TE-100-4M Xcel Series Encoder

USER MANUAL

- Please use the specified power supply to connect.
- Do not attempt to disassemble the device; 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 device. 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 device.
- 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 is product instructions not quality warranty. 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.
- When this product is in use, the relevant contents of Microsoft, Apple and Google will be involved in. The pictures and screenshots in this manual are only used to explain the usage of our product. The ownerships of trademarks, logos and other intellectual properties related to Microsoft, Apple and Google belong to the above mentioned companies.
- This manual is available for many models. Some functions introduced in the manual may be not available for some models. All pictures and examples used in the manual are for reference only.

Disclaimer

- With regard to the product with internet access, the use of product shall be wholly at your own risks. Our company shall be irresponsible for abnormal operation, privacy leakage or other damages resulting from cyber attack, hacker attack, virus inspection, or other internet security risks; however, Our company will provide timely technical support if necessary.
- Surveillance laws vary from country to country. Check all laws in your local region before using this product for surveillance purposes. We shall not take the responsibility for any consequences resulting from illegal operations.

Regulatory Information

FCC Marking

The products have be tested and found in compliance with the council FCC rules and regulations part 15 subpart B. Operation of this product is subject the following two conditions: (1) this device may not cause harmful interface, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CE Marking

The products have been manufactured to comply with the following directives.

EMC Directive 2014/30/EU

RoHS Marking

The products have designed and manufactured in accordance with Directive EU RoHS Directive 2011/65/EU and its amendment Directive EU 2015/863 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

Table of Contents

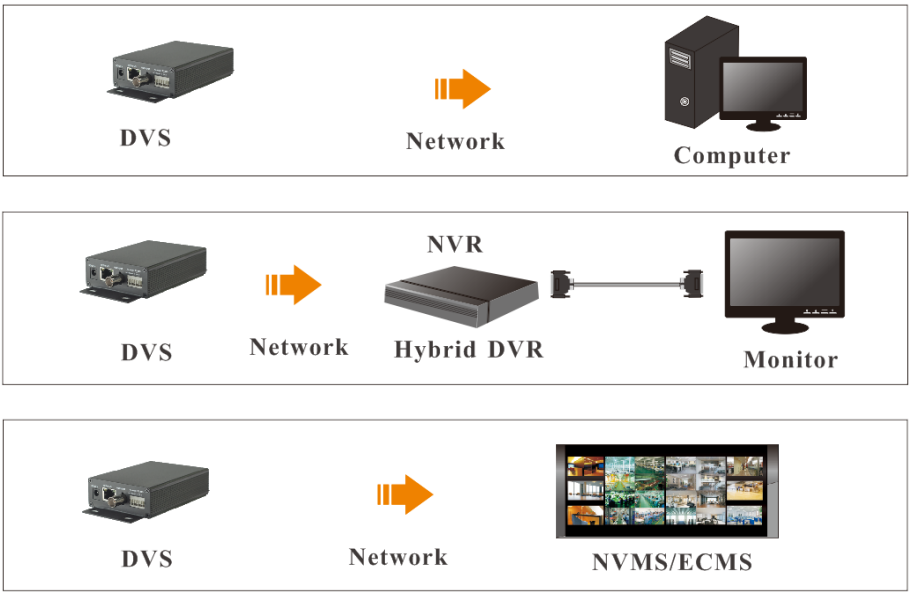
1 Introduction

This high definition encoder 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 and 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

- 4MP (2560×1440) full real time coding
- H.264, H.265 and MJPEG encoding
- Up to 4MP AHD/CVBS video access: 2MP HD-TVI/AHD/CVBS video access
- Pre-alarm recording and auto overlay recording
- PoE/DC12V power supply
- Control over coax control
- Supports three streams

Surveillance Application



2 Network Configuration

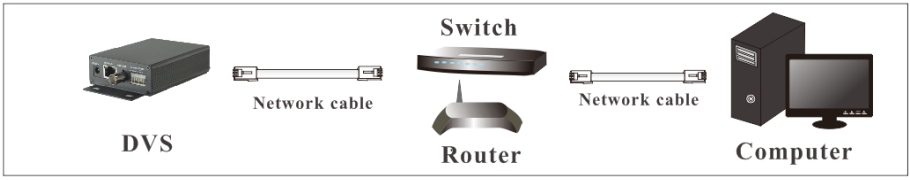
You may connect the device via LAN or WAN. The details are as follows:

2.1 LAN

In LAN, there are two ways to access the device: 1. Access through Xcel IP Utility; 2. Direct Access through Web Browser.

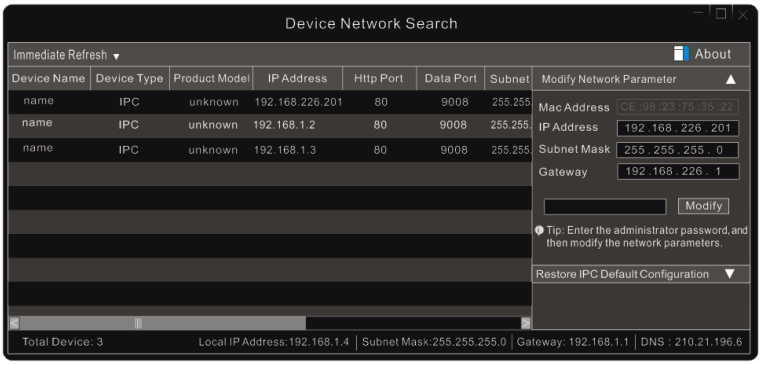
2.1.1 Access through Xcel IP Utility

Network connection:

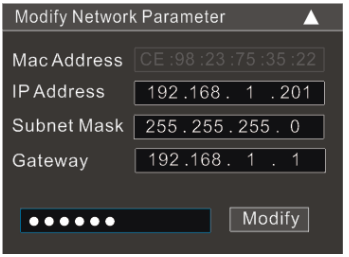


①Make sure the PC and the device are connected to the LAN and the Xcel IP Utility is installed in the PC from the CD.

② Double click the Xcel IP Utility icon on the desktop to run this software as shown below:



③ Modify the IP address. The default IP address of this device is 192.168.226.201. Click the information of the device listed in the above table to show the network information on the right hand. Modify the IP address and gateway of the device 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.

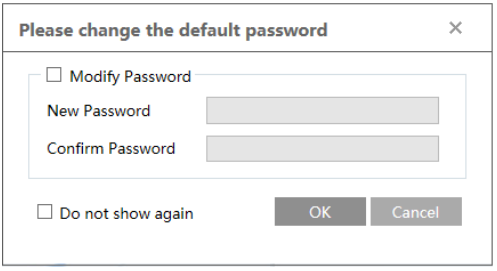


For example, the IP address of your computer is 192.168.1.4. So the IP address of the device shall be changed to 192.168.1.X. After modification, please enter the password of the administrator and click "Modify" button to modify the setting.

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

④ Double click the IP address and then the system will pop up the web browser to connect the device. Download the plug-in and run it in your computer if it is the first time for you to log in. Then enter name and password in the login interface.

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

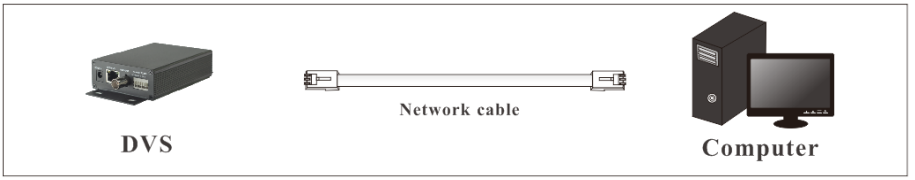


The system will pop up the above-mentioned textbox to ask you to change the default password. It is strongly recommended to change the default password for account security. If "Do not show again" is checked, the textbox will not appear next time.

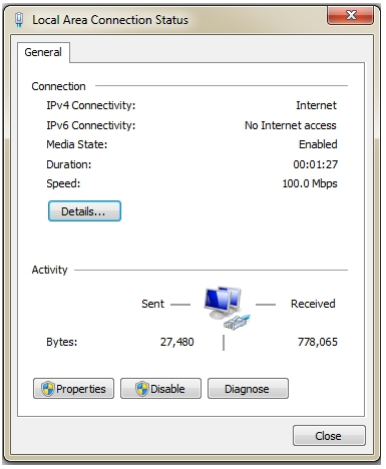
2.1.2 Directly Access through Web Browser

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**

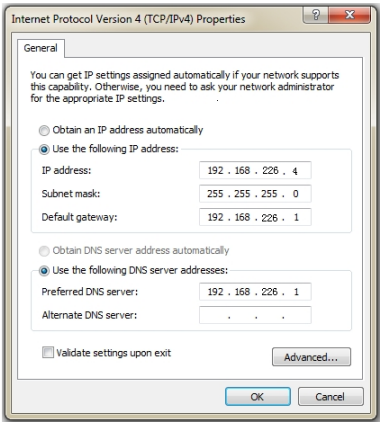
You may use the above default settings when you log in the device for the first time. You may directly connect the device to the computer through network cable.



① Manually set the IP address of the PC and the network segment should be as the same as the default settings of the device. 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.



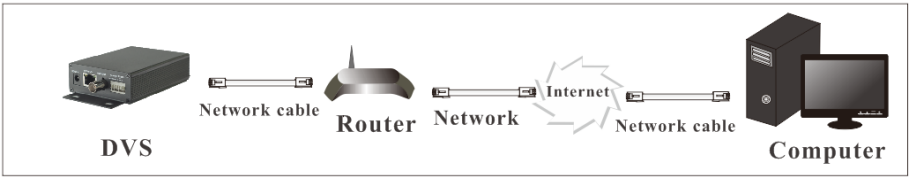
② Open the web browser and enter the default address of the device and confirm.

③ Download the plug-in and run it in your computer if it is the first time for you to log in.

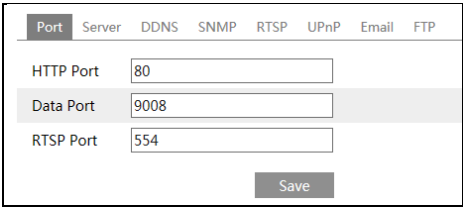
④ Enter the default username and password.

2.2 WAN

➢ **Access through the router or virtual server**

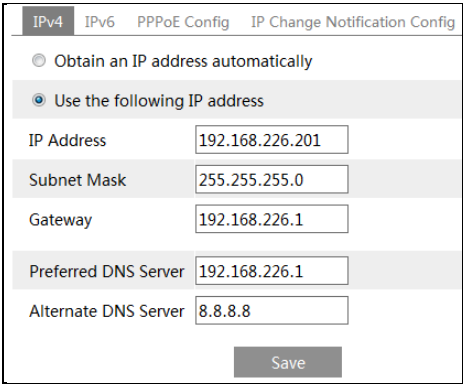


① Make sure the device is connected via LAN and then log in the device via LAN and go to Config→Network→Port menu to set the port number.



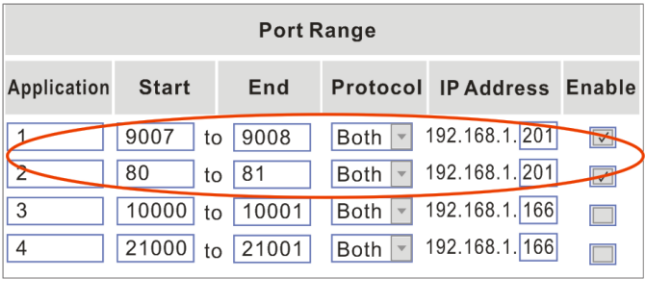
Port Setup

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



IP Setup

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

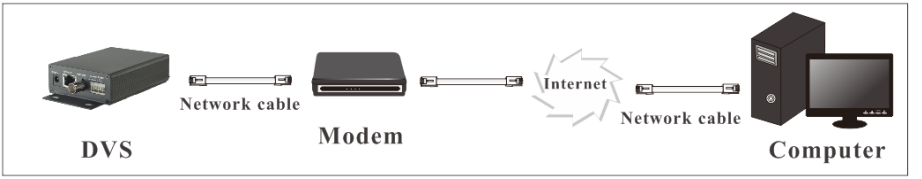


Router Setup

④ Open the web browser and enter its WAN IP and http port to access.

➢ **Access through PPPoE dial-up**

Network connection

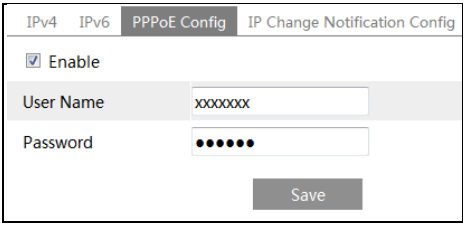


You may access the device through PPPoE auto dial-up. The setting steps are as follow:

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

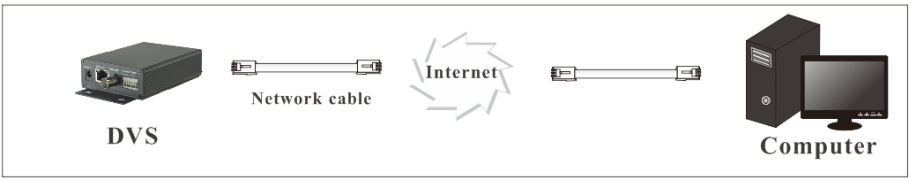
user name and password which you can get from your internet service provider.



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 web browser and enter the domain name and http port to access.

➢ **Access through static IP**

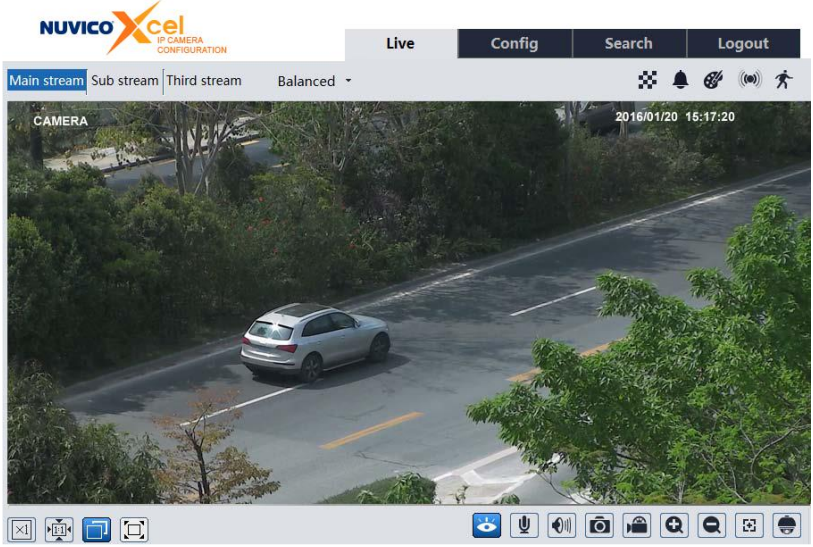
Network connection



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 enter its WAN IP and http port to access.

3 Live View

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



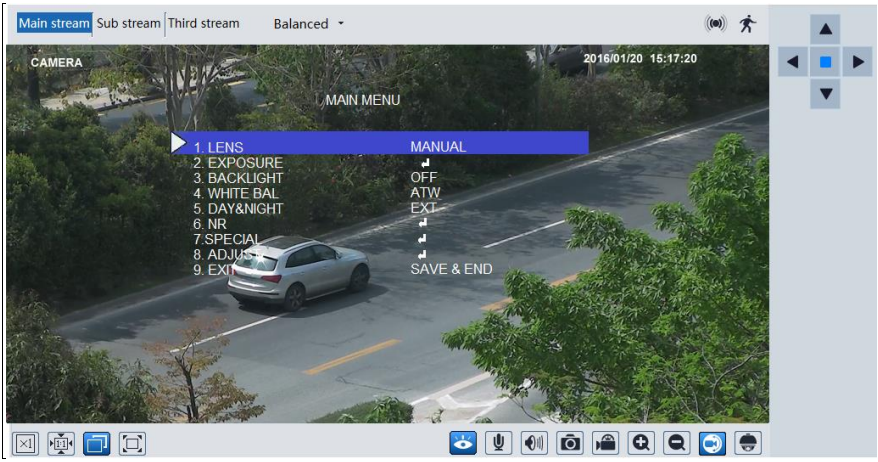
The following table is the instructions of the icons on the remote preview interface.

Icon	Description	Icon	Description
	Original size		Zoom in
	Appropriate size		Zoom out
	Auto		COC
	Full screen		PTZ control
	Start/stop live view		Scene change indicator icon
	Start/stop two-way audio		Abnormal clarity indicator icon
	Enable/disable audio		Color abnormal indicator icon
	Snap		Sensor alarm indicator icon
	Start/stop recording		Motion alarm indicator icon

- Those smart alarm indicators will flash only when the device supports those functions and the corresponding events are enabled.

- In full screen mode, double click on the mouse to exit or press the ESC key on the keyboard.

You can call the main menu of the analog camera connected to the encoder by clicking ( ) control over coax button as shown below.



Different cameras may have different menus. You can click direction keys to select the menu and click button to confirm.

The device can be installed in a compatible external PTZ enclosure through RS485. Click the PTZ icon to reveal the PTZ control panel.
The descriptions of the control panel are as follows:

Icon	Description	Icon	Description
	Move upper left direction		Move upper right direction
	Move up		Stop movement
	Move left		Move right
	Move lower left direction		Move lower right direction
	Move down		Speed adjustment
	Zoom out		Zoom in
	Focus -		Focus +
	Iris -		Iris +
	Auto scan		Wiper

	Light		Radom scan
	Group scan		Preset

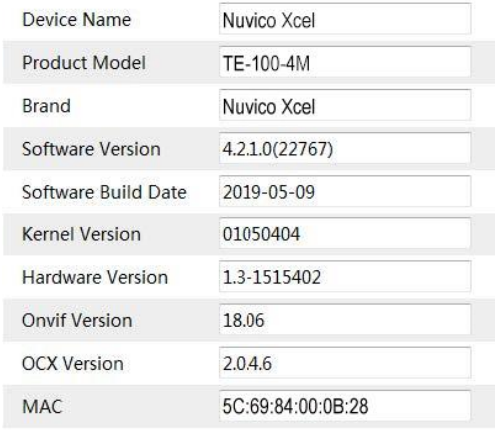
Select preset and click  to call the preset. Select and set the preset and then click  to save the position of the preset. Select the set preset and click  to delete it.

In the Xcel IP Camera Configuration client, choose “Config” to go to the configuration interface.
Note: Wherever applicable, click the “Save” button to save the settings.

4.1 System Configuration

4.1.1 Basic Information

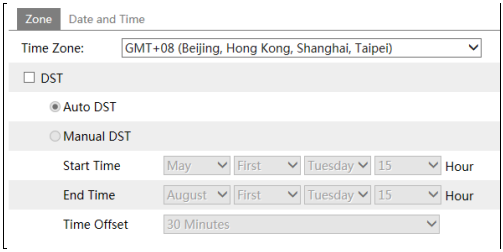
In the “Basic Information” interface, the system information of the device is listed.



Some versions may support device ID and QR code. Having been enabled P2P (see Network Configuration-P2P), the DVS can be quickly added to mobile surveillance client by scanning the QR code or entering device ID.

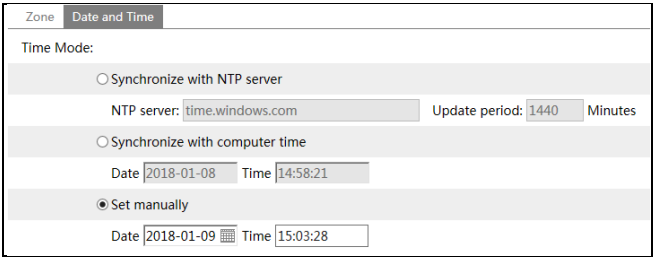
4.1.2 Date and Time

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



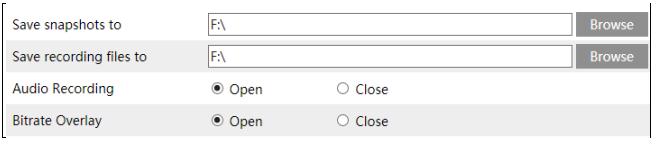
Select the time zone and DST as required.

Click “Date and Time” tab to set the time mode.



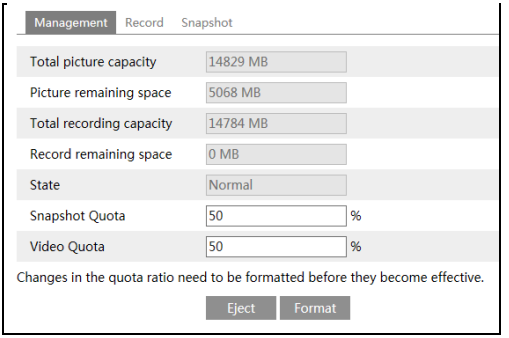
4.1.3 Local Config

Go to Config→System→Local Config to set up the storage path of captured pictures and recorded videos on the local PC. There is also an option to enable or disable the bitrate display in the recorded files.



4.1.4 Storage

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

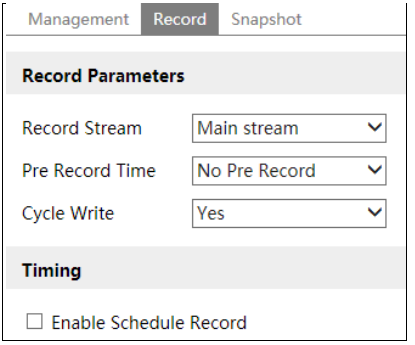


- **SD Card Management**

Click the “Format” button to format the SD card. All data will be cleared by clicking this button.
Click the “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 on the SD card.
Video Quota: Set the capacity proportion of record files on 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 and cycle writing.

Pre Record Time: Set the time to record before the actual recording begins.

3. Set schedule recording. Check "Enable Schedule Record" and set the schedule.

Weekly schedule

Set the alarm time from Monday to Sunday for a single week. Each day is divided in one hour increments. Green means scheduled. Blank means unscheduled.

"Add": Add the schedule for a special day. Drag the mouse to set the time on the timeline.

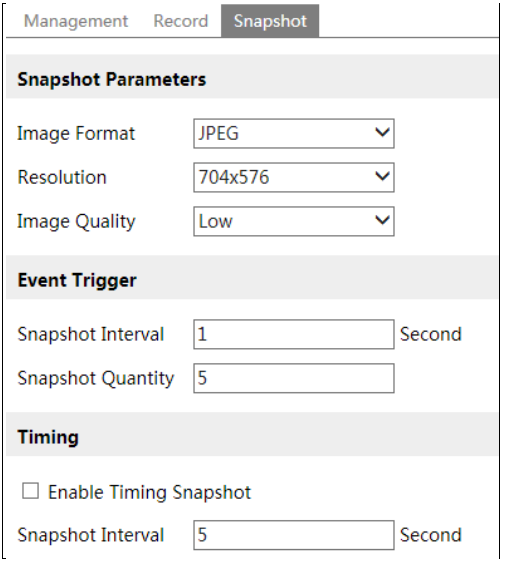
"Erase": Delete the schedule. Drag the mouse to erase the time on the timeline.

Manual Input: Click it for a specific day to enter specific start and end times. This adds more granularities (minutes).

Day schedule
Set the alarm time for alarm a special day, such as a holiday.
Note: Holiday schedule takes priority over weekly schedule.

- **Snapshot Settings**

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



Set the format, resolution and quality of the image saved on the SD card and the snapshot interval and quantity and the timing snapshot here.
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.

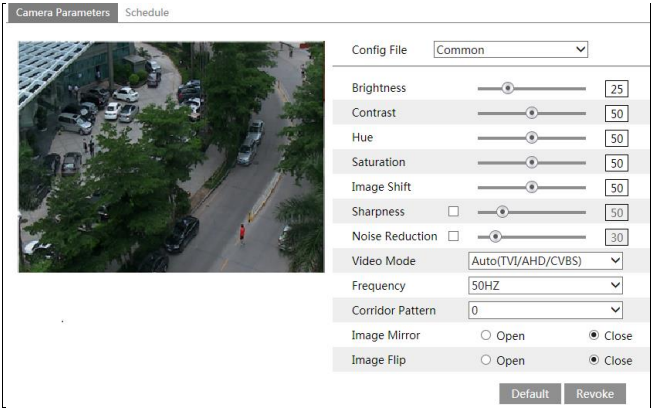
Timing Snapshot: Enable timing snapshot first and then set the snapshot interval and schedule. The setup steps of schedule are the same as the schedule recording (See Schedule Recording).

4.2 Image Configuration

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

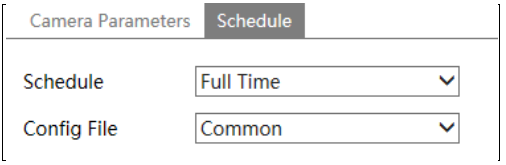
4.2.1 Display Configuration

Go to Image→Display interface as shown below. The image's brightness, contrast, hue and saturation and so on for common, day and night mode can be set up separately. The image effect can be quickly viewed by switching the configuration file.

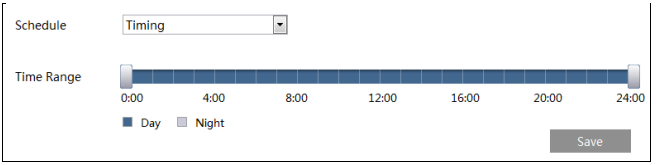


Brightness: Set the brightness level of the camera's image.
Contrast: Set the color difference between the brightest and darkest parts.
Hue: Set the total color degree of the image.
Saturation: Set the degree of color purity. The purer the color is, the brighter the image is.
Image Shift: If there is black edge in the live image, you can change the value to eliminate the black edge.
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.
Video Mode: Auto, TVT, AHD or CVBS can be selectable.
Frequency: 50Hz and 60Hz can be optional.
Corridor Pattern: Corridor viewing modes can be used for situations such as long hallways. 0, 90, 180 and 270 are available. The default value is 0. The video resolution should be 1080P or below if this function is used.
Image Mirror: Turn the current video image horizontally.
Image Flip: Turn the current video image vertically.

Schedule Settings of Image Parameters:
Click the "Schedule" tab as shown below.



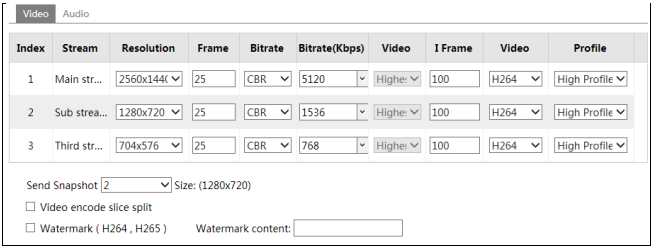
Set full time schedule for common, day, night mode and specified time schedule for day and night. Choose "Timing" in the drop-down box of schedule as shown below.



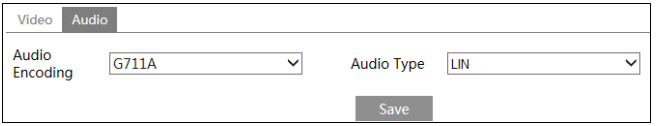
Drag " " icons to set the time of day and night. Blue means day time and blank means night time. If the current mode is set to schedule, the image configuration mode will automatically switch between day and night according to the schedule.

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.



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

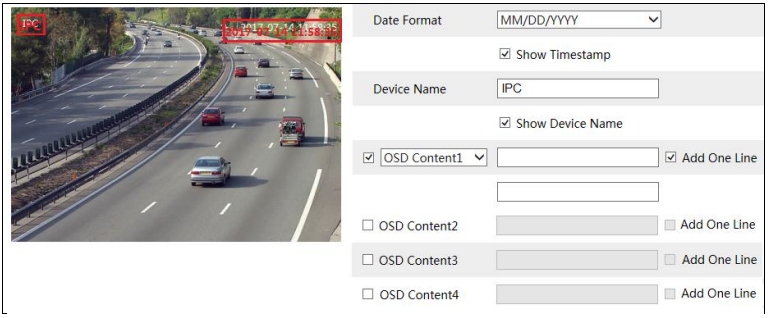


Three video streams can be adjustable.
Resolution: The size of image.
Frame rate: The higher the frame rate, the video is smoother.
Bitrate type: CBR and VBR are optional. Bitrate is related to image quality. CBR means that no matter how much change is seen in the video scene, the compression bitrate will be kept constant. VBR means that the compression bitrate will be adjusted according to scene changes. For example, for scenes that do not have much movement, the bitrate will be kept at a lower value. This can help optimize the network bandwidth usage.
Bitrate: it can be adjusted when the mode is set to CBR. The higher the bitrate, the better the image quality will be.
Video Quality: It can be adjusted when the mode is set to VBR. The higher the image quality, the more bitrate will be required.

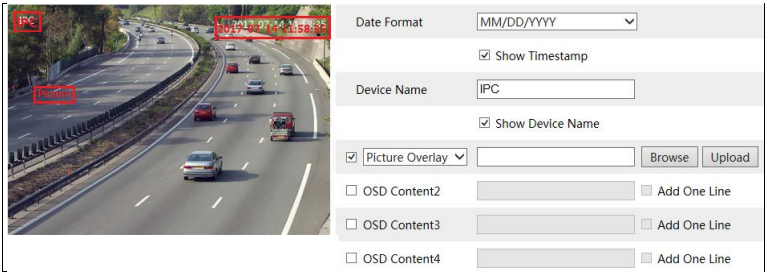
I Frame interval: It determines how many frames are allowed between a “group of pictures”. When a new scene begins in a video, until that scene ends, the entire group of frames (or pictures) can be considered as a group of pictures. If there is not much movement in the scene, setting the value higher than the frame rate is fine, potentially resulting in less bandwidth usage. However, if the value is set too high, and there is a high frequency of movement in the video, there is a risk of frame skipping.
Video Compression: H264 and H265 are optional. If H.265 is chosen, make sure the client system is able to decode H.265.
Profile: For H.264. Baseline, main and high profiles are selectable.
Send Snapshot: How many snapshots to generate for an event.
Video encode slice split: If this function is enabled, smooth image can be gotten even though using the low-performance PC.
Watermark: When playing back the local recorded video in the search interface, the watermark can be displayed. To enable it, check the watermark box and enter the watermark text.
Audio Encoding: G711A and G711U are selectable.
Audio Type: LIN.

4.2.3 OSD Configuration

Go to Image→OSD interface as shown below.



Set time stamp, device name, OSD content and picture overlap here. After enabling the corresponding display and entering the content, drag them to change their position. Then click the “Save” button to save the settings.

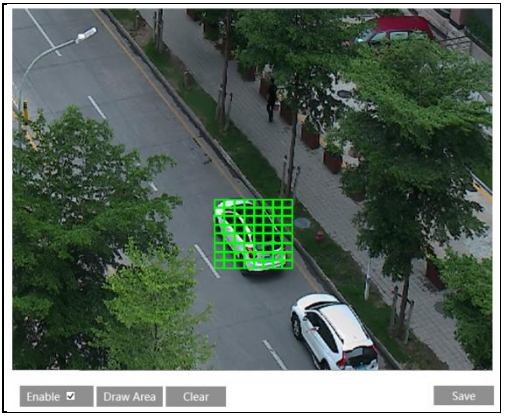


Picture Overlap Settings:

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.

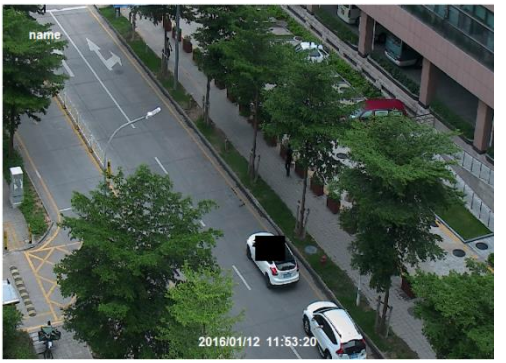
4.2.4 Video Mask

Go to Image→Video Mask interface as shown below. A maximum of 4 zones can be set up.



To set up video mask:

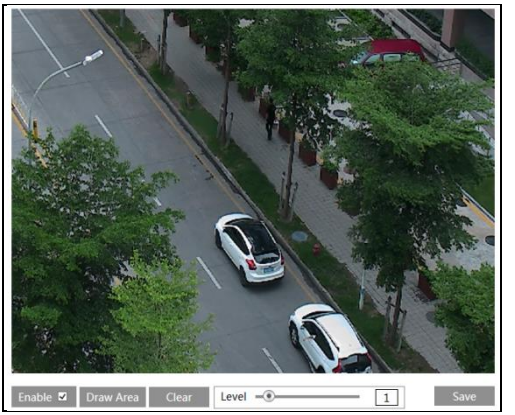
1. Enable video mask.
2. Click the “Draw Area” button and then drag the mouse to draw the video mask area.
3. Click the “Save” button to save the settings.
4. Return to the live to verify that the area have been drawn as shown as blocked out in the image.



To clear the video mask:
Click the “Clear” button to delete the current video mask area.

4.2.5 ROI Configuration

Go to Image→ROI Config interface as shown below.

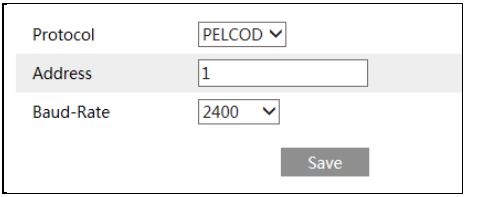


1. Check “Enable” and then click “Draw Area” button.
2. Drag the mouse to set the ROI area.
3. Set the level.
4. Click “Save” button to save the settings.

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

4.3 PTZ Configuration

Go to PTZ→Protocol interface as shown below.



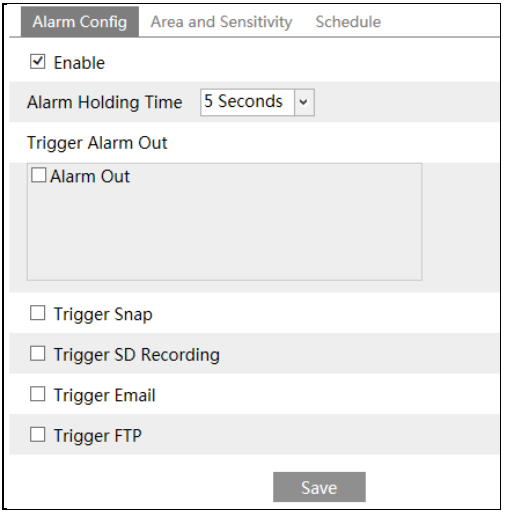
Set the protocol, address and baud rate according to the PTZ.

4.4 Alarm Configuration

Alarm configuration includes four submenus: Motion Detection, Alarm In, Alarm Out and Alarm Server.

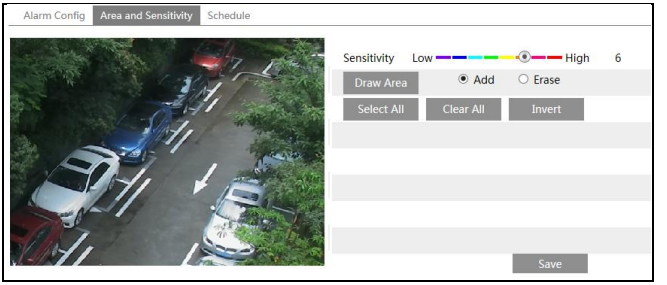
4.4.1 Motion Detection

Go to Alarm→Motion Detection to set motion detection alarm.



1. Check “Enable” check box to activate motion based alarms. If unchecked, the device will not send out any signals to trigger motion-based recording to the NVR or CMS, even if there is motion in the video.
Alarm Out: If selected, this would trigger an external relay output that is connected to the device on detecting a motion based alarm.
Trigger Snap: If selected, the system will capture images on motion detection and save the images on an SD card.
Trigger SD Recording: If selected, video will be recorded on an SD card on motion detection.
Trigger Email: If “Trigger Email” and “Attach Picture” are checked (email address must 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” are 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.



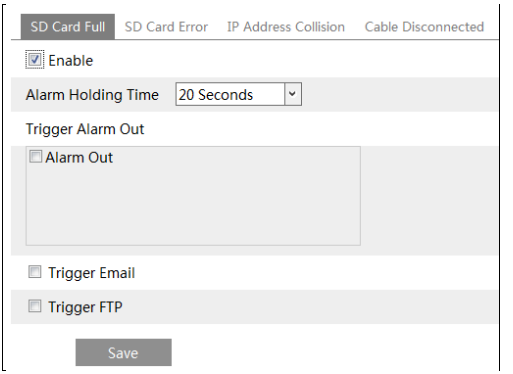
Move the “Sensitivity” scroll bar to set the sensitivity.
Select “Add” and click “Draw” button and drag mouse to select the motion detection area;
Select “Erase” and drag the mouse to clear motion detection area.
After that, click “Save” to save the settings.

3. Set the schedule for motion detection. The schedule setup steps of the motion detection are the same as the schedule recording setup (See Schedule Recording).

4.4.2 Other Alarms

- **SD Card Full**

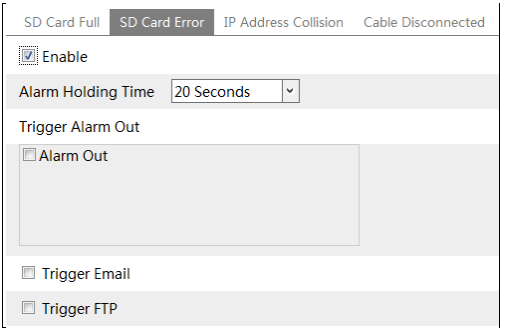
1. Go to Config→Alarm→Anomaly→SD Card Full.



2. Check “Enable” and set the alarm holding time.
3. Set alarm trigger options. The setup steps are the same as motion detection. Please refer to motion detection chapter for details.

- **SD Card Error**

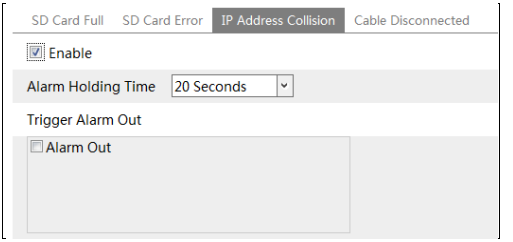
When there are some errors in writing SD card, the corresponding alarms will be triggered.
1. Go to Config→Alarm→Anomaly→SD Card Error as shown below.



2. Click “Enable” and set the alarm holding time.
3. Set alarm trigger options. Trigger alarm out, Email and FTP. The setup steps are the same as motion detection. Please refer to motion detection chapter for details.

- **IP Address Conflict**

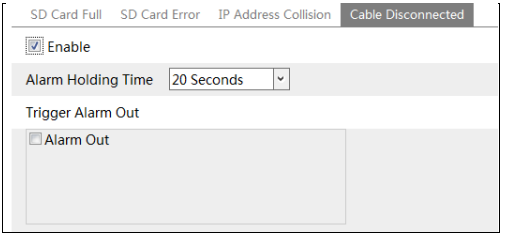
1. Go to Config→Alarm→Anomaly→IP Address Collision as shown below.



2. Click “Enable” and set the alarm holding time.
3. Trigger alarm out. When the IP address of the device is in conflict with the IP address of other devices, the system will trigger the alarm out.

- **Cable Disconnection**

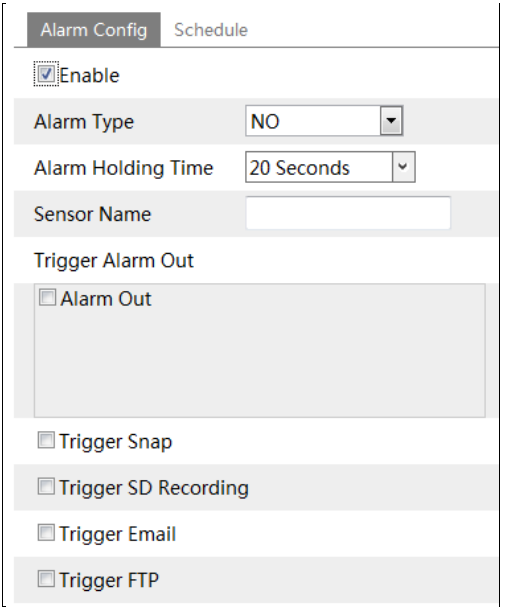
1. Go to Config→Alarm→Anomaly→Cable Disconnected as shown below.



2. Click “Enable” and set the alarm holding time.
3. Trigger alarm out. When the device is disconnected, the system will trigger the alarm out.

4.4.3 Alarm In

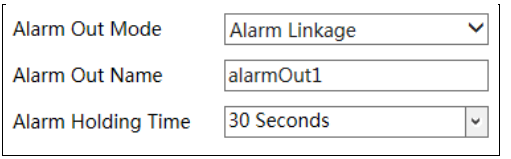
To set sensor alarm (alarm in):
Go to Config→Alarm→Alarm In interface as shown below.



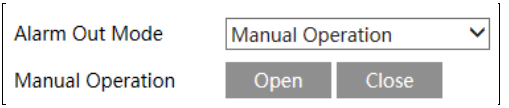
1. Click “Enable” and set the alarm type, alarm holding time and sensor name.
2. Set alarm trigger options. The setup steps are the same as motion detection. Please refer to motion detection chapter for details.
3. Click “Save” button to save the settings.
4. Set the schedule of the sensor alarm. The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

4.4.4 Alarm Out

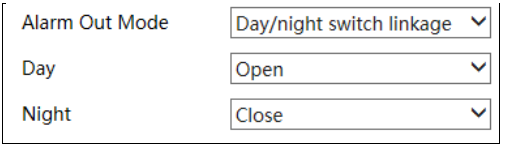
Go to Config→Alarm→Alarm Out.



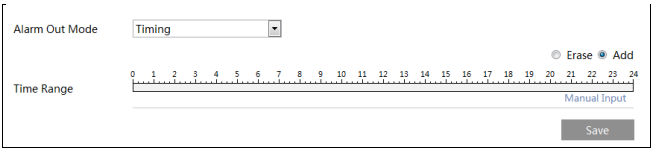
Alarm Out Mode: Alarm linkage, manual operation, day/night switch linkage and timing are optional.
Alarm Linkage: Having selected this mode, select alarm out name and alarm holding time at the “Alarm Holding Time” pull down list box.
Manual Operation: Having selected this mode, click “Open” to trigger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



Day/Night Switch Linkage: Having selected this mode, choose to open or close alarm out when the device switches to day mode or night mode.

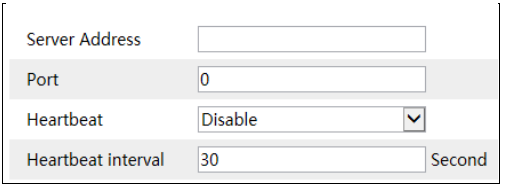


Timing: Click "Add" and drag the mouse on the timeline to set the schedule of alarm out; click "Erase" and drag the mouse on the timeline to erase the set time schedule. After this schedule is saved, the alarm out will be triggered in the specified time.



4.4.5 Alarm Server

Go to Alarm→Alarm Server interface as shown below.
Set the server address, port, heartbeat and heartbeat interval. When an alarm occurs, the device will transfer the alarm event to the alarm server. If an alarm server is not needed, there is no need to configure this section.



4.5 Event Configuration

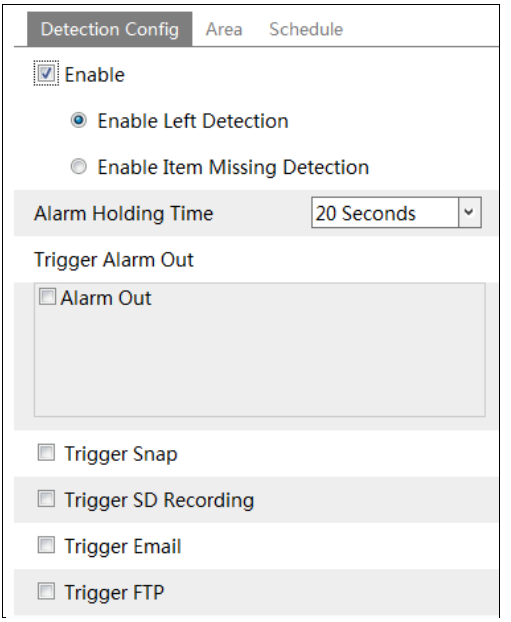
(**Only some specified versions support the following functions**).
For more accuracy, here are some recommendations for installation.

- Cameras should be installed on stable surfaces, as vibrations can affect the accuracy of detection.
- Avoid pointing the camera at the reflective surfaces (like shiny floors, mirrors, glass, lake surfaces and so on).
- Avoid places that are narrow or have too much shadowing.

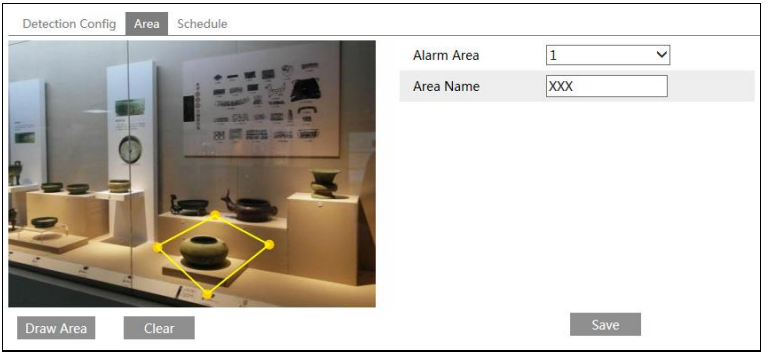
- Avoid scenario where the object's color is similar to the background color.
- At any time of day or night, please make sure the image of the camera is clear and with adequate and even light, avoiding overexposure or too much darkness on both sides.

4.5.1 Object Removal

Alarms will be triggered when the objects are removed from or left at the pre-defined area.
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: Alarms will be triggered if there are items left in the pre-defined area.
Enable Item Missing Detection: Alarms will be triggered if there are items missing in the pre-defined area.
2. Set the alarm holding time and alarm trigger options. The setup steps are the same as 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 the "Area" tab to go to the interface as shown below.



Set the alarm area number and then enter the desired alarm area name. Up to 4 alarm areas can be added. Click the "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 the "Stop Draw" button to stop drawing. Click the "Clear" button to delete the alarm area. Click the "Save" button to save the settings.

5. Set the schedule of the object removal detection. The setup steps of the schedule are the same as the schedule recording setup (See Schedule Recording).

※ The configuration requirements of camera and surrounding areas

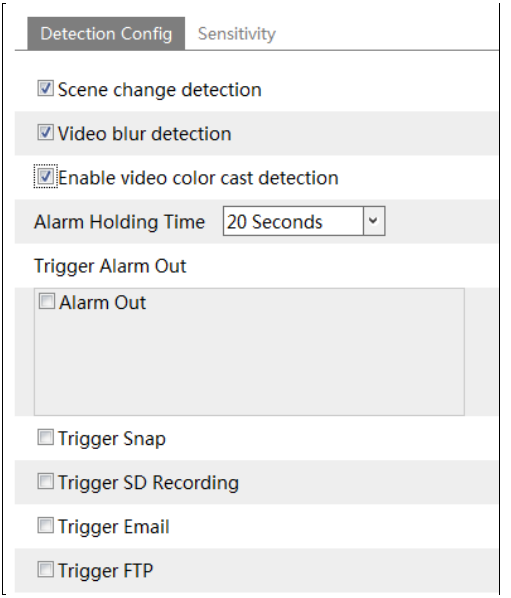
1. The range of the detection object should occupy from 1/50 to 1/3 of the entire image.
2. The detection time of objects in the camera shall be from 3 to 5 seconds.
3. The defined area cannot be covered frequently and continuously (like people and traffic flow).
4. It is necessary for object removal 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 to whom it belongs to.
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.

4.5.2 Exception

This function can detect changes in the surveillance environment affected by the external factors.

To set exception detection:

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



1. Enable the applicable detection that's desired.

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

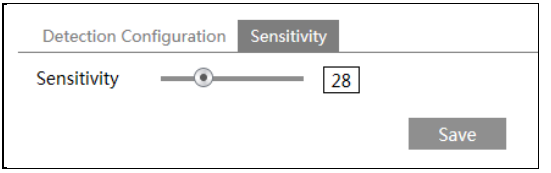
Video Blur Detection: Alarms will be triggered if the video becomes blurry.

Enable Video Color Cast Detection: Alarms will be triggered if the video becomes obscured.

2. Set the alarm holding time and alarm trigger options. The setup steps are the same as 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 enter 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 blurriness of the image.

The sensitivity value of Video Cast Detection: The higher the value is, the more sensitive

the system responds to the obscuring of the image.

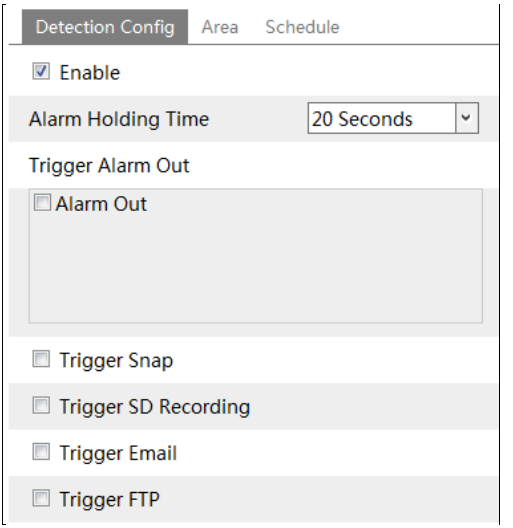
※ **The requirements of camera and surrounding area**

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. Please contact us for more detailed application scenarios.

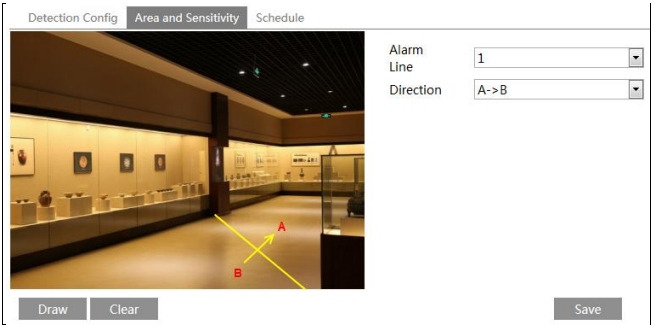
4.5.3 Line Crossing

Line Crossing: Alarms will be triggered if someone or something crosses the pre-defined alarm lines.

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 setup steps are the same as 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 the “Area and Sensitivity” tab to go to the interface as shown below.



Set the alarm line and the direction. Up to 4 lines can be added. Multiple lines cannot be added simultaneously.

Direction：A<->B, A->B and A<-B optional. This indicates the direction of the intruder who crosses over the alarm line that would trigger the alarm.

A<->B: Alarms will be triggered when the intruder crosses over the alarm line from B to A or from A to B.

A->B: Alarms will be triggered when the intruder crosses over the alarm line from A to B.

A<-B: Alarms will be triggered when the intruder crosses over the alarm line from B to A.

Click the "Draw" button and then drag the mouse to draw an alarm line in the image. Click the "Stop" button to stop drawing. Click the "Clear" button to delete the cordons. Click the "Save" button to save the settings.

5. Set the schedule of the line crossing alarm. The setup steps of the schedule are the same as the schedule recording setup (See Schedule Recording).

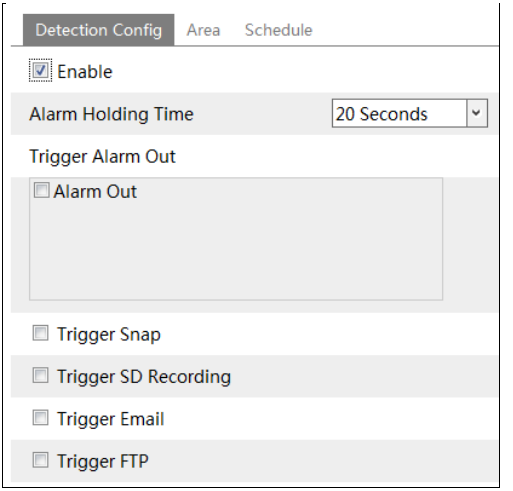
※ **Configuration of camera and surrounding area**

1. Auto-focusing function should not be enabled for line crossing detection.
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.
3. Cameras should be mounted at a height of 2.8 meters or above.
4. Keep the mounting angle of the camera at about 45°.
5. The detected objects should not be less than 1% of the entire image and the largest sizes of the detected objects should not be more than 1/8 of the entire image.
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 crucial for line crossing detection.

4.5.4 Intrusion

Intrusion: Alarms will be triggered if someone or something intrudes into the pre-defined 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 setup steps are the same as motion detection. Please refer to motion detection chapter for details.
3. Click the “Save” button to save the settings.
4. Set the alarm area of the intrusion detection. Click the “Area” tab to go to the interface as shown below.

Set the alarm area number on the right side. Up to 4 alarm areas can be added.
Click the “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 the “Stop Draw” button to stop drawing. Click the “Clear” button to delete the alarm area. Click the “Save” button to save the settings.
5. Set the schedule of the intrusion detection. The setup steps of the schedule are the same as schedule recording setup (See Schedule Recording).

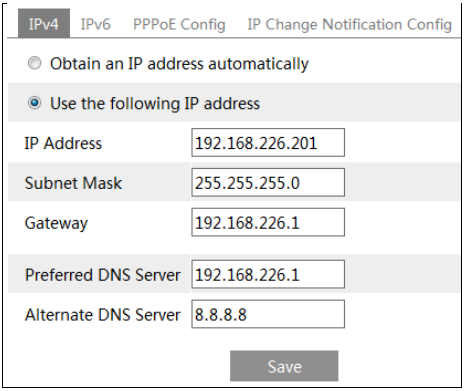
※ Configuration requirements of camera and surrounding area

1. Auto-focusing function should not be enabled for intrusion detection.
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.
3. Cameras should be mounted at a height of 2.8 meters or above.
4. Keep the mounting angle of the camera at about 45°.
5. The detected objects should not be less than 1% of the entire image and the largest sizes of the detected objects should not be more than 1/8 of the entire image.
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 crucial to line crossing detection.

4.6 Network Configuration

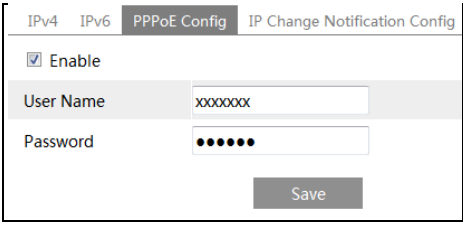
4.6.1 TCP/IP

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

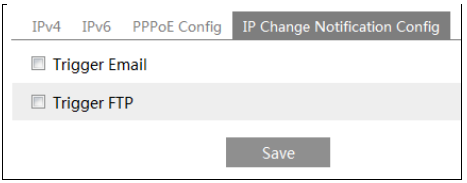


Use IP address (take IPv4 for example)-There are two options for IP setup: obtain an IP address automatically by DHCP protocol and use the following IP address. Please choose one of the options for your requirements.

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.



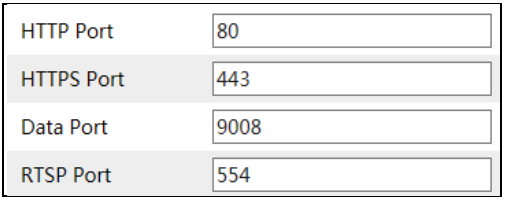
Either method of network connection can be used. If PPPoE is used to connect internet, the device will get a dynamic WAN IP address. This IP address will change frequently. To be notified, the IP change notification function can be used.
Click "IP Change Notification Config" to go to the interface as shown below.



Trigger Email: when the IP address of the device is changed, the new IP address will be sent to the email address that has been set up.
Trigger FTP: when the IP address of the device is changed, the new IP address will be sent to FTP server that has been set up.

4.6.2 Port

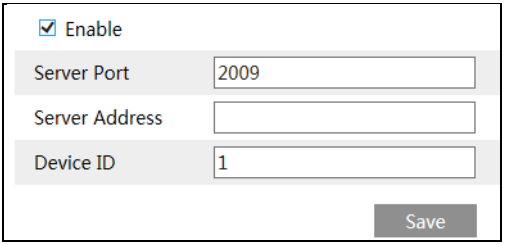
Go to Config→Network→Port interface as shown below.



HTTP Port: The default HTTP port is 80. It can be changed to any port which is not occupied.
HTTPS Port: The default HTTPs port is 443. It can be changed to any port which is not occupied.
Data Port: The default data port is 9008. It can be changed to any port which is not occupied.
RTSP Port: The default port is 554. It can be changed to any port which is not occupied.

4.6.3 Server Configuration

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

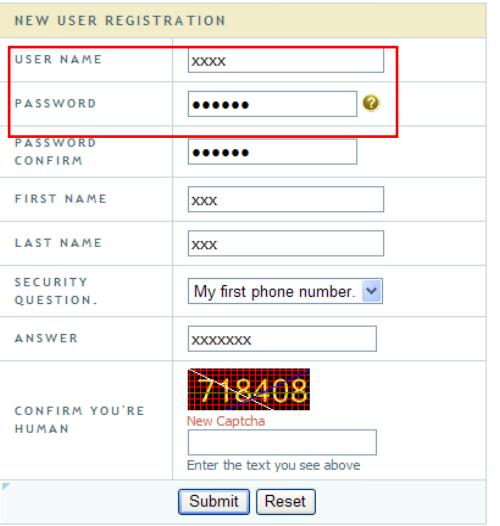


1. Check “Enable”.
2. Check the IP address and port of the transfer media server in the CMS/VMS. Then enable the auto report in the CMS/VMS when adding a new device. Next, enter the remaining information of the device in the CMS/VMS. After that, the system will automatically allot a device ID. Please check it in the CMS/VMS.
3. Enter 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

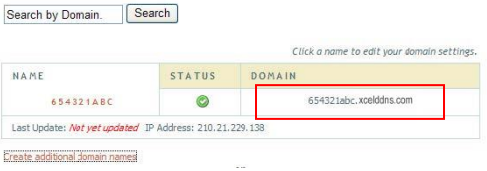
If the device is set up with a DHCP connection, DDNS should be set for the internet.
1. Go to Config→Network→ DDNS.

2. Apply for a domain name. Enter www.xcelddns.com in the web address bar to visit its website. Then click “Registration” button.



Create a domain name.

After the domain name is successfully applied for, the domain name will be listed as below.

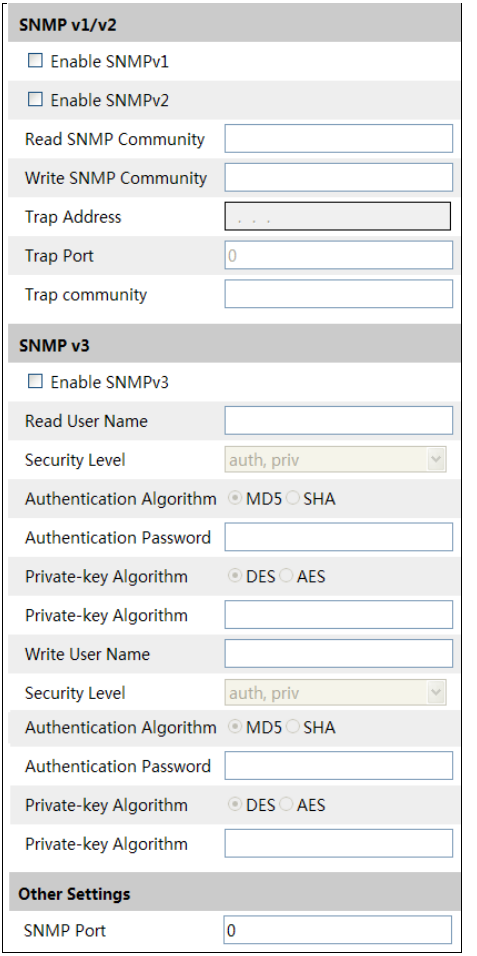


3. Enter the username, password, domain you apply for in the DDNS configuration interface.
4. Click the “Save” button to save the settings.

4.6.5 SNMP

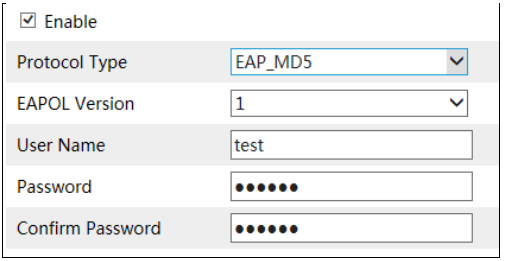
To get device status, parameters and alarm information and remotely manage the device, you can set the SNMP function. Before using the SNMP, please download the SNMP software and set the parameters of the SNMP, such as SNMP port, trap address.
1. Go to Config→Network→SNMP.
2. Check the corresponding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



4.6.6 802.1x

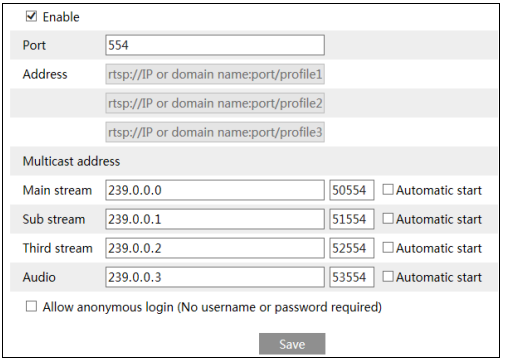
IEEE802.X which is an access control protocol. The setup steps are as follows:



To use this function, the device 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 device connected to the network interface of the switch has passed the authentication of the switch, it can be accessed via the local network.
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.

4.6.7 RTSP



Select “Enable” to enable the RTSP function.
Port: Access port of the streaming media. The default number is 554.
RTSP Address: The RTSP address (unicast) format that can be used to play the stream in a media player.

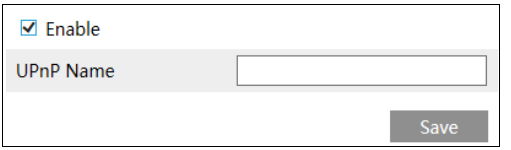
Multicast Address
Main stream: The address format is
“rtsp://IP address: rtsp port/profile1?transportmode=mcast”.
Sub stream: The address format is
“rtsp://IP address: rtsp port/profile2?transportmode=mcast”.
Third stream: The address format is
“rtsp://IP address: rtsp port/profile3?transportmode=mcast”.
Audio: Having entered the main/sub stream in a VLC player, the video and audio will play automatically.
If “Allow anonymous login…” is checked, there is no need to enter the username and password to view the video.
If “auto start” is enabled, the multicast received data should be added into a VLC player to play the video.

Note:1. This device support local play through a VLC player. Enter 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.

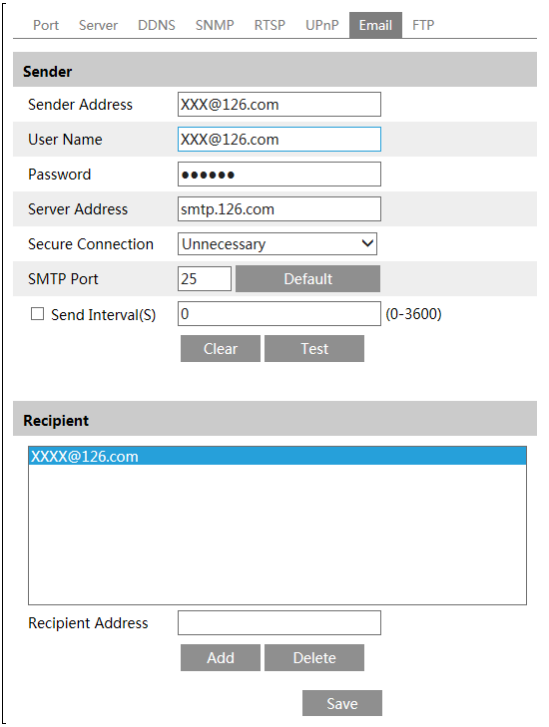
4.6.8 UPNP

If this function is enabled, the device can be quickly accessed through the LAN.
Go to Config→Network→UPnP. Enable UPNP and then enter UPnP name.



4.6.9 Email

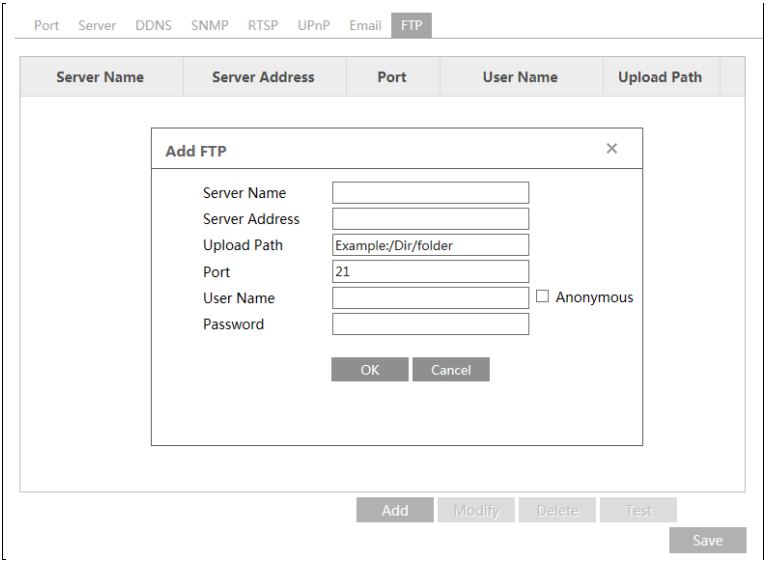
If you need to trigger Email when an alarm happens or IP address is changed, please set the Email here first.
Go to Config→Network →Email.



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 what's required.
SMTP Port: The SMTP port.
Send Interval(S): The time interval of sending email. For example, if it is set to 60 seconds and multiple motion detection alarms are triggered within 60 seconds, they will be considered as only 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, two emails will be sent. When different alarms are triggered at the same time, multiple emails will be sent separately.
Click the "Test" button to test the connection of the account.
Recipient Address: receiver's e-mail address.

4.6.10 FTP

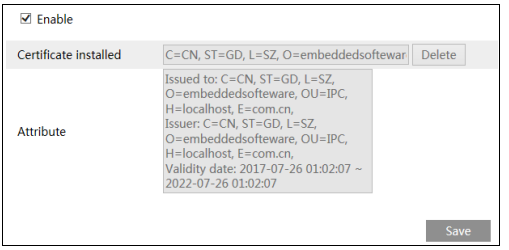
After an FTP server is set up, captured pictures from events will be uploaded to the FTP server.
Go to Config→Network →FTP.



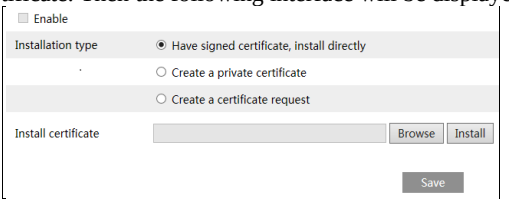
Server Name: The name of the FTP server.
Server Address: The IP address or domain name of the FTP.
Upload Path: The directory where files will be uploaded to.
Port: The port of the FTP server.
Use Name and Password: The username and password that are used to login to the FTP server.

4.6.11 HTTPs

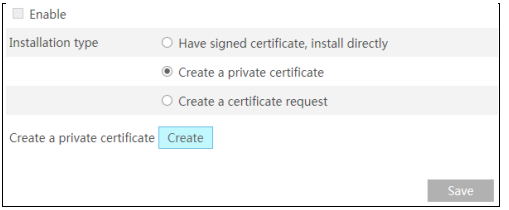
HTTPs provides authentication of the web site and protects user privacy.
Go to Config Config→Network→HTTPS as shown below.



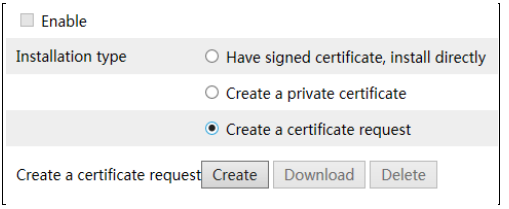
There is a certificate installed by default as shown above. Enable this function and save it. Then the device can be accessed by entering https://IP: https port via the web browser (eg. https://192.168.226.201:443).
A private certificate can be created if users don't want to use the default one. Click "Delete" to cancel the default certificate. Then the following interface will be displayed.



* If there is a signed certificate, click "Browse" to select it and then click "Install" to install it.
* Click "Create a private certificate" to enter the following creation interface.



Click the "Create" button to create a private certificate. Enter the country (only two letters available), domain (the device's IP address/domain), validity date, password, province/state, region and so on. Then click "OK" to save the settings.
* Click "Create a certificate request" to enter the following interface.



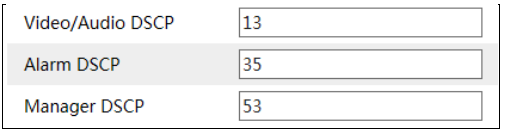
Click “Create” to create the certificate request. Then download the certificate request and submit it to the trusted certificate authority for signature. After receiving the signed certificate, import the certificate to the device.

4.6.12 P2P (Optional)

If this function is enabled, the device can be quickly accessed by adding the device ID in mobile surveillance client or CMS/VMS client via WAN. Enable this function by going to Config→Network→P2P interface.

4.6.13 QoS

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

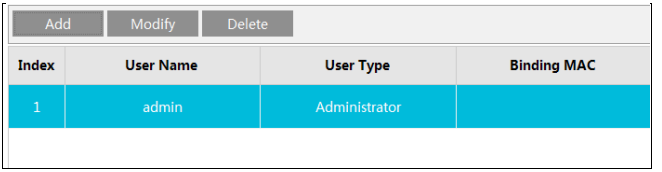


Video/Audio DSCP: The range is from 0 to 63.
Alarm DSCP: The range is from 0 to 63.
Manager DSCP: The range is from 0 to 63.
Generally speaking, the larger the number is, the higher the priority is.

4.7 Security Configuration

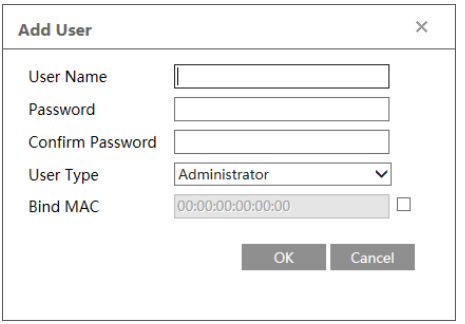
4.7.1 User Configuration

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



Add user:

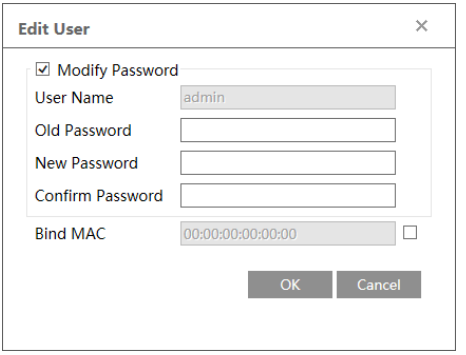
1. Click “Add” button to pop up the following textbox.



2. Enter user name in “User Name” textbox.
3. Enter letters or numbers in “Password” and “Confirm Password” textbox.
4. Choose the user type. Administrator has all permissions. Normal user can only view the live video. Advanced user has the same permissions as an Administrator except for user, backup settings, factory reset, and upgrading the firmware.
5. Enter the MAC address of the PC in “Bind MAC” textbox.
If this option is enabled, only the PC with the specified MAC address can access the device for that user.
6. Click the “OK” button and then the newly added user will be displayed in the user list.

Modify user:

1. Select a user to modify password and MAC address if necessary in the user configuration list box.
2. The “Edit user” dialog box pops up by clicking the “Modify” button.



3. Enter the old password of the user in the “Old Password” text box.
4. Enter the new password in the “New password” and “Confirm Password” text box.
5. Enter computer’s MAC address as necessary.
6. Click the “OK” button to save the settings.

Note: To change the access level of a user, the user must be deleted and added again with the new access level.

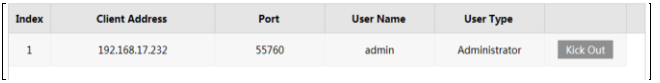
Delete user:

1. Select the user to be deleted in the user configuration list box.
2. Click the “Delete” button to delete the user.

Note: The default administrator account cannot be deleted.

4.7.2 Online User

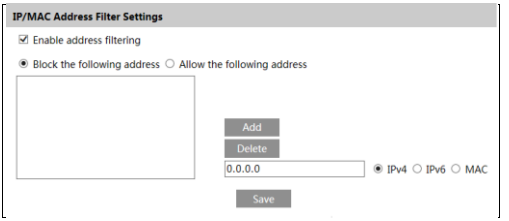
Go to Config→Security→Online User to view the user who is viewing the live video.



An administrator user can kick out all the other users (including other administrators). Note that the kicked users will be added into the block list.

4.7.3 Block and Allow Lists

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



The setup steps are as follows:
Check the “Enable address filtering” check box.
Select “Block/Allow the following address”, IPv4/IPv6/MAC and then enter IP address or MAC address in the address box and click the “Add” button.

4.7.4 Security Management

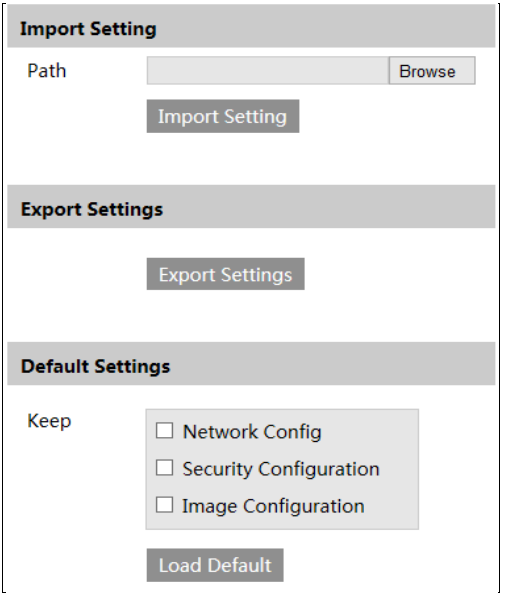
Go to Config→Security→Security Management as shown below.

In order to prevent against malicious password unlocking, “locking once illegal login” function can be enabled here. If this function is enabled, login failure after trying six times will make the login interface locked. The device can be logged in again after a half hour or after the device reboots.
For some specified versions, anonymous login with a private protocol can be enabled here. If this function is enabled, enter http://host:port/Anonymous/1[2/3] (eg. http://192.168.226.201:80/Anonymous/1) via web browser to access the device. 1 indicates main stream; 2 indicates sub stream; 3 indicates third stream. Only video can be viewed by this means and no other operations can be done. If no such function, please skip the instruction.

4.8 Maintenance Configuration

4.8.1 Backup and Restore

Go to Config→Maintenance→Backup & Restore.



- **Import & Export Settings**

Configuration settings of the camera can be exported form a camera into another camera.

1. Click “Browse” to select the save path for import or export information on the PC.
2. Click the “Import Setting” or “Export Setting” button.

- **Default Settings**

Click the “Load Default” button to restore all system settings to the default factory settings except those you want to keep.

4.8.2 Reboot

Go to Config→Maintenance→Reboot.

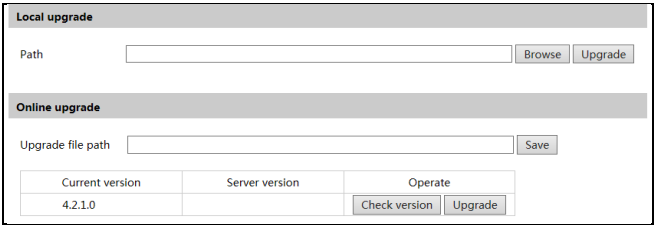
Click “Reboot” button to reboot the device.

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 the “Browse” button to select the save path of the upgrade file
2. Click the “Upgrade” button to start upgrading the firmware.
3. The device will restart automatically

Caution! Do not close the browser or disconnect the device from the network during the upgrade.

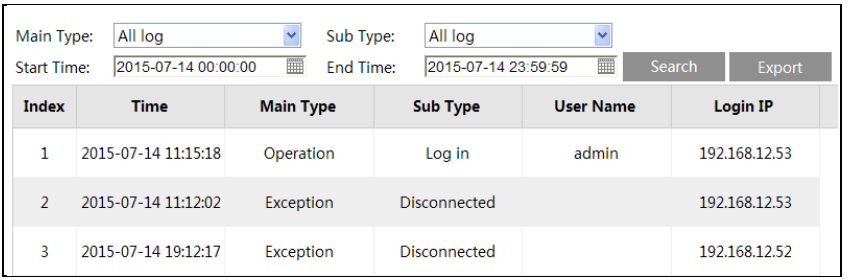
For some specified models, online upgrade is available. The setting steps are as follows. If no such function, please skip the instruction.

1. Create the upgrade file location and save it.
2. Check the latest version by clicking “Check version”.
3. Click “Upgrade” to update the firmware online.

4.8.4 Operation Log

To query and export log:

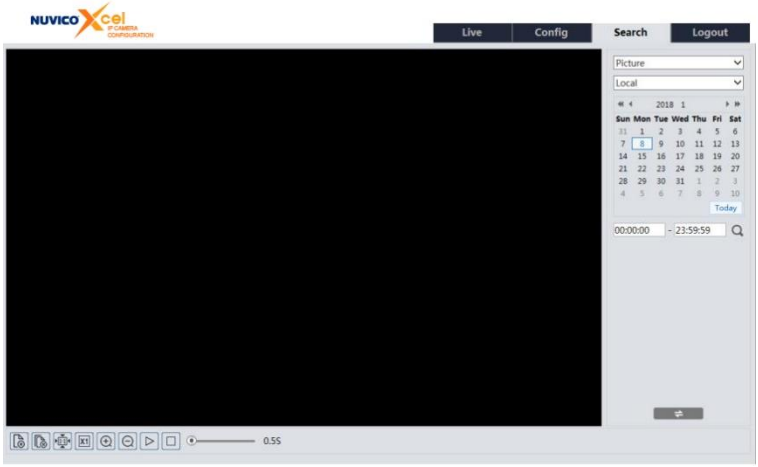
1. Go to Config→Maintenance→Operation Log.



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.

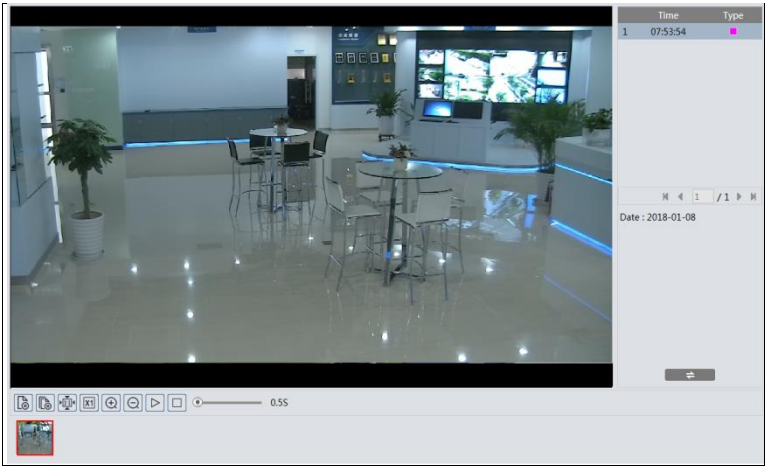
5.1 Image Search

Click Search to go to the interface as shown below. Images that are saved on the SD card can be found here.



- **Local Image Search**

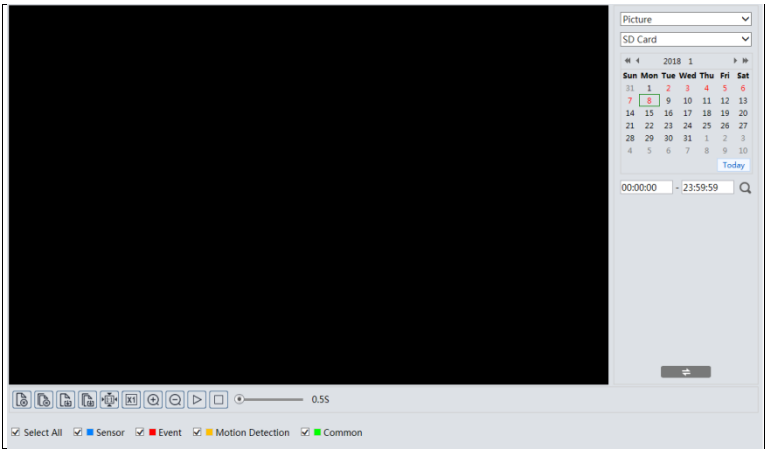
1. Choose “Picture”—“Local”.
2. Set time: Select date and choose the start and end time.
3. Click  to search the images.
4. Double click a file name in the list to view the captured photos as shown above.



Click ⇌ to return to the previous interface.

- **SD Card Image Search**

1. Choose “Picture”—“SD Card”.



2. Set time: Select date and choose the start and end time.
3. Choose the alarm events at the bottom of the interface.
4. Click 🔍 to search the images.
5. Double click a file name in the list to view the captured photos.

Click ⇌ to return to the previous interface.

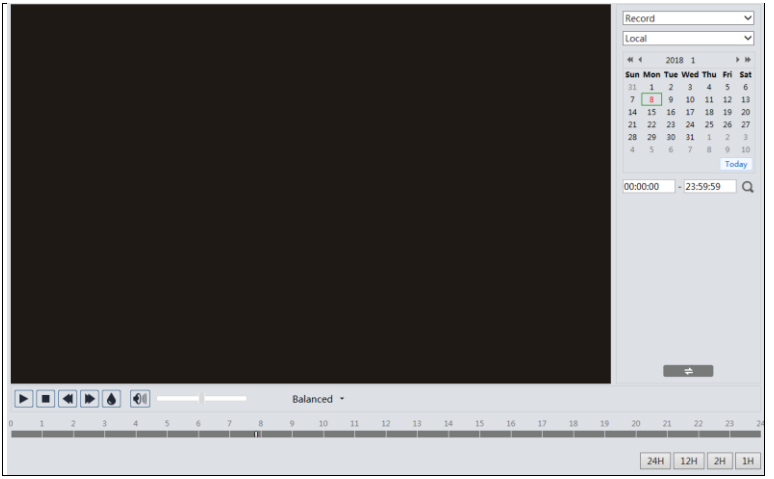
The descriptions of the buttons are shown as follows.

Icon	Description	Icon	Description
	Close: Select an image and click this button to close the image.		Close all: Click this button to close all images.
	Save: Click this button to select the path for saving the image on the PC.		Save all: Click this button to select the path for saving all pictures on the PC.
	Fit size: Click to fit the image on the screen.		Actual size: Click this button to display the actual size of the image.
	Zoom in: Click this button to digitally zoom in.		Zoom out: Click this button to digitally zoom out.
	Slide show play: Click this button to start the slide show mode.		Stop: Click this button to stop the slide show.
5.5S	Play speed: Play speed of the slide show.		

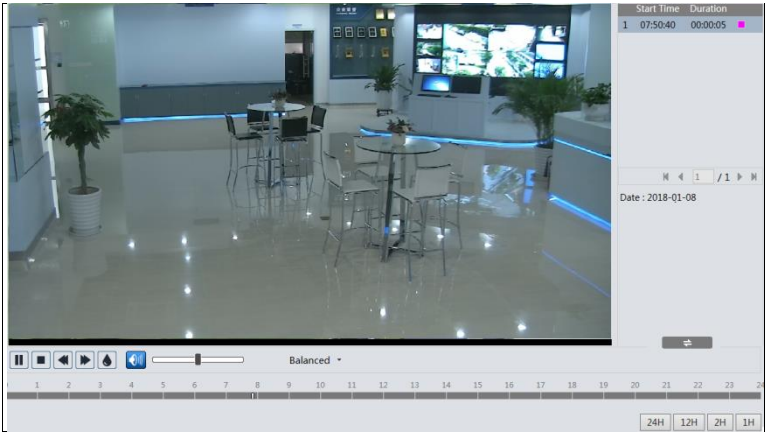
5.2 Video Search

5.2.1 Local Video Search

Click Search to go to the interface as shown below. Videos were recorded locally to the PC can be played in this interface.



1. Choose “Record”—“Local”.
2. Set search time: Select the date and choose the start and end time.
3. Click to search the images.
4. Double click on a file name in the list to start playback.

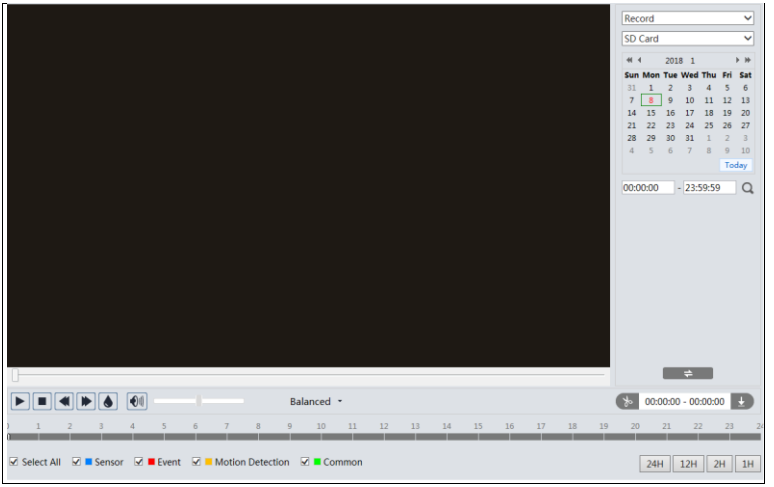


Icon	Description	Icon	Description
	Play button. After pausing the video, click this button to continue playing.		Pause button
	Stop button		Speed down
	Speed up		Watermark display
	Enable / disable audio; drag the slider to adjust the volume after enabling audio.		

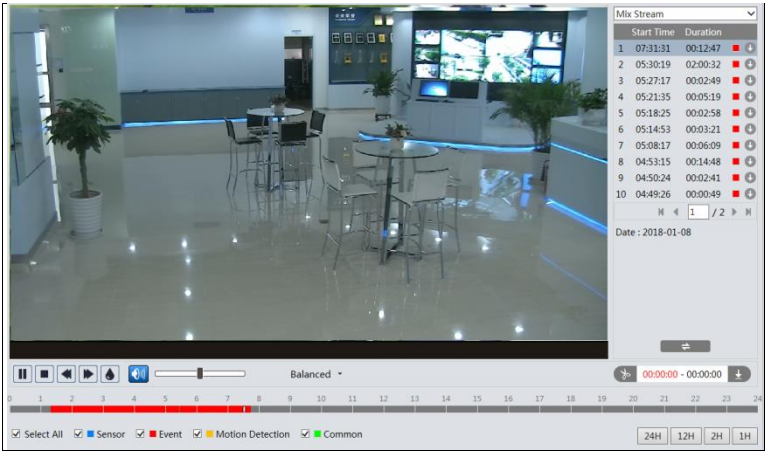
5.2.2 SD Card Video Search

Click Search to go to the interface as shown below. Videos that were recorded on the SD card can be played in this interface.

1. Choose “Record”—“SD Card”.
2. Set search time: Select the date and choose the start and end time.
3. Click to search the images.



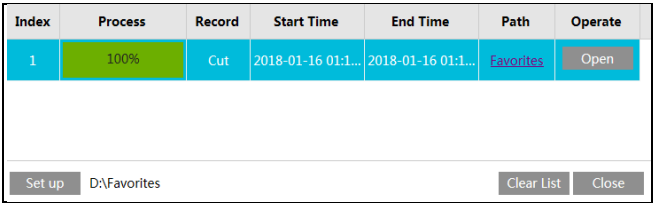
4. Select the alarm events at the bottom of the interface.
5. Select mix stream (video and audio stream) or video stream as needed.
6. Double click on a file name in the list to start playback.



The time table can be shown in 24H/12H/2H/1H format by clicking the corresponding buttons.

Video clip and downloading

1. Search the video files according to the above mentioned steps.
2. Select the start time by clicking on the time table.
3. Click  to set the start time and then this button turns blue ().
4. Select the end time by clicking on the time table. Then click to set the end time.
5. Click  to download the video file in the PC.



Click “Set up” to set the storage directory of the video files.
Click “Open” to play the video.
Click “Clear List” to clear the downloading list.
Click “Close” to close the downloading window.

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 the web 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 Xcel IP Utility.

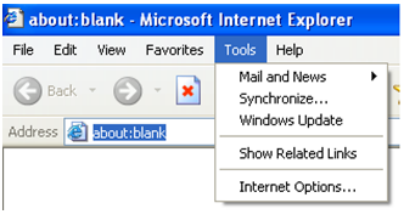
Q：Xcel IP Utility cannot search devices, why?

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

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

a. Web browser blocks ActiveX. Please do setup as below.

① Open the web browser and then click Tools-----Internet Options….

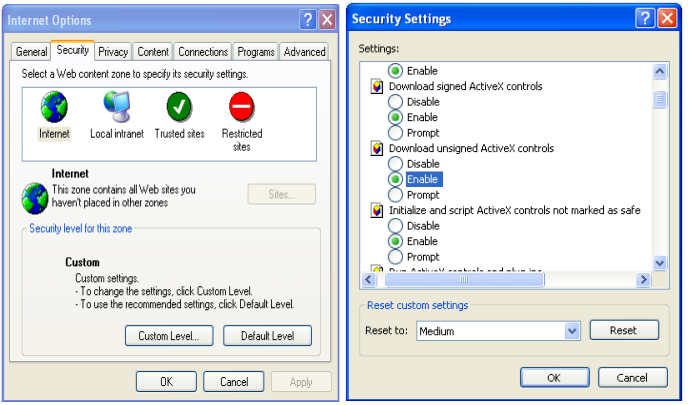


② Select Security------Custom Level….

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 Specifications

Specification /Model		HD Digital Video Server
Video& Audio Input	HD Analog Video Input	1 CH, BNC interface (level:1.0Vp, impedance:75Ω); PAL/NTSC self-adaptive; up to 4MP AHD/CVBS video access; 2MP HD-TVI/AHD/CVBS video access
	Audio Input	1 CH: 3.5mm interface, shared with two-way audio
Image	Video Compression	H.265/H.264/MJPEG
	H.264 Compression Standard	Baseline Profile/Main Profile/High Profile
	Bit Rate Type	VBR/CBR
	Bit Rate	128Kbps~8Mbps
	Resolution	4MP(2560 x 1440), 3MP(2304 x 1296)/(2048 x 1536), 1080p(1920 x 1080) , 720p(1280 x 720), D1, CIF, 480 x 240
	Main Stream	4MP/3MP/1080p/ 720p(1~30fps/25fps)
	Sub Stream	720p/D1/CIF(1~30fps/25fps)
	Third Stream	D1/480×240)/CIF(1~30fps/25fps)
	Image Settings	Saturation, Brightness, Chroma, Contrast, Wide Dynamic, Sharpen, NR, etc. adjustable through client or web browser
	ROI	Support
Interfaces	Network	RJ45
	Auido	MIC IN×1; SPK OUT×1
	Storage	Support micro SD card slot, up to 128 GB
	RS485	Support
	Alarm	1CH alarm input; 1 CH alarm output
	Local Output	1CH BNC output
Fucntion	Remote Monitoring	Web browser, CMS remote control
	Online Connection	Support simultaneous monitoring for up to 6 users and multi-stream transmission
	Network Protocol	TPv4/IPv6, UDP, DHCP, NTP, RTSP, PPPoE, DDNS, SMTP, FTP, HTTPS, 802.1x, QoS
	Interface Protocol	ONVIF, GB-T/28181-2011
	Image Snapshot	JPEG encoding, image quality adjustable
	Smart Analysis(optional)	Object removal detection, line crossing detection, intrusion detection, abnormal video signal detection etc.
	Ingress Protection	TVS6000V lightning protection, surge protection
Others	Power Supply	DC12V/PoE
	Power Output	Max 12V @0.5A
	Power Consumption	< 4W
	Operating Environment	Temperature: -22°F~140°F, Relative humidity: less than 95% (non-condensing)
	Dimensions	5.51″ x 2.93″ x 1.14″
	Weight (net)	.49 lbs
	Installation	Wall mount

TE-100-4MA1