Development Kit

Hardware Design

Reference Design

Software Design

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Version History

Data	Version	Description of change	Author
2012-03-28	1.00	Origin	Sunshengwu

1. Introduction

This document give 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

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

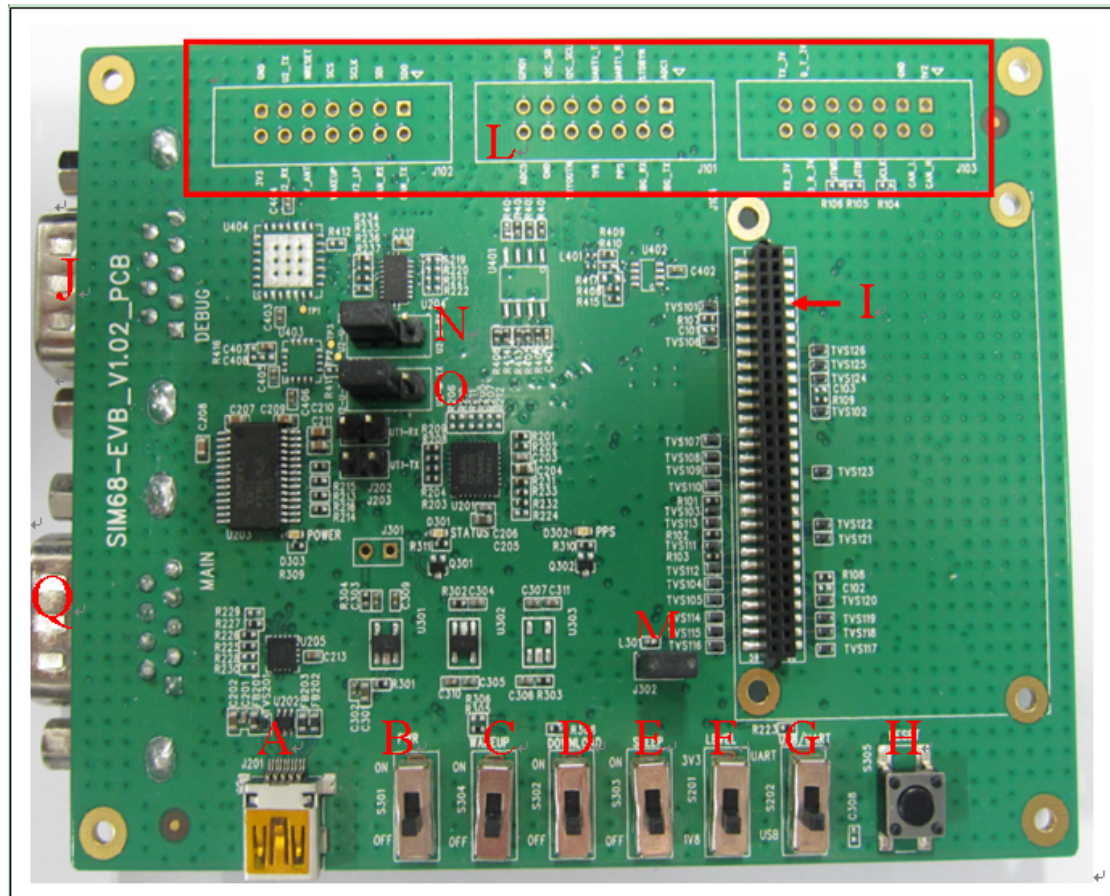The chapter introduces the functions of each component.

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 NEMA 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 NEMA 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.

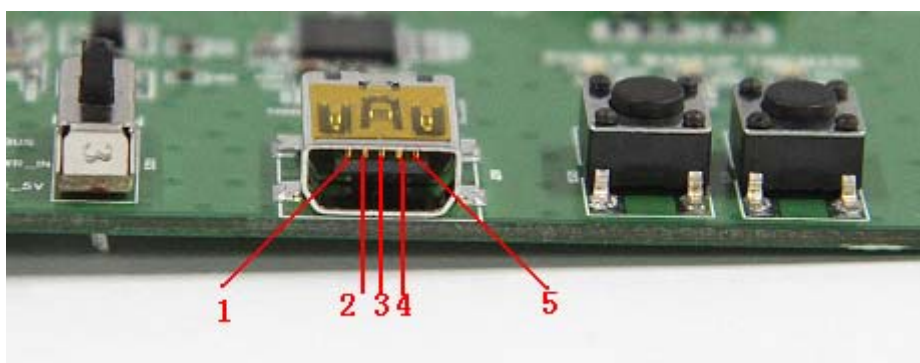Please download the latest CP2103 driver according to the PC's OS from the following link: *http://www.silabs.com/products/mcu/pages/usbtouartbridgevcpdrivers.aspx*

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
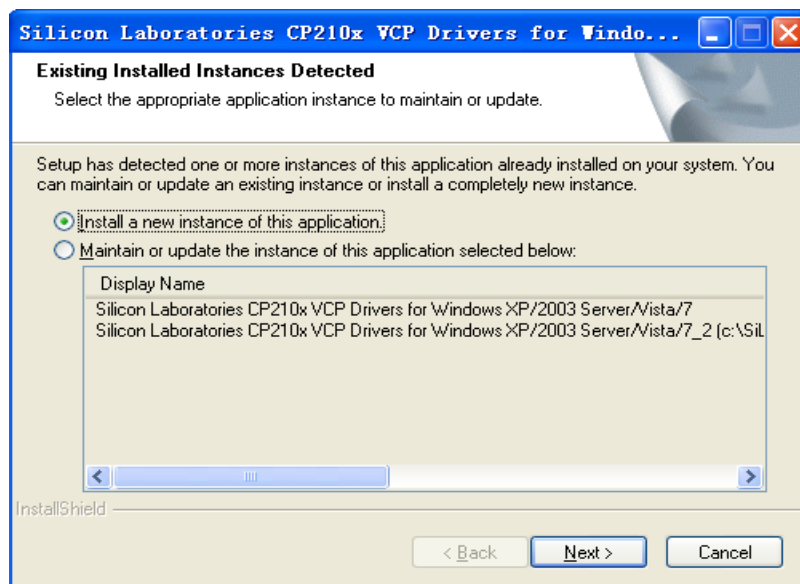
Step1.exectue Setup file (CP210x_VCP_Win_XP_S2K3_Vista_7)
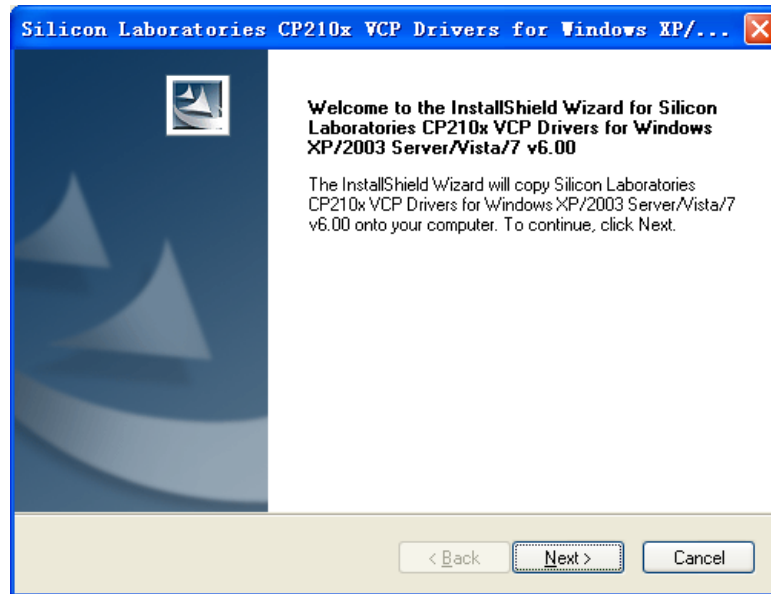

Figure 3: USB driver installation step1

Step2.select "next" button then "next"

Figure 4: USB driver installition step2

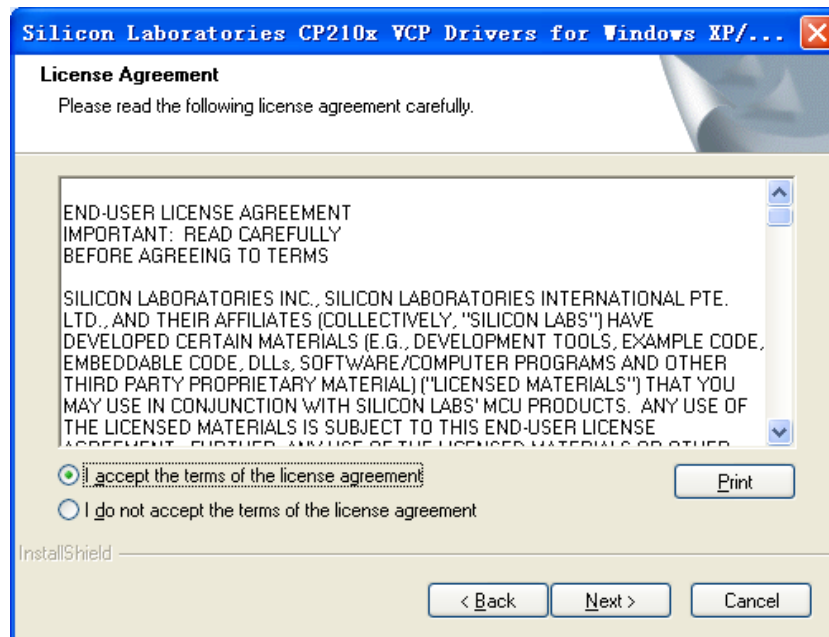Step3. Accept the license agreement and "next"

Figure 5: USB driver installation step3

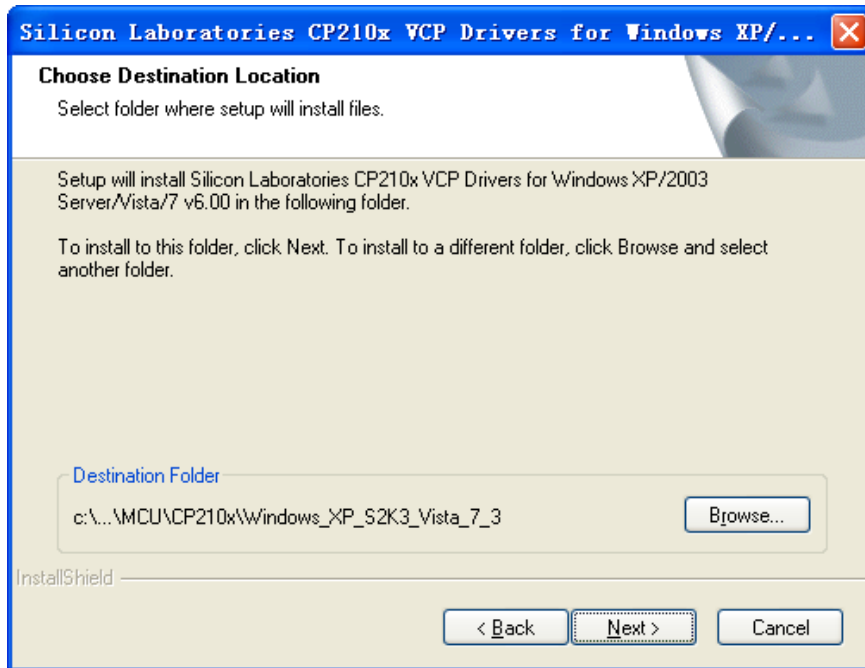Step4. Choose Driver Destination Location

Figure 6: USB driver installation step4
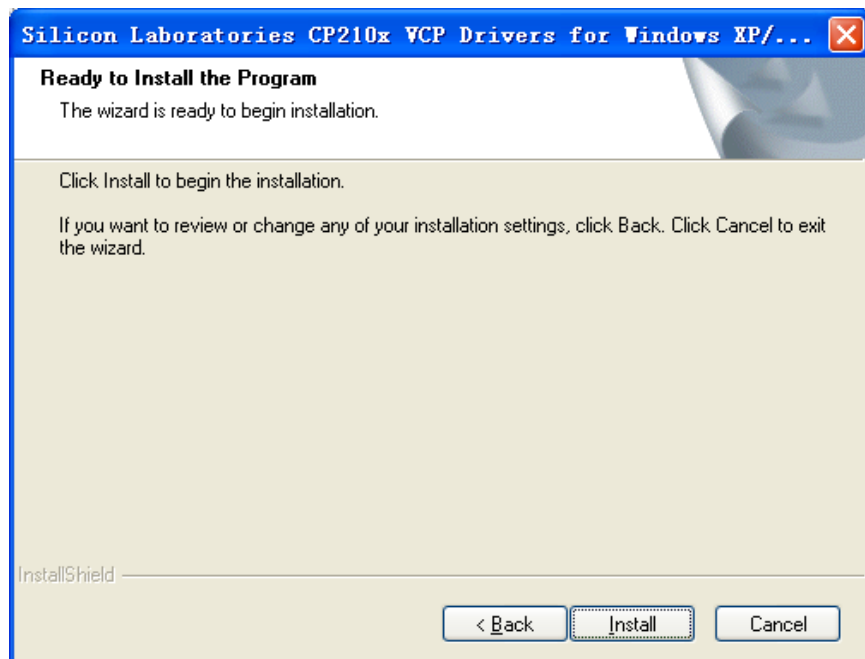
Step5. Confirm Installation, select "Install" button

Figure 7: USB driver installition step5
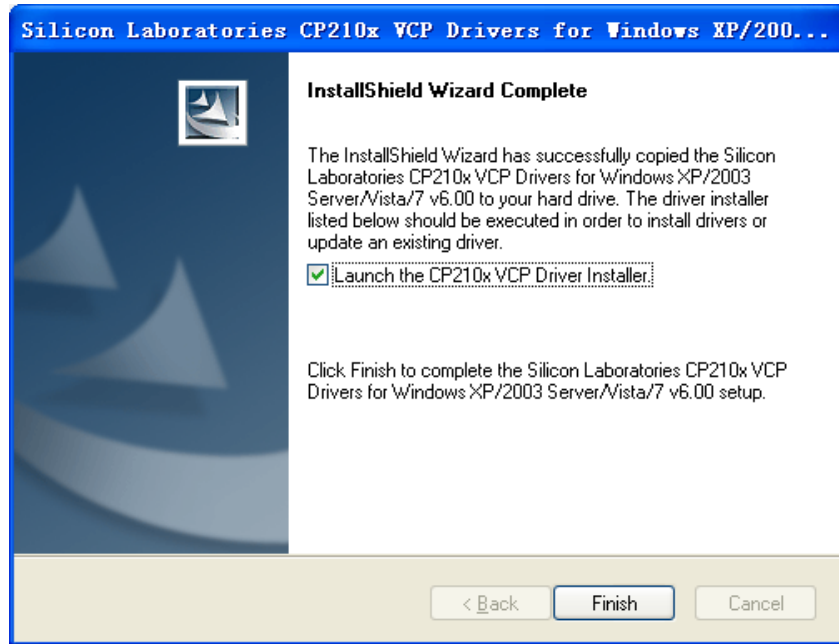
Step6. Launch the CP210x VCP Driver Installer

Figure 8: USB driver installition step6
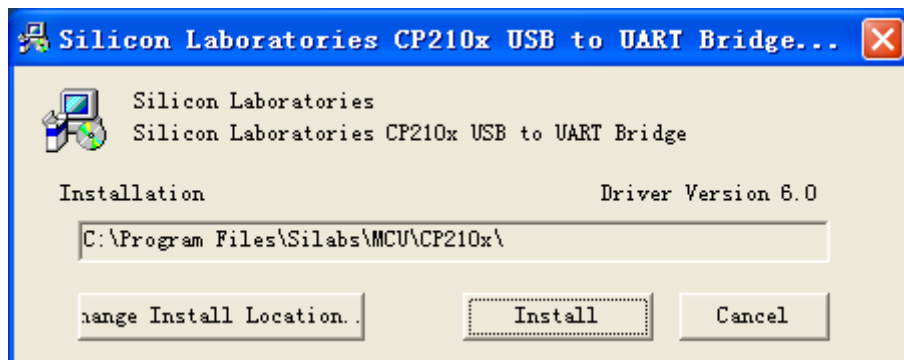
Step7. Select "Install" button

Figure 9: USB driver installation step7
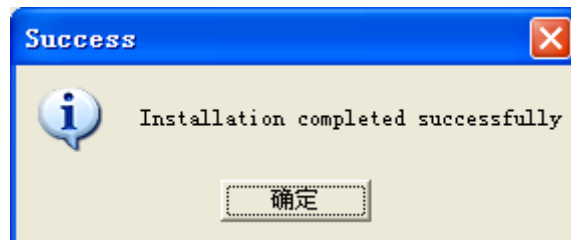
Step8. Installation completed.

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:
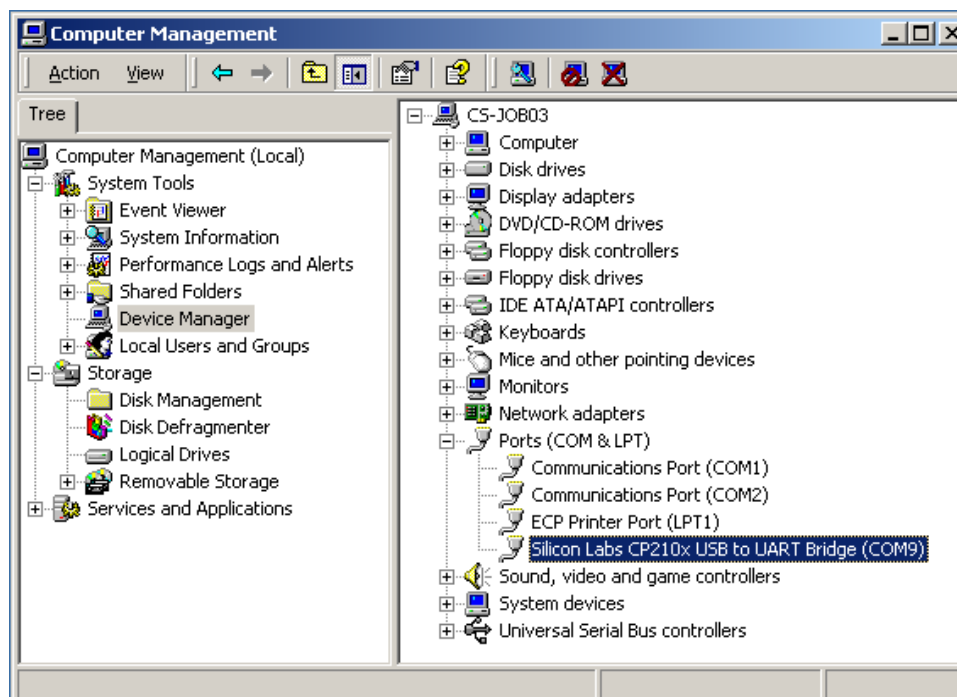

Figure 11: USB driver installation step9

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, S201 is pushed up.

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. ST GPS Testing Tool

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

4.1 Port setting

In the testing configuration panel，in the "device" tab，choose NMEA Port number as the one in device manager.（Since the testing tool only support the port from 1 to 20，you may change the port number if it is bigger than 20.）Set the debug port number if you need debug output. Both the NMEA and DEBUG Baudrate are 115200. Filling the "Path" blank and it is where you save the log files.
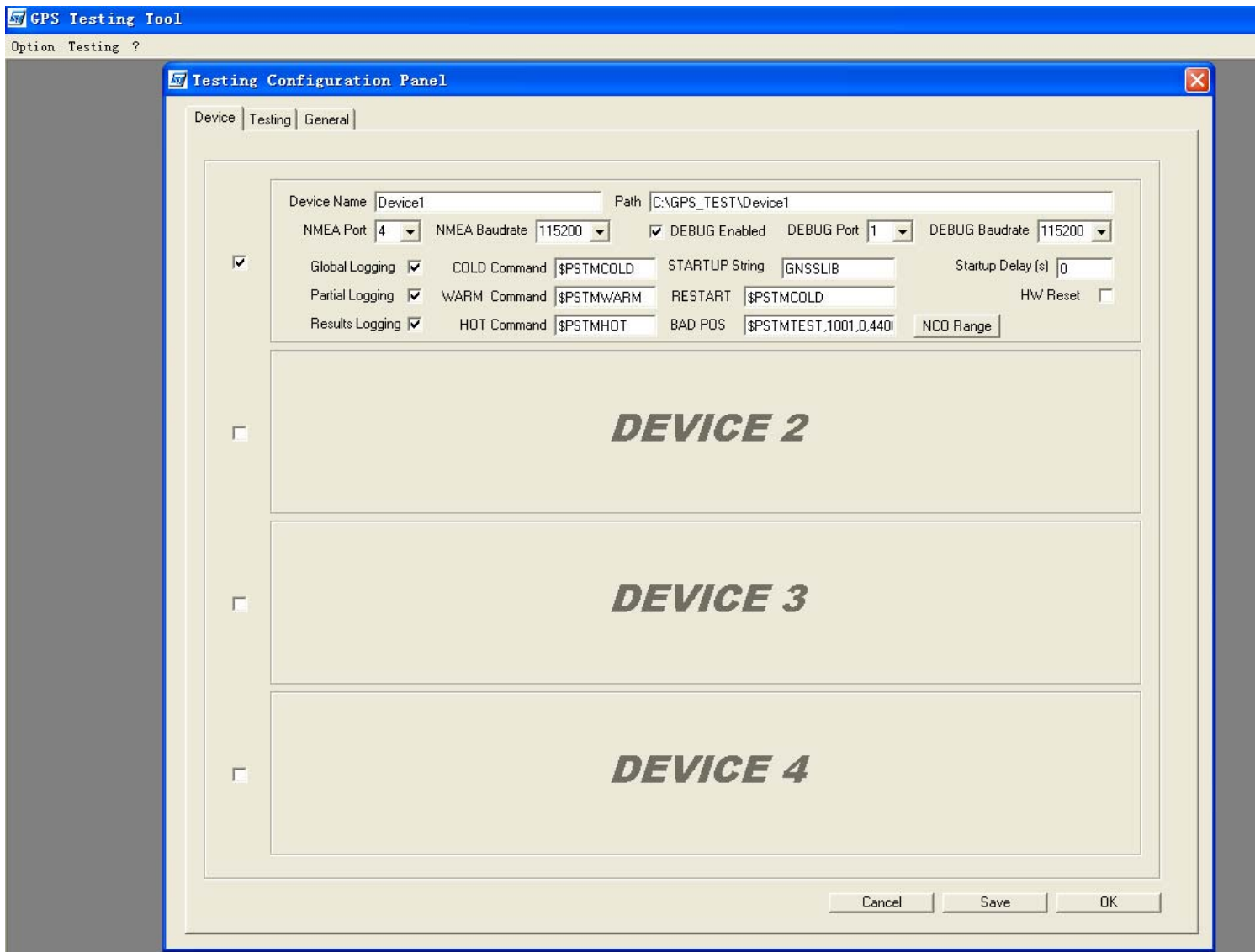

Figure 12: Port setting

4.2 Click to RUN

In the testing tab，choose the running mode in the "test" pull-down list, COLD, WARM, HOT, TRACK24H etc.
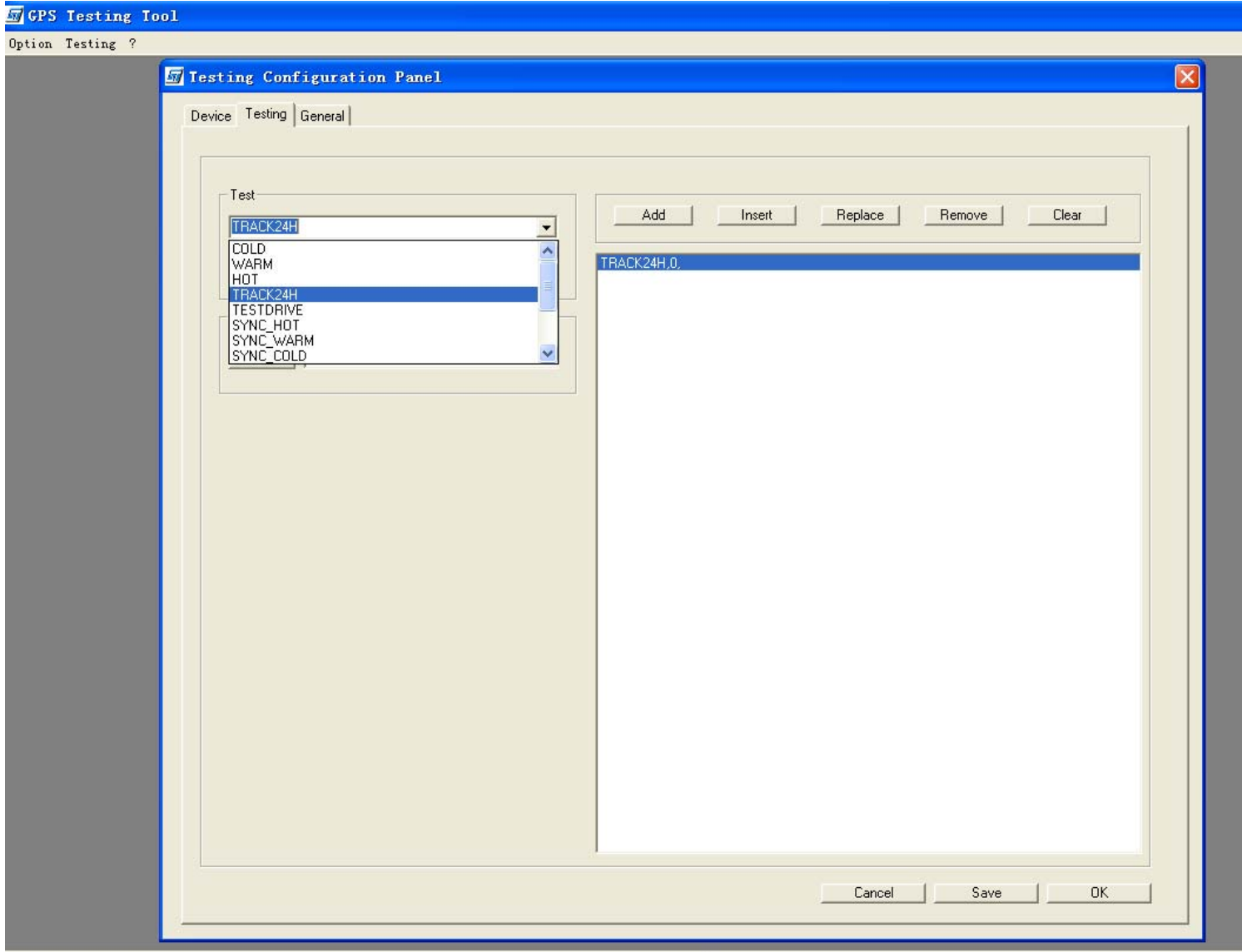

Figure 13: Choose the Running Mode

In a TTFF test mode, you need to write down the times you want to run for the test. The Min delay and Max delay means the stopping time between each fix test, it is recommended not to change the value 15 and 40 for a reliable test result.

After setting the test mode, press the "add" button and it will appear on the right blank. Choose it and press the "OK" button, then the module will work.
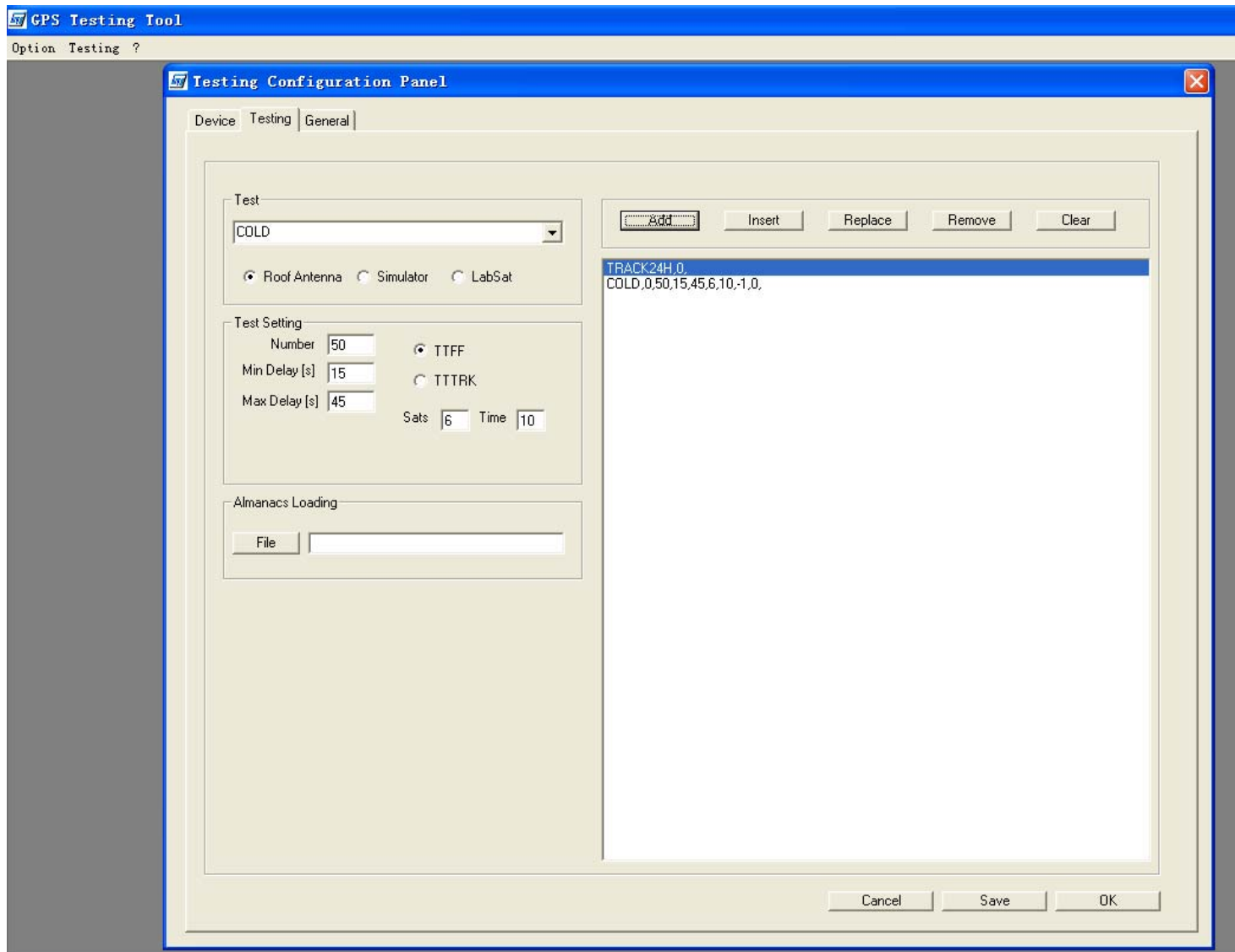
Figure 14: Click to RUN

4.3 Position fixed

After position has been fixed, the GPS information can be viewed in the device NMEA WINDOW.
In the middle of the window, you can see the information of each GPS singal that has been tracked.
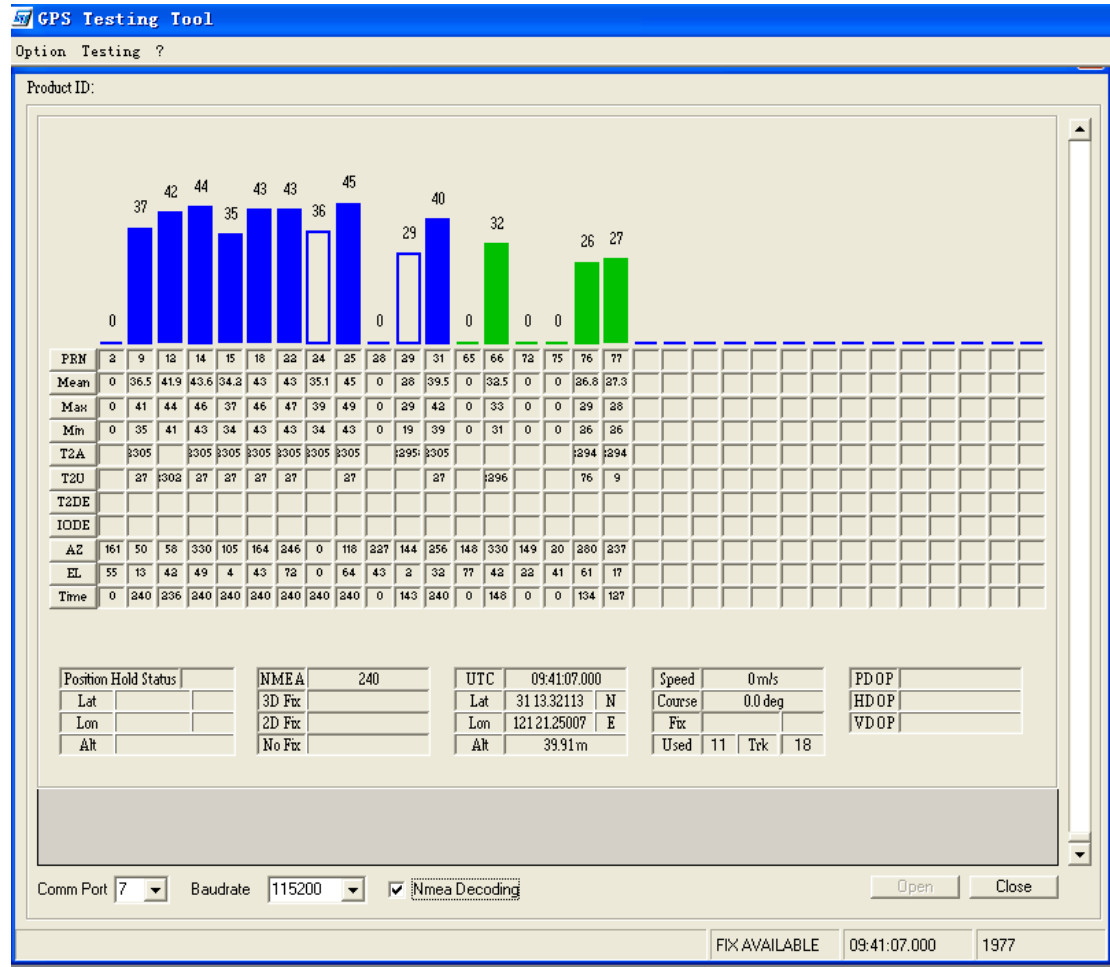The position details(Lat, Lon, Alt etc.) are below it.

Figure 15: Position fixed

You can see the real time NMEA output when you deselect the "NMEA Decoding" box.
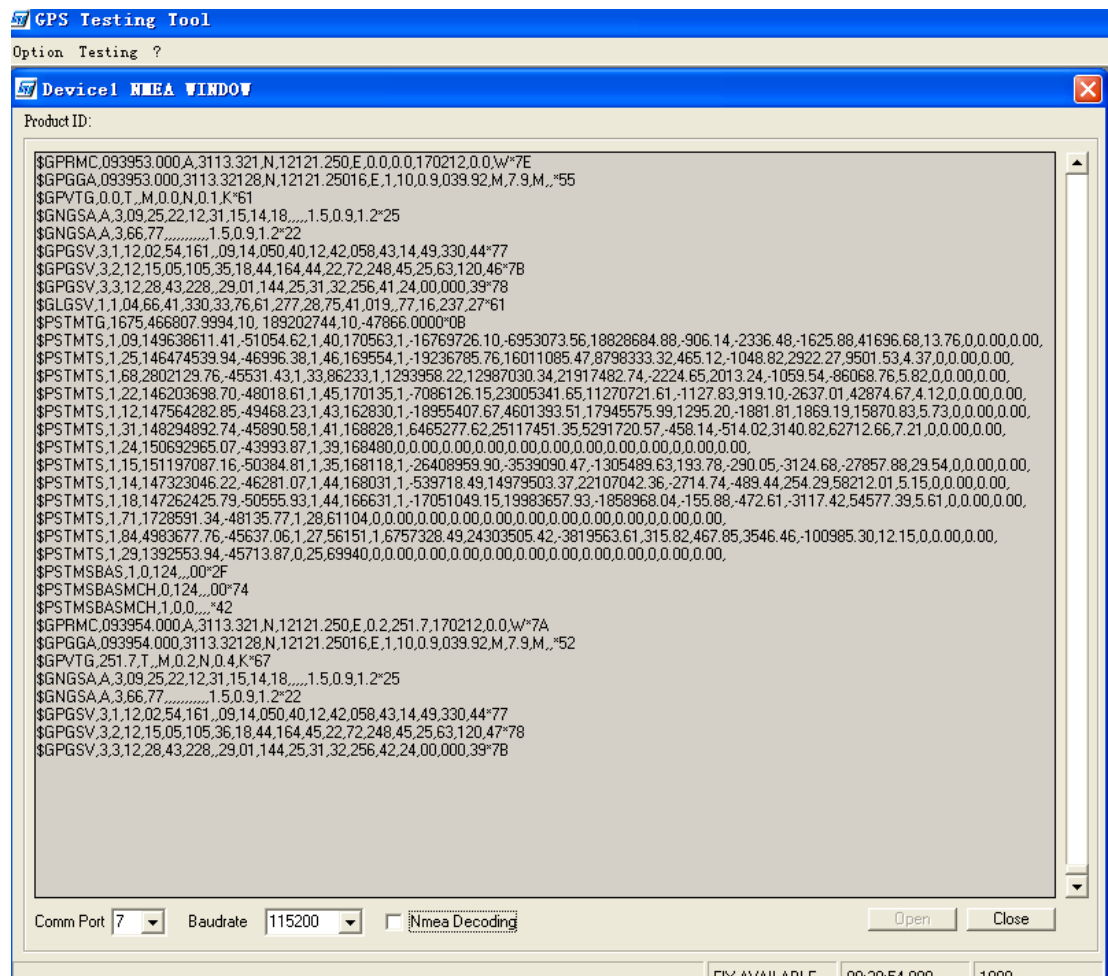
Figure 16: NMEA output

4.4 TTFF Test

If you choose the TTFF test mode in the following step, then you can choose the testing pull-down list on the top to start or stop. When pressing start, after each test a TTFF value will appear on the bottom.
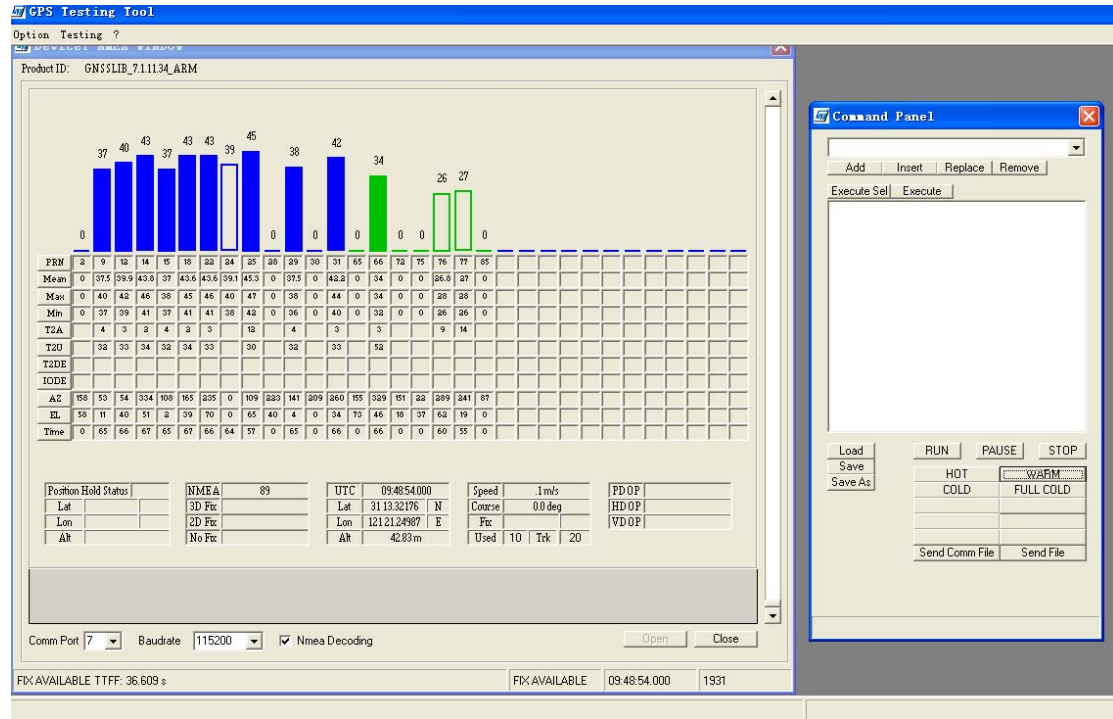
Figure 17: TTFF tset

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