



GlobalTop Technology Inc.

MT3339 PC Tool Operation Manual

Revision: 0.1.0

Technical Document

MT3339 PC Tool for MT3339 Based GPS Modules

This document is the exclusive property of GlobalTop Tech Inc. and should not be distributed, reproduced, into any other format without prior permission of GlobalTop Tech Inc. Specifications subject to change without prior notice.

Copyright © 2011 GlobalTop Technology Inc. All Rights Reserved.

No. 16, Nan-Ke 9th Road, Science-Based Industrial Park, Tainan, 741, Taiwan, R.O.C.

Tel: +886-65051268 / Fax: +886-6-5053381 / Email: sales@gtop-tech.com / Web: www.gtop-tech.com



Version History

Title: GlobalTop MT3339 PC Tool Operation Manual
Subtitle: For MT3339 GPS Modules
Doc Type: Operation Manual
Doc Id:

Revision	Date	Author	Description
0.1.0	2011/09/23	Winson	First Release
0.1.1	2011/11/04	Winson	Fixed content of LOCUS table Fixed display with special sentence Support 10Hz



Table of Contents

1. Introduction	4
2. Setup	4
2.1 Install CP210X USB VCP Driver.....	4
2.2 Install MT3339 PC tool.....	7
3. Operation	10
3.1 Main Screen	10
3.2 Skyplot	13
3.3 NEMA	14
3.4 Standby Mode.....	16
3.5 Periodic Mode.....	17
3.6 AlwaysLocate Mode.....	18
3.7 EPO in Flash	19
3.8 AIC.....	20
3.8 LOCUS	23
3.9 EASY	28

1. Introduction

The MT3339 PC tool is designed to conveniently control and execute commands, as well as adjust settings for feature list that is available for **MT3339 chipset based GPS modules**.

2. Setup

2.1 Install CP210x USB VCP Driver

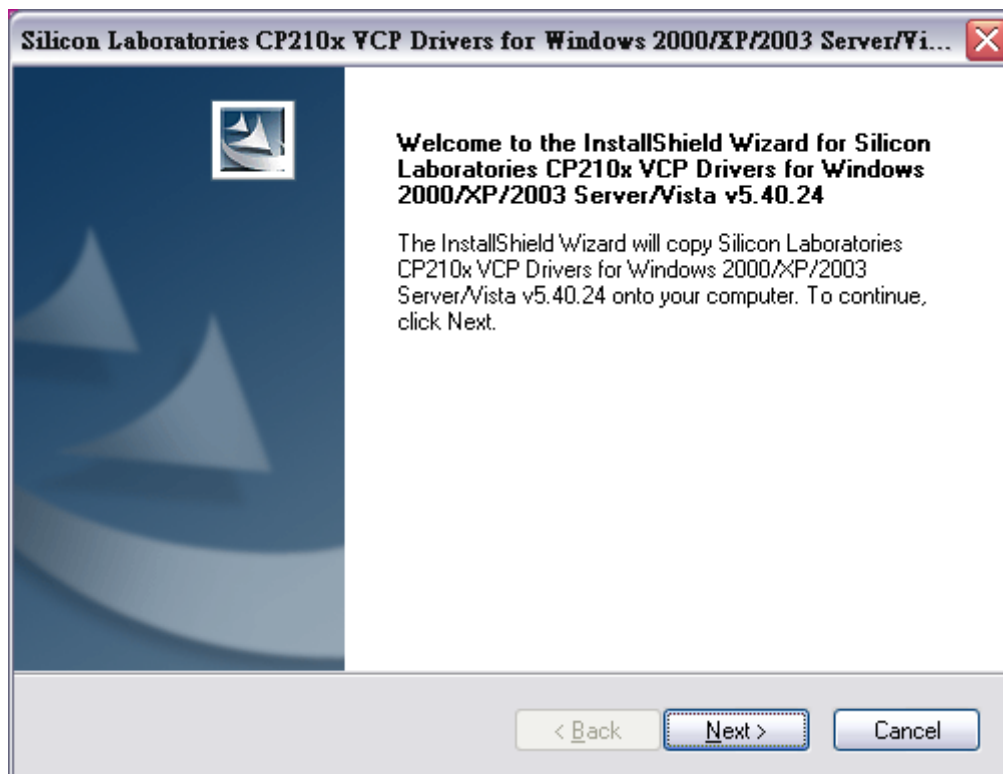


Figure 2.1: Installation Screen for CP210x USB VCP Driver-1

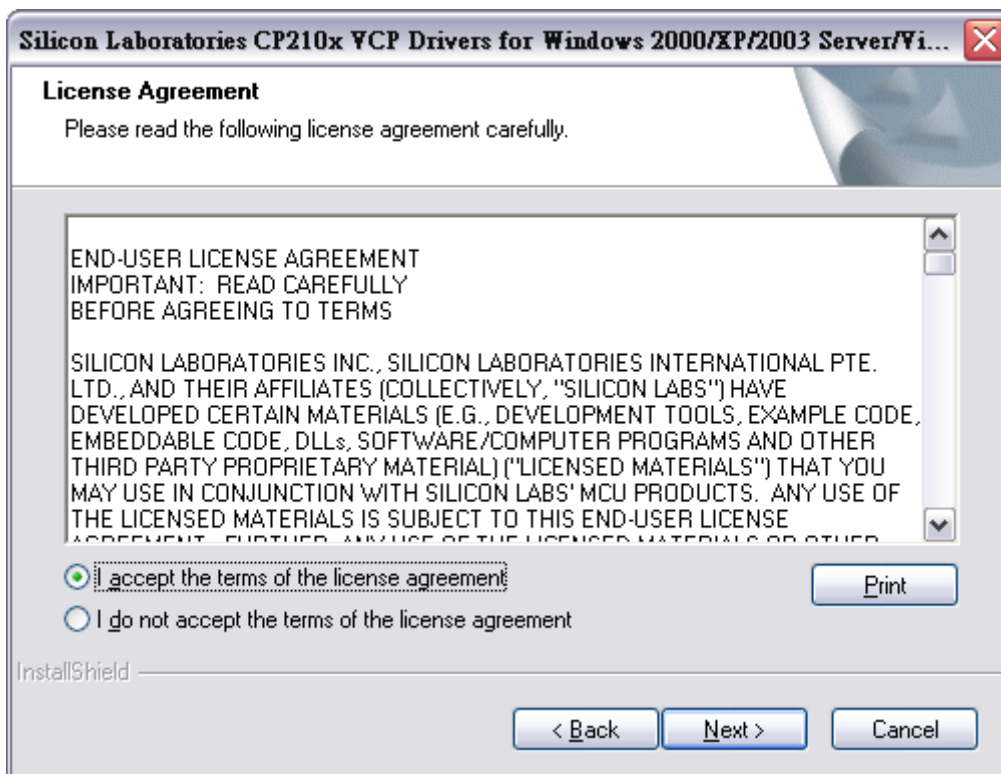


Figure 2.2: Installation Screen for CP210x USB VCP Driver-2

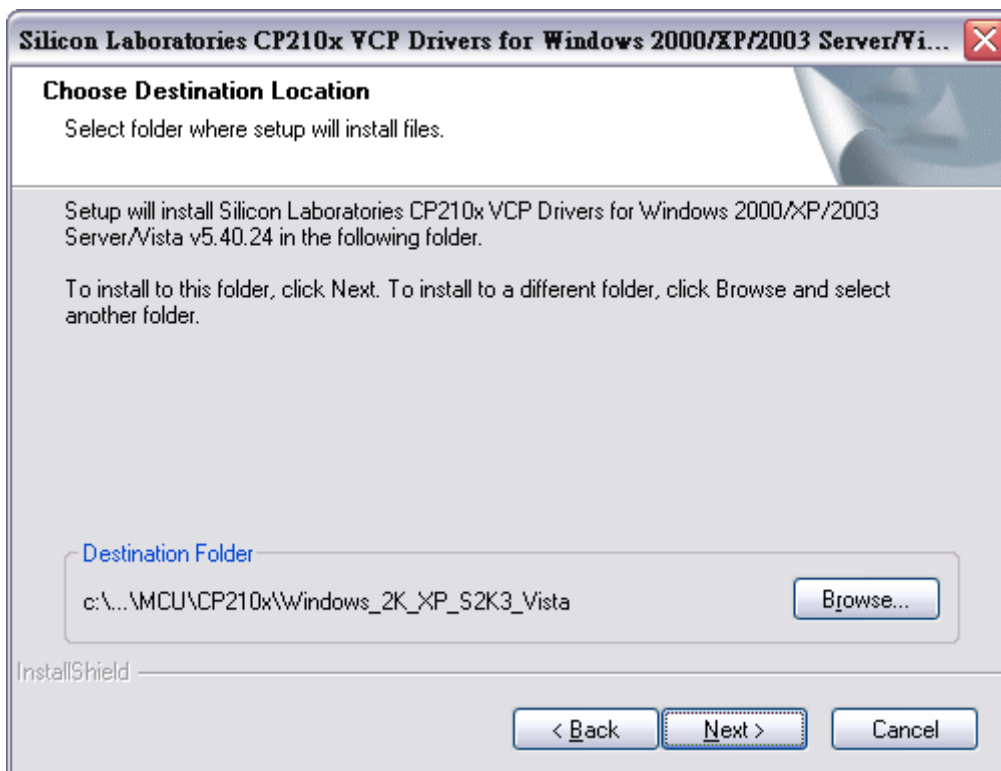


Figure 2.3: Installation Screen for CP210x USB VCP Driver-3

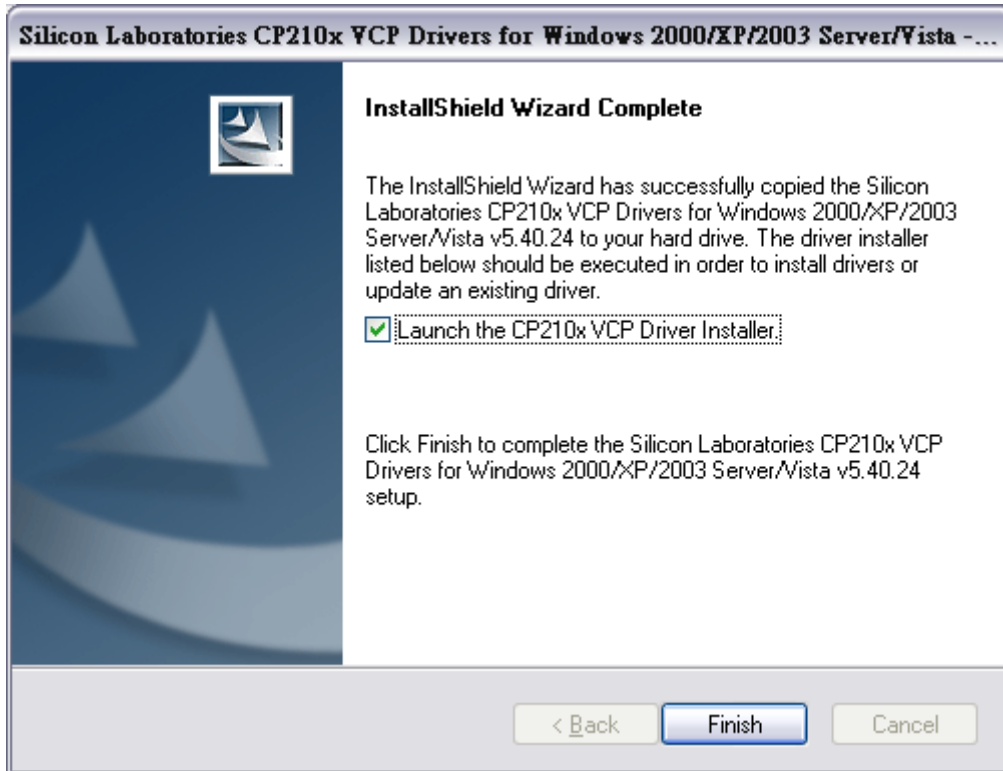


Figure 2.4: Installation Screen for CP210x USB VCP Driver-4



Figure 2.5: Installation Screen for CP210x USB VCP Driver-5



Figure 2.6: Message box appears when CP210x USB VCP Driver is successfully installed

After the driver is successfully installed and the device is connected to PC, you should be able to see the device and its com port number in **Device Manager** under **Com Ports**.

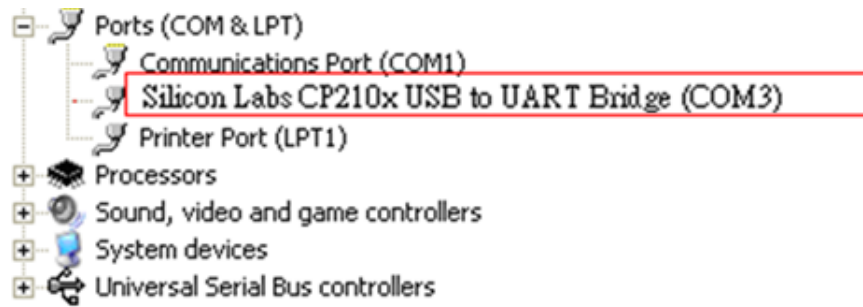


Figure 2.7: Device Manager after device is connected to PC

2.2 Install MT3339 PC tool

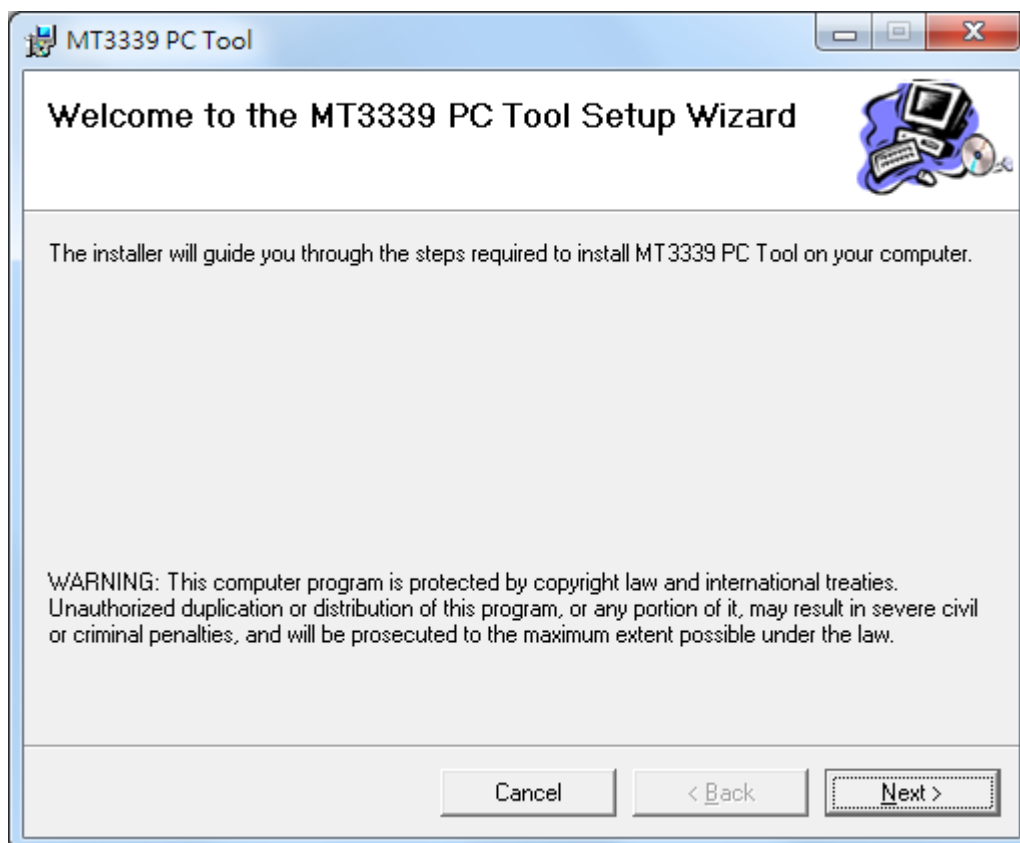


Figure 2.8: Installation Screen for MT3339 PC tool-1

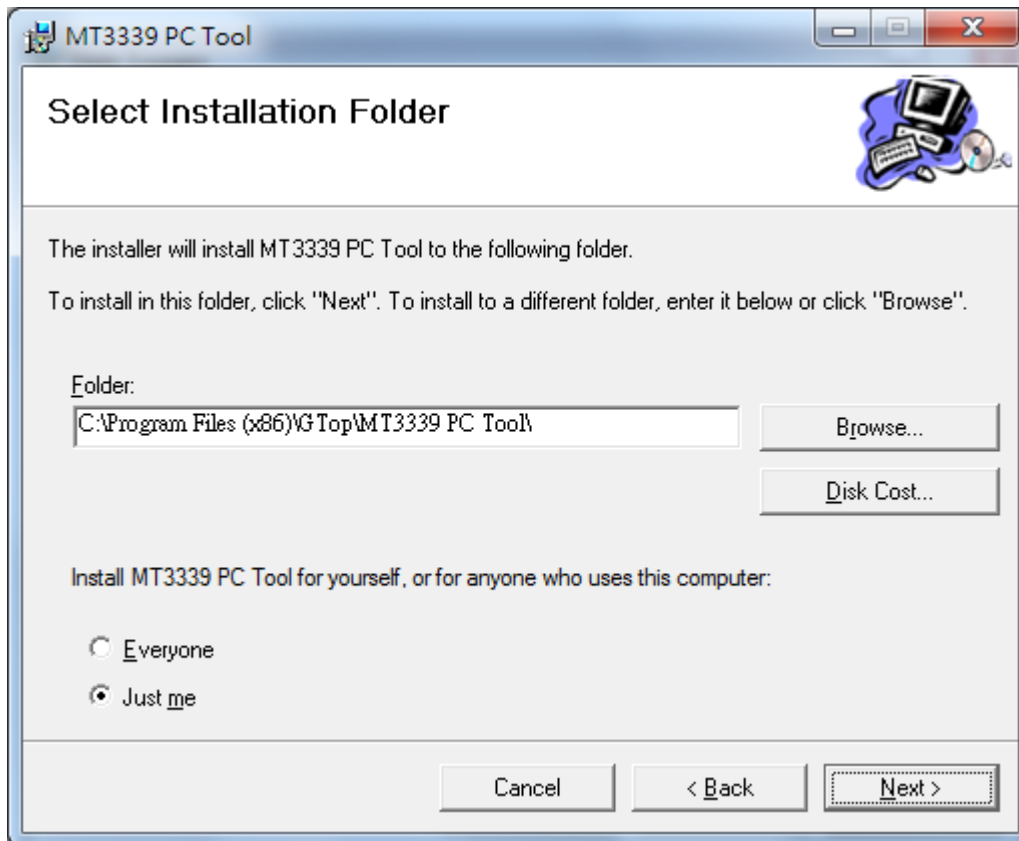


Figure 2.9: Installation Screen for MT3339 PC tool-2

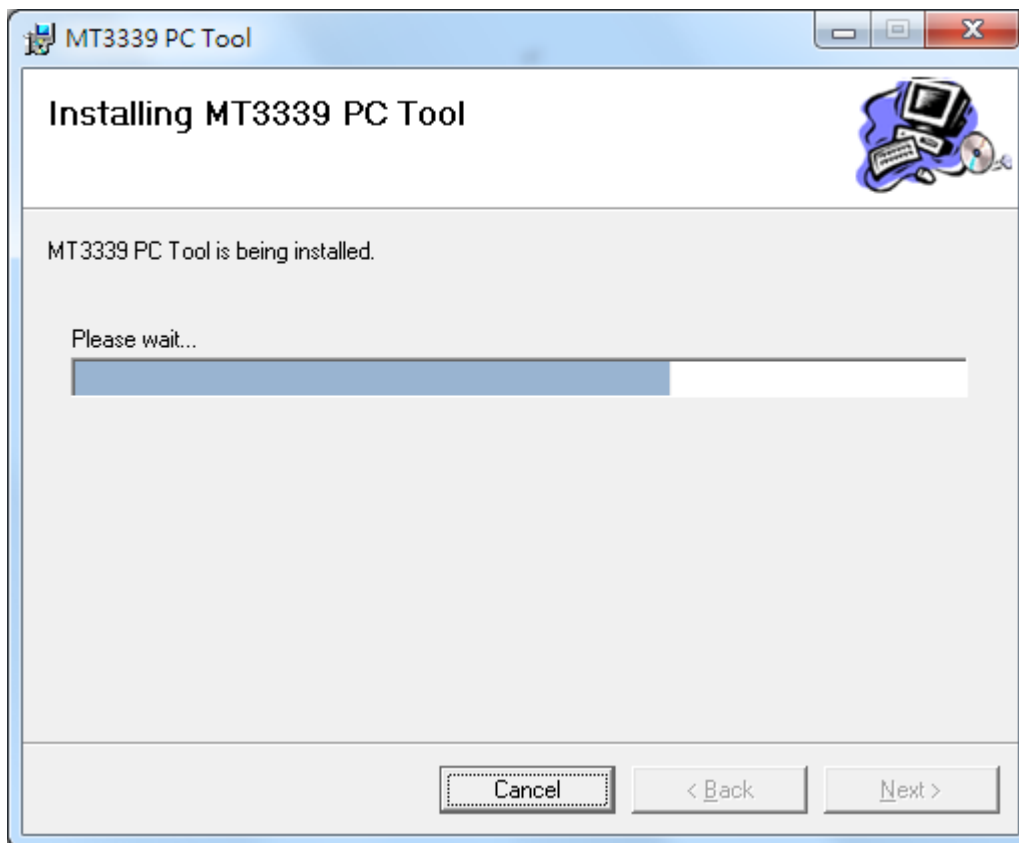


Figure 2.10: Installation Screen for MT3339 PC tool-3

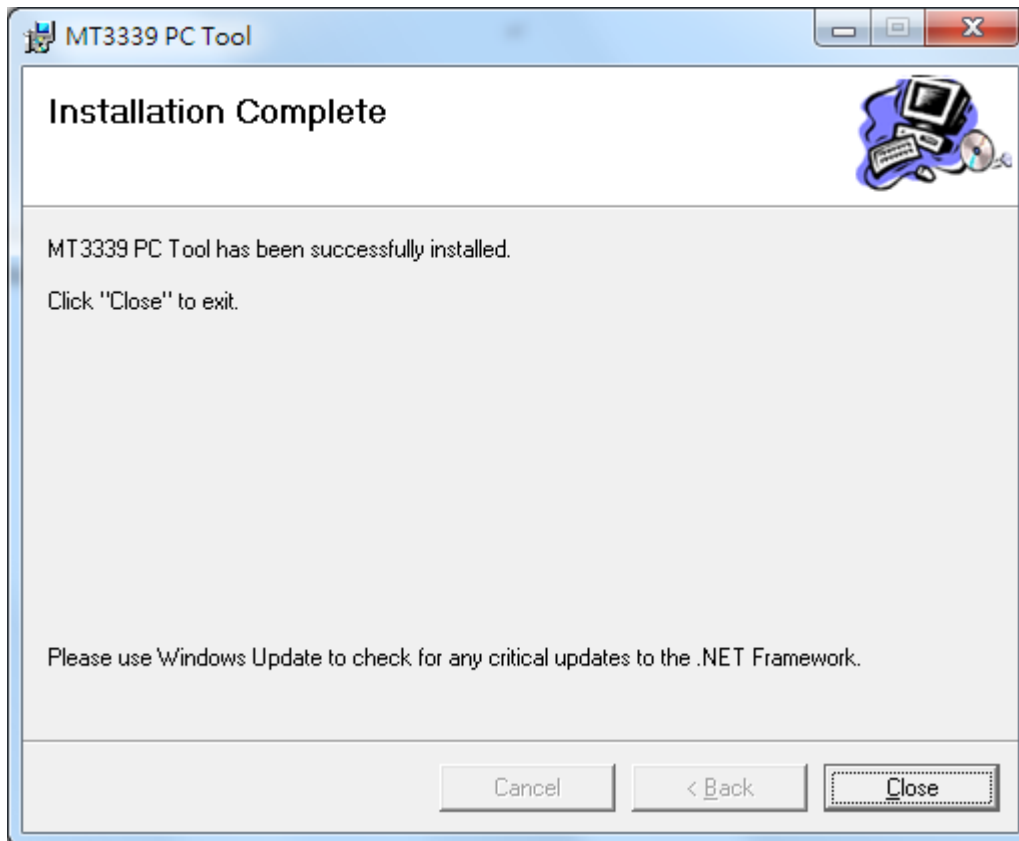


Figure 2.11: Installation Screen for MT3339 PC tool-4

After the application is successfully installed, a shortcut for the MT3339 PC tool would automatically be placed on the PC desktop.

3. Operation

3.1 Main Screen



Figure 3.1: Main program screen

Com Port Setting:

Please choose the correct Com Port and Baud rate then click Open button. If there are errors with the connection, an error box like figure 3.2 will pop up.



Figure 3.2: Com Port error message

After connection is successfully established, the main screen will show Date, Time, Latitude, Longitude, Fix type and CNR information. Firmware version is shown on tool title (figure 3.3).

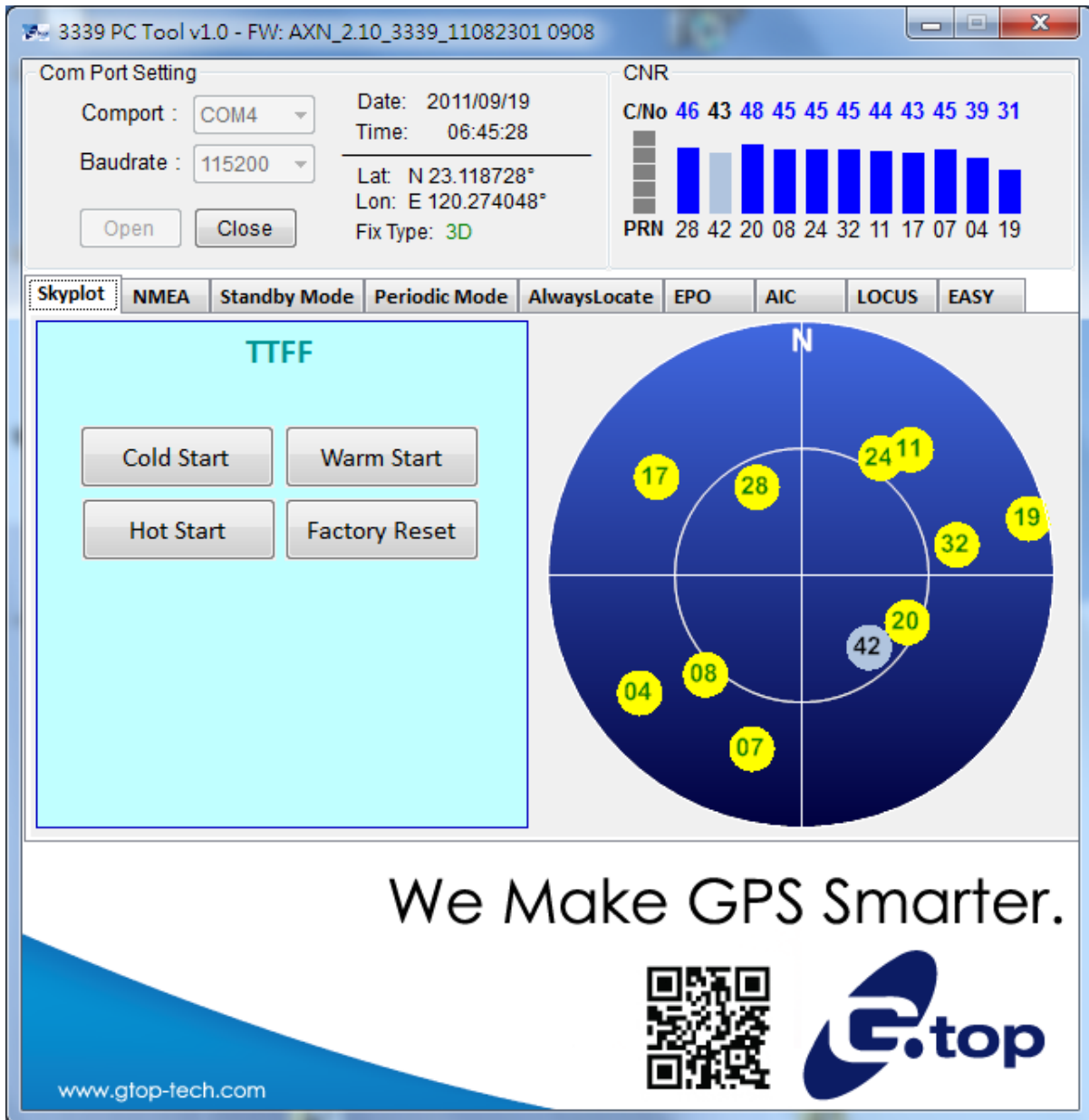


Figure 3.3: After connection is successfully established screen

3.2 Skyplot

There are two features in Skyplot page (figure 3.4). Right side picture indicates satellite position. In TTF, it can force GPS module to do Cold Start, Warm Start, Hot Start and Factory Reset via these command buttons.

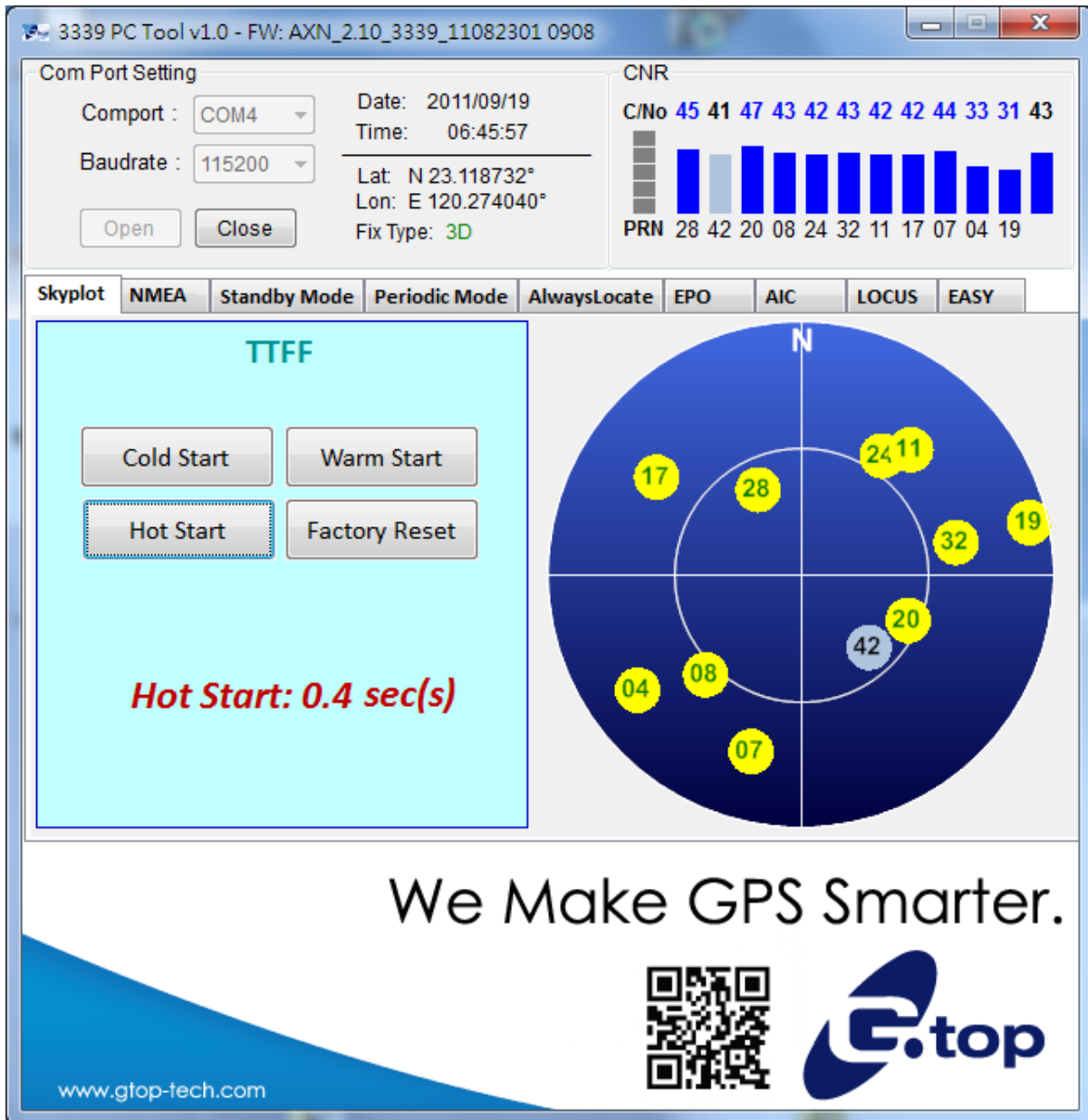


Figure 3.4: skyplot tab screen

3.3 NMEA

NMEA output sentences can be found in this NMEA tab (figure 3.5).

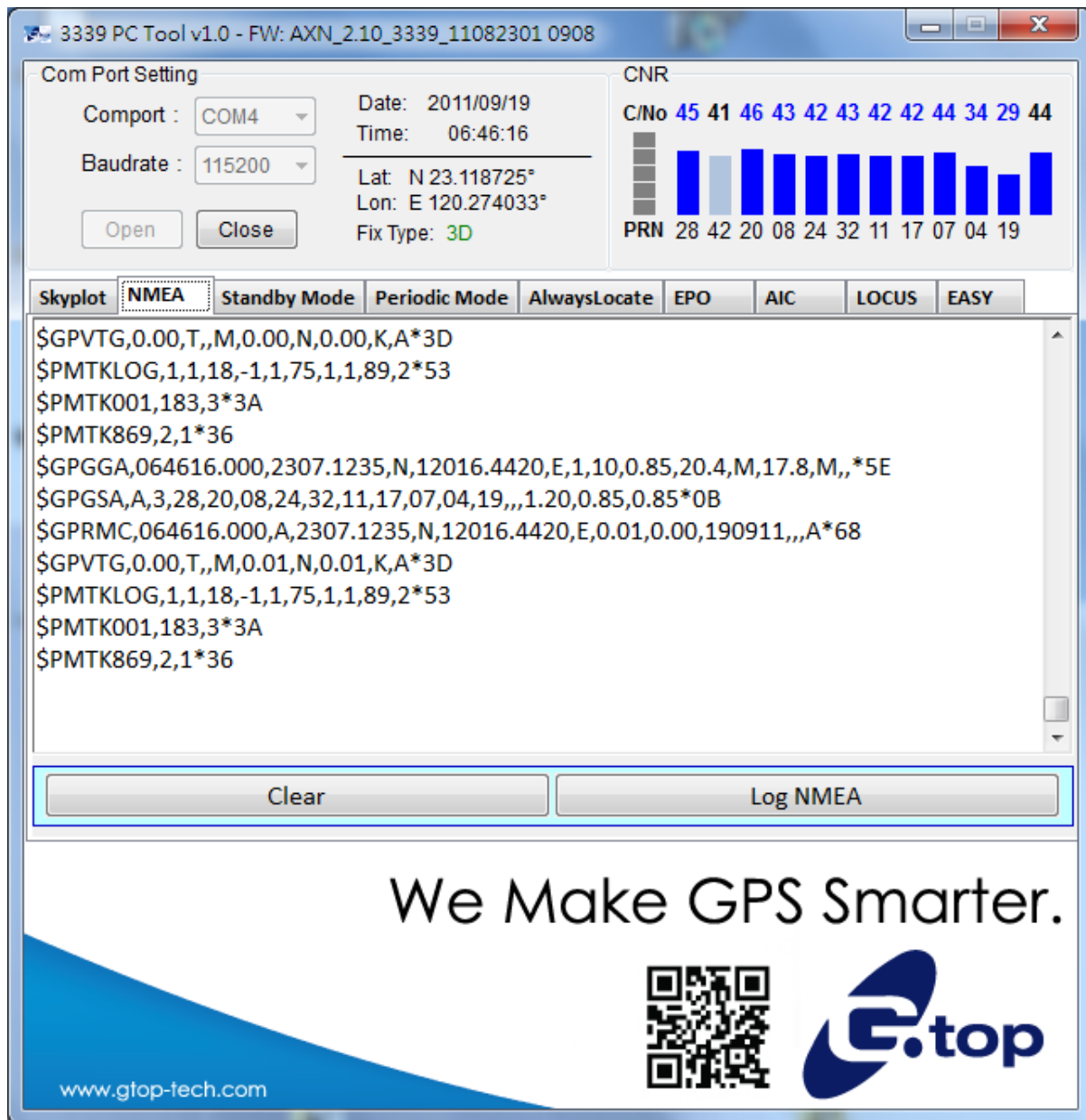


Figure 3.5: NMEA tab screen

Select "Log NMEA" button to record all sentences (figure 3.6).

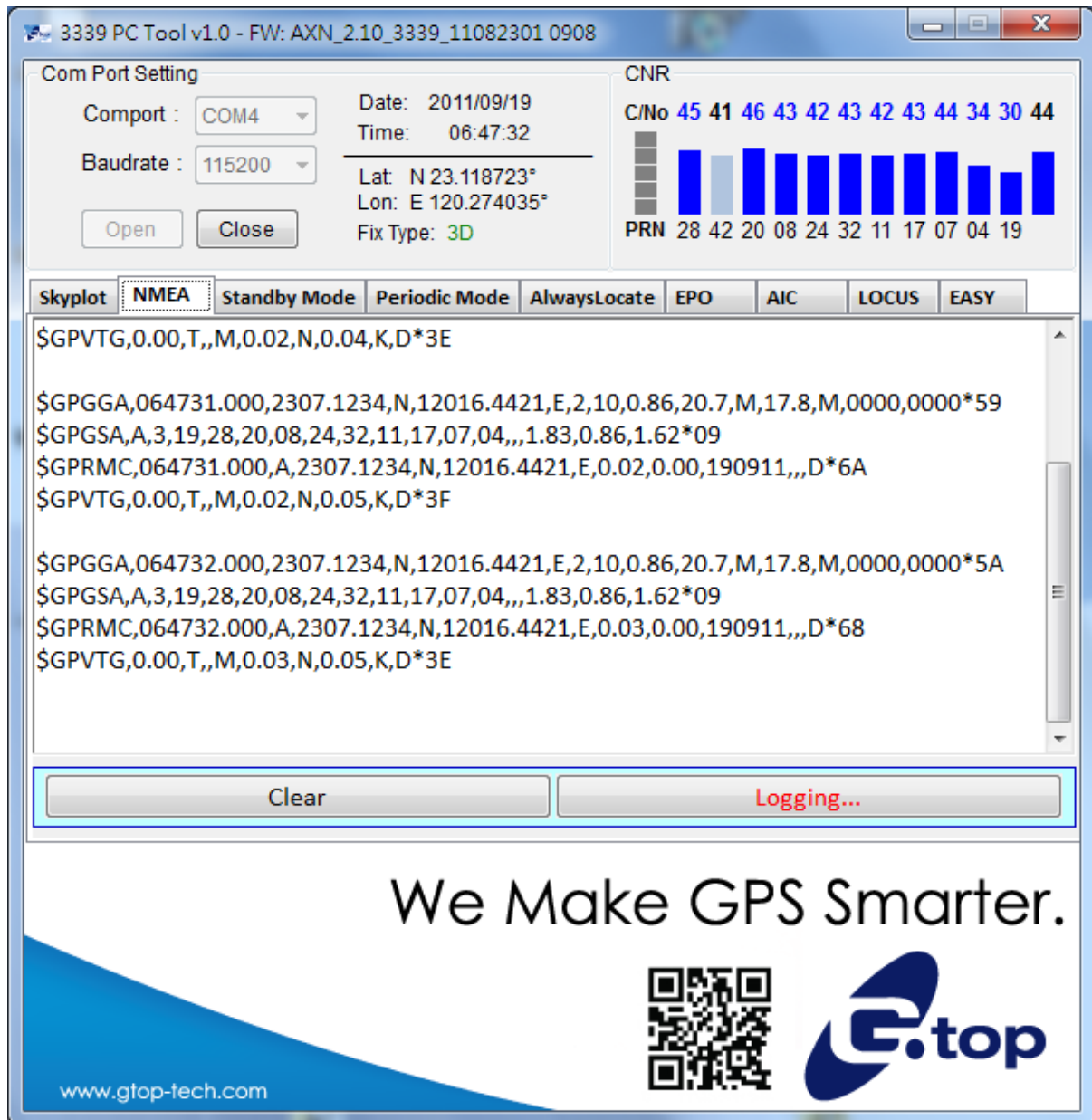


Figure 3.6: NMEA tab logging NMEA screen

3.4 Standby Mode

Standby mode is one of MT3339 power saving modes. The graph displays power status.

Press the “Set Standby Mode” button to enter standby mode or press again the same button to exit standby mode (figure 3.7).

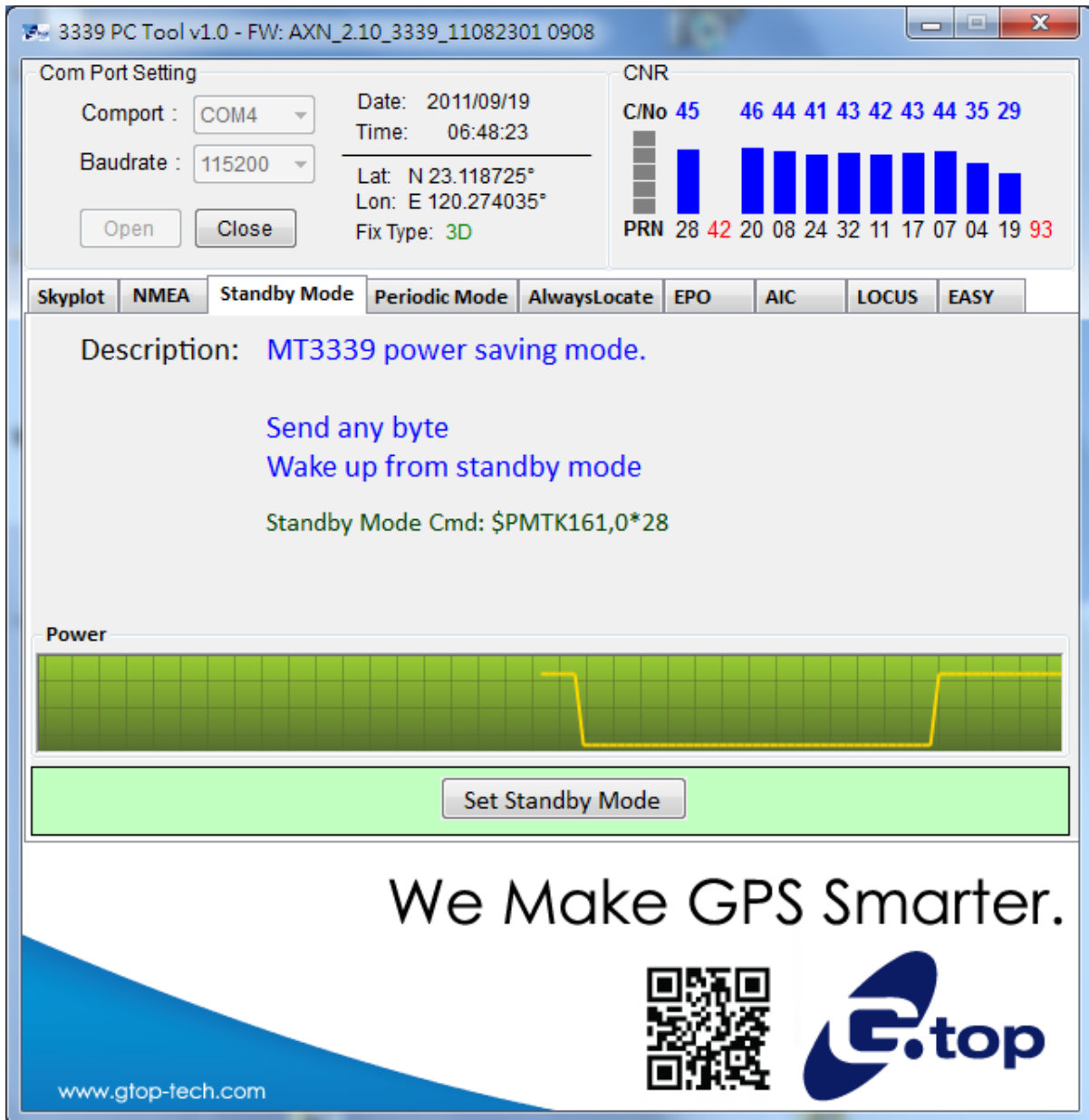


Figure 3.7: Standby Mode tab screen

3.5 Periodic Mode

Periodic Mode enable GPS module can enter and exit sleep state to archive maximum power saving.

After setting parameters, select Set “Periodic Mode” button to perform this command. The Set EPH Receiver button allows GPS module extends the time for ephemeris data receiving (figure 3.8).

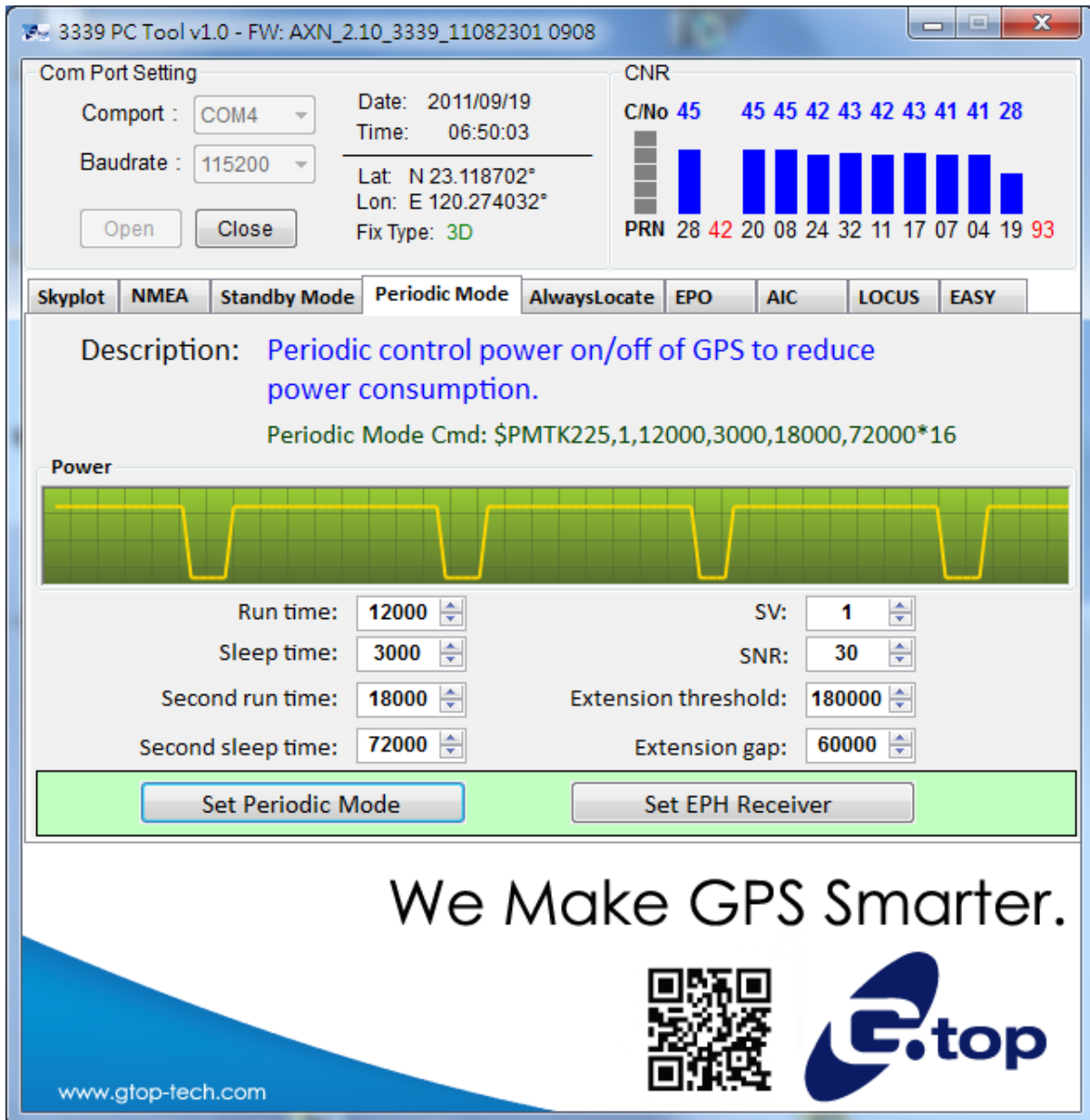


Figure 3.8: Periodic Mode tab screen

3.6 AlwaysLocate Mode

AlwaysLocate is an intelligent controller of MT3339 periodic mode. Depending on the environment and motion conditions, MT3339 can adaptive adjust the on/off time to achieve balance of positioning accuracy and power consumption.

Select On or off radio button then press Set “AlwaysLocate Mode” button to execute command (figure 3.9).



Figure 3.9: AlwaysLocate Mode tab screen

3.7 EPO in Flash

EPO (Extended Prediction Orbit) data service World leading technology for supporting 7/14-days orbit predictions to customers.

Choose 7days or 14days radio button then press “Download” button. Your EPO Server will be downloading this EPO data and automatically update to GPS module (figure 3.10).

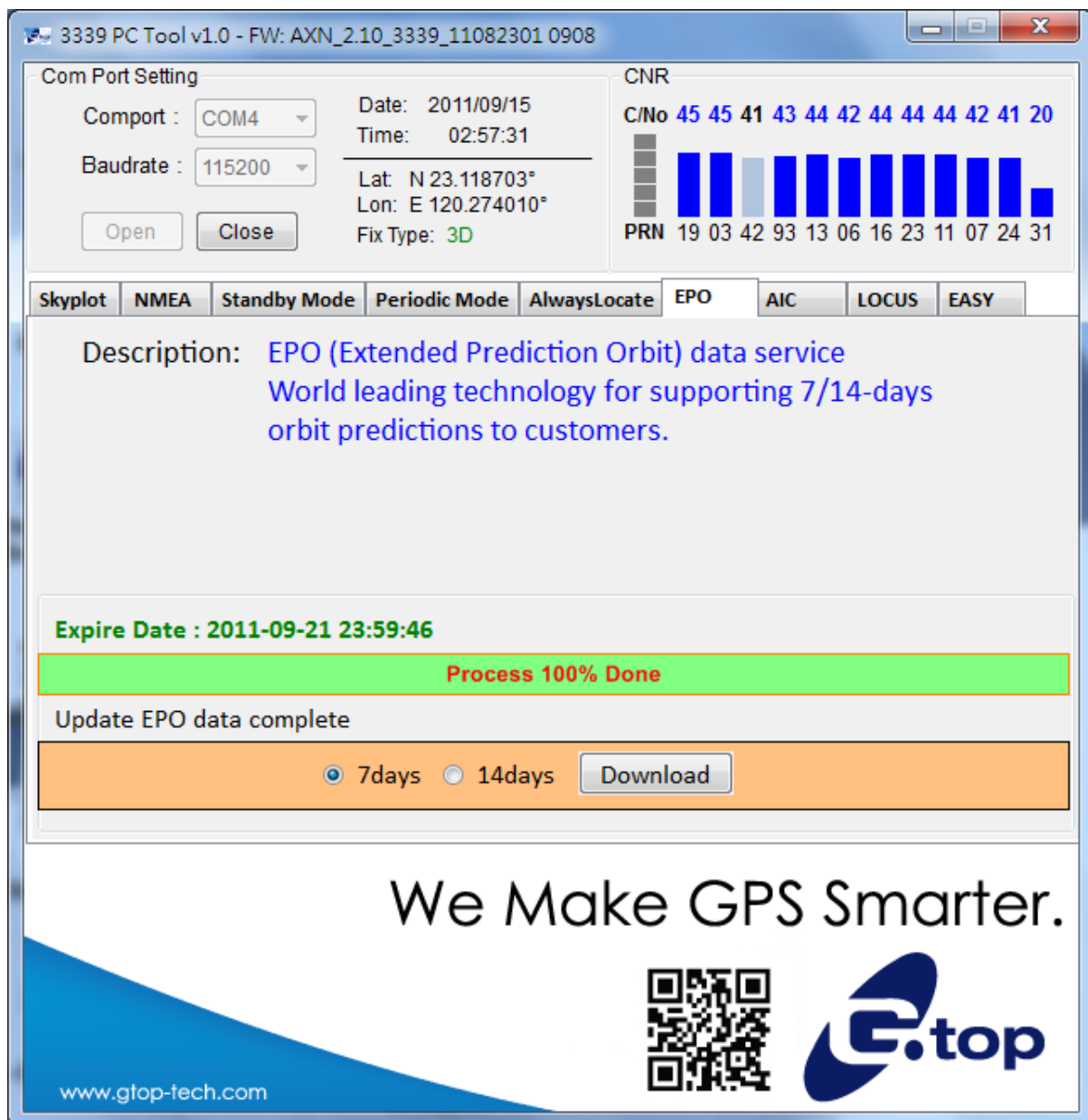


Figure 3.10: EPO update complete screen

3.8 AIC

Active Interference Cancellation (AIC) feature provides effective narrow-band interference and jamming elimination. The GPS signal could be recovered from the jammed signal, and let user get better navigation quality.

Select Enable or Disable radio button then click "Set AIC" button to send command. The graph here shows GPS fix status.

Use GPS simulator and jamming signal generator (1575 MHz, -70dBm) to test AIC function. Firstly, execute Enable AIC function command, and get CNR at 43 (figure 3.11). Secondly, input jamming signal, CNR reduces to 26 but 3D fix successful (figure 3.12). Thirdly, perform Disable AIC function command; however, the CNR is almost down to 0 and get no fix (figure 3.13).

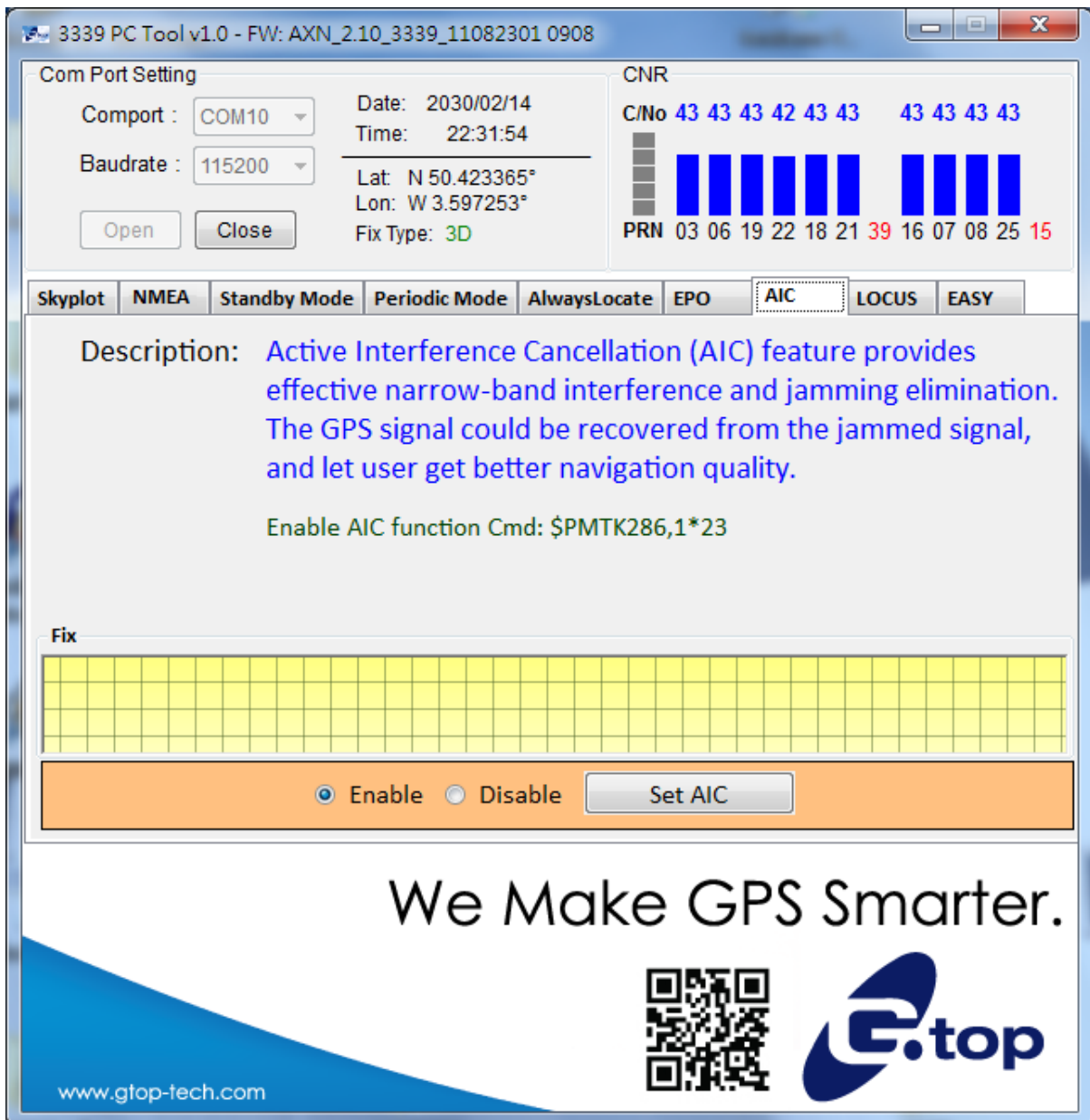


Figure 3.11: Enable AIC function screen

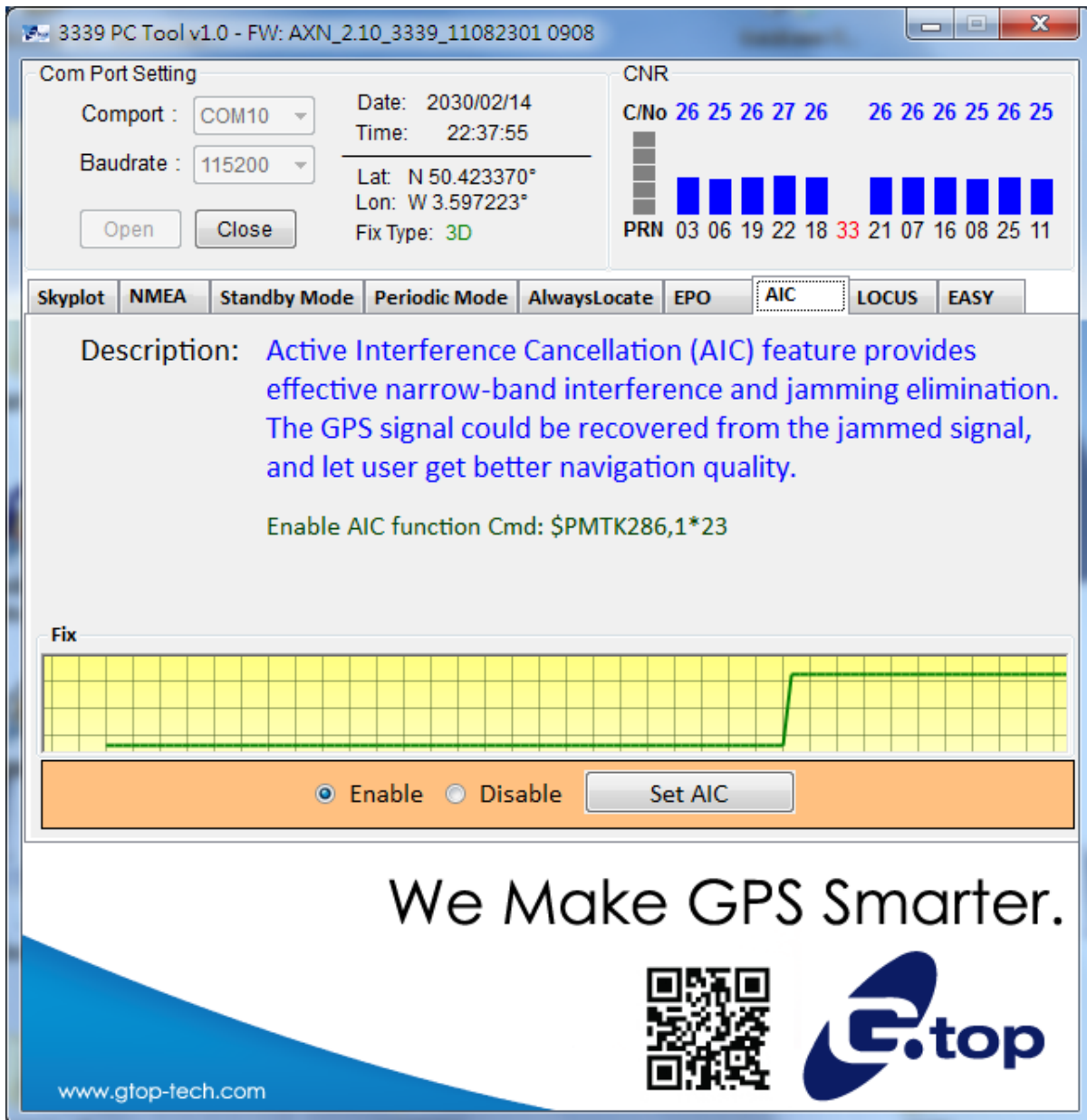


Figure 3.12: Input jamming signal screen

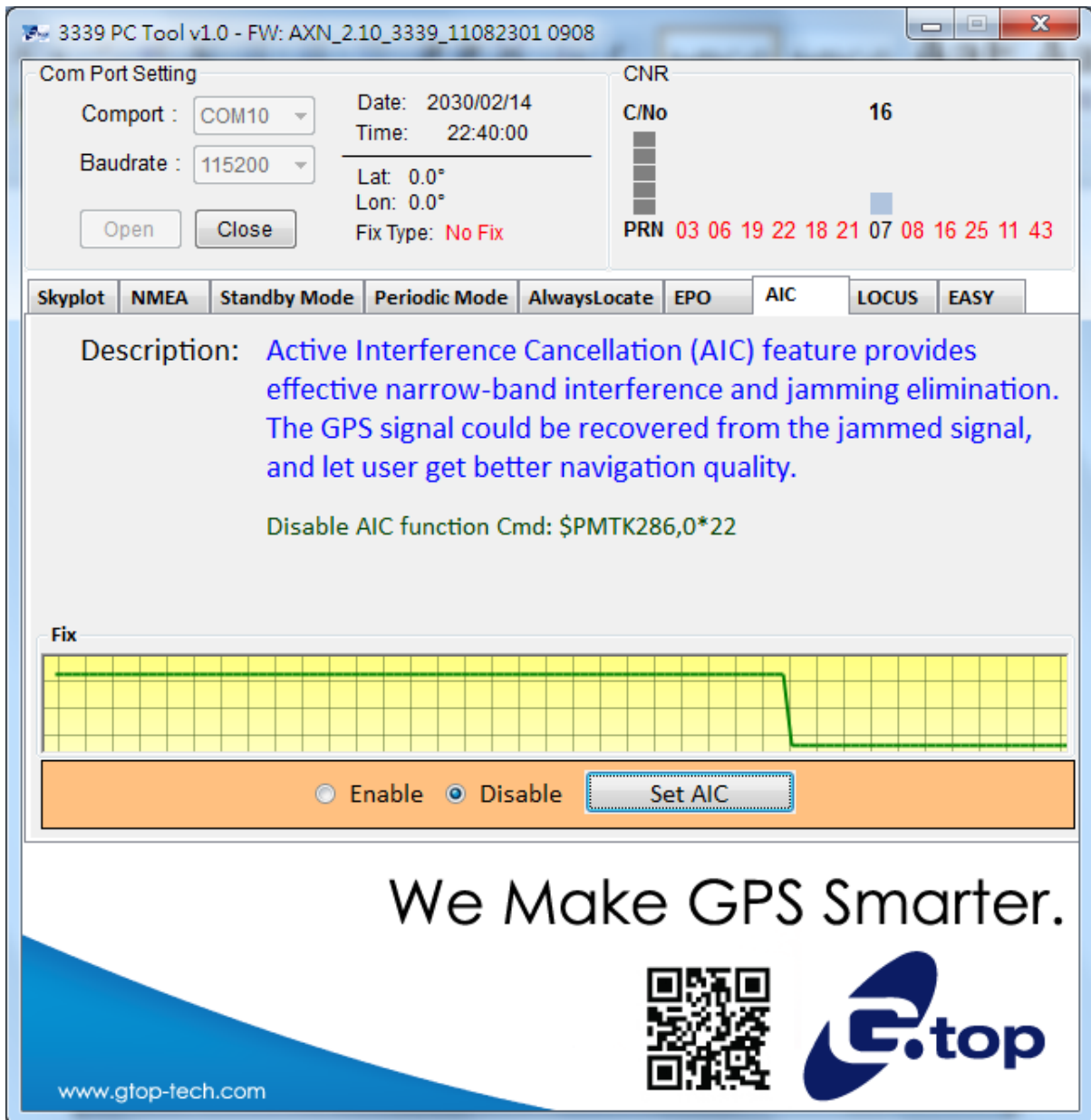


Figure 3.13: Disable AIC function screen

3.8 LOCUS

LOCUS is the name of MT3339 innate logger solution.

Logging information (figure 3.14):

Serial#: logging serial number.

Type: logging type - Overlap, FullStop.

Interval: logging interval setting (valid when Interval mode selected).

Distance: logging distance setting (valid when Distance mode selected).

Speed: logging speed setting (valid when Speed mode selected).

Status: logging status – Stop logging, Start logging.

Number: Logging number of data record. Progress bar is shown logging used percentage.

Mode:

- AlwaysLocate TM mode: logging with AlwaysLocate TM.
- Fix only mode: logging when 3D-fix only.
- Normal mode: logging per positioning (ex. 1 second).
- Interval mode: logging per interval (ex. 15 seconds).
- Distance mode: logging by distance (ex. 75 meters).
- Speed mode: logging mode by speed (ex. 15 m/s).

Table 3.1: Details for logging content

Naming	Size (bytes)	UTC (4)	Fix Type (1)	Lat (4)	Lon (4)	Height (2)	Speed (2)	Track (2)	SatNo (1)	Checksum (1)
Basic	16	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				<input type="radio"/>
Racing	20	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>
Search	19	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>
Saving	13	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>					<input type="radio"/>
All	23	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Content (table 3.1):

- UTC: record timing (clock) information.
- VALID: record GPS fix data information.
- LAT: record position data information.
- LON: record position data information.
- HGT: record height information.
- SPD: record speed information.
- TRK: record direction information.
- HDOP: record Horizontal DOP information.
- NSAT: record the information on the number of satellites in used.

****All configuration need pre-setting by firmware.***

Logging function button:

Status: Stop or Start logging.

Query: query LOCUS data logger status.

Save: export record data stored in the memory (figure 3.15).

Parse: parse bin file to XML file (figure 3.16).

Erase: clears all data stored in the memory.

Map: login the website to use Google Map™ open the XML file and show track (figure 3.17).

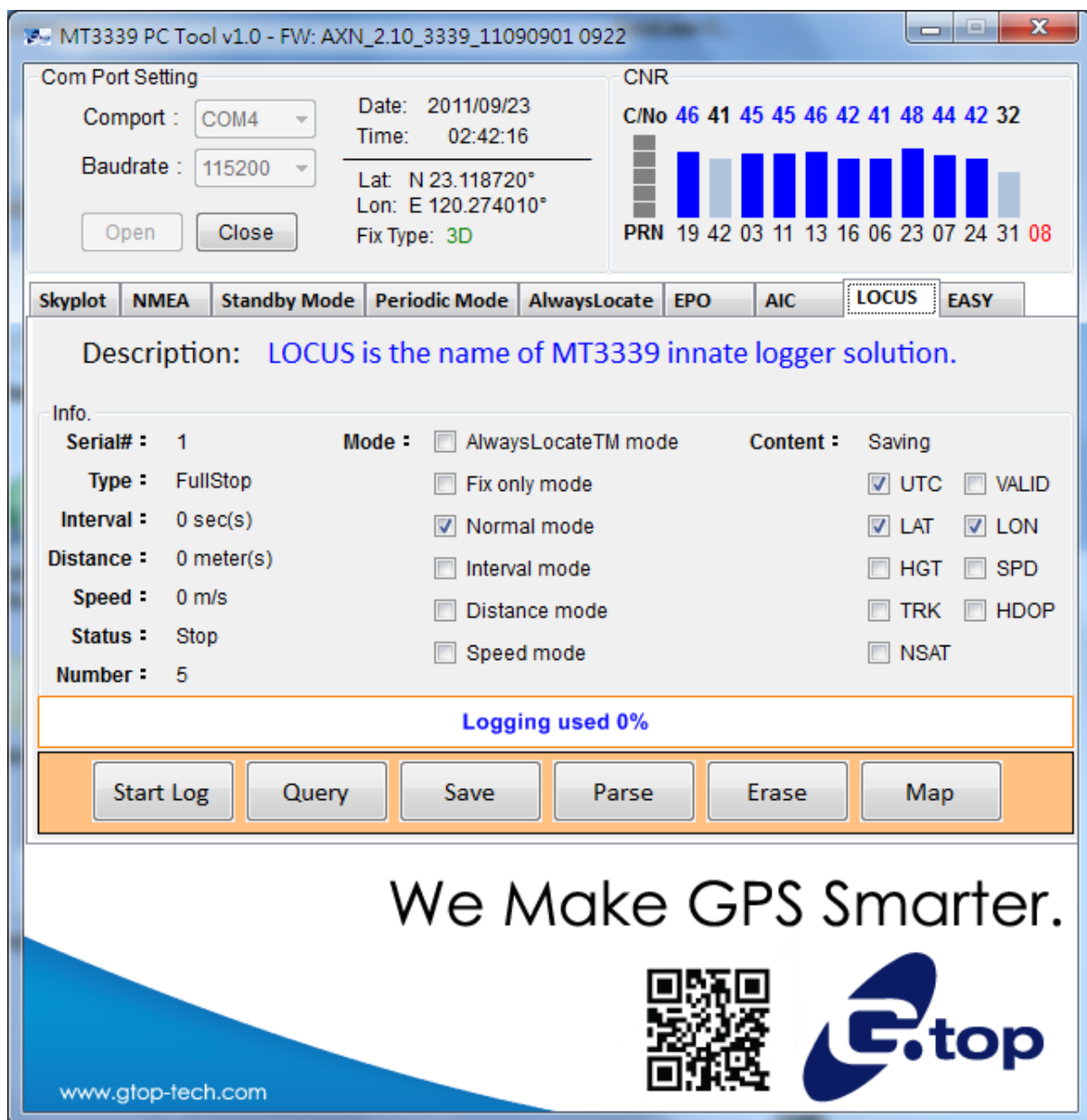


Figure 3.14: LOCUS screen



Figure 3.15: LOCUS read record data screen

```
<?xml version="1.0"?>↓  
<dataset2 xmlns="xsdbooks">↓  
  <Count Data="1">↓  
    <UTC>2011-09-08,07:32:40</UTC>↓  
    <FixType>3D-fix</FixType>↓  
    <Lat>23.118456</Lat>↓  
    <Lon>120.27375</Lon>↓  
    <HGT>20</HGT>↓  
    <Speed>0</Speed>↓  
    <Track>0</Track>↓  
    <HDOP>9</HDOP>↓  
    <SV inUsed>9</SV inUsed>↓  
  </Count>↓  
  <Count Data="2">↓  
    <UTC>2011-09-08,07:33:32</UTC>↓  
    <FixType>3D-fix</FixType>↓  
    <Lat>23.118582</Lat>↓  
    <Lon>120.274498</Lon>↓  
    <HGT>20</HGT>↓  
    <Speed>7</Speed>↓  
    <Track>67</Track>↓  
    <HDOP>9</HDOP>↓  
    <SV inUsed>9</SV inUsed>↓  
  </Count>↓  
  <Count Data="3">↓  
    <UTC>2011-09-08,07:33:58</UTC>↓  
    <FixType>3D-fix</FixType>↓  
    <Lat>23.118103</Lat>↓  
    <Lon>120.273933</Lon>↓
```

Figure 3.16: LOCUS XML file format screen

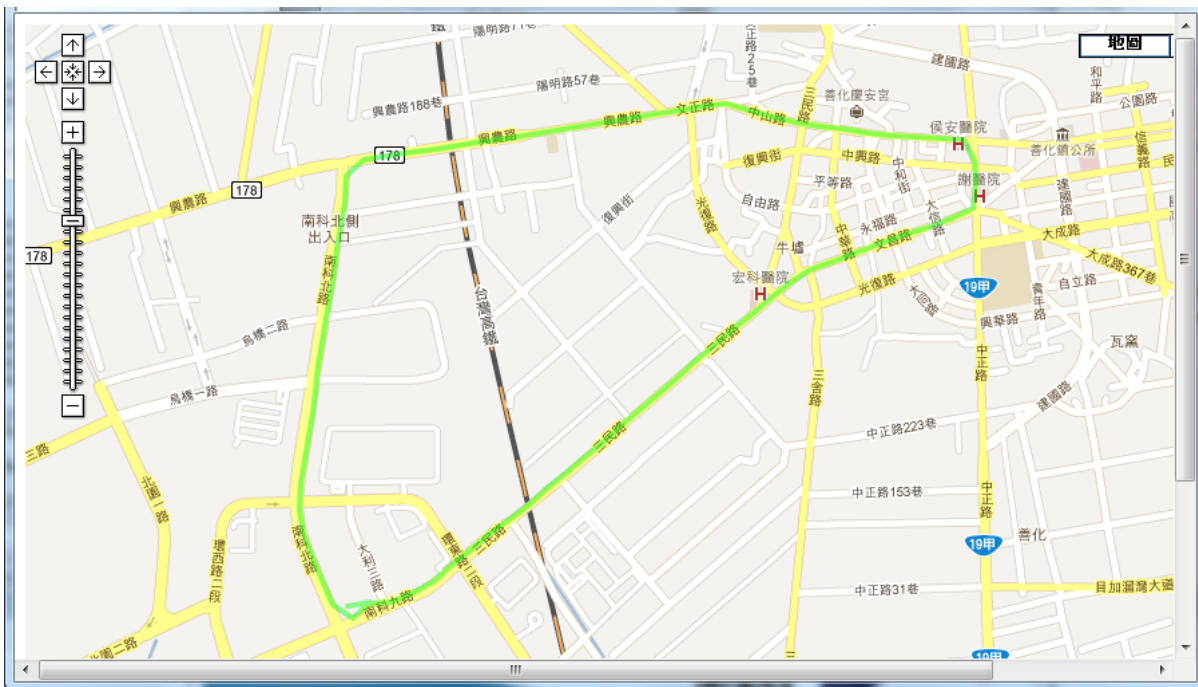


Figure 3.17: LOCUS track on Google Map™ screen

3.9 EASY

EASY is the abbreviation of **E**MBEDDED **A**SSIST **S**YSTEM.

- EASY to TTFF: EASY works as embedded software which can accelerate TTFF by predicting satellite navigation messages from received ephemeris.
- EASY to calculate: No additional computing interval for EASY task. EASY was efficiently scheduled and computed in the free time of every second after GPS navigation solution.
- EASY to design-in: World leading technology with no additional design-in efforts.

Select Enable or Disable radio button then click “Set EASY” button to work. Press Query button to check EASY status (figure 3.18).

Taking this example, execute Enable EASY function command and let GPS module receive satellite signals at least 5 minutes. Next, press Warm Start button to test TTFF; the result is 1.8 seconds.

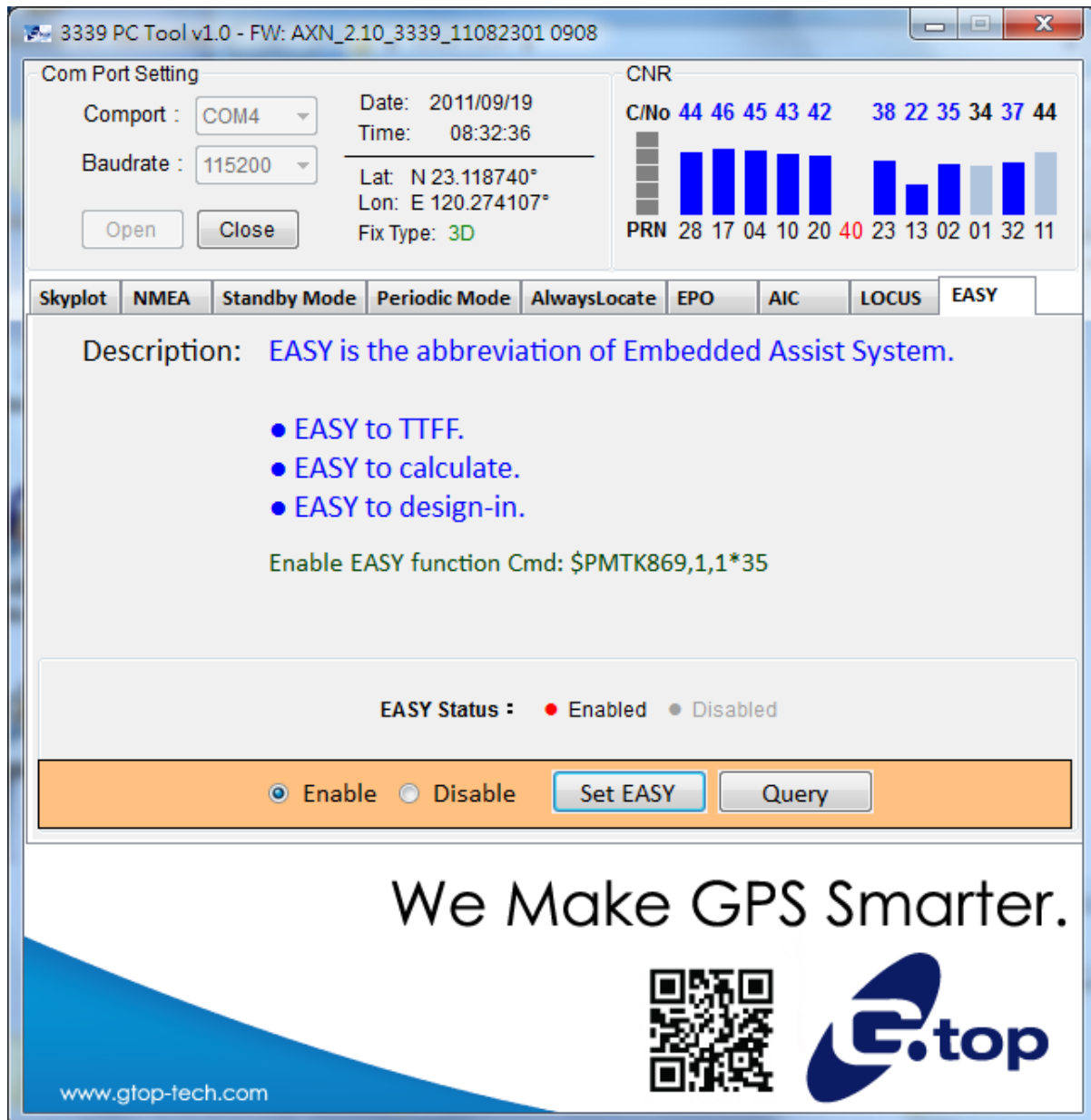


Figure 3.18: Enable EASY function screen

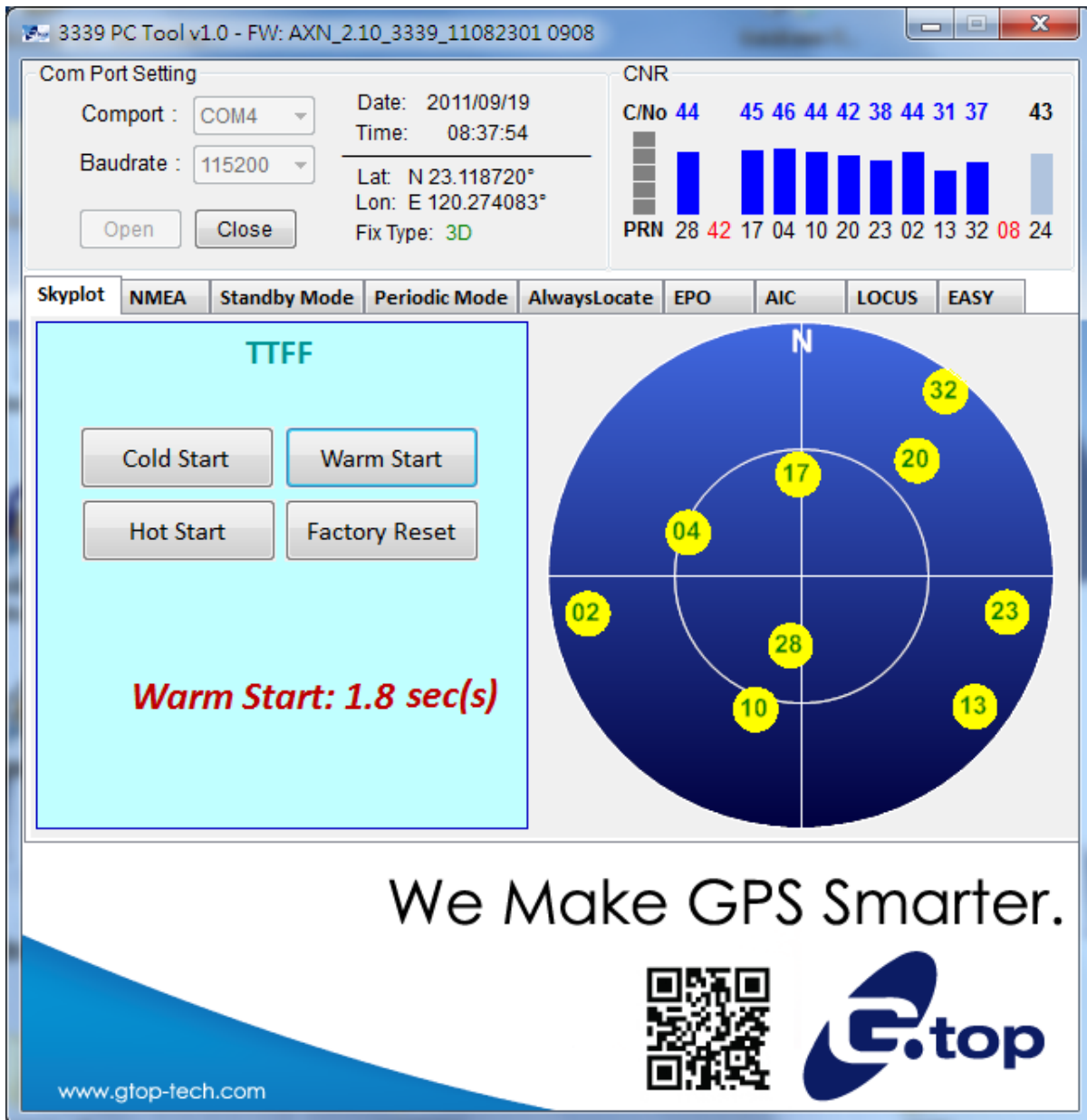


Figure 3.19: Test result of warm start screen