20M-IR H.264

2 Mega-Pixel CMOS Network Camera

CAM628M / CAM628M-PoE

User's Manual

Content

1. Preface

This camera is a professional 2 Mega-Pixel CMOS network camera which builds in web server. User views real-time video via IE browser. It supports H.264, JPEG and MPEG4 (3GPP Only) video compression which provides smooth and high quality video.
The IR model equips infrared illuminator to provide good image quality, even in darkness.
The PoE model built-in support for Power over Ethernet allows the camera to receive both data and power over a single Ethernet cable.
This camera is an easy-to-use IP camera which is designed for security application.

2. Product Specifications

- 2 Mega-Pixel CMOS Sensor

- H.264 / MJPEG / MPEG4 (3GPP Only) compression formats.

- Supports resolution up to 1600x1200

- H.264 / MJPEG / MPEG4 (3GPP Only) triple streaming.

- Self-Contained HTTP Web Server providing Internet capability for remote access

- Day & Night functionality for 24-hours surveillance, auto activate IR illuminator in low illumination

- Infrared radiant distance up to 20 meters

- Outdoor housing with IP66 waterproof standard

- Built-in PoE splitter, support for Power over Ethernet (PoE model)

- 2-way audio

- Online firmware upgrade

- Recorded files compatible with Microsoft Windows Media Player

Hardware	
CPU / RAM / ROM	ARM 9, 32 bit RISC / 256MB / 16MB
Image Sensor	1/3" CMOS, 2 Mega-Pixel
Lens	1/3", Adjustable Vari-focal 3.6 ~ 16 mm, Mega-Pixel lens
Day / Night	Mechanism IR Cut Filter (ICR)
IR Distance	20 Meters
IR LED	Built-in 35 IR LEDs

|	
Illumination	Normal: 0.5 lux IR On: 0 lux
Video Out	1 Analog video out (BNC connector)
Audio In	1 Microphone in (3.5mm phone jack for connecting external passive-type of microphone)
Audio Out	1 Line out (3.5mm phone jack for connecting external amplified speaker)
Digital I/O	1 Digital in / 1 Relay out
Water Proof	IP-66 standard

Power Supply	Normal model: DC 12V, 1A
	PoE model (built-in PoE Splitter):
	  Use PoE: PoE Injector (IEEE 802.3af)
	  Or, use Power Adaptor: DC 12V, 1A

Power Consumption	Max. 9 Watt
Dimensions	W83 x H79.5 x L182.5 mm
Network	
Ethernet	10/ 100 Base-T
Network Protocol	HTTP, TCP/IP, RTP/RTSP, 3GPP, SMTP, FTP, PPPoE, DHCP, DDNS, NTP, UPnP
System	
Video Resolution	1600x1200, 1280x1024, 1280x960, 1280x720 800x592, 640x480, 320x240, 176x144
Compression Format	H.264 / MJPEG / MPEG-4 (3GPP only)
Frame Rate	Up to 15FPS@1600x1200, 22FPS@1280x1024, 25FPS@1280x960, 30FPS@1280x720
Triple Streaming	Yes (2 for live view, 1 for 3GPP)
3GPP	Yes, Live view with 3G mobile phone
Video Bitrate Adjustment	CBR, VBR
Video Adjustment	Brightness, Contrast, Sharpness, BLC, Frame Rate at Night, Video orientation
Image Snapshot	Yes
Privacy Mask	Yes, 3 different areas
Motion Detection	Yes, 3 different areas
Event Trigger	Motion Detection, Digital In
Triggered Action	Send Email, Send to FTP, Relay Out
Pre/ Post Alarm	Yes, configurable
Security	Password protection
Firmware Upgrade	HTTP mode, can be upgraded remotely
Connection	Up to 10 clients simultaneously
Audio	Yes, 2-way

Web browsing requirement	
OS	Windows 2000, XP, Vista, Windows 7
Web Browser	Microsoft IE V7.0 (32-bit) or above, Mozilla Firefox V6.0 or above, Opera V11.5 or above, Safari V5.1 or above, Google Chrome V13.0 or above
Suggested Hardware	Intel Core 2 Duo 1.66GHz, RAM: 1GB Graphic card: 128MB onboard RAM

* Specifications are subject to change without notice

3. Product Installation

A. Hardware Installation

Cable Connections
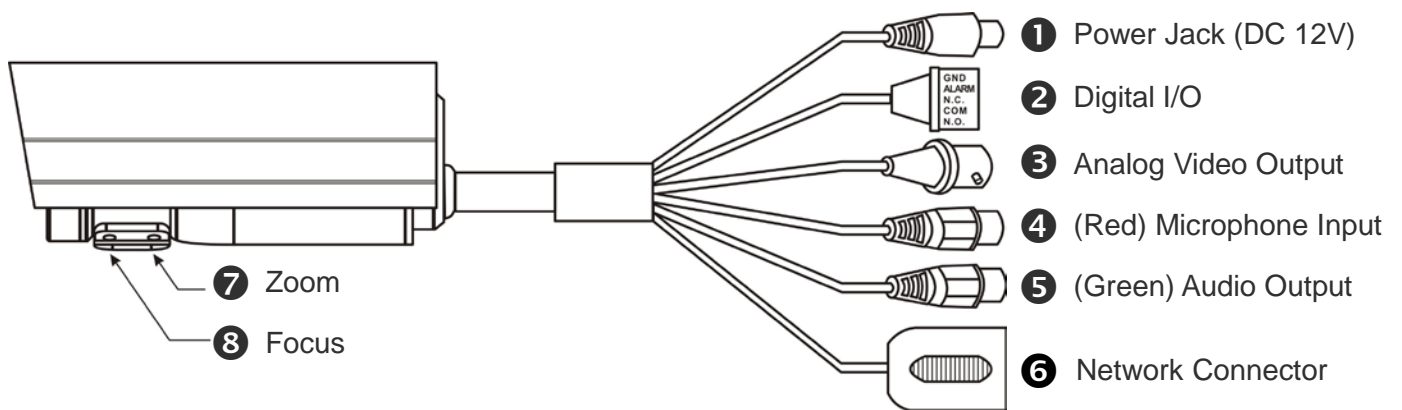
❶ Power Jack:	To connect the DC 12V power adapter.
❷ Digital I/O:	Digital In and Relay Out.
❸ Video Output:	The BNC connector allows connect to the analog display to output analog video for locally monitoring.
❹ Microphone Input (Red):	The 3.5mm phone jack allows connect to a passive-type of microphone, the audio will be heard at the remote site.
❺ Audio Output (Green):	The 3.5mm phone jack allows connect to an amplified speaker, you can hear the voice of the remote site from the speaker.
❻ Network Connector:	The RJ-45 connector allows connect the Ethernet cable.
❼ Zoom Adjustment:	This screw is for zooming in and zooming out.
❽ Focus Adjustment:	This screw is for adjusting the focus.

1. Connect the cable of Digital I/O, Video output, Audio output and Microphone input if you want to use these functionalities.
2. Connect Ethernet cable for network connection.
3. Connect power adapter to turn on the camera.

4. If the camera is PoE model, the power adapter is not necessary. The camera will get the power from the PoE injector or PoE switch.

PoE (Power over Ethernet) is a technology that integrates power into a standard LAN infrastructure. It enables power to be provided to the network device, such as an IP phone or a network camera, using the same cable as that used for network connection. It eliminates the need for power outlets at the camera locations. Please follow the below figure for the connection.
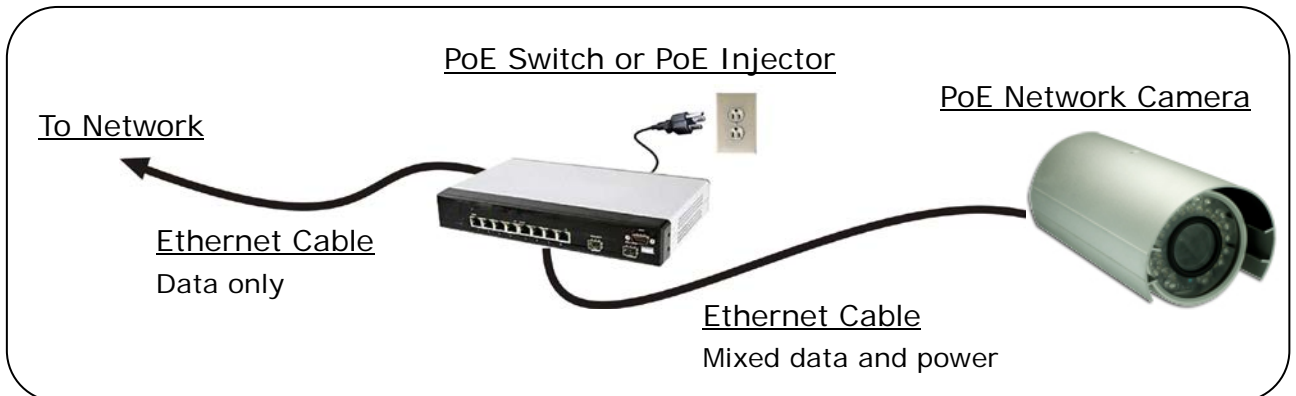

5. Set up the network configurations according to the network environment. For further explanation, please refer to Network Configuration chapter.

I/O Connections

I/O connector – used in application, for e.g., motion detection, event triggering, alarm notifications. It provides the interface to:

- 1 set of Digital Input (Alarm + GND) – The digital inputs for connecting devices that can toggle between an open and closed circuit, such as PIRs, door/window contacts, glass break detectors, etc. When a signal is received the status changes and the input becomes active.

- 1 set of Relay Output (N.O. + COM or N.C + COM) – The output to Relay switch of the alarm device such as LEDs, Sirens, etc.
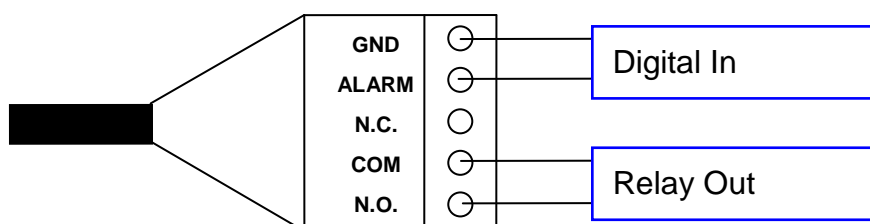
Digital Input (Alarm Input)

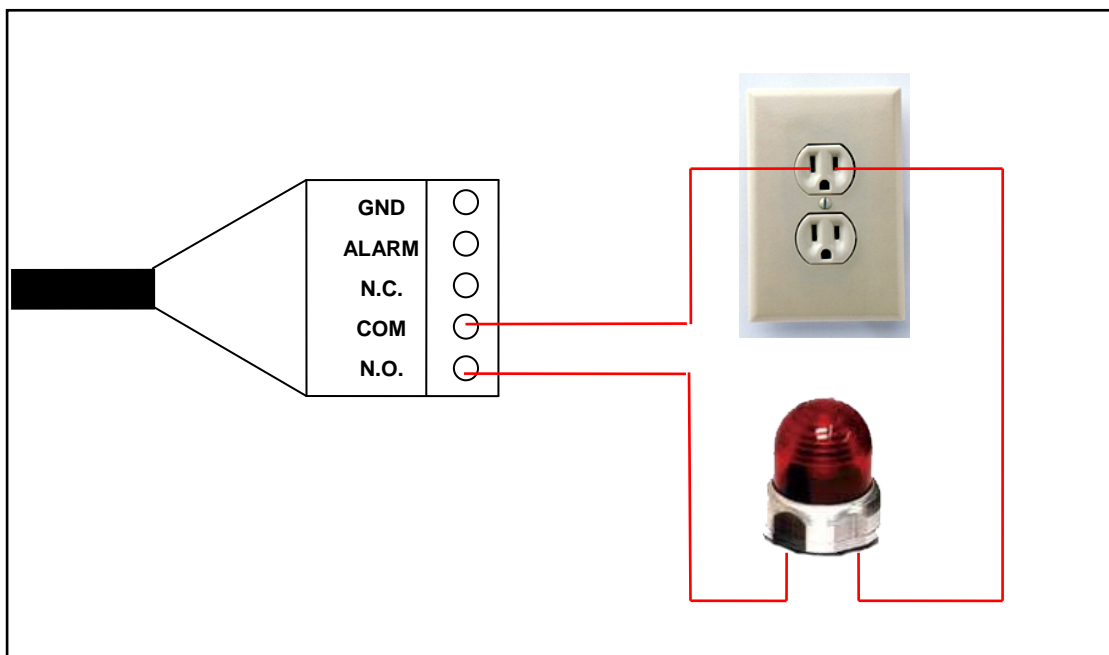**GND (Ground):** Initial status is LOW.

Alarm: Max. 50mA, 12VDC.
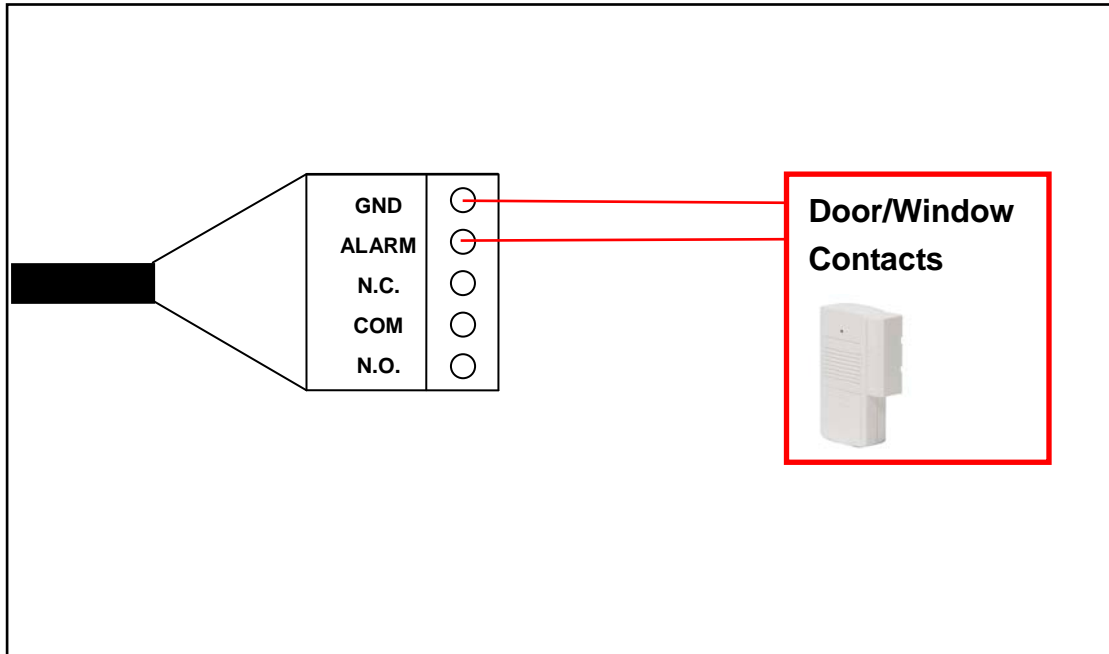
Relay Output

COM: Common pin.

N.O. (Normally Open): Max. 1A / 24VDC or 0.5A / 125VAC.

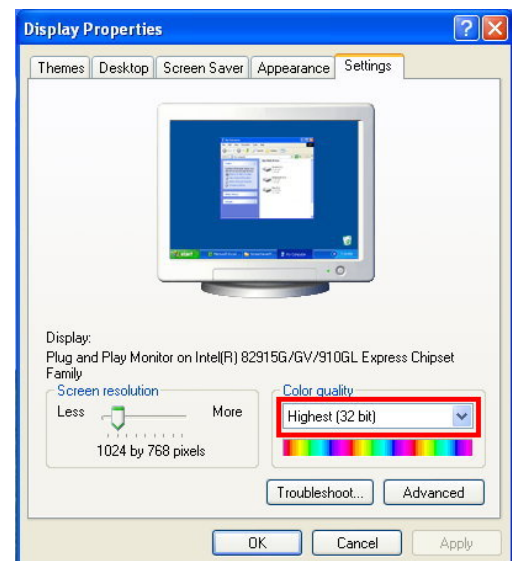**N.C. (Normally Close):** Max. 1A / 24VDC or 0.5A / 125VAC.

B. Monitor Setting

1. Right-Click on the desktop. Select "Properties"

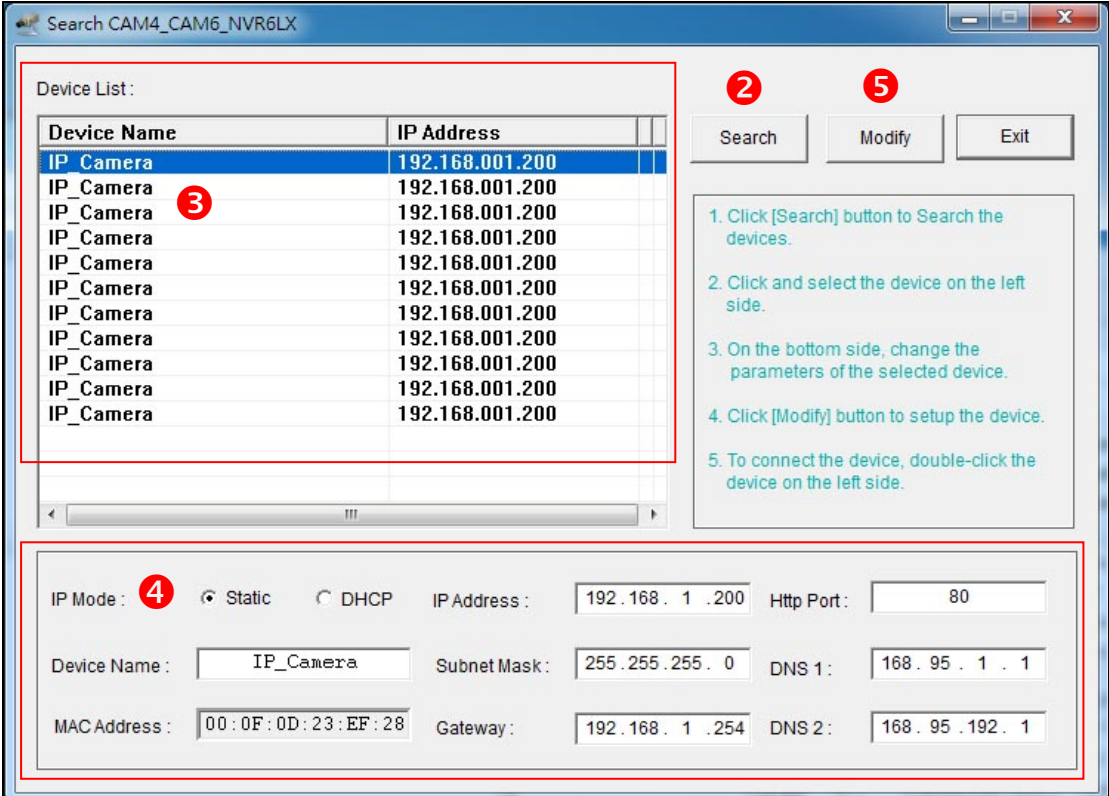2. **Change color quality to "Highest (32bit)"**.

C. IP Assignment

  ➢ Always consult your network administrator before assigning an IP address to your camera in order to avoid using a previously assigned IP address.

  ➢ MAC Address: Each network camera has a unique Ethernet address (MAC address) shown on the sticker of the device.

  ➢ One final note, although the IP Search is able to find and configure any network device on the LAN except those that are behind a router, it is a good idea to set the host PC to the same subnet. In order to connect to the Web-based user interface of the network camera, the host PC must be in the same subnet. For more information about subnets, please consult your network administrator.

"Asoni IP Search" is a utility that provides an easier, more efficient way to configure the IP address and network settings of the network camera in Local Network (LAN).

The software can be installed from the attached software CD.

  1. Once "Asoni IP Search" has been successfully installed on the computer, double click the "Search CAM4_CAM6_NVR6LX" icon on the desktop.

2. IP Search searches all the network devices which connect to the intranet and lists on the window. Click **[Search]** button to search again.

3. From the list, click and select the device with the MAC Address that corresponds to the device that is to be configured.

4. The network configuration of the selected device will show on the bottom, filling in the Device Name, IP Address, Subnet Mask, Gateway and the others.

5. Click **[Modify]** button to save the settings into the device.

6. Wait for few seconds to let the device update the settings, and then click **[Search]** button again to re-search the network devices.

7. Double-click the network device listed on the window, It will open an IE browser and connect to this device directly.

4. Live Video

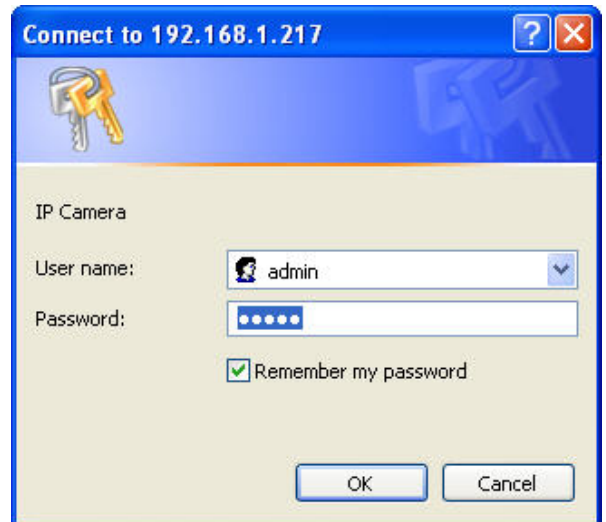Start the IE browser, type the IP address of the network camera in the address field:
 http://<IP of camera>
If the "HTTP Port" has been changed from "80", type the URL as:
 http://<IP of camera>:<HTTP Port>

After link to the camera, it will show a dialogue box. Key-in the user name and password to log-in and open the web page of camera.
The default user name and password are "**admin**" and "**admin**".

For the first time to view the camera video via IE, it will ask you to install the ActiveX component.

If the installation failed, please check the security setting for the IE browser.

1. In IE, click on **[Tools]** → **[Internet Options…]**

2. Click on **[Security]** Tab → **[Custom Level…]**

3. In Security Settings, under **[Download unsigned ActiveX controls]**, select "Enable" or "Prompt".

4. In Security Settings, under **[Initialize and script ActiveX controls not marked as safe]**, select "Enable" or "Prompt".

5. When pop-up window with warning message, click **[Yes]** to save the settings.

1

IP CAMERA - Microsoft Internet Explorer

File   Edit   View   Favorites   Tools   Help

Back   ▸   ▸   ✖

Address   http://192.168.1.21

Mail and News   ▸
Pop-up Blocker   ▸
Manage Add-ons...
Synchronize...
Windows Update

Windows Messenger

Internet Options...

2

Internet Options

General   Security   Privacy   Content   Connections   Programs   Advanced

Select a Web content zone to specify its security settings.

Internet   Local intranet   Trusted sites   Restricted sites

Internet
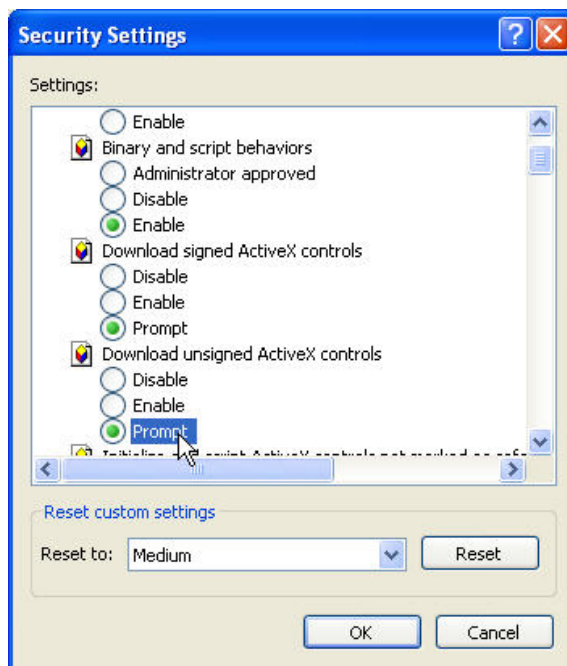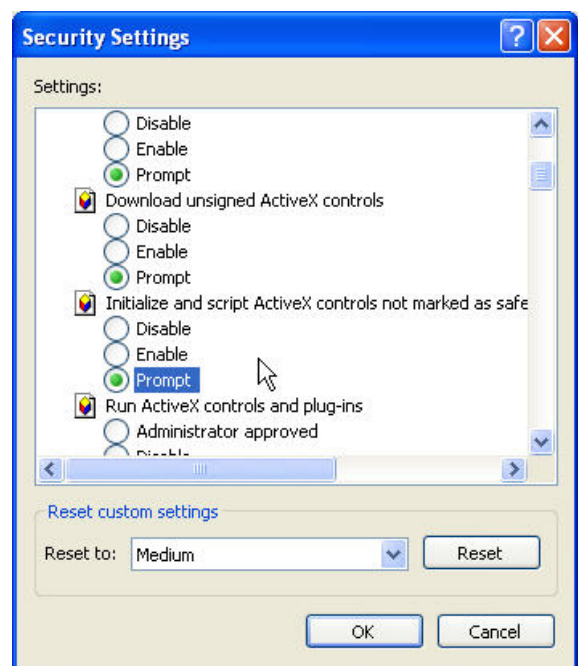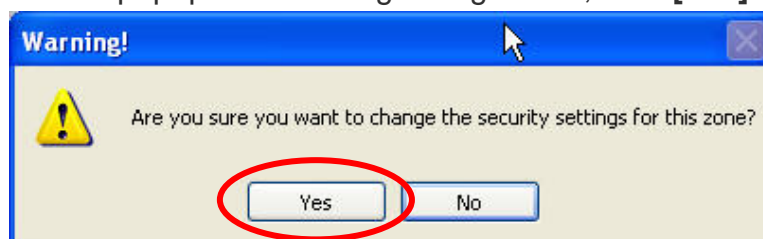This zone contains all Web sites you haven't placed in other zones   Sites...

Security level for this zone

Custom
Custom settings.
- To change the settings, click Custom Level.
- To use the recommended settings, click Default Level.

Custom Level...   Default Level

OK   Cancel   Apply

3

Security Settings

Settings:

○ Enable
 Binary and script behaviors
  ○ Administrator approved
  ○ Disable
  ● Enable
 Download signed ActiveX controls
  ○ Disable
  ○ Enable
  ● Prompt
 Download unsigned ActiveX controls
  ○ Disable
  ○ Enable
  ● Prompt

Reset custom settings

Reset to: Medium   ▾   Reset

OK   Cancel

4

Security Settings

Settings:

○ Disable
○ Enable
● Prompt
 Download unsigned ActiveX controls
  ○ Disable
  ○ Enable
  ● Prompt
 Initialize and script ActiveX controls not marked as safe
  ○ Disable
  ○ Enable
  ● Prompt
 Run ActiveX controls and plug-ins
  ○ Administrator approved

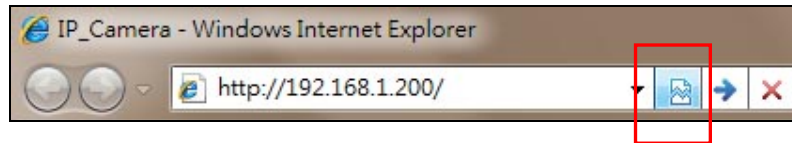Reset custom settings

Reset to: Medium   ▾   Reset

OK   Cancel

5

When popup the following dialogue box, click **[Yes]**.

Warning!

⚠ Are you sure you want to change the security settings for this zone?

Yes   No

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The web page of the device shows as following.

If you are using IE 8.0 or above, please click "Compatibility View" icon to make this web page works properly:

❶ **Streaming :** Select the streaming 1 or 2 from the pull-down list to display.

❷ **Language :** Change the display language temporarily.

Note: The display language is changed temporarily for current connection, and it doesn't change the default language. To change the default language, please go to Configuration ➜ System Information page.

❸ **Configuration :** Go into the configuration page to set the parameters if necessary.

❹ **Status Bar :** Shows system date/time, video resolution and video refresh rate (FPS).

❺ **Online Visitor :** Shows how many users connect to this network camera.

❻ **Function Buttons :** Click these buttons will perform the following functions.

	Original Size : Click this button to display the original size of video.
	Shrink View : Click this button to shrink the video to fit the window for view.
	Full Screen : Click this button or double-click the video, the video will change to full screen mode. Press **[Esc]** key or double-click the video again, it will back to normal mode.
	Snapshot : Click this button to take snapshot of the video. The image will be displayed in a pop-up window, click [save icon] to save as a jpg picture.
	Record : Click this button to record the video into the local PC. It will ask you where to save the video. To stop recording, click this button again. The saved video format is AVI. The recorded file can be played by Microsoft Media Player. Note, H.264 decoder must be installed to play the recorded file. You can install "FFdshow" from the included CD for the decoder.
	Chatting : The camera supports 2-way audio. Click this button, then you can use microphone which connected to the PC to talk to the camera side.
	Voice : Click this button to turn on the audio from camera. Click again to turn off it.
	Digital Zoom : Click this button, a pop-up window appears. You can enable / disable the digital zoom, and adjust the ratio.
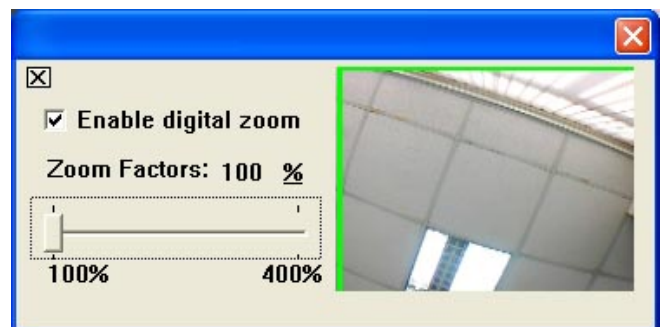
1	**Relay Out (ON/OFF Switch) :** Click the button to manually turn on / off the Relay via the built-in Digital Out.
1	**Relay Out (Time Switch) :** Click the button to manually turn on the Relay via the built-in Digital Out, after the interval time is passed, the Relay will be turned off automatically. The interval time can be set up in Configuration ➔ Event Handling ➔ I/O.

5. Configuration

Click **[Configuration]** button to get into the configuration page. Click **[Live View]** button to back to the Live-View page.

A. System

System Information

Set up the camera name, select language, and set up the camera time.

System Information

Server Information

Server Information	
MAC Address:	00:0F:0D:20:C8:09
Server Name:	IP Camera ☐ Show on Status Bar
LED Indicator:	◉ ON ○ OFF
Default Language:	◉ English ○ Traditional Chinese ○ Simplified Chinese

MAC Address: The MAC address of the Ethernet network card in the device.

Server Name: You can type a name into this field to identify this device.

Show on Status Bar: Determine whether show the server name on the Status Bar.

LED Indicator: Determine whether light-on or turn-off the network and power status LEDs on the device.

Default Language: Select the default language for the user interface.

OSD Setting

OSD Setting	
Time Stamp:	◉ Enable ○ Disable
Position:	◉ Top-Left ○ Top-Right ○ Bottom-Left ○ Bottom-Right
Text:	◉ Enable ○ Disable
	OSD_Display Text Edit

Time Stamp: Enable this option will display the date and time on the video.

Position: Select the display position of Time stamp.

Text: Enable this option will display the OSD string on the video.

Text Edit: Click this button to open "Text Edit" dialog window. You can change the OSD string and adjust the size and alpha of the text. After editing, click **[Upgrade]** button.

Text Edit	
Text	OSD_Display
Size	12 ▼
Alpha	100% ▼
	Upgrade

Time Setting

Date Format: Select the format to display the date.

Time Zone: Select the GMT to match your time zone.

Enable Daylight Saving: If using "Daylight Saving", enable this option and select the start and end time.

Synchronize with NTP Server: Select this option and type the IP address of a NTP (Network Time Protocol) server, this device will synchronize the time with the NTP server via network.

- NTP Server: Type the IP address or URL of the NTP server.
- Update Schedule: Select the interval for the update time. For example, if select "6 Hours", this device will synchronize the date and time with the NTP server every 6 hours.

Synchronize with PC's time: Select this option will synchronize the device time with the PC's time.

Manually Input Date and Time: Manually input the date and time.

The date and time remain the same: Keep the current date and time without change.

*After set up, click **[Apply]** to save the settings.*

User Management

You can add, remove and manage the users in this page.

This device supports 3 user groups:

- Administrator: The administrator can view, operate and configure all functions and settings of this device.

- Guest: The users in Guest group can only view the live video in Live-View page.

- Anonymous: The anonymous user can only view the live video in Live-View page. The privilege is same as Guest group.

User Management

User Management			
Anonymous User Login			
○ Yes ● No			
Setting			
Add User			
User Name:	user		
Password:	••••		
Confirm Password:	••••		
Add/Set			
User List			
User Name	User Group	Modify	Remove
admin	Administrator	Edit	
guest	Guest	Edit	Remove

Anonymous User Login

To allow user visit this device without login, select **[Yes]** and then click **[Setting]** to enable this function.
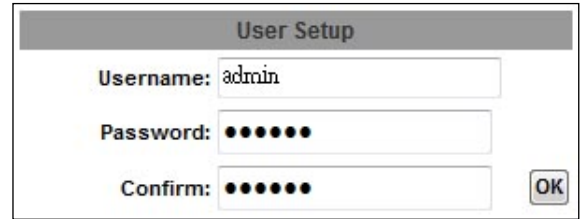
Add User

To add a new user, type the user name and password, then click **[Add/Set]** to save the user.

User List

This table lists the current users.

Edit: To change the username and password, click **[Edit]** and modify the administrator or user in the pop-up window.

User Setup	
Username:	admin
Password:	●●●●●●
Confirm:	●●●●●● OK

Remove: To remove the user, click **[Remove]**.

System Upgrade

This page allows user to upgrade firmware, restart device and restore the factory default settings.

System Upgrade

System Upgrade	
Firmware Upgrade	
Current Firmware Version:	V1.0.22_As.1
New Firmware:	[ ] Browse...
Upgrade	
Reboot System	
Reboot	
Factory Default	
Default	

Firmware Upgrade

The firmware can be upgraded online.

To update the firmware, click **[Browse…]** to select the new firmware file, and then click **[Upgrade]** to the procedure.

Reboot System

To restart the device, click **[Reboot]** and then click **[Yes]** on the prompted window.

Factory Default

To load the factory defaults, click **[Default]** and then click **[Yes]** on the prompted window. Note, all settings including User account, Network, A/V and Event settings will be restored to the factory defaults.

System Logs

System Logs

System Logs	
System Status Logs:	View
Motion Trigger Logs:	View
Digital-In Trigger Logs:	View
All Logs:	View

System Status Logs

Click the **[View]** button on the right side to list the logs of system status.

Motion Trigger Logs

Click the **[View]** button on the right side to list the logs of motion detection.

Digital-In Trigger Logs

Click the **[View]** button on the right side to list the logs of digital input detection.

All Logs

Click the **[View]** button on the right side to list all logs.

B. Video/Audio Setting

Video Format

This device supports H.264/MJPEG and MPEG4 (only for 3GPP streaming) Triple Mode and Triple Streaming, set the video parameters in this page.

Video Format

Original Video:	1600x1200 @ 15fps ▼
Video System:	NTSC - 60Hz ▼
TV Output:	Auto ▼ (Auto: Based on the Video System)

Streaming 1 Output Setting

○ Basic Mode ◉ Advanced Mode	
Resolution:	1600x1200 ▼
Bitrate Control Mode:	◉ CBR (Constant Bit Rate) ○ VBR (Variable Bit Rate)
CBR - Highest Video Bitrate:	1.5Mbps ▼
VBR - Video Quantitative:	7 ▼
Frame Rate Per Second:	15 FPS ▼
GOP Size:	1 X FPS ▼ GOP = 15
Video Compression Format:	H.264 ▼
RTSP Path:	*Audio Format= G.711 *Link the camera with this address -> rtsp://[IP]/

Streaming 2 Output Setting

○ Basic Mode ◉ Advanced Mode	
Resolution:	1600x1200 ▼
Quality:	High ▼
Frame Rate Per Second:	15 FPS ▼
Video Compression Format:	JPEG ▼
RTSP Path:	v2 *Audio Format= G.711 *Link the camera with this address -> rtsp://[IP]/v2

3GPP Streaming Output Setting
(Resolution=176x144, FPS=5, Video=MPEG4, Audio=AMR)

◉ Enable ○ Disable	
3GPP Path:	3g *Link the camera with this address -> rtsp://[IP]/3g *Link the camera (no audio) with this address -> rtsp://[IP]/3gx

Apply

Original Video

Original Video: Select the Original Video from the pull-down list. The Original Video will affect the selection of Resolution and Video Frame Rate of streaming 1 and 2, please refer to the table below to know the supported resolutions and highest FPS in different Original Video:

Original Video = 1600x1200@15fps							
Available Resolution and Highest FPS for Streaming 1/2 Output:							
Resolution	1600x1200	1280x1024	1280x960	1280x720	800x592	640x480	320x240	176x144
FPS	15	15	15	15	15	15	15	15

Original Video = 1280x1024@22fps							
Available Resolution and Highest FPS for Streaming 1/2 Output:							
Resolution	1280x1024	1280x960	1280x720	800x592	640x480	320x240	176x144
FPS	22	22	22	22	22	22	22

Original Video = 1280x960@25fps						
Available Resolution and Highest FPS for Streaming 1/2 Output:						
Resolution	1280x960	1280x720	800x592	640x480	320x240	176x144
FPS	25	25	25	25	25	25

Original Video = 1280x720@30fps					
Available Resolution and Highest FPS for Streaming 1/2 Output:					
Resolution	1280x720	800x592	640x480	320x240	176x144
FPS	30	30	30	30	30

Original Video = 800x600@30fps				
Available Resolution and Highest FPS for Streaming 1/2 Output:				
Resolution	800x592	640x480	320x240	176x144
FPS	30	30	30	30

Video System: Select NTSC-60Hz or PAL-50Hz to match your local video system.

TV Output: Select the video system of the analog video output signal. Select Auto will follow the selection in "Video System", or select NTSC or PAL manually.

Streaming 1 and 2 Output Setting

Basic / Advanced Mode: Select the mode to configure the parameters. Advanced mode provides more detail parameters for setting.

Resolution: Select the resolution from the pull-down list. Please refer to the above tables for the supported resolutions.

Frame Rate Per Second: The video refreshing rate per second. Select the frame rate from the pull-down list. Refer to the above tables for the supported highest FPS.

Video Compression Format: Choose H.264 or JPEG format to compress and output the video stream.

> *H.264:* The video stream will be compressed in H.264 format. Choose CBR (Constant Bit Rate) or VBR (Variable Bit Rate) in Bitrate Control Mode.
>
> - CBR: Set the Video Bitrate from 32Kbps ~ 8Mbps depend on the upload bandwidth of network. The data size of video stream will be limited under the selected bit rate.
>
> - VBR: Set the Video Quantitative from 1 ~ 10, the higher value will get better video quality. The data size of video stream is no limitation, if the upload bandwidth of network is lower than the data size, the video will be displayed slowly.
>
> - GOP Size: Set the GOP (Group of Picture) size. If you don't know what value should be set, please set it to "1XFPS".
>
> *JPEG:* The video stream will be compressed in MJPEG format.
>
> - Quality: 5 levels for select. The higher quality will get bigger file size.

RTSP Path: Assign a name to identify this video stream. When view the video stream with RTSP connection, the URL should be "rtsp://<Public IP of this device>:<RTSP port>/<RTSP path>".

3GPP Streaming Output Setting

After enable the 3GPP streaming, it will enable this device to send out the video in 3GPP format, and you can view the live video on the 3G mobile phone.

Since the bandwidth of 3G is not fast usually, the 3GPP streaming will be set to the following configuration:

- Resolution – Fixed to 176x144.
- Frame Rate –Fixed to 5FPS.
- Video Format – Fixed to MPEG4.
- Audio Format – Fixed to AMR.

3GPP Path: Assign a name to identify the 3GPP video stream

To view the live video with a 3G mobile phone or PDA, open "Streaming Player" or web browser in the mobile phone, type the URL as following to link and view the live video:

rtsp://<Public IP of camera>:<RTSP port>/<3GPP path>

* <Public IP of camera>: The public IP address of the camera.

* <RTSP port>: The RTSP port of the camera. This port is assigned in Configuration ➜ Network Setting ➜ Network Setting

* <3GPP path>: The name of the 3GPP video stream.

If your 3G mobile phone or PDA does not support the viewing of RTSP streaming, you can view the camera with http connection. To do this, use a Java compliant browser such as Opera, and type the URL as following to link and view the live video:

http://<Public IP of camera>:<HTTP port>/Jview.html

* <Public IP of camera>: The public IP address of the camera.

* <HTTP port>: The HTTP port of the camera. This port is assigned in Configuration ➜ Network Setting ➜ Network Setting

Note: Do not use the IE browser in 3G mobile phone because it doesn't support Java.

*After set up, click **[Apply]** to save the settings.*

Image Setting

Image Setting

Privacy Mask

For the security purpose, there are 3 areas can be setup for privacy masks, the masked areas will not be shown in Live-View and recorded file. To set up or clear the privacy mask, click **[Draw/Clear Area]** button, and then use mouse to drag the area on the video. After the configuration, click **[Save Area Settings]** button to save the settings.

Image Quality

Brightness / Contrast / Sharpness: You can adjust these parameters to get clear

video.

Automatic Gain Control: Adjust this function according to the environment.

Backlight Compensation: This device supports "Back Light Compensation", enable/disable this function by selecting ON or OFF.

AWB Gain - Red: Adjust the gain level of red color for the automatic white balance.

AWB Gain - Blue: Adjust the gain level of blue color for the automatic white balance.

Frame Rate at Night: This function can be set at different Frame rate to increase night illumination. Set lower frame rate will slower the frame refresh rate, but will enhance the night illumination. Night mode will be activated automatically depending on lux illumination, if set at 15 frame rate, when night mode activated at low lux, the frame rate will not be more than 15FPS.

Video Orientation: Change the orientation to display the video.

Default: Click **[Default]** button will load the default settings.

Audio Setting

This device supports **2-way audio**.

Audio from Device to Local PC

For this device to local PC, select **[Enable]** and then click **[Apply]** to start this function. If set to **[Disable]**, the **[Voice]** icon on Live View page is not workable.

Audio Setting

Audio from Local PC to This Device

For local PC to this device, click **[Chatting]** icon on the Live View page.

C. Network Setting

Network Setting

Network Setting

Network Setting	
IP Assignment	
○ DHCP ◉ Static IP	
IP Address:	192.168.11.77
Subnet Mask:	255.255.255.0
Gateway:	192.168.11.1
DNS 1:	168.95.1.1
DNS 2:	168.95.192.1
Port Assignment	
HTTP Port:	80
UPnP Setting	
UPnP:	◉ Enable ○ Disable
UPnP Port Forwarding:	◉ Enable ○ Disable
External HTTP Port:	8081
External RTSP Port:	555
RTSP Server Setting	
RTSP Server:	◉ Enable ○ Disable
RTSP Port:	554
RTP Start Port:	5000 [1024..9997]
RTP End Port:	9000 [1027..10000]
Multicast Setting (Based on the RTSP Server)	
Streaming 1:	
IP Address:	234.5.6.78 [224.3.1.0 ~ 239.255.255.255]
Port:	6000 [1 ~ 65535]
TTL:	15 [1 ~ 255]
Streaming 2:	
IP Address:	234.5.6.79 [224.3.1.0 ~ 239.255.255.255]
Port:	6001 [1 ~ 65535]
TTL:	15 [1 ~ 255]

IP Assignment

DHCP: If this device behinds a router and the router provides DHCP service, using DHCP, this device will get all network parameters from the router automatically.

Static: Assign IP address, subnet mask, gateway, and DNS manually.

Port Assignment

Set the port if necessary. If this device will be connected via Internet, configure the NAT (Network Address Translation) in router to match the port assignment.

HTTP Port: Set the port for HTTP connection. The default is "80", change the port if you want to use router's NAT (Network Address Translation) to make this device can be linked from Internet.

UPnP Setting

UPnP: Enable or disable the UPnP protocol.

This device supports UPnP, if the UPnP service is enabled on your computer, the device will automatically be detected and a new icon will be added to "My Network Places".

Note: UPnP service must be enabled on your computer.

The Windows Vista and Windows 7 have enabled UPnP service by default. To activate UPnP service in Windows XP, please follow the procedure:

1. Open the "Control Panel" from the "Start" menu.
2. Select "Add/Remove Programs".
3. Select "Add/Remove Windows Components" and open "Networking Services" section.
4. Click "Details" and select "UPnP" to setup the service.
5. The network device icon will be added to "My Network Places".
6. You may double-click the network device icon to access it via IE browser.

UPnP Port Forwarding: Enable or disable the "UPnP Port Forwarding" function.

The "UPnP Port Forwarding" function provides an easy way to configure the NAT (Network Address Translation) in router. If the router equips "UPnP Port Forwarding" function too, this device will ask the router to open the "External HTTP Port" and "External RTSP Port" for this device automatically. Therefore, you don't need to configure the Port Forwarding manually.

Note: Not all routers equip "UPnP Port Forwarding" function. The device will report whether this function is successful after click **[Apply]** button.

RTSP Server Setting

RTSP Server: The video stream can be direct retrieve via RTSP connection, you can close this function by disable this option.

RTSP Port: Set the port for transfer the video and audio. The default is "554", change the port if you want to use router's NAT (Network Address Translation) to make this device can be linked from Internet.

RTP Port: Set the port range of RTP port.

In RTSP mode, you may use TCP and UDP for connecting. TCP connection uses RTSP Port. UDP connection uses RTP Start and End Port.

Multicast Setting (Based on the RTSP Server)

Multicast addressing is a network technology for the delivery of streaming to a group of destinations simultaneously using the most efficient strategy to deliver the messages over each link of the network only once, creating copies only when the links to the multiple destinations split. To implement the Multicast, a switch or router that supports Multicast function is necessary in the network.

If your network supports Multicast, you can configure the device to enable this function by setup the following:

IP Address: This is the multicast group address the streaming should be sent to. You should configure each recipient with the same multicast group address and receive the streaming from this address. The range is 224.3.1.0 ~ 239.255.255.255

Port: The multicast port. The range is 1 ~ 65535

TTL: Time-To-Live (TTL) for Multicast Packets. This value decides how "far" from a sending host a given multicast packet should be forwarded.

Onvif Setting

This device supports Onvif standard, you can configure the following settings to compatible with the NVC (Network Video Client) such as NVR or recording software:

Onvif Setting			
Onvif Version:	○ V1.02	● V1.01	○ Disable
Security:	○ Enable	● Disable	
RTSP Keepalive:	● Enable	○ Disable	

Onvif Version: Select the version of Onvif standard, or disable the Onvif output.

Security: Enable or disable the Onvif security authentication.

RTSP Keepalive: If select "Enable", when the NVC doesn't send the command for

keeping the RTSP connection, this device will terminate the RTSP connection. If select "Disable", this device will always keep the RTSP connection. If the "Time-out" error happens on NVC side, please disable this function.

*After set up, click **[Apply]** to save the settings.*

Mail / FTP / Samba Setting

To send out the event video to E-mail, FTP or Samba network storage, please set up the configuration first.

Mail / FTP/ Samba

Mail & FTP	
Mail Setting	
Login Method:	Account
Send Mail Server:	smtp.mailserver.com
User Name:	test
Password:	••••
Sender's Mail:	sender@mailserver.com
Receiver's Mail:	receiver@abcmail.com
Bcc Mail:	boss@abcmail.com
Mail Port:	25 (Default Port = 25)
Test	
FTP Setting	
FTP Server:	ftp.company.com
User Name:	ftptest
Password:	••••
FTP Port:	21 (Default Port = 21)
Store Path:	/
FTP Mode:	PORT
Auto Create Folder by Date:	Yes (ex:Path/20100115/121032m.avi)
Test	
Samba (Network Storage) Setting	
NAS Location:	\\192.168.11.50\Event (ex: \\NAS IP_Address\Folder)
Workgroup:	WORKGROUP
User Name:	sambatest
Password:	••••
Auto Create Folder by Date:	Yes (ex: NAS_Location/20100115/121032m.avi)
Test	
Apply	

Login Method: This device provides 2 kinds of mail settings. "Anonymous" for the mail server which doesn't need login with user name and password. "Account" for the mail server which needs login with user name and password.

Send Mail Server: The IP address or URL of the send-mail server.

User Name / Password: The user name and password of the sender to login mail server and send the mail.

Sender's Mail: The sender's mail address.

Receiver's Mail: The receiver's mail address.

BCC Mail: The mail address to receive the mail also.

Mail Port: The port of the mail service. Default is 25.

FTP Setting

FTP Server: The IP address or URL of the FTP server.

User Name / Password: The user name and password to log in the FTP server.

FTP Port: The port of the FTP service. Default is 21.

Store Path: The path to save the sent video file.

FTP Mode: Select "PORT" or "PASV to fit the FTP server. "PORT" is for sending file to an Active FTP server; "PASV" is for sending file to a Passive FTP server.

Auto Create Folder by Date: If select "Yes", a folder will be created under the "Store Path" and named with the date, and then the video file will be saved in this folder. If select "No", the video file will be saved in the "Store Path" without folder.

Samba (Network Storage) Setting

"Samba" is a networking protocol provides file sharing service between network devices. If you have a network storage is running Samba service, this camera can send the event video or snapshot to the network storage directly.

Samba (Network Storage) Setting		
NAS Location:	\\192.168.11.50\Event	(ex: \\NAS IP_Address\Folder)
Workgroup:	WORKGROUP	
User Name:	sambatest	
Password:	••••	
Auto Create Folder by Date:	Yes ▾	(ex: NAS_Location/20100115/121032m.avi)
Test		

NAS Location: The location of the Samba network storage, including IP address or URL and the folder, the event video or snapshot will be send to this location.

Workgroup: Type the work group this Samba network storage belong to.

User Name / Password: The user name and password to log in the Samba network storage.

Auto Create Folder by Date: If select "Yes", a folder will be created under the "NAS Location" and named with the date, and then the video file will be saved in this folder. If select "No", the video file will be saved in the "NAS Location" without folder.

After set up, click [Apply] to save the settings.

Test the Settings

You can click **[Test]** button, this device will send a test mail to receiver's mail box, or upload a test file to FTP site and the Samba network storage, to make sure the settings of mail, FTP or Samba network storage are correct.

PPPoE Setting

If this device connects to an ADSL modem directly and want to use PPPoE connection, set the parameters in this page.

PPPoE Setting

PPPoE Setting	
PPPoE Connection:	⦿ Enable ◯ Disable
User Name:	adsluser
Password:	••••
Send E-mail after Dialed:	☑ Enable
E-mail Subject:	PPPoE From IP Camera

[Apply]

PPPoE Connection

Select **[Enable]** to use PPPoE. Type in user name and password for the ADSL connection.

Send E-mail After Dialed

If select **[Enable]**, when connect to the Internet via PPPoE, this device will send a mail with the Subject to a specific mail account, this mail contains the public IP address of the ADSL connection.

To set the mail account, please refer to Configuration ➜ Network Setting ➜ Mail&FTP page.

E-mail Subject

The subject of the E-mail will be sent.

*After set up, click **[Apply]** to save the settings.*

DDNS Setting

This device supports DDNS, set the parameters in this page.

DDNS Setting

DDNS Setting

There are several DDNS providers can be selected. Select the provider from the pull-down list, input Hostname, User name, Password and the Schedule Update time, and then click **[Apply]** to connect to the DDNS provider.

Status

This field will display the message to indicate the status of DDNS service.

Updating: Information update.

Idle: Stop service.

http://<hostname (username)>.<provider>.com: DDNS registration successful, can now link to the camera with this URL address.

Update Failed, the name is already registered: The hostname or username has already been used. Please change it.

Update Failed, check your internet connection: Network connection failed.

Update Failed, please check the account information with you provider: The input hostname, username or password may be wrong.

D. Event Handling

Event Setting

This device supports multiple event settings.

Event

This device supports 2 kinds of event detections:

- Motion Detection.
- Digital Input Detection.

Motion Detection

This device allows 3 areas for detect motion. When motion detection is triggered, it can send the video or snapshot to specific mail address; transmit the video or snapshot to remote FTP server or Samba network storage; trigger the digital out.

Set the Area: To set up or clear the motion area, click **[Draw/Clear Area]** button on "Set Area" row, and then use mouse to drag the area on the video.

Adjust the Sensitivity: To adjust the sensitivity of detection, select the level from the pull-down list.

Activate Motion Detection: To activate the motion detection, enable the **[Detect Area]** check box

Actions when Motion Detection is Trigger: Select what actions will be taken once the motion detection is triggered in each area.

- E-mail: When the motion detection is triggered in this area, send the recorded video or snapshot to the specific mail address.

- FTP: When the motion detection is triggered in this area, send the recorded video or snapshot to the specific FTP site.

- Save to Samba: When the motion detection is triggered in this area, send the recorded video or snapshot to the Samba network storage.

  To set the mail account FTP site and Samba network storage, please refer to Configuration → Network Setting → Mail&FTP page.

- Out1: When the motion detection is triggered in this area, turn on the Digital Output 1.

E-Mail Subject: The subject of the E-mail will be sent.

Detection Interval: This option provides two functions:

- The interval time between multiple detections. For example, if the time set to 10 seconds, when the motion detection is triggered at time 10H:05M:10S, the next detection will be accepted after 10H:05M:20S. The detections between 10H:05M:10S to 10H:05M:19S will not be accepted.

- If the "Out" is selected for the action, the Interval means "Digital Output On" period. For example, if Interval set to 20 seconds, when the motion detection is triggered, the Digital Output will be "On" and lasting for 20 seconds, and then "Off" automatically.

Enable Motion Detection in Schedule Time: Enable this option will automatic activate the motion detection with scheduled time and stop the detection in the other time. Please refer to Schedule page to setup the schedule time.

Recommendation of Motion Detection Area

To ensure the Motion Detection works well, and avoid unnecessary trigger, please follow the rules to draw the Motion Detection Areas:

- The moving object larger than the 50% of the Motion Detection Area, it will be detected, and the Motion Detection is triggered.

- The moving object smaller than the 50% of the Motion Detection Area, it will not be detected, and the Motion Detection will not be triggered.

- Recommend use 3 smaller Motion Detection Areas to replace a large area.
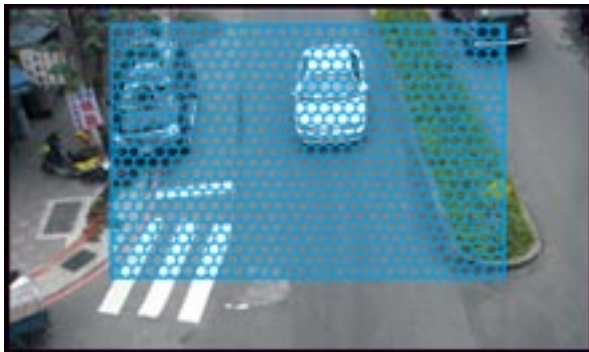
The moving object smaller than the 50% of the motion area, it will not be detected!
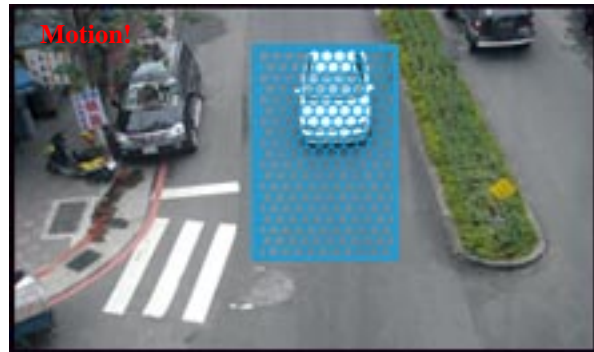
The moving object larger than the 50% of the motion area, it will be detected, and the motion is triggered!

To detect the smaller moving object, use 3 motion areas to replace a large motion area, refer the figure below:
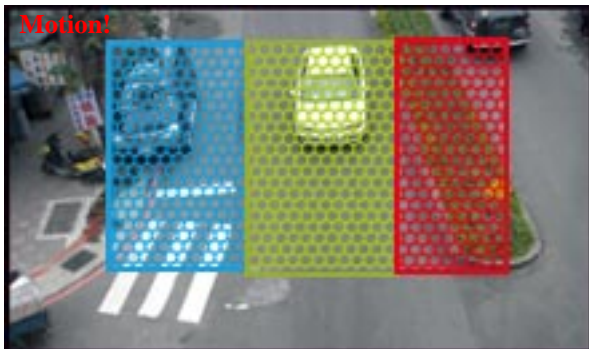
The moving object will be detected when it is in any of the 3 motion areas, and the motion is triggered!

Record File Setting

There are 3 methods to record the event video and send out via E-mail, FTP:

Video: When an event (Motion Detection or Digital Input Detection) is triggered, the video will be recorded as still image with AVI format. The beginning and ending time of the file is depending on the Pre and Post Record Time Setting.

Snapshots: This option is available when the "Video Format" of streaming 1 is set as "JPEG" in Video Format. When an event (Motion Detection or Digital Input Detection) is triggered, this device will take a series of snapshot with JPG format. The beginning and ending time of the snapshot pictures is depending on the Pre and Post Record Time Setting.

Snapshot (Single): This option is available when the "Video Format" of streaming 1 is set as "JPEG" in <u>Video Format</u> page. When an event (Motion Detection or Digital Input Detection) is triggered, this device will take a snapshot with JPG format.

Pre and Post Record Time Setting

Configure the record time for the event recording file. For example, if set "Pre Alarm" as 3 seconds and set "Post Alarm" as 5 seconds, when an event (Motion Detection or Digital Input Detection) is triggered at time 10H:05M:10S, the video will be recorded from 10H:05M:07S to 10H:05M:14S.

Note: Limited by the built-in RAM of this device, when data is too much or video quality set too high, it will cause recording frame drop or decrease the recording time of post alarm.

To avoid the "frame drop" situation, please reduce the bitrate of the video. We recommend connect the device in LAN (Local Network) and set the video as CBR, and Bitrate less than 1.5Mbps.

*After set up, click **[Apply]** to save the settings.*

I/O Setting

This device provides Digital Input and Digital Output. When the Digital Input is triggered, it can send the video or snapshot to specific mail address; transmit the video or snapshot to remote FTP server or Samba network storage; trigger the digital out.

I/O Setting

I/O Setting	
Digital Input Setting	
Input 1 Sensor Type:	N.O
Input 1 Trigger Action:	☐ E-mail ☑ FTP ☑ Out1 ☐ Save to Samba
E-Mail Subject:	GPIO In Detected!
Detection Interval:	10 sec
☐ Enable Digital Input detection based on - Schedule Time	
Digital Output Setting	
Output Switch Type:	○ OnOff Switch ● Time Switch
Turn-On Time:	10 sec
Apply	

Digital Input Setting

Input 1 Sensor Type: Select the type of the sensor which connected to the Digital Input. **[N.O]** means "Normally Opened", this type of sensor will be triggered when it is closed. **[N.C]** means "Normally Closed", this type of sensor will be triggered when it is opened.

Input 1 Trigger Action: Select the actions when the Digital Input is triggered.

- E-mail: When the Digital Input is triggered, send the recorded video or snapshot to the specific mail address.

- FTP: When the Digital Input is triggered, send the recorded video or snapshot to the specific FTP site.

- Save to Samba: When the Digital Input is triggered, send the recorded video or snapshot to the Samba network storage.

  To set the mail account FTP site and Samba network storage, please refer to Configuration ➜ Network Setting ➜ Mail&FTP page.

- Out1: When the Digital Input is triggered, activate the Digital Output 1.

E-Mail Subject: The subject of the E-mail will be sent.

Detection Interval: This option provides two functions.

- The interval time between multiple detections. For example, if the time set to 10 seconds, when the Digital Input is triggered at time 10H:05M:10S, the next trigger will be accepted after 10H:05M:20S. The triggers between 10H:05M:10S to 10H:05M:19S will not be accepted.

- If the "Out" is selected for the action, the Interval means "Digital Output On" period. For example, if Interval set to 20 seconds, when the Digital Input is triggered, the Digital Output will be "On" and lasting for 20 seconds, and then "Off" automatically.

Enable Digital Input Detection in Schedule Time: Enable this option will automatic activate the Digital-Input detection with scheduled time and stop the detection in the other time. Please refer to <u>Schedule</u> page to setup the schedule time.

Digital Output Setting

This section is for setup the parameters of Digital Output.

Note: The following settings are available when manually turn on the Relay Out on Live-View page.

Output Switch Type: Select the type of the Digital Output switch. **[On/Off Switch]** will be triggered to On or Off constantly. **[Time Switch]** will be triggered to "On" and lasting for a period time, and then "Off" automatically.

Turn-On Time: If the Digital Output switch is a "Time Switch", the lasting time of the "On" period can be set here.

*After set up, click **[Apply]** to save the settings.*

Schedule

This function provides the schedule for the following:

- Send Snapshot with the Scheduled Time: automatic send a snapshot to the E-mail address, FTP server or Samba network storage. The interval time can be set.

- Activate and Stop the Motion Detection with Scheduled Time: if the "Enable Motion Detection in Schedule Time" option in <u>Configuration → Event Handling → Event Setting → Motion Detection</u> page is enabled, the motion detection will be activated with scheduled time and stop the detection in the other time.

- Activate and Stop the Digital Input Detection with Scheduled Time: if the "Enable Digital Input Detection in Schedule Time" option in <u>Configuration → Event Handling → I/O Setting</u> page is enabled, the Digital-Input detection will be activated with scheduled time and stop the detection in the other time.

Schedule

Setup Schedule

Select / Unselect All Time: Click **[All]** of the top-left of the time table to select or unselect all time. The square in green means the time is selected; the square in

light-grey means the time is unselected.

Select / Unselect Specific Time: Click the square of the time table to select or unselect the specific time. The square in green means the time is selected; the square in light-grey means the time is unselected.

Send Snapshot with Scheduled Time

Enable / Disable: To enable or disable the schedule function.

Snapshot: Select the method to send out the snapshot.

- E-mail: Automatic send the snapshot to the specific mail address, the interval time of the snapshot pictures is depending on the Interval setting.

- FTP: Automatic send the snapshot to the specific FTP site, the interval time of the snapshot pictures is depending on the Interval setting.

- Save to Samba: Automatic send the snapshot to the Samba network storage, the interval time of the snapshot pictures is depending on the Interval setting.

  To set the mail account FTP site and Samba network storage, please refer to Configuration ➜ Network Setting ➜ Mail&FTP page.

Interval: The interval time of the snapshot pictures. For example, if the time set to 10 seconds, in the scheduled time, the device will send out snapshot every 10 seconds.

File Name: The header of the filename of the snapshot. For example, if you input "Camera" in this field, the filename of the snapshot will be "Camera-yyyymmdd-hhmmss.jpg", "yyyymmdd" indicates the year, month and date; hhmmss indicates the hour, minute and second.

*After set up, click **[Apply]** to save the settings.*

6. Network Configuration

A. Intranet Only

Connects to PC Directly

If you want to connect the camera to PC directly for the very first time setup, please refer to the figure below for the connection.

Camera

IP Address: 192.168.1.200
Subnet Mask: 255.255.255.0
Gateway: (Empty)
Http Port: 80
RTSP Port: 554

Ethernet Cable

This device supports Auto-MDI/MDIX, you can use a straight or cross-over cable to connect these two devices.

PC

IP Address: 192.168.1.2
Subnet Mask: 255.255.255.0
Gateway: (Empty)
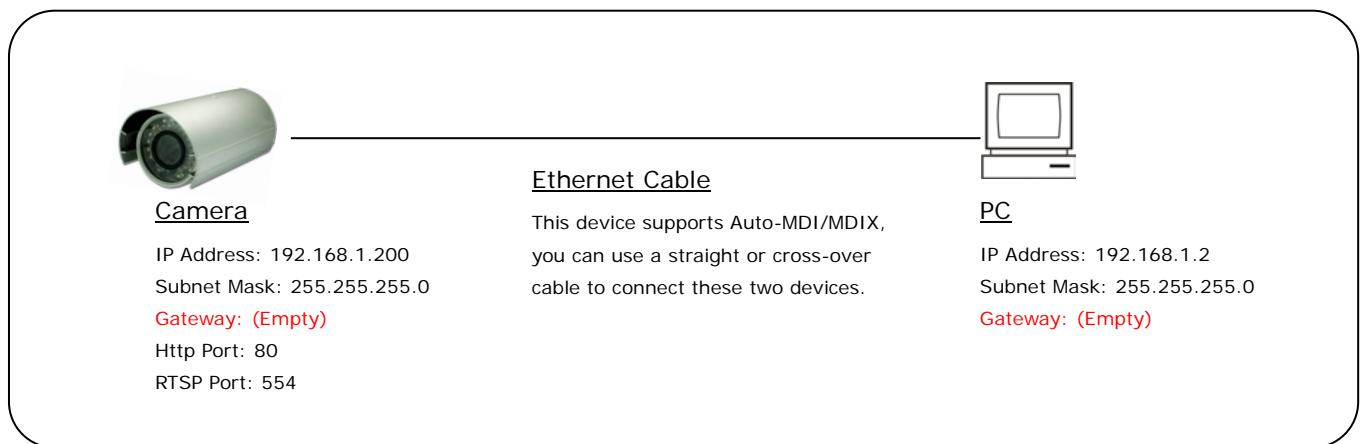
- Connect the camera to PC with Ethernet cable. The camera equips an Auto-MDI/MDIX network connector, you can use a straight or cross-over Ethernet cable.
- Refer to Configuration ➜ Network ➜ Network page to configure the IP settings.
- Please make sure the IP address of PC and camera are in the same subnet. Ex. 192.168.1.2 and 192.168.1.200 have the same subnet.
- Set Subnet Mask of PC and camera.
- Clear the Gateway of PC and camera to empty.

For example, if the IP settings have been configured as the above figure, the cameras can be linked with following addresses:

Client	Camera	Link Address	Remark
PC	Camera	http://192.168.1.200	

Connects to an Exist LAN

If the camera will be used in a local network (LAN) and don't allow to access via Internet, please refer to the figure below for the connection.
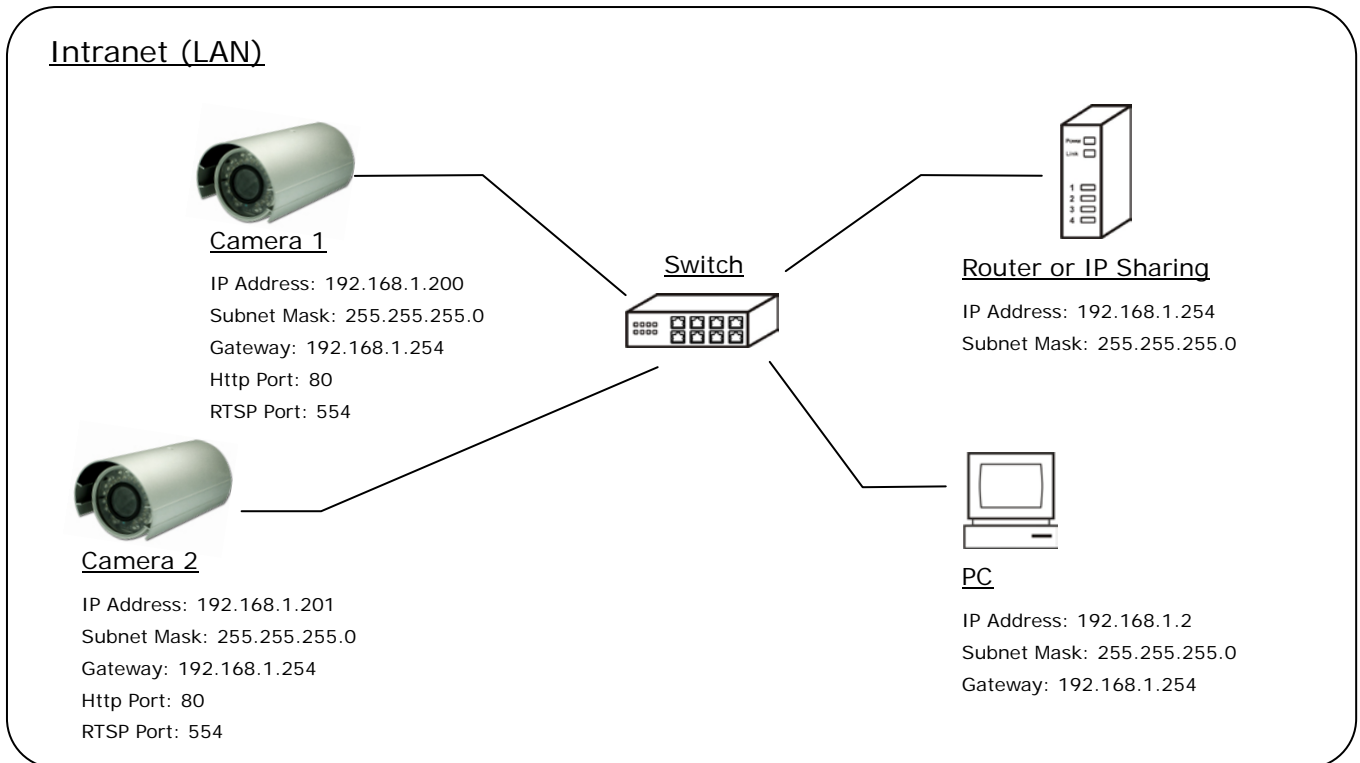
- Connect the cameras to the Switch.
- Refer to Configuration → Network → Network page to configure the IP settings.
- Please make sure the IP address of Router, PC and camera are in the same subnet. Ex. 192.168.1.2 and 192.168.1.200 have the same subnet.
- Set Subnet Mask of Router, PC and cameras.
- Set Gateway of PC and cameras with the same IP address. Usually, the Gateway is the IP address of router.
- Set the IP address of a valid DNS into cameras. An invalid DNS will cause the domain name can't be resolved and reached, such as email address.

For example, if the IP settings have been configured as the above figure, the cameras can be linked with following addresses:

Client	Camera	Link Address	Remark
PC	Camera 1	http://192.168.1.200	
	Camera 2	http://192.168.1.201	

B. Internet Only

Connects to ADSL with Fixed Public IP Address

If the camera connects to Internet with an ADSL modem and the public IP address of ADSL is fixed, please refer to the figure below for the connection.
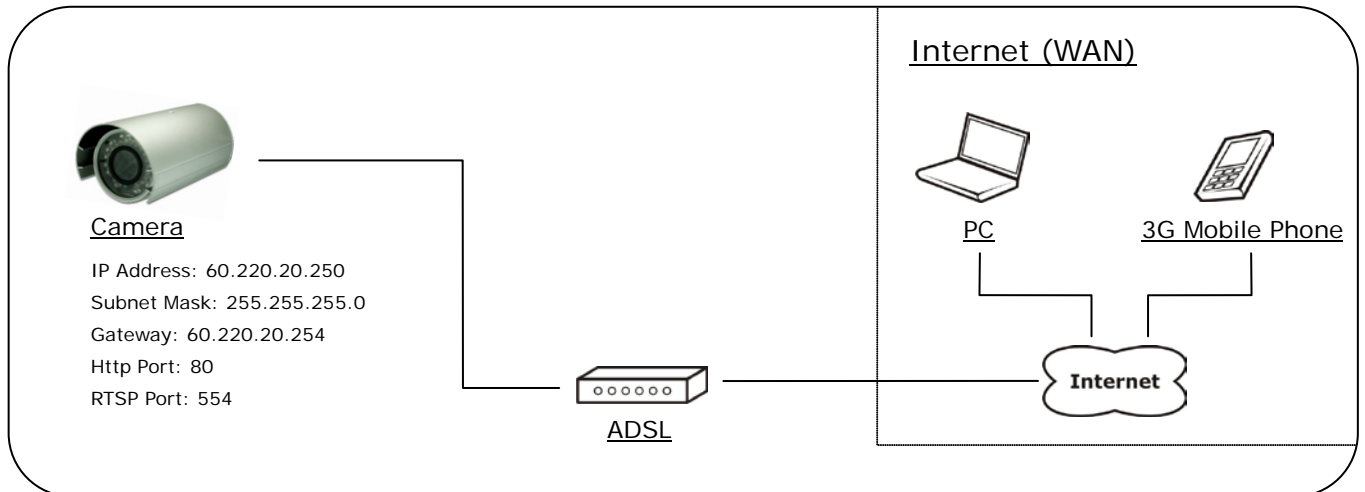
- Connect the camera to the ADSL modem.
- Refer to Configuration ➔ Network ➔ Network page, configure the IP address, Subnet Mask, Gateway and DNS with the settings that ISP provided for ADSL connection.

For example, if the public IP address is "60.220.20.250", now the camera can be linked with following addresses:

Client	Link Address	Remark
PC	http://60.220.20.250	
3G Mobile Phone	With audio: 　rtsp://60.220.20.250/3g Without audio: 　rtsp://60.220.20.250/3gx	Must enable "3GPP Stream" in Configuration ➔ Video/Audio ➔ Video Format page

Connects to ADSL with Floating Public IP Address (PPPoE)

If the camera connects to Internet with an ADSL modem and the public IP address of ADSL is variable, the camera can use PPPoE function for the connection.
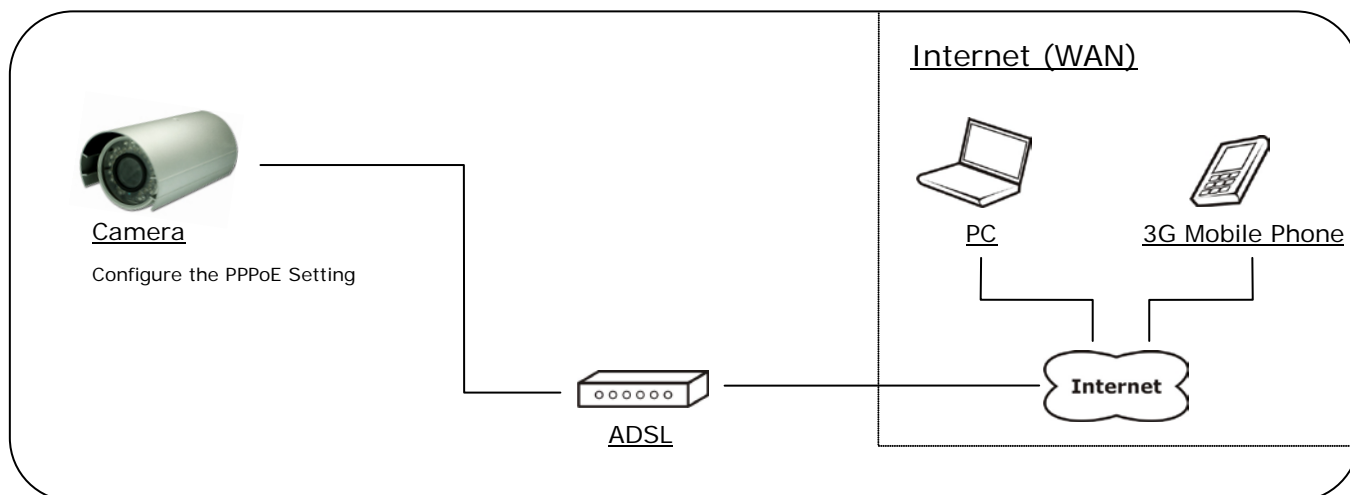
- Connect the camera to the ADSL modem.
- Refer to Configuration ➜ Network ➜ PPPoE page to configure the PPPoE settings.
- The camera will automatic dial-up and get the public IP address from ISP.
- If you have enable "Send Mail After Dialed" function, the camera will send an email to tell you the current public IP address.

For example, if the public IP address is "60.220.20.250", now the camera can be linked with following addresses:

Client	Link Address	Remark
PC	http://60.220.20.250	

3G Mobile Phone	With audio:
	    rtsp://60.220.20.250/3g
	Without audio:
	    rtsp://60.220.20.250/3gx
		Must enable "3GPP Stream" in Configuration ➜ Video/Audio ➜ Video Format page

Using DDNS Function

Since the public IP address is variable, you can enable DDNS function to get a fixed URL to instead of the IP address, refer to Configuration ➜ Network ➜ DDNS page to configure and enable the DDNS function.

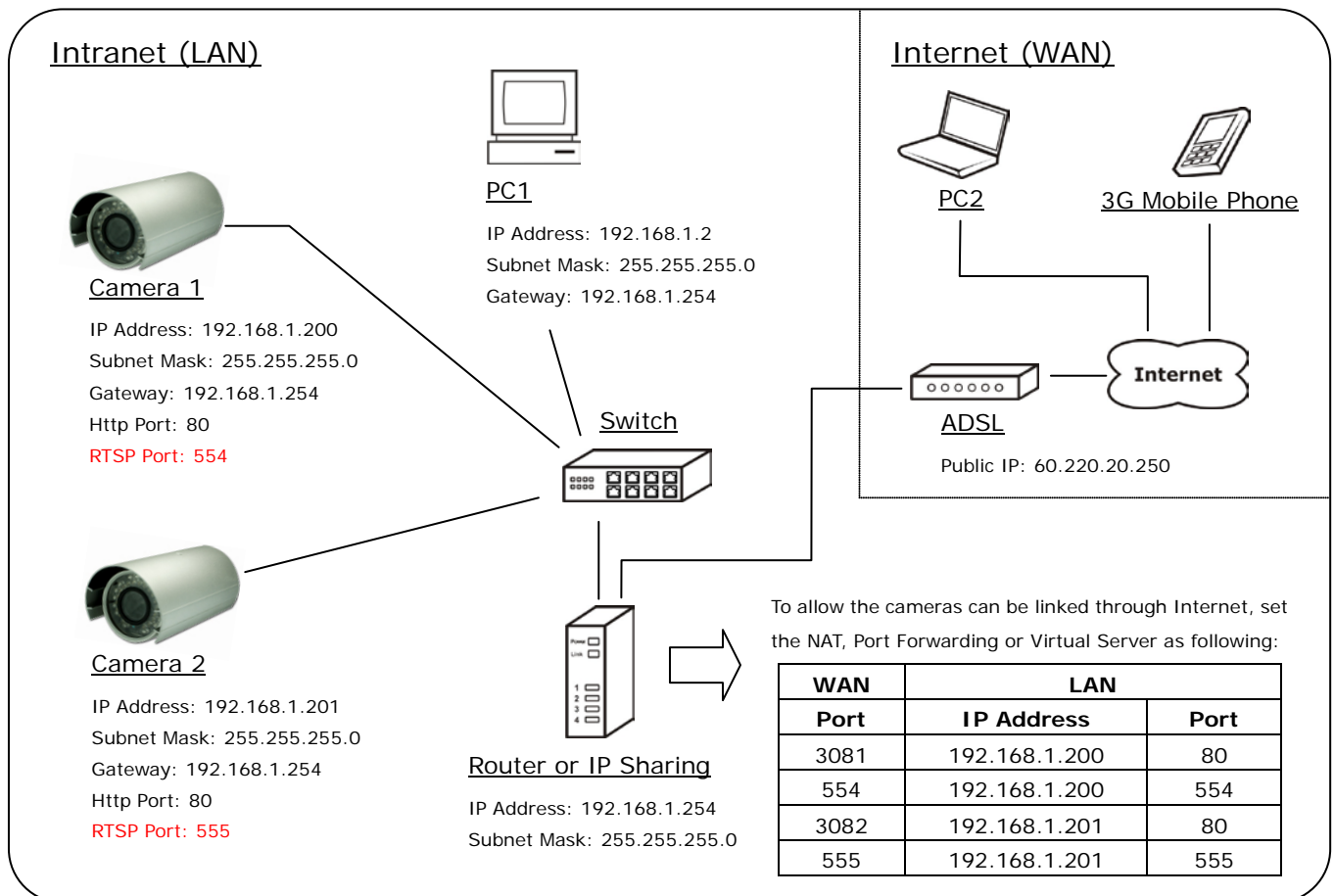After enable the DDNS, assume the registered URL is "test.dyndns.org", now the camera can be linked with following URLs:

Client	Link Address	Remark
PC	http://test.dyndns.org	

3G Mobile Phone	With audio:
	   rtsp://test.dyndns.org/3g
	Without audio:
	   rtsp://test.dyndns.org/3gx
		Must enable "3GPP Stream" in Configuration → Video/Audio → Video Format page

C. Intranet + Internet

Connects to Internet with Fixed Public IP Address

If the camera will be added into a local network (LAN), and will be accessed via both Intranet and Internet, please refer to the figure below for the connection.

Intranet (LAN)

Camera 1
IP Address: 192.168.1.200
Subnet Mask: 255.255.255.0
Gateway: 192.168.1.254
Http Port: 80
RTSP Port: 554

PC1
IP Address: 192.168.1.2
Subnet Mask: 255.255.255.0
Gateway: 192.168.1.254

Switch

Camera 2
IP Address: 192.168.1.201
Subnet Mask: 255.255.255.0
Gateway: 192.168.1.254
Http Port: 80
RTSP Port: 555

Router or IP Sharing
IP Address: 192.168.1.254
Subnet Mask: 255.255.255.0

Internet (WAN)

PC2   **3G Mobile Phone**

ADSL
Public IP: 60.220.20.250

To allow the cameras can be linked through Internet, set the NAT, Port Forwarding or Virtual Server as following:

WAN	LAN	
Port	IP Address	Port
3081	192.168.1.200	80
554	192.168.1.200	554
3082	192.168.1.201	80
555	192.168.1.201	555

- Assume the local network will be connected to Internet with ADSL connection, first, configure the router (or IP sharing) with the ADSL connection. Please refer to the user's manual of router for the configuration.
- Connect the cameras to the Switch.
- Refer to Configuration ➜ Network ➜ Network page to configure the IP settings.
- Configure the cameras with different IP address. Ex. assign camera1 to 192.168.1.200, and assign camera2 to 192.168.1.201
- Please make sure the IP address of Router, PC and cameras are in the same subnet. Ex. 192.168.1.2 and 192.168.1.200 have the same subnet.

- Set Subnet Mask of Router, PC and cameras.
- Set Gateway of PC and cameras with the same IP address. The Gateway is the IP address of router.
- Set the IP address of a valid DNS into cameras. An invalid DNS will cause the domain name can't be resolved and reached, such as email address.
- Configure the cameras with different RTSP port. Ex. assign camera1 with port 554, and assign camera2 with port 555.
- To allow the cameras can be linked through Internet, set router's NAT (Network Address Translation), Port Forwarding or Virtual Server as following:

Camera	WAN Side		LAN Side			Remark
	Port	Protocol	IP Address	Port	Protocol	
Camera 1	3081	TCP	192.168.1.200	80	TCP	Port for Web page
	554	TCP	192.168.1.200	554	TCP	Port for Video and Audio
Camera 2	3082	TCP	192.168.1.201	80	TCP	Port for Web page
	555	TCP	192.168.1.201	555	TCP	Port for Video and Audio

For example, if the IP settings have been configured as the above figure, the cameras can be linked with following addresses:

Clients in Intranet	Camera	Link Address	Remark
PC1	Camera 1	http://192.168.1.200	
	Camera 2	http://192.168.1.201	

Client from Internet	Camera	Link Address	Remark
PC2	Camera 1	http://60.220.20.250:3081	
	Camera 2	http://60.220.20.250:3082	

3G Mobile Phone	Camera 1	With audio:
		   rtsp://60.220.20.250:554/3g
		Without audio:
		   rtsp://60.220.20.250:554/3gx
			Must enable "3GPP Stream" in Configuration → Video/Audio → Video Format page

| | Camera 2 | With audio:
    rtsp://60.220.20.250:555/3g
Without audio:
    rtsp://60.220.20.250:555/3gx | |

Connects to Internet with Floating Public IP Address

If the public IP address of ADSL connection is variable, you can enable DDNS function to get a fixed URL to instead of the IP address.

Note: only one device can enable the DDNS function in the local network (LAN), multiple devices use DDNS will update to the DDNS provider too frequently, and the DDNS provider will block your URL.

If the router has DDNS function, use router's DDNS function is recommended. Please refer to the user's manual of router for the configuration.

If the router doesn't have DDNS function, use one of the cameras DDNS function is recommended. Refer to Configuration ➜ Network ➜ DDNS page to configure and enable the DDNS function.

After enable the DDNS, assume the registered URL is "test.dyndns.org", now the cameras can be linked with following URLs:

Client from Internet	Camera	Link Address	Remark
PC2	Camera 1	http://test.dyndns.org:3081	
	Camera 2	http://test.dyndns.org:3082	

3G Mobile Phone	Camera 1	With audio:
		    rtsp://test.dyndns.org:554/3g
		Without audio:
		    rtsp://test.dyndns.org:554/3gx
			Must enable "3GPP Stream" in Configuration ➜ Video/Audio ➜ Video Format page

	Camera 2	With audio:
		    rtsp://test.dyndns.org:555/3g
		Without audio:
		    rtsp://test.dyndns.org:555/3gx	