The CMIP7923LPR-32R IP License Plate Camera has 3 major features:

1. **This is the IR Infra camera with 60FPS high-speed capture.**
2. Built-in License Plate Recognition program features.
3. Ultra-Low Lux 0.0027. So, it can see the object in a dark area.

Requirements:

1. The License Plate Camera is a special camera, not the regular IP Camera. **Only 89xx or 86xx NVR is fully compatible with it.**
2. Make sure set frame rate to 60fps for the better capture.
3. If you don't have NVR, you can use the SD card to record it.
4. License Plate capture Not recommend use WDR. (slow down fps)
5. LPR camera doesn't support the PTCloud feature.
6. There are No VCA features supported.
7. This camera support EIS feature.

Main Features

- 1920x1080p@60fps High Definition.
- 8 – 32mm Motorized Lens with Auto Focus
- Infrared IR up to 328 feet
- H.264, H.264 Zip+
- Ultra Low Lux 0.0027 @ F1.4
- True WDR 120dB
- IP67
- MicroSD Slot up to 128GB
- Audio I/O & Alarm I/O
- DC 12V, PoE
- License Plate Recognition up to 60MPH

Typical application scenarios
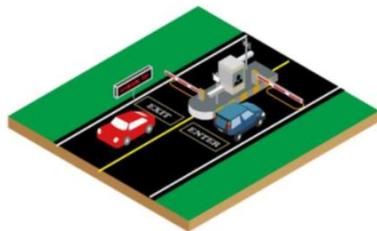
Entrance
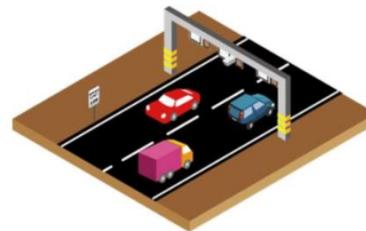
Roads
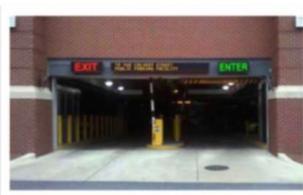
Business Centre

Parking Lot

Country Road

City Road

Installation Recommendation:

For Type 1: **Entrance and Exit**

Horizontal Angle demands:
The view angle of the camera should be within 30 degrees to the path of movement.

Vertical Angle demands:
The angle between lens direction and horizontal should be less than 30 degrees.

Note: Vehicles in the detection area should go as straight as possible instead of turning left or right.
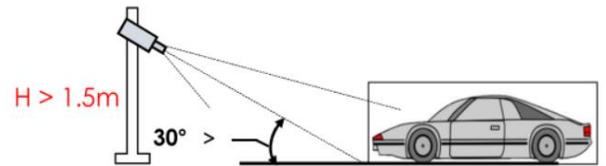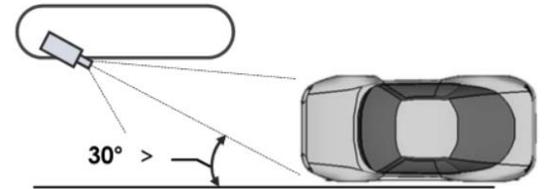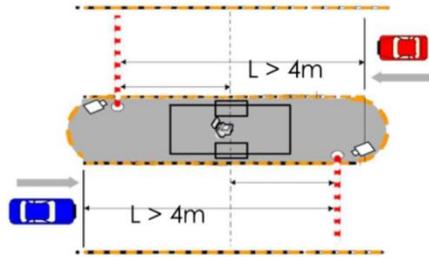
For Type 2: **Road Monitoring**

Horizontal Angle demands:
the view angle of the camera should be within 30 degrees to the path of movement.

• Car speed < 60km/h: One camera can cover two lanes.
• Car speed > 60km/h: One camera is recommended for one lane.

Vertical angle demands:
The angle between lens direction and horizontal should be less than 30 degrees.
Different installation angle needs a different lens (8-32/11- 40/7-33 mm)
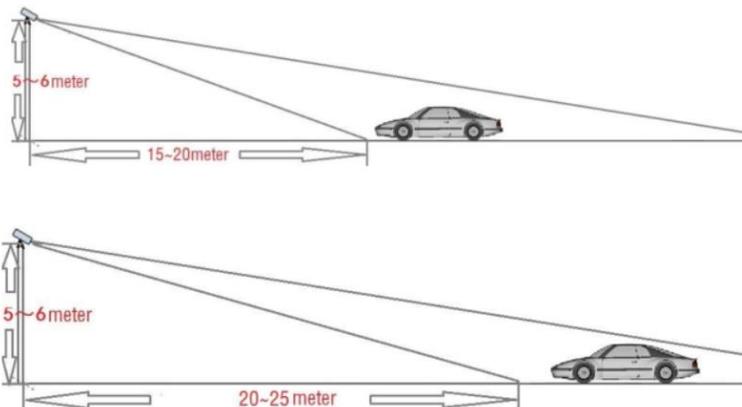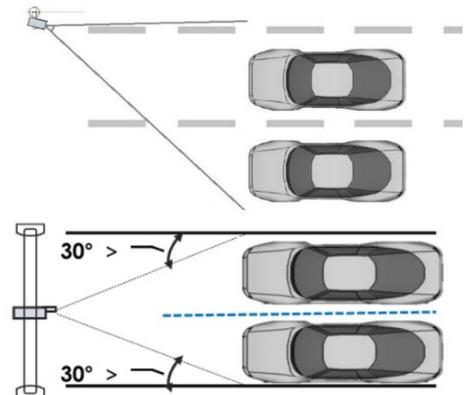
Figure 2-2 Recognition Distance

2. Select a proper lens according to the table below. The recognition distance is based on the camera's focal length.

Table 2-1 Lens and Recognition Distance Table

Camera	Lens (mm)	Min. Recognition Distance (m)	Max. Recognition Distance (m)	Scene
LPR Camera	2.8-12	6	18	Entrance
	8-32	15	50	Road Traffic

Basic Programming

Configuration > **Video/audio**   Make sure set the Frame Rate to **60fps** first.
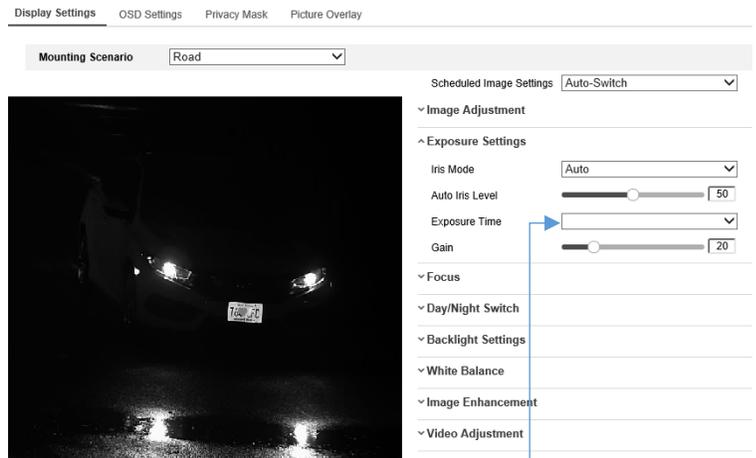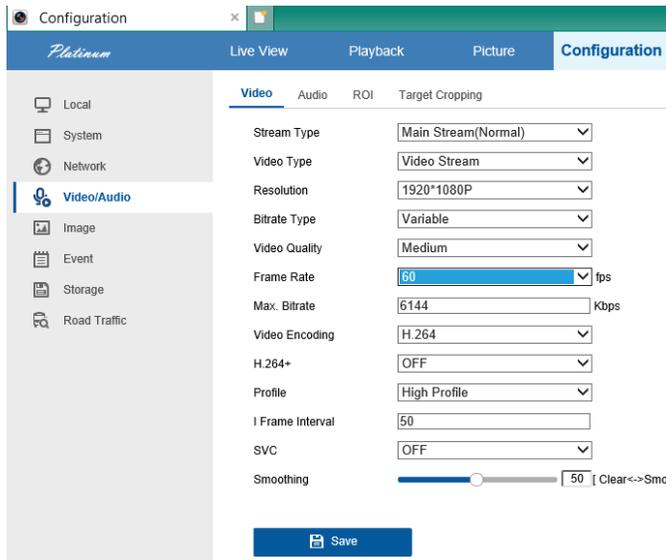
Configuration > Image

The Exposure Setting is a very important section.
Please control the Exposure Time in between 1/300 – 1/1000 or based on your needs.
Brighter image may cause the License Plate over brighten at night and unable to read it.   Therefore, Control Exposure & Gain carefully.

Program LPR Camera Lane Path & Detection

Configuration > **Road Traffic**
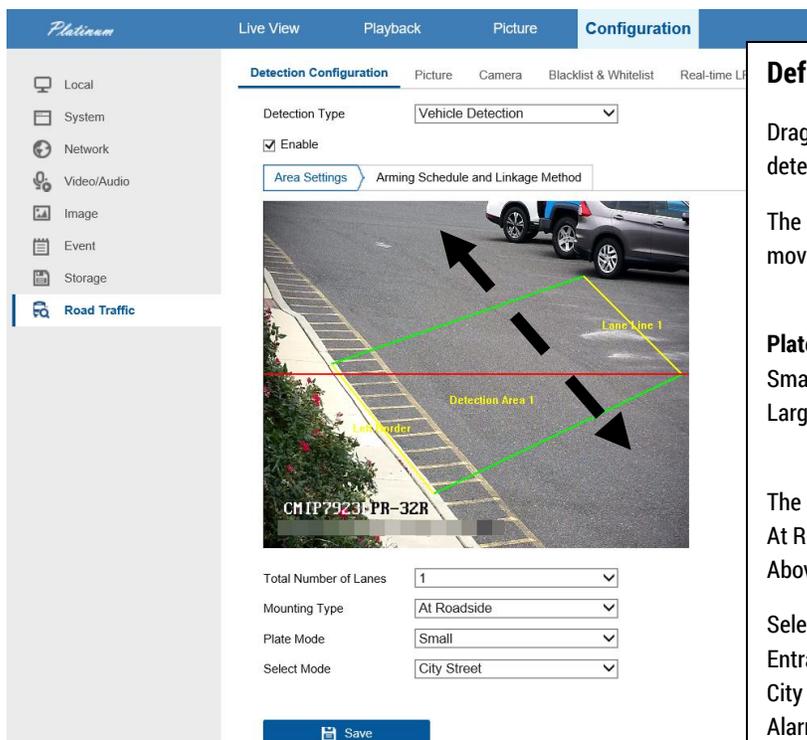
Defining:

Drag the (Yellow Line) Left Border and Lane Line 1 to define the detection zone. The green line will be followed the yellow line shape.

The Red line is the determining line (picture zone). You also can move it, but please make sure inside the green zone area.

Plate Mode:
Small (default):   License Plate height is between 20-30pixels
Large: License Plate height is between 30-40pixels.

The Mounting Type: (please see previous page)
At Roadside
Above the Road

Select Mode:
Entrance / Exit
City Street
Alarm Input

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

LPR Search / Playback from the NVMS7000 PC

LPR camera requires the NVMS7000 PC (Latest Version) to perform the search License Plate Retrieval function.

The first time, please install the Modules: **License Plate Retrieval**

After successfully connected to the device.
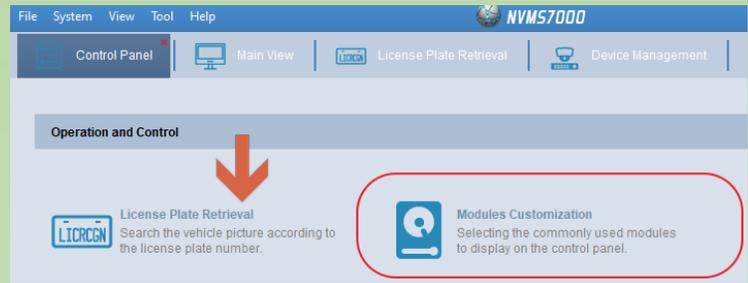
Go **Control Panel** > **License Plate Retrieval**.   Go thru 1-5 step to find the result you are looking.
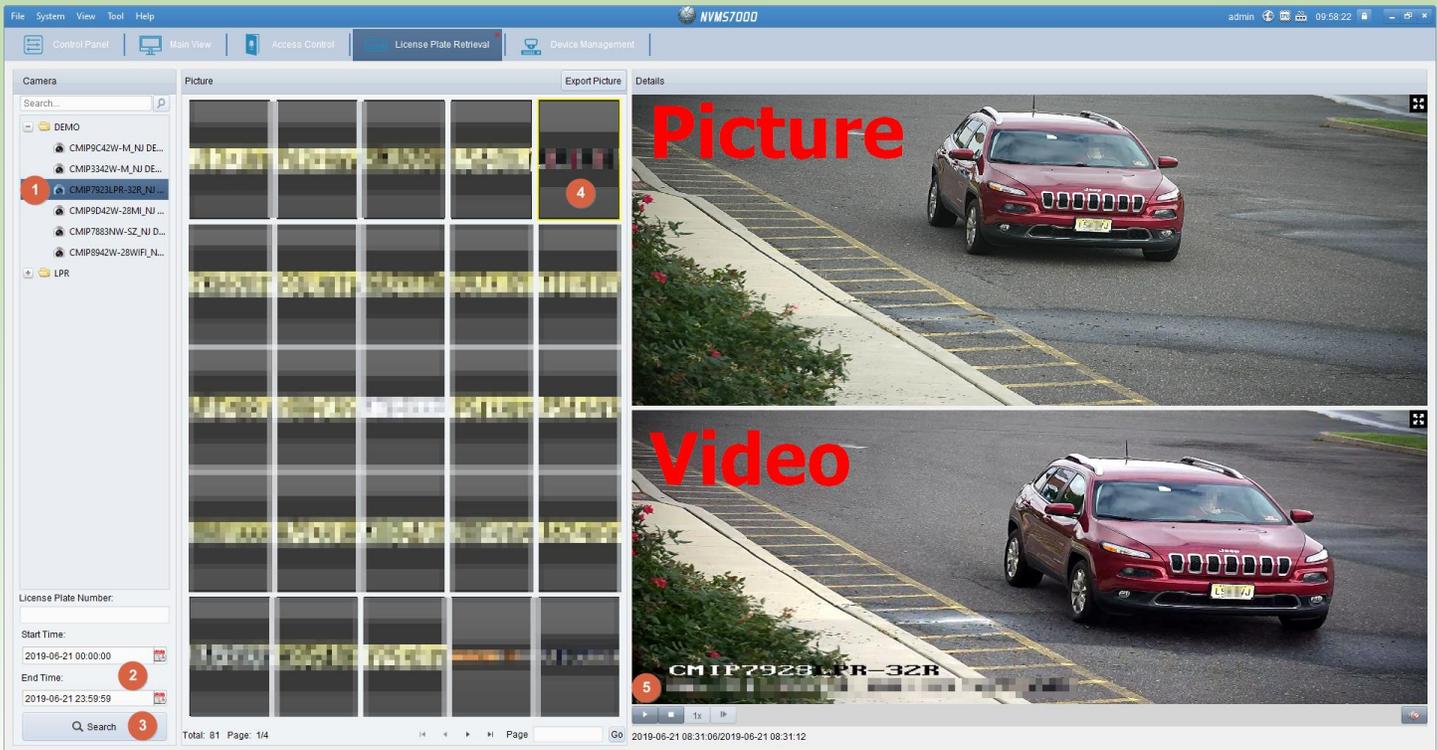
Search the Plate Number from the LPR picture log (SD Card) without NVMS7000

Other Settings

Image Settings

Install / Format SD Card.

Open the bottom panel and insert the SD card.

Make sure the SD card has been formatted from PC first before you install it. Otherwise, if your SD card already contains the video, it just overwrites it but not clean it up.

In here, define the Picture% size and Record%. Save it first, then click Format to initialized.

SD Card Recording

Set Record to Event (Purple)

Turn on Upload to FTP/Memory Card/

Real-Time LPR Result

Configuration > Road Traffic

Only available for the IPC Web UI.

It should provide an instant result from here. It should be good for troubleshooting with multiple Line and direction to improve accuracy.

If the vehicle is too far away, you might need to adjust the angle (direction) or zoom it even closer.

Also, LTN89XX and LTN86XX will have vehicle detection search function with the latest firmware, you will able to search for the license plate, please see below
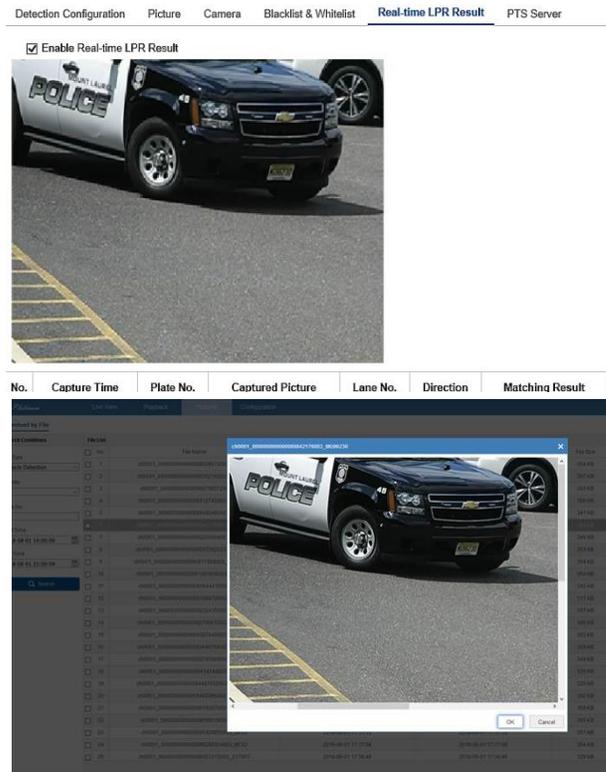
Configuration > Road Traffic

Target Cropping

Purpose:
You can specify a target area on the live video, and then the specified video area can be displayed via the third stream in some certain resolution, thus to provide more details of the target area if needed.
Note: Target cropping function varies according to different camera models.

1. Enter the Target Cropping settings interface.
2. Check Enable Target Cropping checkbox to enable the function.
3. Set Third Stream as the stream type.
4. Select the cropping resolution for the video display of target area. A red rectangle is displayed on the live video to mark the target area, and you can click-and-drag the rectangle to locate the target area as desired.
5. Click Save to save the settings.
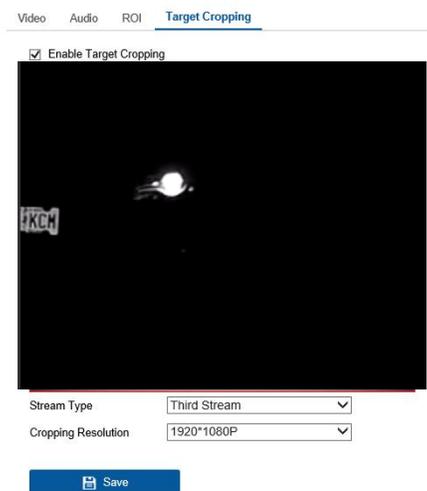
Blacklist & White List

Configuration > Road Traffic
Is design for the Alarm notification purpose.

If the license plate is in the list, will trigger notify or not notify to the push notification.

You can treat this as the Filter Alert.

You can export the list, use Excel to modify and import it back in here.
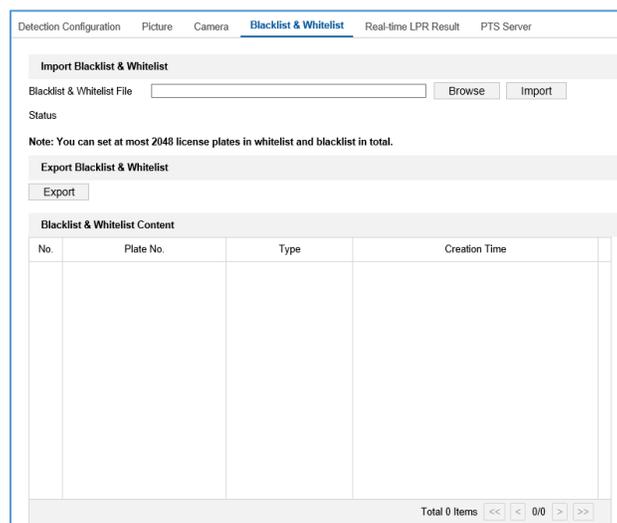
Below is the Road Traffic description from the Online Help menu.

Road Traffic

Purpose:

The camera captures the pass vehicles and recognizes the license plate information.

Note: Road traffic function varies according to different camera models.

Detection Configuration

Steps:
Check the checkbox of Enable to enable the detection.

1. Select the total number of lanes in the corresponding drop-down list. Up to 4 lanes are selectable.
2. Click and drag the lane lines to set their positions or click and drag the line endpoints to adjust the length and angle of the line.

   Detection Area: When you save the settings, the area enclosed by yellow lane lines and green lines is the detection area.

3. Adjust the zoom ratio of the camera so that the size of the vehicle in the image is close to that of the red frame in the image. Only the position of red frame is adjustable.

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

4. Select the plate mode.
   - **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.
5. Select the license plate information upload mode from the Upload Mode drop-down list.
   - **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.

     Notes:

     - When Alarm Input is selected, the alarm input "A<-1" will automatically be assigned to trigger vehicle detection and its alarm type is always NO.
     - If the "A<-1" alarm input is used to trigger vehicle detection, it can not be used for other basic events.
     - When Alarm Input is selected and saved, previously configured linkage method for "A<-1" will be canceled.
6. Save area settings.
7. Configure the arming schedule and linkage method for the detection for white list, black list and other list separately.
   i. Click on the time bar and drag the mouse to select the time period. Click delete or delete all to delete the configured schedule.
   ii. Move the mouse to the end of each day, a copy dialogue box pops up, and you can copy the current settings to other days.

      Note: The time of each period cannot be overlapped. Up to 8 periods can be configured for each day.

   iii. Select the Direction. The Direction means the direction of vehicle moving. Only the vehicles moving as the selected direction can trigger selected linkage methods.

      Forward: Vehicle moves toward the camera.

      Reverse: Vehicle moves away from the camera.

   iv. Check desired linkage method.

      Notify Surveillance Center: Send an exception or alarm signal to remote management software when an event occurs.

      Upload to FTP/NAS/Memory Card: Alarm information will be uploaded to configured FTP server, NAS, or on-board memory card.

Trigger Alarm Output: Alarm signal will be sent to a configured device which will take certain actions to the received signal.

    v.   If you want to copy the current configured arming schedule and linkage method to other list, click Copy to and check desired list.

    vi.   Save the settings for the list.

Upload Picture Configuration

Steps:

1. Set the picture quality.

   Either Picture Quality or Picture Size can be set to specify the picture quality.

2. Enable the text overlay on the uploaded picture.

   You can set the font color and background color by clicking the icon and click the desired color in the popup palette.

3. Select the information for the text overlay, including Device No., Capture Time, Direction, Plate No., Camera Info., Camera No., Validity, etc.. You can also click the up and down direction buttons to adjust the sequence of the text.

4. Configure the file name for the captured pictures. You can use the default name, or you can customize the file name.

   Note: The naming rule for uploaded vehicle detection pictures will not follow that set at FTP configuration page (Configuration > Network > Advanced Settings > FTP).

5. Save the settings.

Camera Information Configuration for Display

Steps:

1. Edit the Device No., Camera No. and Camera Info. in the corresponding text filed.
2. Click Save to save the settings.

Blacklist and Whitelist Configuration

You can import and export the blacklist and whitelist as desired, and check the list content in this interface.

- Import Blacklist & Whitelist
  - i.   Click the Browse button to open the PC local directory.
  - ii.   Find the blacklist & whitelist file and click to select it. Click Open button to confirm.

    Notes:

    - The file to import should corresponds with the file template that is required by the camera. You are recommended to export an empty Blacklist & Whitelist file from the camera as the template and fill in the content.
    - The file should be in the ".xls" format and the cell format should be "Text".
  - iii.   Click the Import button to import the selected file.
- Export Blacklist & Whitelist
  - i.   Click the Export button to open the PC local directory.
  - ii.   Select a directory in your PC local directory.
  - iii.   Name the file in the File name text filed and click the Save button to save the file.

Real-time LPR Result Configuration

Real-time LPR result page displays the captured license plate in the license plate area. The information including capture time, plate No., captured picture, lane No., direction, and matching result (white list, black list or other list) will be listed as well. And up to 20 latest captured license plates will be displayed in the license plate result area.