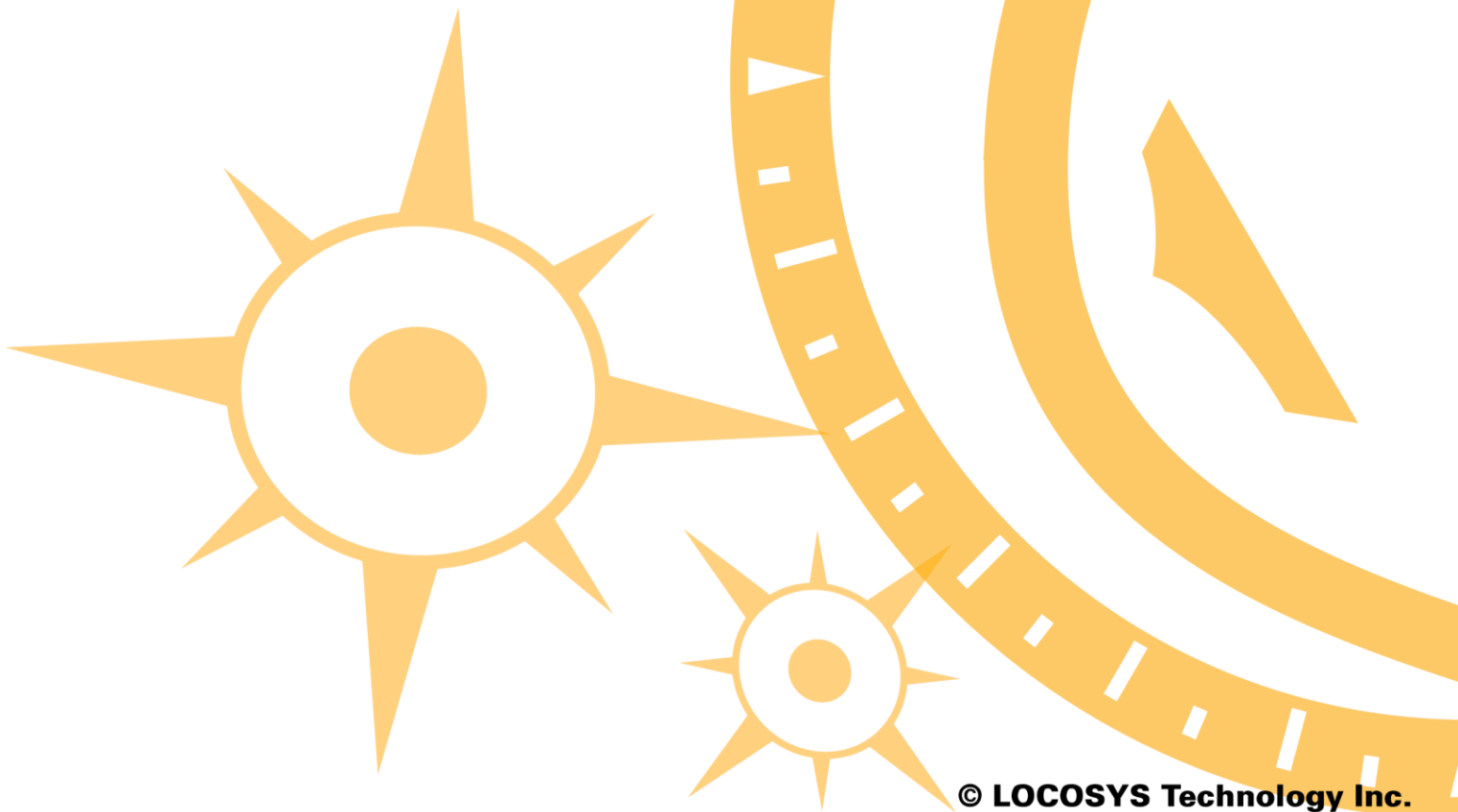


GPSFox Quick Guide for Sub-meter Module & Smart Antenna

Version 1.2

2021 / 04 / 21



About LOCOSYS

LOCOSYS Technology Inc. established in 1995, a company that provide services the scope of which spans from both hardware and software in Global Navigation Satellite System (GNSS), Wireless Communication, Embedded System to Avionics, Automotive and Consumers electronics. LOCOSYS Technology Came from a well-known research organization of information industry, LOCOSYS sustains a strong R&D in Software, Hardware and system integration. Through its self own (International Automotive Task Force, IATF) IATF16949: 2016 / ISO 9001: 2015 certified production lines in Taiwan and carefully selected sites in China. LOCOSYS is a qualified supplier to tier 1 & tier 2 manufacture in Automotive industry (design house, EMS, OEM, ODM) and be the 2017 best partner of 'Automotive Dead Reckoning' in China automotive industry and provides solutions and services to various market segments. Stay in α -level qualified module designer and supplier in the international market, deal the partnership with more than 20 Well-known distributors overseas, to provide our customers a complete OEM and ODM services.

LOCOSYS Technology Inc.

20F.-13, No.79, Sec. 1, Xintai 5th Rd., Xizhi Dist., New Taipei City, 22101, Taiwan
R.O.C.

Tel: +886-2-8698-3698

Fax: +886-2-8698-3699

Mail: info@locosystech.com

For more information about our products, please visit:

<https://www.locosystech.com/en/category/Products/index.html>

For any technical support or others, lease leave a message on below website.

We will then contact you directly.

<https://www.locosystech.com/en/page/Contact-Us/contact-info.html>

Contents

1.	Introduction.....	1
2.	Getting Started	2
2.1	System Requirements.....	2
2.2	Installation.....	2
2.3	Uninstallation.....	2
3.	Launch GPSFox	3
4.	About the GPSFox	9
5.	FAQ (Trouble Shooting)	16

Figure Index

Figure 1: Choose a corresponding	3
Figure 2: Choose corresponding Baudrate.....	3
Figure 3: Connect to GNSS Receiverbutton	4
Figure 4: Disconnect button.....	4
Figure 5: Click to Pause button.....	5
Figure 6-1: Cold Start button	6
Figure 6-2: Factory Default button	6
Figure 7: Start to Log data button	7
Figure 8: press SAVE button.....	7
Figure 9-1: Stop Log button.....	8
Figure 9-2: Log Data will then be saved accordingly	8
Figure 10: GPSFox	9
Figure 11-1: Multiband Constellations Signal Level View.....	10
Figure 11-2: Multiband Constellations Signal Level View (Partial Enlarged View)...	11
Figure 12: Radar View	11
Figure 13: COG&SOG View	12
Figure 14: NMEA View	12
Figure 15: Navigation View	13
Figure 16: Function Bar	13
Figure 17: About the GPSFox.....	14
Figure 18: Update AGPS data.....	14
Figure 19: GNSS Receiver's Firmware version	14
Figure 20: Command line	15
Figure 21: TTFF panel	15

1. Introduction

This document is the user guide of GPSFox for all LOCOSYS GPS/GNSS products.

2. Getting Started

2.1 System Requirements

To use GPSFox on a Windows PC, you must have at least the following:

- Operating System : Windows XP, Windows 7, or Windows 10
- CPU: Celeron 1.6GHz or above
- System Memory (RAM) : 2048 MB RAM and above
- Hard Disk : 50MB free space
- Screen : 800x600, "16-bit High Color" screen
- Internet: 802.11a/b/g/n/ac or Ethernet

2.2 Installation

Make sure the driver for USB has been successfully installed on your host PC/Notebook, and just copy GPSFox.exe to a new empty folder on your hard disk .Create a shortcut on desktop if necessary.

(The USB driver can be downloaded from our website: <http://www.locosystech.com>)

2.3 Uninstallation

This program does not add any key to system registry. If you don't want it to keep it no more, just delete the provided files and its shortcut from your hard disk.

3. Launch GPSFox

1. Please open GPSFOX software and then choose a corresponding COMPort.

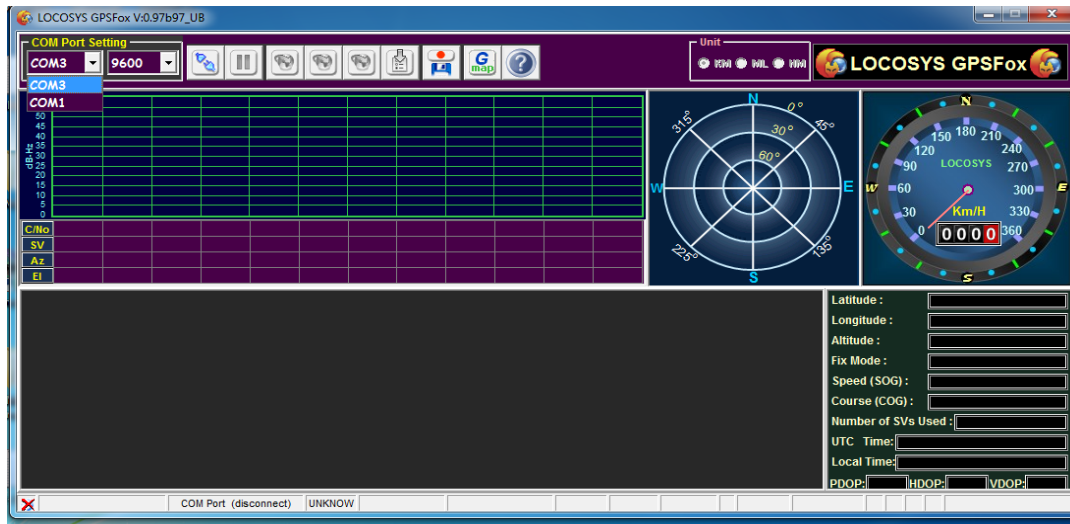


Figure 1: Choose a corresponding

2. Please choose corresponding Baudrate.

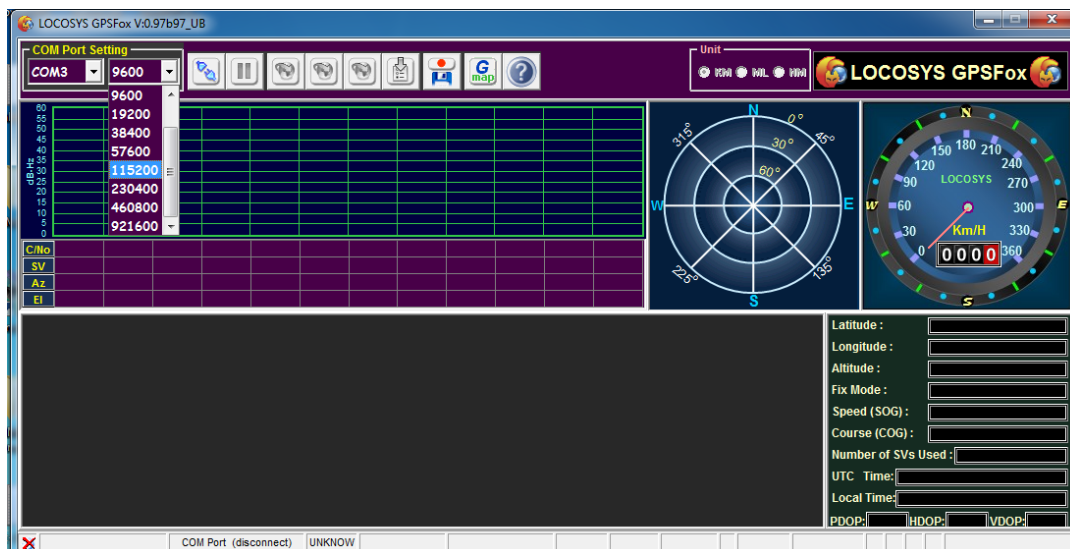


Figure 2: Choose corresponding Baudrate

3. Please press the “Connect to GNSS Receiver” button to connect your GNSS module.

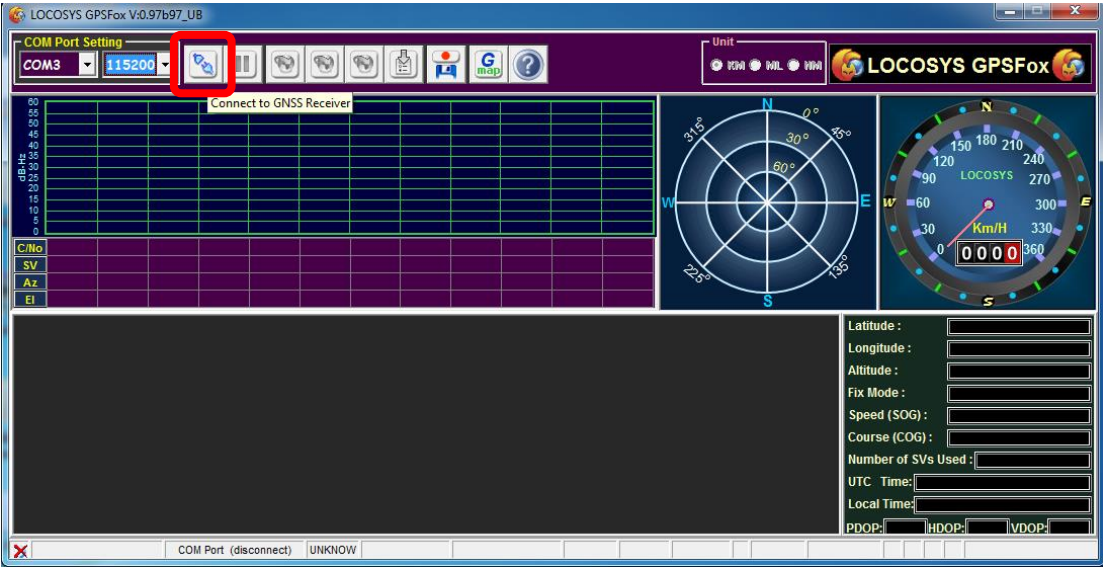


Figure 3: Connect to GNSS Receiverbutton

4. If you hope to disconnect your connected module, please press “Disconnect” button.

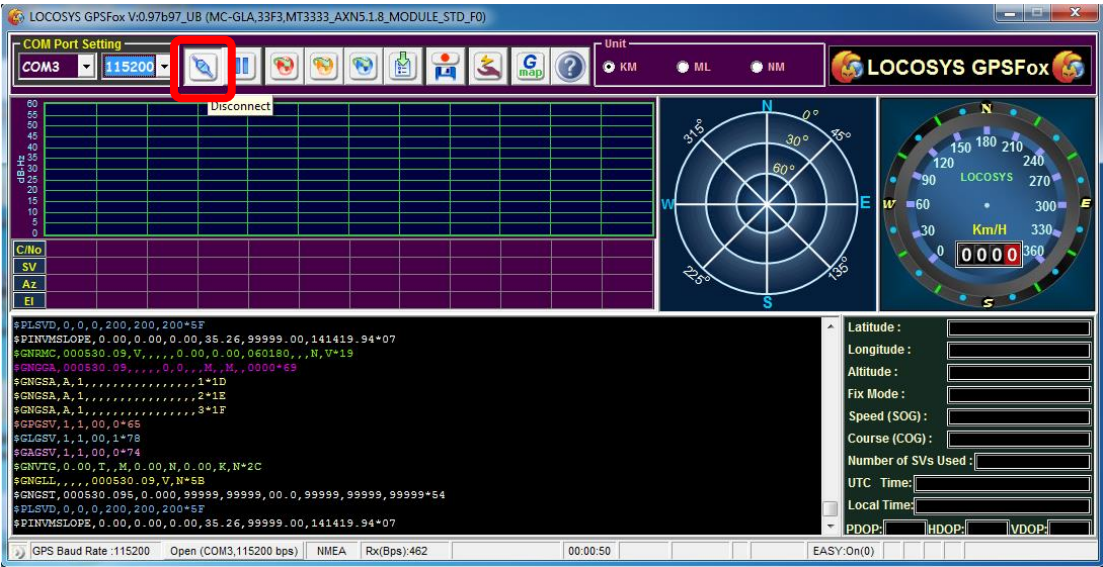


Figure 4: Disconnect button

- If you want to view NMEA signals, please press “Click to Pause” button to temporarily pause the NMEA signals input, and then you can view its signals.

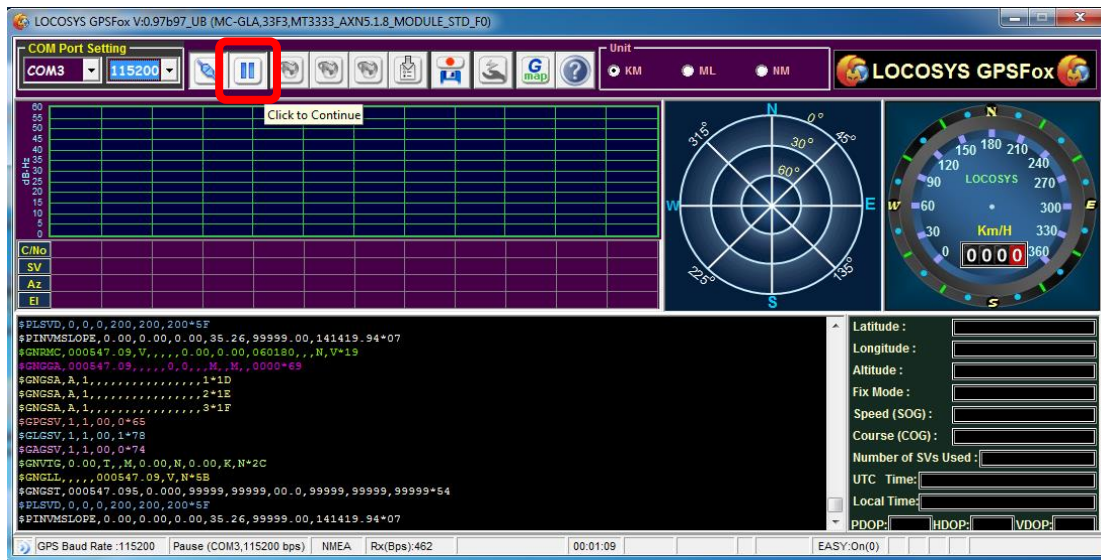


Figure 5: Click to Pause button

6. When you first connect your module, please press “Cold Start” button or “Factory Default” button to clear the original positioning data of the module. Then it can be re-located.

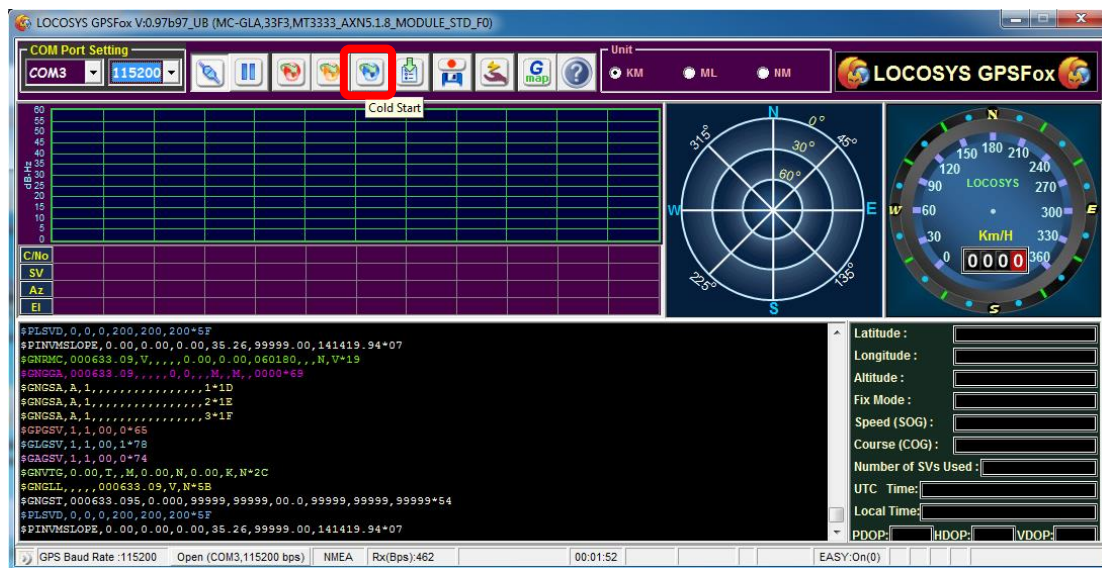


Figure 6-1: Cold Start button

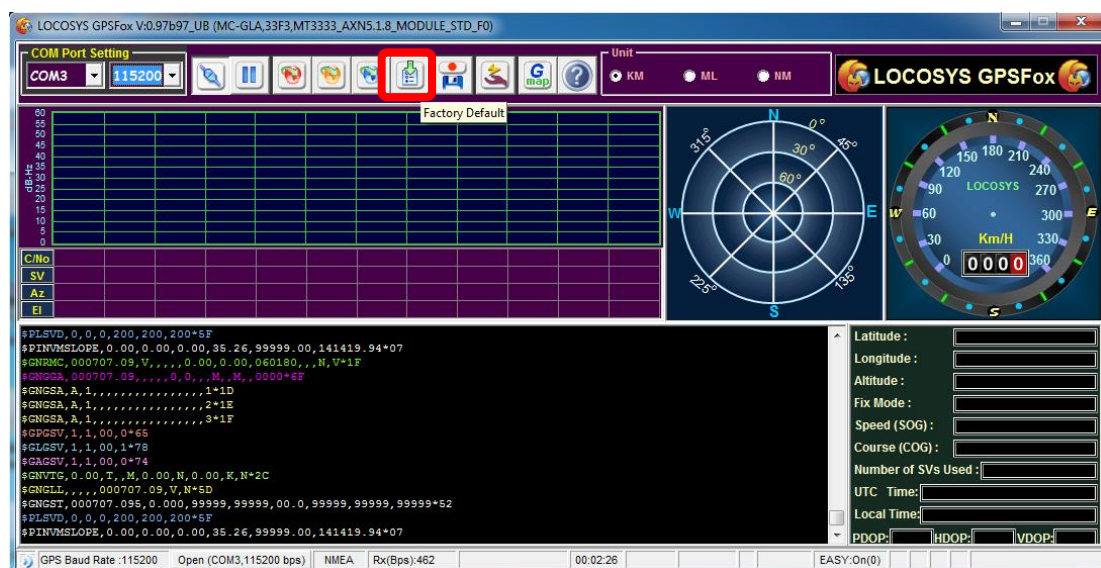


Figure 6-2: Factory Default button

7. If you want to save the Log file of NMEA data, please press “Start to Log data” button.

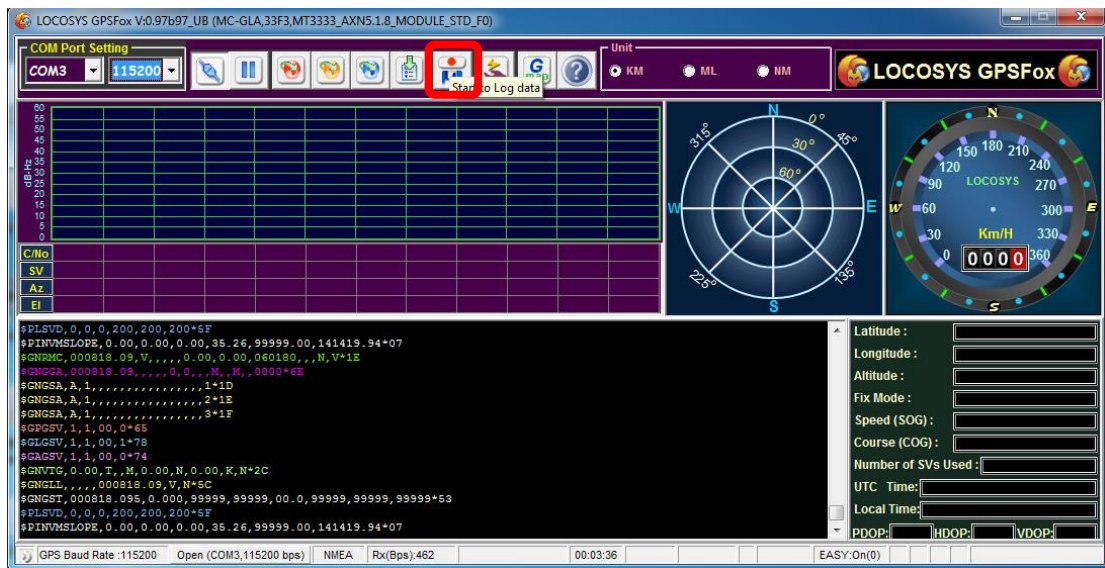


Figure 7: Start to Log data button

8. Please choose the file path where you want to save, and type a file name. Then please press “SAVE” button and it can start recording NMEA LOG Data.

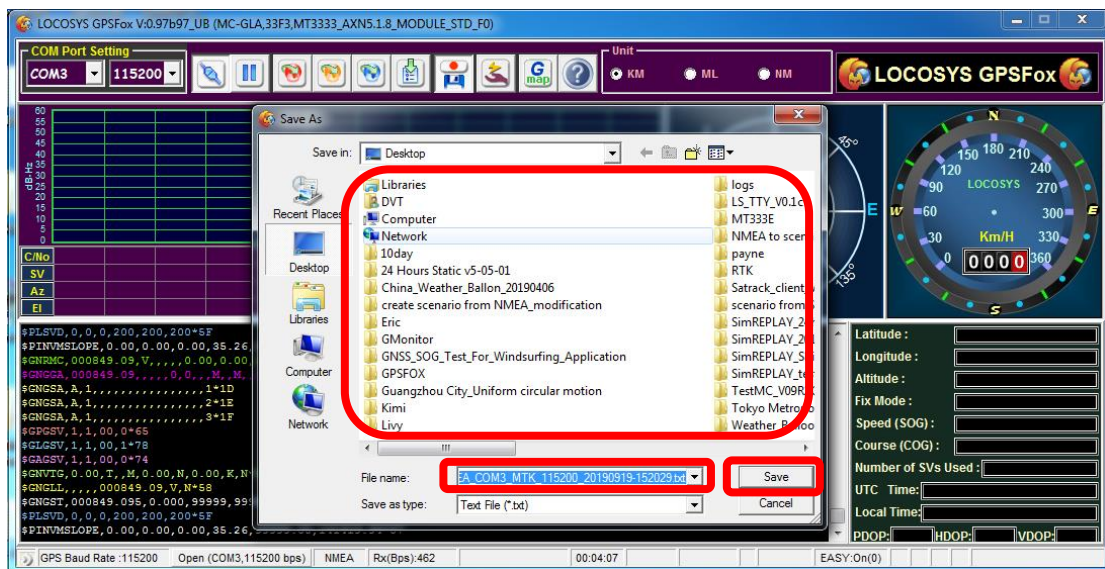


Figure 8: press SAVE button

9. When the recording is completed, please press “Stop Log” button. The Log Data will then be saved accordingly.

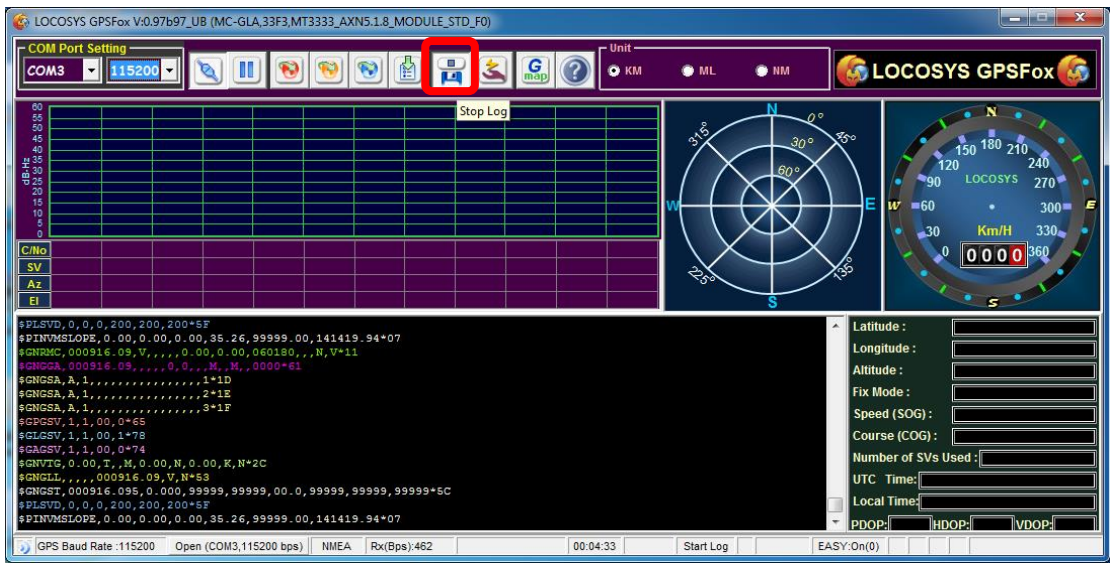


Figure 9-1: Stop Log button

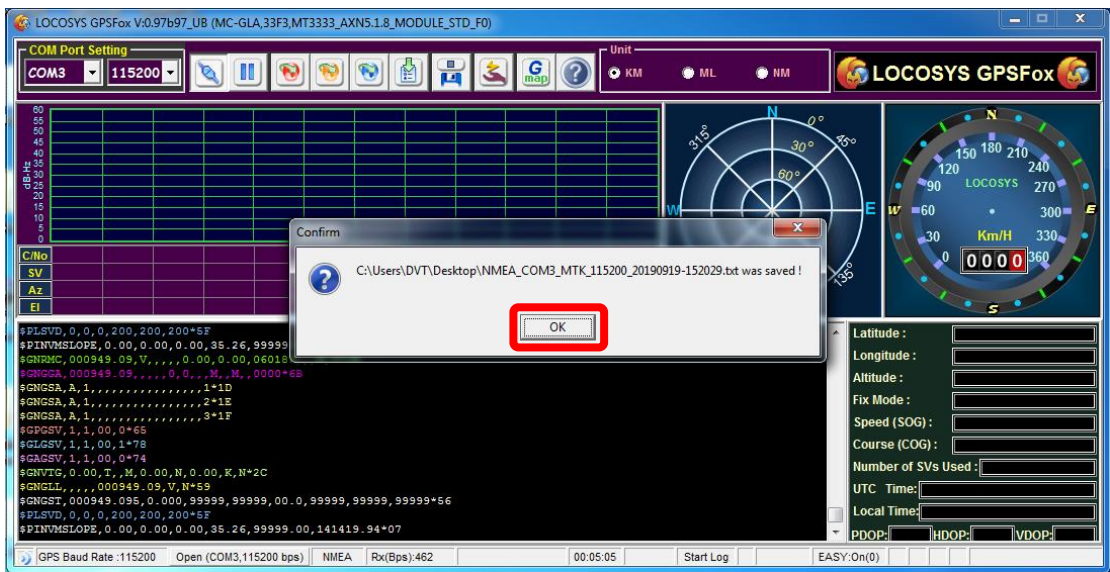


Figure 9-2: Log Data will then be saved accordingly

4. About the GPSFox

The GPSFox is an easy-to-use utility which can display graphically specific NMEA 0183 message received from GNSS receiver. There are five information areas, one function bar and some status indicators in the main form.

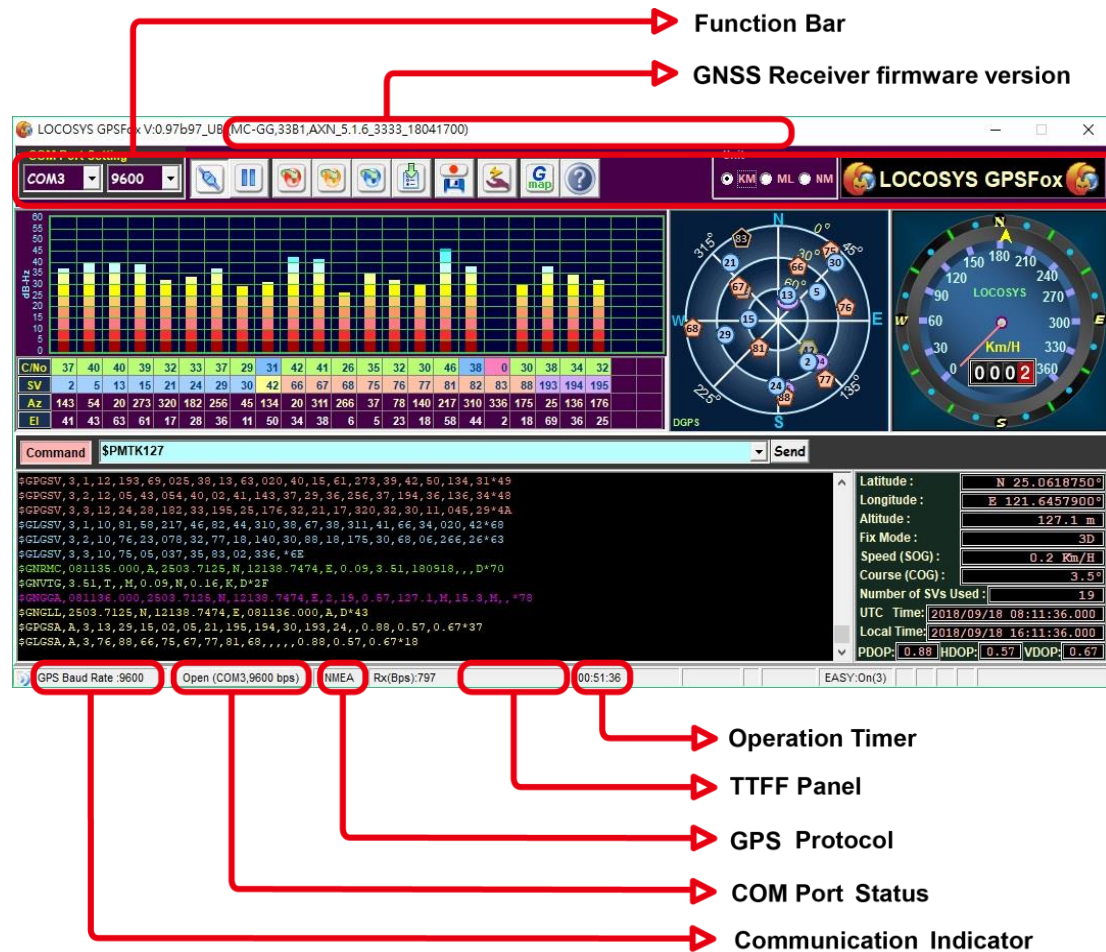


Figure 10: GPSFox

The **Multiband Constellations Signal Level View** displays the satellite number(SV), azimuth(Az), elevation(EI) of tracked and available satellites in a text form. It also shows the C/No value in both text and graphical forms.

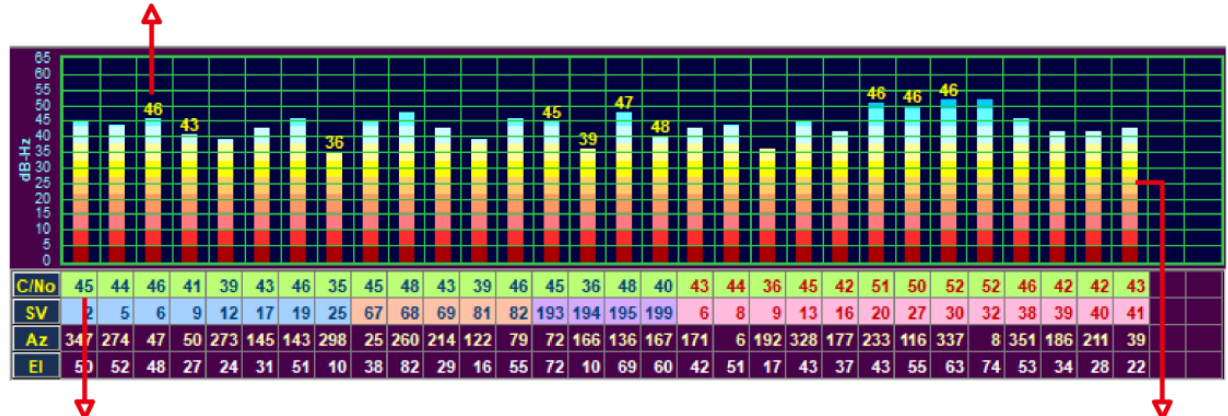
※The C/N value of L1/E1/G1/B1 Band: It displays as both "a number inside the C/No columns" and also "graphical bar".

※The C/N value of L5/E5/B2 Band: It displays as "Yellow Number" above the graphical bar. If there is NO "Yellow Number" above the graphical bar, it means there is no L5/E5/B2 band.

For MC-1010-V2x / MC-1612-V2x/ LS2003x-V2 / LS2303x-V2

For HD-1612-BV2 / LS2008x-BV2/ LS2308x-BV2

Yellow Number :L5/E5/B2 Band C/No

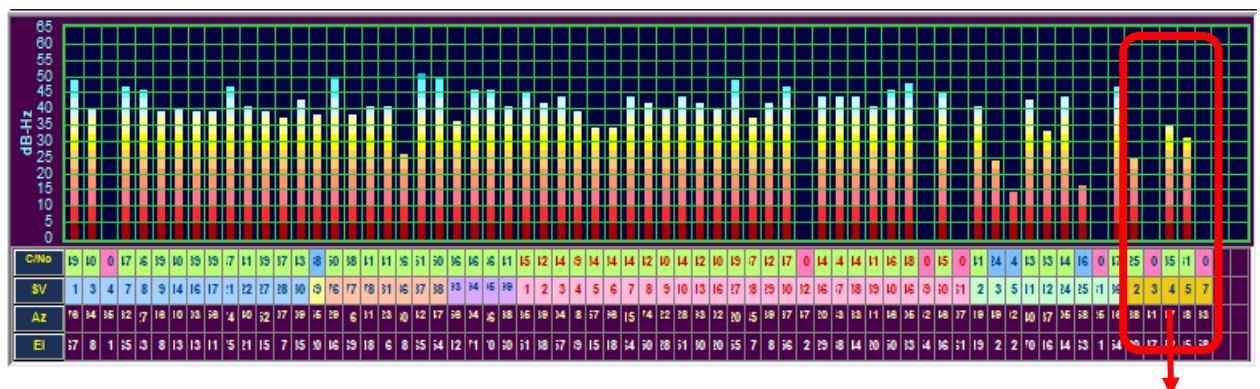


The C/N value : L1/E1/G1/B1 Band C/No

Graphical bar : L1/E1/G1/B1 Band C/No

For MC-1010-V3x / MC-1612-V3x/ LS2003x-V3 / LS2303x-V3

For HD-1612-BV3 / LS2008x-BV3/ LS2308x-BV3



IRNSS Satellite

Figure 11-1: Multiband Constellations Signal Level View

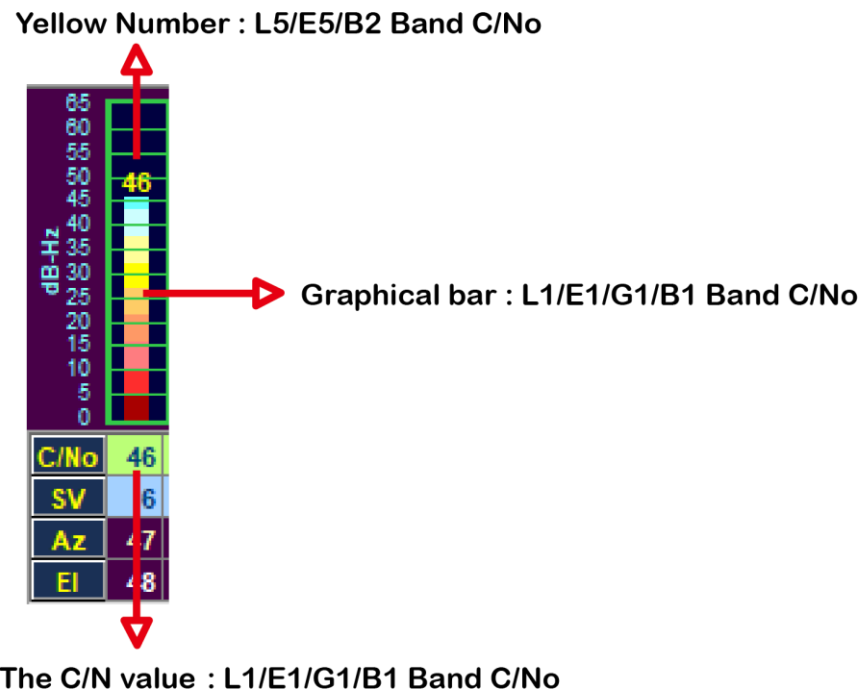


Figure 11-2: Multiband Constellations Signal Level View (Partial Enlarged View)

The **Radar View** displays the azimuth and elevation of tracked and available satellites in a graphical form. The color of the satellite status is:

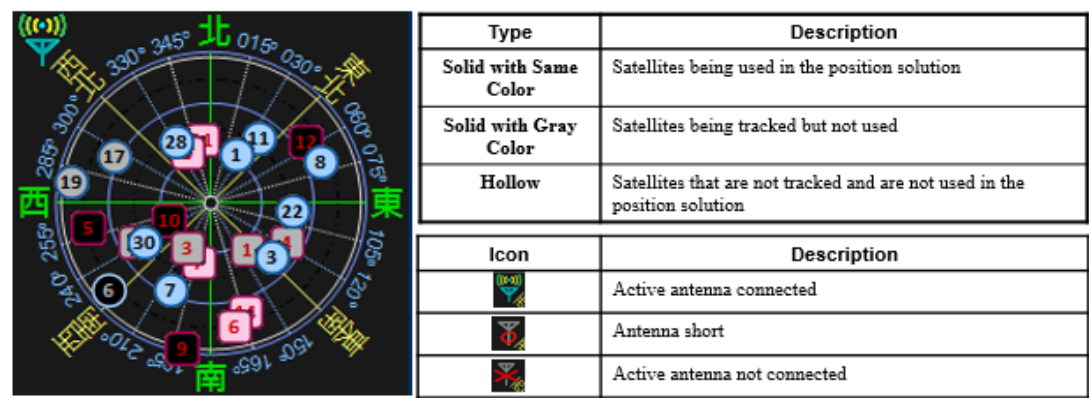


Figure 12: Radar View



Figure 13: COG&SOG View

The **COG&SOG View** displays the GNSS speed and direction in a graphical form. There are three measurement systems can be shown: Metric (Km), Imperial (Mile) or Nautical Mile (Knot). You can select the unit of measurement in the Unit selection box on **Function Bar** by click the item of Km, Mile or Knot.

```
$GPGLL,2503.7150,N,12138.7445,E,033806.000,A,D*5E
$GPGSA,A,3,24,26,21,09,18,29,27,10,15,,,1.29,1.00,0.82+09
$GPGSV,3,1,11,24,71,193,45,27,68,078,42,09,62,174,37,26,58,347,45+70
$GPGSV,3,2,11,42,54,141,38,21,52,303,44,15,47,023,43,18,25,313,41+7F
$GPGSV,3,3,11,10,25,093,40,29,15,224,37,12,04,168,*46
$GPRMC,033806.000,A,2503.7150,N,12138.7445,E,0.03,0.00,040509,,,D*62
$GPVTG,0.00,T,M,0.03,N,0.06,K,D*3D
$GPGGA,033807.000,2503.7150,N,12138.7445,E,2,9,1.00,128.8,M,15.3,M,0000,00
$GPGLL,2503.7150,N,12138.7445,E,033807.000,A,D*5F
$GPGSA,A,3,24,26,21,09,18,29,27,10,15,,,1.29,1.00,0.82+09
$GPGSV,3,1,11,24,71,193,45,27,68,078,42,09,62,174,37,26,58,347,45+70
$GPGSV,3,2,11,42,54,141,38,21,52,303,44,15,47,023,43,18,25,314,41+78
$GPGSV,3,3,11,10,25,093,40,29,15,224,37,12,04,168,*46
$GPRMC,033807.000,A,2503.7150,N,12138.7445,E,0.01,0.00,040509,,,D*61
$GPVTG,0.00,T,M,0.01,N,0.03,K,D*3A
```

Figure 14: NMEA View

The **NMEA View** displays the original NMEA messages received from GNSS receiver. If you want to clear the content of **NMEA View**, just right-click in **NMEA View** area and click the **Clear** item on popup menu.

Latitude :	N 25°03'42.815"
Longitude :	E 121°38'44.810"
Altitude :	120.1 m
Fix Mode :	3D
Speed (SOG) :	0.1 Km/H
Course (COG) :	39.5°
Number of SVs Used :	21
GPS Time:	2016/07/06 10:47:14.000
Local Time:	2016/07/06 18:47:14.000
PDOP:	1.07
HDOP:	0.62
VDOP:	0.88

The **Navigation View** displays the primary navigation information, the units of measurements are determined in the Unit selection box.

Fix Mode	Description
not Fix	Fix not available
2D	2D (<4 SVs used)
3D	3D (>3 SVs used)

Figure 15: Navigation View

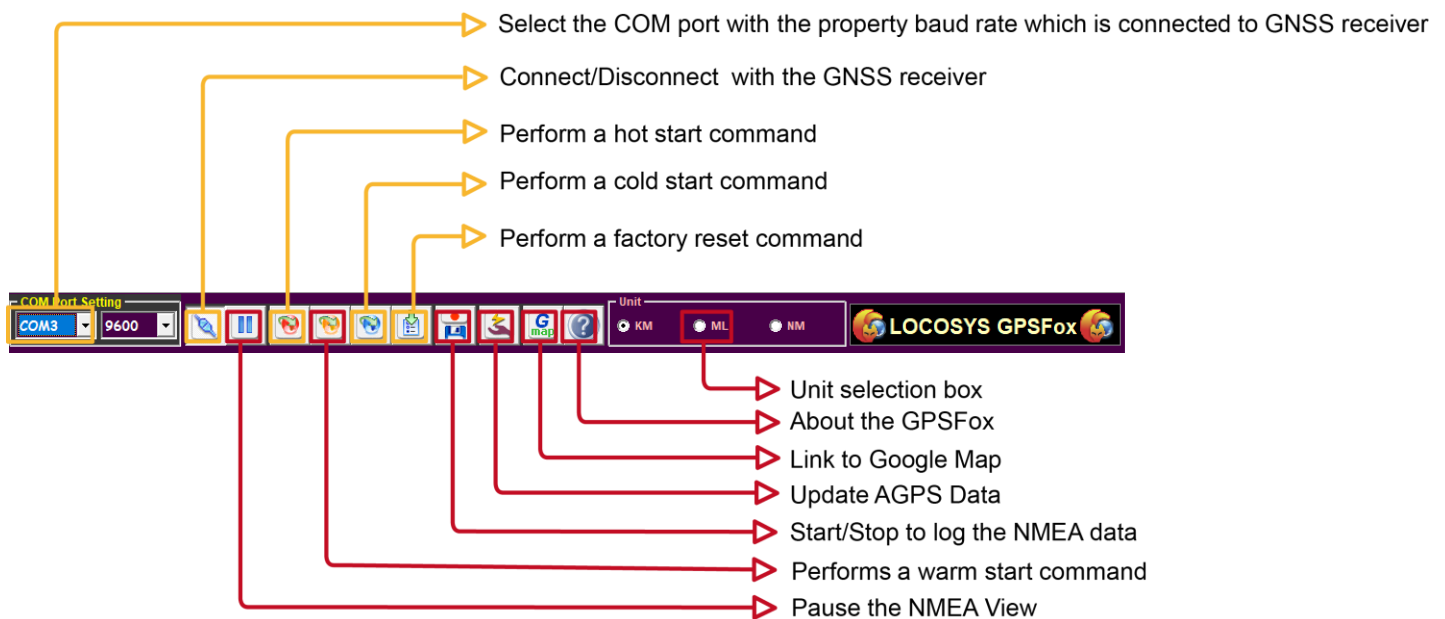


Figure 16: Function Bar



: About the GPSFox



Figure 17: About the GPSFox



: Update AGPS data

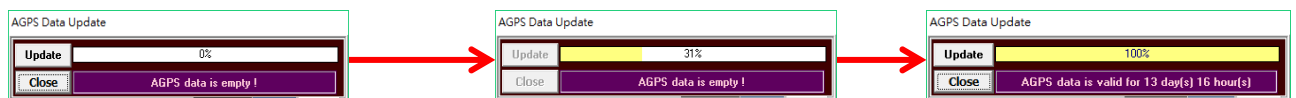


Figure 18: Update AGPS data

Clicks the AGPS button for updating EPO data. If AGPS function is enabled, GPSFox has automatically upload AGPS data to GNSS receiver. Therefore, the TTFF of cold start or warm start with AGPS will faster than them without AGPS aiding.

Desktop or laptop PC needs to connect with Internet when you evaluate the AGPS function.

GNSS Receiver's Firmware version

The firmware version can be found after left top LOCOSYS GPSFox's logo & version.

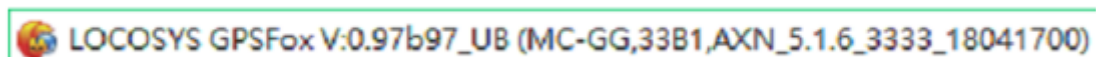


Figure 19: GNSS Receiver's Firmware version

Command line Support:

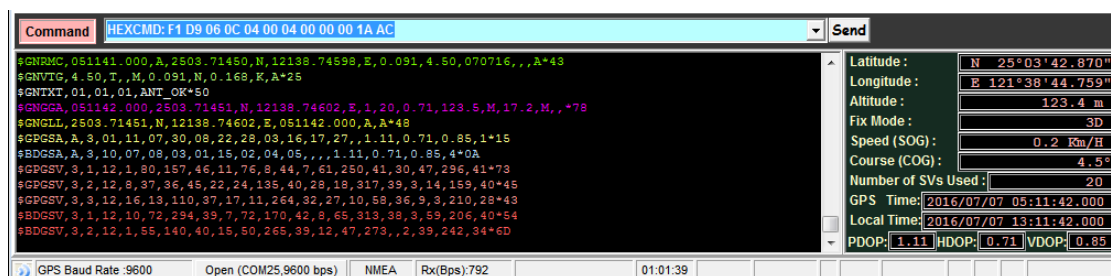


Figure 20: Command line

The version GPSFox can support manual input command. You need to call a hidden command line out. Hold Ctrl key and use mouse to click top right GPSFox logo. An input window will prompt up. Key in “**commandbox**” then clicks okay button. A hidden command line will come out.

You can use the command line to input HED proprietary binary command. Before you input HED binary command you should key in “**HEXCMD:**” for GPSFox accepting.

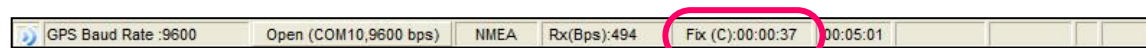


Figure 21: TTFF panel

If you perform a Hot/Warm/Cold Start command, the information of TTFF(Time To First Fix) will display on the TTFF panel.

5. FAQ (Trouble Shooting)

1. Why can't I open the google?

Ans :

- (1) Please check if your computer has been connected to the internet or not.
- (2) Please check if GNSS has been positioned.

2. Why does the screen only show NMEA messages without any color?

Ans :

It is because GPSFox cannot tell which firmware version of your products is.

- (1) For EVK: please unplug and re-plug your USB cable to connect GPSFox.
- (2) For GPS/GNSS Module: please check if “the RX pin of GPS/GNSS module” has been connected to “the TX pin of your own systems” already or not.