M and ZMR Series User Manual

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Summary

LILIN M and ZMR series IP cameras are high performance 2MP and 4MP camera range. The latest technologies provided by the camera include 100 dB high dynamic range, super low light, P-Iris, multi-streaming, HTML5 streaming, Smart H.264, HTTPs, IPv6, auto focus and adjustable IR LEDs.

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

Moreover, the cameras are equipped with an intelligent video analytics (IVS) engine that features sound detection, tampering detection, object counting, and motion detection, in which advanced alarm information can be integrated by other applications.

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

- Supports various encoding formats (H.264 and MJPEG)
- Built-in intelligent video analytics engine that can send Email or FTP snapshot alarms
- Day/night video quality independent scheduling
- Audio and motion detection
- Two-way audio
- 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 HTTP API integration
- Supports G.711
- 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

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

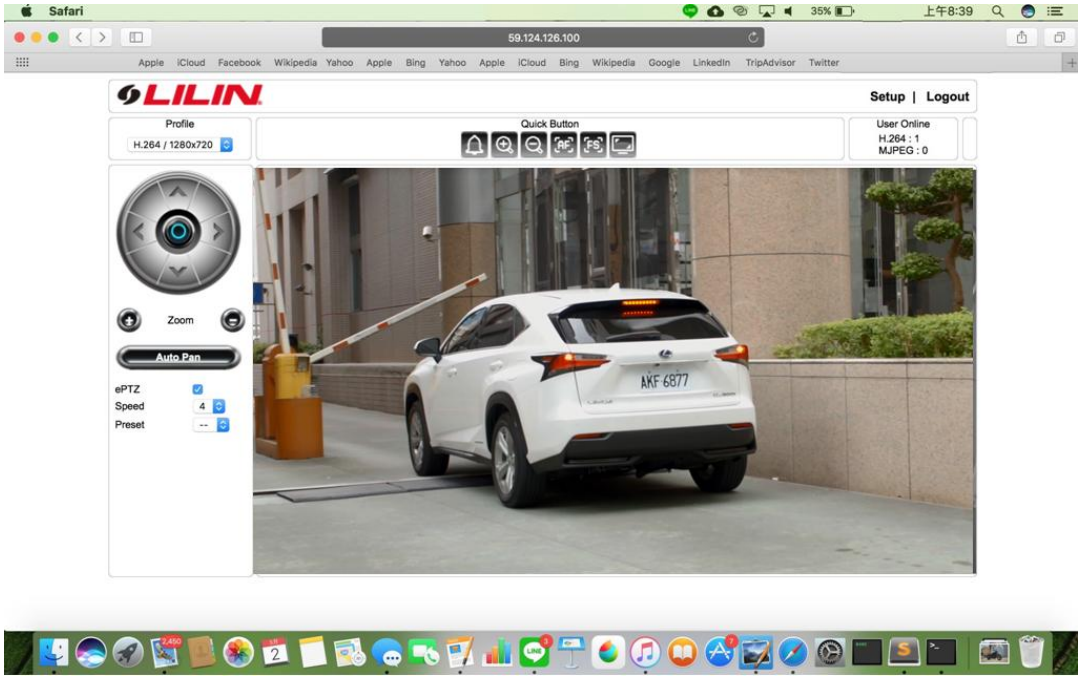
Chapter 1-1 System Requirements

LILIN's IP 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 video. When you first log in to our IP camera, you may see a prompt box as below via Windows OS.

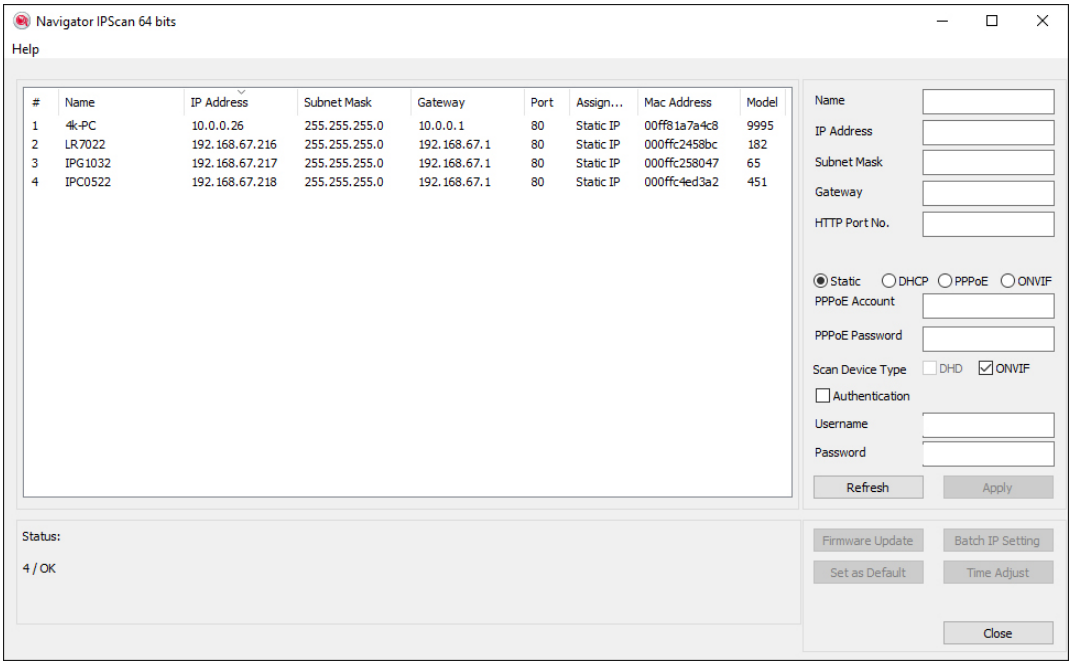
Chapter 2 Before Accessing IP Cameras

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



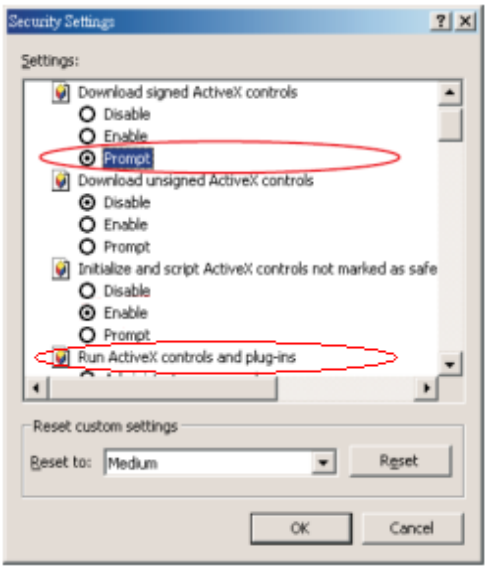
Chapter 2-2 Configure IP Addresses through HTML Connection

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. Please create the username and password on the login page.
- 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

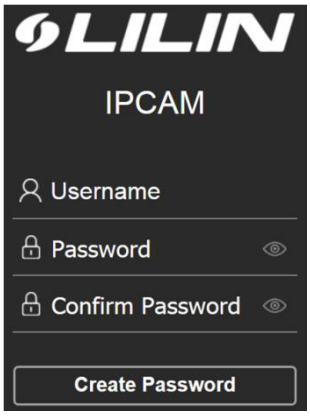
Make sure your Internet browser allows signed ActiveX plug-in to run on your PC. Set Download Signed ActiveX plug-in controls to Prompt and enable Run ActiveX control and plug-in. You can set this in Internet Explorer→Tools→Internet Options→Security→Custom Settings.



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

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.



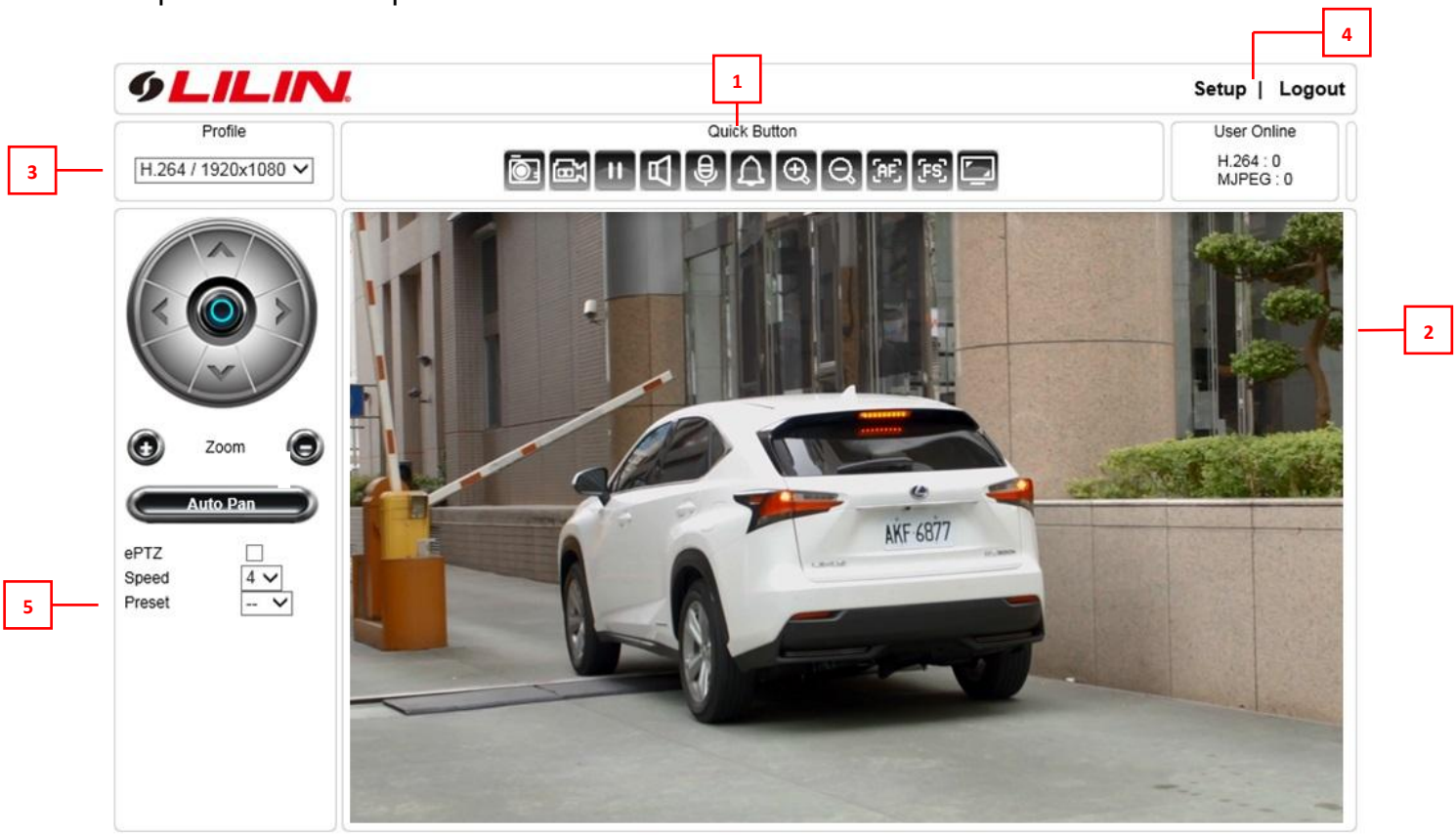
Minimum Password Strength Requirements:
1. The password length must be 8 or more characters.
2. The password must include at least 1 number (0 ~ 9), 1 uppercase letter, 1 lowercase letter and 1 symbol(~ ? / + = , : ; . ' @ # ￥ % ^ & * ( ) _ -).

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



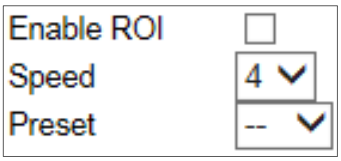
1. **Quick buttons**—IP camera shortcuts
2. **ActiveX display screen**—Display RTSP H.264 or MJPEG streaming video
3. **Profile switching menu**—Switching from one profile to another
4. **Setup buttons**—IP camera setup menu
5. **Zoom & Focus control panel**

Control Functions

Zoom out Focus far Enable auto focus

Zoom in Focus near

ROI Function

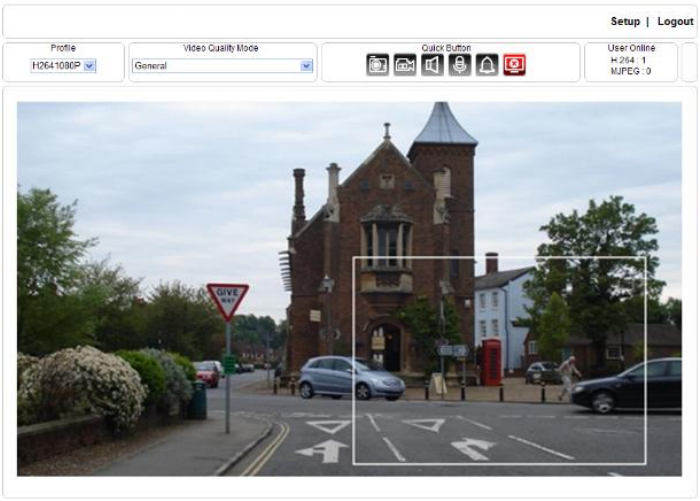


Check to enable ROI

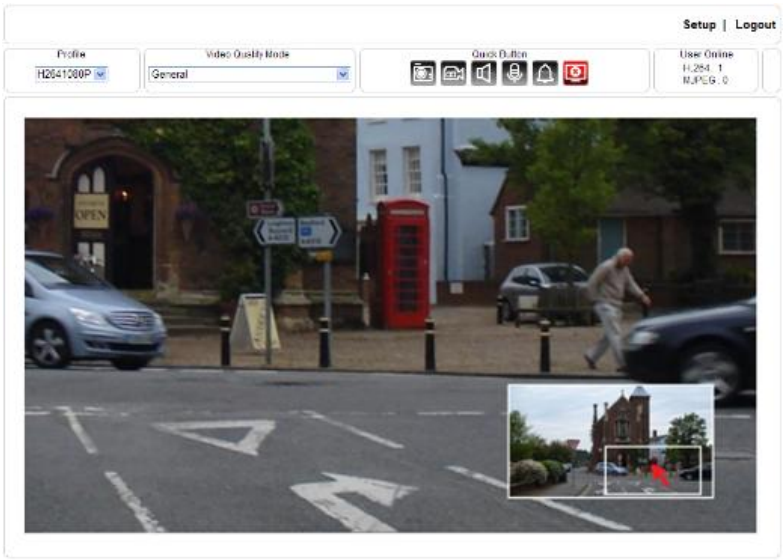
Adjust the zoom and focus speed

Move the screen to the chosen preset point

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 on the video to exit the ePTZ mode.

Chapter 3-2 Quick Buttons

The quick control panel buttons are described below:

	Take a snapshot of the video
	Start recording
	Pause recording

	Speaker on/off
	Microphone on/off
	Enlarge the live view
	Three ROI views and one panoramic view (panoramic cam only)
	Four ROI views (panoramic cam only)
	One 180-degree view and two ROI views and one panoramic view (panoramic cam only)
	Two 180 degree views (panoramic cam only)

Chapter 3-2-1 Two-way Audio

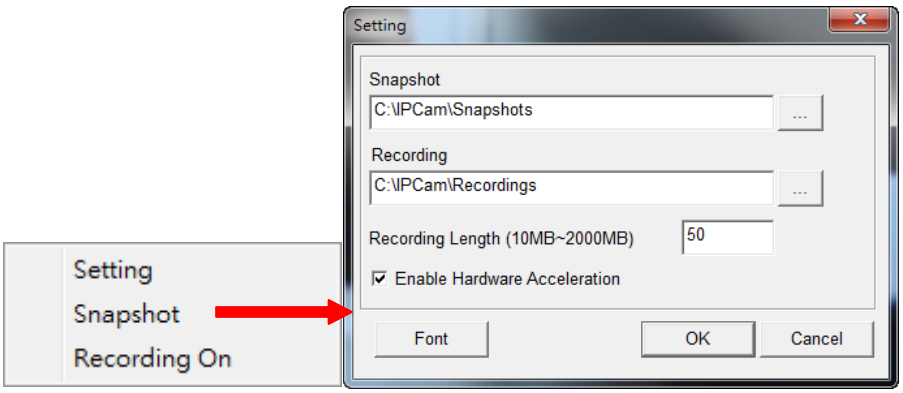
For models supporting two-way audio, click the microphone icon to speak to a remote site. Click the icon again to turn the microphone off.

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

Note: Two-way audio model only

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.

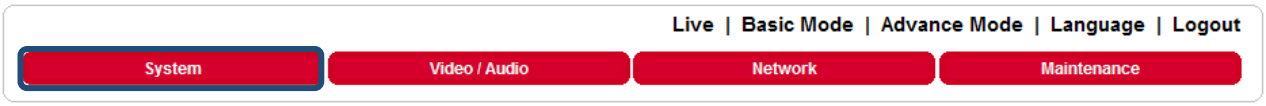


Note: ActiveX is for Windows OS only.

Chapter 4 Basic Settings

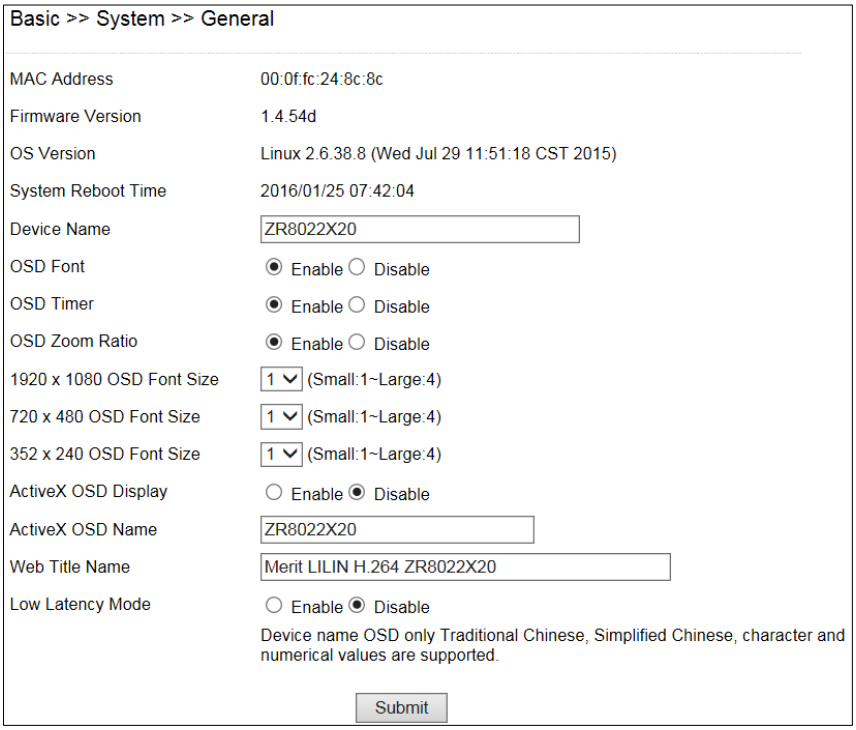
As an administrator, you can configure the IP camera via a standard HTML webpage. Click Setup at the top-right corner of the screen after you log in to the camera.

Chapter 4-1 System



Chapter 4-1-1 General

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



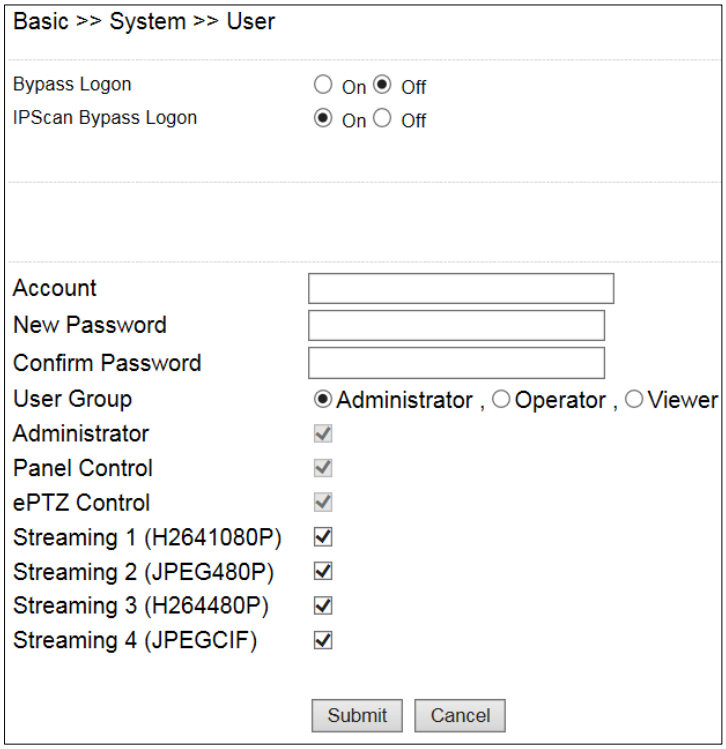
- **MAC Address:** The MAC address of the camera
- **Firmware Version:** Firmware version of the camera
- **OS Version:** The version number of the camera
- **System Reboot Time:** The last time your system was rebooted.
- **Device Name:** The device name can be found using the IPscan utility, which allows you to identify IP cameras. To change the device name, enter a new name for the IP camera and click Submit.
- **OSD Font:** Enable to display the device name on the ActiveX OSD.
- **OSD Time:** Enable to display camera time on the ActiveX OSD.
- **OSD Font Size:** Adjust the size of the ActiveX OSD.

- **OSD Zoom Ratio:** Enable to display camera zoom ratio on the OSD.
- **1920 x 1080 OSD Font Size:** The streaming font size at 1920x1080 resolution
- **720 x 480 OSD Font Size:** The streaming font size at 720x480 resolution
- **352 x 240 OSD Font Size:** The streaming font size at 352x240 resolution
- **ActiveX OSD Display:** Enable/disable to display/hide the device name.
- **ActiveX OSD Name:** The name you enter here will be displayed on the ActiveX
- **Web Title Name:** Enter the name to be displayed on the web browser.
- **Low Latency Mode:** Enable to reduce latency of the ActiveX.

Note: ActiveX is for Windows OS only.

Chapter 4-1-2 User

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

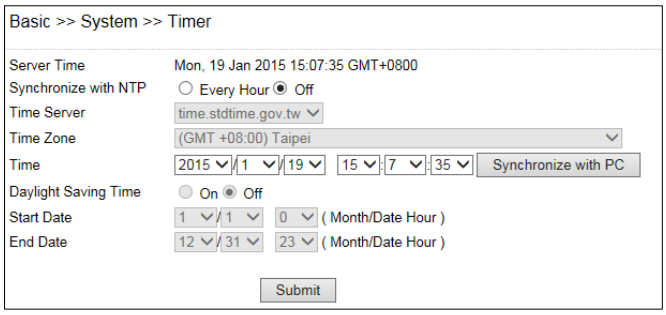


Enter the account name and password for the new account, and then check to assign the access rights for this account.

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

Chapter 4-1-3 Timer Settings

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



Synchronize with an NTP server

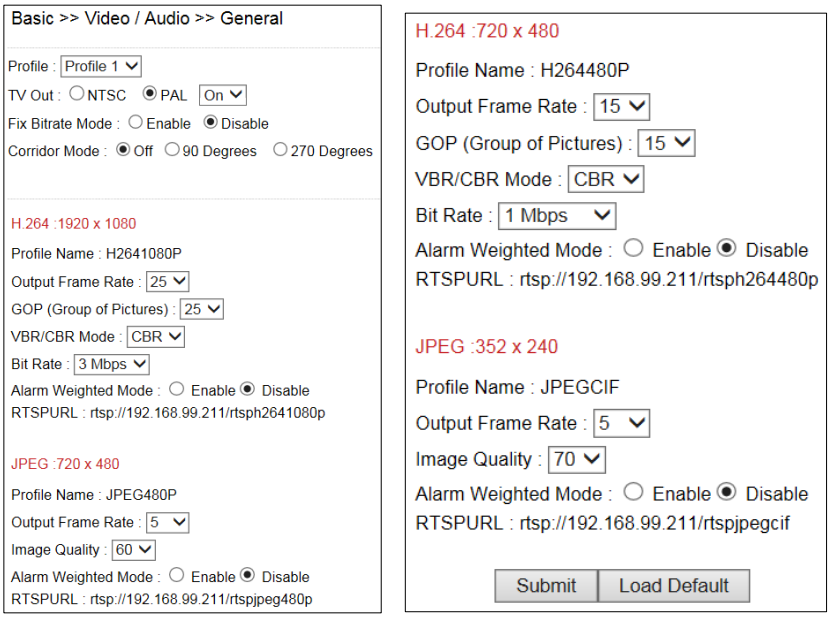
To synchronize with an NTP server, change the Synchronize with NTP to Every Hour. The camera will synchronize its system time with a time server every hour.

Note: This function requires Internet connection.

Chapter 4-2 Video / Audio

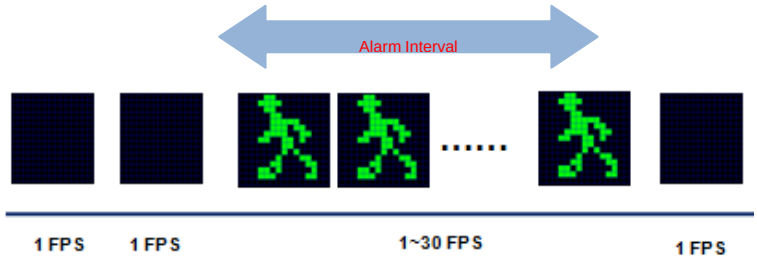
Chapter 4-2-1 General

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



- **Profiles:** 4 customizable profiles
- **TV Out:** NTSC/PAL video systems
- **Fixed Bitrate Mode:** Enable to set the bitrate to a fixed constant
- **Corridor Mode:** Rotate the screen 90° or 270° clockwise

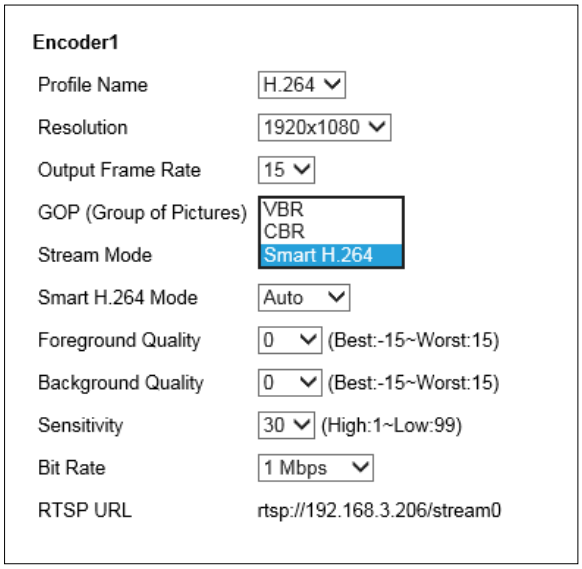
- **Output Frame Rate:** The frame rate of the video
- **GOP:** The number of I-frames to be displayed in one second
- **VBR/CBR Mode:** Variable bit rate, an encoding mode that reduces the use of bandwidth; CBR: constant bit rate, an encoding mode that consumes more bandwidth
- **Bit rate:** The maximum 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 Smart H.264

LILIN camera supports Smart H.264 for higher compression without sacrificing video quality. Choose Smart H.264 at Stream Mode.

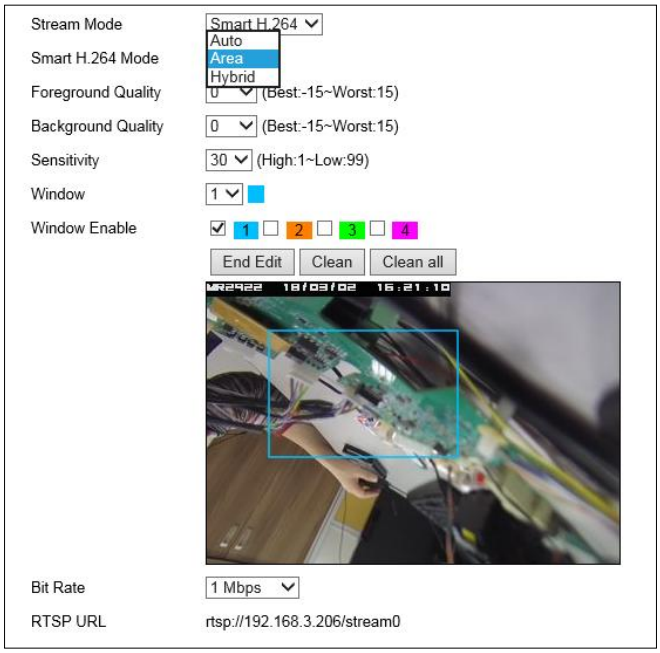


Note: Smart H.264 model only

From the picture below, Smart H.264 can have higher compression in bitrate at 1080P video. The foreground is the moving objects or the region of interest window. The background is the non-moving objects in a video.

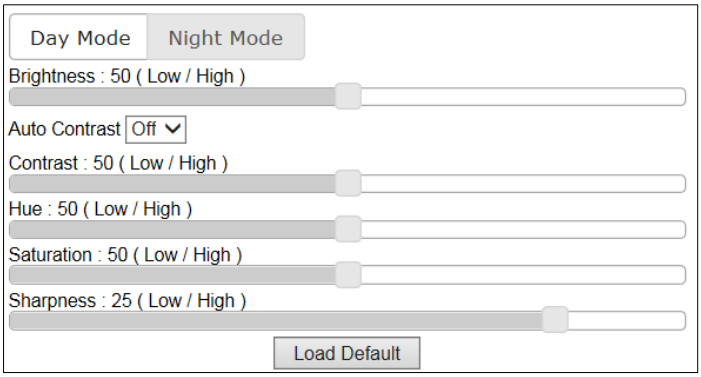
To setup Smart H.264 feature, follow the steps below:

- **Stream Mode:** Select Smart H.264
- **Smart H.264 Mode:** Auto, Area, or Hybrid selection mode
- **Foreground Quality:** Moving object or Smart H.264 window
- **Background Quality:** Non-moving objects or none Smart H.264 defined windows
- **Sensitivity:** Smart H.264 moving objects (foreground) detection sensitivity, the higher sensitivity means higher compression rate.
- **Window:** Select which window for defining the Smart H.264 window.
- **Window Enable:** Enable Smart H.264 window.
- **End Edit:** Finish defining the setting of Smart H.264 window.
- **Clean:** Clean the current defined Smart H.264 window.
- **Clean All:** Clean all the defined Smart H.264 windows.

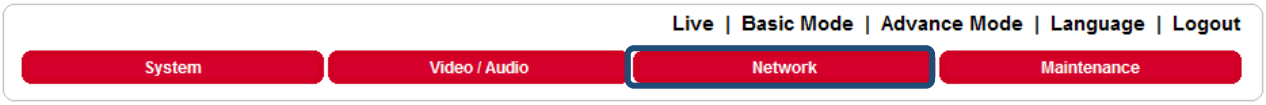


Chapter 4-2-3 Quality Basic

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.



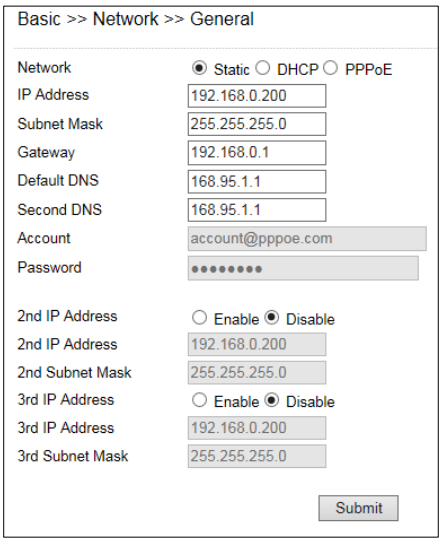
Chapter 4-3 Network



Chapter 4-3-1 General

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

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



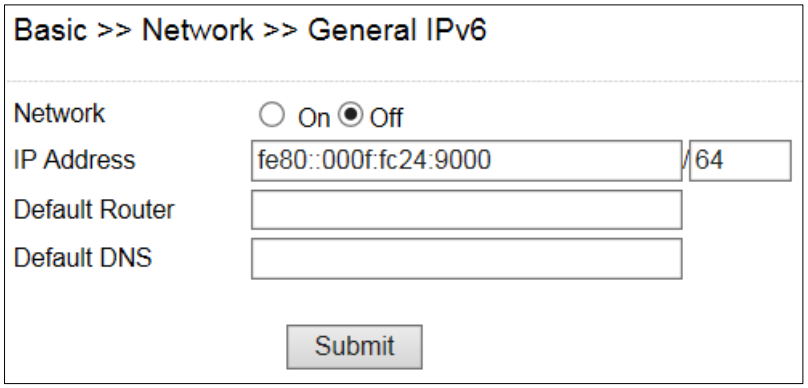
To acquire Internet access, contact your local Internet Service Provider (ISP) for a global IP address. Enter the IP address (global), subnet mask, and gateway IP provided by your ISP.

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

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

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

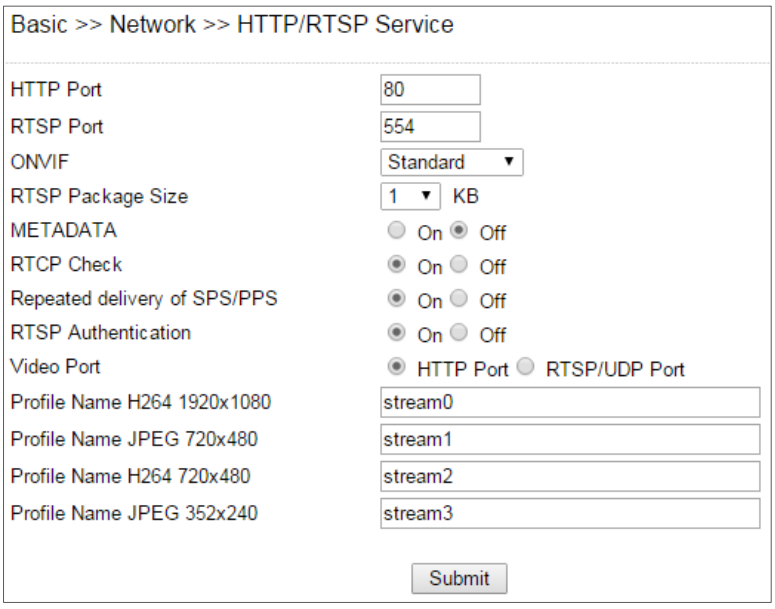
Chapter 4-3-2 IPv6



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

Chapter 4-3-3 HTTP/RTSP Service

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

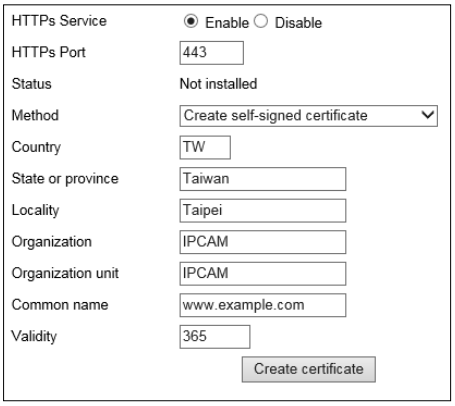


Settings on this page are described below:

- **ONVIF**: Choose a ONVIF protocol from the drop-down list
- **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

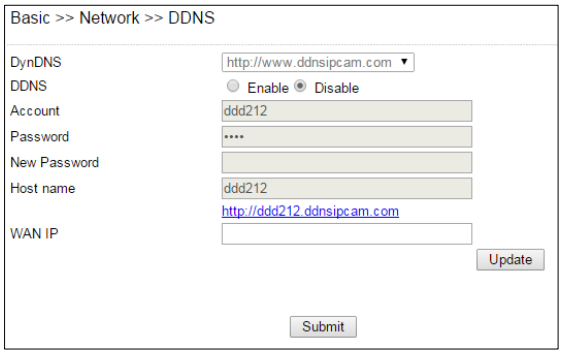


Chapter 4-3-5 IP Address Filtering

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.

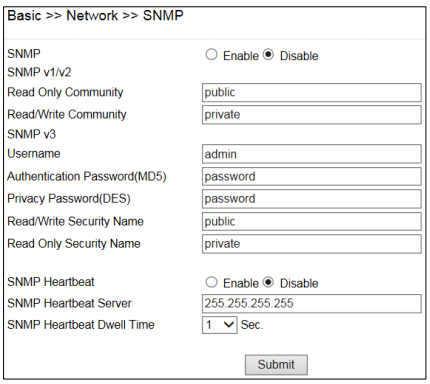


Note: The DDNS feature requires Internet connection.

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.

Chapter 4-3-7 SNMP

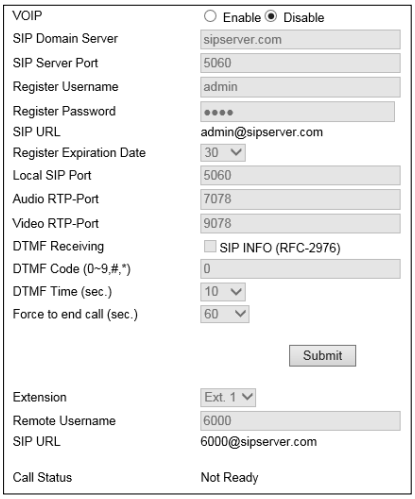
Enable to activate SNMP service. Modify the fields to fit your requirements, and click Submit for the changes to take effect.



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.

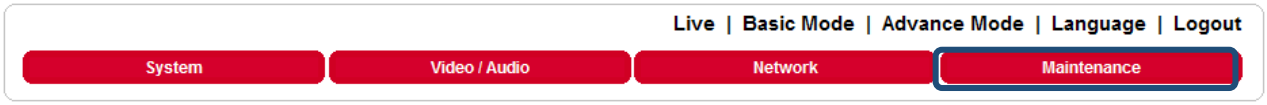
- **SIP Domain Server:** The IP address or DNS of the SIP server
- **SIP Server Port:** The port number of the SIP server
- **Register Name:** The user account (extension) registered on the SIP server
- **Register Password:** The password of the registered user account on the SIP server
- **SIP URL:** 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



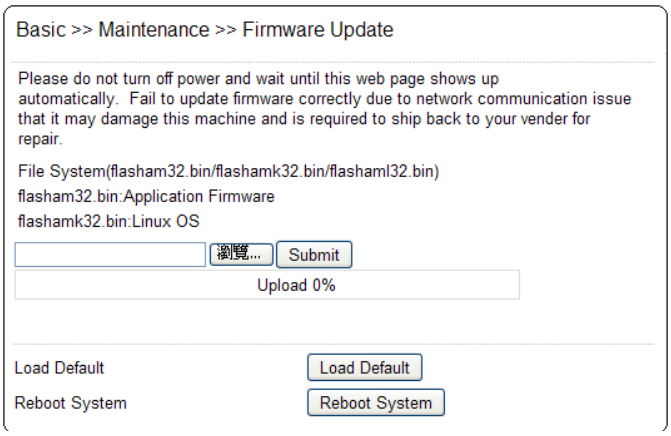
Note: Two-way audio model only

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.

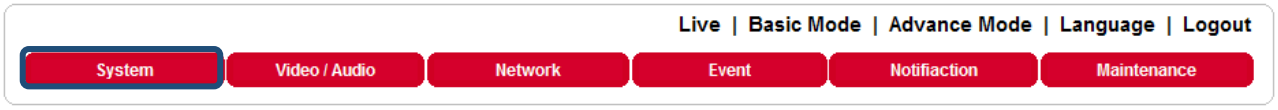


Warning: Never disconnect the power during the update. This could cause irreversible damage to your device.
Note: If you forget your password, please contact your vendor or send the device to us.

Chapter 5 Advanced Mode

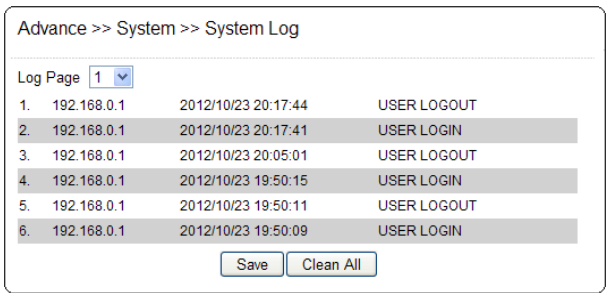
The Advanced Mode provides several professional settings that are not available in the Basic Mode.

Chapter 5-1 System

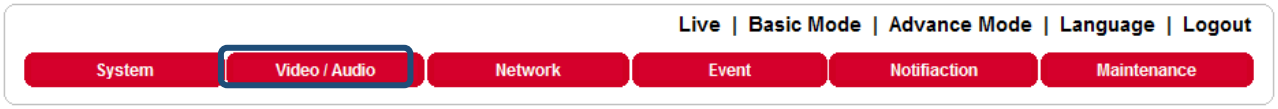


Chapter 5-1-1 System Log

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



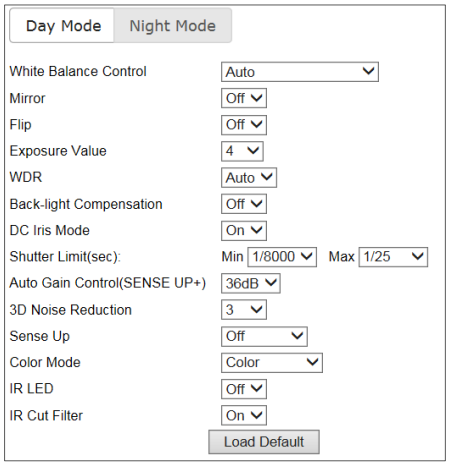
Note: Setting options may differ depending on the model you use.

Chapter 5-2-1 Quality Advanced

In this page, you have access to Exposure, Automatic Gain Control, White Balance Control, 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:

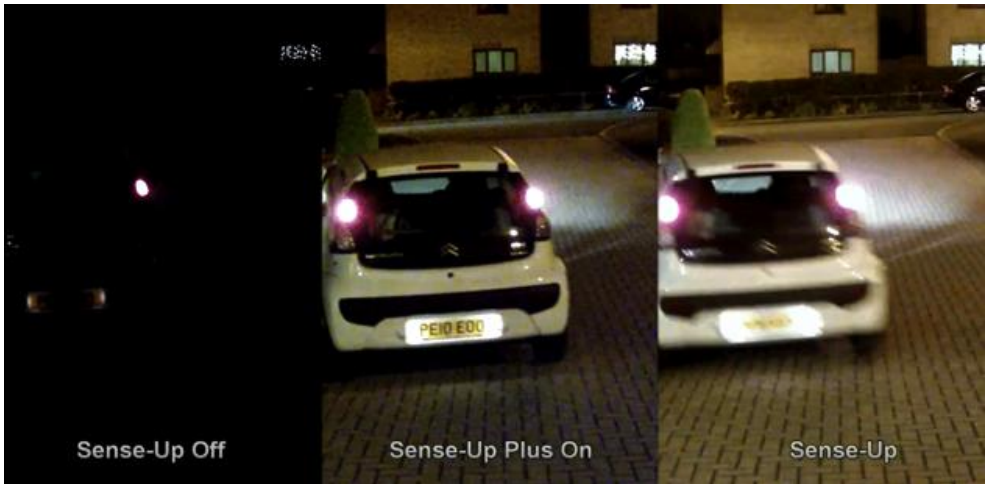
- White Balance Control: sets white balance configurations for different scenarios including tungsten, indoor, fluorescents, or outdoor environments, or choose **Auto** for the camera to automatically switch between white balance settings
- Mirror: flips the video horizontally
- Flip: flips the video 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

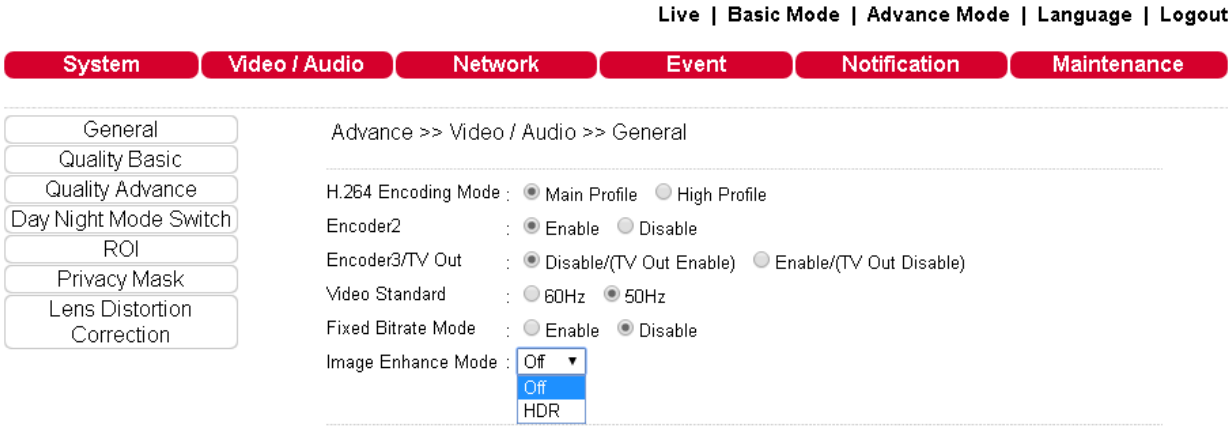
Chapter 5-2-3 Sense Up+

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.



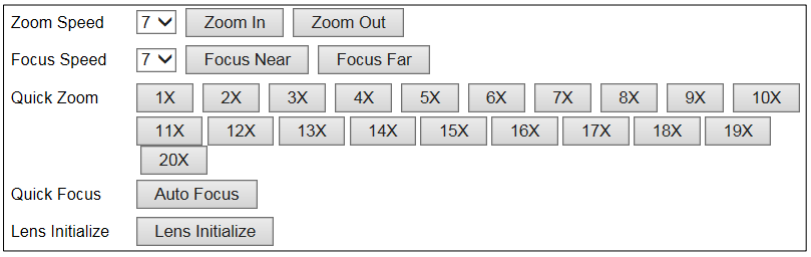
Chapter 5-2-4 HDR vs WDR

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



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

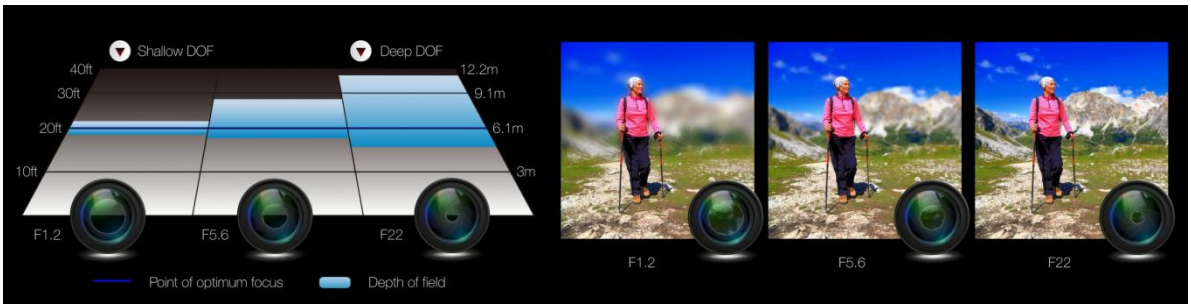
- **Zoom Speed:** Set the speed for **Zoom In** and **Zoom Out**
- **Focus Speed:** Set the speed for **Focus Near** and **Focus Far**
- **Quick Zoom:** Zoom to the ratio you specified
- **Quick Focus:** Click to focus automatically
- **Lens Initialize:** Click to reset zoom speed, focus speed, and zoom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

Note: Auto focus camera only

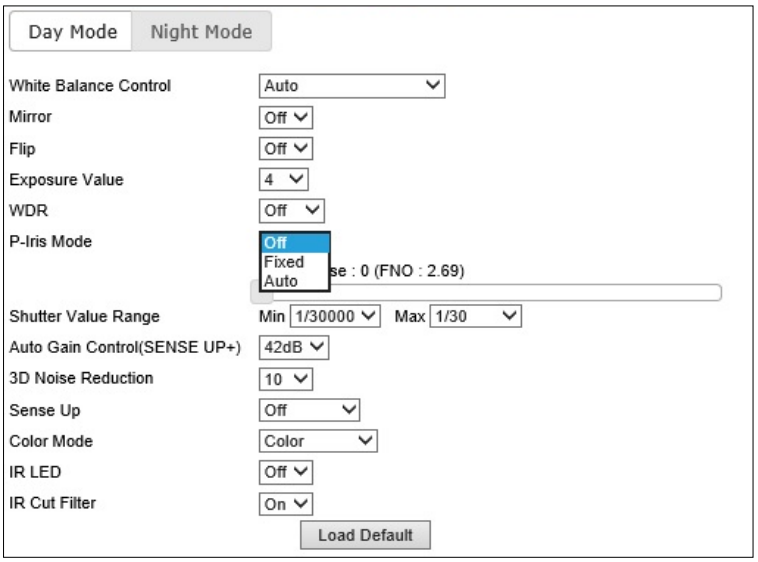
Chapter 5-2-6 P-Iris

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.

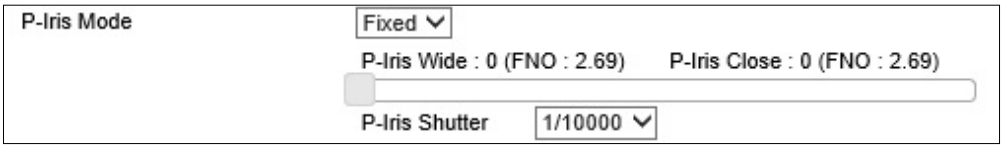
The following diagrams demonstrate that P-Iris automatically chooses correct Iris or F value for the best FOV.



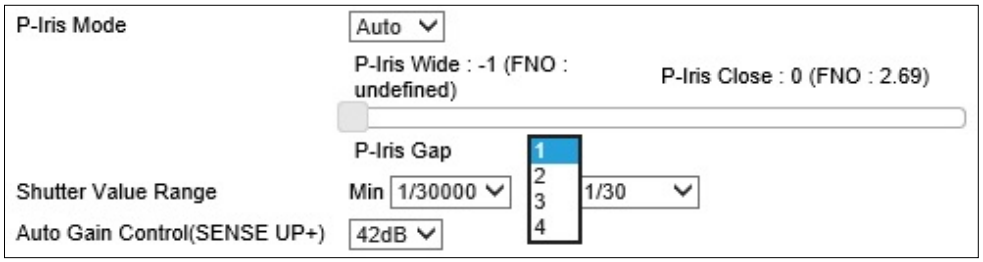
There are two P-Iris modes: Fixed and Auto.



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



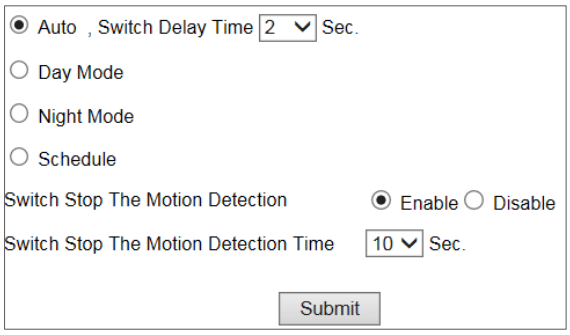
With Auto P-Iris mode, the Iris is automatically determined.



Note: P-Iris camera only

Chapter 5-2-7 Day/Night Mode Switch

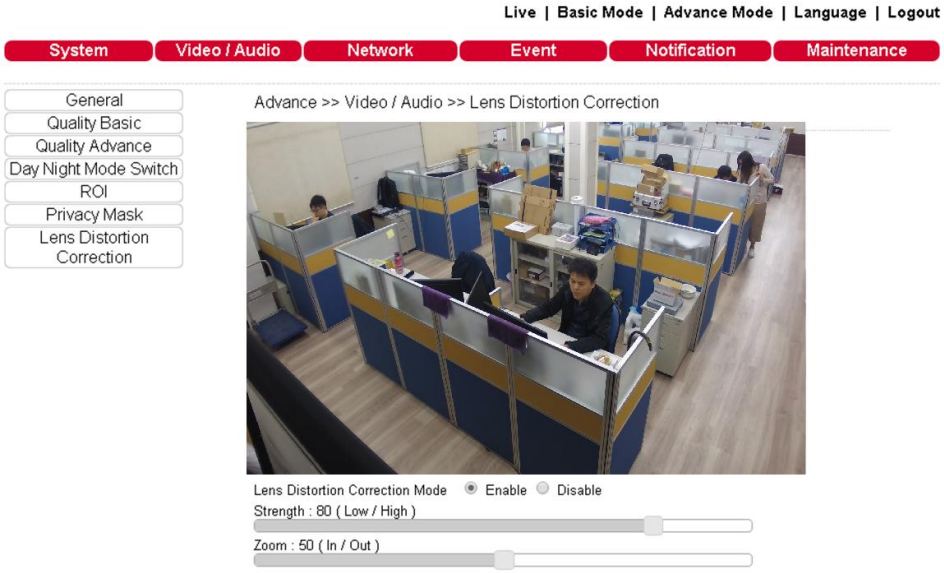
The Day/Night Mode Switch allows you to schedule IR activities by (1) auto, (2) day, (3) night, (4) schedule, or (5) external control. When the setting is set to Auto, the IR module is turned on/off automatically according to the signal from the light sensor. The Night setting removes the IR cut filter,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



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.



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

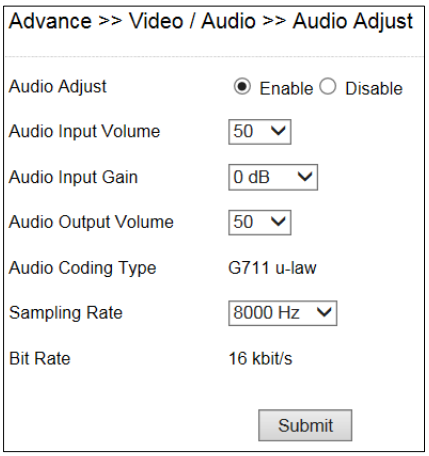
Click Save for the changes to take effect, or Clear all to clear all the settings

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 5-2-10 Privacy Masking

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

Chapter 5-2-11 Audio Adjust



Audio settings are described below in details:

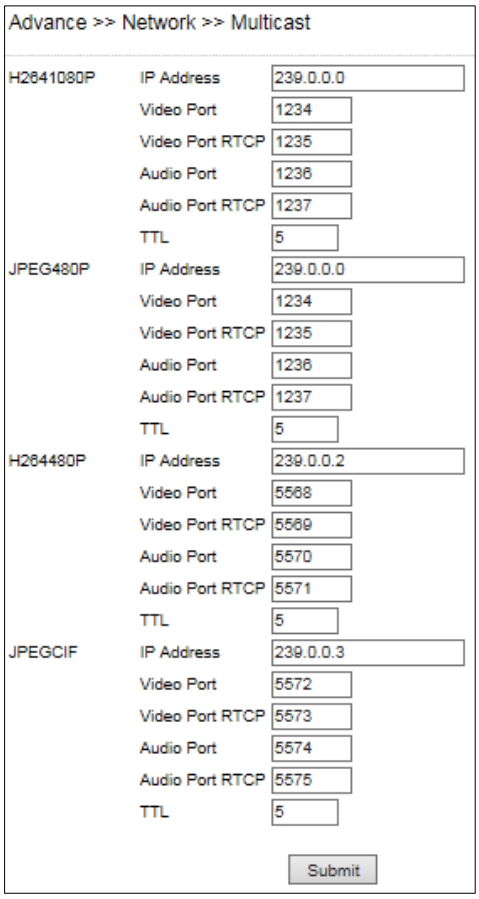
- Audio Input Volume: MIC or line-in volume
- Audio Input Gain: level of gain for audio input
- Audio Input Filter: provides three levels of wind noise reduction for different installation environments
- Audio Output Volume: volume adjustment
- Audio Coding Type: G.711 u-Law
- Sampling rate: set the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

Note: Audio model only

Chapter 5-3 Network

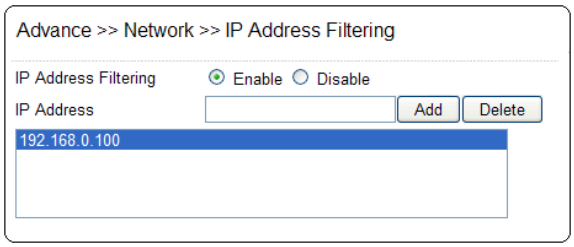
Chapter 5-3-1 Multicast

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



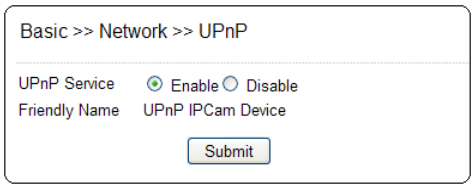
Chapter 5-3-2 IP Address Filtering

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



Chapter 5-3-3 UPnP Settings

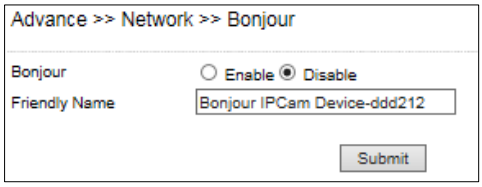
The UPnP service is a network protocol that allows Windows PC users to identify IP cameras in a LAN environment. To activate the UPnP service, choose Enable to activate.



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

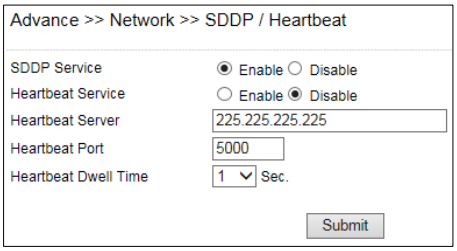
Chapter 5-3-4 Bonjour

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

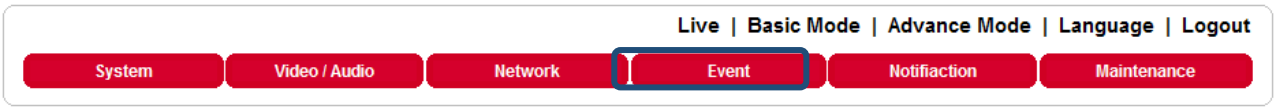


Chapter 5-3-5 SDDP/Heartbeat

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



Chapter 6 Camera Event



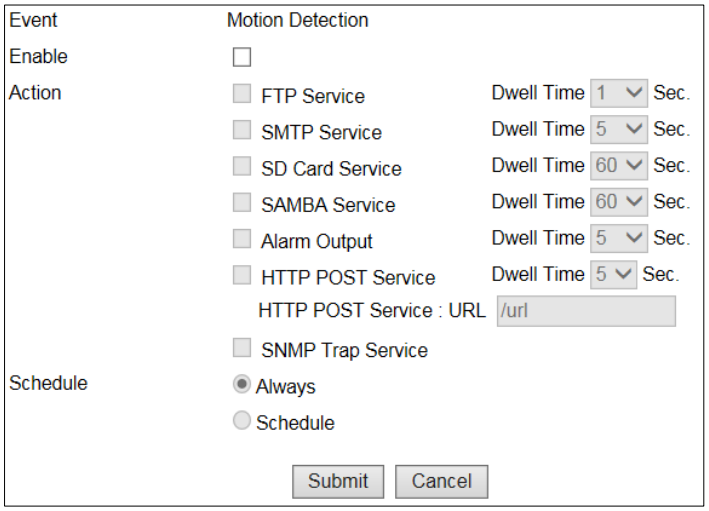
Here you can configure the detection settings for motion, facial, tamper, audio, alarm, and network failure. Choose an event type in the drop-down menu, and click Edit Event.

Advance >> Event >> Event

Event Name Motion Detection Edit Event (SD Recording Continuous)

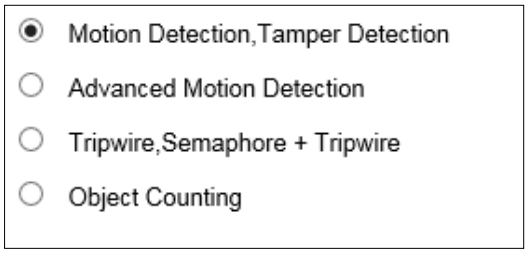
Event	Status	FTP	SMTP	SD Card	SAMBA	Alarm Output	HTTP POST	SNMP Trap	Schedule
Motion Detection	Disable								Auto
Face Detection	Enable								Auto
Tamper Detection	Disable								Auto
Audio Detection	Disable								Auto
Alarm Detection	Enable					V			Auto
Network Detection	Disable	-	-		-		-	-	Auto

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.



Chapter 6-1 IVS

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



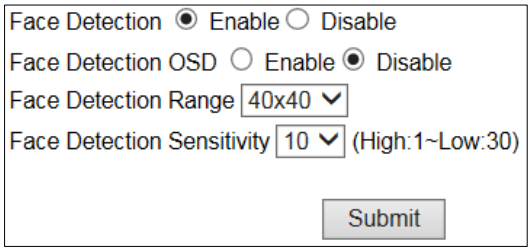
Note: IVS model only

Chapter 6-2 Motion Detection

Once the above configurations are set, click Motion Detection to determine the areas to monitor. Simply double-click or drag across the areas you want to monitor, and cancel your selection by double-click again or drag across the areas you don't want to monitor with the right mouse button.

Chapter 6-3 Face Detection

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

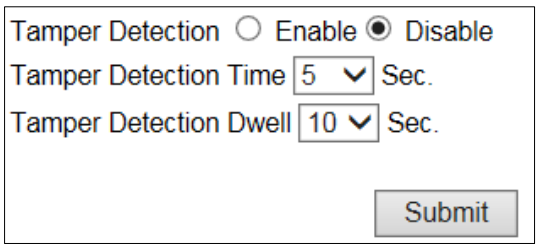


- **Face Detection OSD:** When a face is detected, a blue box will appear to mark the face (as in the image below). If disabled, you will only see a red **F** icon on the top of the screen.

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

Note: Face detection model only

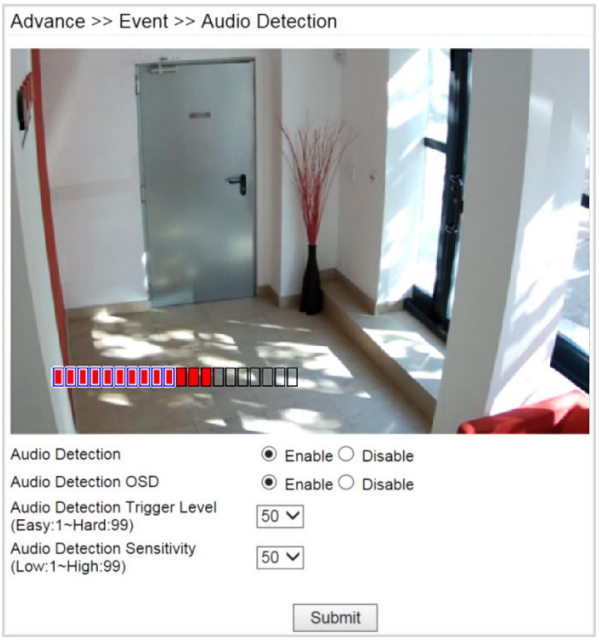
Chapter 6-4 Tamper Detection



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

Chapter 6-5 Audio Detection

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



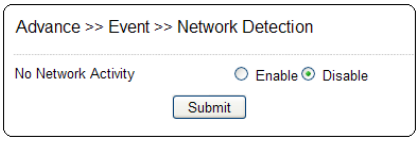
Note: Audio model only.

Chapter 6-6 Alarm Detection

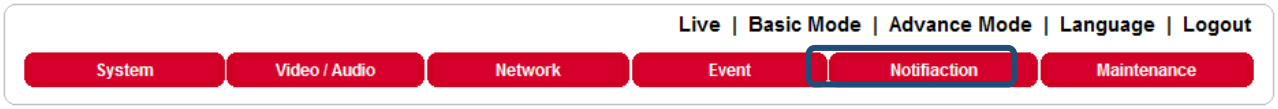
If you connect an external alarm digital input to the IP camera, enable Alarm Notification and switch between NO (normally open) and NC (normally closed) for the input.

Chapter 6-7 Network Detection

Enable this option to send a notification upon network failure.

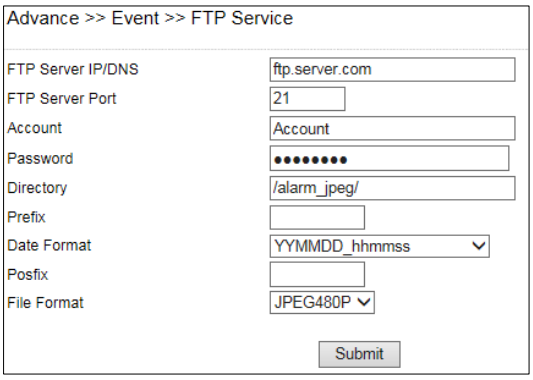


Chapter 7 Camera Notification



Chapter 7-1 FTP Service

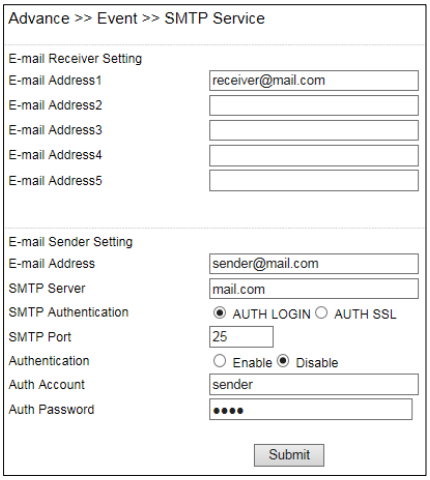
Enter the required FTP information to send alarm snapshots to an FTP server.



- 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

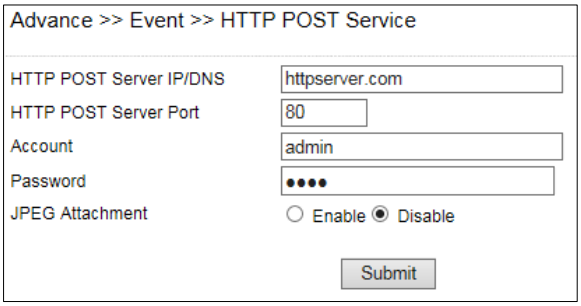
Chapter 7-2 SMTP (Email) Service

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



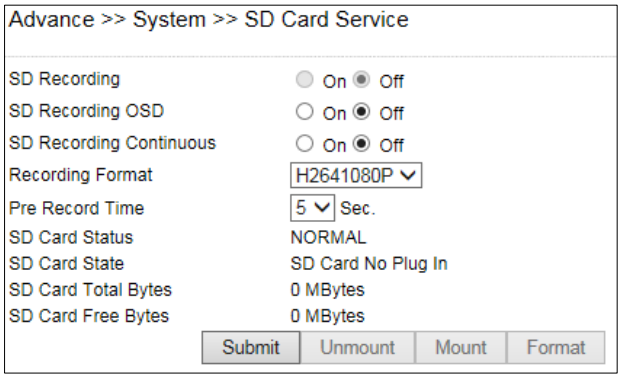
Chapter 7-3 HTTP POST Service

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



Chapter 7-4 SD Card Service

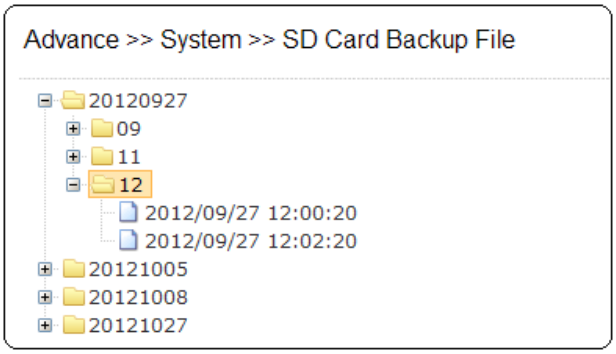
Ensure a SD card is properly installed to the camera before you enable the SD recording option. The camera will start recording videos when an alarm occurs.



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

Chapter 7-5 SD Card Backup

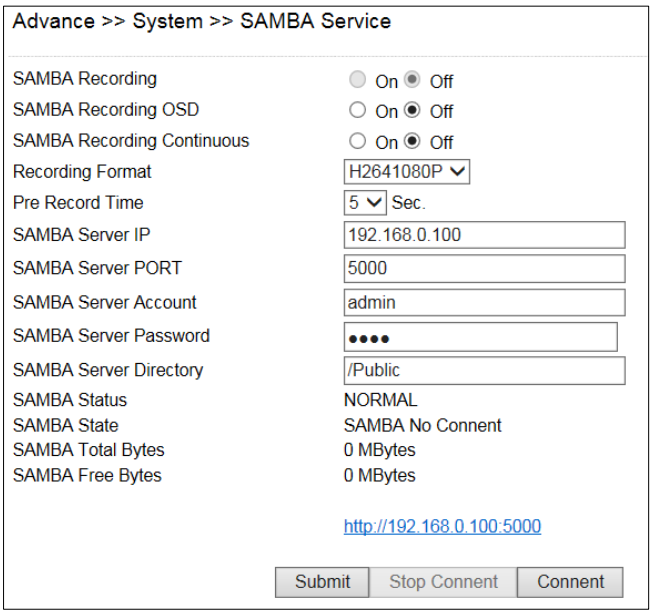
To download a specific clip, right-click the file you want to download and save the AVI file to a local PC.



Chapter 7-6 SAMBA Service

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

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



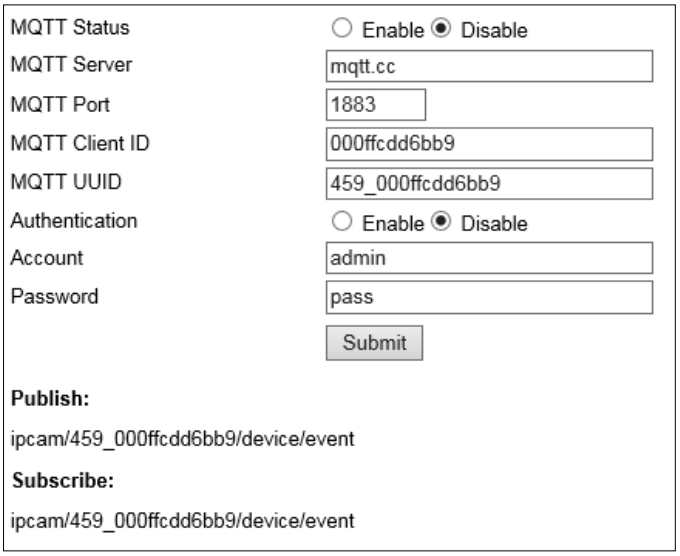
Chapter 7-7 MQTT Service

The camera provides MQTT service. MQTT server is widely used by IoT applications. The camera provides MQTT service for (1) event notifications, (2) controls and (3) returns. The services of Publish and Subscribe

are supported. For more programming information, visit web site for IP Camera MQTT SDK.

To configure MQTT service, follow the descriptions below:

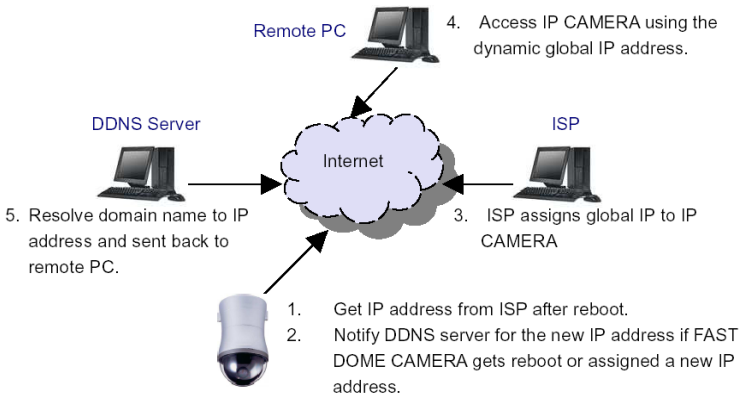
- **MQTT Status**: Enable MQTT service of the camera
- **MQTT Server:**The MQTT server
- **MQTT Port:** The port number of the MQTT server
- **MQTT Client ID**: The client ID of the camera for uniqueness
- **MQTT UUID:** The MQTT UID of the camera
- **Authentication:** Enable authentication for accessing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



Appendix

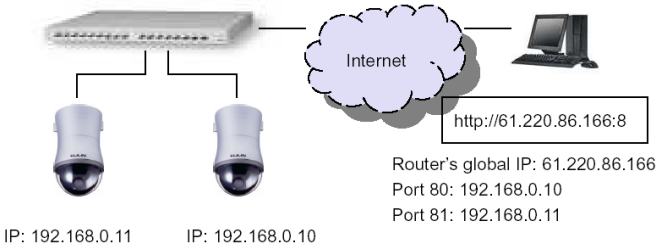
DDNS and PPPoE Network Settings

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:

1. Short the "Restore to Factory Default RESET" cable for 10 seconds before releasing.
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.

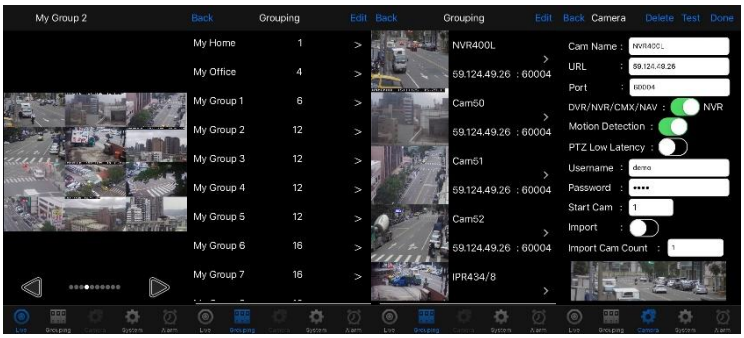
SD Card Compatibility

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:

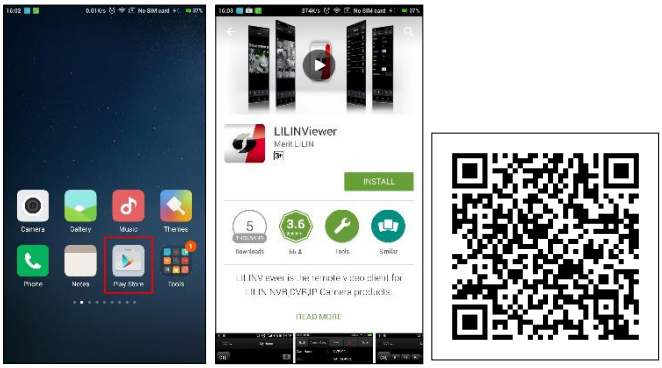
1. Cam Name: IP Camera or DVR name
2. URL: IP address
3. Port
4. Enter your username and password.

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.

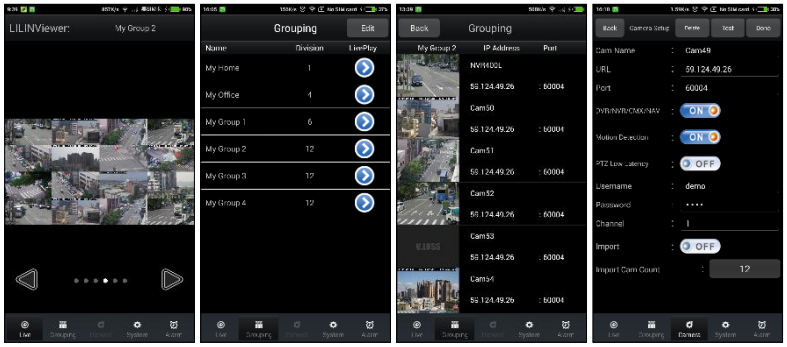
5. After you enter the above information, tap **Done** to save the changes, and the live view of your IP camera or DVR will appear.

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.