



Operating Manual

NANJING BILIN INTELLIGENT IDENTIFICATION TECHNOLOGY CO., LTD.



Catalogue

Se	tup Process	4
1	Unwrap the package	5
	1-1 reader and its belonging	5
	1-2 Cables and power supply	6
	1-3 reader photographs	7
	1-4 Reader configuration	7
2	Connecting Diagram	8
	2-1 Serial port communication connection	8
	2-2 USB port for communication	8
3	I/O connection diagram	9
	3-1 I/O terminal description	9
	3-2 Photoelectric sensor connection	10
	3-3 Switch triggered wiring	10
	3-4 Relay trigger wiring	11
4	Installation and adjustment	11
	4-1 Before installation	11
	4-2 L-type metal fixing plate mounting	12
	4-3 Product dimension drawing	12
	4-4 Size drawing of L-shaped fixed piece	13
	4-5 Reading range characteristics chart	14
5	Connecting FV3X to infostepper	15
	5-1 Introduction to infostepper	15
	5-2 Connecting FV3X to infostepper	16
	5-3 Setting image parameters	18
	5-4 Setting the serial port online	19
	5-5 Setting the output signal level, duration pulse width	21
	5-6 Setting the buzzer for successful or failed barcode reading and laser aiming function	
	5-7 Setting the triggering instruction and how to cancel it	23
	5-8 Setting the failure feedback instructions	24
	5-9 Setting for shielding repeated barcodes reading	25
	5-10 Setting the barcode screening conditions	26
	5-11 How to set the parameters for continuous triggering mode	27
	5-12 Setting readable code system	28
	5-13 How to set to get the images of successful/failed decoding	29
	5-14 How to generate a setting code from setting items	30
	5-15 How to save and operate the configuration file	31
6	Settings for special applications	32
	6-1 Setting the prefix or suffix	32
	6-2 How to read a color-reversed barcode	34
	6-3 How to read Dot-matrix barcode	35
	6-4 How to read small-sized or stained DM barcode	36
7	Other settings	38
	7-1 To view decoded data after settings	38



	7-2 How to trigger the reader with computer command	39
	7-3 How to simulate keyboard input	40
	7-4 How to check the firmware version information of the reader	41
	7-5 How to restore the factory settings of the reader	41
	7-6 How to convert characters to Hex code	42
8	Factory settings description	43
	Device setting barcodes	



Setup Process

1 Check packaging, system configuration



2 Wiring and installation



3 Connect the power supply



4 Connect FV3X to computer and open the infostepper



5 Setting FV3X



1 Unwrap the package

1-1 reader and its belonging

Model	Name	Package content	Quantity	Picture
		reader	1	
		Quick use guide	1	Interest VIX
FV3X	Industrial reader	Bracket	1	
		Insulating gasket	1	
		Screws	1	

5



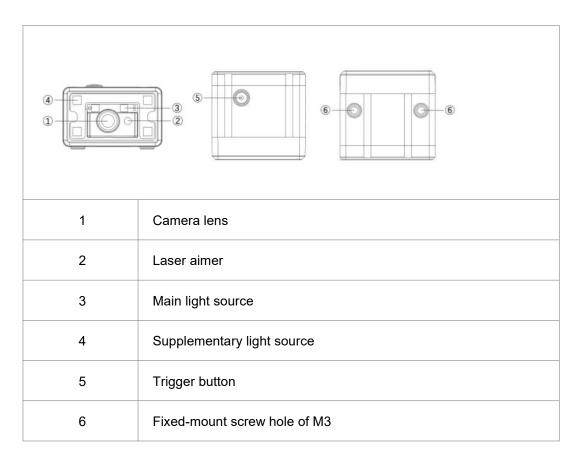
1-2 Cables and power supply

Accessory model	Details
UCM1V-S5-D9PM1-V1	RS232 communication cable, 2 meters, with external power port, with IO terminal, straight end connection
UCM2-D9P-V1	RS232 communication cable, 2 meters, with external power interface, straight connection
UCLM1V-S5-D9PM1-	RS232 communication cable, 2 meters, with external power interface,
V1	IO terminal, elbow connection
	RS232 communication cable, 2 meters, with external power interface,
UCLM2-D9P-V1	elbow connection
UCM1V-S5-UAM1-V1	USB communication cable, 2 meters, with IO terminal, straight end connection
UCM2-UA-V1	USB communication cable, 2 meters, straight end connection
UCLM1V-S5-UAM1-V1	USB communication cable, 2 meters, IO terminal, elbow connection
UCLM2-UA-V1	USB communication cable, 2 meters, elbow connection
FV3X bracket	Fixed-mount bracket for FV3X
5V2A power supply	5V 2A power supply, serial port power supply for FV3X

(Please refer to the customer's actual order for product accessories)

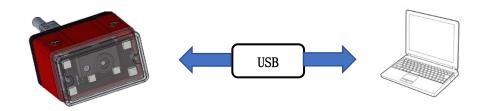


1-3 reader photographs

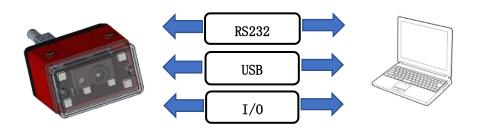


1-4 Reader configuration

Configure products:



Data communication:



7



2 Connecting Diagram

2-1 Serial port communication connection

Connect the serial port communication cable to the host The arrow in the figure indicates the cable connection position



Connect the device power supply

The arrow in the figure indicates the position where the power supply is connected to the serial cable



2-2 USB port for communication

Connect the USB communication cable to the host. The arrow in the figure indicates the cable connection position.



Connect USB port to the host (USB power supply). The arrow in the figure indicates the USB port access position.





3 I/O connection diagram

3-1 I/O terminal description

The I/O terminal is connected to the serial communication cable. If the device connects to external signals or drives external devices, use this terminal to connect to external devices. The terminal is shown in the figure, and the terminal serial number and definition are shown in the table.



color	Terminal name	Specific Description	Note	
Red	5V	Power input (output)	Power output: Provides power supply for external devices Power input: 5V for power supply	
Black	GND	GND	GND	
Green	IN	Input signal	Level triggering (decline triggering by default)	
Yellow	OUT1	Output signal	Success in reading (output drop level by default)	
Blue OUT2 Output signa		Output signal	Fail in reading (output drop level by default)	

9



3-2 Photoelectric sensor connection

The default initial level triggering direction of the device is down. Connect the photoelectric sensor GND to the signal terminal GND and the photoelectric sensor OUT terminal to the signal terminal IN. When the photoelectric sensor OUT terminal level drops, the trigger takes effect. Recommended model of photoelectric sensor:

Model	OMRON E3Z-D62	SICK WT100-N1432
Working condition	NPN normally open type	NPN normally open type
Working voltage	12-36VDC	10-30VDC
Detection distance	0-90cm	

Note 1: Common photoelectric sensor operating voltage is higher than 5V, the photoelectric sensor needs to select an external adaptor power supply based on the rated voltage.

Photoelectric sensor	Signal terminal
OUT	IN (Green)
GND	GND (Black)

By default, the barcode reader is triggered by level drop. If you select level rise trigger, scan the setting code of level rise trigger. Trigger rising level should not be less than 5V.

3-3 Switch triggered wiring

The device default initial logic, take the button switch as an example. Connect the switch to signal terminal 2 and 3. When the switch is pressed, the trigger takes effect:

Push-button switch	Signal terminal	
SW1	GND (black)	
SW2	IN (green)	

By default, it is triggered by level drop. If you need to change it, please scan the setting code of level rise trigger.



3-4 Relay trigger wiring

The default initial logic of the device connects the relay to signal terminal 2 and 3. When the rated voltage is applied externally, the trigger takes effect. The corresponding line sequence is shown in the table:

Relay	Signal terminal	
Constant beginning 1	GND (black)	
Constant beginning 2	IN (green)	

4 Installation and adjustment

4-1 Before installation

Before installation, please pay attention to the following items and check the installation conditions:

1. No influence of ambient light;

Please avoid sunlight, other lighting, photoelectric sensors and other ambient light entering the FV3X light receiving area, otherwise it may cause reading instability or reading error.

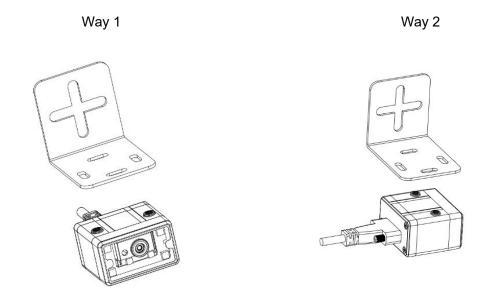
2. Check whether the light source of the barcode reader is blocked;

If the light source is blocked, the barcode may not be detected. If there are other devices emitting strong light (direct light and reflected light) on site, please set up a shading plate to avoid that such strong light may damage the barcode reader or cause code reading failure.

11

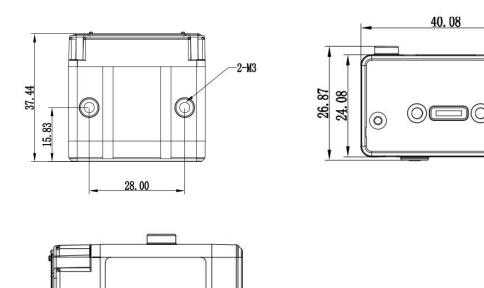


4-2 L-type metal fixing plate mounting



Note 1 The screws used to fix the equipment must be metal screws provided in the package

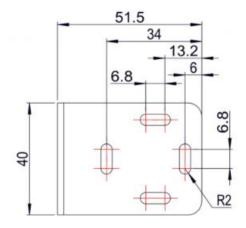
4-3 Product dimension drawing

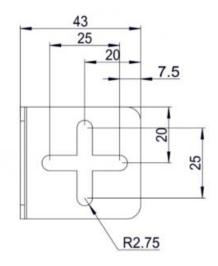


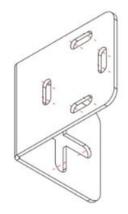
(unit: mm)

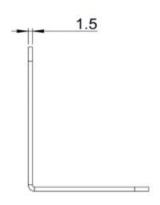


4-4 Size drawing of L-shaped fixed piece









(unit: mm)



4-5 Reading range characteristics chart

FV31

unit: mm

unit: mm

	FV31	
Barcode	Minimum	Maximum
specifications	reading	reading
	distance	distance
3.34mil Code 128 10bit	50	110
5mil Code 128 10bit	40	130
6.67mil Code 128 10bit	40	140
10mil Code 128 10bit	40	160
15mil Code 128 10bit	40	190
5mil DataMatrix 10bit	40	110
6.67mil DataMatrix 10bit	40	120
10mil DataMatrix 10bit	40	150
15mil DataMatrix 15bit	40	160

		uiii
	FV3	31
Installation distance	X axis view	Y axis view
50	40	30
100	90	60
150	130	80
200	170	110

FV31L

unit: mm

unit: mm

	FV31L	
Daniel and if a time	Minimum	Maximum
Barcode specifications	reading	reading
	distance	distance
3.34mil Code 128 10bit	60	110
5mil Code 128 10bit	60	120
6.67mil Code 128 10bit	50	140
10mil Code 128 10bit	30	150
15mil Code 128 10bit	40	180
5mil DataMatrix 10bit	70	110
6.67mil DataMatrix 10bit	60	110
10mil DataMatrix 10bit	50	130
15mil DataMatrix 10bit	60	110

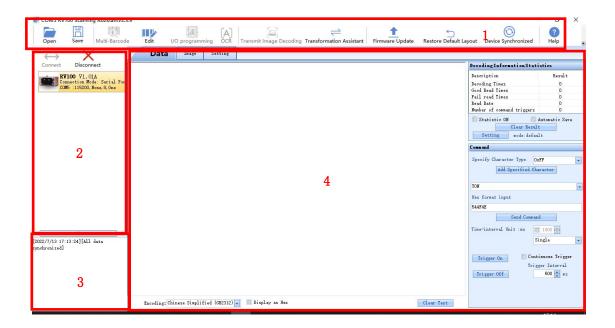
	FV31L	
Installation distance	X axis view	Y axis view
50	30	20
100	70	40
150	100	60
200	130	80



5 Connecting FV3X to infostepper

infostepper download address: www.infoscan-cn.com Decompress the compressed package and run infostepper.exe.

5-1 Introduction to infostepper



Serial number	Instruction	
1	Common Toolbar	
2	Connection mode and information display	
3	Online feedback information display	
4	Once online, set the class	

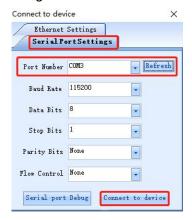
15



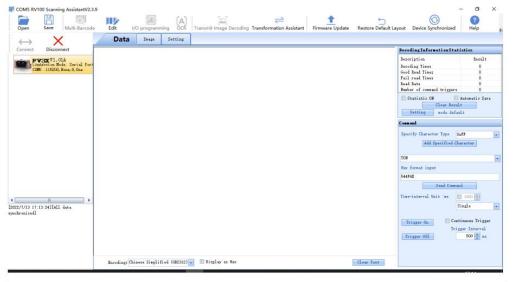
5-2 Connecting FV3X to infostepper

1.RS-232 connection

After the device is directly connected to the computer serial port, check "Device Manager→""Port", confirm the port number, click "Connect" when connecting to the software, then the "Connect to device" window will pop up, select "Serial PortSettings", then click "Port Number" Select the corresponding COM number below. If the COM number is not displayed, you can click the "Refresh" button to search; the baud rate, data bit, stop bit, etc. are consistent with the device; as shown in the figure:



Click "Connect to device" after the connection is successful, the device will have a buzzer prompt, as shown in the figure:

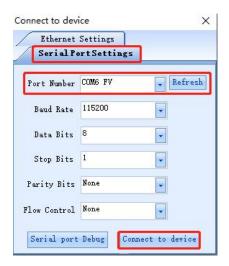


Note: Display the online device model and version information and connection mode, serial port number of the device baud rate and other information; The feedback information part shows the date and time of online and other related information; Click "Image" or "Settings" to set the reader in detail after online and interactive success. (In the image, due to the RS232 serial port transmission rate limit, the "continuous shooting function" cannot be used, and USB port is required to connect)

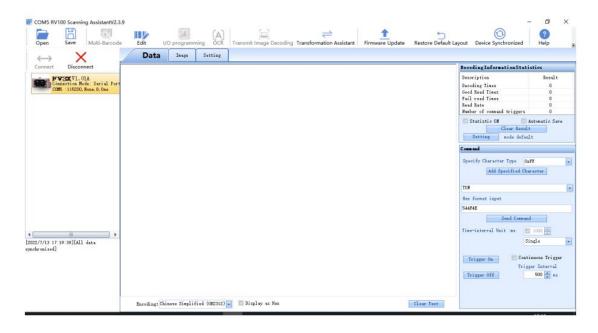


2.USB connection

After the device is directly connected to the computer, first check the "Device Manager" ---, "Port" (under the premise of installing the USB serial port driver), click "Connect" when connecting to the software, then the Device connection window will pop up, select "Serial Port Settings", select the corresponding "COM Number FV" under "Port Number", if "COM Number FV" is not displayed, you can click the "Refresh" button to search.



Finally click "Connect to device", The USB connection screen is as shown in the figure:





5-3 Setting image parameters

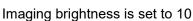
1.In the USB simulation serial port connection, select "Continuous view". View "Image

Parameter Settings";



2. Mode 1: Adjust the imaging brightness with a value of 1-240, as shown in the figure. The imaging brightness is set to 10 and the image is dark. When the imaging brightness is set to 50, the image becomes obviously bright and the sample bar code shows a green box, which can be decoded successfully.







Imaging brightness is set to 50

3. Mode 2: Adjust the lighting source, as shown in the figure.



Different light sources, imaging brightness will be different. As shown, the imaging is reflected in different light sources at the imaging brightness of 50.



20m i 15 DM





No light at all

Main body light

Auxiliary light

Combined light

Note: The confirmation and adjustment of image parameters should be made according to the specific characteristics of reading products to meet reading requirements;



5-4 Setting the serial port online

FV3X reader only supports standard RS232.

1. Select Settings, select Communication Settings.



2. You can set Baud Rate, Parity type, and Data bit/Stop bit as required. For example, set baud rate to 9600, select 9600, and click Ok.

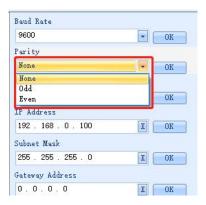


3. Click "Download Settings". If the Settings are successful, the buzzer of the barcode reader feedback and the setting status in the list displays "Succeeded", indicating that the baud rate setting is successful.





4.In the same way, select the verification type as required, click "OK", the selected verification type Settings will appear in the Settings list, and download the Settings.



5.In the same way, select data bit/stop bit as required, click the "OK" button and the selected data bit/stop bit type settings will appear in the setting list. Then download the settings.





5-5 Setting the output signal level, duration pulse width

1.FV3X reader provides two specification output level signal Settings. If "level trigger direction" is set to down, the output signal level is 5V.



2.IO output logic, OUT 1-OUT2 output level signal is 5V.

(About the output logic hardware connection interview the first part of the basic operation)

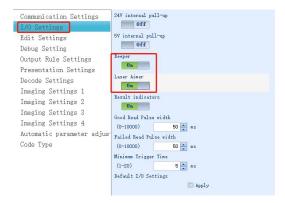
3.For the default I/O output logic, OUT1 indicates that a message is read successfully and OUT2 indicates that a message is read failed. The pulse width of both successful and failed messages is 50ms. The maximum pulse width can be set to 10000ms as required.



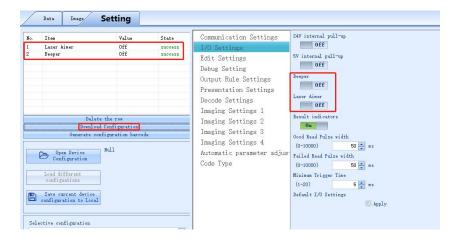


5-6 Setting the buzzer for successful or failed barcode reading and laser aiming function

1.The FV3X barcode reader buzzer for successful or failed barcode reading and the laser aiming function are open by default;



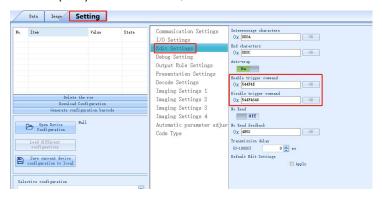
2.The FV3X barcode reader has a buzzer for successful or failed code reading, the laser aiming function can be set to "off" according to requirements. Click "Download Configuration" to complete the setting.





5-7 Setting the triggering instruction and how to cancel it

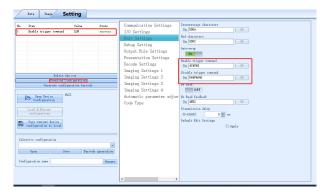
1.The FV3X barcode reader can respond to the command to control the device to read the code. The default triggering command (hex) of the barcode reader is "544F4E", the trigger cancellation command (hex) is "544F4646";



2.Set the triggering command, for example, set "LON" as the triggering command, select "Transformation Assistant" and input "LON" to convert "LON" to the corresponding hexadecimal;



3. Copy the Hex content converted by "LON", paste it into "Enable trigger command", click "OK", you can view it in the setting list, click "Download Configuration" to complete the setting;

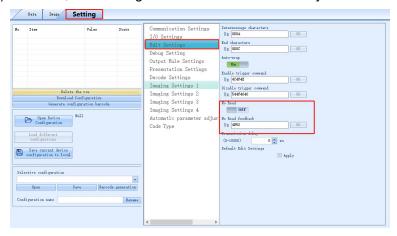


4. The custom trigger cancellation command is set as above.

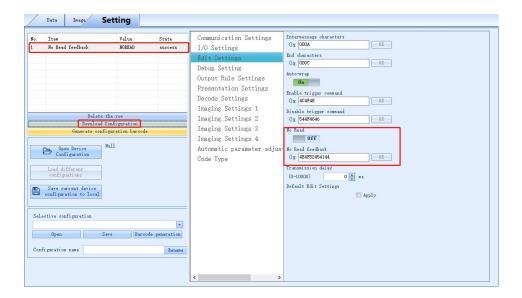


5-8 Setting the failure feedback instructions

1.The FV3X barcode reader can output failed-reading characters, the default output character content (hex) is "4E52", the reading failure feedback is closed by default.



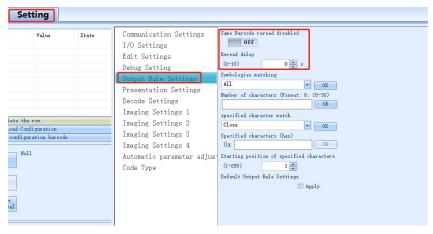
2. The read failure feedback switch is set to on, and the read failure character feedback character (hex) is set to "NoRead". Use the conversion assistant to convert "NoRead" to hexadecimal, paste the hexadecimal content into the "No Read feedback", click "OK", view the list, click "Download Configuration" to complete the setting.



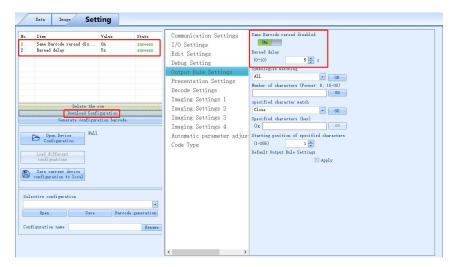


5-9 Setting for shielding repeated barcodes reading

1.FV3X barcode reader "repeated barcode shielding" function is off by default, shielding time is 0 S by default.



2.FV3X barcode reader repeated barcode shielding is set to open, shielding time is set to "5".

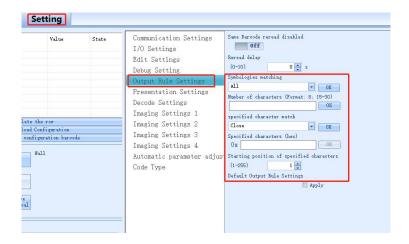


3. The repeated shielding time is set to 5s and the repeated bar code shielding function is kept for 5s.

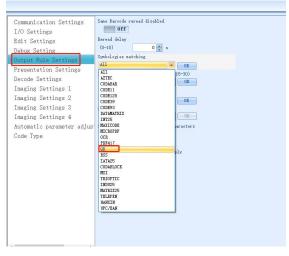


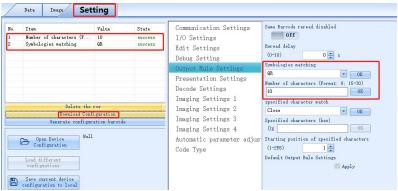
5-10 Setting the barcode screening conditions

1. If the output barcode needs to be screened, FV3X provides the barcode screening function, which can be set according to the code system, the number of characters, special characters, etc. to achieve screening.



2. For example, if the output code system is QR barcode, the number of characters is 10 and the settings are as follows:



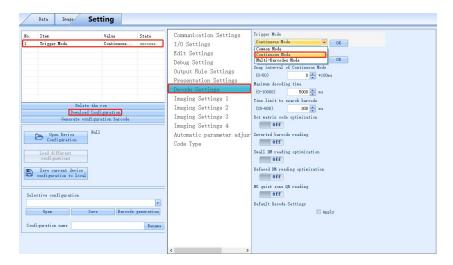


3. Special characters matching can be set for screening.

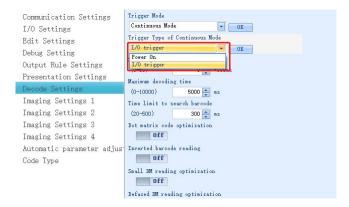


5-11 How to set the parameters for continuous triggering mode

1.In the trigger mode, the continuous trigger mode can be selected.

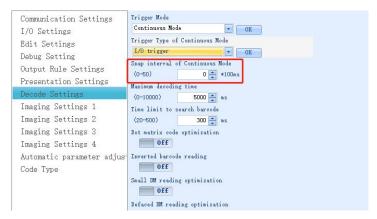


2. The startup modes of continuous triggering mode are booting up and I/O trigger. The default is I/O trigger.



Shooting interval in continuous trigger mode.

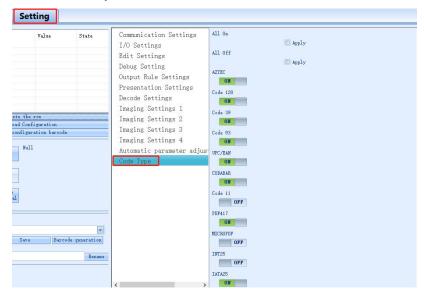
The default value is 1*100ms, optional 1-50, which can be set according to actual application requirements.





5-12 Setting readable code system

1. The setting interface -- code system information can be set.

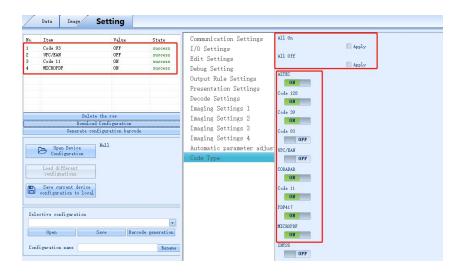


2.Code system setting.

Full code system on: After checking, set the download, you can open all code system. Full code system off: After checking, set the download, you can turn off all code systems.

A code system can be turned on or off seperately, each code system has a corresponding switch button.

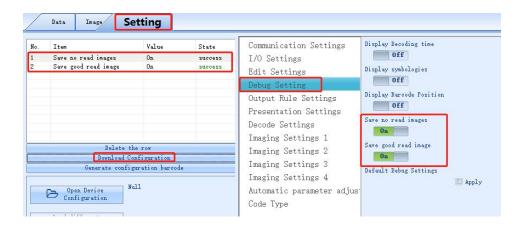
In applications, unnecessary code systems can be turned off, which can improve decoding efficiency.





5-13 How to set to get the images of successful/failed decoding

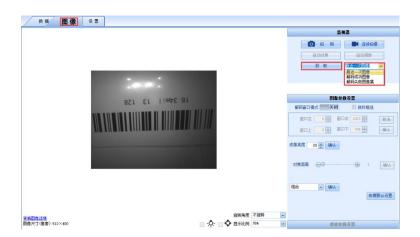
1.Setting interface - save decoding success images and save decoding failure images sets in "Debug Setting".



2.Image interface—obtain, you can view the latest image, successful decoding image and failed decoding image set.

The latest image: The latest image taken by the reader (success/failure).

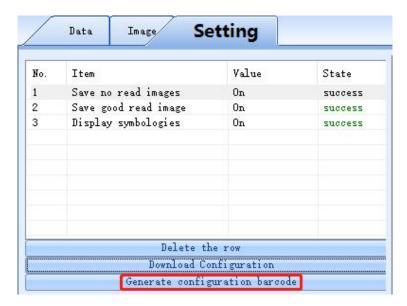
Successful decoding image: The latest image that the barcode reader successfully decoded. Failed decoding image set: The latest image set that the barcode reader failed to decode.



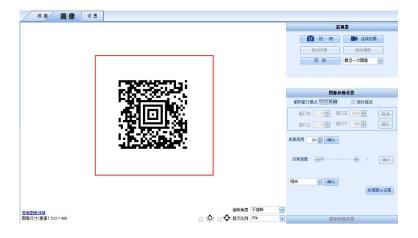


5-14 How to generate a setting code from setting items

1.After selecting some download items with successful settings, click "Generate configuration barcode";



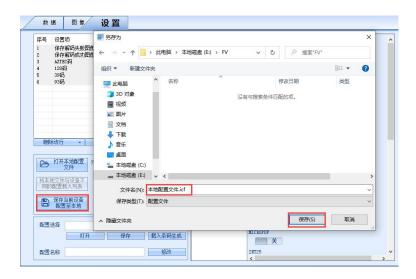
2.According to the prompt, it can be pasted into the word file or viewed in the image interface (the picture is viewed in the image interface) and the current parameter settings can be set by reading the setting code with the barcode reader.



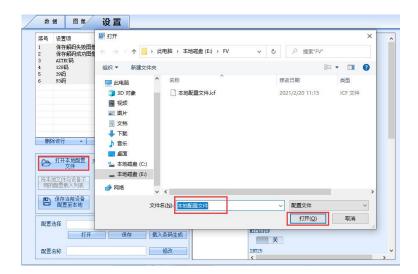


5-15 How to save and operate the configuration file

1.In the setting interface, click to save the current device configuration to the local storage;



2. Click "Open Device Configuration", select the corresponding configuration file, then the parameters of the saved configuration file will be imported into the device.

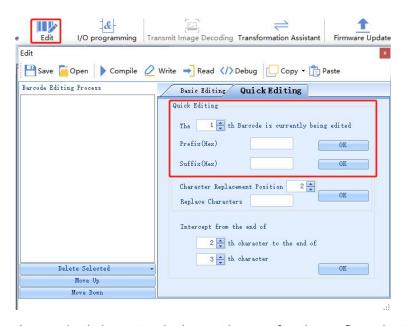




6 Settings for special applications

6-1 Setting the prefix or suffix

Open Edit



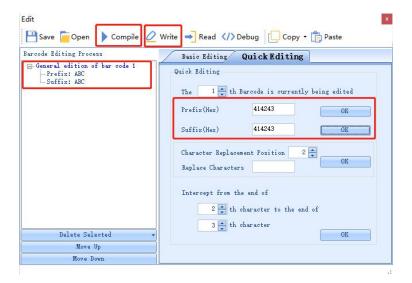
You can enter the required characters in the text boxes after the prefix and suffix. The input text is in hexadecimal, which can be converted by the conversion assistant.

If you want to add "ABC" characters before and after the barcode, open the conversion assistant, enter "ABC", it will be automatically converted to hexadecimal, click to copy the hexadecimal text.





Paste the copied hexadecimal text into the corresponding prefix character input box in the barcode editor. Confirm, compile, write.



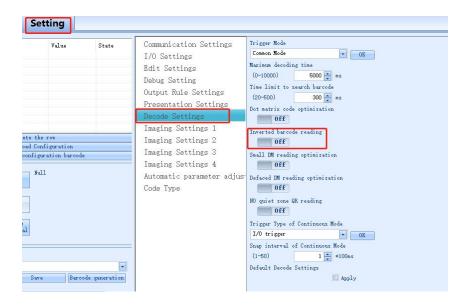
As shown in the figure, the barcode information prefix and suffix is "ABC".





6-2 How to read a color-reversed barcode

In the "Setting - Decode settings", turn on the "Inverted barcode reading", then set the download configuration.



Inverted barcode reading close:



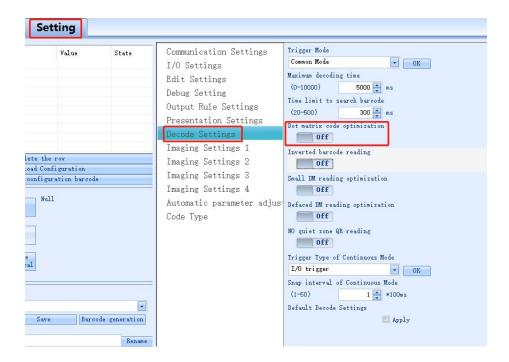
Inverted barcode reading open:





6-3 How to read Dot-matrix barcode

In the "Settings - Decode Settings", turn on the "Dot matirx code optimization" and set the download.



Dot matirx code optimization close



Dot matirx code optimization open

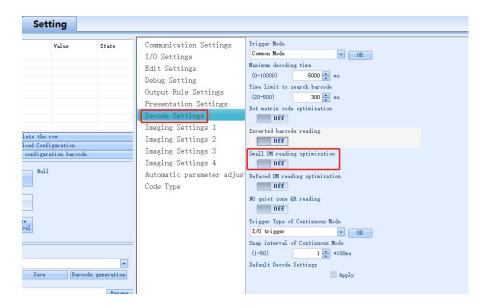




6-4 How to read small-sized or stained DM barcode

Small DM reading optimization

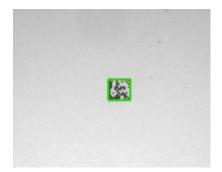
In the "Setting - Decode Settings", turn on the "Small DM reading optimization" and set the download.



Small DM reading optimization close

Small DM reading optimization open

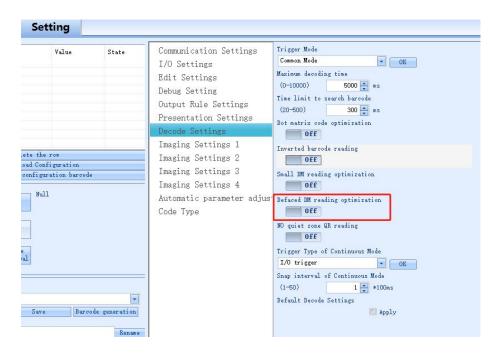






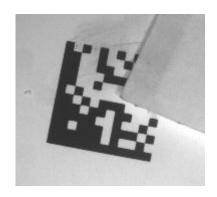
Defaced DM reading optimization

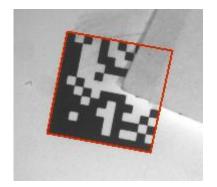
In the "Setting - Decode Settings", turn on the "Defaced DM reading optimization" and set the download.



Defaced DM reading optimization close

Defaced DM reading optimization open



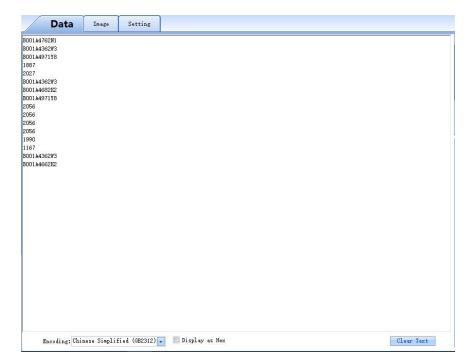




7 Other settings

7-1 To view decoded data after settings

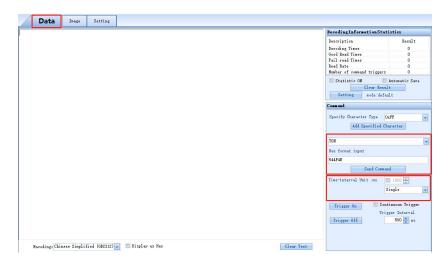
In the data interface, after the device is triggered, if the decoding is successful, the barcode information will be displayed. As shown in the figure:



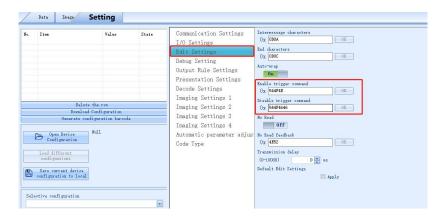


7-2 How to trigger the reader with computer command

In the data interface, select the corresponding command, and click "Send Command" to trigger the device. The device trigger command is "TON" by default, the cancel trigger command is "TOFF". The command trigger interval can be set and the time setting needs to be checked. The default is 1000ms/time.



If you want to change the trigger or cancel the trigger, you can change it in "Setting - Edit Settings".





7-3 How to simulate keyboard input

Method 1, through the QHQ line

Connect the DB9 (male) end of the QHQ cable to DB9 (female) of the serial communication cable, connect the USB end to the PC end



In the communication settings, the baud rate is set to 9600 and set the download. Data output is keyboard input and data can be viewed in a text file (English mode).

Note: QHQ cable is optional, if necessary, please ask our sales or technical personnel to purchase.

Method 2: Change the communication mode USB port to USB keyboard port, the keyboard port output can be realized through the built-in USB cable.



Note: If you want to change USB communication mode from keyboard to simulation serial port, scan the USB simulation serial port setting code.



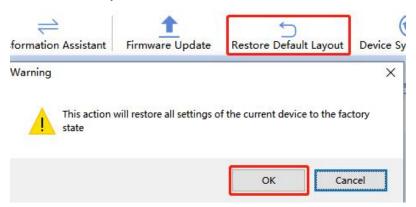
7-4 How to check the firmware version information of the reader

Click the Help button and click equipment Information to view the current device model, firmware version number, etc.



7-5 How to restore the factory settings of the reader

Click the "Restore Default Layout" button, click "OK".



After hearing the device beep and seeing the success message, the device has been restored to the factory state successfully.





7-6 How to convert characters to Hex code

Click the Transformation assistant, input the required characters, it will be automatically converted to hexadecimal code, copy the content and paste it.





8 Factory settings description

Factory Settings description	
Serial communication mode	Baud rate: 115200; Check type: None Data bit: 8; Stop bit: 1
USB communication mode	Simulation serial port
Default trigger instruction	TON (544F4E) /16540d
Cancel trigger instruction	T0FF (544F4646)
Default read failure character feedback	close (NR, 4E52)
Default transmission delay	0 S
Decoding time, code system information, bar code location	close
Repetitive bar code shielding	close
Trigger mode	Fixed exposure mode
Default maximum decoding time/search time	10000ms/300ms
Dot matrix barcode optimization/reverse color code reading /DM small barcode optimization /DM stain code optimization reading/no static area QR code reading	close
Type of the enabled code system	128 code、39 code、93 code、AZTEC code、 DM code、QR code
Imaging brightness/light source	20/Combination of light

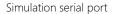
43



9 Device setting barcodes

USB communication mode







Keyboard port



Close the USB communication mode

USB keyboard encoding mode



American keyboard



Chinese Keyboard (UTF-8)



Chinese Keyboard (GBK)

Interface settings

RS232 baud rate setting



4800



9600



19200



38400



57600



115200



Serial communication parameters



No check



Odd parity



Even check



7 Data bit 1 Stop bit



7 Data bit 2 Stop bit



8 Data bit 1 Stop bit

Scan the bar code on the right to restore the default communication settings. Restore the serial port communication parameters to baud rate: 115200; Parity check: No; Data bit: 8; Stop bit: 1

Restore default communication settings

USB communication mode: simulation serial port
USB keyboard encoding mode: American keyboard

Restore default communication setting

Input/output settings

Buzzer on and off



Buzzer on



Buzzer off

I/O high/low level triggering



I/O level drops



I/O level rises



Laser aiming





Laser aiming on

Laser aiming off

Pulse width of successful/ failed reading



Reading success 50ms



Reading success 500ms



Reading success 1000ms



Reading failure 50ms



Reading failure 500ms



Reading failure 1000ms

Edit settings

Reading failure feedback



Open reading failure character feedback



Close reading failure character feedback

Suffixes



Wrap on



Wrap off



Enter



Restore barcode suffix to default

Configuration settings





Open decoding time



Close decoding time



Save the failed decoding image



Close the function of saving failed decoding images



Save the successful decoding image



Close the function of saving successful decoding image

Induction settings

Induction trigger setting



Open induction trigger



close induction trigger

Decoding settings

Maximum decoding time



Maximum decoding time 0s



Maximum decoding time 1s





Maximum decoding time 5s Maximum decoding time 10s

Repetitive barcode shielding settings



Open repetitive barcode shielding



Close repetitive barcode shielding



Repetitive barcode shielding 0s





Repetitive barcode shielding 1s



Repetitive barcode shielding 5s



Repetitive barcode shielding 10s

Reading optimization settings



Open dot matrix barcode optimization



Close dot matrix barcode optimization



Open reverse color code reading optimization



Close reverse color code reading optimization



Open dot matrix small barcode reading



Close dot matrix small barcode reading



Open dot matrix stained code reading optimization



Close dot matrix stained code reading optimization



Open no-static-zone QR code reading optimization



Close no-static-zone QR code reading optimization



Trigger mode





Fixed exposure mode

Dynamic exposure mode

Imaging parameter settings

Lighting mode







All out

Main body light

Auxiliary light



Combined light

Imaging brightness settings



Imaging brightness 0



Imaging brightness 20



Imaging brightness 100



Imaging brightness 240



Code system



Turn on all code systems



Close all code systems



Turn on 128 code



Close 128 code



Turn on 39 code



Close 39 code



Turn on UPC/EAN code



Close UPC/EAN code



Turn on DM code



Close DM code



Turn on QR code



Close QR code



Turn on AZTEC code



Close AZTEC code



Turn on PDF417 code



Close PDF417 code