SID_UF2861Demo Software User's Guidev1.5

1. Parameter interface operation

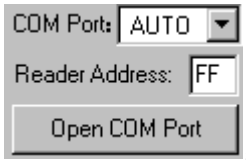
1.1 Open COM Port

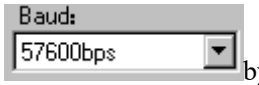
Before open com port, please make controller properly connected with the host using the communication cable provided and then turn on the power.

（1）Auto Open Comport:

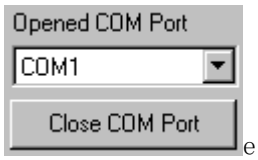
Value 255(0xFF) is broadcasting address. All controllers will respond the order with a broadcasting address.

Other value (0x00~0xFE) is controller address. Only will the controller conforming to the address respond the operation.

Click 

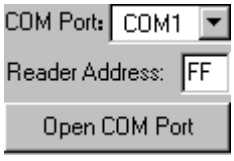
, If reader connect the computer's COM1 ~ COM9, we can see the port display in the place. the demonstration software to 

by connecting the port and written communication, the connection to the port to have a beginning, such as ：

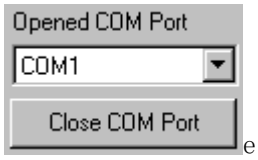


else 

（2）Open Designated Comport:

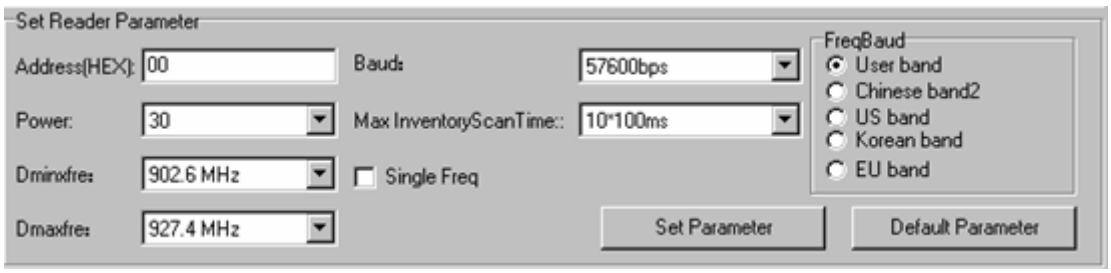


Click , the Baud will Auto Select From 115200bps, 57600bps, 38400bps,19200bps，9600bps, if success



else 

1.2 Parameter Setting:



（1） 

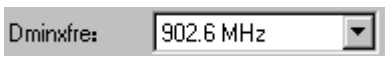
the new reader address to set. This address can't be 0xFF. If set 0xFF, reader will return error information.

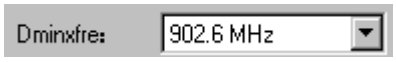
（2） 

set and save power configuration.

（3） 

select the reader's band, different band, the frequency is different.

（4） 



Set reader working Min Frequency and Max Frequency. In different places, the radio requires the rule to be different. Users can follow the local situation and choose to read more sensitive frequency range of the card. In single frequency point operation, only need to set two frequencies to the same value. In frequency hopping operation, only need to set two frequencies to the different value.

（5） 

demo software start run, default use the baud rate 57600 to open COM port, reader power on, reader baud rate default is 57600. After change the baud rate, reader use the new baud rate until power off. Close port and open port, the baud rate no change. The demo software will use the new baud rate, until close the demo software.

（6） 

set the inventory scan max response time of reader. If demo software sends the inventory order, it will wait 30*10ms for reader response and exits.

（7）GPIO Operation

Select need pins， click 

， Can control the output state pins， Click 

， can get output state pins.

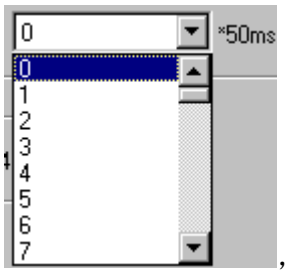
（8） 

， Select antenna 4， click 

， At this time, antenna 4 in working status, can also select multiple antenna working together.

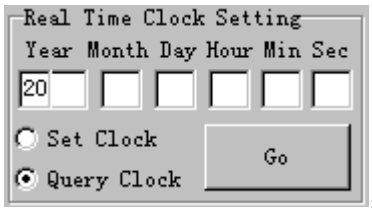
（9） 

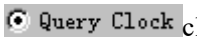
， select release time



, click 

can set release time.

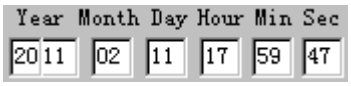
（10） 

, select 

click 

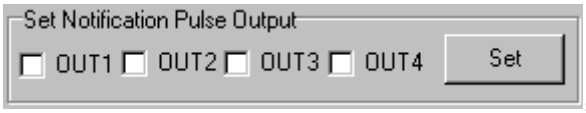
, can get real Clock time 

, if clock time is error, can select 

, input right time 

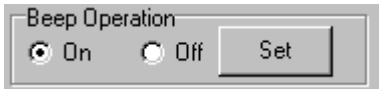
, click 

, Can complete on time of adjustment.

（11） 

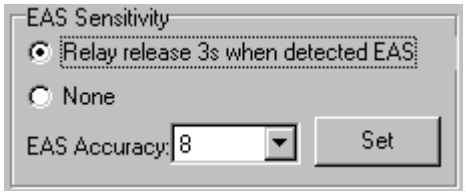
, select output port, click 

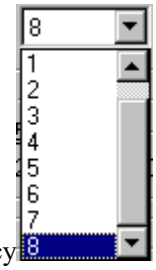
, Can install require notification output port.

（12） 

, Choose buzzer switch state, click Settings button to complete the operation, buzzer open open, when reading or writing to label operation is successful have prompt.

2. Active mode opration（COM IS OPEN）

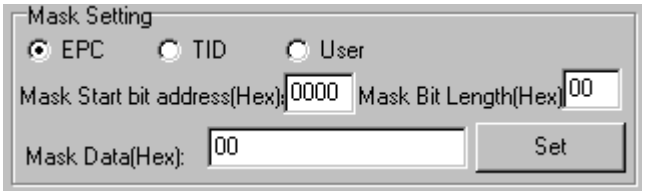
（1） 

, select relay action, accuracy 

, click 

, if successed ,can see 

.

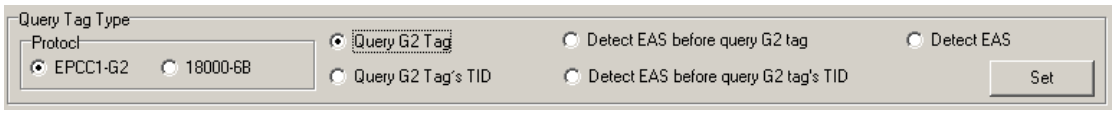
（2） 

，choose mask area,for example choose EPC，mask start bit address: 

，mask bit length 

，mask data 

，if successed,can see 

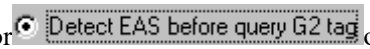
（3） 

，choose query tag type 

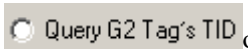
or 

，only choose 

，you can choose query action， 

or 

or 

or 

or 

，if successed,can see 

.

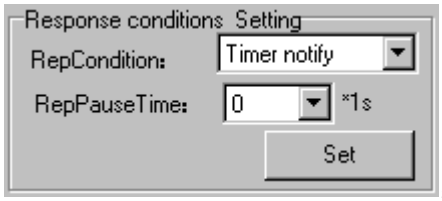
（4） 

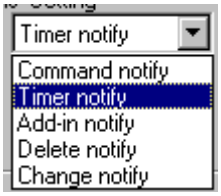
，choose pulse time 

，click 

，if successed,can see 

.

（5） 

，only choose 

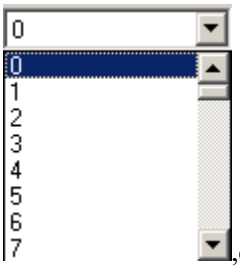
，reponse pause time effective，if successed,can see 

.（only choose 

，can get Reader storage blocks Tag information.

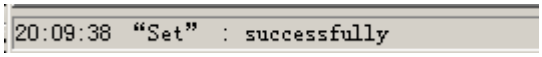
（6） 

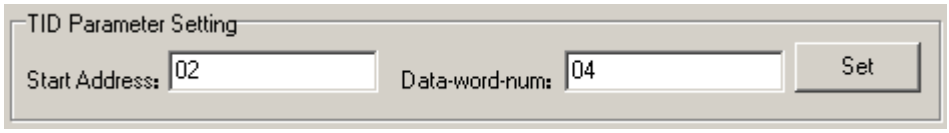
，select trigger time



,click 

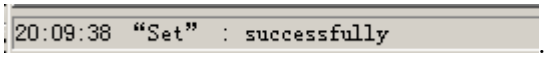
,if success,can see



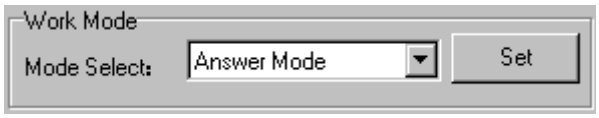
（7） 

， input start address and read word number. click 

,if success,can see



.

（8） 

，（only choose answer mode ，can operate other page ） click 

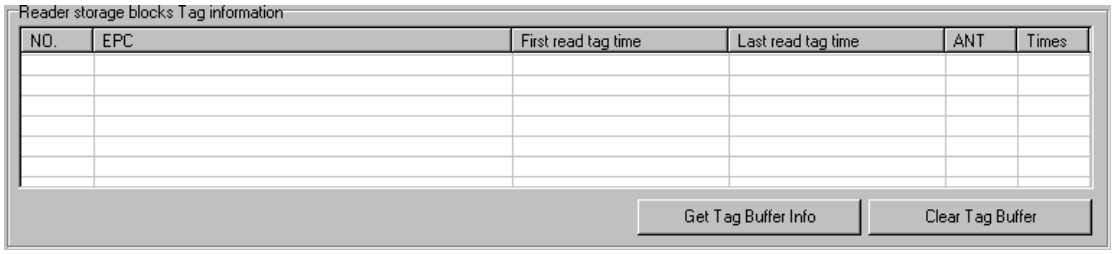
if successed,can see

.

（9） 

，click button，if successed,can see above six parameter。

（10）Only set command notify can do following operation



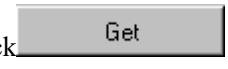
,click 

， if get tag information，can see：

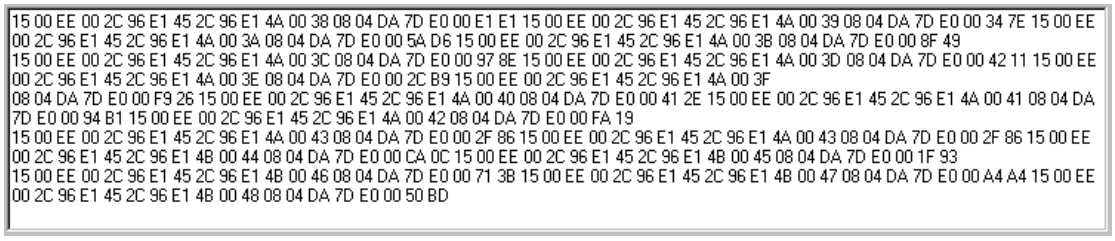
NO.	EPC	First read tag time	Last read tag time	ANT	Times
1	0002	2011-02-12 10:40:21	2011-02-12 10:40:27	1000	118
2	DA7DE000	2011-02-12 10:40:22	2011-02-12 10:40:27	1000	11

click 

， then will clear reader storge blocks tag information.

（11）Only set not command notify could get data,click 

， if get tag information show:



，click 

will stop data getting。

3. The Necessary Knowledge

3. 1 EPCC1G2 tag memory

Tag memory divided into four storage areas, each storage area can be made up of one or more memory words. The four storage areas:

EPC areas (EPC): Store the area of EPC number, this module stipulates it can store 15 word EPC number. Can read and can write.

TID areas (TID): Store ID number established by the tag production firm. There are 4 words and 8 words two kinds of ID numbers at present. Can read and not can write.

User areas (User): This area of different manufacturers is different. There is no user area in G2 tag of Inpinj Company. There are 28 words in Philips Company. Can read and can write.

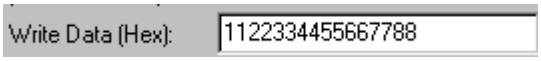
Password areas (Password): The first two words is kill password, the last two words is access password. Can read and can write.

Can write protect in four storage areas. It means this area is never writeable or not writeable under the non-safe state; only password area can set unreadable.

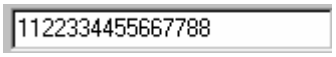
3.2 18000-6B tag

6B tag has a memory space, the minimum 8 bytes (byte 0- 7) is UID of the tag, and can't be rewritten. Following byte all can be rewritten, can be locked too, but once locking, can't rewrite again, can't unblock either.

3.3 Data display (tag ID, passwords, memory data is display in 16 hexadecimal)



Display in Hex, then 11 is first byte, 22 is second byte, and 1122 is first word.



Total 8 bytes, in other words, total 4 words.

4. EPCC1-G2 Test opration（COM IS OPEN）

4.1 Query Tag EPC(The operation needing to choose the tag all need to query tag first)

（1） 

Every 50ms issued a command checks.

（2） 

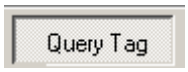
can see

No.	EPC	EPC Length	ANT(4,3,2,1)	Times
1	DA7DE000	04	1000	11

4.2 Query Tag TID

（1）Select 

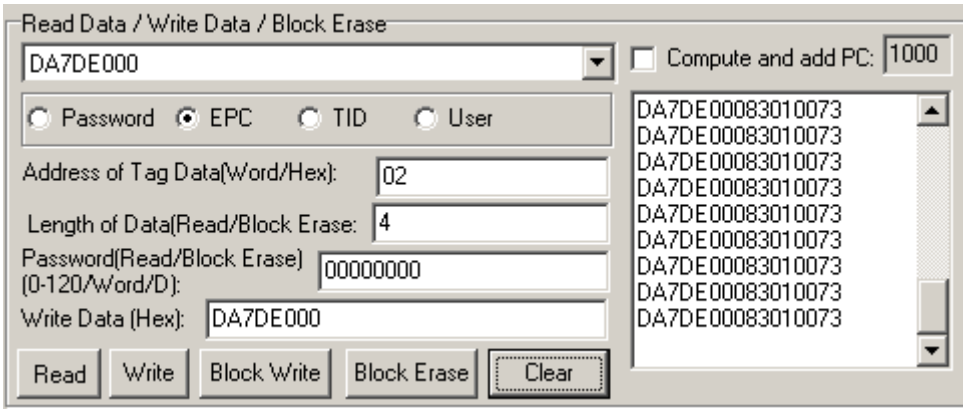
（2）Input query tag TID conditions 

（3） 

can see

No.	EPC	EPC Length	ANT(4,3,2,1)	Times
1	013EF1000DA4BFF5	08	0001	6

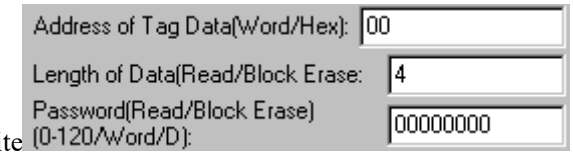
4.3 Read Data, Write Data, Block Erase



(1) Read data operation

<1> Choose tag 

<2> Choose memory 

<3> Write 

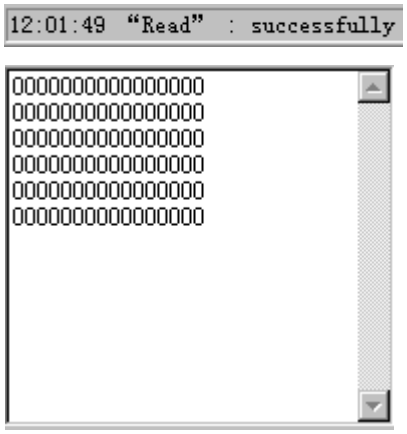
Start address: 0x00 stand in start to read data from first word in the designated storage area, 0x01 stand in start to read data from second word in the designated storage area, and so on.

Read the length: Number of the word to be read. It read 120 words at most. Can not set 0 or 120, otherwise, return the parameter error information.

Access password: From left to right it is the former high-word, low word in the

access password. If operation don't need access password, it can be the arbitrary value, but can't lack.

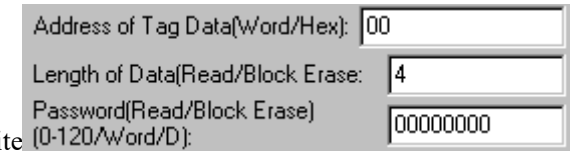
<4> Click 

can see 

(2) Write data operation

<1> Choose tag 

<2> Choose memory 

<3> Write 

（EPC memory Address of tag is 2）

Start address: 0x00, the first word of data (from left) is written in address 0x00 of the designated storage area, and so on.

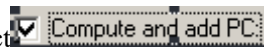
<4> Click 

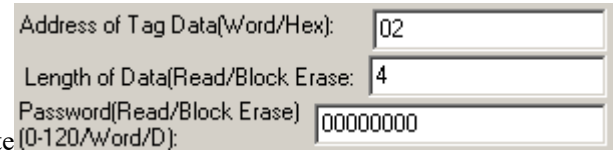
can see

Note: write data can be used to change the EPC number (the method is as follows)

<1> Choose tag 

<2> Choose memory 

,and select 

<3> Write 

（EPC memory Address of

tag is 2）

<4> Click 

can see

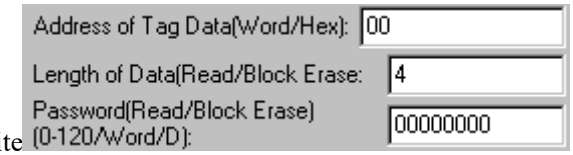
Then query tag EPC,can see

No.	EPC	EPC Length	ANT(4,3,2,1)	Times
1	DA7DE001	04	0001	8

(3) Block Erase Operation (write 0 to the designated data)

<1> Choose tag 

<2> Choose memory 

<3> Write 

Start address: 0x00 stand in start to erase data from first word in the designated storage area, 0x01 stand in start to erase data from second word in the designated storage area, and so on.

The difference from write operation: Needn't fill in the data.

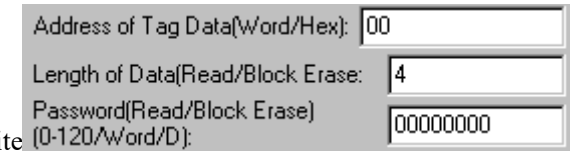
<4> Click 

can see

(4) Write block operation

<1> Choose tag 

<2> Choose memory 

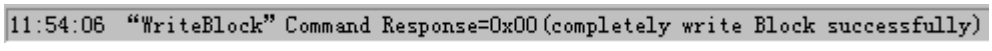
<3> Write 

（EPC memory Address of tag is 2）

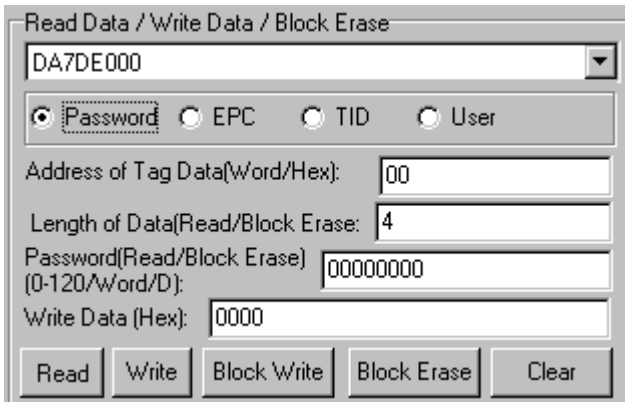
Start address: 0x00, the first word of data (from left) is written in address 0x00 of the designated storage area, and so on.

<4> Click 

can see

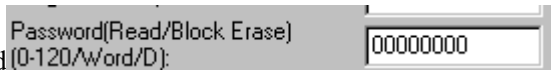


4.4Revise the password



(1) Choose tag 

(2) Choose memory 

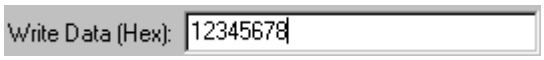
(3) Write access password 

Access password: From left to right it is the former high-word, low word in the access password. If operation don't need access password, it can be the arbitrary value, but can't lack.

(4) Revise the access password 12345678: Write

Click

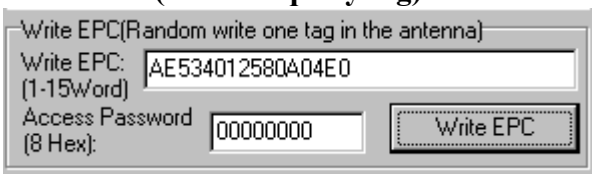
(5) Revise the kill password 12345678: Write



Click 

(6) If succeed, we can see

4.5 Write EPC (Needn't query tag)



(1) Write access password (If EPC area of the tag has not set password protection, we can write 8 data arbitrarily)

(2) Write EPC.

(3) Click 

. (Random write one tag in the effective range of antenna)

When there are many or EPC pieces of tag in the effective range of antenna, and the access

password of one tag is the same as you entered, or EPC area of tag set no password protection, click 

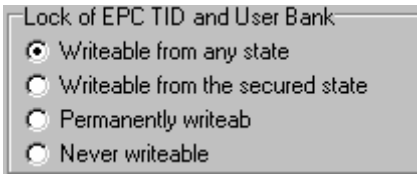
at a time, random write EPC number of one tag in the effective range of antenna.

4.6 Set the state of read and write protection

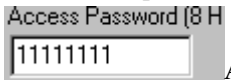
(1) Choose tag 

(2) Choose memory 

(3) Choose protection type

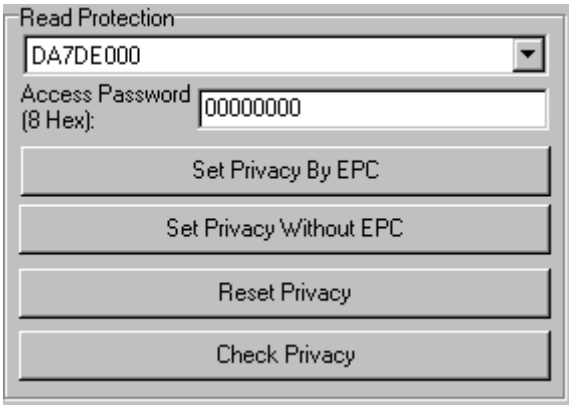


(4) Write access password:



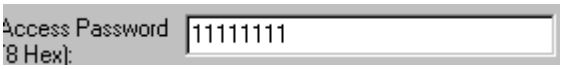
Any storage area in no password protection status still must write the correct access password.(password can not be zero).

4.7 Read Protection



(1) Set Single Tag Read Protection

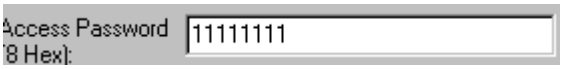
<1> Choose tag 

<2> Write tag access password 

<3> Click 

According to EPC number of the tag, setting read protection, make tag unable to be read and written by any order, even if query the tag, it is unable to get EPC number of the tag. Only NXP UCODE EPC G2X tags valid.

(2) Set Single Tag Read Protection without EPC

<1> Write tag access password 

<2> Click 

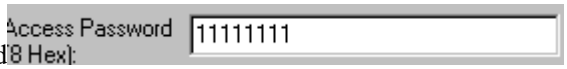
can set tag read protection in the effective range of antenna

The difference from 

: When there are several tag in the effective range of antenna, reader don't know the tag which the order operate.

If operate several tags, then the access password of the tag had better be the same. Only NXP UCODE EPC G2X tags valid.

(3) Reset Single Tag Read Protection without EPC

<1> Write access password 

<2> Click 

Use for reset the tag read protection.

Only put a tag in the effective range of antenna. Only NXP UCODE EPC G2X tags valid.

Comments: If tag does not support the read protection setting, it must be unprotected.

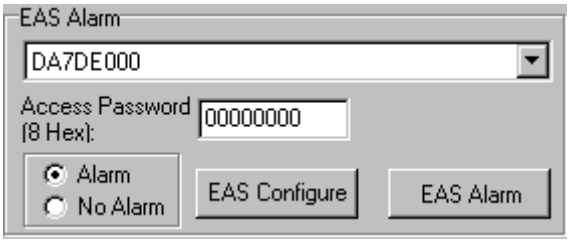
(4) Detect Single Tag Read Protection without EPC

<1> Click 

Can't detect tag whether it support read protection order, can only detect single tag whether it is protected. If tag does not support the read protection setting, it must be unprotected.

Make sure that there is single tag in the effective range of antenna. Only NXP UCODE EPC G2X tags valid.

4.8 EAS Alarm



(1) Alarm setting

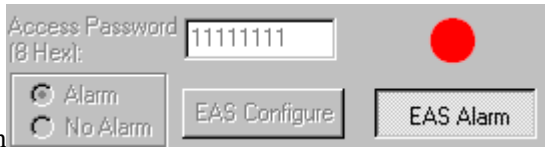
<1> Choose tag 

<2> Write access password 

<3> Choose alarm 

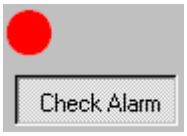
Set or reset the EAS status bit of tag. Only NXP UCODE EPC G2X tags valid.

(2) Check alarm without EPC and access password

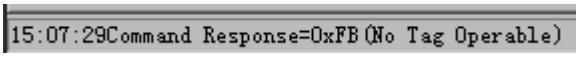
<1> Click check alarm 

Check the EAS alarm of tag. Only NXP UCODE EPC G2X tags valid.

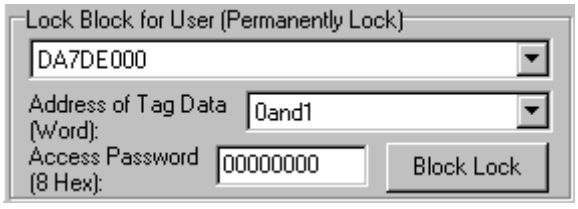
<2> EAS alarm:



No EAS alarm:



4.9 Lock Block for User (Permanently Lock) (After the data locked, it can not be changed again)



(1) Choose tag 

(2) Write 

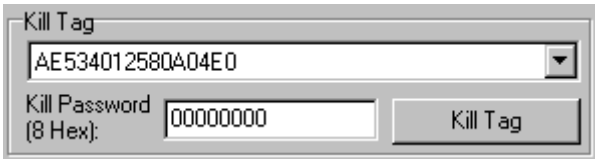
Access password can not be the whole 0. Otherwise, the tag can not be locked, and the tag return response with parameter error.

(3) Choose address of tag data (word). The user's area amounts to 14 word. (0- 13)

Lock permanently in 2 words. Therefore, the address of tag data is divided into 0 and 1, 2 and 3, 4 and 5, 6 and 7, 8 and 9, 10 and 11, 12 and 13. You can lock the data if you wish:

After the data get locked, it can be read only, can't be rewritten, and can't be erased too. Only NXP UCODE EPC G2X tags valid.

4.10 Kill Tag（Permanently Kill）



(1) Choose tag 

(2) Write 

Kill password can not be the whole 0. Otherwise, the tag can not be killed, and the tag return response with parameter error.

4.11 Mask conditions

（1）check enable

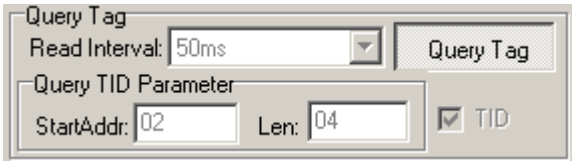
Only check enable can do mask operation。

For example, EPC mask：

Choose EPC area： 

Only the first byte of tag's EPC is DA could response.

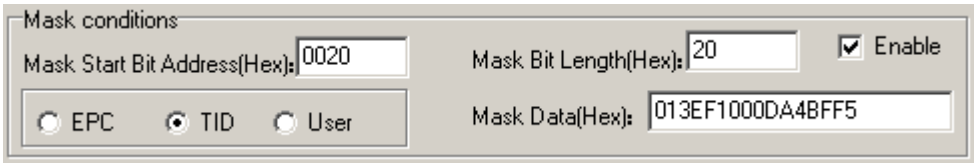
For example, TID mask：

<1>Query TID 

Can see TID

No.	EPC	EPC Length	ANT(4,3,2,1)	Times
1	013EF1000DA4BFF5	08	0001	60

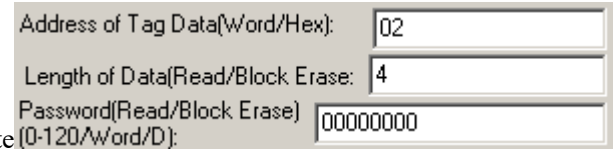
<Mask condition>



For example change EPC :

〈2〉 select

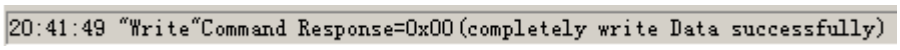
and 

<3> Write 

（EPC memory Address of tag Is 2）

<4> Click 

can see



Then query tag EPC,can see

No.	EPC	EPC Length	ANT(4,3,2,1)	Times
1	DA7DE001	04	0001	8

5. 18000-6B Test Interface Operation (After Open COM Port)

5.1 Query Tag

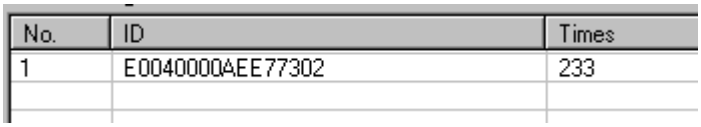
(1) 

send a inventory command every 50ms.

(2) 

Only query the single tag. If many tags are in the effective range of antenna at the same

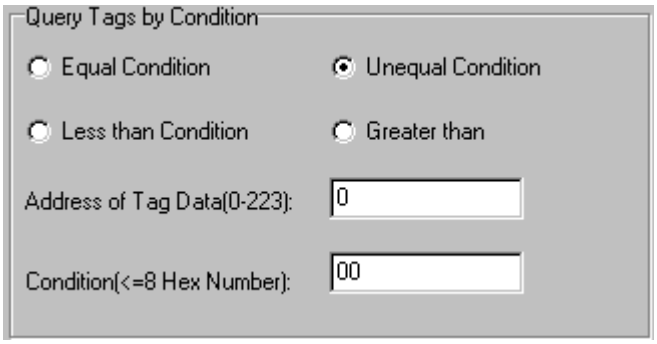
time, it may be unable to query the tag.



No.	ID	Times
1	E0040000AEE77302	233

(3) 

<1> Unequal Condition:



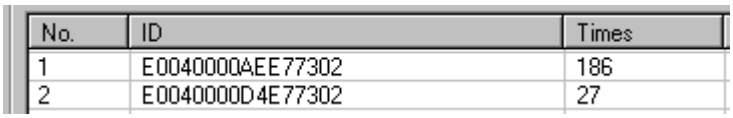
Note:

The 8 bytes of 6B tag number write in the 0~7 which in the address of tag data (0- 233)

Figure, query condition begin to compare from the tag data address 0. The comparative content is 22.

Click

See

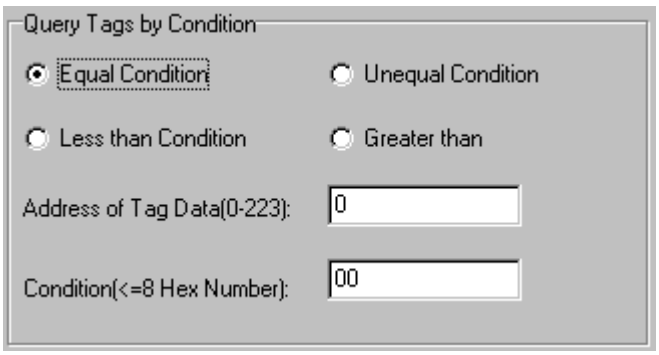


No.	ID	Times
1	E0040000AEE77302	186
2	E0040000D4E77302	27

Figure, from the tag number we can see the addresses 0 of tag data: 00, 00, 11, 11.

Unequal condition 22, therefore, the four tags are read.

<2> Equal Condition:



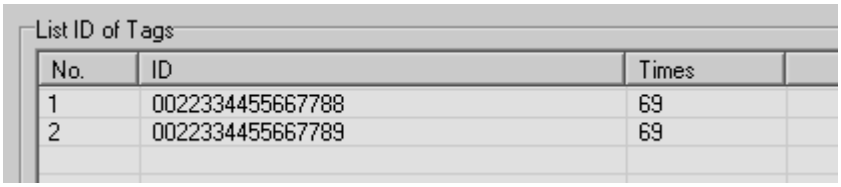
Note:

The 8 bytes of 6B tag number write in the 0~7 which in the address of tag data (0- 233)

Figure, query condition begin to compare from the tag data address 0. The comparative content is 00.

Click

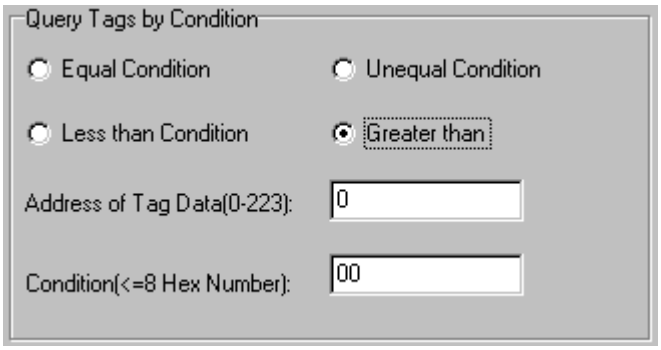
See



Figure, from the tag number we can see the addresses 0 of tag data: 00, 00.

Equal condition 00, therefore, the two tags are read.

<3> Greater than



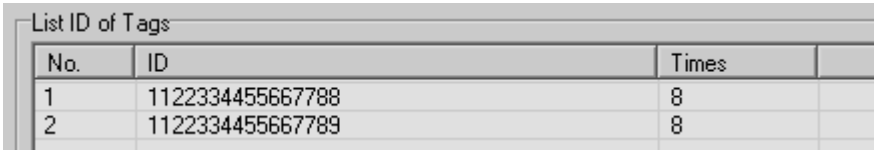
Note:

The 8 bytes of 6B tag number write in the 0~7 which in the address of tag data (0- 233)

Figure, query condition begin to compare from the tag data address 0. The comparative content is 00.

Click

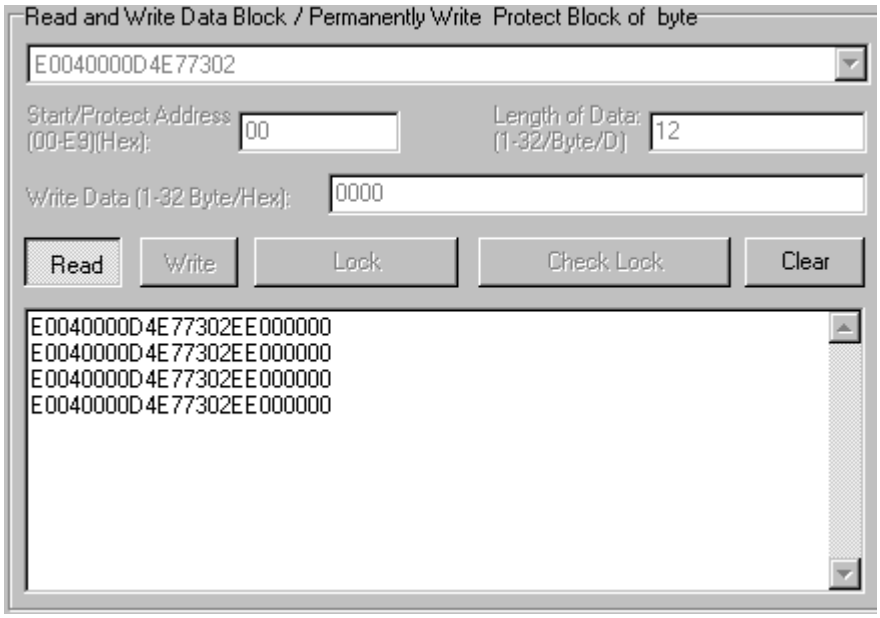
See



Figure, from the tag number we can see the addresses 0 of tag data: 11, 11.

Great than 00, therefore, the two tags are read.

5.2 Read and Write Data Block / Permanently Write Protect Block of Byte



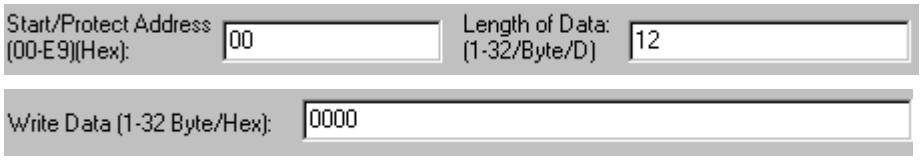
(1) 

(2) Read data:

Start address: 0x00 stand in start to read data from first word in the designated storage area, 0x01 stand in start to read data from second word in the designated storage area, and so on. Range is 8~223. Beyond this range, reader will return parameter error.

Read length: pointed to the number of bytes to read. Range is 1~32. If Start address + Read length greater than 224, or Read length greater than 32 or is zero, reader will return parameter error information. The high bytes of Read length write in the low address in tag.

(3) Write data:

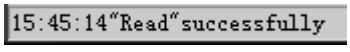


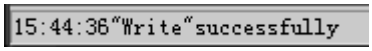
Write data: Range is 1~32. If Start address + Write length greater than 224, or Write length greater than 32 or is zero, reader will return parameter error information. The high bytes of Read length write in the low address in tag.

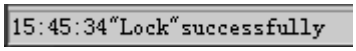
(4) Permanently Write Protect: lock the designated byte.

(5) Check Protect: check whether the designated byte is locked.

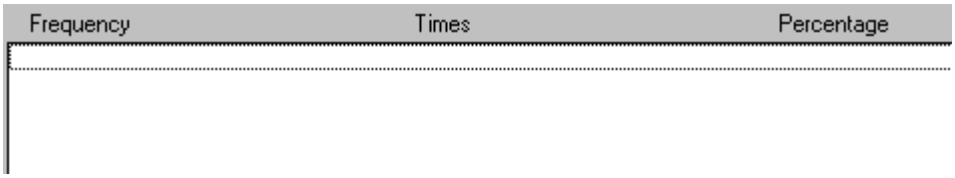
(6) If succeed, we can see:





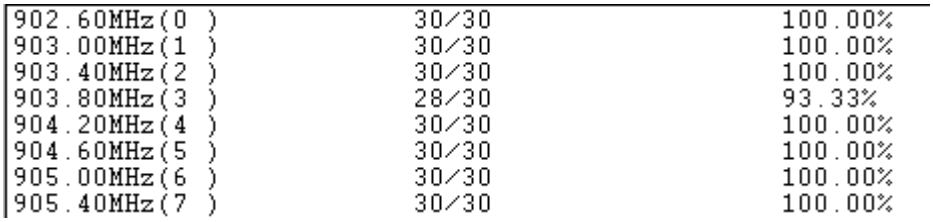


6. Frequency Analysis Operation (After Open COM Port)



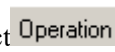
Click 

,can see



The larger of the percentage ,the better of the results.

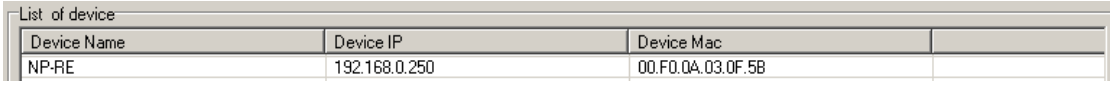
7. Config TCPIP

1.Select 

, click 

Search.

If device connected.



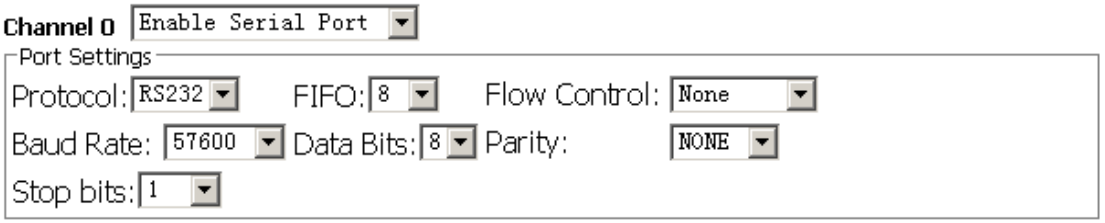
Select the device

2.Select 

,default user name and password are admin.

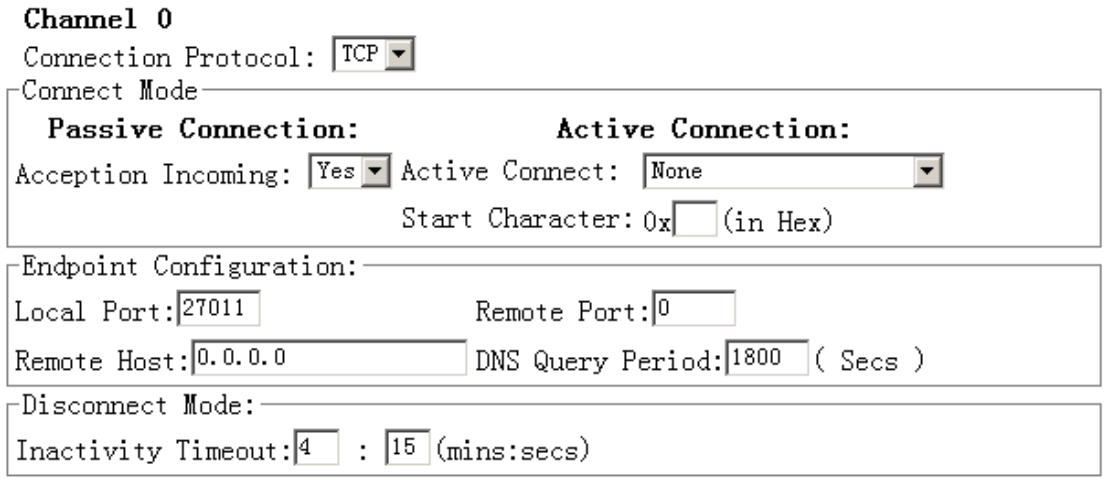
Login.

（1）Select Serial1 Settings ，default:



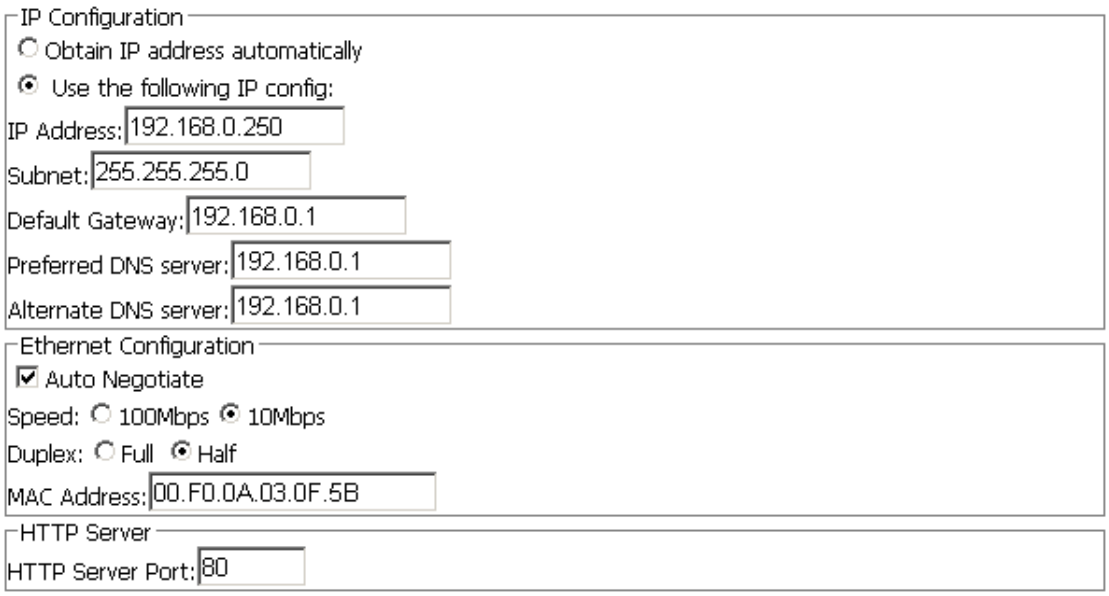
Finished click OK .

（2）Select Connection1 ,set TCP.



Finished click OK .

（3）Select Network set device IP.



Finished click 

.

（4）The end select 

.Click 

，Restart your device.