HD Fast Dome IP Camera Series User Manual

Table of Contents

Summary

LILIN 20X/30X 1080P HD PTZ IP Cameras and 25X/30X IR PTZ IP cameras are capable of streaming HD video at up to 60 frames per second. Featuring Wide Dynamic Range (WDR), the PTZ IP Cameras captures highlights and shadows simultaneously, eliminating pixilation and smear. Capable of making 360° continuous rotations, users can accurately position the camera to identify specific targets. The PTZ IP Cameras provide IP66-rated protection against water and dust. The 20X/25X/30X optical zoom give the PTZ IP Camera an impressive range making it ideal for numerous applications.

The 20X/30X 1080P HD PTZ IP Cameras and 25X/30X IR PTZ IP cameras adopt the latest compression technologies to provide Quadruple Streaming of H.264 and MJPEG in different resolutions. The Quadruple Streaming technology allows transmitting digital video at various bitrates and frame rates to fit both high and low bandwidth network environment.

The built-in intelligent video analytics engine enables audio and motion detection for extra protection. Other useful features include two-way audio, SD card recording, smartphone live access, email snapshot, and continuously sending JPEG snapshots to an FTP server. These features are highly compatible with other applications. Even more, these IP cameras support cutting-edge technologies such as video de-interlacing, built-in video analytics, and ONVIF compliance.

Key Features

- Capability of recording at 60 FPS
- Supports various encoding formats (H.264 and MJPEG)
- Multiple Streaming technology, supporting 4 concurrent streams
- Supports Android, iPad, and iPhone live monitoring
- Audio and motion detection for notifications via email or FTP
- IVA alarm notifications via email or FTP
- Two-way audio (audio models only)
- Network time protocol (NTP) supported
- DDNS and UPnP supported
- Supports HTTP API
- Supports PCM/G.711 audio streaming
- Supports ONVIF protocol
- Supports LILIN Navigator

Trademarks & Acknowledgments

Other names of companies and their products mentioned in this manual may be trademarks or registered trademarks of their respective owners.

Other References

Mobile devices

For mobile surveillance, refer to the detail page of LILINViewer on Apple App Store or Google Play.

LILIN Universal ActiveX Control

Sample codes and documents are included in the product CD and can be downloaded from our company website.

LILIN HTTP API

For non-ONVIF integration, see the LILIN HTTP API document. HTTP API is used in all LILIN IP cameras.

Caution

- Do not drop or damage the equipment
- Do not install the equipment near fire or heat sources
- Keep the equipment from rain, moisture, smoke, or dust
- Do not cover the opening of the cabinet with cloth and/or plastic or install the unit in poorly ventilated places. Allow 10cm between this unit and its surroundings
- Do not continue to operate the unit under abnormal conditions such as smoke, odor, or loss of signal whilst power is turned on
- Do not touch the power cord with wet hands
- Do not damage the power cord or leave it under pressure
- To avoid unnecessary magnetic interference, do not operate this unit near magnets, speaker systems, etc.
- All connection cables should be grounded properly

Disclaimer

To prevent possible unauthorized access to this device, please change the default admin password. Failure to do so may leave this device vulnerable, compromising your privacy. By using the camera, you accept responsibility for establishing and maintaining the security of this device on your network(s) and the wider internet. Please document the new password in a safe place. Forgetting the new password means you will no longer be able to access this network device and will need to perform a hardware reset to restore the default username and password.

Please be aware that this user manual may cover a range of product specifications for various models. Characteristics and features discussed and/or illustrated in this manual may not be applicable or available to all models. We reserve the right to change product specifications, designs and equipment without notice and without incurring obligation.

Chapter 1 System Overview

Chapter 1-1 System Requirements

LILIN's IP PTZ camera uses compression technology that provides high compression rate and superior video quality. However, video performance depends highly on CPU power and network bandwidth for video streaming. The following sections specify the system requirements for using LILIN IP PTZ cameras.

Chapter 1-2 Software Requirements

Chapter 1-2-1 Apple Mac OS

LILIN IP camera uses HTML5 streaming which supports Safari browser for accessing video streaming of the IP camera on Apple Mac OS without any software plug-in.

Chapter 1-2-2 PC Windows OS

Merit LILIN Universal ActiveX software components for a web browser to display MJPEG or H.264 video. When you first log in to our IP camera, you may see a prompt box as below via Windows OS.

Click install and follow the onscreen instructions to install necessary component.

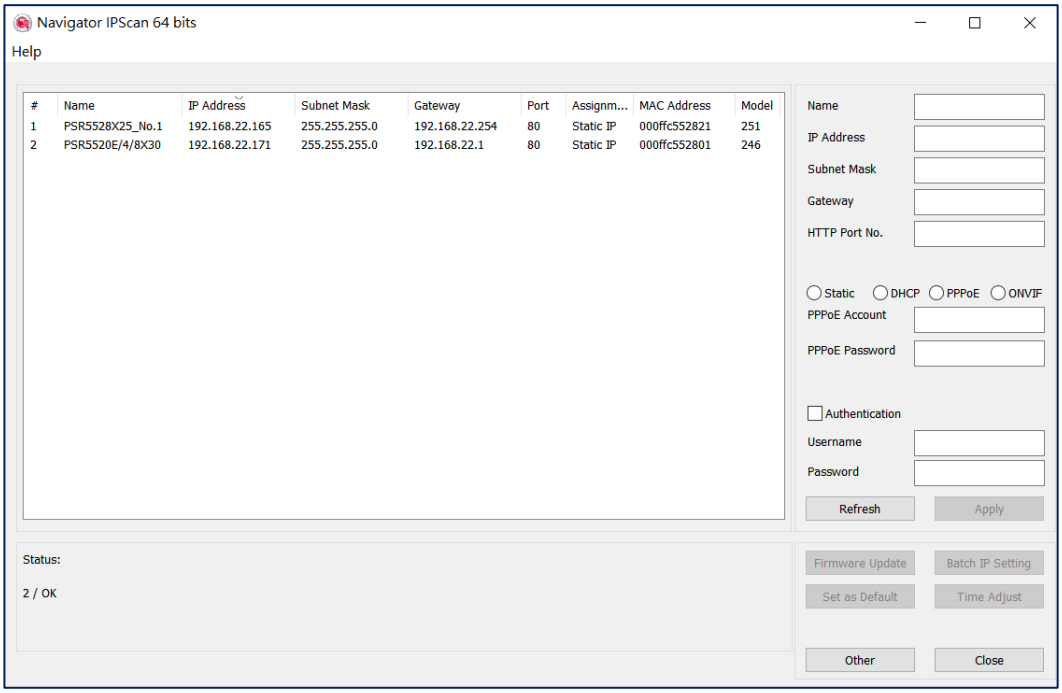
Chapter 2 Before Accessing IP Cameras

Before accessing the IP cameras, make sure that the camera's RJ-45 network connector, audio cable, and power cable are properly connected. To set the IP address, consult your network administrator. The default IP address for each IP camera is 192.168.0.200. Users can use the default IP address to verify the camera's network connection.

Chapter 2-1 Configure IP Addresses using the IPScan Utility

To configure the IP address of your cameras, download IPScan from our official website. Or, you can execute the IPScan installer from the installation CD directly. To change the IP address, subnet mask, gateway, or HTTP port of your cameras, follow the steps below:

- Run the IPScan utility
- Click **Refresh**. All available devices will be listed on the screen
- Select the device item from the device list
- To edit or modify IP address, subnet mask, gateway, or HTTP port, use the box
- Click **Apply** for the changes to take effect
- Click **Refresh** again to verify the changed settings



Note: Make sure your IPScan is version 1.0.0.52 or above.

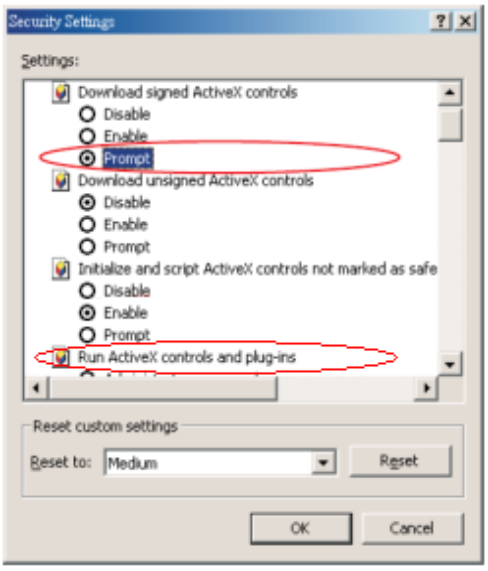
Chapter 2-2 Configure IP Addresses through HTML Connection

To change an IP address on a webpage, type the default IP address (192.168.0.200) into the browser address bar and follow the steps below:

- Log in to your LILIN IP camera**.**
- Click **Setup→Network** to edit or modify IP address, subnet mask, gateway, or HTTP port.
- Click **Submit** for the changes to take effect.

Chapter 2-3 Web Browser Settings & Software Components Required

Make sure your Internet browser allows signed ActiveX plug-in to run on your PC. Set Download Signed ActiveX plug-in controls to Prompt and enable Run ActiveX control and plug-in. You can set this in Internet Explorer→Tools→Internet Options→Security→Custom Settings.



Once completed, you can access the IP camera's live video by entering the default IP address via a web browser. A security warning dialog box will appear. Click **OK** to download the ActiveX directly from the IP camera.

Chapter 2-4 Login

The IP PTZ camera supports 3 levels of user access with different authorization level, including the system administrator (Administrator), operator (Operator) and guest (Viewer). The difference is administrator can monitor live images and perform operations and configure camera parameters, the operator can monitor the live image and operate the camera, while the guest can only monitor the live image. To log in to the IP PTZ camera, please enter the username and password in the login page, and then press the **Confirm** button.

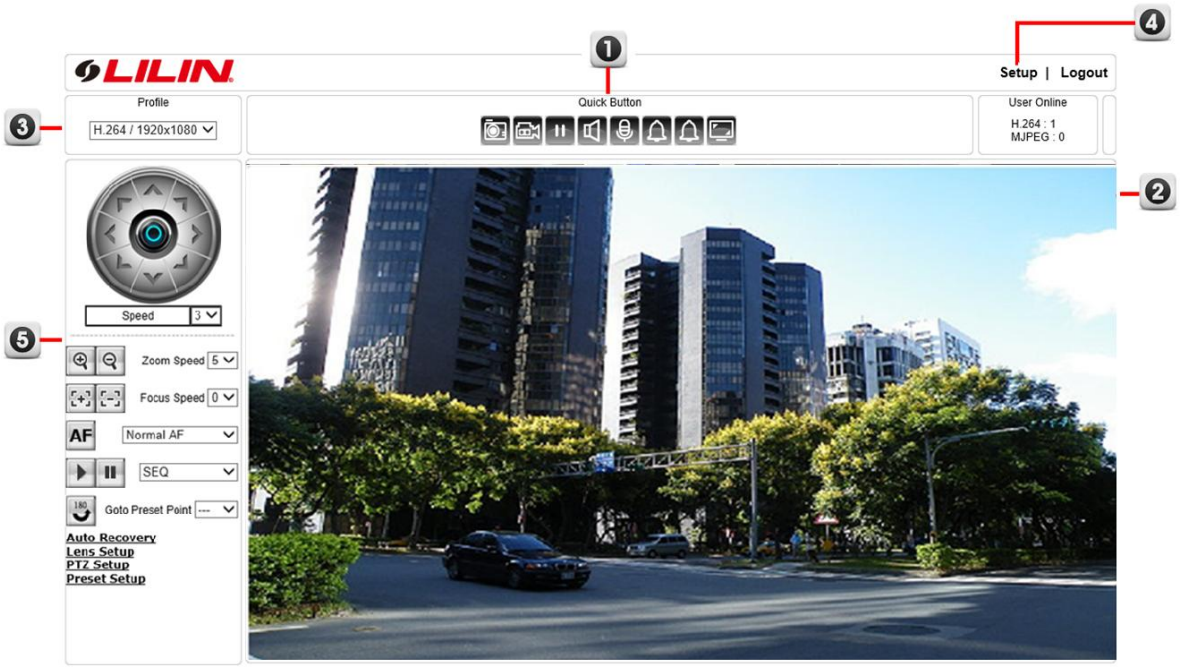
Information Security Version:
The administrator does not have a default username and password. To log in to the webpage, you need to create an administrator username and password. And should pass the username and password authentication to log in to the camera to monitor, operate and set up.

Non-security version:
The default administrator username is admin and password is pass.

Chapter 3 IP Camera Operations

When logged in as an administrator, two main features are available: 1) camera operations and 2) configurations.

Chapter 3-1 HTML Operations



1. **Quick buttons**—IP camera shortcuts
2. **ActiveX display screen**—Display RTSP H.264 or MJPEG streaming video
3. **Profile switching menu**—Switching from one profile to another
4. **Setup buttons**—IP camera setup menu
5. **PTZ control** p**anel**

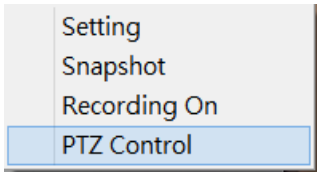
Chapter 3-2 PTZ Control Panel

	Zoom In		Zoom Out	Zoom Speed 5	Zoom Speed
	Focus Far		Focus Near	Focus Speed 0	Focus Speed
AF	Auto Focus			Normal AF	Focus Mode
	Auto Pan Start		Auto Pan Stop	Scan5	Auto Pan Mode
	Flip 180			Goto Preset Point ---	Go to preset position
Auto Recovery		If the IP PTZ camera idles for a period of time, the selected function will be activated automatically.			
Lens Setup		Lens Function Setup.			
PTZ Setup		PTZ Function Setup.			
Preset Setup		Preset Position Setup.			

<table>
<tr>
<td>Auto Recovery
Home Position Off
Preset 1
Self Return Time Off
Min 0
Sec. 0
Self Return Mode Off
Home
Lens Setup
PTZ Setup
Preset Setup</td>
<td>Auto Recovery drop-down options
Home Position: Specify a home position for one of the presets.
Self Return Time: If the IP PTZ camera idles after the chosen time period, the selected function will be activated automatically.
Self Return Mode: Return to home position in modes such as home position, auto scan mode, tour mode, or patrol mode. Users are able to set an operation mode to ensure all-day monitoring. In the Return Mode, if the IP Fast Dome Camera idles for a period of time, the selected function will be activated automatically. The Return Mode allows constant and accurate monitoring to avoid the Dome Camera from idling or missing events.</td>
</tr>
<tr>
<td>Auto Recovery
Lens Setup
Focus Sensitivity Normal
Digital Zoom Off
Preset Position MF
Pan-Tilt Movement AF
PTZ Setup
Preset Setup</td>
<td>Lens Setup drop-down options
Focus sensitivity: Auto focus sensitivity.
Digital Zoom: Enable digital zoom after the optical zoom is exhausted.
Preset Position: Set the camera to Auto-Focus (AF) or Manual-Focus (MF) when the camera performs preset operations.
Pan-Tilt Movement: Set the camera to Auto-Focus (AF) or Manual-Focus (MF) when the camera performs Pan-Tilt movements.</td>
</tr>
<tr>
<td>Auto Recovery
Lens Setup
PTZ Setup
Turbo Speed Off
Vertical Operate Angle 210
Flip Function On
Vertical Down Limit Flip On
Click To Center Off
Motor Power Saving On
Preset Setup</td>
<td>PTZ setup drop-down options
Turbo Speed: When this function is turned on, the speed of preset position operations will be boosted (360 degrees per second). (By model)
Vertical Operate Angle: Select the camera vertical angle to be 90 or 180 degrees.
Flip Function: Turn on or off the flip function.
Vertical Down limit Flip: Turn horizontal flip on or off when running vertically to 90 degrees.
Click To Center: After the function is enabled, move the mouse to the ActiveX display screen and press the left mouse button. PTZ will move the current position image of the mouse to the center of the screen.
Motor power saving mode: Turn the motor power saving mode on or off. After the power saving mode is turned on, when the vertical and horizontal motors stop running, the control system will enter the power saving mode to reduce the motor torque to 70%. When the vertical or horizontal motor is running, the motor torque will return to 100%. (This feature depends on the model or firmware version)
Notice:
When the vertical operating angle is set to 180 degree, the PTZ horizontal flip function will be closed automatically.
When the vertical operating angle is set to 90 degrees, the PTZ horizontal flip function will restore to the previous settings.</td>
</tr>
<tr>
<td>Auto Recovery
Lens Setup
PTZ Setup
Preset Setup
Preset Point 1
Speed 255
Dwell Time 5
Save
Clear Preset Point ---
Clean</td>
<td>Preset Setup drop-down options
A total of 256 preset positions can be programmed for the IP PTZ camera. Please refer to the instructions below to configure preset positions. To set up a preset point, first move the cursor to the PTZ control panel. Then move to the desired position by using the pan, tilt and zoom buttons. Next, assign a number for the current position from the drop-down Preset Point list. Then assign a Dwell Time and Speed for the current position from the drop-down menus. Click Save for the changes to take effect.</td>
</tr>
</table>

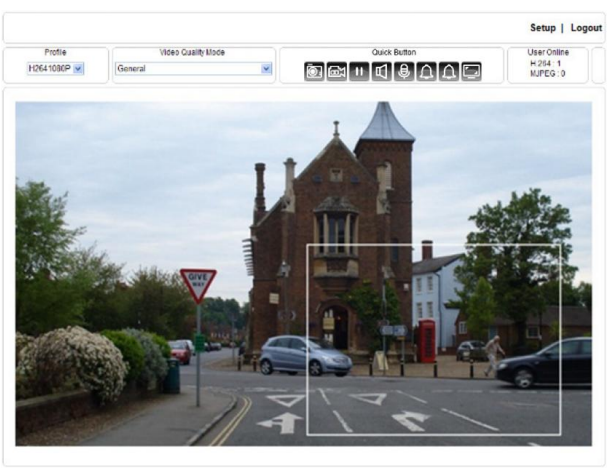
Chapter 3-2-1 Vertical and Horizontal Direction Controls

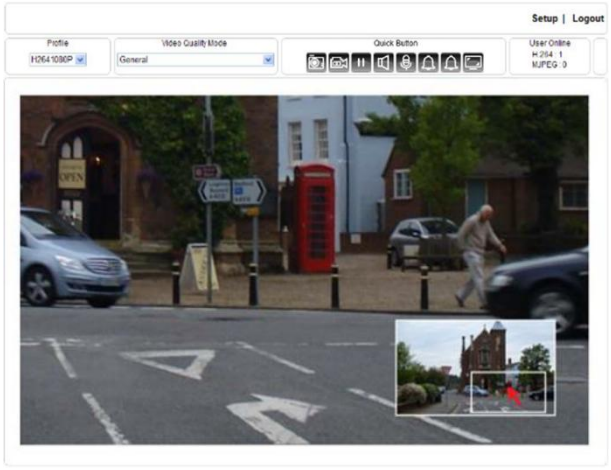
Two modes are available for moving the camera vertically and horizontally. The details are described below:

	3-2-1-1 Directional buttons control Pan-Tilt As shown in the image to the left, eight arrow buttons and speed options are provided to move around the camera. Select the moving speed from the drop-down menu, and press any arrow to move the fast dome network camera. The greater the **Speed** number is, the quicker the camera will move.
	3-2-1-2 Mouse control PTZ As shown in the image to the left, a pop-up menu will appear when you right-click on the screen. Choose **PTZ Control** to enter the mouse control mode. Click and hold the mouse and move around the screen to control the camera according to your mouse movement. The moving speed depends on the distance between the center of the screen to the cursor: When the distance is short, the camera moves slowly; when the distance is long, the camera moves rapidly.

Chapter 3-2-2 ePTZ

The ActiveX control provides an ePTZ (electronic Pan, Tilt, and Zoom) feature. To perform an ePTZ operation, hold and drag your mouse across the screen.





Move your cursor to the PIP window and drag inside it to perform ePan and eTilt actions. The scroll wheel can be used to zoom in and zoom out.

Chapter 3-2-3 Control Panel

The quick control panel buttons are described below:

	Snapshot: Take a snapshot of the video.
	Recording to the PC.
	Pause recording to the PC.
	Audio on: Turn audio on (audio models only).

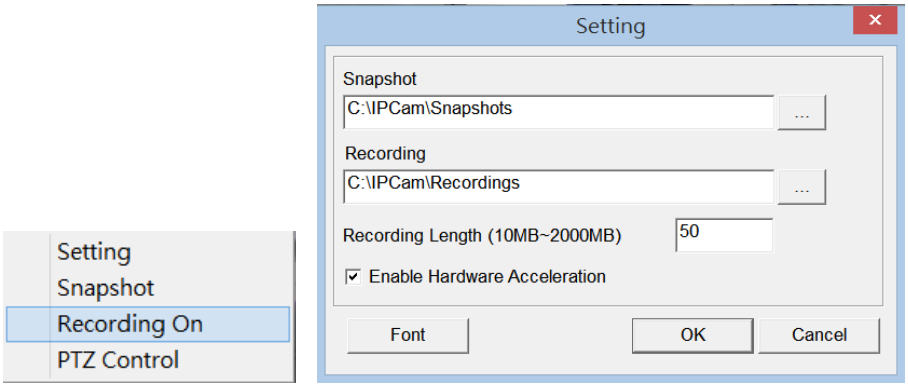
	Speak on: Turn on to speak to the remote site (audio models only).
	Alarm output control (Alarm models only)
	Switch screen

Chapter 3-2-3-1 Two-way Audio (for audio model only)

	To activate two-way audio, please click the microphone icon to speak to the remote site.
	To stop speaking to the remote site, please click the microphone icon again.
	To listen to the remote site, please click the speaker icon.
	To stop listening to the remote site, please click the speaker icon again.

Chapter 3-2-3-2 Record in a Local PC

To record videos to a local PC, first right-click on the Universal ActiveX control. Choose **Setting** to specify the recording paths and recording sizes, and choose **Recording On** to start recording. Please make sure that the ePTZ or ROI feature is disabled before trying to open the setting menu.



Note: ActiveX is for Windows OS only.

Chapter 4 Basic Settings

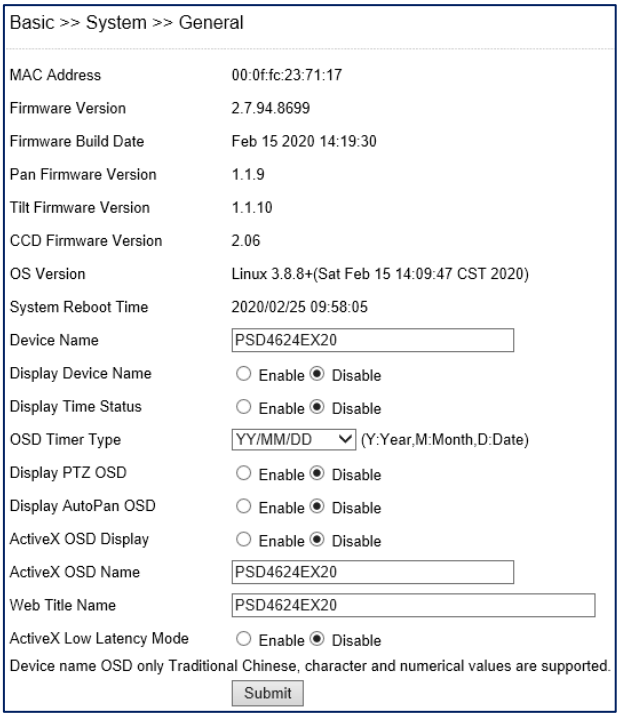
As an administrator, you can configure the IP camera via a standard HTML webpage. Click Setup at the top-right corner of the screen after you log in to the camera.

Chapter 4-1 System

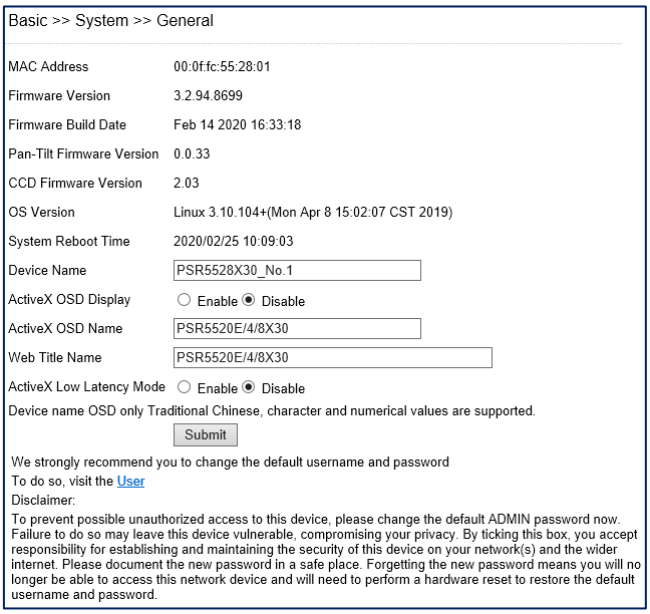
Chapter 4-1-1 General

Under System Settings→General, you will see server system information, such as MAC address, firmware version, user settings, and system time settings. To modify these options, follow the instructions below:

1. PSR46 & PSR50 series models



2. PSR55 series models:



- **MAC Address**: Network MAC address of the IP PTZ camera.
- **Firmware Version**: You are allowed to upgrade IP PTZ camera's firmware remotely.
- **Firmware Build Date**: Firmware version build date and time.
- **Pan Firmware/Tilt Firmware/Pan-Tilt Firmware/CCD Firmware Version**: Check if the firmware is

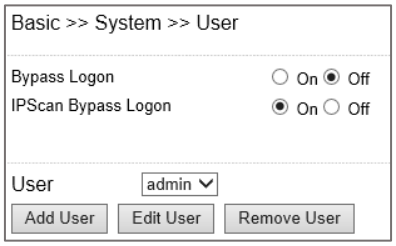
up-to-date.

- **OS version**: Check if the device is up-to-date.
- **System Reboot Time**: The last time your system was rebooted
- **Device Name**: The device name can be found using the IPscan utility, which allows you to identify IP cameras. To change the device name, enter a new name for the IP camera and click Submit.
- **Display Device Name**: Enable/disable to display/hide IP PTZ camera device name. (By model)
- **Display Time Status**: Enable/disable to display/hide camera time on the OSD. (By model)
- **OSD Timer Type**: Can be set to select different date and time display formats. (By model)
- **Display PTZ OSD**: Enable/disable to display/hide IP PTZ currently angle information on the OSD. (By model)
- **Display Auto Pan OSD**: Enable/disable to display/hide IP PTZ Auto-Pan or Self-Run running or not on the OSD. (By model)
- **ActiveX OSD Display**: Enable/disable to display/hide the ActiveX OSD Name.
- **ActiveX OSD Name**: The name you enter here will be displayed on the ActiveX screen.
- **Web Title Name**: Enter the name to be displayed on the web browser.
- **ActiveX Low Latency Mode**: Enable to reduce latency of the ActiveX.

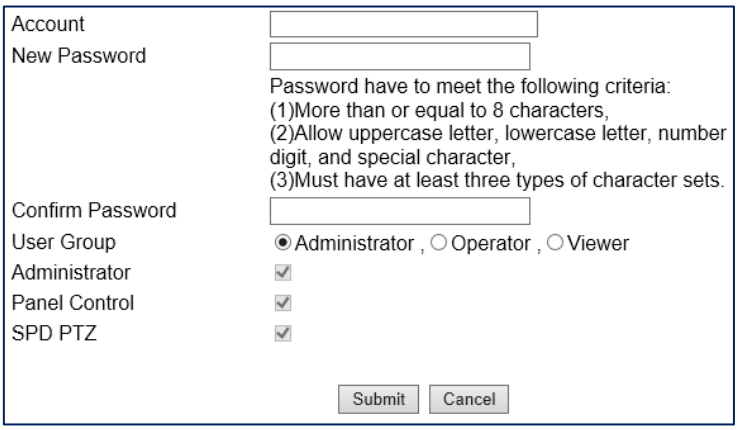
Note: ActiveX is for Windows OS only.

Chapter 4-1-2 User

The camera supports up to 10 user accounts. Each account can be individually configured for its access rights. To add/edit a user, click Add/Edit User. To access an IP camera without authentication, switch the Bypass Logon option to On. Enable IPScan Bypass Logon to log in the camera through IPScan without authentication.



To add a user, press **Add User**, and you will see the following screen:

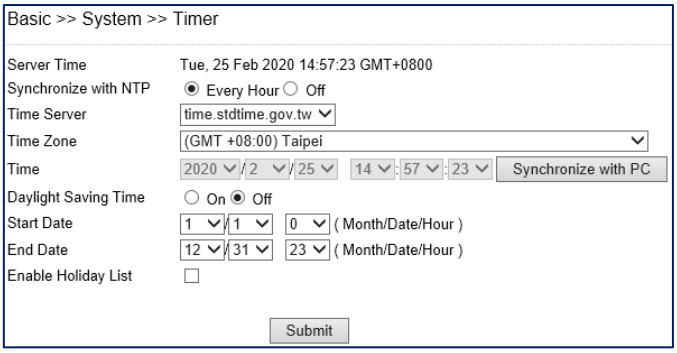


Enter the account name and password for the new account, and then check to assign the access rights for this account.

To edit account information, click **Edit User**. To delete a user, click **Remove User**. Click **Submit** to update the settings.

Chapter 4-1-3 Timer Settings

You can change the time of your camera through a HTML web page. Simply select the date and time in the drop-down menus, and click **Submit** to apply. You may also set the daylight saving time in this page.



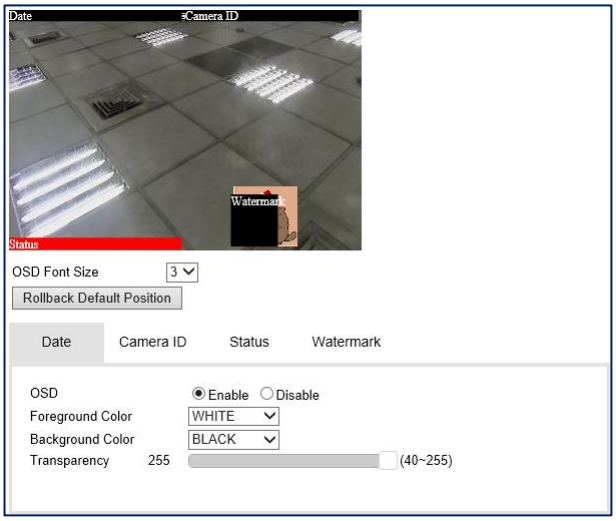
Synchronize with an NTP server

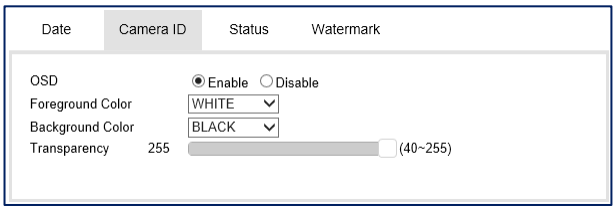
To synchronize with an NTP server, change the Synchronize with NTP to Every Hour. The camera will synchronize its system time with a time server every hour.

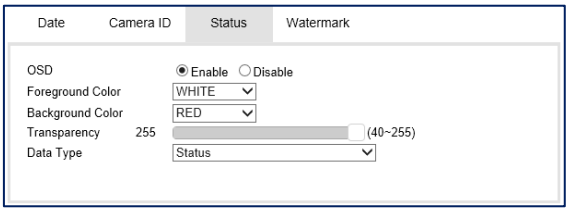
Note: This function requires Internet connection.

Chapter 4-1-4 OSD

OSD (on screen display) is for the use of displaying system information on the video. There are features of date, camera ID, status, and watermark available.







Date, Camera ID, Status, and Watermark are described below:

- **OSD Font Size:** The size of the OSD text
- OSD option setting enables or disables "Date / Device Name / Status / Watermark" information to be displayed on the ActiveX screen.
- **Foreground Color:** The color of the text
- **Background Color:** The background color of the text
- **Transparency:** The transparency of the background color
- The "Data Type" of the status can be selected to display items, and the "status / current PTZ position / preset position, autopan" information can be displayed in the status position of the screen.
- The "Data Type" of the watermark information can be selected as a user-defined / watermark for display. Data type selection User-defined user can enter the display string text in the user-defined field. The data type selection watermark can be uploaded and displayed by selecting bmp bitmap files under 500KB in the watermark field.

Note: This setting page depends on the model.

Chapter 4-2 Video / Audio

Chapter 4-2-1 General

To transmit video over a low bandwidth network such as the Internet, set the bit rate close to the actual upload bandwidth. The camera encodes frames based on the bit rate setting.

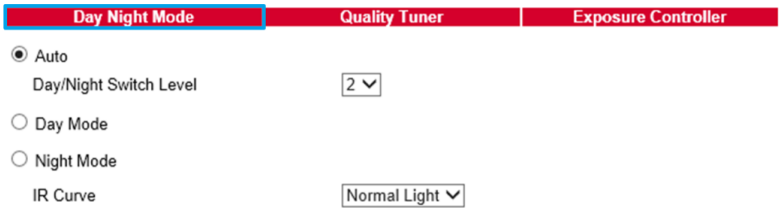
- **Profiles:** 4 customizable profiles.
- **H.264 Encoding Mode:** Encoding mode selection.
- **Enode2:** Enable or disable streaming 2.
- **Encode3/TV Out:** Enable streaming 3 or turn on TV system output (NTSC/PAL).
- **Video Standard:** 60Hz / 50Hz power frequency.
- **Profile Name:** Description of the streaming profile.
- **Resolution:** Image resolution size selection.

- **Output Frame Rate:** The frame rate of the video
- **GOP:** The number of I-frames to be displayed in one second
- **Stream Mode:** VBR: Variable bit rate, an encoding mode that reduces the use of bandwidth; CBR: constant bit rate, an encoding mode that consumes more bandwidth.
- **Bit Rate:** The maximum bit rate available for your network connection.
- **Image Quality**: The compression rate of the MJPEG stream.
- **RTSP URL**: Allows you to see the video stream through the Real Time Streaming Protocol.

Chapter 4-2-2 Video Quality Tuner

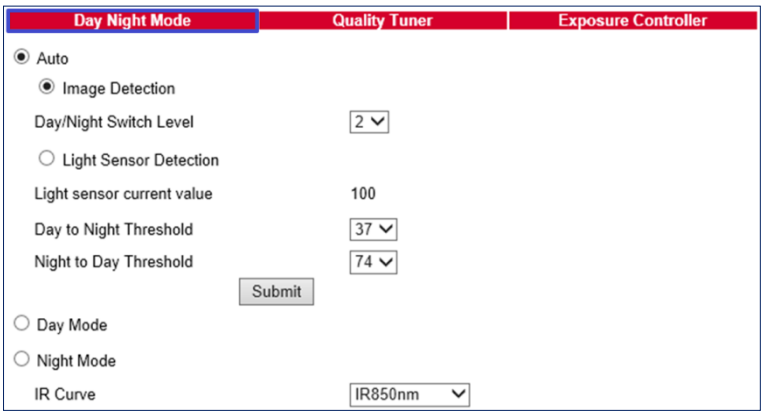
Chapter 4-2-2-1 Day Night Mode

IR Cut removable controls IR activation, and can be set to (1) auto, (2) day, (3) night.



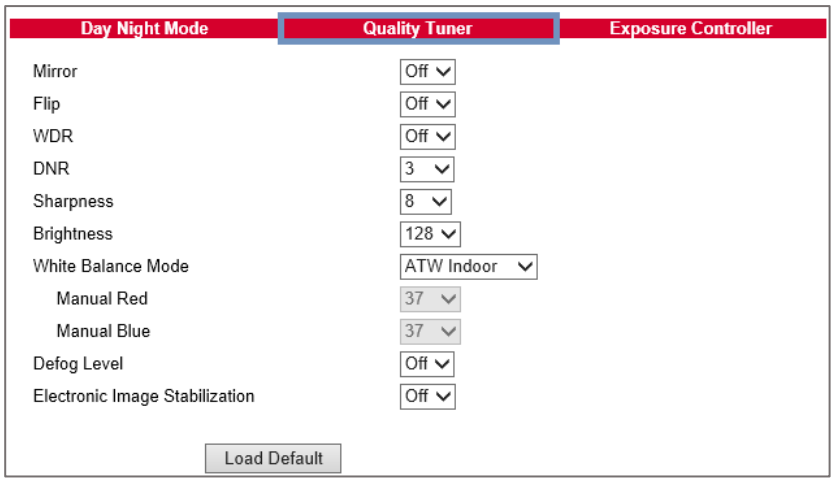
- **Auto:** Automatically switches between **Day Mode (colored)** or **Night Mode (black and white)** based on sensor signals.
- **Day/Night Switch Level:** Set the level of sensitivity for the **Auto Mode**.
- **Day Mode:** IR cut feature is forced to be always on.
- **Night Mode:** IR cut feature is removed.
- **IR Curve:** Select night mode ambient light source wavelength.

Note: This setting page depends on the model.



- **Image detection / light sensor detection:** Users can choose the detection method of automatic day and night switching according to the needs of the environment and functions. The image detection mode will switch between day and night according to the brightness of the light source signal projected to the brightness of the image. The light sensor detection mode will switch between day and night based on the brightness of the light source signal projected onto the light sensor.

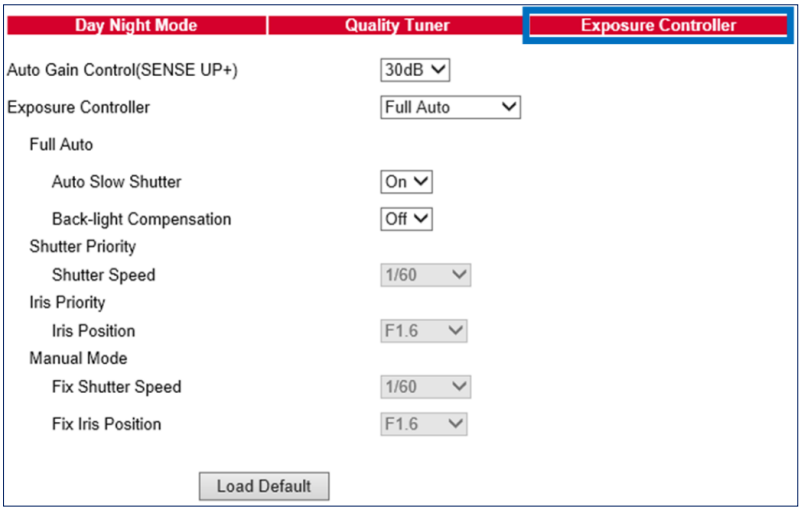
Chapter 4-2-2-2 Quality Tuner



Video setting options are described as followed:

- **Mirror:** Flip the video horizontally.
- **Flip:** Flip the video vertically.
- **WDR**: Enables or disables Wide Dynamic Range to capture greater details. When turned on (the system will be restarted), the camera will record up to 2MP @ 30 fps in H.264. The default is off (the system will be restarted, H.264: up to 2MP @ 60 fps).
- **DNR:** With the 3D noise reduction function, the processor analyzes pixel by pixel and frame by frame to eliminate environmental noise signal so that the highest quality image can be produced even in low light or slow speed shutter conditions. Options cover **Off** and **1–5**, with a default value of **3**.
- **Sharpness:** Intensifies the contour of subjects. The settings are **0–15**, with a default of **8**.
- **Brightness:** This parameter adjusts the brightness of the image. The settings are **1–255**, with a default of **128**.
- **White Balance Mode:**
  Our camera offers two white balance modes: **AWB** (Auto White Balance), which can automatically control the white balance, and **MWB** (Manual White Balance), with which you have to manually control the white balance. **AWB** also provides the **ATW** (Auto Trace White Balance) mode and the **Full Open** mode. The MWB includes specific color temperature settings and a user mode.
  - **ATW Indoor:** Auto Trace White Balance, Color temperature 2800**–**9500 K
  - **ATW Outdoor:** Auto Trace White Balance, Color temperature 2200**–**10500 K
  - **Full Open:** Auto Trace White Balance, Color temperature 1500**–**10500 K
  - **Manual:** Manual White Balance
- **Defog:** When the surrounding area of the subject is foggy and shows low contrast, the defog mode will make the subject appear clearer.
- **Electronic Image Stabilization**: Switching **ON** to reduce image blur caused by, for example, vibration. This function allows you to obtain images without much blurring. A vibration frequency of around 10 Hz can be most effectively reduced. The Image Stabilizer function employs the digital zoom system, so the angle of view and resolution are changed, but the sensitivity is maintained.

Chapter 4-2-2-3 Exposure Controller



The exposure settings include automatic exposure mode and manual exposure mode. AE modes: automatic brightness control through exposure level sensing object. This camera features adjustable maximum gain control, full auto, shutter priority, and iris priority. Manual Exposure Mode: Manual adjustment of shutter speed and iris position.

- **Auto Gain Control (AGC)**: AGC Settings (Off, 2dB, 4dB, 6dB, 8dB, 10dB, 12dB, 14dB, 16dB, 18dB, and 20dB, with a default of 18dB).
- **Auto exposure mode Full Auto:** In this mode, the exposure is automatically controlled by metering the brightness of subjects.
  - **Auto Slow Shutter**: Auto slow shutter: Activate the auto slow shutter photography mode. When the ambient brightness becomes darker to the threshold of the slow shutter activation, the camera system will automatically adjust the slow shutter speed according to the image brightness to enhance the shooting effect.
  - **Back Light Compensation (BLC)*:*** When the subject is too dark to be visible, this function will adjust the exposure value, enhance the brightness of the scene, and make the subject clearer.
- **Auto exposure mode Shutter Priority:** After you select the shutter speed, the iris value will be determined automatically by the camera. Faster shutter speed allows the camera to capture instantaneous streak-free image of a moving subject, while slow speed improves light sensitivity in poorly illuminated areas.
  - **Shutter Speed:** 1/60, 1/90, 1/100, 1/125, 1/180, 1/250, 1/350, 1/500, 1/725, 1/1000, 1/1500, 1/2000, 1/3000, 1/4000, 1/6000, and 1/10000, with a default of 1/60.
- **Auto exposure mode Iris Priority:** After you select the aperture value, the shutter speed will be determined automatically by the camera.
  - Iris Position: F1.6, F2.0, F2.4, F2.8, F3.4, F4.0, F4.8, F5.6, F6.8, F8.0, F9.6, F11, F14, and Off, with a default of F1.6.
- **Manual Mode:** Manually determines shutter speed and iris position.
  - Fix Shutter Speed: 1/60, 1/90, 1/100, 1/125, 1/180, 1/250, 1/350, 1/500, 1/725, 1/1000, 1/1500, 1/2000, 1/3000, 1/4000, 1/6000, and 1/10000, with a default of 1/60.
  - Fix Iris Position: 1.6, F2.0, F2.4, F2.8, F3.4, F4.0, F4.8, F5.6, F6.8, F8.0, F9.6, F11, F14, and Off, with a default of F1.6.

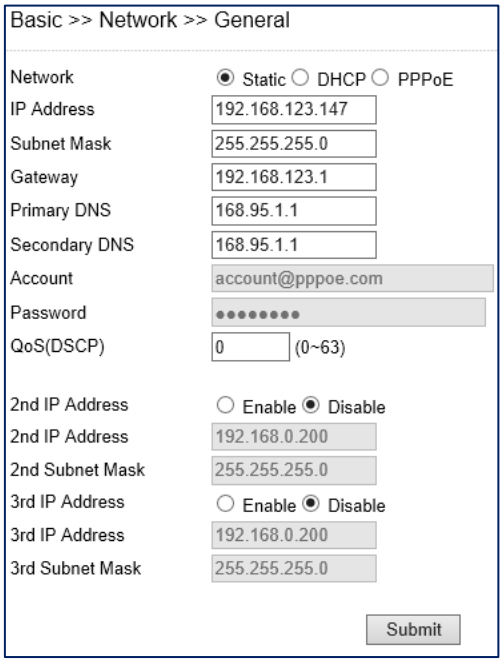
Chapter 4-3 Network

Note: Setting options may differ depending on the model you use.

Chapter 4-3-1 General

Network settings are the basic settings that connect LILIN IP cameras to the network. The default IP address of our IP cameras is 192.168.0.200. Enter this IP address into your web browser to verify the network connection between a local PC and your IP camera.

To set up a local area network, enter the IP address, subnet mask, gateway, and DNS. Also enter account name and password if you are using PPPoE to connect to the network. Click Submit to update the settings.



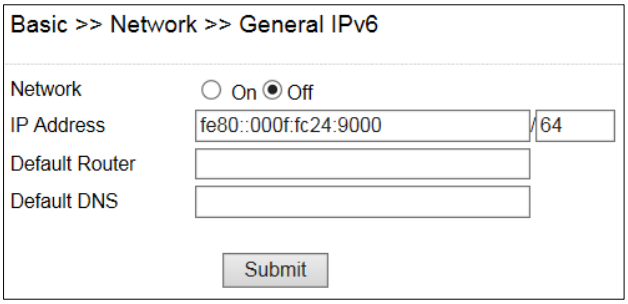
To acquire Internet access, contact your local Internet Service Provider (ISP) for a global IP address. Enter the IP address (global), subnet mask, and gateway IP provided by your ISP.

- **Default DNS**—The IP address of the default and first DNS server
- **Second DNS IP Address**—The IP address of the backup and second DNS server to the default DNS
- **PPPoE Account**—Username of the PPPoE service
- **PPPoE Password—**Password of the PPPoE service

A router, gateway, or other DHCP software server can remotely assign an IP address to your IP camera. There is no need to manually configure the IP address, subnet mask, and gateway. However, every time the DHCP service is rebooted, the IP address of the IP camera may vary. You may need to use IPscan to search for the IP camera. To enable DHCP, click the DHCP option and click Submit.

Note: Once the DHCP option is enabled, the IP camera is assigned an IP address by the DHCP server. This feature is only permitted in LAN environments.

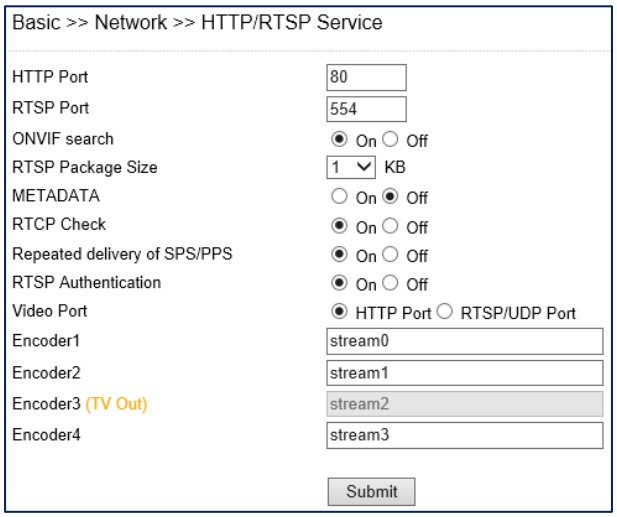
Chapter 4-3-2 IPv6

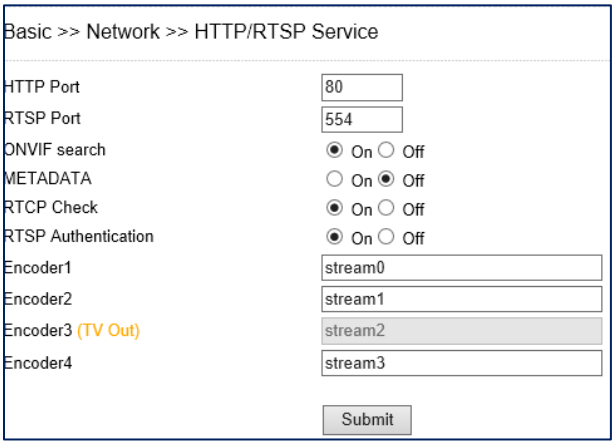


Enter IPv6 IP address, default router, and default DNS for IPv6 service.

Chapter 4-3-3 HTTP/RTSP Service

HTTP and RTSP are two reliable protocols for video streaming. With correct port forwarding, videos can be sent over the Internet. Details are described in the appendix. To change the HTTP port number, consult your network administrator. Choose the streaming type you want to use (HTTP or RTSP/UDP). Click Submit for the changes to take effect.

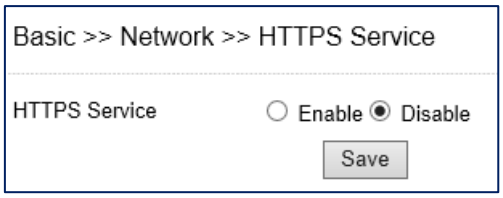




Settings on this page are described below:

- **ONVIF**: Choose a ONVIF protocol from the drop-down list.
- **ONVIF search**: Enable/disable ONVIF search function.
- **RTSP Package Size**: Choose the size of each RTSP package depending on your bandwidth.
- **METADATA**: Enable/disable METADATA.
- **RTCP Check**: Enable to send RTCP packages for transmission optimization.
- **Repeated Delivery of SPS/PPS**: Enable to send SPS/PPS information before I frames.
- **RTSP Authentication**: Enabling this option will require username and password when connecting to the RTSP stream.
- **Video Port**: Choose between HTTP or RTSP/UDP for your stream.
- **Encode Name**: Change the stream name.

Chapter 4-3-4 HTTPs Service



Chapter 4-3-5 DDNS

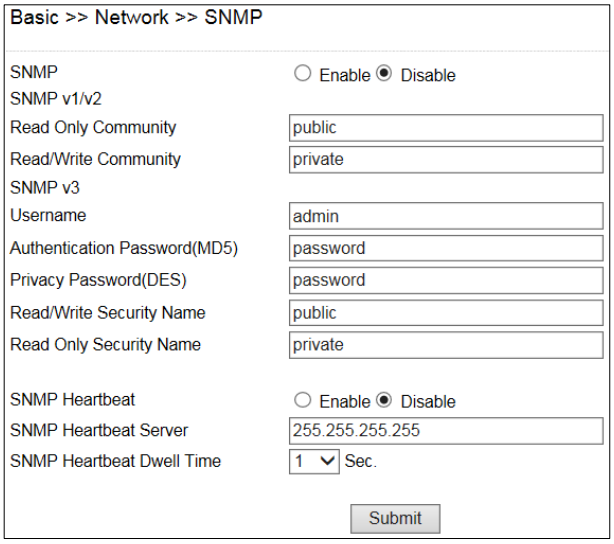
The DDNS service allows you to automatically update the DNS server. LILIN provides three DDNS servers to choose from (we recommend you use the first one from the drop-down menu). Click **Submit** for the changes to take effect.

To activate DDNS, go to www.ddnsipcam.com. If the IP camera is on Internet with a global IP address, use the last 6 digits of the MAC address as the host name with default account and the default password,. The IP camera will automatically register to www.ddnsipcam.com.

Note: The DDNS feature requires Internet connection.

Chapter 4-3-6 SNMP

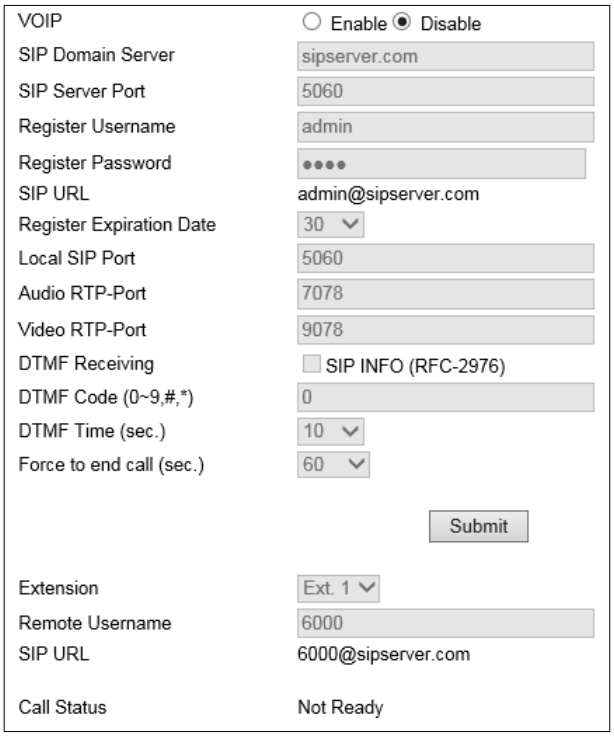
Enable to activate SNMP service. Modify the fields to fit your requirements, and click **Submit** for the changes to take effect.



Chapter 4-3-7 SIP VoIP

SIP protocol provides video and audio communication for the IP camera to a SIP phone via SIP server. Enable VOIP service by entering the required information.

- **SIP Domain Server:** The IP address or DNS of the SIP server
- **SIP Server Port:** The port number of the SIP server
- **Register Name:** The user account (extension) registered on the SIP server
- **Register Password:** The password of the registered user account on the SIP server
- **SIP URL:** The URL of the registered account
- **Register Expiration Time:** The time expired in second for registering the SIP server
- **Local SIP Port:** The port number of the SIP service on the IP camera
- **Audio RTP Port:** The port number of the audio RTP stream
- **Video RTP Port:** The port number of the video RTP stream
- **DTMF Receiving:** The protocol of SIP DTMF
- **DTMF Code (0-9, #, and *):** The DTMF code for triggering the DO on the camera by a SIP client
- **Force to end call (sec):** The time in second for terminating a incoming call
- **Extension:** The SIP clients for communicating with the IP camera
- **Remote Username:** The SIP account of a SIP extension
- **SIP URL:** The SIP URL of a SIP extension
- **Call Status:** The status of incoming or outgoing SIP communication

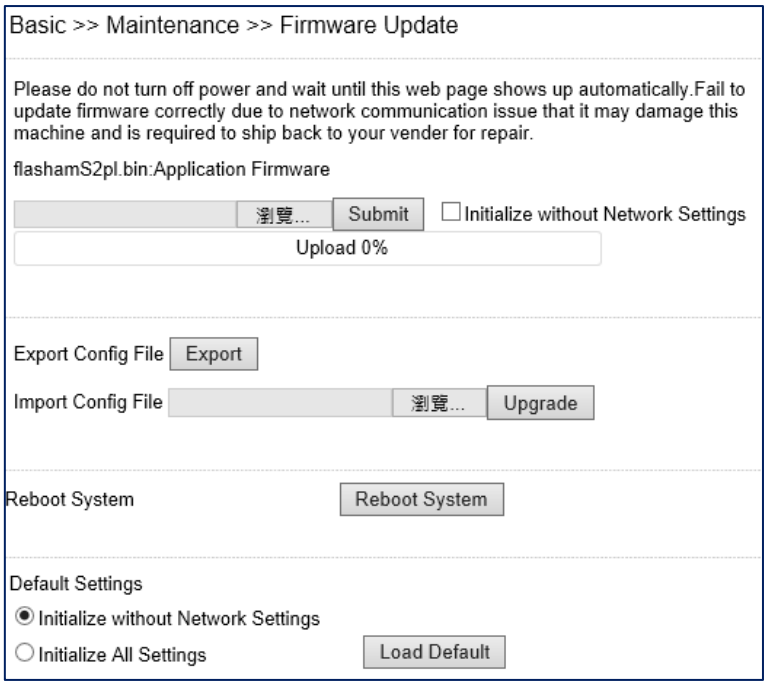


Note: Two-way audio model only.
Note: Early media of the SIP is supported.

Chapter 4-4 Maintenance

In the **Maintenance** page, you can click **Load Default** to restore the camera to factory settings, or click **Reboot System** to restart the camera.

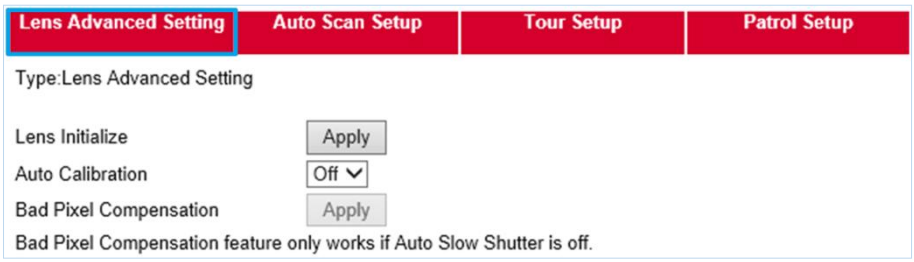
To update the firmware of your IP camera, click **Browse** and locate the update file. Click **Submit** to start the firmware update.



Warning: Never disconnect the power during the update. This could cause irreversible damage to your device.
Note: If you forget your password, please contact your vendor or send the device to us.

Chapter 4-5 PTZ

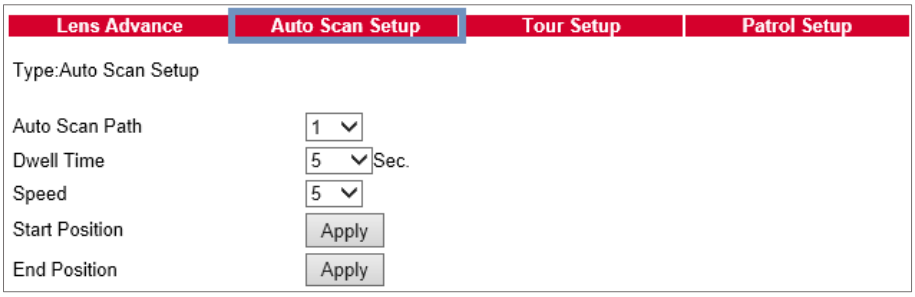
Chapter 4-5-1 Lens Advance Setting



- **Lens Initialize:** Click **Apply** to restore the zoom and focus to factory defaults.
- **Auto Calibration:** Turn on this option to automatically perform AF at 00:00 every night.
- **Bad Pixel Compensation:** Defective pixels can occur during storage or the manufacturing process. Enabling this option allows the system to replace defective pixels with their neighboring pixels

Chapter 4-5-2 Auto Scan Setup

The IP PTZ Camera supports up to sixteen auto scan paths. Please follow the instructions below for auto scan path setup.



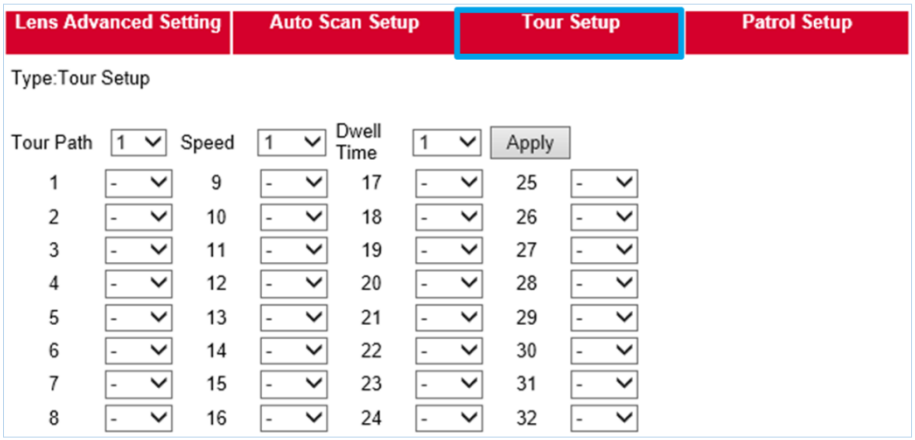
- **Auto Scan Path:** Select a scan path (1 – 16) from the drop-down list.
- **Dwell Time:** Set the time you want the camera view to stay at the start position or end position.
- **Speed:** Set the scanning speed between two positions.
- **Start Position:** Set the start position of the selected scan path.
- **End Position:** Set the end position of the selected scan path.

To set up an auto scan path, please first select a path number from the drop-down list. Then move the cursor to the PTZ control pane, and move the camera to a desired view (PTZ controls) as the start point of an auto scan path. Click **Apply** next to **Start Position** and move around the camera view at will to program the auto scan path via PTZ controls. When you finish programming, click **Apply** next to **End Position** to end the programming process. Next, assign a **Dwell Time** and **Speed** for the current path from the respective drop-down list.

Chapter 4-5-3 Tour Setup

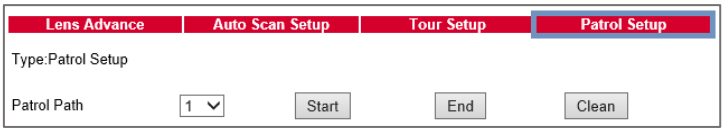
The IP Fast Dome Camera supports up to sixteen tour paths; each path can include up to 32 preset positions. Please refer to the instructions below to program a Tour table.

Note: Before setting this function, users must pre-define at least two preset points.



- **Tour Path:** Choose a tour path to set up.
- **Speed:** Set the running speed from the preset point position to the preset point position.
- **Dwell Time:** Set the dwell time at the preset point position.
- **Sequential Preset Points Setting:** Set up preset point positions for the selected tour path in any order you want from the drop-down list. Finally, click **Apply** to save the settings.

Chapter 4-5-4 Patrol Setup

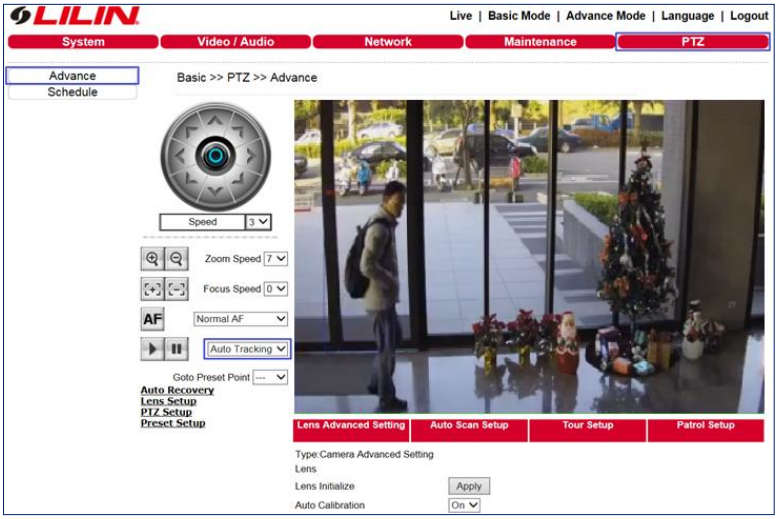


The IP Fast Dome Series supports up to sixteen patrol paths. Please follow the instructions below for patrol path setup.

To set up a patrol path, select a path number from the drop-down list. Then move the cursor to the PTZ control pane, and move the camera to a desired view (PTZ controls) as the start point of the patrol path. Click **Start** and move around the camera view at will to program the patrol path via PTZ controls. When you finish programming, click **End** to end the programming process.

Chapter 4-5-5 Tracking Setup

The PTZ camera will automatically follow the moving object on the screen center. To set up tracking feature, select **Auto Tracking** in Auto Pan box and press Auto Pan Start/Stop button to enable or disable tracking mode.



Note: The tracking feature is only available on few PTZ cameras. Please check the specification for your PTZ cameras.

Chapter 4-5-5-1 Tracking Function

1. The tracking feature of a PTZ can follow the moving object, it cannot zoom. It only works at the field of view (FOV) at Home Preset.

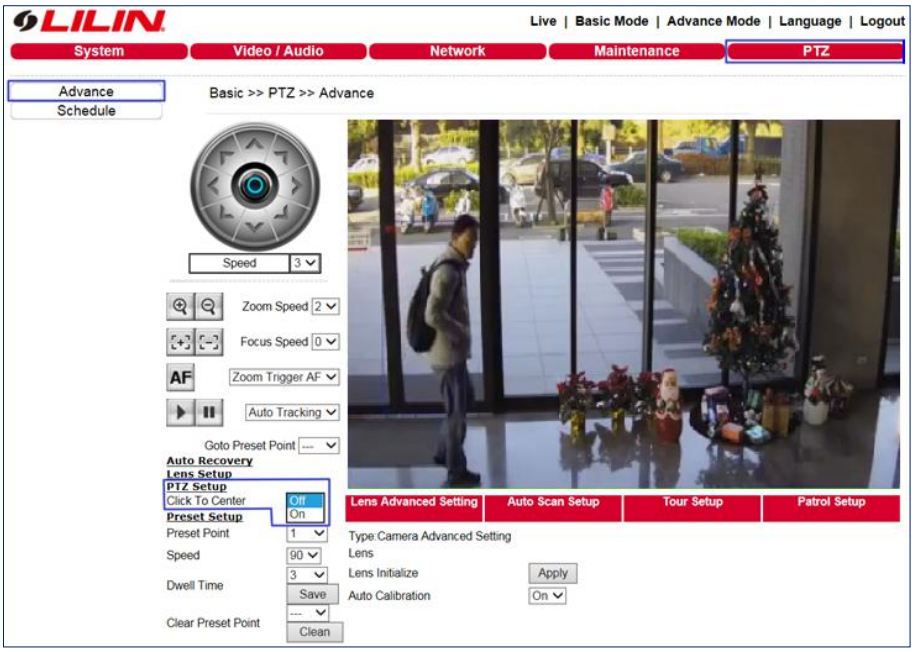
2. Tracking object size should be at least 10% of FOV

3. For PZD series, the tracking feature works at 0~80 degree

4. For PSR & PSD series, the tracking feature works at 0~90 degree

Chapter 4-5-6 Click to Center Settings

By clicking on the object of interest will bring it to center of screen. To set up, click on **PTZ Setup** and select ON or OFF to enable or disable this feature.

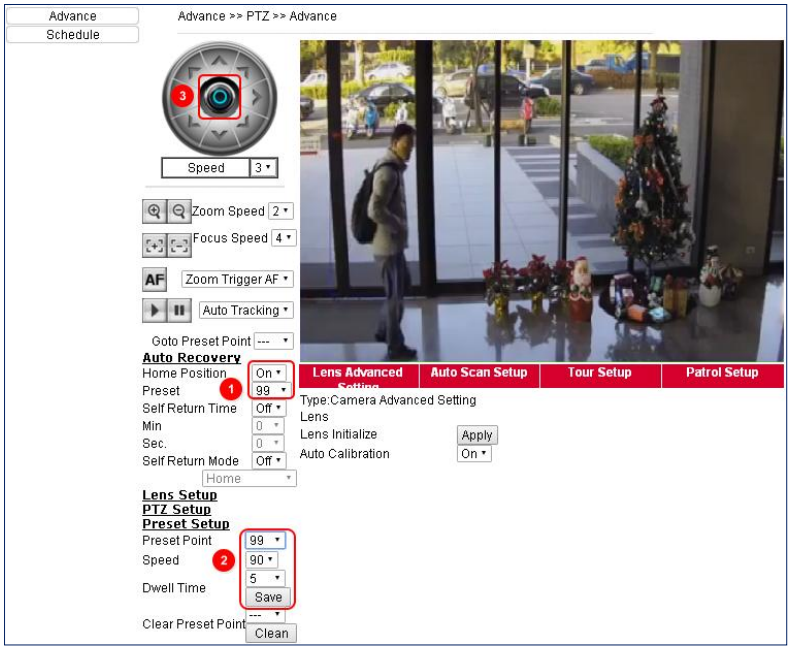


Note: This feature only work at ActiveX IE interface.

Chapter 4-5-7 Home Position Settings

When IVS, motion detection or tampering detection is set, the camera must be in Home Position to execute these smart event settings. To set up the Home Position:

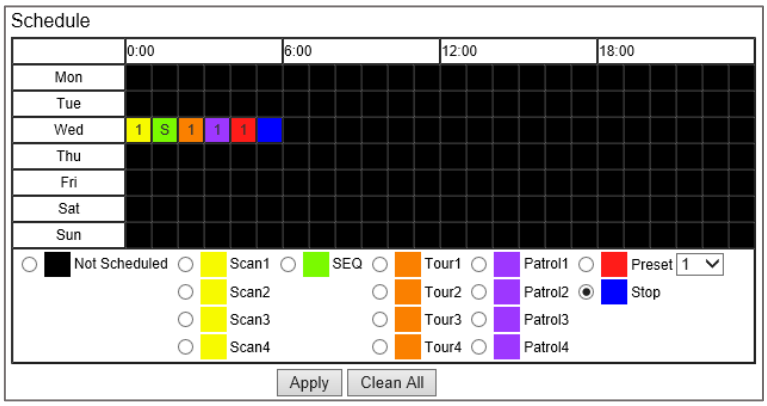
1. Click on Auto Recovery, select **On** in Home Position and select Preset number as home
2. Click on Preset Setup and set the preset point
3. Click on Home button



Note: The IVS features are only available on few PTZ cameras. Please check the specification for your PTZ cameras.

Chapter 4-5-8 PTZ Schedule Settings

To set up PTZ scheduling, please select PTZ schedule. Select the desired schedule type (**Not Scheduled**, **Scan**, **SEQ**, **Tour**, **Patrol**, and **Preset**). Click the schedule to highlight the time intervals you want the camera to perform the pre-determined schedule. Click **Apply** to save the settings and **Clean All** to clear the settings.



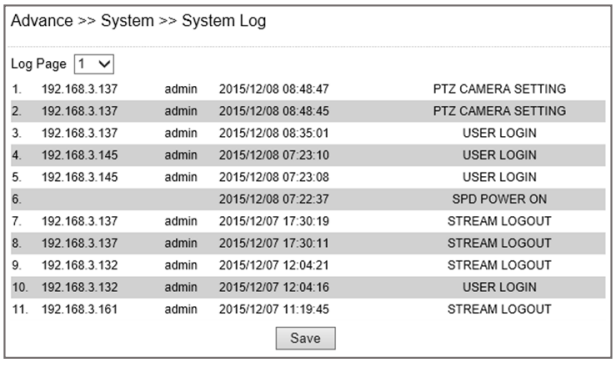
Chapter 5 Advanced Mode

The Advanced Mode provides several professional settings that are not available in the Basic Mode.

Chapter 5-1 System

Chapter 5-1-1 System Log

You can view the system-generated log in this page. Click Save to export the log to a text file.

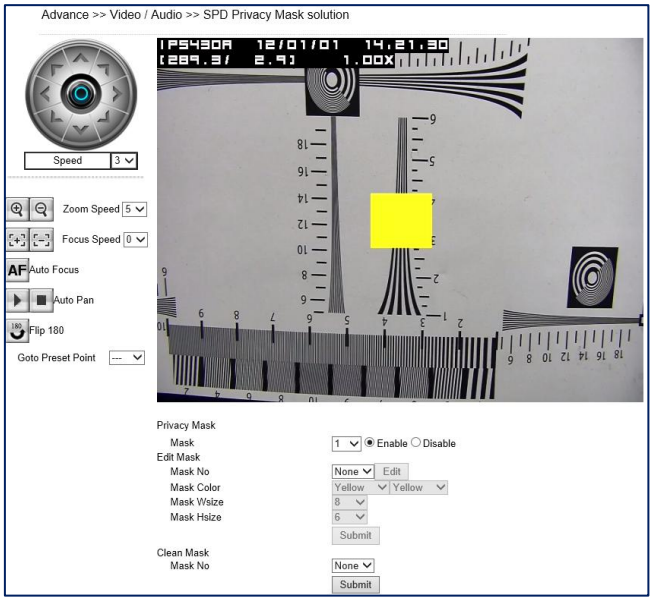


Chapter 5-2 Video/Audio Settings

Note: Setting options may differ depending on the model you use.

Chapter 5-2-1 Privacy Masking

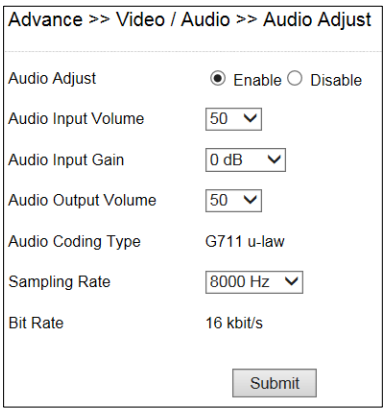
Our PTZ IP camera provides up to 16 privacy masks, Choose a mask number and click **Edit** for a mask to appear in the center of the screen. You can also adjust the color, width, and length of the mask and move the camera to the appropriate position to hide any object. Press **Submit** to save the changes. You are allowed to create up to 16 masks for one camera. To remove a mask, select a number from the **Mask No.** drop-down menu under **Clean Mask** and click **Submit** to save the changes.



Chapter 5-2-2 Audio Adjust

Audio settings are described below in details:

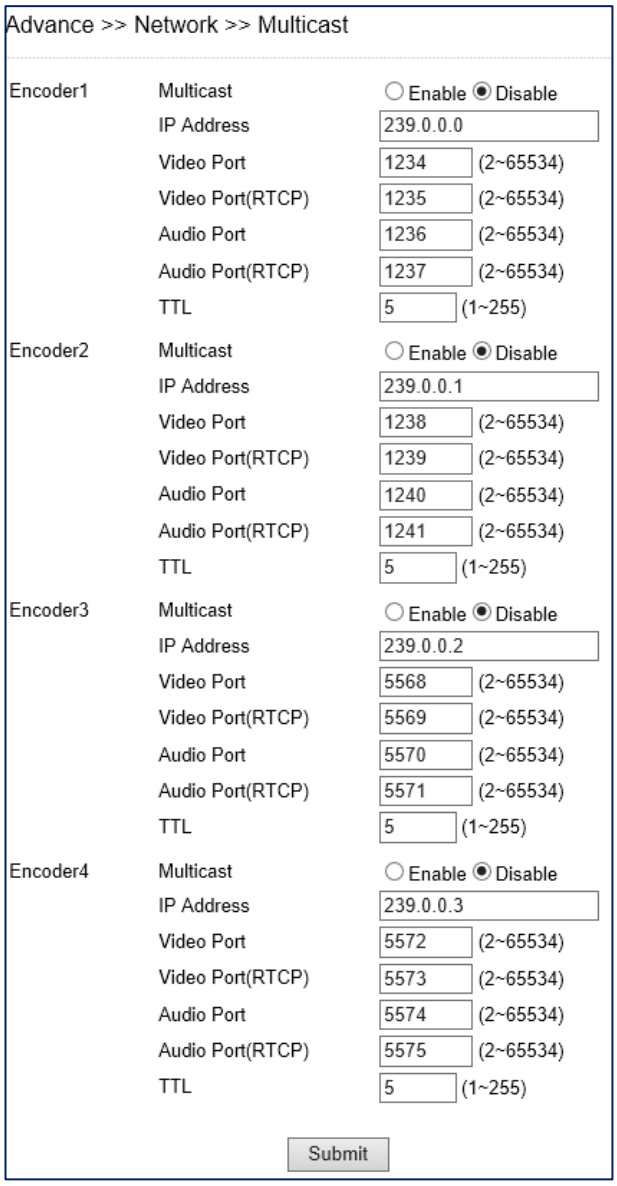
- **Audio Adjust:** Enable/disable audio adjustment
- **Audio Input Volume:** MIC or line-in volume.
- **Audio Input Gain:** level of gain for audio input
- **Audio Output Volume:** Volume adjustment.
- **Audio Coding Type:** G.711 u-Law
- **Sampling rate:** set the audio sampling rate
- **Bit Rate:** 16 Kbit/s



Note: Audio model only

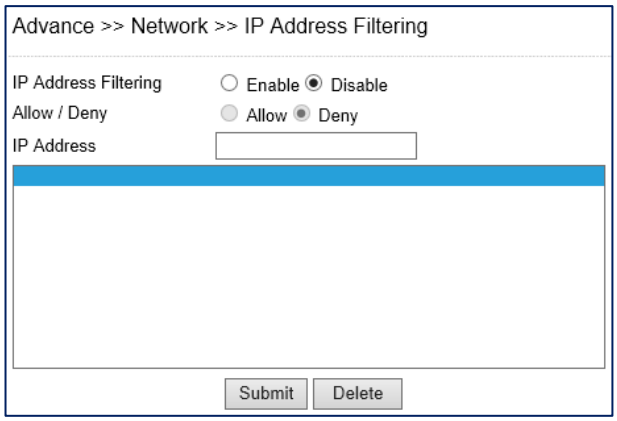
Chapter 5-3-1 Multicast

LILIN camera supports video streaming of 4 different content formats. Under this page, you can configure the settings for individual streams.



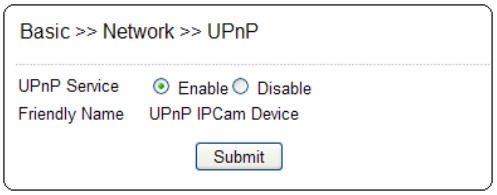
Chapter 5-3-2 IP Address Filtering

LILIN camera provides an IP address filter to help you block unauthorized IP addresses from accessing the camera. Enable the service before you enter the IP address you want to block, and press **Add**. Click **Delete** to remove an IP address from the list.



Chapter 5-3-3 UPnP Settings

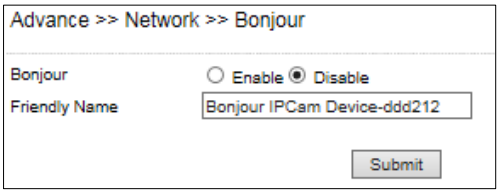
The UPnP service is a network protocol that allows Windows PC users to identify IP cameras in a LAN environment. To activate the UPnP service, choose **Enable** to activate.



In Windows, go to **Network→File Explorer** to see the IP cameras via the UPnP protocol.

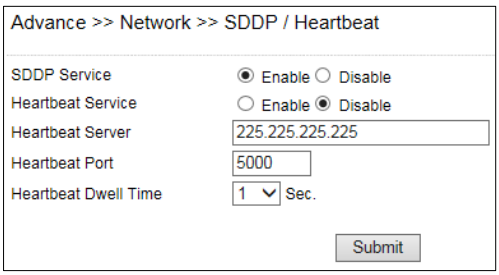
Chapter 5-3-4 Bonjour

Bonjour is Apple's implementation of zero-configuration networking protocol. Click Enable to activate this service.



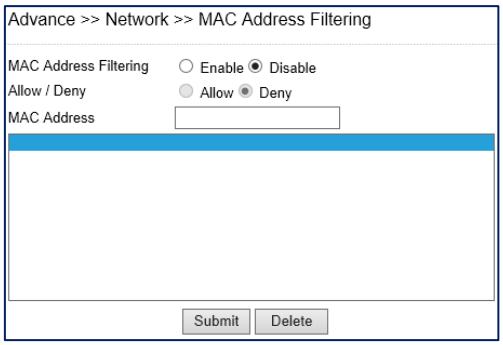
Chapter 5-3-5 SDDP/Heartbeat

With SDDP/Heartbeat support, you can connect to any compatible devices. Enable the service before you make the connection.



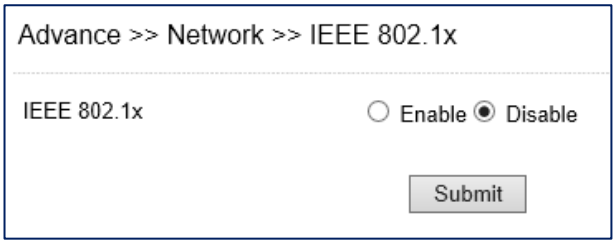
Chapter 5-3-6 MAC Address Filtering

For preventing a remote client access, enable MAC address filter. You can only allow a video client by specifying the Allow MAC address.



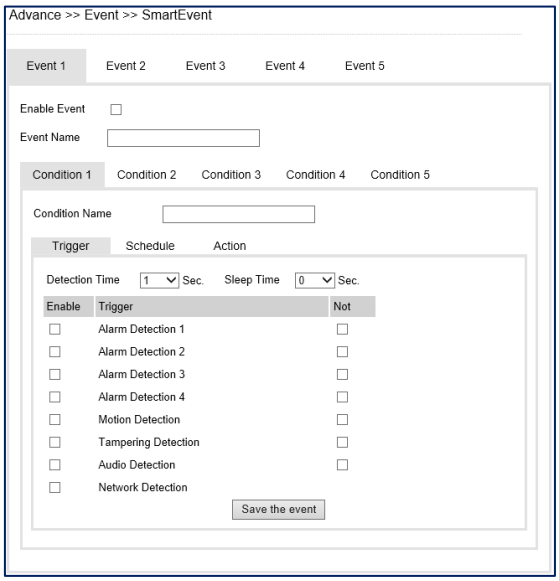
Chapter 5-3-7 IEEE 802.1x

IEEE802.1x provides security access to the camera.

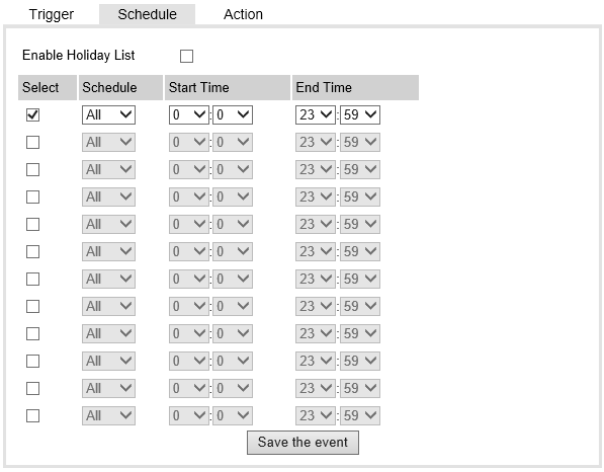


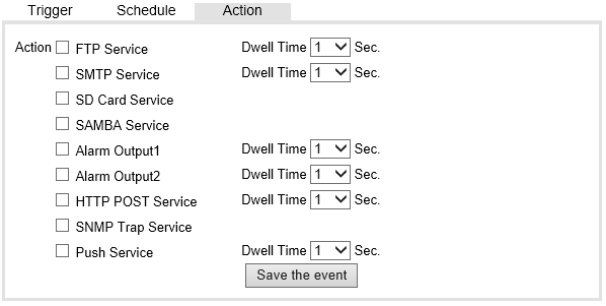
Chapter 6 Camera Event

Here you can configure the detection settings for alarm, motion, tampering, facial, audio, and network failure. Choose an event type for entering the event name and event condition for firing an alarm. Click **Save the event** button for saving the event.



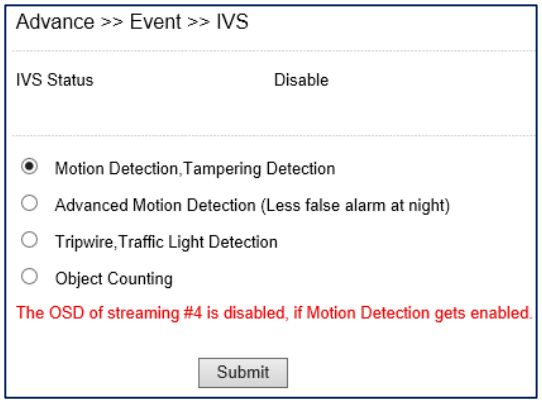
Then the page you see allows you to choose the action to take when the chosen events are detected, such as sending JPEG images to an FTP server or an email account, and/or triggering SD card video recording. To schedule event monitoring, choose Schedule when you edit an event and highlight the time periods you want the camera to detect events. Click Submit for the changes to take effect.





Chapter 6-1 IVS

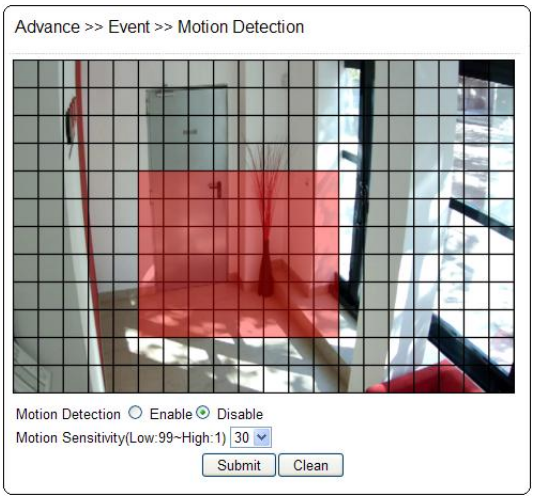
The camera provides IVS features including tampering detection, audio detection, tripwire, and object counting. The features are described below:



Note: IVS model only

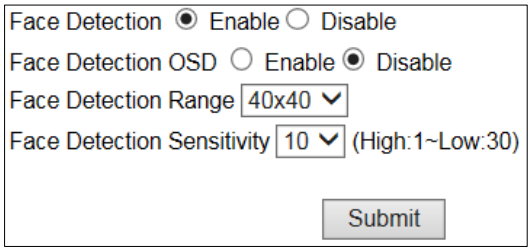
Chapter 6-2 Motion Detection

Once the above configurations are set, click Motion Detection to determine the areas to monitor. Simply double-click or drag across the areas you want to monitor, and cancel your selection by double-click again or drag across the areas you don′ t want to monitor with the right mouse button.



Chapter 6-3 Face Detection

When the camera detects any human faces, an alarm will be triggered and sends a notification message. This page allows you to determine the size of faces to be detected and detection sensitivity.

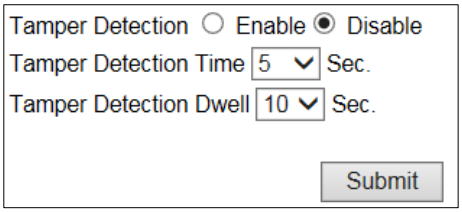


- **Face Detection OSD:** When a face is detected, a blue box will appear to mark the face (as in the image below). If disabled, you will only see a red **F** icon on the top of the screen.

- **Face Detection Range:** Adjust the size of human face that will trigger the alarm.
- **Face Detection Sensitivity:** Adjust the sensitivity according to your needs.

Note: Face detection model only

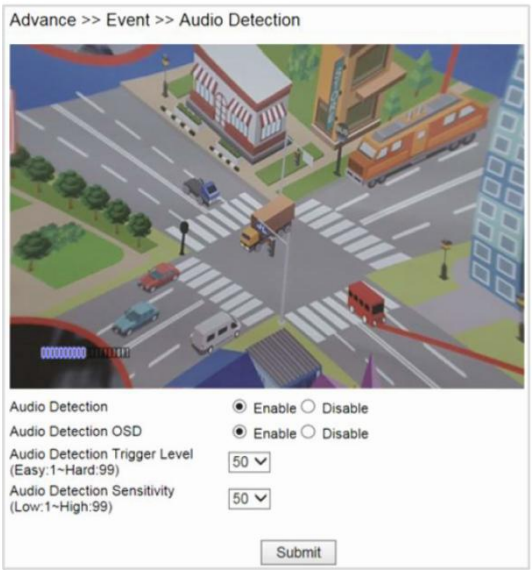
Chapter 6-4 Tamper Detection



LILIN camera can send tamper alarms when the focus or view of the camera is changed, or the lens is obstructed by paint or stain. Click Enable to activate this function and configure the settings.

Chapter 6-5 Audio Detection

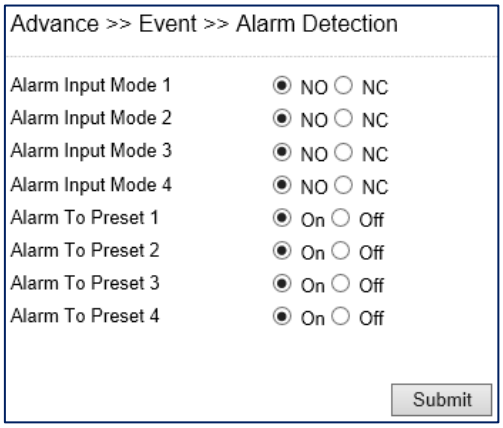
When the detected sound exceeds the sensitivity level, the audio detector will trigger an alarm and send a notification.



Note: Audio model only

Chapter 6-6 Alarm Detection

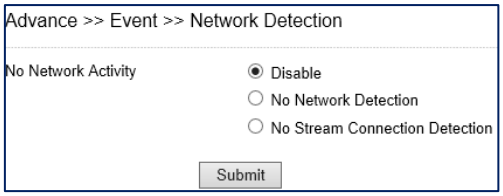
If you connect an external alarm digital input to the IP camera, enable Alarm Notification and switch between NO (normally open) and NC (normally closed) for the input.



Note: Alarm model only

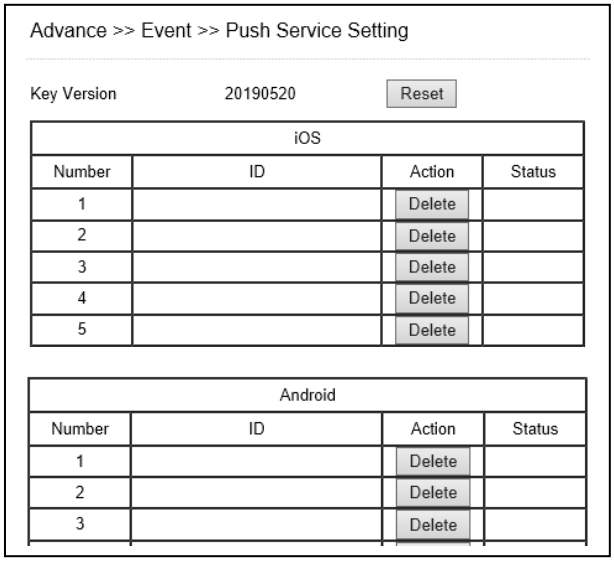
Chapter 6-7 Network Detection

Enable this option to send a notification upon network failure.



Chapter 6-8 Push Service Setting

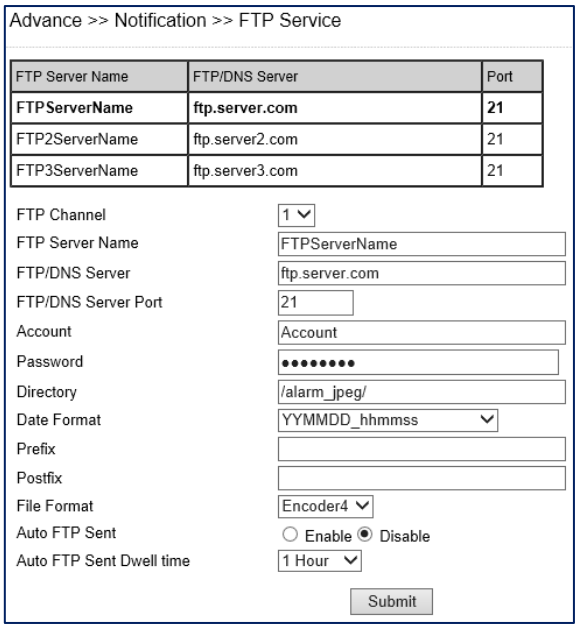
The PTZ camera can send push notifications to Apple or Android devices that have the LILINViewer App installed and the camera added. The PTZ camera and receiving device must have internet connectivity for this feature to work. Push Notifications can be configured to be sent on different event triggers. Moreover, if there' s connected mobile phone, the connected user will show in Push Service setting ID. To set up, click on SmartEvent -> Event1 -> Edit -> Select Trigger and Schedule -> Action -> tick on Push Service box -> Save the event.



Chapter 7 Camera Notification

Chapter 7-1 FTP Service

Enter the required FTP information to send alarm snapshots to an FTP server.



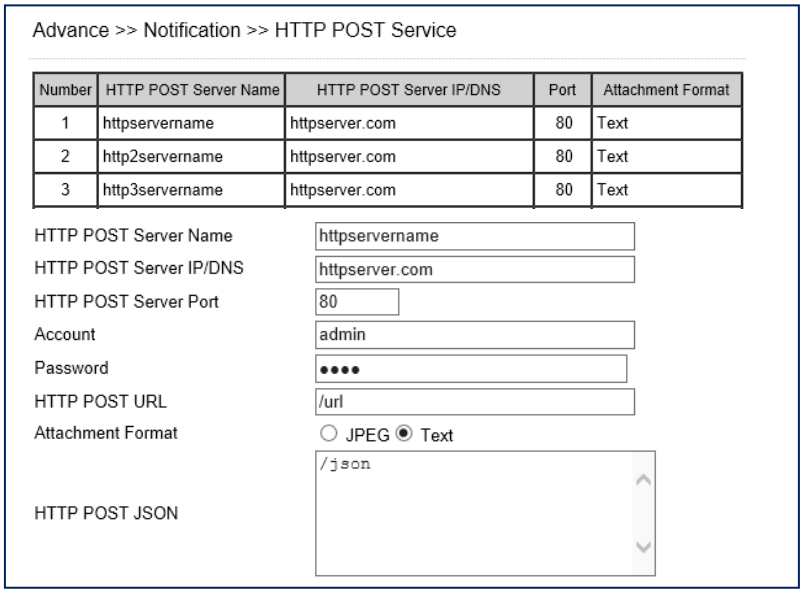
- **FTP Channel:** There are three FTP servers that can be configured.
- **FTP Server Name:** The name of the FTP server.
- **FTP/DNS Server**: IP address or domain name of the FTP server.
- **FTP/DNS Server Port**: The FTP Server Port.
- **Account**: Account name to log in to the FTP server.
- **Password**: Password of the account.
- **Directory**: File path for storing the JPEG snapshots.
- **Date Format**: Date string for the JPEG filename.
- **Prefix**: Prefix of the JPEG filename.
- **Postfix**: Postfix of the JPEG filename.
- **File Formation**: Name string for JPEG filename.
- **Auto FTP Sent**: Enable this function to send alarm notification and snapshots to the designated FTP server.
- **Auto FTP Sent Dwell**: Choose a dwell time from the drop-down menu.

Chapter 7-2 SMTP (Email) Service

For alarm notification with JPEG snapshots, enter the required information to enable this Email notification service.

Chapter 7-3 HTTP POST Service

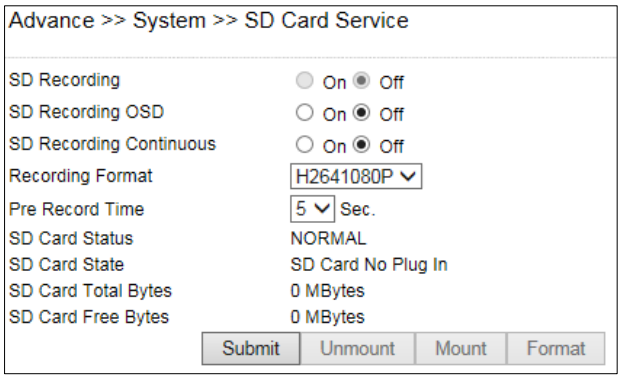
Through the POST protocol, the camera can automatically send notification snapshots to a website if an alarm is triggered.



- **HTTP POST Server Name**: The HTTP POST server
- **HTTP POST Server IP/DNS**: The IP/DNS address of the HTTP Post server
- **HTTP POST Server Port**: The port number of the HTTP Post server
- **Account**: the account
- **Password**: the password
- **Attachment Format**: JPEG snapshot or text mode
- **HTTP POST JSON**: The JSON text editor

Chapter 7-4 SD Card Service

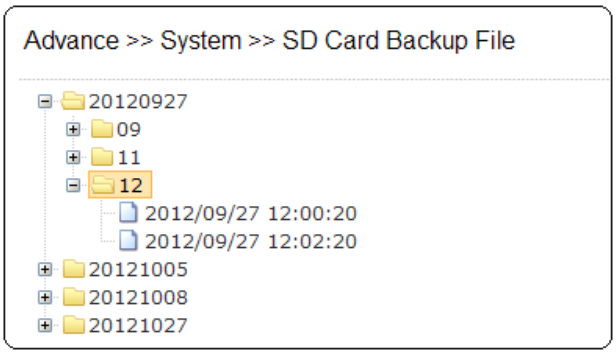
Ensure a SD card is properly installed to the camera before you enable the SD recording option. The camera will start recording videos when an alarm occurs.



Warning: Ensure to click **Unmount** before removing the SD card, or the system may crash.
Note: SD card model only

Chapter 7-5 SD Card Backup

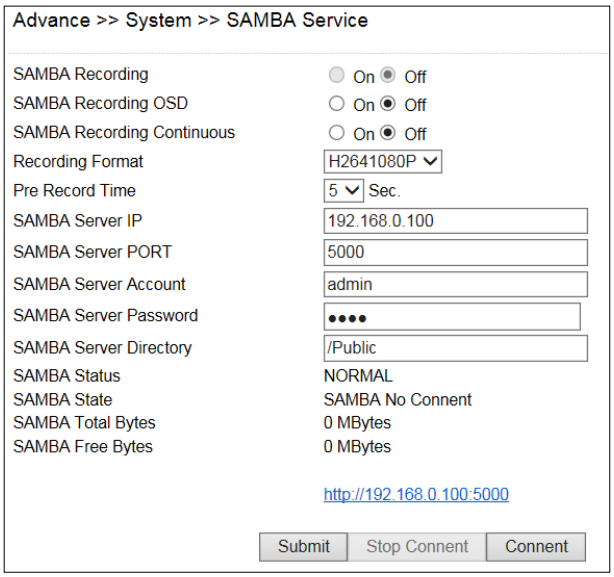
To download a specific clip, right-click the file you want to download and save the AVI file to a local PC.



Chapter 7-6 SAMBA Service

The streaming of the camera can be recorded as AVI files to a Samba server. Continuous and pre-alarm recordings are available. To do so, provide required information for Samba service. Circular recording is available for overwriting the oldest recording files if the Samba server gets full.

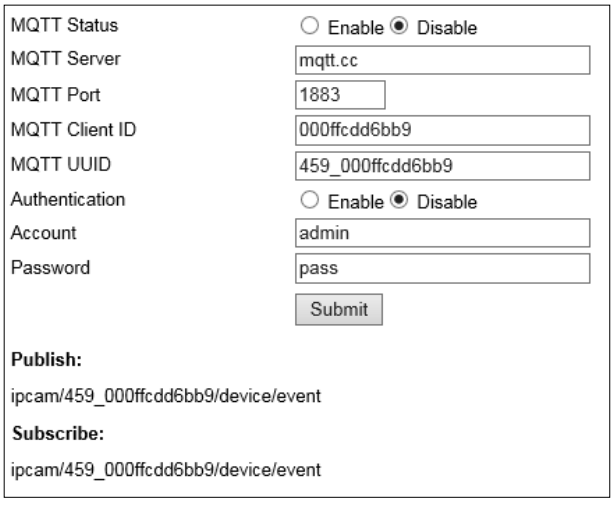
- **Samba Recording:** Enable Samba recording service.
- **Samba Recording OSD:** Timestamp OSD on the AVI files
- **Recording Format:** The resolution of the AVI files
- **Pre-record Time**: Pre-alarm recording based on the alarm settings
- **Samba Server IP:** The IP address of the Samba server
- **Samba Server's Port:** The port number of the Samba server
- **Samba Server Password:** The password of the Samba server
- **Samba Server Directory:** The target path of the recordings on the Samba server
- **Samba Status:** The connection status of the Samba server
- **Samba Total Bytes:** The storage size of the Samba server
- **Samba Free Bytes:** The free storage size of the Samba server



Chapter 7-7 MQTT Service

The camera provides MQTT service. MQTT server is widely used by IoT applications. The camera provides MQTT service for (1) event notifications, (2) controls and (3) returns. The services of Publish and Subscribe are supported. For more programming information, visit web site for IP Camera MQTT SDK.
To configure MQTT service, follow the descriptions below:

- **MQTT Status**: Enable MQTT service of the camera
- **MQTT Server:**The MQTT server
- **MQTT Port:** The port number of the MQTT server
- **MQTT Client ID**: The client ID of the camera for uniqueness
- **MQTT UUID:** The MQTT UID of the camera
- **Authentication:** Enable authentication for accessing the camera
- **Account:** The account for accessing the camera
- **Password:** The password for accessing the camera

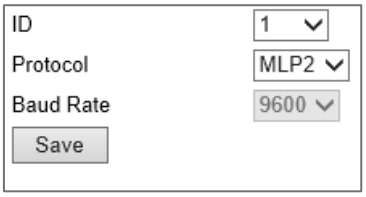


Note: MQTT service model only

Chapter 8 PTZ

Chapter 8-1 RS-485

You can change configurations related to RS-485 if connected to an RS-485 device. To set up, please go to **Advance-> PTZ-> RS-485**



- **ID**: Set the camera ID.
- **Protocol**: Set the communication protocol.
- **Baud Rate**: Set the communication baud rate.

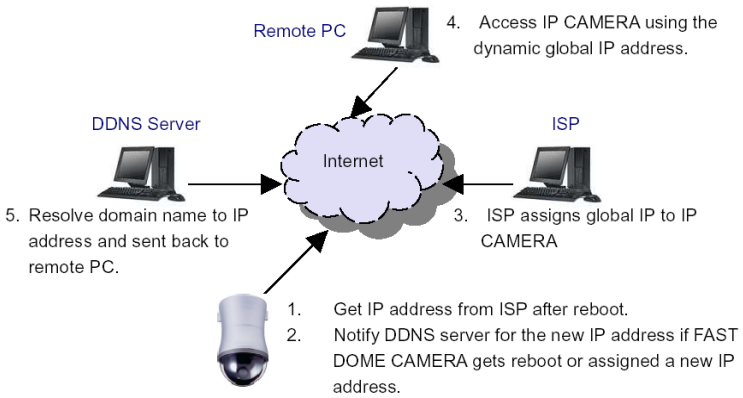
Note: RS-485 control interface model only

Appendix

DDNS and PPPoE Network Settings

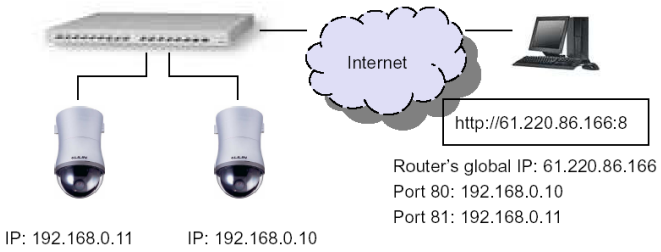
One of the advantages of adopting DDNS and PPPoE services is to save the cost of renting a global IP address. When you power on a camera with a video server and connect to the Internet with the PPPoE service, the camera asks your ISP for a dynamic global IP address. This Internet-accessible IP address will be renewed by the ISP every time you log on the Internet.

Whenever the IP is changed, the camera with the video server will notify the DDNS server of your new IP address. A remote user who intends to connect to the camera with the video server can enter the domain name in the web browser. The domain name will be translated to a new IP address to be used by the camera.



Advanced Port Forwarding Technology

Communication port forwarding technology has been widely used to share a global Internet IP to other devices on the network. The infrastructure of this technology is shown in the below figure, in which the port 80 of the IP router is forwarded to the device with an IP of 192.168.0.10, and the port 81 of the router is forwarded to the device with an IP of 192.168.0.11. When a remote PC on the Internet tries to access the port 81, the user is actually accessing 192.168.0.11, private IP given by the router.



Restore to Factory Default

To restore the IP camera to the factory default, follow the below procedures:
Short the "Restore to Factory Default RESET" cable for 10 seconds before releasing.
The camera will restart.
Launch to IPScan Utility to search for the IP camera.
Access the IP camera via an Internet browser.
Enter the default username and password.

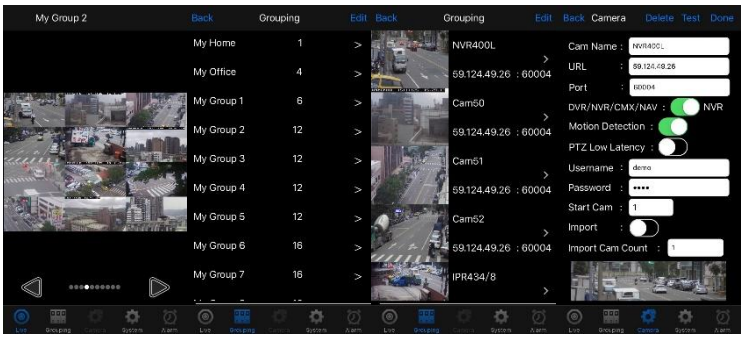
SD Card Compatibility

Manufacturer	Capacity	SDHC/SDSC
Sandisk	16GB	SDHC
Sandisk	8GB	SDHC
Transcend	8GB	SDHC
Transcend	4GB	SDHC
Sandisk	32GB	SDHC

For iPhone Users

Tap App Store, and search and download LILINViewer by Merit LILIN Ent. Co., Ltd. Or, you can scan the QR Code below.

Open LILINViewer, then choose tab Groupings. Select a group, choose a camera type, and add a camera.



Next, enter camera information as follows:

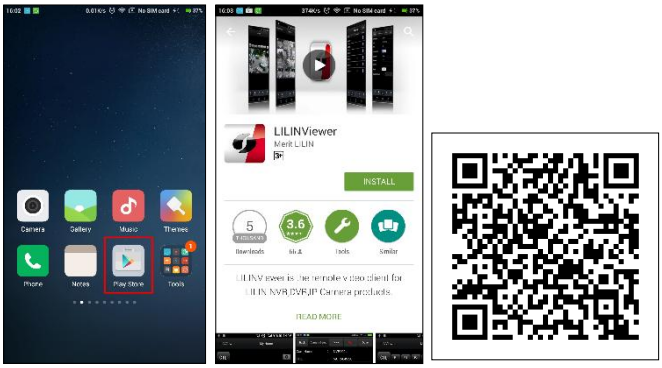
1. **Cam Name**: IP Camera or DVR camera name
2. **URL**: IP address
3. Port
4. Enter your username and password.

The default IP camera user name is admin, password pass. The default DVR user name is admin, password 1111.

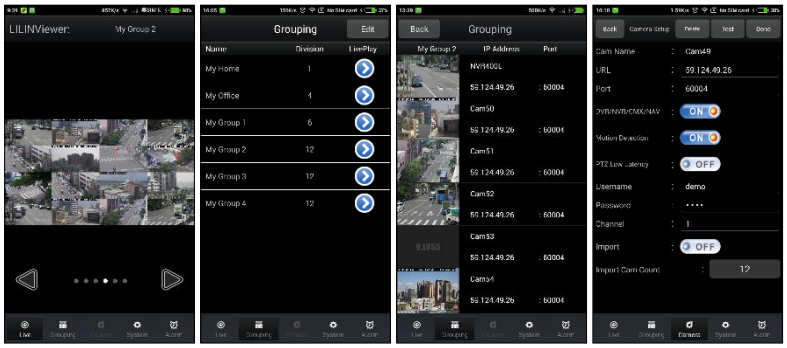
After you enter the above information, tap Done to save the changes, and the live view of your IP camera or DVR will appear.

For Android Users

Tap Play Store to download LILINViewer by Merit LILIN, or scan the following QR code.



Open LILINViewer, then choose tab Groupings. Select a group, choose a camera type, and add a camera.



Next, enter camera information as follows:

1. **Cam Name**: IP Camera or DVR camera name
2. **URL**: IP address
3. Port
4. Enter your username and password.

The default IP camera user name is admin, password pass. The default DVR user name is admin, password 1111. After you enter the above information, tap Done to save the changes, and the live view of your IP camera or DVR will appear.