

MM01&MM04

User Manual

Table of Contents

1. Information.....	2
1.1. Characteristics.....	2
1.2. Applications.....	2
2. Specifications.....	3
2.1. Model: MM01.....	3
2.2. Model: MM04.....	3
2.3. Model: MM12 & MM13.....	4
3. connection diagram.....	5
3.1. Model: MM01 & MM04.....	5
3.2. Model: MM12 & MM13.....	7
4. Software operation.....	9
4.1. Download address.....	9
4.2. Operating instructions.....	10
4.2.1. Connecting equipment.....	10
4.2.2. Connect computers.....	11
4.2.3. Inventory demonstration.....	13
4.2.4. Simple setting.....	13
4.2.5. Advanced settings.....	15
4.2.6. Read and write operations.....	17

1. Information

1.1. Characteristics

- Support ISO18000-6C(EPC C1G2) protocol tag;
- 860~960MHz frequency band;
- USB HID drive free;
- Support virtual keyboard and serial port;
- Working voltage: USB interface or +5V power supply;
- Working current: < 200mA
- Reading distance range:

There is no built-in antenna in the module **MM01** and **MM04**, so it is necessary to purchase additional antennas to match different antennas and have different recognition distances. MM01 supports one antenna interface and MM04 supports four antenna interfaces

Type of antenna: CC02 > 2metre,

Type of antenna: PC06 > 4metre,

Type of antenna: PC08 > 6metre,

Type of antenna: PC09 > 8metre,

Type of antenna: PL12 > 15metre

There is built-in antenna in the module **MM12** and **MM13**,

Type: MM12> 2metre,MM13>3metre

- Interface support:

Model:MM01/MM04---RS232(TTL)、USB、 Wigan and IO

Model:MM12/MM13---RS232(TTL)

Model:MM12W/MM13W---RS232(TTL)、 WIFI

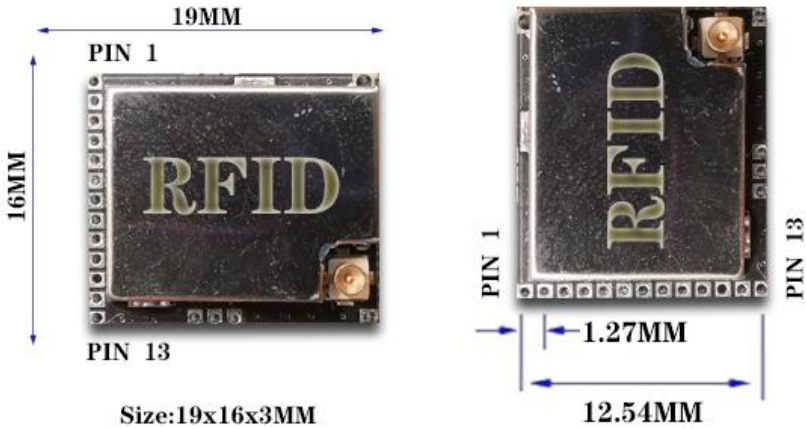
Model:MM12G/MM13G---RS485、 USB、 Wigan and IO

1.2. Applications

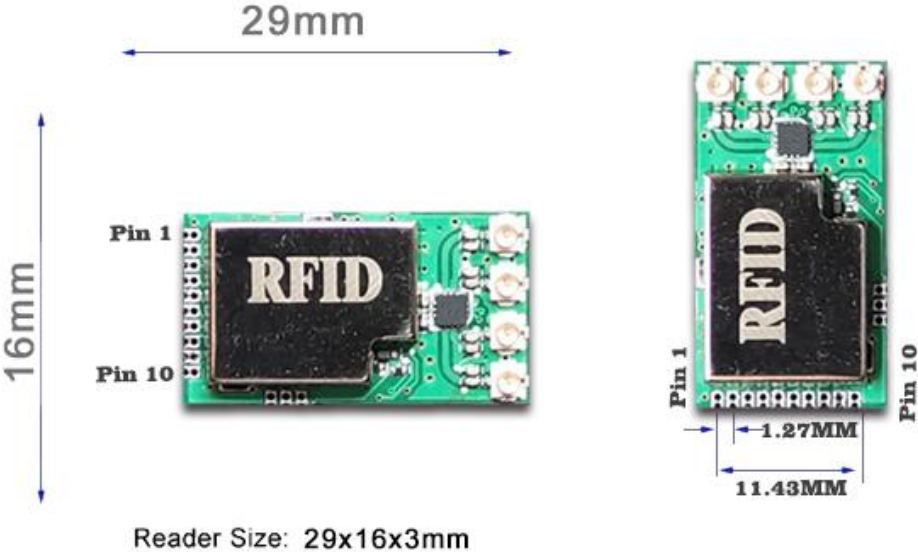
- Logistics and warehouse management: goods flow, warehouse management and the flowing management of mail, parcels and luggage
- Intelligent parking management: parking management and automatic charges
- Productive lines management: production process fixed identify
- Product counterfeit-proof inspection: using memory's write-protect functions inside tags and identifying with true-false of products
- Other fields: used widely in club management, libraries,students schools, consumption management, time management, dinner management and pool management

2. Specifications

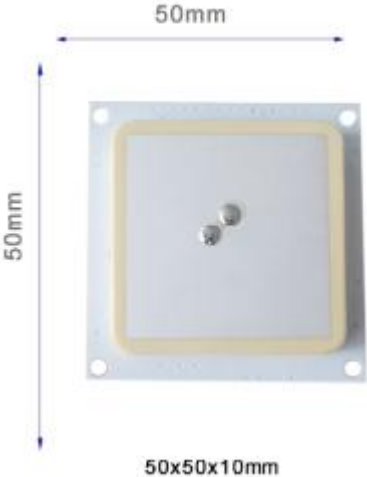
2.1. Model: MM01



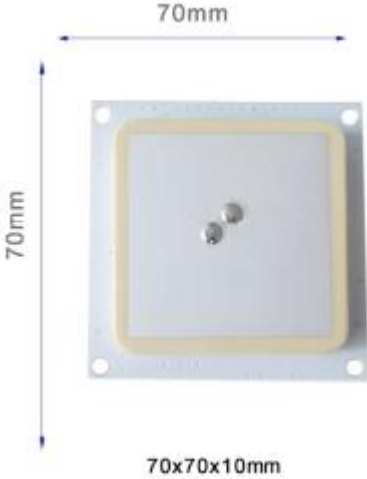
2.2. Model: MM04



2.3. Model: MM12 & MM13



MM12/MM12W/MM12G



MM13/MM13W/MM13G

3. connection diagram

3.1. Model: MM01 & MM04



Antenna Model:	F-CC02	F-PC06	F-PC08	F-PC09
Reading distance:	>2m	>4m	>6m	>8m
Stable distance:	>1m	>2m	>4m	>5m

引脚定义 (Wiring Diagram)



1 Pin	DC+5V	2 Pin	0V
3 Pin	EN	4 Pin	TXD
5 Pin	RXD	6 Pin	D1 (wigan)
7 Pin	D0 (wigan)	8 Pin	D- (USB)
9 Pin	D+ (USB)	10 Pin	Input (I0)
11 Pin	Output (I0)	12 Pin	Null
13 Pin	Beep (I0)		



TYPE: MM01

引脚定义 (Wiring Diagram)



1. Pin	DC+5V	2. Pin	0V
3. Pin	EN	4. Pin	TXD1
5. Pin	RXD1	6. Pin	TXD2
7. Pin	RXD2	8. Pin	D1 (wigan)
9. Pin	D0 (wigan)	10. Pin	BEEP



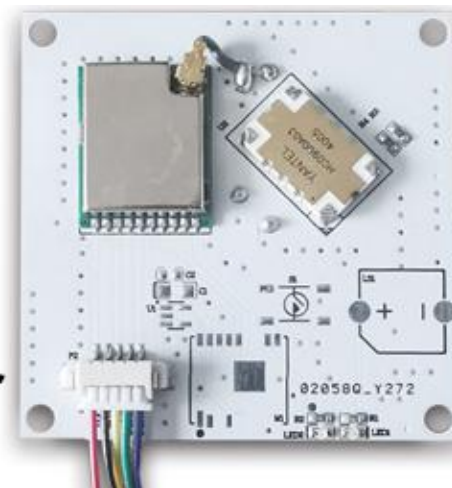
* Standard interface have TTL and I0.

TYPE: MM04

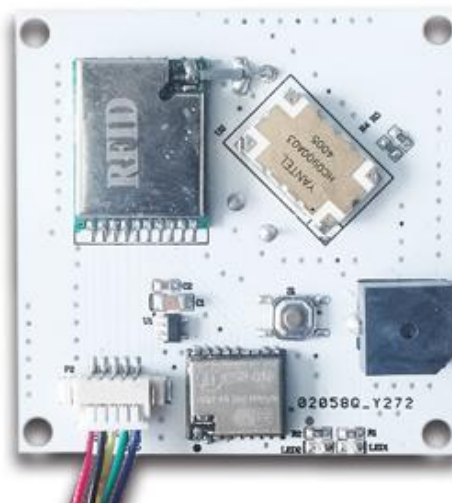
3.2. Model: MM12 & MM13



Model: MM12/MM13



Model: MM12W/MM13W





Model: MM12G/MM13G



USB BEEP D0 D1 B A T 0V 12V

4. Software operation

4.1. Download address



<http://www.uhfsky.com>

NOTE:

- ① At present, the software only supports WINDOWS and Android.
- ② When setting software parameters, do not place RFID tags within the equipment identification range, otherwise the setting will fail.
- ③ Use keyboard to output rfid tag number type reference: for example

The same number of different forms of expression:

Decimal number (Dec) =123456

Hexadecimal number (Hex)=1E240

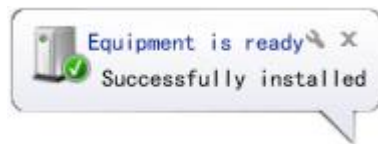
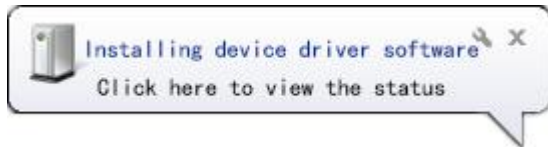
Weigand number =001, 57920 (Break the hexadecimal value 1E240 into decimal numbers 001, 57920)

If the output length is not enough, it can be set by adding 0 in front..

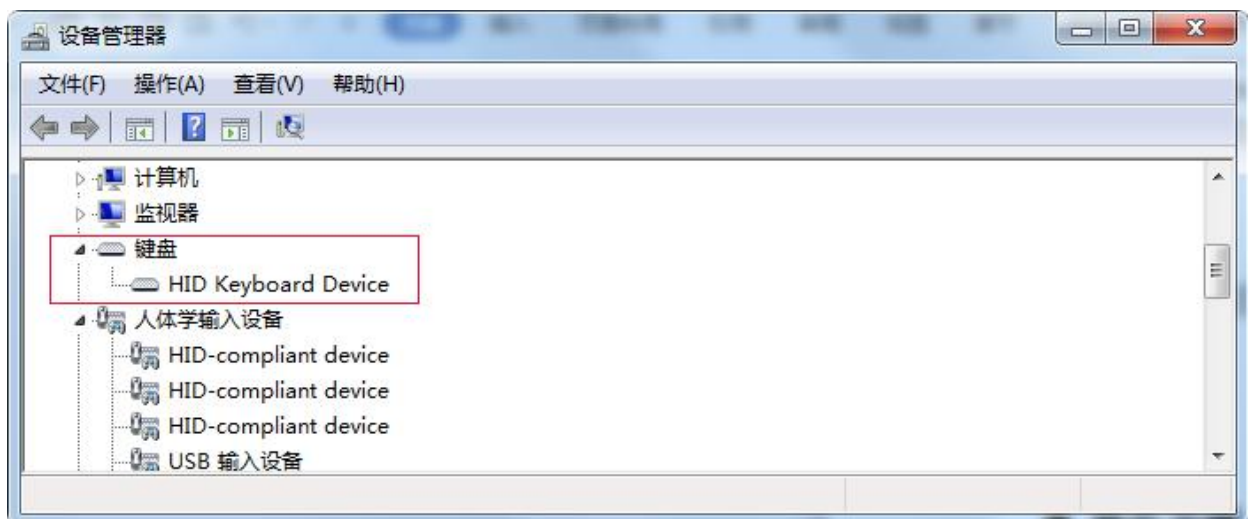
4.2. Operating instructions

4.2.1. Connecting equipment

Plug the device into the USB interface of the computer and the following message pops up:



Then open the device manager of the computer, and there will be one more device in the keyboard option. As follows::




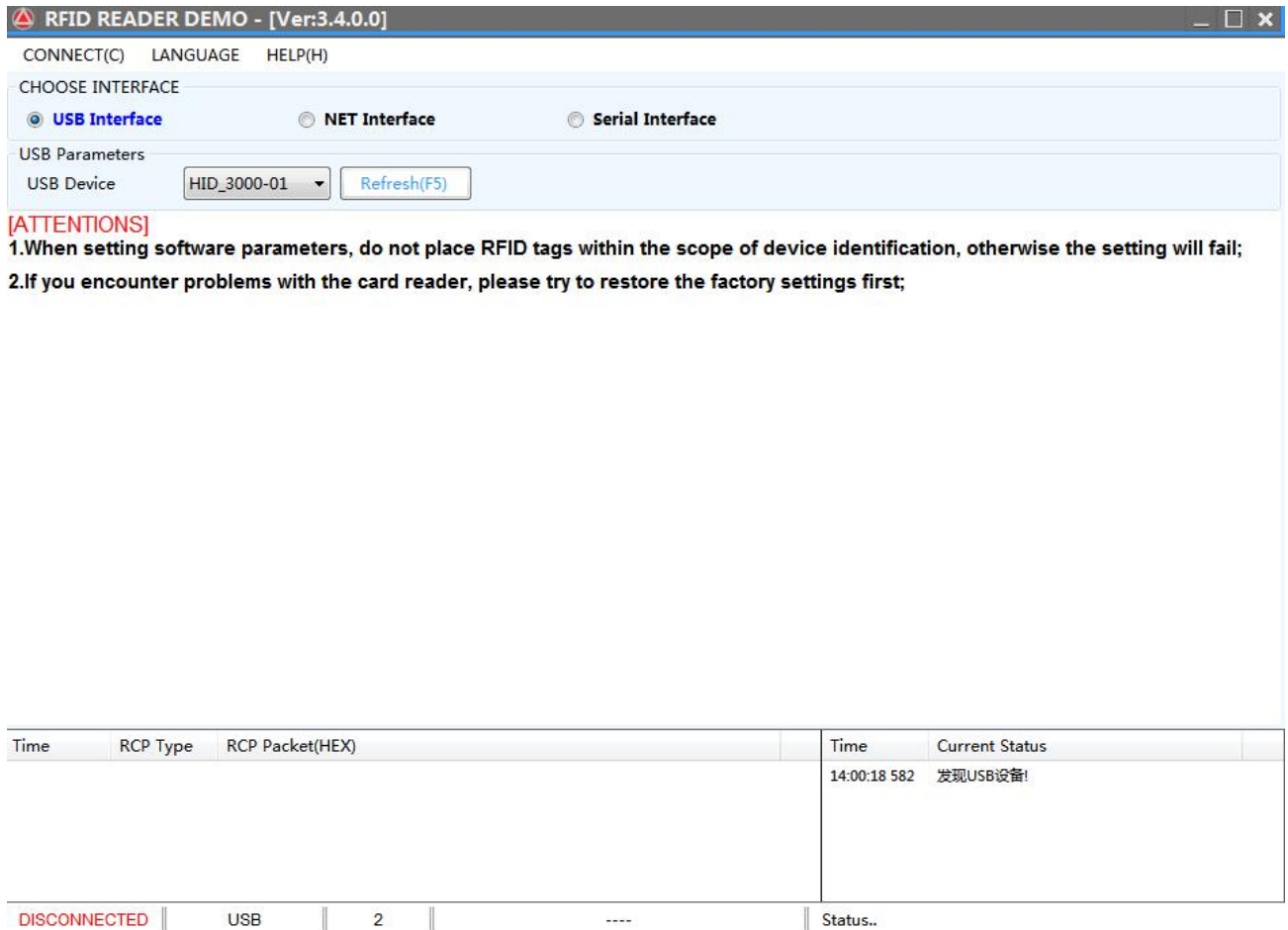
This indicates that the computer has been successfully connected. Now, online operation is started.


(Note: If you want to use TTL or RS485 to connect the demonstration software, you need to purchase the corresponding converter to connect to the computer.)

4.2.2. Connect computers

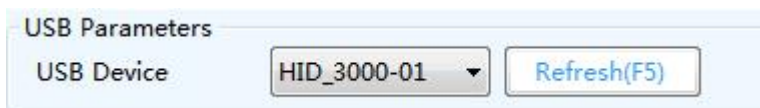
After downloading and decompressing the software,  , Open the file and

double-click the software icon  , The following main interface appears:



① There are three communication parameter configurations. We choose “USB Interface”. If the USB device is empty, please press the button  or F5.

As shown in the figure:



, Select a USB device.

②Click the "CONNECT" button, and four sub-function buttons can be operated on the back side after online:

Inventory Tag---Simple settings---advanced settings---Tag Operation---

Defalut Parameters---restart system.

As shown in the figure:

The screenshot shows the 'RFID READER DEMO' software interface. The title bar indicates the version is 3.4.0.0 and it is for a 915MHz Reader (Q Series) on a QU-V1.21 device. The interface includes a menu bar with 'DISCONNECT(C)', 'LANGUAGE', and 'HELP(H)'. On the left, there is a sidebar with buttons for 'Inventory Tag', 'Inventory', 'Simple Settings', 'Advanced Settings', 'Tag Operation', 'Defalut Parameters', and 'Restart System'. The main area displays 'Inventory Tags' settings, including 'Current Ant' (0), 'Inventory Times(s)' (0), 'All Tags(tags)' (0), and 'Run Times(s)' (0). It also has 'Stop for Tags(tags)' (80), 'Stop for Run Times(sec)' (0), 'Stop for Inventory(num)' (0), and 'Inventory Interval(ms)' (50). Below these settings is a table with columns for 'PC', 'EPC', 'Count', 'Ant', and 'RSSI'. At the bottom of the main area are buttons for 'Loop Inventory', 'Clear', 'Save', and 'Single Inventory'. A log window at the bottom shows RCP packets and their current status.

Time	RCP Type	RCP Packet(HEX)	Time	Current Status
14:06:01 248	RCP CMD	7C FF FF 82 32 00 D2	14:00:18 582	发现USB设备!
14:06:01 261	RCP RSP	CC FF FF 82 00 22 0A 77 77 77 2E 61 6F 73 69 64 2E 63 6F 6D 20 30 41 55 51 56 ...	14:06:01 234	CONNECT: not connect reader,connecti...
14:06:01 679	RCP CMD	7C FF FF 81 32 00 D3	14:06:01 454	CONNECT: Connected.
14:06:01 703	RCP RSP	CC FF FF 81 00 1B 01 01 02 0A 01 02 1E 0A 0F 00 01 02 00 00 00 00 02 00 06 00 ...		

CONNECTED || USB || V1.18 || Type:QU - Version:V1.21 - Address: 65535 || Ready..

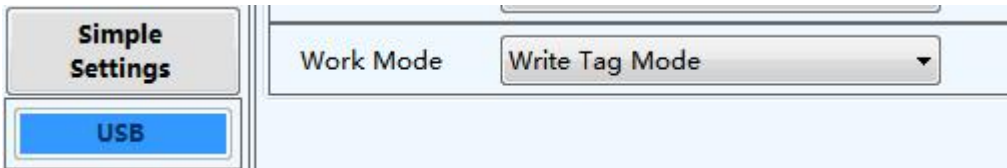
4.2.3. Inventory demonstration

①After the system is connect, the Inventory Tag interface appears directly, as shown in the above figure:

②Put the RFID tag within the recognizable range of the equipment.

③Click the "Loop Inventory" button, and the label information will be displayed in the text box soon.

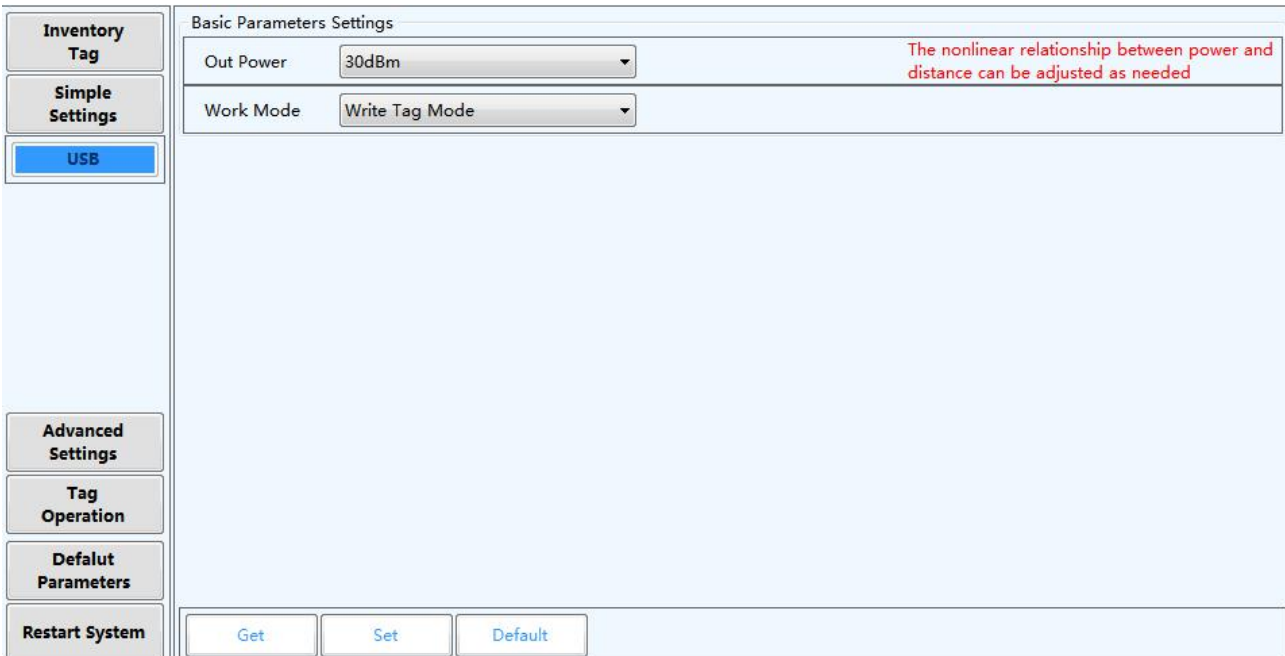
Note: USB desktop card issuer can only use this function if its working mode is set to data writing. As shown in figure:



4.2.4. Simple setting

Simple setting is a simple operation for users who have low requirements on data processing or don't know much about software. If there are higher requirements or more professional users, please use "Advanced Setting".

①Click the "Simple Settings" button on the left, as follows:



② The range of transmission power (0-30DBM) corresponds to the distance (non-linear) of RFID tag identification of equipment.

③There are three working modes: write tag mode, read tag mode and TID visual

keyboard mode.

④ **write tag mode**: select this mode when writing data to a single label. After entering this mode, the equipment enters the command state and will not actively identify the label (this mode can use the "Inventory tag" function)

⑤ **read tag mode**: When this mode is selected, the device will automatically identify the label and output the data according to the set data output format. Data output format is set as shown in the figure:

The screenshot displays the software's configuration interface. On the left, a sidebar contains buttons for 'Inventory Tag', 'Simple Settings', 'USB', 'Advanced Settings', 'Tag Operation', 'Default Parameters', and 'Restart System'. The main panel is titled 'Basic Parameters Settings' and includes 'Out Power' (6dBm) and 'Work Mode' (Read Tag Mode). Below this is the 'Data Output Format Settings' section, which includes 'Out Mode' (Disabled), a grid for 'Hex Tag(EPC) code' (E2 00 00 1D 62 07 01 49 27 20 7F 22), 'Change the position' (From 1 To 3), 'Choose the format' (Decimal), and 'Change the length' (8). The 'Output data' field shows '14811136'. A red warning message is present: 'The nonlinear relationship between power and distance can be adjusted as needed' and '输出数值位数不够前面自动补0'. At the bottom, there are 'Get', 'Set', and 'Default' buttons.

NO. : represents the order of EPC numbers

Hex Tag (EPC) code: data representing EPC number, which can be modified in the box. The three numbers with black bottom in front represent data to be output to USB port. The length and position can be adjusted from the following option, and the final number will appear in the last line.

Change the position: adjust the length and position of the output part of EPC number

Choose the format: there are decimal, hexadecimal and standard Wigan, and there are more output formats in Advanced Configuration.

Change the length: the fixed length of the output data; if it is less than the length, add 0 before it; if it is greater, it will be discarded.

Output data : reference of output data of virtual keyboard after setting the previous parameters.

The software can intelligently and freely combine different output formats, such as decimal, hexadecimal, etc., and the output data is the last one. When the

"function selection" item selects to disable the virtual keyboard, it can detect whether the data is correct, and when the virtual keyboard is selected to enable, it can output the data at the cursor position or text file like the keyboard.

⑥ **TID visual keyboard mode:** this mode adds the function of TID number output on the basis of EPC data reading mode. EPC+TID number output or tid output can be selected. As shown in figure:

No.:	1	2	3	4	5	6	7	8	9	10	11	12
Hex Tag(EPC) code:	E2	00	00	1D	62	07	01	49	27	20	7F	22
	13	14	15	16	17	18	19	20	21	22	23	24
Hex Tag(TID) code:	E2	00	34	12	01	2F	F0	00	0A	25	69	62

4.2.5. Advanced settings

Advanced settings have higher professional knowledge for users. Please consult customer service staff if you are unclear. Click the "Advanced Settings" button on the left, and there are three submenus, namely, basic ---RF ---Else As shown in figure:

DISCONNECT(C) LANGUAGE HELP(H)

Inventory Tag

Simple Settings

Advanced Settings

Basic

RF

Else

Tag Operation

Defalut Parameters

Restart System

Basic Parameters Settings

Output Mode: RS485(RS23: Work Mode: Active Same ID interval: 1 *0.5s

Buzzer: Output only

Auto Read Type: 6C Auto Read Interval: 10 *10ms Auto Read Delay: 1 s

Device Id

Device Id: 002500110444733F00000CA8

RS485 Protocol Address Settings

Address: 65535

Get Set Default

① **Description of setting basic parameters:**

Output Mode: select the communication mode between this equipment and external equipment.

Working mode:

Command mode (the equipment can work only when it sends a command without actively reading the card.)

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

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

Same ID interval: the time interval for uploading the same tag data

Buzzer: it can be turned on or off

Auto read type: the type of output label data, which can be EPC number or TID number.

Auto read interval: the interval between reading label data twice


Auto read delay: the time to delay sending the tag data to the communication interface after reading it

Device ID: the unique ID number of each equipment, which cannot be modified

Address: the address used for RS485 communication

②Description of setting RF parameters::

Inventory Tag Simple Settings Advanced Settings Basic RF Else Tag Operation Default Parameters Restart System	RF Specification Settings			
	Regional Standards	USA	Table	
	RF Transmitter Power Settings			
	Tx Power	6dBm		
	RF Modulation Settings			
	Modulation	00-High Sen	Mixer Gain	12dB
	IF Amp Gain	36dB	SignalThreshold	0120
	Get Set Default			

Regional Standards: Each country has its own corresponding standards for the restrictions on the use of RFID UHF band. American standards and European standards are usually used. Click this button  to select the

frequency to be scanned. When one frequency is selected for scanning, the frequency is fixed, and when multiple frequencies are selected for scanning, it is frequency hopping. As shown in figure:



Tx Power: The range of transmission power (0-30DBM) corresponds to the distance (non-linear) of RFID tag of equipment.

RF Modulation Settings: This is the modulation and de-calling of tag inventory signal, which is usually selected by default.

③Description of setting else parameters:

There are four options to open the Other Parameters menu, which are:

Data Output format setting --GPIO setting -- Encryption setting--Extended setting
Meet various customized functions of users.

4.2.6. Read and write operations

Click the "Tag operation" button on the left, and there are three submenus, namely, Simple Write-Advanced Write-Copy TID

As shown in figure:

Inventory Tag Simple Settings Advanced Settings Tag Operation Simple Write Advanced Write Copy TID	OLD EPC	PC	NEW EPC	USE TIME(...)	Count								
	No.:	1	2	3	4	5	6	7	8	9	10	11	12
	EPC data(hex):	00	00	00	00	00	00	00	00	00	00	00	00
	Incremented mode:	Auto increment			Incremented step: 1								
	Choose the format:	Hex											
Select location:	From	1	To	2	Move Left		Move Right						
Defalut Parameters	Input data:		00-00				Increment		Decrement				
Restart System	Start		Stop		Default		no tag		Export(txt)		Clear		

①Description of setting Simple Write:

This function is specially set for writing label data quickly, and it may be very intuitive to set the data you want to write.

No.: represents the sequence of EPC numbers

EPC data(hex): this line of data is the EPC number to be written into the label. Among them, the two numbers in the front black box represent the position where the data is to be written (the length and position can be adjusted from the following option), and the number in the back white box is fixed and can be modified at will.

Incremented mode: increment and decrement, and the increment number is in the back column.

Choose the format: decimal, hexadecimal and standard Wigan

Select location: adjust the length and location of data input into EPC number

Input data: enter the data you want to write into the variable EPC number here, and the unchanged data can be directly modified in the white box in the line of EPC number above.

②Description of setting Advanced Write:

This function can read and write more complex tags, such as accessing four blocks of tags, setting encryption and destruction of tags, etc., and operate carefully.

③Description of setting Copy TID:

This function is to directly copy the TID number of the tag into the EPC block data and turn it into an EPC number.