



Milesight-Troubleshooting

LPR Setting-LPR1

1. What is LPR

LPR/ANPR(License Plate Recognition) is a technology that uses optical character recognition on images to read vehicle registration plates. For Milesight, the LPR algorithm is embedded in cameras, which allows the cameras to recognize, capture and upload license plate images all alone and intelligently.



Figure 1 LPR

2. Countries that support LPR

For Milesight, the LPR function applicable to the following countries:

Country	Abbreviation	Country	Abbreviation	
Angola	AGO	Macau	MAC	Support
Australia	AUS	Malaysia	MYS	Support
Brazil	BRA	Saudi Arabic	SAU	Support
Chile	CHL	Singapore	SGP	Support
Hong Kong	HKG	South Korea	KOR	Support
India	IND	TaiWan	TWN	Support
Indonesia	IDN	Thailand	THA	Support
Iran	IRN	Turkey	TUR	Support
Israel	ISR	United States (California Only)	USA	Support
Japan	JPN	Vietnam	VNM	Support

3. Milesight LPR Cameras

- LPR 12x H.265+ AF Motorized Pro Bullet Network Camera
- LPR 12x H.265+ Mini PTZ Bullet Network Camera

- LPR H.265+ ABF Pro Box Network Camera
- LPR H.265+ Mini Bullet Network Camera
- LPR H.265+ Vandal-proof Motorized Mini Bullet Network Camera
- LPR H.265+ Motorized Pro Bullet Network Camera

The integration with NVR/CMS is in processing, which is going to bring another supreme experience.

! Notes

Installation Angle Considerations

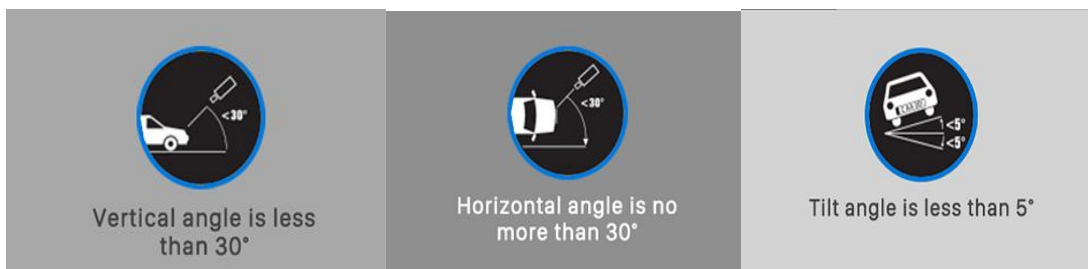
To increase the accuracy of license plate recognition, be sure to install the LPR cameras properly to capture the license plates with the correct image size, lighting conditions and camera angle. The following highlights is the precautions of **installation angle**:

A. Installing the camera in front of the vehicle (Recommended):

The captured image should be filled with a full width of the vehicle.

B. Installing the camera slightly to the side:

To avoid capturing unnecessary contents in the image, the camera should be installed in a higher position (Vertical angle is less than 30°; Horizontal angle is no more than 30°; Tilt angle is less than 5°) to capture the front part of the vehicle.



4. How to set LPR

(1) Settings

Step1: After log in the web, and go to "LPR" → "Settings" → "General".

Check the checkbox "Enable LPR", you can draw the screen to select area interested.

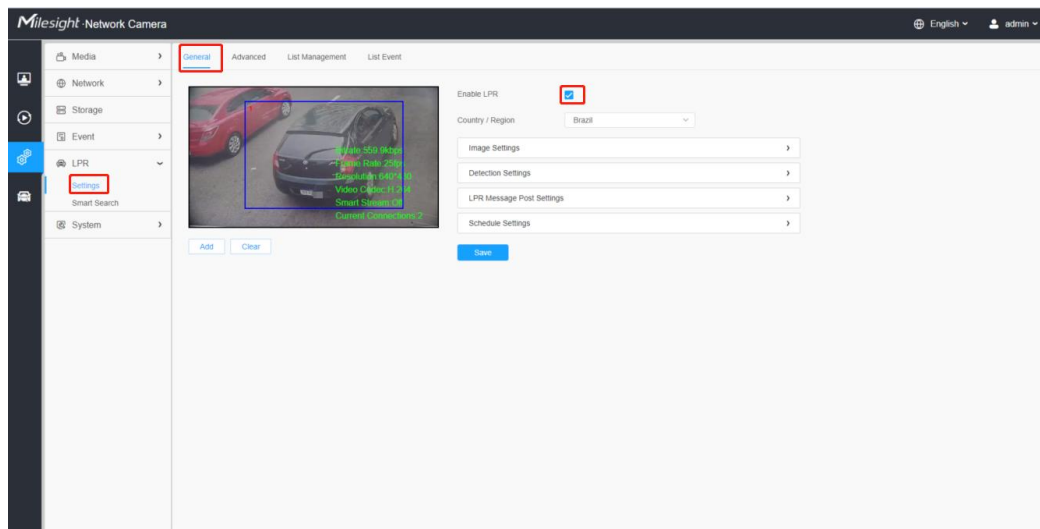


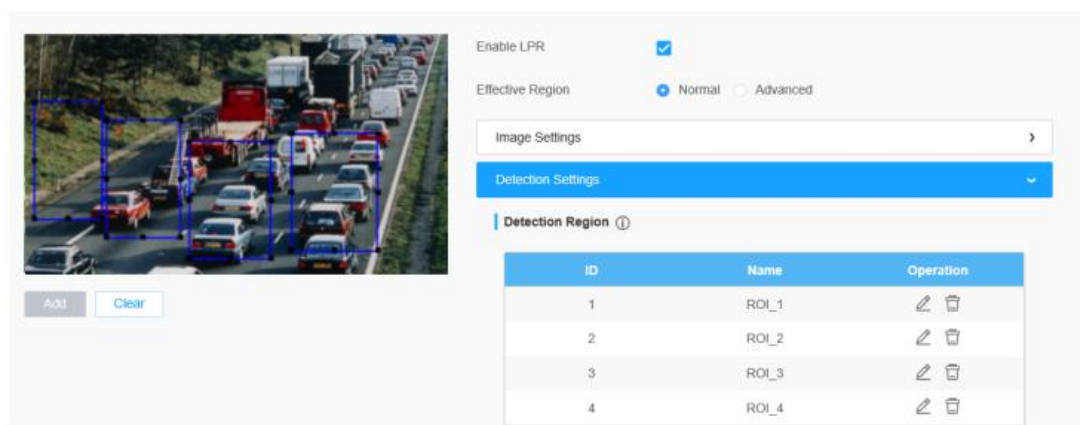
Figure 2 LPR - Settings page

[Enable LPR]: Automatic license plate recognition after it is enabled.

[Country/Region]: You can select the country/region to uses the LPR function.

Step 2: Detection Settings.

You can draw the screen to select four areas interested. The area as shown in the blue box below, it will also display pixels above each area.



Detection Settings

Detection Region ⓘ

ID	Name	Operation
1	ROI_1	
2	ROI_2	
3	ROI_3	
4	ROI_4	

[Delete All](#)

Detection Settings

Processing Resolution: 1280*720

Detection Trigger: Always

Confidence Level: 4

Repeat Plate Checktime: 0 ms (0-60000)

Features Identification:

- ☒ All
- ☒ Plate Color
- ☒ Vehicle Color
- ☒ Direction
- ☒ Vehicle Type
- ☒ Detection Region
- ☒ Country / Region

[Detection Region]: You can set up to 4 ROI areas by drawing the screen. If you choose **Normal**, it supports configuring the LPR detection regions for the current area. If you choose **Advanced** (Only for PTZ series), it supports configuring different LPR detection regions for different PTZ presets(Only support Preset 1~4 so far).

Enable LPR ☒

Effective Region: ☐ Normal ☒ Advanced

Effective with Preset: Preset 1 [Call](#)

Image Settings [>](#)

Detection Settings [>](#)

LPR Message Post Settings [>](#)

Schedule Settings [>](#)

[Save](#)

Figure 4 Set LPR Effective Region

[Processing Resolution]: Default selected resolution is 1280*720. Users can choose different resolution according to the network environment.

Detection Settings

Processing Resolution: 1280*720

Detection Trigger: 1920*1080

Confidence Level: 1280*720

Figure 3 Processing Resolution

[Detection Trigger]: If you choose “**Always**”, camera will always detect the license plate. If you choose “**Alarm input**”, camera will only detect the license plate when Alarm Input is being triggered.

[Confidence Level]: You can set the confidence level from 1 to 10. When the confidence level of the license plate is higher than the set confidence level, it will push the license plate image to the logs interface.

[Repeat Plate Checktime]: Set the time interval for repeatedly reading license plates to effectively avoid duplicate identification of parking vehicles.

[Feature Identification]: Check **Plate Color**, **Vehicle Type**, **Vehicle Color**, **Detection Region**, **Direction**, **Country / Region** or **All** to enable Features Identification, it will display the corresponding information on the logs interface.

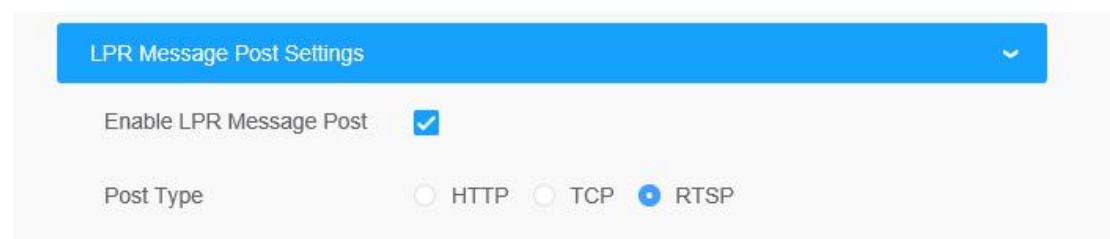
! Notes

- The optimal recognize license plates interval of Milesight LPR cameras within 90-150 PX.
- For better performance, please choose the appropriate resolution in advance.

Step 3: LPR Message Post Settings.

[LPR Message Post Settings]: Check the checkbox to enable LPR Message Post. It will push information to some third-party devices or software that are compatible with ours. Information can be pushed by **RTSP**, **TCP** or **HTTP**.

More information about LPR Message Post, please refer to Milesight-Troubleshooting-Integration between LPR Camera and NVR(VMS).



LPR Message Post Settings

Enable LPR Message Post ☒

Post Type ☐ HTTP ☐ TCP ☒ RTSP

Step 4: Schedule Settings. You can draw the schedule by clicking. And then click **[Save]** or **[Delete]** after setting. You also can copy the settings to other channels.

Schedule Settings

00 : 00 - 24 : 00 Save Delete

Sun. Mon. Tue. Wed. Thu. Fri. Sat.

Select All Clear All

Copy To...

☐ Sun. ☒ Mon. ☒ Tue. ☐ Wed. ☐ Thu. ☐ Fri. ☐ Sat.

Save

Step 5: Don't forget to click **"Save"** after finishing all settings.

General Advanced List Management List Event

Enable LPR ☒

Effective Region ☒ Normal ☐ Advanced

Image Settings >

Detection Settings >

LPR Message Post Settings >

Schedule Settings >

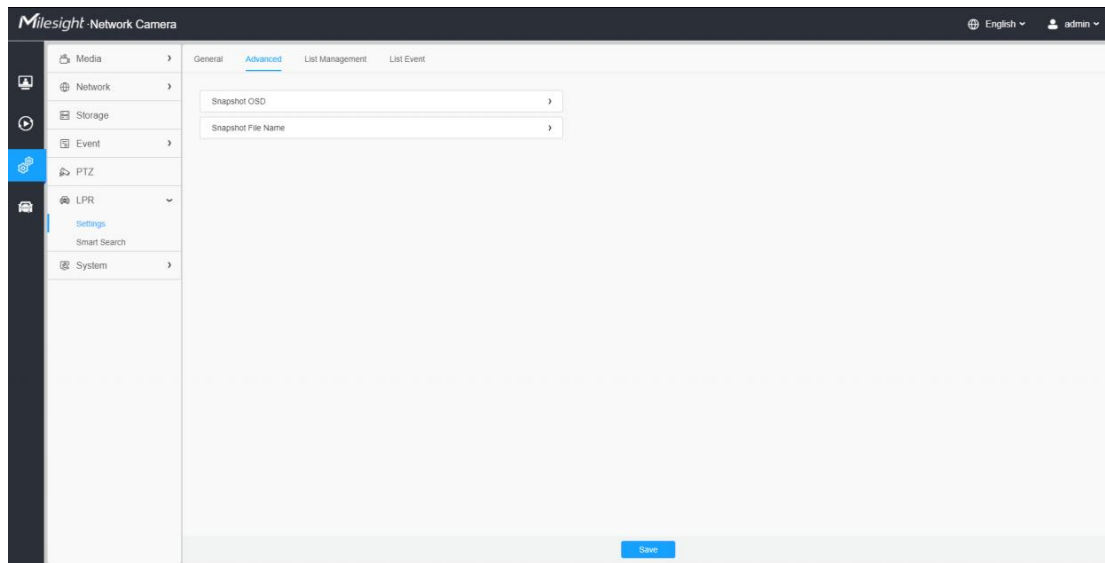
Add Clear

Save

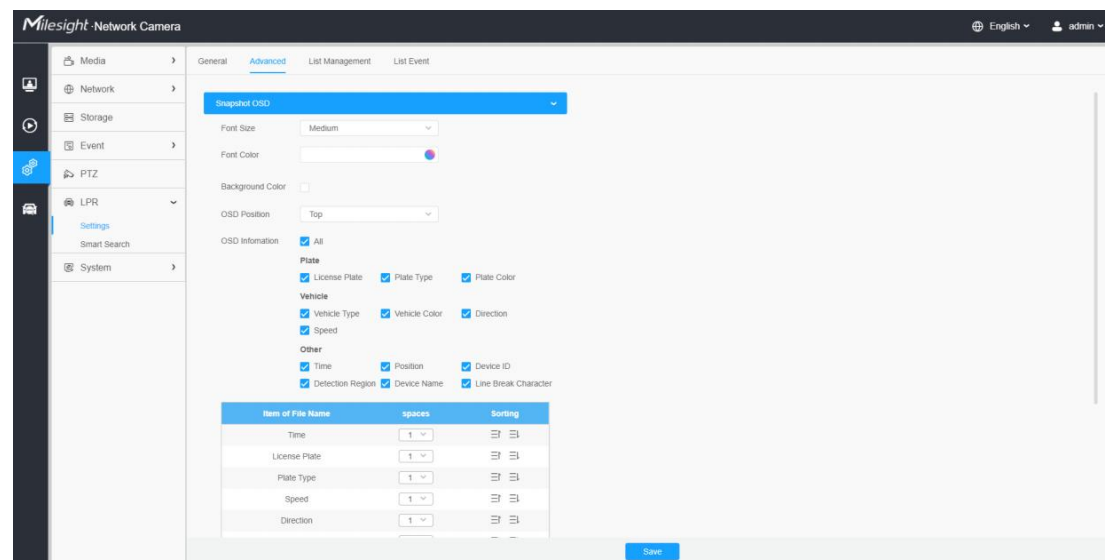
(2) Advanced

In the interface, you can set display information on snapshot of license plate recognition,

and also customize the file name of snapshots which are uploaded via FTP or Email or stored on local LPR Picture File Path.




[Snapshot OSD]

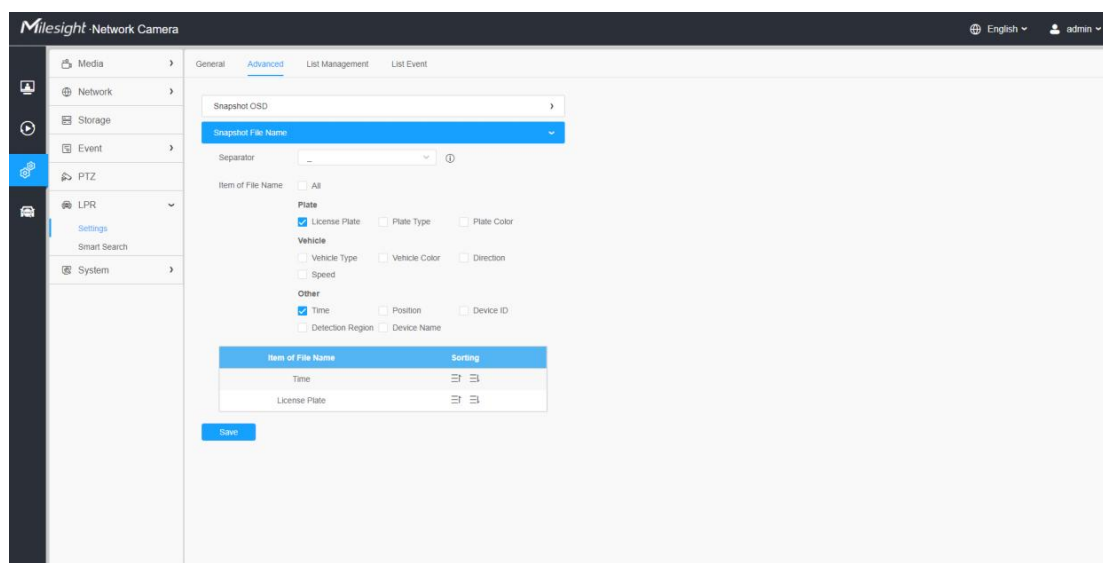


Description of the buttons

Parameters	Function Introduction
Font Size	Small/Medium/Large are available for OSD information. Note: Snapshot OSD font size and Image OSD font size are corresponded.
Font Color	Enable to set different colors for OSD information. Note: Snapshot OSD font color and Image OSD font color are corresponded.
Background Color	Check the checkbox to select background color of snapshot OSD information. Note: Background color cannot be the same with font color.
OSD Position	Check the checkbox to show OSD information position.



Parameters	Function Introduction
OSD Information	<p>Customize the OSD content. You can set OSD Information as shown below:</p> <div><p>OSD Information <input type="checkbox"/> All</p><p>Plate</p><p><input type="checkbox"/> License Plate <input type="checkbox"/> Plate Type <input type="checkbox"/> Plate Color</p><p>Vehicle</p><p><input type="checkbox"/> Vehicle Type <input type="checkbox"/> Vehicle Color <input type="checkbox"/> Direction</p><p><input type="checkbox"/> Speed</p><p>Other</p><p><input type="checkbox"/> Time <input type="checkbox"/> Position <input type="checkbox"/> Device ID</p><p><input type="checkbox"/> Detection Region <input type="checkbox"/> Device Name <input type="checkbox"/> Line Break Character</p></div> <p>When license plate is recognized and the alarm is triggered, the snapshot of license plate recognition will show as below:</p> 

[Snapshot File Name]



Description of the buttons

Parameters	Function Introduction
Separator	<p>“-”, “_” and Space are available for File Name Separator format.</p> <p>The default separator is “-”.</p>
Item of File Name	<p>You can customize the snapshot file name according to items chosen.</p> <div> <p>Item of File Name <input type="checkbox"/> All</p> <p>Plate</p> <p><input checked="" type="checkbox"/> License Plate <input type="checkbox"/> Plate Type <input type="checkbox"/> Plate Color</p> <p>Vehicle</p> <p><input type="checkbox"/> Vehicle Type <input type="checkbox"/> Vehicle Color <input type="checkbox"/> Direction</p> <p><input type="checkbox"/> Speed</p> <p>Other</p> <p><input checked="" type="checkbox"/> Time <input type="checkbox"/> Position <input type="checkbox"/> Device ID</p> <p><input type="checkbox"/> Detection Region <input type="checkbox"/> Device Name</p> </div>

Each time when an item is checked, the list will add the item row, including the item name and sorting operation. You can click  and  button to sort these items, and choose separator to connect these items name. Also, the content of Position and Device ID items can be customized. When you check all items, the function interface will show as below:

Item of File Name ☒ All

Plate

☒ License Plate ☒ Plate Type ☒ Plate Color

Vehicle

























☒ Vehicle Type ☒ Vehicle Color ☒ Direction

☒ Speed

Other

☒ Time ☒ Position ☒ Device ID

☒ Detection Region ☒ Device Name

Item of File Name	Sorting
Time	 
License Plate	 
Plate Type	 
Speed	 
Direction	 
Detection Region	 
Position: <input type="text" value="Position"/>	 
Device Name	 
Device ID: <input type="text" value="Device ID"/>	 
Plate Color	 
Vehicle Type	 
Vehicle Color	 

Note: You need to check at least one item. For example, you can choose items, separator and items sorting as below:

Item of File Name ☒ All

Plate

☒ License Plate ☐ Plate Type ☐ Plate Color

Vehicle

☐ Vehicle Type ☐ Vehicle Color ☐ Direction

☐ Speed

Other

☒ Time ☐ Position ☐ Device ID

☐ Detection Region ☐ Device Name

Item of File Name	Sorting
Time	⇅ ⇅
License Plate	⇅ ⇅

Once license plate is recognized, and the snapshot will be uploaded via FTP or Email or stored on your local LPR Picture File Path. Then, You can see the snapshot file name which you customize as shown below:

Full-snapshot Recognized successfully



Full-snapshot Recognized failed



420201116021729_RT528N

License plate snapshot Recognized successfully



20201116021729_RT528N

License plate snapshot Recognized failed



20201116021729_##528N

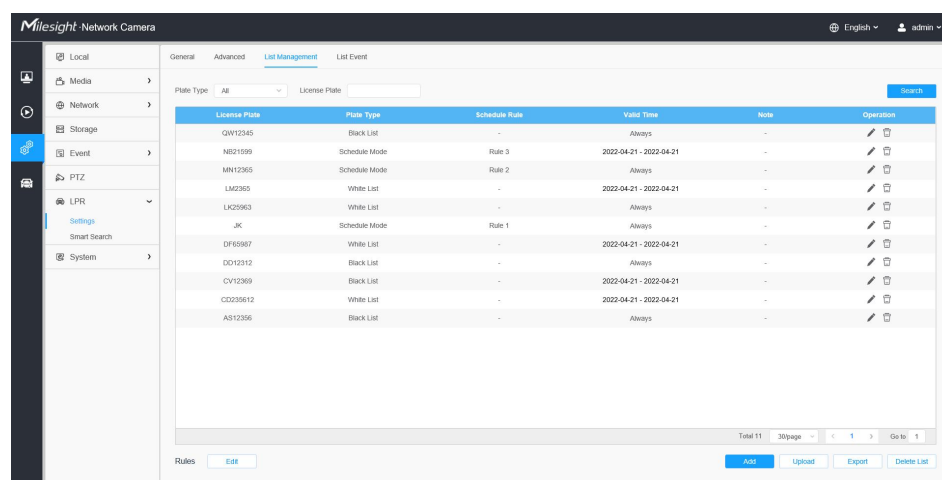
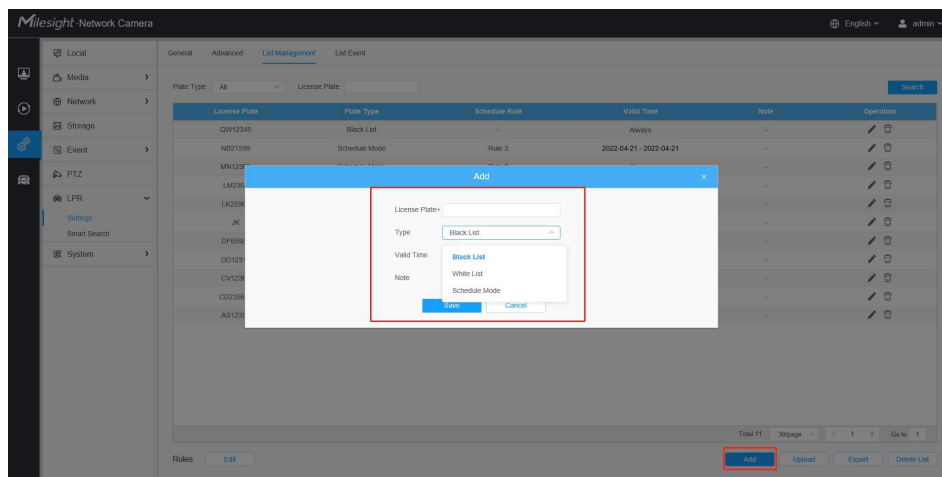
Note:

- If the item checked is not recognized successfully, then the item will be displayed with the specific symbol "#".
- The file name of full-snapshot will be preceded by a number of 4.

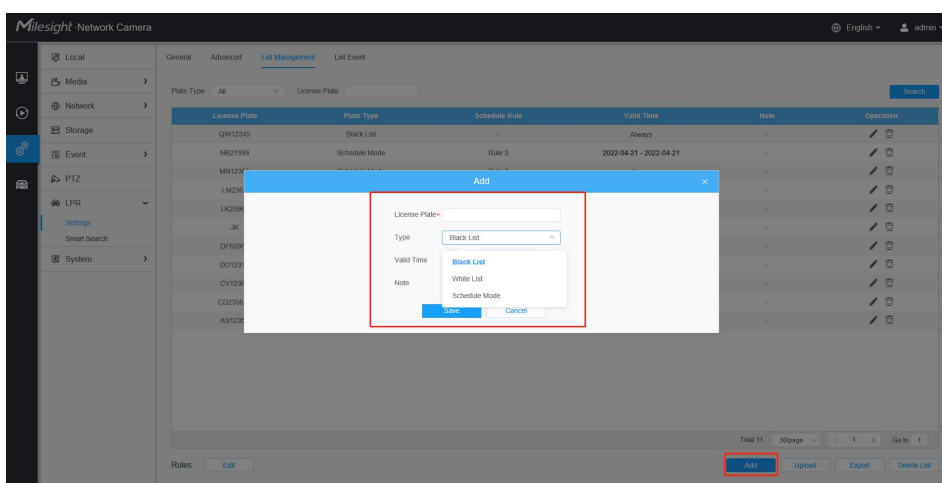
(3) List Management

Add the license plates to this interface as Black, White type (Black/White List), and then you can set the alarm action for these license plates in the corresponding black list mode, white list mode or Visitor mode interface. When these license plates are detected, the

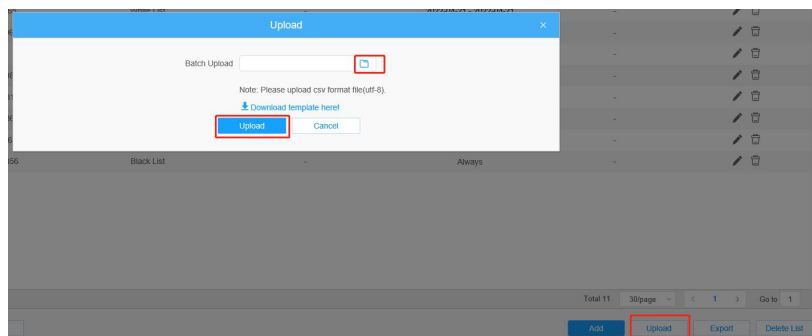
camera will respond accordingly to your settings.



Step1: Click the “Add” button, select the **Type** as black or white, enter the license plate, the license plate will be added successfully.



Step2: You can add a csv form with the license plate you want to add, click the "Browse" button to import the form to this interface, click the "Upload" button, the license plates will be added successfully.

**Note:**

1. You can first download the template as a reference in this interface.
2. It allows to add 1000 license plates to Black and White List.

Step3: Select Plate Type or directly enter the license plate number, click the “**Search**” button, the corresponding license plate will be displayed in the list.

Step4: Click the “**Export List**” button to export the license plate in the current list to a csv form locally.

Step5: Click the “**Delete List**” button to delete all the license plate in the current list.

(4) List Event

Step1: Select the List Type, Black list, White list or Visitor.

Step2: Schedule Settings. You can draw the schedule by clicking it.

Step3: Set alarm action.

Alarm Action

☐ **Record**

Duration

5 s

Linkage

☐ Save to storage (Please mount storage device.)
☐ Upload Via FTP

☐ **Snapshot**

Snapshot Type

License Plate

Number

1

Interval

1

second

Linkage

☐ Save to storage (Please mount storage device.)
☐ Upload Via FTP
☐ Send Email (Please enable the Email.)

Email Triggered Interval

Auto

After that, when a license plate marked as “Black” is detected, the camera will respond accordingly to your settings if you select the Black List in List type;

when a license plate marked as “White” is detected, the camera will respond accordingly to your settings if you select the White List in List type;

when a license plate that is not marked as "Black" or "White" is detected, the camera will respond accordingly to your settings if you select the Visitor in List type.

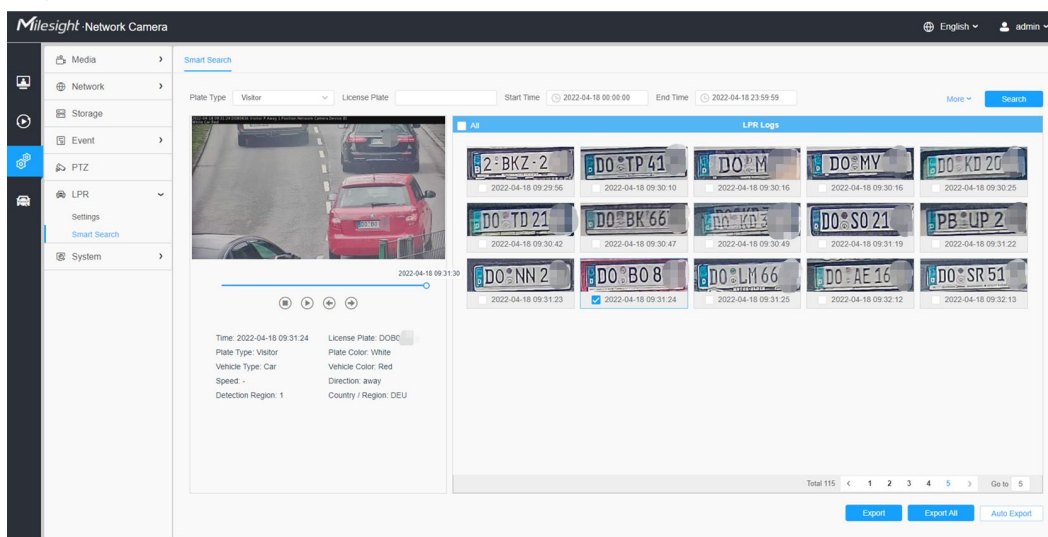
(5) Smart Search

Step1: The detect results in real time will be displayed on the right side of Logs page, including detected time, live screenshot, and license plate.

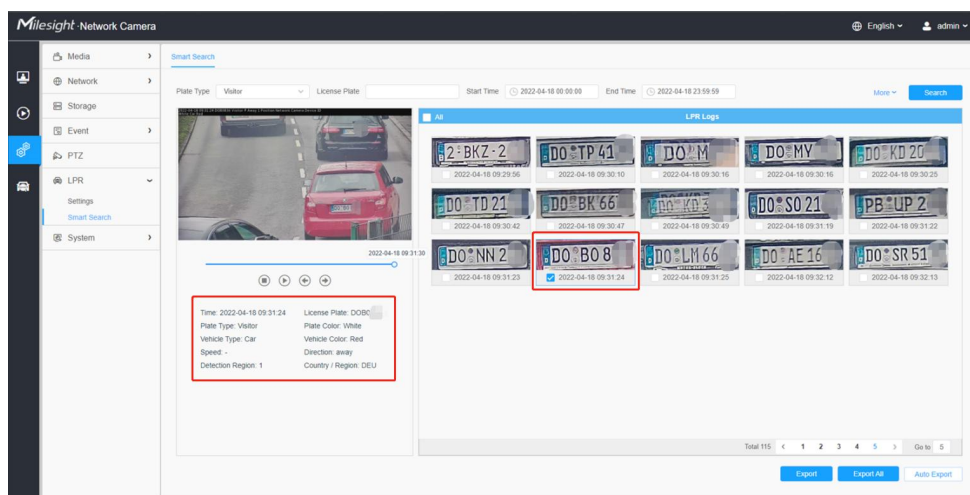
Step2: Select Plate Type or directly enter the license plate number, select Start Time and End Time, click the “**Search**” button, the corresponding license plate will be displayed in the list below.

Note:

- It supports displaying 4000 logs.
- Only when there is a SD Card or NAS has been set on the storage management , then the logs can be stored and showed on Smart Search page.
- For Plate Color/Vehicle Color Recognition and Vehicle Type Classification, please make sure your model is MS-xxxx-xPC.

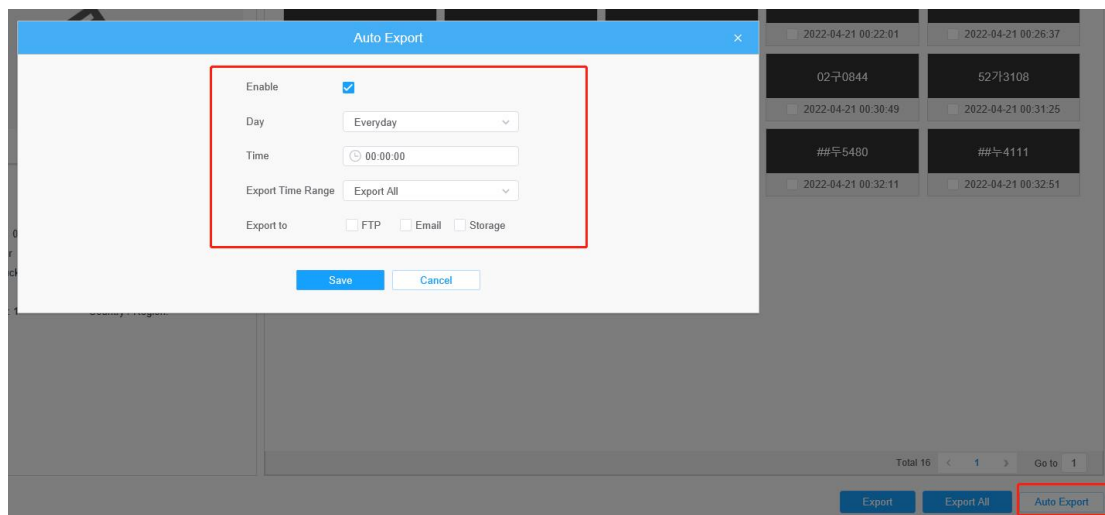
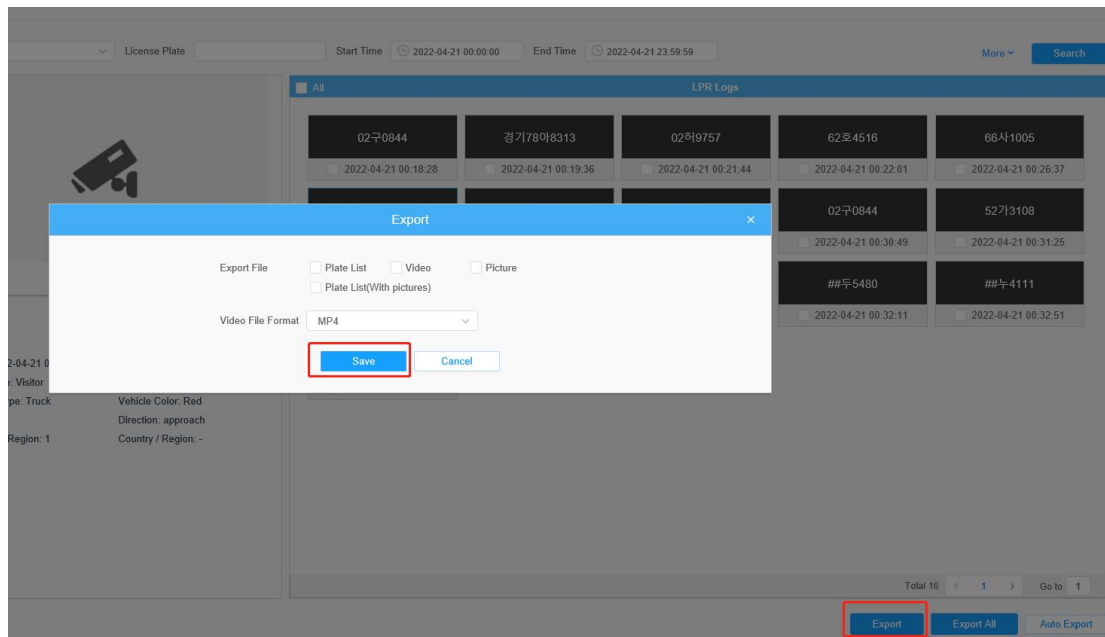


Step3: Click the license plate on the right of each log to display license plate details as shown below.



Step4: Click the "Export" button to export the license plate you selected to a csv form locally.

You can also click the "Auto Export" button to automatically export the log to FTP, SMTP or Storage.



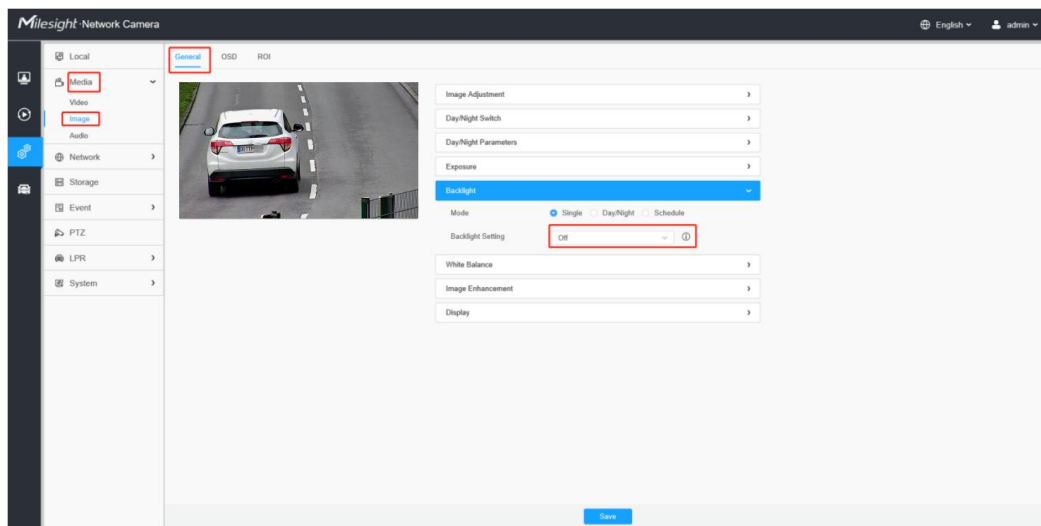
! Notes

How to use LPR function better under night condition

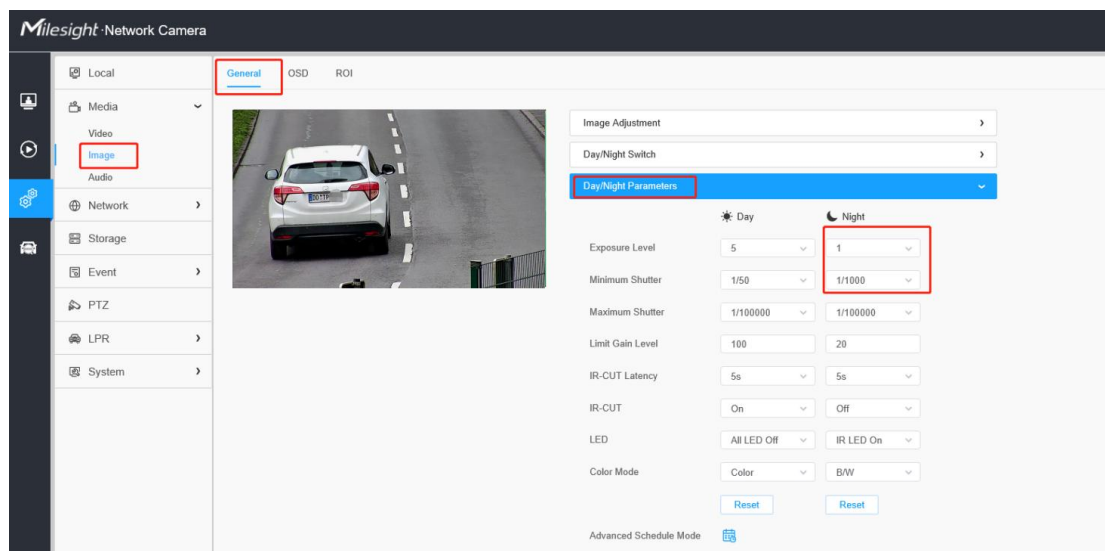
To increase the accuracy of license plate recognition under the night mode. In some special circumstances, you can't get clear license plate capture by adjusting WDR and HLC. Then we recommend that you can set the following options in advance.

Step1: After log in the web, and go to “Media”→ “Image”→ “General” interface.

Check the “Blacklight”, select “off” the Blacklight Setting, remember to save your settings by check the “Save” button, There will be shown in the blue box as below:

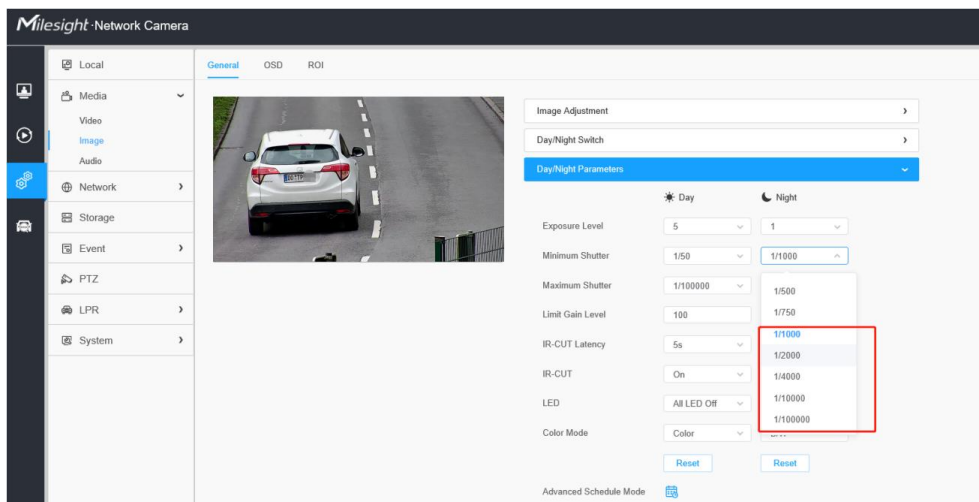


Step2: Set reasonable exposure time and brightness, go to “Media “→ “Image “→ “General“ →”Day/Night Parameters”interface. Then set the Exposure level to 1 and the Minimum Shutter to 1/1000 and keep other settings;



Then be sure to install the LPR cameras properly to capture the license plates with the correct image size, lighting conditions and camera angle.

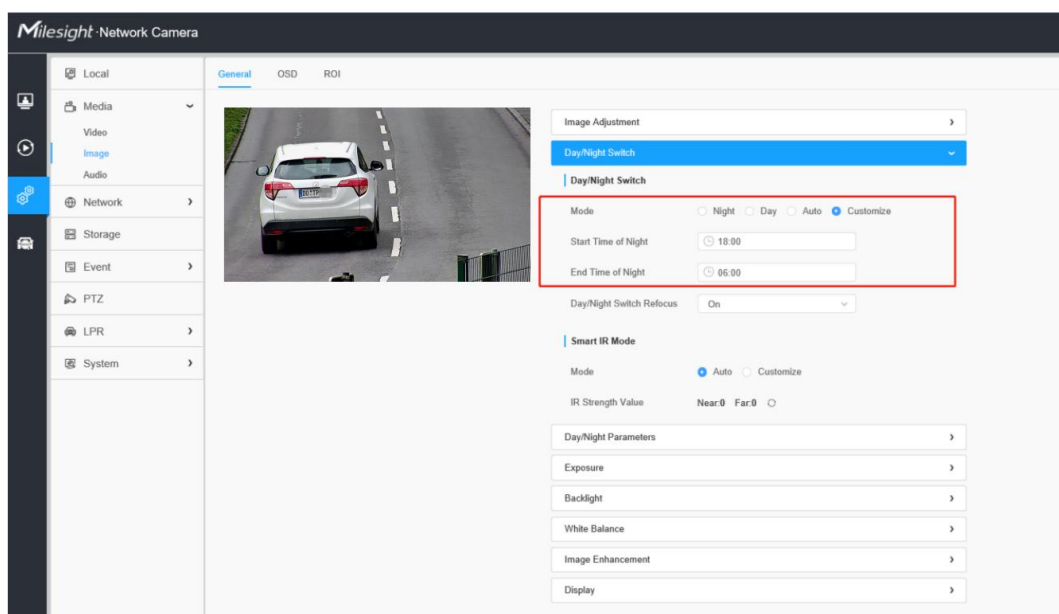
Note: If you still can't get clear license plate capture according to the above settings, we suggest you to reduce the exposure time.



The license plate captures obtained under night conditions are shown below:



Note: If you have special requirements for the time of the **Night Mode**, we recommend that you customize the time of the **Day/Night Mode**.



END