**Chapter 1 Solution Combinations** ..... 4
**1.1 ANRP Camera + NVR** ..... 4
**1.1.1 Topology** ..... 4
**1.1.2 Models and software version requirement:** ..... 4
**1.2 ANPR Camera + VMS** ..... 4
**1.2.1 Topology** ..... 5
**1.3 ANPR Camera + NVR + VMS** ..... 5
**1.3.1 Topology** ..... 5
**1.3.2 Models and software version requirement:** ..... 5
**Chapter 2 7xxx ANPR Camera Installation Specifications** ..... 6
**2.1 Camera Installation Angle** ..... 6
**2.2 Camera Installation Height** ..... 7
**2.3 Camera Lens Selection** ..... 8
**2.4 License plate tilt angle** ..... 8
**2.5 Bullent Camera Installation** ..... 8
**2.5.1 Camera accessories** ..... 9
2.5.2 Installation Steps ..... 10
**Chapter 3 Configurations** ..... 12
**3.1 Set ANRP Function via Camera Web Configuration Interface** ..... 13
**Steps:** ..... 13
**3.2 Set ANRP Function via NVR Web Configuration Interface** ..... 17
**3.3 Set ANRP Function via iVMS-4200** ..... 18
**Steps:** ..... 18
**3.4 Set ANRP Function via NVR Local Configuration Interface with GUI 3.0** ..... 20
**Preparations:** ..... 20
**Steps:** ..... 20
**3.5 Set ANRP Function via NVR Local Configuration Interface with GUI 4.0** ..... 21
**Preparations:** ..... 21
**Steps:** ..... 21
**3.6 Method to check ANPR picture pixels** ..... 22
**Steps:** ..... 22

**Chapter 4 Performance**..... 23
**4.1 Search ANRP pictures & videos via Camera Web Configuration Interface**..... 23
**Steps:**..... 23
**4.2 Search ANRP pictures & videos via iVMS-4200** ..... 24
**Steps:**..... 24
**4.3 Search ANRP pictures & videos via NVR Local Configuration Interface with GUI 3.0**..... 26
**Steps:**..... 26
**4.4 Search ANRP pictures & videos via NVR Local Configuration Interface with GUI 4.0**..... 28
**Steps:**..... 28

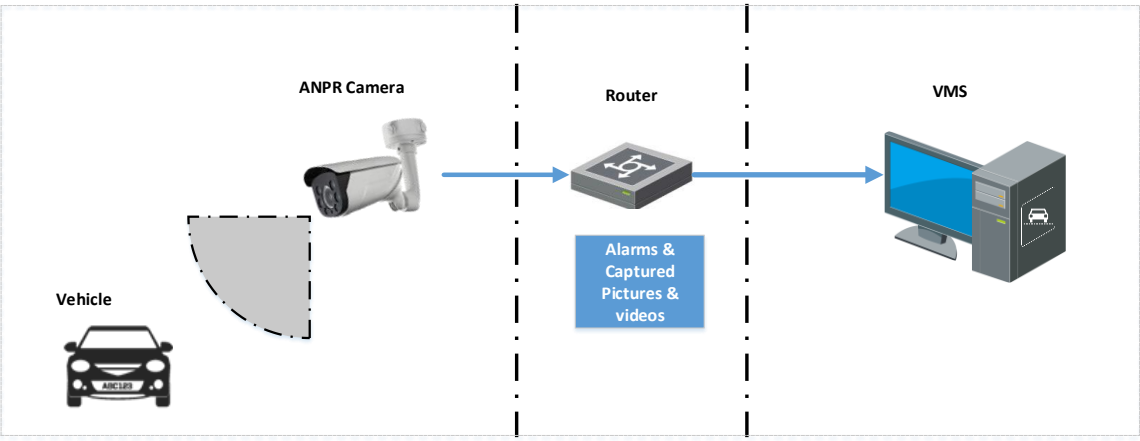
# 7xxx ANPR Installation & Configuration Guidance

# Chapter 1 Solution Combinations

## 1.1 ANRP Camera + NVR

In this solution, we can use the ANPR camera to capture & save the license plate pictures, and use the NVR to save both the license plate pictures & videos.

### 1.1.1 Topology



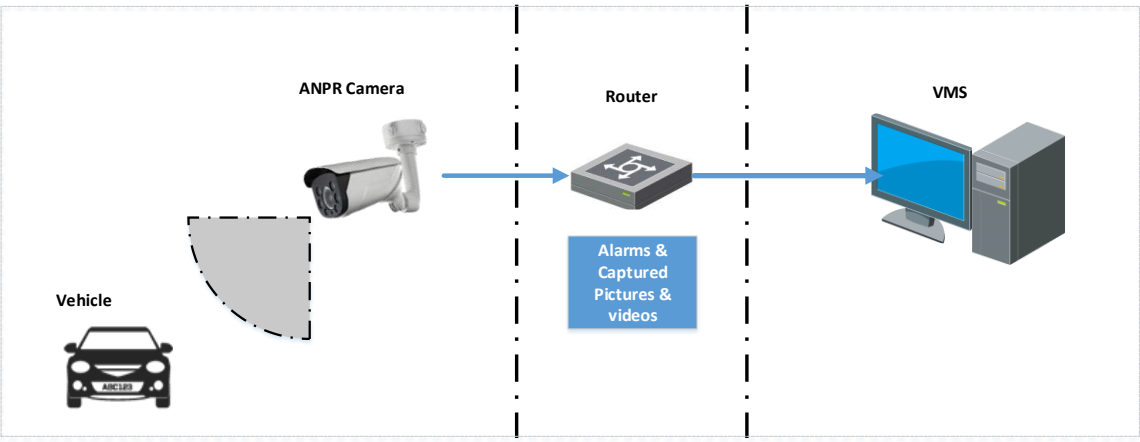

### 1.1.2 Models and software version requirement:

| | Model | Version |
|---|---|---|
| **CAMERA** | DS-2CD7A26G0/P-IZ(H)S<br>DS-2CD7026G0/P-IZ(H)S | Latest baseline version |
| **NVR** | –E/-K/-I series | Latest baseline version |
| **AI NVR** | All series | Latest baseline version |

## 1.2 ANPR Camera + VMS

In this solution, we can use the ANPR camera to capture & save the license plate pictures, and use the VMS to save both the license plate pictures & videos.

### 1.2.1 Topology



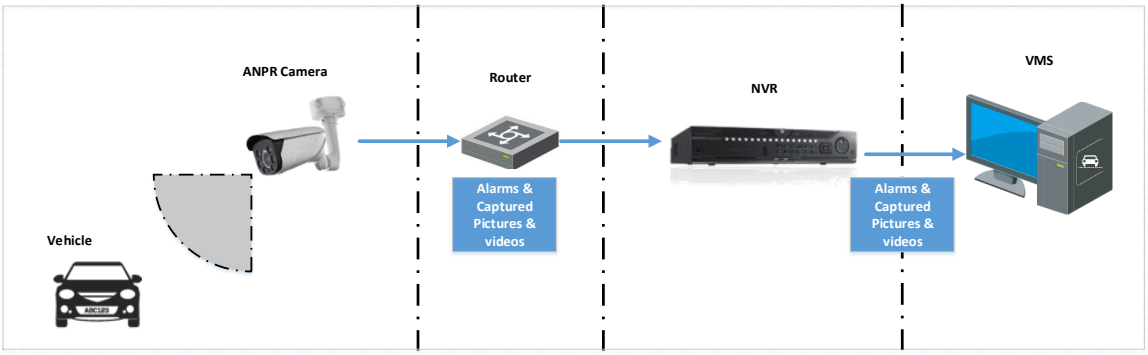

### 1.2.2 Models and software version requirement:

| | Model | Version |
|---|---|---|
| **Camera** | DS-2CD7A26G0/P-IZ(H)S<br>DS-2CD7026G0/P-IZ(H)S | Latest baseline version |
| **VMS** | iVMS-4200 | Latest baseline version |

## 1.3 ANPR Camera + NVR + VMS

In this solution, we can use the ANPR camera to capture & save the license plate pictures, and use either the NVR or VMS to save both the license plate pictures & videos.

### 1.3.1 Topology




### 1.3.2 Models and software version requirement:

| | Model | Version |
|---|---|---|
| **Camera** | DS-2CD7A26G0/P-IZ(H)S<br>DS-2CD7026G0/P-IZ(H)S | Latest baseline version |
| **NVR** | –E/-K/-I series | Latest baseline version |

| | | |
|---|---|---|
| **AI NVR** | All series | Latest baseline version |
| **VMS** | iVMS-4200 | Latest baseline version |

# Chapter 2 7xxx ANPR Camera Installation Specifications

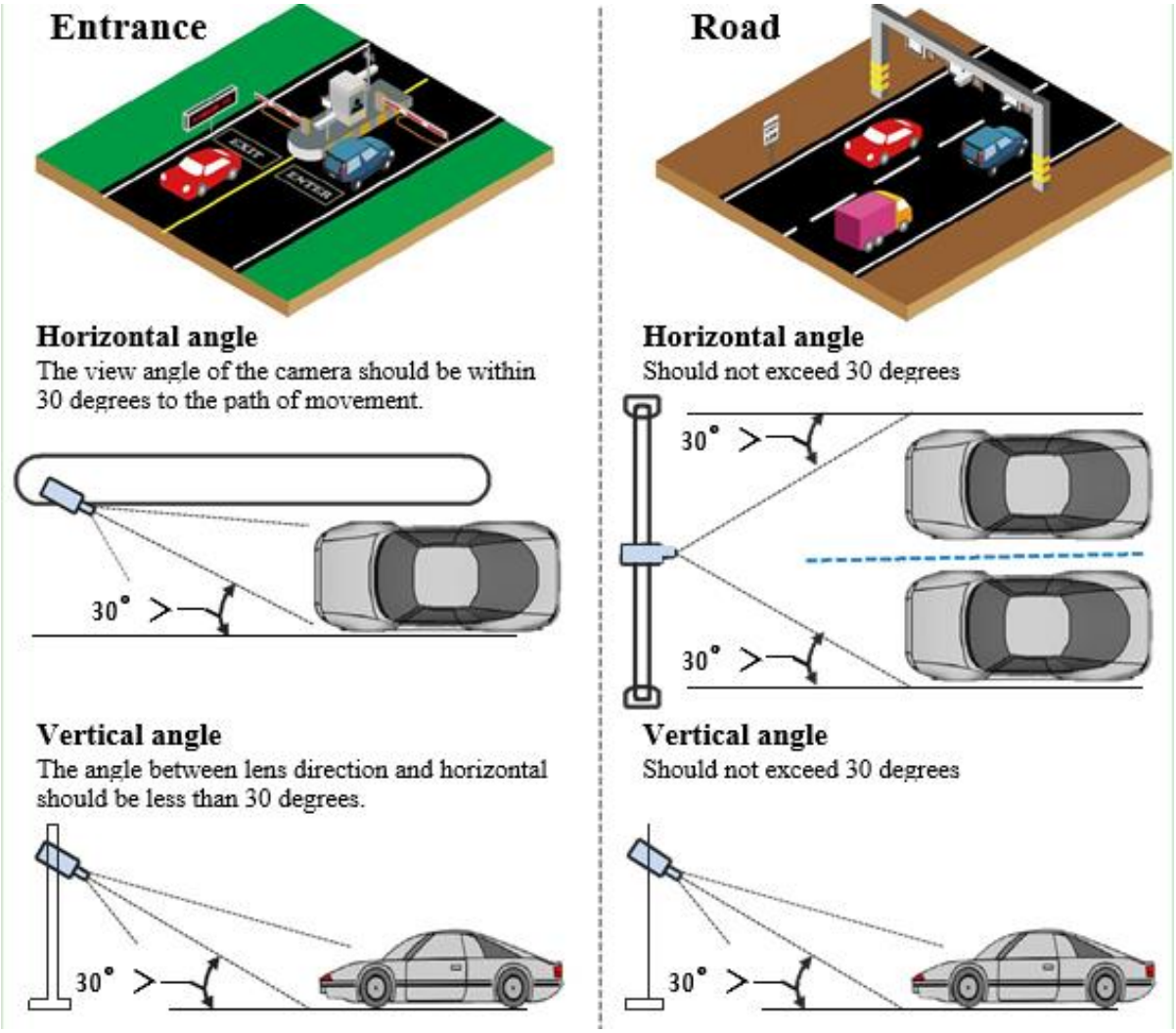
In order to have a better ANPR performance, please refer to this chapter for camera installation.

***Note:***

- It's recommended to cover one lane for each 2MP camera;
- It's recommended the min height of a license plate should be 20 to 30 pixels in the image captured by a 2 megapixel resolution camera.

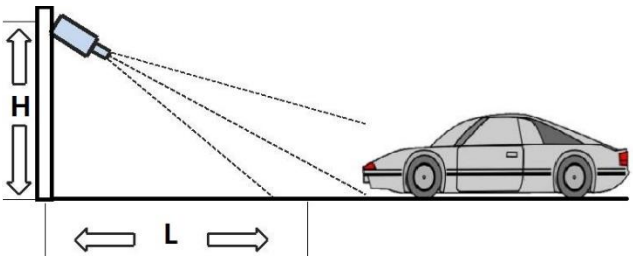
## 2.1 Camera Installation Angle

Hikvision Automatic Number Plate Recognition cameras help users detect passing vehicles and capture the license plates. To obtain the maximum license plate recognition accuracy, you need to install the ANPR camera in a proper way to get a clear image.




## 2.2 Camera Installation Height

The installation height (H) needs to be fixed firstly, and then the detection range (L) could be calculated by a simple equation L = cot 30*H.




L = cot 30*H = 1.7*H

| Height(m) | Min L (m) |
|---|---|
| 1.5 | 4 |
| 2 | 4 |
| 3 | 5.1 |
| 3.5 | 6 |
| 4 | 6.8 |

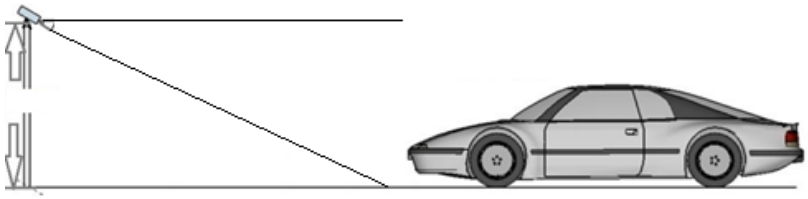
***Note:***

For entrance application, it‘s better to install the camera between the height 1.5m and 4m, and ensure the detection range is no longer than 4m.

For checkpoint application, it‘s better to install the camera with height 6 m.

## 2.3 Camera Lens Selection

The recognition distance is based on the camera focal length. You should select a proper lens In order to get enough pixels in the frame.



The table below is for your reference:

| Camera | Lens(mm) | Min recognition distance (m) | Max recognition distance (m) |
|---|---|---|---|
| DS-2CD7A26G0/P-IZ(H)S | 2.8~12 | 2.5 | 12 |
| DS-2CD7026G0'P-(AP) | 8~32 | 7.2 | 28.9 |

## 2.4 License plate tilt angle

The license plate should be as horizontal as possible and the recommended tilt angle is within +/-5 degrees.

Also, the vehicles in the detection area should go as straight as possible instead of turning left or right.

## 2.5 Bullet Camera Installation

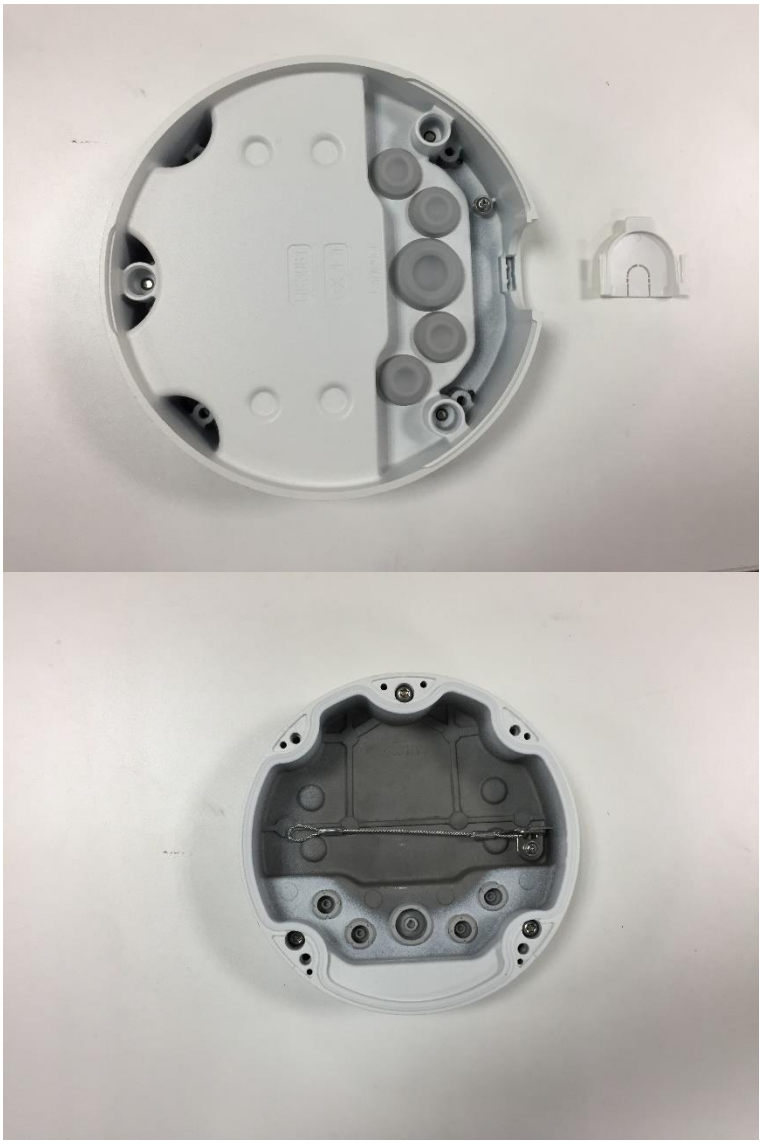
## 2.5.1 Camera accessories

| | | |
|---|---|---|
| | | Bullent Camera Body and Sun Shield |
| | | Power Adaptor |
| | | Mounting Base |
| | | Junction Box |
| | | One Wiring Clamp，<br>One Bag of Screws，<br>One Perforator<br>One Inner Hexagon Spanner |

## 2.5.2 Installation Steps

**Step1:** Use four expandable screws to fix the mounting base on the wall:

**Step2：** Tidy cables, including the power line of the camera, reticle as well as other cables and do the insulation of the power line. If the cables need to be connected from the side during the actual use, please remove the side outlet block first before connecting cables such as power line through this hole and fix them on the wall；If the cables are connected from the rear, please pass them through the circular hole in the mounting base. After arranging the cables, pierce the waterproof silica gel with a perforator, and then cross the reticle and power line from different holes to the junction box. Next, the FRONT end of the junction box is fixed forward to the mounting base. Finally, tighten the three screws.



**Step3**：fixed camera： Hook up the bullet camera’s cramp ring use anti stripping cable from junction box to prevent the camera from falling off during installation, after connecting the reticle and power line, use four screws to fix the camera to the junction box.

**Step4：** Unscrewing the screws to adjust the lens angle in order to adjust the image to the required monitoring site.

# Chapter 3 Configurations

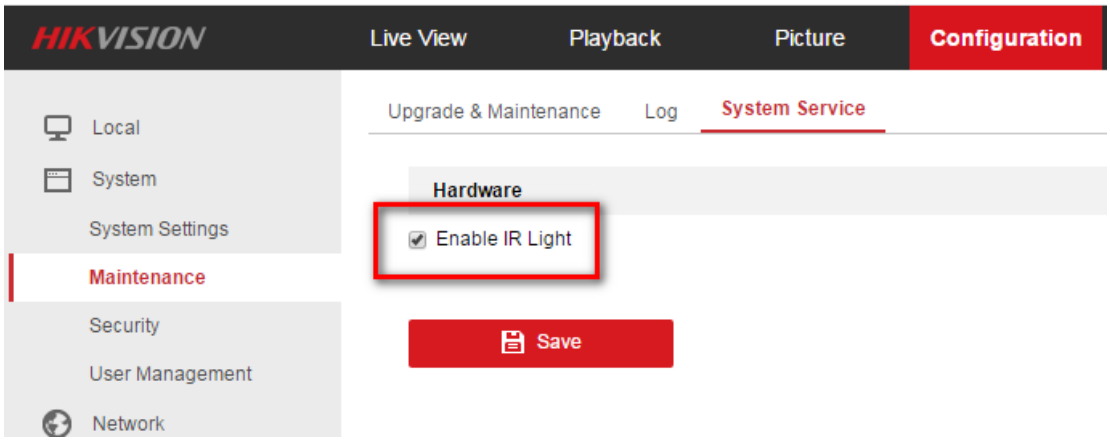
You can set the ANRP function via camera or NVR from web configuration interface, local configuration interface or iVMS client.

The steps are similar.

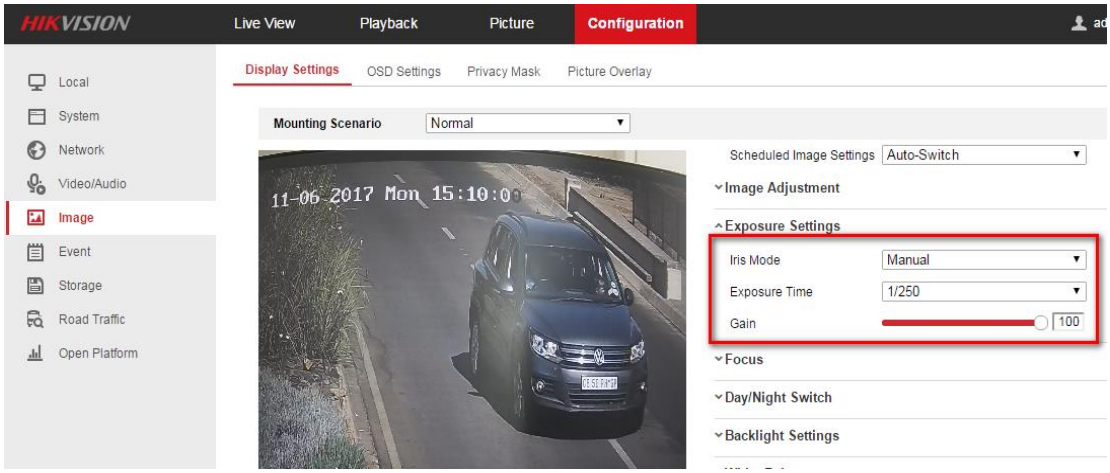
## 3.1 Set ANRP Function via Camera Web Configuration Interface

**Steps:**

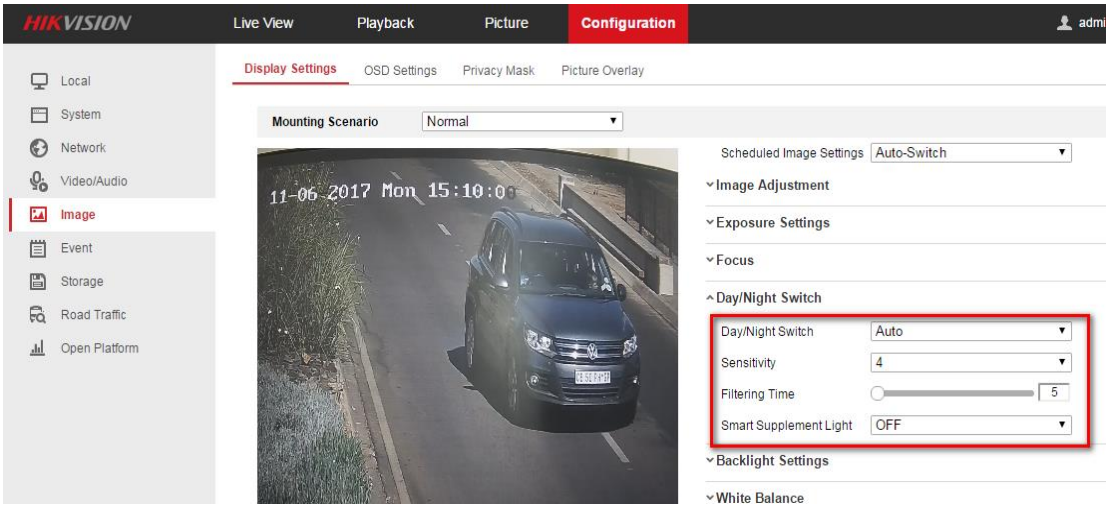
1. Go to **System>Maintenance>System Service** to enable the IR light;



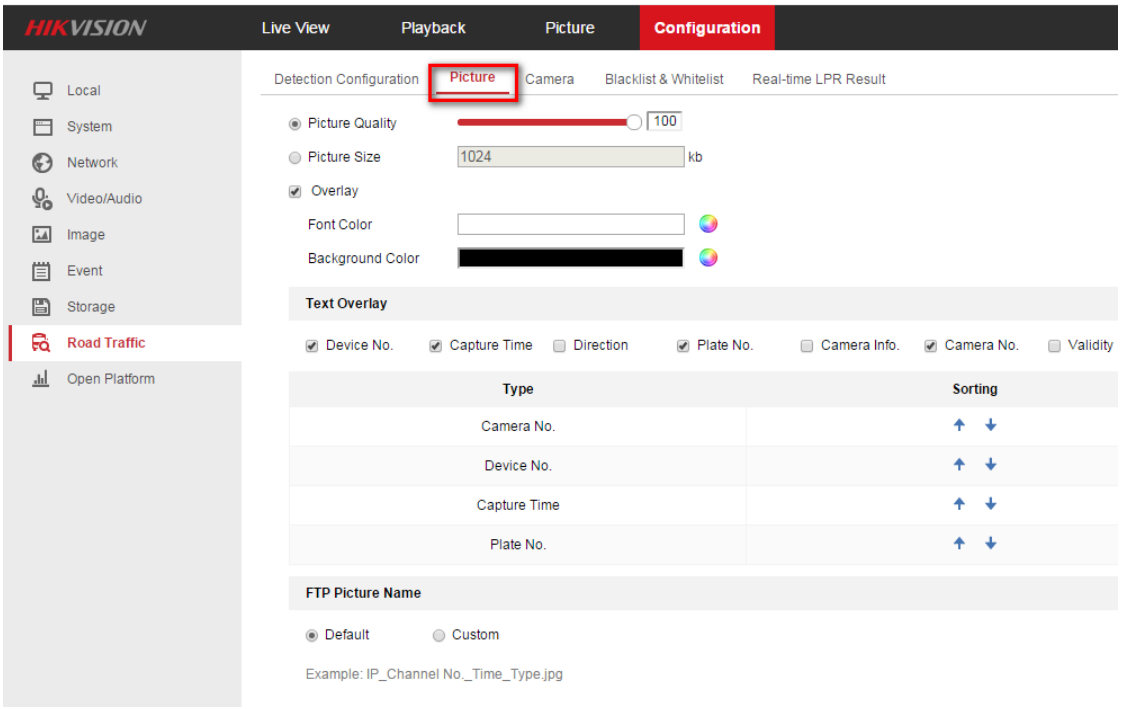

2. Go to **Image Display Settings** to change **Exposure Time** to 1/250 -1/500;




3. Set the **Day/Night Switch** mode, for the environment with unstable illumination, we suggest to set scheduled switch.




4. Go to **Picture** to choose the text overlay on the picture；




5. Go to **Road Traffic** to select detection type;

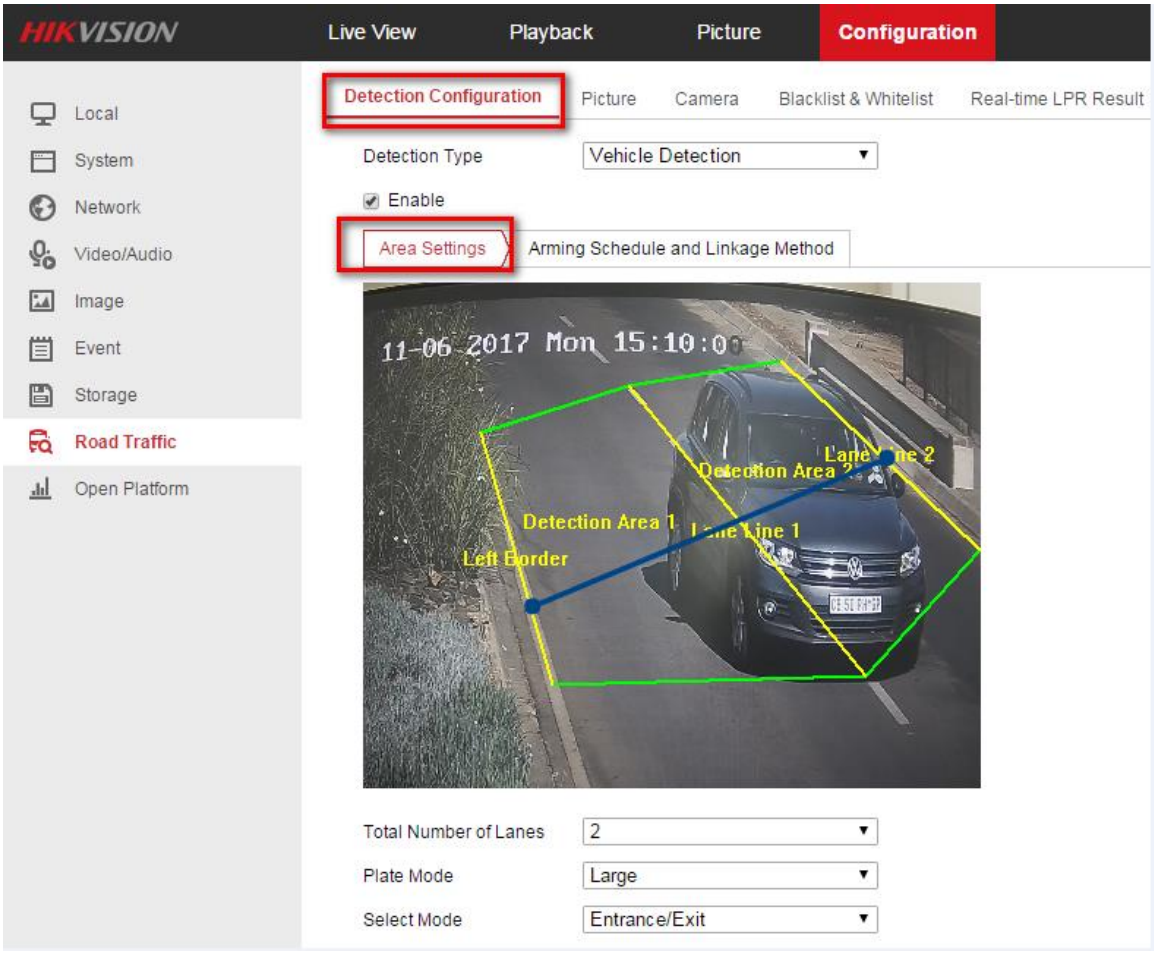
Detection type can be set as Vehicle detection or Mixed-traffic Detection.

Vehicle detection: the passed vehicle can be detected and the picture of its license plate can be captured.

Mixed-traffic Detection: motor vehicle and non-motor vehicle can be detected, and the picture of the object or license plate can be captured

Note: Only one lane support at mixed-traffic detection type.

6. Go to **Road Traffic** to select lane numbers (1~4) and traffic mode;

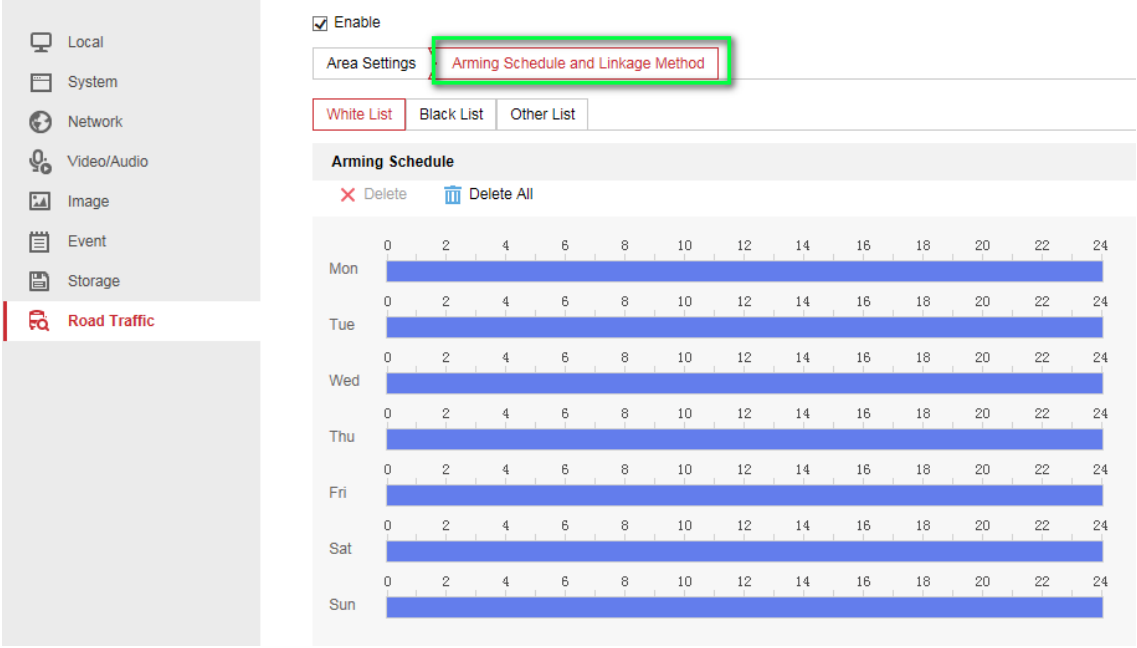



***Note:***

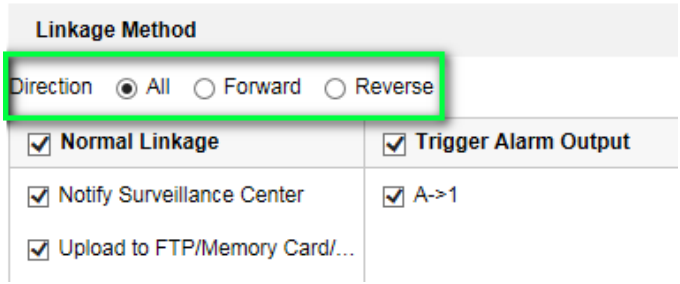
- **Blue Detection Line**: Mainly used for Entrance/Exit with a purpose of improving the capture efficiency. The line is generated automatically, please keep it in the detection area and close to the vehicle license plate.
- **Small:** It means the height of a license plate should be 20 to 30 pixels in the image captured by a 2 megapixel resolution camera.
- **Large:** It means the height of a license plate should be 30 to 40 pixels in the image captured by a 2 megapixel resolution camera.
- **City Street:** It means the license plate information of the detected vehicle will be uploaded when the vehicle passes the detection area and triggers the detection.

- **Alarm Input:** It means the input alarm will trigger a license plate capture and recognition action.

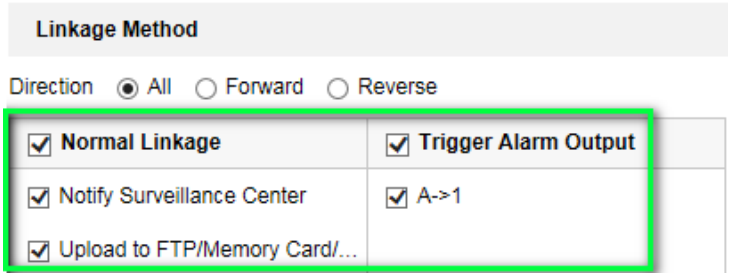
7. Go to **Arming Schedule** and **Linkage Method** to continue; here you can set the arming schedule and linkage action independently for white list, black list and other list;



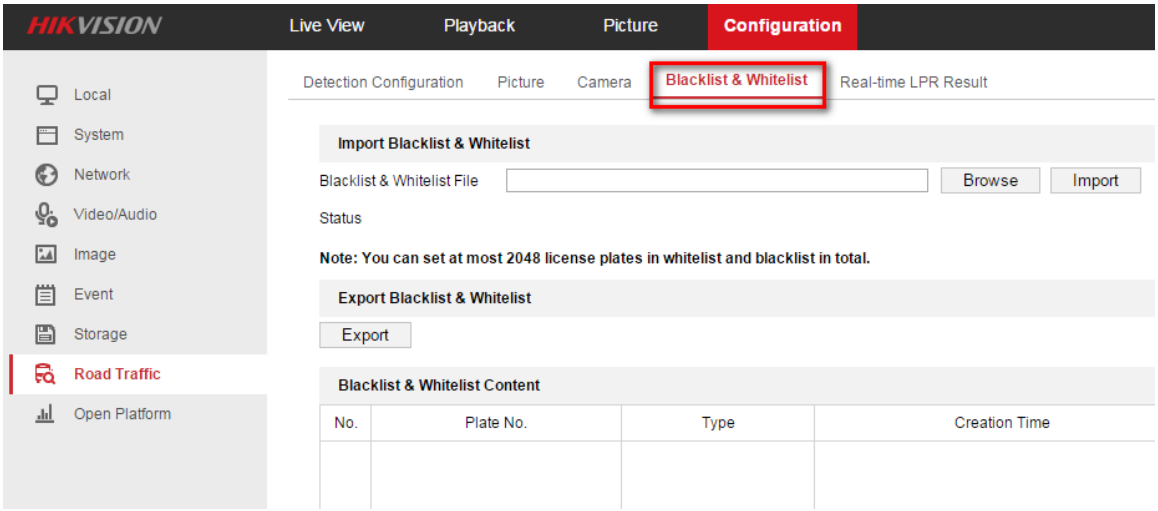

7. Select a direction here. The **Forward** means vehicle moves toward the camera; **Reverse** means vehicle moves away from the camera. Only the vehicles moving as the selected direction can trigger selected linkage methods;




8. Remember to enable **Notify Surveillance Center** and Upload to FTP/xxxx;

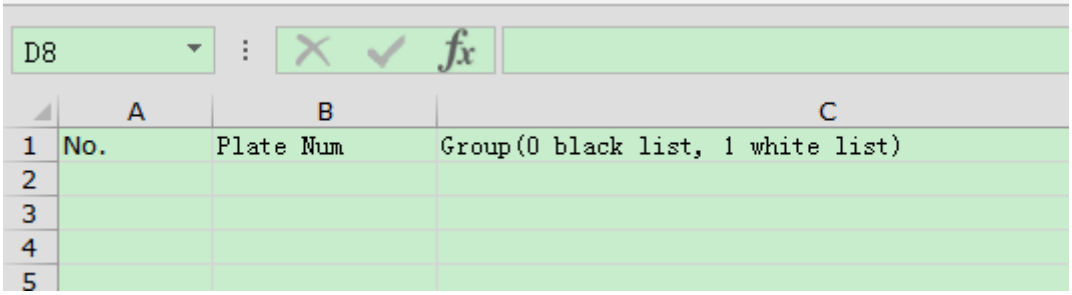



9. The last part is to import the **Blacklist & Whitelist**. If you don't have such a list in advance, export the template first to make one;




The template looks like this:

(when inputting the plate number, input several consecutive numbers/letters with no blank included.)



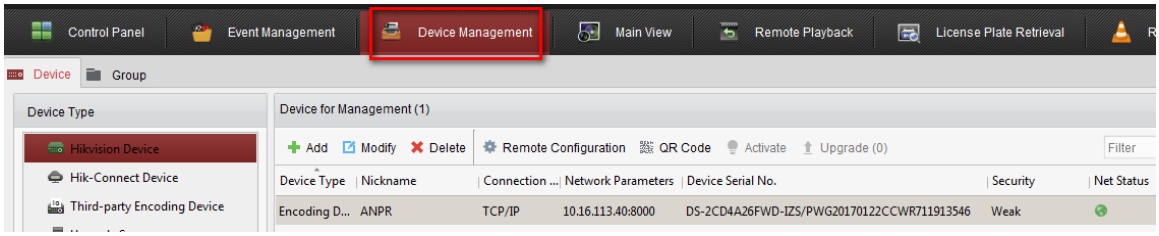

## 3.2 Set ANRP Function via NVR Web Configuration Interface

Please refer to Chapter 3.1;

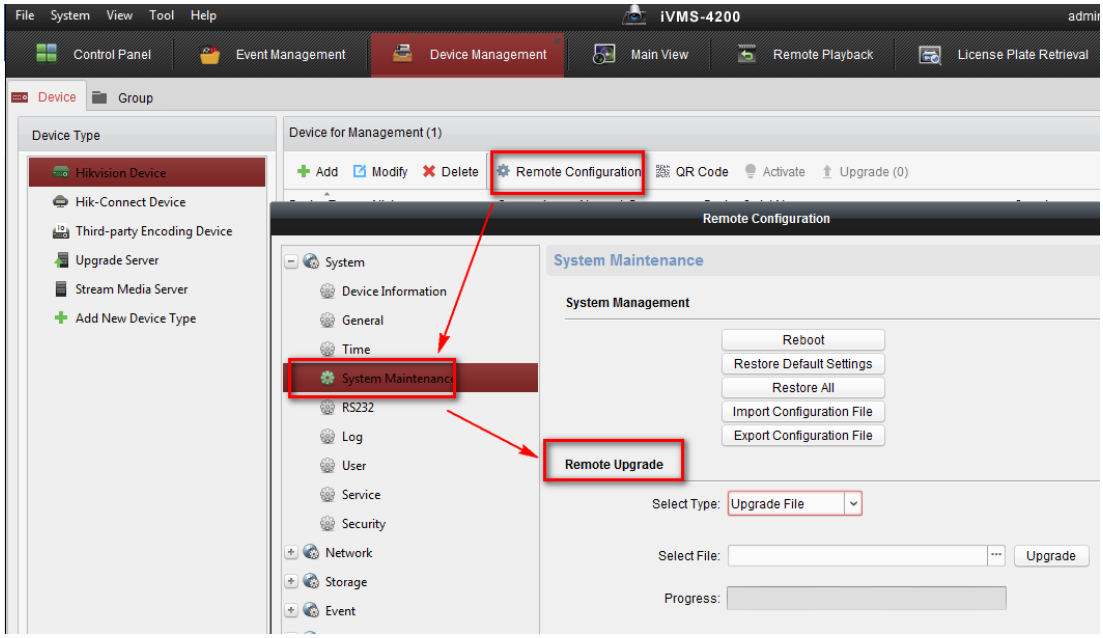
## 3.3 Set ANRP Function via iVMS-4200

**Steps:**

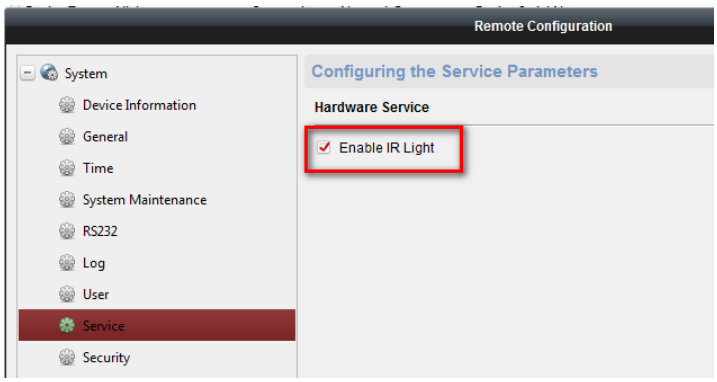
1. Add the ANRP camera to 4200 client in **Device Management** interface;



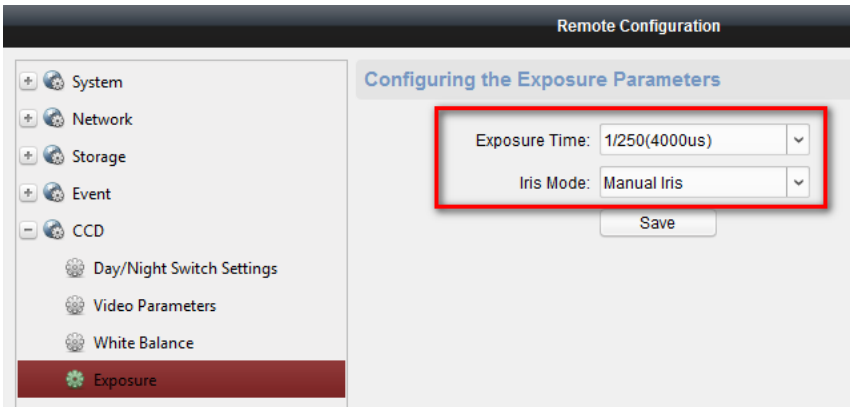

2. Go to **Remote Configuration-> System Maintenance** to upgrade the device to the latest version;



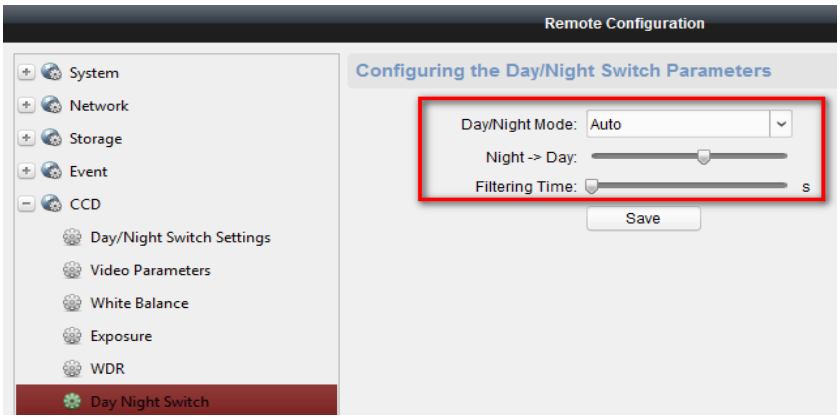

3. Enable IR Light in **System -> Service**;



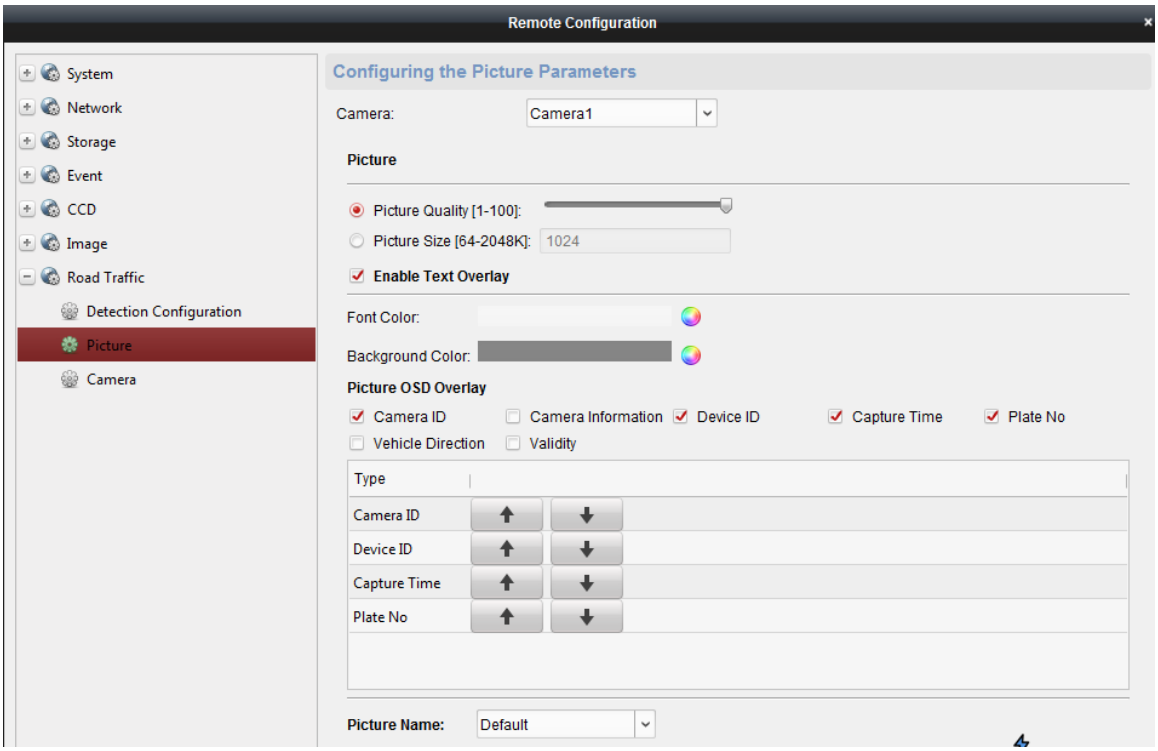

4. Go to CCD to set **Exposure Time** to 1/250 -1/500 & **Iris Mode** to Manual;



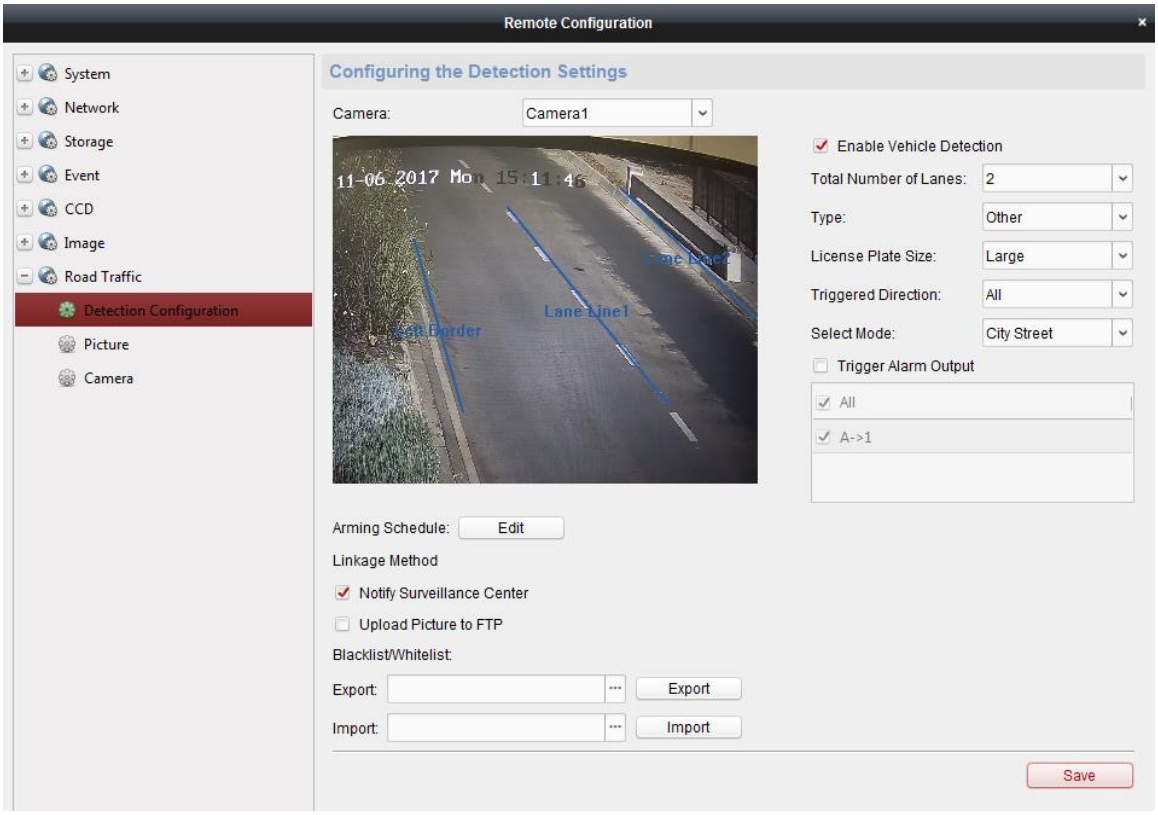

5. Set the **Day/Night Switch** to Auto;




6. Go to **Picture** to choose the text overlay on the capture;



7. Go to **Road Traffic** to set detailed configurations which are similar to those configured in device web configuration interface (please refer to chapter 3.1);



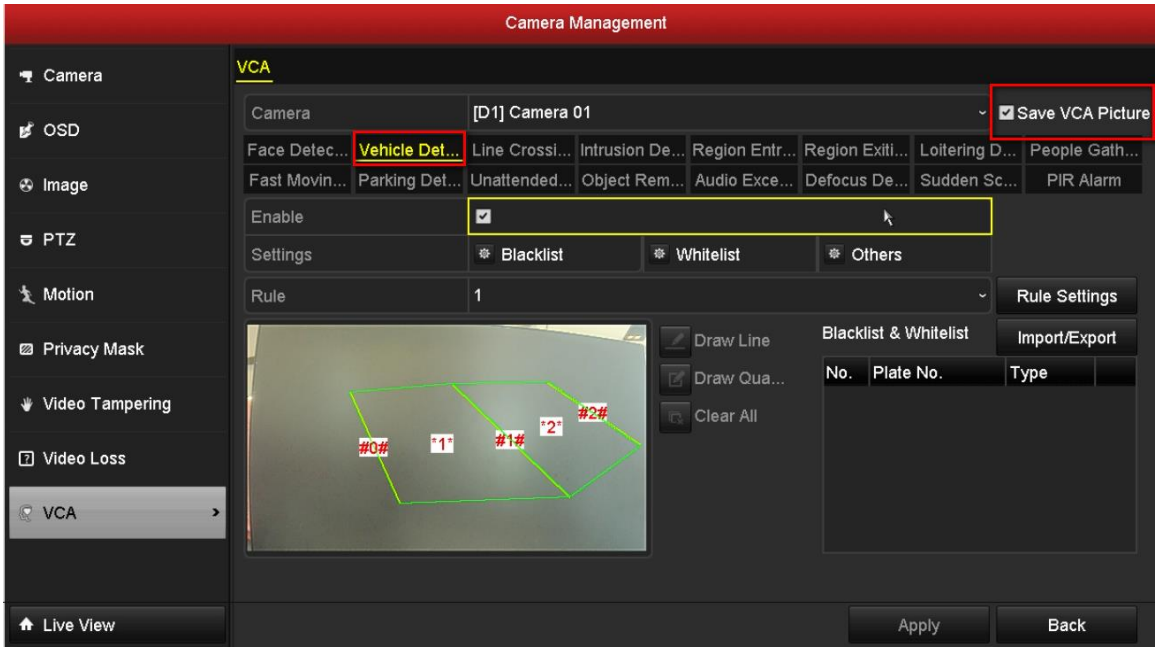

## 3.4 Set ANRP Function via NVR Local Configuration Interface with GUI 3.0

**Preparations:**

Please refer to chapter 3.1 & chapter 3.3;

**Steps:**

1. Go to **Menu->Camera Management->VCA->** select the camera channel->Vehicle Detection to enable ANPR function. Remember to check Save VCA Picture.
2. For detailed steps, please refer to chapter 3.1 & chapter 3.3;



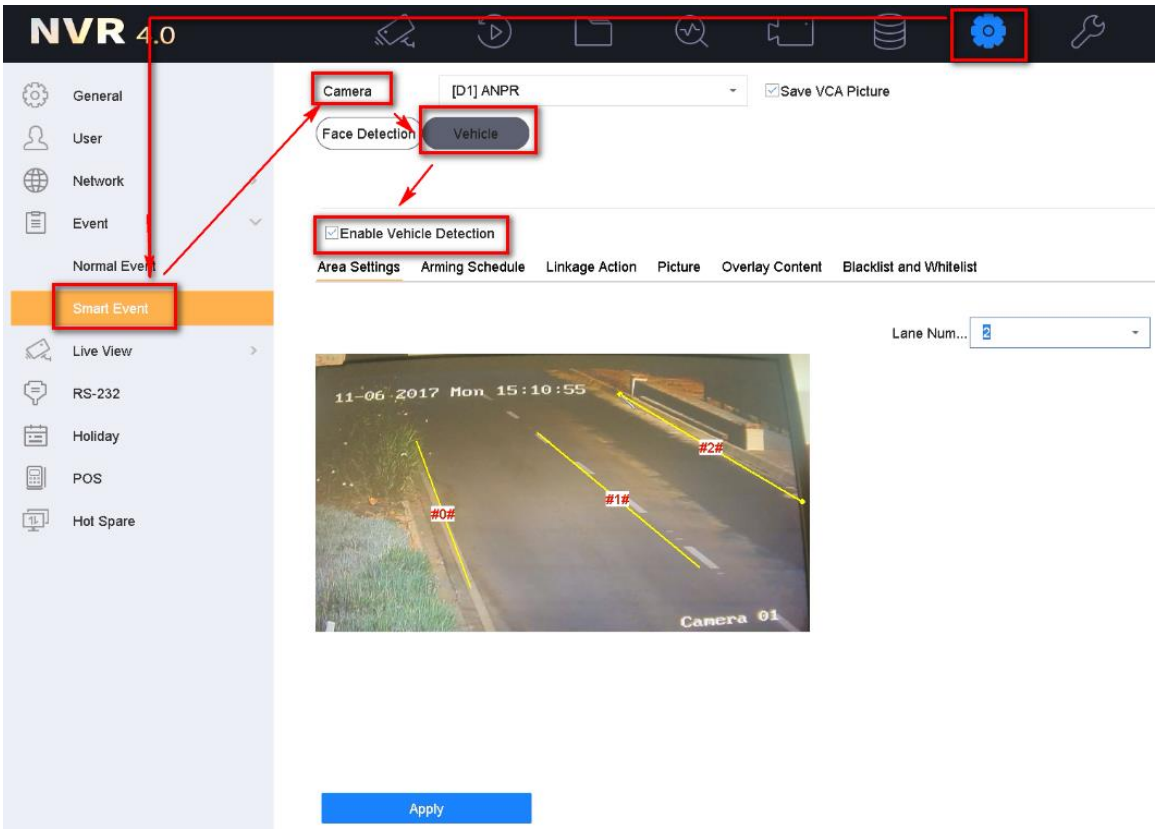

## 3.5 Set ANRP Function via NVR Local Configuration Interface with GUI 4.0

**Preparations:**

Please refer to chapter 3.1 & chapter 3.3;

**Steps:**

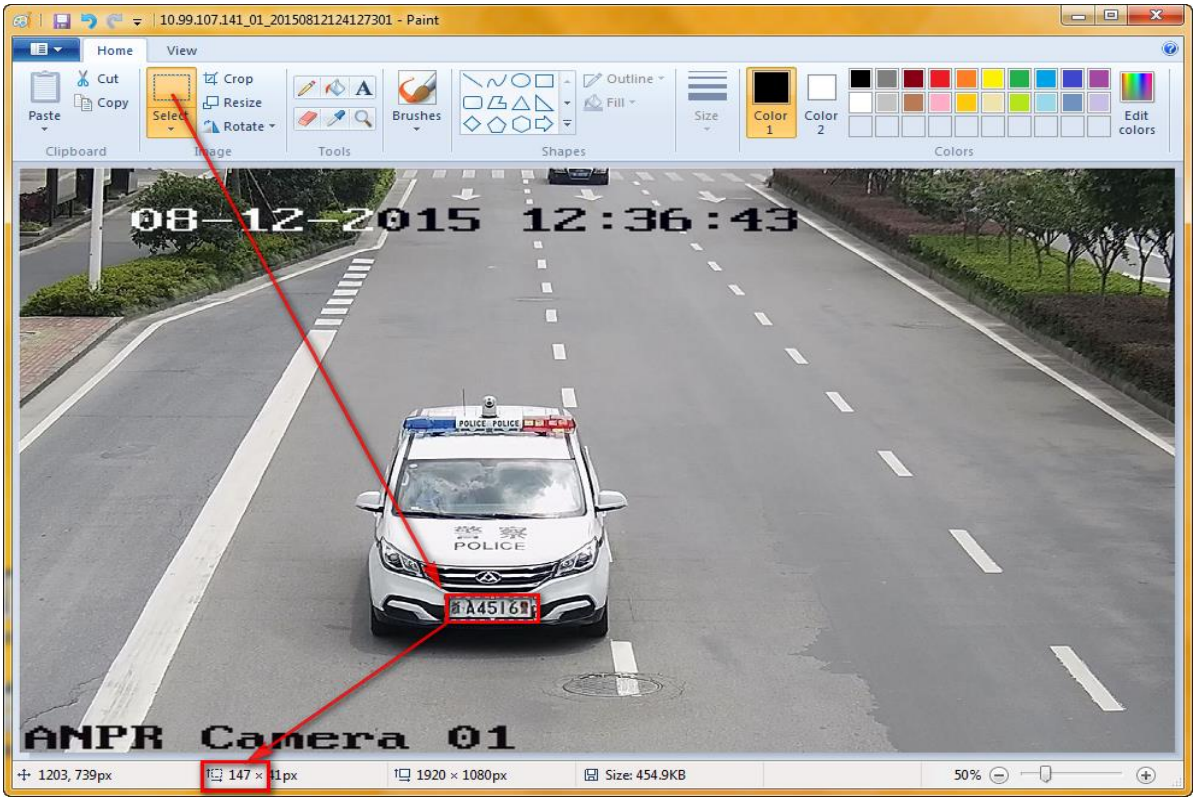
1. Go to **System->Event->Smart Event**-> select the camera channel->Vehicle to enable ANPR function. Remember to check Save VCA Picture;
2. For detailed steps, please refer to chapter 3.1 & chapter 3.3.




## 3.6 Method to check ANPR picture pixels

**Steps:**

1. Save a picture with vehicle license plate information to PC, then open it with paint tool；
2. Click Select, draw a rectangle to cover the vehicle license plate;
3. Check the pixel at the bottom of the picture.




# Chapter 4 Performance

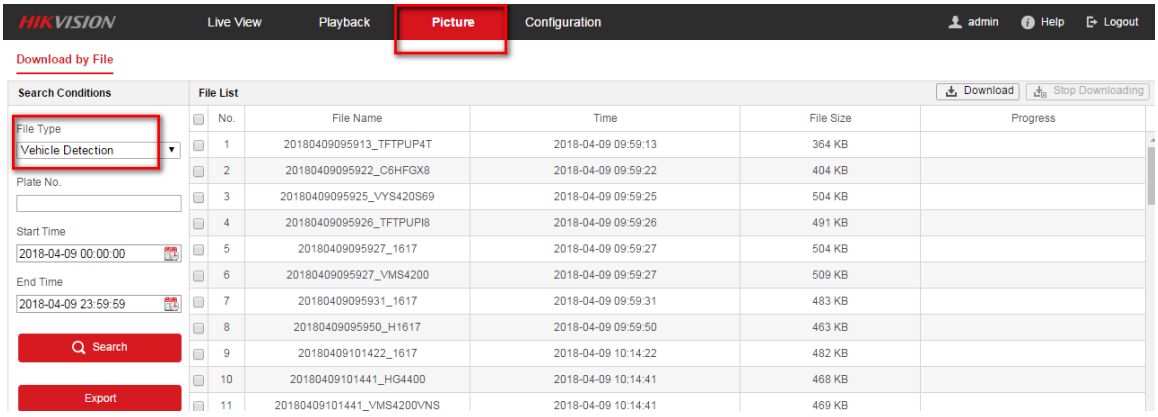
## 4.1 Search ANRP pictures & videos via Camera Web Configuration Interface

**Steps:**

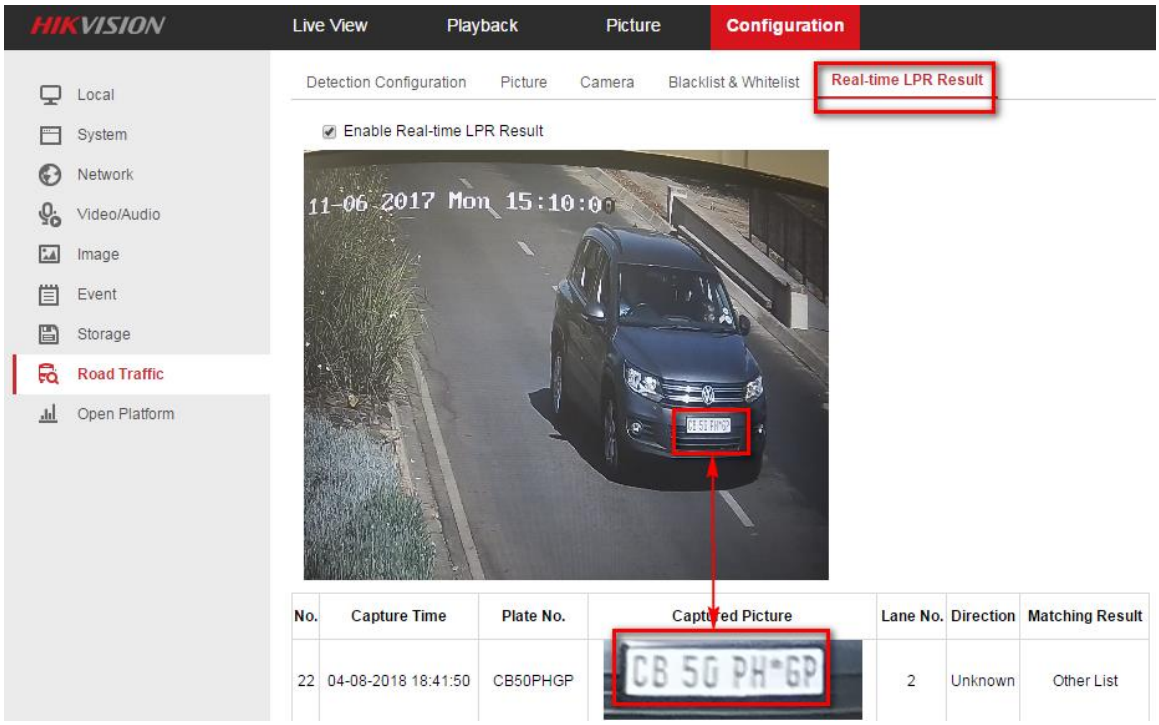
1. You can search or download the pictures in Picture interface by selecting the File Type as Vehicle Detection.

**Note:**

Make sure the SD card in camera is working.



2. You can also check the real-time captured license plate in **Real-time LPR Result** interface;



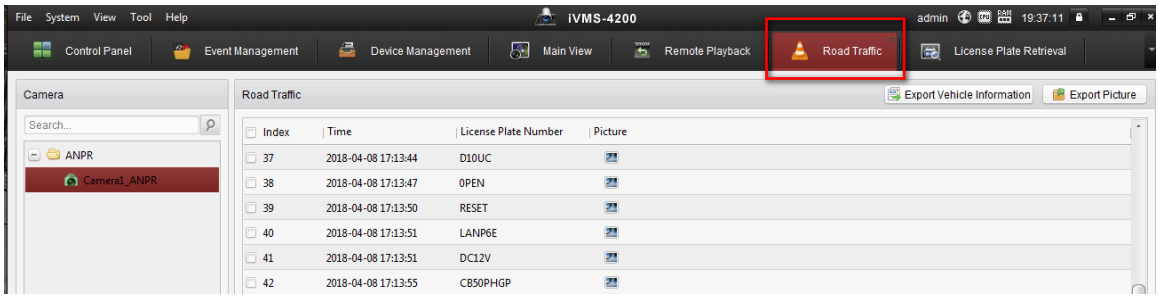

## 4.2 Search ANRP pictures & videos via iVMS-4200

**Steps:**

1. You can search or download the captured pictures in Road Traffic interface. Vehicle Information could also be exported here;

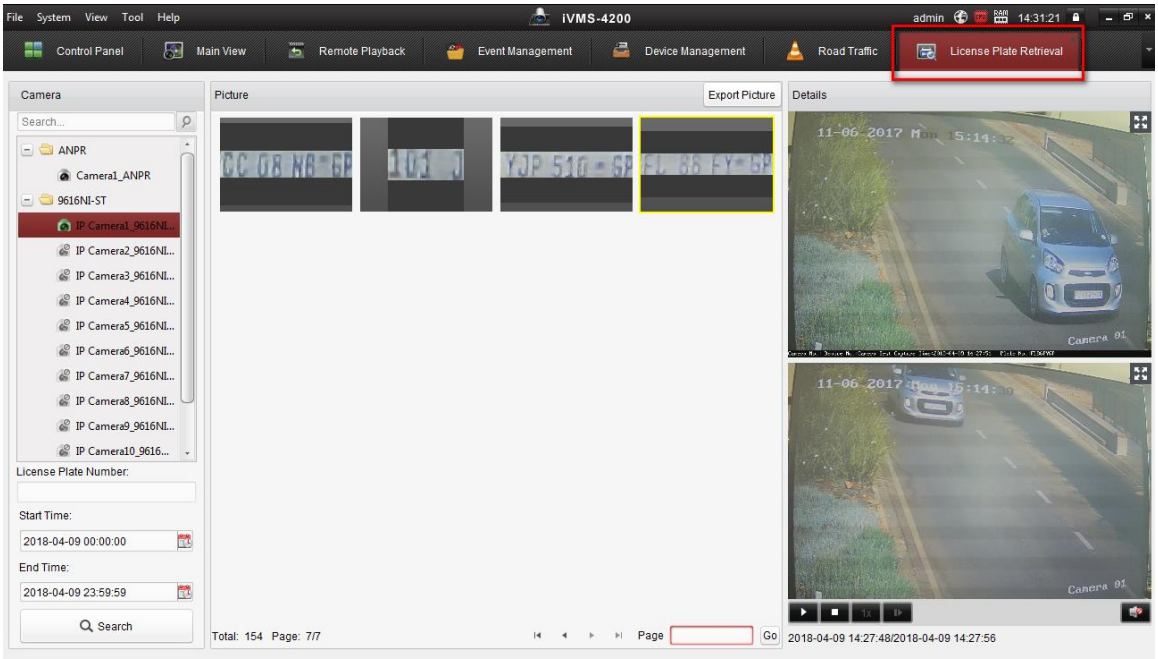
   ***Note:***

   Make sure the SD card in camera is working, or you have set up storage server for iVMS-4200;



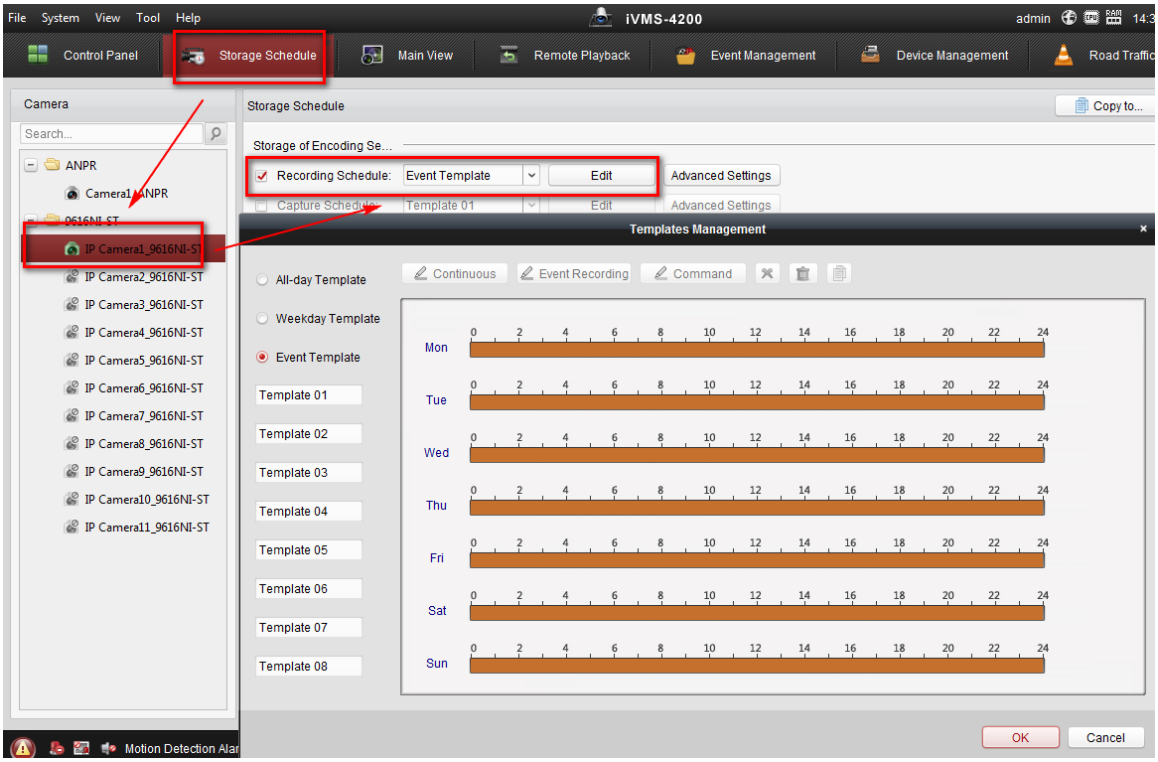

2. If the camera is also added into NVR, you can search or download the

captured pictures in **License Plate Retrieval** interface;




3. You need to set an EVENT recording schedule in NVR in advance.

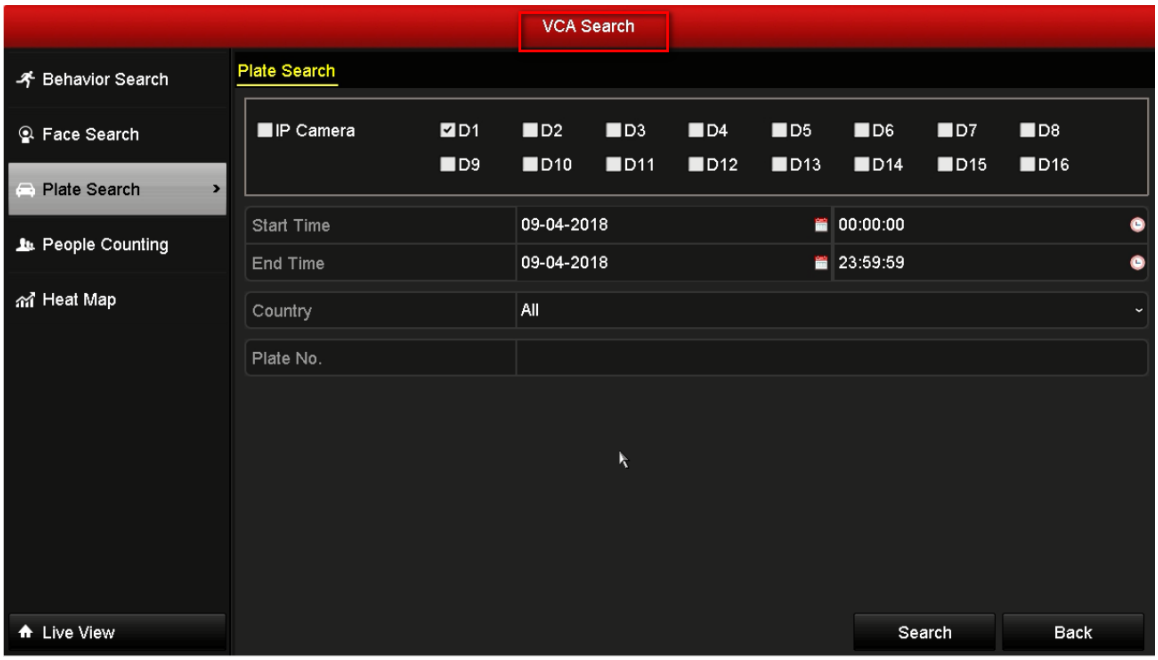
   Otherwise there will be only pictures;



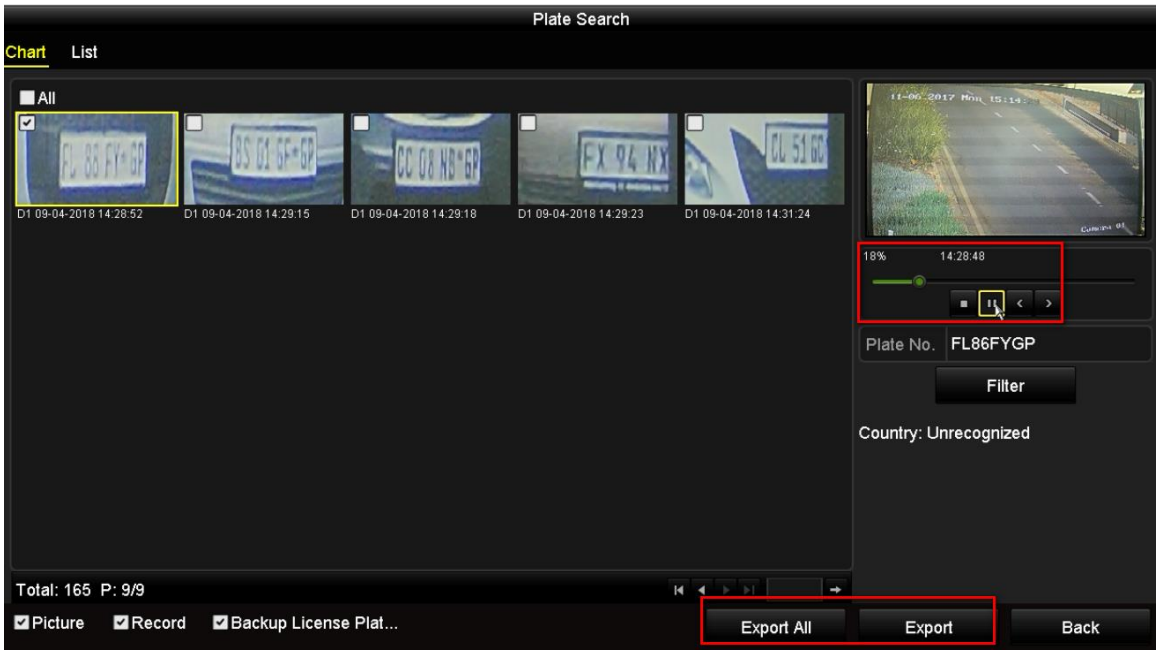
## 4.3 Search ANRP pictures & videos via NVR Local Configuration Interface with GUI 3.0

**Steps:**

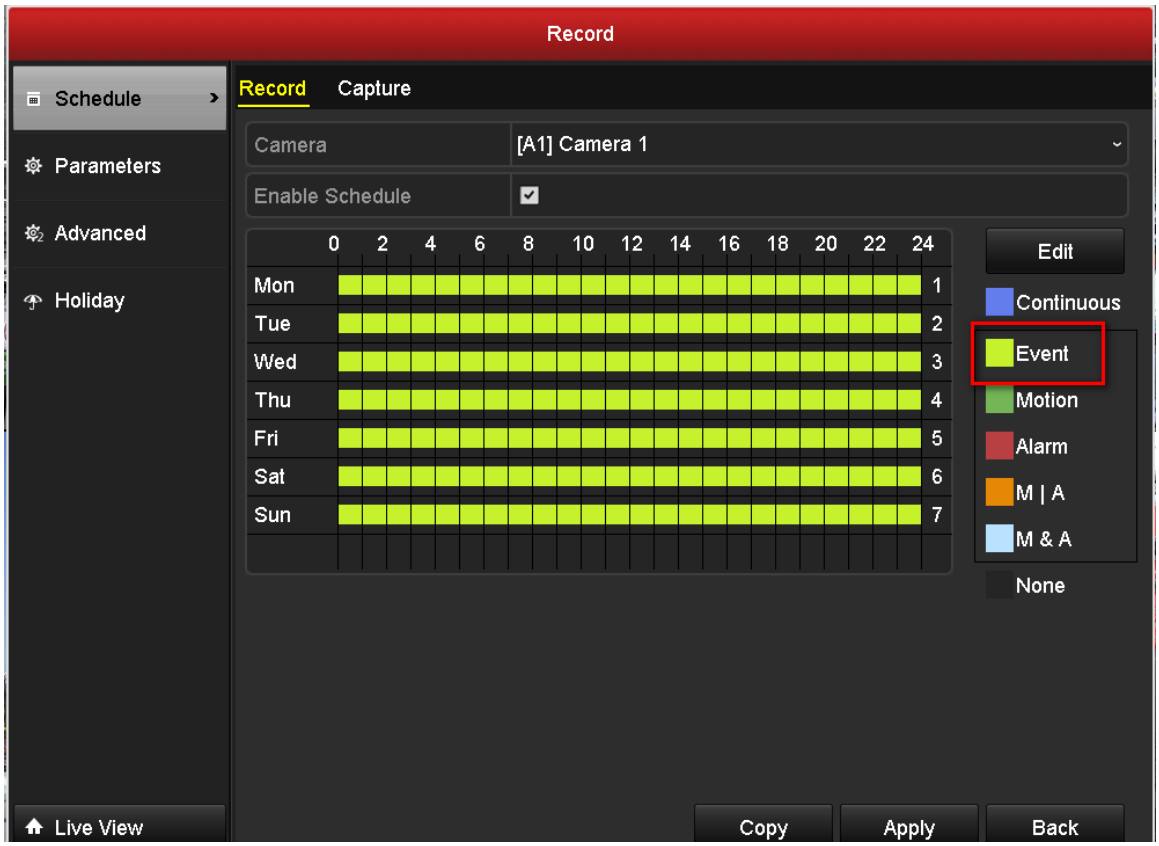
1. Go to **Menu->VCA Search->Plate Search** to search & export the captured license plate pictures & videos;




2. After clicking Search button, all the captured license plate pictures & videos would be displayed;



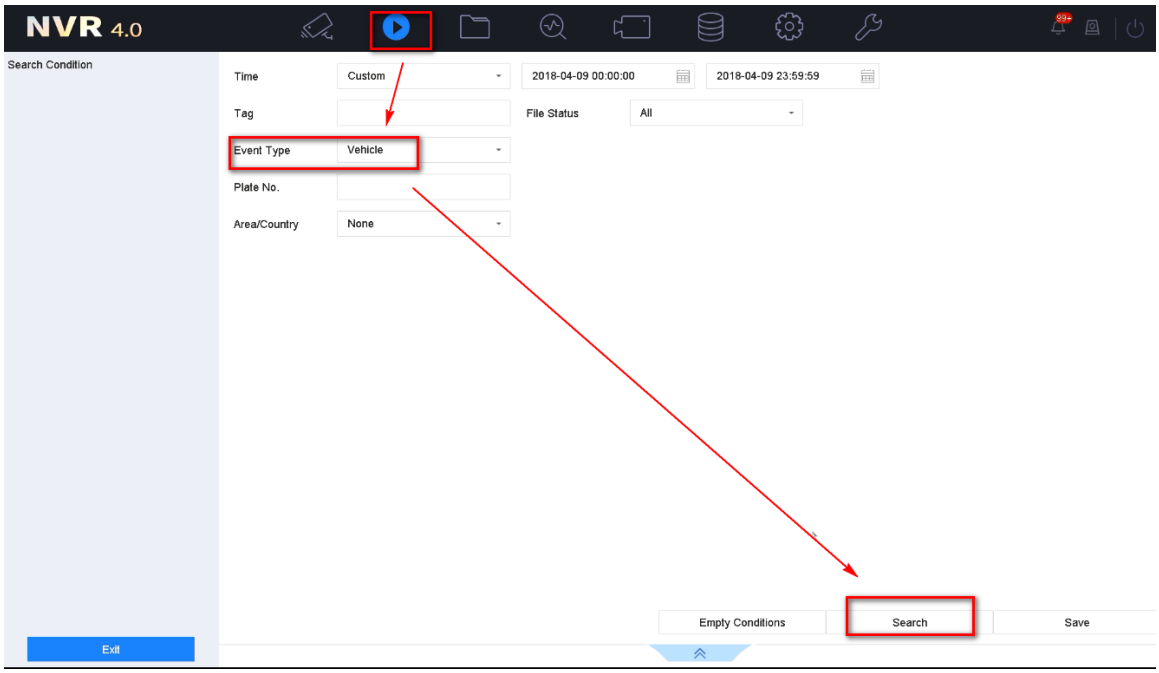

3. You need to set an **EVENT recording schedule** in NVR in advance. Otherwise there will be only pictures;



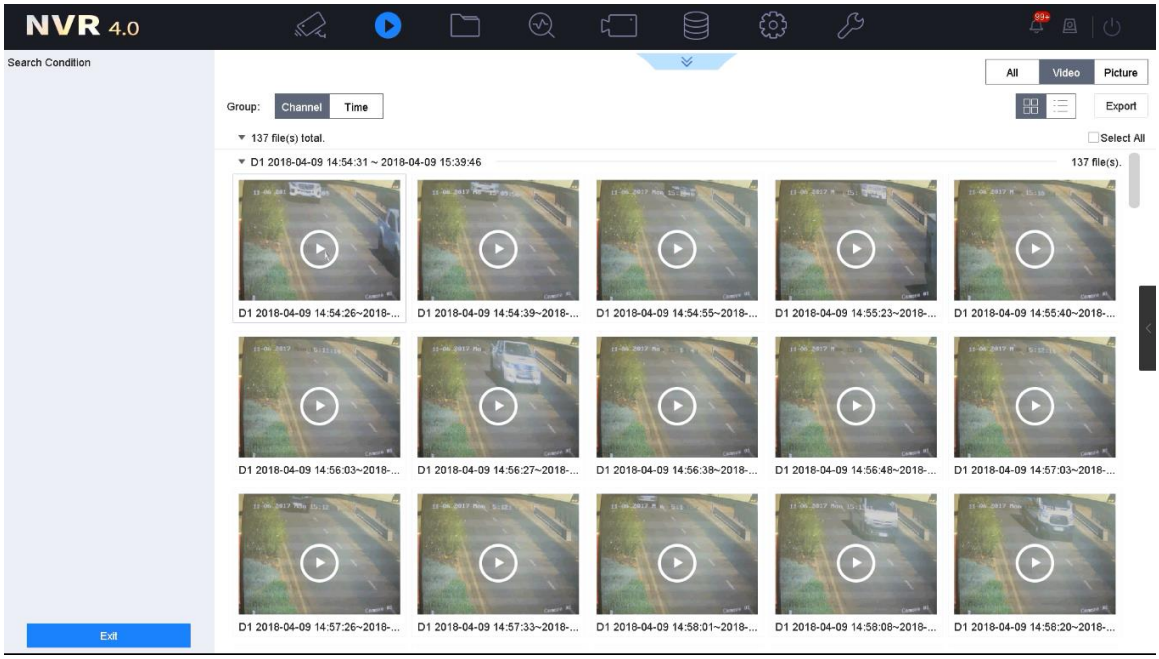
## 4.4 Search ANRP pictures & videos via NVR Local Configuration Interface with GUI 4.0

**Steps:**

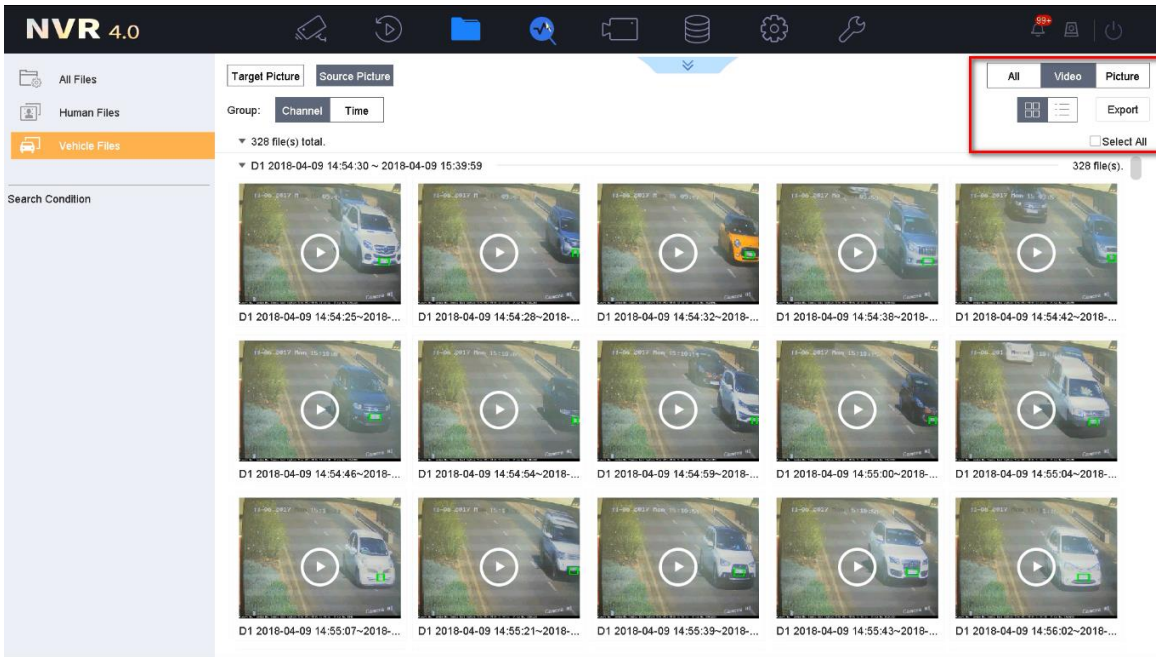
1. You can go to **Playback-> Custom Search->** select the Event Type as Vehicle to search & export the captured license plate pictures & videos;



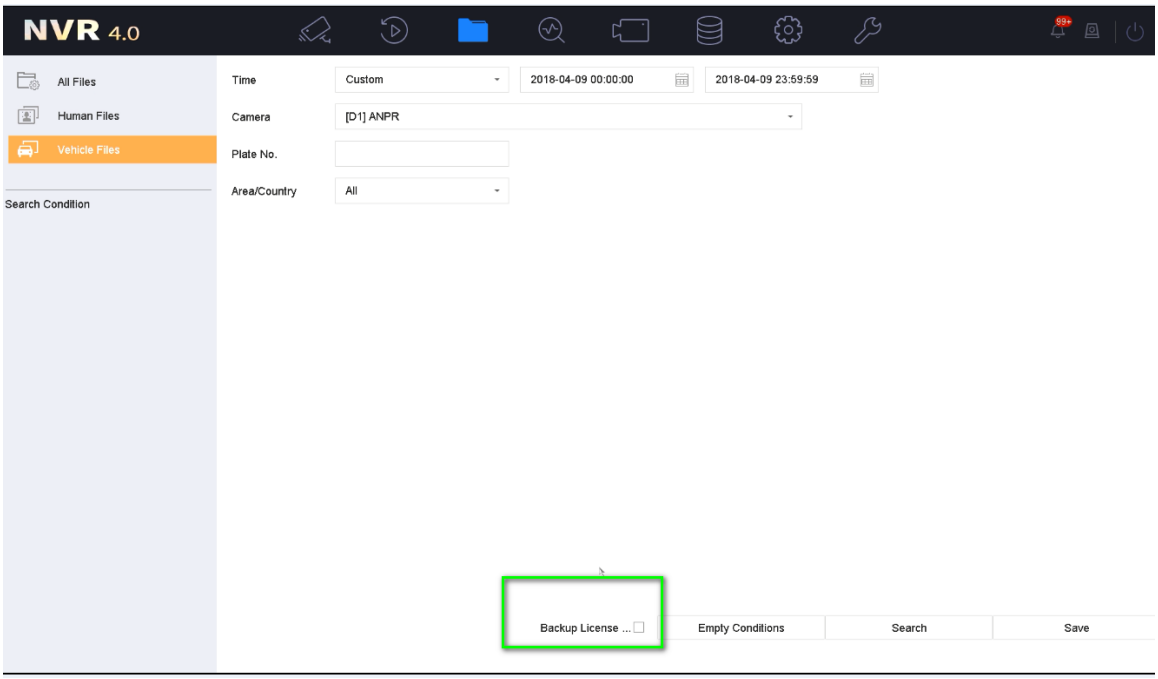

2. After clicking Search button, all the captured license plate pictures & videos would be displayed. You can click any of these to watch the video;

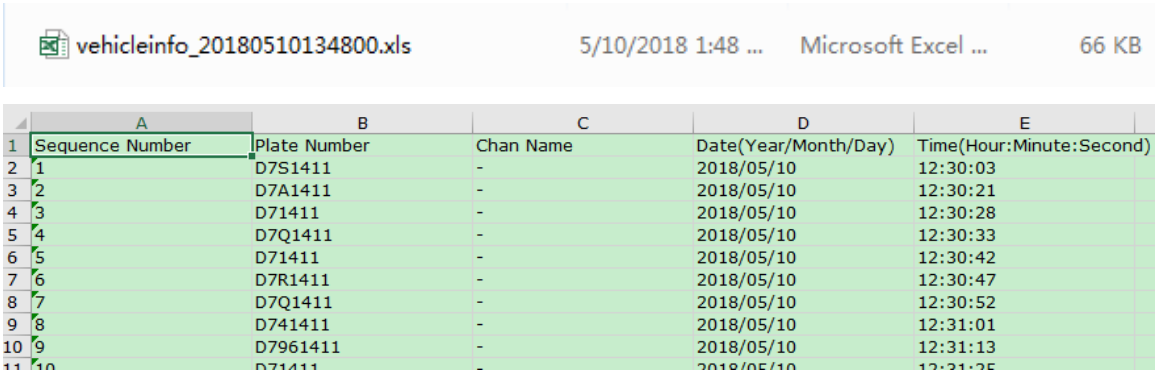



3. You can also go to **File Management->Vehicle Files** ->click Search button, then all the captured license plate pictures & videos would be displayed. You can click any of these to watch the video;



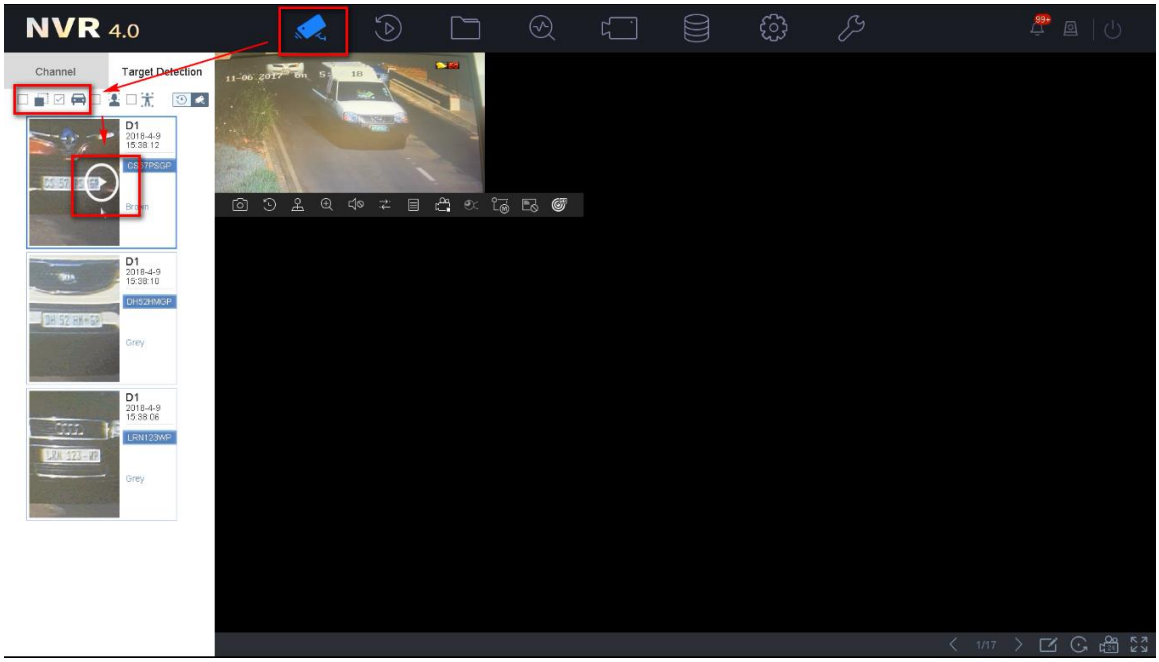

4. Vehicle detailed information could also be exported later if you enable the **Backup License Plate Statistics Info,** which would be included in an .excel file;

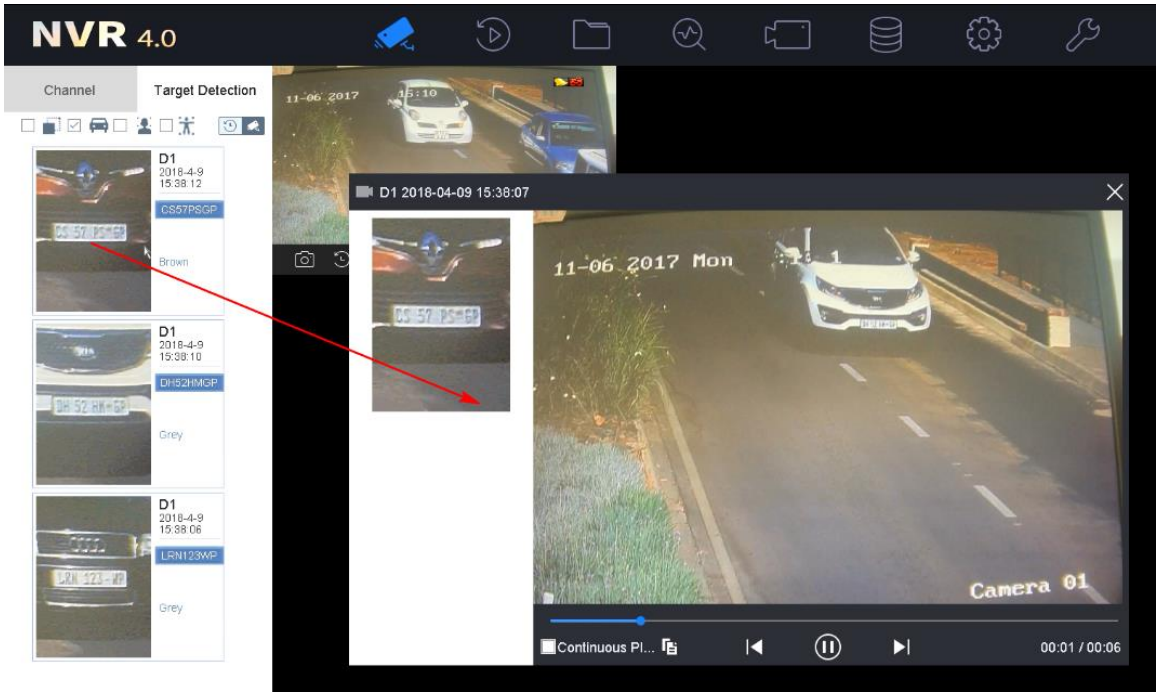


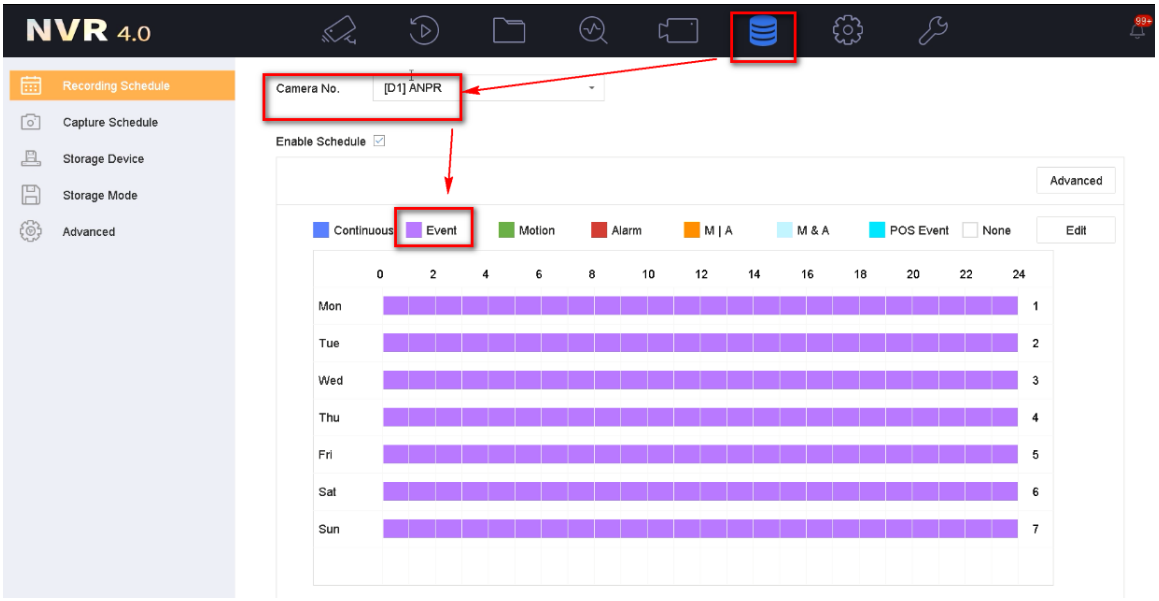

| | A | B | C | D | E |
|---|---|---|---|---|---|
| 1 | Sequence Number | Plate Number | Chan Name | Date(Year/Month/Day) | Time(Hour:Minute:Second) |
| 2 | 1 | D7S1411 | - | 2018/05/10 | 12:30:03 |
| 3 | 2 | D7A1411 | - | 2018/05/10 | 12:30:21 |
| 4 | 3 | D71411 | - | 2018/05/10 | 12:30:28 |
| 5 | 4 | D7Q1411 | - | 2018/05/10 | 12:30:33 |
| 6 | 5 | D71411 | - | 2018/05/10 | 12:30:42 |
| 7 | 6 | D7R1411 | - | 2018/05/10 | 12:30:47 |
| 8 | 7 | D7Q1411 | - | 2018/05/10 | 12:30:52 |
| 9 | 8 | D741411 | - | 2018/05/10 | 12:31:01 |
| 10 | 9 | D7961411 | - | 2018/05/10 | 12:31:13 |

5. Go to **Live view->Target Detection->** Select Vehicle Detection to watch the real-time captured license plate pictures & videos;




6. You need to set an EVENT recording schedule in NVR->Storage->Recording Schedule in advance. Otherwise there will be only pictures.


NVR 4.0
Recording Schedule
Capture Schedule
Storage Device
Storage Mode
Advanced
Camera No.
[D1] ANPR
Enable Schedule
Advanced
Continuous
Event
Motion
Alarm
M | A
M & A
POS Event
None
Edit
0 2 4 6 8 10 12 14 16 18 20 22 24
Mon 1
Tue 2
Wed 3
Thu 4
Fri 5
Sat 6
Sun 7

**First Choice for Security Professionals**
***HIKVISION* Technical Support**