General' highlighted. The main area contains the following settings:

- HTTP event On Off
- URL:
- Port:
- User ID:
- Password:
- Proxy server name:
- Proxy port number:
- Proxy user ID:
- Proxy password:

Buttons at the bottom: OK, Cancel, Test.

- **HTTP event:** Set up the HTTP server URL, port, User ID, Password and Proxy Server settings.



The screenshot shows the 'General' settings page with example values filled in:

- HTTP event On Off
- URL:
- Port:
- User ID:
- Password:
- Proxy server name:
- Proxy port number:
- Proxy user ID:
- Proxy password:

Buttons at the bottom: OK, Cancel, Test.

For example: URL: 192.168.1.107/cgi-bin/operator/ptzset.

 **Note:**

1. The setting of URL should be the same as CGI.
2. The example above is for reference only. For more details, please refer to SDK in the subdirectory of the IP Camera product on our website <http://www.tp-link.com>.

7.5.2 Alarm sending

Set to send the mail with connection to the alarm detection by the built-in motion detection function. Select **On** to send the image and audio file to HTTP server linked with the alarm detection.

The screenshot shows the 'Alarm sending' configuration page. On the left sidebar, 'Alarm sending' is highlighted in green. The main content area has a title 'Alarm sending' and a toggle for 'Alarm sending' set to 'On'. Under the 'Alarm' section, there are three checked options: 'Motion detection', 'Audio detection', and 'Network link down'. Each option has a corresponding 'Parameter' and 'Message' input field and a button. At the bottom, 'Effective Period' is set to 'Schedule' with a 'Schedule' button. 'OK' and 'Cancel' buttons are at the very bottom.

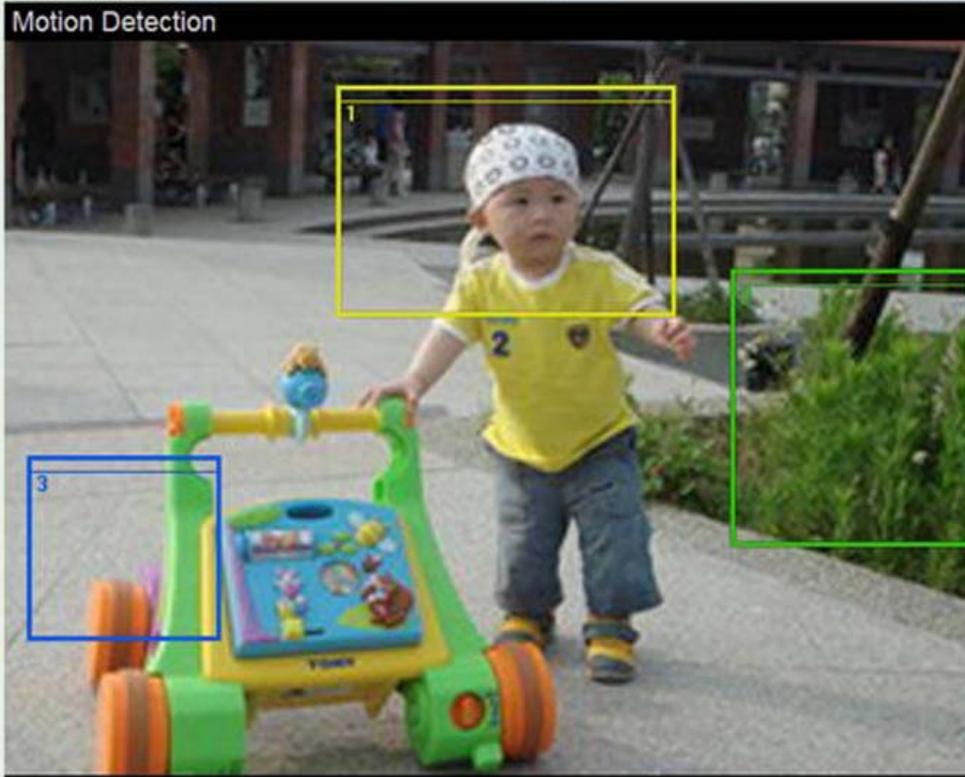
Alarm sending: Select **On** to set to send mail with connection to the alarm detection.

➤ Alarm

- **Motion Detection:** Click it for using Motion Detection function as a sensor. You can set motion detection function on the **motion detection function page**.

Motion detection

<input checked="" type="checkbox"/> Motion detection 1	<input checked="" type="checkbox"/> Motion detection 2	<input checked="" type="checkbox"/> Motion detection 3
Threshold	Threshold	Threshold
 50	 50	 50
Sensitivity	Sensitivity	Sensitivity
 50	 50	 50



OK Cancel

Note:

You can set motion detection on **motion detection page**. (Please go to “**Setting** → **Advanced** → **Motion detection** → **Setting**”) Motion Detection works only when the MPEG4 function is On.

Home

SETTING
 Status
 +BASIC
 -Advanced
 +FTP client
 +SMTP
 +Network storage
 +Memory Card
 -HTTP event
 General
 Alarm sending
 Schedule
 Alarm buffer
 Motion detection
 Audio detection
 System Log

Alarm sending On Off

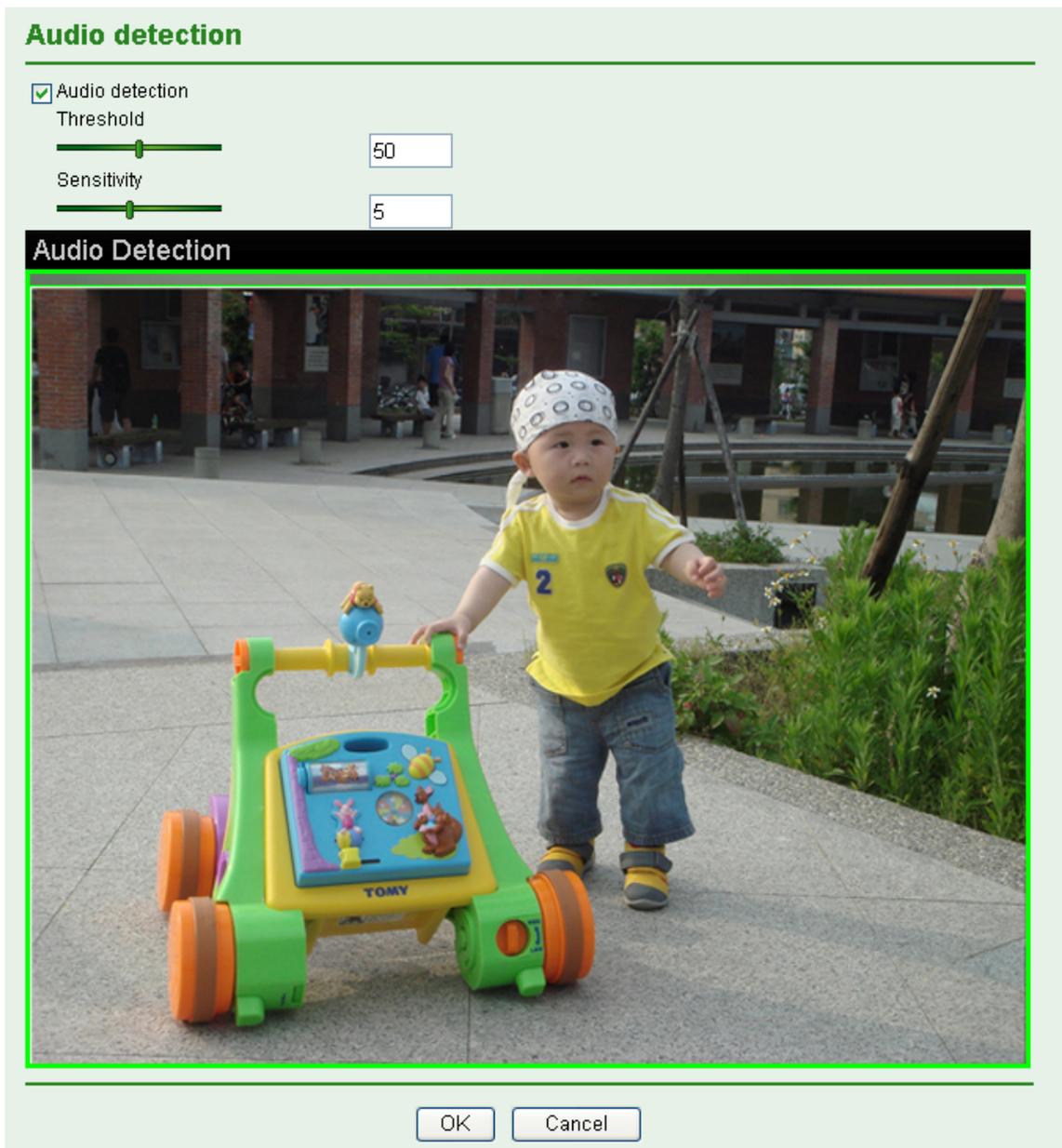
Alarm Motion detection
 Parameter
 Message

Audio detection
 Parameter
 Message

Network link down
 Parameter
 Message

Effective Period Always
 Schedule

- **Parameter:** the parameter of CGI (defined in **Setting** → **Advanced** → **HTTP event** → **General** → **URL**) is from your target device. For example, move=down.
- **Message:** message will show up in the form of Message = PTZ down. If your target device didn't support the parameter of message, you can't see the message. So you can just take the message as a note. For example: PTZ down.
- **Audio detection:** Click it for using Audio Detection function as a sensor. You can set audio detection function on the **audio detection function page**.



- **Parameter:** the parameter of CGI (defined in **Setting** → **Advanced** → **HTTP event** → **General** → **URL**) is from your target device. For example, move=down.
- **Message:** message will show up in the form of Message = PTZ down. If your target device didn't support the parameter of message, you can't see the message. So you can just take the message as a note. For example: PTZ down.

➤ **Effective period:** Set the period when the periodical sending is effective.

- **Always:** The periodical sending is always effective.
- **Schedule:** You can specify the period when the periodical sending is effective in the Schedule setting in the other section.

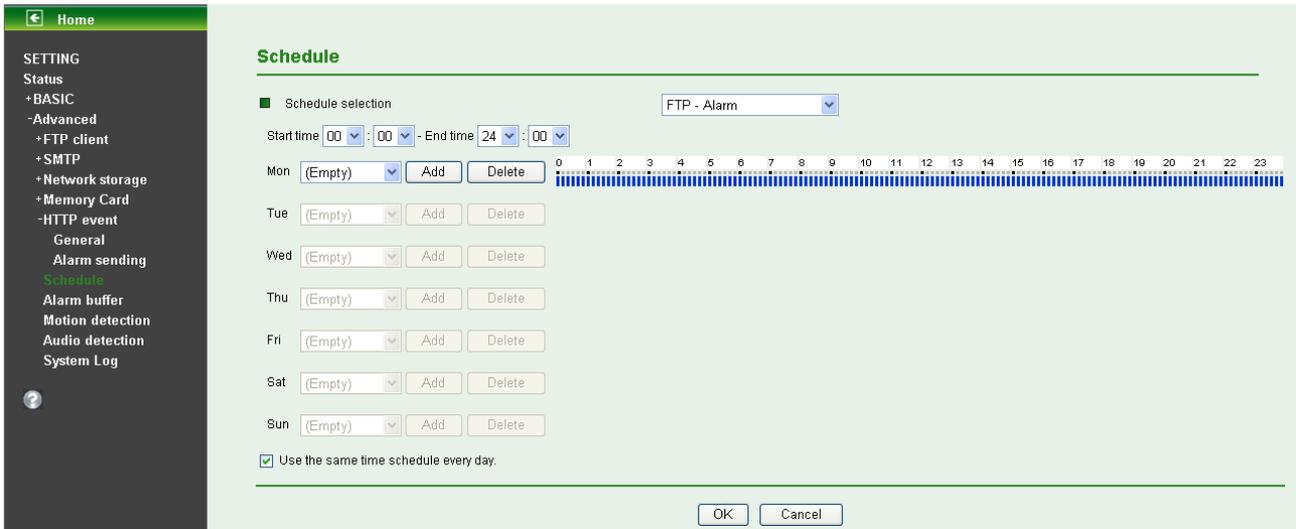
Note:

You can set schedule function on **Schedule** page. (Please go to "**Setting** → **Advanced** → **Schedule** → **Setting**")

7.6 Schedule

Click **Schedule** on the **Advanced** mode menu, the Schedule setting menu appears. This is the same

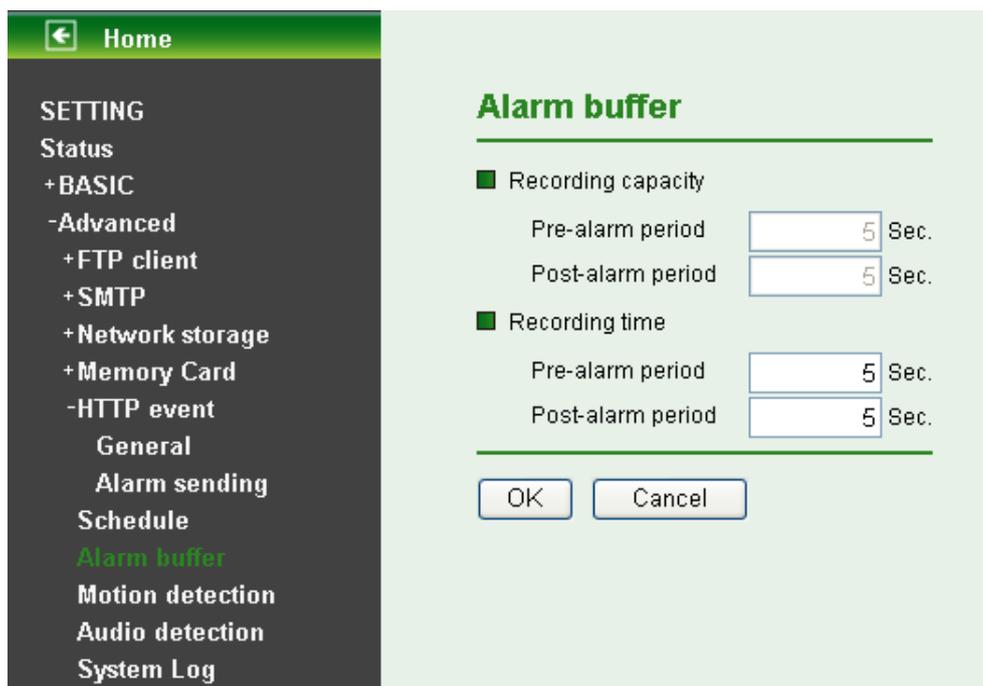
menu as the setting menu which is displayed when you click **Schedule** to set Effective period and Schedule in **FTP client**, e-Mail (**SMTP**), Record, and Alarm out setting menu setting menu.



- **Schedule Selection:** Select the list box to specify the schedule you want to set.
 - FTP -Alarm / FTP – Periodical / E-mail (SMTP) -Alarm / E-mail (SMTP) –Periodical / Record –Alarm / Record –Periodical / Memory Card – Alarm / Memory Card – Periodical / HTTP event - Alarm
- **Mon (Monday) to Sun (Sunday):** The time period on the right of the checked day is the effective period of the schedule.
- **Start Time, End Time:** Specify the **Start Time** and the **End Time**.
- **Use the same time schedule every day:** When this is checked, the **Start Time** and **End Time** set to **Mon** (Monday) are applied to all days. In this case, the **Start Time** and **End Time** of the other days than **Mon** (Monday) cannot be input.

7.7 Alarm Buffer

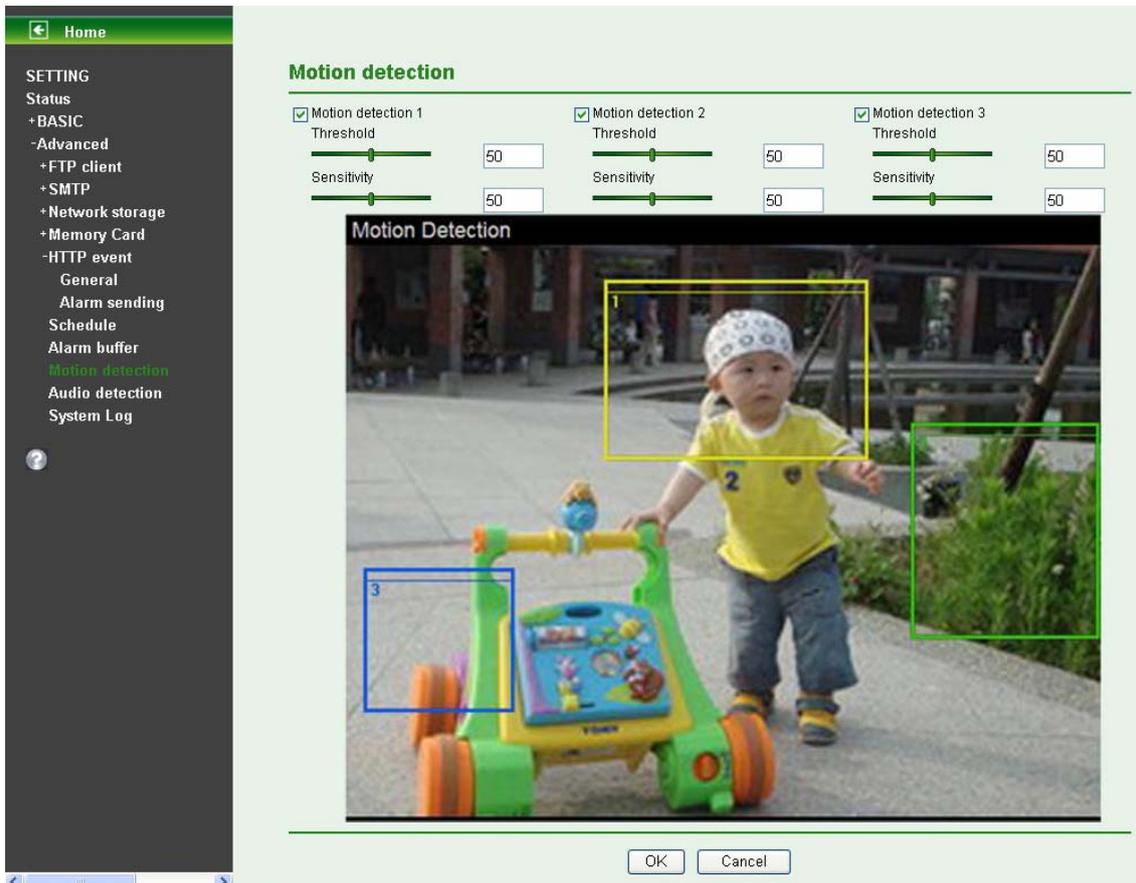
When you click **Alarm Buffer** on the Advanced mode menu, the Alarm buffer setting menu appears. You can set in this menu to enable alarm buffer function connected with **FTP Client**, **SMTP**, and **Network Storage**.



Use alarm buffer function for recording audio and video file in the IP Camera before and after disconnected network. After re-connecting, these files will transmit to **FTP client, SMTP, and Network storage**. You can set the pre-alarm and post-alarm period up to 5 seconds in Alarm Buffer function screen.

7.8 Motion Detection

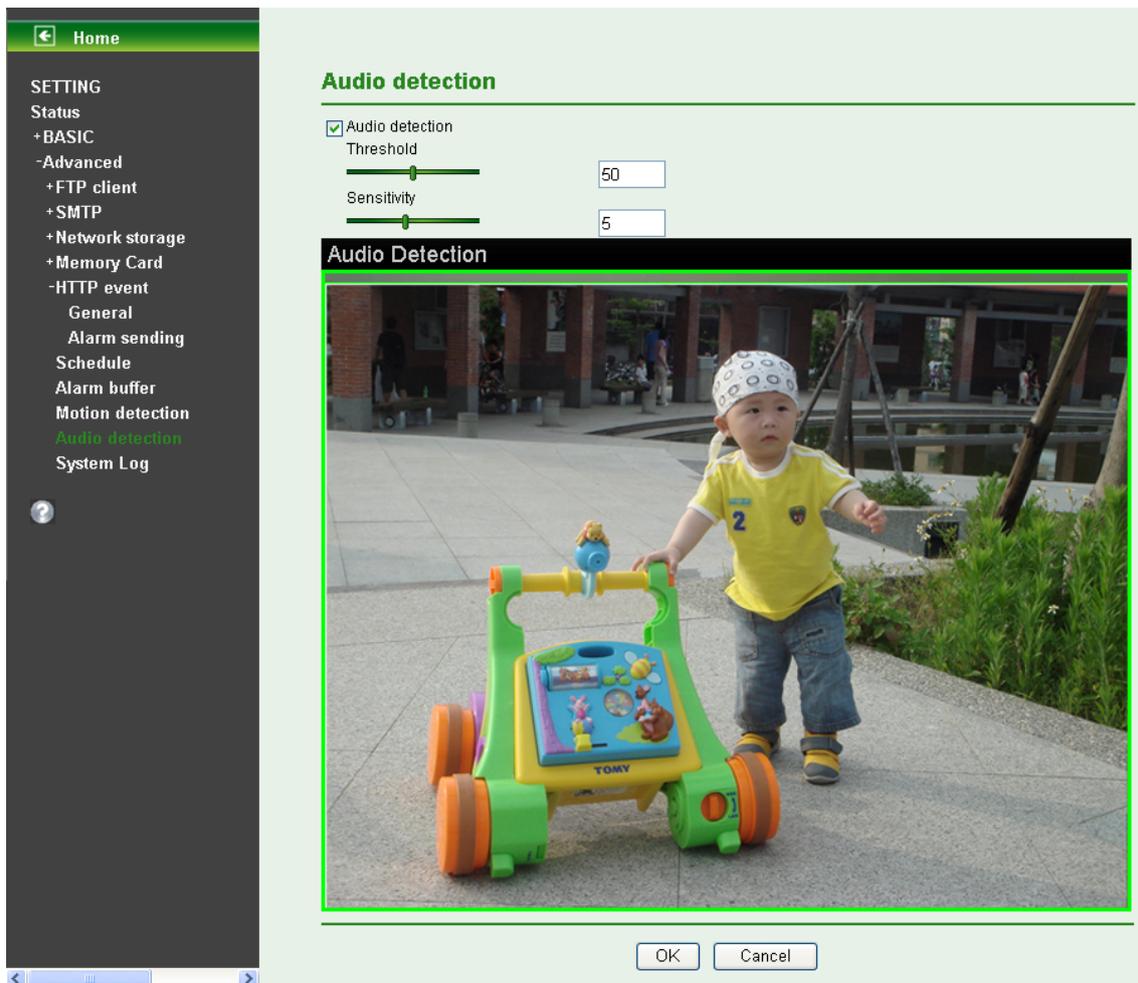
There are three Motion Detection functions as sensors to set for different detecting zones. Each one has Threshold and Sensitivity inputs which you can adjust to specific zone sequentially. Motion Detection function can support to **FTP Client, SMTP, and Network Storage**.



- **Threshold:** It means the extent which the alarm will be triggered. The default value is 50 and the value range is 0~100. The larger the value, the higher the threshold.
- **Sensitivity:** It means that how often the sensor will scan the image different. The higher sensitivity it is and the more frequently it scans. The default value is 50 and the value range is 0~100. The larger the value, the higher the sensitivity.
 - **Motion Detection 1:** Click it on for using **Motion Detection 1** function as a sensor. You can adjust and move the detecting zone by using mouse.
 - **Motion Detection 2:** Click it on for using **Motion Detection 2** function as a sensor. You can adjust and move the detecting zone by using mouse.
 - **Motion Detection 3:** Click it on for using **Motion Detection 3** function as a sensor. You can adjust and move the detecting zone by using mouse.

7.9 Audio Detection

The **Audio detection** has Threshold and Sensitivity inputs which you can adjust sequentially. Audio Detection function can support to **FTP Client, SMTP, Network Storage, and HTTP Event**.

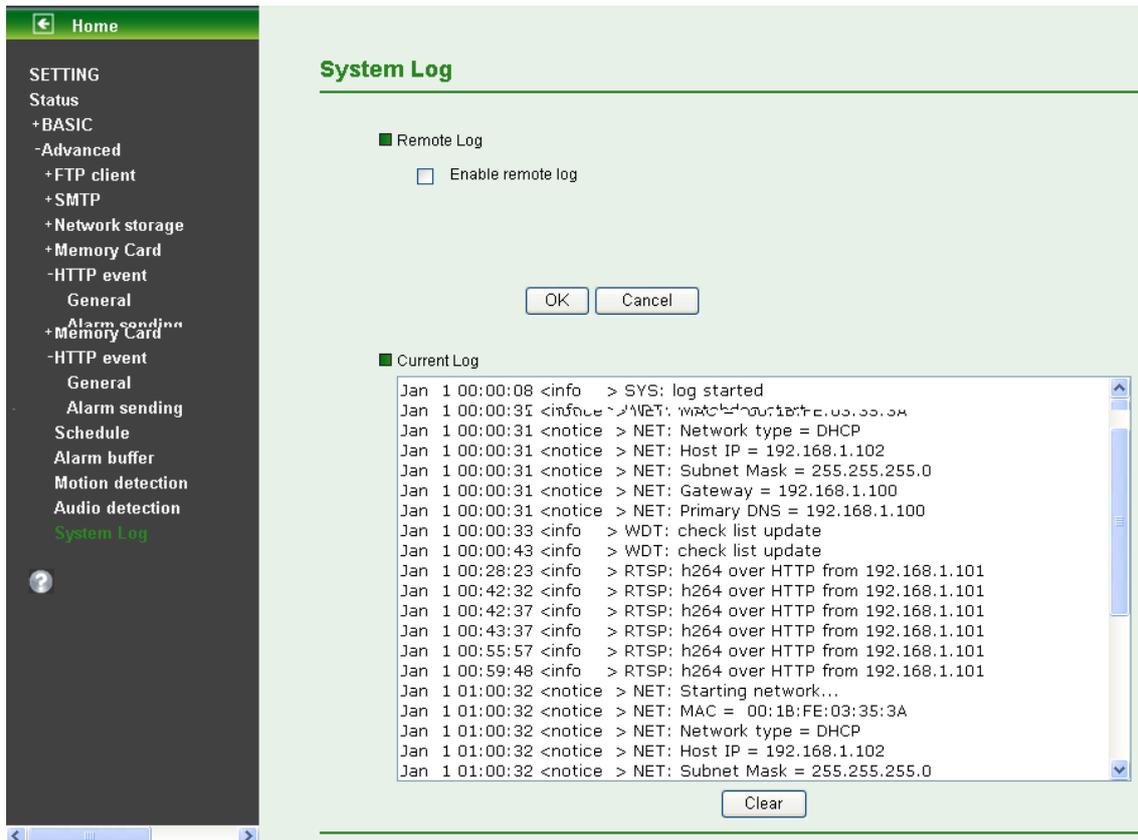


Click it on for using **Audio Detection** function as a sensor. You can set audio detection function at the audio detection function screen.

- **Threshold:** It means the extent which the alarm will be triggered. The default value is 50 and the value range is 0~100. The larger the value, the higher the threshold.
- **Sensitivity:** It means that how often the sensor will scan the image different. The higher sensitivity it is and the more frequently it scans. The default value is 5 and the value range is 1~10. The larger the value, the higher the sensitivity.

7.10 System Log

The System Log function allows users to review any changes and events happened. The system starts logging automatically after started.



- **Enable Remote Log:** Enables user to send the log data to a specified log server.

Appendix

A. Frame-rate and Bitrate Table – Help to set IP Camera with your network environment to access Internet.

Base on your network upload environment to choose the suitable Image-Quality setting. For example, if the network environment is ADSL 256Kb (upload) / 2Mb (download), the most fluent Image-Quality needs to set up under 256Kb situation.

A.1 Mega Mode

A.1.1. H.264 @ 15fps / kbps

Quality	1280*1024	1280*720	640*480	320*240
Excellent	1500	1200	180	50
Detailed	400	250	100	30
Good	250	100	80	20
Standard	100	60	50	15
Medium	80	50	40	10

A.1.2. H.264 @ 10fps / kbps

Quality	1280*1024	1280*720	640*480	320*240
Excellent	1000	800	120	30
Detailed	280	100	70	20
Good	170	70	55	15
Standard	70	40	30	10
Medium	55	30	20	8

A.1.3. H.264 / kbps, fps

Image-Size	Bitrate Setting	Frame-Rate Setting	Current Bitrate	Current Frame-Rate
1280*1024	6144	15	6300	15
1280*1024	6144	10	6300	10
1280*1024	2048	15	2200	15
1280*1024	2048	10	2200	10
1280*1024	512	15	550	15
1280*1024	512	10	550	10
1280*720	6144	15	6300	15
1280*720	6144	10	6300	10
1280*720	2048	15	2200	15
1280*720	2048	10	2200	10
1280*720	512	15	550	15
1280*720	512	10	550	10
640*480	6144	15	6300	15
640*480	6144	10	6300	10
640*480	2048	15	2200	15
640*480	2048	10	2200	10
640*480	512	15	550	15
640*480	512	10	550	15
320*240	6144	15	5100	15

320*240	6144	10	3600	10
320*240	2048	15	2200	15
320*240	2048	10	2200	10
320*240	512	15	550	15
320*240	512	10	550	10

A.1.4. MPEG 4@ 15fps / kbps

Quality	1280*1024	1280*720	640*480	320*240
Excellent	2700	2000	300	100
Detailed	1100	800	200	80
Good	500	350	150	60
Standard	350	250	100	40
Medium	300	200	80	35

A.1.5. MPEG4@ 10fps / kbps

Quality	1280*1024	1280*720	640*480	320*240
Excellent	1800	1400	200	80
Detailed	800	550	120	60
Good	350	250	100	40
Standard	250	180	80	30
Medium	200	140	60	25

A.1.6. MPEG4 / kbps, fps

Image-Size	Quality Setting	Frame-Rate Setting	Current Bitrate	Current Frame-Rate
1280*1024	6144	15	5500	13
1280*1024	6144	10	6300	10
1280*1024	2048	15	2200	15
1280*1024	2048	10	2200	10
1280*1024	512	15	550	15
1280*1024	512	10	550	10
1280*720	6144	15	6300	15
1280*720	6144	10	6300	10
1280*720	2048	15	2200	15
1280*720	2048	10	2200	10
1280*720	512	15	550	15
1280*720	512	10	550	10
640*480	6144	15	6300	15
640*480	6144	10	6300	10
640*480	2048	15	2200	15
640*480	2048	10	2200	10
640*480	512	15	550	15
640*480	512	10	550	10
320*240	6144	15	2200	15
320*240	6144	10	1800	10
320*240	2048	15	2200	15
320*240	2048	10	1800	10
320*240	512	15	550	15
320*240	512	10	550	10

A.1.7. MJPEG @ 15fps / kbps

Quality	1280*1024	1280*720	640*480	320*240
Excellent	22000	16000	6000	2200
Detailed	12000	7000	3000	1200
Good	7000	5000	2500	1000
Standard	5500	4000	2000	800
Medium	4000	3000	1200	500

A.1.8. MJPEG@ 10fps / kbps

Quality	1280*1024	1280*720	640*480	320*240
Excellent	15000	11000	4000	1500
Detailed	8000	5000	2000	800
Good	5000	3500	1800	700
Standard	4000	3000	1500	600
Medium	3000	2000	800	350

A.1.9. MJPEG / kbps, fps

Image-Size	Quality Setting	Frame-Rate Setting	Current Bitrate	Current Frame-Rate
1280*1024	Excellent	15	22000	15
1280*1024	Excellent	10	15000	10
1280*1024	Good	15	7000	15
1280*1024	Good	10	5000	10
1280*1024	Medium	15	4000	15
1280*1024	Medium	10	3000	10
1280*720	Excellent	15	16000	15
1280*720	Excellent	10	11000	10
1280*720	Good	15	5000	15
1280*720	Good	10	3500	10
1280*720	Medium	15	3000	15
1280*720	Medium	10	2000	10
640*480	Excellent	15	6000	15
640*480	Excellent	10	4000	10
640*480	Good	15	2500	15
640*480	Good	10	1800	10
640*480	Medium	15	1200	15
640*480	Medium	10	800	10
320*240	Excellent	15	2200	15
320*240	Excellent	10	1500	10
320*240	Good	15	1000	15
320*240	Good	10	700	10
320*240	Medium	15	500	15
320*240	Medium	10	350	10

A.2 VGA Mode

A.2.1 H.264 @ 30fps / kbps

Quality	640*480	320*240
Excellent	600	60
Detailed	120	40
Good	60	30
Standard	50	25
Medium	40	20

A.2.2 H.264@15 fps / kbps

Quality	640*480	320*240
Excellent	400	40
Detailed	80	30
Good	40	25
Standard	30	20
Medium	25	15

A.2.3 H.264 / kbps, fps

Image-Size	Bitrate Setting	Frame-Rate Setting	Current Bitrate	Current Frame-Rate
640*480	6144	30	6300	30
640*480	6144	15	6300	15
640*480	2048	30	2200	30
640*480	2048	15	2200	15
640*480	512	30	550	30
640*480	512	15	550	15
320*240	6144	30	6300	30
320*240	6144	15	5500	15
320*240	2048	30	2200	30
320*240	2048	15	2200	15
320*240	512	30	550	30
320*240	512	15	550	15

A.2.4 MPEG4 @ 30fps / kbps

Quality	640*480	320*240
Excellent	1000	120
Detailed	400	80
Good	200	60
Standard	150	50
Medium	120	40

A.2.5 MPEG4@ 15fps / kbps

Quality	640*480	320*240
Excellent	600	80
Detailed	250	50
Good	150	40
Standard	100	30
Medium	80	20

A.2.6 MPEG4 / kbps, fps

Image-Size	Bitrate Setting	Frame-Rate Setting	Current Bitrate	Current Frame-Rate
640*480	6144	30	6300	30
640*480	6144	15	6300	15
640*480	2048	30	2200	30
640*480	2048	15	2200	15
640*480	512	30	550	30
640*480	512	15	550	15
320*240	6144	30	5100	30
320*240	6144	15	2800	15
320*240	2048	30	2200	30
320*240	2048	15	2200	15
320*240	512	30	550	30
320*240	512	15	550	15

A.2.7 MJPEG @ 30fps / kbps

Quality	640*480	320*240
Excellent	13000	4500
Detailed	6500	2500
Good	5000	2000
Standard	4000	1600
Medium	2500	1000

A.2.8 MJPEG@ 15fps / kbps

Quality	640*480	320*240
Excellent	7000	2500
Detailed	3500	1500
Good	2800	1200
Standard	2100	1000
Medium	1400	700

A.2.9 MJPEG / kbps, fps

Image-Size	Bitrate Setting	Frame-Rate Setting	Current Bitrate	Current Frame-Rate
640*480	Excellent	30	13000	30
640*480	Excellent	15	7000	15
640*480	Good	30	5000	30
640*480	Good	15	2800	15
640*480	Medium	30	2500	30
640*480	Medium	15	1400	15
320*240	Excellent	30	4500	30
320*240	Excellent	15	2500	15
320*240	Good	30	2000	30
320*240	Good	15	1200	15
320*240	Medium	30	1000	30
320*240	Medium	15	700	15

B. Storage Requirement Table - Help to set Recording Storage System.

Please refer to the following table to find out the capability for recording into your hard disk.

B.1 Mega Mode

B.1.1 H.264 Storage Requirement GB / channel / day @ 15fps

Quality	1280*1024	1280*720	640*480	320*240
Excellent	50	45	10	4.2
Detailed	16.6	13	8.3	2.5
Good	13	8.3	6.7	1.7
Standard	8.3	5	4.2	1.3
Medium	6.7	4.2	3.4	1

B.1.2 H.264 Storage Requirement GB / channel / day @ 10fps

Quality	1280*1024	1280*720	640*480	320*240
Excellent	45	22.5	6.7	2.5
Detailed	12.5	8.3	5.9	1.7
Good	8.3	5.9	4.6	1.3
Standard	5.9	3.4	2.5	1.3
Medium	4.5	2.5	2.1	0.7

B.1.3 MPEG4 Storage Requirement GB / channel / day

Image-Size	Bitrate Setting	Frame-Rate Setting	Storage Requirement
1280*1024	6144	15	522.9
1280*1024	6144	10	522.9
1280*1024	2048	15	182.6
1280*1024	2048	10	182.6
1280*1024	512	15	45.7
1280*1024	512	10	45.7
1280*720	6144	15	522.9
1280*720	6144	10	522.9
1280*720	2048	15	182.6
1280*720	2048	10	182.6
1280*720	512	15	45.7
1280*720	512	10	45.7
640*480	6144	15	522.9
640*480	6144	10	522.9
640*480	2048	15	182.6
640*480	2048	10	182.6
640*480	512	15	45.7
640*480	512	10	45.7
320*240	6144	15	423.3
320*240	6144	10	298.8
320*240	2048	15	182.6
320*240	2048	10	182.6
320*240	512	15	45.7
320*240	512	10	45.7

B.1.4 MPEG4 Storage Requirement GB / channel / day @ 15fps

Quality	1280*1024	1280*720	640*480	320*240
Excellent	133	83	25	8.3
Detailed	58.1	42	17	6.7
Good	42	25	12.5	5
Standard	30	21	8.3	3.4
Medium	25	17	6.7	3

B.1.5 MPEG4 Storage Requirement GB / channel / day @ 10fps

Quality	1280*1024	1280*720	640*480	320*240
Excellent	92	58.1	17	6.7
Detailed	42	30	10	5
Good	30	17	8.3	3.4
Standard	21	12.5	6.7	2.5
Medium	17	10	5	2

B.1.6 MPEG4 Storage Requirement GB / channel / day

Image-Size	Quality Setting	Frame-Rate Setting	Storage Requirement
1280*1024	6144	15	431.6
1280*1024	6144	10	522.9
1280*1024	2048	15	182.6
1280*1024	2048	10	182.6
1280*1024	512	15	45.7
1280*1024	512	10	45.7
1280*720	6144	15	522.9
1280*720	6144	10	522.9
1280*720	2048	15	182.6
1280*720	2048	10	182.6
1280*720	512	15	45.7
1280*720	512	10	45.7
640*480	6144	15	522.9
640*480	6144	10	522.9
640*480	2048	15	182.6
640*480	2048	10	182.6
640*480	512	15	45.7
640*480	512	10	45.7
320*240	6144	15	182.6
320*240	6144	10	149.4
320*240	2048	15	182.6
320*240	2048	10	149.4
320*240	512	15	45.7
320*240	512	10	45.7

B.2 VGA Mode

B.2.1. H.264 Storage Requirement GB / channel / day @ 30fps

Quality	640*480	320*240
Excellent	21	5
Detailed	10	3.4
Good	5	2.5

Standard	4.2	2.1
Medium	3.4	1.7

B.2.2. H.264 Storage Requirement GB / channel / day @ 15fps

Quality	640*480	320*240
Excellent	12.5	3.4
Detailed	6.7	2.5
Good	3.4	2.1
Standard	2.5	1.7
Medium	2.1	1.3

B.2.3. H.264 Storage Requirement GB / channel / day

Image-Size	Bitrate Setting	Frame-Rate Setting	Current Bitrate	Storage Requirement
640*480	6144	30	6300	522.9
640*480	6144	15	6300	522.9
640*480	2048	30	2200	182.6
640*480	2048	15	2200	182.6
640*480	512	30	550	45.7
640*480	512	15	550	45.7
320*240	6144	30	6300	522.9
320*240	6144	15	5500	456.5
320*240	2048	30	2200	182.6
320*240	2048	15	2200	182.6
320*240	512	30	550	45.7
320*240	512	15	550	45.7

B.2.4. MPEG4 Storage Requirement GB / channel / day @ 30fps

Quality	640*480	320*240
Excellent	50	10
Detailed	25	6.7
Good	16.7	5
Standard	12.5	4.2
Medium	10	3.4

B.2.5. MPEG4 Storage Requirement GB / channel / day @ 15fps

Quality	640*480	320*240
Excellent	33.2	6.7
Detailed	16.7	4.2
Good	12.5	3.4
Standard	8.3	2.5
Medium	6.7	1.7

B.2.6. MJPEG Storage Requirement GB / channel / day

Image-Size	Bitrate Setting	Frame-Rate Setting	Current Bitrate	Storage Requirement
640*480	6144	30	6300	522.9
640*480	6144	15	6300	522.9
640*480	2048	30	2200	182.6

640*480	2048	15	2200	182.6
640*480	512	30	550	45.7
640*480	512	15	550	45.7
320*240	6144	30	5100	423.3
320*240	6144	15	2800	232.4
320*240	2048	30	2200	182.6
320*240	2048	15	2200	182.6
320*240	512	30	550	45.7
320*240	512	15	550	45.7

C. System Requirement – Help to setup System

C.1. 16 Channel IP Camera with CIF Performance

Equipment Configuration

Software:	MainConsole Version 2.6.4 Professional
CPU:	Intel Core 2 Quad Q6600 @ 2400 MHz
Memory:	1024 MB (2 x 512 DDR2-SDRAM)
Ethernet:	Marvell Yukon 88E8052 PCI-E ASF Gigabit Ethernet Controller
Hard Disk:	ST3250620A (250 GB)
Graphic card:	ATI Technologies Inc Radeon X1300 Series
Operating System:	Windows XP Professional SP2

Results from Test with a Resolution of 352×240

320x240	Quality	Frame Rate	CPU Load	Bandwidth
16 IP camera	Good	20	65%	40~50 Mbps
16 IP camera	Excellent	20	67%	40~50 Mbps

C.2. 16 Channel IP Camera with D1 Performance

Equipment Configuration

Software:	MainConsole Version 2.6.4 Professional
CPU:	AMD Athlon 64*2 @3600+MHz
Memory:	2048 MB (2 x 1024 DDR2-SDRAM)
Ethernet:	VIA Rhine II Fast Ethernet Adapter
Hard Disk:	ST3250620A (250 GB)
Graphic card:	ATI Technologies Inc EAX1600 Series
Operating System:	Windows XP Professional SP2 x64

Results from Test with a Resolution of 704×480 CCD IPCamera

704x480	Quality	Frame Rate	CPU Load	Bandwidth
16 IP camera	Excellent	30	95%	15~20 Mbps

Results from Test with a Resolution of 640×480 CMOS IPCamera

640x480	Quality	Frame Rate	CPU Load	Bandwidth
16 IP camera	Excellent	30	95%	10~15 Mbps

Europe – EU Declaration of Conformity

This device complies with the essential requirements of the R&TTE Directive 1999/5/EC. The following test methods have been applied in order to prove presumption of conformity with the essential requirements of the R&TTE Directive 1999/5/EC:

Clause	Description
EN 60950-1: 2001	Safety of Information Technology Equipment
EN 50392: 2004	Generic standard to demonstrate the compliance of electronic and electrical apparatus with the basic restrictions related to human exposure to electromagnetic fields (0 Hz - 300 GHz)
EN 300 328 V1.6.1 (2004-11)	Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using wide band modulation techniques; Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive
EN 301 489-17 V1.2.1 (2002-08) and EN 301 489-1 V1.5.1 (2004-11)	Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 17: Specific conditions for 2,4 GHz wideband transmission systems and 5 GHz high performance RLAN equipment

This device is a 2.4 GHz wideband transmission system (transceiver), intended for use in all EU member states and EFTA countries, except in France and Italy where restrictive use applies.

In Italy the end-user should apply for a license at the national spectrum authorities in order to obtain authorization to use the device for setting up outdoor radio links and/or for supplying public access to telecommunications and/or network services.

This device may not be used for setting up outdoor radio links in France and in some areas the RF output power may be limited to 10 mW EIRP in the frequency range of 2454 – 2483.5 MHz. For detailed information the end-user should contact the national spectrum authority in France.

 Český [Czech]	<i>[Jméno výrobce]</i> tímto prohlašuje, že tento <i>[typ zařízení]</i> je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.
 Dansk [Danish]	Undertegnede <i>[fabrikantens navn]</i> erklærer herved, at følgende udstyr <i>[udstyrets typebetegnelse]</i> overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.
 Deutsch [German]	Hiermit erkläre <i>[Name des Herstellers]</i> , dass sich das Gerät <i>[Gerätetyp]</i> in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet.
 Eesti [Estonian]	Käesolevaga kinnitab <i>[tootja nimi = name of manufacturer]</i> seadme <i>[seadme tüüp = type of equipment]</i> vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
 English	Hereby, <i>[name of manufacturer]</i> , declares that this <i>[type of equipment]</i> is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

 Español [Spanish]	Por medio de la presente [<i>nombre del fabricante</i>] declara que el [<i>clase de equipo</i>] cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.
 Ελληνική [Greek]	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ [<i>name of manufacturer</i>] ΔΗΛΩΝΕΙ ΟΤΙ [<i>type of equipment</i>] ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ.
 Français [French]	Par la présente [<i>nom du fabricant</i>] déclare que l'appareil [<i>type d'appareil</i>] est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.
 Italiano [Italian]	Con la presente [<i>nome del costruttore</i>] dichiara che questo [<i>tipo di apparecchio</i>] è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
Latviski [Latvian]	Ar šo [<i>name of manufacturer / izgatavotāja nosaukums</i>] deklarē, ka [<i>type of equipment / iekārtas tips</i>] atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.
Lietuvių [Lithuanian]	Šiuo [<i>manufacturer name</i>] deklaruoja, kad šis [<i>equipment type</i>] atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.
 Nederlands [Dutch]	Hierbij verklaart [<i>naam van de fabrikant</i>] dat het toestel [<i>type van toestel</i>] in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.
 Malti [Maltese]	Hawnhekk, [<i>isem tal-manifattur</i>], jiddikjara li dan [<i>il-mudel tal-prodott</i>] jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn rilevanti li hemm fid-Dirrettiva 1999/5/EC.
 Magyar [Hungarian]	Alulírott, [<i>gyártó neve</i>] nyilatkozom, hogy a [<i>... típus</i>] megfelel a vonatkozó alapvető követelményeknek és az 1999/5/EC irányelv egyéb előírásainak.
 Polski [Polish]	Niniejszym [<i>nazwa producenta</i>] oświadczam, że [<i>nazwa wyrobu</i>] jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC.
 Português [Portuguese]	[<i>Nome do fabricante</i>] declara que este [<i>tipo de equipamento</i>] está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.
 Slovensko [Slovenian]	[<i>Ime proizvajalca</i>] izjavlja, da je ta [<i>tip opreme</i>] v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES.
Slovensky [Slovak]	[<i>Meno výrobcu</i>] týmto vyhlasuje, že [<i>typ zariadenia</i>] spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.
 Suomi [Finnish]	[<i>Valmistaja = manufacturer</i>] vakuuttaa täten että [<i>type of equipment = laitteen tyyppimerkintä</i>] tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.

 Svenska
[Swedish]

Härmed intygar [*företag*] att denna [*utrustningstyp*] står i överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Caution:

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

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.