User Manual

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About this Manual

This Manual is applicable to Network Mini PTZ Camera.
The Manual includes instructions for using and managing the product. Pictures, charts, images and all other information hereinafter are for description and explanation only. The information contained in the Manual is subject to change, without notice, due to firmware updates or other reasons. Please find the latest version in the company website (http://overseas.hikvision.com/en/).
Please use this user manual under the guidance of professionals.

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Regulatory Information

FCC Information
FCC compliance: This equipment has been tested and found to comply with the limits for a digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC Conditions
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

EU Conformity Statement
This product and - if applicable - the supplied accessories too are marked with "CE" and comply therefore with the applicable harmonized European standards listed under the EMC Directive 2004/108/EC, the RoHS Directive 2011/65/EU.

2012/19/EU (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see: www.recyclethis.info.

2006/66/EC (battery directive): This product contains a battery that cannot be disposed of as unsorted municipal waste in the European Union. See the product documentation for specific battery information. The battery is marked with this symbol, which may include lettering to indicate cadmium (Cd), lead (Pb), or mercury (Hg). For proper recycling, return the battery to your supplier or to a designated collection point. For more information see: www.recyclethis.info.

Industry Canada ICES-003 Compliance
This device meets the CAN ICES-3 (A)/NMB-3(A) standards requirements.
Safety Instruction

These instructions are intended to ensure that the user can use the product correctly to avoid danger or property loss.

The precaution measure is divided into ‘Warnings’ and ‘Cautions’:

**Warnings:** Serious injury or death may be caused if any of these warnings are neglected.

**Cautions:** Injury or equipment damage may be caused if any of these cautions are neglected.

<table>
<thead>
<tr>
<th>Warnings</th>
<th>Cautions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Follow these safeguards to prevent serious injury or death.</td>
<td>Follow these precautions to prevent potential injury or material damage.</td>
</tr>
</tbody>
</table>

**Warnings:**

- Please adopt the power adapter which can meet the safety extra low voltage (SELV) standard. The power consumption cannot be less than the required value.
- Do not connect several devices to one power adapter as an adapter overload may cause over-heating and can be a fire hazard.
- When the product is installed on a wall or ceiling, the device should be firmly fixed.
- To reduce the risk of fire or electrical shock, do not expose the indoor used product to rain or moisture.
- This installation should be made by a qualified service person and should conform to all the local codes.
- Please install blackouts equipment into the power supply circuit for convenient supply interruption.
- If the product does not work properly, please contact your dealer or the nearest service center. Never attempt to disassemble the product yourself. (We shall not assume any responsibility for problems caused by unauthorized repair or maintenance.)

**Cautions:**

- Make sure the power supply voltage is correct before using the product.
• Do not drop the product or subject it to physical shock. Do not install the product on vibratory surface or places.
• Do not expose it to high electromagnetic radiating environment.
• Do not aim the lens at the strong light such as sun or incandescent lamp. The strong light can cause fatal damage to the product.
• The sensor may be burned out by a laser beam, so when any laser equipment is being used, make sure that the surface of the sensor not be exposed to the laser beam.
• For working temperature, please refer to the specification manual for details.
• To avoid heat accumulation, good ventilation is required for a proper operating environment.
• While shipping, the product should be packed in its original packing.
• Please use the provided glove when open up the product cover. Do not touch the product cover with fingers directly, because the acidic sweat of the fingers may erode the surface coating of the product cover.
• Please use a soft and dry cloth when clean inside and outside surfaces of the product cover. Do not use alkaline detergents.
• Improper use or replacement of the battery may result in hazard of explosion. Please use the manufacturer recommended battery type.
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Chapter 1 Overview

1.1 System Requirement

System requirement of web browser accessing is as follows:
- **Operating System:** Microsoft Windows XP SP1 and above version / Vista / Win7 / Server 2003 / Server 2008 32bits
- **CPU:** Intel Pentium IV 3.0 GHz or higher
- **RAM:** 1G or higher
- **Display:** 1024×768 resolution or higher
- **Web Browser:** Internet Explorer 8.0 and above version, Apple Safari 5.02 and above version, Mozilla Firefox 5 and above version and Google Chrome 18 and above versions.

1.2 Functions

The functions vary depending on the models of PTZ camera.

- **Limit Stops**
The PTZ camera can be programmed to move within the limit stops (left/right, up/down).

- **Preset Freezing**
This feature freezes the scene on the monitor when the PTZ camera is moving to a preset. This allows for smooth transition from one preset scene to another. It also guarantees that masked area will not be revealed when the PTZ camera is moving to a preset.

- **Presets**
A preset is a predefined image position. When the preset is called, the PTZ camera will automatically move to the defined position. The presets can be added, modified, deleted and called.

- **Label Display**
The on-screen label of the preset title, azimuth/elevation, zoom, time and PTZ camera name can be displayed on the monitor. The displays of time and PTZ camera name can be programmed.

- **Privacy Mask**
This function allows you to block or mask certain area of a scene, for preventing the personal privacy from recording or live viewing. A masked area will move with pan and tilt functions and automatically adjust in size as the lens zooms telephoto and wide.

- **3D Positioning**
In the client software, use the left key of mouse to click on the desired position in the video image and drag a rectangle area in the lower right direction, then the camera will move the position to the center and allow the rectangle area to zoom in. Use the left key of mouse to drag a rectangle area in the upper left direction to move the position to the center and allow the rectangle area to zoom out.

- **Proportional Pan/Tilt**
  Proportional pan/tilt automatically reduces or increases the pan and tilt speeds according to the amount of zoom. At telephoto zoom settings, the pan and tilt speeds will be slower than at wide zoom settings. This keeps the image from moving too fast on the live view image when there is a large amount of zoom.

- **Auto Focus**
  The auto focus enables the camera to focus automatically to maintain clear video images.

- **Day/Night Auto Switch**
  The PTZ camera delivers color images during the day. And as light diminishes at night, the PTZ camera switches to night mode and deliver black and white images with high quality.

- **Slow Shutter**
  In slow shutter mode, the shutter speed will automatically slow down in low illumination conditions to maintain clear video images by extending the exposure time. The feature can be enabled or disabled.

- **Backlight Compensation (BLC)**
  If you focus on an object against strong backlight, the object will be too dark to be seen clearly. The BLC (Backlight Compensation) function can compensate light to the object in the front to make it clear, but this causes the over-exposure of the background where the light is strong.

- **Wide Dynamic Range (WDR)**
  The wide dynamic range (WDR) function helps the camera provide clear images even under back light circumstances. When there are both very bright and very dark areas simultaneously in the field of view, WDR balances the brightness level of the whole image and provide clear images with details.

  **Note:**
  This feature varies depending on PTZ camera models.

- **White Balance (WB)**
  White balance can remove the unrealistic color casts. White balance is the white rendition function of the camera to adjust the color temperature according to the environment automatically.

- **Power Off Memory**
  The PTZ camera supports the power off memory capability with the predefined resume time. It allows the PTZ camera to resume its previous position after power is restored.

- **Time Task**
  A time task is a preconfigured action that can be performed automatically at a
specific date and time. The programmable actions include: preset 1-8, day, night, reboot, PT adjust, Alarm output, etc.

- **Park Action**
  This feature allows the PTZ camera to start a predefined action automatically after a period of inactivity.

- **User Management**
  The PTZ camera allows you to edit users with different levels of permission, in the admin login status. Multiple users are allowed to access and control the same network PTZ camera via network simultaneously.

- **3D Digital Noise Reduction**
  Comparing with the general 2D digital noise reduction, the 3D digital noise reduction function processes the noise between two frames besides processing the noise in one frame. The noise will be much less and the video will be clearer.

- **Dual-VCA**
  Combine the detected moving objects into the video stream, which can be used for the second-time analysis on the back-end device.
Chapter 2 Network Connection

NOTE

- You shall acknowledge that the use of the product with Internet access might be under network security risks. For avoidance of any network attacks and information leakage, please strengthen your own protection. If the product does not work properly, please contact with your dealer or the nearest service center.
- To ensure the network security of the speed dome, we recommend you to have the speed dome assessed and maintained termly. You can contact us if you need such service.

Before you start:
- If you want to set the network PTZ camera via a LAN (Local Area Network), please refer to Section 2.1.
- If you want to set the network PTZ camera via a WAN (Wide Area Network), please refer to Section 2.2.

2.1 Setting the Network PTZ Camera over the LAN

Purpose:
To view and configure the PTZ camera via a LAN, you need to connect the network PTZ camera in the same subnet with your computer, and install the SADP or client software to search and change the IP of the network PTZ camera.

For the detailed introduction of SADP, please refer to Appendix 1.

2.1.1 Wiring over the LAN

The following figures show the two ways of cable connection of a network PTZ camera and a computer:

Purpose:
- To test the network PTZ camera, you can directly connect the network PTZ camera to the computer with a network cable as shown in Figure 2-1.
- Refer to the Figure 2-2 to set the network PTZ camera over the LAN via a switch or a router.
2.1.2 Activating the Speed Dome

Purpose:
You are required to activate the speed dome first before you can use the speed dome. Activation via Web Browser, Activation via SADP, and Activation via client software are supported. In the following sections, activation via web browser and SADP will be taken as examples. You may refer to the user manual of the speed dome for the details of activation via client software.

◆ Activation via Web Browser

Steps:
1. Power on the speed dome, and connect the speed dome to the network.
2. Input the IP address into the address bar of the web browser, and click Enter to enter the activation interface.

NOTE The default IP address of the speed dome is 192.168.1.64.
3. Create a password and input the password into the password field.

**STRONG PASSWORD RECOMMENDED**— We highly recommend you create a strong password of your own choosing (using a minimum of 8 characters, including upper case letters, lower case letters, numbers, and special characters) in order to increase the security of your product. And we recommend you reset your password regularly, especially in the high security system, resetting the password monthly or weekly can better protect your product.

4. Confirm the password.

5. Click OK to activate the speed dome and enter the live view interface.

◆ **Activation via SADP Software**

SADP software is used for detecting the online device, activating the device, and resetting the password.

Get the SADP software from the supplied disk or the official website, and install the SADP according to the prompts. Follow the steps to activate the speed dome.

**Steps:**

1. Run the SADP software to search the online devices.
2. Check the device status from the device list, and select an inactive device.
3. Create a password and input the password in the password field, and confirm the password.

**STRONG PASSWORD RECOMMENDED**— We highly recommend you create a strong password of your own choosing (using a minimum of 8 characters, including upper case letters, lower case letters, numbers, and special characters) in order to increase the security of your product. And we recommend you reset your password regularly, especially in the high security system, resetting the password monthly or weekly can better protect your product.

4. Click **OK** to save the password.

You can check whether the activation is completed on the popup window. If activation failed, please make sure that the password meets the requirement and then try again.

5. Change the device IP address to the same subnet with your computer by either modifying the IP address manually or checking the checkbox of Enable DHCP.
Figure 2-5 Modify the IP Address

6. Input the password and click the **Save** button to activate your IP address modification.

◆ **Activation via Client Software**

The client software is versatile video management software for multiple kinds of devices. Get the client software from the supplied disk or the official website, and install the software according to the prompts. Follow the steps to activate the camera.

**Steps:**

1. Run the client software and the control panel of the software pops up, as shown in the figure below.
2. Click the **Device Management** icon to enter the Device Management interface, as shown in the figure below.

3. Check the device status from the device list, and select an inactive device.
4. Click the **Activate** button to pop up the Activation interface.
5. Create a password and input the password in the password field, and confirm the password.
STRONG PASSWORD RECOMMENDED—We highly recommend you create a strong password of your own choosing (using a minimum of 8 characters, including upper case letters, lower case letters, numbers, and special characters) in order to increase the security of your product. And we recommend you reset your password regularly, especially in the high security system, resetting the password monthly or weekly can better protect your product.

7. Click OK button to start activation.
8. Click the Modify Netinfo button to pop up the Network Parameter Modification interface, as shown in the figure below.

9. Change the device IP address to the same subnet with your computer by either modifying the IP address manually or checking the checkbox of Enable DHCP.
10. Input the password to activate your IP address modification.
2.2 Setting the Network PTZ Camera over the WAN

*Purpose:* This section explains how to connect the network PTZ camera to the WAN with a static IP or a dynamic IP.

### 2.2.1 Static IP Connection

*Before you start:* Please apply a static IP from an ISP (Internet Service Provider). With the static IP address, you can connect the network PTZ camera via a router or connect it to the WAN directly.

- **Connecting the network PTZ camera via a router**

  **Steps:**
  1. Connect the network PTZ camera to the router.
  2. Assign a LAN IP address, the subnet mask and the gateway. Refer to *Section 2.1.2* for detailed IP address configuration of the PTZ camera.
  3. Save the static IP in the router.
  4. Set port mapping, E.g., 80, 8000 and 554 ports. The steps for port mapping vary depending on different routers. Please call the router manufacturer for assistance with port mapping.

    Refer to Appendix 2 for detailed information about port mapping.
  5. Visit the network PTZ camera through a web browser or the client software over the internet.

- **Connecting the network PTZ camera with static IP directly**

  You can also save the static IP in the PTZ camera and directly connect it to the internet without using a router. Refer to *Section 2.1.2* for detailed IP address configuration of the PTZ camera.
2.2.2 Dynamic IP Connection

Before you start:
Please apply a dynamic IP from an ISP. With the dynamic IP address, you can connect the network PTZ camera to a modem or a router.

● Connecting the network PTZ camera via a router

Steps:
1. Connect the network PTZ camera to the router.
2. In the PTZ camera, assign a LAN IP address, the subnet mask and the gateway. Refer to Section 2.1.2 for detailed LAN configuration.
3. In the router, set the PPPoE user name, password and confirm the password.

For your privacy and to better protect your system against security risks, we strongly recommend the use of strong passwords for all functions and network devices. The password should be something of your own choosing (using a minimum of 8 characters, including upper case letters, lower case letters, numbers and special characters) in order to increase the security of your product.

4. Set port mapping. E.g. 80, 8000 and 554 ports. The steps for port mapping vary depending on different routers. Please call the router manufacturer for assistance with port mapping.

Refer to Appendix 2 for detailed information about port mapping.

5. Apply a domain name from a domain name provider.
6. Configure the DDNS settings in the setting interface of the router.
7. Visit the PTZ camera via the applied domain name.

● Connecting the network PTZ camera via a modem

Purpose:
This PTZ camera supports the PPPoE auto dial-up function. The PTZ camera gets a public IP address by ADSL dial-up after the PTZ camera is connected to a modem. You need to configure the PPPoE parameters of the network PTZ camera. Refer to **Section 7.3.3 Configuring PPPoE Settings** for detailed configuration.

![Diagram of Network Setup](image)

**Figure 2-12 Accessing the PTZ Camera with Dynamic IP**

The obtained IP address is dynamically assigned via PPPoE, so the IP address always changes after rebooting the PTZ camera. To solve the inconvenience of the dynamic IP, you need to get a domain name from the DDNS provider (E.g. DynDns.com). Please follow below steps for normal domain name resolution and private domain name resolution to solve the problem.

- **Normal Domain Name Resolution**

![Diagram of Normal Domain Name Resolution](image)

**Figure 2-13 Normal Domain Name Resolution**

**Steps:**
1. Apply a domain name from a domain name provider.
2. Configure the DDNS settings in the **DDNS Settings** interface of the network PTZ camera. Refer to **Section 7.3.4 Configuring DDNS Settings** for detailed configuration.
3. Visit the PTZ camera via the applied domain name.

- **Private Domain Name Resolution**
Figure 2-14 Private Domain Name Resolution

**Steps:**
1. Install and run the IP Server software in a computer with a static IP.
2. Access the network PTZ camera through the LAN with a web browser or the client software.
3. Enable DDNS and select IP Server as the protocol type. Refer to *Section 7.3.4 Configuring DDNS Settings* for detailed configuration.
Chapter 3 Access to the Network PTZ Camera

3.1 Accessing by Web Browsers

Steps:
1. Open the web browser.
2. In the address field, input the IP address of the network PTZ camera, e.g., 192.168.1.64 and press the Enter key to enter the login interface.
3. Activate the speed dome for the first time using, refer to the section 2.1.2 Activating the Speed Dome.
4. Select English as the interface language on the top-right of login interface.
5. Input the user name and password and click Login. The admin user should configure the device accounts and user/operator permissions properly. Delete the unnecessary accounts and user/operator permissions.

The device IP address gets locked if the admin user performs 7 failed password attempts (5 attempts for the user/operator).

Figure 3-1 Login Interface

6. Install the plug-in before viewing the live video and operating the PTZ camera. Please follow the installation prompts to install the plug-in.
Figure 3-2 Download and Install Plug-in

Figure 3-3 Install Plug-in (1)

Figure 3-4 Install Plug-in (2)
You may have to close the web browser to install the plug-in. Please reopen the web browser and log in again after installing the plug-in.

### 3.2 Accessing by Client Software

The product CD contains the client software. You can view the live video and manage the PTZ camera with the client software. Follow the installation prompts to install the client software and WinPcap. The configuration interface and live view interface of client software are shown below.
Figure 3-7 iVMS-4200 Live View Interface

- If you use third party VMS software, please contact technical support of our branch for camera firmware.
- For detailed information about client software of our company, please refer to the user manual of the software. This manual mainly introduces accessing to the network PTZ camera by web browser.
Chapter 4 Wi-Fi Settings

Purpose:
By connecting to the wireless network, you don’t need to use cable of any kind for network connection, which is very convenient for the actual surveillance application.

This chapter is only applicable for the PTZ camera with the built-in Wi-Fi module.

4.1 Configuring Wi-Fi Connection in Manage and Ad-hoc Modes

Before you start:
A wireless network must be configured.

Wireless Connection in Manage Mode

Steps:
1. Enter the Wi-Fi configuration interface.
   Configuration> Advanced Configuration> Network> Wi-Fi

   Figure 4-1 Wireless Network List

2. Click Search to search the online wireless connections.
3. Click to choose a wireless connection on the list.

   Figure 4-2 Wi-Fi Setting- Manage Mode

4. Check the checkbox to select the Network mode as Manage, and the Security
mode of the network is automatically shown when you select the wireless network, please do not change it manually.

These parameters are exactly identical with those of the router.

5. Enter the key to connect the wireless network. The key should be that of the wireless network connection you set on the router.

**Wireless Connection in Ad-hoc Mode**

If you choose the Ad-hoc mode, you don’t need to connect the wireless camera via a router. The scenario is the same as you connect the camera and the PC directly with a network cable.

**Steps:**

1. Choose Ad-Hoc as the Network Mode.

   ![Figure 4-3 Wi-Fi Setting - Ad-hoc](image)

   **Figure 4-3 Wi-Fi Setting - Ad-hoc**

2. Customize a SSID for the camera.
4. Enable the wireless connection function for your PC.
5. On the PC side, search the network and you can see the SSID of the camera you just configured is in the list.

   ![Figure 4-4 Ad-hoc Connection Point](image)

   **Figure 4-4 Ad-hoc Connection Point**

6. Choose the SSID and connect.

**Security Mode Description:**

![Figure 4-5 Security Mode](image)

**Figure 4-5 Security Mode**
You can choose the Security Mode as not-encrypted, WEP, WPA-personal, WPA-enterprise, WPA2-personal, and WPA2-enterprise.

◆ **WEP Mode:**

![Figure 4-6 WEP Mode](image)

- **Authentication:** Select Open or Shared Key System Authentication, depending on the method used by your access point. Not all access points have this option, in which case they probably use Open System, which is sometimes known as SSID Authentication.
- **Key length** - This sets the length of the key used for the wireless encryption, 64 or 128 bit. The encryption key length can sometimes be shown as 40/64 and 104/128.
- **Key type** - The key types available depend on the access point being used. The following options are available:
  - *HEX* - Allows you to manually enter the hex key.
  - *ASCII* - In this method the string must be exactly 5 characters for 64-bit WEP and 13 characters for 128-bit WEP.

◆ **WPA-personal and WPA2-personal Mode:**

Enter the required Pre-shared Key for the access point, which can be a hexadecimal number or a passphrase.

![Figure 4-7 Security Mode- WPA-personal](image)

◆ **WPA- enterprise and WPA2-enterprise Mode:**

Choose the type of client/server authentication being used by the access
point; EAP-TLS, EAP-PEAP or EAP-TTLS.

**EAP-TLS:**

- **Identity / User Name** - Enter the user ID to present to the network.
- **Private key password / Password** – Enter the password for your user ID.
- **EAPOL version** - Select the version used (1 or 2) in your access point.
- **CA Certificates** - Upload a CA certificate to present to the access point for authentication.

**EAP-PEAP:**

- **User Name** - Enter the user name to present to the network
- **Password** - Enter the password of the network
- **PEAP Version** - Select the PEAP version used at the access point.
- **Label** - Select the label used by the access point.
- **EAPOL version** - Select version (1 or 2) depending on the version used at the access point
- **CA Certificates** - Upload a CA certificate to present to the access point for authentication

**EAP-TTLS:**

- **User Name** - Enter the user ID to present to the network.
- **Password** – Enter the password for your user ID.
- **Inner authentication** – Select the authentication mode as PAP or MSCHAPv2.
- **EAPOL version** - Select version (1 or 2) depending on the version used at the access point
- **CA Certificates** - Upload a CA certificate to present to the access point for authentication

For your privacy and to better protect your system against security risks, we strongly recommend the use of strong passwords for all functions and network devices. The password should be something of your own choosing
(using a minimum of 8 characters, including upper case letters, lower case letters, numbers and special characters) in order to increase the security of your product.

4.2 Easy Wi-Fi Connection with WPS function

Purpose:
The setting of the wireless network connection is never easy. To avoid the complex setting of the wireless connection you can enable the WPS function.

WPS (Wi-Fi Protected Setup) refers to the easy configuration of the encrypted connection between the device and the wireless router. The WPS makes it easy to add new devices to an existing network without entering long passphrases. There are two modes of the WPS connection, the PBC mode and the PIN mode.

If you enable the WPS function, you do not need to configure the parameters such as the encryption type and you do not need to know the key of the wireless connection.

Steps:

PBC Mode:
PBC refers to the Push-Button-Configuration, in which the user simply has to push a button, either an actual (refer to the installation manual) or virtual one (as the button on the configuration interface of the web browser), on both the Access Point (and a registrar of the network) and the new wireless client device.

Steps:

1. Check the checkbox of to enable WPS.
2. Choose the connection mode as PBC.

Support of this mode is mandatory for both the Access Points and the connecting devices.
3. Check on the Wi-Fi router to see if there is a WPS button. If yes push the button and you can see the indicator near the button start flashing, which means the WPS function of the router is enabled. For detailed operation, please see the user guide of the router.

4. Push the WPS button to enable the function on the camera.
   If there is not a WPS button on the camera, you can also click the virtual button to enable the PBC function on the web interface.

5. Click **Connect** button.

   ![PBC connection](image)
   ![Connect](image)

   When the PBC mode is both enabled in the router and the camera, the camera and the wireless network is connected automatically.

**PIN Mode:**
The PIN mode requires a Personal Identification Number (PIN) to be read from either a sticker or the display on the new wireless device. This PIN must then be entered to connect the network, usually the Access Point of the network.

**Steps:**
1. Choose a wireless connection on the list and the SSID is shown.

   ![Wi-Fi Settings – WPS PIN Mode](image)

2. Choose **Use route PIN code**.
   If the PIN code is generated from the router side, you should enter the PIN code you get from the router side in the **Router PIN code** field.

3. Click **Connect**.
   Or
   You can generate the PIN code on the camera side. And the expired time for the PIN code is 120 seconds.

   1. Click **Generate**.

5. Enter the code to the router, in the example, enter 70137231 to the router.

---

### 4.3 IP Property Settings for Wireless Network Connection

The default IP address of wireless network interface controller is 192.168.1.64. When

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you connect the wireless network you can change the default IP.

**Steps:**

1. Enter the TCP/IP configuration interface.
   - **Configuration** > **Advanced Configuration** > **Network** > **TCP/IP**
   - Or **Configuration** > **Basic Configuration** > **Network** > **TCP/IP**

![TCP/IP Settings](image)

**Figure 4-11 TCP/IP Settings**

2. Select the NIC as wlan.

3. Customize the IPv4 address, the IPv4 Subnet Mask and the Default Gateway.
   - The setting procedure is the same with that of LAN.
   - If you want to be assigned the IP address you can check the checkbox to enable the DHCP.
Chapter 5 Live View

In this and the following chapters, operation of the PTZ camera by the web browser will be taken as an example.

5.1 Power-up Action

After the power is applied, the PTZ camera will perform self-test actions. It begins with lens actions and then pan and tilt movement.

5.2 Live View Page

*Purpose:*
The live video page allows you to view live video, capture images, realize PTZ control, set/call presets and configure video parameters.

Log in the network PTZ camera to enter the live view page, or you can click on the menu bar of the main page to enter the live view page.

**Descriptions of the live view page:**

- **Menu Bar:**
  Click each tab to enter Live View, Playback, Log and Configuration page respectively.

- **Live View Window:**
  Display the live video.

- **Toolbar:**
  Operations on the live view page, e.g., live view, capture, record, audio on/off, two-way audio, etc.

- **PTZ Control:**
  Panning, tilting, focusing and zooming actions of the PTZ camera. The lighter, wiper, one-touch focus and lens initialization control.
Preset:
Set and call the preset for the PTZ camera.

Live View Parameters:
Configure the image size and stream type of the live video.

5.3 Starting Live View

In the live view window as shown in Figure 5-2, click on the toolbar to start the live view of the PTZ camera.

![Figure 5-2 Start Live View](image)

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>♦/✍</td>
<td>Start/Stop Live view</td>
<td>♦</td>
<td>Manually capture the pictures</td>
</tr>
<tr>
<td>♦/✍</td>
<td>Manual recording off/on</td>
<td>♦/✍</td>
<td>Mute / Audio on and adjust volume</td>
</tr>
<tr>
<td>♦/✍</td>
<td>Two-way audio off/on</td>
<td>♦</td>
<td>3D positioning</td>
</tr>
</tbody>
</table>

- Not all the PTZ camera models support the above functions. Please take the browser interface of the actual product as standard.
- Before enabling the two-way audio or recording with audio functions, please set the Stream Type to Video & Audio referring to Section 6.4.1 Configuring Video Settings.
**Full-screen Mode:**
You can double-click on the live video to switch the current live view into full-screen or return to normal mode from the full-screen.

**3D Positioning:**

**Steps:**
1. Click on the toolbar of live view interface.
2. Operate the 3D positioning function:
   - Left click a position of the live video. The corresponding position will be moved to the center of the live video.
   - Hold down the left mouse button and drag the mouse to the lower right on the live video. The corresponding position will be moved to the center of the live video and zoomed in.
   - Hold down the left mouse button and drag the mouse to the upper left on the live video. The corresponding position will be moved to the center of the live video and zoomed out.

Please refer to the following sections for more information:
- Configuring remote recording in **Section 8.3 Configuring Recording Schedule**.
- Setting the image quality of the live video in **Section 7.1 Configuring Local Parameters** and **Section 7.4.1 Configuring Video Settings**.
- Setting the OSD text on live video in **Section 7.5.2 Configuring OSD Settings**.

### 5.4 Recording and Capturing Pictures Manually

In the live view interface, click on the toolbar to capture the live pictures and the captured image will be saved as a JPEG file in your computer by default.

You can click to record the live video.

The local saving paths of the captured pictures and clips can be set in the **Configuration > Local Configuration** interface, and the image format can also be edited in that interface.

To configure remote automatic recording, please refer to **Section 8.3 Configuring Recording Schedule**.
5.5 Operating PTZ Control

*Purpose:* In the live view interface, you can use the PTZ control buttons to control panning, tilting and zooming.

5.5.1 PTZ Control Panel

On the live view page, click [PTZ] to show the PTZ control panel or click [Hide] to hide it. Click the direction buttons to control the pan/tilt movements. Click the zoom/iris/focus buttons to realize lens control.

![PTZ Control Panel](image_url)

Figure 5-3 PTZ Control Panel

<table>
<thead>
<tr>
<th>Button</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image_url" alt="Zoom in/out" /></td>
<td>Zoom in/out</td>
</tr>
<tr>
<td><img src="image_url" alt="Focus near/far" /></td>
<td>Focus near/far</td>
</tr>
<tr>
<td><img src="image_url" alt="Iris +/-" /></td>
<td>Iris +/-</td>
</tr>
<tr>
<td><img src="image_url" alt="Adjust speed" /></td>
<td>Adjust speed of pan/tilt movements</td>
</tr>
</tbody>
</table>

5.5.2 Setting / Calling a Preset

*Purpose:* A preset is a predefined image position. For the defined preset, you can click the calling button to quickly view the desired image position.

- **Setting a Preset:**
  - **Steps:**
    1. In the PTZ control panel, select a preset number from the preset list.
2. Use the PTZ control buttons to move the lens to the desired position.
   - Pan the PTZ camera to the right or left.
   - Tilt the PTZ camera up or down.
   - Zoom in or out.
   - Refocus the lens.

3. Click \( \text{ } \) to finish the setting of the current preset.

4. You can click \( \text{ } \) to delete the preset.

   You can configure up to 300 presets.

   **Calling a Preset:**

   In the PTZ control panel, select a defined preset from the list and click \( \text{ } \) to call the preset.

   For convenient preset selection, refer to the following steps to navigate to the preset you want.

   **Steps:**

   1. Select any preset from the list.
2. Click the preset number you need on the keyboard.

The following presets are predefined with special commands. You can only call them but not configure them. For instance, preset 94 is the “Remote reboot”. If you call the preset 94, the PTZ camera will reboot remotely.

<table>
<thead>
<tr>
<th>Special Preset</th>
<th>Function</th>
<th>Special Preset</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>34</td>
<td>Back to initial position</td>
<td>92</td>
<td>Start to set limit stops</td>
</tr>
<tr>
<td>39</td>
<td>IR cut filter in</td>
<td>93</td>
<td>Set limit stops manually</td>
</tr>
<tr>
<td>40</td>
<td>IR cut filter out</td>
<td>94</td>
<td>Remote reboot</td>
</tr>
</tbody>
</table>

### 5.6 Configuring Live View Parameters

- **Main stream/Sub-stream:**
  You can select [Main Stream] or [Sub Stream] as the stream type of live viewing. The main stream is with a relatively high resolution and needs much bandwidth. The sub-stream is with a low resolution and needs less bandwidth. The default setting of stream type is [Main Stream].

  Please refer to *Section 7.4.1 Configuring Video Settings* for more detailed parameter settings of the main stream and sub-stream respectively.

- **Image Size:**
  You can scale up/down the live view image by clicking [4:3], [16:9], [original], [auto]. The image size can be 4:3, 16:9, original or auto.
Chapter 6 PTZ Configuration

6.1 Configuring Initial Position

**Purpose:**
The initial position is the origin of PTZ coordinates. It can be the factory default initial position. You can also customize the initial position according to your own demand.

- **Customize an Initial Position:**

  **Steps:**
  1. Enter the Initial Position Configuration interface:
     Configuration > Advanced Configuration > PTZ > Initial Position
  2. Click the PTZ control buttons to find a position as the initial position of the PTZ camera; you can also call a defined preset and set it as the initial position of the PTZ camera.
  3. Click **Set** to save the position.

- **Call/delete an Initial Position:**

  You can click **Goto** to call the initial position. You can click **Clear** to delete the initial position and restore the factory default initial position.
6.2 Configuring Basic PTZ Parameters

*Purpose:* You can configure the basic PTZ parameters, including proportional pan, preset freezing, preset speed, etc.

1. Enter the Basic PTZ Parameter Configuration interface:
   
   **Configuration > Advanced Configuration > PTZ > Basic**

   ![Figure 6-2 Basic PTZ Configuration Interface]

2. Configure the following settings:

   - **Basic Parameters**: Enable/disable proportional pan and preset freezing, set the preset speed, and keyboard control speed.
     - **Proportional Pan**: If you enable this function, the pan/tilt speeds change according to the amount of zoom. When there is a large amount of zoom, the pan/tilt speed will be slower for keeping the image from moving too fast on the live view image.
     - **Preset Speed**: You can set the speed of a defined preset from 1 to 8.
     - **Keyboard Control Speed**: Define the speed of PTZ control by a keyboard as Low, Normal or High.
     - **Manual Control Speed**: The manual control speed can be set as Compatible, Pedestrian, Non-motor Vehicle, Motor Vehicle or Self-adaptive.
       - Compatible: The control speed is same as the Keyboard Control Speed.
       - Pedestrian: Choose the Pedestrian when you monitor the pedestrians.
       - Non-motor Vehicle: Choose the Non-motor Vehicle when you monitor the non-motor vehicles.
       - Motor Vehicle: Choose the Motor Vehicle when you monitor the motor vehicles.
       - Self-adaptive: You are recommended to set the Self-adaptive when the...
application scene of the speed dome is complicated.

- **PTZ OSD:** Set the on-screen display duration of the PTZ status.
  - **Zoom Status:** Set the OSD duration of zooming status as 2 seconds, 5 seconds, 10 seconds, Always Close or Always Open.
  - **PT Status:** Set the azimuth angle display duration while panning and tilting as 2 seconds, 5 seconds, 10 seconds, Always Close or Always Open.
  - **Preset Status:** Set the preset name display duration while calling the preset as 2 seconds, 5 seconds, 10 seconds, Always Close or Always Open.
- **Power-off Memory:** The PTZ camera can resume its previous PTZ status or actions after it restarted from a power-off. You can set the time point of which the PTZ camera resumes its PTZ status. You can set it to resume the status of 30 seconds, 60 seconds, 300 seconds or 600 seconds before power-off.

3. Click **Save** to save the settings.

### 6.3 Configuring PTZ Limit Stops

**Purpose:**
The camera can be programmed to move within the configurable limit stops (left/right, up/down).

**Steps:**
1. Enter the Limit Configuration interface:
   
   Configuration > Advanced Configuration > PTZ > Limit

2. Click the checkbox of **Enable Limit** and the limit type can be only set as Manual.

![Figure 6-3 Configure the PTZ Limit](image.png)
Stops. When manual limit stops are set, you can operate the PTZ control panel manually only in the limited surveillance area.

3. Click the PTZ control buttons to find the left/right/up/down limit stops; you can also call the defined presets and set them as the limits of the PTZ camera.

4. Click Set to save the limits or click Clear to clear the limits.

6.4 Configuring Scheduled Tasks

Purpose:
You can configure the network PTZ camera to perform a certain action automatically in a user-defined time period.

Steps:
1. Enter the Scheduled Task Settings interface:
   Configuration > Advanced Configuration > PTZ > Scheduled Tasks

   ![Figure 6-4 Configure Scheduled Tasks](image)

2. Check the checkbox of Enable Scheduled Task.

3. Set the Park Time. You can set the park time (a period of inactivity) before the PTZ camera starts the scheduled tasks.

4. Set the schedule and task details.

   Steps:

   (1) Click Edit Tasks to edit the task schedule.
Figure 6-5 Edit the Schedule and Task Type

(2) Choose the day you want to set the task schedule.
(3) Click **All Day** to set the schedule as all day; or click **Customize** and input the **Start Time** and **End Time** for each task, and click **Enter** on your keyboard to enter the time.
(4) Choose the task type from the drop-down list. You can choose preset, etc..

**Note** The valid task types may vary according to different camera models.
(5) After you set the scheduled task, you can copy the task to other days (Optional).
(6) Click **OK** to save the settings.

The time of each task cannot be overlapped. Up to 10 tasks can be configured for each day.

5. Click **Save** to save the settings.

6.5 Configuring Park Actions

**Purpose:**
This feature allows the PTZ camera to start a predefined park action (e.g. preset) automatically after a period of inactivity (park time).

**NOTE**

Scheduled Tasks function is prior to Park Action function. When these two functions are set at the same time, only the Scheduled Tasks function takes effect.

**Steps:**
1. Enter the Park Action Settings interface:
   Configuration > Advanced Configuration> PTZ > Park Action

![Figure 6-6 Set the Park Action](image)

2. Check the checkbox of Enable Park Action.
3. Set the Park Time as the inactivity time of the PTZ camera before it starts the park actions.
4. Choose Action Type the from the drop-down list.
5. Click to save the settings.

6.6 Configuring Privacy Mask

**Purpose:**
Privacy mask enables you to cover certain areas on the live video to prevent certain spots in the surveillance area from being live viewed and recorded.

**Steps:**
1. Enter the Privacy Mask Settings interface:
   Configuration > Advanced Configuration> PTZ > Privacy Mask
Figure 6-7 Draw the Privacy Mask

2. Click the PTZ control buttons to find the area you want to set the privacy mask.
3. Click ; click and drag the mouse in the live video window to draw the area.
4. Click to save the privacy mask, and it will be listed in the Privacy Mask List area; you can select a mask and click to delete it from the list.

The color of the mask is set as blue by default, cannot be configured.

Figure 6-8 Privacy Mask List

5. Click to finish drawing or click to clear all of the areas you set without saving them.
6. Check the checkbox of Enable Privacy Mask to enable this function.

You are allowed to draw up to 8 areas on the same image.

6.7 Configuring PTZ Control Priority

Steps:
1. Get to the configuration interface:
   Configuration > Advanced Configuration> PTZ > Prioritize PTZ.
The PTZ camera can be controlled by network and RS-485 signals. You can set the control priority of these two signals.

- The operation of **Operator** is prior to that of **User**. When the **Operator** is controlling the PTZ camera, the **User** cannot control it. When the **Operator** finishes, the **User** can control the PTZ camera after the **Delay** time. The **Delay** time can be set in Priority PTZ interface as shown follows.

![Figure 6-9 PTZ Priority](image)

2. Click ![Save](image) to activate the settings.

### 6.8 Clearing PTZ Configurations

**Purpose:**
You can clear PTZ configurations in this interface, including all presets, privacy masks, PTZ limits, scheduled tasks and park actions.

**Steps:**
1. Enter the Clearing Configuration interface:
   - **Configuration > Advanced Configuration > PTZ > Clear Config**
2. Check the checkbox of the items you want to clear.
3. Click ![Save](image) to clear the settings.
Chapter 7 PTZ Camera Configuration

7.1 Configuring Local Parameters

The local configuration refers to the parameters of the live view and other operations using the web browser.

**Steps:**
1. Enter the Local Configuration interface:
   Configuration > Local Configuration

![Local Configuration Interface](image)

2. Configure the following settings:
   - **Live View Parameters**: Set the protocol type, stream type, image size and live view performance.
     - **Protocol Type**: TCP, UDP, MULTICAST and HTTP are selectable.
       - **TCP**: Ensures complete delivery of streaming data and better video quality, yet the real-time transmission will be affected.
       - **UDP**: Provides real-time audio and video streams.
       - **HTTP**: Allows the same quality as of TCP without setting specific ports for streaming under some network environments.
     - **MULTICAST**: It’s recommended to select the protocol type to when using the Multicast function. For other information about Multicast, refer to *Section 7.3.1 Configuring TCP/IP Settings*.
Live View Performance: Set the live view performance to Shortest Delay, or Auto.

Rules: You can enable or disable the rules of dynamic analysis for motion here.

Image Format: The captured pictures can be saved as different format. JPEG and BMP are available.

Record File Settings: Set the saving path of the video files.

Rules: You can enable or disable the rules of dynamic analysis for motion here.

Image Format: The captured pictures can be saved as different format. JPEG and BMP are available.

Record File Size: Select the packed size of manually recorded and downloaded video files. The size can be set to 256M, 512M or 1G.

Save record files to: Set the saving path for the manually recorded video files.

Save downloaded files to: Set the saving path for the downloaded video files in interface.

Picture and Clip Settings: Set the saving paths of the captured pictures and clipped video files.

Save snapshots in live view to: Set the saving path of the manually captured pictures in interface.

Save snapshots when playback to: Set the saving path of the captured pictures in interface.

Save clips to: Set the saving path of the clipped video files in interface.

You can click to change the directory for saving video files, clips and pictures.

Click to save the settings.

7.2 Configuring Time Settings

Purpose:
You can follow the instructions in this section to configure the time which can be displayed on the video. There are Time Zone, Time Synchronization, Daylight Saving Time (DST) functions for setting the time. Time Synchronization consists of auto mode by Network Time Protocol (NTP) server and manual mode.

To enter the Time Settings interface:
Configuration > Basic Configuration > System > Time Settings
Or **Configuration > Advanced Configuration > System > Time Settings**

![Figure 7-2 Time Settings]

- **Configuring Time Synchronization by NTP Server**

  **Steps:**
  1. Check the radio button to enable the **NTP** function.
  2. Configure the following settings:
     - **Server Address**: IP address of NTP server.
     - **NTP Port**: Port of NTP server.
     - **Interval**: The time interval between the two synchronizing actions by NTP server. It can be set from 1 to 10080 minutes.

![Figure 7-3 Time Sync by NTP Server]

  3. You can click the **Test** button to check whether the configuration is succeeded.

**NOTE**

If the PTZ camera is connected to a public network, you should use a NTP server that has a time synchronization function, such as the server at the National Time Center (IP Address: 210.72.145.44). If the PTZ camera is set in a customized network, NTP software can be used to establish a NTP server for time synchronization.
● Configuring Time Synchronization Manually

**Steps:**

(1) Check the **Manual Time Sync** radio button.

(2) Click to set the system time from the pop-up calendar.

(3) Click to save the settings.

**NOTE**

You can also check the **Sync. with computer time** checkbox to synchronize the time of the PTZ camera with the time of your computer.

![Figure 7-4 Time Sync Manually]

![Figure 7-5 Time Zone Settings]

● Select the Time Zone

**Purpose:**

When the PTZ camera is taken to another time zone, you can use the **Time Zone** function to adjust the time. The time will be adjusted according to the original time and the time difference between the two time zones.

From the **Time Zone** drop-down menu as shown in Figure 7-5, select the Time Zone in which the PTZ camera locates.

![Figure 7-5 Time Zone Settings]

● Configuring Daylight Saving Time (summer time)

**Purpose:**

If there is the habit of adjusting clocks forward in your country in certain time period of a year, you can turn this function on. The time will be adjusted automatically when the Daylight Saving Time(DST) comes.

**Steps:**

(1) Enter the **DST** interface by **Configuration > Advanced Configuration > System > DST**

(2) Check to enable the DST function.
(3) Set the date of the DST period.

(4) Click [Save] to save the settings.

![DST Settings](image)

Figure 7-6 DST Settings

### 7.3 Configuring Network Settings

#### 7.3.1 Configuring TCP/IP Settings

**Purpose:**
TCP/IP settings must be properly configured before you operate the PTZ camera over network. IPv4 and IPv6 are both supported.

**Steps:**
1. Enter TCP/IP Settings interface:
   - **Configuration > Basic Configuration > Network > TCP/IP**
   - **Or Configuration > Advanced Configuration > Network > TCP/IP**
2. Select the NIC you want to configure, LAN and WLAN are selectable.

4. Click **Save** to save the above settings.

**NOTE**

- If the DHCP server is available, you can check **DHCP** to automatically obtain an IP address and other network settings from that server.
- If the IP address is set manually, you can click **Test** to check whether the IP address is already used to prevent the IP address confliction.
- The valid value range of Maximum Transmission Unit (MTU) is 500 ~ 9676. The default value is 1500.
- The Multicast sends a stream to the multicast group address and allows multiple clients to acquire the stream at the same time by requesting a copy from the multicast group address. Before utilizing this function, you have to enable the Multicast function of your router and configure the gateway of the network PTZ camera.
- If the DNS server settings are required for some applications (e.g., sending email), you should properly configure the **Preferred DNS Server** and **Alternate DNS server**.
The router must support the route advertisement function if you select Route Advertisement as the IPv6 mode.

7.3.2 Configuring Port Settings

**Purpose:**
If there is a router and you want to access the PTZ camera through Wide Area Network (WAN), you need to forward the 3 ports for the PTZ camera.

**Steps:**
1. Enter the Port Settings interface:
   - Configuration > Basic Configuration > Network > Port
   - Or Configuration > Advanced Configuration > Network > Port

![Figure 7-9 Port Settings](image)

2. Set the HTTP port, RTSP port, HTTPS port and port of the PTZ camera.
   - **HTTP Port**: The default port number is 80.
   - **RTSP Port**: The default port number is 554.
   - **HTTPS Port**: The default port number is 443.
   - **Server Port**: The default port number is 8000.

3. Click ![Save](image) to save the settings.

7.3.3 Configuring PPPoE Settings

**Purpose:**
If you have no router but only a modem, you can use Point-to-Point Protocol over Ethernet (PPPoE) function.
Steps:
1. Enter the PPPoE Settings interface:
   Configuration > Advanced Configuration > Network > PPPoE
   
   ![Figure 7-10 PPPoE Settings](image)

2. Check the Enable PPPoE checkbox to enable this feature.
3. Enter User Name, Password, and Confirm password for PPPoE access.

   ![NOTE]
   The User Name and Password should be assigned by your ISP.

   *For your privacy and to better protect your system against security risks, we strongly recommend the use of strong passwords for all functions and network devices. The password should be something of your own choosing (using a minimum of 8 characters, including upper case letters, lower case letters, numbers and special characters) in order to increase the security of your product.*

4. Click to save and exit the interface.

7.3.4 Configuring DDNS Settings

Purpose:
If your PTZ camera is set to use PPPoE as its default network connection, you can use the Dynamic DNS (DDNS) for network access.

Before you start:
Registration on the DDNS server is required before configuring the DDNS settings of the PTZ camera.

*For your privacy and to better protect your system against security risks, we strongly recommend the use of strong passwords for all functions and network devices. The password should be something of your own choosing (using a minimum of 8 characters, including upper case letters, lower case letters, numbers and special characters) in order to increase the security of your product.*
Steps:
1. Enter the DDNS Settings interface:
   Configuration > Advanced Configuration > Network > DDNS

   ![Figure 7-11 DDNS Settings]

   Figure 7-11 DDNS Settings

2. Check the Enable DDNS checkbox to enable this feature.
3. Select DDNS Type. Three DDNS types are selectable: IPServer, HiDDNS, NO-IP and DynDNS.
   - **DynDNS:**
     1. Enter **Server Address** of DynDNS (e.g. members.dyndns.org).
     2. In the **Domain** text field, enter the domain name obtained from the DynDNS website.
     3. Enter the **Port** of DynDNS server.
     4. Enter the **User Name** and **Password** registered on the DynDNS website.
     5. Click **Save** to save the settings.

   ![Figure 7-12 DynDNS Settings]

   Figure 7-12 DynDNS Settings

   - **IP Server:**
     1. Enter the **Server Address** of the IP Server.
     2. Click **Save** to save the settings.

   **NOTE**

   The **Server Address** should be entered with the static IP address of the computer that runs the IP Server software. For the IP Server, you have to apply a static IP, subnet mask, gateway and preferred DNS from the ISP.
7.3.5 Configuring SNMP Settings

Purpose:
You can use SNMP to get PTZ camera status and parameters related information.

Before you start:
Before setting the SNMP, please use the SNMP software and manage to receive the PTZ camera information via SNMP port. By setting the Trap Address, the PTZ camera can send the alarm event and exception messages to the surveillance center.
The SNMP version you select should be the same as that of the SNMP software.

**Steps:**
1. Enter the SNMP Settings interface:
   
   **Configuration > Advanced Configuration > Network > SNMP**

   ![SNMP Settings]

   **Figure 7-15 SNMP Settings**

2. Check the corresponding version checkbox (Enable SNMP v1, Enable SNMP v2c, Enable SNMP v3) to enable the feature.

3. Configure the SNMP settings.

   ![](https://via.placeholder.com/150)

   The configuration of the SNMP software should be the same as the settings you configure here.

4. Click ![Save](https://via.placeholder.com/150) to save and finish the settings.
7.3.6 Configuring QoS Settings

**Purpose:**
QoS (Quality of Service) can help solve the network delay and network congestion by configuring the priority of data sending.

**Steps:**
1. Enter the QoS Settings interface:
   
   Configuration > Advanced Configuration > Network > QoS

   ![Figure 7-16 QoS Settings](image)

   **Fig. 7-16 QoS Settings**

2. Configure the QoS settings, including video / audio DSCP, event / alarm DSCP and Management DSCP.
   
   The valid DSCP value ranges from 0 to 63. The DSCP value is bigger, the priority is higher.

3. Click **Save** to save the settings.

   - Make sure that you enable the QoS function of your network device (such as a router).
   - It will ask for a reboot for the settings to take effect.

7.3.7 Configuring FTP Settings

**Purpose:**
You can set a FTP server and configure the following parameters for uploading captured pictures.

**Steps:**
1. Enter the FTP Settings interface:
   
   Configuration > Advanced Configuration > Network > FTP
2. Configure the FTP settings, including server address, port, user name, password, directory and upload type.

For your privacy and to better protect your system against security risks, we strongly recommend the use of strong passwords for all functions and network devices. The password should be something of your own choosing (using a minimum of 8 characters, including upper case letters, lower case letters, numbers and special characters) in order to increase the security of your product.

- **Setting the directory in FTP server for saving files:**
  In the **Directory Structure** field, you can select the root directory, parent directory and child directory.
  - **Root directory**: The files will be saved in the root of FTP server.
  - **Parent directory**: The files will be saved in a folder in FTP server. The name of folder can be defined as shown in following Figure 7-18.

![Figure 7-18 Parent Directory](image)

- **Child directory**: It is a sub-folder which can be created in the parent directory. The files will be saved in a sub-folder in FTP server. The name of folder can be defined as shown in following Figure 7-19.

![Figure 7-19 Child Directory](image)

- **Upload type**: To enable uploading the captured picture to the FTP server.
3. Click to save the settings.

If you want to upload the captured pictures to FTP server, you also have to enable the continuous snapshot or event-triggered snapshot in Snapshot interface. For detailed information, please refer to the Section 8.4 Configuring Snapshot Settings.

7.3.8 Configuring UPnP™ Settings

Purpose:
Universal Plug and Play (UPnP™) is a networking architecture that provides compatibility among networking equipment, software and other hardware devices. The UPnP protocol allows devices to connect seamlessly and to simplify the implementation of networks in the house and corporate environments. With the function enabled, you don’t need to configure the port mapping for each port, and the camera is connected to the Wide Area Network via the router.

Steps:
1. Enter the UPnP™ settings interface.
   Configuration > Advanced Configuration > Network > UPnP™
2. Check the checkbox to enable the UPnP™ function.
   You can edit the Friendly Name of the PTZ camera. This name can be detected by corresponding device, such as a router.

![Configure UPnP Settings](image)

7.3.9 Configuring NAT (Network Address Translation) Settings

Steps:
1. Set the port mapping mode:
   To port mapping with the default port numbers:
   Choose
   To port mapping with the customized port numbers:
   Choose
And you can customize the value of the port No. by yourself.

![Figure 7-21 Configure the Port No.](image)

2. Click **Save** to save the settings.

### 7.3.10 Configuring Email Settings

**Purpose:**
The system can be configured to send an Email notification to all designated receivers if an alarm event is detected, e.g., motion detection event, video loss, tamper-proof, etc.

**Before you start:**
Please configure the DNS Server settings under **Basic Configuration > Network > TCP/IP** or **Advanced Configuration > Network > TCP/IP** before using the Email function.

**Steps:**
1. Enter the Email Settings interface:
   - **Configuration > Advanced Configuration > Network > Email**
2. Configure the following settings:

- **Sender**: The name of the email sender.
- **Sender’s Address**: The email address of the sender.
- **SMTP Server**: The SMTP Server IP address or host name (e.g., smtp.263xmail.com).
- **SMTP Port**: The SMTP port. The default TCP/IP port for SMTP is 25.
- **Enable SSL**: Check the checkbox to enable SSL if it is required by the SMTP server.
- **Attached Image**: Check the checkbox of Attached Image if you want to send emails with attached alarm images.
- **Interval**: The interval refers to the time between two actions of sending attached pictures.
- **Authentication** (optional): If your email server requires authentication, check this checkbox to use authentication to log in to this server and enter the login user name and password.
- **Receiver**: Select the receiver to which the email is sent. Up to 2 receivers can be configured.
- **Receiver’s Name**: The name of the user to be notified.
- **Receiver’s Address**: The email address of user to be notified.

You can click the Test button to check whether the setting is invalid after the required parameters are configured.
For your privacy and to better protect your system against security risks, we strongly recommend the use of strong passwords for all functions and network devices. The password should be something of your own choosing (using a minimum of 8 characters, including upper case letters, lower case letters, numbers and special characters) in order to increase the security of your product.

3. Click to save the settings.

7.3.11 Configuring HTTPS Settings

Purpose:
HTTPS provides authentication of the web site and associated web server that one is communicating with, which protects against Man-in-the-middle attacks. Perform the following steps to set the port number of https.

Example:
If you set the port number as 443 and the IP address is 192.168.1.64, you may access the device by inputting https://192.168.1.64:443 via the web browser.

Steps:
1. Enter the HTTPS settings interface.
   Configuration > Advanced Configuration > Network > HTTPS
2. Create the self-signed certificate or authorized certificate.

![HTTPS Settings](image)

Figure 7-23 HTTPS Settings
OPTION 1: Create the self-signed certificate
1) Click the Create button to create the following dialog box.

![Create Self-signed Certificate](image)

Figure 7-24 Create Self-signed Certificate

2) Enter the country, host name/IP, validity and other information.
3) Click OK to save the settings.

OPTION 2: Create the authorized certificate
1) Click the Create button to create the certificate request, and fulfill the required information.
2) Download the certificate request and submit it to the trusted certificate authority for signature.
3) After receiving the signed valid certificate, import the certificate to the device.

3. There will be the certificate information after you successfully create and install the certificate.

![Installed Certificate Property](image)

Figure 7-25 Installed Certificate Property

4. You can click configure the HTTPS port No. on your demand; refer to Section 7.3.2 Configuring Port Settings for details.

4. Check the checkbox of Enable HTTPS and click the Save button.

7.3.12 Configuring Platform Access Settings

**Purpose:**
EZVIZ Cloud P2P provides the mobile phone application and as well the service platform page to access and manage your connected NVR, which enables you to get a convenient remote access to the surveillance system.

**Steps:**
1. Enter the Platform Access configuration interface.
   - **Configuration > Advanced Configuration > Network > Platform Access**
2. Check the checkbox of the Enable.
3. Select the Platform Type as the **EZVIZ Cloud P2P** in the dropdown list.
4. Click the Save button to activate the settings.
   - You can view the register status of the device in the corresponding text.

**NOTE** You can only enable either EZVIZ Cloud P2P or DDNS.
7.4 Configuring Video and Audio Settings

7.4.1 Configuring Video Settings

**Steps:**

1. Enter the Video Settings interface:
   - Configuration > Basic Configuration > Video / Audio > Video
   - Or Configuration > Advanced Configuration > Video / Audio > Video

   ![Figure 7-26 Configure Video Settings](image)

2. Select the **Stream Type** of the PTZ camera to main stream (normal) or sub-stream. The main stream is usually for recording and live viewing with good bandwidth, and the sub-stream can be used for live viewing when the bandwidth is limited. Refer to the **Section 7.1 Configuring Local Parameters** for switching the main stream and sub-stream for live viewing.

3. You can customize the following parameters for the selected main stream or sub-stream:
   - **Video Type:**
     Select the stream type to video stream, or video & audio composite stream. The audio signal will be recorded only when the Video Type is Video & Audio.
   - **Resolution:**
     Select the resolution of the video output.
   - **Bitrate Type:**
     Select the bitrate type to constant or variable.
   - **Video Quality:**
     When bitrate type is selected as Variable, 6 levels of video quality are selectable.
   - **Frame Rate:**
     The frame rate is to describe the frequency at which the video stream is updated and it is measured by frames per second (fps). A higher frame rate is advantageous when there is movement in the video stream, as it maintains image
quality throughout.

**Max. Bitrate:**
Set the max. bitrate to 32~16384 Kbps. The higher value corresponds to the higher video quality, and the higher bandwidth is required as well.

**Video Encoding:**
The Video Encoding standard can be set to H.264 or MJPEG.

**I Frame Interval:**
Set the I-Frame interval from 1 to 400.

**SVC:**
SVC is a video encoding technology. It extracts frames from the original video and sends these frames to a video recorder which also supports SVC function when the network bandwidth is insufficient.

4. Click to save the settings.

### 7.4.2 Configuring Audio Settings

**Steps:**
1. Enter the Audio Settings interface
   - Configuration > Basic Configuration > Video / Audio > Audio
   - Or Configuration > Advanced Configuration > Video / Audio > Audio

![Audio Settings](image)

**Figure 7-27 Audio Settings**

2. Configure the following settings.
   - **Audio Encoding**: G.722.1, G.711ulaw, G.711alaw, MP2L2 and G.726.
   - **Sampling Rate**: When the Audio Encoding is selected as MP2L2, you can configure the Sampling Rate in the dropdown list. The greater the value is, the better the audio quality will be.
   - **Audio Stream Bitrate**: When the Audio Encoding is selected as MP2L2, you can configure the Audio Stream Bitrate in the dropdown list. The greater the value is, the better the audio quality will be.
   - **Audio Input**: When an intercom is connected to the PTZ camera, you need to set this option to **LineIn**. When a microphone is connected to the PTZ camera, you
need to set this option to MicIn. 

**Input Volume**: Slid the bar to turn up/down the volume. The value ranges from 0 to 100.

**Environmental Noise Filter**: When the monitoring environment is very noisy, you can enable this function to reduce part of the noise.

3. Click to save to save the settings.

### 7.4.3 Configuring ROI Settings

**Before you start:**

ROI (Region of Interest) encoding is used to enhance the quality of images which are specified in advance.

Enter the ROI Settings interface:

**Configuration > Advanced Configuration > Video / Audio > RIO**

![Figure 7-28 Region of Interest](image)

**Stream Type**: You can set the ROI function for main stream or sub stream. Select a stream type and then configure the ROI settings.

**Fixed Region**: The fixed region encoding is the ROI encoding for the manually configured area. And you can choose the Image Quality Enhancing level for ROI encoding, and you can also name the ROI area.

**Steps:**
1. Select a **Region No.**
2. Check the checkbox of **Enable** under **Fixed Region**.
3. Click **Draw Area** and draw a red frame in the live view image.
4. Adjust the **ROI level** from 1 to 6. The higher the value, the better image quality in the red frame.
5. Enter a **Region Name** and click **Save** to save the settings.

### 7.5 Configuring Image Settings

#### 7.5.1 Configuring Display Settings

**Purpose:**
You can set the image quality of the PTZ camera, including brightness, contrast, saturation, sharpness, etc.

**NOTE:**
- The parameters in **Display Settings** interface vary depending on the models of PTZ camera.
- You can double click the live view to enter full screen mode and double click it again to exit.

**Steps:**
1. Enter the Display Settings interface:
   - **Configuration > Basic Configuration > Image > Display Settings**
   - Or **Configuration > Advanced Configuration > Image > Display Settings**
2. You can select the **Mounting Scenario** in the dropdown list with different predefined image parameters.
3. Set the image parameters of the PTZ camera.
Image Adjustment

- **Brightness**
  This feature is used to adjust brightness of the image. The value ranges from 0 to 100.

- **Contrast**
  This feature enhances the difference in color and light between parts of an image. The value ranges from 0 to 100.

- **Saturation**
  This feature is used to adjust color saturation of the image. The value ranges from 0 to 100.

- **Sharpness**
  Sharpness function enhances the detail of the image by sharpening the edges in the image. The value ranges from 0 to 100.

  This function varies depending on the models of PTZ camera.

Exposure Settings

- **Exposure Mode**
  The Exposure Mode can be set to Auto and Manual.
  
  - Auto:
    The iris, shutter and gain values will be adjusted automatically according to the

Figure 7-29 Display Settings
brightness of the environment.

- **Manual:**
  In **Manual** mode, you can adjust the values of **Gain**, **Shutter**, **Iris** manually.

  ![Note]

  This function varies depending on the models of PTZ camera.

- **Limit Gain**
  This feature is used to adjust gain of the image. The value ranges from 0 to 100.

- **Slow Shutter**
  This function can be used in underexposure condition. It lengthens the shutter time to ensure full exposure. The slow shutter value can be set to **Slow Shutter** *2, *4, *6, *12, *16, *24 and *32.

![Figure 7-30 Slow Shutter]

### Day/Night Switch

**Note** The IR related functions are supported by the IR PTZ camera only.

- **Day/Night Switch**
  The **Day/Night Switch** mode can be set to **Auto**, **Day** and **Night**.

  - **Auto:**
    In **Auto** mode, the day mode and night mode can switch automatically according to the light condition of environment.

  - **Day:**
    In **Day** mode, the PTZ camera displays color image. It is used for normal lighting conditions.

  - **Night:**
    In **Night** mode, the image is black and white. **Night** mode can increase the sensitivity in low light conditions.

  - **Schedule**
    In **Schedule** mode, you can set the time schedule for day mode as shown in Figure 7-31. The rest time out of the schedule is for night mode.

![Figure 7-31 Day Night Schedule]

- **IR Light Mode**
  The IR mode is set as **Auto** by default, and is read-only, which means the IR light is
turned on/off according to the illumination.

- **Brightness Limit**
The image brightness is adjusted automatically, you can specify the brightness limit on your demand.

### Backlight Settings

- **BLC**
If there’s a bright backlight, the subject in front of the backlight appears silhouetted or dark. Enabling BLC (back light compensation) function can correct the exposure of the subject. But the backlight environment is washed out to white.

- **WDR (Wide Dynamic Range)**
The wide dynamic range (WDR) function helps the camera provide clear images even under back light circumstances. When there are both very bright and very dark areas simultaneously in the field of view, WDR balances the brightness level of the whole image and provide clear images with details.
You can enable or disable the WDR function as shown in Figure 7-32. The wide dynamic level ranges from 0 to 100.

![Figure 7-32 WDR](image)

- **HLC**
HLC (High Light Compensation) makes the camera identify and suppress the strong light sources that usually flare across a scene. This makes it possible to see the detail of the image that would normally be hidden.

### White Balance

The **White Balance** mode can be set to **Auto**, **MWB**, **Outdoor**, **Indoor**, **Fluorescent Lamp**, **Sodium Lamp** and **Auto-Track**.

- **Auto:**
In **Auto** mode, the camera retains color balance automatically according to the current color temperature.

- **MWB:**
In **MWB** (Manual White Balance) mode, you can adjust the color temperature manually to meet your own demand as shown in Figure 7-33.
Figure 7-33 Manual White Balance

◆ **Outdoor**
You can select this mode when the PTZ camera is installed in outdoor environment.

◆ **Indoor**
You can select this mode when the PTZ camera is installed in indoor environment.

◆ **Fluorescent Lamp**
You can select this mode when there are fluorescent lamps installed near the PTZ camera.

◆ **Sodium Lamp**
You can select this mode when there are sodium lamps installed near the PTZ camera.

◆ **Auto-Track**
In **Auto-Track** mode, white balance is continuously being adjusted in real-time according to the color temperature of the scene illumination.

This function varies depending on the models of PTZ camera.

**Image Enhancement**

◆ **Digital Noise Reduction**
The digital noise reduce function processes the noise in the video signal.
You can set **Digital Noise Reduction** function to **ON** and adjust the **Noise Reduction Level** as shown in Figure 7-34. The level ranges from 0 to 100.

![Digital Noise Reduction ON](image)

**Figure 7-34 Digital Noise Reduction**

This function varies depending on the models of PTZ camera.

**Video Adjustment**

◆ **Mirror**
If you turn the **Mirror** function on, the image will be flipped. It is like the image in the mirror. The flip direction can be set to **OFF** or **Center**.

This function varies depending on the models of PTZ camera.

◆ **Video Standard**
You can set the **Video Standard** to 50hz(PAL) or 60hz(NTSC) according to the video system in your country.

This function varies depending on the models of PTZ camera.

**Other**

- **Zoom Limit**
  You can set **Zoom Limit** value to limit the maximum value of zooming. The value can be set to 3, 6, 12, 24 and 48.

  This function varies depending on the models of PTZ camera.

### 7.5.2 Configuring OSD Settings

**Purpose:**
The PTZ camera supports following on screen displays:

- **Zoom:** Identifies the amount of magnification.
- **Direction:** Displays panning and tilting direction, with the format of PXXX TXXX. The XXX following P indicates the degrees in pan direction, while the XXX following T indicates the degrees in tilt position.
- **Time:** Supports for time display.
- **Preset Title:** Identifies preset being called.
- **Camera Name:** Identifies the name of PTZ camera.

**Steps:**

1. Enter the OSD Settings interface:
   
   **Configuration > Advanced Configuration > Image > OSD Settings**

   ![Image](image.png)

   Figure 7-35 OSD Settings

2. Check the corresponding checkbox to select the display of PTZ camera name,
3. (Optional) If you choose to enable the Display name, and then edit the PTZ
camera name in the text field of **Camera Name**.
4. Select from the drop-down list to set the time format, date format and display
mode.
5. You can use the mouse to click and drag the text frame 😊 in the live view
window to adjust the OSD position.

![Figure 7-36 Adjust OSD Location](image)

6. The font color can also be customized, select the Custom in the drop down list
and select the font color on your demand.
7. Click **Save** to activate above settings.

### 7.5.3 Configuring Text Overlay Settings

**Purpose:**
You can customize the text overlay.

**Steps:**
1. Enter the Text Overlay Settings interface:
   - **Configuration > Advanced Configuration > Image > Text Overlay**
2. Check the checkbox in front of textbox to enable the on-screen display.
3. Input the characters in the textbox.
4. Use the mouse to click and drag the red text frame 😊 in the live view
   window to adjust the text overlay position.
5. Click **Save**.

There are up to 4 text overlays configurable.

![Text Overlay Settings](image)

Figure 7-37 Text Overlay Settings

---

### 7.6 Configuring and Handling Alarms

**Purpose:**
This section explains how to configure the network PTZ camera to respond to alarm events, including motion detection, external alarm input, video loss, tamper-proof and exception. These events can trigger the alarm actions, such as Notify Surveillance Center, Send Email, Trigger Alarm Output, etc.

For example, when an external alarm is triggered, the network PTZ camera sends a notification to an e-mail address.

#### 7.6.1 Configuring Motion Detection

**Purpose:**
Motion detection is a feature which can trigger alarm actions and actions of recording videos when the motion occurred in the surveillance scene.

**Steps:**
1. Enter the motion detection setting interface:
   
   Configuration > Advanced Configuration> Events > Motion Detection

2. Check the checkbox of the **Enable Motion Detection** to enable this function.
   
   You can check the **Enable Dynamic Analysis for Motion** checkbox if you want the
detected object get marked with rectangle in the live view.

3. Select the configuration mode as Normal or Expert and set the corresponding motion detection parameters.
   - **Normal**
     
     ![Figure 7-38 Motion Detection Settings-Normal](image)

     **Steps:**
     
     (1) Click **Draw Area**. Click and drag the mouse on the live video image to draw a motion detection area.
     
     (2) Click **Stop Drawing** to finish drawing.

     **Note**
     
     - You can draw up to 8 motion detection areas on the same image.
     - You can click **Clear All** to clear all of the areas.
     
     (3) Move the slider **Sensitivity** to set the sensitivity of the detection.
   - **Expert**
Steps:

1. Set the Day&Night switch mode, there are OFF, Auto-Switch and Scheduled-Switch selectable. If the Day&Night switch mode is enabled, you can configure the detection rule for the day and night separately.
   - **OFF**: Disable the day and night switch.
   - **Auto-Switch**: Switch the day and night mode according to the illumination automatically.
   - **Scheduled-Switch**: Switch to the day mode at 6:00 a.m., and switch to the night mode at 18:00 p.m..

2. Select Area No. to configure in the dropdown list.

3. Set the values of sensitivity and proportion of object on area.
   - **Sensitivity**: The greater the value is, the easier the alarm will be triggered.
   - **Proportion of Object on Area**: When the size proportion of the moving object exceeds the predefined value, the alarm will be triggered. The less the value is, the easier the alarm will be triggered.

4. Set the Arming Schedule for Motion Detection.
   
   (1) Click **Edit** in Figure 7-40.
(2) Choose the day you want to set the arming schedule as shown in Figure 7-41.

(3) Click 🔄 to set the time period for the arming schedule.

(4) (Optional) After you set the arming schedule, you can click 🔄 to copy the schedule to other days.

(5) Click 🔄 to save the settings.

The time of each period cannot be overlapped. Up to 8 periods can be configured for each day.

5. Set the Alarm Actions for Motion Detection.

You can specify the linkage method when an event occurs. The following
contents are about how to configure the different types of linkage method.

![Linkage Method](image)

Figure 7-42 Linkage Method

Check the checkbox to select the linkage method. Notify surveillance center, send email, upload to FTP, trigger channel and trigger alarm output are selectable.

- **Notify Surveillance Center**
  Send an exception or alarm signal to remote management software when an event occurs.

- **Send Email**
  Send an email with alarm information to a user or users when an event occurs.

  To send the Email when an event occurs, you need to refer to **Section 7.3.10 Configuring Email Settings** to set the Email parameters.

- **Upload to FTP**
  Capture the image when an alarm is triggered and upload the picture to a FTP server.

  You need a FTP server and set FTP parameters first. Refer to **Section 7.3.7 Configuring FTP Settings** for setting FTP parameters.

- **Trigger Channel**
  Record a video when an event occurs.

  You have to set the recording schedule to realize this function. Please refer to **Section 8.3 Configuring Recording Schedule** for settings the recording schedule.

- **Trigger Alarm Output**
  Trigger one or more external alarm outputs when an event occurs.

  To trigger an alarm output when an event occurs, please refer to **Section 7.6.4 Configuring Alarm Output** to set the alarm output parameters.
7.6.2 Configuring Video Tampering Alarm

**Purpose:**
You can configure the PTZ camera to trigger the alarm actions when the lens is covered.

**Steps:**
1. Enter the video tampering Settings interface:
   - **Configuration > Advanced Configuration > Events > Video Tampering**

2. Check **Enable Video Tampering** checkbox to enable the tampering detection.
3. Set the tampering area. Refer to Step 1 in **Section 7.6.1 Configuring Motion Detection**.
4. Click **Edit** to edit the arming schedule for tampering. The arming schedule configuration is the same as the setting of the arming schedule for motion detection. Refer to Step 2 in **Section 7.6.1 Configuring Motion Detection**.
5. Check the checkbox to select the linkage method taken for the tampering. Notify surveillance center, send email, trigger channel and trigger alarm output are selectable. Please refer to Step 3 in **Section 7.6.1 Configuring Motion Detection**.
6. Click **Save** to save the settings.
7.6.3 Configuring External Alarm Input

Steps:
1. Enter the Alarm Input Settings interface: 
   Configuration > Advanced Configuration > Events > Alarm Input:
2. Choose the alarm input No. and the Alarm Type. The alarm type can be NO (Normally Open) and NC (Normally Closed).
3. Edit the name in Alarm Name to set a name for the alarm input (optional).

![Alarm Input Settings](image)

Figure 7-44 Alarm Input Settings

4. Click to set the arming schedule for the alarm input. Refer to Step 2 in Section 7.6.1 Configuring Motion Detection.
5. Check the checkbox to select the linkage method taken for the alarm input. Refer to Step 3 in Section 7.6.1 Configuring Motion Detection.
6. You can also choose the PTZ linking for the alarm input. Check the relative checkbox and select the No. to enable Preset Calling.
7. You can copy your settings to other alarm inputs.
8. Click to save the settings.
### 7.6.4 Configuring Alarm Output

**Steps:**
1. Enter the Alarm Output Settings interface:
   - **Configuration > Advanced Configuration > Events > Alarm Output**
2. Select one alarm output channel in the *Alarm Output* drop-down list.
3. Set a name in [Alarm Name] for the alarm output (optional).
4. The *Delay* time can be set to **5sec**, **10sec**, **30sec**, **1min**, **2min**, **5min**, **10min** or **Manual**. The delay time refers to the time duration that the alarm output remains in effect after alarm occurs.
5. Click [Edit] to enter the *Edit Schedule Time* interface. The time schedule configuration is the same as the settings of the arming schedule for motion detection. Refer to Step 2 in *Section 7.6.1 Configuring Motion Detection*. 
6. You can copy the settings to other alarm outputs.

7. Click ![Save](image) to save the settings.

### 7.6.5 Handling Exception

The exception type can be HDD full, HDD error, network disconnected, IP address conflicted and illegal login to the PTZ camera.

**Steps:**

1. Enter the Exception Settings interface:
   
   **Configuration > Advanced Configuration > Events > Exception**

2. Check the checkbox to set the actions taken for the Exception alarm. Refer to *Step 3* in *Section 7.6.1 Configuring Motion Detection*.

![Exception Settings](image)

3. Click ![Save](image) to save the settings.
7.6.6 Detecting Audio Exception

**Purpose:**
When you enable this function and audio exception occurs, the alarm actions will be triggered.

**Steps:**
1. Enter the video audio exception detection interface:
   
   Configuration > Advanced Configuration > Events > Audio Exception Detection

   ![Audio Exception Detection Interface]

   *Figure 7-48 Audio Exception Detection*

2. Check the checkbox of **Audio Input Exception** to enable the audio input exception detection.

3. Check the checkbox of **Sudden Intensity Steep Rise** checkbox to enable the sudden rise detection.
   - **Sensitivity**: Range [1-100], the smaller the value the more severe the sound change will trigger the detection.
   - **Sound Intensity Threshold**: Range [1-100], it can filter the sound in the environment, the louder the environment sound, the higher the value should be. You can adjust it according to the actual environment.

4. Check the checkbox of **Sudden Intensity Steep Drop** checkbox to enable the sudden drop detection.
   - **Sensitivity**: Range [1-100], the smaller the value the more severe the sound change will trigger the detection.

5. Click **Edit** to edit the arming schedule. The arming schedule configuration is the same as the setting of the arming schedule for motion detection. Refer to **Step 2 in Section 7.6.1 Configuring Motion Detection**.

6. Check the checkbox to select the linkage method taken for audio exception. Notify surveillance center, send email, trigger alarm output, etc. are selectable. Please refer to **Step 3 in Section 7.6.1 Configuring Motion Detection**.
7. Click to save the settings.

7.6.7 Configuring Dual-VCA

**Purpose:**
Enable the VCA function and then the information of the objects (e.g. human, vehicle, etc.) will be marked in the video stream and you can set rules on the connected back-end device to detect the events including line crossing, intrusion, etc..

**Steps:**
1. Enter the Dual-VCA function configuration interface.
   - Configuration > Advanced Configuration > Video/Audio > Display Info. on Stream
2. Check the Enable Dual-VCA checkbox.
3. Click to save the settings.

7.6.8 Configuring Intrusion Detection

Intrusion detection can set an area in the surveillance scene and once the area is entered, a set of alarm action is triggered.

**Steps:**
1. Enter the intrusion detection interface:
   - Configuration > Advanced Configuration > Events > Intrusion Detection
2. Check the Enable Intrusion Detection checkbox.
3. The event triggered and park action related PTZ movement will be locked for 180 seconds after you enter the intrusion detection interface. Optionally, you can click the button to manually activate the movement, or lock the movement when the button turns to by clicking it.

4. Draw area.
   
   (1) Select the Region No. in dropdown list.
   
   (2) Click to draw a rectangle on the image as a defense region.
   
   (3) Click on the image to specify a corner of the rectangle, and right-click the mouse after four corners are configured.

   
   ![](Image)

   **Figure 7-49 Configuring Intrusion Area**

   Up to four areas are supported.

   You can click to clear the areas you drawn.

5. Configure the parameters for each defense region separately.

   - **Threshold**: Range [0-10s], the threshold for the time of the object loitering in the region. If you set the value as 0, alarm is triggered immediately after the object entering the region.

   - **Sensitivity**: Range [1-100]. The value of the sensitivity defines the size of the object which can trigger the alarm, when the sensitivity is high, a very small object can trigger the alarm.

6. Click to edit the arming schedule for tampering. The arming schedule
configuration is the same as the setting of the arming schedule for motion detection. Refer to Step 2 in Section 7.6.1 Configuring Motion Detection.

7. Check the checkbox to select the linkage method taken for the intrusion detection. Notify surveillance center, send email, trigger channel, smart tracking and trigger alarm output are selectable. Please refer to Step 3 in Section 7.6.1 Configuring Motion Detection.

8. Click Save to save the settings.

7.6.9 Configuring Line Crossing Detection

The virtual plane detection can be adopted for the intrusion detection. Once the virtual plane is detected being traversed according to the configured direction, a set of alarm action is triggered.

Steps:

1. Enter the Line Crossing Detection interface:
   Configuration > Advanced Configuration > Events > Line Crossing Detection

2. Check the Line Crossing Detection checkbox.

3. The event triggered and park action related PTZ movement will be locked for 180 seconds after you enter the line crossing detection interface. Optionally, you can click the Unlock button to manually activate the movement, or lock the movement when the button turns to Lock by clicking it.
4. Draw area.
   
   (1) Select the Line No. in dropdown list.
   
   (2) Click **Draw Area** to draw a plane on the image.
   
   (3) Click the line to switch to the editing mode.
   
   ![Figure 7-50 Configuring Line](image)

   Click and drag an end to the desired place to adjust the length and angle of the plane. And click and on the line to adjust the location.

   **NOTE**

   Up to 4 lines are supported.

5. Configure the parameters for each defense region separately.

   - **Direction**: Select the detection direction in the dropdown list, there are A<->B, A->B and B->A selectable.
   
   - **Sensitivity**: Range [1-100]. The value of the sensitivity defines the size of the object which can trigger the alarm, when the sensitivity is high, a very small object can trigger the alarm.

6. Click **Edit** to edit the arming schedule for line crossing detection. The arming schedule configuration is the same as the setting of the arming schedule for motion detection. Refer to Step 2 in **Section 7.6.1 Configuring Motion**
Detection.

7. Check the checkbox to select the linkage method taken for the line crossing detection. Notify surveillance center, send email, upload to FTP, trigger channel, and trigger alarm output are selectable. Please refer to Step 3 in Section 7.6.1 Configuring Motion Detection.

8. Click to save the settings.
Chapter 8 Record Settings

Before you start:
To configure record settings, please make sure that you have the network storage device within the network or the storage card has been inserted in the corresponding card slot. Refer to the installation guide for the location of the storage card slot.

8.1 Configuring NAS Settings

Before you start:
The network disk should be available within the network and properly configured to store the recorded files, log files, etc.

Steps:
1. Enter the NAS (Network-Attached Storage) Settings interface:
   Configuration > Advanced Configuration > Storage > NAS
2. Select the NAS type as NFS or SMB/CIFS. If you select SMB/CIFS, you need to enter the User Name and Password.

![Figure 8-1 Select NAS Type](image)

3. Enter the IP address of the network disk. The default NFS storage format of file path is `/dvr/test` as shown in Figure 8-2. And the default SMB/CIFS storage format of file path is `/test`.

![Figure 8-2 Add Network Disk](image)

4. Click `Save` to add the network disk.

Up to 8 NAS disks can be connected to the PTZ camera.
For your privacy and to better protect your system against security risks, we strongly recommend the use of strong passwords for all functions and network devices. The password should be something of your own choosing (using a minimum of 8 characters, including upper case letters, lower case letters, numbers and special characters) in order to increase the security of your product.

8.2 Initializing and Configuring Storage

Steps:

1. Initialize the local disk or added network disk.
   (1) Enter the HDD Settings interface (Advanced Configuration > Storage > Storage Management), in which you can view the capacity, free space, status, type and property of the disk.
   (2) If the status of the disk is Uninitialized as shown in Figure 8-3, check the corresponding checkbox to select the disk and click Format to start initializing the disk.

   ![Figure 8-3 Initialize Disk](image)

   ![Figure 8-4 Initializing](image)

   When the initialization completed, the status of disk will become Normal as shown in Figure 8-5.

   ![Figure 8-5 View Disk Status](image)

2. Configure the quota for saving the video and picture.
   Enter the percentage for picture and record in the text filed, and the total percentage must be 100%.
8.3 Configuring Recording Schedule

Before you start:
Please make sure a local storage card is inserted in the PTZ camera or the network storage is added to the PTZ camera, and is initialized.

Purpose:
There are two kinds of recording for the PTZ camera: manual recording and scheduled recording. For the manual recording, refer to Section 5.4 Recording and Capturing Pictures Manually. In this section, you can follow the instructions to configure the scheduled recording. By default, the record files of scheduled recording are stored in the SD card (if supported) or in the network disk.

Steps:
1. Enter the Record Schedule Settings interface:
   Configuration > Advanced Configuration > Storage > Record Schedule
2. Check the checkbox of **Enable Record Schedule** to enable scheduled recording.

3. Set the record parameters of the PTZ camera.

   ![Recording Schedule Interface](image)

   **Figure 8-7 Recording Schedule Interface**

   - **Pre-record**: The time you set to start recording before the scheduled time or the event. For example, if an alarm triggers recording at 10:00, and the pre-record time is set as 5 seconds, the PTZ camera starts to record at 9:59:55.
     The Pre-record time can be configured as No Pre-record, 5 s, 10 s, 15 s, 20 s, 25 s, 30 s or not limited.
     
     The pre-record time changes according to the video bitrate.
   - **Post-record**: The time you set to stop recording after the scheduled time or the event. For example, if an alarm triggered recording ends at 11:00, and the post-record time is set as 5 seconds, the PTZ camera records until 11:00:05.
     The Post-record time can be configured as 5 s, 10 s, 30 s, 1 min, 2 min, 5 min or 10 min.
The Pre-record and Post-record parameters vary depending on the PTZ camera model.

- **Overwrite**: If you enable this function and the HDD is full, the new record files overwrite the oldest record files automatically.
- **Recording Stream**: You can select the stream type for recording; Main stream and Sub Stream are selectable. If you select the sub stream, you can record for a longer time with the same storage capacity.

4. Click **Edit** to edit the record schedule.

![Figure 8-9 Record Schedule](image)

5. Choose the day to set the record schedule.

   (1) Set all-day record or segment record:
   - If you want to configure the all-day recording, please check the **All Day** checkbox.
   - If you want to record in different time sections, check the **Customize** checkbox. Set the **Start Time** and **End Time**.

   **NOTE**

   The time of each segment cannot be overlapped. Up to 8 segments can be configured for each day.

   (2) Select a **Record Type**. The record type can be Continuous, Motion Detection, Alarm, Motion | Alarm, Motion & Alarm, Face Detection, Intrusion Detection, Line Crossing Detection, Audio Exception Detection and All events.

   - **Continuous**
     - If you select **Continuous**, the video will be recorded automatically according to the time of the schedule.

   - **Record Triggered by Motion Detection**
If you select **Motion Detection**, the video will be recorded when the motion is detected.

Besides configuring the recording schedule, you have to set the motion detection area and check the checkbox of **Trigger Channel** in the **Linkage Method** of Motion Detection Settings interface. For detailed information, please refer to the **Step 1 in the Section 7.6.1 Configuring Motion Detection**.

- **Record Triggered by Alarm**
  If you select **Alarm**, the video will be recorded when the alarm is triggered via the external alarm input channels.
  Besides configuring the recording schedule, you have to set the **Alarm Type** and check the checkbox of **Trigger Channel** in the **Linkage Method** of **Alarm Input Settings** interface. For detailed information, please refer to **Section 7.6.3 Configuring External Alarm Input**.

- **Record Triggered by Motion & Alarm**
  If you select **Motion & Alarm**, the video will be recorded when the motion and alarm are triggered at the same time.
  Besides configuring the recording schedule, you have to configure the settings on the **Motion Detection** and **Alarm Input Settings** interfaces. Please refer to **Section 7.6.1** and **Section 7.6.3** for detailed information.

- **Record Triggered by Motion | Alarm**
  If you select **Motion | Alarm**, the video will be recorded when the external alarm is triggered or the motion is detected.
  Besides configuring the recording schedule, you have to configure the settings on the **Motion Detection** and **Alarm Input Settings** interfaces. Please refer to **Section 7.6.1** and **Section 7.6.3** for detailed information.

- **Record Triggered by Line Crossing Detection**
  If you select **Line Crossing Detection**, the video will be recorded when the line crossing detection is triggered.
  Besides configuring the recording schedule, you have to configure the settings on the **Line Crossing Detection** interface. Please refer to **Section 7.6.9** for detailed information.

- **Record Triggered by Intrusion Detection**
  If you select **Intrusion Detection**, the video will be recorded when an intrusion is detected.
  Besides configuring the recording schedule, you have to configure the settings on the **Intrusion Detection** interface. Please refer to **Section 7.6.8** for detailed information.

- **Record Triggered by Audio Exception Detection**
  If you select **Audio Exception Detection**, the video will be recorded when the audio exception is detected.
  Besides configuring the recording schedule, you have to configure the settings on the **Audio Exception Detection** interface. Please refer to **Section 7.6.6** for detailed information.

- **Record Triggered by All Events**
If you select **All Events**, the video will be recorded when any event is detected.

(3) Check the checkbox [Select All] and click [Copy] to copy settings of this day to the whole week. You can also check any of the checkboxes before the date and click [Copy].

(4) Click [OK] to save the settings and exit the Edit Record Schedule interface.

6. Click [Save] to save the settings.

---

### 8.4 Configuring Snapshot Settings

**Purpose:**
You can configure the scheduled snapshot and event-triggered snapshot. You can upload the captured pictures to a FTP server.

- **Basic Settings**

**Steps:**

1. Enter the Snapshot Settings interface:

   Configuration > Advanced Configuration > Storage > Snapshot
Figure 8-10 Snapshot Settings

2. Check the **Enable Timing Snapshot** checkbox to enable continuous snapshot, and configure the schedule of timing snapshot. Check the **Enable Event-triggered Snapshot** checkbox to enable event-triggered snapshot.

3. Select the quality of the snapshot.

4. Set the time interval between two snapshots.

5. Click **Save** to save the settings.

● **Uploading to FTP**

Please make sure that the FTP server is online.

You can follow below configuration instructions to upload the snapshots to FTP.

◆ **Upload continuous snapshots to FTP**

**Steps:**

1) Check the **Enable Timing Snapshot** checkbox.

2) Configure the FTP settings and check the **Upload Picture** checkbox in FTP.
Settings interface. Please refer to Section 7.3.7 Configuring FTP Settings for more details to configure FTP parameters.

Upload event-triggered snapshots to FTP

Steps:
1) Check the Enable Event-triggered Snapshot checkbox.
2) Configure the FTP settings and check the Upload Picture checkbox in FTP Settings interface. Please refer to Section 7.3.7 Configuring FTP Settings for more details to configure FTP parameters.
3) Check the Upload to FTP checkbox in Motion Detection Settings or Alarm Input interface. Please refer to Step 3 in Section 7.6.1 Configuring Motion Detection.
Chapter 9 Playback

**Purpose:**
This section explains how to view the remotely recorded video files stored in the network disks.

**Task 1: To play back the video files**

**Steps:**

1. Click on the menu bar to enter playback interface.

   ![Playback Interface](image1)

   **Figure 9-1 Playback Interface**

2. Select the date and click.

   ![Search Video](image2)

   **Figure 9-2 Search Video**

3. Click to play the video files found on this date.
The toolbar on the bottom of Playback interface can be used to control playing process.

Figure 9-3 Playback Toolbar

Table 9-1 Description of the buttons

<table>
<thead>
<tr>
<th>Button</th>
<th>Operation</th>
<th>Button</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Play/Pause</td>
<td></td>
<td>Stop</td>
</tr>
<tr>
<td></td>
<td>Speed down</td>
<td></td>
<td>Speed up</td>
</tr>
<tr>
<td></td>
<td>Playback by frame</td>
<td></td>
<td>Audio on and adjust volume/Mute</td>
</tr>
<tr>
<td></td>
<td>Capture a picture</td>
<td></td>
<td>Start/Stop clipping video files</td>
</tr>
<tr>
<td></td>
<td>Download video files</td>
<td></td>
<td>Download captured pictures</td>
</tr>
<tr>
<td></td>
<td>Display playback status</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTE

You can choose the file paths locally for downloaded playback video files and pictures in Local Configuration interface. Please refer to Section 7.1 Configuring Local Parameters for details.

Drag the progress bar with the mouse to locate the exact playback point. You can also input the time and click to locate the playback point in the Set playback time field. You can also click to zoom out/in the progress bar.

Figure 9-4 Set Playback Time

Figure 9-5 Progress Bar

The different colors of the video on the progress bar stand for the different video
types as shown in Figure 9-6.

![Figure 9-6 Video Types](image)

**Task 2: To download the video files**

**Steps:**

1. Click on the playback interface. The pop-up menu is shown in Figure 9-7.

2. Set the start time and end time. Click **Search**. The corresponding video files are listed on the left.

![Figure 9-7 Video Downloading interface](image)

3. Check the checkbox in front of the video files that you need to download.

4. Click **Download** to download the video files.

- The progress ratio displays the downloading ratio of the video file.
- You can click **Stop** to stop downloading.
- The total number displays the amount of the video files.

**Task 3: To download the captured pictures**

**Steps:**

1. Click on the playback interface. The pop-up menu is shown in Figure 9-8.

2. Set the linkage type of capturing the pictures as timing, alarm, motion, etc..

3. Set the start time and end time. Click **Search**. The corresponding picture files are listed on the left.

4. Check the checkbox in front of the files that you need to download.
5. Click to download the files.

Figure 9-8 Picture Downloading interface
Chapter 10 Log Searching

_Purpose:_
The operation, alarm, exception and information of the PTZ camera can be stored in log files. You can also export the log files on your demand.

_Before you start:_
Please configure network storage for the PTZ camera or insert a SD card in the PTZ camera.

_Steps:_

1. Click on the menu bar to enter log searching interface.

![Log Searching Interface](image)

Figure 10-1 Log Searching Interface

2. Set the log search conditions to specify the search, including the Major Type, Minor Type, Start Time and End Time as shown in Figure 10-2.

![Log Searching Interface](image)

Figure 10-2 Log Searching

3. Click to search log files. The matched log files will be displayed on the Log interface.

4. To export the log files, click to save the log files in your computer.
Chapter 11 Others

11.1 Managing User Accounts

Enter the User Management interface:
Configuration > Basic Configuration > Security > User
Or Configuration > Advanced Configuration > Security > User

The admin user has access to create, edit or delete other accounts. Up to 32 user accounts can be created.

![User Information Table]

Figure 11-1 User Information

11.1.1 Add a User

Steps:
1. Click to add a user.
2. Input the new User Name, select Level and input Password.

   ![Note]

   The level indicates the permissions you give to the user. You can define the user as Operator or User.

   For your privacy and to better protect your system against security risks, we strongly recommend the use of strong passwords for all functions and network devices. The password should be something of your own choosing (using a minimum of 8 characters, including upper case letters, lower case letters, numbers and special characters) in order to increase the security of your product.

3. In the Basic Permission field and Camera Configuration field, you can check or uncheck the permissions for the new user.
4. Click OK to finish the user addition.
11.1.2 Modify a User

Steps:

1. Click to select the user from the list and click Modify.
2. Modify the User Name, Level or Password.
3. In the Basic Permission field and Camera Configuration field, you can check or uncheck the permissions.
4. Click OK to finish the user modification.

For your privacy and to better protect your system against security risks, we strongly recommend the use of strong passwords for all functions and network devices. The password should be something of your own choosing (using a minimum of 8 characters, including upper case letters, lower case letters, numbers and special characters) in order to increase the security of your product.
11.1.3 Delete a User

Steps:
1. Click the user name you want to delete and click Delete.
2. Click OK on the pop-up confirmation box to delete the user.

11.2 Configuring RTSP Authentication

Purpose:
You can specifically secure the stream data of live view.

Steps:
1. Enter the RTSP Authentication interface:
   Configuration > Advanced Configuration > Security > Authentication
2. Set the authentication mode for each authentication type.
   RTSP Authentication: Select the authentication mode as basic or disable in the dropdown list to enable or disable the RTSP authentication.
3. Click Save to save the settings.
11.3 Configuring Anonymous Visit

Enabling this function allows visit for whom doesn’t have the user name and password of the device.

**NOTE**: Only live view is available for the anonymous user.

**Steps:**
1. Enter the Anonymous Visit interface:
   - Configuration > Advanced Configuration > Security > Anonymous Visit

   ![Figure 11-4 Anonymous Visit](image)

2. Set the **Anonymous Visit** permission **Enable** or **Disable** in the drop-down list to enable or disable the anonymous visit.
3. Click **Save** to save the settings.
   - There will be a checkbox of Anonymous by the next time you logging in.

   ![Figure 11-5 Login Interface with an Anonymous Checkbox](image)

4. Check the checkbox of **Anonymous** and click **Login**.

By permitting the Anonymous “Live View” function, you may enable others to access your speed dome and view live images without providing login credentials. It therefore is critical when permitting the Anonymous "Live View" function to ensure that your camera’s field of view does not impact the privacy of individuals whose images might be captured without authorization.

Given its inherent intrusiveness, video surveillance is inappropriate in areas where people have a higher expectation of privacy.

11.4 Configuring IP Address Filter

With this function on, the camera allows certain IP addresses whether to log in or not.

<table>
<thead>
<tr>
<th>Filter Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forbidden</td>
<td>Forbid the IP addresses added in the IP Address Filter interface to log in.</td>
</tr>
<tr>
<td>Filter Type</td>
<td>Description</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Allowed</td>
<td>Allow only the IP addresses added in the IP Address Filter interface to log in.</td>
</tr>
</tbody>
</table>

![Figure 11-6 IP Address Filter](image)

### 11.5 Configuring Security Service Settings

**Steps:**

1. Enter the Security Service interface:
   - **Configuration** > **Advanced Configuration** > **Security** > **Security Service**
2. Check the checkbox to enable the SSH function.
   - **Enable SSH**: Enabling SSH (Secure Shell) function is to encrypt and compress the data and to reduce the transmission time.
3. Click **Save** to save the settings.

### 11.6 Viewing Device Information

Enter the Device Information interface:

- **Configuration** > **Basic Configuration** > **System** > **Device Information**
- Or **Configuration** > **Advanced Configuration** > **System** > **Device Information**

In the **Device Information** interface, you can edit the Device Name.

Other information of the network PTZ camera, such as Model, Device No., Serial No., Firmware Version, Encoding Version, Number of Channels, Number of HDDs, Number of Alarm Input and Number of Alarm Output are displayed. The information cannot be changed in this menu. It is the reference for maintenance or modification in future.
11.7 Maintenance

11.7.4 Rebooting the PTZ camera

Steps:
1. Enter the Maintenance interface:
   Configuration > Basic Configuration > System > Maintenance
   Or Configuration > Advanced Configuration > System > Maintenance:

2. Click Reboot to reboot the network PTZ camera.

11.7.5 Restoring Default Settings

Steps:
1. Enter the Maintenance interface:
   Configuration > Basic Configuration > System > Maintenance
   Or Configuration > Advanced Configuration > System > Maintenance

2. Click Restore or Default to restore the default settings.
Clicking **Default** restores all the parameters to default settings including the IP address and user information. Please use this button with caution.

![Figure 11-9 Restore Default Settings](image)

### 11.7.6 Importing/Exporting Configuration File

**Steps:**
1. Enter the Maintenance interface:
   - Configuration > Basic Configuration > System > Maintenance
   - Or Configuration > Advanced Configuration > System > Maintenance

2. Click **Browse** to select the local configuration file and then click **Import** to start importing configuration file.

   ![NOTE]

   You need to reboot the PTZ camera after importing configuration file.

3. Click **Export** and set the saving path to save the configuration file in local storage.

![Figure 11-10 Import/Export Configuration File](image)

### 11.7.7 Upgrading the System

**Steps:**
1. Enter the Maintenance interface:
Configuration > Basic Configuration> System > Maintenance
Or Configuration > Advanced Configuration> System > Maintenance

2. Select Firmware or Firmware Directory.
   - **Firmware**: when you select Firmware, you need to find the firmware in your computer to upgrade the device.
   - **Firmware Directory**: You need to find the directory where the firmware locates. The device can find the firmware in the directory automatically.

3. Click **Browse** to select the local upgrade file and then click **Upgrade** to start remote upgrade.

   The upgrading process will take 1 to 10 minutes. Please don't disconnect power of the PTZ camera during the process. The PTZ camera reboots automatically after upgrading.

![](image)

**Figure 11-11 Remote Upgrade**

---

**11.8 Configuring RS-485**

**Purpose:**
The RS-485 serial port is used to control the PTZ of the camera. The configuring of the PTZ parameters should be done before you control the PTZ unit.

**Steps:**
1. Enter RS-485 Port Setting interface:

   Configuration> Advanced Configuration> System > RS485

![](image)

**Figure 11-12 RS-485 Settings**
2. Set the RS-485 parameters and click **Save** to save the settings.

![NOTE]

The Baud Rate, PTZ Protocol and PTZ Address parameters of the PTZ camera should be exactly the same as those of the control device.

### 11.9 Configuring Remote Connection

**Steps:**

1. Enter the interface of configuring the remote connection:  
   **Configuration > Advanced Configuration > System > Service**
2. Input a number in text field as the upper limit of the remote connection number. E.g. when you specify the remote connection number as 10, then the 11th remote connection cannot be established.

<table>
<thead>
<tr>
<th>Software</th>
<th>Live View Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10</td>
</tr>
</tbody>
</table>

3. Click the **Save** button to activate the settings.
Appendix

Appendix 1 SADP Software Introduction

- **Description of SADP**
  
  SADP (Search Active Devices Protocol) is a kind of user-friendly and installation-free online device search tool. It searches the active online devices within your subnet and displays the information of the devices. You can also modify the basic network information of the devices using this software.

- **Search active devices online**
  
  ◆ **Search online devices automatically**

  After launch the SADP software, it automatically searches the online devices every 15 seconds from the subnet where your computer locates. It displays the total number and information of the searched devices in the Online Devices interface. Device information including the device type, IP address and port number, etc. will be displayed.

  ![Figure A.1.1 Searching Online Devices](image)

  ◆ **Search online devices manually**

  You can also click to refresh the online device list manually.
newly searched devices will be added to the list.

You can click ▲ or ▼ on each column heading to order the information; you can click ▶ to expand the device table and hide the network parameter panel on the right side, or click ▶ to show the network parameter panel.

- **Modify network parameters**

**Steps:**
1. Select the device to be modified in the device list and the network parameters of the device will be displayed in the **Modify Network Parameters** panel on the right side.
2. Edit the modifiable network parameters, e.g. IP address and port number.
3. Enter the password of the admin account of the device in the **Password** field and click ▶ to save the changes.

- For your privacy and to better protect your system against security risks, we strongly recommend the use of strong passwords for all functions and network devices. The password should be something of your own choosing (using a minimum of 8 characters, including upper case letters, lower case letters, numbers and special characters) in order to increase the security of your product.

- Proper configuration of all passwords and other security settings is the responsibility of the installer and/or end-user.

![Modify Network Parameters](image)

Figure A.1.2 Modify Network Parameters
Appendix 2 Port Mapping

The following settings are for TP-LINK router (TL-R410). The settings vary depending on different models of routers.

Steps:
1. Select the **WAN Connection Type**, as shown below:

![Select the WAN Connection Type](image)

2. Set the **LAN** parameters of the router as in the following figure, including IP address and subnet mask settings.

![Set the LAN parameters](image)

3. Set the port mapping in the virtual servers of **Forwarding**. You need to forward ports 80, 8000, 8200~8210 and 554 for a PTZ camera.

- You can change 80, 8000 and 554 ports value in the PTZ camera with web browser or client software.
- In the PTZ camera, the 8200~8210 ports change with the 8000 port with a constant value of 200. E.g. if the 8000 port is changed to 8005, then the 8200~8210 ports should be changed to 8205~8215.

**Example:**

When the PTZ cameras are connected to the same router, you can forward the ports of a PTZ camera as 80, 8000, 8200~8210 and 554 with IP address 192.168.1.23, and the ports of another PTZ camera as 81, 8001,
8201~8211 and 555 with IP 192.168.1.24. Refer to the steps below:

**Steps:**

1. As the settings mentioned above, forward the port 80, 8000, 8200~8210 and 554 for the network PTZ camera at 192.168.1.23
2. Forward the port 81, 8001, 8201~8211 and 555 for the network PTZ camera at 192.168.1.24.
3. Enable ALL or TCP protocols.
4. Check the Enable checkbox and click **Save**.

![Virtual Servers](image)

Figure A-5 Port Mapping

The port of the network PTZ camera cannot conflict with other ports. For example, some web management port of the router is 80. Change the PTZ camera port if it is the same as the management port.
Appendix 3 Bubble Maintenance

The bubble is a transparent plastic. The dust, oil and finger print, etc. will cause scratch or image blur. Please refer to the following method to clean the bubble.

- Handling dust
  Use oil free soft brush or blowing dust ball to clean the dust.

- Handling oil

Steps:
1. Wipe off the water-drop or oil by soft cloth and dry the bubble.
2. Use oil free cotton cloth to wipe the bubble with alcohol or detergent.
3. Change the cloth to wipe the bubble until the bubble is clean.
Appendix 4 12VDC Wire Gauge & Transmission Distance

The following table describes the recommended max. distance adopted for the certain wire gauge when the loss rate of 12VDC voltage is less than 15%. For the DC driven device, the maximum voltage loss rate is 15% allowable.

<table>
<thead>
<tr>
<th>Distance (feet)</th>
<th>Wire Gauge(mm)</th>
<th>0.800(20)</th>
<th>1.000(18)</th>
<th>1.250 (16)</th>
<th>2.000(12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>0.800(20)</td>
<td>97(28)</td>
<td>153(44)</td>
<td>234(67)</td>
<td>617(176)</td>
</tr>
<tr>
<td>20</td>
<td>0.800(20)</td>
<td>49(14)</td>
<td>77(22)</td>
<td>117(33)</td>
<td>308(88)</td>
</tr>
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Appendix 5 Table of Wire Gauge Standards

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Appendix 6 Alarm In/Out Connections

This section is only for the PTZ cameras with alarm in/out functions. The PTZ camera can be connected with alarm inputs (0~5VDC) and alarm outputs. Refer to the following diagrams for alarm output:

![Diagram](image)

Figure A-6 Alarm Out Connections

The alarm provides the relay output (no voltage), and the external power supply is required when it connects to the alarm device.

- For DC power supply (left diagram), the input voltage must be no more than 30VDC, 1A.
- For AC power supply, the external relay must be used (right diagram) to prevent damages to the PTZ camera and avoid risk of electric shock.
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