SIM68
EVB Kit User Guide

GNSS Module

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Version History

Date	Version	Description of change	Author
2012-03-28	1.00	Origin	Sunshengwu
2012-08-06	1.01	Update the Testing Tool Part	Jinxiaohan
2020-03-26	1.02	Update the templet	Mahonggang
2021-02-24	1.03	Update download part	TianLei

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SCOPE

THIS DOCUMENT DESCRIBES HOW TO USE SIMCOM-EVB TO DO TEST; USER CAN GET USEFUL INFO ABOUT THE SIMCOM-EVB QUICKLY THROUGH THIS DOCUMENT.

THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE AT ANY TIME.

1. SIMCom-EVB Overview

This document gives the usage of SIM68 EVB-Kit, user can get useful information about the SIM68 EVB quickly through this document.

This document is subject to change without notice at any time.

1.1 Acronyms and abbreviation

Table 1: Acronyms and abbreviations

Abbreviation	Description
DC	Direct Current
I/O	Input/Output
LED	Light Emitting Diode
SPI	Serial Peripheral Interface
USB	Universal Serial Bus
UART	Universal Asynchronous Receiver & Transmitter

2. SIM68 EVB Overview

2.1 Detailed description of SIM68-EVB

The chapter introduces the functions of each component.

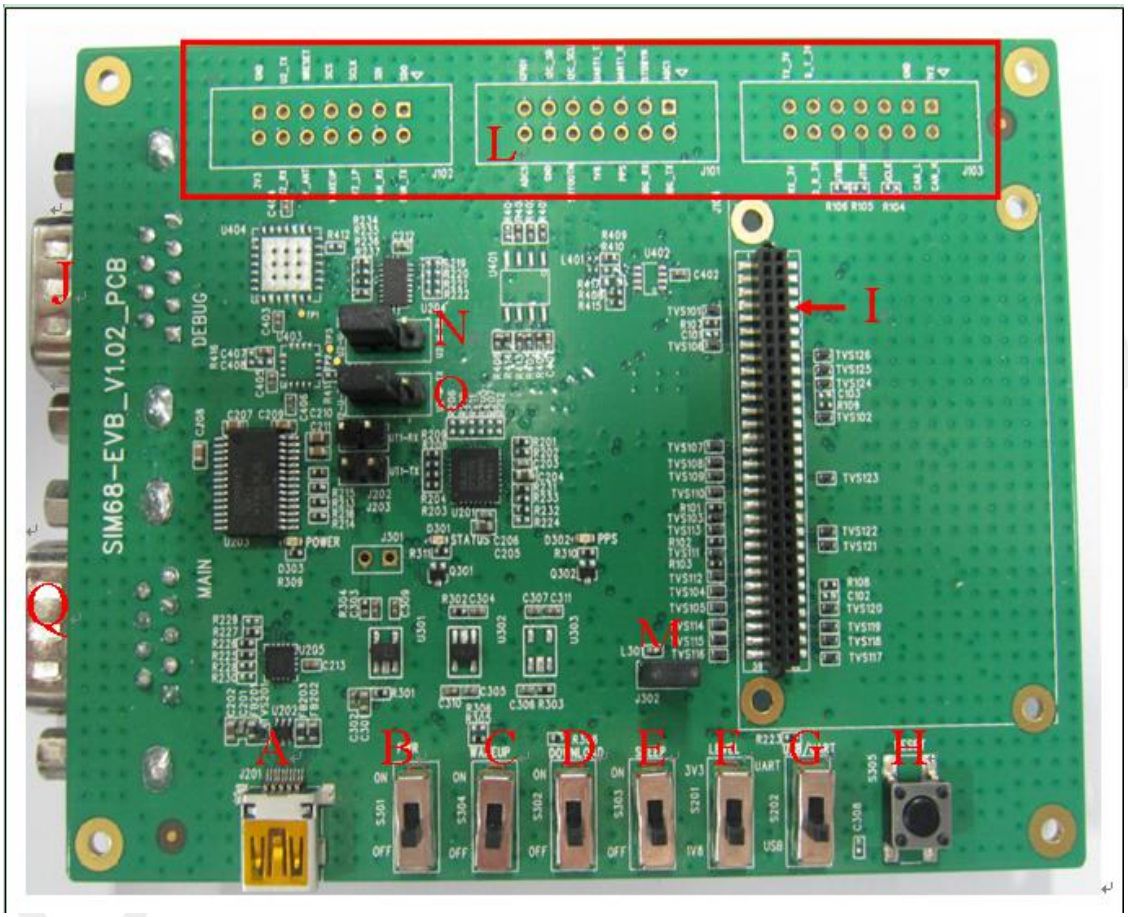

Figure 1: SIM68-EVB components function

A: USB interface, support USB communication with SIM68, and also power the SIM68-EVB.
B: S301, Power switch, push up to power the EVB and module, push down to power off.
C: S304, Reserved.
D: S302, DOWNLOAD switch, push up to going into download mode.
E: S303,sleep switch,push up to going into sleep mode,push down to wakeup from sleep mode.
F: S201 select power source for level shift.
G: S202, NMEA output select. Push up to choose main port, push down to choose USB port.
H: RESET button, pressed to reset SIM68
I: MODULE connector, insert module and TE for test
J: DEBUG port, for debug and download

Q: MAIN port, for communication
L: test point area
M: J302,the jumper of VANT which is the source of active of antenna
N: Select for receiving NMEA data from A or Q. Jump the left and middle needle is select A port, jump the middle and right needle is select Q port.
O: Select for transmitting NMEA data from A or Q. Jump the left and middle needle is select A port, jump the middle and right needle is select Q port.

2.2 USB Interface

There is one Mini-USB interface on SIM68-EVB, which is transferred to UART by a USB to UART chip CP2103 on the EVB board.. User need to install CP2103 driver in their PC first, then connect the EVB board to the PC by a USB cable, and push S301 up to power the SIM68-EVB.

Please download the latest CP2103 driver according to the PC's OS from the following link: ***http://www.silabs.com/products/mcu/pages/usbtouartbridgevcpdrivers.aspx***
Or contact SIMCom support for it.

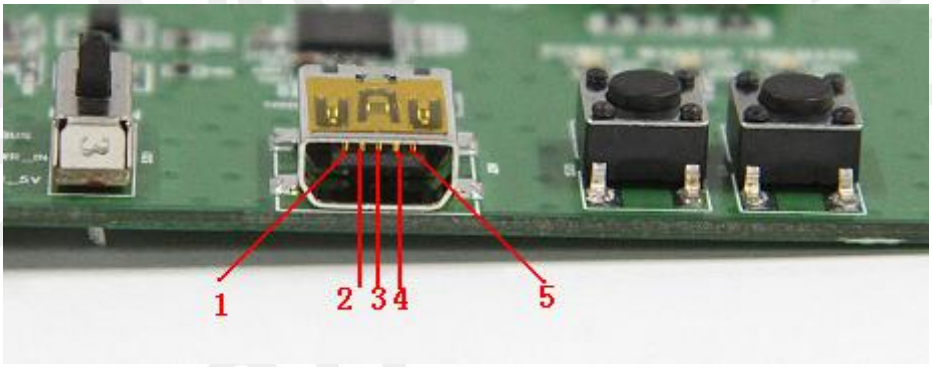

Figure 2: USB interface

Table 2: USB pin definition

PIN	Signal	I/O	Description
1	VBUS	I	5V input
2	D-	IO	Data minus
3	D+	IO	Data plus
4、5	GND		GND

3. Illustration

User need to install CP2103 driver in their PC first before using SIM68-EVB.

Please download the latest CP2103 driver according to the PC's OS from the following link: ***http://www.silabs.com/products/mcu/pages/usbtouartbridgevcpdrivers.aspx***
Or contact SIMCom support for it.

3.1 An example of USB driver installation

Step1.exectue Setup file (CP210x_VCP_Win_XP_S2K3_Vista_7)

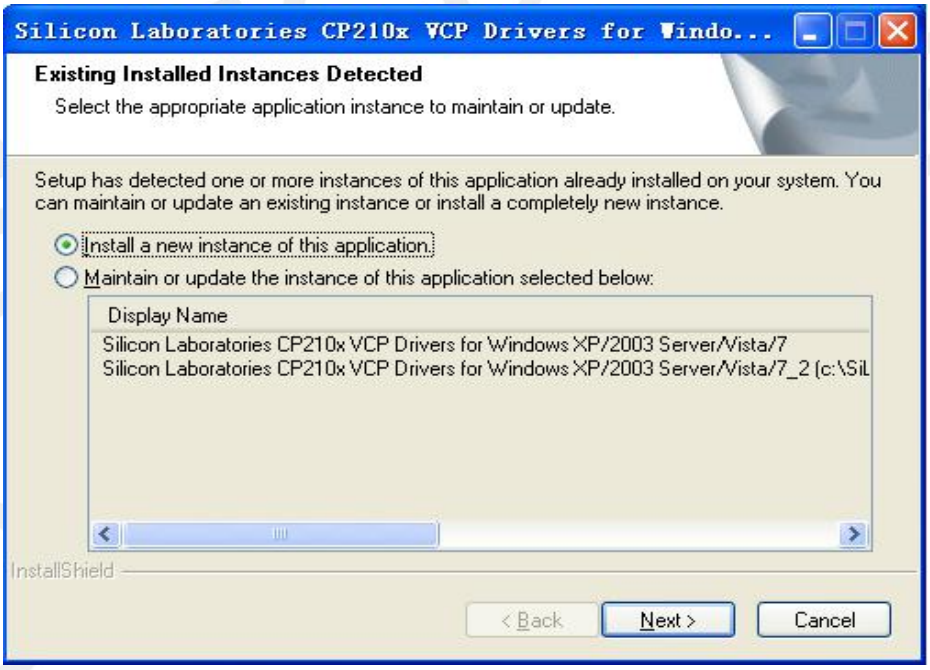

Figure 3: USB driver installation step1

Step2.select “next” button then “next”

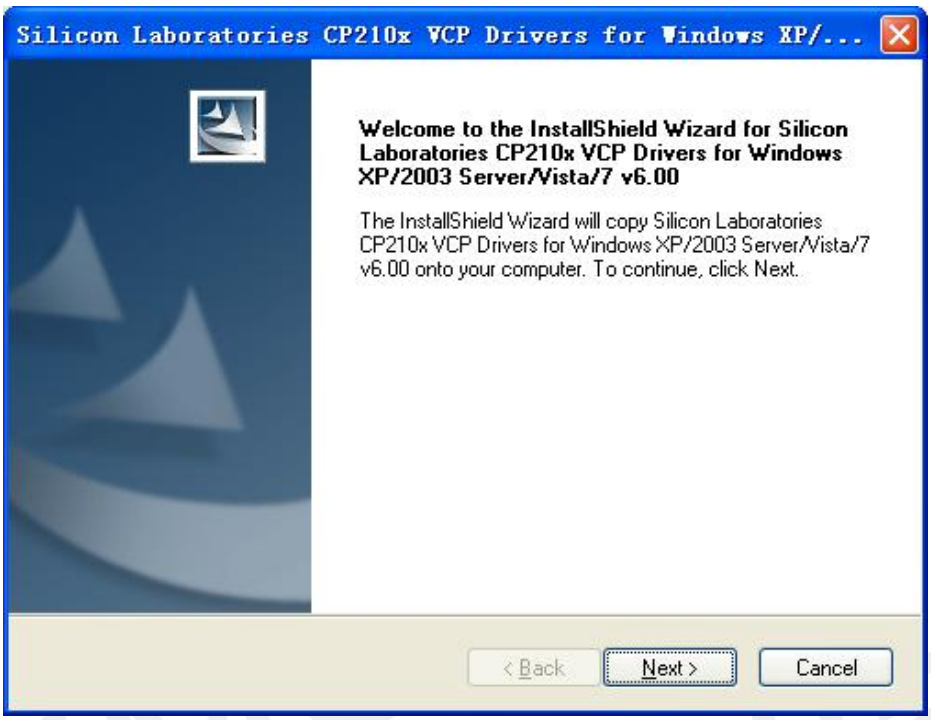

Figure 4: USB driver installation step2

Step3. Accept the license agreement and “next”

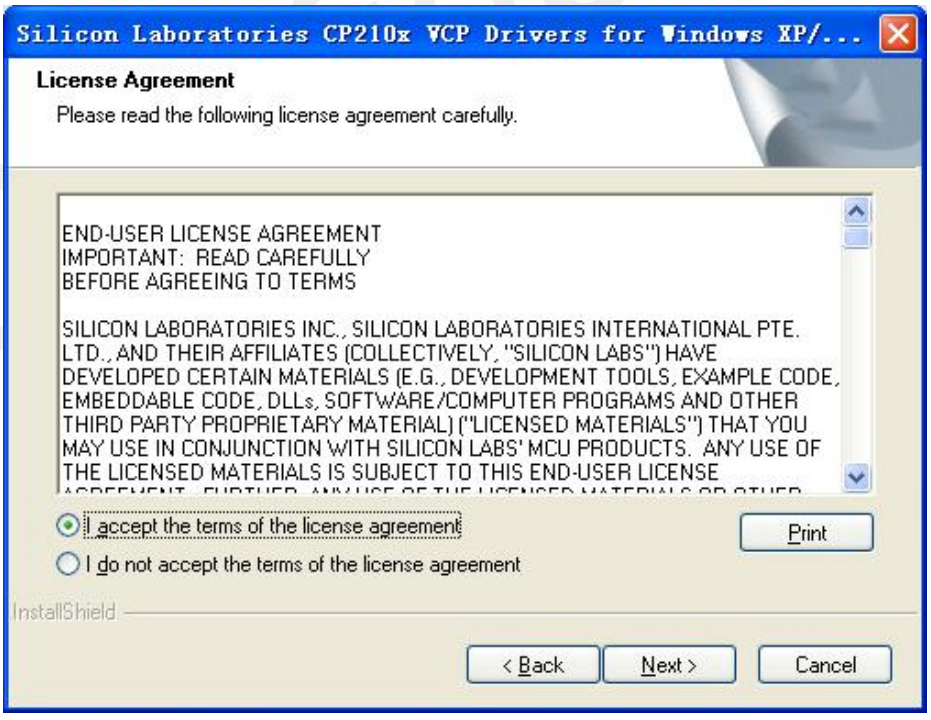

Figure 5: USB driver installation step3

Step4. Choose Driver Destination Location

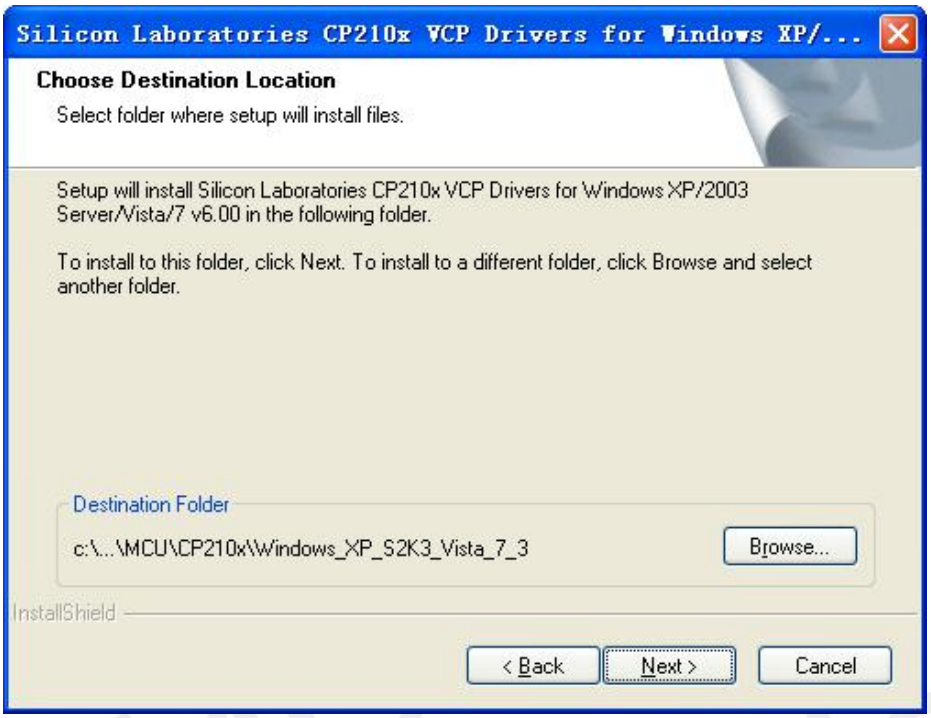

Figure 6: USB driver installation step4

Step5. Confirm Installation, select “Install” button

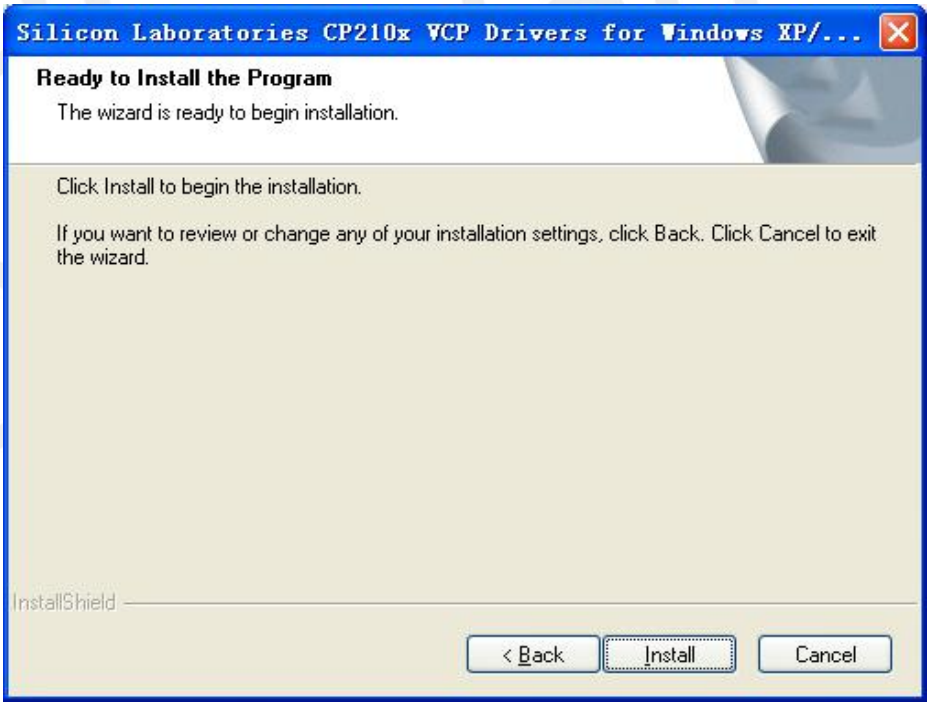

Figure 7: USB driver installation step5

Step6. Launch the CP210x VCP Driver Installer

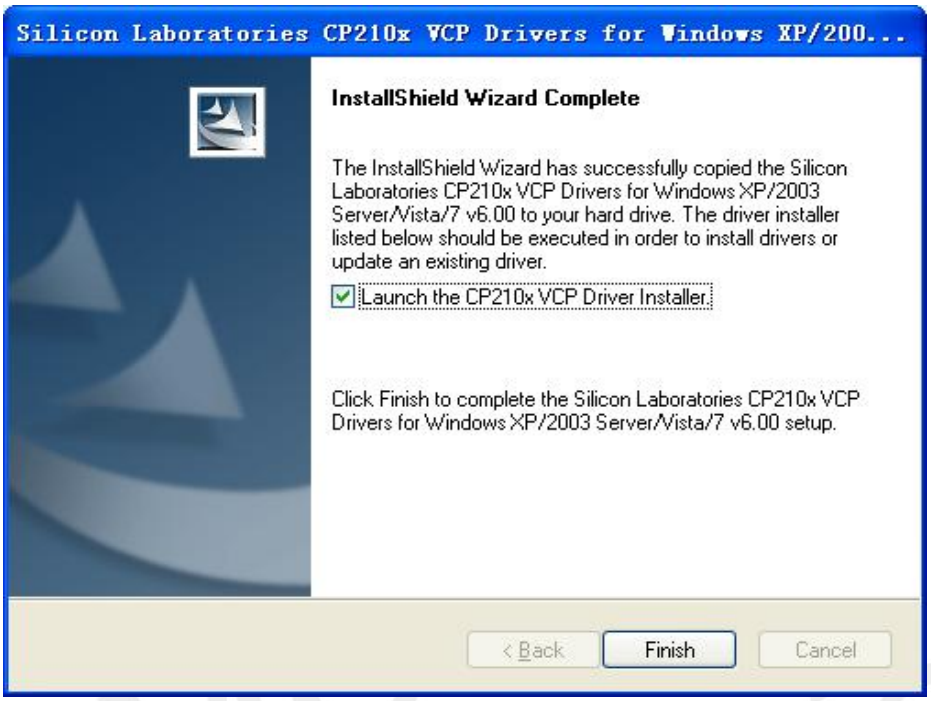

Figure 8: USB driver installation step6

Step7. Select “Install” button

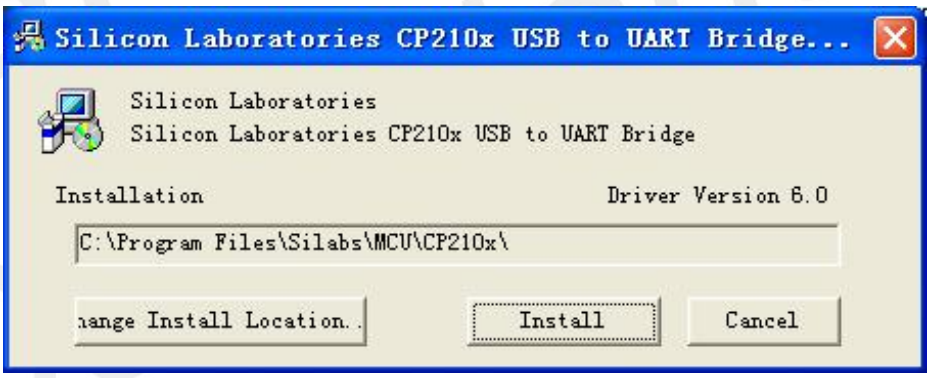

Figure 9: USB driver installation step7

Step8. Installation completed.

Figure 10: USB driver installation step8

Step9. After completing CP2103 driver installation, connect SIM68-EVB to PC by the bus cable, and set S301 switch to VBUS, then “Silicon Labs CP210x USB to UART Bridge (COMX)” will appear in the device manager:

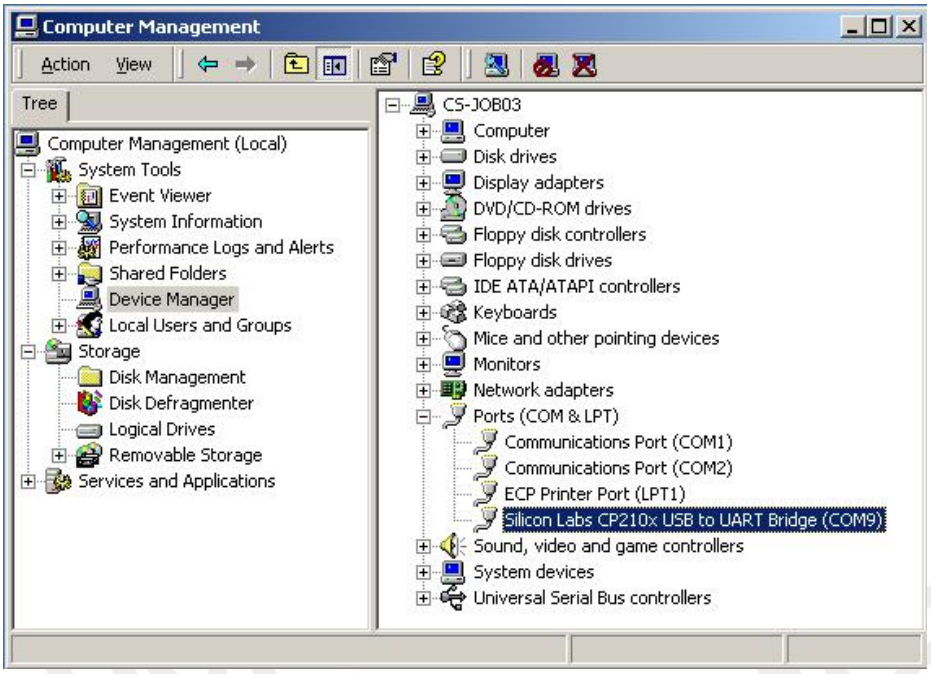

Figure 11: USB driver installation step9

3.2 Connecting and run

To test the SIM68 module, the following operations are needed:

1. Install CP2103 driver
2. Install GPS test tool
3. Connect the active antenna to the RF connector, and insert SIM68-TE to module connector
4. Connect the SIM68-EVB to PC with USB cable
5. Make sure that S304 is switched off
6. Push up the power switch of S301.
7. Push up the switch of S202 to select UART signal
8. Open GPS test tool to test

4. SIMCom GPS Testing Tool

Please contact SIMCom to get the newest version of GPS Testing tool.

4.1 Port setting

In the testing tool interface, open the “setting” window according to the following path: Module-->Properties.

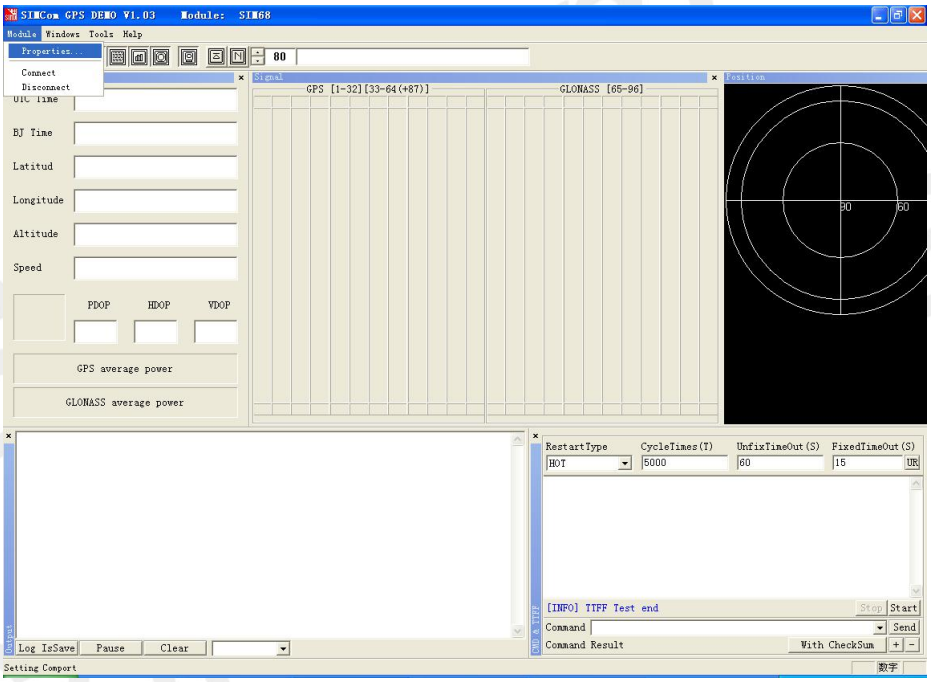

Figure 12: Testing tool interface

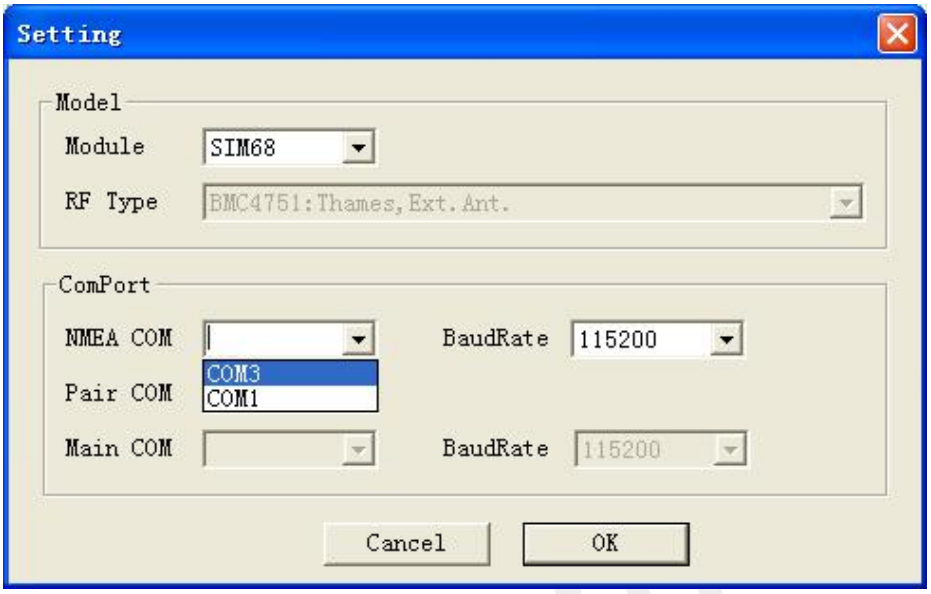

Figure 13: Setting Window

In the “NMEA COM” pull-down list choose the corresponding com mentioned before. The baud rate is 115200.

4.2 Click to RUN

Click the button “Run Comport” on the up left to run the module.

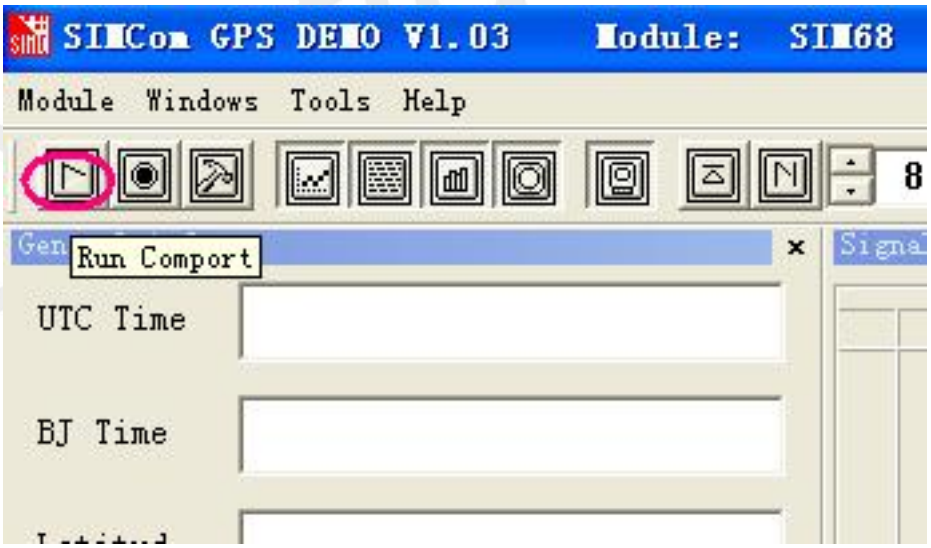

Figure 14: Click to Run

The module will run as the following figure:

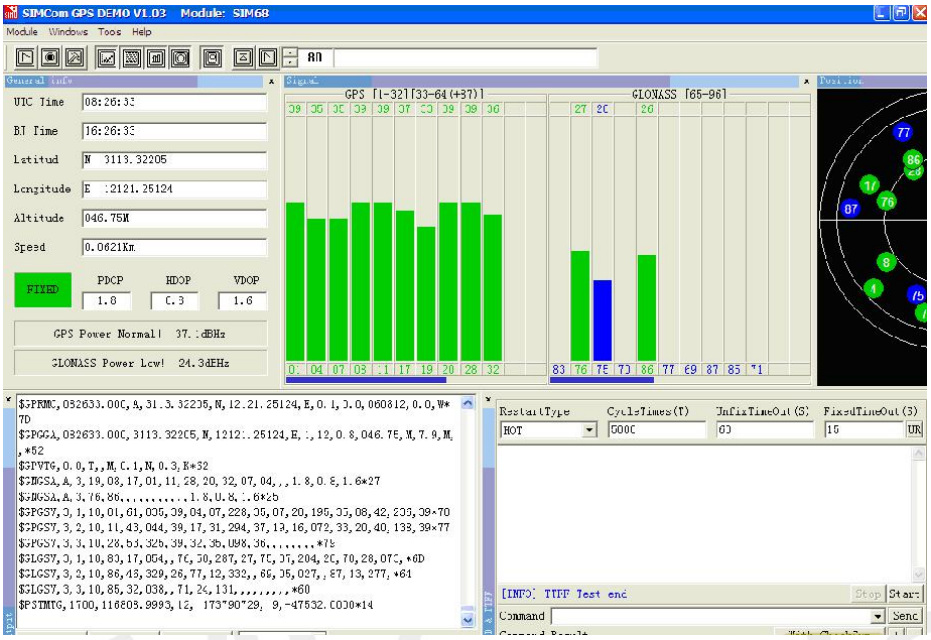

Figure 15: The Module is running

After position has been fixed, the GPS information can be viewed in the “General info” window. In the “Signal” window, you can see the information of each satellite signal that has been tracked, GPS on the left and GLONASS on the right. The NEMA output is in the down left, and it will be saved as txt file in the GPS testing tool directory, with start time as its name.

4.3TTFF Test

The test configure should be set before each TTFF test. It is in the down right part of the tool interface.
The restart type (hot, warm or cold) could be selected in the pull-down test. Fill in the next three blank (Cycletimes for the testing times, Unfixtimeout for the max time limit of each test and Fixedtimeout for the time waiting before next TTFF test) and press the start button.

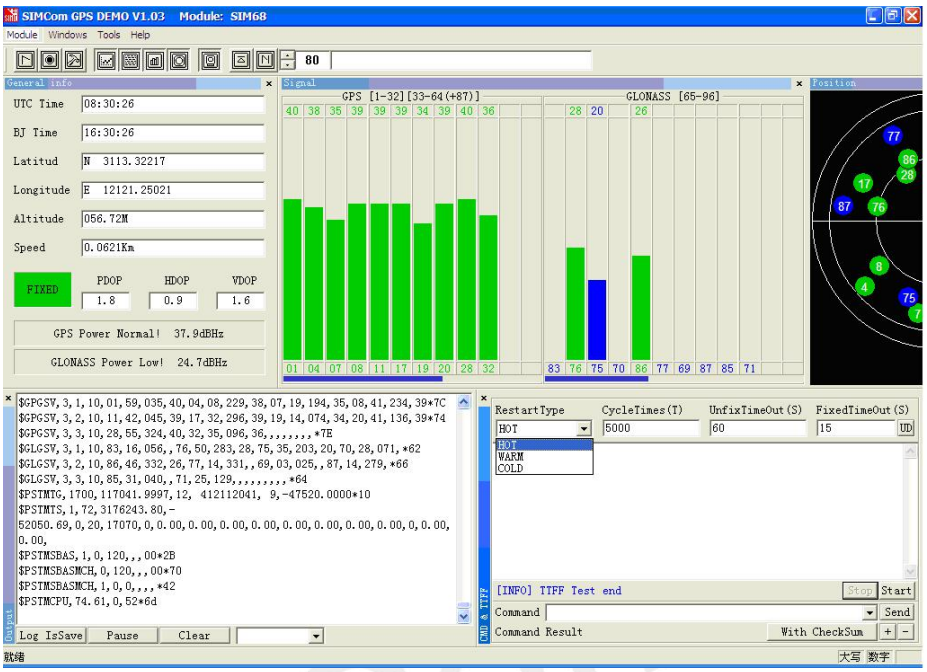

Figure 16: Setting TTFF testing configuration

The result of each TTFF will be shown in the window, each TTFF smaller than the “UnfixTimeOut” is labelled as Pass.

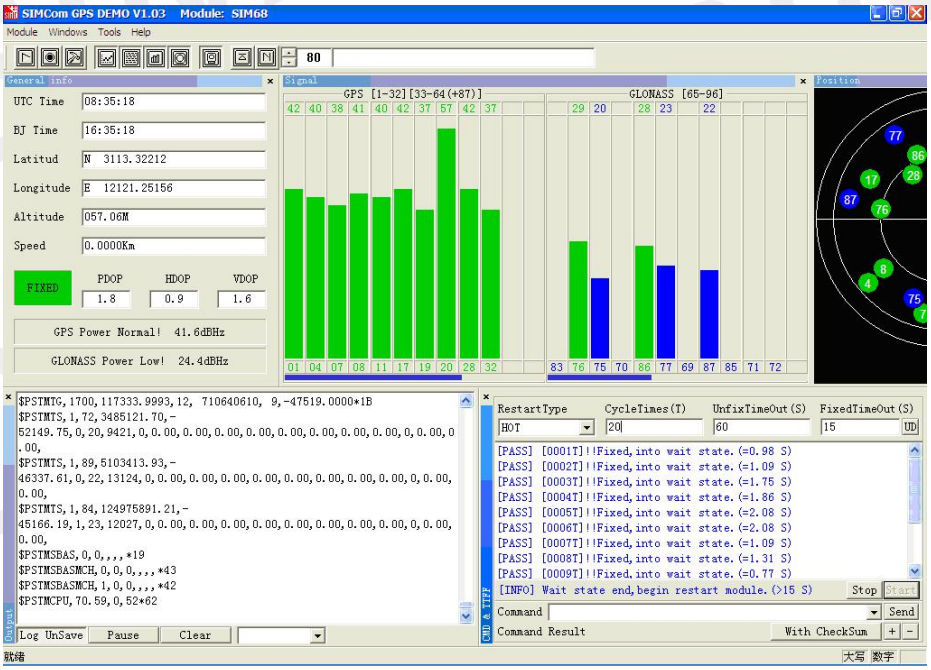

Figure 17: TTFF Test Result

5. Download

To update the SIM68 module software, the following operations are needed:

1. Connect the SIM68-EVB to PC with USB cable

2. Make sure that S304 is switched off

3. Put on the power switch S302.

4. Put on the switch S202 to select UART signal

5. Put on the power switch S301.

6. Download through download software tool:

a). Open PowerFlash_Simcom tool to download software

The interface of download software tool is as follow:

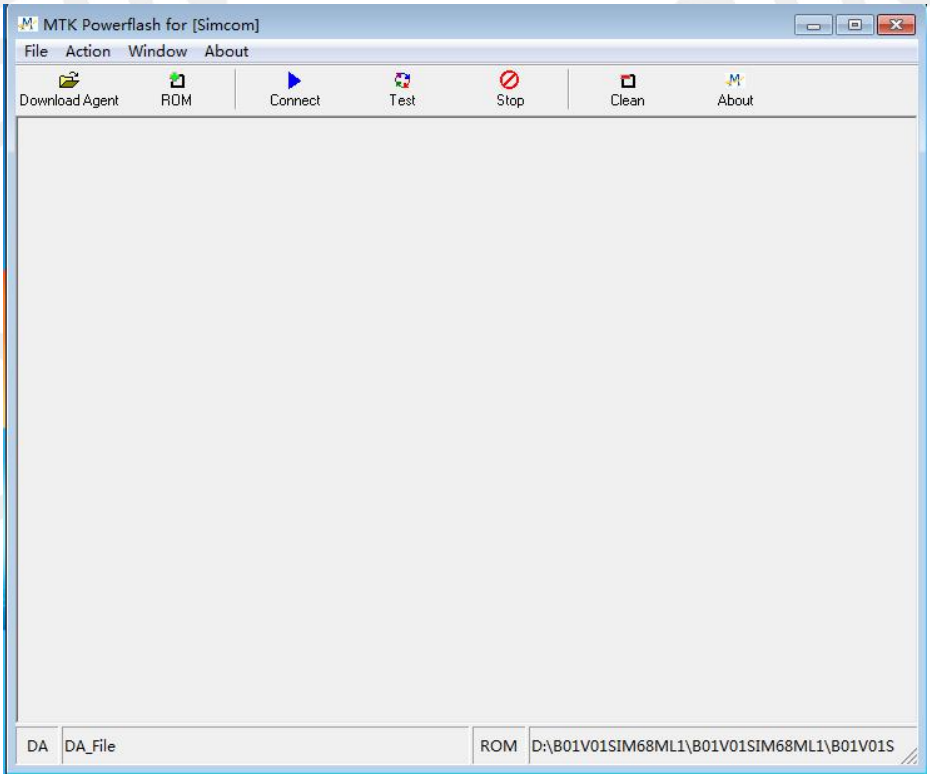

Figure 18: module download interface

b). Click the first button: *Download agent*, and chose the relative file(xxx_AllInOne_DA_xxx.bin) as follow:

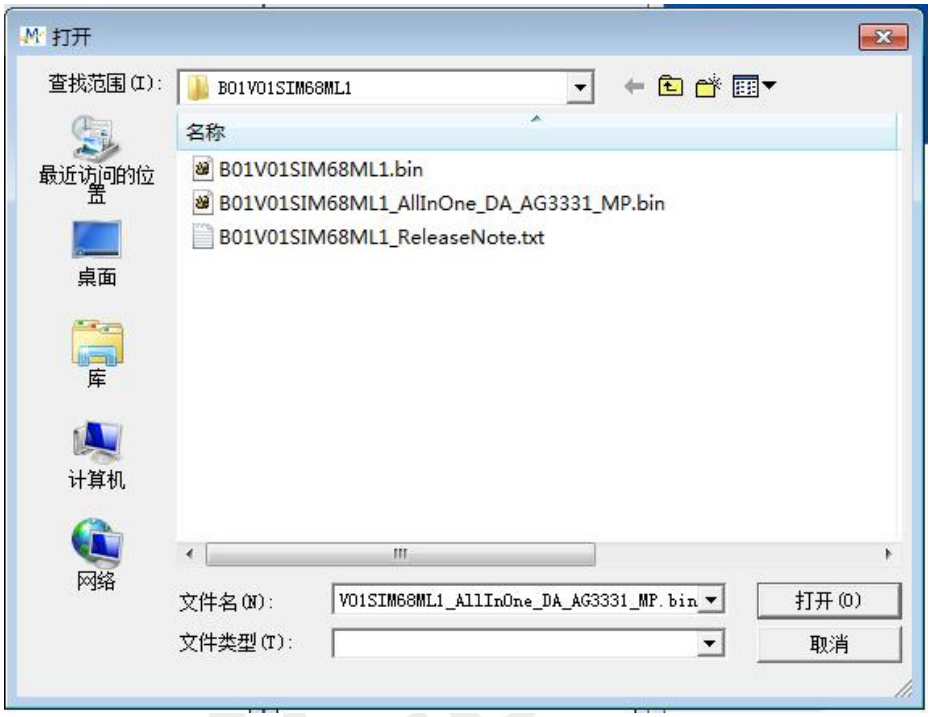

Figure 19: After Click *Download agent*

c). Click the second button: *ROM*, and chose the relative file(xxx.bin) as follow:

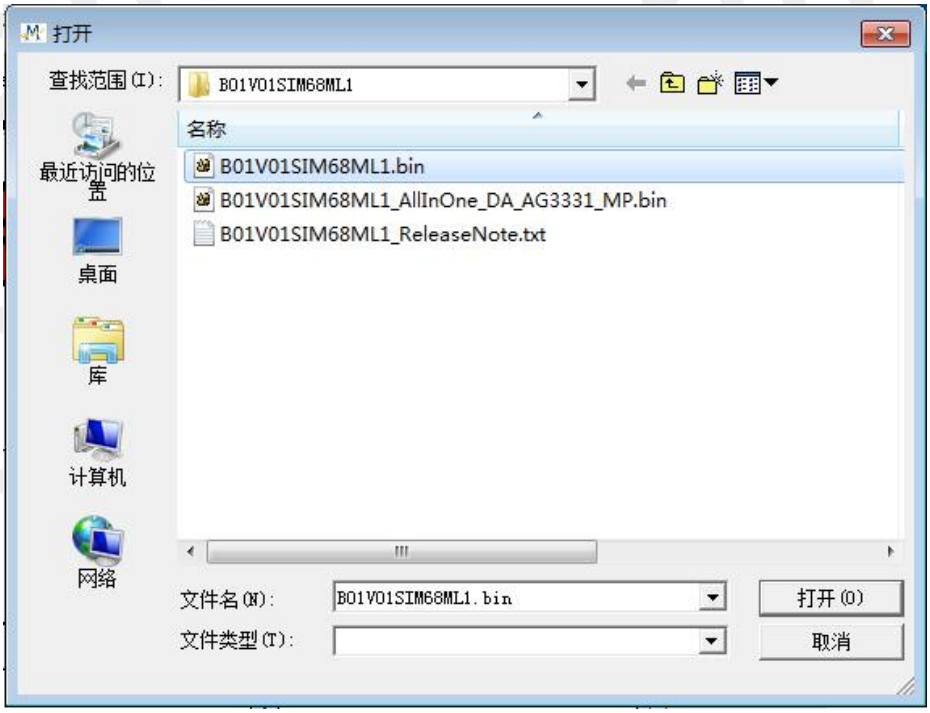

Figure 20: After Click *ROM*

d). Click the third button: *Connect*, (Mind select the right com port and Baudrate) as follow:

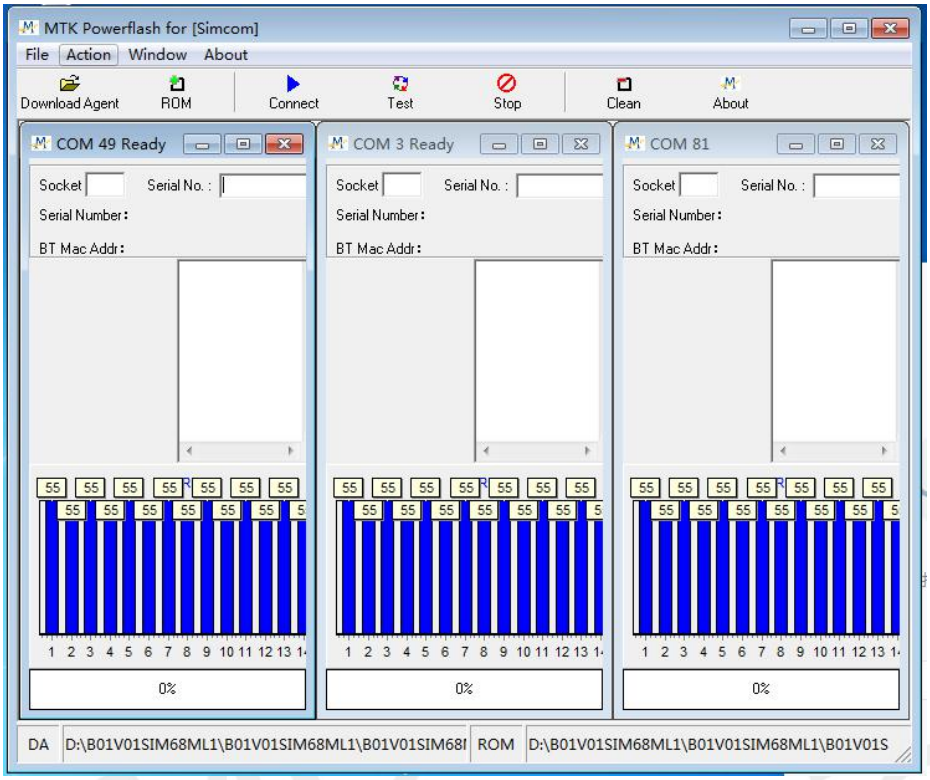

Figure 21: After Click *Connect*

e). Click the forth button: *Test*, to download the software as follow:

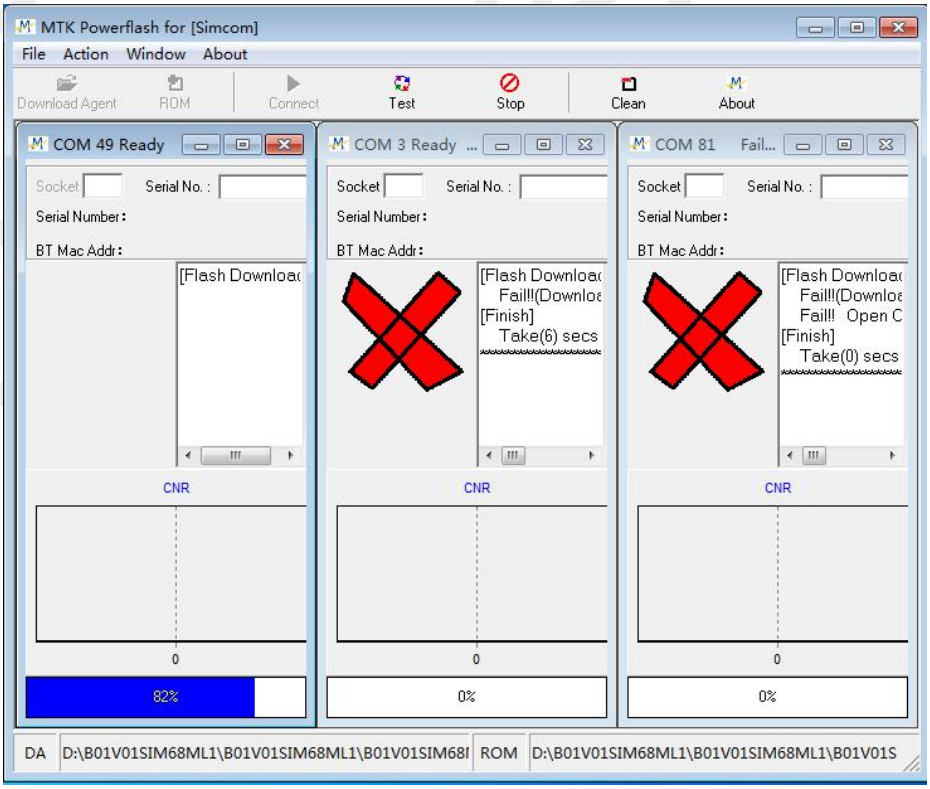

Figure 22: After Click *Test*

f). When the module downloads OK, it will show the following clew.

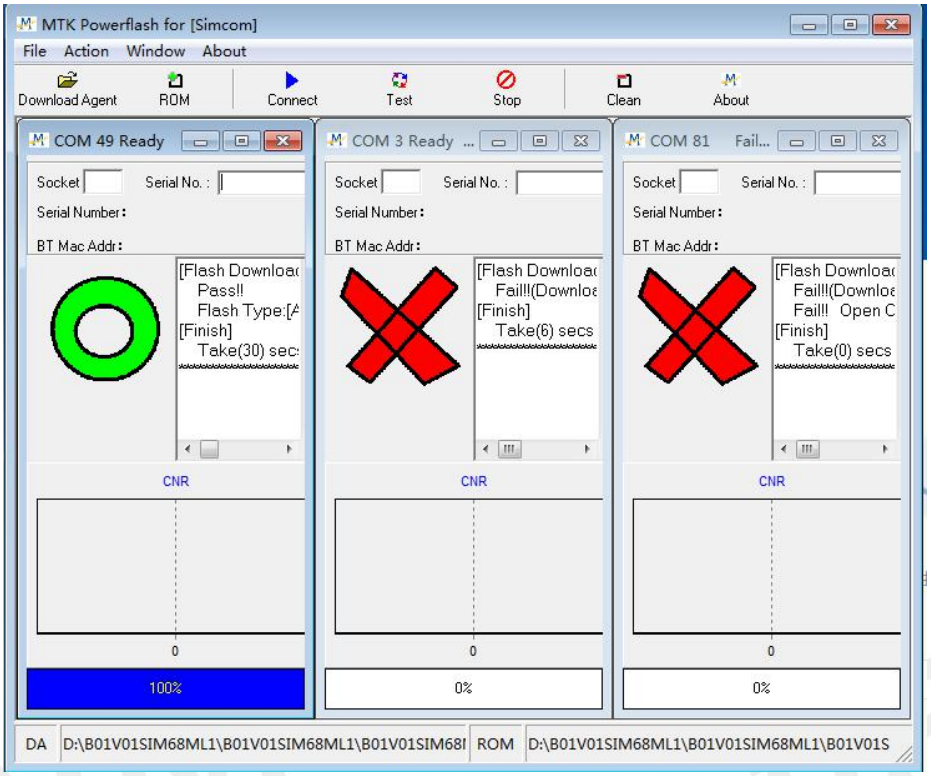

Figure 23: module download pass