

Network Thermal Camera

User Manual

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- Design and specifications are subject to change without prior notice.
- The initial administrator ID is “admin”, the password should be set when logging in for the first time.

Please change your password every three months to safely protect personal information and to prevent the damage of the information theft.

Please, take note that it's a user's responsibility for the security and any other problems caused by mismanaging a password.

OVERVIEW

1.1 Important safety instructions

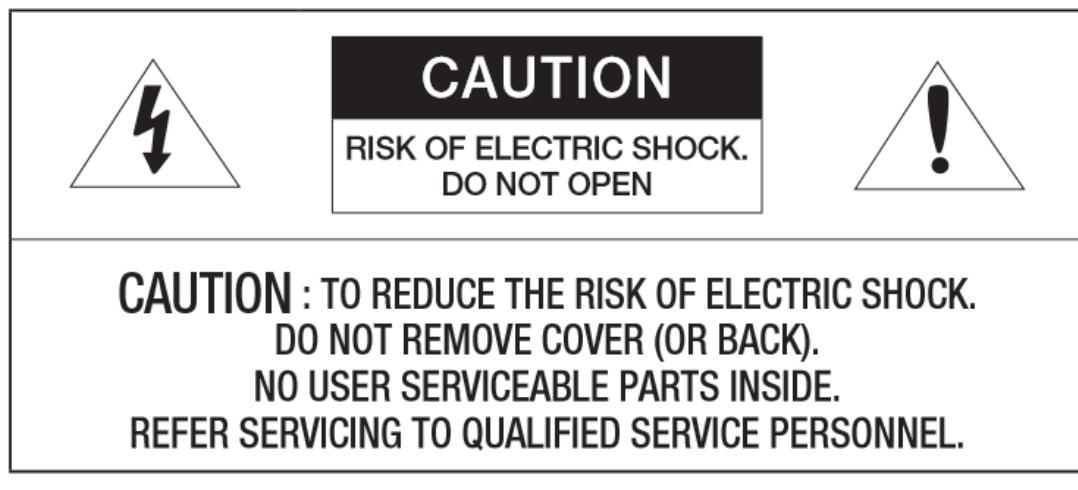
1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions
5. Don' t focuses on the strong radiation source (Sun、 Direction laser beam or reflection) .
6. Don' t use strong corrosive cleaner to clean the device.
7. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
8. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
9. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
10. Only use attachments/ accessories specified by the manufacturer.
11. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
12. Unplug this apparatus during lighting storms or when unused for long periods of time.
13. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, storage error, does not operate normally, or has been dropped.



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 THE VENTILATION GRILLS OR OTHER OPENINGS ON THE EQUIPMENT.

CAUTION



EXPLANATION OF GRAPHICAL SYMBOLS



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

CLASS I construction

An apparatus with CLASS construction shall be connected to a MAINS socket outlet with a protective earthing connection.

Disconnection Device

Disconnect the main plug from the apparatus, if it's defected. And please call a repair man in your location.

CAUTION

These servicing instructions are for use by qualified service personnel only.

To reduce the risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

The one power adapter only used for one camera, don't link other device.

Please read the following recommended safety precautions carefully.

- Due to the thermal camera use very sensitive uncooled thermal detector, please don't focus on the strong radiation source (Sun, Direction laser beam or reflection). IF not, it will be destroyed permanently.
- Do not place this apparatus on an uneven surface.
- Do not install on a surface where it is exposed to direct sunlight, near heating equipment or heavy cold area.
- Do not place this apparatus near conductive material.
- Do not attempt to service this apparatus yourself.
- Do not place a glass of water on the product.

- Do not place heavy items on the product.

User's Manual is a guidance book for how to use the products.

The meaning of the symbols are shown below.

- Reference : In case of providing information for helping of product's usages
 - Notice : If there's any possibility to occur any damages for the goods and human caused by not following the instruction.
- Please read this manual for the safety before using of goods and keep it in the safe place.

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1. OVERVIEW

1.2 Product features

- **Pseudo-color**

You can select different color mode on camera, to display high or low temperature of object.

- **Multi-Streaming**

This network camera can display videos in different resolutions and quality simultaneously using different CODECs.

- **Web Browser-based Monitoring**

Using the Internet web browser to display the image in a local network environment.

- **Alarm**

When an event occurs, image is either sent to the email address registered by the user, sent to the FTP server, saved in a Micro SD card.

- **Gray detector**

Analysis the Gary D-value between high substances and background, when the D-value greater than threshold, it will trigger event.

- **Motion Detection**

Detects motion from the camera' s video input.

- **Intelligent Video Analysis**

Analyzes video to detect logical events of specified conditions from the camera' s video input.

- **Auto detection of Disconnection Network**

Detects network disconnection before triggering an event.

- **Auto detect storage unusual**

Detect Micro SD card unusual, it will send image to the Email and FTP

server that user registered.

- **ONVIF Compliance**

This product supports ONVIF profile-S.

For more information, refer to

www.onvif.org.



1.3 Recommended PC specifications

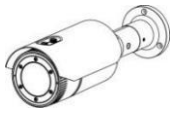





- CPU : Intel Core 2 Duo 2.4 GHz or higher (for using 1920x1080 30 fps)
Intel Core i7 2.8 GHz or higher (for using 1920x1080 60 fps)
- Resolution : 1280X1024 pixels or higher (32 bit color)
- RAM : 2GB or higher
- Supported OS : Windows XP / VISTA / 7 / 8
- Supported Browser : Microsoft Internet Explorer (Ver. 11 ~ 9)
Neither a beta test version unlike the version released in the company website nor the developer version will be supported.
- Video Memory : 256MB or higher

If the driver of the video graphic adapter is not installed properly or is not the latest version, the video may not be played properly.

For a multi-monitoring system involving at least 2 monitors, the playback performance can be deteriorated depending on the system.

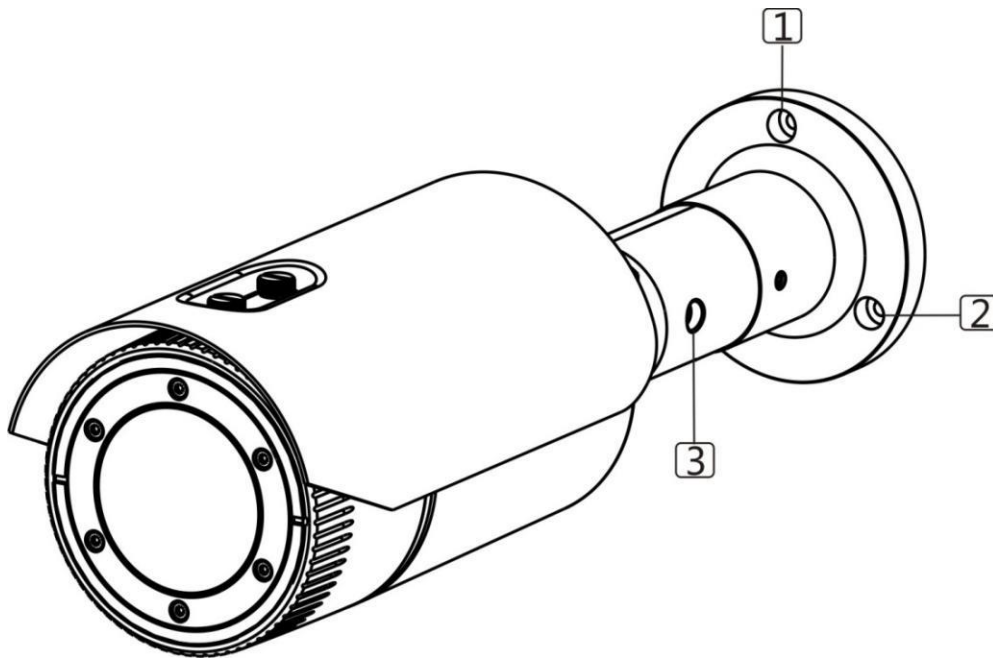
1.4 Provided items with device

Please check if your camera and accessories are all included in the product package.

Appearance	Item Name	Quantity	Description
	Camera	1	
	User Manual PDF	1	
	12V power adapter	1	
	Allen driver	1	M4
	RJ45 waterproof sleeve	1	Protecting RJ45 network interface for water
	Screw spike	3	For installing on ceiling and wall

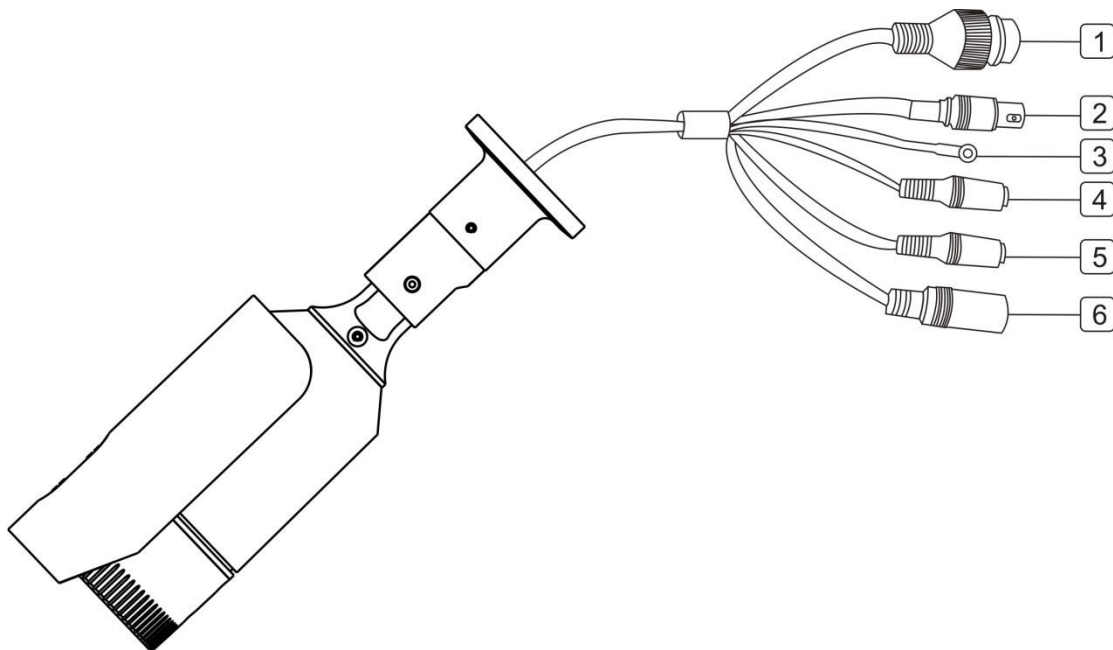
1.5 At a Glance

Appearance



Item	Description
1 2 Fixed screw holes installation	To install the camera on panel.
3 Fixed screw for monitoring direction	To adjust the monitoring direction.

Output line



Item	Description
------	-------------

1 Network port	To connecting PoE or Ethernet cable.
2 Testing displayer output	To testing monitor output port. Using the testing monitor cable to connect the display to test the video.
3 Protective earth port	To protecting the product for lighting and surge.
4 Audio output hole	To connecting loudspeaker
5 Audio input hole	To connecting microphone
6 Power port	To plug in the power line

2. Installation & Connection

2.1 Installation

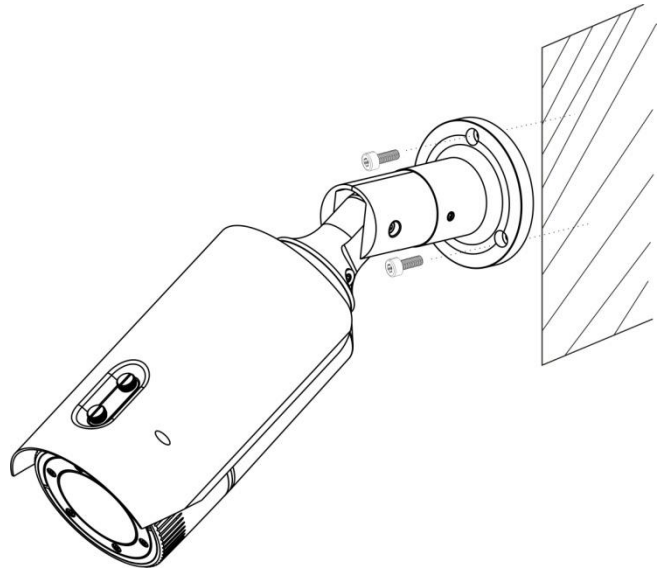
Precautions before installation

Ensure you read out the following instructions before installing the camera:

- It must be installed on the area (ceiling or wall) that can withstand 5 times the weight of the camera including the installation bracket.
- Stuck-in or peeled-off cables can cause damage to the product or a fire.
- For safety purposes, keep anyone else away from the installation site. And put aside personal belongings from the site, just in case.

Installation

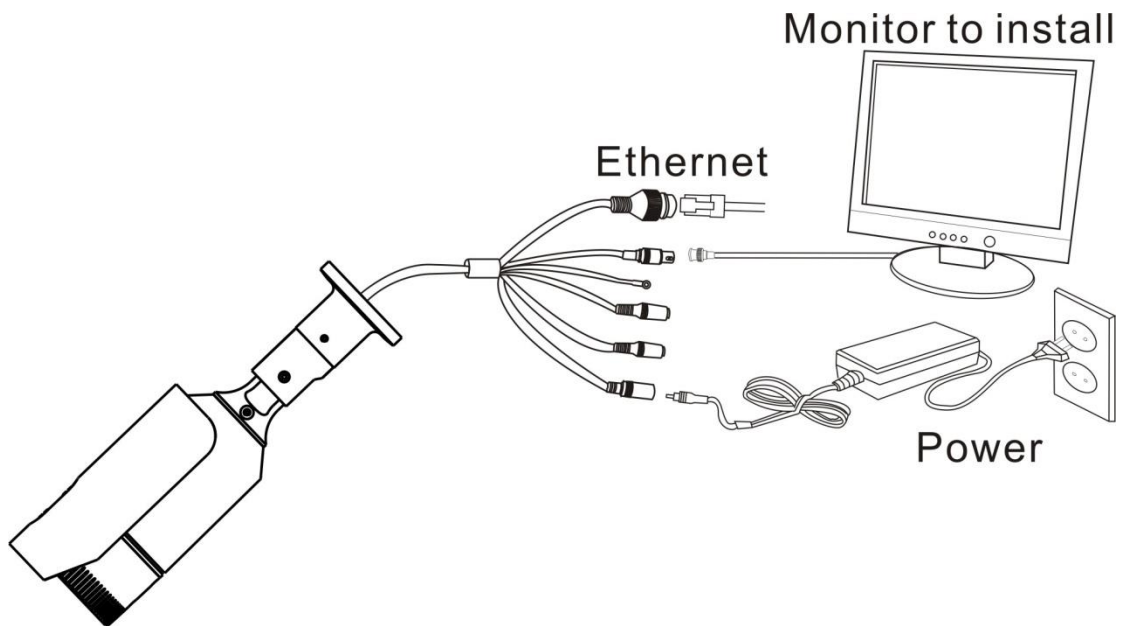
1. Punching 3 holes on fixed platform
2. Use the 3 supplied screws to fix the camera to the 3 punched holes.
3. Screw off the fixed screw, to adjust the direction of camera up and down.
 - The range of incline is 90° .



Don't screw too off when adjust the direction, or it will fall off.

4. After adjustment, screw up the fixed screw.

2.2 Connect with other device



Ethernet connection

Connect the Ethernet cable to LAN or Internet.

Analog video output

Connect the video output port to the video input port on monitor.

- Video output : Single output signal lines (Max.1.0 Vpp)
- Line out impedance : 75Ω

Power supply

Input DC12V power supply on power port.



➤ If PoE and DC 12V powers are both applied, the device will be operated by the initially applied power source.

- You can also use a router featuring PoE to supply power to the camera.

- Use PoE that is compliant with the IEEE802.3af protocols.

- If you want to connect an external device, you must turn off the external device before proceeding.

Power Cable Specification for Each Model

In case of DC 12V Input:

Type (AWG)	# 22	# 20	# 18
Cable Length (Max.)	20m	32m	50m

Network Cable Specification

Item	Contents	Remark
Connector	RJ45	
Ethernet	10/100Base-T	10/100Mbps
Cable	UTP Category 5e	
Max. Distance	100m	
PoE Support	IEEE802.3af	

Grounding the Product

Connect the device housing to earth by using screwdriver.

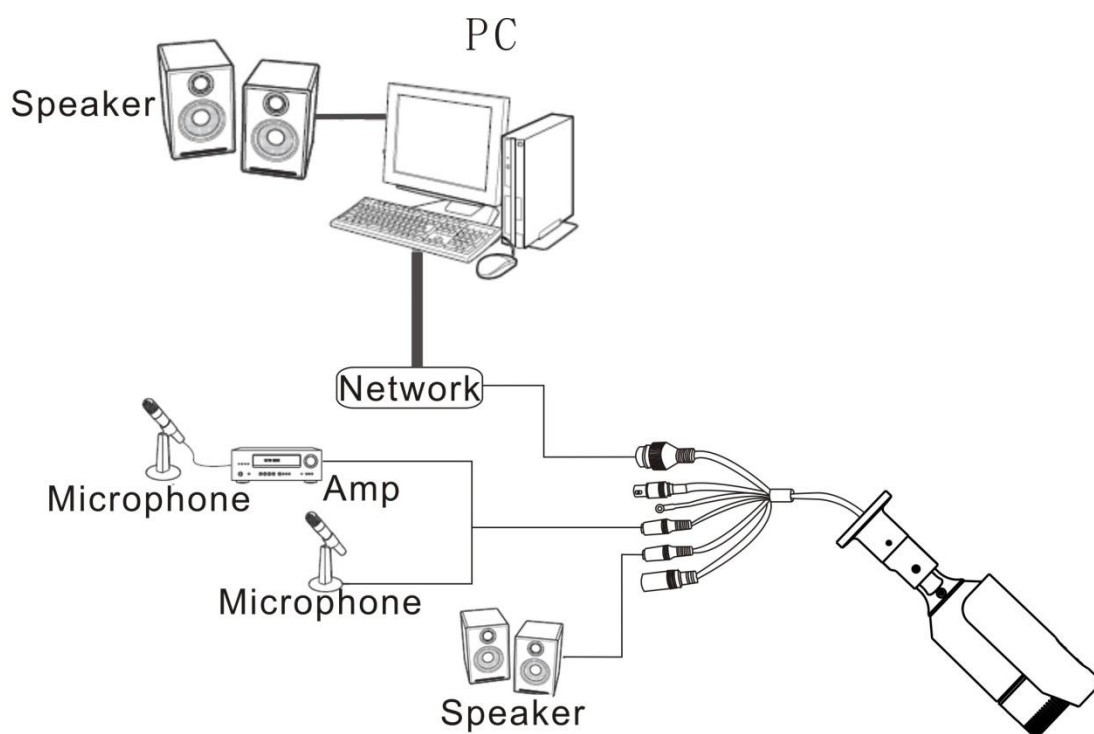


- Grounding protects the product from a surge or lightning.
- When grounding, make sure to turn the product's power off.

Recommended Grounding Cable

- Length : Less than 3M
- Gauge : 18 AWG or biggerEx) UL1007 AWG 18/16, UL1015 AWG18/16/14/12, UL2468 AWG18/16/14

Connecting to Audio Input/Output



1. Connect the AUDIO IN port of the camera with the microphone or LINE OUT port of the amplifier that the microphone is connected to.
2. Connect the AUDIO OUT port of the camera with the speaker
3. Check the specifications for audio input.

Audio Codec

-Audio In : G.711 PCM (Bit Rate: 64kbps / Sampling Frequency: 8kHz)

-Audio Out : G.711 PCM (Bit Rate: 64kbps / Sampling Frequency: 8kHz)

Full duplex Audio

- Audio in : Mono signal line input (Max. 2.4 Vpp)
- Audio out : Mono signal line output (Max. 2.4 Vpp)
- Line out impedance : 16 Ω

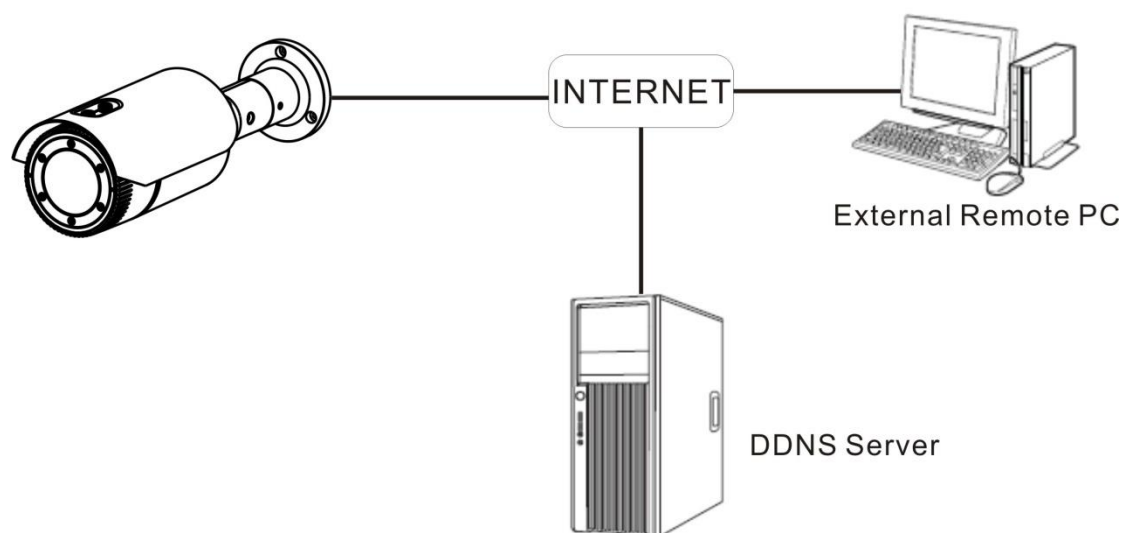
3. Network Connection And Setup

You can set up the network settings according to your network configurations.

3.1 Connecting the camera directly to local area networking

Connecting to the camera from a local PC in the LAN

1. Launch an Internet browser on the local PC.
2. Enter the IP address of the camera in the address bar of the browser.



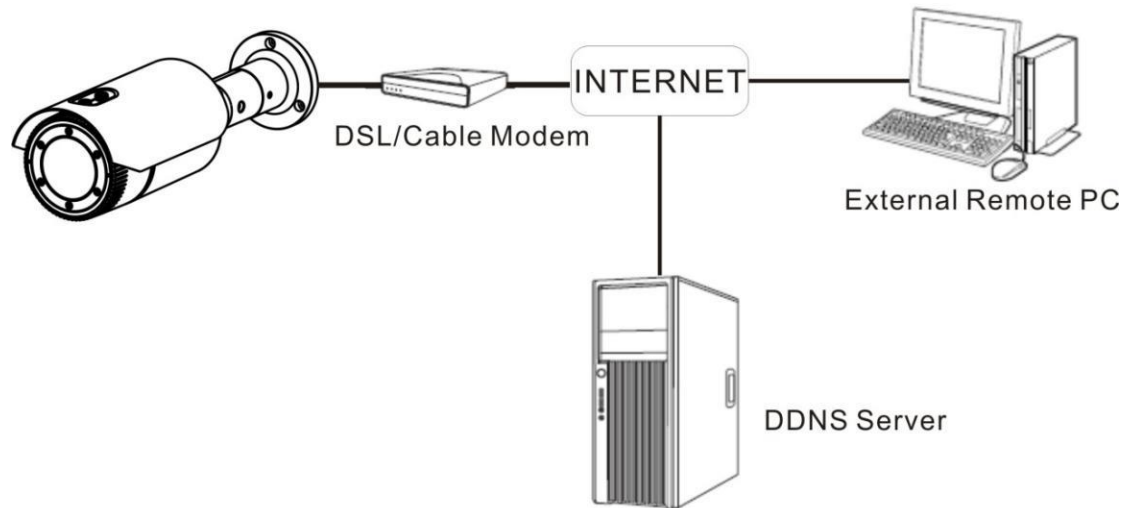
A remote PC in an external Internet out of the LAN network may not be able to connect to the camera installed in the intranet if the port-forwarding is not properly set or a firewall is set. In this case, to resolve the problem, contact your network administrator.

Factory default IP address is 192.168.2.100.

To change the IP address, use the Search IP.

For further details on Search IP use, refer to “Static IP Setup”.

3. 2Connecting the camera directly to a DHCP based DSL/Cable modem



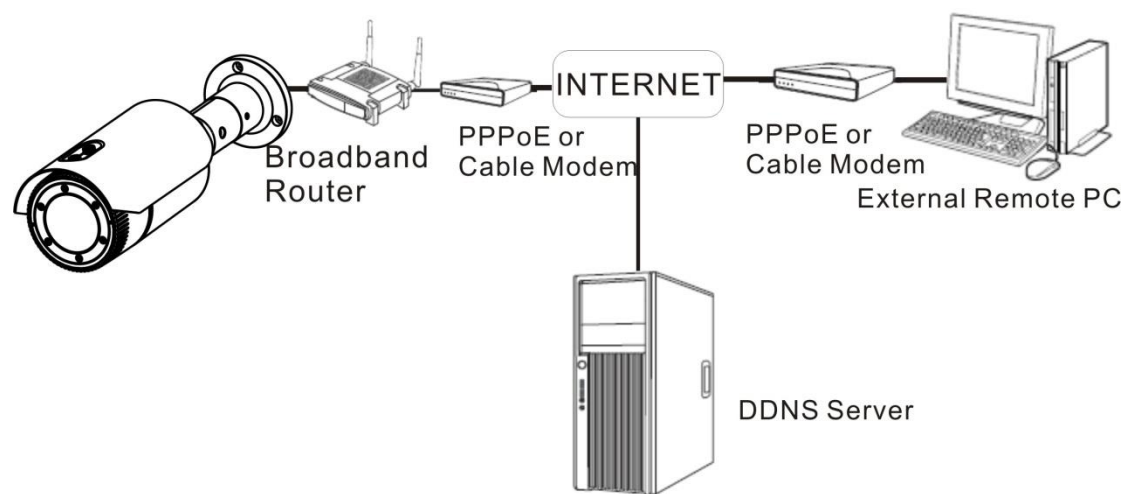
1. Connect the user PC directly with the network camera.
2. Run the IP Installer and change the IP address of the camera so that you can use the web browser on your desktop to connect to the Internet.
3. Use the Internet browser to connect to the web viewer.
4. Move to [Setup] page.
5. Move to [Basic] - [IP & Port], and set the network type to [DHCP].
6. Connect the camera, which was removed from your PC, directly to the modem.
7. Restart the camera.



➤ Refer to “TCP/IP” for how to setup IP.

3.3 Connecting the camera to a broadband router with the PPPoE/Cable modem

This is for a small network environment such as homes, SOHO and ordinary shops.



Configuring the network settings of the local PC connected to a Broadband Router

Configuring the network settings of the local PC connected to a Broadband Router, follow the instructions below.

- Select : <Network>→<Properties>→<Local Area Connection>→<General>→<Properties>→<Internet Protocol (TCP/IP)>→<Properties>→<Obtain an IP address automatically> or <Use the following IP address>.
- Follow the instructions below if you select <Use the following IP address>:
 - ex1) If the address (LAN IP) of the Broadband Router is 192.168.2.1
IP address: 192.168.2.100
Subnet Mask: 255.255.255.0
Default Gateway: 192.168.2.1

ex2) If the address (LAN IP) of the Broadband Router is 192.168.0.1

IP address : 192.168.0.100

Subnet Mask : 255.255.255.0

Default Gateway : 192.168.0.1

ex3) If the address (LAN IP) of the Broadband Router is 192.168.xxx.1

IP address : 192.168.xxx.100

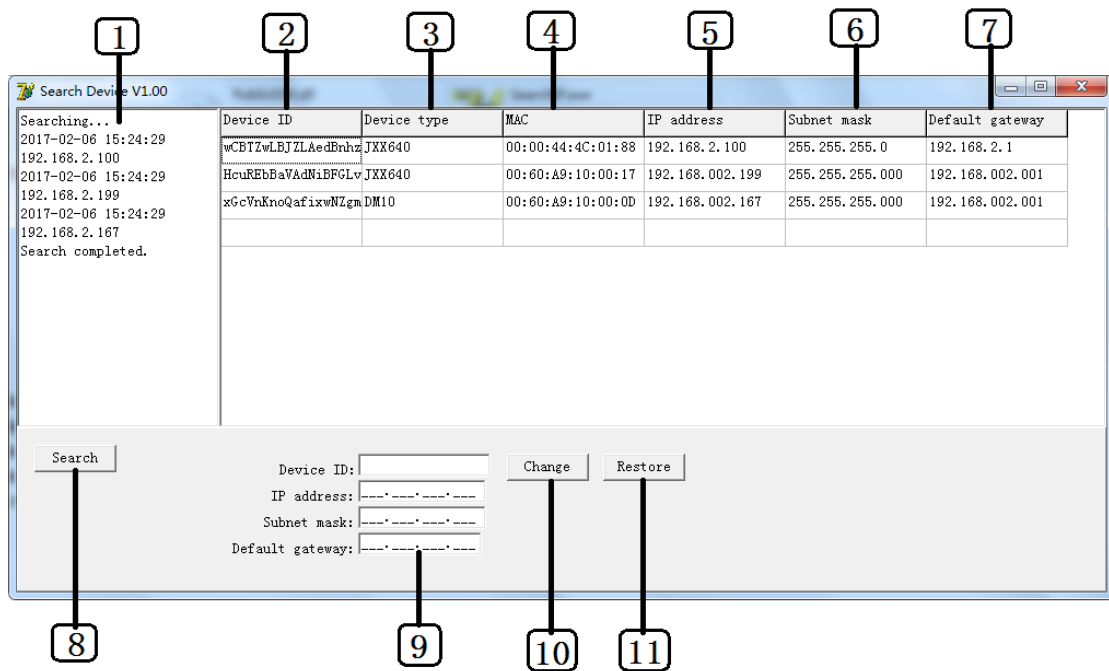
Subnet Mask : 255.255.255.0

Default Gateway : 192.168.xxx.1



➤ For the address of the Broadband Router, refer to the product' s documentation.

3.4 The button used on Search IP



Item	Description
1 Search....	Display the process of searching
2 Device ID	Camera ID that connected
3 Device Type	Camera model name that connected
4 MAC	The Ethernet address of camera that connected
5 IP address	Connected
6 Subnet mask	Camera' s subnet mask is connected
7 Default gateway	Camera' s gateway mask is connected
8 Search	Scan the camera currently connected to

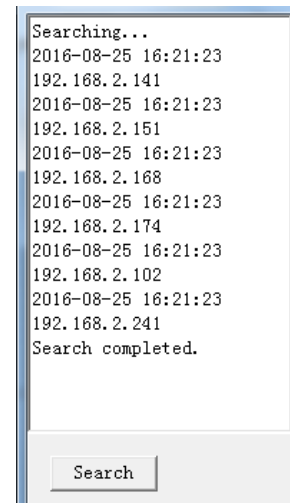
	the network
9	Display camera's IP, subnet mask, and gateway for modification
10 Change	Modify the camera's IP, subnet mask, and gateway
11 Restore	Restore all the parameters of the camera to factory defaults

3.5 Static IP setup

Run <Search IP V1.00> to display camera searching list.

At the initial startup, the interface is all displayed as blank.

1. Click "Search", the search list shows the searched camera information.
2. When "Search completed" is displayed in the search procedure box, the search ends.



3. Select a camera from the search list and the camera's <Device ID>, <IP address>, <Subnet mask>, <Default gateway> will be displayed in the edit screen below.

Device ID: MJCBLY1ftSpfEDTel

IP address: 192.168.002.168

Subnet mask: 255.255.255.000

Default gateway: 192.168.002.001

- MAC: The camera's MAC

address is automatically displayed and does not require user settings.

If you do not use a broadband router

To set <IP Address>, <Subnet mask> and <Default gateway>, contact your network administrator.



4. Click "Change" to complete the network settings.

If you use a broadband router

- IP Address : Enter the IP range of addresses provided by the broadband router.

Ex) 192.168.1.2~254,

192.168.0.2~254,

192.168.XXX.2~254

- Subnet Mask : The <Subnet Mask> of the Broadband Router will be the <Subnet Mask> of the camera.
- Default gateway : Broadband Router's <Local IP Address> will be the camera's <Default gateway>



➤ Settings may vary depending on the connected broadband router model.

- For details, refer to the applicable router's user manual.

If the broadband router is connected to multiple cameras
Clearly configure each other's IP-related settings and
port-related settings.

Ex)

Item		Camera 1	Camera 2
IP related settings	IP Address	192.168.2.100	192.168.2.101
	Subnet Mask	255.255.255.0	255.255.255.0
	Gateway	192.168.2.1	192.168.2.1
Port related settings	HTTP Port	8001	8002



- If <HTTP Port> is set to a value other than 80, you must provide <Port> in the address bar of the Internet browser to access the camera.

EX) http://IP address: HTTP Port

http://192.168.2.100:8001

3.6 Connecting to the camera from a shared local PC

1. Run Search IP.

It scans the connected cameras and displays the list of cameras.

2. In the Internet browser's address bar, type the IP address of the discovered camera to access the camera.

4. Web viewer


4.1 Connecting to the camera

Normally, you would:

1. Launch the Internet browser.
2. Type the IP address of the camera in the address bar.

ex)

- IP address (IPv4) : 192.168.2.100
- http://192.168.2.100
- the Login dialog should appear.

Username	<input type="text" value="admin"/>
Password	<input type="password"/>
	
<input type="button" value="Login"/>	

If the HTTP port is other than 80

1. Launch the Internet browser.
2. Type the IP address and HTTP port number of the camera in the address bar.

ex) IP address : 192.168.2.100:HTTP Port number(10000)
http://192.168.2.100:10000 - the Login dialog should appear.

4. 2 Password setting

1. you should register passport when you firstly access to IPC,
2. sign in password when "Pass word Modify" occurs

PasswordModify	
New password	<input type="text"/>
Confirm new password	<input type="text"/>
<input type="button" value="Confirm"/>	


1. .If the password is 8 to 9 characters long, then it must include a combination of at least 3 of the following character types: alphabet letters with uppercase or lowercase, numbers, and special characters.
2. .If the password is longer than 10 characters, then it must include a combination of at least 2 of the following character types: alphabet letters with uppercase or lowercase, numbers, and special characters.
3. .The following special characters can be used: ~`!@#\$\$%^*()_-=+|{} []?./.
4. .The password should not be the same as the user name.
5. You may not use more than 4 consecutive characters. (example: 1234, abcd, etc.)
6. .You may not use the same character 4 or more times(????, 1111, aaaa).



- For a new password with 8 to 9 digits, you must use at least 3 of the following:
uppercase/lowercase letters, numbers and special characters.
- For a pass word with 10 to 15 digits, you must use at least 2 types of those mentioned.
- Special characters that are allowed. :~`!@#\$\$%^*()_-=+| {} []?./.
- Can not use more than 4 consecutive character, ex: 1234, abcd etc.
- Can not use repeat 4 character, ex: ?????, 1111, aaaa.

4.3 Login

Whenever you access the camera, the login window appears. Enter the User ID and password to access the camera.

Username	<input type="text" value="admin"/>
Password	<input type="password"/>
	
<input type="button" value="Login"/>	

1. Enter “admin” in the <User name>input box.
2. Enter password in the <Password> input box.
3. Click [Login].

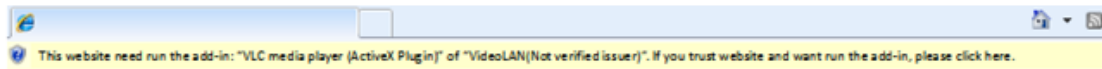


If you have logged in successfully, you will the Live Viewer screen.

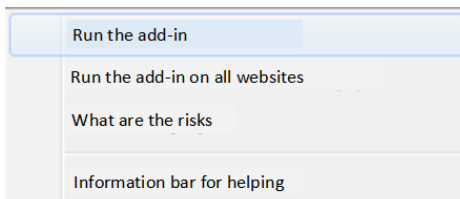
4. 4 Installing VLC setup plugin

If connecting to a camera for the first time, you will see the installation message. Then, install there quired VLC media player Plugin to access the camera and control the video from it in real time.

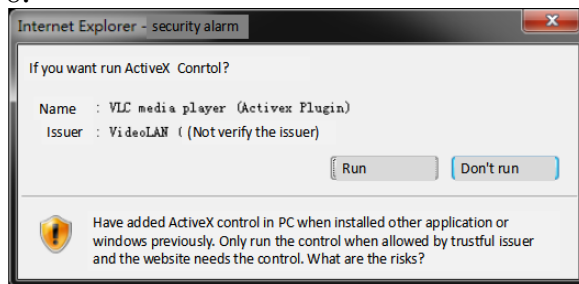
1. When the monitoring page is accessed for the very first time, the installation page is displayed. Click [Click Here] to begin installation.



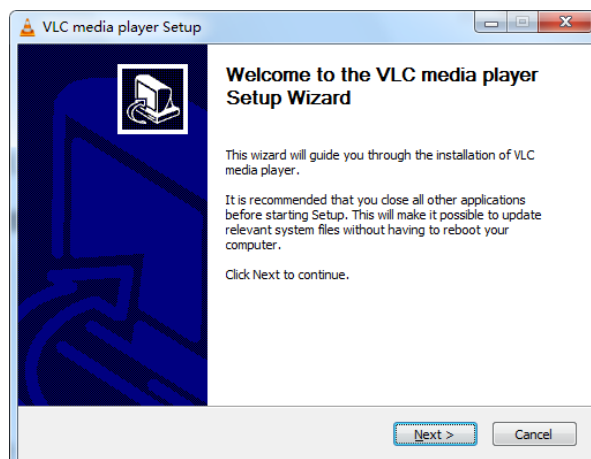
2. Select “run the add-in” on pop-up window, or “run the add-in all websites” .



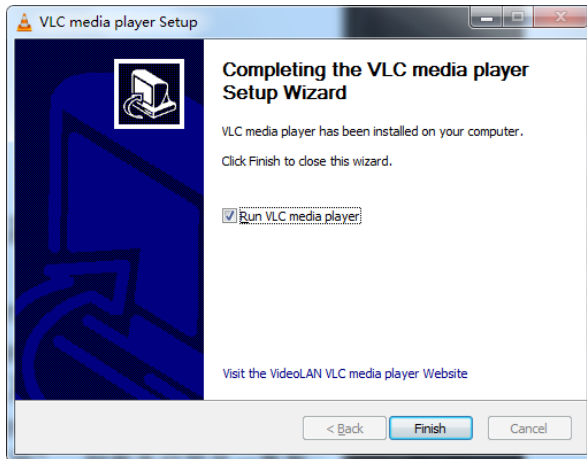
- 3.



4. Click [Run] in the message window.

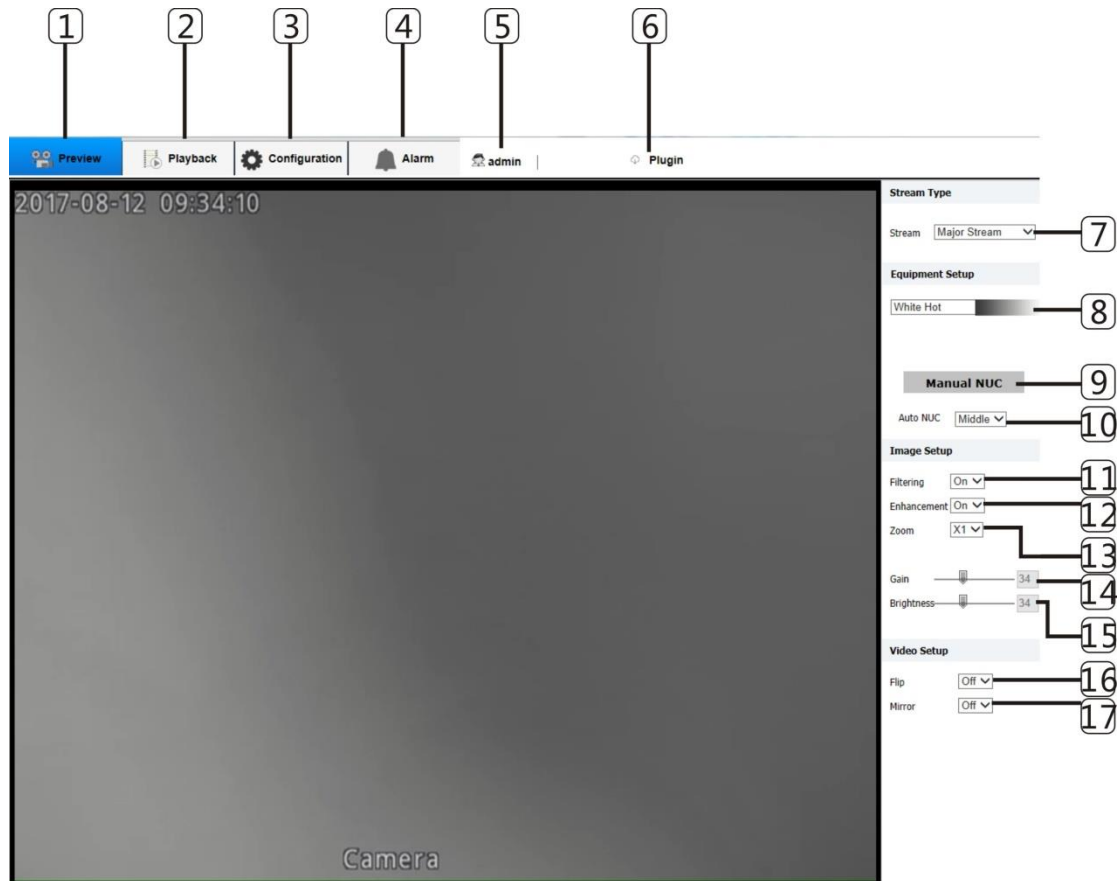


4. Click [Next] to install the Plugin.



5. Click [Finish] to finish installation.

4.5 Using the live screen



Item	Description
1 Live View	Move to the monitoring screen.
2 Playback	Move to the screen where you can search for the video recording saved in your MicroSD memory card or NAS.
3 Setup	Move to the Setup screen.

4 Alarm	Move to alarm setup screen
5 Admin	Display current user
6 Download plug-in	VLC media player plug-in manually
7 Code stream	<p>You can set code stream in <configuration>→<Audio & Video para.>→<coding para. Setup>.</p> <p>➤ It will display current used configuration file information after connecting Web Viewer.</p>
8 Pseudo-color	Selecting different color mode to distinguish high & low temperature of the object.
9 Manual zero setting	Revise the thermal image manually when the image lag appeared.
10 Auto calibration	<p>Select different Auto zero setting modes.</p> <p>➤ When selecting “short” , zero setting every 1 minute.we advise choosing short calibration if day and night temperature difference more than 30 degree.</p> <p>➤ When selecting “middle” , zero setting every 5 minutes.</p> <p>➤ When selecting “long” , zero setting every 10 minutes.we advise choosing long calibration if day and night temperature difference less than 15</p>

	<p>degree.</p> <ul style="list-style-type: none"> ➤ When selecting “off”, won’ t Auto zero setting. ➤ Note: 1. IPC will calibrate by a fixed frequency in 10 minute, then calibrate by setup of “auto calibration” after 10 minute. <p style="padding-left: 40px;">2. When IPC occurs image ghosting ,and lagging ,during the mode of long auto calibration ,please change the mode to middle or short auto calibration</p>
11 Smoothing	<p>Select if wipe off the background noise.</p> <ul style="list-style-type: none"> ➤ Smoothing function on, the image will gentler, less background noise. ➤ Smoothing off, the image will clearer, more background noise.
12 Enhance	<p>Select if opening enhance</p> <ul style="list-style-type: none"> ➤ Enhance on, high & low temperature limit will clearer ➤ Enhance off, the image will gentler.
13 zoom	<ul style="list-style-type: none"> ➤ Select x1, display original image size. ➤ Select x2, the central zone of image will magnify 2 times. ➤ Select x3, the central zone of image will magnify

	<p>3 times.</p> <ul style="list-style-type: none"> ➤ Select x4, the central zone of image will magnify 4 times.
14 Gain	<p>Configure image gain value</p> <ul style="list-style-type: none"> ➤ When gain value low, the image will gentler, but the definition will low. ➤ When gain value high, the image will clearer, but more noise.
15 Brightness	<p>Configure image brightness value</p>
16 Flip vertical	<p>Select if flip the image vertically</p> <ul style="list-style-type: none"> ➤ Flip vertical on, the image will turn upside down. ➤ Flip vertical off, display the original image.
17 Flip horizontal	<p>Select if flip the image horizontally.</p> <ul style="list-style-type: none"> ➤ Flip horizontal on, the image will be mirror left-right. ➤ Flip horizontal off, display the original image.

Full screen

1. Double click the image, to display the image full screen
2. Double click to exit full screen.

4. 6 Playing the recorded video



Before you can play the video, you must configure the record settings. For details on record settings, refer to “Storage” and “Alarm Setup”.

Name of event search screen and its function

The screenshot shows the 'Record Search' interface. At the top, there are navigation tabs: Preview, Playback, Configuration, Alarm, and admin. The main area is a large black video player. To the right of the player is the 'Record Search' panel with the following fields:

- 1: Start time input field (2017-08-11 10:48:11)
- 2: End time input field (2017-08-12 10:48:11)
- 3: Type dropdown menu (ALL)
- 4: Source dropdown menu (SD)
- 5: Search button (magnifying glass icon)
- 6: Refresh button (circular arrow icon)
- 7: Table header row
- 8: Table body rows

Below the video player is a table with the following data:

Select	File Name	Type	Start time	End Time	File Length
11	20170812095953_T00086.avi	Schedule	2017-08-12 09:59:53	2017-08-12 10:48:11	385.6792MB
12	20170812095308_T00084.avi	Schedule	2017-08-12 09:53:08	2017-08-12 09:55:44	19.5774MB
13	20170812085549_T00085.avi	Schedule	2017-08-12 08:55:49	2017-08-12 09:59:52	514.0115MB
14	20170811211117_T00083.avi	Schedule	2017-08-11 21:11:17	2017-08-11 22:00:00	351.8379MB
15	20170811200002_T00082.avi	Schedule	2017-08-11 20:00:02	2017-08-11 21:11:17	514.5308MB
16	20170811164643_A00081.avi	Alarm	2017-08-11 16:46:43	2017-08-11 16:46:54	1.2432MB
17	20170811164537_A00080.avi	Alarm	2017-08-11 16:45:37	2017-08-11 16:45:48	1.2423MB
18	20170811164527_A00079.avi	Alarm	2017-08-11 16:45:27	2017-08-11 16:45:38	1.2887MB
19	20170811164517_A00078.avi	Alarm	2017-08-11 16:45:17	2017-08-11 16:45:28	1.0598MB
110	20170811164414_A00077.avi	Alarm	2017-08-11 16:44:14	2017-08-11 16:45:18	7.5485MB

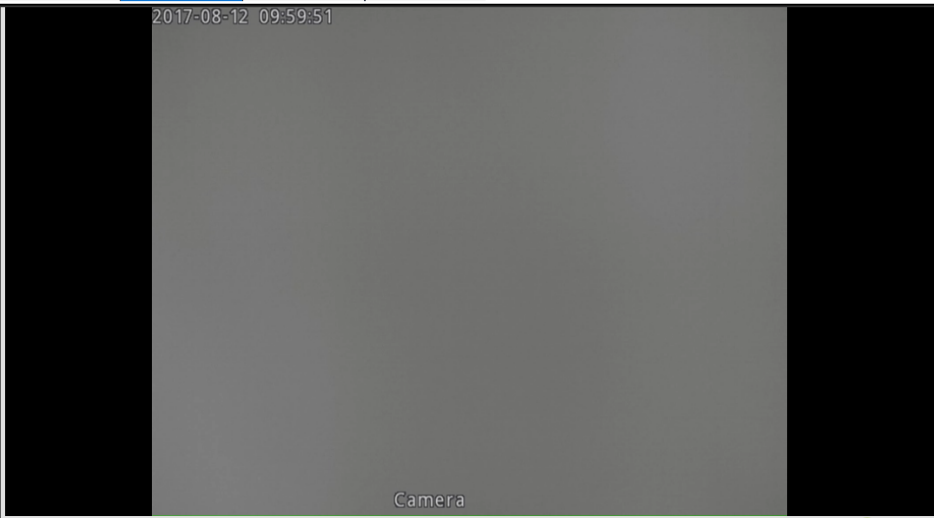
Item	Description
------	-------------

1 Start time	Set the search date and time range for data saved in your Micro SD memorycard or NAS.
2 End time	
3 Recording type	Configure the event type you want search.
4 Source	Select the source of events. SD: Search the event from SD card NAS: Search the event from NAS server
5 Search	Run event searching
6 Download	Download data selected
7 Paging	Paging of searching list.
8 Searching list	Display the data searched.

Play video

Preview
Playback
Configuration
Alarm
admin
Plugin

2017-08-12 09:59:51



Camera

Record Search:

Start time

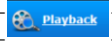




End Time

Type

Source



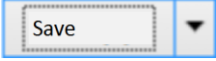

Previous page
 /
Next page

Select	File Name	Type	Start time	End Time	File Length
<input checked="" type="checkbox"/>	20170812095953_T00086.avi	Schedule	2017-08-12 09:59:53	2017-08-12 10:48:11	385.6792MB
<input type="checkbox"/>	20170812095308_T00084.avi	Schedule	2017-08-12 09:53:08	2017-08-12 09:55:44	19.5774MB
<input type="checkbox"/>	20170812085549_T00085.avi	Schedule	2017-08-12 08:55:49	2017-08-12 09:59:52	514.0115MB
<input type="checkbox"/>	20170811211117_T00083.avi	Schedule	2017-08-11 21:11:17	2017-08-11 22:00:00	351.8375MB
<input type="checkbox"/>	20170811200002_T00082.avi	Schedule	2017-08-11 20:00:02	2017-08-11 21:11:17	514.5308MB
<input type="checkbox"/>	20170811164643_A00081.avi	Alarm	2017-08-11 16:46:43	2017-08-11 16:46:54	1.2432MB
<input type="checkbox"/>	20170811164537_A00080.avi	Alarm	2017-08-11 16:45:37	2017-08-11 16:45:48	1.2423MB
<input type="checkbox"/>	20170811164527_A00079.avi	Alarm	2017-08-11 16:45:27	2017-08-11 16:45:38	1.2887MB
<input type="checkbox"/>	20170811164517_A00078.avi	Alarm	2017-08-11 16:45:17	2017-08-11 16:45:28	1.0598MB
<input type="checkbox"/>	20170811164414_A00077.avi	Alarm	2017-08-11 16:44:14	2017-08-11 16:45:18	7.5485MB

1. Click [] Button
2. Specify the start time and end time of your search.
3. Select an event type and source for your search within the specified period.
4. Click [] Button. The search results will be displayed in the list.
5. Select a data item to play in the search list, double click to play.
6. When playing the video, the section in the specific period is played by moving the time bar.
7. To listen to a voice signal in the recorded video, then activate the voice signal icon [] when you play it. If the voice signal icon is [], it's silent mode.
8. When Playing the video, Click[] to cover the maximum size of the monitor.

Download video searched

Select (C)	File Name	Type	Start time	End Time	File Length
<input checked="" type="checkbox"/>	20170811160743_A00046.avi	Alarm	2017-08-11 16:07:43	2017-08-11 16:08:51	8.1151MB

1. Select one video from data list searched (Tick in front of the data) .
2. Click []Button. The Save window appears
3. Click []above [], Choose [**Save as**], the Save As window appears
4. Confirm the save path and click [] Button. The

screenshot will be backed up to the specified path.

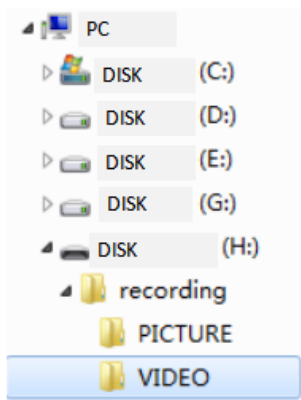
To play the backup video

The back up images are saved in an avi format. Gom Player, VLC Player, and Window Media Player are recommended as the media player compatible with this format.



In case of Windows Media Player, download the latest codec from www.windows7codecs.com and install it prior to use.

To Play an AVI File on Micro SD memory card



1. Take out the Micro SD card from the camera.

Before separating the Micro SD memory card, set the <Open the recording



plan> to <Off> in the “<Setup>→<storage management>→<recording plan>” menu.

2. Insert the Micro SD memory card into the PC.

3. Play the AVI file in the “\recording\VIDEO”



- A filename starts with the format “YYYYMMDDHHMMSS_T(A)00001.avi” and the file number is incremented by one.
- YYYYMMDDHHMMSS indicates the start time of data saving.
- T00001 is timing video, A00002 is alarm video. Each AVI

file' s size is Max. 512M

- Once corrupted, the data in the Micro SD memory card cannot be replayed in the Web Viewer' s[Playback].

Play the AVI file in NAS

- In Windows browser, use \\<ipaddress>\ to access.

Ex) \\192.168.2.159\nas\recording\VIDEO\



- Selecting AVI file to play after connecting NAS server.

➤ The file name format is “YYYYMMDDHHMMSS_T (A)

00001.avi”, T mean timing recording, A means alarm recording.

➤ YYYYMMDDHHMMSS means starting time of saved data.

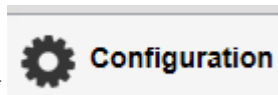
➤ Each AVI file' s size is Max. 512M.

➤ If you change or damage the saved data on your own, it will not play back or save properly.

5. Setup screen

5.1 Setup

On the network, you can set up basic information on the camera, video and audio, network events and system.

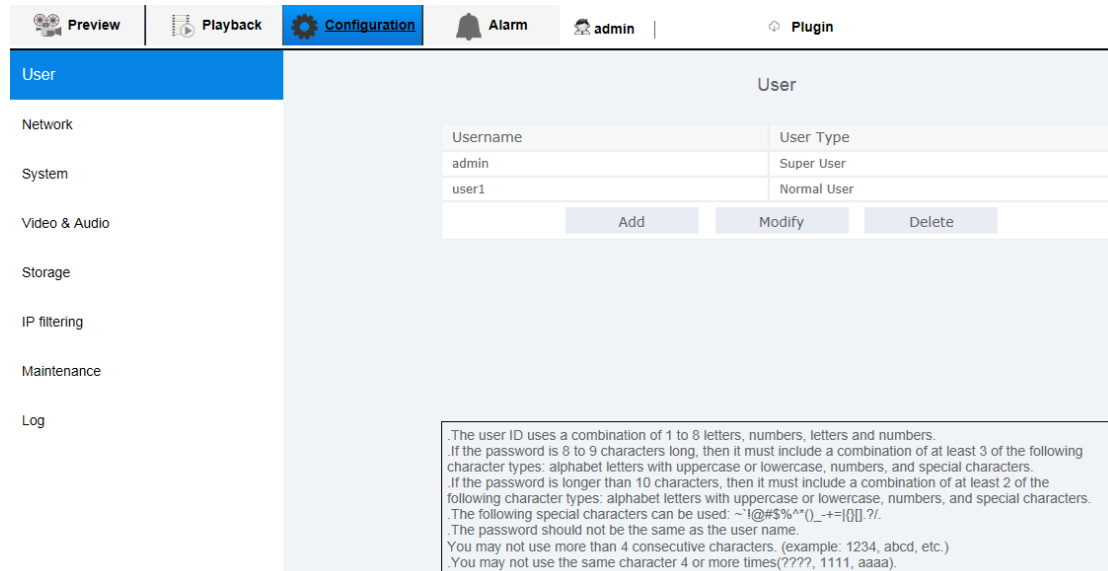


1. In the Live screen, click [].

2. The Setup screen appears.

5.2 User Management

1. From the setup menu, select the <User>tab.
2. Provide the necessary user information



The screenshot shows a web interface with a top navigation bar containing 'Preview', 'Playback', 'Configuration' (highlighted), 'Alarm', and 'admin'. A left sidebar lists various system settings: 'User', 'Network', 'System', 'Video & Audio', 'Storage', 'IP filtering', 'Maintenance', and 'Log'. The main content area is titled 'User' and displays a table of users:

Username	User Type
admin	Super User
user1	Normal User

Below the table are buttons for 'Add', 'Modify', and 'Delete'. A text box at the bottom provides password requirements:

- .The user ID uses a combination of 1 to 8 letters, numbers, letters and numbers.
- .If the password is 8 to 9 characters long, then it must include a combination of at least 3 of the following character types: alphabet letters with uppercase or lowercase, numbers, and special characters.
- .If the password is longer than 10 characters, then it must include a combination of at least 2 of the following character types: alphabet letters with uppercase or lowercase, numbers, and special characters.
- .The following special characters can be used: ~!@#%*^()_+=[]?/.
- .The password should not be the same as the user name.
- .You may not use more than 4 consecutive characters. (example: 1234, abcd, etc.)
- .You may not use the same character 4 or more times(????, 1111, aaaa).

- Administrator password change : Change the password for the administrator



➤ For the security purposes, you are recommended to use a combination of numbers, alphabets uppercase and lowercase and special characters for your password.

➤ It is recommended to change your password once every three months.

➤ The password length and limits are shown as follows.

- A combination of at least three types of upper case, lower case, numeric, and special characters: 8 to 9 characters.
- A combination of at least two types of upper case, lower case, numeric, and special characters: 10 to 15 characters.
- Should be different from the ID.
- For higher security, you are not recommended to repeat the same characters or consecutive keyboard inputs for your passwords.
- Special characters that are allowed. :~!@#%*^*()_+|=|{}[].?/
- Cannot use 4 consecutive characters, ex: 1234, abcd etc.
- Cannot use repeat 4 characters, ex: ????, 1111, aaaa.

•New users : Click [New] to add a new user

The new user only can watch Live Viewer, if new user type is <common user>.

•Modification : You can modify the selected user' s password.

3. Click[confirm] after finishing.

User	
Username	User Type
admin	Super User
user1	Normal User
<input type="button" value="Add"/> <input type="button" value="Modify"/> <input type="button" value="Delete"/>	
Username	<input type="text" value="user1"/>
Password	<input type="text"/> (Input admin user password)
New password	<input type="text"/>
<input type="button" value="Confirm"/> <input type="button" value="Cancel"/>	
<p>.The user ID uses a combination of 1 to 8 letters, numbers, letters and numbers. .If the password is 8 to 9 characters long, then it must include a combination of at least 3 of the following character types: alphabet letters with uppercase or lowercase, numbers, and special characters. .If the password is longer than 10 characters, then it must include a combination of at least 2 of the following character types: alphabet letters with uppercase or lowercase, numbers, and special characters. .The following special characters can be used: ~!@#%*^*()_+ = {}[].?/ .The password should not be the same as the user name. You may not use more than 4 consecutive characters. (example: 1234, abcd, etc.) .You may not use the same character 4 or more times(????, 1111, aaaa).</p>	

5.3 Network Setup

TCP/IP

The screenshot displays the 'TCP/IP' configuration page in a web interface. The top navigation bar includes 'Preview', 'Playback', 'Configuration' (selected), 'Alarm', 'admin', and 'Plugin'. The left sidebar menu shows 'User', 'Network' (selected), 'TCP/IP', 'FTP', 'HTTPS', 'E-mail', '802.1x', 'System', 'Video & Audio', 'Storage', 'IP filtering', 'Maintenance', and 'Log'. The main content area is titled 'TCP/IP' and contains the following configuration options:

Enable DHCP	<input type="radio"/> On <input checked="" type="radio"/> Off
IPv4 Local IP Address	<input type="text" value="192.168.2.142"/>
IPv4 Subnet Mask	<input type="text" value="255.255.255.0"/>
IPv4 Gateway	<input type="text" value="192.168.2.1"/>
MAC address	<input type="text" value="00:60:A9:10:0E:21"/>
Multicast Enable	<input type="radio"/> On <input checked="" type="radio"/> Off
IPv4 Multicast IP	<input type="text" value="239.0.0.0"/>
Multicast Port	<input type="text" value="22140"/>
DNS Address	
DNS Address 1	<input type="text" value="192.168.0.1"/>
DNS Address 2	<input type="text" value="192.168.1.1"/>
Port	
HTTP port	<input type="text" value="80"/>
HTTPS Port	<input type="text" value="443"/>
RTSP Port	<input type="text" value="554"/>
RTSP Over HTTP Port	<input type="text" value="8080"/>
ONVIF Port	<input type="text" value="8000"/>
<input type="button" value="Confirm"/>	

1. From the Setup menu, select the <Network setup> tab.

2. Click<TCP/IP>。

3. Set<IPv4 setup>。

- IP Type : select IP type

- Manual : Specify the IP address, Subnet mask, Gateway, DNS1, and DNS2.

- DHCP : Specify the DNS1 and DNS2.

If you set it to <Manual>, you should specify the IP, Subnet mask, Gateway, DNS 1 & 2 manually.

- MAC Address : Shows the MAC address.

- IP Address : Displays the current IP address.

- Subnet Mask : Displays the <Subnet mask> for the set IP.

- Gateway : Displays the <Gateway> for the set IP.

- DNS1/DNS2 : Displays the DNS (Domain Name Service) server address.



➤ Once completed with editing, click [Confirm] to apply changes and the browser exits. After a while, connect again with the changed IP.

4. Configure the multicast parameters.

- IPv4 multicast address: Enter the IPv4 address that can be used to connect to the IPv4 network.

- IPv4 multicast port: Specifies the video communication port.



- If you set the multicast address to 224.0.0.0-224.0.0.225, multicast can not work in all environments. In view of this situation, we recommend that you change the multicast address.
- Port range between 0 and 1023 and port 3702, 8000, 8080, 19999, 49152 are not available.

5. Type in each item in the Port menu as necessary.

- HTTP : HTTP port used to access the camera via the web browser. The default is 80(TCP).

A port range between 0 and 1023 is not available for ports 3702, 8000, 8080, 19999, 49152.

- HTTPS : In this version, the security of the web communication protocol HTTP is strengthened. It can be used when you set HTTPS mode in SSL.

The initial value is set to 443(TCP).

A port range between 0 and 1023 is not available for ports 3702, 8000, 8080, 19999, 49152.

The available setting range is 1024~65535. (For security reasons, in your Safari or Google Chrome browser, you may not use 65535 as your HTTPS port.)

- RTSP : Used to transfer videos in the RTSP mode; the default is 554.

A port range between 0 and 1023 is not available for ports 3702, 8000, 8080, 19999, 49152.

- RTSP Over HTTP Port: Only use it when modify RTSP protocol into HTTP protocol.

A port range between 0 and 1023 is not available for ports 3702, 8000, 8080, 19999, 49152.

➤ If changed the HTTP port, the browser exits.



Afterwards, address should contain the newly assigned HTTP port trailing the IP.

ex) IP address: 192.168.2.100, HTTP port : Assigned 8001

http://192.168.2.100:8001

(If HTTP port is set to 80, no need to specify the port number)

➤ Using RTSP and HTTPS is recommended in order to prevent the image information from being restored.

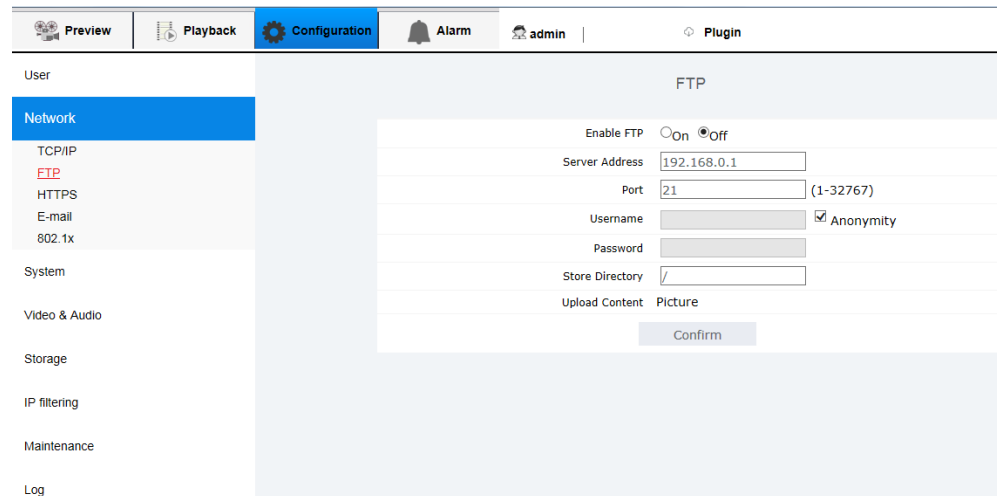
6. Click[confirm] to finish.

FTP

You can configure the FTP server settings so that you can transfer

the image taken with camera to your PC if an event occurs.

1. From the setup menu, select the <network setup>tab.



2. Click<FTP>.

3. Open<FTP>, and input the information you need.

- FTP Configuration

- Server address : Enter the IP address of the FTP server that you transfer the alarm or event images.

- Port : The default port of the FTP server is 21: however, you can use a different port number according to the FTP server settings.

- ID : Enter the user ID with which you will log in to the FTP server

- Password : Enter the user account password for logging into the FTP server.

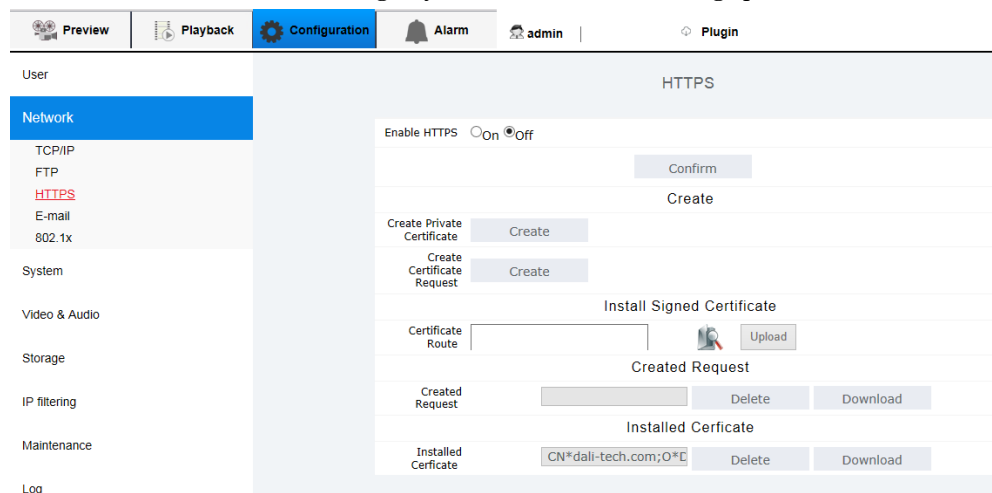
- Anonymity : Don' t need user account and password if select [anonymity].

- Saving directory: Begin with “/” . If it' s empty behind “/” , the images upload will saved in root directory of FTP server. If you want save in someone folder, please input the file name that existed behind the “/” .

4. When done, please click [yes].

HTTPS

Used for safe connecting system or installing public certification.



1. From setup menu, select <network setup>tab.
2. Click<HTTPS>.
3. The device has been installed by default and <HTTPS> can be opened if there is a certificate.
You must enter the camera' s IP address with https://<Camera_IP> format, if you want visit the camera by using HTTPS mode.
4. Create a certificate: You can create a private certificate, you can also create a certificate request, you can upload a certified certificate, you can download the certificate.
 - Create a private certificate: Click "Create" to open the private certificate creation window, fill in the country (such as CN), domain name / IP, valid and other parameters, click "OK" to complete the creation.
 - Create a certificate request: Click "Create" to open the certificate request creation window, fill in the country (such as CN), domain name / IP, valid and other parameters, click "OK" to complete the creation.
 - Install the signed certificate: Click Browse to locate the certificate storage path and click Upload to install the certificate.
 - Created request: Displays the requested request. Click "download" to download the certificate down to the certification body for certification. To re-create a request, you need to delete the current request.

- Installed certificate: Displays the certificate that was created. To re-create a certificate or upload a certificate, you need to delete the current request.

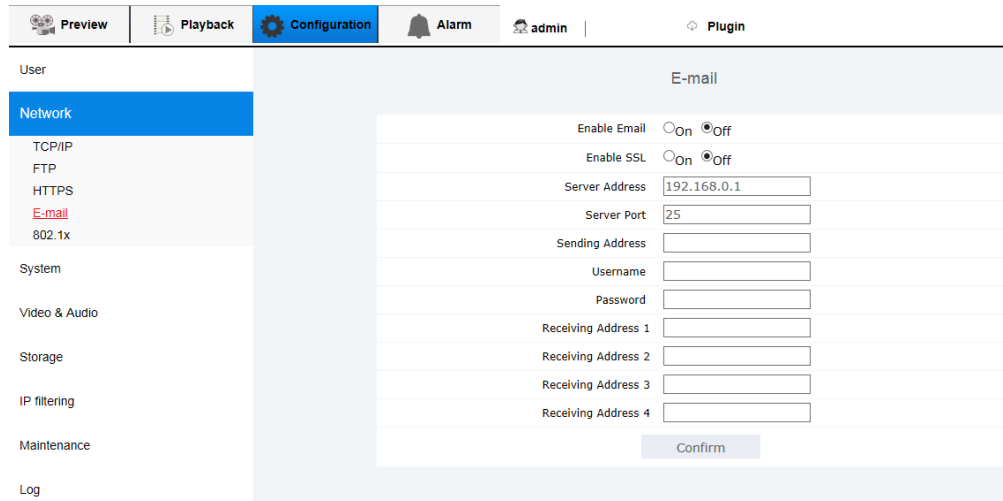


- Delete the installed certificate before you can create and upload a new certificate.
- When you open HTTPS, you can not delete a certificate.
- It is required to mark "*" when creating a private certificate or certificate request.

5. When done, please click[yes].

Email

You can configure the FTP/E-mail server settings so that you can receive the Email if an event occurs.



1. From the Setup menu, select the <Network setup> tab.

2. Click <Email>.

3. Open <Email>, input the value you need.

- Server address : Enter the IP address of the email server that you transfer the alarm or event images to.

- Port : The default port of the email server is 25; however, you can use a different port number according to the email server settings.

- Sender : Enter the address of the email sender. If the sender address is incorrect, the email from the sender may be classified as SPAM by the email server and thus may not be sent.

- Username : Enter the user ID for logging into the email server.

- Password : Enter the user account password for logging into the email server.

- Recipient1-4 : Enter the address of the email recipient.

4. When done, click [Apply].

802.1X

When connecting network, you can choose whether using 802.1x

protocol.

The screenshot shows a web-based configuration interface. At the top, there are tabs for 'Preview', 'Playback', 'Configuration', 'Alarm', and 'Plugin'. The 'Configuration' tab is active. Below the tabs, there is a user profile 'admin' and a 'Plugin' icon. On the left side, there is a navigation menu with categories: 'User', 'Network', 'System', 'Video & Audio', 'Storage', 'IP filtering', 'Maintenance', and 'Log'. Under 'Network', there are sub-items: 'TCP/IP', 'FTP', 'HTTPS', 'E-mail', and '802.1x'. The '802.1x' item is highlighted in red. The main content area is titled '802.1x' and contains the following configuration options:

- Enable: On Off
- EAP Type:
- EAP Version:
- Username:
- Password:
- Confirm:

1. From the Setup menu, select the <Network Setup> tab.

2. Click <802.1x>.

3. Open <802.1x > to set homologous para.

- EAP Type : Specify the use of the 802.1x protocol.

- EAP version : Select version 1 or 2.

- Username : Enter the client certificate ID.

- Password : Enter the client private key password. If the key file used is not encrypted, you don' t need to enter it.



➤ If the connected network device does not support the 802.1x protocol, the protocol will not operate properly even if you set it.

4. When done, click [Apply].

5.4 System setup

Time setup

The screenshot shows a web interface for configuring the time zone. The top navigation bar includes 'Preview', 'Playback', 'Configuration' (selected), 'Alarm', and 'Plugin'. The left sidebar lists 'User', 'Network', 'System' (selected), 'Timing Setting', 'System Setting', 'Video & Audio', 'Storage', 'IP filtering', 'Maintenance', and 'Log'. The main content area is titled 'Time Zone' and contains the following fields and options:

- Time Zone:** A dropdown menu showing '(GMT+8:00)Beijing, Kuala Lumpur, singapore'.
- NTP Sync:** Radio buttons for 'Yes' and 'No', with 'No' selected.
- Server Address:** A text input field containing '192.168.0.1'.
- NTP Port:** A text input field containing '123'.
- Interval:** A text input field containing '60', followed by the text 'Minute (5-9999)'.
- Confirm:** A button to save the settings.
- Manual setting:** A section with a 'Manual setting' label and a 'Synchro' button. It contains five dropdown menus for year, month, day, hour, and minute, with values 2017, 8, 12, 13, and 33 respectively.
- Synchronize with PC viewer:** A section with a 'Synchronize with PC viewer' label and a 'Synchro' button. It shows the current time as 2017-08-12 13:33:21.

1. From the Setup menu, select the <System setup>tab.

2. Click<Time setup>.

3. Specify the time and date that will be applied to the camera.

•Time zone : Specify the local time zone based on the GMT.

•System time setup : Specify the time and date that will be applied to your system.

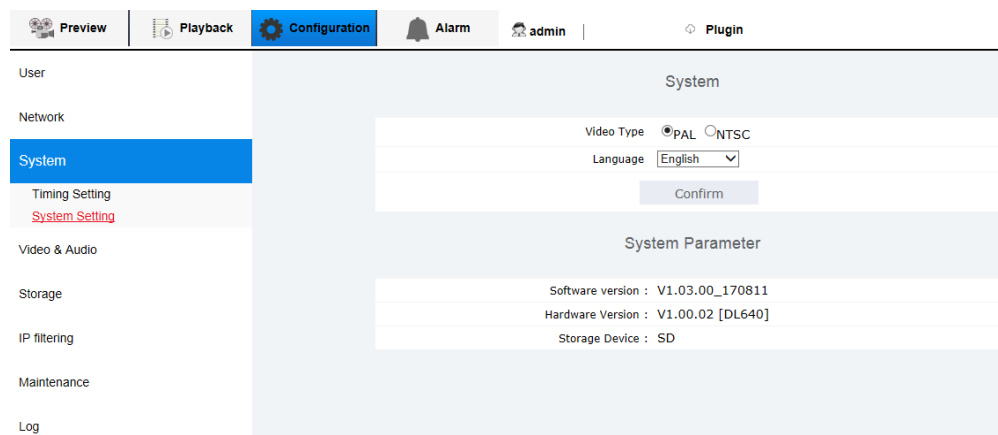
- Manual : Specify the time manually.

-Synchronize with PC viewer: Sets to the time of the computer connected.

- Synchronize with NTP server : Sync with the time of the specified server address.

4. Click[apply] to finish.

System para.



1. From setup menu, select <system setup>tab.

2. Click <system para.>.

3. Setting analog video output display mode.

•System: Select analog video output mode.

- PAL: Select PAL mode when local monitor is PAL.

- NTSC: Select NTSC mode when local monitor is NTSC.

4. Setting WEB monitor displayed by OSD language.



You need to reset the WEB after modify the language.

5. When done, click [yes].

6. System para.: Display the configuration file information of camera.

- Software version: The current software version.

- Hardware version: The current hardware version of camera.

- Storage device: Local storage device that camera supported.

- User amount: The current connected rear-end user amount.

5.5 VIDEO & AUDIO setup

Video setup

User

Network

System

Video & Audio

Encode Setting

Audio

Storage

IP filtering

Maintenance

Log

Video Para.

Name (=, ;, #, & space are not allowed)

Display Camera Name On Off

Display time On Off

OSD Name


(&, =, ' and \ are not allowed)

Display OSD On Off

VCA Rule On Off

OSD Position

Confirm

1. From the Setup menu, select the <Video & Audio setup > tab.
2. Click <Video setup>.
3. Setting overlaying the OSD para. on real time video.
 - Name : Display the camera name on screen that specified.
 - Custom name : Display the custom camera name on the screen specified.
 - Movable camera name , time and custom name : If you want move someone OSD position, move cursor on homologous OSD, when the cursor display , then hold left mouse button and move the cursor on new position.
 - Smart Rule Display: If "On" is selected, the corresponding rules and the trajectory of the movement of the object are displayed on the preview and playback images when a cross-border alarm or area alarm is turned on. If "Off" is selected, all rules and tracks are not displayed on the preview and playback images.

4. When done, please click[yes].

Codec para. setup

you can modify setup file to adapt different environment based on recording and network transfer condition.

The screenshot shows the 'Encoding Para.' configuration page. The left sidebar has 'Video & Audio' selected, with 'Encode Setting' highlighted in red. The main content area is divided into three sections: 'Major Stream Config', 'Minor Stream Config', and 'JPEG Config'. Each section has a 'CodecType' dropdown (radio buttons for 'Variable code Rate' and 'Constants code Rate'), a 'Resolution' dropdown, a 'Bitrate' dropdown, and a 'Frame Rate' dropdown. A 'Confirm' button is located at the bottom right of the main area.

1. From setup menu, select <Audio & Video setup>tab.

2. Click < Codec papa. setup>.

3. Select homologous codec information, include resolution and frame rate.

-Type: you can select one of fixed rate and variable rate to compress. Fixed rate means the network transmission is fixed when you change video quality and rate. Variable rate means it will give priority to video quality when you change rate.

-Resolution: Setting video resolution

-Rate: Setting max. rate when the type is VBR.



Due to rate will adjust limited according to resolution, rate and screen, the practical rate will bigger than Max. rate. So you should consider the environment when you set the value.

-Frame rate: setting Max. frame quantity every second.

4. When done, click [yes].

Main code stream application

1. You should restart after you modify the main code stream para.
2. The event recording will encode according to main code stream. You should restart after you modify the resolution of main code stream.

Stream Type	
Stream	Major Stream
	Minor Stream
	JPEG Monitoring

Sub code stream application

You should restart after you modify the sub code stream parameter.

Stream Type	
Stream	Major Stream
	Minor Stream
	JPEG Monitoring

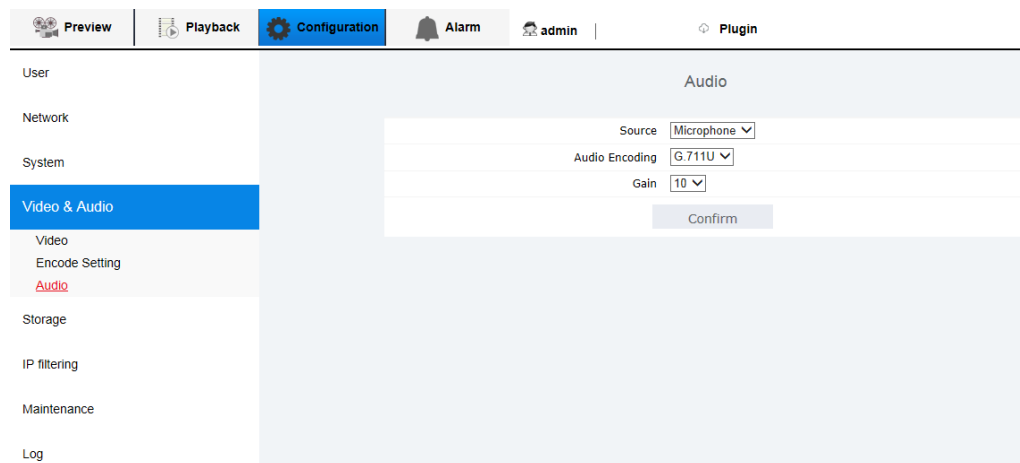
JPEG Application

You should restart after you modify the JPEG parameter.

Stream Type	
Stream	Major Stream
	Minor Stream
	JPEG Monitoring

Audio para. setup.

You can configure the audio codec settings of the audio source from the camera.



1. From the Setup menu, select the <Video & Audio > tab.
2. Click <Audio setup>.
3. Set the audio input value.

- Source: Sets the audio input.

- Line: Connect the cable to the audio device.
- Microphone: Microphone that is built-in in the camera.

- Audio Codec : Specify the audio codec.

- G.711 : A audio codec standard, it uses 64 Kbps PCM (Pulse Code Modulation)encoding.

ITU standard audio codec that is adequate for digital voice transfer in PSTN network or through a PBX.

- Gain : Specify the audio input amplification.



Sound quality deterioration or howling may occur if the loudness of the sound source or gain value were set excessively.

5. When done, click [Apply].

5.6 Storage management

Recording plan

Setting appointed time to auto recording.

Record Schedule

Record schedule On Off

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

Record Schedule

Tip: Drag the mouse, you can choose the time period, when the mouse drag, hold down the 'shift' or 'Ctrl' button, you can choose the time periods

Confirm

1. From setup menu, select <storage management>tab.

2. Click<recording plan>

3. Open < recording plan>

4. Drag the mouse, you can choose the time period, when the mouse drag, hold down the 'shift' or 'Ctrl' button, you can choose the time periods

5. When done, click[yes].



If plan recording overlaps alarm recording, the device will only open alarm recording.

Storage management

You can activate Micro SD card, select covering condition, check margin of saved data occupied, and format micro SD card.

The screenshot shows the 'hard drive management' configuration page. The left sidebar contains navigation options: User, Network, System, Video & Audio, Storage (highlighted), Record Schedule, Storage (with a red underline), NAS Setting, IP filtering, Maintenance, and Log. The main content area is titled 'hard drive management' and contains the following settings:

Enable	<input checked="" type="radio"/> On <input type="radio"/> Off
hard drive capacity	28.96GB
free Space	23.76GB
Hard Drive status	Recording
hard drive type	SD
Auto cover	<input checked="" type="radio"/> Yes <input type="radio"/> No
storage full Alarm	<input checked="" type="radio"/> Yes <input type="radio"/> No
Storage full threshold	<input type="range" value="80"/>

At the bottom of the configuration area, there are two buttons: 'Formatting' and 'Confirm'.

1. From setup menu, select<Memorizer management>tab.

2. Click<Memorizer management>tab.

3. Display the information of micro SD card.



➤ It will display “Recording” when the device is recording data.

➤ It will display “Ready” if turn “enable” to “ off” .

➤ If display “ERROR” , please check below items:

- Check memorizer, make sure it connects with device.
- Check the file in the memorizer, make sure it didn' t damaged.
- Check memorizer, make sure it didn' t been broken.

If it still display “ERROR” , please change Micro SD card.

4. Check<Hard drive capacity> and <Usable size> of micro SD card.

5. Check the saved data, if they are not important, click <formatting>



- The formatting will slow if the micro SD card is large capacity.
- The data stream will increase if you set high resolution, high rate and high frame rate.

6. Select “yes” of “Auto Overrides”, if micro SD card is full, it will delete old data and save new data to replace. Once you delete the data, you cannot recover it.

7. Hard disk full alarm: when Micro SD card is full, it will alarm and record the log.

8. Hard disk full threshold value: when [available capacity/total capacity = threshold value], the device will think of micro SD card is full.

9. When done, click [yes].

NAS setting

1. Select<Storage management>tab.
2. Click<NAS Setup>.
3. Enter the information registered in your NAS.
 - IP Address: Unique IP address assigned to the NAS.
 - ID: An ID registered in the NAS.
 - Password: Password registered in the NAS.
 - Saving list: The NAS user file to save data.
4. When done, turn “off” to “on” of NAS Setup, then click [yes].
5. Refreshing after a while, when it display the capacity of NAS, means the device have connected with NAS server.



➤ It will display “Recording”, when the device is recording the data.

➤ If the fail message is displayed, check the following:

- Confirm that the IP address of the NAS is valid.
- Confirm that the ID/password of the NAS is valid.
- Confirm that you can access the folder designated as the default folder using the ID of the NAS.
- Confirm that the NAS IP address and the camera IP address are in the same format.

ex) The NAS & camera subnet mask initial value is 255.255.255.0. If

the IP address is 192.168.20.32 then the NAS IP address should be in the range of 192.168.2.1~192.168.2.255.

6. Select “yes” of “Auto Overrides”, if micro SD card is full, it will delete old data and save new data to replace.



It supports auto deleting only the file in NAS is on-specification.

7. Hard disk full alarm: when NAS server is full, it will alarm and record the log.

8. Hard disk full threshold value: when [available capacity/total capacity = threshold value], the device will think of NAS server is full.

5.7 IP address filtration

Set up awarding or refusing visiting IP list.

1. From setup menu, select IP address filtration >tab.

2. Open <security management>, select <default strategy>.

•Refusing: if select this tab, it will award other IP to visit except the IP in filtration list.

•Awarding: if select the tab, other IP cannot visit except the IP in the filtration list.

The screenshot shows the 'Safety Management' configuration page. The 'Enable' section has radio buttons for 'On' and 'Off', with 'Off' selected. The 'Default Strategy' section has radio buttons for 'Allow' and 'Refuse', with 'Allow' selected. Below this is a table with 8 rows. Each row has a 'Network Address/Mask' field with a value and a slash followed by a mask (e.g., 192.168.2.0 / 24) and a 'Default Strategy' field with radio buttons for 'Allow' and 'Refuse'. The first row has '192.168.2.0 / 24' and 'Allow' selected. The remaining seven rows have '192.168.1.0 / 24' and 'Refuse' selected. A 'Save' button is located at the bottom right of the table.

3. In filtration list, enter especial IP address or segment to dispartk or forbid.

- 192.168.2.100/32 means 192.168.2.100 is dis park or forbid.
- 192.168.2.100/24 means 192.168.2.1-192.168.2.255 is dis park or forbid.



If the IP address of the currently set computer is added to <reject>, the device will prompt "IP address input is incorrect, please check and re-enter".

4. When done, click [Save].

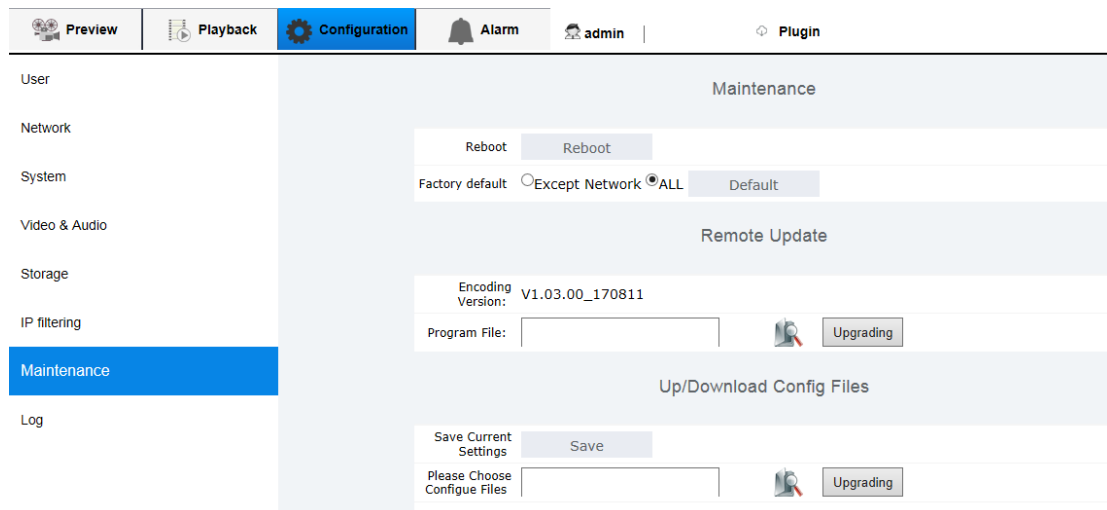
Only open within the range of 192.168.2.1-192.168.2.255 IP can visit:

1. select <default policy> to "reject".
2. In the list, enter 192.168.2.1/24, and then click the latter strategy to "allow".

Only reject 192.168.2.77 IP access:

1. Select <Default Policy> as "Allow".
2. In the list, enter 192.168.2.77/32, and then click the following policy to "reject".

5.8 System maintenance



1. From setup menu, select <System maintenance>tab.

2. Select the item you need to set.

- Restart: restart the system.

- Factory default: to reset the system into factory default.

- Except for network parameters: Restore all parameters except the network parameters to factory values.

- All: Restores all parameters to factory values. After resetting the factory value, the IP is 192.168.2.100.

- After resetting the factory value, you need to reset the admin password.

- After resetting the factory value, the log information will be cleared.

- Hardware update: Run system updating.

- Upload/download configuration file: backup or upload system setup.

- Save current setup: backup current system setup.

- Upload configuration file: upload the backup system setup to current system.

5.9 Log

You can check the system log or event log.

1. From the Setup menu, select the <log> tab.

2. Select log type.

- Alarm log: check event log, include time information.
- Unusual log: check unusual log, include time information.
- Operation log: check operation log, include time information.
- All: check system log, alarm log and unusual log.

Serial number	Time	IP Address	Content
1	2017-08-12 13:26:33	192.168.2.77	admin Set [System] Parameter
2	2017-08-12 13:26:33	192.168.2.77	admin Login OK
3	2017-08-12 13:26:19	192.168.2.77	admin Set [System] Parameter
4	2017-08-12 11:16:51	192.168.2.77	admin Search Log
5	2017-08-12 10:57:22	192.168.2.77	admin Add User OK
6	2017-08-12 10:55:47	192.168.2.77	admin Set [System] Parameter
7	2017-08-12 10:55:47	192.168.2.77	admin Login OK
8	2017-08-12 10:55:22	192.168.2.142	System Power On
9	2017-08-12 10:52:00	192.168.2.77	admin Search Record File
10	2017-08-12 10:52:00	192.168.2.77	admin Search Record File
11	2017-08-12 10:51:59	192.168.2.77	admin Search Record File
12	2017-08-12 10:51:59	192.168.2.77	admin Search Record File

3. If one page cannot display all logs, please use page turning button.

4. Click < download > button to download the log data you selected...



- Each page displays 12 logs with the latest one displayed at the top
- The event/system log list can contain up to 5000 logs; after that, the existing logs will be deleted from the oldest one each time a new log is created.

6. Alarm configuration



Open timing recording and alarm recording at same time, the device will only record alarm recording.

6.1 Gray value alarm

If gray difference value in the area greater than the threshold, it will alarm.


1. From alarm menu, select <gray value>tab.


2. Open<Gray value>.

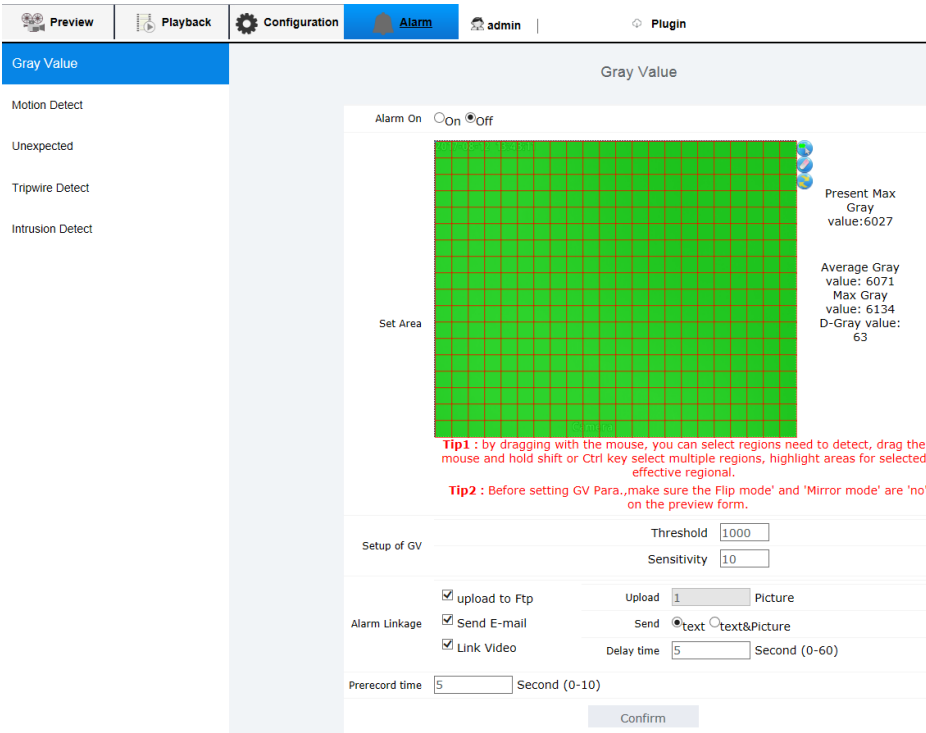
3.You can select a part area of screen as detection area or deleted area.

- Detection area :By dragging with the mouse, you can select regions need to detect, drag the mouse and hold shift or Ctrl key select multiple regions, highlight areas for selected effective regional.

- Deleted area : You can delete the area by dragging with the left key of mouse to move.

- : Select all button, click to select all areas for the detection area.

- : Clear all button, click to delete all areas.



Gray Value

Alarm On On Off

Present Max Gray value: 6027

Average Gray value: 6071
Max Gray value: 6134
D-Gray value: 63

Tip1 : by dragging with the mouse, you can select regions need to detect, drag the mouse and hold shift or Ctrl key select multiple regions, highlight areas for selected effective regional.

Tip2 : Before setting GV Para.,make sure the 'Flip mode' and 'Mirror mode' are 'no' on the preview form.

Setup of GV

Threshold

Sensitivity

Alarm Linkage

upload to Ftp Upload Picture

Send E-mail Send text text&Picture

Link Video Delay time Second (0-60)

Prerecord time Second (0-10)

Confirm

4. Setup/selecting alarm condition.

- Right-hand of detection area display Max. gray value of screen, average gray value, difference value and max. value of yellow area.

- Threshold: When the threshold you set less than gray difference value, it will alarm.

- Sensitivity: it will easy to alarm if the sensitivity value is high.

5. It will run the operation when the specified alarm trigger.

- FTP: It will transfer the image to the specified FTP server when the alarm trigger.

- Email: It will transfer the image to specified email when the alarm trigger.

- Text: it will only transfer text to email when the alarm trigger.

- Text & image: it will transfer text and one image to email when the alarm trigger.

- Recording: setting recording time in gray value alarm.

- Delayed time: appoint alarm triggering timing; it will saving image until appointed timing. Max. delayed time is 60s after alarm triggering.

6. Setting pre-recording: Appoint the time before alarm triggering; start at this time, it will save image. Max. appointed time is 10s.


7. When done, click[yes].

When the whole area is the detection area, the alarm trigger conditions are as following:

1. Check the grayscale value difference on the right side of the detection area. For example, the grayscale value difference is 300, set the threshold <300, set the sensitivity of 20, you can generate an alarm.

2. If the alarm occurs too often, set a higher threshold and lower sensitivity, can reduce the frequency of the alarm.

3. When the alarm is triggering, on IE interface will appear at the

top right like  .

When not the whole area is the detection area, the alarm trigger conditions are as following:

1. Move the mouse to the selected detection area, when appears the yellow box on the interface, " maximum grayscale value in the yellow box " will be displayed on the right side the detection area.

2. Move the mouse in the detection area to record the maximum grayscale value in each yellow box.

3. Compare the maximum grayscale values in all the yellow boxes to get the maximum grayscale value in the area.

4. Calculate the gray scale difference: the grayscale value difference = the maximum grayscale value in the area - the average grayscale value (the average grayscale value is displayed on the right side of the detection area).

5. For example, calculate the grayscale value difference is 300, set the threshold <300, set the sensitivity of 20, you can generate an alarm.

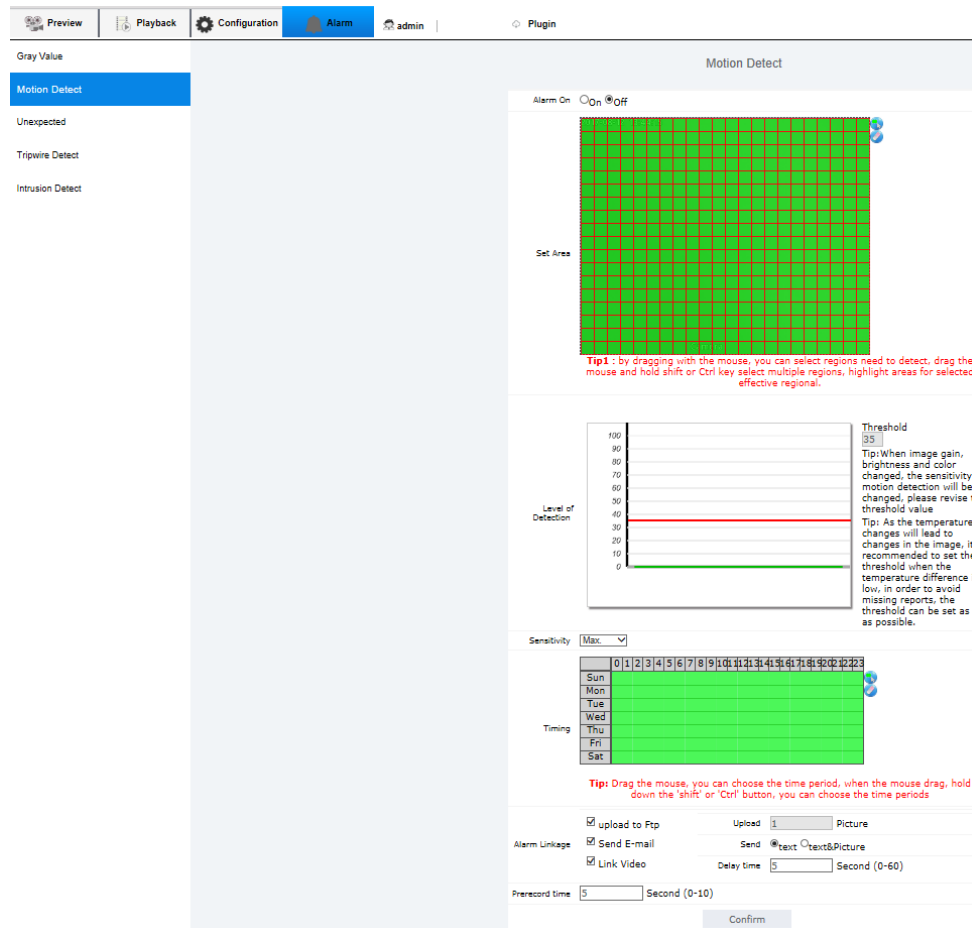
6. If the alarm is generated too frequently, set a higher threshold and lower sensitivity, you can reduce the frequency of the alarm.

7. When the alarm is triggering, on IE interface will appear at the top

right like  .

6.2 Motion Detection

It detects a motion that meets all conditions specified by sensitivity, size and area.




1. From alarm menu, select <motion detection>tab.
2. Open <motion detection>.
3. You can appoint the area of screen to add on the detection area or evacuant area.


- Detection area : By dragging with the mouse, you can select regions need to detect, drag the mouse and hold shift or Ctrl key select multiple regions, highlight areas for selected effective regional.

- Delete area : You can delete the area by dragging with the left key of mouse to move.

4. Set the threshold according to the detection curve.

- Detection curve: When there is an object moving in the detection area, according to the size of the object and the speed of movement, X-Y axis will appear in real time a curve shows the current level of movement.
- Set threshold: The red line displayed on the X-Y axis is the threshold set. Move the mouse arrow to the red line, when the mouse turns into a hand icon, hold down the left mouse button, move the mouse up and down to set the threshold.
- Generate alarm: When the peak of the curve exceeds the set threshold, the device generates a motion detection alarm.

: Button for select all, click to select all areas as the detection area.

: Button for clear all, click to delete all areas.

5. Set the sensitivity.

Objects that move within the detection area, when the same object through the same speed, if set a different sensitivity, the resulting of detection curve peak will be different.

- Low sensitivity: When the sensitivity is set to "lowest", the peak of the detection curve is small when the same object passes at the same speed.
- High sensitivity: When the set sensitivity is "highest", the peak of the detection curve is large when the same object passes at the same speed.

6. Appoint <Arming time>.

- Drag the mouse, you can choose the time period, when the mouse drag, hold down the 'shift' or 'Ctrl' button, you can choose the time periods

7. It will run operation when appointed alarm triggering. About <alarm linkage>, please refer "gray value".

8. Setting pre-recording: Appoint the time before alarm triggering; start at this time, it will save image. Max. appointed time is 10s.

9. When done, click[yes].

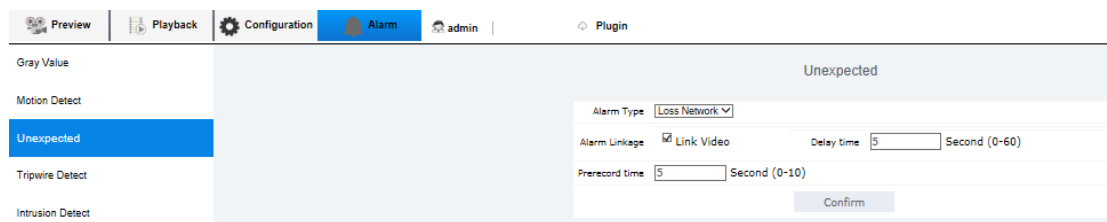


The motion detection effect will decline or incorrectness at below situations:

- The gray value of the subject is similar with background.
- Small activities at boundary of view of camera.
- Scene change, Illumination changes continuously or other reasons, a lot of motions continuously occurred.
- The fixed target move continuously at one position.
- Unconspicuous motion.
- The movable target is too close to camera.
- The target hides behind of other targets.
- The target moves too fast.

6.3 Unusual alarm

Disconnect network, IP conflicting, memorizer full and memorizer error will regard as unusual event.



1. From setup menu, select <unusual alarm>tab.

2. Select alarm type.

- Network disconnection: you can select video recording when it detect network disconnecting.

- IP conflicting: you can select video recording when it detects IP conflicting.

- Memorizer full: you can select uploading images to FTP server or transfer to email when it detects memorizer full.

- Memorizer error: you can select uploading images to FTP server or transfer to email when it detects memorizer error.

3. About <alarm linkage>and<pre-recording>, please refer “gray value” .

4. When done, click[yes].

6.4 Crossing alarm

It detects event that meets all conditions specified by sensitivity and area and the event condition rules.

1. From setup menu, select <crossing alarm>tab.
2. The device support 4 kinds crossing alarm modes.

The screenshot shows the 'Alarm' configuration page for a 'Wire' alarm mode. The interface includes a navigation menu on the left with options: Gray Value, Motion Detect, Unexpected, Tripwire Detect (selected), and Intrusion Detect. The main configuration area is titled 'Wire' and contains the following settings:

- Serial number: 1
- Enable: Yes No
- Wire Position: A large gray rectangular area representing the camera's field of view, with a timestamp '2017-08-12 13:45:19' and a 'Camera' label at the bottom.
- Direction: Both Way
- Timing: A calendar grid showing all days from Sunday to Saturday are highlighted in green, indicating the alarm is active 24/7.
- Alarm Linkage: upload to Ftp (Upload: 1 Picture), Send E-mail (Send: text text&Picture), Link Video (Delay time: 5 Second (0-60)).
- Prerecord time: 5 Second (0-10)
- Confirm button


3. Open <crossing alarm>.

4. Edit the virtual line.

- Draw a virtual line: When "Enabled" is "Yes", the virtual line can be drawn.
 - At the beginning of the virtual line, click the left mouse button, a red dot appears on the screen. And then move the mouse to the end

of the virtual line position, click the left mouse button, the screen will appear on a red line (virtual line), red lines will be marked on both sides of the A and B.

- Virtual lines can be drawn in the dashed box.

• Delete Virtual Line: Click the  button to delete the drawn virtual line.

5. Direction: Select the direction that object through the virtual line to trigger the alarm.

6. click the starting and ending point of imaginary line on the screen, then select the rules you need:

•Both way : Detecting the target moving from A to B or B to A.

•A→B : Detecting the target moving form A to B.

•B→A : Detecting the target moving form B to A.

6. Sensitivity: used to set the size of the detection object, the higher the sensitivity of the smaller the object is easier to be determined as the target object, the lower the sensitivity of the larger objects will be determined as the target object.

7. About <arming time>, <alarm linkage>and<pre-recording>, please refer “gray value” .

8. When done, click[yes].



The size of target detected may be different with actual size, it' s depend on the shape. If the camera catch the closer target, the video analysis function will be inaccuracy.

The smart video analysis function will be inaccuracy at the situations below:

- The gray value of target is similar with background.
- The fixed target move continuously at one position.
- Unconspicuous motion.
- The movable target is to close to camera.
- The target hides behind of other targets.
- The target moves too fast.

- Small activities at boundary of view of camera.
- Scene change, Illumination changes continuously or other reasons, a lot of motions continuously occurred.

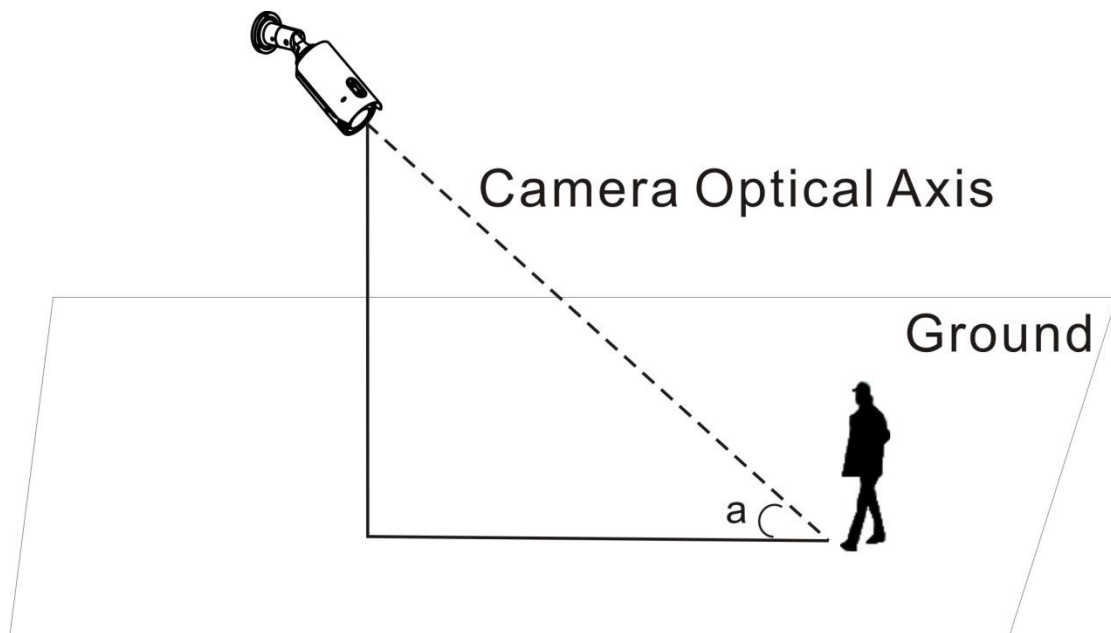
Intelligent rules display ON/OFF

You can choose to display or disappear the construction line and track of the mobile on the image playback and review.

Set this function ON, in the interface <configuration>-<audio and video setup>-<video parameter setup>.

Installation

1. Adjust the dip angle of the camera. Have the included angle a between 30° to 60° , please see the following picture as reference.



2. Adjust the distance between the camera and your target. Have your target stand $1/100 \sim 1/20$ in size and $1/15 \sim 1/4$ in height.

6.5 Area alarm

It detects event that meets all conditions specified by sensitivity and area and the event condition rules.

1. From setup menu, select<area alarm>.
2. The device support 4 kinds area alarm modes.
3. Open<area alarm>.


The screenshot shows the 'Area' configuration page. The left sidebar has 'Intrusion Detect' selected. The main content area includes:

- Serial number: 1
- Enable: Yes No
- Area Position: A camera view with a dashed box indicating the alarm area.
- Direction: Intrusion
- Timing: A grid with all cells highlighted in green.
- Alarm Linkage: upload to Ftp (Upload: 1, Picture), Send E-mail (Send: text text&Picture), Link Video (Delay time: 5, Second (0-60)).
- Prerecord time: 5, Second (0-10)
- Confirm button

4. Edit warning region

- Draw the warning region: To set the function ON to draw the warning region.
 - Click on the left button of your mouse on dashed box for increase the extreme point (max. 8 points can be set). The warning region will

be show as red box.

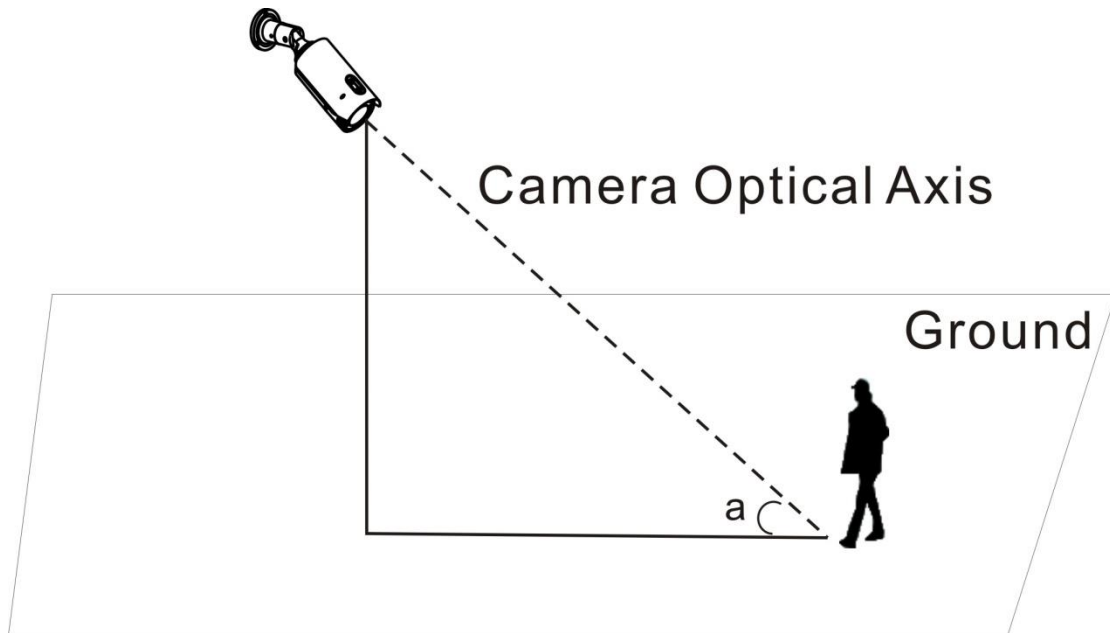
- Delete the warning region: Click on  for the delete.
5. Direction: to select the warning mode when the object invade the warning region.
- Invade: to inspect the object which is not pass to the boundary, or the object invaded to the warning area.
 - Entry: to inspect the object that entering into the warning region.
 - Leave: to inspect the object that leaving the warning region.
6. About <arming time>, <alarm linkage> and <pre-recording>, please refer “gray value”
7. When done, click [yes].

Intelligent rules display ON/OFF

You can choose to display or disappear the construction line and track of the mobile on the image playback and review.
Set this function ON, in the interface <configuration>-<audio and video setup>-<video parameter setup>.

Network Camera Installation

1. Adjust the dip angle of the camera. Have the included angle a between 30° to 60° , pls see the following picture as reference.
2. Adjust the distance between the camera and your target. Have your target stand $1/100 \sim 1/20$ in size and $1/15 - 1/4$ in height.



Grey alarm, Invade the mobile inspection region, boundary violation alarm, network disconnection, IP clash, memorizer is full, memorizer is in error.

7. Appendix

7.1 Specification

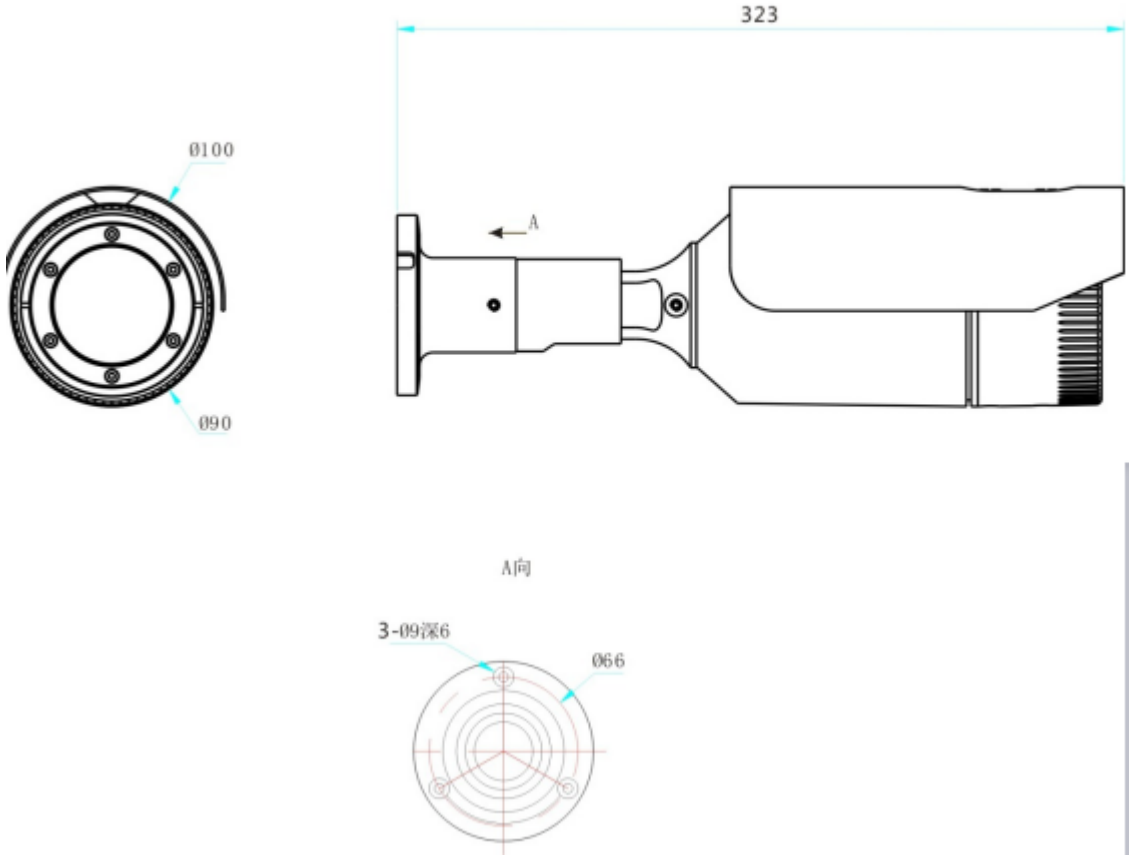
Item		Description	
Video	Detector	Uncooled FPA microbolometer	
	Resolution	640 (H) X 480 (V)	384 (H) X 288 (V)
	Pitch size	17 μ m	
	Wave range	8-14 μ m	
	Frame Frequency	50Hz	
	Video output	CVBS : 1.0 V _{p-p} / 75 Ω recombination, 720x480 (N), 720x576 (P),	
Lens	FOV	16.8° (H) X 12.6° (V)	
	Aperture	F1.1	
	Length	37mm	
	Type	Mechanical no thermalization	
Tilting	Tilting range	0-90°	
Operation	NETD	< 70mK	
	Electronic zoom	1X/ 2X/3X/4X	

	Brightness/Gain	Manual brightness/Gain
	Noise	off/on
	Image enhancement	off/on
	Pseudo-color	12 kinds
	Revising function	Manual revising, Auto revising; timing revising
	Overturn/Mirroring	Off/on
	Audio input	Off/on
	Alarm	Grey alarm, Invade the mobile inspection region, boundary violation alarm, network disconnection, IP clash, memorizer is full, memorizer is in error.
	Event alarm	<ul style="list-style-type: none"> ● Upload to FTP. ● Transfer to email ● Saving in local device or recording on NAS when alarm trigger.
Network	Ethernet	RJ-45 (10/100BASE-T)
	Video compression format	H.264, Motion JPEG
	Resolution	720x576 / 720x480 / 640x480 / 384x288 / 320x240
	Frame rate	H.264 : Max. 30 fps Motion JPEG : 640x480 : Max. 15 fps
	Video quantity adjustment	H.264 : compression level, target bit rate level controlling.
	Bit rate controlling	H.264 : CBR or VBR
	Audio compression format	G.711A/G.711U
	IP	IPv4, IPv6
	Protocol	TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP, RTSP, NTP, HTTP, HTTPS, SSL, DHCP, PPPoE, FTP, ICMP, IGMP, ARP, DNS
	Security	HTTPS(SSL) Login authentication Classify Login authentication IP address filtration User visiting log 802.1X authentication

	Memorizer	Micro SD - Download moving images from SD card NAS -Support recording on NAS server.
	Application codec port.	ONVIF Profile S
	Web Viewer	Support : Microsoft Internet Explorer (Ver.9~11), Google Chrome (Ver.40 or under)
Environment	Working temperature/humidity	-40° C ~ +60° C (+14° F ~ +131° F) / less than 90% RH
	Storage temperature/humidity	-45° C ~ +65° C (-22° F ~ +140° F) / Less than 90% RH
	Input voltage/electricity	DC12V±10% PoE (IEEE802.3af, Class3)
	Power dissipation	6W (at normal temperature) 6W(PoE, Class3) (at normal temperature)
Machinery	Color/material	Ivory white/aluminium
	Size	Length: 323mm The largest outer diameter: 100mm
	Weight	1.24Kg

7.2 Product image

Unite : mm



7.3 Malfunction Removal


Problem	Solution
I cannot access the camera from a web browser	<ul style="list-style-type: none">● Check to make sure that the camera's Network settings are appropriate.● Check to make sure that all network cables have been connected properly.

	<ul style="list-style-type: none"> ● If connected using DHCP, verify that the camera is able to acquire dynamic IP addresses without any problem. ● If the camera is connected to a Broadband Router, verify that port forwarding is properly configured.
The Image cannot display after the camera start up.	If the camera starting up/ shutdown frequently, the device will go into shutdown protection. Please wait for 5s to restart.
Viewer got disconnected during monitoring.	<ul style="list-style-type: none"> ● Connected Viewers become disconnected upon any change to camera or network configurations. ● Check all network connections. ● If the camera is connected over an PPPoE network, it' s possible for ● Viewer to disconnect under poor network conditions.
After alarm triggering, you cannot receive the email.	<p>Verify setup by following:</p> <ol style="list-style-type: none"> 1. Check <system setup>→<timing setup>, if the time is usual. 2. Check<sending email>tab at alarm setup, if it is right. 3. Check <network setup>→<email setup>, if it is enable.
Cannot recording on Micro SD card	Check<hard disk> in <storage management>→<memorizer management>, if it displays OK?
Cannot record plan recording.	If plan recording time overlap with alarm recording time, the device will only record alarm recording.
Open a lot kinds of alarm recording, only one alarm recording takes effect.	If open a lot kinds of alarm recording, the device will only record alarm recording.

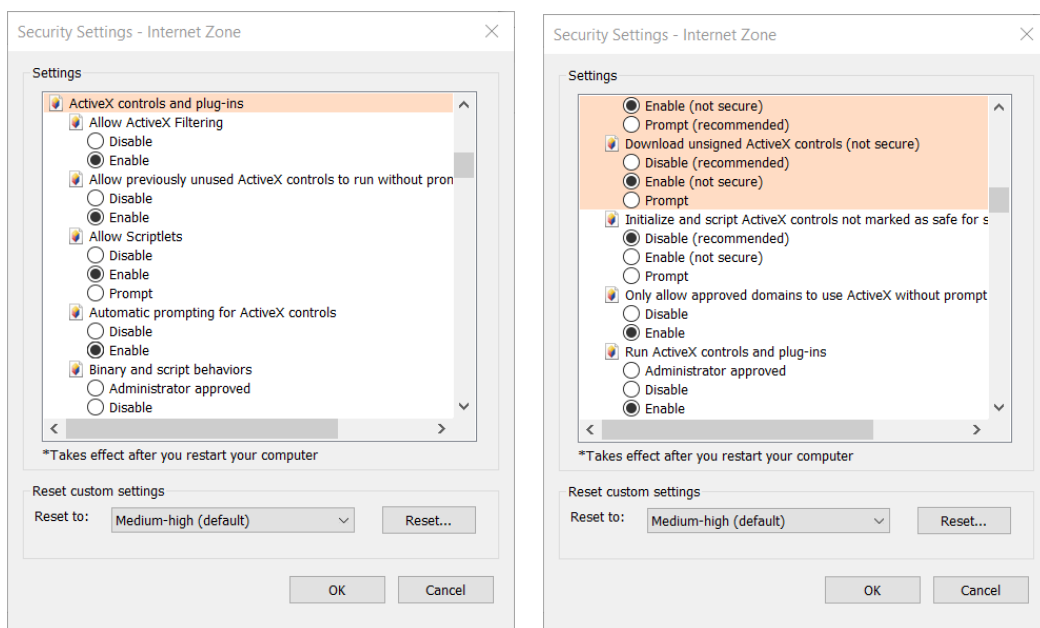
7.4 IE SETUP

When you firstly use IE to connect the device, you must do the followings:

1. You must confirm you have installed 9.0 or above version IE tool.
2. When connecting the device for the first time, if IE can not automatically

pop up the plug-in installation window, please manually click "Plug-in Download" button ( 插件下载) to download and run IE

3. If you want IE to automatically pop-up plug-in installation window, please go to IE "Tools" -> "Internet Options" -> "Security" -> "Internet Zone Security Level Custom Level" menu, the "ActiveX Controls and Plug- Under the "automatic ActiveX control tips" "Download unsigned ActiveX controls" "Download signed ActiveX controls" "ActiveX controls not marked as safe and script running" "Run ActiveX controls and plug-ins" Selected as " Enable ", as shown:



Other options are to retain the system default options.

4. When debugging through and browse and use the normal function, if you need to ensure IE security, you can directly restore the "Internet Zone Security Level" to the default level or customize other levels.