

SA series
Ultra high frequency
integrated machine

User Manual

1.Product Introduction

1.1.Parameters

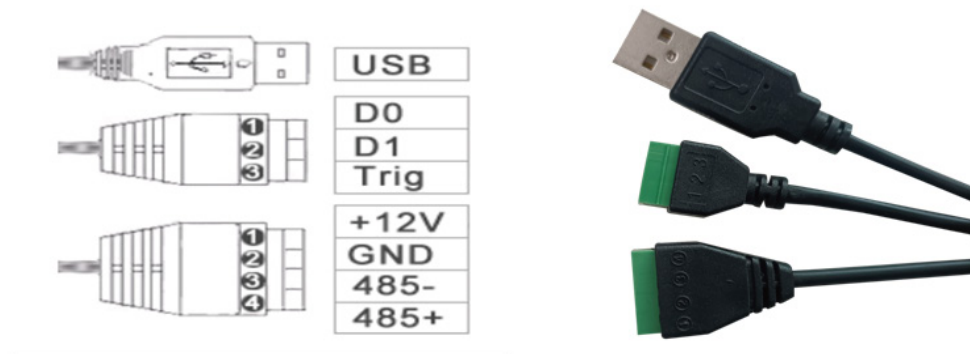
- ISO18000-6C(EPC C1G2) protocol;
- 860~960MHz frequency band;
- USB HID drive free;
- Support virtual disk and serial port;
- Working voltage :USB interface 5V or (9-12) V power supply;
- Current of operation: < 400mA
- Reading range: depending on the model
- Interface support:
Basic version : RS485、WG、USB、BLE
Network version : RS485、WG、USB、BLE、RELAY、RJ45

1.2.Applications

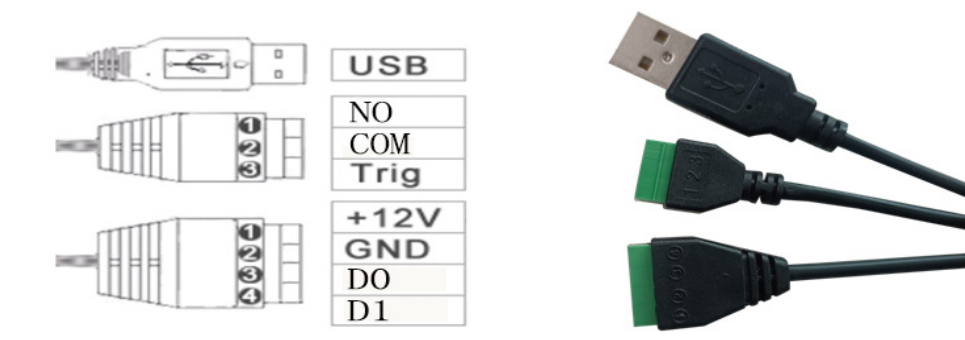
- Logistics and warehouse management: logistics, warehouse management, and flow management of mail, packages, and baggage.
- Intelligent Parking management: parking management and automatic charging.
- Production line management: fixed identification of production process.
- Product anti-counterfeit detection: identify the authenticity of the product by using the write protection function of the memory in the label.
- Other fields: widely used in club management, libraries, student schools, consumption management, time management, dinner management.

2.Wiring definition

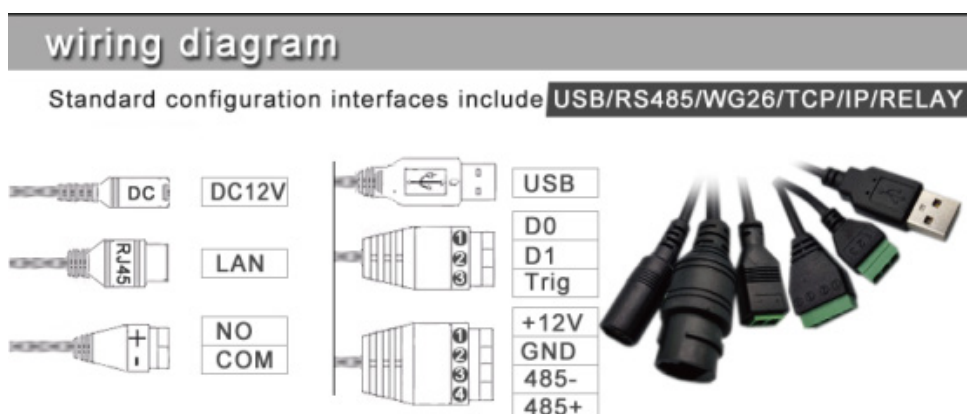
2.1 Basic version(1): RS485+WG+USB



2.2 Basic version(2): RELAY+WG+USB



2.3 Web version (full function): RS485、WG、USB、BLE、RELAY、RJ45



3.Schematic diagram of the reader connected to the controller:

TCP/IP Network Access Control B Series

Access Control System Provider

TCP/IP turnstile access controller wiring diagram explanation

Wire from card reader to access controller: suggest using 8 core multi-strand twisted-pair shielded cable. 2 cables to be connected to 12V+, 2 cables to be connected to GND, GREEN line for D0, White line for D1, Blue line for LED/BUZZER line. Line diameter should be > 0.5mm, and the distance between reader and controller should be less than 60meters, shield line for access control's GND.

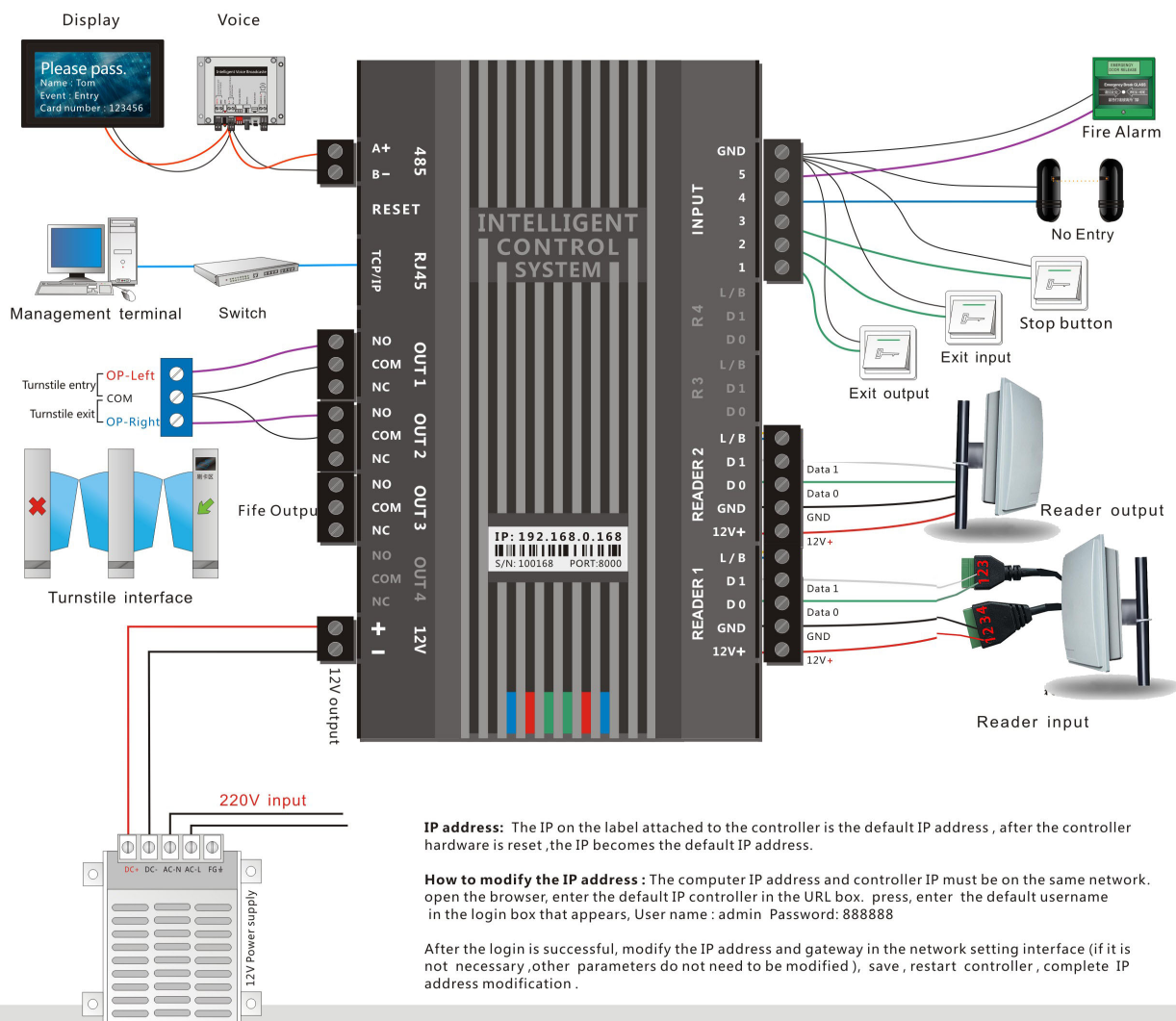
Wire from release button to access controller: Suggest 2 core line, line diameter should be >0.3mm.We can use 2 lines of 8 core network line.

Wire from turnstile to controller: suggest using 2 core power supply line. Line diameter should be >1mm. If distance between lock and controller is >50 meters, we should use thicker line, or use more lines for example 2 lines or more for lock's 12V line, and 2 lines or more for lock's GND.

Wire from door sensor to access controller: suggest using 2 core line. Line diameter should be >0.3mm.

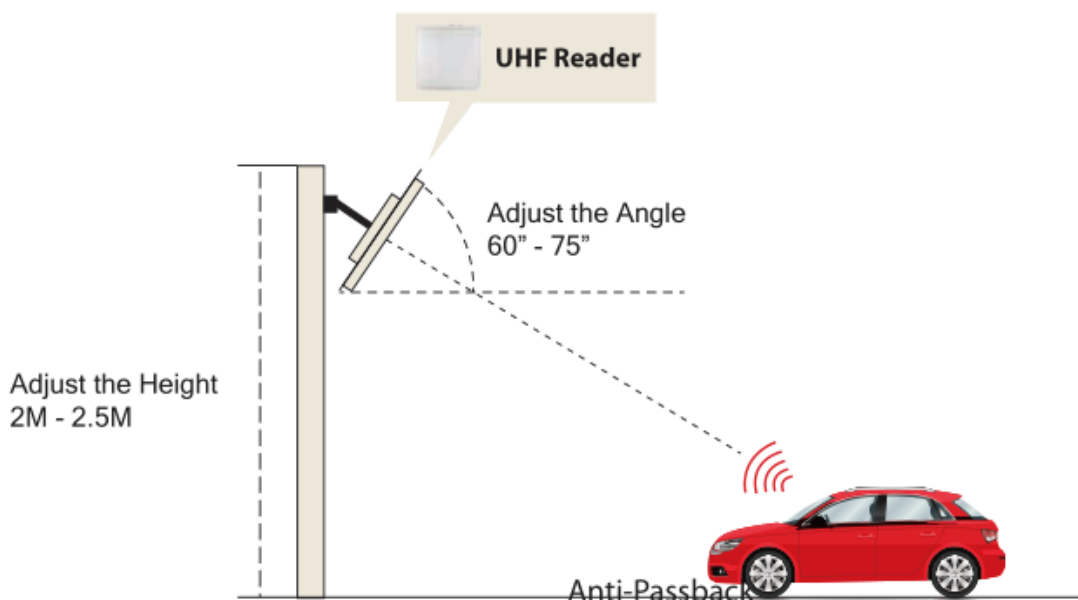
How to reset access controller: 1, Hardware reset operation: use sharp things like clip/refill/screw/tooth pick/iron wire to plug into reset pole, and press down the reset key reset key for 4 sec. After hearing beep,beep,release reset key,and repower controller. TCP controller will automatically restart.

2, Open software, right click on controller icon to be initialized---device---reset access controller.



4. Installation instructions

The reading head is installed on the rod or column and other objects through the fixed bracket. According to the specific use scene, the height and Angle of the installation are adjusted to achieve the best recognition effect. (Car management) The recommended installation height is between 2 and 2.5 meters, and the Angle is between 60 and 75 degrees, as shown below:



5. Operating instructions

5.1 Card reader test

First, the machine is connected to a +12V power supply and waits to start. When the machine starts, the red light is on, and the buzzer rings twice, indicating that the machine starts successfully.

Card test:

Put the user card into the machine card area, the machine buzzer rings 1 sound, the machine through Wiegand, RS485 or network data line, the card data out.

If you need to modify the working mode of the read head, RF power, read card interval, etc., you can connect the computer Demo through USB to customize the Settings.

5.2 Software operation

5.2.1 Download address



www.yanzeo.com

Note:

At present, the software only supports WINDOWS and Android systems.

② When setting software parameters, do not place RFID tags within the identification range of the device, or it will lead to setting failure.

③ Use the disk to output the RFID tag number type reference: for example, the same number of different forms:

Decimal (Dec) = 123456 Hexadecimal (Hex) = 1E240

Wiegand value = 001,57920 (split hexadecimal 1 E240 to decimal number 001,57920) If the output is not long enough, you can set the processing by adding a 0 before the output.

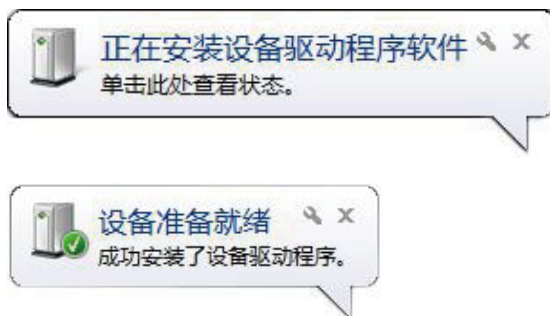
5.3 Operating instructions

5.3.1 Connecting devices

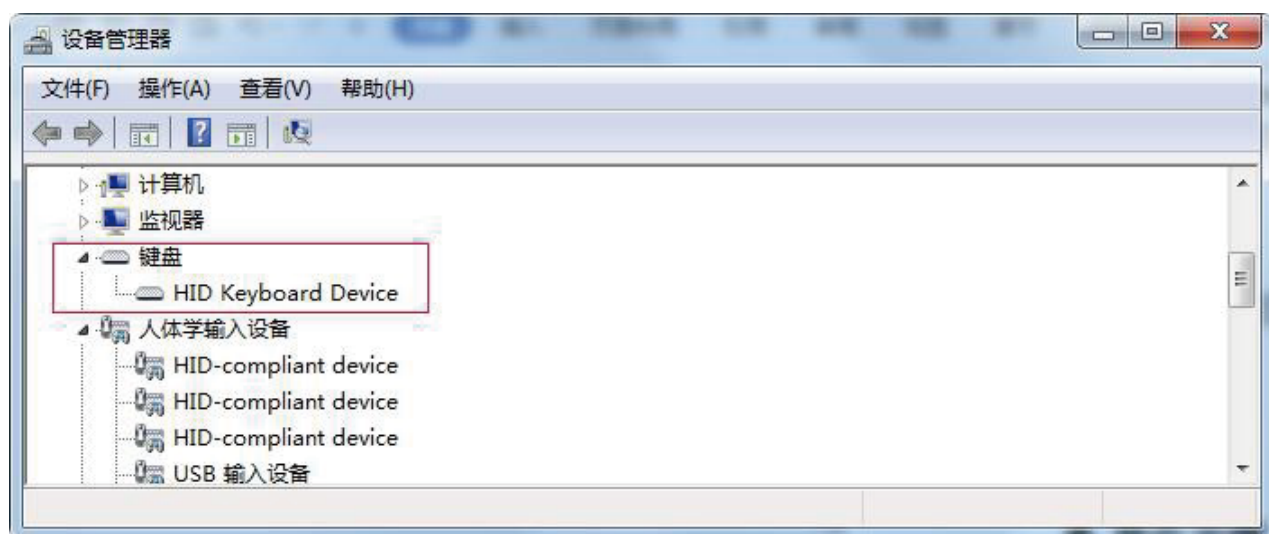
There are three ways to connect the device, which are: USB connection, serial port connection, and network port connection.

①USB interface connection

Plug the device into the USB port of your computer and the following message will pop up:



Then open the Device Manager on your computer, and an additional device will appear under the Keyboard option. As follows:



This indicates that the computer is connected successfully. Now let's go online.

②Serial port interface connection

SA series has RS485 port. If the computer has RS485 port, it can be directly connected to this device. If not, it is necessary to convert RS485 port into or USB port, as shown in the figure:



When the converter is connected and plugged into the computer, the computer will remind you to install the driver, install the driver according to the instructions, and then the computer will have a serial port interface, as shown in the figure:



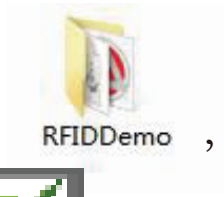
When you unplug the converter, the serial port will disappear.

If the computer itself comes with a serial port, it does not need to install the driver, you can directly use.

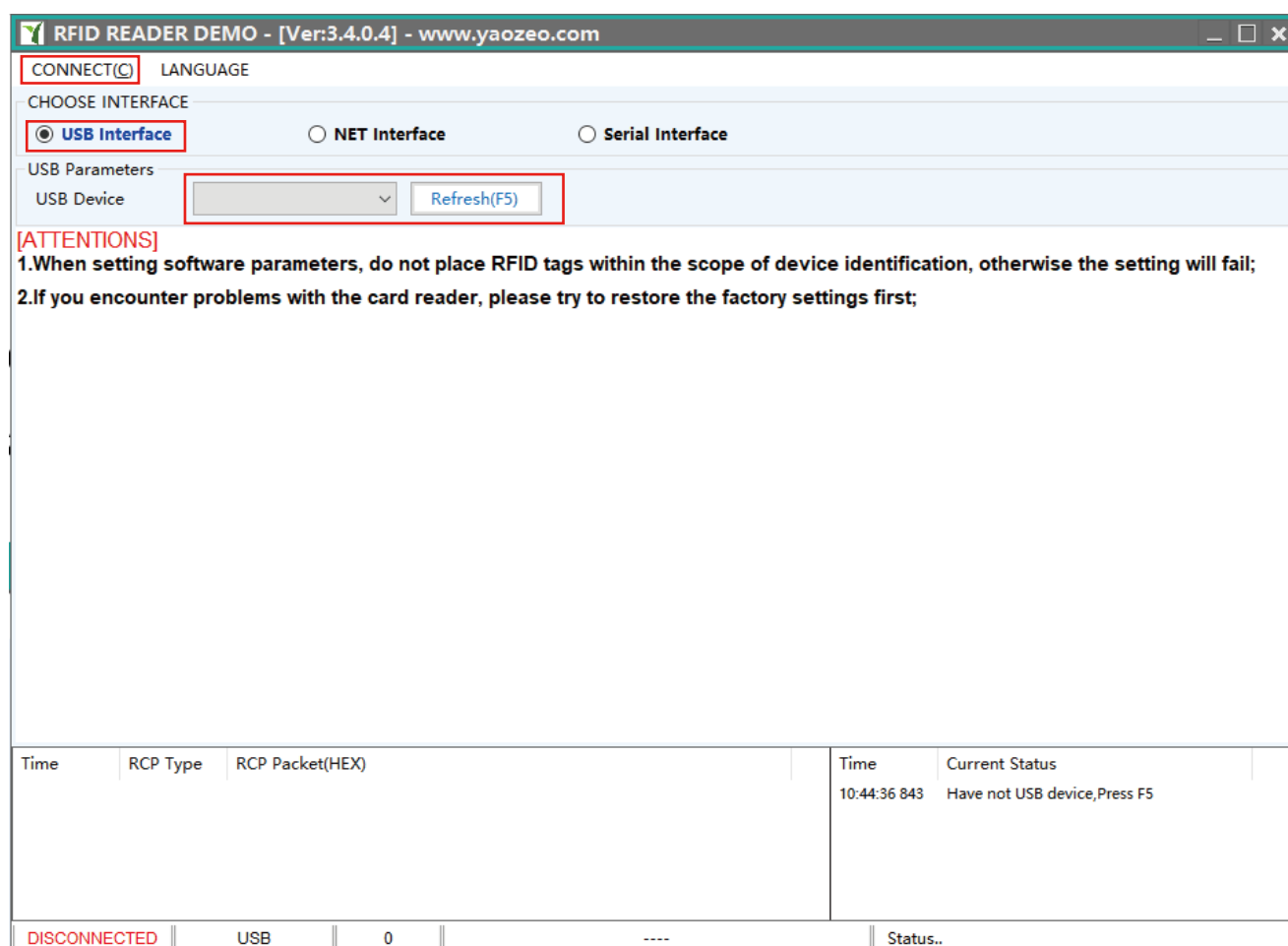
③Network port interface connection

The network port connection can be directly connected to the computer with the network cable, and the network cable can also be indirectly connected to the computer through the router

5.3.2 Connection

Download the software and unzip it,  , Open the file by

double-clicking the software icon  , The following main screen appears:

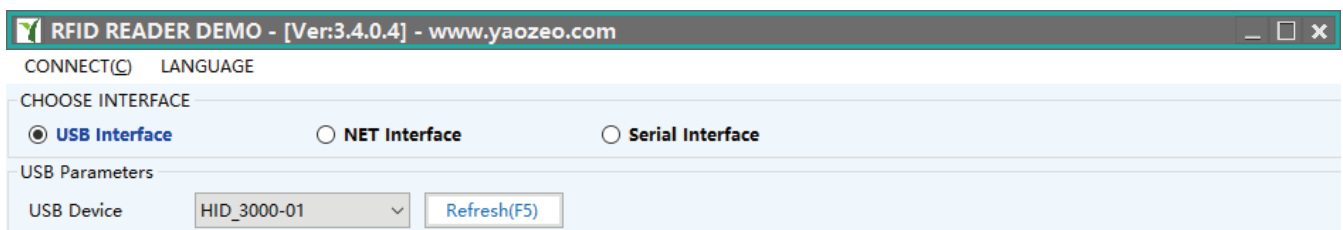


There are three kinds of communication parameter configuration :USB communication -- serial communication -- network port communication.

Each communication parameter configuration is not the same, choose the correct configuration to connect to the computer.

①USB Communication :

After confirming that the USB device is plugged in, select USB communication. As shown :



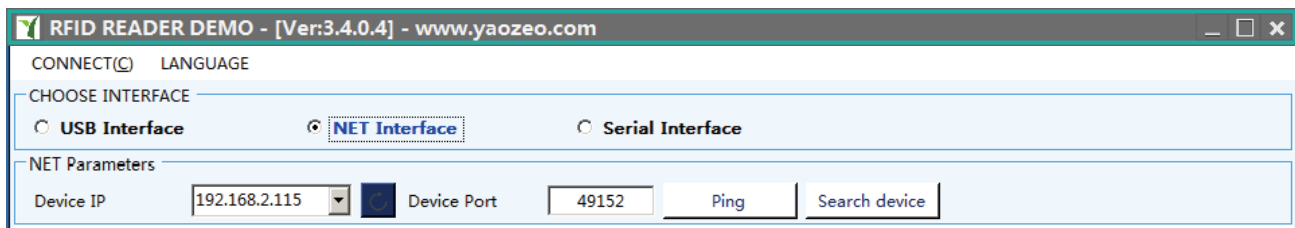
If the USB device is empty, double-check that the USB cable is plugged in, and then press the key  or F5. Select the USB device and click the "CONNECT" button.

③Network port communication :

After confirming that the network connection is good (including wired network and wireless network), select the network port communication.

☒ **NET Interface**

As shown:



Here, you need to select the correct remote IP address and remote IP port of the device (by default, the computer is a client, the device is a server, and the TCPIP protocol), and click the "Ping" button. If the connection is correct, a success flag will be displayed in the status bar, as shown in the figure:

时间	当前状态
14:11:15 148	PING:192.168.2.115 Success

This indicates that the connection has been successful.

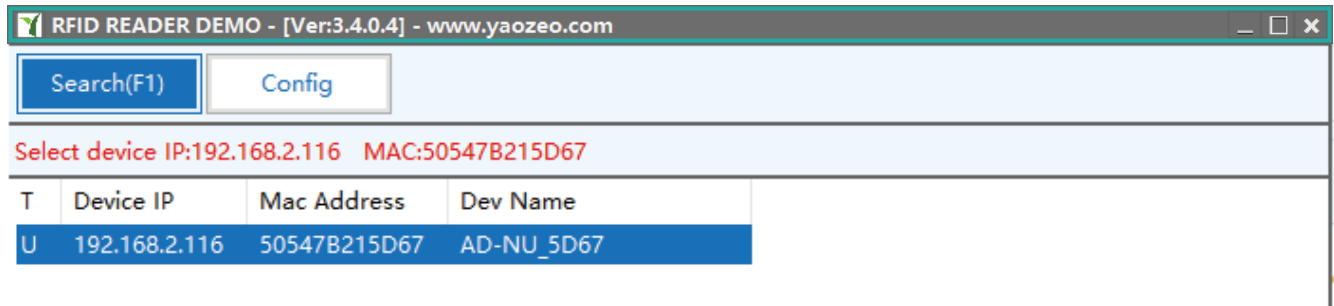
Time	Current Status
10:01:13 914	PING:192.168.2.115 TimedOut

This indicates a connection failure

Causes of connection failure:

1. The network is not connected correctly, so the network is not usable.
2. If the IP address or port of the device is wrong, click the "Search device" button to find the IP address and port of the device that has been connected, and reconfigure the network parameters of the device, such as IP address, TCPIP, UDPIP, gateway and so on. Note: When setting the IP address, make sure that it is in the same gateway, and cannot have the same IP address.

Figure:



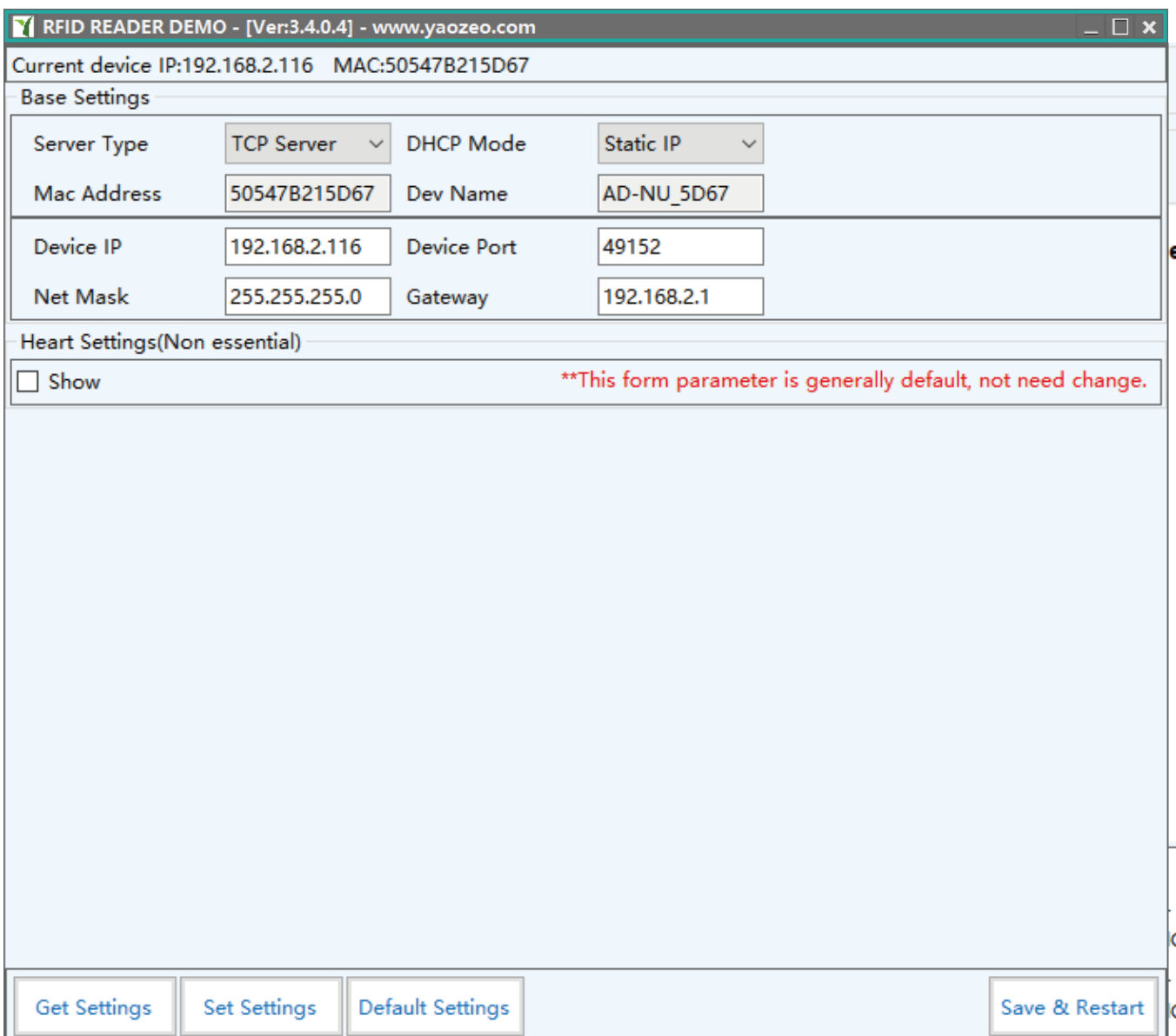
RFID READER DEMO - [Ver:3.4.0.4] - www.yaozeo.com

Search(F1) Config

Select device IP:192.168.2.116 MAC:50547B215D67

T	Device IP	Mac Address	Dev Name
U	192.168.2.116	50547B215D67	AD-NU_5D67

Click the "Search" button to search for all devices online. You can choose the device you want to set up.



RFID READER DEMO - [Ver:3.4.0.4] - www.yaozeo.com

Current device IP:192.168.2.116 MAC:50547B215D67

Base Settings

Server Type	TCP Server	DHCP Mode	Static IP
Mac Address	50547B215D67	Dev Name	AD-NU_5D67
Device IP	192.168.2.116	Device Port	49152
Net Mask	255.255.255.0	Gateway	192.168.2.1

Heart Settings(Non essential)

☐ Show **This form parameter is generally default, not need change.

Get Settings Set Settings Default Settings Save & Restart

④CONNECT:

After configuring the communication method, click the "CONNECT" button in the upper left corner.

After online, there are several operable sub-function buttons on the upper side:

The order is READ DEMO - BASE SETTINGS - SENIOR SETTINGS - CUSTOM SETTINGS - EPC(GEN2) READ&WRITE - ELSE SETTINGS

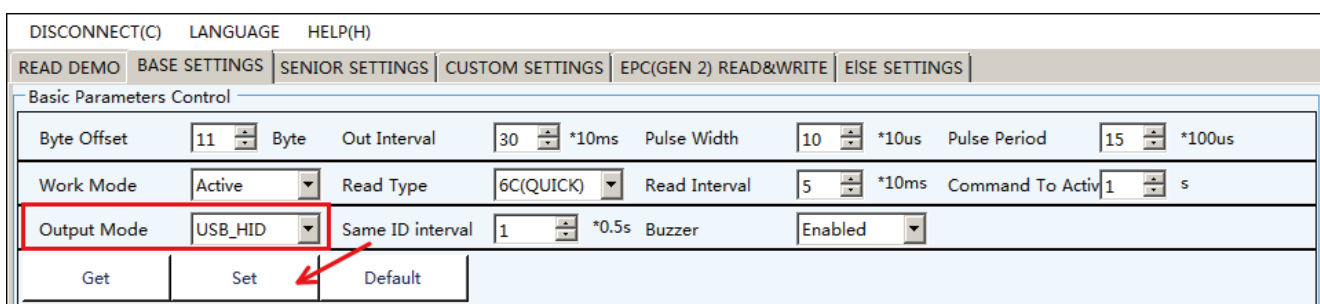
Figure:

DISCONNECT(C) LANGUAGE HELP(H)																																											
READ DEMO		BASE SETTINGS		SENIOR SETTINGS		CUSTOM SETTINGS		EPC(GEN 2) READ&WRITE		ELSE SETTINGS																																	
Inventory Tags: 		Current Ant:		Choose Ant:		button1		4																																			
		Inventory Times(s):		Stop for Tags(tags): 200		button2																																					
		All Tags(tags):		Stop for Run Times(sec): 0				Inventory Interval(ms): 50																																			
		Run Times(s):		Stop for Inventory(num): 0				☐ Johar Tag																																			
<table border="1"><thead><tr><th>PC</th><th>EPC</th><th>Count</th><th>Ant</th><th>RSSI</th></tr></thead><tbody></tbody></table>										PC	EPC	Count	Ant	RSSI																													
PC	EPC	Count	Ant	RSSI																																							
<table border="1"><tr><td>Start Reading Tags</td><td>Clear</td><td>Save</td><td>Single Read</td></tr></table>										Start Reading Tags	Clear	Save	Single Read																														
Start Reading Tags	Clear	Save	Single Read																																								
<table border="1"><thead><tr><th>Time</th><th>RCP Type</th><th>RCP Packet(HEX)</th><th>Time</th><th>Current Status</th></tr></thead><tbody><tr><td>15:54:55 463</td><td>设备回复</td><td>CC FF FF 88 00 00 AE</td><td>15:54:47 343</td><td>发现USB设备!</td></tr><tr><td>15:55:41 076</td><td>下发命令</td><td>7C FF FF 81 32 00 D3</td><td>15:54:49 489</td><td>发现USB设备!</td></tr><tr><td>15:55:41 085</td><td>设备回复</td><td>CC FF FF 81 00 1B 02 01 04 05 01 0B 1E 0A 0F 00 01 01 00 00 00 02 00 06 00 ...</td><td>15:54:51 832</td><td>联机: 未连接读卡器,正在连接...</td></tr><tr><td>15:55:58 831</td><td>下发命令</td><td>7C FF FF 81 32 00 D3</td><td>15:54:52 105</td><td>联机: 已经连接读卡器.</td></tr><tr><td>15:55:58 840</td><td>设备回复</td><td>CC FF FF 81 00 1B 02 01 04 05 01 0B 1E 0A 0F 00 01 01 00 00 00 02 00 06 00 ...</td><td></td><td></td></tr></tbody></table>										Time	RCP Type	RCP Packet(HEX)	Time	Current Status	15:54:55 463	设备回复	CC FF FF 88 00 00 AE	15:54:47 343	发现USB设备!	15:55:41 076	下发命令	7C FF FF 81 32 00 D3	15:54:49 489	发现USB设备!	15:55:41 085	设备回复	CC FF FF 81 00 1B 02 01 04 05 01 0B 1E 0A 0F 00 01 01 00 00 00 02 00 06 00 ...	15:54:51 832	联机: 未连接读卡器,正在连接...	15:55:58 831	下发命令	7C FF FF 81 32 00 D3	15:54:52 105	联机: 已经连接读卡器.	15:55:58 840	设备回复	CC FF FF 81 00 1B 02 01 04 05 01 0B 1E 0A 0F 00 01 01 00 00 00 02 00 06 00 ...						
Time	RCP Type	RCP Packet(HEX)	Time	Current Status																																							
15:54:55 463	设备回复	CC FF FF 88 00 00 AE	15:54:47 343	发现USB设备!																																							
15:55:41 076	下发命令	7C FF FF 81 32 00 D3	15:54:49 489	发现USB设备!																																							
15:55:41 085	设备回复	CC FF FF 81 00 1B 02 01 04 05 01 0B 1E 0A 0F 00 01 01 00 00 00 02 00 06 00 ...	15:54:51 832	联机: 未连接读卡器,正在连接...																																							
15:55:58 831	下发命令	7C FF FF 81 32 00 D3	15:54:52 105	联机: 已经连接读卡器.																																							
15:55:58 840	设备回复	CC FF FF 81 00 1B 02 01 04 05 01 0B 1E 0A 0F 00 01 01 00 00 00 02 00 06 00 ...																																									
CONNECTED USB V2.00 Type:IW4A - Version:V1.30 - Address: 65535 3405 - 3404																																											

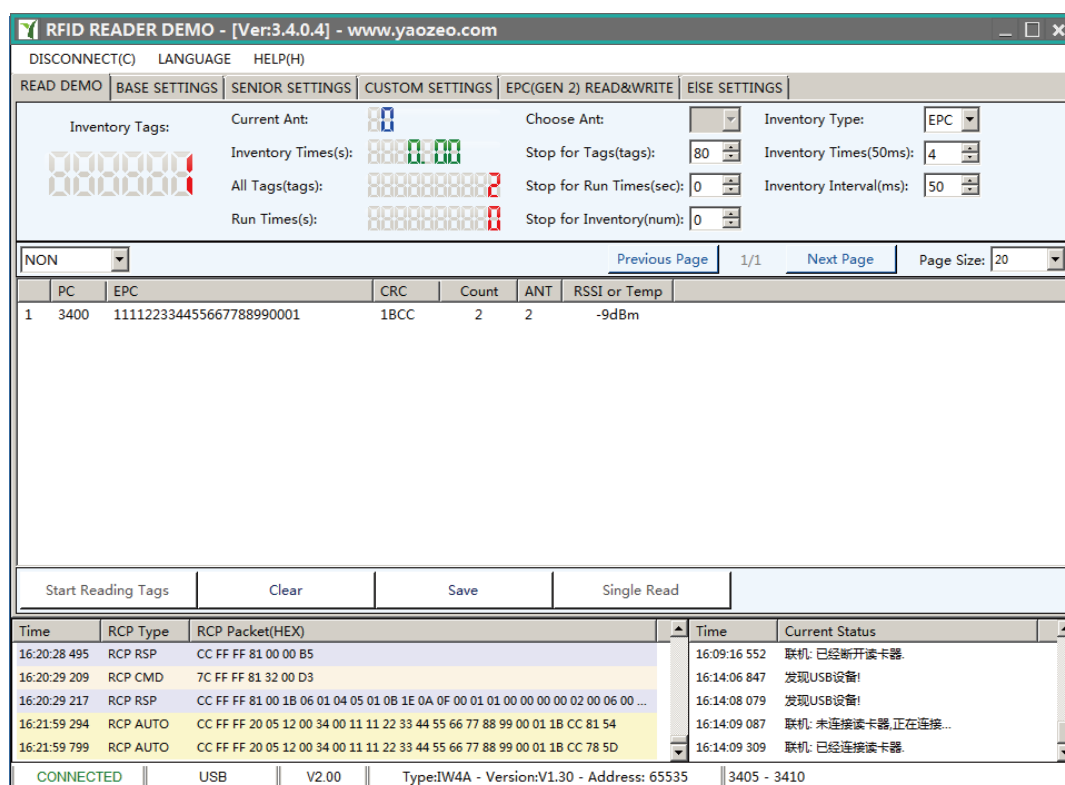
5.3.3 Card reading demonstration

①After reading the card online, the "Card Reading Demonstration" interface will appear directly, as shown in the figure above:

②If the connection is USB, change the communication mode to "USB_HID" in the basic parameters page, as shown below:

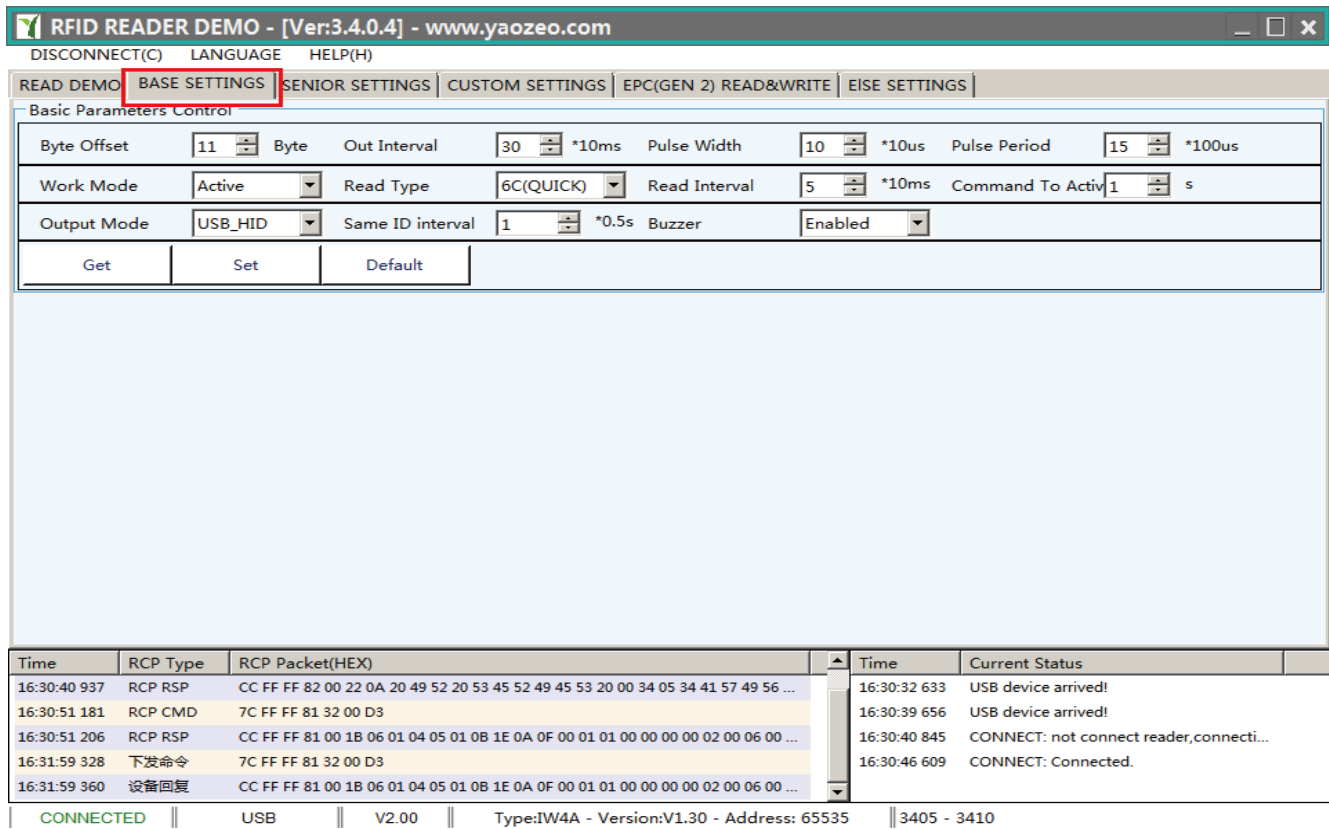


③The RFID tag is then placed within the range that the device can recognize. The tag information is about to be displayed in the text field. The following image:



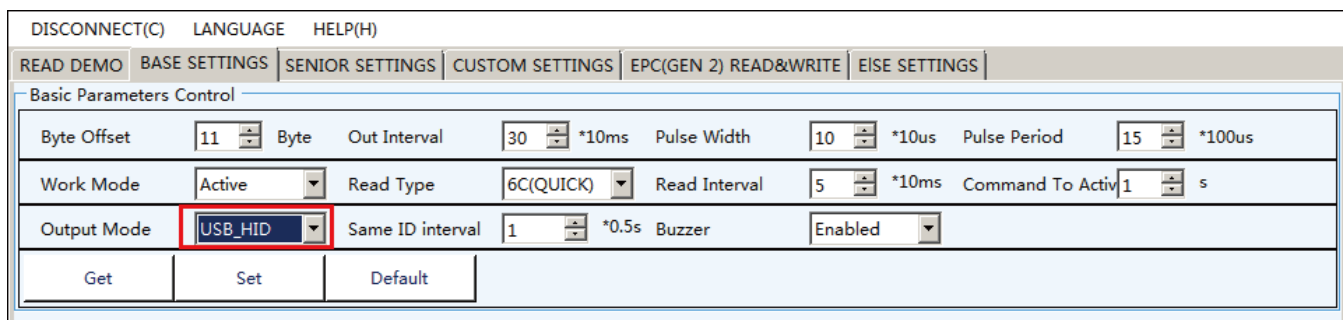
5.3.4 Basic parameter setting

Click the "BASE SETTINGS" button at the top left as follows:



Different communication modes correspond to different simple configurations.

① If the USB communication is set, as shown below:



5.3.4.1

Mode of communication: Select the mode of communication between the device and the external device.

Mode of work: There are three modes: response mode, active mode, and passive mode.

Reply mode (the device does not actively read the card, send commands to work,)

Active mode (the device actively reads the card, works when powered on, and sends data to the communication interface)

Passive mode (the device actively reads the card, works when powered on, does not send data to the communication interface, and needs to send commands to receive data)

Same ID output interval: the time interval between uploading data of the same tag.

Buzzer: can be turned on or off.

Automatic read type: The type of output tag data, which can be EPC number or TID number.

Automatic read interval: The interval between two reads of tag data.

Automatic read delay: the delay time after reading the tag data and sending it to the communication interface.

5.3.4.2 The reader WG26 communication sets the last 3 bytes of the read

1.The output mode is changed to WG26
(card reader SG218, SG220, MG04, MG08, etc.)

2.Byte offset is set to 11 byte

DISCONNECT(C) LANGUAGE HELP(H)		
READ DEMO BASE SETTINGS SENIOR SETTINGS CUSTOM SETTINGS EPC(GEN 2) READ&WRITE EISE SETTINGS		
Basic Parameters Control		
Byte Offset	11 Byte	Out Interval 30 *10ms Pulse Width 10 *10us Pulse Period 15 *100us
Work Mode	Active	Read Type 6C(QUICK) Read Interval 5 *10ms Command To Activ 1 s
Output Mode	WG26	Same ID interval 1 *0.5s Buzzer Enabled
Get	Set	Default

5.3.4.3 The reader WG26 communication is set to read the first 3 bytes

1.The output mode is changed to WG26
(card reader SG218, SG220, MG04, MG08, etc.)

2.Byte offset is set to 2 byte

DISCONNECT(C) LANGUAGE HELP(H)		
READ DEMO BASE SETTINGS SENIOR SETTINGS CUSTOM SETTINGS EPC(GEN 2) READ&WRITE EISE SETTINGS		
Basic Parameters Control		
Byte Offset	2 Byte	Out Interval 30 *10ms Pulse Width 10 *10us Pulse Period 15 *100us
Work Mode	Active	Read Type 6C(QUICK) Read Interval 5 *10ms Command To Activ 1 s
Output Mode	WG26	Same ID interval 1 *0.5s Buzzer Enabled
Get	Set	Default

5.3.4.4 The reader WG34 communication sets the last 4 bytes of reading

1.The output mode is changed to WG34
(card reader SG218, SG220, MG04, MG08, etc.)

2.Byte offset is set to 10 byte

DISCONNECT(C) LANGUAGE HELP(H)											
READ DEMO		BASE SETTINGS		SENIOR SETTINGS		CUSTOM SETTINGS		EPC(GEN 2) READ&WRITE		EISE SETTINGS	
Basic Parameters Control											
Byte Offset	10	Byte	Out Interval	30	*10ms	Pulse Width	10	*10us	Pulse Period	15	*100us
Work Mode	Active		Read Type	6C		Read Interval	20	*10ms	Command To Activ	1	s
Output Mode	WG34(no usi		Same ID interval	1	*0.5s	Buzzer	Enabled				
Get		Set		Default							

5.3.4.5 The reader WG34 communication is set to read the first 4 bytes

1.The output mode is changed to WG34
(card reader SG218, SG220, MG04, MG08, etc.)

2.Byte offset is set to 2 byte

DISCONNECT(C) LANGUAGE HELP(H)											
READ DEMO		BASE SETTINGS		SENIOR SETTINGS		CUSTOM SETTINGS		EPC(GEN 2) READ&WRITE		EISE SETTINGS	
Basic Parameters Control											
Byte Offset	2	Byte	Out Interval	30	*10ms	Pulse Width	10	*10us	Pulse Period	15	*100us
Work Mode	Active		Read Type	6C		Read Interval	20	*10ms	Command To Activ	1	s
Output Mode	WG34(no usi		Same ID interval	1	*0.5s	Buzzer	Enabled				
Get		Set		Default							

5.3.4.6 Modify the same ID output interval time

5.3.4.7 Modify the card read interval time

5.3.4.8 Modify the reading sound

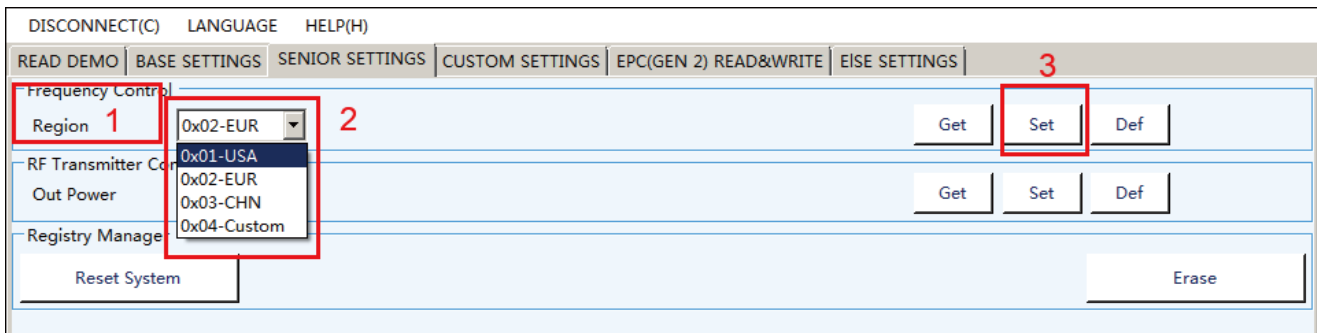
5.3.4.9 Select the type of card to read

Select the type of reader you need, and then set it

5.3.5 Advanced parameter Settings

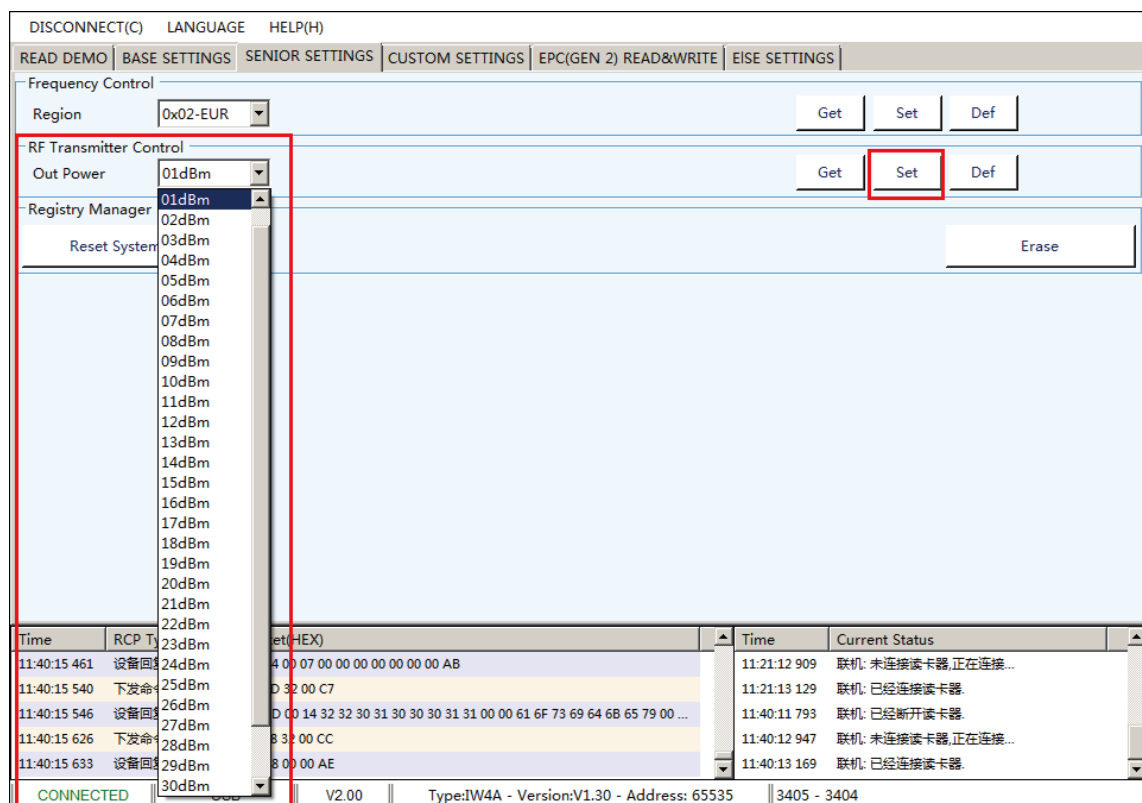
5.3.5.1 Modify operating frequency

After connection, go to advanced Settings - RF Settings for corresponding Settings



5.3.5.2 Modify the transmit power (adjustment distance)

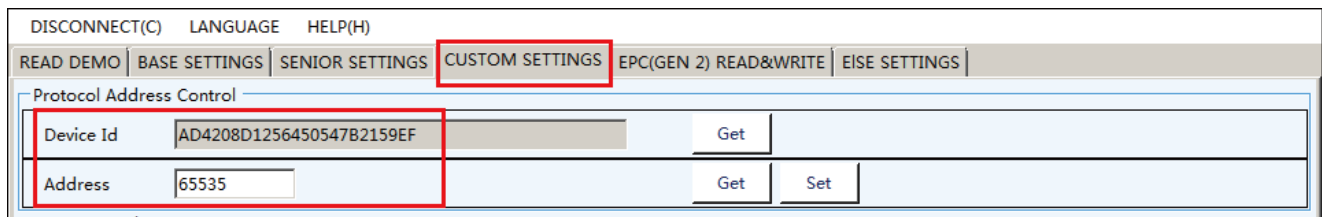
Transmit power size: The transmission power size range (0-33DBM), corresponding to the distance of the identification RFID tag of the device (nonlinear).



5.3.6 Custom parameters

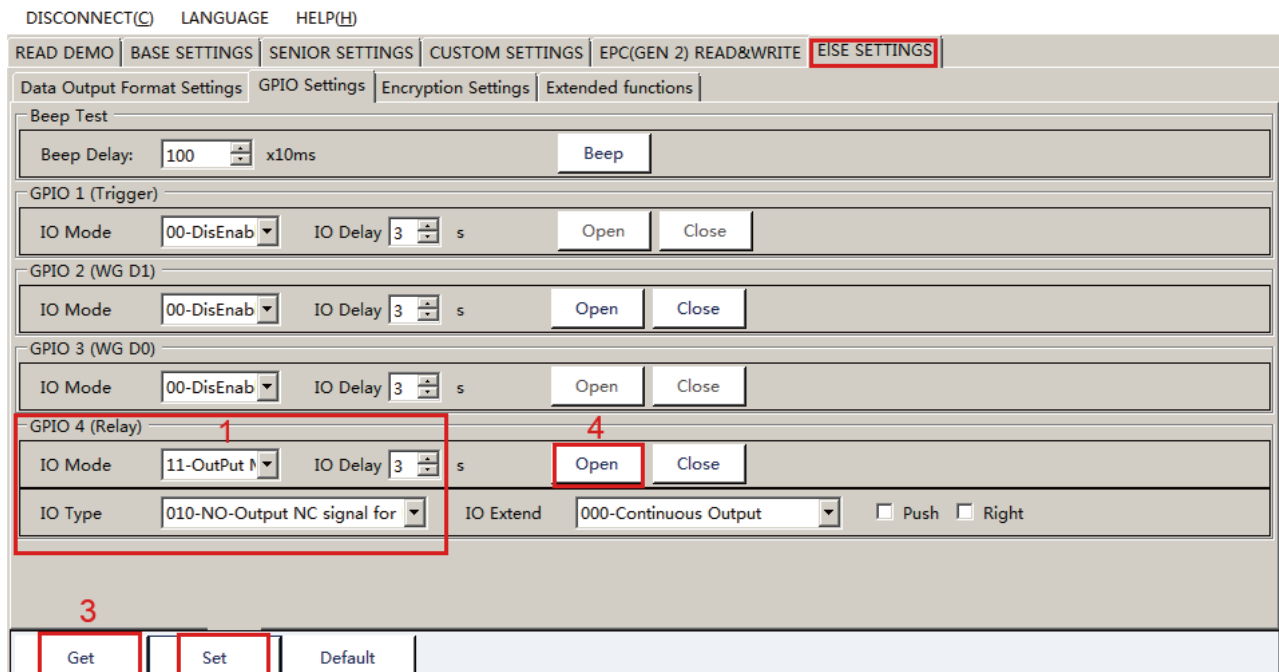
5.3.6.1

Device ID : The unique ID number of each device cannot be modified
 Protocol address: The address used in RS485 communication can be modified by custom



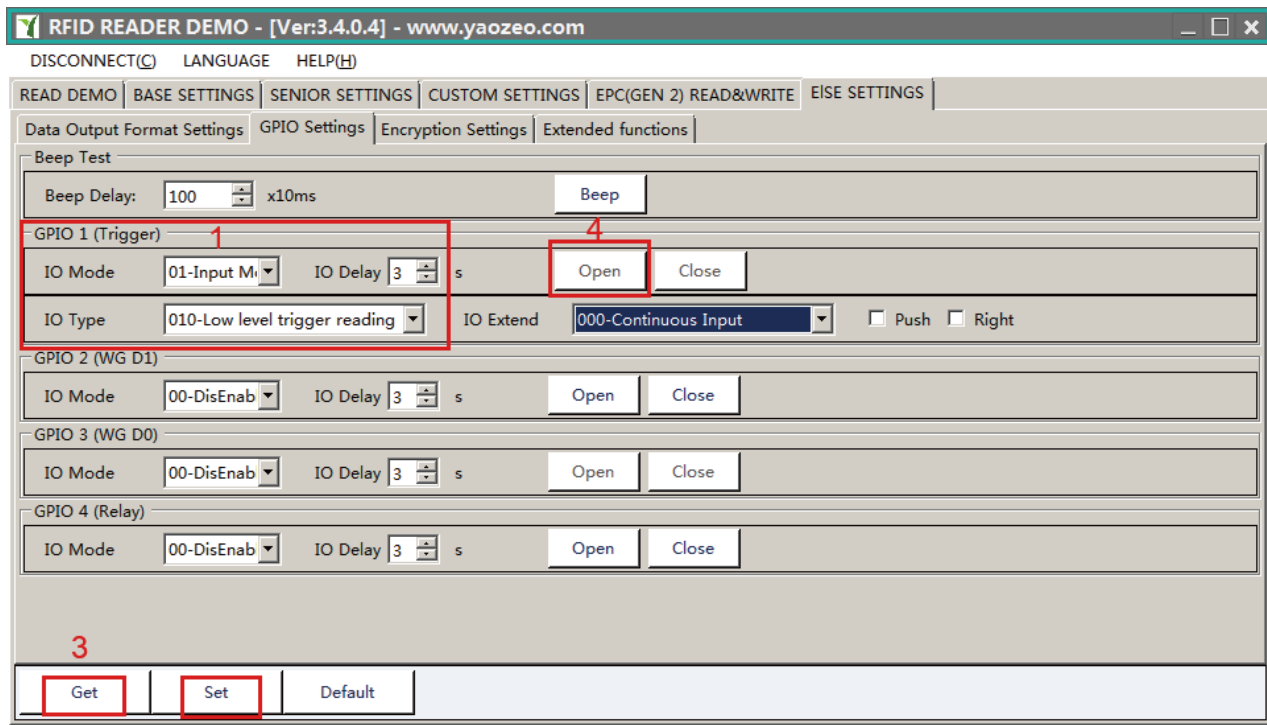
5.3.6.2 Turn on the relay

After connecting, Set it in ELSE SETTINGS -- GPIO Settings



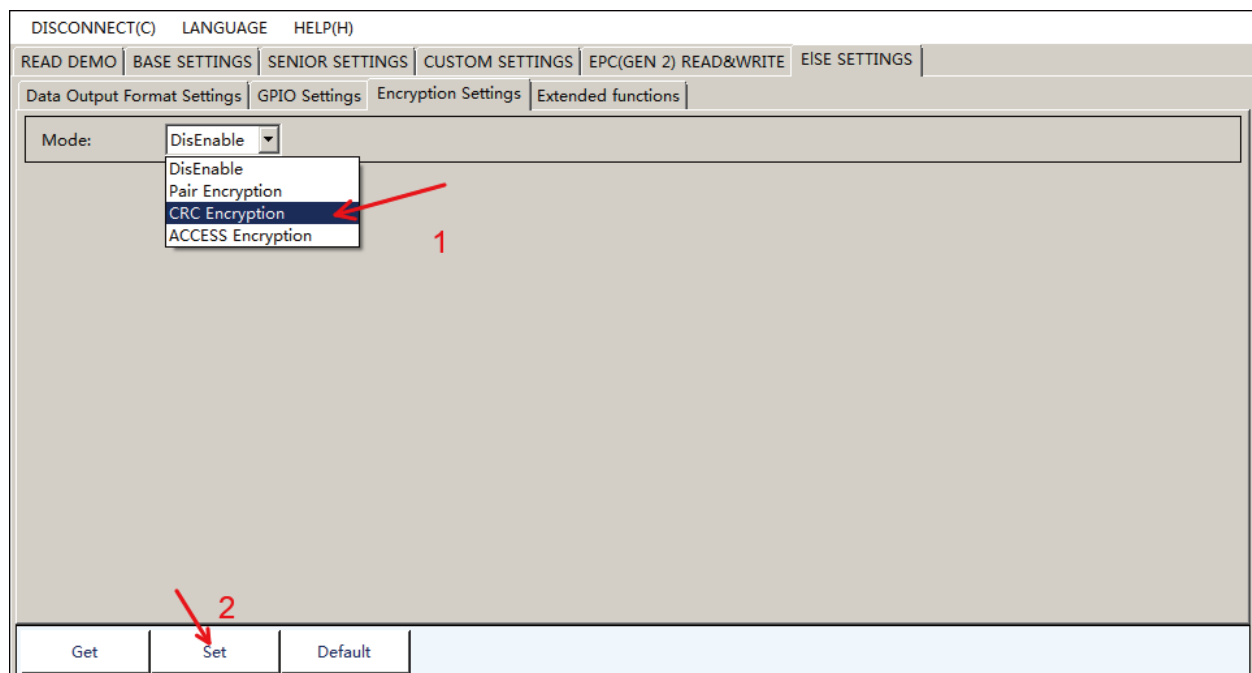
5.3.6.3 Open trigger read card

After connecting, Set it in ELSE SETTINGS -- GPIO Settings



5.3.6.4 The card reader is encrypted

After connecting, Set it in ELSE SETTINGS -- Encryption Settings, Select "CRC" Encryption.



Then the encryption Settings page will appear: (as shown below)



Note 1: The card reader of SG/MG series can only encrypt the card reader. If the tag needs to be encrypted, the card issuer such as DM02 DR201 should be used for encryption. You can refer to another encrypted information.

Note 2: Please refer to other videos for card writing operation.