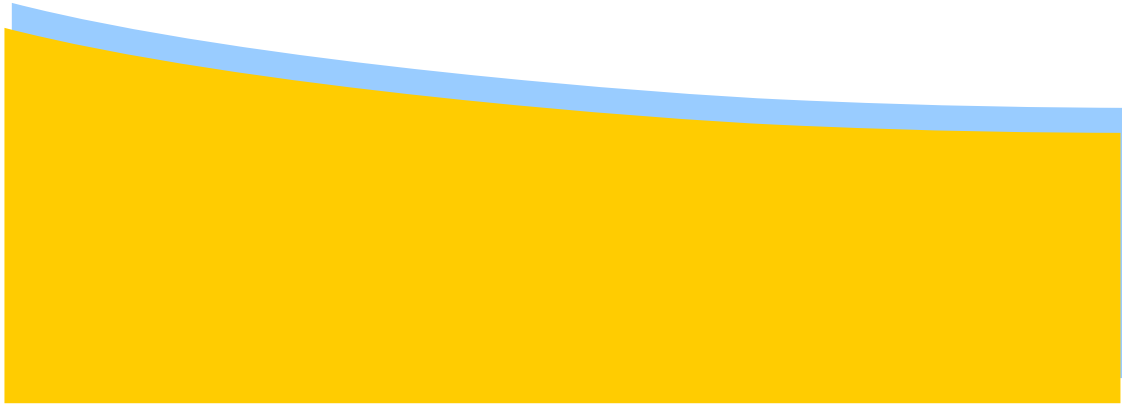
User Manual

HF Module OEM-HF-890

Version:

Version No.	Description	Date	Writer
V1.0	PDF output	2012.12.20	James Xiao



1. Introduction

This testing demo is usable for any kinds of readers with TTL or RS232 interface, and support to operate read/write cards compliant with ISO/IEC 14443A/B, ISO/IEC 15693 Standards, etc.

This DEMO is just for testing used, other specific app or request on function button, please refer to API documents, demo code and other second development files for your own program, or contact our sales for customization.

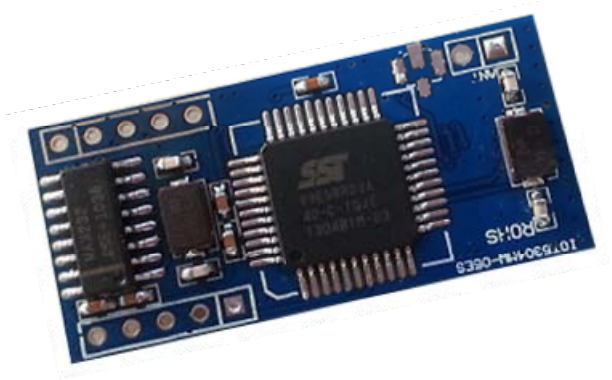
Remark: For USB-Com reader, before using this demo, please install the driver included on the file package, no need for RS232/TTL module.

2. Operation procedure

2.1 Connection

Here taken Testing on PC side by using tool of RS232 DB9 connector

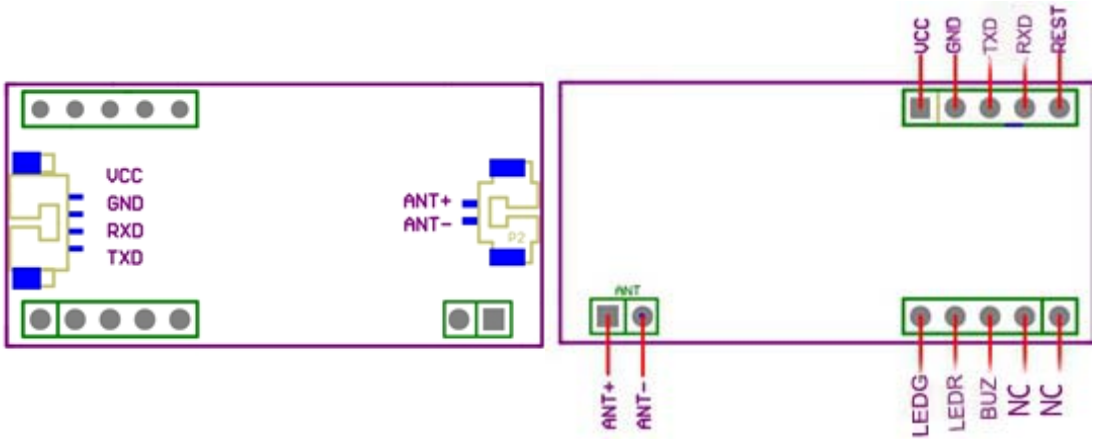
Please refer to the PIN definition of different modules, which shown as below:



Product Photo

PIN Definition

PIN Definition	RS232 Port
J1-PIN1	NC
PIN2	NC
PIN3	BUZ
PIN4	LEDG
PIN5	LEDR
J2- PIN1	RESET
PIN2	232-RX
PIN3	232-TX
PIN4	GND
PIN5	+5V(DC)
J3-PIN1	ANTENNA-
PIN2	ANTENNA+

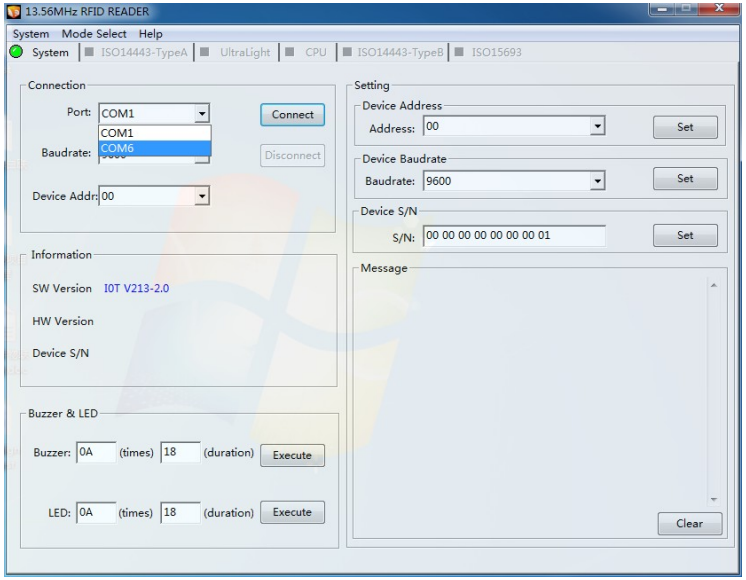


Connect RS232 connector to PC, and check if the device be recognized, please look for the right COM Port number for connection in menu of “Device manager”

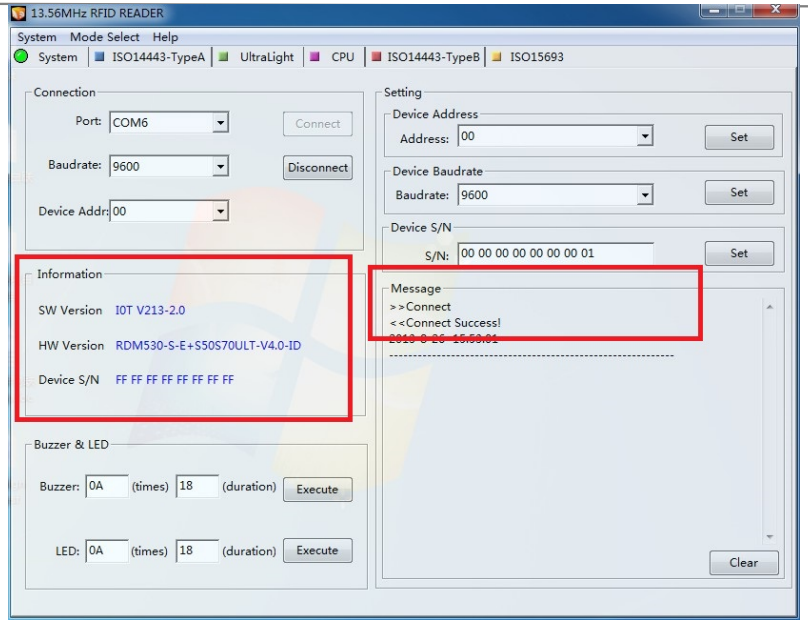
Remark: if failed, there will be no according device display

2.2 System parameter setup

After succeed in hardware connection, please open SW of “DEMO” and the port matching up, as following picture：



Then please click “ Connect” to build up communication port, and feedback displaying according device information and Message box, as below:



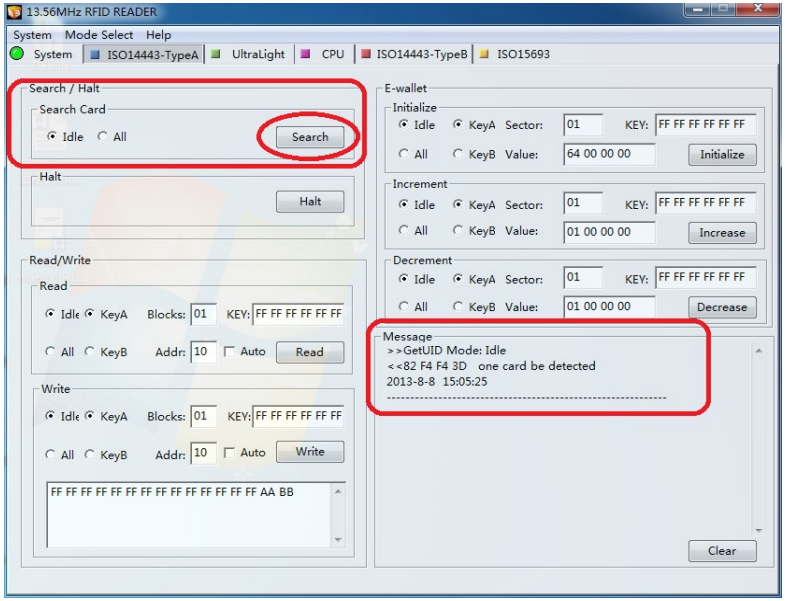
In this system setup , there are function button for changing working mode of Buzzer and LED, detail command definition and format, please refer to document of API parameter.

Also you could setup the address of the device and serial number in this operation interface.(note: this is only used when there are multiple device working together).

2.3 ISO14443 Type A operation

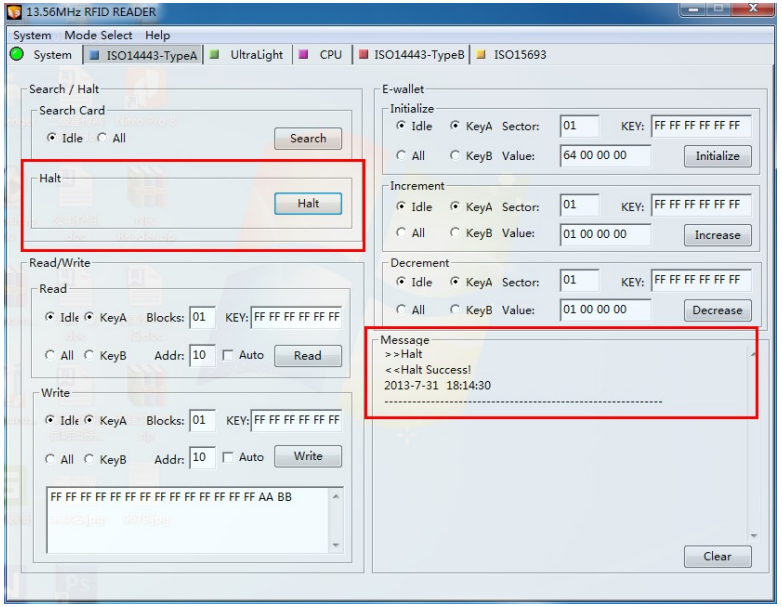
2.3.1 ISO14443A Search card

Please enter to “ISO14443A Type A” operation interface, and click ”Search” to look for cards in the reading field, then get back UID of the card if succeed, shown as:



2.3.2 Card Halting operation

This process is to halt card：



2.3.3 Read data of card blocks

To operate card blocks information reading, card supporting types can be Mifare 1K, Mifare 4K, and the working mode optional with Idle mode and All mode.

Remark:

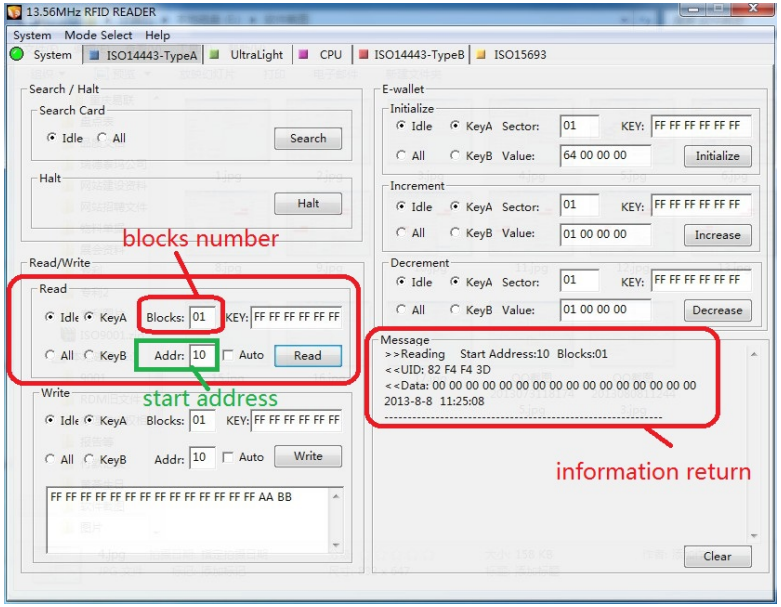
Under idle mode, all cards in the IDLE state shall respond synchronously with ATQA

Under All mode, all the card in the IDLE or HALT state shall respond synchronously with ATQA.

“Blocks “dialog box stands for the blocks number to be read in one time, and the “Addr” is the start address of this reading, the “KEY” default is FF FF FF FF FF.

If the reading block/blocks is/are encrypted, please get and input the special key, see following:

If successfully, then Message box will return right information about the operation; if failed, then feedback with wrong code, please refer to Wrong code list to know their definition.



2.3.4 Write data into card blocks

To operate card blocks information writing, card supporting types can be Mifare 1K, Mifare 4K, and the working mode optional with Idle mode and All mode.

Remark:

Under idle mode, all cards in the IDLE state shall respond synchronously with ATQA

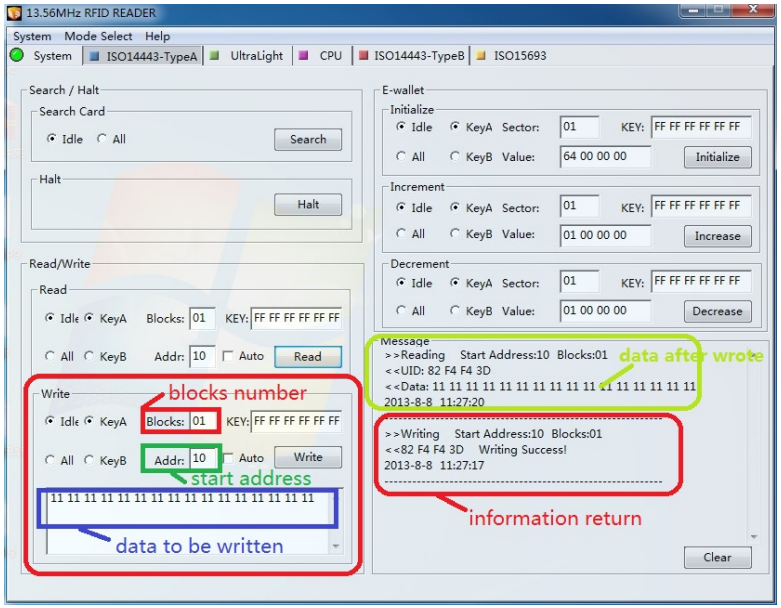
Under All mode, all the card in the IDLE or HALT state shall respond synchronously with ATQA.

"Blocks "dialog box stands for the blocks number to be written in one time, and the

"Addr" is the start address of this writing , the "KEY" default is FF FF FF FF FF.

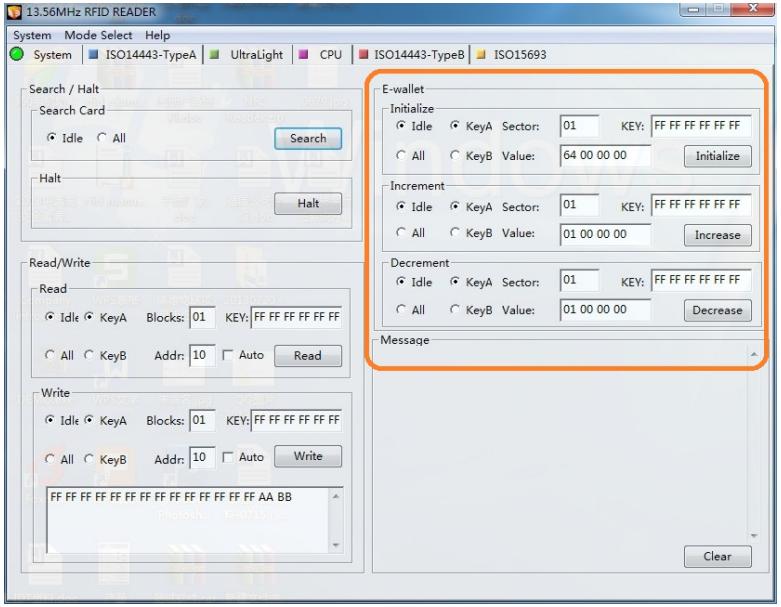
If the writing block/blocks is/are encrypted, please get and input the special key, see following:

If successfully, then Message box will return right information about the operation; if failed, then feedback with wrong code, please refer to Wrong code list to know their definition.



2.3.5 E-Wallet operation

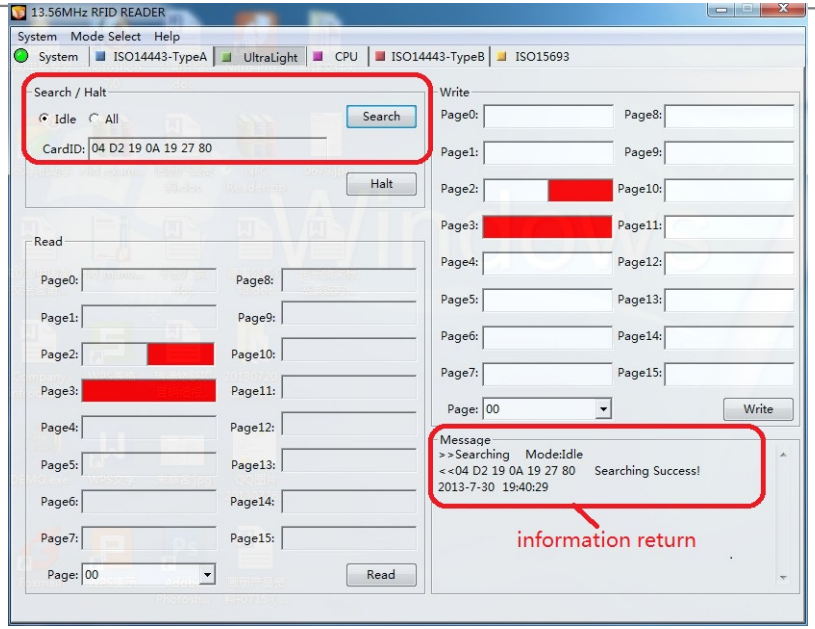
Here in this demo, we just provide a simple operation interface, to demonstrate the using procedure of E-wallet, which including initialize, increment, decrement, detail operating sectors and value command, please refer to use manual of the card.



2. 4 Ultralight operation

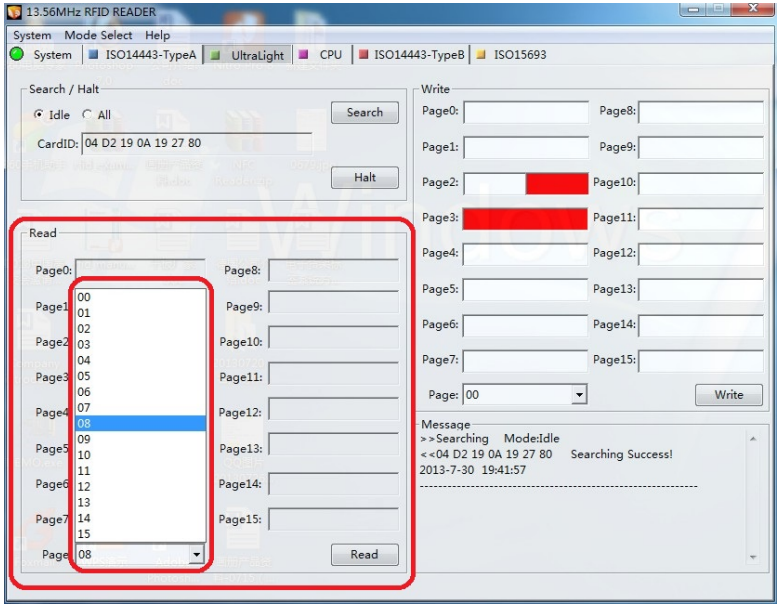
2.4.1 Search Mifare Ultralight

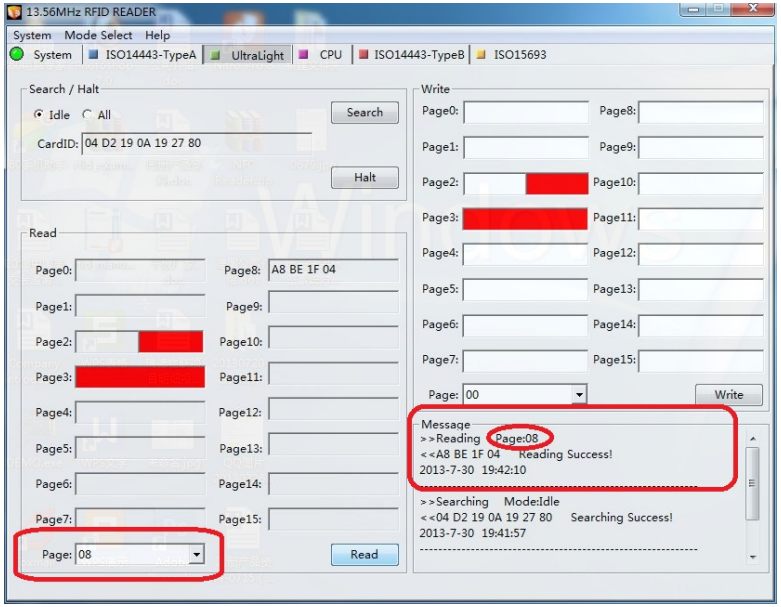
This procedure is need before reading or writing any specific page, just Click the “Search”, then you will get the CardID displaying in Message box, shown as below:



2.4.2 Read data of page

Please choose the page number in the drop-down list box, then click “Read”, then get the information of the paged chosen.

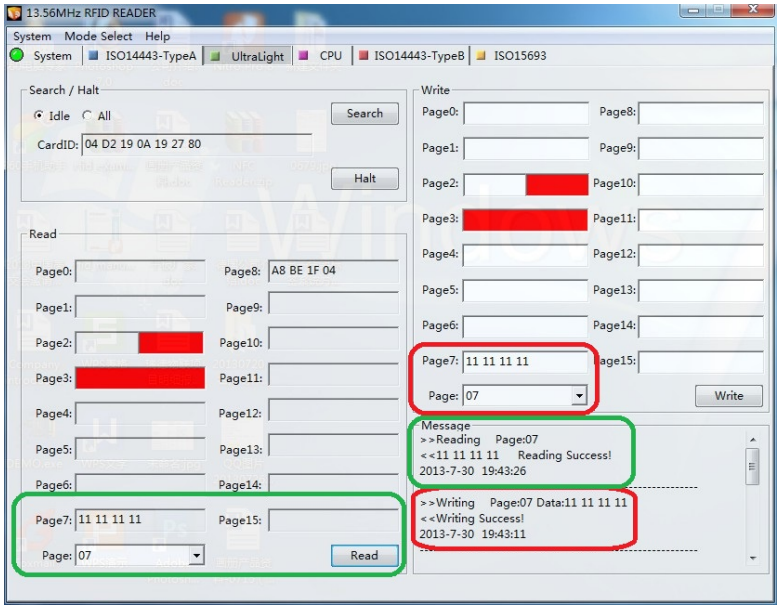




2.4.3 Write data of page

To write information to the page, select the page number to be written under drop-down list box, input data need to be written into (4 bytes), then click “Write”.

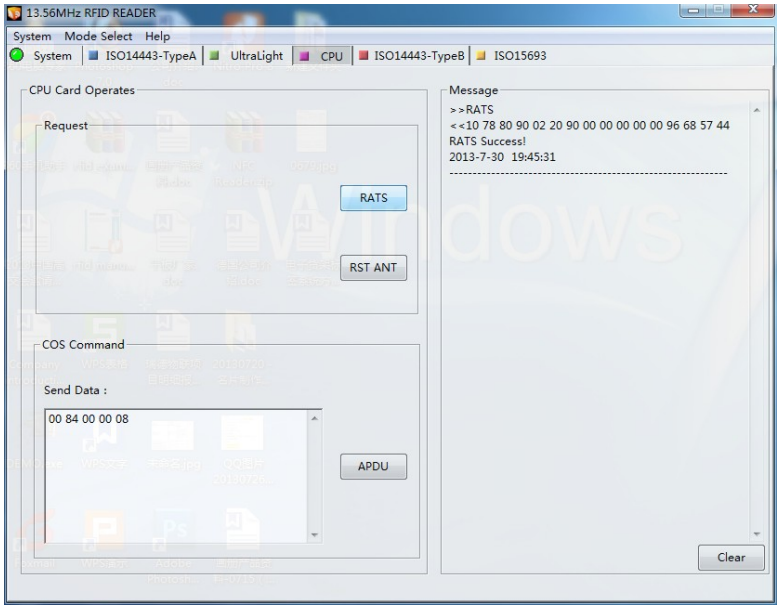
To check out if the writing success, you could see the information return in the Message box, also you could operate to read the page just wrote , shown as below:

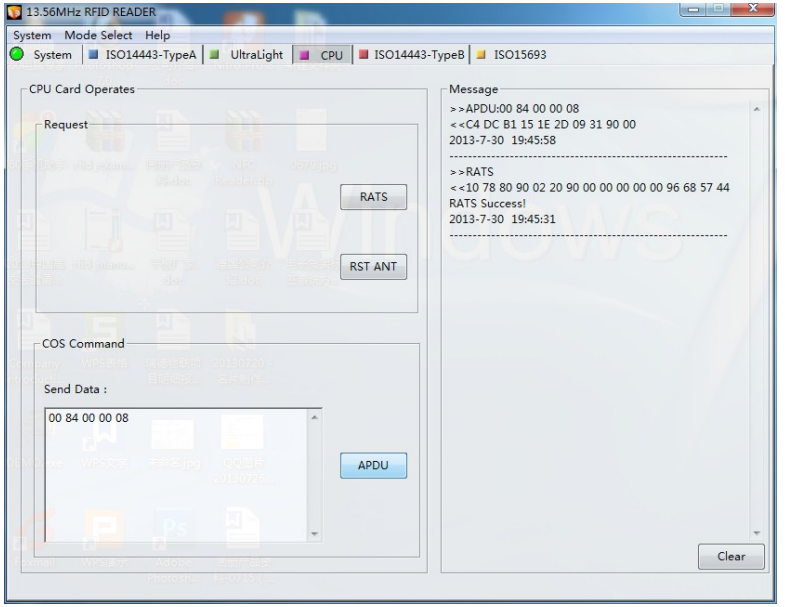


3 CPU card operation

This interface is used for contactless CPU cards compliant with ISO 14443A standard, here we provide three function button, including RATS(Request for Answer to Select), RST ANT (Reset Antenna) and Send APDU.

These three function are fit for all common types of contactless CPU card,





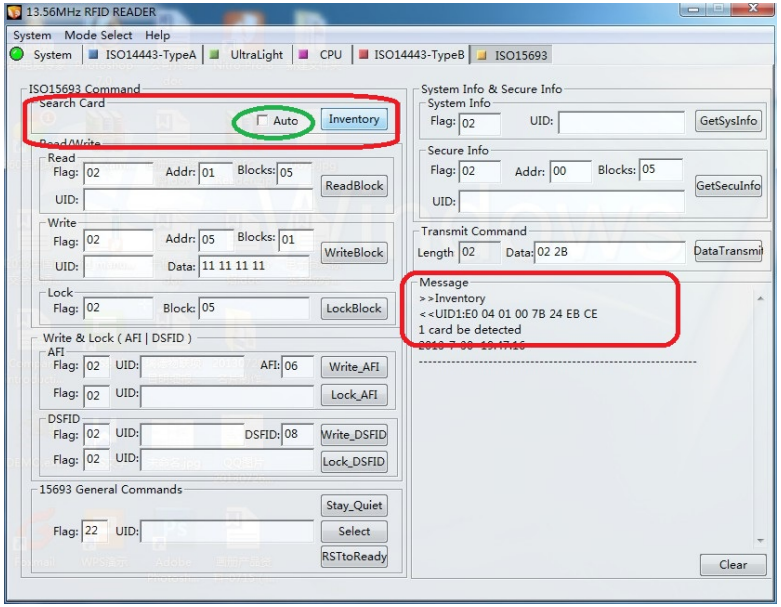
4 ISO14443 Type B

Detail operation, there is other demo to do it.

5. ISO15693 Operation

5.1 Inventory

To search the card or cards in the reading field,

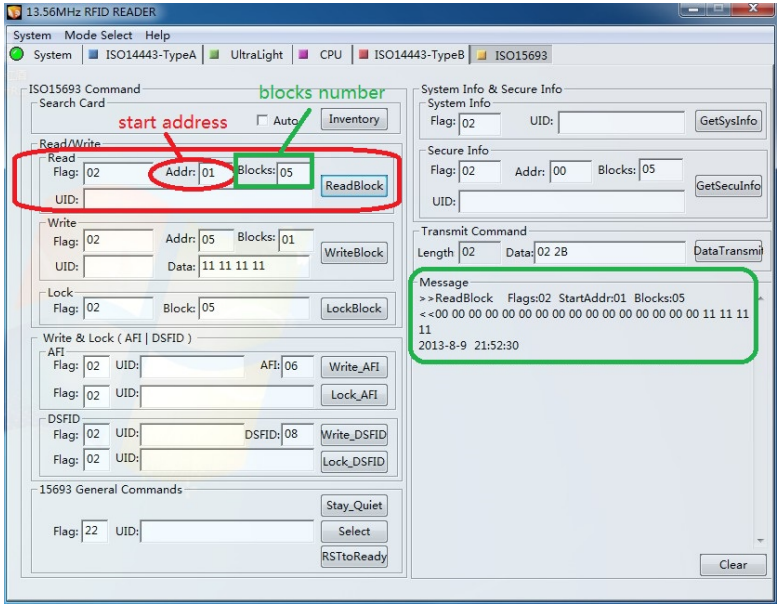


5.2 Read block

To read data of the block

Please refer to user manual of different chip cards, to get the Flag value, then input the right one, and chose the start address and blocks number to be read.

Following is the example for the I CODE SLI chip cards, the Flag value is 02, as following:

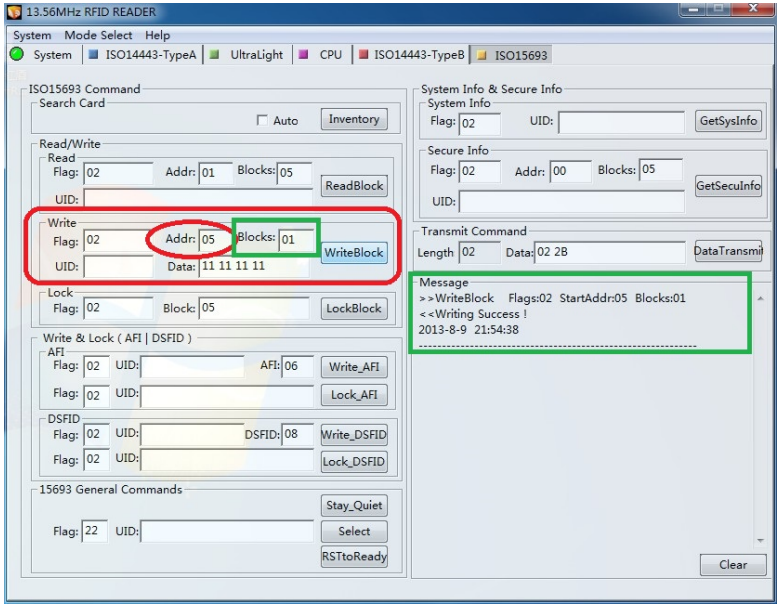


5.3 Write block

To write data of the block

Please refer to user manual of different chip cards, to get the Flag value, then input the right one, and chose the start address and blocks number to be written.

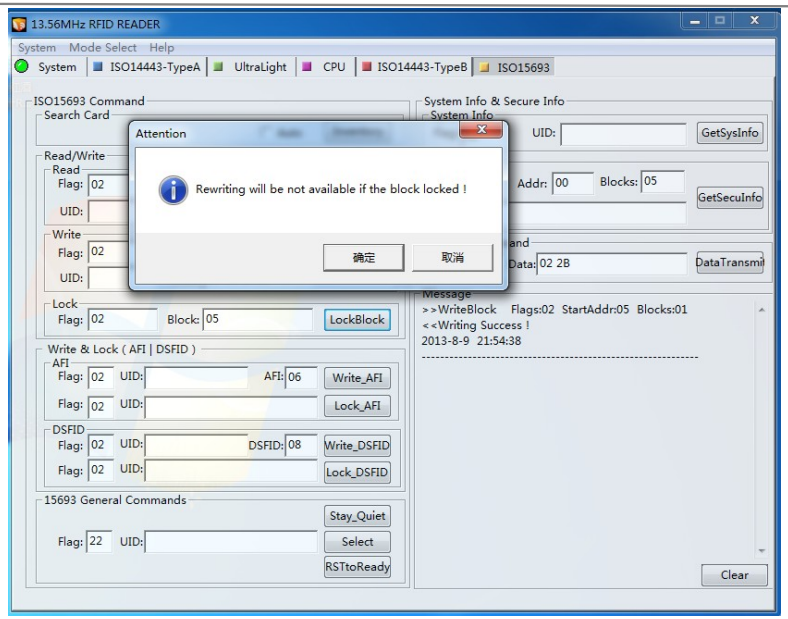
Following is the example for the I CODE SLI chip cards, the Flag value is 02



5.4 Lock block

Here needed to input the right Flag of the using card and choose the blocks number to be locked.

Attention: if the block locked, rewriting for these blocks will be not available any more.



5.5 Write & Lock (AFI/DSFID)

Please refer to the ISO15693 standard.

5.6 ISO15693 General Commands

5.6.1 Stay_Quiet

To make the card to be slept

5.6.2 Select

To select the single card on the reading field

5.6.3 RST to Ready

To wake-up the single card be stay_quiet

5.7 System info & Secure info

This is to get the system & secure information of the card, here this testing demo is available with three buttons of “GetSysInfo”, “GetSecurInfo” and “Data Transmit”

Other incomplete functions or operation, please refer to API document for reference and develop the own software accordingly.

Federal Communication Commission Statement (FCC, U.S.)

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 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.

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.

FCC Caution:

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

IMPORTANT NOTES

Co-location warning:

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

OEM integration instructions:

This device is intended only for OEM integrators under the following conditions:

The module may not be co-located with any other transmitter or antenna. The module shall be only used with the original antenna(s) that has been originally tested and certified with this module.

As long as the above conditions are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed (for example, digital device emissions, PC peripheral requirements, etc.).

Validity of using the module certification:

In the event that these conditions cannot be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization for this module in combination with the host equipment is no longer considered valid and the FCC ID of the module cannot be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

End product labeling:

This transmitter module is authorized only for use in device where the module is completely used without any changes, and without any other modules. The final end product must be labeled in a visible area with the following: “Contains Transmitter Module FCC ID: S6A-HF-M890”.

Information that must be placed in the end user manual:

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module. The end user manual shall include all required regulatory information/warning as show in this manual.

- English: "

This device complies with Industry Canada licence-exempt RSS stand ard(s). Operation is subject to the following two conditions:

(1) this device may not cause interference, and

(2) this device

must accept any interference, including interference that

may cause undesired operation of the device."

- French:"

Le présent appareil est conforme aux CNR d'Industrie Canada applica bles aux appareils radio

exempts de licence. L'exploitation est autorisée

aux deux conditions suivantes :

(1) l'appareil nedoit pas produire de brouillage, et

(2) l'utilisateur de l'appareil doit accepter tout brouillage

radioélectrique subi, même si le brouillage est susceptible d'en

compromettre le fonctionnement."

Industry Canada Statement:

This device complies with RSS-210 of the Industry Canada Rules. Operation is subject to the following two conditions: 1) this device may not cause interference and 2) this device must accept any interference, including interference that may cause undesired operation of the device.

IC Radiation Exposure Statement: This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment.

Avis d’Industrie Canada

Cet appareil est conforme à la norme CNR-210 des règlements d’ Industrie Canada. Son

fonctionnement est sujet aux deux conditions suivantes:

1) Cet appareil ne doit pas provoquer d’interférences et

2) Cet appareil doit accepter toutes les interférences, y compris celles pouvant entraîner son dysfonctionnement.

Avis d’Industrie Canada sur l’exposition aux Rayonnements: Cet appareil est conforme aux limites d’exposition aux rayonnements d’ Industrie Canada pour un environnement non contrôlé.

Precaución para los usuarios:

Los cambios y las modificaciones no aprobadas expresamente por la parte responsable del cumplimiento podrían invalidar la autoridad del usuario a utilizar este equipo.

Nota: Este equipo ha sido probado y es compatible con los límites de un dispositivo digital de Clase B, según el párrafo 15 del Reglamento de FCC. Dichos límites han sido definidos con el fin de proporcionar una protección razonable contra interferencias perjudiciales en una instalación residencial. Este equipo genera, utiliza y puede irradiar energía en radiofrecuencia y, si no se instala y utiliza de acuerdo con las instrucciones, podría provocar interferencias perjudiciales en la recepción de ondas de radio o televisión, lo cual puede determinarse apagando y encendiendo el equipo. Animamos al usuario a intentar corregir las interferencias llevando a cabo una o más de las siguientes medidas:

- Reorientar o colocar la antena receptora en otro lugar.
- Aumentar la separación entre el equipo y el receptor.
- Conectar el equipo a un enchufe perteneciente a un circuito distinto al que pertenece el enchufe al que está conectado el receptor.
- Consulte a su proveedor o a un técnico experimentado en radio /TV para más información.