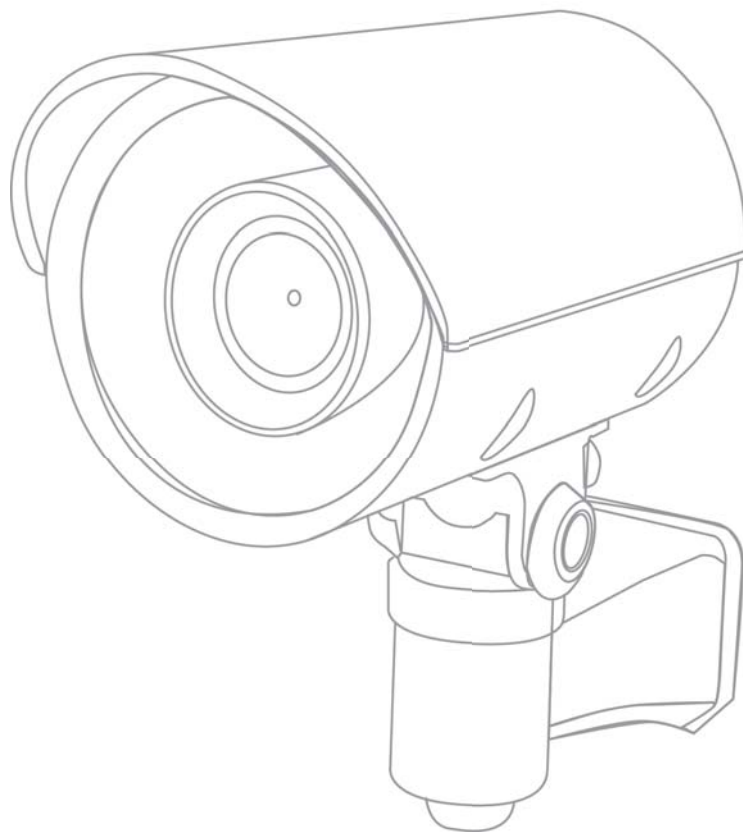


# LILIN IP Camera Start Guide



## Summary

LILIN IP Cameras adopt the latest compression technologies, which allow multiple streaming of H.264 or MJPEG formats in different resolutions. LILIN's multiple streaming technology transmits digital video at various bit rates and frame rates to suit both high and low bandwidth network environments.

Our cameras are equipped with progressive-scan, megapixel CMOS sensors that provide superior video quality. LILIN's digital signal processing (DSP) technologies support Wide Dynamic Range (WDR), 3D noise reduction, Backlight Compensation (BLC), ePTZ, region of interest (ROI), adjustable shutter speed, and privacy masking features for almost every installation environment.

The built-in intelligent video analytics engine enables audio and motion detection. Other useful features include two-way audio, SD card recording, mobile device live access, email notification with JPEG snapshots, and JPEG-to-FTP upload.

LILIN cameras, with their latest technologies, provide megapixel H.264 video, outstanding DSP capacities, built-in video analytics, built-in PoE support, and ONVIF compliant (select models only).

The powerful combination of LILIN Navigator software and IP cameras will maximize your system performance and deliver an integrated system solution for your migration to IP videos.

## Key Features

- Capability of recording at 30 FPS (15 FPS for L Series models)
- Supports various encoding formats (H.264 and MJPEG)
- Multiple Streaming technology, supporting multiple concurrent streams (3 streams for L series and Ultra Series models, and 4 streams for Pro Series Models)
- Sense Up+ provides enhanced videos even in low light conditions
- Day/night video quality scheduling
- Audio and motion detection for notification via email or FTP
- Supports 3D DNR, WDR, BLC, adjustable shutter speed, and privacy masking
- Two-way audio (select models only)
- Bit rate and frame rate on-the-fly adjustment
- Supports Android, iPad, and iPhone mobile live monitoring
- Supports dynamic DNS (DDNS) and network time protocol (NTP)
- Supports PCM/G.711
- Supports ONVIF protocol
- Supports LILIN Navigator

## Trademark 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 there from.

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



## Chapter 1 System Overview

### Chapter 1-1 System Requirements

LILIN's IP cameras adopt compression technology that provide 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 cameras.

### Chapter 1-2 Software Requirements

Merit LILIN Universal ActiveX software components or QuickTime are required 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:



Click **Install** and follow the onscreen instructions to install necessary components.

## Chapter 2 Before Accessing IP Cameras

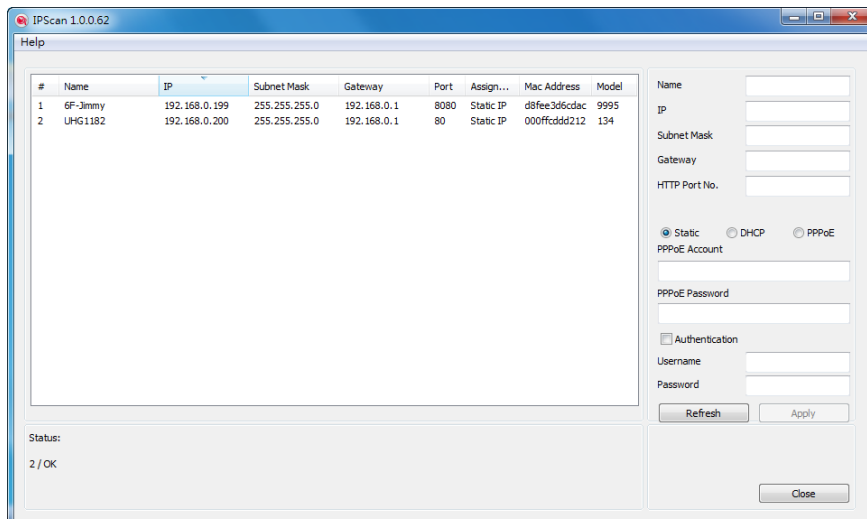
Before accessing the IP cameras, make sure that the camera's RJ-45 network connector, audio cable, and power cable are properly connected. To set the IP address, consult your network administrator. The default IP address for each IP camera is 192.168.0.200. Users can use the default IP address to verify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

<http://www.meritlilin.com/webe/html/download>. 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



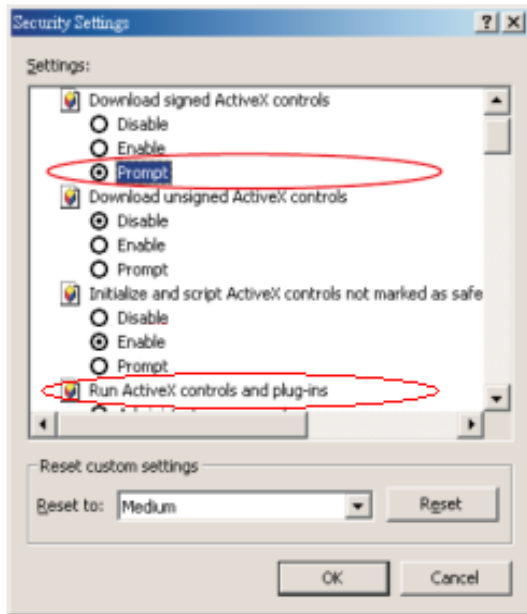
### Chapter 2-2 Configure IP Addresses through HTML Connection

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 into your 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 usernames and passwords for administrator are:

	Administrator
Username	admin
Password	pass

Then press **Submit** to log in.



## Chapter 3 LILIN IP Camera Operations

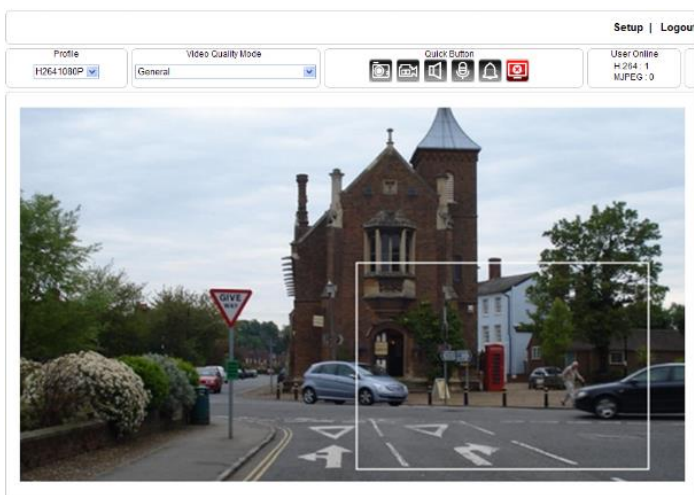
When logged in as an administrator, two main features are available: 1) camera operations and 2) configurations.

### Chapter 3-1 IP Camera Operations



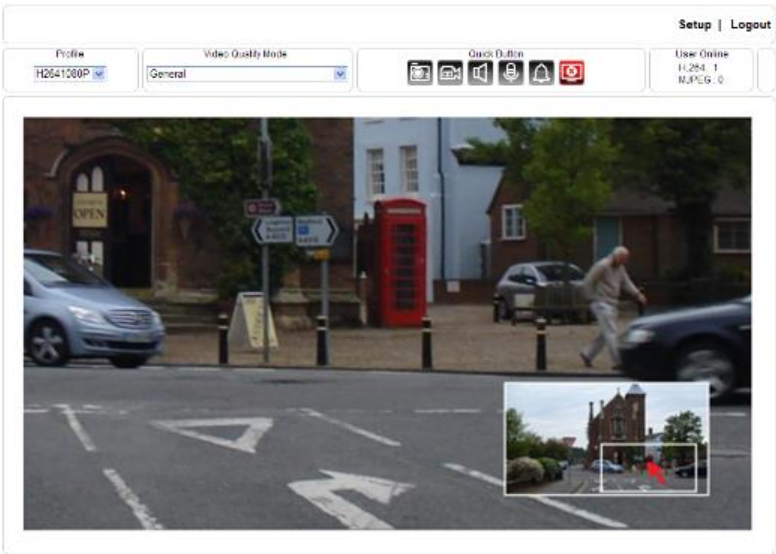
1. **Profile switching menu**—Switching from one profile to another
2. **ActiveX display screen**—Display RTSP H.264 or MJPEG network video
3. **Quick buttons**—IP camera control panel
4. **Setup menu**—IP camera setup menu

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.



Right-click to exit the ePTZ mode.

Chapter 3-2 IP Camera Main Controls


















(fisheye models)



(autofocus models)


The quick control panel buttons are described below:


	Take a snapshot of the video
	Start recording
	Pause recording

	Speaker on/off (for audio models only)
	Microphone on/off (for audio model only)
	Alarm output on/off (for alarm model only)
	Switch to another screen if you are using multiple displays
	Click to display the current (left) and ideal (right) sharpness value to help you use the focal ring to focus
	Switch to view No. 1 (fisheye models only)
	Switch to a combination of views No. 1, 2, 3, and 360° (fisheye models only)
	Switch to a combination of views No. 1, 2, 3, and 4 (fisheye models only)
	Switch to a combination of views No. 1, 2, 3, and wide angle (fisheye models only)
	Switch to a combination of views No. 1, 2, 3, and wide angle (fisheye models only)
	Click to autofocus the subject (autofocus models only)
	Click to scan through all focal planes (autofocus models only)

**Note:** Depending on the camera models you have, you may see different quick buttons available.

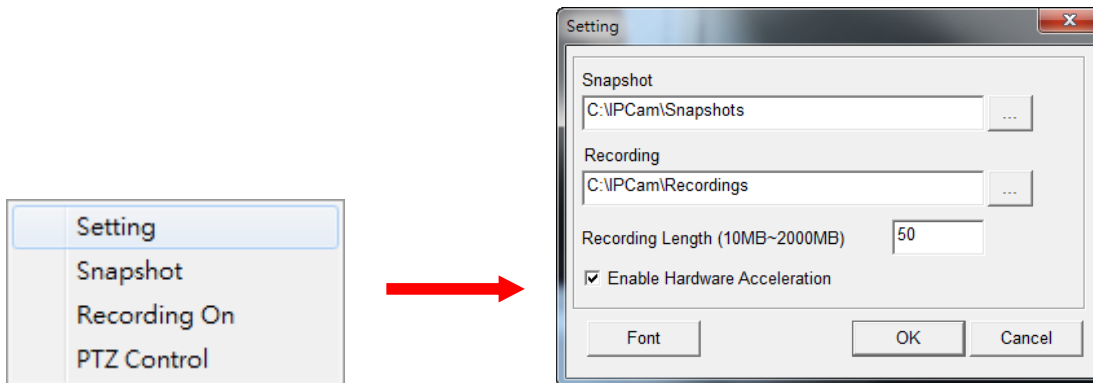
### Chapter 3-2-1 Two-way Audio (only available for audio-ready cameras)

For models supporting two-way audio, click the microphone icon  to speak to a remote site. Click the icon again to turn the microphone off.

Click the speaker icon  to monitor the audio of a remote site. Click the icon again to turn the speaker off.

### Chapter 3-2-2 Record to a Local PC

To record to a local PC, right-click anywhere on the screen. Choose **Setting** to specify the recording paths and recording sizes, and choose **Recording On** to start recording.



## 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 below instructions.

Basic >> System >> General

MAC Address	00:0f:fc:25:30:50
Firmware Version	1.4.48
OS Version	Linux 2.6.38
System Reboot Time	2015/03/20 07:41:47
Device Name	<input type="text" value="FD2452E"/>
OSD Font	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
OSD Timer	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
1920 x 1080 OSD Font Size	<input type="text" value="1"/> (Small:1~Large:8)
720 x 480 OSD Font Size	<input type="text" value="1"/> (Small:1~Large:8)
352 x 240 OSD Font Size	<input type="text" value="1"/> (Small:1~Large:8)
ActiveX OSD Display	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
ActiveX OSD Name	<input type="text" value="FD2452E"/>
Web Title Name	<input type="text" value="Merit LILIN H.264 FD2452E"/>
Low Latency Mode	<input type="radio"/> Enable <input checked="" type="radio"/> Disable

**MAC Address**

The MAC address of your computer.

**Firmware Version**

Here you can see the firmware version of your camera. To update the firmware, see **Chapter 4-10 Maintenance**.

**OS Version**

The version number of your operating system.

**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**.

**OSD Font**

Enable/disable to display/hide the device name on the OSD.

**OSD Time**

Enable/disable to display/hide camera time on the OSD.

**OSD Font Size**

Adjust the size of OSD

**ActiveX OSD Display**

Enable/disable to display/hide the device 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.

**Low Latency Mode**

Enable to reduce latency, if any.

**Note:** Depending on the camera models you have, you may see different quick buttons available.

## Chapter 4-1-2 User

Our camera supports up to 10 user accounts. Each account can be individually configured for 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:

Advance >> System >> User

Bypass Logon ☐ On ☒ Off  
IPScan Bypass Logon ☒ On ☐ Off

Account   
New Password   
Confirm Password   
User Group ☒ Administrator , ☐ Operator , ☐ Viewer  
Administrator ☒  
Panel Control ☒  
ePTZ Control ☒  
RS-485 ☐  
Streaming 1 (H2641080P) ☒  
Streaming 2 (JPEG480P) ☒  
Streaming 3 (H264480P) ☒  
Streaming 4 (JPEGCIF) ☒

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 Time

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.

Basic >> System >> Timer

Server Time	Mon, 19 Jan 2015 15:07:35 GMT+0800	
Synchronize with NTP	<input type="radio"/> Every Hour <input checked="" type="radio"/> Off	
Time Server	time.stdtime.gov.tw	
Time Zone	(GMT +08:00) Taipei	
Time	2015 / 1 / 19 15 : 7 : 35 <input type="button" value="Synchronize with PC"/>	
Daylight Saving Time	<input type="radio"/> On <input checked="" type="radio"/> Off	
Start Date	1 / 1 0 (Month/Date Hour)	
End Date	12 / 31 23 (Month/Date Hour)	

### 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 Video / Audio



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

## Basic &gt;&gt; Video / Audio &gt;&gt; General

Profile :

TV Out : ☐ NTSC ☒ PAL

Fix Bitrate Mode : ☐ Enable ☒ Disable

Corridor Mode : ☒ Off ☐ 90 Degrees ☐ 270 Degrees

## 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://192.168.3.65/rtsp2641080p

## JPEG : 720 x 480

Profile Name : JPEG480P

Output Frame Rate :

Image Quality :

Alarm Weighted Mode : ☐ Enable ☒ Disable

RTSPURL : rtsp://192.168.3.65/rtspjpeg480p

## Basic &gt;&gt; Video / Audio &gt;&gt; General

Profile :

TV Out : ☒ NTSC ☐ PAL

Entropy Coding Mode : ☒ Main Profile ☐ High Profile

## 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://192.168.0.200/rtsp2641080p

## JPEG : 720 x 480

Profile Name : JPEG480P

Output Frame Rate :

Image Quality :

Alarm Weighted Mode : ☐ Enable ☒ Disable

RTSPURL : rtsp://192.168.0.200/rtspjpeg480p

**Profiles**

6 customizable profiles

**TV Out**

NTSC/PAL video systems

**Entropy Coding Mode**

Choose between standard- (**Main Profile**) and good-quality (**High Profile**) encoders

**Fixed Bitrate Mode**

Enable to set the bitrate to a fixed constant

**Corridor Mode**

Rotate the screen 90° or 270° clockwise

**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

**Output frame rate**

The frame rate of the video

**GOP**

The number of I-frames to be displayed in one second

**Alarm Weighted Mode**

Enable to prioritize as the output stream you want to see when an alarm is detected

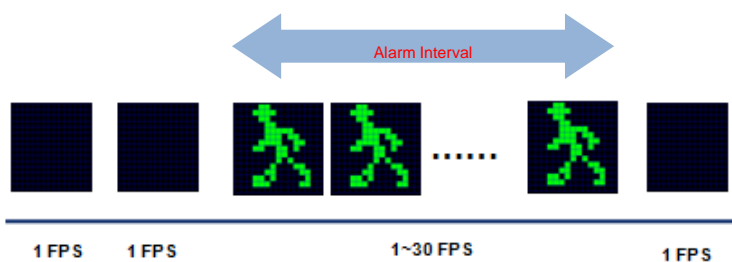
**RTSP URL**

Allows you to see the video stream through the Real Time Streaming Protocol

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

**Chapter 4-2-1 Alarm Weighted Mode**


Weighted mode is activated when an alarm is triggered, and the stream rate will increase to the maximum rate (this may differ depending on the model you use). If there is no alarm activity, the stream remains at 1 FPS to save bandwidth and storage.

**Chapter 4-2-2 Quality Basic**

This menu allows you to adjust brightness, auto contrast, contrast, hue, saturation, and sharpness both for the Day Mode and Night Mode. Individual day/night settings ensure the camera to provide optimal video quality.


Day Mode


Night Mode


Brightness : 50 ( Low / High )  



Auto Contrast 

Off

Contrast : 50 ( Low / High )  


Hue : 50 ( Low / High )  


Saturation : 50 ( Low / High )  


Sharpness : 25 ( Low / High )  


Load Default

## Chapter 4-3 Network

Live | Basic Mode | Advance Mode | Language | Logout

System

Video / Audio

Network

Maintenance

**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 your are using PPPoE to connect to the network. Click **Submit** to update the settings.

Basic >> Network >> General

Network ☒ Static ☐ DHCP ☐ PPPoE

IP Address

Subnet Mask

Gateway

Default DNS

Second DNS

Account

Password

2nd IP Address ☐ Enable ☒ Disable

2nd IP Address

2nd Subnet Mask

3rd IP Address ☐ Enable ☒ Disable

3rd IP Address

3rd Subnet Mask

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 General IPv6

**Basic >> Network >> General IPv6**

Network	<input type="radio"/> On <input checked="" type="radio"/> Off
IP Address	<input type="text" value="fe80::000f:fc24:9000"/> / <input type="text" value="64"/>
Default Router	<input type="text"/>
Default DNS	<input type="text"/>
<input type="button" value="Submit"/>	

Enter the information for IPv6 service.

**Chapter 4-3-3 HTTP/RTSP Service**

HTTP and RTSP are two reliable protocol 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	<input type="text" value="80"/>
RTSP Port	<input type="text" value="554"/>
ONVIF	<input type="text" value="Standard"/>
RTSP Package Size	<input type="text" value="1"/> KB
METADATA	<input type="radio"/> On <input checked="" type="radio"/> Off
RTCP Check	<input checked="" type="radio"/> On <input type="radio"/> Off
Repeated delivery of SPS/PPS	<input checked="" type="radio"/> On <input type="radio"/> Off
RTSP Authentication	<input checked="" type="radio"/> On <input type="radio"/> Off
Video Port	<input checked="" type="radio"/> HTTP Port <input type="radio"/> RTSP/UDP Port
Profile Name H264 1920x1080	<input type="text" value="stream0"/>
Profile Name JPEG 720x480	<input type="text" value="stream1"/>
Profile Name H264 720x480	<input type="text" value="stream2"/>
Profile Name JPEG 352x240	<input type="text" value="stream3"/>
<input type="button" value="Submit"/>	

Settings on this page are described below:

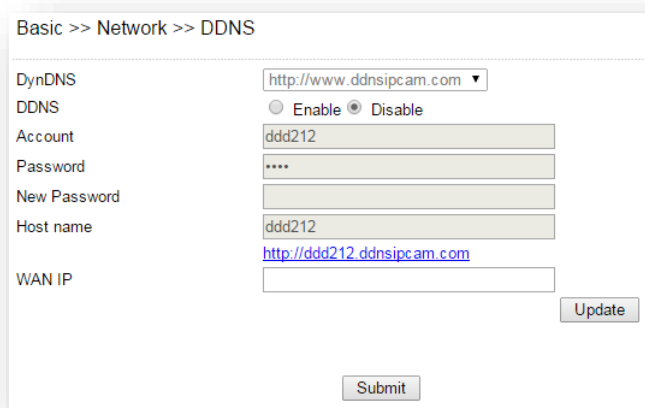
- ONVIF: Choose a ONVIF protocol from the drop-down list
- RTSP Package Size: Choose the size of each RTSP package depending on your bandwidth
- METADATA: Enable/disable METADATA
- RTCP Check: Enable to send RTCP packages for transmission optimization
- Repeated Delivery of SPS/PPS: Enable to send SPS/PPS 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 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.



The screenshot shows the 'Basic >> Network >> DDNS' configuration page. It includes the following fields and controls:

- DynDNS:** A dropdown menu set to 'http://www.ddnsipcam.com'.
- DDNS:** Radio buttons for 'Enable' and 'Disable', with 'Disable' selected.
- Account:** A text input field containing 'ddd212'.
- Password:** A text input field containing four asterisks '\*\*\*\*'.
- New Password:** An empty text input field.
- Host name:** A text input field containing 'ddd212'.
- WAN IP:** A text input field containing the URL 'http://ddd212.ddnsipcam.com'.
- Buttons:** An 'Update' button at the bottom right and a 'Submit' button at the bottom center.

**Note:** The DDNS feature requires Internet connection.

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).

### Chapter 4-3-5 SNMP

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

### Chapter 4-3-6 SIP

Basic &gt;&gt; Network &gt;&gt; SIP

VOIP	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
SIP Domain Server	<input type="text" value="sipserver.com"/>
Registration Username	<input type="text" value="admin"/>
Registration Password	<input type="password" value="••••"/>
Registration Expires	<input type="text" value="30"/> ▾
SIP Port	<input type="text" value="5060"/>
Audio RTP-Port	<input type="text" value="7078"/>
Video RTP-Port	<input type="text" value="9078"/>

Enable VOIP service by entering the required information.

## Chapter 4-4 Maintenance

Live | Basic Mode | Advance Mode | Language | Logout

System Video / Audio Network **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(flasham32.bin/flashamk32.bin/flashaml32.bin)  
flasham32.bin:Application Firmware  
flashamk32.bin:Linux OS

Upload 0%

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 us.

## Chapter 5 Advanced Mode

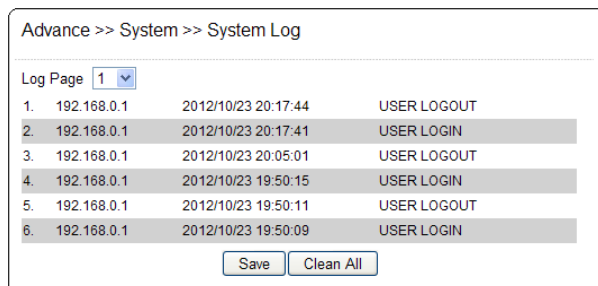
The **Advanced Mode** provides several professional settings that are not available in the **Basic Mode**.

### Chapter 5-1 System



#### Chapter 5-1-1 System Log

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



### Chapter 5-2 Video/Audio Settings



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

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

In this page, you have access to Exposure, Automatic Gain Control, White Balance Control, etc. **Sense Up** allows you to adjust camera sensitivity at night.

The screenshot shows a settings window with two tabs: 'Day Mode' and 'Night Mode'. The 'Day Mode' tab is selected. The settings are as follows:

- White Balance Control: Auto
- Mirror: Off
- Flip: Off
- Exposure Value: 5
- WDR: Auto
- Back-light Compensation: On
- DC Iris Mode: Off
- Shutter Limit(sec): Min 1/8000, Max 1/30
- Auto Gain Control(SENSE UP+): 36dB
- 3D Noise Reduction: 10
- Sense Up: Off
- Color Mode: Black/White
- IR Cut Filter: Off
- Video Quality Mode: General
- Load Default button

Video setting options are described as followed:

- 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
- Dynamic Defective Pixel Correction: enabling this option allows the system to replace defective pixels with their neighboring pixels
- 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 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
- Video Quality Mode: choose the mode that best fits your need

### ***Sense Up***

- Automatic Gain Control, AGC (Sense Up): When enabled, this function automatically increases the gain



of the video signal. If AGC cannot obtain enough light, set the option to a higher level. However, the Sense Up feature may cause motion blur at night

- 3D Noise Reduction: reduces noise at night
- Sense Up: with slow shutter you can capture clearer images at night

Without Sense Up



Sense Up by 3 Frames



### ***Sense Up+***

Sense Up+ 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 instead, which, however, may cause motion blur in low-light conditions.



## **Chapter 5-2-2 Auto Focus (autofocus models only)**

Focus Speed

Quick Focus

Here you are allowed to change the settings of autofocus functions for autofocus-supported cameras.

### ***Focus Speed***

Set the speed for Focus Near/Far and Step Near/Far

### ***Focus Near/Far***

Press and hold to manually adjust the focus

### ***Step Near/Far***

Press to manually adjust the focus by steps

### ***Auto Focus***

Click to focus automatically

## **Chapter 5-2-3 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

Day to Night Time  :

Night to Day Time  :

☐ External Control

Submit

## **Chapter 5-2-4 ROI**

LILIN cameras support 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.

- Location Mode: determine where your camera is located
- Windows Select: choose the camera view you want to display
- 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.

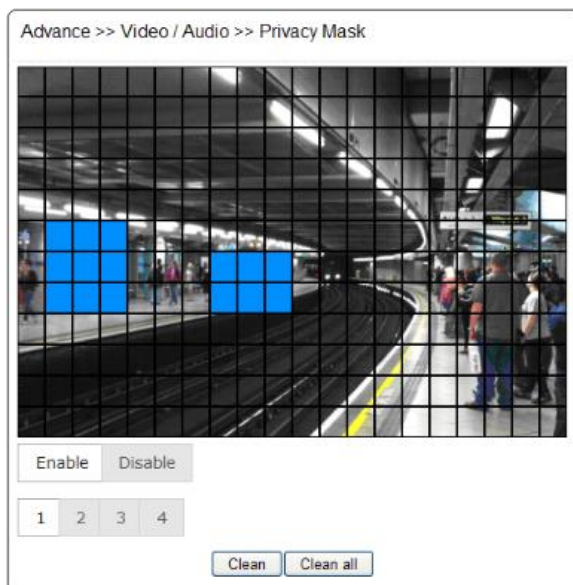
**Note:** Options may differ depending on the model you use.

### Chapter 5-2-5 RS-485

You can change configurations related to RS-485 if connected to an RS-485 device.

### Chapter 5-2-6 Privacy Masking

LILIN cameras provide up to 4 sets of privacy masking. Select any of the masking numbers and drag to mask specific areas



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

### Chapter 5-2-7 Audio Settings

Advance >> Video / Audio >> Audio Adjust

Audio Adjust	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
MIC Volume	50 ▼
Audio Input	<input type="radio"/> Line In <input checked="" type="radio"/> MIC In
Audio Input Gain	0 dB ▼
Audio Input Filter	1 ▼
Audio Output Volume	50 ▼
Audio Coding Type	G711 u-law
Sampling Rate	8000 Hz ▼
Bit Rate	16 kbit/s

Submit

Detailed audio settings are described below:

- MIC Volume: MIC or line-in volume
- Audio Input Mode: choose between MIC or line-in
- Audio Input Gain: level of gain for audio input
- Audio Input Filter: provides three levels of wind noise reduction for different installation environments
- Audio Output Volume: volume adjustment
- Audio Coding Type: G.711 u-Law
- Sampling rate: set the audio sampling rate
- Bit Rate: 16 Kbit/s

## Chapter 5-3 Network

Live | Basic Mode | Advance Mode | Language | Logout

System	Video / Audio	Network	Event	Notification	Maintenance
--------	---------------	---------	-------	--------------	-------------

### Chapter 5-3-1 Multicast

LILIN cameras support 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

Submit

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

LILIN cameras provide a 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

IP Address

192.168.0.100
---------------

### Chapter 5-3-3 UPnP Settings

The UPnP service is a network protocol that allows Windows PC users to access 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 225.225.225.225

Heartbeat Port 5000

Heartbeat Dwell Time 1 Sec.

### Chapter 5-4 Event

Live | Basic Mode | Advance Mode | Language | Logout

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

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

Advance >> Event >> Event

Event Name: Motion Detection Edit Event

Event	Status	FTP	SMTP	SD Card	Alarm Output	HTTP POST	Schedule
Motion Detection	Disable						Auto
Tamper Detection	Disable						Auto
Audio Detection	Disable						Auto
Alarm Detection	Disable						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 >> System >> Event

Event: Motion Detection

Enable: ☒

Action:

- ☐ FTP Service Dwell Time: 1
- ☐ SMTP Service Dwell Time: 5
- ☐ SD Card Service Dwell Time: 60
- ☐ Alarm Output Dwell Time: 5

Schedule:

☐ Always

☒ Schedule

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


☒ Event Schedule  
☐ Not Scheduled

Submit Cancel

### Chapter 5-4-1 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 5-4-2 Tamper Detection

LILIN cameras 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 5-4-3 Audio Detection (for audio models only)

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)

### Chapter 5-4-4 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

### Chapter 5-4-5 Network Detection

Enable this option to send a notification upon network failure.

Advance >> Event >> Network Detection

No Network Activity ☐ Enable ☒ Disable

### Chapter 5-5 Notification

Live | Basic Mode | Advance Mode | Language | Logout

### Chapter 5-5-1 FTP Service

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

Advance >> Event >> FTP Service

FTP Server IP/DNS

FTP Server Port

Account

Password

Directory

Prefix

Date Format

Posfix

File Format

- FTP server IP/DNS— IP address or domain name of the FTP server
- 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

### Chapter 5-5-2 SMTP (Email) Service

If an alarm is triggered, you can send a snapshot to the email account(s) you designate. Enter the required information to enable this service.

Advance >> Event >> 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 5-5-3 HTTP POST Service

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

Advance >> Event >> HTTP POST Service

HTTP POST Server IP/DNS

HTTP POST Server Port

Account

Password

JPEG Attachment ☐ Enable ☒ Disable

### Chapter 5-5-4 SD Card Service

Ensure an 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	<input type="radio"/> On <input checked="" type="radio"/> Off
SD Recording OSD	<input type="radio"/> On <input checked="" type="radio"/> Off
SD Recording Continuous	<input type="radio"/> On <input checked="" type="radio"/> Off
Recording Format	H2641080P ▾
Pre Record Time	5 ▾ 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

Submit Unmount Mount Format

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

### Chapter 5-5-5 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.

Advance >> System >> SD Card Backup File

- 20120927
  - 09
  - 11
  - 12
    - 2012/09/27 12:00:20
    - 2012/09/27 12:02:20
- 20121005
- 20121008
- 20121027

### Chapter 5-5-6 SAMBA Service

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 Connent
SAMBA Total Bytes	0 MBytes
SAMBA Free Bytes	0 MBytes

<http://192.168.0.100:5000>

Submit Stop Connent Connent

LILIN cameras is compatible with the SAMBA protocol. Enable the service and enter the required information.