

HD Fast Dome IP Camera Series User Manual

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Summary

LILIN 20X/30X D/N 1080p 60FPS Full HD Fast 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 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

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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 PTS 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.

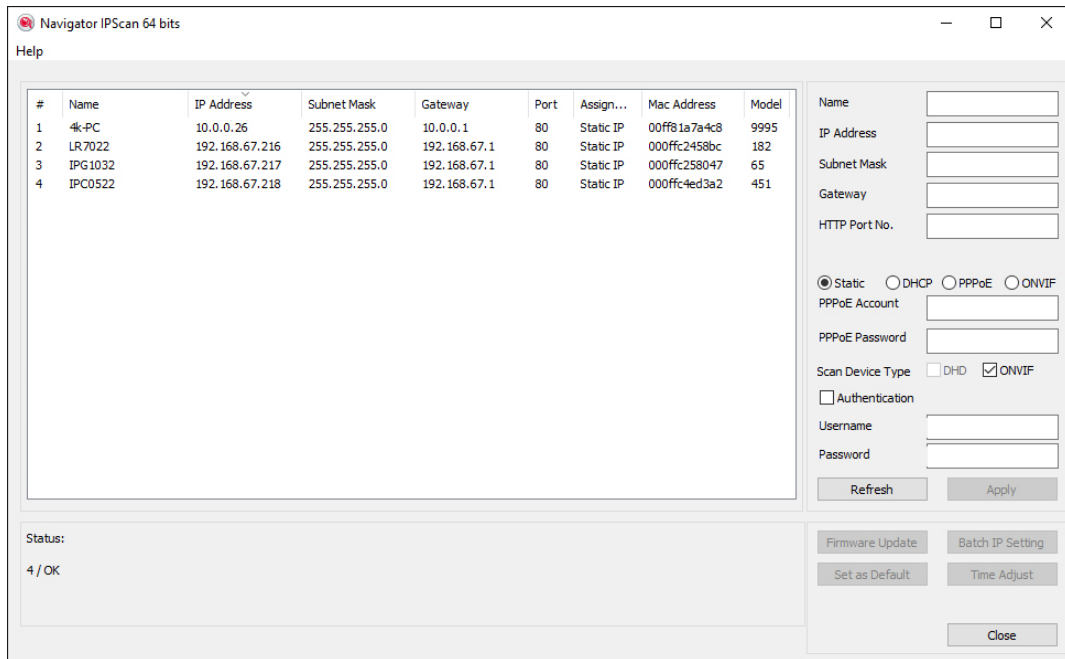
Chapter 2 Before Accessing IP Cameras

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



#	Name	IP Address	Subnet Mask	Gateway	Port	Assign...	Mac Address	Model
1	4-PC	10.0.0.26	255.255.255.0	10.0.0.1	80	Static IP	00ff81a7a4c8	9995
2	LR7022	192.168.67.216	255.255.255.0	192.168.67.1	80	Static IP	000ffc2458bc	182
3	IPG1032	192.168.67.217	255.255.255.0	192.168.67.1	80	Static IP	000ffc258047	65
4	IPC0522	192.168.67.218	255.255.255.0	192.168.67.1	80	Static IP	000ffc4ed3a2	451

Configuration options on the right:

- Name:
- IP Address:
- Subnet Mask:
- Gateway:
- HTTP Port No.:
- Static (selected), DHCP, PPPoE, ONVIF
- PPPoE Account:
- PPPoE Password:
- Scan Device Type: ☐ DHD, ☒ ONVIF
- Authentication: ☐
- Username:
- Password:
- Buttons: Refresh, Apply, Firmware Update, Batch IP Setting, Set as Default, Time Adjust, Close

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

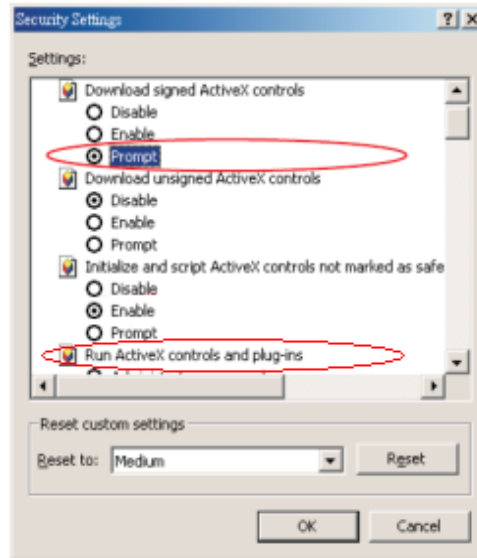
Chapter 2-2 Configure IP Addresses through HTML Connection

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 using the default username **admin** and default password **pass**
- 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

You can log in to the camera as administrator or guest. The default username for administrator is admin, and the password pass. Then press Submit to log in.



Chapter 3 LILIN 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**

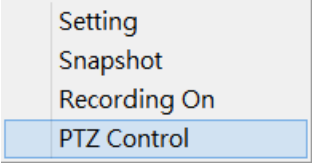
Chapter 3-2 PTZ Control Panel

	Zoom In		Zoom Out	Zoom Speed 5	Zoom Speed
	Focus Far		Focus Near	Focus Speed 0	Focus Speed
	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			

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	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.
Auto Recovery Lens Setup Focus Sensitivity Normal ▾ Digital Zoom Off ▾ Preset Position MF ▾ Pan-Tilt Movement AF ▾ PTZ Setup Preset Setup	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.
Auto Recovery Lens Setup PTZ Setup Turbo Speed Off ▾ Vertical Operate Angle 180 ▾ Vertical Flip Function Off ▾ Vertical Down Limit Flip Off ▾ Preset Setup	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). 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. 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.
Auto Recovery Lens Setup PTZ Setup Preset Setup Preset Point 1 ▾ Speed 255 ▾ Dwell Time 5 ▾ Save Clear Preset Point --- ▾ Clean	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.

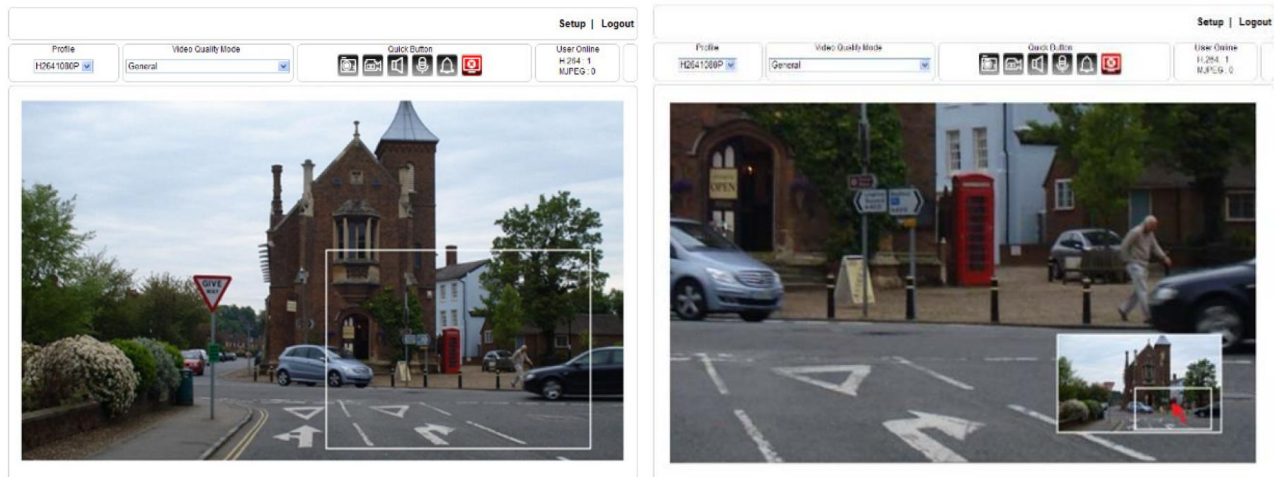
Chapter 3-2-1 Vertical and Horizontal Direction Controls

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:

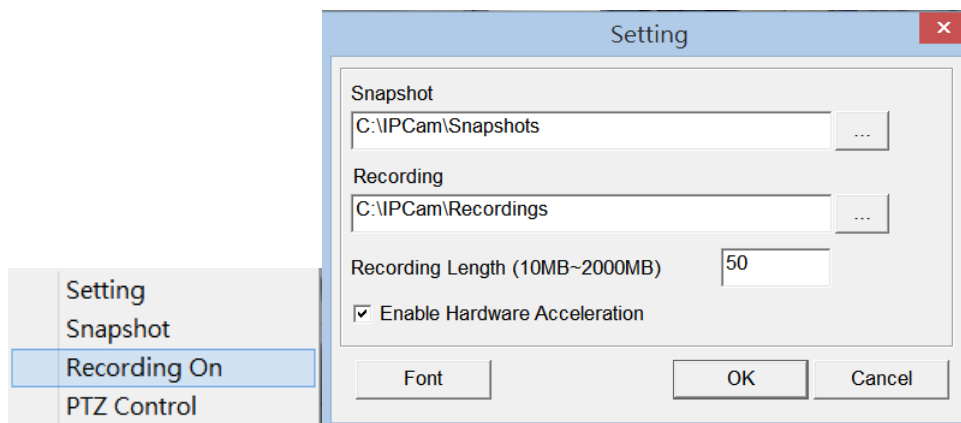
	Snapshot: Take a snapshot of the video.
	Recording to the PC.
	Pause recording to the PC.
	Audio on: Turn audio on (audio models only).
	Speak on: Turn on to speak to the remote site (audio models only).
	Switch screen

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 4-1-1 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:85:85:88
Firmware Version	0.0.1
Firmware Build Date	Dec 3 2015 13:20:14
Pan Firmware Version	0.0.3
Tilt Firmware Version	0.0.3
Camera Firmware Version	0.2
OS Version	Linux 3.8 (Wed Dec 2 17:12:06 CST 2015)
System Reboot Time	2015/12/03 13:23:29
Device Name	PSD4624EX30
Language	English
Display Device Name	☐ Enable ☒ Disable
Display Time Status	☐ Enable ☒ Disable
Display PTZ OSD	☐ Enable ☒ Disable
Display AutoPan OSD	☐ Enable ☒ Disable
ActiveX OSD Display	☐ Enable ☒ Disable
ActiveX OSD Name	PSD4624EX30
Web Title Name	Merit LILIN H.264 PSD4624EX30

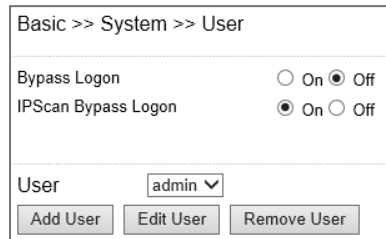
Submit

- MAC Address: Network MAC address of the IP PTZ camera.
- Firmware Version: You are allowed to upgrade IP PTZ camera's firmware remotely.
- Pan Firmware/Tilt Firmware/Camera 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 Timer: Enable/disable to display/hide camera time on the OSD.
- 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 top-right corner of the ActiveX screen.
- Web Title Name: Enter the name to be displayed on the web browser.

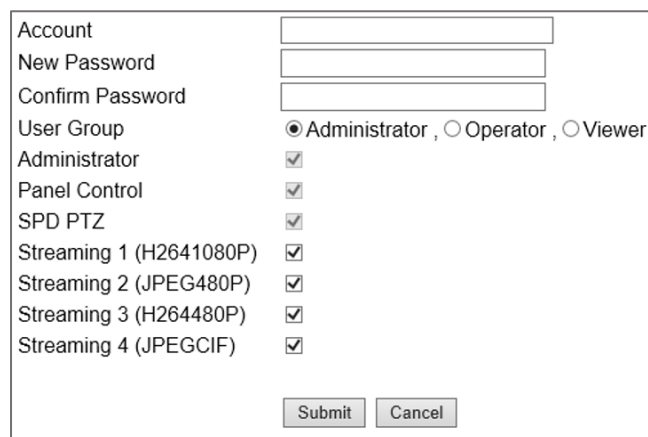
Note: ActiveX is for Windows OS only.

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:

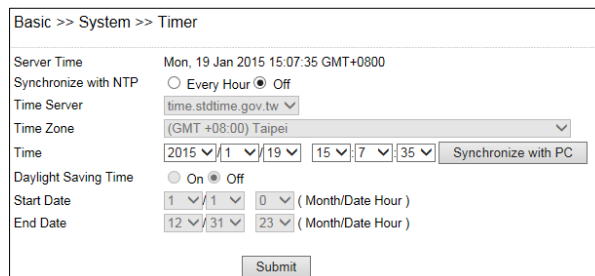


Enter the account name and password for the new account, and then check to assign the access rights for this account.

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

Profile :

TV System : ☒ NTSC ☐ PAL Output

H.264 :1920 x 1080

Profile Name : H2641080P

Output Frame Rate :

GOP (Group of Pictures) :

VBR/CBR Mode :

Bit Rate :

Alarm Weighted Mode : ☐ Enable ☒ Disable

RTSPURL : rtsp://192.168.3.153/rtspH2641080p

H.264 :720 x 480

Profile Name : H264480P

Output Frame Rate :

GOP (Group of Pictures) :

VBR/CBR Mode :

Bit Rate :

Alarm Weighted Mode : ☐ Enable ☒ Disable

RTSPURL : rtsp://192.168.3.153/rtspH264480p

JPEG :720 x 480

Profile Name : JPEG480P

Output Frame Rate :

Image Quality :

Alarm Weighted Mode : ☐ Enable ☒ Disable

RTSPURL : rtsp://192.168.3.153/rtspJPEG480p

JPEG :352 x 240

Profile Name : JPEGCIF

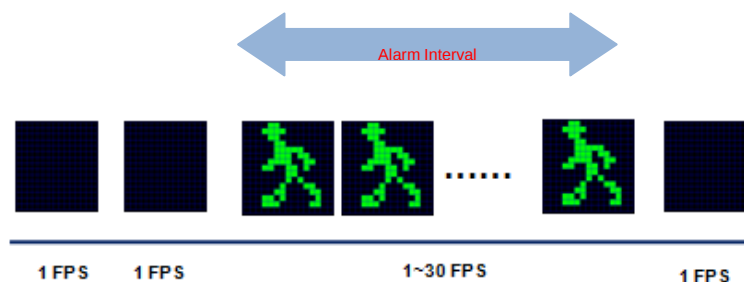
Output Frame Rate :

Image Quality :

Alarm Weighted Mode : ☐ Enable ☒ Disable

RTSPURL : rtsp://192.168.3.153/rtspJPEGCIF

- **Profiles:** 4 customizable profiles
- **TV Out:** NTSC/PAL video systems
- **Profile Name:** Description of the streaming profile.
- **Output Frame Rate:** The frame rate of the video
- **GOP:** The number of I-frames to be displayed in one second
- **VBR/CBR Mode:** 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
- **Alarm Weighted Mode:** Enable to prioritize as the output stream you want to see when an alarm is detected



- **RTSP URL:** Allows you to see the video stream through the Real Time Streaming Protocol
- **Image Quality:** The compression rate of the MJPEG stream

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.

Day Night Mode	Quality Tuner	Exposure Controller
☒ Auto Day/Night Switch Level 2 ▼ ☐ Day Mode ☐ Night Mode		
Load Default		

- 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.

Chapter 4-2-2-2 Quality Tuner

Day Night Mode	Quality Tuner	Exposure Controller
Mirror	Off ▼	
Flip	Off ▼	
WDR	Off ▼	
DNR	3 ▼	
Sharpness	8 ▼	
Brightness	128 ▼	
White Balance Mode	ATW Indoor ▼	
Manual Red	37 ▼	
Manual Blue	37 ▼	
Defog Level	Off ▼	
Electronic Image Stabilization	Off ▼	
Load Default		

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

Day Night Mode	Quality Tuner	Exposure Controller
Auto Gain Control(SENSE UP+)	10dB ▼	
Exposure Controller	Full Auto ▼	
Full Auto		
Back-light Compensation	Off ▼	
Shutter Priority		
Shutter Speed	1/60 ▼	
Iris Priority		
Iris Position	F1.6 ▼	
Manual Mode		
Fix Shutter Speed	1/60 ▼	
Fix Iris Position	F1.6 ▼	
Load Default		

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
- 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.

Basic >> Network >> General

Network

☒ Static
 ☐ DHCP
 ☐ PPPoE

IP Address

192.168.0.200

Subnet Mask

255.255.255.0

Gateway

192.168.0.1

Default DNS

168.95.1.1

Second DNS

168.95.1.1

Account

account@pppoe.com

Password

••••••••

2nd IP Address

☐ Enable
 ☒ Disable

2nd IP Address

192.168.0.200

2nd Subnet Mask

255.255.255.0

3rd IP Address

☐ Enable
 ☒ Disable

3rd IP Address

192.168.0.200

3rd Subnet Mask

255.255.255.0

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

Basic >> Network >> General IPv6

Network

☐ On ☒ Off

IP Address

fe80::000f:fc24:9000

/64

Default Router

Default DNS

Submit

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.

Basic >> Network >> HTTP/RTSP Service

HTTP Port

80

RTSP Port

554

ONVIF

Standard

RTSP Package Size

1

KB

METADATA

☐ On ☒ Off

RTCP Check

☒ On ☐ Off

Repeated delivery of SPS/PPS

☒ On ☐ Off

RTSP Authentication

☒ On ☐ Off

Video Port

☒ HTTP Port ☐ RTSP/UDP Port

Profile Name H264 1920x1080

stream0

Profile Name JPEG 720x480

stream1

Profile Name H264 720x480

stream2

Profile Name JPEG 352x240

stream3

Submit

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.
- **Profile Name:** Change the profile name.

Chapter 4-3-4 HTTPs



Chapter 4-3-5 IP Address Filtering

To block an IP address for accessing the camera, enable IP Address Filtering feature. Add the IP address for blocking the IP address connecting the camera. Visit System->System Log for the IP addresses.



Chapter 4-3-6 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 4-3-7 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	public
Read/Write Community	private
SNMP v3	
Username	admin
Authentication Password(MD5)	password
Privacy Password(DES)	password
Read/Write Security Name	public
Read Only Security Name	private
SNMP Heartbeat	☐ Enable ☒ Disable
SNMP Heartbeat Server	255.255.255.255
SNMP Heartbeat Dwell Time	1 Sec.
Submit	

Chapter 4-3-8 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

VOIP	☐ Enable ☒ Disable
SIP Domain Server	sipserver.com
SIP Server Port	5060
Register Username	admin
Register Password	••••
SIP URL	admin@sipserver.com
Register Expiration Date	30
Local SIP Port	5060
Audio RTP-Port	7078
Video RTP-Port	9078
DTMF Receiving	☐ SIP INFO (RFC-2976)
DTMF Code (0~9,#,*)	0
DTMF Time (sec.)	10
Force to end call (sec.)	60
Submit	
Extension	Ext. 1
Remote Username	6000
SIP URL	6000@sipserver.com
Call Status	Not Ready

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. Restoring to factory settings does not affect IP addresses.

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.

File System(flashamS2pl.bin/flashamLS2pl.bin)
flashamS2pl.bin:Application Firmware
flashamLS2pl.bin:Linux OS

Upload 0%

Export Settings

Import Setting

Load Default

Reboot System

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 Advance	Auto Scan Setup	Tour Setup	Patrol Setup
Type: Camera Advanced			
Lens Initialize	Apply		
Auto Calibration	On ▼		
Bad Pixel Compensation	Apply		
Self Diagnosis	On Off		

- 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
- Self Diagnosis: Enable/disable the diagnosis function.

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.

Lens Advance	Auto Scan Setup	Tour Setup	Patrol Setup
Type: Auto Scan Setup			
Auto Scan Path	1 ▼		
Dwell Time	5 ▼ Sec.		
Speed	5 ▼		
Start Position	Apply		
End Position	Apply		

- 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 Advance		Auto Scan Setup		Tour Setup		Patrol Setup	
Type: Tour Setup							
Tour Path	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.
- Sequential Preset Points Setting: Set up preset 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

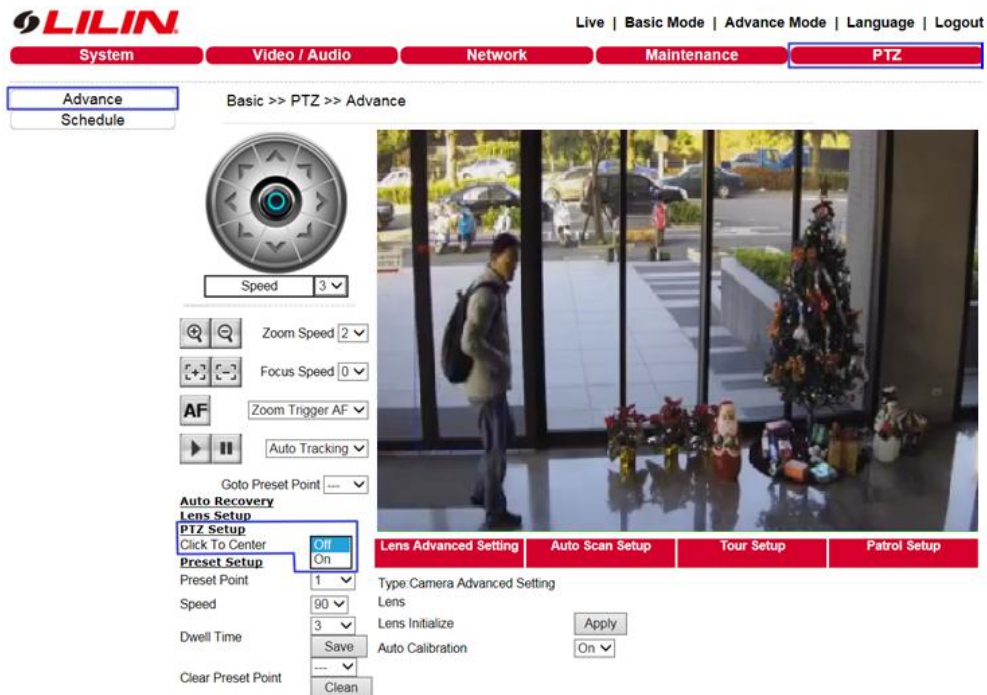
The PTZ camera will automatically follow the moving object on the screen center. To set up tracking feature, select **Auto Tracking** in Auto Pan box and press Auto Pan Start/Stop button to enable or disable tracking mode.

LILIN		Live Basic Mode Advance Mode Language Logout							
System		Video / Audio		Network		Maintenance		PTZ	
Advance Schedule		Basic >> PTZ >> Advance							
		Lens Advanced Setting		Auto Scan Setup		Tour Setup		Patrol Setup	
		Type: Camera Advanced Setting							
		Lens Initialize							
		Auto Calibration							

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

Chapter 4-5-6 Click to Center Settings

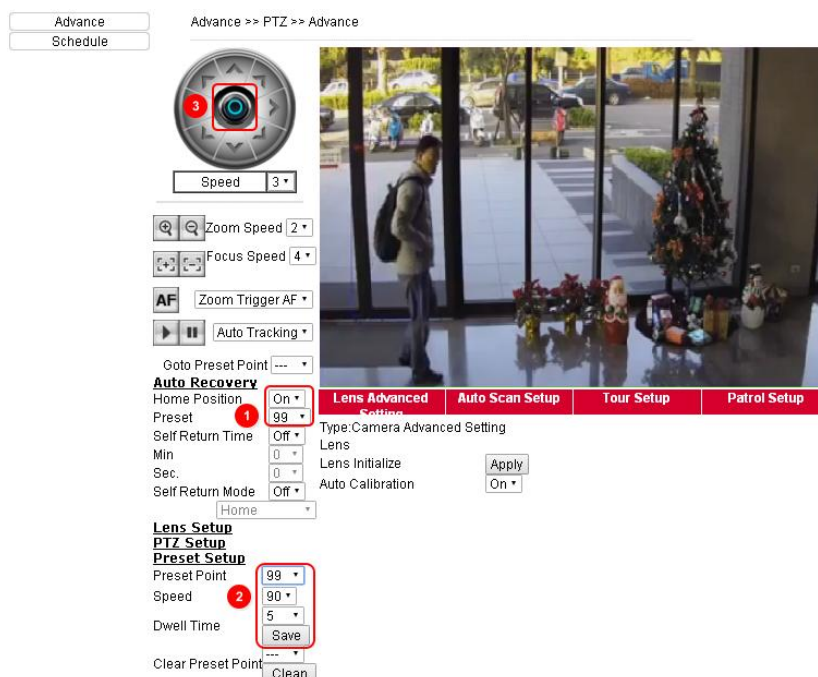
By clicking on object of interest will bring it to center of screen. To set up, click on **PTZ Setup** and select ON or OFF to enable or disable this feature.



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 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.

Schedule

	0:00	6:00	12:00	18:00
Mon				
Tue				
Wed	1	S	1	1
Thu				
Fri				
Sat				
Sun				

☐

Not Scheduled

☐

Scan1

☐

Scan2

☐

Scan3

☐

Scan4

☐

SEQ

☐

Tour1

☐

Tour2

☐

Tour3

☐

Tour4

☐

Patrol1

☐

Patrol2

☐

Patrol3

☐

Patrol4

☐

Preset

1

☒

Stop

Apply

Clean All

Chapter 5 Advanced Mode

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

Chapter 5-1 System

Live | Basic Mode | **Advance Mode** | Language | Logout

System

Video / Audio

Network

Event

Notification

Maintenance

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		
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
Save				

Chapter 5-2 Video/Audio Settings



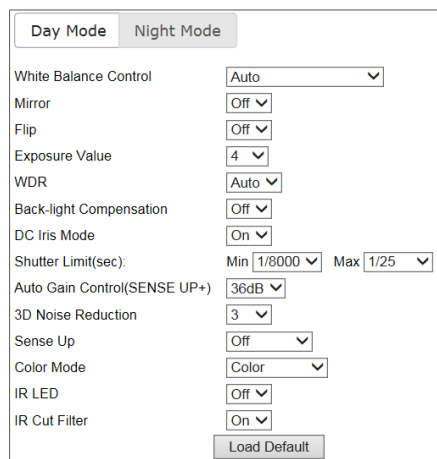
Note: Setting options may differ depending on the model you use.

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.



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: adjusts the value of exposure; the higher the value is set, the brighter the video is
- 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 LED: Turn on to activate the infrared LED
- IR Cut Filter: enable/disable the IR cut filter

Without Sense Up



Sense Up by 3 Frames



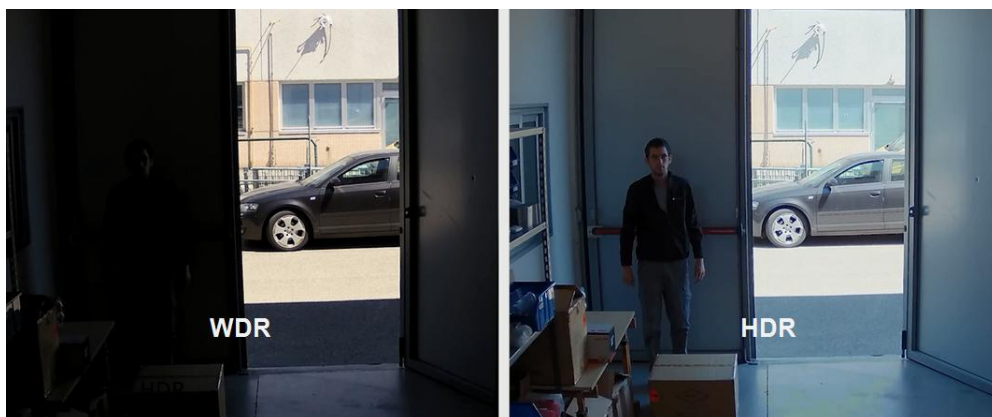
Chapter 5-2-3 Sense Up+

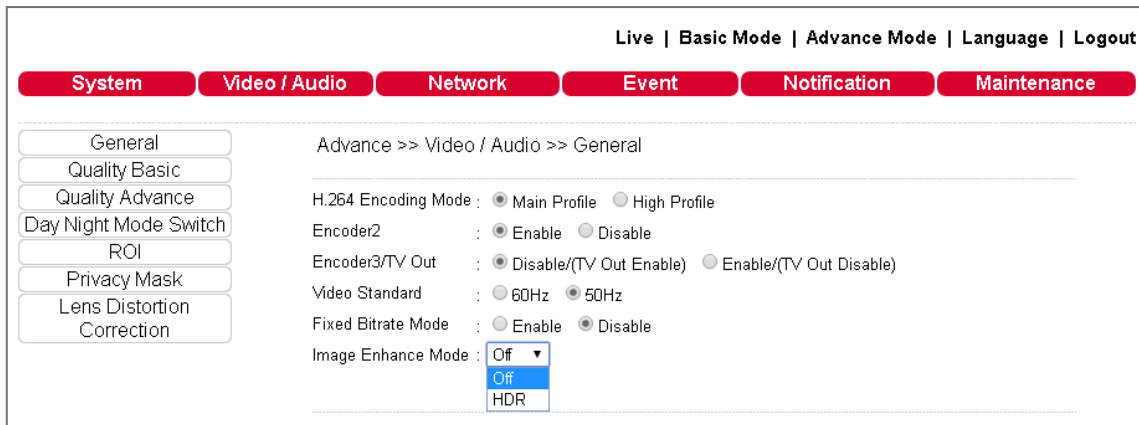
Sense Up+ (AGC) is a low-light and high-sensitivity DSP control that enables outstanding video quality even in low-light environments. Sense Up+ technology can be used for both black-and-white and/or color video modes. To enable Sense Up+, first enable Auto Gain Control (AGC). Use Sense Up+ with 3D noise 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 camera contains HDR or WDR for strong back light environment. Turn on HDR mode if the camera points to strong light environment.





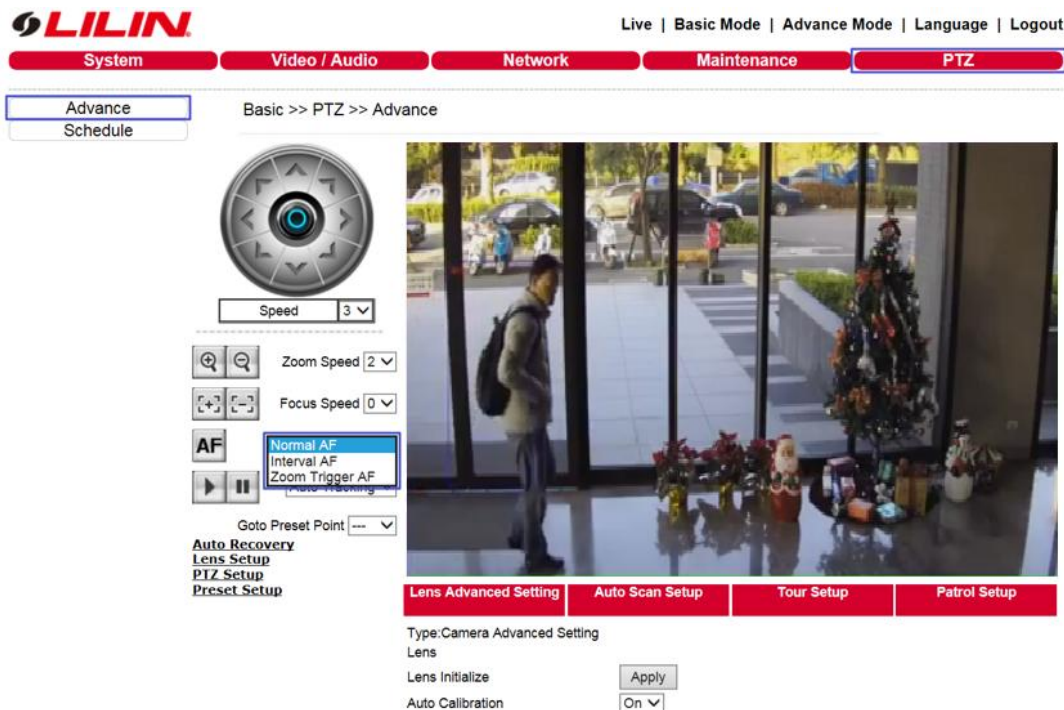
Note: Above HDR is only available at 100dB and up cameras.

Note: 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.



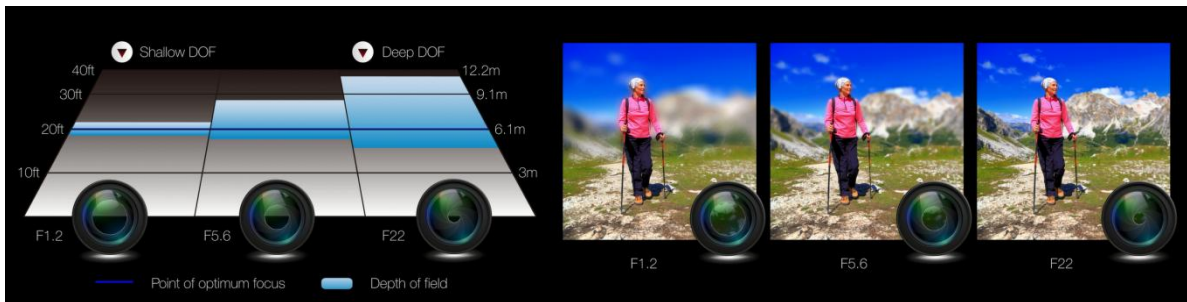
Note: Auto focus camera only

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 2 3 4
Shutter Value Range	Min 1/30000 ▼	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.

☒ Auto , Switch Delay Time 2 ▼ Sec.	
☐ Day Mode	
☐ Night Mode	
☐ Schedule	
Switch Stop The Motion Detection	☒ Enable ☐ Disable
Switch Stop The Motion Detection Time	10 ▼ Sec.
Submit	

Note: IR-cut camera model only

Chapter 5-2-8 Lens Distortion Correction

Lens distortion correction (LDC) is software based wide lens distortion correction via DSP/ISP. Retail application normally requires a wide angle lens (1.8mm~2.2mm) for its video. LDC feature allows correcting the distortion. Click Zoom and Strength features for the correction.

Live Basic Mode Advance Mode Language Logout	
System Video / Audio Network Event Notification Maintenance	
General Quality Basic Quality Advance Day Night Mode Switch ROI Privacy Mask Lens Distortion Correction	Advance >> Video / Audio >> Lens Distortion Correction  Lens Distortion Correction Mode ☒ Enable ☐ Disable Strength : 80 (Low / High) Zoom : 50 (In / Out)



Warning: LDC feature does not support 4:3 resolution ratio for the main stream. For LED feature, please set the main stream at 16:9 resolution ratio.

Chapter 5-2-9 ROI

LILIN camera supports the Region of Interest (ROI) function. Click Enable ROI to enable the function, and use the arrow buttons to move the view for each preset.

- **Stream Profile:** choose the stream format for the ROI
- **Preset:** provides 16 ROI presets to choose from
- **Dwell Time:** the amount of time the camera stays on the ROI
- **Speed:** the speed for the camera to move to the ROI

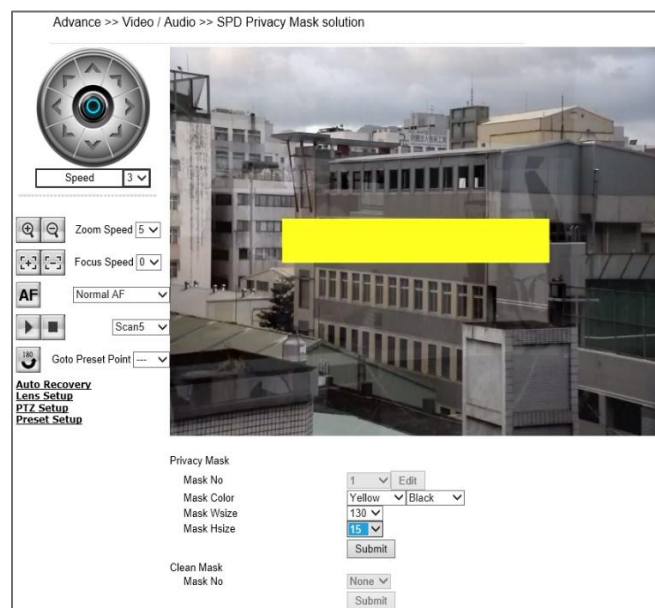
Click Save for the changes to take effect, or Clear all to clear all the settings

Note: Options may differ depending on the model you use.

Note: By enabling privacy masking, ROI will be turned on automatically, and EPTZ will be disabled.

Chapter 5-2-9 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 5-2-10 Audio Adjust

Advance >> Video / Audio >> Audio Adjust

Audio Adjust ☒ Enable ☐ Disable

Audio Input Volume

Audio Input Gain

Audio Output Volume

Audio Coding Type G711 u-law

Sampling Rate

Bit Rate 16 kbit/s

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 Network

System Video / Audio **Network** Event Notification Maintenance PTZ

Chapter 5-3-1 Multicast

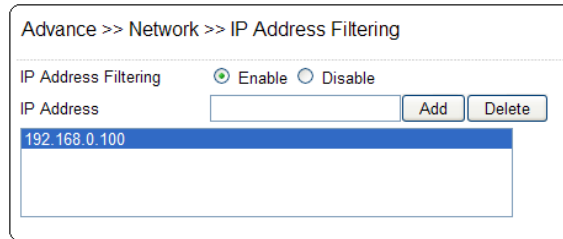
LILIN camera supports video streaming of 4 different content formats. Under this page, you can configure the settings for individual streams.

Advance >> Network >> Multicast

H2641080P	IP Address	239.0.0.0
	Video Port	1234
	Video Port RTCP	1235
	Audio Port	1236
	Audio Port RTCP	1237
	TTL	5
JPEG480P	IP Address	239.0.0.0
	Video Port	1234
	Video Port RTCP	1235
	Audio Port	1236
	Audio Port RTCP	1237
	TTL	5
H264480P	IP Address	239.0.0.2
	Video Port	5568
	Video Port RTCP	5569
	Audio Port	5570
	Audio Port RTCP	5571
	TTL	5
JPEGCIF	IP Address	239.0.0.3
	Video Port	5572
	Video Port RTCP	5573
	Audio Port	5574
	Audio Port RTCP	5575
	TTL	5

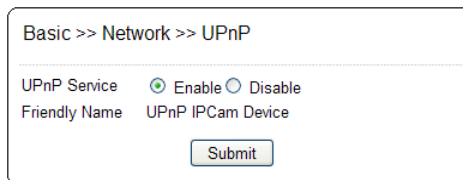
Chapter 5-3-2 IP Address Filtering

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

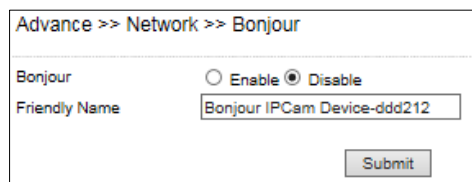
The UPnP service is a network protocol that allows Windows PC users to identify IP cameras in a LAN environment. To activate the UPnP service, choose Enable to activate.



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

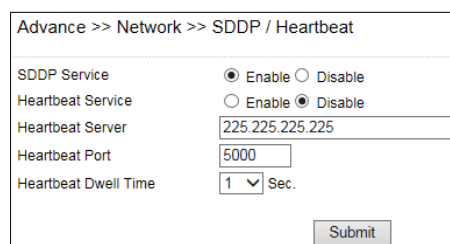
Chapter 5-3-4 Bonjour

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 6 Camera Event

System

Video / Audio

Network

SmartEvent

Notification

Maintenance

PTZ

Here you can configure the detection settings for motion, facial, tamper, audio, alarm, and network failure. Choose an event type in the drop-down menu, and click **Edit Event**.

Advance >> Event >> Event

Event Name: Motion Detection Edit Event

Event	Status	FTP	SMTP	SD Card	Alarm Output	HTTP POST	SNMP Trap	Schedule
Motion Detection	Disable					V		Auto
Audio Detection	Disable					V		Auto
Alarm Detection	Disable					V		Auto
Network Detection	Disable	-	-			-	-	Auto

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.

Advance >> Event >> Event

Event: Motion Detection

Enable: ☒

Action:

- ☐ FTP Service Dwell Time: 10 Sec.
- ☐ SMTP Service Dwell Time: 10 Sec.
- ☐ SD Card Service Dwell Time: 60 Sec.
- ☐ Alarm Output Dwell Time: 10 Sec.
- ☒ HTTP POST Service Dwell Time: 5 Sec.
- HTTP POST Service : URL /url
- ☐ SNMP Trap Service

Schedule:

☐ Always

☒ Schedule

	0:00	6:00	12:00	18:00
Sun				
Mon				
Tue				
Wed				
Thu				
Fri				
Sat				

☒ Event Schedule
☐ Not Scheduled

Submit Cancel

- **FTP Service:** When an alarm is triggered, snapshots will be sent to a pre-determined FTP site during the specified time.
- **SMTP Service:** When an alarm is triggered, snapshots will be sent to pre-determined Email addresses during the specified time.
- **SD Card Service:** When an alarm is triggered, snapshots will be saved to the inserted SD card during the specified time.
- **Alarm Output:** When an alarm is triggered, alarm notifications will be sent to the external device connected to the camera during the specified time.
- **HTTP POST Service:** Enter a URL, and when an alarm is triggered, snapshots will be posted to the website during the specified time.

Note: Camera must be in home position to execute IVS, motion detection or tampering detection setting.

Chapter 6-1 IVS

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

☒ Motion Detection,Tamper Detection

☐ Advanced Motion Detection

☐ Tripwire,Semaphore + Tripwire

☐ Object Counting

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)

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	☒ Enable ☐ Disable
Face Detection OSD	☐ Enable ☒ Disable
Face Detection Range	40x40 ▼
Face Detection Sensitivity	10 ▼ (High:1~Low:30)
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	☐ Enable ☒ Disable
Tamper Detection Time	5 ▼ Sec.
Tamper Detection Dwell	10 ▼ Sec.
Submit	

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.

Advance >> Event >> Audio Detection



Audio Detection ☐ Enable ☒ Disable

Audio Detection OSD ☒ Enable ☐ Disable

Audio Detection Sensitivity (Low:99~High:1)

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.

Advance >> Event >> Alarm Detection

Alarm Notification ☐ Enable ☒ Disable

Alarm Input Mode ☒ NO ☐ NC

Alarm OSD ☐ On ☒ Off

Alarm To Preset 1 ☒ On ☐ Off

Alarm To Preset 2 ☒ On ☐ Off

Alarm To Preset 3 ☒ On ☐ Off

Alarm To Preset 4 ☒ On ☐ Off

Alarm To Preset 5 ☒ On ☐ Off

Alarm To Preset 6 ☒ On ☐ Off

Alarm Time Set Min.

Chapter 6-7 Network Detection

Enable this option to send a notification upon network failure.

Advance >> Event >> Network Detection

No Network Activity ☐ Enable ☒ Disable

Chapter 6-8 Push Service Setting

The PTZ camera can send push notifications to Apple or Android devices that have the LILIN 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 Sec.
- ☐ SMTP Service Dwell Time Sec.
- ☐ SD Card Service
- ☐ SAMBA Service
- ☐ Alarm Output Dwell Time Sec.
- ☐ HTTP POST Service Dwell Time Sec.
- ☐ SNMP Trap Service
- ☒ Push Service Dwell Time Sec.

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.

Advance >> Notification >> FTP Service

FTP Server IP/DNS

FTP Server Port

Account

Password

Directory

Prefix

Date Format

Postfix

File Format

Auto FTP Sent ☐ Enable ☒ Disable

Auto FTP Sent Dwell

Submit

- FTP/DN Server IP/DNS: IP address or domain name of the FTP server.
- FTP/DN 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.
- Prefix: Prefix of the JPEG filename.
- Date Format: Date string for 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

HTTP POST Server IP/DNS

HTTP POST Server Port

Account

Password

JPEG Attachment ☒ Enable ☐ Disable

Attachment File Format ☐ Fixed ☒ Date

Attachment File Name

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

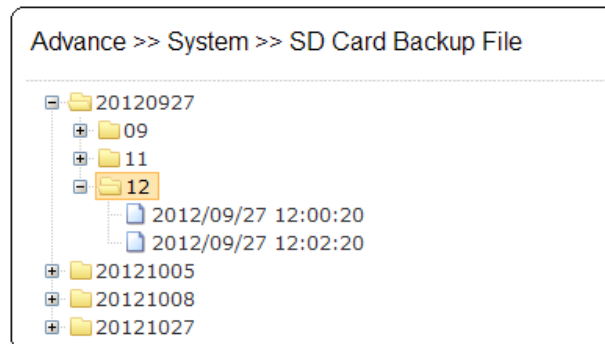
SD Card Free Bytes 0 MBytes

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	☐ On ☒ Off
SAMBA Recording OSD	☐ On ☒ Off
SAMBA Recording Continuous	☐ On ☒ 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 Connent
SAMBA Total Bytes	0 MBytes
SAMBA Free Bytes	0 MBytes

<http://192.168.0.100:5000>

Submit Stop Connent Connent

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	☐ Enable ☒ Disable
MQTT Server	mqtt.cc
MQTT Port	1883
MQTT Client ID	000ffcdd6bb9
MQTT UUID	459_000ffcdd6bb9
Authentication	☐ Enable ☒ Disable
Account	admin
Password	pass
Submit	
Publish:	
ipcam/459_000ffcdd6bb9/device/event	
Subscribe:	
ipcam/459_000ffcdd6bb9/device/event	

Chapter 8 PTZ

System	Video / Audio	Network	Event	Notification	Maintenance	PTZ
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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	1
Protocol	MLP2
Baud Rate	9600
Save	

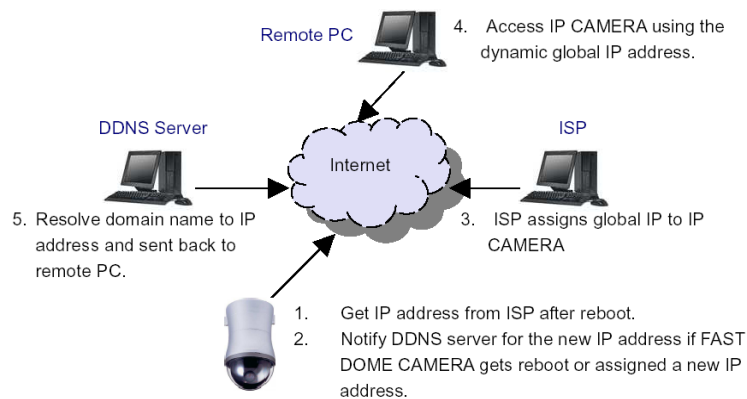
- **ID:** Set the camera ID.
- **Protocol:** Set the communication protocol.
- **Baud Rate:** Set the communication baud rate.

Appendix

DDNS and PPPoE Network Settings

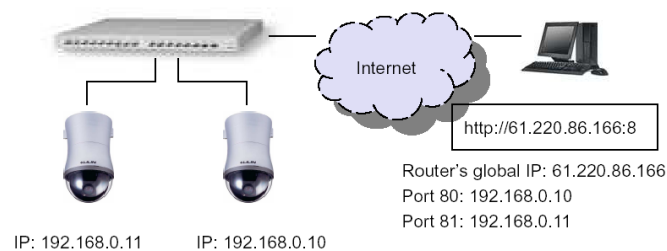
One of the advantages of adopting DDNS and PPPoE services is to save the cost of renting a global IP address. When you power on a camera with a video server and connect to the Internet with the PPPoE service, the camera asks your ISP for a dynamic global IP address. This Internet-accessible IP address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

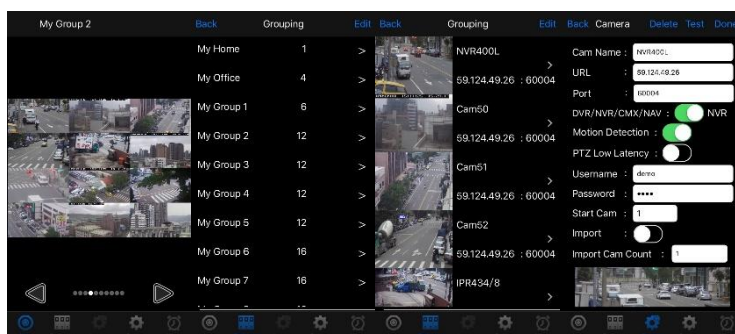
Manufacturer	Capacity	SDHC/SDSC
Sandisk	16GB	SDHC
Sandisk	8GB	SDHC
Transcend	8GB	SDHC
Transcend	4GB	SDHC
Sandisk	32GB	SDHC

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.

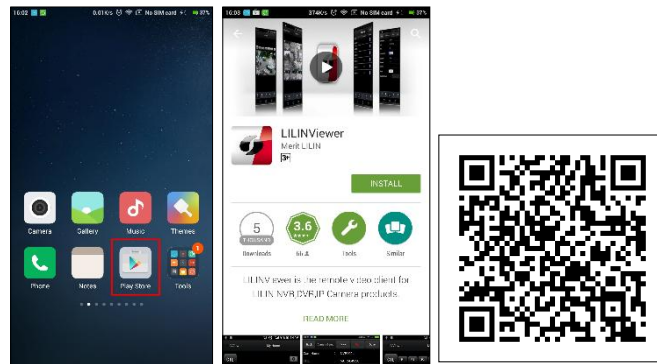
The default IP camera user name is admin, password pass. The default DVR user name is admin, password 1111.

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.