

# The User manual of RFID UHF reader demo

V 1.0

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# 1.Selection of communication mode

Note: there are two communication modes for our conventional Reader: network port RJ45 and serial port (RS232 or USB).

## 2. Network port communication

2.1 The default IP address of the reader device is 192.168.1.136;

2.2 Please modify the IP of the host (such as computer) to be in the same network segment as the reader, as shown in the following "Figure 1".

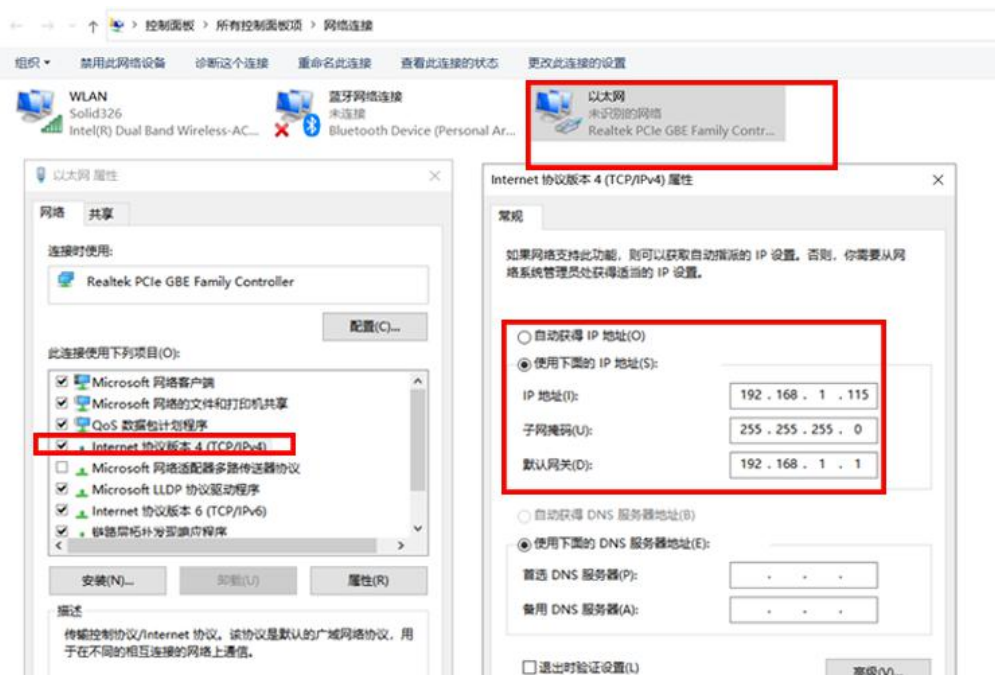


Figure 1

2.3 Open the reader demo "sreaderwfp", as shown in the following "Figure 2":



Figure 2

2.4 The default communication mode selected in demo is network port RJ45 . Enter the IP and click “Connect” , as shown in "Figure 3":

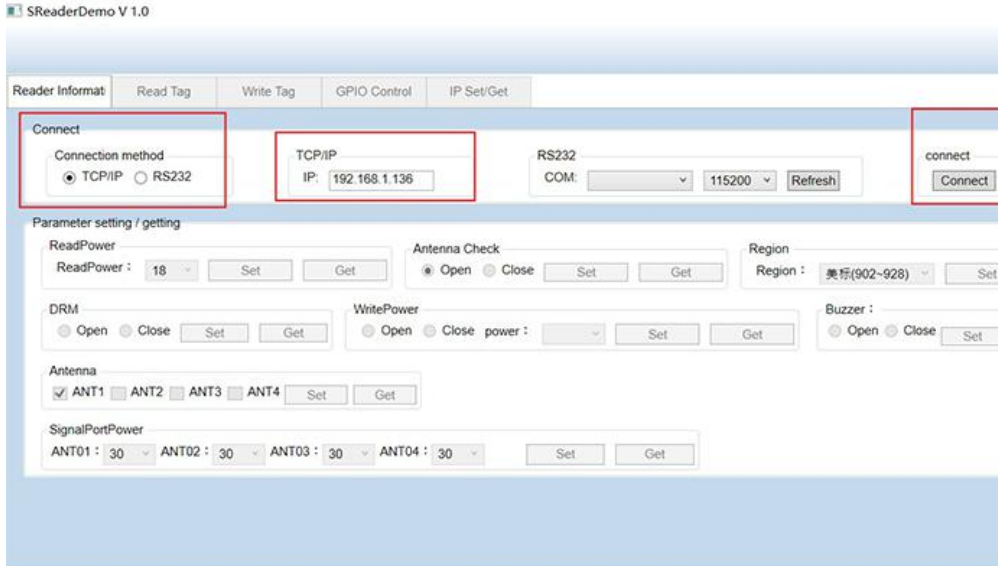


Figure 3

### 3. Serial communication (RS232 or USB):

3.1 Connect the serial port cable or USB cable to the reader and check the generated serial port number in the computer device manager, as shown in "Figure 4":

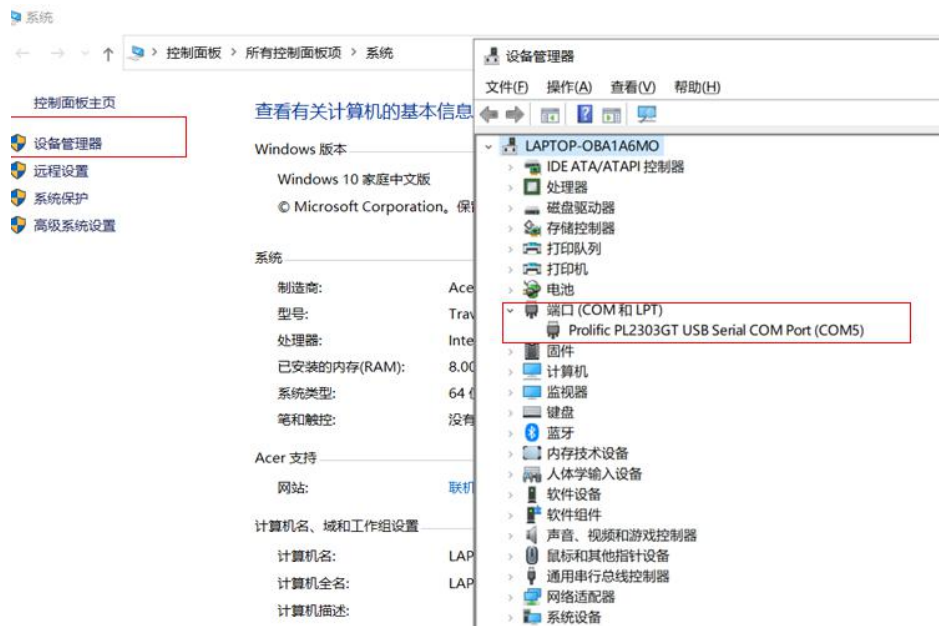


Figure 4

3.2 Open the reader demo "sreaderwpf" and select serial communication, as shown in "Figure 5":

Connection mode: select RS232, select the generated serial port number and baud rateselect 115200, and click Connect.

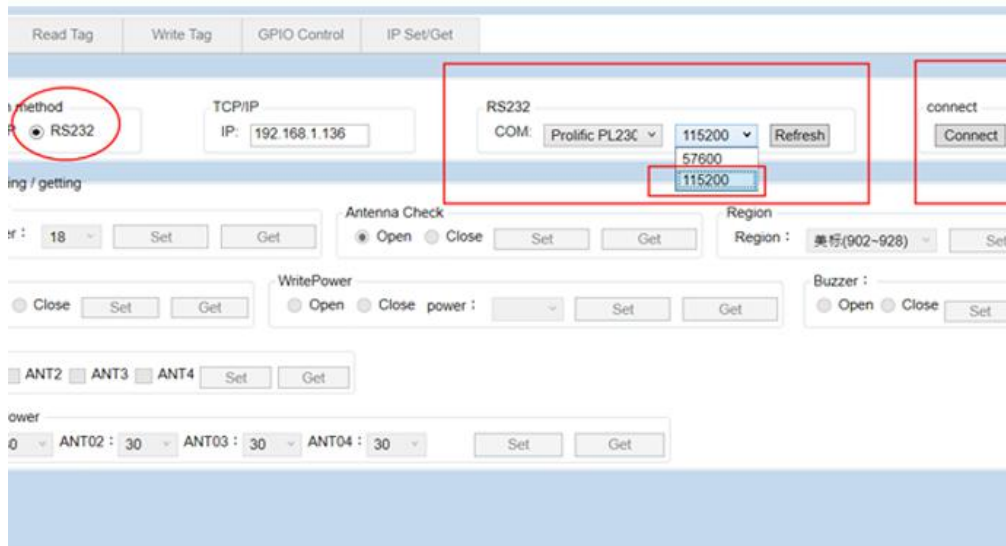


Figure 5

## 4. Power setting of the reader

4.1 Unified setting: this setting will uniformly set the power of all ports of the reader, as shown in "Figure 6" below. Select the value to be set in the power drop-down box and click Set. Click "get" to obtain the current power of all ports.

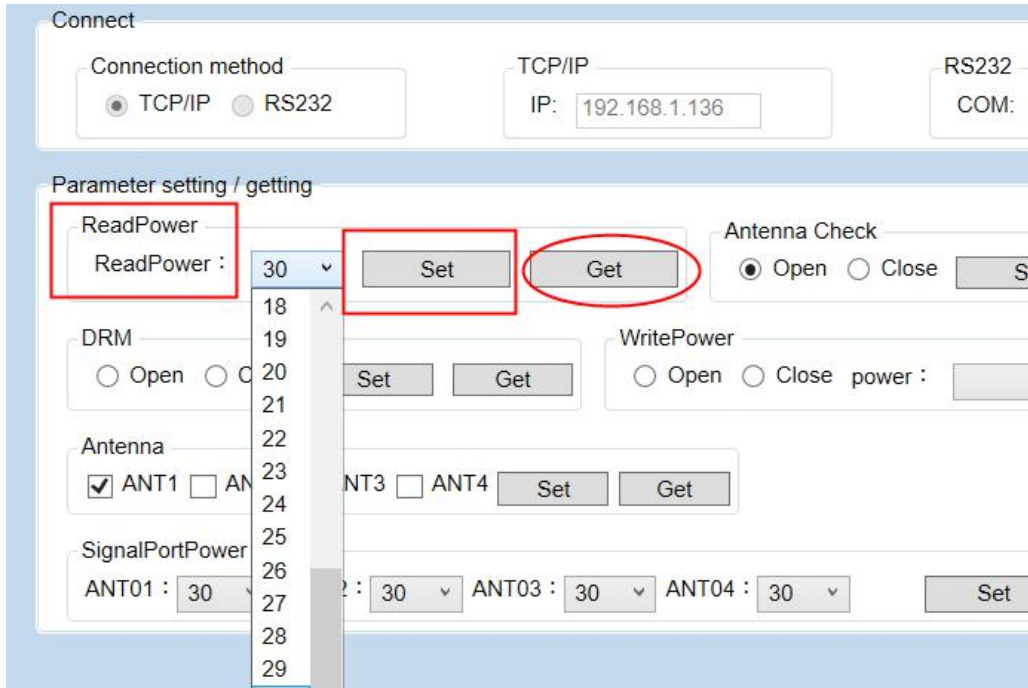


Figure 6

4.2 Set the power of each port of the reader separately: each port of the device can set the power separately, as shown in "Figure 7", select the value to be set in the power drop-down box of each antenna port, and click Set. Click "get" to obtain the current power of each port.

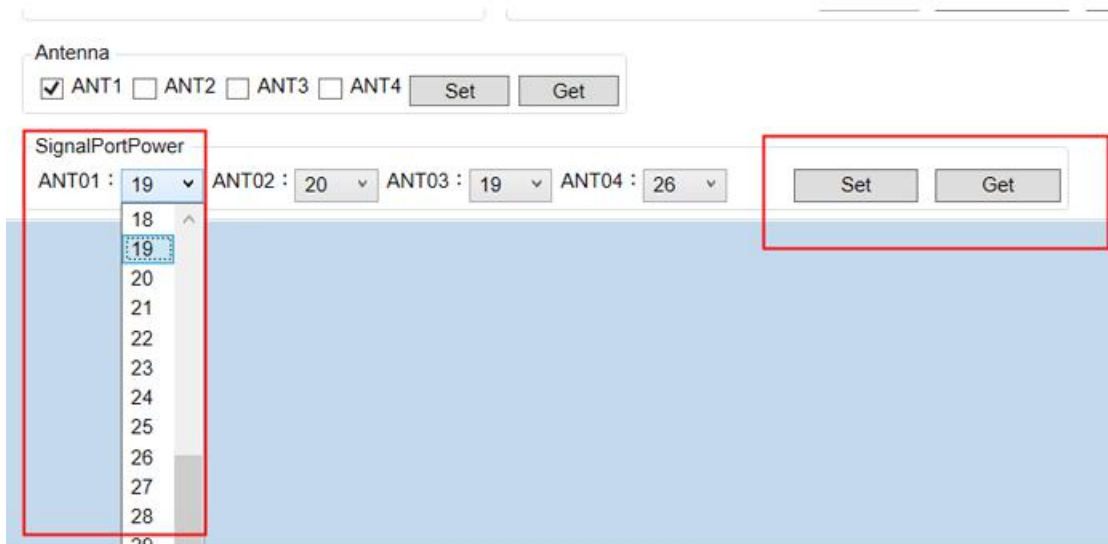


Figure 7

## 5. Set the frequency of the reader

Note: select the working frequency band of the reader in the frequency drop-down box and click settings, as shown in "Figure 8".

Click "get" to get the current working frequency of the reader.

Tip: the reader, tag and antenna are in the same frequency band, and the reading effect is the best.

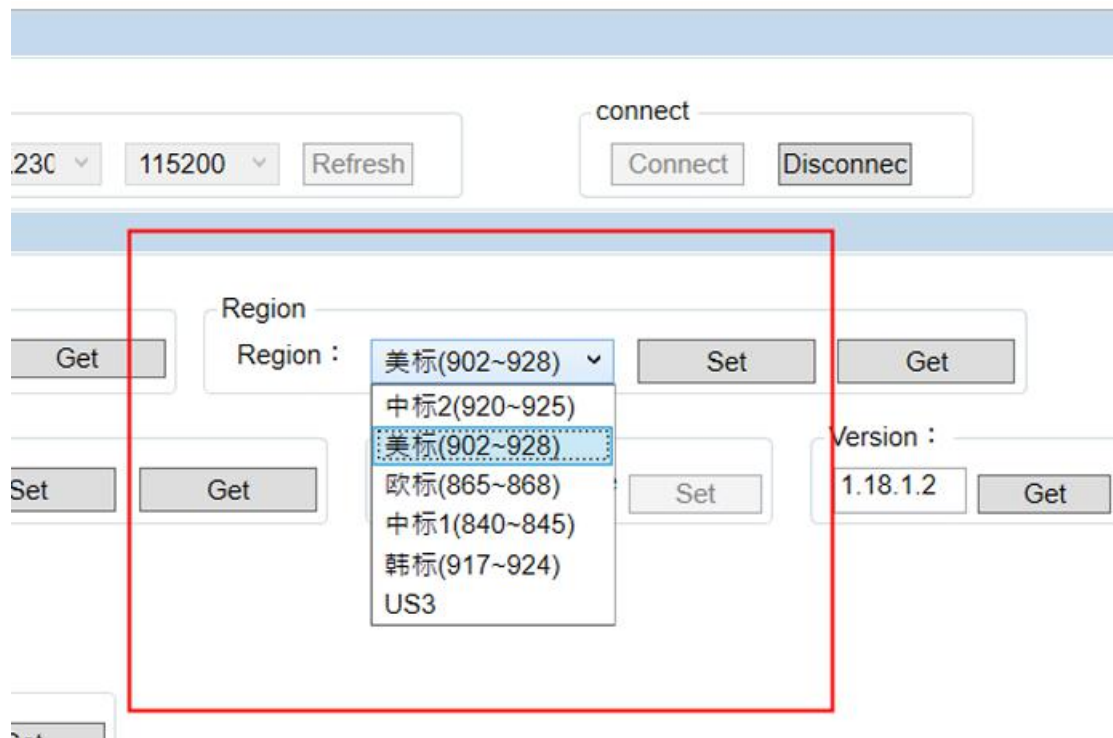


Figure 8

## 6. Antenna detection

Note: the antenna detection function is enabled by default. It is recommended to enable it. After opening, the reader will automatically identify the closed-circuit antenna connected to the reader, as shown in the following "Figure 9":

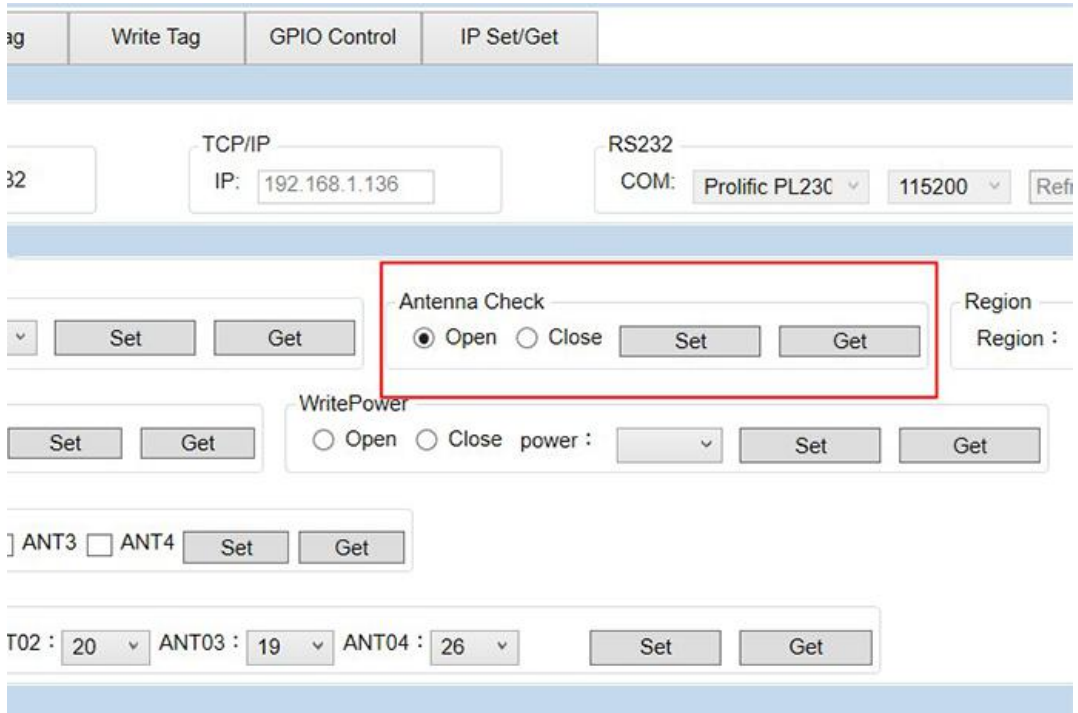


Figure 9

## 7. Buzzer setting

Note: if the reader has this function, this function can be turned off or on through this setting, as shown in the following "Figure 10".

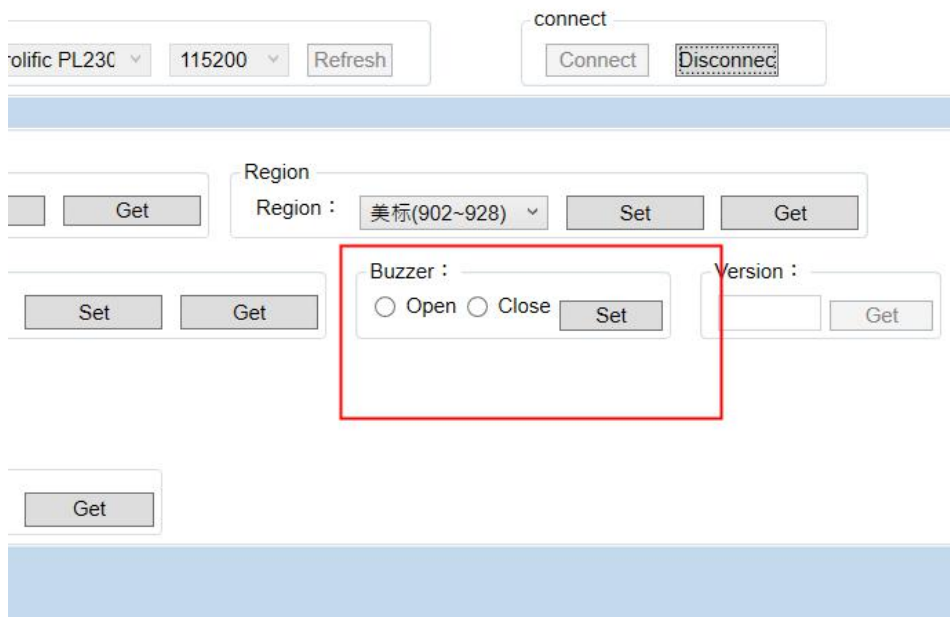


Figure 10

## 8. Read Tag

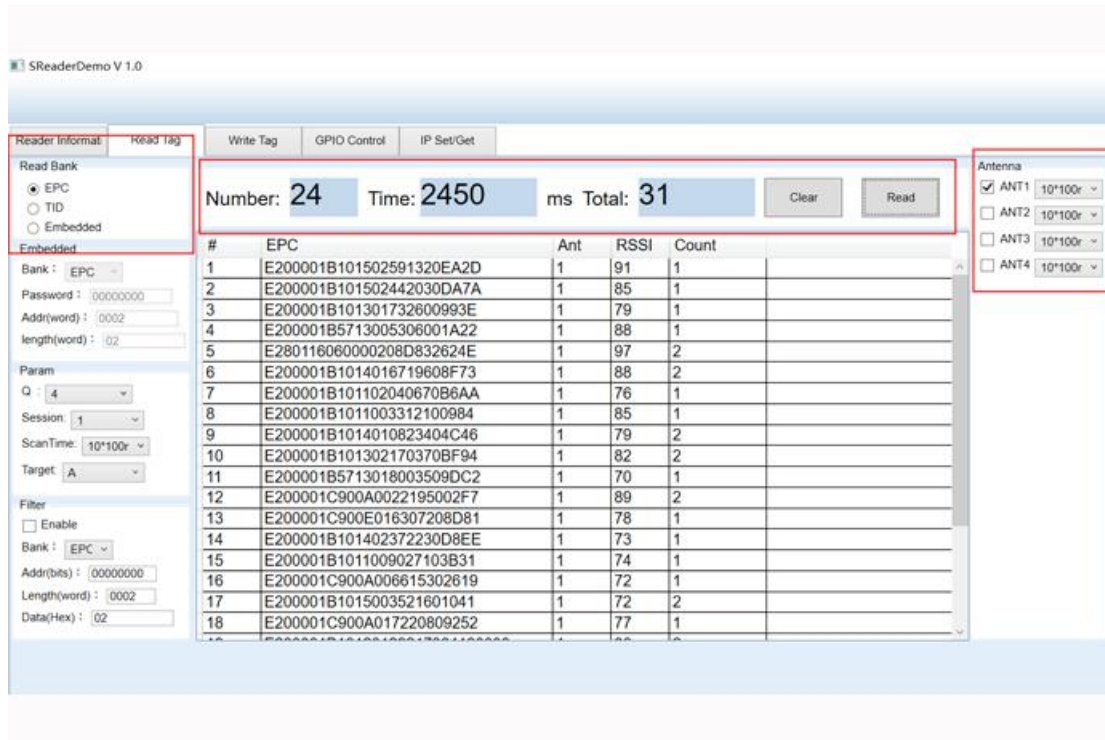


Figure 11

### 8.1 Antenna:

Demo check the antenna number actually connected to the reader, which must be consistent with the physical connection. Select the correct port number, otherwise the reader may be damaged. For example, only antenna 1 and antenna 2 are actually connected. We check antenna 1 and antenna 2.

8.2 Other settings can be the default configuration. Click "Read".

8.3 Read Bank: Set the read data area, which defaults to EPC.

8.3.1 EPC query is used to query the EPC area of the tag;

8.3.2 TID query is used to query the TID area of the tag;

8.3.3 Embedded query can query EPC + reserved area, or EPC + TID or EPC + user area at the same time.

### 8.4 Embedded:

You can query the data of a specified starting address and a specified length of a



specified area;

Password: access password, hexadecimal string;

Add: Specifies the address from which to start reading data, in "word";

Length: Specifies the length of read data, in "word".

### 8.5 Param:

8.5.1: Q: The general Q value is 4 by default. The closer the number of tags is to the Q power of 2, the better.

8.5.2: Session: The session value used when querying the EPC of the tag.

Recommended settings: a small number of labels S0 and multiple labels S1.

8.5.3: Scan time: Set the maximum single query time of all antenna ports globally

If it is necessary to set the single maximum interrogation time of an antenna port separately, see "Figure 12":

8.5.4: Target: AB is the tag status value.

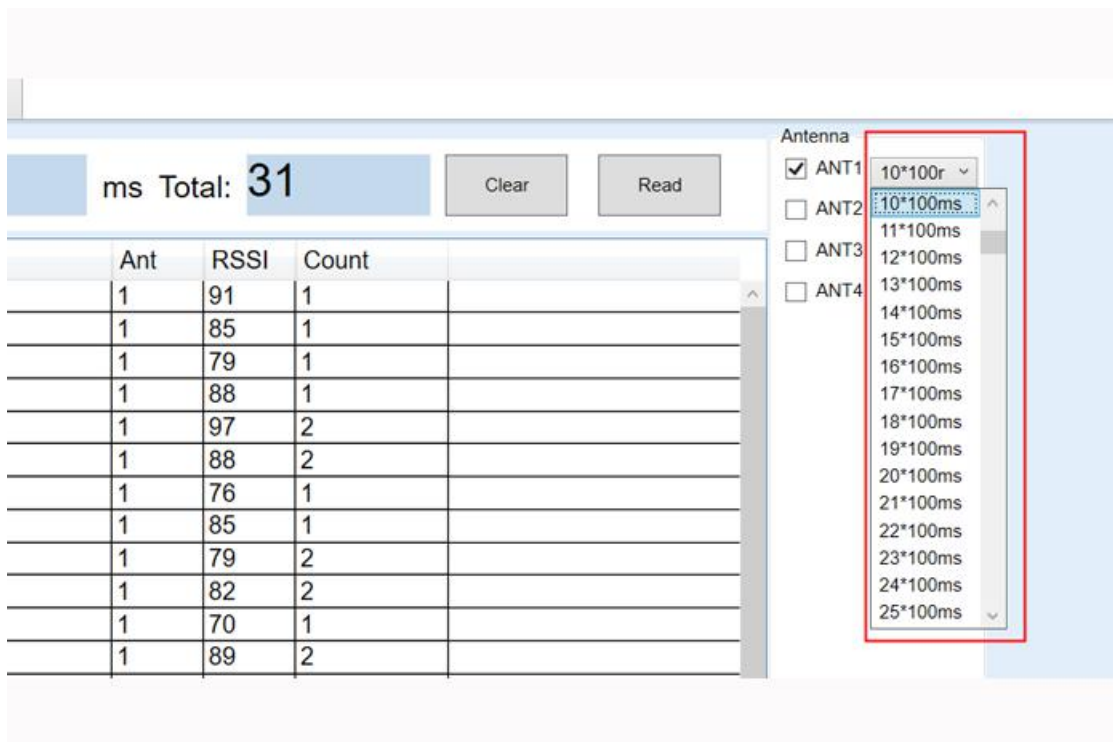


Figure 12

## 8.6 Filter:

8.6.1:Bank: read a certain type of tag according to the data of EPC, reserved and user areas;

8.6.2:Addr:Address of filtered data in memory, unit "bits";

8.6.3:Length:(length of filtered data) unit "bits", which must match the filtered data;

8.6.4:Data:(Filter data)Hexadecimal string, the data must match the length of the filtered data.

## 8.7 Data display area:

8.7.1: Display area:

1. Number - number of the tags;
2. Time - reading time;
3. Total - Total number of reads of all tags.

8.7.2: Each tag data will display data, antenna number (which antenna port the tag is currently recognized by), RSSI, number of times (the total number of times a single tag is read), as shown in the following "figure 13".

#	EPC	Ant	RSSI	Count
1	E200001B101502591320EA2D	1	91	1
2	E200001B101502442030DA7A	1	85	1
3	E200001B101301732600993E	1	79	1
4	E200001B5713005306001A22	1	88	1
5	E280116060000208D832624E	1	97	2
6	E200001B1014016719608F73	1	88	2
7	E200001B101102040670B6AA	1	76	1
8	E200001B1011003312100984	1	85	1
9	E200001B1014010823404C46	1	79	2
10	E200001B101302170370BF94	1	82	2
11	E200001B5713018003509DC2	1	70	1
12	E200001C900A0022195002F7	1	89	2
13	E200001C900E016307208D81	1	78	1
14	E200001B101402372230D8EE	1	73	1
15	E200001B1011009027103B31	1	74	1
16	E200001C900A006615302619	1	72	1
17	E200001B1015003521601041	1	72	2
18	E200001C900A017220809252	1	77	1

Figure 13

## 9. Write Tag

The screenshot shows the 'SReaderDemo V 1.0' software interface. At the top, there are navigation tabs: 'Reader Informati', 'Read Tag', 'Write Tag', 'GPIO Control', and 'IP Set/Get'. The 'Write Tag' tab is active. Below the tabs, there are several sections:

- Mask Mode:** Two radio buttons, 'EPC' (selected) and 'Mask'.
- EPC:** A text input field for 'EPC (Hex):' and a 'Read EPC' button.
- Mask:** A 'Mask Bank:' dropdown menu set to 'EPC', an 'Addr(bits):' input field with '00000000', a 'Length(bits):' input field with '00000000', and a 'Data(Hex):' input field.
- Write Tag:** A 'Bank:' dropdown menu set to 'EPC', an 'Addr(words):' input field with '0002', a 'Length(words):' input field with '2', an 'Access Password(Hex):' input field with '00000000', a 'New Data(Hex):' input field, a checkbox for 'PC: 0000', and a 'Write Tag' button.
- Write EPC(Keep a tag in the antenna field):** An 'EPC:' input field, an 'Access Password(Hex):' input field with '00000000', and a 'Write EPC' button.
- Lock Tag:** Four radio buttons: 'Kill Password' (selected), 'Access Password', 'EPC', and 'User'. To the right, a 'Read/Write Protect:' dropdown menu set to 'Uncl', an 'Access PassWord(Hex):' input field with '00000000', and a 'Set' button.

Figure 14

### 9.1 Operates on a specified tag

Note:

Complete EPC data can be used as filtering conditions (EPC) or partial data can be used as filtering conditions (mask);

This function can be used to read data, write data and set protection on this page;

9.1.1 Complete EPC, as shown in "Figure 15" .

Mask Mode  EPC  Mask

EPC  
 EPC (Hex) :

Mask  
 Mask Bank:  Addr(bits) :   
 Length(bits)  Data(Hex):

Write Tag  
 Bank:  Addr(words) :  Length(words):   
 New Data(Hex):   PC: 0000

Write EPC(Keep a tag in the antenna field)  
 EPC :  Access Password(Hex)

Figure 15

## 9.2 Writing data and reading data

Reader Informat | **Read Tag** | Write Tag | GPIO Control | IP Set/Get

Mask Mode  EPC  Mask

EPC  
 EPC (Hex) :

Mask  
 Mask Bank:  Addr(bits) :   
 Length(bits)  Data(Hex):

Write Tag  
 Bank:  Addr(words) :  Length(words):  Access Password(Hex)   
 New Data(Hex):   PC: 0000

Write EPC(Keep a tag in the antenna field)  
 EPC :  Access Password(Hex)

Lock Tag  
 Kill Password  Access Password  EPC  User Read/Write Protect:  Access PassWord(Hex):

Figure 16

### 9.2.1

Bank:writable areas are: EPC, Reserved, USER;

The readable areas are: EPC, Reserved, USER, TID;

Addr(words): the unit is "word". You can specify the start address of data reading or writing.

Length(words): the unit is "word". You can specify the length of data to be read or written.

New Data(Hex):

1. When writing the tag, the length of the written data must be consistent with the specified length, and the data length must be an even number of bytes. When writing EPC data, if you need to overwrite the original EPC data, you need to check the automatic calculation of PC value. If Auto calculate PC value is checked, data will be written from start address 1 by default.

2. When reading the tag, the length of the read data cannot exceed the length of the data actually stored in the tag.

Access Password(Hex): hexadecimal string. The default is "00000000". It is generally used when the label is protected or locked. It can only be operated with a correct password.

### 9.3 Write EPC

Note: 1. Only one tag must be reserved in the antenna field (it can be adjusted with the reader power);

2.The EPC data written must be a hexadecimal string with an even number of bytes in length.

Reader Informati	Read Tag	Write Tag	GPIO Control	IP Set/Get
Mask Mode				
<input checked="" type="radio"/> EPC <input type="radio"/> Mask				
EPC				
EPC (Hex) : E28011606000021140ADF864				Read EPC
Mask				
Mask Bank:	EPC	Addr(bits) :	00000000	
Length(bits)	00000000	Data(Hex):		
Write Tag				
Bank:	EPC	Addr(words) :	0002	Length(words): 2
				Access Password(Hex) 00000000
New Data(Hex):		<input type="checkbox"/> PC: 0000		Write Tag
Write EPC(Keep a tag in the antenna field)				
EPC :		Access Password(Hex)	00000000	Write EPC
Lock Tag				
<input checked="" type="radio"/> Kill Password <input type="radio"/> Access Password <input type="radio"/> EPC <input type="radio"/> User    Read/Write Protect: Unloci				
				Access PassWord(Hex): 00000000    Set

Figure 17

#### 9.4 Lock Tag

Note: this function is used for EPC write protection, access password area read-write protection, destruction password area read-write protection and user area read-write protection. Before this function is operated, the access password must be set in advance

Write EPC(Keep a tag in the antenna field)				
EPC :		Access Password(Hex)	00000000	Write EPC
Lock Tag				
<input checked="" type="radio"/> Kill Password <input type="radio"/> Access Password <input type="radio"/> EPC <input type="radio"/> User    Read/Write Protect: Unloci				
				Access PassWord(Hex): 00000000    Set

Figure 18

# 10.GPIO

## 10.1 GPO output

This function can control the status of the GPO ports of the reader, and the output time unit is seconds.

## 10.2 GPI input

Start monitoring can monitor the status of the GPI ports of the reader in real time.

When starting is triggered, the level is "0" and the default is "1".

## 10.3 TriggerReading

After the TriggerReading is started, if the GPI status information changes, the reading can be started, and the reading time is 5 seconds (the reading time can be set).

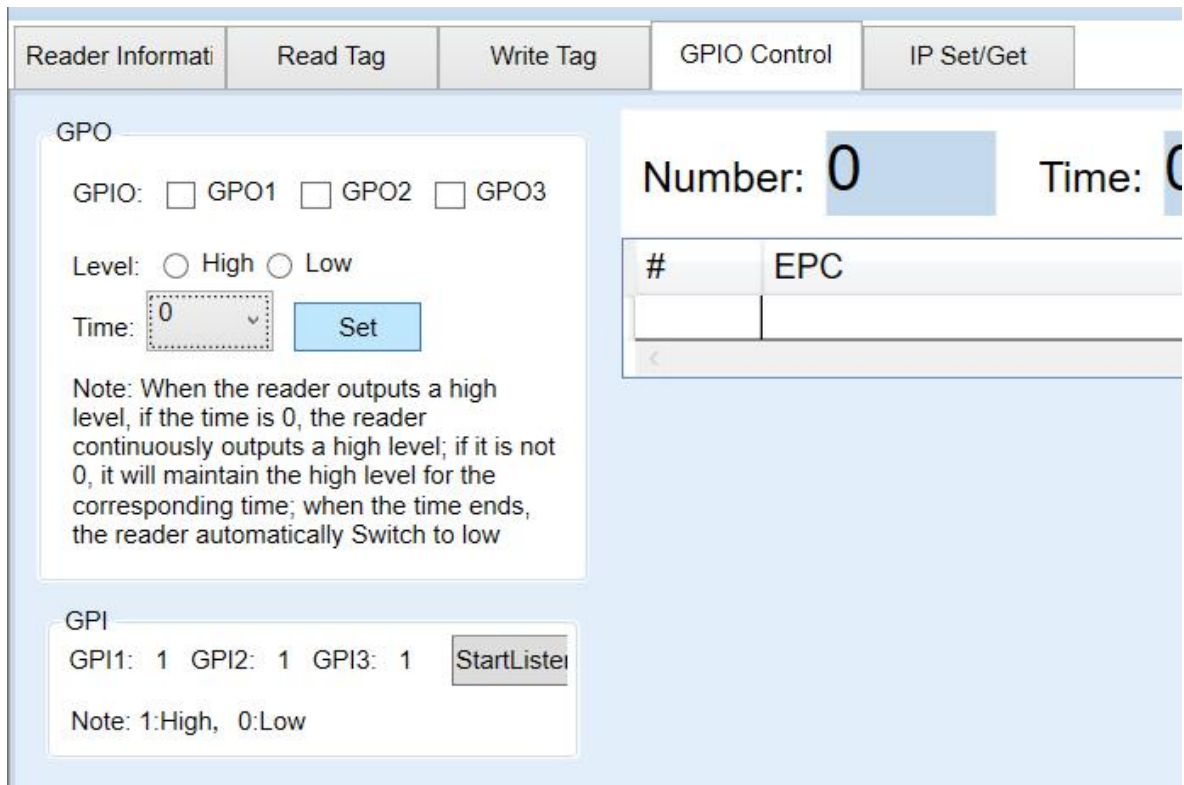


Figure 19

## 11. Set the IP address of the reader

Get: click get to get the current IP information of the reader

Setting: in the dialog box, enter a new IP address and click set. After the prompt is set successfully, the new IP address will take effect after the reader is powered off and restarted.

Reader Informati	Read Tag	Write Tag	GPIO Control	IP Set/Get
IP Information				
IP :	<input type="text" value="192"/>	<input type="text" value="168"/>	<input type="text" value="1"/>	<input type="text" value="136"/>
Mask :	<input type="text" value="255"/>	<input type="text" value="255"/>	<input type="text" value="255"/>	<input type="text" value="0"/>
Gate :	<input type="text" value="192"/>	<input type="text" value="168"/>	<input type="text" value="1"/>	<input type="text" value="1"/>
	<input type="button" value="Get"/>		<input type="button" value="Set"/>	

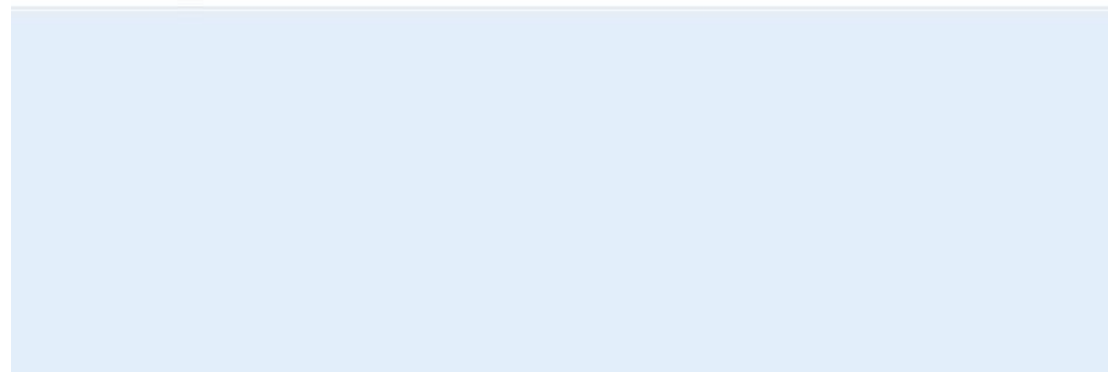


Figure 20