AzureWave Technologies, Inc.

AW-CU485

IEEE802.15.4 Wireless Microcontroller Zigbee 3.0 Stamp LGA Module

Environment Kit

Rev. A

(For Standard)

Revision History

Version	Revision Date	Description	Initials	Approved
A	2020/11/10	● Initial Version	Shihhua Huang	N.C. Chen

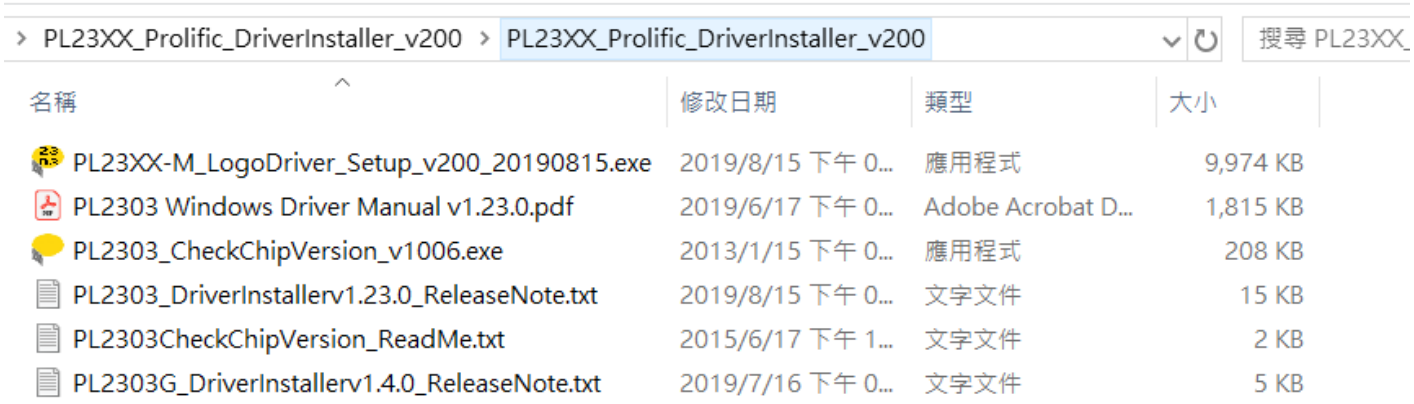
1. System Setup

(1) Hardware Requirements

- AW-CU485 TA Board + Carrier Board
- Host system need running the Windows 10 x64 operating system
- IQxel-M8
- RF isolation chamber for receive measurements.
- RF attenuators
- RF cable
- NFC reader

(2) Software Requirements

- PL-2303GC Driver

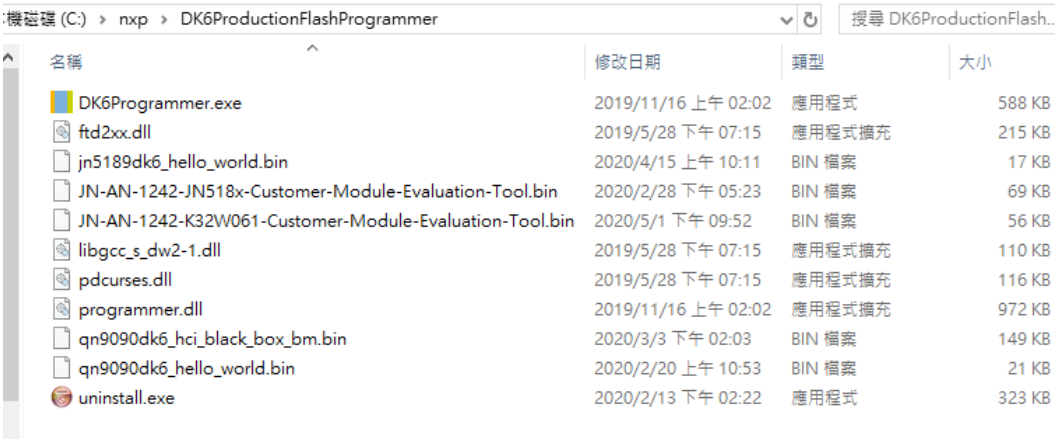


- Tera Term (tool)

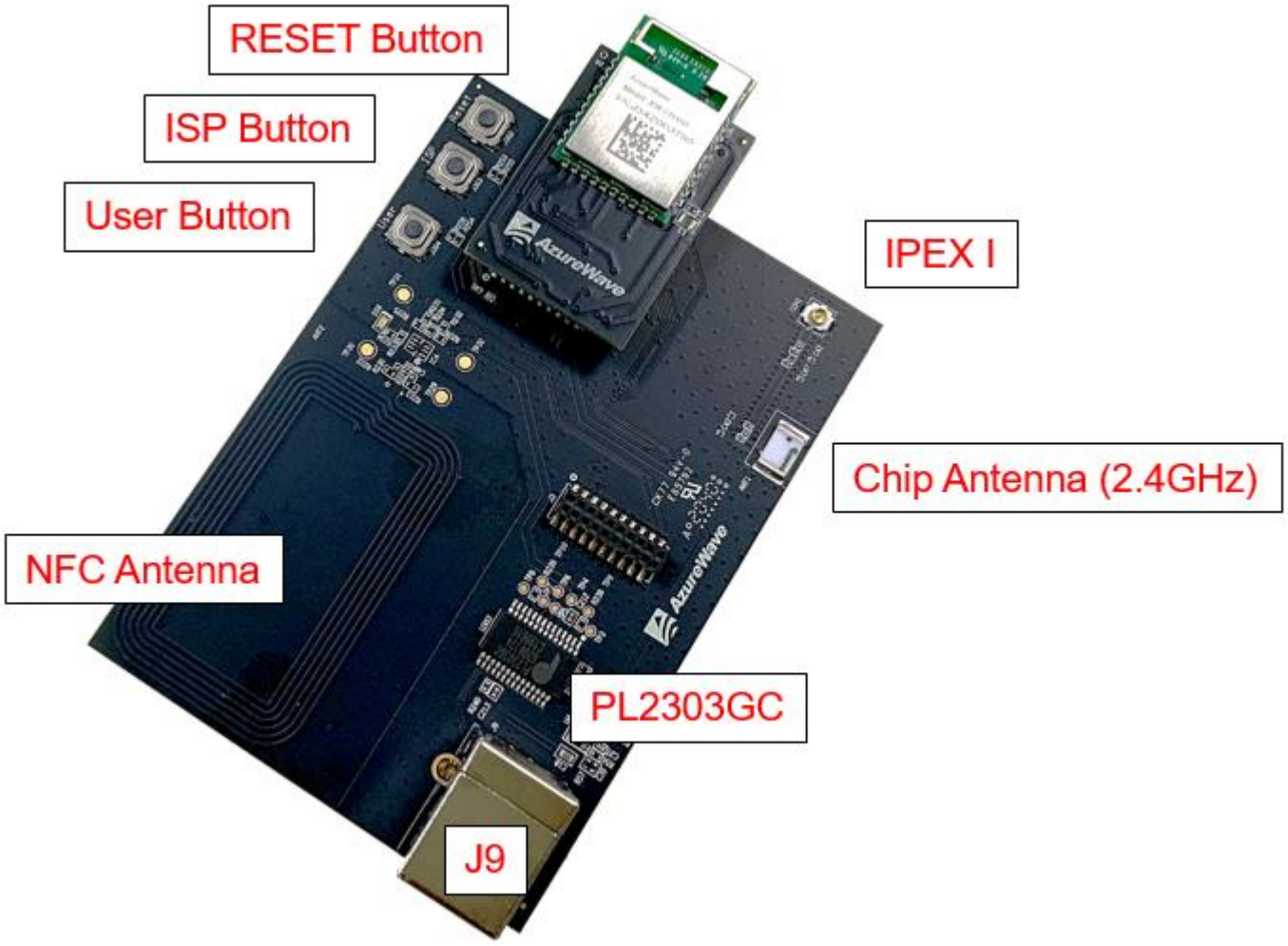
Note: Tera Term is our suggestion. You can try any terminal tool.

- DK6Production flash programmer folder (please contact FAE)

Note: You must have below files

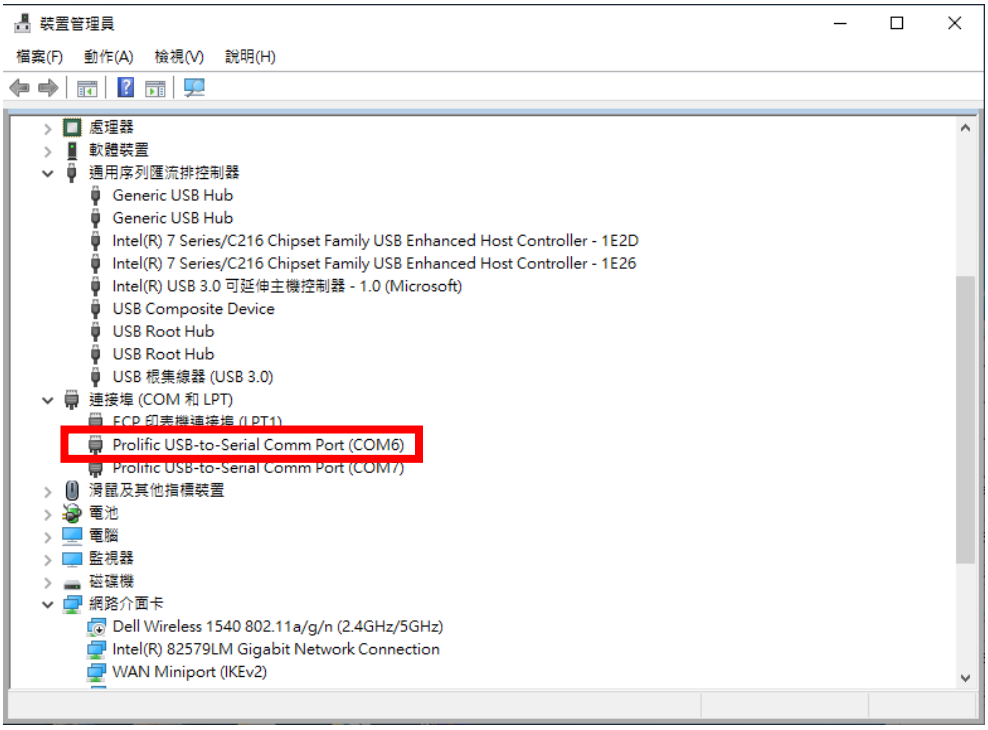


2. AW-CU485 EVK

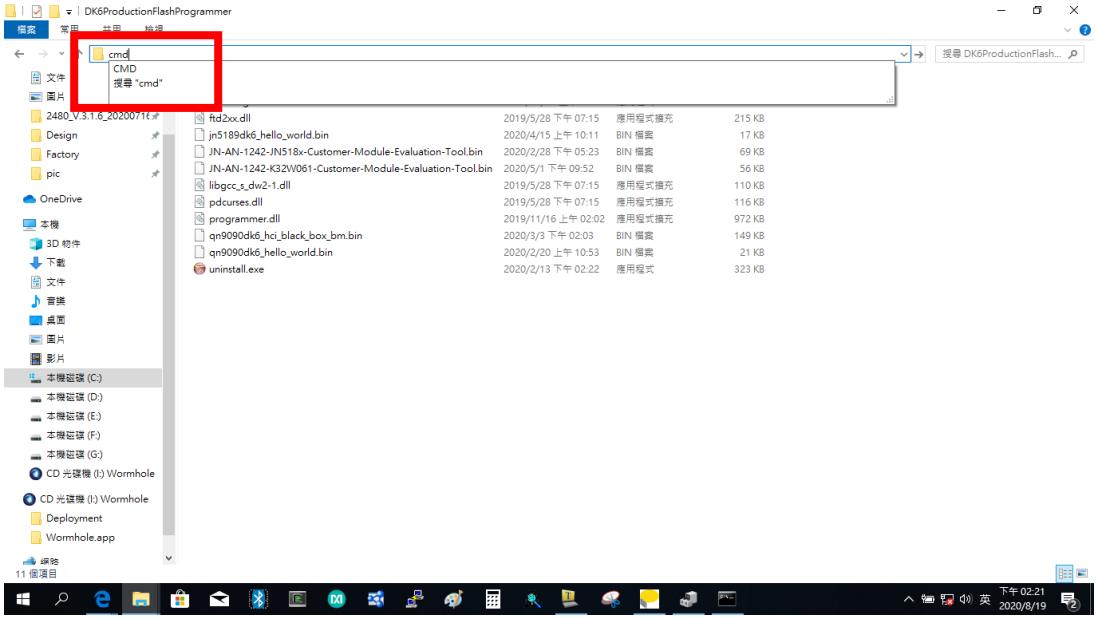


3. How to download the image

1. You must check the COM number (can check the value by the following picture)
   Note: J9 for DUT COM port



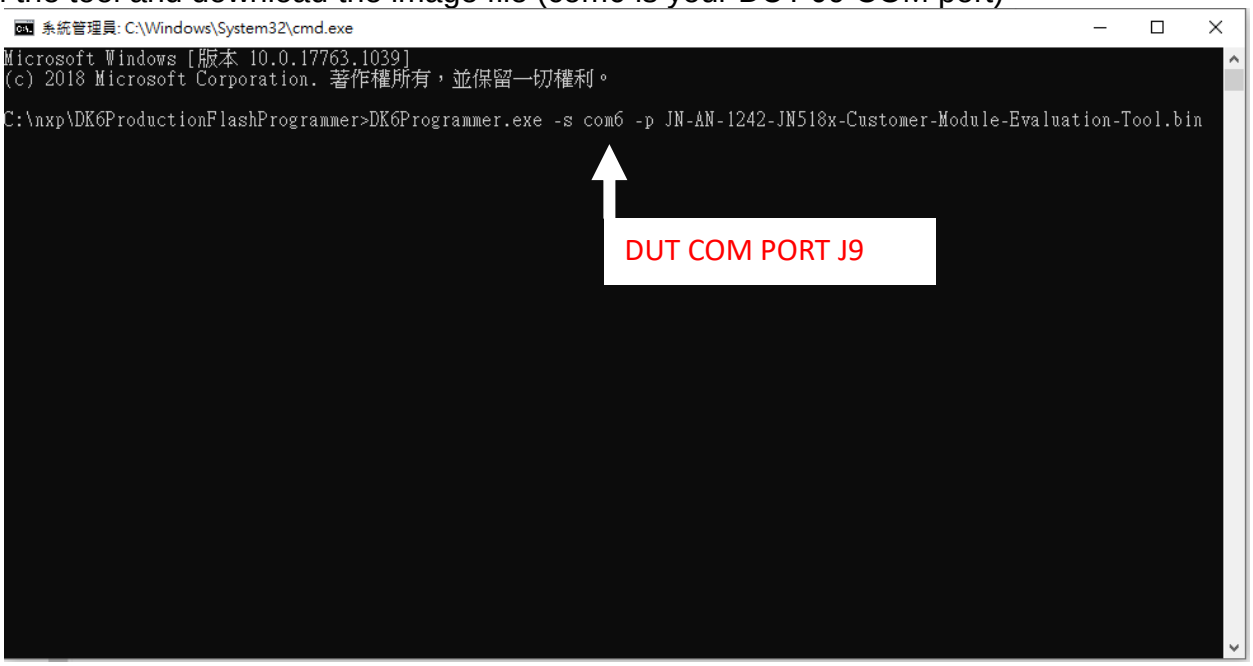
2. Find the folder of DK6ProductionFlashProgrammer, and type cmd to get into the Dos window.



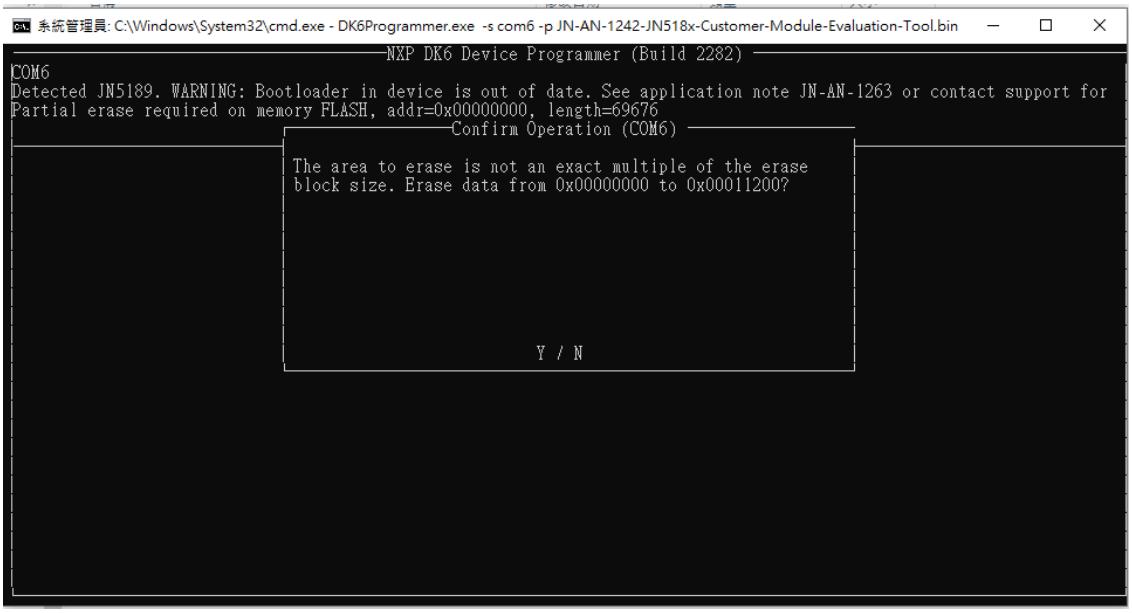
3. Key in
   - ZIGBEE IMAGE:
     DK6Programmer.exe –s com6 -p JN-AN-1242-JN518x-Customer-Module-Evaluation-Tool.bin

*You must note the step. If you key in the format before getting into download mode (DK6Programmer.exe -s com6 -p JN-AN-1242-JN518x-Customer-Module-Evaluation-Tool.bin), you need to keep holding the ISP button and Reset button, and then release the ISP button after releasing the reset button.

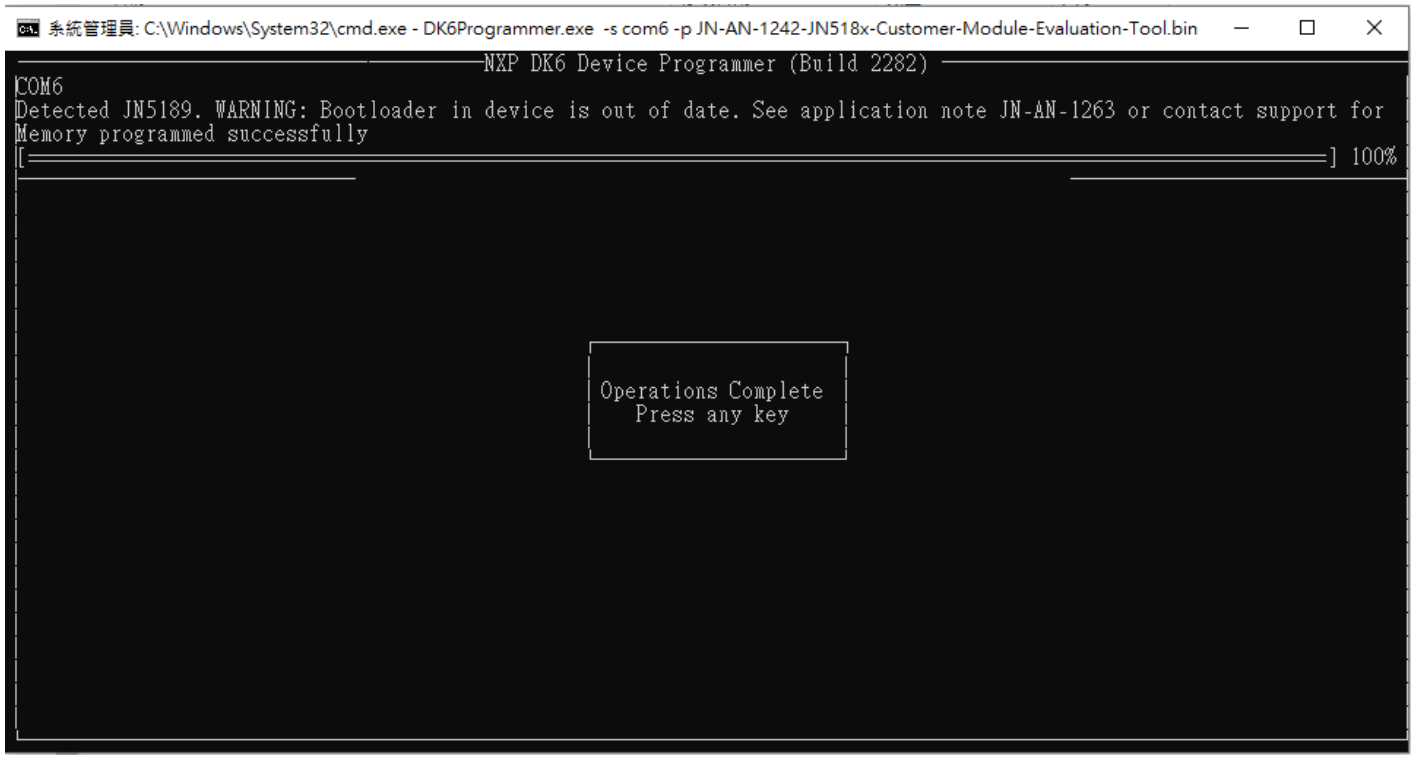
To open the tool and download the image file (com6 is your DUT J9 COM port)



4. Select Y

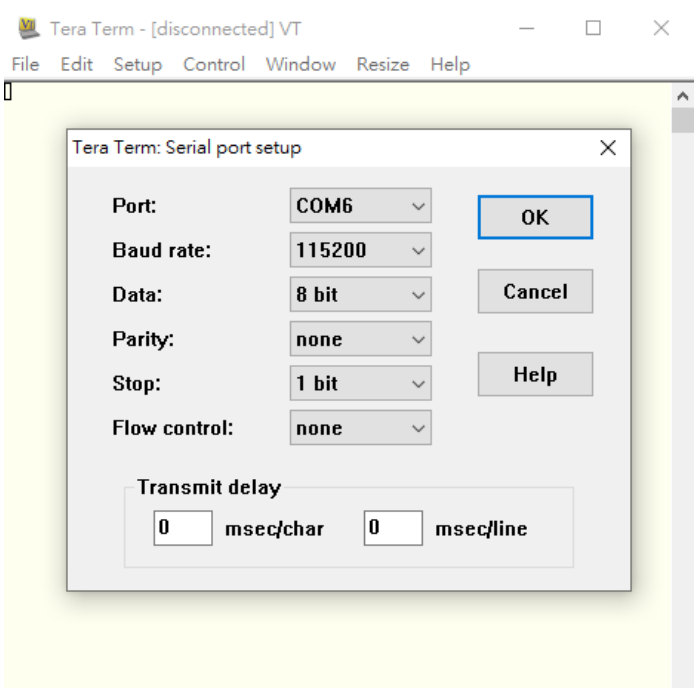


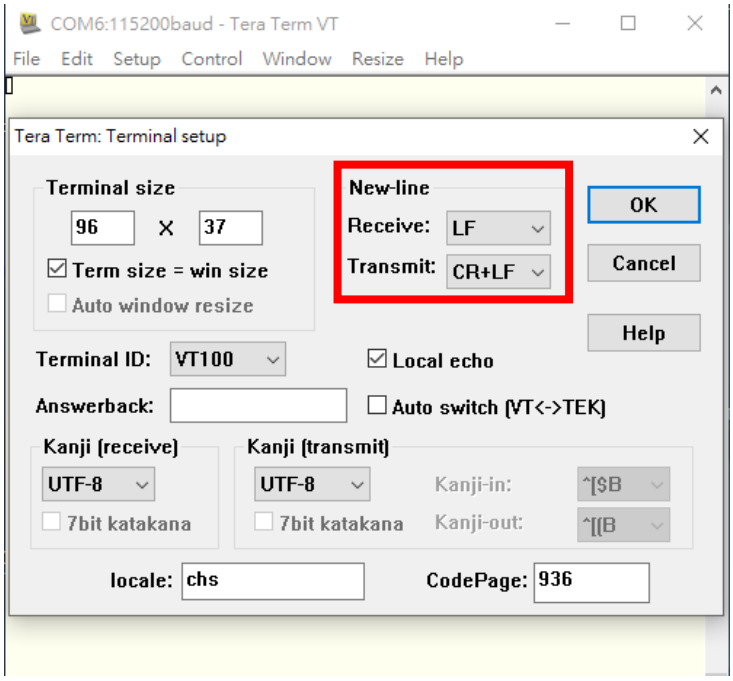
5. Finish



4. Test mode(In Zigbee)

1. Open the Tera Term
2. Select setup →Serial port
   - Setting COM port (J9 com port)
   - Baud rate is 115200
3. Select setup →Terminal
   - Receive - select LF
   - Transmit - select CR+LF





4. Select a) standard module

```
**********************************************
*     Customer Module Evaluation Tool        *
*     Version 2038                           *
*     Compiled Feb 28 2020 10:23:14          *
*     Radio Test version 2041                *
*     Radio Driver version 2085              *
*     Chip ID 000e2111                       *
**********************************************

a) Standard Module
b) High Power Module (RFTX/RFRX on PI04/5)
c) High Power Module (RFTX/RFRX on PI020/21)
/) Reset CMET

Please choose an option > A
 Standard Module Selected

**********************************************
*                ZigBee Mode                 *
**********************************************
```

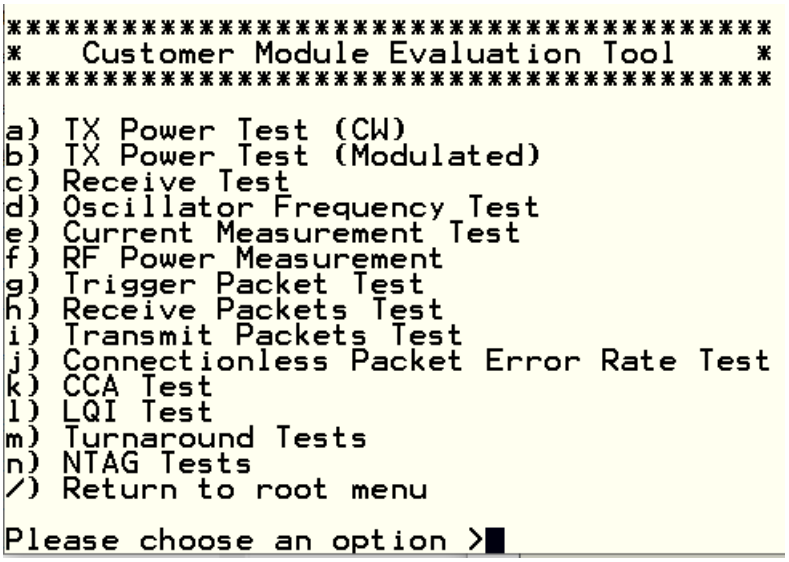
5. Select a) Regular

```
**********************************************
*                ZigBee Mode                 *
**********************************************

a) Regular
b) Proprietary 1
c) Proprietary 2

Please choose an option > A
 ZigBee Regular Mode Selected
```

6. Customer Module Evaluation Tool (main menu)
   - Select “g” trigger packet test (Rx test)
   - Select “i” transmit packet test (Tx test)



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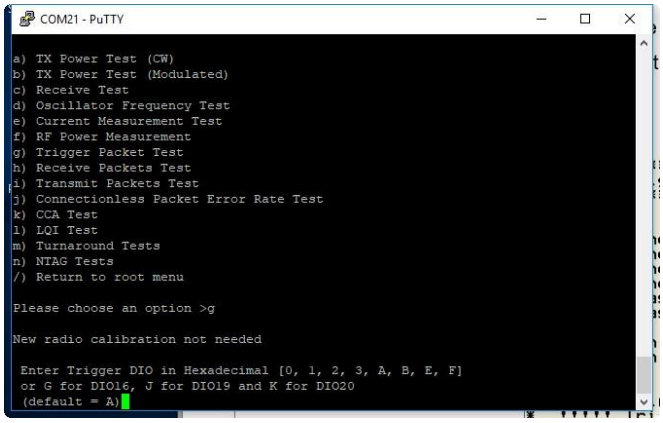
1. RX test (Select g)
   - g → Start test (start to receive the package)
   - Enter any keywords (0~F) into testing.



   - +/- → Increment or decrement channel
   - X → Return to main menu
   - /→Return to root menu

```
****************************************
*        Trigger Packet Test           *
****************************************
* Key         Function                 *
*                                      *
*   +   Increment Channel              *
*   -   Decrement Channel              *
*   ]   Increment Repetitions          *
*   [   Decrement Repetitions          *
*   >   Increase Trigger Delay         *
*   <   Decrease Trigger Delay         *
*   g   Go                             *
*   x   Return to main menu            *
*   /   Return to root menu            *
*                                      *
* Note:                                *
* Connect pin DIO2 to the trigger      *
*  !!!!! Trig on RAISING edge !!!!!    *
* input on the signal generator        *
****************************************

Channel        11    (2.405 GHz)
Repetitions    100
Trigger delay  1 mS
```

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2. TX test (Select i)
   - +/- → Can control the channel
   - f → Fast transmit rate (fast transmit can help modulation to catch signal)
   - X → Return to main menu
   - /→Return to root menu

```
********************************************
*  Transmit Packet Test In Progress        *
*  Slow Rate (~1 Pkt/sec)                  *
********************************************
* Key         Function                     *
*                                          *
*   f   Faster transmit rate               *
*   l   Lower transmit rate                *
*   +   Increment Channel                  *
*   -   Decrement Channel                  *
*   <   Reduce output power by   0.25 dBm  *
*   >   Increase output power by 0.25 dBm  *
*   p   Reduce power step                  *
*   P   Increase power step                *
*   x   Return to main menu                *
*   /   Return to root menu                *
*                                          *
********************************************

Channel        11    (2.405 GHz)
Power Level     10.00 dBm
MAC Address    00:15:8D:00:04:A5:A8:3F

Packets Sent 9
```

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3. NTAG tests(Select n)

Select Internal or External NTAG

- Select a) internal NTAG

NTAG Tests (Internal)

- Select a) read contents of EEPROM
- Select b) write data to EEPROM

```
**************************************
* Select Internal or External NTAG   *
**************************************

a) Internal NTAG
b) External NTAG on DK6 (FD to PI01)

Please choose an option >A
**************************************
* NTAG Tests  (Internal)             *
**************************************

a) Read contents of EEPROM
b) Write data to EEPROM
c) Reset NTAG address to 0x55
d) Monitor FD pin
e) Test FD pin Wake up
x) Return to main menu
/) Return to root menu

Please choose an option >
```

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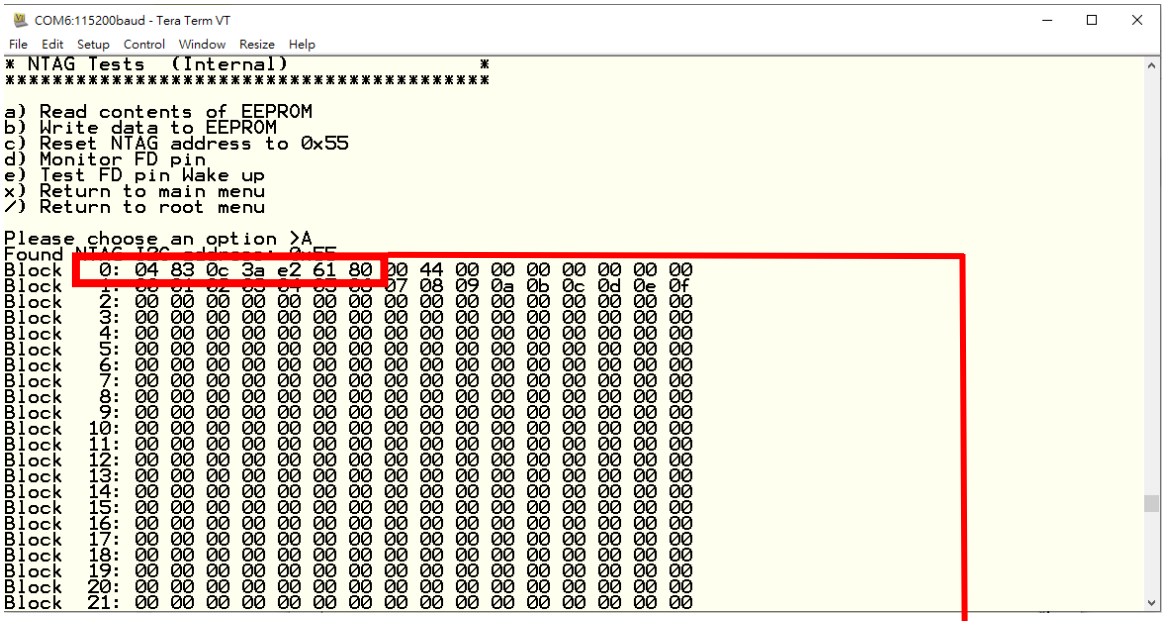
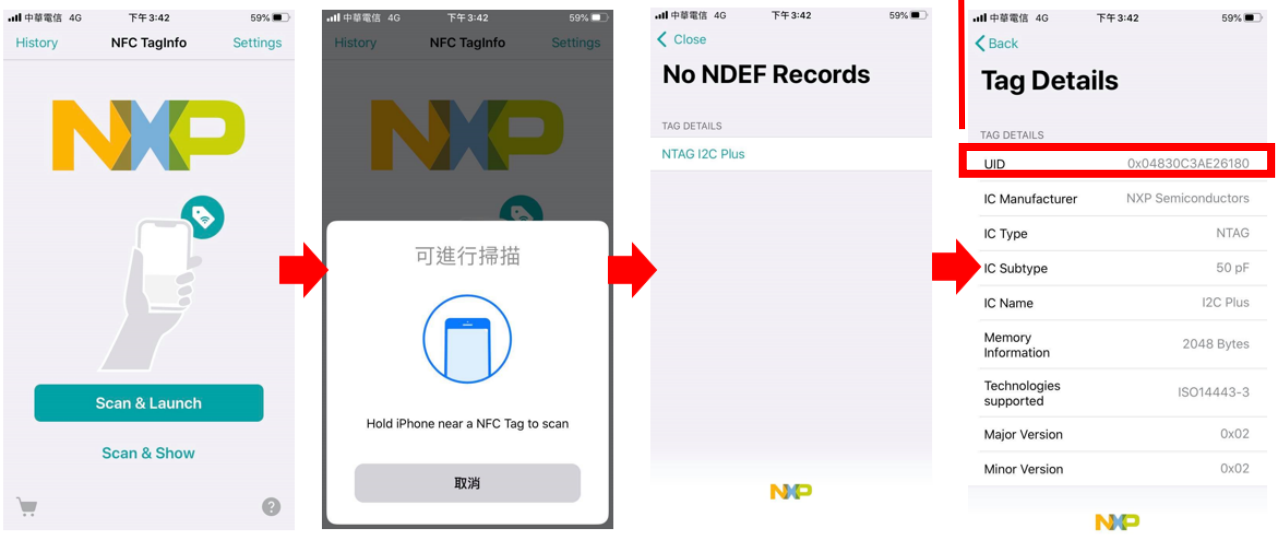
4. Read contents of EEPROM

Can read the NFC MAC in Block 0: 04830C3AE26180



Open the NFC Taginfo on you smart phone, and scan the NFC, then you will get the information from NFC.



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5. Write data to EEPROM

Use this test to write data to EEPROM, Format is:

1:0 1 2 3 4 5 6 7 8 9 A B C D E F

Programs 0 to F in block 1

```
****************************************
* NTAG Tests  (Internal)               *
****************************************

a) Read contents of EEPROM
b) Write data to EEPROM
c) Reset NTAG address to 0x55
d) Monitor FD pin
e) Test FD pin Wake up
x) Return to main menu
/) Return to root menu

Please choose an option >
Using Address: 0x55
Enter Data to Program:1:0 1 2 3 4 5 6 7 8 9 0 A B C D E F
```

Check the Format again.

```
****************************************
* NTAG Tests  (Internal)               *
****************************************

a) Read contents of EEPROM
b) Write data to EEPROM
c) Reset NTAG address to 0x55
d) Monitor FD pin
e) Test FD pin Wake up
x) Return to main menu
/) Return to root menu

Please choose an option >
Found NTAG I2C address: 0x55
Block   0: 04 83 0c 3a e2 61 80 00 44 00 00 00 00 00 00 00
Block   1: 00 01 02 03 04 05 06 07 08 09 0a 0b 0c 0d 0e 0f
Block   2: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Block   3: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Block   4: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Block   5: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
```

5. Carrier Board Schematic