

HIKVISION EUROPE

SOLUTIONS

ANPR Solution



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The Manual introduces ANPR solution, which is designed based upon a hypothetical environment defined in the content; therefore, THE INFORMATION CONTAINED IN THE MANUAL IS SUBJECT TO CHANGE DUE TO DIFFERENT ENVIRONMENTS. Pictures, charts, images and all other information hereinafter are for description and explanation only.

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Reading Tips

Document category
ANPR System & products (Version 2)
Brief description of system and notice
<p>1. Application: Small Parking System</p> <p>2. Composition: the solution has 4 modes:</p> <p style="padding-left: 40px;">Mode1: IPC+SDK,</p> <p style="padding-left: 40px;">Mode2: NVR +IPC,</p> <p style="padding-left: 40px;">Mode3: 5200P+NVR+IPC,</p> <p style="padding-left: 40px;">Mode4: 4200P+NVR+IPC,</p> <p>Each mode is with functionalities of ANPR recognition, storage, querying and backup. At the same time, users can choose according to their own needs because of the characteristics of each mode features, please refer to Solution chapter.</p> <p>3. Notice:</p> <p>a) 5200P does not rely on SS, SMS, without W/B (Blacklist and whitelist), while W/B can be realized in NVR or IPC, for details, please refer to 3.2.1 and 3.2.2 chapter.</p> <p>b) All modes can be deployed in Public network.</p> <p>4. Reference:</p> <p>a) Spec EU LPR</p> <p>b) I series NVR Spec 76,77, 96</p>

Document Control

No.	Revised Content	Time	Revised by	Reviewed by
1	V1.0	2015/9/29	Challen	Ethan
2	V1.5 Add Mode 4 Update the grammatical mistakes Update the new version test result Update Blacklist and whitelist	2016/4/29	Challen	Ethan

Preface

1.1 Overview

Nowadays, there are more and more vehicles. For security and efficiency consideration, automated parking systems with video surveillance is significantly important. As license plate is the unique “ID” for each car, it’s important to recognize it in some parking related scenarios like public garage, gas station, hotel, supermarket.etc. In this way, all the vehicles are recognized and protected without any change inside the vehicles.

1.2 Applicability

ANPR System is the good solution to help to recognize the license plate. It has the ability to recognize the license plate at both day and night time. The result can be uploaded to NVR/Server for further analysis and query.



Fig.1 Simple product families

Compared with other ANPR system, the Hikvision ANPR system has the following advantages:

- ANPR algorithm is inside the cameras;
- Accurate capture and accurate recognition;
- Bullet camera is with build-in infrared light, adaptive to even low light environment;
- Imperceptible behavior, It is harmless to humans;
- Installation is simple, It is simple to install cameras in public areas;
- Easy to operate;

- Convenient system expansion and renovation, system expansion and renovation can be achieved through network configuration and adding new cameras;

Regulation Applicability

Considering the widely deployment of the ANPR cameras, the DS-2CD4A series, DS-2CD40 series, DS-2CD46 series can meet the require of the most parking/entrance scenarios.

NVR is a good storage to record and query. We suggest DS-76, DS-77, DS-96 series. They are not only storage, but also a good choice for live view of the passing vehicle, querying license plate, managing W/B, statistics of car’s entrance time and exiting time.

IVMS-5200 is widely adopted in the video surveillance industry, and provides license plate recognize from v3.1.0. The front-end video and real time license plate data is previewed together and the data is sent to the platform to query and backup the different information, recording and pictures.

IVMS-4200 is also widely used in many cases, and provides license plate recognize from v2.3. The front-end video and real time license plate data is also previewed together and the data is sent to the platform to query and backup the different information, recording and pictures.

The four parts can combine well; the data flow can be seen in the following diagram:

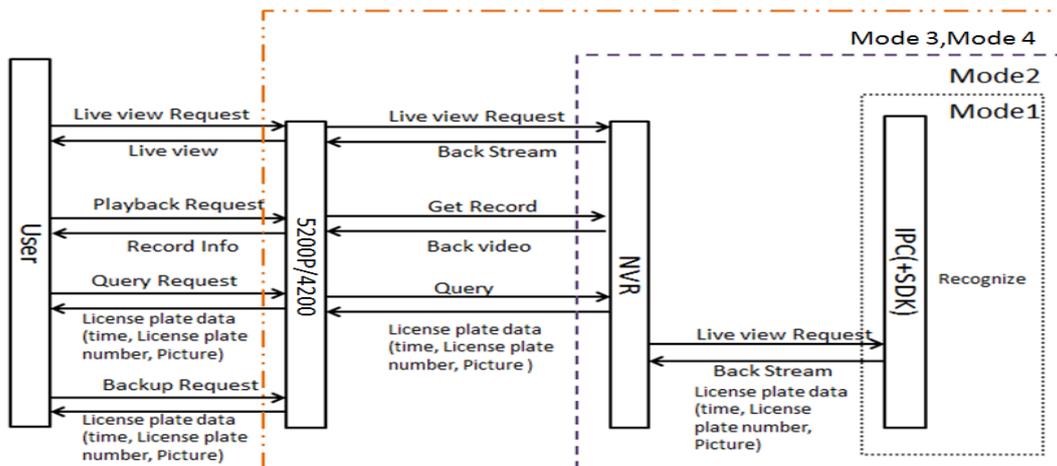


Fig.2 ANPR data flow

2.1 Solution

Hikvision adopts different solution modes to help the management to collect the license plate information by different structure requirements.

The license plate data is collected by the intelligent cameras that is flexible deployed in different modes, the data can be stored, queried and backup. Due to the application is the small parking system, Hikvision recommends that users can choose according to their own needs with the characteristics of the following modes.

3.2 System Structure

The system is consisting of a front-end ANPR camera, an NVR and the platform. They are located in a LAN or the device can be in the public network. For mode 1, the “IPC+SDK” solution can cooperate with other SDK, with good extension with 3rd party software. For mode 2, the “NVR+ IPC” solution is convenient to manage. For Mode3&4 the “NVR+ IPC+ platform” solution can be used for large installation, easy to use with the platform. Users can choose according to their own needs because of the characteristics of each mode.

You can see the easy topological map as following:

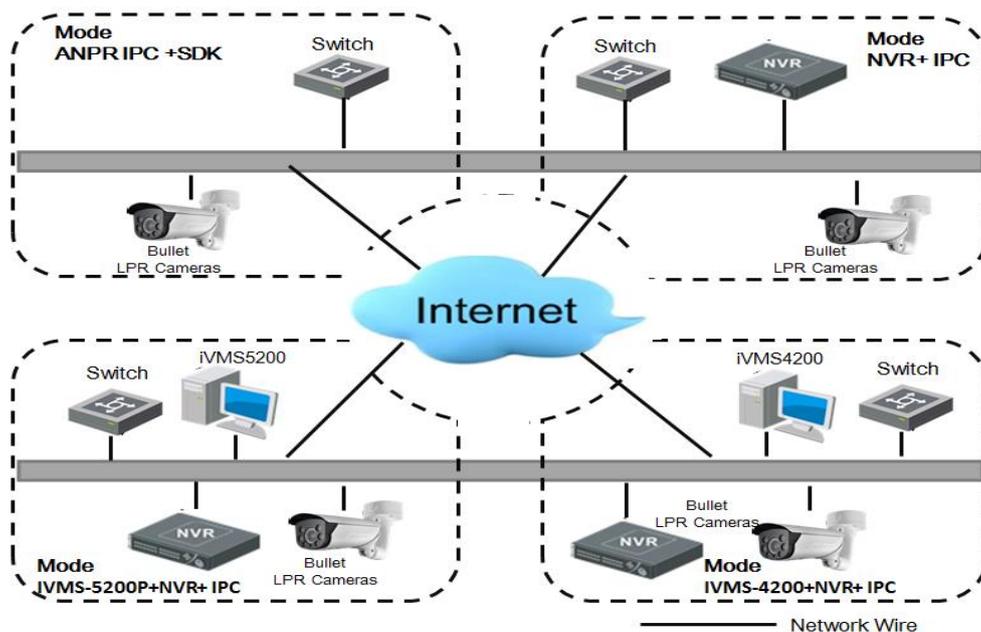


Fig.3 Topology of ANPR system

3.2.1 “ANPR IPC + SDK” mode

3.2.1.1 Introduction

Hikvision IP Cameras are embedded with ANPR intelligent algorithm with specific models, therefore, no sever is necessary, moreover, we can also achieve high accuracy through recommended installation, and 3rd party company can easily integrate ANPR function through Hikvision SDK, below is detailed description of installation and integration.



Fig.4 SDK integrates

1. Camera Installation:

The view angle of the camera should be within 30 degrees to the ground. Based on the view angle and the IR distance of your camera, install the camera at a proper height and distance. Vertical angle - should not exceed 30 degrees.

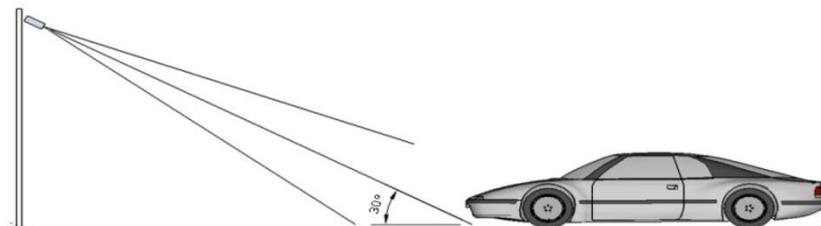


Fig.5 Camera Installation1

The view angle of the camera should be within 30 degrees to the path of movement.

Horizontal angle - should not exceed 30 degrees

The installer can measure all of the needed geometrical lengths using a Pythagorean equation.

I am assuming that the height of camera mounting (let it be x), from the camera to the car, by the ground (let it be y). The initial formula is $y = (\text{square root of } 3) * x = 1.7 * x$

If $x = 3$ meters, the minimum length y must be bigger than 5.1 meters.

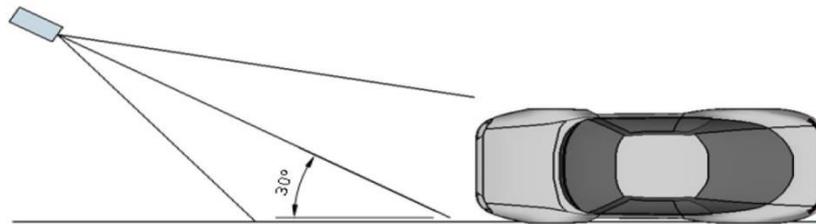


Fig.6 Camera Installation2

Install the camera to the front of the vehicle (Recommended). If you want to recognize two lanes - it is generally recommended to mount a camera on a crossbar.

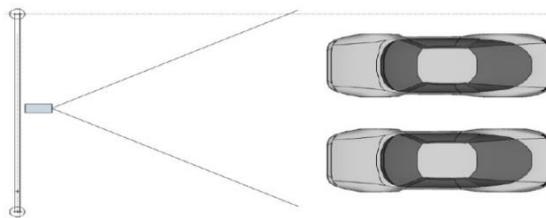


Fig.7 Camera Installation3

2. 3rd party VMS integration:

Hikvision supplies the APIs such as: picture searching, LPR configuration, intelligent control configuration ability, get/set intelligent control parameters APIs, and plate recognition alarm uploading.

*For details, please refer to the 《How to integrate with Hikvision LPR function via SDK》.

3.2.1.2 Features

Key features:

- Real-time recognition

The intelligent algorithm is embedded in the Hikvision camera, you can view real-time license plate and the country after configuration, the following is real time LPR result:

Detection Configuration | Picture | Camera | **Real-time LPR Result** | Blacklist & Whitelist



No.	Capture Time	Plate No.	Captured Picture	Country	Lane	Direction
7	03-16-2016 16:05:26	SWAAB69		Germany(DEU)	1	Unknown
6	03-16-2016 16:05:16	SWAAB69		Germany(DEU)	1	Forward
5	03-16-2016 16:05:08	SWAAB69		Germany(DEU)	1	Reverse
4	03-16-2016 16:05:04	SWAAB69		Germany(DEU)	1	Forward
3	03-16-2016 16:04:55	SWAAB69		Germany(DEU)	1	Reverse
2	03-16-2016 16:04:47	SWAAB69		Germany(DEU)	1	Reverse
1	03-16-2016 16:01:08	SWAAB69		Germany(DEU)	1	Forward

Fig.8 Real-time recognition

■ Picture Text Overlay

HIKVISION DS-2CD4A25FWD-IZHS

Live View | Playback | Log | **Configuration** | admin | Logout

Detection Configuration | **Picture** | Camera | Real-time LPR Result | Blacklist & Whitelist

- Local Configuration
 - Local Configuration
- Basic Configuration
- Advanced Configuration
 - System
 - Network
 - Video/Audio
 - Image
 - Security
 - Basic Event
 - Smart Event
 - Storage
 - Road Traffic**

Picture Quality[1-100]
 Picture Size[64-2048k]
 Enable Text Overlay
 Font Color
 Background Color

Text Overlay

Camera No.
 Camera Info.
 Device No.
 Capture Time
 Plate No.

Type		
Camera No.	<input type="text"/>	<input type="button" value="↑"/> <input type="button" value="↓"/>
Plate No.	<input type="text"/>	<input type="button" value="↑"/> <input type="button" value="↓"/>
Camera Info.	<input type="text"/>	<input type="button" value="↑"/> <input type="button" value="↓"/>
Capture Time	<input type="text"/>	<input type="button" value="↑"/> <input type="button" value="↓"/>
Device No.	<input type="text"/>	<input type="button" value="↑"/> <input type="button" value="↓"/>

FTP Picture Name

Default
 Custom

Camera Name
 Capture Time
 Plate No.
 Alarm Type

Camera Name

Type		
Capture Time	<input type="text"/>	<input type="button" value="↑"/> <input type="button" value="↓"/>
Camera Name	<input type="text"/>	<input type="button" value="↑"/> <input type="button" value="↓"/>
Plate No.	<input type="text"/>	<input type="button" value="↑"/> <input type="button" value="↓"/>
Alarm Type	<input type="text"/>	<input type="button" value="↑"/> <input type="button" value="↓"/>

Fig.9 Picture Text Overlay

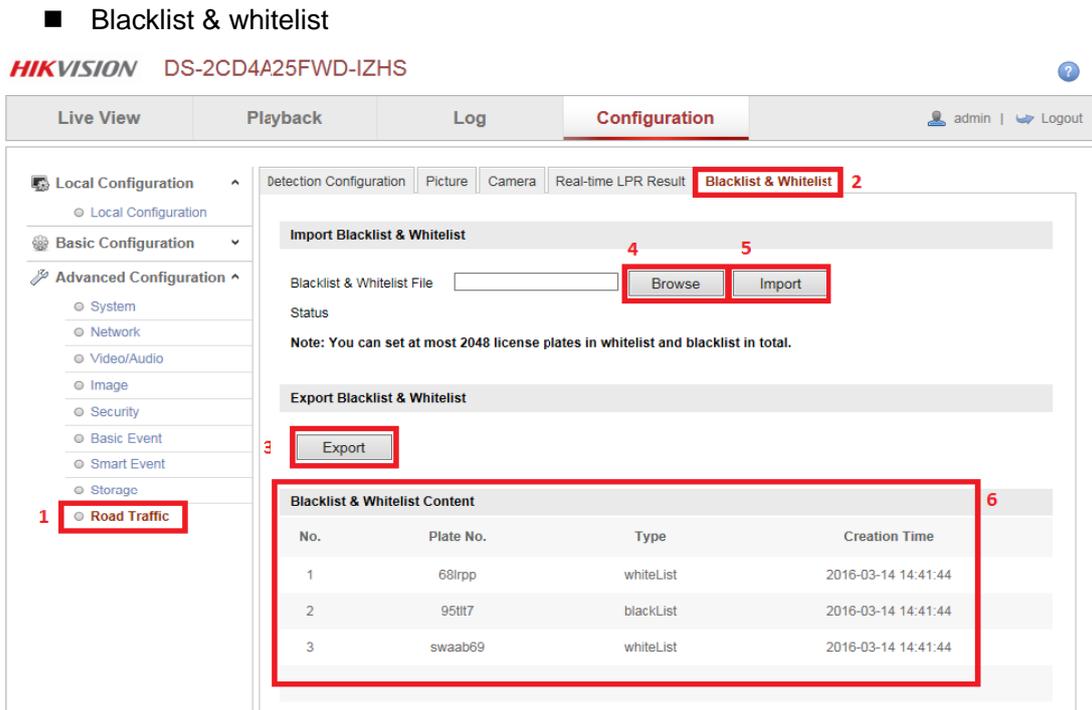


Fig.10 Blacklist & whitelist

3.2.1.3 Configuration

Detection configuration:

Connect the camera with WEB browser and login the camera using the administrator account.

1. Upgrade the firmware to the specific firmware. The camera has to be connected to local network.
2. VCA resource can be efficiently allocated to get a better performance. Two modes of VCA resource allocation are supported: Smart Event and Vehicle Detection. Go to Configuration-> Advanced Configuration-> System -> VCA Resource. Select Vehicle Detection for the VCA resource allocation. Reboot the device to activate the new settings.

*Note: When you choose the feature “Vehicle Detection”, the “Smart Event” feature is limited. You 'only' have the following options remaining for the 'Smart Event':

- Audio Exception Detection
- Defocus Detection

- Scene Change Detection

The following options will not be available when 'Vehicle Detection' is activated;

- Face Detection
- Line Crossing Detection
- Intrusion Detection
- Region Entrance Detection
- Region Exiting Detection
- Unattended Baggage Detection
- Object Removal Detection

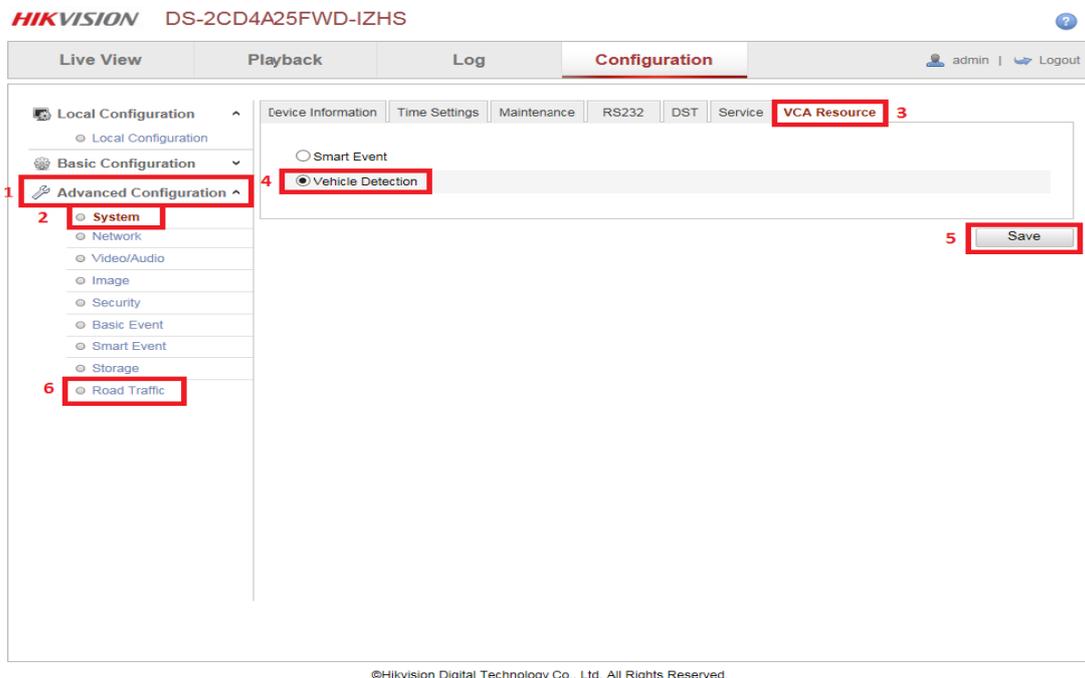


Fig.11 Vehicle detection configuration

3. Then go to *Advanced Configuration->Road Traffic option*. Select the detection type from the list. *Vehicle detection* can be selectable.

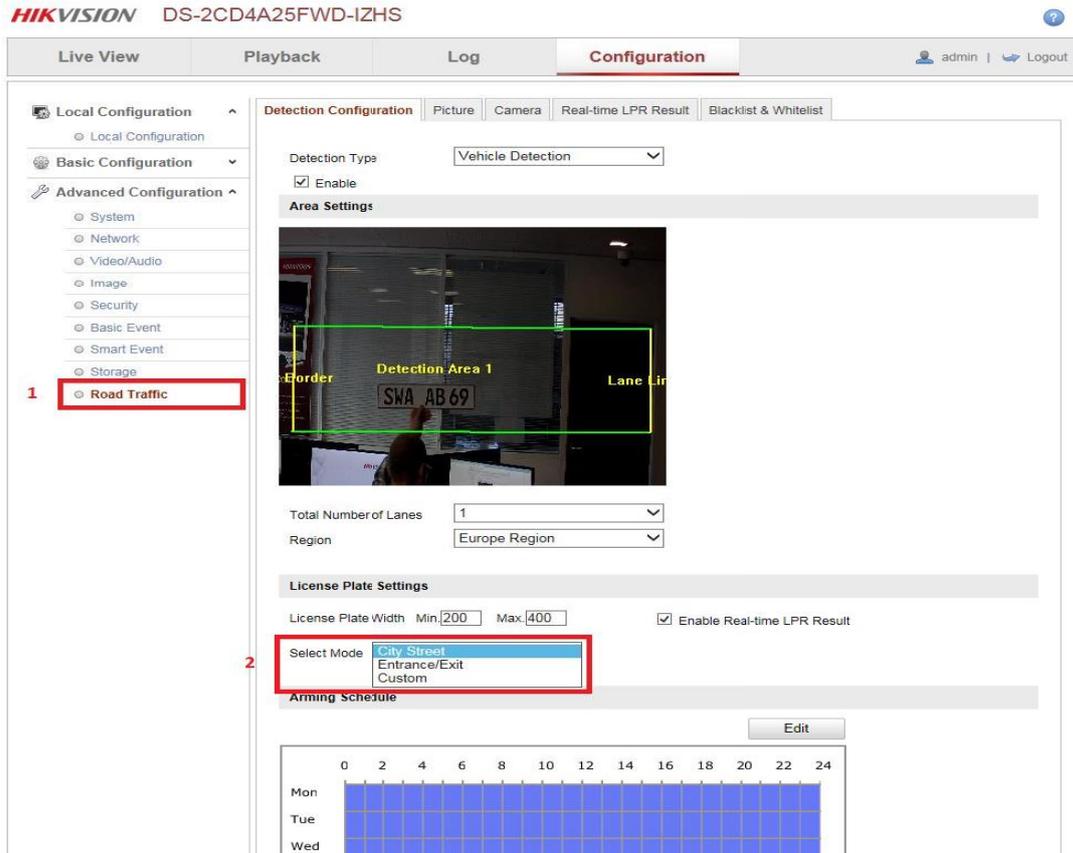


Fig.12 Detection area settings

4. Enable the selected detection function. Then select the lane number in the corresponding dropdown list. Up to 4 lanes are selectable. To get the best result, here we suggest using one lane or two lanes.
5. Click and drag the lane line to set its position, or click and drag the line end to adjust the length and angle of the line.

*Note: Only 1 license plate can be captured at one time for each lane.

6. You will be able to select 3 different 'Select Modes' (2):

Table 1 Modes

City Street	When City Street mode is selected, the license plate information will be uploaded after the car has left the determined detection area.
Entrance/Exit	When Entrance/Exit mode is selected, the license plate information will be uploaded when the car enters the determined detection area.
Custom	When Custom is selected, the license plate information will be uploaded after the determined time interval. The range can be set

between 0 milliseconds and 15.000 milliseconds. So the license plate information will be uploaded after the set time after detection of the car.

- Setting up the Blacklist / Whitelist, selected 'Road Traffic' (1) you could select the tab 'Blacklist & Whitelist' (2),

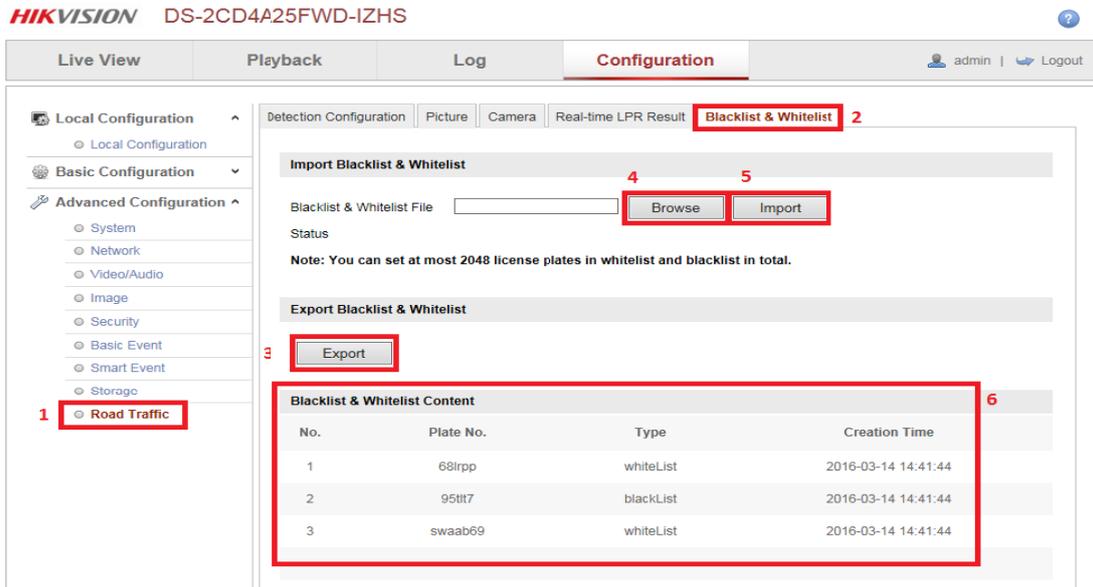


Fig.13 Blacklist & Whitelist configuration page

*note: If we not select the 'Blacklist & Whitelist' alarm to the "Notify Surveillance Center", no alarm will be stored.

If we select the 'Blacklist & Whitelist' alarm to the "Notify Surveillance Center", we can get the alarm to the NVR or platform.

- Click 'export' (3), then you are being asked to save as a Microsoft Excel file (*.xls).

You can pick any name you like and start filling the details like shown below.

	A	B	C
1	No.	Plate Num	Group(0 black list, 1 white list)
2	1	68lrpp	1
3	2	95tlt7	0
4	3	swaab69	1

Fig.14 Blacklist & Whitelist export page

- Set the arming schedule for vehicle detection. To edit the arming schedule, click **Edit** button.

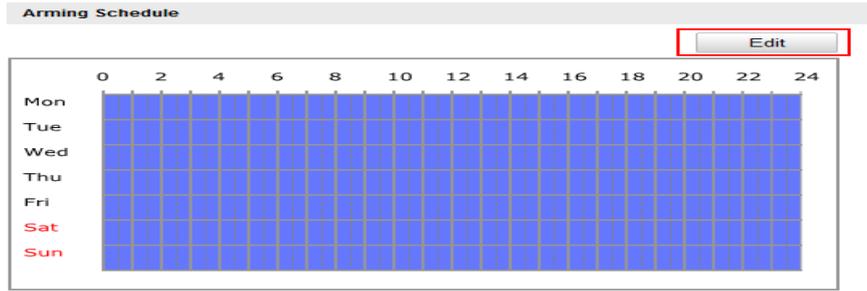


Fig.14 Arming schedule page

After setting the arming schedule, also you can click the **Copy** button to copy the schedule to other days. Click the **OK** button to save the settings.

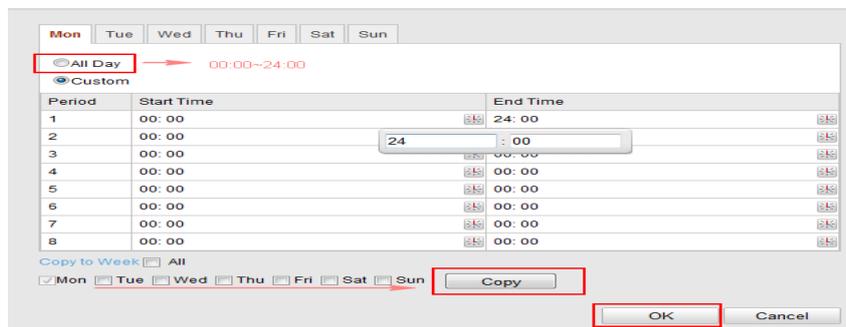


Fig.15 Arming schedule page for all

*Note: The time of each period cannot be overlapped.

10. Check the checkbox to select the linkage method. Notify surveillance center is selectable.



Fig.16 Select the surveillance center

11. Text Overlay

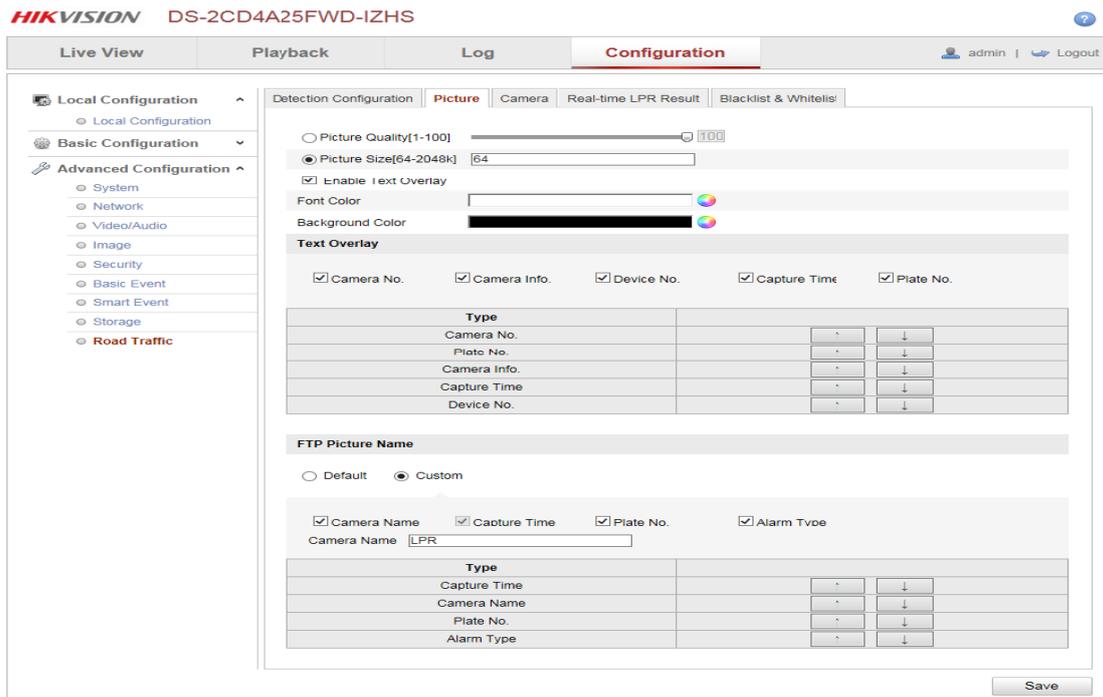


Fig.17 Text Overlay

12. Real-time LPR Result

When you log in to the camera you can see a real-time result of the LPR scanning.

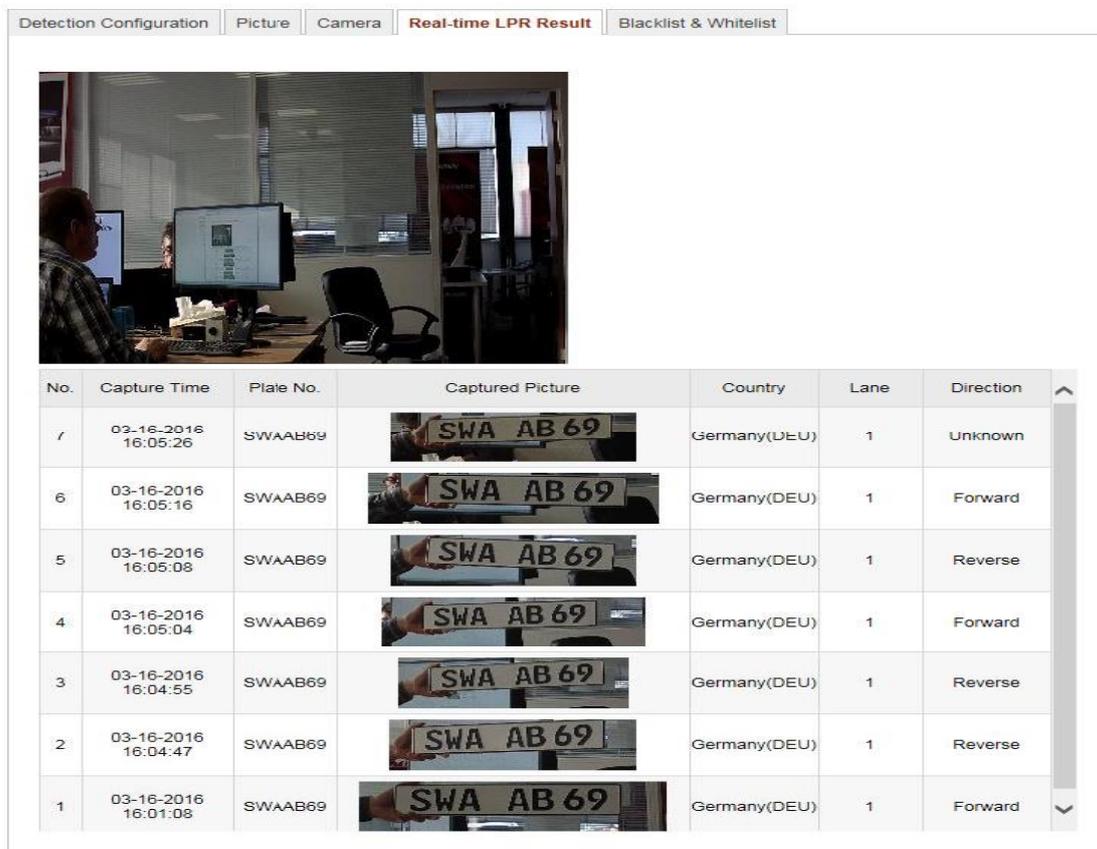


Fig.18 Real-time LPR Result

Notify Surveillance Center:

Send an exception or alarm signal to NVR/ remote management software when an event occurs if you need to check in the Surveillance Center.

13. Click the Save button to activate the settings.

14. Go to Configuration->Image->Display, we can see some configurations, we recommend the following parameters:

Table 2 parameters settings introduce

Backlight		Exposure		Day/Night Switch	
BLC Area:	OFF	Iris Mode	Auto	Day/Night Switch	Auto
WDR	OFF	Auto Iris Level	50	Sensitivity	4
		Exposure Time	1/1000	Filtering Time	5
		Gain	20	Smart IR	ON
				Mode	Auto

With this configuration, we can see the image examples:

DAY

NIGHT



Fig.19 Day



Fig.20 Day

*The latest test report about it can refer to 《Firmware 5.3.8 build 160126 CONCEPT v0.1.pdf》

3.2.1.4 Product Selection

Table 3 Product List

Product	Product Model	Description	Image
Dark Fighter	DS-2CD4A26FWD-IZ(H)(S)	1/1.8"CMOS ,2megapixel(1920 × 1080) @ 60 fps, 120dB WDR, Lens:2.8~12mm	
	DS-2CD4626FWD-IZ(H)(S)	1/1.8"CMOS ,2megapixel(1920 × 1080) @ 60 fps, 120dB WDR,	

		Lens:2.8~12mm	
	DS-2CD4026FWD /P-IR5(3.8-16mm) DS-2CD4026FWD /P-IRA(11-40mm)	1/1.8"CMOS , 2megapixel(1920 × 1080) @ 60 fps, 120dB WDR	
Light Fighter	DS-2CD4A25FWD -IZ(H)(S)	1/2.8'CMOS,2megapixel(1920 × 1080) @ 60 fps, 140dB WDR Lens:2.8-12mm, 8-32mm	
	DS-2CD4625FWD -IZ(H)(S)	1/2.8'CMOS,2megapixel(1920 × 1080) @ 60 fps, 140dB WDR Lens:2.8-12mm,8-32mm	
	DS-2CD4025FWD -(A)(P)	1/2.8'CMOS,2megapixel(1920 × 1080) @ 60 fps, 140dB WDR	

*For detailed configurations, please refer to the 《Datasheet.doc》

Table 4 Supported countries

Supported countries	Czech Republic, Germany, Spain, France, Italy, Netherlands, Poland, Slovakia, Belarus, Moldova, Ukraine, Russia, Belgium, Bulgaria, Denmark, Finland, Great Britain, Greece, Croatia, Hungary, Israel, Luxembourg, Macedonia, Norway, Portugal, Romania, Serbia, Azerbaijan, Georgia, Kazakhstan, Lithuania, Turkmenistan, Uzbekistan, Latvia, Estonia, Albania, Austria, Bosnia and Herzegovina, the Republic of Ireland, the Republic of Iceland, the Vatican City, the Republic of Malta, Sweden, Switzerland, Cyprus, Turkey, Slovenia, Russia.
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3.2.2 “NVR+ IPC” mode

3.2.2.1 Introduction

Hikvision I series NVR v3.3.2 of 76/77/96NI-I series support ANPR function.

This Mode sets NVR as storage, because NVR does not support algorithm identification, so it needs to cooperate with the license plate recognition camera. The ANPR camera works as a NVR digital channel, which is connected to a LAN deployment.



Fig.21 “NVR+ IPC” mode

3.2.2.2 Features

Key features:

- Recognition



Fig.22 Recognition

- The local license plate preview

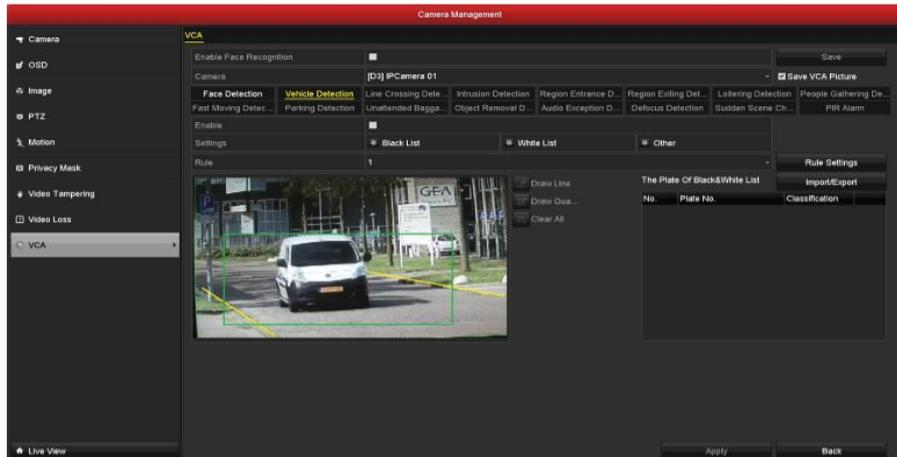


Fig.23 The local license plate preview

■ Picture Text Overlay

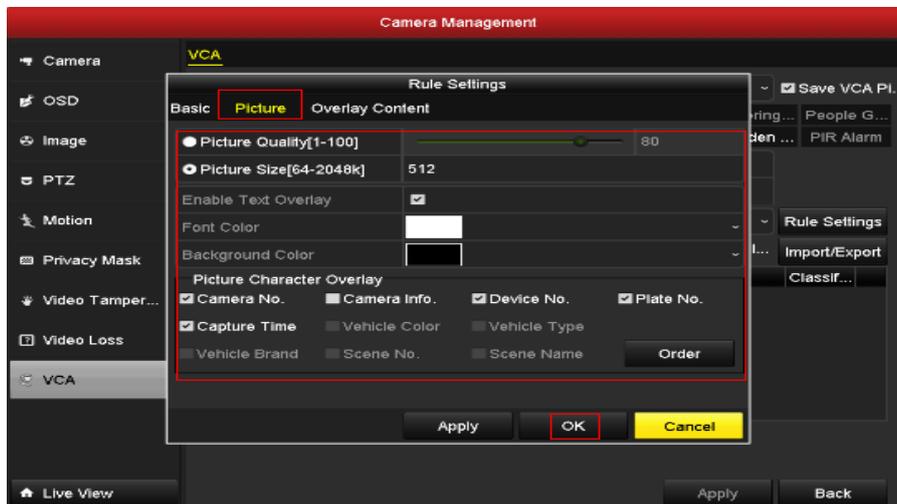


Fig.24 Picture Text Overlay

3.2.2.3 Configuration

■ LPR configuration on local NVR:

1. Add IPC

Go to **Menu->Camera**; add the camera into the NVR as follows.



Fig.25 Add IPC

2. Configuration

Go to **Menu->Camera->VCA->Rule Settings**; select the **Lane number** as you want.

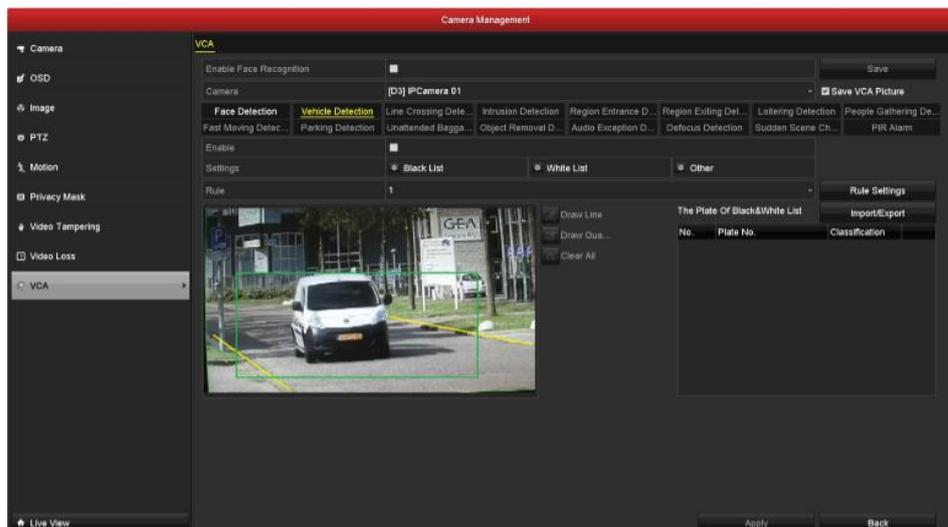


Fig.26 Configuration

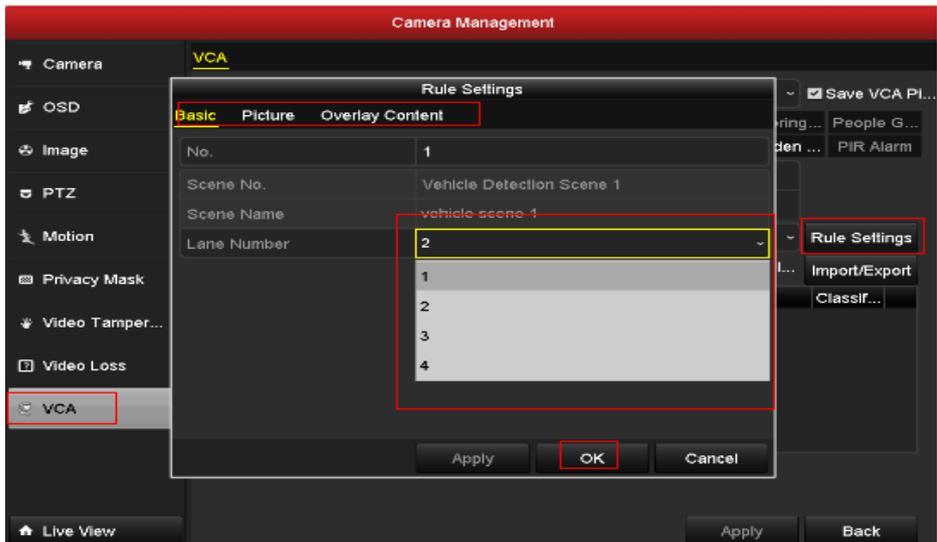


Fig.27 Configure lane

Go to **VCA->Picture** and **VCA->Overlay Content**, configure the parameter as follows.

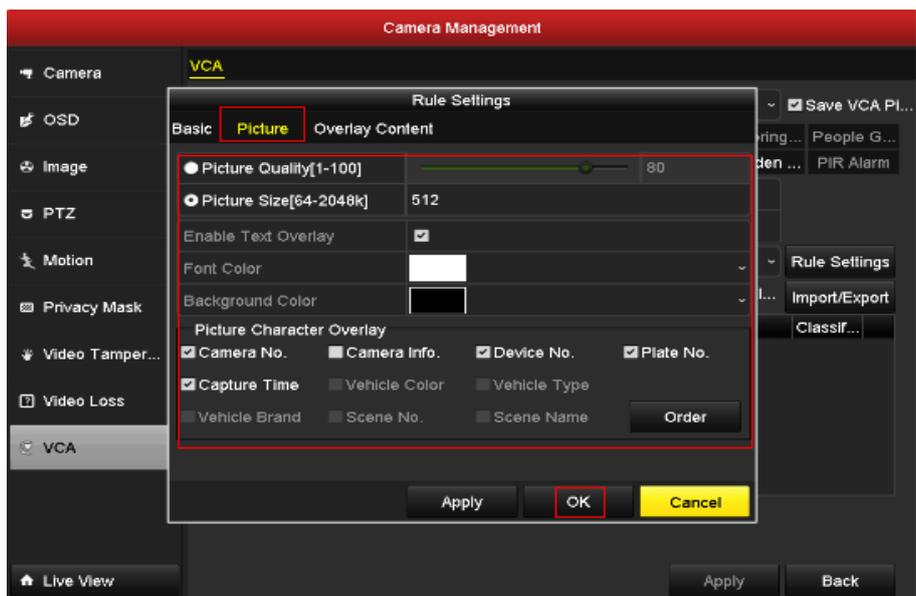


Fig.28 Configure picture

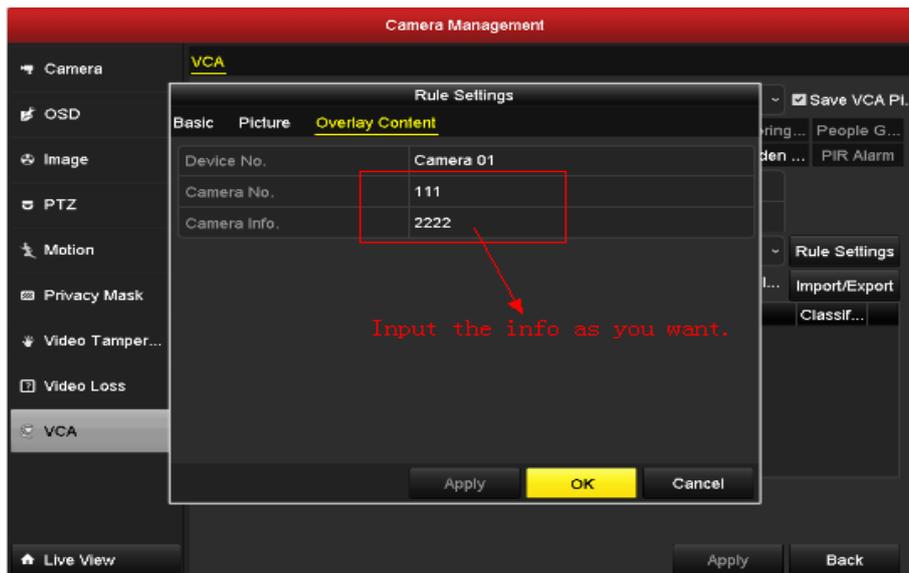


Fig.29 Configure overlay

Go to **VCA->others**, configure the **Trigger channel/Arming Schedule** and set the **Linkage Action** as follows.

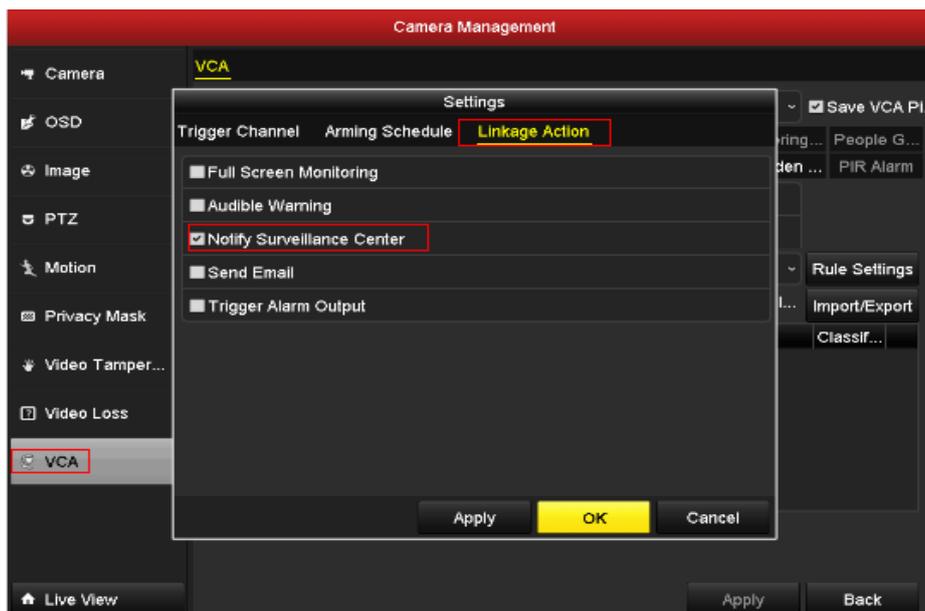


Fig.30 Configure linkage

3. Blacklist and Whitelist management.

Edit the blacklist and whitelist on computer as follows, copy the file to a USB storage device.

	A	B	C
1	No	Plate Num	Group(0 black list, 1 white list)
2	1	02RTL3	0
3	2	32XBZZ	1
4	3	38SB6	0
5	4	32XBZZ	1
6	5	8STL42	0
7	6	5SFT88	1
8	7	KLETP407	0
9	8	41SJT2	0
10	9	7VLP4F	0
11	10	4VTG19	0
12	11	7558H	0
13	12	8KNZ92	0
14	13	42NSNF	0
15	14	VF034P	0
16	15	08BNBF	0
17	16	5OPFT	0

Fig.31 Blacklist and whitelist format

Connect the USB storage device to the NVR. Go to **VCA->Import/Export**, import the blacklist and whitelist as follows.

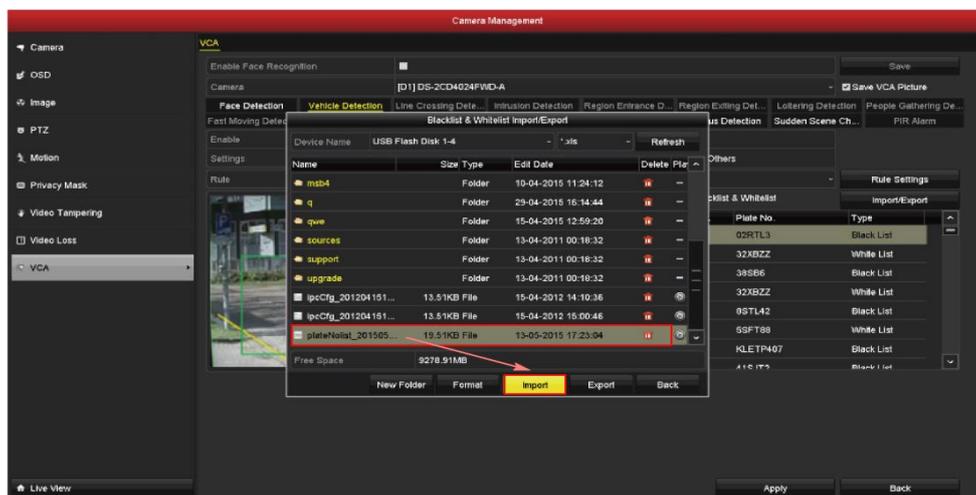


Fig.32 Blacklist and whitelist format import

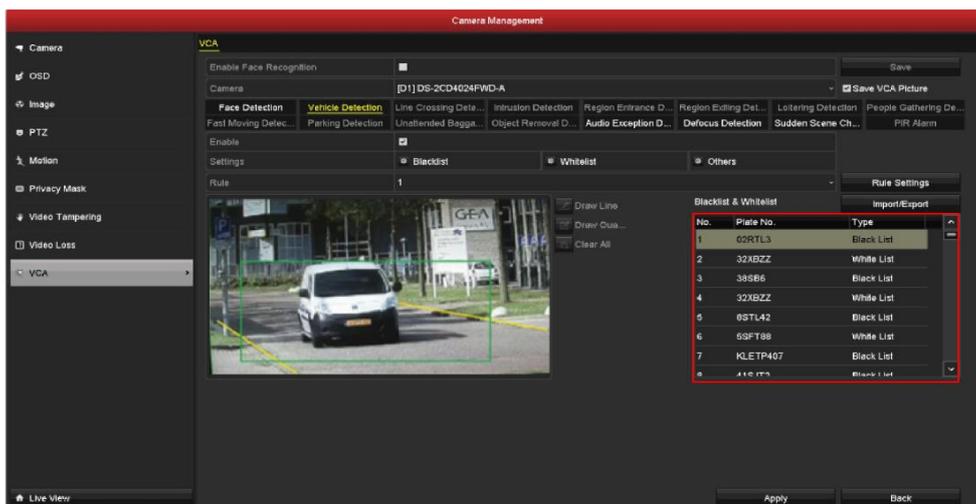


Fig.33 Blacklist and whitelist test

Go to **VCA->Blacklist/ Whitelist/ Others**; configure the trigger channel, arming schedule and linkage actions for the blacklist, whitelist and others.

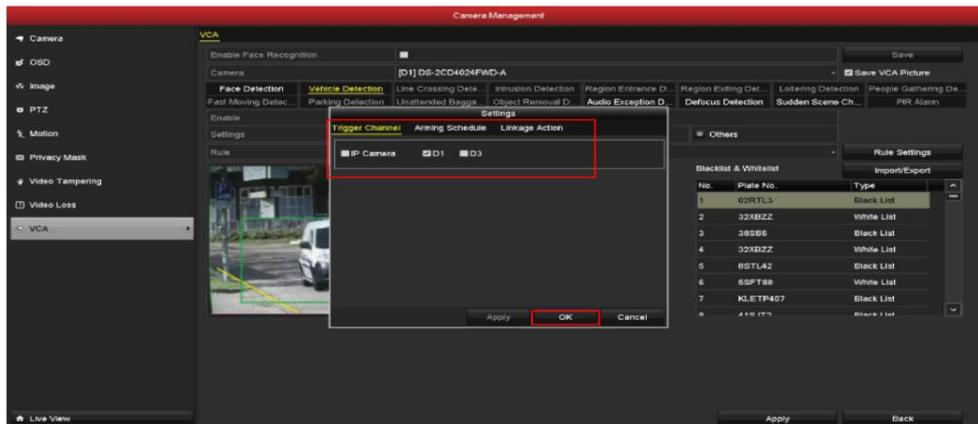


Fig.34 Blacklist and whitelist channel selection

*Note:

If we not select the 'Blacklist & Whitelist' alarm to the “Notify Surveillance Center” in the IPC, no alarm will be stored.

If we select the 'Blacklist & Whitelist' alarm to the “Notify Surveillance Center” in the IPC, we can get the alarm in the NVR.

4. Record Schedule

To get the video clip more accurately, users need to configure the record schedule on local NVRs. Please see the detailed configuration below.

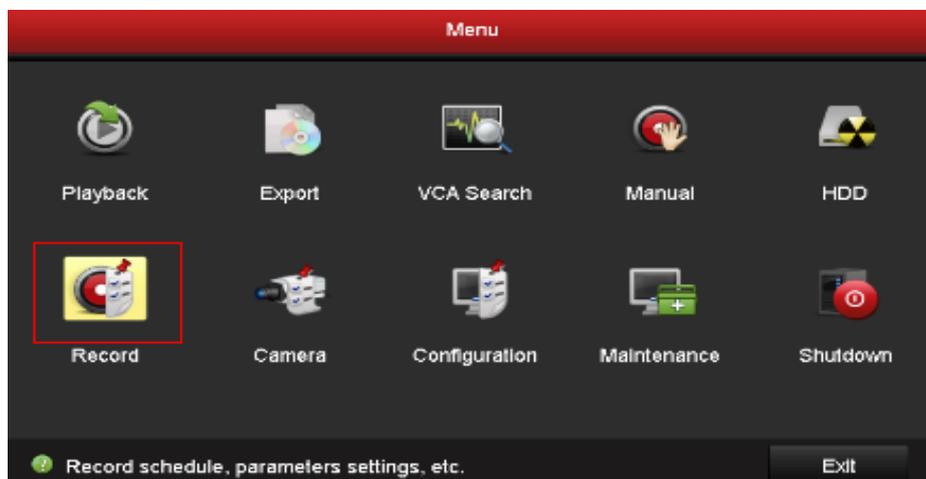


Fig.35 Record page

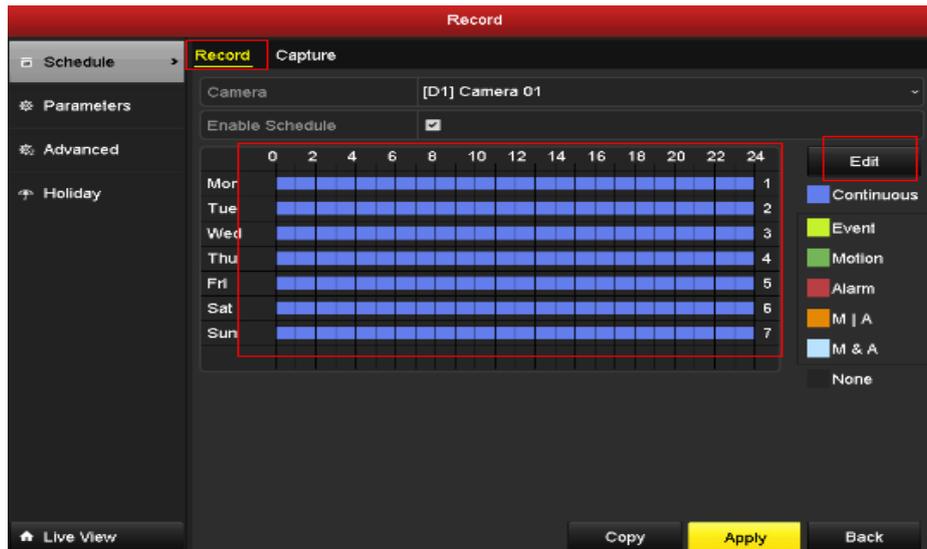


Fig.36 Record configuration

5. Result Query

Go to **Menu -> VCA Search-> Plate Search**, select the channel and start/stop time, users can search the plate info on the local NVR. Please see the details below.

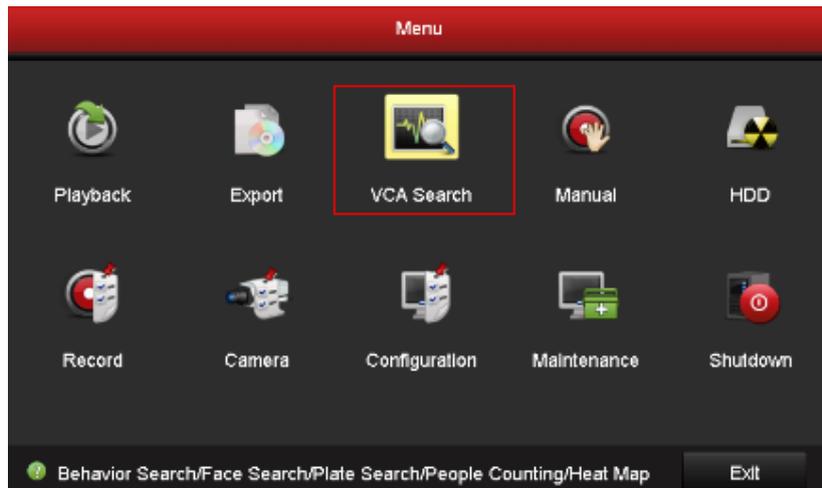


Fig.37 VCA search



Fig.38 VCA channel selection



Fig.39 License plate search result

■ LPR Configuration on NVR web:

Open the web configuration page of NVR, you can achieve the following functions:

1. Add IPC

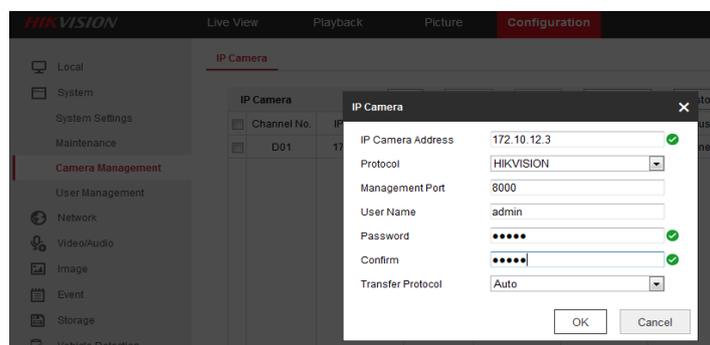


Fig.40 IPC add

2. License plate rule configuration

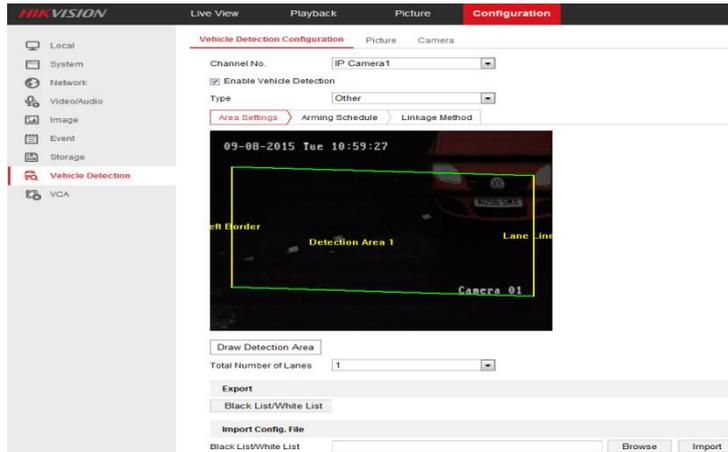


Fig.40 License plate rule configuration

3. Information display, Text Overlay, Picture configuration

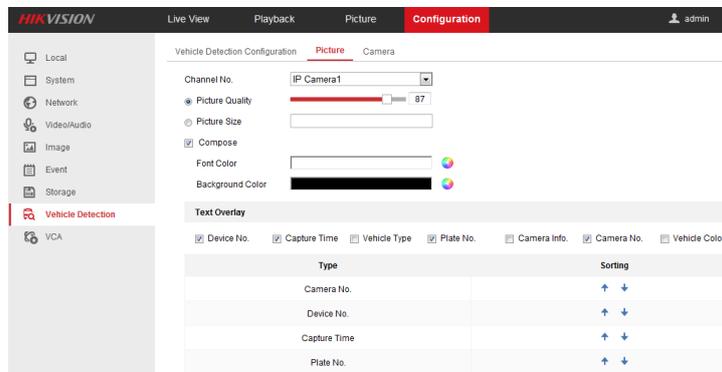


Fig.40 Text Overlay configuration

3.2.2.4 Product Selection

Table 5 product List

Product	Product Model	Description	Image
NVR	DS-9616/9632/9664/9664NI-I	Up to 16/32/64-ch IP cameras input Third-party network cameras supported, 12 MP resolution recording, RAID 0,1,5,6,10 supported	
	DS-7708/7716/7732NI-I	Up to 8/16/32-ch IP cameras input, Third-party network cameras supported, 12 MP resolution recording	
	DS-7608/7616/7632NI-I	Up to 8/16/32-ch IP cameras input, Third-party network cameras supported, 12 MP resolution recording	

*For detailed configurations, please refer to the 《ANPR Quick Guide via NVR》

3.2.3 “iVMS-5200P+NVR+ IPC”mode1

3.2.3.1 Introduction

The iVMS-5200 Pro is a centralized management monitor system which is developed by HIKVISION based on SOA architecture. iVMS-5200 Pro provides the central management, information sharing, convenient connection and multi-business integration. This model is based on 5200 Pro, with the client to manage. And the NVR can work as storage, because NVR can upload the license plate to the platform. So it needs to cooperate with the license plate recognition camera and the IPC works as a NVR digital channel, both camera and NVR can be deploy in a public network.

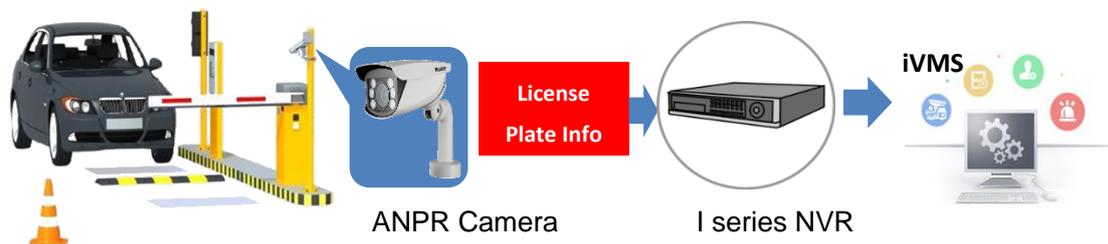


Fig.41 Platform Web Manager

3.2.3.2 Features

LPR module features:

1. LPR module live view

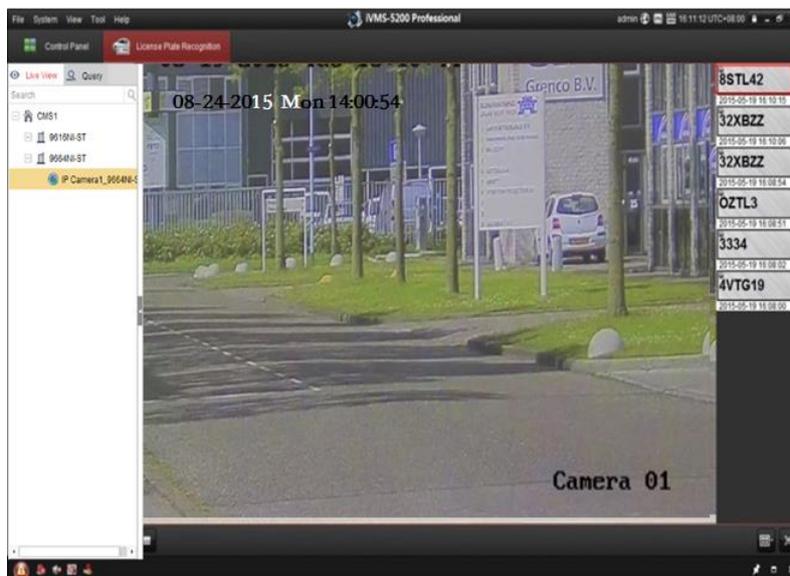


Fig.42 live view

2. Query

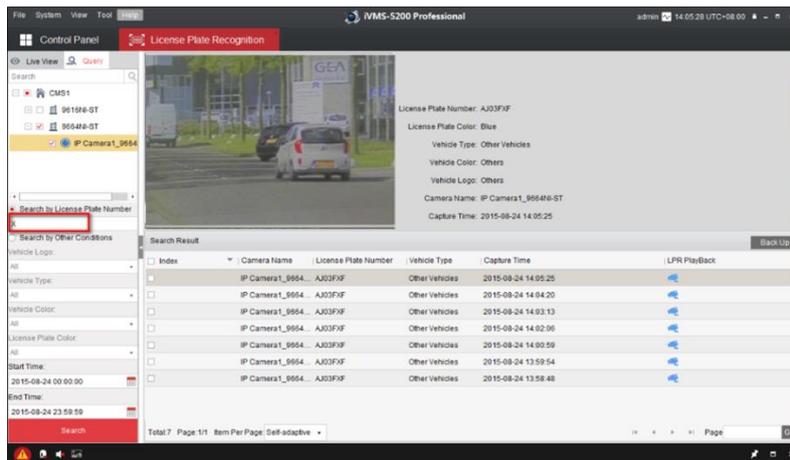


Fig.43 Query

3. Playback

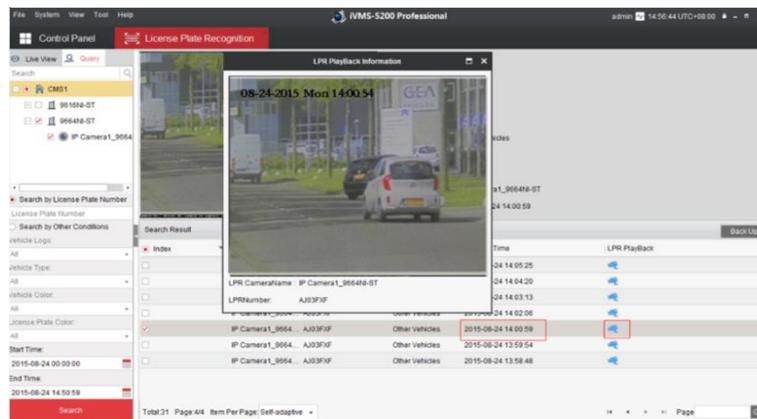


Fig.44 Playback

4. Backup

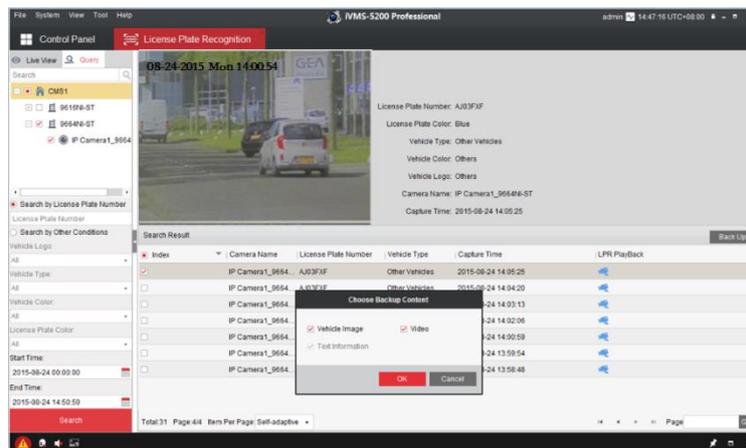


Fig.45 Backup

3.2.3.3 Configuration

We set the NVR+IPC configuration as the mode2.

1. LPR Configuration:

Open the **Web Manager** page of **iVMS-5200 Professional**, login and go to **Resource Management** option.

*Note: The default user name and PWD of 5200P is admin and 12345.

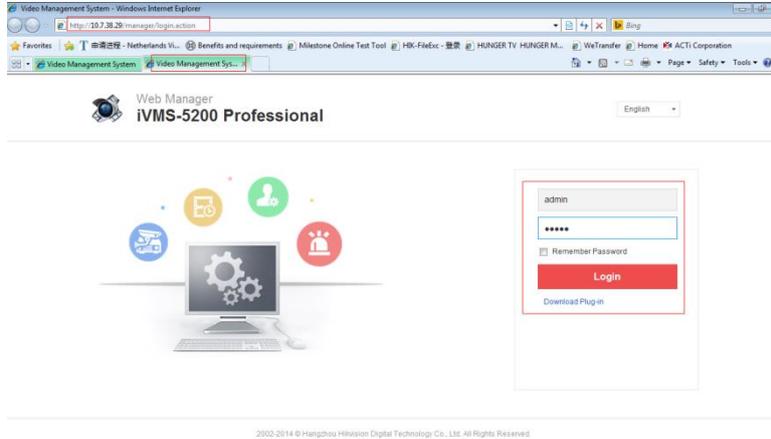


Fig.46 Login page

Select **Encoding device** and add the NVR into the software as follows. And click **OK** button, then you will see the device online.

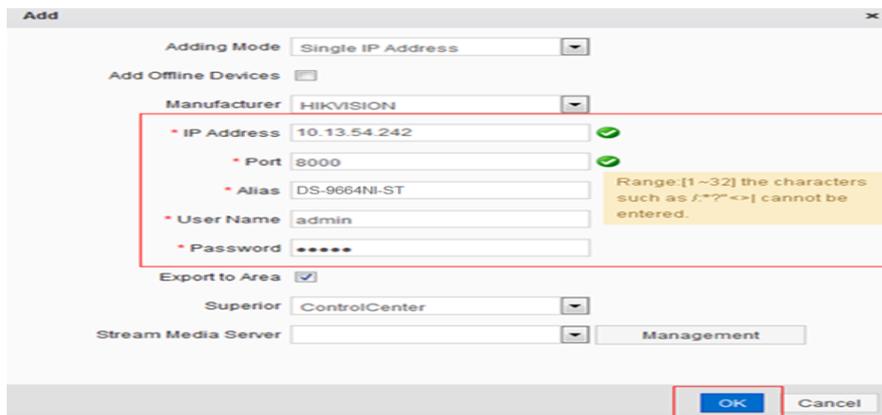


Fig.47 Add device

Go to **Remote Configuration->Vehicle Detection**, configure the parameters just like as follows.

- A. Select “ Enable Vehicle Detection”, then select the **total number of lane** and **State** as you want. Then click **Draw** button, the region appears and click **Edit** to configure the **Arming schedule**. Enable the event alarm uploading
- B. Configure the picture parameter of plate as follows, especially select “Notify Surveillance Center” to send alarm to the client.
- C. If you want to upload the pictute to the cloud, please fill in the cloud info here.

D. Fill in the camera info for reference.

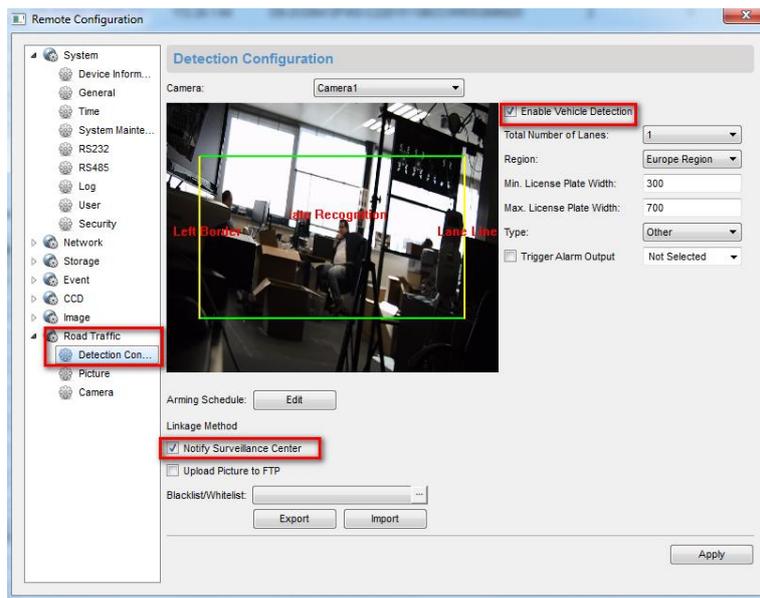


Fig.48 Remote configuration

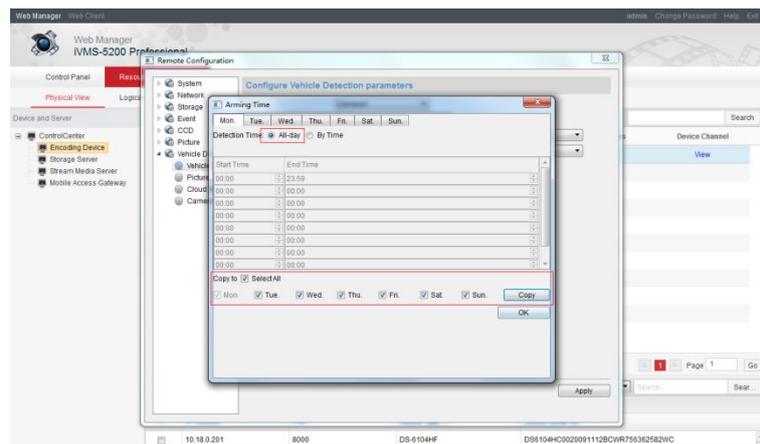


Fig.49 Arming time configuration

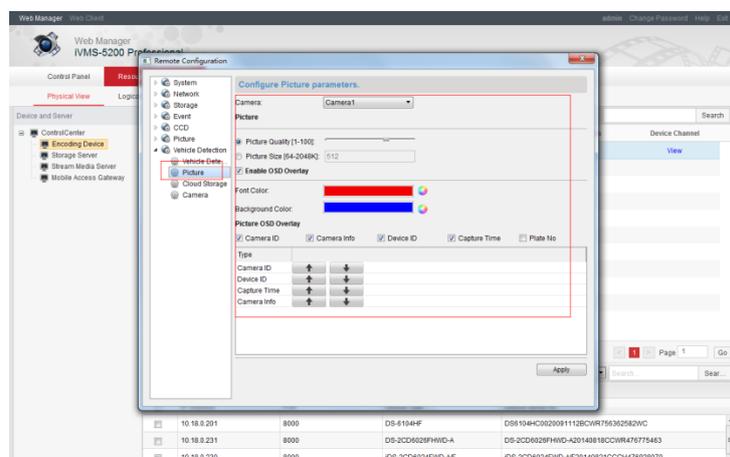


Fig.50 Picture configuration

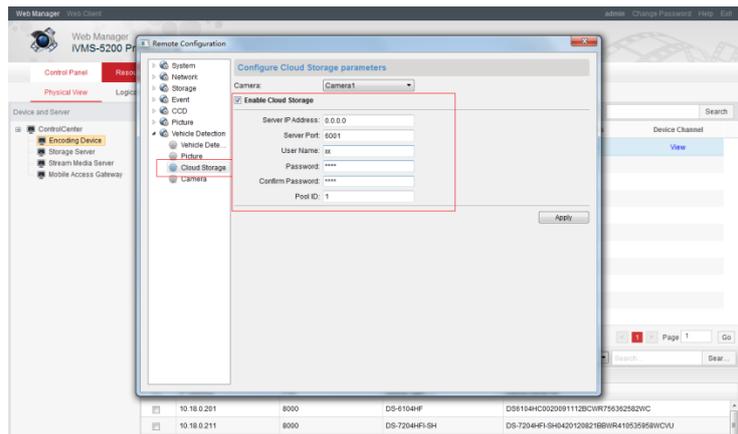


Fig.51 Storage configuration

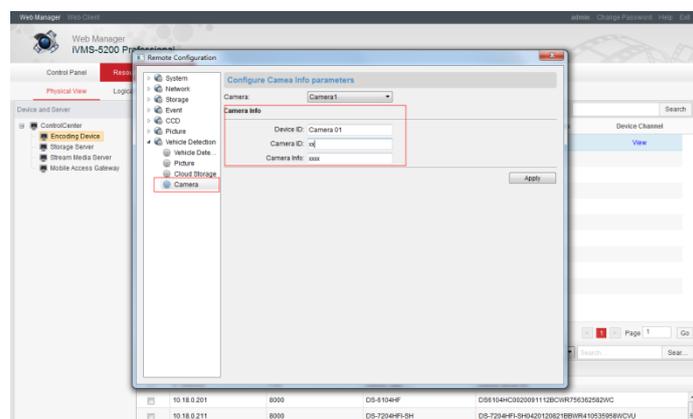


Fig.52 Camera configuration

2. Device storage Configuration:

Click **Resource management** to configure Device storage. For storage Location, Encoding Device is needed.

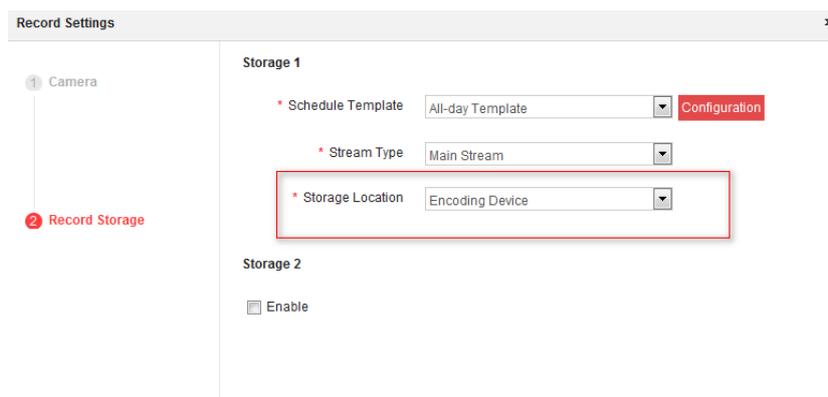


Fig.53 Web storage configuration

3. LPR live view and result searching:

Open **iVMS-5200 Control Client**, connect to the correct CMS and go to **License Plate Recognition** in the control panel.

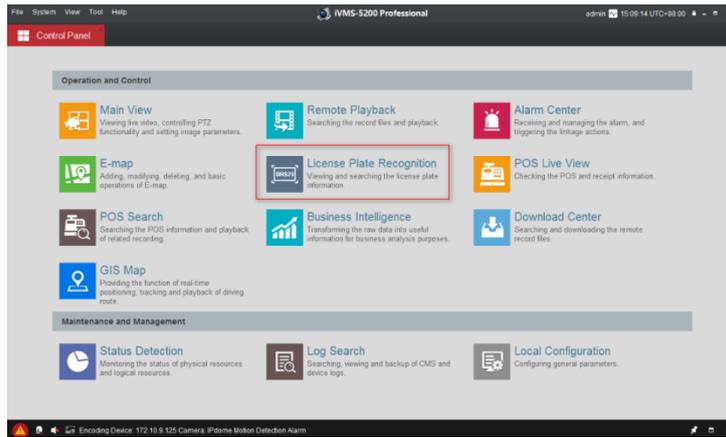


Fig.54 LPR entrance

Select the camera and live view, the plate captured will display on the image synchronously.



Fig.55 Live view

Double click the plate, the detailed info will be shown on the interface.

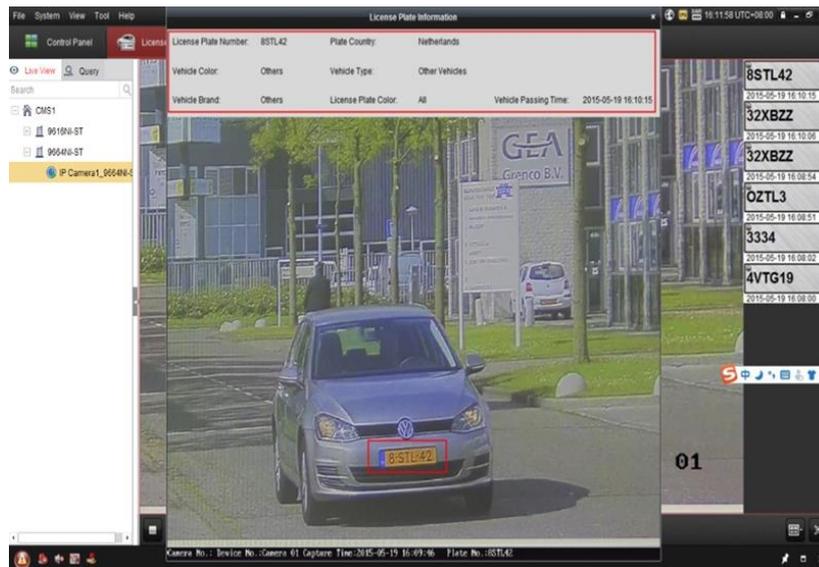


Fig.56 LPR live view

4. Result Query:

Go to **Query** option, choose the way of search, and select the start time/stop time and click **Search**, the specific plate info will be shown on the page. Please see detailed info as below.

Search by Support Country, by License Plate Number, by Other Conditions.

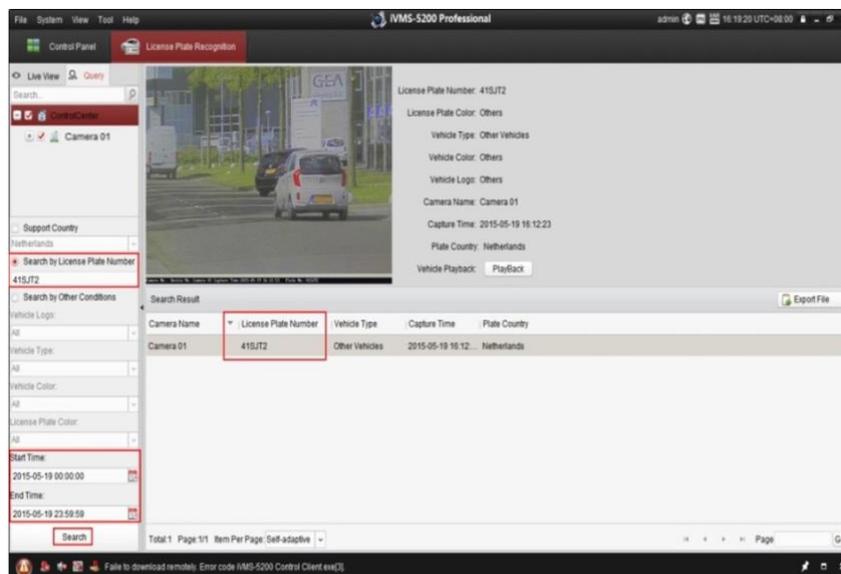


Fig.57 Result Query

You also can see the current image by click **Playback** button.

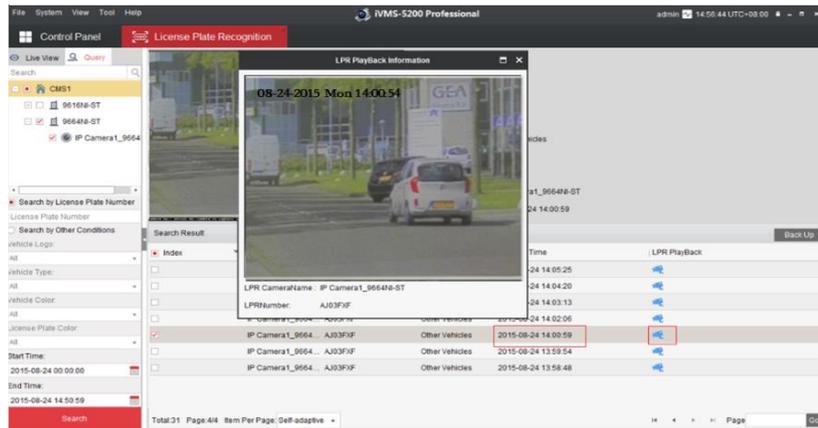


Fig.58 Playback

5. Result save:

Go to **Export File** option, choose the options that you want to save, select the file path and click **Backup**, the plate info will be saved to the local computer. Please see detail info below.

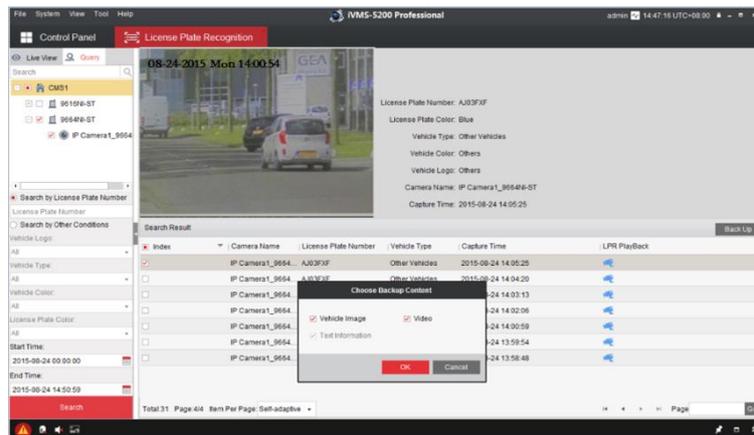


Fig.59 Result save

3.2.3.4 Product Selection

Table 6 product List

Product	Product Model	Description
Platform	iVMS-5200 Pro, with LPR module	1024 channels maximum

*For detailed configurations, please refer to the 《How to configure Hikvision LPR Function via iVMS-5200P-519》

3.2.4 “iVMS-5200P+NVR+IPC” mode2

3.2.4.1 Introduction

This mode2 is different from mode1, the NVR is a storage server, IPC store the data into NVR. Get the license plate info in the 5200.Camera, NVR and software only Centralized deployment.

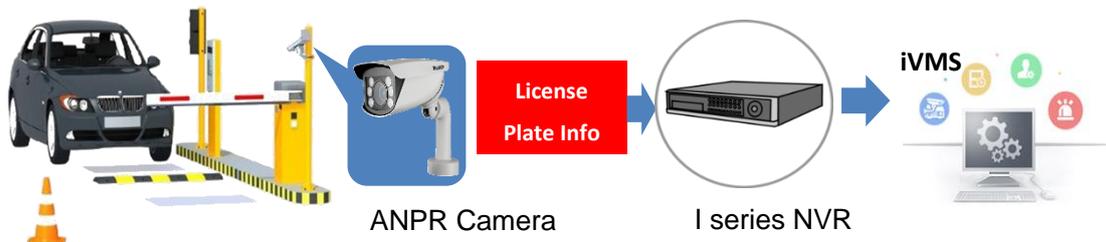


Fig.60 Platform Web Manager

3.2.4.2 Feature

The feature is the same with mode1.

3.2.4.3 Configuration

1. Configuration

In the 5200P physical page, add the NVR as a storage server.

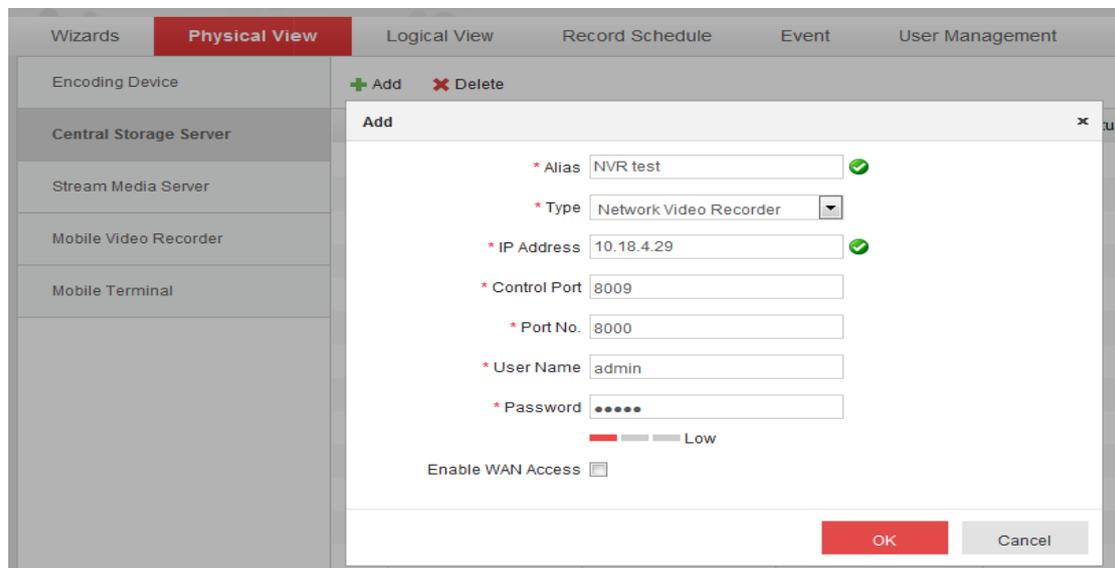


Fig.61 Add storage server

Note:

1. NVR need a disk
2. NVR cannot be added the IPC in advance which will configure the NVR storage

After adding the NVR as a storage server, we need to click *one touch configuration* to keep the server alive.

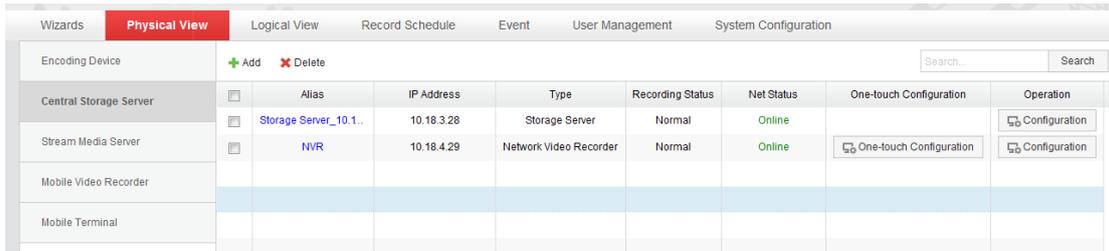


Fig.62 Configure the NVR

Add an IPC into the platform, and then configure its record schedule, the Storage Location need to choose Network Video Record.

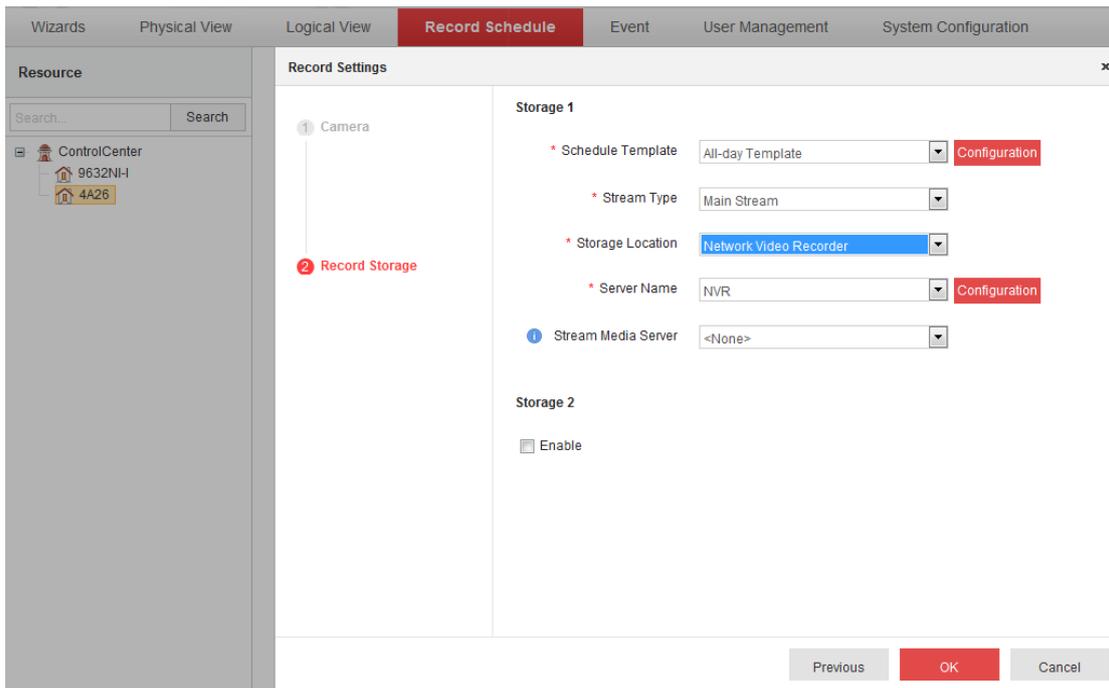


Fig.63 Configure the Record Schedule

After last step, when you login the NVR camera management, the IPC is added in the NVR as a channel.

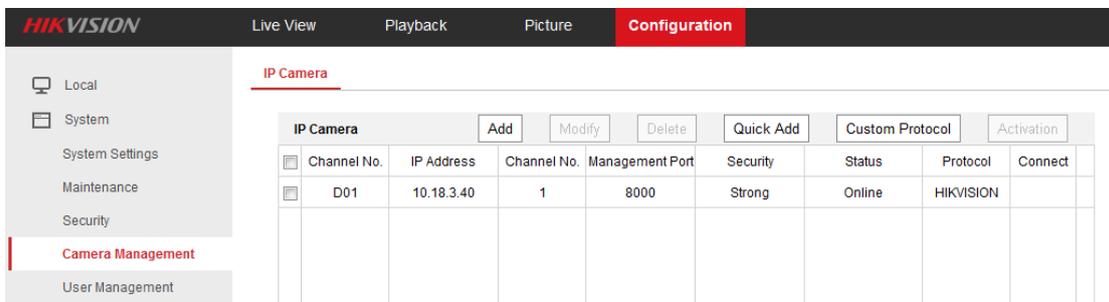


Fig.64 NVR channel page

We set the vehicle detection configuration in the Vehicle Detection page. Linkage method is Notify surveillance center.

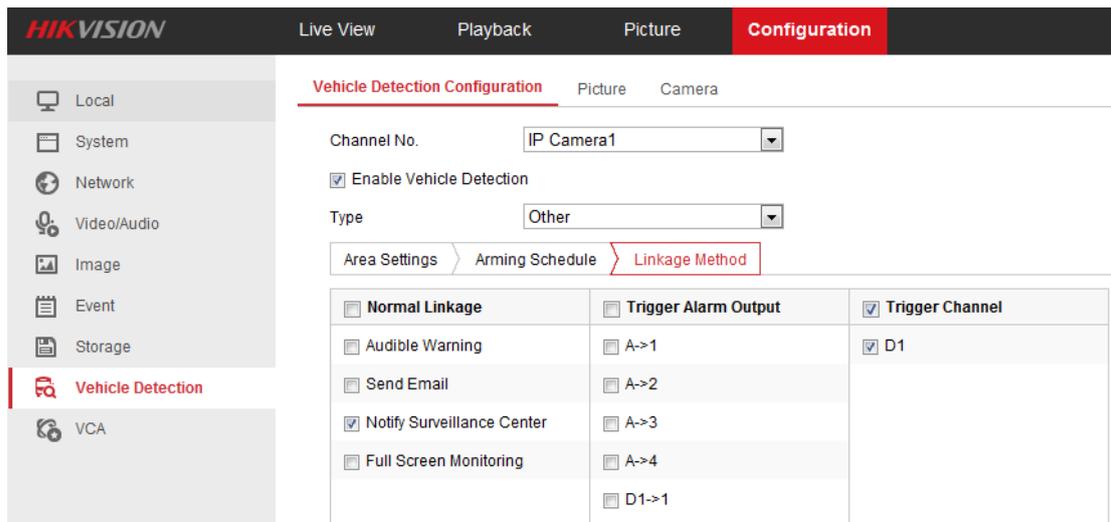


Fig.65 Alarm linkage

2. LPR live view and result searching:

Open **ivMS-5200 Control Client**, connect to the correct CMS and go to **License Plate Recognition** in the control panel.

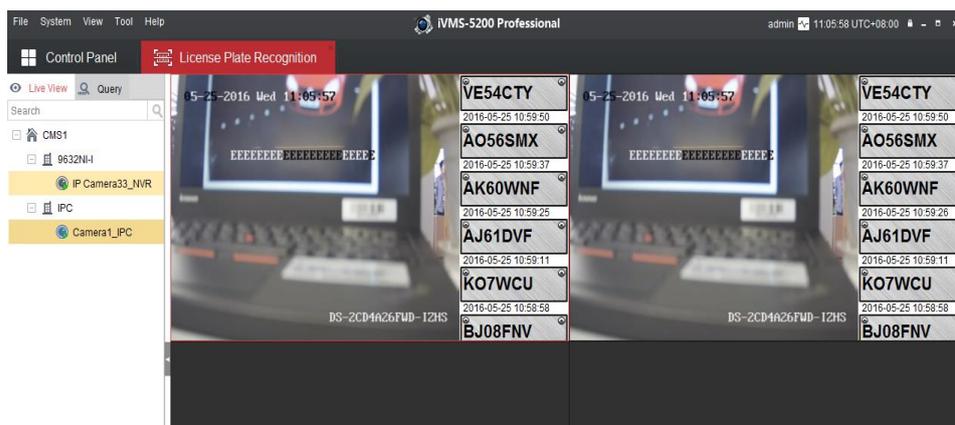


Fig.66 Live view

3. Query

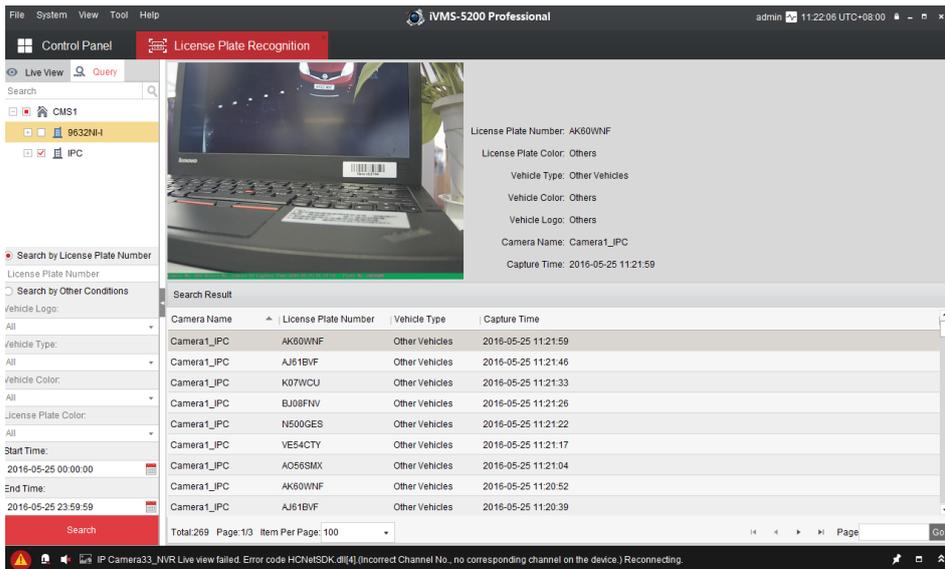


Fig.67 Query

3.2.4.4 Product Selection

Table 7 product List

Product	Product Model	Description
Platform	iVMS-5200 Pro, with LPR module	1024 channels maximum

3.2.5 “iVMS-4200 +NVR+IPC” mode

3.2.5.1 Introduction

With high compatibility and wide adaption, the iVMS-4200 can manage analog, IP and hybrid signal devices; it can access to the devices of different network environment, namely LAN, WAN, cable or wireless connection; This model is based on iVMS-4200, the NVR works as storage, so it needs to cooperate with the license plate recognition camera and the IPC works as a NVR digital channel, which is connected to a LAN deployment.

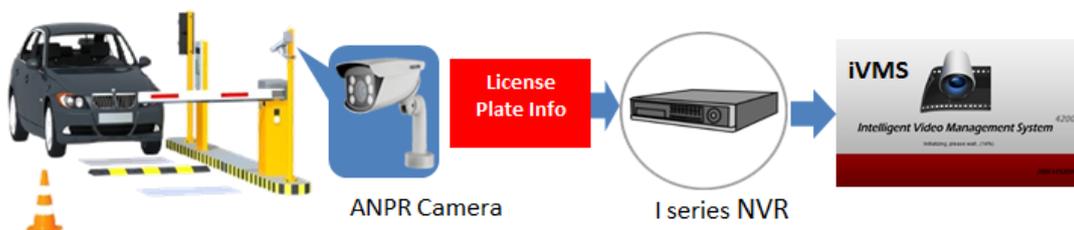


Fig.68 iVMS-4200 Platform

3.2.5.2 Features

LPR module features:

1. LPR module live view

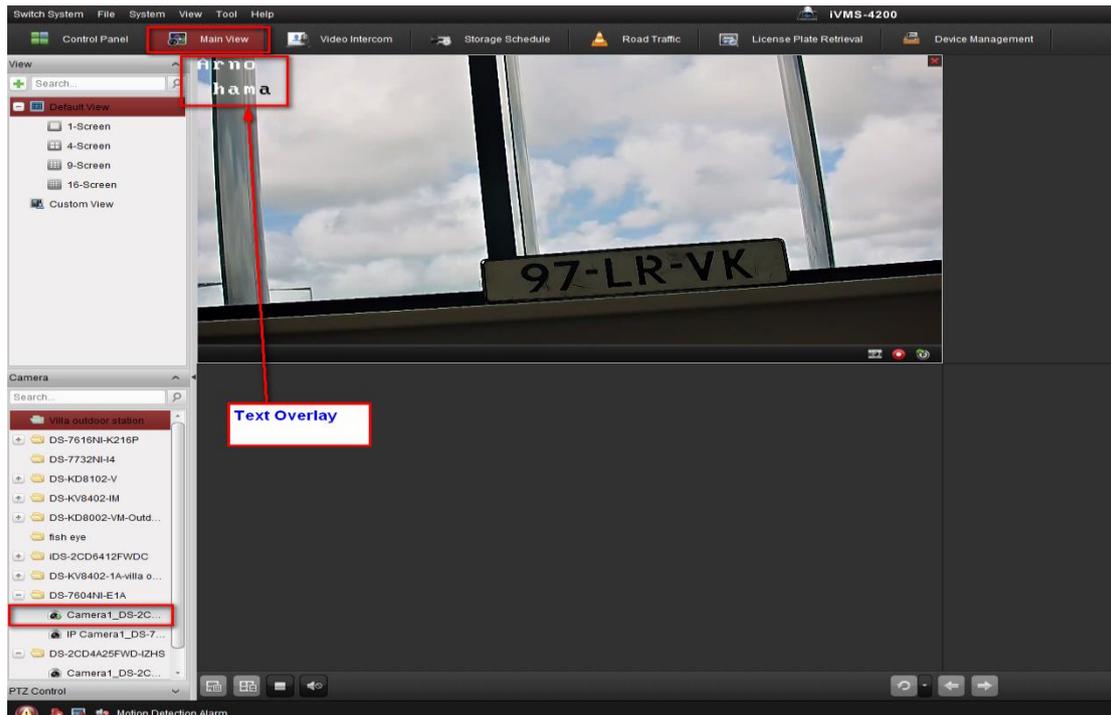


Fig.69 live view

2. Query and playback

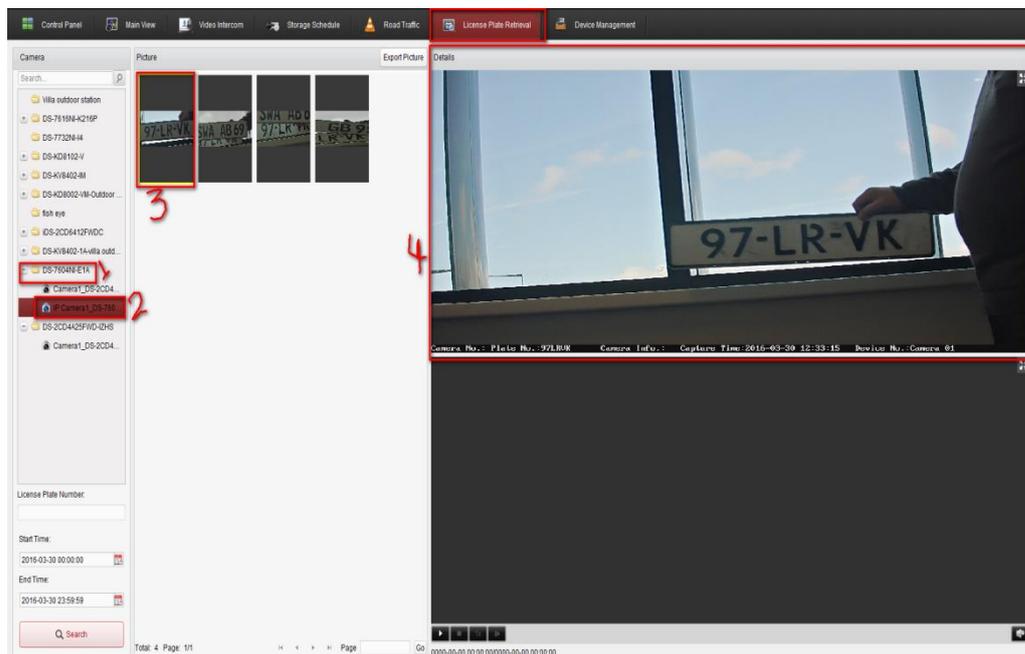


Fig.70 Query and playback

3.2.5.3 Configuration

We set the NVR+IPC configuration as the mode NVR+IPC.

Open the **iVMS-4200 Client**, login and go to **Device Management** to add the NVR. Select

Encoding device enter the remote config. Set the traffic rule and click Save button.

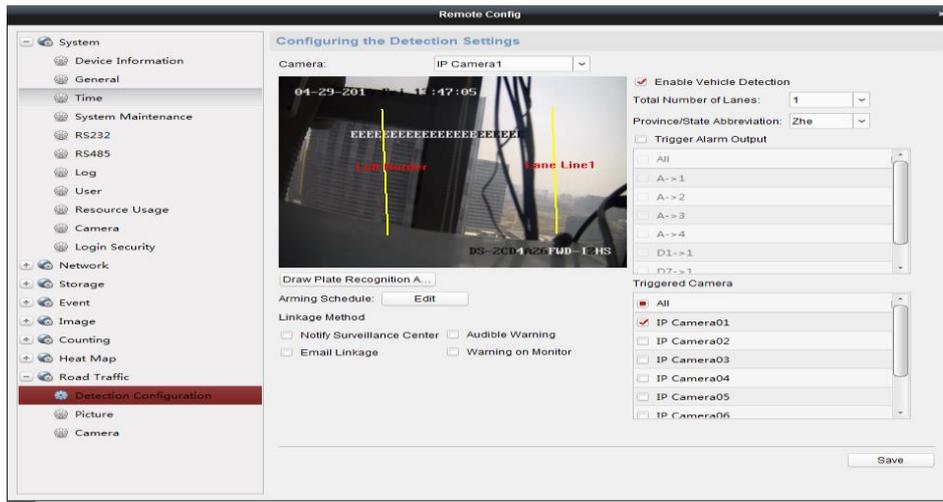


Fig.71 Rule configure

1. Device storage Configuration:

Click **Storage schedule** to configure Device storage. In order to search the LPR in the query page.

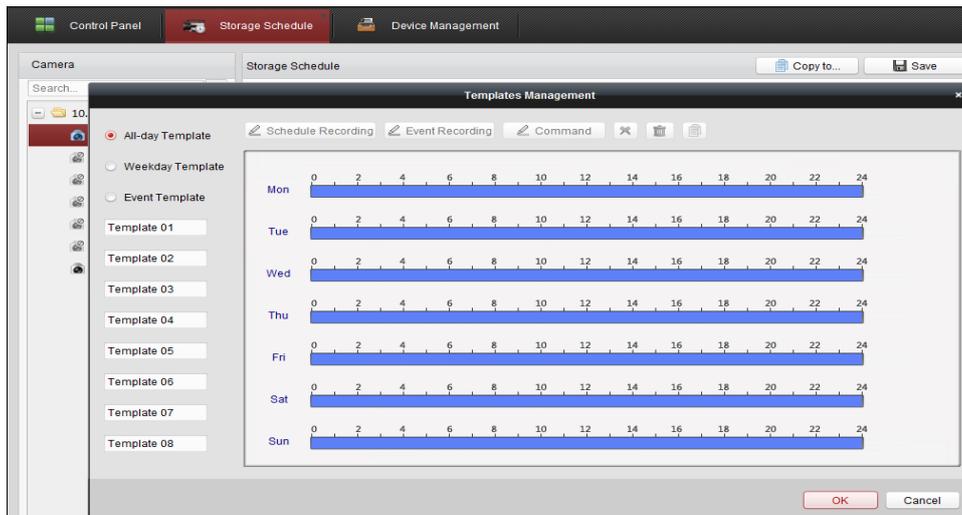


Fig.72 Device storage configuration

2. License Plate Retrieval

Open the License Plate retrieval page, select a NVR folder to open a camera channel, then, search the record. You will see the LPR reorganization picture, if click the LPR picture, you can also get the record about the license plate at the right page, playback the short video of vehicle passing.

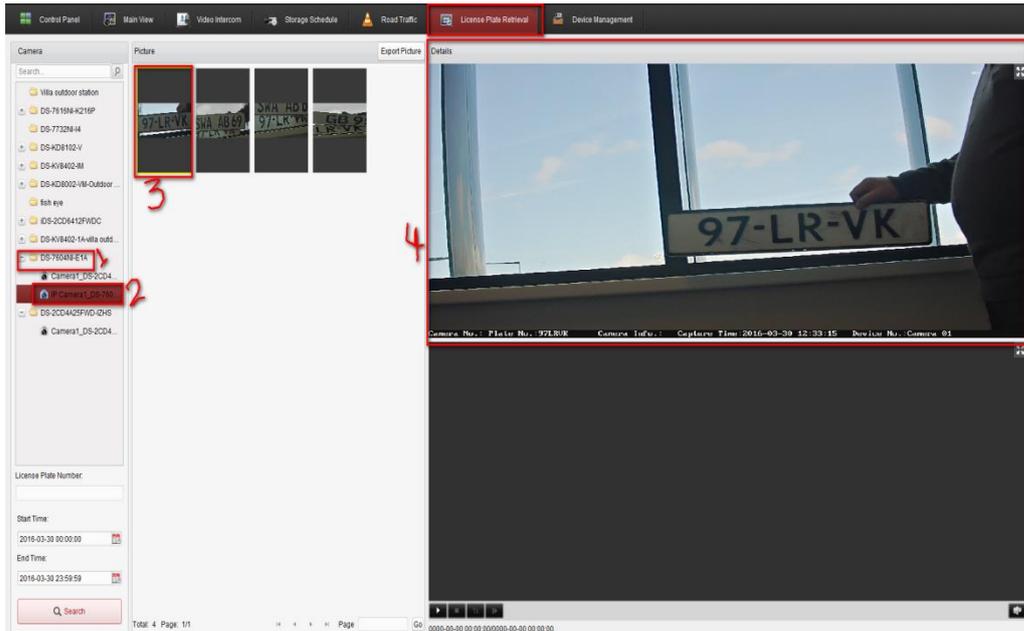


Fig.73 License Plate Retrieval

3.2.5.4 Product Selection

Table 8 product List

Product	Product Model	Description
Platform	iVMS-4200	256 channels maximum

*For other reference: 《iVMS5200P with LPR_DS-2CD4A25FWD firmware V5.3.8.doc》

3.2.5.5 Blacklist and whitelist info

Every B&W of IPC, NVR, ivms-4200 and ivms-5200 is independent.

- “IPC+SDK mode”: can configure blacklist and whitelist in the IPC, and get the filter of the rule.
- “IPC+MVR mode“: can configure the blacklist and whitelist in the IPC or NVR, once set rule in the NVR, the rule of IPC is no use, NVR can’t get B&W event from IPC.
- “IPC+NVR+ iVMS-5200 mode”: In the 5200 event configuration page, the event of device can configure the blacklist alarm and whitelist alarm, but this alarm only can get from the parking system of the 5200, no relationship of others. If using B&W list of NVR, 5200 can’t get alarm event from NVR. If you want to get these alarms from the NVR or IPC, only need to do customization. Although, the NVR set as a storage server, 5200 client also cannot receive the B&W alarm.
- “IPC+NVR+iVMS-4200 mode”: iVMS4200 doesn’t support B&W list, and can’t get alarm event from NVR, although B&W list is configured in NVR.

iVMS4200 supports to get alarm event from NVR when vehicle passing. There is license plate number and time in the information of alarm event.

