H.265 E5 IP Camera User Manual

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Summary

LILIN E5 series IP cameras are high performance 2MP day and night auto focus camera range. LILIN IP Cameras adopt the latest H.265 compression technologies, which allow multiple streaming of H.264/H.265 formats in 2MP 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.

LILIN IP cameras provide various alarm notifications including mobile device live access, email notification with JPEG snapshots, HTTP push notification, and JPEG-to-FTP upload.

The 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

- Supports H.264 and H.265 encoding formats.
- Built-in intelligent video analytics engine that can send Email or FTP snapshot alarms
- Day/night video quality independent scheduling
- Motion detection
- Bit rate and frame rate on-the-fly adjustment
- Support Android, iPad, and iPhone mobile live monitoring
- Support dynamic DNS (DDNS) and network time protocol (NTP)
- Support HTTP API integration
- Support ONVIF protocol
- Support LILIN Navigator

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This product contains H.265 (High Efficiency Video Coding, HEVC) codec technologies and is manufactured under the license from Access Advance LLC, and the HEVCAdvance symbol are trademarks of Access Advance LLC.

Covered by one or more claims of the HEVC patents listed at patentlist.accessadvance.com.

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.

Disclaimer

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.

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 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 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.
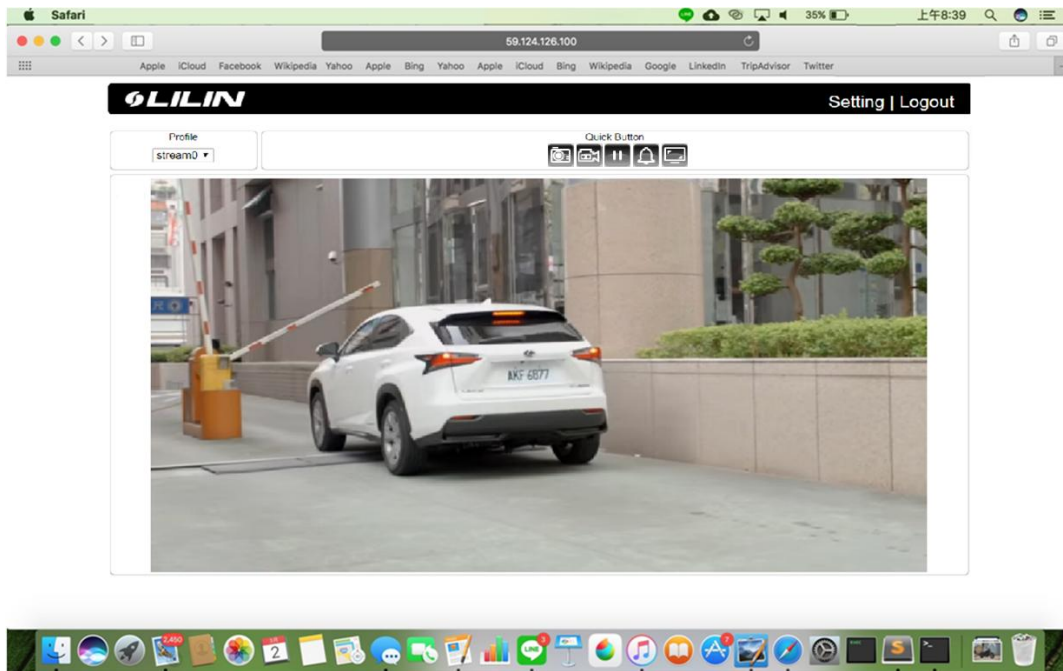
Chapter 1-2-2 PC Windows OS

Merit LILIN Universal ActiveX software components for a web browser to display MJPEG or H.264/H.265 video. When you first log in to our IP camera, you may see a prompt box as below via Windows OS.

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
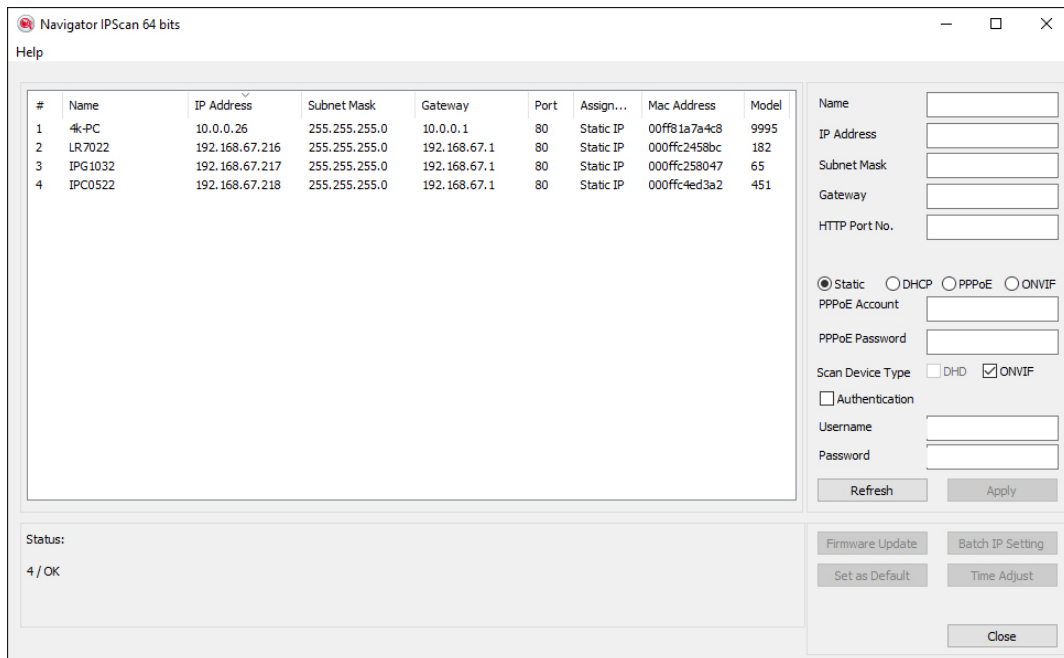
Chapter 2-2 Configure IP Addresses through HTML Connection

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:

- Due to security reason, create the username and password for the first login. To login to the IP camera, please create the username and password on the login page. Press **Confirm** to complete the setting and login simultaneously.
- Click **Setup→Network** to edit or modify IP address, subnet mask, gateway, or HTTP port
- Click **Submit** for the changes to take effect.

![LILIN logo]

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.
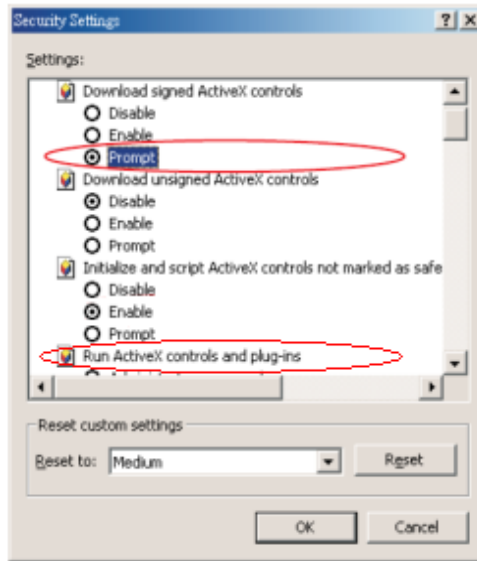
Once completed, you can access the IP camera's live video by entering the default IP address via a web browser. A security warning dialog box will appear. Click OK to download the ActiveX directly from the IP camera.
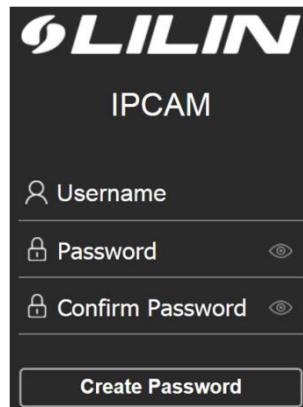
Chapter 2-4 Login

Due to security reason, create the username and password for the first login. To login to the IP camera, please create the username and password on the login page. Press **Confirm** to complete the setting and login simultaneously.

Minimum Password Strength Requirements:
1. The password length must be 8 or more characters.
2. The password must include at least 1 number (0 ~ 9), 1 uppercase letter, 1 lowercase letter and 1 symbol(~ ? / + = , : ; . ' @ # ￥ % ^ & * ( ) _ -).

Note: Please preserve the credential for accessing the camera properly. Forgetting the credential for accessing the camera, please perform hardware factory default.

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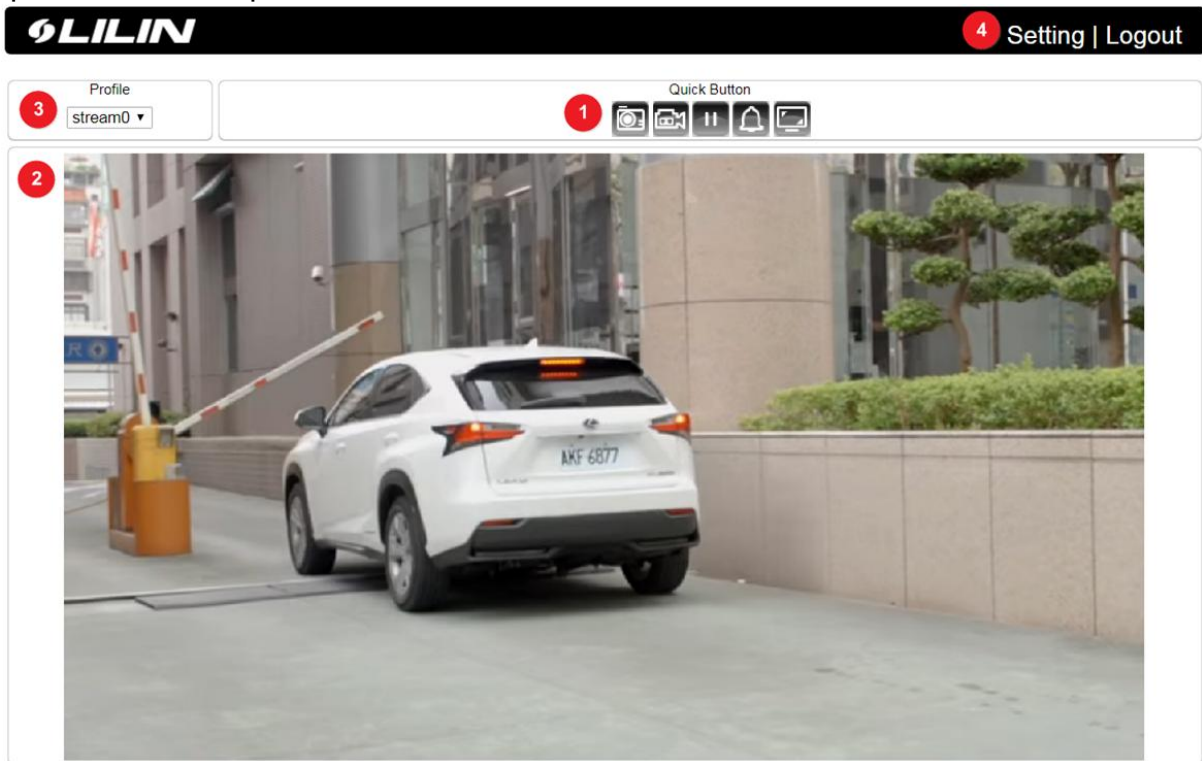
1. **Quick buttons:** IP camera shortcuts
2. **ActiveX display screen:** Display RTSP H.264 or MJPEG streaming video
3. **Profile switching menu:** Switching from one profile to another
4. **Setup buttons:** IP camera setup menu

Chapter 3-2 Quick Buttons
The quick control panel buttons are described below:

📷	Take a snapshot of the video
🎥	Start recording
⏸	Pause recording
🔔	Alarm out
🖥	Enlarge the live view

Chapter 4 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, os version, system reboot time, and device name settings. To modify these options, follow the instructions below:

Setup > System > General

MAC Address	00:0f:fc:21:18:88
Firmware Version	9.0.001.1477
OS Version	Linux 4.9.84
System Reboot Time	2020/01/31 08:22:48 Fri CST
Device Name	P5R6352E2

OK

- **MAC Address:** The MAC address of the IP camera
- **Firmware Version:** Firmware version of the IP camera
- **OS Version:** The version number of the IP camera
- **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 the IP cameras. To change the device name, enter a new name for the IP camera and click OK.

![LILIN logo]

Chapter 4-1-2 User

The IP 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 IP camera through IPScan without authentication. To add a user, press Add User, and you will see the following screen:

Enter the account name, password and confirm password to add new account, and then check to assign the access rights for this account. Click OK to update the settings.

To edit account information, select user for edit and click Edit User. To delete a user, select user for delete and 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 OK to apply. You may also set the holiday list in this page.

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

Note: This function requires Internet connection.

Chapter 4-1-4 OSD Settings

OSD (on screen display) is for the use of displaying system information on the video. There are features of date and status available.
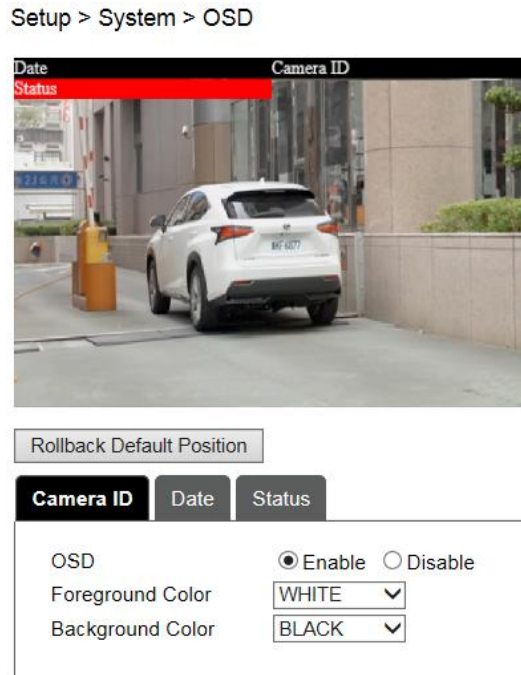
Camera ID, Date and Status are described below:

- OSD: Click to enable or disable the OSD
- Foreground Color: The color of the text
- Background Color: The background color of the text

Chapter 4-1-5 System Log

You can view the system-generated log in this page. Click Save ⊟ icon to export the log to a text file. You can also search for log file by selecting the type keyword.

Setup > System > System Log

IP Address	User	Date & Time	Log Description
192.168.110.5	admin	2019/11/06 10:48:26	HTTP User Reject(SYSTEM WRONG)
192.168.110.202	admin	2019/11/06 10:33:03	Update Device Name(SYSTEM MESSAGE)
192.168.110.74	admin	2019/11/06 09:30:15	HTTP User Reject(SYSTEM WRONG)
192.168.110.74	admin	2019/11/06 09:30:15	HTTP User Reject(SYSTEM WRONG)
		2019/11/06 07:42:48	Power On(SYSTEM MESSAGE)

Chapter 4-2 Video

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.

Setup > Video > General

Video Standard   : ◉ 60Hz ○ 50Hz

Encoder1

Profile Name	H.264 ⌄
Resolution	2592x1920 ⌄
Output Frame Rate	20 ⌄
GOP (Group of Pictures)	20 ⌄
Stream Mode	CBR ⌄
Bit Rate	3 Mbps ⌄
RTSP URL	rtsp://192.168.89.225/stream0

Encoder2

Profile Name	H.264 ⌄
Resolution	720x480 ⌄
Output Frame Rate	10 ⌄
GOP (Group of Pictures)	10 ⌄
Stream Mode	CBR ⌄
Bit Rate	1 Mbps ⌄
RTSP URL	rtsp://192.168.89.225/stream1

Encoder3

Profile Name	H.264 ⌄
Resolution	352x256 ⌄
Output Frame Rate	10 ⌄
GOP (Group of Pictures)	10 ⌄
Stream Mode	CBR ⌄
Bit Rate	1 Mbps ⌄
RTSP URL	rtsp://192.168.89.225/stream2

OK   Load Default

- **Profiles:** 3 customizable profiles
- **Video Standard:** NTSC/PAL setting
- **Profile Name:** The selection of H.264/H.265 video compression
- **Resolution:** The resolution of the video stream
- **Output Frame Rate:** The frame rate of the video
- **GOP:** The number of I-frames to be displayed in one second
- **Stream 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
- **RTSP URL:** Allow you to access the video stream via the Real Time Streaming Protocol
- **Image Quality:** The compression rate of the H.264/H.265 stream

Chapter 4-2-2 Quality Basic

This menu allows you to adjust brightness, 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.
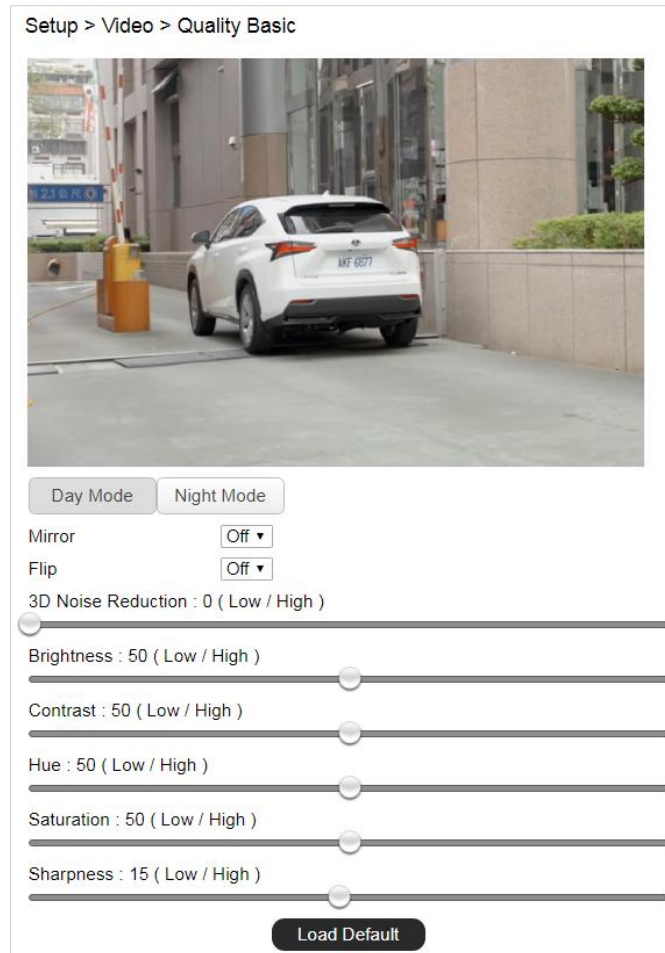
- **Mirror:** Mirror the video
- **Flip:** Flip the video
- **3D Noise Reduction:** If the noise of the video is high at night, set the setting to high if needed.

Chapter 4-2-3 Quality Advance

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

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.

Setup > Video > Quality Advance

Video setting options are described as follows:
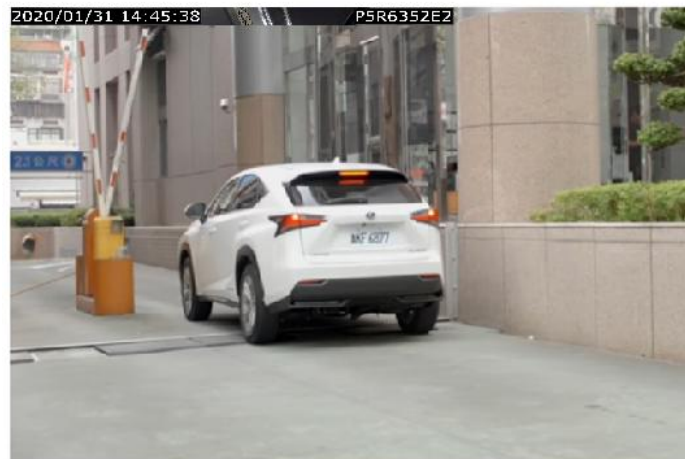
- **White Balance Control:** adjusts the white balance manually or automatically
- **Exposure Value:** adjusts the value of exposure; the higher the value is set, the brighter the video is
- **WDR:** enables or disables Wide Dynamic Range to capture greater details
- **Shutter Value Range:** set the min and max shutter values
- **Auto Gain Control (Sense Up+):** see the below description
- **Sense Up:** select the level of Sense Up to enhance the video
- **Color Mode:** switch between color/black-and-white mode
- **IR LED:** IR LED control
- **IR Cut Filter:** enable/disable the IR cut filter

Without Sense Up   Sense Up by 3 Frames

Chapter 4-2-3-1 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 4-2-3-2 White Balance Control (AWB)

There are day time and night time auto white balance controls (ATW) for the camera.

- ● **White Balance Control:** Auto white balance and manual white balance
- ● **R-Gain:** Red gain specific auto white control
- ● **B-Gain:** Blue gain specific auto white control

Chapter 4-2-4 Auto Focus

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

- ● **Zoom Speed:** Set the speed for **Zoom In** and **Zoom Out**
- ● **Focus Speed:** Set the speed for **Focus Near** and **Focus Far**
- ● **Quick Zoom:** Zoom to the ratio you specified
- ● **Quick Focus:** Click to focus automatically
- ● **Lens Initialize:** Click to reset zoom speed, focus speed, and zoom ratio to factory defaults

Note: Auto focus camera model only.

Chapter 4-2-5 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.
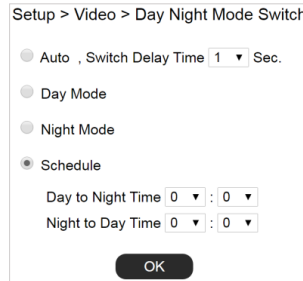
Note: IR-cut camera model only

Chapter 4-2-6 Privacy Mask

LILIN camera provides up to 4 sets of privacy masking. Select any of the masking numbers and drag to mask specific areas.
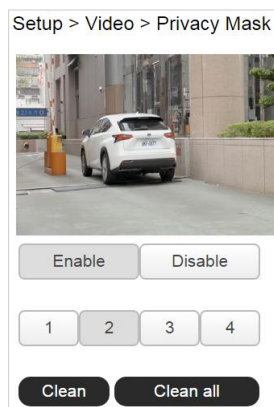
Chapter 4-3 Controls

Chapter 4-3-1 Digital I/O

The IP camera supports NO and NC control interface. To set up, connect the external alarm digital input to the IP camera. And switch between NO (normally open) and NC (normally closed) for the input.

Chapter 4-3-2 Global Counter

The global counters are for counting a trigger of a remote device.　The global counter can be triggered by a metadata, or a virtual input.　The global counters can be used for output purposes, such as LED display.

Setup > Controls > Global Counter

Global Counter #1	State: 0	Set
Global Counter #2	State: 0	Set
Global Counter #3	State: 0	Set
Global Counter #4	State: 0	Set
Global Counter #5	State: 0	Set
Global Counter #6	State: 0	Set
Global Counter #7	State: 0	Set
Global Counter #8	State: 0	Set
Global Counter #9	State: 0	Set
Global Counter #10	State: 0	Set
Global Counter #11	State: 0	Set
Global Counter #12	State: 0	Set
Global Counter #13	State: 0	Set
Global Counter #14	State: 0	Set
Global Counter #15	State: 0	Set
Global Counter #16	State: 0	Set

Chapter 4-3-3 Virtual Input
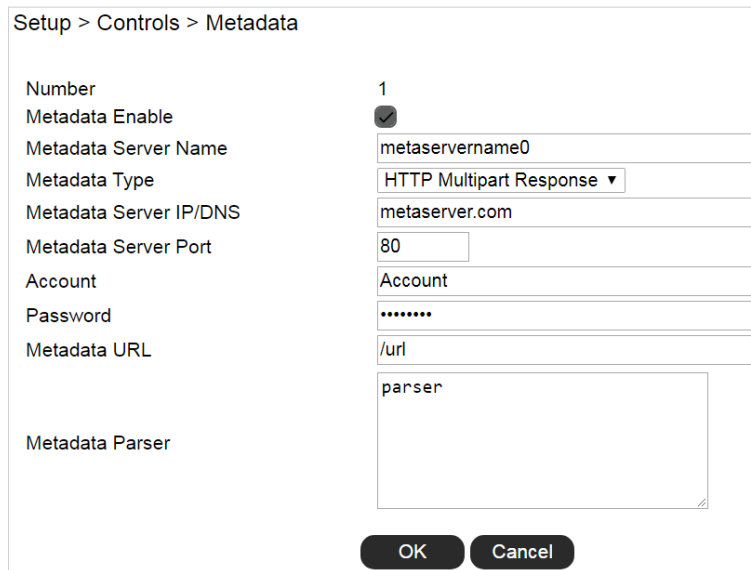
The IP camera provides up to 16 virtual inputs.　The virtual inputs are CGI commands that these can be used for other remote device to trigger.

Setup > Controls > Virtual Input

Virtual Input #1	State: 1
Virtual Input #2	State: 0
Virtual Input #3	State: 0
Virtual Input #4	State: 0
Virtual Input #5	State: 0
Virtual Input #6	State: 0
Virtual Input #7	State: 0
Virtual Input #8	State: 0
Virtual Input #9	State: 0
Virtual Input #10	State: 0
Virtual Input #11	State: 0
Virtual Input #12	State: 0
Virtual Input #13	State: 0
Virtual Input #14	State: 0
Virtual Input #15	State: 0
Virtual Input #16	State: 0

Chapter 4-3-4 Metadata

Metadata is the HTTP response of a CGI command. LILIN IP camera is able to receive the metadata from an IP device. The metadata is the URL response of an IP device.

Setup > Controls > Metadata

Number	1
Metadata Enable	☑
Metadata Server Name	metaservername0
Metadata Type	HTTP Multipart Response ▾
Metadata Server IP/DNS	metaserver.com
Metadata Server Port	80
Account	Account
Password	••••••••
Metadata URL	/url
Metadata Parser	parser

OK   Cancel

The example below, LILIN IP camera is able to receive the metadata of motion events, MotionDetect token of /getalarmmotion CGI command, from an IP device. The events are captured into the valuable %Trigger1% for actions. In the SmartEvent, %Trigger1% can be used for a global counter for event triggering.

To setup metadata, finish the settings below:

Metadata Enable: Enable metadata service.
Metadata Server Name: Specify the name of the metadata service.
Metadata Type: (1) HTTP multipart response, (2) HTTP response

    (1) HTTP multipart response—Continuous responses
    (2) HTTP response—Client-pull by a schedule

Metadata Server IP/DNS: The IP address of an integrated device.
Metadata Server Port: The port number of the integrated device.
Account: Account name of an integrated device.
Password: password of an integrated device.
Metadata URL: The URL of the an integrated device. "/" is required.
Metadata Parser: The parsing tokens for the valuables of Triggers.

Special characters
If there are special characters such as "/", "\r", "\n", and "\r\n" in the metadata, enter special characters for parsing the metadata.

%Split%
%CR% => \r
%LF% => \n
%CRLF% => \r\n

Enter the parsing tokens in the meta parser field for triggering an event from metadata URL of a third party device. The max length is 127 characters including spaces.

The parsing tokens of Metadata response are described below::

%Trigger1% => Metadata #1
%Trigger2% => Metadata #2
%Trigger3% => Metadata #3
%Trigger4% => Metadata #4
%Trigger5% => Metadata #5
%Trigger6% => Metadata #6
%Trigger7% => Metadata #7
%Trigger8% => Metadata #8
%Trigger9% => Metadata #9
%Trigger10% => Metadata #10
%Trigger11% => Metadata #11
%Trigger12% => Metadata #12
%Trigger13% => Metadata #13
%Trigger14% => Metadata #14
%Trigger15% => Metadata #15
%Trigger16% => Metadata #16

%Split%
%CR% => \r
%LF% => \n
%CRLF% => \r\n

Chapter 4-4 Network

Chapter 4-4-1 General

Network settings are the basic settings that connect LILIN IP cameras to the network. The default IP address of 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. Click OK to update the settings.

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

- **Primary DNS** —The IP address of the default and first DNS server
- **Secondary DNS IP Address**—The IP address of the backup and second DNS server to the default DNS
- **QoS(DSCP) —**Based on DSCP standard, set the TCP/IP packet header for packet priority.

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 4-4-2 HTTP Service

HTTP is a 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 & HTTPs or HTTPs). Click OK for the changes to take effect.

Setup > Network > HTTP Service

HTTP Port	80
HTTP Connection Policy	◉ HTTP & HTTPS ○ HTTPS Service

OK

Chapter 4-4-3 RTSP

RTSP is another reliable protocol for video streaming. With correct port forwarding, videos can be sent over the Internet. Details are described in the appendix.

Setup > Network > RTSP

RTSP Port	554
RTSP Authentication	◉ On ○ Off
Encoder1	stream0
Encoder2	stream1
Encoder3	stream2

OK

Settings on this page are described below:
- **RTSP Authentication**: Enabling this option will require username and password when connecting to the RTSP stream
- **Encoder:** Change encoder name.

Chapter 4-4-4 HTTPs Service

LILIN IP camera support HTTPs (Hypertext Secure Transmission Protocol) service. HTTPs is an Internet protocol that ensures the integrity and confidentiality of data as it travels between users' computers and websites. When users visit any website, they want a secure and private online experience.

HTTPs can be regarded as the advanced security version of HTTP. The SSL protocol is added as a security certificate. Therefore, the website can prevent data thief from directly seeing the transmitted data even if they intercept the transmitted information by using the encryption on the agreement.

HTTPS Service   ○ Enable ◉ Disable

There are two options to set HTTPs service:
1. The first option is to create a free self-signed certificate by filling-in the blank field below, then click **Create a certificate.**

HTTPS Service	◉ Enable ○ Disable
HTTPS Status	Disable
Certificate Status	Not installed
Method	Create self-signed certificate ▼
Country	US
State or province	Taiwan123
Locality	Taipei123
Organization	IPCAM12
Organization Unit	IPCAM123
Common Name	/w.example.com@@123
Validity	365

Create a certificate.

A pop up message will display:

Organization Unit   IPCAM123

Common Name   /w example com@@123

Create a certificate.

Validity   365

Create a certificate.

Then, you will notice that **Certificate Status** has changed from **Not Installed** to **Active**

HTTPS Service	◉ Enable ○ Disable
HTTPS Status	Disable
HTTPS Port	443
Certificate Status	Active
Method	Create self-signed certificate
Country	US
State or province	Taiwan123
Locality	Taipei123
Organization	IPCAM12
Organization Unit	IPCAM123
Common Name	www.example.com@@123

OK   Remove a certificate.

Click **OK** to activate HTTPS function. And the **HTTPS Status** will have changed from **Disable** to **Enable**.


This IP Camera may now be connected via HTTPS protocol with your browser

2. The second option is to purchase an SSL certificate by selecting **Create a certificate request and install**. After purchasing the SSL certificate from a third party company, browse your computer to upload the SSL certificate. If it is successful, the **Certificate Status** will have changed from **Not Installed** to **Active**. And **HTTPS Status** will have changed from **Disable** to **Enable**.

Chapter 4-4-5 DDNS

The DDNS service allows you to automatically update the DNS server. LILIN provides three DDNS servers to choose from (we recommend you use the first one from the drop-down menu). Click OK for the changes to take effect.
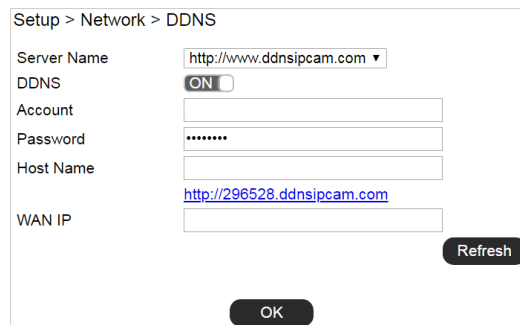
To activate DDNS, go to www.ddnsipcam.com. If the IP camera is on Internet with a global IP address, use the last 6 digits of the MAC address as the host name with default account and the default password,. The IP camera will automatically register to www.ddnsipcam.com.

Note: The DDNS feature requires Internet connection.

Chapter 4-5-1 SmartEvent

Here you can configure the detection settings for alarm, global counter, virtual input, meta data and network failure. Choose an event type for entering the event name and event condition for triggering an alarm.   Click **Save the event** button for saving the event.

Then the page you see allows you to choose the action to take when the chosen events are detected, such as sending JPEG images to an FTP server or an email account. To schedule event monitoring, choose **Schedule** when you edit an event and highlight the time periods you want the camera to detect events. Click **Save the event** button to update the settings.

Click **Action** to select the outputs for event triggering.

- **FTP Service:** Mail event logs to an FTP server.
- **SMTP Service:** Mail event logs to an SMTP server.
- **Push Service Setting:** When the alarm is triggered, can send push notification to specified iOS and Android.
- **Alarm Out:** Trigger the digital output of the IP camera.
- **HTTP POST Service:** Send notification snapshots to a specified website when alarm is triggered.
- **Global Counter:** To set a value between 0 and 65,535 or add value range from -99 to 99.
- **Virtual Input:** Enable or disable a specific virtual input among the 16 sets.
- **SD Card Service:** When the alarm is triggered, the screenshot is saved to the SD card.
- **Samba Service:** Set to send data of the selected encoder profile to the predefined samba server.

Note: To activate SmartEvent / Action setting, please also configure corresponding action in **Controls** setup page or **Notification** setup page.

Chapter 4-5-2 Motion Detection

The IP camera provides motion detection feature. Click on 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. Click OK button to update the settings.

Chapter 4-6 Notification

Chapter 4-6-1 FTP Service

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

Setup > Notification > FTP Service

Number	FTP Server Name	FTP/DNS Server	Port
1	FTPServerName	ftp.server.com	21
2	FTP1ServerName	ftp1.server.com	21
3	FTP2ServerName	ftp2.server.com	21

Number: 1
FTP Server Name: FTPServerName
FTP/DNS Server: ftp.server.com
FTP/DNS Server Port: 21
Account: admin
Password: ••••••••
Directory: /alarm_jpeg/
Prefix:
Postfix:

[OK] [Cancel]

- **FTP Channel:** There are three FTP servers that can be configured.
- **Number:** The number of FTP service.
- **FTP Server Name:** The name of the FTP server.
- **FTP/DNS Server:** The FTP server's address.
- **FTP/DNS Server Port:** The FTP server's port number.
- **Account:** The account name to log in to the FTP server.
- **Password:** The password of the account.
- **Directory:** The file path for storing the JPEG snapshots.
- **Prefix:** The prefix of the JPEG filename.
- **Postfix:** The postfix of the JPEG filename.
- **File Format:** The JPEG file format based on different JPEG encoder.

Chapter 4-6-2 SMTP (Email) Service

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

Setup > Notification > SMTP Service

E-mail Receiver Setting
E-mail Address1: receiver@mail.com
E-mail Address2:
E-mail Address3:
E-mail Address4:
E-mail Address5:
E-mail Sender Setting
E-mail Address: sender@mail.com
SMTP Server: mail.com
SMTP Authentication:
  ● Auth Login
  ○ Auth SSL
  ○ Auth TLS
SMTP Port: 25
Authentication: [OFF]
Auth Account: sender
Auth Password: ••••••••

[OK] [Send Mail & Status]

- **Receiver E-mail Address:** Address of receiving mailbox.
- **Sender E-mail Address:** Address of sending mailbox.
- **SMTP Server:** Enter the address of mail server.
- **SMTP Authentication:** Select authentication type
- **SMTP Port:** The default port number is 25 (mail server port).
- **Authentication:** Enable or disable mail service
- **Auth Account:** User name of the mail server
- **Auth Password:** Password of sending mailbox.

Chapter 4-6-3 HTTP POST Service

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

```
Setup > Notification > HTTP POST Service

Number                      1
HTTP POST Server Name       httpservername
HTTP POST Server IP/DNS     httpserver.com
HTTP POST Server Port       80
Account                     admin
Password                    ••••••••
HTTP POST URL               /url

HTTP POST JSON              /json

                       OK    Cancel
```

- **HTTP POST Server Name:** The HTTP POST server
- **HTTP POST Server IP/DNS:** The IP/DNS address of the HTTP Post server
- **HTTP POST Server Port:** The port number of the HTTP Post server
- **Account:** The account
- **Password:** The password
- **HTTP POST URL**：The CGI command to send HTTP POST
- **HTTP POST JSON**：The JSON text editor

Chapter 4-6-4 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.

```
Setup > Notification > SD Card Service

SD Recording              ○ On ● Off
SD Recording OSD          ○ On ● Off
SD Recording Continuous   ○ On ● Off
Recording Format          Encoder1 ▼
Pre Record Time           1 Sec.
SD Card Status            NORMAL
SD Card State             Unmount
SD Card Total Bytes       0 MBytes
SD Card Free Bytes        0 MBytes

        OK    Unmount    Mount    Format
```

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

Chapter 4-6-5 SD Card Backup File

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

Setup > Notification > SD Card Backup File

(Right Button->Play, Right Button->Stop)

Delete   **Refresh**

Chapter 4-6-6 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.

Setup > Notification > SAMBA Service

SAMBA Recording	○ On ◉ Off
SAMBA Recording OSD	○ On ◉ Off
SAMBA Recording Continuous	○ On ◉ Off
Recording Format	Encoder1 ∨
Pre Record Time	1 Sec.
SAMBA Server IP	192.168.0.100
SAMBA Server Account	admin
SAMBA Server Password	••••••••
SAMBA Server Directory	/Public
SAMBA Status	NORMAL
SAMBA State	SAMBA service is not connected
SAMBA Total Bytes	0 MBytes
SAMBA Free Bytes	0 MBytes

OK   **Disconnected**   **Connected**

- **Samba Recording:** Enable Samba recording service.
- **Samba Recording OSD:** Timestamp OSD on the AVI files
- **Samba Recording Continuous:** Enable/disable Samba continuous recording.
- **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 Account:** The account 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 system status of the Samba server
- **Samba State:** The connection status of the Samba server
- **Samba Total Bytes:** The storage size of the Samba server
- **Samba Free Bytes:** The free storage size of the Samba server

Chapter 4-7 Maintenance

	Live | Language | Logout

System	Video	Controls	Network	SmartEvent	Notification	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 export camera settings, click on Export Config File for other cameras.   Click on Import Config File for importing camera settings.

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

Setup > 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 may damage this machine and may be required to ship back to your vendor for repair.

flashssc327.bin:Application Firmware

Browse...   Submit
Upload 0%

Export Config File   Export
Network Setting   ☐
System Setting   ☑
Controls Setting   ☑
Event Setting   ☑
Services Setting   ☑
Video Setting   ☑
Import Config File   Browse...   Upgrade

Reboot System   Reboot System

Default Settings
◉ Initialize without Network Settings
○ Initialize All Settings   Load Default

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.

Appendix

DDNS 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.
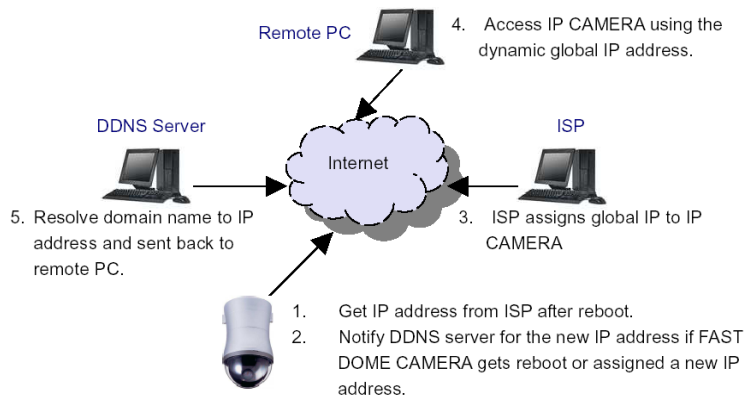
Advanced Port Forwarding Technology

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.
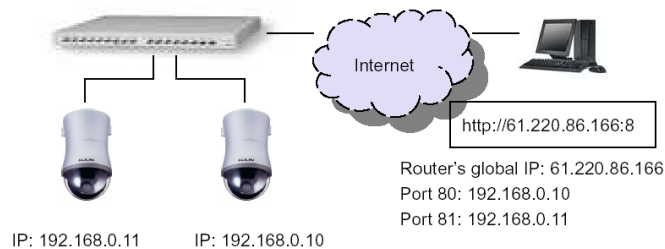
Restore to Factory Default

To restore the IP camera to the factory default, follow the below procedures:
1. Press and hold "Reset Key" for 15 seconds and release.
2. The camera will restart.
3. Launch to IPScan Utility to search for the IP camera.
4. Access the IP camera via an Internet browser.
5. Due to security reason, create the username and password for the first login. To login to the IP camera, please create the username and password on the login page. Press **Confirm** to complete the setting and login simultaneously.
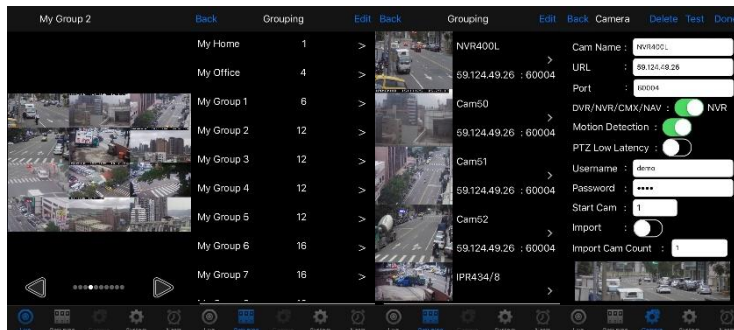
For iPhone Users

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 name
2. URL: IP address
3. Port
4. Enter your username and password.

Due to security reason, create the username and password for the first login of IP camera or DVR. To login to the IP camera or DVR, please create the username and password on the login page. Press **Confirm** to complete the setting and login simultaneously.
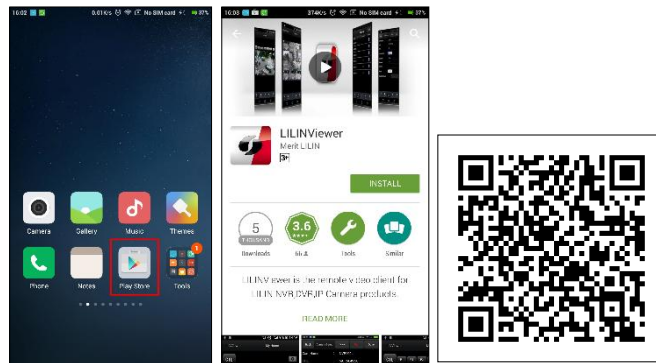
The default DVR user name is admin, password 1111.

5. After you enter the above information, tap **Done** to save the changes, and the live view of your IP camera or DVR will appear.
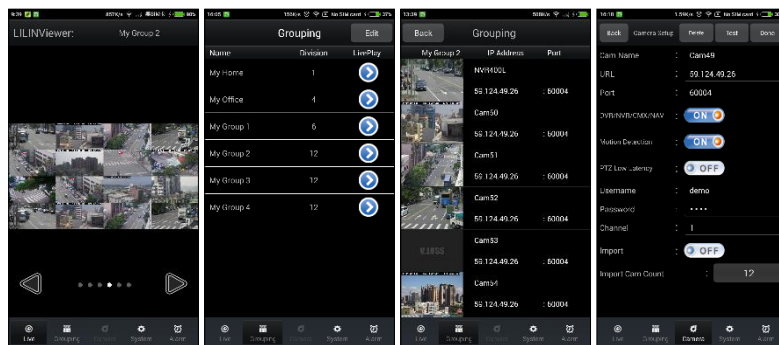
For Android Users
Tap Play Store to download LILINViewer by Merit LILIN, or scan the following QR code.

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 name
2. URL: IP address
3. Port
4. Enter your username and password.

Due to security reason, create the username and password for the first login of IP camera or DVR. To login to the IP camera or DVR, please create the username and password on the login page. Press **Confirm** to complete the setting and login simultaneously.

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