InVid Tech

Innovative Video Technology

Paramont Cameras
User Manual: PAR 4MP Series

PARAMONT IP

- This product is intended to be supplied by a Listed Power Unit, marked with 'Limited Power Source', 'LPS' on unit, output rated minimum 12V/2 A or POE 48V/ 350mA(depending on models), no more than 2000m altitude of operation and Tma=60 Deg.C.
- As for the modes with PoE function, the function of the ITE being investigated to IEC 60950-1 standard is considered not likely to require connection to an Ethernet network with outside plant routing, including campus environment and the ITE is to be connected only to PoE networks without routing to the outside plant.
- Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.
- Do not attempt to disassemble the camera; in order to prevent electric shock, do not remove screws or covers.
- There are no user-serviceable parts inside. Please contact the nearest service center as soon as possible if there is any failure.
- Avoid from incorrect operation, shock vibration, heavy pressing which can cause damage to product.
- Do not use corrosive detergent to clean main body of the camera. If necessary, please use soft dry cloth to wipe dirt; for hard contamination, use neutral detergent. Any cleanser for high grade furniture is applicable.
- Avoid aiming the camera directly towards extremely bright objects, such as, sun, as this may damage the image sensor.
- Please follow the instructions to install the camera. Do not reverse the camera, or the reversing image will be received.
- Do not operate it in case temperature, humidity and power supply are beyond the limited stipulations.
- Keep away from heat sources such as radiators, heat registers, stove, etc.
- Do not expose the product to the direct airflow from an air conditioner.
- This manual is for using and managing the product. We may reserve the rights of amending the typographical errors, inconsistencies with the latest version, software upgrades and product improvements, interpretation and modification. These changes will be published in the latest version without special notification.
- All pictures, charts, images in this manual are only for description and explanation of our products. The ownerships of trademarks, logos and other intellectual properties related to Microsoft, Apple and Google belong to the above-mentioned companies.
- This manual is suitable for IR water-proof network cameras.

Table of Contents

This IP-CAMERA (short for IP-CAM) is designed for high performance CCTV solutions. It adopts state of the art video processing chips. It utilizes most advanced technologies, such as video encoding and decoding technology, complies with the TCP/IP protocol, SoC, etc to ensure this system more stable and reliable.

This product is widely used in banks, telecommunication systems, electricity power departments, law systems, factories, storehouses, uptowns, etc. In addition, it is also an ideal choice for surveillance sites with middle or high risks.

Main Features

- ICR auto switch, true day/night
- 3D DNR, true WDR
- ROI coding
- Support BLC, Defog, Anti-flicker
- Support smart phone, iPad, remote monitoring

Surveillance Application
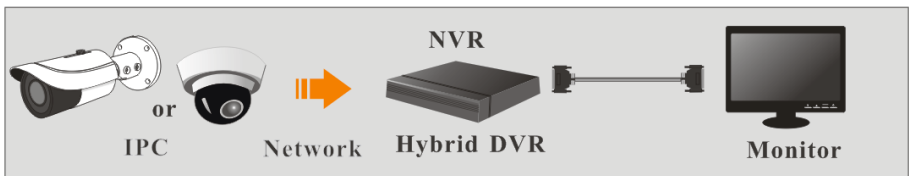
You may connect IP-Cam via LAN or WAN. Here only take IE browser (6.0) for example. The details are as follows:

2.1 LAN

In LAN, there are two ways to access IP-Cam: 1. access through IP-Tool; 2. directly access through IE browser.

2.1.1 Access through IP-Tool

Network connection:
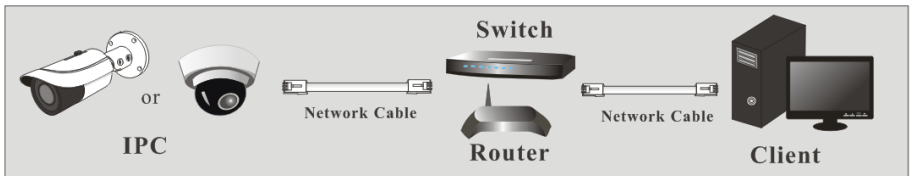
① Make sure the PC and IP-Cam are connected to the LAN and the IP-Tool is installed in the PC from the CD.
② Double click the IP-Tool icon on the desktop to run this software as shown below:
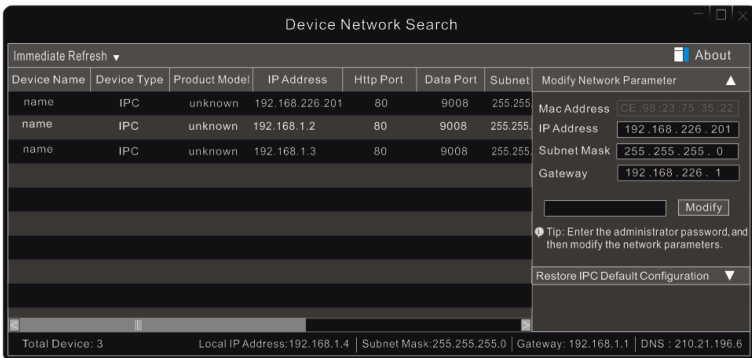
③ Modify the IP address. The default IP address of this camera is 192.168.226.201. Click the information of the camera listed in the above table to show the network information on the right hand. Modify the IP address and gateway of the camera and make sure its network address is in the same local network segment as that of the computer. Please modify the IP address of your device according to the practical situation.
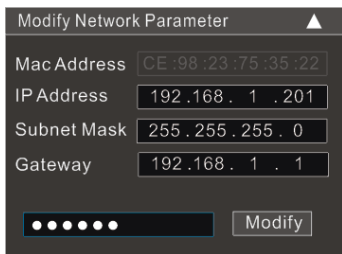
For example, the IP address of your computer is 192.168.1.4. So the IP address of the camera shall be changed to 192.168.1.X. After modification, please input the password of the administrator and click "Modify" button to modify the setting.

☞ | The default password of the administrator is "*123456*".

④ Double click the IP address and then the system will pop up the IE browser to connect IP-CAM. Download, install and run the Active X control.
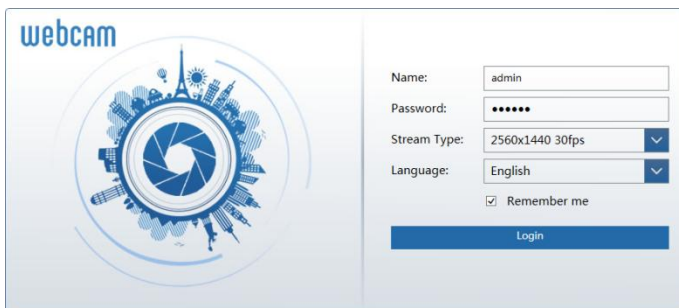
Input the username and password in the login window to log in. (You can modify the default username and password for your first login for some versions)

☞ | The default username is "*admin*"; the default password is "*123456*".

2.1.2 Directly Access through IE

The default network settings are as shown below:
IP address: **192.168.226.201**
Subnet Mask: **255.255.255.0**
Gateway: **192.168.226.1**
HTTP: **80**
Data port: **9008**

You may use the above default settings when you log in the camera for the first time. You may directly connect the camera to the computer through network cable.
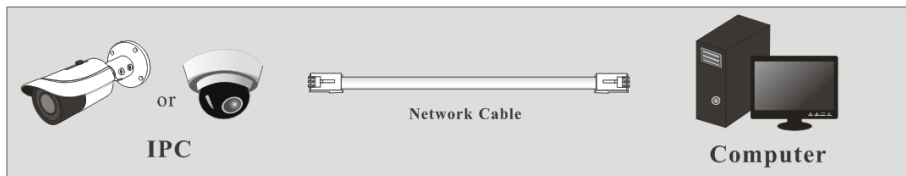
① Manually set the IP address of the PC and the network segment should be as the same as the default settings of the IP camera. Open the network and share center. Click "Local Area Connection" to pop up the following window.
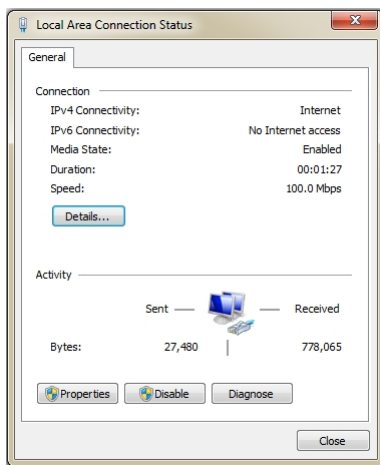
Select "Properties" and then select internet protocol according to the actual situation (for example: IPv4). Next, click "Properties" button to set the network of the PC.
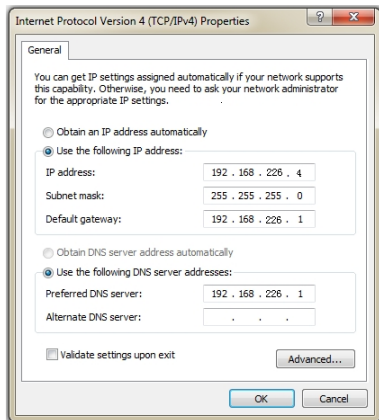
② Open the IE browser and input the default address of IP-CAM and confirm.

③ Download, install and run the Active X control.

④ Input the default username and password in the login window and then enter to view.

2.2 WAN

➢ **Access through the router or virtual server**
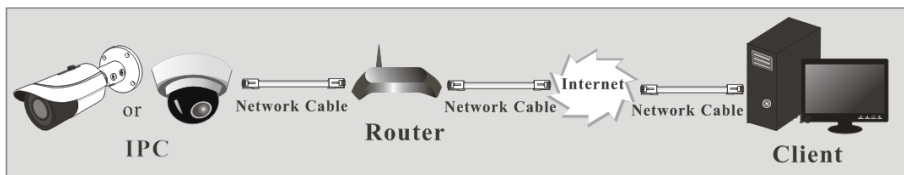
① Make sure the camera is well connected via LAN and then log in the camera via LAN and go to Config→Network→Port menu to set the port number.

Port Setup

② Go to Config →Network→TCP/IP menu to modify the IP address.

IP Setup

③ Go to the router's management interface through IE browser to forward the IP address and port of the camera in the "Virtual Server".

Router Setup

④ Open the IE browser and input its WAN IP and http port to access. (for example, if you change your http port as 81, you may input "192.198.1.201:81" in the address bar of web browser to access).

➢ **Access through PPPoE dial-up**

Network connection
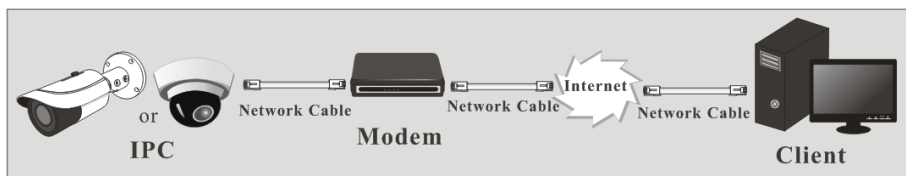
You may access the camera through PPPoE auto dial-up. The setting steps are as follow:

① Go to Config→Network→Port menu to set the port number.

② Go to Config →Network→TCP/IP→PPPoE Config menu. Enable PPPoE and then input the user name and password which you can get from your internet service provider.

③ Go to Config →Network→DDNS menu. Before you configure the DDNS, please apply for a domain name first. Please refer to DDNS configuration for detail information.

④ Open the IE browser and input the domain name and http port to access.

➢ **Access through static IP**

Network connection
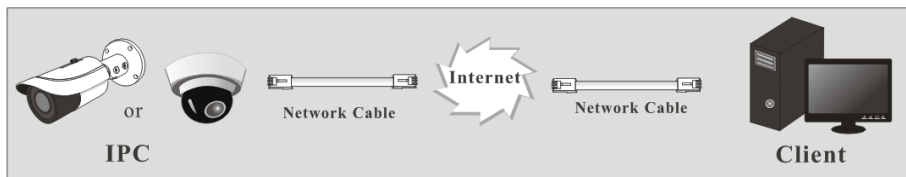
The setting steps are as follow:

① Go to Config→Network→Port menu to set the port number.

② Go to Config →Network→TCP/IP menu to set the IP address. Check "Use the following IP address" and then input the static IP address and other parameters.

③ Open the IE browser and input its WAN IP and http port to access.

After you log in, you will see the following window.

The following table is the instructions of the icons on the live view interface.

Icon	Description	Icon	Description
×1	Original size		SD card recording indicator icon
1:1	Appropriate size		Color abnormal indicator icon
	Auto		Abnormal clarity indicator icon
	Full screen		Scene change indicator icon
	Start/stop live view		Line crossing indicator icon
	Start/stop two-way audio		Crowd density indicator icon
	Enable/disable audio		People counting indicator icon
	Snap		Object removal indicator icon
	Start/stop recording		Intrusion indicator icon

Icon	Description	Icon	Description
🔍	Zoom in		People intrusion indicator icon
🔍	Zoom out	((•))	Sensor alarm indicator icon
	PTZ control	🏃	Motion alarm indicator icon
	AZ control (only available for the model with motorized zoom lens)		

- All above-mentioned indicator icons can be displayed in live view interface only when the corresponding event detections are enabled.
- In full screen mode, double click to exit.

Click AZ control button to unfold AZ control panel. The descriptions of the control panel are as follows:

Icon	Description	Icon	Description
	Zoom -		Zoom +
	Focus -		Focus +
	One key focus		

Click PTZ extended button to unfold PTZ control panel. In remote preview interface, you can view the image from every direction by controlling PTZ panel.
The descriptions of the control panel are as follows:

Icon	Description	Icon	Description
▼	Click it to rotate the dome diagonally up-left	◀	Click it to rotate the dome diagonally up-right.
▲	Click it to rotate the dome upwards.	■	Click it to stop rotating the dome.
◀	Click it to rotate the dome towards left	▶	Click it to rotate the dome towards right.
▶	Click it to rotate the dome diagonally down-left	◀	Click it to rotate the dome diagonally down-right.
▼	Click it to rotate the dome downwards.	−●+	Drag the scroll bar to adjust rotating speed of the dome.
	Click it to zoom out the live image.		Click it to zoom in the live image.
	Focus -		Focus +
	Iris -		Iris +
	Auto scan		Wiper

	Light			Radom scan
	Group scan			Preset

Select preset and click ⬆ to call the preset. Select and set the preset and then click 💾 to save the position of the preset. Select the set preset and click 🗑 to delete it.

4 Network Camera Configuration

In the Webcam client, choose "Config" to go to the configuration interface.

4.1 System Configuration

4.1.1 Basic Information

In the "Basic Information" interface, you can check the relevant information of the device.

Device Name	XXX
Product Model	XXX
Brand	Customer
Software Version	4.2.0.0(11955) build 29
Software Build Date	2017-07-03
Kernel Version	20170414
Hardware Version	1.3
Onvif Version	16.12(#1)
OCX Version	2.0.1.3
MAC	00:18:ae:5e:1e:ef
Device Id	I1EEF023O630

4.1.2 Date and Time

Go to Config→System→Date and Time. Please refer to the following interface.

Zone	Date and Time				
Time Zone:	GMT+08 (Beijing, Hong Kong, Shanghai, Taipei)				
☐ DST					
◉ Auto DST					
○ Manual DST					
Start Time	May	First	Tuesday	15	Hour
End Time	August	First	Tuesday	15	Hour
Time Offset	30 Minutes				

You can select the time zone and DST as required.
Click "Date and Time" tab to set the time mode.

4.1.3 Local Config

Go to Config→System→Local Config. You can set the storage path of the captured pictures and video records. You can also enable or disable the bitrate display in the live view interface and the audio of record files.

4.1.4 Storage

This function is only available for the model with SD card.
Go to Config→System→Storage to go to the interface as shown below.

● **SD Card Management**
The first time you use the SD card, you should click "Format" button to format the SD card. All data will be cleared by clicking this button.
Click "Eject" button to stop writing data to SD card. Then the SD card can be ejected safely.
Snapshot Quota: Set the capacity proportion of captured pictures in the SD card.

Video Quota: Set the capacity proportion of record files in the SD card.

● **Schedule Recording Settings**
1. Go to Config→System→Storage→Record to go to the interface as shown below.
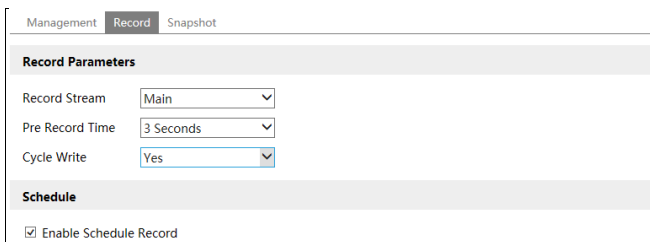
2. Set record stream, pre-record time, cycle writing.
Pre Record Time: Set the time to record before the actual recording begins.

3. Set schedule recording. **C**heck "Enable Schedule Record" and set the schedule.
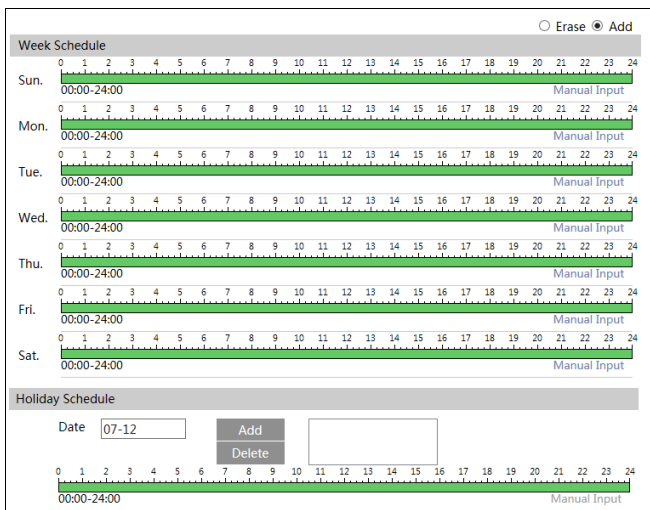
Week schedule
Set the alarm time from Monday to Sunday for alarm everyday in one week. The lengthwise means one day of a week; the rank means 24 hours of a day. Green means selected area. Blank means unselected area.
"Add": Add the schedule for a special day. Drag the mouse to set the time on the timeline.
"Erase": Delete holiday schedule. Drag the mouse to erase the time on the timeline.
Manual Input: Click it to input the specified start and end time to add or erase the time.

Day schedule

Set alarm time for alarm in some time of a special day, such as holiday.

Set a date at the "Date" box, click "Add" button to add that date to the list box on the right side and then drag the cursor to set the schedule of that day.

Select a date in the list box on the right side, and click "Delete" to remove the schedule on that day.

Click "Save" button to save the settings.

Note: Holiday schedule is prior to Week schedule.

● **Snapshot Settings**

Go to Config→System→Storage→Snapshot to go to the interface as shown below.

Here you may set the format, resolution and quality of the image saved in the SD card and the snapshot interval and quantity. Additionally, you can also set the timing snapshot.

Snapshot Quantity: The number you set here is the maximum quantity of snapshots. The actual quantity of snapshots may be less than this number. Supposing the occurrence time of an alarm event is less than the time of capturing pictures, the actual quantity of snapshots is less than the set quantity of snapshots.

Timing Snapshot: You shall enable timing snapshot first and then set the snapshot interval and schedule. The setting steps of schedule are the same with that of the schedule recording (See Schedule Recording).

4.2 Image Configuration

Image Configuration includes Display, Video/Audio, OSD, Video Mask and ROI Config.

4.2.1 Display Configuration

Go to Image→Display interface as shown below. You can set and adjust the picture's brightness, contrast, hue and saturation and so on for common, day and night mode separately. Then you can quickly see the image effect by switching the configuration file.
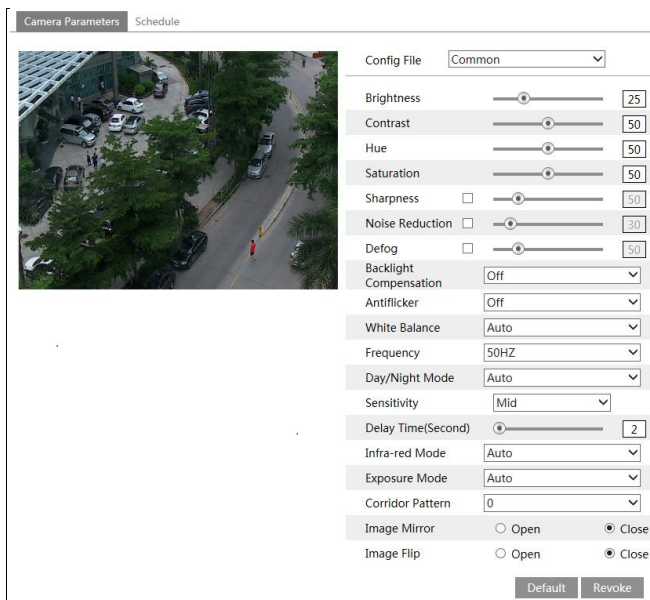
Brightness: Set the brightness level of the camera's image.

Contrast: Set the color difference between the brightest and darkest parts.

Hue: Set the total color degree of the image.

Saturation: Set the degree of color purity. The purer the color is, the brighter the image is.

Sharpness: Set the resolution level of the image plane and the sharpness level of the image edge.

Noise Reduction: Decrease the noise and make the image more thorough. Increasing the value will make the noise reduction effect better but it will reduce the image resolution.

Defog: Activating this function and setting an appropriate value as required in foggy, dusty, smoggy or rainy environment helps you to get clear images.

Backlight Compensation:

● Off: close the backlight compensation function. It is the default mode.

● WDR

◆ As to the WDR scene, WDR will help the camera provide clear images when there are both very bright and very dark areas simultaneously in the field of the view by lowering the brightness of the highlight area and increasing the brightness of the lowlight area. High, middle and low can be selected.

◆ There will be some record lost in a few seconds during mode changing from non-WDR to WDR mode.

● HLC: lower the brightness of the whole image by suppressing the brightness of the image's highlight area and reducing the size of the halo area.

● BLC: if enabled, the auto exposure will activate according to the scene so that the object of the image in the darkest area will be seen clearly.

HFR: If this function is enabled, the system will restart and then the maximum value of the frame rate of the main stream can be set to 60 fps. (**Some models may not support this function**).

Antiflicker:

● Off: Close the anti-flicker function.

● 50Hz: Make sure the horizontal stripes will not appear in the image while the device is adjusting the exposure automatically according to the brightness of the scene.

● 60Hz: Make sure the horizontal stripes will not appear in the image while the device is adjusting the exposure automatically according to the brightness of the scene.

White Balance: Adjust the color temperature according to the environment automatically.

Frequency: 50Hz and 60Hz can be optional.

Day/night Mode: Please choose the mode as needed.

Sensitivity: High, middle and low can be selected.

Infrared Mode: You may choose "ON", "OFF" and "Auto" as required. (**Some models may not support the infrared mode**).

Exposure Mode: You may choose "Auto" or "Manual" as required.

Corridor Pattern: You can change the direction of the video image by using this function. 0, 90, 180 and 270 are available. The default value is 0. The video resolution should be 1080P or under 1080P if you use this function.

Image Mirror: Reverse the current video image right and left.

Image Flip: Turn the current video image upside down.

Schedule Settings of Image Parameters:
Click "Schedule" tab as shown below.
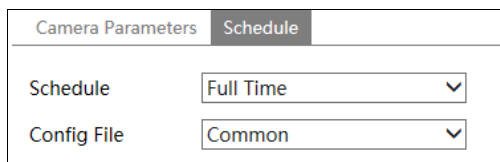
You may set full time schedule for common, day, night mode and specified time schedule for day and night. Choose "Schedule" in the drop-down box of schedule as shown below.
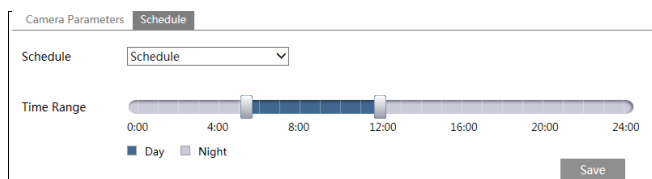
Drag " " icons to set the time of day and night. Blue means day time and blank means night time. If the current mode of camera parameters is set to schedule, the image configuration mode will automatically switch between day and night according to the schedule.

4.2.2 Video / Audio Configuration

Go to Image→Video / Audio interface as shown below. In this interface, you can set the resolution, frame rate, bitrate type, video quality and so on subject to the actual network condition.

Index	Stream Name	Resolution	Frame Rate	Bitrate Type	Bitrate(Kbps)	Video Quality	I Frame Interval	Video Compression	Profile
1	Main stream	2560x1440	30	CBR	3072	Medium	120	H265	Main Profile
2	Sub stream	352x240	30	CBR	512	Highest	120	H264	High Profile
3	Third stream	704x480	30	CBR	768	Higher	120	H264	High Profile

Send Snapshot 1 Size: (2560x1440)
☐ Video encode slice split
☑ Watermark   Watermark content: XXX

Click "Audio" tab to go to the interface as shown below.

Video **Audio**

Audio Encoding G711A   Audio Type MIC

Save

Three video streams can be adjustable.

Resolution: The higher the resolution is, the clearer the image is.

Frame rate: The higher the frame rate is, the more fluent the video is. However, more storage room will be taken up.

Bitrate type: Including CBR and VBR. CBR means that no matter how changeable the video resources are, the compression bitrate keeps constant. This will not only facilitate the image quality better in a constant bitrate but also help to calculate the capacity of the recording. VBR means that the compression bitrate can be adjustable according to the change of the video resources. This will help to optimize the network bandwidth.

Bitrate: Please choose it according to the actual network situation.

Video Quality: When VBR is selected, you need to choose image quality. The higher the image quality you choose, the more bitrate will be required.

I Frame interval: It is recommended to use the default value. If the value is over high, the read speed of the group of pictures will be slow resulting in the quality loss of the video.

Video Compression: H264 and H265 are optional. Higher quality of image can be transferred under limited network bandwidth by using H265 video encoding. However, higher quality of the hardware is required.

Profile: Baseline, main/high profiles are optional. Baseline profile is mainly used in interactive application with low complexity and delay. Main/high profile is mainly used for

higher coding requirement.

Send Snapshot: Please select it according to the actual situation.

Video encode slice split: If this function is enabled, you may get more fluent image even though using the low-performance PC.

Watermark: Check it and input the watermark content. You may see the watermark when playing back the local record in the search interface, lest the record files is tampered.

Audio Encoding: G711A and G711U are selectable.

Audio Type: MIC and LIN are selectable.

4.2.3 OSD Configuration

Go to Image→OSD interface as shown below.
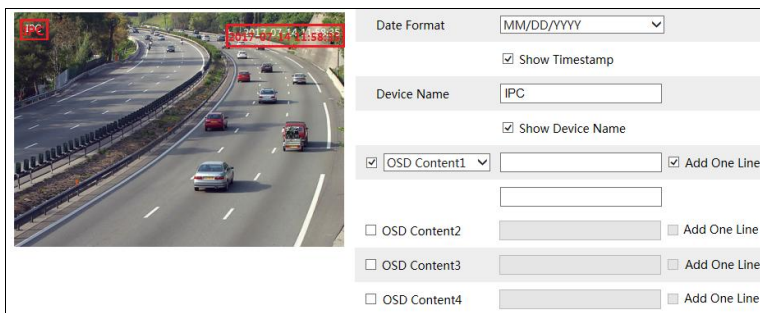
You may set time stamp, device name, OSD content and picture overlap here. After enabling the corresponding display and inputting the content, drag them to change their position. Then click "Save" button to save the settings.
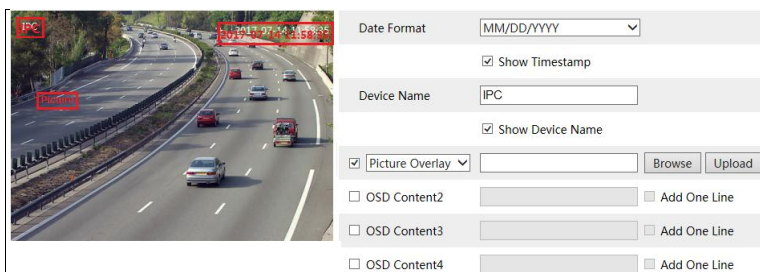
Picture Overlap Settings:

Check "OSD Content1", choose "Picture Overlay" and click "Browse" to select the overlap picture. Then click "Upload" to upload the overlap picture. The pixel of the image shall not exceed 200*200, or it cannot be uploaded.

4.2.4 Video Mask

Go to Image→Video Mask interface as shown below. You can set 4 mask areas at most.
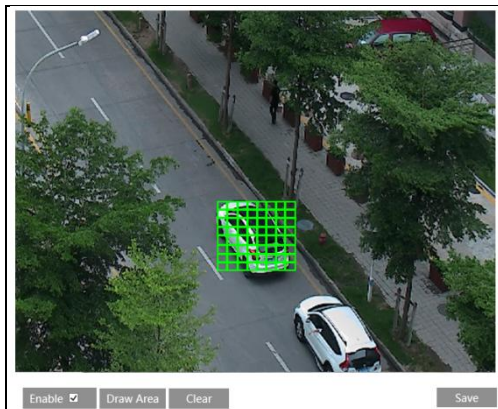
To set up video mask:
1. Enable video mask.
2. Click "Draw Area" button and then drag the mouse to draw the video mask area.
3. Click "Save" button to save the settings.
4. Return to the live to see the following picture.
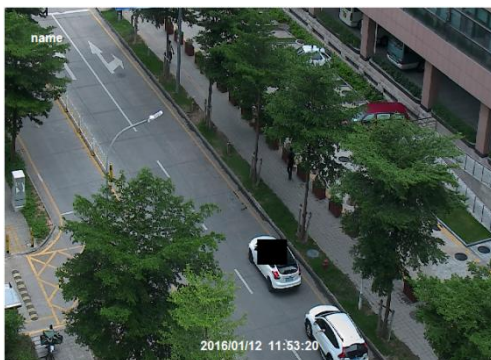
Clear the video mask:
Go to video mask interface and then click "Clear" button to delete the current video mask area.

4.2.5 ROI Configuration

Go to Image→ROI Config interface as shown below.
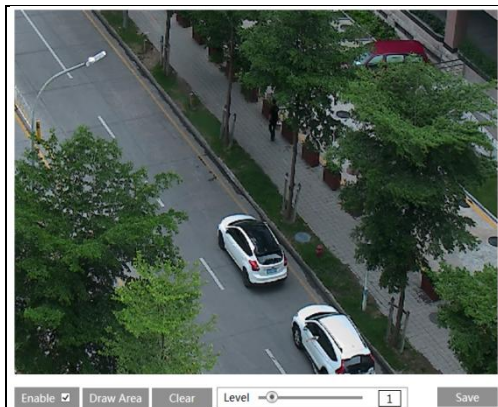
1. Check "Enable" and then click "Draw Area" button.
2. Drag the mouse to set the ROI area.
3. Set the level.
4. Click "Save" button to save the settings.

Now, you will see the selected ROI area is clearer than other areas especially in low bitrate condition.
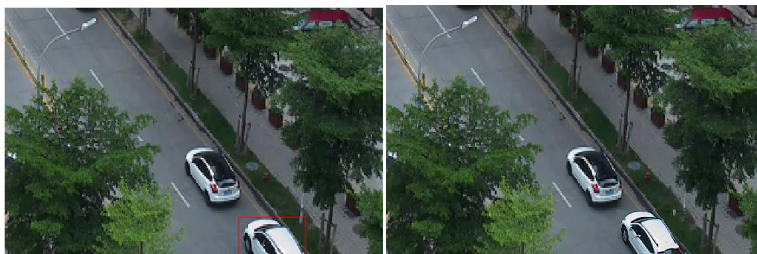
4.2.6 Lens Control

This function is only available for the model with motorized zoom lens. You may adjust zoom and focus and choose the focus mode or one key focus.
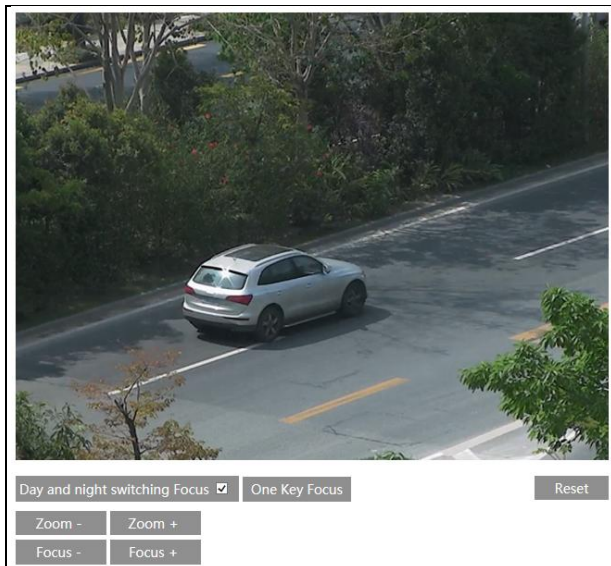
4.3 PTZ Configuration

This function is only available for some modes.
Go to PTZ→Protocol interface as shown below.

Set the protocol, address and baud rate according to the PTZ.

4.4 Alarm Configuration
4.4.1 Motion Detection

Go to Alarm→Motion Detection to set motion detection alarm.
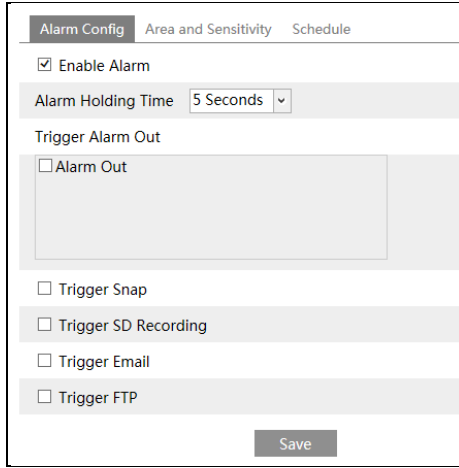
1. Check "Enable Alarm" check box to activate motion based alarm, choose alarm holding time and set alarm trigger options.

Alarm Out: If selected, this would trigger the external relay output on detecting a motion based alarm.

Trigger Snap: If selected, the system will capture images on an alarm and save the images in SD card (this function is only available for the model with SD card).

Trigger SD Recording: If selected, the record will be triggered and saved in SD card on an alarm (this function is only available for the model with SD card).

Trigger Email: If "Trigger Email" and "Attach Picture" checkbox is checked (email address shall be set first in the Email configuration interface), the captured pictures and triggered event will be sent into those addresses.

Trigger FTP: If "Trigger FTP" and "Attach Picture" checkbox is checked, the captured pictures will be sent into FTP server address. Please refer to FTP configuration chapter for more details.

2. Set motion detection area and sensitivity. Click "Area and Sensitivity" tab to go to the interface as shown below.
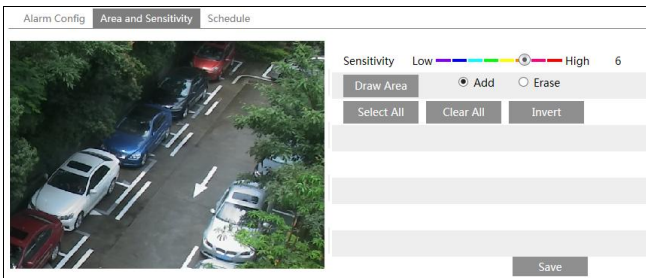
Move the "Sensitivity" scroll bar to set the sensitivity.

Select "Add" and click "Draw" button and drag mouse to select the motion detection area;
Select "Erase" and drag the mouse to clear motion detection area.
After that, click "Save" to save the settings.

3. Set the schedule of the motion detection. The schedule setting steps of the motion detection are the same with that of the schedule recording (See Schedule Recording).

4.4.2 Other Alarms
● **SD Card Full**
1. Go to Config→Alarm→Anomaly→SD Card Full.

2. Enable alarm and set alarm holding time.
3. Set the alarm trigger options. You may trigger alarm out, Email and FTP. The setting steps are the same with that of motion detection. Please refer to motion detection chapter for details.

● **SD Card Error**
When there are some errors in writing SD card, the corresponding alarms will be triggered.
1. Go to Config→Alarm→Anomaly→SD Card Error as shown below.

2. Enable alarm and set alarm holding time.
3. Set the alarm trigger options. You may trigger alarm out, Email and FTP. The setting steps are the same with that of motion detection. Please refer to motion detection chapter for details.

● **IP Address Conflict**
1. Go to Config➔Alarm➔Anomaly➔IP Address Collision as shown below.
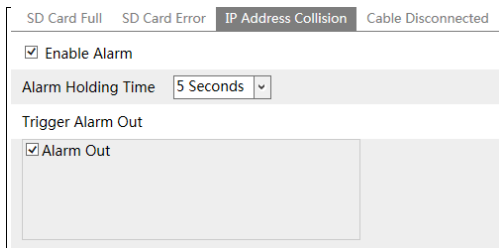
2. Enable alarm and set alarm holding time.
3. Trigger alarm out. When the IP address of the camera is in conflict with the IP address of other devices, the system will trigger the alarm out.

● **Cable Disconnection**
1. Go to Config➔Alarm➔Anomaly➔Cable Disconnected as shown below.
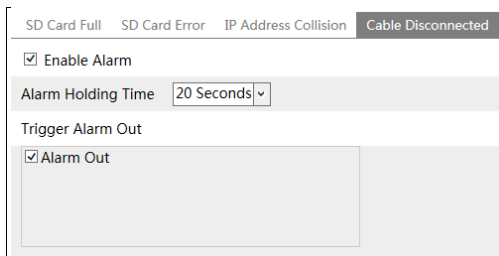
2. Enable alarm and set alarm holding time.
3. Trigger alarm out. When the camera is disconnected, the system will trigger the alarm out.

4.4.3 Alarm In

This function is only available for some models. To set sensor alarm (alarm in):
Go to Config➔Alarm➔Alarm In interface as shown below.

1. Enable alarm and set the alarm type, alarm holding time and sensor name.
2. Set alarm trigger options. The setting steps are the same with that of motion detection. Please refer to motion detection chapter for details.
3. Click "Save" button to save the settings.
4. Set the schedule of the sensor alarm. The setting steps of the schedule are the same with that of the schedule recording (See Schedule Recording).

4.4.4 Alarm Out

This function is only available for some models. Go to Config➔Alarm➔Alarm Out.

Alarm Out Mode: Alarm linkage, manual operation, day/night switch linkage and schedule are optional.
Alarm Linkage: Having selected this mode, select alarm out name and alarm holding time at the "Alarm Holding Time" pull down list box.
Manual Operation: Having selected this mode, you can click "Open" to trigger the alarm out immediately and click "Close" to stop alarm.

Day/Night Switch Linkage: Having selected this mode, you can choose to open or close day/night switch linkage.

Alarm Out Mode	Day/night switch linkage ⌄
Day	Open ⌄
Night	Close ⌄

Schedule: Click "Add" and drag the mouse on the timeline to set the schedule of alarm out; click "Erase" and drag the mouse on the timeline to erase the set time schedule. After you save this schedule, the alarm out will be triggered in the specified time.

Alarm Out Mode	Schedule ⌄
	○ Erase ⊙ Add
	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Time Range	05:00–08:00 Manual Input

4.4.5 Alarm Server

Go to Alarm→Alarm Server interface as shown below.

You may input the alarm server address and port. When the alarm happens, the camera will automatically transfer the alarm event to the alarm server. If the alarm server is not used, there is no need for you to configure here.

Server Address	
Port	0
	OK

4.5 Event Configuration

This series of network cameras support a lot of smart alarm function, such as object removal detection, exception detection, line crossing detection, region intrusion detection, people intrusion, crowd density detection and people counting.

For enabling the above-mentioned alarm function, please meet the following installation requirement.

● Cameras should be installed in settled places, lest too much shaking affects the accuracy of detection.

● Avoid the reflective surfaces (like shiny floors, mirrors, glass, lake surfaces and so on).

● Avoid narrow or too much shadowing monitoring places.

● Avoid such monitoring scenario - the object color is similar to the background color.

● The monitoring images shouldn't have large changes after enabling the smart alarms, or it will result in frequency alarm triggers (for example, the function of auto focus or automatic white balance is automatically enabled).

● At any time of day or night, please make sure the image of cameras is clear and with

adequate and even light, avoiding overexposure or too dark on both sides.

4.5.1 Object Removal

The alarm will be triggered when detecting the objects removed from the pre-defined area. This function can be used in such scenarios like object security, debris flow, illegal parking detection, illegal pasting, illegal doodle, etc.

To set object removal:

Go to Config→Event→Object Removal interface as shown below.

1. Enable object removal detection and then select the detection type.
Enable Left Detection: The relevant alarms will be triggered if there are items left in the pre-defined alarm area.
Enable Item Missing Detection: The relevant alarms will be triggered if there are items missing in the pre-defined alarm area.
2. Set the alarm holding time and alarm trigger options. The setting steps are the same as that of motion detection. Please refer to motion detection chapter for details.
3. Click "Save" button to save the settings.
4. Set the alarm area of the object removal detection. Click "Area" tab to go to the interface as shown below.
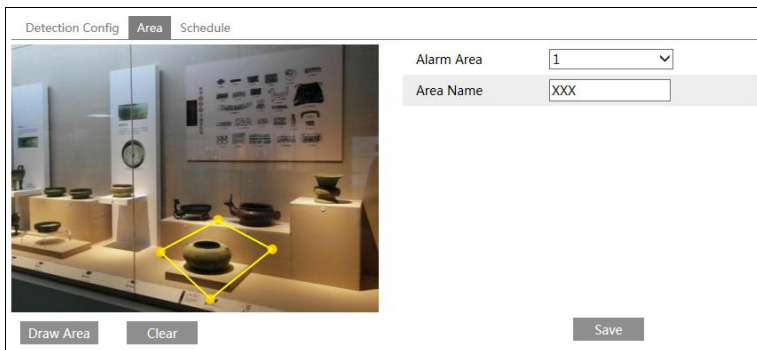
Set the alarm area number and then input the alarm area name. You can add 4 alarm areas at most. Click "Draw Area" button and then click around the area where you want to set as the alarm area in the image (the alarm area should be a closed area). Click "Stop Draw" button to stop drawing. Click "Clear" button to delete the alarm area. Click "Save" button to save the settings.

5. Set the schedule of the object removal detection. The setting steps of the schedule are the same with that of the schedule recording (See <u>Schedule Recording</u>).

※ **The configuration requirements of camera and ambient requirements**

1. The range of the detection object occupies from 1/50 to 1/3 of the whole image.

2. The detection time of objects in the camera shall be from 3 to 5 seconds.

3. The defined area cannot be covered frequently and continuously (like people and traffic flow).

4. It is necessary for object removal detection that the drawn frame must be very close to the margin of the object in enhancing the sensitivity and accuracy of the detection.

5. Object removal detection cannot determine the objects' ownership. For instance, there is an unattended package in the station. Object removal detection can detect the package itself but it cannot determine whether it is an ownership package.

6. Try not to enable object removal detection when light changes greatly in the scene.

7. Try not to enable object removal detection if there are complex and dynamic environments in the scene.

8. Adequate light and clear scenery are very important to object removal detection.

9. Please contact us for more detailed application scenarios.

Here we take some improper application scenarios for instance.

There are so many trees near the road and cars running on the road, which make the scene too complex to detect the removal objects.

4.5.2 Exception

This function can detect the change of surveillance environment affected by the external factors and the blur and cast of the surveillance images and some certain actions can be taken when the alarm is triggered.

To set exception detection:

Go to Config→Event→Exception interface as shown below.

1. Enable the relevant detection as required.

Scene Change Detection: The relevant alarms will be triggered if the scene of the monitor video has changed.

Video Blur Detection: The relevant alarms will be triggered if the monitor video is blurry.

Video Cast Detection: The relevant alarms will be triggered if color cast happens to the monitor video.

2. Set the alarm holding time and alarm trigger options. The setting steps are the same with that of motion detection. Please refer to motion detection chapter for details.

3. Click "Save" button to save the settings.

4. Set the sensitivity of the exception detection. Click "Sensitivity" tab to go to the interface as shown below.
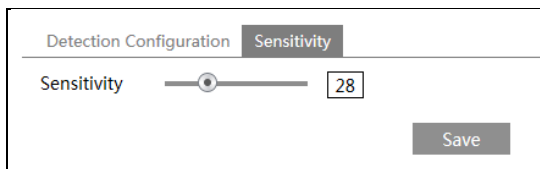
Drag the slider to set the sensitivity value or directly input the sensitivity value in the textbox. Click "Save" button to save the settings.

The sensitivity value of Scene Change Detection: The higher the value is, the more sensitive the system responds to the amplitude of the scene change.

The sensitivity value of Video Blur Detection: The higher the value is, the more sensitive the system responds to the defocus of the device image. You should just the value according to the real situation.

The sensitivity value of Video Cast Detection: The higher the value is, the more sensitive the system responds to the color cast of the device image. You should also consider other factors.

※ **The requirements of camera and ambient requirements**

1. Auto-focusing function should not been enabled for exception detection.

2. Try not to enable exception detection when light changes greatly in the scene.

3. Detect the exception of the image in the whole surveillance scene, including six kinds of exception events- low light, excessive brightness, low definition, color cast, interference and scene change.

4. Please contact us for more detailed application scenarios.

4.5.3 Line Crossing

Line Crossing: The relevant alarms will be triggered if someone or something crosses the pre-defined alarm lines. It can replace the electronic fence, warning line of flood prevention, etc.

Go to Config→Event→Line Crossing interface as shown below.
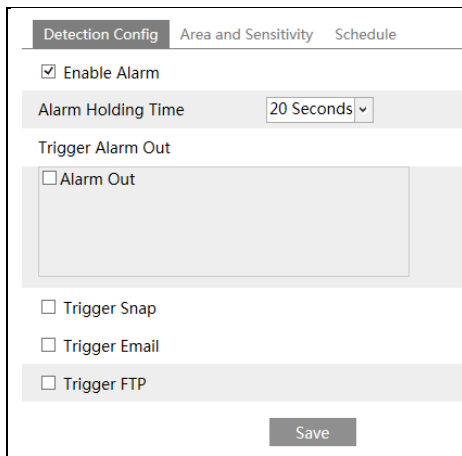
1. Enable line crossing alarm and set the alarm holding time.
2. Set alarm trigger options. The setting steps are the same with that of motion detection. Please refer to motion detection chapter for details.
3. Click "Save" button to save the settings.
4. Set area and sensitivity of the line crossing alarm. Click "Area and Sensitivity" tab to go to the interface as shown below.
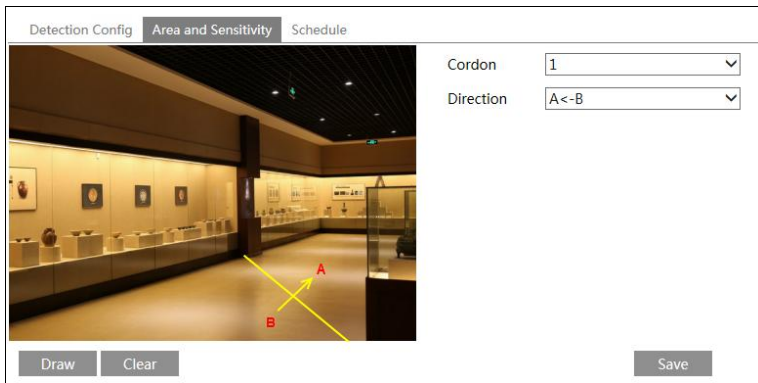
Set the cordon number and direction. You can add 4 cordons at most.
Direction：A<->B, A->B and A<-B optional. It is the crossing direction of the intruder who crosses over the alarm line.
A<->B: The alarm will be triggered when the intruder crosses over the alarm line from B to A or from A to B.
A->B: The alarm will be triggered when the intruder crosses over the alarm line from A to B.
A<-B: The alarm will be triggered when the intruder crosses over the alarm line from B to A.
Click "Draw" button and then drag the mouse to draw a cordon in the image on the left side. Click "Stop" button to stop drawing. Click "Clear" button to delete the cordons. Click "Save"

button to save the settings.

5. Set the schedule of the line crossing alarm. The setting steps of the schedule are the same with that of the schedule recording (See Schedule Recording).

※ **The installation requirements of camera and ambient requirements**

1. Auto-focusing function should not been enabled for line crossing detection. If enabled, the video image will change so greatly that the algorithm will stop working temporarily.

2. Avoid the scenes with many trees or the scenes with various light changes (like many flashing headlights). The ambient brightness of the scenes shouldn't be too low, because dimly lighted scenes will decrease the accuracy of the alarm.

3. Cameras should be mounted at a place of 2.8 meters height or above.

4. The mounting view angle of the camera tries to keep about 45 °.

5. The detected objects accounting for the proportion in the whole image should not be less than 1% and the largest sizes of the detected objects accounting for the proportion in the whole image should not be more than 1/8.

6. Make sure cameras can view objects for at least 2 seconds in the detected area for accurate detection.

7. Adequate light and clear scenery are very important to line crossing detection.

8. Please contact us for more detailed application scenarios.

Here we take some improper application scenarios for instance.

There are so many trees near the road and cars running on the road, which make the scene too complex to detect the crossing objects.

The ground is covered with vegetation; at the right of the fence is a gym where people pass by frequently. The above mentioned environment is too complex to detect the crossing objects.

4.5.4 Intrusion

Intrusion: The relevant alarms will be triggered if someone or something intrudes into the alarm areas or moves in the pre-defined alarm areas. This function can be applicable to important supervision places, danger areas and prohibited areas, like military administrative zones, house breaking, scenic high danger areas, no man's areas, etc.

Go to Config→Event→Intrusion interface as shown below.

1. Enable region intrusion detection alarm and set the alarm holding time.
2. Set alarm trigger options. The setting steps are the same with that of motion detection. Please refer to motion detection chapter for details.
3. Click "Save" button to save the settings.
4. Set the alarm area of the intrusion detection. Click "Area" tab to go to the interface as shown below.
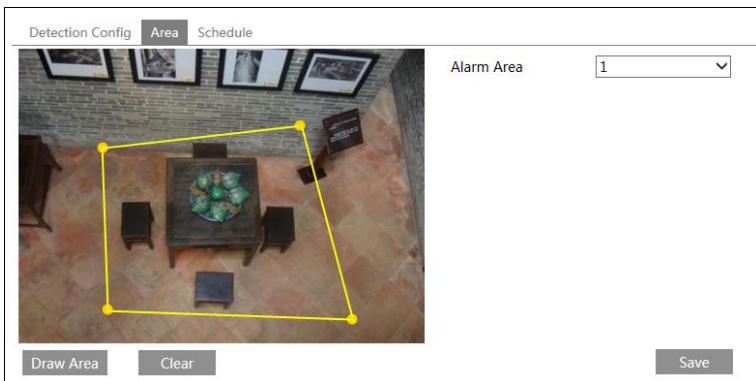
Set the alarm area number on the right side. You can add 4 alarm areas at most.

Click "Draw Area" button and then click around the area where you want to set as the alarm area in the image on the left side (the alarm area should be a closed area). Click "Stop Draw" button to stop drawing. Click "Clear" button to delete the alarm area. Click "Save" button to save the settings.

5. Set the schedule of the intrusion detection. The setting steps of the schedule are the same with that of the schedule recording (See <u>Schedule Recording</u>).

※ **The installation requirements of camera and ambient requirements**

1. Auto-focusing function should not been enabled for line crossing detection. If enabled, the video image will change so greatly that the algorithm will stop working temporarily.

2. Avoid the scenes with many trees or the scenes with various light changes (like many flashing headlights). The ambient brightness of the scenes shouldn't be too low, because dimly lighted scenes will decrease the accuracy of the alarm.

3. Cameras should be mounted at a place of 2.8 meters height or above.

4. The mounting view angle of the camera tries to keep about 45 °.

5. The detected objects accounting for the proportion in the whole image should not be less than 1% and the largest sizes of the detected objects accounting for the proportion in the whole image should not be more than 1/8.

6. Make sure cameras can view objects for at least 2 seconds in the detected area for accurate detection.

7. Adequate light and clear scenery are very important to line crossing detection.

8. Please contact us for more detailed application scenarios.

Here we take some improper application scenarios for instance.

The camera's angle of depression is not wide enough; there are so many trees in the scene. The above mentioned environment is too complex to detect the intrusion.

The camera's angle of depression is not wide enough; the street lamps at night lead to light interference; the swaying trees in a windy day lead to random interference. All the above mentioned factors make the scene improper for intrusion detection.

4.5.5 Crowd Density Detection

This function detects the density of the walking people in a specified area (square, supermarket) and evaluates the level. Go to Config→Event→Crowd Density as shown below.

1. Enable the crowd density detection.
2. Set "Refresh Frequency", "Density Alarm Threshold" and "Alarm Holding Time".
Refresh Frequency: It refers to the period of a detection result report.
Density Alarm Threshold: The camera will trigger an alarm once the percentage of the crowd density in a specified area exceeds the pre-defined threshold value.
3.Set alarm trigger options. The setting steps are the same with that of motion detection. Please refer to motion detection chapter for details.
4. Set an alarm area for the crowd density detection. Click "Area" tab as shown below.
Click "Draw Area" and drag the mouse to draw a rectangle area. Drag the boundary of the rectangle to modify its size and move the rectangle to change its position. Click "Stop Draw" to stop drawing the area. Click "Clear" to clear the area.
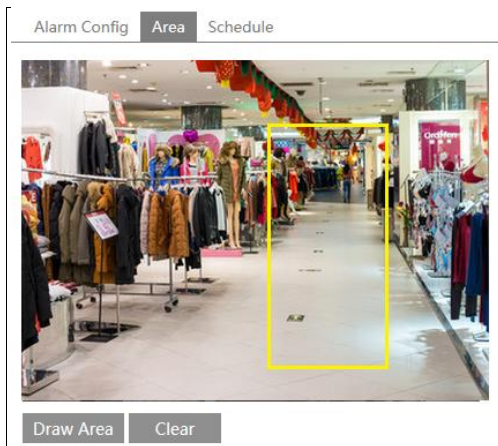
5.Set the schedule of the crowd density detection. The setting steps of the schedule are the same with that of the schedule recording (See <u>Schedule Recording</u>).

※ The installation requirements of camera and ambient requirements
1. The lens direction of the camera shall be the same with the direction of people flow, allowed a little bit incline. The direction of the people flow shall be less than 45 °from the horizontal. It is recommended that the angle between the lens of the camera and the floor shall be between 30 °and 60 °.
2. The size of a single person of the people flow shall take up between 1% and 5% of the whole picture and the height of the figure occupies from 1/5 to 1/2 of the whole picture.
3. This function is inapplicable to the scene where there are many moving objects except human shape, like moving car.
4. Abundant trees and billboards are not allowed in the detected area.

4.5.6 People Intrusion

This function is specially designed for the use of indoor scenes. It is mainly used to detect whether someone breaks into the scenes that should have no people. To prevent someone from intruding indoor to endanger the family security, the alarm will be triggered if someone enters into the detection area in 3~5s. The setting steps are as follows.
1. Go to Config→Event→People Intrusion. Please refer to the following picture.
2. Enable the people intrusion detection.
3. Set "Alarm Sensitivity" and "Alarm Holding Time".
4. Set alarm trigger options. The setting steps are the same with that of motion detection. Please refer to <u>motion detection</u> chapter for details.
5. Set the schedule of the people intrusion detection. The setting steps of the schedule are the same with that of the schedule recording (See <u>Schedule Recording</u>).

※ **The installation requirements of camera and ambient requirements**

1. The detection area should have stable and adequate light with less illumination changing.

2. For detecting moving people or objects in the whole detection area, the height of the installation had better be 1~3m.

3. To make sure the camera shoots all the indoor scenes, the camera lens should be to the detected direction and the camera had better be installed in the corner.

4. The proportion of the detection people occupies from 1/5 to 1/2 of the whole picture.

5. The false alarm will be triggered if the indoor scenes have cluttered and frequently changing lights.

6. With family members in the house, it is no need to enable this function.

7. This function is inapplicable to outdoors.

4.5.7 People Counting

This function is to count the quantities of the bidirectional people flow in the detected areas by detecting, tracking and counting the head shape of the people. The counting data includes the number of entering people, exiting people and remaining people. The setting steps are as follows.

1. Go to Config→Event→People Counting. Please refer to the following picture.

2. Enable the people counting detection.

3. Set "Detection Sensitivity", "Entrancing Threshold", "Departing Threshold", "Staying Threshold", "Counting Period", "Alarm Holding Time" and so on.

Counting Period: All, daily, weekly and monthly are optional.

Counting Reset: The current people counting will be cleared by clicking "Reset" button.

Any pre-defined threshold value surpassed (the default value is 500; the maximum value is 655350), the alarm of the camera will be triggered.

When people pass the detected area along with the flow, it will take 1 ~5 seconds to complete the detection of people counting due to different scenes.

4. Set alarm trigger options. The setting steps are the same with that of motion detection. Please refer to <u>motion detection</u> chapter for details.

5. Set the area of the people counting. Click "Area" tab to go to the area setting interface.
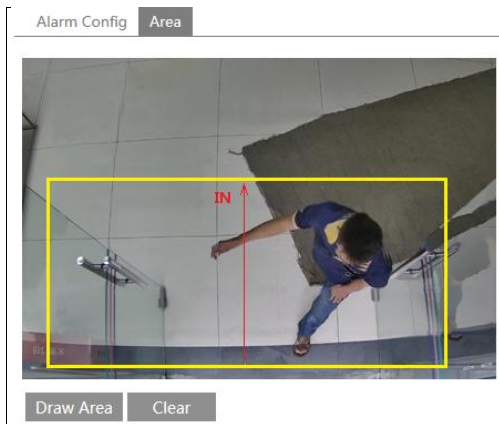
Click "Draw Area" and drag the mouse to draw a rectangle area. Drag the boundary of the rectangle to modify its size and move the rectangle to change its position. Click "Stop Draw" to stop drawing the area. Click "Clear" to clear the area. Click and drag the arrow or the other end of the arrow line to change the people entrancing direction.

The detected area must be larger than the width of the main hallway of the people flow (hereinafter referred to as "hallway"), left a certain distance from the edge of the picture (the width of the undetected areas shall occupy 4%~10% of the whole picture). The direction of detection shall be in conformity to that of the hallway as shown in the picture above. The area drawn yellow box is the detected area. The head size of the figure (width or height) shall account for 1/5 ~ 1/2 of the drawn detection area. The direction of the red arrow is the direction of detection. The direction along with the red arrow is entrance direction and the opposite direction of the red arrow is exiting/departing direction.

Having configured the people counting detection, you can see its counting results by clicking "Live" tab. Please refer to the following picture.
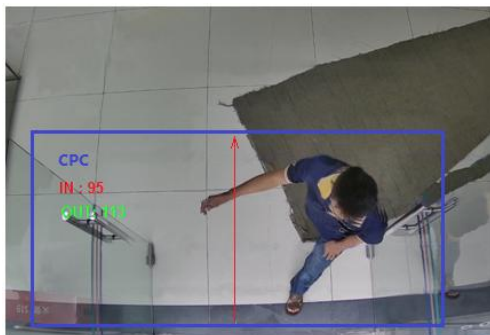
※ **The installation requirements of camera and ambient requirements**
1. Cameras must be installed in the area with stable and adequate light sources.
2. The background color (like floor color) of the installation shall be light color.

3. The lens of the camera shall be adjusted straight down, allowed a little bit incline but the whole head must be captured.

4. The installation height of the camera depends on the actual focal length of the lens. The hallway shall take up over a half of the width of the whole picture and the head of the people shall be about 1/5 of the height of the whole picture. Reserving certain space on both sides makes the hallway lie in the center of the whole picture.

The recommending height of installation as shown below:

Lens	Mounting height
2.8mm	2.6 ~ 3.2m
3.3mm	3.0 ~ 4.0m
3.6mm	3.3 ~ 5.0m

5. More than two directions of people flow are not allowed in the scenes.

6. Various changeable lights will disturb the people counting and the darker scenes will reduce the accuracy of counting.

7. If the camera is installed in a higher place, the head feature will not be traced completely due to too little proportion of the head of the figure in the picture.

8. If the figure is moving at a high speed (passing the detected area within 2 seconds), it may result in detection failure. If the figure is moving at a low speed, staying more than 15 seconds in the detected area, the camera will give up tracing.

9. If the cloth color of the people is similar with the color of the background, it may cause detection failure.

10. More headwears probably conceal the head features, which will lead to detection failure.

4.6 Network Configuration

4.6.1 TCP/IP

Go to Config➔Network➔TCP/IP interface as shown below. There are two ways for network connection.

Use IP address (take IPv4 for example)-There are two options for IP setup: obtain an IP address automatically by DHCP protocol and use the following IP address. Please choose one of the options for your requirements.

Test: You can test the effectiveness of the IP address by clicking this button.

Use PPPoE-Click "PPPoE Config" tab to go to the interface as shown below. Enable PPPoE and then enter the user name and password from your ISP.

You can choose either way of the network connection. If you use PPPoE to connect internet, you will get a dynamic WAN IP address. This IP address will change frequently. You may use the function of IP change notification.

Click "IP Change Notification Config" to go to the interface as shown below.

Trigger Email: when the IP address of the device is changed, a new IP address will be sent to the appointed mailbox automatically

Trigger FTP: when the IP address of the device is changed, a new IP address will be sent to FTP server.

4.6.2 Port

Go to Config→Network→Port interface as shown below. HTTP port, Data port and RTSP port can be set.

HTTP Port: The default HTTP port is 80. It can be changed to any port which is not occupied.
Data Port: The default data port is 9008. Please change it as required.
RTSP Port: The default port is 554. Please change it as required.

4.6.3 Server Configuration

This function is mainly used for connecting network video management system.

1. Check "Enable".
2. Check the IP address and port of the transfer media server in the ECMS/NVMS. Then enable the auto report in the ECMS/NVMS when adding a new device. Next, input the remaining information of the device in the ECMS/NVMS. After that, the system will automatically allot a device ID. Please check it in the ECMS/NVMS.
3. Input the above-mentioned server address, server port and device ID in the corresponding boxes. Click "Save" button to save the settings.

4.6.4 DDNS

If your camera is set to use PPPoE as its default network connection, DDNS should be set for network access. Before you set the DDNS, please make sure you have registered a domain name on the DDNS server.
1. Go to Config→Network→ DDNS.

2. Apply for a domain name. Take www.dvrdyndns.com for example.

Input www.dvrdydns.com in the IE address bar to visit its website. Then click "Registration" button.

NEW USER REGISTRATION
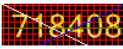
USER NAME	xxxx
PASSWORD	●●●●●● ❓
PASSWORD CONFIRM	●●●●●●
FIRST NAME	xxx
LAST NAME	xxx
SECURITY QUESTION.	My first phone number. ▾
ANSWER	xxxxxxx
CONFIRM YOU'RE HUMAN	718408 New Captcha Enter the text you see above

Submit Reset

Create domain name.

You must create a domain name to continue.

Domain name must start with (a-z, 0-9). Cannot end or start, but may contain a hyphen and is not case-sensitive.

[   ] . dvrdydns.com ▾ Request Domain

After you successfully request your domain name, you will see your domain in the list.

Search by Domain. Search

Click a name to edit your domain settings.

| NAME | STATUS | DOMAIN |
| 654321ABC | ✅ | 654321abc.dvrdydns.com |

Last Update: *Not yet updated* IP Address: 210.21.229.138

Create additional domain names

3. Input the username, password, domain you apply for in the DDNS configuration interface.
4. Click "Save" button to save the settings.

4.6.5 SNMP

To get camera status, parameters and alarm information and remotely manage the camera, you can set the SNMP function. Before using the SNMP, please download the SNMP software and set the parameters of the SNMP, such as SNMP port, trap address.
1. Go to Config→Network→SNMP.

2. Check the corresponding version checkbox (Enable SNMPv1, Enable SNMPv2, Enable SNMPv3) according to the version of the SNMP software you download.
3. Set the "Read SNMP Community", "Write SNMP Community", "Trap Address", "Trap Port" and so on. Please make sure the settings are the same as that of your SNMP software.

Note: Please use the different version in accordance with the security level you required. The higher the version is, the higher the level of the security is.

SNMP v1/v2	
☐ Enable SNMPv1	
☐ Enable SNMPv2	
Read SNMP Community	
Write SNMP Community	
Trap Address	. . .
Trap Port	0
Trap community	
SNMP v3	
☐ Enable SNMPv3	
Read User Name	
Security Level	auth, priv
Authentication Algorithm	⦿ MD5 ◯ SHA
Authentication Password	
Private-key Algorithm	⦿ DES ◯ AES
Private-key Algorithm	
Write User Name	
Security Level	auth, priv
Authentication Algorithm	⦿ MD5 ◯ SHA
Authentication Password	
Private-key Algorithm	⦿ DES ◯ AES
Private-key Algorithm	
Other Settings	
SNMP Port	0

4.6.6 802.1x

IEEE802.X which is an access control protocol manages the device in connection with the local network by authentication. The setting steps are as follows:

To use this function, the camera shall be connected to a switch supporting 802.1x protocol. The switch can be reckoned as an authentication system to identify the device in a local network. If the camera connected to the network interface of the switch has passed the authentication of the switch, you can access it via LAN. If not, you can't access it. Protocol type and EAPOL version: Please use the default settings. User name and password: The user name and password must be the same with the user name and password applied for and registered in the authentication server.

The structure of 802.1x
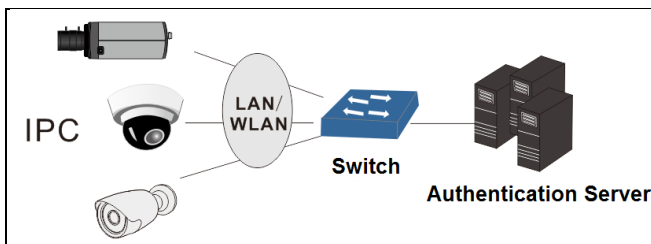
① The network camera initiates the authentication of 802.1x protocol via web client and then the authentication is taken by the switch supporting 802.1x protocol.
② The switch provides the camera with a physical or logic local network interface and goes on the authentication for the camera.
③ Authentication server provides the entity of authentication service for the switch, stored the relative information of web client, realizing the authentication of web client.
Please refer to the user manual of the connected switch for more details.

4.6.7 RTSP

Go to Config→Network→RTSP.

Select "Enable" to enable RTSP function.

Port: Access port of the streaming media. The default number is 554.

RTSP Address: The RTSP address (unicast) format you need to input in the media player.

Multicast Address

Main stream: The address format is

  "rtsp://IP address: rtsp port/profile1?transportmode=mcast".

Sub stream: The address format is

  "rtsp://IP address: rtsp port/profile2?transportmode=mcast".

Third stream: The address format is

  "rtsp://IP address: rtsp port/profile3?transportmode=mcast".

Audio: Having input the main/sub stream in a VLC player, the video and audio will play automatically.

If you check "Allow anonymous login…", there is no need for you to input the username and password in VLC player.

Note:1. This camera support local play through a VLC player. You can input the RTSP address (unicast or multicast, eg. rtsp://192.168.226.201:554/profile1?transportmode=mcast) in a VLC player to realize the simultaneous play with the web client.

　　2. The IP address mentioned above cannot be the address of IPV6.

　　3. Avoid the use of the same multicast address in the same local network.

　　4. When playing the video through the multicast streams in a VLC player, please pay attention to the mode of the VLC player. If it is set to TCP mode, the video cannot be played.

　　5. If the coding format of the video of the main stream is MJPEG, the video may be disordered at some resolutions.

4.6.8 UPNP

If you enable this function, you can quickly access the camera via LAN and you don't need to configure the port mapping when the camera is connected to the WAN via the router.

Go to Config→Network→UPnP. Enable UPNP and then input UPnP name.

Port	Server	DDNS	SNMP	RTSP	**UPnP**	Email	FTP

☐ Enable

UPnP Name

[Save]

After you enable it and set the UPnP name, you will see the UPnP name by clicking "Network" on the desktop of your computer which is in the same local area network with your camera. Then double click this name to access the camera quickly.

4.6.9 Email

If you need to trigger Email when an alarm happens or IP address is changed, please set the Email here first.
Go to Config→Network →Email.

Port	Server	DDNS	SNMP	RTSP	UPnP	**Email**	FTP

Sender

Sender Address	XXX@126.com
User Name	XXX@126.com
Password	●●●●●
Server Address	smtp.126.com
Secure Connection	Unnecessary
SMTP Port	25 [Default]
☐ Send Interval(S)	0 (0-3600)

[Clear] [Test]

Recipient

XXXX@126.com

Recipient Address	

[Add] [Delete]

[Save]

Sender Address: sender's e-mail address.
User name and password: sender's user name and password.

Server Address: The SMTP IP address or host name.

Select the secure connection type at the "Secure Connection" pull-down list according to actual needs.

SMTP Port: The SMTP port.

Send Interval(S): The time interval of sending email. For example, if it is set to 60 seconds and more than one motion detection alarms are triggered and last within 60 seconds, it will be considered as one alarm event and only one email will be sent. If one motion alarm event is triggered and then another motion detection alarm event is triggered after 60 seconds, there will be two emails sent. When the motion detection alarm and other alarms are triggered at the same time, the emails will be sent separately.

Click "Test" button to test the effectiveness of the account.

Recipient Address: receiver's e-mail address.

4.6.10 FTP

After you set the FTP server, the captured pictures on an alarm will be uploaded to the FTP server.

Go to Config→Network →FTP.

Server Name: The name of the FTP.

Server Address: The IP address or domain name of the FTP.

Upload Path: The path of uploading the files.

Port: The port of the FTP.

Use Name and Password: The username and password are used to login the FTP.

4.6.11 QoS

QoS (Quality of Service) function is used to provide different quality of services for different needs of various network applications. With the deficient bandwidth, the router or switch will sort the data streams and transfer them by priority.
Go to Config→Network→QoS.

Video/Audio DSCP	13
Alarm DSCP	35
Manager DSCP	53

Video/Audio DSCP: The range is from 0 to 63.
Alarm DSCP: The range is from 0 to 63.
Manager DSCP: The range is from 0 to 63.
Generally speaking, the larger the number is, the higher the priority is.

4.7 Security Configuration

4.7.1 User Configuration

Go to Config→Security→User interface as shown below.

Add	Modify	Delete	
Index	**User Name**	**User Type**	**Binding MAC**
1	admin	Administrator	

Add user:
1. Click "Add" button to pop up the following textbox.

Add User	×
User Name	
Password	
Confirm Password	
User Type	Administrator
Bind MAC	00:00:00:00:00:00 ☐
	OK Cancel

2. Input user name in "User Name" textbox.
3. Input letters or numbers in "Password" and "Confirm Password" textbox.
4. Choose the use type. Administrator has all permissions. Common user can only view the

live image. Compared administrator, advanced user cannot set user, backup settings, restore the system to the default factory settings and upgrade the software.

5. Input the MAC address of the PC in "Bind MAC" textbox.

After binding physical address to the IP-CAM, you can access the device on this PC only. If the MAC address was "00:00:00:00:00:00" which means it can be connected to any computers.

6. Click "OK" button and then the new added user will display in the user list.

Modify user:

1. Select the user you need to modify password and physical address in the user configuration list box.

2. The "Edit user" dialog box pops up by clicking "Modify" button.



3. Input old password of this user in the "Old Password" text box.

4. Input new password in the "New password" and "Confirm Password" text box.

5. Input computer's MAC address as required.

6. Click "OK" button to save the settings.

Delete user:

1. Select the user you want to delete in the user configuration list box.

2. Click "Delete" button to delete the user.

Note: The default super administrator cannot be deleted.

4.7.2 Online User

Go to Config→Security→Online User. You can view the user who is viewing the live video.

An administrator user can kick out all the other users (including other administrators).

4.7.3 Block and Allow Lists

Go to Config→Security→Block and Allow Lists interface as shown below.

The setting steps are as follows:

Check "Enable IP address filtering" check box.

Select "Block the following IP address", input IP address in the IP address list box and click "Add" button. The operation step of "Allow the following IP address" and MAC address filter settings are the same with "Block the following IP address".

After you set the IP address or MAC address, the system will block or allow the user using the added IP address or MAC address to access the camera.

4.8 Maintenance Configuration

4.8.1 Backup and Restore

Go to Config→Maintenance→Backup & Restore.

● **Import & Export Settings**

You can import or export the setting information from PC or to device.

1. Click "Browse" to select save path for import or export information on PC.

2. Click "Import Setting" or "Export Setting" button.

● **Default Settings**

You can choose the configurations you don't want to restore to the factory default settings first. Then click "Load Default" button to restore all system settings to the default status except the items you check.

4.8.2 Reboot

Go to Config→Maintenance→Reboot.

Click "Reboot" button to reboot the device.

Timed Reboot Setting:

Enable "Time Settings", set the date and time and then click "Save" button to save the settings.

4.8.3 Upgrade

Go to Config→Maintenance→Upgrade. In this interface, you can upgrade the system.

1. Click "Browse" button to select the save path of the upgrade file
2. Click "Upgrade" button to start upgrading the application program.
3. The device will restart automatically
4. After you successfully update the software, click "OK" button to close IE and then re-open IE to connect IP-Cam.
Caution! You can't disconnect to PC or close the IP-CAM during upgrade.

4.8.4 Operation Log

To query and export log:
1. Go to Config→Maintenance→Operation Log.

Main Type: All log	Sub Type: All log				
Start Time: 2015-07-14 00:00:00	End Time: 2015-07-14 23:59:59			Search	Export
Index	**Time**	**Main Type**	**Sub Type**	**User Name**	**Login IP**
1	2015-07-14 11:15:18	Operation	Log in	admin	192.168.12.53
2	2015-07-14 11:12:02	Exception	Disconnected		192.168.12.53
3	2015-07-14 19:12:17	Exception	Disconnected		192.168.12.52

2. Select the main type, sub type, start and end time.
3. Click "Search" to view the operation log.
4. Click "Export" to export the operation log.

5.1 Photo Search

Click Search→Photo to go to the interface as shown below. You can search the images saved both in the local computer and the SD card.

Note: If your camera doesn't support SD card, please skip the instructions of SD card image search.
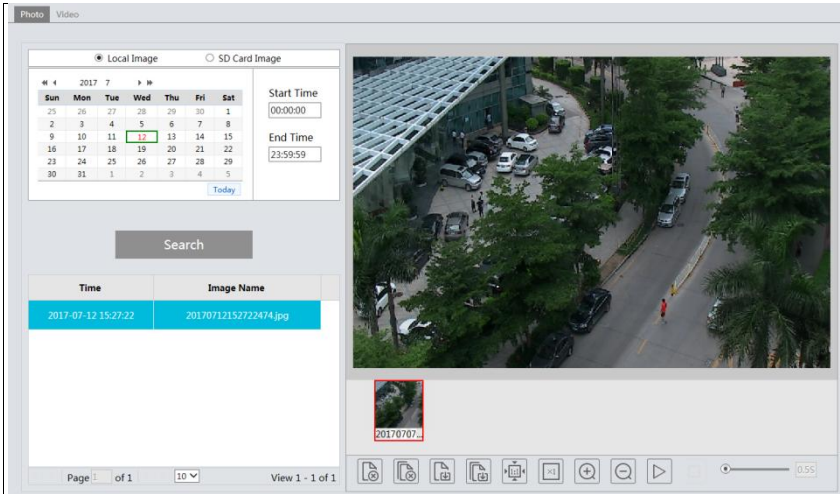
● **Local Image Search**
1.   Choose "Local Image".
2.   Set time: Select date and choose the start and end time in the top left corner.
3.   Click "Search" button to search the photos.
4.   Double click a file name in the list to view the captured photos as shown above.

● **SD Card Image Search**
1.   Choose "SD Card Image".
2.   Set time: Select date and choose the start and end time in the top left corner.
3.   Choose the alarm events by clicking   button.
4.   Click "Search".
5.   Double click a file name in the list to view the captured photos as shown below.
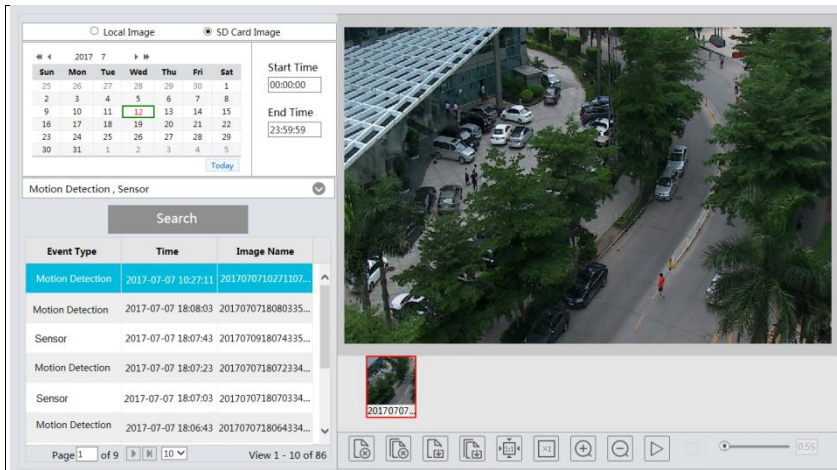
The descriptions of the buttons are shown as follows.

| Icon	Description	Icon	Description
🗗	Close: Select a picture and click this button to close this picture.	🗗	Close all: Click this button to close all pictures viewing.
🗗	Save: Click this button to select the save path of the picture on the PC for saving the current picture.	🗗	Save all: Click this button to select the save path of the pictures on PC for saving all pictures.
⬍1:1⬍	Fit size: The picture will fit on screen by clicking this button.	×1	Actual size: Click this button to display the actual size of the picture.
⊕	Zoom in: Click this button to amplify the picture.	⊖	Zoom out: Click this button to zoom out the picture.
▷	Slide show play: Click this button to play the picture in slide show mode.	□	Stop: Click this button to stop slide show.
⊙ 5.5S	Play speed: Play speed of the slide show.		

5.2 Video Search

5.2.1 Local Video Search

Click Search→Video→Local Video to go to the interface as shown below. Before playing the local video, please set the storage path of the video record in the local configuration interface and make sure there are record files.
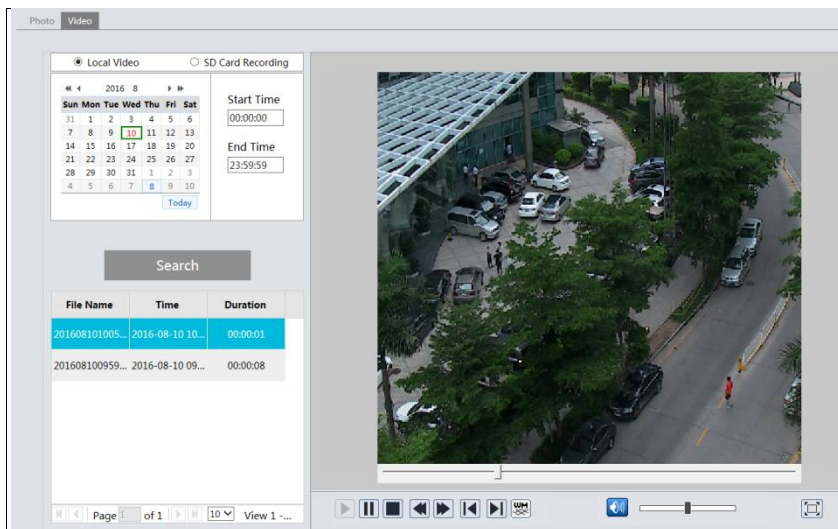
Choose the date and the start time and end time and then click "Search" button to search the record files. Double click the record file to play the record. The descriptions of the buttons on the playback interface are as follows.

Icon	Description	Icon	Description
▶	Play button. After pausing the video, click this button to continue playing.	⏸	Pause button.
⏹	Stop button.	◀◀	Speed down.
▶▶	Speed up.	◀⎮	Click it to play the previous record.
⎮▶	Click it to play the next record.	WM	Open/close watermark.
🔊 ──────■─────	Click it to enable / disable audio; drag the slider to adjust the volume after enabling audio.	⌗	Full screen. Click it to display full screen. Double click to exit full screen.

5.2.2 SD Card Video Search

Click Search→Video→SD Card Recording to go to the interface as shown below. You can search the record saved in the SD card.

Note: If your camera doesn't support SD card, please skip the instructions of SD card video search.
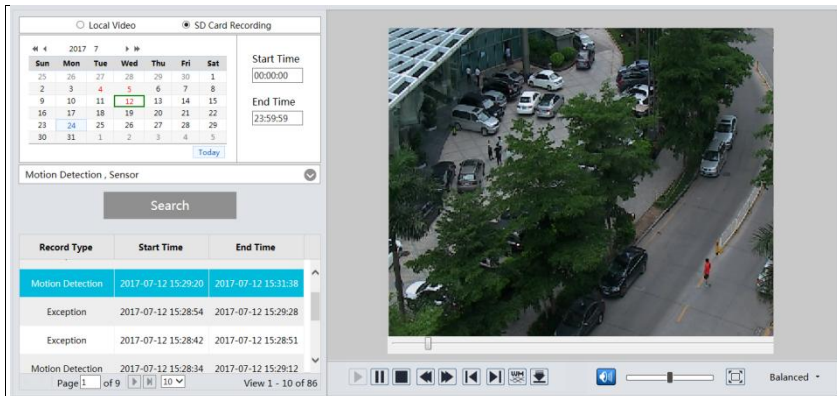
Before you search the SD record, you should trigger the SD recording in motion detection alarm or other alarms (see the relevant alarm trigger for detail information).

Set the date and the start and end time, select the record type and then click "Search" button to search the record. Double click the searched file name to play the record.

Please refer to Local Video Search for the descriptions of the buttons on the playback interface.

Click ⬇ button to download the record saved in the SD card.

Appendix 1 Q & A

Q: How to find my password if I forget it?
A：Reset the device to the default factory settings.
Default IP: 192.168.226.201; User name: admin; Password: 123456

Q：Fail to connect devices through IE browser, why?

A: Network is not well connected. Check the connection and make sure it is connected well.
B: IP is not available. Reset the valid IP.
C: Web port number has been revised: contact administrator to get the correct port number.
D: Exclude the above reasons. Recover default setting by IP-Tool.

Q：IP tool cannot search devices, why?

A：It may be caused by the anti-virus software in your computer. Please exit it and try to search device again.

Q：IE cannot download ActiveX control. How can I do?

a. IE browser blocks ActiveX. Please do setup as below.
① Open IE browser and then click Tools-----Internet Options….
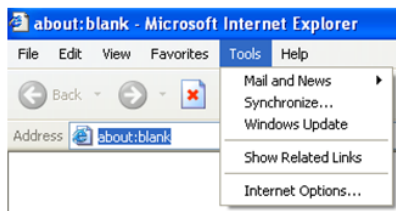
② Select Security------Custom Level….
③ Enable all the sub options under "ActiveX controls and plug-ins".
④ Then click OK to finish setup.
b. Other plug-ins or anti-virus blocks ActiveX. Please uninstall or close them.
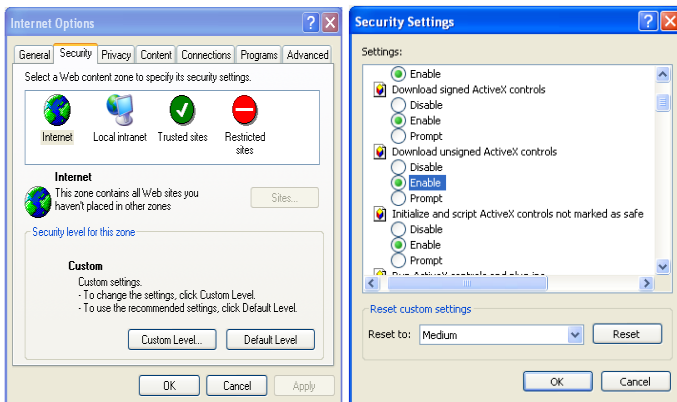
Q：No sound can be heard, why?

A：Audio input device is not connected. Please connect and try again.

B: Audio function is not enabled at the corresponding channel. Please enable this function.

Appendix 2 Installation of Water-proof Rubber Plug

In order to improve the water-proof effect, the rubber plugs are attached to some network cameras. You may mount the rubber plugs to the mounting base of the camera as requried when installing. The installation instructions are as follows.
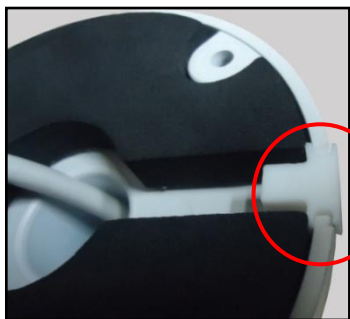
Please mount the rubber plug to the gap of the mounting base.
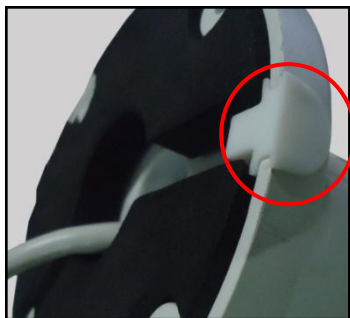
Please let the camber surface of the rubber plug mount outside.

Appendix 3 Specifications

Specification /Model		Network Box Camera
Camera	Image Sensor	1/3 " CMOS
	Image Size	2688×1520
	Electronic Shutter	1/25s~1/100000s
	Iris Type	Fixed Iris
	Min. llumination	0.05lux@F1.2, AGC ON: 0lux with IR
	Lens Mount	C/CS
	Day&Night	ICR
	WDR	120dB
	BLC	Support
	HLC	Support
	Defog	Support
	Digital NR	3D DNR
Image	Video Compression	H.265/H.264/MJPEG
	H.265 Type	Main Profile @Leve4.1 High Tier
	Video Bit Rate	128Kbps~10Mbps
	Resolution	4MP (2592 ×1520). 2K(2560×1440), 3MP(2304×1296), 1080P, 720P, D1, CIF, 480×240
	Main Stream	60Hz: 4MP(1~30fps)/ 2K(1~30fps)/3MP(1~30fps)/ 1920×1080(1~30fps)/1280×720(1~30fps) 50Hz: 4MP (1~25fps)/ 2K (1~25fps)/3MP(1~25fps)/1920×1080(1~25fps)/1280×720(1~25fps)
	Image Settings	Saturation, Brightness, Chroma, Contrast, Wide Dynamic, Sharpen, NR, etc. adjustable through client or web browser
	ROI	Support
Interfaces	Network	RJ45
	Video	CVBS output (BNC ×1)
	Auido	MIC IN×1; MIC OUT×1
	Storage	Support SD card, up to 128 GB
	RS485	Support
	Alarm	1CH alarm input; 1 CH alarm output
Fucntion	Remote Monitoring	IE browser, CMS remote control
	Online Connection	Support simultaneous monitoring for up to10 users and multi-stream transmission
	Network Protocol	TCP/IP, UDP, DHCP, NTP, RTSP, PPPoE, DDNS, SMTP, FTP
	Interface Protocol	ONVIF, GB-T/28181-2011
	Storge	SD card storage; network remote storage
	Smart Alarm	Motion alarm; sensor alarm
	Power	DC12V/AC24V/PoE
	Power Consumption	< 2.5W
	Opterating Environment	Temperature: -20 ℃~50 ℃; Relative humidity: 10%~90%
	Dimension (mm)	70×145×60 (W ×D ×H)
	Weight（net）	400g
	Installation	Wall mounting

Specification /Model		IR Water-proof Bullet Network Camera	IR Water-proof Bullet Network Camera
Camera	Image Sensor	1/3 " CMOS	
	Image Size	2688×1520	
	Electronic Shutter	1/25s~1/100000s	
	Iris Type	Fixed Iris	
	Min. llumination	0.05lux@F1.2, AGC ON: 0 lux with IR	
	Lens	3.6mm@F1.6, horizontal field of view: 72 °(2.8mm, 6mm optional)	
	Lens Mount	M12	
	Day&Night	ICR	
	WDR	120dB	
	BLC	Support	
	HLC	Support	
	Defog	Support	
	Digital NR	3D DNR	
	Angle Adjustment	Any angle	
Image	Video Compression	H.265/H.264/MJPEG	
	H.265 Type	Main Profile @Leve4.1 High Tier	
	Video Bit Rate	128Kbps~10Mbps	
	Resolution	4MP (2592 ×1520). 2K(2560×1440), 3MP(2304×1296), 1080P, 720P, D1, CIF, 480×240	
	Main Stream	60Hz: 4MP(1~30fps)/ 2K(1~30fps)/3MP(1~30fps)/ 1920×1080(1~30fps)/ 1280×720(1~30fps) 50Hz: 4MP (1~25fps)/ 2K (1~25fps)/3MP(1~25fps)/1920×1080(1~25fps)/ 1280×720(1~25fps)	
	Image Settings	Saturation, Brightness, Chroma, Contrast, Wide Dynamic, Sharpen, NR, etc. adjustable through client or web browser	
	ROI	Support	
Interfaces	Network	RJ45	
	Video	CVBS output (BNC ×1)	
	Auido	MIC IN×1	
Fucntion	Remote Monitoring	IE browser, CMS remote control	
	Online Connection	Support simultaneous monitoring for up to10 users and multi-stream transmission	
	Network Protocol	TCP/IP, UDP, DHCP, NTP, RTSP, PPPoE, DDNS, SMTP, FTP	
	Interface Protocol	ONVIF, GB-T/28181-2011	
	Storge	Network remote storage	
	Smart Alarm	Motion alarm	
Others	IR Distance	10~20 m	
	Protection Grade	IP66	
	Power	DC12V/PoE	
	Power Consumption	< 6W	
	Opterating Environment	Temperature: -20 ℃~50 ℃; Relative humidity: 10%~90%	
	Dimension (mm)	Ø64mm×183mm	Ø70mm×156mm
	Weight（net）	383g	368g
	Installation	Wall mounting; pendent mounting	

Specification /Model		IR Water-proof Bullet Network Camera			IR Water-proof Bullet Network Camera		
Camera	Image Sensor	1/3 " CMOS					
	Image Size	2688×1520					
	Electronic Shutter	1/25s~1/100000s					
	Iris Type	Fixed Iris					
	Min. llumination	0.05lux@F1.2, AGC ON: 0lux with IR					
	Lens	6mm@F1.6, horizontal field of view: 50°; (2.8mm, 6mm,8mm optional)		3.3~12mm @F1.4, horizontal field of view: 80°~38°	6mm@F1.6, horizontal field of view: 50°; (2.8mm, 6mm,8mm optional)		3.3~12mm@F1.4, horizontal field of view: 80°~38°	
	Lens Mount	M12		Ø14	M12		Ø14	
	Day&Night	ICR					
	WDR	120dB					
	BLC	Support					
	HLC	Support					
	Defog	Support					
	Digital NR	3D DNR					
	Angle Adjustment	Any angle					
Image	Video Compression	H.265/H.264/MJPEG					
	H.265 Type	Main Profile @Leve4.1 High Tier					
	Video Bit Rate	128Kbps~10Mbps					
	Resolution	4MP (2592 ×1520). 2K(2560×1440), 3MP(2304×1296), 1080P, 720P, D1, CIF, 480×240						
	Main Stream	60Hz: 4MP(1~30fps)/ 2K(1~30fps)/3MP(1~30fps)/ 1920×1080(1~30fps)/ 1280×720(1~30fps) 50Hz: 4MP (1~25fps)/ 2K (1~25fps)/3MP(1~25fps)/1920×1080(1~25fps)/ 1280×720(1~25fps)						
	Image Settings	Saturation, Brightness, Chroma, Contrast, Wide Dynamic, Sharpen, NR, etc. adjustable through client or web browser						
	ROI	Support					
Interfaces	Network	RJ45					
	Video	CVBS output (BNC ×1)					
	Auido	MIC IN×1					
Fucntion	Remote Monitoring	IE browser, CMS remote control					
	Online Connection	Support simultaneous monitoring for up to10 users and multi-stream transmission					
	Network Protocol	TCP/IP, UDP, DHCP, NTP, RTSP, PPPoE, DDNS, SMTP, FTP					
	Interface Protocol	ONVIF, GB-T/28181-2011					
	Storge	Network remote storage					
	Smart Alarm	Motion alarm					
Others	IR Distance	20~30 m					
	Protection Grade	IP66					
	Power	DC12V/PoE					
	Power Consumption	< 6W					
	Opterating Environment	Temperature: -20℃~50℃; Relative humidity: 10%~90%					
	Dimension (mm)	Ø87mm×219mm			Ø87mm×221mm			
	Weight（net）	609g			650g			
	Installation	Wall mounting; pendent mounting					

Specification /Model		IR Water-proof Bullet Network Camera	IR Water-proof Bullet Network Camera
Camera	Image Sensor	1/3 " CMOS	
	Image Size	2688×1520	
	Electronic Shutter	1/25s~1/100000s	
	Iris Type	Fixed Iris	
	Min. llumination	0.05lux@F1.2, AGC ON: 0lux with IR	
	Lens	3.3~12mm@F1.4, horizontal field of view: 80°~38°	
	Lens Mount	Ø14	
	Day&Night	ICR	
	WDR	120dB	
	BLC	Support	
	HLC	Support	
	Defog	Support	
	Digital NR	3D DNR	
	Angle Adjustment	Any angle	
Image	Video Compression	H.265/H.264/MJPEG	
	H.265 Type	Main Profile @Leve4.1 High Tier	
	Video Bit Rate	128Kbps~10Mbps	
	Resolution	4MP (2592 ×1520). 2K(2560×1440), 3MP(2304×1296), 1080P, 720P, D1, CIF, 480×240	
	Main Stream	60Hz: 4MP(1~30fps)/ 2K(1~30fps)/3MP(1~30fps)/ 1920×1080(1~30fps)/1280×720(1~30fps) 50Hz: 4MP (1~25fps)/ 2K (1~25fps)/3MP(1~25fps)/1920×1080(1~25fps)/1280×720(1~25fps)	
	Image Settings	Saturation, Brightness, Chroma, Contrast, Wide Dynamic, Sharpen, NR, etc. adjustable through client or web browser	
	ROI	Support	
Interfaces	Network	RJ45	
	Video	CVBS output (BNC ×1)	
	Auido	MIC IN×1; MIC OUT×1	
	Storage	Support TF card, up to 128 GB	
	RS485	Support	
	Alarm	1CH alarm input; 1 CH alarm output	
Fucntion	Remote Monitoring	IE browser, CMS remote control	
	Online Connection	Support simultaneous monitoring for up to10 users and multi-stream transmission	
	Network Protocol	TCP/IP, UDP, DHCP, NTP, RTSP, PPPoE, DDNS, SMTP, FTP	
	Interface Protocol	ONVIF, GB-T/28181-2011	
	Storge	TF card storage; network remote storage	
	Smart Alarm	Motion alarm; sensor alarm	
Others	IR Distance	30~50 m	
	Protection Grade	IP66	
	Power	DC12V/PoE	
	Power Consumption	< 7W	
	Opterating Environment	Temperature: -20℃~50℃; Relative humidity: 10%~90%	
	Dimension (mm)	Ø109mm×284mm	Ø110mm×294mm
	Weight（net）	1115g	1180g
	Installation	Wall mounting; pendent mounting	

Specification /Model		IR Water-proof Bullet Network Camera
Camera	Image Sensor	1/3 " CMOS
	Image Size	2688×1520
	Electronic Shutter	1/25s~1/100000s
	Iris Type	Fixed Iris
	Min. llumination	0.05lux@F1.2, AGC ON: 0lux with IR
	Lens	9~22mm@F1.4, horizontal field of view: 29.5°~16.2°
	Lens Mount	Ø14
	Day&Night	ICR
	WDR	120dB
	BLC	Support
	HLC	Support
	Defog	Support
	Digital NR	3D DNR
	Angle Adjustment	Any angle
Image	Video Compression	H.265/H.264/MJPEG
	H.265 Type	Main Profile @Leve4.1 High Tier
	Video Bit Rate	128Kbps~10Mbps
	Resolution	4MP (2592 ×1520). 2K(2560×1440), 3MP(2304×1296), 1080P, 720P, D1, CIF, 480×240
	Main Stream	60Hz: 4MP(1~30fps)/ 2K(1~30fps)/3MP(1~30fps)/ 1920×1080(1~30fps)/1280×720(1~30fps)
		50Hz: 4MP (1~25fps)/ 2K (1~25fps)/3MP(1~25fps)/1920×1080(1~25fps)/1280×720(1~25fps)
	Image Settings	Saturation, Brightness, Chroma, Contrast, Wide Dynamic, Sharpen, NR, etc. adjustable through client or web browser
	ROI	Support
Interfaces	Network	RJ45
	Video	CVBS output (BNC ×1)
	Auido	MIC IN×1; MIC OUT×1
	Storage	Support SD card, up to 128 GB
	RS485	Support
	Alarm	1CH alarm input; 1 CH alarm output
Fucntion	Remote Monitoring	IE browser, CMS remote control
	Online Connection	Support simultaneous monitoring for up to10 users and multi-stream transmission
	Network Protocol	TCP/IP, UDP, DHCP, NTP, RTSP, PPPoE, DDNS, SMTP, FTP
	Interface Protocol	ONVIF, GB-T/28181-2011
	Storge	SD card storage; network remote storage
	Smart Alarm	Motion alarm; sensor alarm
Others	IR Distance	70~100 m
	Protection Grade	IP66
	Power	DC12V/PoE
	Power Consumption	< 16W
	Opterating Environment	Temperature: -20 ℃~50 ℃; Relative humidity: 10%~90%
	Dimension (mm)	Ø109mm×360mm
	Weight（net）	1700g
	Installation	Wall mounting; pendent mounting

Specification /Model		Water-proof IR Bullet Network Camera		
Camera	Image Sensor	1/3 " CMOS		
	Image Size	2688×1520		
	Electronic Shutter	1/25s~1/100000s		
	Iris Type	Fixed Iris		
	Min. llumination	0.05lux@F1.2, AGC ON: 0lux with IR		
	Lens	6mm@F1.6, horizontal field of view: 49 °; (3.6mm,8mm optional)		
	Lens Mount	M12		
	Day&Night	ICR		
	WDR	120dB		
	BLC	Support		
	HLC	Support		
	Defog	Support		
	Digital NR	3D DNR		
Image	Video Compression	H.265/H.264/MJPEG		
	H.265 Type	Main Profile @Leve4.1 High Tier		
	Video Bit Rate	128Kbps~10Mbps		
	Resolution	4MP (2592 ×1520). 2K(2560×1440), 3MP(2304×1296), 1080P, 720P, D1, CIF, 480×240		
	Main Stream	60Hz: 4MP(1~30fps)/ 2K(1~30fps)/3MP(1~30fps)/ 1920×1080(1~30fps)/ 1280×720(1~30fps) 50Hz: 4MP (1~25fps)/ 2K (1~25fps)/3MP(1~25fps)/1920×1080(1~25fps)/ 1280×720(1~25fps)		
	Image Settings	Saturation, Brightness, Chroma, Contrast, Wide Dynamic, Sharpen, NR, etc. adjustable through client or web browser		
	ROI	Support		
Interfaces	Network	RJ45		
	Video	CVBS output (BNC ×1)		
	Auido	MIC IN ×1		
Fucntion	Remote Monitoring	IE browser, CMS remote control		
	Online Connection	Support simultaneous monitoring for up to10 users and multi-stream transmission		
	Network Protocol	TCP/IP, UDP, DHCP, NTP, RTSP, PPPoE, DDNS, SMTP, FTP		
	Interface Protocol	ONVIF, GB-T/28181-2011		
	Storge	Network remote storage		
	Smart Alarm	Motion alarm		
Others	IR Distance	20~30 m	30~50 m	70~100 m
	Protection Grade	IP66		
	Power	DC12V		
	Power Consumption	< 4.5W	< 5.5W	< 7W
	Opterating Environment	Temperature: -20 ℃~50 ℃; Relative humidity: 10%~90%		
	Dimension (mm)	W99mm ×D188mm ×H86mm		
	Weight（net）	429g		
	Installation	Wall mounting; pendent mounting		

Specification /Model		Water-proof Mini Dome Network Camera	IR Water-proof Dome Network Camera
Camera	Image Sensor	1/3 " CMOS	
	Image Size	2688×1520	
	Electronic Shutter	1/25s~1/100000s	
	Iris Type	Fixed Iris	
	Min. llumination	0.05lux@F1.2, AGC ON: 0lux with IR	
	Lens	3.6mm@F1.6, horizontal field of view: 72°(2.8mm, 6mmoptional)	
	Lens Mount	M12	
	Day&Night	ICR	
	WDR	120dB	
	BLC	Support	
	HLC	Support	
	Defog	Support	
	Digital NR	3D DNR	
	Angle Adjustment	Pan: 0°~355°; Tilt: 0°~65°; Rotation: 0°~355°	Pan: 0°~355°; Tilt: 0°~67°; Rotation: 0°~355°
Image	Video Compression	H.265/H.264/MJPEG	
	H.265 Type	Main Profile @Leve4.1 High Tier	
	Video Bit Rate	128Kbps~10Mbps	
	Resolution	4MP (2592 ×1520). 2K(2560×1440), 3MP(2304×1296), 1080P, 720P, D1, CIF, 480×240	
	Main Stream	60Hz: 4MP(1~30fps)/ 2K(1~30fps)/3MP(1~30fps)/ 1920×1080(1~30fps)/ 1280×720(1~30fps) 50Hz: 4MP (1~25fps)/ 2K (1~25fps)/3MP(1~25fps)/1920×1080(1~25fps)/ 1280×720(1~25fps)	
	Image Settings	Saturation, Brightness, Chroma, Contrast, Wide Dynamic, Sharpen, NR, etc. adjustable through client or web browser	
	ROI	Support	
Interfaces	Network	RJ45	
	Video	CVBS output (BNC ×1)	
	Auido	MIC IN×1	
Fucntion	Remote Monitoring	IE browser, CMS remote control	
	Online Connection	Support simultaneous monitoring for up to10 users and multi-stream transmission	
	Network Protocol	TCP/IP, UDP, DHCP, NTP, RTSP, PPPoE, DDNS, SMTP, FTP	
	Interface Protocol	ONVIF, GB-T/28181-2011	
	Storge	Network remote storage	
	Smart Alarm	Motion alarm	
Others	IR Distance	10~20 m	
	Protection Grade	IP66&IK10	
	Power	DC12V/PoE	
	Power Consumption	< 4W	
	Opterating Environment	Temperature: -20℃~50℃; Relative humidity: 10%~90%	
	Dimension (mm)	Ø116mm×91mm	Ø117mm×90mm
	Weight（net）	605g	
	Installation	Pendent mounting (wall mounting available with junction box and bracket)	

Specification /Model		Water-proof Mini Dome Network Camera	
Camera	Image Sensor	1/3 " CMOS	
	Image Size	2688×1520	
	Electronic Shutter	1/25s~1/100000s	
	Iris Type	Fixed Iris	
	Min. llumination	0.05lux@F1.2, AGC ON: 0lux with IR	
	Lens	3.6mm@F1.6, horizontal field of view: 72 °(6mm, 8mmoptional)	3.3~12mm@F1.4, horizontal field of view: 80 °~38 °
	Lens Mount	M12	Ø14
	Day&Night	ICR	
	WDR	120dB	
	BLC	Support	
	HLC	Support	
	Defog	Support	
	Digital NR	3D DNR	
	Angle Adjustment	Pan: 0 °~360 °; Tilt: 0 °~77 °; Rotation: 0 °~360 °	
Image	Video Compression	H.265/H.264/MJPEG	
	H.265 Type	Main Profile @Leve4.1 High Tier	
	Video Bit Rate	128Kbps~10Mbps	
	Resolution	4MP (2592 ×1520). 2K(2560×1440), 3MP(2304×1296), 1080P, 720P, D1, CIF, 480×240	
	Main Stream	60Hz: 4MP(1~30fps)/ 2K(1~30fps)/3MP(1~30fps)/ 1920×1080(1~30fps)/ 1280×720(1~30fps) 50Hz: 4MP (1~25fps)/ 2K (1~25fps)/3MP(1~25fps)/1920×1080(1~25fps)/ 1280×720(1~25fps)	
	Image Settings	Saturation, Brightness, Chroma, Contrast, Wide Dynamic, Sharpen, NR, etc. adjustable through client or web browser	
	ROI	Support	
Interfaces	Network	RJ45	
	Video	CVBS output (BNC ×1)	
	Auido	MIC IN×1	
	Storage	TF card storage, up to 128GB	
Fucntion	Remote Monitoring	IE browser, CMS remote control	
	Online Connection	Support simultaneous monitoring for up to10 users and multi-stream transmission	
	Network Protocol	TCP/IP, UDP, DHCP, NTP, RTSP, PPPoE, DDNS, SMTP, FTP	
	Interface Protocol	ONVIF, GB-T/28181-2011	
	Storge	Network remote storage	
	Smart Alarm	Motion alarm	
Others	IR Distance	20~30 m	
	Protection Grade	IP54	
	Power	DC12V/PoE	
	Power Consumption	< 6W	
	Opterating Environment	Temperature: -10 ℃~40 ℃; Relative humidity: 10%~90%	
	Dimension (mm)	Ø122mm×96mm	
	Weight（net）	336g	
	Installation	Pendent mounting (wall mounting available with junction box and bracket)	

Specification /Model		IR Water-proof Dome Network Camera	IR Water-proof Dome Network Camera
Camera	Image Sensor	1/3 " CMOS	
	Image Size	2688×1520	
	Electronic Shutter	1/25s~1/100000s	
	Iris Type	Fixed Iris	
	Min. llumination	0.05lux@F1.2, AGC ON: 0lux with IR	
	Lens	3.3~12mm@F1.4, horizontal field of view: 80 °~38 °	
	Lens Mount	Ø14	
	Day&Night	ICR	
	WDR	120dB	
	BLC	Support	
	HLC	Support	
	Defog	Support	
	Digital NR	3D DNR	
	Angle Adjustment	Pan: 0 °~360 °; Tilt: 0 °~77 °; Rotation:0 °~360 °	
Image	Video Compression	H.265/H.264/MJPEG	
	H.265 Type	Main Profile @Leve4.1 High Tier	
	Video Bit Rate	128Kbps~10Mbps	
	Resolution	4MP (2592 ×1520). 2K(2560×1440), 3MP(2304×1296), 1080P, 720P, D1, CIF, 480×240	
	Main Stream	60Hz: 4MP(1~30fps)/ 2K(1~30fps)/3MP(1~30fps)/ 1920×1080(1~30fps)/1280×720(1~30fps) 50Hz: 4MP (1~25fps)/ 2K (1~25fps)/3MP(1~25fps)/1920×1080(1~25fps)/1280×720(1~25fps)	
	Image Settings	Saturation, Brightness, Chroma, Contrast, Wide Dynamic, Sharpen, NR, etc. adjustable through client or web browser	
	ROI	Support	
Interfaces	Network	RJ45	
	Video	CVBS output (BNC ×1)	
	Auido	MIC IN×1; MIC OUT×1	
	Storage	Support TF card, up to 128 GB	
	RS485	Support	
	Alarm	1CH alarm input; 1 CH alarm output	
Fucntion	Remote Monitoring	IE browser, CMS remote control	
	Online Connection	Support simultaneous monitoring for up to10 users and multi-stream transmission	
	Network Protocol	TCP/IP, UDP, DHCP, NTP, RTSP, PPPoE, DDNS, SMTP, FTP	
	Interface Protocol	ONVIF, GB-T/28181-2011	
	Storge	TF card storage; network remote storage	
	Smart Alarm	Motion alarm; sensor alarm	
Others	IR Distance	20~30 m	
	Protection Grade	IP66&IK10	
	Power	DC12V/PoE	
	Power Consumption	< 2.5W(ICR OFF); < 5W(ICR ON)	
	Opterating Environment	Temperature: -20 ℃~50 ℃; Relative humidity: 10%~90%	
	Dimension (mm)	Ø150mm×114mm	Ø161mm×137.3 mm
	Weight（net）	1030g	1260g
	Installation	Pendent mounting (wall mounting available with junction box and bracket)	

Specification /Model		IR Water-proof Dome Network Camera	IR Water-proof Dome Network Camera
Camera	Image Sensor	1/3 ″ CMOS	
	Image Size	2688×1520	
	Electronic Shutter	1/25s~1/100000s	
	Iris Type	Fixed Iris	
	Min. llumination	0.05lux@F1.2, AGC ON: 0 lux with IR	
	Lens	3.6mm@F1.6, horizontal field of view: 72 °(2.8mm, 6mmoptional)	
	Lens Mount	M12	
	Day&Night	ICR	
	WDR	120dB	
	BLC	Support	
	HLC	Support	
	Defog	Support	
	Digital NR	3D DNR	
	Angle Adjustment	Any angle	
Image	Video Compression	H.265/H.264/MJPEG	
	H.265 Type	Main Profile @Leve4.1 High Tier	
	Video Bit Rate	128Kbps~10Mbps	
	Resolution	4MP (2592 ×1520). 2K(2560×1440), 3MP(2304×1296), 1080P, 720P, D1, CIF, 480×240	
	Main Stream	60Hz: 4MP(1~30fps)/ 2K(1~30fps)/3MP(1~30fps)/ 1920×1080(1~30fps)/ 1280×720(1~30fps) 50Hz: 4MP (1~25fps)/ 2K (1~25fps)/3MP(1~25fps)/1920×1080(1~25fps)/ 1280×720(1~25fps)	
	Image Settings	Saturation, Brightness, Chroma, Contrast, Wide Dynamic, Sharpen, NR, etc. adjustable through client or web browser	
	ROI	Support	
Interfaces	Network	RJ45	
	Video	CVBS output (BNC ×1)	
	Auido	MIC IN×1	
Fucntion	Remote Monitoring	IE browser, CMS remote control	
	Online Connection	Support simultaneous monitoring for up to10 users and multi-stream transmission	
	Network Protocol	TCP/IP, UDP, DHCP, NTP, RTSP, PPPoE, DDNS, SMTP, FTP	
	Interface Protocol	ONVIF, GB-T/28181-2011	
	Storge	Network remote storage	
	Smart Alarm	Motion alarm	
Others	IR Distance	10~20 m	
	Protection Grade	IP66	
	Power	DC12V(PoE power supply optional)	
	Power Consumption	< 5W	
	Opterating Environment	Temperature: -20 ℃~50 ℃; Relative humidity: 10%~90%	
	Dimension (mm)	Ø87mm×108mm	Ø84.3mm×94.6mm
	Weight（net）	427g	443g
	Installation	Pendent mounting (wall mounting available with junction box and bracket)	

Specification /Model		IR Water-proof Dome Network Camera	IR Water-proof Dome Network Camera
Camera	Image Sensor	1/3 " CMOS	
	Image Size	2688×1520	
	Electronic Shutter	1/25s~1/100000s	
	Iris Type	Fixed Iris	
	Min. llumination	0.05lux@F1.2, AGC ON: 0 lux with IR	
	Lens	3.3~12mm@F1.4, horizontal field of view: 80°~38°	
	Lens Mount	Ø14	
	Day&Night	ICR	
	WDR	120dB	
	BLC	Support	
	HLC	Support	
	Defog	Support	
	Digital NR	3D DNR	
	Angle Adjustment	Any angle	
Image	Video Compression	H.265/H.264/MJPEG	
	H.265 Type	Main Profile @Leve4.1 High Tier	
	Video Bit Rate	128Kbps~10Mbps	
	Resolution	4MP (2592 ×1520). 2K(2560×1440), 3MP(2304×1296), 1080P, 720P, D1, CIF, 480×240	
	Main Stream	60Hz: 4MP(1~30fps)/ 2K(1~30fps)/3MP(1~30fps)/ 1920×1080(1~30fps)/ 1280×720(1~30fps) 50Hz: 4MP (1~25fps)/ 2K (1~25fps)/3MP(1~25fps)/1920×1080(1~25fps)/ 1280×720(1~25fps)	
	Image Settings	Saturation, Brightness, Chroma, Contrast, Wide Dynamic, Sharpen, NR, etc. adjustable through client or web browser	
	ROI	Support	
Interfaces	Network	RJ45	
	Video	CVBS output (BNC ×1)	
	Auido	MIC IN×1	
Fucntion	Remote Monitoring	IE browser, CMS remote control	
	Online Connection	Support simultaneous monitoring for up to10 users and multi-stream transmission	
	Network Protocol	TCP/IP, UDP, DHCP, NTP, RTSP, PPPoE, DDNS, SMTP, FTP	
	Interface Protocol	ONVIF, GB-T/28181-2011	
	Storge	Network remote storage	
	Smart Alarm	Motion alarm	
Others	IR Distance	20~30 m	
	Protection Grade	IP66	
	Power	DC12V/PoE	
	Power Consumption	< 5.5W	
	Opterating Environment	Temperature: -20℃~50℃; Relative humidity: 10%~90%	
	Dimension (mm)	Ø109mm×130mm	Ø120.4mm×102.5mm
	Weight（net）	689g	736g
	Installation	Pendent mounting (wall mounting available with junction box and bracket)	

Specification /Model		IR Water-proof Dome Network Camera
Camera	Image Sensor	1/3 " CMOS
	Image Size	2688×1520
	Electronic Shutter	1/25s~1/100000s
	Iris Type	Fixed Iris
	Min. llumination	0.05lux@F1.2, AGC ON: 0 lux with IR
	Lens	3.6mm@F1.6 , horizontal field of view: 85 °(2.8mm optional)
	Lens Mount	M12
	Day&Night	ICR
	WDR	120dB
	BLC	Support
	HLC	Support
	Defog	Support
	Digital NR	3D DNR
	Angle Adjustment	Pan: 0 °~360 °, Tilt: 0 °~70 °; Rotation: 0 °~350 °
Image	Video Compression	H.265/H.264/MJPEG
	H.265 Type	Main Profile @Leve4.1 High Tier
	Video Bit Rate	128Kbps~10Mbps
	Resolution	4MP (2592 ×1520). 2K(2560×1440), 3MP(2304×1296), 1080P, 720P, D1, CIF, 480×240
	Main Stream	60Hz: 4MP(1~30fps)/ 2K(1~30fps)/3MP(1~30fps)/ 1920×1080(1~30fps)/ 1280×720(1~30fps) 50Hz: 4MP (1~25fps)/ 2K (1~25fps)/3MP(1~25fps)/1920×1080(1~25fps)/ 1280×720(1~25fps)
	Image Settings	Saturation, Brightness, Chroma, Contrast, Wide Dynamic, Sharpen, NR, etc. adjustable through client or web browser
	ROI	Support
Interfaces	Network	RJ45
	Video	CVBS output (BNC ×1)
	Auido	MIC IN×l
	Storage	TF card storage, up to 128GB
Fucntion	Remote Monitoring	IE browser, CMS remote control
	Online Connection	Support simultaneous monitoring for up to10 users and multi-stream transmission
	Network Protocol	TCP/IP, UDP, DHCP, NTP, RTSP, PPPoE, DDNS, SMTP, FTP
	Interface Protocol	ONVIF, GB-T/28181-2011
	Storge	Network remote storage; TF card storage
	Smart Alarm	Motion alarm
Others	IR Distance	0~10 m
	Protection Grade	IP66
	Power	DC12V/PoE
	Power Consumption	<4.5W(ICR ON)
	Opterating Environment	Temperature: -20 ℃~50 ℃; Relative humidity: 10%~90%
	Dimension (mm)	Ø110mm×58mm
	Weight（net）	350g
	Installation	Pendent mounting (wall mounting available with junction box and bracket)

A0