

GPSFox Quick Guide

Version 1.7

2018/09/18

LOCOSYS

© LOCOSYS Technology Inc.

Getting Started

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

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>)

Uninstallation :

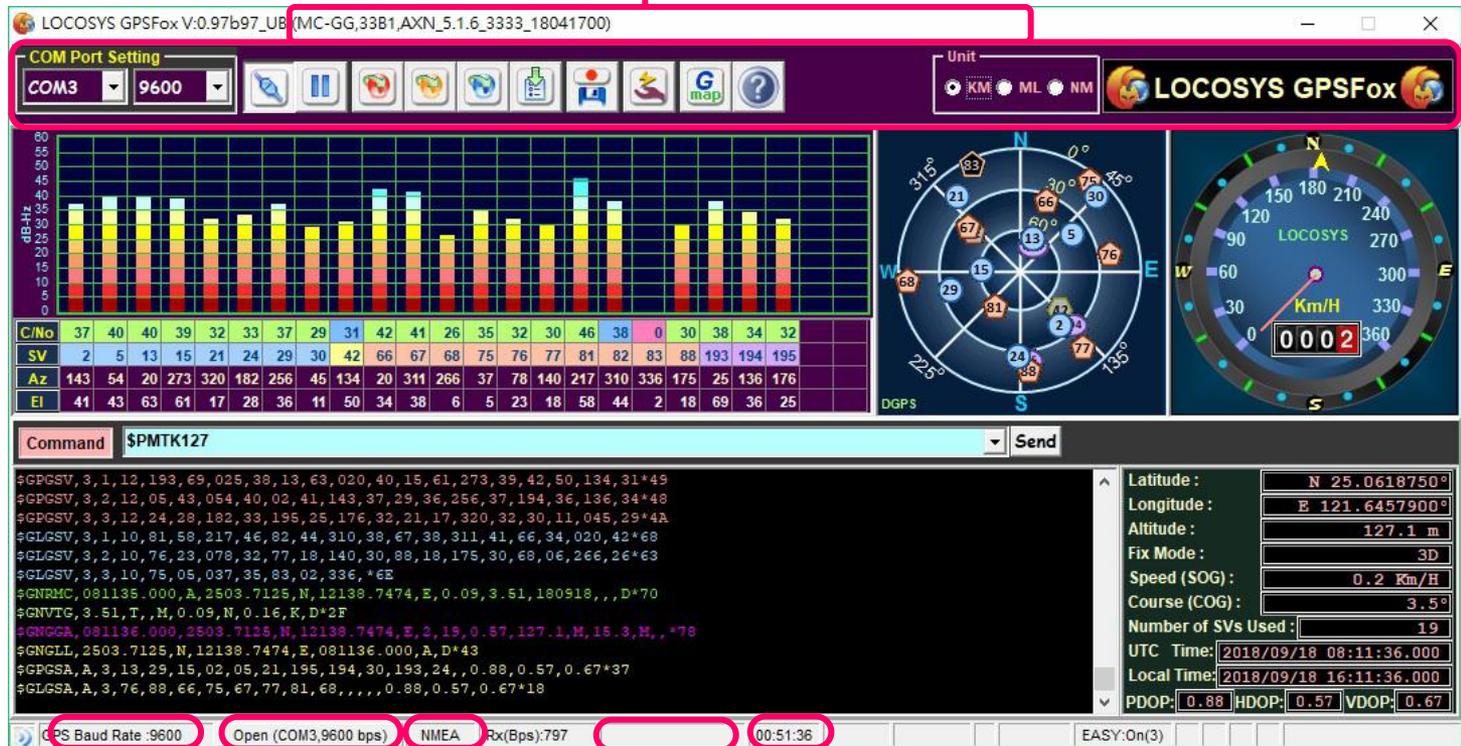
This program does not add any key to system registry. If you don't want it to keep it no more , just delete the provided files and its shortcut from your hard disk.

Launch GPSFox

1. Double click on the GPSFox.exe or the GPSFox's shortcut  on windows desktop.
2. Select the "COM Port" and "Baud Rate" apply to the host PC.
3. Click "Connect to GNSS"  and then the NMEA output messages will display in the NMEA View.

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.

GNSS Receiver firmware version



Function Bar

| C/No | 37 | 40 | 40 | 39 | 32 | 33 | 37 | 29 | 31 | 42 | 41 | 26 | 35 | 32 | 30 | 46 | 38 | 0 | 30 | 38 | 34 | 32 |
|------|-----|----|----|-----|-----|-----|-----|----|-----|----|-----|-----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|
| SV | 2 | 5 | 13 | 15 | 21 | 24 | 29 | 30 | 42 | 66 | 67 | 68 | 75 | 76 | 77 | 81 | 82 | 83 | 88 | 193 | 194 | 195 |
| Az | 143 | 54 | 20 | 273 | 320 | 182 | 256 | 45 | 134 | 20 | 311 | 266 | 37 | 78 | 140 | 217 | 310 | 336 | 175 | 25 | 136 | 176 |
| EI | 41 | 43 | 63 | 61 | 17 | 28 | 36 | 11 | 50 | 34 | 38 | 6 | 5 | 23 | 18 | 58 | 44 | 2 | 18 | 69 | 36 | 25 |

Command: \$PMTK127 Send

```
$GPGSV,3,1,12,193,69,025,38,13,63,020,40,15,61,273,39,42,50,134,31*49
$GPGSV,3,2,12,05,43,054,40,02,41,143,37,29,36,256,37,194,36,136,34*48
$GPGSV,3,3,12,24,28,182,33,195,25,176,32,21,17,320,32,30,11,045,29*4A
$GLGSV,3,1,10,81,58,217,46,82,44,310,38,67,38,311,41,66,34,020,42*68
$GLGSV,3,2,10,76,23,078,32,77,18,140,30,88,18,175,30,68,06,266,26*63
$GLGSV,3,3,10,75,05,037,35,83,02,336,*6E
$GNRMC,081135.000,A,2503.7125,N,12138.7474,E,0.09,3.51,180918,,D*70
$GNVTG,3.51,T,,M,0.09,N,0.16,K,D*2F
#NGGA,081136.000,2503.7125,N,12138.7474,E,3.19,0.57,127.1,M,15.3,M,*78
$GNGLL,2503.7125,N,12138.7474,E,081136.000,A,D*43
$GPGSA,A,3,13,29,15,02,05,21,195,194,30,193,24,,0.88,0.57,0.67*37
$GLGSA,A,3,76,88,66,75,67,77,81,68,,,,,0.88,0.57,0.67*18
```

GPS Baud Rate: 9600 Open (COM3,9600 bps) NMEA Rx(Bps):797 00:51:36 EASY:On(3)

Communication Indicator

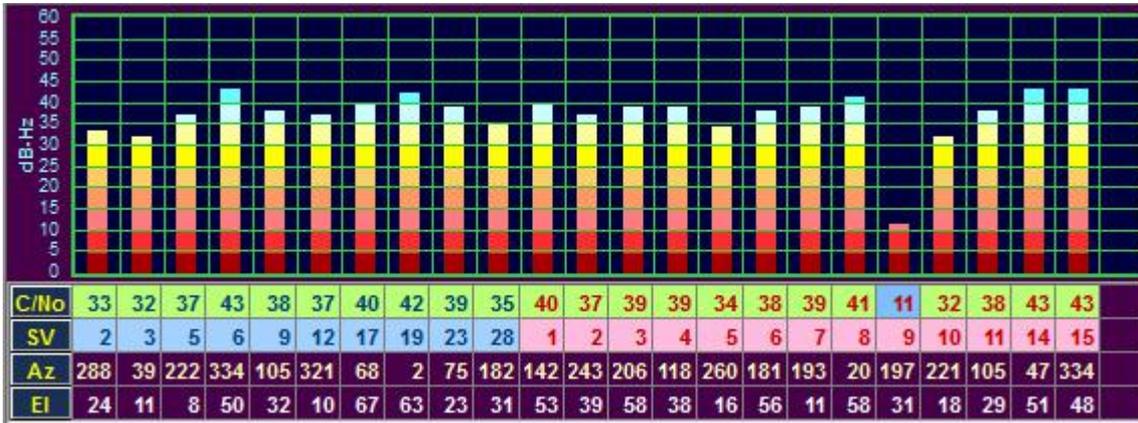
COM Port Status

GPS Protocol

TTFP Panel

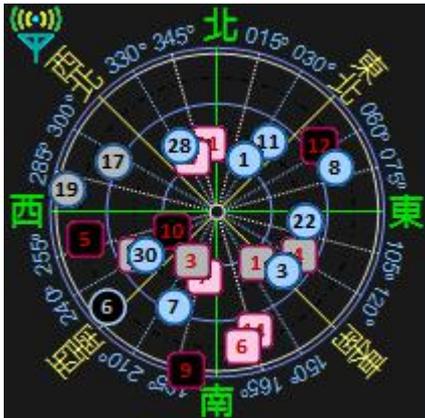
Operation Timer

✦ Signal Level View



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

✦ Radar 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:

| Type | Description |
|------------------------------|---|
| Solid with Same Color | Satellites being used in the position solution |
| Solid with Gray Color | Satellites being tracked but not used |
| Hollow | Satellites that are not tracked and are not used in the position solution |

| Icon | Description |
|---|------------------------------|
|  | Active antenna connected |
|  | Antenna short |
|  | Active antenna not connected |

★ 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.

★ NMEA View

```

$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
  
```

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.

✦ Navigation View

| | |
|----------------------|-------------------------|
| 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) |

✦ Function Bar

The Function Bar in LOCOSYS GPSFox contains the following elements and functions:

- COM Port Setting:** A dropdown menu showing 'COM3' and a baud rate of '9600'.
- Navigation Icons:** A series of icons for navigation and data management: a pencil (edit), a pause symbol (pause NMEA view), a globe (warm start), a globe with a refresh symbol (update AGPS data), a globe with a location pin (link to Google Map), a globe with a refresh symbol (about GPSFox), a globe with a refresh symbol (start/stop NMEA logging), a globe with a refresh symbol (factory reset), a globe with a refresh symbol (cold start), a globe with a refresh symbol (hot start), a globe with a refresh symbol (connect/disconnect), and a globe with a refresh symbol (COM port setting).
- Unit Selection:** Radio buttons for 'KM', 'ML', and 'NM'.
- LOCOSYS GPSFox Logo:** The application logo on the right side.

Labels with arrows pointing to the icons in the Function Bar:

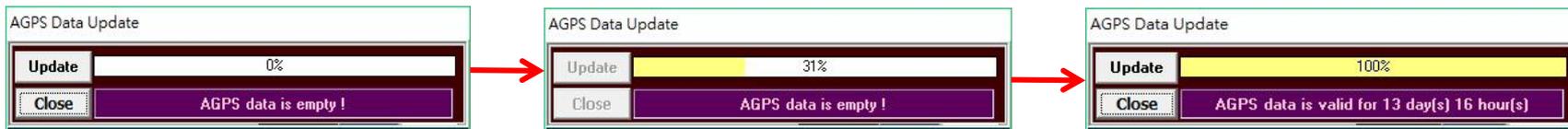
- Select the COM port with the property baud rate which is connected to GNSS receiver
- Connect/Disconnect with the GNSS receiver
- Perform a hot start command
- Perform a cold start command
- Perform a factory reset command
- Unit selection box
- About the GPSFox
- Link to Google Map
- Update AGPS Data
- Start/Stop to log the NMEA data
- Performs a warm start command
- Pause the NMEA View



About the GPSFox :



: 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 TTFB of cold start or warm start with AGPS will faster than them without AGPS aiding.

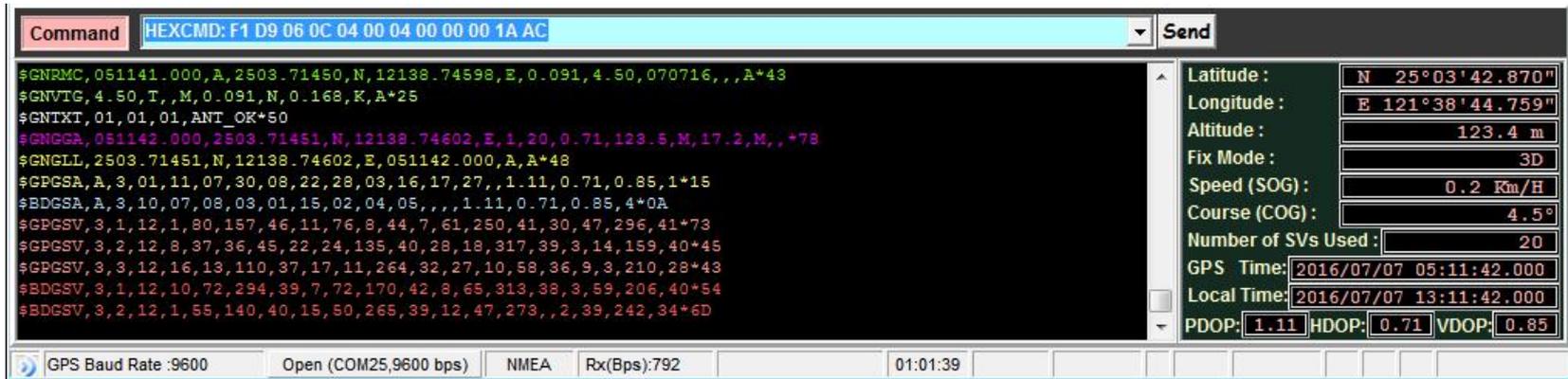
Desktop or labtop PC needs to connect with Internet when you evaluate the AGPS function.

GNSS Receiver's Firmware version

LOCOSYS GPSFox V:0.97b97_UB (MC-GG,33B1,AXN_5.1.6_3333_18041700)

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

Command line Support:



The screenshot shows the GPSFox software interface. At the top, a "Command" field contains the hexadecimal string "HEXCMD: F1 D9 06 0C 04 00 04 00 00 00 1A AC". Below this, a large text area displays various NMEA sentences, including \$GNRMC, \$GNVTG, \$GNTXT, \$GNGGA, \$GNGLL, \$GPGSA, \$BDGSA, \$GPGSV, and \$BDGSV. On the right side, a status panel displays real-time GPS data: Latitude (N 25°03'42.870"), Longitude (E 121°38'44.759"), Altitude (123.4 m), Fix Mode (3D), Speed (SOG) (0.2 Km/H), Course (COG) (4.5°), Number of SVs Used (20), GPS Time (2016/07/07 05:11:42.000), Local Time (2016/07/07 13:11:42.000), PDOP (1.11), HDOP (0.71), and VDOP (0.85). At the bottom, a status bar shows "GPS Baud Rate :9600", "Open (COM25,9600 bps)", "NMEA", "Rx(Bps):792", and a timer at "01:01:39".

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.



This is a close-up screenshot of the status bar from the GPSFox software. It shows several fields: "GPS Baud Rate :9600", "Open (COM10,9600 bps)", "NMEA", "Rx(Bps):494", and a panel labeled "Fix (C):00:00:37" which is circled in red. To the right of this panel is a timer showing "00:05:01".

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