

HD NETWORK CAMERA

User Manual

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Introduction

Thank you for using our network camera products. Our network camera products are integrated and developed for network video monitoring, including Storage Network Bullet, Wireless Storage Network Bullet, IR Network Dome, IR Network Weather-Proof Cameras and High-Speed Network Ball. High-performance single SOC chips are used in media processor for audio/video acquisition, compression and transmission/transfer. Standard H.264 encoding algorithm is applied to ensure clear and smooth video representation and transfer performance. Embedded Web Server offers users access to real-time surveillance and remote control of front-end camera through IE browser.

Thenetwork cameras are easy to install and operate. The network cameras are applicable to large and medium-size enterprises, governmental projects, large mall, chain supermarkets, intelligent buildings, hotels, Hospitals and schools and other group customers, as well as to applications requiring remote network video transmission and monitoring.

Instructions:

- For purpose of this manual, IP camera means network camera.
- Single click means a single click on the left mouse button.
- Double click means a double-click on the left mouse button.
- The default factory IP address for IP camera is 192.168.1.168.
- The default factory administrator user name for IP camera is admin (in lowercase), and the password is admin (in lowercase).
- The default Web port number is 80 and the default media port number is 9988.

Statement:

Some information contained in this manual may differ from the actual product. For any problems you cannot solve with the use of this manual, please contact our technical support or the authorized dealers. This manual may be subject change without prior notice.

1. Overview

1.1 Range of Application

The network cameras with powerful image processing capacity may be applied at various public places such as mall, supermarket, school, factory and workshop, as well as in environments requiring HD video image such as bank and traffic control system, as shown below:



1.2 Product Description

An IP camera is a digital online surveillance camera embedded with Web server and capable of independent operation, giving user access to real-time monitoring through web browser or client software from any place across the world.

IP camera is based on the latest Hisilicon solution, an integrated media processing platform for audio/video acquisition, compression and network transmission on a single board. It is in compliance with H.264/ H265 High Profile encoding standards. Any remote user can have access to real-time monitoring by entering the IP address or domain name of the IP camera in web browser. This network camera solution is applicable to residential or business environmentas well as a wide range of situations requiring remote network video monitoring and transmission. The IP camera products are easy to install and operate.

The IP cameras can be managed by several users with different authorization levels.

IP cameras allows mobile detection, and sends e-mail and snapshot taken in case of emergency and store the image or video snapshot in SD card for retrieval.

1.3 Operation Environment

Operating system: Windows 7/Windows 8/Windows 2008 (32/64-bit),

Windows 2003/Windows XP/Windows 2000 (32-bit)

CPU: Intel Core Duo II dual-core processor or higher Memory: 1G or more Video memory: 256M or more

Display: 1024 × 768 or higher resolution

IE: IE 6.0 or higher version

2. Device Connection

IP camera can be connected in two ways:

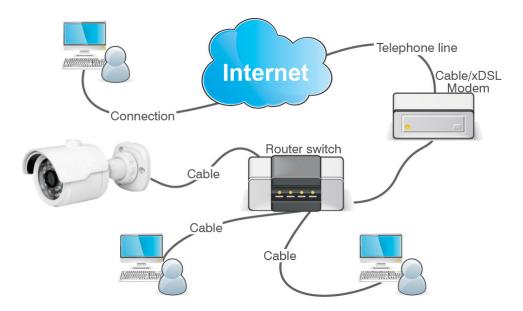
1. Connection to PC

Connect IP camera to PC via straight-through network cable, with power input connected to a DC 12V adaptor, and set the IP addresses of the PC and IP camera in one network segment. The IP camera will communicate with PC within one minute after being powered on if the network operates normally.



2. Connection to router/switch

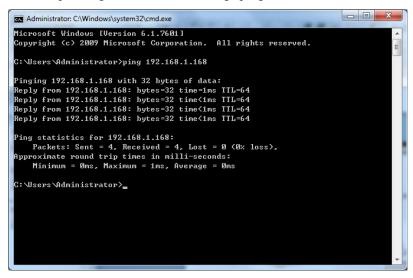
This is more commonly used in connecting the IP camera to Internet, where the camera and PC are connected to LAN ports of a router/switch, with gateway of the camera set to the IP address of the router.



3. Device Operation Instructions

3.1 Check Connection

- 1. The default factory IP address for IP camera is 192.168.1.168 and the subnet mask is 255.255.255.0. Allocate to your computer an IP address in the same network segment as the IP camera, for example, 192.168.1.69, and a same subnet mask as that of the IP camera.
- 2. Test whether the IP camera is connected properly and started normally by clicking on Start > Run and entering "cmd" and pressing ENTER, and entering "ping 192.168.1.168" in the command line window to



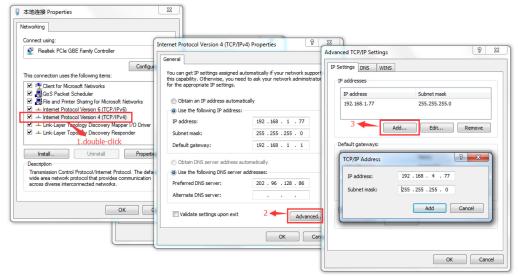
Check whether the IP camera is accessible. If the PING command is executed successfully, it indicates that the IP camera operates normally and the network is connected properly. If the PING command fails, check IP address and gateway setting of the PC and connectivity of the network.

3.2 Searching Device

Tips: IPC Device Search may be used for device searching across network segments. Before running IPC

Device Search, click on the local connection icon at the lower right corner of the desktop;

1. Add IP addresses of several network segments in TCP/IP setting for local connection (as shown below). By running the searching tool you can search any device with IP address in the same network segment.



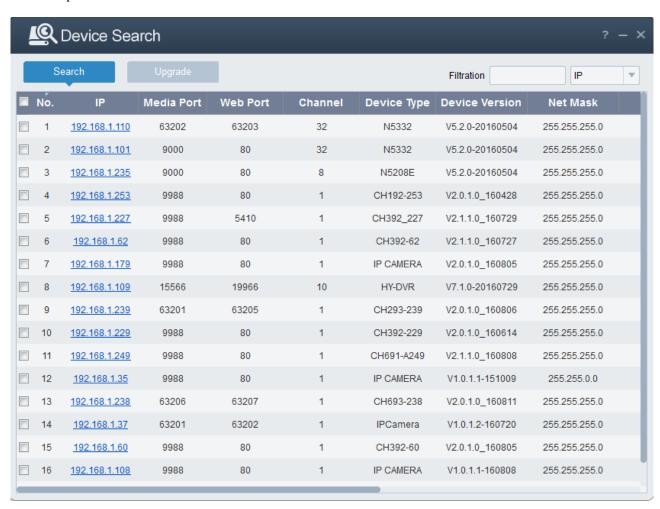
Note:

IPC Device Search uses multicast protocol for device searching across segments but any firewall forbids traffic of multicast data packets, so any firewall must be disabled in order that network the information on device can be acquired.

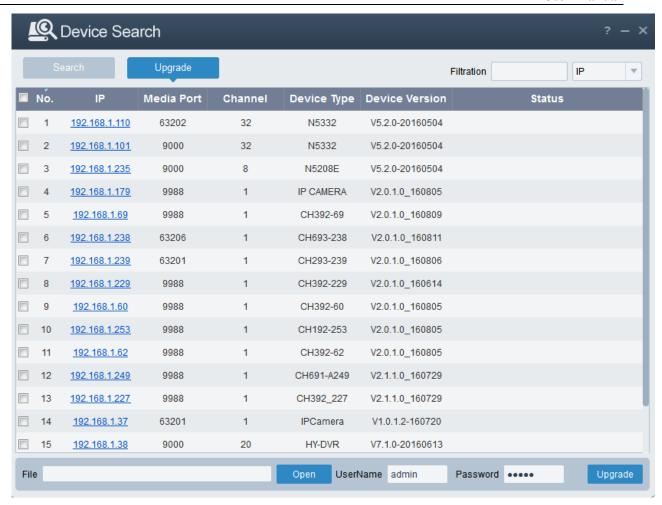
Online device searching procedure

1. Run IPC Device Search by double clicking icon

address, port number, number of channels, device type and version, subnet mask, gateway, MAC address and connection pattern.



Upgrade: it can offer 1pcs or more than 1pcs IP camera upgrade. Please choose the IP camera you want to upgrade in the left frame. Open the icon to choose the software you want ,put in the user name and password, the press the right corner button to upgrade.

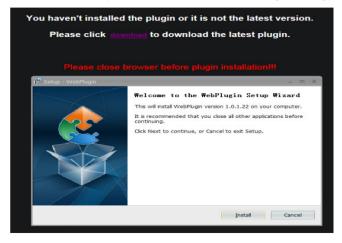


3.3 Installation of Controls and Login to System

Before using IE (Internet Explorer) browser to access the IP camera for the first time, related plug-in components must be installed by following the procedure below:

Access IP address of the IP camera to automatically load the controls from it.

In a pop-up plug-in installation dialog box, choose an installation option to perform the installation process.

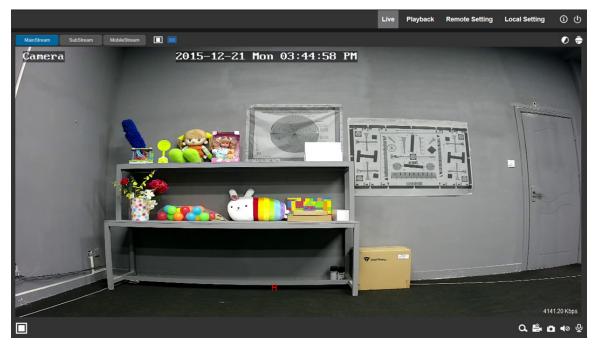


3.3.1 Preview

Operate IE and enter the IP address of the camera (http://192.168.1.168) to open a login box as shown below:



In the login box you can choose a language for the IE client. Enter your user name (admin by default) and password (admin by default) and then press OK to open a preview frame as shown below:



Some buttons in the preview frame are described below.

: Color setting button, for setting of color, brightness, contrast, saturation and sharpness of the frame.

PTZ CONTROL press the icon ,then it show below picture:



: It has eight difference angle to control in the circle button, 0-10,it means difference PTZ speed, ZOOM:adjust lens FOCUS: fix lens. Preset: choose point you want to cruise, choose 85to make IP camera return back default, Cruise IP camera cruise control automatically, stop cruise control.

Remark: It maybe has some difference between models, you can ignore above function if the models without these functions.

Playback

: read the recording file from SD card, and then playback from browser

Remote Setting

: Access to device setting menu, for customized setting of various device parameters.

Local Setting

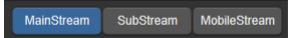
: For setting of snapshot, video file type and storage path.

Help information (including current user, Web browser and plug-in versions), logout button, for returning to the login page.

: Preview frame ratio adjustment, toggling between Original Ratio and Automatic Ratio.

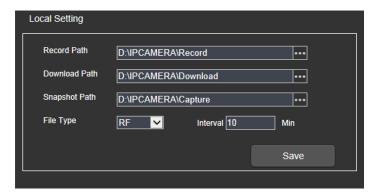
Q 🖴 🗗 🗣 🞐

Preview control buttons - Zoon-In/Out, Open Video, Snap and Sound On/Off, Mircophonearranged from the left to the right.



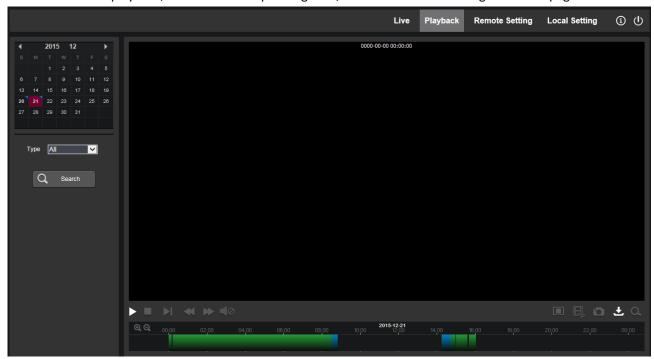
: Dynamic switching of bit stream for the preview frame.

Click Path Configuration button to pop up the following dialog box: In this dialog box you can set video storage location, paths for download of remote file and storage of image snapshot, file type (RF by default, in H265 encoding) and video recording duration.

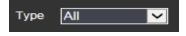


3.3.2 Playback (optional function)

Click record file to playback, select the corresponding date, then click the Search to go to below page



playback function explanation



: Record file type; ALL, Normal, Alarm



: From left to right is play/pause, stop, frame playback(click one time, playback one Frame), slow playback, fast forward, audio control

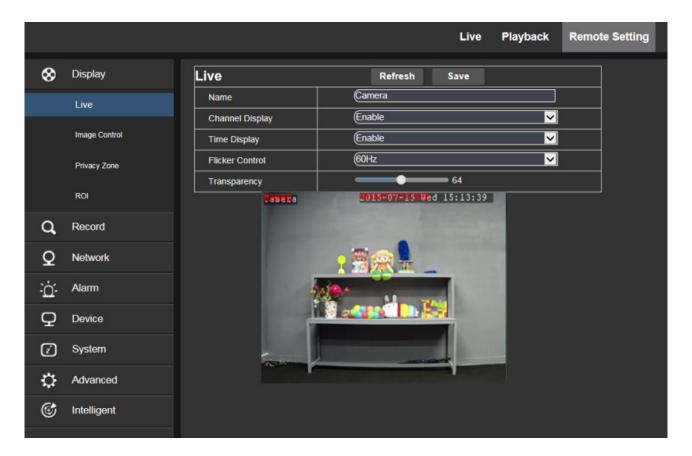


from left to right is scale up, Video clips(need to setup in the progress bar), screenshot, video download and zoom

4 Parameter Setting

4.1 Display Configuration

Click on Parameter Setting to open the page as below (preview setting page by default):



Name of channel: name of the IP camera

Display of channel: Choose to display or conceal it.

Time display: Choose to display or conceal it.

Blinking control: Choose 50Hz, 60Hz or disable it.

Transparency: Choose transparency of display of name of channel and time on the preview frame (smaller value indicates higher transparency)

OSD: the text in red color on the frame; you can locate display of the name of channel and time by dragging it in the preview frame.

4.2 Image Control

Click on Image Control in Display Configuration to open the following page:



IR-Cut Model: Classified into GPIO Automatic, Colored, and Black-White models.

Delay: IR-cut switching delay.

Image Flip-Over: including flip horizontal, flip vertical, Corridor mode and Angle rotation (0° \180°)

Image Control: backlight compensation, 3D noise reduction, WDR, automatic gain, shutter speed, exposure time

and de-moist model.

Note: Below 2MP device, it doesn't support Corridor mode and Angle rotation, fog mode.

4.3 Video Blocking

Click on Video Blocking in Display Configuration to open the following page:



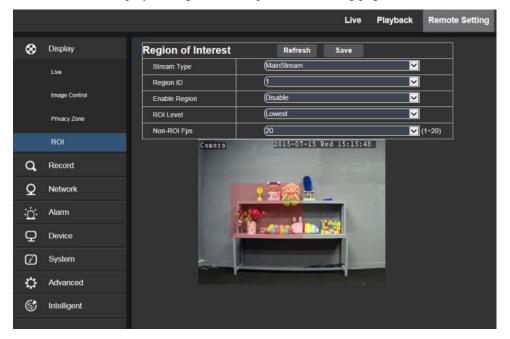
Procedure of setting video blocking:

- 1. Check Enable Video Blocking
- 2. Press down and hold the left mouse button and drag out a area for video blocking (up to four areas at one time)
- 3. Click on Save to enable the video blocking area.

Remove: After clicking Refresh, choose a blocked area by clicking it and then click Remove and click Save to remove it.

4.4 ROI (if applicable)

Click on ROI in Display Configuration to open the following page:



Procedure of setting ROI:

- 1. Choose an area of application
- 2. Press down and hold the left mouse button and drag out a ROI area (only one ROI can be set for each area)
- 3. Click on Save to apply the ROI area.

Bit stream type: Choose bit stream effective for ROI among Main Bit Stream, Sub-Bit Stream and Cell Phone Stream.

Area Numbering: Up to 8 ROI areas can be set in one bit stream.

Enable ROI area: Enable or disable ROI area

Area image quality: Set quality of the image in the area (relative quality, absolute quality)

ROI level: Set ROI level in one bit stream; larger value indicates higher-quality image in ROI area (1~6 Levels)

Non-ROI frame rate: Set frame rate out of RIO area; smaller value indicates higher-quality image in ROI area.

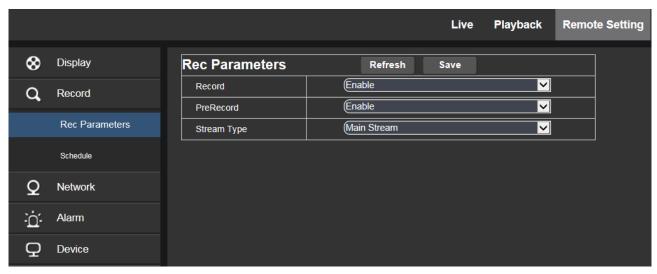
Range of frame rate is in relation to video standard and resolution. (Note: Different non-ROI frame rates may be allocated to different ROI areas, but the minimum value among them is used as the frame rate to be applied for the

non-ROI area on the preview frame.)

5.Record Parameters

5.1 Rec Parameters

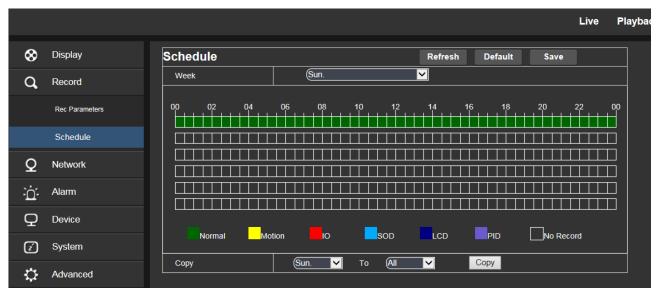
Click Rec Parameters under the menu Record, go to below page



This function is to control the record, pre record and record type (main stream and substream)

5.2 Schedule

Click Schedule under the menu Record, then go to the page as below

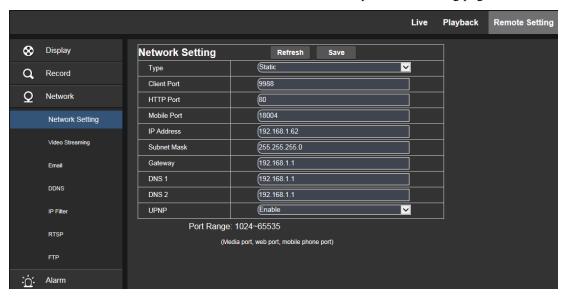


As image: one grid in the table is 30 minutes, green is normal record, yellow is motion detection alarm, red is I/O Alarm record, light blue is SOD record, dark blue is LCD record, purple is PID record. User can setup according to private requirement to choose different record type and time.

6. Network Parameters

6.1 Network Parameters

Click on Network Parameters in Network Parameter Menu to open the following page:



Networking mode: DHCP (Automatically Acquired), Manually Configured and PPPOE; the default is Manually

Configured

Media port: Media port for IPC

Web port: Web port for IPC

Cell phone port: Port for connection of cell phone client

IP address: IP address of IPC

Subnet mast: Subnet mast of IPC

Default gateway: Default gateway of the device

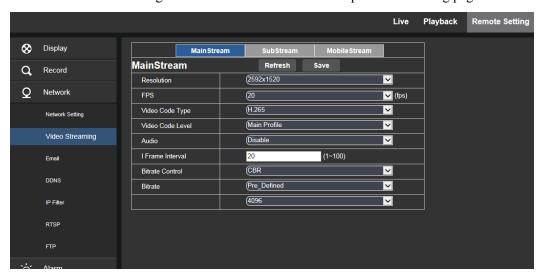
Preferred/Alternate DNS server: Set DNS server

UPNP: Enable or disable UPNP function for the device (enabled by default)

Note: To enable UPNP, the media/web/cell phone port should be set to a value between 1024-65535; the media port is used for connection of proprietary cell phone client; cell phone port is used for connection of the mobile client.

6.2 Bit stream setting

Click on Bit Stream Setting in Network Parameter Menu to open the following page:



By default the available bit streams are: main bit stream, sub-bit stream and cell phone bit steam.

You can set resolution, frame rate, video encoding, encoding level, audio, I frame interval, variable frame rate and bit stream size respectively for main bit stream, sub-bit stream and cell phone bit steam.

Resolution: Set resolutions respectively for bit streams: The highest resolution for main bit stream is 2048×1536. The higher resolution for sub-bit stream is 704×480. The only resolution available for cell phone bit steam is 320×480.

Note: The higher resolution for main bit stream of 3MP Series is 2048*1536 (frame rate of 30 fps). The higher resolution for main bit stream of 4MP Series is 2592*1520 (frame rate of 20 fps). The higher resolution for main bit stream of 5MP Series is 2592*1944 (frame rate of 15 fps). The higher resolution for main bit stream of 8MP Series is 3840x2160 (frame rate of 30 fps). The higher resolution for main bit stream of 2MP Series is 1920*1080 (frame rate of 30 fps).

Frame rate: When refresh rate is 50Hz, the maximum available frame rate is 25 fps. When refresh rate is 60Hz, the maximum available frame rate is 30 fps.

Video encoding: Set video encoding (H265/H264) for each bit stream.

Audio: Enable audio for each bit stream. **I frame interval:** Set I frame interval.

Bitrate control: Set constant or variable bitrate for bit stream.

Bit stream: Set bit stream value by choosing fixed value or customizing it.

Note: Range of main bit stream is 256-8192.

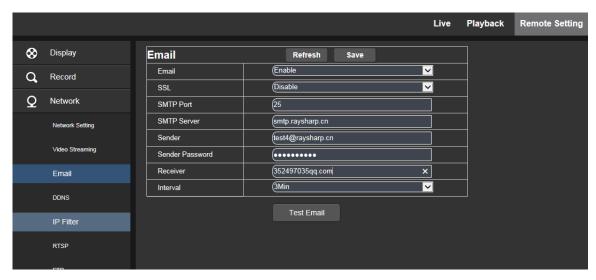
Range of sub-bit stream is 128-4096.

Range of cell phone bit steam is 8-1536.

Video encoding and encoding level are unavailable in setting page of IP camera of 2MP Series.

6.3 E-Mail Configuration

Click on E-Mail Configuration in Network Parameter menu to open the following page:



E-Mail Configuration: mail service setting - used with alarm function to upload images snapped to the mail server.

Enable e-mail: Enable or disable e-mail function.

SSL: ON/OFF SSL proto.

Port: The default port number is 25 (mail serve port).

SMTP server: Enter the address of mail server.

Address of sender: Address of sending mailbox.

Password of sender: Password of sending mailbox.

Address of recipient: Address of receiving mailbox.

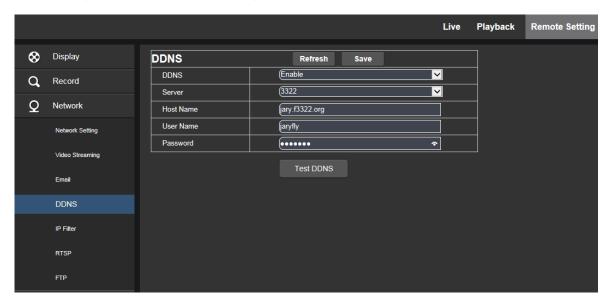
Time interval: Time interval for sending mail (1 minute, 3 minute, 5 minute, 10 minute).

E-mail test: Click it to test whether the mailbox is configured properly by sending a test mail to the recipient's mailbox.

6.4 DDNS Configuration

Click on DDNS Configuration in Network Parameter menu to open the following page:

DDNS configuration: Dynamic DNS configuration - used with server for access from an extranet.



Enable DDNS: Enable or disable it.

Address of server: Choose "3322".

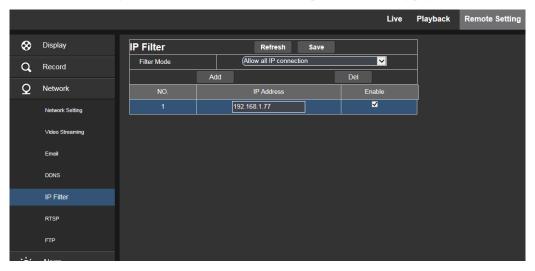
Name of host: Enter the name of active server

User name: Name of the user

Password: Password of the user

6.5 IP Filtering

Click on IP Filtering in Network Parameter menu to open the following page:



Filtering mode: Three modes are available (Allow all IP connections, Allow all IP connections as set, Forbid IP connection as set).

Add: Add any allowed or forbidden IP address

Delete: Delete any IP address added previously

6.6 RTSP

Click on RTSP in Network Parameter menu to open the following page:



RTSP Enabling: Enable or disable RTSP. RTSP is enabled by default. After it is disabled, it will not be found with ONVIF.

RTSP Port: The default port number is 554, and can be changed to another value between 1024 and 65535. Modification to the parameter will restart the system.

Operation Instructions:

For IP cameras of 3MP/4MP/5MP/8MP Series: rtsp://IP:Port/ch00/A A:0 (main bit stream), 1(sub-bit stream), 2 (cell phone bit stream)

For IP cameras of 2MP Series: rtsp://IP:Port /A A:0 (main bit stream), 1(sub-bit stream), 2 (cell phone bit stream)

6.7 FTP

Click on FTP in Network Parameter menu to open the following page:



FTP: FTP service setting - used with alarm function to upload images or videos snapped to the FTP server.

FTP:Enable or disable it.

User name: The user name for access to FTP service

Password: The password for access to FTP service

FTP Server: Enter the address of FTP server.

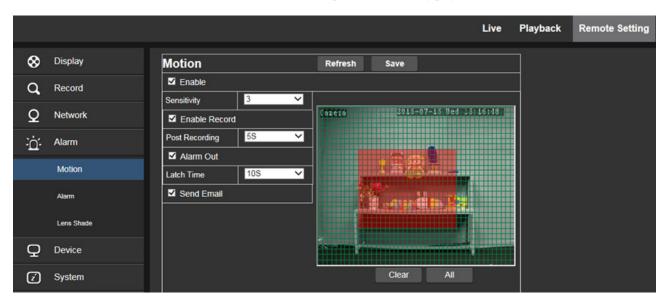
Port:FTP service port number; the default number is 21.

Transmit Image: Check it to transmit image

7. Alarm Parameter

7.1 Mobile Detection

Click on Mobile Detection in Alarm Parameter menu to open the following page:



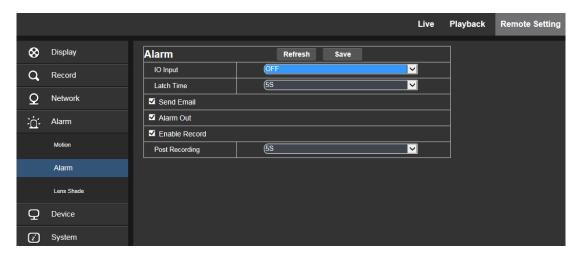
Procedure of setting Mobile Detection:

- 1. Check Enable Mobile Detection.
- 2. Press down and hold the left mouse button and drag out an area for mobile detection.
- 3. Set the sensitivity for mobile detection (ranging from 1 to 8; larger value indicates higher sensitivity).
- 4. Used with SMTP to enable mail delivery.
- 5. Click on Save to apply the settings.

(Note: When any object moves within the target area, a letter "M" in green color will be displayed on the preview frame)

7.2 I/O Alarm (if applicable)

Click on I/O Alarm in Alarm Parameter menu to open the following page:



I/O Alarm Input: Enable or disable I/O alarm.

I/O Alarm Output Time: Set I/O alarm output time (10s, 20s, 40s, 60s)

Recording Delay Time: After checking Enable Triggered Recording, you can set recording delay time (5S/10S/20S/30S)

7.3 Lens Blocking

Click on Lens Blocking in Alarm Parameter menu to open the following page:



Check Lens Blocking option (checked by default) to activate Security Level and Mail Linkage options.

Security Level: Set security level for lens blocking (Level 1~8; larger value indicates higher security level)

Mail Linkage: It is disabled by default. After enabled, it may be used with SMTP to enable mail delivery.

8. Device

It includes SD Card (optional function) Logs and Audio. Their interfaces and functions are described below.

8.1 SD Card (optional function)

Click SD Card under the menu Device, then go to below page



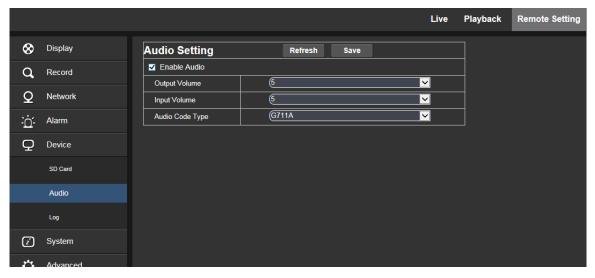
Insert SD card to device, system will auto detect the total capacity and balance capacity of SD card and give The information of time to record

SD Card Overwrite: when the capacity of SD card is 0, new recorad will overlap previous record(this function is default on)

SD Card Format: to format SD card

8.2 Audio

Click on Audio in Device menu to open the following page:



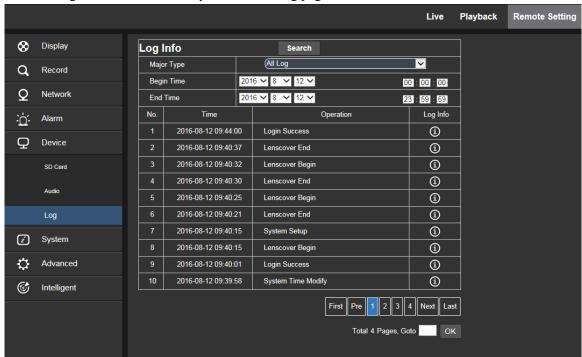
Procedure of setting Audio:

Check Open Audio option to access audio setting, and set audio input/output volume (ranging $0\sim10$), and then click on Save to save the parameters set.

(Note: For application of audio function, the audio option in Bit Stream Setting needs to be enabled)

8.3 Logs

Click on Logs in Device menu to open the following page:



Log Type: Eight types of logs are available - system logs, network logs, parameter logs, alarm logs, user logs, recording logs, storage logs and all logs). Choose the starting and ending date/time for retrieval.

Click on "Search" to retrieve and display related logs in the table below.

Click on "Delete" to delete all device logs.

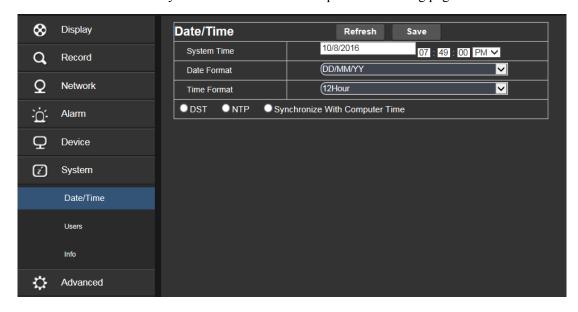
Click on "Refresh" to refresh the logs selected.

9. System Parameters

System parameters include Basic Information, User Configuration and System Information. Their interfaces and functions are described below.

9.1 Basic Information

Click on Basic Information in System Parameters menu to open the following page:



The device time, system time, date format and time format contained in the basic information can be manually set and saved.

Three automatic time correction functions are provided in this device.

DST: Check Daylight Savings Time (DST) option to enable DST correction.

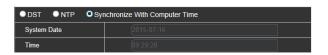
The device will correct the time based on the time deviation as set.

NTP: Check Enable NTP option, input the address of time server and choose a time zone and then save the setting. The system will correct time in accordance with the time server.

Sync with PC Time: The device will use PC as a time server to correct time.

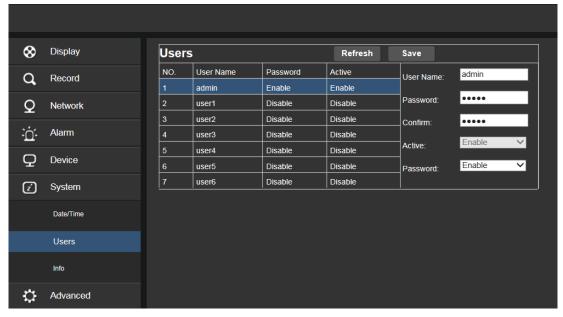






9.2 User Configuration

Click on User Configuration in System Parameters menu to open the following page:



Here you can set user access authority and login password.

9.3 System Information

Click on System Information in System Parameters menu to open the following page:



Here some system information on the device will be displayed, including device type, MAC address and software version.

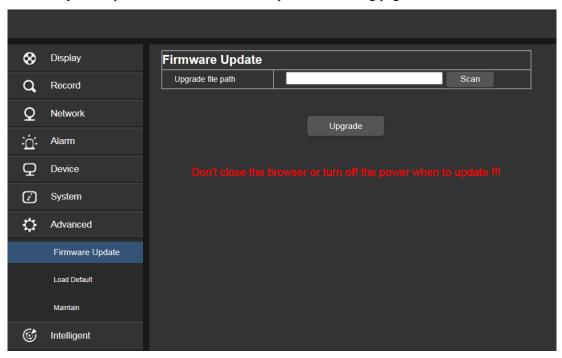
You can visit mobile app through P2P QR code directly.

10. Advanced

It includes System Update, Default Parameters and System Maintenance. Their interfaces and functions are described below.

10.1 System Update

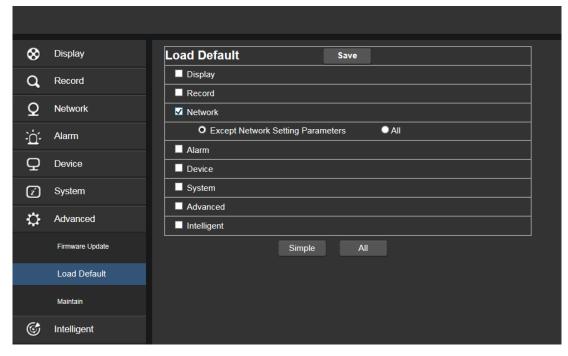
Click on System Update in Advanced menu to open the following page:



Update will be unavailable if the update files do not match the target device.

10.2 Default Parameters

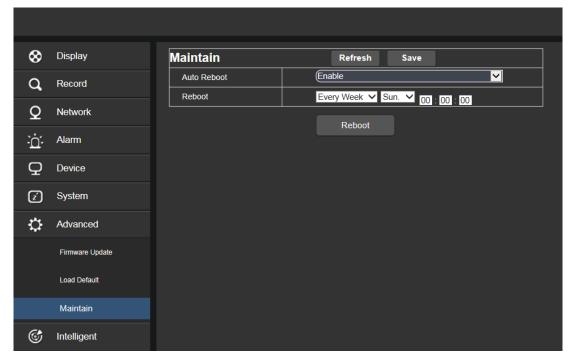
Click on Default Parameters in Advanced menu to open the following page:



Check relevant options and click on Save to recover the default factory settings for the options as checked.

10.3 System Maintenance

Click on System Maintenance in Advanced menu to open the following page: \

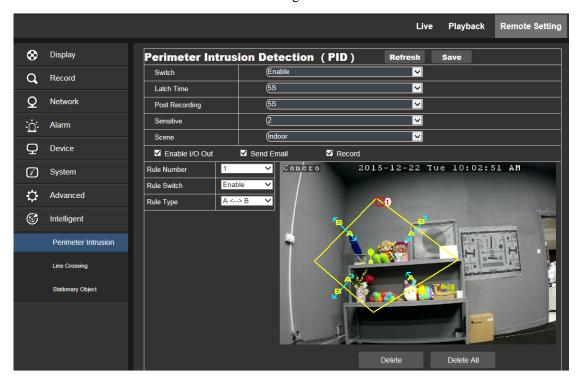


Here you can set regular restart or manual restart of the device.

11. Intelligent

11.1 Perimeter Intrusion Detection (PID)

Click Perimeter Intrusiion under the menu Intelligent:



Function description: in the preview page, to detect and follow up the invaded object

Switch: PID function master switch

Latch Time: when trigger alarm, the external alarm device output alarm time, can selected time period is 5S,10S, 20S, 30S.

Post Recording: after triggered alarm, the post record time, selected time period is 5S, 10S, 20S, 30S

Sensitive: Sensitive level, range is 1-4, default to 2. If the detected object sensitivity is more high, the moving

Object can be detected easily. Meanwhile, the false detection rate is higher. Suggest to use default level.

Scene: Scene setup, user can choose Indoor or outoddor according to real situationEnable I/O Out: Trigger alarm then if will be I/O output

Send Email: If trigger alarm, send the Email to notify, the Email setup need to set in Remote Setting –Network-Email

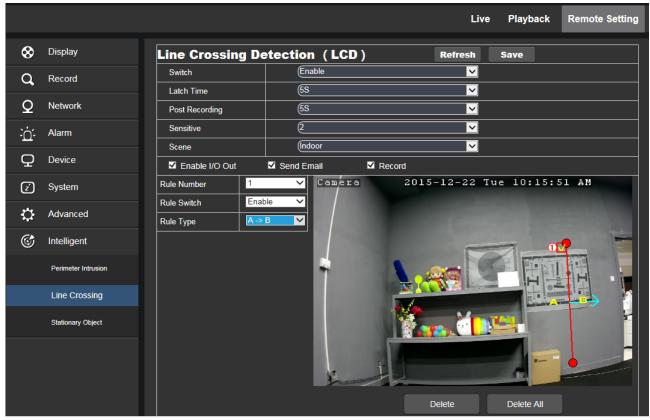
Record: if to do record

Rule Number: Max set 4 rule numberule Switch: The switch to every rule

Rule Type: Setup to each rule, A->B means can detect A to B direction moving, B->A means can detect B to A direction moving, A \longleftrightarrow B means can detect two directions moving.

11.2 Line Crossing Detection (LCD)

Click Line Crossing under the menu Intelligent to go to below page



Function description: in the preview page, detect and followup the moving object to pass through the guard line Switch: LCD master switch

Latch Time: when trigger alarm, the external alarm device outure alarm time, can selected time period is 5S,10S, 20S, 30S.

Post Recording:

after triggered alarm, the post record time, selected time period is 5S, 10S, 20S, 30S

Sensitive:

Sensitive level, range is 1-4, default to 2. If the detected object sensitivity is more high, the moving

Object can be detected easily. Meanwhile, the false detection rate is higher. Suggest to use default level

Scene: Scene setup, user can choose Indoor or outoddor according to real situationEnable I/O Out: Trigger alarm then if will be I/O output

Send Email:

If trigger alarm, send the Email to notify, the Email setup need to set in Remote Setting -Network-Email

Record: if to do record

Rule Number:: Max set 4 rule numberRule Switch:

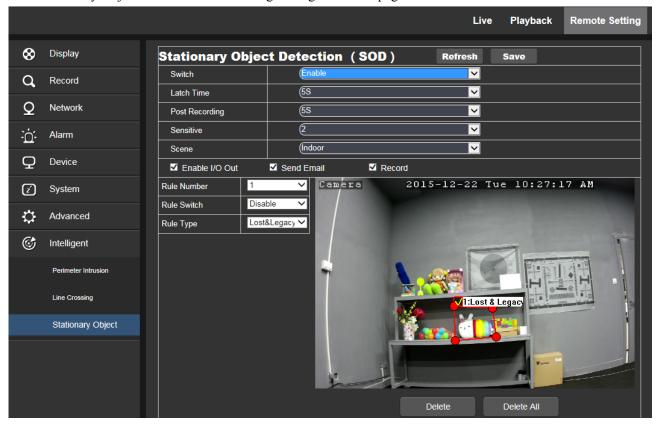
The switch to every rule

Rule Type:

Setup to each rule, A->B means can detect A to B direction moving, B->A means can detect B to A direction moving, A \longleftrightarrow B means can detect two directions moving.

11.3 Stationary Object Detection

Click Stationary Object under the menu Intelligent to go to below page



Function description: in the preview page, detect the lost and leave behind object in one fixed area

Switch: LCD master switch

Latch Time: when trigger alarm, the external alarm device output alarm time, can selected time period is 5S,10S, 20S, 30S.

Post Recording:

after triggered alarm, the post record time, selected time period is $5\mathrm{S},\,10\mathrm{S},\,20\mathrm{S},\,30\mathrm{S}$

Sensitive:

Sensitive level, range is 1-4, default to 2. If the detected object sensitivity is more high, the moving Object can be detected easily. Meanwhile, the false detection rate is higher. Suggest to use default level.

Scene: Scene setup, user can choose Indoor or outoddor according to real situationEnable I/O Out: Trigger alarm then if will be I/O output

Send Email:

If trigger alarm, send the Email to notify, the Email setup need to set in Remote Setting -Network-Email

Record: if to do record

Rule Number: Max set 4 rule numberRule Switch:

The switch to every rule

Rule Type:

Setup to each rule, A->B means can detect A to B direction moving, B->A means can detect B to A direction moving, A $\leftarrow \rightarrow$ B means can detect two directions moving.

Tips:

- 1) IA function enable, need 30S-1 mins to initializate, during this period, function don't work
- 2) When enable PID, LCD and SOD function at same tiem, the setup is follow up the the last one scene