



# HD Fast Dome IP Camera Series User Manual

## Table of Contents

Summary .....	3
Key Features .....	3
Trademarks & Acknowledgments .....	3
Other References .....	4
Mobile devices.....	4
LILIN Universal ActiveX Control .....	4
LILIN HTTP API .....	4
Caution.....	4
Disclaimer .....	4
Chapter 1 System Overview .....	5
Chapter 1-1 System Requirements .....	5
Chapter 1-2 Software Requirements.....	5
Chapter 1-2-1 Apple Mac OS .....	5
Chapter 1-2-2 PC Windows OS .....	5
Chapter 2 Before Accessing IP Cameras .....	6
Chapter 2-1 Configure IP Addresses using the IPScan Utility .....	6
Chapter 2-2 Configure IP Addresses through HTML Connection .....	6
Chapter 2-3 Web Browser Settings & Software Components Required .....	7
Chapter 2-4 Login.....	7
Chapter 3 IP Camera Operations .....	8
Chapter 3-1 HTML Operations .....	8
Chapter 3-2 PTZ Control Panel.....	8
Chapter 3-2-1 Vertical and Horizontal Direction Controls .....	9
Chapter 3-2-2 ePTZ.....	10
Chapter 3-2-3 Control Panel .....	10
Chapter 3-2-3-1 Two-way Audio (for audio model only).....	11
Chapter 4 Basic Settings .....	11
Chapter 4-1 System.....	11
Chapter 4-1-1 General .....	12
Chapter 4-1-2 User.....	13
Chapter 4-1-3 Timer Settings .....	13
Chapter 4-2 Video / Audio .....	14
Chapter 4-2-1 General .....	14
Chapter 4-2-2 Quality Basic .....	15
Chapter 4-3 Network .....	15
Chapter 4-3-1 General .....	15
Chapter 4-3-2 IPv6 .....	16
Chapter 4-3-3 HTTP/RTSP Service .....	16
Chapter 4-3-4 HTTPs Service .....	17
Chapter 4-3-5 DDNS .....	17
Chapter 4-3-6 SNMP .....	18
Chapter 4-4 Maintenance .....	18
Chapter 4-5 PTZ.....	19
Chapter 4-5-1 Lens Advance Setting .....	19
Chapter 4-5-2 Auto Scan Setup .....	19
Chapter 4-5-3 Tour Setup .....	19
Chapter 4-5-4 Patrol Setup .....	20
Chapter 4-5-5 Tracking Setup .....	21
Chapter 4-5-5-1 Tracking Function.....	21
Chapter 4-5-6 Click to Center Settings.....	22

Chapter 4-5-7 Home Position Settings .....	23
Chapter 4-5-8 PTZ Schedule Settings .....	23
Chapter 5 Advanced Mode .....	24
Chapter 5-1 System.....	24
Chapter 5-1-1 System Log .....	24
Chapter 5-2 Video/Audio Settings .....	24
Chapter 5-2-1 Quality Advanced .....	24
Chapter 5-2-2 Day and Night Modes.....	25
Chapter 5-2-3 Sense Up+ .....	26
Chapter 5-2-4 HDR vs WDR .....	26
Chapter 5-2-5 Auto Focus .....	27
Chapter 5-2-6 P-Iris .....	27
Chapter 5-2-7 Day/Night Mode Switch.....	29
Chapter 5-3 Network .....	29
Chapter 5-3-1 Multicast .....	29
Chapter 5-3-2 IP Address Filtering .....	30
Chapter 5-3-3 UPnP Settings .....	30
Chapter 5-3-4 Bonjour .....	30
Chapter 5-3-5 SDDP/Heartbeat .....	30
Chapter 5-3-6 MAC Address Filtering .....	31
Chapter 5-3-7 IEEE 802.1x .....	31
Chapter 6 Camera Event .....	31
Chapter 6-1 IVS.....	32
Chapter 6-2 Motion Detection .....	32
Chapter 6-3 Face Detection .....	33
Chapter 6-4 Tamper Detection .....	33
Chapter 6-5 Audio Detection .....	34
Chapter 6-6 Alarm Detection .....	34
Chapter 6-7 Network Detection .....	34
Chapter 6-8 Push Service Setting .....	35
Chapter 7 Camera Notification .....	35
Chapter 7-1 FTP Service.....	35
Chapter 7-2 SMTP (Email) Service .....	36
Chapter 7-3 HTTP POST Service .....	37
Chapter 7-4 SD Card Service.....	37
Chapter 7-5 SD Card Backup.....	38
Chapter 7-6 SAMBA Service .....	38
Chapter 7-7 MQTT Service .....	39
Chapter 8 PTZ .....	39
Chapter 8-1 RS-485 .....	39
Appendix.....	40
DDNS and PPPoE Network Settings .....	40
Advanced Port Forwarding Technology.....	40
Restore to Factory Default .....	40
SD Card Compatibility .....	41
For iPhone Users.....	41
For Android Users.....	42



## Summary

LILIN 3X D/N 1080p 30FPS PTZ Dome 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 environments.

The 3X PTZ Dome IP Camera is capable of streaming HD video at up to 30 frames per second. With High Dynamic Range (HDR) feature, the 3X PTZ Dome IP Camera captures highlights and shadows simultaneously, eliminating pixilation and smear. Capable of making continuous rotations, users can accurately position the camera to identify specific targets. The 3X PTZ Dome IP Camera provides IP67-rated protection against water and dust. The 3X optical zoom gives the PTZ Dome IP Camera an impressive range. With a focal length of 3.35 mm ~ 10.05 mm, 3X PTZ Dome IP Camera is ideal for numerous applications.

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 30 FPS
- Supports various encoding formats (H.264 and MJPEG)
- Multiple Streaming technology, supporting 4 concurrent streams
- Supports Android, iPad, and iPhone live monitoring
- Motion detection for notifications via email or FTP
- IVA alarm notifications via email or FTP
- Network time protocol (NTP) supported
- DDNS and UPnP supported
- Supports HTTP API
- Supports ONVIF protocol
- Supports LILIN Navigator

## Trademarks & Acknowledgments

Microsoft, Windows 2000, Windows XP, Windows Vista, Windows 7, ActiveX, and Internet Explorer are registered trademarks of Microsoft Corporation in the U.S. and/or other countries.

Java and all Java-based trademarks and logos are trademarks or registered trademarks of Sun Microsystems, Inc. in the United States and other countries. Flash, Macromedia, and Macromedia Flash Player are either trademarks or registered trademarks of Adobe Systems Incorporated in the United States and/or other countries.

Linux and DynDNS are registered trademarks of the respective holders.

Intel, Pentium, and Intel® Core™ 2 Duo are registered trademarks of Intel Corporation.

FFmpeg is a trademark of [Fabrice Bellard](#), originator of the FFmpeg project.

QuickTime and the QuickTime logo are trademarks or registered trademarks of Apple Computer, Inc., used under license therefrom.

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 LILIN IP camera, you may see a prompt box as below via Windows OS.



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

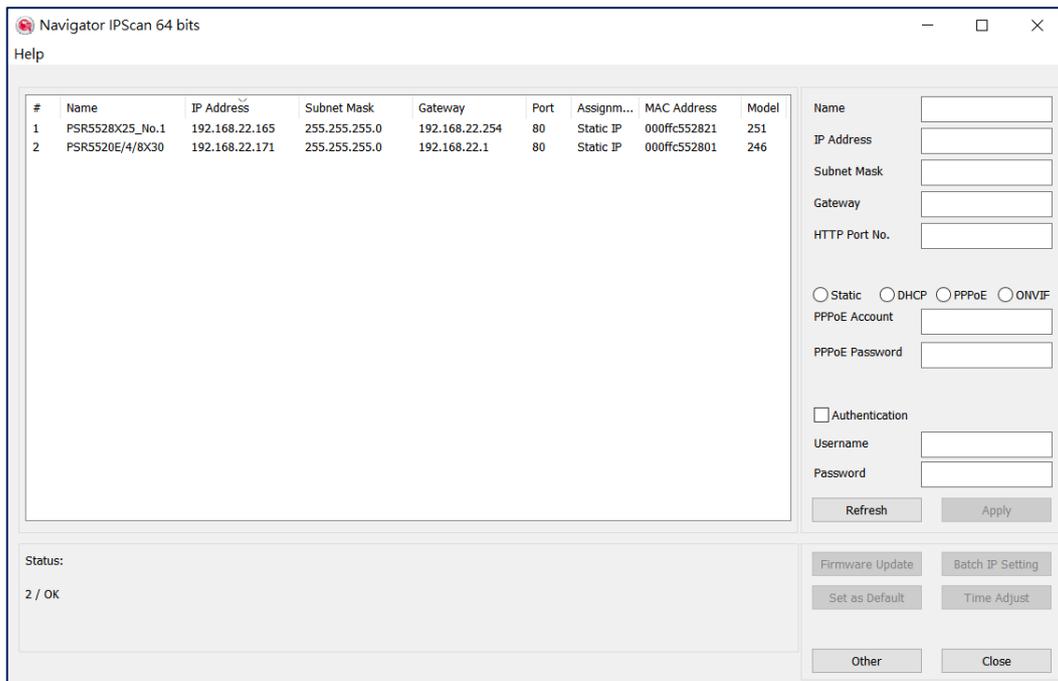
## Chapter 2 Before Accessing IP Cameras

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

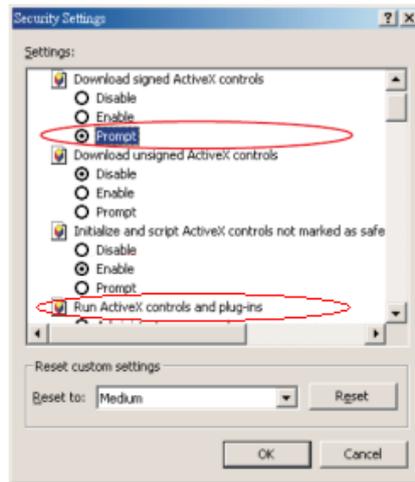
To change an IP address on a webpage, type the default IP address (192.168.0.200) into the browser address bar and follow the steps below:

- 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

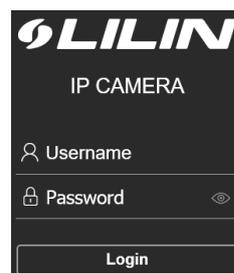
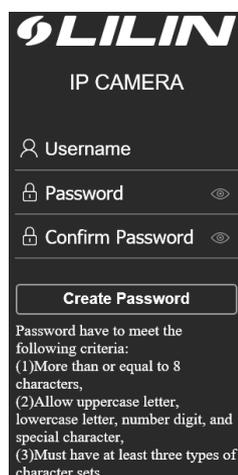
The IP PTZ camera supports 3 levels of user access with different authorization level, including the system administrator (Administrator), operator (Operator) and guest (Viewer). The difference is administrator can monitor live images and perform operations and configure camera parameters, the operator 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 panel**

### Chapter 3-2 PTZ Control Panel

	Zoom In		Zoom Out	Zoom Speed <input type="text" value="5"/>	Zoom Speed
	Focus Far		Focus Near	Focus Speed <input type="text" value="0"/>	Focus Speed
	Auto Focus			Normal AF <input type="text"/>	Focus Mode
	Auto Pan Start		Auto Pan Stop	Scan5 <input type="text"/>	Auto Pan Mode
				Goto Preset Point <input type="text" value="---"/>	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.			

<p><b>Auto Recovery</b></p> <p>Home Position <input type="button" value="Off"/> ▾</p> <p>Preset <input type="button" value="1"/> ▾</p> <p>Self Return Time <input type="button" value="Off"/> ▾</p> <p>Min <input type="button" value="0"/> ▾</p> <p>Sec. <input type="button" value="0"/> ▾</p> <p>Self Return Mode <input type="button" value="Off"/> ▾</p> <p><input type="button" value="Home"/> ▾</p> <p><b>Lens Setup</b></p> <p><b>PTZ Setup</b></p> <p><b>Preset Setup</b></p>	<p>Auto Recovery drop-down options</p> <p><b>Home Position:</b> Specify a home position for one of the presets.</p> <p><b>Self Return Time:</b> If the IP PTZ camera idles after the chosen time period, the selected function will be activated automatically.</p> <p><b>Self Return Mode:</b> 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 <b>Return Mode</b>, if the IP Fast Dome Camera idles for a period of time, the selected function will be activated automatically. The <b>Return Mode</b> allows constant and accurate monitoring to avoid the Dome Camera from idling or missing events.</p>
<p><b>Auto Recovery</b></p> <p><b>Lens Setup</b></p> <p>Preset Position <input type="button" value="MF"/> ▾</p> <p>Pan-Tilt Movement <input type="button" value="AF"/> ▾</p> <p><b>PTZ Setup</b></p> <p><b>Preset Setup</b></p>	<p>Lens Setup drop-down options</p> <p><b>Preset Position:</b> Set the camera to <b>Auto-Focus (AF)</b> or <b>Manual-Focus (MF)</b> when the camera performs preset operations.</p> <p><b>Pan-Tilt Movement:</b> Set the camera to <b>Auto-Focus (AF)</b> or <b>Manual-Focus (MF)</b> when the camera performs Pan-Tilt movements.</p>
<p><b>Auto Recovery</b></p> <p><b>Lens Setup</b></p> <p><b>PTZ Setup</b></p> <p>Click To Center <input type="button" value="Off"/> ▾</p> <p><b>Preset Setup</b></p>	<p>PTZ setup drop-down options</p> <p><b>Click To Center:</b> 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.</p>
<p><b>Auto Recovery</b></p> <p><b>Lens Setup</b></p> <p><b>PTZ Setup</b></p> <p><b>Preset Setup</b></p> <p>Preset Point <input type="button" value="1"/> ▾</p> <p>Speed <input type="button" value="255"/> ▾</p> <p>Dwell Time <input type="button" value="5"/> ▾</p> <p><input type="button" value="Save"/></p> <p>Clear Preset Point <input type="button" value="--"/> ▾</p> <p><input type="button" value="Clean"/></p>	<p>Preset Setup drop-down options</p> <p>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 <b>Preset Point</b> list. Then assign a <b>Dwell Time</b> and <b>Speed</b> for the current position from the drop-down menus. Click <b>Save</b> for the changes to take effect.</p>

### Chapter 3-2-1 Vertical and Horizontal Direction Controls

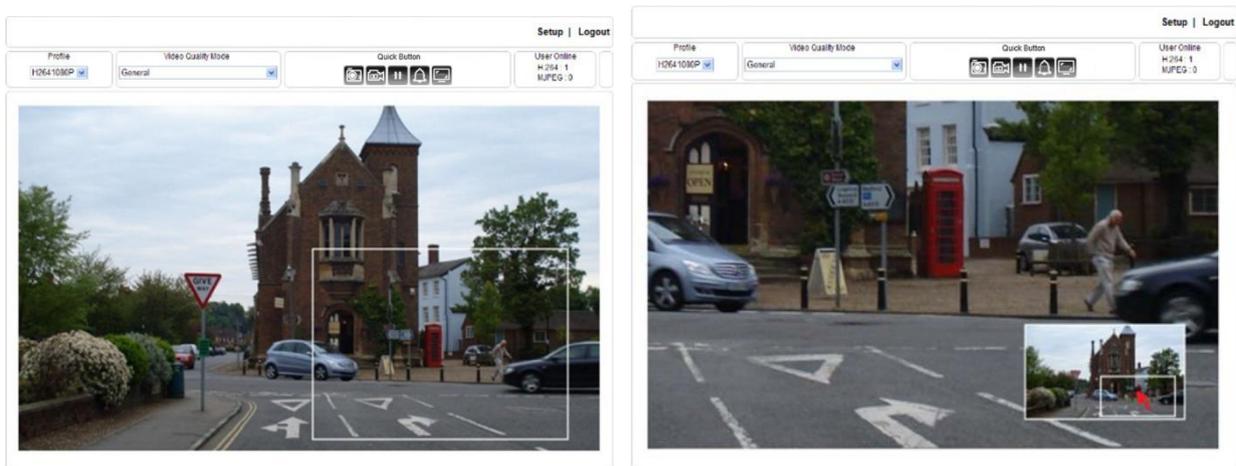
Two modes are available for moving the camera vertically and horizontally. The details are described below:

	<p>3-2-1-1 Directional buttons control Pan-Tilt</p> <p>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 <b>Speed</b> number is, the quicker the camera will move.</p>
-------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

<ul style="list-style-type: none"> <li>Setting</li> <li>Snapshot</li> <li>Recording On</li> <li style="background-color: #e0e0e0;">PTZ Control</li> </ul>	<p><b>3-2-1-2 Mouse control PTZ</b></p> <p>As shown in the image to the left, a pop-up menu will appear when you right-click on the screen. Choose <b>PTZ Control</b> 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.</p>
-----------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

### 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:

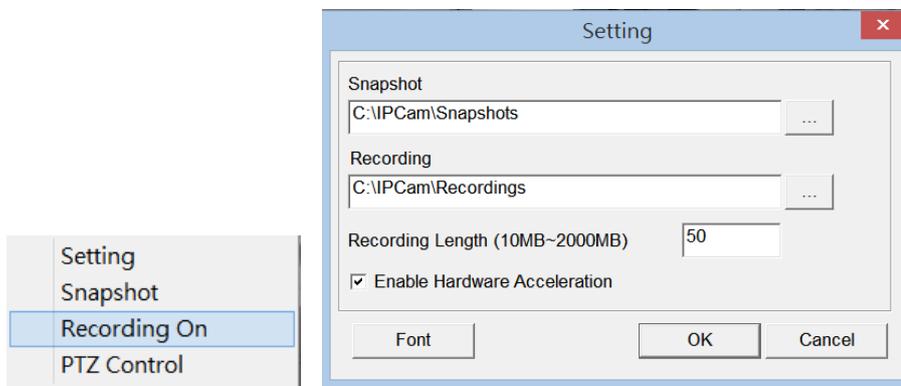
	<p>Snapshot: Take a snapshot of the video.</p>
	<p>Recording to the PC.</p>
	<p>Pause recording to the PC.</p>
	<p>Audio on: Turn audio on (audio models only).</p>
	<p>Speak on: Turn on to speak to the remote site (audio models only).</p>
	<p>Alarm output control (Alarm models only)</p>
	<p>Switch screen</p>

### 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

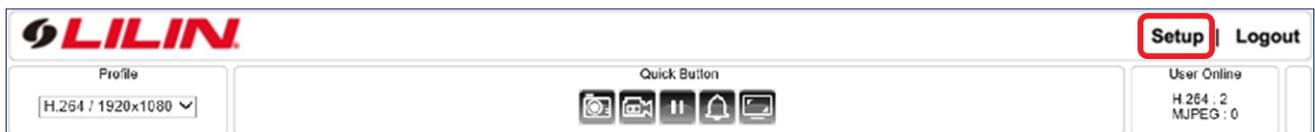
To record videos to a local PC, first right-click on the Universal ActiveX control. Choose **Setting** to specify the recording paths and recording sizes, and choose **Recording On** to start recording. Please make sure that the ePTZ or ROI feature is disabled before trying to open the setting menu.



**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:

Basic >> System >> General

MAC Address	00:0f:fc:64:22:13
Firmware Version	4.2.94.8734
Firmware Build Date	Feb 25 2020 20:36:01
Pan-Tilt Firmware Version	1.0.7
CCD Firmware Version	1.05
OS Version	Linux 3.10.104+(Tue Feb 25 20:24:23 CST 2020)
System Reboot Time	2020/03/19 08:32:26
Device Name	<input type="text" value="PZD6422EX3_QA"/>
Display Device Name	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Display Time Status	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
OSD Timer Type	<input type="text" value="YY/MM/DD"/> (Y:Year,M:Month,D:Date)
Display PTZ OSD	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Display AutoPan OSD	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
ActiveX OSD Display	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
ActiveX OSD Name	<input type="text" value="PZD6422EX3"/>
Web Title Name	<input type="text" value="PZD6422EX3"/>
ActiveX Low Latency Mode	<input type="radio"/> Enable <input checked="" type="radio"/> Disable

Device name OSD only Traditional Chinese, character and numerical values are supported.

- **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-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.
- **Display Time Status:** Enable/disable to display/hide camera time on the OSD.
- **OSD Timer Type:** Can be set to select different date and time display formats.
- **Display PTZ OSD:** Enable/disable to display/hide IP PTZ currently angle information on the OSD.
- **Display Auto Pan OSD:** Enable/disable to display/hide IP PTZ Auto-Pan or Self-Run running or not on the OSD.
- **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 4-2-1 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.

Basic >> Video / Audio >> General

H.264 Encoding Mode :  Main Profile  High Profile

Encoder2 :  Enable  Disable

Encoder3/TV Out :  Disable/(TV Out Enable)  Enable/(TV Out Disable)

Video Standard :  60Hz  50Hz

Fixed Bitrate Mode :  Enable  Disable

<p><b>Encoder1</b></p> <p>Profile Name <input type="text" value="H.264"/></p> <p>Resolution <input type="text" value="1920x1080"/></p> <p>Output Frame Rate <input type="text" value="50"/></p> <p>GOP (Group of Pictures) <input type="text" value="50"/></p> <p>Stream Mode <input type="text" value="CBR"/></p> <p>Bit Rate <input type="text" value="6 Mbps"/></p> <p>RTSP URL <input type="text" value="rtsp://192.168.22.171/stream0"/></p>	<p><b>Encoder3</b></p> <p>Profile Name <input type="text" value="H.264"/></p> <p>Resolution <input type="text" value="720x576"/></p> <p>Output Frame Rate <input type="text" value="15"/></p> <p>GOP (Group of Pictures) <input type="text" value="15"/></p> <p>Stream Mode <input type="text" value="CBR"/></p> <p>Bit Rate <input type="text" value="1 Mbps"/></p> <p>RTSP URL <input type="text" value="rtsp://192.168.22.171/stream2"/></p>
<p><b>Encoder2</b></p> <p>Profile Name <input type="text" value="H.264"/></p> <p>Resolution <input type="text" value="720x480"/></p> <p>Output Frame Rate <input type="text" value="25"/></p> <p>GOP (Group of Pictures) <input type="text" value="25"/></p> <p>Stream Mode <input type="text" value="CBR"/></p> <p>Bit Rate <input type="text" value="3 Mbps"/></p> <p>RTSP URL <input type="text" value="rtsp://192.168.22.171/stream1"/></p>	<p><b>Encoder4</b></p> <p>Profile Name <input type="text" value="JPEG"/></p> <p>Resolution <input type="text" value="352x240"/></p> <p>Output Frame Rate <input type="text" value="25"/></p> <p>Image Quality <input type="text" value="80"/></p> <p>RTSP URL <input type="text" value="rtsp://192.168.22.171/stream3"/></p> <p style="text-align: right;"> <input type="button" value="Submit"/> <input type="button" value="Load Default"/> </p>

- **Profiles:** 4 customizable profiles.
- **H.264 Encoding Mode:** Encoding mode selection.
- **Encoder2:** Enable or disable streaming 2.
- **Encoder3/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 Quality Basic

This setting page allows users to adjust the brightness, contrast, hue, saturation, and sharpness of day mode and night mode. Independent day and night settings allow the camera to provide the highest quality image quality.

Day Mode	Night Mode
Brightness : 50 ( Low / High )	<input type="text"/>
Contrast : 50 ( Low / High )	<input type="text"/>
Hue : 50 ( Low / High )	<input type="text"/>
Saturation : 45 ( Low / High )	<input type="text"/>
Sharpness : 10 ( Low / High )	<input type="text"/>
<input type="button" value="Load Default"/>	

### 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.

Basic >> Network >> General	
Network	<input checked="" type="radio"/> Static <input type="radio"/> DHCP <input type="radio"/> PPPoE
IP Address	<input type="text" value="192.168.123.147"/>
Subnet Mask	<input type="text" value="255.255.255.0"/>
Gateway	<input type="text" value="192.168.123.1"/>
Primary DNS	<input type="text" value="168.95.1.1"/>
Secondary DNS	<input type="text" value="168.95.1.1"/>
Account	<input type="text" value="account@pppoe.com"/>
Password	<input type="password" value="....."/>
QoS(DSCP)	<input type="text" value="0"/> (0~63)
2nd IP Address	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
2nd IP Address	<input type="text" value="192.168.0.200"/>
2nd Subnet Mask	<input type="text" value="255.255.255.0"/>
3rd IP Address	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
3rd IP Address	<input type="text" value="192.168.0.200"/>
3rd Subnet Mask	<input type="text" value="255.255.255.0"/>
<input type="button" value="Submit"/>	



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

The screenshot shows the 'Basic >> Network >> General IPv6' configuration page. It includes a 'Network' section with radio buttons for 'On' and 'Off', where 'Off' is selected. Below this are input fields for 'IP Address' (containing 'fe80::000f:fc24:9000'), 'Default Router', and 'Default DNS'. A 'Submit' button is located at the bottom.

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.

The screenshot shows the 'Basic >> Network >> HTTP/RTSP Service' configuration page. It includes fields for 'HTTP Port' (80) and 'RTSP Port' (554). There are radio buttons for 'ONVIF search' (On selected), 'METADATA' (Off selected), 'RTCP Check' (On selected), and 'Repeated delivery of SPS/PPS' (On selected). There are also radio buttons for 'RTSP Authentication' (On selected) and 'Video Port' (HTTP Port selected). Below these are input fields for 'Encoder1' through 'Encoder4', all containing 'stream0' through 'stream3' respectively. A 'Submit' button is at the bottom.

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

Basic >> Network >> HTTPS Service

HTTPS Service  Enable  Disable

Save

#### 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.

Basic >> Network >> DDNS

DynDNS

DDNS  Enable  Disable

Account

Password

Host name

<http://ddd212.ddnsipcam.com>

Submit

To activate DDNS, go to [www.ddnsipcam.com](http://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](http://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.

Basic >> Network >> SNMP

---

SNMP  Enable  Disable

SNMP v1/v2

Read Only Community

Read/Write Community

SNMP v3

Username

Authentication Password(MD5)

Privacy Password(DES)

Read/Write Security Name

Read Only Security Name

SNMP Heartbeat  Enable  Disable

SNMP Heartbeat Server

SNMP Heartbeat Dwell Time  Sec.

### 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.

Basic >> Maintenance >> Firmware Update

---

Please do not turn off power and wait until this web page shows up automatically. Fail to update firmware correctly due to network communication issue that it may damage this machine and is required to ship back to your vender for repair.

flashamS2pl.bin:Application Firmware

Initialize without Network Settings

Upload 0%

---

Export Config File

Import Config File

---

Reboot System

---

Default Settings

Initialize without Network Settings

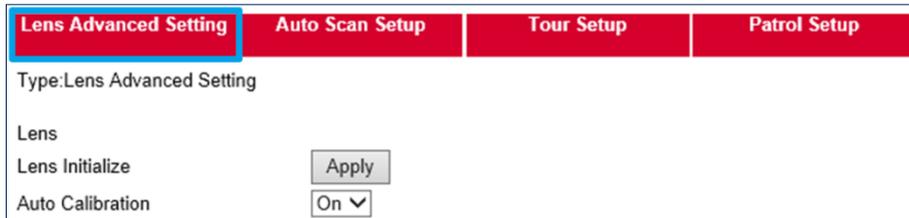
Initialize All Settings

**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.



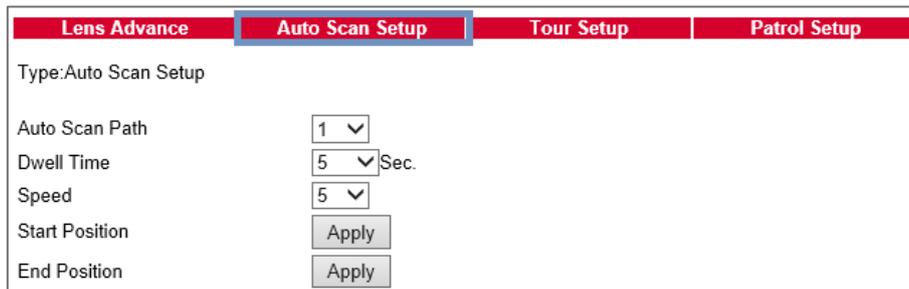
### Chapter 4-5-1 Lens Advance Setting



- **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.

### 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.

Lens Advanced Setting	Auto Scan Setup	Tour Setup	Patrol Setup				
Type: Tour Setup							
Tour Path	1 ▾	Speed	1 ▾	Dwell Time	1 ▾	Apply	
1	- ▾	9	- ▾	17	- ▾	25	- ▾
2	- ▾	10	- ▾	18	- ▾	26	- ▾
3	- ▾	11	- ▾	19	- ▾	27	- ▾
4	- ▾	12	- ▾	20	- ▾	28	- ▾
5	- ▾	13	- ▾	21	- ▾	29	- ▾
6	- ▾	14	- ▾	22	- ▾	30	- ▾
7	- ▾	15	- ▾	23	- ▾	31	- ▾
8	- ▾	16	- ▾	24	- ▾	32	- ▾

- **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

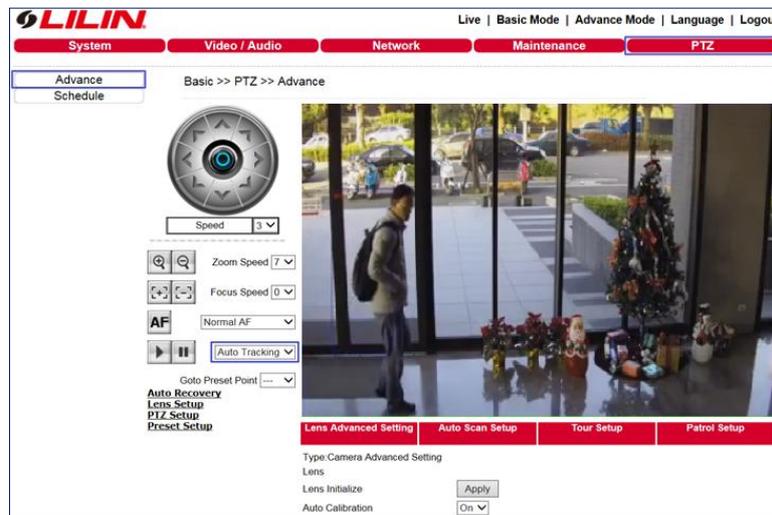
Lens Advance	Auto Scan Setup	Tour Setup	Patrol Setup	
Type: Patrol Setup				
Patrol Path	1 ▾	Start	End	Clean

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

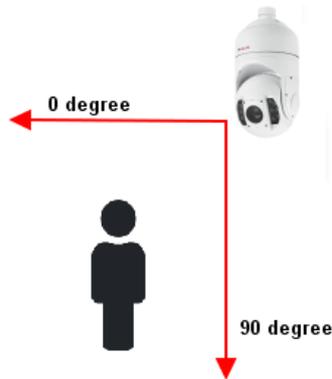
1. The tracking feature of a PTZ can follow the moving object, it cannot zoom. It only works at the field of view (FOV) at Home Preset.
2. Tracking object size should be at least 10% of FOV



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

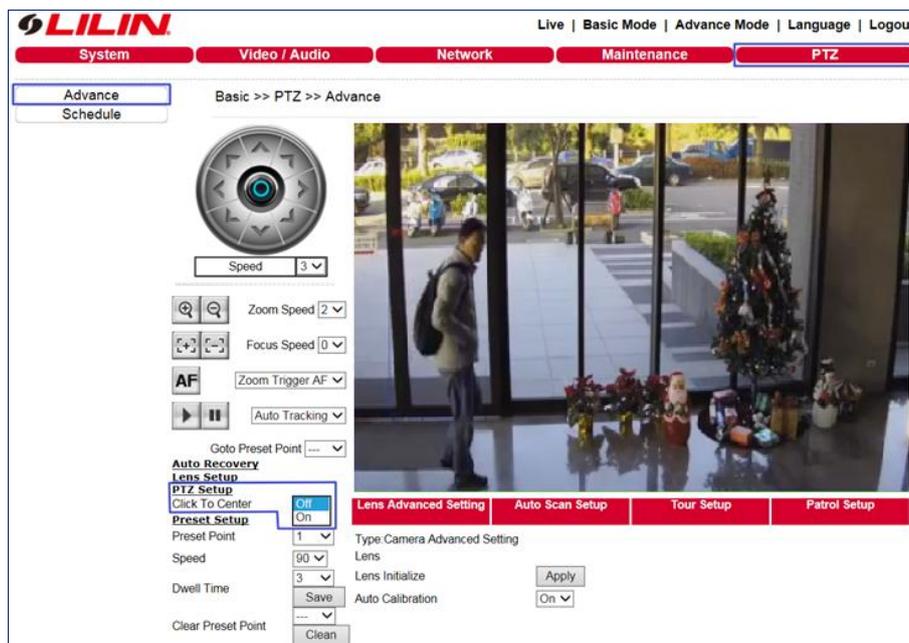


4. For PSR & PSD series, the tracking feature works at 0~90 degree



#### 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.

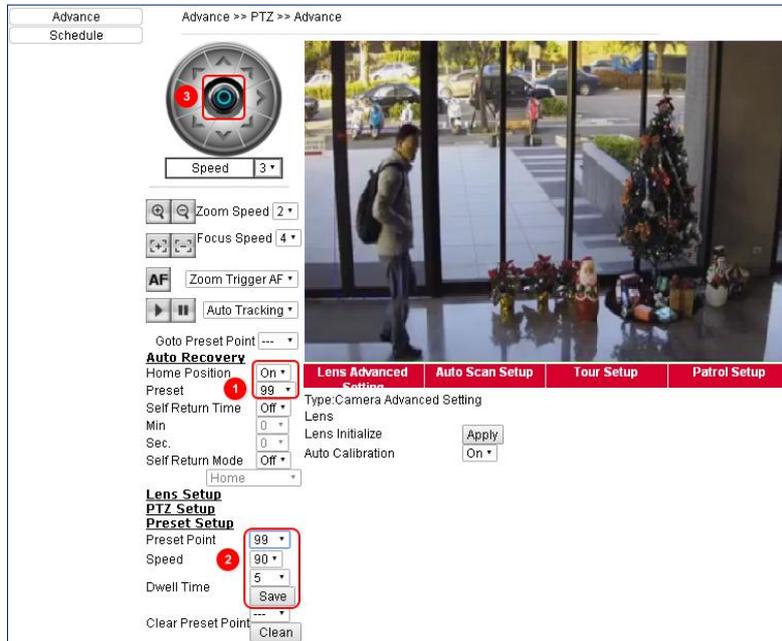


**Note:** This feature only work at ActiveX IE interface.

### 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:

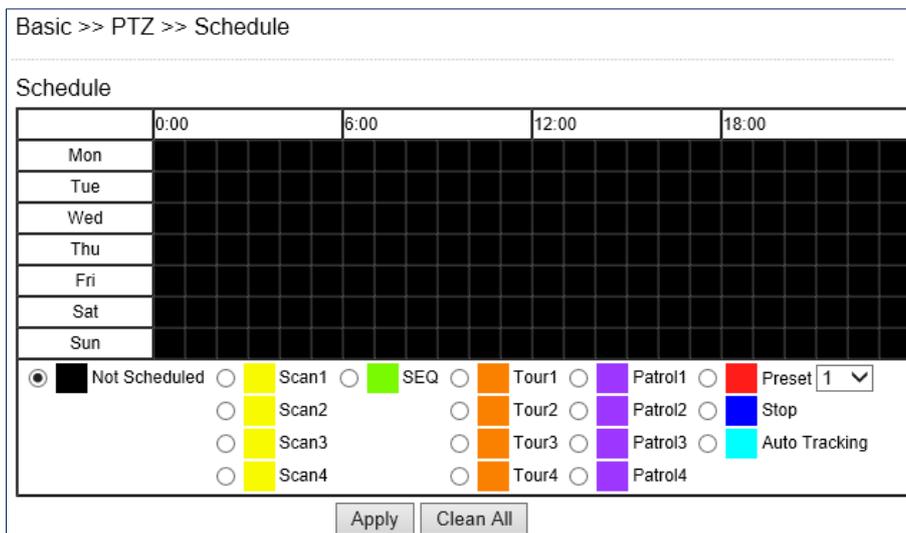
1. Click on Auto Recovery, select **On** in Home Position and select Preset number as home
2. Click on Preset Setup and set the preset point
3. Click on Home button



**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.

Advance >> System >> System Log

Log Page

1.	192.168.3.137	admin	2015/12/08 08:48:47	PTZ CAMERA SETTING
2.	192.168.3.137	admin	2015/12/08 08:48:45	PTZ CAMERA SETTING
3.	192.168.3.137	admin	2015/12/08 08:35:01	USER LOGIN
4.	192.168.3.145	admin	2015/12/08 07:23:10	USER LOGIN
5.	192.168.3.145	admin	2015/12/08 07:23:08	USER LOGIN
6.			2015/12/08 07:22:37	SPD POWER ON
7.	192.168.3.137	admin	2015/12/07 17:30:19	STREAM LOGOUT
8.	192.168.3.137	admin	2015/12/07 17:30:11	STREAM LOGOUT
9.	192.168.3.132	admin	2015/12/07 12:04:21	STREAM LOGOUT
10.	192.168.3.132	admin	2015/12/07 12:04:16	USER LOGIN
11.	192.168.3.161	admin	2015/12/07 11:19:45	STREAM LOGOUT

### Chapter 5-2 Video/Audio Settings



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

#### Chapter 5-2-1 Quality Advanced

In this page, you have access to Exposure, Automatic Gain Control, White Balance Control, Sense Up, Shutter Speed, IR-Cut, and Iris settings allowing you to adjust camera video quality for day and night.

## Chapter 5-2-2 Day and Night Modes

The camera provides two sets of video quality database for day or night mode. This is very useful settings for video quality especially for ANPR/LPR application where the shutter speed can be customized at night. The video quality settings can be applied by Day and Night Switch explained later in this chapter.

Day Mode	Night Mode
White Balance Control	Auto
Mirror	Off
Flip	Off
Exposure Value	6
WDR	Off
DC Iris Mode	Off
Shutter Value Range	Min 1/30000 Max 1/25
Auto Gain Control(SENSE UP+)	48dB
3D Noise Reduction	10
Sense Up	Off
Color Mode	Color
IR Cut Filter	On
Load Default	

Video setting options are described as follows:

- **White Balance Control:** sets white balance configurations for different scenarios including tungsten, indoor, fluorescents, or outdoor environments, or choose Auto for the camera to automatically switch between white balance settings.
- **Mirror:** flips the video horizontally.
- **Flip:** flips the video vertically.
- **Exposure Value:** Adjust the exposure value; the higher the value, the brighter the video.
- **WDR:** enables or disables Wide Dynamic Range to capture greater details.
- **Back-light Compensation:** increases the exposure of objects with insufficient light.
- **DC- Iris/P-Iris Mode:** turn on to enable auto iris adjustment.
- **Shutter Limit:** set the min and max shutter values.
- **Auto Gain Control (Sense Up+):** see the below description.
- **3D Noise Reduction:** suppresses noise occurred in low lighting conditions.
- **Sense Up:** select the level of Sense Up to enhance the video.
- **Color Mode:** switch between color/black-and-white mode.
- **IR Cut Filter:** enable/disable the IR cut filter.

Without Sense Up



Sense Up by 3 Frames



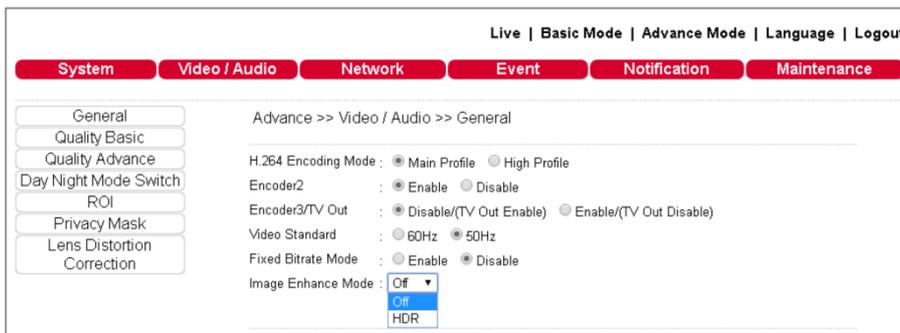
### Chapter 5-2-3 Sense Up+

Sense Up+ (AGC) is a low-light and high-sensitivity DSP control that enables outstanding video quality even in low-light environments. Sense Up+ technology can be used for both black-and-white and/or color video modes. To enable Sense Up+, first enable Auto Gain Control (AGC). Use Sense Up+ with 3D noise reduction (3D DNR) can reduce noise that occurs in low light environments. AGC and 3D DNR do not cause motion blur. If the picture is still too dark under the environment, turn on Sense Up (slow shutter) instead, however, it may cause motion blur in low-light conditions.



### Chapter 5-2-4 HDR vs WDR

LILIN PTZ IP camera contains HDR or WDR for strong back light environment. Turn on HDR mode if the camera points to strong light environment.



**Note 1:** Above HDR is only available at 100dB and up cameras.

**Note 2:** Once HDR mode is activated, video frame rate and resolution get dropped.

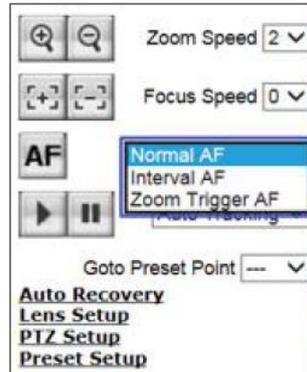
### Chapter 5-2-5 Auto Focus

To set up auto focus, please select auto focus mode

Normal AF: continuously auto focus

Interval AF: perform auto focus every 5 seconds

Zoom Trigger AF: perform auto focus during zoom in/out, when in pan/tilt, focus is maintained according to last auto focus status.



**Note:** Auto focus camera only

### Chapter 5-2-6 P-Iris

P-Iris of a camera can precisely controls the aperture of the lens getting deeper depth of field (DOF) for city traffic management, school surveillance, and ANPR applications. P-Iris provides excellent video quality than traditional DC-Iris for day-n-night, especially for twilight environment.



The following diagrams demonstrates that P-Iris automatically chooses correct Iris or F value for the best FOV.



There are two P-Iris modes: Fixed and Auto.

Day Mode	Night Mode
White Balance Control	Auto
Mirror	Off
Flip	Off
Exposure Value	4
WDR	Off
P-Iris Mode	Off Fixed Auto
Shutter Value Range	Min 1/30000 Max 1/30
Auto Gain Control(SENSE UP+)	42dB
3D Noise Reduction	10
Sense Up	Off
Color Mode	Color
IR LED	Off
IR Cut Filter	On

Load Default

With Fixed P-Iris mode, the Iris (F value) can be specified.

P-Iris Mode	Fixed	P-Iris Wide : 0 (FNO : 2.69)	P-Iris Close : 0 (FNO : 2.69)
P-Iris Shutter	1/10000		

With Auto P-Iris mode, the Iris is automatically determined.

P-Iris Mode	Auto	P-Iris Wide : -1 (FNO : undefined)	P-Iris Close : 0 (FNO : 2.69)
P-Iris Gap	1		
Shutter Value Range	Min 1/30000	Max 1/30	
Auto Gain Control(SENSE UP+)	42dB		

**Note:** P-Iris camera only

### Chapter 5-2-7 Day/Night Mode Switch

The Day/Night Mode Switch allows you to schedule IR activities by (1) auto, (2) day, (3) night, (4) schedule, or (5) external control. When the setting is set to Auto, the IR module is turned on/off automatically according to the signal from the light sensor. The Night setting removes the IR cut filter, and the Day setting keeps the filter on. If you choose Schedule, the filter turns on/off according to the set time period.

Advance >> Video / Audio >> Day Night Mode Switch

---

Auto , Switch Delay Time  Sec.  
 Day Mode  
 Night Mode  
 Schedule

Avoid Motion Detection at IR Switching       Enable  Disable  
 Avoid Motion Detection Dwell at IR Switching       Sec.

**Note:** IR-cut camera model only

### Chapter 5-3 Network



#### Chapter 5-3-1 Multicast

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

Advance >> Network >> Multicast

---

<p><b>Encoder1</b>      Multicast      <input type="radio"/> Enable <input checked="" type="radio"/> Disable</p> <p>IP Address      <input type="text" value="239.0.0.0"/></p> <p>Video Port      <input type="text" value="1234"/> (2~65534)</p> <p>Video Port(RTCP)      <input type="text" value="1235"/> (2~65534)</p> <p>Audio Port      <input type="text" value="1236"/> (2~65534)</p> <p>Audio Port(RTCP)      <input type="text" value="1237"/> (2~65534)</p> <p>TTL      <input type="text" value="5"/> (1~255)</p>	<p><b>Encoder3</b>      Multicast      <input type="radio"/> Enable <input checked="" type="radio"/> Disable</p> <p>IP Address      <input type="text" value="239.0.0.2"/></p> <p>Video Port      <input type="text" value="5568"/> (2~65534)</p> <p>Video Port(RTCP)      <input type="text" value="5569"/> (2~65534)</p> <p>Audio Port      <input type="text" value="5570"/> (2~65534)</p> <p>Audio Port(RTCP)      <input type="text" value="5571"/> (2~65534)</p> <p>TTL      <input type="text" value="5"/> (1~255)</p>
<p><b>Encoder2</b>      Multicast      <input type="radio"/> Enable <input checked="" type="radio"/> Disable</p> <p>IP Address      <input type="text" value="239.0.0.1"/></p> <p>Video Port      <input type="text" value="1238"/> (2~65534)</p> <p>Video Port(RTCP)      <input type="text" value="1239"/> (2~65534)</p> <p>Audio Port      <input type="text" value="1240"/> (2~65534)</p> <p>Audio Port(RTCP)      <input type="text" value="1241"/> (2~65534)</p> <p>TTL      <input type="text" value="5"/> (1~255)</p>	<p><b>Encoder4</b>      Multicast      <input type="radio"/> Enable <input checked="" type="radio"/> Disable</p> <p>IP Address      <input type="text" value="239.0.0.3"/></p> <p>Video Port      <input type="text" value="5572"/> (2~65534)</p> <p>Video Port(RTCP)      <input type="text" value="5573"/> (2~65534)</p> <p>Audio Port      <input type="text" value="5574"/> (2~65534)</p> <p>Audio Port(RTCP)      <input type="text" value="5575"/> (2~65534)</p> <p>TTL      <input type="text" value="5"/> (1~255)</p>

### Chapter 5-3-2 IP Address Filtering

LILIN PTZ IP 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.

Advance >> Network >> IP Address Filtering

IP Address Filtering  Enable  Disable

Allow / Deny  Allow  Deny

IP Address

### 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.

Basic >> Network >> UPnP

UPnP Service  Enable  Disable

Friendly Name UPnP IPCam Device

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.

Advance >> Network >> Bonjour

Bonjour  Enable  Disable

Friendly Name Bonjour IPCam Device-ddd212

### 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.

Advance >> Network >> SDDP / Heartbeat

SDDP Service  Enable  Disable

Heartbeat Service  Enable  Disable

Heartbeat Server

Heartbeat Port

Heartbeat Dwell Time  Sec.

### 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 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.

Trigger				Schedule				Action			
Enable Holiday List <input type="checkbox"/>											
Select	Schedule	Start Time	End Time								
<input checked="" type="checkbox"/>	All	0:00	23:59								
<input type="checkbox"/>	All	0:00	23:59								
<input type="checkbox"/>	All	0:00	23:59								
<input type="checkbox"/>	All	0:00	23:59								
<input type="checkbox"/>	All	0:00	23:59								
<input type="checkbox"/>	All	0:00	23:59								
<input type="checkbox"/>	All	0:00	23:59								
<input type="checkbox"/>	All	0:00	23:59								
<input type="checkbox"/>	All	0:00	23:59								
<input type="checkbox"/>	All	0:00	23:59								
<input type="checkbox"/>	All	0:00	23:59								
<input type="checkbox"/>	All	0:00	23:59								
<input type="checkbox"/>	All	0:00	23:59								
Save the event											

Trigger		Schedule		Action	
Action	<input type="checkbox"/> FTP Service	Dwell Time	1	Sec.	
	<input type="checkbox"/> SMTP Service	Dwell Time	1	Sec.	
	<input type="checkbox"/> SD Card Service				
	<input type="checkbox"/> SAMBA Service				
	<input type="checkbox"/> Alarm Output	Dwell Time	1	Sec.	
	<input type="checkbox"/> HTTP POST Service	Dwell Time	1	Sec.	
	<input type="checkbox"/> SNMP Trap Service				
	<input type="checkbox"/> Push Service	Dwell Time	1	Sec.	
Save the event					

### Chapter 6-1 IVS

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

Advance >> Event >> IVS

---

IVS Status: Disable

---

Motion Detection, Tampering Detection  
 Advanced Motion Detection (Less false alarm at night)  
 Tripwire, Traffic Light Detection  
 Object Counting

The OSD of streaming #4 is disabled, if Motion Detection gets enabled.

Submit

**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.

Advance >> Event >> Motion Detection



Motion Detection  Enable  Disable  
 Motion Sensitivity (Low: 99 - High: 1) | 30

Submit Clean

### 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	<input checked="" type="radio"/> Enable	<input type="radio"/> Disable
Face Detection OSD	<input type="radio"/> Enable	<input checked="" type="radio"/> Disable
Face Detection Range	40x40 ▼	
Face Detection Sensitivity	10 ▼ (High:1~Low:30)	
<input type="button" value="Submit"/>		

- **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

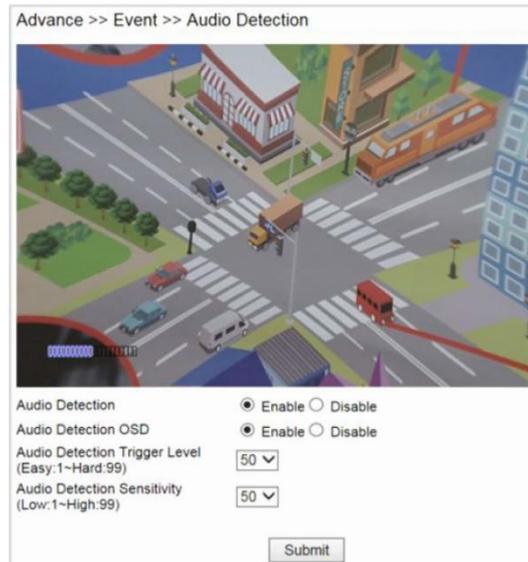
### Chapter 6-4 Tamper Detection

Tamper Detection	<input type="radio"/> Enable	<input checked="" type="radio"/> Disable
Tamper Detection Time	5 ▼ Sec.	
Tamper Detection Dwell	10 ▼ Sec.	
<input type="button" value="Submit"/>		

LILIN PTZ IP 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

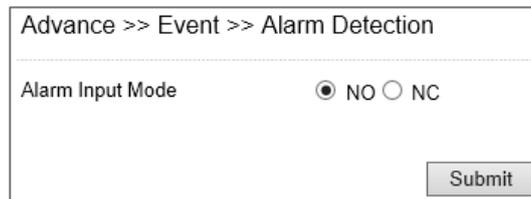
When the detected sound exceeds the sensitivity level, the audio detector will trigger an alarm and send a notification.



**Note:** Audio model only

### Chapter 6-6 Alarm Detection

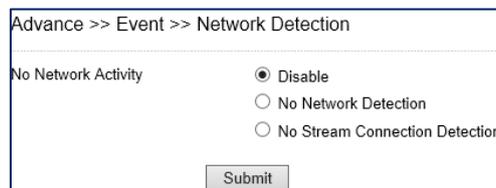
If you connect an external alarm digital input to the IP camera, enable Alarm Notification and switch between NO (normally open) and NC (normally closed) for the input.



**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 IP 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.

Advance >> Event >> SmartEvent

Event 1 | Event 2 | Event 3 | Event 4 | Event 5

Enable Event

Event Name

Condition 1 | Condition 2 | Condition 3 | Condition 4 | Condition 5

Condition Name

Trigger | Schedule | Action

Action

- FTP Service Dwell Time 1 Sec.
- SMTP Service Dwell Time 1 Sec.
- SD Card Service
- SAMBA Service
- Alarm Output Dwell Time 1 Sec.
- HTTP POST Service Dwell Time 1 Sec.
- SNMP Trap Service
- Push Service Dwell Time 1 Sec.

Advance >> Event >> Push Service Setting

Key Version 20190520

iOS			
Number	ID	Action	Status
1		Delete	
2		Delete	
3		Delete	
4		Delete	
5		Delete	

Android			
Number	ID	Action	Status
1		Delete	
2		Delete	
3		Delete	

## Chapter 7 Camera Notification

System

Video / Audio

Network

SmartEvent

**Notification**

Maintenance

PTZ

### Chapter 7-1 FTP Service

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

Advance >> Notification >> FTP Service

FTP Server Name	FTP/DNS Server	Port
FTPServerName	ftp.server.com	21
FTP2ServerName	ftp.server2.com	21
FTP3ServerName	ftp.server3.com	21

FTP Channel 1

FTP Server Name FTPServerName

FTP/DNS Server ftp.server.com

FTP/DNS Server Port 21

Account Account

Password .....

Directory /alarm\_jpeg/

Date Format YYYYMMDD\_hhmmss

Prefix

Postfix

File Format Encoder4

Auto FTP Sent  Enable  Disable

Auto FTP Sent Dwell time 1 Hour

- **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.

Advance >> Notification >> SMTP Service

---

**E-mail Receiver Setting**

E-mail Address1

E-mail Address2

E-mail Address3

E-mail Address4

E-mail Address5

---

**E-mail Sender Setting**

E-mail Address

SMTP Server

SMTP Authentication  AUTH LOGIN  AUTH SSL

SMTP Port

Authentication  Enable  Disable

Auth Account

Auth Password

### 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.

Advance >> Notification >> HTTP POST Service

Number	HTTP POST Server Name	HTTP POST Server IP/DNS	Port	Attachment Format
1	httpservername	httpserver.com	80	Text
2	http2servername	httpserver.com	80	Text
3	http3servername	httpserver.com	80	Text

HTTP POST Server Name:   
 HTTP POST Server IP/DNS:   
 HTTP POST Server Port:   
 Account:   
 Password:   
 HTTP POST URL:   
 Attachment Format:  JPEG  Text  
 HTTP POST JSON:

- **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.

Advance >> System >> SD Card Service

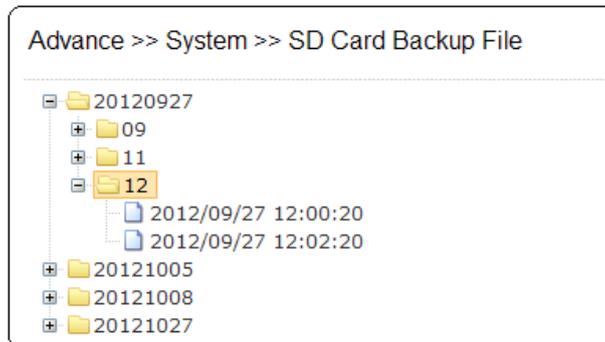
SD Recording:  On  Off  
 SD Recording OSD:  On  Off  
 SD Recording Continuous:  On  Off  
 Recording Format:   
 Pre Record Time:  Sec.  
 SD Card Status: NORMAL  
 SD Card State: SD Card No Plug In  
 SD Card Total Bytes: 0 MBytes  
 SD Card Free Bytes: 0 MBytes

**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

Advance >> System >> SAMBA Service

SAMBA Recording	<input type="radio"/> On <input checked="" type="radio"/> Off
SAMBA Recording OSD	<input type="radio"/> On <input checked="" type="radio"/> Off
SAMBA Recording Continuous	<input type="radio"/> On <input checked="" type="radio"/> Off
Recording Format	H2641080P ▾
Pre Record Time	5 ▾ Sec.
SAMBA Server IP	192.168.0.100
SAMBA Server PORT	5000
SAMBA Server Account	admin
SAMBA Server Password	••••
SAMBA Server Directory	/Public
SAMBA Status	NORMAL
SAMBA State	SAMBA No Content
SAMBA Total Bytes	0 MBytes
SAMBA Free Bytes	0 MBytes

<http://192.168.0.100:5000>

## 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 UUID of the camera
- **Authentication:** Enable authentication for accessing the camera
- **Account:** The account for accessing the camera
- **Password:** The password for accessing the camera

MQTT Status	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
MQTT Server	<input type="text" value="mqtt.cc"/>
MQTT Port	<input type="text" value="1883"/>
MQTT Client ID	<input type="text" value="000ffcdd6bb9"/>
MQTT UUID	<input type="text" value="459_000ffcdd6bb9"/>
Authentication	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
Account	<input type="text" value="admin"/>
Password	<input type="text" value="pass"/>
<input type="button" value="Submit"/>	
<b>Publish:</b>	
ipcam/459_000ffcdd6bb9/device/event	
<b>Subscribe:</b>	
ipcam/459_000ffcdd6bb9/device/event	

**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	<input type="text" value="1"/>
Protocol	<input type="text" value="MLP2"/>
Baud Rate	<input type="text" value="9600"/>
<input type="button" value="Save"/>	

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

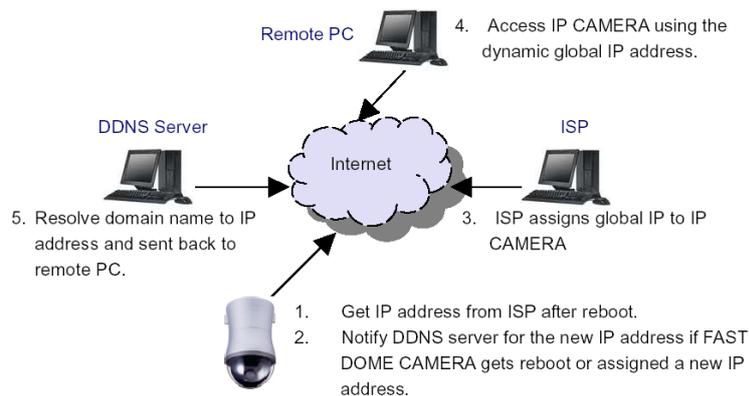
**Note:** RS-485 control interface model only

## Appendix

### DDNS and PPPoE Network Settings

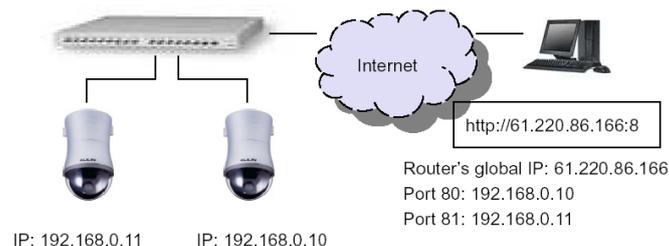
One of the advantages of adopting DDNS and PPPoE services is to save the cost of renting a global IP address. When you power on a camera with a video server and connect to the Internet with the PPPoE service, the camera asks your ISP for a dynamic global IP address. This Internet-accessible IP address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

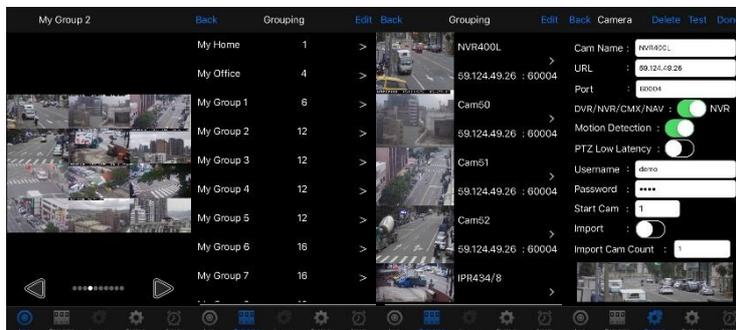
Manufacturer	Capacity	SDHC/SDSC
Sandisk	16GB	SDHC
Sandisk	8GB	SDHC
Transcend	8GB	SDHC
Transcend	4GB	SDHC
Sandisk	32GB	SDHC

### 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:

- Cam Name: IP Camera or DVR camera name
- URL: IP address
- Port
- Enter your username and password.

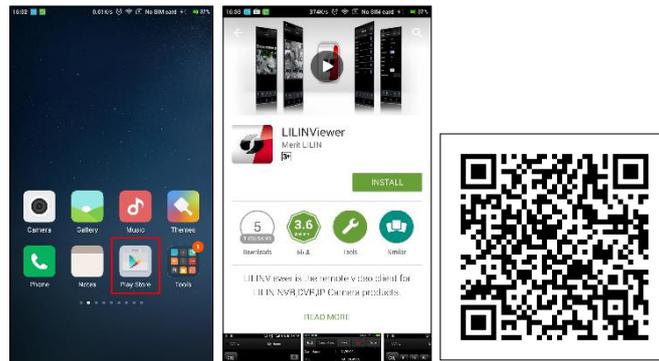
The default IP camera user name is admin, password pass. The default DVR user name is admin, password 1111.

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:

Cam Name: IP Camera or DVR camera name

URL: IP address

Port

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.