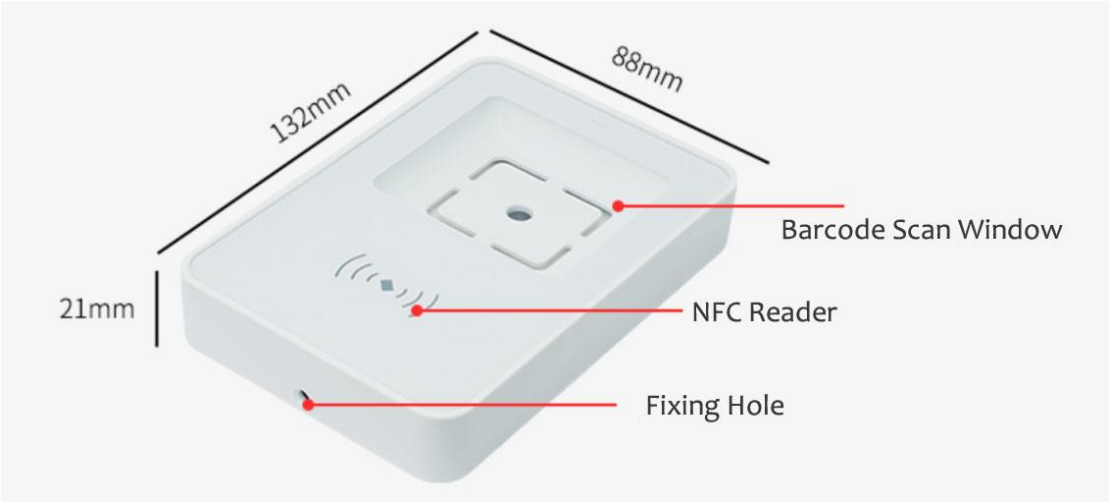
User Manual for RTMU86

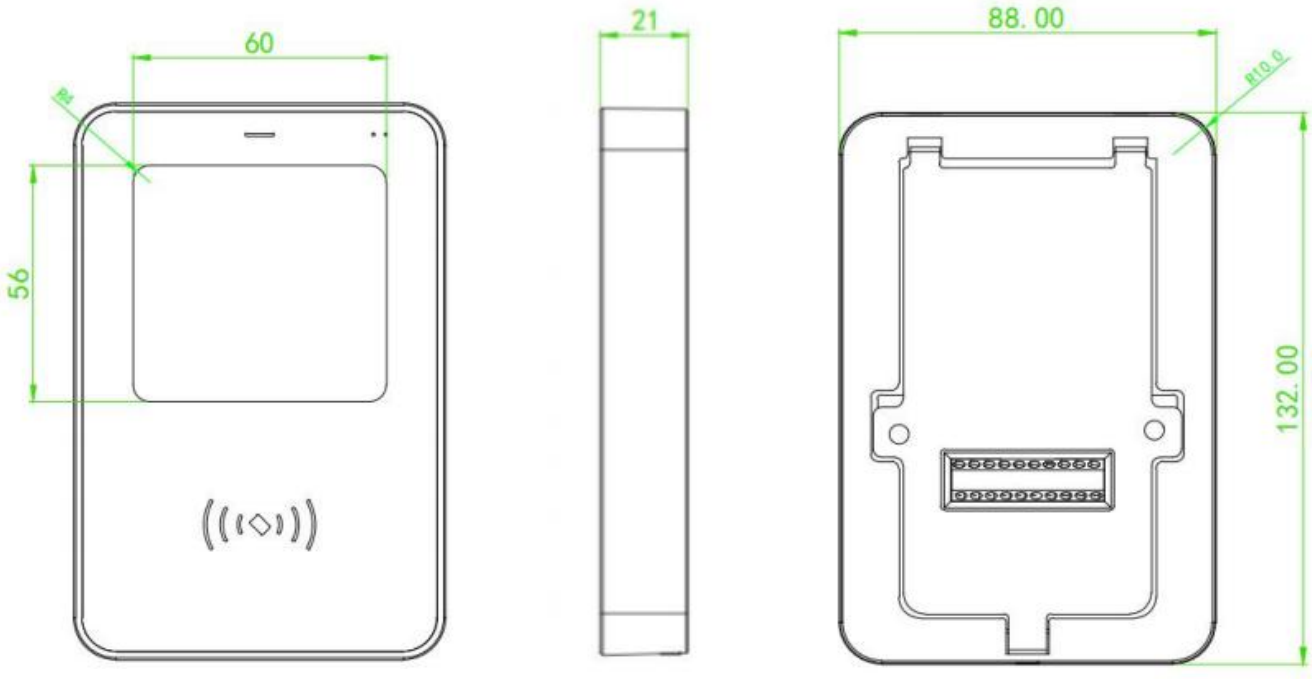
Video introduction and Guide

You can watch our Video introduction and User guide by:
https://youtu.be/3Ovhe2f_L6Q

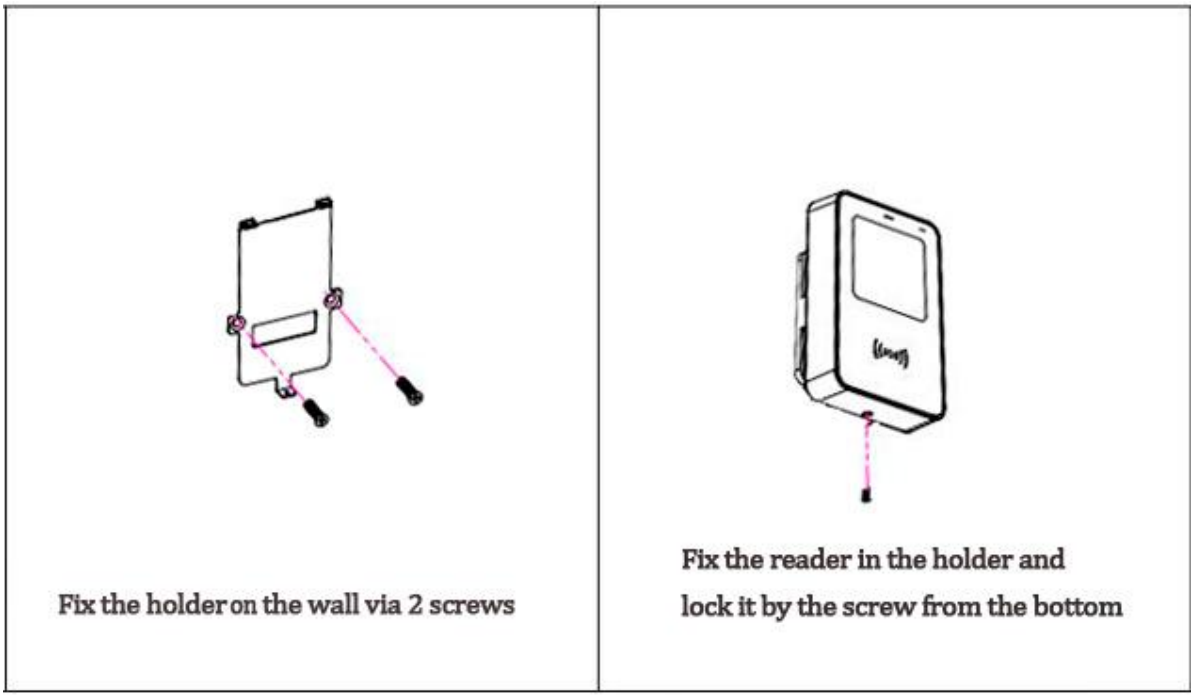
I. Introduction of RTMU86

1. Outlook and dimension:





2. Installation / Fixing



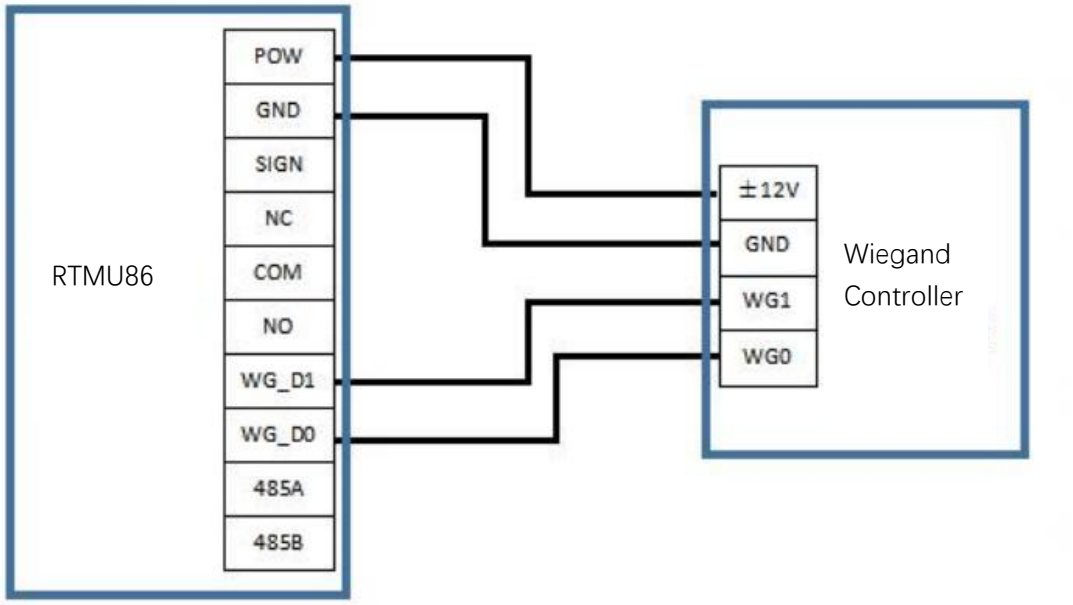
To facilitate our customer integration, we provide a holder for easy installation on the wall. The holder is designed for easy installation. Just fix the holder in the wall via 2 screws, then fix the reader in the holder and lock it by the screw from the bottom, done.

3. PIN definition

485 and wiegand interface definition

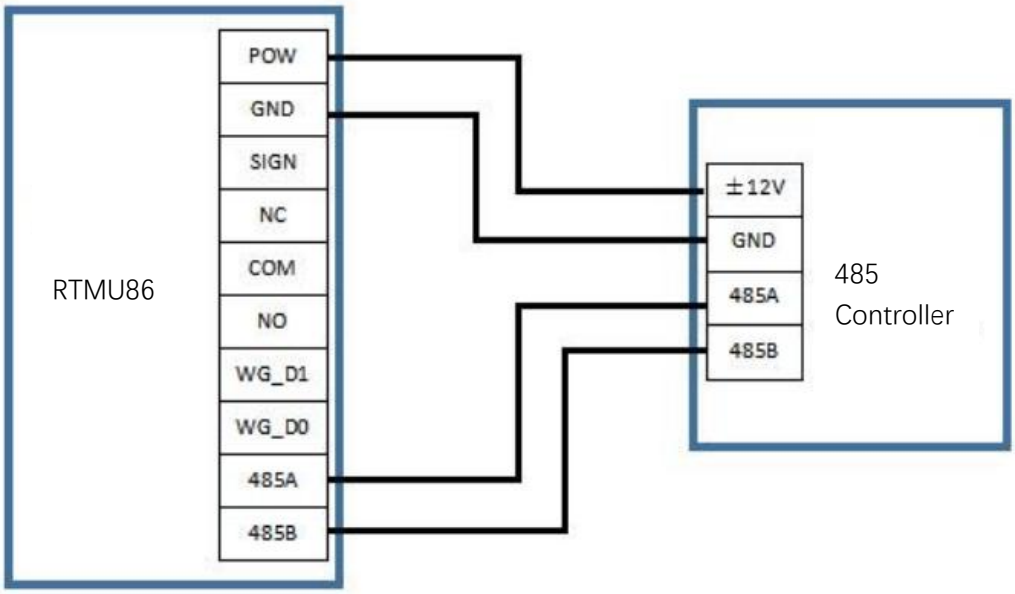
A. Wiegand interface pin definition

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



B. RS485 interface definition

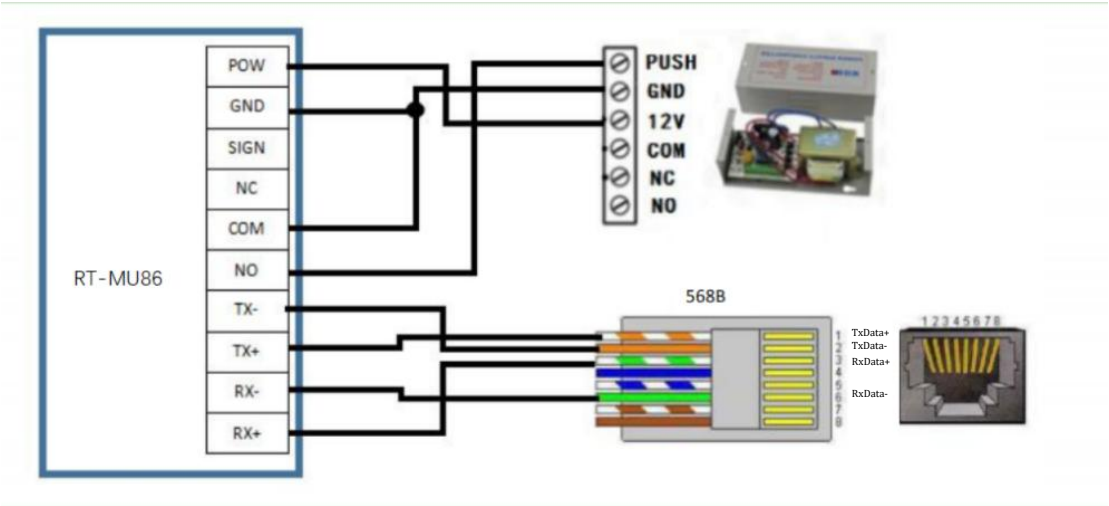
Pin10	Pin9	Pin8	Pin7	Pin6	Pin5	Pin4	Pin3	Pin2	Pin1
POW	GND	SIGN	NC	COM	NO	WG_D1	WG_D0	485A	485B



C. Ethernet interface definition:

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

RTMU86	Pin4	Pin3	Pin2	Pin1
Network cable color	Orange	Orange and white	green	Green and white
Network cable color icon				



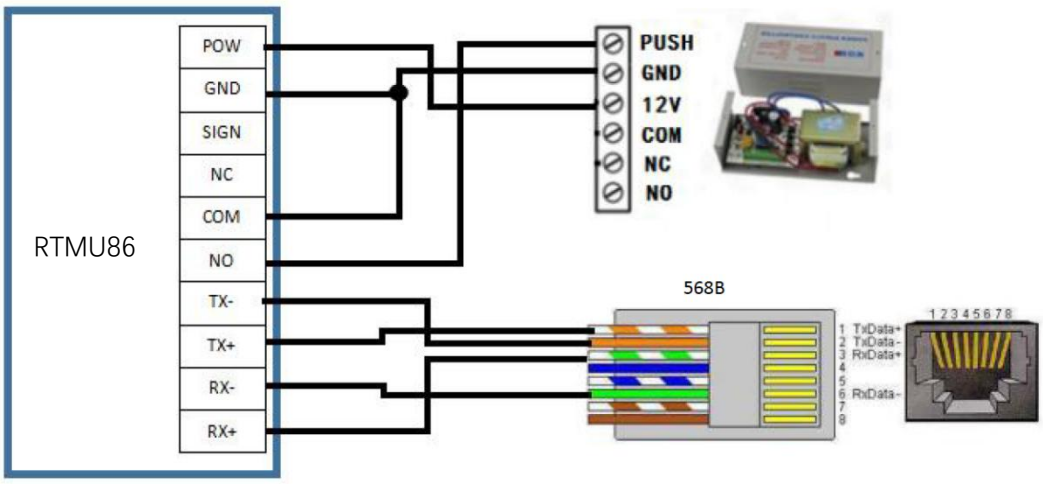
II. Use the RTMU86 via Ethernet

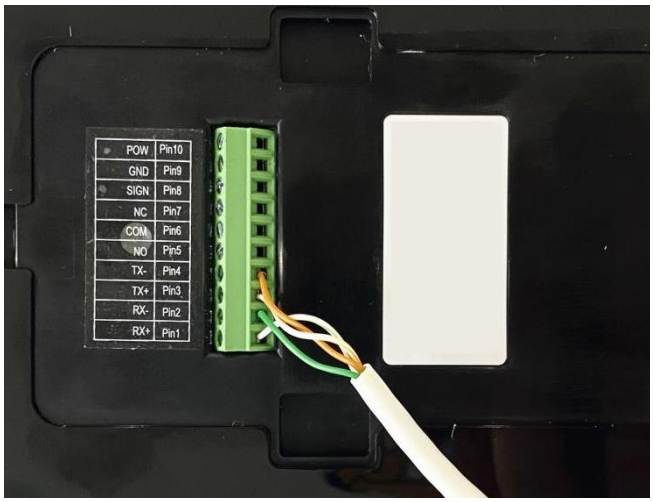
1. Hardware connecting

TheRTMU86 Ethernet version directly leads out four network cable pins, which can be connected to four cables of the standard eight-core network cables according to the color.

The network cable adopts the 568B connection method, please refer to the below table for wiring by color.

RTMU86 ports	Pin4	Pin3	Pin2	Pin1
Network cable color	Orange	Orange and white	green	Green and white
Network cable color icon				





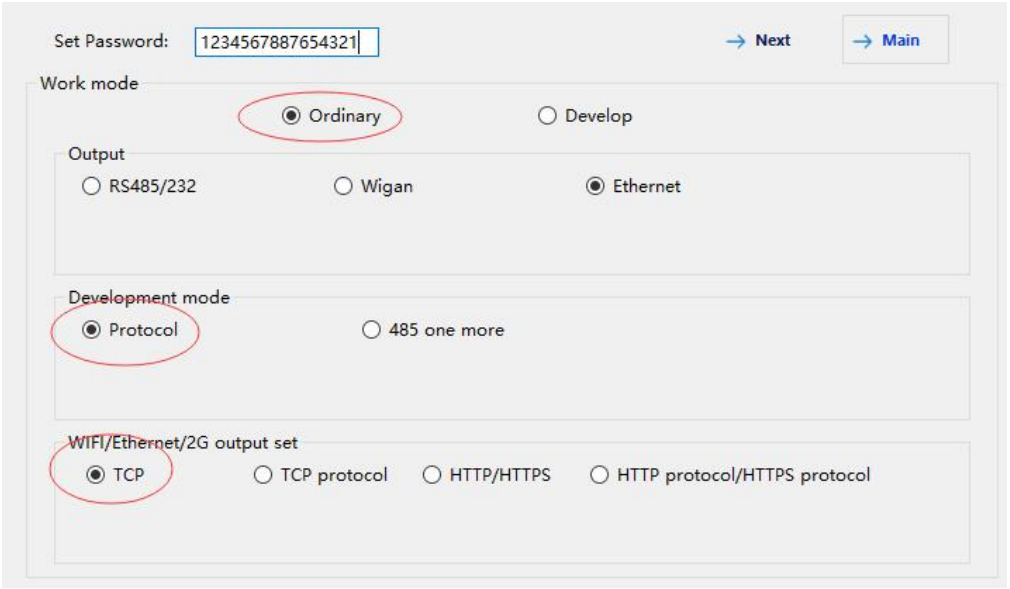
2. RTMU86 settings

A. Manually select the scanner model to RTMU86

Click **Next**

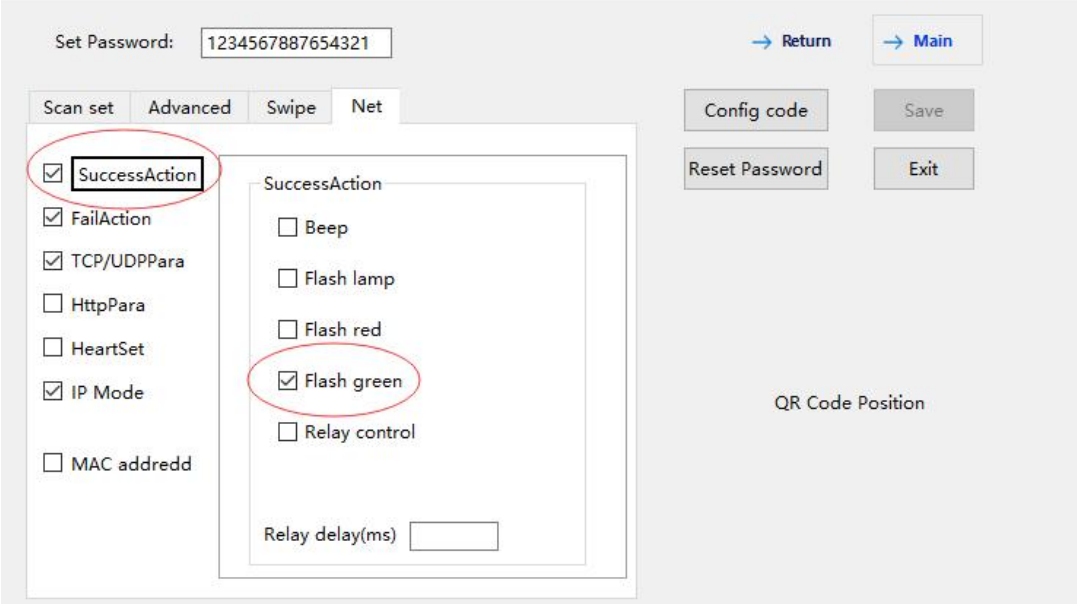
B. Work mode settings

Work mode: Ordinary
Output: Ethernet
Development mode: Protocol
WIFI/Ethernet/2G output: TCP

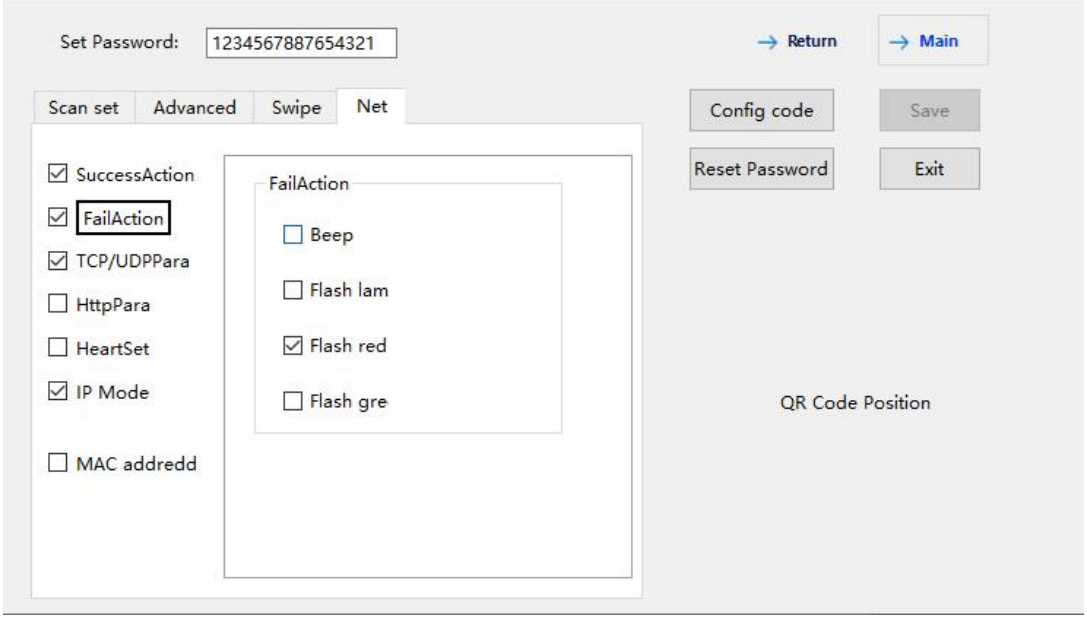


C. NET settings

Set the action after successfully reporting data (Optional)
SuccessAction: Flash green (Optional)



Set the action after failed to report data (Optional)
FailAction: Flash red (Optional)

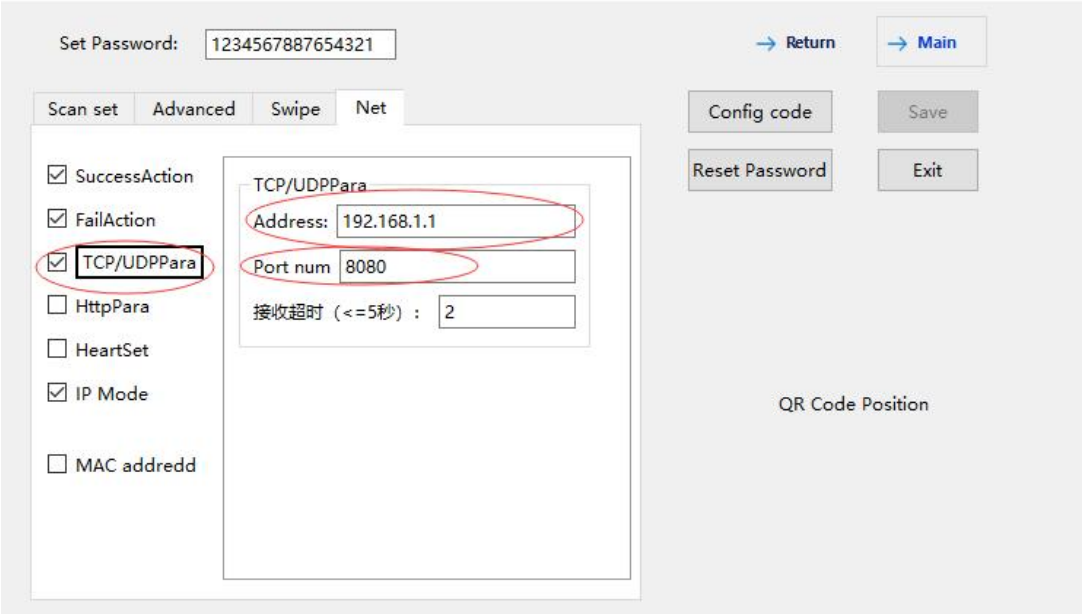


Set the server address and port to which the data is uploaded (*Necessary)

Address: server address, such as 192.168.4.1

Port num: server port

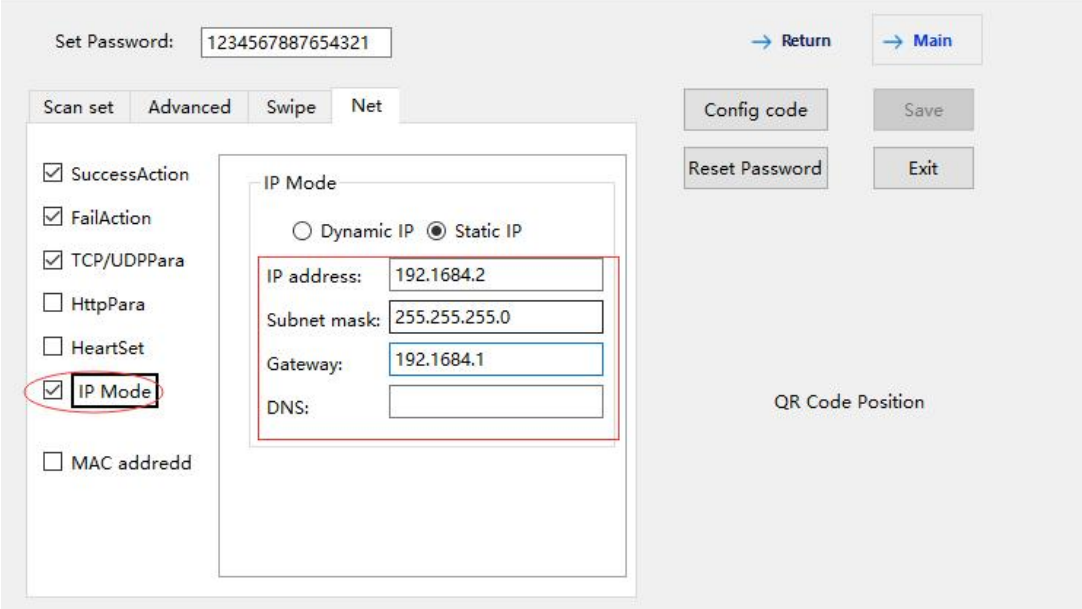
Receive Timeout(≦ 5 seconds) : input the number less than 5



IP mode setting

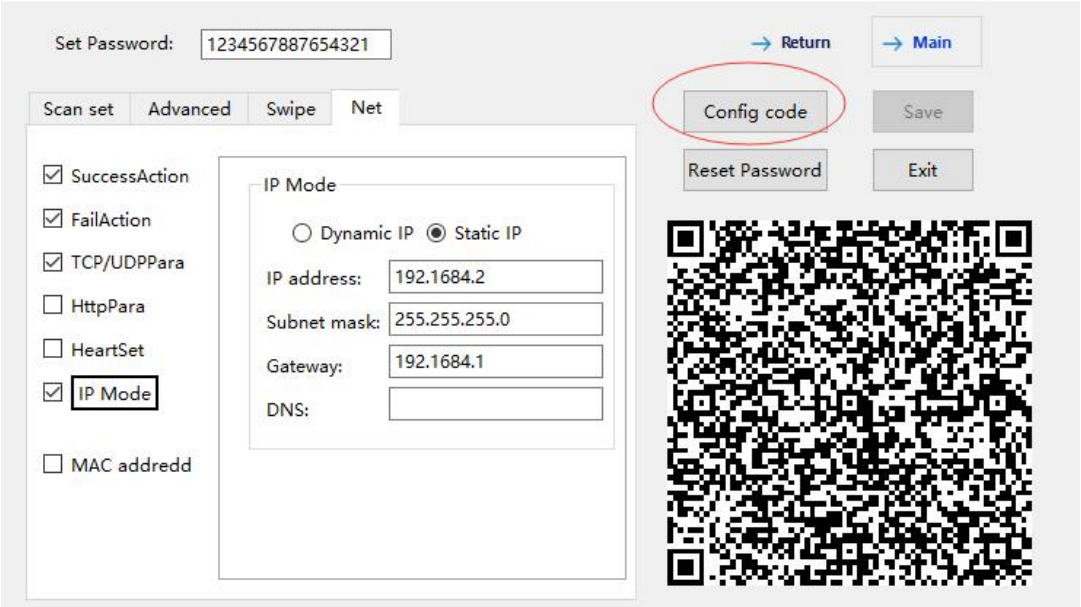
Dynamic IP: IP address is automatically assigned by the router

Static IP: manually specify the IP address, when set to static IP, you must input the IP address, Subnet mask, Gateway, the format is as follows:



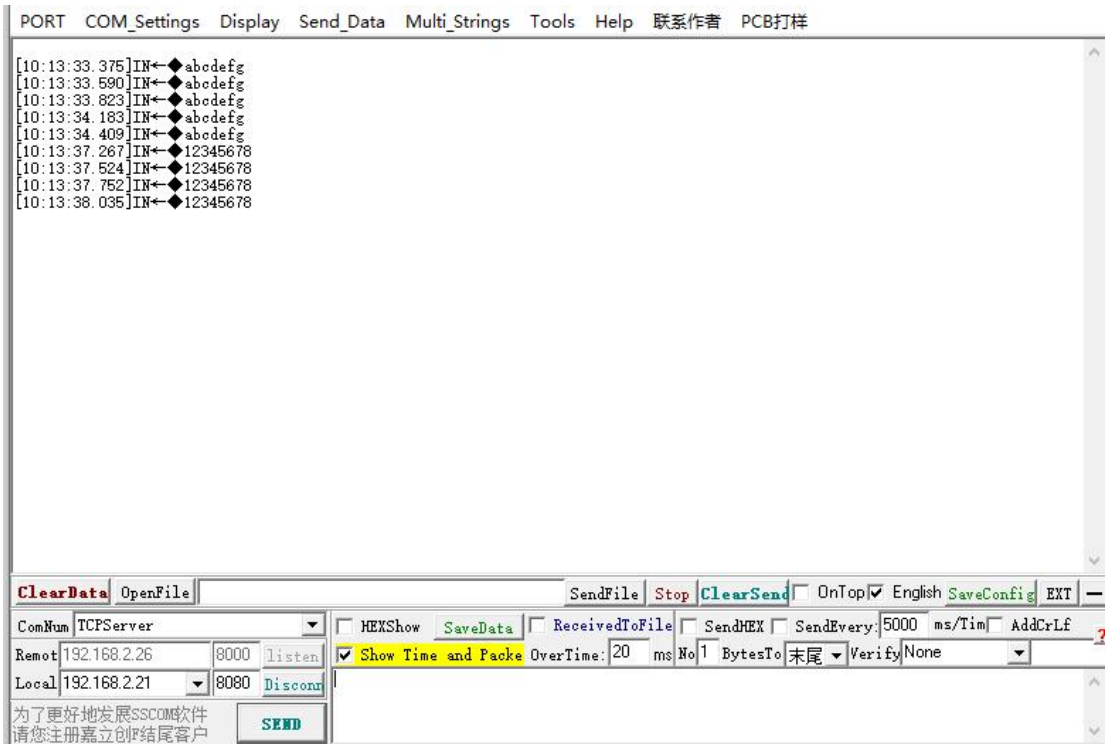
D. Scan settings

Click **config code** to generate the configuration code, and the scanner scans the configuration code to complete the setting



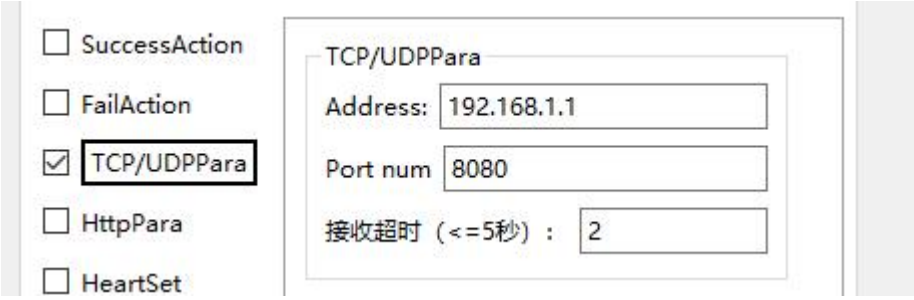
For detailed usage of the configuration tool, please refer to "ScannerConfig Configuration Tool User Manual".

After the configuration is complete, the device automatically connects to the specified server, and will upload the data after scanning the bar code



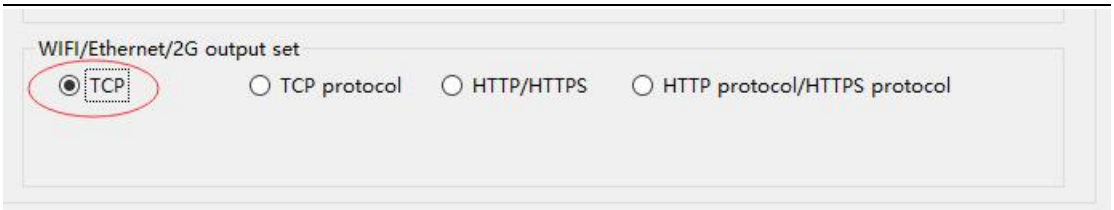
3. Communication protocol

As a client, the scanner can initiate HTTP or TCP/IP requests to the server and process the response returned by the server. The interface specification is defined as follows
TCP/TCP protocol
The format of the requested TCP/IP server IP address is: xxx.xxx.xxx.xxx
The requested TCP/IP server port format is: 0-65535



HTTP/HTTPS
The requested HTTP server path format is: http://serveraddr:port/path
Among them:
serveraddr——The domain name or IP address of the server
port——The server port
path——The server path
The requested HTTP type is POST

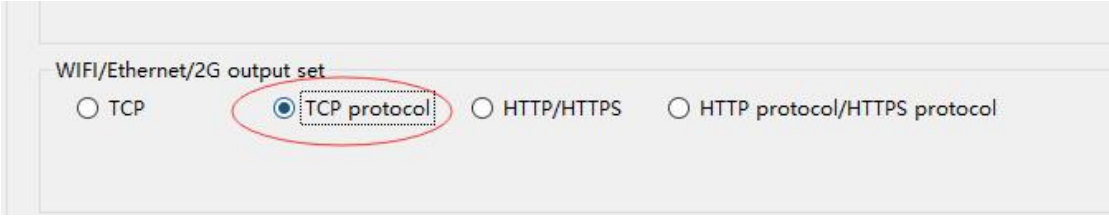
A. TCP



The scanner sends the original scanned data to the server.

The server:

B. TCP protocol



The format of the content sent to the server is: vgdecoderesult=xxx&&devicenumber=xxx

Among them:

vgdecoderesult=xxx——Where xxx represents the decoded result string

devicenumber=xxx——Where xxx represents the scanner device number (can be set in the main interface: **Advanced** -> **Device num**)

The format of the response is: code=xxxx&&desc=xxx

Among them:

code=xxxx——xxx indicates the server processing result code, 0000 indicates success, others indicate errors

desc=xxx——xxx represents server processing description

For example:

Device->The server

vgdecoderesult=12345678&&devicenumber=0

The server->Device

code=0000&&desc=ok

C. HTTP/HTTPS

The HTTP packet format is as follows:
Device-The server

```
POST /test HTTP/1.1
Host: 192.168.4.1:8080
Accept: */*
Content-Type: text/html; charset=UTF-8
Content-Length: 7

abcdefg
```

Body content is the original data of scan code

D. HTTP/HTTPS protocol

The HTTP packet format is as follows:
Device-The server

```
POST /test HTTP/1.1
Host: 192.168.4.1:8080
Accept: */*
Content-Type: text/html; charset=UTF-8
Content-Length: 53

vgdecoderesult=12345678&&devicenumber=0&&otherparams=
```

The server->Device

```
HTTP/1.1 200 OK
Content-Type: text/plain;charset=utf-8
Content-Length: 9

code=0000
```

The content format is:
vgdecoderesult=xxx&&devicenumber=xxx
vgdecoderesult=xxx——Where xxx represents the decoded result string
devicenumber=xxx——Where xxx represents the scanner device number (can be set in the main interface: **Advanced** -> **Device num**)

The format of the response is: code=xxxx
xxxx indicates the server processing result code, 0000 indicates success, others indicate errors

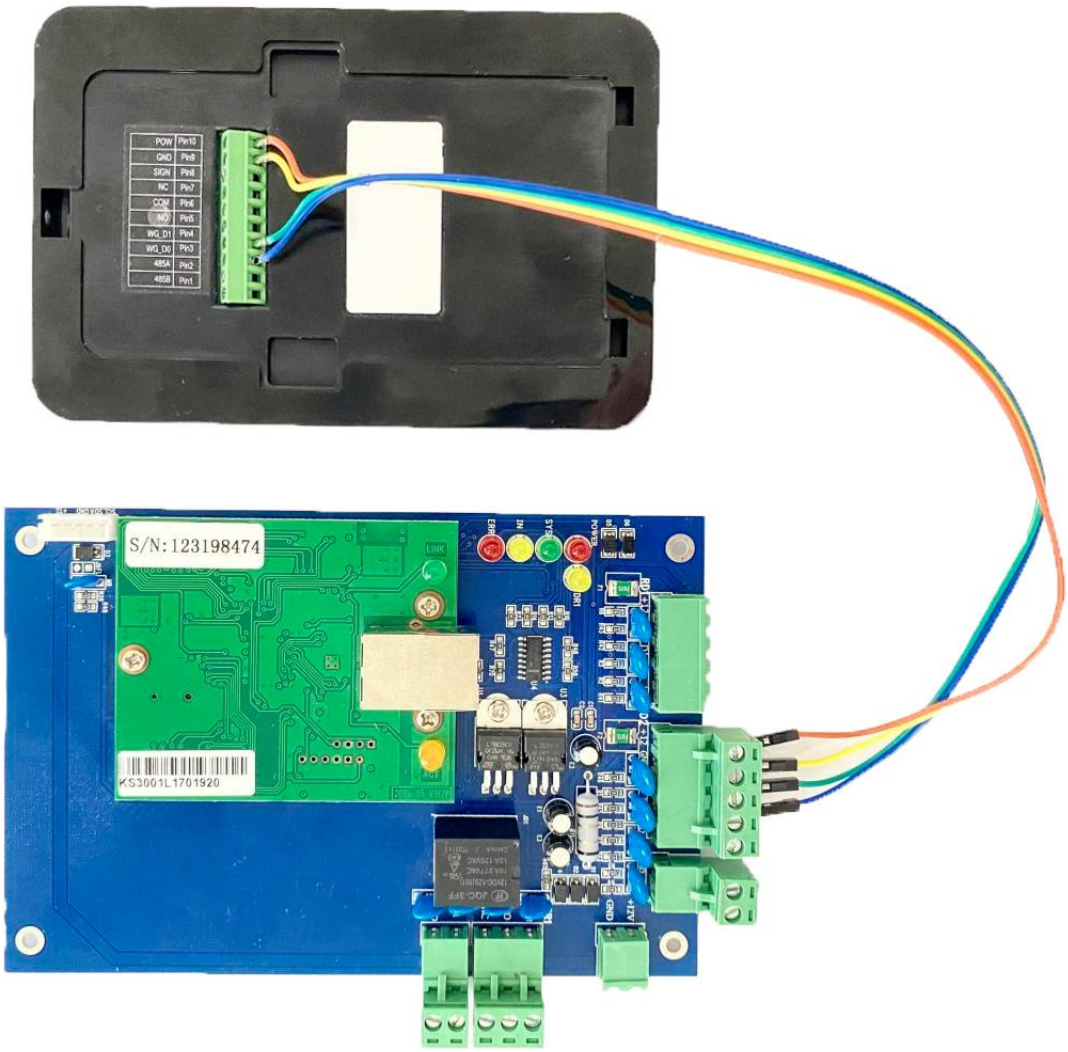
III. Use RTMU86 with access controller board via Wiegand interface

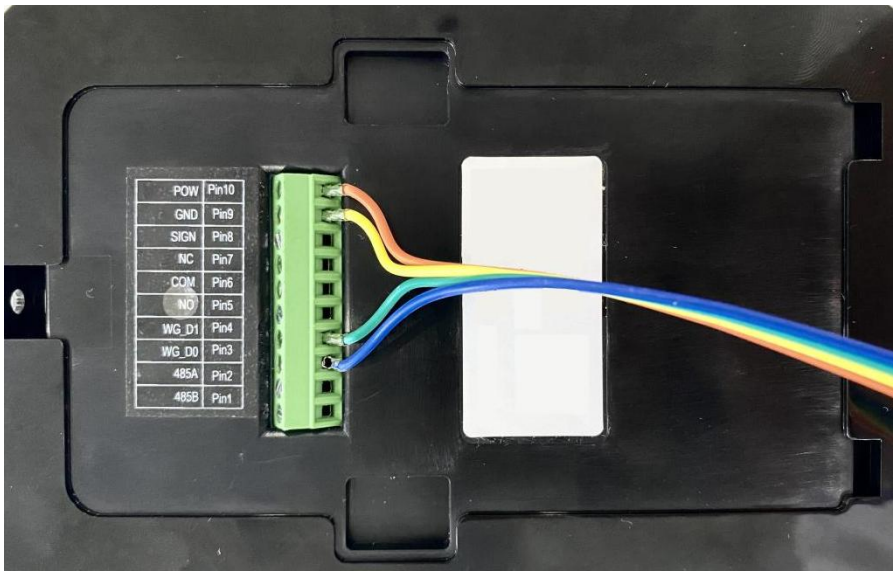
1. Introduction

The access control board
RTMU86 reader

2. Hardware connecting

Use RTMU86 Wiegand cable to connect to the RD interface of the access control board





Connect the network cable on the control board to the router lan port or directly plug it into the network port of the computer

3. Software preparation

Access control system:

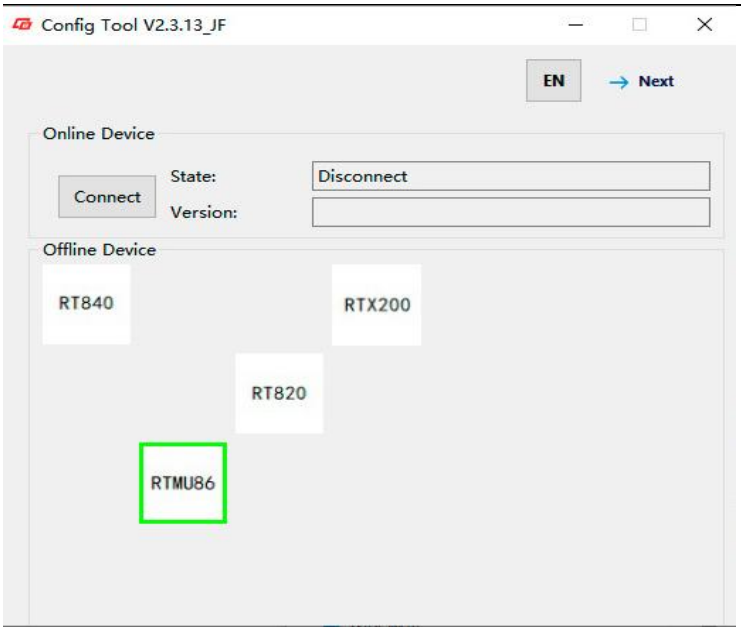
AccessControlV7.61en

Scanner configuration tool:

ScannerConfig

4. RTMU86 settings

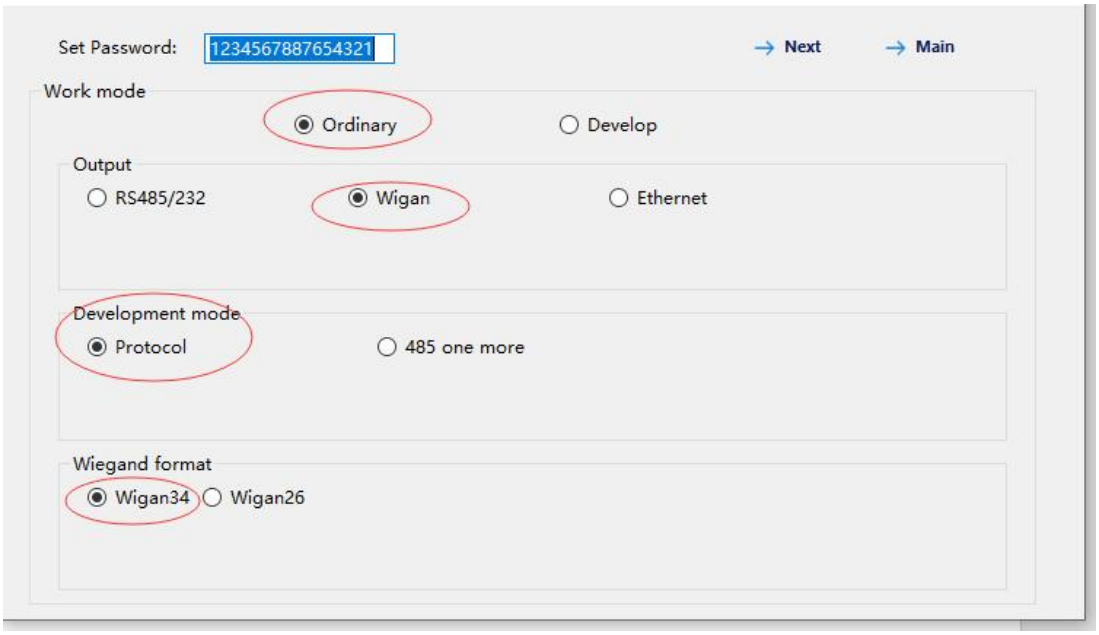
A. Manually select the scanner model to MU86



Click **Next**

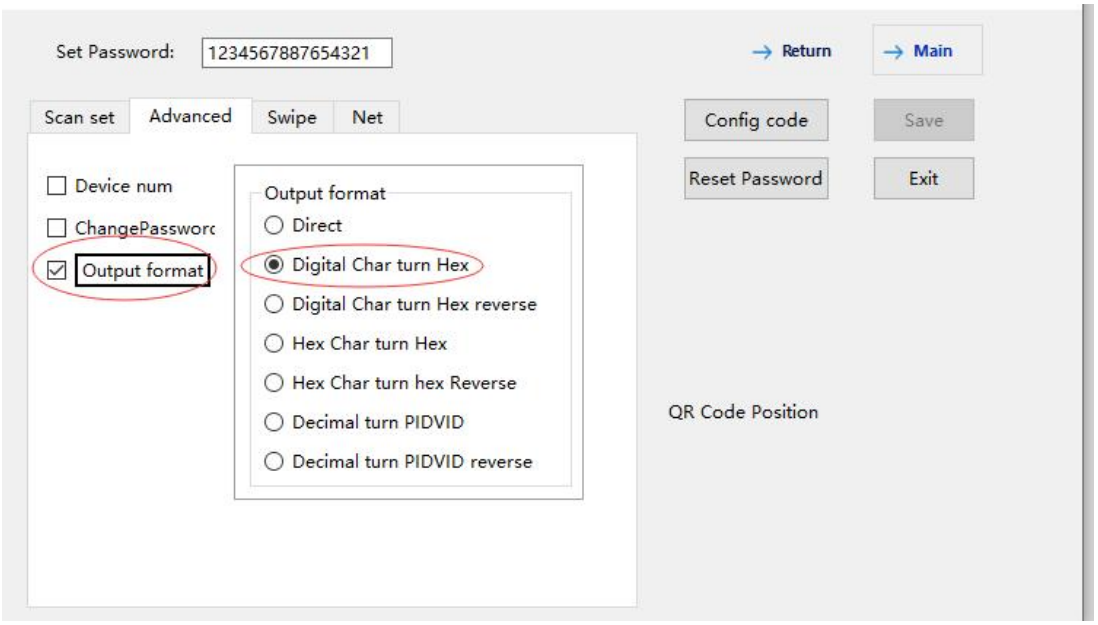
B. Work mode settings

Word mode: Wigan,
Development mode: Protocol
Wiegand format: Wigan34

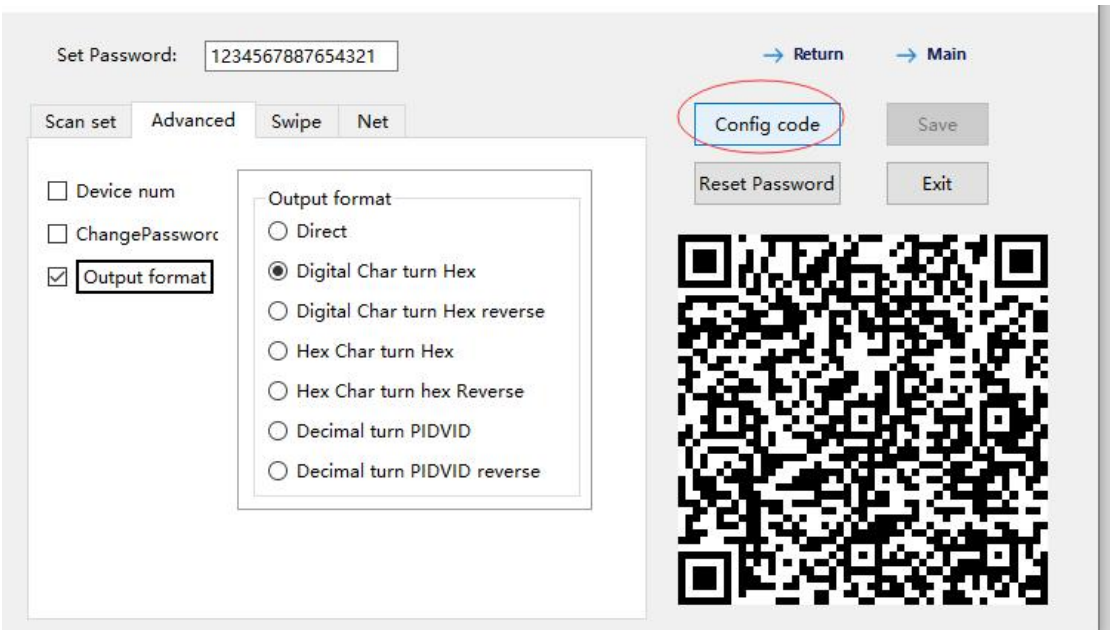


Click **Next**

C. Select Advanced->Output format->Digital Char turn Hex

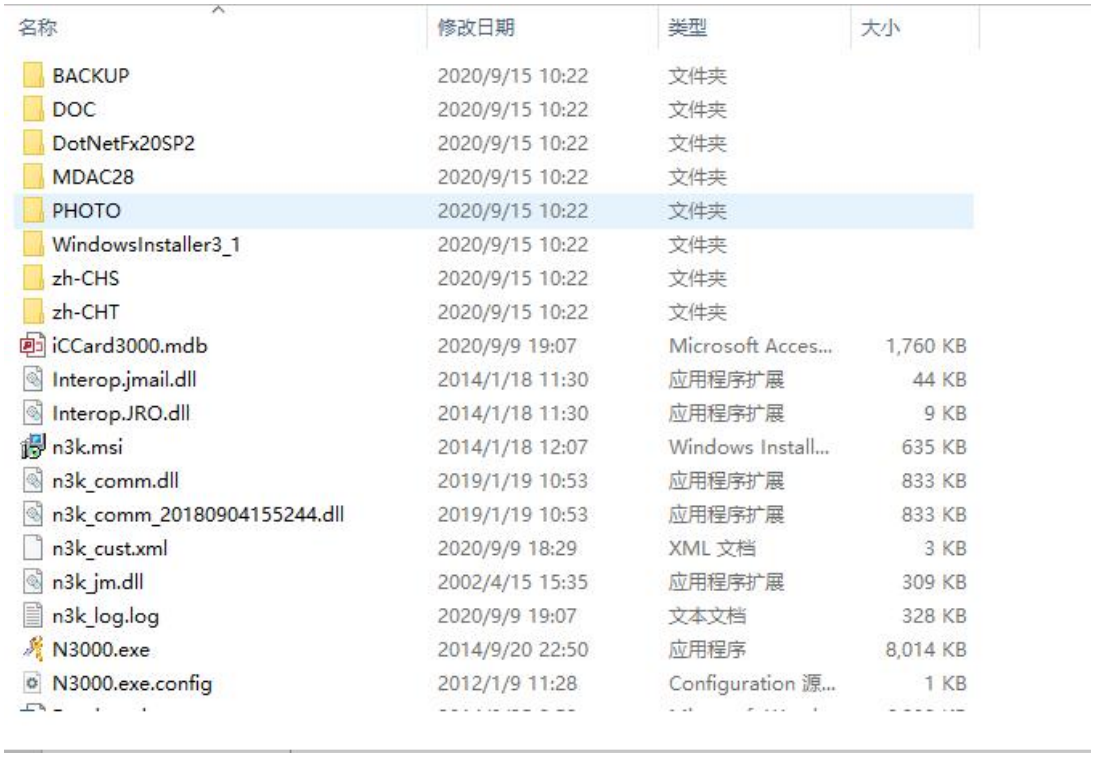


D. Click config code to generate a configuration QR code, use the MU86 to read the QR code to complete the configuration



5. Access control system software installation and setting

A. Install AccessControlV7.61en



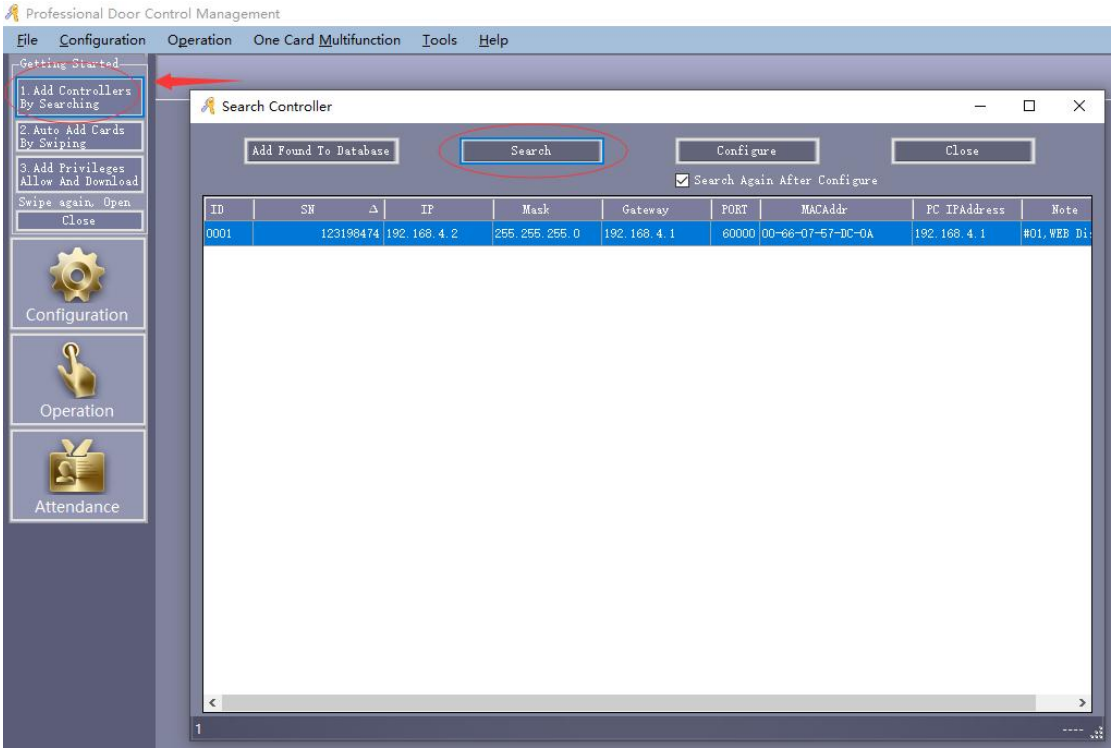
名称	修改日期	类型	大小
BACKUP	2020/9/15 10:22	文件夹	
DOC	2020/9/15 10:22	文件夹	
DotNetFx20SP2	2020/9/15 10:22	文件夹	
MDAC28	2020/9/15 10:22	文件夹	
PHOTO	2020/9/15 10:22	文件夹	
WindowsInstaller3_1	2020/9/15 10:22	文件夹	
zh-CHS	2020/9/15 10:22	文件夹	
zh-CHT	2020/9/15 10:22	文件夹	
iCCard3000.mdb	2020/9/9 19:07	Microsoft Acces...	1,760 KB
Interop.jmail.dll	2014/1/18 11:30	应用程序扩展	44 KB
Interop.JRO.dll	2014/1/18 11:30	应用程序扩展	9 KB
n3k.msi	2014/1/18 12:07	Windows Install...	635 KB
n3k_comm.dll	2019/1/19 10:53	应用程序扩展	833 KB
n3k_comm_20180904155244.dll	2019/1/19 10:53	应用程序扩展	833 KB
n3k_cust.xml	2020/9/9 18:29	XML 文档	3 KB
n3k_jm.dll	2002/4/15 15:35	应用程序扩展	309 KB
n3k_log.log	2020/9/9 19:07	文本文档	328 KB
N3000.exe	2014/9/20 22:50	应用程序	8,014 KB
N3000.exe.config	2012/1/9 11:28	Configuration 源...	1 KB

B. Log in to the access control management system

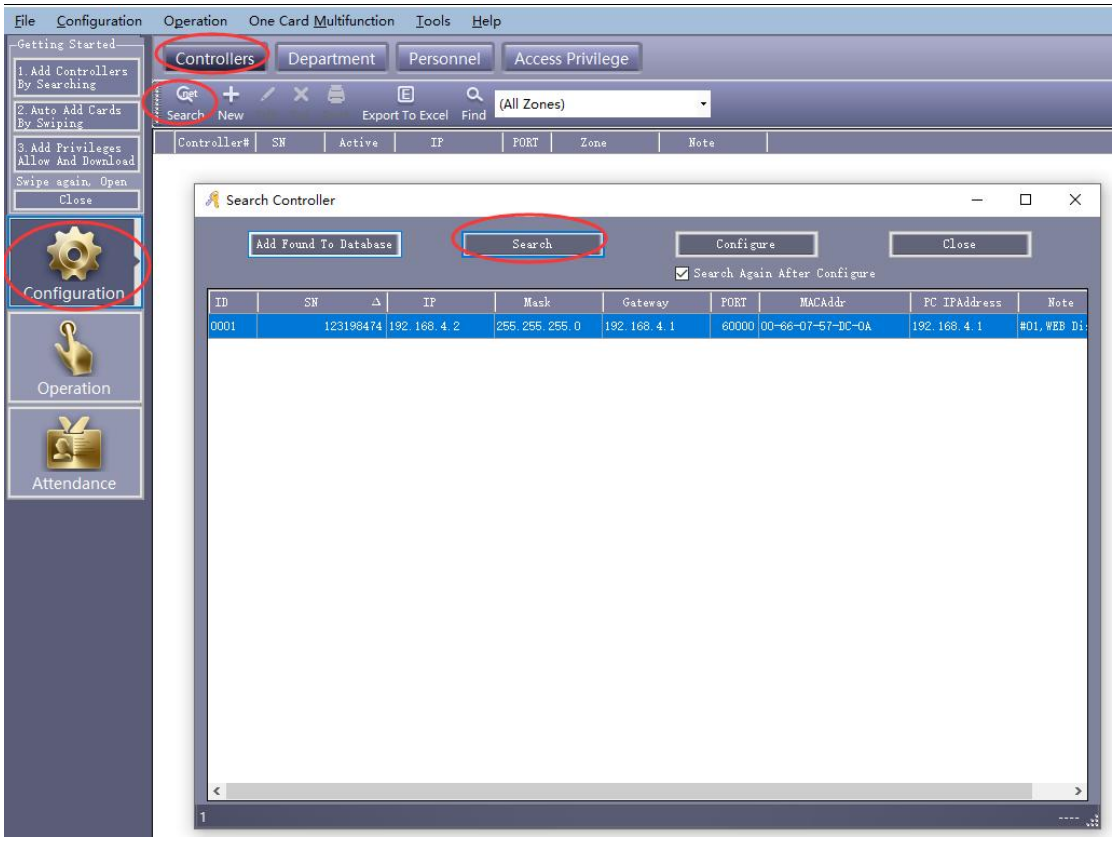
The default account is **abc** and the password is **123**

C. Add access controller device

Click **1. Add Controllers by Searching** to find and add the controller device in the LAN

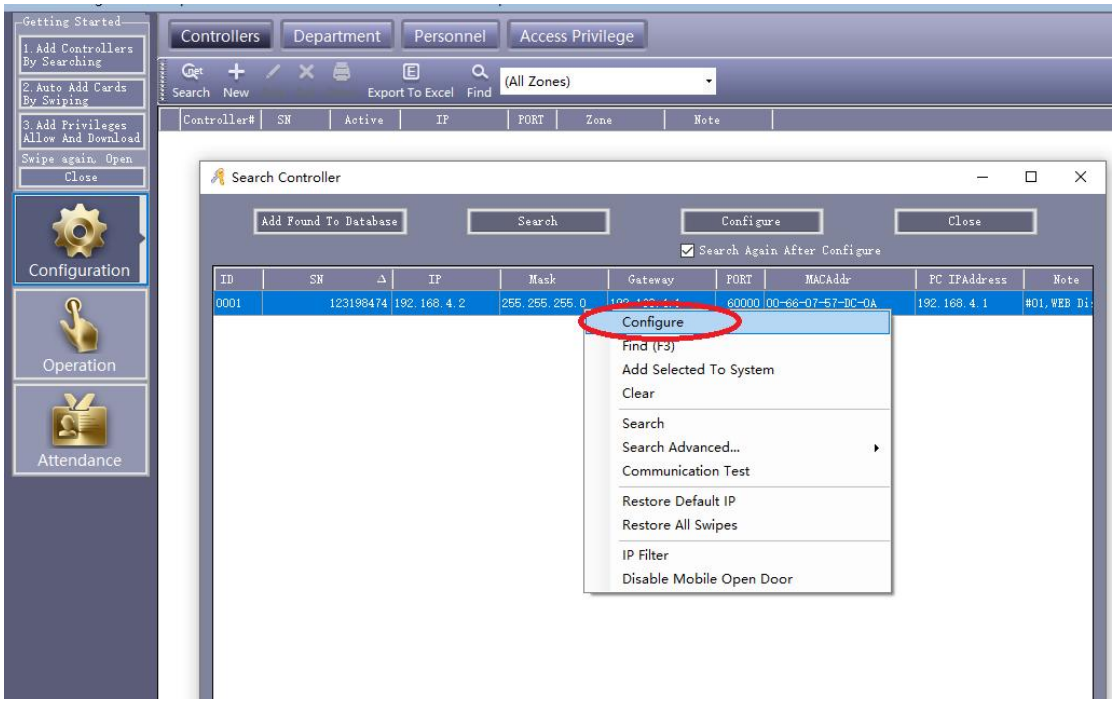


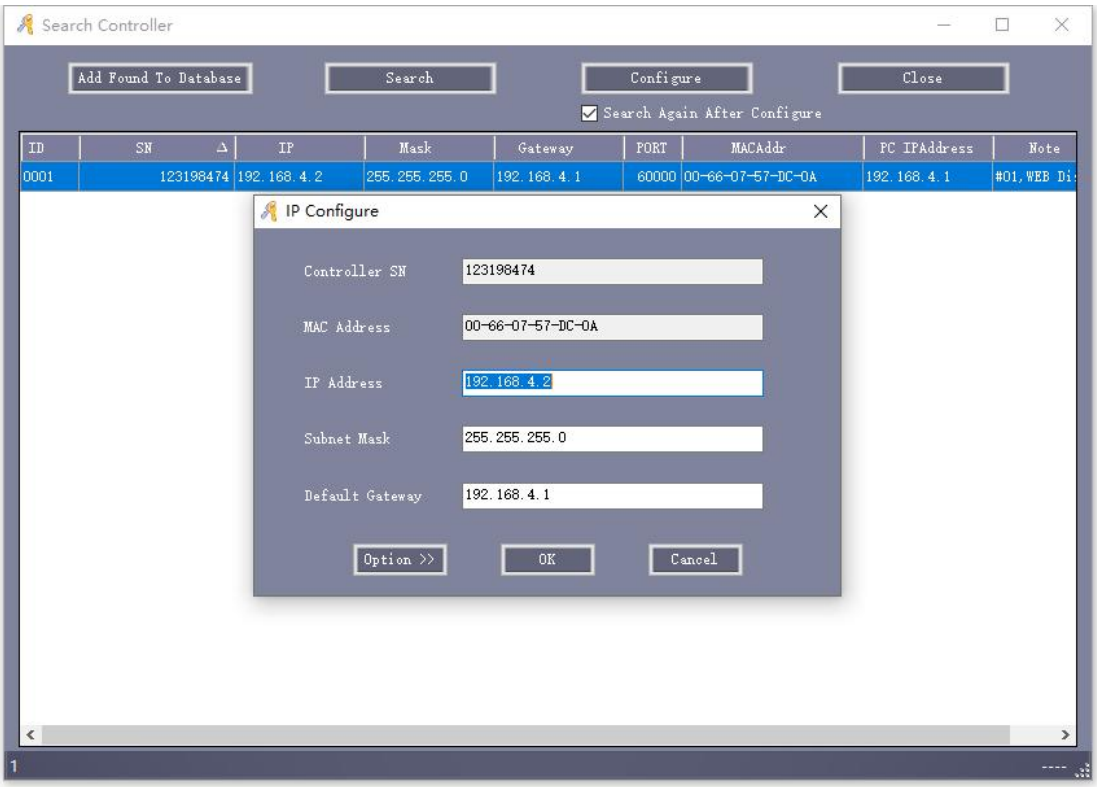
Or click **Configuration->Controllers-> Search** to find the access controller in the LAN



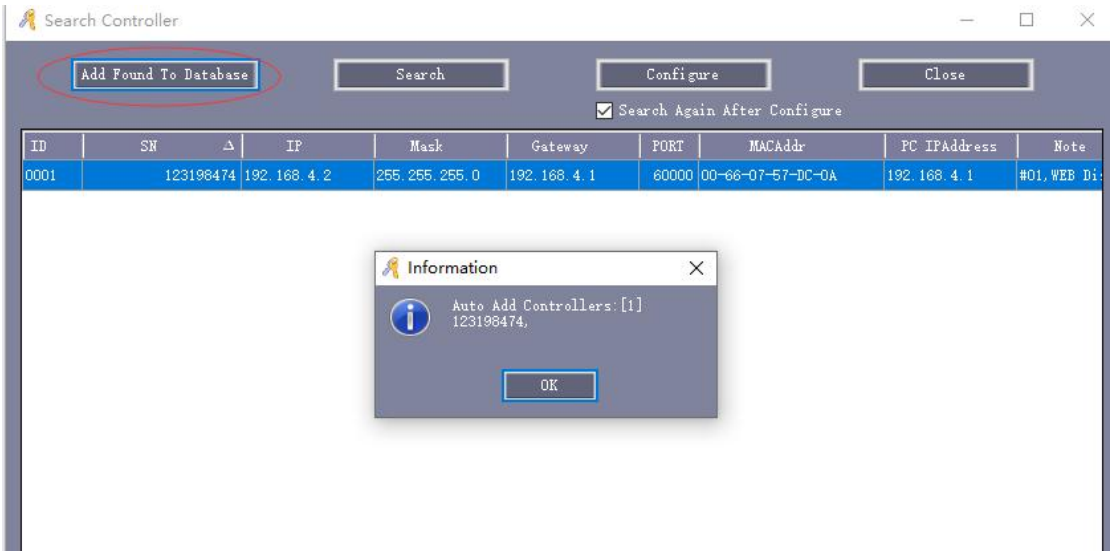
D. Modify the file controller IP

Select the found controller, right-click and choose **Configure** to configure the device **IP address**, or you can also specify the IP address for the device in the router DHCP server.



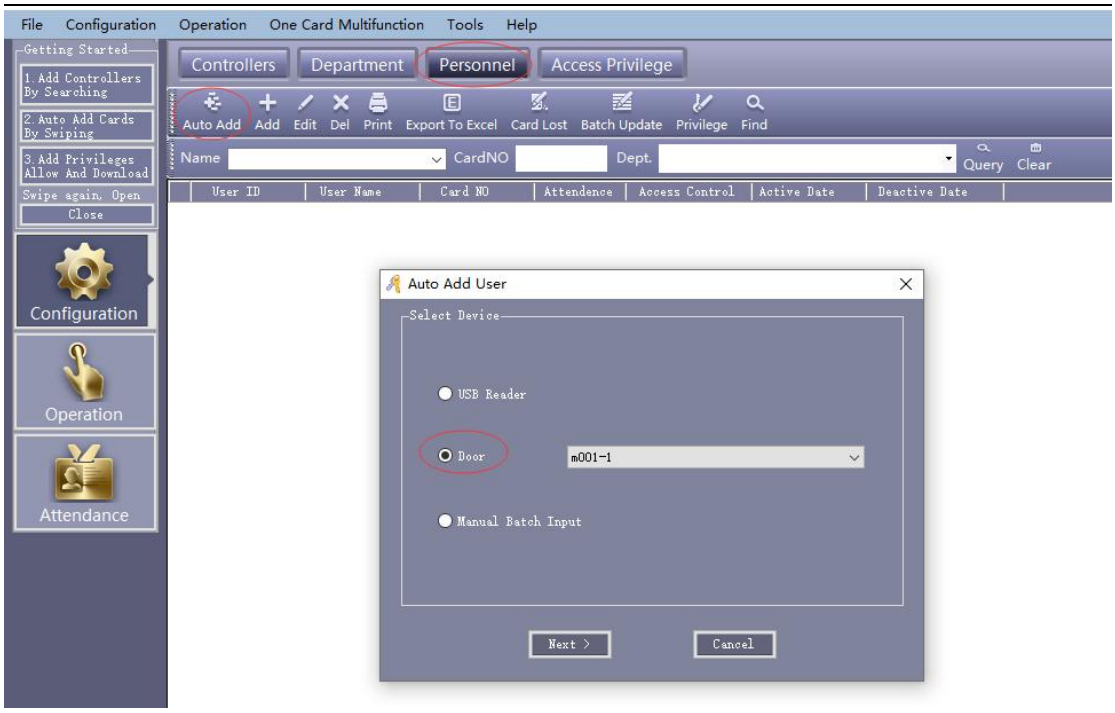


Click **Add Found To Database** to add the device



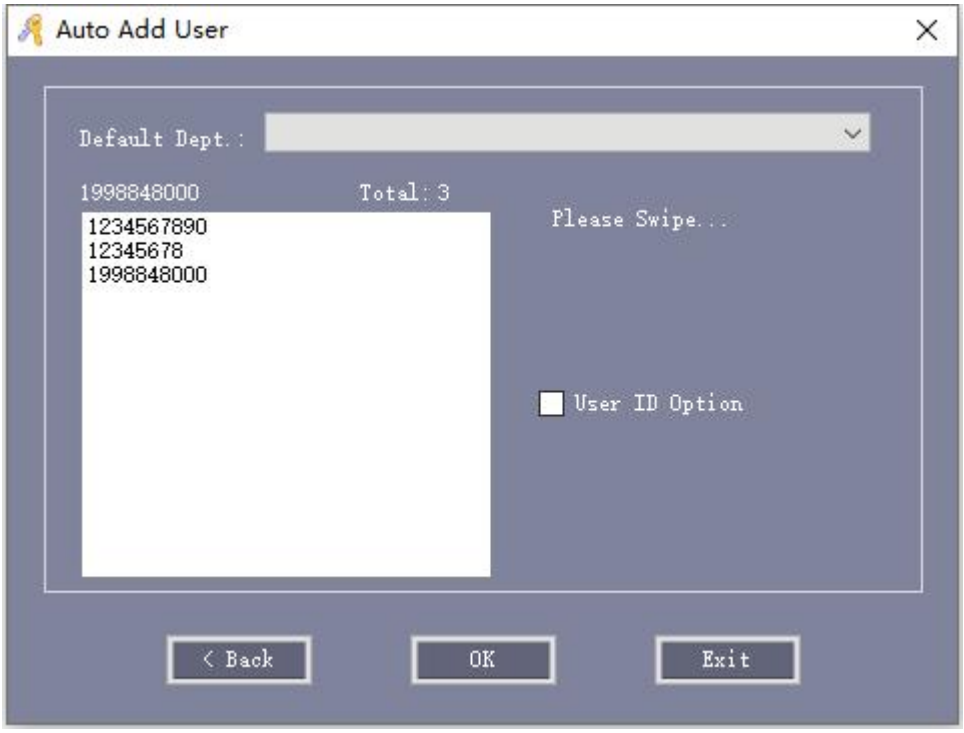
E. Add personnel and card number

Select **Configurtion->Personnel->Auto Add** to add personnel

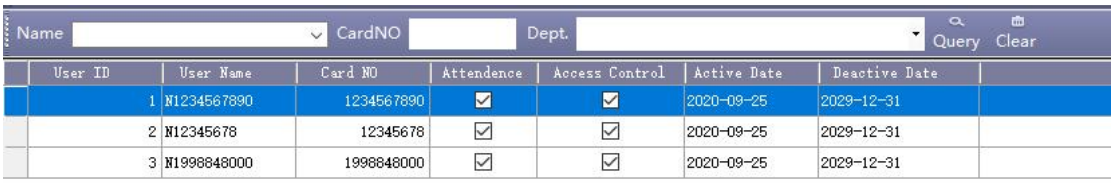


Select the device that needs to record the door card and click **Next**

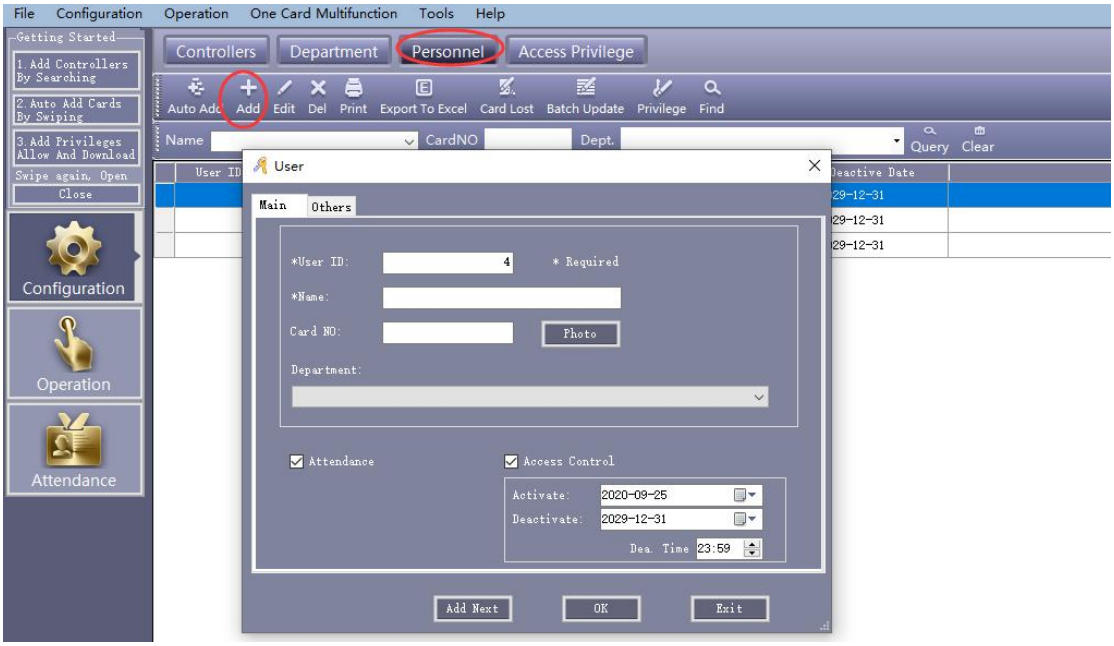
Swipe the card or scan the QR code to add the card number to the list.



Click **OK** to enter these card numbers

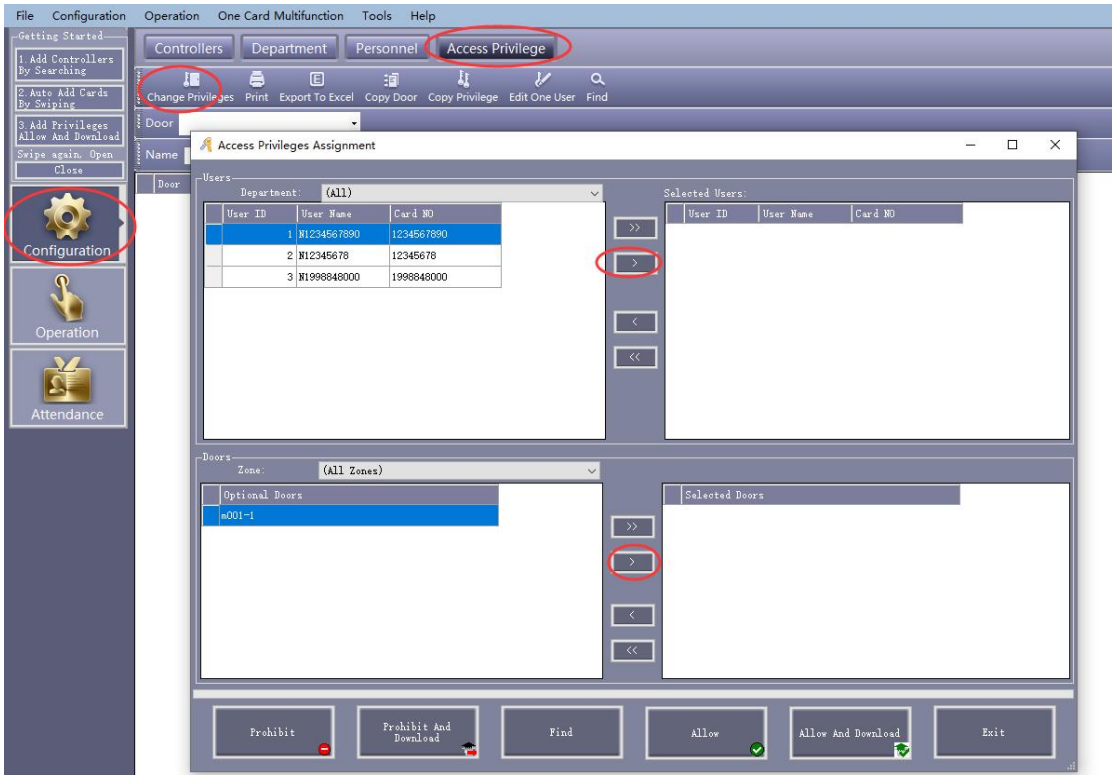


You can also manually click **Configurtion**->**Personnel**->**Add** to manually enter user information.

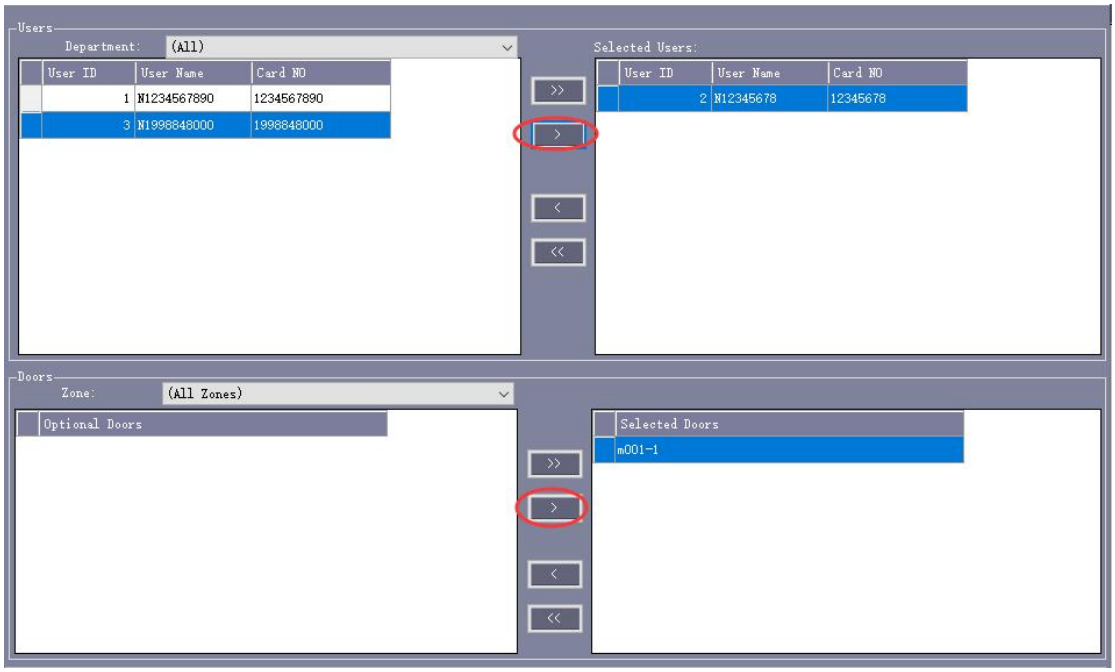


6. Personnel access privilege

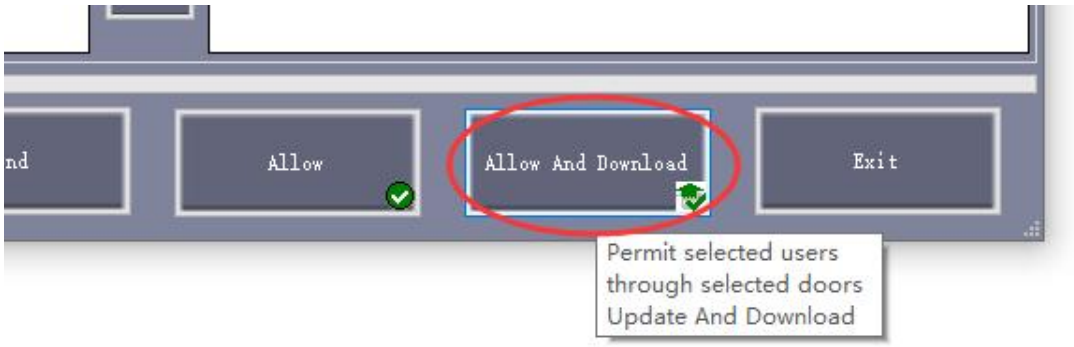
Click **Configuration->Access Privilege->Change Privileges** to assign permissions to users

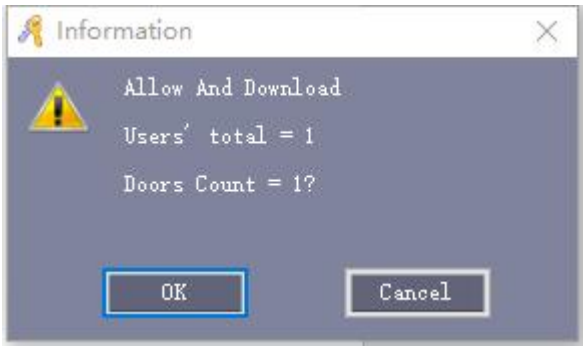


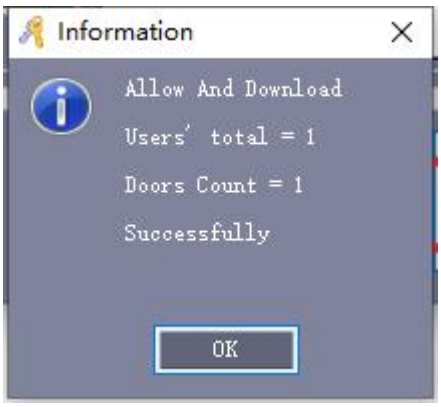
Click **>** and **>>** to add users and access control controller



Click **Allow And Dowrload** to save the card numbers to the controller

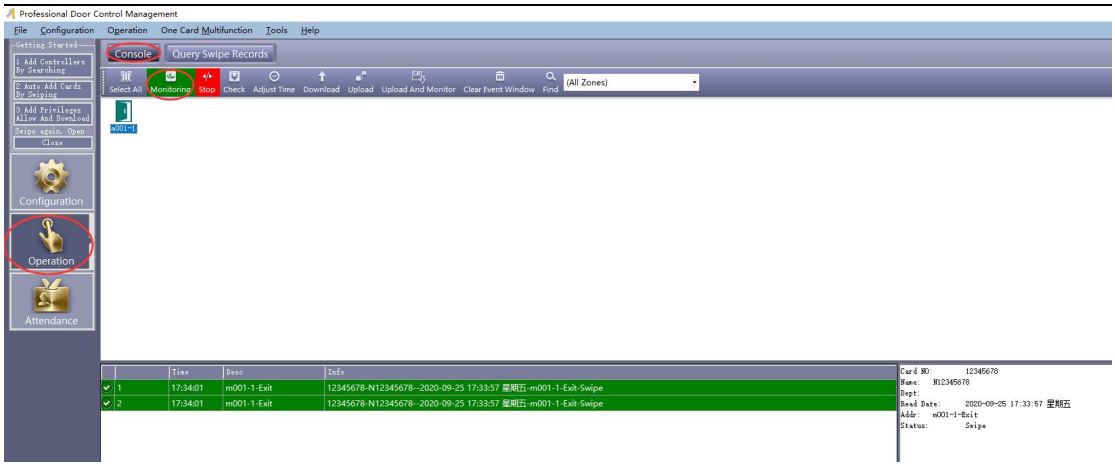






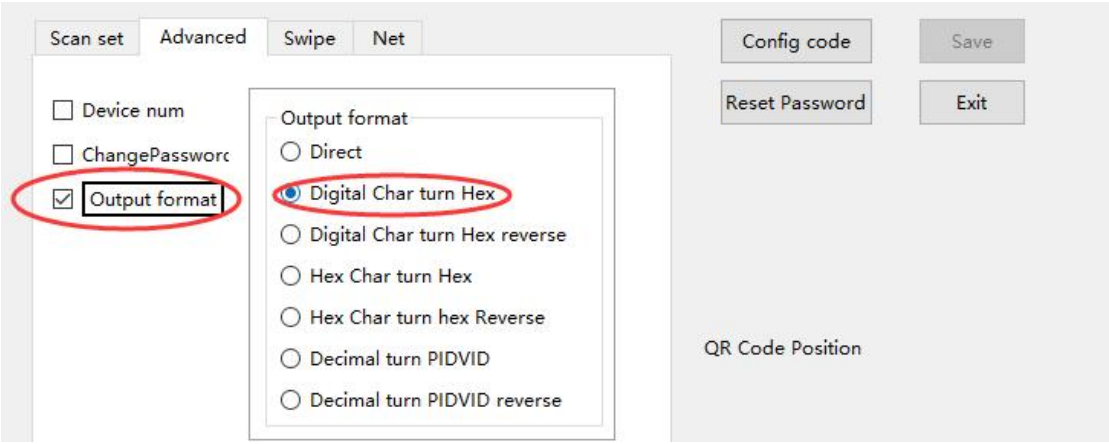
7. Real-time monitoring of access control

Click **Operation** -> **Real-Time Monitoring**
Swipe card or read bar code to control the switch

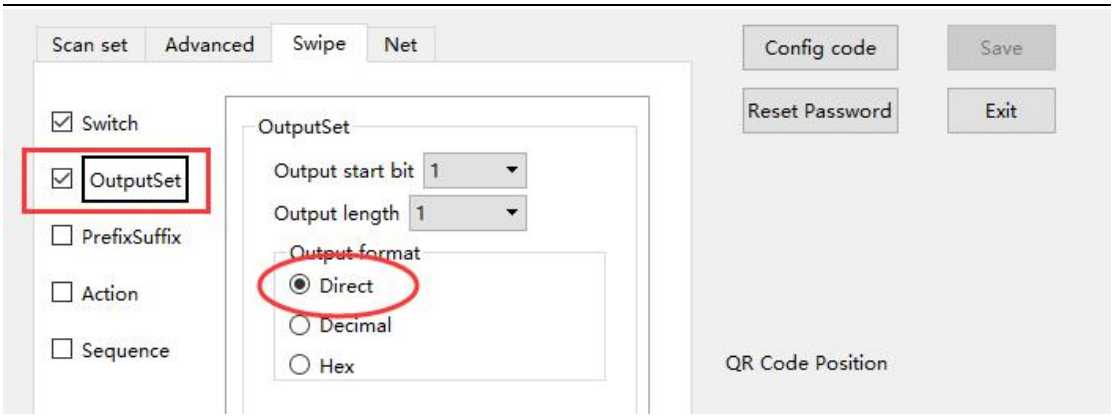


8. Attention!

When the reader is configured as Wiegand interface, the output format of the scan code needs to be set to **Digital Char turn Hex**



NFC swipe output format is set to **Direct**



IV. Explanation of the Output Format

Main interface -> Advanced -> Output format:

Ex: read the barcode: **12345678**

1. Direct
   Output the scanned original data.
   The output is: 38 37 36 35 34 33 32 31

2. Digital Char turn Hex
   Convert string to Integer

   "12345678" is converted to 12345678（HEX 00 BC 61 4E）

3. Digital Char turn Hex reverse
   Convert string to int, and then int high low

   "12345678" is converted to 1315027968（HEX 4E 61 BC 00）

   "12345678" is converted to 5136828（HEX 4E 61 BC）

4. Hex Char turn Hex
   Convert Hex string to Hex
   "12345678" is converted to 2018915346 (HEX 78 56 34 12)

5. Hex Char turn Hex Reverse
   Convert Hex string to Hex
   "12345678" is converted to 305419896 (HEX 12 34 56 78)

6. Decimal turn PIDVID format output
7. Decimal turn PIDVID format output reverse

V. Wiegand output format comparison

		Wigan 26		
Card Type	Card No.	Direct	Convert to decimal output	Convert to Hex output
NTAG213	046D61EAD45B81	13917057(D45B81)	“13917057” (3133393137303537)	“D45B81” (44 34 35 42 38 31)
MF1S50	A2DABD8D	14335373(DABD8D)	"14335373"	"DABD8D"
FM11RF08	BD7B88E3	8095971(7B88E3)	"8095971"	“7B88E3"
		Wigan 34		
Card Type	Card No.	Direct	Convert to decimal output	Convert to Hex output
NTAG213	046D61EAD45B81	3937785601(EAD45B81)	“3937785601” (33393337373835363031)	“EAD45B81” (4541443435423831)
MF1S50	A2DABD8D	2732244365(A2DABD8D)	"2732244365"	"A2DABD8D"
FM11RF08	BD7B88E3	3178989795(BD7B88E3)	”3178989795“	”BD7B88E3“
Remark:				
Direct: output the original data directly. For example, if the Card No. is 01 02 03, directly output three bytes of data and display the Card No. as 66051				
Convert to decimal output: convert Hex data to decimal and then to decimal string. For example, if you want to convert the 0x81 at the end of the Card No. to "129", it will actually be displayed as 0x393231, and then converted to a decimal number 3748401				

Convert to Hex output: convert Hex data to Hex string. For example, if you want to convert the card number 0x046D to "046D", the actual display is 0x64363430 and then converted to decimal number 1681273904
Once set to decimal or Hex output, the outputted Card No. is the ASCII value of the converted string