User Manual

QR50

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Doc Version: 1.0

English

Thank you for choosing our product. Please read the instructions carefully before operation. Follow these instructions to ensure that the product is functioning properly. The images shown in this manual are for illustrative purposes only.

For further details, please visit our Company's website www.zkteco.com.

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It is an essential pre-requisite for the satisfactory operation and maintenance that the operating and maintenance personnel are fully familiar with the design and that the said personnel have received thorough training in operating and maintaining the machine/unit/equipment. It is further essential for the safe operation of the machine/unit/equipment that personnel has read, understood and followed the safety instructions contained in the manual.

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The product will be updated from time to time without prior notice. The latest operation procedures and relevant documents are available on http://www.zkteco.com

If there is any issue related to the product, please contact us.

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To know more about our global branches, visit www.zkteco.com.

About the Company

ZKTeco is one of the world's largest manufacturer of RFID and Biometric (Fingerprint, Facial, Finger-vein) readers. Product offerings include Access Control readers and panels, Near & Far-range Facial Recognition Cameras, Elevator/floor access controllers, Turnstiles, License Plate Recognition (LPR) gate controllers and Consumer products including battery-operated fingerprint and face-reader Door Locks. Our security solutions are multi-lingual and localized in over 18 different languages. At the ZKTeco state-of-the-art 700,000 square foot ISO9001-certified manufacturing facility, we control manufacturing, product design, component assembly, and logistics/shipping, all under one roof.

The founders of ZKTeco have been determined for independent research and development of biometric verification procedures and the productization of biometric verification SDK, which was initially widely applied in PC security and identity authentication fields. With the continuous enhancement of the development and plenty of market applications, the team has gradually constructed an identity authentication ecosystem and smart security ecosystem, which are based on biometric verification techniques. With years of experience in the industrialization of biometric verifications, ZKTeco was officially established in 2007 and now has been one of the globally leading enterprises in the biometric verification industry owning various patents and being selected as the National High-tech Enterprise for 6 consecutive years. Its products are protected by intellectual property rights.

About the Manual

This manual introduces the operations of QR50 Product.

All figures displayed are for illustration purposes only. Figures in this manual may not be exactly consistent with the actual products.

Document Conventions

Conventions used in this manual are listed below:

GUI Conventions

For Software	
Convention	**Description**
Bold font	Used to identify software interface names e.g. **OK**, **Confirm**, **Cancel**
>	Multi-level menus are separated by these brackets. For example, File > Create > Folder.
For Device	
Convention	**Description**
< >	Button or key names for devices. For example, press <OK>
[ ]	Window names, menu items, data table, and field names are inside square brackets. For example, pop up the [New User] window
/	Multi-level menus are separated by forwarding slashes. For example, [File/Create/Folder].

Symbols

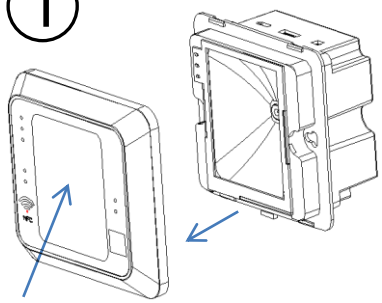
Convention	Description
	This implies about the notice or pays attention to, in the manual
	The general information which helps in performing the operations faster
	The information which is significant
	Care taken to avoid danger or mistakes
	The statement or event that warns of something or that serves as a cautionary example.

Table of Contents

1 Equipment Installation

Installation precautions: In order to ensure the normal use of the equipment, please strictly follow the installation instructions.

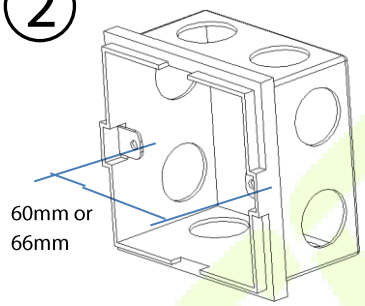
①



Faceplate (with panel)

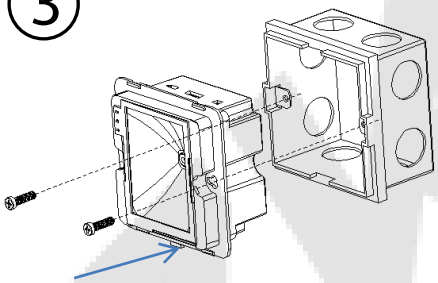
Remove the faceplate (with panel) from the device. You must gently remove the panel from the side of the USB socket to avoid any damage to the LED light.

②



Purchase a standard 86 mounting box with an installation distance of 60mm or 66mm. Place the mounting box on the wall, mark and drill on the wall according to the box's dimensions, then fix the box with cement-bonded sand.

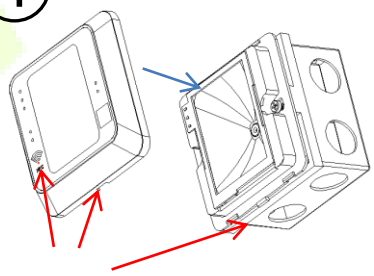
③



The protruded tiny area of the device pointed by the arrow as shown above should be facing the bottom.

Before installing the device, connect it to the cable and test it. Then, install the device into the 86 mounting box as shown in the figure, fix the device with two M4*15PB fasteners. Please note that the area as pointed in the figure above should be facing downwards.

④



Align the notch at the bottom of the faceplate with that of the mounting box.

Find and align the notch of the faceplate with the protruded area of the device. Push the faceplate (with panel) against the device. Pay attention to the assembly direction during installation and check whether the printing on the rear panel is upright.

2 Product Introduction

The QR50-QR code Reader is a new generation of intelligent access control card reader developed by our company. The product has a high-end appearance, high scanning speed, high recognition rate, strong compatibility, and can be connected to any access controller that supports Wiegand input. The reader adapts to various application scenarios and supports the identification of RFID radio frequency cards and QR codes, which can be applied in community management, visitor management, hotel management, unmanned supermarkets, and other fields.

The characteristics of the QR code reader are as follows:

- New QR code access control technology development.
- Comes with a card reader antenna and working frequency are 125KHz or 13.56MHz.
- Support ID Cards or IC Cards, which includes Ultralight, Mifare (S50/S70), CPU, NFC (analog Card), Desfire EV1, NTag, QR Code.
- Support Wiegand, RS485, USB(Upgrade Use).

3 Wiring Instructions

3.1 Wiring Definition

From left to right (based on the image above):

DC(+12V)	GND	485+	485-	WGO	WG1	NO	COM	NC	Config
Power	Ground	RS485 Interface		WG Interface		/	/	/	/

3.2 Instructions

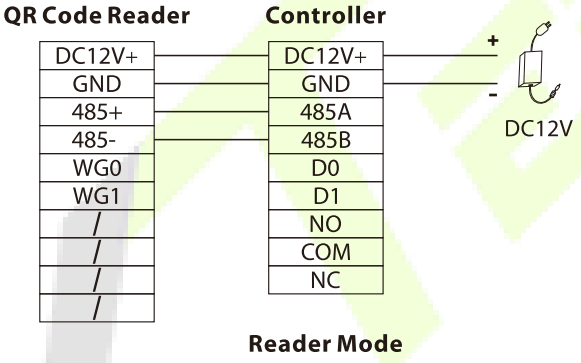
Please connect the device to other equipment according to the wiring definition of the QR code reader. In addition, the following only refers to the partial wiring of the QR code reader and the controller. It does not represent all wiring definitions of the controller. Please refer to the actual controller wiring definition.

3.2.1 Wiegand or RS485 Communication

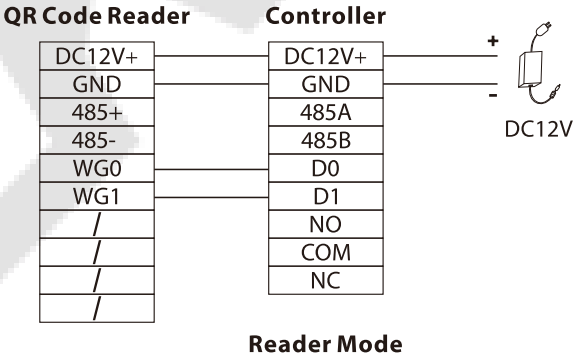
1. First, connect the QR code and card reader to the controller via Wiegand or RS485 and then connect it the +12V power supply.

   The QR code reader does not need to be connected to the lock body when it is used as a reader. The controller in the figure only lists some of the wirings, and there are many kinds of connections between the machines. Wiegand or RS485 common connection reference as shown below:

   RS485 Connection Mode



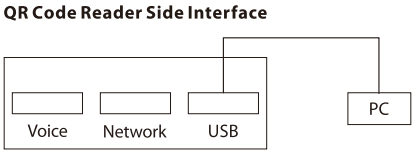
   Wiegand Connection Mode



2. Then, place a card or QR code (paper, electronic, mobile phone) within the reader's recognition range, the card reader will automatically obtain and transmit the information carried by the card or QR code to the controller.

3.2.2 USB Communication

1. First, connect the QR code and card reader to the PC terminal through the USB cable.



2. Then, enable "**HID Keyboard**" on the DEMO software setting interface, place a card or QR code (paper, electronic, mobile phone) within the reader's recognition range, the card reader will automatically obtain the information carried by the card or QR code and transmit it to the PC, which can be demonstrated by text.

Note: The USB port is for upgrade use only.

4 Set up the QR Code Reader with DEMO Software

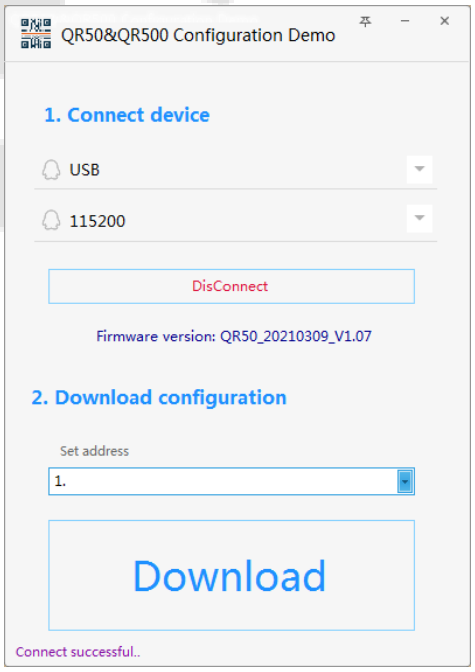
This section describes how to configure the QR code and card reader through the DEMO software.

4.1 Configuration

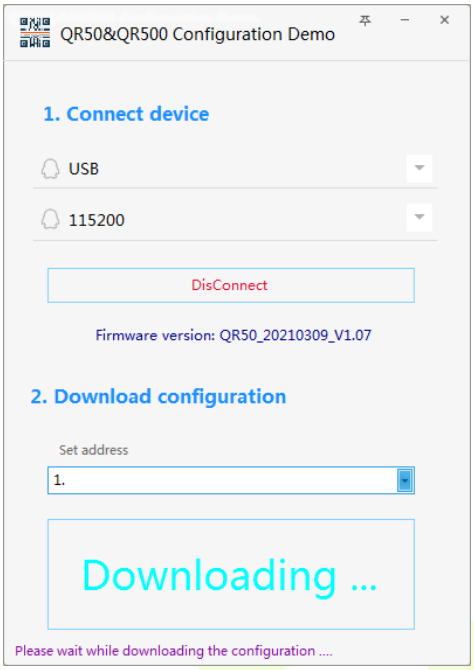
1. Connect the reader to the computer with a USB cable, open the Demo software, select the USB-HID port, and click OK. (Note: If a serial connection is selected, the baud rate is 115200 by default.)

Note: Support connecting configuration tools via USB and serial ports.

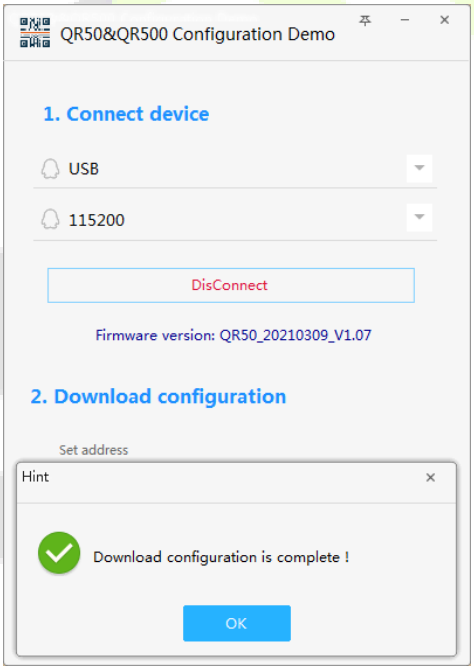
- USB: Connection to the configuration tool by means of USB communication.
- COM: Connection to the configuration tool by means of RS485 communication.



2. When the connection is successful, in the Download Configuration area below, click **"Download"**.



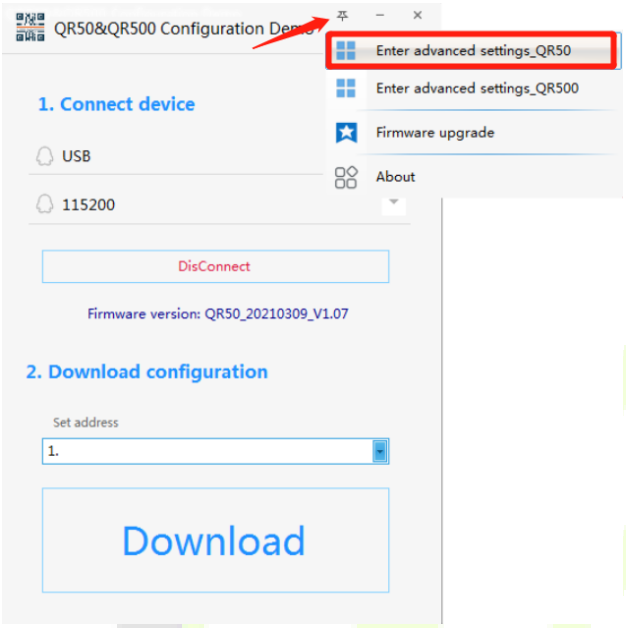
3. When it prompted "**Download configuration is complete!**", you can complete the QR code reader configuration in one click, easy to operate.



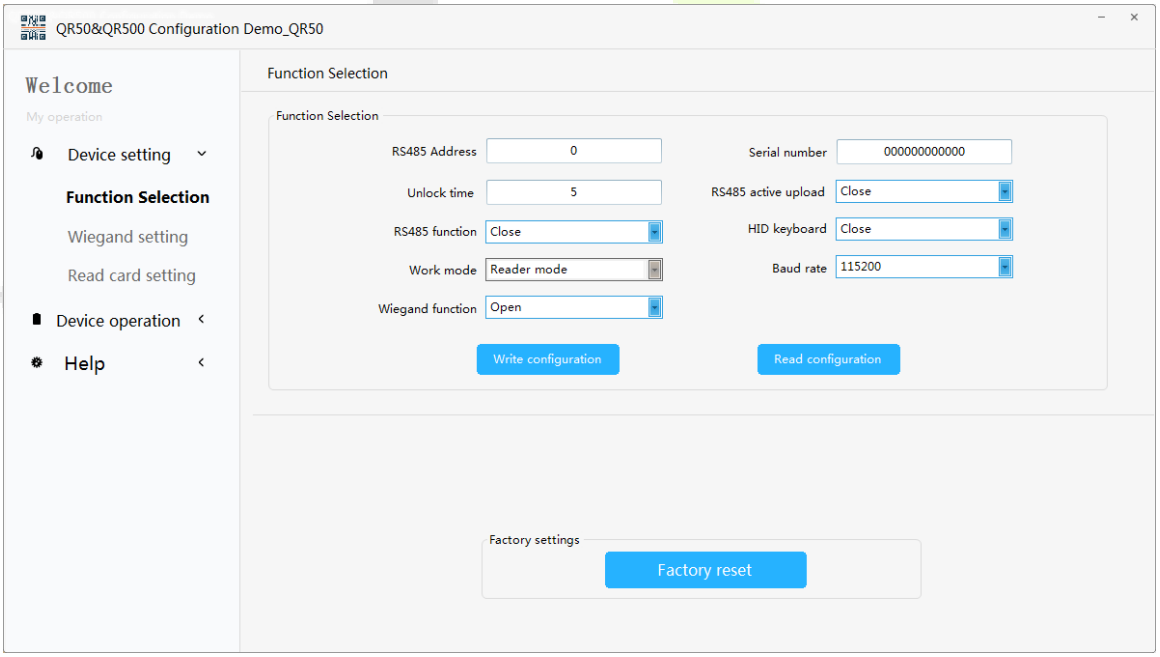
4.2 Device Operation

Operation Steps:

1. If the user needs to set the parameters of the QR code reader by themselves, open the Demo software, after successful connection, enter the advanced settings page in the top right corner of the page.

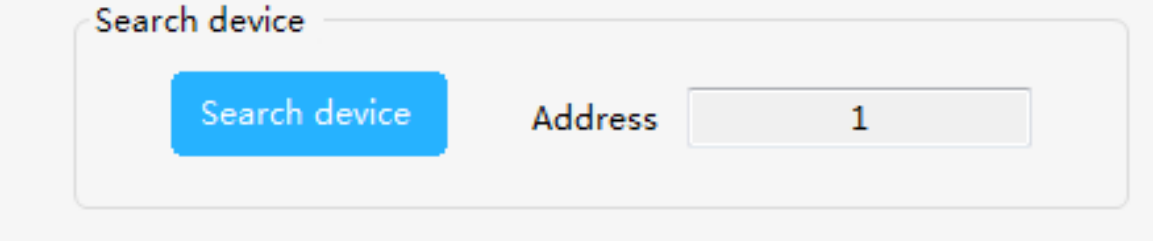


2. Enter advanced settings page.



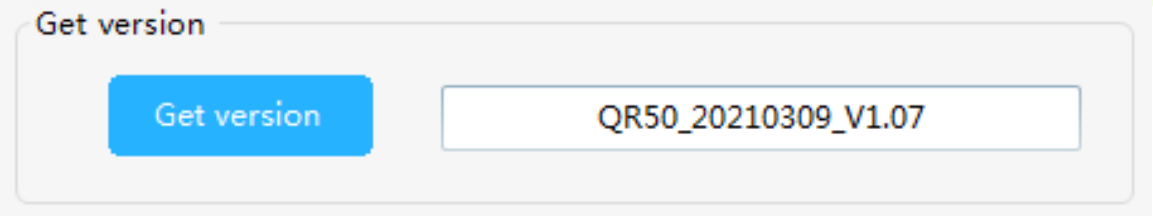
3. On the "**Reader operation**" page, set the configuration parameters for the card reader as required.

1) Click "**Search device**" to view the communication address of the card reader.

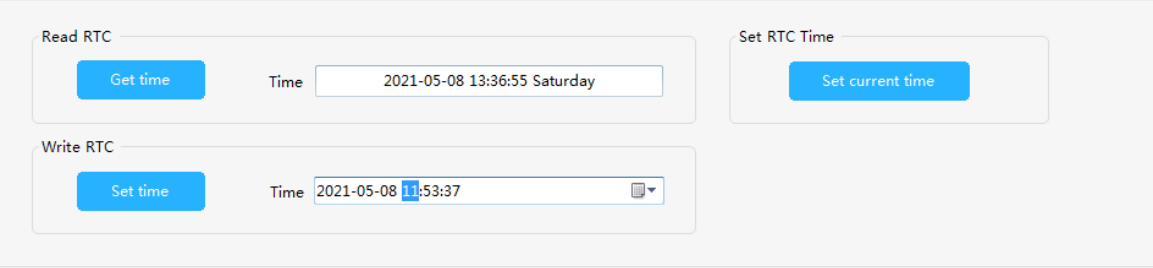


Note: If you select RS485 address, you can click "**Search device**" to get the correct device address before you can perform other operations.

2) Click "**Get version**" to view the version number information of the card reader.



3) Set the relevant parameters for the reader.

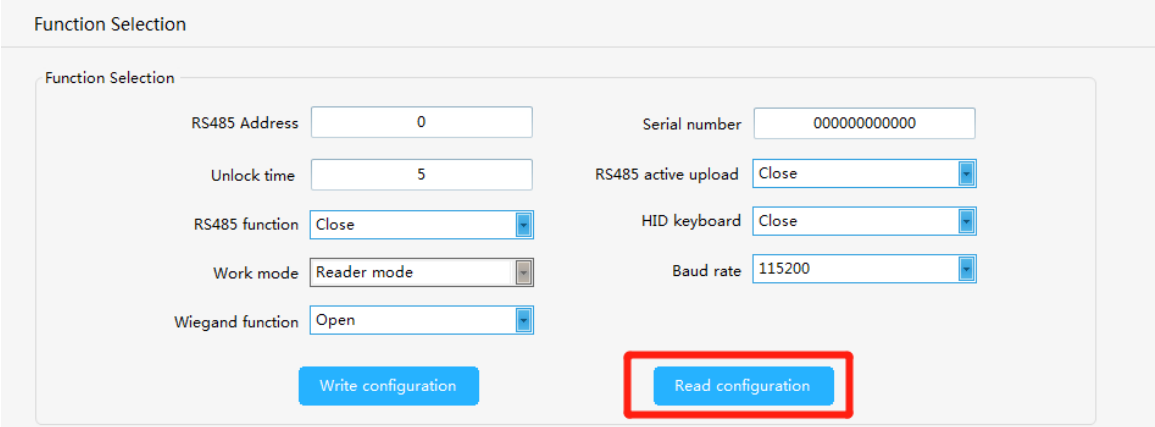


Parameter	Description
Read RTC	Get the time of the card reader.
Write RTC	Set the time of the card reader.
Set RTC Time	Set to the current time of the PC.

4.3 Function Selection

Operation Steps:

1. On the "**Function Selection**" page to view the current configuration information of the reader.

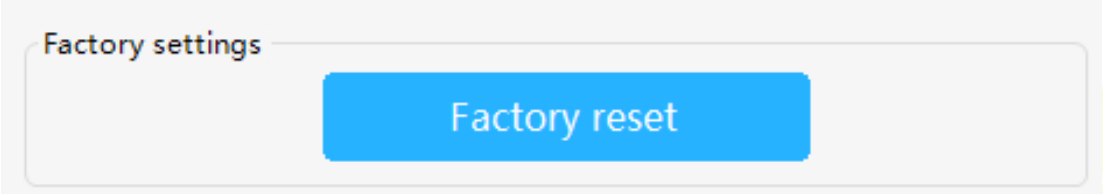


2. Users can set the parameter information of the reader by themselves, and then click "**Write configuration**" to configure the parameter information of the QR code reader.

Parameter	Description
RS485 Address	0: Broadcast address, that is, the communication connection can be made regardless of whether the machine 485 address is set to 0~255. If the machine 485 address is set to 1~255, fill in the corresponding, you can also communicate.
Unlock time	Set the time to unlock, valid values are 0~255.
RS485 function	Open or Close of the RS485 communication method of the card reader. The configuration tool can still be connected via 485 when it is closed.
Work mode	Reader mode: When the card reader is connected, the reader mode is selected, and the parameters of the reader are set by the DEMO software.
Wiegand function	In the DEMO, the Wiegand switch has no effect and the Wiegand output is also available with the Wiegand mode switched off.
Serial number	The serial number of the device of the reader.
RS485 active upload	When opened, the card reader data is automatically uploaded to the server under the 485 interface. When closed, the reader data will not be uploaded to the server.
HID keyboard	Upgrade mode only.

Baud rate	If a serial connection is selected, setting the baud rate is supported.
Write configuration	After modifying the above parameters, click "**Write configuration**", that is, the new configuration information is successfully written to the card reader.
Read configuration	Get the current configuration information of the reader and display it.

3. Support for restoring the card reader to its factory settings.



4.4 Wiegand Parameter Setting

Operation Steps:

On the "**Wiegand setting**" page, set the parameters for Wiegand.

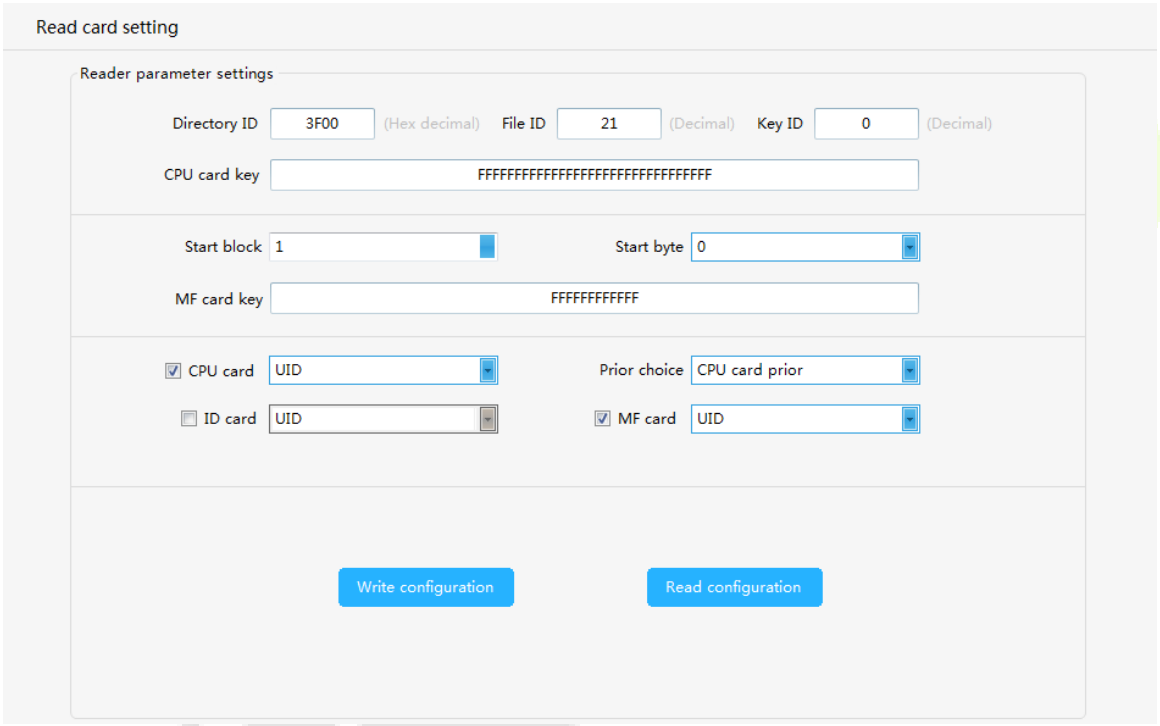
Parameter	Description
Wiegand mode	Wiegand 26, 34 and 66 are available.
Output format	When Wiegand outputs the card number/message, the card number can be optionally output in the forward/reverse direction.
Parity check	Parity check is a method of verifying the correctness of a code transmission. Parity check is performed according to whether the number of "1" in the number of bits of the transmitted binary code is odd or even.
Pulse Width	Wiegand pulse width, selectable (1~99)*10ms.
Pulse interval	Wiegand pulse gap, optional (0~89)*100+1000ms.
Write configuration	After modifying the above parameters, click "**Write configuration**", that is, the

	new configuration information is successfully written to the card reader.
Read configuration	Get the current configuration information of the reader and display it.

4.5 Reader Parameter Setting

Operation Steps:

1. On the "**Read card setting**" page, set the card reading parameters for the card reader.



Parameter	Description
Directory ID	The directory file number of the user card content to be read.
File ID	The file number of the user card content to be read.
Key ID	The key identifier for external authentication of the CPU card.
CPU card key	The key to the CPU user card content to be read. Note: The authentication key of the user card must be the same as the user card key set on the configuration card.
Start block	The content of the user card to be read starts from the first block.
Start byte	The content of the user card to be read starts from the first few bytes.

MF card key	The sector key of the MF user card content to be read.
Prior choice	Select the CPU priority or MF card priority when setting the card reader composite card.
Reading Card mode	Custom settings read the physical card number or content of the CPU card, MF card UID or content.
Write configuration	After modifying the above parameters, click Write Configuration, that is, the new configuration information is successfully written to the card reader.
Read configuration	Customised settings to read CPU card physical card number or content, MF physical card number or content, ID card physical card number or content, ISO15693 physical card number or content.

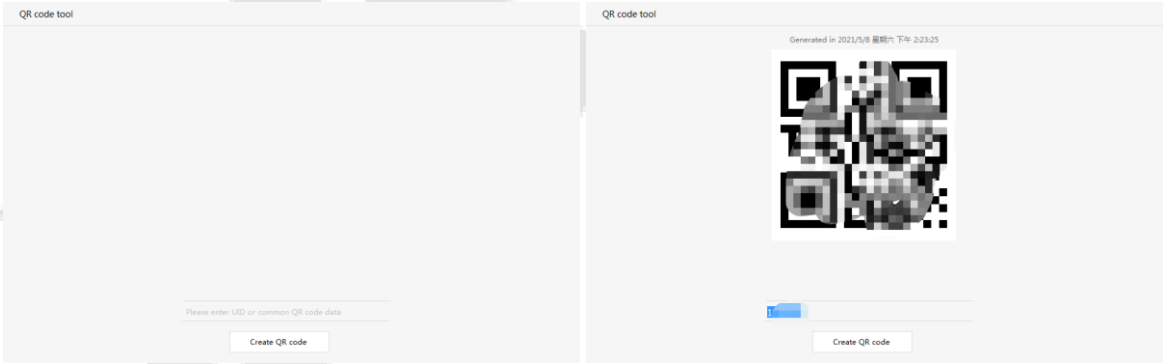
2. Once you have set the parameters, click "**Write configuration**" to write the information to the card reader.

3. Click "**Read configuration**" to display the configuration information of the card reader.

4.6 QR Code Tool

Operation Steps:

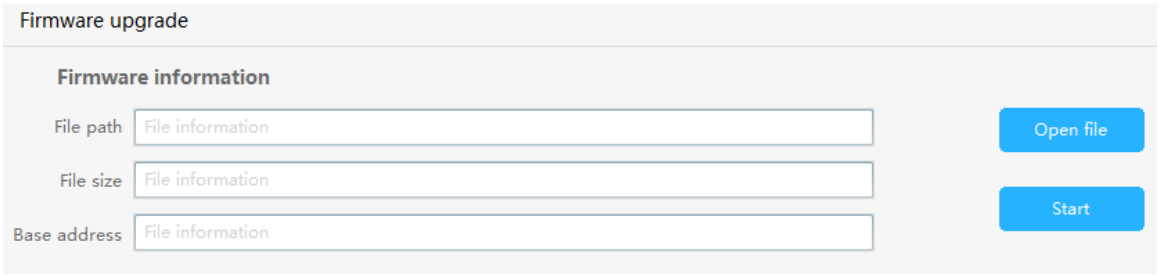
On the "**QR code tool**" page, enter UID or common QR code data, and click" **Create QR code**".

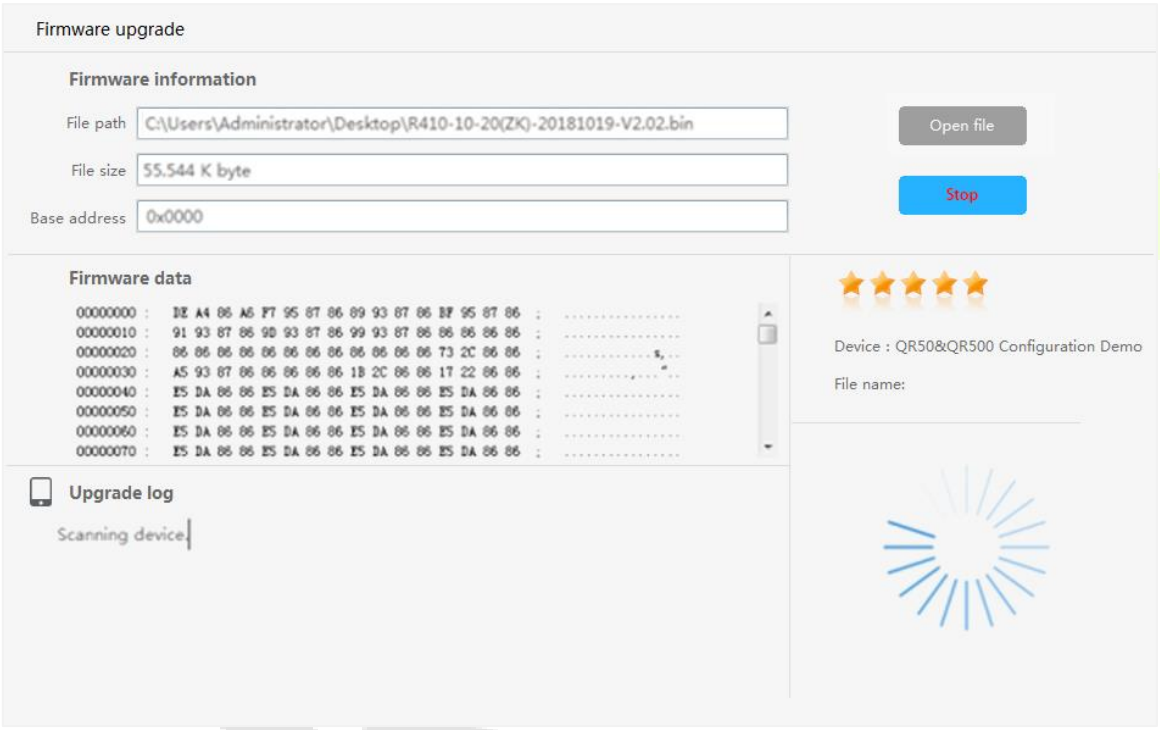


4.7 Firmware Upgrade

Operation Steps:

On the "**Firmware Upgrade**" page, click "**Open file**", select the upgrade program, click the "**Start**" button, plug in the USB and reconnect the computer to the computer to view the prompt message, indicating that the upgrade is successful.





4.8 Page Configuration

Operation Steps:

On the "**Page configuration**" page, click "**Export configuration**" to exporting the page configuration information of the current device, click the "**Import configuration**" to importing configuration information.

4.9 About Software

Displays the name, version number and copyright notice of the current software.

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