

Milesight-Troubleshooting LPR Setting-LPR1

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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

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	USA	Support
151801	15K	(California Only)	USA	Support
Japan	JPN	Vietnam	VNM	Support

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

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

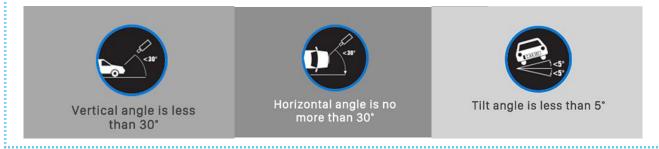
To increase the accuracy of license plate recognition, be sure to install the LPR cameras properly to capture the license plates with the correct image size, lighting conditions and camera angle. The following highlights is the precautions of **installation angle**:

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°; Tile 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 "Advanced Settings " \rightarrow "LPR " \rightarrow "Settings".

Check the checkbox "Enable License Plate Recognition", you can draw the screen to select area interested.

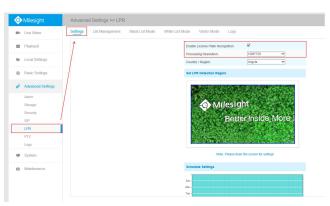


Figure 2 LPR - Settings page

[Enable License Plate Recognition]: Automate license plate recognition after it is enabled.

[Processing Resolution]: Default selected resolution is 1280*720. Users can choose



different resolution according to the network environment.

Enable License Plate Recognition:	
Processing Resolution:	1920*1080 1280*720 640*360
Country / Region:	320*176
Set LPR Detection Region	

Figure 3 Processing Resolution

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

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

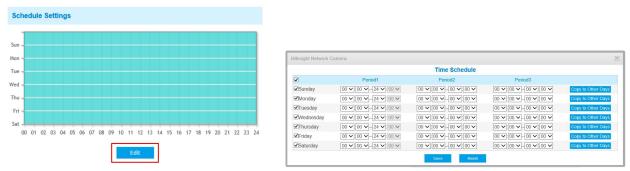


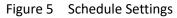
Notes

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



Step2: Schedule Settings. You can draw the schedule by clicking "**Edit**" button. And then click **"Save"** or **"Reset"** after finishing setting. You also can copy the settings to other channels.





Step3: Detection Settings and LPR Message Post Settings.

Detection Settings	
Detection Trigger:	Always
Confidence Level:	
Repeat Plate Checktime:	0 millisecond ✔ (0~60000ms)
Features Identification:	All
LPR Message Post Settings	
Enable LPR Message Post:	
Post Type:	RTSP 🗸

Figure 6 LPR Message Post Settings

[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 Direction, ROI_ID or All to enable Features Identification,



it will display the corresponding information on the logs interface.

[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)*.

Step4: Don't forget to click **"Save"** after finishing all settings.

(2) List Management

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

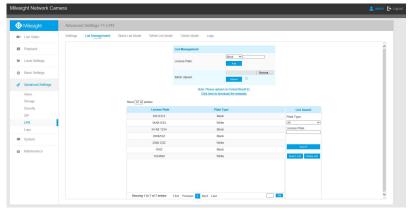


Figure 7 List Management

[Add License Plate]: Select the license plate type as black or white, enter the license plate number, click the "Add" button, the license plate number will be added successfully.

[Batch Upload]: You can add a csv form of 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.

[List Search]: Select Plate Type or directly enter the license plate number, click the "Search" button, the corresponding license plate will be displayed in the list below.

[Export List]: Click the "Export List" button to export the license plate in the current list in csv form locally.

[Delete List]: Click the "Delete List" button to delete all the license plate in the current list.

(3) Black List Mode

esight Netw	ork Camera					👱 admin 🕞
Milesight	Advance	ed Settings >> LPR				
Live Video	Settings	List Management	Black List Mode	White List Mode V	sitor Mode Logs	
Playback				Enable Black List Mode:		
 Local Settin 	IS			Schedule Settings		
Basic Settin	25			Sun -		
Advanced S	ettings			Tue -		
Alarm				Thu -		
Storage Security				Sat	18 09 10 11 12 13 14 15 16 17 18 19 23 21 22 23 24	
SIP					Edit	
LPR Logs				Alarm Action		
System				Save Into NAS:	(Please mount storage device.)	
Maintenanc				Upload Via FTP:	File Format: Record V	
Maintenanc	2			Upload Via SMTP:	File Format: Snapsho	
				External Output:	(Please configure the External Output Action Time)	

Figure 8 Black List Management

Step1: Check the checkbox to enable Black List Mode.

Step2: Schedule Settings. You can draw the schedule by clicking "Edit" button.Step3: Set alarm action.

Alarm Action	
Save Into NAS:	File Format: Record (Please mount storage device.)
Upload Via FTP:	File Format: Record
Upload Via SMTP:	File Format: Snapsho
External Output:	☐ (Please configure the External Output Action Time.)
Play Audio:	☐ (Please configure the Audio Action Settings and Audio Interval.)
Alarm to SIP Phone:	(Please open the SIP.)
HTTP Notification:	

Figure 9 Alarm Action

Step4: Set alarm settings.

Alarm Setting	
Record Video Sections:	5 seconds V
Pre-record:	0 second
Snapshot Type:	License Plate V
Snapshot:	3
Snapshot Interval:	1 second V
External Output Action Time:	30 seconds
Audio Action Settings:	Edit
Play Audio Interval:	Auto

Figure 10 Alarm Setting

After that, when a license plate marked as **"black"** is detected, the camera will respond accordingly to your settings.

(4) White List Mode

📀 Milesight

Live Video	Settings	List Management	Black List Mode	White List Mode	isitor Mode Logs	
LIVE VIDEO						
Playback				Enable White List Mode:		
Local Settings				Schedule Settings		
Basic Settings				Sun		
Advanced Settings				Tue = Wed =		
Alarm				Thu -		
Storage				Fri -		
Security				Sat00 01 02 03 04 05 06 07	08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	
SIP					Edit	
LPR						
Logs				Alarm Action		
System				Save Into NAS:	File Format: Record (Please mount storage device.)	
Maintenance				Upload Via FTP:	File Format: Record	
mannonanco				Upload Via SMTP:	File Format: Snapsho	
				External Output:	(Please configure the External Output	

Figure 11 White List Mode

Step1: Check the checkbox to enable White List Mode.

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

Step3: Set alarm action.

Alarm Action	
Save Into NAS:	File Format: Record (Please mount storage device.)
Upload Via FTP:	File Format: Record
Upload Via SMTP:	File Format: Snapsho
External Output:	☐ (Please configure the External Output Action Time.)
Play Audio:	☐ (Please configure the Audio Action Settings and Audio Interval.)
Alarm to SIP Phone:	□ (Please open the SIP.)
HTTP Notification:	

Figure 12 Alarm Action

Step4: Set alarm settings.

Alarm Setting	
Record Video Sections:	5 seconds 🗸
Pre-record:	0 second 🗸
Snapshot Type:	License Plate V
Snapshot:	3 🗸
Snapshot Interval:	1 second V
External Output Action Time:	30 seconds
Audio Action Settings:	Edit
Play Audio Interval:	Auto



After that, when a license plate marked as "White" is detected, the camera will respond accordingly to your settings.

(5) Visitor Mode

0	Milesight	Advance	ed Settings >> LPR			
	Live Video	Settings	List Management	Black List Mode	White List Mode	Visitor Mode Logs
	Playback				Enable Visitor Mode:	×
in .	Local Settings				Schedule Settings	
ø	Basic Settings				Sun -	
°	Advanced Settings				Tue -	
	Alarm				Thu -	
	Storage				Fri -	
	Security					06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
	SIP					Edit
	LPR					
	Logs				Alarm Action	
Ŧ	System				Save Into NAS:	(Please mount storage device.)
Ö	Maintenance				Upload Via FTP:	File Format: Snapsho 🗸
	wantenance				Upload Via SMTP:	File Format: Snapsho
					External Output:	(Please configure the External Output Action Time)

Figure 14 Visitor Mode

Step1: Check the checkbox to enable Visitor Mode.

Step2: Schedule Settings. You can draw the schedule by clicking "Edit" button.Step3: Set alarm action.

Alarm Action	
Save Into NAS:	File Format: Record (Please mount storage device.)
Upload Via FTP:	File Format: Record
Upload Via SMTP:	File Format: Snapsho
External Output:	(Please configure the External Output Action Time.)
Play Audio:	(Please configure the Audio Action Settings and Audio Interval.)
Alarm to SIP Phone:	(Please open the SIP.)
HTTP Notification:	

Figure 15 Alarm Action

Step4: Set alarm settings.

Alarm Setting	
Record Video Sections:	5 seconds 🗸
Pre-record:	0 second
Snapshot Type:	License Plate 🗸
Snapshot:	3 🗸
Snapshot Interval:	1 second V
External Output Action Time:	30 seconds
Audio Action Settings:	Edit
Play Audio Interval:	Auto

Figure 16 Alarm Setting

After that, when a license plate that is not marked as "Black" or "White" is detected, the camera will respond accordingly to your settings.

(6) Logs

ight Network Can						A
Milesight	Advanced Settings >> LPR					
Live Video	Settings List Management Black List Mode	White List Mode Visitor Mode Logs				
Playback				Time Snapshot	License Plate	
Local Settings			- FA2.00 -	Time Snapshot		
and a second sec			2019-0	9-18 14:43:42	EV309JO	
Basic Settings				ST. BBS		
Advanced Settings			2019-0	9-18 14:43.21	EV309JO	
Alarm			2019-0	9-18 14 39 14	EV309J0	
Storage				Contraction of the second		
Security			2019-0	9-18 14:34:48	EV309JO	
SIP						
LPR		Show 30 V entries				
Logs		Time	License Plate	Plate Type	Log Search	
System		2019-09-18 14:48:00	EV309J0	Vallor	Plate Type:	
		2019-09-18 14:43:42	EV305J0	Visitor	All	
		2019-09-18 14:43:21	EV309J0	Visitor	License Plate	
Maintenance		2019-09-18 14:39:14	EV309JO	Visitor Det		
		2019-09-10 14:34:48	EV309JO	Visitor	Start Time:	
		2019-09-18 14:32:36	EV309J0	Vaitor	2019-08-20 00:00:00	
		2019-09-15 14:20:47	EV309JO	Visitor	End Time:	
		2019-09-18 14:19.45	EV325J0	Visitor	2019-09-20 23:59:59	
		2019-09-18 14:19:06	EV309JO	Vaitor		
		2019-09-18 14 18 55	EV303J0	Visitor	Search	
		2019-09-15 14:10:50	EV329JO	Visitor		
		2019-09-18 14:13:35	EV309J0	Visitor	Log Export	
		2019-09-18 14:12:48	EV329JO	Visitor		
		2019-09-18 14:11:11 2019-09-18 13:18:01	EV395J0 EV325J0	Visitor Visitor	Auto Expert	

Figure 17 LPR Logs page

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

Note: 10 real-time logs are visible on the right side.



Figure 18 LPR Real-time Logs page

Step1: Select Plate Type or directly enter the license plate number.

Step2: Select Start Time and End Time, click the **"Search"** button to achieve fuzzy search, then the corresponding license plate or containing search keywords license plate will be displayed in the list below.

Note: It supports displaying 10,000 logs.

Time	License Plate	Plate Type		Log Search
2019-09-18 14:48:00	EV309JO	Visitor	~	Plate Type:
2019-09-18 14:43:42	EV309JO	Visitor		All
2019-09-18 14:43:21	EV309JO	Visitor		License Plate:
2019-09-18 14:39:14	EV309JO	Visitor		LICENSE Plate.
2019-09-18 14:34:48	EV309JO	Visitor	Detail	Start Time:
2019-09-18 14:32:36	EV309JO	Visitor		2019-08-20 00:00:00
2019-09-18 14:20:47	EV309JO	Visitor		End Time:
2019-09-18 14:19:45	EV309JO	Visitor		
2019-09-18 14:19:06	EV309JO	Visitor		2019-09-20 23:59:59
2019-09-18 14:18:55	EV309JO	Visitor		Search
2019-09-18 14:18:50	EV309JO	Visitor		
2019-09-18 14:13:35	EV309JO	Visitor		Log Export
2019-09-18 14:12:48	EV309JO	Visitor		Log Export
2019-09-18 14:11:11	EV309JO	Visitor		
2019-09-18 13:18:01	EV309JO	Visitor		Auto Export
2019-09-18 11:35:41	TB696N	Visitor	~	

Figure 19 LPR Logs Search page

Step3: Click the "Detail" button on the right of each log to display license plate details as

shown below.

M	ilesight Network Camera				X
	License Plate Details				
	Time: 2019-09-20 11:08:57	License Plate: ۲۴۲۶۴۲۸۰	Plate Type: Visitor	ROI_ID: 1	
	Direction: Approach				

Figure 20 License Plate Details

Step4: Click the "Log Export" button to export the license plate in the current list to a csv

form locally.

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

Storage.

Log Settings		
Enable Auto Export Logs:	Y	
Day:	Everyday	~
Time:	00:00:00	
Export Time Range:	All	~
Export to:	□ FTP	SMTP Storage

Figure 21 Auto Export

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 "**Basic Settings** " \rightarrow "**Image** " \rightarrow "**Enhancement**" interface. Check the checkbox "**BLC**", then select "**off**" the BLC region, remember to save your settings by check the "**Save**" button, There will be shown in the blue box as below:

Milesight	Basic S	ettings >> Imag	8				
 Live Video 	Display	Enhancement	Day/Night Mode	OSD F	01		
Playback							
 Local Settings 					and the second	e i fr	
Basic Settings					Milesi	ght	
Video					Bet	ter Inside, More in S	light
Video Image					Bet	ter Inside, More in S	sight
					Bet	ter Inside, More in S	sight
Image					R Balance Mode:	ter Inside, More in S	Sight
Image Network					and the second		
Image Network Date & Time Advanced Settings					IR Balance Mode:	[Off	~
Image Network Date & Time Advanced Settings					IR Balance Mode: White Balance:	Off Auto White Balance	× ×
Image Network Date & Time Advanced Settings System					IR Balance Mode: White Balance: Digital Anti-log Mode:	Off Auto White Balance Off	> > >
Image Network Date & Time Advanced Settings System					IR Balance Mode: White Balance: Digital Arth-6g Mode: Digital Image Stabilisation: Exposure Mode:	Off Auto White Batance Off Off	> > > > > > > >
Image Network Date & Time Advanced Settings System					IR Balance Mode: Write Barance: Digital Anti-fog Mode: Digital Image Stabilisation: Exposure Mode: @ Single Mode C D	Off Auto White Balance Off Off Auto Mode	> > > > > > > >

Figure 22-1 Enhancement settings page

Step2: Set reasonable exposure time and brightness, go to "**Basic Settings** " \rightarrow "**Image** " \rightarrow "**Day/Night Mode**" interface. Then set the Exposure level to 1 and the Minimum Shutter to 1/1000 and keep other settings;

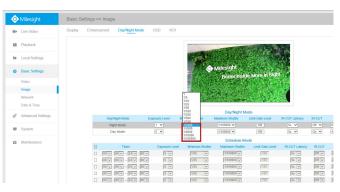
÷.,	Milesight	Basic Settings >> Image									
=	Live Video	Display En	hancement Day/Night Mod	OSD ROI							
ы	Playback				STATES IN		18	Ph.			
ter.	Local Settings				() M	N/esight					
•	Basic Settings					Better Inside	Nore in Sight	2			
	Video										
	Image					14.5 (M. 144	1.	11.6			
	Network										
	Date & Time					Day/Night Mo					
			Day/Night Mode					IR-CUT Latency	IR-CUT	LED	Color Mode
e ^o	Advanced Settings		Night Mode:	1 ¥	1/1000 ¥	1/100100 🗸	100	55 💙	or 🗸	IR LED On 🗸	B/W ¥
			Day Mode:	5 🗸	1/100 ¥	1/100000 🗸	100	5a 🗸	On 🗸	All LED Off 🗸	Color 🗸
							22				
÷	System					Schedule Mo	08				
			Timer	Exposure Level	Minimum Shutter	Maximum Shutter	Limit Gain Level	IR-CUT Latency	IR-CUT	LED	Color Mode
	System Maintenance		Timer		Minimum Shutter			IR-CUT Latency	IR-CUT	AT LED Off 🔽	Color Mode
				0V 5V		Maximum Shutter	Limit Gain Level				
					125 🔍	Maximum Shutter	Limit Gain Level	55 🗸	0# 🗸	AT LED Off 🔍	BW 🗸
			00 - 24 - 24 - 0 00 - 24 - 24 - 0	0 V 5 V 0 V 5 V	1125 V 1125 V	Maximum Shutler	Limit Gain Level	55 V	011 ->	All LED Off V	BW V



Figure 22-2 Day/Night Mode settings page

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:



Figure 22-4

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**.

-	Live Video	Display	Enhancement	Day/Night Mode	OSD RO	1	
	Playback						
500	Local Settings					Carlos and	
ø	Basic Settings					Milesig	ght er Inside More in Sight
	Video					SHEW TE SOLL	er inside twore in caffit.
	Image					11-5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5	and a state of the
	Network						AND THE ADDRESS OF THE ADDRESS OF THE
	Date & Time						
o	Advanced Settings					Power Line Frequency:	50Hz V
						Day/Night Mode:	Customize
1	System					Start Time of Night:	18 🗸 00 🗸
Ø	Maintenance					End Time of Night:	06 🗸 00 🗸
						Smart IR Mode:	Auto Mode 🗸
						IR Strength Value:	Near: 0 Far: 0 0
						White LED Level:	Reset
						Outdoor/Indoor Mode:	Outdoor V
					re 22-5		

END

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