Modbus RTU RFID Reader

YW-630/YW-631

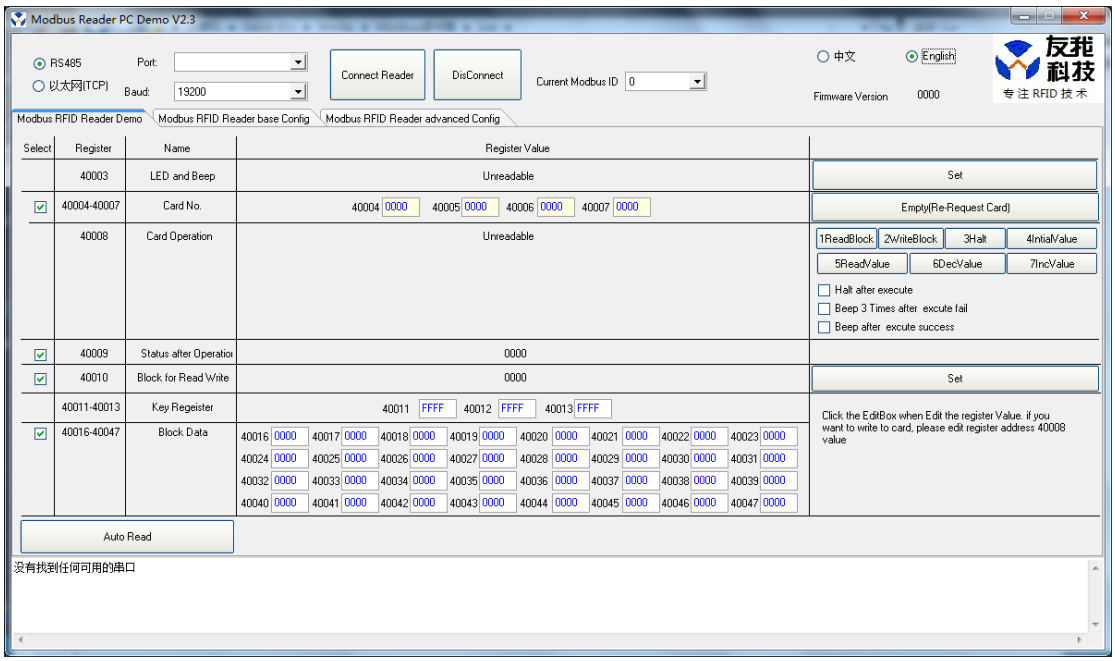
PC Demo User Manual(V2)

YOWO RFID Technology Co.,LTD

Modbus RTU RFID Reader YW-630 and YW-631 are based on Modbus-RTU protocol by RS485. It Connect PLC directly by RS485.

PC Demo software can demonstrate Modbus RTU, It can read and write register.

1 Run the demo software, you can see the main form.



The Main form has 3 blocks:

- Port
- Register and Value
- Result display

1.1 Port

Select COM Port or TCP , RS485 default parameter is “19200,n,8,1”, Click button Connect Reader. If connected, the button will be gray and disabled.

1.2 Register and Value

PC demo software can read and write RFID Reader by Modbus-RTU. The form shows 5 colums: select, register, name, register values,read and write.

1.2.1 Read Register automation: select the register and click Auto Read, the the selected register value will update per 1 second.

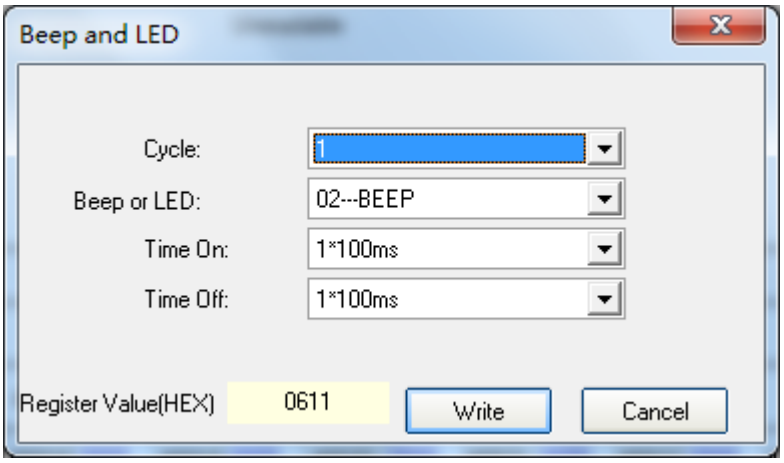
1.2.2 All Registers

Register address	Register name	Register default value	Register value discription
40001	Baud and Modbus ID	0x0301	03 shows Baud 19200，ID is 01
40002	Parameter Register 2	0x0030	Card type:S50/S70 and compitable Whether Beep and Led On when read card Whether authorize by register key or system key AB Key:Key A
40003	LED and Beep	0x0000	Control the LED and Beep
40004 to 40007	Card Serial No. Register	0x00000000000000	Card Serial No. 7 bytes max
40008	Card Read and write	0x0000	Read and write Card blocks, Read and Inc, Dec e-wallet
40009	Status of read and write	0x0000	Status of read and write: 0x00 is success Else fail.
40010	Block numbers and block index	0x0000	Block numbers and block index. Do not read and write blocks in 2 sectors.
40011 to 40013	Register key	0xFFFFFFFFFFFF	Register key, 6 bytes

40016 to 40047	Data register	0x00000000000000000000000000000000 0x00000000000000000000000000000000 0x00000000000000000000000000000000 0x00000000000000000000000000000000	Block data, will be 64bytes max.

1.2.3 Write register value

1.2.3.1 Beep and LED



Select lines and it will make a hex code, click write button , the hex code will fill the register 40003.

1.2.3.2 Empty Card Serial No. Register

Click Empty button, this will fill zero from 40004 to 40007 register. Request Card again.

1.2.3.3 Card Read and write

Card Read and write can read and write block and e-wallet operation.

0: default value. Do not Execute any command.

1:Read block

2:write block

3:card halt

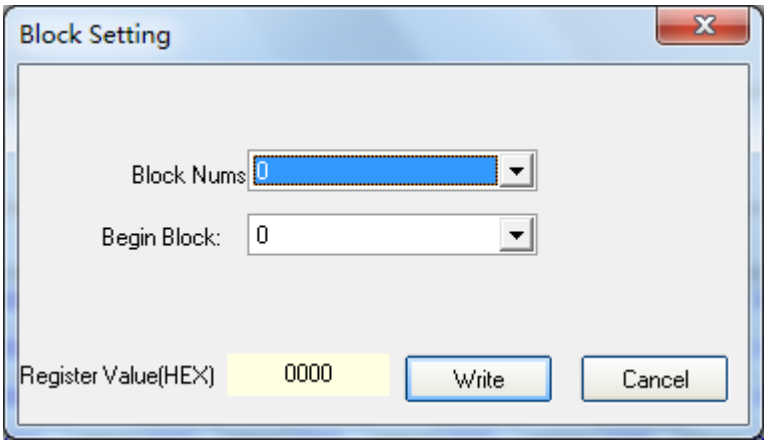
4:Initial e-wallet value

5:Dec value of e-wallet

6:Inc value of e-wallet

You can use more combined hex code to control Beep with this value.

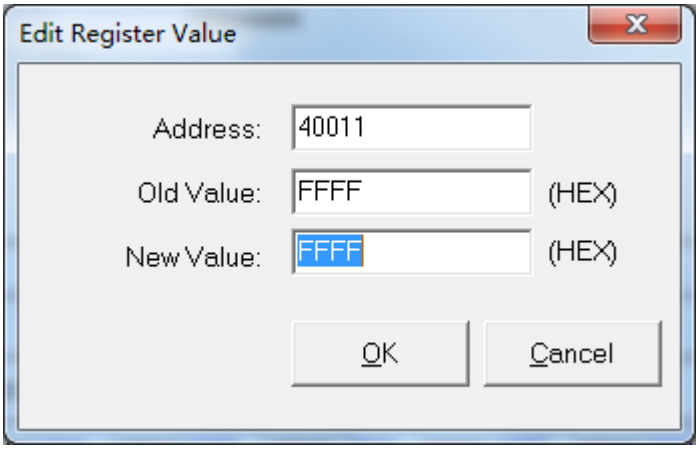
1.2.3.4 Block number setting



Select Block numbers and begin block, you can get a hex code and click write button to write to rfid reader.

1.2.3.5 Register key

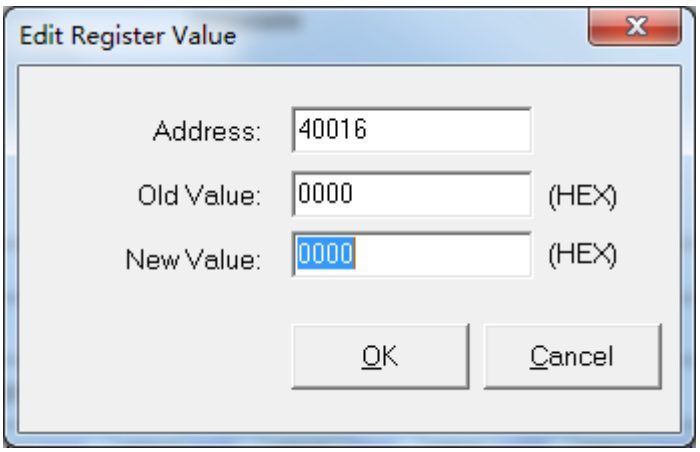
Register key is 6 bytes, you can click it to edit. Click OK button to write to the reader.



1.2.3.6 Block Data

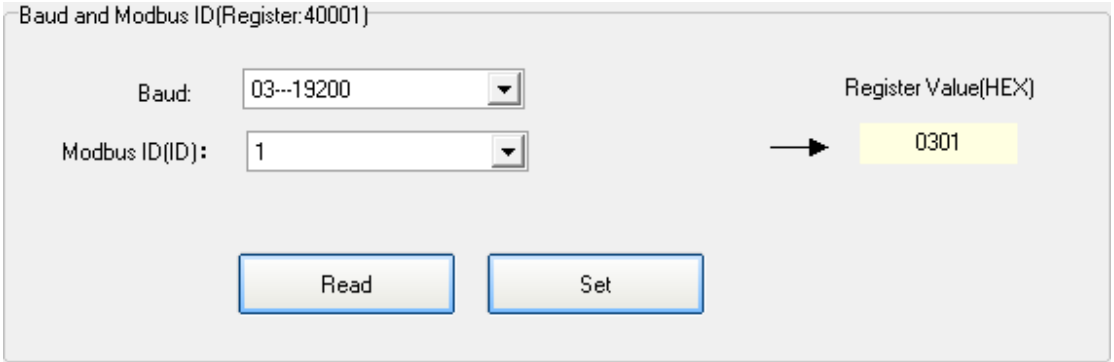
40016	0000	40017	0000	40018	0000	40019	0000	40020	0000	40021	0000	40022	0000	40023	0000
40024	0000	40025	0000	40026	0000	40027	0000	40028	0000	40029	0000	40030	0000	40031	0000
40032	0000	40033	0000	40034	0000	40035	0000	40036	0000	40037	0000	40038	0000	40039	0000
40040	0000	40041	0000	40042	0000	40043	0000	40044	0000	40045	0000	40046	0000	40047	0000

Block Data is 64 bytes, 32 registers. You can click it to edit, click ok to write it to Reader(Not To Card.)



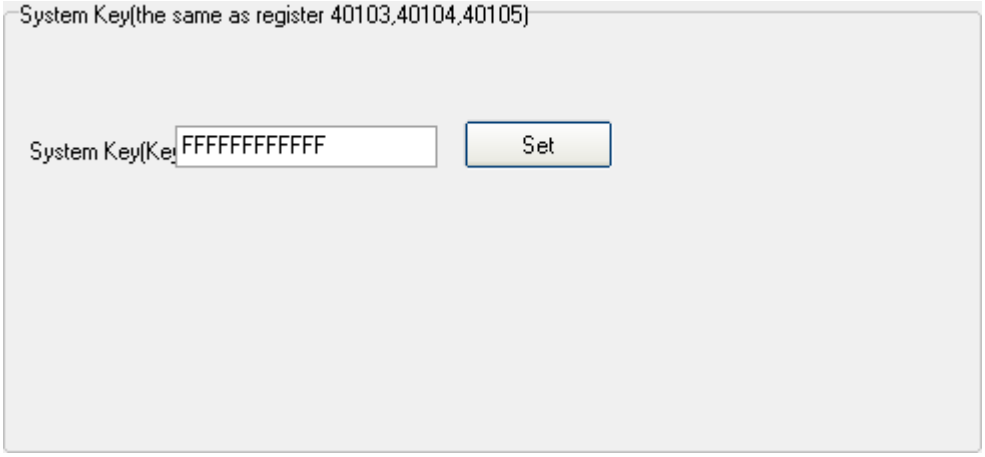
2 Modbus reader setting

2.1 Baud and Modbus ID, register address 40001

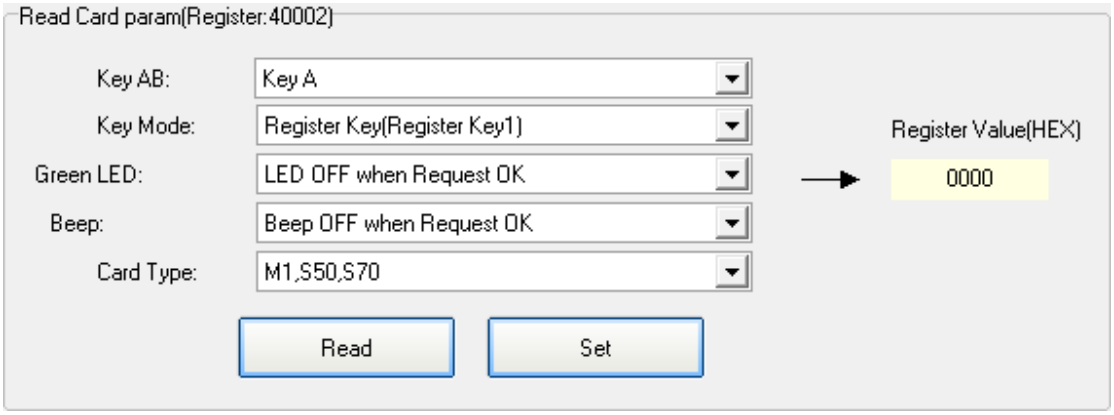


Default COM parameter:19200,n,8,1. Modbus id: 1. You can change it to another value.

2.2 System Key(the same as key register 2, address: 40103, 40104, 40105)



2.3 Parameter Register 2

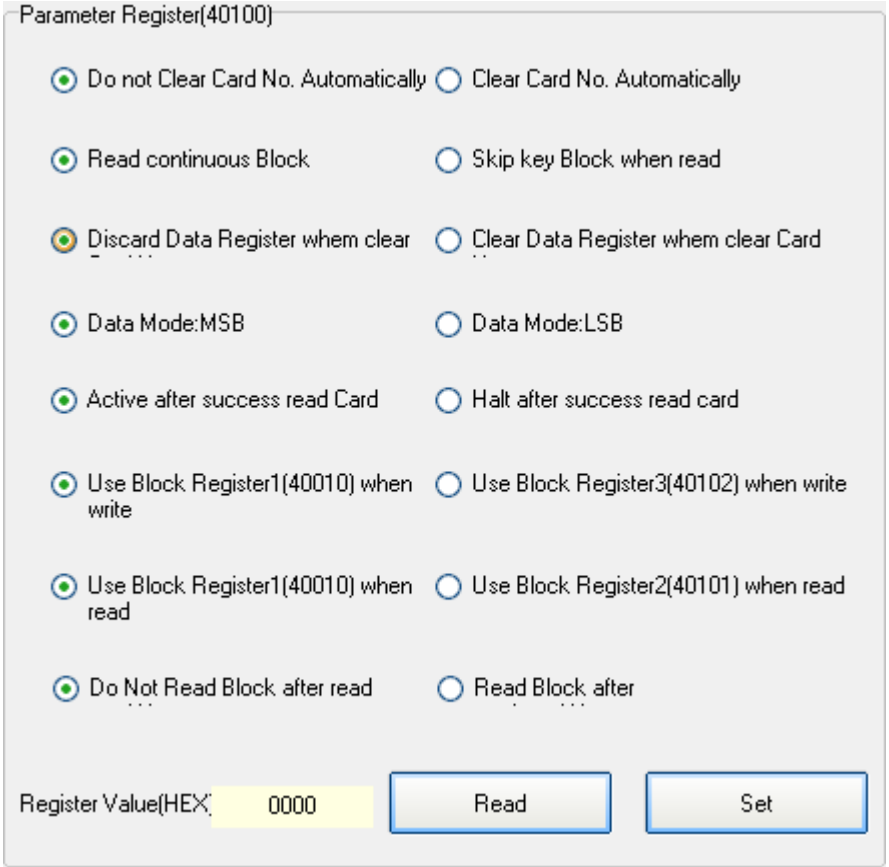


bit	description
8~7	**00->Both reading and writing ,Key A authentication(default)** **01->Both reading and writing, Key B authentication** **10->Reading card with Key A, writing with Key B** **11->Reading card with Key B, writing with Key A**
6	0-> **Authenticate with Key Register 1(40011~40013)** 1-> **Authenticate with Key Register 1(40103~40105)**
5	**0->*Green LED*** without action after getting card information. **1-> *Green LED*** Turn ON after getting card information.(Only 1 Time)

4	**0->*Beep*** without action after getting card serial number. *1*->***Beep*** Turn ON after getting card serial number. (Only 1 Time)
3~0	**The Card type of current operation：** 0x00->S50/S70(**Default**)

3 Modbus reader advance setting

3.1 Parameter register, Address 40100:



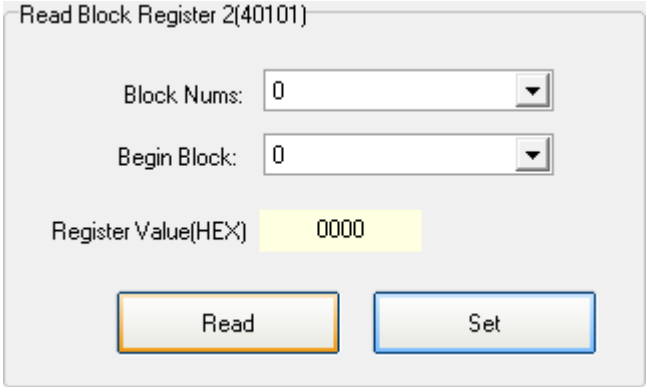
Parameter register 400100 can set how to do it after read the card.

bit	description
7	Card Serial No. Register value Empty automation. **0->Do not Empty value automation, you need fill zero value to the register from 40004 to 40007.** **1->Empty value after read register from 40004 to 40007, if bit5=1, then the**

	data block register will be empty too.
6	**Whether to skip key blocks when reading and writing blocks:** **0->Do not skip key blocks (default)** **1->Skip key block**
5	**Whether to clear all block data registers when clearing card number registers:** **0->When clearing the card number register, the block data register is not cleared.** **1->When clearing the card number register, clearing the block data register(That is all written0)**
4	**Data Mode for Block Data Register(40016～40047),Key Register(40011~40013 and 40103~40105),Card Serial No. Register(40004～40007) .** 0-> LSB 1-> MSB
3	**Whether card halt after card operation.** **0->The Card does not halt after operation to card.** **1-> The Card does halt after operation to card.**
2	0-> write card with the parameter register address 40010 1-> write card with the parameter register address 40102
1	0-> write card with the parameter register address 40010 1-> write card with the parameter register address 40101

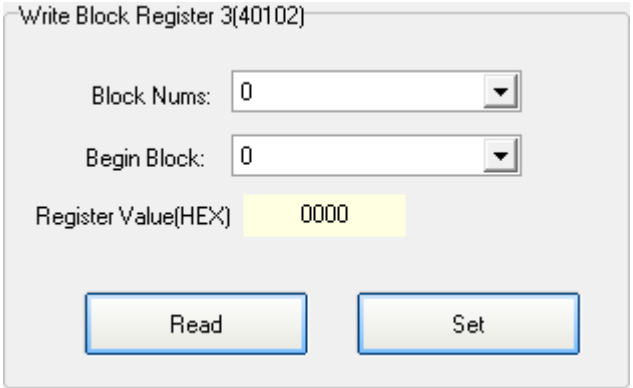
0	0-> Do not read block data after request card No. 1-> read block data after request card No.

3.2 Block number for read, address is 40101



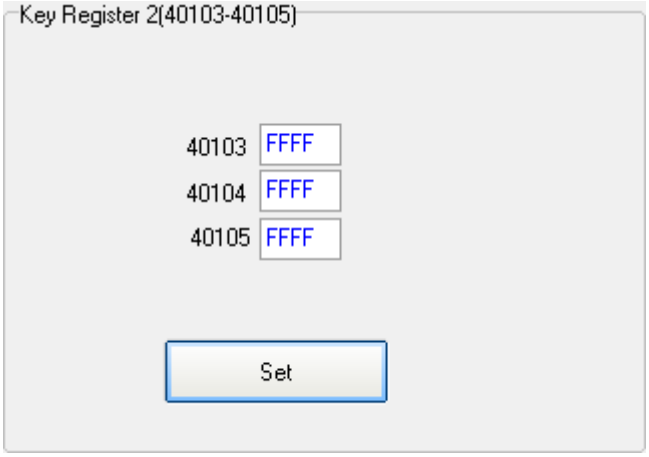
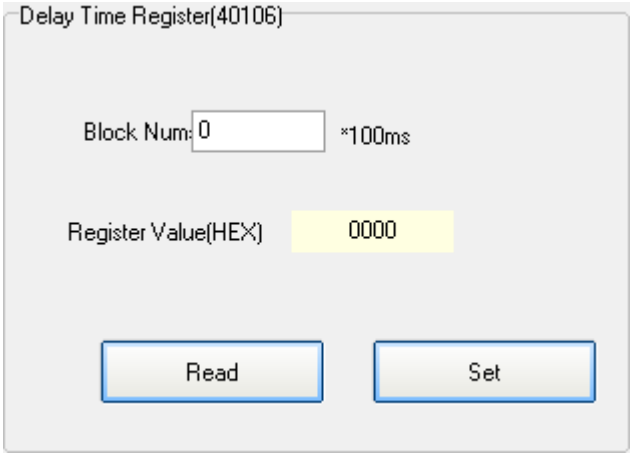
Whether use this register according to Parameter setting register(40100)

1.1 Block number for read, address is 40101



Whether use this register according to Parameter setting register(40100)

1.2 Key register 2，the same as system key. Address:40103,40104,40105



1.3 Delay time for the same card. Address is 40106