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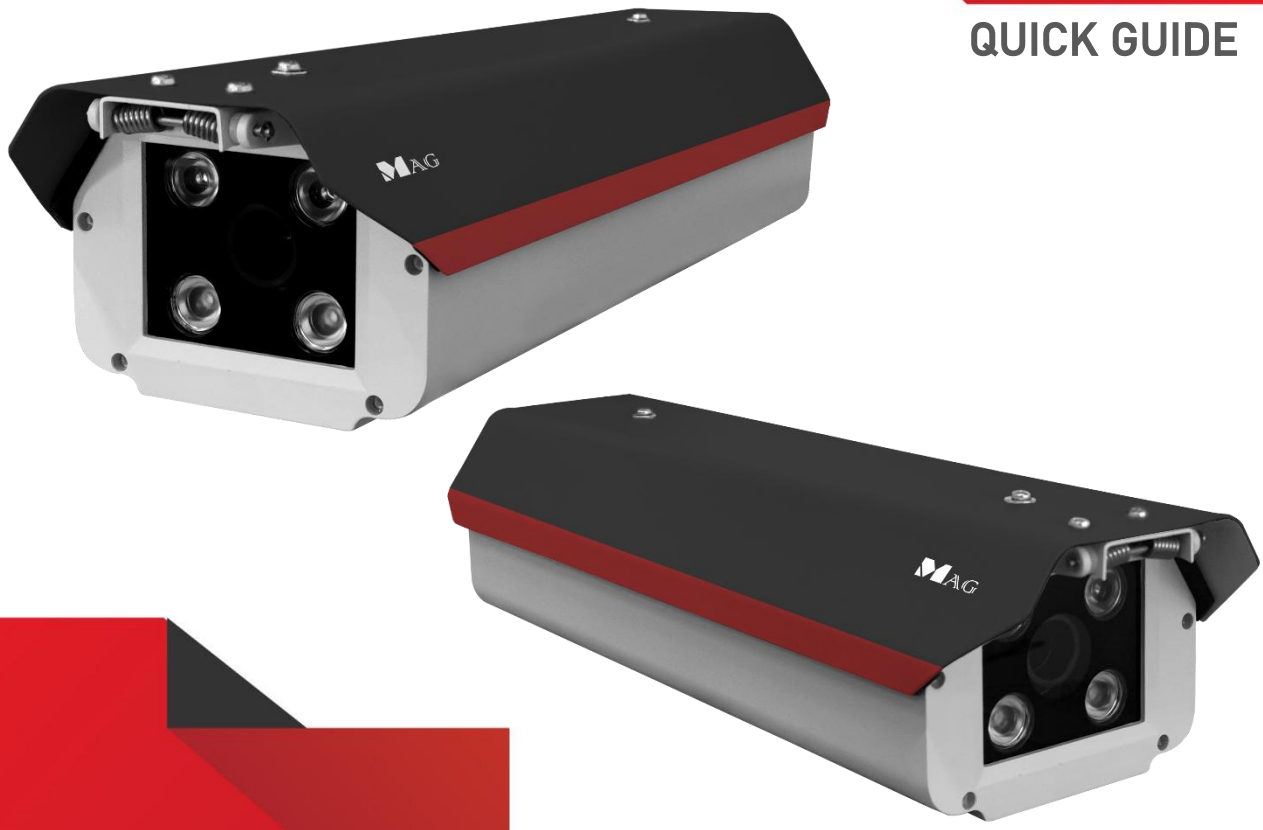
QUICK GUIDE



SNP131

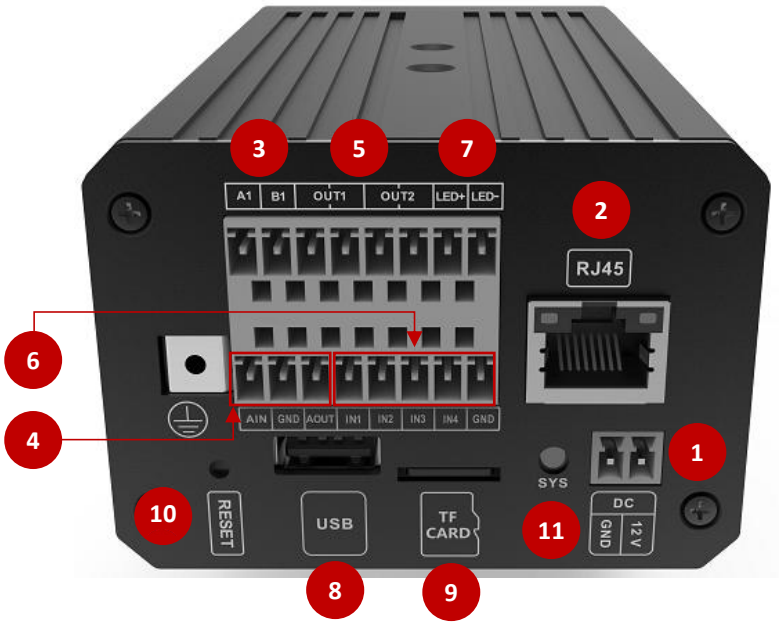
MAG License Plate Recognition

GOOD QUALITY & INNOVATION

EXPERT KNOWLEDGE & EXPERIENCE

EXCELLENCE SUPPORT & SERVICE

Device Interface Description



No.	Function	Label	Description
1	Power	DV12V；GND	Standard 12V/2A
2	Network Interface	RJ45/LAN	Support 10/100Mbps Ethernet transmission
3	Serial Port (RS485)	A1/B1	Connect to LED Display
4	Audio	AIN\AOUT\GND	Audio input /output.
5	IO Output (Alarm Out)	OUT1/OUT2	Can be used for barrier gate opening
6	IO Input (Alarm In)	IN1/2/3/4 /GND	Used for external signal trigger
7	Light Interface	LED+/LED-	Used to power & control LED Camera
8	USB Interface	USB	USB Type A interface
9	SD Card Slot	TF-CARD	SD card slot, maximum 128GB
10	Reset	RESET	Press for 5 to 10 seconds for a long time, and the equipment will fully restore to factory configuration
11	Indicator Light	SYS （green）	Flashing means the system is currently working properly, whereas continuous on or off means starting or abnormal

Equipment Installation

LPR Camera Installation

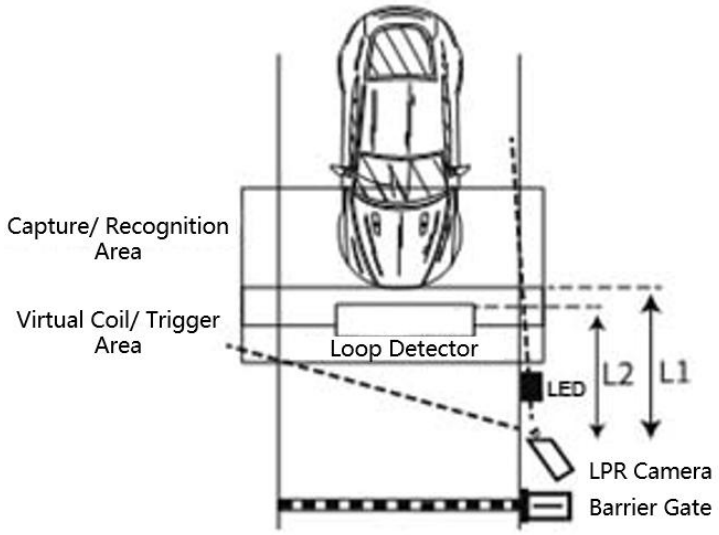


Fig. 1: Installation diagram of LPR Camera

Installation Requirements		Installation Height	
1、Install in front of the barrier gate 2、About 3-6 meters from the virtual coil, L1. 3、About 3-4 meters from loop detector, L2		- For frequent small car entry, the recommended height of camera is about 1.4m above the ground - For frequent large truck entry, the recommended height of camera is about 1.6m above the ground - The angle of camera installed is recommended to be between 15°and 40° and as far as possible.	
No.	Effective identification distance, D (m)	Recommended installation height, H (m)	Corresponding angle (degree)
1	3	1.4	~20°
2	4	1.5	~20°
3	5	1.6	~20°

LED Fill Light Installation

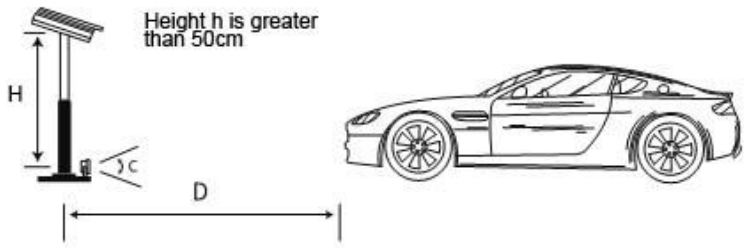


Fig. 2: Installation diagram of LED Fill Light

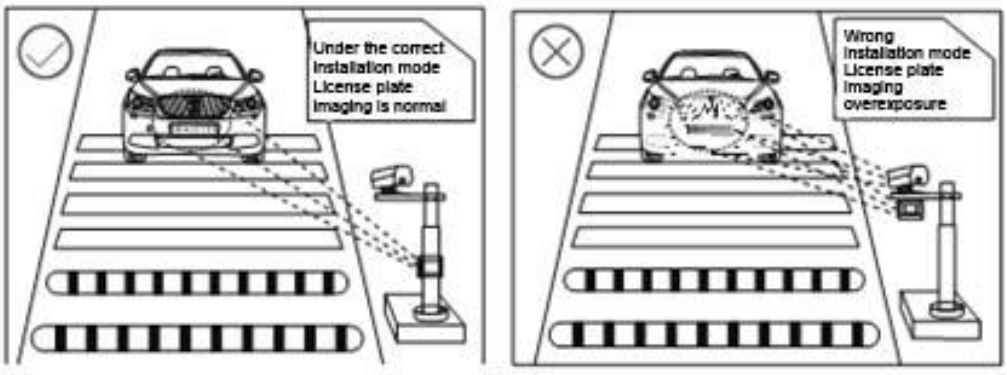


Fig. 3: Example of wrong installation of LED (overexposure)

Installation Requirements:

- Distance, D: The recommended distance between the fill light and license plate is more than 2m and less than 6m
- Angle, C: The fill light should be angled so that it illuminates the license plate in the recognition area (around 15° - 45°) and avoids overexposure
- Vertical Height, H: The fill light should be kept at a vertical distance of 0.5m – 0.7m away from the LPR camera

Typical Installation Scenario of LPR Camera

Ensure that car plate is kept close to horizontal line

Too large angle with horizontal line might lead to accuracy issues

Setting Up SNP131

1. The factory default IP configuration for SNP131 is **192.168.1.100 (username: admin, Password: admin)**

2. Before connecting to the camera, confirm whether the IP address of the current computer and the camera IP address are in the same network segment.

3. After powering up the LPR camera, open browser and input the IP address http://192.168.1.100 /

Fig. 4: Login Page

4. For first time setup using **Internet Explorer** browser, kindly install the plugin when the prompt pops up (not necessary for other browser types)

Fig. 5: Install plugin prompt (IE browser only)

5. Enter the default user name: admin, the default password admin, and click the login button to log in.

6. After logging in, the main interface is as shown below:

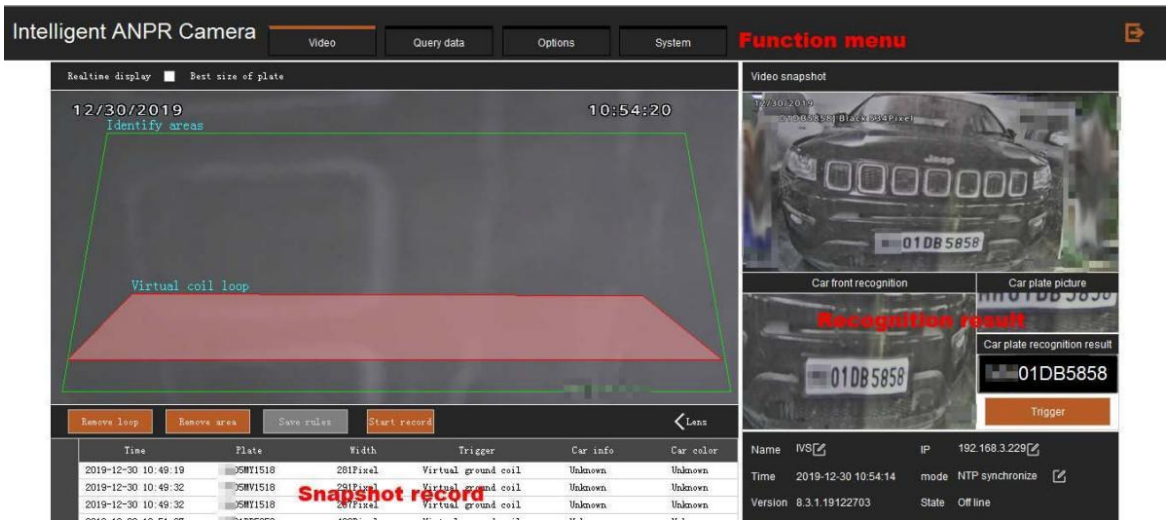


Fig. 6: Web Portal Main Page

7. In the real-time video display, the recognition area and virtual coil loop is marked by default.

8. To adjust both areas, use the red points on the vertex to adjust the shape and size of the recognition/identification area and the virtual coil loop area.

9. To add more red points for adjustment, double-click on the area to create a new red point.

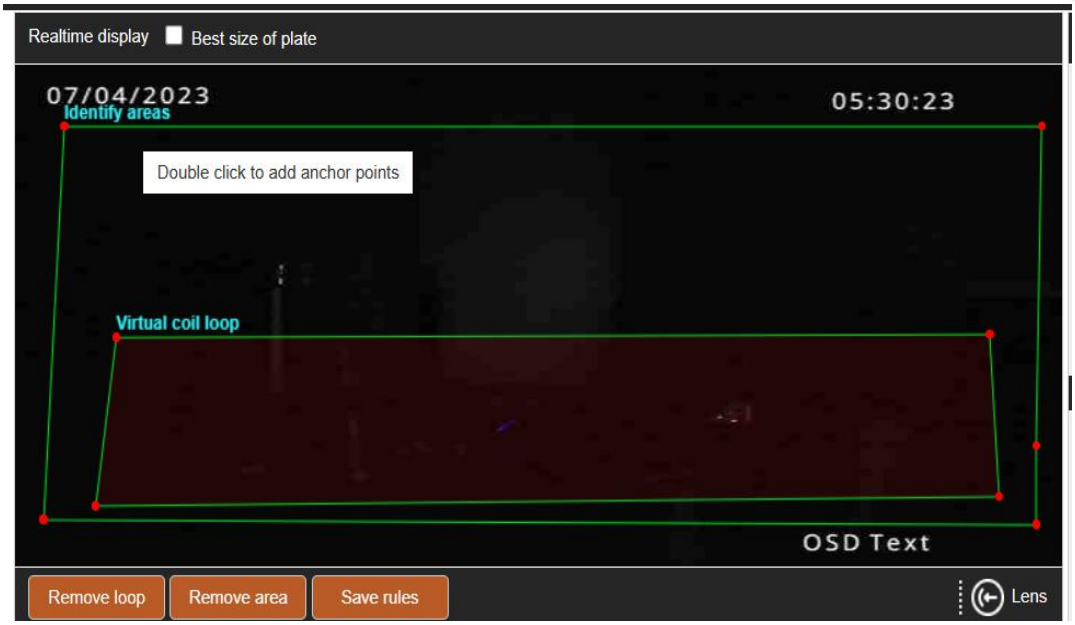


Fig. 7: Default Area Configuration of Recognition Area & Virtual Coil Loop

4. After completing the adjustment, click on “save rules” to save the configuration for both recognition area and virtual coil loop area.

5. To delete the drawn area, use the “remove loop” and “remove area” function to delete and redraw the areas

6. Use the Lens function to adjust the camera zoom according to site conditions.

Important Note:

Recognition/Identification Area: When the vehicle enters the identification area, it will start to identify and analyse the license plate;

Virtual Coil Loop: When the vehicle enters the virtual coil loop area (trigger area), the recognition result of the license plate will be sent.

Positioning of Virtual Coil Loop

1. When calibrating the recognition area and virtual coil loop area, you may separate the video screen into 3 segments. The Virtual Coil Loop should be positioned at the lower 3rd segment of the video height

2. Ensure that the left and right area of the Virtual Coil Loop is able to cover the car license plate.

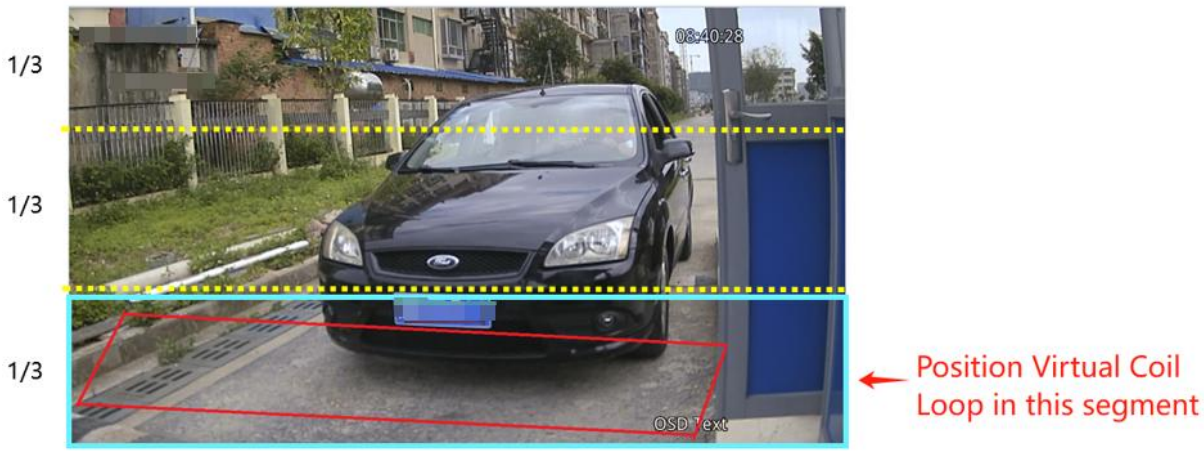


Fig. 8: Positioning of Virtual Coil Loop

Recognition Area Full Coverage

1. When calibrating the recognition area, make sure to include the effective range of movement of the license plate on the screen

Fig. 9: Recognition Area Adjustment according to Site

2. When calibrating the recognition area, ensure more area is included for the vehicle to gain more video streams and more recognition frames for better accuracy

Event Capture

1. After completing the LPR calibrations, incoming vehicle car plates will be captured automatically and the identified license plate number will be displayed on the right side

Fig. 10: Car Plate Identification Result

2. To manually trigger the car plate recognition, click on the “Trigger” button to manually capture a test image. The captured image will automatically display the close-up car image and the license plate, whereas the license plate number identified will be displayed on the right side.

3. Under the real-time display interface, there is a snapshot event history of all the car plates identified

Time	Plate	Width	Trigger	Car info	Car color
2019-12-30 10:49:19	[redacted]5MY1518	281Pixel	Virtual ground coil	Unknown	Unknown
2019-12-30 10:49:32	[redacted]5MV1518	291Pixel	Virtual ground coil	Unknown	Unknown
2019-12-30 10:49:32	[redacted]5MY1518	287Pixel	Virtual ground coil	Unknown	Unknown
2019-12-30 10:51:27	[redacted]1DB5858	483Pixel	Virtual ground coil	Unknown	Unknown
2019-12-30 10:51:54	[redacted]1DB5858	600Pixel	Virtual ground coil	Unknown	Unknown
2019-12-30 10:52:43	[redacted]1DB5858	534Pixel	Virtual ground coil	Unknown	Unknown

Fig. 11: Identified Car Plate Event Log

Device Settings

At the top of the interface, click on Options to enter the advanced setting menu as shown below:

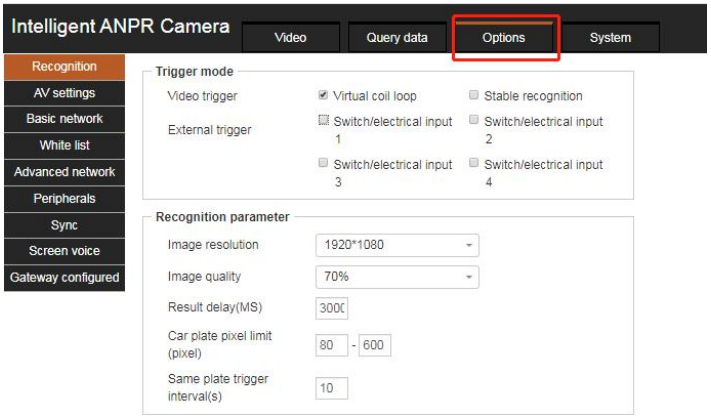


Fig. 11: Advance Setting Interface

Recognition/ Identification Setting

1. Use the Trigger Mode to switch between different types of identification trigger.

2. Recognition parameters can be used to change image resolution, image quality, result delay, car plate pixel limit and same plate trigger intervals.

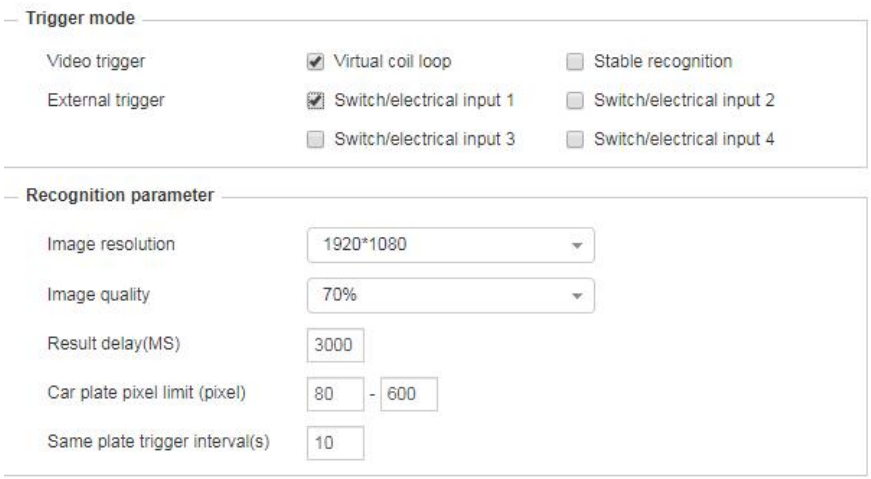


Fig. 12: Identification Setting Interface

Basic Network Settings

1. In the basic setting tab, you may configure the basic network settings as follows:

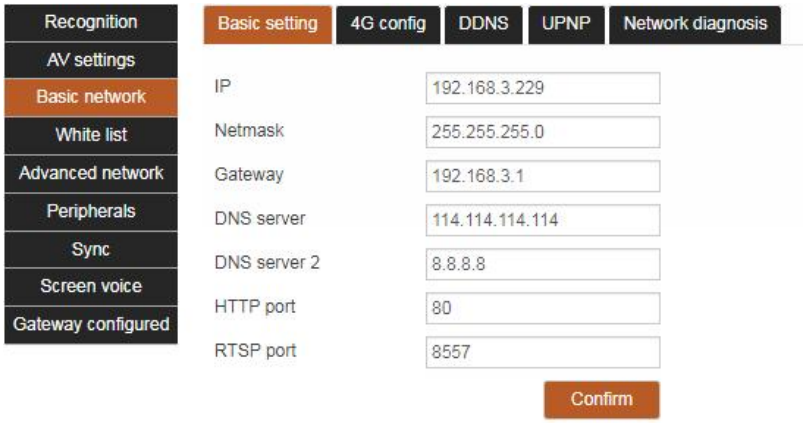


Fig. 13: Basic Network Settings

- **IP address**: To configure the network IP address.
- **Subnet mask**: To configure the subnet mask of the network.
- **Default gateway:** To configure the network default gateway. It should be in the same network segment as the IP address
- **DNS server:** To configure the DNS server of the network. After configuring the network parameters, click OK to take effect.
- **DNS server 2:** To configure the standby DNS server, and automatically switch to this DNS server when there is connection error in the default DNS server
- **HTTP port:** To configure the port number of HTTP protocol. The default is 80. Click OK to take effect.
- **RTSP port:** To configure the port number of RTSP video stream. The default is 8557. Click OK to take effect.

White List

1. In the white list configuration tab, you may configure white list as follows:

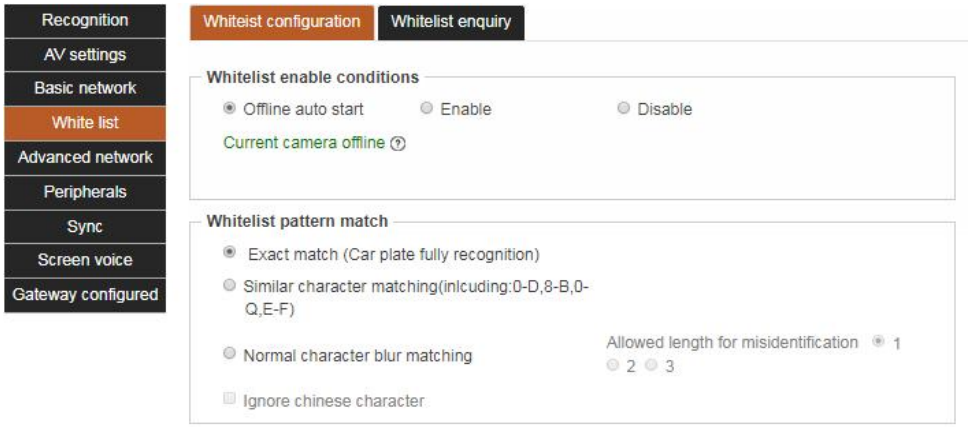


Fig. 14: Whitelist Configuration Settings

- **Whitelist enable conditions:** To set the working condition for car plate whitelist
- **Whitelist pattern match:** Car plate pattern match can be set according to actual use case.
- Please note, if SNP131 is using ME-ACS, all number plates will be uploaded to the whitelist using ME-ACS features. Similarly, if you want to delete a plate number from the whitelist, it may require the ME-ACS software

Peripherals

1. In the peripheral settings, you may set the output configuration as below:

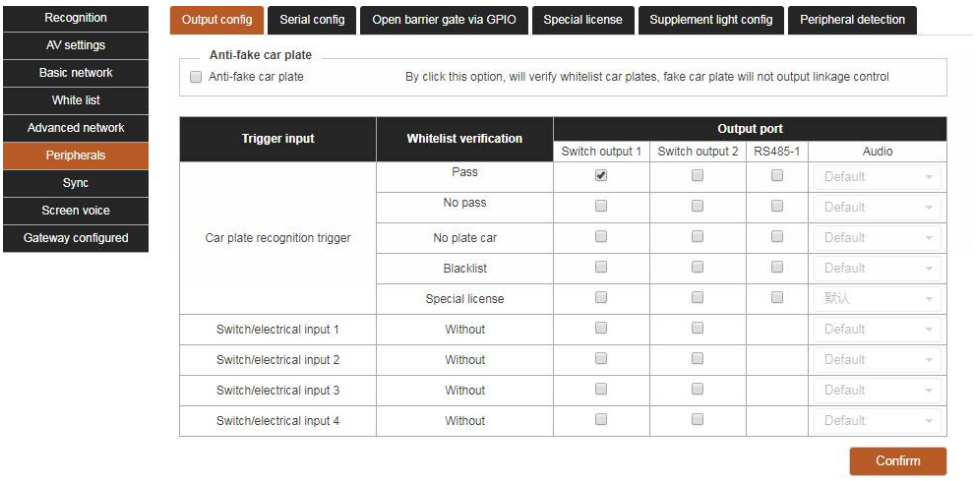


Fig. 15: Output Configuration

- **Anti fake license plate**: When the opening function is enabled, the fake license plate will not trigger the output linkage control.
- When the license plate recognition is triggered, the user can configure the system to output signals at various ports according to the white list verification.
- Users can configure the system to trigger multiple (only partial output ports) output port signals when obtaining input port signals.

2. In the GPIO configuration tab, you may set the barrier gate settings as below:

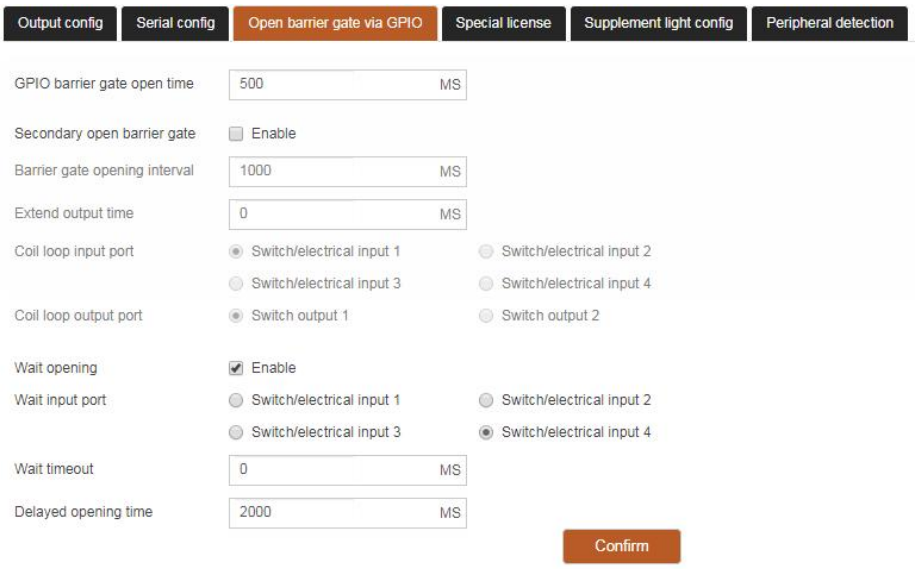


Fig. 16: GPIO Opening Configuration

- **Barrier Gate Opening Time**: By default, the opening time of GPIO is set
- **Enable the secondary opening**: After enabling, the vehicle unrecognized by the camera can be triggered to open the barrier gate through the ground induction coil.
- **Gate interval time**: To set the minimum interval time of opening the gate twice. Only when the front car passes and the gate falls, the gate can be opened for the rear car after the interval time.
- **Extend the output time**: To set the extension time of the ground induction coil to the output signal after the vehicle induction disappears.
- **Ground induction input port**: The port for receiving the ground induction coil signal.
- **Ground induction output port**: The port for outputting signal of the ground induction coil.

3. In the LED configuration tab, you may configure the LED fill light settings as below:

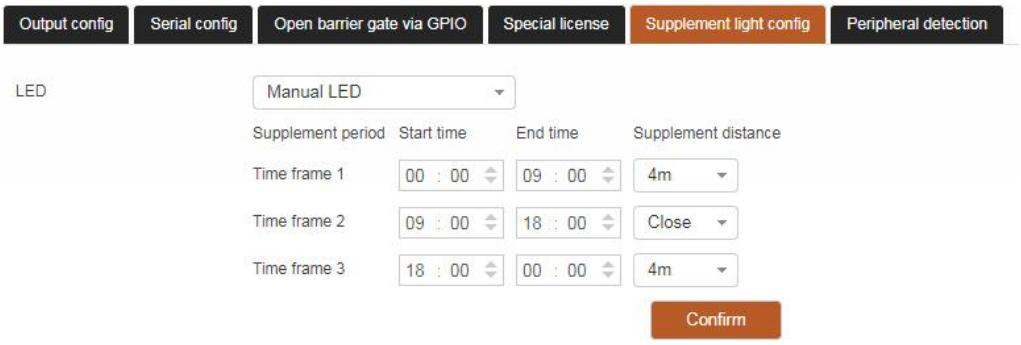


Fig. 17: LED Fill Light Configuration

- **Fill light mode**: Select the working state of fill light.
- You can set the LED fill light configuration in different time periods by adjusting the time periods and LED installation distance (refer to page 10 on LED installation)

4. After setting up all IO connections, you may use the peripheral detection tab to check the connection status of the ports as shown below:

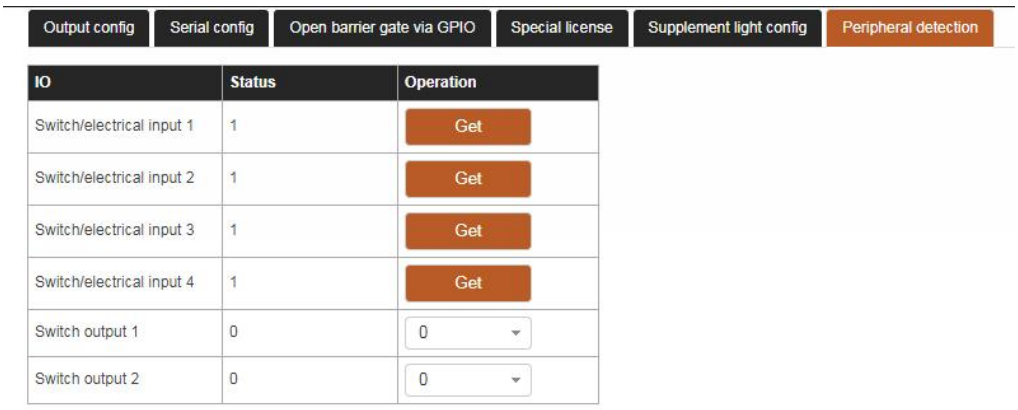


Fig. 18: Peripheral Detection

- In the input port section, click the get button to get the current port connectivity status.
- In the output port section, select the path/open option to set the current port status to on/off.

LED Screen Display Setting

1. In the screen voice tab, you may configure the LED screen display as below:

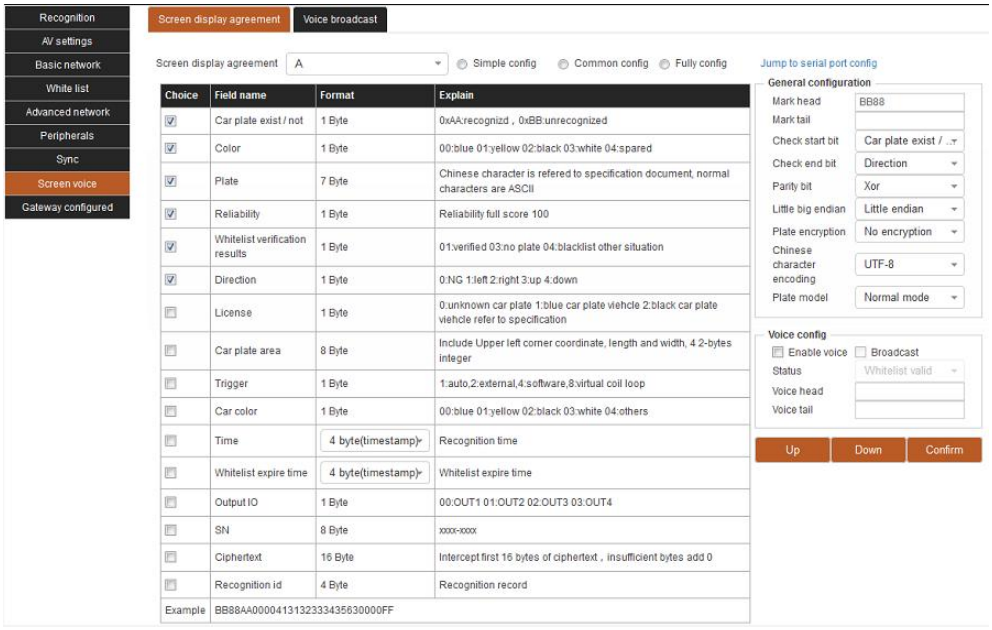
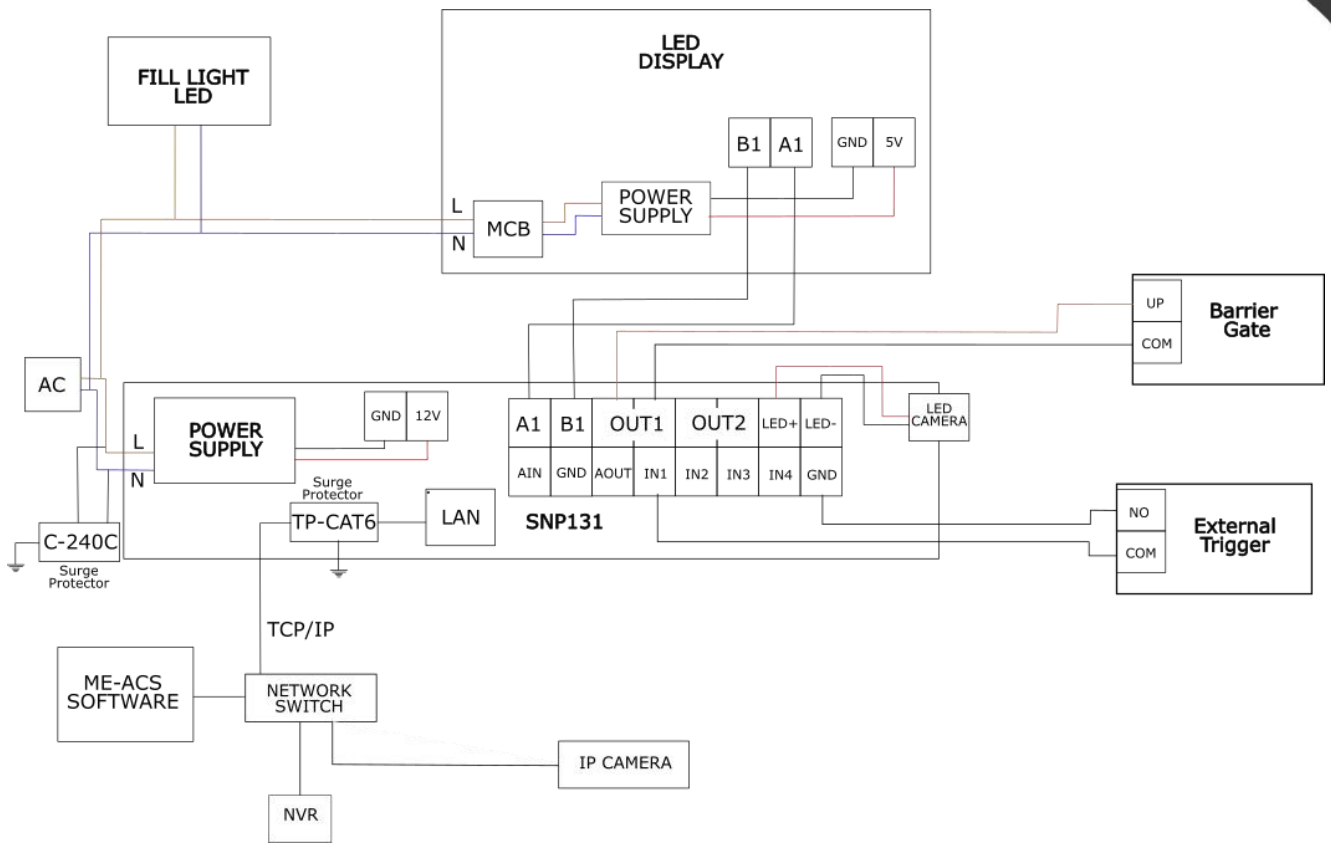


Fig. 19: LED Screen Display Configuration

- According to the screen display agreement, select the corresponding LED screen model. For SNP131-DSP , select model = L(ML_IV)
- **Quick configuration**: You can quickly configure the screen output by selecting the corresponding fields to display.
- **Output format**: You can view the field output examples at the bottom of the table.
- **General configuration**: Used for integrity verification and encryption of output field information.
- **Voice configuration**: Used to enable/disable voice or license plate broadcasting.
- **Adjust field display position:** Select the field and click the move up / move down button to adjust the field position.
- Click the confirm button to save the configuration.

Wiring Connection



Important Notes:

- IP address SNP131 must in the same network as ME-ACS

- LED Display SNP131-DSP, must connected to A1 B1 accordingly and the model L(ML_IV) is choose to make sure the number plate capture is display correctly on LED Display.Refer Page 15

- For SNP131 to control barrier gate, the connection OUT1 must connected to UP terminal on the Barrier Gate. OUT2 is additional output from NVR, please refer page 12.

- SNP131 can have external trigger to capture number plate. This is commonly used for Loop Coil Detector.

- Surge protector is important to make sure device is protected from surge

***Product performances is based on testing in a controlled environment. Your result may vary due to several external and environment factors.**