

DM8500MAX Industrial Code Reader

User Manual



Contents

Chapter 1 Product Introduction	3
1.1 Product Description	3
1.2 Key Features	3
1.3 Appearance Overview	4
1.4 Interface and Flying Lead Definitions	5
1.5 Accessories	5
1.6 Hardware Dimensions	6
Chapter 2 Device Installation and Operation	7
2.1 Device Installation	7
2.2 Power Connection	7
2.3 Communication Connection	7
Chapter 3 I/O Electrical Characteristics and Wiring	10
3.1 I/O Electrical Characteristics	10
3.2 External I/O Wiring	13
3.3 RS-232 Serial Port	17
Chapter 4 Client Installation and Operation	18
4.1 Client Software Download	18
4.2 Software Connection	18
4.3 PC Network Configuration	19
4.4 Firmware Upgrade	20
Chapter 5 Feature Introduction	21
Chapter 6 Product Configuration Methods	47
Chapter 7 FAQs	66
7.1 The client software detects the device but shows 'Unreachable'	66
7.2 Debug mode settings in the client are not saved	67
7.3 How to Use Trigger Modes in the Client Software	68
7.4 Network Trigger Fails	68

Chapter 1 Product Introduction

1.1 Product Description

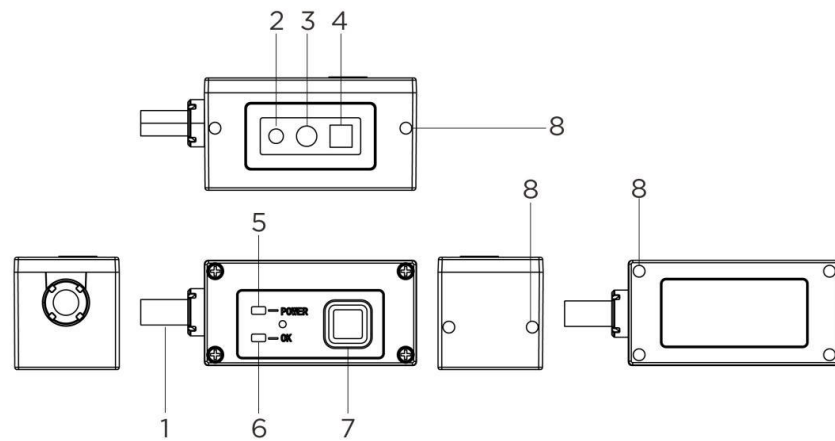
This manual applies to the Tipcode Scanner DM8500MAX series intelligent code reader. The device is equipped with a deeply customized AI chip and features an ultra-compact design. It is suitable for use in confined spaces and can efficiently read complex DPM codes, complex inkjet codes, and challenging paper label codes.

1.2 Key Features

- Plug and play, with no complex operation or learning curve; easy to install and debug.
- Full-link AI decoding algorithm supporting complex DPM code reading.
- Integrated multi-interface design supporting serial port, USB, and I/O.
- Multi-code reading in a single image; supports reading up to 30 barcodes simultaneously.
- Customized large-depth-of-field lens to meet wide-range code reading requirements.
- Sensor-level ultra-small size for installation in extremely compact spaces.



1.3 Appearance Overview

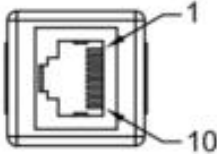


No.	Name	Description
1	Connection Cable	Provides power, Ethernet, I/O, and USB functions
2	Aiming Light	Indicates the image center position for easy target aiming
3	Image Sensor	Used for image acquisition
4	Light Source	Built-in white light source for fill light during image acquisition to ensure image quality
5	POWER Indicator	Green when operating normally; off when not operating
6	Code Reading Status Indicator	Green on OK; off on NG
7	TRIG/TUNE Button	Trigger/one-touch tuning button. Click once to trigger image capture; press and hold for 5 s for one-touch tuning.
8	Mounting Hole	Intelligent Code Reader Mounting Hole, Used to fix the device

1.4 Interface and Flying Lead Definitions

The device interface is an RJ45 female connector. The pin signal definitions are shown in the figure below.

When wiring the device, connect each pin according to the pin numbers in the table and the colors marked on the cable labels.

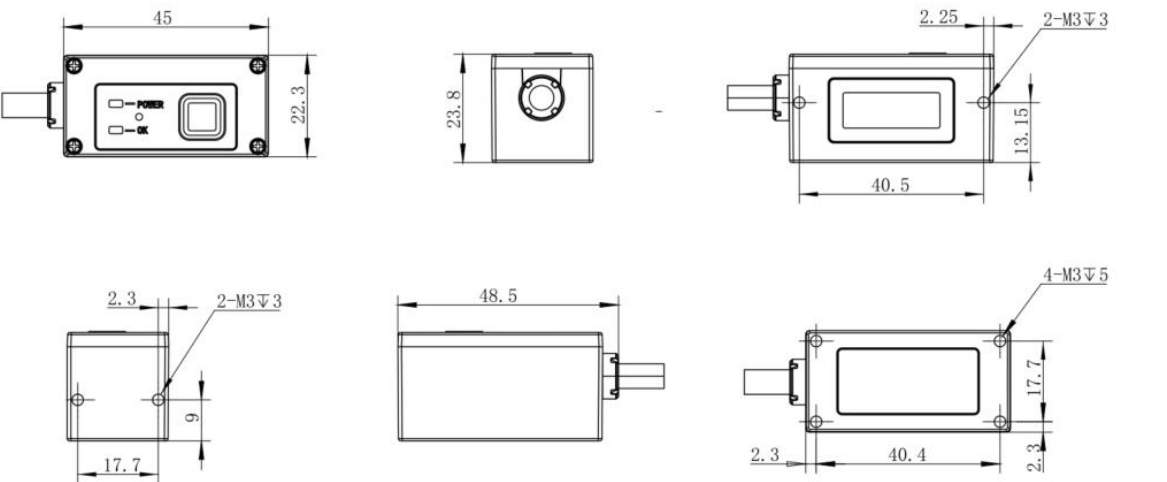
RJ45 Female Connector 	Pin	Color	Signal
	1	Red	USB_5V
	2	White/Black	USB_DM
	3	Green/Black	USB_DP
	4	Black	GND
	5	Green	RS232_TXD
	6	White	RS232_RXD
	7	Gray	LINE_OUT0
	8	Orange	LINE_IN0
	9	Black	GND
	10	Red	VIN-24V

1.5 Accessories

To use the device properly, prepare the accessories shown in the table below before installation.

Accessory Name	Description	Image
Cable	RJ45 Female Connector Connection Cable	
Power Supply	24V Power Adapter (Optional)	
L-shaped Mounting Bracket	L-shaped Mounting Bracket + Screws (Optional)	

1.6 Hardware Dimensions

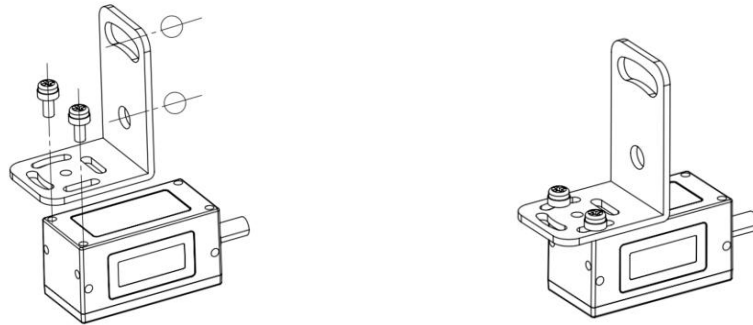


单位:mm

Chapter 2 Device Installation and Operation

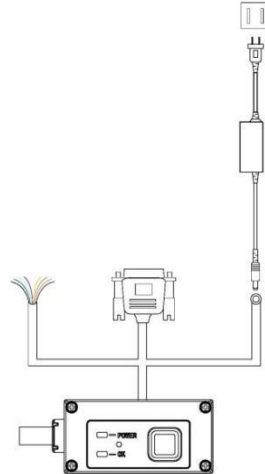
2.1 Device Installation

Use screws to mount the device onto the fixed bracket, and then install the bracket onto other mechanical structures.



2.2 Power Connection

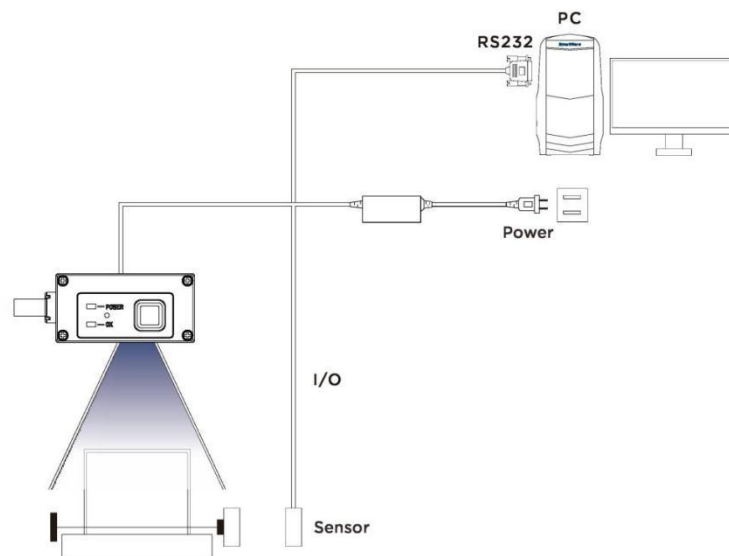
The power supply supports 24 VDC, maximum 3 A, and USB 5 V power. The device supports direct 24 VDC connection, 220 VAC connection with an adapter, or USB power supply.



2.3 Communication Connection

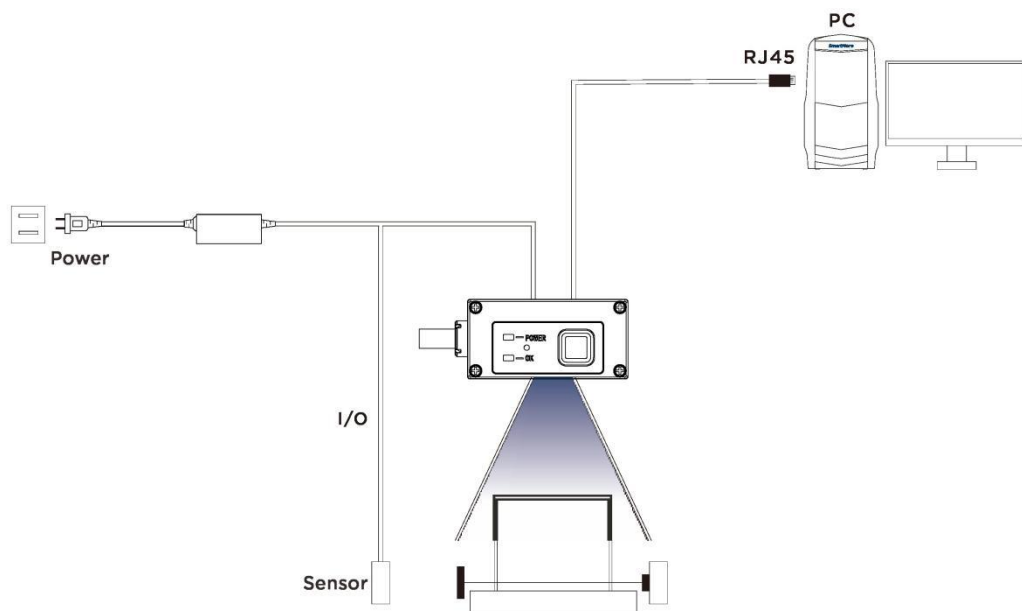
A RS232 Serial Connection

The default baud rate is 9600, parity is NULL, data bits are 8, and stop bits are 1. Actual parameters can be changed in the debugging software.

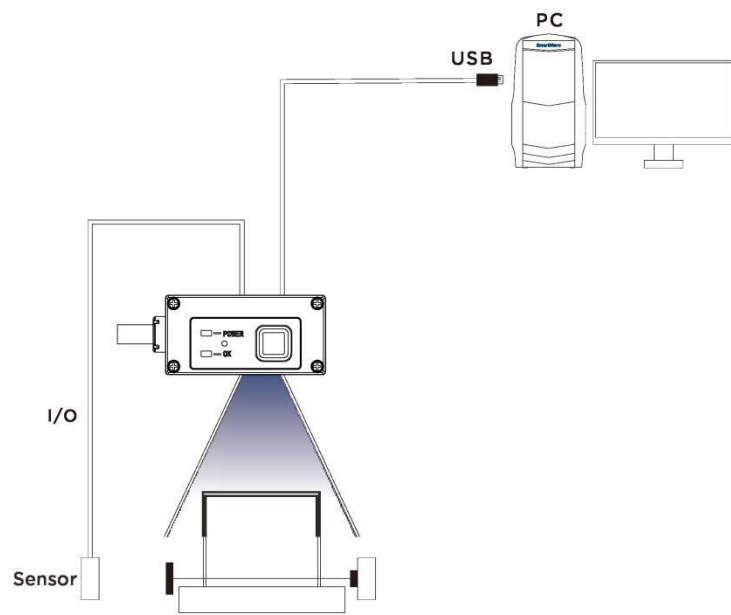


B Ethernet Connection

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



C USB Connection



Chapter 3 I/O Electrical Characteristics and Wiring

The DM8500MAX intelligent code reader has one non-isolated input and one non-isolated output.

3.1 I/O Electrical Characteristics

In the device I/O signals, LineIn1 is a non-isolated input and LineOut1 is a non-isolated output.

3.1.1 Input Electrical Characteristics

Parameter Name	Parameter Symbol	Parameter Value
Input Logic Low	VOL	0.6V
Input Logic High	VOH	2V
Input Falling-edge Delay	TDF	0.5us
Input Rising-edge Delay	TDR	1us

Note: Input logic low or high represents the threshold value of the input voltage. Input rising or falling delay represents performance.

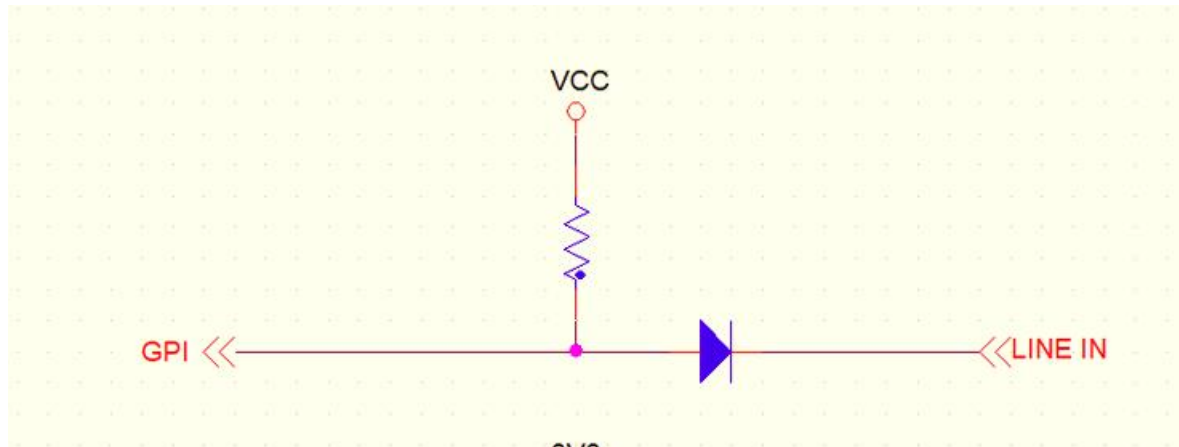
3.1.2 Output Electrical Characteristics

Parameter Name	Parameter Symbol	Parameter Value
Output Logic Low	VOL	0.7V(Max.)
Output Logic High	VOH	Depends on pull-up resistor voltage
Output Falling-edge Delay	TDF	20.3ns
Output Rising-edge Delay	TDR	550ns
Output Falling Time	TF	12ns
Output Rising Time	TR	3.5us

3.1.3 Input Internal Wiring Diagram

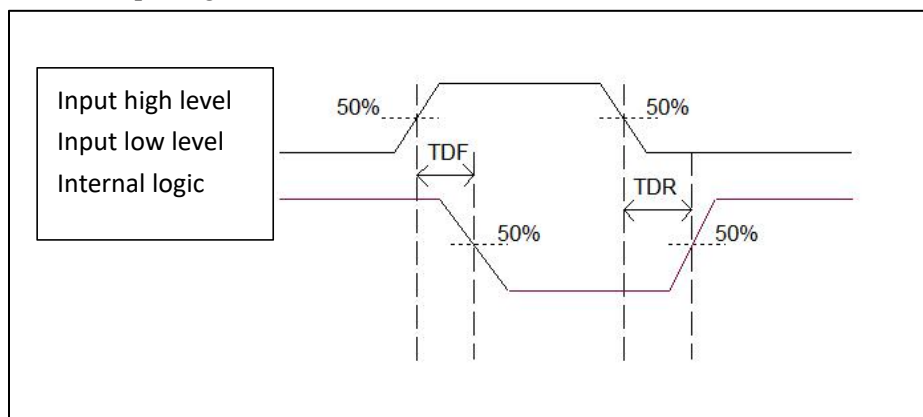
- Input Signal

In the device I/O signals, In1 is a non-isolated input. The input voltage range is 0 to 28 VDC.



Device Input Circuit Diagram

- The input logic levels are:

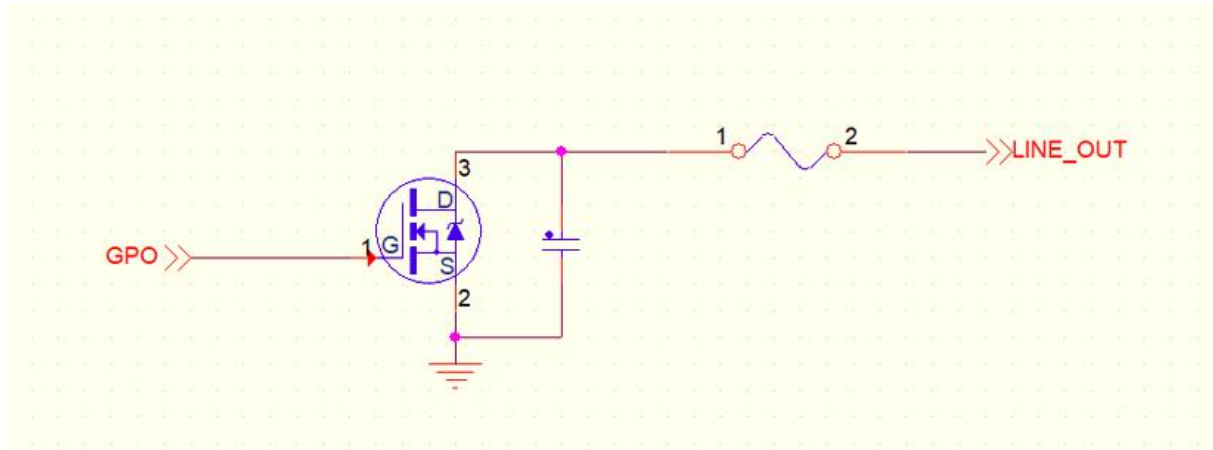


Input Logic Level Diagram

3.1.4 Output Internal Wiring Diagram

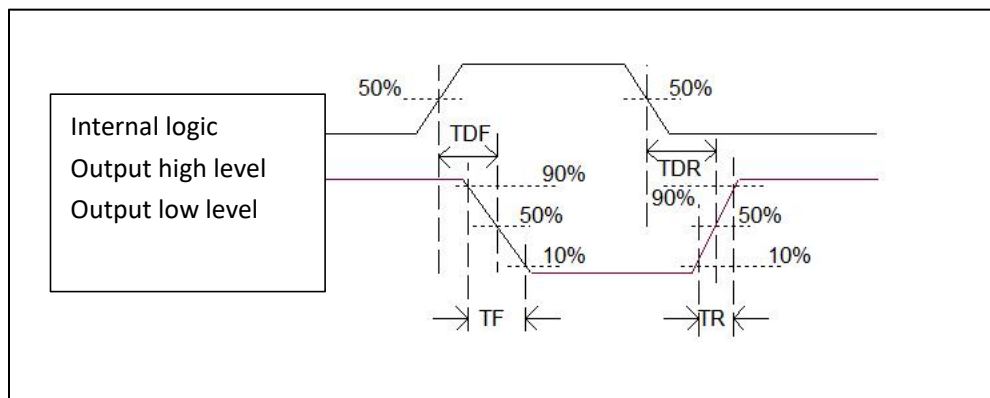
- Output Signal

In the device I/O signals, LineOut1 is an output. The output can drive a VCC voltage of up to 28 V, and the output current must not exceed 50 mA.



Device Output Circuit Diagram

- The output logic levels are:



Output Logic Level Diagram

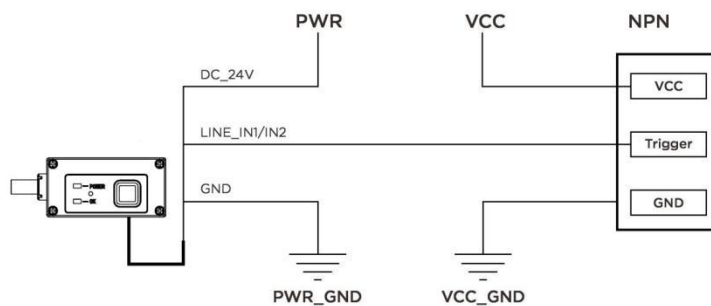
3.2 External I/O Wiring

The device can receive external input signals or output signals to external devices through the I/O interface. This section mainly describes I/O wiring. In the wiring diagrams, LineIn1 is used as the example input signal and LineOut1 is used as the example output signal. Other interfaces can be wired by analogy according to the cable definitions and interface descriptions.

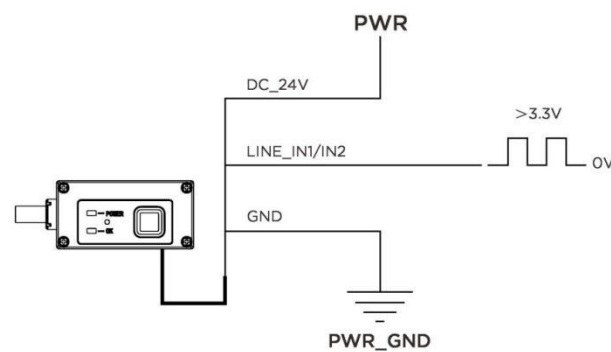
3.2.1 External Input Wiring Diagram

Input wiring varies depending on the device type.

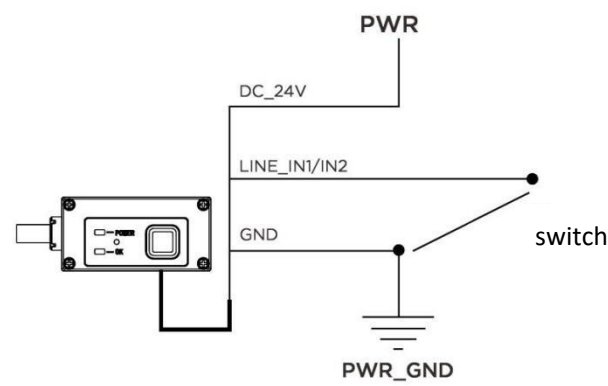
- Input signal is NPN



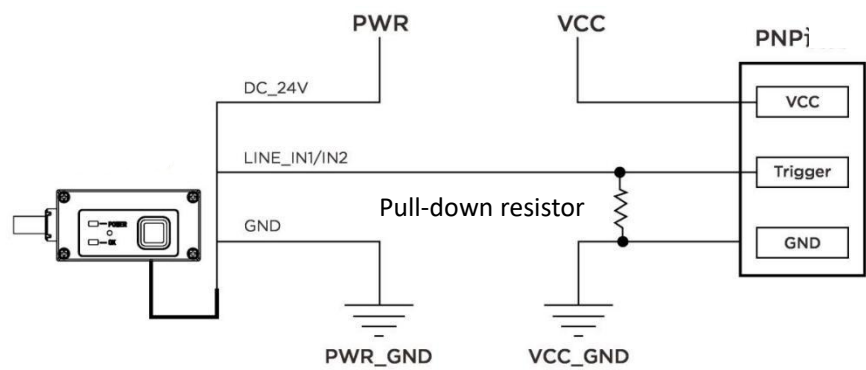
- Input signal is voltage input



- Input signal is switch input



- Input signal is PNP



Note:

1) An external pull-down resistor is required. The resistance should be less than 1 kΩ. According to $P=U^2/R$, the resistor rated power must be greater than P. Several reference values are listed below:

<i>VCC Voltage (V)</i>	<i>Pull-down Resistance(Ω)</i>	<i>Actual Resistor Power(W)</i>	<i>Recommended Resistor Rated Power(W)</i>

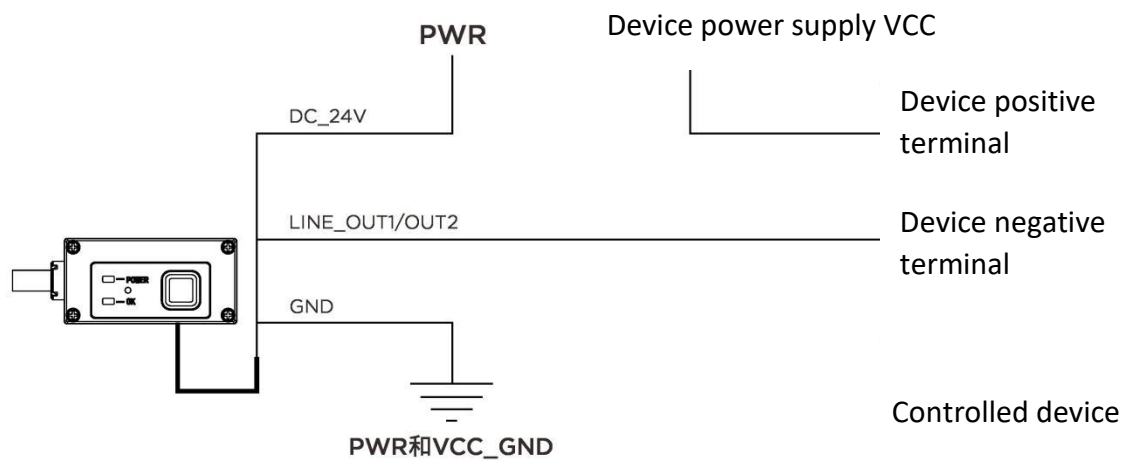
5V	1K	0.025	1/8W or higher
12V	1K	0.144	1/4W or higher
24V	1K	0.576	1W or higher

2) This wiring method requires an external resistor and is not recommended for connecting the input to a PNP device.

3.2.2 External Output Wiring Diagram

Output wiring varies depending on the device type.

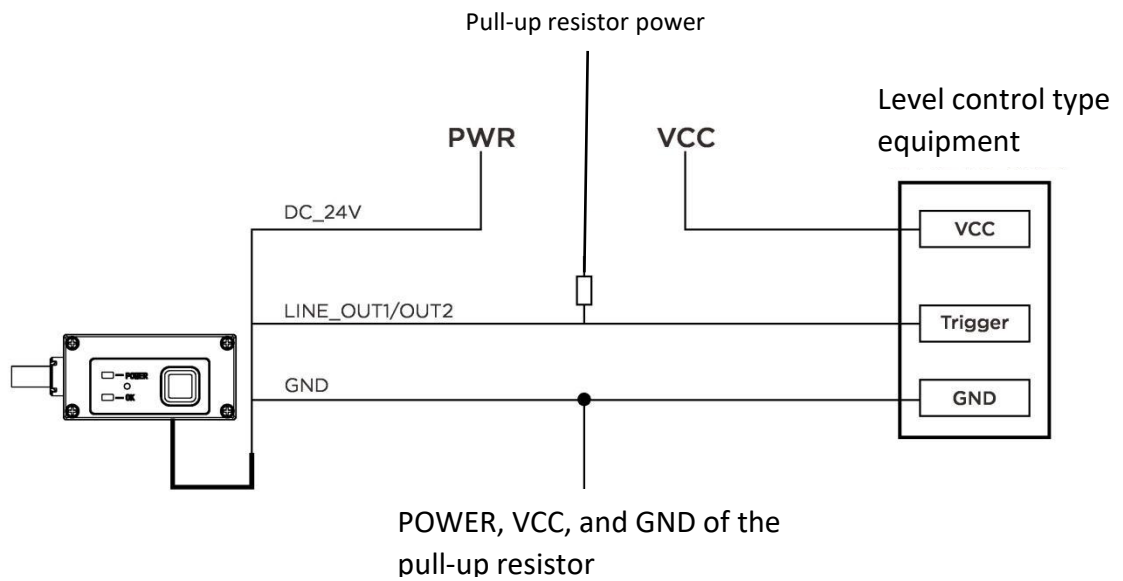
- The external device is an optocoupler, alarm, indicator light, or other device whose power supply circuit needs to be directly controlled.



Note:

- 1) Do not drive inductive devices such as relays or motors.
- 2) The load current at the output terminal must meet the product specification requirements. Add a current-limiting resistor in series if necessary.

- The external device requires high/low level input.



Note:

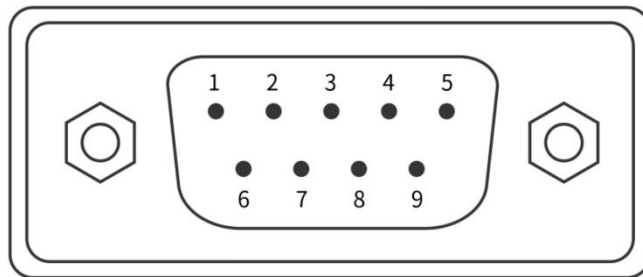
- 1) Measure whether the TRIGGER pin of the device carries voltage. If it does, the device has an internal pull-up resistor and no external pull-up resistor is required. Note that the device's built-in voltage must not exceed the DM8500MAX output control maximum voltage of 28 V.
- 2) If the trigger pin has no voltage, confirm the input voltage range of the device. The pull-up resistor supply voltage must not exceed the maximum input voltage of the controlled device and must be less than 28 V; otherwise, the device and code reader may be damaged.
- 3) It is recommended to calculate the resistor value according to $P=U^2/R$ to ensure that the power is less than the rated power of the pull-up resistor; otherwise, the resistor may be damaged.

3.3 RS-232 Serial Port

The device supports RS-232 serial output.

3.3.1 RS-232 Serial Port

The definition of a commonly used 9-pin male RS-232 serial connector is shown in the figure below.



9-pin Male Connector

Pin Number	Meaning	Function Description
2	RX	Receive data
3	TX	Send data
5	GND	Signal ground

9-pin Male RS-232 Pin Definition

Note: The VCC voltage must not be higher than the PWR voltage; otherwise, the device output signal may be abnormal.

Chapter 4 Client Installation and Operation

4.1 Client Software Download

Go to the Tipcode official website at <http://www.tipcode.cn> and download the 'tipcode-scanner' software installation package. Double-click the installer to install the software.

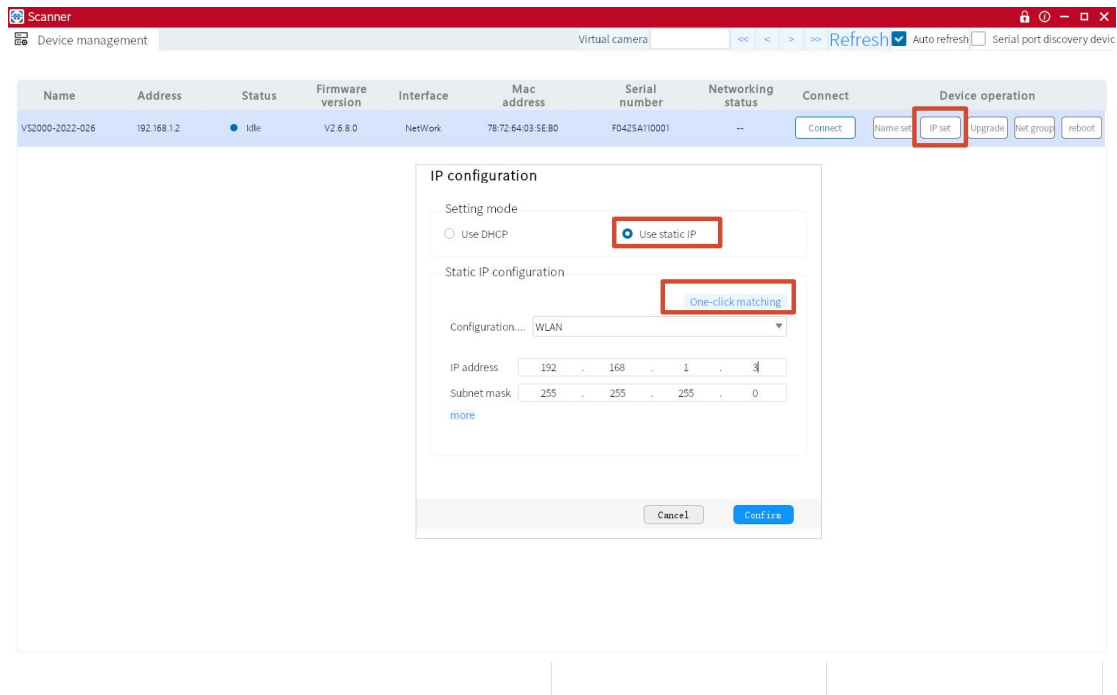


4.2 Software Connection

- Click 'TipcodeScanner' on the PC desktop and run the software as an administrator.



- The intelligent code reader and the PC running the configuration software must be on the same network segment to connect.
- Default IP address of the VSE series: 169.254.153.0; gateway: 255.255.255.0.
- Use a static IP address to establish a successful connection.



4.3 PC Network Configuration

4.3.1 Change the PC IP Address

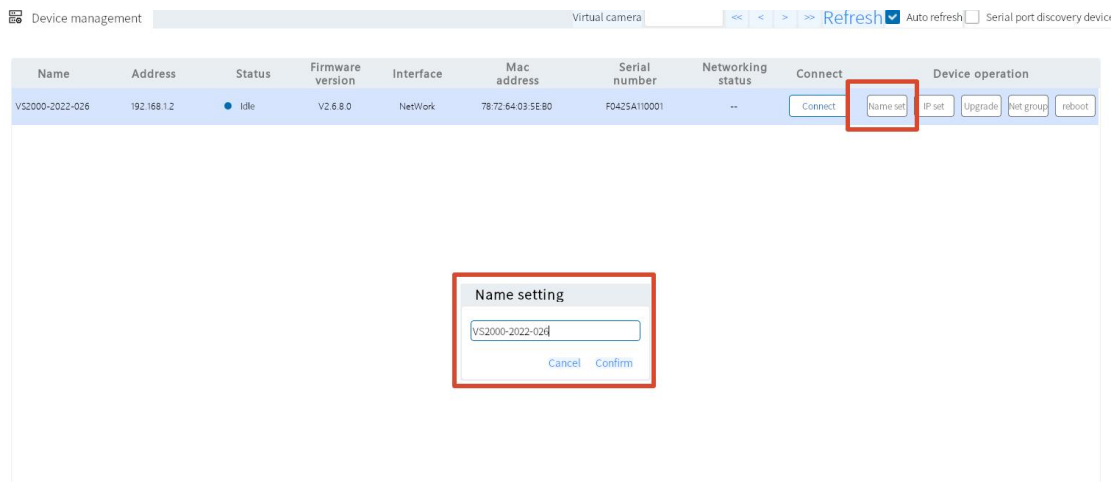
- Procedure: 1) Using Windows 10 as an example, open Start Menu > Settings > Network & Internet > Ethernet > Change adapter options > Ethernet 3 > right-click Properties > Networking > Internet Protocol Version 4 (TCP/IPv4). Modify the IP address of the corresponding PC network card to 169.254.153.16 and set the subnet mask to 255.255.255.0.

2) Open the configuration software, select the corresponding PC, and click Connect to complete the connection.



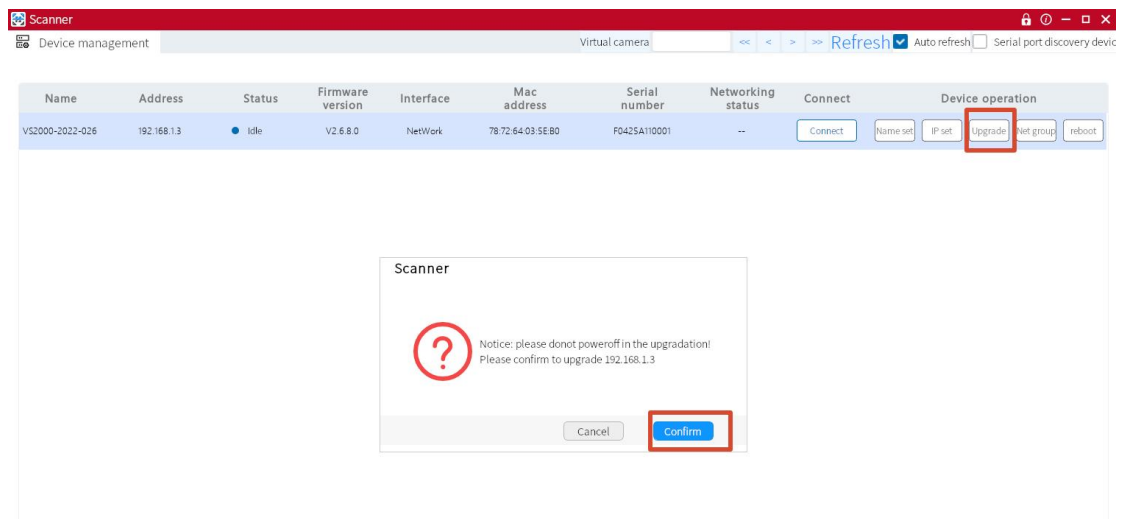
4.3.2 Change the Code Reader IP Address

- Procedure: Open the configuration software, select the corresponding PC network card, and after the code reader is displayed, click IP Settings > Use Static IP > One-click Match > Confirm to change the IP address to the same network segment as the PC.



4.4 Firmware Upgrade

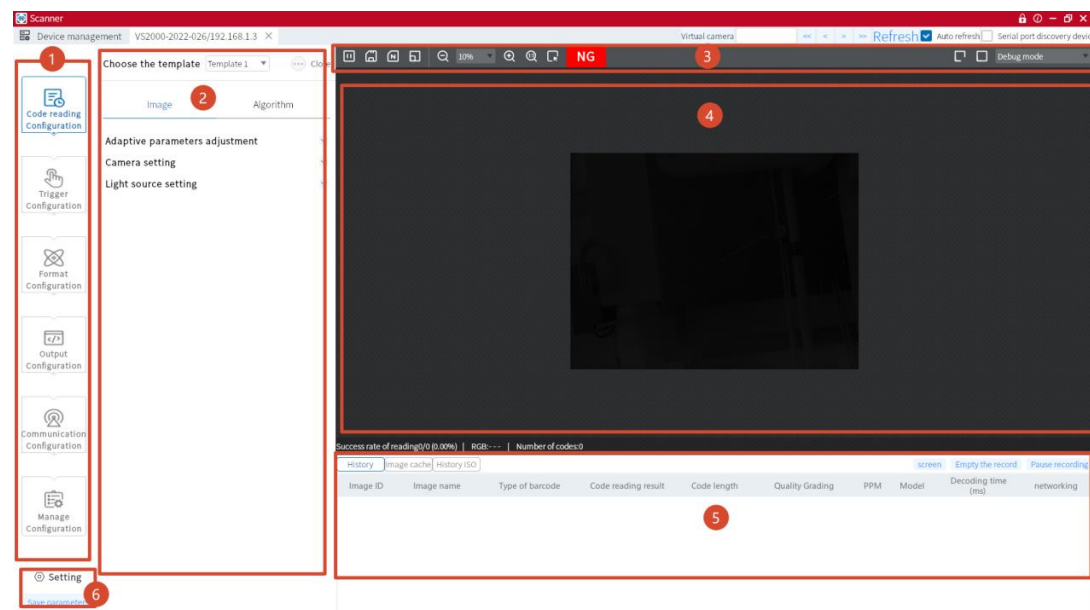
- Procedure: Device Management > Device Maintenance > Firmware Upgrade. Select the firmware file and click OK to update the firmware. Wait for the device to reboot to complete the upgrade.



Chapter 5 Feature Introduction

5.1 Client Interface Overview

- The device can be operated through the client as follows:
 - 1) After confirming that the device is reachable, select and click 'Connect' in the client to connect to the device successfully.
 - 2) After the device is connected, the main interface of the client is shown below. The functions of each module are described in the table.



No.	Name	Function Description
1	Menu Bar	Configures basic client functions.
2	Code Reader Configuration	A submenu under the menu bar used to configure parameters for corresponding modules, including template selection, parameter settings, algorithm settings, and more.
3	Toolbar	Provides shortcuts such as start/stop image acquisition, capture and save image, cancel ROI, zoom preview image in/out, software trigger, and switch operating mode.
4	Preview Window	Displays the device's current acquired image, algorithm reading results, and ROI drawing effects in real time.
5	History	Displays the barcode information currently read by the client in real time.

6	Basic Settings	Allows you to change the device name, buzzer settings, and button settings, and also view code reading statistics, upgrade firmware, and check device logs.
---	----------------	---

5.2 Code Reading Configuration

5.2.1 Template Selection

- The template type supports five templates, from Template 1 to Template 5, as shown below.
- Use the drop-down list in the upper-left corner of the 'Code Reader Configuration' area to select a device template. After configuring related parameters, you can save the current operating mode as a template.
- When multiple templates are selected, the device enters template polling mode and reads using the selected templates during the task time. If 'Use last successful template' is selected, the current task uses the template that decoded successfully in the previous task. If not selected, the device polls templates 1 to 5 in ascending order.
- Multi-template serial image acquisition: When enabled, the current template performs image acquisition and decoding before moving to the next template. When disabled, multiple templates acquire images in parallel and decode in sequence. This is disabled by default.

Choose the template
Template 1
... Turn on

☒ Template 1
☐ Template 2
☐ Template 3

☐ Template 4
☐ Template 5

☐ Use Last Success Template

☐ Multi template serial image retrieval

Image

Algorithm

Camera setting

Light source setting

5.2.2 Image Acquisition

- If recognition performance is poor, adjust the 'Image Acquisition' parameters under 'Code Reading Configuration', including manual camera settings and light source settings such as exposure time and gain, or use automatic image adjustment so the device can intelligently adjust camera settings.

5.2.2.1 Camera Settings

- Automatic image adjustment: Adjusts the image by changing exposure and gain parameters according to on-site conditions.
- Exposure time: Controls the opening time of the code reader shutter and the image brightness. The longer the exposure time, the brighter the acquired image. It can be adjusted by dragging the slider or entering a numeric value.
- Gain coefficient: Controls the image gain and image brightness. It can be adjusted by dragging the slider or entering a numeric value.

Tip: The longer the exposure time, the lower the supported motion speed for reading. The higher the gain value, the more image noise there will be.

Choose the template

Template 1

...

Turn on

☒ Template 1

☐ Template 2

☐ Template 3

☐ Template 4

☐ Template 5

☐ Use Last Success Template

☐ Multi template serial image retrieval

Image

Algorithm

Camera setting

^

Automatic image adjustment

☒ Turn on

Exposure time

1500

Gain coefficient

25

Light source setting

v

5.2.2.2 Light Source Settings

- The light source settings can configure the built-in light, whether external light source 1/2 is enabled, switching time, aiming light, and other parameters. Settings can be adjusted according to the model and application requirements.
 - Module light source: Controls whether the module light source is on or off.
 - External light source 1/2: Controls whether the external light source is on or off. Only high-performance versions support this function.
 - Aiming light: Controls the on/off and always-on status of the aiming light. When

enabled, it lights only when the code reader is in reading status. When set to always on, it remains on even when not reading.

Choose the template

Template 1

Turn on

☒ Template 1

☐ Template 2

☐ Template 3

☐ Template 4

☐ Template 5

☐ Use Last Success Template

☐ Multi template serial image retrieval

Image

Algorithm

Camera setting

Light source setting



☒ Module light source

Positioning lamp

Open

5.2.3 Algorithm Configuration

- Use the 'Algorithm Configuration' module to set parameters related to the code reading algorithm.

5.2.3.1 Code Reading Type

- The current code reading device supports both 1D codes and 2D codes. Select the symbologies to be read; multiple selections are allowed.
- As shown below, the algorithm configuration interface displays the selected symbologies. The more symbologies selected, the longer the algorithm takes to process each image. Select only the required symbologies according to actual needs for best performance.

Choose the template
Template 1
Close

Image
Algorithm

Type of code reading

☒ One-dimensional code

☒ CODE128
☒ CODE39
☒ CODE93
☒ Interleaved 2 of 5
☒ EAN13
☒ EAN8
☒ UpcA
☒ UpcE
☒ UpcEanExtension
☒ Codabar

☐ QR code

☒ QR
☒ DM
☒ Pdf417
☐ MicroQR
☐ Aztec
☐ Maxicode

5.2.3.2 Algorithm Parameters

- Sets decoding parameters for 1D and 2D codes.
 - Algorithm timeout: Sets the algorithm timeout. If the algorithm processing time exceeds this value, image processing stops and the result is output.
 - Image preprocessing: Provides image preprocessing functions, including erosion, dilation, opening/closing operations, and other image processing tools.
 - Algorithm type: Can be set to Normal Mode or Expert Mode. Expert Mode is recommended for complex scenarios.
 - GS1: Used for GS1 format output. Disabled by default.
 - DMECC: Used to select the Data Matrix version.
 - 1D/2D code parameters: Used to select and configure 1D/2D code parameters.
 - Distortion: Used to determine whether the code is distorted. Options include Distorted,

Non-distorted, and Compatible Mode.

- Operating mode: Selects the decoding method. Different modes have different algorithm processing times and results. Options include High-speed Mode, Normal Mode, and Expert Mode.
- QR Version: Used to select the QR version type. Precise selection can reduce algorithm processing time. It is recommended to keep this disabled.
- DM Version: Used to select the Data Matrix version type. Precise selection can reduce algorithm processing time. It is recommended to keep this disabled.
- QR mode: QR has Mode 1 and Mode 2. Compatible Mode is used by default.
- Number of codes: Sets the maximum number of 1D/2D codes to output. The standard version supports up to 2 codes, and the high-performance version supports up to 30 codes.

Choose the template

Template 1

Close

Image	Algorithm
Type of code reading	
Algorithm parameters	
Algorithm time limit	600ms
Aiming decoding settings	Full region decoding
Image Preprocess	Turn
Algorithm type	Expert Mode
GS1	Close
DMECC	ECC200
Barcode quantity	1
1D/2D Barcode Configuration	QR code
Application Mode	Expert Mode
Distortion degree	high
QRVersion	Close
DMVersion_1	Close
QR mode	Auto
algorithm ROI setting	
Turn on	

5.2.3.3 Decoding Algorithm ROI Settings

- Algorithm ROI allows recognition to be performed only in selected regions of interest, while other regions are not processed by the algorithm, improving reading efficiency. Multiple algorithm ROI regions can be configured. Code results are output in ascending order of the

algorithm ROI region number in which the code is located. If no code is recognized in an ROI region, the code information for that region is replaced with the configured noread character. Two ROI drawing methods are currently supported: manual drawing and batch adding. Clearing all ROIs is also supported.

Choose the template
Template 1
Close

Image

Algorithm

Type of code reading

Algorithm parameters

algorithm ROI setting

Turn on

Turn on

Draw ROI manually

Draw

Add multiple ROI in a batch

Draw

Clear all ROI

Clear

ROI number offset

0

- Manual ROI drawing: Click Settings to enter manual ROI setting mode. Drag to set the ROI size as required. You can also precisely set the ROI size by center point X/Y, width, and height. The selected area is the algorithm region of interest.
 - Center X: X coordinate of the ROI box center point.
 - Center Y: Y coordinate of the ROI box center point.
 - Width: Number of pixels in the horizontal direction of the ROI.
 - Height: Number of pixels in the vertical direction of the ROI.

Code reading Configuration

Trigger Configuration

Format Configuration

Output Configuration

Communication Configuration

Manage Configuration

Setting

Choose the template

Template 1

Close

Image

Algorithm

Type of code reading

Algorithm parameters

algorithm ROI setting

Turn on

Turn on

Draw ROI manually

Draw

Add multiple ROI in a batch

Draw

Clear all ROI

Clear

ROI number offset

0

Draw area

Center point X

570

Center point Y

432

Width

842

Height

505

Success rate of reading: 98/185 (52.97%) | RGB: 75 75 75 | Number of codes: 1

History

Image cache

screen

Empty the record

Pause recording

Image ID	Image name	Type of barcode	Code reading result	Code length	PPM	Model	Decoding time (ms)	networking
185	19700101000752392	QR	1173064	7	14.0	1	62	-
184	19700101000752264	QR	1173064	7	14.0	1	70	-
183	19700101000752193	QR	1173064	7	14.0	1	62	-
182	19700101000752005	QR	1173064	7	13.9	1	68	-
181	19700101000751879	QR	1173064	7	14.0	1	97	-

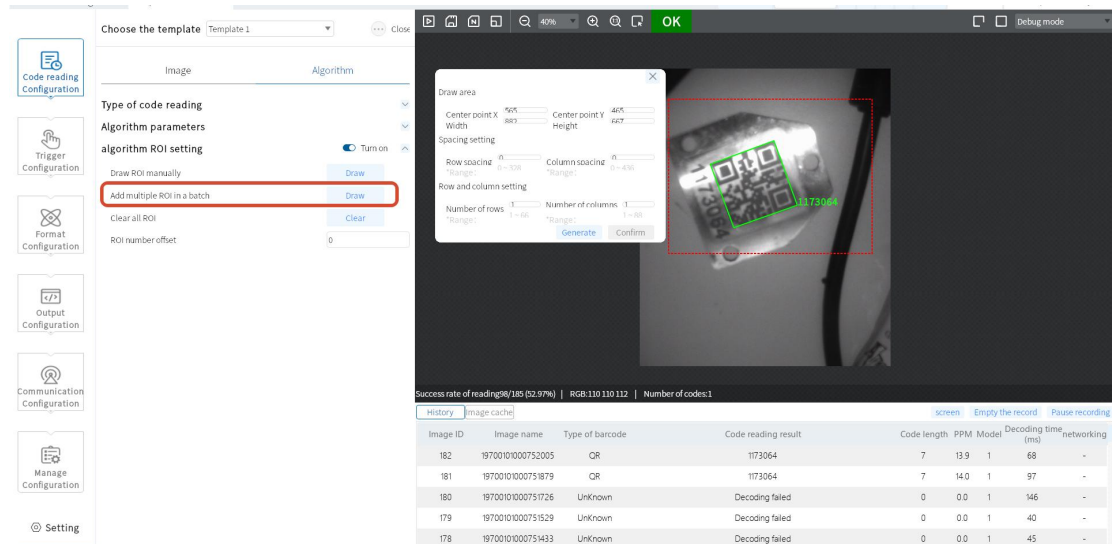
- Batch Add ROI (Checkerboard): Used to draw ROIs in batches.
 - Drawing area: Center X is the X coordinate of the center point of the batch setting area; Center Y is the Y coordinate of the center point; Height is the number of pixels in the vertical direction; Width is the number of pixels in the horizontal direction (default is the maximum pixel

count).

2) Spacing settings: Row spacing is the distance between ROI rows; column spacing is the distance between ROI columns.

3) ROI quantity (rows * columns): Sets the number of ROI rows and columns. The maximum value is dynamically adjusted according to the drawing area size and row/column spacing.

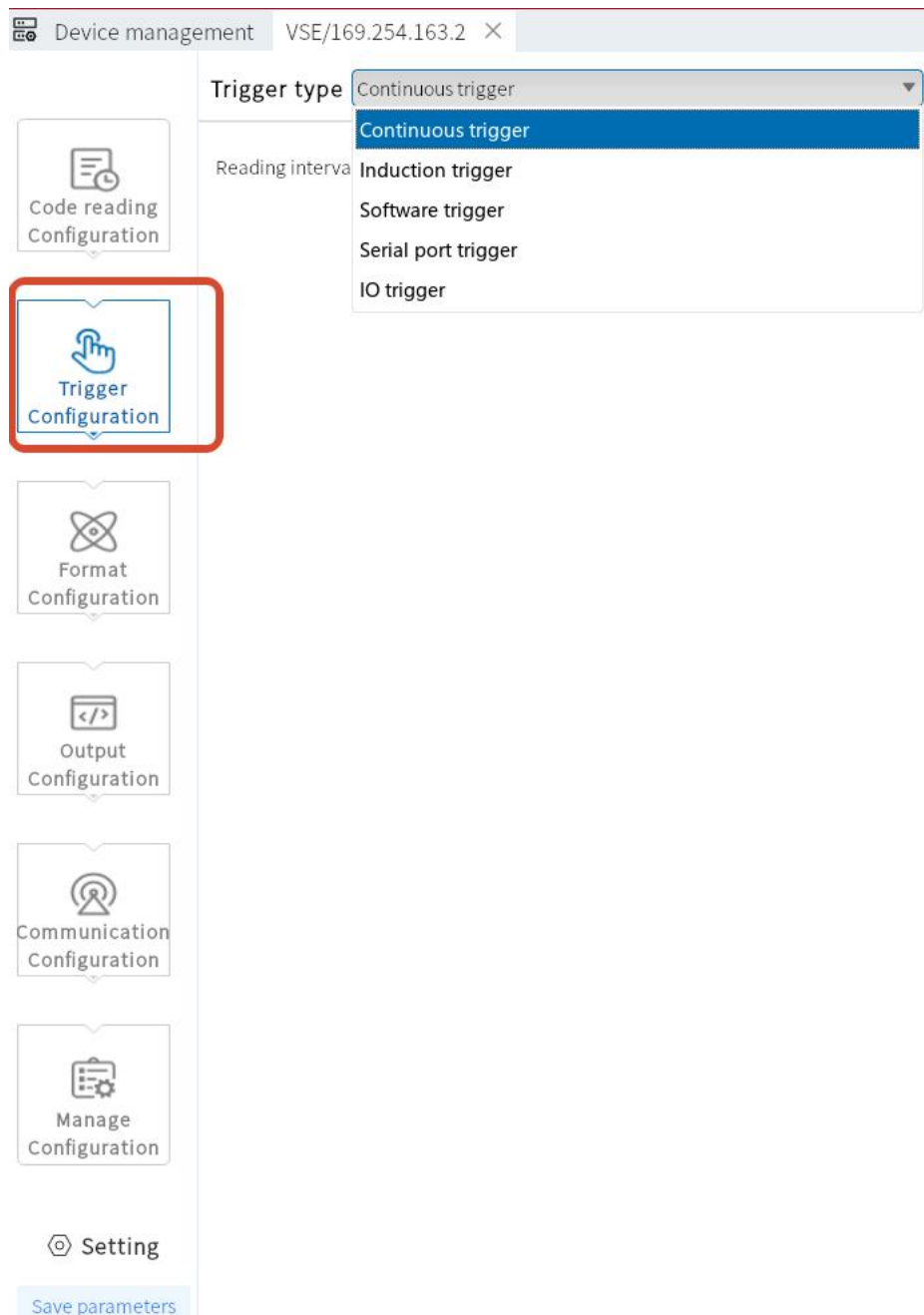
4) Generate: Confirm the above settings.



- Clear All ROI: Clears all current ROIs.
- ROI number offset: Sets a numeric offset for ROI numbering.

5.3 Trigger Configuration

- Trigger types include Continuous Trigger, Button Trigger, Induction Trigger, Batch Reading, Software Trigger, Serial Trigger, and I/O Trigger.



5.3.1 Continuous Trigger

- Continuous trigger means that the code reader continuously triggers image capture. Code reading interval: Used for setting the interval.

Trigger type

Reading interval time ms

5.3.2 I/O Trigger

- I/O trigger means that the code reader triggers image capture and decoding after receiving a signal.

① Task timeout: Sets the maximum task time for a single trigger. After triggering starts, if the timeout is reached and the task has not ended, it is forcibly closed. The default is 9999. The setting range is 150 to 99999 and takes effect when enabled.

Task time fixed to timeout: When selected, the task ends exactly according to the timeout value.

Decode all images: When selected, the task ends only after the algorithm has decoded all cached images.

② Multi-code end enable: When enabled, the configured number of codes is used as the end condition. If the required code count is not reached and task timeout is not enabled, the device remains in reading status (excluding duplicate codes). When task timeout is enabled, the task exits based on the configured timeout. This includes quantity settings for 1D and 2D codes.

Continuous reading during task: When selected, the device continuously reads during the task until the task ends. If not selected and unified result output is enabled, decoded codes are sent immediately.

③ Image acquisition mode: Includes cache mode and non-cache mode.

Non-cache mode: Image acquisition and decoding run serially.

Cache mode: Image acquisition and decoding run in parallel. It is suitable for scenarios where moving barcodes appear at uncertain positions.

Maximum number of images: Sets the number of images required for caching. The value range is 1 to 200, and may vary by device.

Image extraction frequency: Extracts cached images for decoding according to the set frequency.

④ I/O debounce time: Used to set the debounce time. The task takes effect when the signal duration is greater than the set time. Signal caching can also be configured.

⑤ Start Trigger & End Trigger: Used to set parameters related to I/O start trigger and end trigger.

Delayed trigger: On the Start Trigger page, trigger delay means that reading starts after the set delay time following receipt of the trigger signal. On the End Trigger page, trigger delay means that reading stops after the set delay time following receipt of the end trigger signal. The default is 0 ms. The setting range is 0 ms to 9999 ms.

Trigger signal: On the Start Trigger page, trigger signals are Line0 and Line1, corresponding to the hardware trigger inputs IN0 and IN1. On the End Trigger page, trigger signals are Line0 and Line1, also corresponding to the hardware trigger inputs IN0 and IN1.

Trigger type: On the Start Trigger page, the trigger type can be Rising Edge or Falling Edge. Rising Edge means reading starts when the code reader receives a rising-edge signal. Falling Edge means reading starts when it receives a falling-edge signal. On the End Trigger page, the trigger type can also be Rising Edge or Falling Edge. Rising Edge means reading stops when the code reader receives a rising-edge signal, and Falling Edge means reading stops when it receives a falling-edge signal.

Trigger type IO trigger

IO trigger

Task Start Settings

Trigger signal Line0

Trigger form Rising edge

Delay trigger 0 ms

Task photography settings

Image collection mode Cache Mode

Maximum number of images 10

get image frequency 1 out of 1

Task End Settings

Multiple choices are allowed, and if any condition is met, the task will end
If not selected, read a code to end the task

☐ Multi code end 1 Codes

☒ Timeout ended 9999 ms

☒ The maximum number of images reached in cache mode has ended

☒ Received signal completec

End signal Line0

End signal form Rising edge

Delay End 0 ms

Advanced Options

Please read the description carefully before enabling the following advanced options
Please note that some options may delay the end of the task

☐ The task time is fixed to a timeout time

☐ Stop immediately upon receiving the end signal

☐ Continuous code reading during the mission period

5.3.3 Software Trigger

- Click 'Software Trigger' with the mouse to trigger the code reader to capture an image. A trigger means that the code reader performs image capture and decoding after receiving a signal.

Trigger type

Software trigger

5.3.4 Serial Trigger

- Serial trigger means that the code reader captures an image and decodes after receiving a serial trigger command signal.

Use hexadecimal: When enabled, start/end trigger signal characters are set and output in hexadecimal format.

Note: Other parameters are the same as the I/O settings. Please refer to the I/O section.

Trigger type

Serial port trigger

Task Start Settings

Trigger signal

Trigger starts ms

Task photography settings

Image collection mode

Maximum number of images

get image frequency

Task End Settings

Multiple choices are allowed, and if any condition is met, the task will end
if not selected, read a code to end the task

☐ Multi code end Codes

☒ Timeout ended ms

☒ The maximum number of images reached in cache mode has ended

Received signal completed

End signal

Delay ends ms

Advanced Options Range 1 ~ 999

Please read the description carefully before enabling the following advanced options
Please note that some options may delay the end of the task

☐ Using Hex numbers

☐ The task time is fixed to a timeout time

☐ Stop immediately upon receiving the end signal

☐ Continuous code reading during the mission period

5.3.5 Induction Trigger

- Induction trigger means that the code reader captures an image and decodes after detecting a change in image brightness.
 - ① Trigger sensitivity: Indicates how sensitive the detection algorithm is to the external environment. Options are Low, Medium, and High.
 - ② Induction timeout: If no barcode is read within the set time, the task ends and the device enters detection mode.
 - ③ Induction interval: Sets the interval between tasks. The next task can start only after the set time has elapsed.
 - ④ Multi-code end enable: When enabled, the configured number of codes is used as the end condition. If the required code count is not reached and task timeout is not enabled, the device remains in reading status (excluding duplicate codes).
 - ⑤ Continuous reading: When enabled, if no image environment change occurs after successful induction and a barcode is present, barcode content is continuously output. The sending interval can be customized.

Trigger type

Induction trigger

Induction trigger

Task Start Settings

Trigger sensitivity:

centre

Task End Settings

Multiple choices are allowed, and if any condition is met, the task will end
If not selected, read a code to end the task

☐ Multi code end

1

Codes

☒ Induction timeout

2000

ms

Advanced Options

Please read the description carefully before enabling the following advanced options

Induction interval time:

300

ms

5.4 Format Configuration

5.4.1 Format Configuration

- Format configuration includes two sections: Data Filtering and Data Processing. It can be used to set filtering rules and output data for the device.

Code reading Configuration

Trigger Configuration

Format Configuration

Output Configuration

Communication Configuration

Manage Configuration

Setting

Save parameters

Configuration of format

Configuration of format

Data filtering

Data processing

Advanced features

1. Data Filtering

- Data filtering filters barcodes read by the device according to configured rules.
 - Duplicate time filtering: When enabled, duplicate codes within the set time are not output. (30-9999999)

Example: If the setting is 500 ms and the code content is 123452, multiple readings within 500 ms will output the result only once.

- Duplicate quantity filtering: When enabled, if the same content is read more times than the set value, it is not output. (1-100)

Example: If the setting is 3 and the code content is 123452, the output count of 123452 cannot exceed 3.

- Duplicate barcode filtering: When enabled, content identical to the previous reading is not output.
- Duplicate barcode merge:
- Filter containing subsets: When enabled, if there is an intersection of subset results between the previous result and the next result, the two results are considered the same.

- Barcode length limit: When enabled, only codes whose length falls within the limit range are output.
- Block prefix: When enabled, barcodes starting with the configured characters are blocked and not output.
- Specified prefix: When enabled, only codes starting with the specified prefix are output. Multiple prefixes are supported.
- Specified suffix: When enabled, only codes ending with the specified suffix are output. Multiple suffixes are supported.
- Must contain: When enabled, outputs codes that contain the configured content. Multiple required contents are supported.
- Must not contain: When enabled, outputs codes that do not contain the configured content. Multiple excluded contents are supported.
- Barcode verification: Enter target character information to verify whether the above filtering conditions are met. If no input is provided, OK/NG is not displayed. OK is displayed when the filtering conditions are met, and NG is displayed when they are not met.

Code reading Configuration

Trigger Configuration

Format Configuration

Output Configuration

Communication Configuration

Manage Configuration

Setting

Save parameters

Configuration of format

Configuration of format

Data filtering

Close Filtering of repeated time

Close Filtering of repeated barcodes

Close Duplicate barcode filtering

Close Duplicate barcode merging

Turn on Filter Ignore NG

Close Filter containing subsets

Decoding content processing

Close Barcode length limit

Block specified characters

Multiple conditions ar...

Close Block special characters

Close Block the beginning

Close Specify the beginning

Close Specify the end

Close Must contain

Close Cannot contain

Close Character requirement

Barcode verification

Data processing

Advanced features

2. Data Processing

- The data processing section is used to configure the barcode results output by the device. The specific parameters vary depending on the selected communication protocol.
 - Barcode separator: Used to separate multiple codes. It can be customized. The default is ';'. Hexadecimal input is supported. When entering hexadecimal values, add '<>'. For example, if the separator is carriage return, enter '<0D>'.
 - Decode failure output character: Used to edit the character output when code reading fails.
 - ROI no-read fill: Regions where no code is read are automatically filled with the output failure character.
 - Output start/end: Content at the start/end of the output data. Specific content can be set according to actual requirements.
 - Output content configuration includes barcode content, barcode type, barcode angle, vertex coordinates, text input, ROI number, PPM, time, barcode quality, CRLF, CR, LF, hexadecimal input, barcode quantity, barcode length, center coordinates, center X, center Y, decoding time, task time, and more.

Configuration of format

Configuration of format

Data filtering
Data processing
sort

Data template
Barcode separator
Decoding failed to output characters
☐ Close No code displayed in ROI

Output starts

Barcode content
Barcode type
Barcode angle
Vertex coordinates
Text input
More

{code_content}{newline}

Output ends

- Unicode to UTF8: When enabled, the encoding rule is converted from Unicode to UTF8.
- UTF8 to ASCII: When enabled, the encoding rule is converted from UTF8 to Unicode.
- GBK to UTF8: When enabled, the encoding rule is converted from GBK to UTF8.
- Hex replaces special characters: When enabled, HEX replaces special characters.
- Output results one by one: When enabled, barcodes are output one by one according to the configured delay.

- Single-code specified length:
- Output specified length:

Advanced features

Close UnicodeToUTF8

Close UTF8ToASCII

Close GBKToUTF8

Close Hex replaces special characters

Close Output results one by one

0

ms

Single code specified length

Close

X; X-x;...

Output Length

Close

0

5.4.2 Script

Format Configuration (Script): This function is used to customize processing of code reading results. The data acquired by the system is recombined and output by means of a script.

Code reading Configuration

Trigger Configuration

Format Configuration

Output Configuration

Communication Configuration

Manage Configuration

Setting

Save parameters

Configuration of format script

☐ Open script

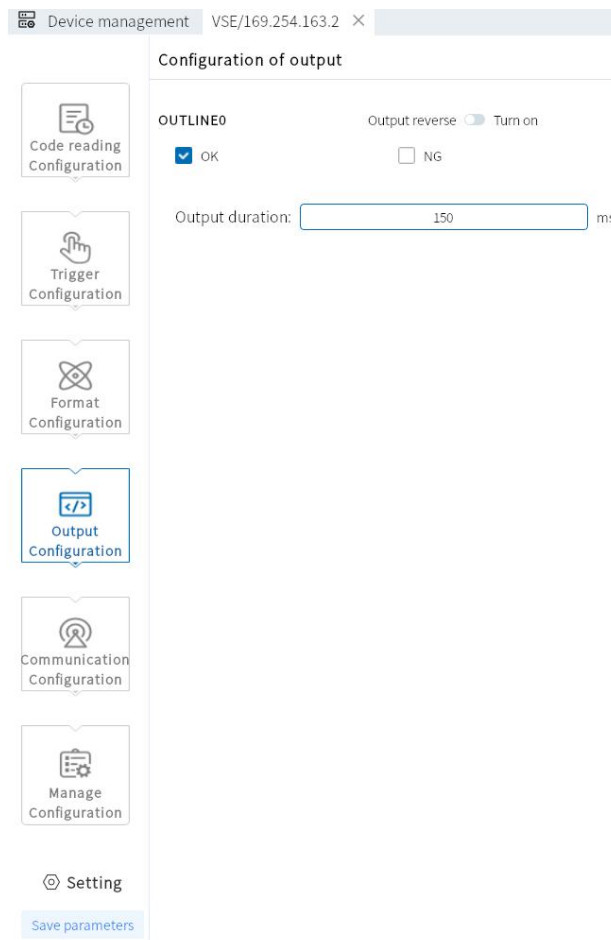
☐ Block data processing

Variable Name	data source	data type
+		

run Save

5.5 Output Configuration

- Output settings control the output of 'OUTLINE0', corresponding to the hardware trigger output 'OUT0'.
 - 1) Signal output source: Two statuses can be selected: 'Code Reading Success' and 'Code Reading Failure'. 'Code Reading Success' outputs a signal when reading succeeds; 'Code Reading Failure' outputs a signal when reading fails.
 - 2) Output duration: Duration of the output signal. The default is 200 ms, and the range is 1 to 99999 ms.
 - 3) Output inversion: Enable output inversion if the device needs to output a signal opposite to the current signal.



5.6 Communication Configuration

- The Communication Configuration section includes Serial and USB, and is used to select the communication protocol required for data transmission. The communication protocol is related to the device operating mode.

5.6.1 Serial Port

- When the communication protocol is set to Serial, the following parameters can be configured:
 - Serial baud rate: Sets the baud rate of the receiving end.
 - Serial parity: Sets the parity bit of the receiving end.
 - Serial data bits: Sets the data bits of the receiving end.
 - Serial stop bit: Sets the stop bit of the receiving end.
 - Delayed output: Used to control the character sending delay during serial transmission.

Code reading Configuration

Trigger Configuration

Format Configuration

Output Configuration

Communication Configuration

Manage Configuration

Setting

Save parameters

Configuration of communication Serial port

Serial port

Enable serial port discovery device

search COM

Baud rate

9600

Parity check

None

Data bit

8

Stop bit

1

Delayed output

Number of characters sent per time

20

Character spacing (0-1000ms) {0-2000m?}

100

Task interval (0-1000ms) {0-2000m?}

0

Add Customization:

+

5.6.2 USB

- When the communication protocol is set to USB serial port, the following parameters can be configured:
 - Serial baud rate: Sets the baud rate of the receiving end.
 - Serial parity: Sets the parity bit of the receiving end.
 - Serial data bits: Sets the data bits of the receiving end.
 - Serial stop bit: Sets the stop bit of the receiving end.

Configuration of communication USB ▼

☐ USB serial port ^

Search COM

Baud rate 115200 ▼

Parity check None ▼

Data bit 8 ▼

Stop bit 1 ▼

Add Customization: +

- When the communication protocol is set to USB keyboard input, the following parameters can be configured:
 - Ignore Caps Lock: When selected, USB outputs the barcode content itself and is not affected by Caps Lock.
 - Character inversion: When selected, uppercase characters are converted to lowercase and lowercase characters are converted to uppercase during output.
 - Case conversion: When Uppercase is selected, all characters are output in uppercase. When Lowercase is selected, all characters are output in lowercase.
 - Ignore Chinese input method: When selected, output is not affected when a Chinese input method is active.
 - Characters sent each time: Used to set the number of characters sent each time. The maximum value is 1.
 - Character interval (0-2000 ms): Sets the interval between characters.
 - Task interval (0-2000 ms): Sets the interval between tasks.
 - USB version switching: Used to switch between USB 1.1 and 2.0.
 - Interval:

Configuration of communication USB

☐ USB serial port
 ☒ USB cursor output

☐ Ignore Capslock
☐ Character inversion
☐ toggle case ☐ capitalization ☐ small letter
☐ Ignore Chinese input method
☐ The subscript symbols in Chinese input method are in English
☐ Unicode output
☐ GBK output

Number of characters sent per time

Character spacing (0-100 ms) {0-2000ms}

Bar code interval (0-100 ms) {0-2000ms}

USB version switching USB2.0

5.7 Configuration Management

Restore factory configuration: When clicked, device parameters are restored to factory settings.

Code reading Configuration

Trigger Configuration

Format Configuration

Output Configuration

Communication Configuration

Manage Configuration

⊙ Setting

Save parameters

Manage configuration

Save default parameters

Restore default parameters

Restore factory parameters

5.8 Settings

5.8.1 Device Settings

- Device name: Allows you to modify the code reader device name. Chinese, English, letters, characters, numbers, and more are supported.
- VSE USB type: Used to select the USB type.
- Device discovery method for USB connection: You can select virtual network card discovery or virtual serial port discovery. When disabled, the software cannot be used for connection.
- Debug logo information: Records LOGO information for debugging.
- Automatically save historical result summary data: Enables or disables automatic saving of historical data.
- Algorithm calculation switch: Enables or disables algorithm data recording.
- Barcode instruction Settings
 - ① Return value: When enabled, a setting status value is returned when barcode commands are used for configuration.
 - ② All-mode setting: When enabled, a setting code can be read in any mode to configure the device. When disabled, configuration can be performed only in button mode.
 - ③ Decoding sound: You can choose sound on decoding success, sound on failure, or off.

Setting	
Device setting	Name of device: VSE
Backup and recovery	VSE USB type: HID
	Device discovery method during USB connection: Virtual network card
	Debugging Log Information: Close
Storage configuration	Automatically save historical result summary data: Close
	Algorithm calculation switch: Open
Status tool	Barcode instruction settings
	return value: Close
	Full mode setting: Turn on
	Set code sound: Turn on
	Buzzer setting
	Decoding sound: Decoding opened successfully
	Buzzer duration: centre 80
Save current setting	

- Buzzer Settings
 - ④ Buzzer duration: Low, medium, high, or custom can be selected.
 - ⑤ Buzzer frequency: Low, medium, high, or custom can be selected.
 - Button Settings
- Aiming light: on/off. Code reading status indicator: on/off.
- SDK communication settings: Turn SDK communication on/off.

- **Rendering Settings**

Sets the rendered text displayed during code reading. Options include Follow, Do Not Follow, and Off.

Buzzer setting

Decoding sound: Decoding opened successfully ▼

Buzzer duration: centre ▼ 80

Power on prompt sound: Turn on ▼

Buzzer frequency: centre ▼ 2730

Button setting

Positioning lamp: Close ▼

Reading status indicator light: Open ▼

NG upload image number:

SDK communication settings

SDK communication: Close ▼

Render settings

Scanning result rendering: follow ▼

Positioning box rendering: Close ▼

Actual result output: ☐ Close

[Sync time to device](#) ☐ Automatically synchronize when connectec

[reboot device](#)

[Save current setting](#)

5.8.2 Backup and Restore

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

Setting

×

Device setting

Backup and recovery

Storage configuration

Status tool

Backup

Path

Backup

Batch backup

Reset

Path

Reset

Batch restore

Restore factory settings

Configuration	Parameters
Equipment configuration	
Name	VSE
Program version	V3.8.3.4
Algorithm version	v0.42.35_ziyoukeji_vs500max

5.8.3 Storage Configuration

- PC save configuration: Allows you to freely select the save path.
- Image capture configuration: Used to set the path for saving a single image from the rendering interface.

Save configuration on the upper computer

Save configuration on PC

Hard disk alarm GB

Data record ☐

Path [Browse...](#)

File name

Save as

Data filtering

Show original image ☐

Save Type ☐ Raw image ☒ Preprocessing diagram ☐ Result rendering

☐ Save images by day

Decode image ☐

Path [Browse...](#)

Prefix

Undecoded image ☐

Path [Browse...](#)

Prefix

Naming convention for images

Configuration for capturing images

Path [Browse...](#)

Time for capturing images ☐ Second

Number of captured images ☐

Advanced Mode ☐

[Save Configuration](#)

5.8.4 Status Tool

I/O status tool: Used to view and count input/output signal status.

Setting

Device setting

Backup and recovery

Storage configuration

Status tool

I/O status [Refresh](#) [recount](#)

IN0

Chapter 6 Product Configuration Methods

Tipcode series code readers are configured with default parameters at the factory. If users need to modify parameters, they can use the following methods:

1. Connect directly to the code reader and configure it through the host computer software.
2. Press the TRIG button and scan setting barcodes to configure parameters.

6.1 System Settings

1) Device Restore Factory Settings / Restart Settings



Restore Factory Settings



Restart Device

2) System Information Query



System Information Query

3) Set as Default Parameters



Parameters

Change Current Parameters to
Restore Default Parameters



Default

4) Buzzer Settings



Turn on for Successful Reading



Turn off Buzzer

5) Code Reading Status Indicator Settings



Turn on for Successful Reading

Turn on for Reading Failure

6) Aiming Light Settings



Aiming Light On



Aiming Light Off



Aiming

Light Always On

7) Light Source Settings



Module Light On



Module Light Off



External Light Source 1 On



External Light Source 2 On



External Light Source 2 On



External Light Source 2 Off



Light Source Switching Time 500 ms



Light Source Switching Time 1000 ms



Switching Time 1500 ms



Light Source Switching Time 2000 ms

Note: Only the high-performance version supports external light source control.

8) Communication Switching



USB HID Communication Mode



USB CDC Communication Mode



Serial

Communication Mode

9) USB Keyboard Output Settings



Ignore Caps Lock (On)
(Off)



Ignore Caps Lock (Off)



Character Inversion (On)



Character Inversion
(Off)



Case Conversion (On)
Conversion (Lowercase)



Case Conversion (Off)



Case Conversion (Uppercase)



Case
Conversion (Lowercase)



Character Interval 0
Character Interval 100



Character Interval 10



Character Interval 50



Barcode Interval 0
Barcode Interval 100



Barcode Interval 10



Barcode Interval 50



Characters Sent Each Time 1



Characters Sent Each Time 10



Characters Sent Each Time 20



Ignore Chinese Input Method (On)



Ignore Chinese Input Method (Off)

10) Serial Port Settings

1) Baud Rate Settings



4800



9600



19200



38400



57600



115200

2) Parity Settings



None



Odd



Even

3) Stop Bits



1



2

6.2 Image Parameter Settings

1) Automatic Image Adjustment Settings



Enable Automatic Image Adjustment



Disable

Automatic Image Adjustment

2) Exposure Time Setting



Exposure Time 100



Exposure Time 500



Exposure Time 1000



Exposure Time 3000



Exposure Time 6000



Exposure Time 10000



Exposure Time 20000

Note: Unit: us

3) Gain Settings



Gain 1



Gain 32



Gain 96



Gain 144



Gain 192



Gain 255

Note: Exposure time and gain settings take effect only when AE is disabled.

6.3 Symbology Settings

1) Enable/Disable All Symbologies



Enable All 1D Codes



Disable All 1D Codes



Enable All 2D Codes

Disable All 2D Codes

2) Enable/Disable Code128



Enable Code128



Disable Code128

3) Enable/Disable Code39



Enable Code39



Disable Code39

4) Enable/Disable Code93



Enable Code93



Disable Code93

5) Enable/Disable EAN8



Enable EAN8



Disable EAN8

6) Enable/Disable EAN13



Enable EAN13



Disable EAN13

7) Enable/Disable ITF25



Enable ITF25



Disable ITF25

8) Enable/Disable UPCA



Enable UPCA



Disable UPCA

9) Enable/Disable UPCE



Enable UPCE



Disable UPCE

10) Enable/Disable Codabar



Enable Codabar



Disable Codabar

11) Enable/Disable QR



Enable QR



Disable QR

12) Enable/Disable DM



Enable DM



Disable DM

13) Enable/Disable PDF417



Enable PDF417



Disable PDF417

14) Enable/Disable MicroQR



Enable MicroQR



Disable MicroQR

15) Enable/Disable Aztec



Enable Aztec



Disable Aztec

16) Enable/Disable MaxiCode



Enable MaxiCode



Disable MaxiCode

16) Number of Codes



1



2

17) 1D Code Algorithm Operating Mode



High-speed Mode



Normal Mode



Expert Mode

18) 2D Code Algorithm Operating Mode



High-speed Mode



Normal Mode



Expert Mode

6.4 Format Configuration

1) Duplicate Time Filtering Settings

1) Enable/Disable Duplicate Time Filtering



Enable



Disable

2) Filter Time Settings



100



300



600



1000



2000



5000

2) Duplicate Quantity Filtering Settings

1) Enable/Disable Duplicate Quantity Filtering



Enable



Disable

2) Filter Count Settings



1



4

2



5

3



6

3) Duplicate Barcode Filtering Settings



Enable



Disable

4) Duplicate Barcode Merge



Enable



Disable

5) Barcode Length Limit Command



Enable



Disable

6) Block Prefix Settings



Enable



Disable

7) Specified Prefix Settings



Enable



Disable

8) Specified Suffix Settings



Enable

Disable

9) Must Contain Settings



Enable Must Contain



Disable Must Contain

10) Must Not Contain Settings



Enable



Disable

11) Character Requirement Settings

1) Enable/Disable Character Requirement



Enable



Disable

1) Character Requirement Settings



All Digits



All Letters



Digits or Letters

12) Barcode End Separator



Empty



CRLF



CR



/



\



-



_



TAB

6.5 Trigger Switching



Continuous Trigger Mode



I/O Trigger Mode



Serial Trigger Mode



Button Trigger Mode



Induction Trigger Mode



Batch Reading Mode



Software Trigger

Mode

6.6 Appendix:

1) Product Command Setting Table

Name	Command Code	Value Range	Default	Remarks
Restore Factory Settings	@REFSET	/	/	
System Information Query	@GETSYI	/	/	
Adaptive Parameter Adjustment	@OSAP	/	/	
Buzzer Settings	@OPSBUZ(Read SuccessEnable) @OPLBUZ(Read	/		

	FailureEnable) @CLBUZ(Disable)			
Aiming Light Settings	@OPAIM(Enable) @CLAIM(Disable)	/	@OPAIM	
Exposure Time Setting	@EXPX			
Enable/Disable All 1D Codes	@OPA1D(Enable) @CLA1D(Disable)	/		
Enable/Disable All 2D Codes	@OPA2D(Enable) @CLA2D(Disable)	/		
Enable/DisableCODE1 28	@OPC128(Enable) @CLC128(Disable)	/		
Enable/DisableCODE3 9	@OPC39(Enable) @CLC39(Disable)	/		
Enable/DisableCODE9 3	@OPC93(Enable) @CLC93(Disable)	/		
Enable/Disable EAN8	@OPEAN8(Enable) @CLEAN8(Disable)	/		
Enable/Disable ITF25	@OPI25(Enable) @CLI25(Disable)	/		
Enable/DisableQR	@OPQR(Enable) @CLQR(Disable)	/		
Enable/DisableDM	@OPDM(Enable) @CLDM(Disable)	/		
Number of Codes Setting	@CONUMX			
Decoding Algorithm Timeout	@SETALX			
Trigger Configuration Switching	@CONTR(Continuous Trigger) @IOTR(I/O Trigger) @SETR(Serial Trigger) @BUNTR (Button Trigger)@MOTTR (Induction			

	Trigger)@BATTR(Batch Reading)@SOFTTRIG(Software Trigger)			
I/O Trigger Related Settings	@IOTONX(Task Timeout)			
	@IOMBTNX(Multi-code end enable count)			
	@IODBTMX(Debounce Time)			
	@IOTSSLNX(Trigger Start Source)			
	@IOTSDX(Trigger Start Delay Time)			
	@IOTSRE(Trigger Start Rising Edge) @IOTSFE(Trigger Start Falling Edge)			
	@IOTESLNX(Trigger End Source)			
	@IOTEDX(Trigger End Delay Time)			
	@IOTERE(Trigger End Rising Edge) @IOTEFE(Trigger End Falling Edge)			
Serial Trigger Settings	@SETONX(Task Timeout)			
	@SEMBTNX(Multi-code End Enable)			
	@SETSDX(Trigger Start Delay Time)			
	@SETSSX(Trigger Command Setting)			
	@SETEDX(Trigger End Delay Time)			
	@SETESX(Trigger Command	Customiza		Hexadecimal

	Setting)	ble		input supported
Duplicate Time	@OPRPNUM(Enable) @CLRPNUM(Disable)		@CLRPNUM	
	@RPNUMX(Duplicate quantity)			
Duplicate Barcode Filtering	@OPRPCD(Enable) @CLRPCD(Disable)	/	@CLRPCD	
Barcode Quantity Filtering	@OPFBN(Enable) @CLFBN(Disable)	/	@CLFBN	
	@FBNMIX(Minimum Quantity)			
	@FBNMAX(Maximum Quantity)			
Specified Prefix	@OPSPB(Enable) @CLSPB(Disable)	/	@CLSPB	
	@SPBX(Content)	Customizable	Empty	
Specified Suffix	@OPSPE(Enable) @CLSPE(Disable)	/	@CLSPE	
	@SPEX(Content)	Customizable	Empty	
Must Not Contain	@OPCTID(Enable) @CLCTID(Disable)	/	@CLCTID	
	@CTIDX(Content)	Customizable	Empty	
Character Requirement	@OPCARE(Enable) @CLCARE(Disable)	/	@CLCARE	
	@CAREFN(All Digits) @CAREFL(All Letters) @CARRELN(Alphanumeric)	/		
Barcode Separator	@BCSEX	Customizable		Hexadecimal input supported
Decode Failure Output Character	@OCFDX	Customizable		Hexadecimal input supported

Output Start Character	@OUSTX	Customizable	Empty	Hexadecimal input supported
Output End Character	@OUENX	Customizable	Empty	Hexadecimal input supported
Communication Interface Settings	@SETUH(HID) @SETCD(CDC) @OPRS (RS232)			
Serial Port Related Settings	@BAUDRX(Baud Rate)	1:4800 2:9600 3:19200 4:38400 5:57600 6:115200		
	@PARBT1X(Parity)	1:None 2:Odd 3:Even		
	@STPBT0X(Stop Bits)	1:1 2:2		

Note: A red X indicates that this command supports multiple status inputs. Set as required.

2) ASCII Code Table

Hexadecimal	Decimal	Character
00	0	NUL
01	1	SOH
02	2	STX
03	3	ETX
04	4	EOT
05	5	ENQ
06	6	ACK
07	7	BEL
08	8	BS
09	9	HT
0a	10	LF/NL
0b	11	VT

0c	12	FF/NP
0d	13	CR
0e	14	SO
0f	15	SI
10	16	DLE
11	17	DC1/XON
12	18	DC2
13	19	DC3/XOFF
14	20	DC4
15	21	NAK
16	22	SYN
17	23	ETB
18	24	CAN
19	25	EM
1a	26	SUB
1b	27	ESC
1c	28	FS
1d	29	GS
1e	30	RS
1f	31	US
20	32	(Space)
21	33	!
22	34	"
23	35	#
24	36	\$
25	37	%
26	38	&
27	39	'
28	40	(
29	41	)
2a	42	*
2b	43	+
2c	44	,
2d	45	-

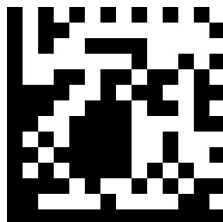
2e	46	.
2f	47	/
30	48	0
31	49	1
32	50	2
33	51	3
34	52	4
35	53	5
36	54	6
37	55	7
38	56	8
39	57	9
3a	58	:
3b	59	;
3c	60	<
3d	61	=
3e	62	>
3f	63	?
40	64	@
41	65	A
42	66	B
43	67	C
44	68	D
45	69	E
46	70	F
47	71	G
48	72	H
49	73	I
4a	74	J
4b	75	K
4c	76	L
4d	77	M
4e	78	N
4f	79	O

50	80	P
51	81	Q
52	82	R
53	83	S
54	84	T
55	85	U
56	86	V
57	87	W
58	88	X
59	89	Y
5a	90	Z
5b	91	[
5c	92	\
5d	93	]
5e	94	^
5f	95	_
60	96	`
61	97	a
62	98	b
63	99	c
64	100	d
65	101	e
66	102	f
67	103	g
68	104	h
69	105	i
6a	106	j
6b	107	k
6c	108	l
6d	109	m
6e	110	n
6f	111	o
70	112	p
71	113	q

72	114	r
73	115	s
74	116	t
75	117	u
76	118	v
77	119	w
78	120	x
79	121	y
7a	122	z
7b	123	{
7c	124	
7d	125	}
7e	126	~
7f	127	DEL

3) How to Customize Setting Commands

For example, to set the associated character for scan failure to 'st', use the setting command '@OCFDst'. Use a barcode generation tool to generate a DM code with the content '@OCFDst', and scan the code to set the failure associated character to 'st'.



Chapter 7 FAQs

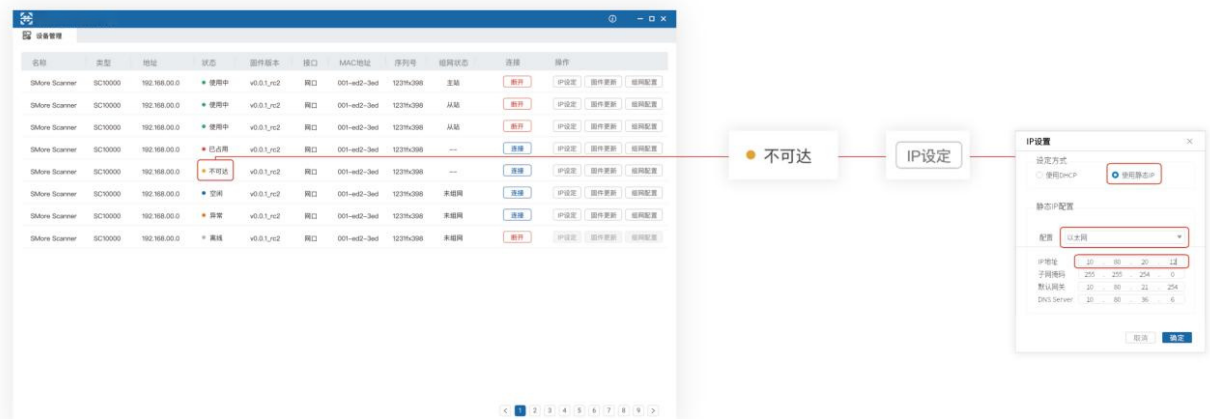
7.1 The client software detects the device but shows 'Unreachable'

- **Possible causes:**

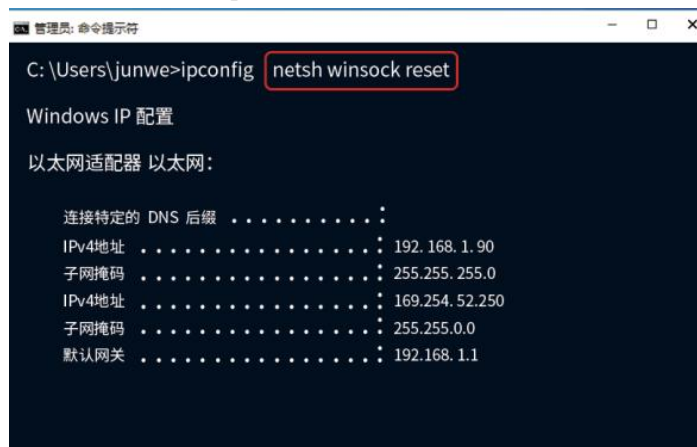
- 1) The device IP and the network card connected to the device are not on the same network segment.
- 2) The network card has obtained IP addresses from two different network segments.

- **Solution:**

1) Modify the device IP so that the computer and the device are on the same network segment.



2) Click Start on the computer, enter 'cmd' in the search box, right-click and run as administrator, then enter: netsh winsock reset. After resetting the network card information, restart the computer.



7.2 Debug mode settings in the client are not saved

- Possible cause: The system has temporarily stored the setting parameters. All settings must be manually saved after configuration is completed.
- Solution: Click 'Configuration Management' > 'Save All Configurations'.
- Specific operations are as follows:



7.3 How to Use Trigger Modes in the Client Software

- **Solution:**

- 1) Network trigger: First verify with third-party software. Set the code reader to network trigger in the software, and configure the same port, trigger command, and network IP segment. Some routers may enable IP isolation, which must be disabled.
- 2) I/O trigger: Connect the I/O trigger signal cable and set the code reader to I/O trigger in the software. The wiring must match the configured LINE0/1, and the trigger command must be the same. NPN and PNP wiring methods are available. Common wiring: connect IN0/IN1 to the OUT wire of the triggering device; connect IN_COM to positive (NPN) or negative (PNP). For details, see Section 3.2.
- 3) Serial trigger: Connect the DB9 terminal, and set the correct COM port, baud rate, data bits, stop bits, parity, and trigger command in the software.
- 4) Network trigger: The client software and code reader must be connected to the same network segment.

7.4 Network Trigger Fails

- **Possible cause:** The device currently supports only client mode.
- **Solution:** Adjust the network trigger mode of the PLC device.