

# ANPR product functions and problem troubleshooting



## Catalogue

1.	Prol	blem	feedback	1
1	.1	Info	rmation collection	1
	1.1.	1	Basic information	1
	1.1.	2	Issue information	2
	1.1.	3	Camera files	3
	1.1.	4	Print information	4
1	.2	POS	S video	6
	1.2.	1	H3 + Web Record	7
	1.2.	2	H5/H7 + Web Record	7
	1.2.	3	H8 + Web Record	8
	1.2.	4	(H3/H5/H7) + SD card recording	9
	1.2.	5	H8 + SD card recording 1	10
2.	Inst	allati	on requirements 1	10
2	.1	Entr	ance / exit 1	10
	2.1.	1	Entrance / exit -Standard installation 1	10
2	.2	City	y street 1	1
	2.2.	1	City street -Standard installation 1	12
3.	Con	nfiguı	ration1	14
4.	Ima	iging	requirements	20
5.	Prol	blem	analysis	20
5	.1	Erro	pr identification	20
5	.2	Darl	k background2	21
5	.3	Inco	mplete recognition	22
5	.4	Bloc	ck and allow list2	23
5	.5	Dup	licated license plates	24
5	.6	Wie	gand 2	25
5	.7	Prin	t information	26
6.	Prol	blem	cases	27
6	.1	Proł	nibit installation scenario2	27

6.1.2	Open scene	27
6.1.3	Far from the target	28
6.1.4	Far behind the barrier	28
6.2 Not	recommended scenario	29
6.2.1	The body is not fully exposed	29
6.2.2	Uncontrollable driving direction	30

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# **1.Problem feedback**

## **1.1 Information collection**

## **1.1.1 Basic information**

Items with * are required								
Information co	Information collector:							
Date of information collection:								
Project	Example	Feedback information						
category	p.c							
Project*	N/A							
Equipment	iDS-2CD7A26G0/P-IZHSY							
model*	iDS-2CD7A46G0/P-IZHSY(C)							
SN of issue	D12245678							
Equipment*	D12343070							
Firmware	V 5 7 80 build 210909							
version*	¥ 5.7.60 bund 210909							
Custom order	D7123456789							
number*	DE123+30107							
Total number of equipment*	It refers to the total number of equipment purchased by the customer in the same batch (including normal + issue equipment)							
Total number of issue equipment*	It refers to the number of all equipment that feedback issue phenomena this time							
Frequency of	It refers to the time when the issue							
issue*	equipment first appears issue							
Recognition rate Capture rate*	For example, 90% (20 / 400), 200 pictures in the day and 200 pictures in the night (the pictures need to be continuous), use the attachment tool for statistics, and please attach the original pictures captured Count 200 cars in succession, how many cars were captured and how many cars were missed*							
Platform*	What platform is the camera connected to							



Equipment	It refers to the installation time of the same
installation	batch of equipment (including normal +
time*	Issue equipment)
	Need to shoot the installation position of the
	camera from the outside and attach the
	values of installation height and angle
	Height: 6.3m
Site	Depression angle: 15°
information*	Horizontal deflection angle: 15°

## 1.1.2 Issue information

Misidentified Plates							
Туре	Remark	Misidentified plate figure	Real plate figure				
Letter	O identified as Q	YBQ54S	YB0-54S				
misidentify	D identified as 0	BWT970	BWT-97D				
	Total nur	nber of issues	/				
	Dual decker	/	/				
Special	P/L plate	NZN2W	NZW L				
vehicles/plate	P/L plate	BTD78CP	IBTD-78CP				
	Total nur	/					
Non-plate	Light/Shadow	111J	/				
identified as plate	Railing	EEEEEEE	/				
	Total nur	/					
	/	/	ER TEPY				
Missed plates	/	/	CL 27 JZ				
	/	/	/				



	Total nun	nber of issues	/
Remark		The naming rule of the plan	tes in this country

## 1.1.3 Camera files

Please attach All captured figures and the Screenshot of Road Traffic page.



And export the **Diagnose Information** and **Device Configuration Data** (and the password when exporting it) and send these to HQ



HII	VISION®	Live View Playb	ack Picture	Application	Configuration	Smart Display	VCA
Ţ	Local	Upgrade & Maintenance	Log System Service	Security Audit Log			
	] System System Settings	Reboot Reboot	Reboot the device.				
1	Security User Management	Default	Reset all the parameters,	except the IP parameters a	and user information, to t	he default settings.	
©	) Network	Default	Restore all parameters to	default settings.			
50	Video/Audio Image	Device	<b>2</b>		- <b>F</b>		
	Storage	Import Config. File	Download the log, system	Information and hardware	Information.		
		Device Parameters Status			Browse	Import	
		Upgrade Firmware V			Browse	Upgrade	
		Status Note: The upgrading pro	ocess will be 1 to 10 minute	es, please don't disconne	ct power to the device	during the process. The de	evice reboots automatically after upgrading.
		Device Auto Mainten	ance				
		<ul> <li>Enable Auto Maintena</li> <li>Maintenance Time</li> </ul>	Mon	✓ 00:00:00			
		🖹 Save	•				

## 1.1.4 Print information

- 1. Serial port connection device; Or SSH login device.
- 2. There are two ways to enable SSH. One is enabled via web interface directly.

HIK	VISION®	Live View	Playback	Picture	Configuration	
Q	Local	Authentication	IP Address Filter	Security Service		
···-	System	✓ Enable SSF	H			
	System Settings	Enable Illeg	al Login Lock			
	Maintenance					
	Security	B	Save			
	User Management					
Ð	Network					
Q.	Video/Audio					
14	Image					
Ë	Event					
	Storago					

3. Another one which doesn't support enable it via web interface, it needs to use ClientDemo tool. Add the camera to ClientDemo tool.



rsion Info build 20160531 CNetSDK V5.2.1.101 PlayCtrl V7.3.0.84	Config Preview Playback Management Others Product Related	Exi
Device Tree(Right Click t		
	Local Node       Device Address       10.13.51.150       Port       8000       Username       admin       Password	
	Get IP of Device on DDNS Get IP DDNS Address www.hiddns.com DDNS Port B0 Device Serial Number E0120110526CCRR403594603 Device Name/Alias (IPserver use device name _hiDDNS use alias)	

4. Choose the camera and select the below path: Product Related>IPC/IPD CFG>Device Server>Enable SSH, then click Set to save the setting.

/ersion Info build 20160531					
HCNetSDK V5.2.1.101	Config	Preview Playback	Management	Others Produ	ct Related Exit
PlayCtrl V7.3.0.84					
	VCA   Alarm Hos	DVR/NVR/DVS CVR D	ecode CEG IPC/IPD CI	FG ITC CFG ACS V	is 1
Device Tree(Right Click 1				1	- 1
• Camera 1	Configure				
Ū	CCD	IPC Special	IPC Special Ex	CameraSetUpCfg	IPC File Export
	PTZ Socp	e SMD	Device Server	PTZ Ctrl CFG	ROI
	Fis Dev	vice Server Module	white the	The Trup	x
	Vehic	Dev services module	Securit	y services module	
		IrLamp Server Disable		SSH Enable	-
	- Alarm	telnet Server Disable		Web Basic	<b>-</b>
	Álarm In			Telest Distant	
					•
		Led status disable	- F	RTSP Basic	•
		AutoDefog Disable		Login Lock Open	•
		SupplementLight Disable	Strea	am Encryption No Encrypt	-
		MultDiscover	• ,	Anti Attack Disable	-
		Remove Ice Disable		Set Ge	et
		Set	Get		

5. PSH unlocking device:



#### Input *debug*

Then use the OA terminal console to query the password to unlock the device.

- 6. Input command, release printing
  - 1) Input: *prtHardInfo*
  - 2) Input: setDebug -1 7 -d 111 -m ROAD\_TRAFFIC (Note: Input manually. You can use the commands in the table below to replace as requested by tech support colleagues)
  - 3) Input: *outputOpen*
- 7. Common print commands for H7, H8 devices.

ANPR basic information	setDebug -1 7 -d 111 -m ROAD_TRAFFIC
General module	setDebug -17 -d 111 -m EDA_UTILITY
SDK Upload Center	setDebug -17 -d 111 -m EDA_UPLOADER
Alarm output	setDebug -17 -d 111 -m EDA_ALARM_OUT
HTTP listening	setDebug -17 -d 111 -m EDA_HTTP_LISTEN
FTP	setDebug -17 –d 111 –m EDA_FTP
Capture	setDebug -17 -d 111 -m EDA_CAPTURE
Storage	setDebug -17 -d 111 -m EDA_STORAGE
webSocket	setDebug -17 –d 111 –m EDA_WS
Mail linkage module	setDebug -17 -d 111 -m EDA_EMAIL
Alarm host	setDebug -17 –d 111 –m EDA_HOST
ISUP linkage module	setDebug -1 7 –d 111 –m EDA_ISUP
Wiegand	setDebug -1 7 –d 111 –m IPC

8. Common print commands for R3, H3 devices.

setDebug -1 7 –d 111 –m alarm\_exp setDebug -1 7 –d 111 –m dsp setDebug -1 7 –d 111 –m sdkcmd setDebug -1 7 –d 111 –m all

#### 1.2 POS video

Please collect POS video while collecting print, if you are not sure whether the POS information can be parsed, you can play the collected video first with VSplayer for test. If you see a line of small words beside the license plate, it means that the POS information is released successfully





#### 1.2.1 H3 + Web Record

#### A. Operation 1.

Control login, in the Configuration - Local - Play parameters, *Rule information* and *POS information overlay* Click enable

#### B. Operation 2.

- 1. SSH or serial port login device; PSH unlocking device;
- 2. Input command: *setRtpLen 7988* (note the space in the middle of the command, as well as the following commands)
- 3. reboot device:

#### C. Operation 3.

- 1. SSH or serial port login device; PSH unlocking device;
- 2. Confirm RtpLen size: Enter *getRtpLen* If the return value is 7988, it means that the rtplen of the device is correct. Otherwise, operate according to **operation 2** again.
- 3. Let go of intelligent printing of road monitoring: *dsp\_debug -setPrtLevel HSSS DBG* (*Note that the horizontal bar in the middle of the command is in lower case*)
- Release algorithm POS information, to record POS video: dsp\_debug setVtsPosFlag 1 At this time, the target box, DSP POS information algorithm POS information will open.
- 5. Then input *outputOpen* Record the log and the control starts recording

#### **1.2.2 H5/H7 + Web Record**

The H5/H7 platform is relatively simple to operate due to the integration of a new sub-packaging library.

- 1. Log in to the web, in the *Configuration-Local-Live View Parameters*, Enable the *Rules* and *Display POS Information*.
- 2. SSH or serial port login device; PSH unlock device;
- Input: dsp\_debug -setVtsPosFlag 1 (Note: underline); At this time, the target box, DSP POS information, and algorithm POS information will be turned on

![](_page_10_Picture_0.jpeg)

4. Web click to start recording

#### 1.2.3 H8 + Web Record

- Download SDK Demo via following FTP link: FTP path: /01 IPC/13 Troubleshooting/带 POS 信息英文版 SDK Demo
- 2. Log in to the web, in the *Configuration Local Live View Parameters*, Enable the *Rules* and *Display POS Information*.
- 3. Add the camera on SDK Demo,

💑 ClientDemo			- 🗆 X
- Version Info build 20210621 HCINetSDK V6. 1. 7. 30 PlayCtrl V 7. 3. 9. 56	Config	Add Device Exit	
		Device Address 10.9.96.81 Port 8000 Username admin Password ******* Login Mode Pirvate  HTTP(S) HTTP SDKTLSVerifyMode no	PTZ Up Left Right Down - Zoom + - Focus + + Iris -
_		Get IP of Device on DDNS     Get IP       DDNS Address     vvvvv.hiddns.com     DDNS Port     80       Device Serial Number     E0120110526CCRR403594603     0       Device Name/Alias     (IPserver use device name ,hiDDNS use alias)	PTZ Speed 1  Preset  T Call Setup  PTZ Sequence  T Call Setup Del  PTZ Pattern
		Get IP of Device on HCDDNS     Image: Second S	ID 1 V Start Stop Delete Delete all Tour Track stop PTZ Park action Enable manual Track Tvoe
	Play Time 21-10-12 18:11 21-10-12 18:11	Proxy server no use proxy  Add Cancel Activate Error Info err[0:No e err[0:No e	Brightness Contrast Saturation Hue

4. Enable POS info overlay:

![](_page_11_Picture_0.jpeg)

💑 ClientDemo	E C	$\times$
Version Info build 20210621 HCNetSDK V6. 1.7.30 PlayCtrl V7.3.9.56	Config Preview Playback Management Others Product Related Exit	
□         Device Tree(Right Click t           ■         10.9.96.15           ■         10.9.96.127           ■         10.9.96.153           ■         10.9.96.153           ■         10.9.96.153           ■         10.9.96.153           ■         10.18.99.48           ■         10.18.99.48           ■         10.18.99.48           ■         10.18.99.48           ■         10.18.99.48	VCA       Alarm Host       DVR/NVR/DVS       CVR       Decode CFG       IPC/IPD CFG       ITC CFG       ACS       VIS       DH         Configure       2         CCD       IPC Special       IPC Special Ex       CameraSetUpCrg       IPC File Export         PTZ Socpe       SMD       Device Server       PTZ Ctrl CFG       R01	
10.9.96.26 	Fitheye         Stream Attach Info         Wireless Dial         Smart Storage         Three Dim PTZ           Vehicle Recog         OIS Clg         Pos info         X	
⊡         10.9.96.42           ⊡         10.9.97.34           ⊡         10.9.96.61           ⊡         10.41.30.5	Correct table     Eagle Cable Prc       Thormal Imaging Cig     Soft Service       storage server test     security cig file exit	
⊞ № 10.9.96.40 ⊟ ∰ 10.65.213.23 ⊡ ∰ Camera1	File Upload Download     FTP Log Uploa       POS Into Overlap     RideEnanble         RideEnanble     PantsTypeEnanble	
	Alarm - SexEnanble SleeveEnanble HeightEnanble AgeEnanble	
	GET GET	

5. Record the video on the camera's web page. The directory of the recorded file can be change in [Configuration]-[Local]-[Record File Setting]. It's recommended to run the browser as administrator.

![](_page_11_Picture_3.jpeg)

#### 1.2.4 (H3/H5/H7) + SD card recording

SD card video because there is no packaging problem, so the operation is relatively simple

- 1. Control login, in the Configuration Local Play parameters, *Rule information* and *POS information overlay* Click enable
- 2. SSH or serial port login device; PSH unlocking device;
- 3. Release the POS information of the algorithm, in order to record POS Video: *dsp\_debug* -*setVtsPosFlag 1*

At this time, the target box, DSP POS information algorithm POS information will open.

![](_page_12_Picture_0.jpeg)

4. SD card starts record video

#### 1.2.5 H8 + SD card recording

- 1. Refer to step **1.2.3** 1-4
- 2. SD card starts record video

# 2.Installation requirements

#### **Terminology:**

License plate height: The character height. The number of pixels between the upper and lower bounds of the main characters in the license plate;

## 2.1 Entrance / exit

- 1. The camera cannot be installed behind the barrier gate. It needs to be installed in front of the barrier gate next to the barrier gate, or the camera needs to be installed in the side of the barrier gate.
- 2. Camera installation height: the height is about 1.6-2m. The depression angle should not be too small, and should be greater than 30 ° to avoid direct light from the head light.
- 3. Lane width: Less than 3.5m

![](_page_12_Picture_12.jpeg)

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

![](_page_12_Picture_14.jpeg)

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

![](_page_12_Picture_16.jpeg)

#### 2.1.1 Entrance / exit -Standard installation

Key points of standard installation at the entrance and exit:

- 1. the installation height is 1.6m-2m (not too high or too low);
- 2. The deflection angle of the camera is about 30  $^{\circ}$ ;

![](_page_13_Picture_0.jpeg)

3. Only 1 lane can be configured, width less than 3.5m.

![](_page_13_Picture_2.jpeg)

Requirement:

- 1. The imaging is normal, and the license plate is clear and recognizable
- 2. The angle is normal, the vehicle queue is exposed one by one, and there is no driving route that leads to vehicle occlusion and intersection problems
- 3. The field of view is normal, and the vehicle is completely exposed, which does not affect the model and brand effect of the vehicle.
- 4. The scale is normal, and the license plate needs to meet the character height greater than 16 pixels within the capture range

#### 2.2 City street

- 1. When supporting two lanes: the camera needs to be installed in the middle of the gantry; However, when the speed exceeds 60km/h, the lane line should be configured as a single lane.
- 2. Horizontal angle should not exceed 30°.
- 3. Camera installation height: More than 6m. Horizontal distance between camera and vehicle: 15-20m, and Vertical angle should not exceed 30°.
- 4. Lane width: Single lane less than 4m

![](_page_14_Picture_0.jpeg)

![](_page_14_Figure_1.jpeg)

5. The camera can also be installed on the side of the gantry. It is necessary to ensure that the camera field of vision is not blocked. The camera installation site shall not be more than 1m away from the road.

![](_page_14_Picture_3.jpeg)

#### 2.2.1 City street -Standard installation

Key points of standard installation at middle of gantry:

- 1. Installation height  $\ge$  6m; The camera pitch angle is about 30 °;
- 2. The vision is wide, and the body of large vehicles should be completely exposed

![](_page_15_Picture_0.jpeg)

![](_page_15_Picture_1.jpeg)

Requirement:

- 1. The imaging is normal, and the license plate is clear and recognizable
- 2. The angle is normal, the vehicle attitude is correct, and the vehicle brand and model can be tested
- 3. The field of view is normal, and the vehicle is completely exposed, which does not affect the model and brand effect of the vehicle.
- 4. The scale is normal, and the license plate meets the requirements that the character height is greater than 16 pixels within the capture range

Key points of standard installation at side of gantry

- 1. Installation height >6m;
- 2. The camera depression angle is about 30 °; Camera deflection angle <30 °;
- 3. The body of large vehicles should be completely exposed

![](_page_15_Picture_11.jpeg)

Requirement:

![](_page_16_Picture_0.jpeg)

- 1. The imaging is normal, and the license plate is clear and recognizable
- 2. The angle is normal, the camera installation height is greater than 6m, and the inclination angle is less than 30 degrees
- 3. The field of view is normal, and the vehicle is completely exposed, which does not affect the model and brand effect of the vehicle.
- 4. The scale is normal, and the license plate meets the requirements that the character height is greater than 16 pixels within the capture range

## **3.**Configuration

4. Go to Image>Display Settings>Day/Night Switch and set the Day/Night Switch to the

"Triggered by Video";

^Day/Night Switch

Day/Night Switch	Triggered by Video	~
Sensitivity	4	$\sim$
Filtering Time	о <b>———</b> [	5
Smart Supplement Light	OFF	$\sim$
Supplement Light Mode	IRlight Supplement Light	$\sim$
Light Brightness Control	Auto	$\sim$

5. Go to Image Display Settings to change Exposure Time and Gain according to the standard

below (the Gain control can be operated only after step 1 is finished ):

Speed < 30km/h	— Exposure Time : 1/150-1/200;
30km/h < Speed < 60kn	n/h — Exposure Time : 1/250-1/500;
60km/h < Speed	— Exposure Time : 1/500-1/1000

Gain : Generally set as **20** and we usually don't change this.

![](_page_17_Picture_0.jpeg)

HIKVISION®	Live View	Playback	Picture	Application	Configuration	Smart Display
Local	Display Settings	OSD Settings	Privacy Mask	Picture Overlay Ima	age Parameters Switch	
System	Scene	Nor	mal	~		
Q. Video/Audio	43/25/2821 The 18:56;52		Sa .		✓ Image Adjustme	ent
🔝 Image			C.D	10.00 × 1.00	A Exposure Settin     A	lgs
Event	-				Auto Iris Level	Auto
Storage			- Aller -		Exposure Time	1/300 🗸
Counting		E A		A P	Gain	20
		4	1-1		✓ Focus	
			B	S A L	~ Day/Night Switc	h
		1	- Li	1	~ Backlight Settin	gs
				Cantra Of	~ White Balance	
				6 0	Vinage Enhancer	rt
					- Video Adjusune - Other	

6. Make sure the Focus Mode is semi-auto.

![](_page_17_Picture_3.jpeg)

7. If the image effect is not satisfied:

getting better.

a. Choose the pre-settings Scene and the referring using scenario to try whether the effect is

Display Settings	OSD Settings	Privacy Mask	Picture Overlay				
Scene	Non Bac Fron Low	mal k light tt light Illumination					
Te	Cus	tom1 tom2					

b. WDR or HLC will make the image easier to perform the "ghost image" or detail lost. So if the strong light can be solved by the exposure and gain settings, we don't recommend you

![](_page_18_Picture_0.jpeg)

enable these to counter strong lights.

A Backlight Settings

BLC Area	OFF	~
WDR	OFF	~
HLC	OFF	~

- VWhite Balance
- c. Double check whether the installation angle is smaller than 30° and the installation height satisfy the full observation of full scale of vehicle.
- 8. Go to **Picture** to choose the text overlay on the picture as the scenario needs;

HIK	VISION®	Live View Pla	ayback Pictu	ure Applicatio	on Configurati	on Smart Di	splay	
Q	Local	Detection Configuration	Picture Camera	Advanced Blocklis	st & Allowlist			
	System	<ul> <li>Picture Quality</li> </ul>		80				
Ð	Network	O Picture Size	100	Kb				
Q.	Video/Audio	License Plate Enha	ancement					
1	Image	Level		50				
Ë	Event	Overlay						
B	Storage	Font Color		<b>e</b>				
5	Road Traffic	Background Color						
~7	Counting	Text Overlay						
		Device No.	Capture Time	Vehicle Type	Moving Direction	Plate No.	Camera Info.	
		Camera No.	Validity	✓ Vehicle Color	Vehicle Brand			
			Туре			Sorting	J	
			Camera No.			÷ 4	,	
			Camera Info.			÷ 4	,	
			Device No.			+ +	,	
			Capture Time			<b>↑</b> ↓	,	
			Plate No.			+ +	,	
			Vehicle Color			<b>↑</b> ↓	•	
			Vehicle Type			↑ ↓	, ,	
			Vehicle Brand			<b>↑</b> ↓		
		FTP Picture Name						
		<ul> <li>Default</li> </ul>	O Custom					
		Example: IP_Chan	nel NoTime_Type.jpg					

#### 9. 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

![](_page_19_Picture_0.jpeg)

of the object or license plate can be captured

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

10. Go to **Road Traffic** to select lane numbers  $(1 \sim 2)$  and traffic mode;

HII	VISION	Live View	Playback	Picture	Configuratio	n
Q	Local	Detection Configur	ation Picture	Camera	Blacklist & Whitelist	Real-time LPR Result
	System	Detection Type	Vehicle	Detection	▼	
Ø	Network	🕑 Enable				
Q.	Video/Audio	Area Settings	Arming Schedul	e and Linkag	e Method	
1	Image	to an alternal				
圁	Event	11-06-20	17 Mon 15:	10:00		
6	Storage	Magazia -	0	DA		
Fa	Road Traffic			VIL	L'ane ne 2	
<u>.11</u>	Open Platform	Total Number of L Plate Mode Select Mode	Detection Area Forder Lanes 2 Large Entranc	e/Exit		

#### Note:

- Blue Detection Line: Mainly used for Entrance/Exit with a purpose of improving the capture efficiency. The line is the trigger line of license plate and we highly recommend you put it middle-lower of the screen to make sure the car can pass it with the plate and the full scale.
- Detect Area: The Actual detect area is the 2 yellow lane and the square they seized.
- Entrance & Exit: It means the camera is set to monitor the Entrance & Exit and will get a better performance at this scenario. Also, Entrance & Exit mode only supports 1 lane.
- **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. City Street can support 2 lanes.

- Alarm Input: It means the input alarm will trigger a license plate capture and recognition action.
- Detection Mode: Vehicle priority and License plate & Vehicle mode:

Vehicle priority mode: the classic mode of the ANPR camera, it will detect the vehicle scale first, then catch the plate out to make the analysis. It will get the better accuracy but sometimes it will lose some results in the not-satisfied installation scenario.

License plate & Vehicle mode: this mode will allow the ANPR camera to capture the vehicle plate simultaneously with the scale of vehicle is detected. This mode will greatly improve the recognition at some not-satisfied installation scenario.

So we recommend you to use **Vehicle priority mode first** if there is no issues on installation and filling lights. After the issues of plate recognition is carried out, you can **switch the mode to License plate & Vehicle mode.** 

 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, so you need to set them one by one;

	Local	Enable	Э													
÷	Local	Area Se	ettings	Armir	ng Sch	edule a	nd Linka	ige Me	ethod	1						
	System			<u> </u>												
Ð	Network	White L	.ist E	Black List	Ot	her List										
Q. •	Video/Audio	Armin	g Sche	dule												
14	Image	× D	elete	前 De	lete A	I										
Ë	Event		0	2	4	6	8		10	12	14	16	18	20	22	24
	Storage	Mon														
Rà	Road Traffic	Tue	U	2	4	6	8		10	12	14	16	18	20	22	24
		Wed	0	2	4	6	8		10	12	14	16	18	20	22	24
		Weu	0	2	4	6	8		10	12	14	16	18	20	22	24
		Thu			Ì	1 Î			10		1	10	10		LL	21
		Fri	0	2	4	6	8		10	12	14	16	18	20	22	24
		Sat	0	2	4	6	8		10	12	14	16	18	20	22	24
		Sun	0	2	4	6	8		10	12	14	16	18	20	22	24

12. 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. We highly recommand you choose All if there is no special use;

![](_page_21_Picture_0.jpeg)

Linkage Method						
Direction <ul> <li>All</li> <li>Forward</li> <li>Reverse</li> </ul>						
✓ Normal Linkage	Trigger Alarm Output					
☑ Notify Surveillance Center	✓ A->1					
Upload to FTP/Memory Card/						

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

Linkage Method							
Direction <ul> <li>All</li> <li>Forward</li> <li>Reverse</li> </ul>							
✓ Normal Linkage	Trigger Alarm Output						
✓ Notify Surveillance Center	✓ A->1						
Upload to FTP/Memory Card/							

14. 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;

HI	KVISION	Live View	Playback	Picture	Configurati	ion						
Ţ	Local	Detection Co	nfiguration Picture	Camera Blac	klist & Whitelist	Real-time LPR Result						
	System	Import E	Blacklist & Whitelist									
Ð	Network	Blacklist &	Whitelist File			Browse Import	1					
<u>Q.</u>	Video/Audio	Status										
1	Image	Note: You	Note: You can set at most 2048 license plates in whitelist and blacklist in total.									
圁	Event	Export E	Blacklist & Whitelist									
₿	Storage	Export										
Rà	Road Traffic	Blacklis	t & Whitelist Content									
<u>.ul</u>	Open Platform	No.	Plate No.		Туре	Creation Time						

The template looks like this:

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

included.)

D8			-	:	×	$\checkmark$	$f_x$
		А			в		с
1	No.			Plate	Num		Group(0 black list, 1 white list)
2							
3							
4							
5							

# 4. Imaging requirements

- 1. The license plate in the field of view must be clear and discernible without motion blur;
- 2. The size of the license plate shall be moderate, and it shall not be too large or too small, so as to avoid blurred strokes and overexposure of the license plate.
- 3. You can check the number of pixels of license plate characters in the drawing software of windows. The height of main characters is recommended to be between 20-40 pixels.
- 4. If it is also necessary to identify sub fields at the same time, the height of the sub field shall be at least 16 pixels; For license plates with a large number of single line characters, the length of the main field shall not exceed 200 pixels

![](_page_22_Picture_6.jpeg)

5. The inclination angle of the license plate is less than +/-5°; Now it is OK not to exceed +/-15° (not necessary)

![](_page_22_Picture_8.jpeg)

6. Check whether the lens is in manual light exposure mode, and the focusing effect is the best.

# 5. Problem analysis

## 5.1 Error identification

- 1. Some license plates were missed
- 2. Some license plate characters are incorrectly recognized
- 3. Inaccurate judgment of license plate driving direction

Analysis and solution:

#### 1. Missed capture

Improper installation (adjusting the installation height / angle),

Focus too far or too close (adjust focus),

The image is not clear, and the image is overexposed (adjusting parameters)

License plate detection parameters (license plate recognition mode (mixed traffic, entrances and exits, urban roads, alarm input), check snap lines, number of lanes, license recognition area)

#### 2. There is a snapshot, but it is not recognized

The pixel size of the license plate does not meet the requirements (installation height, angle, gain, shutter, WDR...);

The license plate is not clear (adjust the image parameters and focal length);

License plate detection parameters (check the snap line, the number of lanes, and the license recognition area)

#### If it still cannot be solved:

- 1. Software version number /dsp version number, customization order number / customization responsible project manager,
- 2. Complete screenshots of image parameters and screenshots of license plate setting parameters
- 3. Scene map (1 license plate map, 1 equipment erection scene map), erection height, angle, formal / side installation

After checking the above conditions, provide all printing (including DSP printing) of the camera from Startup to problem recurrence, and provide POS video screen.

## 5.2 Dark background

![](_page_23_Picture_16.jpeg)

**Analysis and solution:** this problem is not a product problem, but an existing design mechanism. The camera usage scene demand of license plate recognition is license plate recognition, and scene monitoring is an additional feature, so the configuration of camera image effect is to ensure the license plate recognition effect as the priority. For the scene where the license plate recognition effect is affected by too bright lights, the design scheme is to ensure the capture effect of the license plate by limiting the shutter and gain. The limiting gain is to make the license plate not exposed and the font clearly visible. Therefore, the shutter and gain restrictions may affect the image brightness of the background. The insufficient background brightness in this scenario is consistent with the

![](_page_24_Picture_0.jpeg)

product design specifications.

## **5.3** Incomplete recognition

![](_page_24_Figure_3.jpeg)

![](_page_24_Figure_4.jpeg)

#### Analysis and solution:

The license plate is correctly identified, but the license plate matting is incomplete. Check the erection

Configuration parameters, pixels of the character part of the license plate in the large picture of the vehicle

When the above checks are normal, POS videos and POS pictures can be provided for analysis

## 5.4 Block and allow list

- 1. The blacklist cannot be found in the save path after exporting
- 2. Failed to import / add black and white list of license plate camera

HII	VISION	U	ve Viev	N	Playback	k Pictur	e Configu	uration				
	Local		Detectio	n Configural	ion Pie	cture Camera	Blacklist & Whitel	ist Real-	time LPR Result			
Ē	System					R-4						
0	Network		Im	port Blackli	st & White	list	405 75 345 430	2010071	000000 P		Import	
.0.	Video/Audio		Black	nst & vvniteli	st File	Incorrect file form	st_105.75.215.120	_20160713	D005507 Dr0	wse	import	
50 Ea	Image		Status Status									
(=)	Event		Note: You can set at most 10,000 license plates in whitelist and blacklist in total.									
	Storage		Export Blacklist & Whitelist									
	Road Traffic			sport								
1			Bl	acklist & Wi	hitelist Cor	ntent						
			No	Pl	ate No.	Туре	Creati	on Time		Expiry (	Date	
LIK		ivo Vie	3447	Playba	ck	Dicture	Application C	onfiguration	Smart Disn	Jav	VCA	
mix		146 41		Flayba	UK.	Picture		omgulation	Sinan Disp	nay	TUA	
63	VCA Resource	Detect	ion Conf	iguration F	Picture A	dvanced Parameters Co	onfiguration BlockI	ist & Allowlis	L			
	General VCA Settings	h	mport Bl	ocklist & Allo	wlist							
	Road Traffic	Bloc	:klist & A	llowlist File				Bro	wse Import	Ł		
	Road Traffic	Status Note: You can set at most 10,000 license plates in blocklist & allowlist in total.										
		E	xport Blocklist & Allowlist									
		1	Export									
		E	locklist & Allowlist Content									
		F	ilter by	All Types	1	<ul> <li>keywords</li> </ul>			Search			
			No.	Plate No.	Туре	Creation Time	Effictive Start Date	Effictive Er	nd Date Wiega	and CardID	Operation	
			1	A12345	Allowiist	2022-10-27 15:48:57	2022-10-27	2022-1	0-27		Edit	
									Total 1 Item	(S) << <	1/1 > >	>

Analysis and solution: when importing the black-and-white list into the license plate recognition camera, you will encounter the problem of prompt incorrect file format. In this case, it is often due to the problem of the imported black-and-white list format; Another reason may be that the customer creates the black-and-white list template himself, resulting in the format of the imported black-and-white list cannot match. In this case, it is necessary to explain clearly to the customer that when using the import and export black-and-white list function, we must export the template from the device side, and then fill in the license plate information.

#### 3. Black and white list linkage external barrier or alarm failure

![](_page_26_Picture_0.jpeg)

	HIKVISION	Live View	Playback	Picture	Application	Confic	uration				
	Q Local	Detection Co	infiguration Picture	Camera Blac	klist & Whitelist	Real-time LPR	R Result				
	System System Network System Video/Audio Image Event Event	Enable     Area Sets     White List     Arming	[V] Enable     Arming Schedule and Linkage Method       Area Settings     Arming Schedule and Linkage Method       Whe List     Black List       Other List     Coner List								
ł	Storage	X Dek	io 📋 Delete All						_		
1	Counting	0 Mon	2 4	6 8 10	12 14	16 1	18 20	22 24			
	E county	0 Tue	. 2 . 4 .	6 8 10	12 14	16 1	18 20	22 24			
		0 Wed	2 4	6 8 10	12 14	16 1	18 20	22 24			
		0 Thu	2 4	6 8 10	12 14	16 1	18 20	22 24			
		Pri	. 2 . 4 .	6 8 10	12 14	16 1	18 20	22 24			
		0 Sat	2 4	6 8 10	12 14	16 1	18 20	22 24			
		0 Sun	2 4	6 8 10	12 14	16 1	18 20	22 24			
		Direction	Method All  Forward  I	Reverse							
		Norma	I Linkage	Trigger Alarm	n Output						
		Votify	Surveillance Center	₩ A>1							

- 1. Confirm whether the deployment time and linkage options of the three lists (black / White / other lists) are configured.
- 2. If it is confirmed that there is no problem with the configuration of the equipment, check whether the wiring of the external gateway and the camera is correct

## 5.5 Duplicated license plates

Implemented by algorithm,

it is divided into two processing methods:

- 1. The same adjacent license plate
- 2. Same but not adjacent license plates

H3: 5.5.62 program: do not filter the same and non adjacent license plates,

Filter the same adjacent license plates for 4 minutes (frame rate 25FPS), which is on by default

H3: 5.6.10 program: filter in both cases, 4 minutes, on by default

H7, H8: the web side supports 0-4 minutes of the same brand filtering configuration

Remove Duplicated License Plates

![](_page_26_Picture_14.jpeg)

![](_page_27_Picture_0.jpeg)

![](_page_27_Picture_1.jpeg)

Same adjacent license plate

![](_page_27_Picture_3.jpeg)

Same but not adjacent license plate

## 5.6 Wiegand

- 1. R3 and H3 cannot distinguish whether the current camera supports Wiegand function by camera name,
- 2. H7 and H8 cameras can use whether the suffix of the camera name has the letter "Y". If the suffix has the letter "Y", the camera supports Wiegand
- 3. Wiegand wiring reference Wiegand documentation
- 4. H7 and H8 baselines support Wiegand; R3, H3 customized support Wiegand
- 5. Release Wiegand print (provide print log for RD):

Ç.	local	setDebug -1 7 Detection Configuratio	n Picture	IPC Camera	Blocklist &	Allowlist	Real-time LPR Result	Wiegand
	System Network /ideo/Audio	Enable Wiegand Type	Card ID SHA-1 2 Hik 34bi	26bit 6bit t			H3	
HIK	VISION®	Live View	Playback	Pic	ture	Applic	ation Configu	iration Si
Q E	Local System	Basic Information	Time Settings	DST	RS-232	RS-485	metadata Settings	Wiegand
1	Maintenance Security User Management	Protocol	SHA- Hik 3- NEW	1 26bit 4bit G 72bit				
© % ⊡	Network Video/Audio Image Event			H8	Devi	ce		
	Storage							

## 5.7 Print information

- 1. H7 and H8 use the new framework, which is different from the previous R3, H3 and other platforms when collecting and printing,
- 2. Select and release the corresponding print according to the module in question:

Common print commands for H7, H8 devices.

ANPR basic information	setDebug -17 -d 111 -m ROAD_TRAFFIC
General module	setDebug -17 -d 111 -m EDA_UTILITY
SDK Upload Center	setDebug -17 -d 111 -m EDA_UPLOADER
Alarm output	setDebug -17 -d 111 -m EDA_ALARM_OUT
HTTP listening	setDebug -1 7 –d 111 –m EDA_HTTP_LISTEN
FTP	setDebug -1 7 –d 111 –m EDA_FTP
Capture	setDebug -1 7 –d 111 –m EDA_CAPTURE
Storage	setDebug -1 7 –d 111 –m EDA_STORAGE
webSocket	setDebug -1 7 –d 111 –m EDA_WS
Mail linkage module	setDebug -1 7 –d 111 –m EDA_EMAIL
Alarm host	setDebug -1 7 –d 111 –m EDA_HOST
ISUP linkage module	setDebug -1 7 –d 111 –m EDA_ISUP
Wiegand	setDebug -1 7 –d 111 –m IPC

Common print commands for R3, H3 devices.

setDebug -1 7 -d 111 -m alarm\_exp

setDebug -l 7 –d 111 –m dsp

setDebug -l 7 -d 111 -m sdkcmd

setDebug -l 7 –d 111 –m all

## 6. Problem cases

#### 6.1 Prohibit installation scenario

#### 6.1.1 Large deflection angle

![](_page_29_Picture_4.jpeg)

Large vehicle deflection angle and depression angle greater than 30 degrees will lead to:

1. When the vehicle approaches the horizontal position, the vehicle target detection effect becomes worse, resulting in the target can not be continuously tracked, resulting in false capture

2. The vehicle attitude is poor, resulting in a large deflection angle of the license plate, and it is difficult for the license plate to have a stable license recognition result on the driving track, resulting in the final license recognition error

3. Poor vehicle attitude, non-standard bayonet entrance and exit scene, wrong judgment of vehicle type, vehicle brand and vehicle color.

#### 6.1.2 Open scene

Non standard cases: there is no clear lane line, the vehicle driving direction is arbitrary or even conflict, and one camera undertakes the task of multiple cameras

![](_page_30_Picture_1.jpeg)

![](_page_30_Picture_2.jpeg)

Problem - vehicles with multiple directions in a scene:

1. Large vehicle deflection angle: poor vehicle detection effect, affecting vehicle attributes / vehicle capture

2. The side of the car body drives at a large angle, which is easy to make mistakes

3. The license plate recognition area is not easy to set, and the license plate may be incomplete

4. The characters on the side body are easy to be misidentified

#### 6.1.3 Far from the target

![](_page_30_Picture_9.jpeg)

![](_page_30_Picture_10.jpeg)

The camera is too far away from the vehicle / license plate: the size of the license plate does not meet the requirements (the minimum character height is 16 pixels)

#### 6.1.4 Far behind the barrier

![](_page_30_Picture_13.jpeg)

![](_page_31_Picture_1.jpeg)

The configuration parameters shown in the figure above can recognize the license plate, but the problem is that when the vehicle stops in front of the pole, the license plate is still in the recognition area. The algorithm judges that the license plate does not leave the recognition area, and will not give the upload signal. When the uplink signal is not received, the pole will not be lifted. Erection improvement:

All cameras at the entrance and exit must be erected at or in front of the cross bar! It cannot be erected behind the cross bar. The erection height shall be more than 1.5m with a certain depression angle.

#### 6.2 Not recommended scenario

#### 6.2.1 The body is not fully exposed

It can make ANPR, but the effect of vehicle type and other attributes is poor The driving direction of the vehicle is fixed, so license plate recognition can be done, but the body cannot be completely exposed, so if it is necessary to do vehicle type recognition, it cannot be met

![](_page_31_Picture_7.jpeg)

![](_page_32_Picture_0.jpeg)

![](_page_32_Picture_1.jpeg)

Problems:

- 1. The car body snapshot is incomplete, so it is impossible to make vehicle attributes
- 2. The installation height is low, and the license plate may block the snapshot

#### 6.2.2 Uncontrollable driving direction

#### It's barely feasible, and the capture will be affected

Non standard case: the angle and height are not a big problem, but the driving direction of the vehicle is uncontrollable

![](_page_32_Picture_8.jpeg)

Problems:

- 1. The license plate is blocked and captured by mistake
- 2. Being caught by mistake when the license plate is incomplete

![](_page_33_Picture_0.jpeg)