User Manual

IP CAMERA

WARINGS

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MISTURE.
DO NOT INSERT ANY METALLIC OBJECT THROUGH VENTILATION GRILLS.

CAUTION

	CAUTION	
	RISK OF ELECTRIC SHOCK DO NOT OPEN	
CAUTION：TO REDUCE THE RISK OF ELECTRIC SHOCK. DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.		

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Content

V1.0_110926

I. Preface

This is a 720P real time IP camera with the web server built in. User can view real-time video via IE browser. It supports H.264, JPEG and MPEG4 video compression which provides smooth and high video quality. The video can be stored in the SD card and playback remotely.

With user friendly interface, it is an easy-to-use IP camera which is designed for security application.

II. Product Specifications

- Mega-Pixel CMOS Sensor
- Power over Ethernet(Option)
- H.264/ MJPEG/ MPEG4 Compression Format
- Micro SD Card backup
- Support iPhone/ Android/ Symbian/ Blackberry/ Mac
- SDK for Software Integration
- Free Bundle 36 Channel Recording Software

Specifications

MODEL	PoE Model	ICR Model
Hardware		
CPU	ARM 9 ,32 bit RISC	
RAM	256MB	
Flash	16MB	
Image sensor	1/4" CMOS sensor	
Support DC IRIS	Yes	
Lens Type	4.3mm	
Angle of View	50° (Hor), 30° (Ver)	
Power over Ethernet	Yes	No
Power Consumption	DC 12V	
Dimensions	110mm (∅) x 90mm (H)	
IR LEDs (Option)		
LEDs	No	7 LEDs, 850nM,

IR distance	No	5 Meters
Network		
Ethernet	10/ 100 Base-T	
Network Protocol	HTTP, HTTPS, SNMP, QoS/DSCP, Access list, IEEE 802.1X, RTSP, TCP/IP, UDP, SMTP, FTP, PPPoE, DHCP, DDNS, NTP, UPnP, 3GPP, SAMBA	
System		
Video Resolution	1280x800@30fps,1280x720@30fps , 640x480@30fps, 320x240@30fps, 176x144@30fps	
Video Adjust	Brightness, Contrast, Hue, Saturation, Sharpness, AGC, Night Mode, D-WDR, Flip, Mirror, Noise reduction	Brightness, Contrast, Hue, Saturation, Sharpness, AGC, Night Mode, D-WDR, Flip, Mirror, Day&Night.
Triple Streaming	Yes	
Image Snapshot	Yes	
Full Screen Monitoring	Yes	
Privacy Mask	Yes, 3 different areas	
Compression Format	H.264/ JPEG/ MPEG4	
Video Bitrates Adjust	CBR, VBR	
Motion Detection	Yes, 3 different areas	
Triggered Action	Mail, FTP, Save to Micro SD card, SAMBA	
Pre/ Post Alarm	Yes, configurable	
Security	Password protection, IP address filtering, HTTPS encrypted data transmission, 802.1X port-based authentication for network protection	
Firmware Upgrade	HTTP mode, can be upgraded remotely	
Simultaneous Connection	Up to 10	
SD card management		
Recording Trigger	Motion Detection, IP check, Network break down (wire only),Schedule	
Video Format	AVI, JPEG	
Video Playback	Yes	
Delete Files	Yes	
Web browsing requirement		
OS	Windows 7, 2000, XP, 2003, Microsoft IE 6.0 or above	
Hardware		

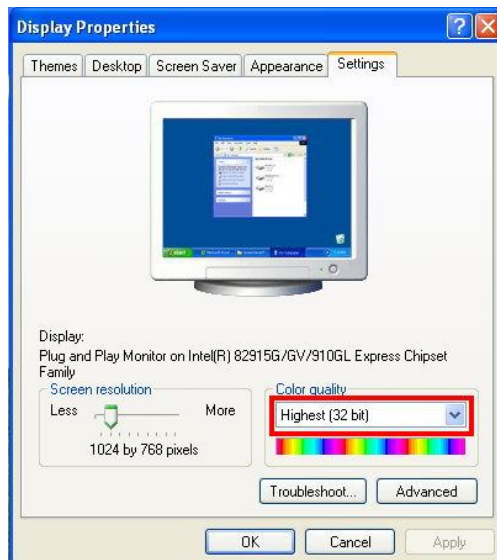| Suggested	Intel Dual Core 1.66G,RAM: 1024MB, Graphic card: 128MB
Minimum	Intel-C 2.8G, RAM: 512MB, Graphic card: 64MB

III. Product Installation

A. Monitor Setting
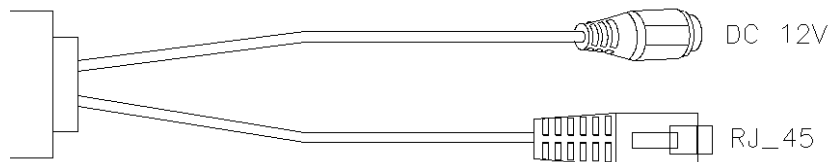
    i.   Right-Click on the desktop. Select " Properties"

    ii.   Change color quality to highest (32bit).


B. Hardware Installation and I/O Pin

Assignment

i.   Connect power adaptor

ii.   Connect IP Cam to PC or network with Ethernet cable

iii.   Set up the network configurations according to the network environment. For further explanation, please refer to chapter VI, "Network Configuration for IP CAMERA".

iv.   PoE (Power Over Ethernet)(Optional) **802.3af, 15.4W PoE Switch is recommended**

Power over Ethernet (PoE) 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 and enables easier application of uninterruptible power supplies (UPS) to ensure 24 hours a day, 7 days a week
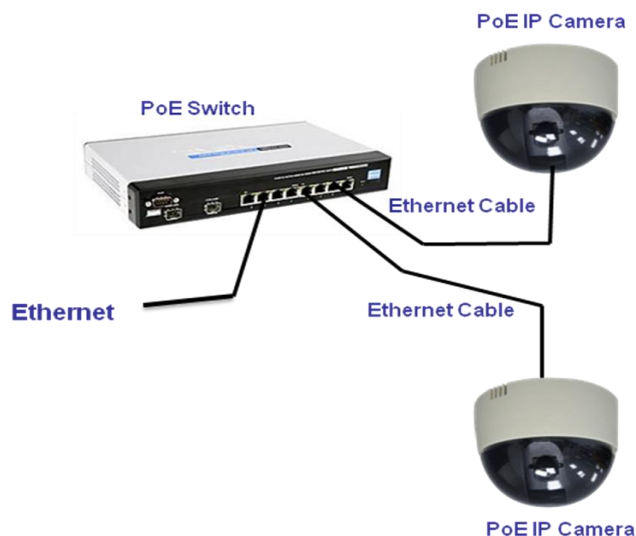
C. IP Assignment

i. Use the software, "IP Installer" to assign the IP address of IP CAMERA. The software is in the attached software CD.

ii. IP installer supports two languages
   a. IPInstallerCht.exe：Chinese version
   b. IPInstallerEng.exe：English version

iii. There are 3 kinds of IP configuration.
   a. Fixed IP (Public IP or Virtual IP)
   b. DHCP (Dynamic IP)
   c. Dial-up (PPPoE)

iv. Execute IP Installer

v. For Windows XP SP2 user, it may popup the following message box. Please click "Unblock".

vi. IP Installer configuration:
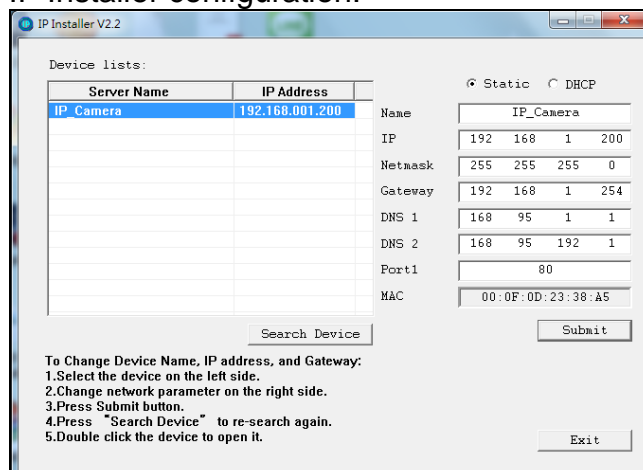
vii. IP Installer will search all IP Cameras connected on Lan. The user can click "Search Device" to search again.

viii. Click one of the IP Camera listed on the left side. The network configuration of this IP camera will show on the right side. You may

change the "name" of the IP Camera to your preference (eg: Office, warehouse). Change the parameter and click "Submit" then click "OK". It will apply the change and reboot the Device.
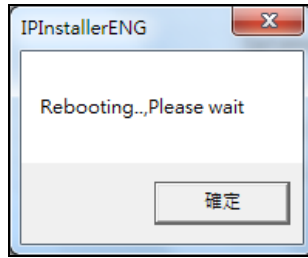
ix. Please make sure the subnet of PC IP address and IP CAM IP address are the same.

The same Subnet:

IP CAM IP address: 192.168.1.200
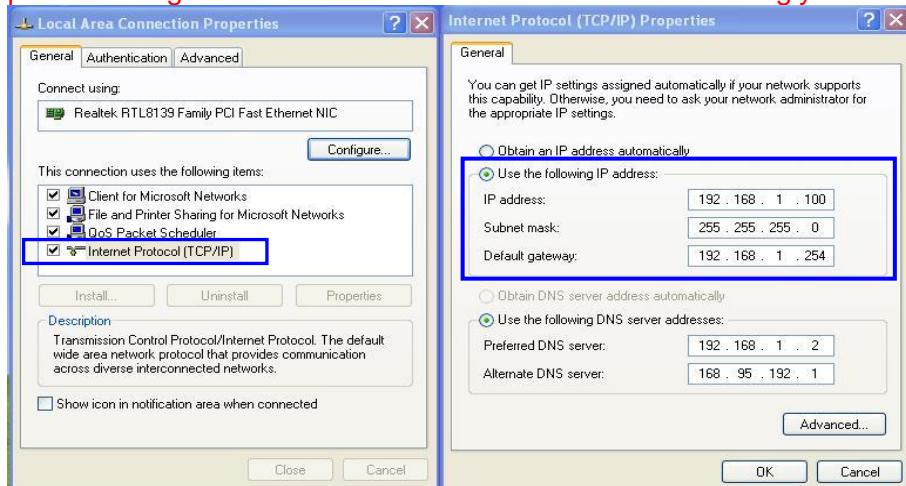
PC IP address: 192.168.1.100

Different Subnets:

IP CAM IP address: 192.168.2.200

PC IP address: 192.168.1.100

To Change PC IP address:

Control Panel→Network Connections→Local Area Connection Properties→Internet Protocol (TCP/IP) →Properties

Please make sure your IP Camera and PC have the same Subnet. If not, please change IP Camera subnet or PC IP subnet accordingly.

x. A quick way to access remote monitoring is to left-click the mouse twice on a selected IP Camera listed on "Device list" of IP Installer. An IE browser will be opened.
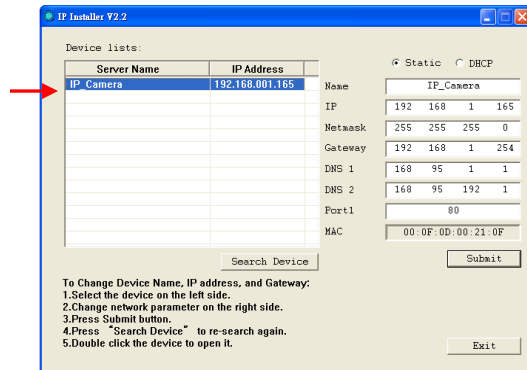
xi. Then, please key in the default "user name: admin" and "password: admin".
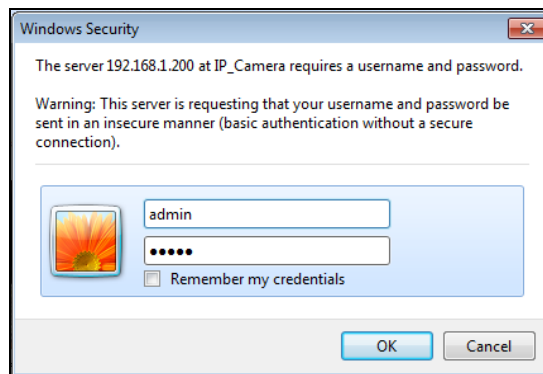

D. Install ActiveX control:

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.

i. IE → Tools → Internet Options… → Security Tab → Custom Level… → Security Settings → Download unsigned ActiveX controls→ Select "Enable" or Prompt.

ii. IE → Tools → Internet Options… → Security Tab → Custom Level… →Initialize and script ActiveX controls not marked as safe → Select "Enable" or Prompt.
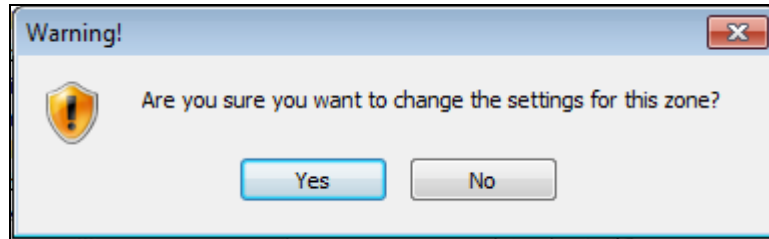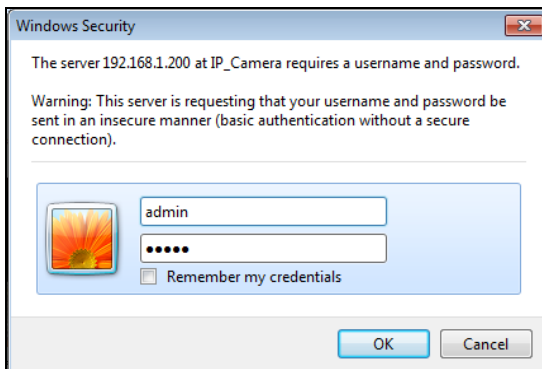
1

2

3

4

5
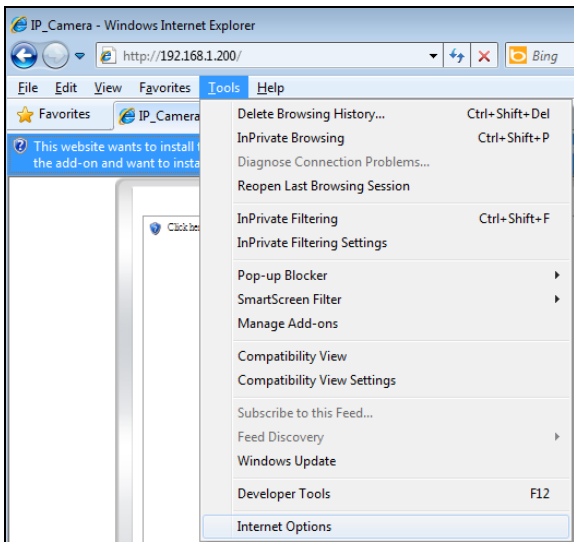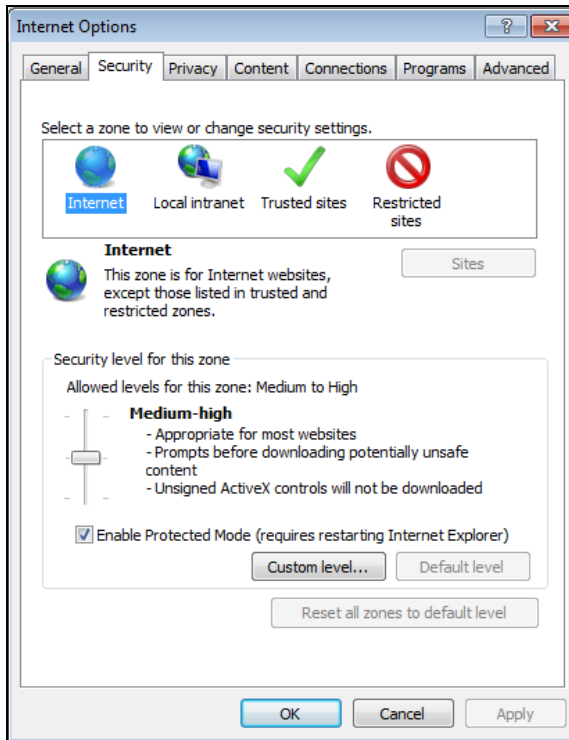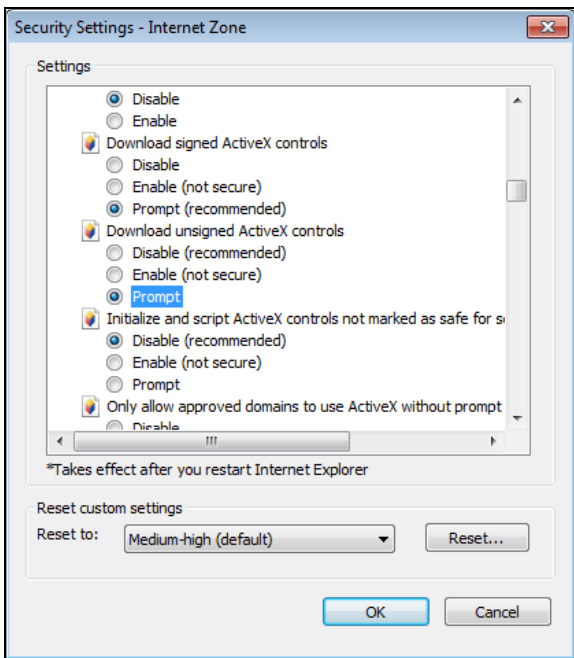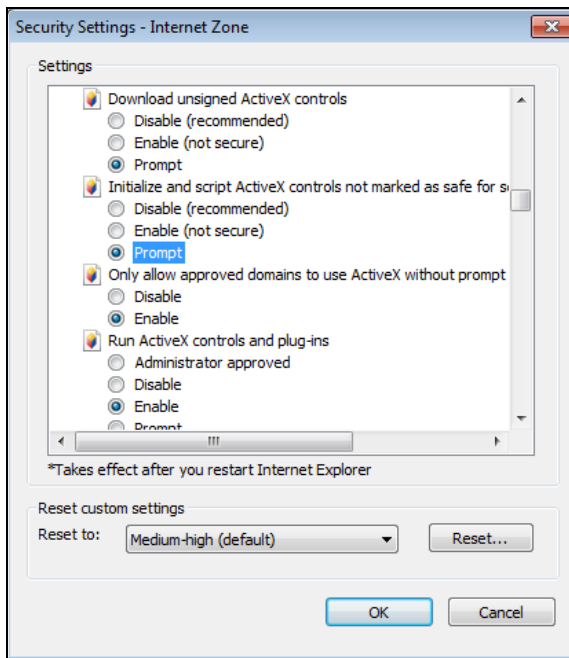
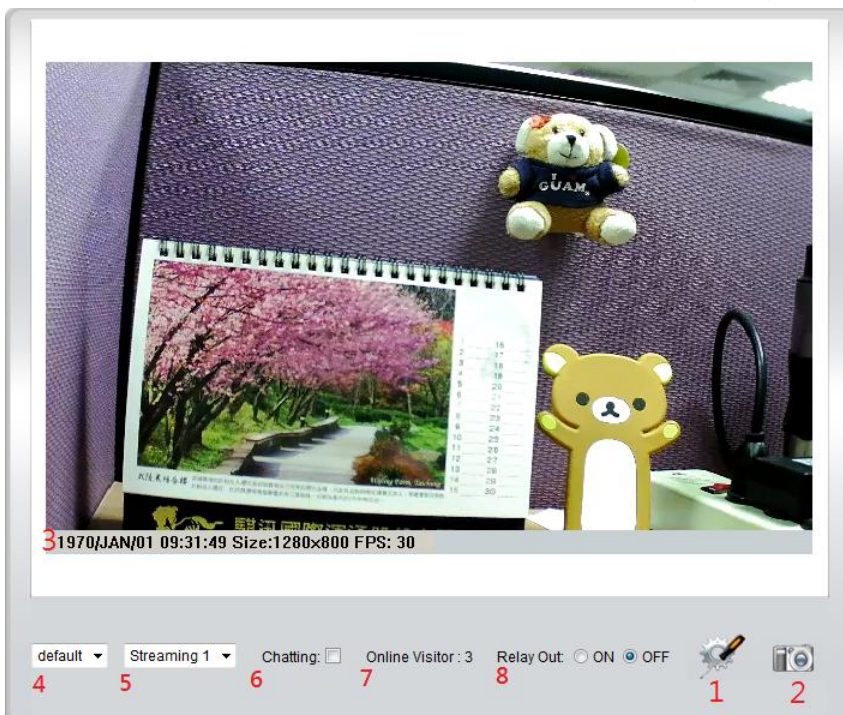When popup the following dialogue box, click "Yes".

IV. Live Video

Start a IE browser, type the IP address of the IP camera in the address field. It will show the following dialogue box. Key-in the user name and password. The default user name and password are "**admin**" and "**admin**".

When connect to the IP CAMERA。The following program interface shows.

1. ：Get into the administration page

2. ：Video Snapshot

3. Show system time, video resolution, and video refreshing rate
4. Adjust image, 1/2x, 1x, 2x
5. Select video streaming source **(When streaming 2 setting in 『Video Setting』 is closed, this function will not display)**
6. Shows how many people connect to this IP camera

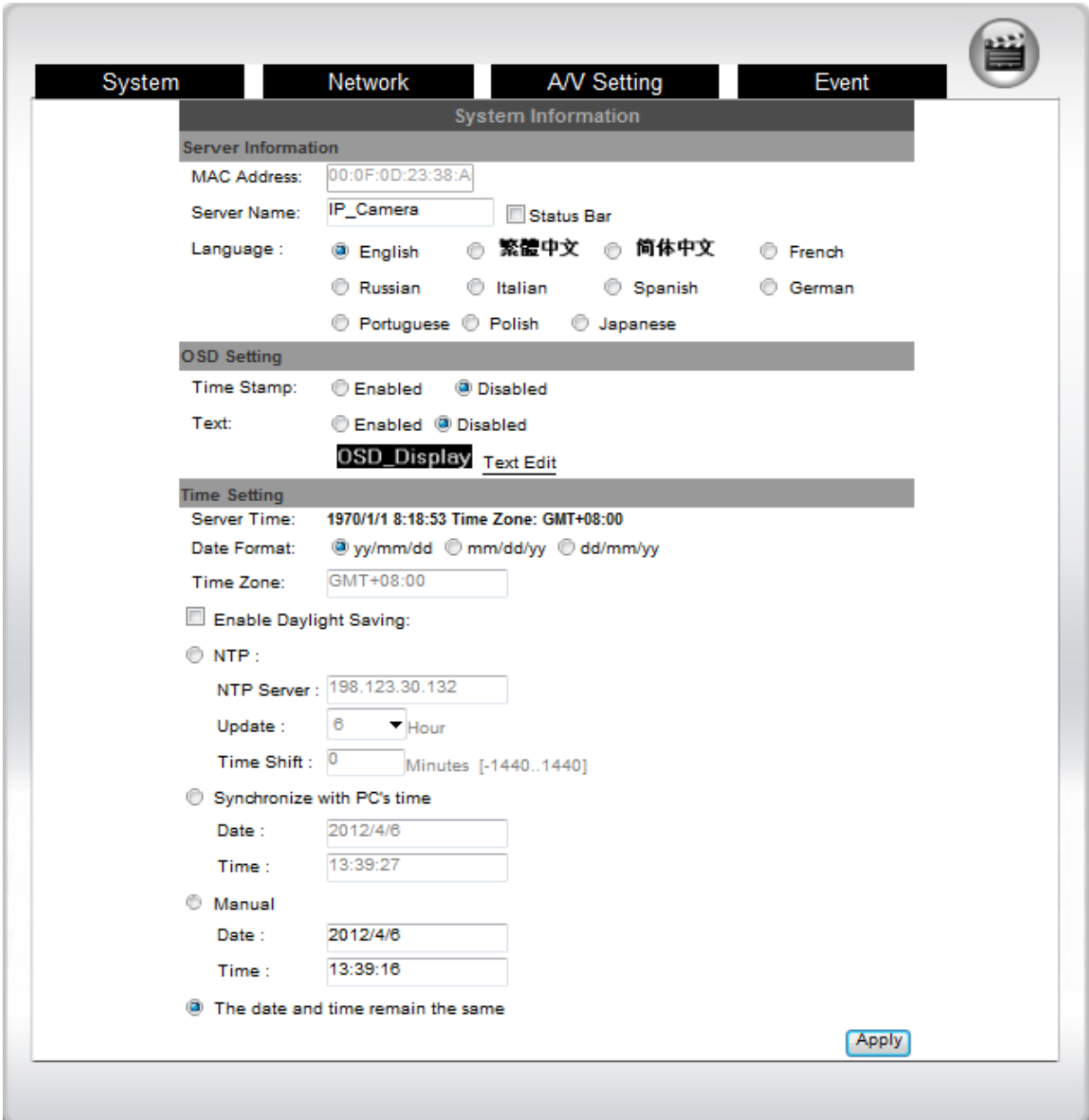Right-Click the mouse on the video, it will show a pop-up menu.

1. Snapshot：Save a JPEG picture
2. Record Start：Record the video in the local PC. It will ask you where to save the video. To stop recording, right-click the mouse again. Select "Record Stop". The video format is AVI. Use Microsoft Media Player to play the recorded file.
3. Full Screen：Full-screen mode.
4. ZOOM: Enable zoom-in and zoom-out functions. Select "Enable digital zoom" option first within the pop-up dialogue box and then drag and drop the bar to adjust the zoom factors.
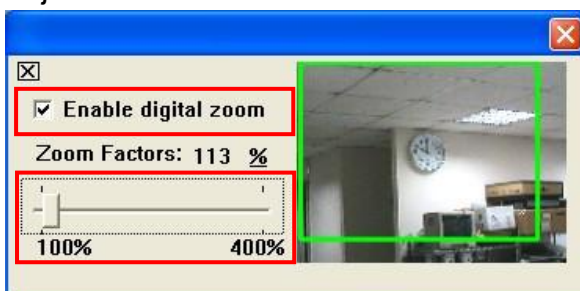
V. Configuration

Click to get into the administration page. Click to go back to the live video page.

A.System

i、 System Information

    a. Server Information: Set up the camera name, select language, and set up the camera time.

      1. Server Name：This is the Camera name. This name will show on the IP Installer.

      2. Select language：There are English, Traditional Chinese, and Simplified Chinese to select. When change, it will show the following dialogue box for the confirmation of changing language.
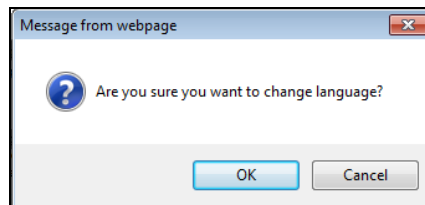
    b. OSD Setting: Select a position where date & time stamp / text showing on screen.

Moreover, click Text Edit can entry to adjust the OSD contents which is including Size and Alpha of text. Finally, click Upgrade button to reserve the setting.
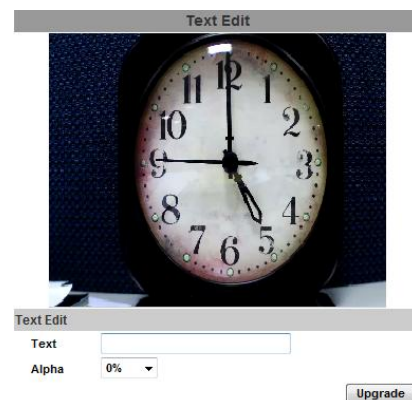
    c. Time setting：

      1. Daylight Saving Time(DST)：Select "Enable Daylight Saving", There are DST Start and DST End can be set.

2. Server Time Setting：Select options to set up time - "NTP", "Synchronize with PC's time", "Manual", "The date and time remain the same".

ii、 User Management

IP CAMERA supports three different users, administrator, general user, and anonymous user.

a. Anonymous User Login：

Yes：Allow anonymous login

No：Need user name & password to access this IP camera

b. Add user：

Type the user name and password, then click "Add/Set".

c.   Click "edit" or "delete" to modify the user.
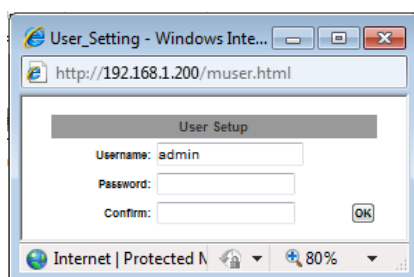
iii、 System update：

a.   To update the firmware online, click "Browse…" to select the firmware. Then click "Upgrade" to proceed.

b.   Reboot system：re-start the IP camera

c.   Factory default：delete all the settings in this IP camera.

d.   Setting Management：User may download the current setting to PC, or upgrade from previous saved setting.

　　1.　Setting download:
　　　　Right-click the mouse button on Setting Download → Select "Save AS…" to save current IP CAM setting in PC → Select saving directory → Save

　　2.　Upgrade from previous setting
　　　　Browse → search previous setting → open → upgrade → Setting update confirm → click **index.html**. to return to main page

B.Network

i、 IP Setting

IP Camera supports DHCP and static IP.

a. DHCP：Using DHCP, IP Camera will get all the network parameters automatically.

b. Static IP：Please type in IP address, subnet mask, gateway, and DNS manually.

c. Port Assignment: user may need to assign different port to avoid conflict when setting up IP assignment.

   1. Web Page Port: setup web page connecting port and video transmitting port (Default: 80)
   2. HTTPs Port: setup the https port(Default: 443)

d. UPnP

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

UPnP Port Forwarding：Enable UPnP Port Forwarding can access the Network Camera from the Internet, select this option to allow the Network Camera to open ports on the router automatically so that video streams

can be sent out from a LAN. There are three External port can be set, Web Port, Http Port and RTSP port. To utilize of this feature, make sure that your router supports UPnP™ and it is activated.

Note: UPnP must be enabled on your computer.

Please follow the procedure to activate UPnP

1. *open the* **Control Panel** *from the* **Start Menu**
2. *Select* **Add/Remove Program***s*
3. *Select* **Add/Remove Windows Components** *and open* **Networking Services** *section*
4. *Click* **Details** *and select* **UPnP** *to setup the service*
5. *The IP device icon will be added to "MY Network Places"*
6. *User may double click the IP device icon to access IE browser*

   e.   RTSP setting

     1.   RTSP Server: enable or disable

     2.   RTSP Port: setup port for RTSP transmitting (Default: 554)

     3.   RTP Start and End Port: in RTSP mode, you may use TCP and UDP for connecting. TCP connection uses RTSP Port (554). UDP connection uses RTP Start and End Port.

ii、 Advanced：

   a.   Https (Hypertext Transfer Protocol Secure)：Https can help protect streaming data transmission over the internal on the higher security level.

Https setting：Before setting new request, please remove old secure identification identification at Http connection type.

1. Created Request: remove secure identification in Created request mode. There is a warning message showing. Please set "Yes" to remove secure identification.
2. Setting the secure identification and apply it.

3. Installed Certificate: remove Certificate in .Installed Certificate mode. There will be a warning message to check again.
4. There are two ways to set Certificate- Install Signed Certificate and Create Self-Signed Certificate.

b. SNMP(Simple Network Management Protocol)：

1. Enable SNMPv1 or SNMPv2 and write the name of Write Community and Read Community.

2. Enable SNMPv3, please set Security Name, Authentication Type, Authentication Password, Encryption Type, Encryption Password of Write mode and Read mode.

3. Enable SNMPv1/SNMPv2 Trap can detect the Trap server. Please set what event need to detect.

c. Access list："Enable IP address filter" can set IP address which can allow or deny to this camera. There are two options, single and range, for user to set the IP address.

IP FILTER

IP ADDRESS FILTER Setting

☑ Enable ip address filter

IPv4 Setting:

[add] ⦿ allow ○ deny

[single ▾] address: [_____]
- single
- range

IPv4 List:

No.	IP Address	Filter	Action
1			[remove]
2			[remove]
3			[remove]
4			[remove]
5			[remove]
6			[remove]
7			[remove]
8			[remove]
9			[remove]
10			[remove]

☐ Allow admin ip address always access this device

Admin ip address: [_____]

[apply]

d.   QoS/DSCP(Quality of Server/Differentiated Services Code-point)：
DSCP specifies a simple mechanism for classifying and managing
network traffic and provide QoS on IP networks. DSCP is a 6-bit in
the IP header for packet classification purpose. Please define the
reserve for Live Stream, Event / Alarm and Management.

QoS/DSCP

QoS/DSCP Setting

☑ Enable QoS/DSCP

Live Stream:	0	(0~63)
Event / Alarm:	0	(0~63)
Management:	0	(0~63)

[Apply]

e.   IEEE 802.1x：
IEEE 802.1x is an IEEE standard for port-based Network Access
Control. It provides an authentication mechanism to device wishing
to attach to a LAN or WLAN.
The EAPOL protocol support service identification and optional
point to point encryption over the local LAN segment.

supplicant   Authenticator   Authentication
                    (switch)   server

Please check what version of the authenticator and authentication server support. This camera supports EAP-TLS method. Please enter ID, passwoard issued by the CA, then upload related certificates.

iii、 PPPoE & DDNS：

a. PPoE：Select "Enabled" to use PPPoE. Key-in Username and password for the ADSL connection. Send mail after dialed：When

connect to the internet, it will send a mail to a specific mail account. For the mail setting, please refer to "Mail and FTP" settings.

b. DDNS：

It supports DDNS (Dynamic DNS) service.

1. DynDNS：

(1) Enable this service
(2) Key-in the DynDNS server name, user name, and password.
(3) Set up the IP Schedule update refreshing rate.
(4) Click "Apply"
(5) If setting up IP schedule update too frequently, the IP may be blocked. In general, schedule update every day (1440 minutes) is recommended

2. Camddns service：

(1) Please enable this service

(2) Key-in user name.

(3) IP Schedule update is default at 5 minutes

(4) Click "Apply".

3. DDNS Status

(1) Updating：Information update

(2) Idle：Stop service

(3) DDNS registration successful, can now log by http://<username>.ddns.camddns.com：Register successfully.

(4) Update Failed, the name is already registered：The user name has already been used. Please change it.

(5) Update Failed, please check your internet connection： Network connection failed.

(6) Update Failed, please check the account information you provide：The server, user name, and password may be wrong.

iv、 Server setting

There are three choices of server types available: Email, FTP and SAMBA. Select the item to display the detailed configuration options. You can configure either one or all of them.

To send out the video via mail of ftp, please set up the configuration first.

C.A/V Setting

    i、   Image Setting

For the security purpose, there are three areas can be setup for privacy mask. Click Area button first and pull a area on the above image. Finally, click Save button to reserve the setting.

Adjust "Brightness", "Contrast", "Hue", "Saturation, Sharpness, AGC," to get clear video.

Moreover, IP CAMERA supports "Back Light Compensation", "Night Mode", "D-WDR", "Video Orientation" and " Denoise.

ii、 Video Setting

User may select 2 streaming output simultaneously:

Streaming 1 Setting: Basic mode and Advanced mode

Streaming 2 Setting: Basic mode, Advanced mode, and 3GPP mode

(Max Video Frame Rate for both streaming combined is 30 FPS)

a. Video System: click the drop down list to select the system type

b. Streaming 1 Basic Mode：

1. Resolution：
   There are 5 resolutions can be chosen.
   1280x 800, 1280x720, 640x480, 320x240, 176x144
2. Quality：
   There are 5 levels to adjust:
   Best/ High/ Standard/ Medium/ Low
   The higher the quality is, the bigger the file size is. Also not good for internet transmitting
3. Video Frame Rate：The video refreshing rate per second.
4. Video Format：H.264 or JPEG or MPEG4
5. RTSP Path: RTSP output name

c.   Streaming 1 Advanced Mode：

1. Resolution：
   There are 5 resolutions can be chosen.
   1280x800, 1280x720, 640x480, 320x240, 176x144
2. Bitrate Control Mode
   There are CBR〔Constant Bit Rate〕 and VBR〔Variable Bit Rate〕to use.
   CBR：32Kbps~8Mbps (the higher the CBR is, the better the video quality is)

VBR：1(Low)~10(High) – Compression rate, the higher the compression rate, the lower the picture quality is; vise versa. The balance between VBR and network bandwidth will affect picture quality. Please carefully select the VBR rate to avoid picture breaking up or lagging.

3. Video Frame Rate
   The video refreshing rate per second.
   NTSC: Max 30 frames/second   PAL: Max 25 frames/second
4. GOP Size
   It means "Group of Pictures". The higher the GOP is, the better the quality is.
5. Video Format：H.264 or JPEG or MPEG4
6. RTSP Path: RTSP output connecting route

d. Streaming 2 Basic Mode：

1. Resolution：
   There are 5 resolutions can be chosen.
   1280x800, 1280x720, 640x480, 320x240, 176x144
2. Quality：
   There are 5 levels to adjust:
   Best/ High/ Standard/ Medium/ Low
   The higher the quality is, the bigger the file size is. Also not good for internet transmitting
3. Video Frame Rate：The video refreshing rate per second.
4. Video Format：H.264 or JPEG or MPEG4
5. RTSP Path: RTSP output connecting route

e. Streaming 2 Advanced Mode：

1. Resolution：

   There are 5 resolutions can be chosen.

   1280x800, 1280x720, 640x480, 320x240, 176x144

2. Bitrate Control Mode

   There are CBR〔Constant Bit Rate〕 and VBR〔Variable Bit Rate〕to use.

   CBR：32Kbps~8Mbps (the higher the CBR is, the better the video quality is)

   VBR：1~10 (Compression Rate)

3. Video Frame Rate

   The video refreshing rate per second.

4. GOP Size

   It means "Group of Pictures". The higher the GOP is, the better the quality is.

5. Video Format：H.264 or JPEG or MPEG4

6. RTSP Path: RTSP output name

f. 3GPP Streaming mode:

3GPP mode suggested setting: 176x144 resolution, 5FPS, MPEG4 format

1. Enable or Disable 3GPP Streaming
2. 3GPP: 3GPP output name

D.Event

IP CAMERA provides multiple event settings.

i、 Event Setting
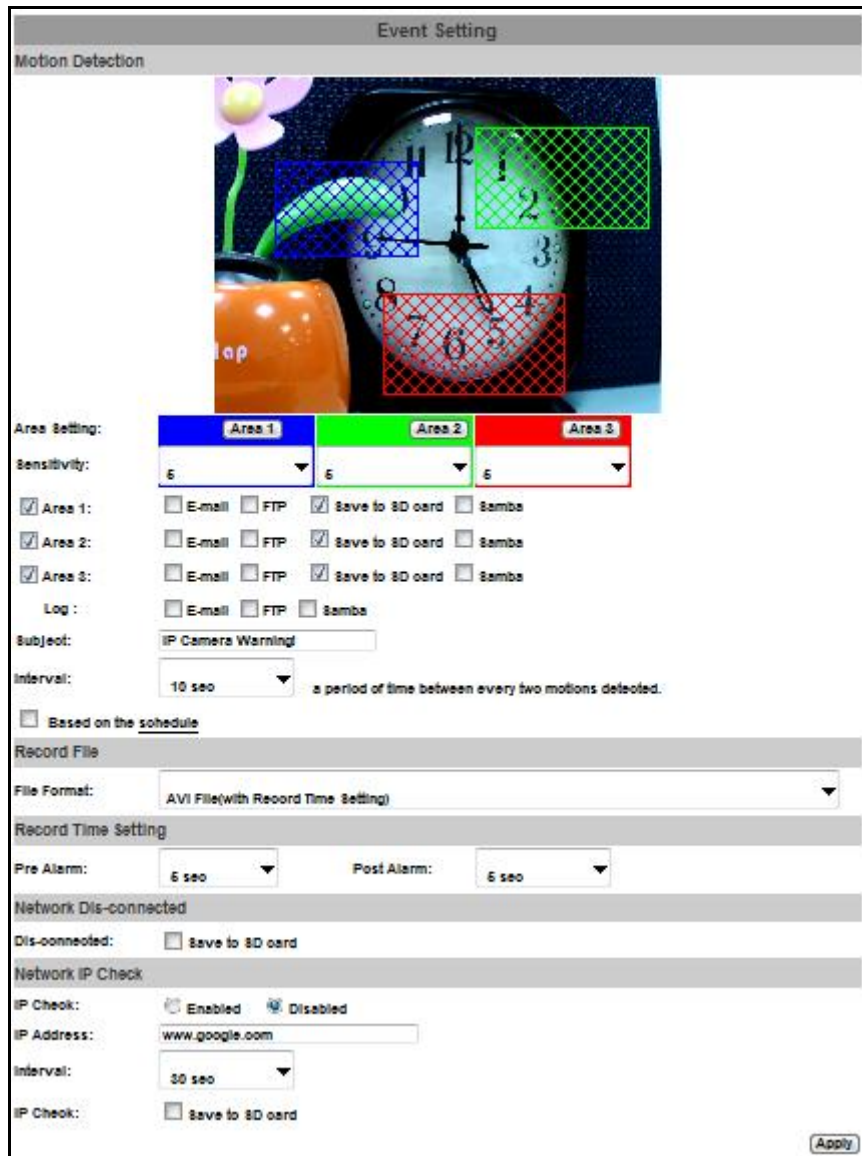
a. Motion Detection：

IP CAMERA allows 3 areas motion detection. When motion is triggered, it can send the video to some specific mail addresses, transmit the video to remote ftp server, trigger the relay, and save video to local SD card and SAMBA. To set up the motion area, click "Area Setting". Using mouse to drag and draw the area. The same operation for area 2 and 3.

b. Record File Setting: IP CAMERA allows 3 different types of

recording file to change its record size.

When motion/alarm is triggered, there are 3 different types of record mode.

1. AVI File (With Record File Setting)
2. Multi-JPEG (With Record File Setting), only with JPEG compression format.
3. Single JPEG (Single File with Interval Setting)

c. Record Time Setting：

Pre Alarm and Post Alarm setups for video start and end time when motion detected or other devices got triggered.

Note: Pre/Post Alarm record time is base on record time setting and IP Cam built-in Ram memory. Limited by IP Cam built-in Ram Memory, When information is too much or video quality set too high, it will cause recording frame drop or decrease on post alarm recording time.

d. Network Dis-connected：

When the network is down, it will save the video to local SD card. This function is only enabled in wire connection.

e. Network IP check

When the connection is down, it records the video to SD card. Make sure the video recording is continuous. To use this function, key in the IP address of the PC which has recording software installed. Enable the function of "Save to SD card", then click "Apply". **The interval of two video files on SD card is with 30 - 60 seconds.**

ii、 Schedule

a. Schedule: After complete the schedule setup, the camera data will be recorded according to the schedule setup.

b. Snapshot: After enable the snapshot function, user can select the storage position of snapshot file, the interval time of snapshot and the reserved file name of snapshot.

Schedule

	All	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Mon.																									
Tue.																									
Wed.																									
Thu.																									
Fri.																									
Sat.																									
Sun.																									

■ With schedule setup.

Snapshot

○ Enabled   ● Disabled

Snapshot: ☐ E-mail ☐ FTP ☐ Save to SD card ☐ Samba

Interval: 10   Second(s) [1..50000]

File Name: Snapshot

[Apply]

iii、 Log List

Log List

System Logs

Logs

Motion Detection Logs

Logs

All Logs

Logs

Sort by System Logs, Motion Detection Logs. In addition, System Logs won't lose data due to power failure.

iv、 Micro SD card
Please Insert Micro SD card before use it. Make sure pushing Micro SD card into the slot completely.

Note：The use of the Micro SD card will affect the operation of the IP CAMERA slightly, such as affecting the frame rate of the video.

a.   Playback：

1.   It will show the capacity of the SD card. Click the date listed on this page. It will show the list of the video.
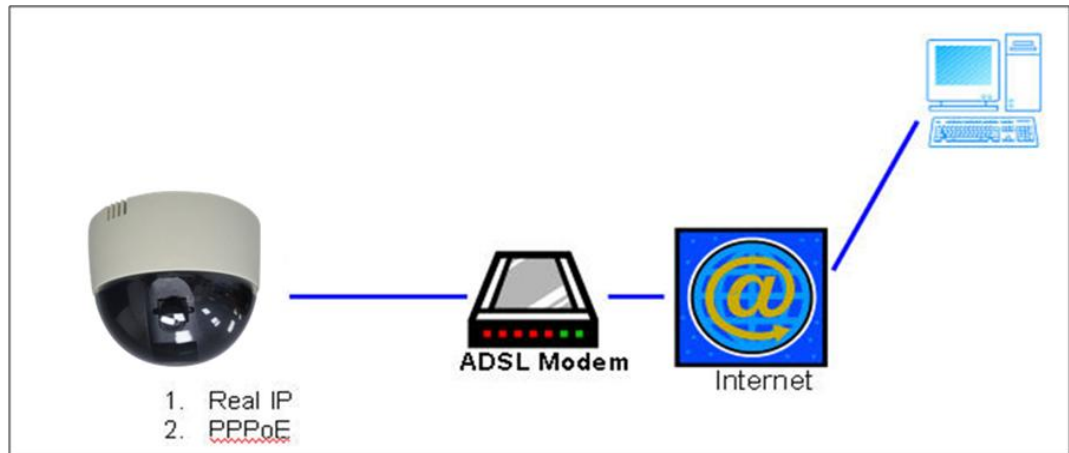

2.   The video format is AVI. Click the video to start Microsoft Media Player to play it.

3.   To delete the video, check it, then click Del. When the SD card is full, it will remove the oldest video automatically.

VI. Network Configuration

i、 Configuration 1：

    a.   Internet Access：ADSL or Cable Modem

    b.   IP address：One real IP or one dynamic IP

    c.   Only IP CAMERA connects to the internet

    d.   For fixed real IP, set up the IP into IP CAMERA. For dynamic IP, start PPPoE.

ii、 Configuration 2：
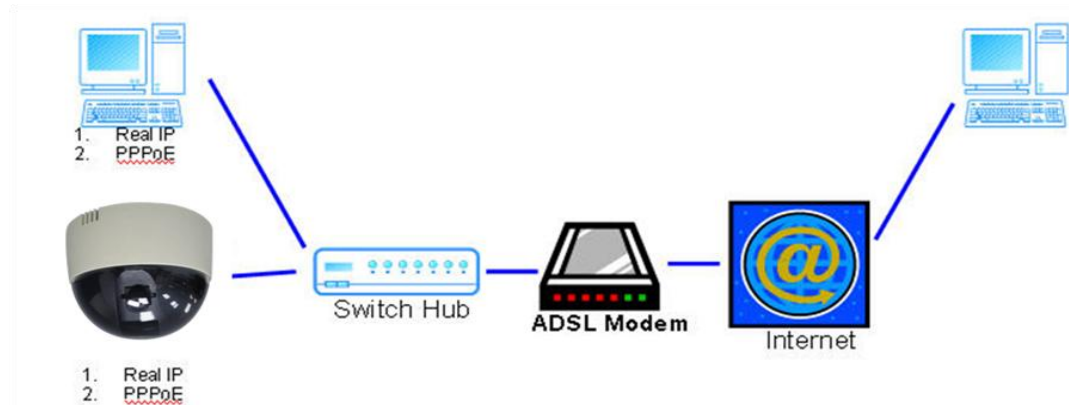
    a.   Internet Access：ADSL or Cable Modem

    b.   IP address：More than one real IP or one dynamic IP

    c.   IP CAMERA and PC connect to the internet

    d.   Device needed：Switch Hub

    e.   For fixed real IP, set up the IP into IP CAMERA and PC. For dynamic IP, start PPPoE.

iii、 Configuration 3：
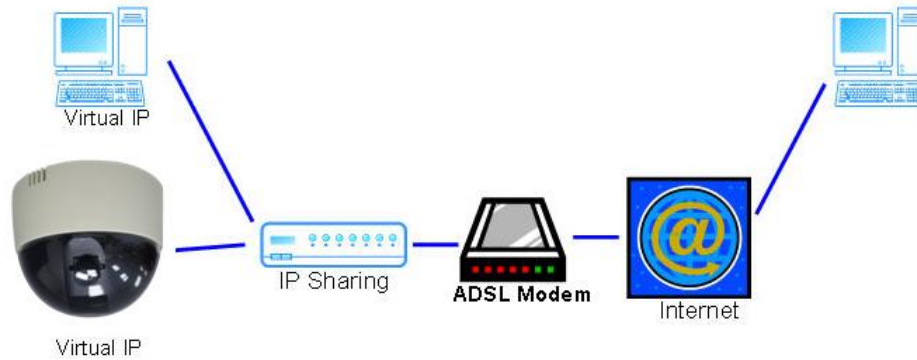
a. Internet Access：ADSL or Cable Modem
b. IP address：one real IP or one dynamic IP
c. IP CAMERA and PC connect to the internet
d. Device needed：IP sharing
e. Use virtual IP, set up port forwarding in IP sharing.

VII. Factory Default

i、 If the user name, password, and IP address are lost, please follow the following instructions.

ii、 Press and hold the following button in the back of IP Camera first and unplug the power adapter at the same.
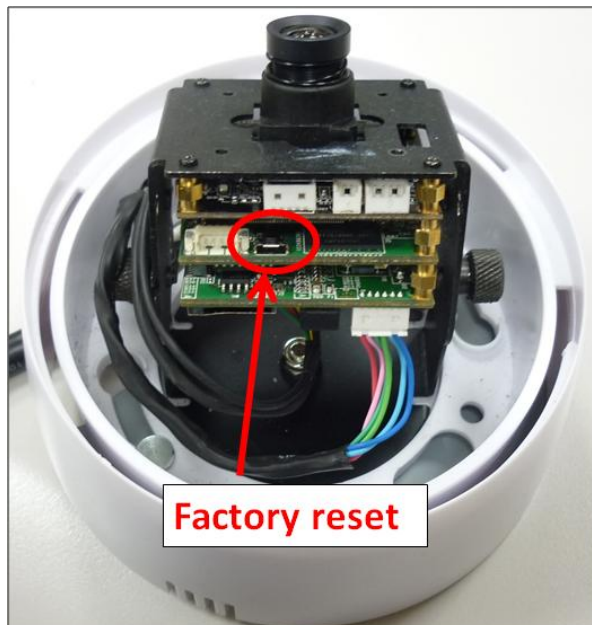
iii、 Plug in the power adapter and do not release the button during the IP Camera booting.

iv、 It will take around 20 seconds to boot the IP Camera.

v、 Release the button after the IP Camera finishes booting.

vi、 Reconnect the IP Camera with the default IP address (http://192.168.1.200), user name is **admin**, and password is **admin**.

VIII. Package contents

i、 IP CAMERA Network Camera

ii、 Adaptor

iii、 Ethernet Cable

iv、 CD title (User manual, IP installation Utility)

Appendix I

SD Card Recommended：

Vendor	Test
ADATA 4G	passed
ADATA 512M	passed
Blast 128M	passed
GIGATEK 128M	passed
Kingmax 256M	passed
Kingston 128M	passed
Kingston 256M	passed
Kingston 512M	passed
Kingston 1G	passed
Kingston 32G	passed
Phast 256M	passed
Photofast 256M	passed
PK 128M	passed
PRETEC 128M	passed
READY 128M	passed
SanDisk 128M	passed
SanDisk 256M	passed
SanDisk 512M	passed
SanDisk 1G	passed
SanDisk 2G	passed
SanDisk 4G	passed
SanDisk 8G	passed
SanDisk 16G	passed
SanDisk 32G	passed

Vendor	Test
SiliconPower 128M	passed
SiliconPower 256M	passed
TEKQ 128M	passed
TEKQ 256M	passed
Toshiba 128M	passed
Toshiba 256M	passed
Toshiba 4G	passed
Transcend 128M 80X	passed
Transcend 256M 80X	passed
Transcend 1G 80X	passed
Transcend 2G 150X	passed
Transcend 4G 150X	passed
Transcend 512M 80X	passed
Transcend 4G	passed
Transcend 8G	passed
Transcend 16G	passed
Transcend 32G	passed
TwinMOS 128M	passed
TwinMOS 256M	passed
UMAX 128M	passed
U-TEK 128M	passed