

Uhf desktop electronic label reader Demo Software User's Guidev1.0

1. Parameter interface operation	1
1.1 Open COM Port	1
1.2 Parameter Setting:	1
2. The Necessary Knowledge	2
2. 1 EPCC1G2 tag memory	2
2.2 Data display (tag ID, passwords, memory data is display in 16 hexadecimal)	3
3. EPCC1-G2 Test	3
3.1 Query Tag EPC	3
3.2 Read Data, Write Data, Block Erase	4
3.3Revise the password	6
3.4 Write EPC	7
3.5 Lock Operation	7
3.6 Read Protection	8
3.7 EAS Alarm	9
3.8 Kill Tag (Permanently Kill)	10
3.9 Mask conditions	11
4. Buffer operation	12

1. Parameter interface operation

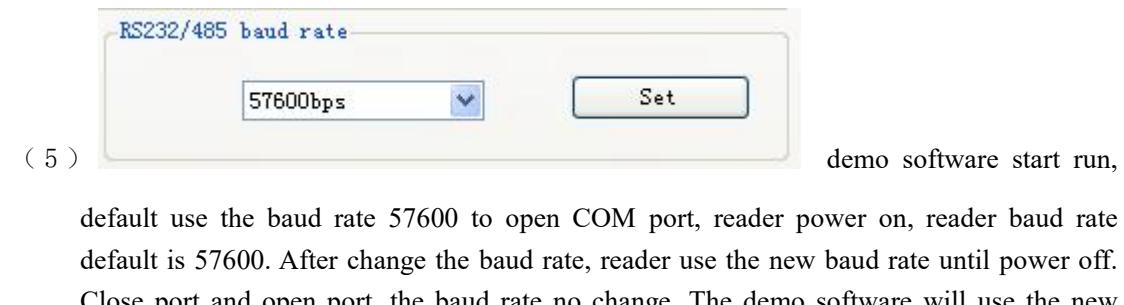
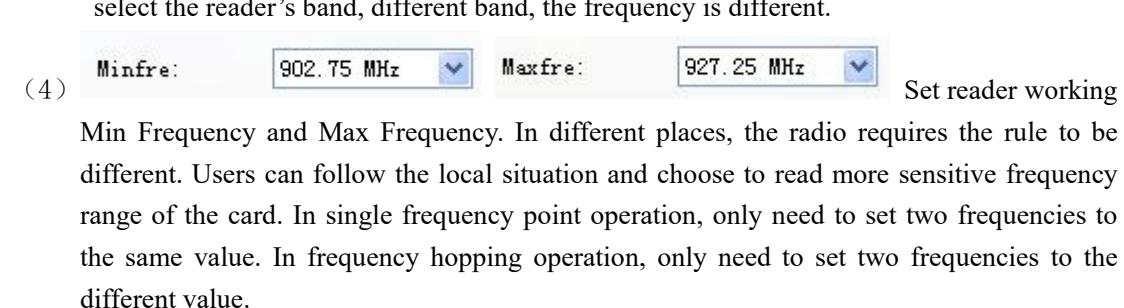
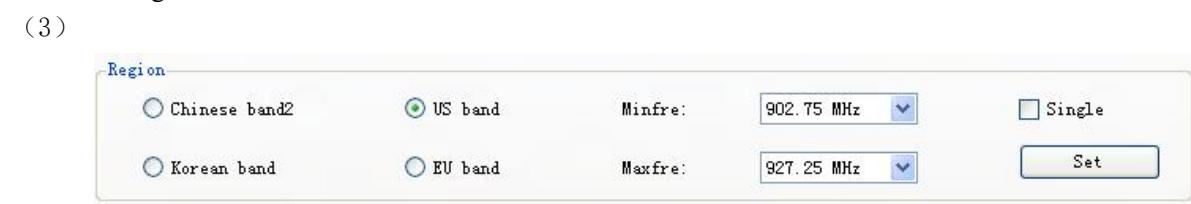
1.1 Open COM Port

Before use this demo, please install the USB serial port driver,.net framework.



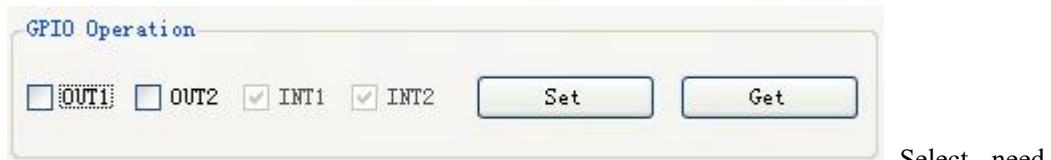
If success , can see `2014-7-25 14:09:35 Connected COM4@57600bps`

1.2 Parameter Setting:

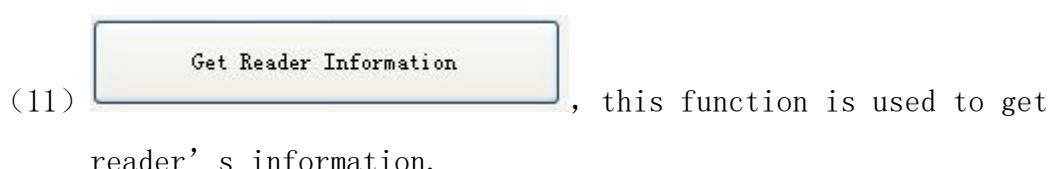
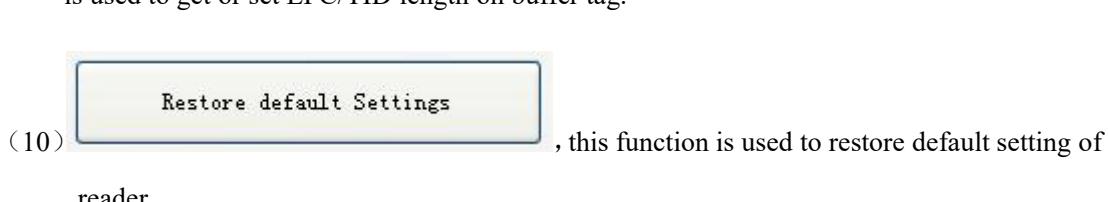


baud rate, until close the demo software.

(6) GPIO Operation



pins, click **Set**, Can control the output state pins, Click **Get**, can get output state pins.



2. The Necessary Knowledge

2. 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.

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

Write Data (Hex):	1122334455667788
-------------------	------------------

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

1122334455667788	Total 8 bytes, in other words, total 4 words.
------------------	---

3. EPCC1-G2 Test

3.1 Query Tag EPC

(1) Select EPC or TID to read, like

Select other condition

Q:	4	Session:	0	Max-ScanTime:	10*100ms
Target:	A	<input checked="" type="checkbox"/> Read 2 times no tag, then A/B conversion			

Note: about Q, S choice, a single tag or less number must be S0, a lot of tag queries using S1 or S2, S3. 2^Q equal tag number is better. If it is a single query effect must use S0

Start

(2) Click

3.2 Read Data, Write Data, Block Erase

Read Data / Write Data / Block Erase			
Start address (Hex):	0000	Read/Write data(Hex)	0000
Length (Dec):	4	<input type="checkbox"/> Auto Compute and add PC	0800
Password (Hex):	00000000	<input checked="" type="radio"/> Password <input checked="" type="radio"/> EPC <input type="radio"/> TID <input type="radio"/> User	<input type="button" value="Read"/> <input type="button" value="Write"/> <input type="button" value="Ext Read"/>
		<input type="button" value="Block"/> <input type="button" value="Block"/> <input type="button" value="Ext Write"/>	

Select memory Password EPC TID User to be operation

(1) Read data operation

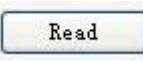
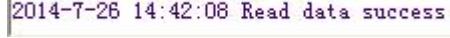
Start address: (Hex):	0000
Length (Dec):	4
Password: (Hex):	00000000

<1> Input data like

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.

<2> Click  can see 

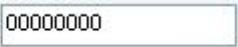
Read/Write data(Hex) 

 is used to read large memory of tag.

(2) Write data operation

<1> Input Write data word address

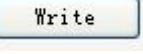
Start address: (Hex):  and Password

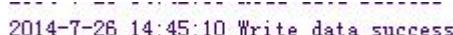
Password: (Hex): 

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

<2> Input data what you want to write like

Read/Write data(Hex) 

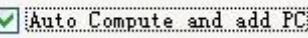
<3> Click  can see



Note: write data can be used to change the EPC number

(the method is as follows)

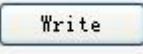
<1> Choose memory , and

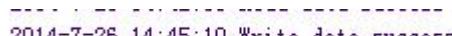
select 

<3> Write EPC number

Read/Write data(Hex) 

(EPC memory Address of tag is 2)

<4> Click  can see



Then query tag EPC, can see

Tag list (No Repeat)			
NO.	EPC	Times	RSSI
1	111122223333444455556666	3	132

Ext Write

is used to Write large memory of tag.

(3) Input erase data address and length

Start address: (Hex):	<input type="text" value="0000"/>
Length (Dec):	<input type="text" value="4"/>
Password: (Hex):	<input type="text" value="00000000"/>

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

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

<4> Click **Erase** can see

2014-7-29 12:07:56 Block erase success then the data will be set to 0

(4) Write block operation

<1> Input Write data word address

Start address: (Hex):	<input type="text" value="0000"/>	and Password
Password: (Hex):	<input type="text" value="00000000"/>	

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

<2> Input data what you want to write like

Read/Write data (Hex)

<3> Click **Write** can see

2014-7-26 14:45:10 Write data success

3.3 Revise the password

(1) Select one tag

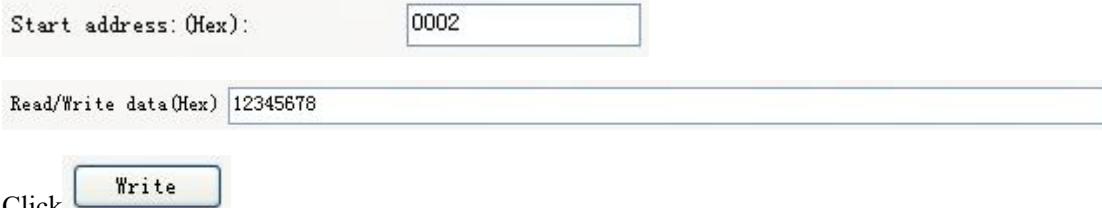
Selected tag:

Select memory Password EPC TID User to be operation

(2) Write access password 

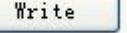
Access password: default is 00000000, if you have change to others, you should input right values.

(3) Revise the access password 12345678: Write



Start address: (Hex): 0002

Read/Write data (Hex) 12345678

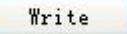
Click 

(4) Revise the kill password 12345678: Write

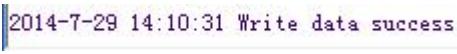


Start address: (Hex): 0000

Read/Write data (Hex) 12345678

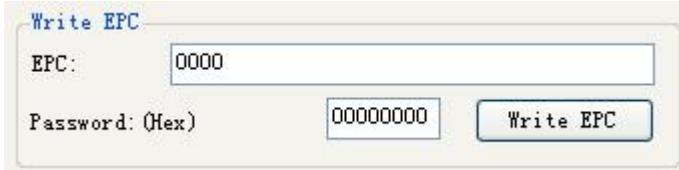
Click 

(5) If succeed, we can see



2014-7-29 14:10:31 Write data success

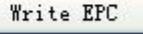
3.4 Write EPC



Write EPC

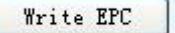
EPC: 0000

Password: (Hex) 00000000

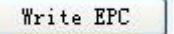


(1) Write access password (If EPC area of the tag has not set password protection, we can write 8 data arbitrarily)

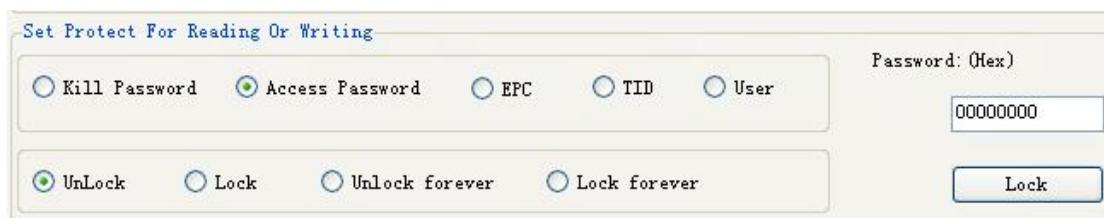
(2) Write EPC.

(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.

3.5 Lock Operation



Set Protect For Reading Or Writing

Kill Password Access Password EPC TID User

Access Password: (Hex) 00000000

UnLock Lock Unlock forever Lock forever



(1) Select one tag

Selected tag: E211210100120000000001BA

(2) select memory

Kill Password Access Password EPC TID User

to be operation

(3) select protect type

UnLock Lock Unlock forever Lock forever

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

(5) Click **Lock** then, the option is over.

3.6 Read Protection

Read Protection

Password: (Hex)	00000000
Set Privacy By EPC	
Set Privacy Without EPC	
Reset Privacy	
Detect Privacy	

Select one tag

Selected tag: E211210100120000000001BA

(1) Set Single Tag Read Protection

Set Privacy By EPC

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

Set Privacy Without EPC

can set tag read protection in the effective range of antenna

Set Privacy By EPC

The difference from **Set Privacy By EPC** : 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

 Reset Privacy

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

 Detect Privacy

<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.

3.7 EAS Alarm



Select one tag

Selected tag: E211210100120000000001BA

(1) Alarm setting

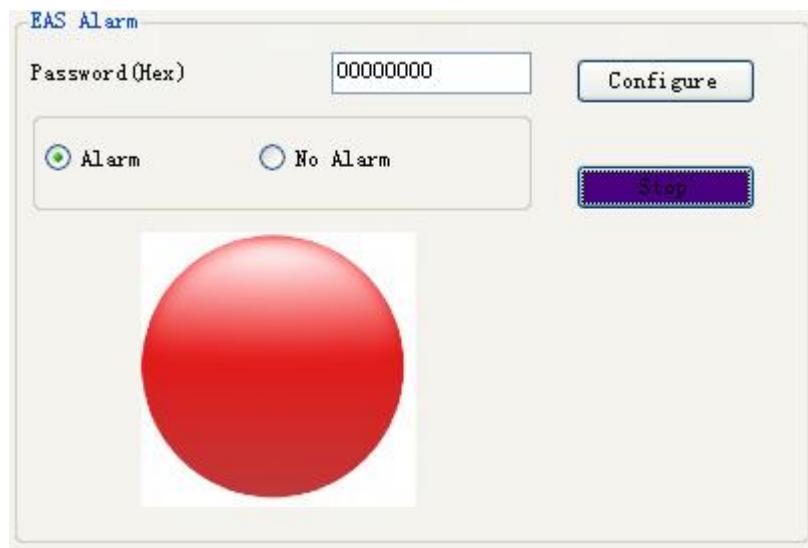


<3> Choose alarm

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

(2) Check alarm without EPC and access password

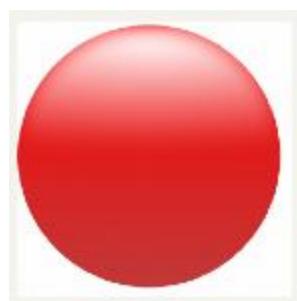
<1> Click check alarm



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

<2> EAS alarm:

2014-7-29 14:27:37 EAS Alarm



No EAS alarm:

2014-7-29 14:28:26 No EAS Alarm

3.8 Kill Tag (Permanently Kill)

(1) Select one tag

Selected tag: E211210100120000000001BA

Kill Password: (Hex) 12345678

(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.

(3) Click **Kill tag**, if success, the tag is killed.

3.9 Mask conditions

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	Times	RSSI
1	E20034120141F1000DF52E26	8	133

<Mask condition>

For example change EPC :

<2> select

Start address (Hex):	0002
Length (Dec):	4
Password (Hex):	00000000

<3> Write (EPC memory Address of tag Is 2)

Read/Write data (Hex) E0550141F10000DF52E261234

<4> Click can see

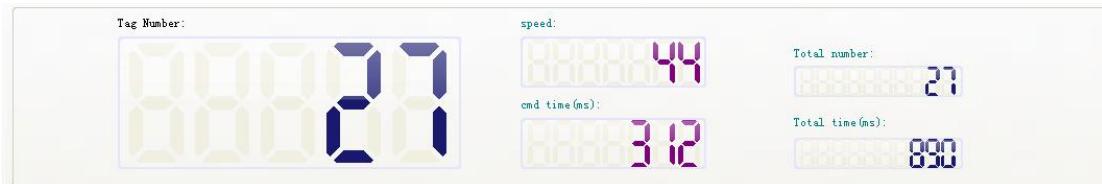
2014-7-29 14:39:20 Write data success

4. Buffer operation

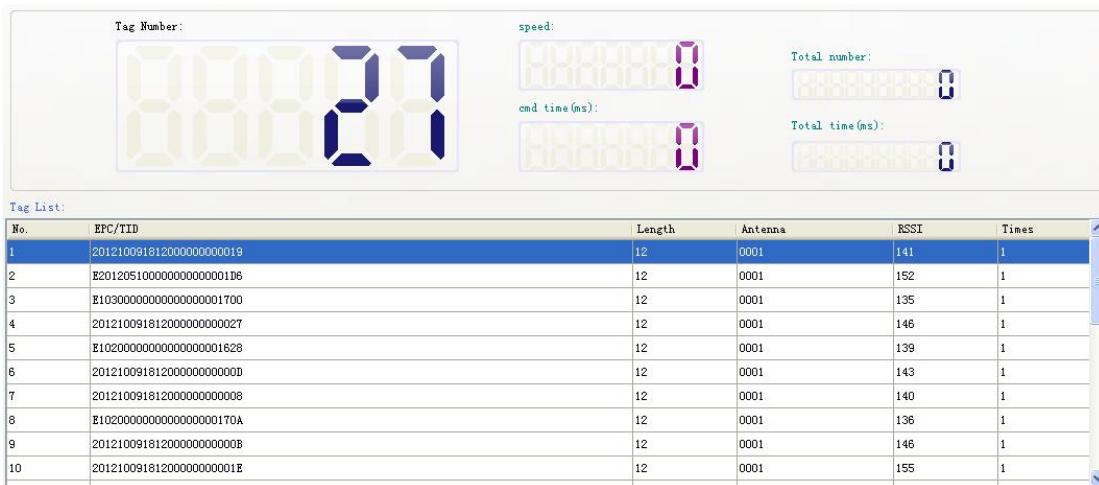
(1) Select EPC/TID query. For example: EPC



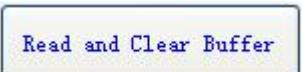
This demo is used Q=4,S=1,Target A to inventory tag, if there are some tag

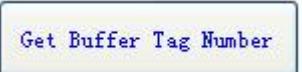


(2) is used to read tag in the buffer, if there are tag



(3) is used to clear tag information in the buffer.

(4)  is used to read out tag and clear tag in the buffer.

(5)  is used to get