

Merit LILIN Application Note

Crossing Chevron Markings Detection

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Dept : Technical Support, Taipei

This document describes how to use LILIN S series intelligent video surveillance (IVS) cameras with LILIN Navigator Enterprise for crossing chevron markings detection. LILIN crossing chevron markings can be used for detecting traffic violations: no U-turn, double white & yellow lines crossing, and wrong way detections. LILIN Navigator Enterprise can bookmark the violation events for easy accesses.

This solution can reduce great amount of time in watching and in searching traffic violation events.

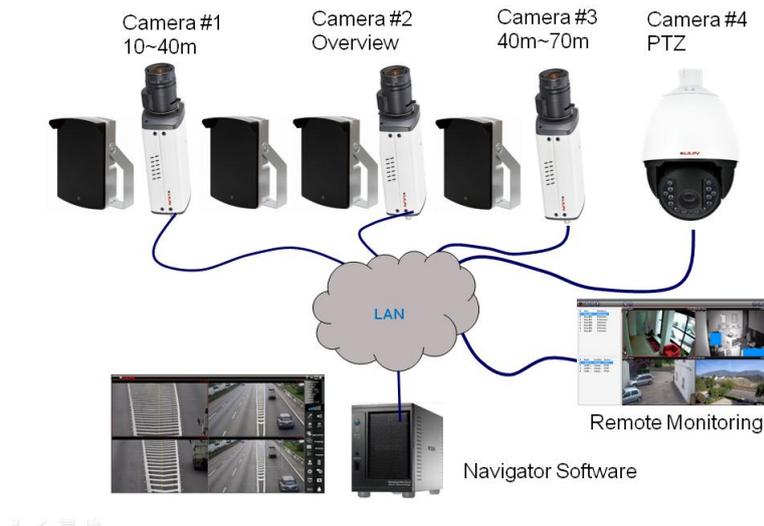
System Architecture

PTZ camera x 1: IRS1304/IRS1308

30-meter cameras x 2: SG1122 + PRH-5880

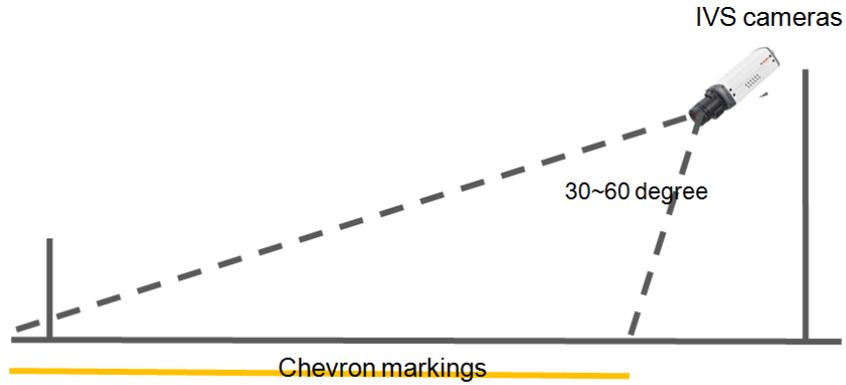
Overview camera x 1: SG1122 + PRH-5880

IR projector x 3: IM05108H



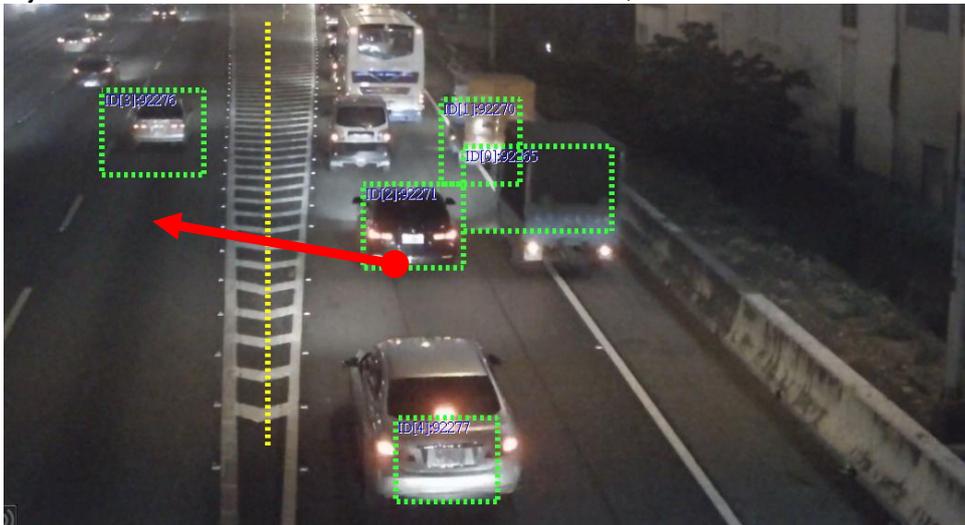
Camera Installation

- Shutter speed: 1/240~1/480 sec
- Enable IR from the IR housings and IR projector at night.



How Does it Work

If an object center of a vehicle crosses the center line, this can fire the event.



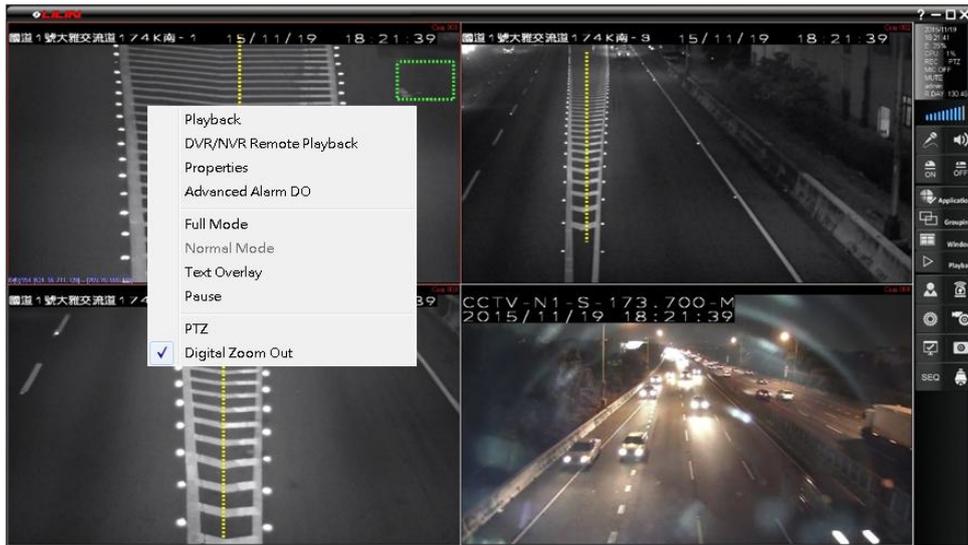
Camera Lens Requirement

Fujinon: DV3.4x3.8SA-SA1

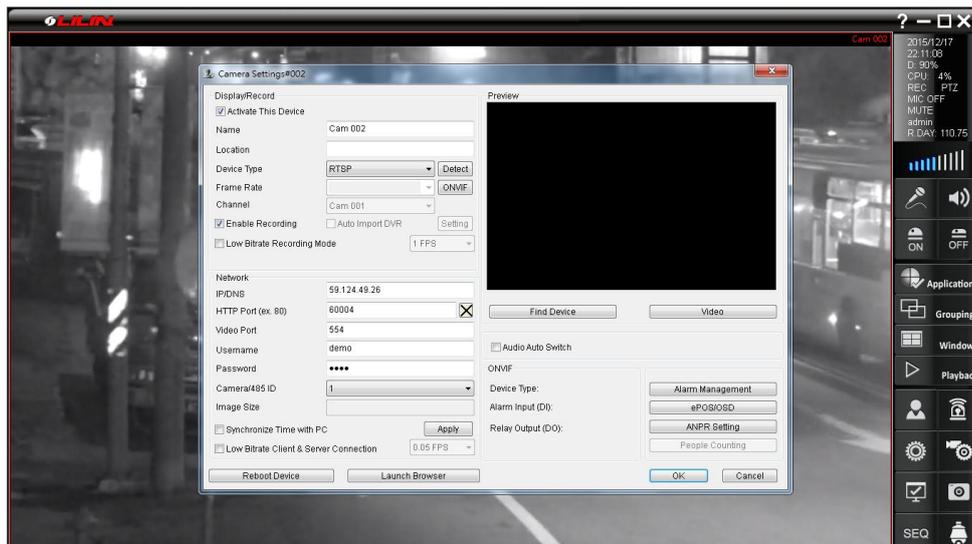
Fujinon: DV10x8SR4A01

How to Use LILIN Navigator Enterprise

Logon LILIN Navigator and enter username "admin" and password EMPTY.

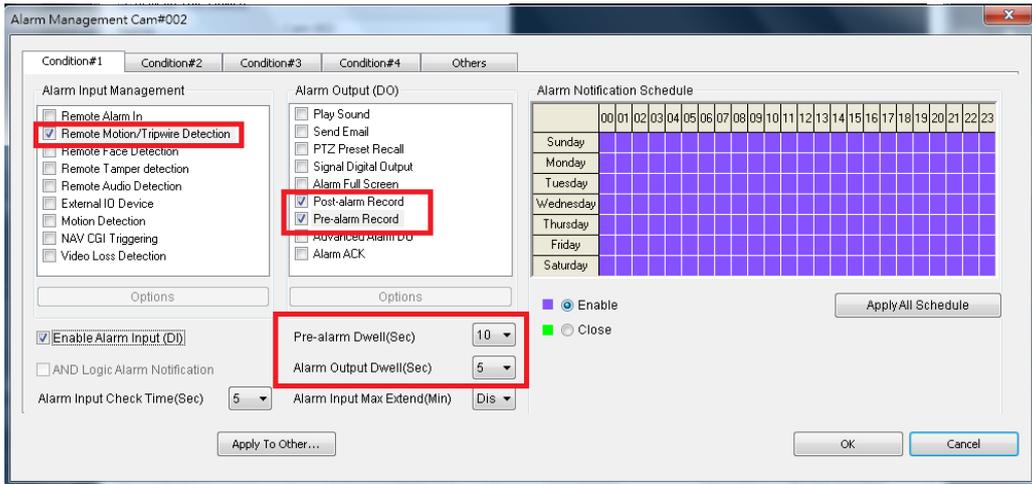


Add S series IVS IP cameras into LILIN Navigator.



Enable Remote Motion and Tripwire Detection feature.

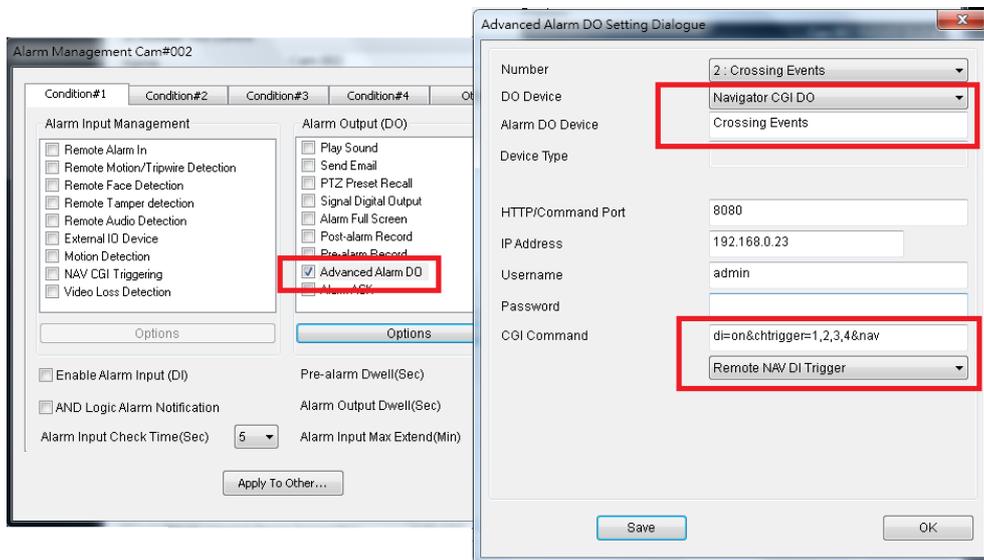
- Click on Properties->Alarm Management.
- Enable Pre-alarm and post-alarm recordings.
- Specify Pre-alarm Dwell to 10 seconds and Alarm Output Dwell to 5 seconds.



Enable Advanced Alarm DO option and Setup CGI triggering for events.

- Select one alarm DO.
- Select Navigator CGI DO: This allows Navigator to trigger events.
- Enter the Navigator's IP address and port number 8080.
- Enter username "admin" and password EMPTY.
- Select Remote NAV DI Trigger and the enter CGI command "di=on&chtrigger=1,2,3,4&nav".

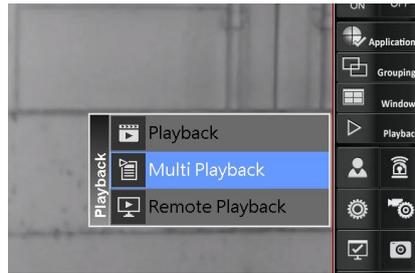
Repeat the setup for all three S series IVS cameras.



Note: The CGI command "di=on&chtrigger=1,2,3,4&nav" is to trigger camera #1, 2, 3, and 4 for recordings and add event logs if the one of the camera gets event triggered.

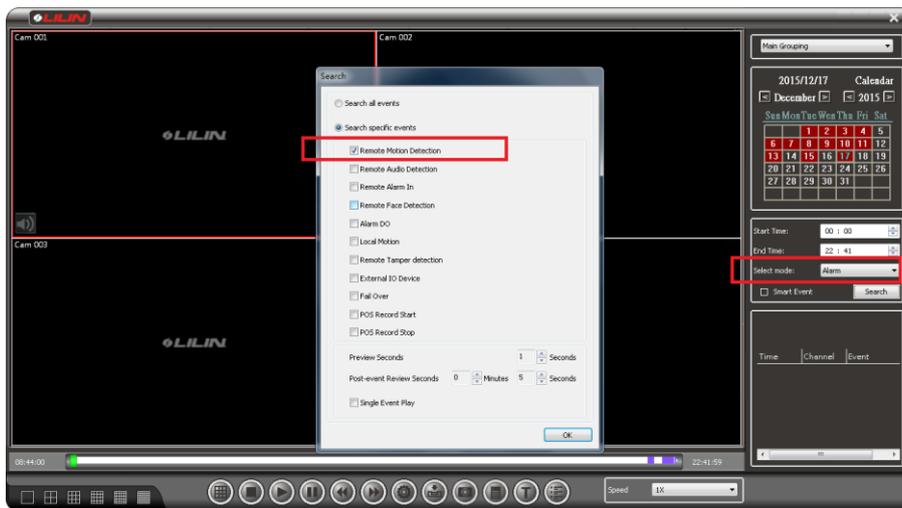
Events Playback

Click on Multi Playback for events playback.



- Click on the date.
- Select Alarm mode.

This can filter out for crossing events.



Click on event logs for event playback. You can also select Smart Event options to review all the event video.



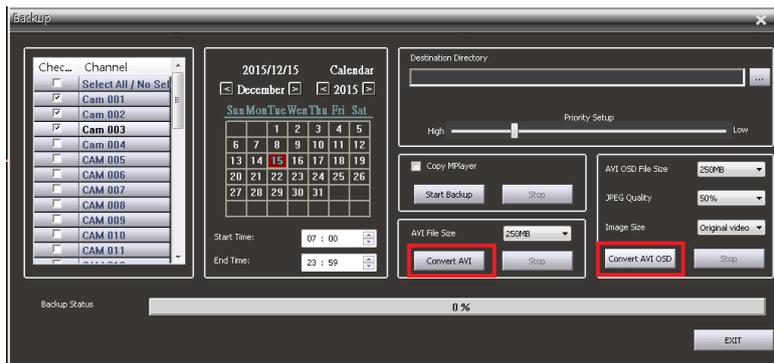
Once a crossing event is found, click on Pause button. Drag the stepping time bar can step forward and backward for the event video.



How to capture the event picture and convert AVI file

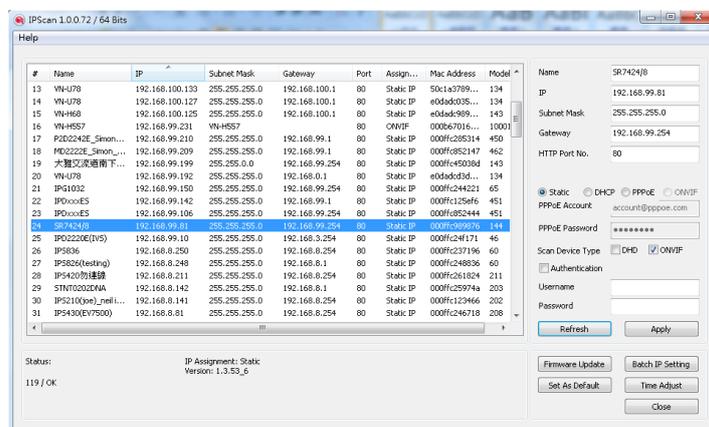
- Click on Snap button that can snap all the pictures of the event.
- Click on Download button for converting an AVI file.

Click on Convert AVI button that can convert event video without the green line OSD. Click on Convert AVI OSD that can generate the green line OSD on the video.



How to setup LILIN S series IVS camera

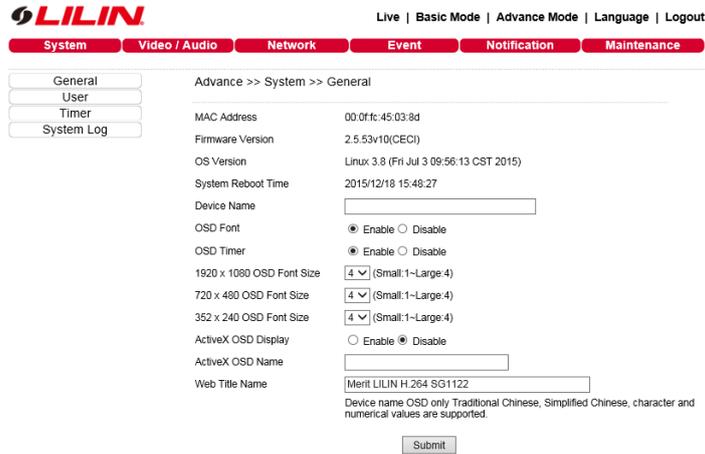
Use IPScan tool to change IP cameras' default IP addresses from 192.168.0.200 to preferred IP addresses and click apply to change.



Enable OSD on the camera

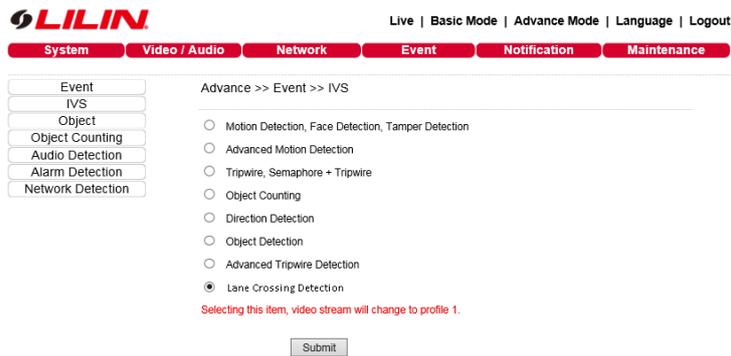
The OSD can be embedded into the video for displaying the name of the road.

- Logon the IP camera by entering default username, admin, and password, pass.
- Enable camera OSD and choose proper font size.

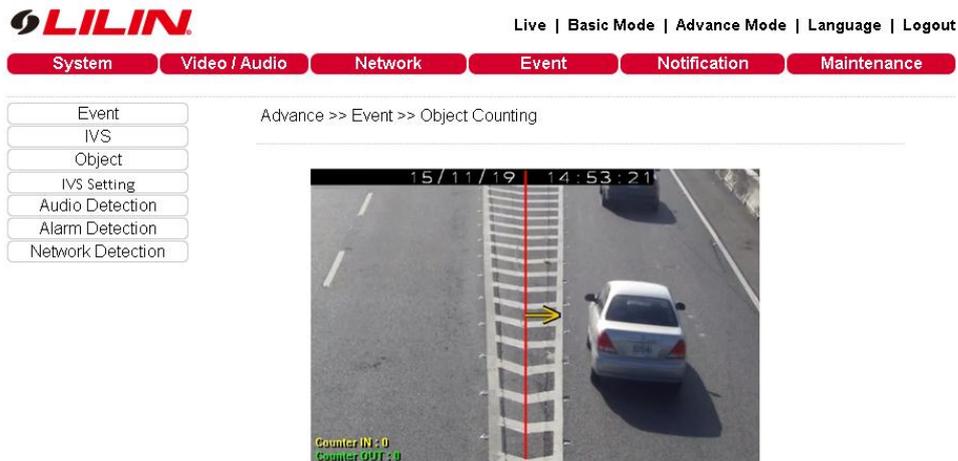


Enable IVS feature

Visit Advance Mode and select Lane Crossing Detection. Click Submit button.



Select IVS Setting for configuring the vertical line.



- OSD: To enable the object boxes on the camera for debugging purpose.
- Sensitivity: Detection sensitivity. Recommend to set to 80%.

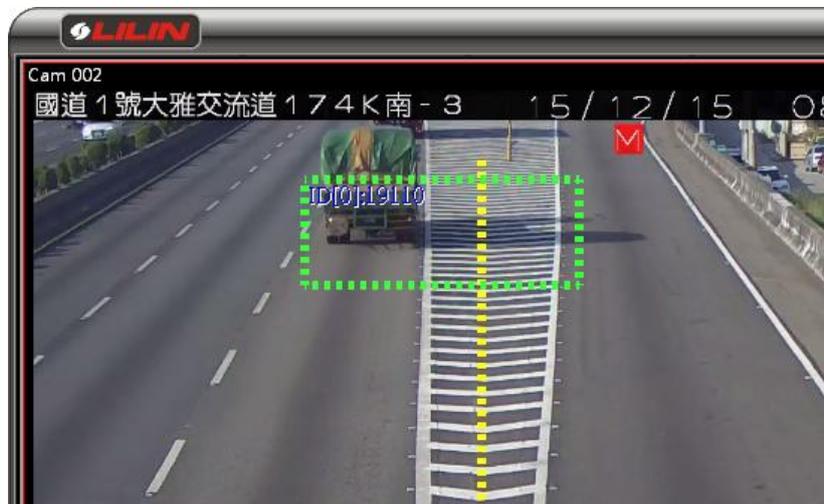
- Process Quality: Video quality for processing IVS. Recommend to set to Low.
- Object Min and Max for Width and Height: A filter for filtering IVS objects based on the percentage of the screen.

Type	State	Min Width	Min Height	Max Width	Max Height
Object	<input checked="" type="checkbox"/>	5 %	8 %	30 %	40 %
Other	<input checked="" type="checkbox"/>	5 %	8 %	30 %	40 %

Submit

Warnings & Limitations

- The IVS camera has shadow reduction algorithm. However, the shadow might still cause a false alarm.



- For complex head lights environment, the system might cause false alarm.





Enable SD card recording

To enable SD card recording up on IVS triggering, please click on Edit Event and enable SD Card recording.

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

Event
IVS
IVS Filter
IVS Setting
Audio Detection
Alarm Detection
Network Detection

Advance >> Event >> Event

Event Name: Motion Detection

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

Click on SD Card Service and set the Dwell Time up on IVS triggering.

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

Event
IVS
IVS Filter
IVS Setting
Audio Detection
Alarm Detection
Network Detection

Advance >> Event >> Event

Event: Motion Detection

Enable:

Action:

- FTP Service Dwell Time: 1 Sec.
- SMTP Service Dwell Time: 5 Sec.
- SD Card Service Dwell Time: 5 Sec.
- SAMBA Service Dwell Time: 60 Sec.
- Alarm Output Dwell Time: 5 Sec.
- HTTP POST Service Dwell Time: 5 Sec.
HTTP POST Service : URL
- SNMP Trap Service
- Push Notification Service Dwell Time: 5 Sec.

Schedule:

- Always
- Schedule



Select Recording format and enable SD Recording.

The screenshot shows the LILIN web interface. At the top left is the LILIN logo. To the right are navigation links: Live | Basic Mode | Advance Mode | Language | Logout. Below these are five menu tabs: System, Video / Audio, Network, Event, Notification, and Maintenance. The 'Notification' tab is selected. On the left side, there is a sidebar menu with buttons for FTP Service, SMTP Service, HTTP POST Service, SD Card Service, SD Card Backup File, and SAMBA Service. The main content area is titled 'Advance >> Notification >> SD Card Service'. It contains the following configuration options:

SD Recording	<input checked="" type="radio"/> On <input type="radio"/> Off
SD Recording OSD	<input checked="" type="radio"/> On <input type="radio"/> Off
SD Recording Continuous	<input type="radio"/> On <input checked="" type="radio"/> Off
Recording Format	H2641080P ▾
Pre Record Time	5 ▾ Sec.
SD Card Status	NORMAL
SD Card State	SD Card Plug In
SD Card Total Bytes	29645 MBytes
SD Card Free Bytes	29590 MBytes

At the bottom of the configuration area are four buttons: Submit, Unmount, Mount, and Format.

Warning: The life expectancy of an SD card for writing is about 7,000 to 100,000 times based on a SD card. After exceeding the writing times, the SD card writing speed will be decreased and not able to write. If this happens, LILIN camera will stop record on SD card and keep adding warning logs, "Check SD Card" in the camera. Change a new SD card if necessary.