

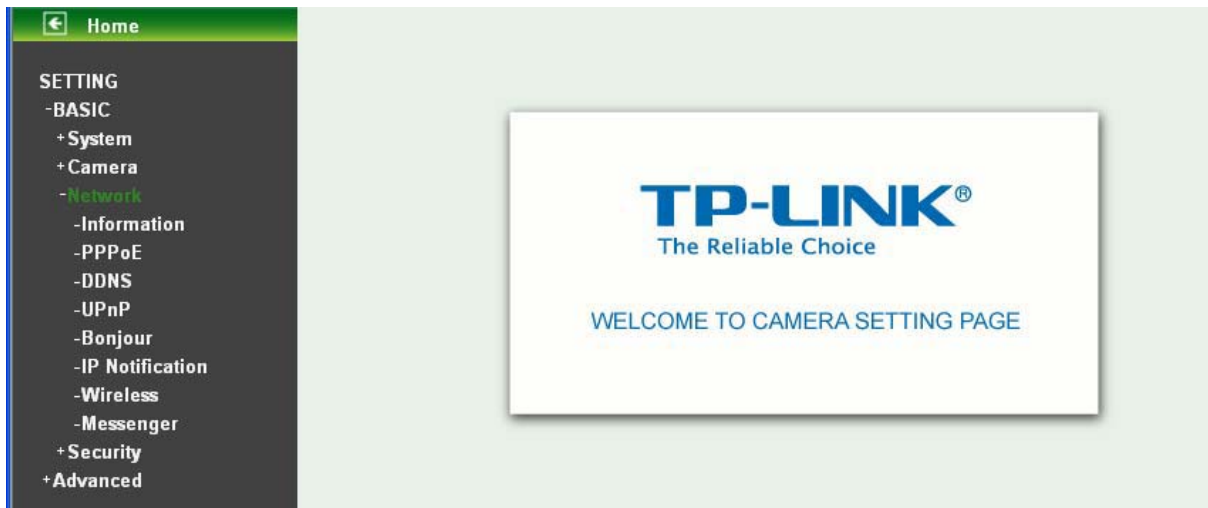
- **Image Size:** Specify the image size when the network camera transmits. You can choose among 640 x 480, 320 x 240, and 160 x 120.
- **Frame Rate:** Set the frame rate of the MJPEG image. You can choose values from 1, 2, 3, 4, 5, 7, 10, and 15 fps. The unit “fps” stands for “frames per second”.
- **Quality:**
 - **Auto:** The quality will be automatically decided.
 - **Fixed Quality:** You can 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 and Bitrate Table](#).

7.3 Network

Click the folder of **Network** to display the sub folders including **Information**, **PPPoE**, **DDNS**, **UPnP**, **Bonjour**, **IP Notification**, **Wireless (for wireless models)** and **Messenger**.



7.3.1 Information

The page of **Information** displays the MAC address of the device.

The screenshot shows the 'Information' page in a network configuration interface. On the left is a dark sidebar with a 'Home' button and a list of settings: SETTING, -BASIC, +System, +Camera, -Network, -Information (highlighted), -PPPoE, -DDNS, -UPnP, -Bonjour, -IP Notification, -Wireless, -Messenger, +Security, and +Advanced. The main area is titled 'Information' and contains the following settings:

- MAC address:** 94:0C:6D:B0:46:F5
- IP address options:**
 - Obtain an IP address automatically (DHCP)
 - Use the following IP address
 - IP address: 192.168.1.100
 - Subnet mask: 255.255.255.0
 - Default gateway: 192.168.1.1
- DNS server address options:**
 - Obtain DNS server address automatically
 - Use the following DNS server address
 - Primary DNS server: 192.168.1.1
 - Secondary DNS server: 0.0.0.0
- HTTP port number:** 80 [] (1024 to 65535)

At the bottom are 'OK' and 'Cancel' buttons.

- **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.
- **Use the following IP address:** Select this 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 page or in the Setup Program, access the device by typing the IP address of the device on the web browser as follows: for example, when HTTP port number is set to 2000 and the IP address of your camera is set to 192.168.1.100, you should type in <http://192.168.1.100:2000/> to access the device.

Note:

1. The IP Camera needs to be rebooted after it finishes changing the network setting completely. Please go to “**Setting**→ **Basic** → **System** → **Initialize**” page and click the **Reboot** button after you make some changes.

2. If you connect the IP Camera with your computer directly, the default network domain of camera is 192.168.1.xx.

7.3.2 PPPoE (Point-to-Point Protocol over Ethernet)

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

The screenshot shows the PPPoE configuration interface. The 'PPPoE' toggle is turned on. The IP address is set to 0.0.0.0. The User ID, Password, and Re-type password fields are empty. The 'Use the following DNS server address' option is selected, with the Primary DNS server set to 192.168.1.1 and the Secondary DNS server set to 0.0.0.0. The 'OK' and 'Cancel' buttons are visible at the bottom.

- **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.
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 more details, please refer to [Section 7.3.6](#).
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.

7.3.3 DDNS (Dynamic DNS)

The screenshot shows a web-based configuration interface for DDNS. On the left is a dark sidebar with a 'Home' button and a list of settings: -BASIC, +System, +Camera, -Network, -Information, -PPPoE, -DDNS (highlighted), -UPnP, -Bonjour, -IP Notification, -Wireless, -Messenger, +Security, and +Advanced. The main content area is light green and titled 'DDNS'. It features a toggle switch for 'DDNS' which is currently turned 'On'. Below this are several input fields: a dropdown menu for 'Server name', text boxes for 'User ID', 'Password', and 'Re-type password', and a text box for 'Host name'. At the bottom of the form, there are radio buttons for 'Periodical Update', with 'Auto' selected and 'Periodical' set to '5 min'. 'OK' and 'Cancel' buttons are located at the bottom center of the configuration area.

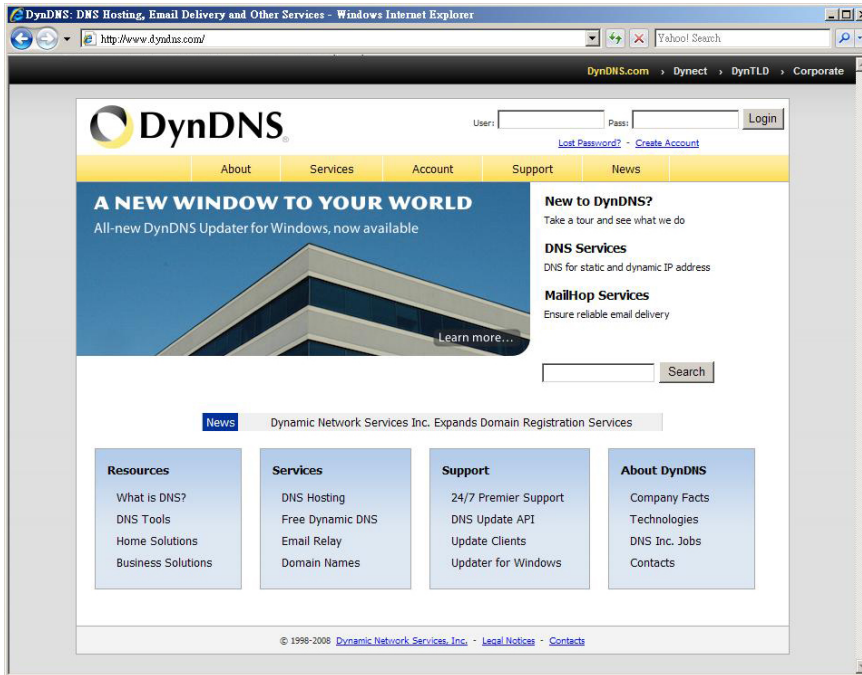
DDNS is a system which allows the domain name data held in a name server to be updated in real time. The most common use for DDNS is allowing an internet domain name to be assigned to a computer with a varying/dynamic IP Address. This makes it possible for other sites on the internet to establish connection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

- **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.
- **Periodical Update:**
 - **Auto:** The domain name data will be updated automatically.
 - **Periodical:** The domain name data will be updated once in a period. The period can be chosen among 5, 10, 15, 30 and 60 minutes.

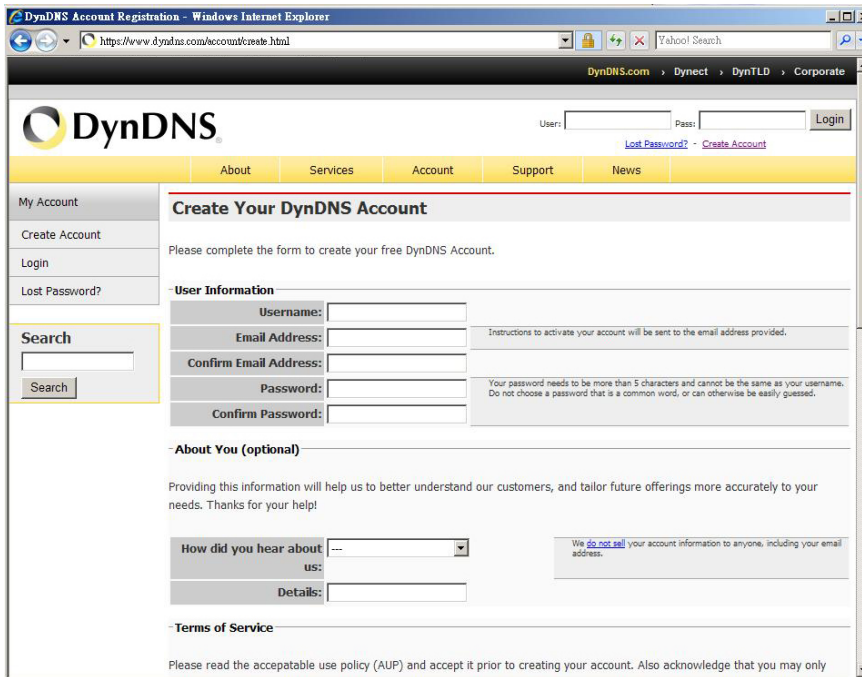
Note:

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

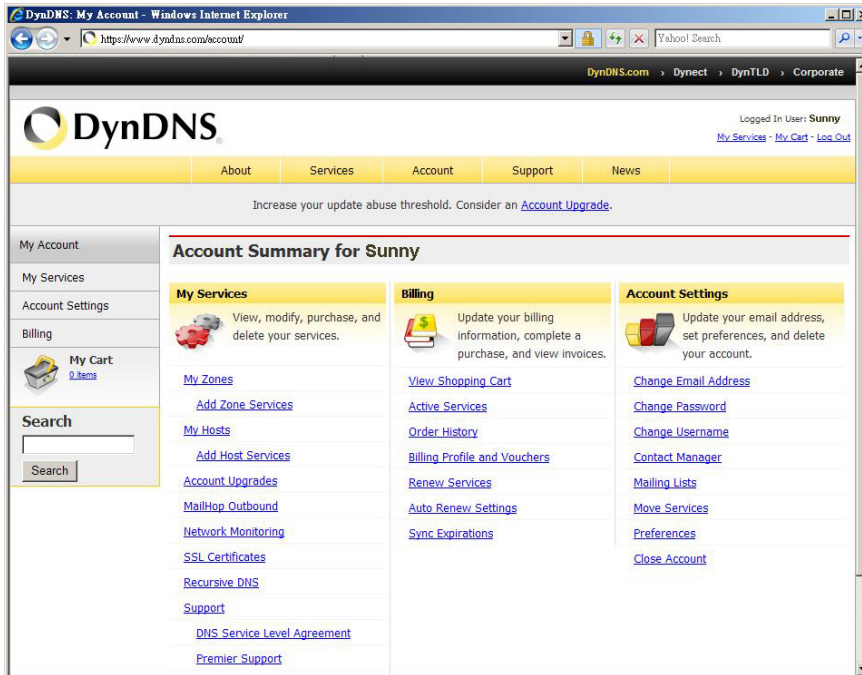
1. Login <http://www.dyndns.org>, click the Create Account.



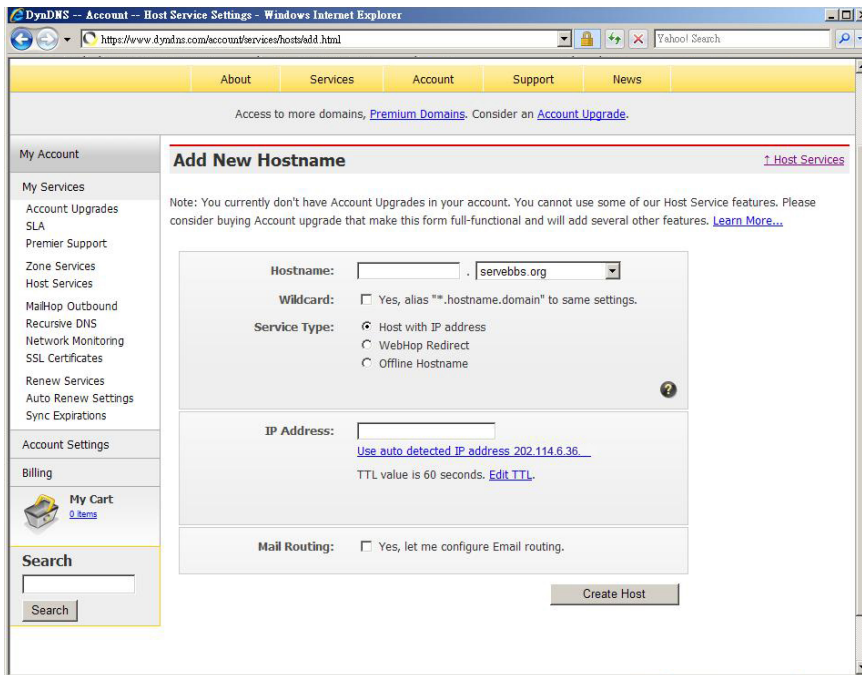
2. Input all information and follow step by step with DynDNS.



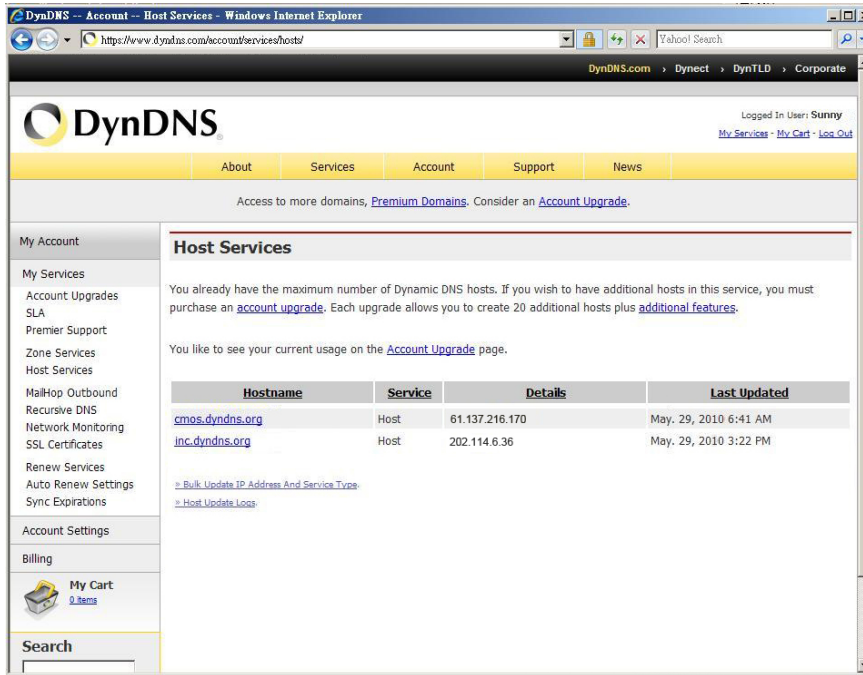
3. Login with new account and click Account → My Hosts → Add Host Services.



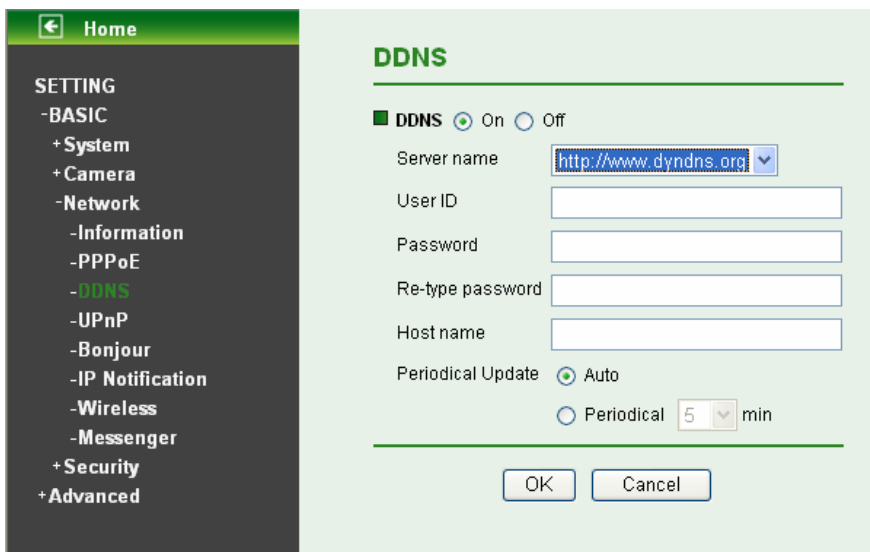
4. Type domain in the Hostname field and select sub-domain.



5. After type information, check your DDNS service.

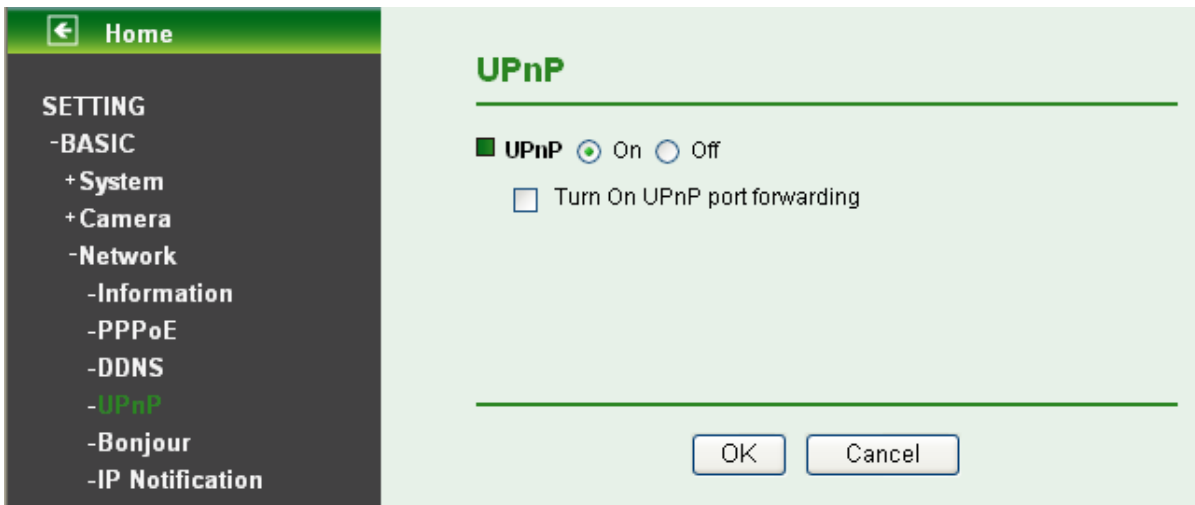


6. Type your DDNS User ID, Password and Host name in **Setting** → **Network** → **DDNS**. After completing setting, reboot IP Camera.

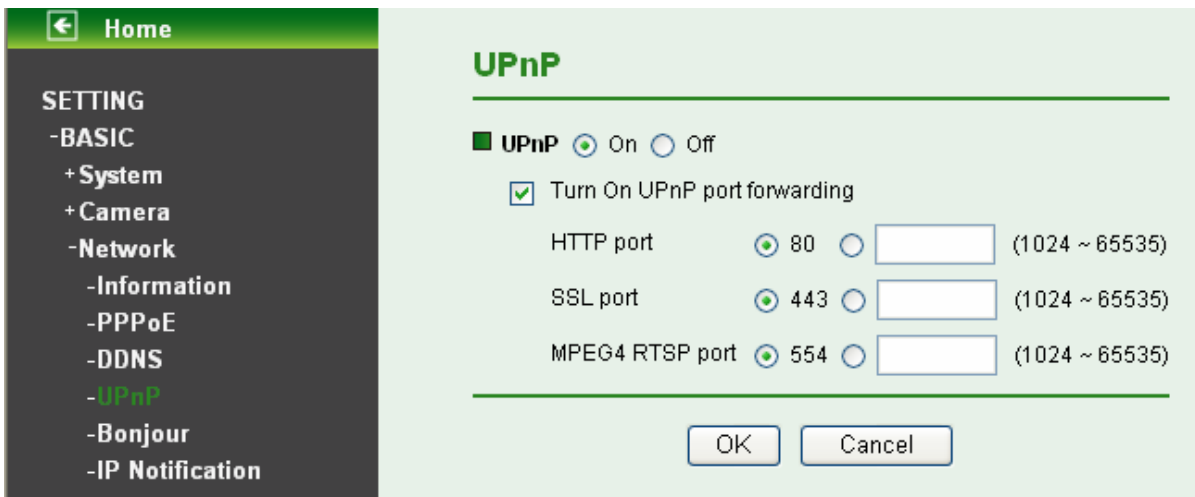


7.3.4 UPnP (Universal Plug and Play)

You can select UPnP function “On” or “Off”.



If a router is used to access to internet and it supports UPnP IGD function, please tick **Turn On UPnP port forwarding**.



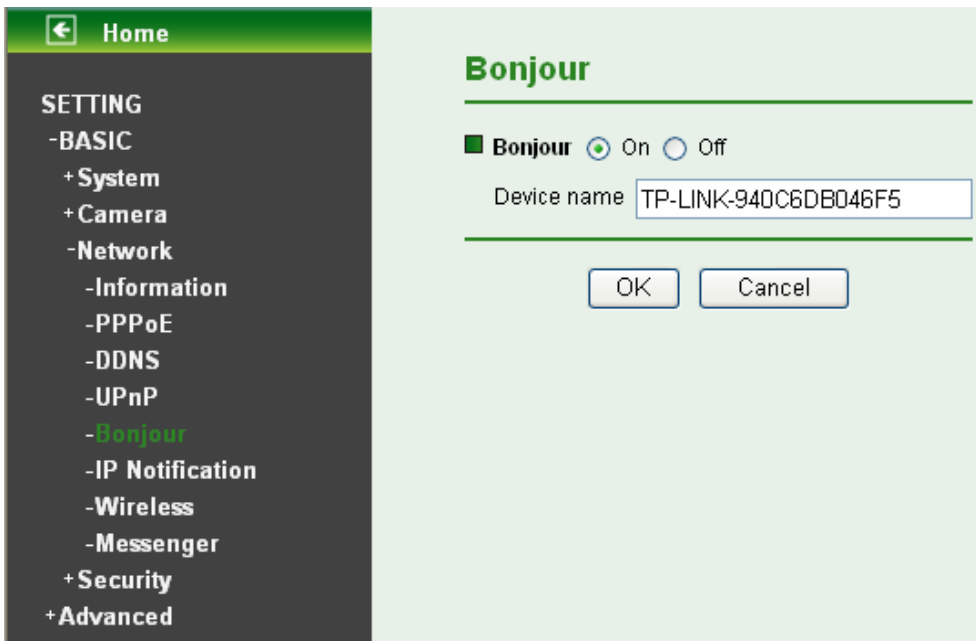
- **HTTP port:** The default HTTP port is 80. Or the port number can be entered, ranged from 1024 to 65535.
- **SSL port:** The default SSL port is 443. Or the port number can be entered, ranged from 1024 to 65535.
- **MPEG4 RTSP port:** The default MPEG-4 RTSP Port is 554. Or the port number can be entered, ranged from 1024 to 65535.

 **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. The device supports UPnP which is enabled by default. The device will be automatically detected and a new icon will be added to “My Network Place” if it also enables on your computer. It provides Port Forwarding for opening a port in a router or firewall in a private network in order to let a party from the outside world contact a inside user.

7.3.5 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 as 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>.

7.3.6 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.)

IP Notification

On Off

Notify type DHCP Static IP PPPoE

SMTP server name

SMTP server port (1 ~ 65535) SSL

Authentication On Off

SMTP POP before SMTP

POP server name

User name

Password

Recipient e-Mail address

Administrator e-Mail address

Subject

Message

- **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.
 - **SSL:** 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 587 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**.

IP Notification

IP Notification On Off

Notify type DHCP Static IP PPPoE

SMTP server name

SMTP server port (1 ~ 65535) SSL

Authentication On Off

SMTP POP before SMTP

POP server name

User name

Password

Recipient e-Mail address

Administrator e-Mail address

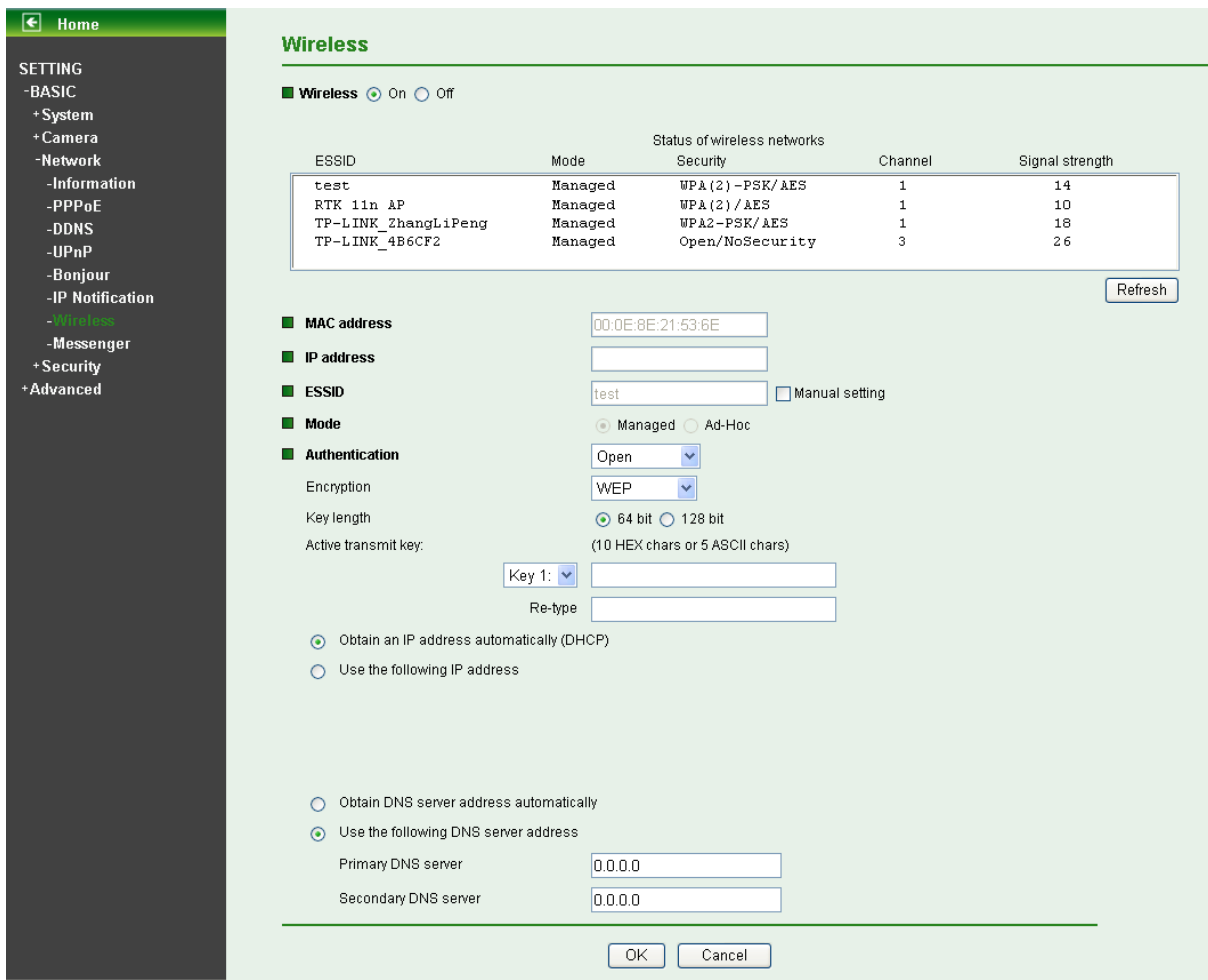
Subject

Message

- **SMTP:** Select if SMTP authentication is necessary when an e-mail is sent.
- **POP before SMTP:** Select if POP before SMTP authentication is necessary when an e-mail is sent.
 - **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.

7.3.7 Wireless

The wireless network has to be set up by using cable network connection. After setting the camera correctly, the wireless function can work with 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 control how the camera is connected to the wireless network.

- **MAC address** – This displays the MAC address of the IP camera.
- **IP address** – The **IP address** field is not for entering, but for displaying. 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 ESSID can be entered.

- **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
RTK 11n AP	Managed	WPA(2)/AES	1	10
TP-LINK_ZhangLiPeng	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

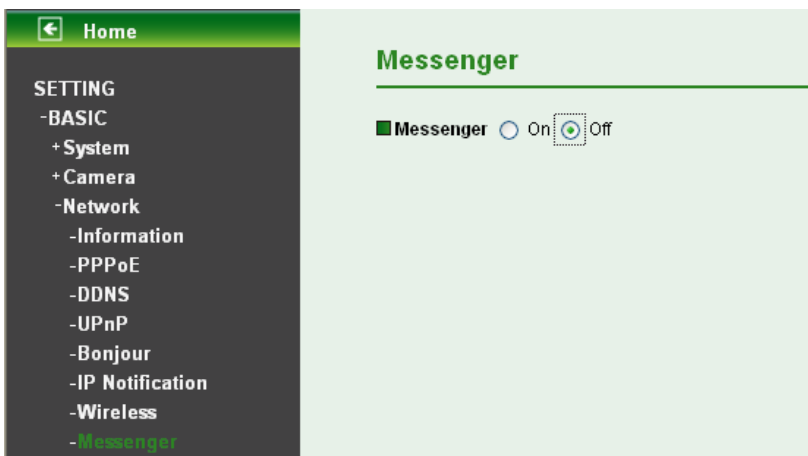
Secondary DNS server

- ✓ **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 affirm it.

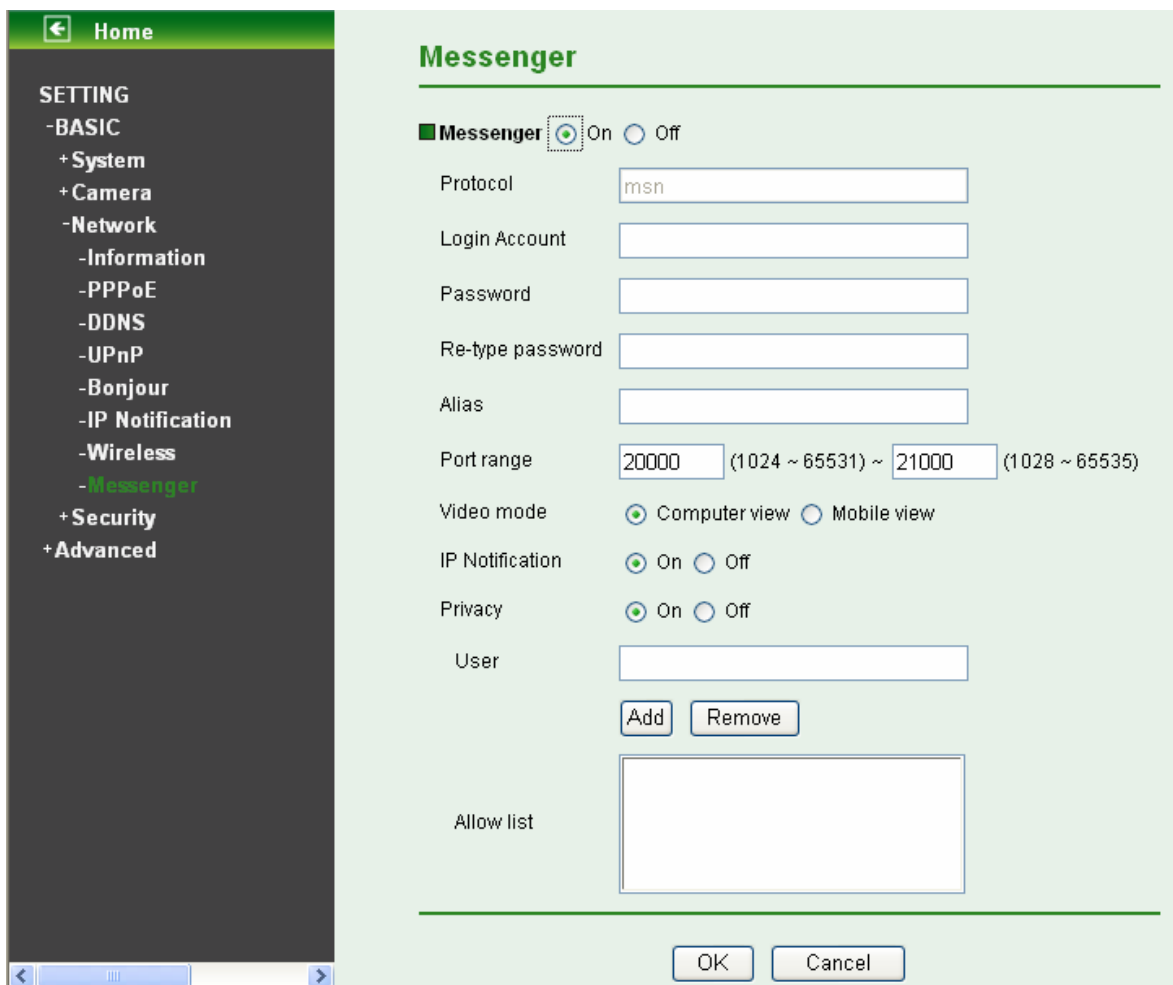
- ✓ **Obtain an IP address automatically (DHCP)** – If a DHCP server is installed on the network, to select this while the IP address is assigned by the DHCP server.
- ✓ **Use the following IP address** - Select this when the fixed IP address is set.
 - ✧ **IP address:** Enter the IP address of the camera, 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.

7.3.8 Messenger

If Messenger option is selected **On**, you can set out the setting of MSN account.



Messenger function provides an easy-connect feature. User can easily know what the camera's private and public IP addresses are.



- **Protocol:** support MSN only.
- **Login Account:** Camera will use this account to login MSN server. This MSN account should be applied form <http://www.msn.com>.
- **Password:** password for this msn account.
- **Re-type password:** re-type password to double confirm.
- **Alias:** This alias will display on MSN like the following which display in red frame.
- **Port range:** Camera will select one port from this port range for video transmission.
- **Video Mode:** You can select Computer View or Mobile View.
 - **Computer View:** This mode is the default value.
 - **Mobile View:** If Messenger function doesn't work due to the firewall or the function limit of router, please choose Mobile View.
- **IP Notification:** Switch the IP notification On/Off. If this feature switches On, camera will send IP notification to the users who are allowed.
- **Privacy:** Switch privacy On/Off. When privacy turns on, only those users in allow list can access the camera.
- **User:** Input to this blank to edit allow list.
- **Allow list:** When privacy turns on, only those users in allow list can access the camera.

7.4 Security

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

7.4.1 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.

UserID	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 (apply in speed dome).
 - 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. Click **Off** and select one (among **Admin**, **Operator** and **Viewer**) from the pull list as default, 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 default, you can key in appropriate username and password in the diag box that pop up when performing advanced operations that are only allowed by the higher authority.

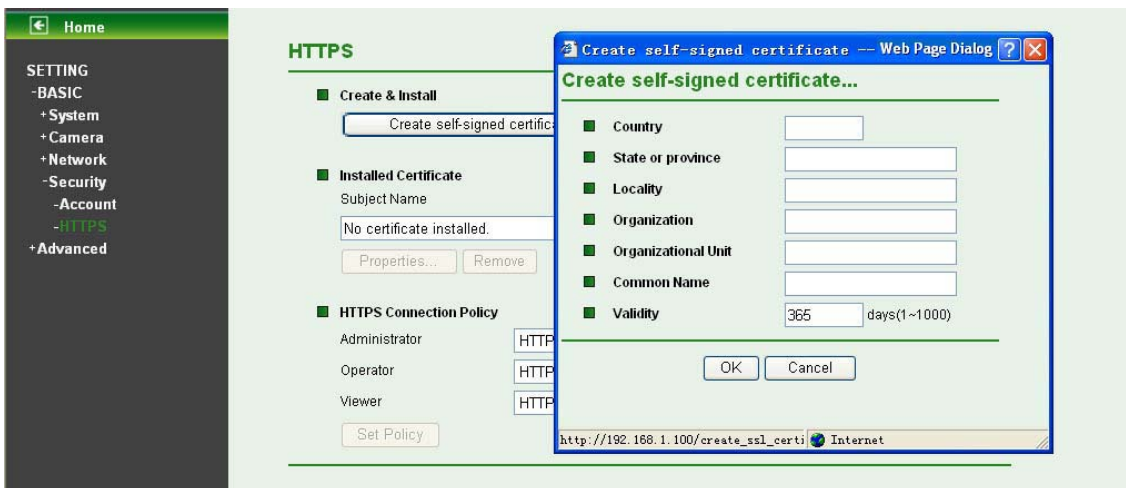
7.4.2 HTTPS

HTTPS is a URI 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.

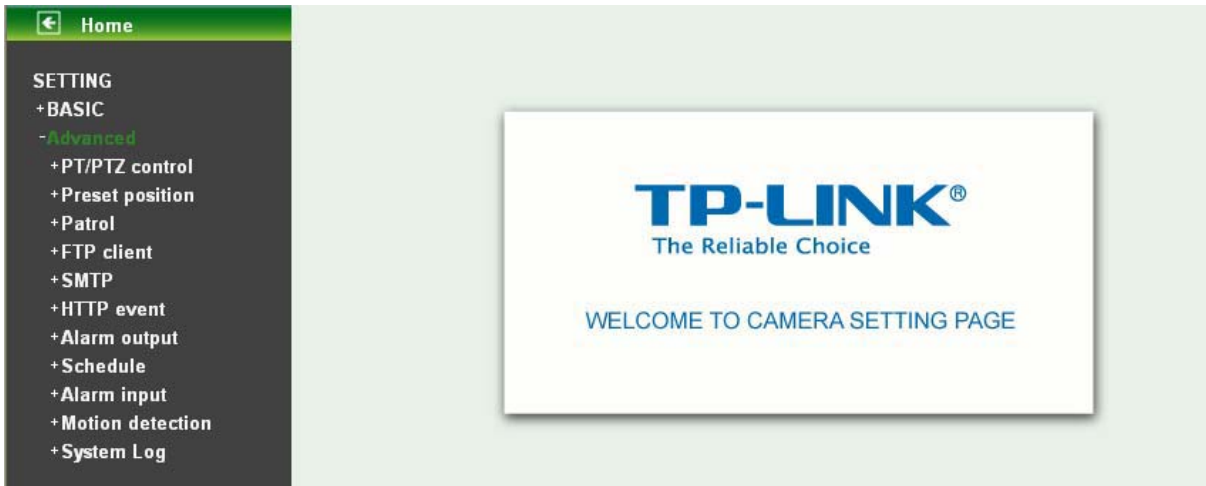


Note:

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.

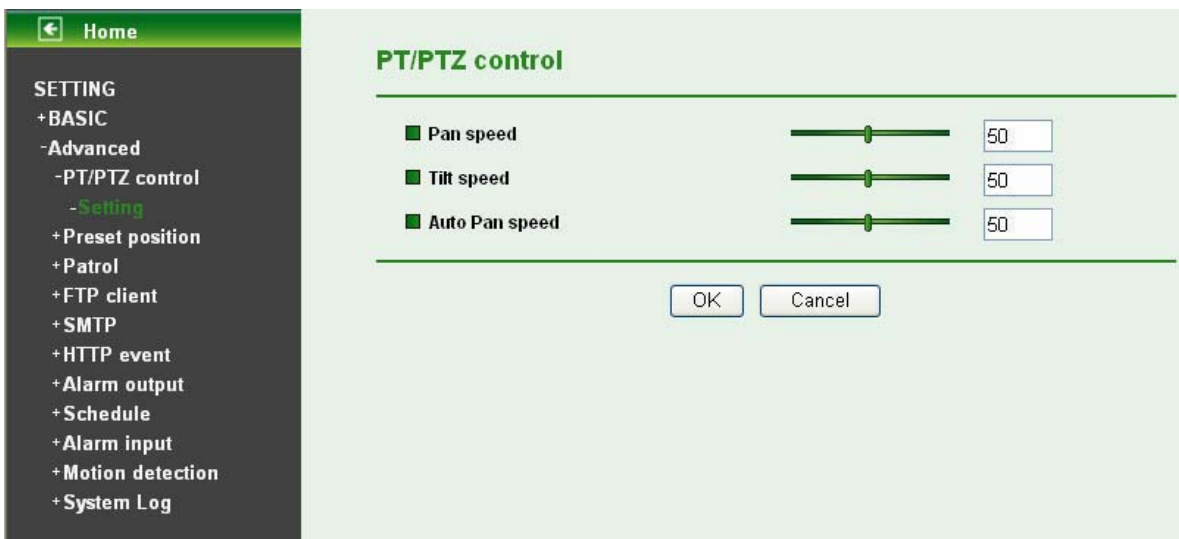
Chapter 8 Setting-Advanced

Click the folder of **Advanced** to display the sub folders including **PT Control**, **Present Position**, **Patrol**, **FTP client**, **SMTP**, **HTTP Event**, **Alarm Output**, **Schedule**, **Alarm Input**, **Alarm Buffer**, **Motion detection** and **System Log**.



8.1 PT/PTZ Control

In this section, it provides **Pan**, **Tilt**, **Auto Pan speed** control setting.



- **Pan speed:** Specify the moving speed of the left and right commands. Available options are from 0 (slowest) to 100 (fastest). The larger the value, the faster the speed.
- **Tilt speed:** Specify the moving speed of the up and down commands. Available options are from 0 (slowest) to 100 (fastest). The larger the value, the faster the speed.
- **Auto Pan speed:** Specify the moving speed of the patrol tour. Available options are from 0 (slowest) to 100 (fastest). The larger the value, the faster the speed.

8.2 Preset Position

- **Set:** Use it to save the camera position to a preset number. Carry out the following steps.
 - Move the camera to the position to be saved while you are checking the image with the main console.
 - Write the preset position name in “Preset Pos. Name text” box.
 - Click the **Set**. The camera position is saved.
 - If want to set this position as home position, click **Home** option on. Click the **Set**. The camera position is saved as home position.

 **Note:**

Setting the new Home position will replace previous **Home** position.

- **Reset:** When writing the preset position name in Preset Pos. Name text box, press **Reset** to clean filed words.
- **Delete All:** Be careful! When pressing Delete All, all Preset Position information will be deleted.
- **Calibration:** Click it and the camera will move to the straight ahead position.
- **Preset Go:** Choose one preset position, click the button, and then the camera will be set to the selected preset position. This button allows users to adjust the camera position more conveniently and efficiently.
- **Control panel:** Click **Control panel** button and the control panel will appear. The camera position can be adjusted by clicking the direction buttons.

- **Delete:** Select a preset number from 1 to 32 in the list box. Use it to delete a specific preset position setting.

8.3 Patrol

There are four patrol tours to set for composing different preset positions. Each one lists up to 8 positions which can be programmed, and the camera moves to the programmed positions sequentially. The camera stops when it moves to the last preset position.

The screenshot shows a web-based configuration interface for a camera system. On the left is a dark sidebar menu with a 'Home' button at the top. The menu items include: SETTING, +BASIC, -Advanced, +PT/PTZ control, +Preset position, -Patrol, -Tour 1 (highlighted in green), -Tour 2, -Tour 3, -Tour 4, +FTP client, +SMTP, +HTTP event, +Alarm output, +Schedule, +Alarm input, +Motion detection, and +System Log. The main content area is titled 'Setting' and has a light green background. It contains the following elements:

- Tour Name:** A text input field containing 'Guardtour1'.
- Tour Position:** A section with three dropdown menus: 'Order', 'Select Pos.', and 'Waiting time :'. Below these are three buttons: 'Set', 'Clear', and 'Clear All'.
- Interval:** A dropdown menu set to '0.5' with the unit 'hours'.
- Set as default tour:** A checked checkbox and a 'Tour Start' button.
- Preset Pos. Name and Waiting time (Sec):** A table with 8 rows. Each row has a number (1-8) in the first column, a text input field for the name in the second column, and a text input field for the waiting time in the third column.
- Buttons:** 'OK' and 'Cancel' buttons at the bottom of the form.

- **Tour name:** Rename the tour name.
- **Tour position**
 - **Order:** There are 8 orders to select for camera directions.
 - **Select Pos.:** There are preset positions to choose for each order. (For more information about preset position, please refer to [Section 8.2.](#))
 - **Waiting time:** Define how long the camera is needed to stop at this position. The range is 1~99 seconds.
 - **Set:** Click it to save the camera position to a preset number.
 - **Clear:** If a preset position is not needed, select the tour order and click **Clear** to delete this position information.
 - **Clear All:** Be careful! When you click Clear All, it will clear out all information of this tour.
- **Interval:** Define the cycle interval between two patrol tours. The interval value is among 0.5, 1, 2, 4, 8, 12 and 24 hours.
- **Set as default tour:** Tick it to set this tour as default.

- **Tour Start:** To click **Tour Start**, and then the camera will start the preset patrol tour.
- **Tour Stop:** While the camera moves on patrol tour, click **Tour Stop** to stop the patrol tour.

➤ **Carry out the following steps:**

1. Click **Order** and choose one of eight orders.
2. Click **Select Pos.** and choose one of the preset positions.
3. Fill in the **Waiting time**.
4. Click **Set**, and then the tour position is saved.
5. Follow the steps to set the other orders.
6. Click the **OK** to save the tour.

8.4 FTP Client

This menu is used for capturing and sending images to an FTP server. By using FTP client function, you can send to FTP server the image file which has been shot and recorded linked with the built-in motion detection function. Click the folder of **FTP client** to display the sub folders including **General**, **Alarm sending** and **Periodical sending**.

8.4.1 General

The screenshot shows the 'General' settings page for the FTP client. On the left is a sidebar menu with 'Home' at the top, followed by 'SETTING', '+BASIC', '-Advanced', '+PT/PTZ control', '+Preset position', '+Patrol', '-FTP client', '-General' (highlighted in green), '-Alarm sending', '-Periodical sending', '+SMTP', '+HTTP event', and '+Alarm output'. The main content area is titled 'General' and features a 'FTP client' toggle with 'On' selected. Below this are four input fields: 'FTP server name', 'User name', 'Password', and 'Re-type password'. At the bottom of the form is a 'Passive mode' toggle with 'Off' selected. Three buttons are at the bottom: 'OK', 'Cancel', and 'Test'.

Select “**On**” when you use FTP function. The FTP client setting page appears.

Select “**Off**”, when you do not 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.

- **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 mode:** 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.

8.4.2 Alarm Sending

Set to forward the image file to the specified FTP server linked with the alarm detection by the built-in motion detection function. Select **On** to send the image 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 images when sending to the FTP server. You can use up to 10 alphanumeric characters, - (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), 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 0000000001 and 4294967295 and two fixed digits 00 are 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 page.

Motion detection

Setting

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

Motion Detection

The video frame shows a child in a yellow shirt and blue pants pushing a green and yellow stroller. A blue box highlights the child's head, a yellow box highlights the stroller, and a green box highlights the ground. The background shows an outdoor setting with trees and a building.

OK Cancel

Note:

You can set motion detection at **motion detection** page. (Please go to “**Setting** → **Advanced** → **Motion Detection** → **Setting**”. For more details, please refer to [Section 8.10.](#))

- **Alarm Input:** Select the connected alarm.
 - ✓ **Alarm input1:** The external sensor which is connected to **Alarm input1** of the alarm input.

Alarm input

Setting

■ Alarm input

Alarm input 1

Trigger condition High Low

Camera move ▼

OK Cancel

 **Note:**

You can set the alarm input function at **Alarm Input** page. (Please go to “**Setting** → **Advanced** → **Alarm Input** → **Setting**”. For more details, please refer to [Section 8.9.](#))

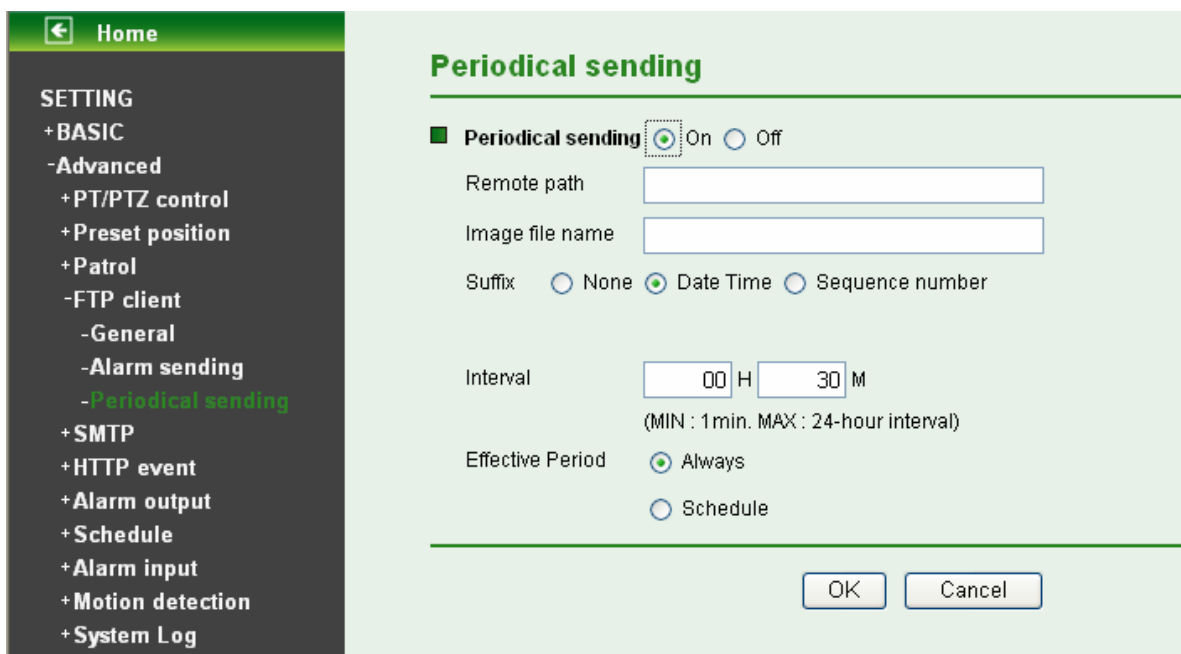
- **Effective period:** Set the period when the periodical sending is effective.
 - **Always:** The periodical sending is always effective.
 - **Schedule:** You can specify the period when the periodical sending is effective in the Schedule setting in the other section.

 **Note:**

You can set schedule function at **Schedule** page. (Please go to “**Setting** → **Advanced** → **Schedule** → **Setting**”. For more details, please refer to [Section 8.8.](#))

8.4.3 Periodical Sending

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



Periodical sending

Periodical sending On Off

Remote path

Image file name

Suffix None Date Time Sequence number

Interval H M
(MIN : 1min. MAX : 24-hour interval)

Effective Period Always Schedule

- **Remote path:** Type the path to the destination in FTP server up to 64 characters.
- **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.
 - **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 time interval of the 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.

 **Note:**

You can set schedule function at **schedule** page. (Please go to “**Setting** → **Advanced** → **Schedule** → **Setting**”. For more details, please refer to [Section 8.8.](#))

8.5 SMTP

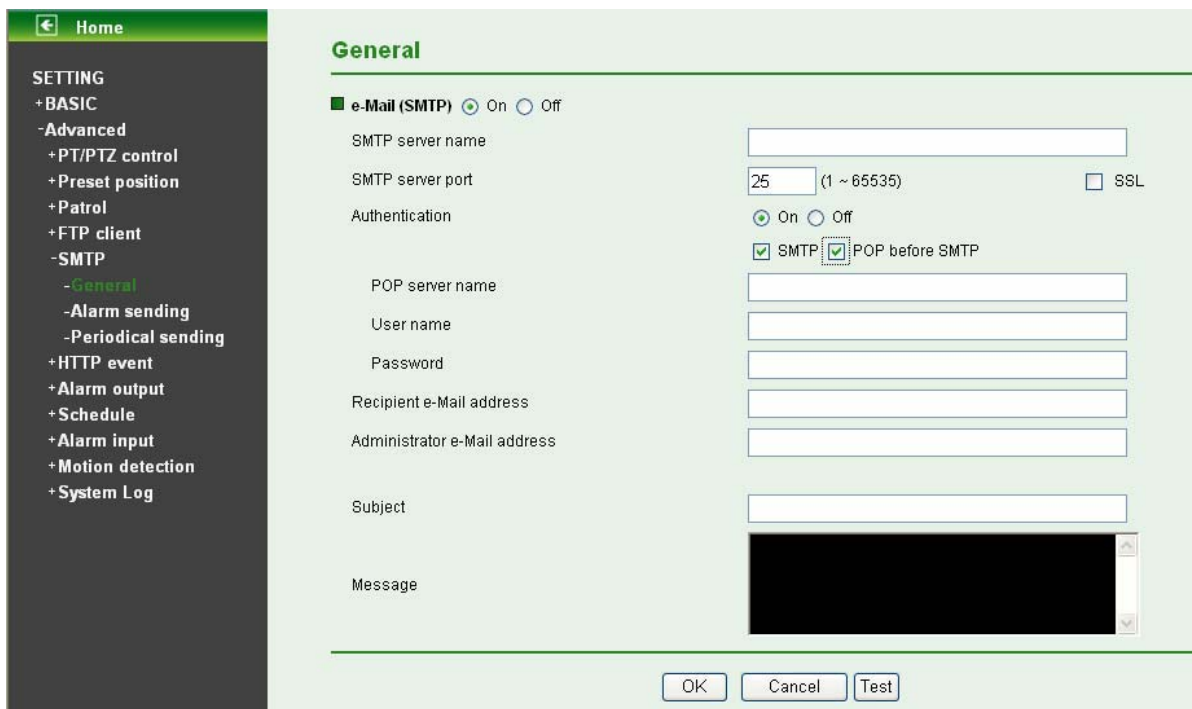
SMTP is used for sending an image via e-mail. By using Mail (SMTP) function, you can send a mail with attached image file which has been shot linked with the external sensor input or with the built-in motion detection function. The image file can also be sent periodically. Click the folder of **SMTP** to display the sub folders including **General**, **Alarm sending** and **Periodical sending**.

8.5.1 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** will be the same as the setting of **IP Notification**. (Please check “**Setting** → **Basic** → **Network** → **IP Notification**”).



- **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.
 - **SSL:** 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 587 as your port number and tick SSL box.

➤ **Authentication:**

- **Off:** No authentication is necessary when an email is sent.
- **On:** Authentication is necessary when an e-mail is sent. To set the authentication, please select one from **SMTP** and **POP before SMTP**.

➤ **SMTP:** Select it if SMTP authentication is necessary when an e-mail is sent.

➤ **POP before SMTP:** Select it if POP before SMTP authentication is necessary when an e-mail is sent.

 **Note:**

When authentication is set to **On**, be sure to select either **SMTP** or **POP before SMTP**, or both of them.

- **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's 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 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.)

8.5.2 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 file to SMTP server linked with the alarm detection.

Alarm sending

Alarm sending On Off

File attachment On Off

Image file name

Suffix None Date Time Sequence number

Sequence number clear

Alarm Motion detection

Alarm input

Effective Period Always Schedule

- **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 image 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), 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 0000000001 and 4294967295 and two fixed digits 00 are 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 page.

Motion detection

Setting

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

Motion Detection

The preview image shows a child in a yellow shirt and blue pants pushing a green and yellow stroller. A blue box highlights the child's head, a yellow box highlights the stroller, and a green box highlights a patch of ground. The background is an outdoor area with trees and a building.

Note:

You can set motion detection at **motion detection** page. (Please go to **“Setting → Advanced → Motion Detection → Setting”**. For more details, please refer to [Section 8.10.](#))

- **Alarm Input:** Select the connected alarm.
 - ✓ **Alarm input1:** The external sensor which is connected to **Alarm input1** of the alarm input.

Alarm input

Setting

■ Alarm input

Alarm input 1

Trigger condition High Low

Camera move ▼

 **Note:**

You can set the alarm input function at **Alarm Input** page. (Please go to “**Setting** → **Advanced** → **Alarm Input** → **Setting**”. For more details, please refer to [Section 8.9.](#))

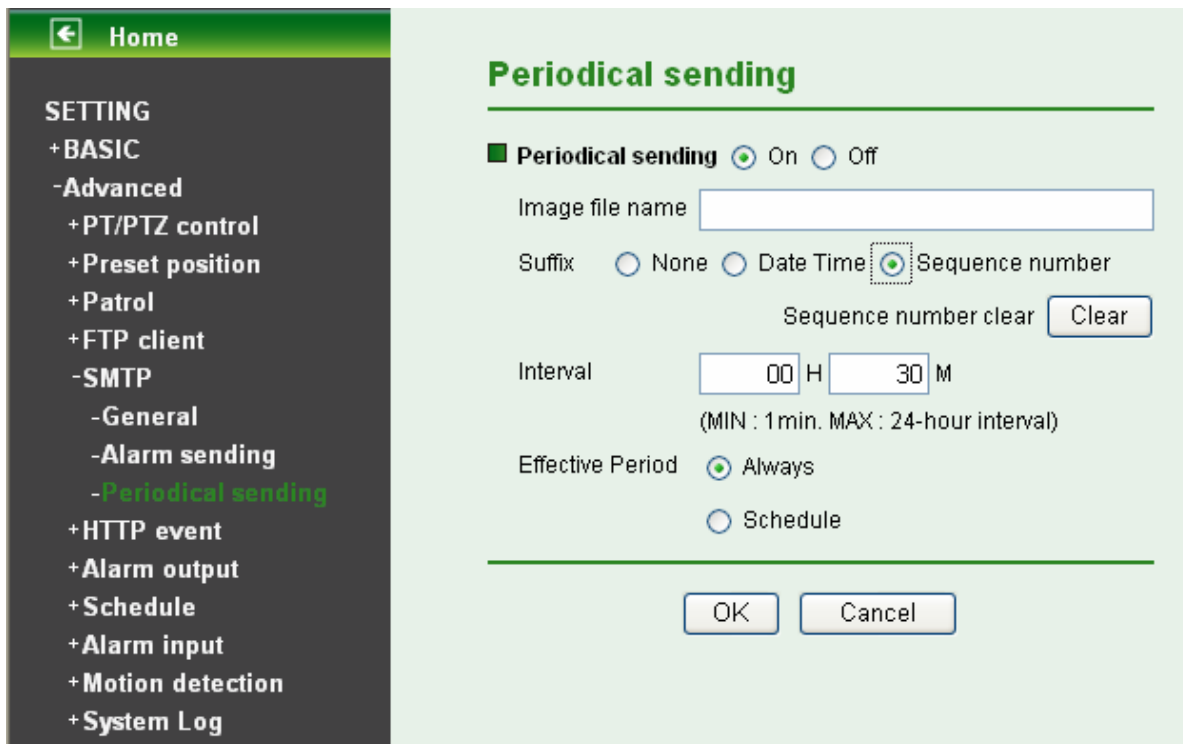
- **Effective period:** Set the period when the periodical sending is effective.
 - **Always:** The periodical sending is always effective.
 - **Schedule:** You can specify the period when the periodical sending is effective in the Schedule setting in the other section.

 **Note:**

You can set schedule function at **Schedule** page. (Please go to “**Setting** → **Advanced** → **Schedule** → **Setting**”. For more details, please refer to [Section 8.8.](#))

8.5.3 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.
 - **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 time interval of the periodical sending. Min value is 30 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** → **Advance** → **Schedule** → **Setting.**”

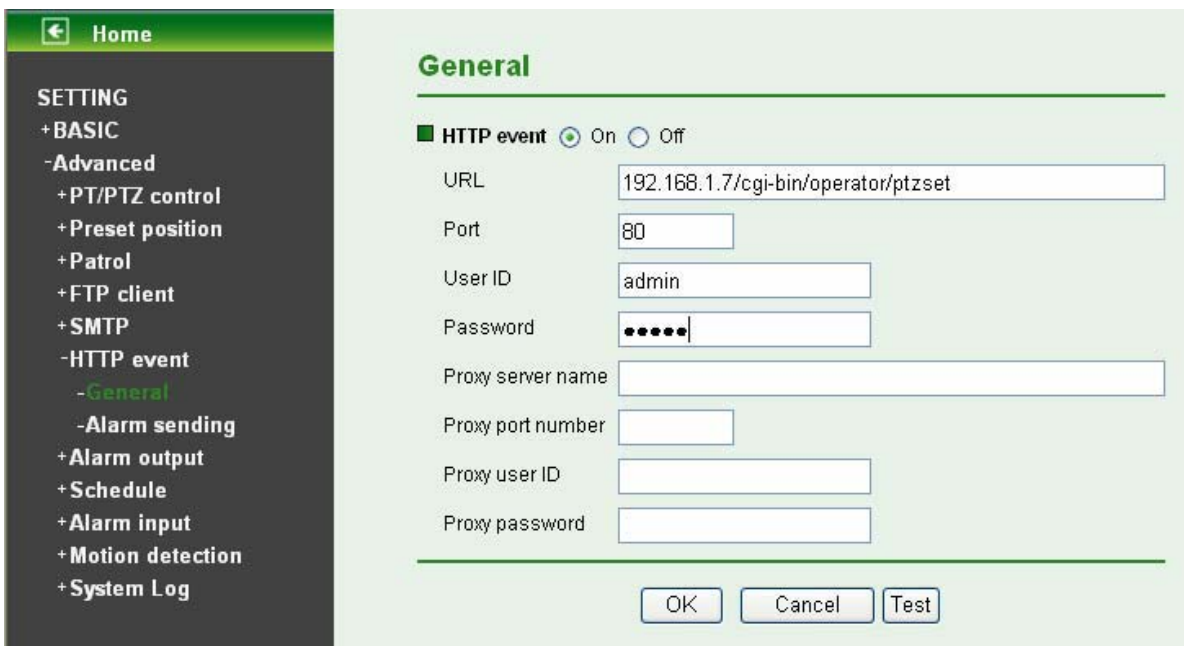
 **Note:**

You can set schedule function at **schedule** page. (Please go to “**Setting** → **Advanced** → **Schedule** → **Setting**”. For more details, please refer to [Section 8.8.](#))

8.6 HTTP Event

HTTP Event is used for sending commands to an HTTP server. By using HTTP client function, you can send the command defined by yourself, linked with the external sensor input or with the built-in motion detection function to HTTP server. HTTP Event setting menu is composed of two tabs, **General** and **Alarm sending**. Click the folder of **HTTP Event** to display the sub folders including **General** and **Alarm sending**.

8.6.1 General



General

HTTP event On Off

URL: 192.168.1.7/cgi-bin/operator/ptzset

Port: 80

User ID: admin

Password:

Proxy server name: _____

Proxy port number: _____

Proxy user ID: _____

Proxy password: _____

OK Cancel Test

Select **On**, and you can start setting up the function.

HTTP Event: Set up the HTTP server URL, port, User ID, Password, and Proxy server settings.

For example:

URL: 192.168.1.7/cgi-bin/operator/ptzset

 **Note:**

The setting of URL should be the same as CGI.

8.6.2 Alarm Sending

Set to send the commands via the alarm detection, external sensor input or built-in motion detection function. Select **On** to send the commands to HTTP server linked with the alarm detection.

Alarm sending

Alarm sending On Off

Alarm Motion detection
Parameter
Message

Alarm input
Parameter
Message

Effective Period Always Schedule

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


➤ **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 page.

Motion detection

Setting

Motion detection 1
Threshold 
Sensitivity 

Motion detection 2
Threshold 
Sensitivity 

Motion detection 3
Threshold 
Sensitivity 

Motion Detection



OK Cancel

Note:

1. You can set motion detection at **motion detection** page. (Please go to “**Setting** → **Advanced** → **Motion Detection** → **Setting**”. For more details, please refer to [Section 8.10.](#))
2. Motion Detection works only when the MPEG4 function is **On**.

Home

SETTING
+BASIC
-Advanced
+PT/PTZ control
+Preset position
+Patrol
+FTP client
+SMTP
-HTTP event
-General
-Alarm sending
+Alarm output
+Schedule
+Alarm input
+Motion detection
+System Log

Alarm sending

Alarm sending On Off

Alarm Motion detection Alarm input

Parameter

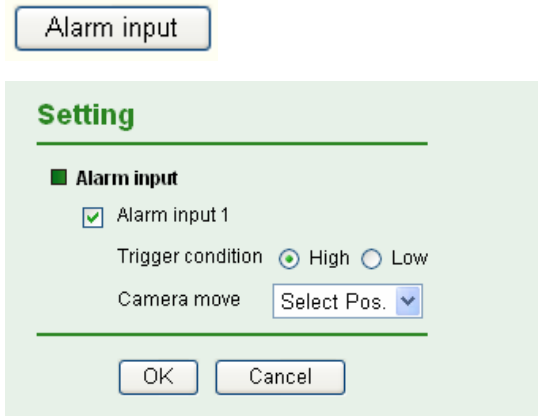
Message

Effective Period Always Schedule

OK Cancel

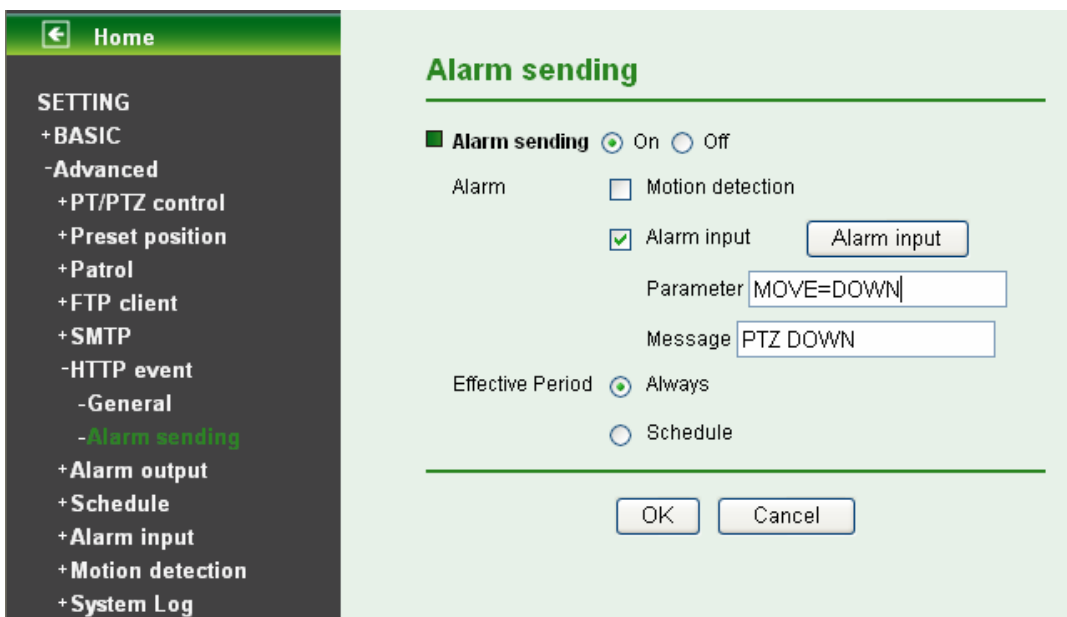
- ✓ **Parameter:** the parameter of CGI (defined in URL of HTTP → General) is from your target device. For example, move=down.

- ✓ **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.
- **Alarm Input:** Select the connected alarm.
 - ✓ **Alarm input1:** The external sensor which is connected to sensor input1 of the alarm input.



Note:

You can set the alarm input function at **Alarm Input** page. (Please go to “**Setting** → **Advanced** → **Alarm Input** → **Setting**”. For more details, please refer to [Section 8.9.](#))



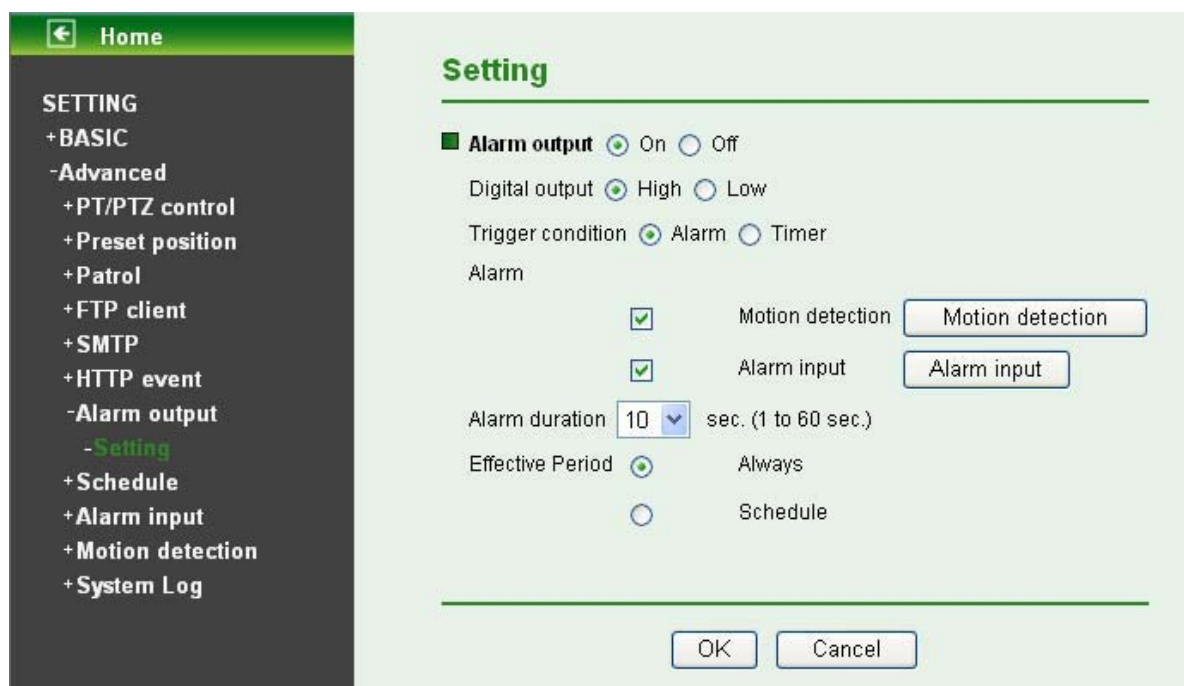
- ✓ **Parameter:** the parameter of CGI (defined in URL of **HTTP**→**General**) is from your target device. For example, move=down.
- ✓ **Message:** message will show up in the form of Message = PTZ down. If your target device didn't support the parameter of message, you can't see the message. So you 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 at **Schedule** page. (Please go to “**Setting** → **Advanced** → **Schedule** → **Setting**”. For more details, please refer to [Section 8.8.](#))

8.7 Alarm Output

When you click **Alarm output** on the setting-advanced menu, the **Setting** menu appears. You can set in this menu to control the alarm out of I/O port on the rear of the device linked to the alarm detection and the timer.



Alarm output: To activate the Alarm output function, select **On**. When you do not use the Alarm output function, select **Off**.

- **Digital output:** Select High signal output and Low signal output as your alarm.
- **Trigger condition:** Select the mode of the Alarm output function. You can choose “Alarm” or “Timer”.
- **Alarm:** Controls alarm output by synchronizing with an external sensor input or the built-in activity detection function.
 - **Motion Detection:** Click it on for using Motion Detection function as a sensor. You can set motion detection function at the motion detection function page.

 **Note:**

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

 **Note:**

Motion Detection works only when the Video mode is set to MPEG4 and the Cropping is set to **Off**.

- **Alarm Input:** Select the connected alarm.
 - ✓ **Alarm input1:** The external sensor which is connected to Alarm input1 of the alarm input.

 **Note:**

You can set the alarm input function at alarm input page. (Please go **“Setting →Advanced →Alarm input → Setting”**)

- **Alarm Duration:** There are up to 60 second options to choose for alarm duration interval.
- **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.

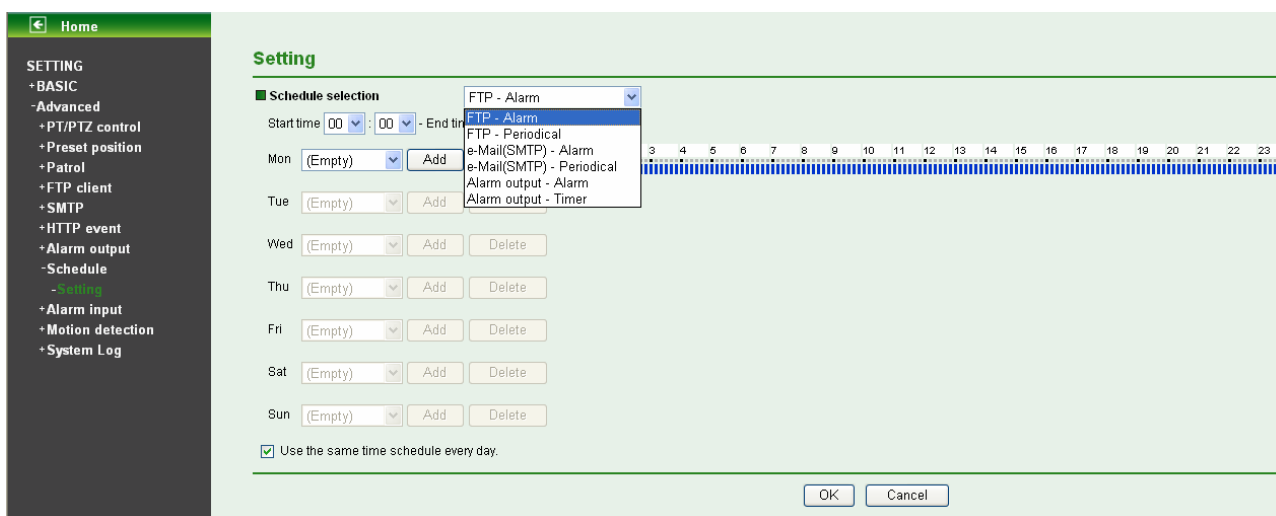
 **Note:**

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

8.8 Schedule

When you click **Schedule** on the setting-advanced menu, the **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 setting menu, and E-Mail (SMTP) setting menu.

Example: When setting e-Mail (SMTP) (the alarm sending) in the Schedule setting menu.

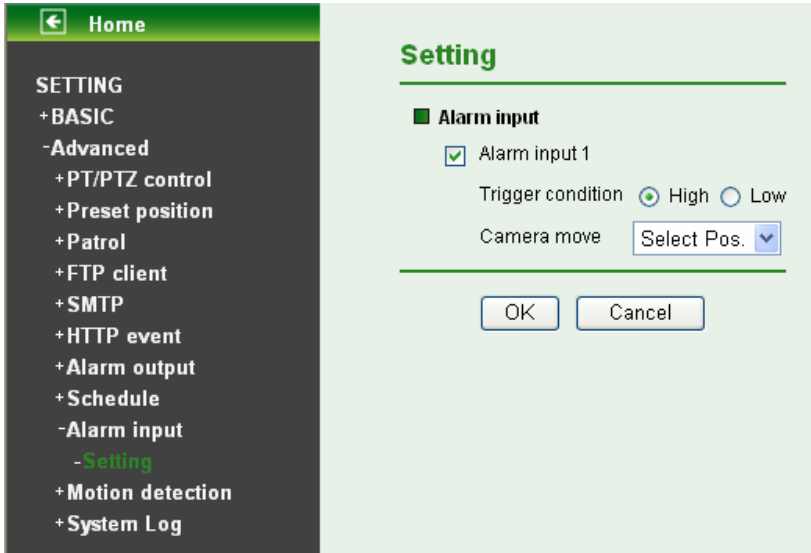


- **Schedule Selection:** Select the list box to specify the schedule you want to set.
 - FTP - Alarm
 - FTP - Periodical
 - e-Mail (SMTP) - Alarm
 - e-Mail (SMTP) - Periodical
 - Alarm output - Alarm
 - Alarm output - Timer
- **Mon (Monday) to Sun (Sunday):** The time period on the right of the checked 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.

8.9 Alarm Input

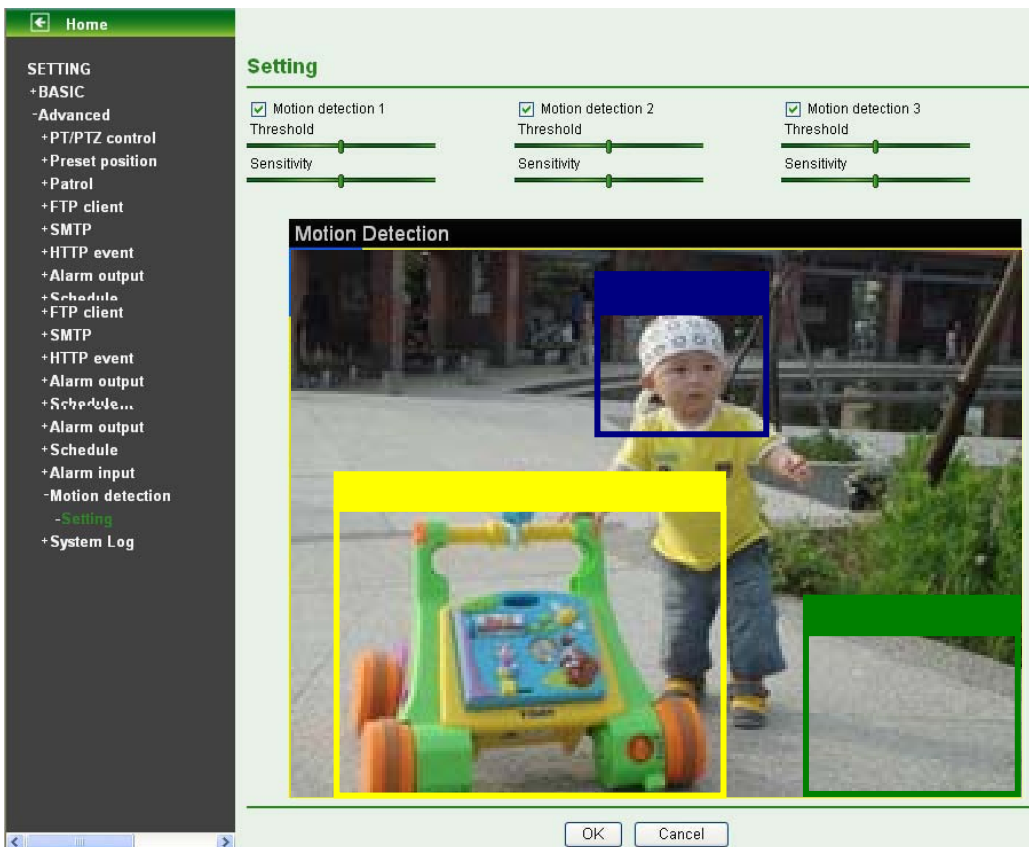
When you click **Alarm Input** on the setting-advanced menu, the **Setting** menu appears. You can set in this menu to control the external alarm input of I / O port on the rear of the device linked to FTP, SMTP, and HTTP sending function.



- **Alarm input 1:** Click it on for using external sensor which is connected to Alarm input1 of the camera I/O port.
 - **Trigger condition:** Select High signal output and Low signal output as your alarm.
 - **Camera move:** Pull down the window to select the camera preset position. When external alarm input happens, the camera will automatically move to that position.

8.10 Motion Detection

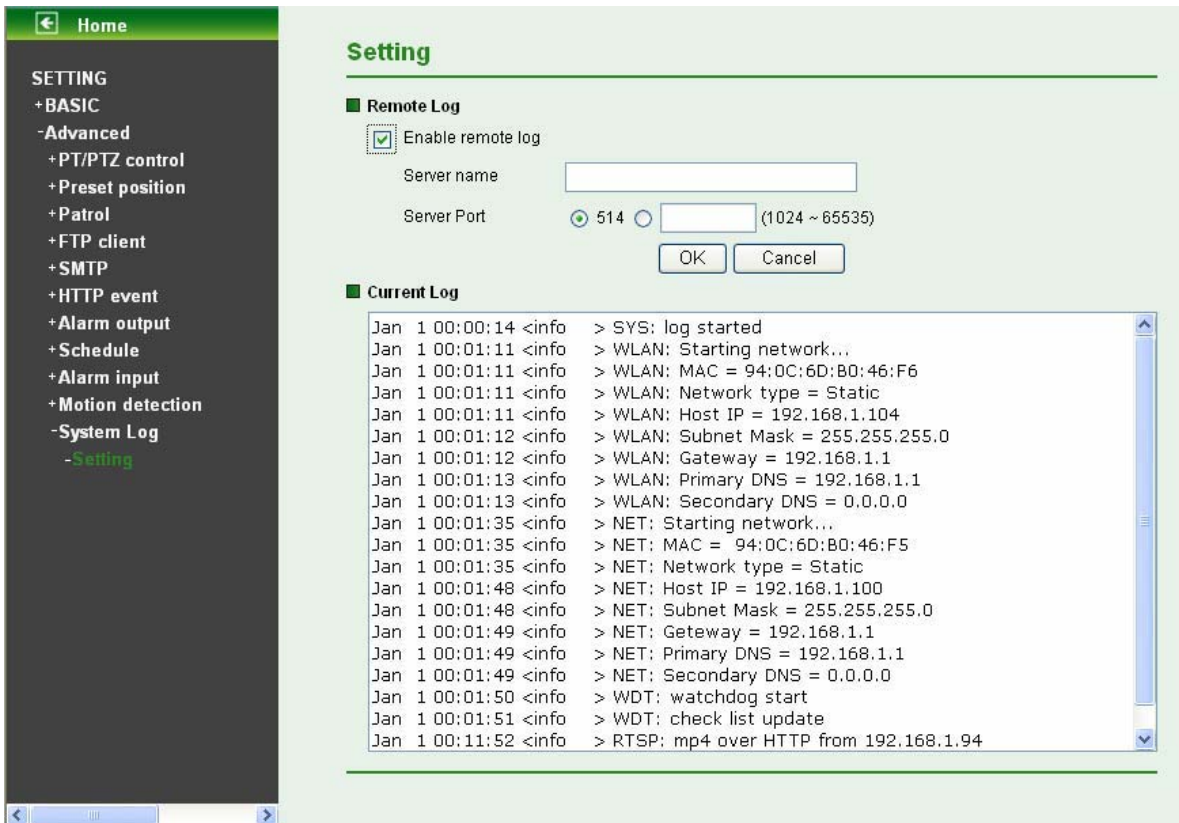
There are three Motion Detection functions as sensors to set for different detecting zones. Each one has Threshold and Sensitivity inputs which you can adjust to specific zone sequentially. Motion Detection function can support to FTP, SMTP and Alarm output for capturing and sending images or starting alarm output.



- **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.
 - **Threshold:** It means the extent which the alarm will be triggered. If the tool bar is closer to the left hand, the threshold is lower; vice versa.
 - **Sensitivity:** It means that how often the sensor will scan the image different. If the tool bar is closer to the left hand, the sensitivity is lower; vice versa. The higher sensitivity it is and the more frequently it scans.

8.11 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/s (upload)/2Mb/s (download), the most fluent Image-Quality needs to set up under 256 Kb situation.

A.1. MPEG4 @ 30fps / Kbps

Quality	640*480	320*240	160*120
Excellent	1000	300	90
Detailed	400	150	50
Good	300	100	30
Standard	250	70	25
Medium	250	55	20

A.2. MPEG4 / Kbps, fps

Image-Size	Bitrate Setting	Frame-Rate Setting	Current Bitrate	Current Frame-Rate
640*480	2048	30	1800	26
640*480	2048	15	2200	16
640*480	1536	30	1500	30
640*480	1536	15	1700	16
640*480	1024	30	1000	30
640*480	1024	15	1000	16
640*480	512	30	500	30
640*480	512	15	600	16
320*240	1536	30	1500	30
320*240	1536	15	1600	16
320*240	1024	30	1000	30
320*240	1024	15	1000	16
320*240	512	30	550	30

320*240	512	15	600	16
160*120	1024	30	950	30
160*120	1024	15	750	16
160*120	512	30	500	30
160*120	512	15	50	16
160*120	128	30	130	30
160*120	128	15	140	16

A.3. MJPEG @ 15fps / Kbps

Quality	640*480	320*240	160*120
Excellent	4000	1500	600
Detailed	2400	900	400
Good	1600	650	300
Standard	1300	500	240
Medium	900	350	170

A.4. MJPEG / Kbps, fps

Image-Size	Quality Setting	Frame-Rate Setting	Current Bitrate	Current Frame-Rate
640*480	Excellent	15	4000	13
640*480	Excellent	5	1600	5
640*480	Good	15	1600	13
640*480	Good	5	650	5
640*480	Medium	15	900	14
640*480	Medium	5	360	5
320*240	Excellent	15	1500	13
320*240	Excellent	5	550	5
320*240	Good	15	650	13
320*240	Good	5	260	5

320*240	Medium	15	350	13
160*120	Medium	5	130	5
160*120	Excellent	15	600	13
160*120	Excellent	5	230	5
160*120	Good	15	300	13
160*120	Good	5	115	5
160*120	Medium	15	170	13
160*120	Medium	5	65	5

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

Quality	640*480	320*240	160*120
Excellent	10.5	3.2	0.9
Detailed	4.2	1.6	0.5
Good	3.2	1.1	0.3
Standard	2.6	0.7	0.3
Medium	2.6	0.6	0.2

B.2. MPEG4 Storage Requirement GB / channel / day @ 15fps

Quality	640*480	320*240	160*120
Excellent	5.3	1.6	0.4
Detailed	2.1	0.8	0.3
Good	1.6	0.6	0.2
Standard	1.3	0.4	0.1
Medium	1.3	0.3	0.1

B.3. MPEG4 Storage Requirement GB / channel / day

Image-Size	Bitrate Setting	Frame-Rate Setting	Current Bitrate
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640*480	2048	30	23.0
640*480	2048	15	22.2
640*480	1536	30	18.5
640*480	1536	15	17.9
640*480	1024	30	10.5
640*480	1024	15	10.5
640*480	512	30	5.3
640*480	512	15	6.3
320*240	1536	30	15.8
320*240	1536	15	16.9
320*240	1024	30	10.5
320*240	1024	15	10.5
320*240	512	30	5.8
320*240	512	15	6.3
160*120	1024	30	10.0
160*120	1024	15	7.9
160*120	512	30	5.3
160*120	512	15	0.5
160*120	128	30	1.4
160*120	128	15	1.5

B.4. MJPEG Storage Requirement GB / channel / day @ 15fps

Quality	640*480	320*240	160*120
Excellent	42.2	15.8	6.3
Detailed	25.3	9.5	4.2
Good	16.9	6.9	3.2
Standard	13.7	5.3	2.5
Medium	9.5	3.7	1.8

B.5. MJPEG Storage Requirement GB / channel / day

Image-Size	Quality Setting	Frame-Rate Setting	Current Bitrate
640*480	Excellent	15	42.2
640*480	Excellent	5	16.9
640*480	Good	15	16.9
640*480	Good	5	6.9
640*480	Medium	15	9.5
640*480	Medium	5	3.8
320*240	Excellent	15	15.8
320*240	Excellent	5	5.8
320*240	Good	15	6.9
320*240	Good	5	2.7
320*240	Medium	15	3.7
160*120	Medium	5	1.4
160*120	Excellent	15	6.3
160*120	Excellent	5	2.4
160*120	Good	15	3.2
160*120	Good	5	1.2
160*120	Medium	15	1.8
160*120	Medium	5	0.7

C. TESTING SYSTEM SPECIFICATION

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

D. PERFORMANCE OF 16 CHANNEL IP CAMERA

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.

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.

IEEE 802.11b or 802.11g operation of this product in the U.S.A. is firmware-limited to channels 1 through 11.

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.