

# LILIN Ultra, S and ZS series IVS Camera User Manual

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## Chapter 1 IVS Features

### 1.1 The following situations IVS might not work

- In the rainy day, the rain drops block the FOV for the detected objects.
- In the foggy environment, the fog blocks the detected objects.
- The reflection caused by sunshine and mirror
- The large object blocks the detected objects.
- Blurry video in a strong wind installation
- The detected objects and the background are too similar.
- The shadows of people might be detected.
- The motion blocks and tripwire are on top of a tree or the shadow of the tree.
- The spider nest on top of the camera cover

### 1.2 The Border of Non-detection Area

The edge (5% FOV) of the camera view is the non-detection area. Make sure that the target objects should avoid the non-detection area during camera installation. The edge of non-detection area is for the camera's OSD and the tolerance against camera vibration caused by wind.



### 1.3 IVS Setting

IVS settings are described below:

Live | Basic Mode | Advance Mode | Language | Logout

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

Event  
IVS  
Motion Detection  
Audio Detection  
Alarm Detection  
Network Detection  
Push Service Setting

Advance >> Event >> IVS

IVS Status                      Enable

- Motion Detection, Tamper Detection
- Advanced Motion Detection
- Tripwire, Semaphore + Tripwire
- Object Counting
- Object Left Detection
- Object Remove Detection
- Advanced Tripwire Detection
- Advanced Object Counting
- Density Detection
- Loiter Detection
- Face Detection

If enable Motion Detection function, Encode4 OSD will disable.

Submit

## Chapter 2 Instruction for IVS Features

### 2.1 Motion Detection

Motion detection (L Series, Pro Series, Z Series, M Series, Ultra, and S Series) detects motion in a scene, the area can be customised and the sensitivity adjusted to suit specified requirements



**Note:** LILIN Ultra and S series IVS use advance motion detection technology that is to change the way motion detection is handled by the camera. With a four-pass filter for separating motion objects, this results in a more accurate motion detection algorithm, lowering false alarms and other recording triggers.

#### 2.1.1 Motion Detection Configuration

To enable Motion Detection on the camera, follow the steps below:

- Click on IVS tab on the left.
- Select Motion Detection, Face Detection, Tampering Detection and click Submit button to save the changes.
- Click on Motion Detection tab on the left.
- Enable Motion Detection feature.
- Use a mouse drag on the video blocks.
- Change Motion Sensitivity according to the motion activities. (Low:99~High:1)
- Click Submit button to save the changes.



## 2.2 Tampering Detection

An alarm is triggered automatically when the camera detects if someone attempts to cover, vandalize or move the lens.



### 2.2.1 Tampering Detection Configuration

To setup Tampering Detection on the camera, follow the steps below:

- Click on IVS tab on the left.
- Select Motion Detection, Tampering Detection and click Submit button to save the changes.
- Click on Tampering Detection tab on the left.
- Enable Tampering Detection feature.
- Adjust Tampering Detection Time and Dwell Time.
- Click Submit button to save the changes.

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

System Video / Audio Network Event Notification Maintenance

Event  
IVS  
Motion Detection  
Tamper Detection  
Audio Detection  
Alarm Detection  
Network Detection  
Push Service Setting

Advance >> Event >> Tamper Detection

Tamper Detection  Enable  Disable  
Tamper Detection Time  Sec.  
Tamper Detection Dwell  Sec.

Submit

## 2.3 Tripwire

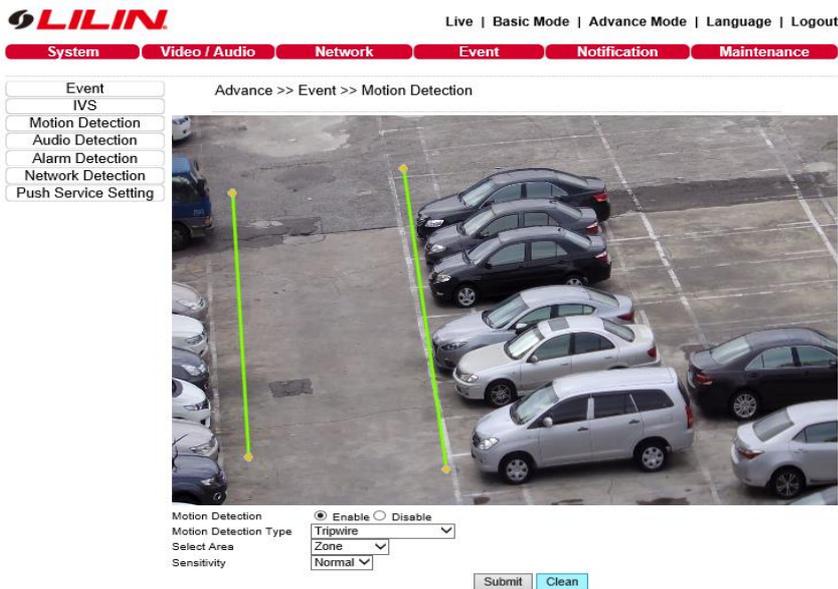
Tripwire allows up to 8 lines or rectangles to be drawn within a camera image, movement from either direction across this line will trigger a motion detection alarm.



### 2.3.1 Tripwire Configuration

To setup Tripwire on the camera, follow the steps below:

- Click on IVS tab on the left.
- Select Tripwire, Semaphore + Tripwire and click Submit button to save the changes.
- Click on Motion Detection tab on the left and Edit button on the bottom.
- Enable motion detection feature.
- Motion Detection Type to be selected Tripwire.
- Select Area to be selected Zone.
- Use a mouse drag on the video.
- Change motion sensitivity according to the motion activities.
- Click Submit button to save the changes.



## 2.4 Traffic Light Detection (Semaphore + Tripwire Detection)

Create alarms when up to 8 tripwire lines are crossed when a specified colour is shown in your chosen area. Below is an example of tripwires becoming active when the traffic lights turn to red (as this is where the specified box is)



### 2.4.1 Traffic Light Detection Configuration

To setup Traffic Light on the camera, follow the steps below:

- Click on IVS tab on the left.
- Select Tripwire, Semaphore + Tripwire and click Submit button to save the changes.
- Click on Motion Detection tab on the left and Edit button on the bottom.
- Enable motion detection feature.
- Motion Detection Type to be selected Semaphore + Tripwire.
- Select Area to be selected Zoom.
- Use a mouse drag on the video.
- Drag a rectangle to where is semaphore on the video, and adjust the rectangle to fit the actual size of semaphore.
- Change motion sensitivity according to the motion activities.
- Select one specific color and color ratio for detection.
- Click Submit button to save the changes.

Live | Basic Mode | Advance Mode | Language | Logout

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

Advance >> Event >> Motion Detection

Event  
IVS  
Motion Detection  
Audio Detection  
Alarm Detection  
Network Detection  
Push Service Setting

Motion Detection  Enable  Disable  
Motion Detection Type Semaphore + Tripwire  
Select Area Zone  
Sensitivity High  
Color Specific Red  
Color Ratio Adjust 50  
(High:2~Low:50)

Submit Clean

## 2.5 Object Counting

Count the number of objects entering or exiting an area over a specific duration. A virtual area can be drawn over a camera image with anything passing through the virtual area being logged and counted. A record of how many times this area has been crossed is then accessible from the camera's menu.



**Note:** For a crowd environment, people are right next to each other, the people counting engines might treat as one people.

### 2.5.1 Object Counting Configuration

To setup Object Counting, follow the steps below:

- Click on IVS tab on the left.
- Select Object Counting and click Submit button to save the changes.
- Click on Object Counting tab on the left and Edit button on the bottom.
- Enable Object Counting feature.
- Select either Vertical or Horizontal crossing line.
- Use a mouse to drag the crossing line based on the video.
- Click the Direct Change button to define which direction is IN.
- Click Submit button to save the changes.

Live | Basic Mode | Advance Mode | Language | Logout

System Video / Audio Network Event Notification Maintenance

Event  
IVS  
Object Counting  
Audio Detection  
Alarm Detection  
Network Detection  
Push Service Setting

Advance >> Event >> Object Counting

Object Counting  Enable  Disable  
Type Vertical

Direct Change Counter Reset Submit

## 2.6 Unattended Object Detection (Object Left Detection)

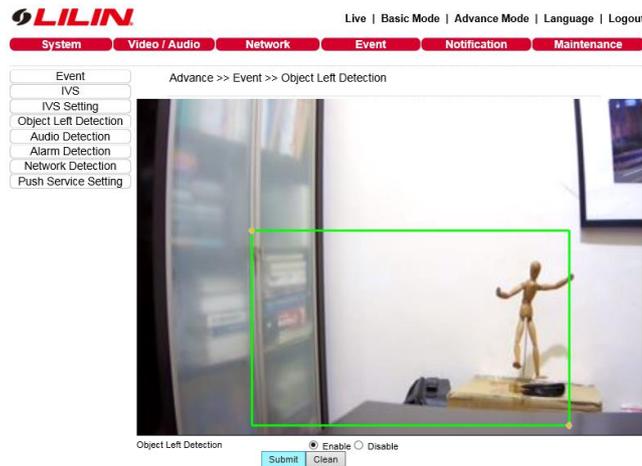
Detect a left object. This can be used for detecting an unattended object or a parking violation. When an object gets left, a red block gets showed.



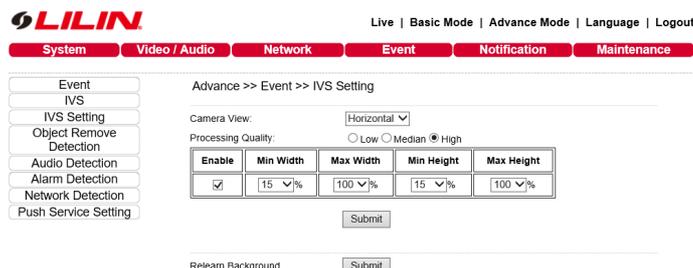
### 2.6.1 Unattended Object Detection Configuration

To setup unattended object detection, follow the steps below:

- Click on IVS tab on the left.
- Select Object Left Detection and click Submit button to save the changes.
- Click on Object Left Detection tab on the left.
- Enable Object Left Detection feature.
- Use a mouse to drag a green detection box to where is monitored area on the video.
- Click Submit button to save the changes.



- Click on IVS Setting tab on the left.
- Select one Camera View according to what camera mounting. (Horizontally is for tabletop, Angle and Overhead is for ceiling mount)
- Define Min. & Max. width and height for the detected object size.
- Click Submit button to save the changes.



**Note:** Relearn background could avoid false alarms. Strongly recommend to click the Submit button, if the camera field of view gets changed.

## 2.7 Missing Object Detection (Object Remove Detection)

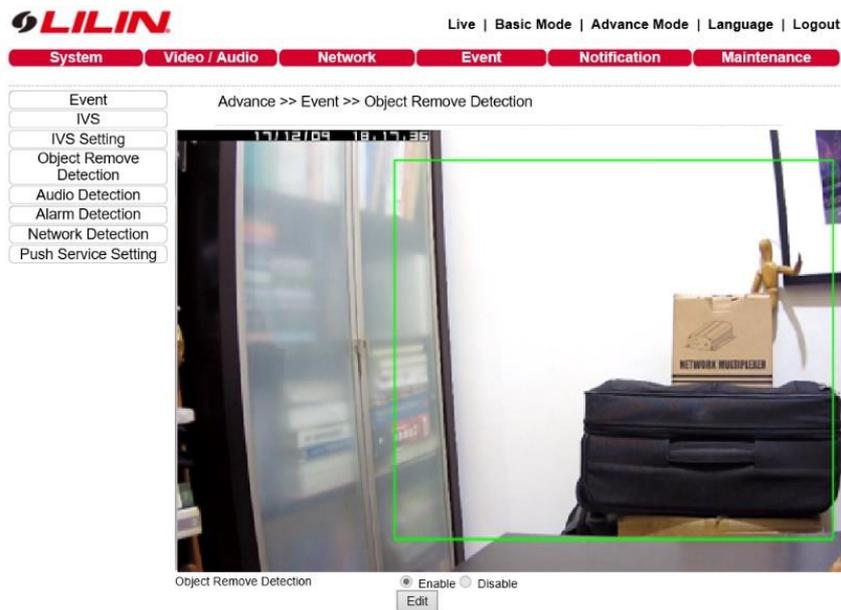
Detect a removed object. This can be used for monitoring an object missing in a museum or finding a parking space.



### 2.7.1 Missing Object Detection Configuration

To setup Missing Object Detection on the camera, follow the steps below:

- Click on IVS tab on the left.
- Select Object Remove Detection and click Submit button to save the changes.
- Click on Object Remove Detection tab on the left.
- Enable Object Remove Detection feature.
- Use a mouse to drag a green detection box to where is monitored area on the video.
- Click Submit button to save the changes.



- Click on IVS Setting tab on the left.
- Select one Camera View according to what camera mounting. (Horizontally is for tabletop, Angle and Overhead is for ceiling mount)
- Define Min. & Max. width and height for the detected object size.
- Click Submit button to save the changes.

System Video / Audio Network Event Notification Maintenance

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Event

IVS

IVS Setting

Object Remove Detection

Audio Detection

Alarm Detection

Network Detection

Push Service Setting

Advance >> Event >> IVS Setting

---

Camera View: Horizontal ▼

Processing Quality:  Low  Median  High

Enable	Min Width	Max Width	Min Height	Max Height
<input checked="" type="checkbox"/>	15 ▼%	100 ▼%	15 ▼%	100 ▼%

---

Relearn Background

**Note:** Relearn background could avoid false alarms. Strongly recommend to click the Submit button, if the camera field of view gets changed.

## 2.8 Crowd Detection (Density Detection)

Detect number of moving people or objects exceeding a certain quantity, and fire warning alarm. There are up to 32 objects that could be detected. This can be used for crowd detection.



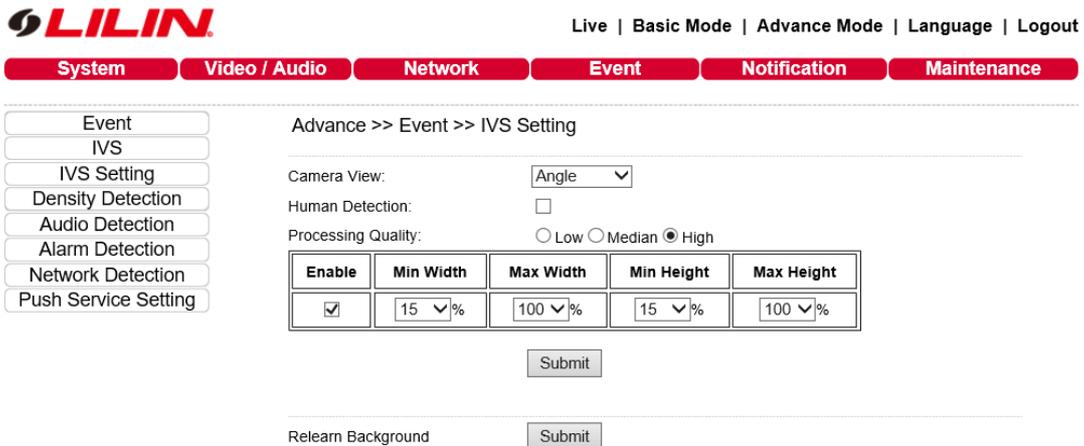
### 2.8.1 Crowd Detection Configuration

To setup crowd detection, follow the steps below:

- Click on IVS tab on the left.
- Select Density Detection and click Submit button to save the changes.
- Click Density Detection tab.
- Enable the setting.
- Select the number of the crowd. (Count: 3~32)
- Click Submit button for saving the changes.

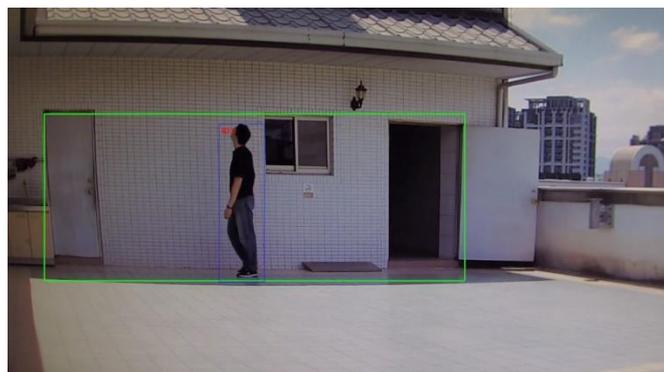


- Click on IVS Setting tab on the left.
- Select one Camera View according to what camera mounting. (Horizontally is for tabletop, Angle and Overhead is for ceiling mount)
- Define Min. & Max. width and height for the detected object size.
- Click Submit button to save the changes.



## 2.9 Loitering Detection

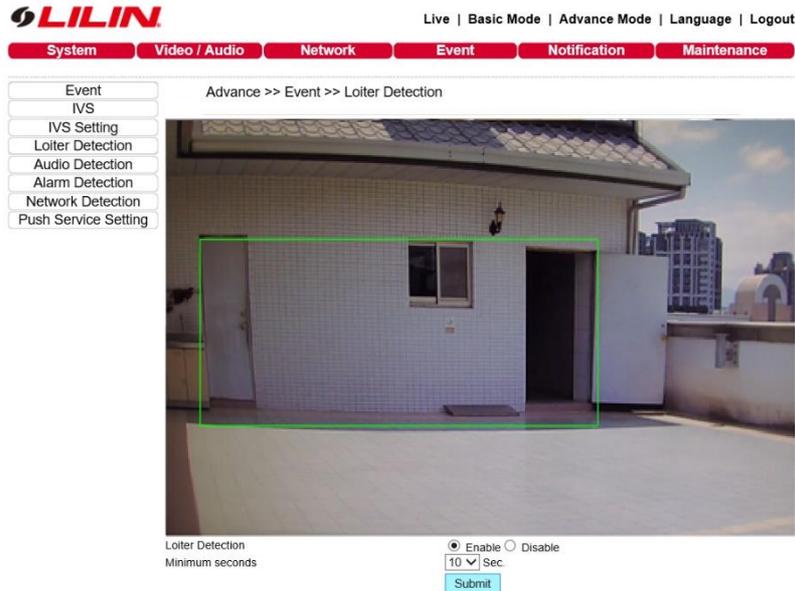
Detect people or objects walking or staying in the detection area for a period of time, and fire warning alarm.



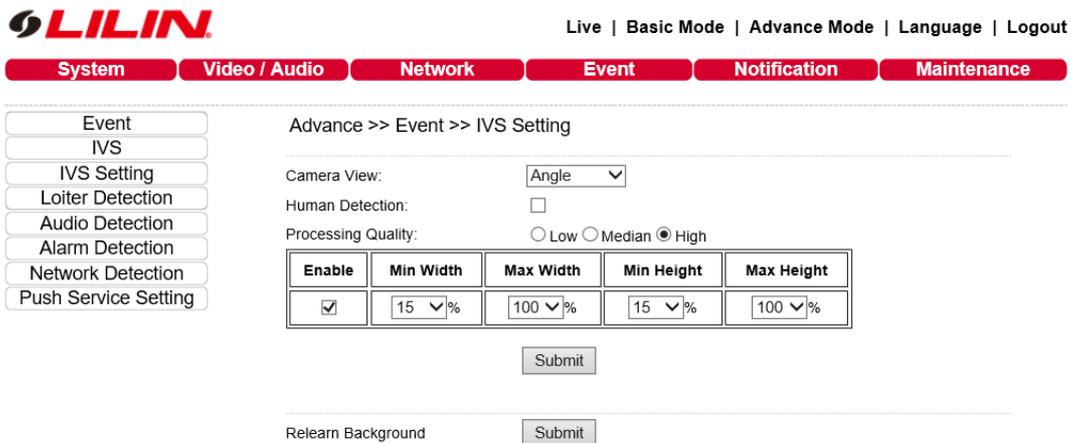
## 2.9.1 Loitering Detection Configuration

To setup Loiter Detection, follow the steps below:

- Click on IVS tab on the left.
- Select Loiter Detection and click Submit button to save the changes.
- Click Loiter Detection tab.
- Click Edit button and choose Enable.
- Select Minimum seconds for judging the loiter event when people or objects are working or staying the detection area for this setting time. (10/20/30/40/50/60sec)
- Click Submit button for saving the changes.



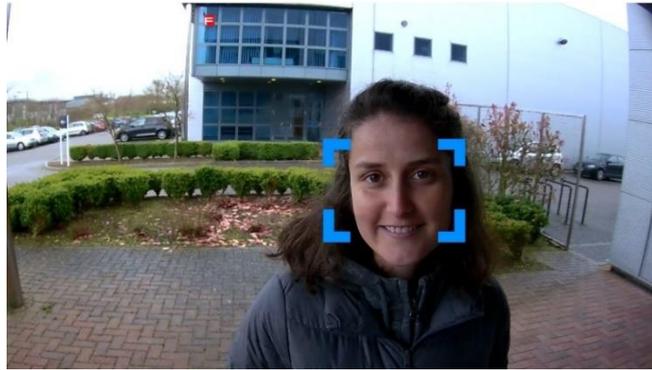
- Click on IVS Setting tab on the left.
- Select one Camera View according to what camera mounting. (Horizontally is for tabletop, Angle and Overhead is for ceiling mount)
- Define Min. & Max. width and height for the detected object size.
- Click Submit button to save the changes.



**Note:** Relearn background could avoid false alarms. Strongly recommend to click the Submit button, if the camera field of view gets changed.

## 2.10 Face Detection

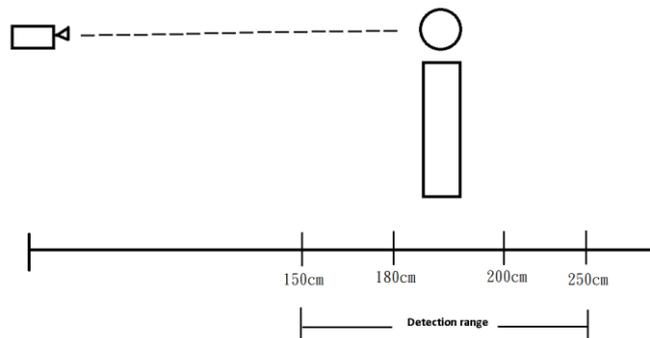
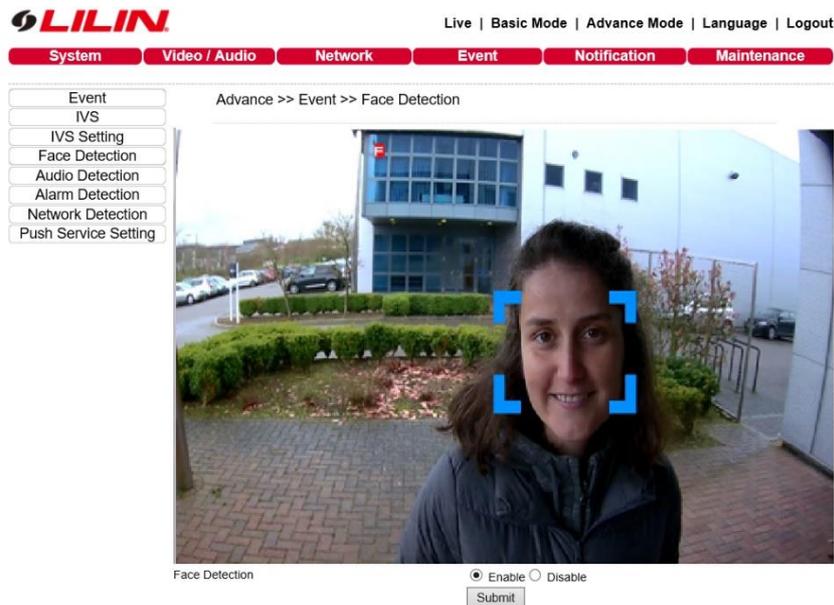
When a human face is recognized, LILIN cameras can send alerts or customer notifications.



### 2.10.1 Face Detection Configuration

To setup Face Detection on the camera, follow the steps below:

- Click on IVS tab on the left.
- Select Face Detection and click Submit button to save the changes.
- Click on Face Detection tab on the left.
- Enable Face Detection feature.
- Click Submit button to save the changes.



**Note:** The range of face detection of S & ZS series IVS should be in between 150cm to 250cm.

There are up to 4 faces that can be detected at same time.



## 2.11 Audio Detection

An alarm is triggered when ambient sound exceeds predetermined levels. An example is a camera in a child/baby room acting as a monitor.



### 2.11.1 Audio Detection Configuration

To setup Audio Detection, follow the steps below:

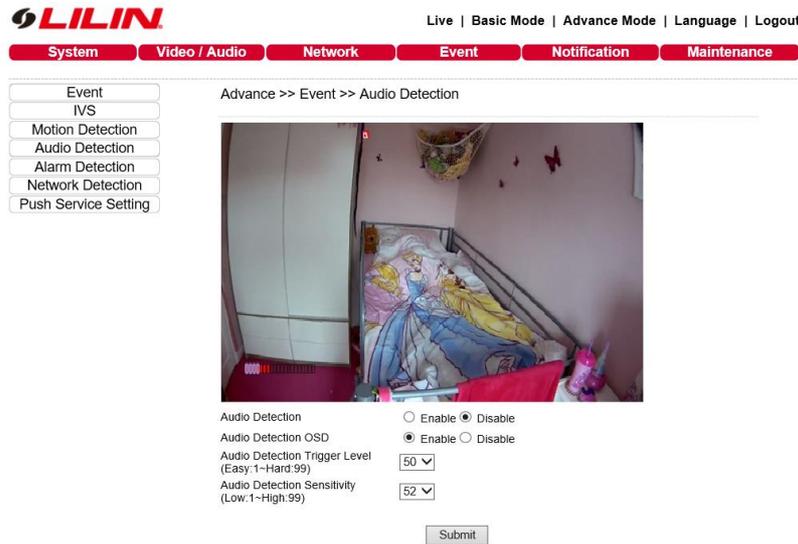
- Enable Audio Adjust from Video/Audio tab.
- Select which Audio Input is used by Camera.
- Click on Audio Detection from Event tab.

The screenshot shows the LILIN web interface. At the top, there are navigation links: "Live | Basic Mode | Advance Mode | Language | Logout". Below this is a menu bar with tabs: "System", "Video / Audio", "Network", "Event", "Notification", and "Maintenance". The "Video / Audio" tab is selected. On the left, a sidebar menu lists various settings: "General", "Quality Basic", "Quality Advance", "Day Night Mode Switch", "ROI", "RS-485", "RS-485", "Privacy Mask", and "Audio Adjust". The "Audio Adjust" option is selected. The main content area shows the "Advance >> Video / Audio >> Audio Adjust" configuration page. The settings are as follows:

- Audio Adjust:  Enable  Disable
- Audio Input Volume: 50
- Audio Input:  Line In  MIC In
- Audio Input Gain: 0 dB
- Audio Input Filter: Off
- Audio Output Volume: 50
- Audio Encoding Type:  G711 u-law  AAC
- Sampling Rate: 8000 Hz
- Bit Rate: 16 kbit/s

A "Submit" button is located at the bottom of the configuration area.

- Enable Audio Detection and Audio Detection OSD features.
- Adjust Audio Detection Trigger Level. (Easy:1~ Hard:99)
- Change Audio Detection Sensitivity according to the audio activities. (Low:1~ High:99)
- Click Submit button to save the changes.



**Note:**

Basic M Series: These models are MR632, MR832, MR312

Audio: To use audio alarms you must have a built-in Microphone or an external Mic integrated.

Pro Series 4 digits and Z Pro 4 digits IVS: This is standard on the relevant camera series on cameras with serial number 610\*\*\*\*\* onwards, if you have older models a special firmware upgrade is available

IVS 1.0: Available on S Series cameras serial number 1702\*\*\*\* earlier models cannot be updated.

IVS 2.0: LILIN UH 4K, UF 120FPS, and ZH series are shipped with IVS 2.0 (firmware 2.7.xx) started on 12/4/2017. LILIN S and ZS series are shipped with IVS 2.0 (firmware 2.7.xx) started on serial 1712\*\*\* (12/4/2017).

Old stocks of LILIN Ultra, 4K, and S series (firmware 2.5.xx) cannot be upgraded to IVS 2.0 (firmware 2.7.xx).

# Appendix

	Features	UH,UF, S, ZS		Pro & Z	M (4 digit) & ZM	M (3 digits)
IVS 2.0	Face detection		Basic IVS	Yes		
	Tampering detection	Yes		Yes	Yes	
	Audio detection	Yes		Yes	Yes	
	Tripwire	Yes		Yes	Yes	
	Zone entering	Yes		Yes	Yes	
	Object counting	Up to 32 objects		Up to 1 to 2 object	Up to 1 to 2 object	
	Traffic light detection	Yes		Yes	Yes	
IVS 2.1	Face detection	Yes				
	Missing object detection (object removal)	Yes				
	Unattended object detection (object insertion)	Yes				
	Crowd Detection (density detection)	Yes				
	Loitering detection	Yes (2.1)				
Alarm	DI alarm detection	Yes (DI model only)		Yes (DI model only)	Yes (DI model only)	Yes (DI model only)
	Motion detection	Yes		Yes	Yes	Yes