AI ToF IP Camera User Manual

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Summary

LILIN IP ToF cameras are high performance Sony 3D DepthSense ToF sensor. The Indirect Time-of-Flight (ToF) technology can measure AI object's ranged from 0.3-meter to 7-meter, millimeter grade. The ToF camera has 4 x 940nm VCSELs that can work indoor and outdoor under sunlight. The camera is also an IP67 ratio for outdoor environment.

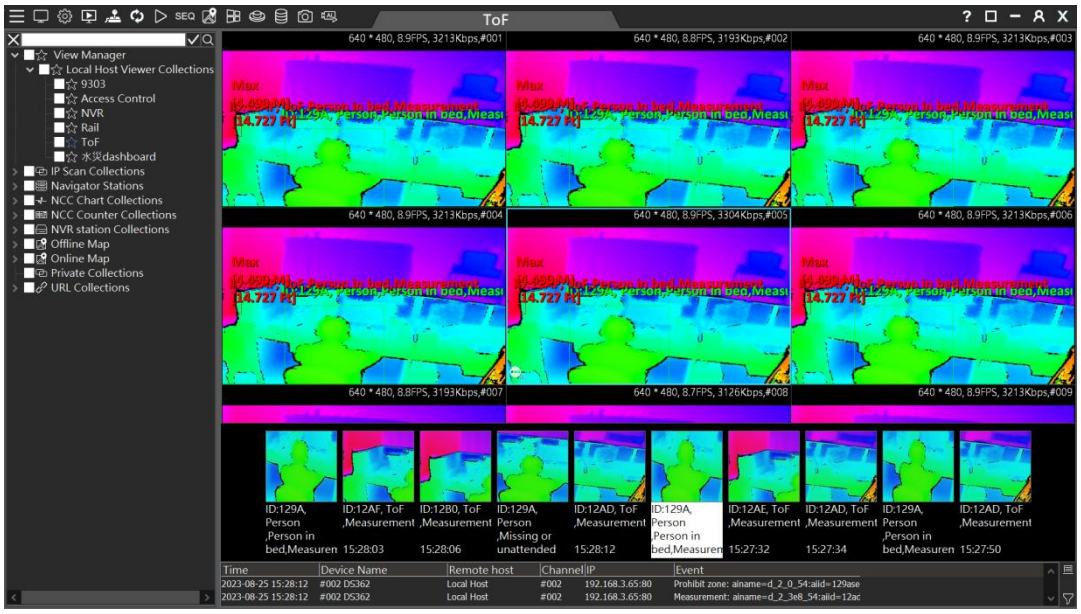
LILIN IP ToF Cameras adopt the latest H.265 compression technologies, which allow multiple streaming of H.264/H.265 formats in 640 x 480 resolutions for the 2D depth color image. LILIN's multiple streaming technology transmits digital video at various bit rates and frame rates to suit both high and low 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

- 3D ToF detection range 0.3m ~ 7m
- 640 x 480 H.265 / H.264 and Motion JPEG multi-profile video streaming
- Support email and FTP notifications
- Dynamically change frame rate and bitrate
- Mobile App and multi-browsers supported
- Built-in motion detection, audio, and tampering alarm function
- Programmable SmartEvent supported
- Support NTP time sync
- Support DDNS name server translation
- ONVIF Profile T, S supported
- Support Navigator VMS



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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.

LILIN HTTP API

For non-ONVIF integration, see the LILINOpenGitHub/LILIN-Edge-AI-ToF-Camera document.

Disclaimer

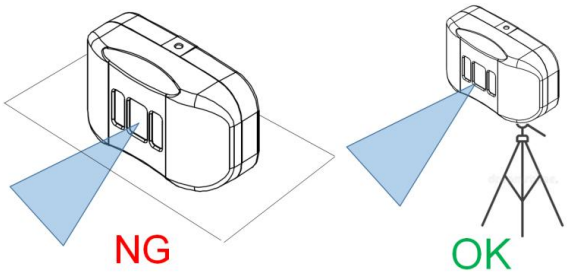
Please be aware that this user manual may cover a range of product specifications for various models. Characteristics and features discussed and/or illustrated in this manual may not be applicable or available to all models. We reserve the right to change product specifications, designs and equipment without notice and without incurring obligation.

Applications

- Out of bed detection and fall detection
- Distance detection and height detection
- Blind spot detection system

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
- Do place on a shelf or a table for testing purpose. Use a tripod or camera bracket for testing purpose.



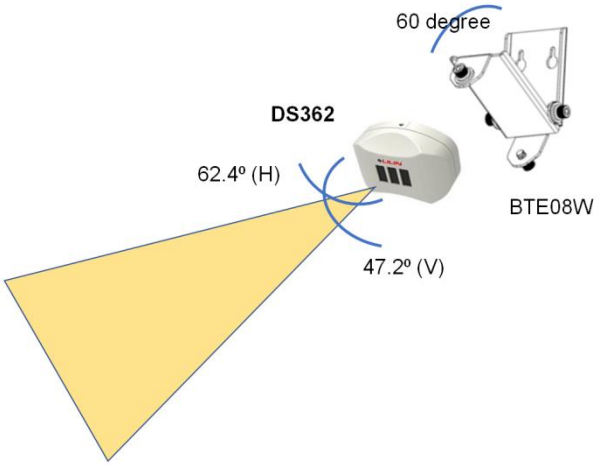
Chapter 1 System Overview

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.

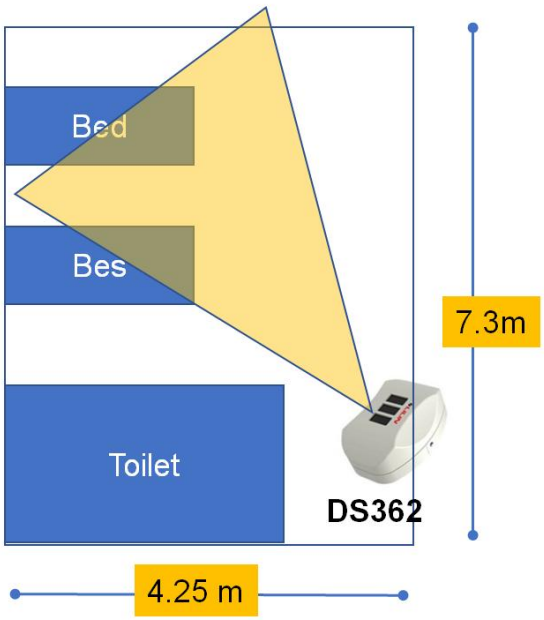
Chapter 1-2 AI ToF Camera Bracket

Purchase the BTE08W bracket for the ToF camera. The BTE08W bracket supports wall mounting for a 0 to 60-degree downward view installation and allows for left and right rotation installation.



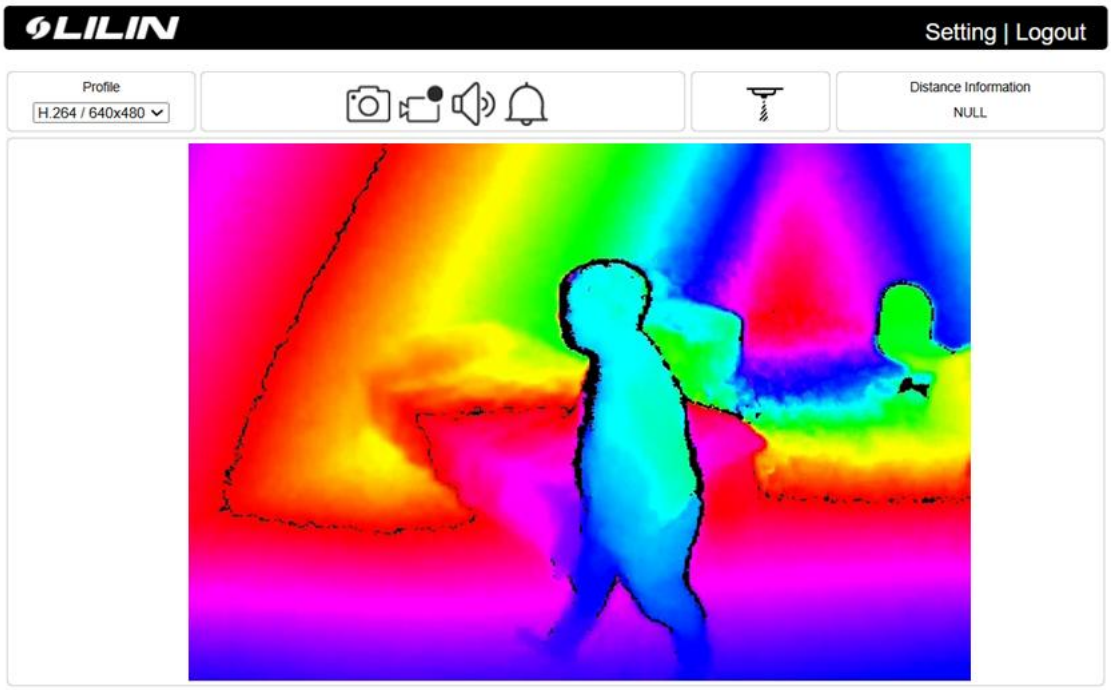
Chapter 1-3 Getting Out of Bed Detection

For the application of fall detection for patients getting out of bed, the main approach would be to install the BTE08W ToF camera bracket at a distance of 7 meters from the bed with a downward angle of 30 degrees and a diagonal angle of 30 degrees to capture falls effectively.



Chapter 1-4 Software Requirements

LILIN IP camera uses HTML5 streaming which supports Safari browser for accessing video streaming of the IP camera on Apple Mac OS and Windows OS without any software plug-in.



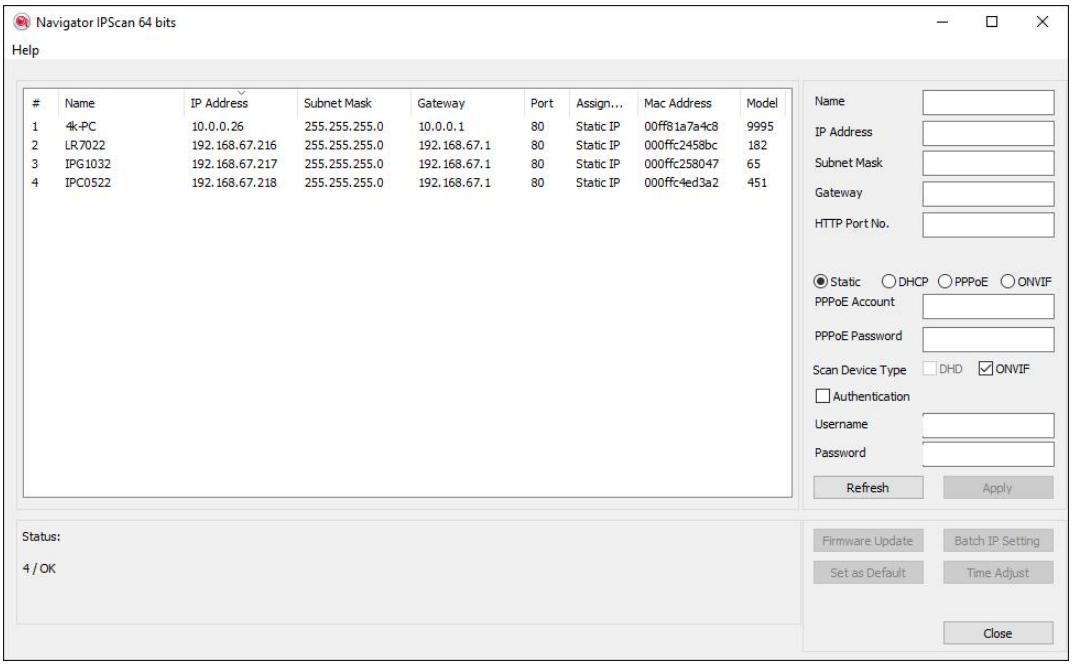
Chapter 2 Before Accessing IP Cameras

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



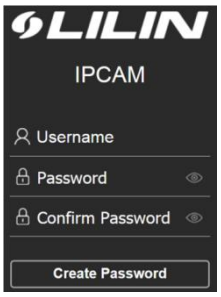
Chapter 2-2 Configure IP Addresses through HTML Connection

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.

Chapter 2-3 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(~ ? / + = , : ; . ' @ # ¥ % ^ & * ( ) _ -).

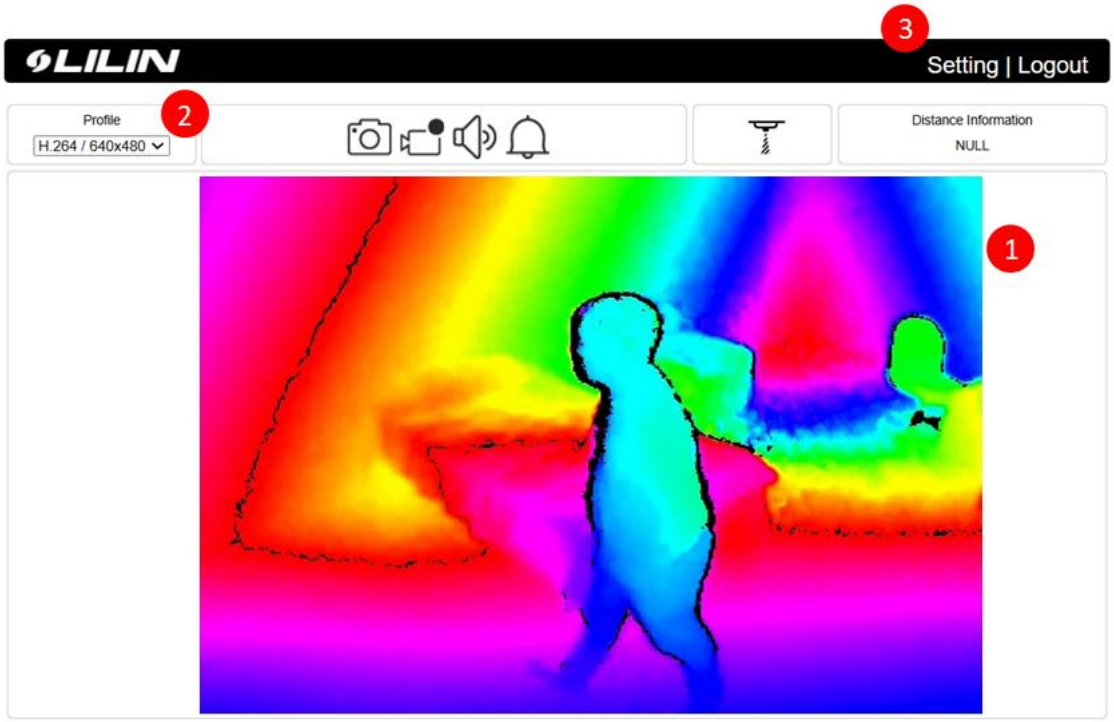
Note: Please preserve the credential for accessing the camera properly. Forgetting the credential for accessing the camera, please perform hardware factory default.

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

After logon the ToF camera, the web page is shown below:



1. **Video display screen:** Display RTSP H.264 or MJPEG streaming video
2. **Profile switching menu:** Switching from one video profile to another
3. **Setup buttons:** IP camera setup menu
4. **Logout:** Click logout that can logout the system

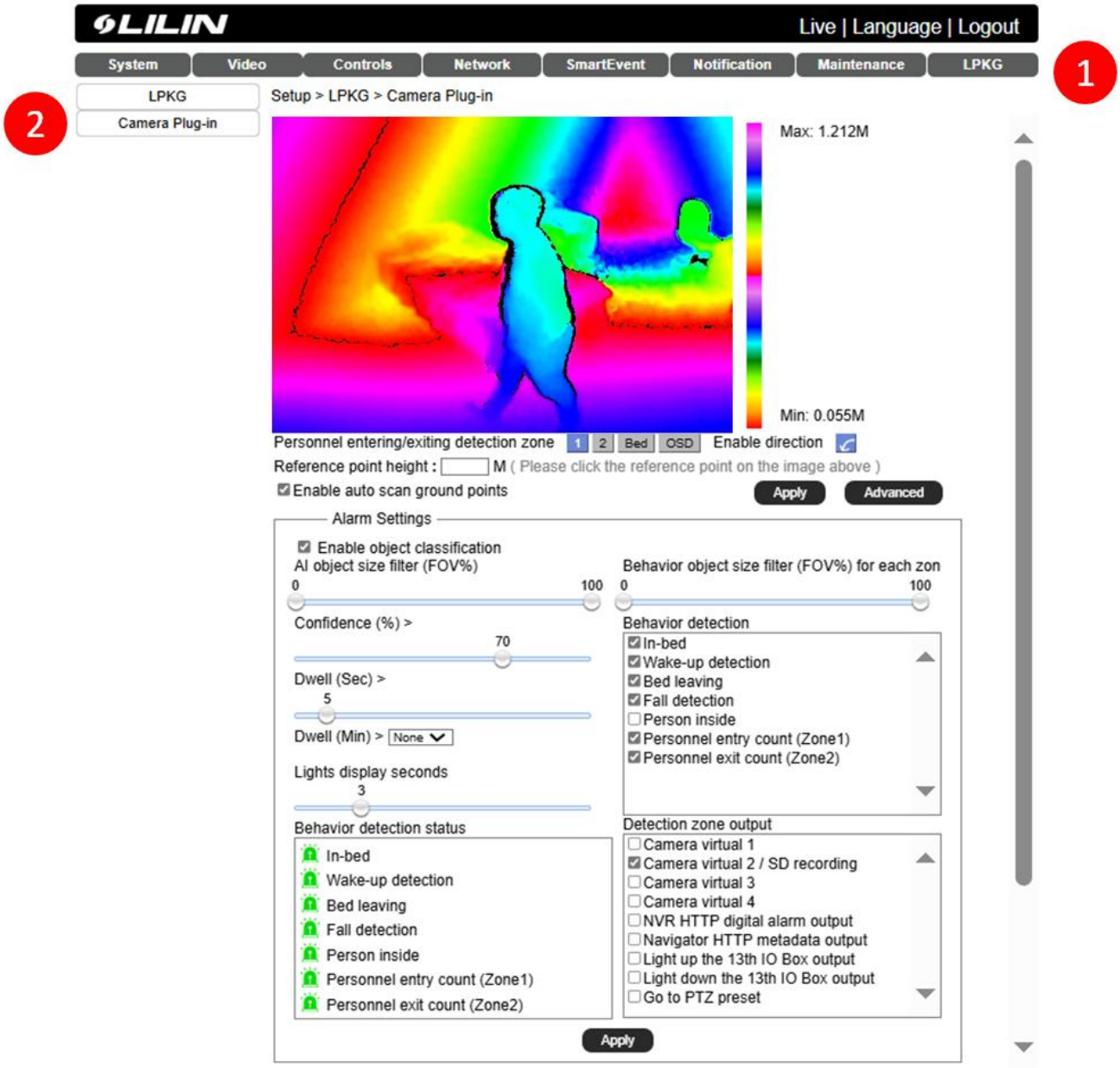
Chapter 3-2 Quick Buttons

The quick control panel buttons are described below:

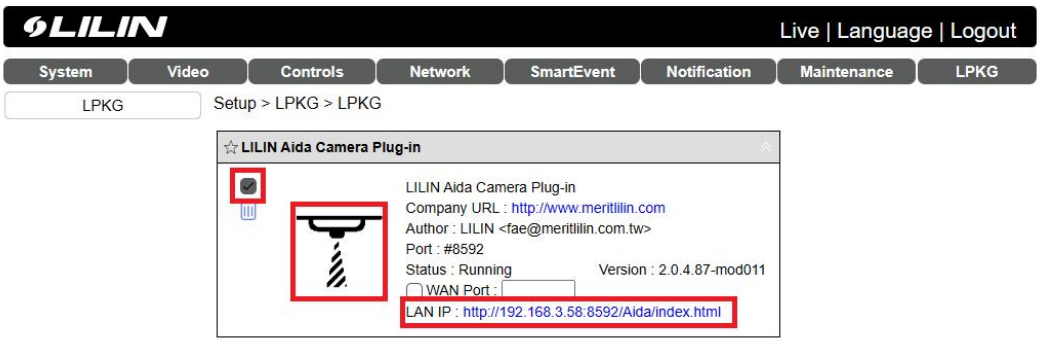
	Speaker output control (audio model only)
	Digital input triggering indictor of the camera
	Take a JPEG snap shot
	Record the MP4 video into a local PC

Chapter 3-3 Access the Plug-in

For accessing ToF plug-in, click on LPKG and click on Camera Plug-In. You can get the ToF configuration page.



Click on the link of the LAN IP for opening ToF page. For Internet access, the WAN port can be used for mapping the port number for Internet access on an Internet router.

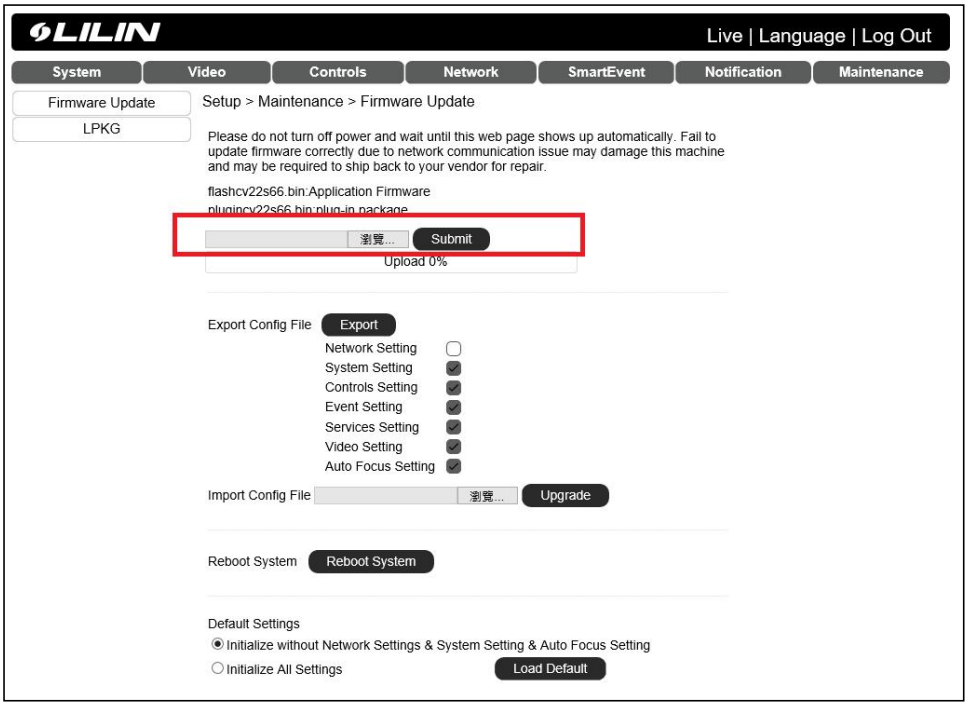


For opening the plug-in, first enable the check box ☑. Second, click on the link or the button below for opening

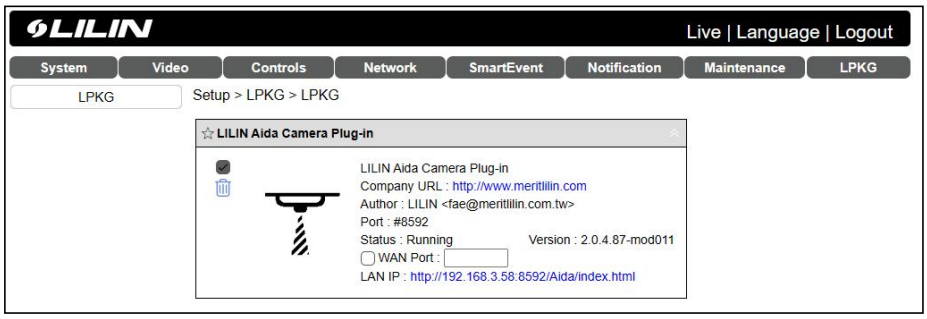
the plug-in. Click button that can remove the plug-in.

Chapter 3-3-1 Upgrade LPKG

Please click "Maintenance -> Firmware Update", the Aida plug-in file format of this product is "plugincv22s66.bin", select the "Browse" button to select the file, and select the "Submit" button to install the plug-in.



After the Aida plug-in gets installed, the Aida plug-in page can see the relevant information of the plug-in as in LILIN Plug-in Package (LPKG) page.



Click on the plug-in icon that can open the plug-in page. LILIN Aida software is at 8592 port. Click that can enable the plug-in. Click delete button that can remove the plug-in.

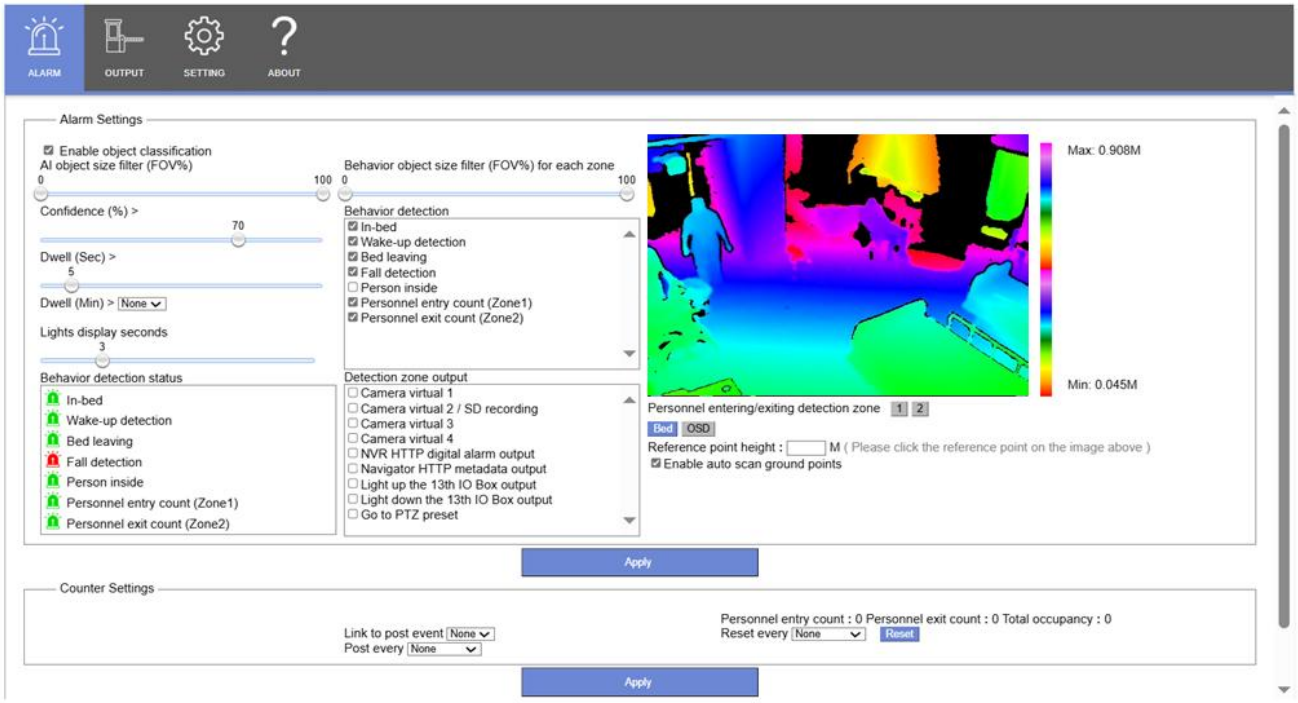
Chapter 3-4 ToF Alarm Setup

The AI ToF camera is equipped with an embedded AI engine that can identify people. Click "Enable Object Classification" to utilize AI object classification detection. When it comes to object recognition, there are 2 detection zones available to analyze the behavior of objects. Please follow the instructions below for configuration.

The alarm page can show the maximum and minimum distances detected in a sense. There are distance and height detections available.

The explanation for the relevant alert zone settings is as follows:

- AI object size filter (FoV%): This is a global filter for AI objects. Objects with widths smaller or larger than the filter value will be filtered out by the AI.
- Confidence (%): This is a global filter for AI object confidence. It filters out AI objects with confidence levels below the specified threshold.
- Dwell time: This is the time setting for triggering an alert when a particular species of AI-recognized object is detected within the alert zone for duration.
- AI object size filter (FoV%):These are individual width filters for each alert zone. Objects with widths smaller or larger than the filter values specific to each zone will be filtered out by the AI.
- Behavior detection status: The behavior detection indicator



Chapter 3-5 Person Entering & Leaving Detection Zones via Tripwire

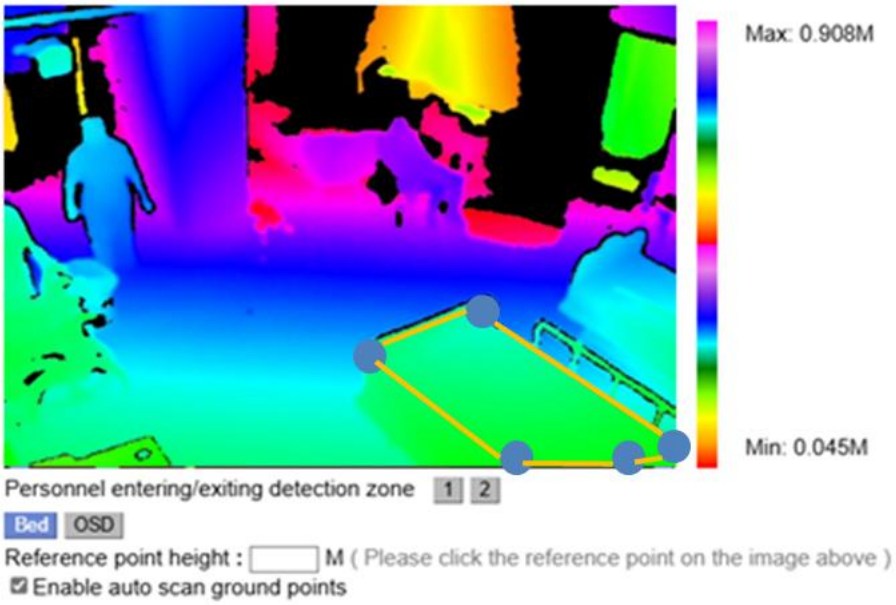
Click the buttons 1 2 to define a person entering detection zones. After adding a tripwire, drag the anchor points of the zone to align with the on-site environment. You can have up to 2 tripwires, which are used to analyze the behavior of person. Setting up tripwires allows you to focus on specific areas for detection and reduces false alarms.

For the reference height, please use the mouse point and click on the video area. Enter the reference height information in meter. It is highly recommend pointing to a wall for the reference height.

Chapter 3-5-1 ToF Camera Settings for Fall Detection

To adjust the fall detection zone, please follow these steps: Click Bed button.

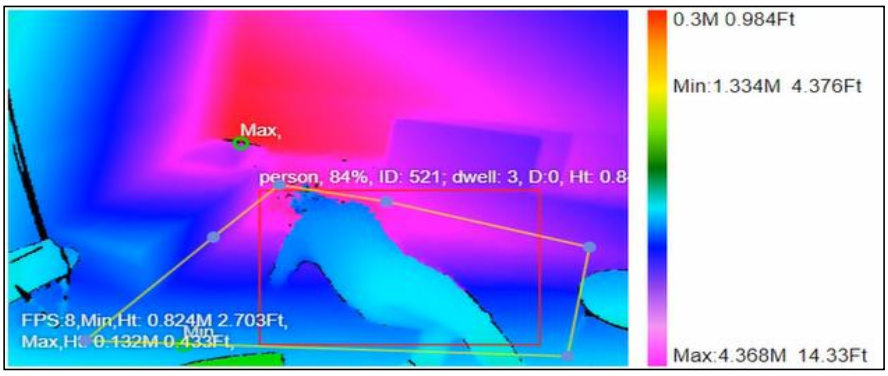
- Move the mouse cursor over the blue dot of the desired detection zone on top of a bed.
- Press and hold the left mouse button, then drag the blue area to adjust it to the desired size and position for the detection zone.
- Release the left mouse button to confirm the adjustment of the detection zone.
- Using this method, you can easily adjust the detection zone by using the mouse, placing it in the desired position and range.



Chapter 3-5-2 Fall Detection

Fall prevention: When someone leaves the bed, particularly for high-risk individuals like the elderly or individuals with limited mobility, the risk of falling increases. Bed exit detection can alert caregivers, enabling them to respond quickly and reduce the likelihood of falls.

Fall detection for individuals involves first defining a "Ground" reference point (up to three points) and utilizing AI to recognize a "Person." The system then determines if a fall has occurred based on the person's highest point of elevation.

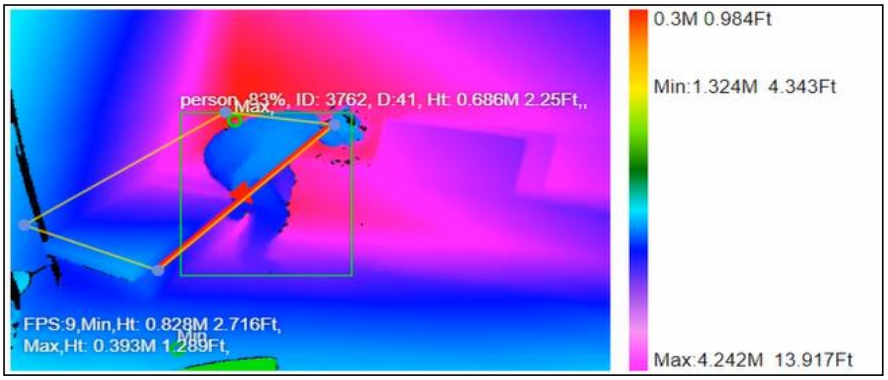


Chapter 3-5-3 Getting out of Bed Detection

Getting out of Bed detection is crucial in specific situations, especially when caring for individuals who require extra attention, such as the elderly or patients.

Monitoring health conditions: Bed exit detection provides real-time monitoring of the activity patterns of patients or individuals being cared for. It offers insights into sleep quality, rest times, activity levels, and more, which is valuable for assessing health conditions and developing personalized care plans.

Please define a detection zone around the bed and select the "Getting out of bed" setting. In bed exit detection, individuals within a caution zone within a distance of 30 centimeters from the bed are considered as off-bed.



Chapter 3-5-4 Getting up of Bed Detection

Please define a detection zone around the bed and select the "getting out of bed" setting. In getting out of bed detection, individuals within the caution zone (bed area) are monitored, and when their height exceeds 90 centimeters, it is determined that they are getting out of bed.

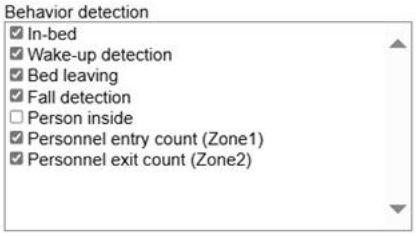
Chapter 3.6 Behavior Detection

Chapter 3.6.1 Prohibit Zone Detection for Human

To set up an alarm notification for an object entered the prohibited detection zone, please select in the object names in “classification”. Add a detection zone to desired area. Tick on “Prohibit zone detection”. Click “Set” button to save the settings.

This can be used for detecting a person entering a prohibit zone or parking violation.

The prohibit zone works as below: If an object gets classified and enters the prohibit zone as below, the classified objects in the zone get shown in red.



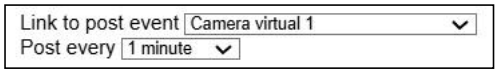
Chapter 3.6.2 Counter Detections

Counter feature is to count human in a detection zone. This function can be used for the detection of too many people in the detection area and trigger the camera alarm. To use this function, please select the "Person inside, person entry, person exit detection" feature described above.

The results are shown below:

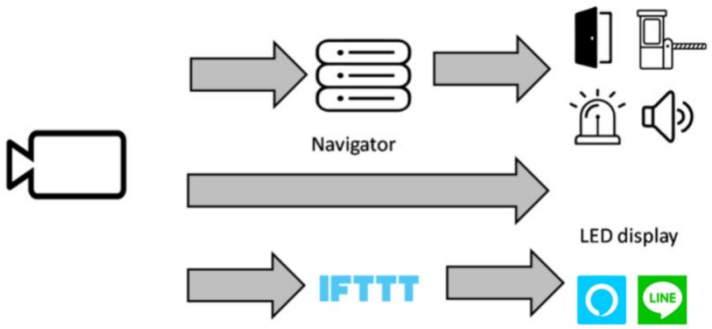
The counter detection is to count the behavior detection. Once it reaches the value of the Counter Trigger, the camera can trigger an action. The example below shows the tripwire with “Counter Triggering” feature at counter #2. For the counting feature, please follow:

- Enable one of the behavior for a detection zone
- Reset every minute: Reset time interval
- Post every: HTTP post time interval



Chapter 3-7 HTTP Post Notification

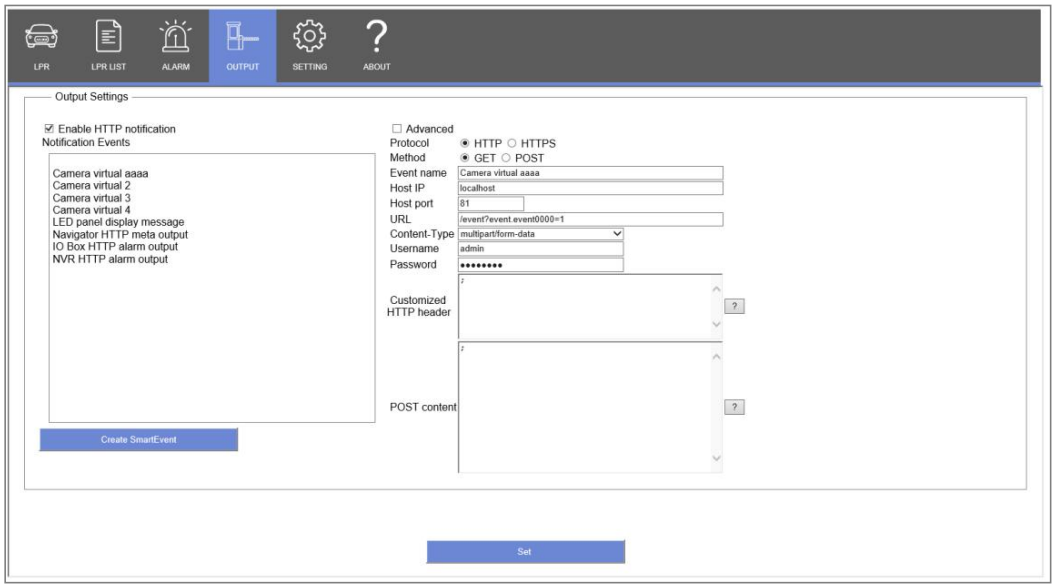
HTTP Post can notify other systems for integration purpose. See examples below:



Click on to launch HTTP notification dialogue box. There are few pre-programmed HTTP CGI commands for interfacing LILIN NVR or IP camera. Click on Add, Delete, and Edit buttons for editing the HTTP Post commands.

For example, to control IP camera's relay output, follow the steps below:

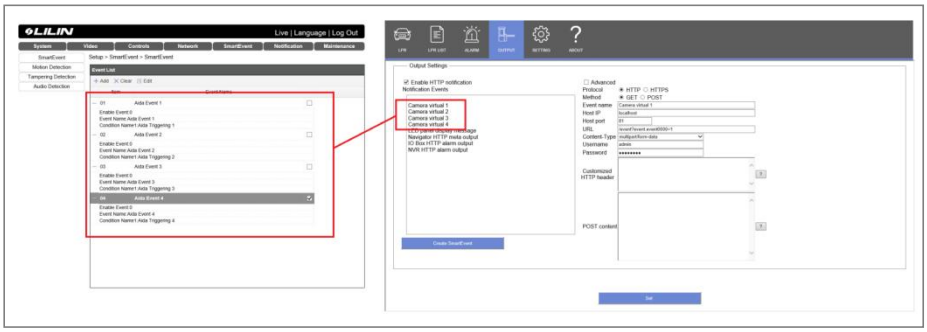
- **Protocol**: Select HTTP port (default) for communication purpose.
- **Method**: Select the target device HTTP protocol method.
- **Event name**: Specify an event name.
- **Username and password**: Enter the username and password of the target device.
- **HTTP Port**: The port number of the target device.
- **URL**: The CGI command of the IP camera for reply triggering output.
- Customized HTTP header
- **Post content**: Customized contents of AI recognition result including "counter", bonding boxes, number plate, and others.

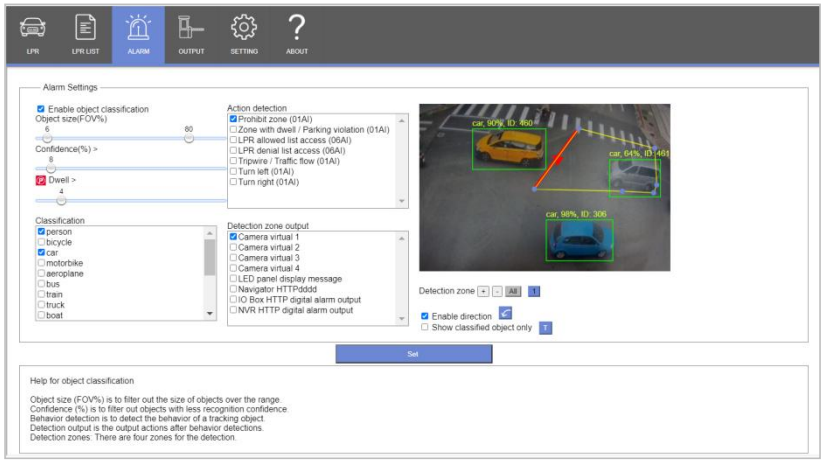


Chapter 3-8 The Outputs of Camera

When Aida plug-in detects an object in detection zone alarm or a license plate recognition black and white list, it can perform camera alarm notification, (1) camera-side smart event alarm notification (2) HTTP notification to other systems and (3) counter output.

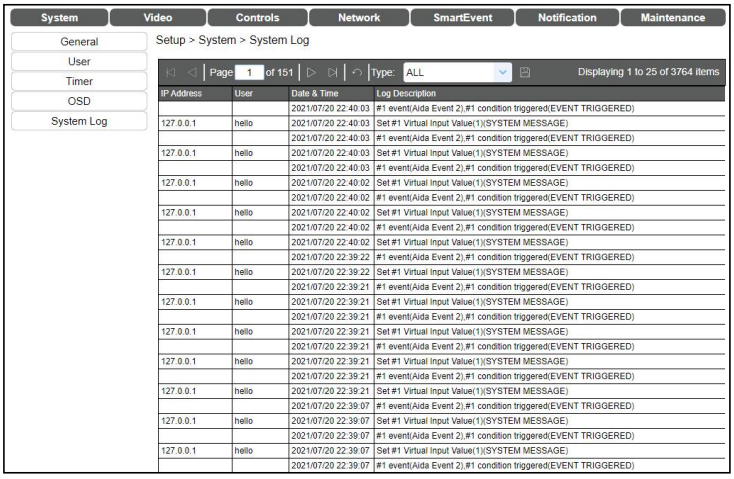
Click the button to automatically create the camera "SmartEvent" alarm output setting. This button can create 4 camera events and correspond to the Camera virtual inputs #1 ~ #4 of the Aida notification event (see the picture below). If Aida plug-in has the AI detection, e alarm output, you can use the camera to trigger the "smart event", select the behavior to be detected and press the output setting button; you can specify the output after behavior detection as





Chapter 3-8-1 Verify the Output Triggering of the Camera

Go to Setup > System > System Log of the camera to verify the triggering by Aida detection.



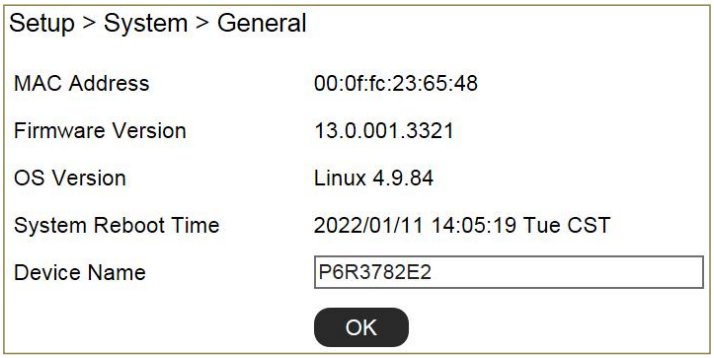
Chapter 4 Settings

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

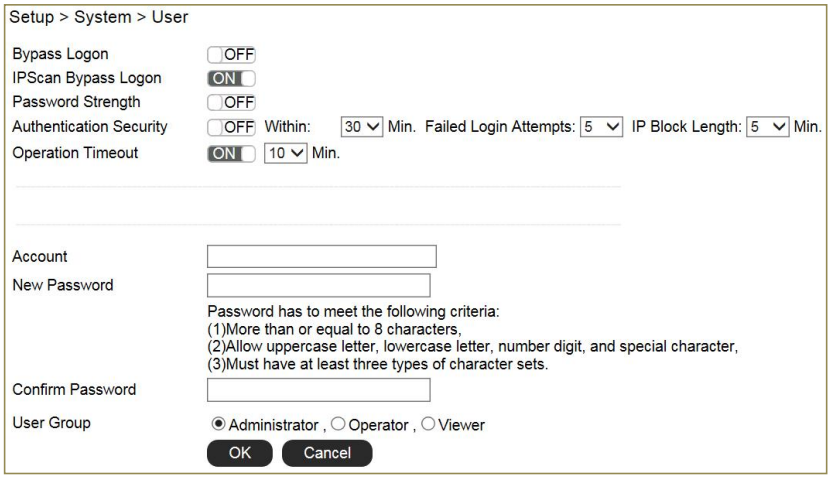
Under System Settings→General, you will see server system information, such as MAC address, firmware version, os version, system reboot time, and device name settings. To modify these options, follow the instructions below:



- **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.

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:

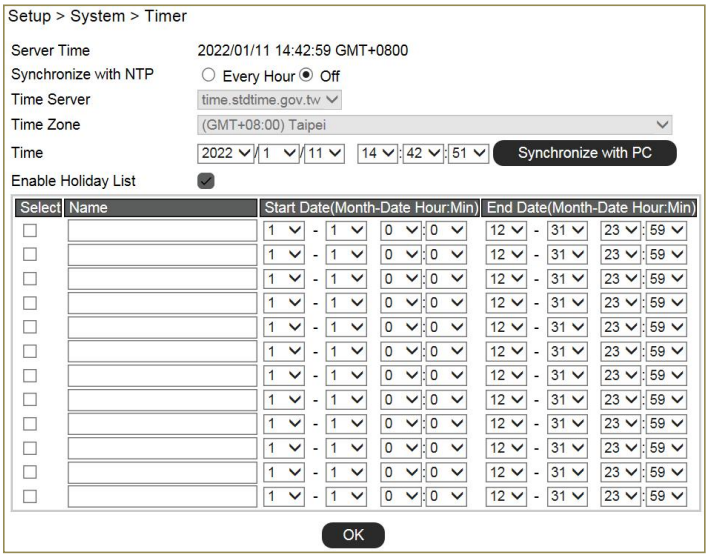


Enter the account name, password and confirm password to add new account, and then check to assign the access rights for this account. Click OK to update the settings.

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.



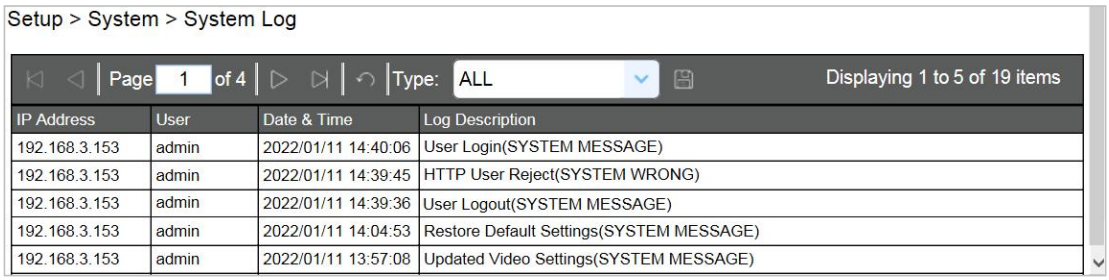
Synchronize with an NTP server

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 4-1-5 System Log

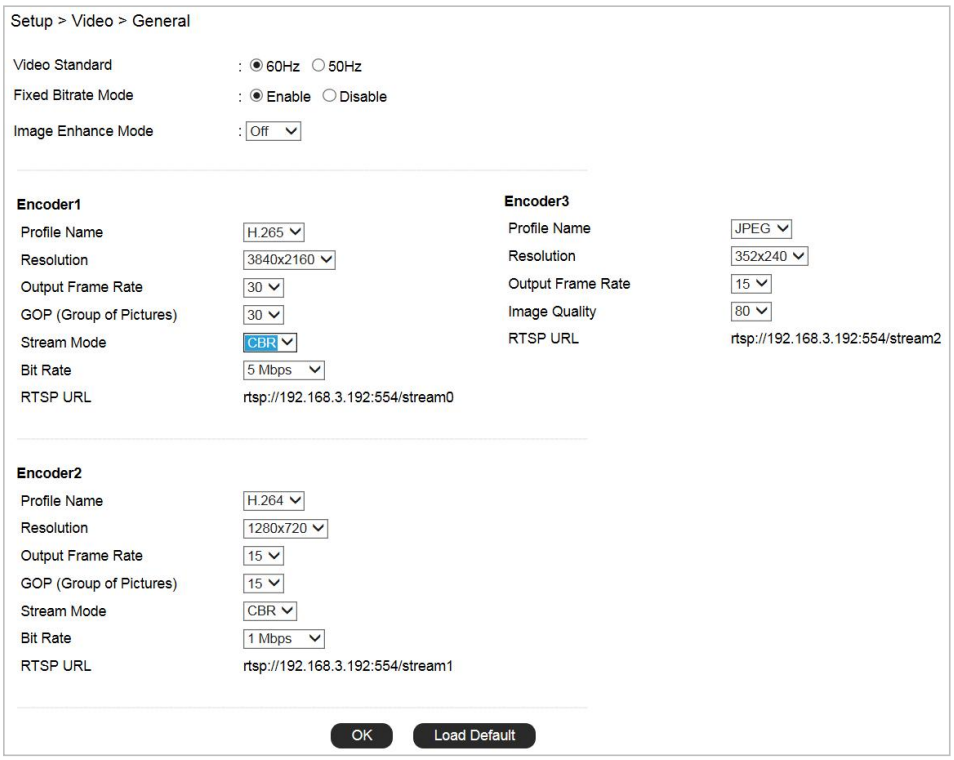
You can view the system-generated log in this page. Click Save icon to export the log to a text file. You can also search for log file by selecting the type keyword.



Chapter 4-2 Video

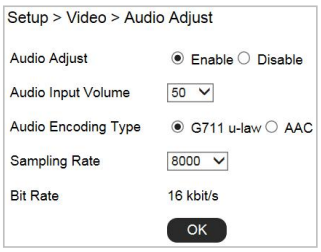
Chapter 4-2-1 General

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.



- **Profiles:** 3 customizable profiles
- **Video Standard:** NTSC/PAL setting
- **Image Enhance Mode:** HDR switch
- **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 Audio Adjust



- **Audio Adjust:** The switch for audio adjust
- **Audio Input Volume:** MIC or line-in volume
- **Audio Encoding Type:** volume adjustment
- **Sampling Rate:** set the audio sampling rate
- **Bit Rate:** 16 Kbit/s

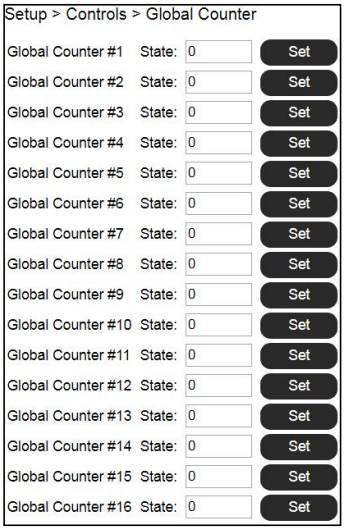
Chapter 4-3 Controls

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.

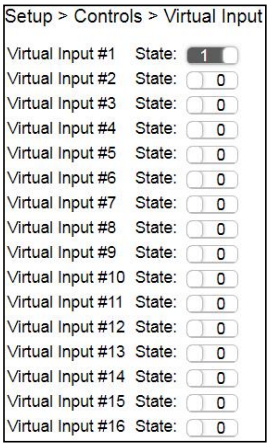
Chapter 4-3-2 Global Counter

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.



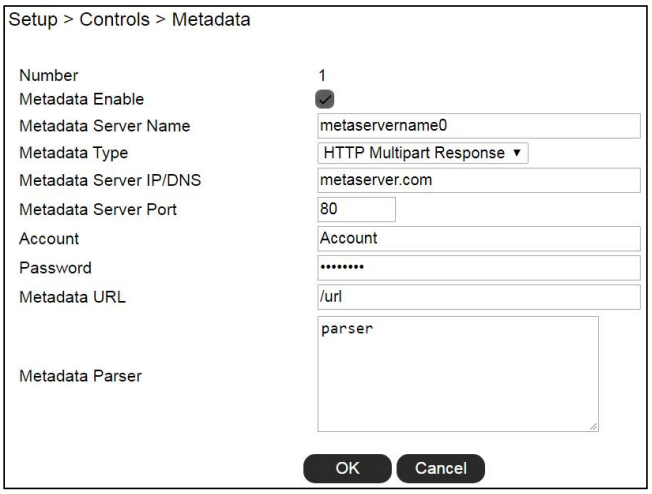
Chapter 4-3-3 Virtual Input

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.



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.



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:

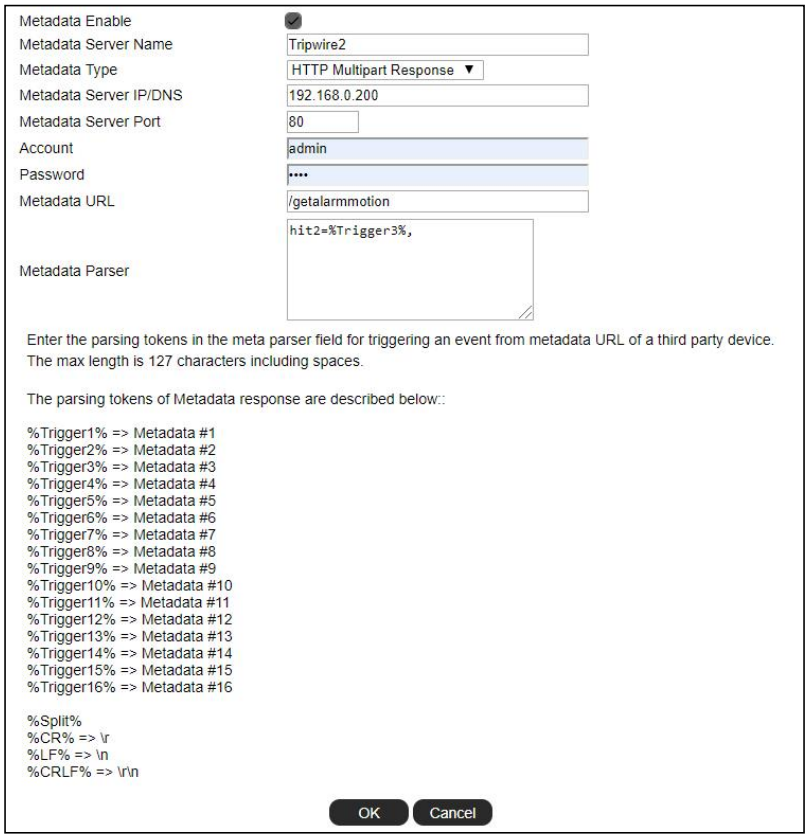
Metadata Enable: Enable metadata service.
Metadata Server Name: Specify the name of the metadata service.
Metadata Type: (1) HTTP multipart response, (2) HTTP response

(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

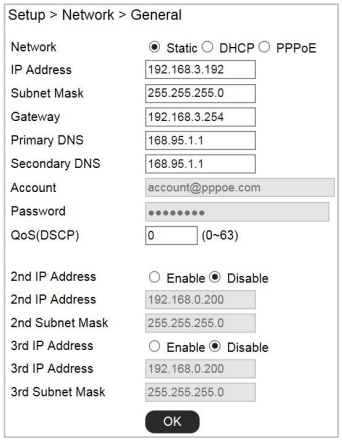


Chapter 4-4 Network

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.

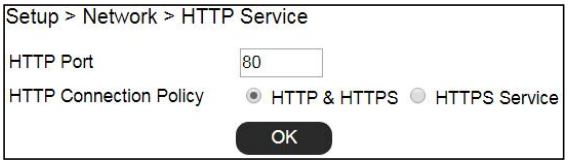
- **Primary DNS** —The IP address of the default and first DNS server
- **Secondary DNS IP Address**—The IP address of the backup and second DNS server to the default DNS
- **QoS(DSCP) —**Based on DSCP standard, set the TCP/IP packet header for packet priority.

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.

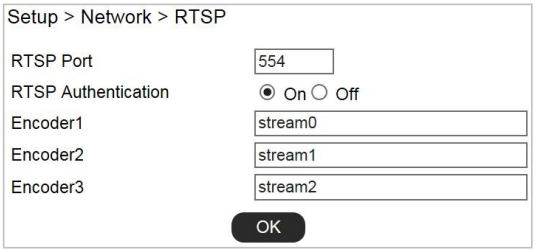
Chapter 4-4-2 HTTP Service

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.



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.



Settings on this page are described below:

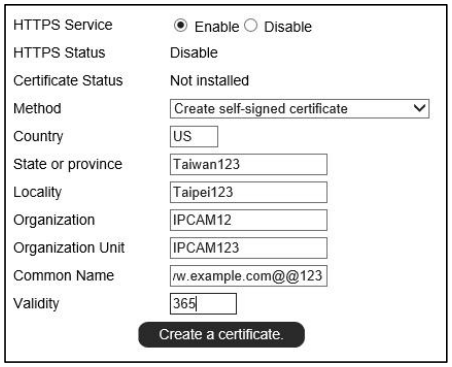
- **RTSP Authentication**: Enabling this option will require username and password when connecting to the RTSP stream
- **Encoder:** Change encoder name.

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.

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.**



A pop up message will display:

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

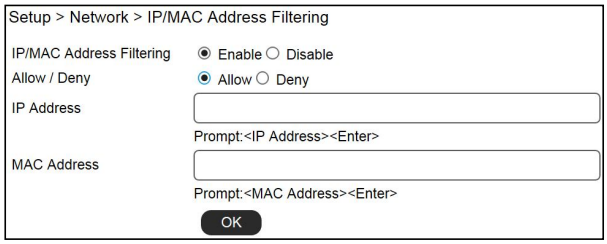
Click **OK** to activate HTTPS function. And the **HTTPS Status** will have changed from **Disable** to **Enable**.

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 IP/MAC Address Filtering

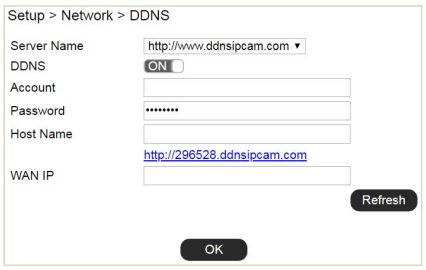
LILIN camera provides an IP/MAC address filter to help you block unauthorized IP/MAC addresses from accessing the camera. Enable the service before you enter the IP address you want to block, and press OK.



- **IP/MAC Address Filtering:** The switch for IP/Mac address filtering.
- **Allow / Deny:** Allow / deny to access by the IP/Mac address.
- **IP Address:** Specify the IP address for filtering.
- **MAC Address:** Specify the IP MAC for filtering.

Chapter 4-4-6 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 OK for the changes to take effect.



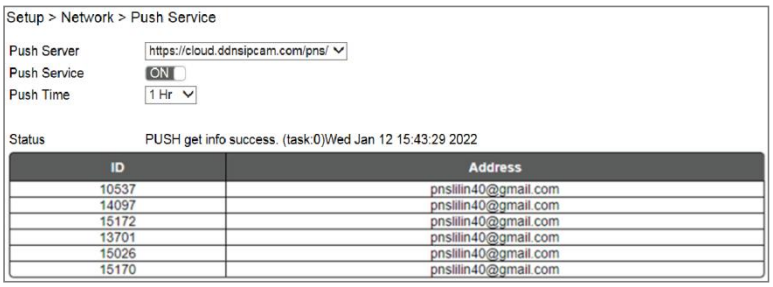
To activate DDNS, go to www.ddnsipcam.com. If the IP camera is on Internet with a global IP address, use the last 6 digits of the MAC address as the host name with default account and the default password,. The IP camera will automatically register to www.ddnsipcam.com.

Note: The DDNS feature requires Internet connection.

Chapter 4-4-7 Push Service

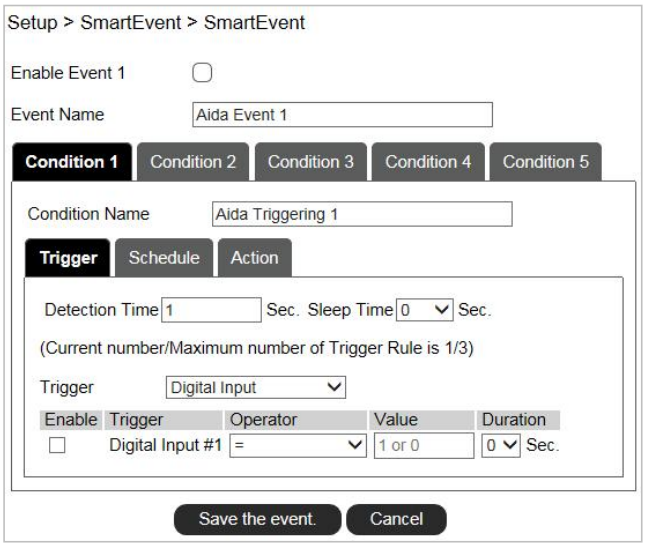
The camera provides IOS and Android mobile phone push service. When the camera alarm occurs, push service setting provides the information to LILIN cloud. And then, send push notification to the client's mobile phone.

- **Push Service:** Enable the push notification.
- **Push Time:** The camera reports regularly to the cloud watchdog time interval.
- **ID:** The APP independent code of LILINHome or LILINViewer on the mobile phone. The table list how many mobile phones are currently subscribed to broadcast notification.
- **Address:** The mobile phone registered email account in the cloud.

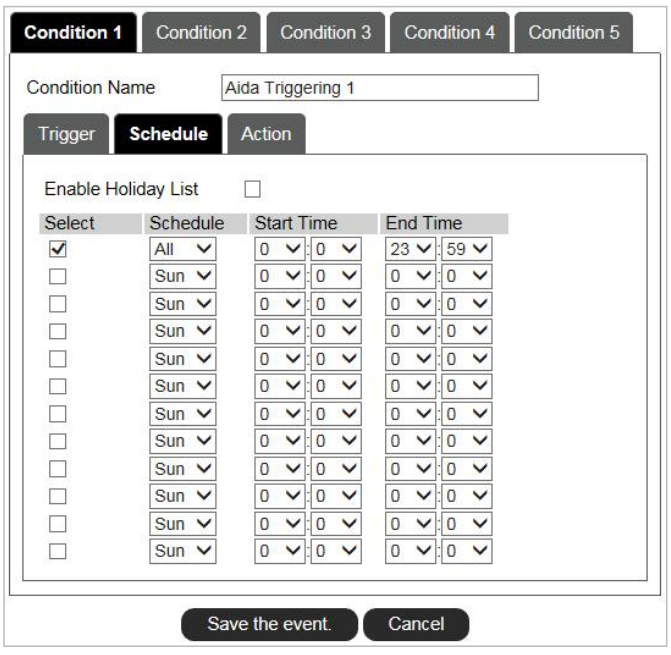


Chapter 4-5-1 SmartEvent

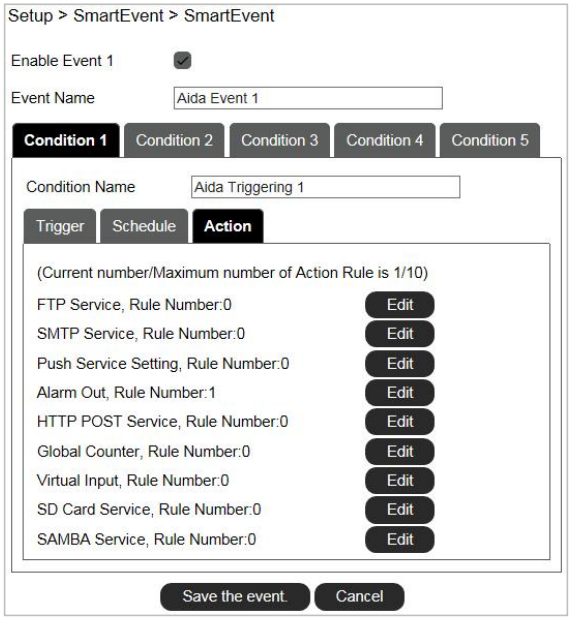
Here you can configure the detection settings for alarm, global counter, virtual input, meta data and network failure. Choose an event type for entering the event name and event condition for triggering an alarm. Click **Save the event** button for saving the event.



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.



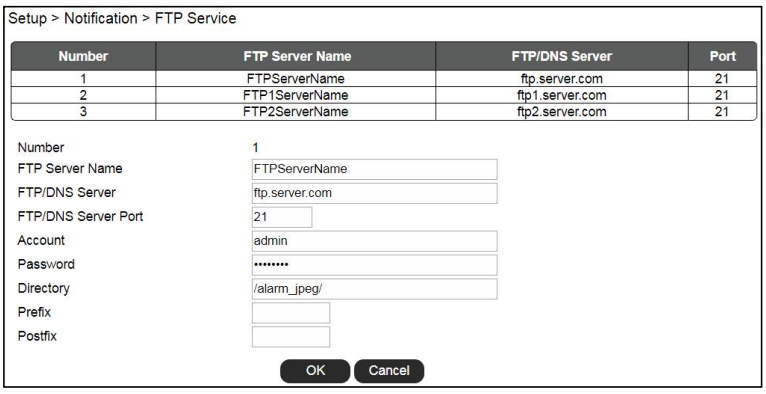
- **FTP Service:** Mail event logs to an FTP server.
- **SMTP Service:** Mail event logs to an SMTP server.
- **Push Service Setting:** When the alarm is triggered, can send push notification to specified iOS and Android.
- **Alarm Out:** Trigger the digital output of the IP camera.
- **HTTP POST Service:** 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 4-6 Notification

Chapter 4-6-1 FTP Service

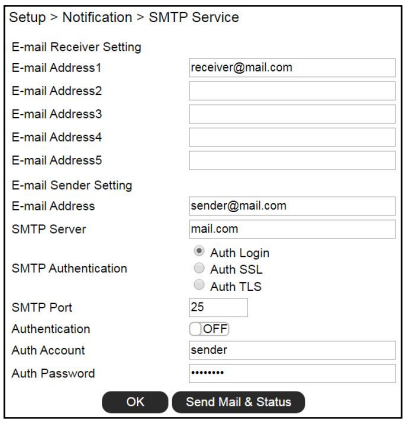
Enter the required FTP information to send alarm snapshots to an FTP server.



- **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

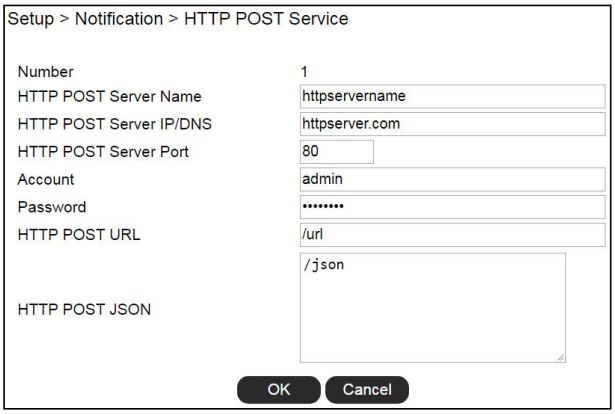
For alarm notification with JPEG snapshots, enter the required information to enable this Email notification service.



- 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

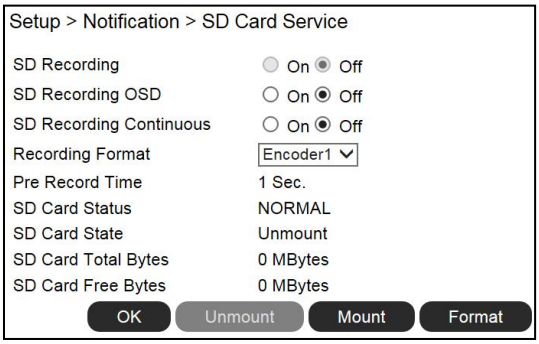
Through the POST protocol, the camera can automatically send notification snapshots to a website if an alarm is triggered.



- **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.



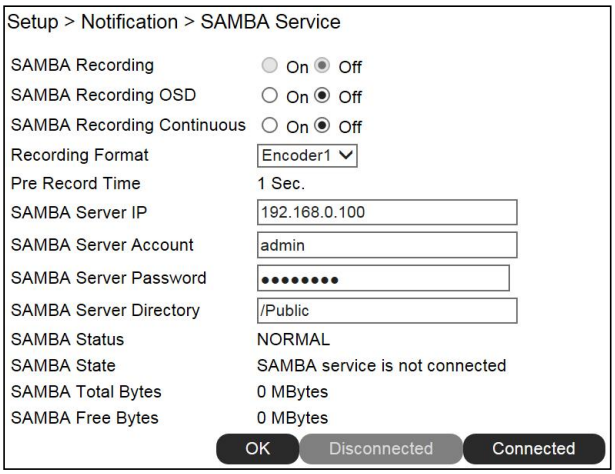
Warning: Ensure to click **Unmount** before removing the SD card, or the system may crash.
Note: SD card model only

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.

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.



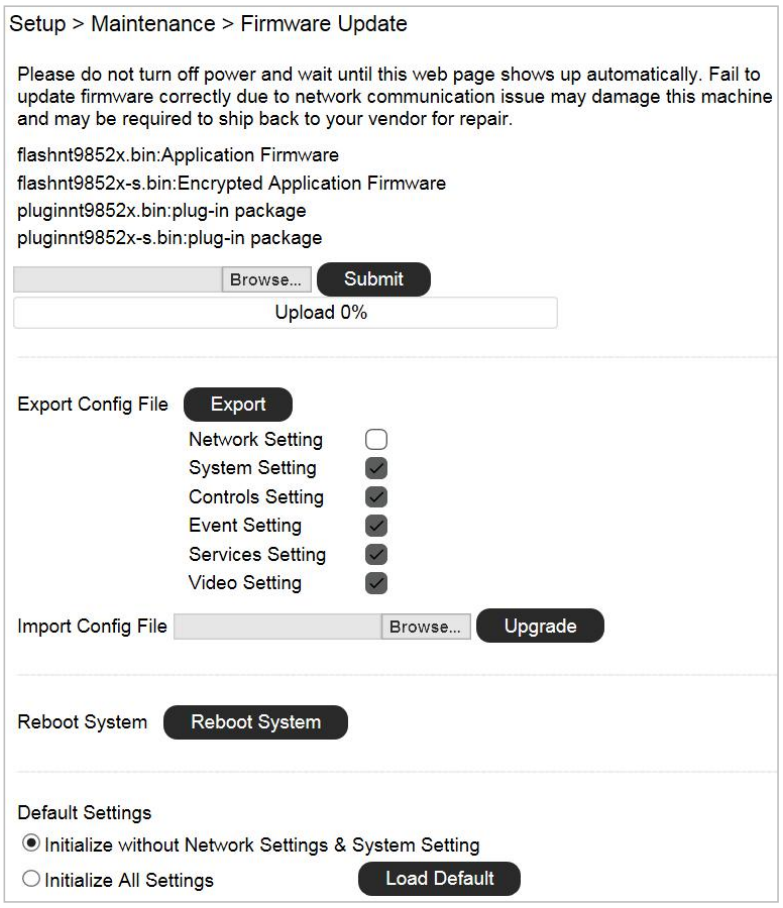
- Samba Recording: Enable Samba recording service.
- Samba Recording OSD: Timestamp OSD on the AVI files
- Samba Recording Continuous: Enable/disable Samba continuous recording.
- Recording Format: The resolution of the AVI files
- Pre-record Time: Pre-alarm recording based on the alarm settings
- Samba 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

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.



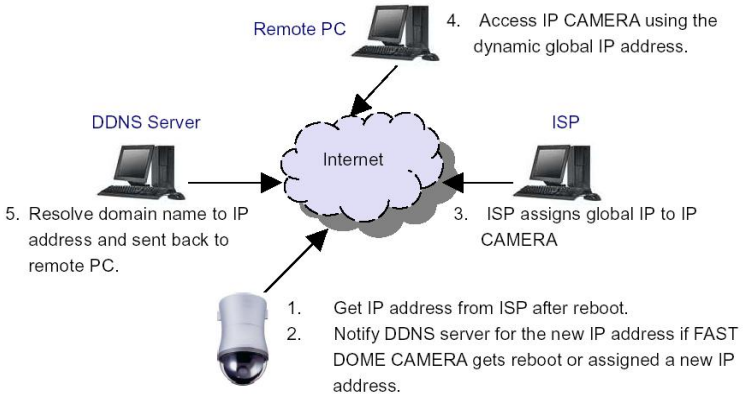
Warning: Never disconnect the power during the update. This could cause irreversible damage to your device.
Note: If you forget your password, please contact your vendor or send the device to us.

Appendix

DDNS Network Settings

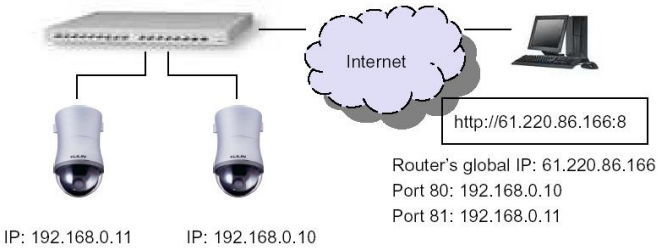
One of the advantages of adopting DDNS and PPPoE services is to save the cost of renting a global IP address. When you power on a camera with a video server and connect to the Internet with the PPPoE service, the camera asks your ISP for a dynamic global IP address. This Internet-accessible IP address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