MR761UC User's Manual

(Revision 3.31)

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Please read this manual carefully before using. If any problem, please mail to: jinmuyu@vip.sina.com

Contents

1 Overview

MR761UA desktop contactless IC card reader use USB interface (HID standard). In the systems of Windows, Linux and other PC systems support USB keyboard, the reader simulate the USB keyboard to output the card data.We supply a configuaration software. Under the the software, user could configuar complex read card method to implement many type of uses.

The reader supports the ISO15693 compliant tags. The output data could be UID and/or card data.

2 Technical parameters

- PCD: NXP MF RC523
- Working frequency: 13.56MHz
- RF protocol: ISO14443A, ISO14443B
- Operating distance: 80mm (Mifare One, typical)
- SAM slots: 2 slots, full function support ISO7816, only for ODM
- Display: 1 tricolor LED
- Buzzer: Build in
- Interface: USB HID standard, keyboard simulator
- Power supply: DC5V $\pm 10\%$, USB power supply
- Power consumption: 0.6W
- Dimension: 123mm * 88mm * 25mm
- Weight: About 100g
- Operating temperature: -25 ~ +85 ℃
- Storage temperature: -40 ~ +125 ℃
- PC software: MR76x Config Tools, download from http://www.jinmyu.com
- ISP: Support
- RoHS: Compliant

3 Cards supported

3.1 ISO14443A

- Mifare One S50
- Mifare One S70
- Mifare One Mini
- Mifare Ultra Light
- Desfire (UID)
- Mifare Plus (UID)
- ISO14443-4 (T=CL) TYPE A dual interface CPU Card (UID)

3.2 ISO14443B

- SR176
- SRI512
- SRI1K
- SRI2K
- SRI4K
- SRIX4K

3.3 ISO7816

- Any type of contact smart cards according to ISO7816, support any baud rate reset and any baud rate operation (by PPS)

4 Model of the reader

4.1 Model format

This is the model format of Master Reader series contactless card reader/writer:

1	2	3	4	5	6
MR	XXX	X	X	X	-XXX

1: Product code; 2: Device class; 3: Communication port; 4: Supported card type;
5: Color of enclosure; 6: ODM code;

4.2 Model description

4.2.1 Product code

The code of Master Reader series contactless card reader is: MR

4.2.2 Device class

600: Desktop reader/writer with LED digital display

701: Desktop reader/writer

730: Ethernet desktop reader/writer

760: HID keyboard simulator interface desktop reader, support ISO15693 only

761: HID keyboard simulator interface desktop reader, support ISO14443A and ISO14443B

780: High performance desktop reader/writer, support ISO7816 fully

790: USB PC/SC interface desktop reader/writer

800: High performance USB PC/SC interface desktop reader/writer with LCD display

810: High performance USB PC/SC interface desktop reader/writer

4.2.3 Communication port

S: RS232C interface, power supply from USB

R: RS485 interface, power supply by wire connection

U: USB interface

E: Ethernet interface, power supply by AC adaptor

4.2.4 Supported card type

A: ISO14443A, Mifare classic and ISO7816

C: ISO14443A, ISO14443B, Mifare classic and ISO7816

G: ISO15693 and ISO7816

H: ISO14443A, ISO14443B, ISO15693, Mifare classic and ISO7816

4.2.5 Color of enclosure

W: white (if blank, default white)

B: black

4.2.6 ODM code

This part is for ODM customer only. It is 3 digital codes like 001, 002...

4.3   Model available

The models below are available for supply:
- MR761UA
- MR761UC

5   DIP switch configuration

|	ON (default)	OFF
SW1	Working mode depends on the software	Working mode depends on SW2
SW2	Reader on the configuration mode	Reader on the reading card mode
SW3	—	—
SW4	—	—

6   Configuration software instruction

6.1   Reader installation

The reader interface is USB HID class. The driver installation wills automatic process by OS. User need not do anything except connect the reader.

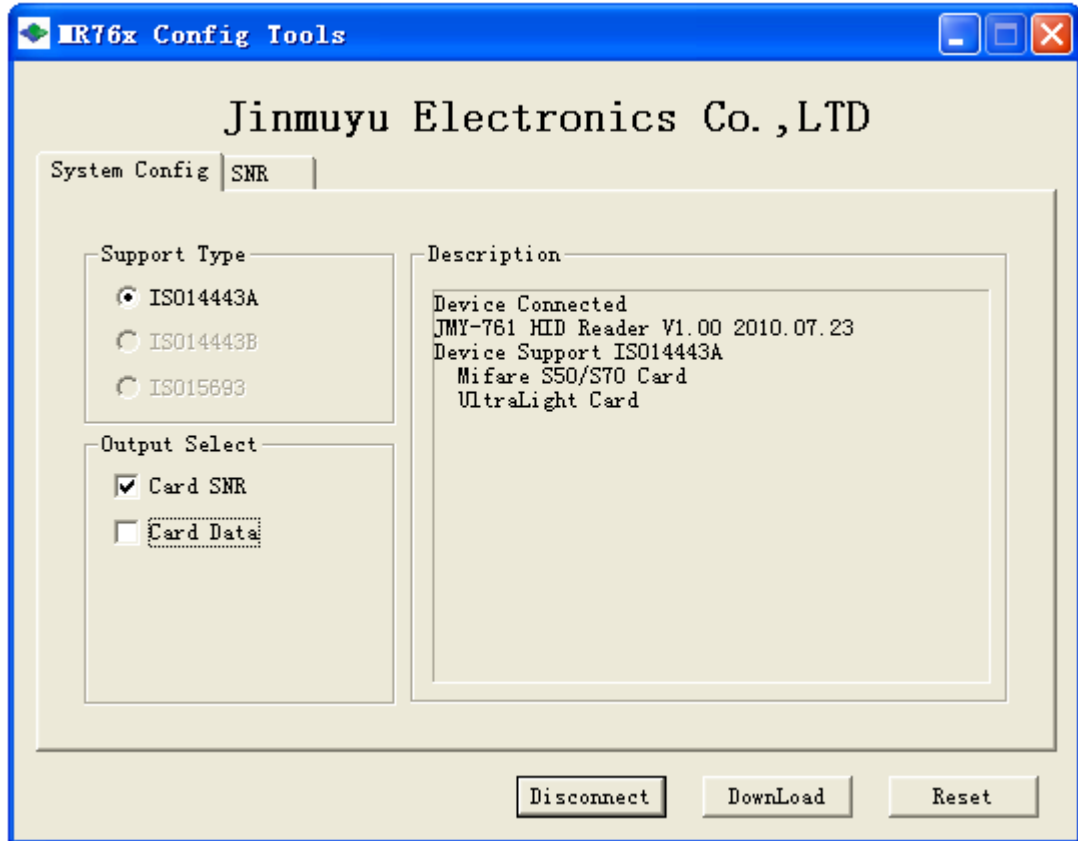Then check the attributes of "USB Human Interface Device":
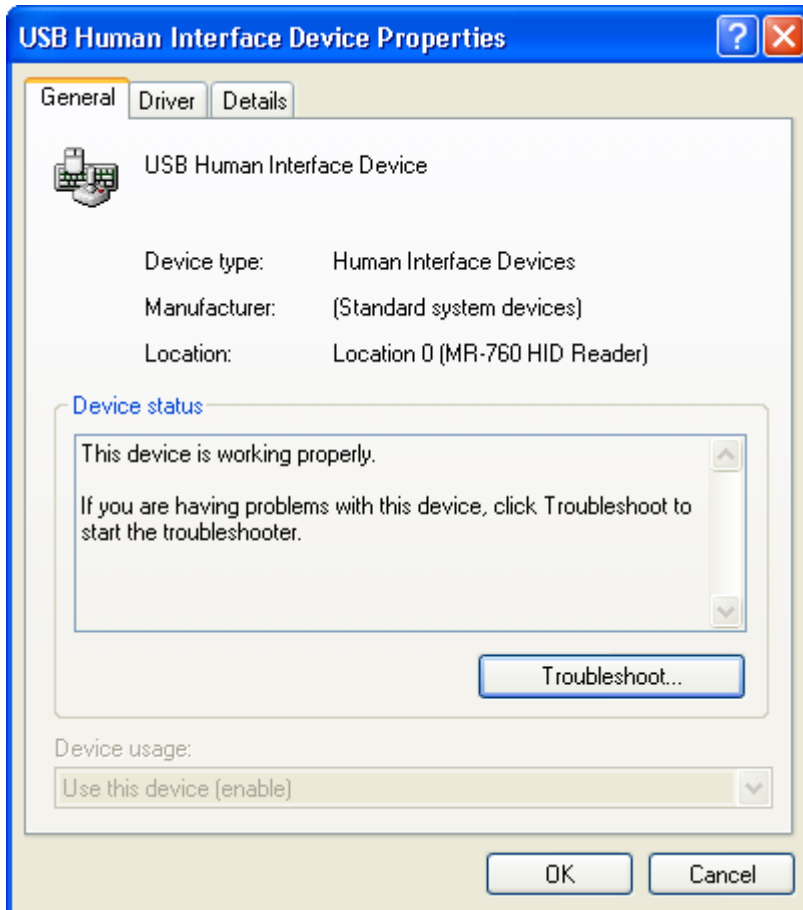
6.2   Software connects to the device

Open the configuration tool.

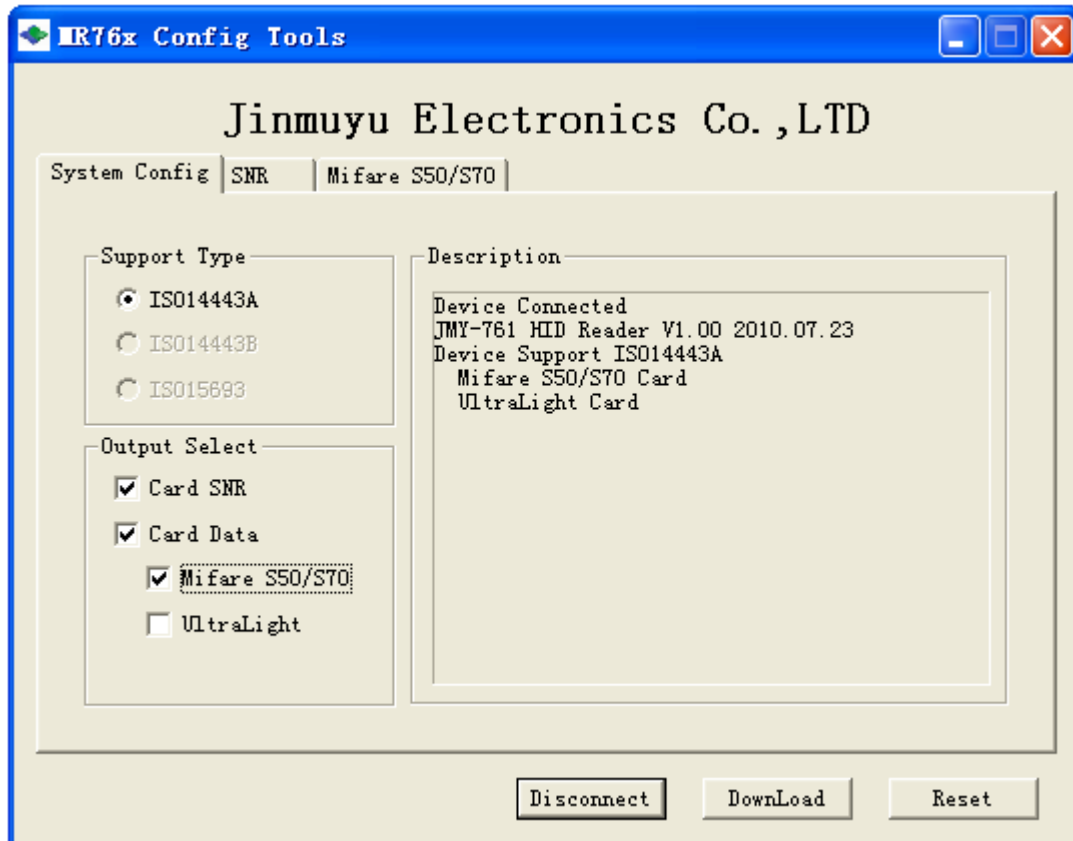Then click the "Connect" button. Successfully connect as following:

The dialog box will prompt the supported card types.
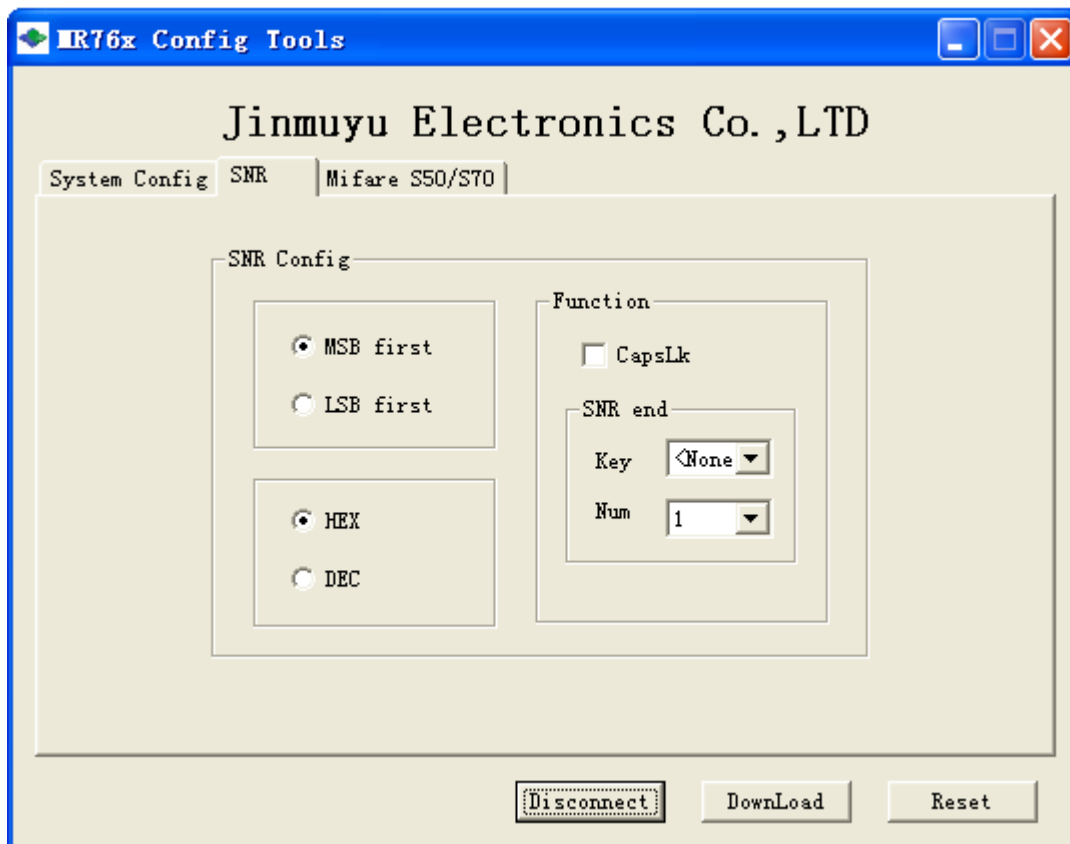
6.3 Data output configuration instruction

Taking ISO14443A tag as an example, set the output card number and card data. As the picture, the supported card is ISO14443A, and output select is Card SNR, Card Data Mifare S50/S70 and UltraLight

6.3.1 Card SNR output configuration

Click "SNR" tab to set the Card SNR, as following:

Card number order set:	Set MSB first or LSB first output
Card Number format set:	Set HEX or DEC
CapsLk set:	Set the letter of card number in Caps or lower case
Extra key set:	After card number output, select output key assignments (4 optional keys: Tab, Enter, Down Arrow and Page Down) and typing numbers.

6.3.2 Card data output configuration

6.3.2.1   Start data configuration

Click "Mifare S50/S70" tab to set the card data output configuration. Two modes (Mode1, Mode2) can be select. Select the key assignment in "Every Block End" and "Data End", as following:
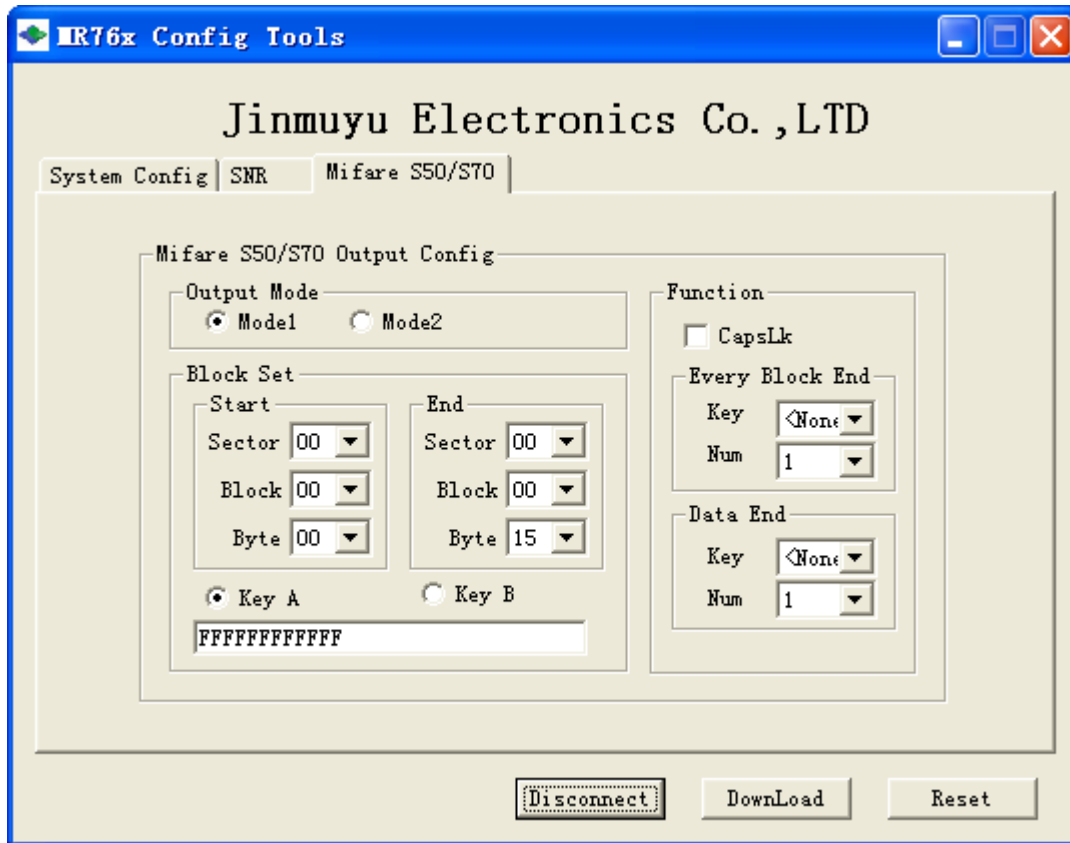
6.3.2.2   Continuous mode

Name the start byte of the start block, then output, till to the end byte of the named end block, as the chart:

Byte / Block	00	01	02	03	04	05	6	7	8	9	10	11	12	13	14	15
Block0	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
Block1	10	11	12	13	14	15	16	17	18	19	1A	1B	1C	1D	1E	1F
Block2	20	21	22	23	24	25	26	27	28	29	2A	2B	2C	2D	2E	2F

If set the following parameters:

Start sector = 00

End sector = 00

Start block = 00

End block = 02

Start byte = 07

End byte = 06

Then the output data is the red data in the chart:

07 08 09 0A 0B 0C 0D 0E 0F

10 11 12 13 14 15 16 17 18 19 1A 1B 1C 1D 1E 1F

20 21 22 23 24 25 26

6.3.2.3　　Array mode

Name the start block and end block, then start to output the data from the start byte to the end byte, as the chart:

Byte Block	00	01	02	03	04	05	6	7	8	9	10	11	12	13	14	15
Block0	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
Block1	10	11	12	13	14	15	16	17	18	19	1A	1B	1C	1D	1E	1F
Block2	20	21	22	23	24	25	26	27	28	29	2A	2B	2C	2D	2E	2F

If set the following parameters:

Start sector=00

End sector=00

Start block=00

End block=02

Start byte=03

End byte=09

Then the output data is the red data in the chart:

03 04 05 06 07 08 09

13 14 15 16 17 18 19

23 24 25 26 27 28 29

6.3.2.4　　Extra key additional

CapsLk setting:　　　　　Set CapsLk to configure the output of part of card number letter in Upper-case or Lower-case format.

Extra key setting:　　　　Set the key in two positions (Every block end and Data End) after the card number output. Then set the output key assignments (4 optional keys: Tab, Enter, Down and Page Down) and typing number.

Every block end:　　　　Set the output extra key after every block output ends.

Data end:　　　　　　　Set the output extra key after data output ends.
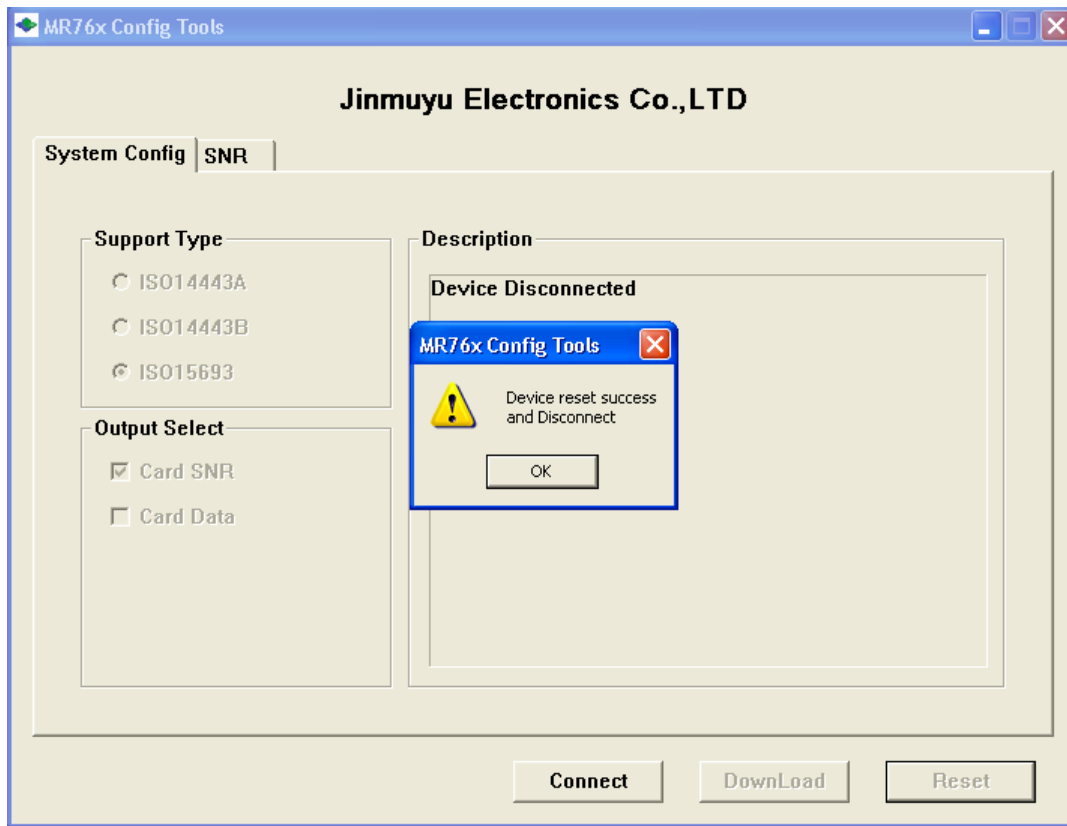
6.3.3 Parameter downloads

After finish all the configuration item, click "DownLoad" to download the parameters, if success, as following:
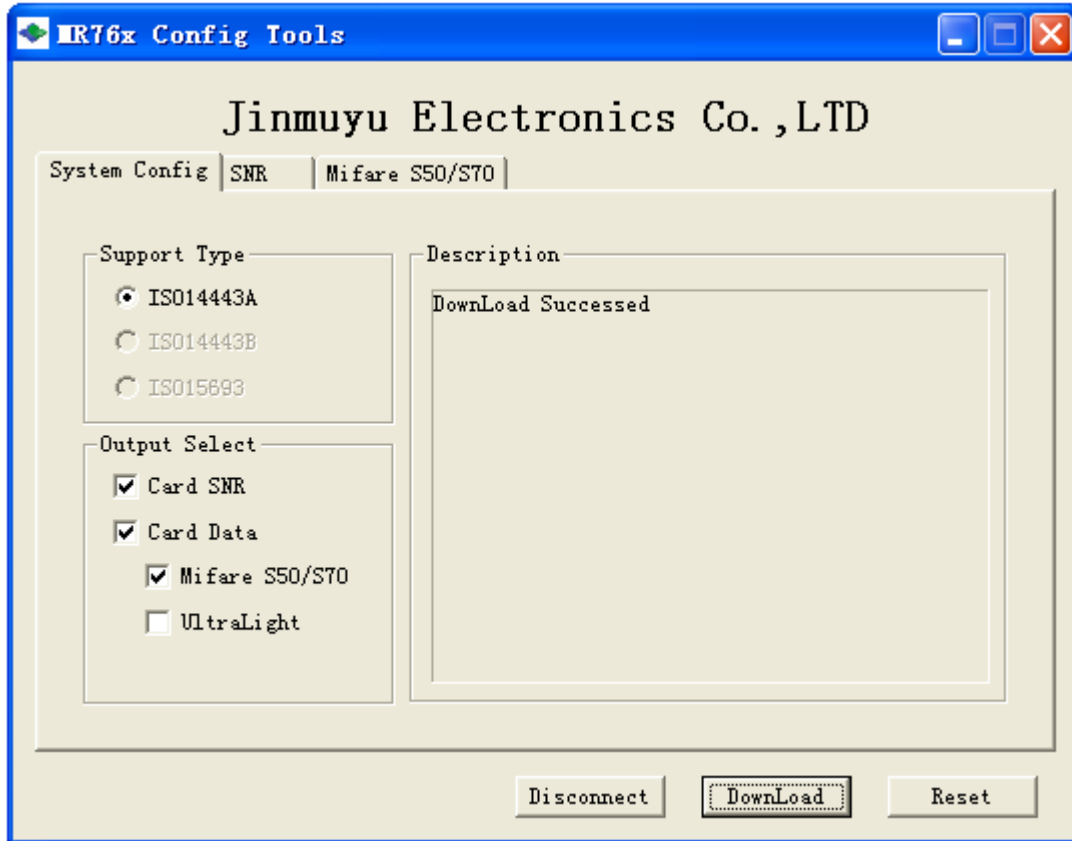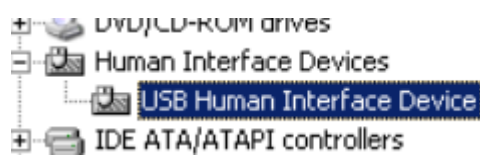
If download success, and then click "Reset" to restart the device. After restart, the computer and device disconnect. Then the computer will re-identify the device and turn to the reading card mode, as following:
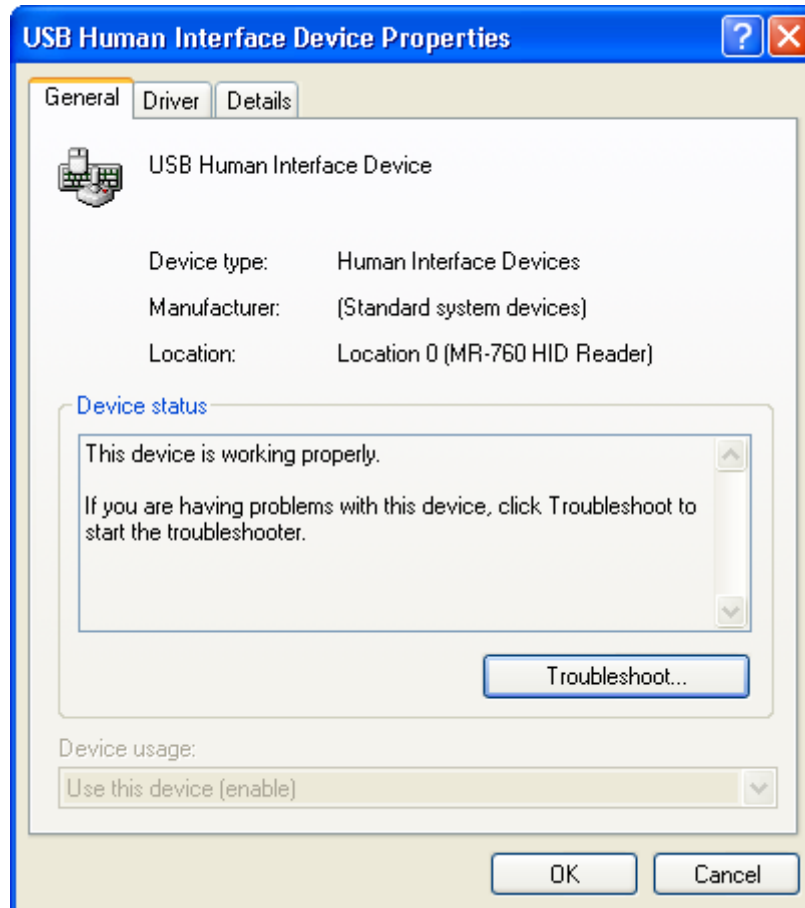

6.4 Device working

Once the computer re-identifies the device, it will only identify one device. As following:

Then according to the set parameter, the device will output the data after read success.

6.5 Reset the configuration parameter

If the output data changed, then need to reset the configuration parameters. Please pull the DIP switch SW1 to OFF, and SW2 to ON. After the device power up and start, user can normally setup the device parameter. When parameter download finishes, pull the DIP switch SW1 to ON, then click "Reset" and restart the device, the device will turn into working mode.

Setting steps:
- Step 1: Pull SW1 to OFF, SW2 stay in ON, device power up.
- Step 2: Set the configuration parameter, download parameter (see the Chapter 5.3)
- Step 3: Pull SW1 to ON.
- Step 4: Click "Reset" to restart the device.

7   Application sample

7.1   Mifare S50/S70 data output

E.g., as the chart, the RED NUMBER stores in the Block 4~6:

| Byte / Block	00	01	02	03	04	05	6	7	8	9	10	11	12	13	14	15
Block4	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
Block5	10	11	12	13	14	15	16	17	18	19	1A	1B	1C	1D	1E	1F
Block6	20	21	22	23	24	25	26	27	28	29	2A	2B	2C	2D	2E	2F

- Set the "System Config" as following:
  Not select Card SNR, not output the card number
  Select Card data and Mifare S50/S70
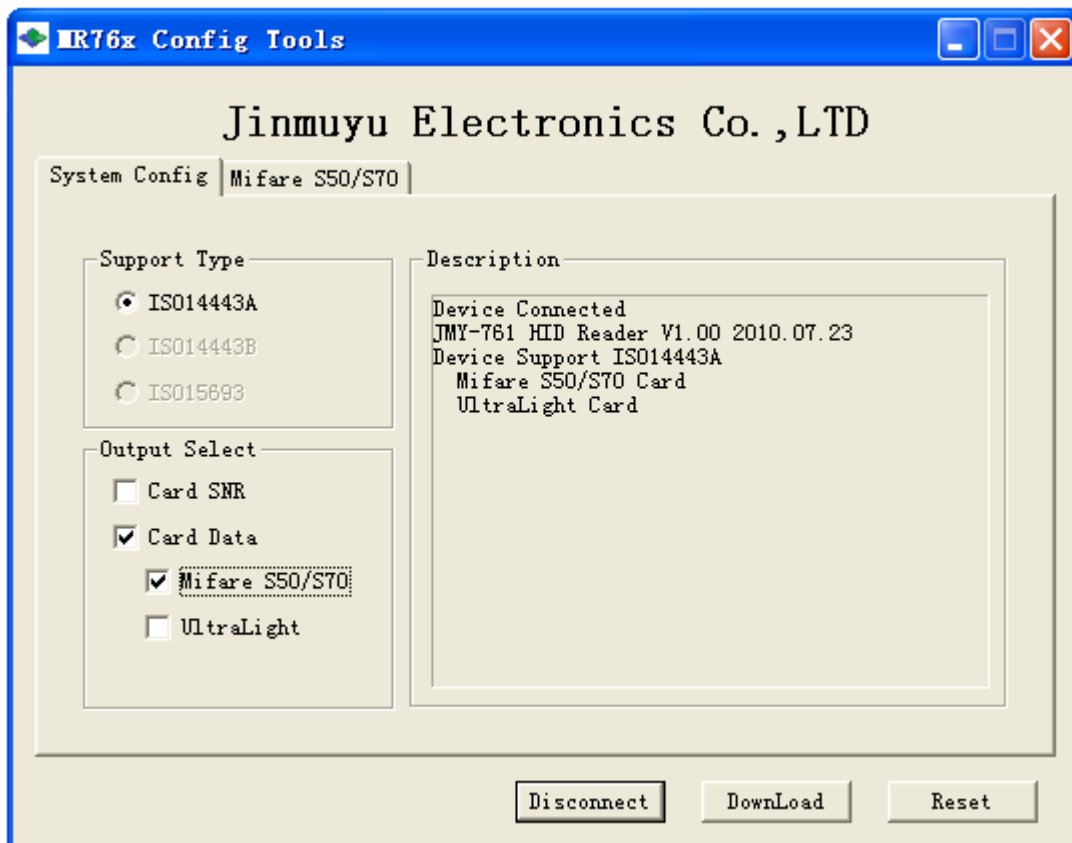
- Set the Mifare S50/S70 as following:
  Select Mode 1, and set the continuous output mode
  Set:
  - Start sector=01
  - Start block=00
  - Start byte=07

End sector=01

End Block=02

End Byte=06

Select data to output

Select Key type: Key A

Set Key: FF FF FF FF FF FF

Set CapsLk to select the Capital letter output.

Set Every Block End, the Key of Every Block End is None

Key=None

Num=1

Set Data End, the Key of Data End is Enter, Num is 1.

Key=Enter

Num=1
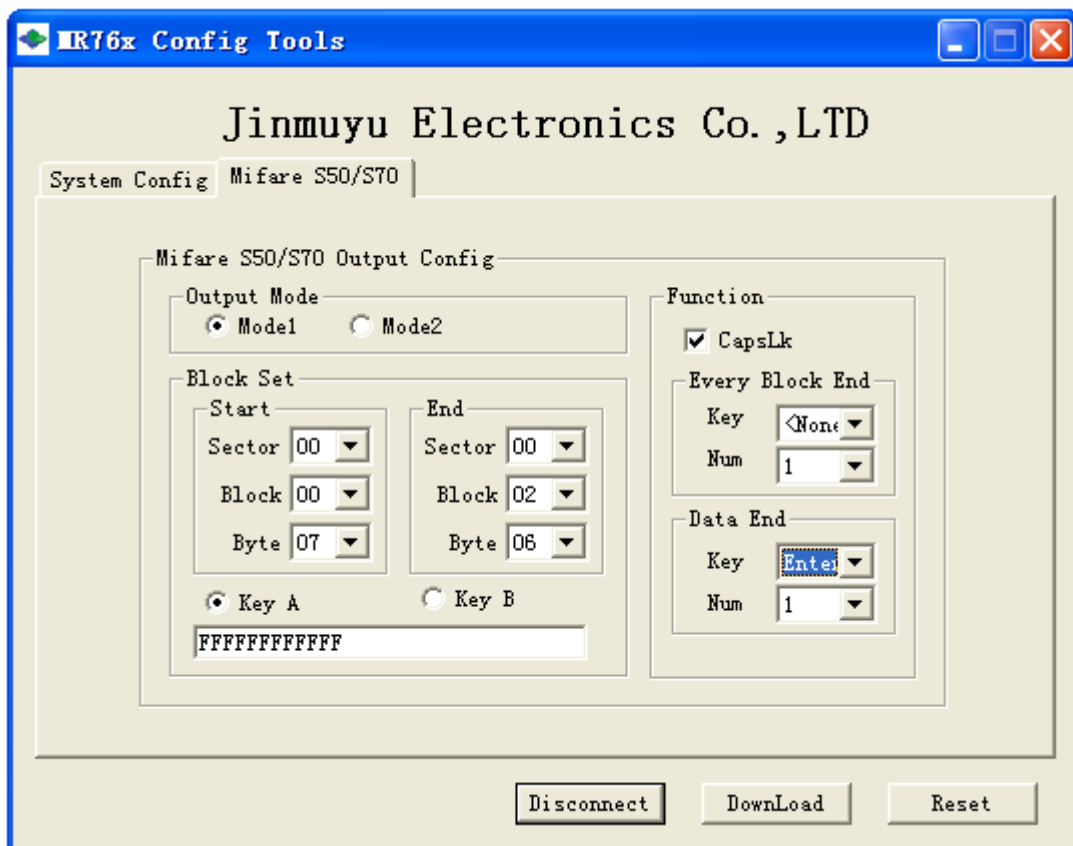
As the above setting, the reader will output the Red data in the chart.
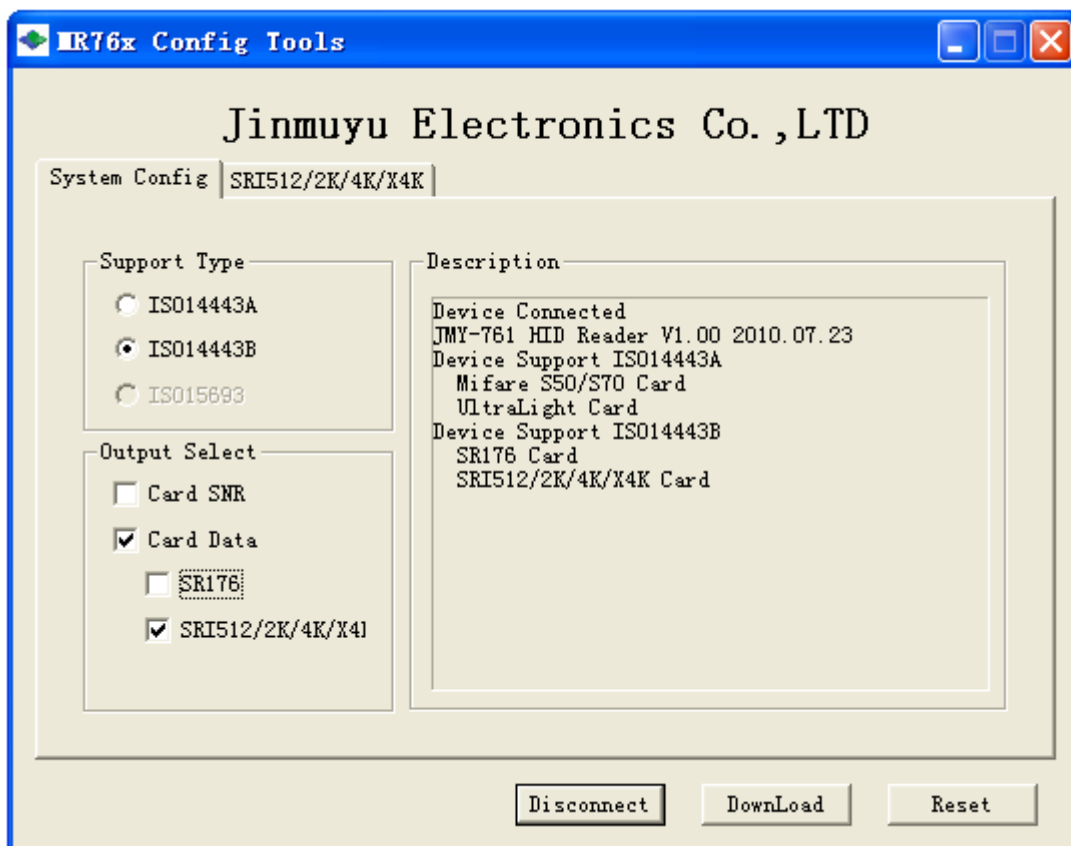
7.2 SRI4K data output

As the chart, there are 123456201008231234 stored in the Block4-6:

	Byte0	Byte1	Byte2	Byte3
Block3	XX	XX	XX	XX
Block4	12	34	56	20
Block5	10	08	23	12
Block6	34	XX	XX	XX
Block7	XX	XX	XX	XX

- Set the "System Config" as following:

    Not select Card SNR, not output the card number

    Select ISO14443B, Card data and SRI512/2K/4K/X4K Card

- Set the SRI512/2K/4K/X4K Card as following:

    Select Mode 1

    Set:

    Start Block=04

    End Block=06

    Start Byte=00

    End Byte=00

    Select CapsLk, Capital output

    Set Every Block End, the Key of Every Block End is None
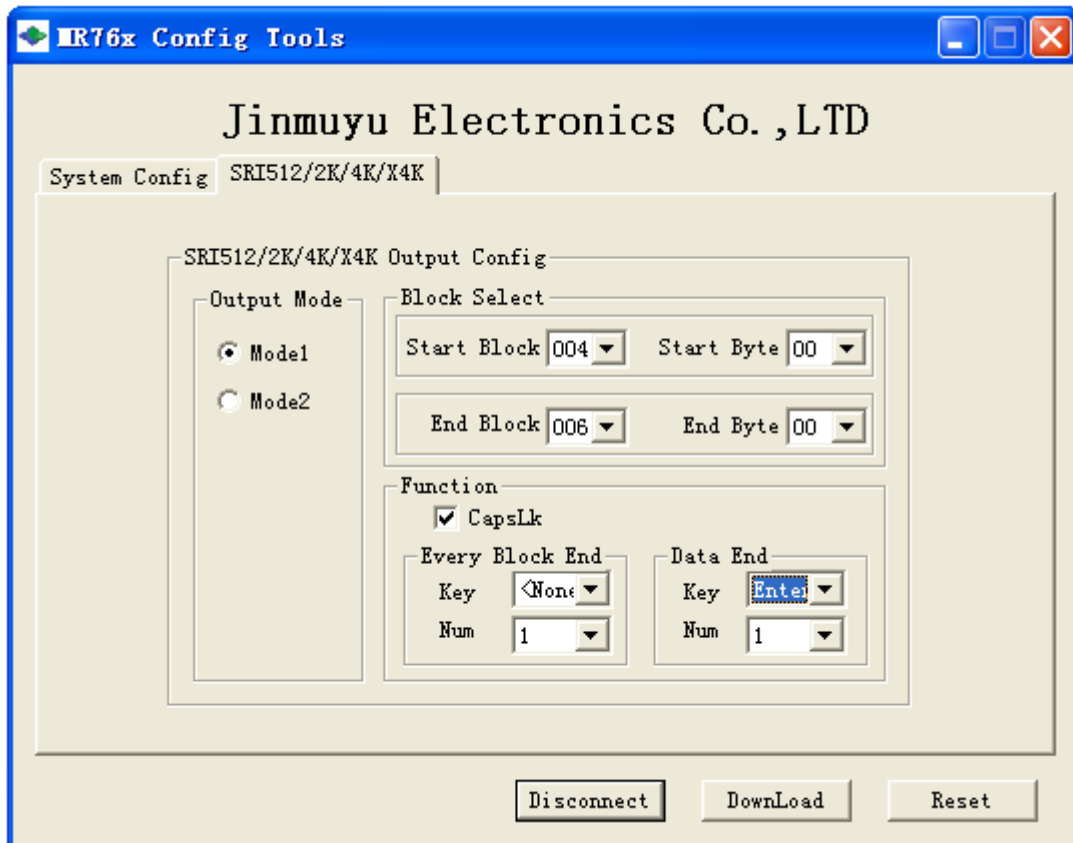
Key=None

Num=1

Set Data End, the Key of Data end is Enter, Num is 1.

Key=Enter

Num=1

As the above setting, the reader will output the Red data in the chart.