User Manual

H.264+ 2 Megapixel Thermal IP Camera

V1.0_20200827

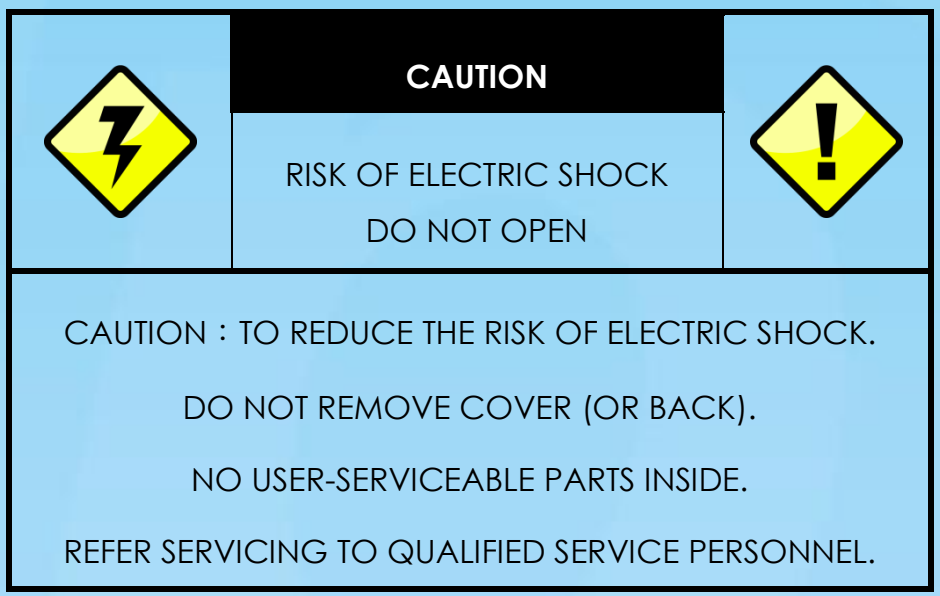
ip Solutions

WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.

DO NOT INSERT ANY METALLIC OBJECT THROUGH VENTILATION GRILLS.

CAUTION



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PREFACE

This is a **Thermal IP Camera** with a built-in web server. The user can view real-time video via IE browser. It supports **H.264+**, **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.

PRODUCT SPECIFICATIONS

Main Features:

- 2 Megapixel AI Thermal IP Camera
- Face/Mask Detection
- Temperature tag
- Support Access Control System
- High temperature/No mask alarm
- Recommended distance:70~100cm
- Temperature Accuracy: ±0.3℃
- Recommended ambient temperature:15°C~35°C
- Working Temperature:-20°C ~50°C / -4°F~158°F
- Wi-Fi/Mic/Speaker& Buzzer Built-in
- Support Micro SD Card
- Support iOS/Android APP

Thermal Hardware	
Detector Type	Infrared thermal sensor (Japan Made)
Effective pixels	80x32
Pixel size	25um
NETD	100mk
Focal length	Fixed Lens 3.5mm
Spectral range	8~14um

FOV	29 °(H), 78°(V)
Focus mode	Fixed focus
Recognition distance	70~100cm
Detection Temperature range	15°C~35°C
Temperature Accuracy	±0.3°C
IP CAM Hardware	
CPU	Multimedia SoC
RAM	1GB
Flash	256MB
Image Sensor	Sony Starvis sensor Diode Infra-Red sensor
Sensitivity	Color : 0.005 Lux (AGC ON) B / W : 0.001 Lux (AGC ON)
Lens Type	Fixed Lens 3.6mm @ F2.0
View Angle	RGB : 87°(H), 46°(V)
ICR	IR cut Filter Mechanism
GPIO	DI / DO x1 Wiegand x1 RS-485 x1
Video Output	HDMI x1
Audio Format	G.711(64K) and G.726(32K,24K) audio compression
Audio	Input : Mic built-in Output : 3.5mm phone jack Speaker built-in Support 2-way audio
Power over Ethernet	Yes
Power Consumption	DC 12V Max: 4.0 W PoE Max: 5.4 W
Operating Temperature	-20°C ~ 50°C
Wide Dynamic Range	120dB
S/N Ratio	65dB
Dimensions	65x65x140(mm)
Weight	230g
Network	

Ethernet	10/ 100 Base-T
Network Protocol	IPv6, IPv4, HTTP, HTTPS, SNMP, SSL, TLS , DNS , ICMP, IGMP, ARP, SNTP, QoS/DSCP, CoS, IEEE 802.1X, RTSP/RTP/RTCP, TCP/IP, UDP, SMTP, FTP, PPPoE, DHCP, DDNS, NTP, UPnP, SAMBA, Bonjour, Google drive, Drop box, Onvif profile S
Wireless	
Wireless	802.11b/g/n
WPS	Yes
Security	WEP,WPA-PSK,WPA2-PSK
Power Consumption	DC 12V Max: TBD W
System	
Video Resolution[16:9]	1920x1080@30fps, 1280x720@30fps, 640x480@30fps, 320x240@30fps
Video Adjust	Brightness, Contrast, Hue, Saturation, Sharpness, AGC, Shutter Time, Sense-up, True-WDR, Lens Distortion Correction, Flip, Mirror, Day&Night adjustable, Red Gain and Blue Gain, Denoise
Features	ROI, Smart Stream, Advanced Smart Stream, Motion Detection, Privacy Mask, Tampering Detection, Corridor Mode, Push Video , P2P(Optional)
Triple Streaming	Yes(4)
Image Snapshot	Yes
Full Screen Monitoring	Yes
Privacy Mask	Yes, 3 different areas
Compression Format	H.264+/ H.264/ M-JPEG
Video Bitrates Adjust	CBR, VBR
Motion Detection	Yes, 3 different areas
Intelligence Functions	Face/Mask Detection, Temperature tag
Triggered Action	Mail, FTP, Save to SD card, DO, SAMBA , Dropbox , Google Drive
Security	Password protection, IP address filtering, HTTPS encrypted data transmission, 802.1X port-based authentication for network protection, QoS/DSCP
Firmware Upgrade	HTTP mode, can be upgraded remotely
Simultaneous Connection	Up to 10
Micro SD Card Management	
Recording Trigger	Motion Detection, IP check, Network break down

	(wire only), Schedule, DI
Video Format	AVI, JPEG
Video Playback	Yes
Delete Files	Yes
Remote Browsing Requirement	
OS	Windows 10 , Microsoft IE 11.0 or above
Hardware Suggested	Intel Dual Core 2.8G, RAM: 4GB, Graphic card: 128MB
Mobile Support	iOS 8 or above, Android 4.4.2 or above.

***SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTIFICATION.**

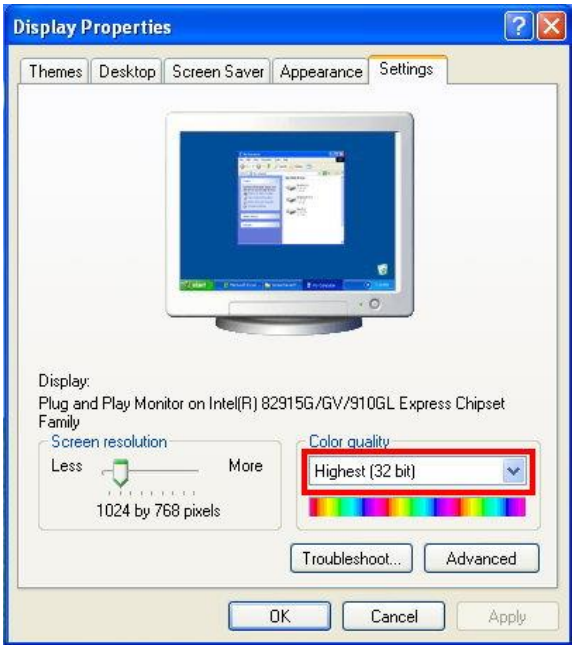
PRODUCT INSTALLATION

Monitor Settings

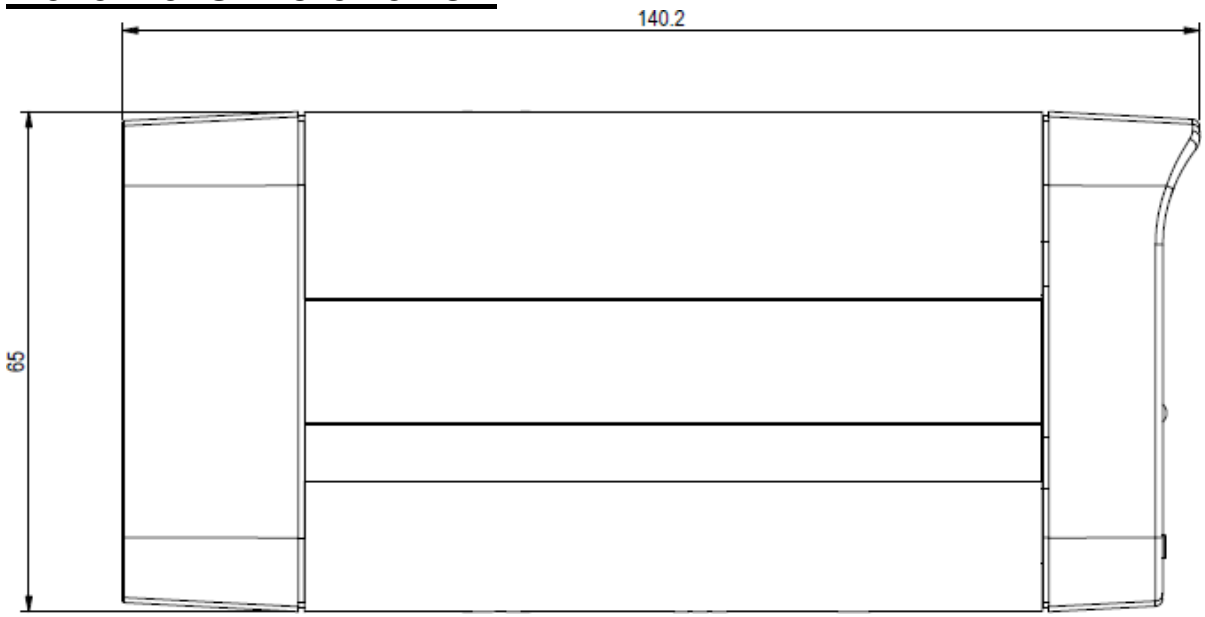
Caution: This setting only applies to Windows 7 system users.

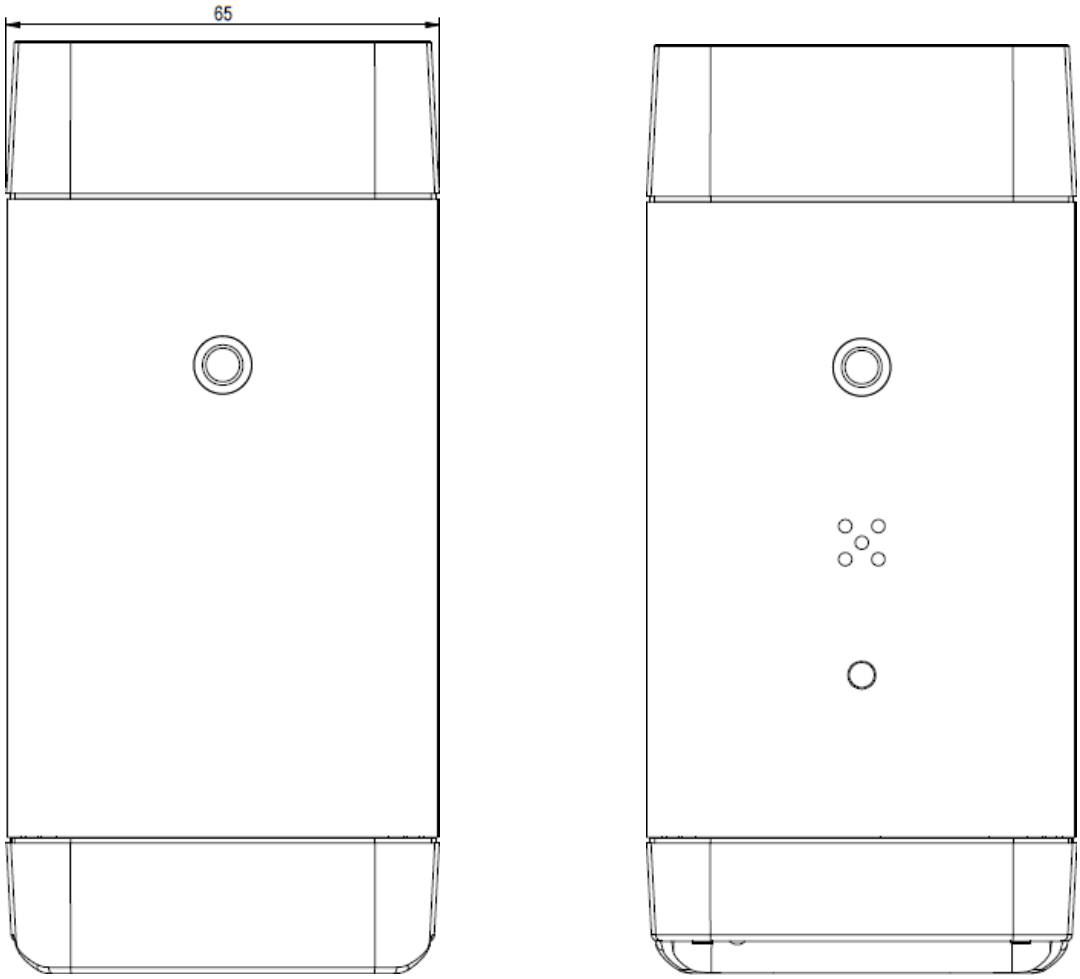
a. Right-Click on the desktop. Select **Properties**

b. Change color quality to highest (**32bit**).



Hardware Installation

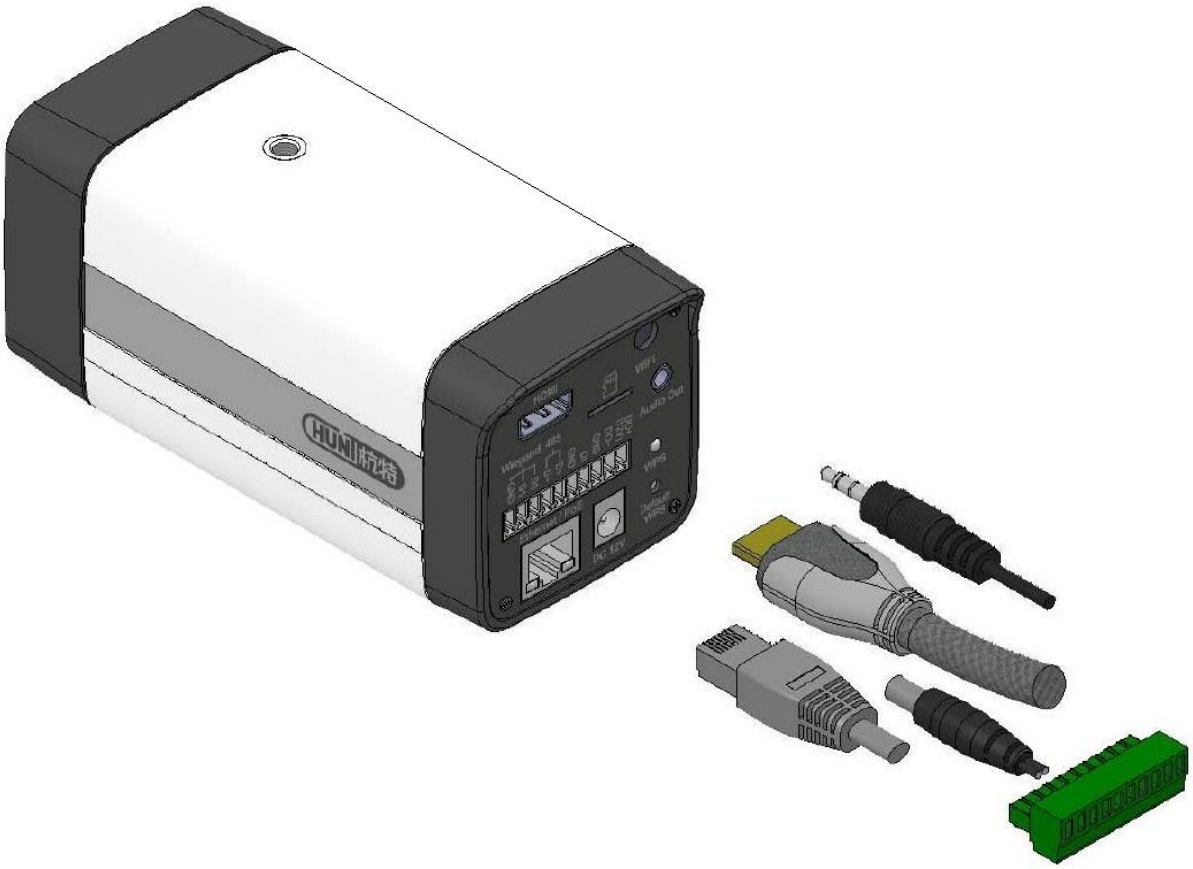




Connector Instruction

Set up configurations based on the network environment.

Label	OPERATION
HDMI	HDMI video output
WiFi	WiFi
	Micro SD Card Slot (128G Micro SD Card inside already)
Audio output	Insert with phone jack supported speaker
Wiegand	Wiegand Connection
RS-485	RS-485 Connection
1 DI / 1 DO	4 alarm in / 1Relay out
WPS	Led indicator
Ethernet/PoE	RJ-45 connector for Ethernet/PoE
DC 12V	Connect to power adapter
Default WPS	Reach & press the button within to revert WPS to default



Connect the power adaptor to the DC 12V terminal first.

Connect the Ethernet/PoE terminal with the RJ-45 Internet cable, and adjust the settings according to the PC network environment by going through the **IP Assignment** and **Network** settings.

The I/O terminal must be plugged with the green outlet piece of the connection terminal. For I/O setting, please refer to **I/O Configuration** chapter for more.

Connect the audio cable to the headphone jack labelled as Audio output, and open the **Live Video** browser to test the audio quality. Then enter the **Audio Setting** for any adjustment.

Finally, plug the HDMI cable into the HDMI port, and enter the **HDMI out** menu to adjust the settings for completing the wiring configuration.

Mount Camera on the Tripod

Unpack the tripod and take out the tripod from the backpack.


After releasing the locks around each leg, the tripod feet can be pulled out from within. You may as well extend the tripod to its ideal height.


Buckle the locks of each leg tube to keep the current height of the tripod.


Adjust the distance between the center column and the tripod for your preference, and then turn the center lock clockwise to set the position.



Move the handle up and down to adjust the pan-tilt to the appropritate angle for mounting the camera.



Mount the camera bottm with its socket on the quick-release plate with its bolt, and adjust the observation angle with reference to the bubble level.


After extending/shortening the center column, fasten the rotating shaft clockwise as the picture below. Then pull down the handle to fasten the center column & finish mounting the camera unto the tripod.



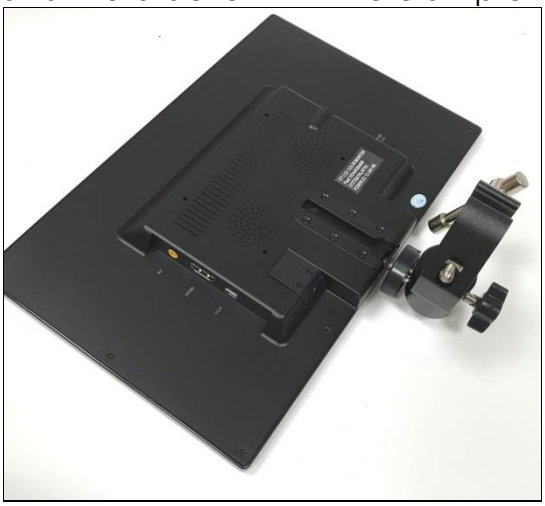
Monitor Screen Installation

Attach bracket unto the clamp by joining the thread of each bolt and bore.



Twist the handle of the clamp to have its jaws extended until it can hold unto the center column of the tripod.


Join both threads of the monitor screen and the bracket with the clamp on.



Adjust the position of the monitor screen on the center column of the tripod. Fasten the handle to apply pressure unto the jaws so the clamp could hold unto the center column firmly.

Plug on the power cord unto the battery. Turn on the switch of the battery device, the green light you see on the battery indicates the current level of

the remaining power. You may charge up the battery by having it plugged to the adaptor which needs to plug on a power supply (socket). The red light on the adaptor signifies that the battery is charging, and the green light signifies that the battery power is now full.

Battery + power chord for Monitor & Camera

Battery + Adaptor for power supply

Note: Remove the protective cover of the battery and do not charge the battery while it is being used, otherwise the battery may be damaged or overheated, causing a battery hazard.

Have the HDMI cable connected to both the camera and the monitor, and connect the power cord with the battery to the screen.

After the camera is turned on, the monitor will display what the camera captures on the screen. The **camera can also be operated through a RJ45 cable which is connected to a PoE device**. Please refer to **Connector Instruction** for more reference.

Buzzer Alarm Installation

Refer to images below to attach the buzzer alarm on the bracket by having the screws fastened.

The **red cable** of the buzzer alarm aims at the **DO+(12V)** and the other **red** & **black cables** aims at the **DO-**. Please refer to **I/O Connection** for details.

Product Deployment

Mount the thermal camera unto the tripod. The height of the tripod must be adjusted to the regular height (**100~190cm**) of a human body, and the distance between the tested person and the camera is within **100cm**.

The face of the person tested must aim at the green frame in the **Live Video** screen, so that the camera can detect the person's face to **analyse the person's forehead temperature** and ensure **whether the person tested is wearing a mask or not**.

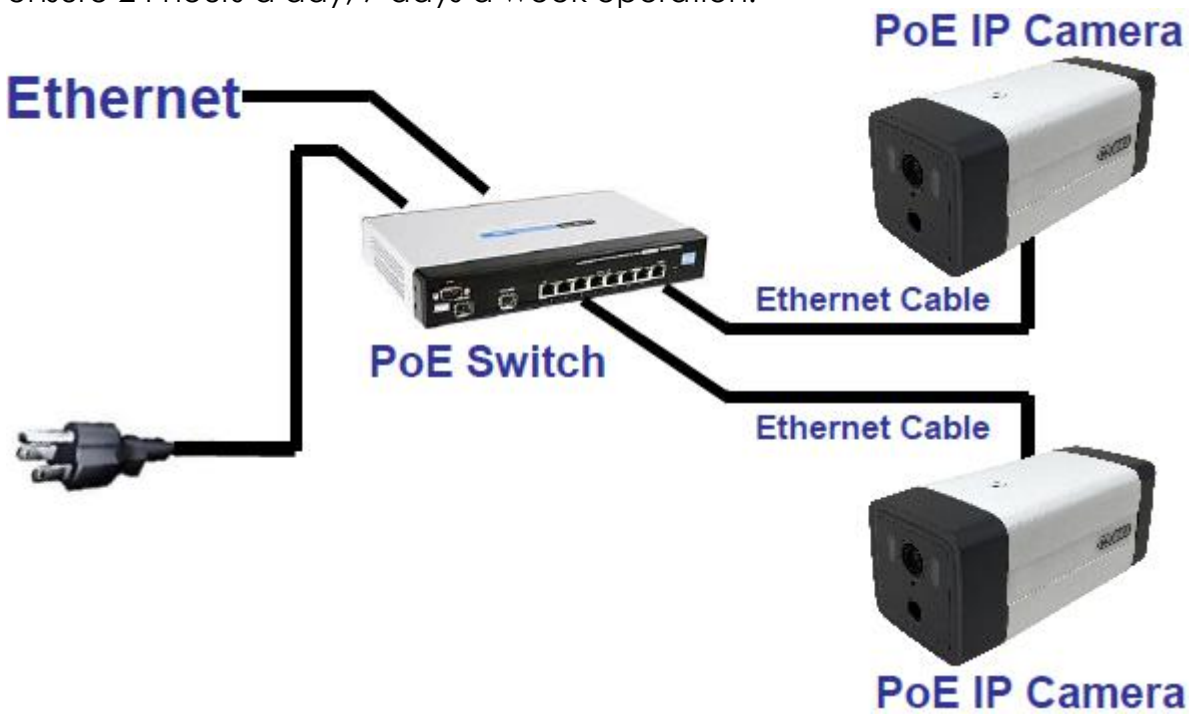
Please refer to the **Product Specifications** to confirm the environmental conditions for deploying the product indoors, and confirm that the ambient

temperature is within the range of 10°C~42°C. Do not operate the camera outdoors, for the sun has ultraviolet and infrared rays which may drastically interfere with the recognition performance.

PoE (Power Over Ethernet)

802.3af, 15.4W PoE Switch is recommended (Optional)

Power over Ethernet (PoE) is a technology that integrates power into a standard LAN infrastructure. It allows providing power to a network device, such as an IP phone or a network camera, using the same cable 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 operation.



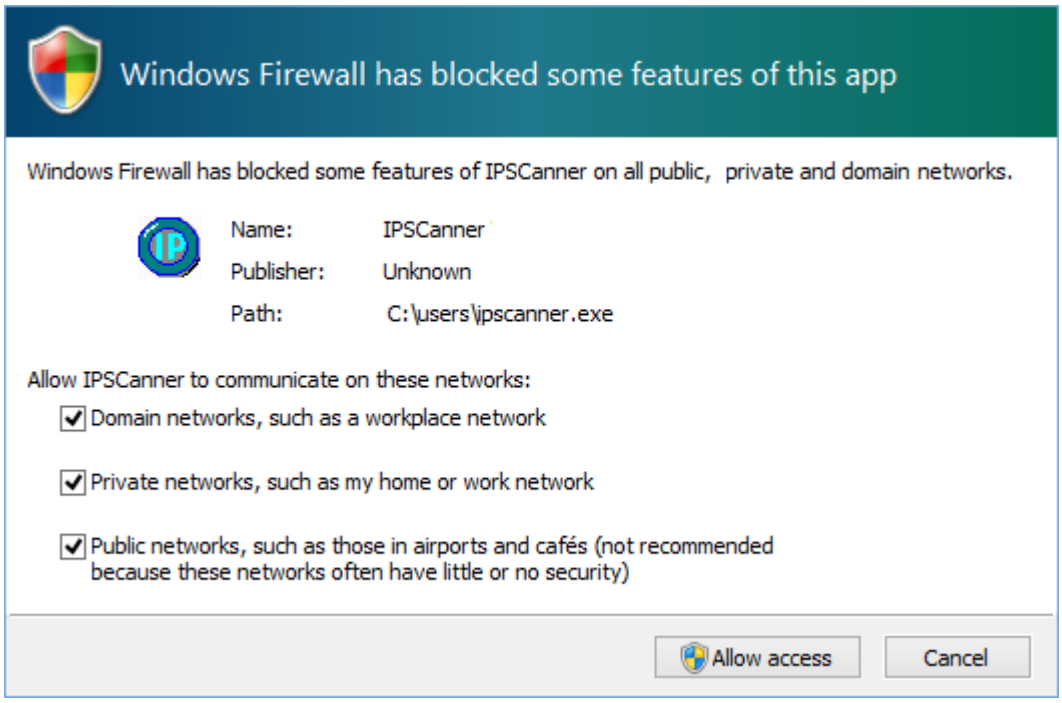
IP ASSIGNMENT

i. Open the software **IP Scanner** to assign the IP address of the IP Camera. Find it in **Applications** folder from the CD attached of the product package.

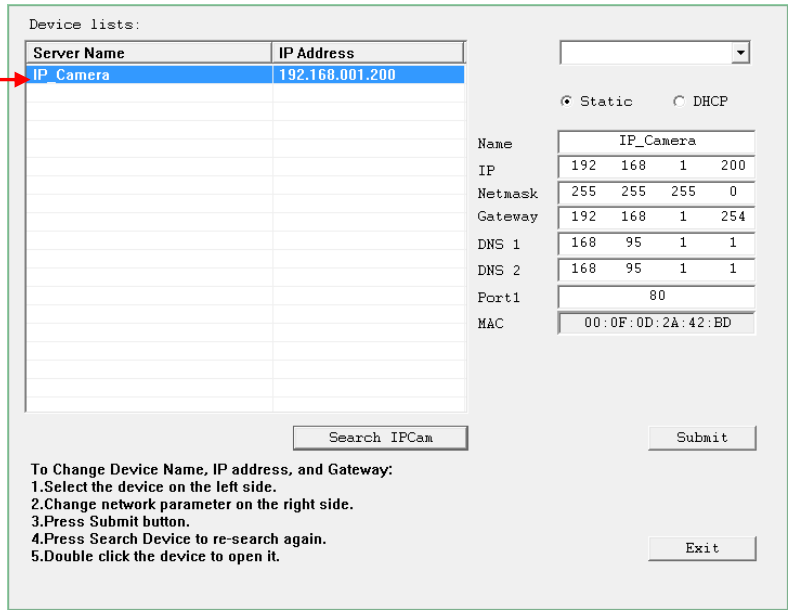
ii. Execute the English version of **IP Scanner**: **IPScannerENG**

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

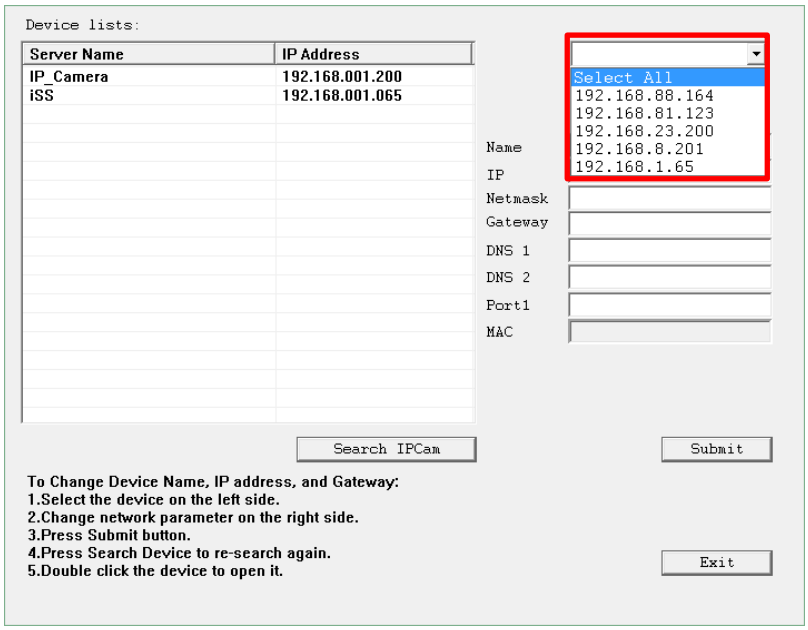
iv. For Windows XP SP2 or above, a Windows Security Alert may pop up. Choose the network type based on your surveillance environment, and click on **Allow access**.



v. **IP Scanner** will search for all the IP Cameras connected on the LAN. The user can click **Search IPCam** to search again.



vi. Click one of the IP Cameras listed on the left side. The network configuration of this IP camera will be shown on the right side once you highlight the device with your mouse. You can change the **name** of the IP Camera to your preference (e.g.: Office, warehouse). Change the parameters and click **Submit**.



You can select different network cards that you are currently connected to from the drop-down menu at the top right corner. You can also select the

online device from a specific network card in **Device lists**, or choose **Select All** to include all network card devices in **Device lists**.

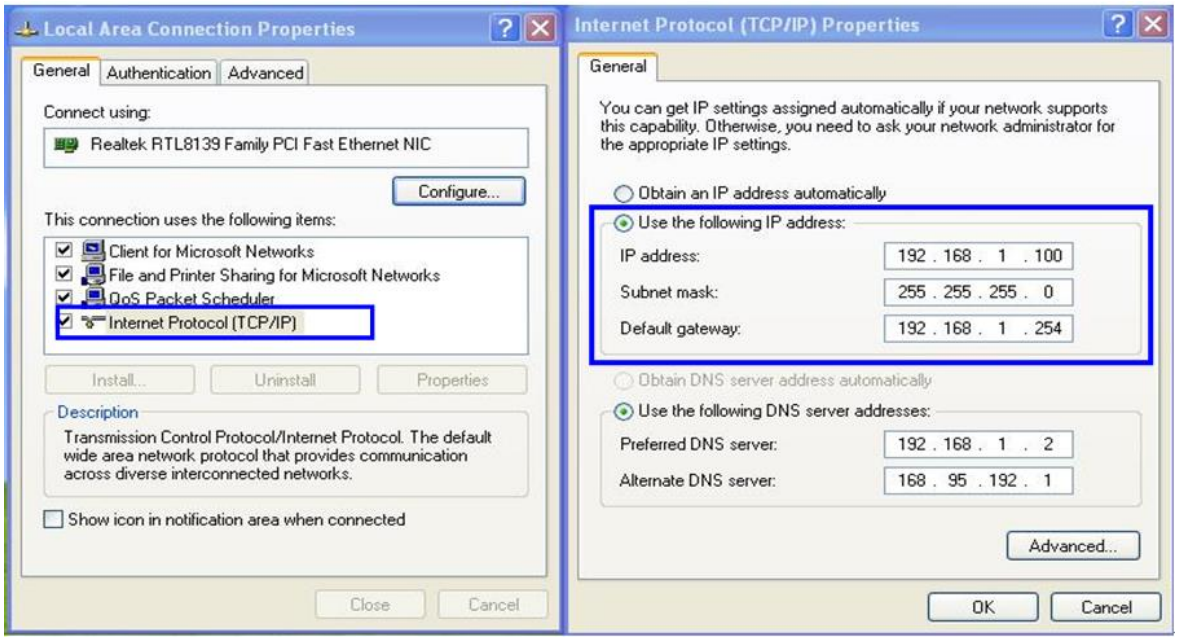
vii. Please make sure the subnet of the PC IP address and the IP Camera IP address are the same.

The same Subnet	**Different Subnets**
IP Camera IP address: 192.168.1.200	IP Camera IP address: 192.168.2.200
PC IP address: 192.168.1.100	PC IP address: 192.168.1.100

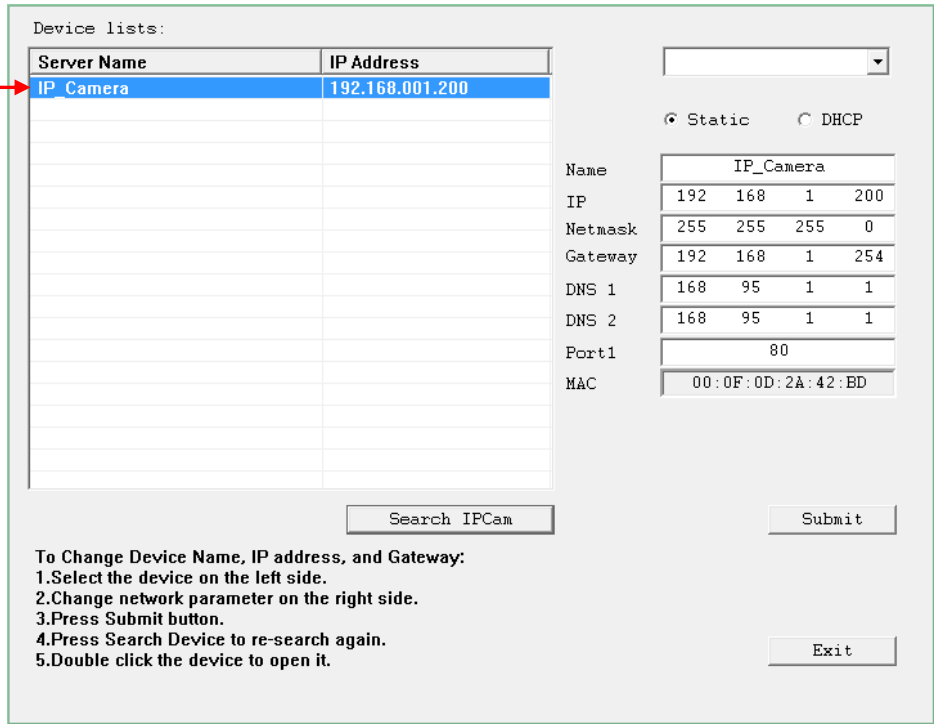
To Change the PC IP address

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

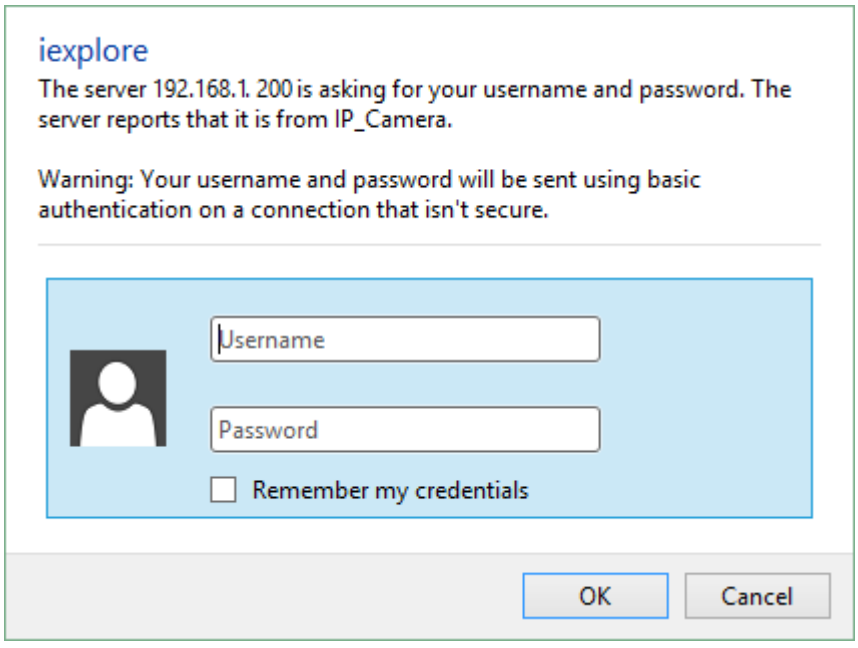
Make sure your IP Camera and PC are in the same Subnet. If not, change the IP Camera subnet or the PC IP subnet accordingly below.



viii. To quickly access remote monitoring, left-click the mouse twice on the selected IP Camera listed under **Device list** of **IP Scanner**.



ix. A default network browser of the camera control interface will open. Enter **admin** for both Username and Password to gain access.

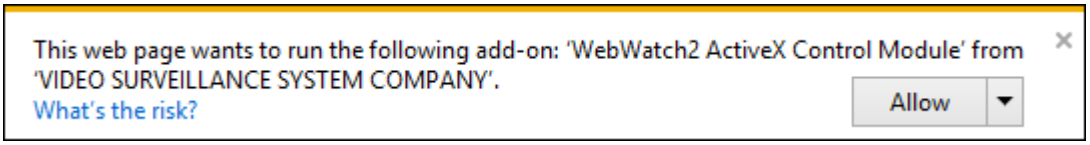


INSTALL ACTIVE CONTROL

For users using 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.

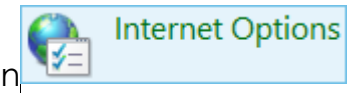
Choose '**Allow**'



The ActiveX component should then be completed and user will be able to view the live video screen.

If the installation fails, please check the security settings in the IE browser. Follow the steps below:

1) Go to **Start-Up Menu**  on the lower left corner of the **Windows**

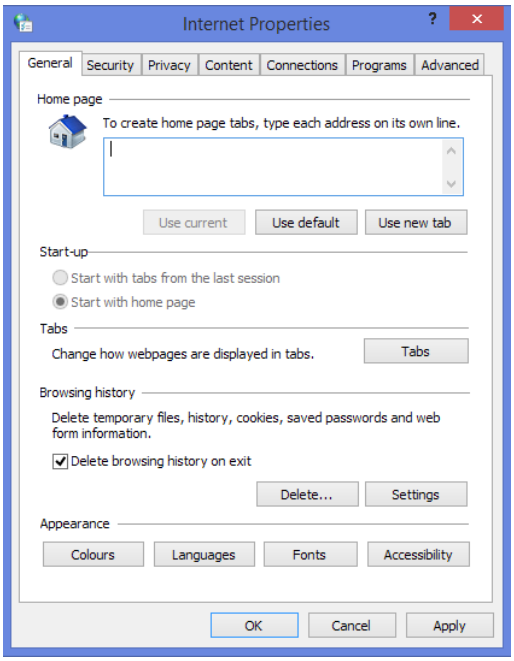
2) Select **Control Panel**  , double-click on 

3) You will then enter the page of **Internet Properties** settings.

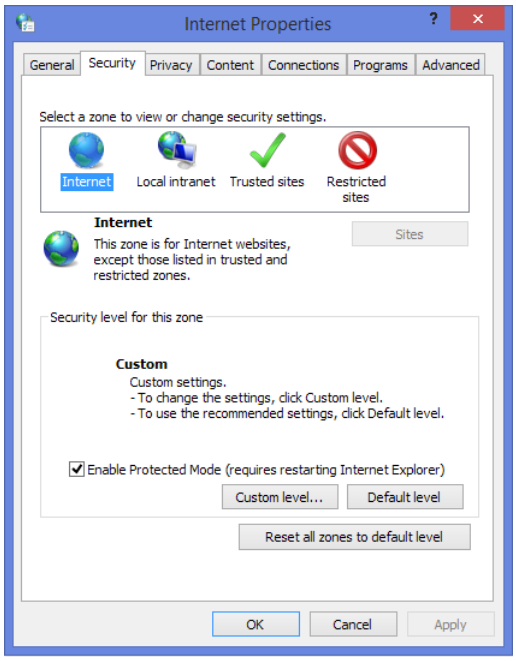
4) Starting from **Internet Properties**, proceeding steps as below:

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

i



ii



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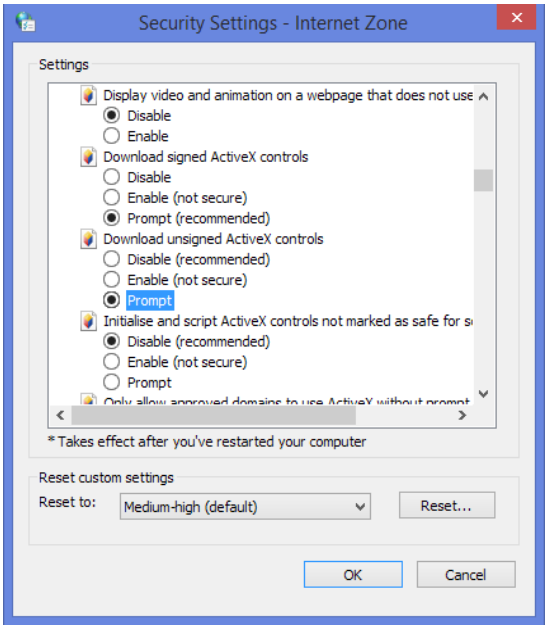
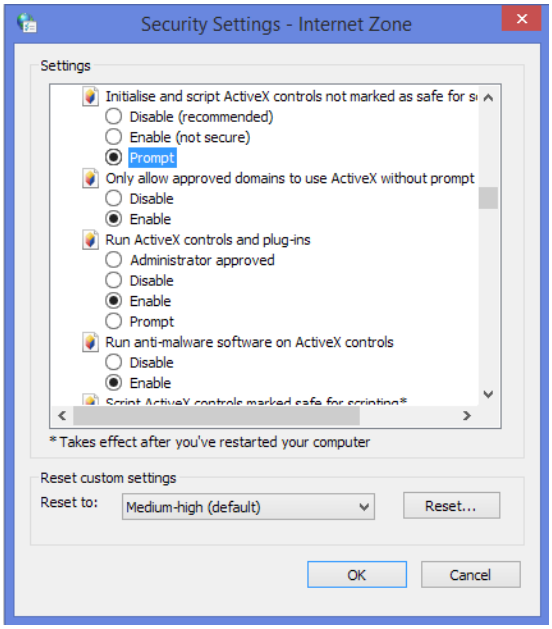
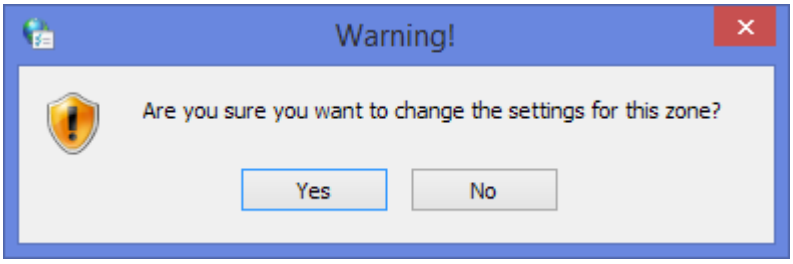


vi



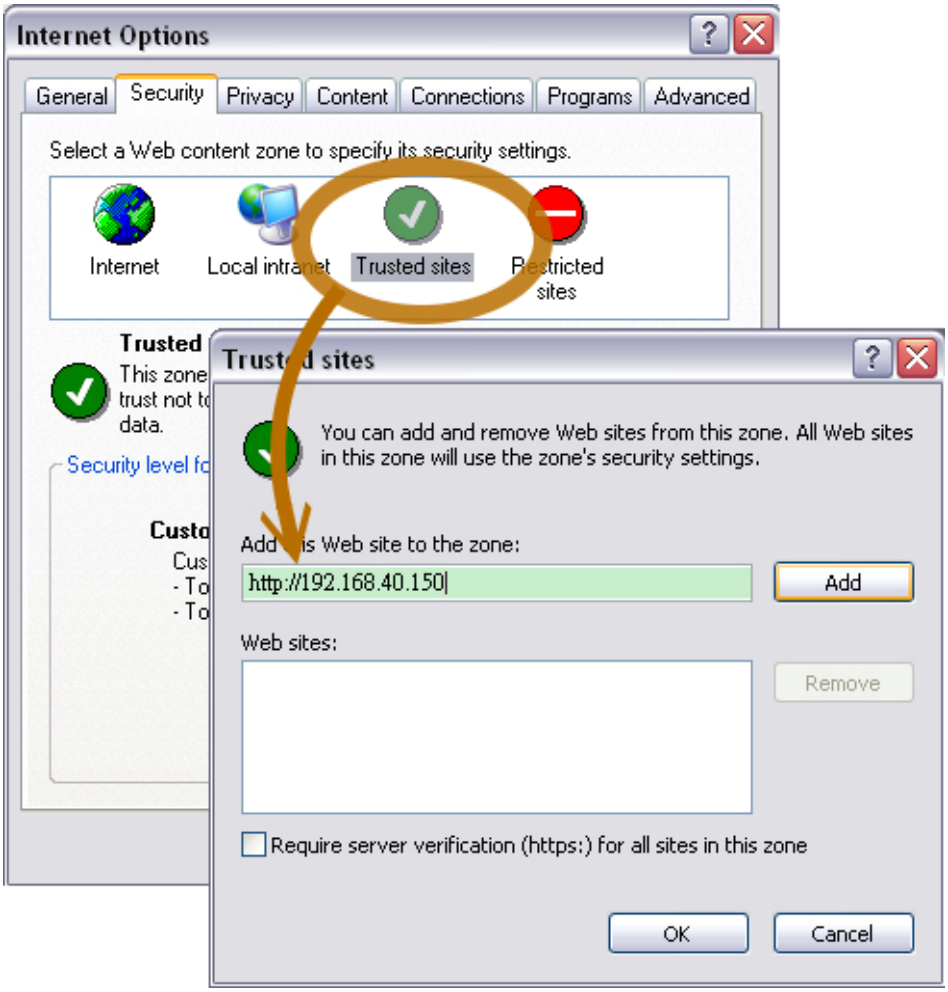
v

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



Another Method

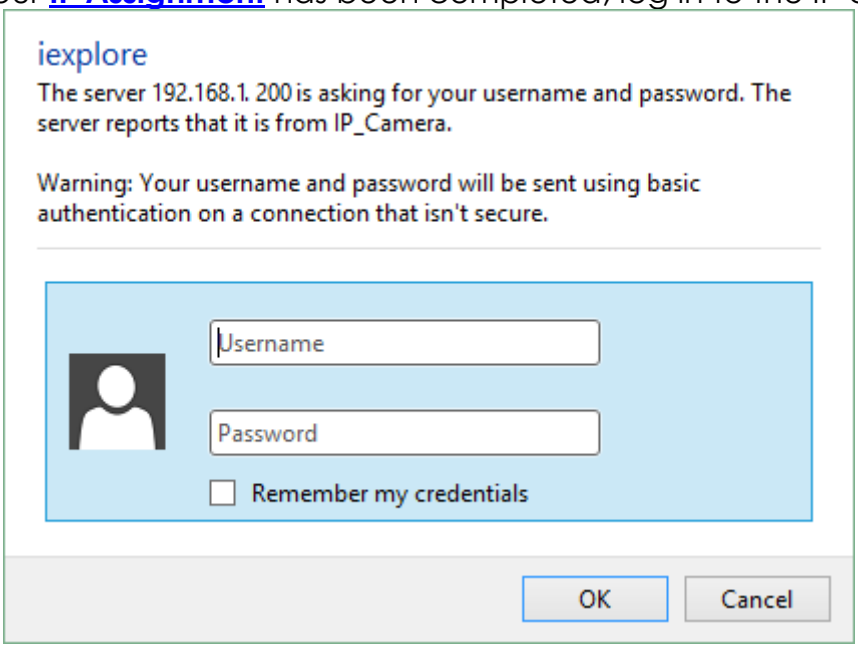
Go to: IE→Tools → Internet Options… → Security Tab → Trusted sites → Add the IP address and click **OK**.



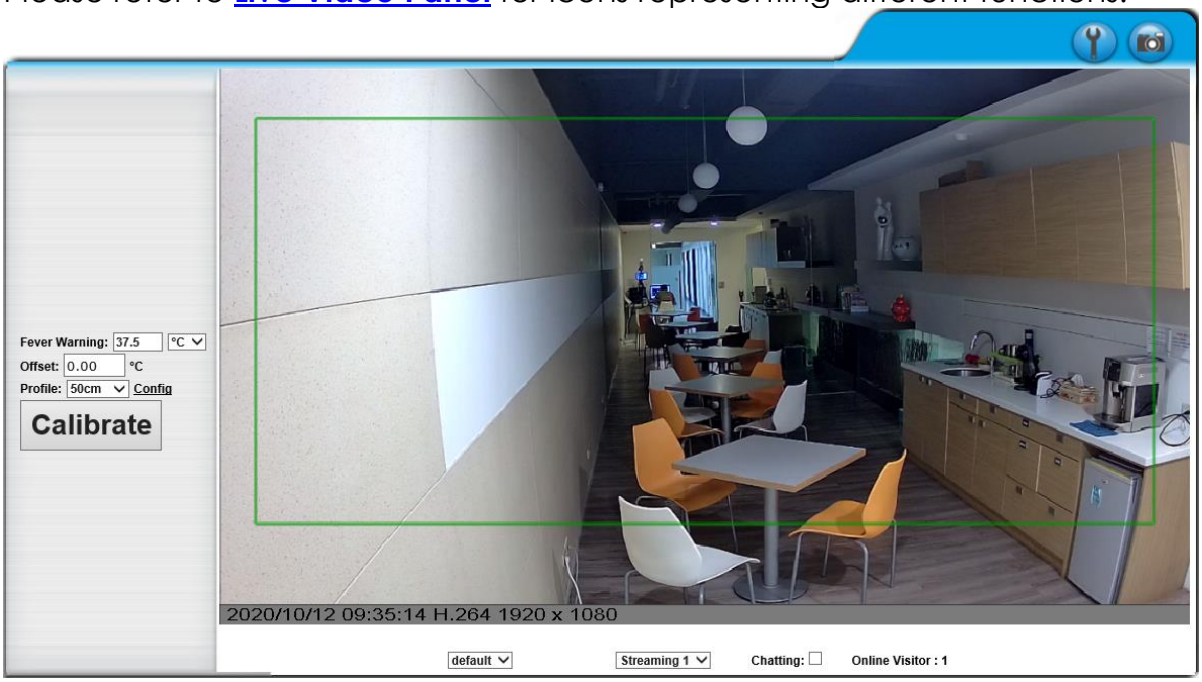
In the site list you can key in one single IP address or a LAN address. For example, if you add **192.168.21.***, all the IP address under **21.*** on the LAN will be regarded as trusted sites.

LIVE VIDEO

Once your **IP Assignment** has been completed, log in to the IP camera.



When IP Camera is successfully connected it shows the following interface. Please refer to **Live Video Panel** for icons representing different functions.



Please change default password is a sign which flickers on the live view screen as a reminder, to suggest the user to change the default password. You may configure the login settings in **System** to secure your account privacy.

Full Screen Mode

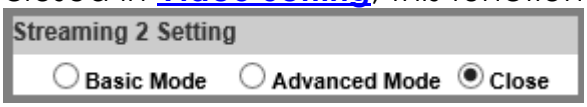
Double-clicking on the video screen will enter the full screen mode. Press "Esc" on your computer keyboard or double-click the video screen again for returning to normal screen mode.

Live Video Panel

- Click  - Get into the administration page.
- Click  - A snapshot preview window will appear.
  Choose  to save the current snapshot or choose  to discard it.
- Show the system time, video resolution, and other information.
  

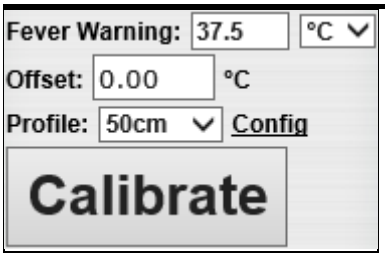
- 

  - Adjust image size by its ratio of 1/2x(default), 1x, and 2x.
- 

  - Select the video streaming source: If the streaming 2 is set closed in **Video Setting**, this function will not be displayed.
  

- Tick on **Chatting** checkbox to enable two-way audio. You may adjust settings from **Audio Setting**.
- **Online Visitor:** Shows how many people are connected to this device.
- DO: ON OFF - Control the external output device or DO (digital output) connected to this camera.

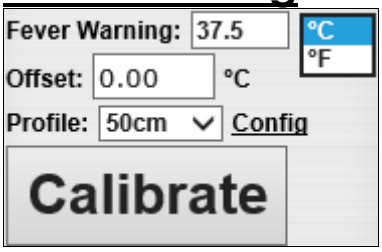
Thermal Control Panel



Help specify various criterions for operating the thermal camera.

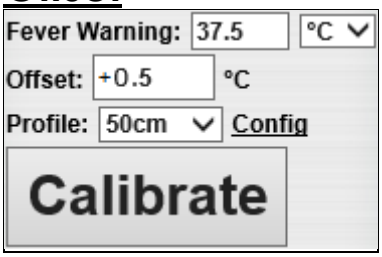
Features **Fever Warning**, **Offset**, **Profile** and the **Calibrate** command.

Fever Warning



Click into the empty field on the right, and you can manually enter the standard value used to define the healthy temperature of a person. You can also select the temperature measurement unit from the drop-down menu on the right.

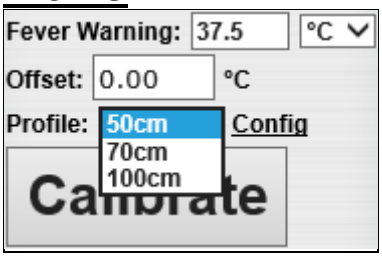
Offset



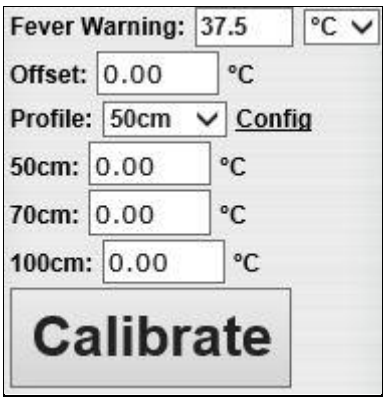
When the human body temperature measured by the camera is different from the standard value of **Fever Warning**, you can click in the blank field on the right, then manually input the error value with +or-symbol, and then click the **Calibrate** icon.

The system will take the + or-command into calculation of the error value to make the temperature measurement result accurate after correction.

Profile



In the drop-down menu, select the standard distance used to determine the temperature measurement of the human body. There are three options to select from: 50cm, 70cm, 100cm.



Click **Config** to expand the panel into full settings. Configure the **Profile** settings in 3 different distance range.

Measurement Criteria

Use the camera **while keeping the level of the tripod stand**, adjust the viewing angle and achieve accurate measurement results.

Please also confirm whether the temperature measurement environment complies with the installation of this product according to the following standards.

The Distance

The best distance to measure a person's temperature is 100cm, and there may be an error value of **-0.3** or **+0.3 degree Celsius** in each temperature measurement. The person being measured must be in the green frame displayed in the live video screen before the measurement begins.

The Temperature

To ensure accurate measurement, it is recommended to have the camera set up in an environment with the temperature of **10~35 degree Celsius** and a relative humidity level of less than **95 percent**.

The ambient temperature also needs to be stable to avoid sudden temperature changes that affect the sensing results. Please operate the camera **indoor** where there is no obvious airflow, and avoid setting up in places with strong sunlight for its radiant heat energy will affect the overall result of the temperature measurement.

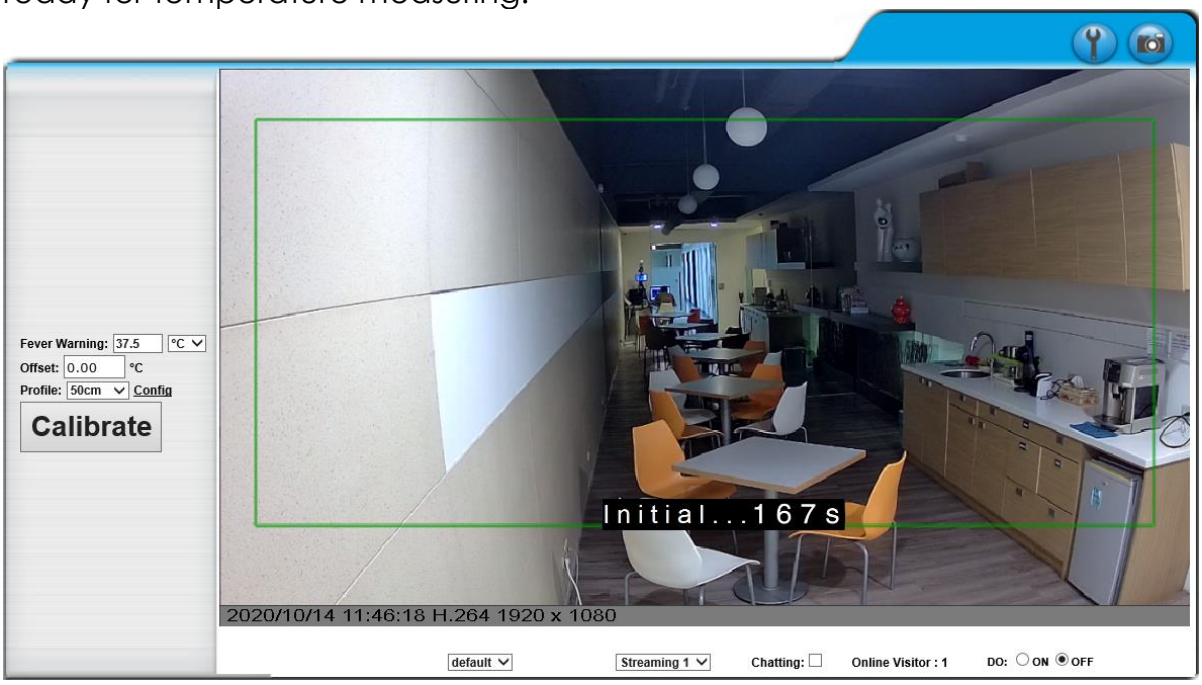
The Subject

People who are to be measured for temperature are recommended to move in queue; therefore the operation should take place where the movements of people are under certain control, such as no bowing-heads.

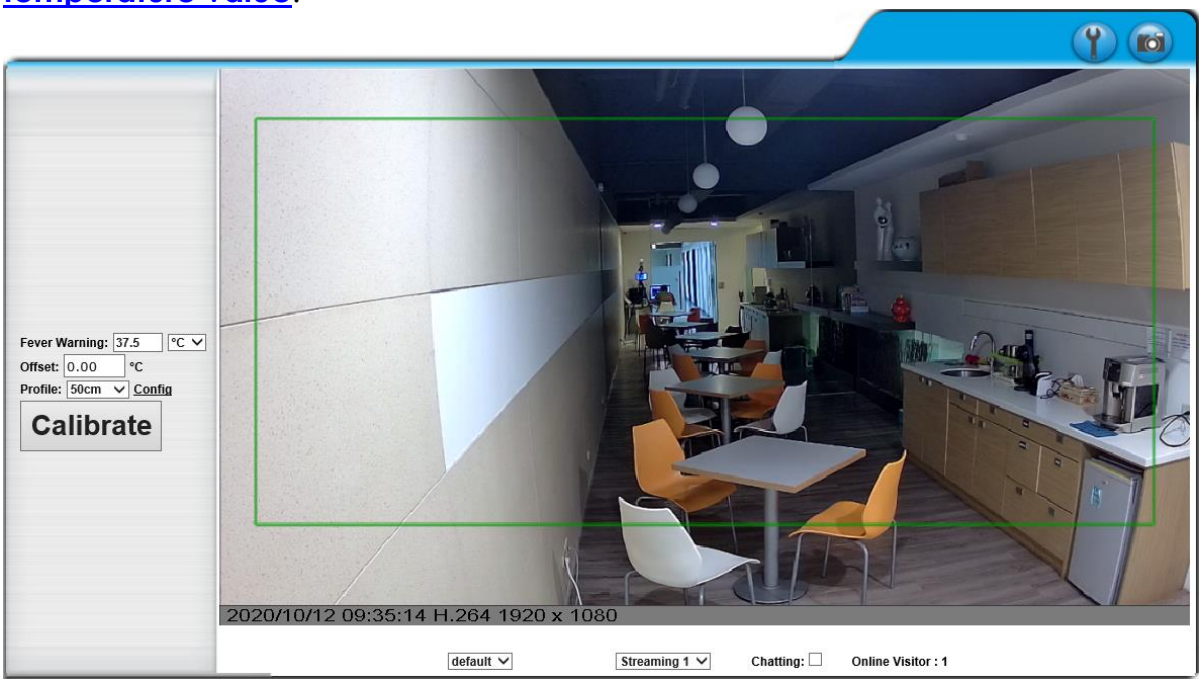
Before facing the camera, everyone is required to take off hats, and maintain a social distance of 1.5m from each other. Setting up visible, obvious signs and obstacles as surroundings may also be helpful as guidelines for the crowd to cooperate.

The Warming-Up

After turning on the power of the camera, it will begin to warm up. The live video screen will display the countdown status of the machine before it gets ready for temperature measuring.



After the boot is completed, you can start to manually **adjust the exact temperature value**.



The Calibration

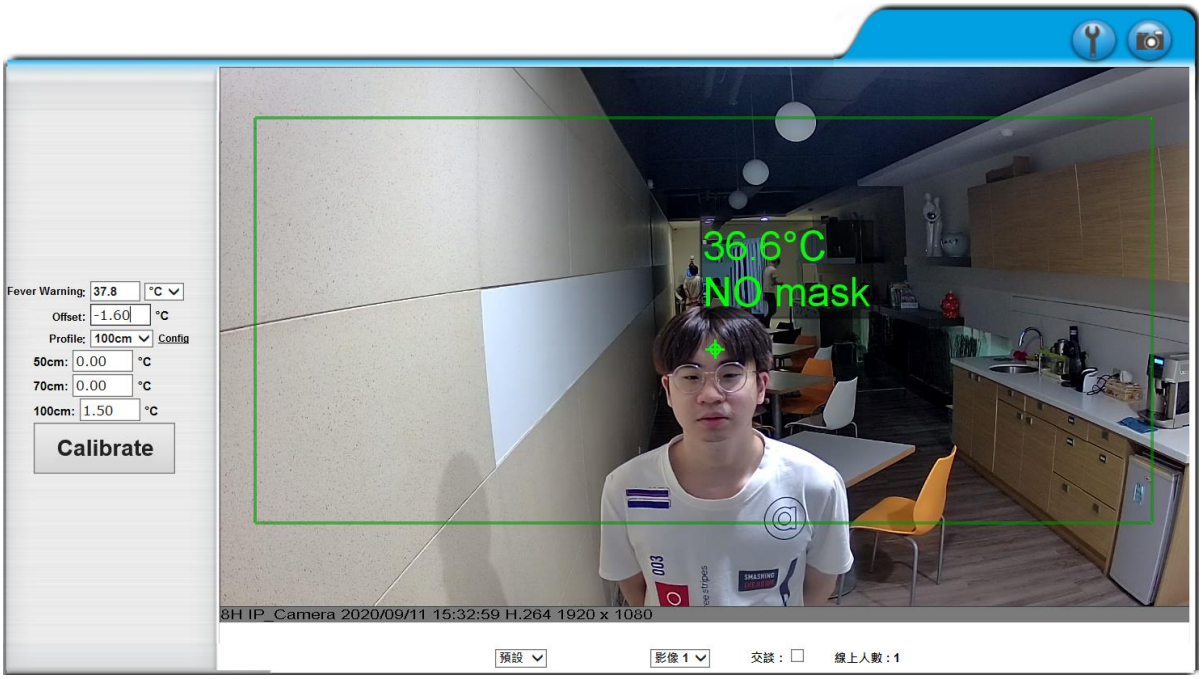
The following procedures of calibration will be demonstrated on the **Offset** value being **100cm** as reference.

We need to set the standard temperature for the thermal camera to determine whether a person being measured has a fever or not.

First, sample the supposed healthy human temperature value from a healthy person by using a temperature measuring device or forehead thermometer.

For this case, we have discovered that the healthy temperature is **36.6 degree Celsius**. (standard temperature value)

Then let the same person stand in front of the camera within the standard distance (100cm). **Modify the Offset field** after comparing the temperature results between the forehead thermometer and the camera.



You can also configure settings in details by opening the **Profile**.

If the measured temperature is not the same as the standard temperature, please calibrate the setting by inputting the error value in the 100cm field.

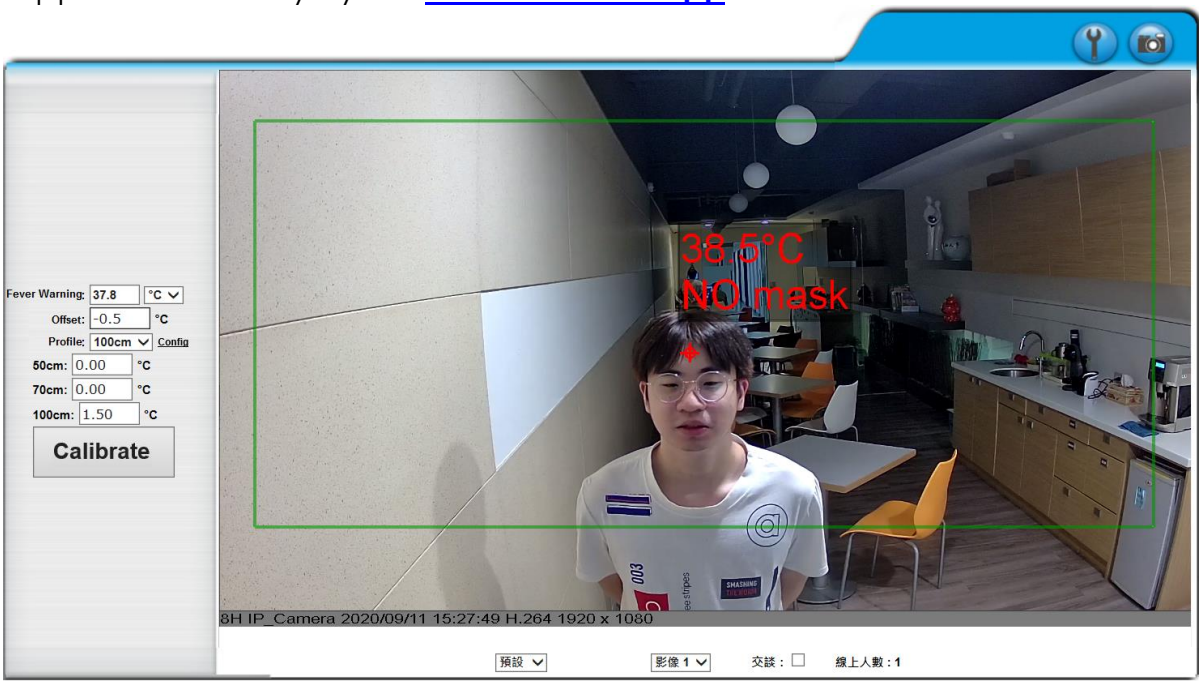
If the temperature value displayed on the screen is higher than the standard value, input the **−value** in the 100cm field to make up the standard temperature value which is **36.6 degree Celsius.**

If the temperature value displayed on the screen is higher than the standard value, input the number **+value** in the 100cm field to make up the standard temperature value which is **36.6 degree Celsius.**

Follow the formula below to work out the number required for calibration:
Measured Temperature = Measured Value
Standard Temperature = Actual Value
Measured Value - Actual Value = Error Value

Click the **Calibrate** icon to enter the error value input in the 100cm field.

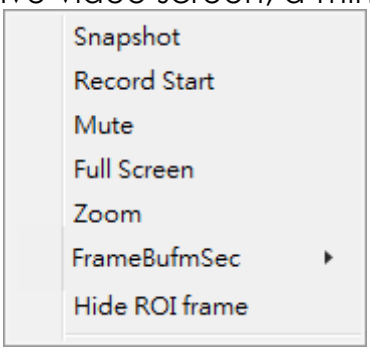
You can keep the error value as the setting for the next time you operate the camera. You can also configure the standard temperature value from Fever Warning Setting. Operation of the temperature measurement is also supported remotely by the **mobile device App**.



Caution: The camera may **need to be calibrated** once in a while for the temperature of the environment and surroundings may change over time.

Submenu

Right-click the mouse on live video screen, a mini menu will then pop up.



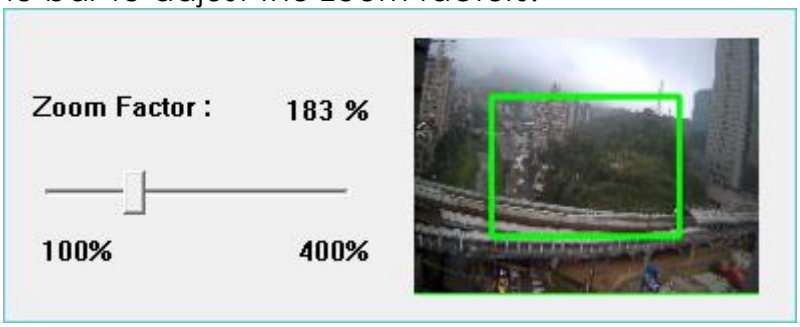
i. **Snapshot:** Save a JPEG picture

ii. **Record Start:** Record the video to the local PC. The video format is AVI and you will be asked to set up the directory for the video file. To stop recording, right-click again. Select "Record Stop".

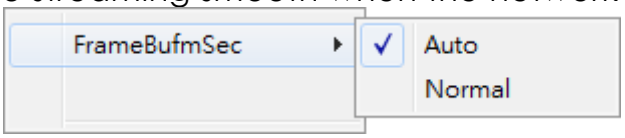
iii. **Mute:** Click to turn off the audio. Click again to turn it on.

iv. **Full Screen:** Full-screen mode.

v. **Zoom:** Select "zoom" within the pop-up dialogue box and then drag and drop the bar to adjust the zoom factors.



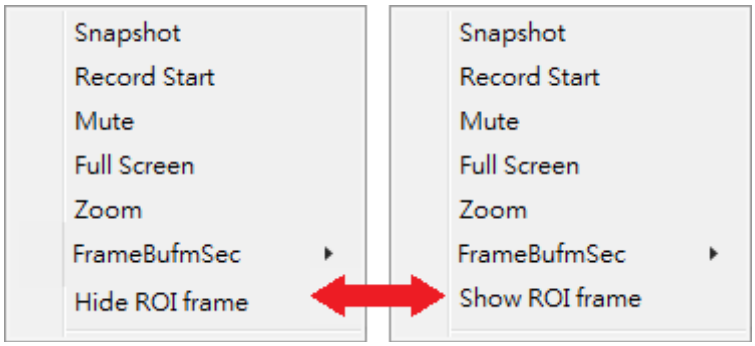
vi. **Frame Buffm Sec:** This function aims to build a temporary buffer to accumulate several video frames in a LAN network environment. It can make video streaming smooth when the network speed is slow.



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)

vii. **Hide / Show ROI frame:** Once the **ROI** frame has been set up from **AV Settings**, there will be frames in colors appearing on the live view. Choose to hide to make the frames invisible, or choose show to keep the frames.

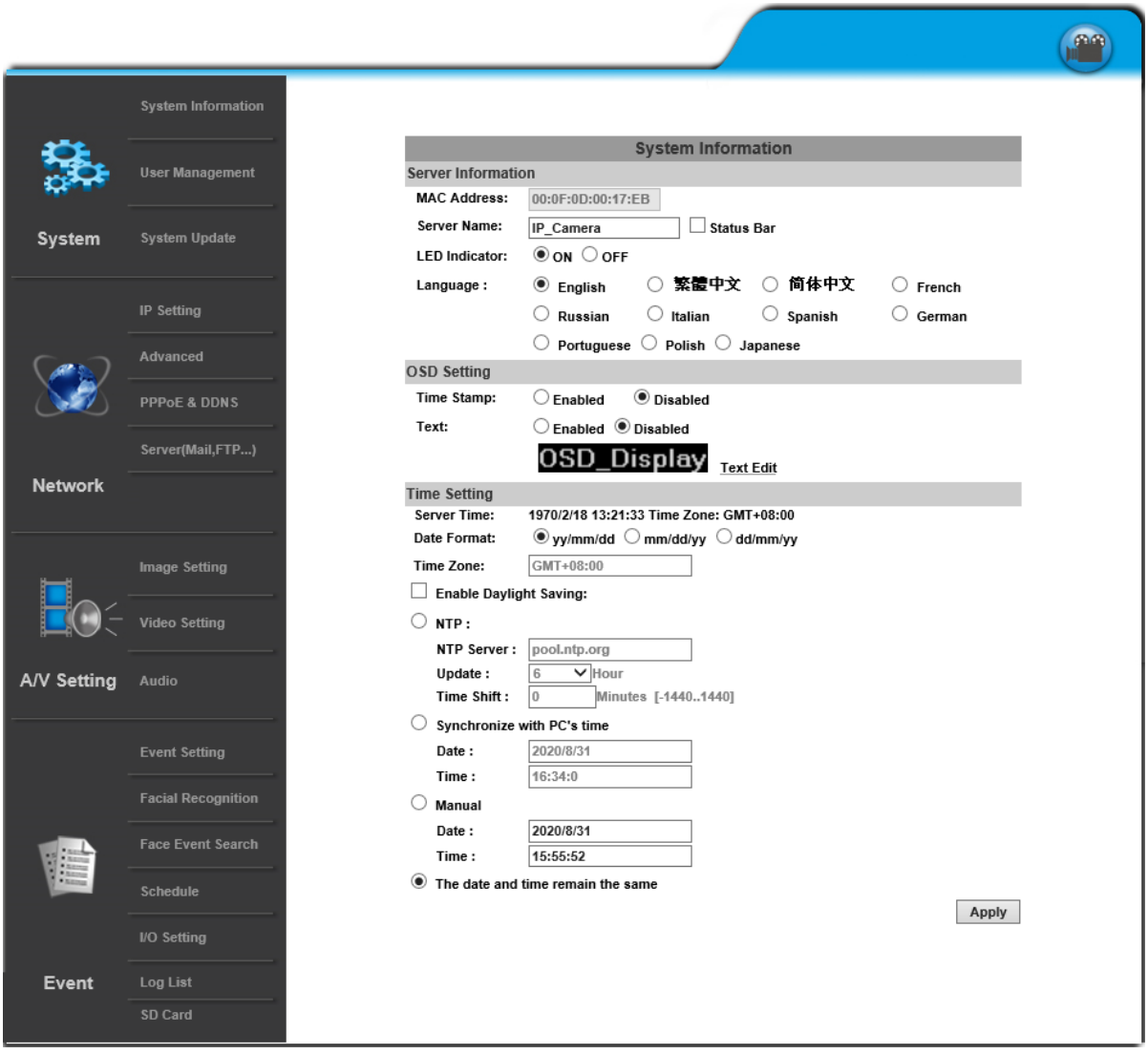


CAMERA CONFIGURATION

Caution: The camera must be deployed indoors, and avoid any contact of the sunlight before its operation.

System

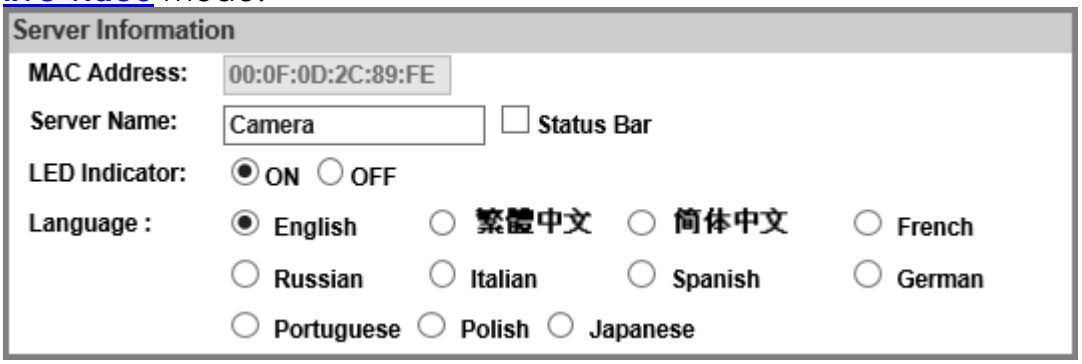
Click  to get into the administration page. Click  to go back to the **live video** page.



System Information

Server Information

Set up the camera name, language, and the camera time for displaying on live video mode.

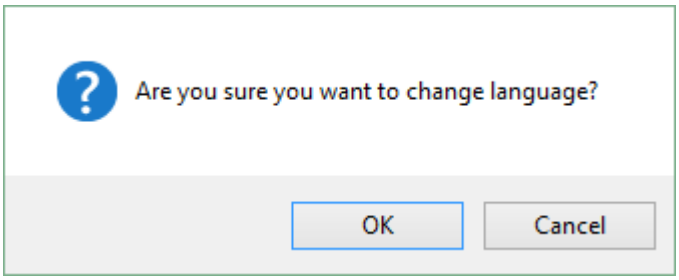


- **MAC Address:** The given identification specifically assigned for each camera model. Every MAC address is different, and cannot be modified.

- **Server Name:** This is the Camera name which will also be shown on IP Scanner. Tick the checkbox of **Status Bar** and click **Apply** at the right bottom of the page to display the **Server Name** in live video.
  For example, if you input **DEMO**, then the word **Camera** will be displayed at live video mode at the bottom.
  DEMO SEP/17/2018 13:52:25 H.264+ Size:3840x2160

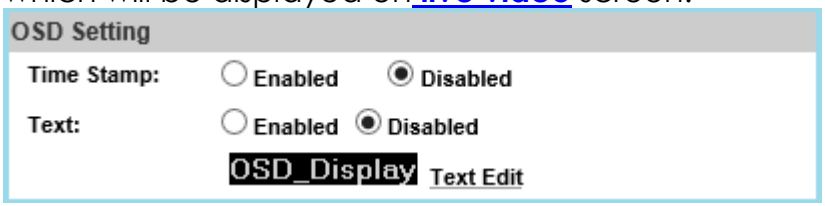
- **LED Indicator:** Turn on/off the LED indicator on the camera.

- **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.

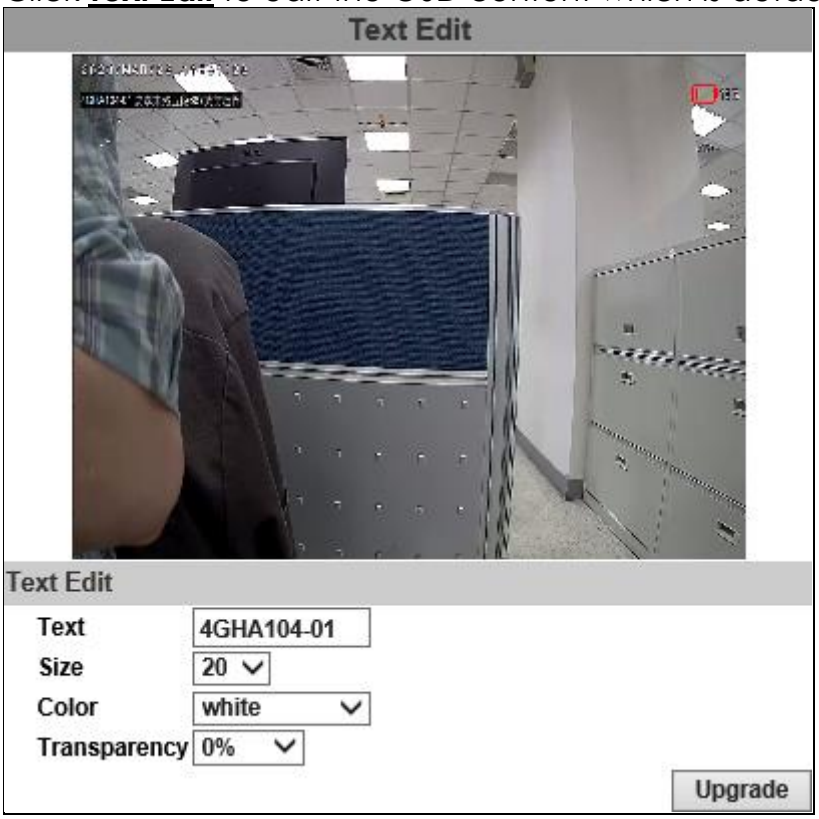


OSD Setting

You can adjust the **Position** for the **Enabled** option of **Time Stamp** or **Text** which will be displayed on **live video** screen.



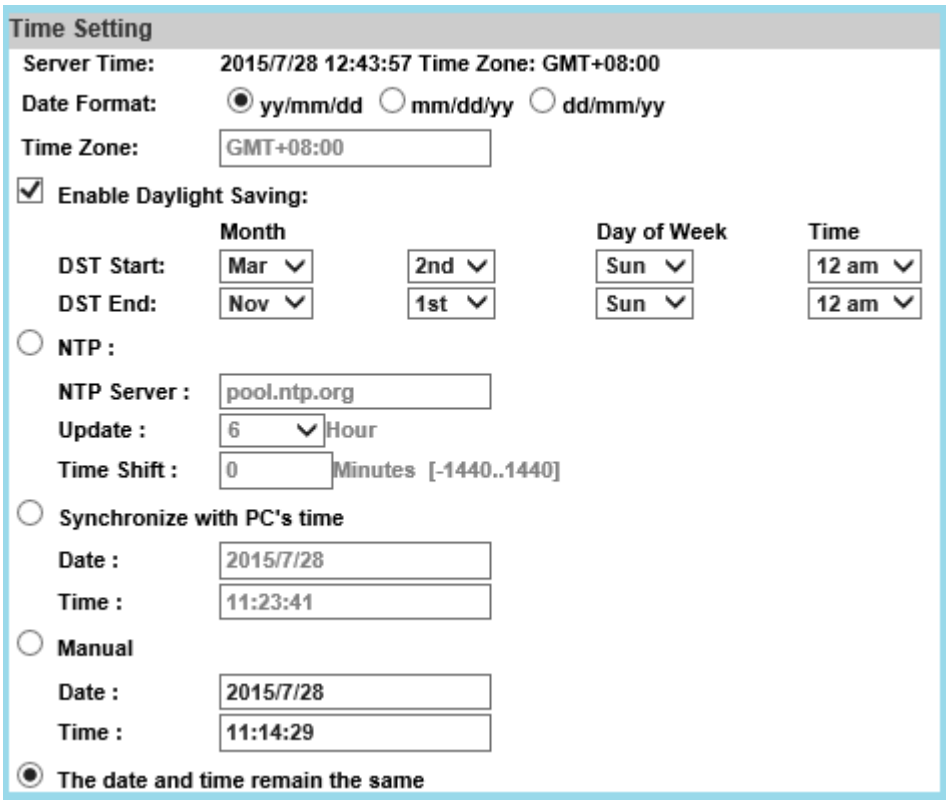
Click **Text Edit** to edit the OSD content which is defaulted as **OSD_Display**.



Text: Input the arbitrary content of the OSD on **Live video** screen.
Size: Adjust the size of the OSD text on **Live video** screen.
Color: Adjust the color of the OSD text on **Live video** screen.
Transparency: Adjust the transparency of the OSD text on **Live video** screen.

Click the **Upgrade** button to apply settings.

Time Setting

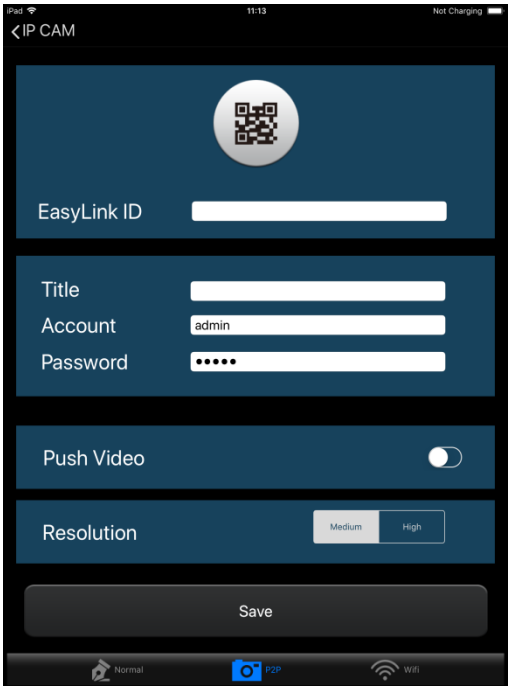


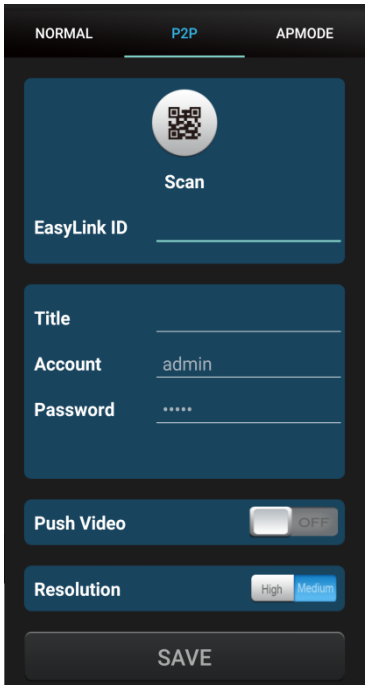
Assign the formation to display **Year/Month/Date** on **Live video** screen, as well enable **Daylight Saving** and other options.

EasyLink (Optional)

Install **IP Motion App** on your mobile phone to access **EasyLink** operation which allows user to watch IP camera live view on self-owned mobile phones. Once the installation is done, either enter the **EasyLink ID** from the IP camera web browser, or simply scan the **QR Code** to help you log in to your IP camera through **IP Motion App** and watch the live view.

For iOS **For Android**

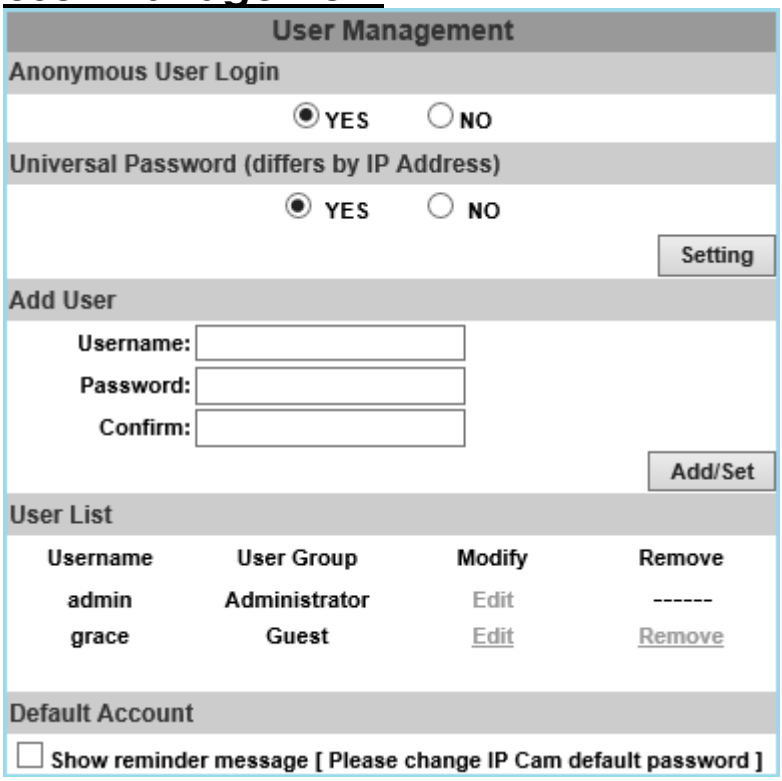




Read more about operating **IP Motion App** from the user's manual document inside the folder **User Manual_Mobile Phone APP** which comes as part of the **CD contents**.

Note: Your smartphone must be equipped with a camera and featured with a QR code scanner application.

User Management



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.

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.

Add User

The IP Camera supports 2 different users: **Administrator** and **Guest**. **Administrator** can operate everything. **Guest** has the right to access **Live view**, time sync, location setting, playback viewing and check playlist.

User List

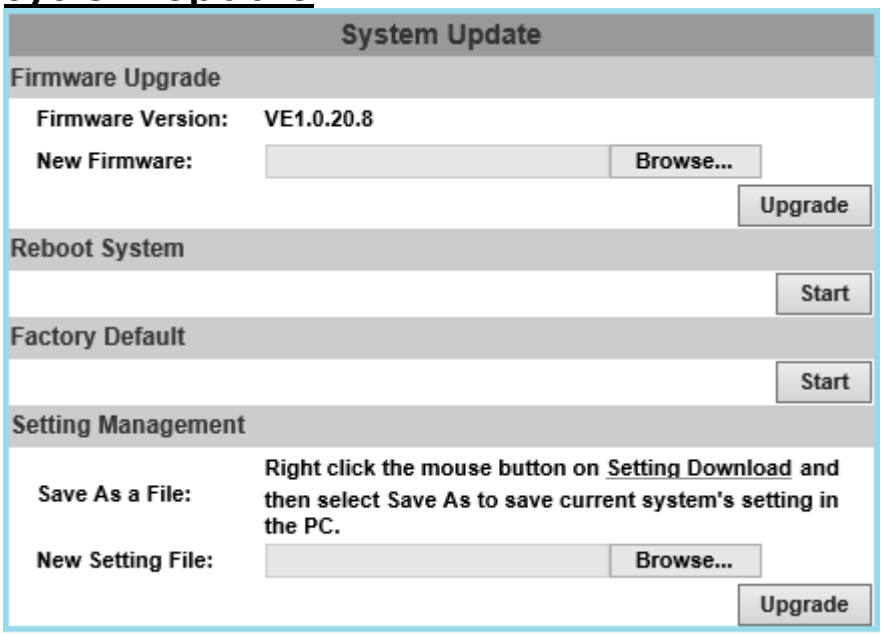
Type the user name and password, then click **Add/Set**. The guest user can only browse live video page and is not allowed to enter the configuration page. Click **Edit** or **Remove** in the user list to modify them. The system will ask

you to input the password in the pop-up window before you edit the user information.

Default Account

Please change default password is a sign which appears on the live view screen as a reminder, suggesting the user to change the default password. Click the checkbox to enable/disable the reminder message.

System Update



Firmware Upgrade

To update the firmware online, click **Browse…** to select the firmware, and then click **Upgrade** to proceed.

Reboot System

Restart the IP camera.

Factory Default

Delete all the settings of this IP camera.

Setting Management

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

Save As a File

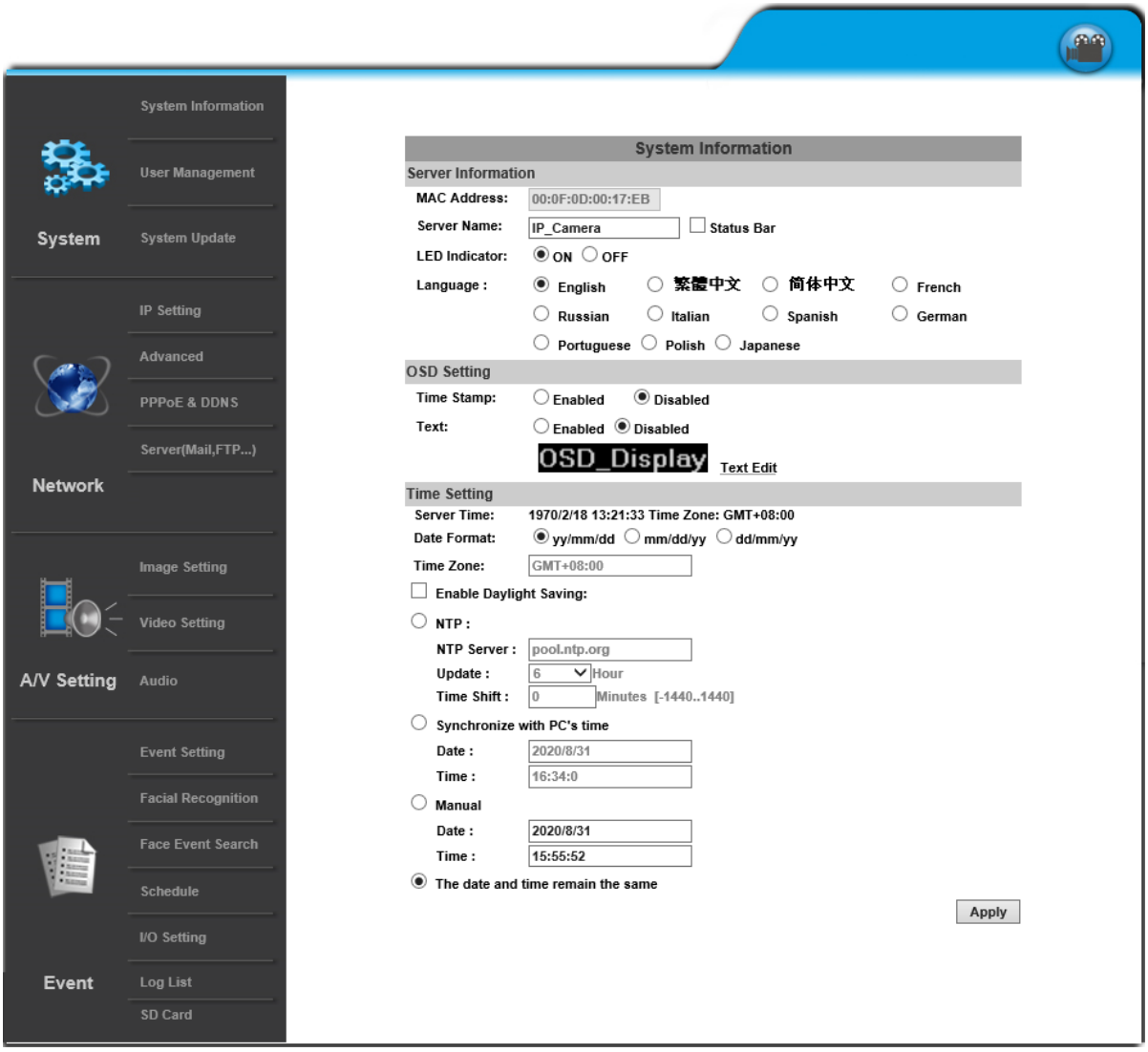
Right-click the mouse button on **Setting Download** → Select **Save AS…** to save current IP Camera settings in PC → Select saving directory → Save

New Setting File

To upgrade new settings, click **Browse** to search previous settings from a pop-up window, then click **Open** → **Upgrade** → Settings update confirm. Finally, click **index.html**. to returning to main page.

Network

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

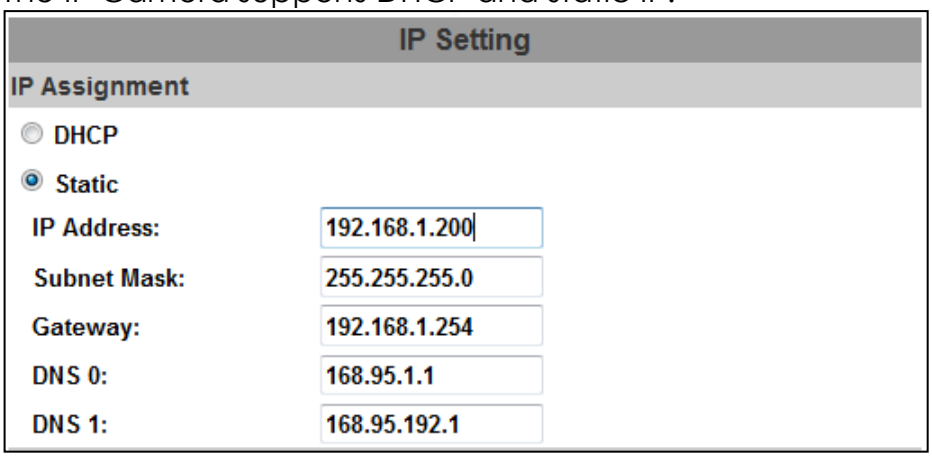


Enter the Network by clicking on titles from IP Setting, Advanced, PPPoE & DDNS and Server Settings.

IP Setting

IP Assignment

The IP Camera supports DHCP and static IP.



DHCP

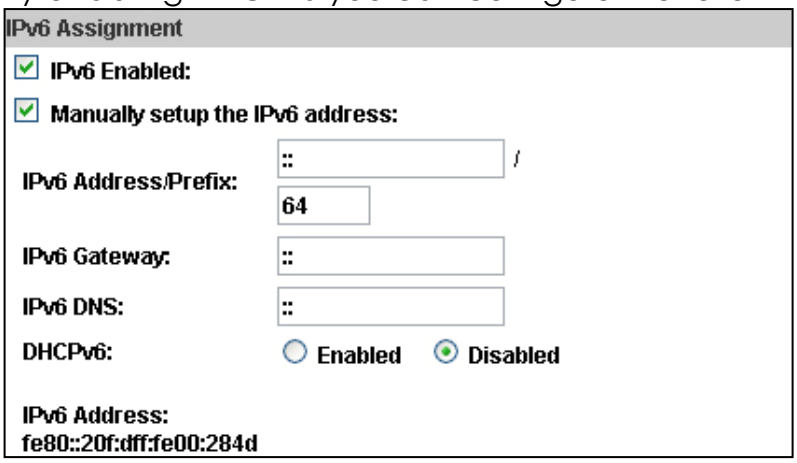
The IP Camera will get all the network parameters automatically.

Static IP

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

IPv6 Assignment

By enabling DHCPv6 you can configure the following IPv6 address settings:



Manually setup the IPv6 address

Key-in the Address, Gateway, and DNS.

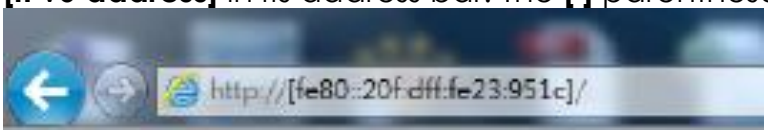
DHCPv6

If you have a DHCPv6 server, enable it to assign the IPv6 automatically. The assigned IP address will be displayed alongside.

Automatically generated IPv6 Address

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

Use IPv6 address to access the IP camera. Open a web browser and input **[IPv6 address]** in its address bar. The **[ ]** parentheses mark is necessary.



Port Assignment

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

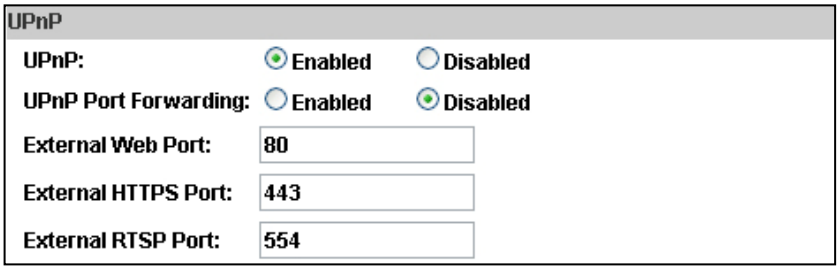
Web Page Port

Setup the web page connecting port and video transmitting port (Default: 80)

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.

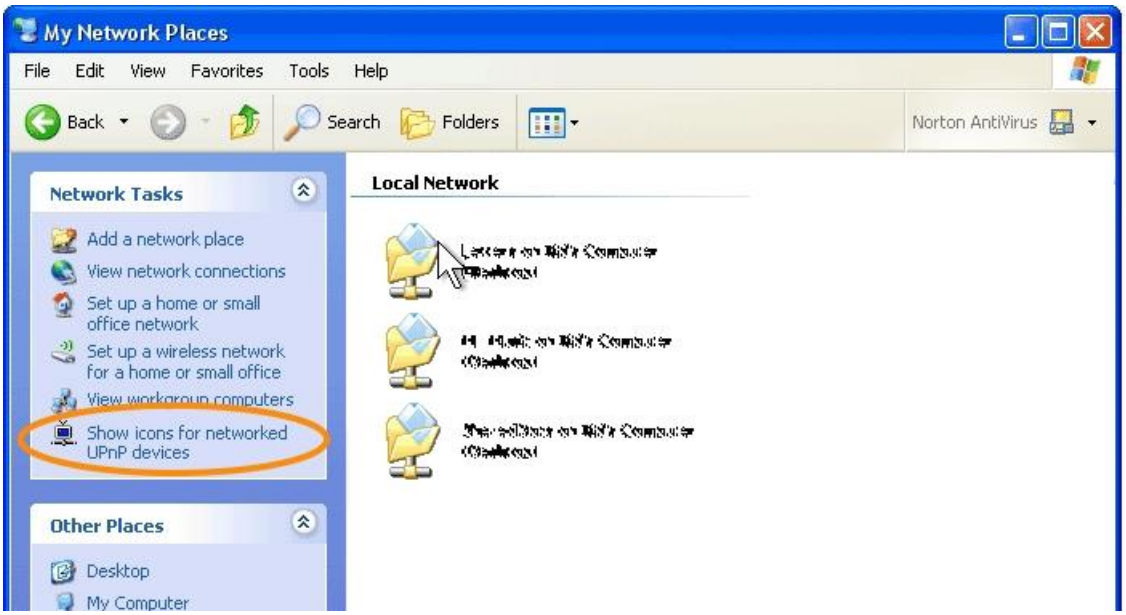
Note: UPnP must be enabled on your computer.
Please follow the procedure to activate UPnP:

<Approach 1>

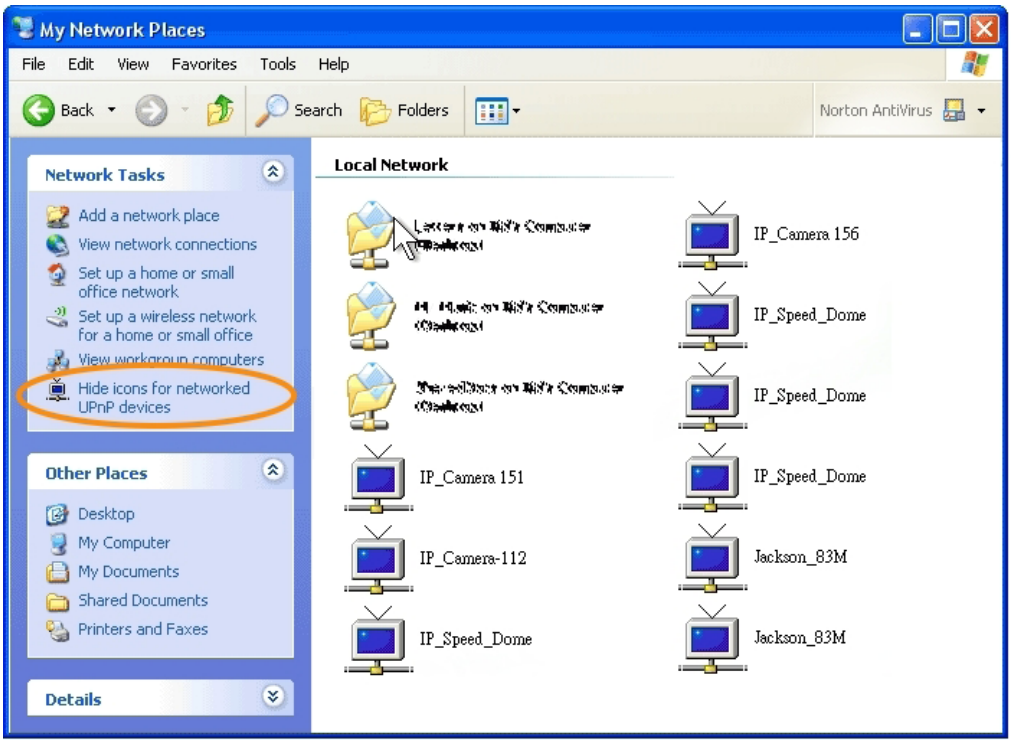
i. Open the **Control Panel** from the **Start Menu**
ii. Select **Add/Remove Programs**
iii. Select **Add/Remove Windows Components** & open **Networking Services** section
iv. Click **Details** and select **UPnP** to setup the service.
v. The IP device icon will be added to **My Network Places.**
vi. The user may double click the IP device icon to access IE browser

<Approach 2>

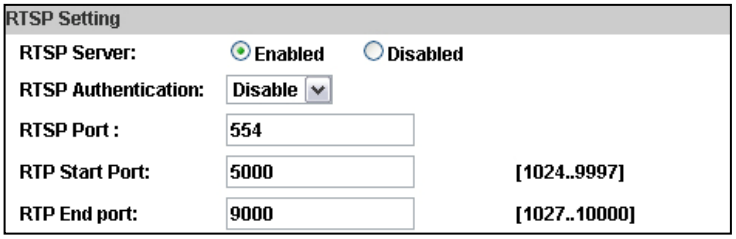
i. Open My **Network Space**
ii. Click **Show icons for networked UPnP devices** in the tasks column on the left.



iii. Windows might ask your confirmation for enabling the components. Click **Yes**.
iv. Now the IP device is displayed under the LAN.
v. Double-click the icon to access the camera via web browser.
vi. Click **Hide icons for networked UPnP devices** on the left to disable UPnP.



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 streaming transmissions respectively.

RTSP Server

Choose Enabled or Disabled.
Disable means everyone who knows your camera IP Address can link to your camera via RTSP. No username and password are 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.

RTSP Port

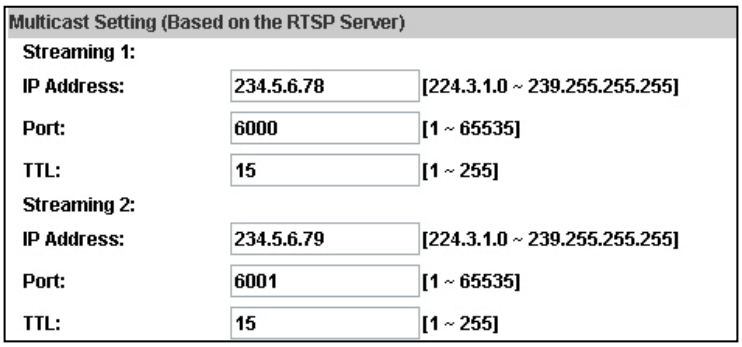
Setup port for RTSP transmitting (Default: 554)

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 & End Port.

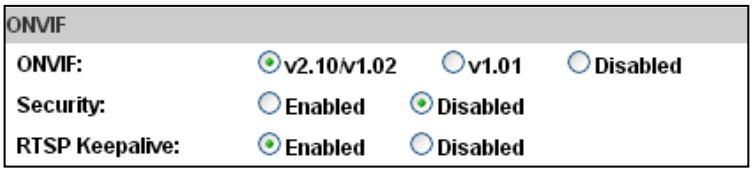
Multicast Setting

(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



Choose your ONVIF version and settings.

ONVIF

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.

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.

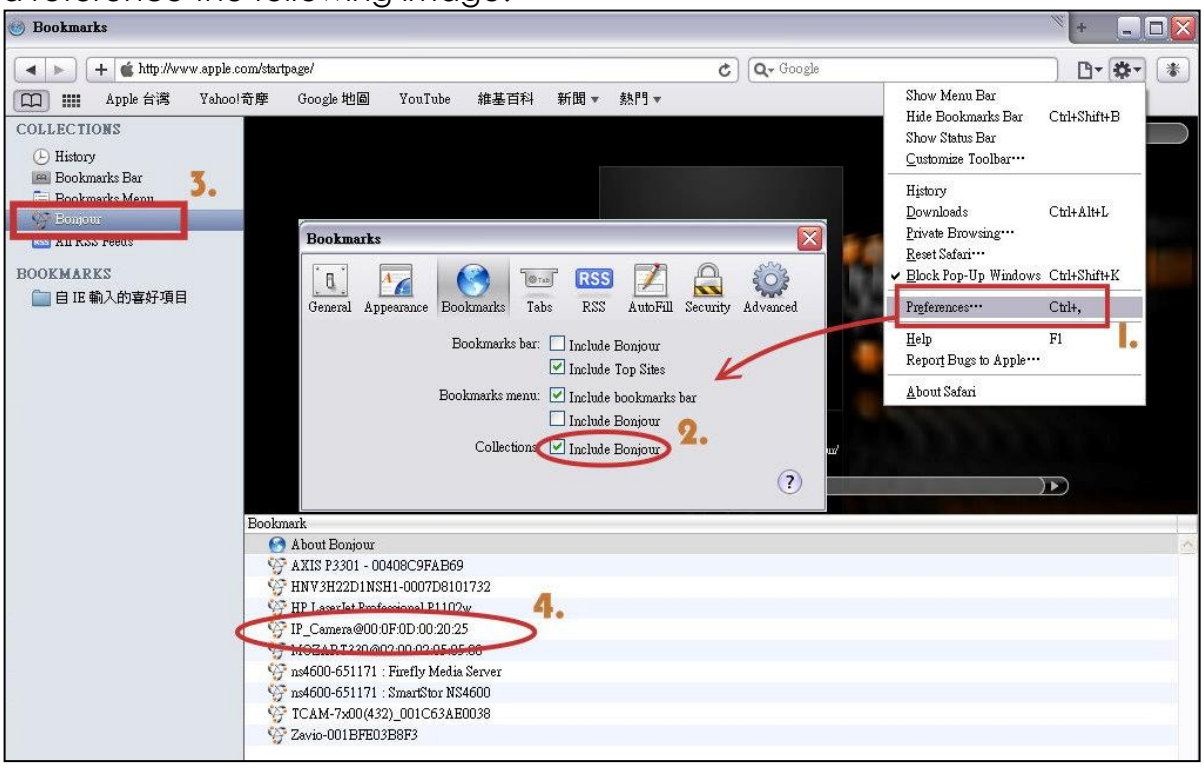
RTSP Keepalive

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

Bonjour

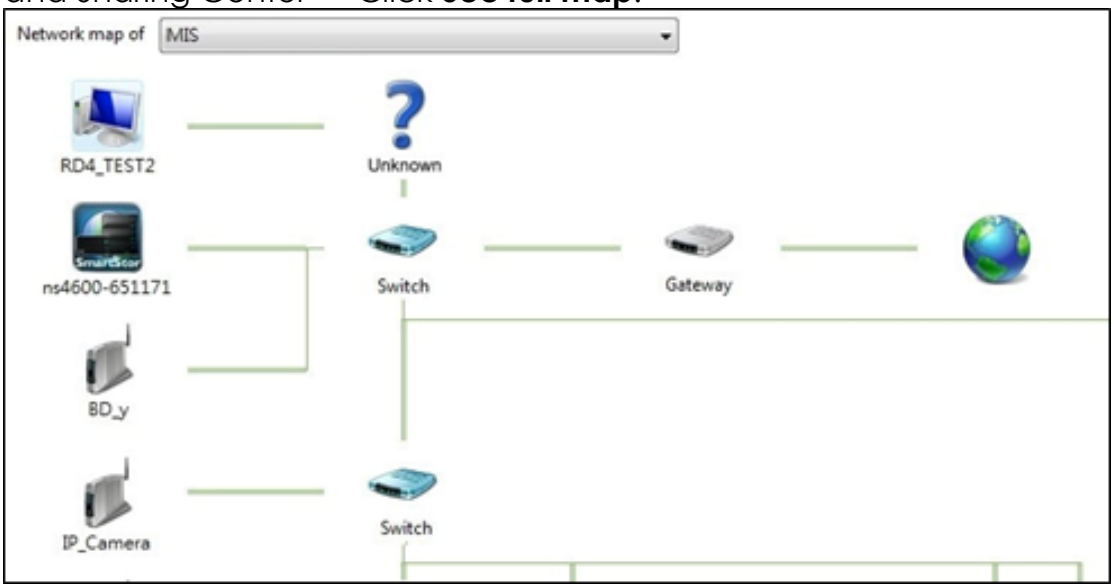
This function allows Apple systems to connect to this IP camera. On **Bonjour Name** key-in the name here. The web browser **Safari** also has a Bonjour function. Tick **Include Bonjour** in the bookmark setting, for the IP camera to appear under the bonjour category.

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 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**.

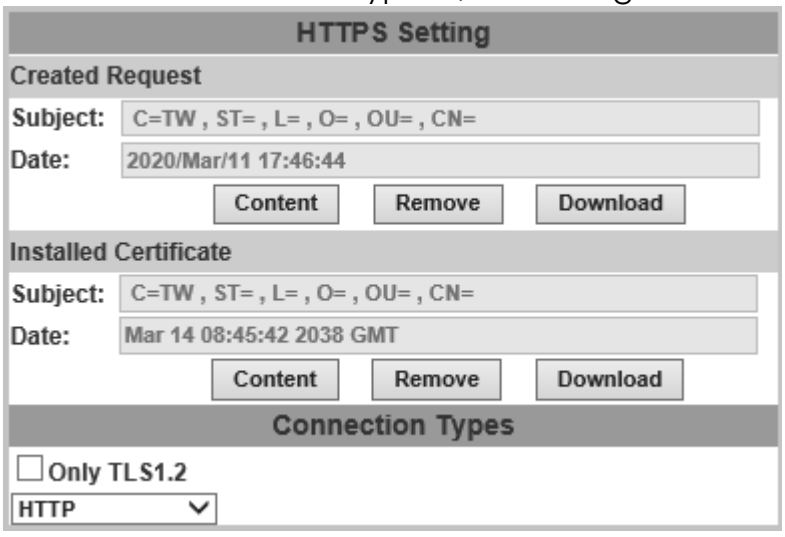


Advanced

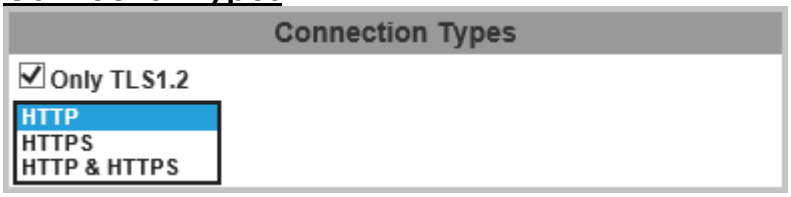
HTTPS Setting

(Hypertext Transfer Protocol Secure)

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



Connection Types



TLS is the abbreviation of **Transport Layer Security**. Many websites send data with connection established by this protocol to. Tick **Only support TLS1.2** checkbox with mouse to enable. Select the connection type:

HTTP

User can access the camera via HTTP path but cannot access it via HTTPS path.

HTTPS

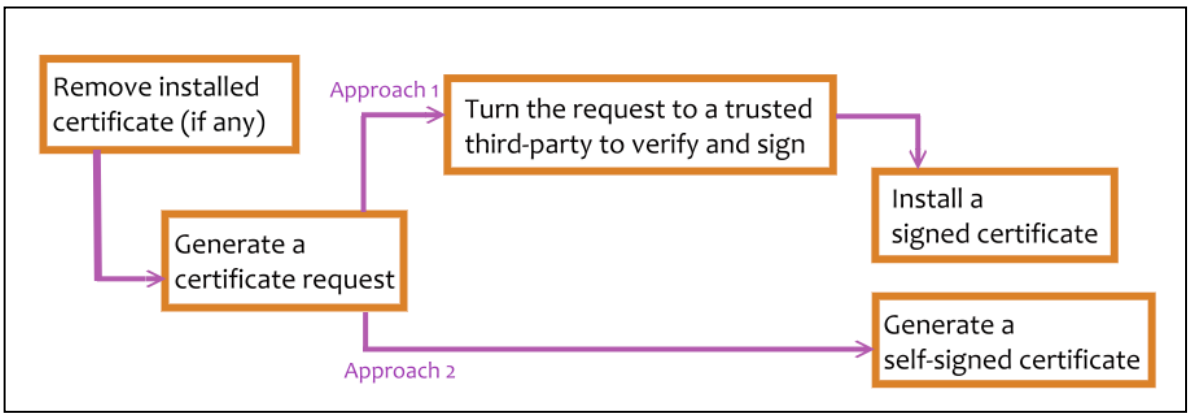
User can access the camera via HTTPS path but cannot access it via the HTTP path.

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.

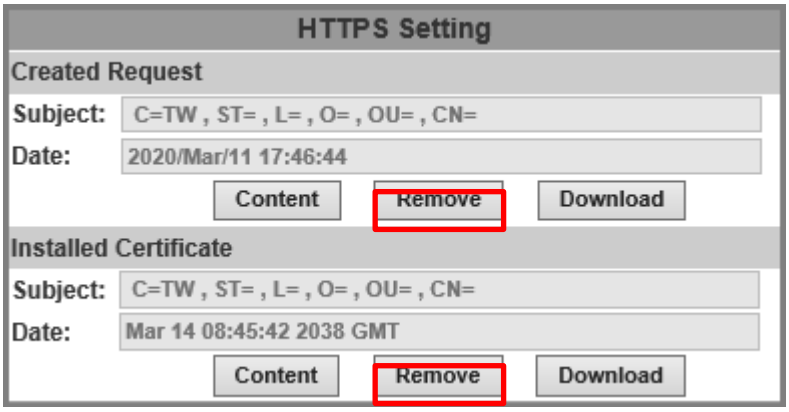
If you want to change from Http to Https, please switch to **HTTP & HTTPS** mode first, and then switch to **HTTPS** mode and vice versa.

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:



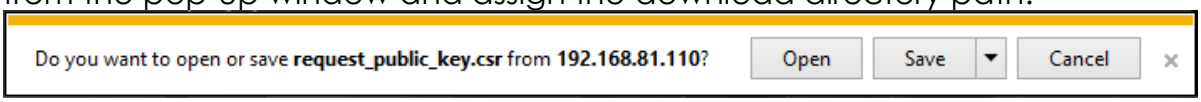
Remove Existing Certificate

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**.



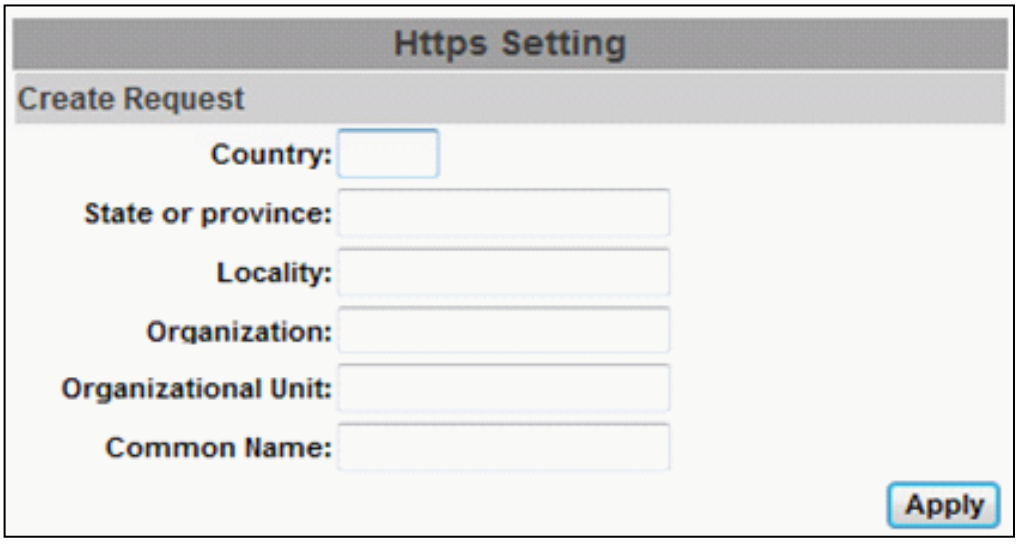
Download Request

Click Download to save the CSR (Certificate Signing Request) file. Select **Save** from the pop-up window and assign the download directory path.



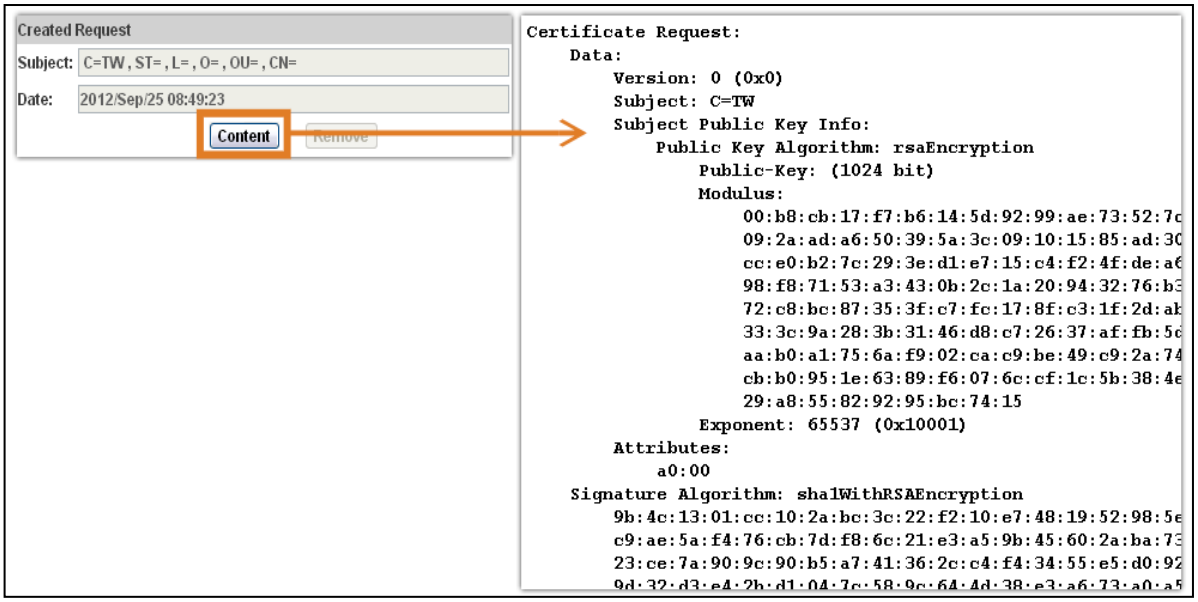
Created Request

Fill-in the following form and click **apply**.



Country: Country where the company is located
State or province: The state or province where the company is located
Locality: The name of the city where the company is located
Organization: Needs to be consistent with legally registered name
Organizational Unit: Company department, you can fill in its common name
Common Name: The name of the domain you want to secure

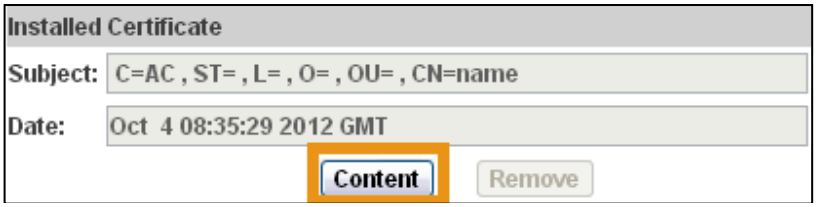
After generating a certificate request, if you choose to turn it & verify it by a trusted third-party, click **Content** and copy all the request content.



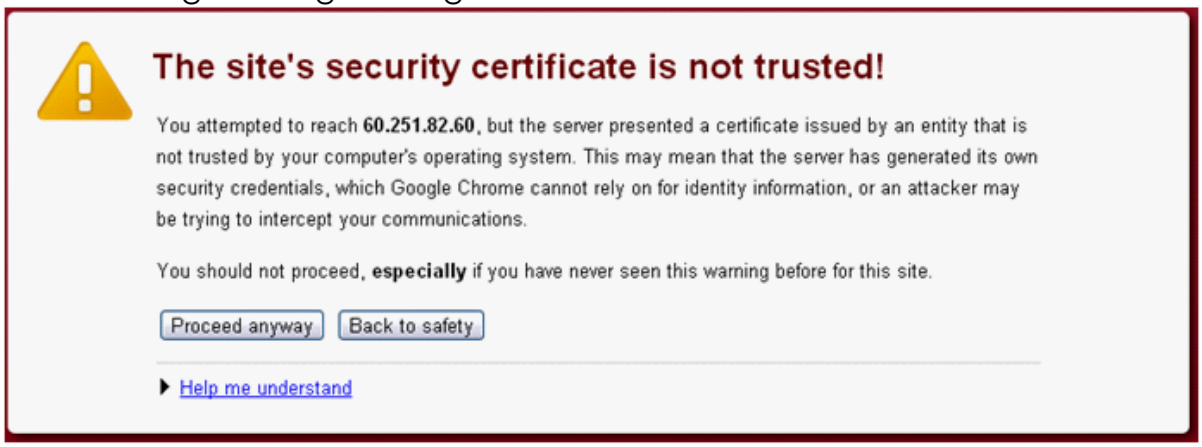
According to the certificate source, there are two ways to install the certificate: If you had sent the certificate request for signing and receiving a signed certificate, click **browse** and find the certificate file in your computer. Click **Apply** to install it.

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.



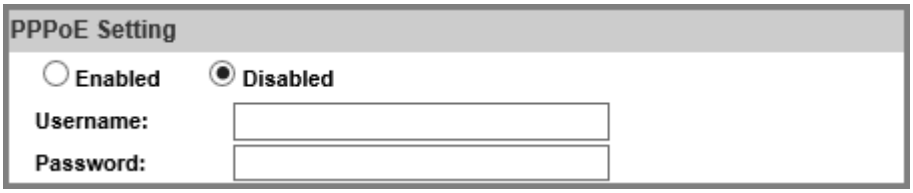
To use Https to access the camera, open your browser, and key-in **https:// (IP address)/** in the address bar. Now your data will be transmitted via encrypted communications. The browser will check your certificate status. It might show the following warning message:



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

PPPoE & DDNS

PPPoE Setting

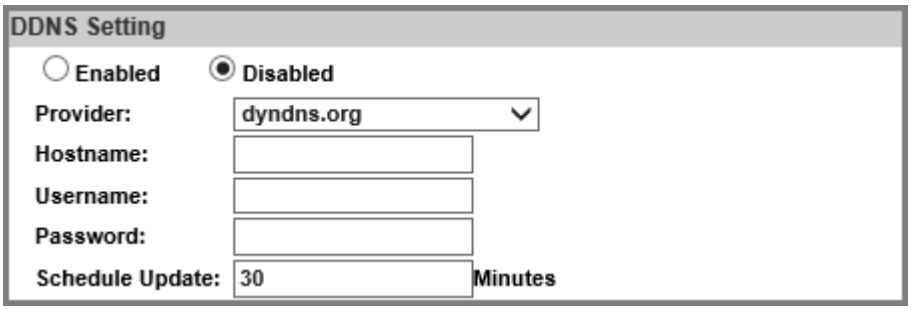


Select **Enabled** to use PPPoE. Key-in the the Username and password for ADSL connection.

Send mail after PPPoE dialed

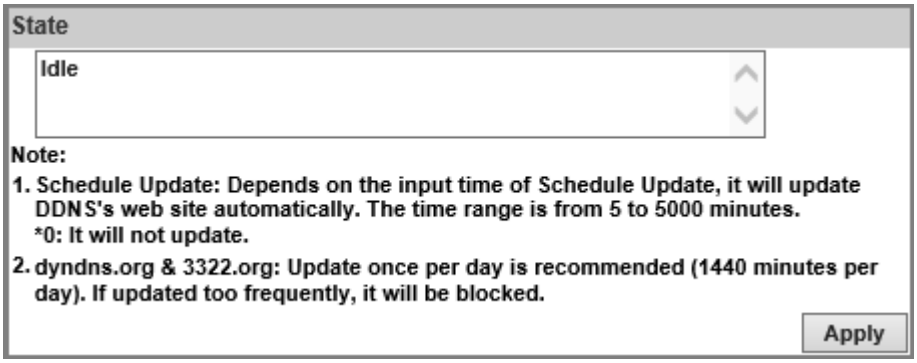
When connected to the internet, the camera will send a mail to a specific mail account.

DDNS Setting



camddns as an example: Enable this service→Input username→IP schedule update→Default: 5 minutes→Click **Apply**
Check results from the message presented inside the **State** field.

State



(1) Updating: Information update

(2) Idle: Stop service

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

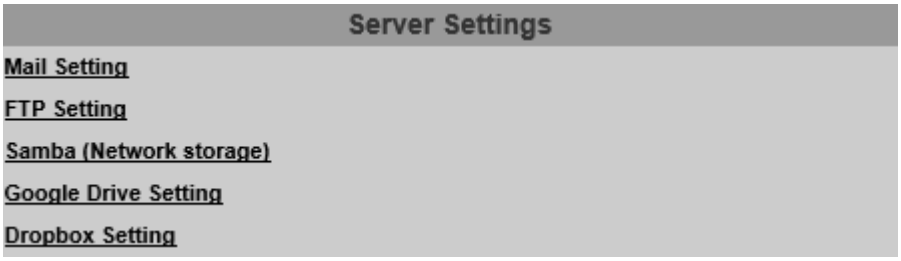
(4) Update Failed, the name is already registered: The user name has already been used. Please change it.

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

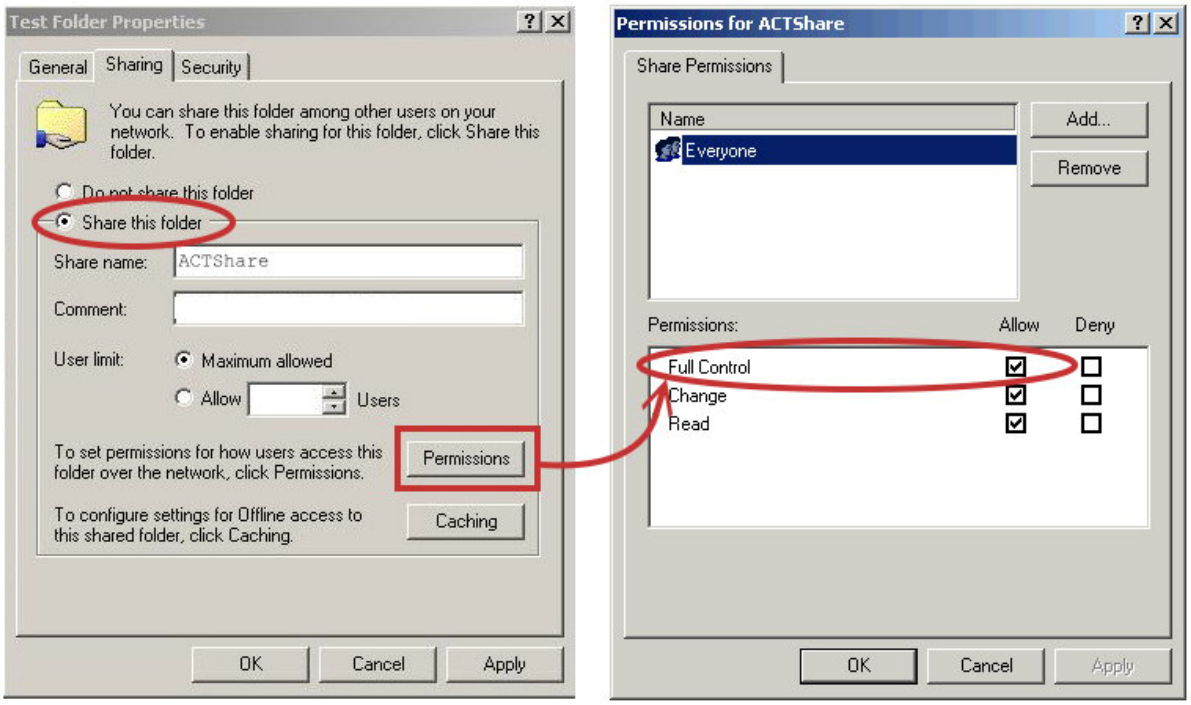
(6) Update Failed, please check the account information you provided: The server, user name, and password may be wrong.

Server Settings

There are several server types available. Select the item to display detailed configuration options. You can configure either one or all of them.



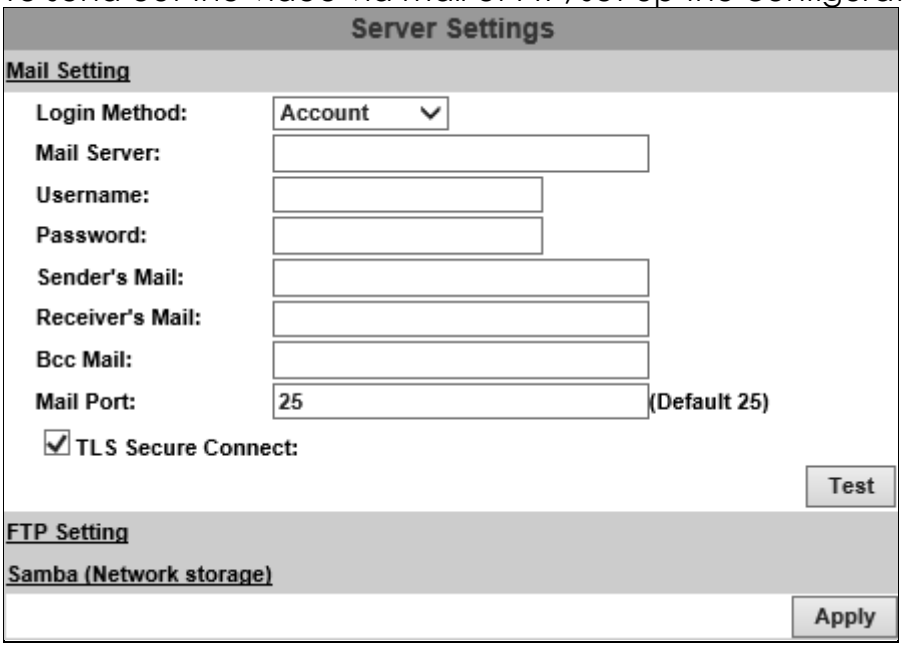
Click **Apply** to save settings at the bottom of **Server Settings**, then click **Test** icon to test the server connection. A message box will tell you **OK!** if it works, and a test document will be created in the location.



If the testing fails, check the sharing setting of your location folder. The folder properties must be **shared** and the permissions must be **Full Control**.

Mail Setting

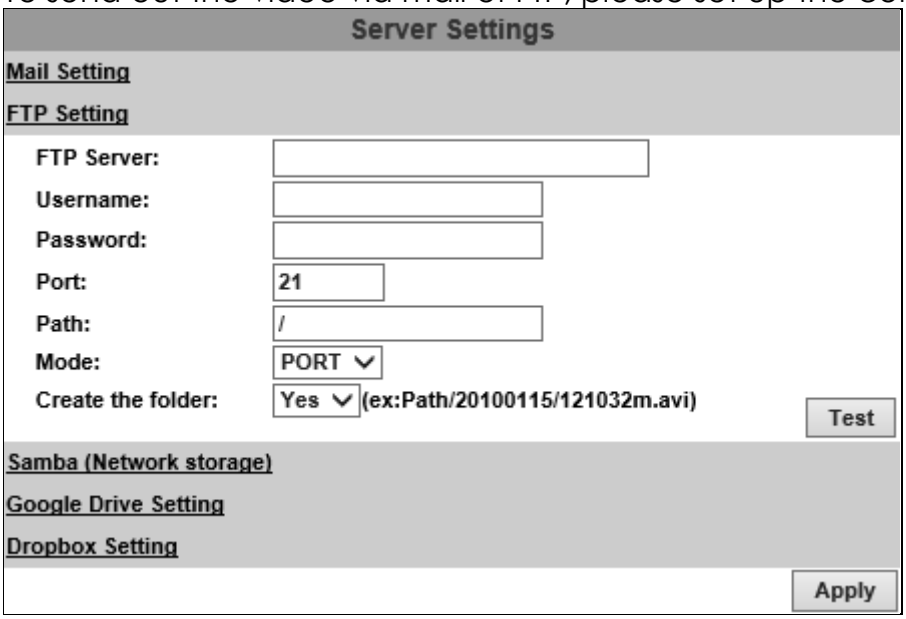
To send out the video via mail of FTP, set up the configuration first.



Click **Apply** to confirm settings at the bottom of **Server Settings**, then click **Test** icon to test the server connection.

FTP Setting

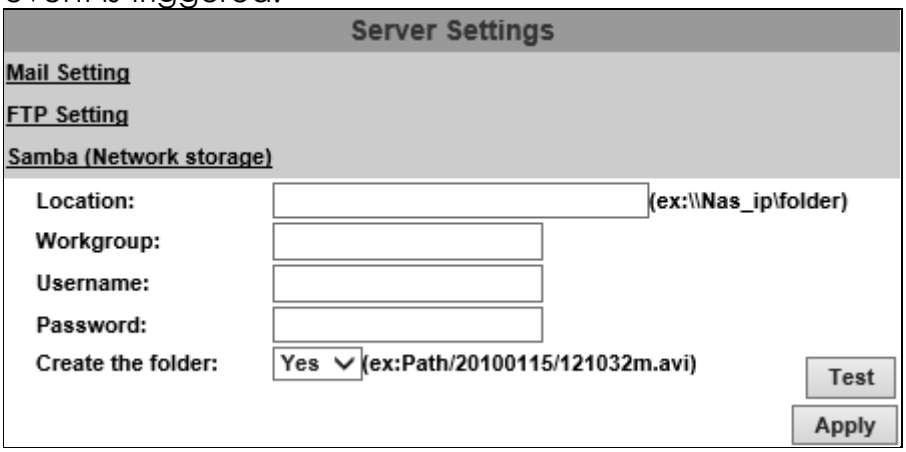
To send out the video via mail of FTP, please set up the configuration.



Click **Apply** to confirm settings at the bottom of **Server Settings**, then click **Test** icon to test the server connection.

Samba (Network Storage)

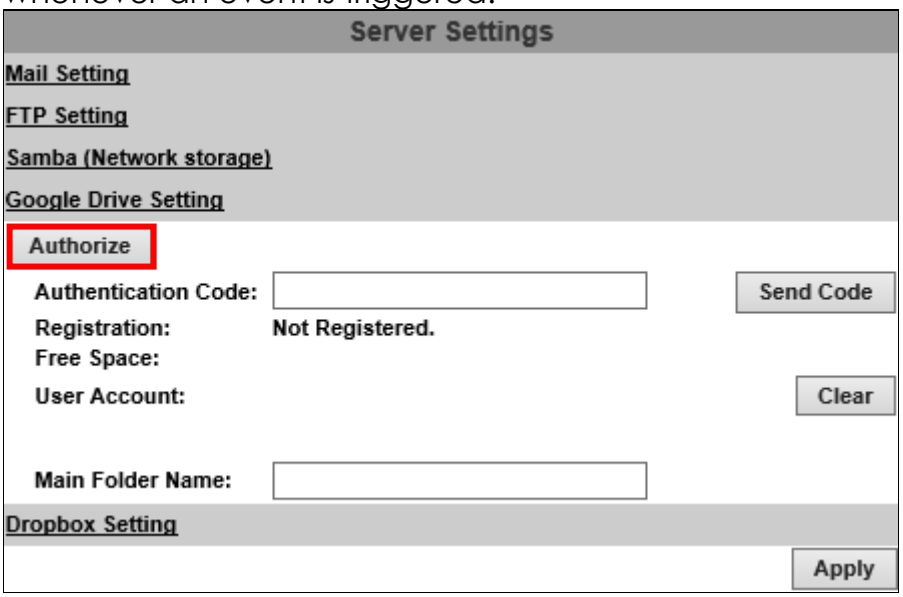
Select this option to send the media files via a neighbor network when an event is triggered.



Click **Apply** to confirm settings at the bottom of **Server Settings**, then click **Test** icon to test the server connection.

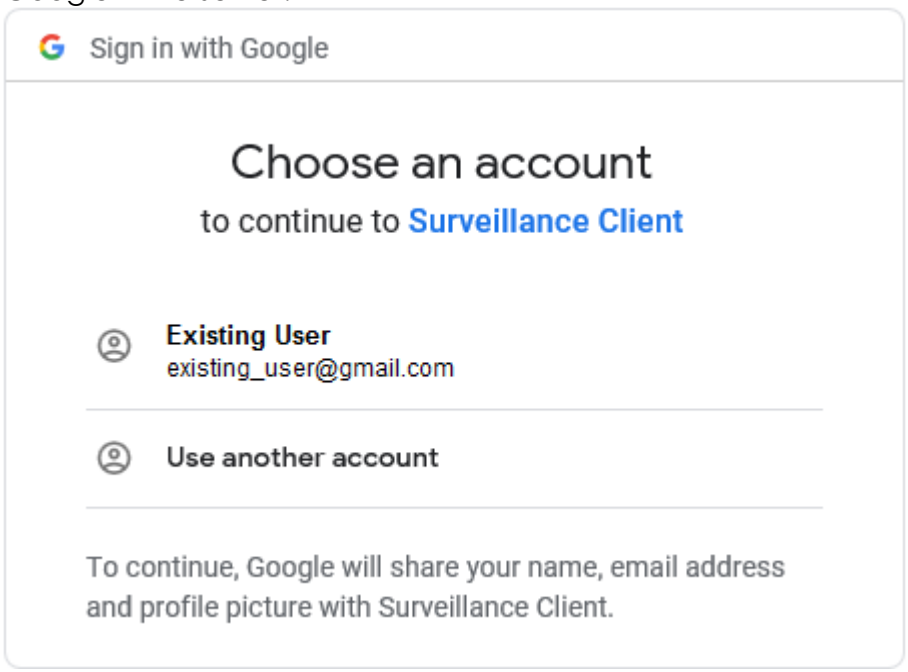
Google Drive Setting

Select this option to send the media files unto the cloud server Google Drive whenever an event is triggered.

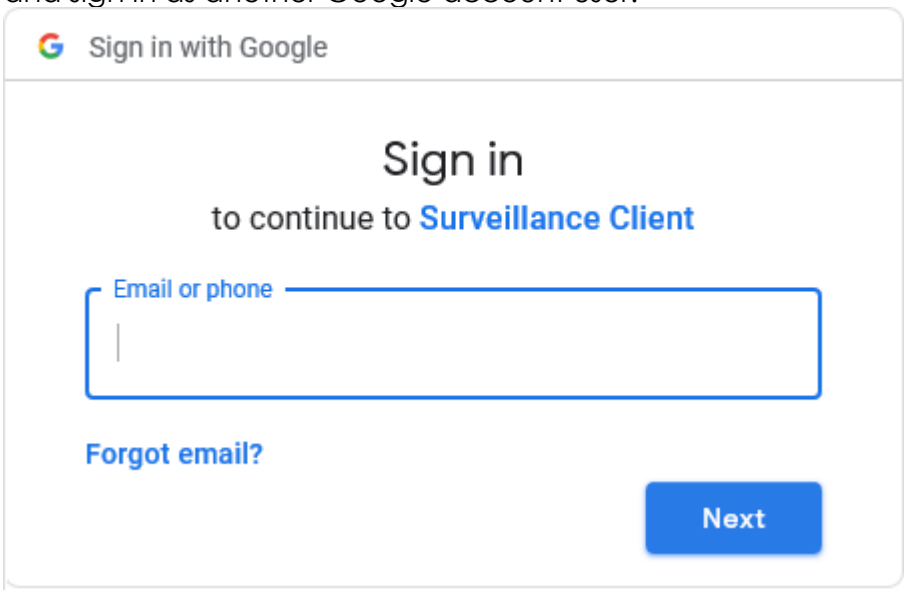


You will have to sign in to the **Google Drive** network before you start the operation. If you have not yet been a Google user, the **online registration** will be required, and you will need to **sign in** first as a Google account user. Below are the steps:

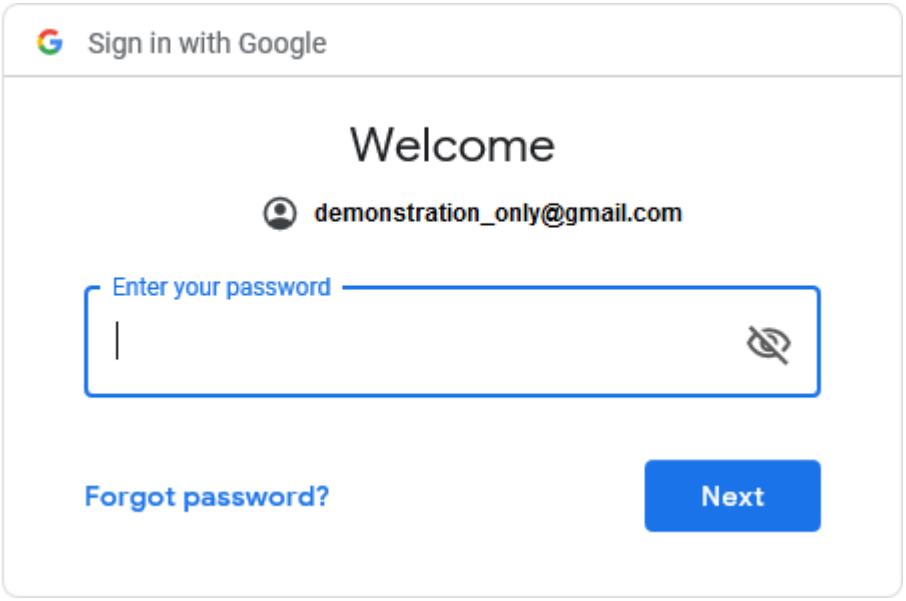
i. Click **Authorize** to begin the online-registration operation. A window will pop up and require you to sign in for a Surveillance Client account directed by Google Drive server.



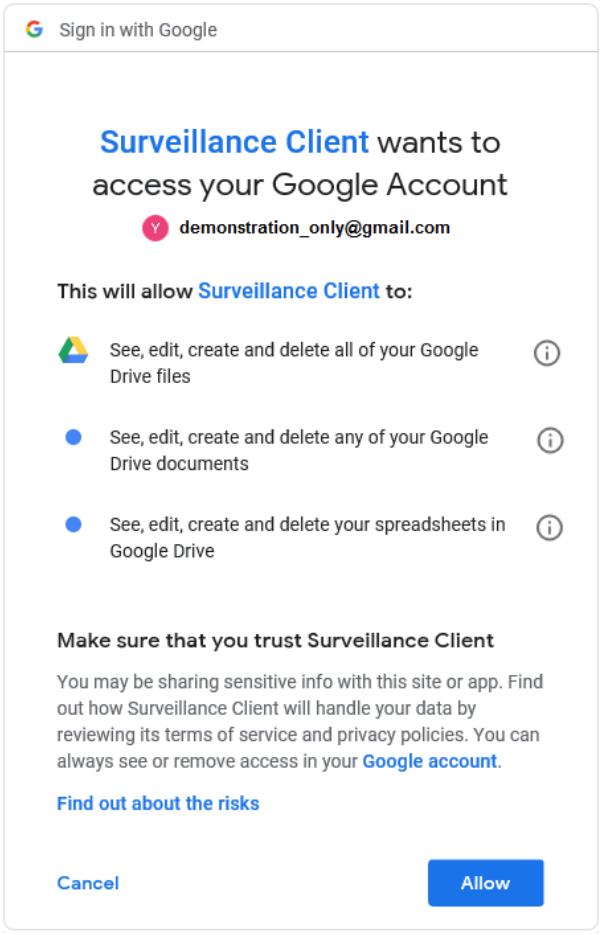
ii. Choose **Existing User** to continue the operation if you have already owned a Google Drive account. Otherwise, you may choose **Use another account** and sign in as another Google account user.



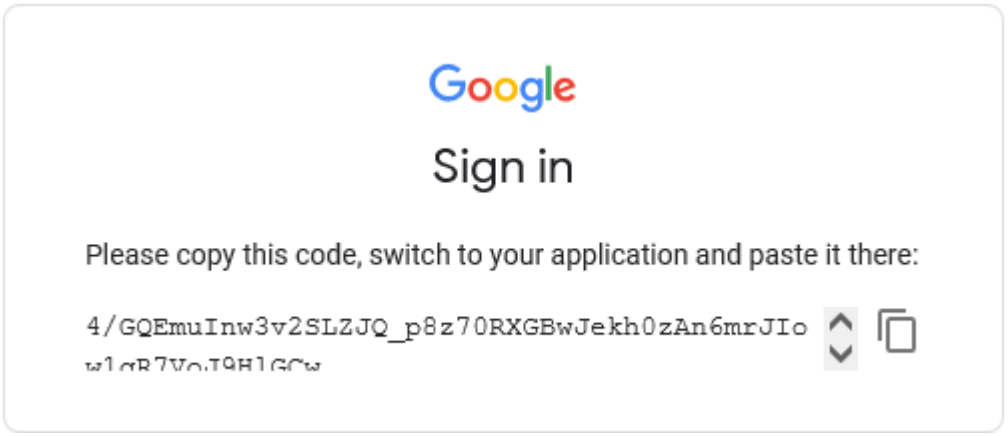
iii. Enter the password and click **Next**.



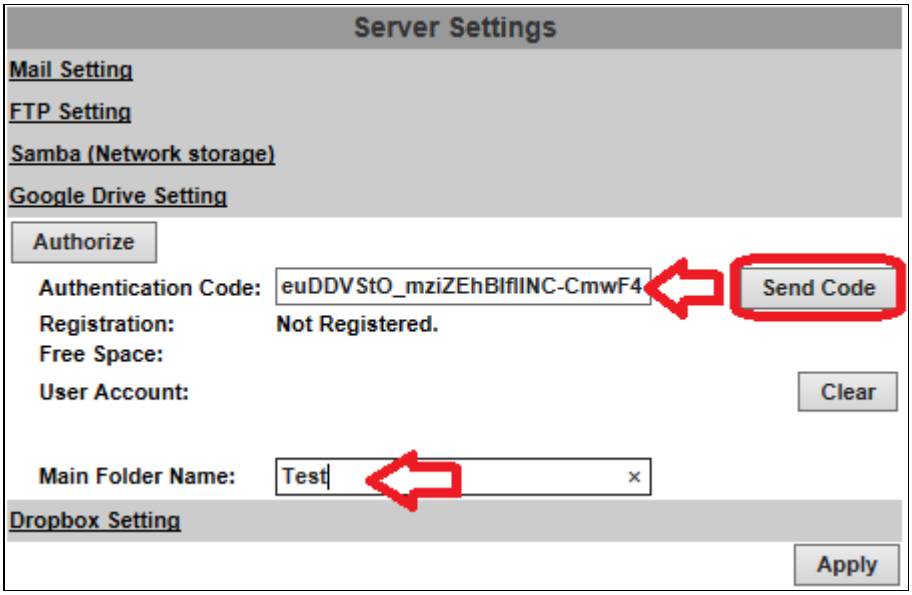
iv. Click **Allow**.



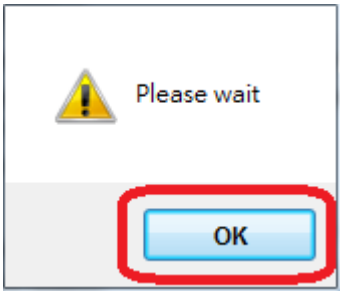
v. **Authentication Code** will be generated by Google server.



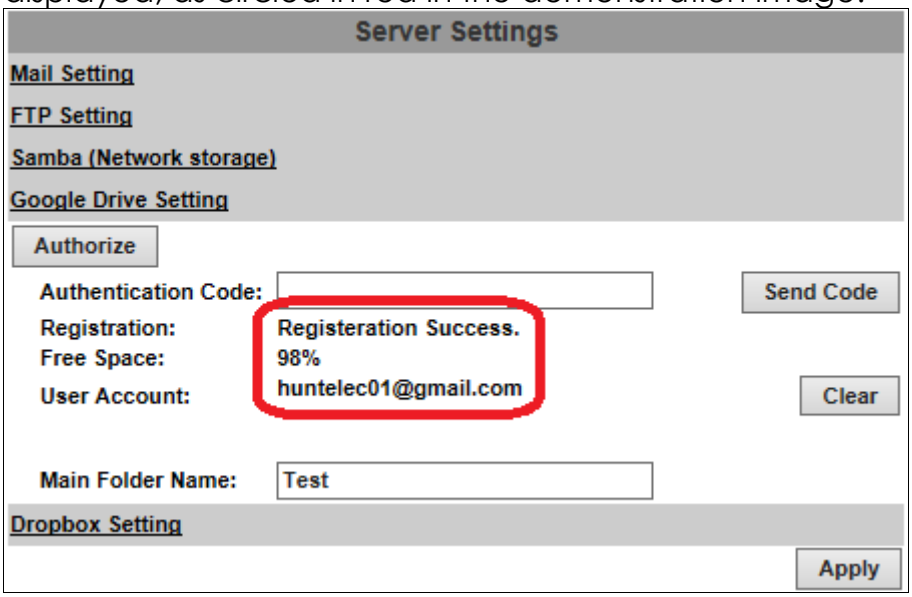
vi. Paste the **Authentication Code** acquired from Google server in the required field, input the **Main Folder Name** of your preference and click **Send Code**.



vii. Please wait for around 15 seconds before clicking OK.



viii. If the application is successful, you will be able to see a list of status displayed, as circled in red in the demonstration image.



Click **Apply** to confirm settings at the bottom of **Server Settings**. Click **Clear** to delete the current account registered for this server.

Dropbox Setting

Select this option to send the media files unto the cloud server Dropbox whenever an event is triggered.

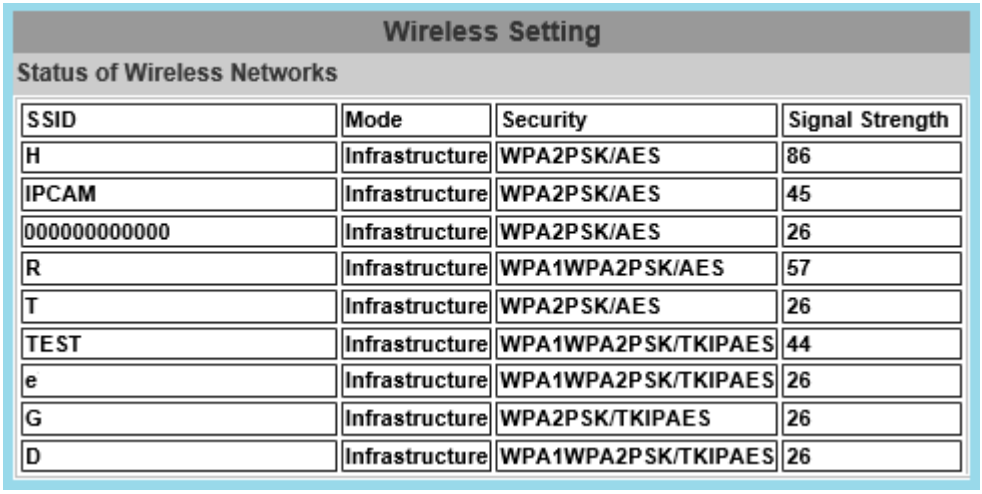
You will have to sign in to **Dropbox** network first. If you do not own an account, you will need to register one for free. If you have already created a Dropbox account, click **Authorize** to start the operation.
A window from the Dropbox server will open to ask you for signing-in.
Enter **Authentication Code** in the required field and click **Send Code**.
Click **Clear** to delete the current account registered for this server.
Click **Apply** to confirm settings at the bottom of **Server Settings**.

Please refer to **Google Drive Setting** for the same setup procedure.

Wireless Setting

(Optional, support 802.11 b/g/n)

For setting up the IP camera via wireless network, first, use the Ethernet cable to connect the camera.



Wireless Setting

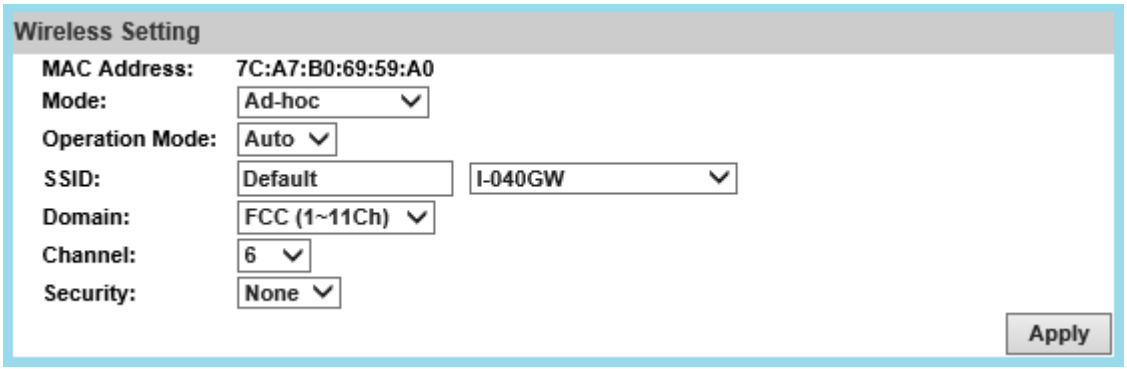
Status of Wireless Networks

SSID	Mode	Security	Signal Strength
H	Infrastructure	WPA2PSK/AES	86
IPCAM	Infrastructure	WPA2PSK/AES	45
000000000000	Infrastructure	WPA2PSK/AES	26
R	Infrastructure	WPA1WPA2PSK/AES	57
T	Infrastructure	WPA2PSK/AES	26
TEST	Infrastructure	WPA1WPA2PSK/TKIPAES	44
e	Infrastructure	WPA1WPA2PSK/TKIPAES	26
G	Infrastructure	WPA2PSK/TKIPAES	26
D	Infrastructure	WPA1WPA2PSK/TKIPAES	26

After finishing & saving the wireless settings, remove the Ethernet cable.
Note: The IP address is the same under both wireless and wired network. If the Ethernet cable is plugged in the camera, the IP camera will use it to link to the Internet instead of the wireless router.

Status of Networks in Wireless Setting

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



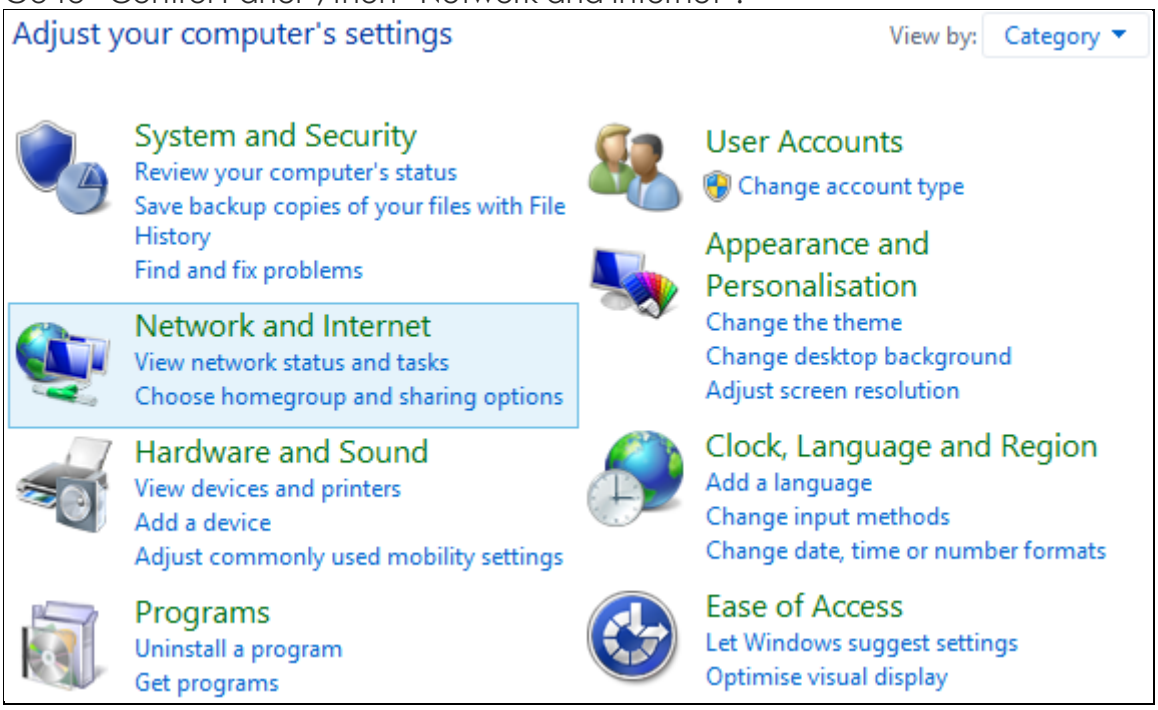
Mode: Infrastructure mode is used to link to the wireless router. **Ad-hoc** mode is used to link to the PC directly.

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.
Domain and **Channel** options appear only in the Ad-hoc mode.

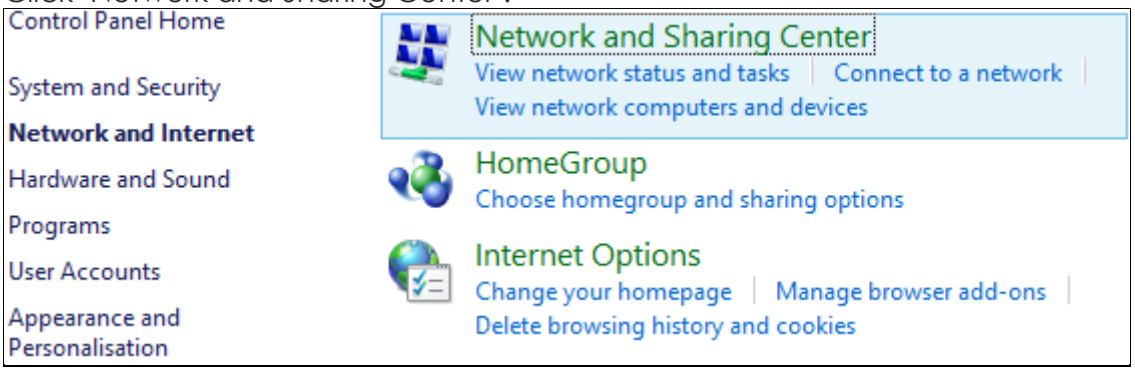
Connecting to an ad-hoc Wi-Fi network

This demonstration is done manually and specifically applied to Windows 8.1 since Windows 8.1 no longer shows Ad-hoc network in the Wi-Fi list.

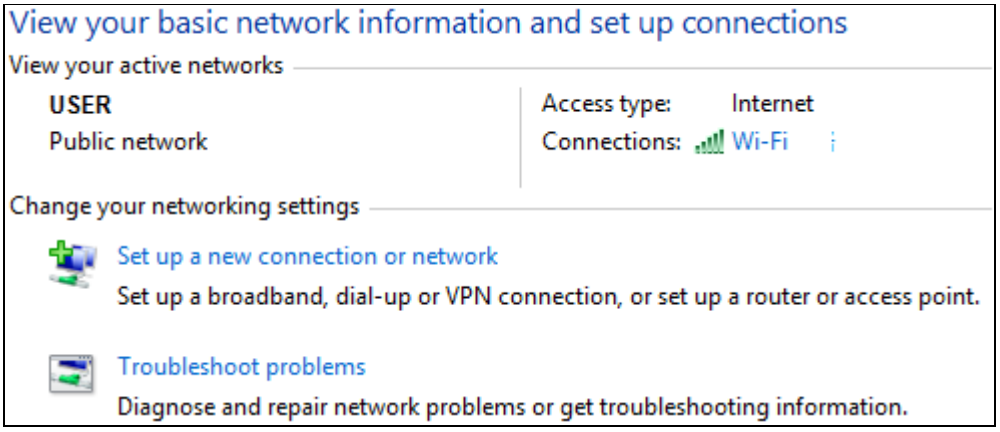
Go to "Control Panel", then "Network and Internet".



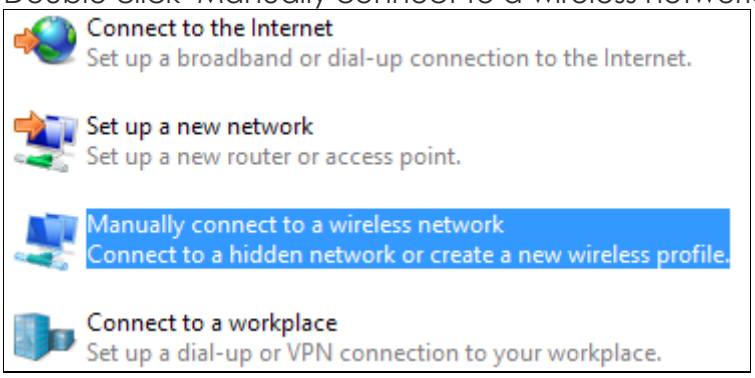
Click "Network and Sharing Center".



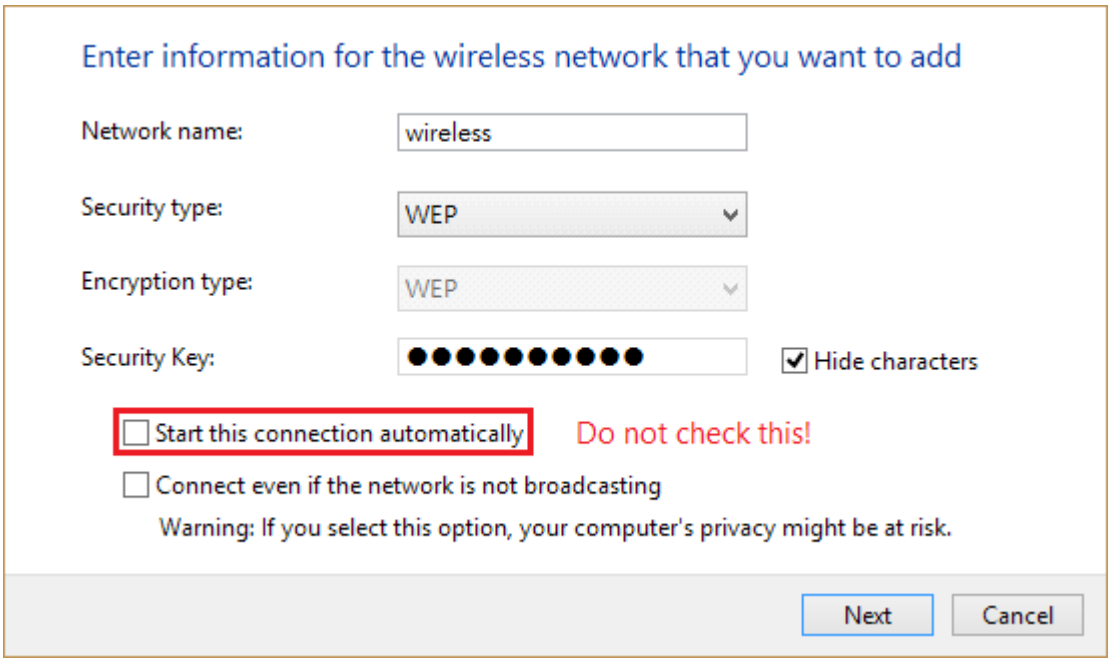
Click "Set up a new connection or network".



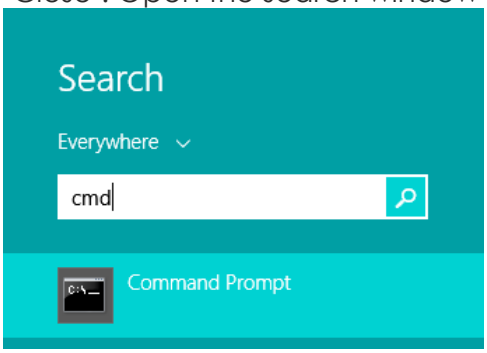
Double click "Manually connect to a wireless network".



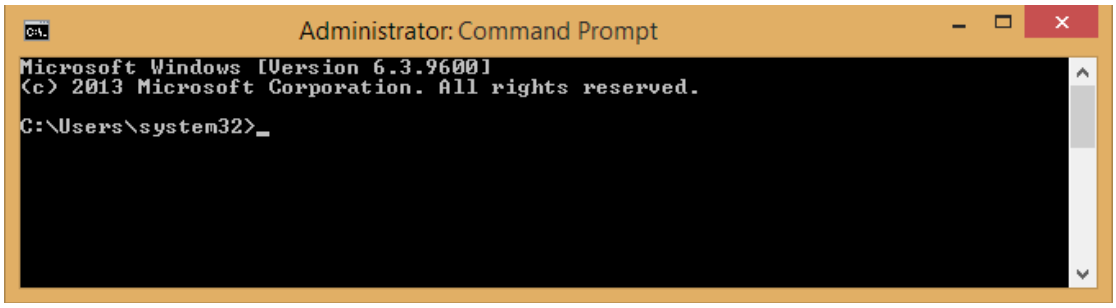
Enter the SSID of the ad-hoc network (as shown by "netsh wlan show networks") into the "Network name" field. Configure security settings accordingly.



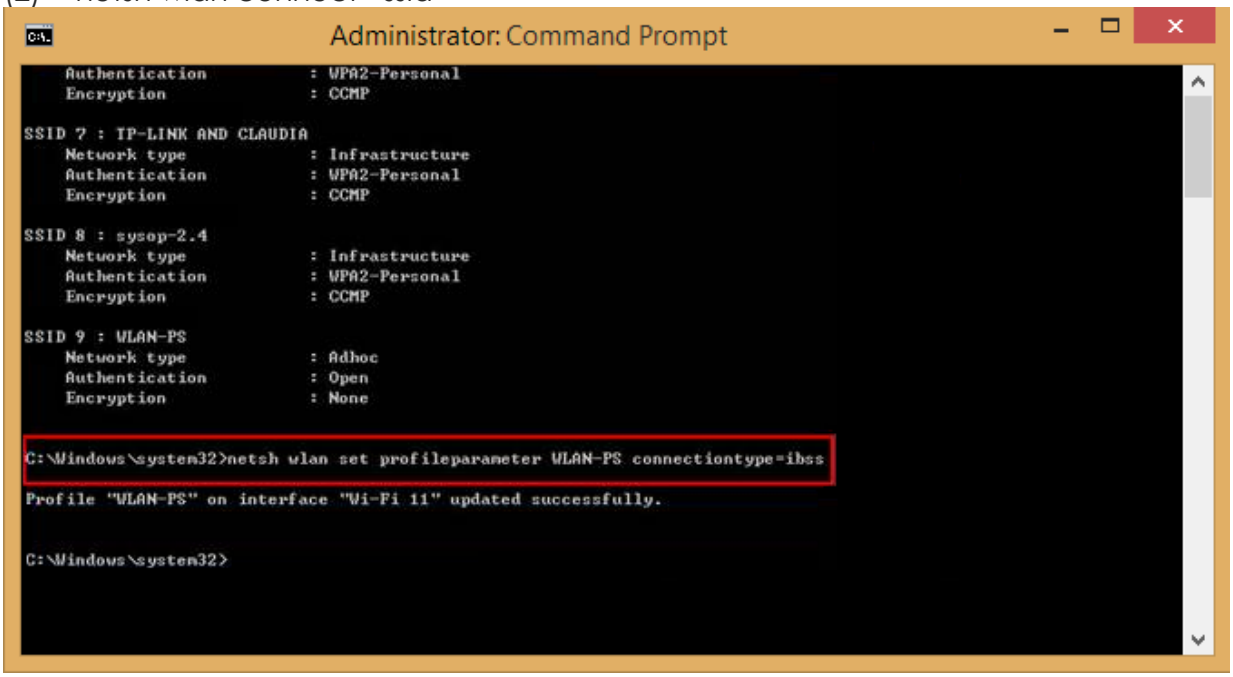
Make sure "Start this connection automatically" is unchecked. Click "Next", then "Close". Open the search window (Windows key+Q) & search for "cmd"



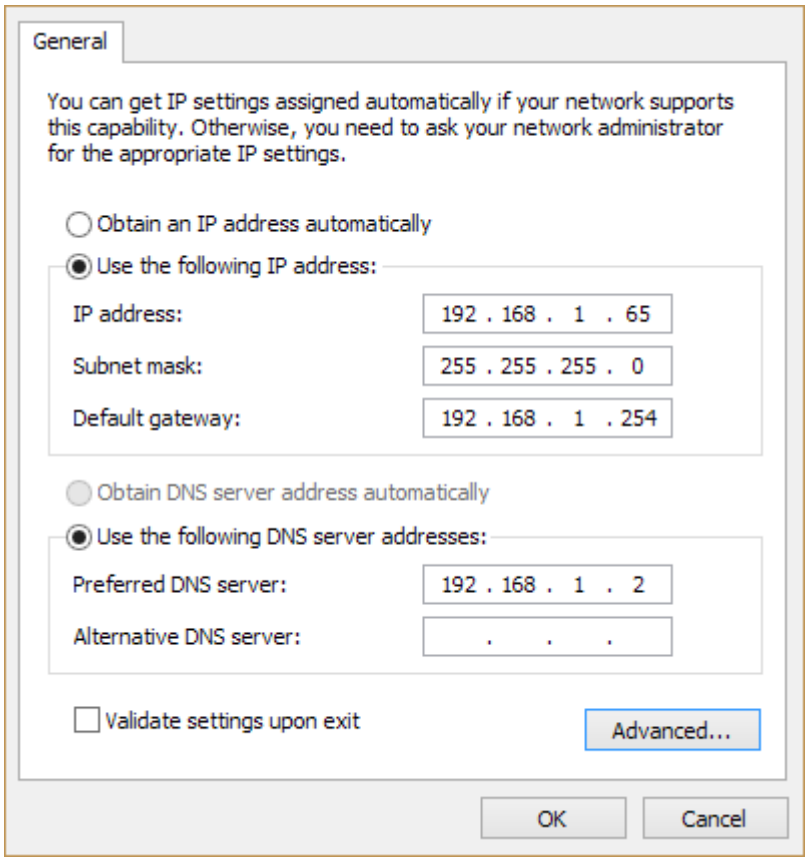
Run the command to open up a new window.



Enter the messages below.
(1) > netsh wlan set profileparameter <ssid> connectiontype=ibss
(2) > netsh wlan connect <ssid>

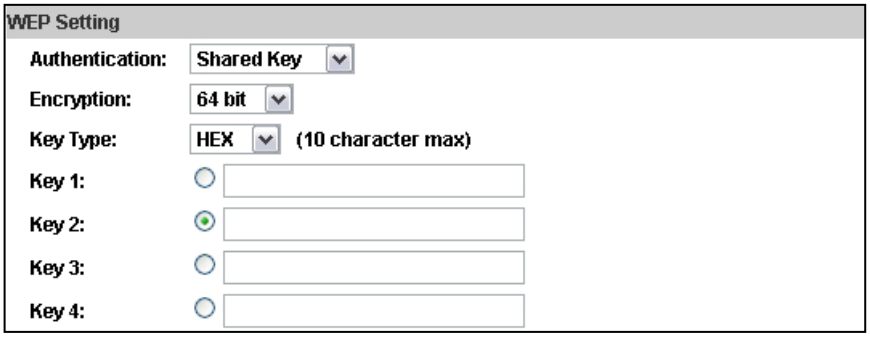


Now **Ad-hoc** mode is available after the IP settings completion.



- **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.

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:** Key in the key password according to your wireless router setting. The length and type must be consistent with the settings above.

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.)

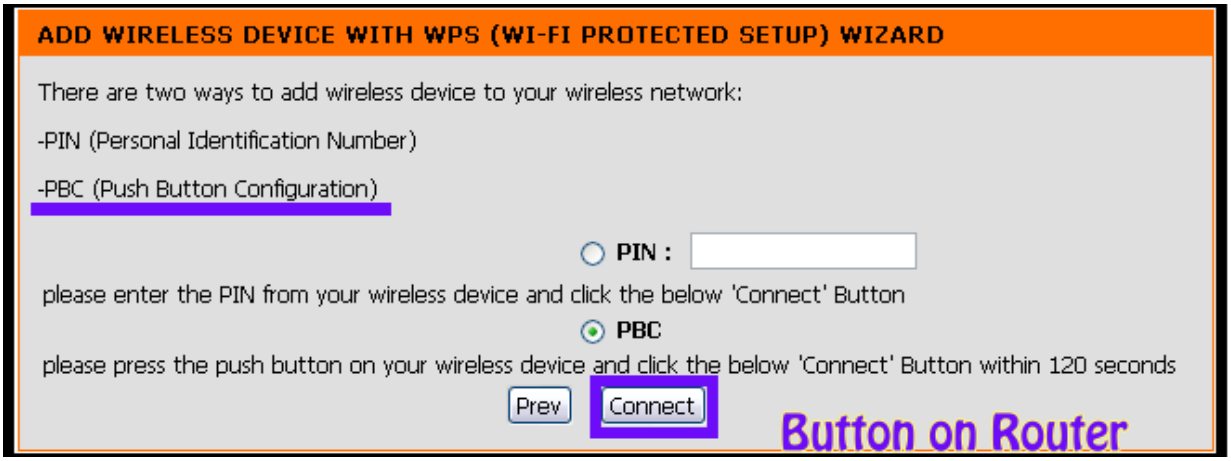
WPS

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 of the IP camera.

Use the Ethernet cable to connect the IP camera to the PC or network. Enter into 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 press the black button on the back of the camera. (Note: Only press and hold the button no longer than 3 seconds, otherwise the camera will then turn the command to factory default instead.)

The signal light under the WPS label will start flashing to indicate the connecting status. Once the WPS connection is successful, the light will then stop to flicker.

A/V Settings

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

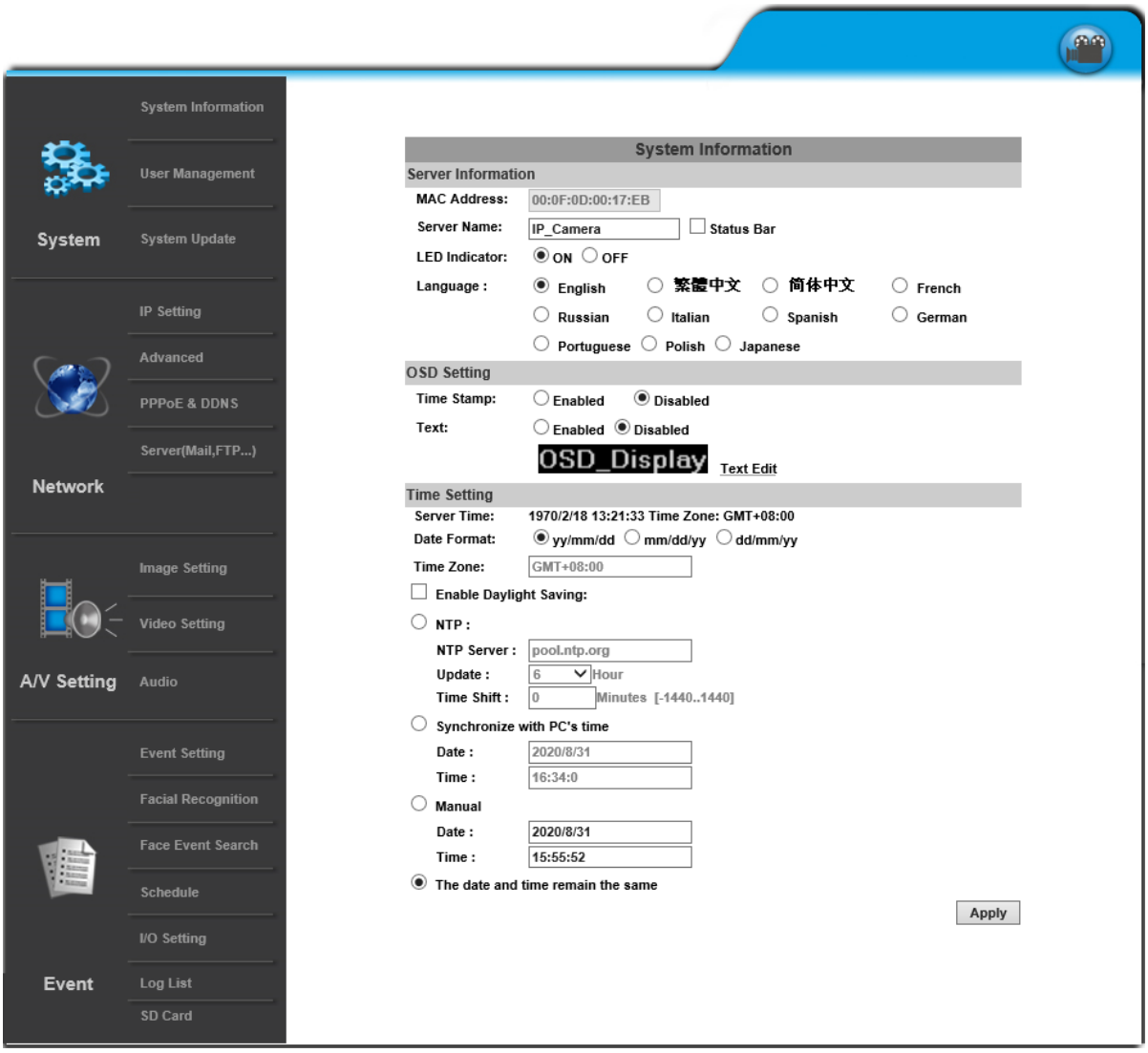


Image Setting

Camera offers preview of the result made in **Image Setting**.

Privacy Mask

An area on the monitoring screen can be masked as a block of particular color only in **live view** for security and privacy purposes, but will not be visible in the video recorded. You can create up to 3 privacy masks.

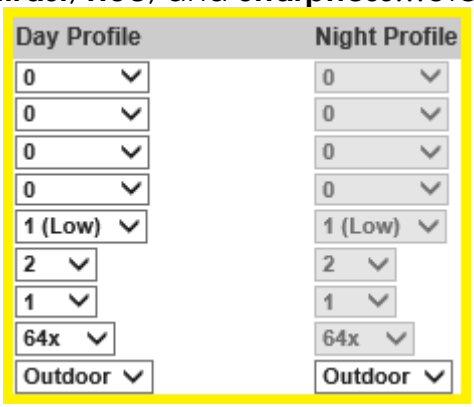
Click any **Area 1/2/3** button first, and then draw an area on the preview image screen with mouse. Click **Save** to apply settings and create the mask.

Discard the masked area previously set by clicking **Area 1/2/3** button again, and click **Save** to confirm.

Image Setting

Day Profile & Night Profile

Settings can be adjusted under **Day Profile** & **Night Profile** drop-down lists. Such as **Brightness**, **Contrast**, **Hue**, and **Sharpness**…etc.

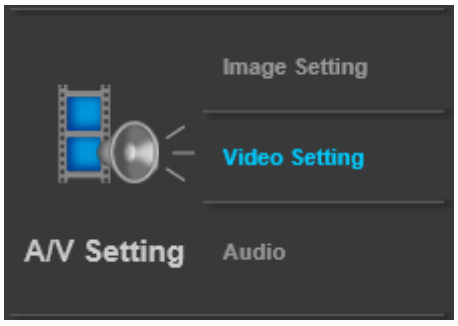


Activate them by enabling **Times Mode** from **Day & Night** and assign settings under each profile. Configurations from both Day & Night Profiles will be adjusted between daytime and night time. Different **Brightness**, **Contrast**, **Hue**, and **Sharpness** values can be adjusted

Brightness, Contrast, Hue, Sharpness

Settings can be adjusted from each drop-down menu.

D-WDR & True-WDR



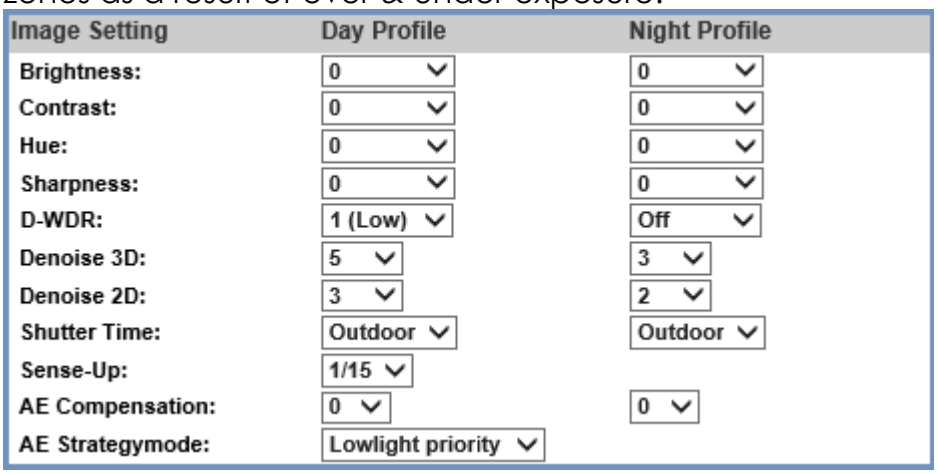
Click Video Setting from **A/V Settings** menu first.

There are two types of **Image Settings** to switch from depending on what **Input Resolution** from **Video Setting** you have applied to the camera.

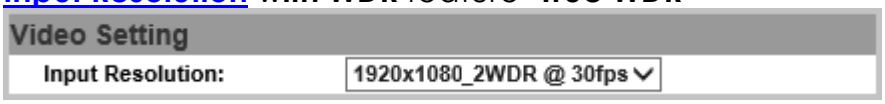
Click Apply to assign an input resolution for captured video files. Features vary in FPS (frames-per-second) and options will be modified in **Image Setting**.

Input Resolution without WDR feature=**D-WDR**

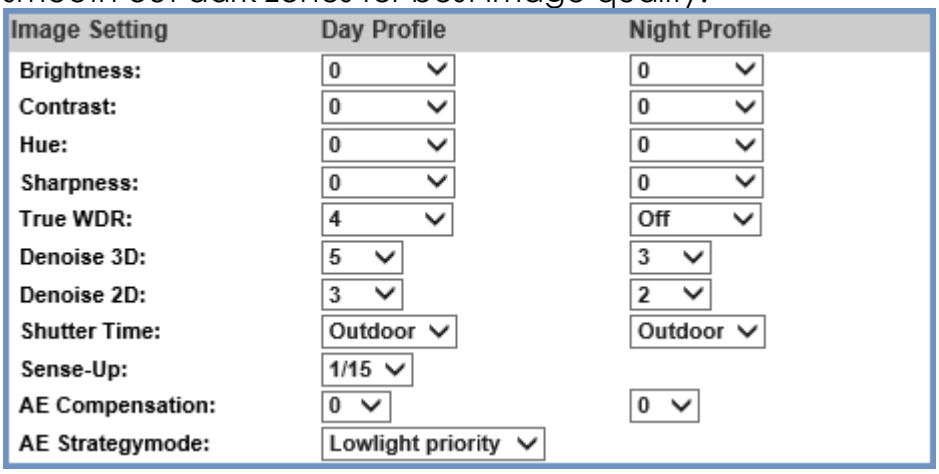
D-WDR enables the camera to reduce the contrast in the view to avoid dark zones as a result of over & under exposure.



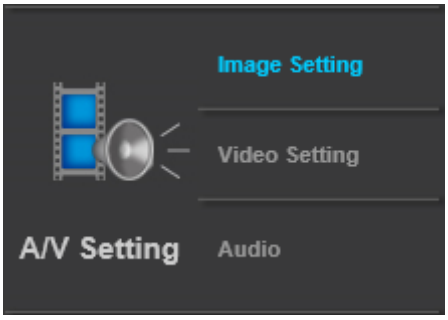
Input Resolution with WDR feature=**True WDR**



True WDR enables the camera to combine the over & under exposures to smooth out dark zones for best image quality.



Go back to **Image Setting** where you can operate a different set of settings.



Denoise 3D & 2D
Filter the noise and blur from the image and show a clearer view. You can set the values for **3D & 2D** filters.

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.

Sense-Up
This function increases the sensitivity of camera to get brighter image at night. The smaller value you select, the slower shutter speed becomes. So that the image will get brighter, and moving subjects might be blurred.

AE Compensation
Assign levels of exposure to help lighten or darken the camera view. Assigning a bigger/smaller number creates a lighter/darker image.

AE Strategymode
Select **Lowlight Priority** or **Highlight Priority** to adjust the view in preference of lightening or darkening the contrast.

Saturation
Adjust the saturation values here.

AGC
The sensitivity of the camera can be adjusted according to its environmental lighting. Enable this function to get brighter images on low light, but the level of noise may also increase.

Digital Image Stabilization
Enable this function to reduce blurriness occurred during the motion of a camera and helps compensate the captured image quality when camera

shakes. Digital Image Stabilization & Lens Distortion Correction may not be recommended to be in operation at the same time for which may cause image loss.

Anti Fog

Improve the image clarity on environments presenting high levels of fog or smoke.

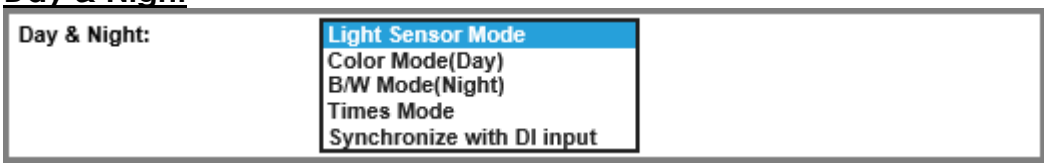
Lens Distortion Correction

Straighten the curves in the borders of the image caused by the lens angles.

Video Orientation

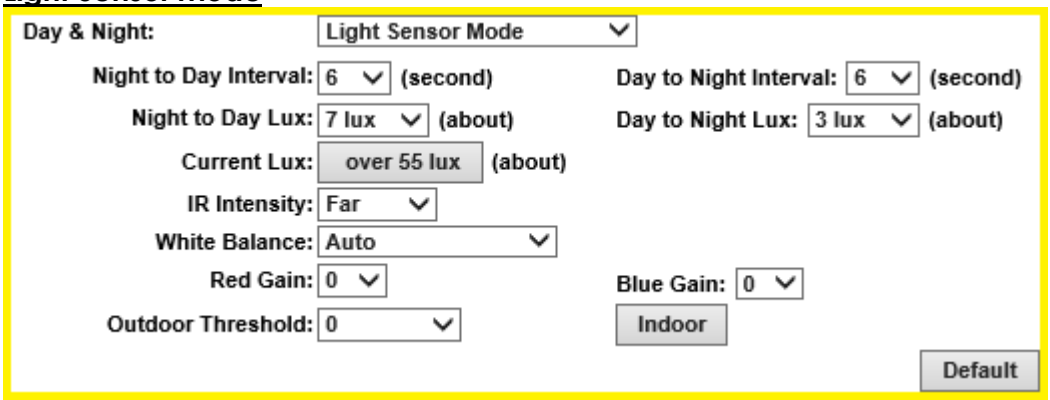
Flip or mirror the image.

Day & Night



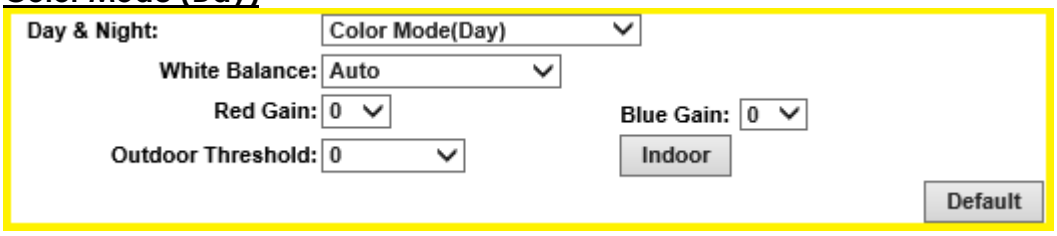
Adjust the camera to detect the light level for different environments. Settings vary when modes are shifted. An extra sub-function may appear to be available after a setting is adjusted.

Light Sensor Mode



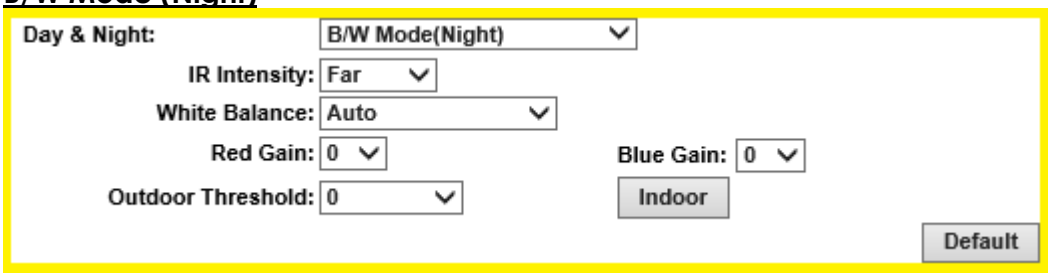
The image will turn black & white at night to keep a clear image. To set light sensor mode, appoint a lux standard of switching day & night. Current lux values in the menu are provided for reference.

Color Mode (Day)



Recommended to use during day time.

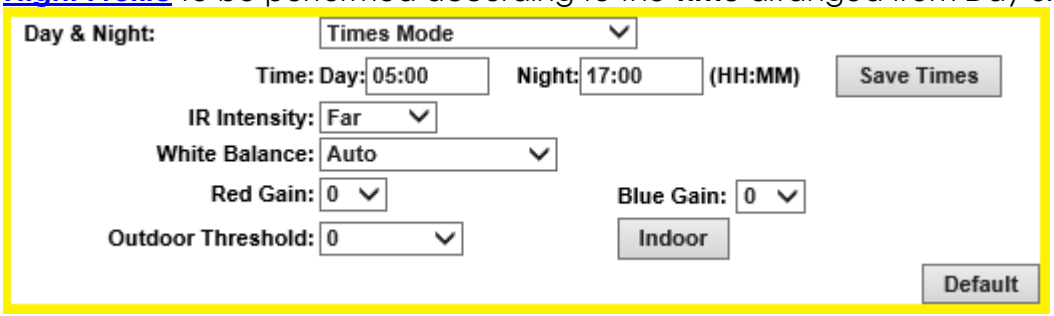
B/W Mode (Night)



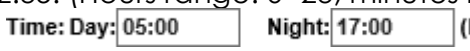
Recommended to use during night time.

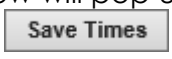
Times Mode

Set the values in Brightness, Contrast, Sharpness, and **Denoise(3D&2D)** for both **Day & Night Profile** to be performed according to the **Time** arranged from Day & Night.

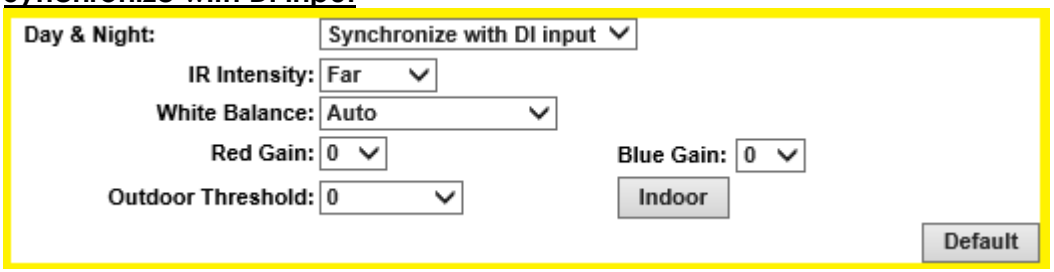


Time: The user can define when the daytime (Day) starts by filling in the digits such as 05:00 or 12:35. (Hours range: 0~23, minutes range: 0~59)

Example:  If the time range is inaccurate, a window will pop up to remind you. Same way applies to filling the nighttime (Night).

Click  when settings are completed.

Synchronize with DI input



The settings are adjusted according to the DI input functions.

Night to Day Interval & Day to Night Interval

Set up the duration of how long before the Day time shifts to Night time (or the other way around).

Day to Night Lux & Night to Day Lux

Appoint desired lux values as a standard for switching **Night to Day Interval** & **Day to Night Interval**.

Current Lux

Provided as a reference value to adjust **Day to Night Lux** & **Night to Day Lux**.

IR Intensity

Adjust the IR intensity level from **Far**, **Middle** or **Near**.

White Balance

Assign lighting options which are designed for specific lighting environments.

AUTO - Continuously adjusts camera color balance according to any change of color temperatures and lightings in various environments.		
Tungsten Lamp	**Fluorescent Lamp**	**Sunlight**
Cloudy		**Cloudy Days**

You can set the **Red/Blue gain** and **Outdoor Threshold** levels by selecting values from each drop down menu.

Red & Blue Gain

Adjust levels in red & blue contrasts in the image. Be aware that when these levels are increased, the image quality will become sharper to a point that noise of the image will also be increased.

Outdoor Threshold

Values applied for this feature will define how sensitive the motion detection is triggered for outdoor scenes.

Indoor

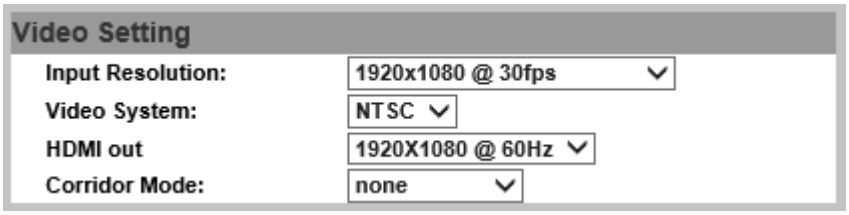
Click to enable operation for any indoor motion detections.

Default

Click on Default button to restore the default settings.

Video Setting

Video System

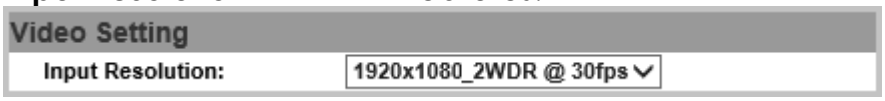


Input Resolution

Click Apply to assign input resolution for captured video files. Features vary in FPS (frames-per-second) and will modify the options from **Image Setting**.

Input Resolution without **WDR** features:

Input Resolution with **WDR** features:



Video System

Choose from **NTSC** or **PAL** for video signal.

HDMI out

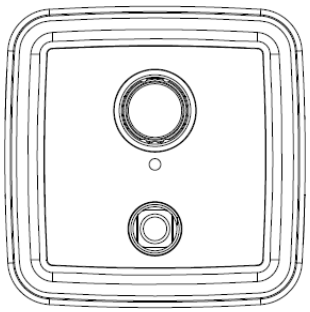
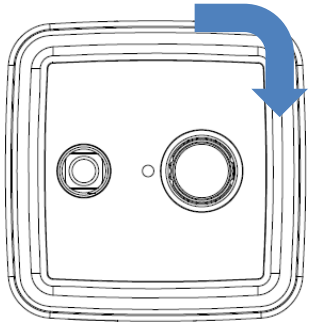
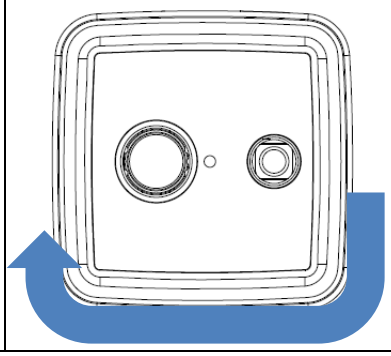
Select from different resolutions of high definition signal.

Corridor Mode

Set the degree of the camera angle for monitoring purpose.

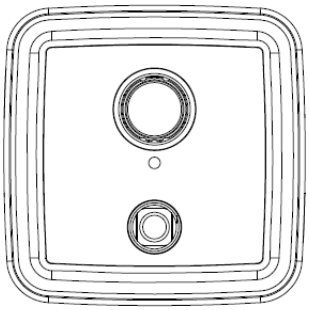
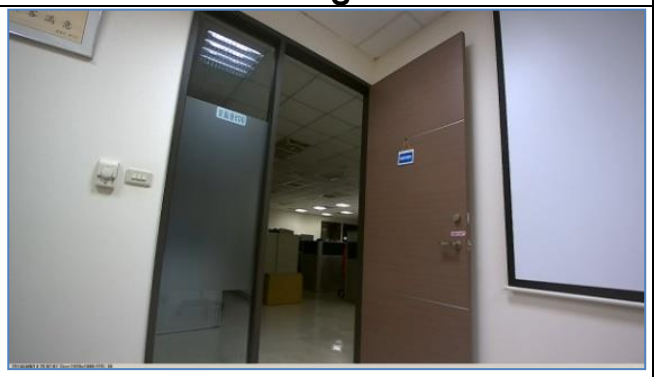
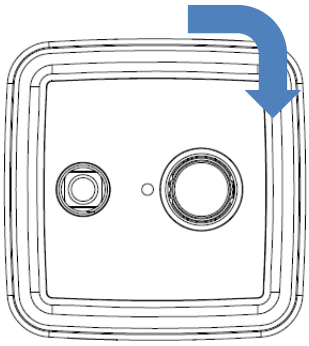
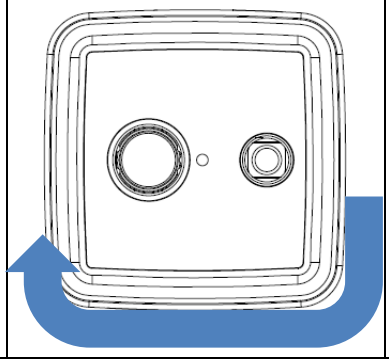
If **Corridor Mode** is set as **90 degrees** or **270 degrees** the relation of the image and the camera would be as the following:

Corridor Mode: 90 or 270 degrees

Degrees	Position	Image
0 degrees		 
90 degrees		
270 degrees		

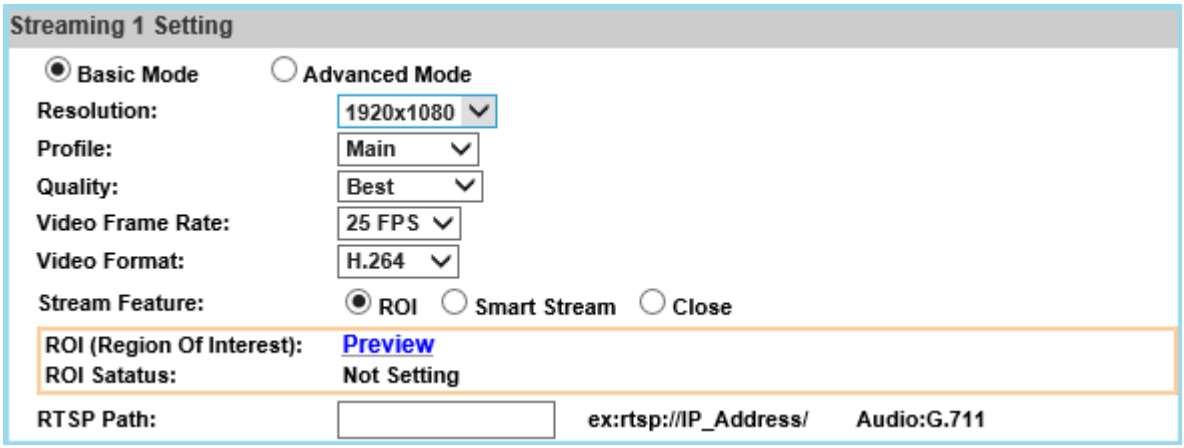
If **Corridor Mode** is set as **none**, the relation of the image and the camera would be as the following.

Corridor mode: None

Degrees	Position	Image
0 degrees		
90 degrees		
270 degrees		

Streaming Setting: Basic Mode

Resolution range varies depending on different modes.



Resolution

Choose a set for the camera resolution from **1920x1080@30fps, 1280x720@30fps, 640x480@30fps, 320x240@30fps**

Profile

Chose **Main** or **Baseline** based on bandwidth consumption of the video.

Quality

The higher quality assigned, the slower transmission speed may become.

Video Frame Rate

Adjust the video refreshing rate for each second.

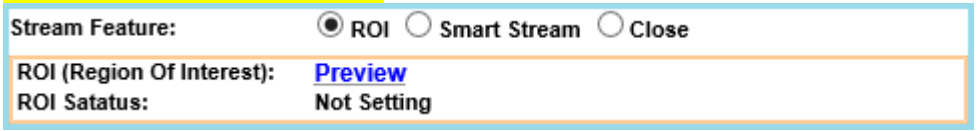
Video Format

The video refreshing rate per second. Select from H.264+, H.264 or JPEG

Stream Feature

Select from the options for operating different features.

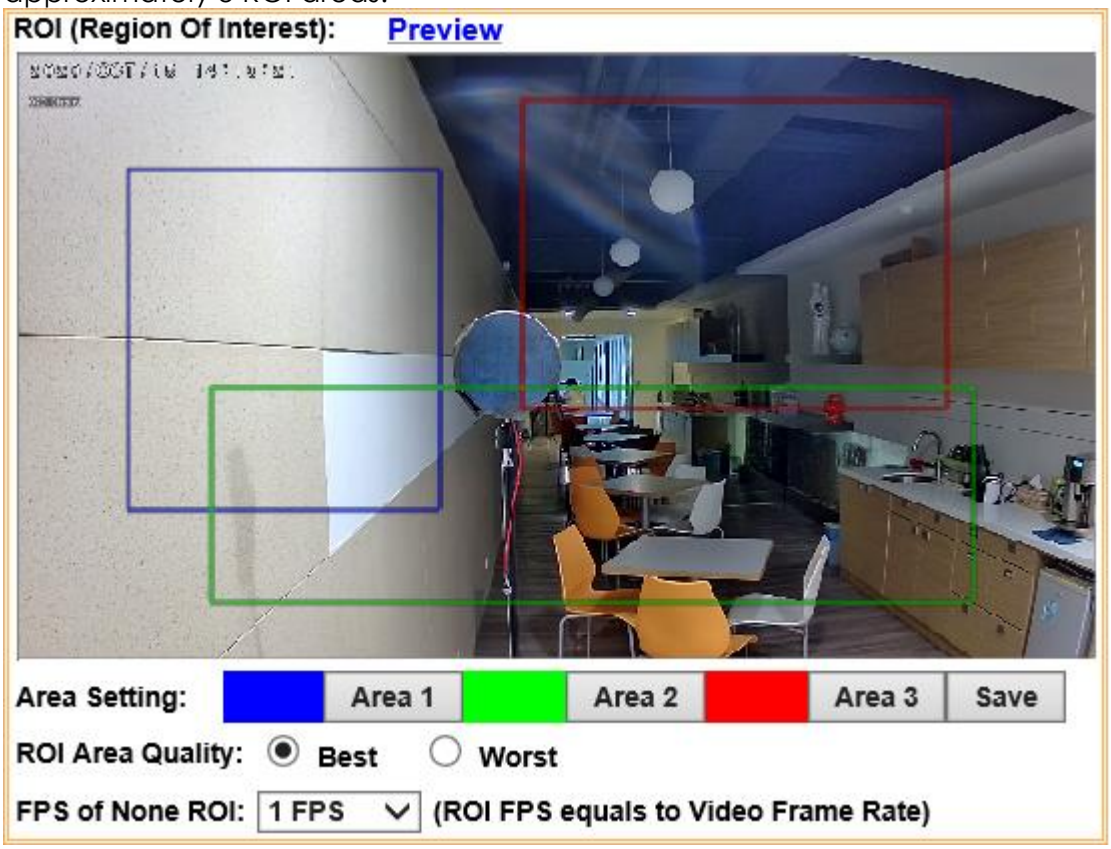
Note: You MUST click Apply at the bottom after selecting the feature to enable either ROI or Smart Stream.



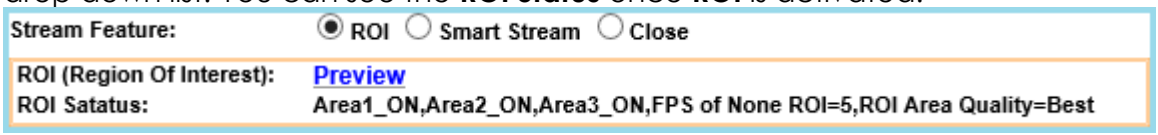
ROI (Region of Interest)

This function helps refine any specific part of the monitoring area which can be dragged out with the mouse at a time, improving efficiency in image observation and management in video compression rate.

Click **Preview** to enable ROI the function. Click on any of the colors in **Area Setting** to draw an ROI area on the preview screen by dragging your mouse. You can set up to approximately 3 ROI areas.

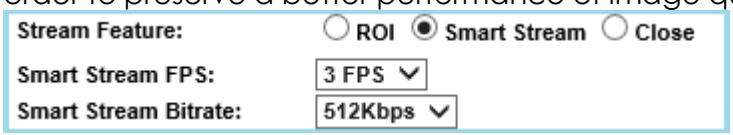


Adjust the **ROI Area Quality** and **FPS of None ROI** values of each area from each drop down list. You can see the **ROI Status** once **ROI** is activated.



Smart Stream

Enable this mode, set the range of FPS and Bitrate to limit its stream capacity, in order to preserve a better performance of image quality and save more bandwidth.

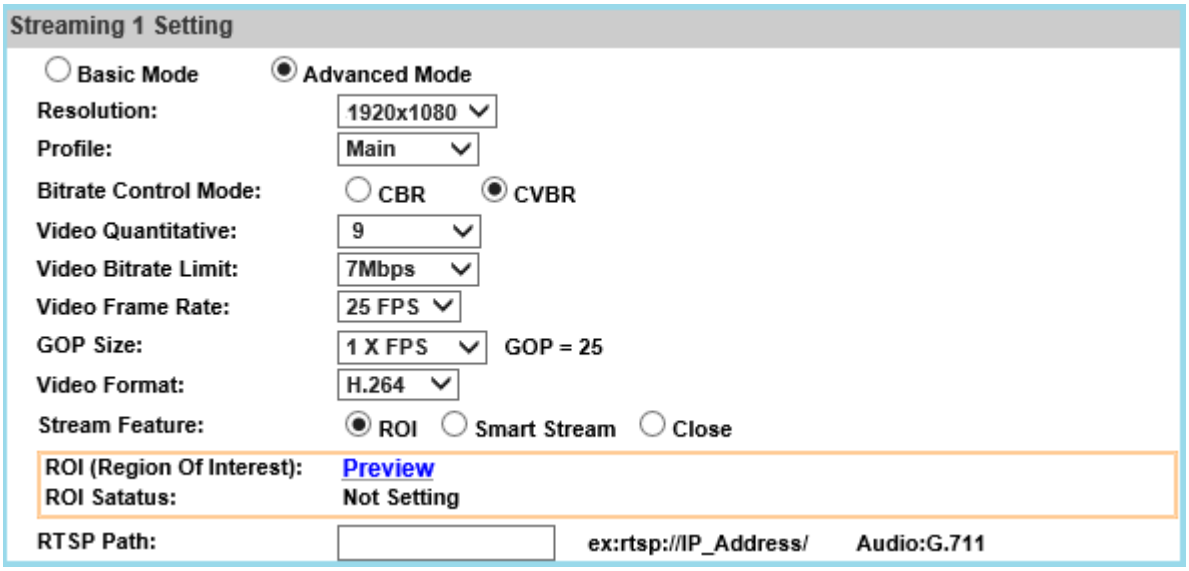


RTSP Path

Offers the RTSP output connecting path.

Streaming Setting: Advanced Mode

Resolution range varies depending on different modes.



Resolution

Profile

Bitrate Control Mode

There are **CBR**(Constant Bit Rate) & **CVBR**(Constrained Variable Bit Rate) modes.

Video Bitrate Limit: (32Kbps~8Mbps)

There are **CBR**(Constant Bit Rate) & **CVBR**(Constrained Variable Bit Rate) modes.

Video Quantitative: 1(Low) ~10(High)

In a surveillance environment that needs to process more image details, the image quality will need to be configured with a higher parameter value. The parameter value set in **Video Bitrate Limit** can reach the maximum bitrate once **CVBR** is applied. Therefore, the higher the parameter value configured, the greater the bitrate it can achieve, and the better the picture quality will be in a more detailed environment.

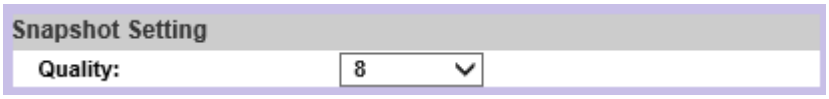
Video Frame Rate

GOP Size

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

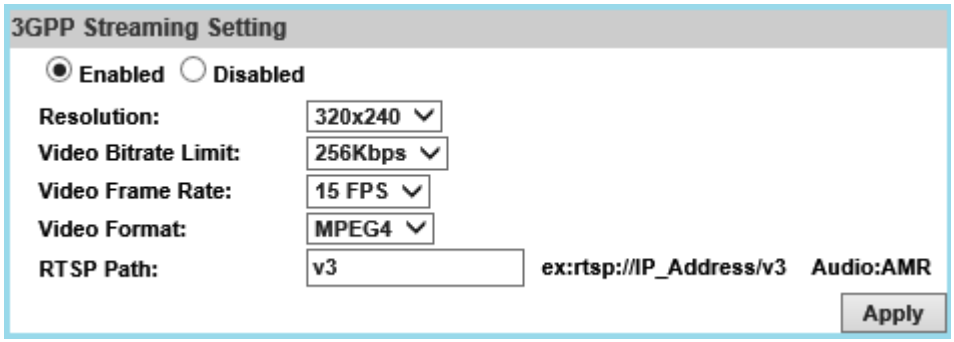
Snapshot Setting

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



3GPP Streaming Setting

TV output will be shut down during this mode.



Resolution

640x480@15fps, 320x240@15fps

Video Bitrate

The higher Video Bitrate, the better the video quality is.

Video Frame Rate

The video refreshing rate per second.

Video Format

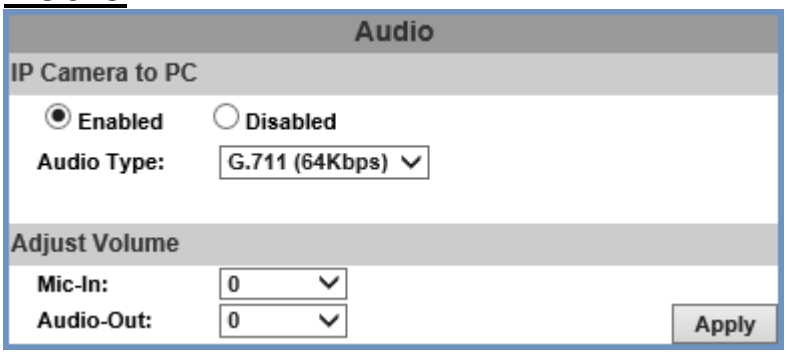
The video refreshing rate per second. Select from H.264+, H.264

RTSP Path

Offers the RTSP output connecting path.

Please click on the Apply button to keep the changes when all the settings are completed and confirmed.

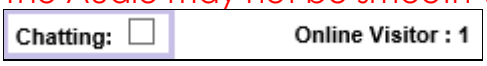
Audio



The user can send audio from the IP Camera built-in microphone to the remote PC and audio from remote PC to IP Camera's external speaker.

IP Camera to PC

Select **Enabled** to start and select the audio type. Tick **chatting** in the live browser to enable **PC to IP Camera** audio function.
The Audio may not be smooth when the SD card is recording.

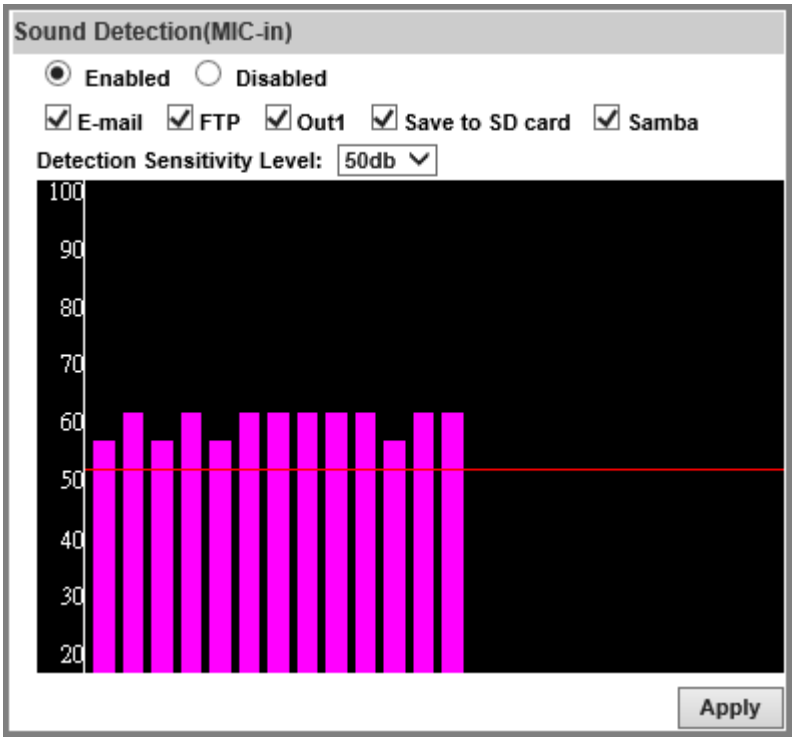


Adjust Volume

Select the volume of both **Mic-in** & **Audio-out**. Click on the **Apply** button to keep all the changes.

Sound Detection

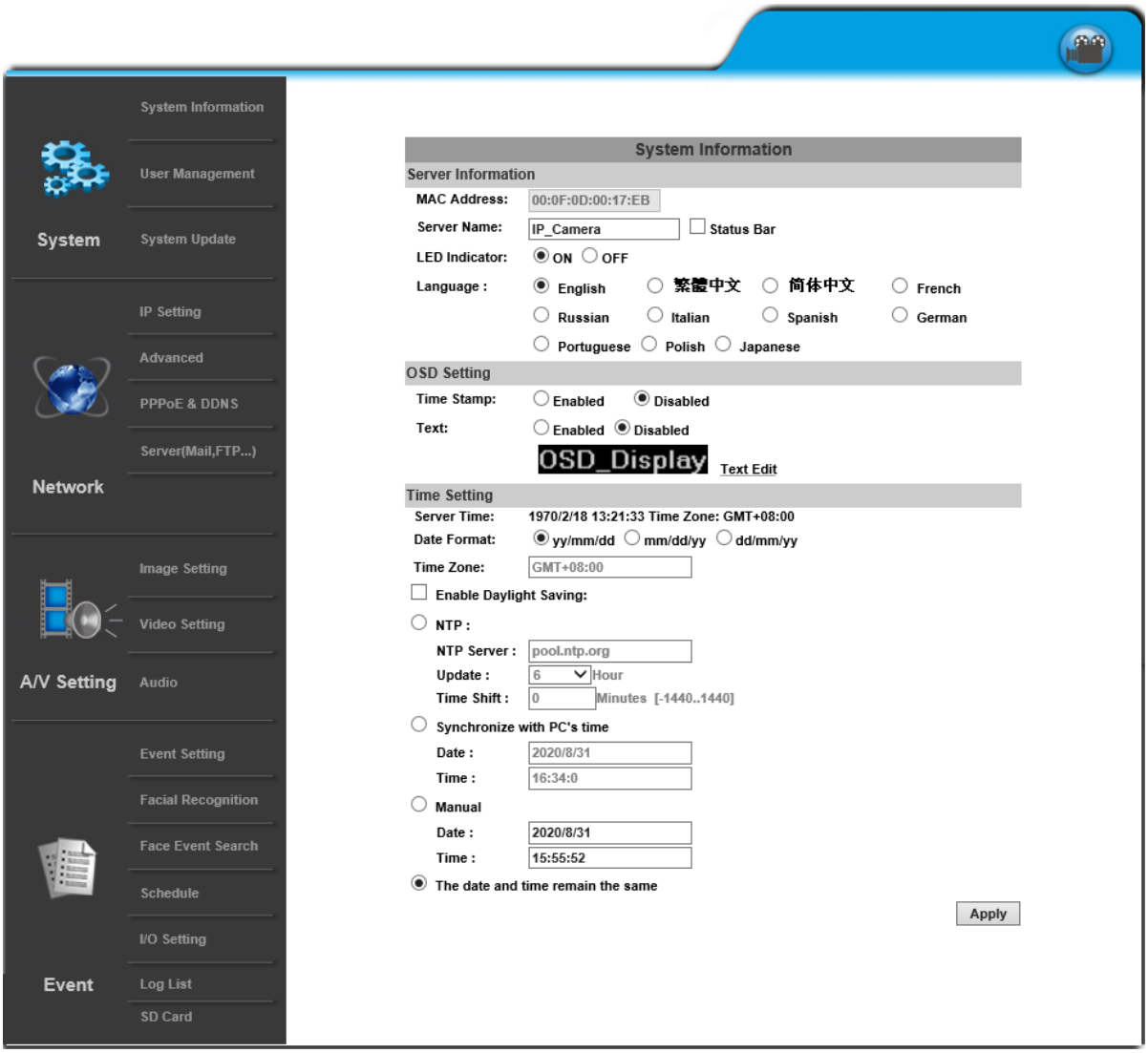
Test the audio volume and sound quality first by selecting **Enabled**. Tick the output destination of the audio file recorded.



Adjust the **Detection Sensitivity Leve**l from 40~90db to display the audio frequency level in the analytical graph.

Event

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



The IP Camera provides multiple event settings.

Event Setting

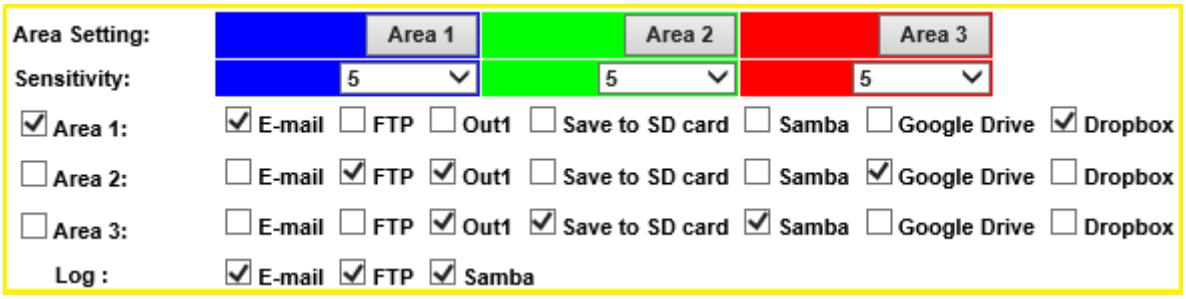
Please change default password is a sign which appears on the preview screen as a reminder, to suggest you change login settings in **System** to secure your account privacy.

Motion Detection

A motion detection operation allows user to define a certain area which detects anything moving or changing its position within. It helps user to target

on details inside a smaller picture, and effectively identify various surroundings of the monitored environment.

Whenever a motion is detected inside the framed area, the word Motion will appear on live screen and the data of notification can be sent to assigned directory for remote user.



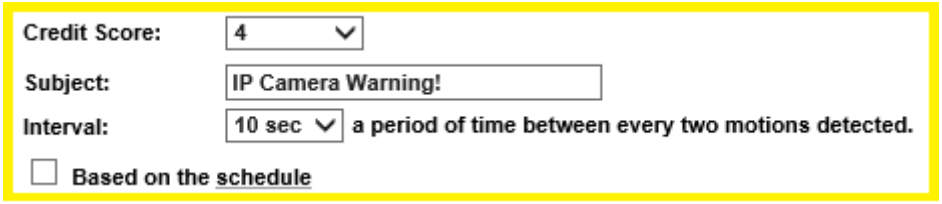
- **Area Setting:** Click any of the 

icons to start drawing 3 areas on the preview screen with your mouse in 3 different colors. Click any **Area** icon again to discard the motion area which has been made.

- **Sensitivity:** Adjust the level of the responsiveness defined as motion detection. The higher number assigned, the more sensitive, vice versa.

- **Area 1/2/3:** Data of events triggered within the motion area can be assigned by marking the checkboxes of the source and destination. For example, if you mark the **Save to SD card** checkbox from **Area 3**, the video or snapshot triggered in **Area 3** motion area will be saved to the **Micro SD card**.

- **Log:** Popped up after **Save to SD card** checkbox is ticked by your mouse. Check **E-mail/ FTP/ Samba** checkboxes on the **Log** option to send the motion detection log 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!**".

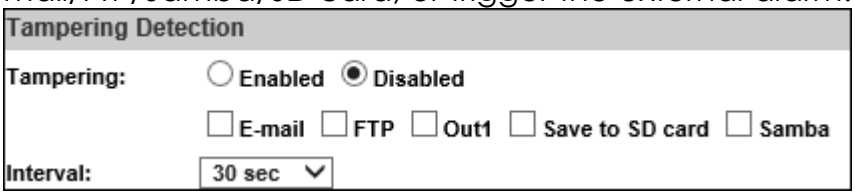
- **Interval**: For example, when selecting **10 sec**, once the motion is detected and the action is triggered, it cannot be triggered again within 10 seconds.

- **Credit Score:** Assign a number from 1~10 for the level of sensitivity. The smaller number is assigned, the more critical for anything within the monitored view will be conditioned for **Motion Detection**.

- **Based on the schedule**: Assign the timetable managed from **Schedule** to enable motion detection after the option checkbox is ticked.

Tampering Detection

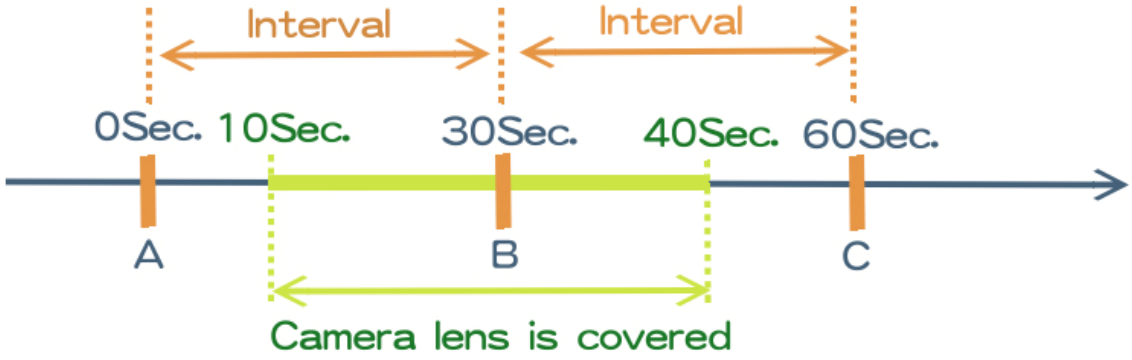
When the camera view is covered, moved, hit by strong light, or out of focus, the tampering detection will be triggered, and send snapshot to mail/FTP/Samba/SD card, or trigger the external alarm.



For example:

Before Tampering Detection		Tampering Triggered (Defocused)
		
Before Tampering Detection		Tampering Triggered (Lens Covered)
		
Before Tampering Detection		Tampering Triggered (Glare)
		
Before Tampering Detection		Tampering Triggered (Camera Moved)
		

- **Interval:** The tampering detecting interval. Take the diagram below as example. The interval is set for 30 second; the camera lens is covered during 10 - 40 sec. At time point B, the camera compares the view with time point A, and sends an alarm when it founds that the lens is covered. At time point C, the camera compares the view with time point B, and sends an alarm when it founds that the lens is uncovered.



Record File

When an event occurs, the 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**.

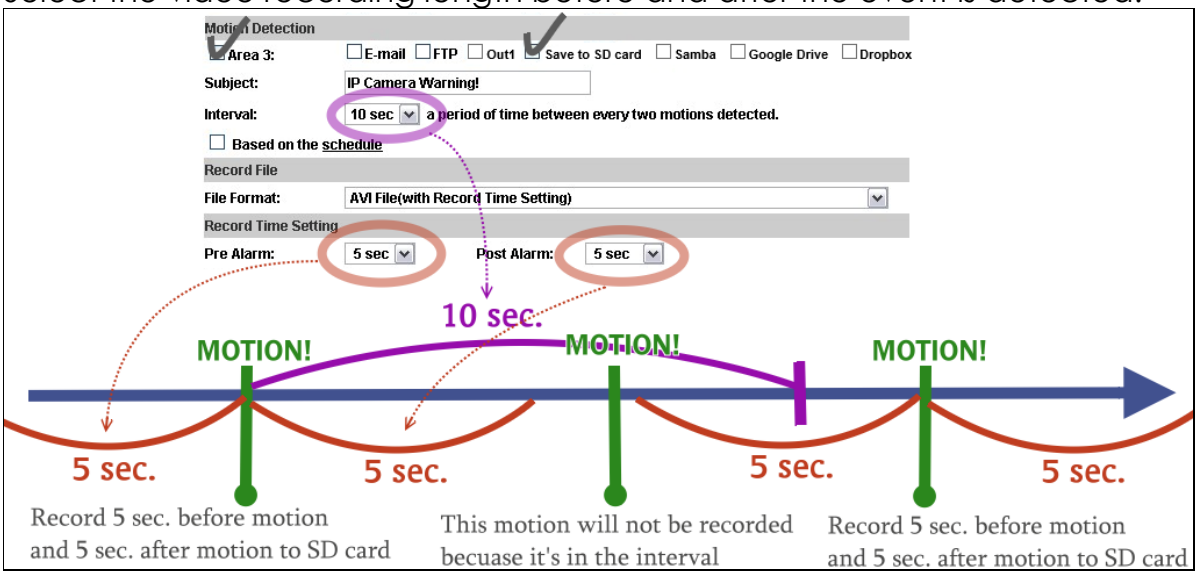
- **JPEG Files (with Record Time Setting)*Only Streaming 1 with JPEG file format.:** Only when selecting "JPEG" in **streaming 1 video format** of **Video Setting**, this option can be enabled. Select this option to save several JPEG picture files. The successive picture files cover a period of time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

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

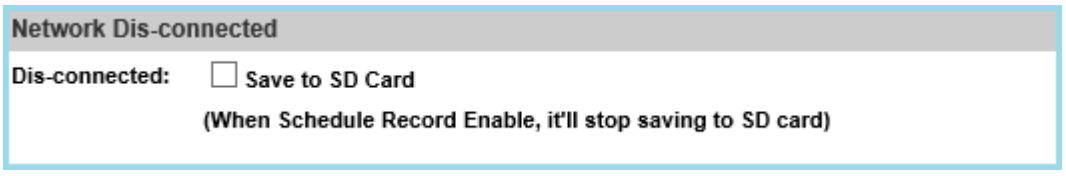
Record Time Setting

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.

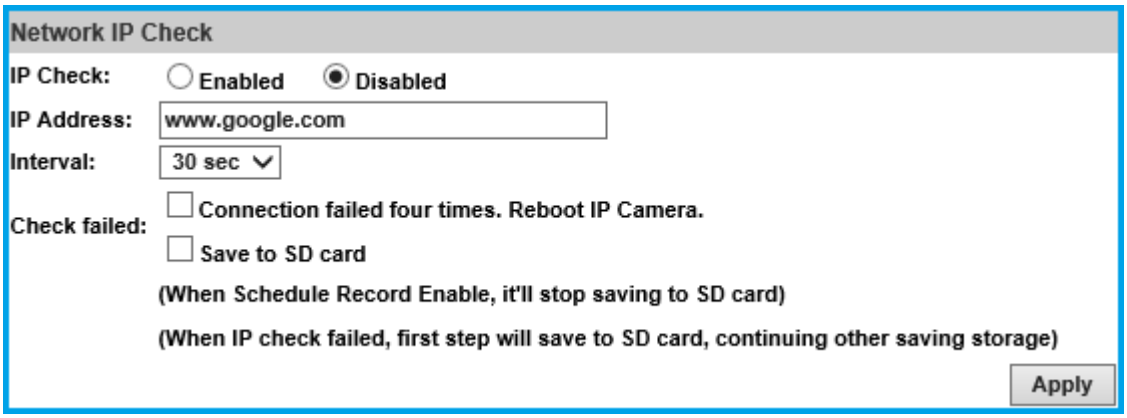


Network Dis-connected



The image will be recorded to the SD card after the IP Camera detects network disconnection once "**Save to SD card**" is ticked.

Network IP Check

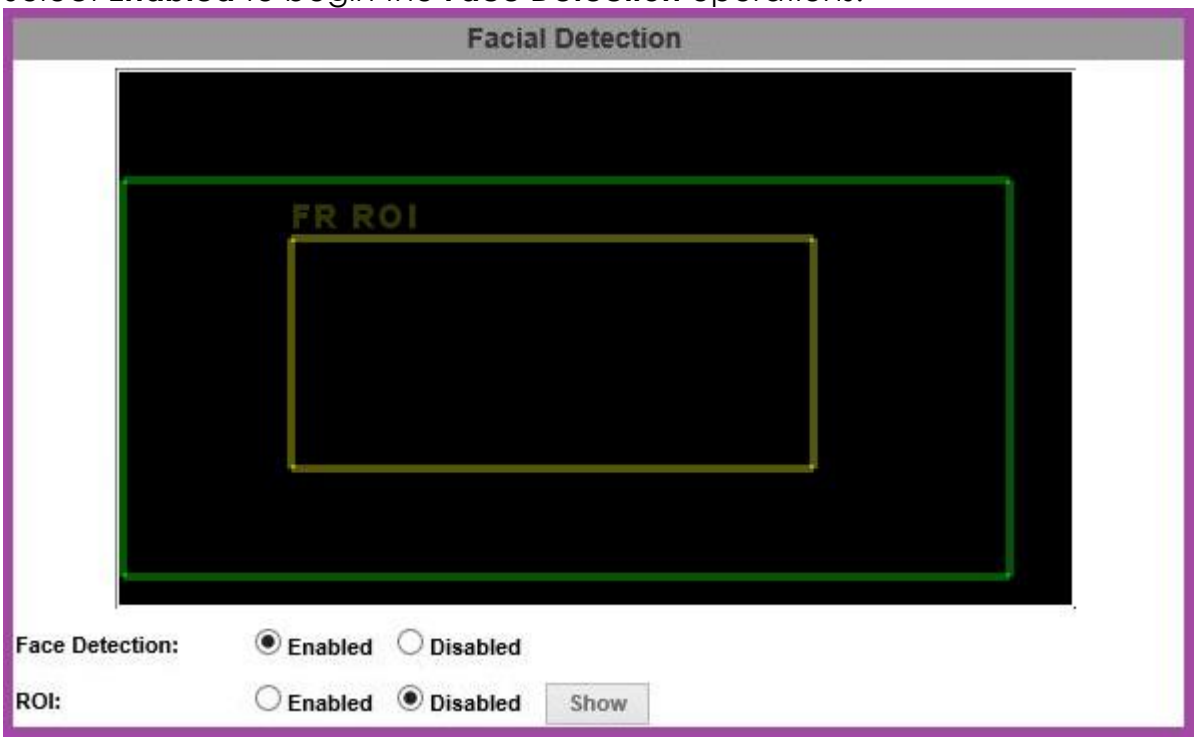


After enabling IP Check, the IP camera can check if the network server is connecting. If the checking fails for 4 times, the camera will reboot.

Click Apply to update all the settings adjusted.

Facial Detection

Select **Enabled** to begin the **Face Detection** operations.



Face Detection

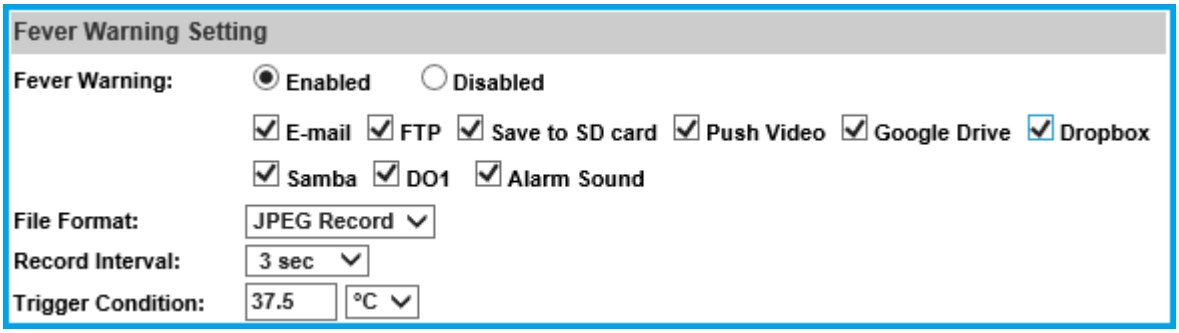
Click **Enabled** to activate, define, and analyse a human face with settings applied by the video device. Please refer to **Fever Warning Setting** & **Event Setting** for more descriptions.

ROI

Mark **Enabled** and click Show to activate **ROI** frame. A dark green box marked **FR ROI** will appear on the screen for users to move the cursor with the mouse to adjust the size. Click the left mouse button to determine the shape. The dark green box can help refine a specific portion of the monitored area which can enhance efficiency in observing & gathering face data.

Click Show again to delete the current **ROI** frame.

Fever Warning Setting



Configure settings for events which get triggered for people who are conditioned to get detected for various body temperature levels.

Fever Warning

Mark **Enabled** to start. Mark the checkboxes of output directories below for where the notification is sent when **Fever Warning** triggers.

File Format

Select the file format type (either **JPEG Record** or **AVI Record**) you wish to receive as notification file.

Record Interval

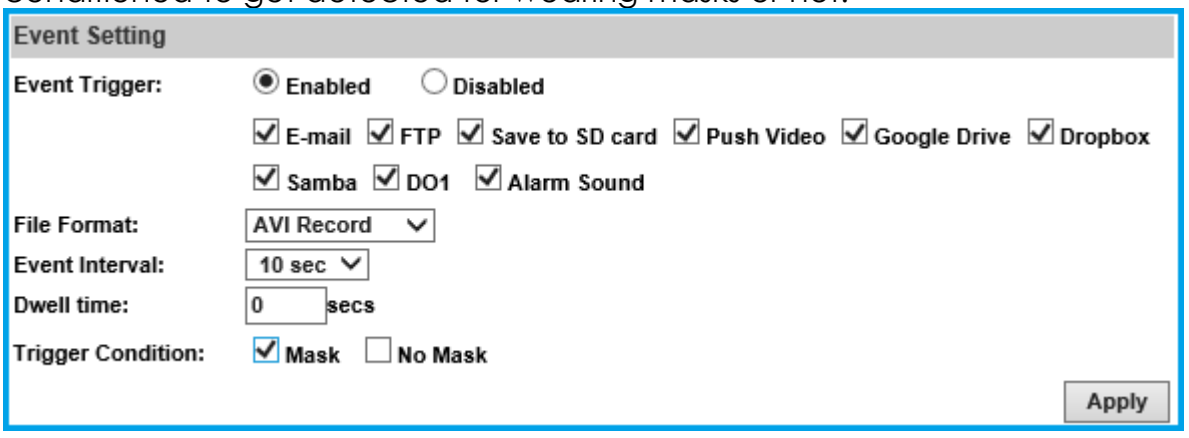
Select the **second(s)** in between each event.

Trigger Condition

Set the condition of temperature level for getting triggered.

Event Setting

Configure settings for events which get triggered for people who are conditioned to get detected for wearing masks or not.



Event Trigger
Mark **Enabled** to start. Mark the checkboxes of output directories below for where the notification is sent whenever a condition is met for triggering.

File Format
Select the file format type (either **JPEG Record** or **AVI Record**) you wish to receive as notification file.

Event Interval
Select the **Event Interval** for every time an event triggers.

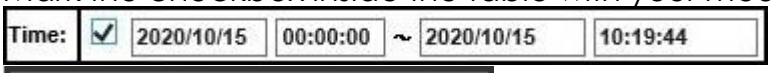
Dwell time
The human face detected will have its dwell time displayed in **sec**ond(s) based on how long the face stays on screen.

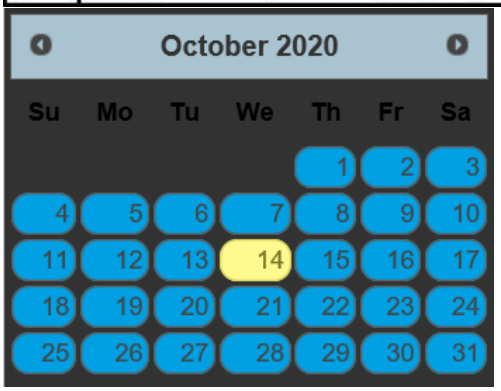
Face Event Search

The face data recorded can be calculated and categorised in lists. Check the title you would like to aim for searching, and click **Query** to begin.

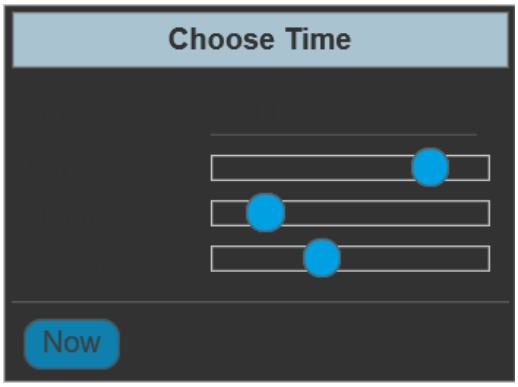
Search Events

Mark the checkbox inside the table with your mouse to enable the operation.





Click anywhere on the **year/month/date** field in the time table, and a mini window will pop up for you to configure numbers to set up the **year/month/date** range for searching events. Taking this image on the left as an example, the search range is set to **14th October 2020**. Click on the left or the right arrow of the October 2020 heading to turn to the previous month or next month.

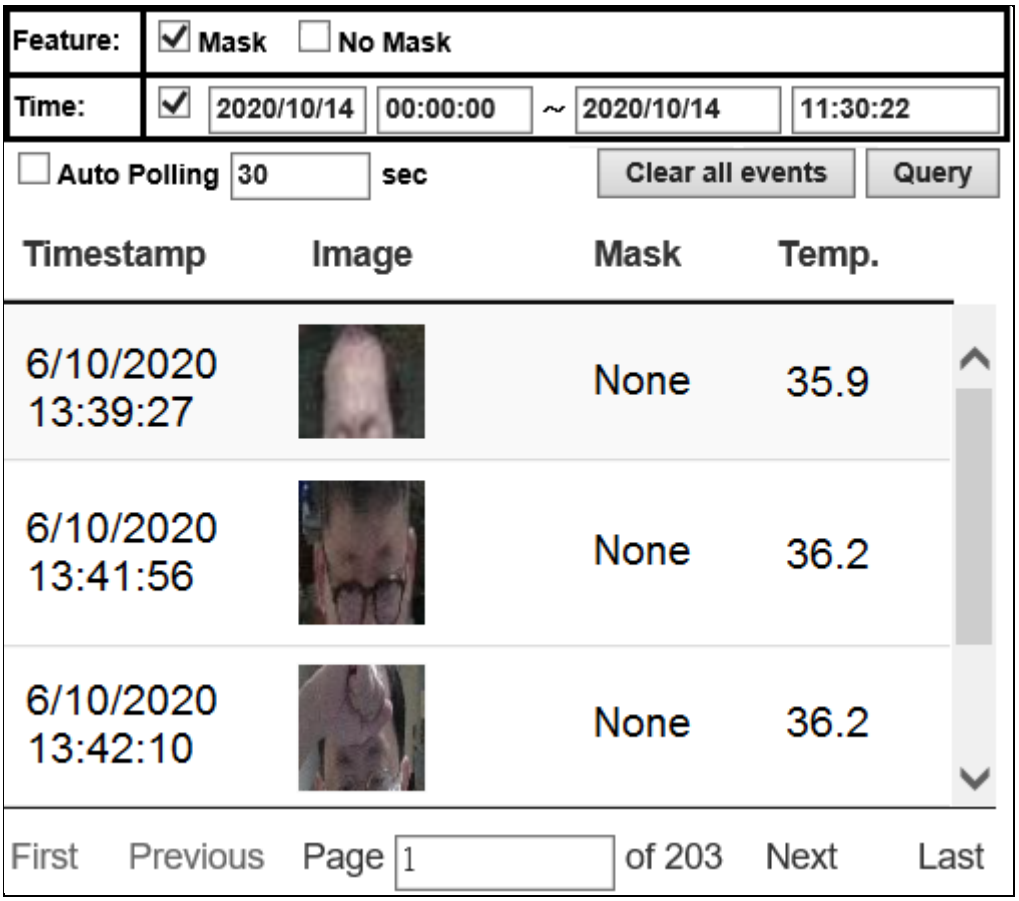


Click anywhere on the **hour:min:sec** field in the time table, and a mini window will pop up for you to configure the time range for searching events. Taking this image on the left as an example, it is set to **18:10:25**. Click & drag the anchor to left or right to adjust the time range. If you click **Now**, the time range will synchronize with the PC's current time automatically.

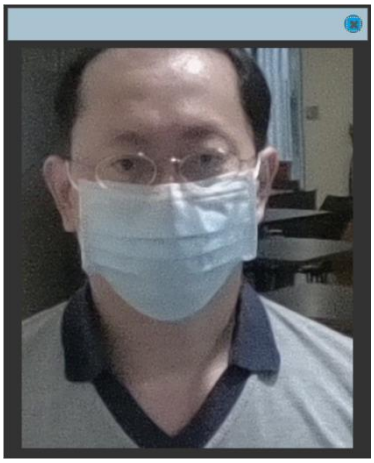
Click **Query** once you have specified what time range you would like to begin the time search with.

Check Events

Search results will vary according to the checkbox marked, and the face data collected. For example, if you would like to see all the face data detected for wearing **Mask** only, you will only see a list of each face data with a mask on. Such is the example displayed below.



You can also check **Auto Polling** for the category to be constantly updated in specified seconds assigned.
Click **First**, **Previous**, **Next**, **Last** to browse different pages of face data.

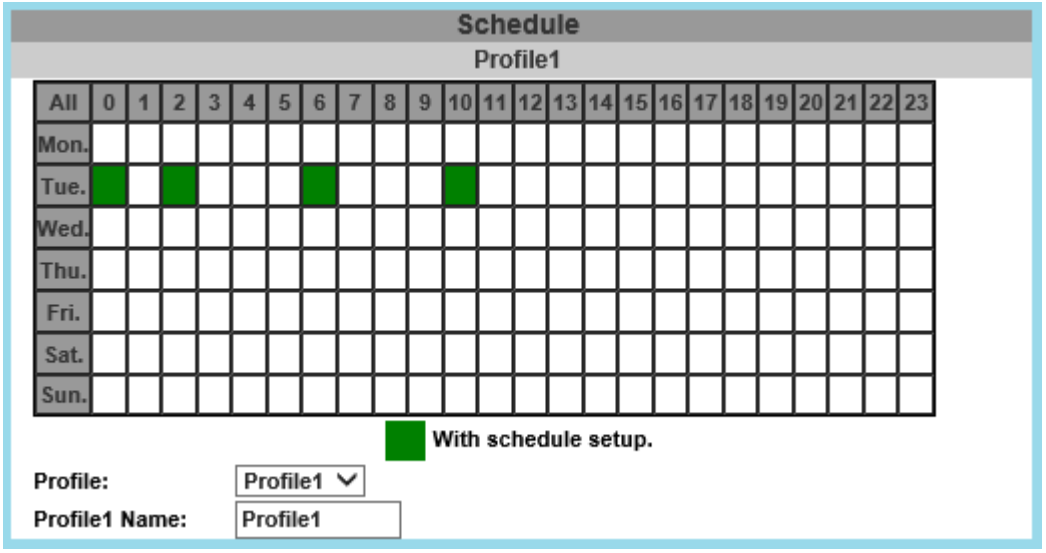


Click on one of the thumbnails, and a mini window will pop up, showing a enlarged snapshot of the human face selected by the mouse and.

Schedule

Schedule

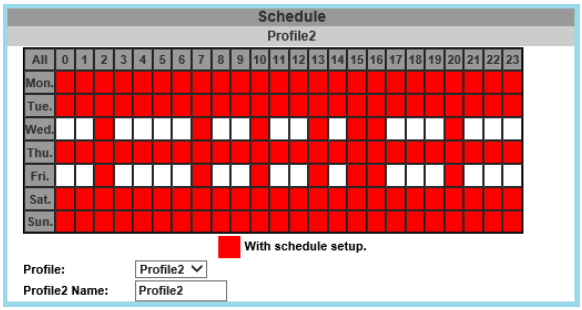
Tick the grids on the calendar to manage your schedule time.

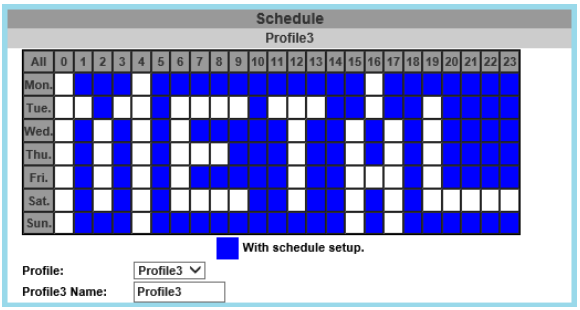


Profile
Select a Profile from the drop down list.

Profile(1,2,3) Name

Input & assign a profile name for each profile.

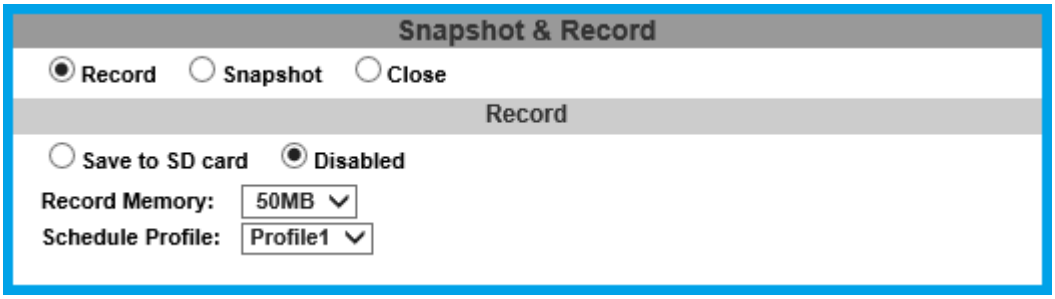




Snapshot & Record

Record

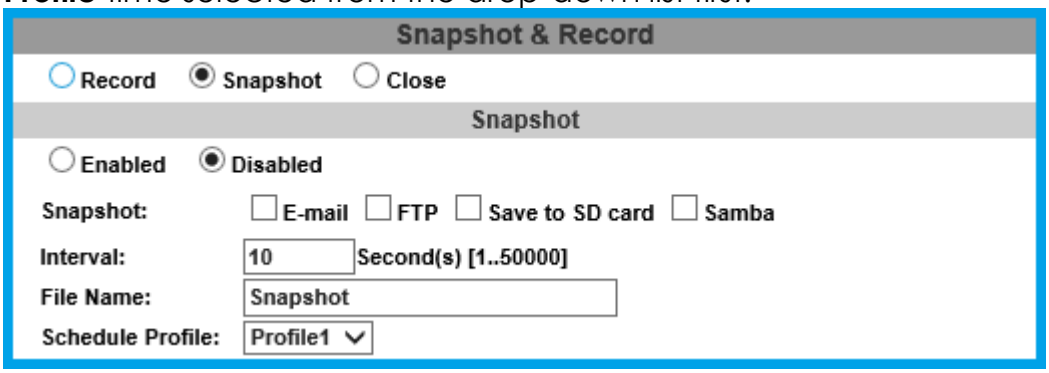
After completing the **Schedule**, the camera data will be recorded according to the schedule made from the calendar.



Beware that SD cards may fail for being recorded for a long period of time. You may set up how much you would like the SD card memory to be used in order to estimate the right time to swap a new one. Assign the **Schedule Profile** time selected from the drop-down list first.

Snapshot

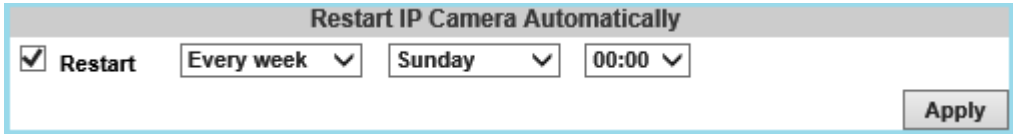
After enabling the snapshot function; the user can select the storage position, interval time and reserved file name of the snapshot. Assign the **Schedule Profile** time selected from the drop-down list first.



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.

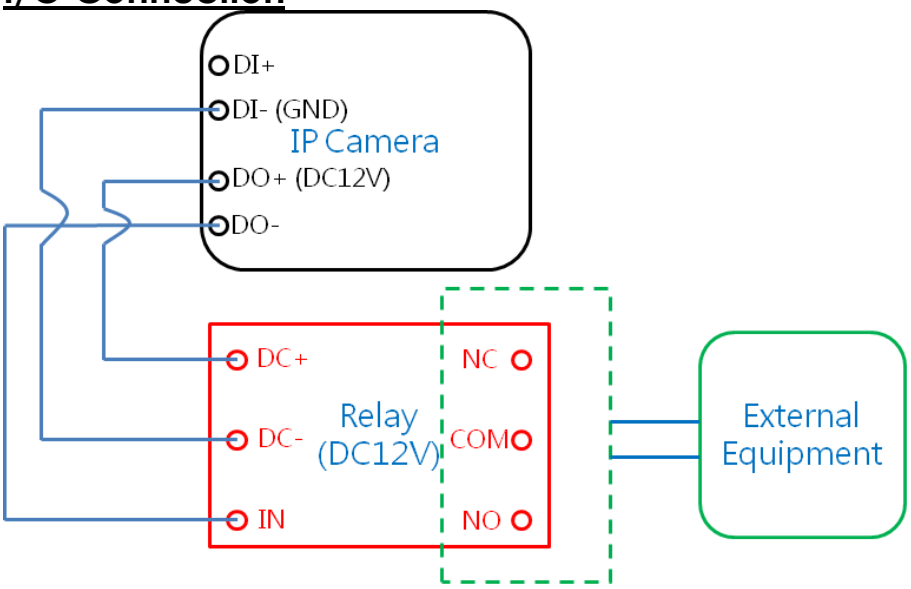


Click Apply to update all the settings adjusted.

I/O Setup

Enter **Live Video** via internet browser & check Out1 to enable I/O signal.

I/O Connection

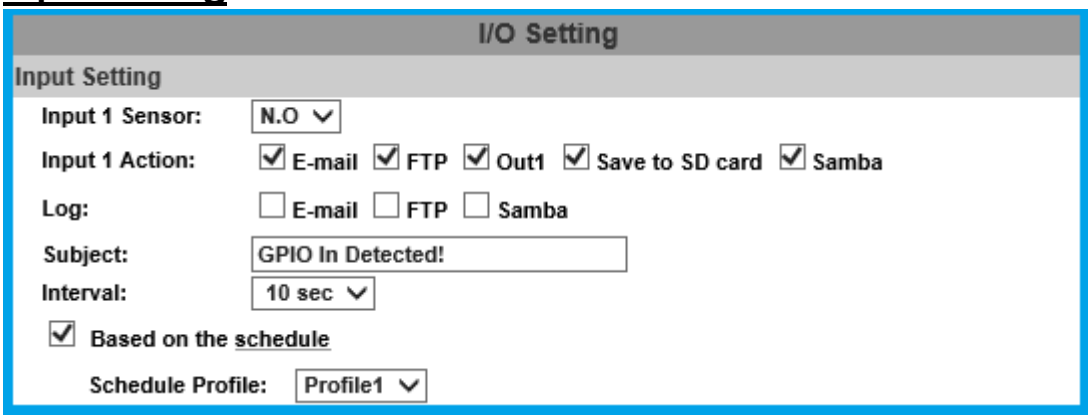


Connect the GND & DO pin to the external relay (buzzer) device.
Connect the GND & DI pin to the external trigger device.

I/O PIN Definition

GND (Ground): Initial state is LOW
DO (Digital Output): Max. 50mA, DC 12V
DI (Digital Input): Max. DC 6V

Input Setting



The IP camera supports both input and output operations. When the input condition is triggered, the relay will be also triggered & a notification will be sent depending what checkboxes are ticked.

Log
Tick **Save to SD card** to enable the **Log** you would like to save data with.

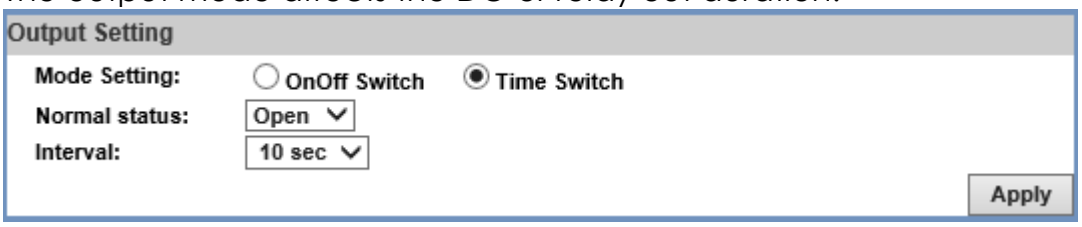
Subject
Input & edit the message you would receive for triggered alarm.

Interval
For example, if you select "10 sec" here, once the motion is detected and action is triggered, it cannot be triggered again within 10 seconds.

Based on the schedule
Tick its checkbox to assign timetable from **Schedule**. Once the option is activated, only during the selected schedule time the I/O is enabled. Assign The **Profile** timetable selected from the drop-down list first.

Output Setting

The output mode affects the DO or relay out duration.



Mode Setting

ON/Off Switch
The camera triggers the external device and lasts for 10 seconds. Enable the **OnOff Switch** in **Output Setting** by clicking beside its title. You can turn off the alarm manually by clicking "off" at the right bottom of the **live video** page.

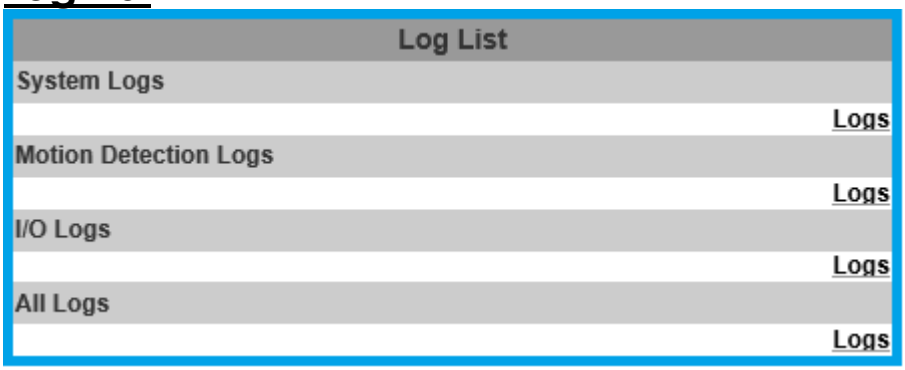
Select **Open** (N.O) or **Close** (N.C) for its sensor from **Normal Status**.

Time Switch

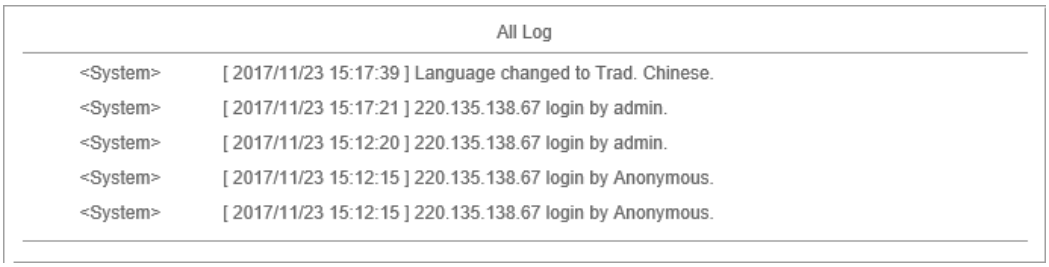
The camera triggers the external device and lasts for certain time according to the internal setting, and the user is not allowed to break off the alarm manually. Enable **Time Switch** by clicking beside the title, and then adjust the **Normal Status** & **Interval** to your desired level.

Click Apply to keep all the changes.

Log List



The log keeps data for user to check through events which have occurred during the monitoring operation. Click each **Logs** to open different log data.

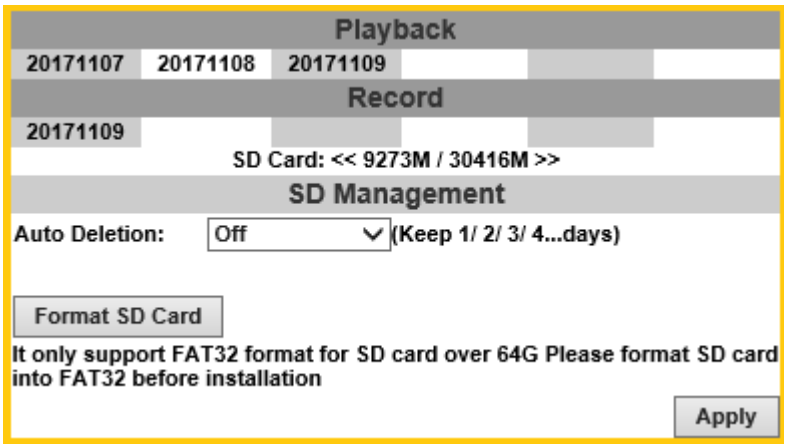


System Logs won't lose data due to power failure. Choose **All Logs** to list out all the events from **Motion Detection Logs** to **I/O Logs**.

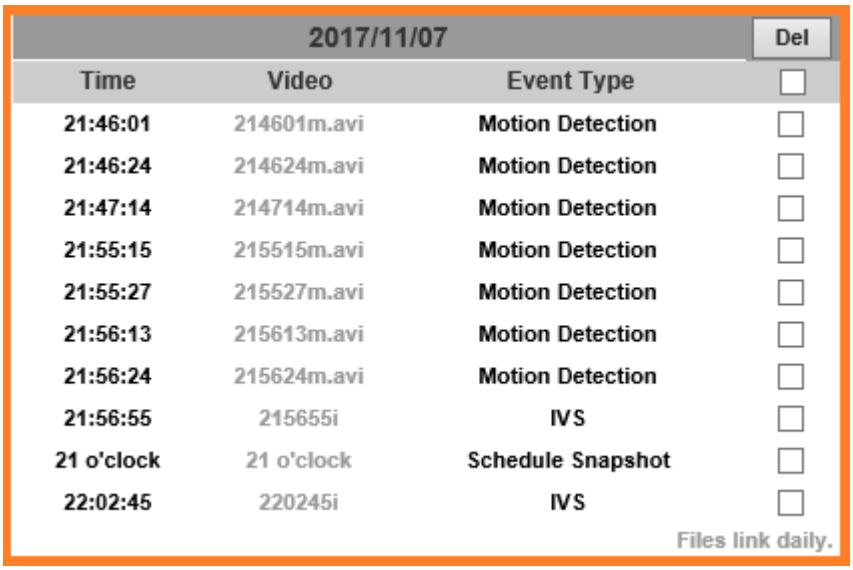
SD Card

The camera has already been equipped with a SD card.

Playback



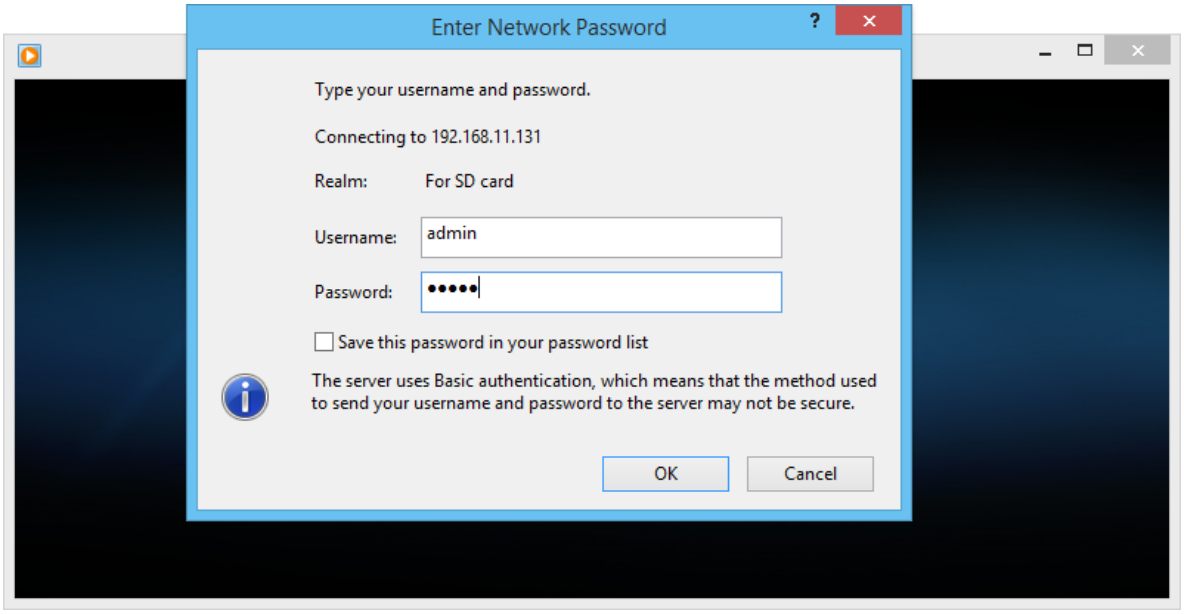
Insert Micro SD card into the card slot thoroughly before starting this operation. Click the date under **Playback** title & a list of files will pop up.



For example, if the date **2017/11/07** is clicked, all the events happened within that time frame will then appear in a list. The enlisted files under **Video** category are files representing an event.

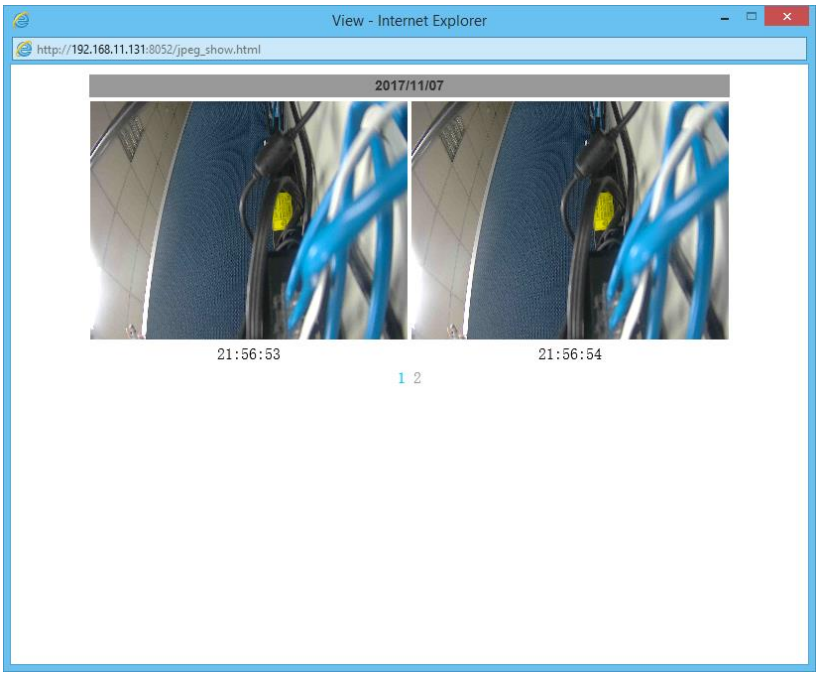
There are 3 types of file formats, and each is different for its own **Event Type**. Notice how the file name formations under the **Video** category represent the time when a file is created.

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.

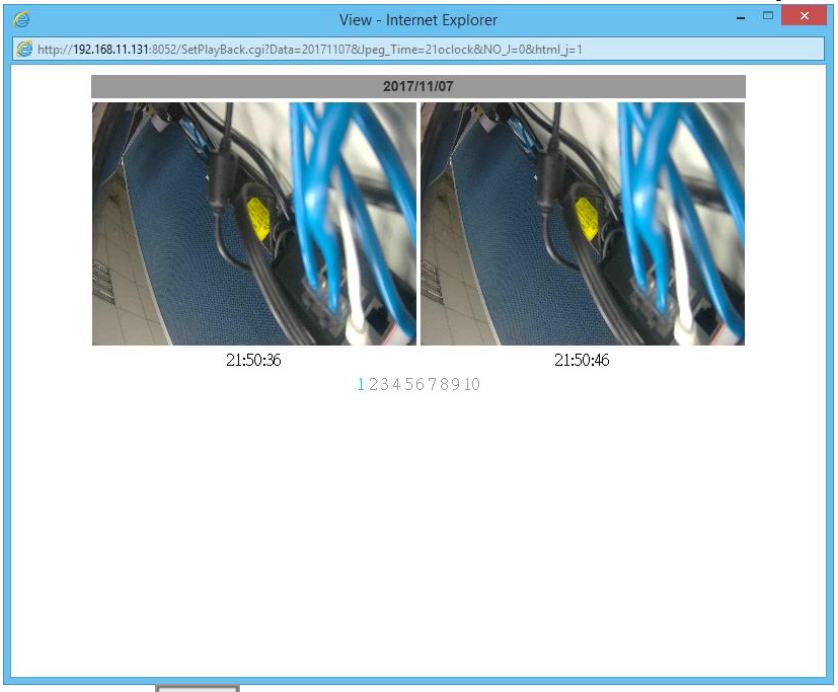


For **avi** files, you need Microsoft Media Player which is supposedly built-in in your PC. The default Username & Password for playing the video file are both **admin**.

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:



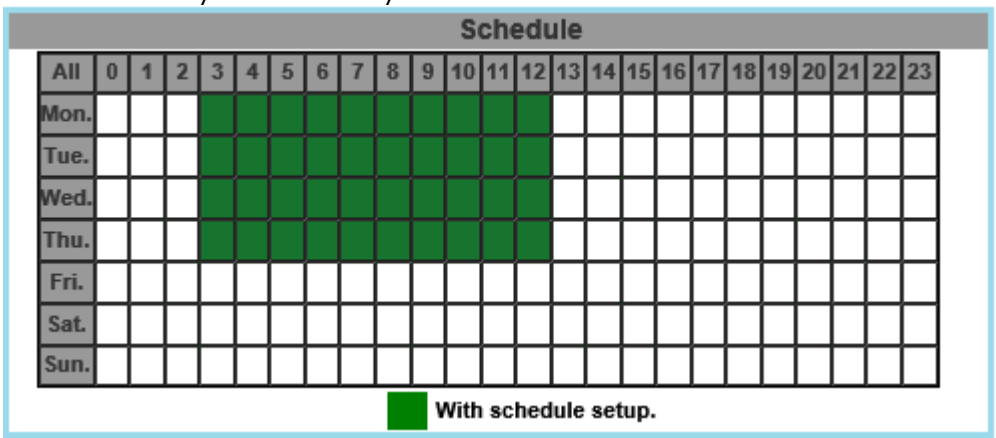
Clicking on any title that is labeled with "**time unit**" (such as **21 o'clock**) at the end will bring out a pop-up window indicating the snapshot taken as scheduled in **Schedule** mode and enabled in **Snapshot** mode.



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

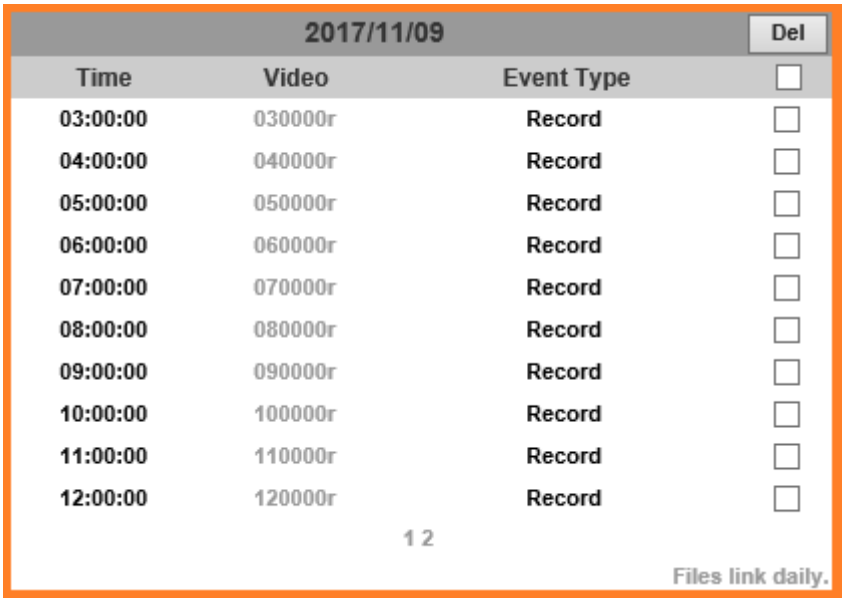
Record

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.

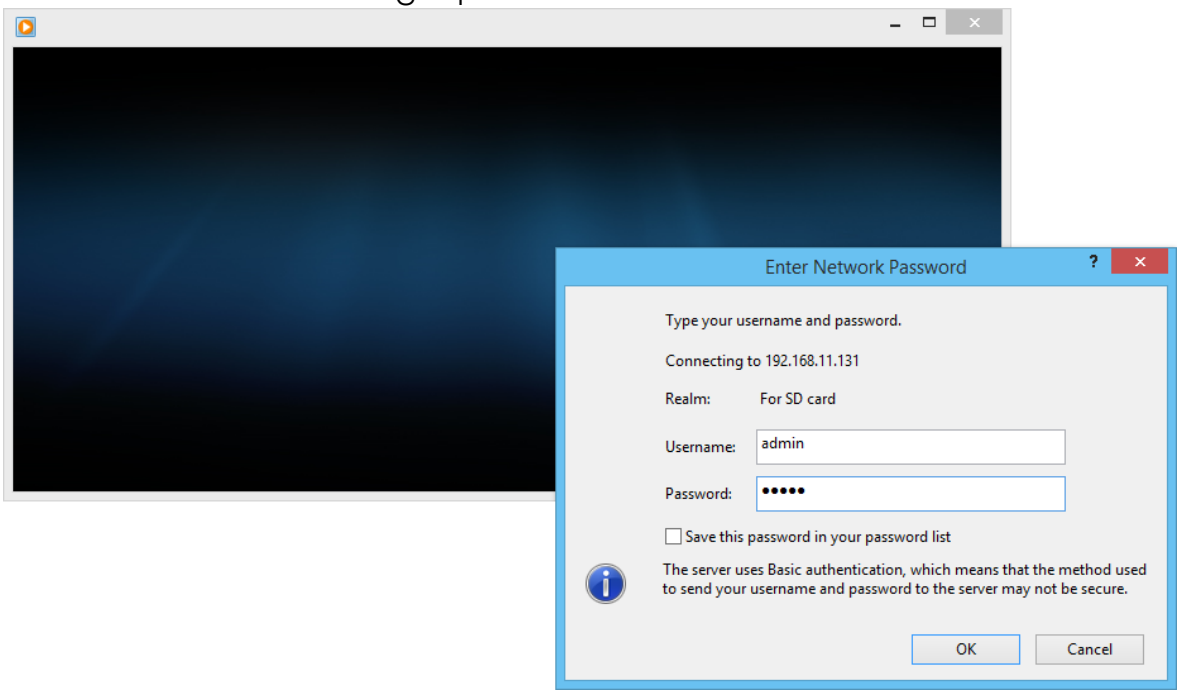


Once the recording mode is on, the video data recorded will be found and labelled as **2017/11/09**.

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

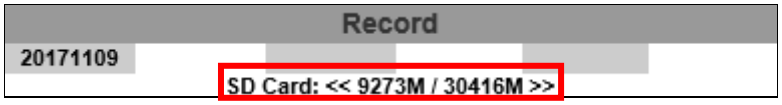


Click on any video title to open Microsoft Media Player (supposedly already built-in in your PC) and play the video file. Key-in **admin** for both Username & Password to get permission to view the video.



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.



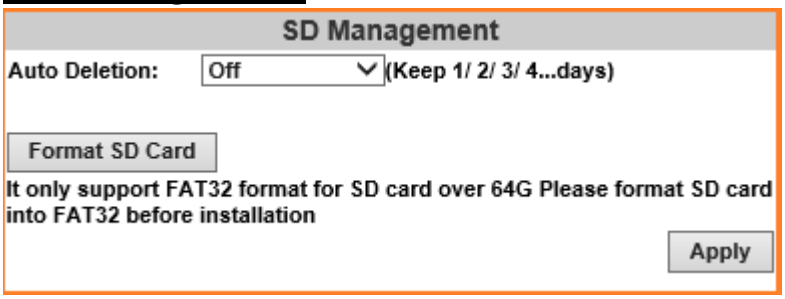
If the memory of the SD card is **over 128G**, **70%** of the memory will be used for scheduled recording, and **30%** will be used for event recording.

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 with its checkbox checked under the Del category.

SD Management



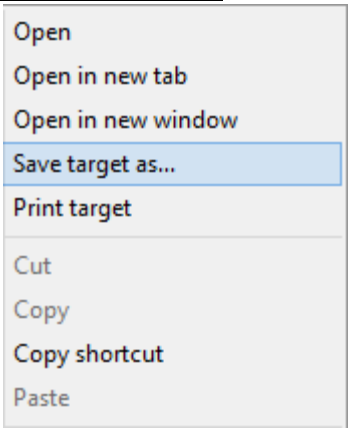
Auto Deletion

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.

Format SD Card

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.

SD Card Files

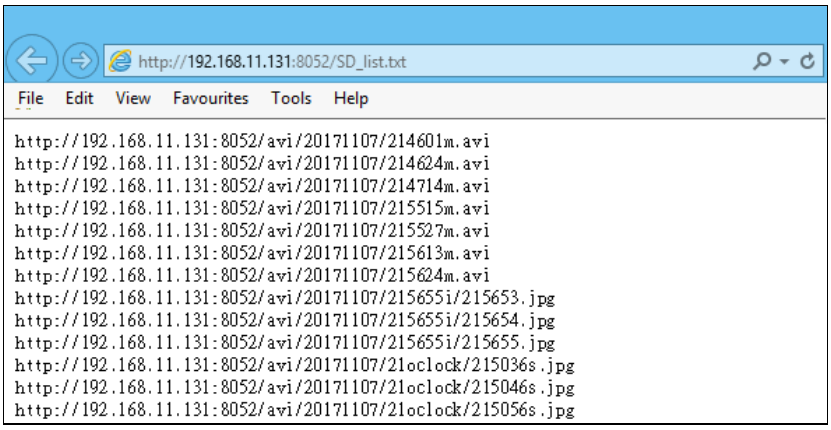


Downloading the Files

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.

Linking the Files

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.

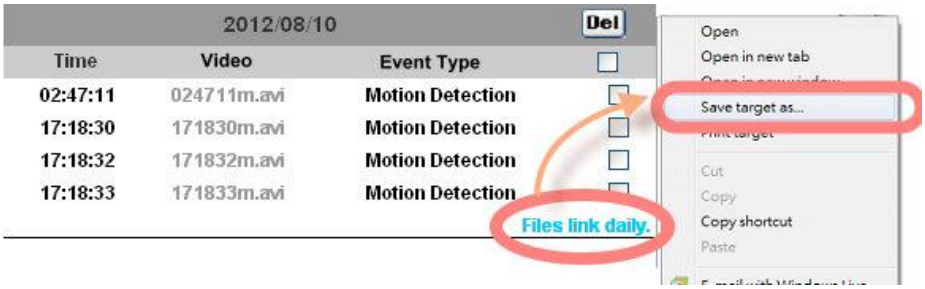


You may copy any of the protocol provided in the window and paste it on a web browser as a URL address to look at each file.

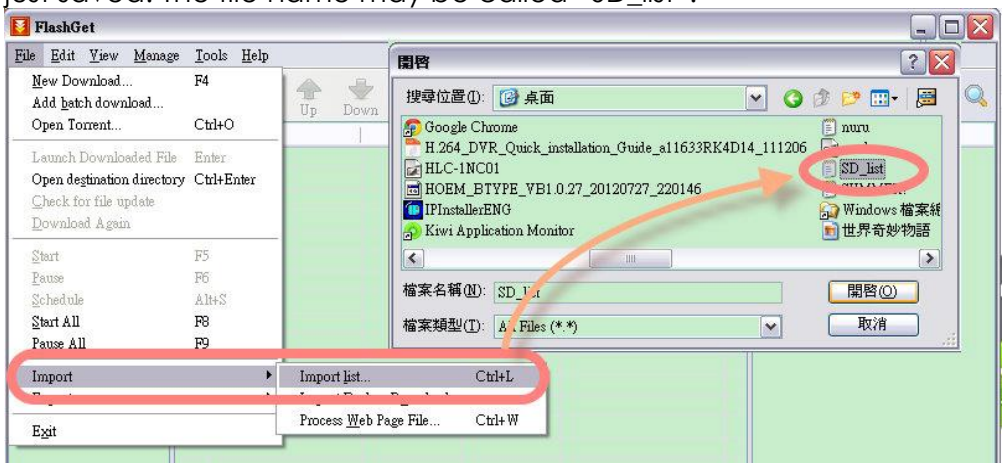
Copy to PC

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:

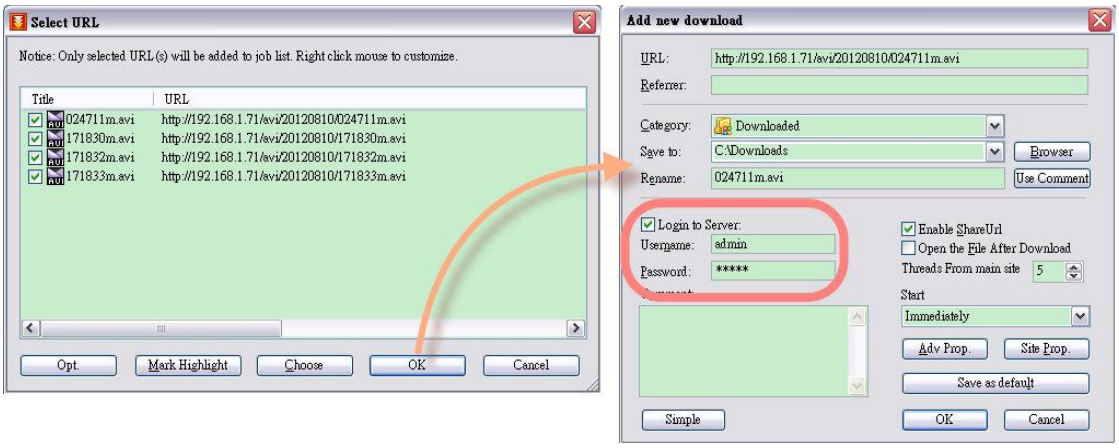
i. Enter data list and right-click " **Files link daily.**", select "save target as…" then save the link list to PC.



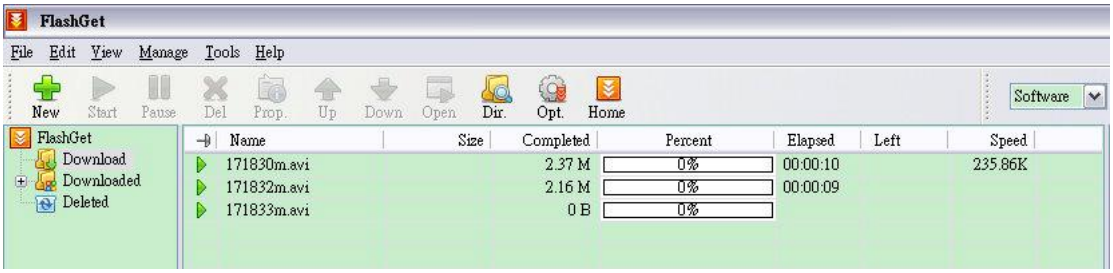
ii. Open FlashGet, select "File"→ "Import" → "Import list", and find the link list file you just saved. The file name may be called "SD_list".



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.



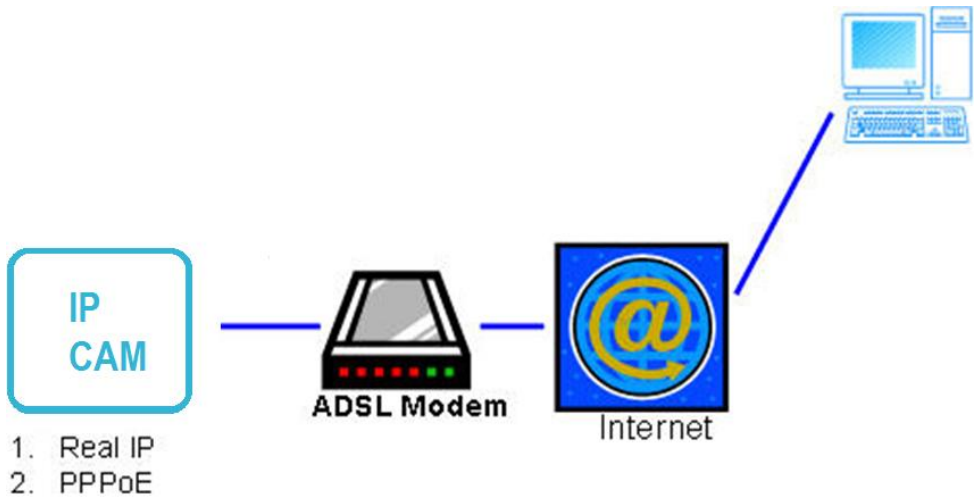
iv. Click OK to start download.



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

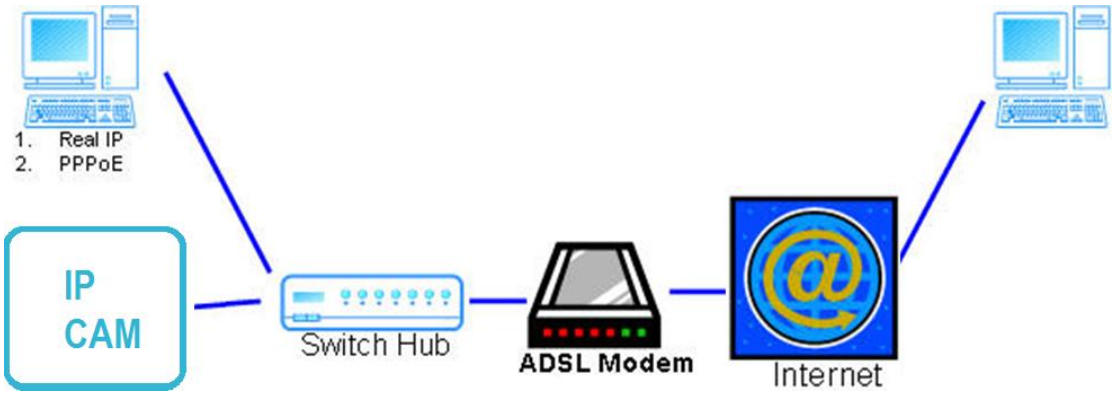
NETWORK CONFIGURATION

Configuration I



- Internet Access: ADSL or Cable Modem
- IP address: One real IP or one dynamic IP
- Only the IP Camera is connected to the internet
- For fixed real IP, set up the IP into IP Camera. For dynamic IP, start PPPoE.

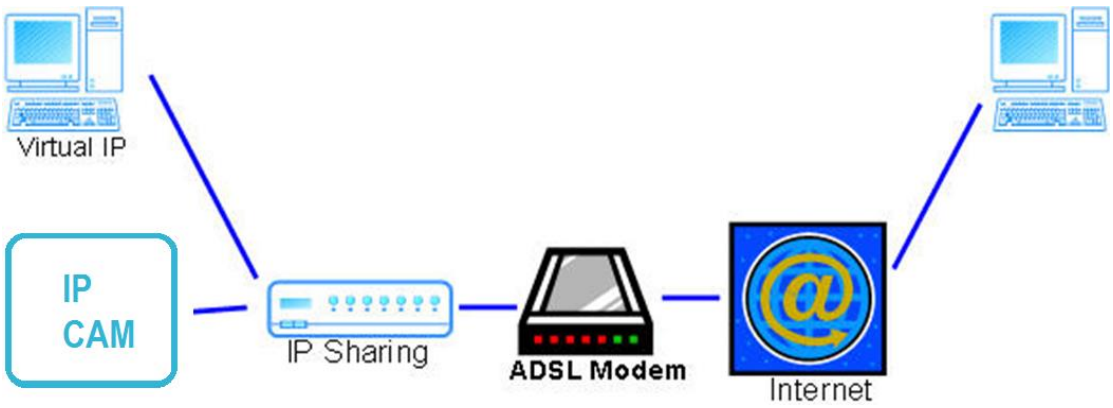
Configuration II



- Internet Access: ADSL or Cable Modem
- IP address: More than one real IP or one dynamic IP

- IP Camera and PC connect to the internet
- Device needed: Switch Hub.
- For fixed real IP, set up the IP into IP Camera & PC.
- For dynamic IP, start PPPoE.

Configuration III

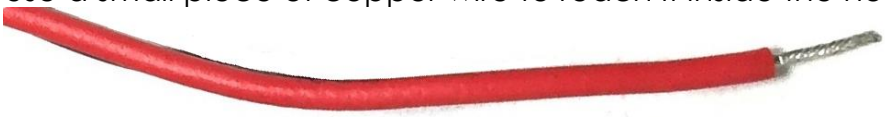


- Internet Access: ADSL or Cable Modem
- IP address: one real IP or one dynamic IP
- IP Camera and PC connect to the internet
- Device needed: IP sharing
- Use virtual IP, set up port forwarding in IP sharing

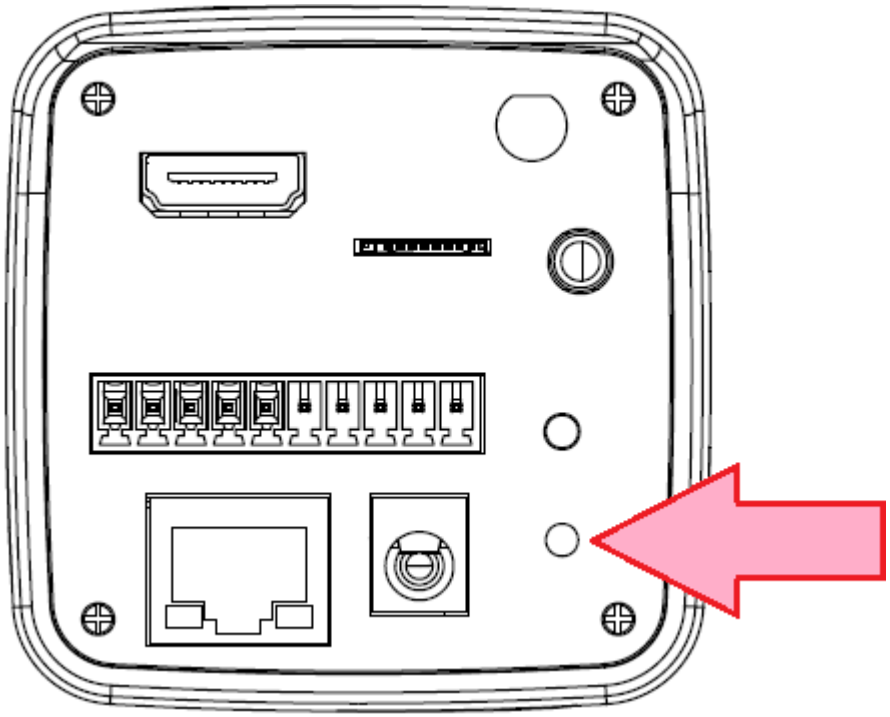
FACTORY DEFAULT

Follow the steps below to restore its default settings if you forget your log-in password of the camera.

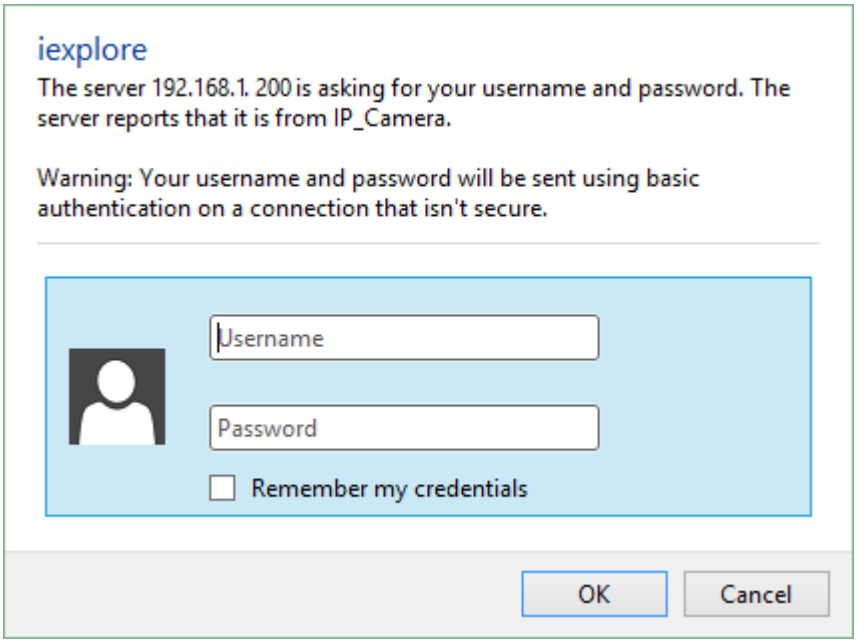
- Remove the power and Ethernet cable.
- Use a small piece of copper wire to reach it inside the hole.



- Press and hold the button once it is reached.



- Connect the power for the camera to reboot for around 30 seconds.
- Remove the wire after rebooting completes.
- Open the internet browser using default IP (http://192.168.1.200)
- Input **admin** for both user name and password to log in.



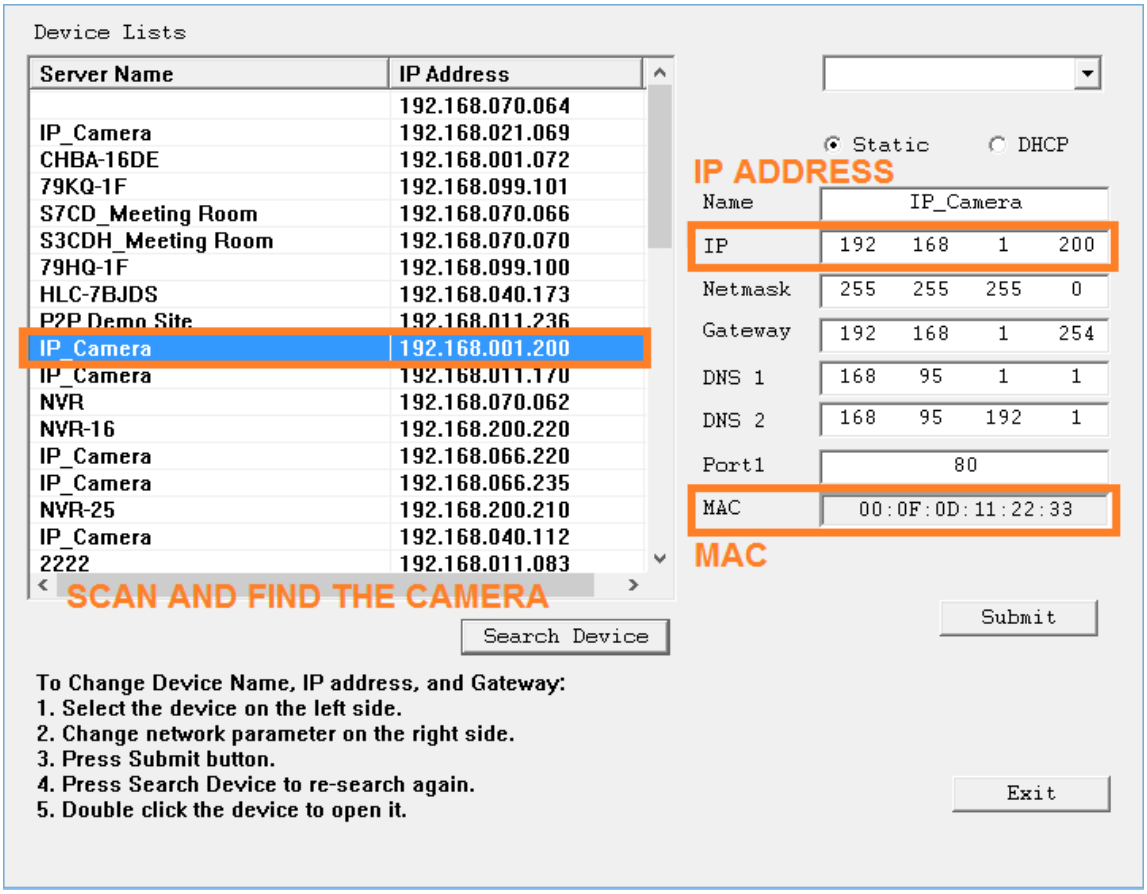
✧ You may also perform **Factory Default** through **System Update** when you operate the camera by remote. Please refer to **System** chapter for more instructions.

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.

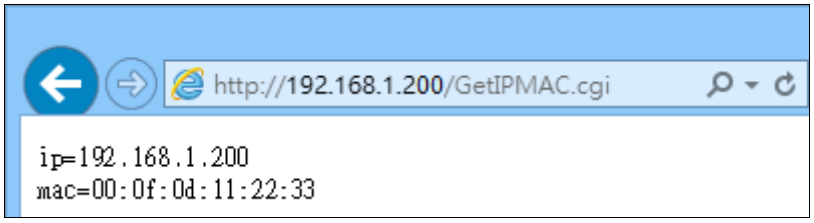
Note: Universal password will be valid only when you enable the function in **User Management**.

i. 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.

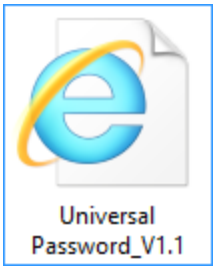


Or else, if you already know the IP address of camera: Open the web browser, key in **http:// (IP address) /GetIPMAC.cgi** and press enter.

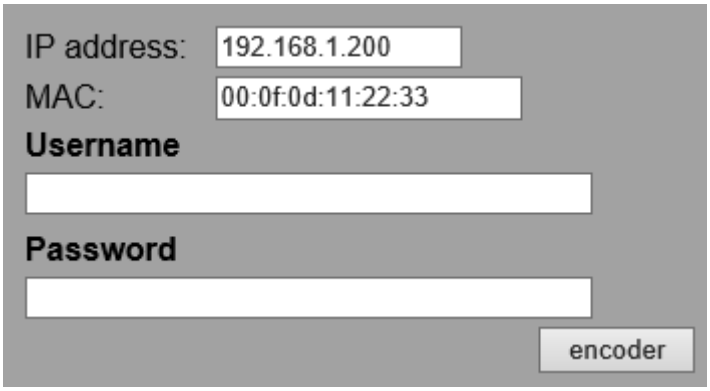
The IP address and MAC address will be displayed on browser.



ii. Locate the .html file named **Universal Password V1.1** in the Universal Password folder from the Applications folders in CD-ROM. Open it with an IE web browser.

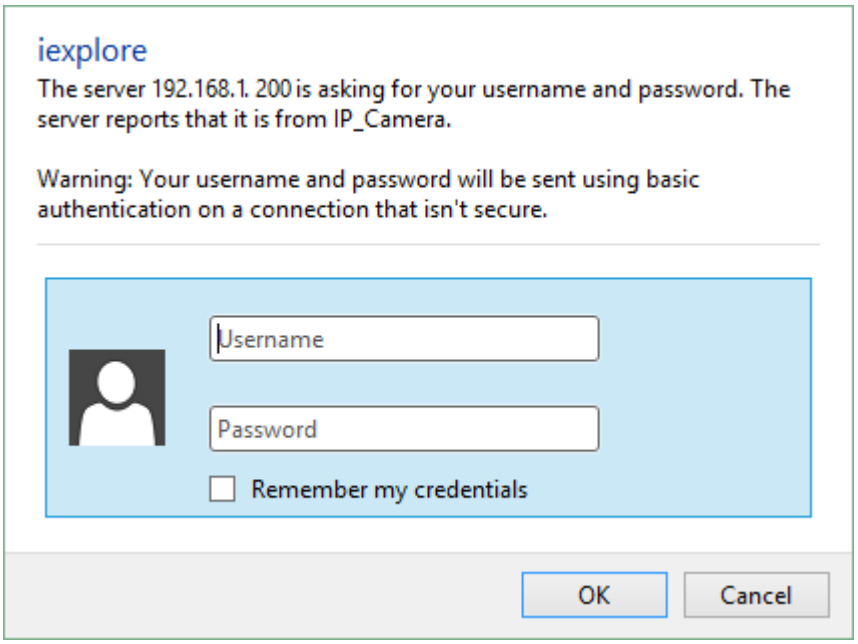


iii. The camera IP address and MAC address will be displayed automatically in both **IP Address** and **MAC** columns.

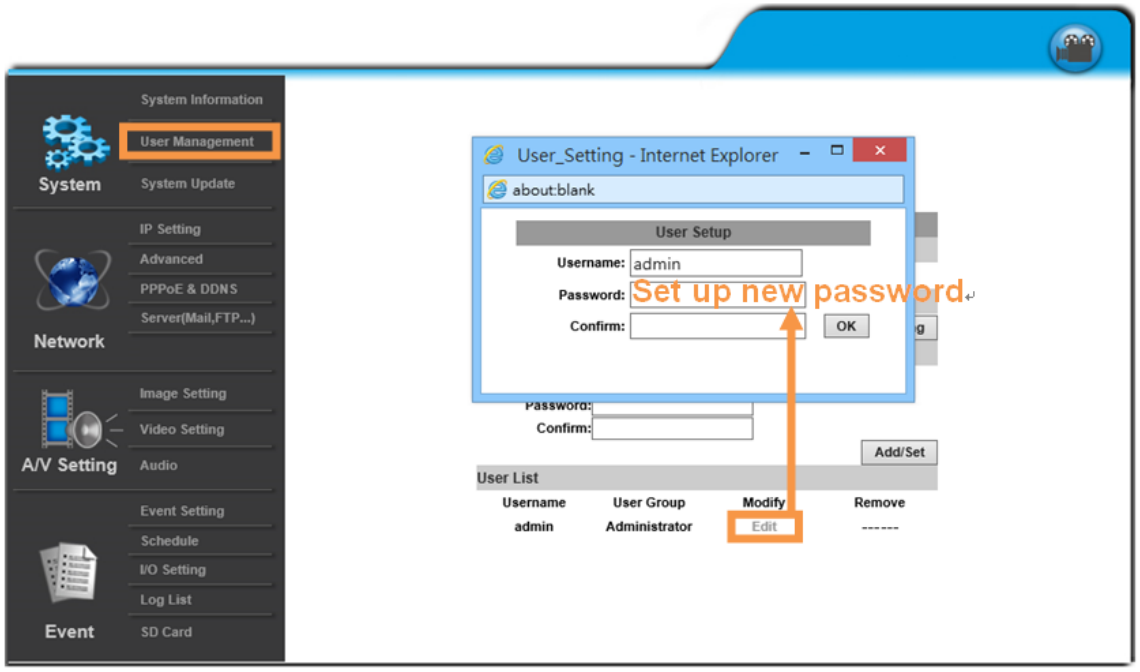


After clicking on **encoder**, a set of username and password will appear. The universal username and password are generated from the IP address and MAC address you key-in, so if you change the camera IP address the universal password changes, too.

iv. Use the generated username & password to log in the camera account.

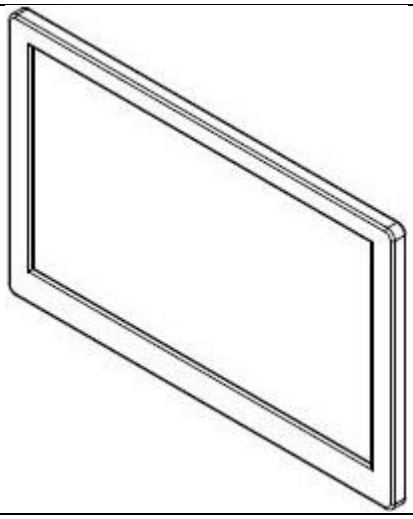
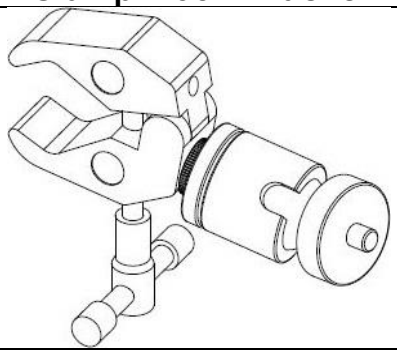
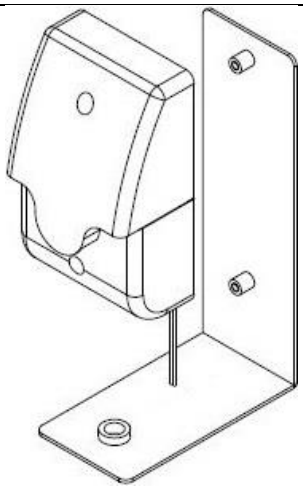


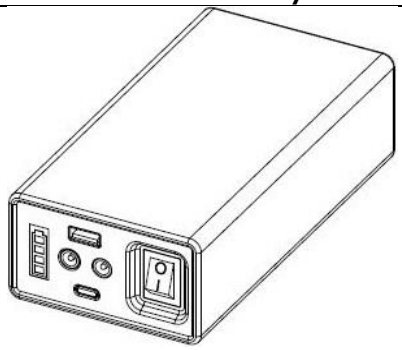
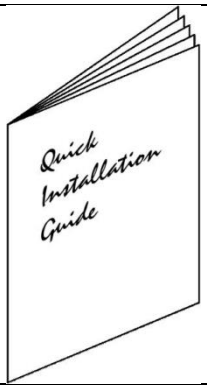
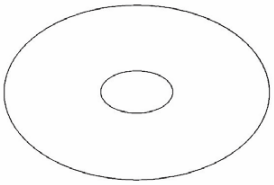
v. Now you can login as administrator. Turn to **User Management** page. The use of universal password does not affect the previous user setting, so the administrator account password does not change until you edit it. Please click **Edit** to give a new administrator password.



PACKAGE CONTENTS

IP Camera	Tripod
	

Monitor	Clamp Mount Bracket	Buzzer Alarm + Bracket
		
	Knob Screw	
		

Lithium Battery	Quick Installation Guide	CD
		

- The **CD** includes user manual and software tools