User Manual

System Overview

TM-915 is designed of 902MHz to 928MHz reader module for UHF RFID, usually applied to PC . Our advance technology delivers small, reliable, easy to design and cost-effective EPC C1G2 UHF reader module solution. TM-915 also compatible with ISO-18000-6C. Its simplified Uart interface, low power consumption and high performance, make it easily to integrate any device with UHF technology.

PC system: Windows XP/Vista/7/8 (32 & 64-bit)

- USB to UART driver
- Above Net_Framework_4.0
- FAVEPC Reader Utility software
- 1. First install PL2303_Prolific_DriverInstaller_v1_12_0 file. The file download Web side refer to the below

http://www.prolific.com.tw/UserFiles/files/PL2303_Prolific_DriverInstaller_v1_14_0.zip

2. Install process:



Step 1: Next



Step 2: Finish and PC restart

3. Install the above Net_Framework_4.0 file [,] The file download Web side refer to the below

https://www.microsoft.com/zh-tw/download/details.aspx?id=17718

4. USB Reader plug to PC USB port and Run Reader Utility software [,] refer to the below:

Device Connect	×
已連接RFID Reader. (COM6)	
Multi-Reader Select	
COM6 –Prolific USB-to-Serial Comm Port (COM6)	-
Connect Enter B	eader
Connect Enter R	leader

Check the box [Enter Reader] and Enter the operating window.

Reader Utility _{v2.5.1}		英文(美國) ▼ X
EPC/TID Multi Cont. EPC (Q) TID	PC EPC	CRC16 Count
Pre-setting Set select to pre-command Memory Bank: Address(bit): Length(bit): Data: 01: EPC Set access to pre-command		
Access Password: Read/Write Read/Write	Info	Log Clear
01: EPC 2 6 Write		
Read		
Kill pwd Access pwd EPC bank TID bank USER bank skip skip skip skip skip skip skip		
Kill Kill pwd Kill Set		
Msg: Ver: VC1C	7,080C2FE8,B0,2 ID: S080C2FE8 Statu	us: COM6 (38400,8,None,One)

Operating command refers to the below:

1.1 Q command :

Read EPC data from single TAG. Check the box [EPC(Q)]. It can read TAG EPC data.

If it need continue to read single TAG. First check the box [Cont.] and check

	Multi Cor
EPC (Q)	
TID	E

the box [EPC(Q)] again.

Check the box **[**STOP**]** . It stops to read the TAG EPC.

		Multi	Cont
Stop	3000300833B2DDD9014000000001299A		
TID			

1.2 U command

Read many EPC data from multi-TAG. First check the box [Multi] and check

	EPC/TID	
		Multi Cont.
	EPC (U)	
· · · · · · · · · · · · · · · · · · ·	TID	
the box [EPC(U)]		

If it need continue to read Multi-TG. First check the box [Cont.] and [Multi],

EPC (U)	

check the box [EPC(U)]

check the box **[**STOP**]** . It stops to read multi TAG.

	Multi Con
Stop	
DID	

1.3 **[TID]** button

Real command is <LF>R2,0,4<CR>. It can see the real command in Info windows at lower right corner. The **[**TID **]** button is used to read single TAG. If it need continue to read single TAG, check the box **[**Cont. **]** and check

	EPC/TID	Multi Cont.
	EPC (Q)	0 0
	TID	V
thebox 【 TID 】		

check the box **[**STOP**]** . It stops to read multi TAG.

		Multi Cont
EPC (Q)		
Stop	E280110020005A54	

1.4 R command (Read operation) :

1.4.1 First select the [Memory Bank], Drop-down menu: [00:RESERVED] [01:EPC][02:TID][03:USER][00:RESERVED KillPwd][00:RESERVED]



1.4.2 Enter number in [Address] and [Length(word)]

Read/Write Memory Bank:	Address:	Length(word)
01: EPC •	2	6
Write		
Read	E200300	003919003813208DE0

1.4.3 Check the Box 【Read】 to get the data.

1.5 W command (Write operation) :

- 1.5.1 First select the [Memory Bank]
- 1.5.2 Enter number in [Address] and [Length(word)]
- 1.5.3 Enter the HEX data to the write windows
- 1.5.4 Check the box [Write]. The result show in Info windows at lower right corner. If it is right, it show the <LF>W<OK><CR><LF>.
- 1.5.5 Check the box [Read]. It can get the data if it writes data to the TAG.

Read/Write - Memory Bank:	Address:	Length(word)
01: EPC -	2	2
Write	E20030	91
Read	E20030	91

1.6 Lock operation

- 1.6.1 Check the box from Kill pwd options. It can select four items.
 - 1.6.1.1 [skip]: not change
 - 1.6.1.2 【Readable and writable】: TAG can be Readable and writable
 - 1.6.1.3 【Permanently Readable and writable】: TAG can be Permanently Readable and writable. It can't be change the status after the setting.
 - 1.6.1.4 【Need password to readable and writable】: TAG need password to readable and writable
 - 1.6.1.5 【Need password to permanently readable and writable】: TAG need password to permanently readable and writable. It can't be change the status after the setting.

Kill pwd	Access pwd	EPC bank	TID ba	ank	USER bank
skip	skip	▼	•] s	kip	• skip
skip				1	
Readable ar	nd writable				
Permanently Need passw	readable and wr ord to readable a	itable nd writable		ng —	
Need passw	ord to permanent	ly readable and v	vritable	h	

- 1.6.2 Check the box from Access pwd options. It can select four items.
 - 1.6.2.1 [skip]: not change
 - 1.6.2.2 [Readable and writable] : TAG can be Readable and writable
 - 1.6.2.3 【Permanently Readable and writable】: TAG can be Permanently Readable and writable. It can't be change the status after the setting.
 - 1.6.2.4 【Need password to readable and writable】: TAG need password to readable and writable
 - 1.6.2.5 【Need password to permanently readable and writable】: TAG need password to permanently readable and writable. It can't be change the status after the setting.

Kill pwd	Access pwd	EPC bank	TID bank	USER bank			
skip	▼ skip	skip	▼ skip	▼ skip	•		
Lock	A skip – Readable an	– skip – Readable and writable					
Kill	Permanently Kil Need passwo Need passwo	readable and wo ord to readable a ord to permanen	ritable and writable tly readable and y	writable			

1.6.3 Check the box from EPC bank options. It can select four items.

*EPC data always can be read.

- 1.6.3.1 [skip] : not change
- 1.6.3.2 [Writable] : TAG can be writable
- 1.6.3.3 [Permanently writable] : TAG can be permanently writable. It can't be change the status after the setting.
- 1.6.3.4 [Need password to writable] : TAG need password to writable
- 1.6.3.5 【Need password to permanently writable】: TAG need password to permanently writable. It can't be change the status after the setting.

GIII pwd	Access pwd	EPC bank	TID bank	USER bank
skip	▼ skip	• skip	skip	▼ skip
Lock		– skip –		
2001		Writable		
		Permanently	writable	
Kill -	Kill nwd	Need passw	ord to writable	
1.011		Need passw	ord to permanen	tly writable

1.6.4 Check the box from TID bank options. It can select four items.

*TID data always can be read. Normal TAG TID can't be written. It need refer to the TAG IC specification.

1.6.4.1 [skip] : not change

- 1.6.4.2 [Writable] : TAG can be writable
- 1.6.4.3 [Permanently writable] : TAG can be permanently writable. It can't be change the status after the setting.
- 1.6.4.4 [Need password to writable] : TAG need password to writable
- 1.6.4.5 【Need password to permanently writable】: TAG need password to permanently writable. It can't be change the status after the setting.

Kill pwd	Access pwd	EPC bank	TID bank	USER bank
skip	▼ skip	▼ skip	▼ skip	▼ skip ▼
Lock]		– skip –	
LOOK	J		Writable	
1211			Permanently	writable
KIII	Kill nwd	R	Need passw	ord to writable
			Need passw	ord to permanently writab

1.6.5 Check the box from USER bank options. It can select four items.

*USER bank data always can be read.

- 1.6.5.1 [skip] : not change
- 1.6.5.2 [Writable] : TAG can be writable
- 1.6.5.3 【Permanently writable】: TAG can be permanently writable. It can't be change the status after the setting.

1.6.5.4 [Need password to writable] : TAG need password to writable

1.6.5.5 【Need password to permanently writable】: TAG need password to permanently writable. It can't be change the status after the setting

Kill pwd	Access pwd	EPC bank	TID bank	USER bank
skip	▼ skip ▼	skip 🔹	skip 🔹	skip 🔻
Lock				– skip –
				Writable
200			0.11	Permanently writable
Kill -	Kill nud	Reade	er Setting	Need password to writable
				Need password to permanently write

1.6.6 For example. We will select (Need password to readable and writable) option at all item. Check the box 【Lock】. The result show in Info windows at lower right corner. If it is right, it show the

•
•

Kill pwd	Access pwd	EPC bank	TID bank	USER bank
Need passw 🔻	Need passw 🔻	Need passw 🔻	Need passw 🔻	Need passw 🔻
Leek	·	~ <u></u>	· · · · · · · · · · · · · · · · · · ·	~

1.7 Kill Password Setting

1.7.1 At [Memory Bank] of Read/Write operation item , Drop-down menu

00: RESE -	0	2	
00: RESERV	ED		
01: EPC		1	
02: TID		1	
3: USER			
00: RESERV	ED(KillF	wd)	EDC
00. RESERV	ED(Acc	ace Durd)	EPt

select [00:RESERVED KillPwd] item.

- 1.7.2 Check the box 【Read】, Default value is 0000000
- 1.7.3 For example. Write password is 12345678, check the Box [Write]. The result show in Info windows at lower right corner. If it is right, it show the <LF>W<OK><CR><LF>

Read/Write — Memory Bank:	Address:	Length(word)	
00: RESE •	0	2	
Write	1234567	78	
Read	0000000	90	

1.8 Access Password Setting

1.8.1 At [Memory Bank] of Read/Write operation item , Drop-down menu

Memory Bank:	Address:	Lengui(word)
00: RESE -	0	2
00: RESERV	/ED	
01: EPC		
02: TID		
03: USER		
00: RESERV	/ED(KillPw	d) EPC H
00: RESERV	/ED(Acces	sPwd)

select (00:RESERVED AccessPwd)

- 1.8.2 Check the box [Read] , Default value is 0000000
- 1.8.3 For example. Write password is 12345678, check the Box [Write]. The

result show in Info windows at lower right corner. If it is right, it show the <LF>W<OK><CR><LF>

- Read/Write — Memory Bank:	Address:	Length(word)	
00: RESE •	2	2	
Write	123456	78	
Read	000000	90	_

1.9 P command:

- 1.9.1 The all operations are be locked the password. So we need use P command before the other command operates.
- 1.9.2 Write the password (12345678) at Access Password item
- 1.9.3 Check the box [Set access to pre-command]
- 1.9.4 We can read TAG to get the EPC data.
- 1.9.5 We can see the information in Info windows at lower right corner. The R command. It isn't need the password to read EPC data. Because the EPC data always can be read. But we need write the ECP data. If it doesn't run the P command, it will resend the error code (4). It means the memory is locked. So we run the P command first and immediately run W command. It can write data to EPC bank memory.

Reader Utility _{v2.5.1}	英文(美國) ▼
- EPC/TID Tag Reco	ord
Multi Cont. PC	EPC CRC16 Count
TID	
Pre-setting	
Set select to pre-command Memory Bank: Address(bit): Length(bit): Data:	
01: EPC •	
Set access to pre-command	
Access 12345678	Log
Read/Write	
Memory Bank: Address: Length(word)	4 18:18:00.386 [IX] - <lf>R1,2,2<cr> 4 18:18:00.635 [RX] - <lf>RE2003001<cr><lf></lf></cr></lf></cr></lf>
01: EPC • 2 2 1 16/05/24 16/05/24	4 18:18:21.649 [TX] - <lf>W1,2,2,E2003000<cr> 4 18:18:21.842 [RX] - <lf>4<cr><lf></lf></cr></lf></cr></lf>
Write E2003000 16/05/24 16/05/24	4 18:18:24.962 [TX] - <lf>P12345678<cr> 4 18:18:25.092 [RX] - <lf>P<cr><lf></lf></cr></lf></cr></lf>
Read E2003001 16/05/24	4 18:18:25.102 [TX] - <lf>W1,2,2,E2003000<cr> 4 18:18:25.297 [RX] - <lf>W<ok><cr><lf></lf></cr></ok></lf></cr></lf>
Kill pwd Access pwd EPC bank TID bank USER bank	
skip • skip • skip • skip •	
Lock	
Kill Reader Setting	
Kill Set	

1.10 Kill command

- 1.10.1 Enter kill password 12345678 at Kill pwd item
- 1.10.2 Check the box [Kill]. The TAG will be kill and can't be used again.
- 1.11 T command ---Select TAG operation

- 1.11.1 It need select one TAG operation at Multi-TAG. It need use the T Command to select specific TAG.
- 1.11.2 Check the box [Multi] first and check the box [EPC(U)]
- 1.11.3 It show the Multi-TAG data at Top right of the window
- 1.11.4 At Pre-setting item
 - 1.11.4.1 Check the box [Set select to pre-command]
 - 1.11.4.2 Select [01:EPC] at Memory Bank
 - 1.11.4.3 Enter number(70) at Address(bit) *Warning : Address unit is bit, the value is HEX. So HEX(7*16)=HEX(112)=70 hex
 - 1.11.4.4 Enter number (10) at Length(bit) * Warning : Length unit is bit, the value is HEX. So HEX(1*16)=HEX(16)=10 hex
 - 1.11.4.5 Enter last four numbers of EPC at Data item. For example. The number is 8DE0 or 8DDF.
- 1.11.5 At Read/Write item
 - 1.11.5.1 Select (01:EPC) at Memory Bank

1.11.5.2 Check the box [Read]. We can get the EPC data by selected TAG

1.11.6 It shows the command process in Info windows at lower right corner.

Reader Util								英文 (美國)	_	•
EPC/TID						Tag Rec	cord			
	1				Multi Cont	PC	EPC	C	RC16	Count
EPC (U)						3000	E20030003919003813208DE	24	6B 1	
TID						5000	E20020002313002912109DF	JF 20	/2 1	
Pre-setting Set select to Memory Bank:	pre-command Address(bit): L	.ength(bit):	Data:							
01: EPC 🔹	70	10	8DE0							
Set access to Access Password:	o pre-command]					Log) [c	lear
01: EPC • Write	2 E20030003	91900381	13208DE0			<lf>U300 <lf>U300 <lf>U300 <lf>U<cf 16/05/24 16/05/24</cf </lf></lf></lf></lf>	00E20030003919003813208DE024 00E20030003919003813108DDF26 R> <lf> 4 18:45:09.129 [TX] - <lf>T1 4 18:45:09.259 [RX] - <lf>T4</lf></lf></lf>	46B <cr><lf> 572<cr><lf> L,70,10,8DDF<cr (CR><lf></lf></cr </lf></cr></lf></cr>	ь	
Reau	20030003	5150050.				16/05/24	4 18:45:09.274 [IX] - <lf>R1 4 18:45:09.476 [RX] - <lf>RE</lf></lf>	2,6 <cr> 20030003919003</cr>	813108DD	F <cr><</cr>
Lock Kill pwd	Access pwo	I EP	C bank skip 🔹	TID bank	USER bank	16/05/24 16/05/24 16/05/24 16/05/24	4 18:45:22.982 [TX] - <lf>T1 4 18:45:23.112 [RX] - <lf>T4 4 18:45:23.128 [TX] - <lf>R1 4 18:45:23.260 [RX] - <lf>R5</lf></lf></lf></lf>	L,70,10,8DE0 <cr CR><lf> L,2,6<cr> 20030003919003</cr></lf></cr 	\$ 8813208DE	0 <cr><</cr>
Lock										
Kill	Kill pwd		Read	er Setting —			m			
Msg: N/A: Not a	applicable.				Ver: VC	1C7,080C2FE8	3,B0,2 ID: S080C2FE8 Status	: COM6 (38400),8, <mark>Non</mark> e,	One)

Federal Communication Commission Interference Statement 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 or more 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.

FCC Caution:

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.

Statement:

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

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.