

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.

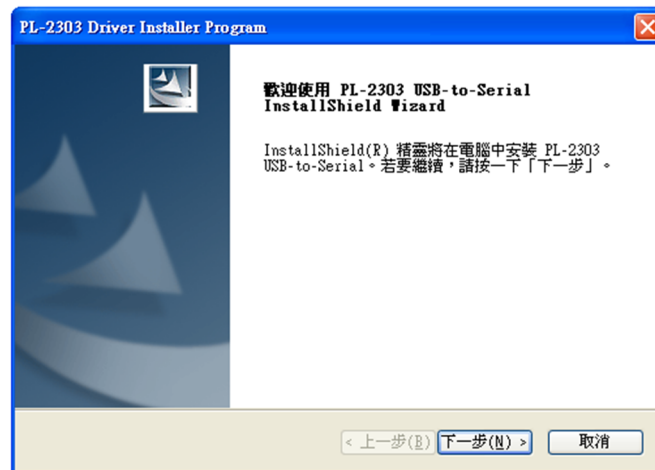
PC system: Windows XP/Vista/7/8 (32 & 64-bit)

- 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:

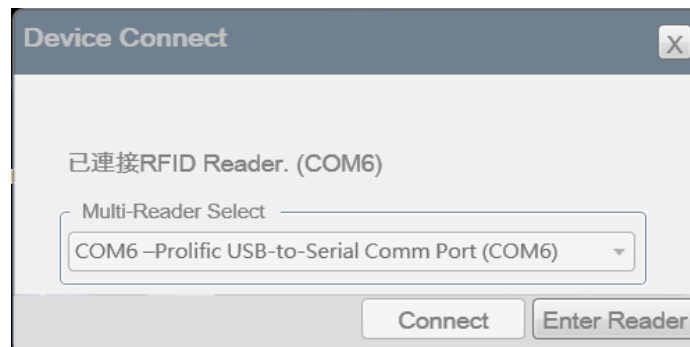


Step 1: Next

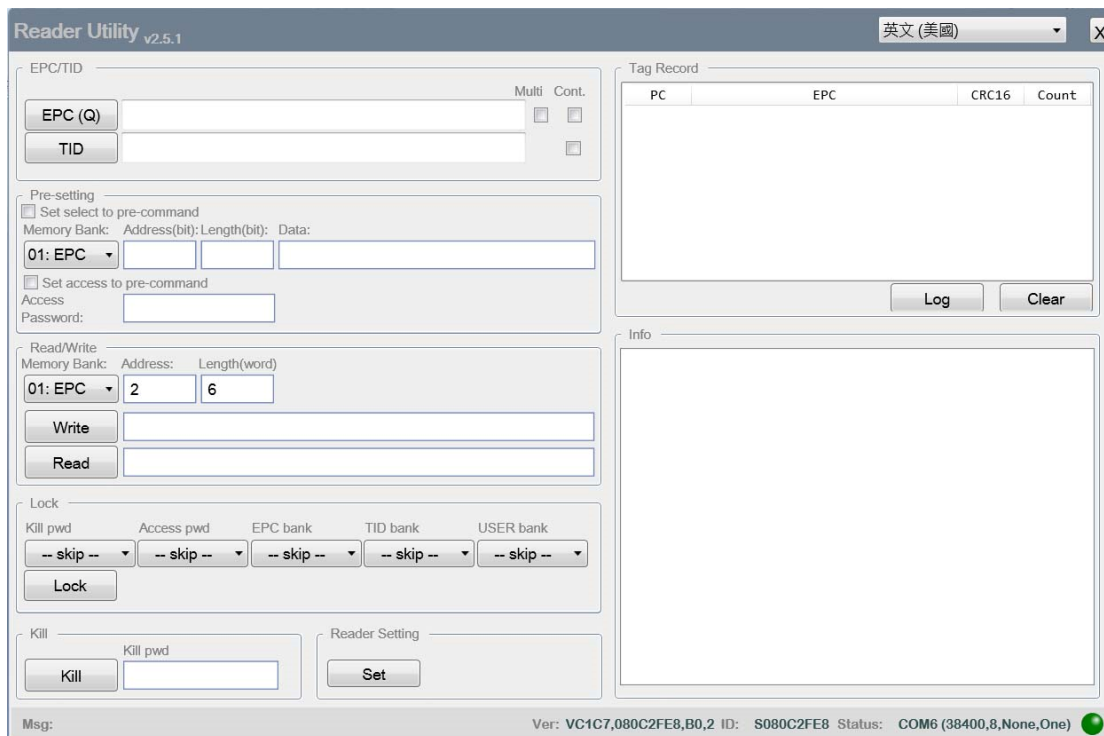


Step 2: Finish and PC restart

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:



Check the box **【Enter Reader】** and Enter the operating window.



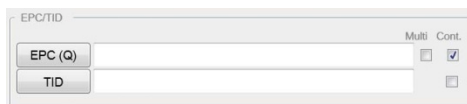
Operating command refers to the below:

1.1 Q command :

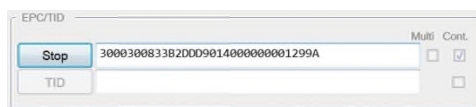
Read EPC data from single TAG. Check the box【EPC(Q)】. It can read TAG EPC data.

If it need continue to read single TAG. First check the box【Cont.】 and check

the box 【EPC(Q)】 again.



Check the box 【STOP】 . It stops to read the TAG EPC.



1.2 U command

Read many EPC data from multi-TAG. First check the box【Multi】 and check

the box 【EPC(U)】



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

check the box 【EPC(U)】 .



check the box **【STOP】** . It stops to read multi TAG.



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



check the box **【STOP】** . It stops to read multi TAG.

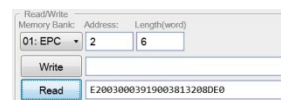


1.4 **R command (Read operation) :**

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



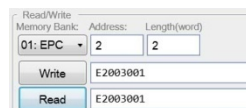
- 1.4.2 Enter number in **【Address】** and **【Length(word)】**



- 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.



1.6 Lock operation

1.6.1 Check the box from Kill pwd options. It can select four items.

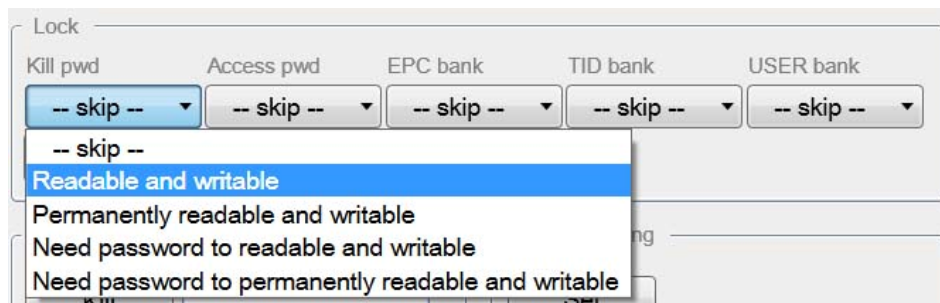
1.6.1.1 **【 skip 】** : not change

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.



1.6.2 Check the box from Access pwd options. It can select four items.

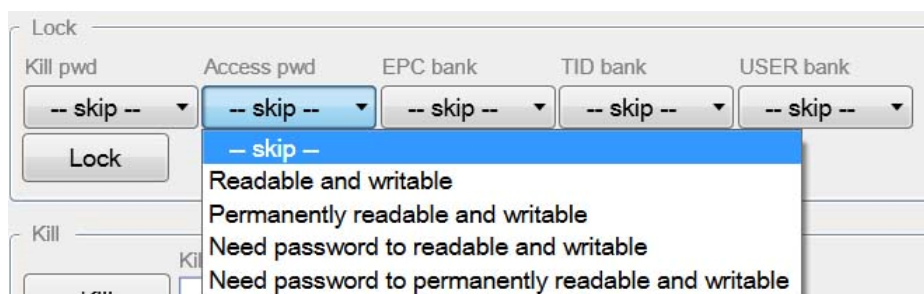
1.6.2.1 **【 skip 】** : not change

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.



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

*EPC data always can be read.

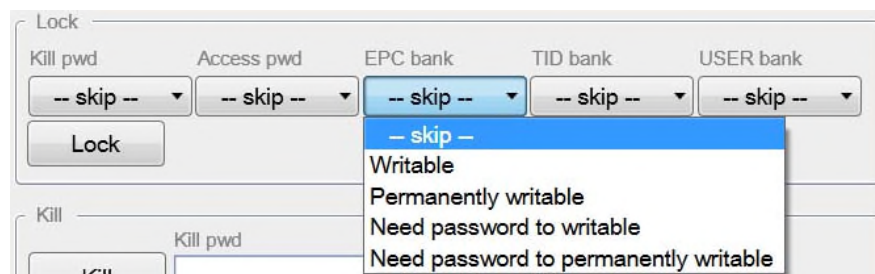
1.6.3.1 **【 skip 】** : not change

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.



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.

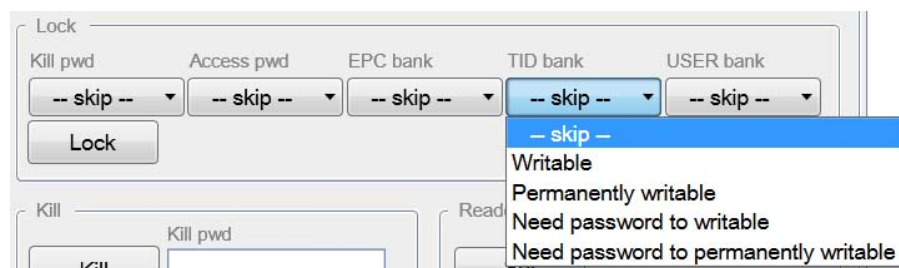
1.6.4.1 **【 skip 】** : not change

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.



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

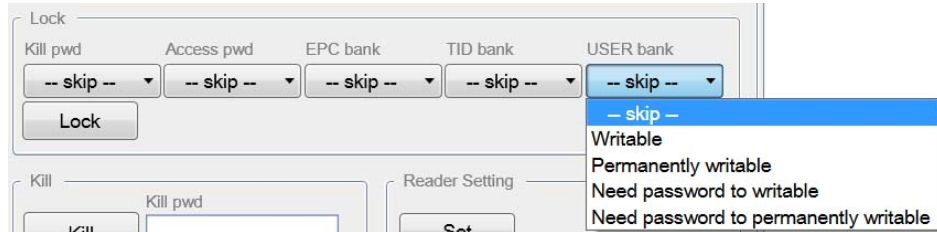
*USER bank data always can be read.

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

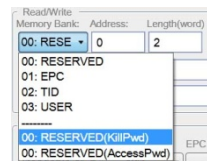


- 1.6.6 For example. We will select (Need password to readable and writable) option at all item. Check the box **【 Lock 】** . The result show in Info windows at lower right corner. If it is right, it show the <LF>L<OK><CR><LF>.



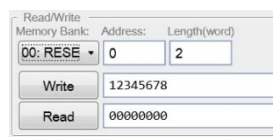
1.7 Kill Password Setting

- 1.7.1 At **【 Memory Bank 】** of Read/Write operation item , Drop-down menu



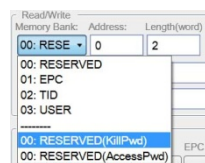
select **【 00:RESERVED KillPwd 】** item.

- 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>



1.8 Access Password Setting

- 1.8.1 At **【 Memory Bank 】** of Read/Write operation item , Drop-down menu



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 12345678		
Read 00000000		

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.

The screenshot shows the Reader Utility v2.5.1 interface. The 'Read/Write' section is active, showing 'Memory Bank' set to '01: EPC', 'Address' set to '2', and 'Length(word)' set to '2'. The 'Write' field contains 'E2003000' and the 'Read' field contains 'E2003001'. The 'Access Password' is set to '12345678'. The 'Info' window displays the following log entries:

```

16/05/24 18:18:00.386 [TX] - <LF>R1,2,2<CR>
16/05/24 18:18:00.635 [RX] - <LF>RE2003001<CR><LF>
16/05/24 18:18:21.649 [TX] - <LF>W1,2,2,E2003000<CR>
16/05/24 18:18:21.842 [RX] - <LF>4<CR><LF>
16/05/24 18:18:24.962 [TX] - <LF>P12345678<CR>
16/05/24 18:18:25.092 [RX] - <LF>P<CR><LF>
16/05/24 18:18:25.102 [TX] - <LF>W1,2,2,E2003000<CR>
16/05/24 18:18:25.297 [RX] - <LF>W<OK><CR><LF>

```

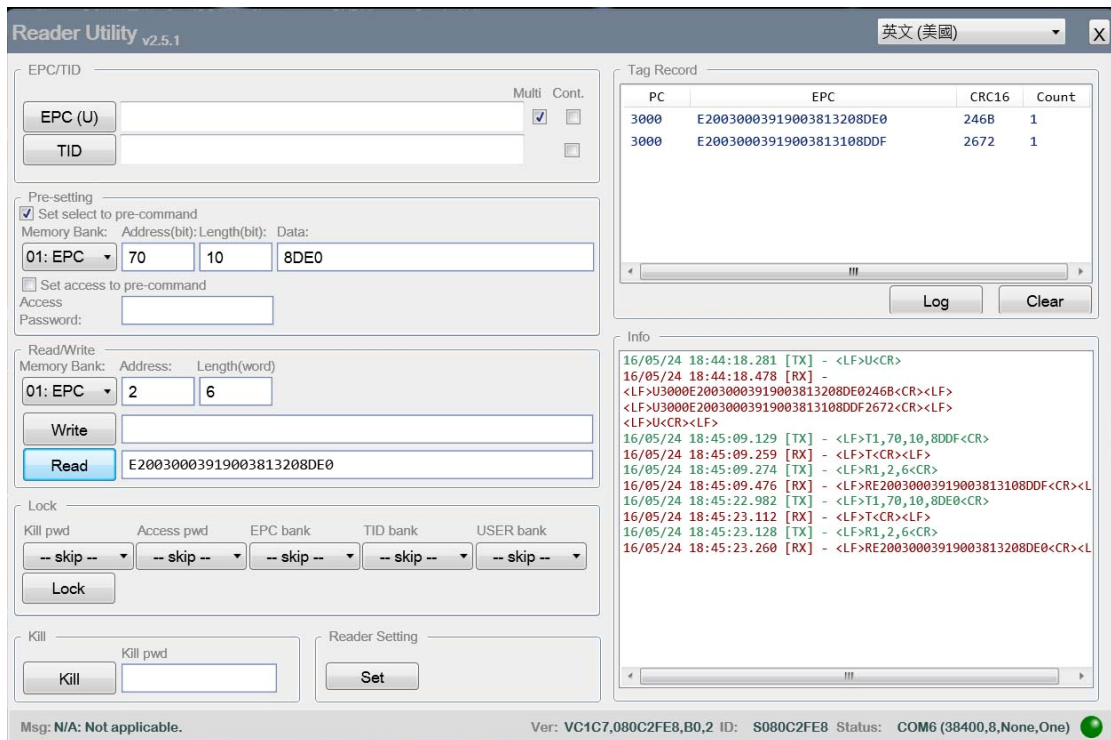
The status bar at the bottom shows: 'Msg: W<OK>: The Tag has been successfully written. Ver: VC1C7,080C2FE8,B0,2 ID: S080C2FE8 Status: COM6 (38400,8,None,One)'

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 $\text{HEX}(7*16)=\text{HEX}(112)=70$ hex
 - 1.11.4.4 Enter number (10) at Length(bit) * Warning : Length unit is bit, the value is HEX. So $\text{HEX}(1*16)=\text{HEX}(16)=10$ 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.



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.