

Wired Handheld Code Reader (RS3000 Series)

User Manual



Foreword

Overview

This manual introduces the configuration and operations of RS3000 series handheld code reader (hereinafter referred to as the “the reader”). Read carefully before using the device, and keep the manual safe for future reference.

Safety Instructions

The following categorized signs and words with defined meaning might appear in the Manual.

Signal	Description
 DANGER	Indicates a high potential hazard which, if not avoided, will result in death or serious injury.
 WARNING	Indicates a medium or low potential hazard which, if not avoided, could result in slight or moderate injury.
 CAUTION	Indicates a potential risk which, if not avoided, could result in property damage, data loss, reductions in performance, or unpredictable results.
	Provides methods to help you solve a problem or save your time.
	Provides additional information as a supplement to the text.

Revision History

Version Number	Content	Release Date
V1.0.0	First release.	Jun. 2025
V1.0.1	Added the description of device indicator and buzzer.	Aug. 2025

Important Safeguards and Warnings

This section introduces content covering the proper handling of the device, hazard prevention, and prevention of property damage. Read carefully before using the device, and comply with the guidelines when using it.

Operation Requirements

- Do not install or place the device in a location that exposes it to sunlight or heat sources. Ensure the housing temperature of the device remains below 50°C (+122°F).
- Keep the device away from dampness, dust or soot.
- Install the switch horizontally on a stable surface to prevent it from falling.
- Do not drip or splash liquid onto the device, and make sure that there is no object filled with liquid on the device to prevent liquid from flowing into it.
- Install the device in a well-ventilated place, and do not block the ventilation.
- Operate the device within the rated range of power input and output.
- Do not disassemble the device.
- Transport, use, and store the device under the allowed humidity and temperature conditions.
- Connect the device (type-I structure) to the power socket with protective earthing.

Power Requirement

- Use the power cords that are recommended for the region and conform to the rated standards!
- Use the standard power adapter. Otherwise, it might result in personal injury and device damage.
- The power source shall conform to the requirement of the Safety Extra Low Voltage (SELV) standard, and supply power with rated voltage which conforms to Limited Power Source requirement according to IEC62368-1. Please note that the power supply requirement is subject to the device label.
- Connect the device (type-I structure) to the power socket with protective earthing.

Table of Content

Foreword.....	I
Important Safeguards and Warnings	II
1 Introduction.....	1
1.1 Overview	1
1.2 Features	1
1.3 Specification	1
1.4 Appearance and Port.....	3
1.4.1 Dimensions	3
1.4.2 Appearance.....	4
1.4.3 Port Description	5
1.5 FOV and Viewing Distance	6
1.5.1 Close-focal Length and FOV	6
1.5.2 Afocal Length and FOV	8
1.6 Indicator and Buzzer	9
2 Electrical Specifications.....	10
2.1 Power and Network Port	10
2.2 How to Avoid EMI and ESD.....	10
3 Installation	12
3.1 Installation Precautions	12
3.1.1 Safety Protections.....	12
3.1.2 Environmental Requirements	12
3.2 Hardware Installation	13
3.2.1 Packing List	13
3.2.2 Accessory Description.....	14
3.2.3 Installation.....	14
3.3 Device Connection.....	15
3.3.1 Connection Method.....	15
3.3.2 Network Settings	16
3.3.3 Software Installation.....	18
3.3.4 Client Connection.....	20
3.4 Client Operation.....	21
3.4.1 Basic Functions	21
3.4.2 Viewing Device Information	24
4 Device Operation	26
4.1 Device List.....	26
4.1.1 Change Device Order	26

4.1.1.1 Favorite List.....	26
4.1.1.2 Sorting.....	29
4.1.2 Connect/Disconnect Devices.....	29
4.1.3 Refresh	29
4.1.4 Search Device.....	29
4.1.5 Device Status	30
4.2 Configuration List	30
4.2.1 Scan Settings	31
4.2.1.1 Common Configuration.....	31
4.2.1.2 Senior Configuration.....	32
4.2.2 Code Reading Settings	34
4.2.2.1 Common Configuration.....	34
4.2.2.2 Senior Configuration.....	37
4.2.3 Communication Settings.....	38
4.2.3.1 Ethernet Communication.....	38
4.2.3.2 Serial Communication	40
4.2.3.3 FTP Communication.....	40
4.2.4 Trigger Settings.....	41
4.2.5 Output Settings	43
4.2.6 Config Management.....	47
4.3 Menu Bar	49
4.3.1 Tool.....	49
4.3.2 ReadCode Log.....	51
4.3.3 Config.....	51
4.3.4 System.....	52
4.3.4.1 Image Save	52
4.3.4.2 FTP and TFTP.....	54
4.3.4.3 SerialPort Keyboard.....	55
4.3.5 Help.....	60
4.4 Setting Code.....	61
4.4.1 Enable and Exit Configuration	62
4.4.2 Device Management Setting.....	62
4.4.3 Code Type Setting.....	63
4.4.4 Code Reading Setting	65
4.4.5 Result Transfer Control.....	66
4.4.6 Ethernet Communication Setting.....	68
4.4.7 Serial Communication Setting.....	68
4.4.8 Beeper Setting	70

4.4.9 Vibrator Setting.....	71
4.4.10 Aiming Light Setting	71
4.4.11 Fill Light Setting	72
4.4.12 Parameter Setting Code.....	73
5 FAQ (Frequently Asked Questions)	74
5.1 Client Software Cannot Find Device.....	74
5.2 Client Software Can Find Devices but Failed to Connect.....	74
5.3 Device is Offline.....	74
5.4 Algorithm Processing Effect Does Not Meet Requirements	74
6 Clean and Maintenance.....	76

1 Introduction

1.1 Overview

The handheld code reader adopts high performance photo-sensitive chip, and its maximum transmission rate of 100 Mb/s can meet the requirements of most industrial applications. It can work stably in various poor and complex environments, which makes it a handheld code reader with high stability at low cost.

1.2 Features

- Built-in excellent and efficient self-developed AI algorithm can ensure the high speed and accurate decoding in complex environments.
- RWB integrated light source, actively switching the best decoding light source.
- 1280*1024 high-resolution and high-frame-rate sensor, which can quickly identify higher precision barcodes.
- Ergonomic design ensures comfortable operation, aligning with product design in industrial environments, making it more durable and long-lasting.
- Intelligent tuning tool provides optimal settings for Direct Part Mark (DPM) code reading.
- Multiple industrial communication protocols are supported.

1.3 Specification

Table 1-1 Specification description

Model		Close-Focal	Afocal
Basic	Resolution	1280*1024	
	Scanning Method	Button and automatic induction	
	Certification	CE	
	Code Type	● Barcode: Code39, Code93, Code128, ITF 14/25, CodaBar, EAN8, EAN13, UPCA ,UPCE, Pharmacode; ● QR Code: QR Code, Data Matrix, MQR, QR Model1, PDF417;	
Performance	Min Resolution	3mil	4mil
	Light Source	RWB light source	
	Aiming Light	Red cross light	

Model		Close-Focal	Afocal
	DOF	● Barcode ◇ Code-128 (3 mil): 35mm~80mm ◇ Code-128 (10 mil): 10mm~200 mm ◇ Code-39 (5 mil): 15mm~100 mm ◇ Code-39 (20mil): 0mm~250 mm ● QR Code ◇ QR Code (5mil): 30mm~70 mm ◇ QR Code (20mil): 10mm~240 mm ◇ Data Matrix (10 mil): 5mm~115 mm	● Barcode ◇ Code-39 (5 mil): 40mm~160 mm ◇ Code-128 (10 mil): 10mm~ 400 mm ● QR Code ◇ QR Code (7 mil): 65mm~120mm ◇ Data Matrix (10 mil): 30mm~200 mm ◇ QR Code (15 mil): 15mm~280 mm ◇ QR Code (20 mil): 20mm~400 mm
	Field Angle	● Horizontal Angle: 43° ● Vertical Angle: 36°	
	Detection Angle	● Tilt Angle: ± 60° ● Slant Angle: ±60° ● Rotation Angle: 360°	
	Print Contrast	15%	
	Prompt	Buzzer, LED Indicator Light, Vibrator	
Interface Specification	Connector	● NET: Fast Ethernet (100Mbit/s), DC Terminal ● USB: USB 2.0, RS-232, DC Terminal	
	Communication Protocol	● NET: SmartSDK, TCP Client, Serial, FTP, HTTP, TCP Server, MELSEC, ModBus, Profinet, EthernetIP, Fins ● USB: SmartSDK, USB (HID), RS-232	
	LED Indicator	Power indicator, reading result indicator	
Power Supply	Method	● NET: DC 12 V~24 V (DC Terminal) ● USB: DC 5 V (USB); DC 12 V ~ 24V (DC Terminal)	
	Consumption	2.5 W (standard); 4.5 W (Max)	
Structure	Dimension	89mm*78mm*180mm	
	Weight	Approx. 210g (without cable)	
	IP Grade	IP54	
	Drop Height	1.8 meters	

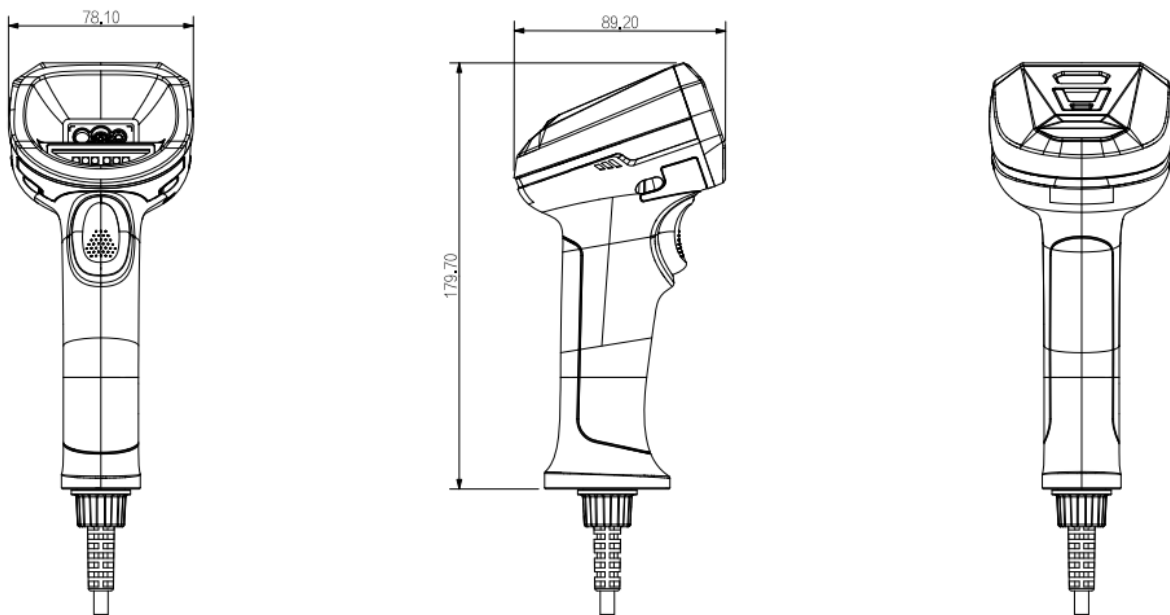
Model		Close-Focal	Afocal
Operation Environment	Temperature	● Operation Temperature: -20°C ~+50°C (-4°F ~+122°F) ● Storage Temperature: -40°C ~+70°C (-40°F ~+158°F)	
	Humidity	20%~80%, non-condensing	

1.4 Appearance and Port

1.4.1 Dimensions

The dimensions of RS3000 series wired handheld code reader are shown in the diagram below:

Figure 1-1 Dimensional drawing of the reader



1.4.2 Appearance

Figure 1-2 Appearance drawing of the reader

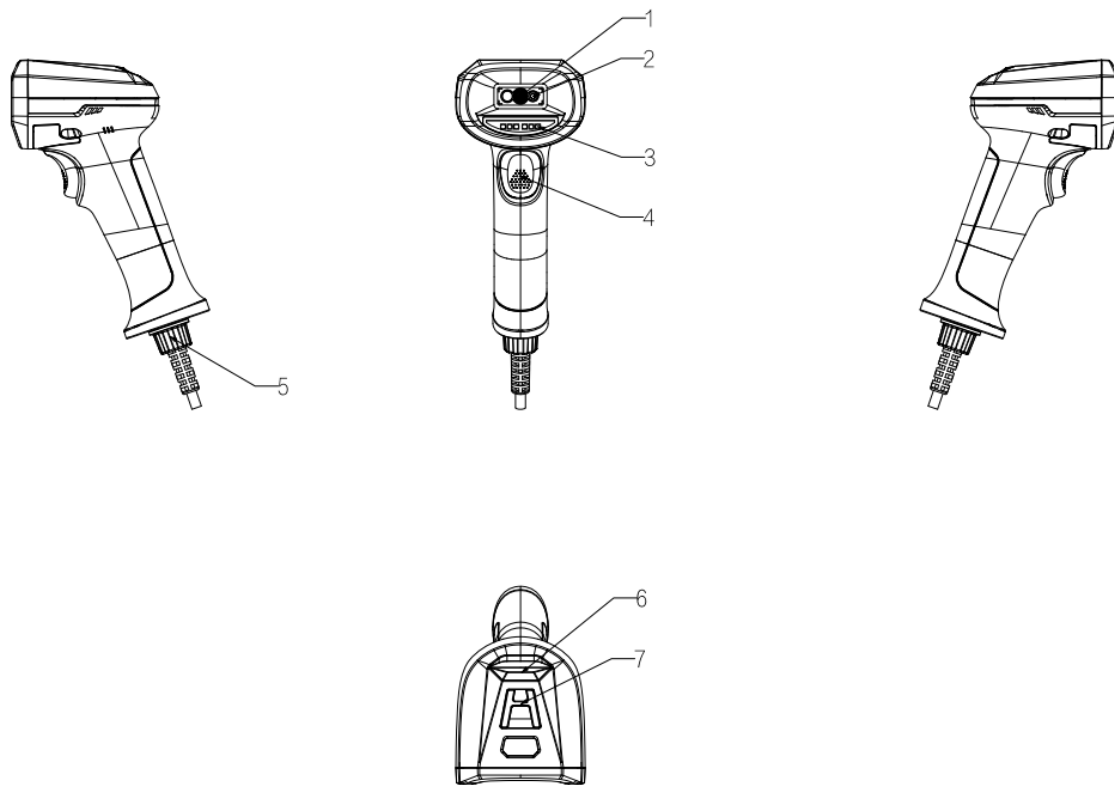


Table 1-2 Appearance description

No.	Function	Description
1	Lens	4.7 mm focal length
2	Aiming Light	Physical positioning
3	Fill Light	RWB three-color light source, and these colors can be controlled separately. The lighting modes include Always, Flashing, Off and Loop.
4	Button	For the level triggering
5	Cable Port	For power supply and data communication.
6	Indicator Light	For indicating the status of device, power connection and network connection.
7	Hanging Hole	For hanging the handheld code reader.

1.4.3 Port Description

Figure 1-3 Device port



The specific pin signals of the device are defined as follows:

Figure 1-4 Ethernet cable diagram

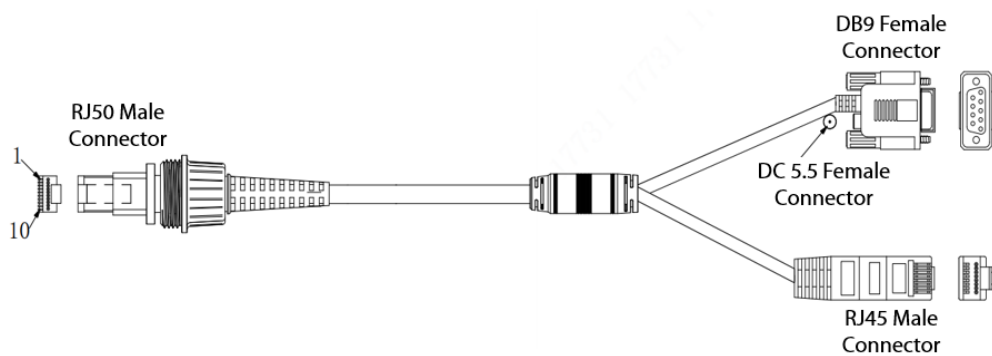


Table 1-3 Pin signal description

Pin No.	Item	Function	Color
1	MD0_P	RJ-45 network port	Orange-White
2	MD0_N		Orange
3	MD1_P		Green-White
4	MD1_N		Green
7	RS232_RXD	RS232_RXD	Orange
8	RS232_TXD	RS232_TXD	Yellow
9	POWER_GND	Power supply ground	Blue
10	POWER	Power input	Brown

Figure 1-5 USB cable diagram

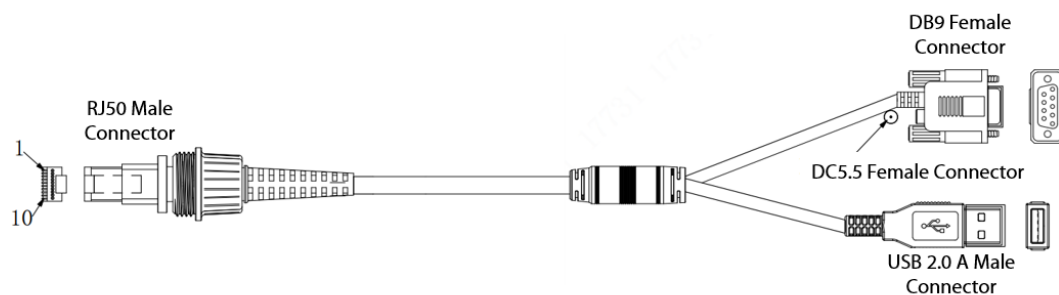


Table 1-4 Pin signal description

Pin No.	Name	Function	Color
1	USB2.0_DM	USB signal	White
2	USB2.0_DP		Green
5	USB_5V	5V power supply	Red
6	USB_GND	USB Signal GND	Black
7	RS232_RXD	Serial port for receiving data.	Orange
8	RS232_TXD	Serial port for transmitting data	Yellow
9	POWER_GND	Power supply ground	Blue
10	POWER	Power input	Brown

- When using the device, we recommend you to use the cable as shown above.
- The ports of cable for supplying power connecting to pin 9 and pin 10 have been made into DC 5.5 female receptacles; therefore, no additional wiring is required.
- The ports of cable for transmitting signals by RS-232 connecting to pin 7 and pin 8 have been made into standard DB9 female receptacles, therefore no additional wiring is required.
- The ports of cable of Ethernet model for transmitting data connecting pin 1, pin 2, pin3 and pin4 have been made into RJ45, therefore no additional wiring is required.
- The ports of cable of USB model for transmitting data connecting to pin 1, pin 2, pin 5 and pin 6 have been made into USB ports, therefore no additional wiring is required.



If the power ports are connected in reverse, the device will not be able to operate.

1.5 FOV and Viewing Distance

1.5.1 Close-focal Length and FOV

Table 1-5 Close-focal model parameter description

Working Distance (mm)	FOV (Range X mm*Y mm)		Smallest Code Accuracy (mm)
35	55	45	0.07
80	89	70	0.07
130	126	100	0.12
165	150	120	0.25
200	176	140	0.25
240	205	165	0.50

Figure 1-6 Close-focal model FOV chart

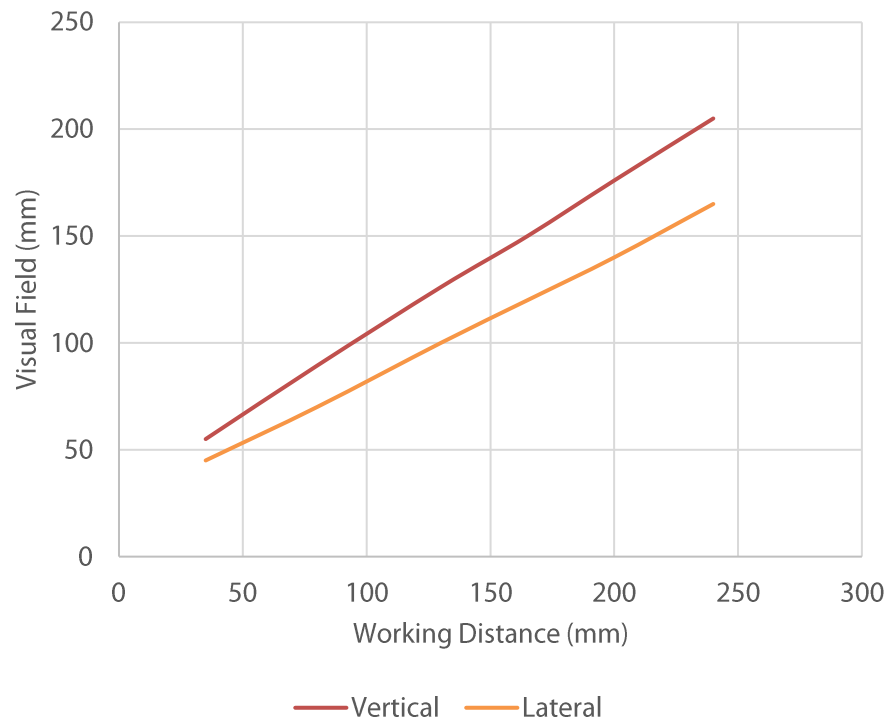
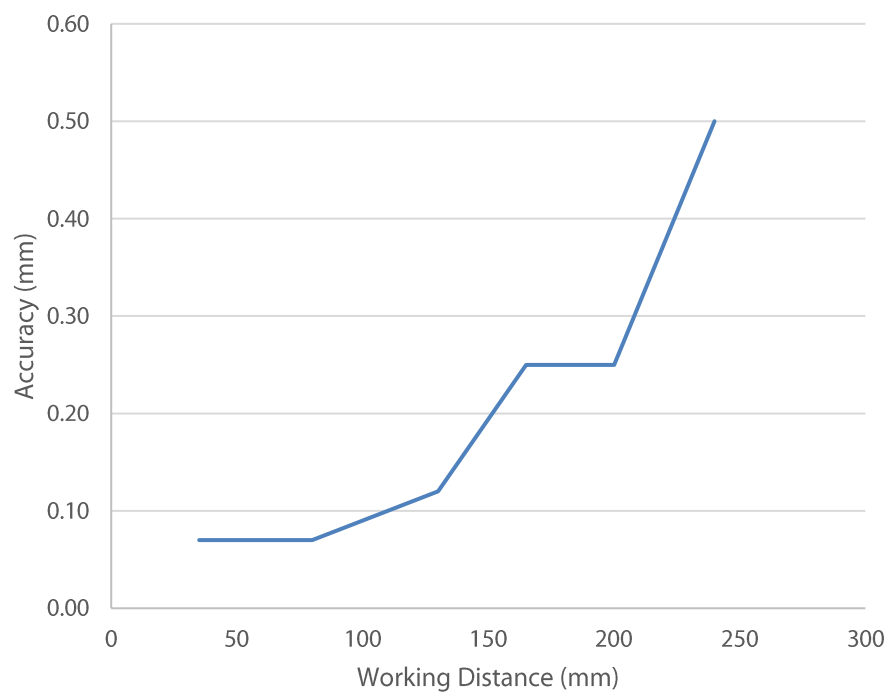


Figure 1-7 Smallest code accuracy chart



1.5.2 Afocal Length and FOV

Table 1-6 Parameter description of afocal model

Working Distance (mm)	FOV (X mm*Y mm)		Smallest Code Accuracy (mm)
40	60	48	0.12
65	79	63	0.18
120	119	95	0.18
200	178	140	0.25
280	235	185	0.25
400	325	260	0.50

Figure 1-8 Smallest code accuracy chart

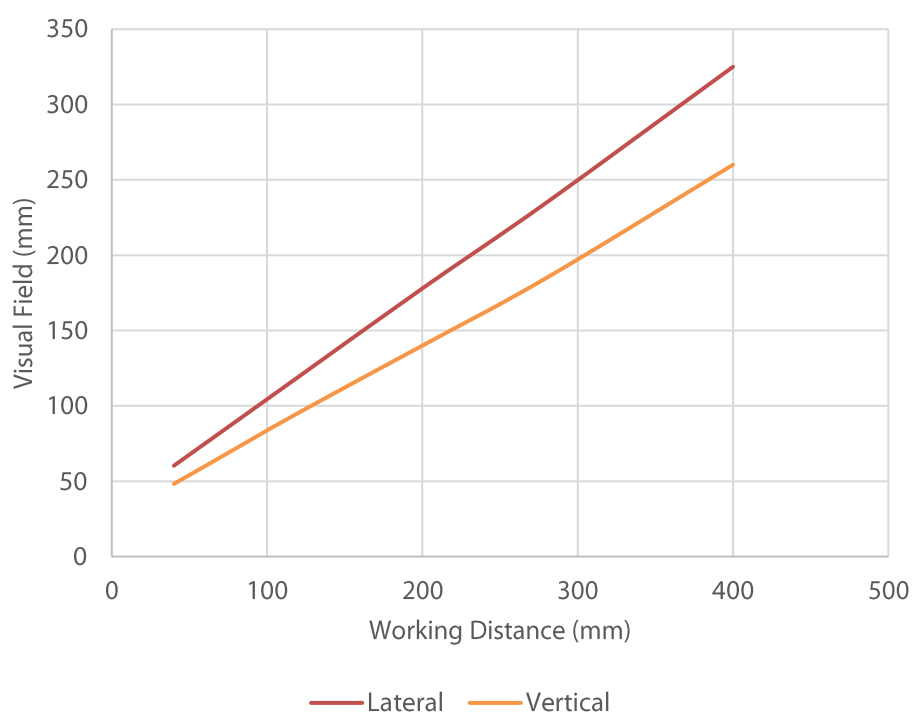
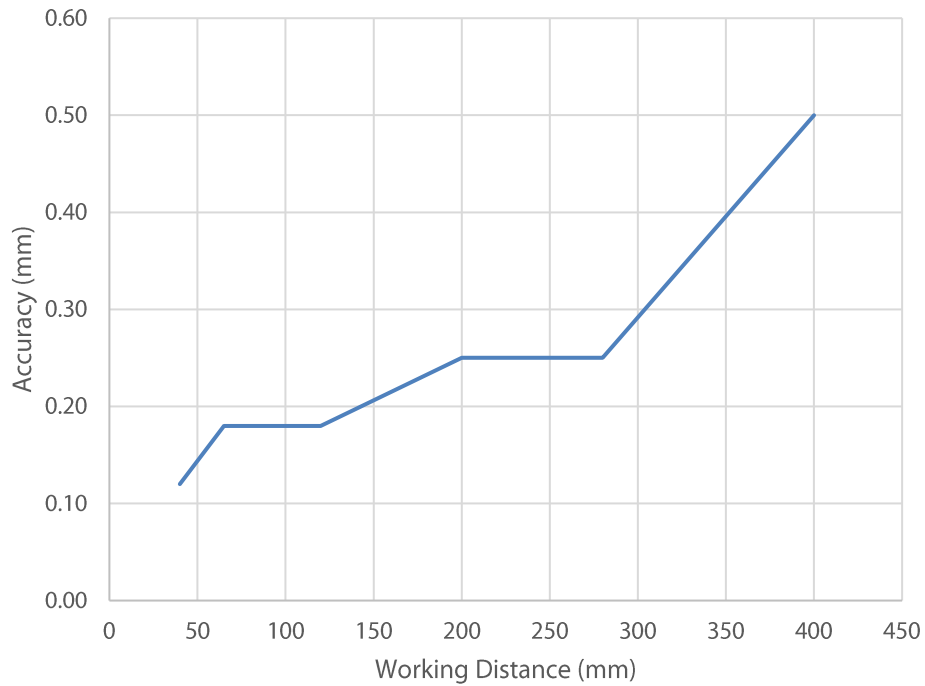


Figure 1-9 Parameter description of close-focal model



1.6 Indicator and Buzzer

This section introduces the indicator and buzzer status of the handheld code reader.

Reader Status		Indicator	Buzzer
Power On	Powering On	Flashing green	NA
	Powered On	Green light off	Buzz gives two long beeps.
Network	Abnormal Connection	Solid Blue	NA
	Normal Connection	NA	
Code Reading	Reading Successful	Once flashing green	Buzzer beeps once
	Reading Failed	Once flashing red	NA
	Setting Code Reading	NA	Buzzer beeps two times
Upgrade	Upgrading	Flashing red and green alternately	NA
	Upgrading Successful	Device reboot, and flashing green	After rebooting the device, the buzzer gives two long beeps.
	Upgrading Failed	Solid red light for 3 seconds and then off	Buzzer gives a long beep for 3 seconds.

2 Electrical Specifications

2.1 Power and Network Port

Table 2-1 Power and Network Port

Parameter	Description
Device Power Specification	DC +12 V to +24 V, <1% ripple, powered through RJ50 connector.
Data Communication Port	100 Mbps Ethernet, USB 2.0, and RS-232.
Certification	CE



The power supply must comply with SELV and LPS specifications. The device shell is sprayed with insulating paint.

2.2 How to Avoid EMI and ESD

Devices are installed in industrial sites where equipment that generates EMI (electromagnetic interference) may exist, and are themselves susceptible to ESD (electrostatic discharge). Serious EMI and ESD can lead to false triggering or sudden stop of streaming. EMI and ESD can also adversely affect image quality of devices and the reliability of data transmission between device and PC.

In order to avoid the problems mentioned above caused by EMI and ESD, we recommend you take the following measurements:

- Use high quality shielded cables, which can play a good effect on shielding EMI and ESD. Use high quality shielded cables, which can play a good effect on shielding EMI and ESD;
- Choose a cable with right length. Do not coil the excessive device cable into a loop. If the cable is really excessively long, bend it back and forth instead of coiling into a loop.
- The power cable of the device is routed in parallel with data cable.
- Do not route the device cable in parallel with other high current and voltage switching cables (such as stepper motor drive and solenoid valve); Do not place the device cable near the interference sources mentioned above.
- You are advised to connect all the grounding (GND) wires to a single point, i.e., single point grounding. For example, a distribution board can be used to connect the grounding wires of the whole system to a single point. This is done to avoid plenty of ground circuits (which are a major cause of EMI problems). Connect all the grounding (GND) wires to a single point. For example, a distribution board can be used to connect the grounding wires of the whole system to a single point. This is done to avoid plenty of ground circuits (which are a major cause of EMI problems).
- Adopt a line filter for the main power supply of the device, or adopt a separate power supply.
- Install the devices and cables as far away from spark generating equipment as possible, such as brush motor and relay. A metal shielding enclosure can be additionally used if necessary.

-
- The following measures can be taken to reduce the risk of ESD:
 - ◇ The mounting surface shall be adopted with conductive material.
 - ◇ The humidity in the installation environment shall be properly controlled. Dry air is easy to produce ESD.

3 Installation

3.1 Installation Precautions

When installing, pay attention to static electricity, electromagnetic interference, lightning strike and surge as well as heat dissipation of the devices.

3.1.1 Safety Protections

Although the interior of the device is designed to protect against lightning, surge, EMI and ESD, from the perspective of safety, it is necessary to take measures to avoid or reduce these effects.

Please follow the protection measurements in below:

- Adopt SFTP network cables with shielding function. When meeting the usage requirements, please do not overly coil the network cable.
- The network cable should not be too long. If the network cable is too long, do not coil the redundant portion in an O-shape; it should be arranged in an S-shape to minimize the effect of electromagnetic interference.
- Adopt power control cables with interference shielding function. It can be wired in parallel with the network cable, but should avoid winding each other.
- The power cable and network cable shall be far away from the equipment with large current, high voltage, frequent power on and off, start and stop, such as stepper motor. In particular, it shall not be wired in parallel with the cable of such equipment. This kind of device has strong electromagnetic radiation, which can be easily coupled to the transmission line of the device.
- The protective GND wires of all devices shall be connected together firstly, and then connected the protective GND wires to the single point. The multi-point grounding is easy to cause the voltage difference between each device, which can form a loop and couple the electromagnetic interference.
- The AC power supply end of the switching power supply for the equipment and PC should come from the same AC socket, so that their protection GND can be connected together to avoid multi-point grounding. The high-power electromechanical device should not connect to the same AC power.
- The magnetic ring can be adopted to the power control line of the equipment to absorb the electromagnetic interference signals.
- To reduce the ESD, the ESD wrist strap, anti-static clothing and shoes are recommended to wear, and the environment humidity shall be maintained in a proper range.

3.1.2 Environmental Requirements

The environmental requirements of code reader are as follows:

- Temperature and Humidity
 - ◇ The ambient temperature cannot exceed 50 °C (+122°F), and it is best for the device to work

in an air-conditioned environment.

- ◇ Ambient Humidity: 20% to 80%, non-condensing.
- ◇ Storage Temperature: -40°C to +70°C (-40 °F to +158 °F).
- ◇ Storage Humidity: 20%~80%, non-condensing.
- Do not coil the excessive cable into a loop, please bend it back and forth instead of coiling into a loop to ensure the performance of EMI.
- Do not bump the buttons of the devices during transportation. Otherwise, it may cause the damage to the buttons.

3.2 Hardware Installation

3.2.1 Packing List

After unpacking the box, check if there is obvious damage to the device surface, and check the accessories against the packing list below.

Table 3-1 Packing list

No.	Parameter	Specification/Model	Quantity	Diagram
1	Power Supply Cable and I/O Port Cable	CABNET-RJ50-DB9-03 (For Ethernet Port Model)	1	
		CABUSB-RJ50-DB9-025 (For USB Port Model)	1	
2	Power adapter	S065-1A240250B3	1	
3	Adapter Cable	Power Supply Cable-(GB 3 Cores,10A250V)-Black-1200mm-GB	1	

3.2.2 Accessory Description

To ensure normal use of the device, make preparations for the related items listed in Table 1-2.

Table 3-2 Accessory list

S./N.	Item	Quantity	Description
1	Handheld Code Reader	1	Device mentioned in this manual
2	Power Supply Cable and I/O Cable	1	Cable mentioned in this manual
3	Switch-type power supply or power adapter	1	The power adapter mentioned in this manual.

3.2.3 Installation

The wired handheld code reader shall be connected with power supply cable and data cable.

Procedure

Step 1 Connect the RJ50 IO cable with the bottom of the reader, then rotate and tighten the blind nut as shown in the figure below. See the following figure.

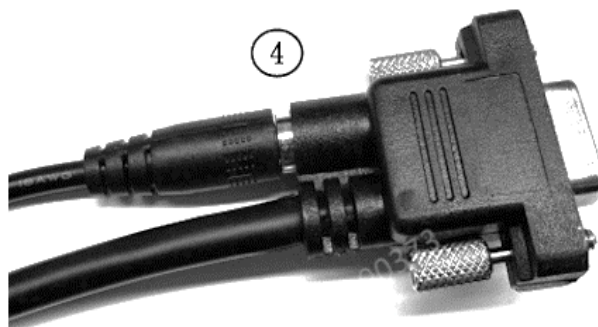
Figure 3-1 Cable connection



Step 2 Ethernet Model: Connect the DC male connector of the IO port cable with the DC port female connector of the power adapter

Then, connect the other end of the adapter with the 3-core power cable.

Figure 3-2 Ethernet port cable



Step 3 USB Model: Connect the USB port of the IO port cable with the USB port of the PC.

Figure 3-3 USB port cable



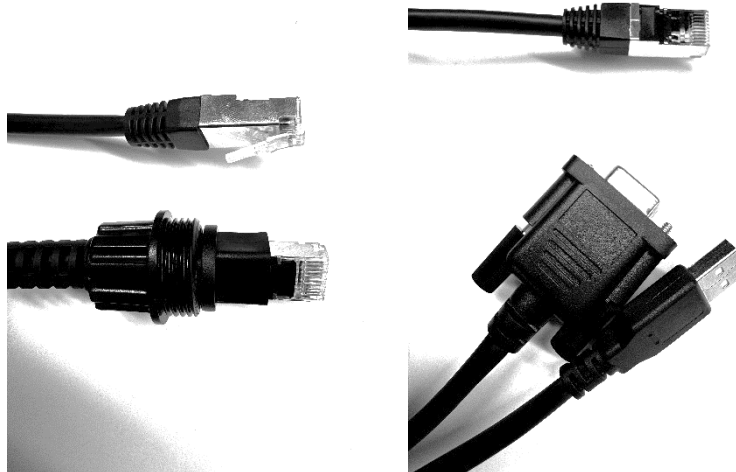
- If you adopt the USB port cable, the additional power supply is not needed.
- Ensure that the computer can continuously power the reader, or you can connect the DC port of IO cable with the power adapter to power the reader.

3.3 Device Connection

3.3.1 Connection Method

Three connection methods: Ethernet, RS232 Standard Serial Port and USB.

Figure 3-4 Cable diagram



- If you adopt the USB port cable, the additional power supply is not needed.
- Ensure that the computer or base station can continuously power the reader.
- Please note that the client software cannot find the device if you use the RS-232 port cable.

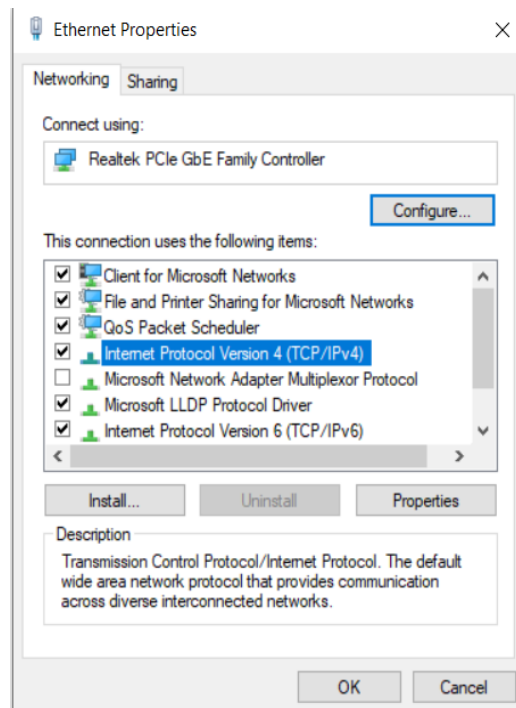
3.3.2 Network Settings

Procedure

Step 1 Select **Control Panel > Network and Internet > Network and Sharing Center > Change Adapter Configuration**.

Step 2 Select and right-click the corresponding network adapter, and click **Properties** from the shortcut menu. The **Ethernet Properties** interface will pop up.

Figure 3-5 Attribute Settings of NIC



Step 3 Double-click the **Internet Protocol Version 4 (TCP/IPv4)**. The IP address setting interface is displayed.

Step 4 Configure the network port to **Automatically Obtain an IP Address**, or enter the static IP address.



Ensure that the PC and the device are on the same LAN.

Figure 3-6 Windows NIC Configuration

Internet Protocol Version 4 (TCP/IPv4) Properties ✕

General

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

☐ Obtain an IP address automatically

☒ Use the following IP address:

IP address:

Subnet mask:

Default gateway:

☐ Obtain DNS server address automatically

☒ Use the following DNS server addresses:

Preferred DNS server:

Alternate DNS server:

☐ Validate settings upon exit Advanced...

OK Cancel

3.3.3 Software Installation

You can perform image debugging and parameters configuration through EasyID client. EasyID can be installed on 32-/64-bit Windows 7/10/11.

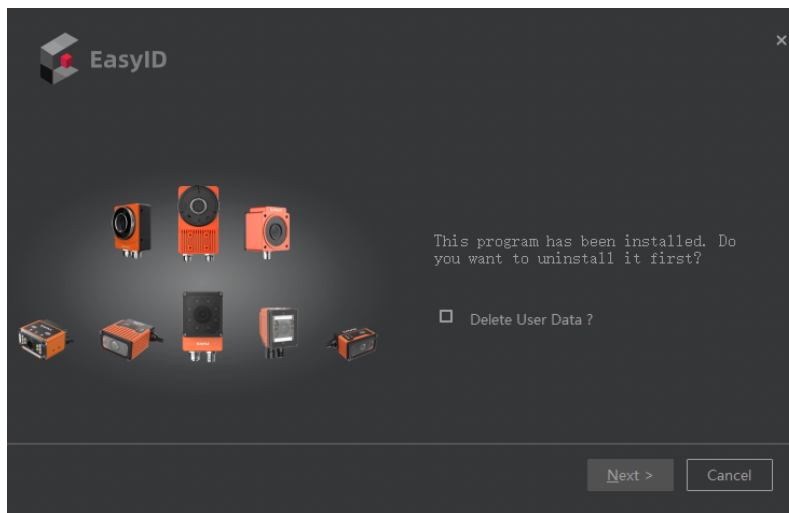


Contact the technical support personnel to obtain the latest client program.

Procedure

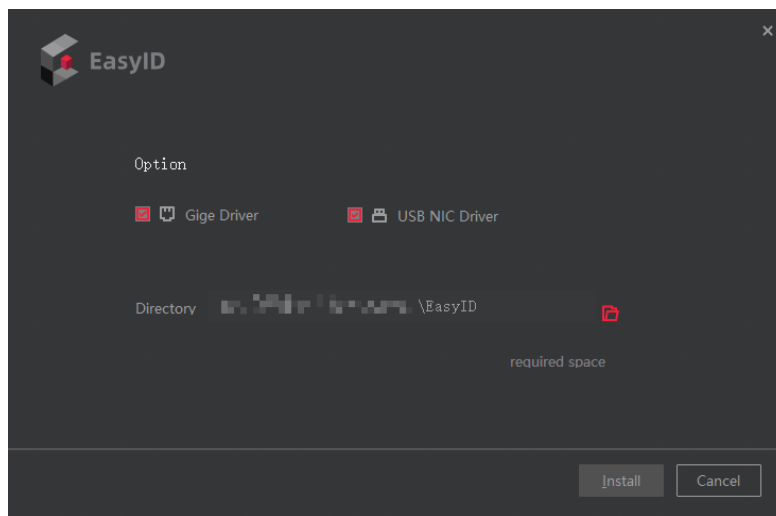
Step 1 Double-click to run the program **EasyID_Vx.x.xx_XXXXXXX.exe**, or right-click it and click **Open**. The installation procedure will begin.

Figure 3-7 EasyID installation interface (1)



Step 2 Click **Next**, and then select the driver based on the device type. Click , and then select the installation path.

Figure 3-8 Drive and installation path selection



Step 3 Click **Install** to proceed automatic installation procedure, the automatic installation will take about one minute.

Figure 3-9 EasyID installation interface (2)



Figure 3-10 Installation complete



Step 4 After selecting **Run EasyID**, click **Finish**. After the installation finished, the software runs automatically.

Figure 3-11 EasyID Homepage

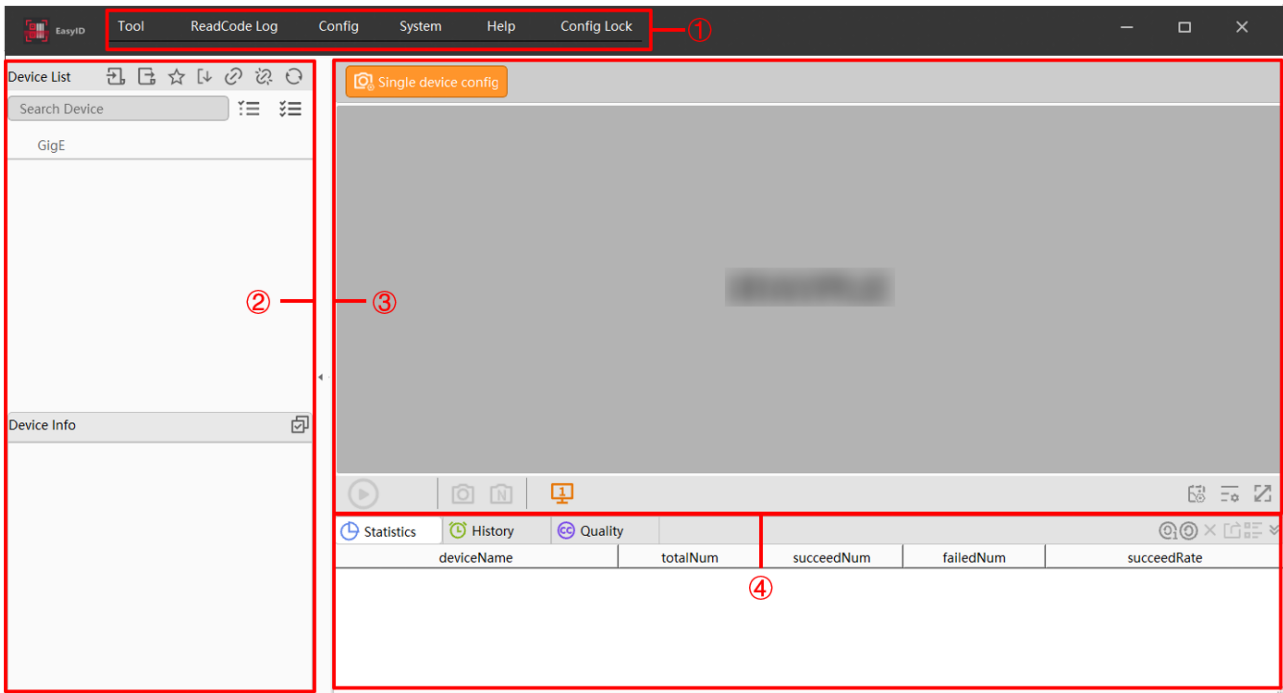


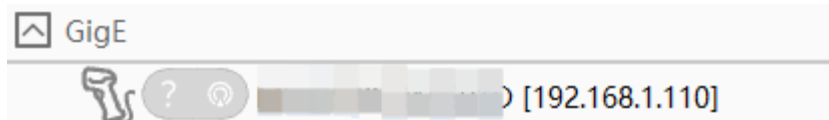
Table 3-3 Homepage introduction

S./N.	Item	Description
1	Menu Bar	Common functions, including Tool, ReadCode Log, Config, System, and Help.
2	Device List	The list of found devices and device information.
3	Image Display Area	The image displaying area includes some settings and information of streaming, such as the received image quantity, network transmission speed, frame rate, gray level, resolution, etc.
4	Result Area	It displays the decoding information, statistics, etc.

3.3.4 Client Connection

Connect the reader correctly, open the EasyID, and the reader can be found in the device list.

Figure 3-12 Device List

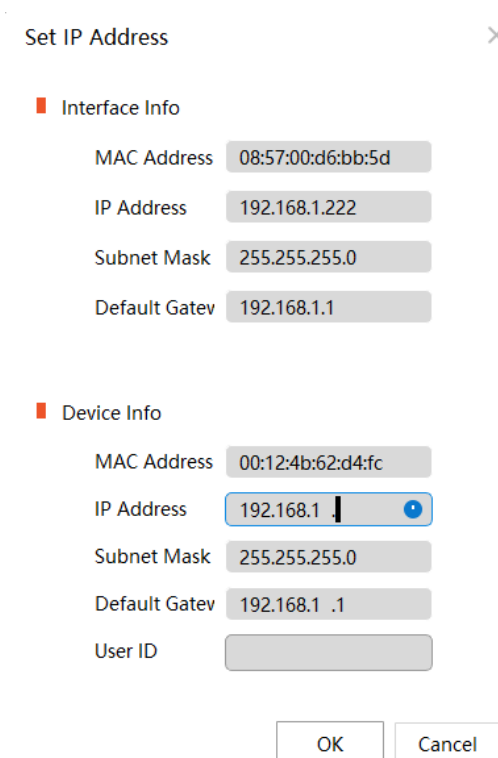


Device list will display the devices in the same network segment with the PC. When the new devices are connected to the network, click  to refresh the list.

Procedure

Step 1 Hover the mouse on the device, and click  to enter the IP configuration window. Make sure that the IP address of the device and the industrial PC are on the same network segment. Enter the IP address, and then click **OK**.

Figure 3-13 IP configuration of the Reader



The dialog box titled "Set IP Address" contains two sections: "Interface Info" and "Device Info". Each section has fields for MAC Address, IP Address, Subnet Mask, and Default Gatev. The "Device Info" section also includes a "User ID" field. At the bottom are "OK" and "Cancel" buttons.

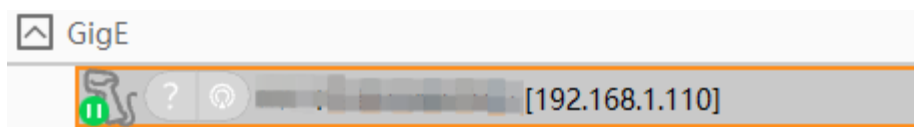
Section	Field	Value
Interface Info	MAC Address	08:57:00:d6:bb:5d
	IP Address	192.168.1.222
	Subnet Mask	255.255.255.0
	Default Gatev	192.168.1.1
Device Info	MAC Address	00:12:4b:62:d4:fc
	IP Address	192.168.1
	Subnet Mask	255.255.255.0
	Default Gatev	192.168.1 .1
	User ID	



You can modify the device name in the User ID. The max character quantity can contain up to 16 characters. The English, Chinese, and special characters are supported only.

Step 2 Click  on the right of the device to connect devices, or double-click the device to perform connection. After successfully connected, the status is shown as below.

Figure 3-14 Connection successful

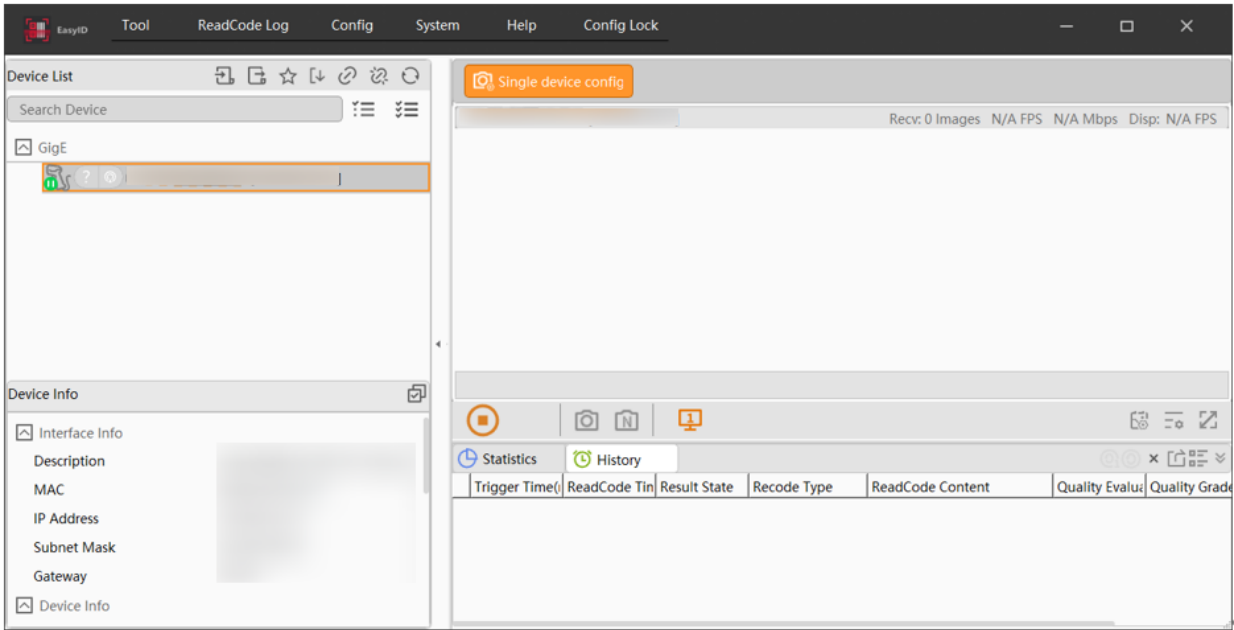


3.4 Client Operation

3.4.1 Basic Functions

After the reader is connected, the client software will automatically acquire images, or click  to acquire images.

Figure 3-15 Homepage



Place the 1D or 2D code at the proper position within the reader's field of vision to ensure a better imaging effect. The decoding function is enabled by default, so the device will automatically decode and display the code value on the client software. Also, the decoding result will be updated in real time in the result area, including Trigger Time (ms), ReadCode Time (ms), Recode Type, ReadCode Content, etc.

Figure 3-16 Code value and reading result

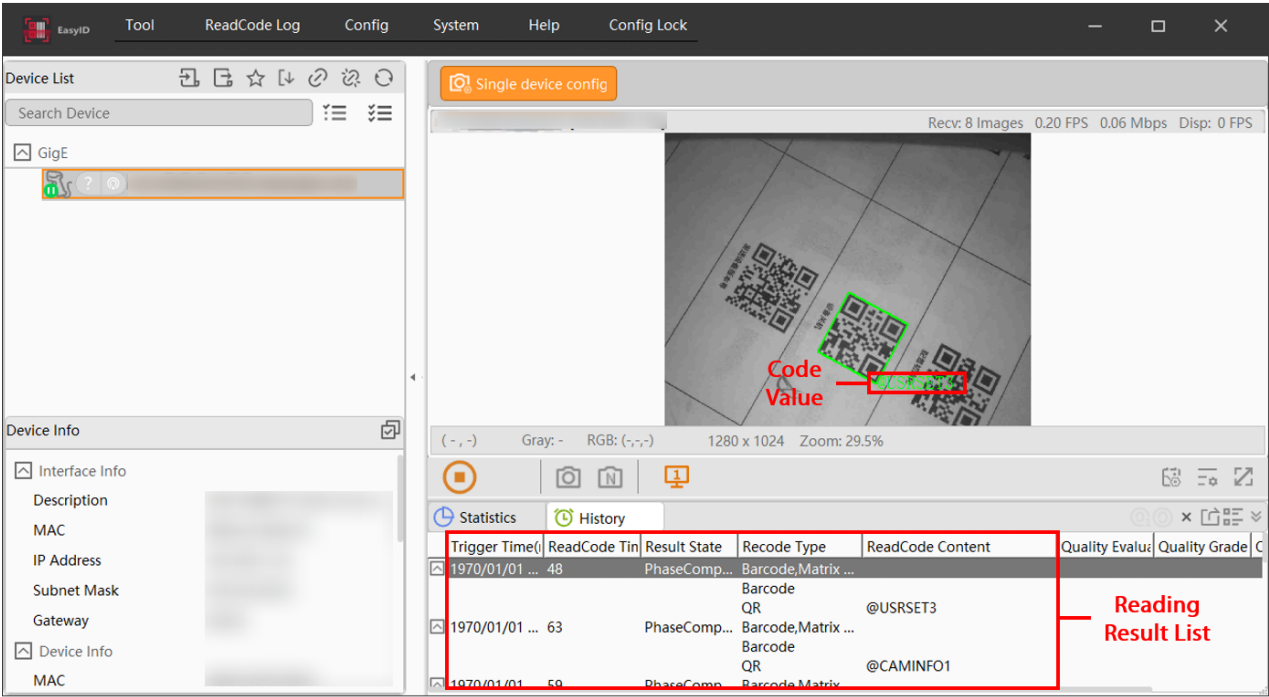


Image Display Area

Figure 3-17 Image Display Area



Click , the concealed default image tools will show up.

Figure 3-18 Concealed tools



Table 3-4 Image display area description

S./N.	Item	Icon/Button	Description
1	Basic Information	NA	Display the model information and IP address of the connected reader.
2	Real-Time Information		Display the received image quantity, frame rate, bandwidth, more.
3	Image Display Area		Display the image acquired by the reader. If the code reading mode is enabled and the code is identified, the identified code will be marked with the green box and code value will be displayed on the image. Hover the mouse over any part of the image and scroll the mouse wheel to zoom in or out the image.
4	Image Information		Mouse coordination, gray level, RGB value, resolution, zoom ratio, etc. will be displayed in real time.
5	Operation Button		Play button, click it to display the acquired image.
			Snapshot, click it to capture the image.
			Capture button, click it to enable the image capturing. The captured images will be saved to

S./N.	Item	Icon/Button	Description
			the defined path. You can select System > Image Save to configure the image saving path.
			Split screen button, the client can display the images from up to 16 devices in same time.
			Zoom-in button, click it to zoom in the image.
			Zoom-out button, click it to zoom out the image.
			Display scale button, click it to adjust the image displaying scale in 1:1.
			Display scale reset button, click it to reset the display scale.
			The central position of image displayed on the client will be restored after clicking it.
			Display setting button, the relevant display settings. Display ▶ Bayer Demosaicing Algorithm ▶ ☒ Display Chunk Data ☒ Display Text Data ☐ Display Crosshair Set Crosshair Color
			Global display button, display the image in full screen.

3.4.2 Viewing Device Information

Select the name of the device, and then view the basic information, including IP address, model, manufacturer, and firmware version, serial number, etc.

Figure 3-19 Device information

Device Info	
Interface Info	
Description	ASIX AX88179 USB 3.0 to Gig...
MAC	00:0e:c6:36:8c:75
IP Address	192.168.1.123
Subnet Mask	255.255.255.0
Gateway	0.0.0.0
Device Info	
MAC	a0:bd:1d:b7:d4:3c
IP Address	192.168.1.110
Subnet Mask	255.255.255.0
Gateway	0.0.0.0
Vendor	
Model	
Manufacture	
Version	V1.003.0001.9.R.20250320-920



If an abnormal device needs to be checked by the vendor, please provide the device information, including the model, firmware version, and serial number, to the sales representative or technical specialist.

4 Device Operation

4.1 Device List

The previous content describes the connection of the handheld code reader and the device information viewing. This section will introduce other functions in the device list area.

4.1.1 Change Device Order

4.1.1.1 Favorite List

The connected devices will be classified according to the model of handheld code reader by default, such as GigE, USB, etc. You can also create a favorite list to classify the devices based on your needs.

Create Favorite List

Step 1 Click ☆ on the device list, or right-click a device > **Add Device To Favorite List** > **Create New Collect List**.

Figure 4-1 Device list

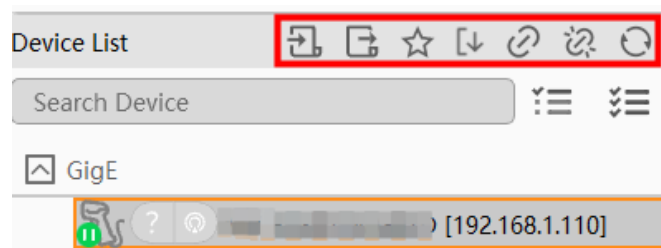
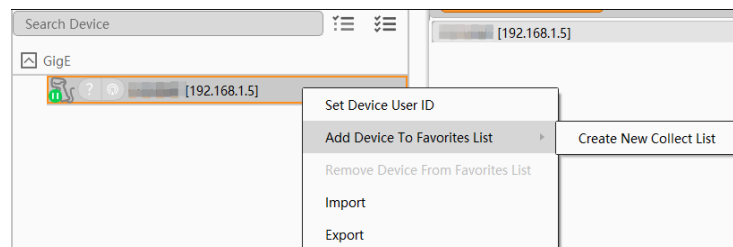
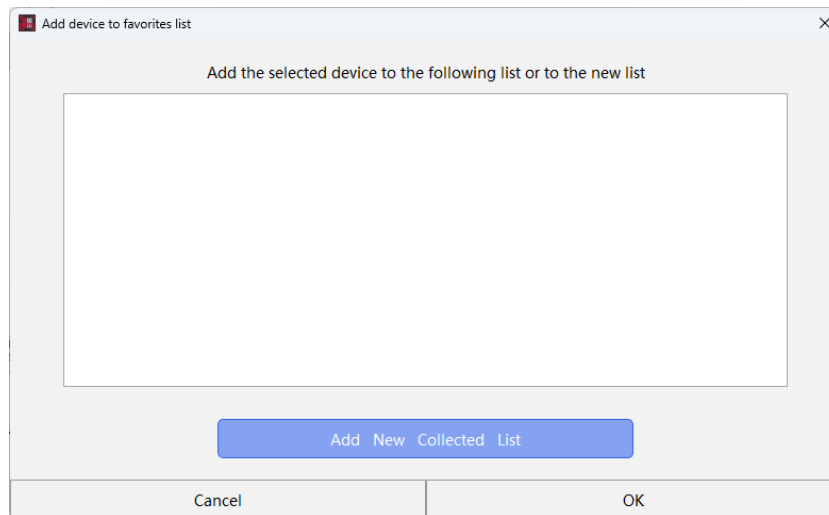


Figure 4-2 Create favorite list



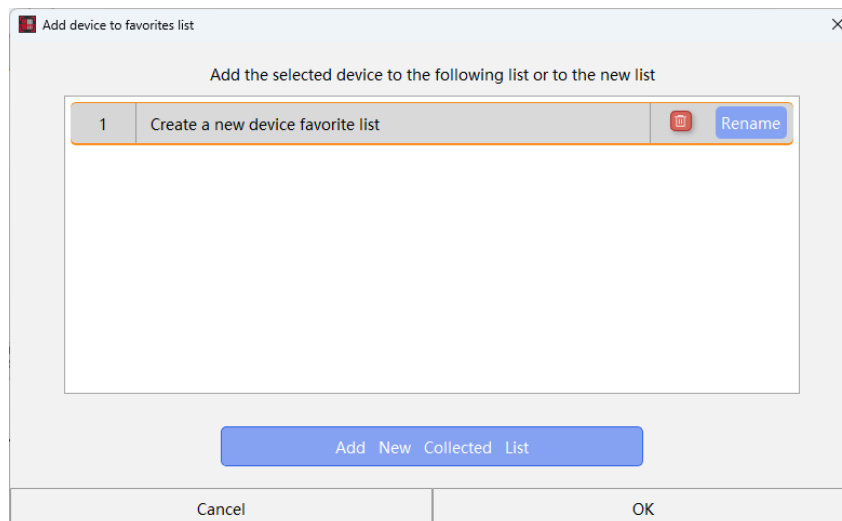
The favorite list creation window will pop up.

Figure 4-3 Favorite list creation window



Step 2 Click **Add New Favorite List**.

Figure 4-4 Add new favorite list



Step 3 Click  to delete the list; Click **Rename** to rename the favorite list.

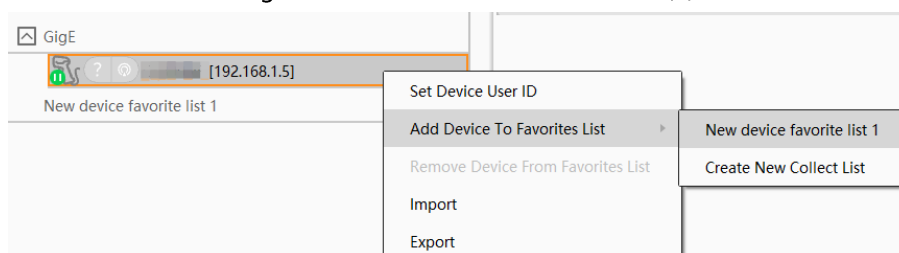
Step 4 Click **OK** to save all configurations, and click the **Cancel** to abandon all configurations.

Add One Device to Favorite List

- Method 1

Right-click a device > click **Add device to favorite list** > select the favorite list.

Figure 4-5 Add device to favorite list (1)



- Method 2

Select a device > click  > select the favorite list > click **OK**

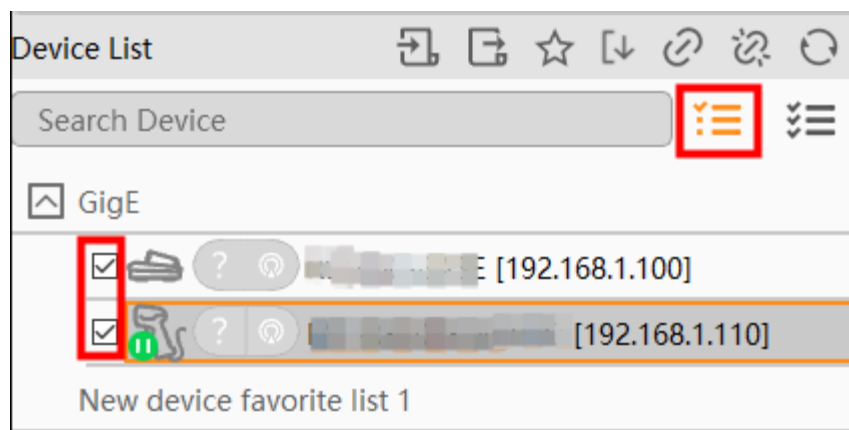
Figure 4-6 Add device to favorite list (2)



Add Many Devices to Favorite List

Step 1 Click  to select multiple devices.

Figure 4-7 Select multiple devices



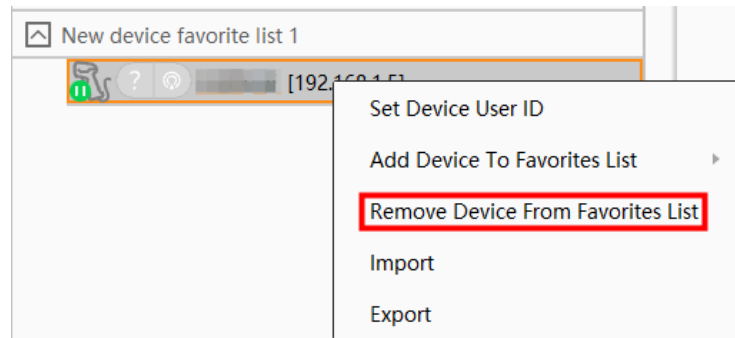
Step 2 After completing the multi-selection, click  > select the favorite list > click OK.

Step 3 Click , all devices in the device list will be selected.

Remove One Device from Favorite List

Right-click the device > click **Remove Device from Favorite List**. The device will be reclassified into the default device list according to the device model.

Figure 4-8 Remove device from favorite list



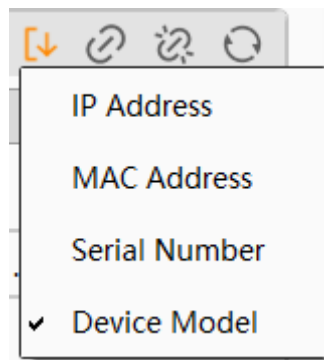
Import/Export Favorite List

Click  to import the favorite lists; Click  to export the favorite lists.

4.1.1.2 Sorting

Click  to sort all devices in all lists according to the default rules, such as IP address, MAC address, series number, device model.

Figure 4-9 Sorting



4.1.2 Connect/Disconnect Devices

Click  to connect all devices with the client software.

Click  to disconnect all devices connected with the client software.

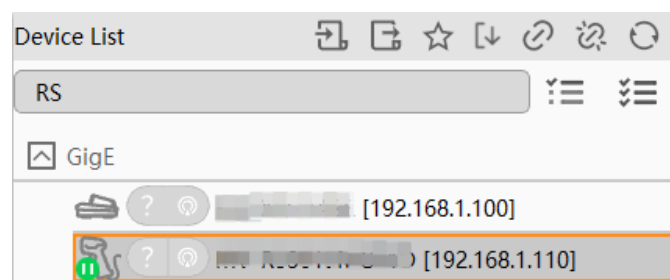
4.1.3 Refresh

Click  to refresh the device list.

4.1.4 Search Device

Enter the device name and press **【Enter】** to search the device.

Figure 4-10 Search the device



4.1.5 Device Status

Each device in the device list has three icons which indicates device status, configuration status and communication status. See the following figure:

Figure 4-11 Status icon

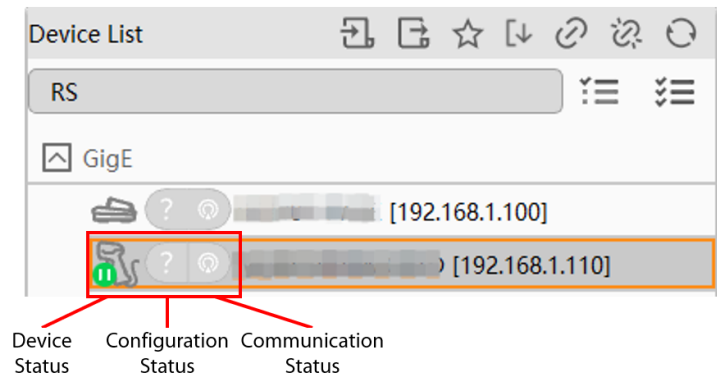


Table 4-1 Status description

Status	Icon	Description
Device Status		The device status is normal, it can be connected.
		The device has been connected with the other client, so the device cannot be connected.
		The IP addresses of device and client are in different network segment, so the device cannot be connected.
		The device is offline.
		The device is connected, but not streaming.
		The device is connected and streaming.
Configuration Status		The firmware does not support this function/Offline.
		The attributes are configured.
		The attributes are not configured.
Communication Status		The firmware does not support this function/Offline.
		Communication status is normal.
		Communication status is abnormal.

4.2 Configuration List

Click **Single Device Config** or to enter the configuration interface.

Figure 4-12 Enter configuration interface

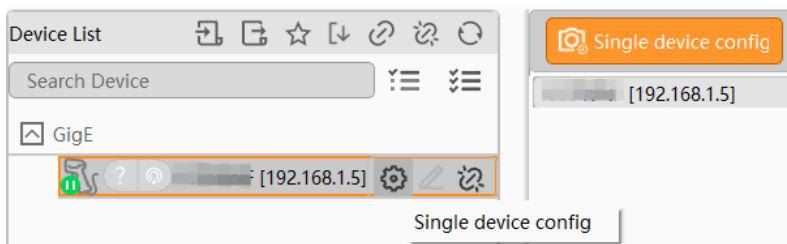
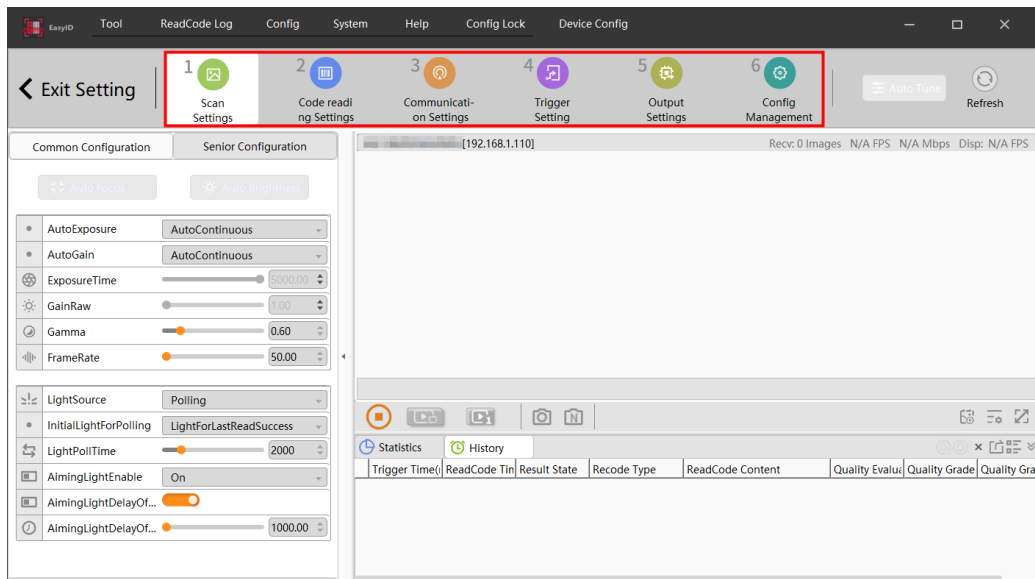


Figure 4-13 Configuration page



The Area 1 is the configuration toolbar, click **Exit Setting** to exit the configuration interface to homepage.

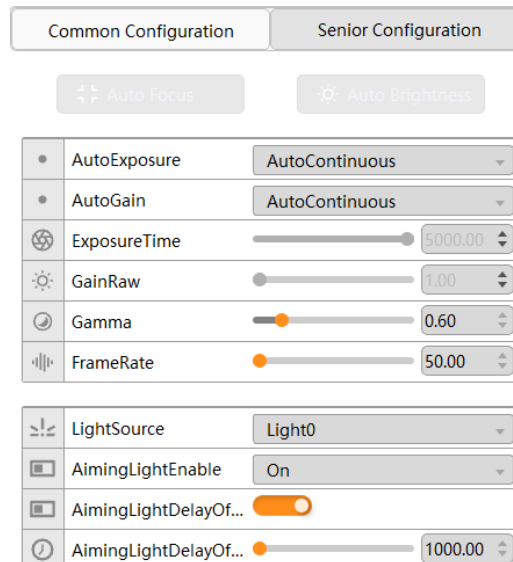
4.2.1 Scan Settings

You can configure the parameters of handheld code reader on this page. The parameters are divided into two parts, including the common configuration and senior configuration.

4.2.1.1 Common Configuration

Click **Scan Settings**, the **Common Configuration** includes the exposure time, gain raw, gamma, etc.

Figure 4-14 Common Configuration interface



Auto-focus and auto-brightness functions are not supported on RS3000 series handheld code reader; therefore, the buttons cannot be pressed.

Table 4-2 Common parameter description

Parameter	Range/Option	Description
Auto Exposure	Y/N	The exposure value will be adjusted automatically according to the operating environment.
Automatic Gain		The gain value will be adjusted automatically based on the exposure value according to the operating environment.
Exposure	20 us ~ 5000 us	Increasing the exposure time can enhance the brightness of the image, but it may also reduce the frame rate to some extent, and when capturing the moving objects, it is prone to motion blur.
Gains	1 ~ 23	Increasing the gain value can enhance the brightness of the image, but it may also increase the image noise to some extent.
Gamma Value	0 ~ 4	The larger the value, the more obvious the contrast ratio of the image.
Frame Rate	50 Hz	The frame rate of RS3000 series reader is 50 fps by default, which cannot be modified.
Light Source Selection	Off/White light/ Red light/ Blue light/ Loop	Select the fill light source.
Aiming Light Delay Off Enable	Y/N	After enabling, the aiming light will be closed according to the set delay time.
Aiming Light Delay Off Time	1000 ms ~ 15000 ms	Set the delayed off time of aiming light



- Y: Enable this function; N: Disable this function.
- To ensure the power consumption of the reader is in a normal range, there is a correlation between the exposure value and brightness level of the inner fill lights. If the brightness of fill light is too high, the upper limit value of exposure value will be lowered.
- If the exposure value is too high, it will affect the frame rate. You can adjust the parameters of gain, gamma, fill light brightness to acquire a better image.

4.2.1.2 Senior Configuration

The image format, ISP and exposure can be configured on the senior configuration interface.

Figure 4-15 Senior Configuration interface

Common Configuration

Senior Configuration

ImageFormatControl

Click to collapse

Width

1280

Height

1024

HorizontalFlip

VerticalFlip

ISPControl

Click to collapse

Gamma

0.60

SharpnessEnabled

DenoisingEnabled

ExposureControl

Click to collapse

ExposureTime

5000.00

GainRaw

1.00

Table 4-3 Senior parameter description

Parameter		Range/Option	Description
Image Format Configuration	Width	1280	The width and height of RS3000 series reader are fixed, which cannot be modified.
	Height	1024	
	Horizontal Flip	Y/N	The image will be flipped on the Y-axis, which means the image is reversed from left to right.
	Vertical Flip		The image will be flipped on the X-axis, which means the image is reversed upside down.
ISP Configuration	Gamma Value	0~4	The larger the value, the more obvious the black and white contrast of the image.
	Sharpness Enabled	Y/N	The image will be sharpened after enabling.
	Denoising Enabled		The image noise will be reduced after enabling.
	Contrast Enable		The image contrast will be adjusted after enabling.
Configuring Exposure	Exposure Time	20 us ~ 5000 us	Increasing the exposure time can enhance the brightness of the image, but it may also reduce the frame rate to some extent, and when capturing the moving objects, it is prone to motion blur.

Parameter		Range/Option	Description
	Gains	1~23	Increasing the gain value can enhance the brightness of the image, but it may also increase the image noise to some extent.



Y: Enable this function; N: Disable this function.

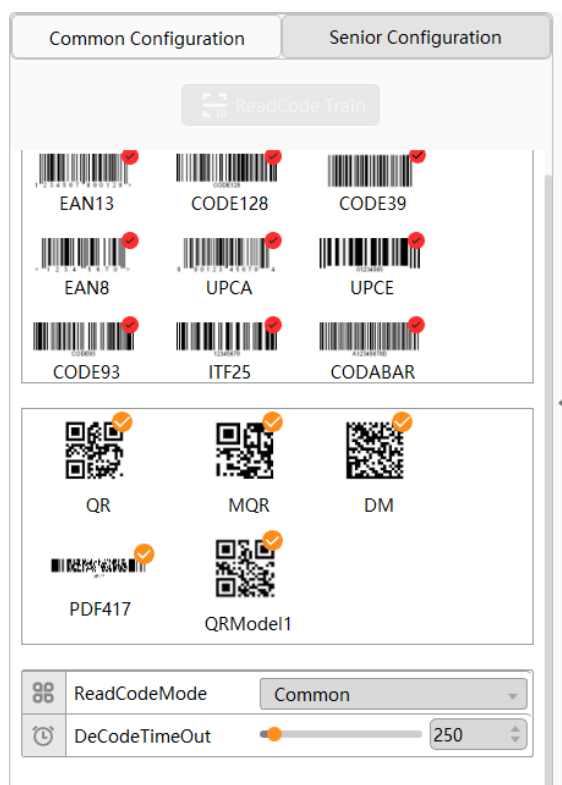
4.2.2 Code Reading Settings

You can configure the parameters of handheld code reader on code reading configuration interface. The parameters are divided into two parts, including the common configuration and senior configuration.

4.2.2.1 Common Configuration

See the following figure:

Figure 4-16 Common Configuration Interface



Code reading training is not supported on RS3000 series handheld code reader; therefore, the buttons cannot be pressed.

Table 4-4 Common parameter description

Parameter	Range/Option	Description
1D Code Type	EAN13/ CODE128/ CODE39/ EAN8/ UPCA/ UPCAE/ CODE93/ ITF25/ CODABAR	Select the 1D code type which needs to be identified, supporting single-selection and multi-selection modes.
2D Code Type	QR/ MQR /DM	Select the 2D code type which needs to be identified, supporting single-selection and multi-selection modes.
Read Code Mode	Common/Accurate/ Continuous/Batch	● Common: It only reads the code which is closest to the center of the aiming light or the image, and only one code can be read at a time. The code reading quantity cannot be set. ● Accurate: It only reads the 1D code where the aiming light is shone upon, and only one code can be read at a time. The code reading quantity cannot be set. ● Continuous: It only reads the 1D code where the aiming light is shone upon, and only one code can be read at a time. The code reading quantity cannot be set. If the code reading is successful, the reading will not be stopped, and the reading result will be output directly. If the reader reads the 1D code twice or more, the reading results can be filtered base on the filtering rule. ● Batch: It can read multiple codes, and the code reading quantity can be set. After completing the reading, the reader will package the results and output it.
Decode Timeout	0 ms ~ 5000 ms	Default value is 250 ms.  The timeout value shall be adjusted according to the actual decoding time.
ChecksumCODE39	Y/N	Enable or disable the CheckSumCODE39.
ChecksumITF25		Enable or disable the CheckSumITF25.

Parameter	Range/Option	Description
Matrix Code High Version Enable		After enabling this function, the identifiable QR code version will be extended from 1~8 to 1~40, and the identifiable DM code version will be extended from 1~15 to 1~30.

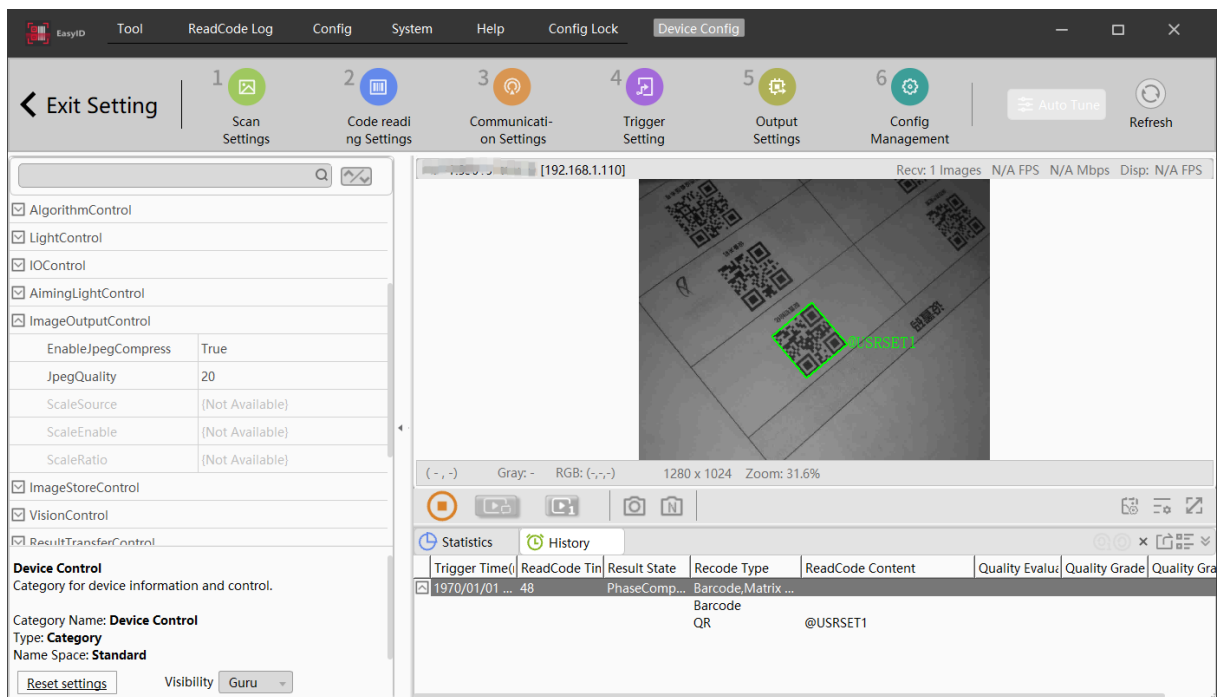


Y: Enable this function; N: Disable this function.

The image acquiring effect could be affected by some factors, such as the object material, inherent characteristics, light source type, environment, etc. Therefore, the image processing operations shall be proceeded to improve the code reading efficiency.

Select **Single Device Config > Device Config > ImageOutputControl > EnableJpegCompress > Disable**. You can view the processing effect on the image display area in real time.

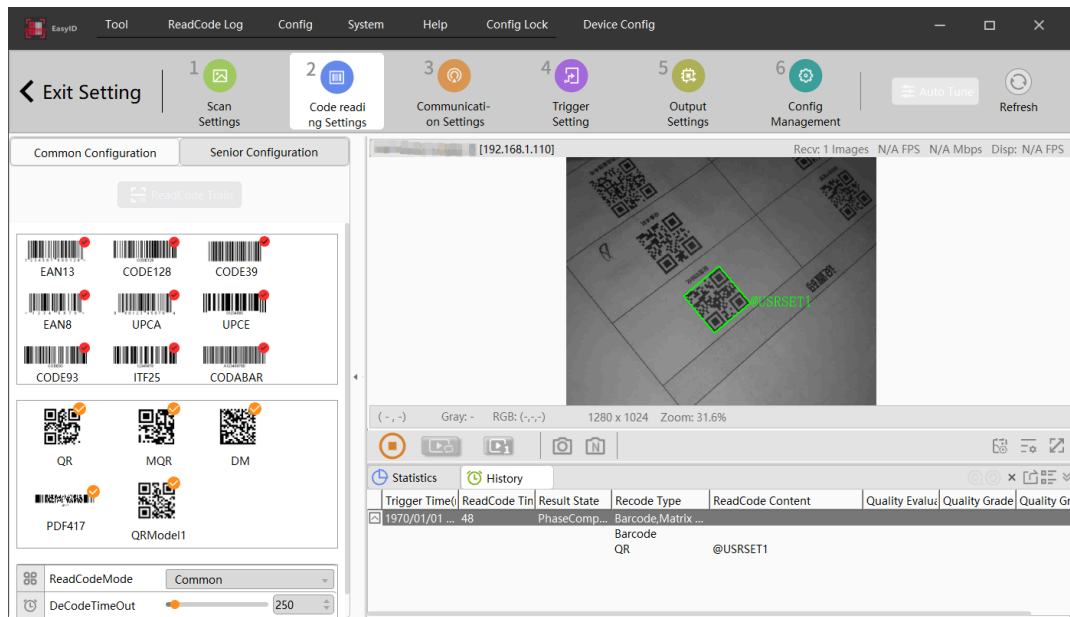
Figure 4-17 Image output parameter



- Barcode Type: Code 39, Code 93, Code128, CodaBar, EAN8, EAN13, UPCA, UPCE, ITF25, 2of5 (Industrial2of5), GS1-128, Pharmacode.
- 2D Code Type: QR, Data Matrix, Micro QR, GS1 DM, GS1 QR.
- If the other 1D and 2D code types are needed to be shown on EasyID, please contact the sales representative or technical specialist.

You can check the code value in the image display area (the code will be marked with green box), and check the code information on history, including trigger time, read-code time, result state, code type, data, quality evaluation, etc.

Figure 4-18 Decoding successful



4.2.2.2 Senior Configuration

The senior configuration interface includes the parameters of algorithm.

Figure 4-19 Algorithm Control

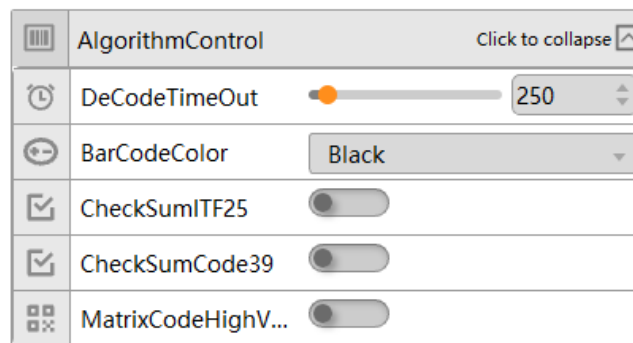


Table 4-5 Parameter description

Parameter	Range/Option	Description
Decode Timeout	0 ms ~ 5000 ms	Default value is 250 ms.  The timeout value shall be adjusted according to the actual decoding time.
1D Code Polarity	Auto/Black/White	Auto is suggested. It supports both black code and white code.
ChecksumITF25	Y/N	Enable or disable the CheckSumITF25.
ChecksumCode39		Enable or disable the CheckSumCode39.

Parameter	Range/Option	Description
Matrix Code High Version Enable		After enabling this function, the identifiable QR code version will be extended from 1~8 to 1~40, and the identifiable DM code version will be extended from 1~15 to 1~30.

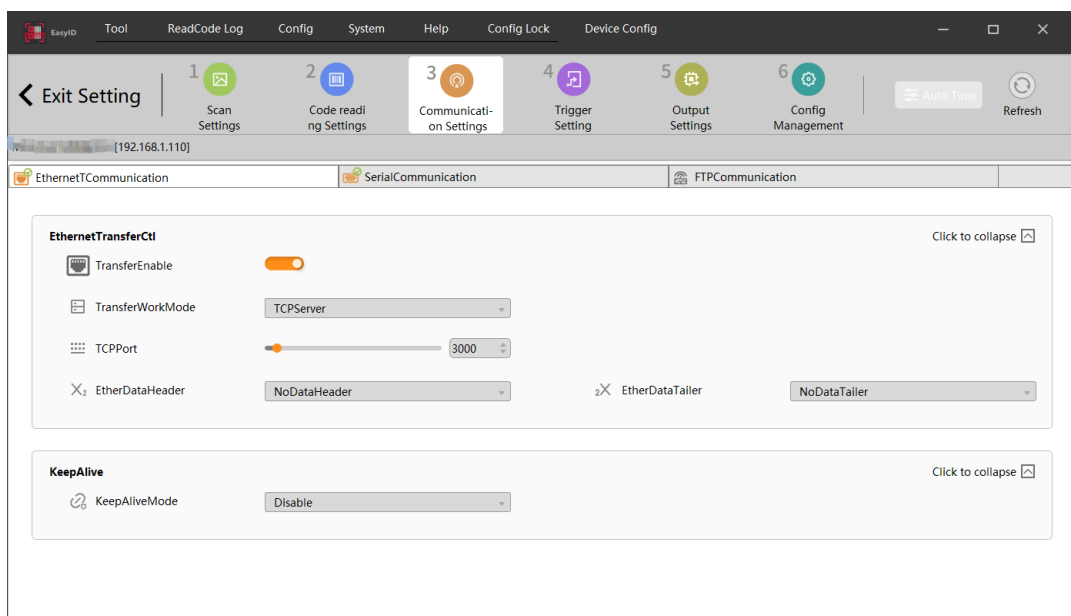


Y: Enable this function; N: Disable this function.

4.2.3 Communication Settings

There are three kinds of data transmission modes that can be configured on this interface, which includes Ethernet communication, serial communication, and FTP communication.

Figure 4-20 Communication configuration interface



4.2.3.1 Ethernet Communication

Figure 4-21 Ethernet configuration interface

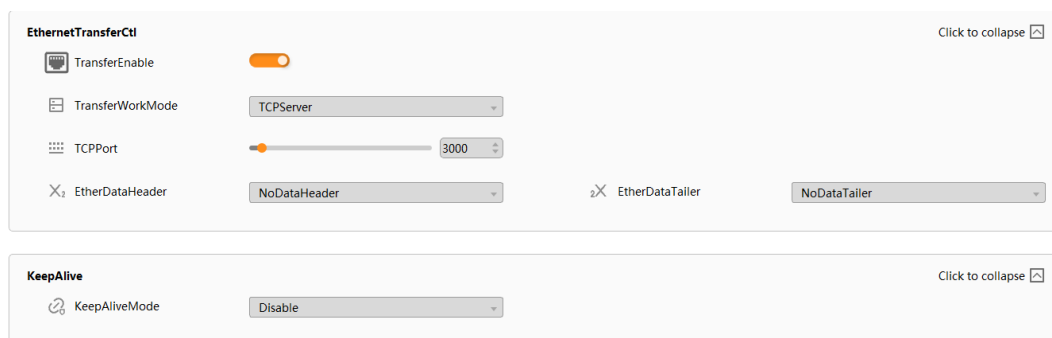


Table 4-6 Parameter description

Item		Range/Option	Description
Ethernet TransferCtl	Transfer Enable	Y/N	Click the button to enable the function.
	TransferWork Mode	TCP/Profinet/ ModbusTcp/FINS/ EthernetIP/MC	Select the transfer mode when outputting data. The transfer modes include TCP, Profinet, ModbusTcp, FINS, EthernetIP, and MC, and each mode has different parameters that needs to be configured.  The transfer mode of USB model can only be set to the TCP.
	TCP Port	20 ~ 65535	When the transfer mode is set to the TCP Server or TCP Client , you shall configure the port number.
	Server IP	User Defined	When the transfer mode is TCP Client, the server IP shall be configured.
	Ethernet Data Header	NoDataHeader/ Data_STX/ IP_Address/ Device_UserID/ Device_SerialNum	When the communication mode is TCP server, the system will pad the bytes at the packet header.
	Ethernet Data Tailer	NoDataTailer/ DataTailer_CR/ DataTailer_LF/ DataTailer_CR_LF/ DataTailer_ETX/ DataTailer_TAB	When communication mode is TCP Server, the system will pad the characters at the end of the packet data.  The DataTailer_TAB is only valid for the USB model device.
Network Keep-alive	TCP Keep-alive	Disable/ Default/ User Defined	When the transfer mode is TCP Server or TCP Client , the Keep-alive will be enabled; After selecting the User Define , the parameters of the keepAliveTime and KeepAlivePktData can be configured.



Y: Enable this function; N: Disable this function.

4.2.3.2 Serial Communication

Figure 4-22 Serial Control interface

SerialControl

Click to collapse

UartEnable

BaudRate

Baud_9600

DataBits

Bits_8

Bits_7

Parity

Parity_None

StopBits

Bits_1

Bits_2

Table 4-7 Parameter description

Item		Range/Option	Description
Serial Control	UartEnable	Y/N	Click the button to enable the function.
	Baud Rate	600/ 1200 /2400 / 4800 /9600 /19200 /38400 /57600 / 115200	The number of code meta-symbols which has been transmitted per unit time.
	Data Bits	Bits 8/ Bits 7	Number of data bits.
	Parity	None/ Even/ Odd	Parity method.
	Stop Bits	Bits 1/ Bits 2	Number of stop bits.



Y: Enable this function; N: Disable this function.

4.2.3.3 FTP Communication

Figure 4-23 ImageStoreControl interface

ImageStoreControl

Click to collapse

ReadSuccessPosition

Disable

SendByFTP

ReadFailPosition

Disable

SendByFTP

ImageStoreFTPServerIP

0.0.0.0

ImageStoreFTPServerPort

21

ImageStoreFTPServerUserName

ImageStoreFTPServerPassword

ImageStoreFTPDirectory

ImageStoreFileNamePattern

%Y%M%D_%H%m%S_%z

Table 4-8 Parameter description

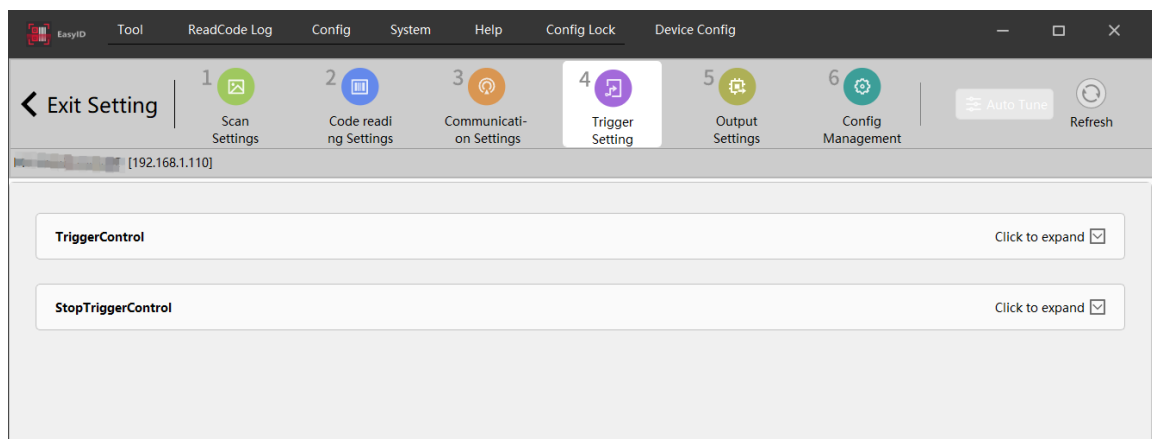
Item		Range/Option	Description
Image Store Control	ReadSuccess Position	Disable/Send by FTP	The image saving path of the OKRead.
	ReadFail Position	Disable/Send by FTP	The image saving path of the NGRead.

Item		Range/Option	Description
	Image Store FTP Server IP	User Defined	To set IP address.
	Image Store FTP Server Port	1 ~ 65535	The configurable port number range is 1~65535.
	Image Store FTP Server User Name	User Defined	To set the user ID.
	Image Store FTP Server Password		To set the password.
	Image Store FTP Directory		To set the path for saving image.
	Image Store File Name Pattern		Naming rule setting

4.2.4 Trigger Settings

There are two trigger control configuration modules for the handheld code reader, which includes the TriggerControl and StopTriggerControl.

Figure 4-24 Trigger Setting interface



Trigger Control

Figure 4-25 Trigger Control interface

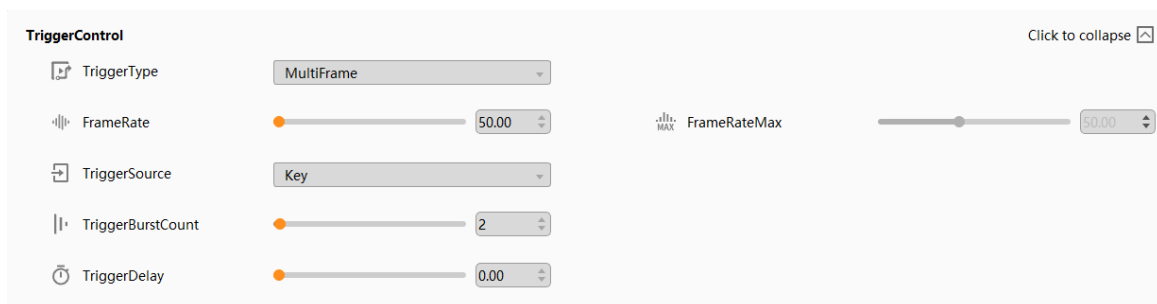


Table 4-9 Parameter description

Item	Range/Option	Description
Trigger Mode	Free Run/ Single Frame/ Multi-frame/ Phase Mode/ Motion Detection	● Free Run: the device will continuously capture the image according to the set frame rate. ● Single Frame: the device will capture one image after receiving the trigger signal. ● Multi-frame: the device will capture the set frame number of images after receiving the trigger signal. ● Phase Mode: the device will continuously capture the image according to the set frame rate after receiving the phase signal, and stop capturing until the trigger signal ends ● Motion Detection: the device only captures the image when a moving object is detected; otherwise, the device is in the dormant state.
Frame Rate	50 fps	The frame rate of RS3000 series reader is 50fps by default, which cannot be modified.
Max Frame Rate	NA	Max frame rate at which the device operates, which is related to the resolution and device performance.
TriggerDelay	0 μ s ~1000000 μ s	Trigger delay time.
Trigger Burst Count	1~255	The maximum number of frames of the image captured by the device after receiving a trigger signal, which is valid only in multi-frame mode.
TriggerSource	Software/ TCP/ Serial/ Key	● Software: the device is triggered by trigger signal sent from software. ● TCP: the device is triggered by the specific characters via the TCP. ● Serial: the device is triggered by the specific characters through the serial port. ● Key: the device is triggered by the keys.
TriggerStartCmd	User Defined	The device is triggered to start operating after receiving the set characters, which is valid only in the TCP mode or Serial mode.

Item	Range/Option	Description
TriggerEndCmd		The device is triggered to stop operating after receiving the set characters, which is valid only in the TCP mode or Serial mode.
MotionDetectMode	Weak/ Medium/ Strong	To adjust the sensitivity of motion detection. It is valid only in the motion detection mode.
MotionDetectWorkTime	10 ms ~ 3000 ms	For adjusting the capturing duration. When device detects the FoV movement, it will start to capture images, and stop capturing according to the set time. It is valid only in the motion detection mode.

StopTriggerControl

Figure 4-26 StopTriggerControl interface

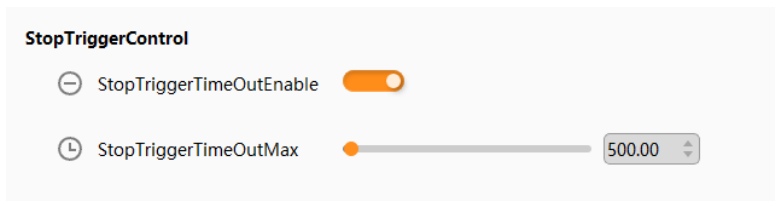


Table 4-10 Parameter description

Parameter		Range/Option	Description
StopTriggerControl	StopTriggerTimeOutEnable	Y/N	For enabling the stop trigger timeout function, which is valid only in the multi-frame or phase mode.
	StopTriggerTimeOutMax	0 ~ 60000	To adjust the StopTriggerTimeout value. It is valid only when the stop trigger timeout is enabled.

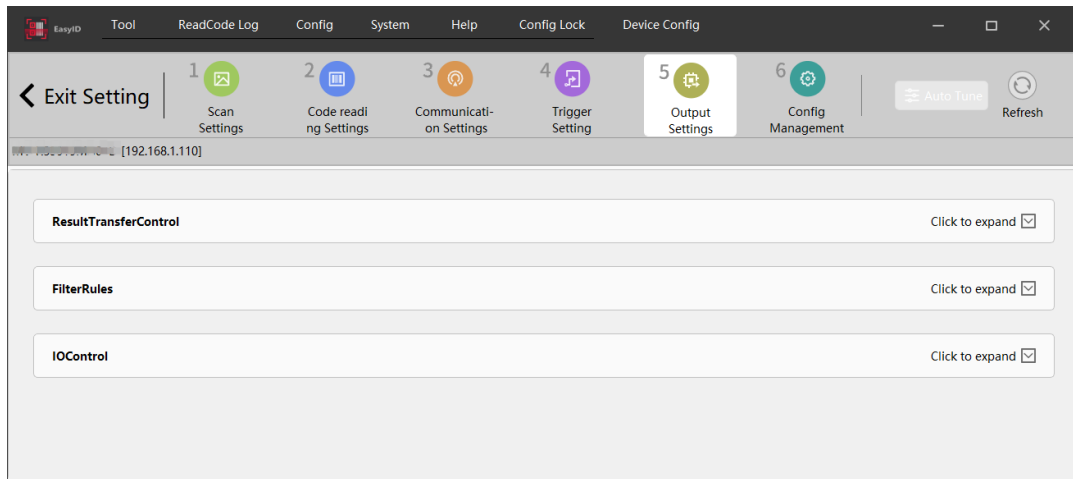


Y: Enable this function; N: Disable this function.

4.2.5 Output Settings

There are three control modules for handheld code reader in the output configuration interface, which includes result transfer control, filter rules, and IO control.

Figure 4-27 Output Settings interface



ResultTransferControl

Figure 4-28 ResultTransferControl interface

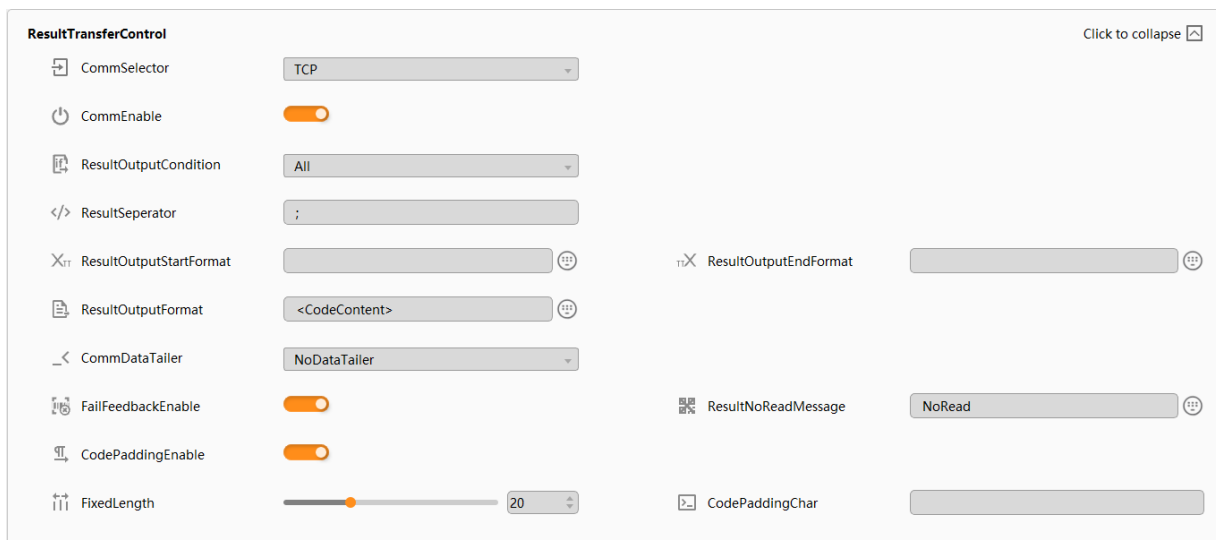


Table 4-11 Parameter description

Parameter	Range/Option	Description
CommSelector	TCP/ Profinet/ ModbusTCP/ FINS/ EthernetIP/ MC /Serial Port	Select the transmission mode according to the device model to define the result output format.  The transfer mode of the USB model can only be set to the TCP.
CommEnable	Y/N	For controlling whether the result is output.
ResultOutputCondition	Disable/ All/ ReadFail/ ReadSuccess/ Customize	For controlling the conditions of result output. When customize mode is selected, the script parameters shall be configured.
ResultSeparator	User Defined	To enter the separator in the result data.

Parameter	Range/Option	Description
ResultOutputStartFormat		The characters among the data can be customized or select the options from the keypad list.
ResultOutputEndFormat		The settings between the data can be customized or selected from the keypad list.
ResultOutputFormat		The result output format can be customized or selected from the keypad list.
CommDataTailer	NoDataTailer/ DataTailer_CR/ DataTailer_LF/ DataTailer_CR_LF/ DataTailer_TAB	The tail data of the entire set of the data.  The DataTailer_TAB is valid only for the USB model device.
FailFeedbackEnable	Y/N	Send feedback when code is not read.
ResultNoReadMessage	User Defined	Only valid when fail feedback is enabled.
CodePaddingEnable	Y/N	Pad the length of the code value.
FixedLength	1~64	To configure the length of padding bytes. It is valid only when code padding function is enabled.
CodePaddingChar	User Defined	To configure the bytes of padding. It is valid only when code padding function is enabled.



Y: Enable this function; N: Disable this function.

FilterRules

Figure 4-29 FilterRules interface

FilterRules

Click to collapse

CodeRepeatedFilterEnable

CodeResultFilterEnable

NormalFilter

MinCodeLen

0

MaxCodeLen

0

CodeRepeatedFilterTimeout

2000

NumberFilter

BeginWithFilter

IncludeFilter

ExcludeFilter

Table 4-12 Parameter description

Parameter	Range/Option	Description
CodeRepeatedFilterEnable	Y/N	To filter the repeated codes.
CodeRepeatedFilterTimeout	0 ms ~ 3600000 ms	It can be customized according to the actual conditions.
CodeResultFilterEnable	None/ NormalFilter/ RegularFilter	● Normal Filter: it can provide some simple filtering options. ● Regular Expression Filter: it specifies filtering rules through regular expressions.
MinCodeLen	0~Max Code Length	To limit the min length of code value (only valid in NormalFilter).
MaxCodeLen	Min Code Length~256	To limit the max length of code value (only valid in NormalFilter).
NumberFilter	Y/N	Keep the code reading result with only numbers (only valid in NormalFilter).
IncludeFilter	User Defined	Keep the code reading results with the specific characters (only valid in NormalFilter).
ExludeFilter		Keep the code reading results which excludes the specific characters (only valid in NormalFilter).
BeginWithFilter		Keep the code reading results which begins with the specific characters (only valid in NormalFilter).
RegularExpression		Filter the code reading results according to the expression content (only valid in RegularFilter).
FilterStrategy	ReserveMatch/ ReserveNoMatch	Select reserved items based on the results of regular expression filtering.



Y: Enable this function; N: Disable this function.

Figure 4-30 I/OControl interface

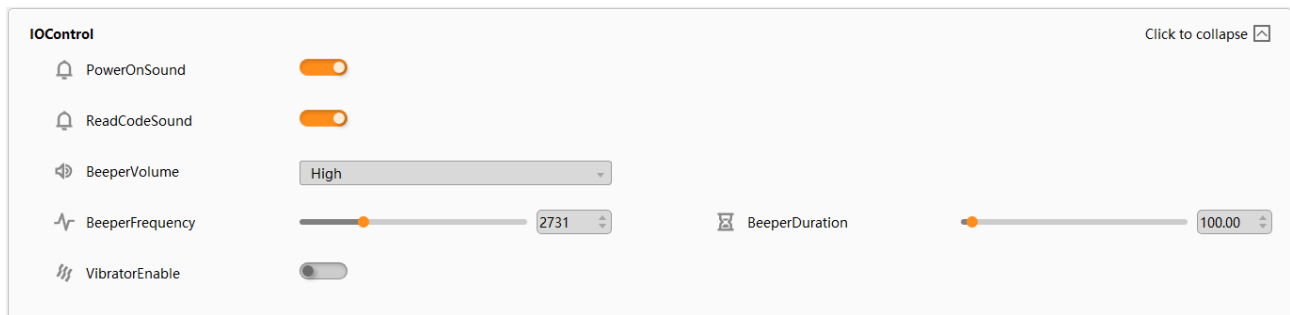


Table 4-13 Parameter description

Parameter	Range/Option	Description
PowerOnSound	Y/N	For enabling or disabling the prompt tone of power-on
ReadCodeSound		For enabling or disabling the prompt tone when the decoding process is successful.
BeeperVolume	Low/ Medium/ High	To adjust the sound volume
BeeperFrequency	50 Hz ~ 10000 Hz	To adjust the beeper frequency based on the volume level.
BeeperDuration	20 ms ~ 3000 ms	Once beeping duration
VibratorEnable	Y/N	For enabling or disabling the vibrator when decoding process is successful.
VibratorDuration	100 ms ~ 1000 ms	The duration of one vibration.



Y: Enable this function; N: Disable this function.

4.2.6 Config Management

After configuring the parameters, you can save or restore the configurations here as needed. In addition, you can perform the device restarting, default configuration restoring, and configuration files import and export.

Figure 4-31 Config Management interface

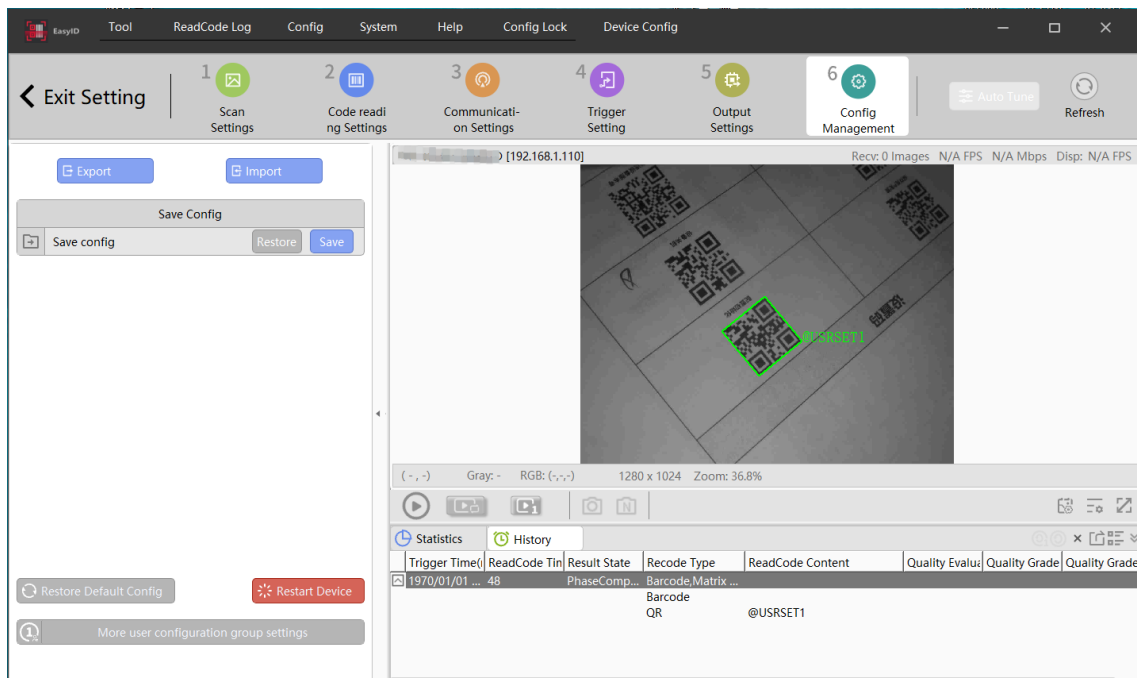


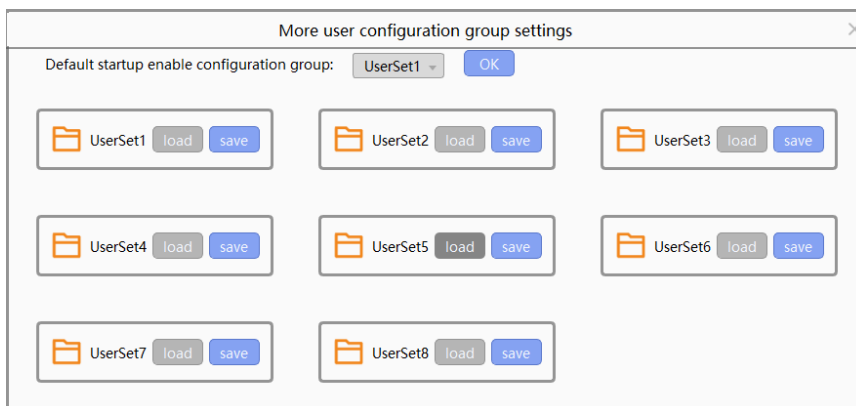
Table 4-14 Parameter description

Item	Description
Export	Click it to export configuration files.  The image capturing shall be suspended before importing and exporting files.
Import	Click it to import configuration files.  The image capturing shall be suspended before importing and exporting files.
Restore	Click it to restore to the last saved attribute configuration.  You should disable the MainSwitchEnable function.
Save	Click it to save the current attribute configuration.  The MainSwitchEnable function should be disabled.
Restore Default Config	Click Reset to restore device to the factory settings.
Restart Device	Click it to restart the device.
More User Configuration Group Setting	Selectively load and save user configuration.

Procedure

Step 1 After clicking the **More User Configuration Group Setting**, the configuration window will pop up.

Figure 4-32 More User Configuration Group Setting



Step 2 Select any **UserSet** in **Default Startup Enable Configuration Group** and click **OK**. The configurations that you have configured will be saved to the selected **UserSet**.

- Save the configurations of the current device in **UserSet1**.
- Load the selected **UserSet2** as the current device configurations.
- Select the default power-on configurations as the selected configuration which is the **UserSet2** in this example.

Step 3 Click **Load** to load the corresponding configurations as the current **UserSet**. Click **Save** to save the all-current configurations into the corresponding **UserSet**.

4.3 Menu Bar

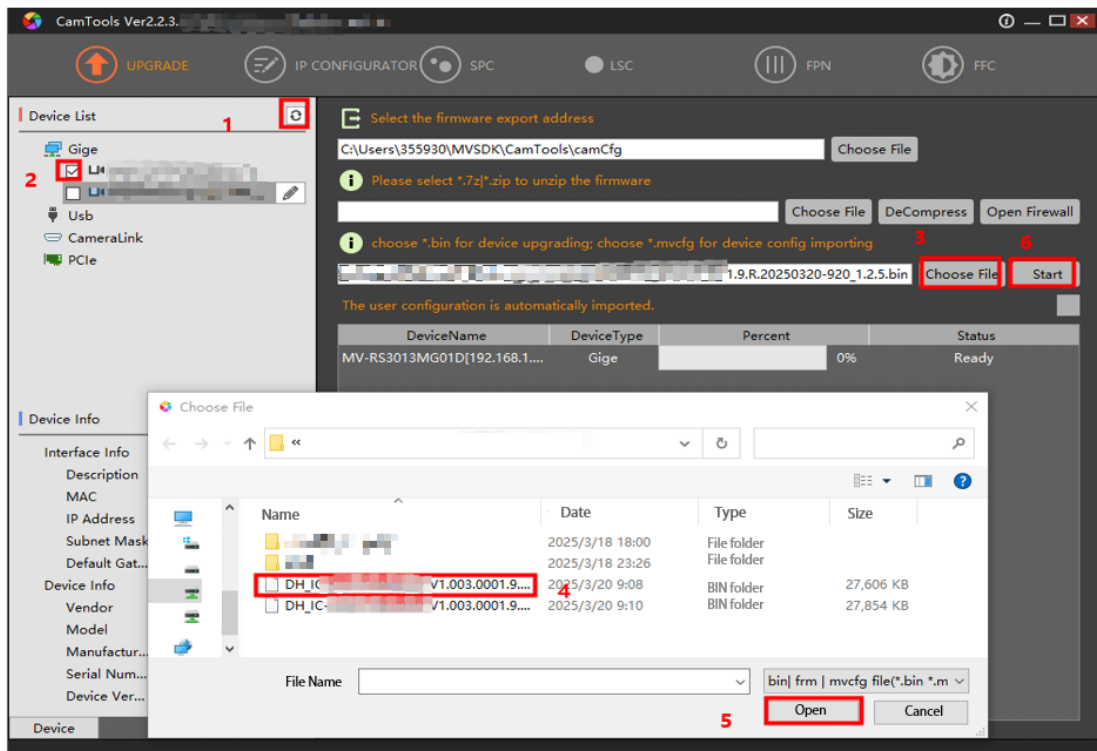
4.3.1 Tool

The **Tool** on toolbar includes the **CamTools** for firmware upgrading.

Procedure

Step 1 Click **Tool > CamTools**. The **CamTools** will start.

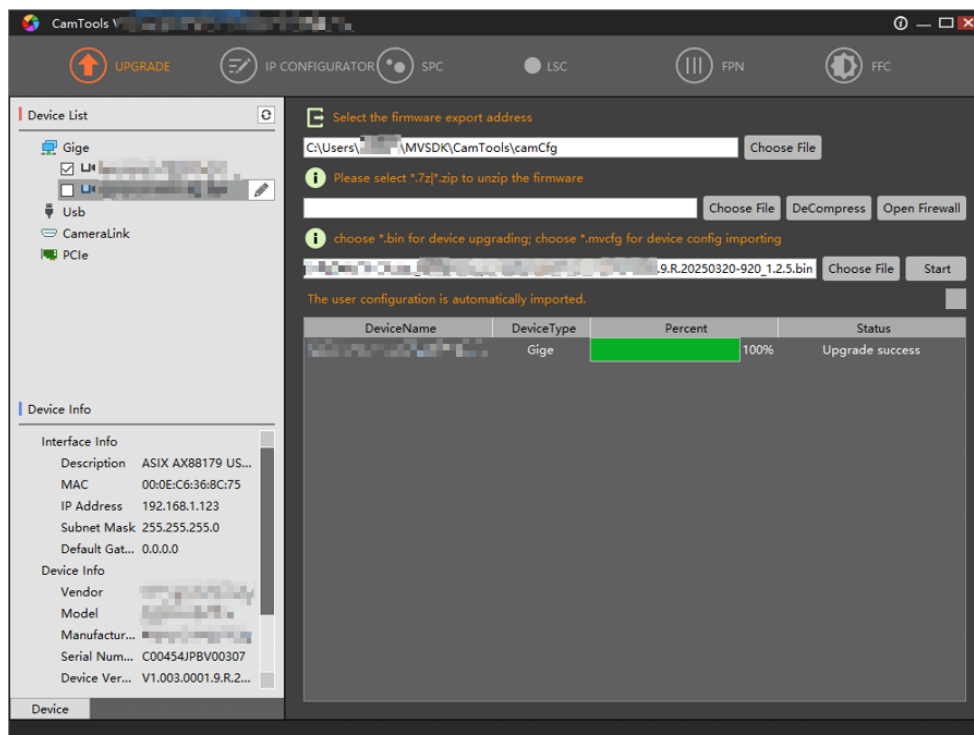
Figure 4-33 CamTools



Step 2 Select the device to be upgraded in the device list, and check the device IP address.

- Click **Choose File** on the right side of the configuration area, select the firmware file, and click **OK**.
- Click **Start** to start the firmware upgrading.

Figure 4-34 Firmware upgrading



Step 3 After the firmware is successfully upgraded, the device will be automatically powered off and restarted. You can check the firmware version on the homepage of EasyID.

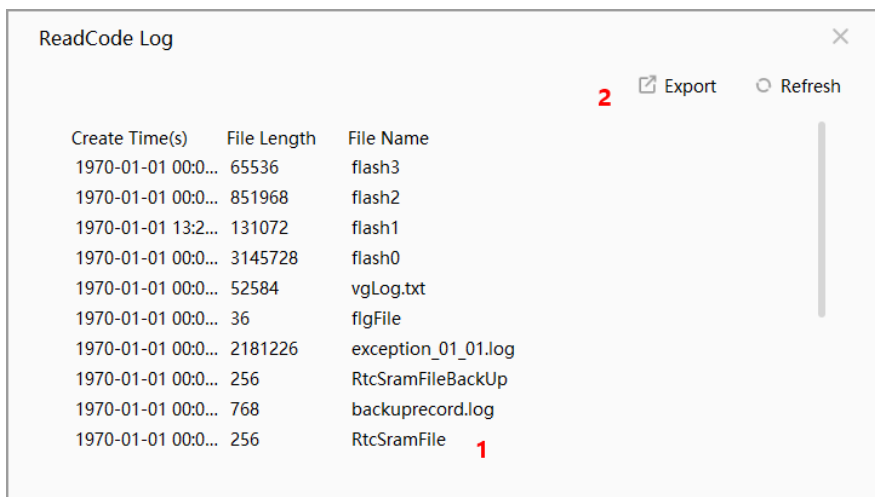


Before upgrading the firmware, please disconnect the device on the homepage of EasyID.

4.3.2 ReadCode Log

This function provides the operating logs of the device, if the device is abnormal, please provide related logs to the technical specialist for troubleshooting.

Figure 4-35 Logs Export



ReadCode Log

2 Export Refresh

Create Time(s)	File Length	File Name
1970-01-01 00:0...	65536	flash3
1970-01-01 00:0...	851968	flash2
1970-01-01 13:2...	131072	flash1
1970-01-01 00:0...	3145728	flash0
1970-01-01 00:0...	52584	vgLog.txt
1970-01-01 00:0...	36	flgFile
1970-01-01 00:0...	2181226	exception_01_01.log
1970-01-01 00:0...	256	RtcSramFileBackUp
1970-01-01 00:0...	768	backuprecord.log
1970-01-01 00:0...	256	RtcSramFile 1

4.3.3 Config

Figure 4-36 History Record

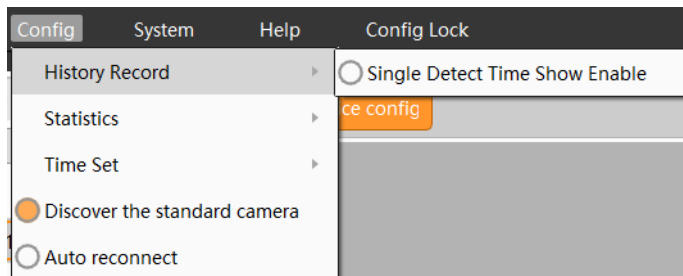


Figure 4-37 Statistics

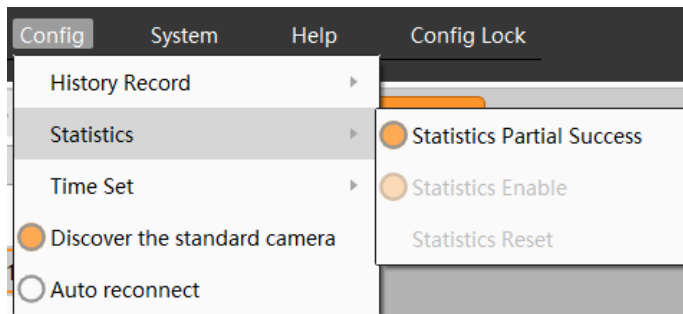


Figure 4-38 Time Set

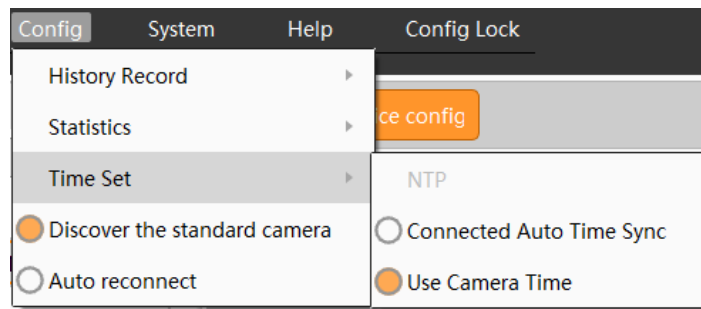


Table 4-15 Function description

Item	Description
History Records	Single Detect Time Show Enable
Statistics	It includes the Statistics Partial Success, Statistics Enable, and Statistics Reset.  If you set the ExpectedDecodeNum to 10, but only 8 codes are read, the code reading result is failed when the Statistics Partial Success is disabled.
Time Set	It includes the NTP, Connected Auto Time Sync, and Use Camera Time
Discover Standard Device	After enabling this function, the client software can find earlier version device.
Auto Reconnect	After enabling this function, the client software can reconnect the device when it is offline.

4.3.4 System

4.3.4.1 Image Save

Image Save is one of the most commonly used functions, which can save all decoded images according to the usage scenario for traceability. Besides, if the code image is unable to decode, you can provide it to the sales representative or technical support for parameter adjustment or algorithm optimization.

Figure 4-39 Image Save

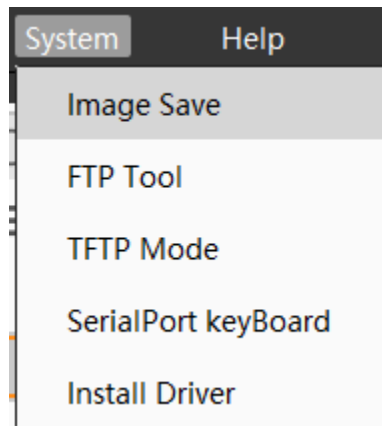
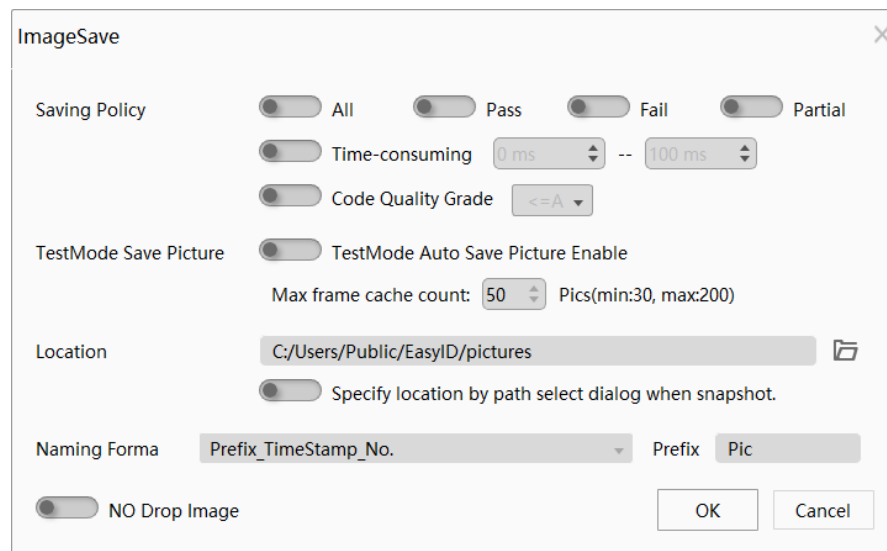


Figure 4-40 ImageSave configuration interface



You can save the images in BMP or JPEG format.

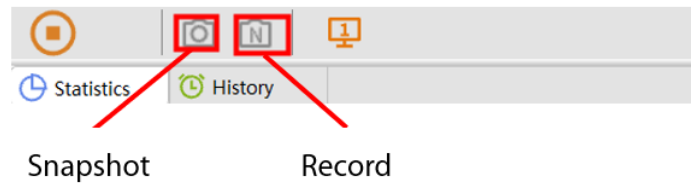
- **JPEG:** Enable the **JPEG Compression** in the **ImageOutputControl**, and select the appropriate image quality. The image will be compressed and saved as the JPEG format.
- **BMP:** Disable the **JPEGCompress**, and select the **ImageSource** in the **ScaleSource**. The **ScaleRatio** can be enabled and disabled according to your needs.

The options of the **Saving Policy** include All, Pass, Fail, Partial.

Two methods of image saving:

- **Record** button is in the control bar under the image display area, it can save every received image until it is disabled.
- **Snapshot** button is in the control bar under the image display area, and it can save one image when it is pressed.

Figure 4-41 Image saving buttons



4.3.4.2 FTP and TFTP

Figure 4-42 FTP and TFTP

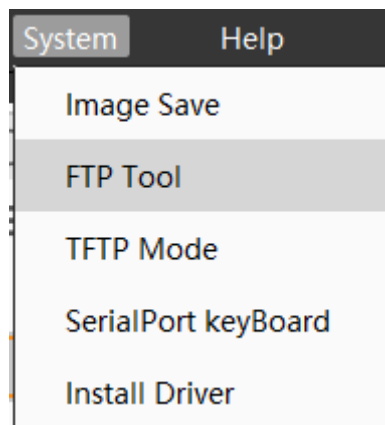


Figure 4-43 FTP Tool

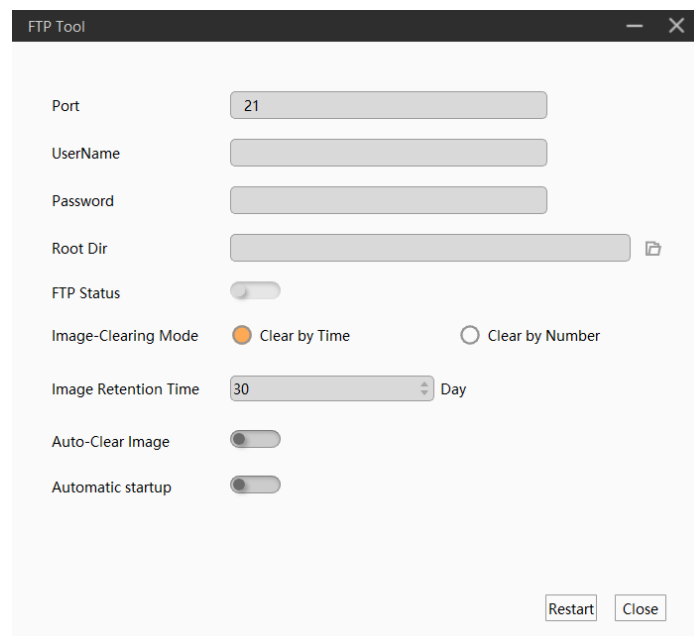


Figure 4-44 TFTP Config

The screenshot shows a 'TFTP Config' window with the following elements:

- TFTP Server Enabled:** A toggle switch currently turned off.
- TFTP Enabled:** A toggle switch currently turned off.
- Image Url:** An empty text input field.
- Image Name:** An empty text input field with a file icon button to its right.
- Decode Timeou:** A dropdown menu with '3.00' selected.

Table 4-16 Function description

Item	Description
Image Save	You can save images based on the set saving policy, and customize the saving path.
FTP Tool	The FTP server, which comes with EasyID, is generally used with the FTP image saving function. The FTP Image Saving function can save images based on the code reading status, and you can customize the image naming rules and saving path.
TFPT Mode	The commissioning function of the TFTP server is encrypted.
SerialPort Keyboard	It only outputs the information which you specified by the mouse or others.
Install Driver	For installing drivers.

4.3.4.3 SerialPort Keyboard

You can use the Virtual keyboard Output Tool to debug device.

Figure 4-45 Virtual Keyboard Output Tool

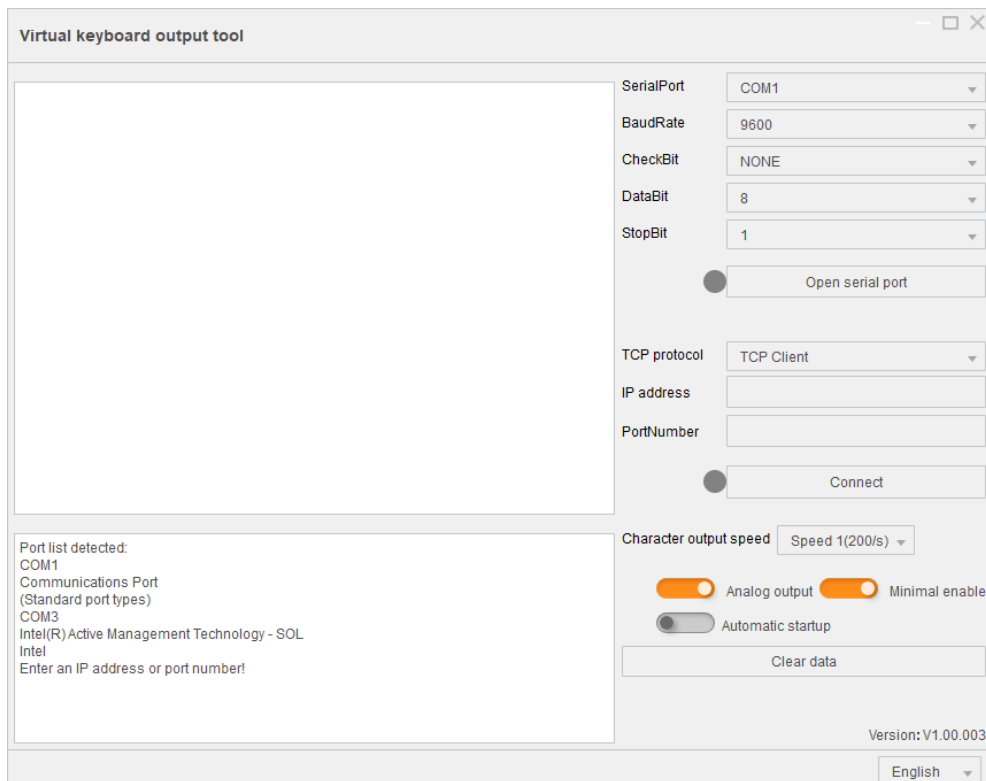


Table 4-17 Parameter description

Item	Description
Serial Port Virtual Keyboard	You can click Open serial port to enable the serial port function. For details on serial port configuration, see the 4.2.3 Communication Settings .
TCP Virtual Keyboard	You can click Connect to enable the TCP virtual keyboard function. For details on TCP configuration, see 4.2.3 Communication Settings .
Character Output Speed	The options include Speed 1 (200/s), Speed 2 (250/s), Speed 3 (330/s), Speed 4 (500/s), and Speed 5 (1000/s). The low-speed transmission options are recommended, because the low transmission rate is more stable and reliable.
Analog Output	To enable or disable the output function of virtual keyboard.
Minimal Enable	To enable or disable the minimization function.
AutoRun	To enable or disable the function of Automatic Startup.
Clear Data	Click it to clear the data.
Language	Switch the language between English and Chinese.
Data Viewing Area	To display the data.

Serial Control

Step 1 After connecting the cables, check the serial port number of the receiving end.

Step 2 Click **Single Device Config > Device Config > Serial Control**, and set the **UartEnable** to Enable and configure the relevant parameters.

Step 3 Click **Single Device Config > Device Config > ResultsTransferControl**.

Step 4 Set the **CommSelector** to the **Serial**. Enable the **CommEnable**, and configure the relevant parameters.

Figure 4-46 SerialControl feature

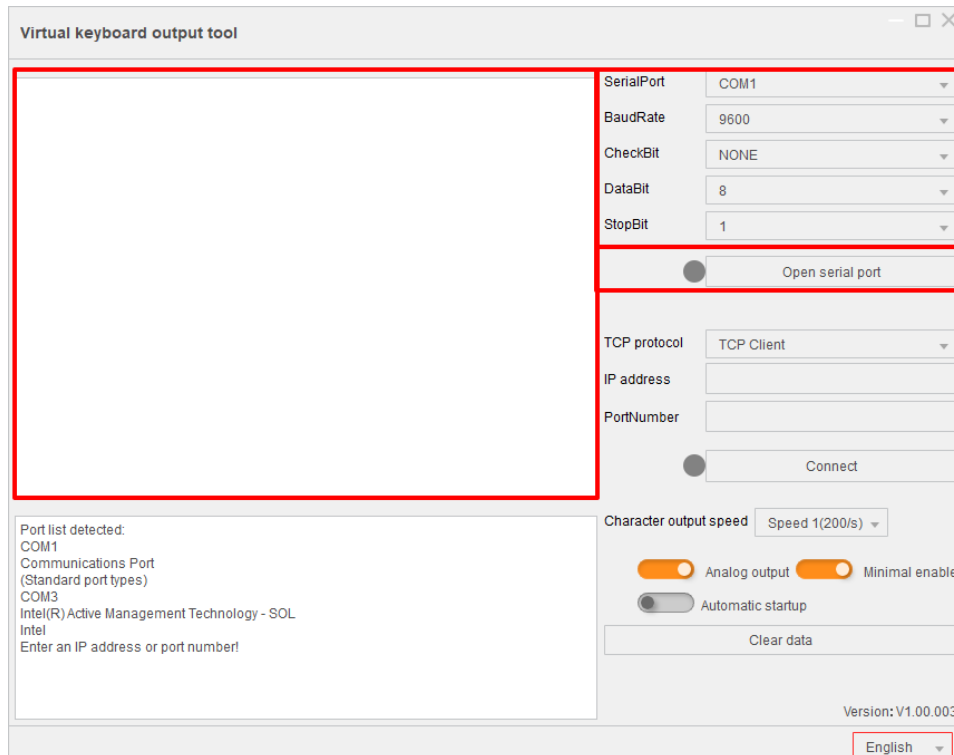
SerialControl	
UartEnable	True
BaudRate	Baud_9600
DataBits	Bits_8
Parity	Parity_None
StopBits	Bits_1

Figure 4-47 ResultTransferControl feature

ResultTransferControl	
CommSelector	Serial
CommEnable	True
ResultOutputCondition	All
ResultOutputFormat	<CodeContent>
ResultOutputStartFormat	
ResultOutputEndFormat	
ResultSeperator	;
CommDataTailer	NoDataTailer
☒ CodePadding	
☒ ReadFailFeedback	

Step 5 Click **System > Virtual Keyboard Output Tool**, and configure the **Serial Number** and check other parameters of serial port. Finally, click **Open Serial Port**. When the device recognizes the code, it will output data and display it at the information area.

Figure 4-48 Serial Port configuration



Please ensure that the configured parameters on EasyID and Virtual keyboard output tool are the same; otherwise, the serial port communication will be invalid, or the output result will be garbled.

TCP Service

The reader can serve as either the TCP client or the TCP server. Take the reader as the TCP client as an example, the setting procedures are similar to serial port analog.

Procedure

- Step 1** Click **Single Device Config > Device Config > EthernetTransferCtl**. Set the **TransferEnable** to **True**, **TransferWorkMode** to **TCP Client**, and enter the TCP port number and server IP address.
- Step 2** Click **Single Device Config > Device Config > ResultTransferControl**. Set the **CommSelector** to the **TCP**, **CommEnable** to **Enable**, and configure the relevant parameters as you needed.

Figure 4-49 EthernetTransferCtl feature

EthernetTransferCtl	
TransferEnable	True
TransferWorkMode	TCPServer
TCPPort	3,000
TCPServerAddress	{Not Available}
CtrlRegStartAddress	{Not Available}
RespRegStartAddress	{Not Available}
DataRegStartAddress	{Not Available}
ProfinetStatus	{Not Available}
ByteOrderConvert	{Not Available}
EtherDataHeader	NoDataHeader
EtherDataTailer	NoDataTailer
☒ KeepAlive	

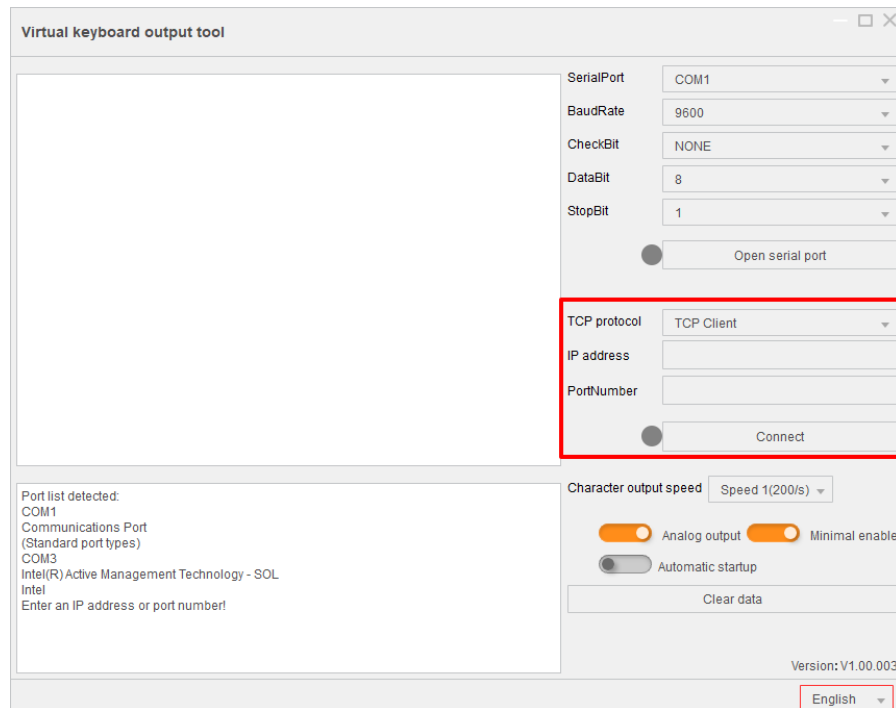
Figure 4-50 ResultTransferControl feature

ResultTransferControl	
CommSelector	TCP
CommEnable	True
ResultOutputCondition	All
ResultOutputFormat	<CodeContent>
ResultOutputStartFormat	
ResultOutputEndFormat	
ResultSeperator	;
CommDataTailer	NoDataTailer
☒ CodePadding	
☒ ReadFailFeedback	

Step 3 Click **System > Virtual Keyboard Output Tool**. Set TCP Protocol to the TCP Client, and enter the IP address and port number.

After ensuring the configured parameters on the EasyID and output tool are the same, click **Connect**. When the device recognized the code, the data is outputted on the information area, as shown in the figure below.

Figure 4-51 TCP configuration



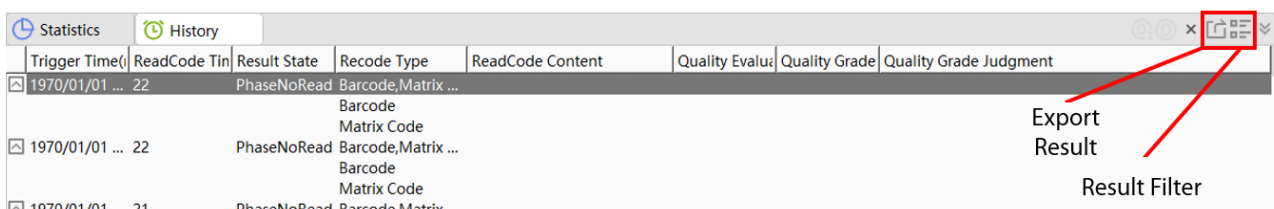
4.3.5 Help

Table 4-18 Function description

Item	Description
AutoRun	After selecting the Open, the client will be automatically started with the system starting.
Language	You can switch the languages between Chinese and English.
Context Help	You can find the user manual and development manual in the popped-up folder.
About	To view the information of client version and company.

- Algorithm results can be displayed as a list on the results area.
- Click **Export** to export the results in TXT format.
- Click **ResultFilt** to filter the results.

Figure 4-52 Algorithm result area



When the device is reading the codes, you can click the statistics page to view the results. If you need to clear the history records of the reading results, click **Config > Statistics > Statistics Reset** to reset the statistics.

Figure 4-53 Statistics Reset

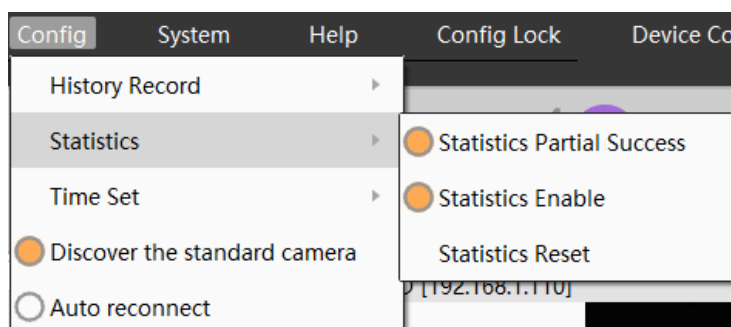


Figure 4-54 Statistical information area

Statistics	History		
0	0	0	0.00%
Total	Succeed	Failed	Rate

4.4 Setting Code

You can use the reader to scan some special codes to perform the parameter settings. These codes are called setting codes. The prompt sound of reader is different when it scans the setting codes. The reader will beep twice if the scanning is successful.

Procedure

- Step 1 Make sure the reader is normally started and in the operating mode. The setting code can only take effect in the operating mode.
- Step 2 Scan the code named with **Code Setting Enable**, the reader will be in the quick setting status.
- Step 3 You can scan the setting codes to perform the parameter setting according to your needs. After scanning the setting codes, the parameters will be configured immediately and effective.



Please note that some setting codes named with values can only take effect after scanning the code named with **Complete Parameter Setting**.

- Step 4 After completing the settings, please scan the code named with **Exit Code Setting** to exit the setting mode.

For the setting codes with values, you need to scan the setting code named with **Complete Parameter Setting** to exit the setting mode, such as the **Reading Quantity Setting**, the **Modify Prefix**, and the **Modify Suffix**. If you need to re-enter the parameters, scan the setting code again.

4.4.1 Enable and Exit Configuration



Start setup code



Exit setting code

4.4.2 Device Management Setting

Function	Code	
Configuration Management	 Save user configuration	 Configuration Initialization
	 Device restart	NA
Obtain Device Information	 Send serial number	 Send device version number
	 Send device name	NA

4.4.3 Code Type Setting

Function	Code	
1D CodeMainEnable	 Disable all barcodes	 Enable all barcodes
2D CodeMainEnable	 Disable all QR codes	 Enable all QR codes
Code128Enable	 Disable Code128	 Enable Code128
Code39Enable	 Disable Code39	 Enable Code39
Ean13Enable	 Disable Ean13	 Disable Ean13
Ean8Enable	 Disable Ean8	 Enable Ean8
UpcaEnable	 Disable UPCA	 Enable UPCA

Function	Code	
UpceEnable	 Disable UPCE	 Enable UPCE
Code93Enable	 Disable Code93	 Enable Code93
Itf25Enable	 Disable ITF25	 Enable ITF25
CodabarEnable	 Disable Codabar	 Enable Codabar
PharmaCodeEnable	 Disable Pharma	 Enable Pharma
QREnable	 Disable QR	 Enable QR

Function	Code	
MQREnable	 Disable MQR	 Enable MQR
QRModel1Enable	 Disable QR Model1	 Enable QR Model1
DMEnable	 Disable DM	 Enable DM
PDF417Enable	 Disable PDF417	 Enable PDF417



- When enabling the PharmaCode, other setting code for enabling code types will be invalid.
- When enabling the PharmaCode, the setting code of **Enable All Barcode Type** will be invalid.
- After scanning the setting code of **Enable PharmaCode**, the recognition function of other code types will be disabled.
- When scanning the **Enable All 1D Codes**, the PharmaCode will not be enabled.
- When scanning the **Disable All 1D Codes**, the PharmaCode will not be disabled.

4.4.4 Code Reading Setting

If you need to set the code reading quantity, scan the Set Code Reading Quantity code, then scan the Set Parameter code. The parameter is expressed in decimal. The max number of code reading is 20.

Function	Code	
Reading Mode	 Common Mode	 Accurate Mode
	 Continuous Mode	 Batch Mode
CodeRepeatedFilterEnable	 Disable repeated code filter	 Enable repeated code filter
CodeRepeatedFilter Timeout	 Repeated code timeout 2s	 Repeated code timeout 1min
	 Repeated code timeout 10min	NA
Reading Quantity Setting	 Set reading quantity	 Complete quantity setting
High Version 2D Code Setting	 Disable High Version 2D Code	 Enable High Version 2D Code

4.4.5 Result Transfer Control

If you need to modify the prefix and suffix, first scan the **Modify Prefix** code or **Modify Suffix** code,

then scan the **Set Parameter** code. According to the ASCII code table to modify the content, the characters are expressed by hexadecimal encoding values. The max number of characters can be up to 5.

Function	Code	
TCP Result Transfer	 Disable TCP result transfer	 Enable TCP result transfer
Serial Port Result Transfer	 Disable serial port result transfer	 Enable serial port result transfer
Profinet Result Transfer (Only for Ethernet model)	 Disable Profinet result transfer	 Enable Profinet result transfer
ModbusTCP Result Transfer (Only for Ethernet model)	 Disable ModbusTCP result transfer	 Enable ModbusTCP result transfer
FINS Result Transfer Enable (Only for Ethernet model)	 Disable FINS result transfer	 Enable FINS result transfer
MC Result Transfer Enable (Only for Ethernet model)	 Disable MC result transfer	 Enable MC result transfer
KeyBoard Result Transfer Enable (Only for USB model)	 Disable Keyboard Result Transfer	 Enable Keyboard Result Transfer
Fail Feedback Enable	 Disable fail reading feedback	 Enable fail reading feedback

Function	Code	
Result Tail Data (DataTailer_TAB is only valid for the USB model)	 Not add tail data	 Add CR
	 Add LF	 Add CR and LF
	 Add TAB	
Modify Prefix	 Modify prefix content	 Complete prefix modification
Modify Suffix	 Modify suffix content	 Complete suffix modification

4.4.6 Ethernet Communication Setting

Function	Code	
TCP Server	 Disable TCP Server	 Enable TCP Server

4.4.7 Serial Communication Setting

Function	Code	
Serial Communication Enable	 Disable Serial Communication	 Enable Serial Communication

Function	Code	
Baud Rate	 Baud Rate 600	 Baud Rate 1200
	 Baud Rate 2400	 Baud Rate 4800
	 Baud Rate 9600	 Baud Rate 19200
	 Baud Rate 38400	 Baud Rate 57600
	 Baud Rate 115200	NA
DataBits	 8 Data Bits	 7 Data Bits
Parity Check	 Disable Parity Check	 Even Parity Check
	 Odd Parity Check	-

Function	Code	
StopBits	 1 Stop Bit	 2 Stop Bits

4.4.8 Beeper Setting

Function	Code	
PowerOnSound Setting	 Turn off	 Turn on
ReadCodeSound Setting	 Turn off	 Turn on
BeeperDuration	 20s	 80s
	 120s	NA
BeeperVolume	 Low volume	 Medium volume
	 High volume	NA

Function	Code	
BeeperFrequency	 Low frequency	 Medium frequency
	 High frequency	NA

4.4.9 Vibrator Setting

Function	Code	
VibratorEnable	 Turn off vibration reminder	 200ms vibration duration
	 500ms vibration duration	 1000ms vibration duration

4.4.10 Aiming Light Setting

Function	Code	
Aiming Light Enable	 Disable	 Enable
Aiming Light Delay Off Setting	 Disable the delay function	 Delay closing for 1 second

Function	Code	
	 Delay closing for 2 second	 Delay closing for 5 second

4.4.11 Fill Light Setting

Function	Code	
Light Selector	 Turn off the fill light	 Red light
	 White light	 Blue light
	 Light polling	NA
Polling Time	 Polling interval 1s	 Polling interval 2s
	 Polling interval 5s	NA

4.4.12 Parameter Setting Code

Number Code 0~9		
 Number 0	 Number 1	 Number 2
 Number 3	 Number 4	 Number 5
 Number 6	 Number 7	 Number 8
 Number 9	NA	NA
Number Code A~F		
 Number A	 Number B	 Number C
 Number D	 Number E	 Number F

5 FAQ (Frequently Asked Questions)

5.1 Client Software Cannot Find Device

Possible Reasons

- Device may not be started normally, and the power supply could not meet the requirements.
- Abnormal network cable connection.
- The device and the client software are not on the same network segment.
- Non-standard protocol device.

Solution

- Check power supply to make sure that the power supply and cable are suitable.
- Check network connection: Check the indicator of the reader, and make sure the network is working normally, and the device and the Client are on the same network segment.

5.2 Client Software Can Find Devices but Failed to Connect

Possible Reasons

- The device may not be started normally.
- The device and client are not on the same network segment.
- The device is occupied by other software.

Solution

- Restart the device, and then try to modify the IP address to make it on the same LAN with the client software.
- Disconnect connection between the device and other software, and reconnect it with EasyID.

5.3 Device is Offline

Possible Reasons

- Hardware problems, such as poor contact with the network card or with the network cable.
- Software setting problems, such as unmatched network card configurations, unmatched device configurations.

Solution

- Perform cross verification on hardware, if failure happens, replace the corresponding hardware.
- Check the NIC configuration.

5.4 Algorithm Processing Effect Does Not Meet Requirements

Possible Reasons

- The image FOV or illumination does not meet the requirements.
- Illegal parameter configurations or algorithm failed to start.
- The code has a defect.

Solution

-
- Check the device FOV and the illuminator. Review the device parameters such as trigger mode, trigger delay, input smoothing, exposure, gain and illumination.
 - Check whether the algorithm is started. Review the algorithm parameters, including type, scale, timeout, number, filter and error code rate.

6 Clean and Maintenance

This section introduces how to clean and replace the color filter.

To avoid dust dropping on the sensor, a piece of fully transparent glass is installed on the sensor. If the color filter surface requires cleaning, use special detergent for the optical materials so that no stains left after cleaning.