

**RDM • 瑞德**

Radio Frequency Identification

# **RDM8560-R-A**

## **User Manual**

**SHENZHEN RDM TAG MASTER CO.,LTD**

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## RDM8560-R-A Reader



## **STATEMENT**

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## **1. Introduction**

### **1.1. Intention of This Manual**

This Demo software is the presentation software for the reader produced by SHENZHEN RDM TAG MASTER CO.,LTD. Its interface is simple and be used for testing and acknowledging the relevant function of the RDM series reader. In addition, it also provides the user of RDM series reader with development routines and shortens the project of development time.

### **1.2. Target Reader**

Project developer

Manufacturer of the card

Production agent

### **1.3. Definition, Acronym and Abbreviation**

ISO (International Standards Organization)

AFI (Application family identifier) It is primary of application card stands for application type locked by VCD, and only satisfying the needed application standard can VICC be selected from current VICCs.

DSFID (data storage format identifier) It points out that how the data form in EMS memory of VICC.DICC is written and locked by relevant command and should be written in one byte. Then if DSFID is allowed, the logical organization of data can be known immediately. But if VICC can't support DSFID program,VICC will answer it by “ 0 “.

RFU (reserved for future use for ISO/IEC)

VICC (vicinity integrated circuit card)

VCD (vicinity coupling device)

ID card is the contactless only-read card of C12/13 .The transfer rate of reader data is 3.9 kbps( THRC12) or 6.62kbps( THRC13).

### **1.4. Reference**

**ISO/IEC 14443 Protocol**

**ISO/IEC 15693 Protocol**

## **RDM Communication protocol V2.0(full version).doc**

### **1.5. Environmental Requirement**

This Demo Software Systems don't request high for configuration of the computer and it can be fitted for all kinds of current popular desktop and notebook computer.

Requirement for hardware:

1. The lowest levels of computer configuration should be Pentium;
2. The least memory should be 32M
3. The video memory should be 2M at least;
4. It should support of Monitor.

Requirement for software: It should embody the following software:

1. Microsoft Windows2000/XP/2003 operating systems
2. 1024\*768 of Desktop resolution or higher
3. the necessary document of relevant language corresponding program

## **2. Software Configuration**

### **2.1. Software Installation**

1. *Before using the testing demo, please install the USB driver firstly*
2. Unpack compressed package to the appointed place
3. Copy corresponding system files to system directory

### **2.2. Parameter Configuration**

*When operating the program, first of all please have a check the cable port is opened or not. The detail operation please refer to the handling instruction.*

## **3. General Introduction of Software**

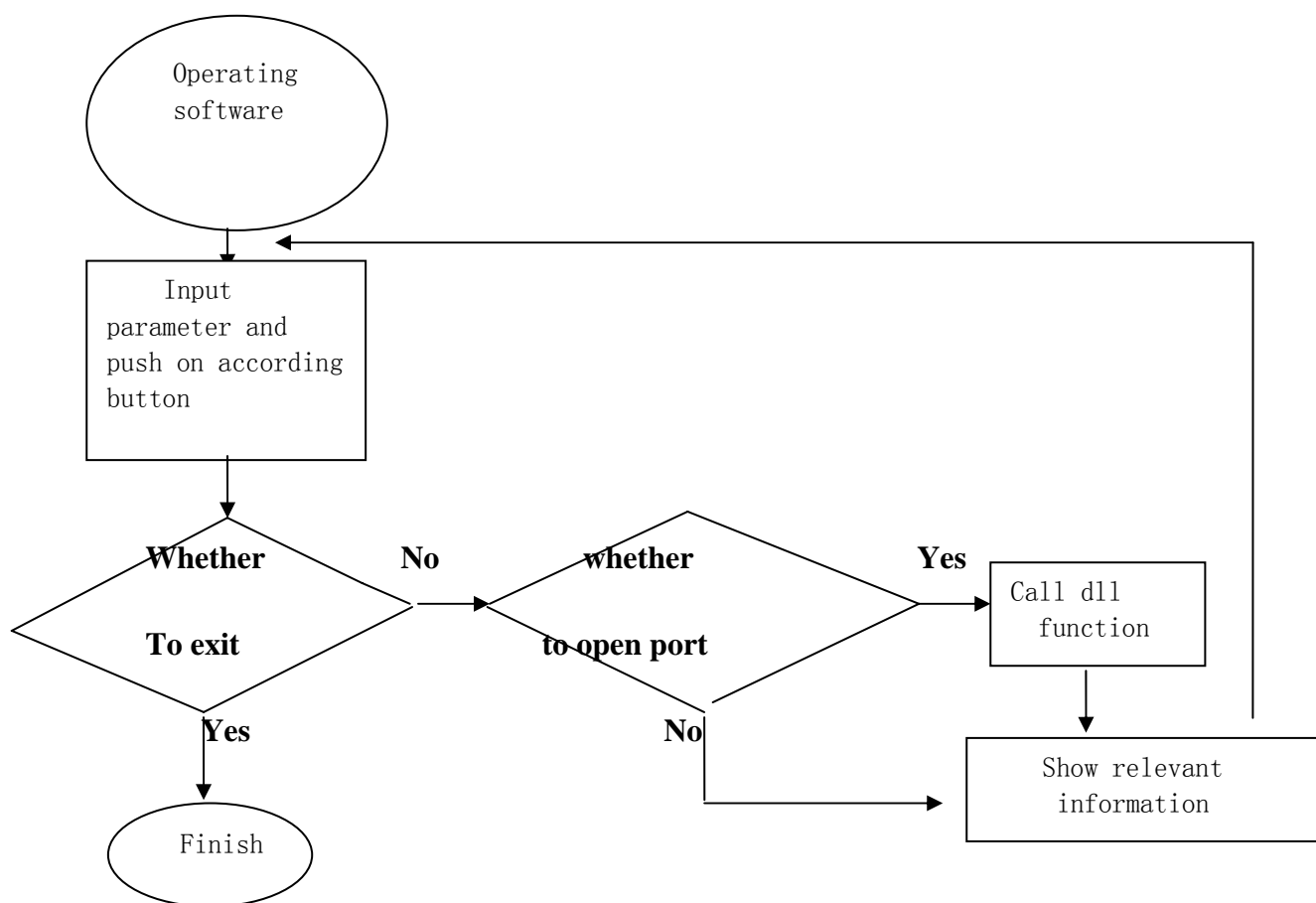
### **3.1. System Introduction**

Welcome you to choose RDM series reader. The Demo system is the special presentation software for developing the reader made by our own company. This Demo system contains various Embedded Visual programming tools developed with Chinese and English bilingual kind of software together, such as Visual Basic, Visual C++, Embedded Visual C++ and so on

The Demonstration software for any language development of the Demo system divide from modules. Every module is put on a property page but for Embedded Visual C++ development software for PDA , and all property page are put on the layout structure of one property sheet. Due to the limited by itself of PDA devices, the Embedded Visual C++ development demonstration software for PDA will be connected by a command button between property pages. And each demonstration software contain two main part : The first part is to present with modules, which means to operate module with reader, that is, the property page of “ Setup parameter” for Module One and the property page of “ Readparam “ for Module Two: The second part is to select module and is a charge part. According to different products sold by the user ,the demonstration software they obtain will be different and each module will be match one operating of one card. The specific module function, please refer to instruction of this manual.

### **3.2. Introduction of System flow**

The Demonstration Software in the Demo move the function of repository matching to one command button. For each presentation software operating , please refer to the flow diagram as follows:



**Picture 1 Demonstration software operating flow**

## 4. Operating Instruction

Different language development systems are alike expert for slight difference. The following operating guideline of this manual takes demonstration software (default Chinese) developed for Visual C++ as an example.

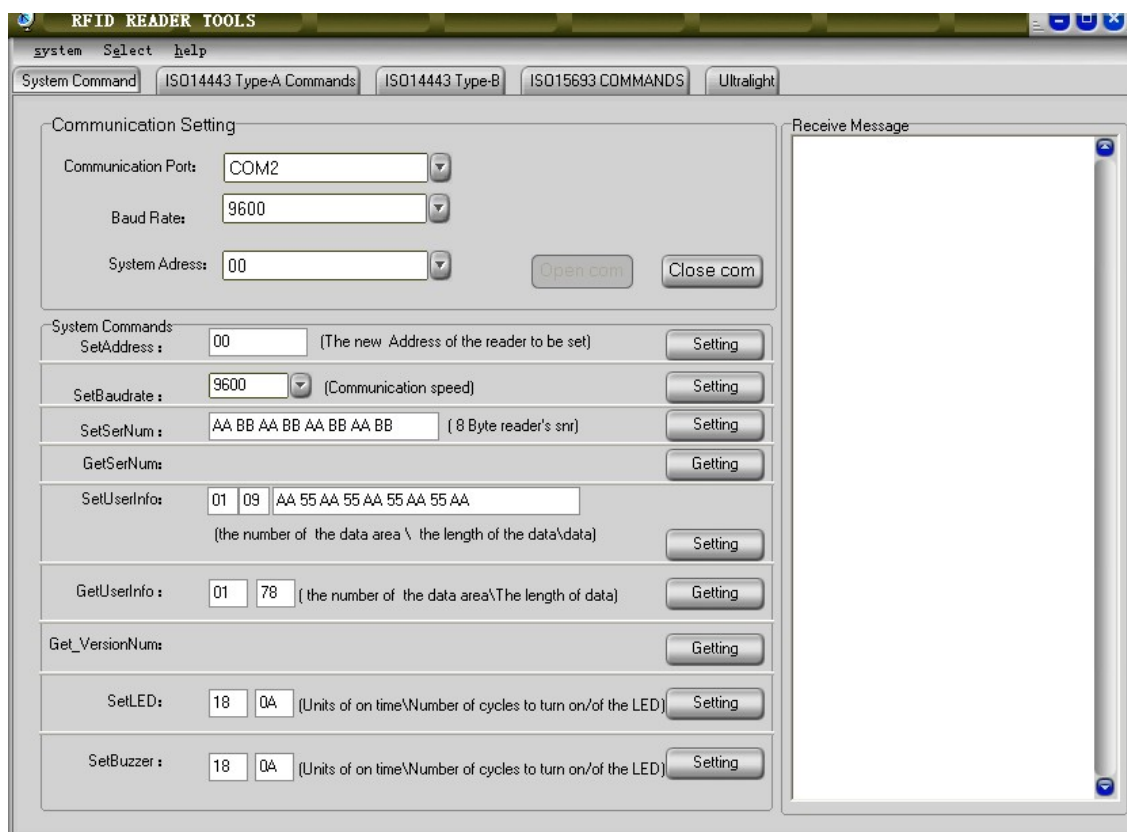
### 4.1. Module One : The Property Page of “Parameter setup”



## Function Description

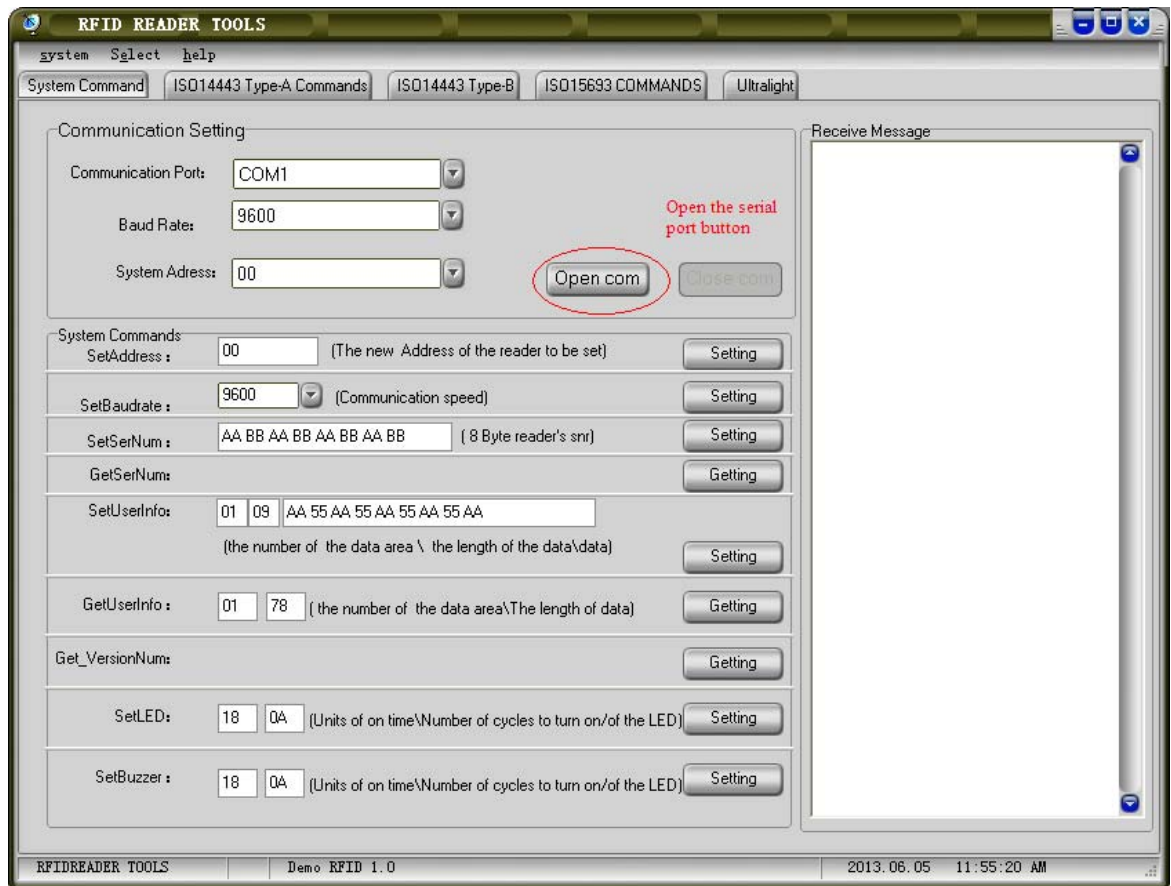
Create Module for Property Page of “Parameter setup”. This Module mainly includes the transfer of interface language and the relevant Parameter setup when the reader is working .The detail function please refer to the operating method of 4.1.3.

### 4.1.1. User Interface

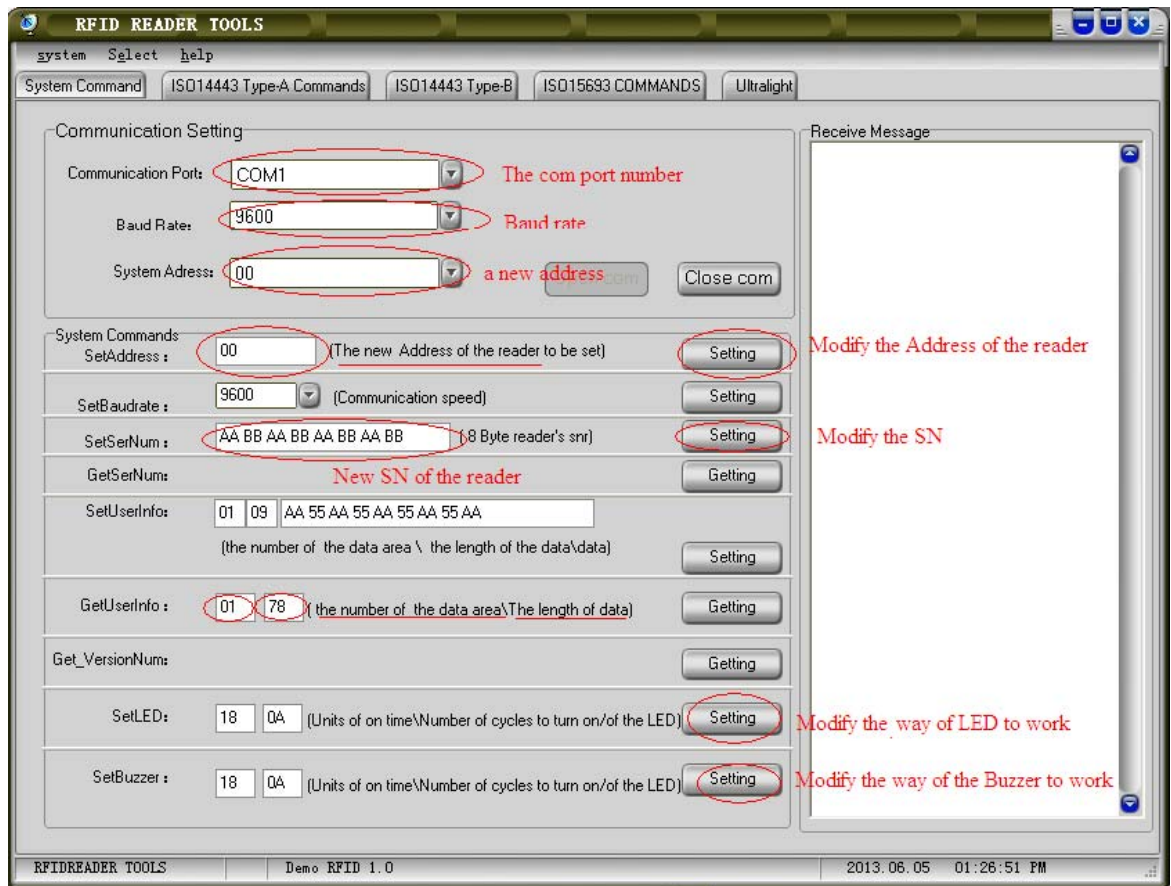


Picture 2 Operating Interface

Select the corresponding port number and baud rate on the Listbox,



Picture 3.Open port button and parameter configurations



Picture 4. Explanation of parameters interface

Please click the “close” button, the current operating condition will be shown on the Message box.

The baud rate of the reader usually would be 9600bps, but it could be changed by setup the baud rate button. Then after operating, the Message box will remind the current operating condition.

Click “Clear” button and increase message in empty space below the red circle as Picture 6

The general address of the reader is 00H and it can be changed by setup to modify the reader's address. Please select the right new address of the reader in the listbox, then click the matching “Set” button and there will be remind you the current operating condition

in the Message box. The relevant position please refer to the Picture Seven.

NOTE: ① Please select the right reader address or chose the general address 00H when communicating.

Please write 8 bytes new serial number into Listbox and click the “ Set “ button, after that there will be reminding the current operating condition in the Message box .The relevant position please refer to the Picture Seven.

Firstly, please input the relevant area code, data length and data in the message area of the User, and then click the corresponding “ Set “ button, after that the current operating condition will be shown on the Message box .Relevant position please refer to Picture Seven.

NOTE: ① The longest length of the input data for the each section should be 78H bytes.

Please input the relevant running time and times in the area of the operating mode of the led, then click corresponding “ Set “ button, after that the current operating condition will be shown on the Message box. Relevant position, please refer to Picture Seven.

NOTE: ① The running time is the time duration what the led light on, the unit is 20 millisecond and limited in 1 second (1000 millisecond ).The reminded time will be the time for led light off. So the largest value is 32H,when it is more than or equal to 32H,there can be seen the light lasting on. It is the time for led light one time.

The default value is 18: each time led light on is 24\*20 millisecond and led light off is 26\*20 millisecond.

② Times is the time for light off .

Such as : the running time is 18H,the time is 0AH, the indicator light will be 10 times off in 24\*20 millisecond.

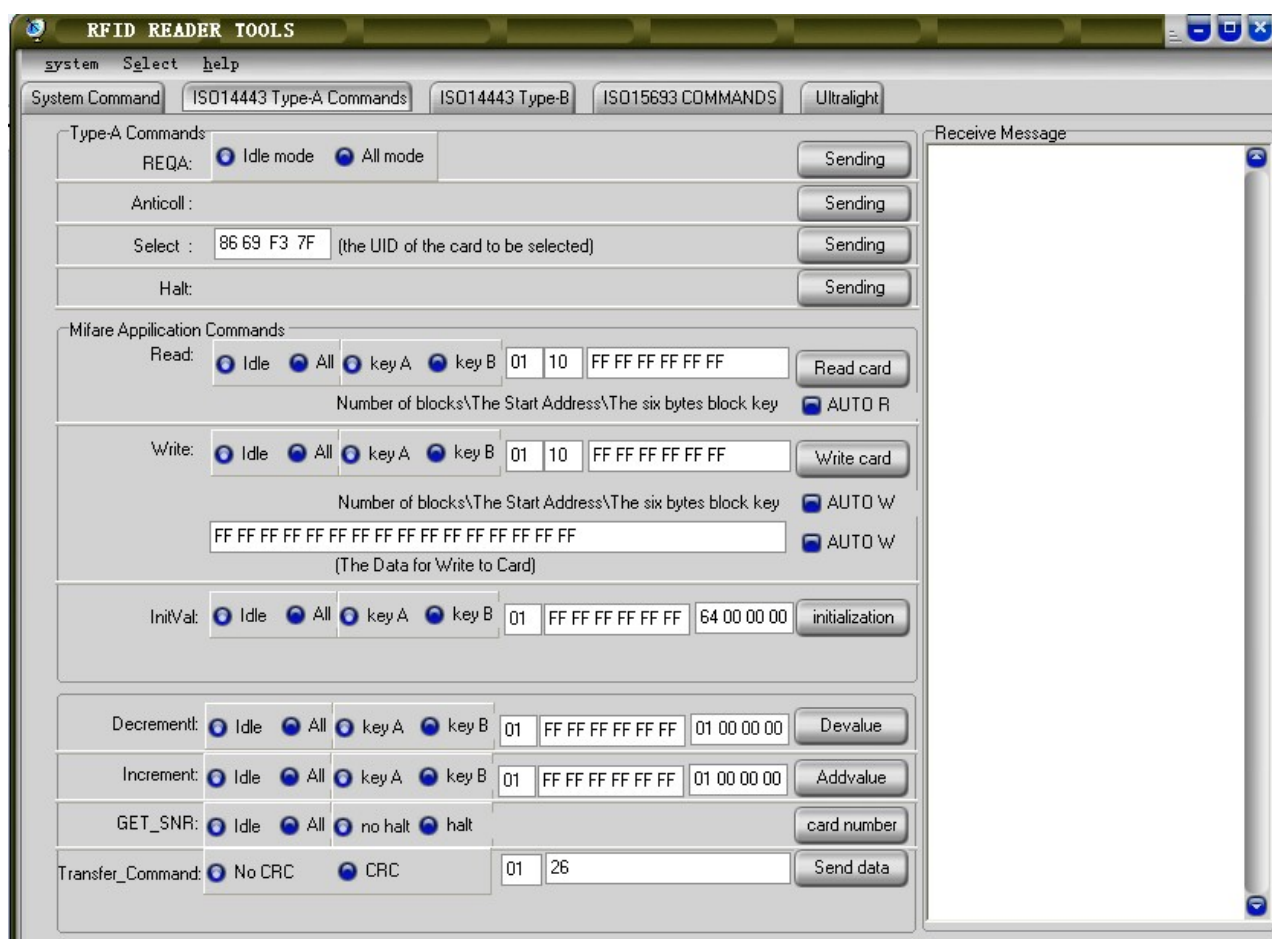
Its operating is similar as the led's. Omit here.

## 4.2. Property page of “ISO/IEC1443 A Card”for module three

### Function Description

This Module is able to read and write ISO/IEC 14443 A Mifare S50,S70 Card of Philips. We take S50 card as an example here and the detail function please refer to operating mode of 4.2.3.

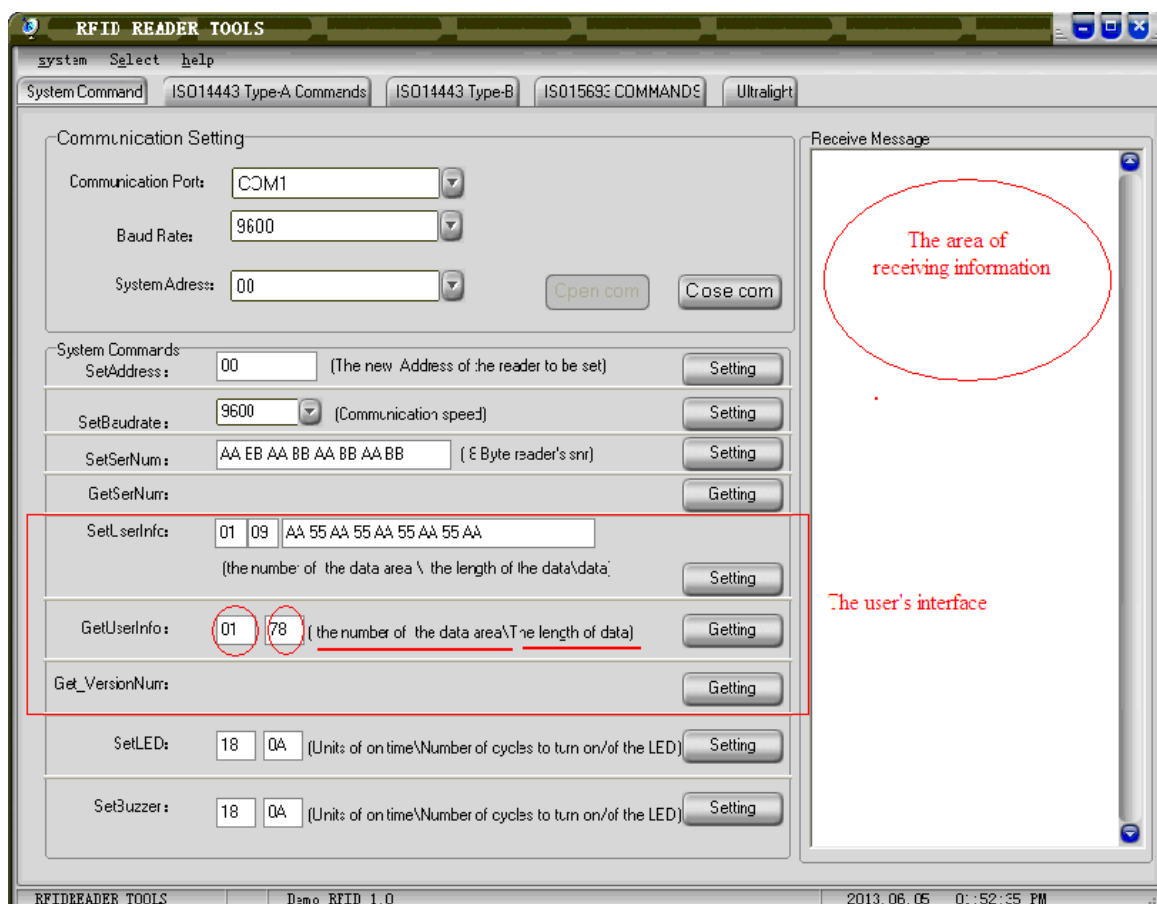
### User Interface



Picture 5. Property page interface of “ ISO/IEC 14443 A Card”

## Operating Mode

### 4.2.1.1. Get serial number



Picture 8 the property page interface of “Read Parameter”

Click “Serial Number” button. show on the red circle as Picture 8

### 4.2.1.2. Get the Module version number

Click “Module Version Number” button. Show on the red circle as Picture 9

### 4.2.1.3. Read user`s information

In user`s information area, input the corresponding data (hexadecimal data), data length (hexadecimal data). Click “read” button show on the red circle as picture 9

### 4.2.1.4. Clear Message Box

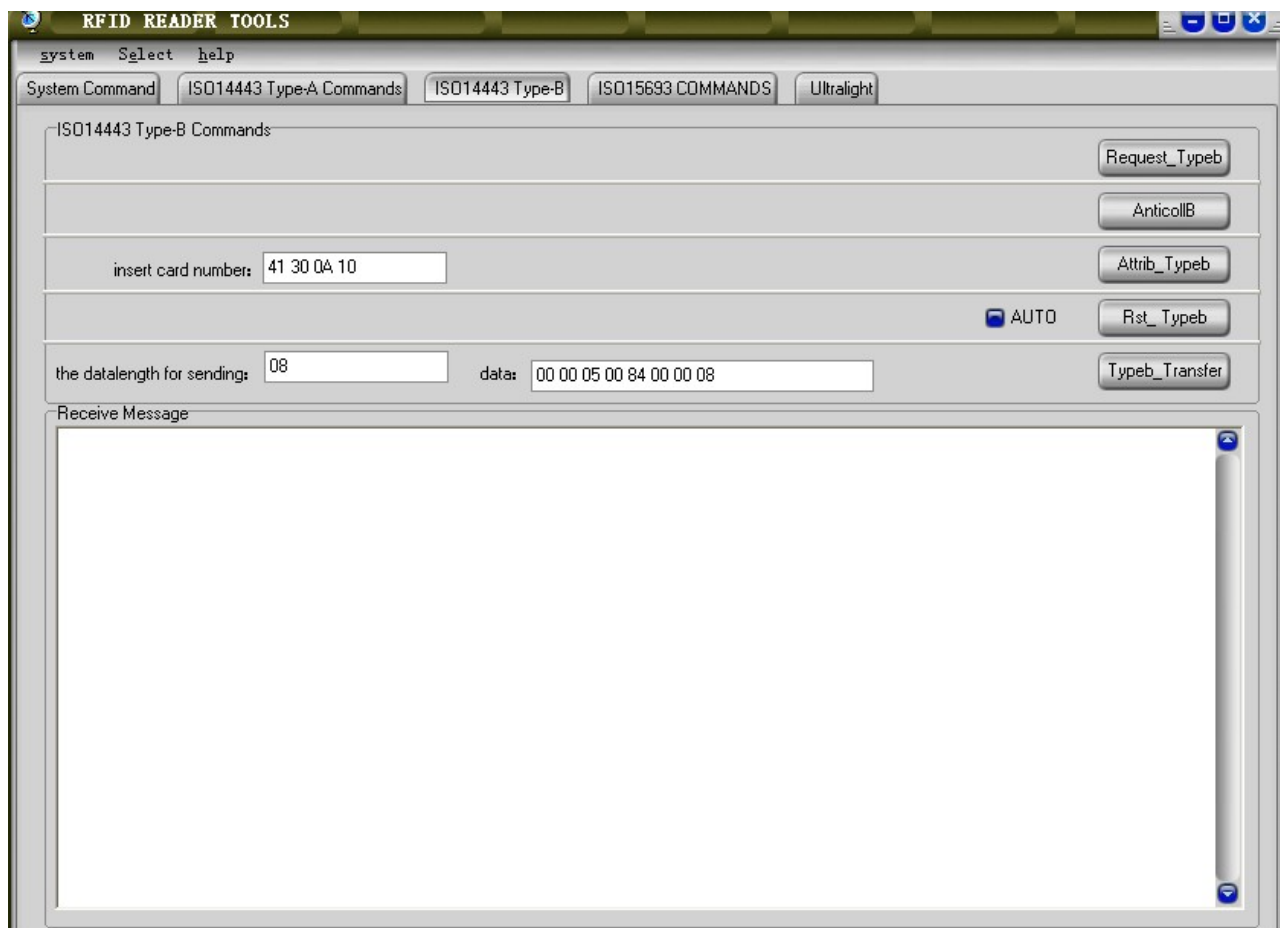
Click “Clear “ button.

### 4.3. Module 3 “ISO/ICE 14443 A Card “property page

#### Function Description

This module mainly contains the information exchange between the reader and the Type B card of external meet ISO/IEC Standard, and it takes Simens card made of SLE66CL160S chip as the test card.. Due to the special initial IC structure of Type B card ,this module just have the most basic function, other advance function can be specially designed according to the specific structure of IC. If necessary, please kindly contact Shenzhen RDM Tag Master Co.,Ltd for the detail development information. And the detail function please refer to 4.4.3 operating method

#### User Interface



Picture 9 Property page interface of “ ISO/IEC 14443 A/B Card “

## **Operating Method**

### **4.3.1.1. Seek Card**

Select the mode and click “ Read card“ button or tick AUTO , the Message Box will show of the type of current operating card.

Among the mode selected is divided into two parts, the detail as following:

All : Read multi-card method

Idle: Read one card method

Default mode is Idle.

### **4.3.1.2. Anti-collision**

Click “Anti-collision “button and increase message in empty space below the red circle shown on the Picture Night

### **4.3.1.3. Hibernate**

Firstly please select flag and input UID (basing on flag), then click “ StayQuit” button and increase message in empty space below red circle as Picture Night.

### **4.3.1.4. Get the serial number**

Get the serial number of the operating card.

The select mode is the same as find card, and the Halt method as follows:

None: Only read serial number of card, not to operate with others;

Halt: Read the serial number as well operate stay quiet with the card at the same time.



#### **4.3.1.5. Select card**

Firstly please select flag and input UID (basing on flag ) ,then click “ Select “ button and increase message in empty space below the red circle as Picture 9 .

UID is made up with 4 of 2 bits hexadecimal number.

#### **4.3.1.6. Read data**

Firstly please select page number, then click “ Read data “ button and increase message in empty space below the red circle as Picture 9.

#### **4.3.1.7. Write data**

Firstly please select page number and input the contents you want to write to ( the contents should be made up with 4 of 2 bits hexadecimal number ), then click “ Read data “ button and increase message in empty space below the red circle as Picture 9.

#### **4.3.1.8. Initialize the sector as E-wallet**

Firstly, please select sector number, mode, input key and initialization value, then click “ Initialize “ button and update the E-wallet of current sector. The update value should be input into the data of value.

For the mode and the key , please refer to Read data in the card of 4.3.3.6.

#### **4.3.1.9. Decrement of E-Wallet value**

Please select the card sector number and mode, input the value needed to decrement and the key. Then click “Decrement “button and decrement for the E-wallet of the current sector with the card.

The parameter information please refer to 4.3.3.8 “Initialize the sector as E-wallet”

#### **4.3.1.10.Increment of E-Wallet value**

Please select the sector number of the card and the mode, input the added value and key, then click “Increment ” button and add value for the E-wallet of the current sector of the card.

The parameter information please refer to 4.3.3.8” Initialize the sector as E-wallet”.

#### **4.3.1.11.Transfer CMD**

Firstly please select flag and page number , input UID (basing on flag) , then click “TransferCMD “ button and increase message in empty space below the red circle as Picture Night.

There are many flag parameters and the details please refer to ISO/IEC 15693 Standard, the following are commonly used:

The two optionals 0x02 : Disabled.

0x22: when transfer CMD, please must input 8 bits of UID and there can be several cards in reading area.

0x42: Disabled.

#### **4.3.1.12.EMPTY THE INFORMATION BOX**

Click “clear” button and increase message in empty space below the red circle as picture Night.

## **5. APPENDIX:**

### **5.1. FAQ**

1.The led of reader do not work

Cause of problem: 1 the cables are not connected well

2 The LED must be broken (but it rarely happens)

Solutions: Please change the relevant hardware

1, Open port successfully but fail to operate with other command

Cause of problem: 1 the cables are not connected well

2, The opening port is not the port of connecting with the reader.

3 The reader`s baud rate is not in accord with the PC COM Port

Solutions: Cause 1: refer to reason 1

Cause 2, 3 : Close the port then reopen the port with connecting port of the device and the current baud rate of reader.

1, After set the new format for module ten, the result of reading still be old format.

Cause of problem: The application of new format will be work after restarting.

Solutions: Cut off the power once by hand, that means remove the cables and then plug into again.

Company: MCAI

Name: TWC RFID

Model Number: TWC 8560-R-A

**FCC ID: 2AA3UTWC8560-R-A**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.