AKUSENSE

Intelligent code reader
RCD-AI100-S Series
User Manual

V2.0

目录

Chapter 1 Product Introduction

1.1 Product Description

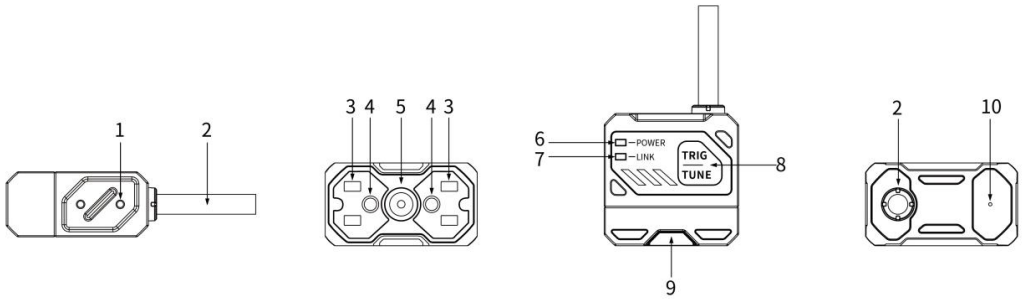
This manual is applicable to Akusense Intelligent Code Reader RCD-AI100-S series, which can be applied to 3C, food and drug, electronic semiconductor, auto parts and other industries. The device uses sensors and optical components to obtain the image of the object to be measured, and achieves barcode resolution through the device's built-in code reading algorithm. The device can also output detection results through various communication methods.

1.2 Main Features

- Compact size for small space installation
- Uses a liquid lens with a built-in self-focusing algorithm for fast zooming
- The Tune button on the body allows automatic one-touch adjustment, saving time in the field
- Supports ultra-small code reading for different distances
- Provides red/white dual color light source and supports polarized light source for complex scenes
- Aviation plug design, single cable connection, easy to connect

1.3 Appearance

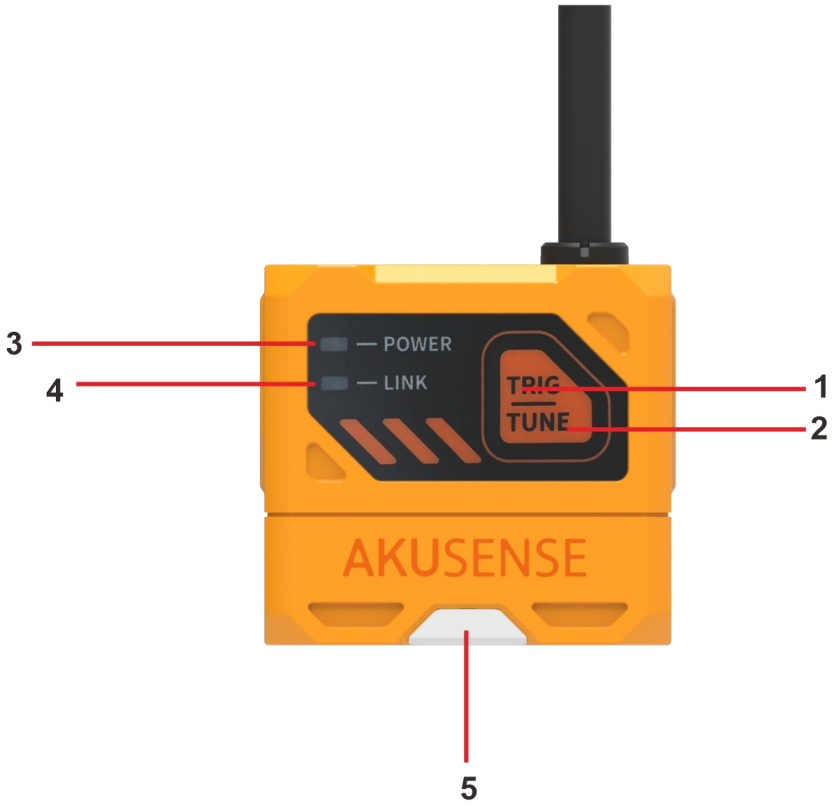
A. Appearance Description



No.	Name	Description
1	Screw holes	Smart reader mounting holes for securing devices
2	Connection Cable	M12-17PIN cable, including power cable, Ethernet cable, IO cable, serial communication cable
3	Light source	Built-in red / white light source for image acquisition to fill in the light to ensure the

		image effect
4	Aiming light	Indicates the center of the image for easy targeting
5	Image Sensor	For image acquisition
6	Power indicator	Green light for normal operation of equipment, no light for operation
7	LINK Network Indicator	Green light strobe when the network communication is normal
8	TRIG Button/TUNE Button	Trigger / One-touch reference button. Single click for trigger photo, long press for 5s for one-touch referencing
9	Code reading status indicator	Green light when OK, red light when NG
10	Buzzer	Vocalize when decoding succeeds or fails

B Status Indicator Description



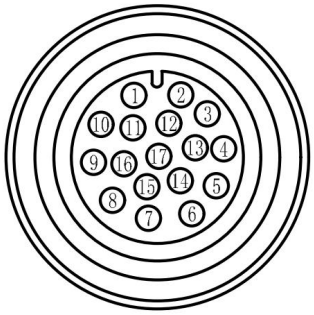
No.	Name	Description
1	TRIG button	Trigger button
2	TUNE button	Auto-reference button
3	Power indicator	Green light for normal equipment

		operation
4	Network Indicator	Green light strobe when the network communication is normal
5	OK/NG Indicator	Green light for successful code reading, red light for failed code reading

1.4 Interface and Scatter Definition

The device connector is M12-17PIN connector, the specific pin signal definition is shown in the figure below.
When wiring the device, please connect according to the pin numbers in the table, combined with the color on the cable label.

M12-17PIN male connector



Pin	Color	Signal
1	Red	DC_24V
2	/	
3	/	
4	Red and Blue	RS232_TXD
5	light green	RS232_RXD
6	Orange and White	ENET_RX-
7	Green	ENET _TX+
8	Yellow	LINE_INO
9	Brown	IN_COM
10	White	LINE_IN1
11	Black	GND
12	Grey	LINE_OUT0
13	/	
14	Orange	ENET_RX+
15	Green and White	ENET_TX-
16	Purple	LINE_OUT1
17	Blue	LINE_OUT2

1.5 Accessories & Dimensions

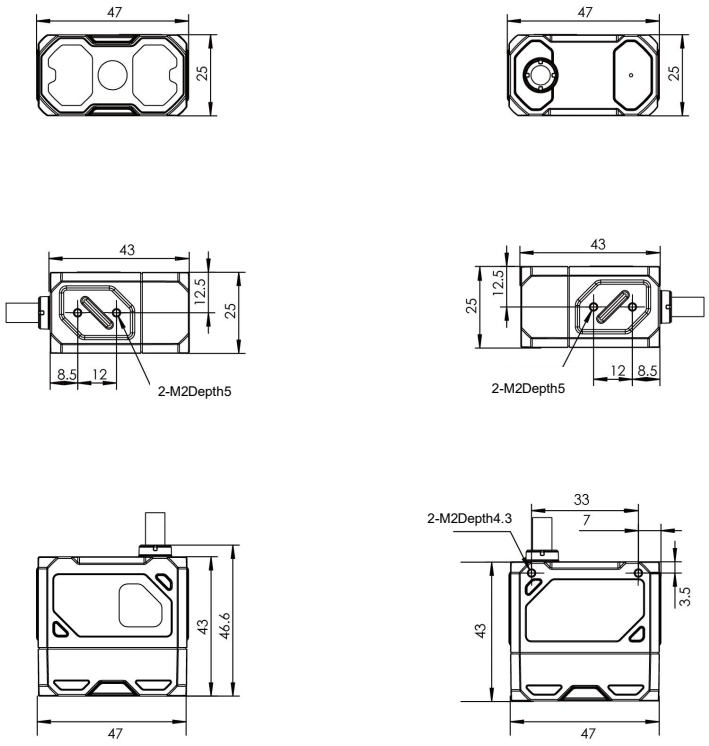
A List

In order to use the equipment properly, please prepare the supporting items shown in the table below before installation

Accessory Name	Description	Picture
Cable	M12-17PIN cable to connect the device connector	
Power	24V Power adapter	
L-shaped mounting bracket	L-shaped mounting bracket + screws	

B Size

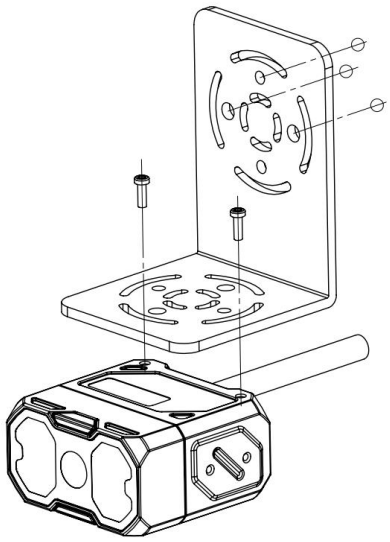
Unit ：mm



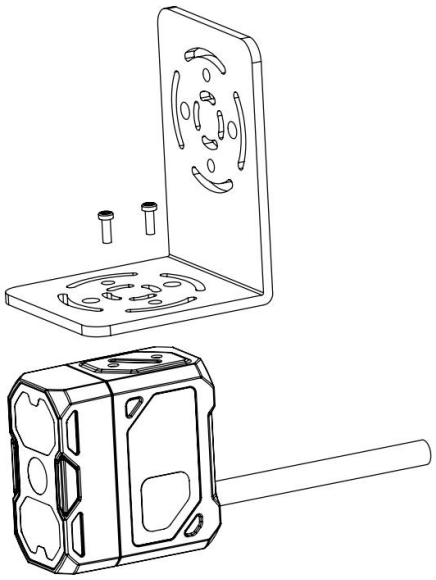
Chapter 2 Equipment installation and operation

2.1 Equipment Installation

1. Attach the equipment to the fixing bracket using screws, and then attach it to the other mechanism parts through the fixing bracket.

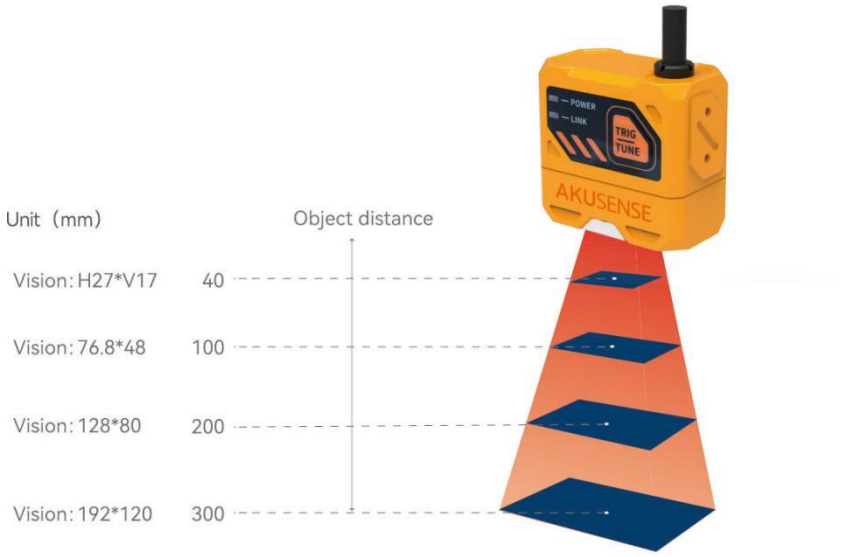


Demo diagram: Front mounting



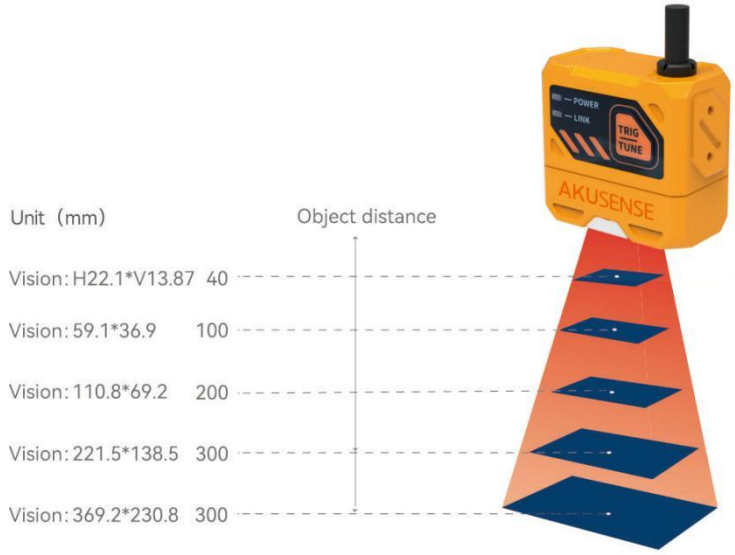
Demo diagram: side mounting

2. Installation tilt 10-15 degrees to avoid light spots and reflections.
   Liquid zoom code reader working distance of 40mm-300mm



Liquid zoom field of view diagram

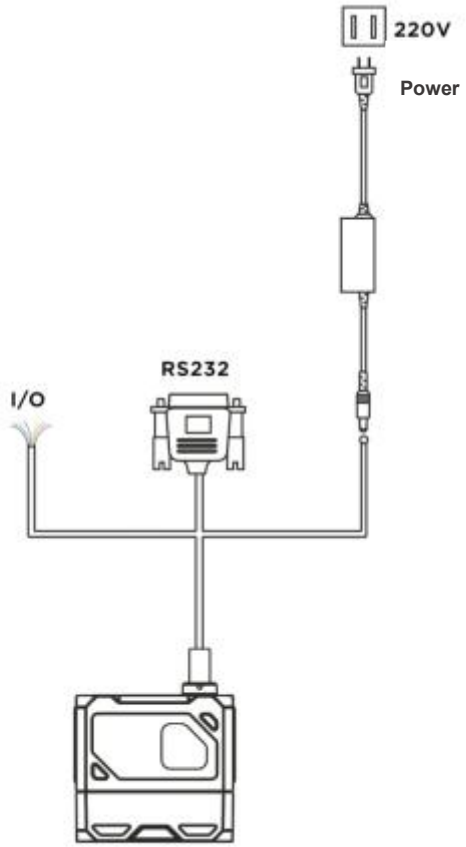
Manual zoom code reader working distance of 30mm-300mm



Schematic diagram of manual zoom field of view

2.2 Power connection

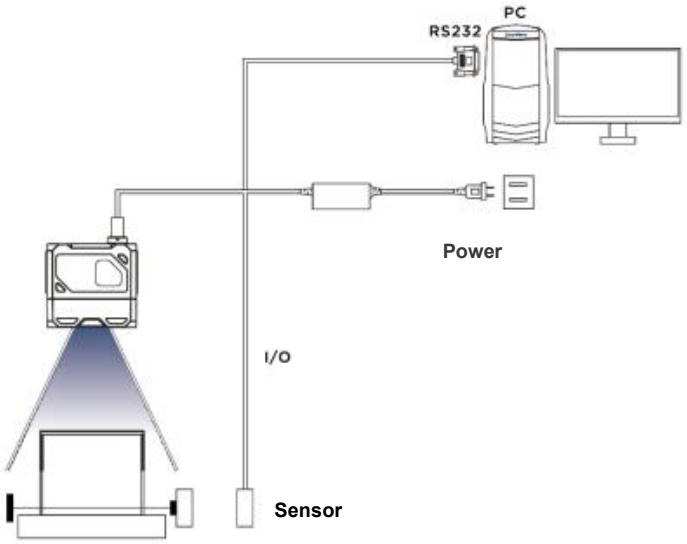
Power supply supports 24V DC, 3A max.
There are two types of power supply: support 24VDC direct connection or 220VAC with adapter connection.



2.3 Communication connection

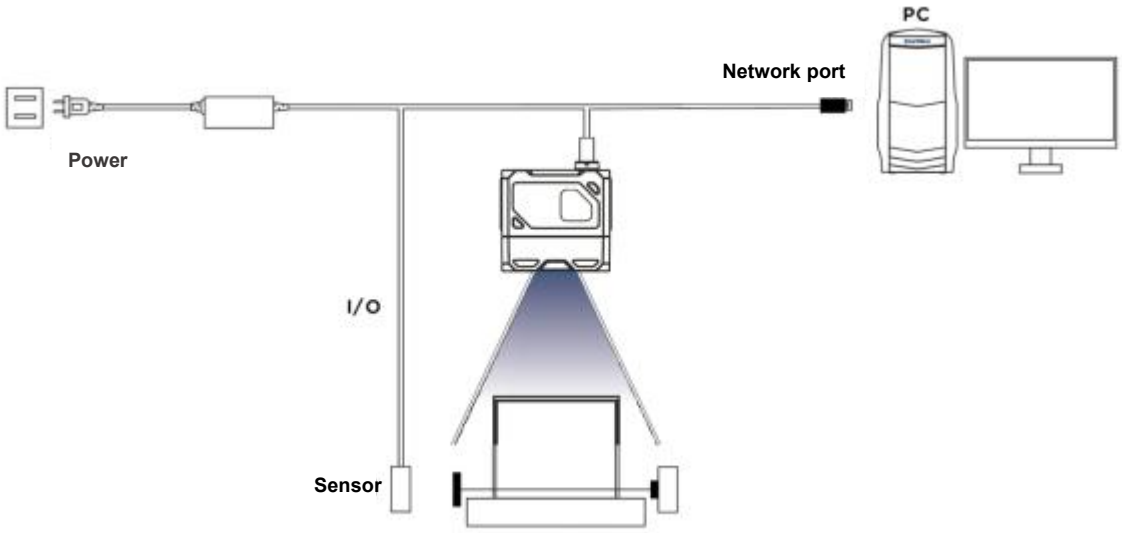
A RS232 serial connection

The default baud rate is 9600, parity bit: NULL, data bit: 8, termination bit: 1. The actual parameters can be changed during debugging software.



B Ethernet connection

The default IP address is 169.254.153.0 and the default data port is 15000.



Chapter 3 IO electrical characteristics and wiring

The smart reader has 2 optically isolated inputs as well as 3 non-isolated outputs.

3.1 I/O Electrical Characteristics

LineIn 0/1 of the device I/O signals are optocoupler isolated inputs and LineOut0/1/2 are non-optocoupler isolated outputs.

3.1.1 Input Electrical Characteristics

Parameter Name	Parameter Symbols	Parameter Value
Input logic low level	VOL	8V
Input logic high level	VOH	12V
Input falling edge delay	TDF	10μs
Input rising edge delay	TDR	47μs

Description: Input logic low or logic high is the threshold value of the voltage representing the input. The input rise or fall delay is the performance of the representative.*

3.1.2 Output electrical characteristics

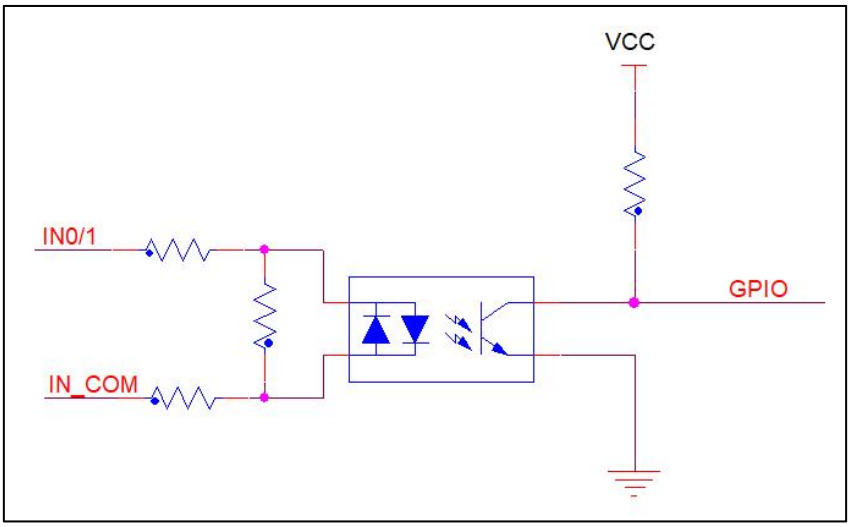
Parameter Name	Parameter Symbols	Parameter Value
Output logic low level	VOL	0.7V
Output logic high level	VOH	23.9V
Output falling edge delay	TDF	20.3μs

Output rising edge delay	TDR	550μs
Output drop time	TF	12μs
Output rise time	TR	3.5μs

3.1.3 Input internal wiring diagram

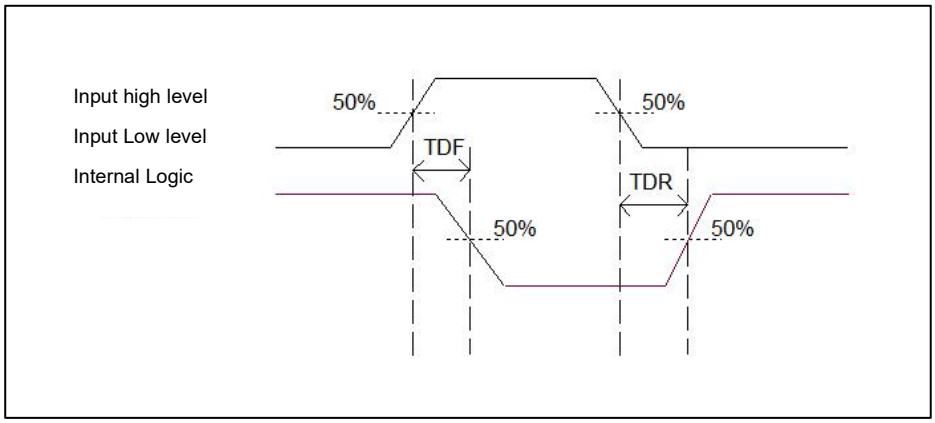
- Input signal

In 0/1 of the device I/O signal is an optocoupler isolated input with an input voltage range of 8~24VDC.



Device input circuit diagram

- The input logic level is：

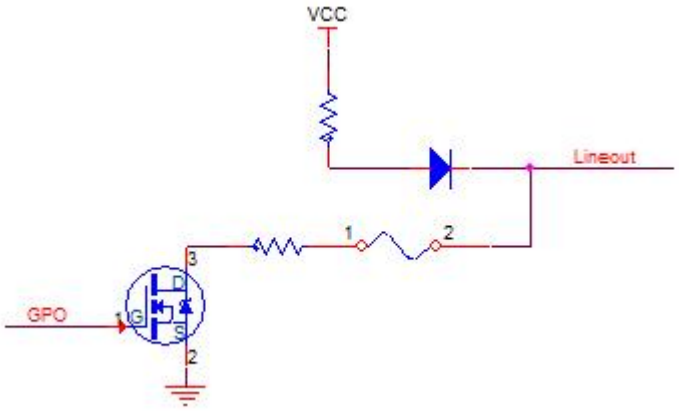


Input Logic Level Diagram

3.1.4 Output internal wiring diagram

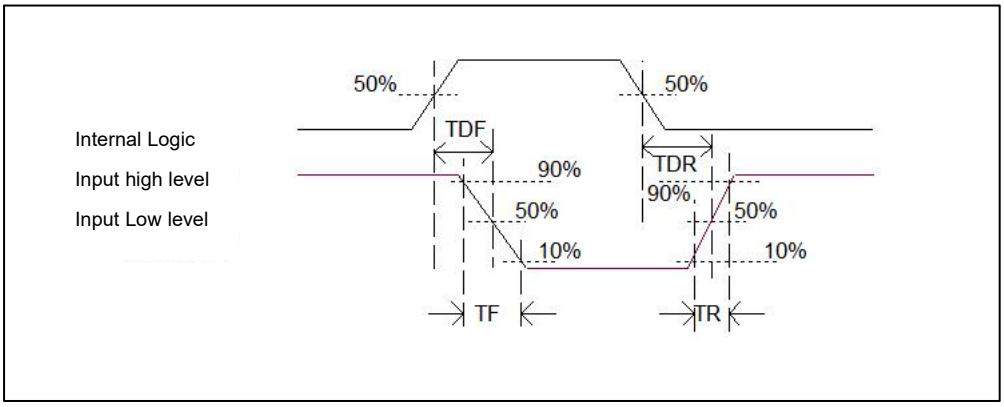
- Output signal

Lineout0/1/2 in the device I/O signal is the output. The output voltage range is 5 to 40 V and the output current does not exceed 50 mA.



Device Output Circuit Diagram

- The output logic level is：



Output logic level diagram

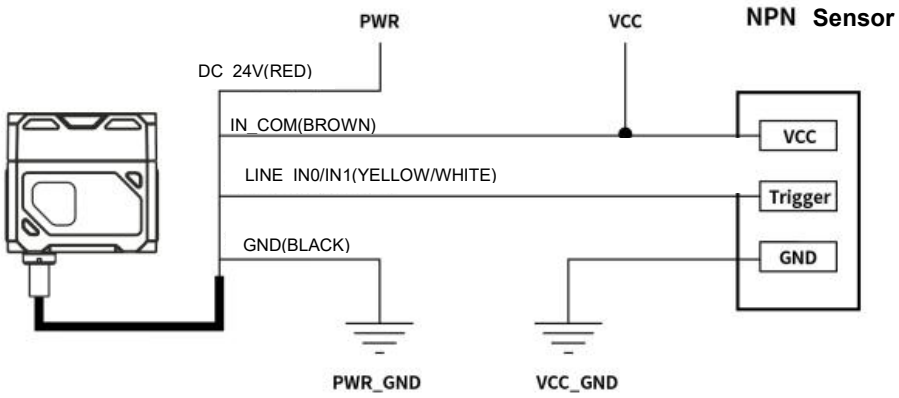
3.2 IO External Wiring

The device can receive signals from external inputs or output signals to external devices through the I/O interface. This section mainly introduces how to wire the I/O section, the signal input in the wiring diagram is LineIn 0 for example, and the signal output is LineOut 0 for example. Other interfaces can be defined according to the cable in the wiring diagram, combined with the introduction of the interface for analogy.

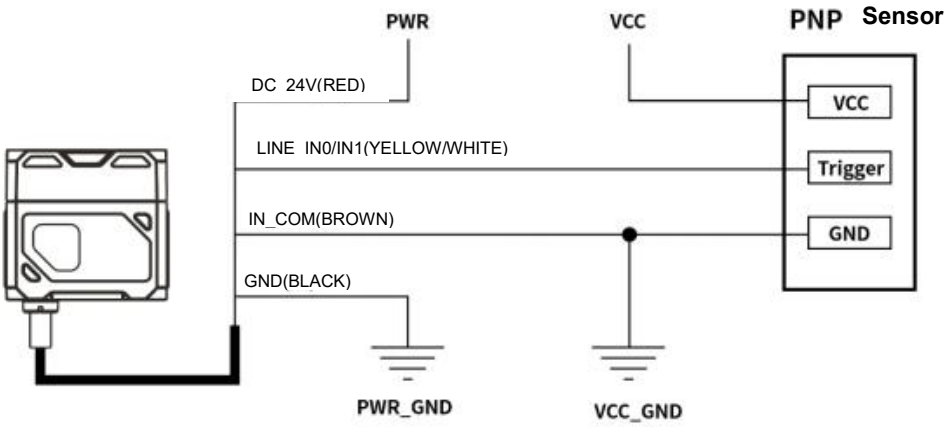
3.2.1 Input external wiring diagram

The device input wiring varies depending on the type of device.

- Input signal is NPN



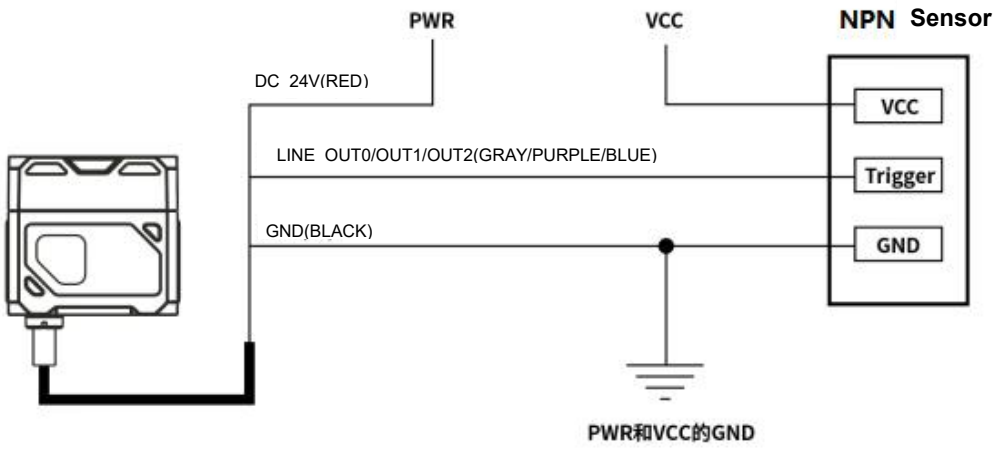
- Input signal is PNP



3.2.2 Output external wiring diagram

The device output wiring varies depending on the type of device.

- External devices are NPN type devices



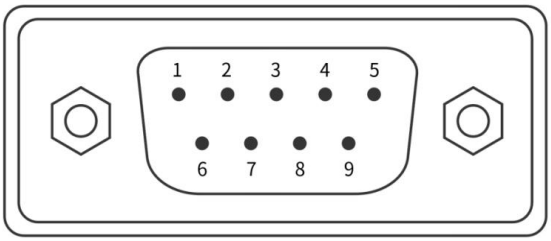
Note.*
1) The voltage value of VCC of the device shall not be higher than the voltage value of PWR of the code reader 24V, otherwise the output signal of the device will be abnormal.
2) The load current of output terminal should meet the requirement of product specification (if necessary, string current limiting resistor is required).

3.3 RS-232 Port

The device supports RS-232 serial output.

3.3.1 RS-232 Port

The common 9-pin male 232 serial port connector serial port is defined as shown below.



9-pin Male connectors

Pin number	meaning	function description
2	RX	Receive data
3	TX	Send data
5	GND	Signal ground

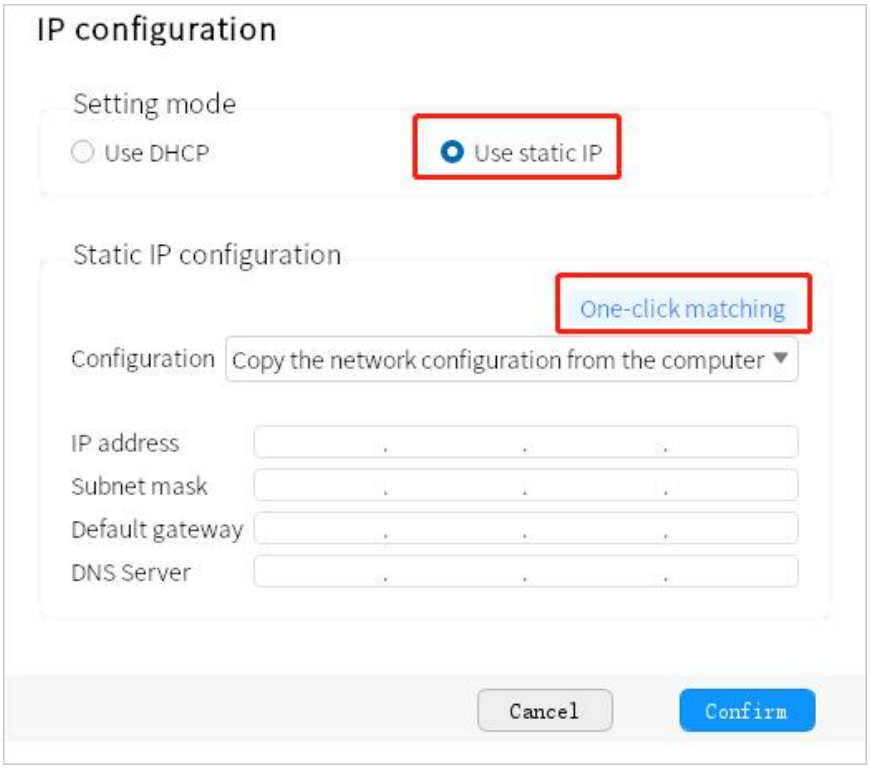
9-pin male 232 serial port definition

10-Note: The voltage value of VCC must not be higher than the voltage value of PWR, otherwise the device output signal will be abnormal.*

Chapter 4 Client Operations

4.1 Software Connection

- Double-click the icon to open the software.
- The intelligent reader and the PC configuring the software need to be on the same network segment in order to be connected.
- Default IP address: 169.254.153.0; gateway 255.255.0.0.
- DHCP can be used with the use of static IP address form to make the connection successful.



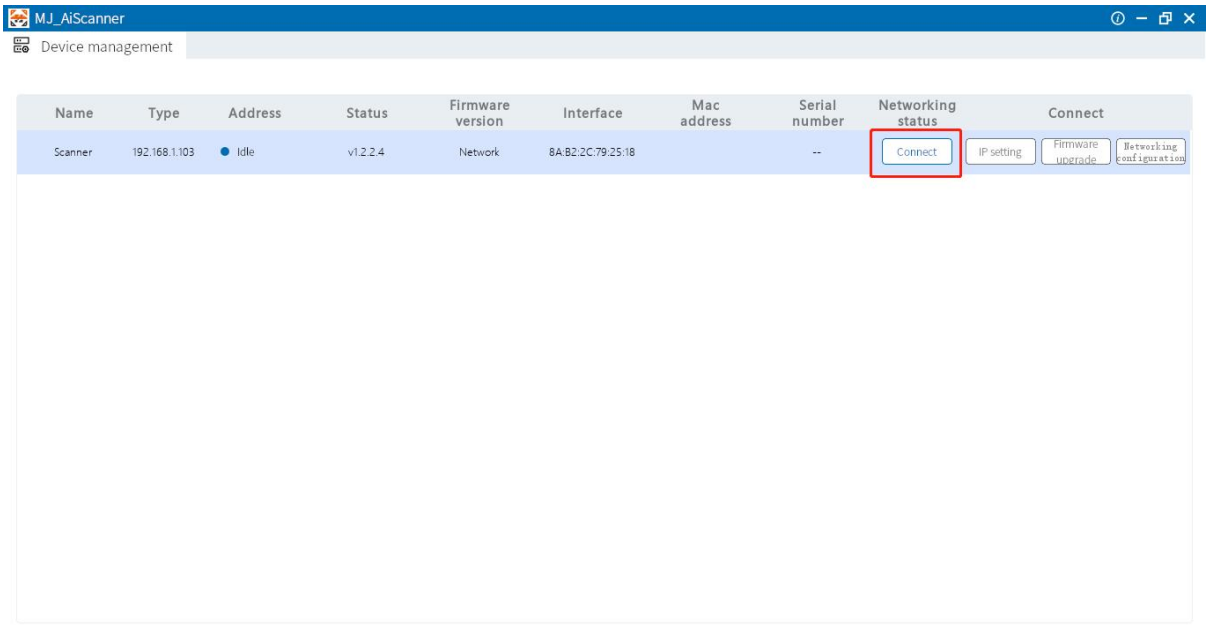
Modify ip

4.2 PC Network Configuration

4.2.1 Change the IP address of the PC

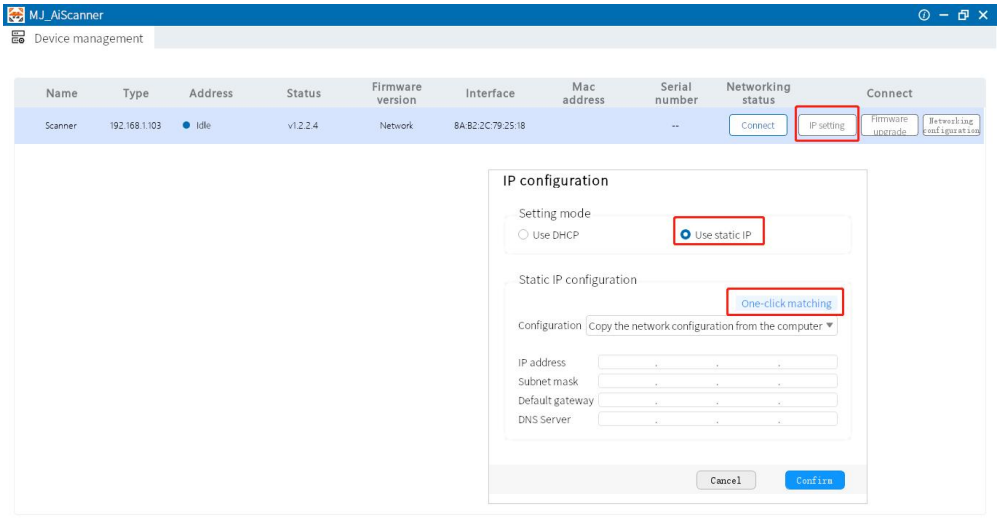
The operation steps are as follows:
1) Take Windows10 as an example, open "Start Menu" > "Settings" > "Network and Internet" > "Ethernet" > "Change Adapter Options" > "Ethernet 3" > Right-click "Properties" > "Network" > "Internet Protocol Version 4 (TCP/IPv4)", correspondingly modify the IP address of the PC of the corresponding network card to 169.254.153.16; subnet mask: 255.255.0.0.

2) Open the configuration software, select the corresponding product and click connect to complete.



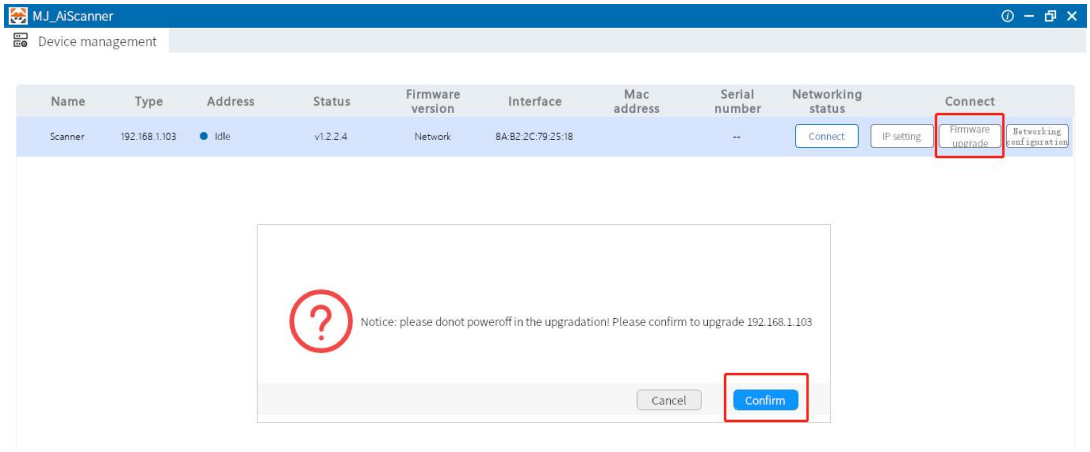
4.2.2 Change the reader IP address

The operation steps are as follows: Open the configuration software, select the corresponding PC network card, after it is displayed on the barcode reader, click IP setting > Use static IP > One-key matching > Confirm, and change the IP address to the same network segment IP as the PC.



4.3 Firmware upgrade

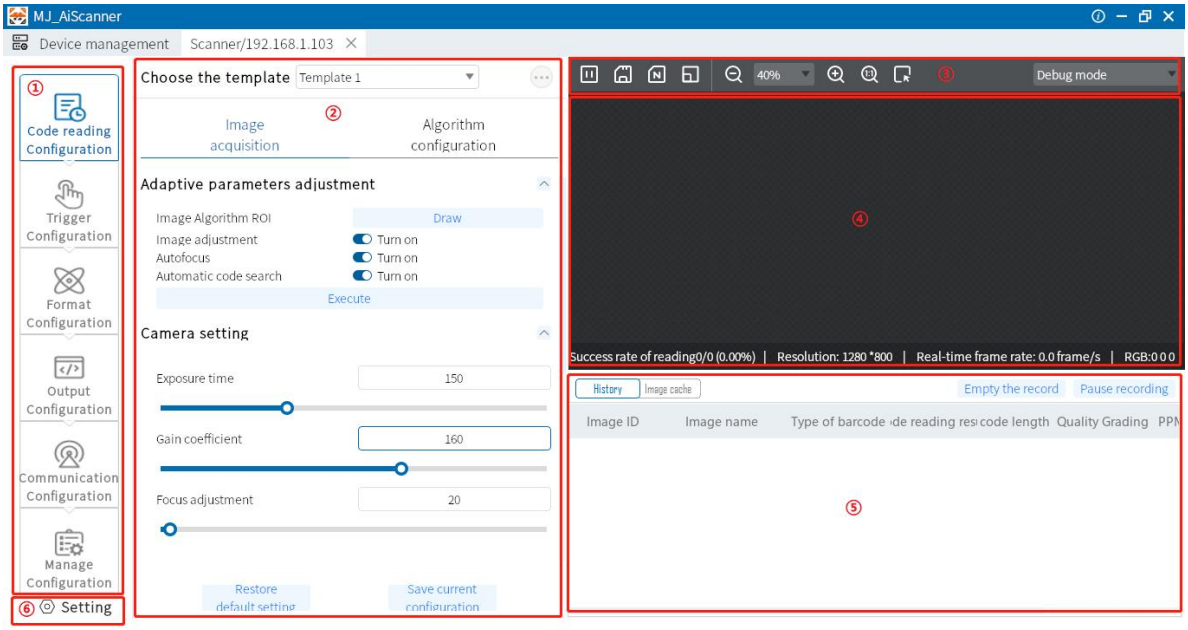
The operation steps are as follows: Device Management > Device Operation > Firmware Upgrade, select the firmware file, and then click OK to update the firmware. Wait for the reboot to complete.



Chapter 5 Function Introduction

5.1 Interface introduction

The device can perform related operations through the client, as follows:
1) In the case of confirming that the device is reachable, select and click on the "connection" of the client to successfully connect the device.
2) After connecting the device, the main interface of the client is shown in the figure below, and the introduction of each function module is shown in the table.

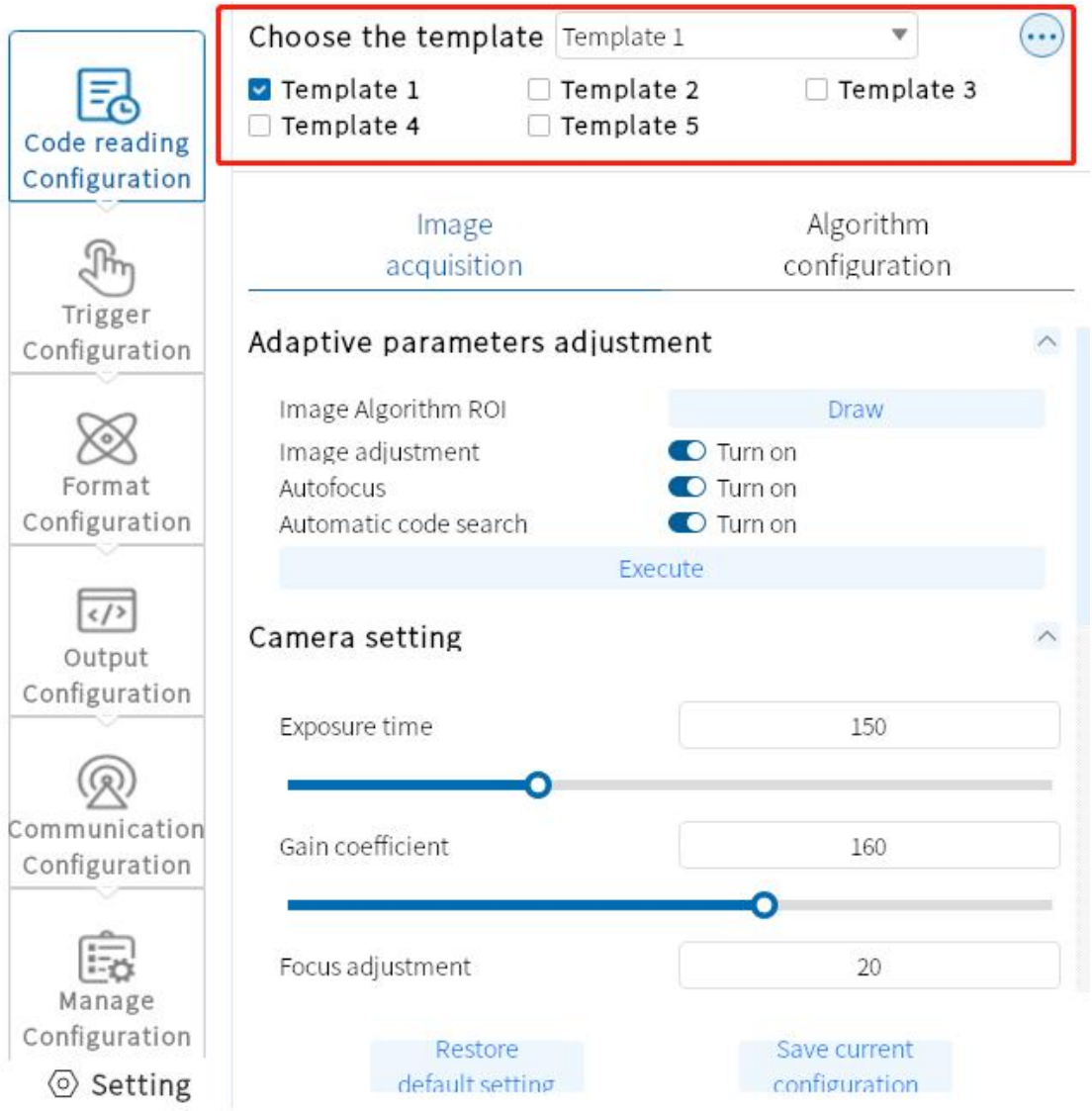


No.	Name	Function brief
1	Menu bar	Set up the basic functions of the client.
2	Code reader configuration	Menu bar secondary menu, do parameter setting for the corresponding module, including template selection, parameter setting, algorithm setting, etc.
3	Toolbar	You can start/stop image acquisition on the device and also perform quick operations such as capture and save, cancel ROI, zoom in/out preview image, and software trigger.
4	Preview Window	Real-time preview of the device's currently captured images, algorithm readings, and the effect of drawing ROI windows.
5	History	Real-time display of the barcode information currently read by the client.
6	Basic settings	You can change the device name, buzzer settings, key settings, and also count the read code information of the device, upgrade the firmware, and view the device log information.

5.2 Read code configuration

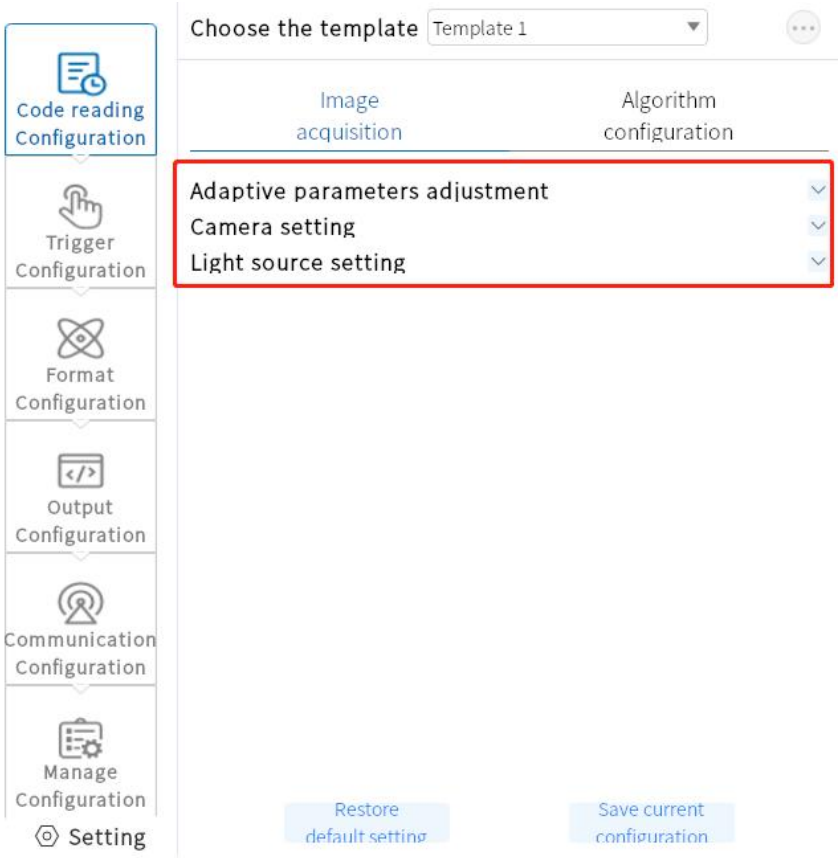
5.2.1 Template Selection

The template type supports 5 templates from "Template 1" to "Template 5", as shown in the figure below.
The "template selection" of the device is carried out by pulling down the upper left corner of the "reader configuration" area, and the operation mode can be saved as "template" after the configuration of the relevant parameters of the reader is completed.



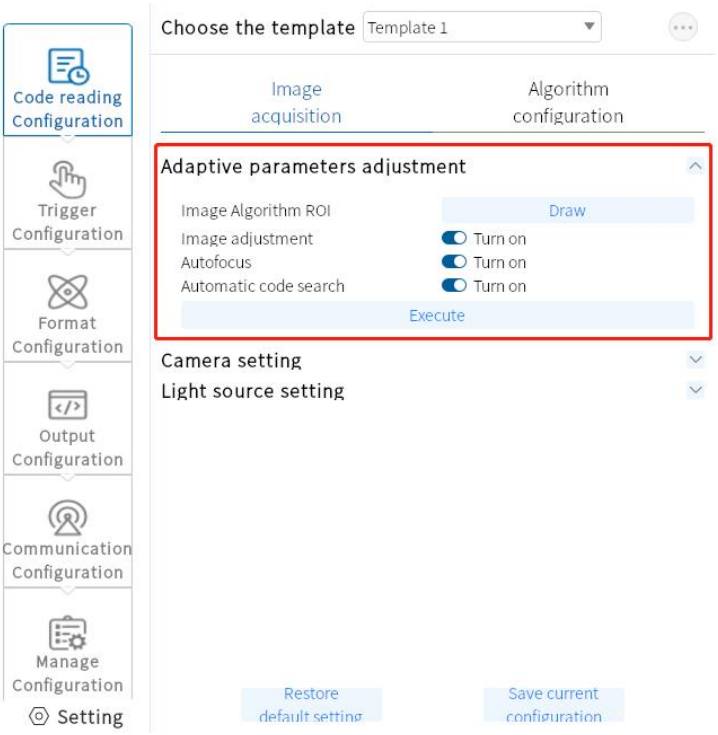
5.2.2 Image Acquisition

If the recognition effect is not good, you can adjust the parameters of "image acquisition" in "code reading configuration", including manual adjustment of camera settings and light source settings, such as exposure time, gain, focus, light source parameters, etc.; or adaptive adjustment, through the device itself intelligent adjustment of camera settings and light source settings



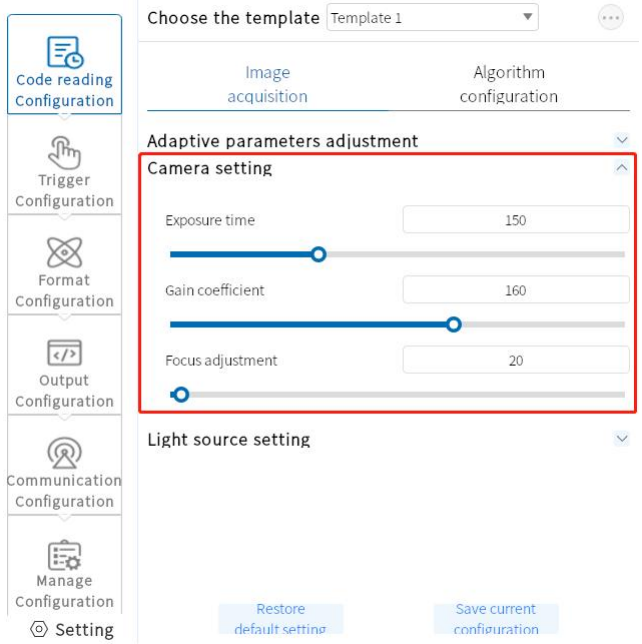
5.2.2.1 Adaptive parameter adjustment

Adaptive parameter adjustment includes: image algorithm ROI, image adjustment, light source adaptive, auto-focus, auto-code system search. Users select the required adjustment parameters (image quality adaptive, light source, auto-focus, auto-code search) and click to execute automatic adjustment of exposure, gain, light source, code system and other parameters to achieve the best decoding effect, and set the adjustment parameters automatically for each parameter item.



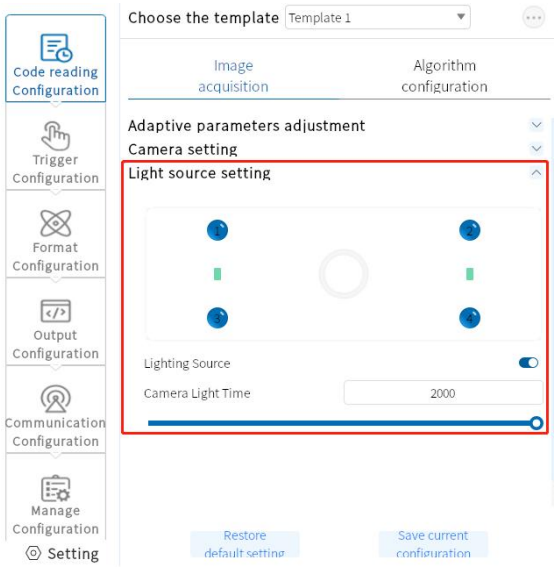
5.2.2.2 Camera settings

- Exposure time: control the opening time of the shutter of the code reader to control the brightness of the image, the longer the exposure time, the brighter the captured image. Can be adjusted by sliding or filling in the numbers.
- Gain index: control the size of the image gain and control the brightness of the image, which can be adjusted by sliding or filling in the numbers.
- Hint: the larger the exposure time, the smaller the speed of motion supported for reading; the larger the gain index, the more noise in the image.



5.2.2.3 Light source settings

Control the opening and closing of all fill lights.

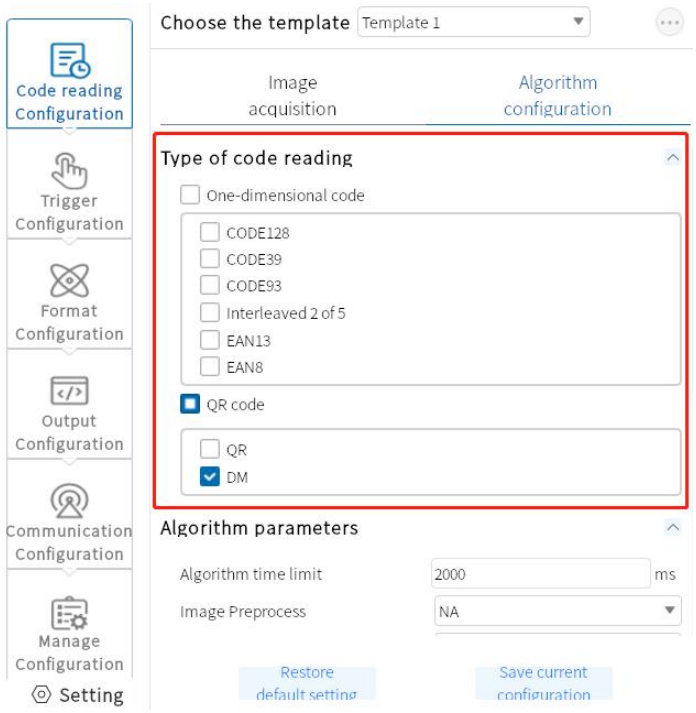


5.3 Algorithm configuration

The device can set the parameters related to the code reading algorithm through the "algorithm configuration" module.

5.3.1 Read code type

The current code reading device supports two types of 1D code and 2D code, check the code system that the device needs to read barcode, and you can select more.
As shown in the figure below, the algorithm configuration interface shows the selected code system. The more code systems you select, the more time the algorithm will take to process each image. It is recommended to select the corresponding code system according to the actual demand to achieve the best effect.



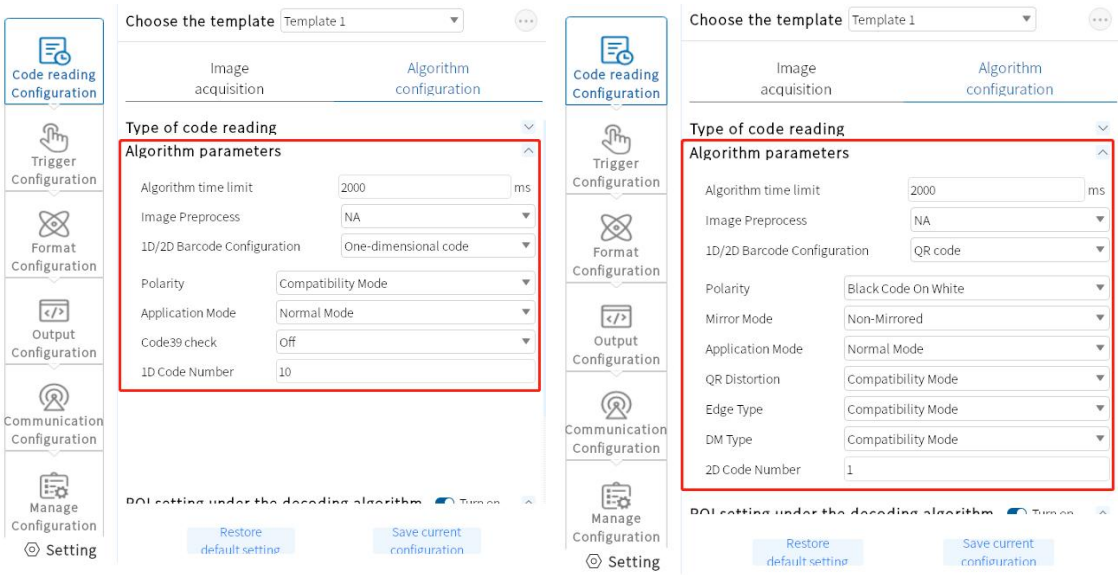
5.3.2 Algorithm parameters

The setting of the parameters for decoding the 1D 2D code.

- Polarity: used to indicate the barcode and background color, and the parameters can be set as black code on white background and white code on black background with compatible mode.
- Edge type: the parameters can be set as continuous code, discrete code and compatible mode.

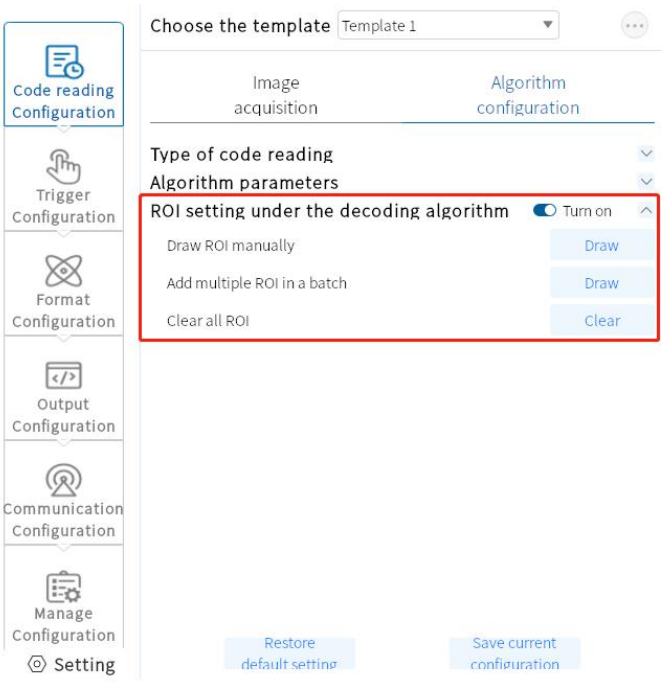
Note: Continuous or discrete depends on whether the smallest cells of the code are connected together, connected together is the continuous code, separated is the discrete code.

- Mirror mode: used to distinguish whether the code is a mirror state, can set parameters for mirror, non-mirror and compatible mode.
- QR distortion: used to determine whether the QR code has distortion phenomenon, can set parameters for distortion, non-distortion and compatibility mode.
- DM code type: It is used to distinguish the type of DM code, and the parameters can be set as square, rectangle and compatible mode.
- Operation mode: Select the mode used for decoding, different modes correspond to different time consumption and results of the algorithm, and the parameters can be set as extreme mode, normal mode and expert mode.
- Number of 1D codes: the maximum number of 1D codes to be output.
- Number of 2D codes: the maximum number of 2D codes to be output.



5.3.3 Decoding algorithm ROI setting

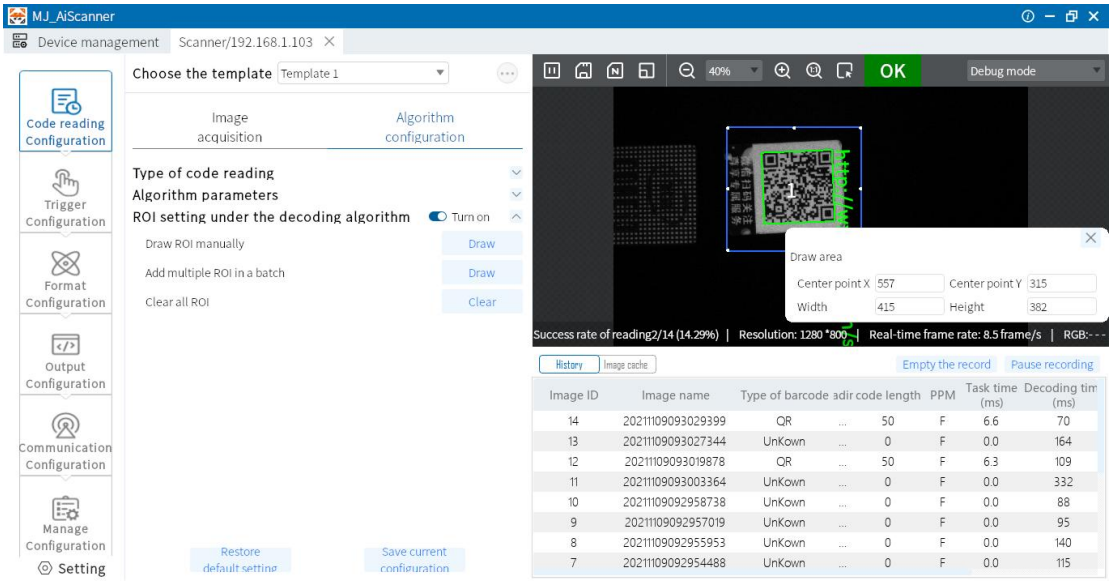
Algorithm ROI can carry out algorithm recognition only for the selected area of interest of the device, and other areas are not processed by algorithm to improve the reading efficiency. The device can set multiple algorithm ROI areas and output barcode results in order from smallest to largest according to the number of the algorithm ROI area where the barcode is located. The output rules are as follows: 1, barcode 2, barcode 3, barcode 4, barcode, if the barcode is not recognized in a certain algorithm ROI area, the barcode information in the corresponding area will be changed to the set noread character. At present, it supports 2 kinds of algorithm ROI drawing methods: manual and batch adding, and it supports clearing all ROI.



5.3.4 Manual plotting of ROI

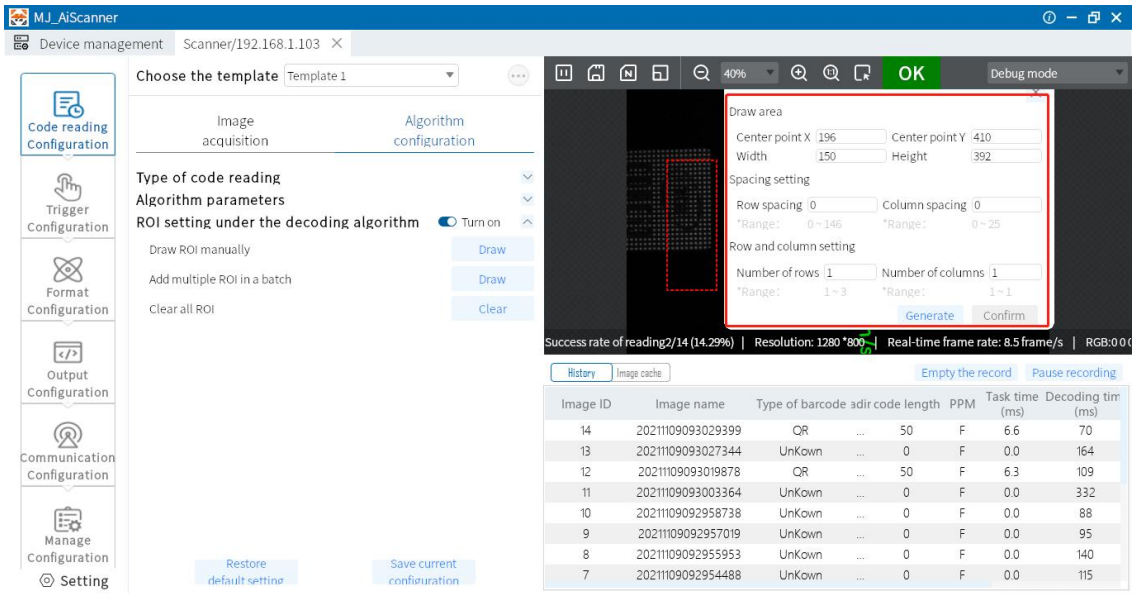
Click Settings to enter the manual setting ROI mode, you can drag to set the ROI size according to your needs (you can finely set the ROI size by center point X/Y, width and height), the box selection area is the area of interest of the algorithm.

①Center X: X coordinate of the center point of ROI box.
②Center Y: Y coordinate of the center point of the ROI box.
③Width: the number of pixels in the horizontal direction of ROI.
④Height: the number of pixels in vertical direction of ROI.



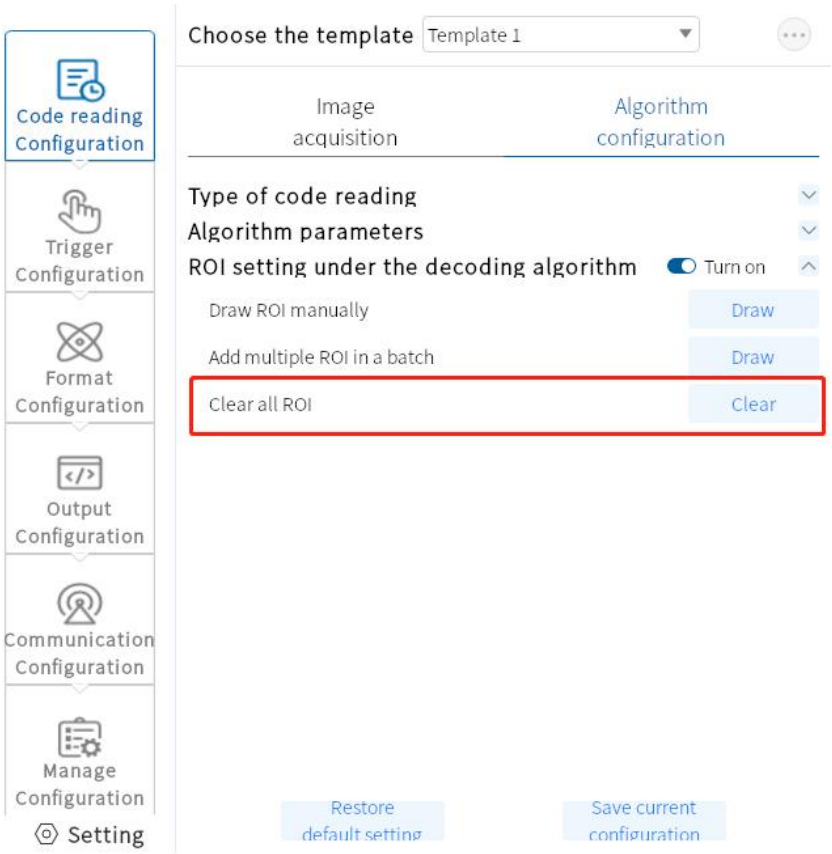
5.3.5 Batch add ROI (checkerboard grid)

Used to draw ROI in batch.
①Drawing area: Center X: batch set the X coordinate of the center point of the area, Center Y: batch set the Y coordinate of the center point of the area, Height: batch set the number of pixels in the vertical direction of the area, Width: batch set the number of pixels in the horizontal direction of the area (default is the maximum number of pixels).
②Pitch setting: spacing between ROI rows and rows; column spacing: spacing between ROU columns and columns.
③ROI quantity (row*column): batch set the number of rows and columns of ROI (the maximum value is dynamically adjusted according to the drawing local area size and row/column spacing size).
④Generation: determine the above settings.



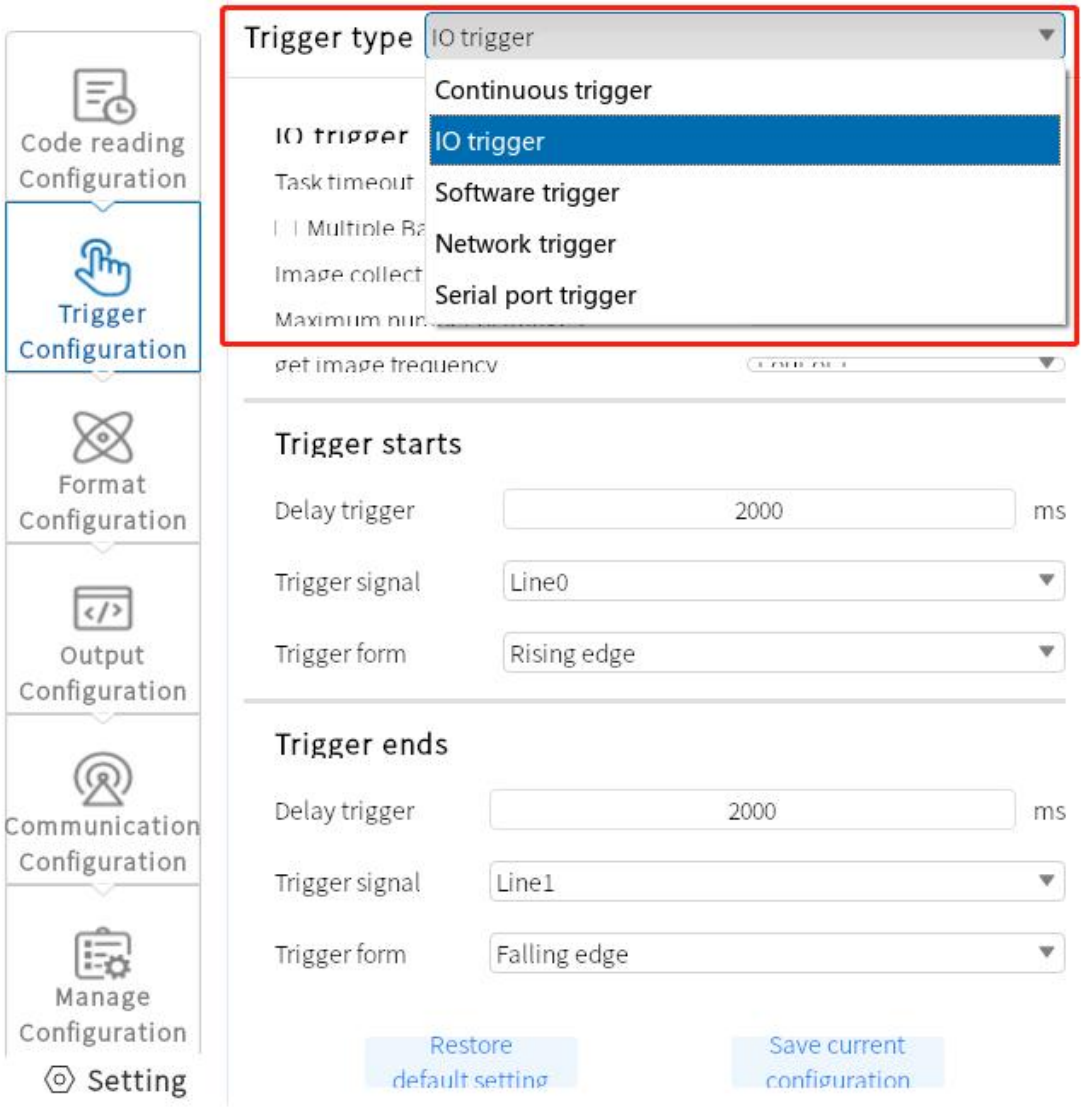
5.3.6 Clear all ROI

Used to clear all current ROIs.



5.4 Trigger configuration

The trigger types include "continuous trigger", "IO trigger", "software trigger", "network trigger" and "serial trigger".



The trigger types are as follows

5.4.1 Continuous Trigger

Continuous trigger means that the reader continuously triggers to take pictures.

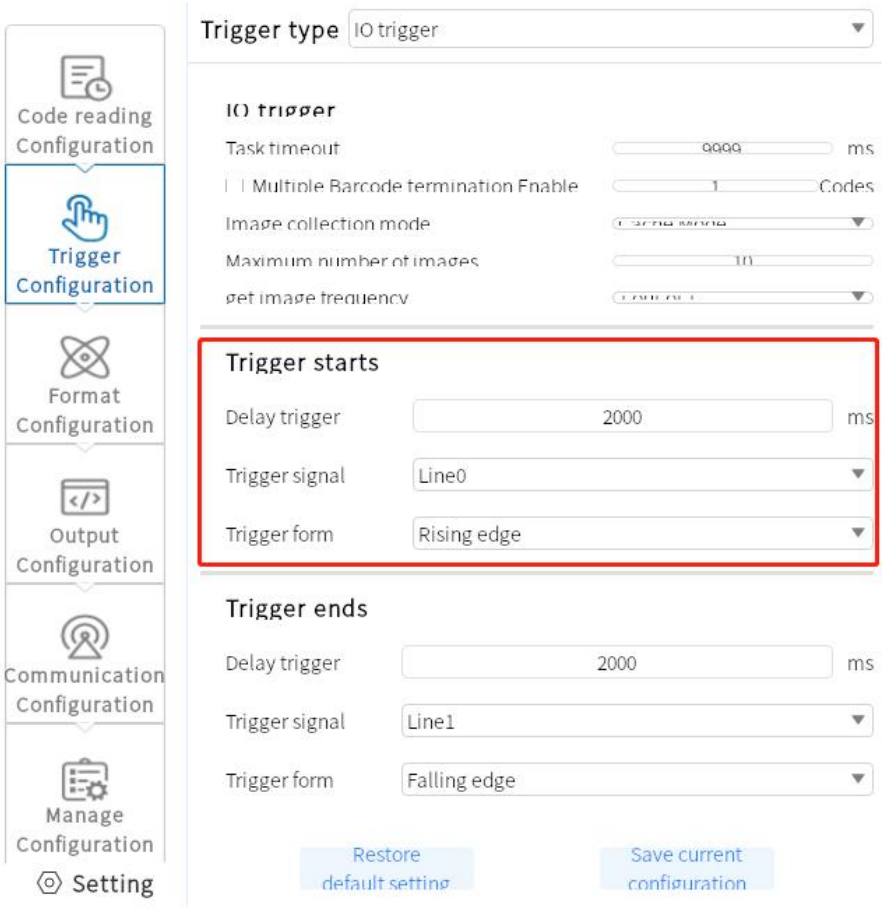
5.4.2 IO Trigger

IO trigger means that the reader receives a signal and then triggers to take a picture. This

trigger mode needs to select "single (external)" mode before this function can be set.
Task timeout: Set the maximum task time for single trigger. When the trigger is turned on, it will be forcibly turned off when the timeout period is reached and not turned off. Default 9999, the setting range is 10-9999.

5.4.2.1 Start Trigger

The selection page for turning on and off start triggering.

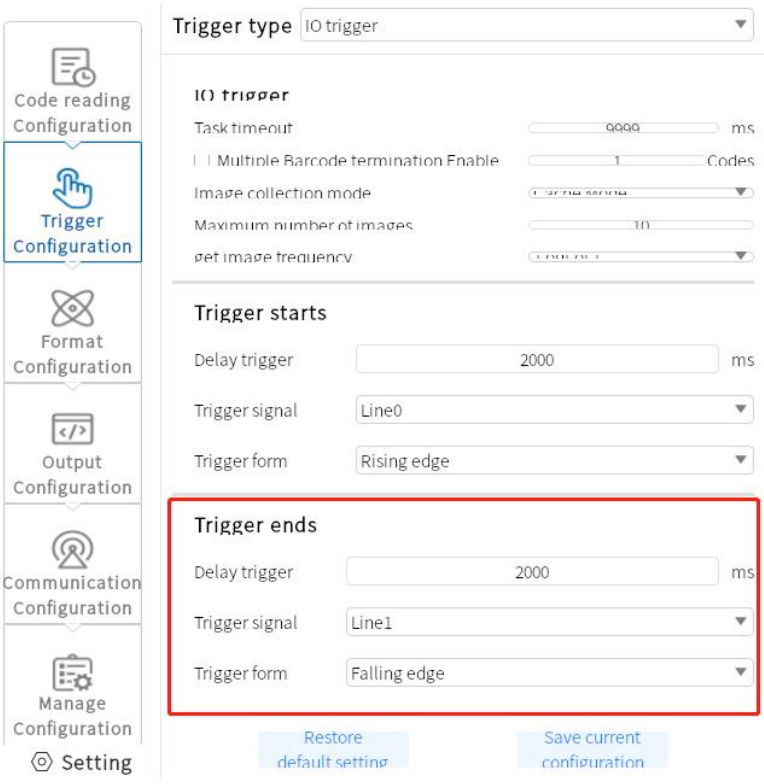


5.4.2.2 End Trigger

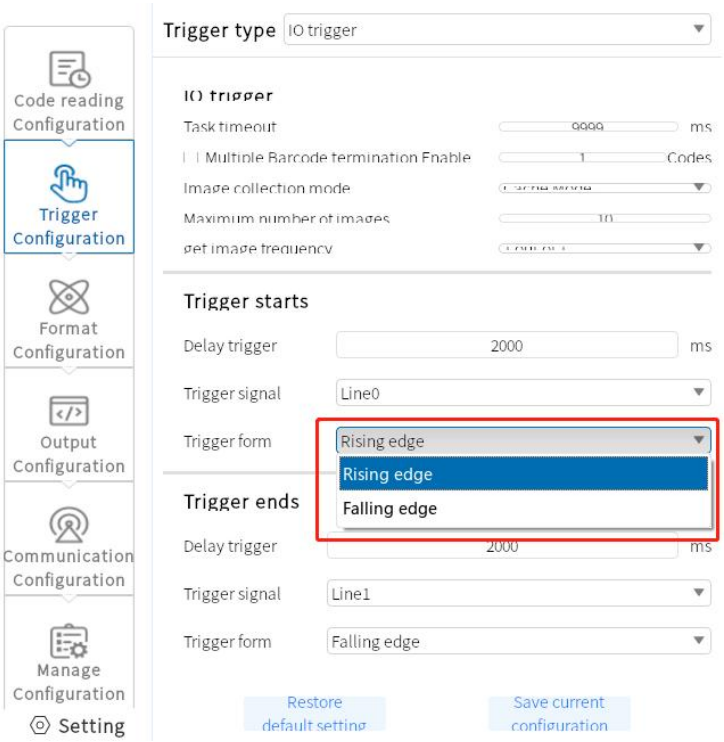
Turn on and off the selection page of the termination trigger.

- Delay trigger: The trigger delay under the start trigger page means that the code reading will start only after the delay time set by the trigger signal. The trigger delay under the end trigger page means that the code reading will be stopped only after the set time is delayed when the end trigger signal is received. The default is 0ms, and the setting range is 0ms-9999ms.
- Trigger signal: The trigger signal under the start trigger page is divided into "Line0" and "Line1", which correspond to the hardware trigger input IN0 and IN1 respectively; the trigger signal under the stop trigger page is divided into "Lin0" and "Lin1". Line0" and

"Line1", corresponding to the hardware trigger input IN0 and IN1 respectively.



- Trigger form: The trigger form under the start trigger page is divided into "rising edge" and "falling edge". "Rising edge" means that the code reader receives the rising edge signal and starts reading; "falling edge" means that the code reader receives the falling edge signal and starts reading. The trigger form under the termination trigger page is divided into "rising edge" and "falling edge". "Rising edge" means the reader receives the rising edge signal and stops reading; "falling edge" means the reader receives the falling edge signal and stops reading.



5.4.3 Software trigger

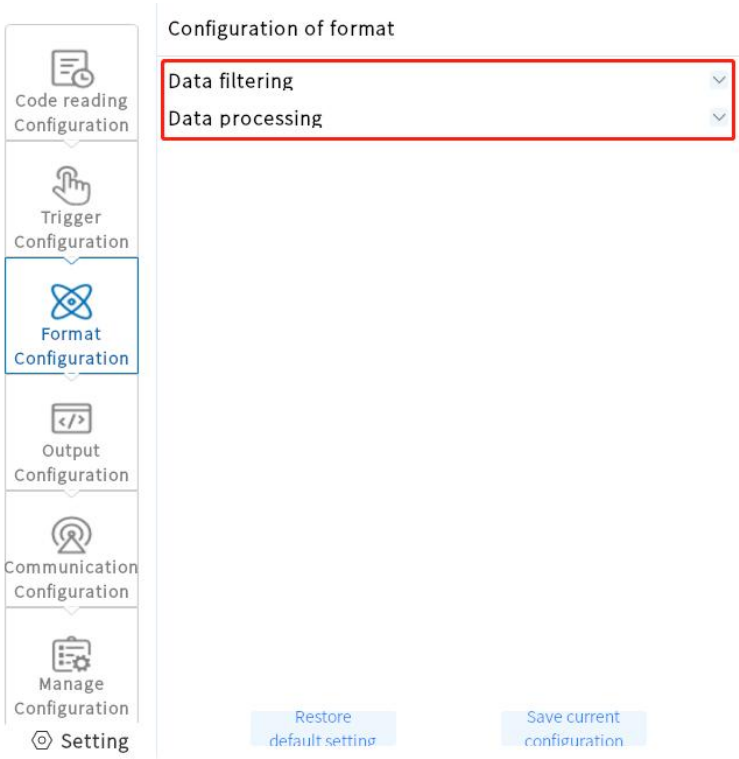
Through the mouse click on the "software trigger" content, you can realize the code reader trigger to take pictures.

5.4.4 Network trigger

Set the longest task time for single trigger.
When the trigger is opened, it will be forced to close when the timeout is not closed. The setting range is 10-9999; the maximum number of pictures ranges from: 1 to 100.

5.5 Format Configuration

The format configuration includes two sections, "Data Filtering" and "Data Processing", which can set the filtering rules and output data of the device.



5.5.1 Data Filtering

Data filtering can do certain filtering to the barcode read by the device according to the set rules.

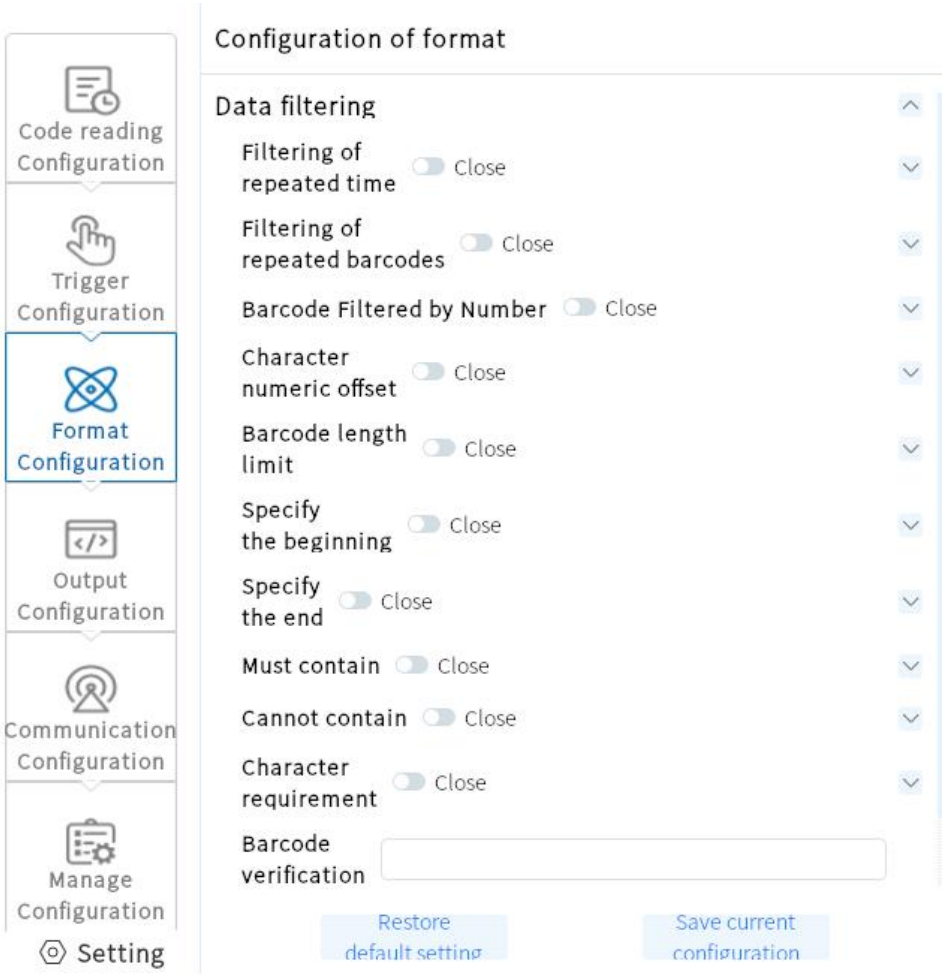
- Repeat time filtering: When this function is enabled, the repeat code will not be output within the set time; (30-30000)

ex: when set to within 500ms, the code content will be 123452, and the result value will be output 1 time if it is run many times within 500ms.

- Reread quantity filter: when this function is enabled, read the same content more than a set number of times, it will not be output; (1-100)

ex: when set to 3, when the code content is 123452, the number of times 123452 is output cannot exceed 3 times.

- barcode length limit: when this function is enabled, only codes within the limit are output.
- specified beginning: when this function is enabled, only codes with specified beginnings are output (there can be more than one beginning)
- specified end: when this function is enabled, only codes with the specified end are output (multiple endings are possible).
- must contain: when this function is enabled, the code that satisfies the containment setting is output (there can be more than one containment).
- Cannot contain: when the function is enabled, output codes that satisfy the non-contained set content (there can be multiple non-contained).
- Character bit offset: output from after the set bit (ex, code: 1232334, set to 3, code output information for 2334).
- output character requirements: all-numeric: only the output of numbers, letters: only the output of letters, numbers or letters.
- Barcode verification: input the target character information to verify whether the above filtering conditions are met, no input is not displayed, OK/NG is displayed, OK is displayed when the filtering conditions are met, NG is displayed when they are not met.

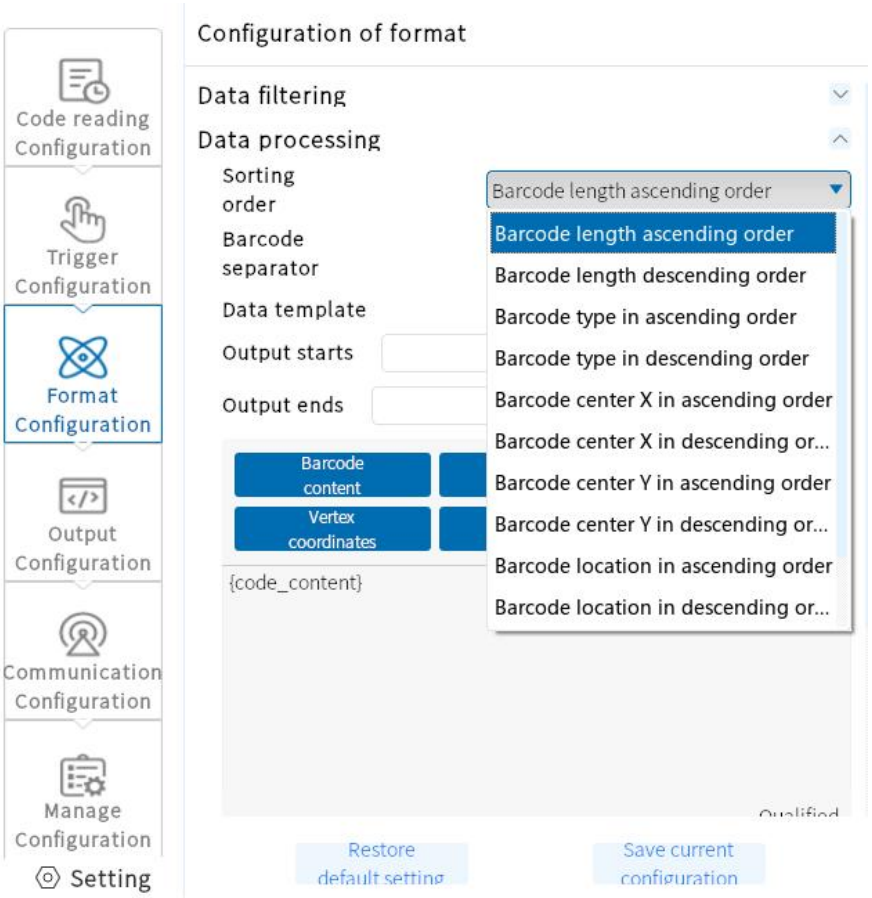


5.5.2 Data Processing

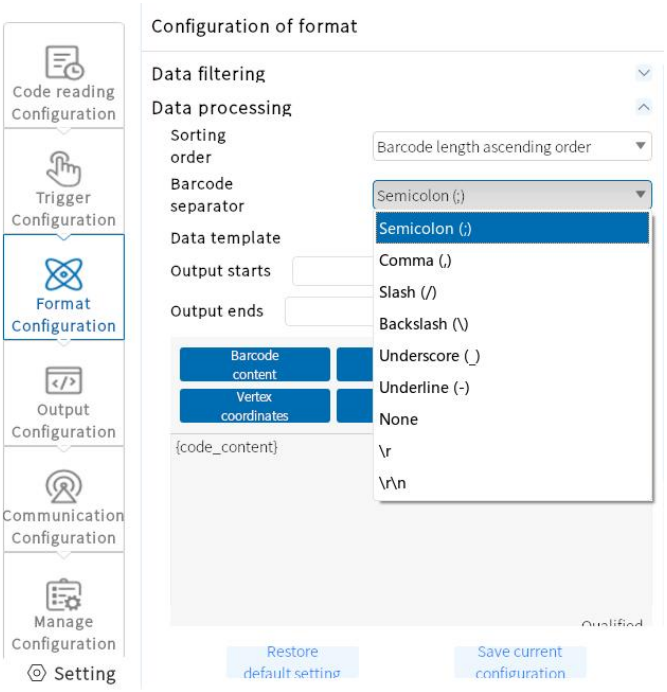
The data processing section allows you to set the barcode results output by the device. The specific parameter content differs with different communication protocols selected.

- Sorting mode: The sorting mode of the output result of the code system supports a variety of sorting rules.

①Barcode length ascending order: sorting from smallest to largest according to the length of barcode content.
②Barcode length descending order: sort from big to small according to the length of barcode content.
③Barcode type ascending order: 1D code: code39,93,128,ITF25,EAN; 2D code: QR/DM.
④Barcode type descending order: 2D code: DM/QR,1D code: EAN,ITF2/5,code128,93,39.
Note:The subsequent new code system is arranged in order according to the above combination.
⑤ ROI ascending order: sorted according to the set ROI number from smallest to largest.
⑥ROI descending order: Sort from big to small according to the set ROI number.
⑦Barcode center X ascending/descending order: sorting according to the code center X position from small to large (descending order is vice versa).
⑧ Barcode center Y ascending/descending order: sorting according to the code center Y position from smallest to largest (descending order and vice versa).
⑨ Barcode position ascending/descending order: sorting according to X from small to large and Y from small to large (descending order and vice versa).



- Bar code separator, semicolon (;), comma (,), slash (/), backslash (\), underscore (_), midline (-).

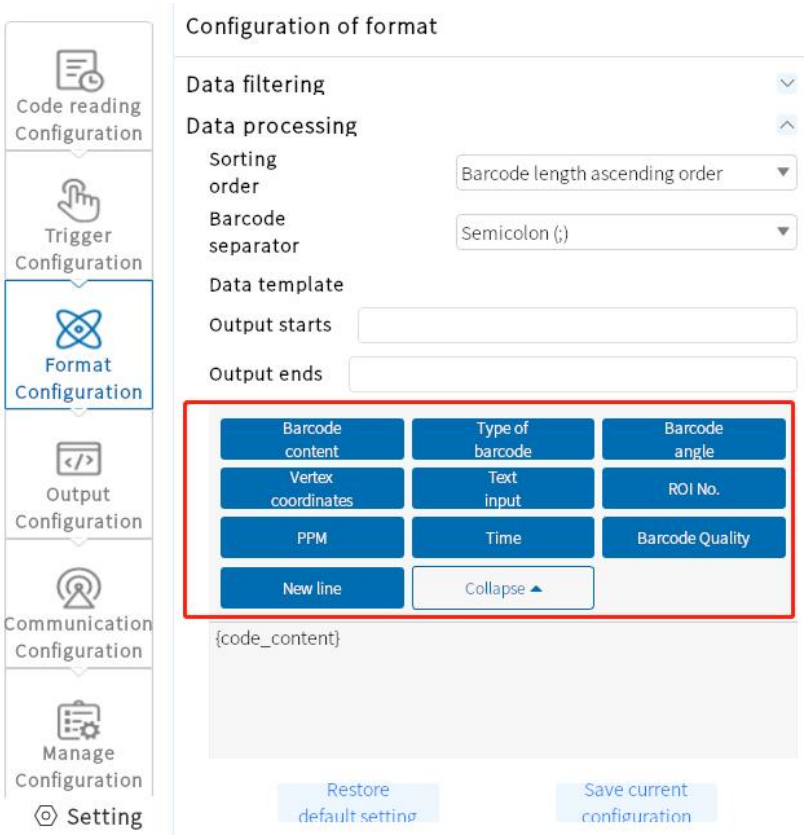


- Data Templates

Used to process data for editing.

- Output Start

Contains barcode content, barcode type, barcode angle, vertex coordinates, quality level, ROI serial number, PPM, time, carriage return line feed.



- End of Output

Contains text input, output start, and output end.

① Text input: Used for custom character input.

② Output start/end: Used for custom settings of start and end.

③ Preview content: Used for preview of editing content.

- ROI No Read Complement

There is no recognized code in the ROI area, and the read failure associated character is output.

- Output failure character

Used to define the read code failure character.

5.6 Output Configuration

Continuous output time is 0~9999ms, divided into 3 outputs.

5.6.1 OUT setting

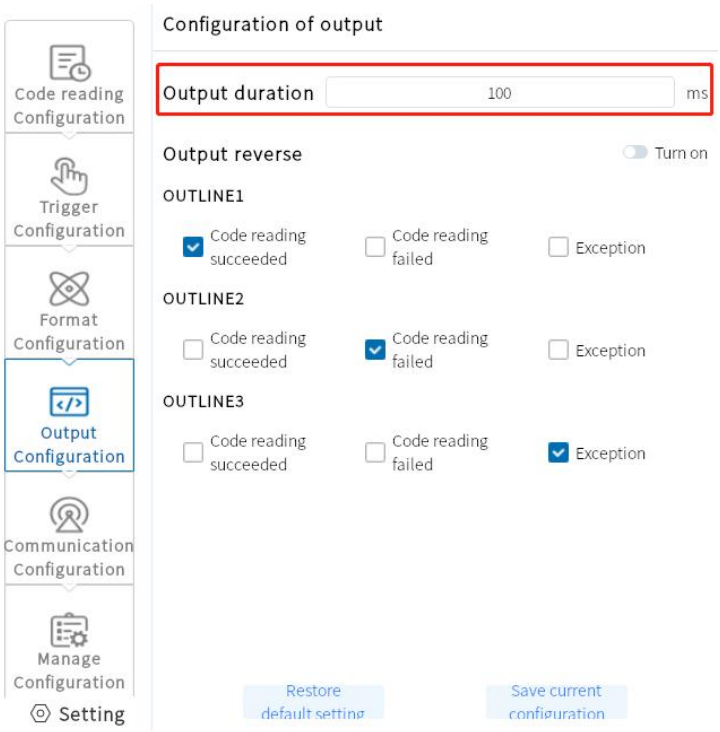
OUT setting can control three different groups of output control, divided into "OUTLINE1", "OUTLINE2" and "OUTLINE3", which correspond to The hardware trigger output "OUT0", "OUT1" and "OUT2" respectively.

①OUTLINE1: You can select three states: "OK", "reading code failure" and "abnormal". "OK" indicates the output signal of successful code reading; "code reading failure" indicates the output signal of code reading failure; "abnormal" indicates the output signal of abnormal condition of device self-test.

②OUTLINE2: You can select "OK", "code reading failure", "abnormal" three states. "OK" means the output signal of successful code reading; "code reading failure" means the output signal of code reading failure; "abnormal" means the output signal of abnormal condition of equipment self-test.

③OUTLINE3: You can select "OK", "reading code failure", "abnormal" three states. "OK" means the output signal of successful code reading; "code reading failure" means the output signal of code reading failure; "abnormal" means the output signal of abnormal condition of equipment self-test.

④ Output duration: the duration of the output signal, the default is 9ms, range 0-9999ms.

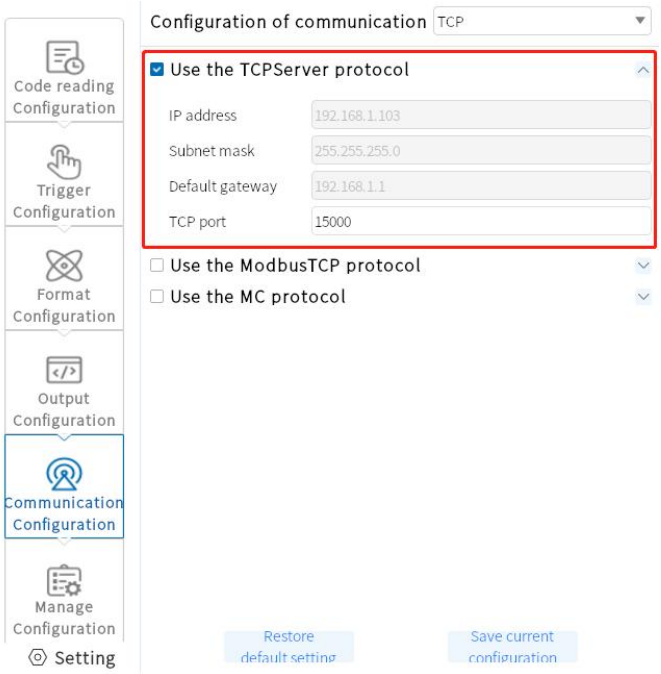


5.7 Communication configuration

The "Communication Configuration" panel contains TCP and serial ports, which are used to set up the communication protocols required for data transmission, which are related to the device operation mode.

5.7.1 Using the TCPServer protocol

Generally for the common TCP protocol communication, the sweeper as the Server side.



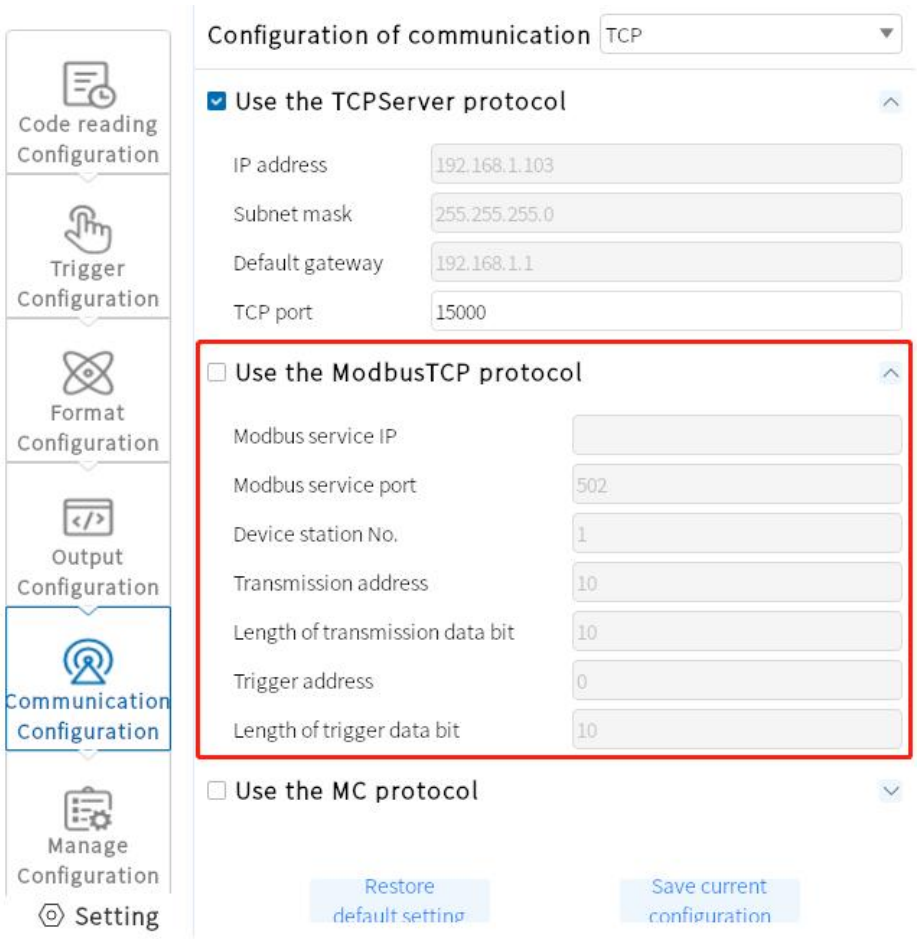
5.7.2 Using the ModbusTcp protocol

In addition to TCPServer, you can also choose ModbusTcp protocol, which requires configuration of Modbus service IP, Modbus service port, etc. respectively.

- Service IP: IP address of the corresponding device to be connected.
- Service Port: The port number of the corresponding device is connected.

Device station number: The station number of the corresponding device is connected.

- Transmission address: The address of the corresponding PLC transmission data.
- Transmit data bit length: the length of the data byte.
- Trigger address: the address required for the PLC to trigger the camera.
- Trigger Data Bit Length: the length of the data bits required for triggering.

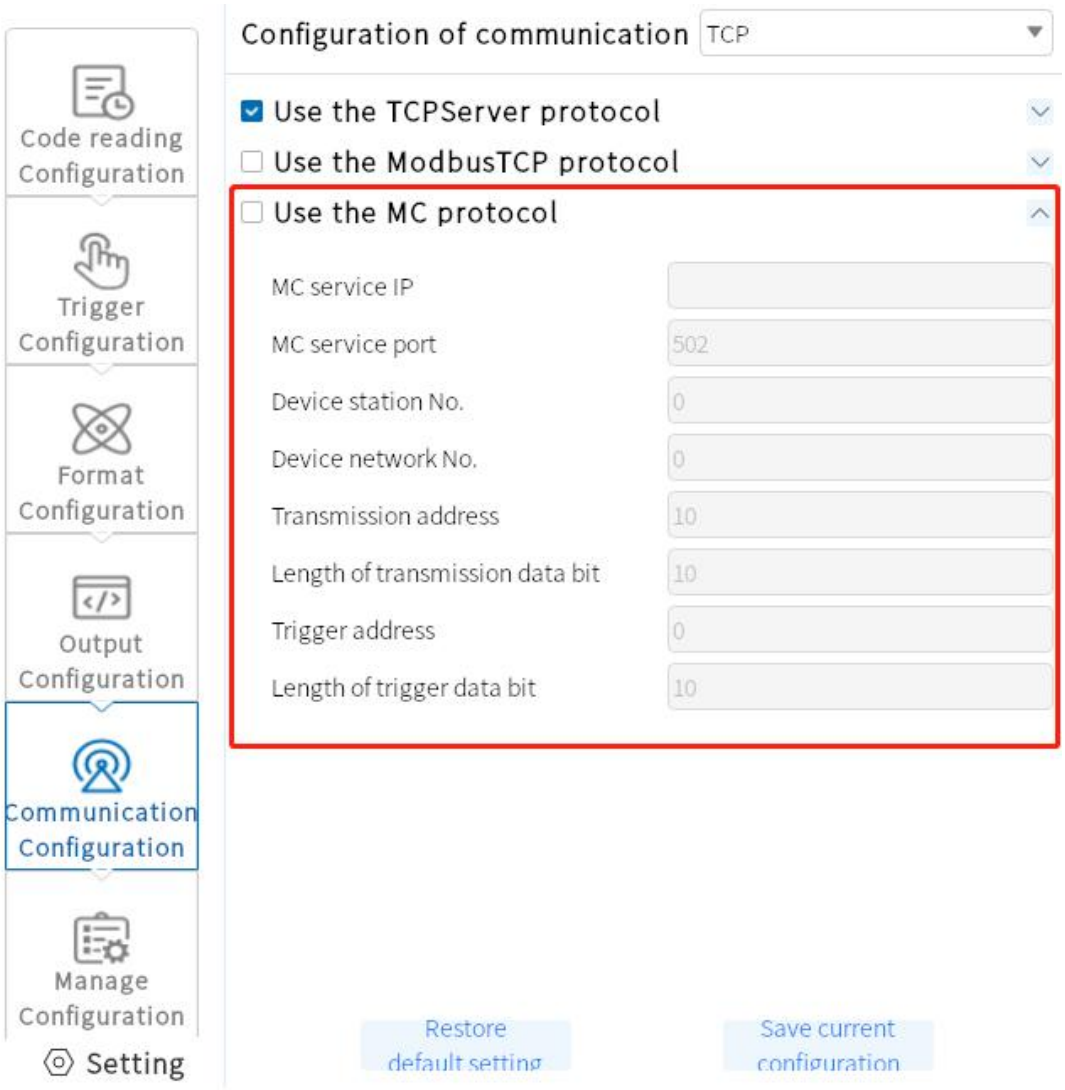


5.7.3 Using the MC protocol

MC protocol needs to be configured separately for MC service IP, MC service port, etc.

- Service IP: IP address of the corresponding device to be connected.
- Service Port: The port number of the corresponding device is connected.
- Device station number: The station number of the corresponding device.
- Device network number: The network number of the corresponding device is connected.
- Transmission address: the address of the corresponding PLC transmission data.

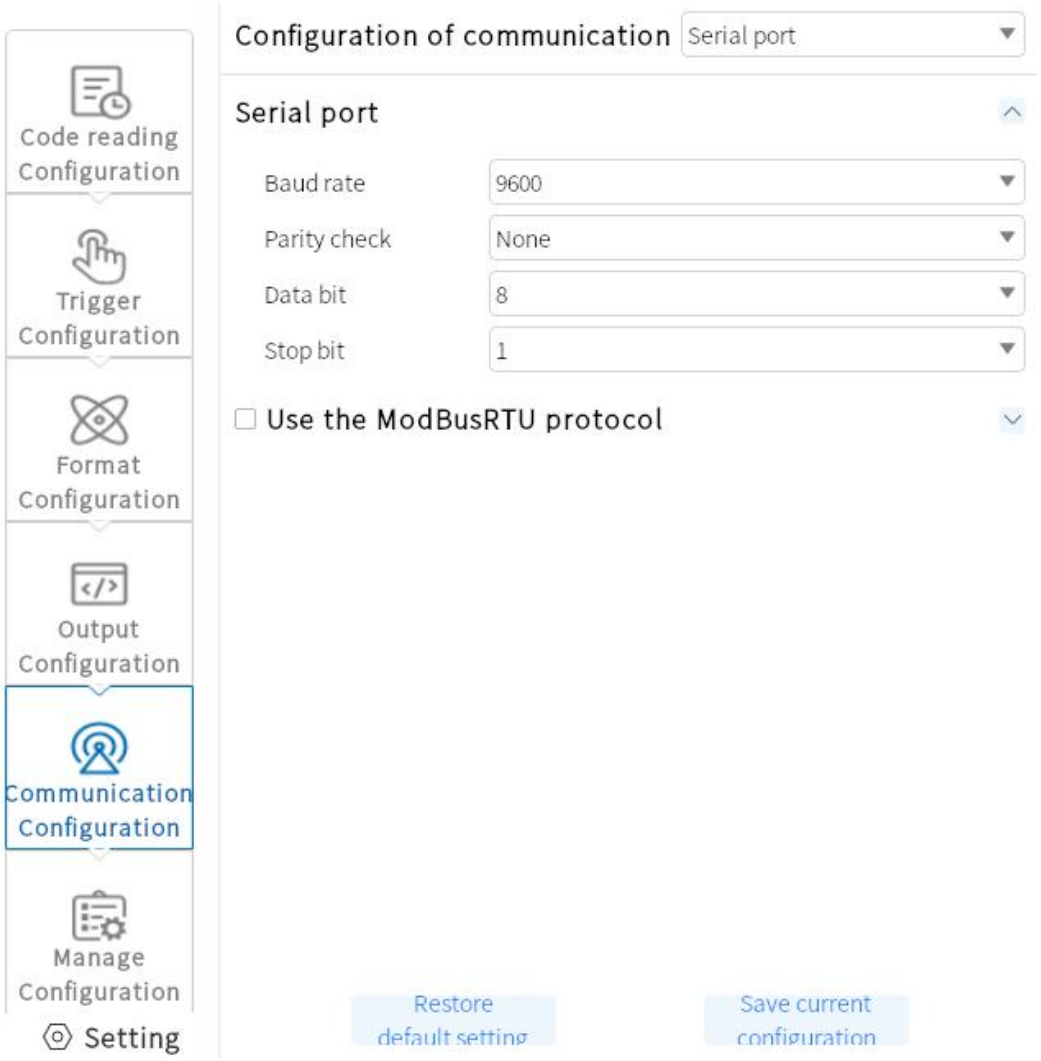
- Transfer Data Bit Length: The length of the data byte.



5.7.4 Serial port

When Serial is selected as the communication protocol, the following parameters can be set.

- Serial port baud rate: Set the serial port baud rate of the receiver.
- Serial Parity: Set the serial parity bit of the receiver.
- Serial data bits: Set the serial data bits of the receiver.
- Serial port end bit: Set the serial port stop bit of the receiver.

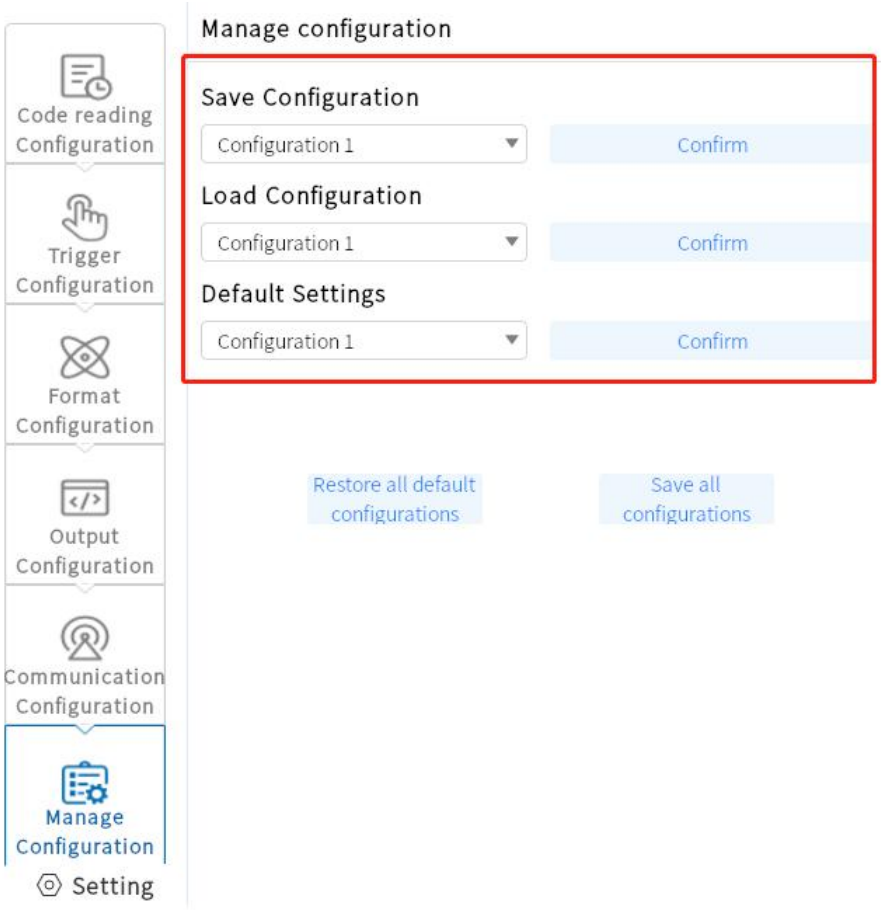


5.7.5 Using the ModBusRTU protocol

- Device station number: The station number of the corresponding device is connected.
- Transfer Address: The address of the corresponding PLC transfer data.
- Transmit data bit length: the length of the data byte.
- Trigger address: the address required for the PLC to trigger the camera.
- Trigger Data Bit Length: the length of the data bits required for triggering.

5.8 Configuration Management

Configuration management includes "Restore all default configurations" and "Save all configurations".



5.9 Settings

5.9.1 Device Settings

- Device Name

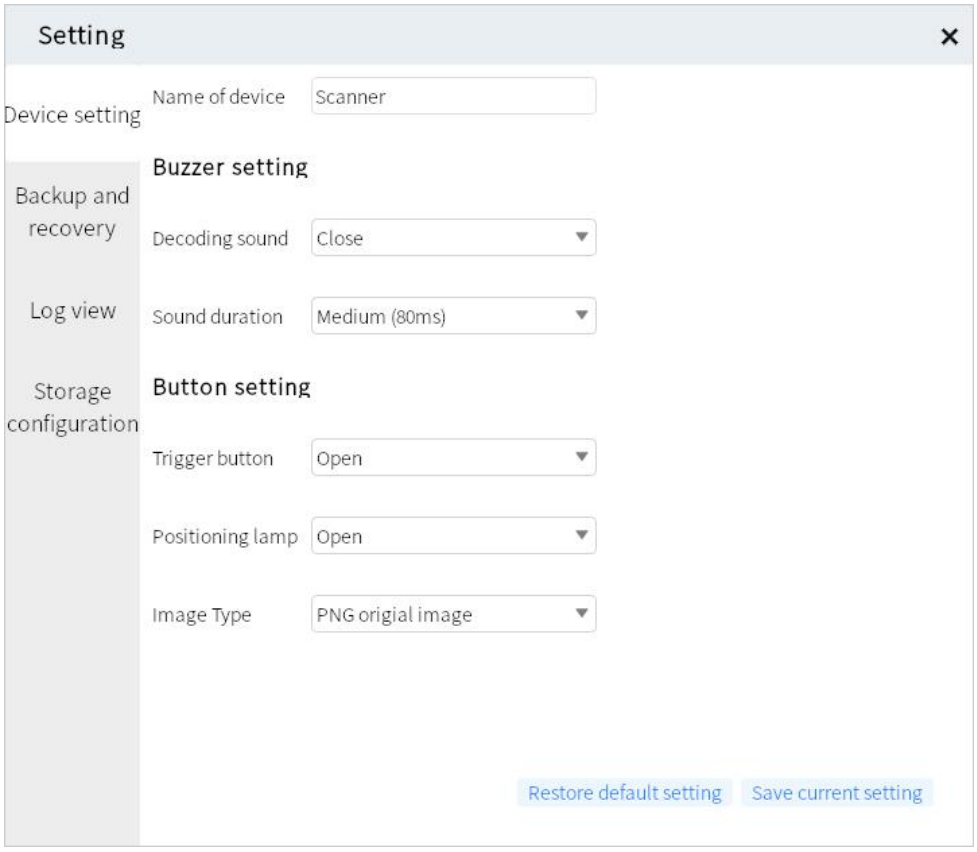
You can modify the device name of the code reader. Support Chinese, English, letters, characters, numbers, etc.

- Buzzer setting

Can be turned on after decoding success/failure, sound can be set to 40ms, 80ms, 120ms.

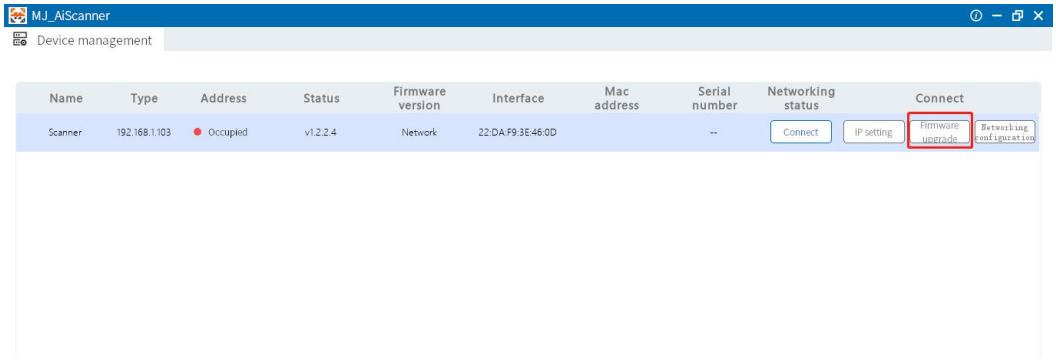
- Key setting

Trigger button, open/close. Function button, open/close. Positioning light, open/close.



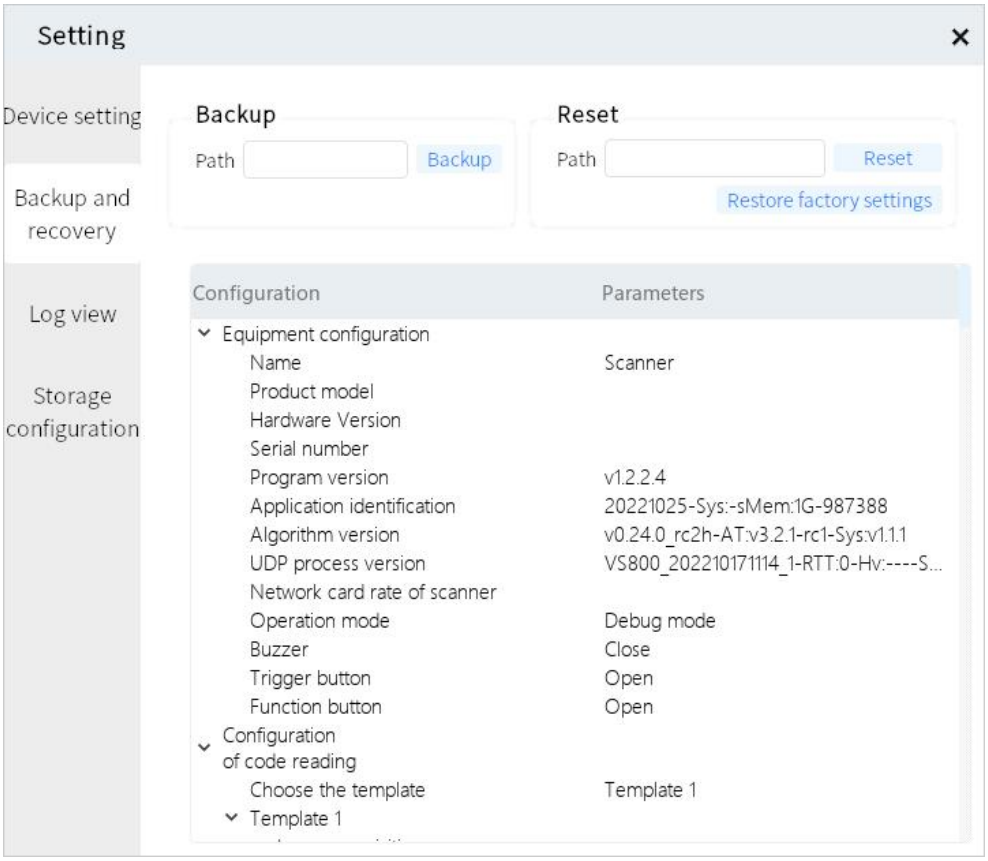
5.9.2 Firmware Updates

After clicking Browse to select the firmware file, click Upgrade to complete the code reader firmware upgrade process.



5.9.3 Backup Restore

The code reader can back up settings and other information to the PC, as well as restore settings and restore factory settings.

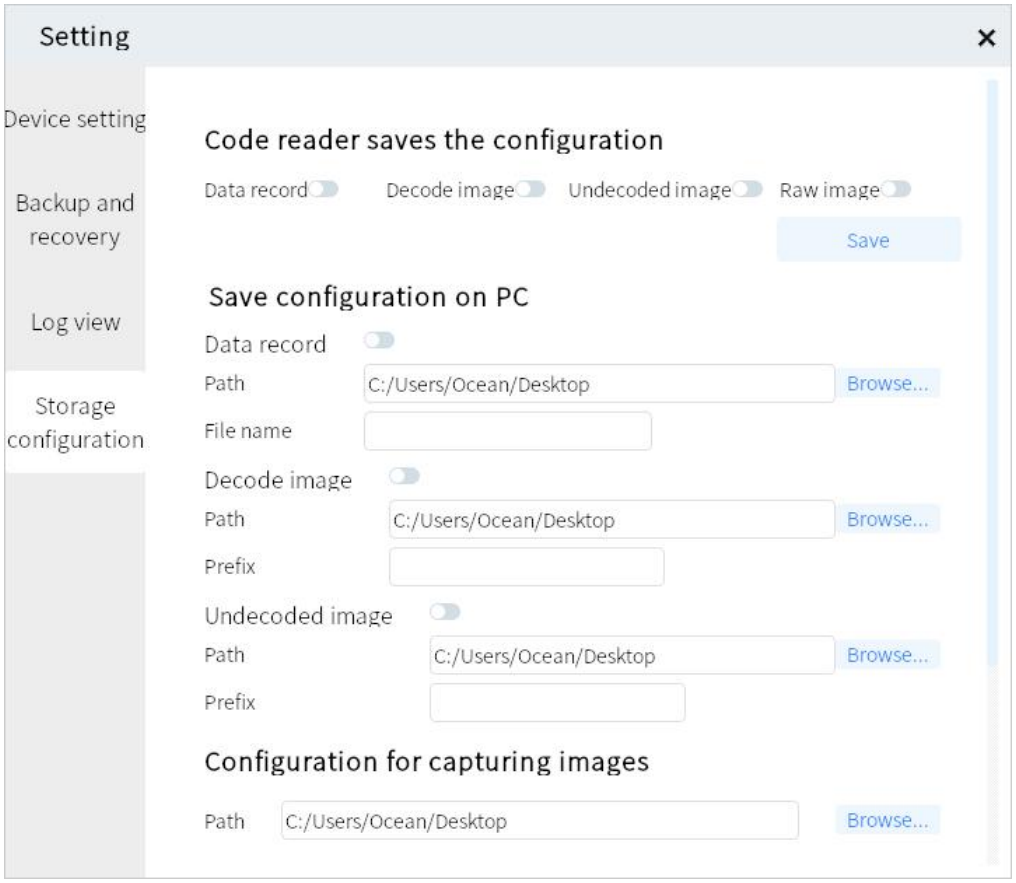


5.9.4 Log view

You can view the log level "ERROR", "WARN", "INFO", "DEBUG ", etc.
You can "refresh log", "clear log", "export log".

5.9.5 Storage Configuration

- Readers save configuration. You can turn on/off "Data Logging", "Decoded Image", "Undecoded Image", and "Original Image".
- PC save configuration. You can freely choose the path to save.
- Capture configuration. You can save the capture path.
- Capture time: 1s~60min.
- Number of captures: 2~10000 pictures.



Chapter 6 List of Frequently Asked Questions

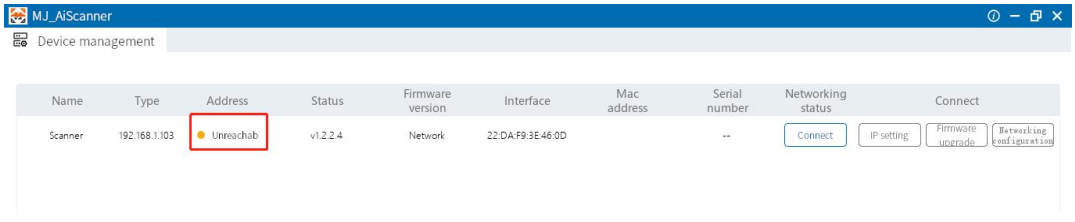
6.1 The client software has recognized the device, but it says "unreachable"

- **Possible causes. :**

1) The IP of the device and the NIC to which the device is connected are not in the same network segment.
2) The NIC has obtained IPs from two different segments.

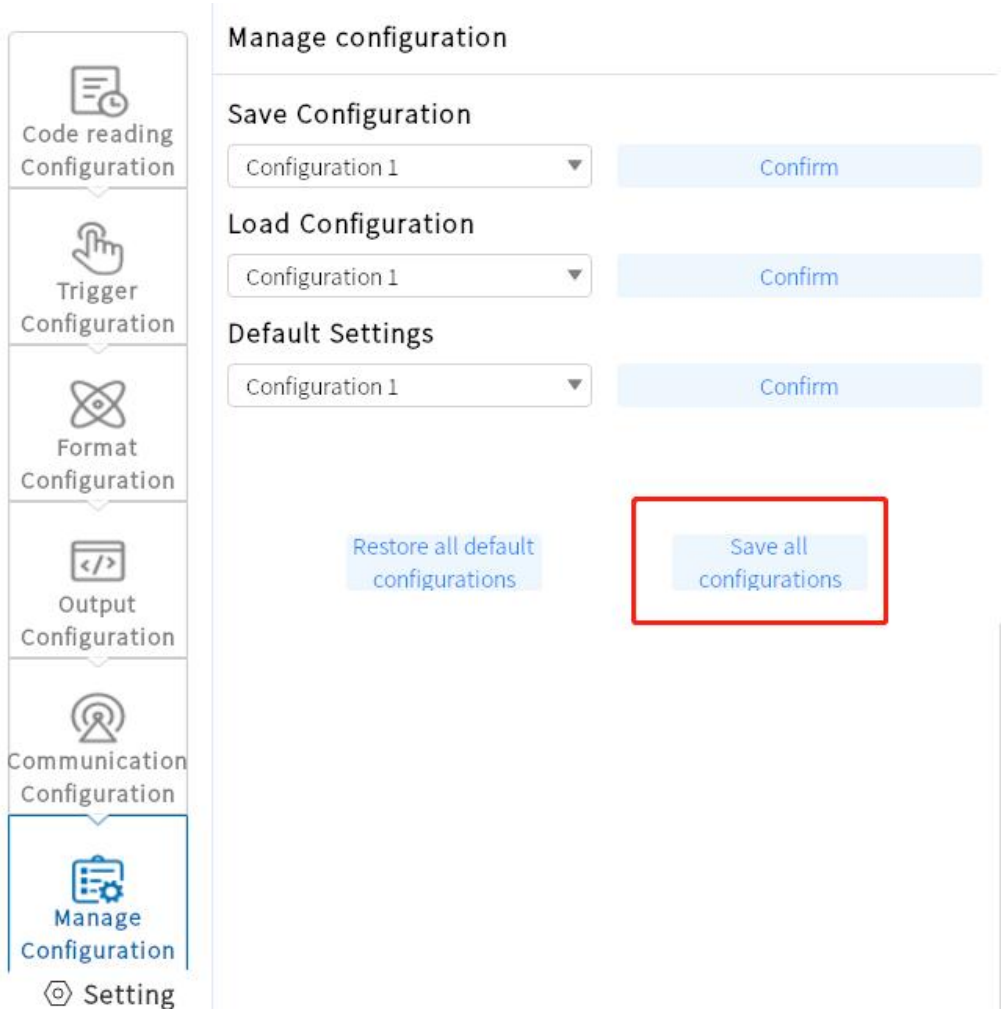
- **Solution :**

1) Make the computer and the device in the same network segment by modifying the device IP.
2) Click on the computer "Start" - search box, type "cmd" - right click administrator privileges to run - enter: netsh winsock reset, reset the network card information, then restart the computer.



6.2 After setting debug mode on the client, it was found that the debug mode was not saved

- Possible reason: The system has temporarily stored the setting parameters, and you need to save all the settings manually after the settings are completed.
- Solution: Click "Configuration Management" - "Save All Configuration".
- The specific operation is as follows.

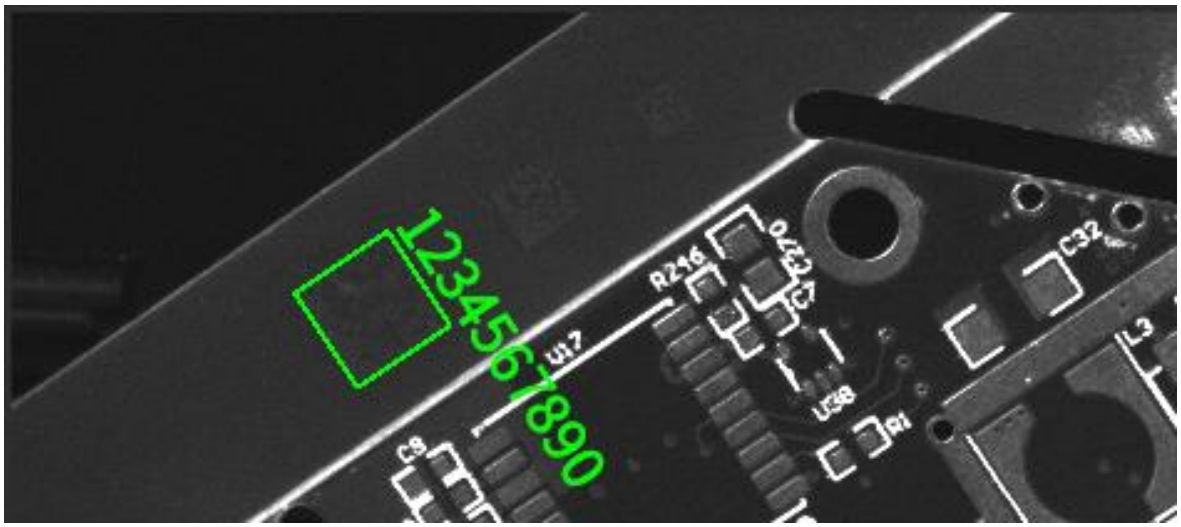


6.3 The barcode material is metal/PCB, the focus is clear but cannot be identified

- **Possible causes.**

1) The identified material is black background, reading code area brightness is too low.

2) The identified material is reflecting seriously.



- **Solution.**

1) Increase the value of "light source" or "gain" to increase the brightness of the code reading area.

(2) adjust the angle of the code reader / material angle, avoid direct light source, adjust the exposure and gain.

6.4 Unable to recognize smaller barcode sizes

- **Possible reasons:** The barcode occupies less weight in the field of view, and the barcode is not accurate enough, resulting in unrecognition. (Stable reading of one-dimensional code needs more than PPM2, and stable reading of two-dimensional code needs more than PPM3.)

*PPM: is the number of pixels occupied by the smallest module of the barcode.

- **Solution：**

1) Zoom: Reduce the object distance.

6.5 How to use the various trigger modes of the client software

- **Solution.**

(1) network trigger: need to use the third-party software to verify first, the software set the reader for the network trigger, set the same port, the same trigger command, the same network ip segment (some routes may open IP isolation, need to close).
(2) IO trigger: need to connect IO trigger signal line, software set the reader for IO trigger, wiring to set the same LINE0/1, the same trigger command [which will have NPN, PNP two kinds of connection. General connection: IN0/IN1 contact the hair device OUT line, IN_COM line connected to positive (npn) or negative (pnp)].
(3) serial port trigger: need to connect DB9 terminal, software set the correct COM port, the same baud rate, data bits, stop bits, parity bits. The same trigger command.
(4) Software trigger: need client software and code reader to connect the same network segment.

6.6 Network trigger unsuccessful

- **Possible reasons：**Only client mode is currently supported on the device side.
- **Solution：**Adjusts the PLC device network trigger mode.