SA series
Ultra high frequency
integrated machine

User Manual

REACH COMPLIANT √RoHS COMPLIANT C E

# 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
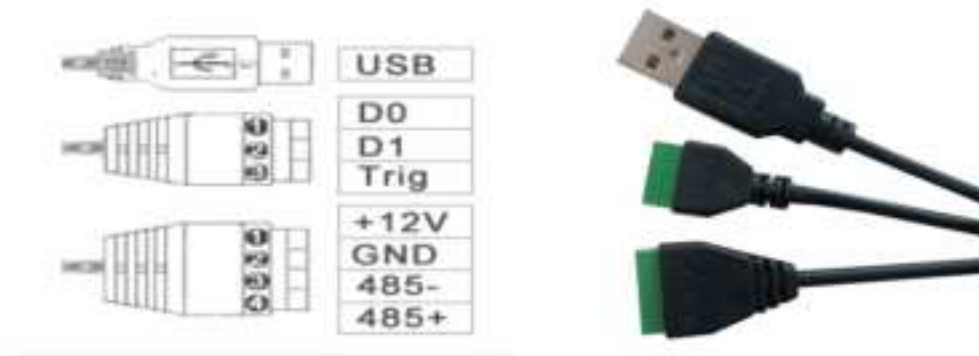

2.2 Basic version(2)：RELAY+WG+USB

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

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

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:
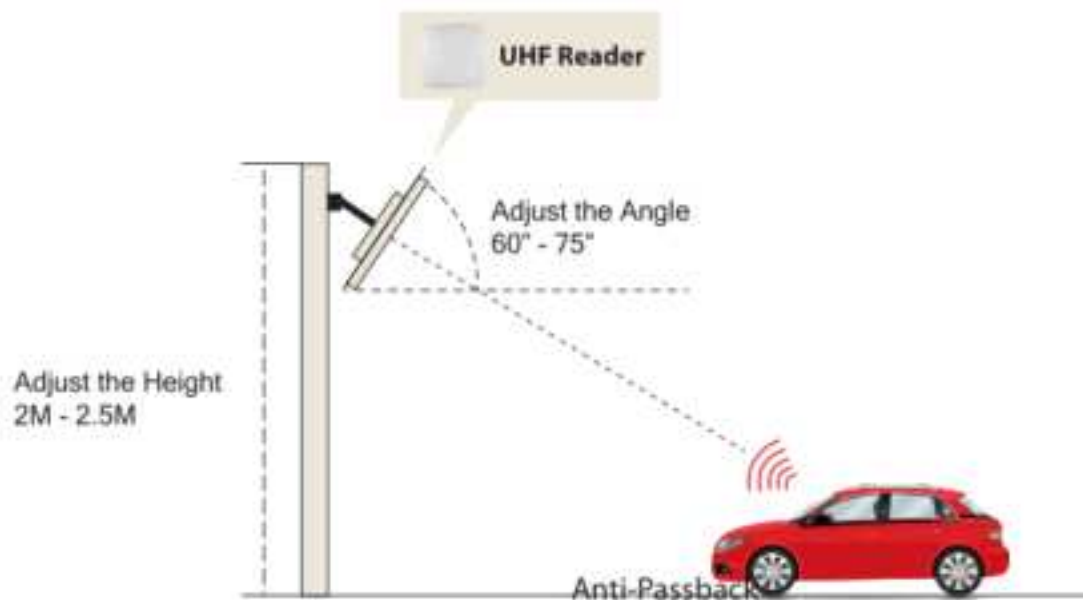
5. Operating instructions

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

Data Download ➔   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.

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## 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：
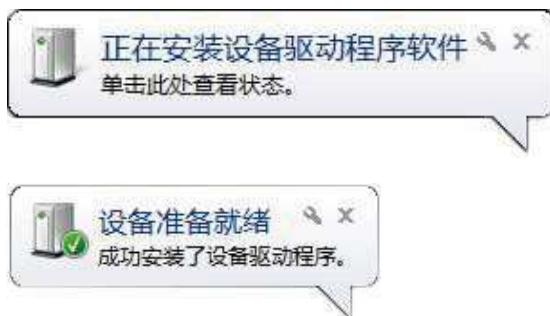
Then open the Device Manager on your computer, and an additional device will appear under the Keyboard option. As follows:
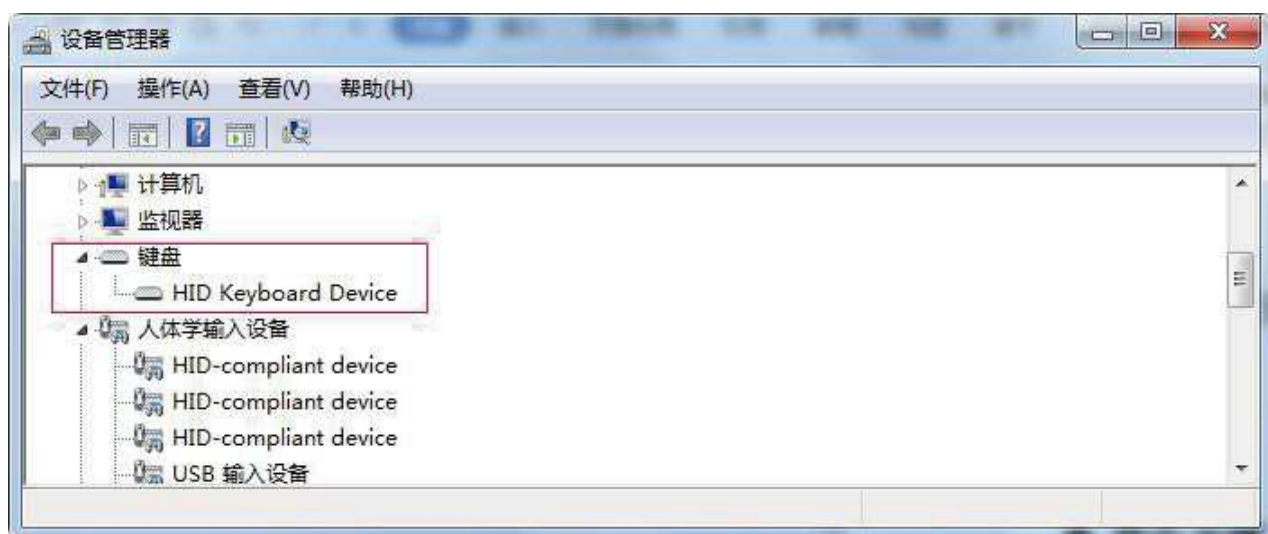
This indicates that the computer is connected successfully. Now let's go online.

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:

RS485 to RS232   RS485 to USB
                    OR RS232 to USB

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.

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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, RFIDDemo , Open the file by double-clicking the software icon , The following main screen appears：

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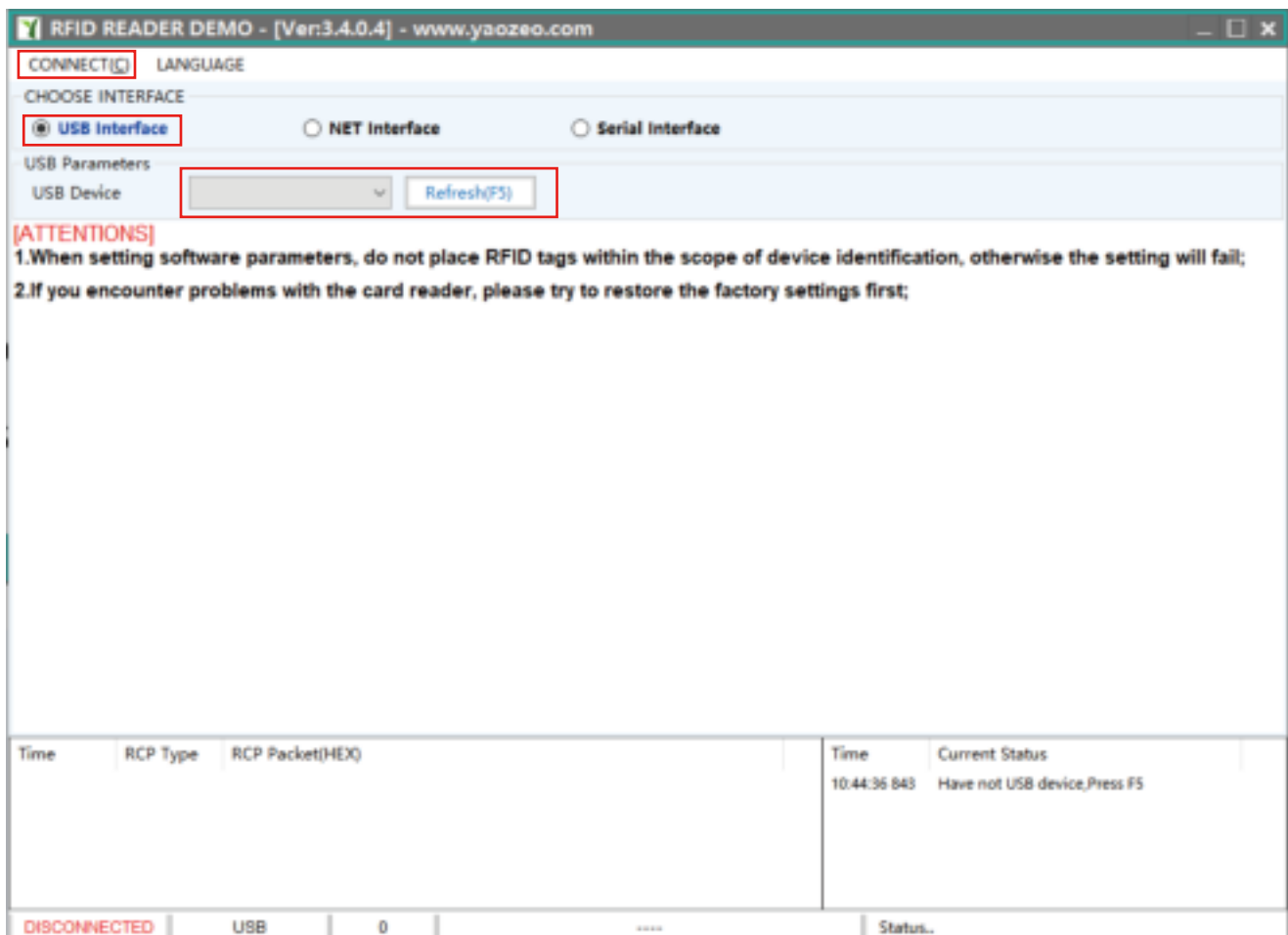
There are three kinds of communication parameter configuration :USB communication -- serial communication -- network port communication.

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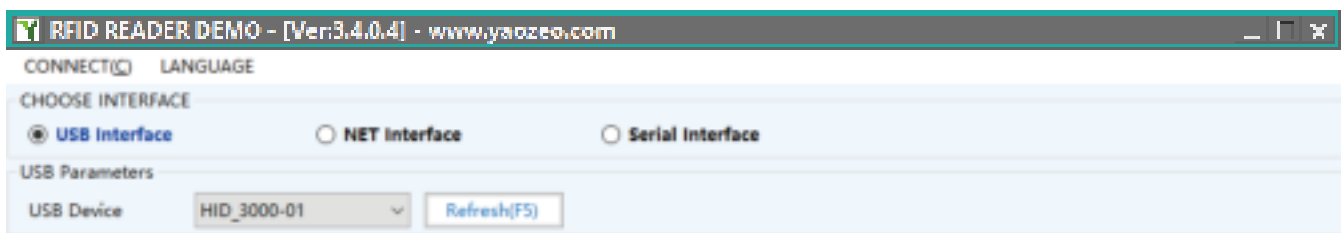
If the USB device is empty, double-check that the USB cable is plugged in, and then press the key Refresh(F5) or F5.
Select the USB device and click the "CONNECT" button.

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:

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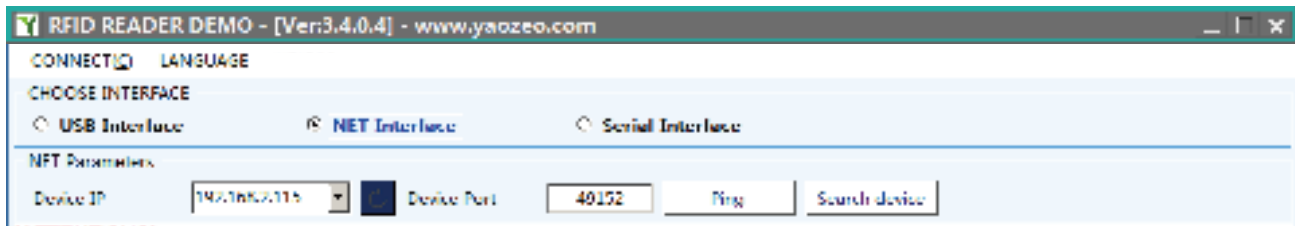
Here, you need to select the correct remote IP address and remote IP port of the device (by default, the computer is a client, the device is a server, and the TCPIP protocol), and click the "Ping" button. If the connection is correct, a success flag will be displayed in the status bar, as shown in the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

This indicates that the connection has been successful.
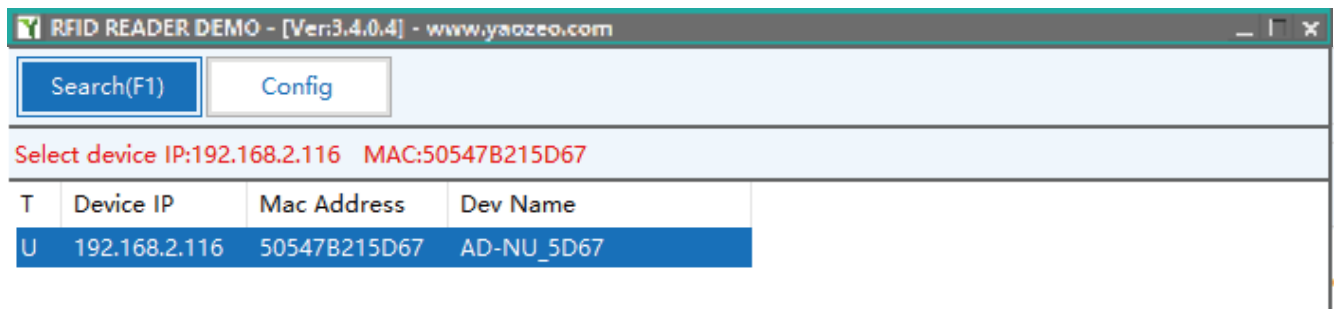
This indicates a connection failure

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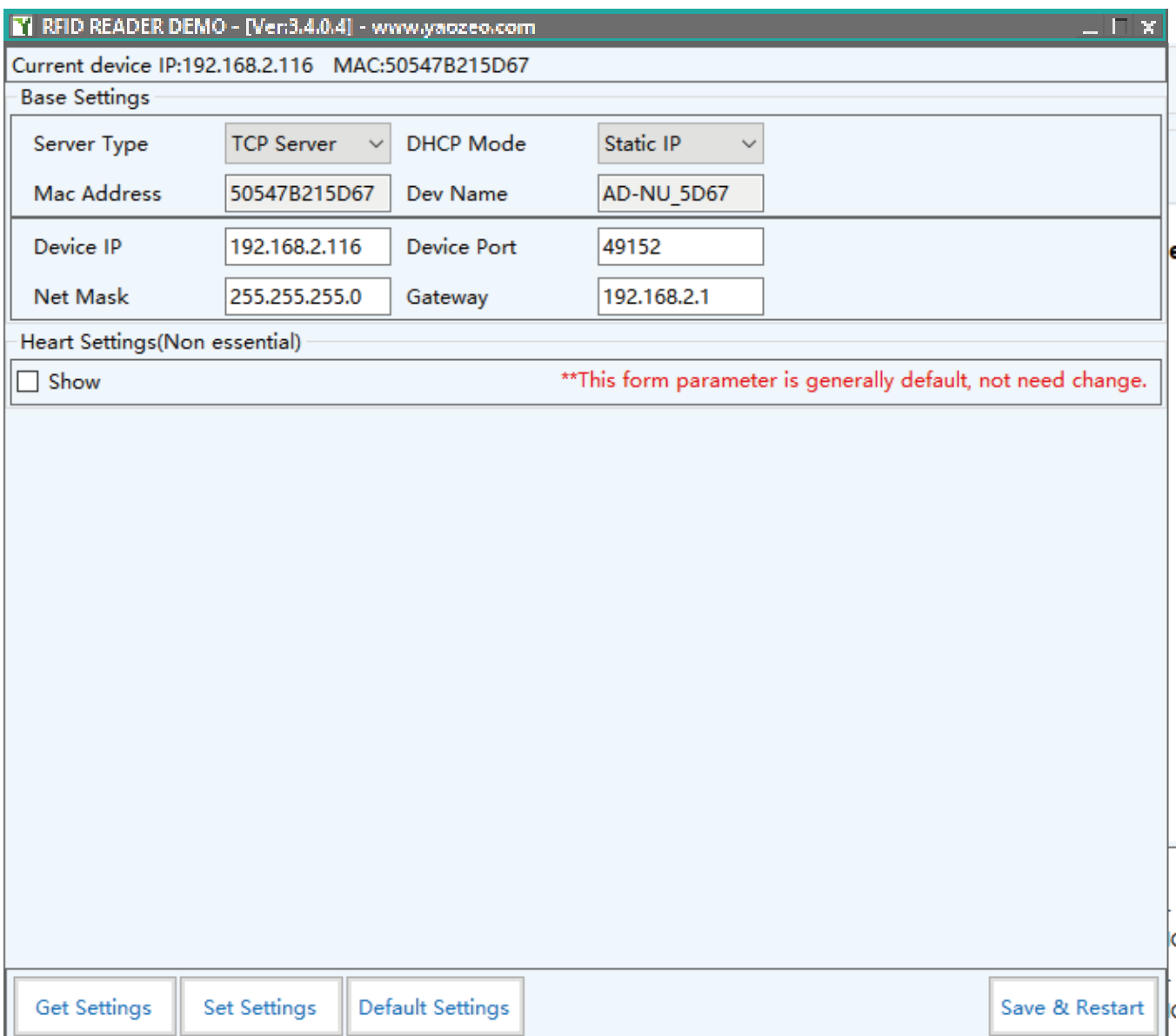
Click the "Search" button to search for all devices online. You can choose the device you want to set up.

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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:

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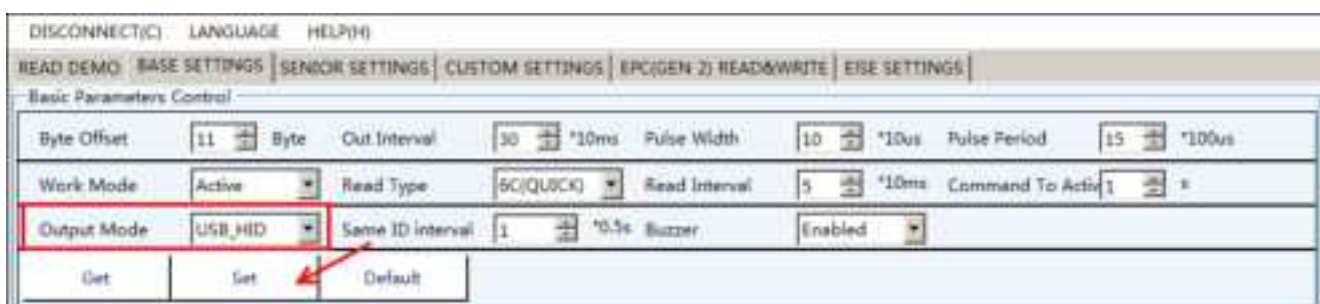
③The RFID tag is then placed within the range that the device can recognize. The tag information is about to be displayed in the text field. The following image:

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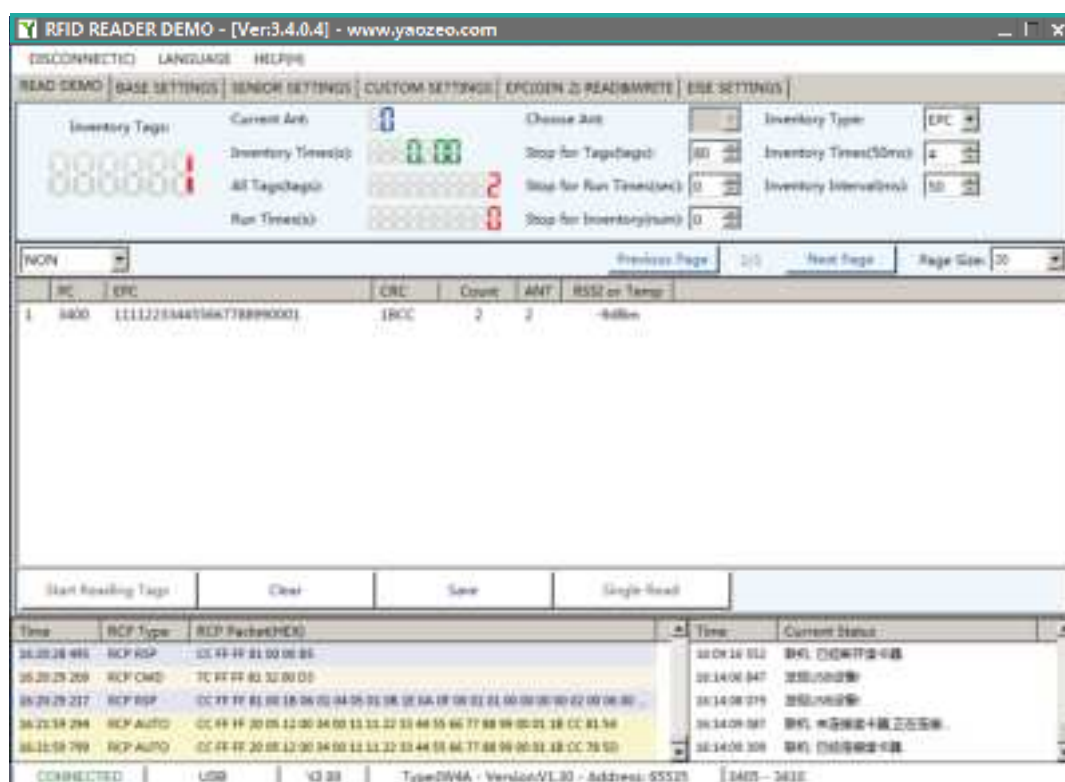
5.3.4 Basic parameter setting

Click the "BASE SETTINGS" button at the top left as follows:
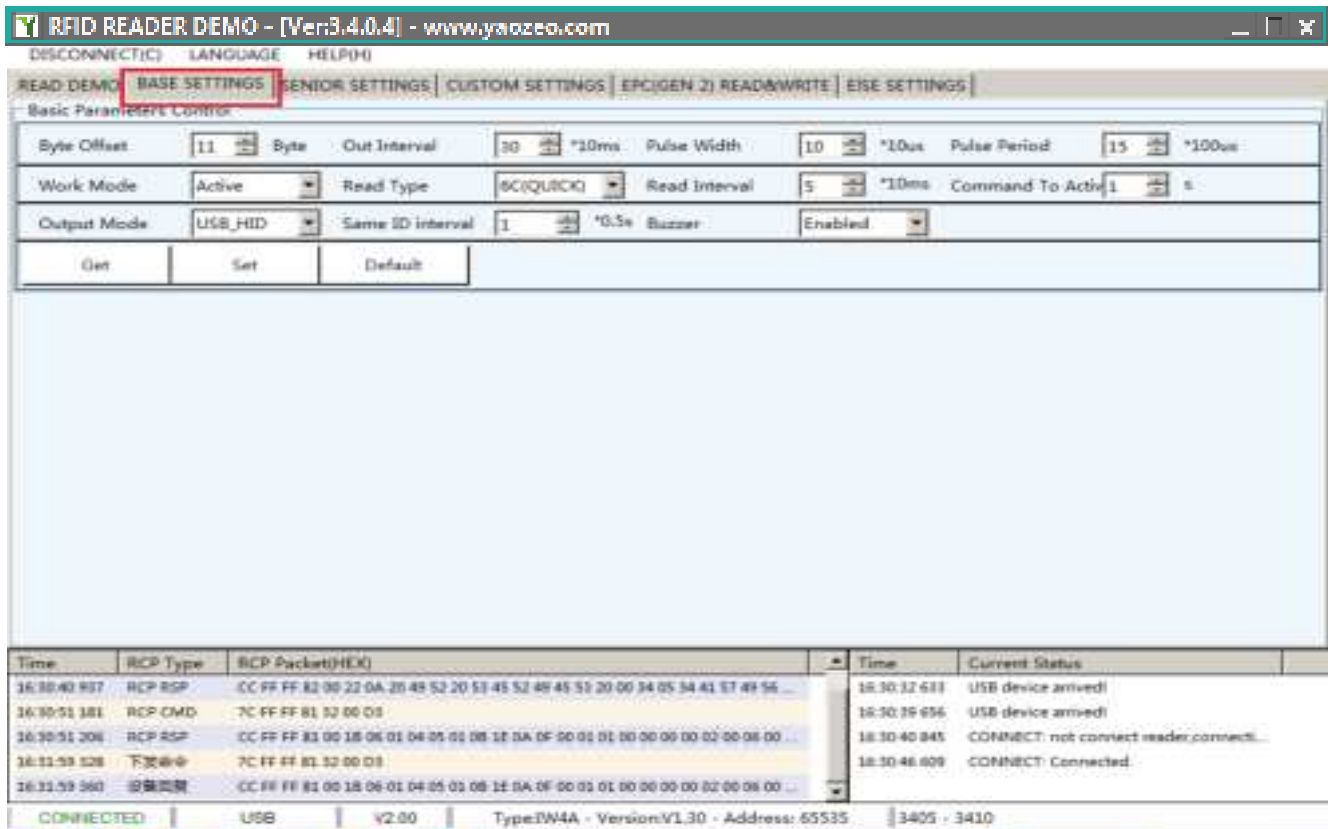
Different communication modes correspond to different simple configurations.

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

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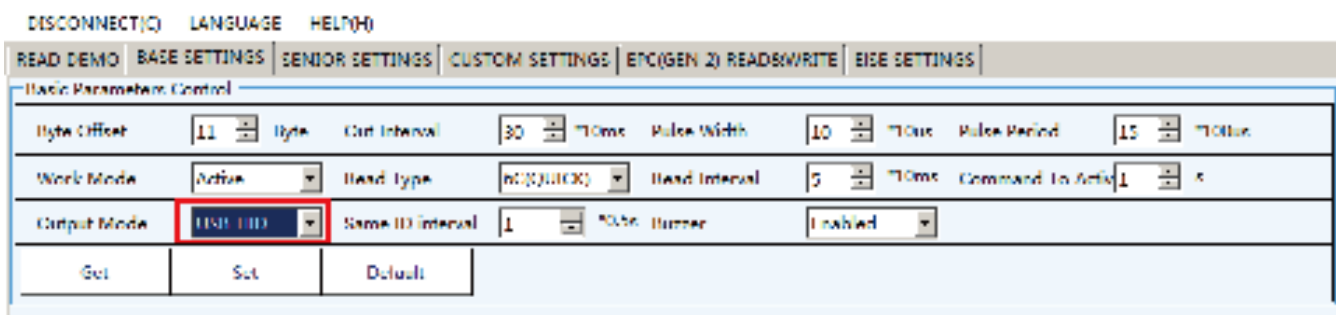
5.3.4.1

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
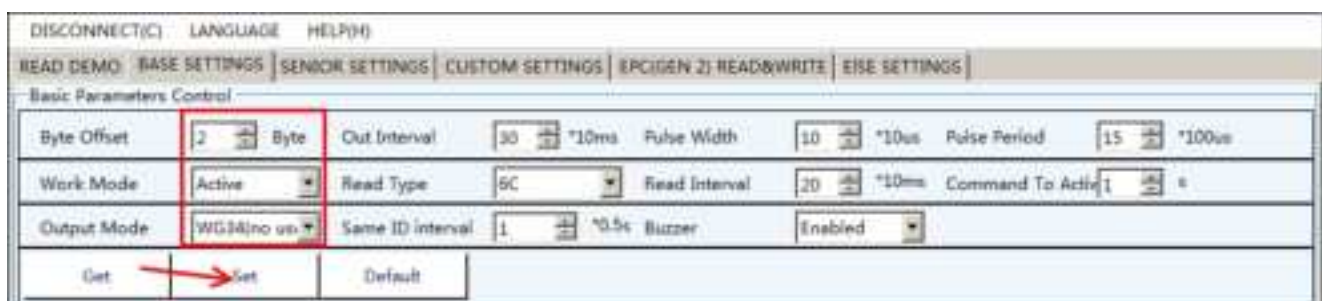(card reader SG218, SG220, MG04, MG08, etc.)

2.Byte offset is set to 11 byte

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

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

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

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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 correspond-ing 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).

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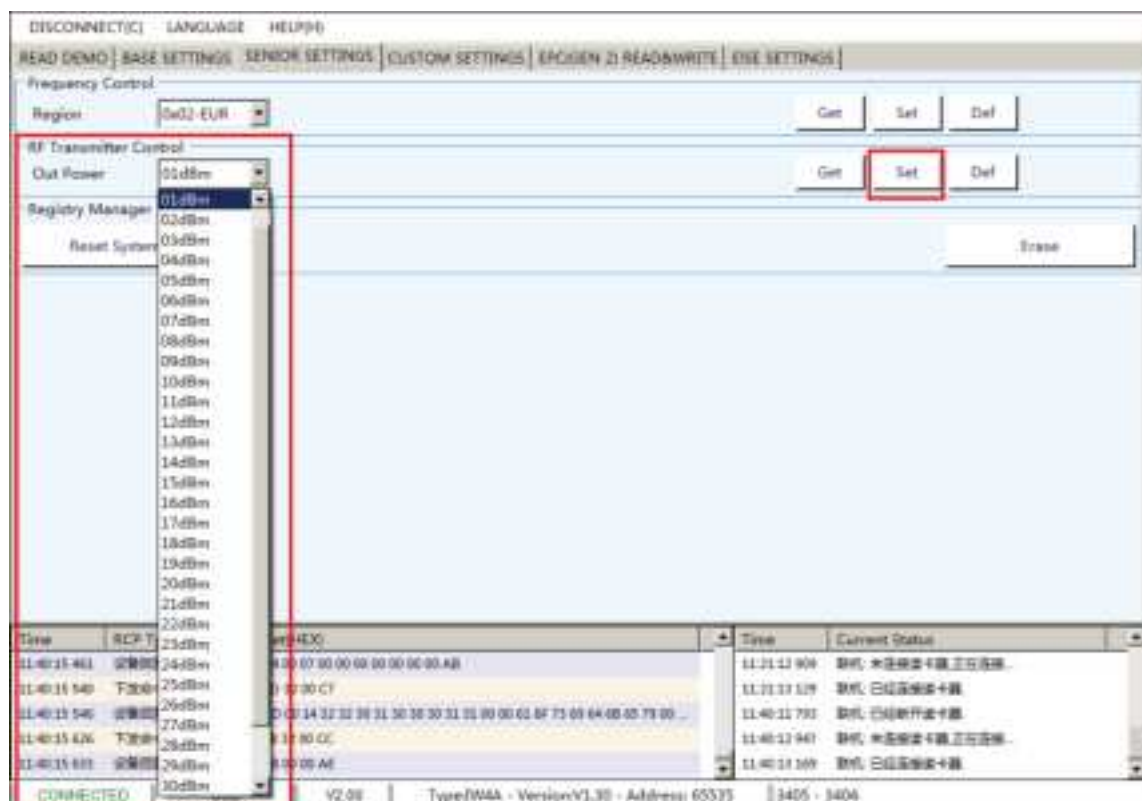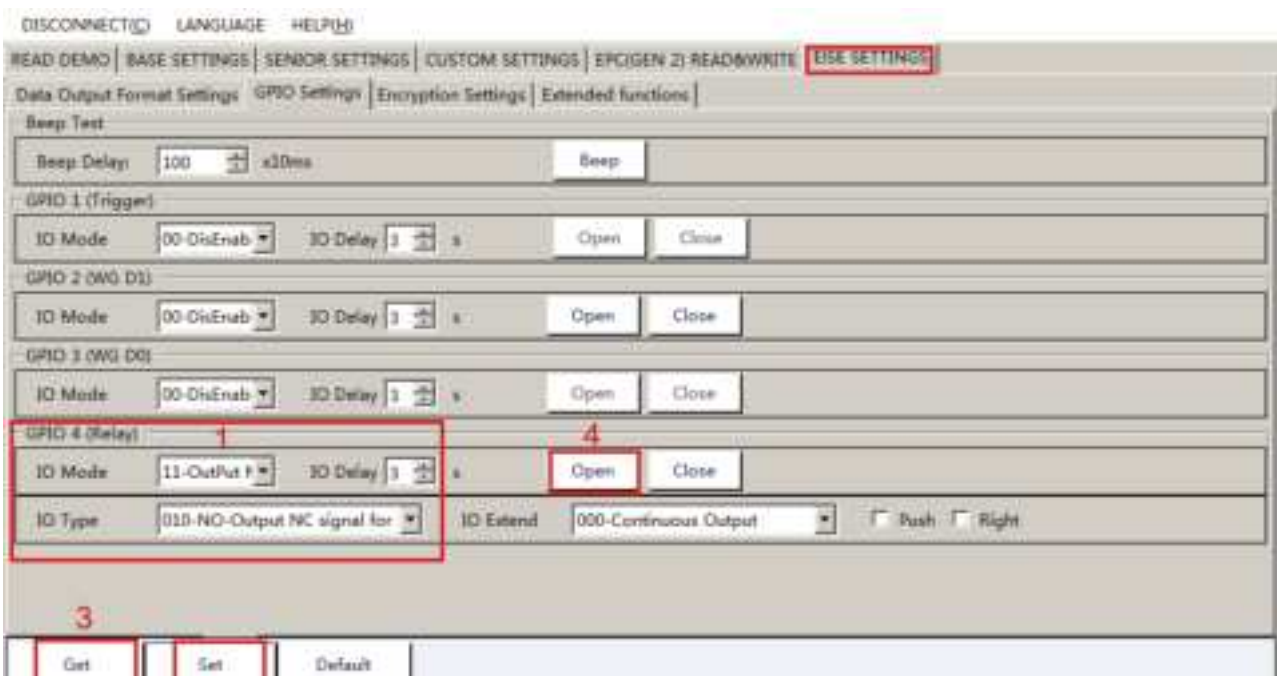
5.3.6 Custom parameters

5.3.6.1

Device ID ： The unique ID number of each device cannot be modified

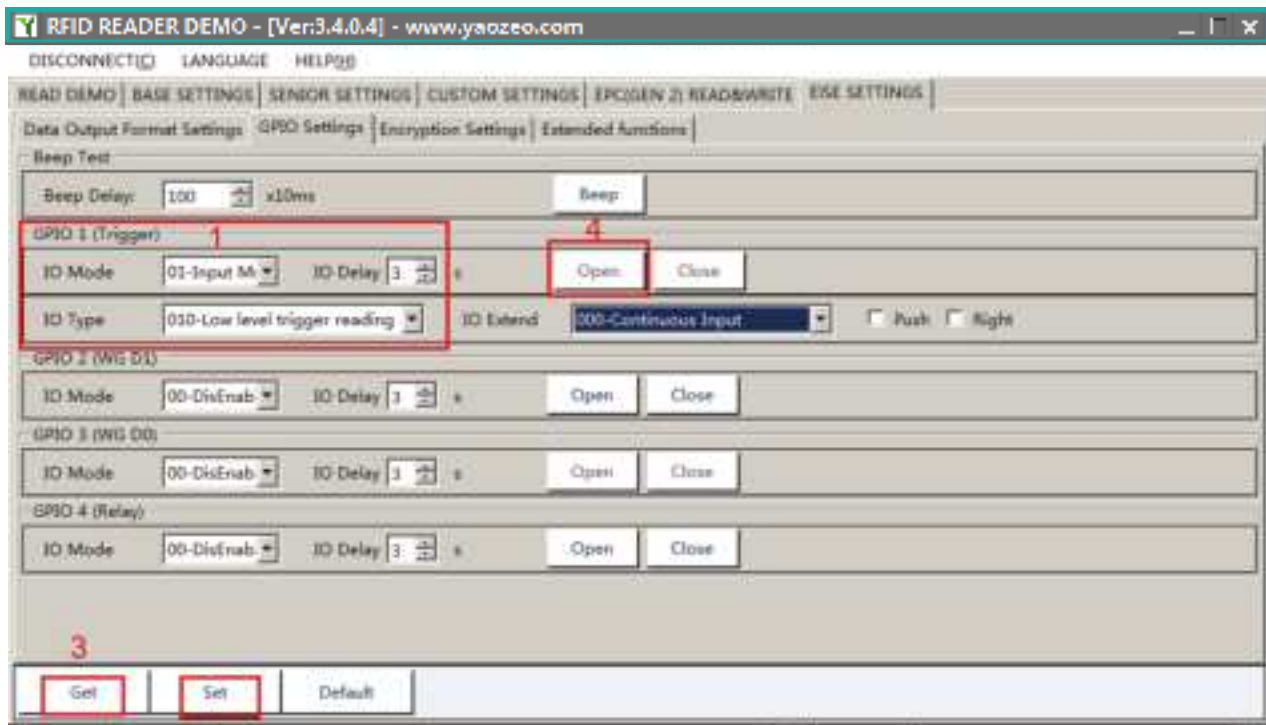Protocol address： The address used in RS485 communication can be modified by custom
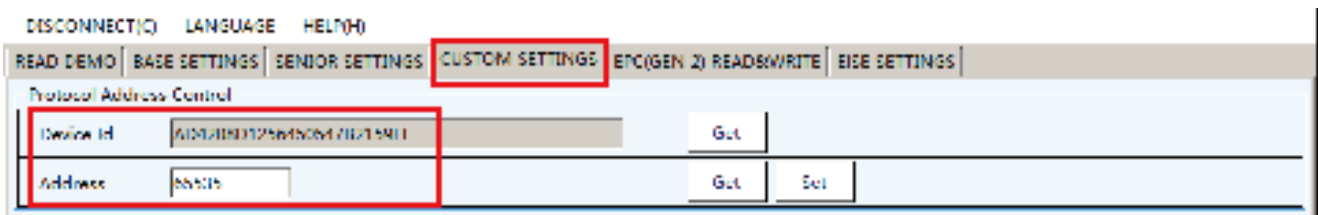
5.3.6.2 Turn on the relay

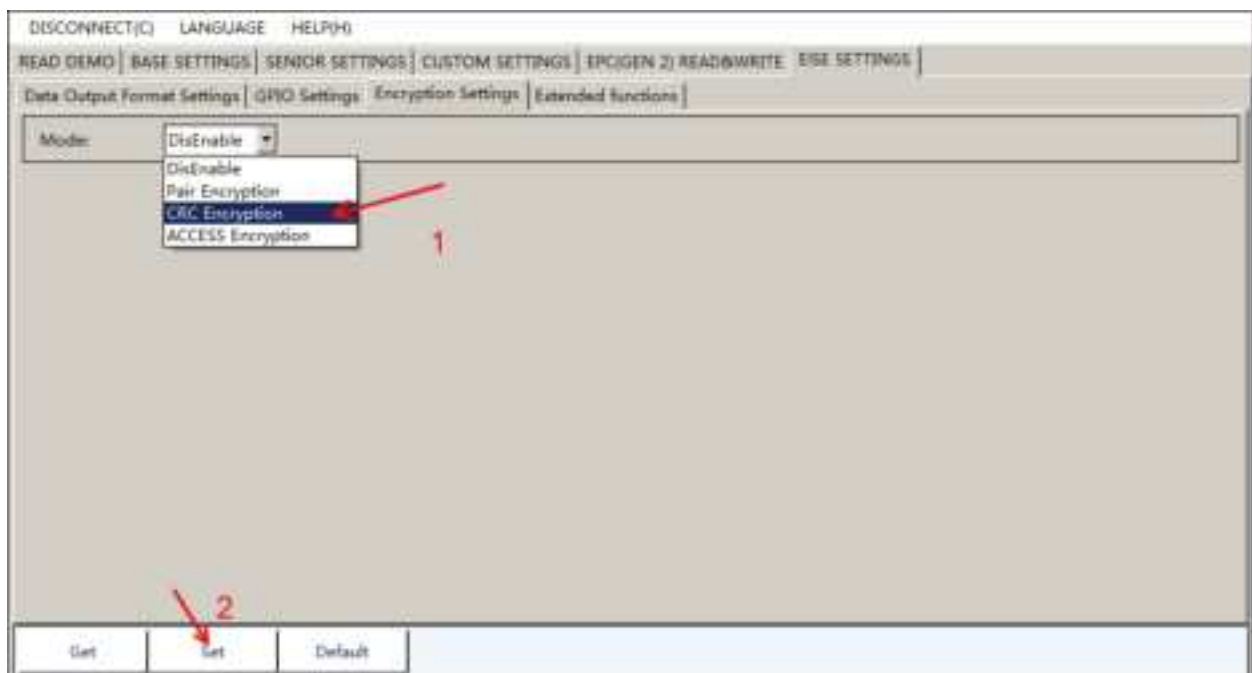After connecting， Set it in ELSE SETTINGS -- GPIO Settings

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.