User Manual

WIRELESS IP CAMERA

V1.1_171120

ip Solutions

WIRELESS IP CAMERA

This is a **1 / 2.7" Mega-Pixel CMOS Sensor** IP camera with a built-in web server. The user can view real-time video via IE browser. It supports **H.264**, and **M-JPEG** video compression, providing smooth and high video quality. The video can be stored in **Micro SD card** and playback remotely.

With a user friendly interface, it is an easy-to-use IP camera for security applications.

Topics

Inside the folder '**Topics**' you will find the documentation related with this IP Camera. You can click on '**Read More**' for directly opening the file regarding the topic you would like to read.
Adobe Acrobat is recommended.

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Warnings, Cautions and Copyright

WARNING

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.

COPYRIGHT

THE TRADEMARKS MENTIONED IN THE MANUAL ARE LEGALLY REGISTERED TO THEIR RESPECTIVE COMPANIES.

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 or more of the following measures:

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

FCC Caution:

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 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.

Product specification

Main Features:

- HD 1080P Real Time
- Digital Noise Reduction
- Digital Wide Dynamic Range
- H.264/ M-JPEG Compression
- IR LED Built
- Support 2-way Audio
- Micro SD Card Backup
- Wireless
- Support iPhone/iPad/Android
- Dual Streaming
- SDK for Software Integration
- Free Bundle 36 ch Recording Software

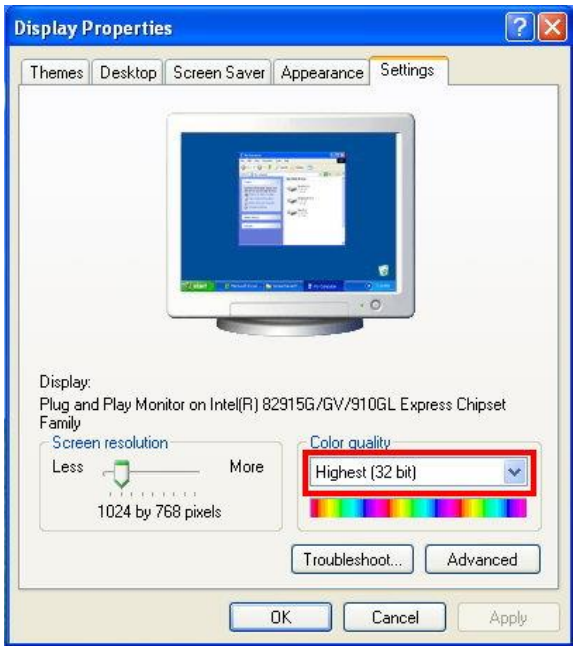
Hardware	
CPU	Multimedia SoC
RAM	128 MB
Flash	16 MB
Image Sensor	1 / 2.7” Mega-Pixel CMOS sensor
Sensitivity	Color : 0.1 Lux (AGC ON) B / W: 0.05 Lux (AGC ON)
Lens Type	2.8mm
View Angle	102°(H), 59°(V)
ICR	Mechanism IR cut Filter
Audio	Input : Microphone built-in Output : Speaker built-in Support 2-way audio
Power Consumption	DC 5V power supply Max: 4.0 W
Operating Temperature	0°C ~ 45°C
Dimensions	(□) 68.1mm x (H)111.6mm
Weight	100g
IR LEDs	
LEDs	4 LEDs
IR distance	5m

Network	
Network Protocol	IPv6, IPv4, HTTP, HTTPS, SSL, TLS , DNS , ICMP, IGMP, ARP, RTSP/RTP/RTCP, TCP/IP, UDP, FTP, PPPoE, DHCP, DDNS, NTP, UPnP, 3GPP, SAMBA, Bonjour
System	
Video Resolution	1920x1080@30fps,1280x720@30fps, 640x480@30fps, 320x240@30fps
Video Adjust	Brightness, Contrast, Hue, Sharpness, AGC, Shutter Time, Sense-Up, D-WDR , Flip, Mirror, Day&Night Adjustable, De-noise , LDC
Features	Motion Detection, Privacy Mask, Anti Fog, Corridor Mode, Push Video , P2P(Optional)
Dual Streaming	Yes
Image Snapshot	Yes
Full Screen Monitoring	Yes
Privacy Mask	Yes, 3 different areas
Compression Format	H.264/ M-JPEG
Video Bitrates Adjust	CBR, VBR
Motion Detection	Yes, 3 Different Areas
Triggered Action	Mail, FTP, Save to SD card, SAMBA
Pre/ Post Alarm	Yes, configurable
Security	Password protection, HTTPS encrypted data transmission,
Firmware Upgrade	HTTP mode, can be upgraded remotely
Simultaneous Connection	Up to 10
Wireless	
Wireless	802.11 b/g/n
Security	WEP,WPA-PSK,WPA2-PSK
Micro SD Card Management (Optional)	
Recording Trigger	Motion Detection, IP check, Schedule
Video Format	AVI, JPEG
Video Playback	Yes
Delete Files	Yes
Web Browsing Requirement	
OS	Windows 7, 8 , 10 ,XP, Microsoft IE 6.0 or above
Mobile Support	iOS 8 or above, Android 4.4.2 or above.
Hardware Suggested	Intel Dual Core 2.8G,RAM, 4GB, Graphic card: 128MB

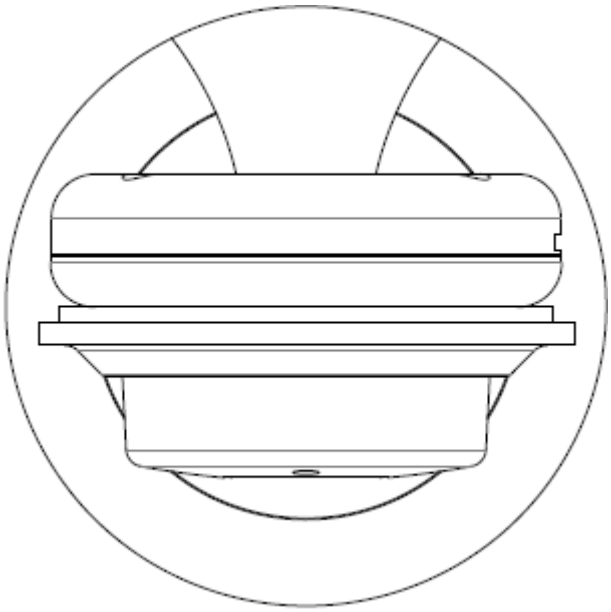
Monitor Settings

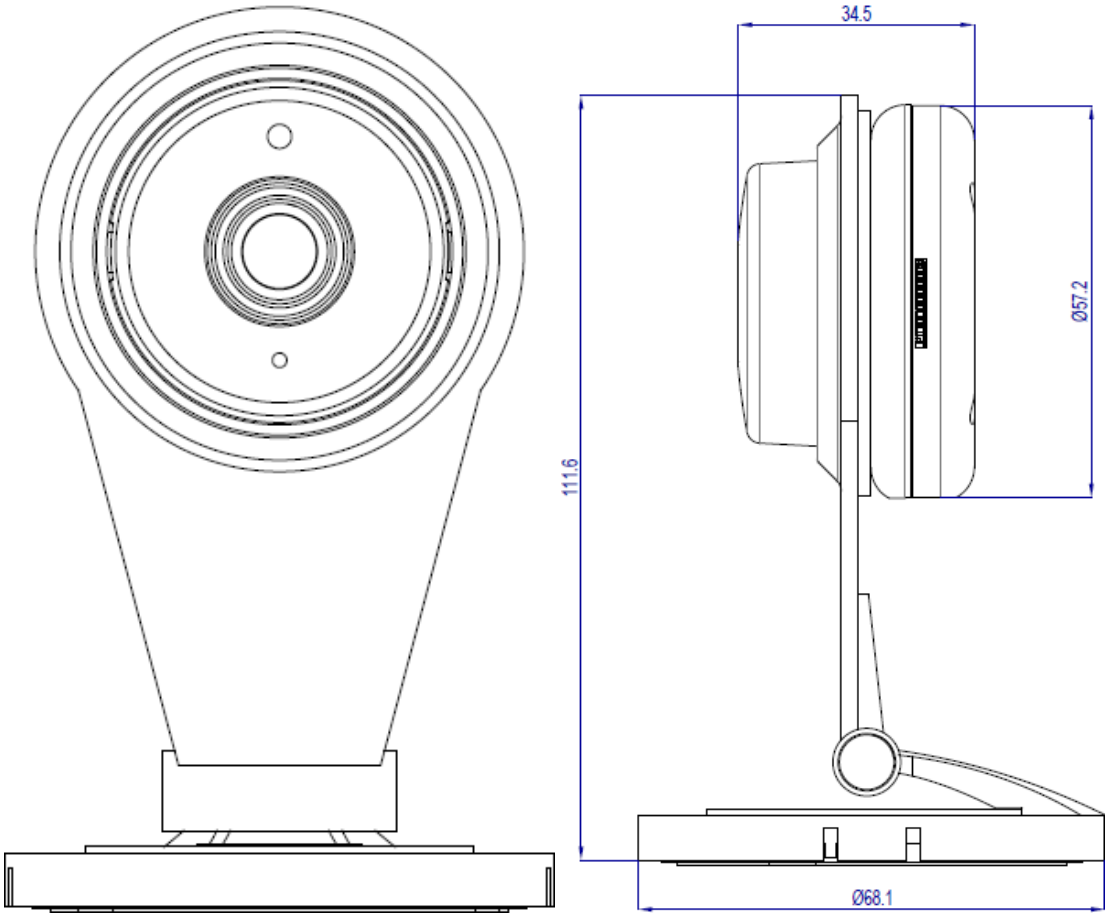
1. Right-Click on the desktop. Select **Properties**

2. Change color quality to highest: **32bit**.



Hardware Installation



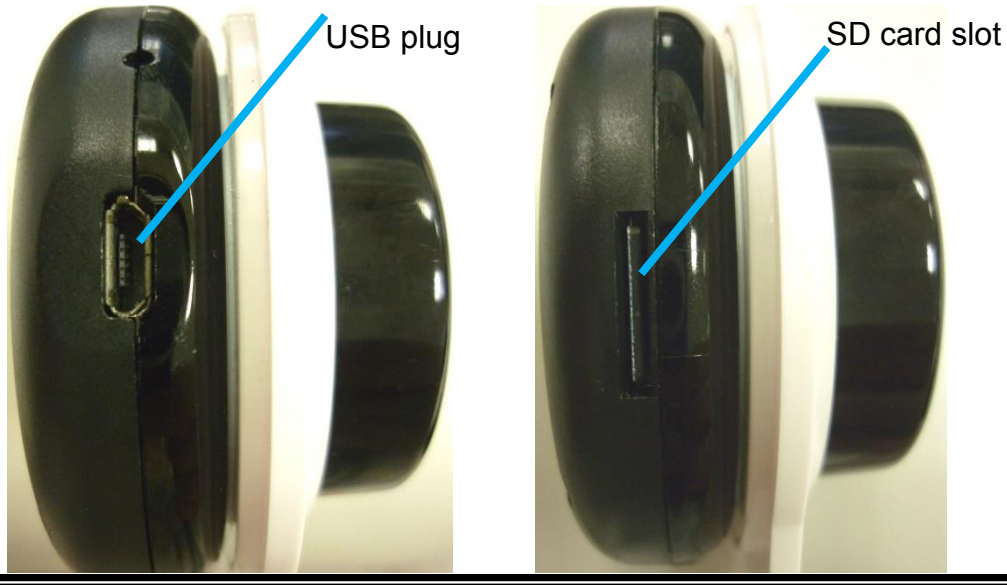


1. **Angle Adjustment**

   You may be able to adjust the angle of the camera in various directions when you are to install the MicroSD card or connect it to the adaptor. Please refer to the image below.

2. **Connector Instruction**

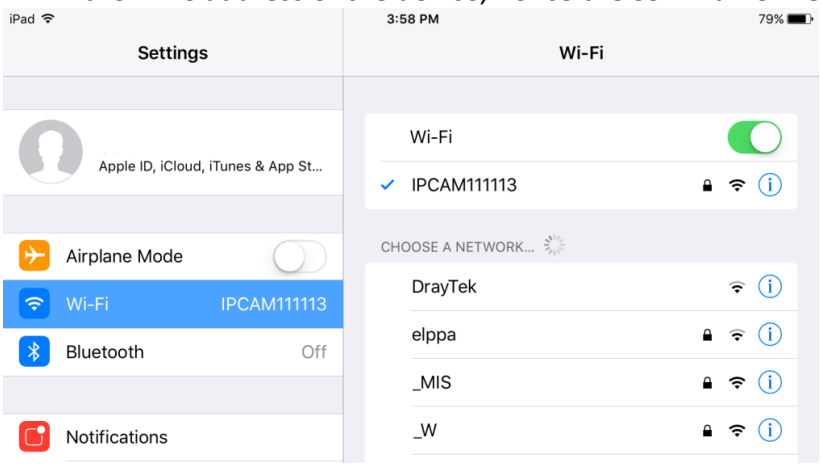
   The camera connectors are as below. Connect the power and the Ethernet cable with the camera, and set it according to your network environment.



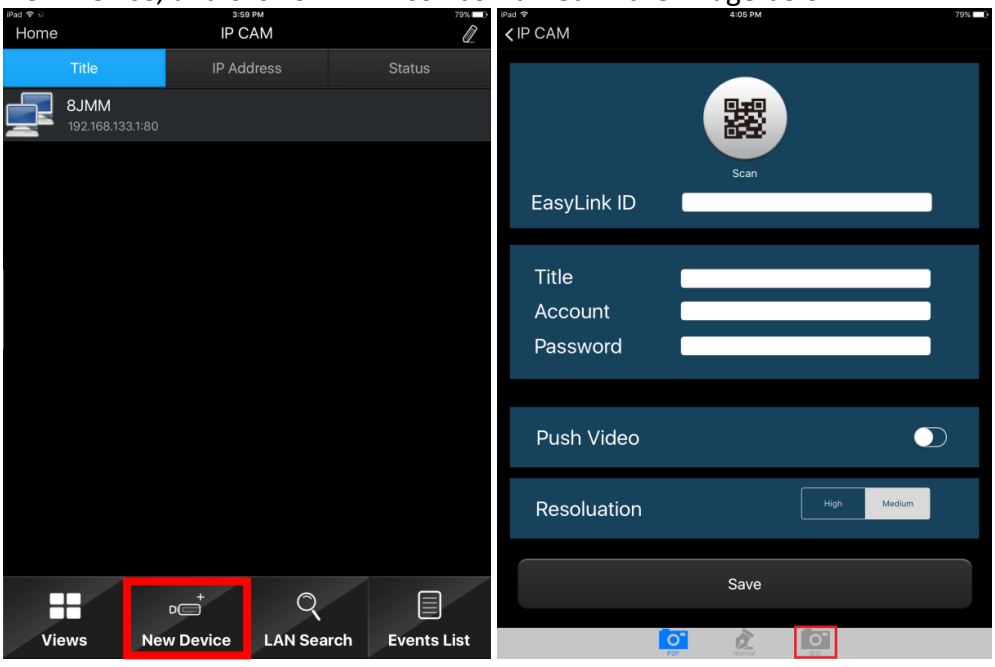
IP Assignment

The camera does not work with RJ45 cable, therefore the user has to establish the wireless connection via a router which shares the same LAN as the desktop computer. The wireless network can be set up using SSID to perform the remote operation.

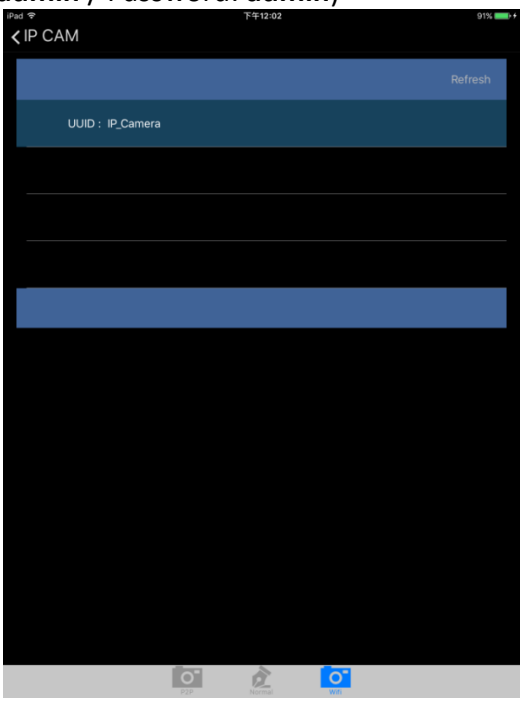
1. Once the camera is switched on, use the mobile device or tablet computer to search for SSID through Wi-Fi and establish a connection. As the image demonstrates below, the SSID name of the camera is **IPCAM111113**, which is derived from the term "IP CAM", with 111113 being the last 6 digits of the MAC address of the device, hence the SSID name **IPCAM111113**.

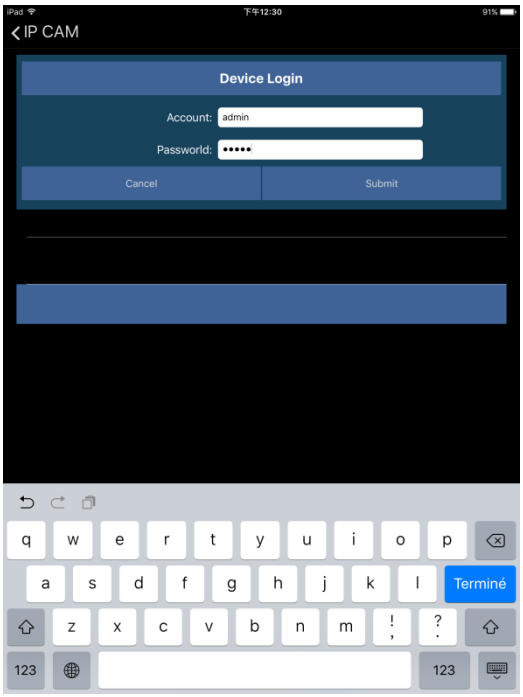


Enter the default password "**12345678**" for accessing the SSID. Once the connection has been successfully established, open the IPmotion APP, click on New Device, and click on WiFi icon as framed in the image below.

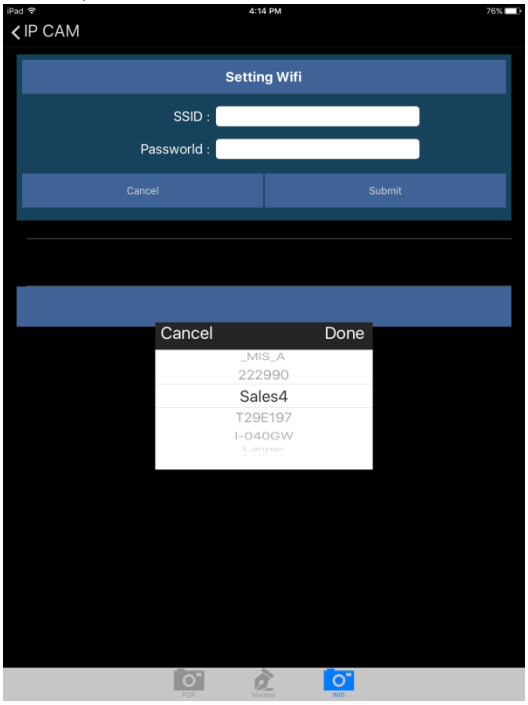


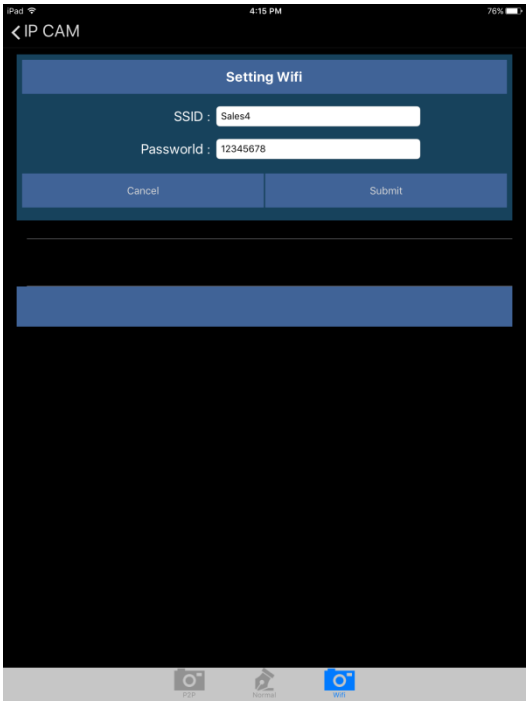
The same SSID name will be displayed in the WiFi interface which you have just entered. Click on the SSID and enter its account name and password. (Account: **admin** / Password: **admin**)



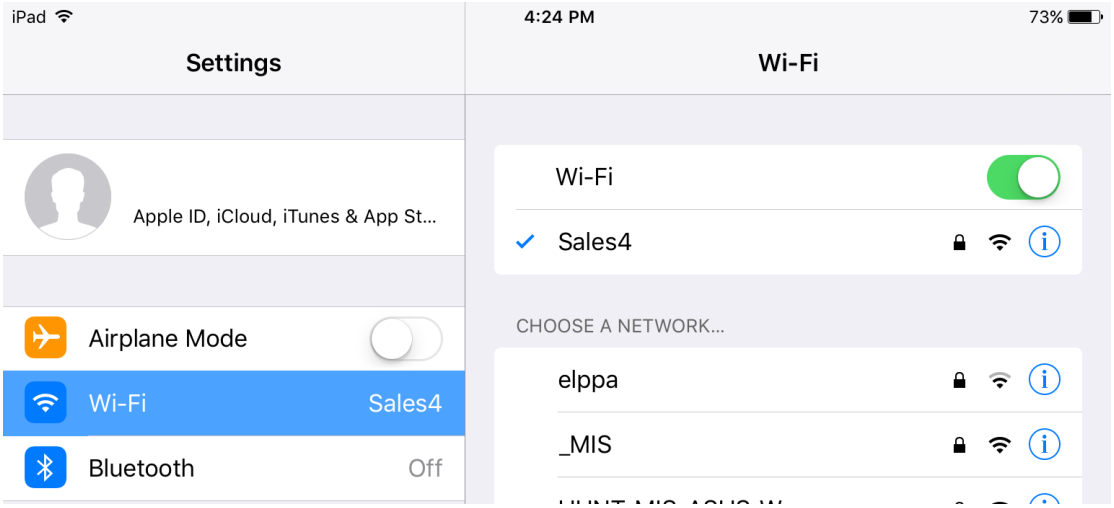


You will be asked to select the router which has been found online. Click on the router which you would like to be connected with, key-in the password for the router, and click on Submit.

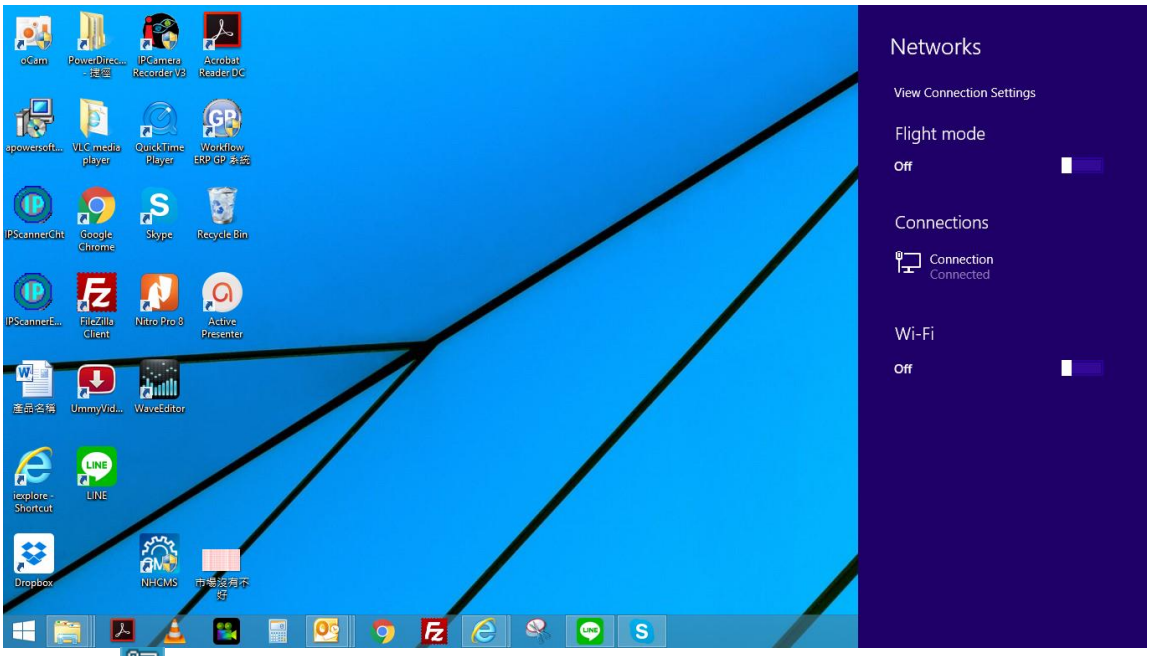




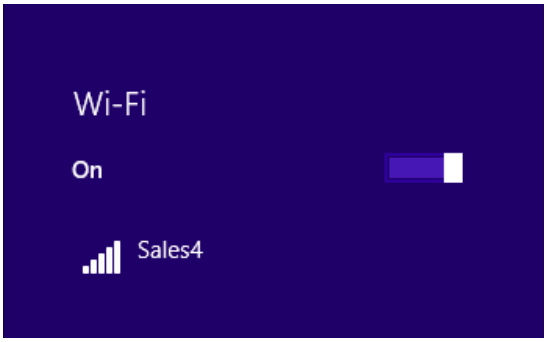
Take the image below as the reference. Open the setting of the mobile device or tablet computer, and select the same WiFi service which shares the same connection of the camera.



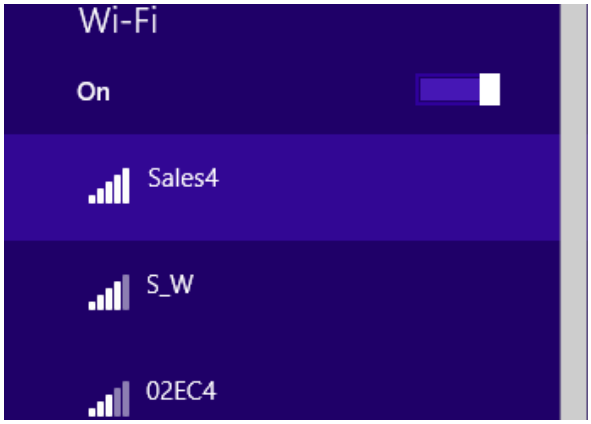
Now the camera is ready to be operated remotely from a desktop computer.



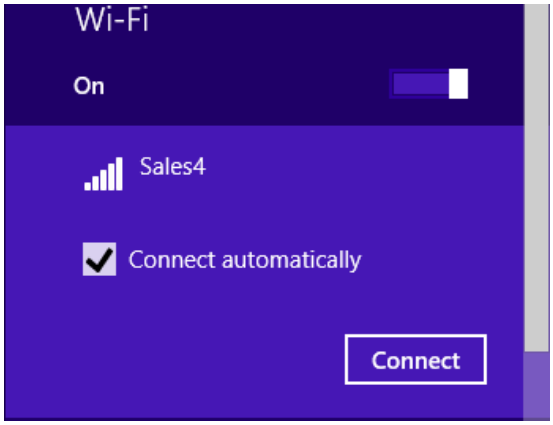
Click the icon at the right corner of the menu bar. The setup menu will pop up from the right.



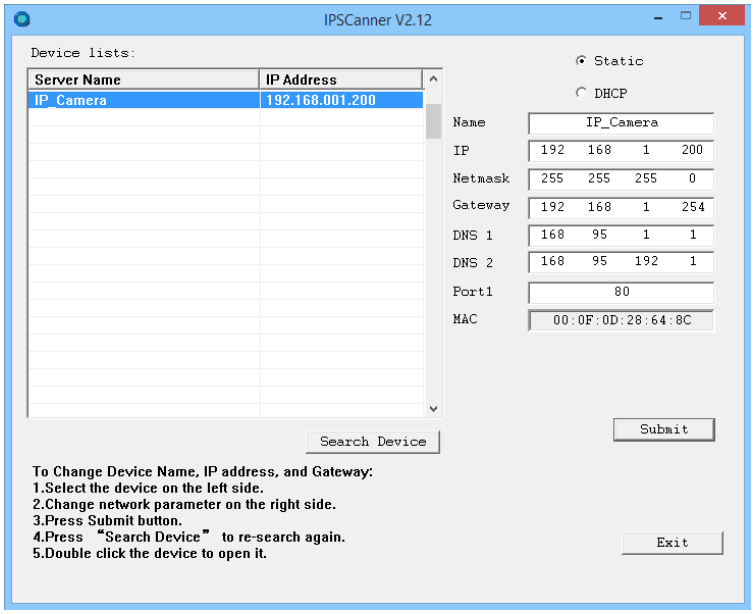
Turn on the Wi-Fi option by clicking on the bar with a mouse-click.



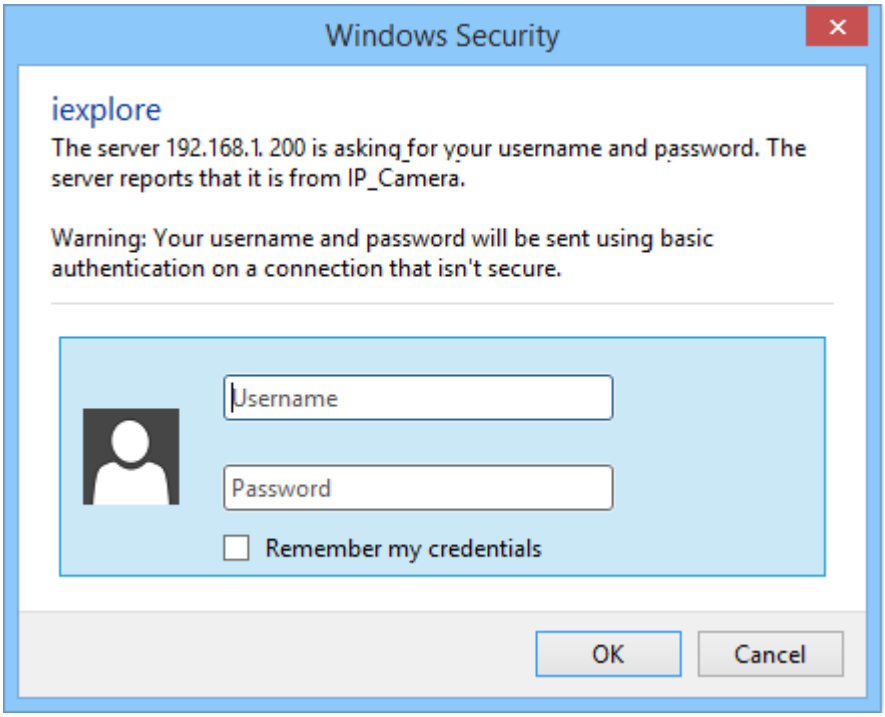
Select the same server that operates the wireless connection. In this case, the Sales4 is the aimed server.



Click on **Connect** to allow the Wi-Fi connection to be established.



Execute IP Scanner, click on Search Device to find the expected IP camera or simply open an IE browser and enter the IP address of the IP camera which you would like to connect to.



A security window will pop up requiring the default Username & Password. Key-in **admin** for both columns to enter the camera operational page on IE browser.

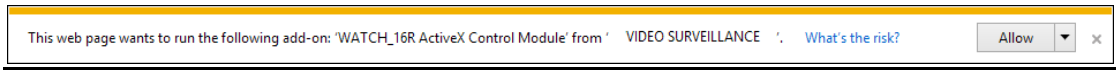
Please see further wireless connection options at chapter Network.

Install ActiveX control

1. For users of IE 6.0 or above:

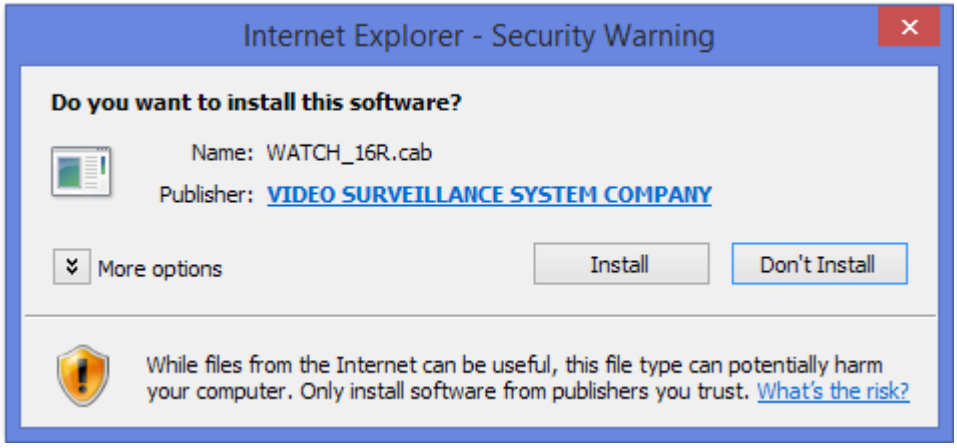
When viewing the camera video for the first time via IE, the browser will ask you to install the **ActiveX** component.

Choose 'Allow',

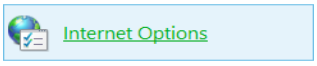


Then choose 'Install'.

Start installing the ActiveX component.



If the installation fails, please check the security settings in the IE browser.

Go to **Start-Up Menu** on the lower left corner of the **Window**s, select **Control Panel** then Double-click on 

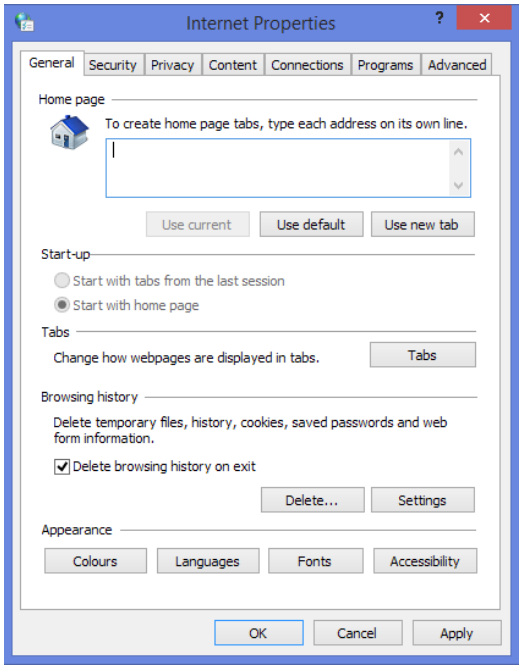
to access to **Internet Properties** settings.

Starting from **Internet Properties**, proceeding step **A** and **B:**

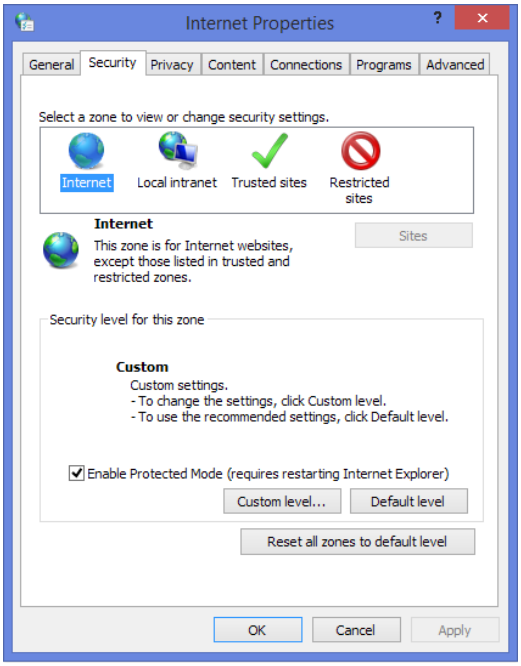
A. Security → Custom Level → Security Settings → Download unsigned ActiveX controls → Enable or Prompt (recommended).

B. Security → Custom Level → Security Settings → Initialize and script ActiveX controls not marked as safe → Enable or Prompt (recommended).

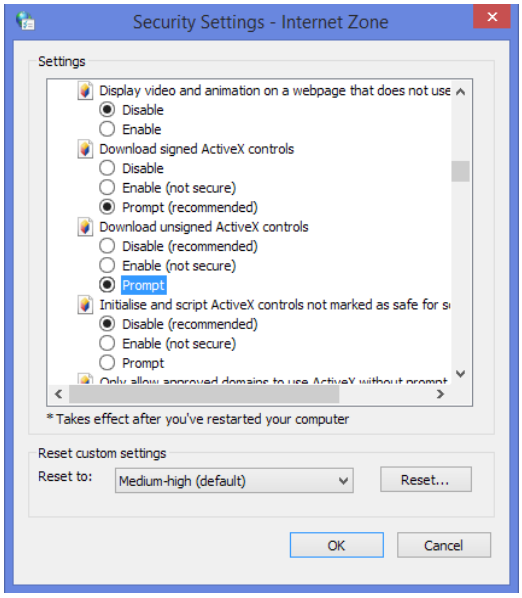
1



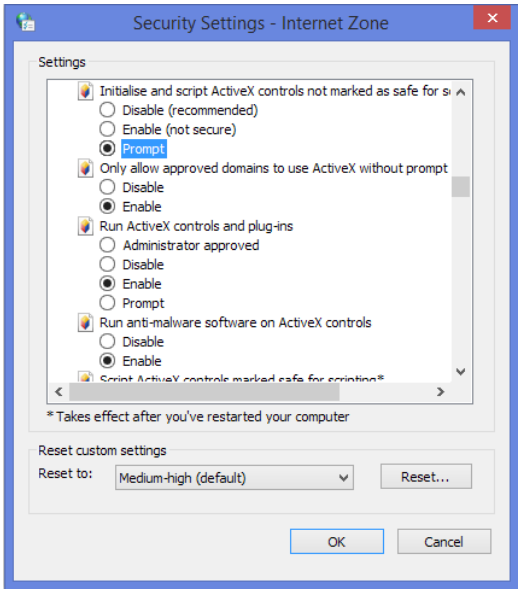
2



3

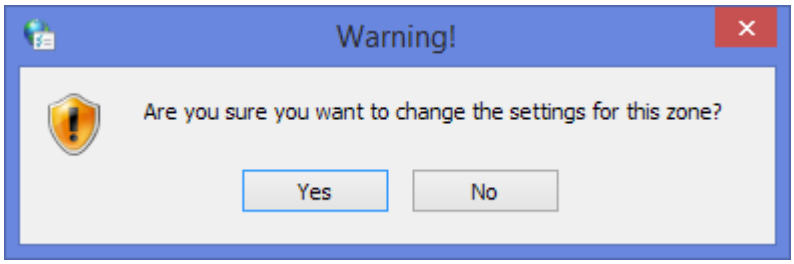


4



5

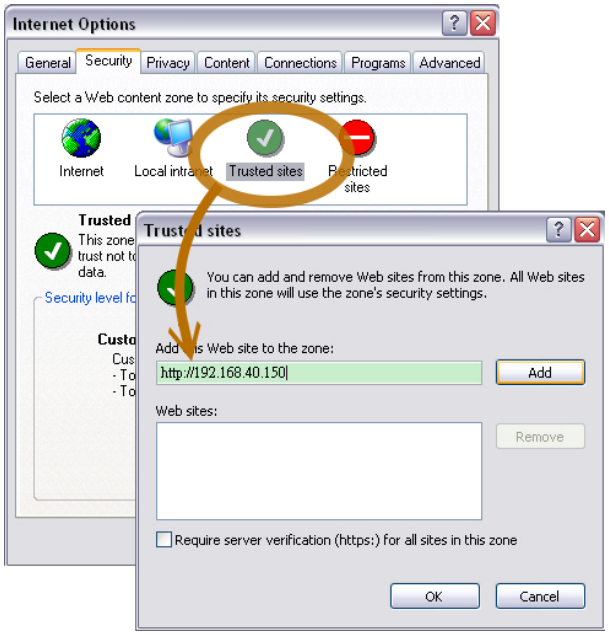
When popup the following dialogue box, click **Yes**.



2. You can choose another way:

Go to: IE→Tools → Internet Options… → Security Tab → Trusted sites → Add the IP address and click **OK**.

In the site list you can key one single IP address or a LAN address. For example, if you add **192.168.21.***, all the IP address under **21.*** on the LAN will be regarded as trusted sites.



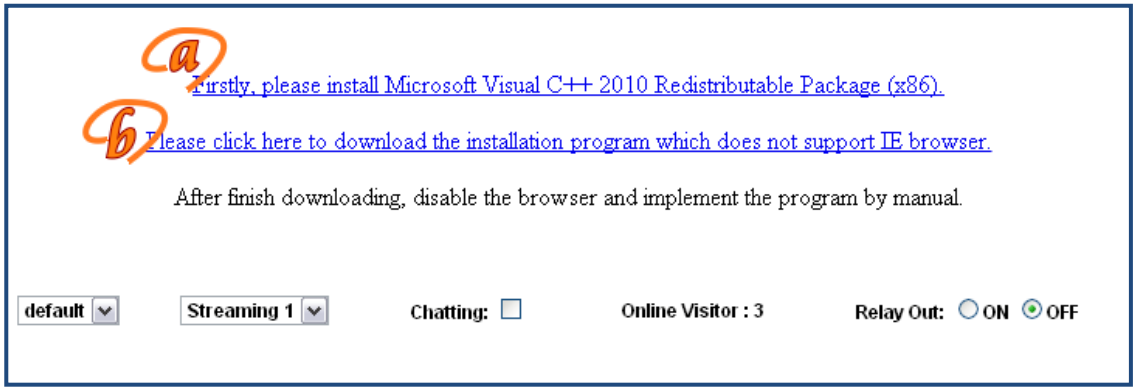
2. To Non-IE Web Browser Users

If you use Firefox or Google chrome to access the IP camera but fails to watch the live video, please follow the steps to install necessary tools:

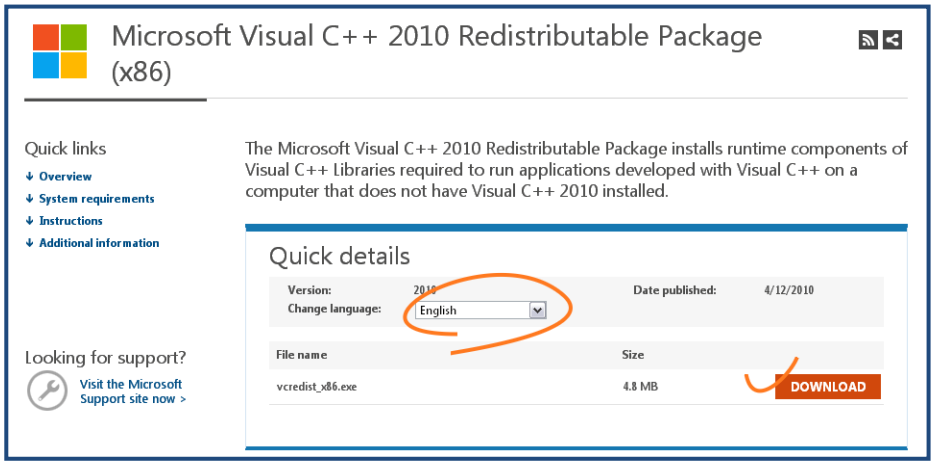
(The following pictures are based on chrome.)

a. You may see the prompt message as the picture below. Click the link:

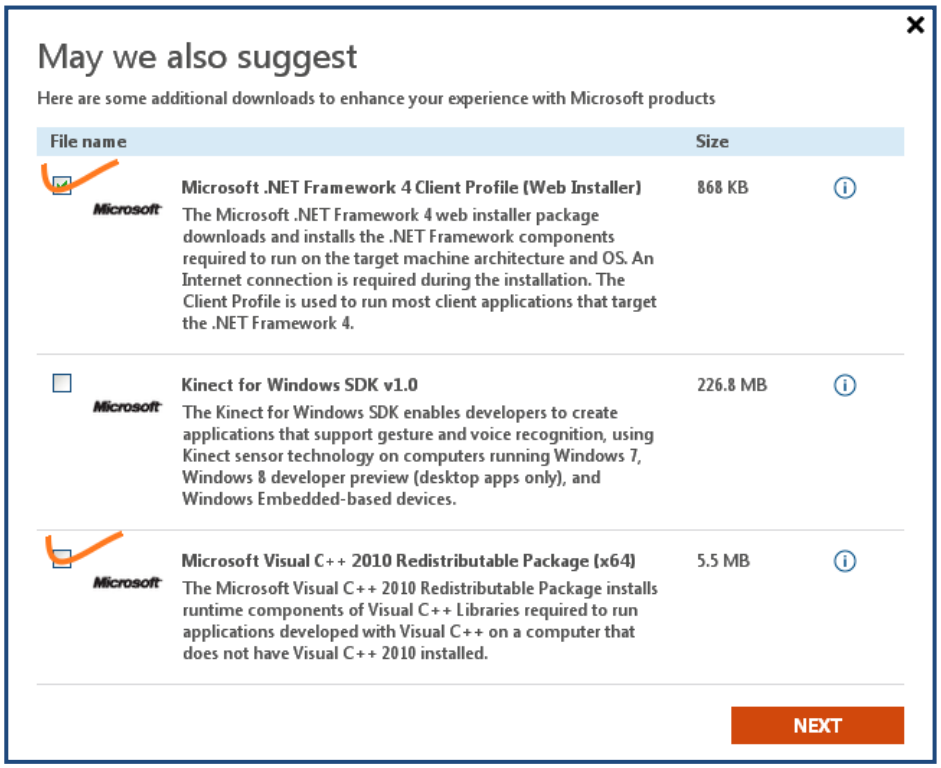
Firstly, please install Microsoft Visual C++ 2010 Redistributable Package (x86).



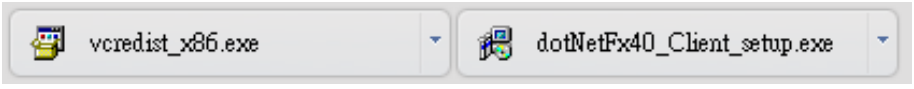
The link will conduct you to the Microsoft official site where you can download the tools. Please select the language and click **download**.



In the pop-up window, please tick the first and the third file as the picture below. Click **Next** to download both **Microsoft .NET Framework 4 Client Profile (Web Installer)** and **Microsoft Visual C++ 2010 Redistributable Package (x64)**.



After finishing downloading, execute the two files respectively to install them. The windows may ask you to reboot the PC when the installation is finished.

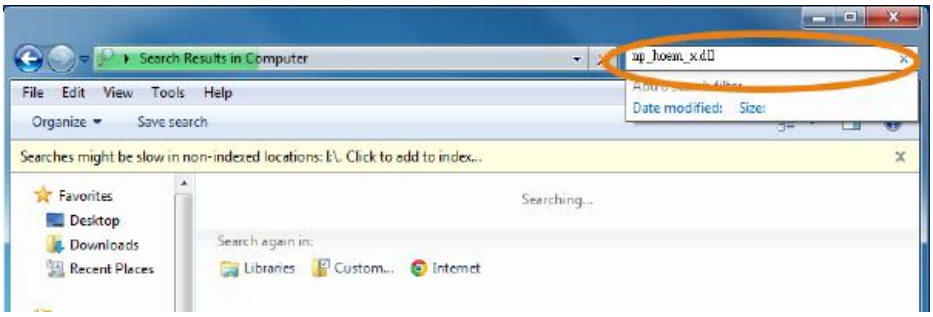


b. Then, click the second link **Please click here to download the installation program which does not support IE browser** to download Setup ActiveX.

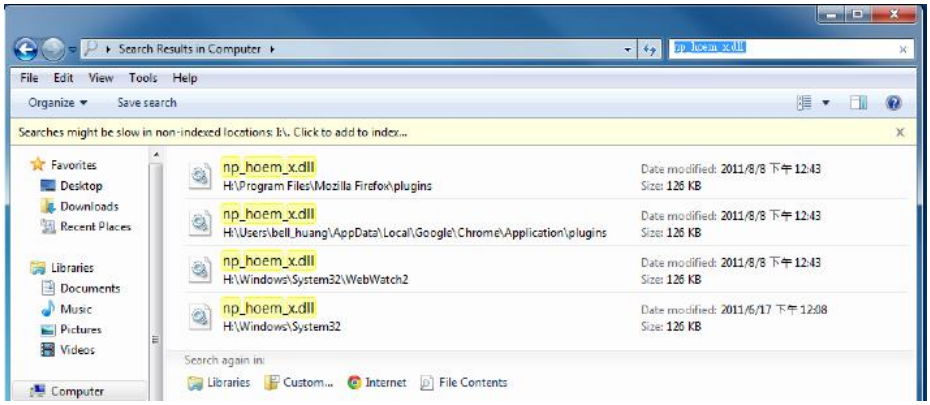
After finishing downloading, execute the files to install **ActiveX**. Then restart the browser.

c. If you execute the steps above but still cannot see live video normally, please try the following solution:

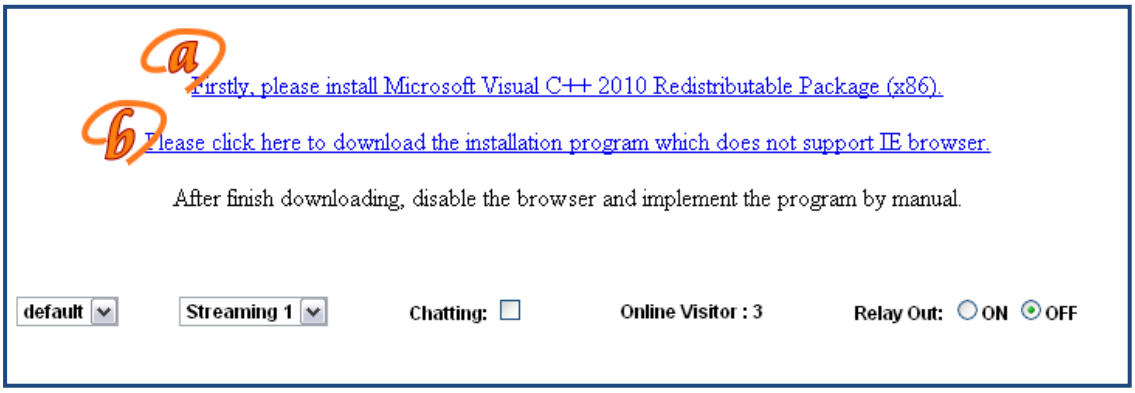
Search for the file **np_hoem_x.dll** in your system disk. For Windows XP users, please go to **Start** → **Search** → Search for **All files and folders** and key-in **np_hoem_x.dll**. For Windows 7 users, please use the search bar on the top-right of the Windows Explorer.



Delete all the files named **np_hoem_x.dll**. They're the **ActiveX** control tools installed in your computer, but the old version of **ActiveX** might not be compatible with the new version of the browser. Therefore, they need to be deleted in order to install the latest **ActiveX** control.

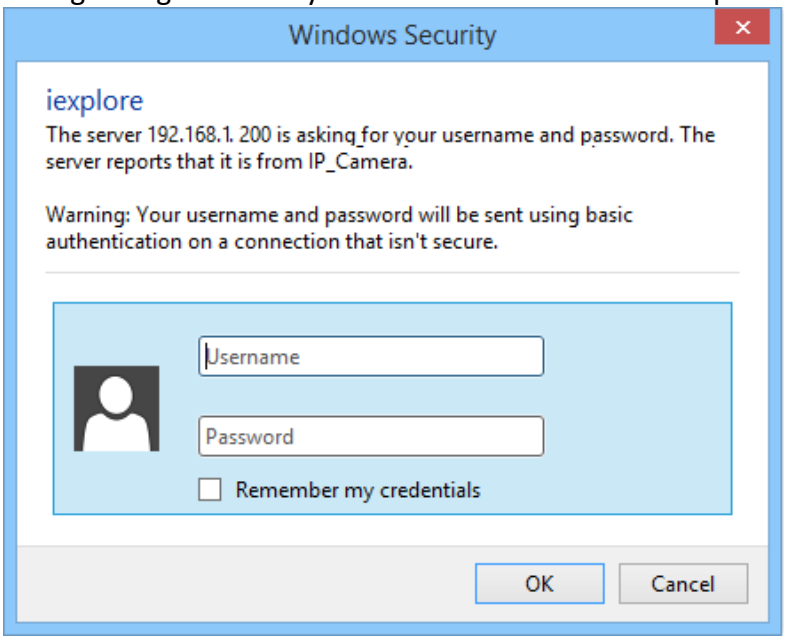


Start your web browser, and repeat the step 2-b: **Download the installation program which does not support IE browser** to download and install **ActiveX**.



Live Video

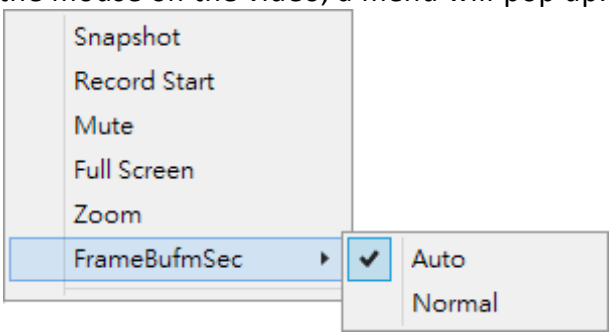
Start an IE browser, type the IP address of the IP camera in the address field. It will show the following dialogue box. Key-in the user name: **admin** and password: **admin**.



When the IP Camera is successfully connected it shows the following interface.

1. Get into the administration page.
2. Video Snapshot.
3. Show the system time, video resolution, and video refreshing rate.
4. Adjust image: 1/2x, 1x, 2x.
5. Streaming source: If the streaming 2 is closed, this function will not be displayed.
6. Tick on **Chatting** for enabling two-way audio.
7. Shows how many people are connected to this IP camera.

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



1. Snapshot: Save a JPEG picture.

2. Record Start: Record the video in the local PC. It will ask where to save the video. To stop recording, right-click again and Select **Record Stop**.
   The video format is AVI. Use Microsoft Media Player to play the recorded file.

3. Mute: Turn-off the audio. Click again to turn on it.

4. Full Screen: Full-screen mode.

5. Zoom: Enable the zoom-in and zoom-out functions. First, select **Enable digital zoom** option within the pop-up dialogue box and then drag and drop the bar to adjust the zoom factors.

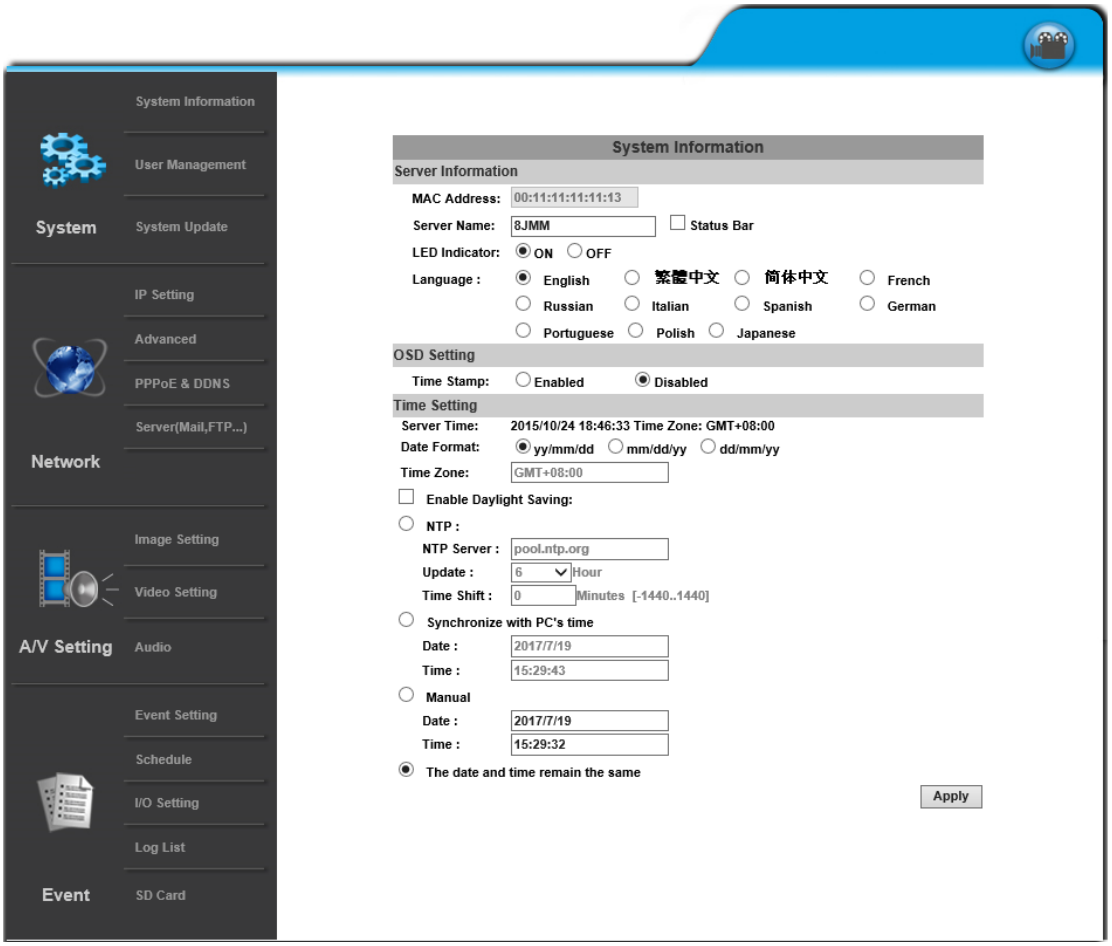
6. Frame Buffm Sec: T This function aims to build a temporary buffer to accumulate several video frames in a LAN network environment. It can make video streaming smooth when the network speed is slow.

   Select **Auto** to allow this function automatically help fix the streaming performance whenever the video happens to be lagging.

   Select **Normal** to play the video data based on the current network streaming performance. (Note: the lagging of the video displayed will not be seen as a result of the actual video data)

System

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



I. System Information

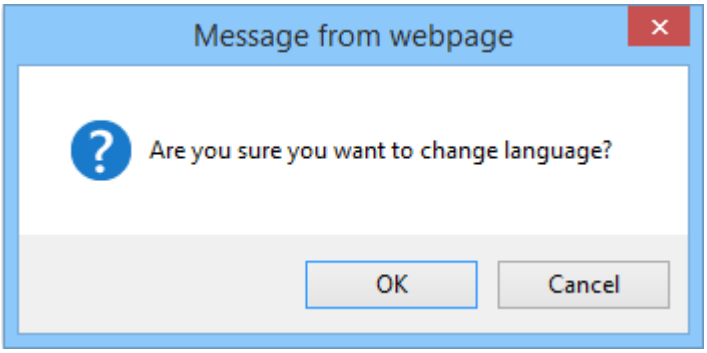
a. Server Information

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

1. **Server Name:** This is the Camera name. This name will be shown on the IP Scanner.

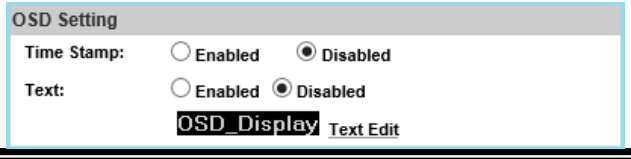
2. **LED Indicator:** Turn on/off the LED indicator on the camera.

3. **Language:** English and other languages can be selected. When a language preference is selected, the following dialogue box will pop up to confirm the change.

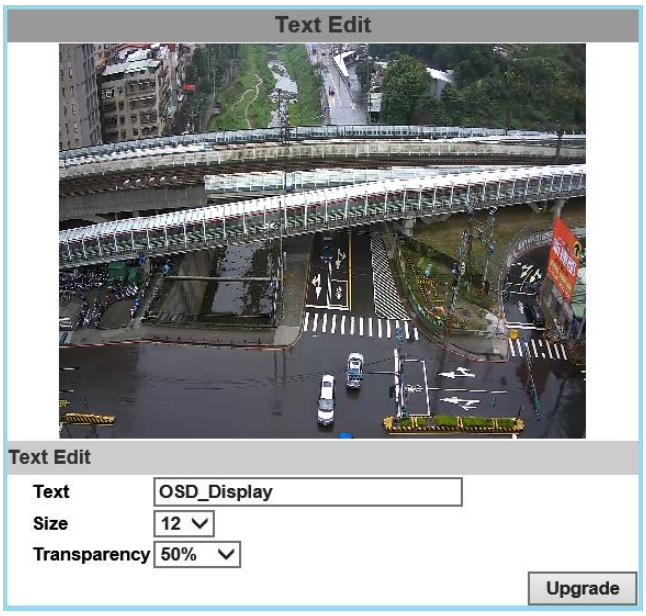


b. OSD Setting

Select a position where the date & time stamp / text are displayed on the screen.

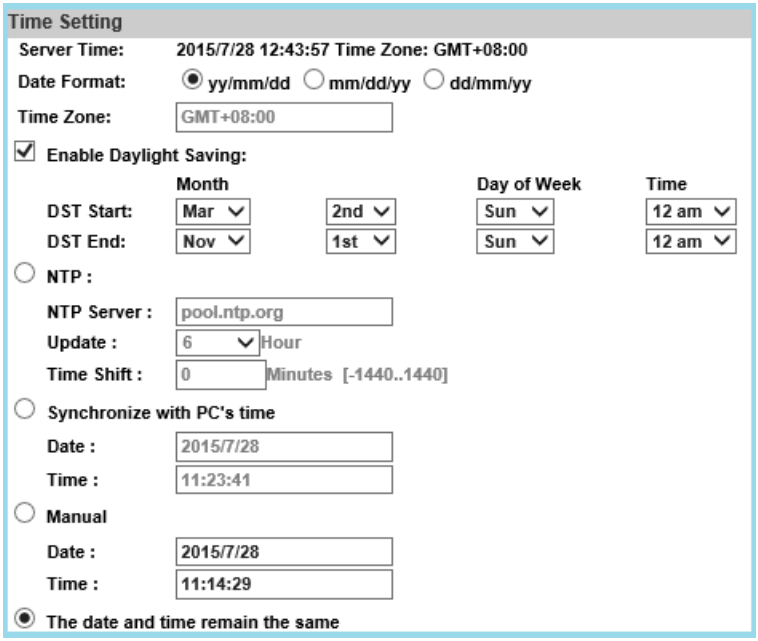


Click **Text Edit** for editing the OSD content, including text size and transparency. Click the Upgrade button to apply the settings.

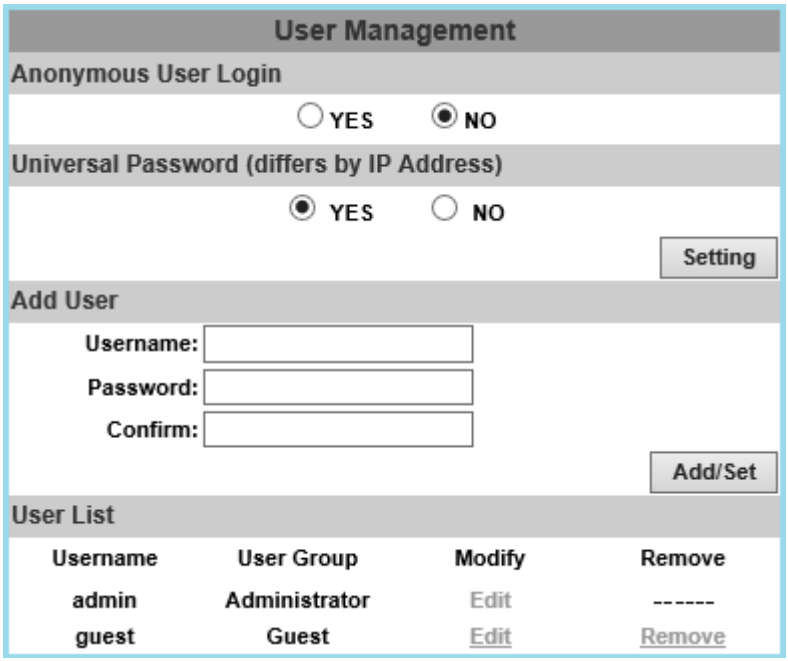


c. Time Setting

Select between **NTP**, **Synchronize with PC's time**, **Manual**, **The date and time remain the same** for setting the server time.



II. User Management



The IP Camera supports three different users: **administrator**, **general**, and **anonymous** user.

1. **Anonymous User Login**

   Select **Yes** for allowing access to watch live video of the IP camera without having to enter username and password. Yet when entering the configuration page of the IP camera, the system will do otherwise. Select **No** for requiring a username and login to access the camera.

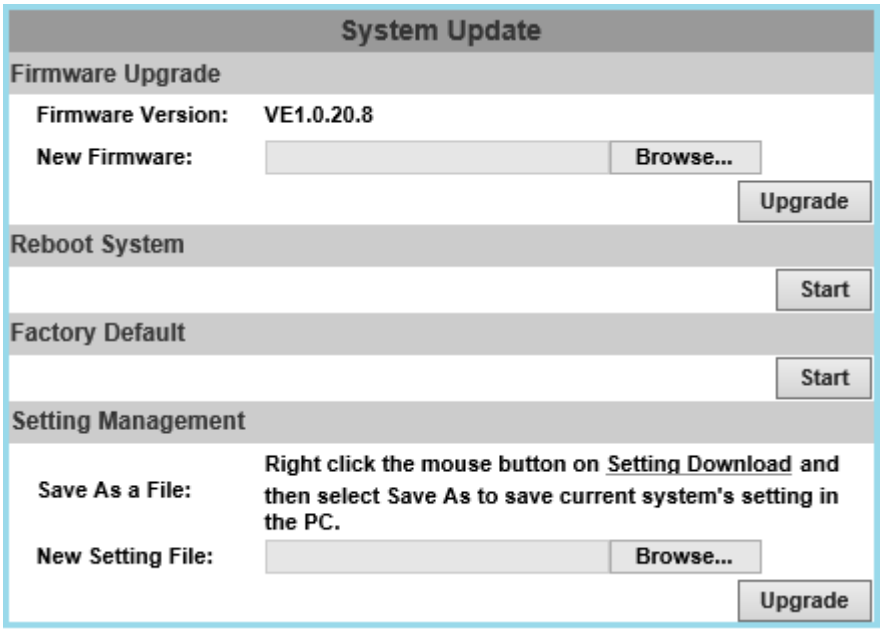
2. **Universal Password**

   Select **Yes** for allowing login to this IP camera by universal password. Please refer to **Universal Password** chapter for more explanations. Select **No** for disabling universal password.

3. **Add user**

   Type the user name and password, then click **Add/Set**. The guest user can only browse live video page and is not allowed to enter the configuration page. Click “Edit” or “Remove” in the user list to modify them. The system will ask you to key-in the password in the pop-up window before you edit the user information.

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 of this IP camera.

d. Setting Management: The user can download the current settings to PC, or upgrade from previous saved settings.

1. **Settings download**

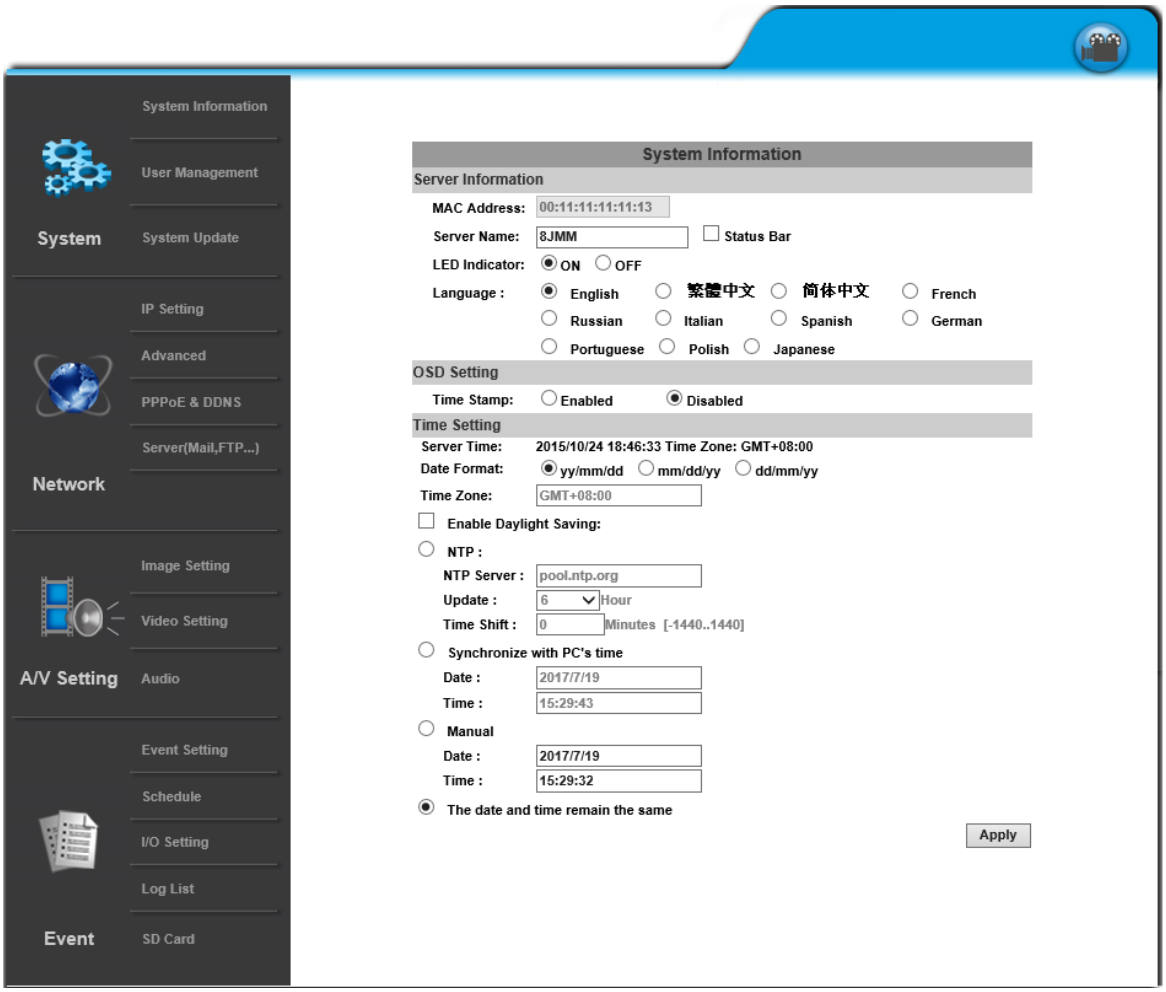
   Right-click the mouse button on Setting Download → Select **Save AS…** to save current IP Camera settings in PC → Select saving directory → Save

2. **Upgrade from previous settings**

   Browse → search previous settings → open → upgrade → Settings update confirm → click **index.html**. for returning to the main page.

Network

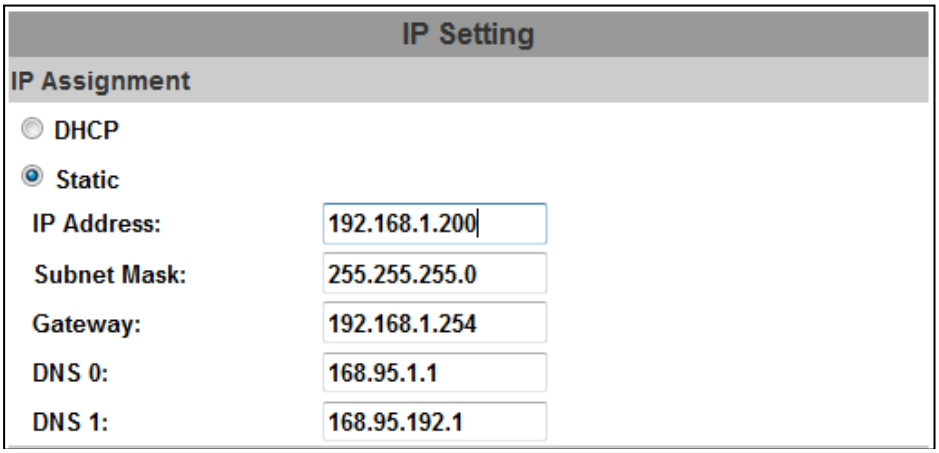
Click to get into the administration page. Click to go back to the live video page.



I. IP Settings

IP Assignment

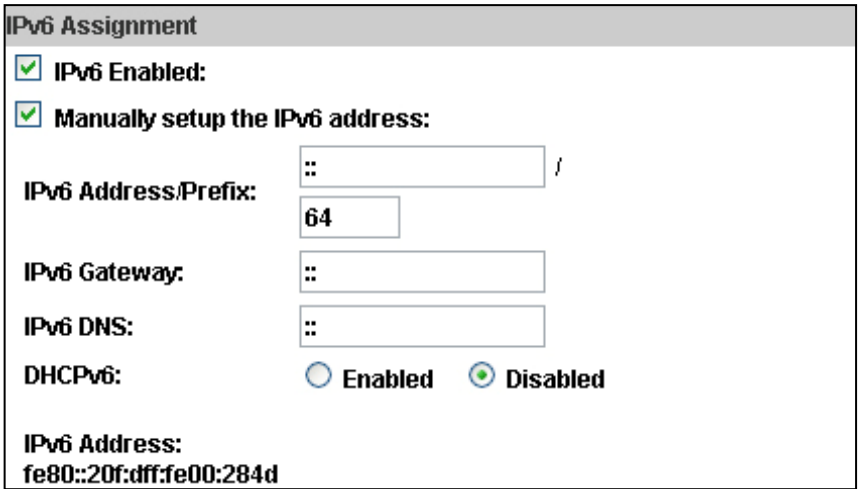
The IP Camera supports DHCP and static IP.



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

b. Static IP: Type-in the IP address subnet mask, gateway, and DNS.

IPv6 Assignment

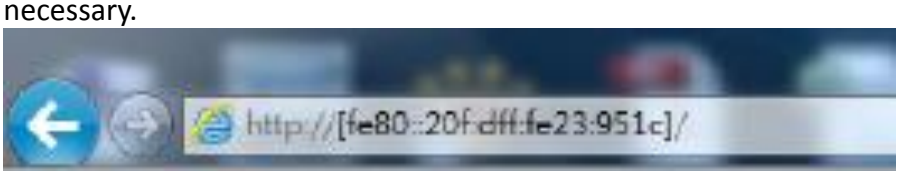


Enable DHCPv6 to configure the following IPv6 address settings:

- Manually setup the IPv6 address: Key-in the Address, Gateway, and DNS.
- DHCPv6: If you have a DHCPv6 server, enable it to assign the IPv6 automatically. The assigned IP address will be displayed beside the column.

- Automatically generated IPv6 Address: Indicates a virtual IPv6 address generated automatically by the IP camera. This virtual IPv6 address cannot be used on WAN.

To use IPv6 address to access the IP camera, open the web browser, and key-in the **[IPv6 address]** in the address bar. The [ ] parentheses mark is necessary.

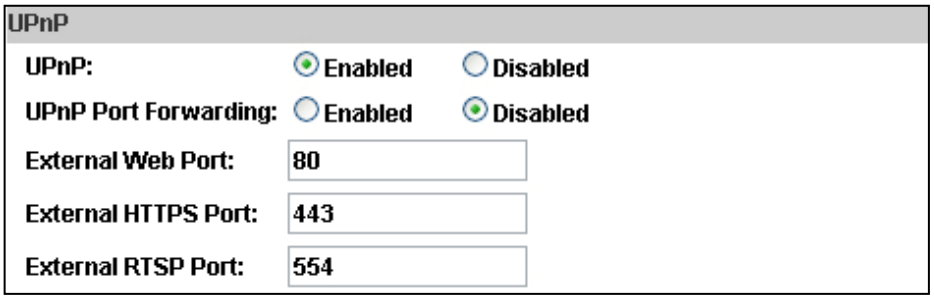


a. Port Assignment: The user might need to assign a different port to avoid conflicts when setting up the IP.

b. Web Page Port: setup the web page connecting port and video transmitting port (Default: 80)

c. HTTPs Port: setup the https port(Default: 443)

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 for accessing the IP Camera from the Internet; this option allows the IP Camera to open ports on the router automatically so that video streams can be sent out from a LAN. There are three external ports for being set: **Web Port**, **Http Port** and **RTSP** port. To utilize of this feature, make sure that your router supports **UPnP** and is activated. ***Note:*** *UPnP must be enabled on your computer.*

Please follow the procedure to activate UPnP:

<Approach 1>

i. open the **Control Panel** from the **Start Menu**

ii. Select **Add/Remove Programs**

iii. Select **Add/Remove Windows Components** and open **Networking Services** section

iv. Click **Details** and select **UPnP** to setup the service.

v. The IP device icon will be added to **My Network Places.**

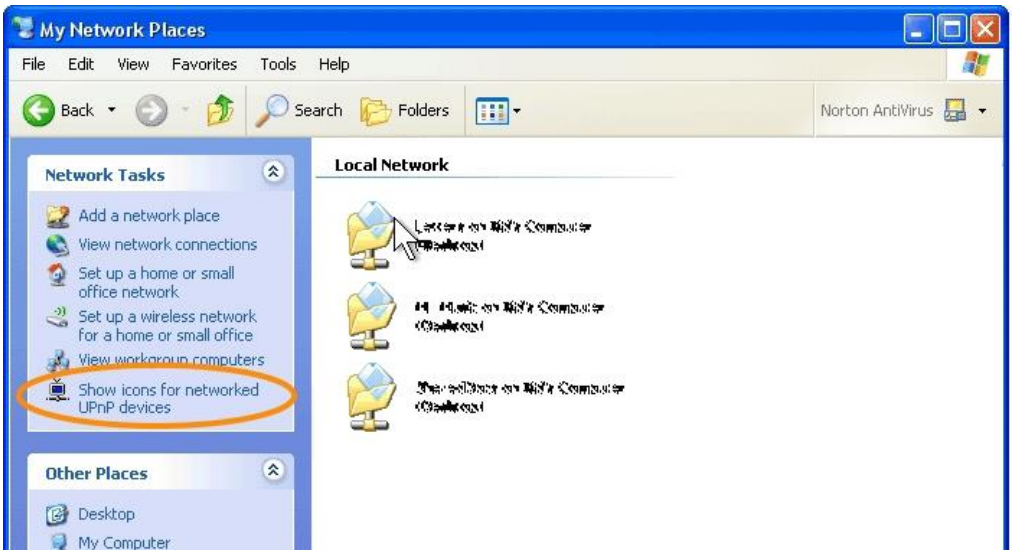
vi. The user may double click the IP device icon to access IE browser

<Approach 2>

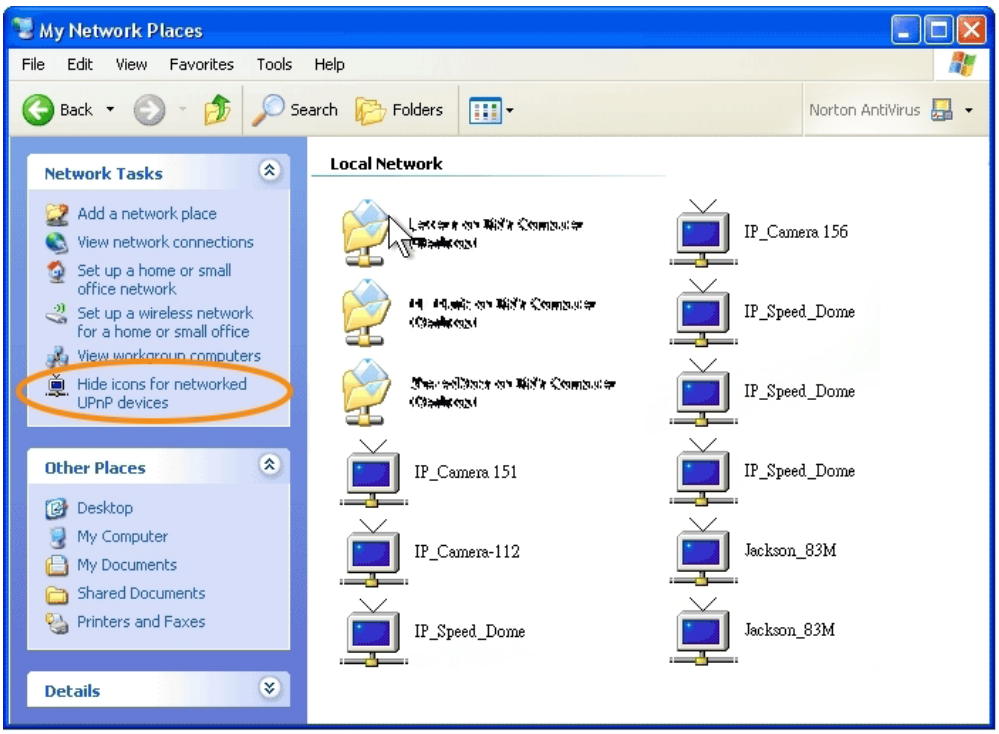
i. Open My **Network Space**

ii. Click **Show icons for networked UPnP devices** in the tasks column on the left of the page.

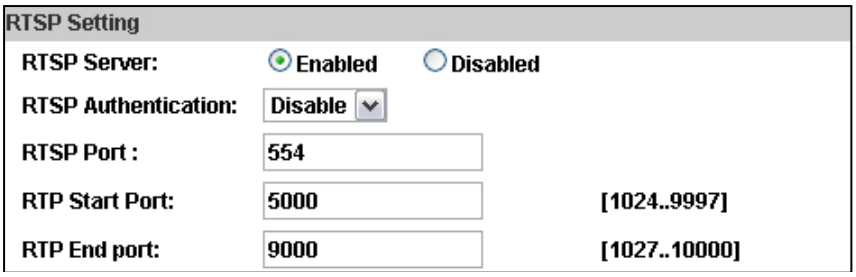
iii. Windows might ask your confirmation for enabling the components. Click **Yes**.



iv. Now the IP device is displayed under the LAN. Double-click the icon to access the camera via web browser. To disable the UPnP, click **Hide icons for networked UPnP devices** in the tasks column.



RTSP Setting



If you have a media player that supports RTSP protocol, you can use it to receive video streaming from the IP camera. The RTSP address can be set for two streamings respectively.

i. RTSP Server: enable or disable

Disable means everyone who knows your camera IP Address can link to your camera via RTSP. No username & password required.

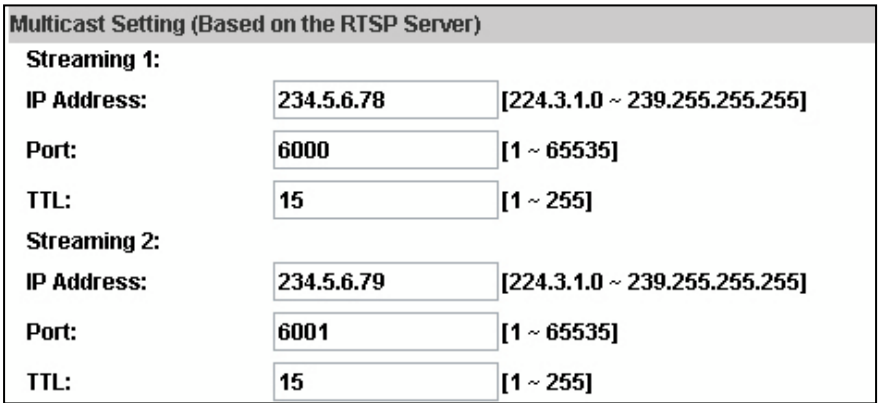
Under **Basic** and **Digest** authentication mode, the camera asks for a username and password before allows access.

The password is transmitted as a clear text under basic mode, which provides a lower level of security than under **digest** mode.
Make sure your media player supports the authentication schemes.

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

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

Multicast Setting (Based on the RTSP Server)

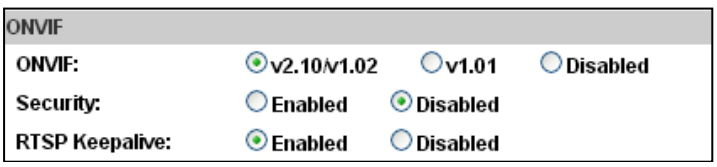


Multicast is a bandwidth conservation technology. This function allows several users to share the same packet sent from the IP camera.

For using Multicast, appoint here an IP Address and port. TTL means the life time of packet, the larger the value is, the more users can receive the packet.

For using Multicast, be sure to enable the function **Force Multicast RTP via RTSP** in your media player. Then key in the RTSP path of your camera: **rtsp :///(IP address)/** to receive the multicast.

ONVIF



i. Choose your ONVIF version and settings.
Under ONVIF connection, the video will be transmitted by RTSP. Be sure to enable the RTSP server in IP setting, otherwise the IP Camera will not be able to receive the video via ONVIF.

ii. Security:
By selecting **Disable**, the username and password are not required for accessing the camera via ONVIF. By selecting **Enable** the username and password are necessary.

iii. RTSP Keepalive:
When the function is enabled, the camera checks once in a while if the user who is connected to the camera via ONVIF is still connected. If the connection has been broken the camera will stop transmitting video to the user.

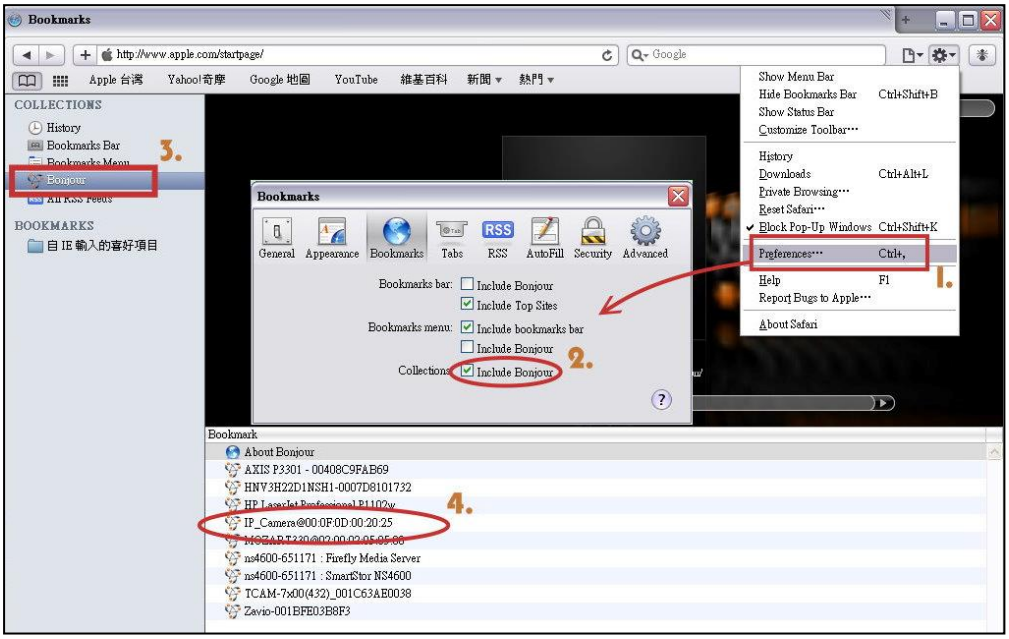
Bonjour

This function allows Apple systems to connect to this IP camera. On **Bonjour Name** key-in the name here.

The web browser **Safari** also has a Bonjour function. Tick **Include Bonjour** in the bookmark setting, for the IP camera to appear under the bonjour category. Click the icon to connect to the IP camera.

The Bonjour function on Safari browser doesn't support HTTPS protocol. If on the camera you select **https**, the camera will appear on Safari's bookmarks but it cannot be accessed.

Take as a reference to the following image:

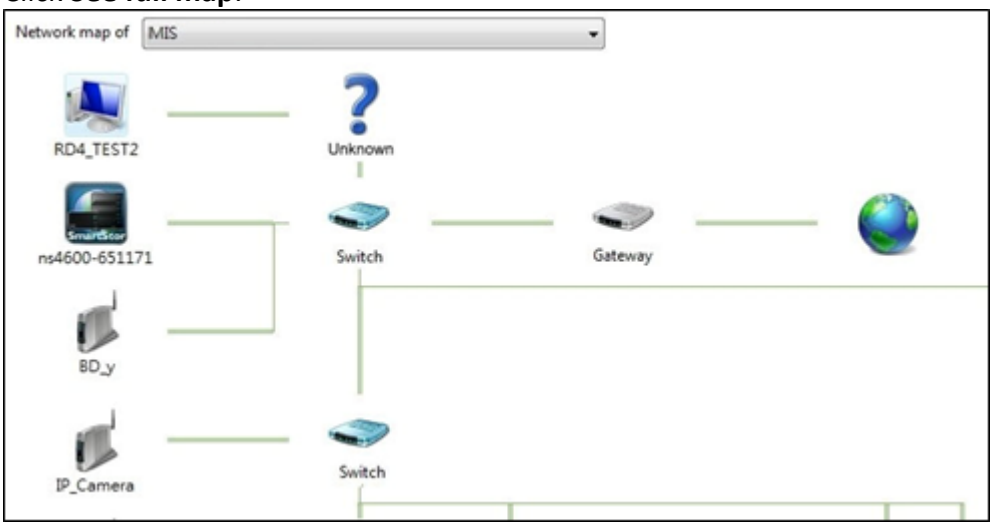


LLTD

If your PC supports LLTD, enable this function for allowing checking the connection status, properties, and device location (IP address) in the network map.

If the computer is running Windows Vista or Windows 7, you can find LLTD through the path:

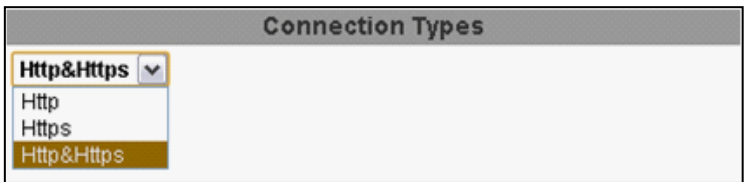
Control Panel → Network and Internet → Network and Sharing Center → Click **See full map**.



II. Advanced

a. Https (Hypertext Transfer Protocol Secure)

When the users access cameras via Https protocol, the transmitted information will be encrypted, increasing the security level.



Select the connection type:

• Http: the user can access the camera via the Http path but cannot access it via the Https path.

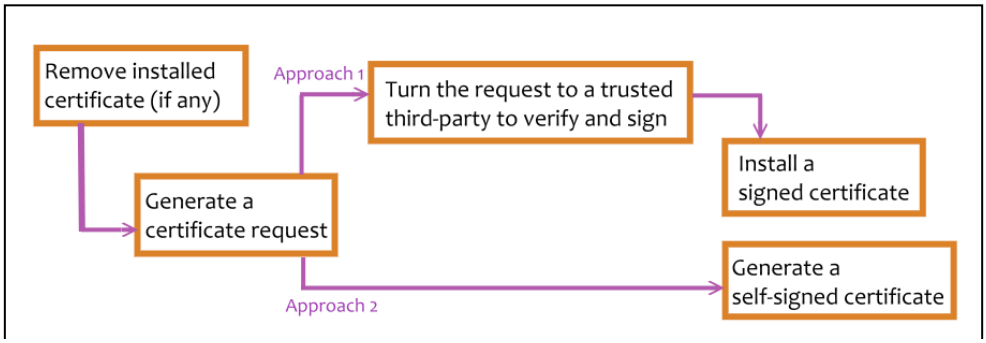
• Https: the user can access the camera via the Https path but cannot access it via the Http path.

• Http & Https: Both the Http and Https path can be used to access the camera. When you change the connection type settings, it may cause connection error or disconnection error if you switch the protocol directly. Therefore, **Http & Https** mode is necessary.

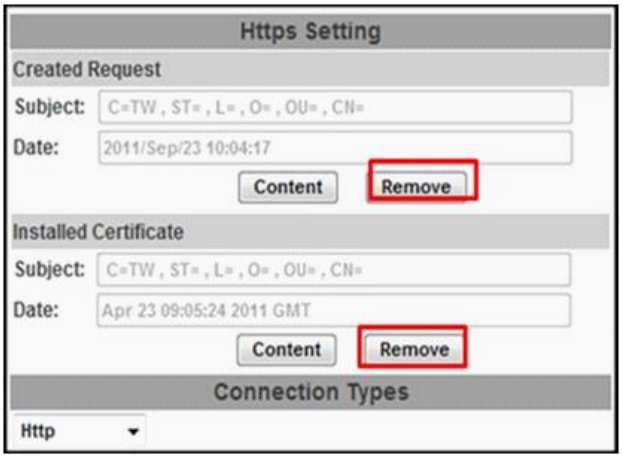
If you want to change from Http to Https, please switch to **Http & Https** mode first, and then switch to **Https** mode and vice versa.

The Https protocol has a verifying mechanism. When the user access a website via Https, the browser will check the certificate of that domain and verify its trustiness and security.

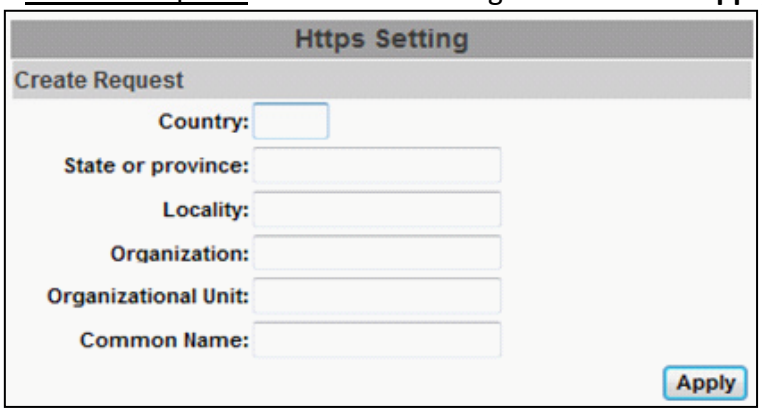
Certificate generation process:



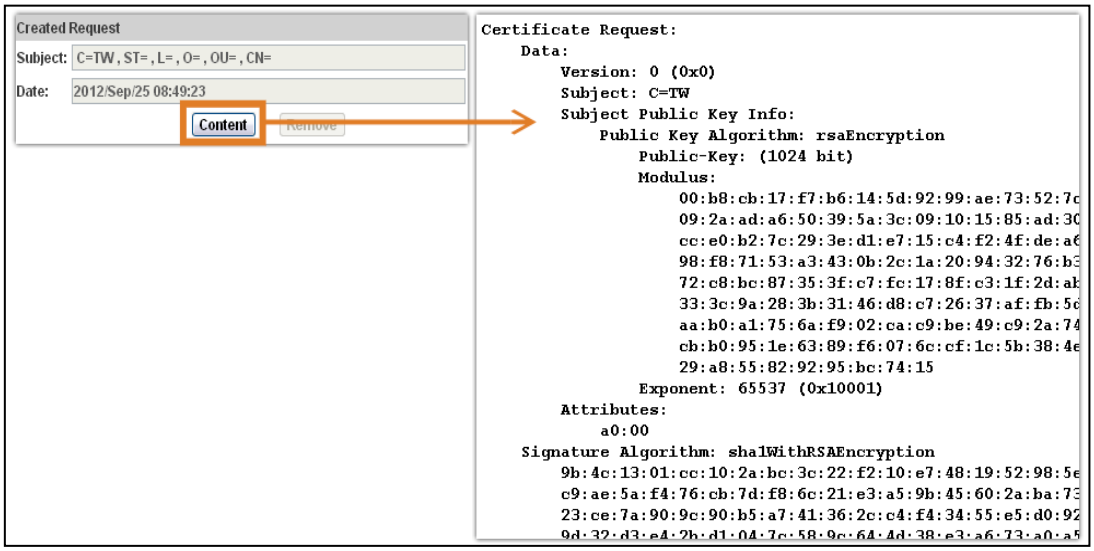
• Remove the existing certificate: Before you generate a new certificate, please remove the installed one. Select the **Http** connection type and click **Remove**. If a dialog box pops up to ask you to confirm, click **Yes**.



• Created Request: Fill-in the following form and click **apply**.



• After generating a certificate request, if you choose to turn it and verified by a trusted third-party, click **Content** and copy all the request content.

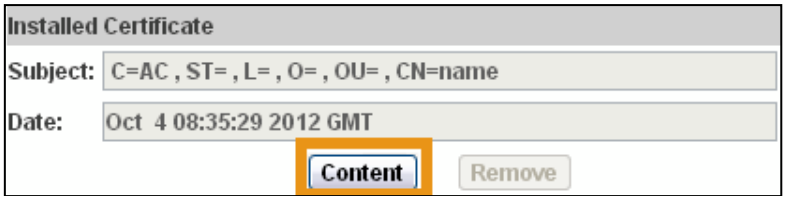


• According to the certificate source, there are two ways to install the certificate:

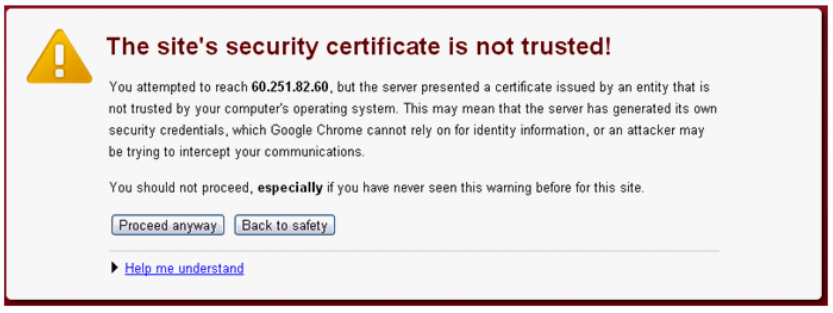
If you had sent the certificate request for signing and receiving a signed certificate, click **browse** and find the certificate file in your computer. Click **Apply** to install it.

If you choose to generate a self-signed certificate, fill-in the following forms and set the validity day, click **Apply** to finish installed it.

After finishing the installation, click on **Content** to call out and check the certificate content.



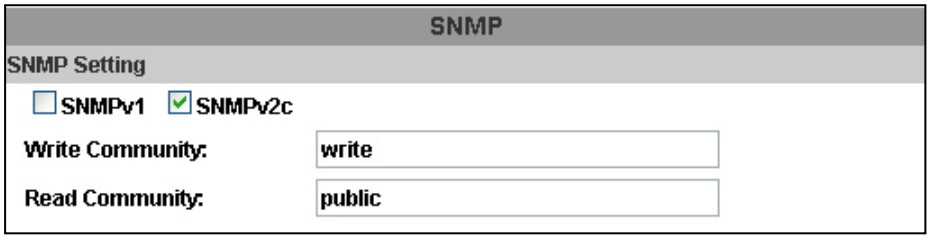
To use Https to access the camera, open your browser, and key-in **https:// (IP address)/** in the address bar. Now your data will be transmitted via encrypted communications. The browser will check your certificate status. It might show the following warning message:



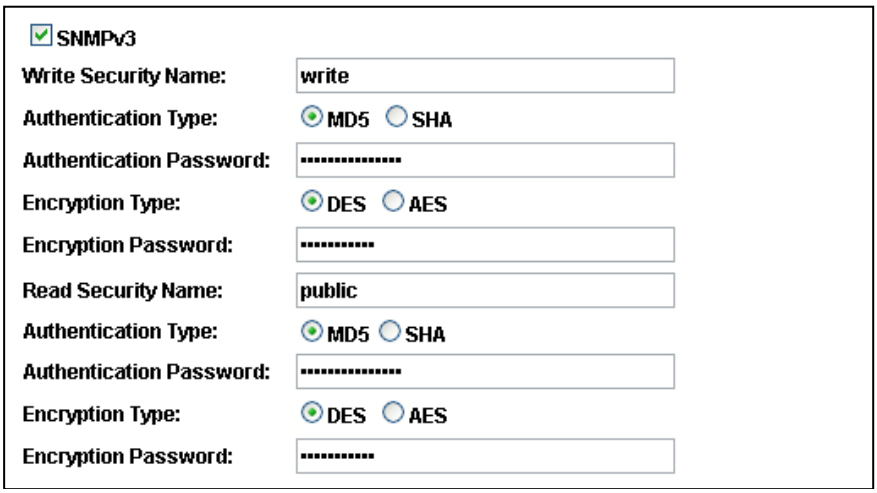
Meaning that certificate is self-signed or signed by a distrusted institution. Click **Proceed anyway** to return to the camera page.

b. SNMP (Simple Network Management Protocol)

1. **SNMPv1** or **SNMPv2**: write the name of both **Write Community** and **Read Community**.



2. **SNMPv3**: Set the Security Name, Authentication Type, Authentication Password, Encryption Type, Encryption Password of Write mode and Read mode.

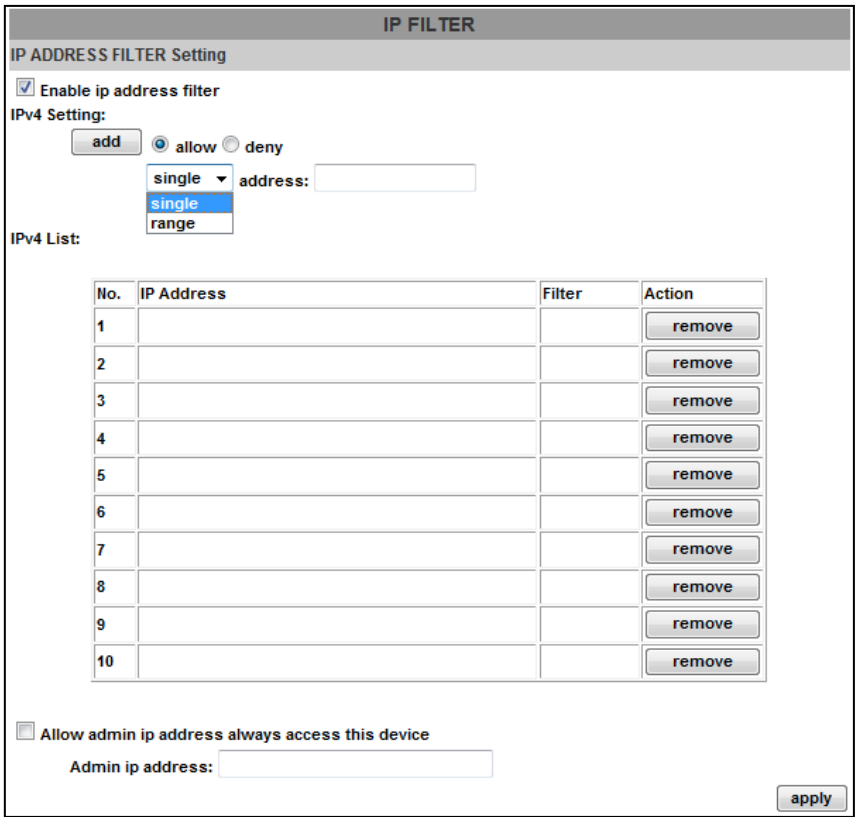


3. Enable SNMPv1/SNMPv2 Trap for detecting the Trap server. Please set what event needs to be detected.

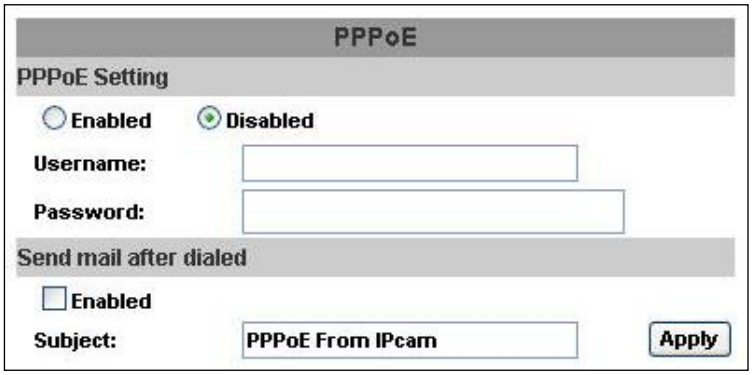
- Cold Start: The camera starts up or reboots.
- Setting changed: The SNMP settings have been changed.
- Network Disconnected: The network connection is broken down (The camera will send trap messages after the network is connected again).
- V3 Authentication Failed: A SNMPv3 user account tries to get authentication but failed. (Due to incorrect password or community)
- SD Insert / Remove: A Micro SD card is inserted or removed.

c. Access list:

Enable IP address filter for setting the IP addresses which allows or denies this camera. There are two options: **single** and **range**.



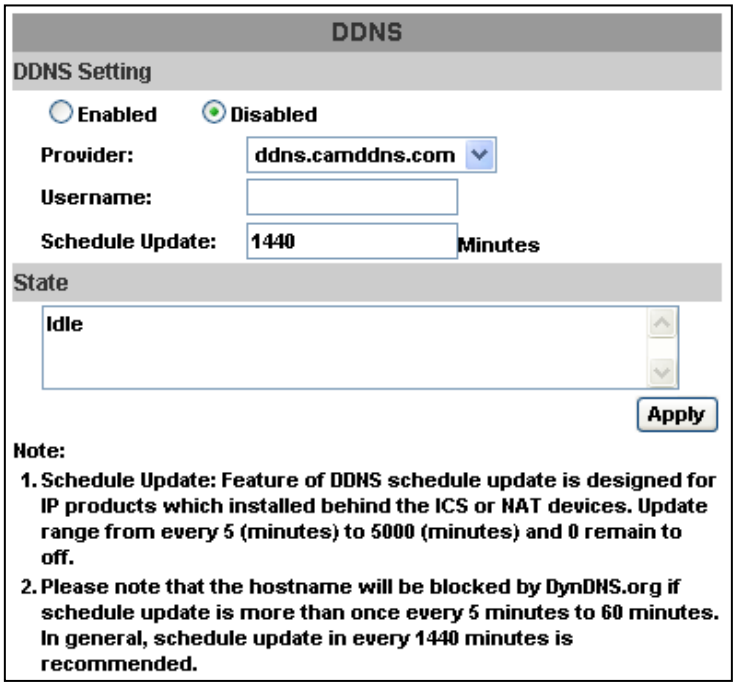
III. PPPoE & DDNS



a. PPPoE: Select **Enabled** to use PPPoE. Key-in the the Username and password for ADSL connection.

Send mail after dialed: When connected to the internet, the camera will send a mail to a specific mail account.

b. DDNS (camddns example):



Enable this service

- Key-in the username.
- IP schedule update. Default: 5 minutes
- Click **Apply**.

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.

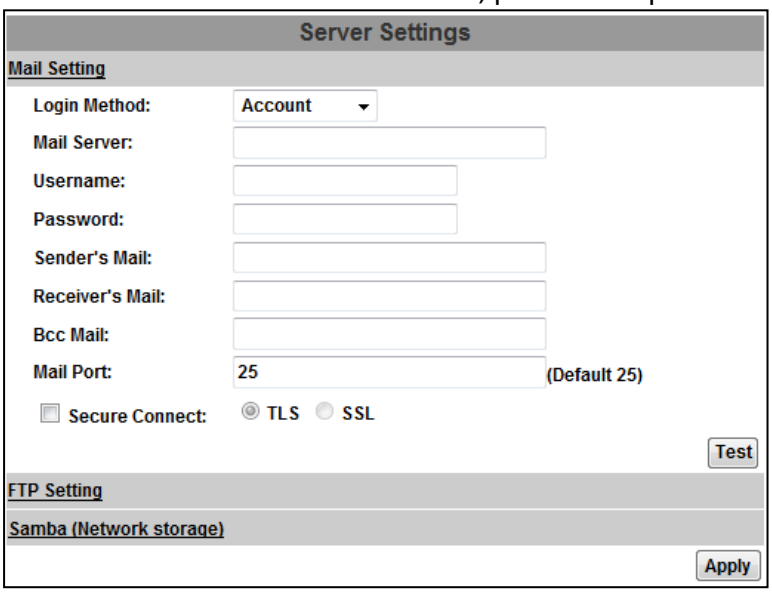
(5) **Update Failed; please check your internet connection:** Network connection failed.

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

IV. Server Settings

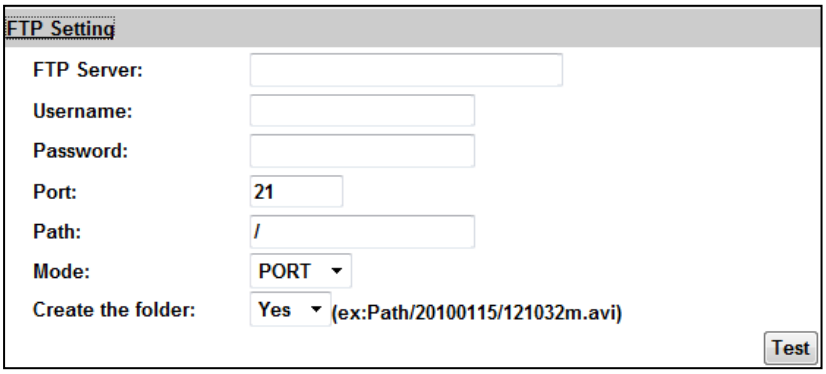
There are three server types available: **Email**, **FTP** and **SAMBA**. Select the item for display detailed configuration options. You can configure either one or all of them.

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



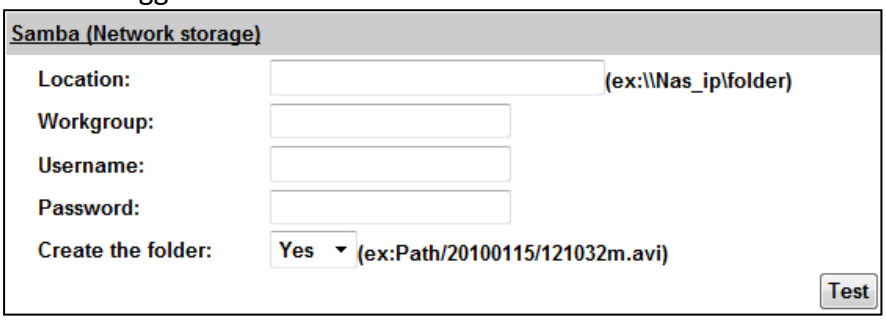
FTP

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



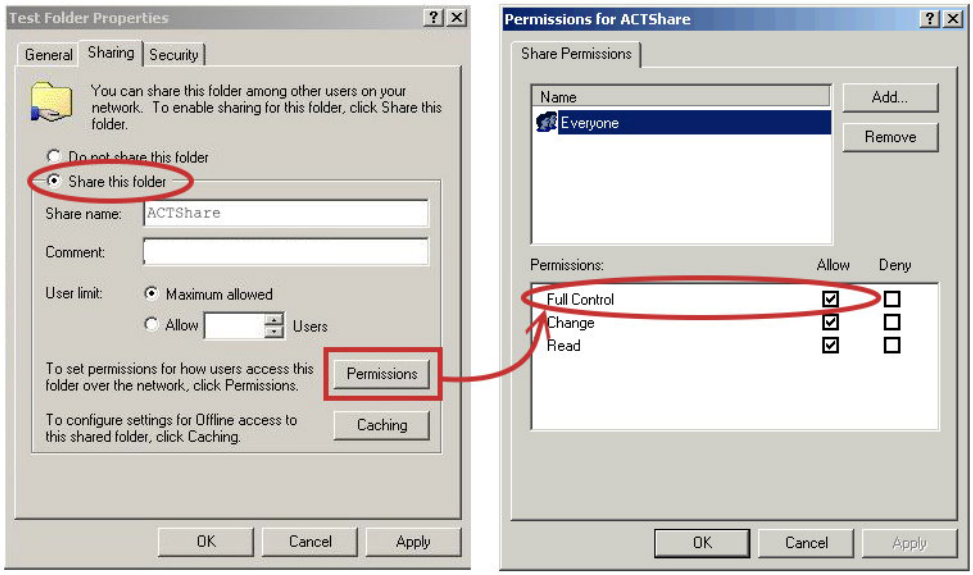
Samba

Select this option to send the media files via a neighbor network when an event is triggered.



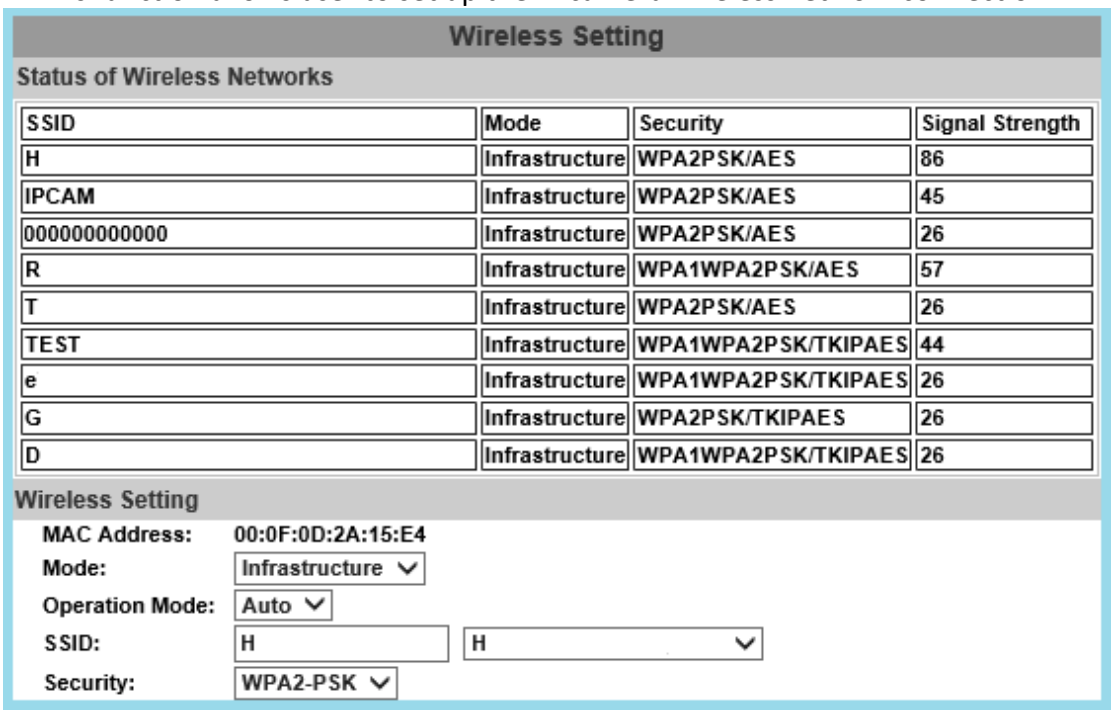
Click **Apply** to save the setting, then use **Test** button to test the server connection. A message box will tell you **OK!** if it works, and a test document will be created in the location.

If the test failed, check the sharing setting of your location folder. The folder properties must be **shared** and the permissions must be **Full Control** as the picture.



V. Wireless Setting (Optional): Support 802.11 b/g/n

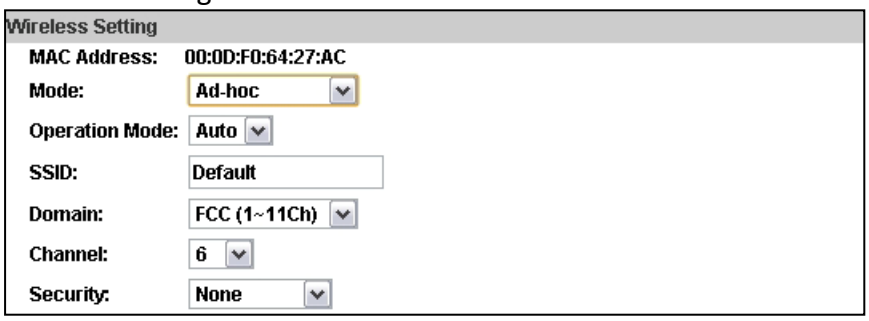
This function allows user to set up the IP camera wireless network connection.



a. Status of Wireless Networks

The camera scans and shows the SSID, Mode, Security, and Signal strength of the wireless network.

b. Wireless Setting



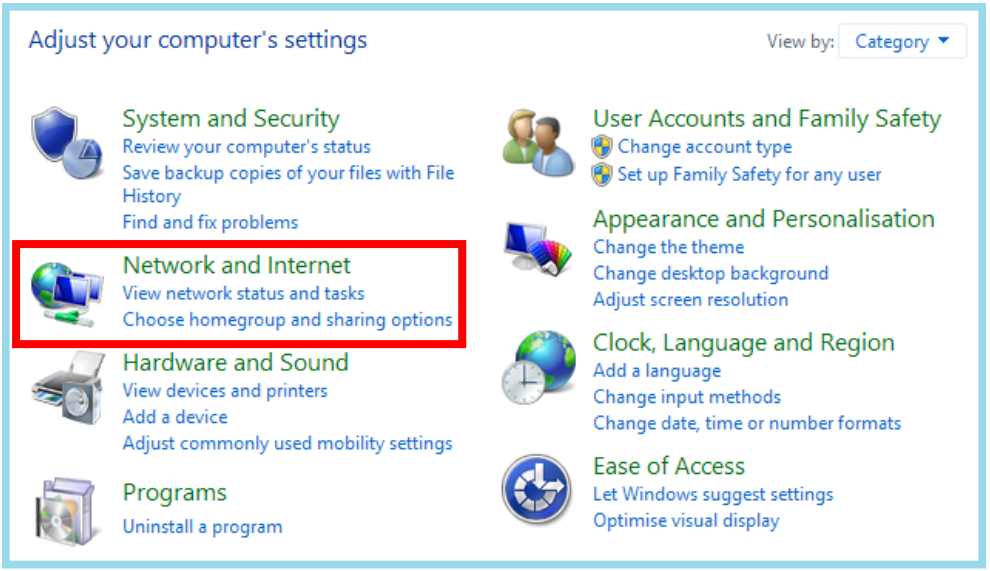
Mode: **Infrastructure** mode is used to link to the wireless router. **Ad-hoc** mode is used to link to the PC directly.

Domain and **Channel** options appear only in the Ad-hoc mode.
Ad-hoc is a short term derived from wireless ad hoc network, known as **WANET**. This type of network is only established temporarily, and does not rely on a pre-existing network through a router or Wireless Access Point.

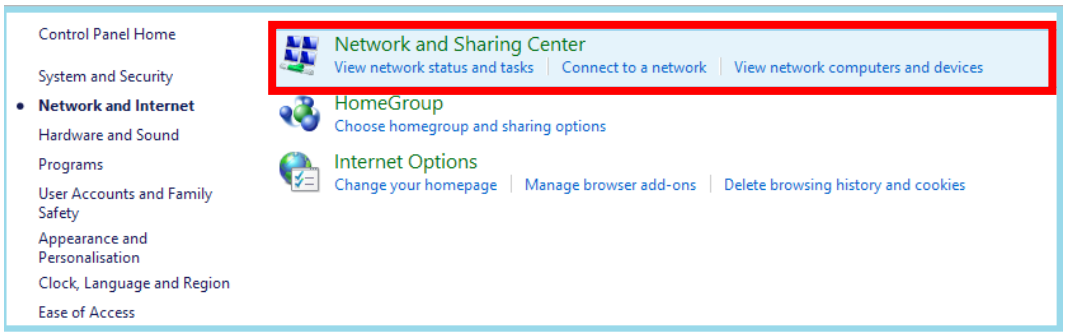
How to connect to an ad-hoc Wi-Fi network in Windows 8.1
To make the Ad-hoc mode available, follow the steps below. This is done manually. Note that this demonstration applies to Windows 8.1 since the Windows 8.1 system no longer shows Ad-hoc network in the Wi-Fi list.

The following example is based on another type of IP camera.

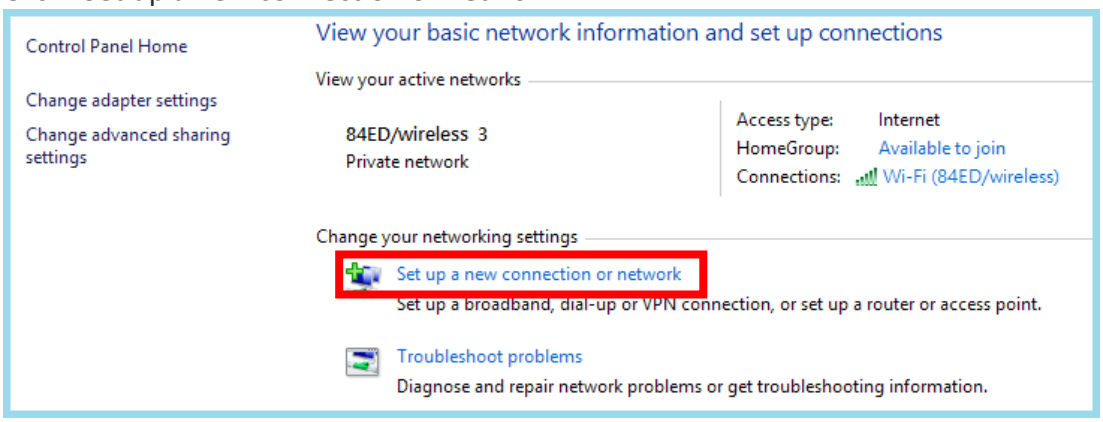
Go to “Control Panel”, then “Network and Internet”.



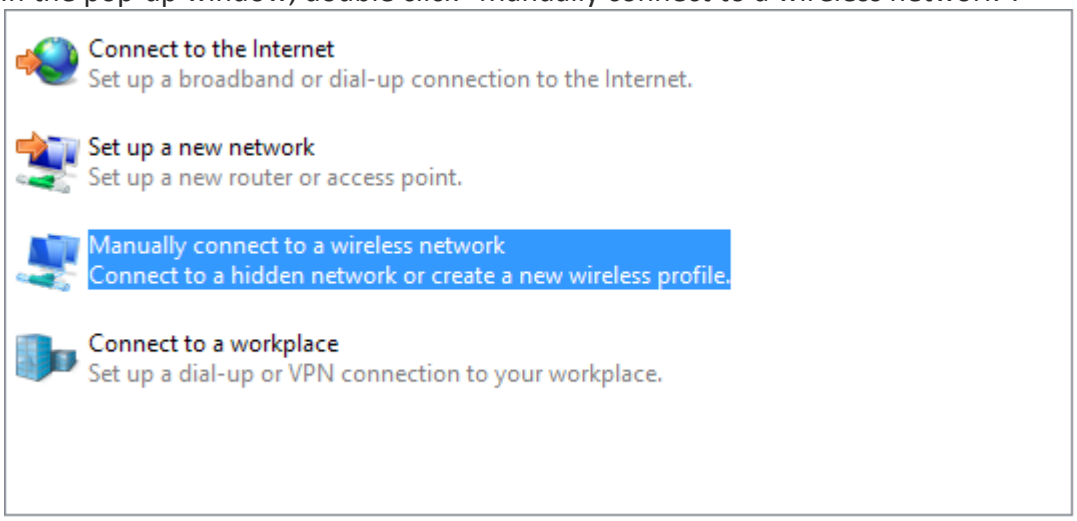
Click on "Network and Sharing Center".



Click "Set up a new connection or network".

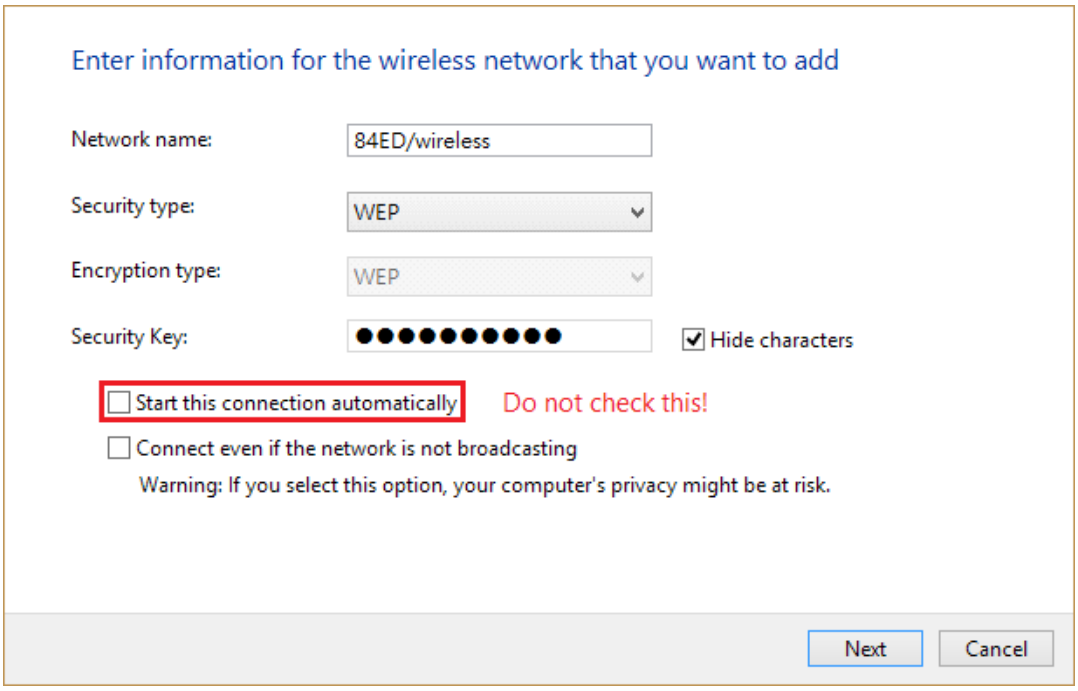


In the pop-up window, double click "Manually connect to a wireless network".



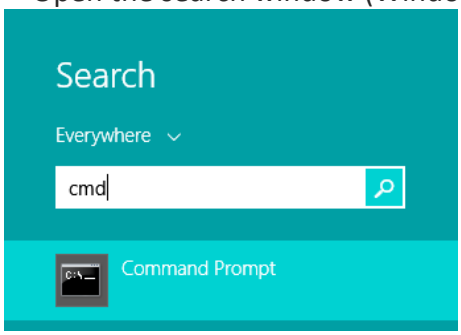
Enter the SSID of the ad-hoc network (as shown by "netsh wlan show networks") into the "Network name" field.

Configure security settings accordingly.

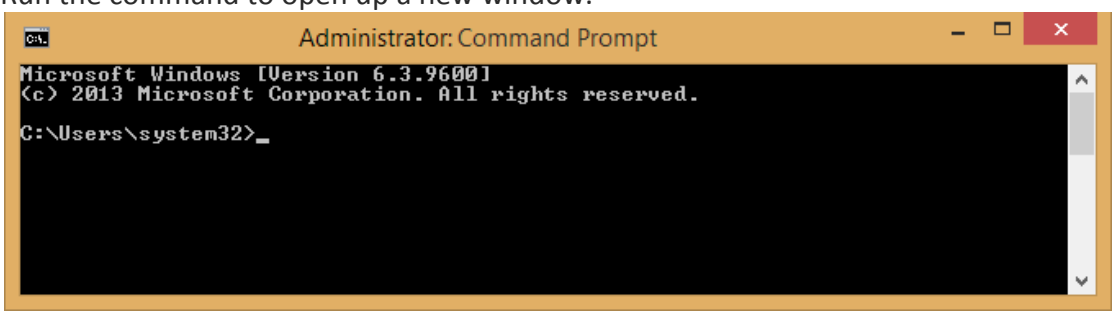


Make sure that "Start this connection automatically" is unchecked, click "Next", then "Close"

Open the search window (Windows key+Q) and search for “cmd”

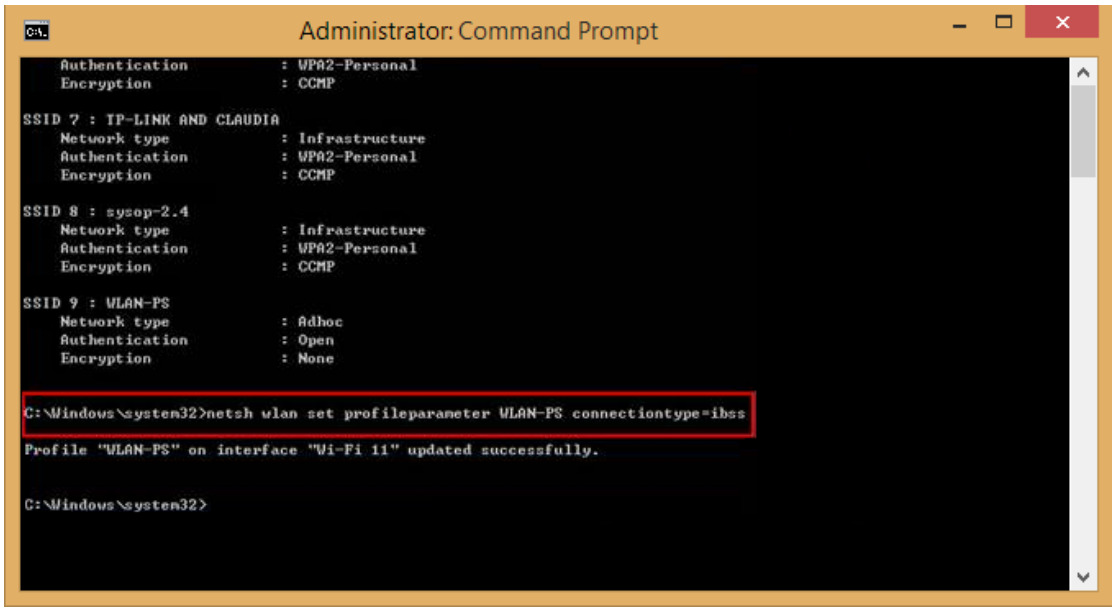


Run the command to open up a new window.

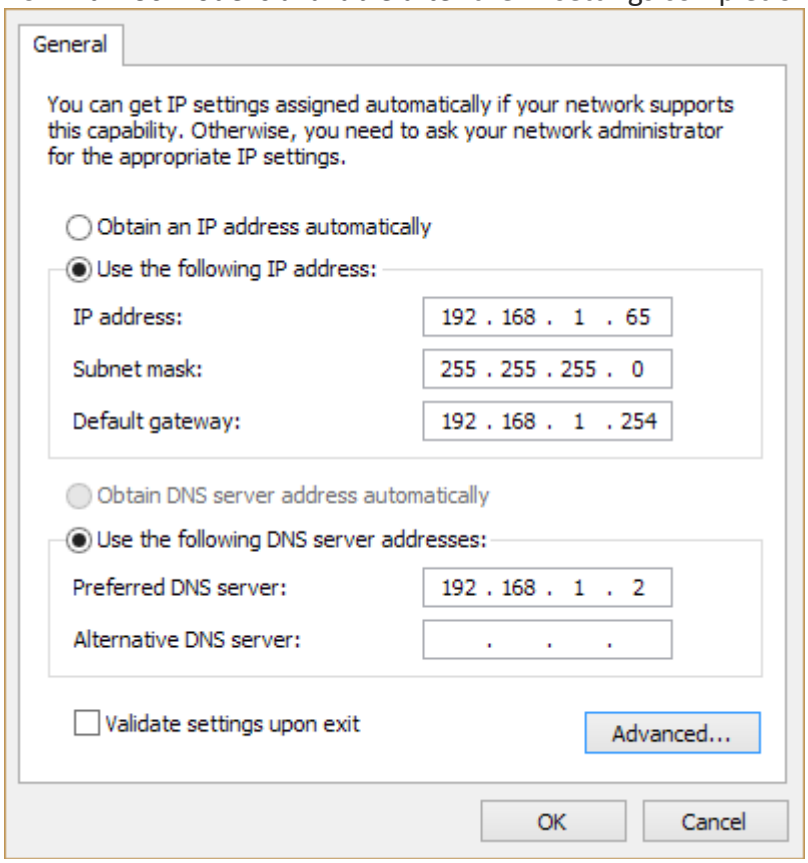


Enter the messages below.

1. > netsh wlan set profileparameter <ssid> connectiontype=ibss
2. > netsh wlan connect <ssid>



Now **Ad-hoc** mode is available after the IP settings completion.

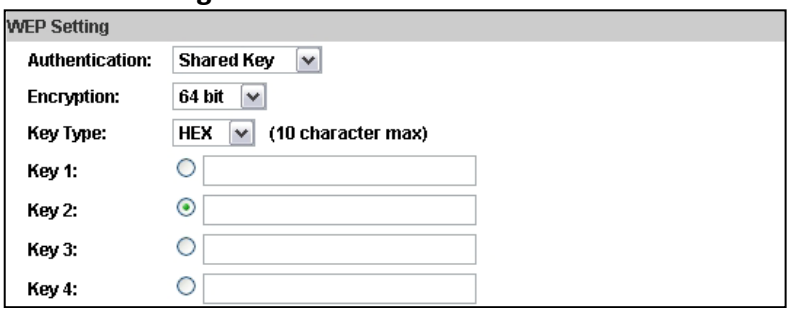


- SSID: The ID of the wireless network service.
- Domain: The wireless network standards are different in each region. Please select the wireless standard of you location. FCC is the American standard. ETSI is the European standard. JP is the Japanese standard.

- Channel: Assign a channel for the camera in order to avoid interference.

- Security: Select WEP, WPA-PSK, or WPA2-PSK according to your wireless router settings.

a. WEP Setting



Authentication: Open System or **Shared Key**, according to your wireless router.

Encryption: The option determines the length of the key password. In **HEX** type, 10 characters are allowed if you select 64 bit; 26 characters are allowed if you select 128bit; In **ASCII** type, 5 characters are allowed if you select 64 bit; 13 characters are allowed if you select 128bit.

Key Type: In **HEX** type, the key password can only be hexadecimal numbers. In ASCII type, the key password can be any letter and number. (Capital and lowercase letters are regarded as different.)

Key 1~4: Enter the key password according to your wireless router setting. The length and type must be consistent with the settings above.

b. WPA-PSK/ WPA2-PSK Setting

Encryption: TKIP or **AES**, according to your wireless router.

Pre-Shared Key: Key-in the key password according to your wireless router settings. Any letters and numbers are allowed. (Capital and lowercase letters are regarded as different.)

c. **WPS**

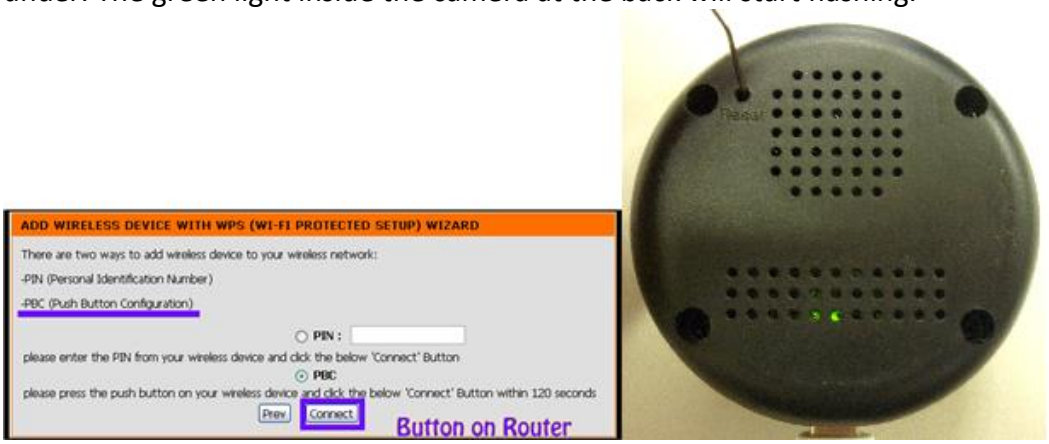
WPS (Wi-Fi Protected Setup) is an interface standard that allows users to easily establish wireless network, and be free from complicated security setting.

Please follow the steps for starting WPS. The menu and usage of every router may be different from the sample pictures.

Set up SSID and pre-shared key on your wireless router. WPS only supports WPA/WPA2 security. Do not select WEP security. Plug on the power adapter to the IP camera.

Once the wireless connection of the camera has been established with the PC, enter the wireless setting page, and check if the SSID of your wireless router is listed in **Status of Wireless Networks**. If yes, continue toward next step, no other wireless settings are needed.

Access your router, and press the **Connect** button of the **PBC (Push Button Configuration)** setting page on your router. Then use any hard & tiny little stick to reach the WPS button within the hole where there is a word “Reset” right under. The green light inside the camera at the back will start flashing.



When it finally stops flashing and lights constantly, it means the WPS connection is successful. Refresh the wireless setting page on the camera; you will see that the security settings have been already automatically completed.

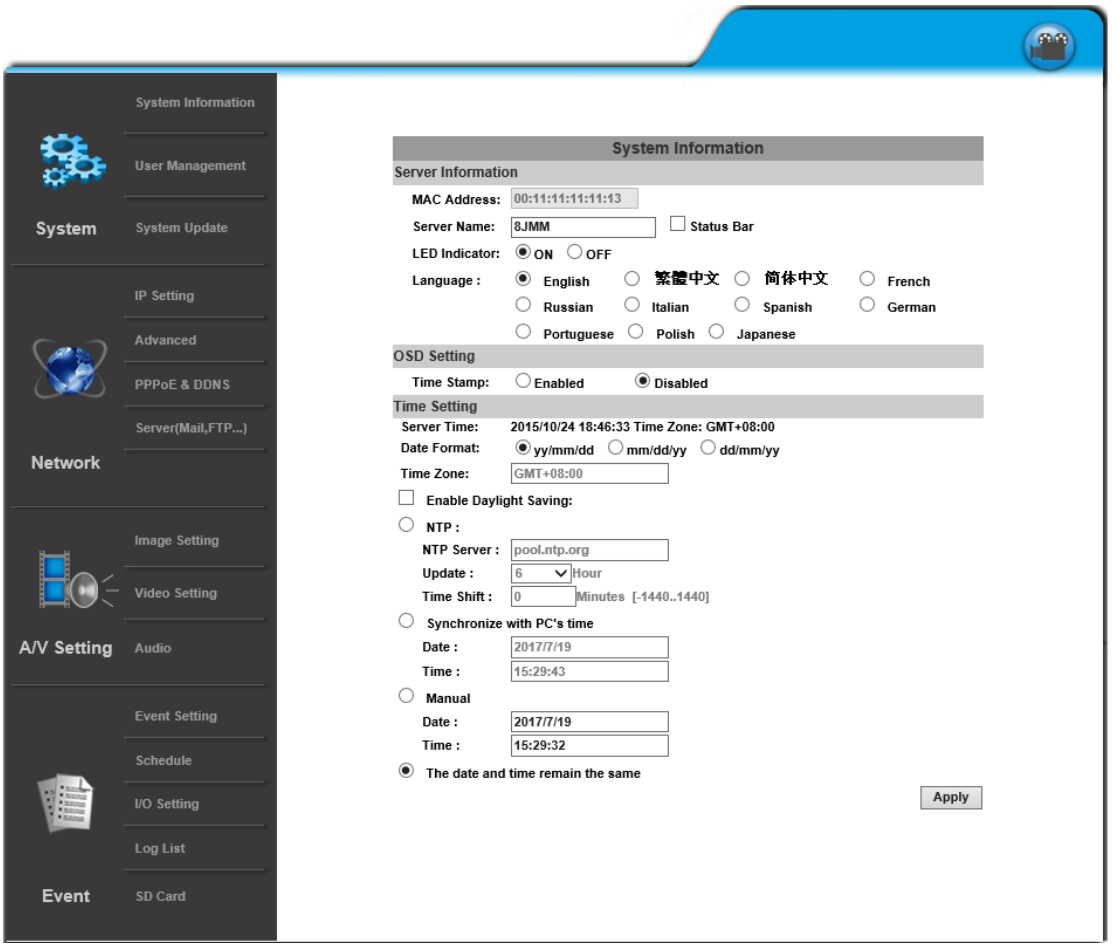
Meanwhile you might see a message on your router page to inform you the connection is OK.

If the light finally stops flashing but the lights are off, it means the WPS connection failed.

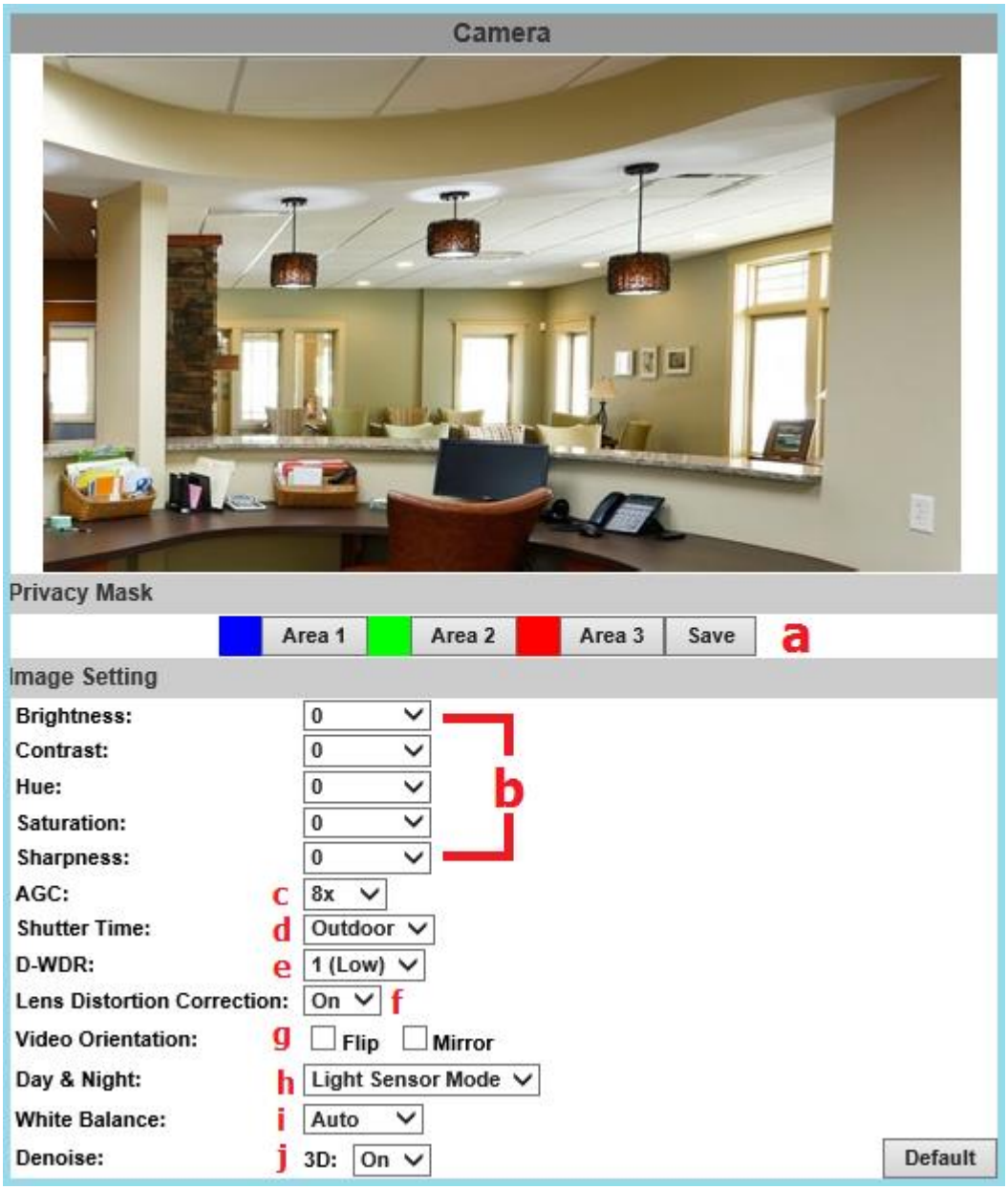
Check your wireless router setting, and make sure the SSID of the wireless router is found by the camera and listed in **Status of Wireless Networks**.

A / V Settings

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



1. Image Setting



Please refer to the details below for image settings:

a. For security and privacy purposes, there are three areas that can be set up for privacy. Click the **Area** button first, and then drag an area on the above image. Remember to save your settings. The masked area will not be shown on both live view and recording image.

b. **Brightness**, **Contrast**, **Hue**, **Saturation**, **Sharpness** can be adjusted here.

c. **AGC:** The sensitivity of the camera can be adjusted to the environmental lighting. By enabling this function the camera will get brighter images on low light, but the level of noise may also increase. The available values are: **16x, 24x, 32x, 48x.**

d. **Shutter Time:** Choose the location of your camera or a fixed shutter time. The shorter the shutter time is the less light the camera receives and the image becomes darker.

Note: When you select a number in **Shutter Time**, the shutter time will vary in a range and be controlled by camera automatically. The following table shows the shutter time options and corresponding range.

e. **D-WDR:** This function enables the camera to reduce the contrast in the view to avoid dark zones as a result of over and under exposure. If the Input resolution is 30fps, the default value is fixed on **ENABLED**. The available values are: **OFF, 1, 2, 3, 4, 5, 6, 7, 8**

If the D-WDR is enabled the values for bright, dark and contrast can be adjusted.

f. **Lens Distortion Correction:** Straight the curves in the borders of the image caused by the lens angles. The available values are: **OFF, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.**

g. **Video Orientation:** Flip or mirror the image.

h. **Day & Night:** The camera can detect the light level of the environment. If you choose **Light Sensor Mode**, the image will be turned black and white at night in order to keep a clear image. Under **Times Mode** the switch time of Color/Black and white will be according to the given time. You can also control it by choosing **Color** or **B/W**.

i. **White Balance:** There are 6 modes which can be assigned for different lighting sources:

- AUTO - Continuously adjusts camera color balance according to any change of color temperatures and lightings.
- Manual –Adjust color balance with Red Gain & Blue Gain values.

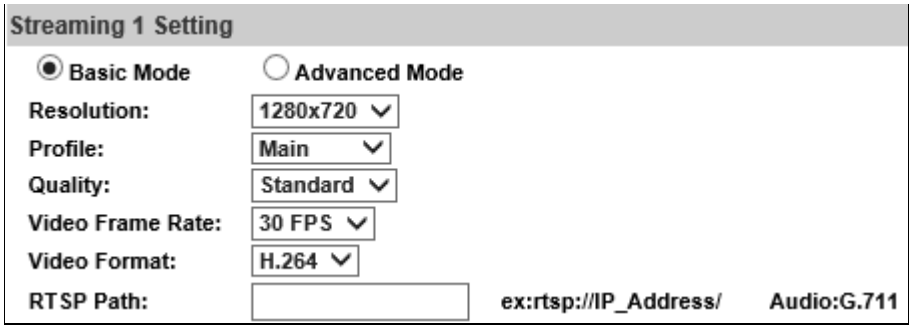
j. **Denoise:** This function is able to filter the noise and blur from the image and show a clearer view. You can set the values for 3D filters.

2. Video Setting

Video System: NTSC or PAL

The IP Camera provides three types of streaming settings:

a. Streaming 1 & 2 Basic Mode:



1. 1920x1080@30fps,1280x720@30fps, 640x480@30fps, 320x240@30fps

2. Profile: Chose between Main or Baseline

3. Quality: There are 5 levels. **Best/ High/ Standard/ Medium/ Low**

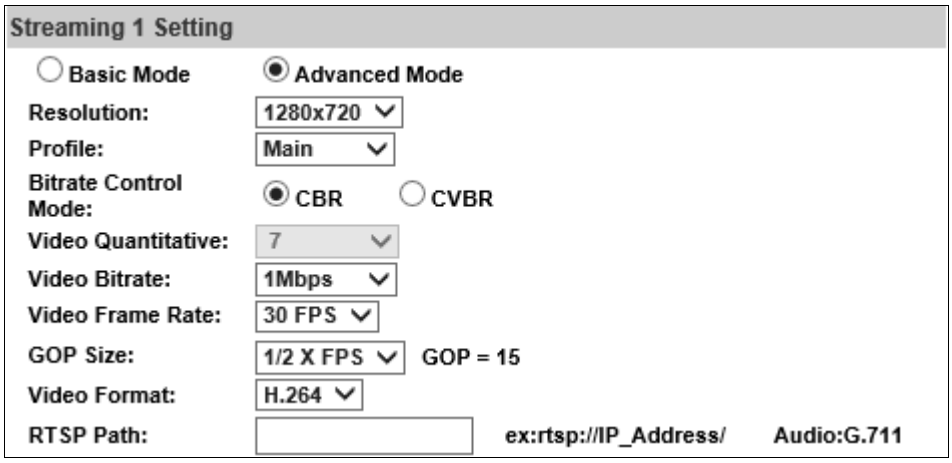
The higher the quality is, the bigger the file size becomes. Not good for Internet transmission.

4. Video Frame Rate **(5~30 FPS):** The video refreshing rate per second.

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

6. RTSP Path: RTSP output name

b. Streaming 1 & 2 Advanced Mode:



1. 1920x1080@30fps,1280x720@30fps, 640x480@30fps, 320x240@30fps

2. Profile: Chose between Main or Baseline

3. Bitrate Control Mode: There are CBR (Constant Bit Rate) and CVBR (Constrained Variable Bit Rate)

- **CBR**

Video Bitrate Limit: (32Kbps~8Mbps)
The higher the CBR is, the better the video quality is.

- **CVBR**

Video Quantitative: 1(Low) ~10(High)
The higher the compression rate, the lower the picture quality is; vice versa. Avoid image breaking up or lagging by setting the bandwidth limit for CVBR streaming.

4. Video Frame Rate **(5~30 FPS)**: The video refreshing rate per second.

5. GOP Size **(1, 1/2, 2) X FPS**: "Group of Pictures". The higher the GOP is, the better the quality is.

6. Video Format: **H.264** or **JPEG**

7. RTSP Path: RTSP output connecting path

c. Snapshot Setting:

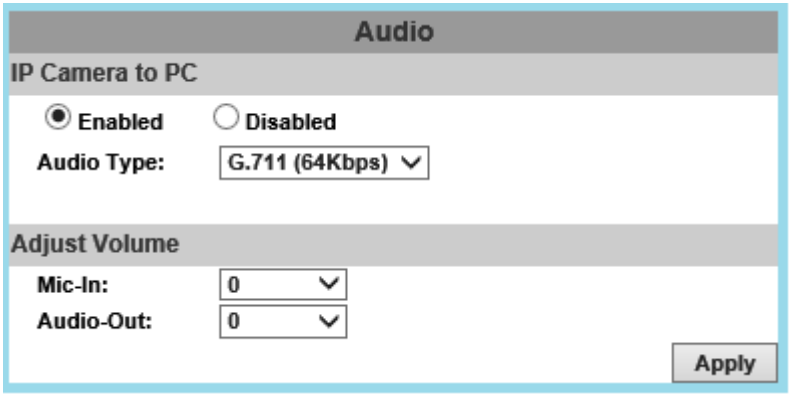
Select the snapshot image quality from 1(Low) ~10(High).

3. Audio

The IP Camera supports 2-way audio. The user can send audio from the IP Camera built-in microphone to the remote PC; the user can also send audio from remote PC to IP Camera's external speaker.

a. Audio from local PC to IP Camera: Click on the icon and mark "chatting" in the **Live View** browser page. Note that the audio will not be smooth when the SD card is being recorded.

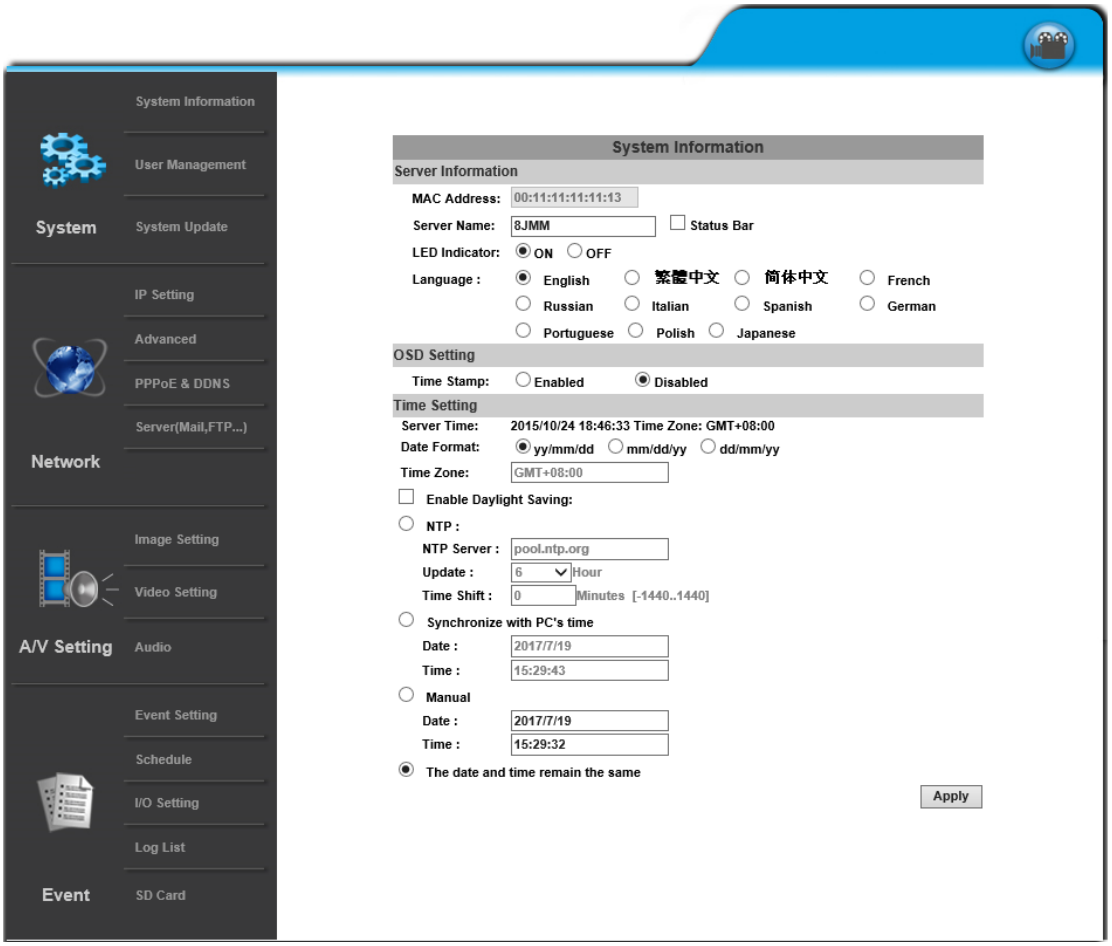
b. IP Camera to PC (Audio from IP camera built-in microphone to local PC)**:** Select **Enable** to start this function & you also can select the audio type.



c. Adjust Volume: When both **Chatting** (in live mode) and **Audio Out** are on, the built-in microphone may be automatically shut down to avoid echoing effects.

Event List

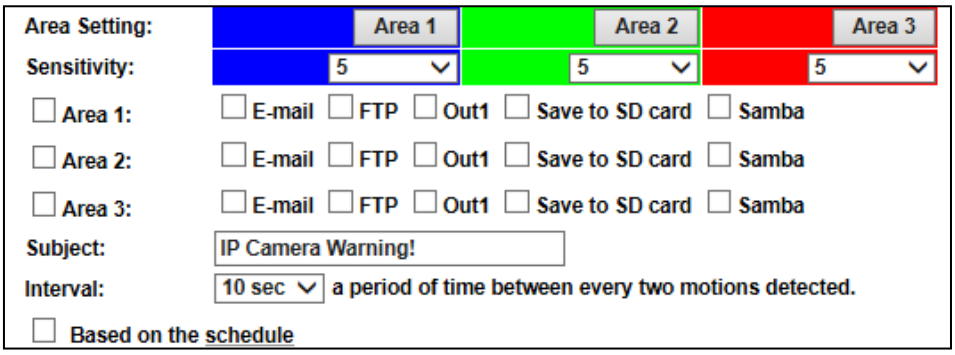
Click to get into the administration page. Click to go back to the live video page.



The IP Camera provides multiple event settings.

1. Event Setting

a. Motion Detection



To enable motion detection, tick **Area 1/2/3**. Click **Area 1/2/3** in **Area Setting**, and draw an area on the preview screen. When motion is detected in the area, the word **Motion!** will be displayed on the live screen. The camera will send video or snapshot to specific mail addresses, trigger the output device, or save video to FTP/ Micro SD card/ Samba.

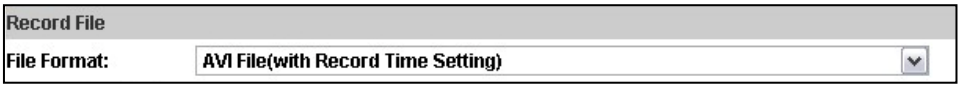
By selecting **save to SD card**, the video or snapshot will be saved to the Micro SD card. Also, by ticking **E-mail/ FTP/ Samba** on the **Log** option, the motion detection log will be sent to **E-mail/ FTP/ Samba** simultaneously.

- Subject: Type in the message you would receive when motion is detected. The default message is “IP Camera Warning!”.

- Interval: For example, when selecting **10 sec**, once the motion is detected and the action is triggered, it cannot be triggered again within 10 seconds.

- Based on the schedule: When the option box is ticked, only during the selected schedule time the motion detection is enabled.

b. Record File



When an event occurs, the IP camera will record a video clip or take snapshot, and then send to mail/ FTP/ Samba. Select the file format to be saved.

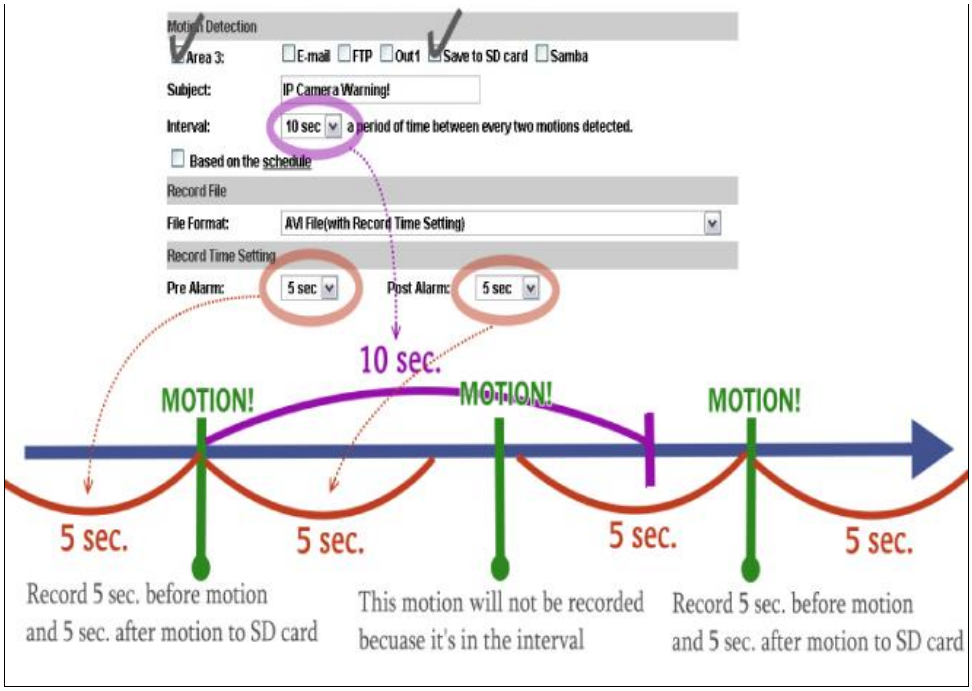
- **AVI File (with Record Time Setting)**: Save AVI video file. The video length is according to the value set in Record Time Setting.

- **JPEG File (Single File with Interval Setting)**: Save single JPEG picture file when the event occurs.

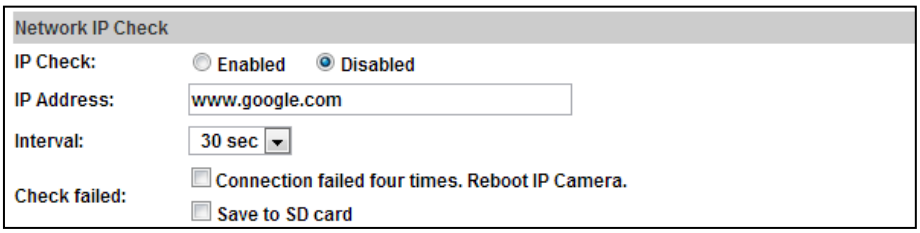
- **JPEG Files (with Record Time Setting)**: Only when selecting "JPEG" in streaming 1 video format of Video Setting, this option can be enabled. Select this option to save several JPEG picture files. The successive picture files cover a period of time according to the value set in Record Time Setting.

c. Record Time Setting

When an event occurs, the IP camera can record a video clip or take a snapshot, and then send it via mail/ FTP/ Samba. Select the video recording length before and after the event is detected.



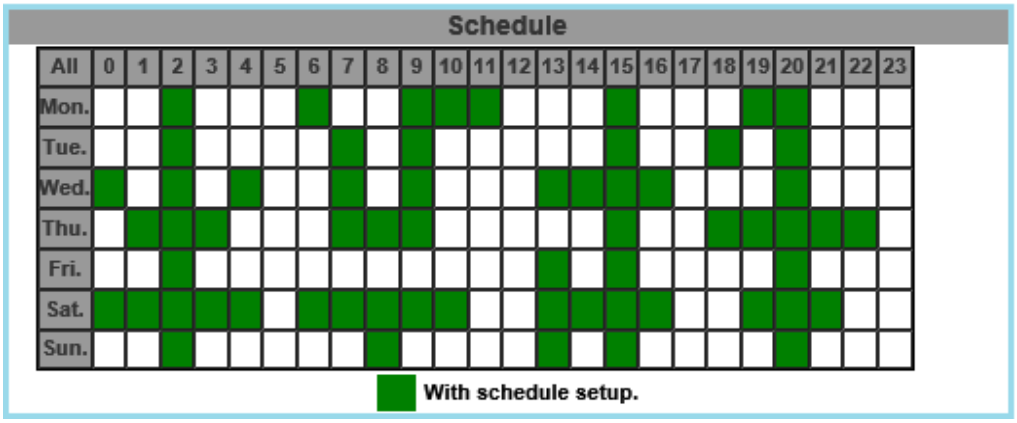
d. Network IP Check:



After enabling IP Check, the IP camera can check if the network server is connecting. If the IP camera checking failed, the image will be recorded to the SD card.

2. Schedule

a. Schedule: Tick the grids on the calendar to manage the time of your schedule to automatically record video files, or take snapshots.

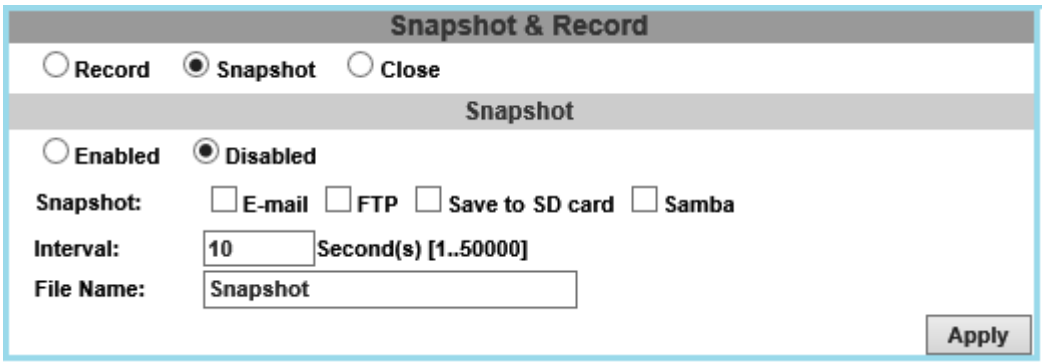


b. Snapshot & Record:

- **Record:** After completing the **Schedule**, the camera data will be recorded according to the schedule made from the calendar. Be aware that SD cards may fail in time for being recorded too long.

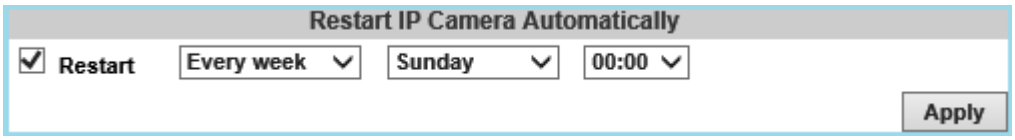
You may set up how much you would like the SD card memory to be used in order to estimate when it is a right time to swap for a new one.

- **Snapshot:** After enabling the snapshot function; the user can select the storage position of the snapshot file, the interval time of the snapshot and the reserved file name of the snapshot.

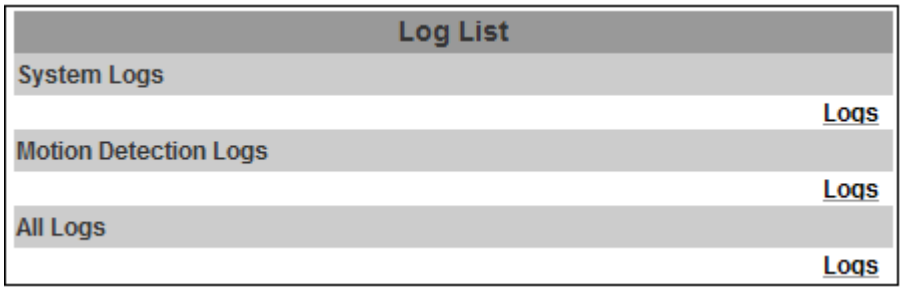


Interval: Users can set the interval between two snapshots.
File Name: Enter the file name of your snapshot file.

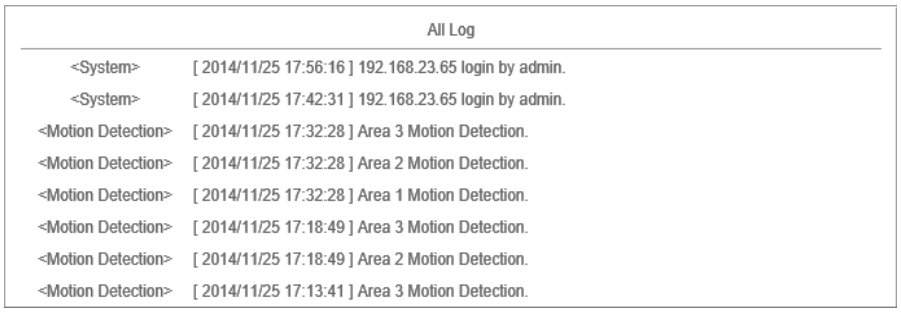
- Restart IP Camera Automatically: Set up the time for IP camera to restart automatically after ticking **Restart** to enable access.



3. Log List



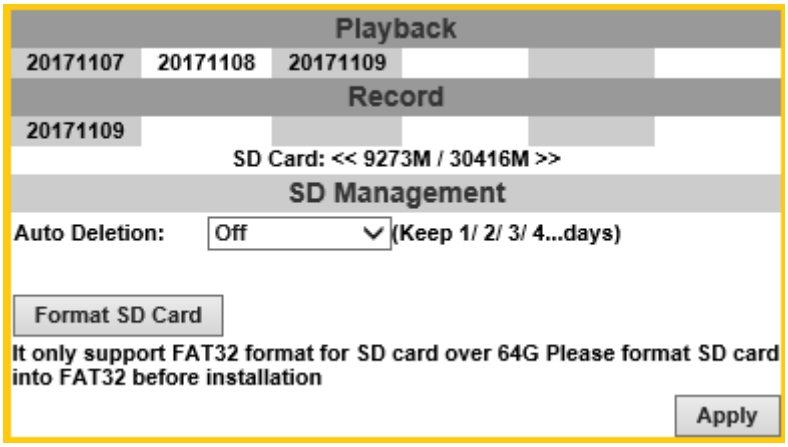
Sort by System Logs and Motion Detection Logs. In addition, System Logs won't lose data due to power failure.



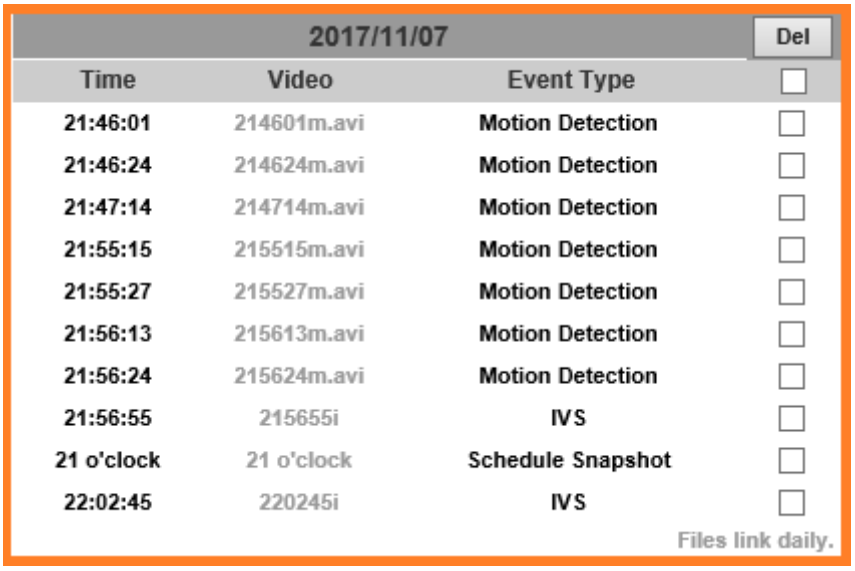
4. SD Card

Please Insert the Micro SD card before use it. Make sure to push the Micro SD card into the slot completely.

a. Playback



Click the date under the **Playback** title and a list of files will pop up.
For example, if the date **2017/11/07** is clicked, all the events happened within that time frame will then appear in a list like the one below.

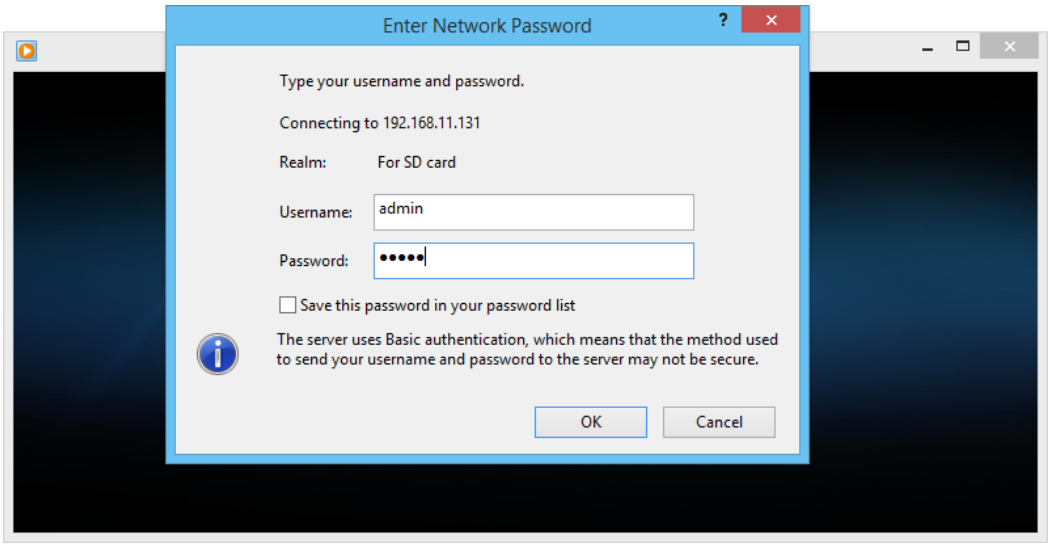


The enlisted files under **Video** category are files representing events.

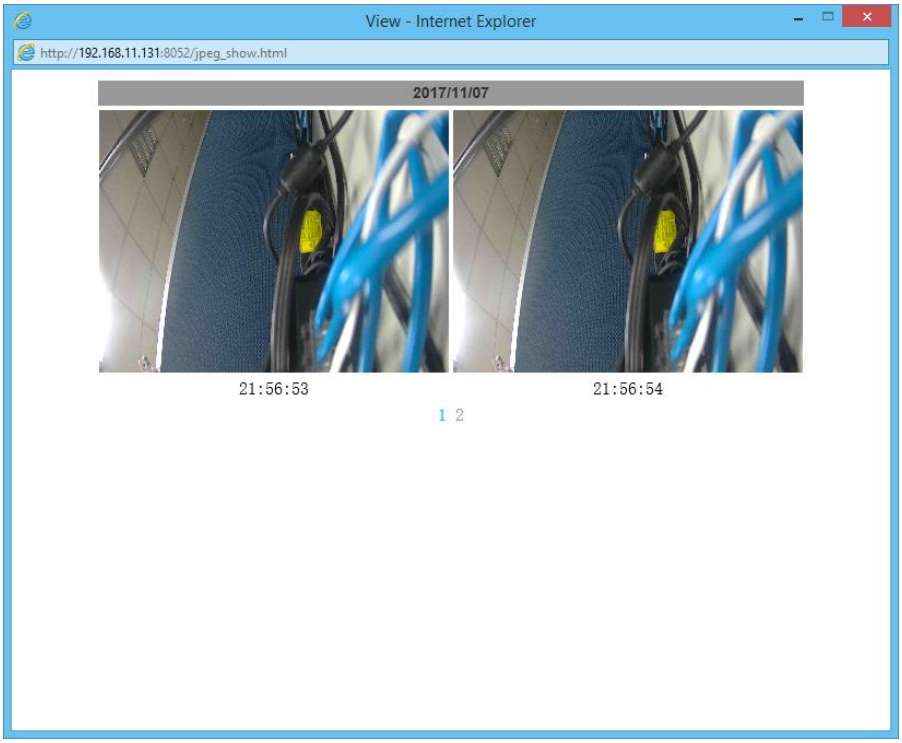
There are 3 types of file formats, and each is different for its own **Event Type**. Notice how the file name formations under the **Video** category represent the time when a file is created. For instance, the file name "**214601m.avi**" means the video is recorded at **21:46:01** today, **m** means **Motion Detection**, and **avi** represents the file format.

Click on the file name to open the file.

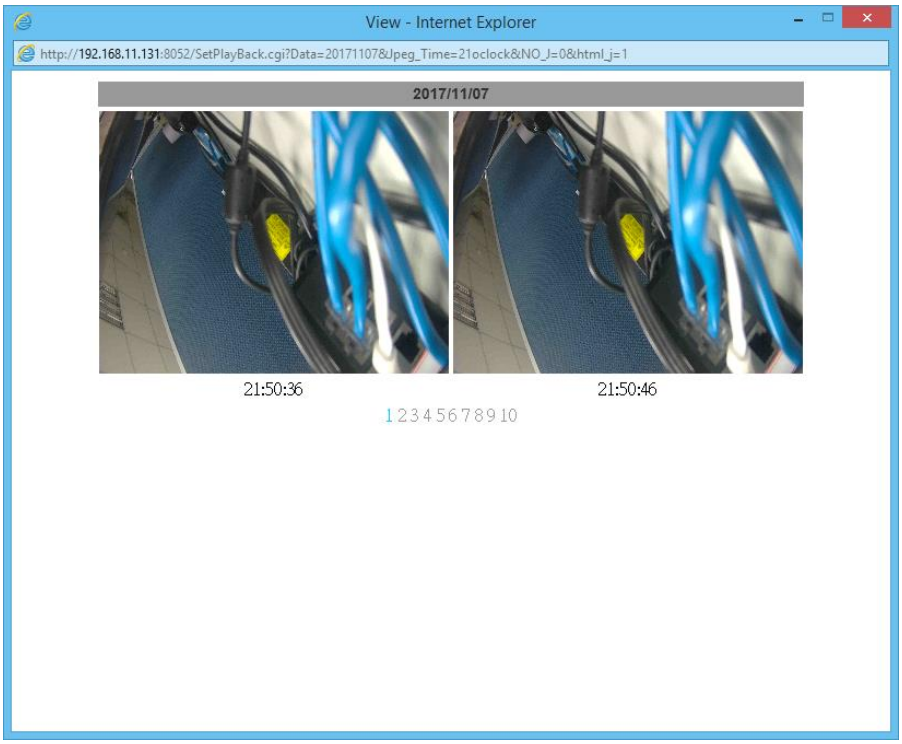
For **avi** files, you need Microsoft Media Player which is supposedly built-in in your PC. The default Username & Password for playing the video file are both **admin**.



Clicking on an **IVS** file (such as **215655i**) will bring out a pop-up window suggesting an **IVS** event captured as snapshots as the one below:



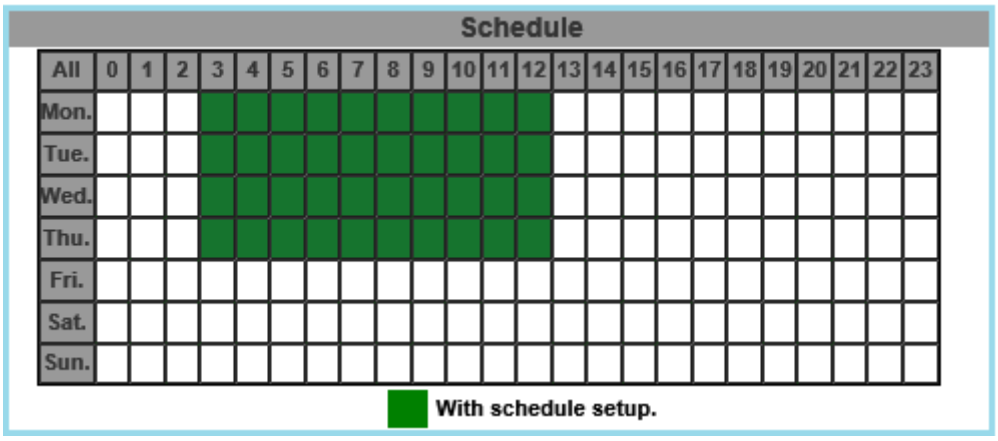
Clicking on any title that is labeled with "**time unit**" (such as **21 o'clock**) at the end will bring out a pop-up window indicating the snapshot taken as scheduled in **Schedule** mode and enabled in **Snapshot** mode.



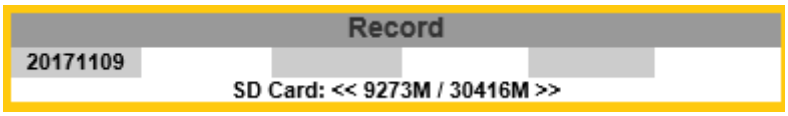
Click the Del icon to delete any file bymarking on the checkbox under the **Del** category with a mouse click.

b. Record

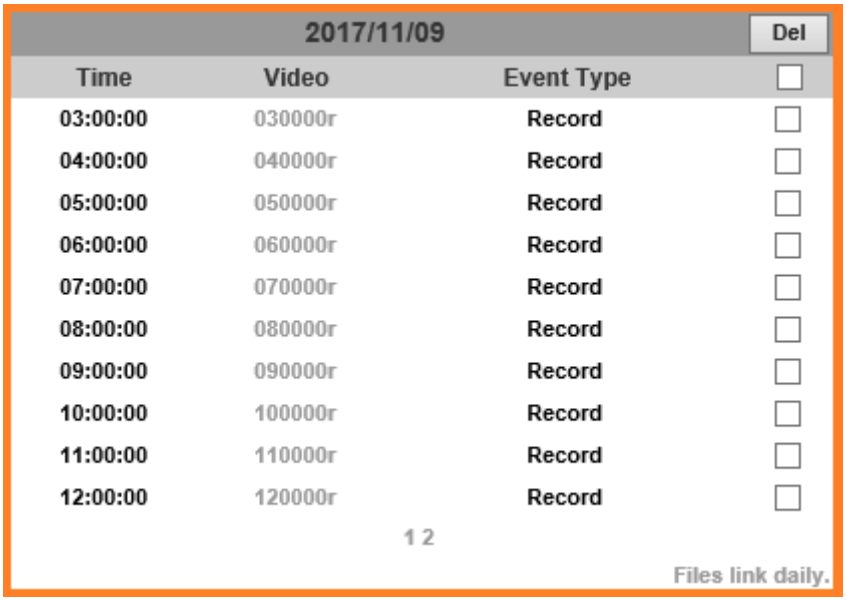
The recording mode is enabled after **Record** is set in **Schedule** mode.
Take the schedule calendar below for example, the grids coloured in green between 3~12 are scheduled to start recording from 3 o'clock to 12 o'clock from Monday to Thursday.



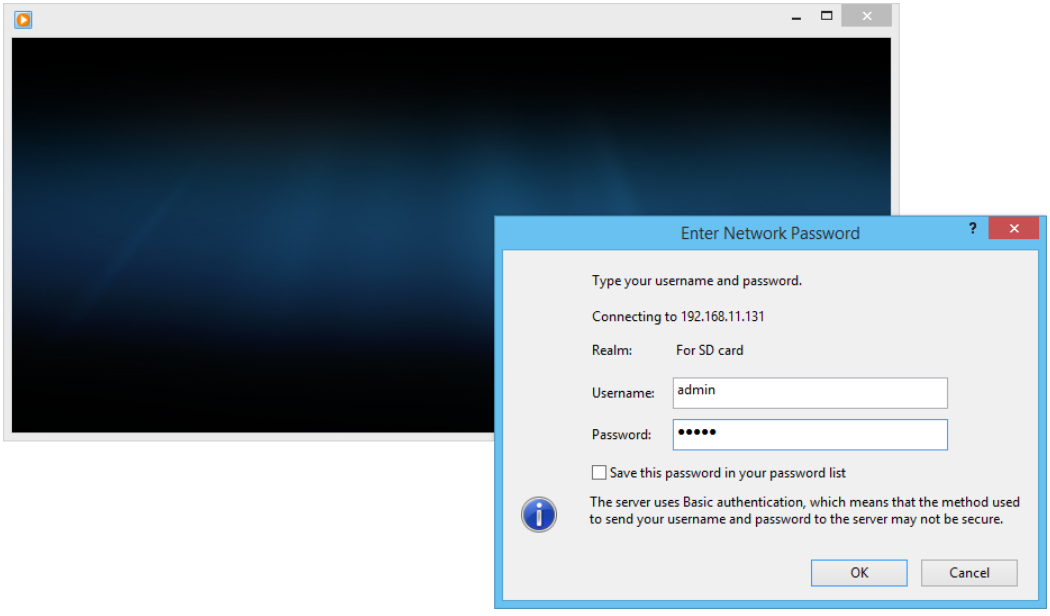
Once the recording mode is on, the video data recorded will be found and labelled as **2017/11/09**.



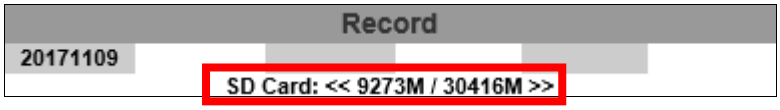
Click on **2017/11/09** to enter the next page where all files recorded on that date are enlisted.



Click on any video title to open Microsoft Media Player (supposedly already built-in in your PC) and play the video file. Key-in **admin** for both Username & Password to get permission to view the video.



The number at the bottom indicates the distributive law of the current SD Card memory which is divided and assigned to different types of recording purposes. The left side shows how much memory is still available, and the right side shows how much the total memory is.



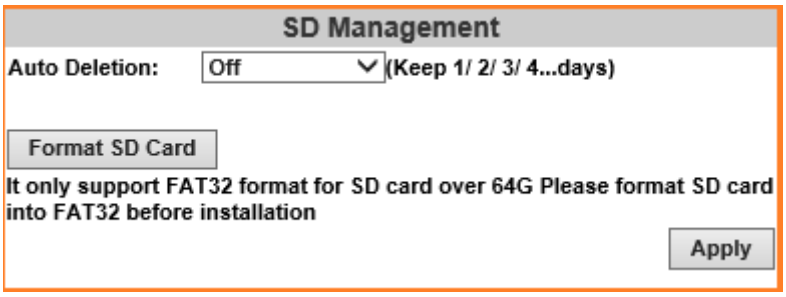
If the memory of the SD card is **over 128G**, **70%** of the memory will be used for scheduled recording, and **30%** will be used for event recording.

If the memory of the SD card is **below 128G**, **50%** of the memory will be used for scheduled recording, and **50%** will be used for event recording.

Click the

icon to delete any file by marking on the checkbox under the Del category with a mouse click.

c. SD Management



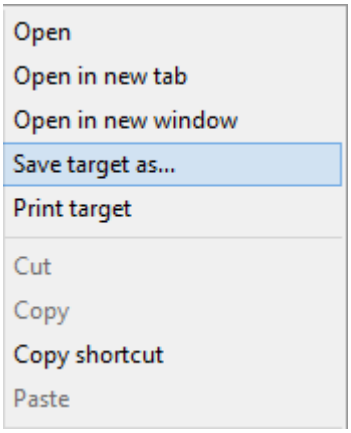
c1. <u>Auto Deletion</u>: Choosing “The 1st day” means the recoding file will be kept for one day. Example: It is five o’clock now. Choose “The 1st day”. The files will be kept from five o’clock yesterday to five o’clock today. The oldest file will be deleted if the Micro SD card is full.

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

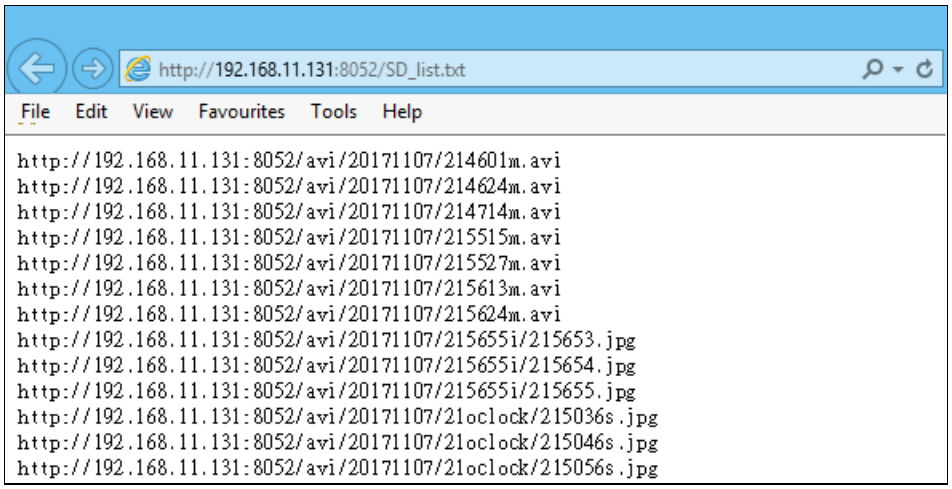
c2. <u>Format SD Card</u>: Click the icon to process the SD Card formatting into FAT32 format. Be cautious that since it only supports FAT format for SD Card over 64G, please format SD Card into FAT32 before installation.

d. SD Card Files

d1. <u>Downloading the Files</u>: For both **Playback** and **Record** mode, after entering a date data to see the **Video** and **Event Type,** right-click on a title under the **Video** list, and choose "**Save Target As…**" from its pop-up window to start downloading the file.



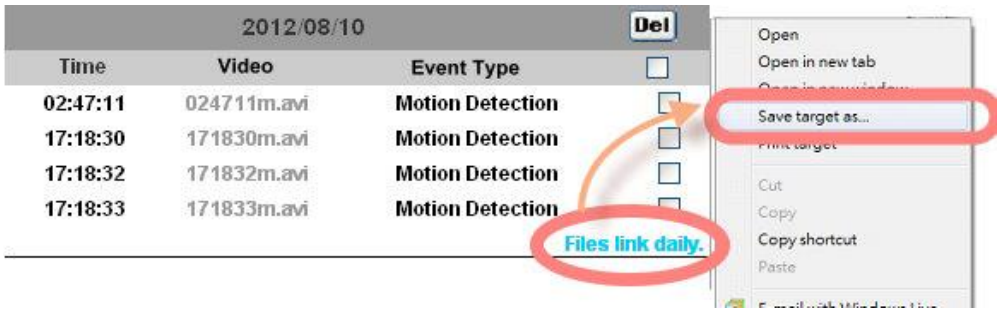
d2. <u>Linking the Files</u>: For both **Playback** and **Record** mode, find the **Files link daily.** link at the right corner of the bottom after entering a date data to see the **Video** and **Event Type**. Click on the link, a window will pop up.



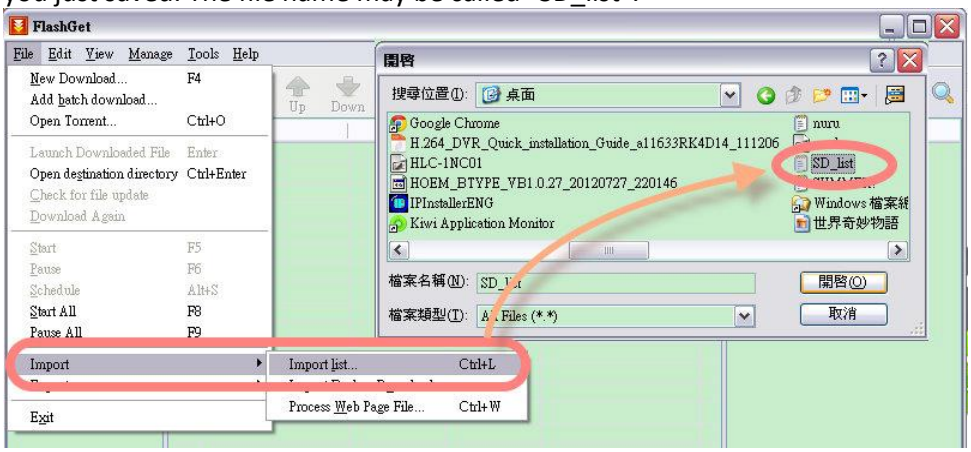
You may copy any of the protocol provided in the window and paste it on a web browser as a URL address to look at each file.

d3. <u>Copy to PC</u>: You can insert the Micro SD card to the PC and read the files directly, or use FlashGet instead to download the files from the IP camera. (In this way you do not need to pull out the Micro SD card from the camera.) To use FlashGet for downloading image and video data from the Micro SD card, please follow the steps:

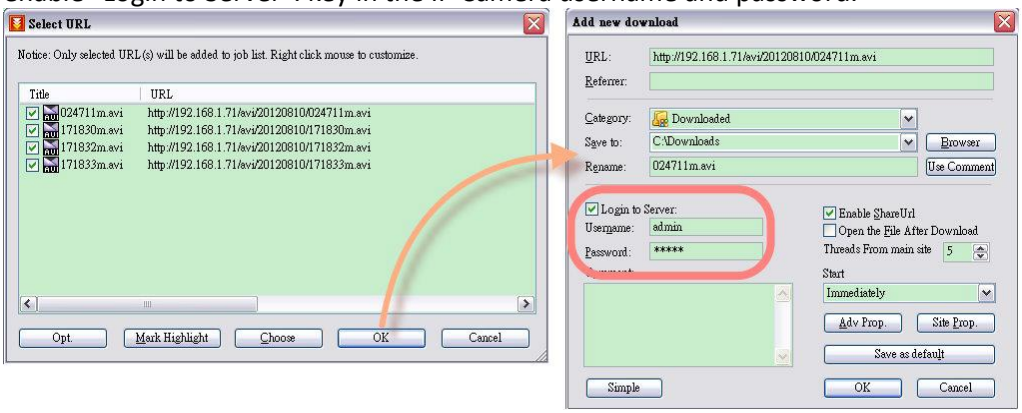
i. Enter data list and right-click "**Files link daily.**", select "save target as…" then save the link list to PC.



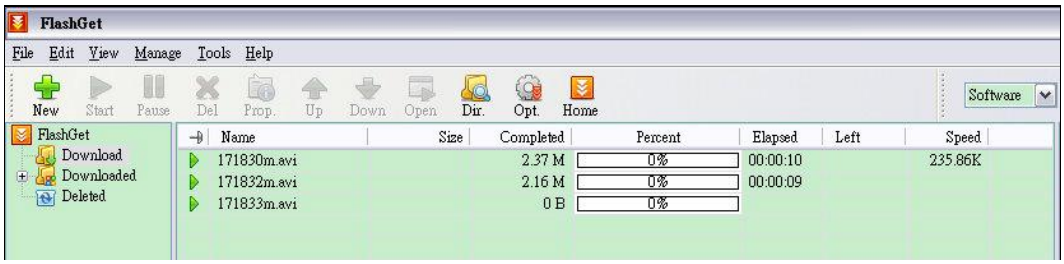
ii. Open FlashGet, select "File"→ "Import" → "Import list", and find the link list file you just saved. The file name may be called “SD_list”.



iii. FlashGet will show you the link list, and you can tick the files you want to copy to your PC. Give the directory path in the new download window, and remember to enable "Login to Server": key in the IP Camera username and password.



iv. Click OK to start download.



- FlashGet is free software that can be downloaded from FlashGet official website. The example above is based on FlashGet ver.1.9.6.

Factory Default

If you forget your password, please follow the steps to set back the IP Camera to its default value.

- Keep the power through while it is already switched on.
- Use any hard & tiny little stick to reach into the hole where there is a word “Reset” right under. Press and hold the button within as demonstrated in the picture below.

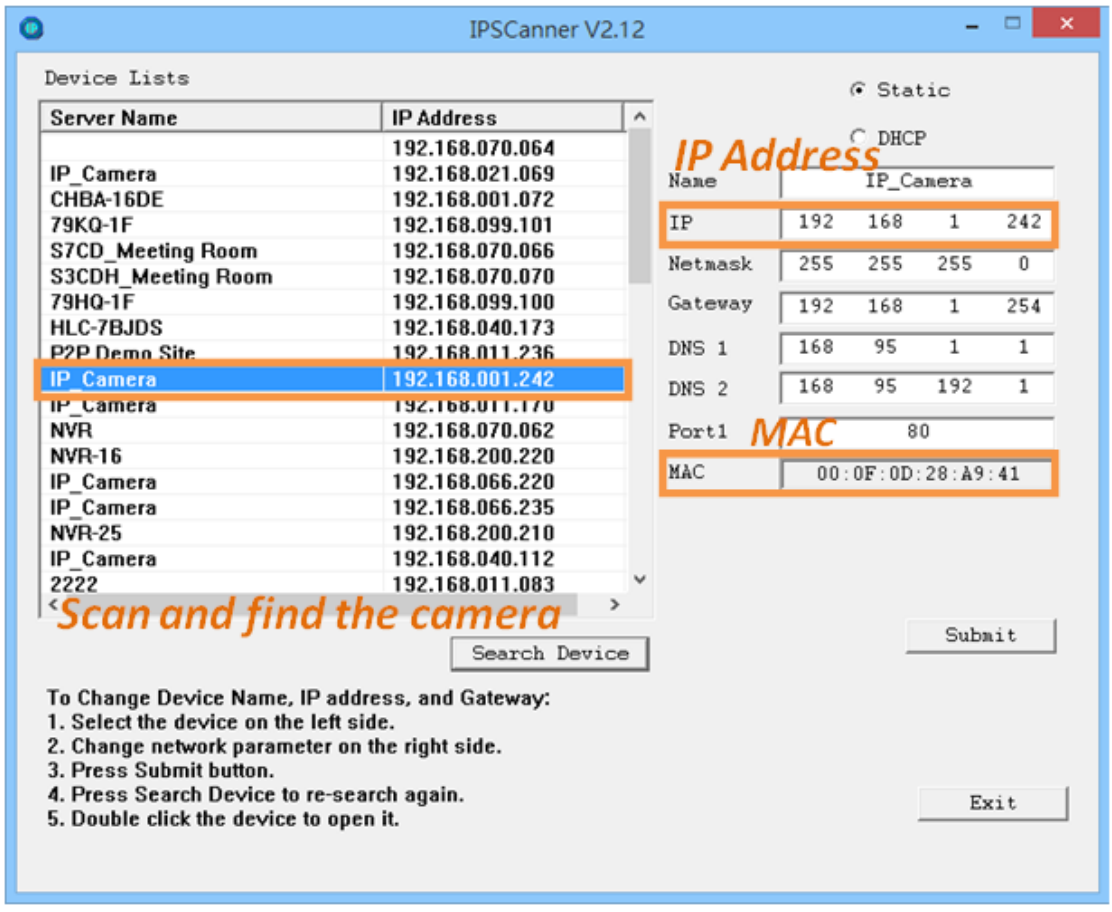
- It will take around 5 seconds to boot the camera.
- Release the button when the camera finishes booting.
- Re-login the camera using the default IP (**http://192.168.1.200**), and user name: **admin**, password: **admin**.

Universal Password

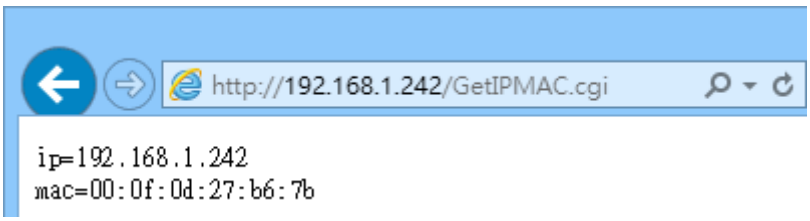
If you forgot the password of your IP camera, you can reset the camera to factory default, or follow the procedure below to generate a universal password.

Note: Universal password will be valid only when you enable the function in **User Management.**

1. First, you need to know the IP address and MAC address of your IP camera. You can use **IP Scanner** to scan the LAN, and see the IP address and MAC address on the side column.

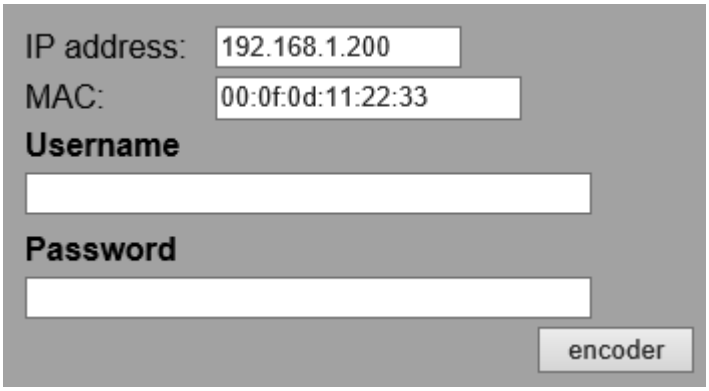


Or, if you already know the IP address of camera: Open the web browser, key in **http:// (IP address) /GetIPMAC.cgi** and press enter. The IP address and MAC address will be displayed on browser.



2. Locate the .html file named **Universal Password_V1.1** in the Universal Password from the Applications folders in CD-ROM. Open it with a web browser.

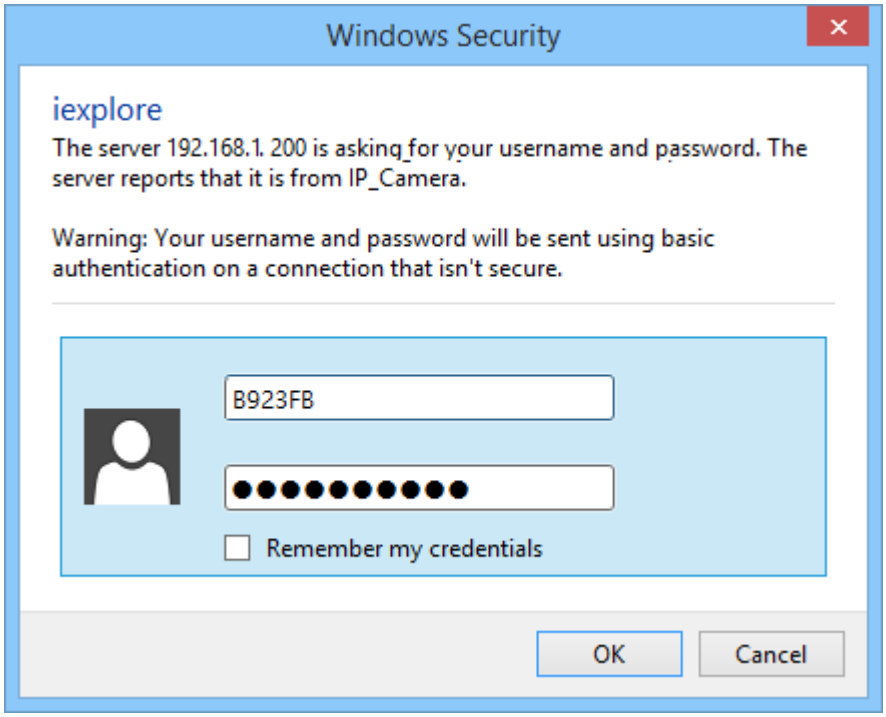
3. The camera IP address and MAC address will be displayed automatically in both **IP Address** and **MAC** columns.



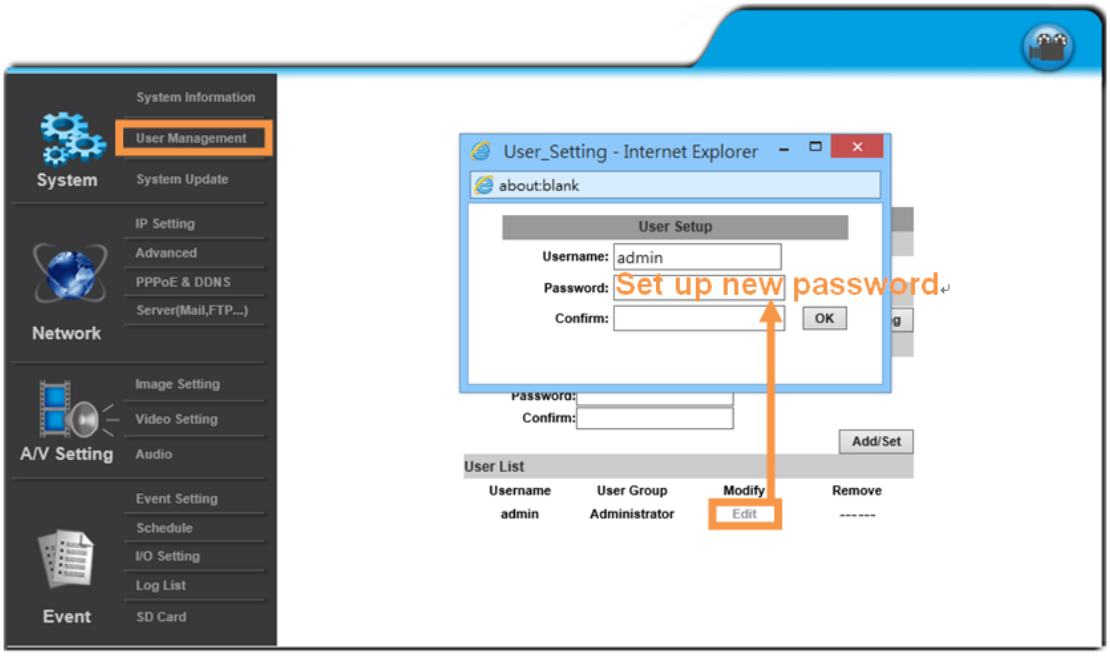
After clicking on **encoder**, a set of username and password will appear.

The universal username and password are generated from the IP address and MAC address you key-in, so if you change the camera IP address the universal password changes, too.

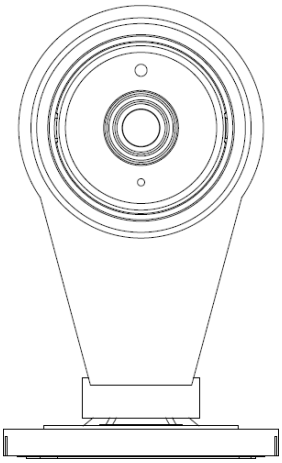
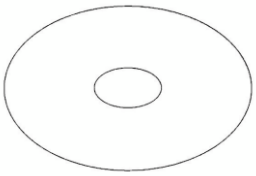
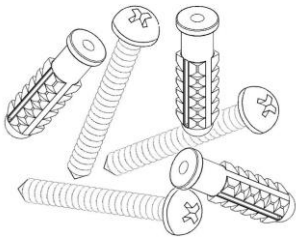
4. Take the generated username and password. Use them to log into the camera.



5. Now you can login as administrator. Turn to **User Management** page. The use of universal password does not affect the previous user setting, so the administrator account password does not change until you edit it. Please click **Edit** to give a new administrator password.


System Information
User Management
System Update
System
IP Setting
Advanced
PPPoE & DDNS
Server(Mail,FTP...)
Network
Image Setting
Video Setting
Audio
A/V Setting
Event Setting
Schedule
I/O Setting
Log List
SD Card
Event
User_Setting - Internet Explorer
about:blank
User Setup
Username: admin
Password:
Confirm:
OK
Set up new password
Password:
Confirm:
Add/Set
User List
Username
User Group
Modify
Remove
admin
Administrator
Edit

Package Contents

IP Camera		
		
Quick Installation Guide	CD	Screw Package
		

- The CD includes user manual and software tools

Micro SD Card Compatibility (Optional)

The following are the recommended Micro SD Cards:

Transcend	SDHC class4 16GB
	SD class4 16GB
	SDHC class4 32GB
	SD class4 32GB
	SD class6 4GB
	SDHC class6 4GB
	SD class6 8GB
	SDHC class6 8GB
	SD class6 16GB
	SDHC class6 16GB
	SDHC class10 4GB
	SDHC class10 8GB
	SDHC class10 16GB
	SDHC class 10 Max. 64GB
SanDisk	SDHC class4 8GB
	SDHC class4 16GB
	SDHC class4 32GB
	SDHC class10 Max. 128GB