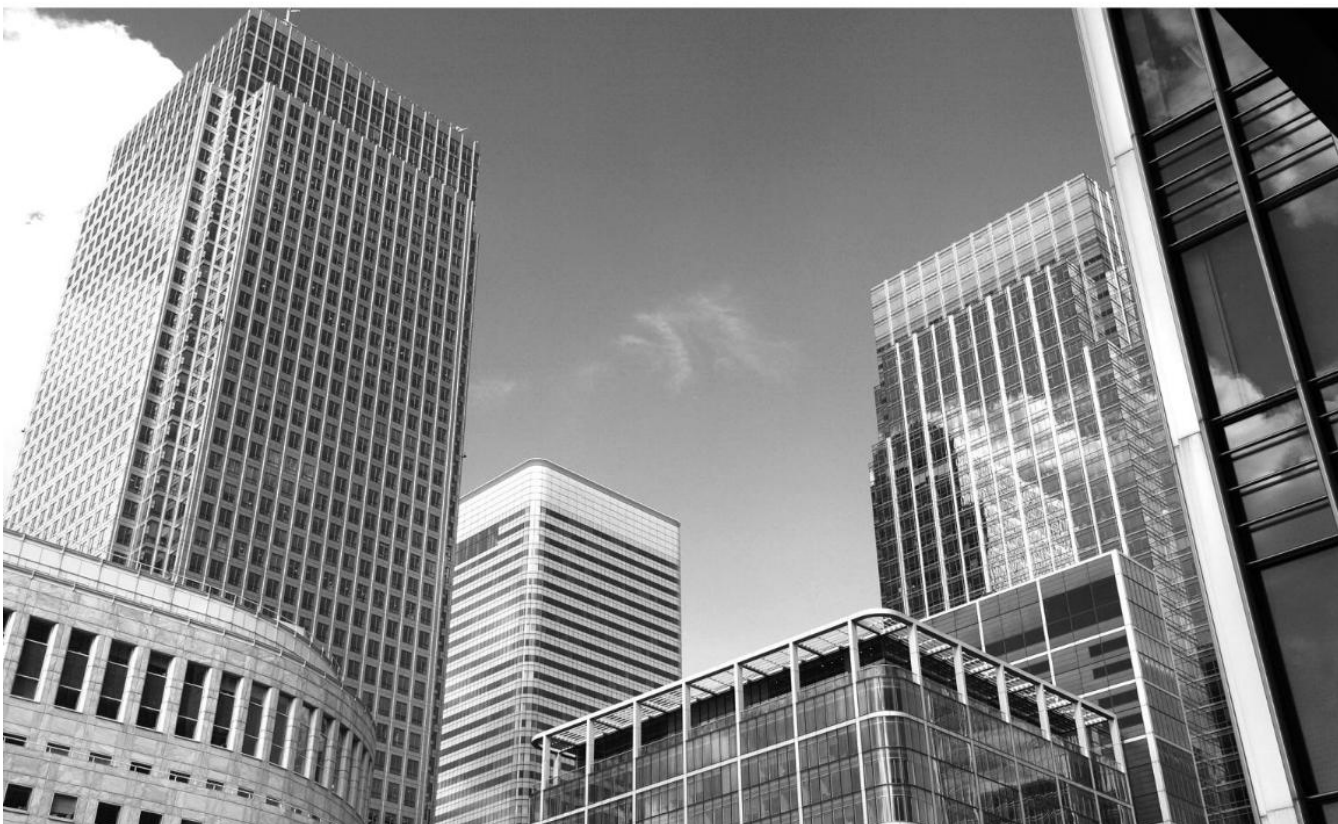




微光互联  
二维码扫描专家

**MU86**

**User Manual**



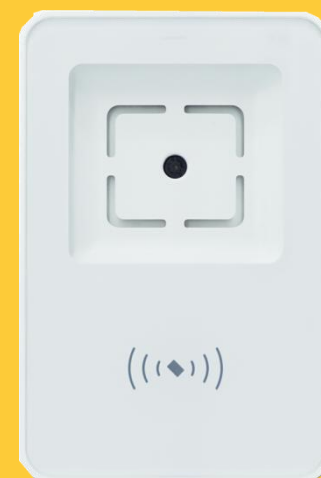
**Fast recognition**



**Various output interface**



**Built in relay module**



**Beijing Vguang Internet Technology Co., Ltd**

## Disclaimer

Before using the product, please read all the contents in this MU86 Product Manual carefully to ensure the safe and effective use of the product. Do not disassemble the product or tear up the seal on the device by yourself, or Beijing Vguang Internet Technology Co., Ltd. will not be responsible for the warranty or replacement of the product.

The pictures in this manual are for reference only. If any individual pictures do not match the actual product, the actual product shall prevail. For the upgrade and update of this product, Beijing Vguang Internet Technology Co., Ltd. reserves the right to modify the document at any time without notice.

Use of this product is at the user's own risk. To the maximum extent permitted by applicable law, damages and risks arising from the use or inability to use this product, including but not limited to direct or indirect personal damage, loss of commercial profits, Beijing vguang Internet Technology Co., Ltd. will not bear any responsibility for trade interruption, loss of business information or any other economic loss.

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## Edit history

Change date	Version	Description	Responsible
2020.9.23	V1.0	Initial version	Guohua Lau

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# 1. Preface

Thank you for buying the MU86 QR/barcode reader provided by Vguang. Reading this document carefully can help you understand the functions and features of this device, and quickly master the use and installation of the device.

## 1.1. Product introduction

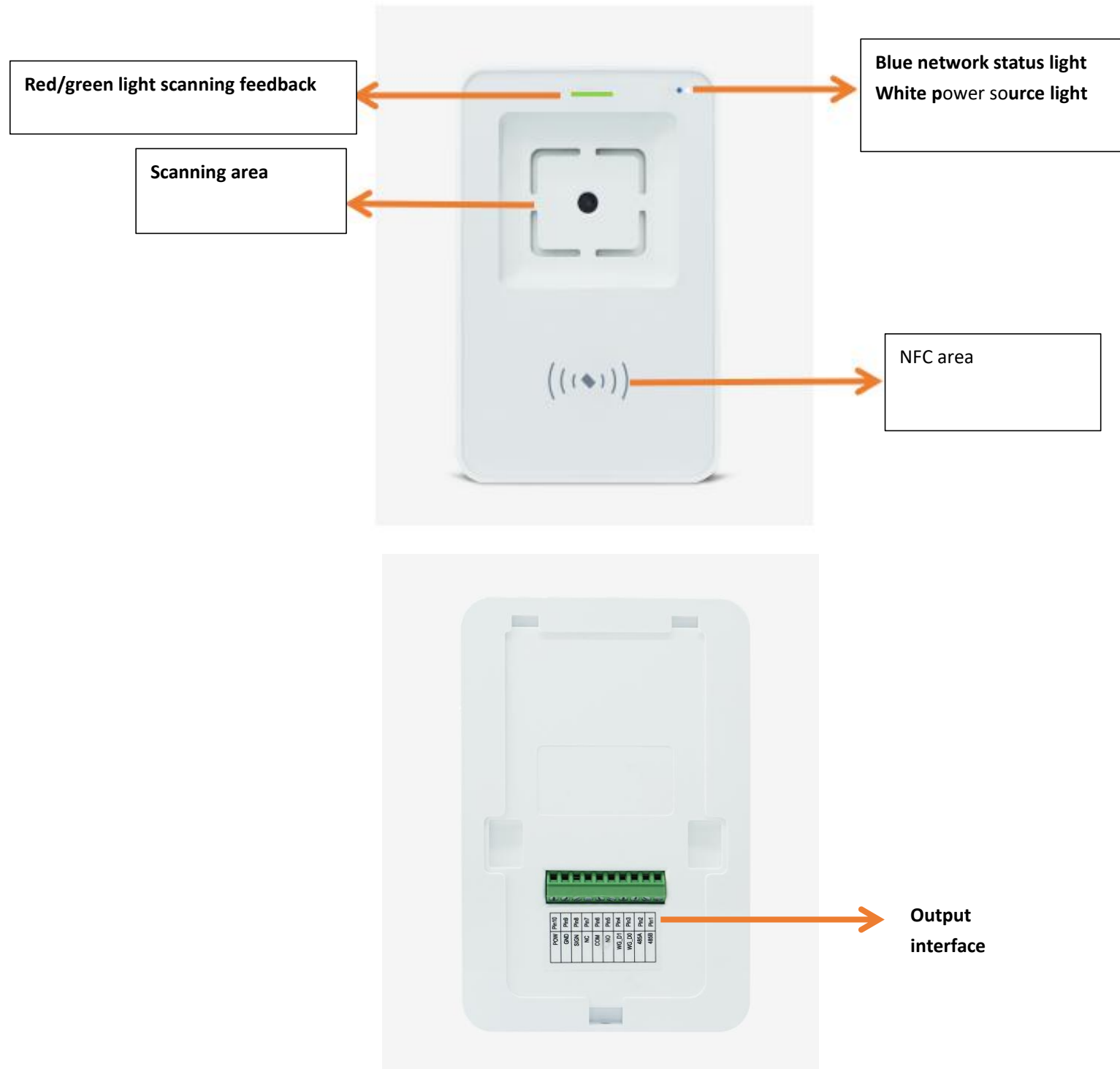
MU86 QR/barcode reader was a specially designed product for access control, which has various output interface, support wiegand and RS485, can connect to the traditional access controller. It also support Ethernet output interface, with built-in relay module.

## 1.2. Product feature

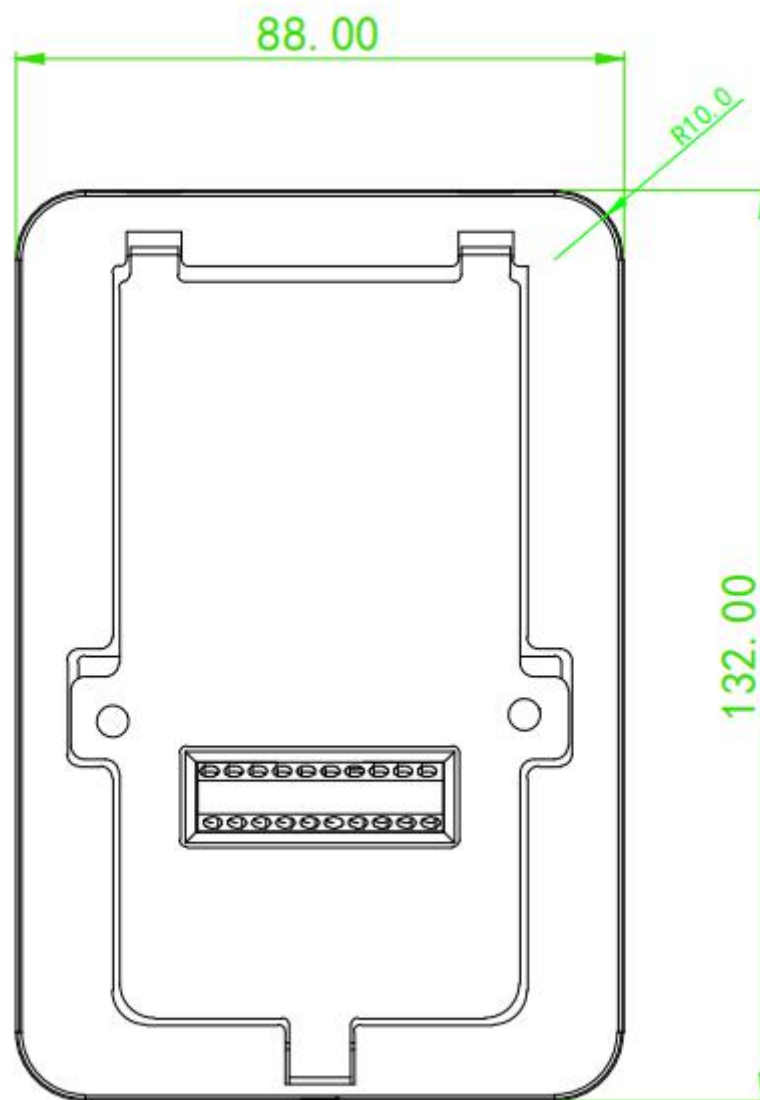
- A. Scan QR/barcode & reading card all in one.
- B. Fast recognition, high accuracy, can reach 0.1s the fastest.
- C. Easy to operate, more easy to debug with the humanize tool.
- D. Built-in relay module, can connect to the access system directly.

## 2. Product appearance

### 2.1.1. OVERALL INTRODUCTION



## 2.1.2. PRODUCT SIZE CHART

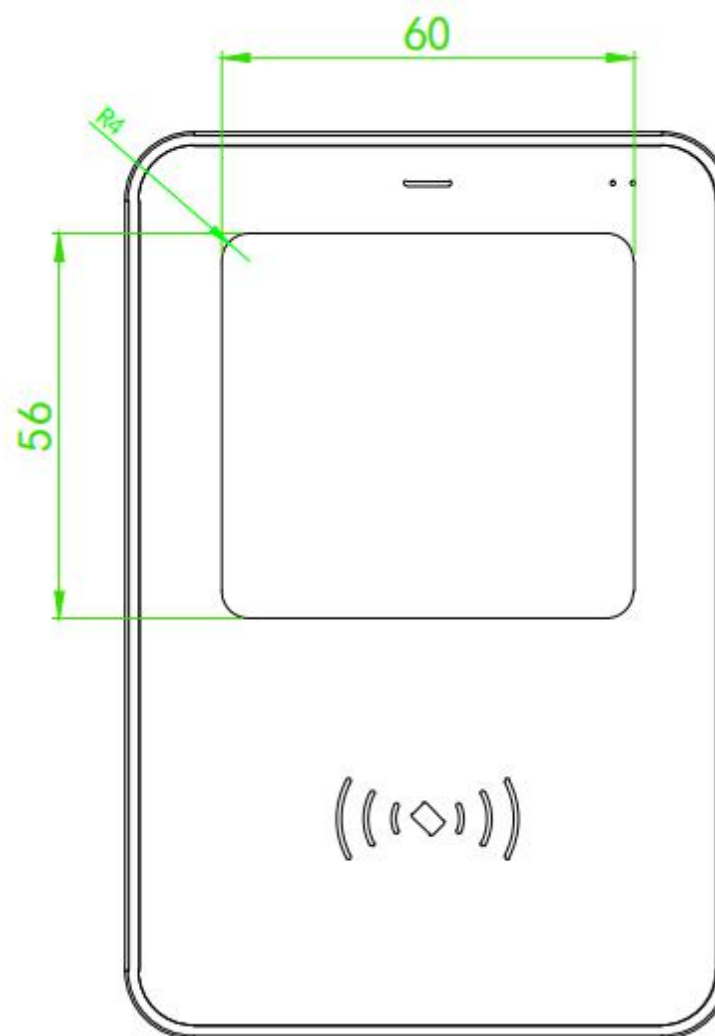


2.1 back view





2.2 side view



2.3 front view

## 3. Product parameters

### 3.1. General parameter

General parameter	
Output interface	RS485, wiegand, Ethernet, relay
Indicating method	Red, green, blue, white indication light Beep
Imaging sensor	300,000 pixel CMOS sensor
Max resolution	640*480
OS	Windows (xp. 7. 8. 10)
Installation method	Wall mounted type
Product size	132*88*21mm
Recognition window size	60mm*56mm
Product material	Imported PC & tempered glass

## 3.2. Recognition parameter

QR code recognition parameter	
Symbologies	QR, PDF417, CODE39, CODE93, CODE128, ISBN10, ITF, EAN13 etc
Supported decoding	Mobile phone screen/ printed barcodes
DOF	15.9mm~75.68mm(QRCODE 15mil)
Reading accuracy	≥7mil
Reading speed	100ms per time(average), support reading continuously
Reading direction	Tilt±59.5° rotation±360° deflection±63.5° (70 character 15milQR)
FOV	Horizontal 72.4° vertical 54.2° FOV 84.8° (70 character 15milQR)
RFID parameter	
Type	ISO 14443A, ISO 14443B protocol
Operation method	read UID, read the sector of M1 card
RF	13.56mhz
Distance	<5cm

## 3.3. Electric parameter

The power input can be provided only when the device is connected properly. If the device is plugged in or unplugged while the cable is live (hot plugging), its electronic components will be damaged. Make sure that the power is turned off when plugging and unplugging the cable.

Poor power supply, too short interval power off and on operation may cause the device cannot work in a stable and normal status. It is necessary to keep the power input stable. After turning off the power input, it need to takes more than 2 seconds to turn on the power input again.

Electric parameter	
Working voltage	DC 12V-24V
Working current	100mA(12V typical value)
Power consumption	1200mW(12V typical value)
Relay	DC30V/1A

## 3.4. Work environment

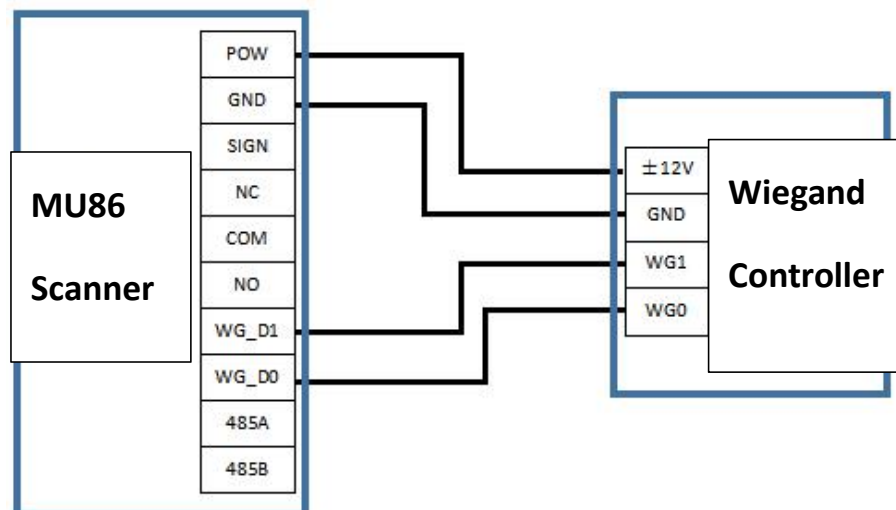
Work environment parameter	
ESD protection	$\pm 8\text{kV}$ ( air discharge) , $\pm 4\text{kV}$ (direct discharge)
Working temperature	$-20^{\circ}\text{C}$ - $70^{\circ}\text{C}$
Storage temperature	$-40^{\circ}\text{C}$ - $80^{\circ}\text{C}$
Relative humidity	5%-95% (no condensation) (under normal temperature)
Ambient light	0-80000Lux(Non direct sunlight)

## 4. Interface definition

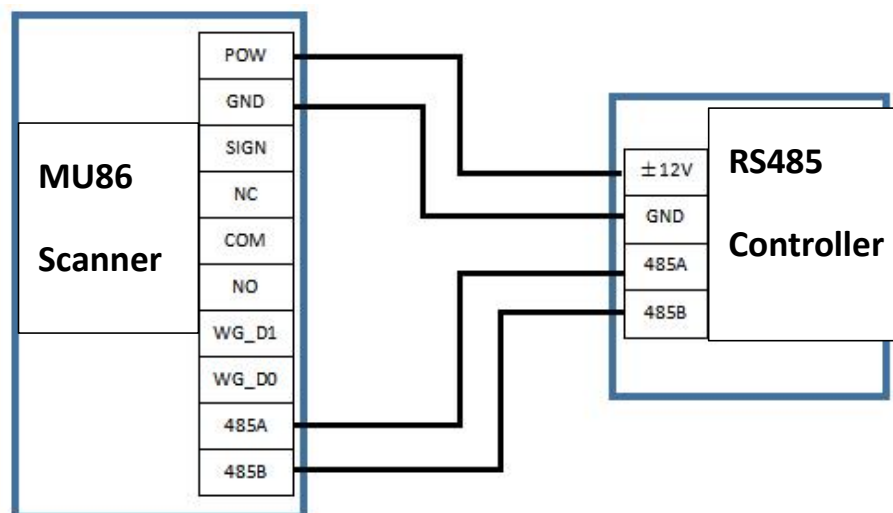
### 4.1. RS485 & wiegand interface definition

Pin10	Pin9	Pin8	Pin7	Pin6	Pin5	Pin4	Pin3	Pin2	Pin1
POW	GND	SIGN	NC	COM	NO	WG_D1	WG_D0	485A	485B

wiegand wiring diagram:



RS485 wiring diagram:



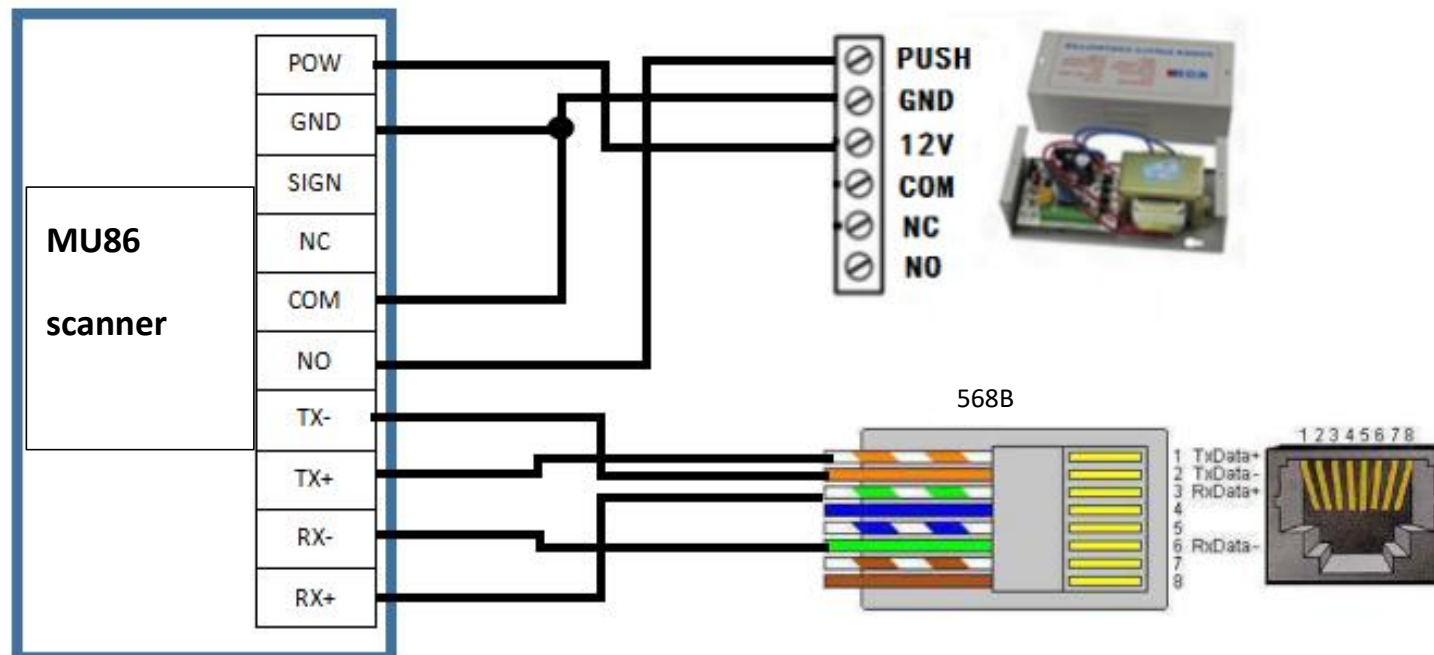
## 4.2. Ethernet interface definition

Pin10	Pin9	Pin8	Pin7	Pin6	Pin5	Pin4	Pin3	Pin2	Pin1
POW	GND	SIGN	NC	COM	NO	TX-	TX+	RX-	RX+

MU86 interface	Pin4	Pin3	Pin2	Pin1
Network cable color	Orange	Orange white	Green	Green white

MU86 Ethernet model directly leads four network cable pins, and can be connected to four of the standard eight-core network cables according to the color. The network cable uses the 568B type connection method. Refer to the table below and connect the cables according to color.

Wiring diagram(network device):



## 5. Device configuration

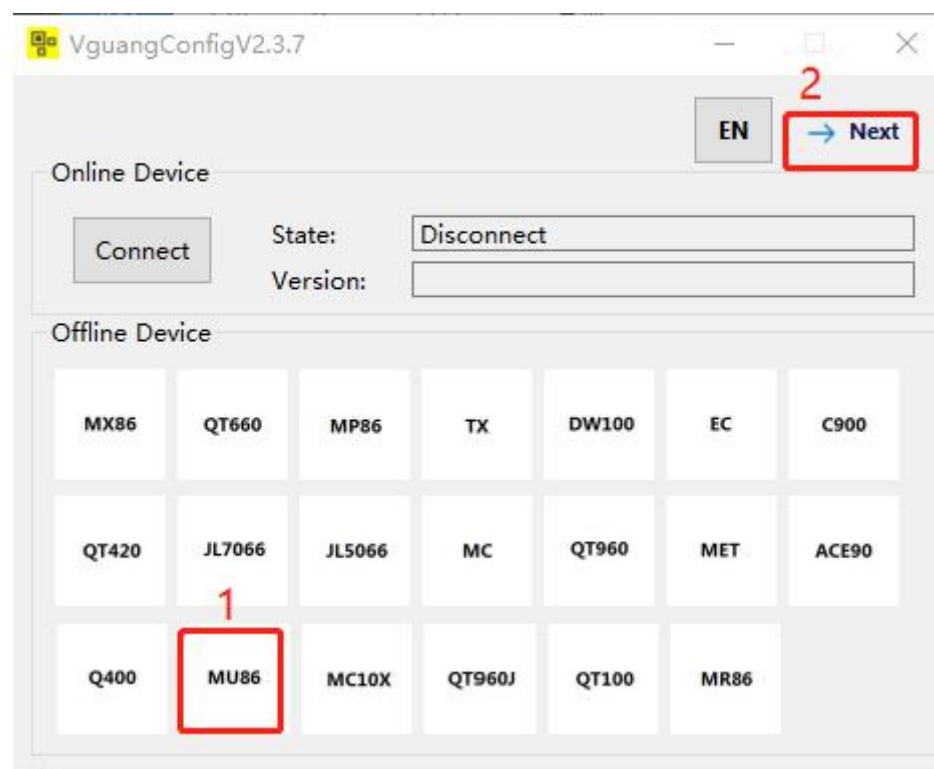
Use the VguangConfig tool to configure the device, which can be download from our official website



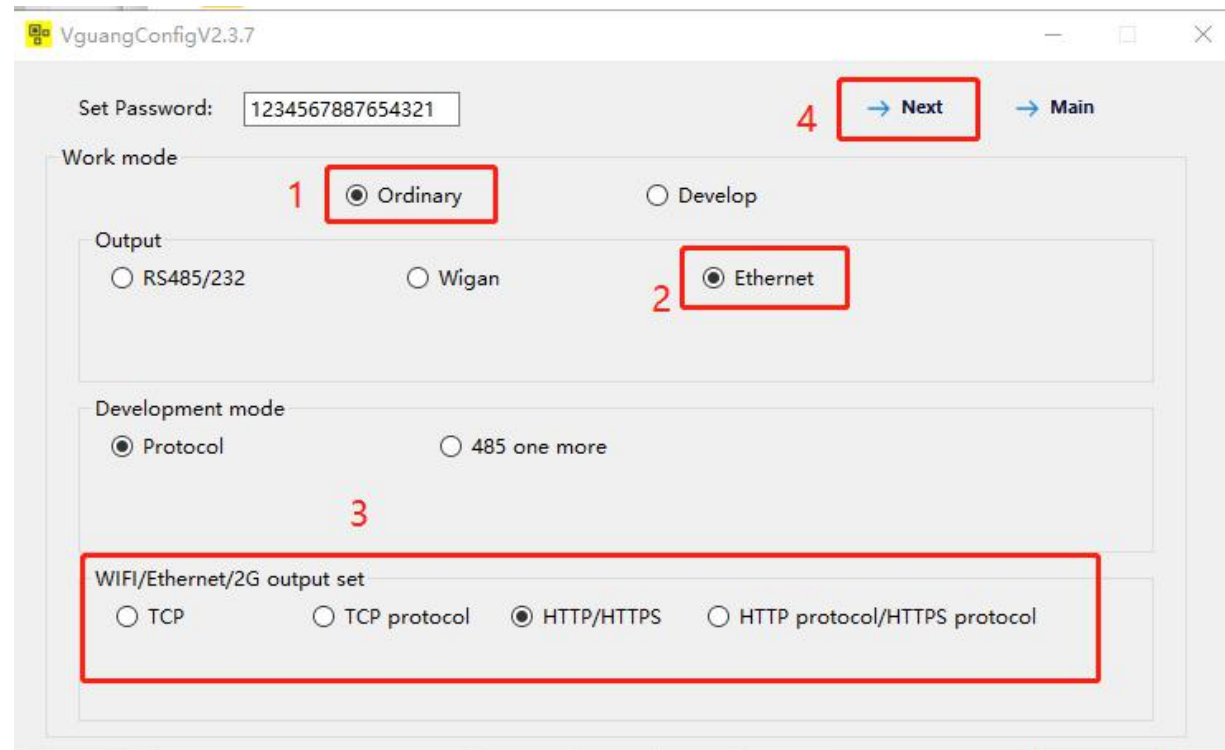
5.1 VguangConfig tool

Configure the server address as the step shows:

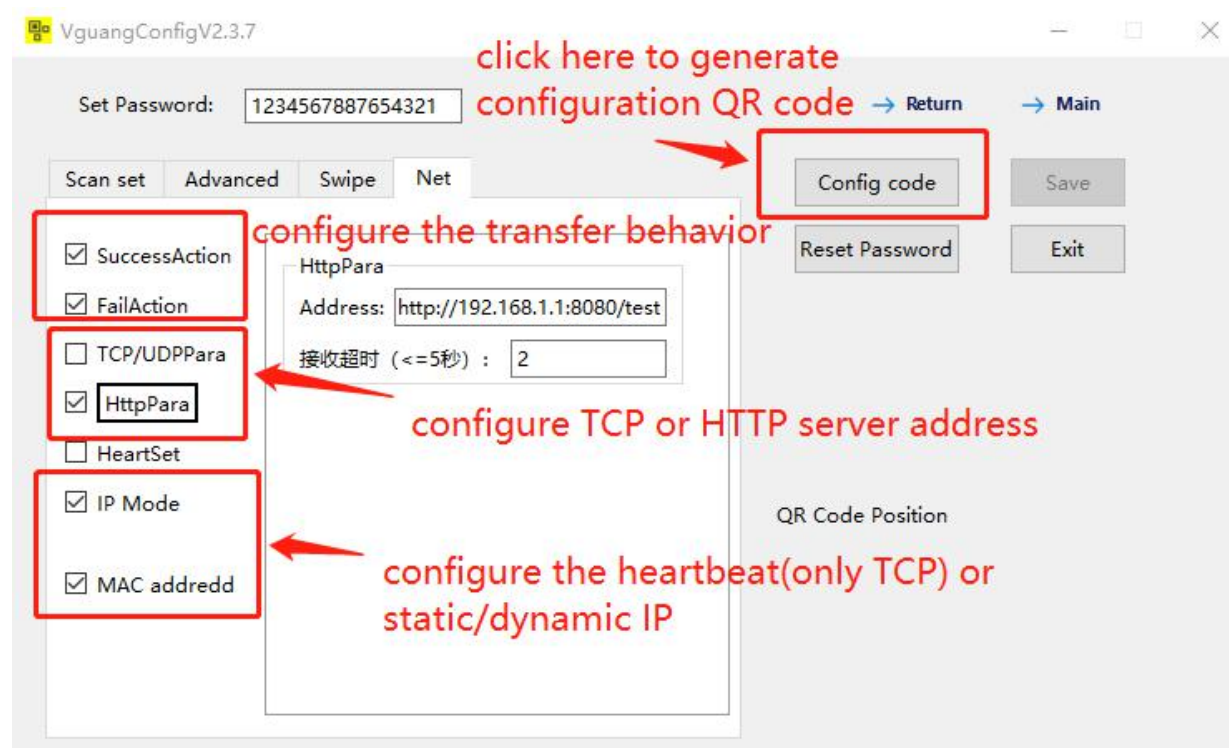
Step 1: select device



Step 2: select output method

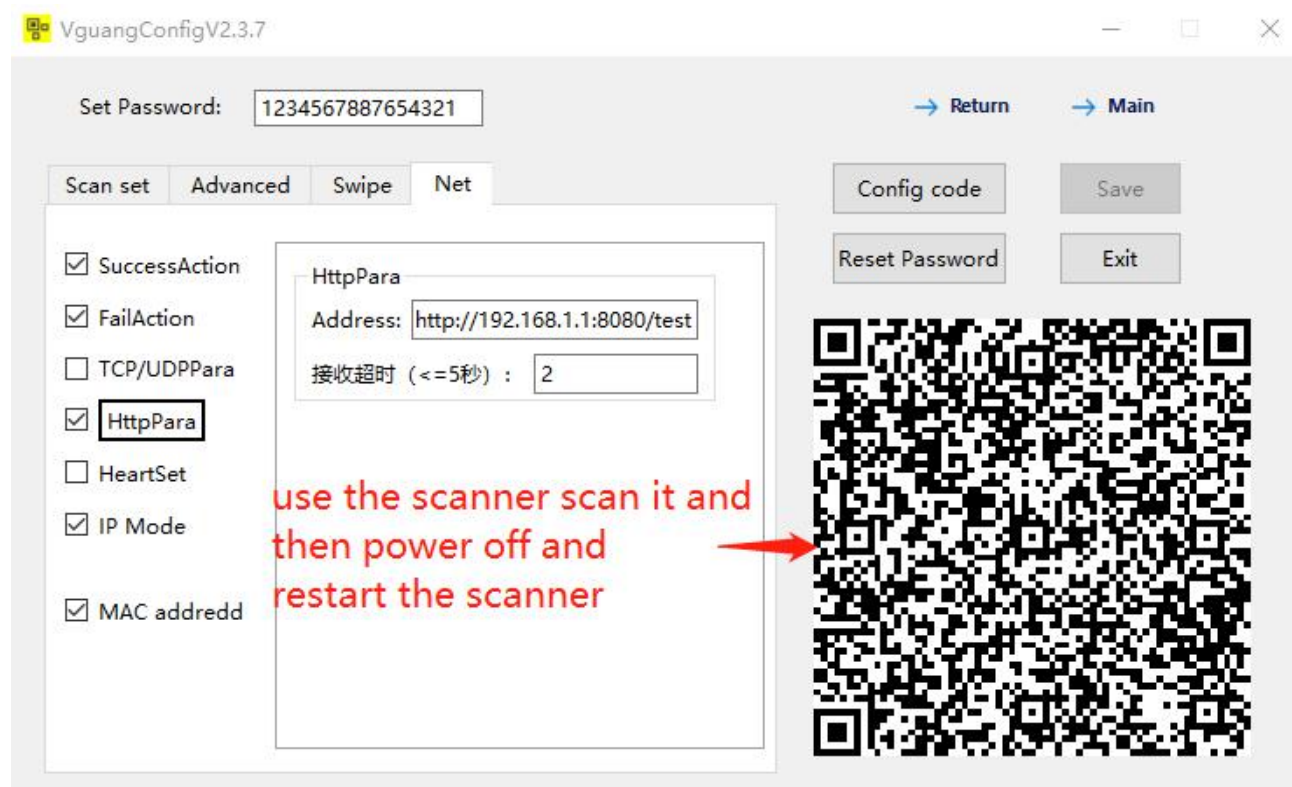


Step 3: configure the server address and the transfer action.





Step 4: use the device to scan the config QR code



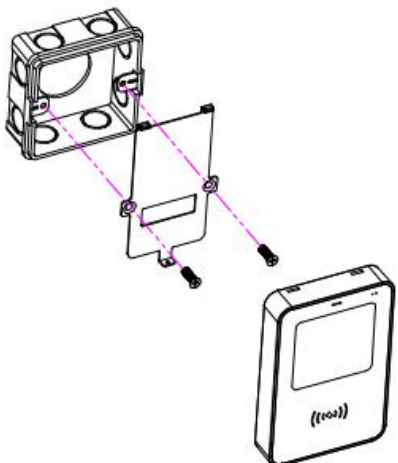
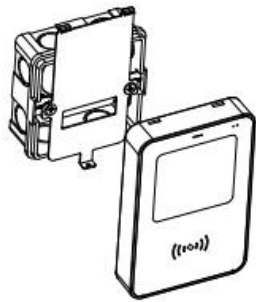

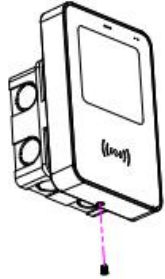
For more information about the configuration tool, please refer to the VguangConfig user manual.

## 6. installation method

The product using CMOS image sensor, the recognition window should avoid direct sun or other strong light source when install the scanner. The strong light source will cause the contrast in the image too big to decoding, the long term exposure will damage the sensor and cause the device failure.

The recognition window are using tempered glass, which has good transmission of the light, it also a pressure resistance, but still need to avoid scratching the glass by some hard object, it will affect the QR code recognition performance.

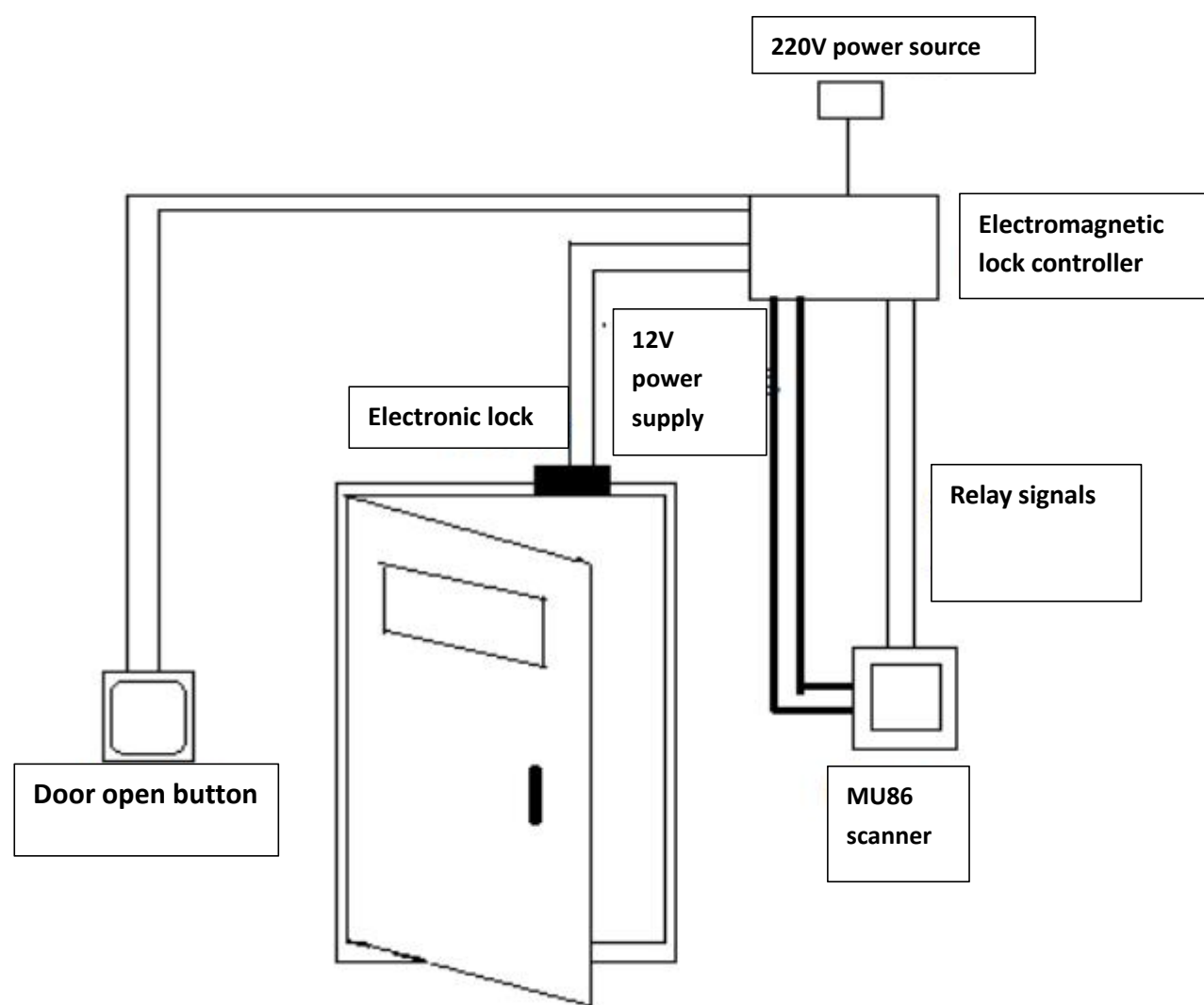
The RFID antenna was in the underside of the recognition window, there should have no metal or magnetic material within 10cm when installing the scanner, or it will affect the card reading performance.

			
<p><b>1.fix the holder on the 86 box</b></p>	<p><b>2.Tighten up the holder with 2 M4*20 screws</b></p>	<p><b>3.Fix the product on the metal holder</b></p>	<p><b>4.Tighten up the product with 1 M3*6 screw from bottom</b></p>

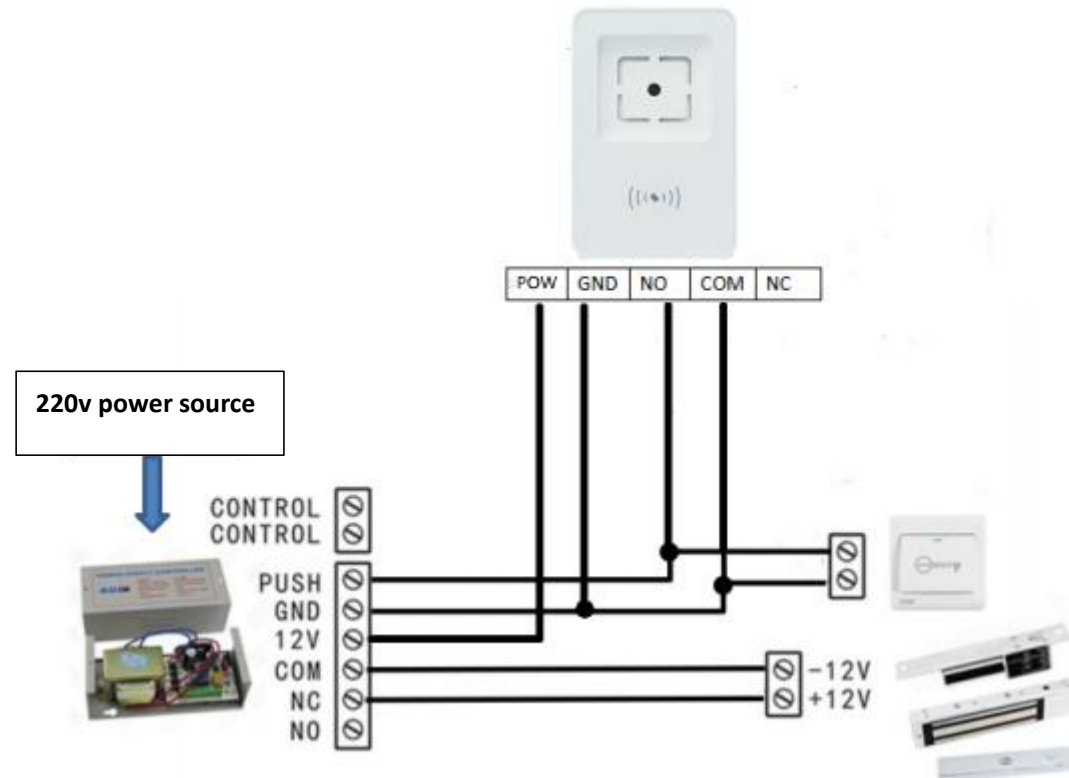
## 7. Access scenario application

The scenario is for MU86 Ethernet device.

### 7.1. Using scenario diagram



## 7.2. Access control system wiring diagram



Note: access control solution introduction

1. Scanner connect with network, upload the scanned QR data to the specified server.
2. The server judge the authority when received the QR data.
3. If the QR code matches the door open condition, it will return the scanner a value.
4. When the scanner receive the returned value, it will output relay signal, control open the door.

## 8. Attention

1. The equipment standard is 12-24V power supply, it can get power from the access control power or power it separately. Excessive voltage may cause the device to fail to work normally or even damage the device.
2. Do not disassemble the scanner without permission, otherwise the device may be damaged.
3. For Ethernet scanner, it is necessary to ensure a good network environment, otherwise it may be unable to communicate with the server.
4. The installation position of the scanner should avoid direct sunlight. Otherwise, the scanning effect may be affected. The panel of the scanner must be clean, otherwise it may affect the normal image capture of the scanner. The metal around the scanner may interfere with the RFID magnetic field and affect card reading.
5. The wiring of the scanner must be firm. In addition, ensure the insulation between the lines to prevent the equipment from being damaged by a short circuit.
6. The output of the scanner is a switch signal. In an access control scenario, it can be connected to the original access control system according to the normally open or normally closed connection method of the original access control system.

## 9. Contact info

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