

AW-CU478

IEEE802.15.4 Wireless Microcontroller Zigbee 3.0 Stamp LGA Module (M03)

RF Tool Guide

Rev. A

(For Standard)

Revision History

Version	Revision Date	Description	Initials	Approved
A	2020/8/18	● Initial Version	Jeff Kuo	N.C. Chen

1. System Setup

(1) Hardware Requirements

- AW-CU478 Module on test board
- Host system need running the Window10 x64 operating system
- Vector Signal Analyzer analyzer for transmit measurements.
- Signal generator for receiver measurements.
- RF isolation chamber for receive measurements.
- RF attenuators
- RF cable

(2) Software Requirements

- PL-2303 GPIO Test (tool)

PL2303HXD_GPIO > PL2303HXD 4 GPIO_bin

名稱	修改日期	類型	大小
 PL-2303 4 GPIOTest.exe	2020/8/11 上午 1...	應用程式	300 KB

- Tera Term (tool)








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

名稱	修改日期	類型	大小
 teraterm-4.63.exe	2009/9/8 下午 04...	應用程式	7,045 KB

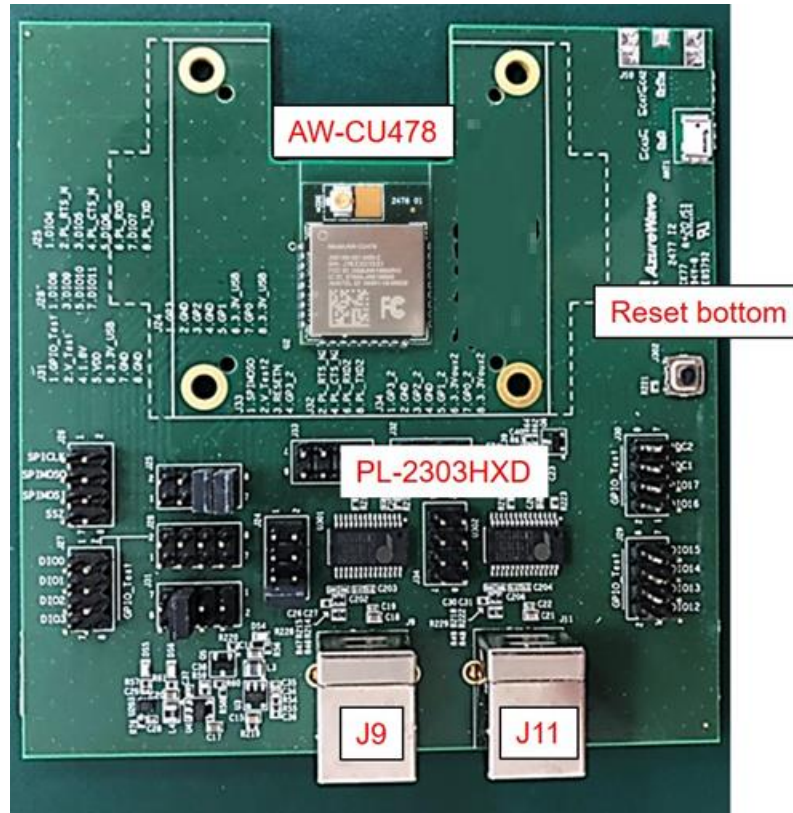
- Production flash programmer folder (please contact FAE)

Note: You must be have below files

2477 > ProductionFlashProgrammer

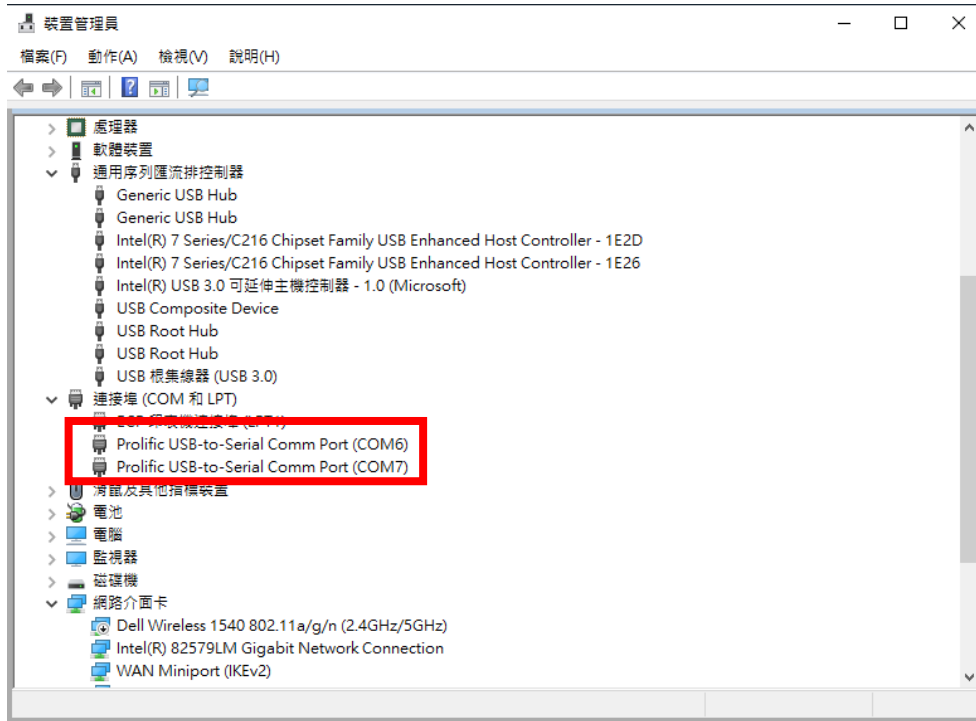
名稱	修改日期	類型	大小
 AN1172_CustomerModuleEvalTool_JN5169.bin	2016/8/19 上午 1...	BIN 檔案	27 KB
 ftd2xx.dll	2015/1/26 下午 0...	應用程式擴充	215 KB
 JN51xxProgrammer.exe	2017/6/16 下午 0...	應用程式	543 KB
 libgcc_s_dw2-1.dll	2015/1/26 下午 0...	應用程式擴充	110 KB
 pdcurses.dll	2015/1/26 下午 0...	應用程式擴充	116 KB
 programmer.dll	2017/6/16 下午 0...	應用程式擴充	205 KB
 uninstall.exe	2020/2/13 下午 0...	應用程式	322 KB

2. AW-CU478 EVB

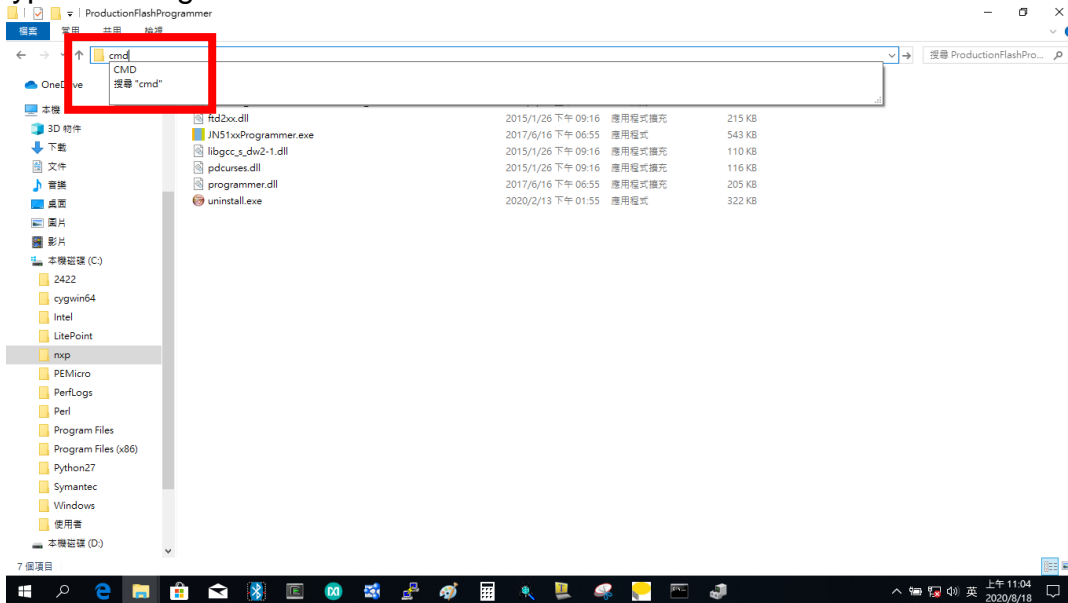


3. How to download the image

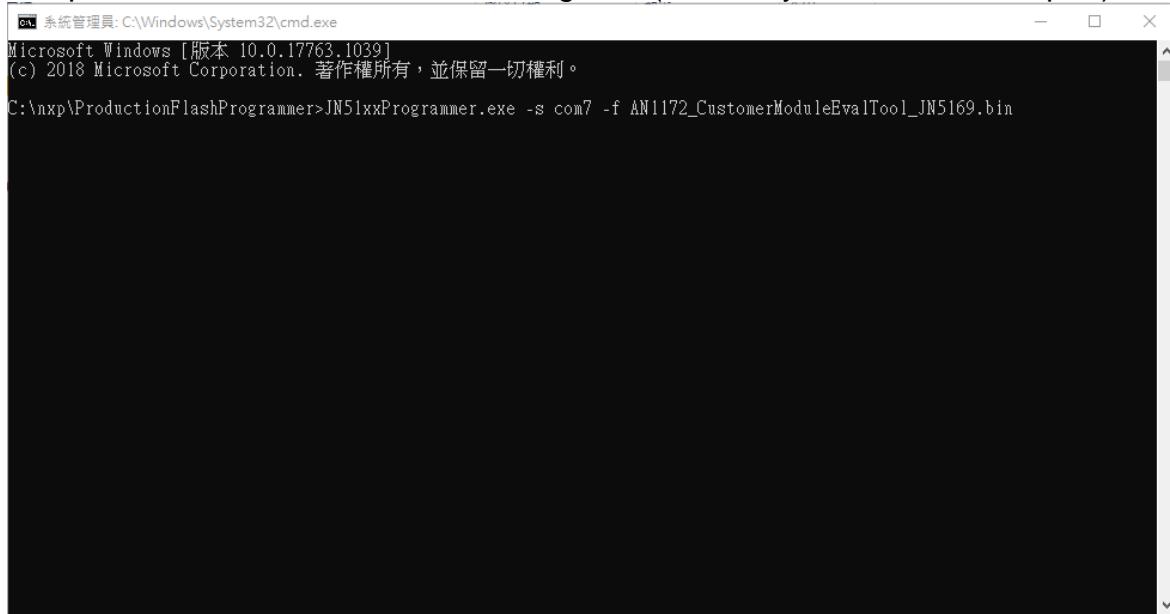
1. you must check the COM number (J9 and J11) (can check the value by the following picture)
Note: J9 for DUT COM port
J11 for PL2303 control Test/Normal mode.



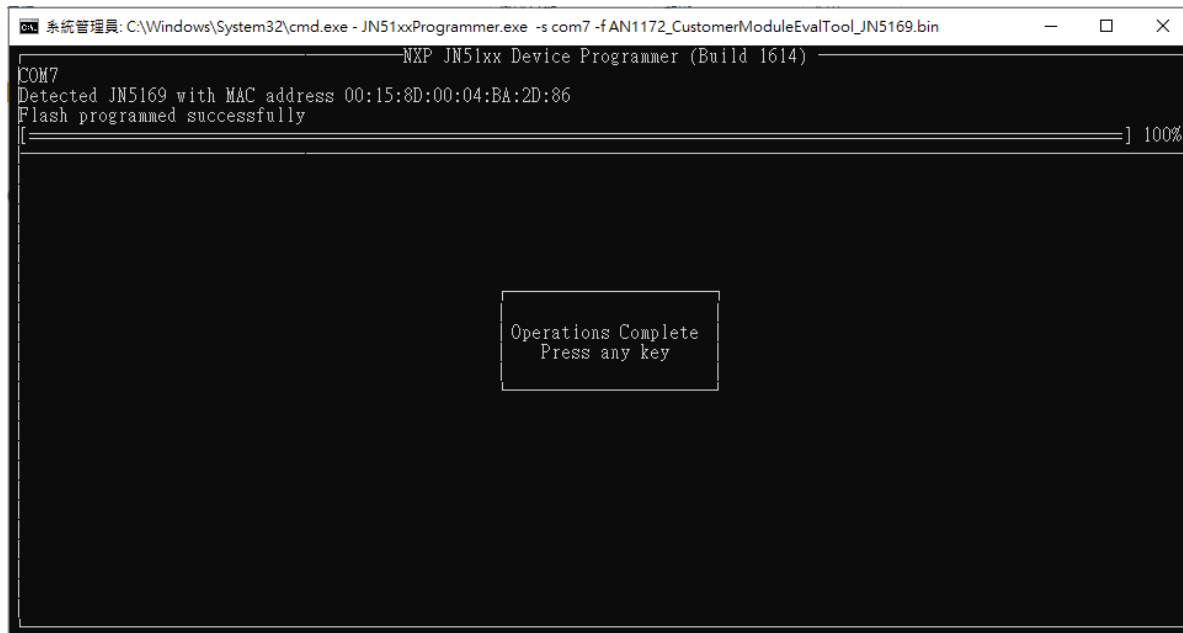
2. Find the folder of production flash programmer.
And type cmd to get into the Dos window.



- key in **JN51xxProgrammer.exe -s com7 -f AN1172_CustomerModuleEvaTOOL_JN169.bin**
To open the tool and download the image file (com7 is your DUT J9 Com port)

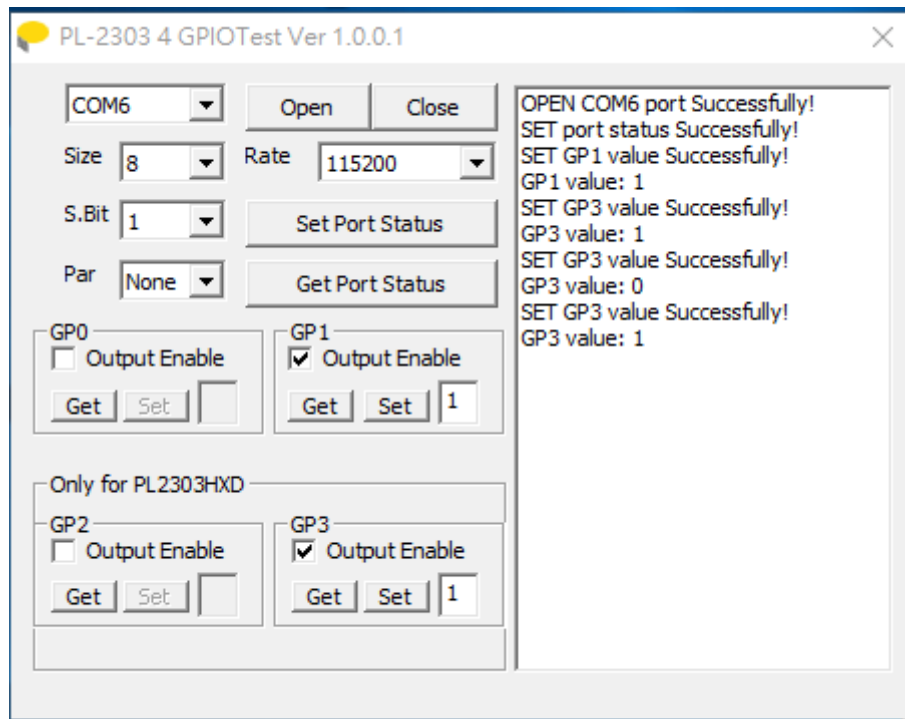


4. Finish



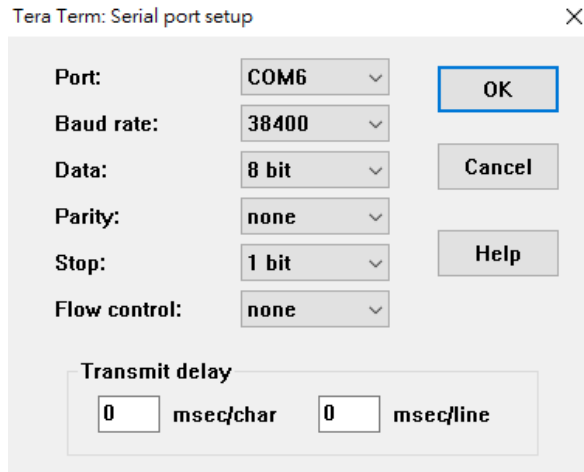
4. How to into the test mode (Default is Download mode)

1. Open the PL-2303 GPIO Test
2. Setting Com port (J11 com port)
3. Baud rate is 115200
4. Setting the GP1
Keying 1 and Select set button.(open test mode)
5. Setting the GP3
First Keying 0 and Select set button
Then Keying 1 and Select set button again. (Reset)

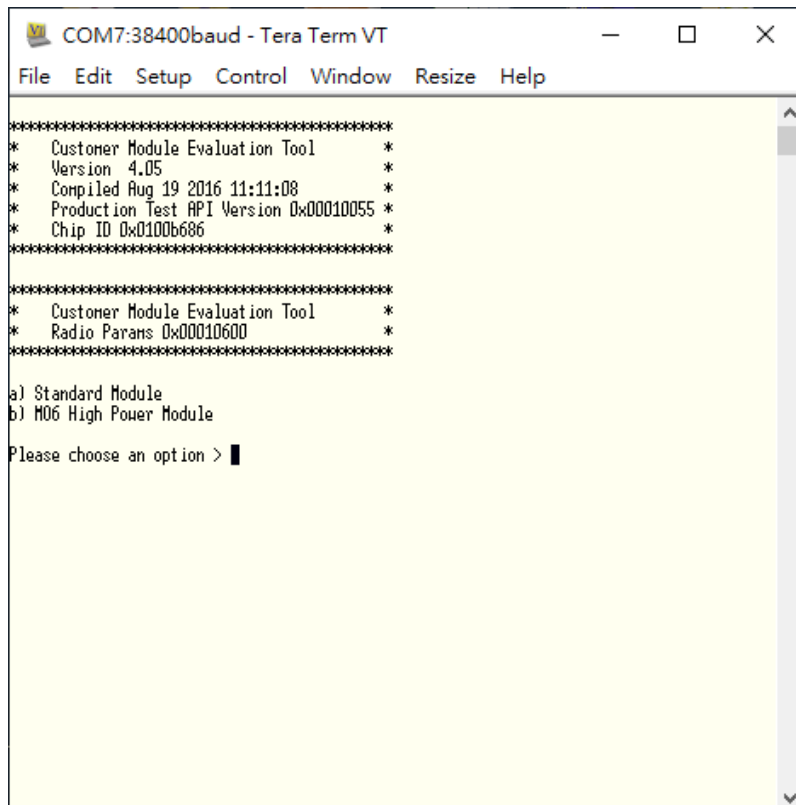


5. Test mode

1. Open the Tera Term
 - Setting COM port (J9 com port)
 - Baud rate is 38400



- a. standard module (AW-CU477&CU478)
 - b. M06 High Power Module (AW-CU479)
- (Choose what kind of DUT you used)



- Tx power Adjustment.

Select a

```
*****
*           Tx Power Adjustment           *
*****

a) Default Tx Power
b) Default Tx Power +0,8dB
c) Default Tx Power +1,2dB
d) Default Tx Power +1,6dB

Please choose an option > A Default Tx Power Selected
```

- Tx 2.5dB Attenuator.

Select a

```
*****
*           TX 2.5dB Attenuator           *
*****

a) 2.5dB Attenuator Off
b) 2.5dB Attenuator On

Please choose an option > A 2.5dB Attenuator Off Selected
```

- RX Maximum Input Level.

Select b

```
*****
*           RX Maximum Input Level       *
*****

a) RX Maximum Input Level +10dBm
b) RX Maximum Input Level 0dBm (with reduced power consumption)

Please choose an option > B RX Maximum Input Level 0dBm Selected
```

- Customer Module Evaluation Tool (main menu)

```
*****
* Customer Module Evaluation Tool *
*****

a) TX Power Test (CH)
b) TX Power Test (Modulated)
c) Receive Test
d) Oscillator Frequency Test
e) Current Measurement Test
f) RF Power Measurement
g) Trigger Packet Test
h) Receive Packets Test
i) Transmit Packets Test
j) Connectionless Packet Error Rate Test
k) CCA Test
l) LQI Test

Please choose an option >
```

6. Select “g” trigger packet test (Rx test)
“l” transmit packet test (Tx test)

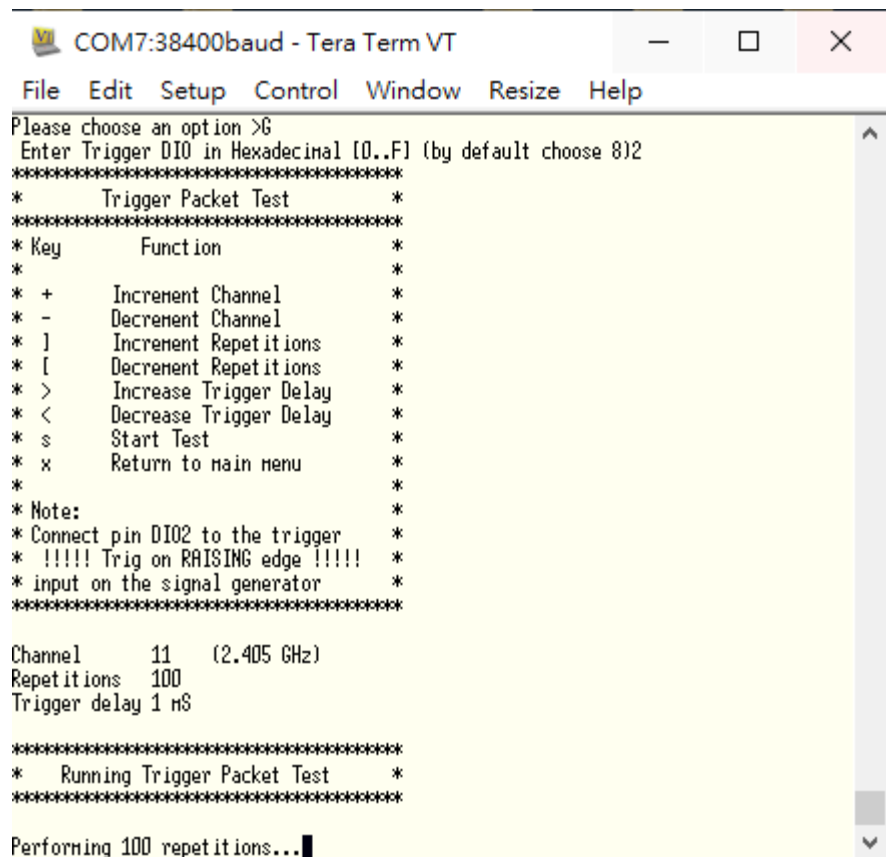
```

*****
* Customer Module Evaluation Tool *
*****
a) TX Power Test (CW)
b) TX Power Test (Modulated)
c) Receive Test
d) Oscillator Frequency Test
e) Current Measurement Test
f) RF Power Measurement
g) Trigger Packet Test
h) Receive Packets Test
i) Transmit Packets Test
j) Connectionless Packet Error Rate Test
k) CCA Test
l) LQI Test

Please choose an option >

```

7. RX test (Select g)
 - S → start test (start to receive the package)
 - +/- → Increment or decrement channel
 - X → Return to main menu



```

COM7:38400baud - Tera Term VT
File Edit Setup Control Window Resize Help
Please choose an option >G
Enter Trigger DIO in Hexadecimal [0..F] (by default choose 8)2
*****
* Trigger Packet Test *
*****
* Key      Function      *
* * * * *
* +      Increment Channel *
* -      Decrement Channel *
* ]      Increment Repetitions *
* [      Decrement Repetitions *
* >      Increase Trigger Delay *
* <      Decrease Trigger Delay *
* s      Start Test *
* x      Return to main 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

*****
* Running Trigger Packet Test *
*****

Performing 100 repetitions...

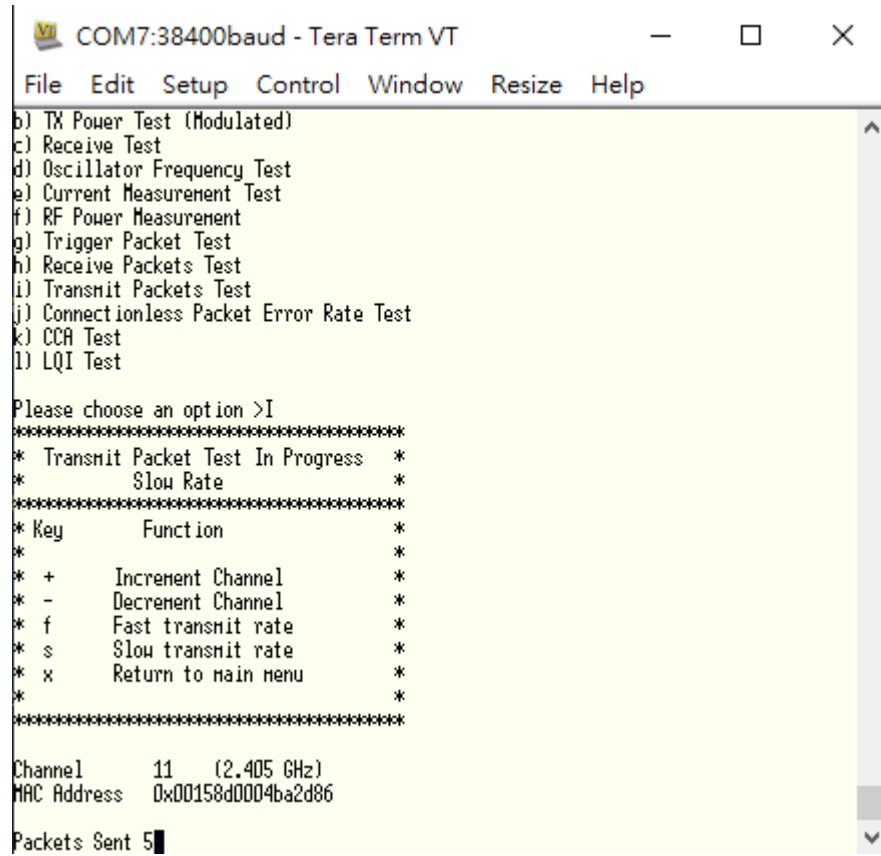
```

8. 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



```
COM7:38400baud - Tera Term VT
File Edit Setup Control Window Resize Help
b) TX Power Test (Modulated)
c) Receive Test
d) Oscillator Frequency Test
e) Current Measurement Test
f) RF Power Measurement
g) Trigger Packet Test
h) Receive Packets Test
i) Transmit Packets Test
j) Connectionless Packet Error Rate Test
k) CCA Test
l) LQI Test

Please choose an option >I
*****
* Transmit Packet Test In Progress *
* Slow Rate *
*****
* Key      Function      *
*          *          *
* +      Increment Channel *
* -      Decrement Channel *
* f      Fast transmit rate *
* s      Slow transmit rate *
* x      Return to main menu *
*          *          *
*****

Channel      11      (2.405 GHz)
MAC Address  0x00158d0004ba2d86

Packets Sent 5
```