

SE880 RDK User Manual

1VV0301047 – 2013-05-1



APPLICABILITY TABLE

PRODUCT
SE880



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1. Introduction

1.1. Scope

Scope of this document is to give an overview of the SE880 reference design kit (or SE880 RDK) of the GPS standalone 3D-SiP SE880.

1.2. Audience

This document is intended for customers who are evaluating one or more products in the applicability table.

1.3. Contact Information, Support

For general contact, technical support, to report documentation errors and to order manuals, contact Telit Technical Support Center (TTSC) at:

TS-EMEA@telit.com
TS-NORTHAMERICA@telit.com
TS-LATINAMERICA@telit.com
TS-APAC@telit.com

Alternatively, use:

<http://www.telit.com/en/products/technical-support-center/contact.php>

For detailed information about where you can buy the Telit modules or for recommendations on accessories and components visit:

<http://www.telit.com>

To register for product news and announcements or for product questions contact Telit Technical Support Center (TTSC).

Our aim is to make this guide as helpful as possible. Keep us informed of your comments and suggestions for improvements.

Telit appreciates feedback from the users of our information.



1.4. Text Conventions



Danger – This information MUST be followed or catastrophic equipment failure or bodily injury may occur.



Caution or Warning – Alerts the user to important points about integrating the module, if these points are not followed, the module and end user equipment may fail or malfunction.



Tip or Information – Provides advice and suggestions that may be useful when integrating the module.

All dates are in ISO 8601 format, i.e. YYYY-MM-DD.

1.5. Related Documents

- SE880 HW User Guide
- SE880 Product Description
- NMEA Reference Manual (CS-129435-MA-3)
- GSD4e OSP Manual (CS-129291-DC-13)
- SiRF Live User Manual (CS-206217-UG-5)



NOTE:

- To prevent ESD and EOS damage, a properly grounded ESD wrist strap should be worn when working inside the RDK.
- Do not alter switch positions while USB power is applied.
- Do not short the RF signal to ground if the antenna voltage is installed. Damage to the RDK may result.

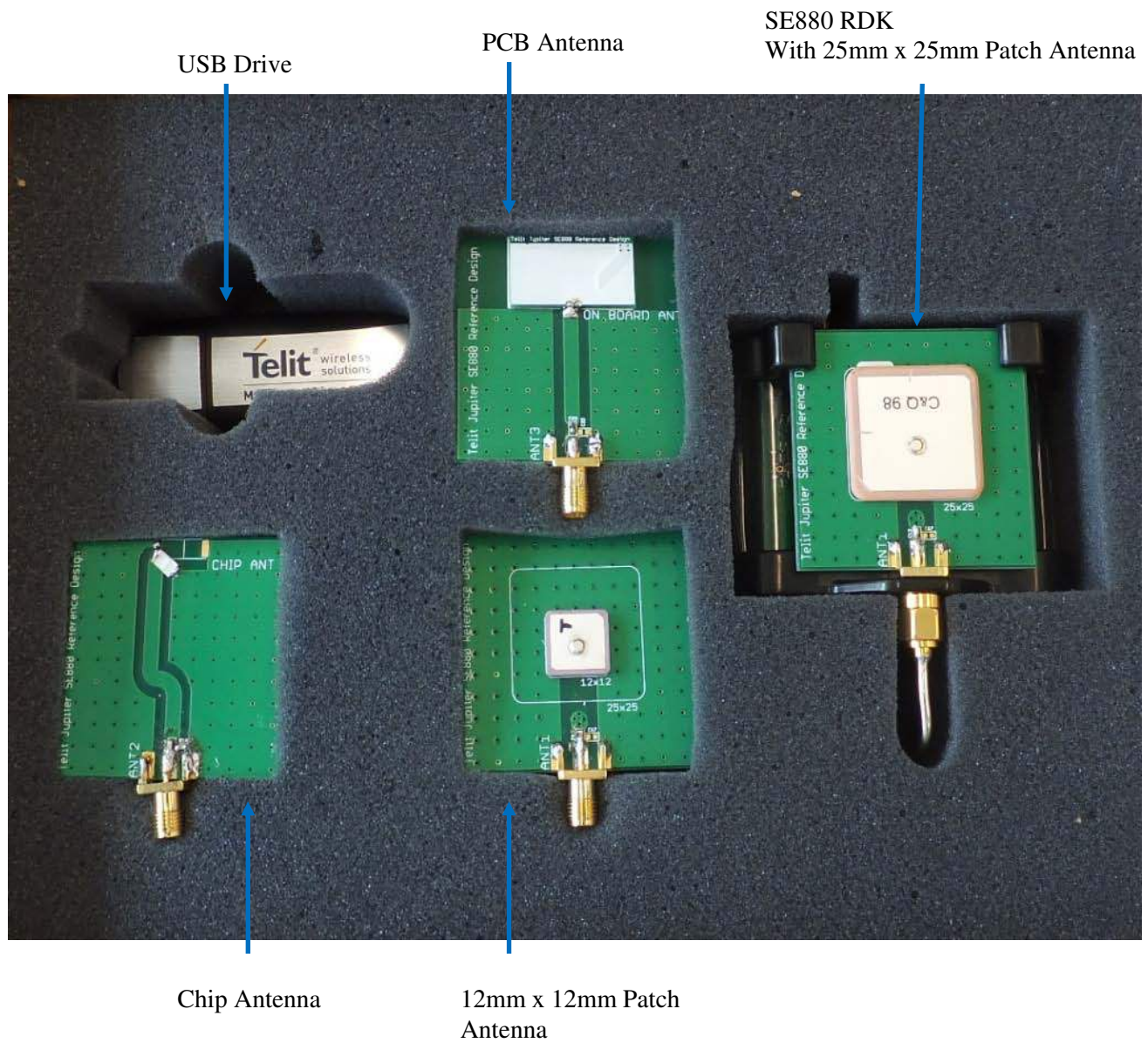
NOTE:

Always follow ESD safety precautions when utilizing the SE880 RDK. For additional information on the SE880, ask your sales representative for additional manuals, datasheets, support, etc.



3. SE880 Reference Design Kit

3.1. What's in the Box



3.2. SE880 RDK Features

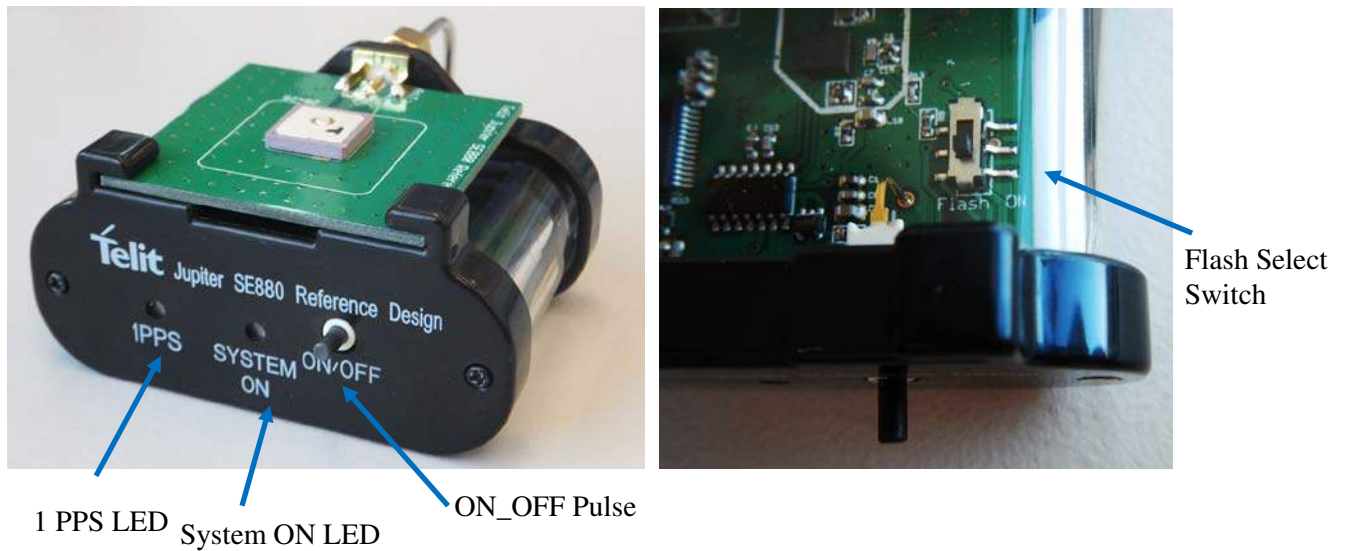


Figure 2: SE880 RDK assembly

<u>Item</u>	<u>Function</u>
System ON LED	LED that indicates the SE880 is ready for GPS reception
1PPS LED	LED that pulses ON at 1/2 a second and OFF at 1/2 a second, indicating a fix with the receiver.
ON_OFF Pulse	Push button that sends a 1.8V voltage pulse to the ON_OFF input of the SE880 module toggling the module between Operating or Hibernate mode.
Flash Select Switch	Switch that selects the external 4Mbit SPI Flash connected to auxiliary port. Patch code "GSD4e_4.1.2-P1_RPATCH.03-Telit-F01" is preloaded in the Flash by using the ROM Patcher provided.



4. SE880 RDK Reference Layout

The reference schematic and PCB layout are provided in the USB memory which comes along with the RDK. The performance of SE880 will be optimized with the following guidelines:

1. Use the bottom layer (layer-2) as the big ground plane for both RF and heat transfer.
2. The ground plane with via holes under the SE880 (shown in Figure 3) serves two purposes:
 - a. Provide a good RF ground plane for the SE880.
 - b. The big via hole dominates heat transfer from the SE880 to the big ground on layer-2. This enhances TCXO implementation by provide the TCXO a thermally stable environment. Heat transfer of copper is 1400 times fast than FR4.
3. Coplanar waveguide calculator should be used to determine the appropriate transmission line structure to achive 50 Ohm input trace for the antenna at 1.575GHz..

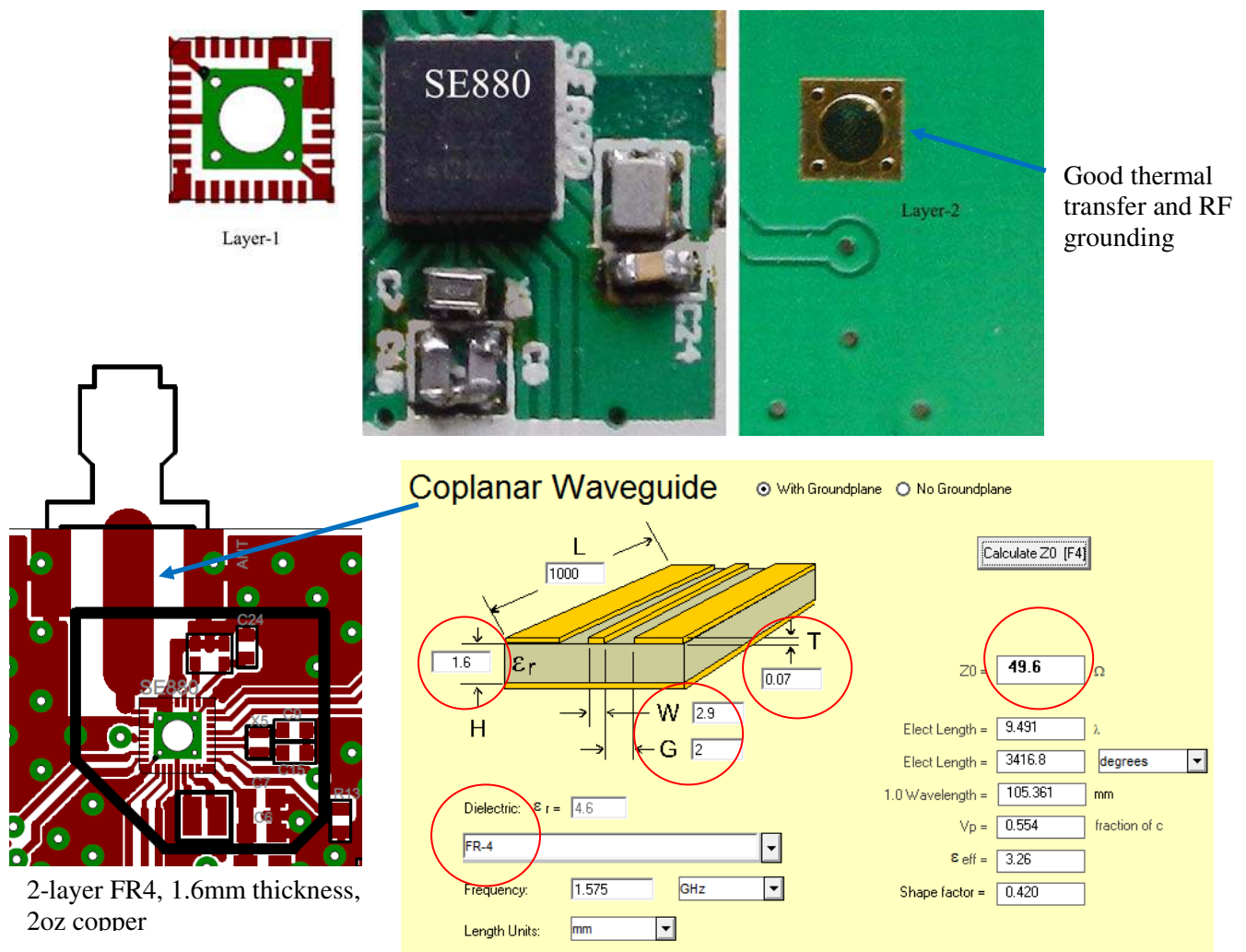


Figure 3: SE880 PCB Layout

6.2.2. Main Tool Bar



Select the “Receiver Settings” button



Or the “Connect” button



6.2.3. Rx Port Settings

Select the GSD4e Product Family, RS232/USB, and the Correct COM Port.

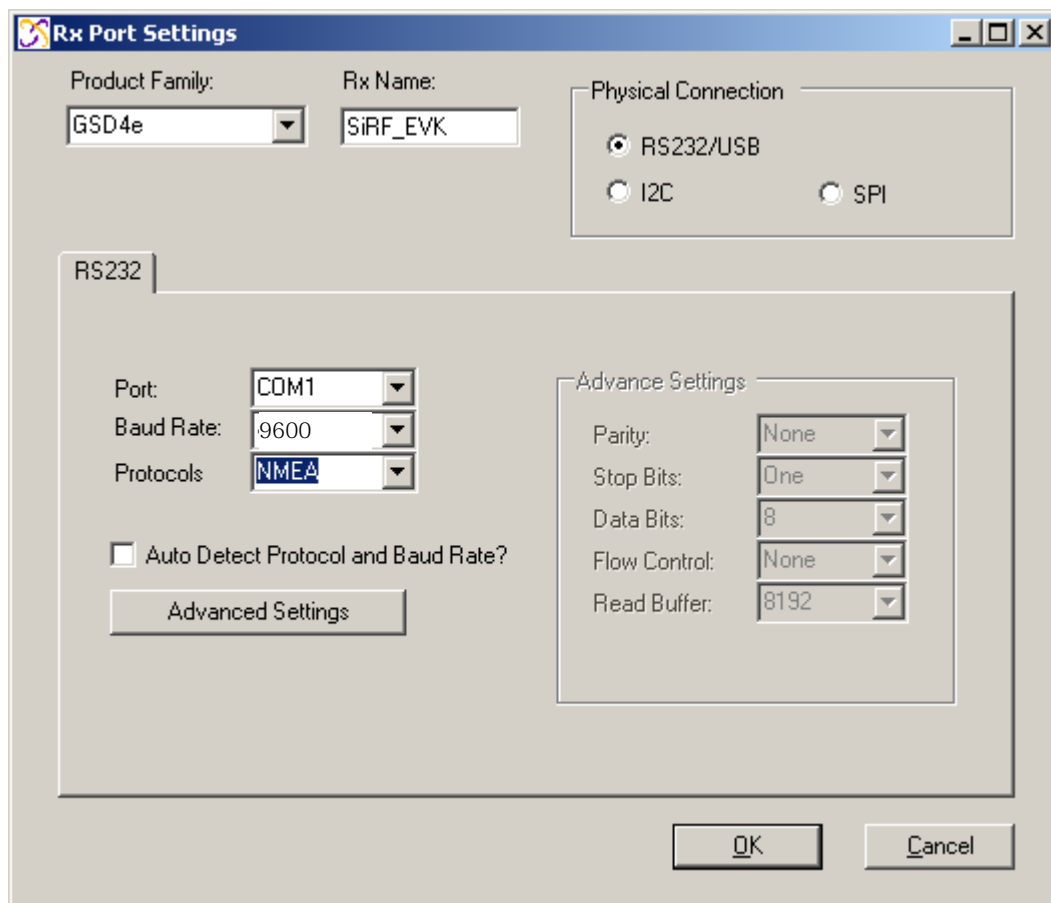


Figure 9: The Rx Port Connection Window



Default Baud rate for SE880 RDK is NMEA 9600 baud at power up.



6.3.3. Debug View



(main tool bar icon)

Shows the communication messages with the receiver.

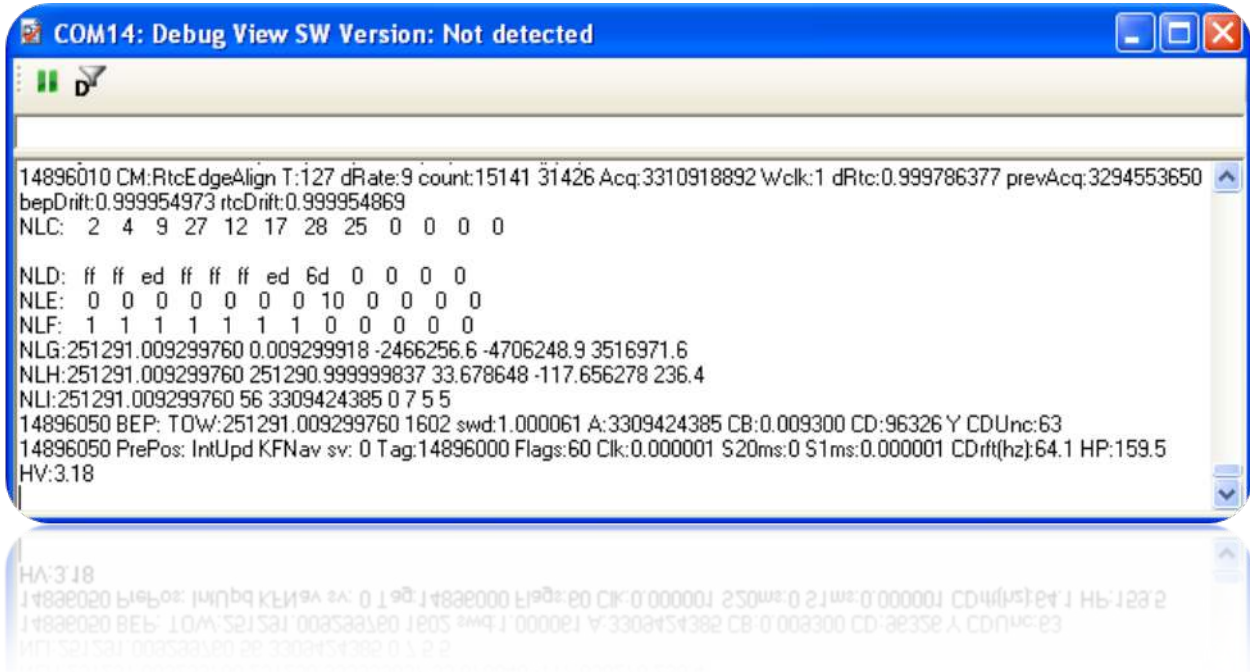


Figure 12: Debug view with One Socket Protocol messages.



6.3.4. Location View



(main tool bar icon)

Displays more detailed information regarding the UTC, TOW, Latitude, Longitude, Altitude, etc.

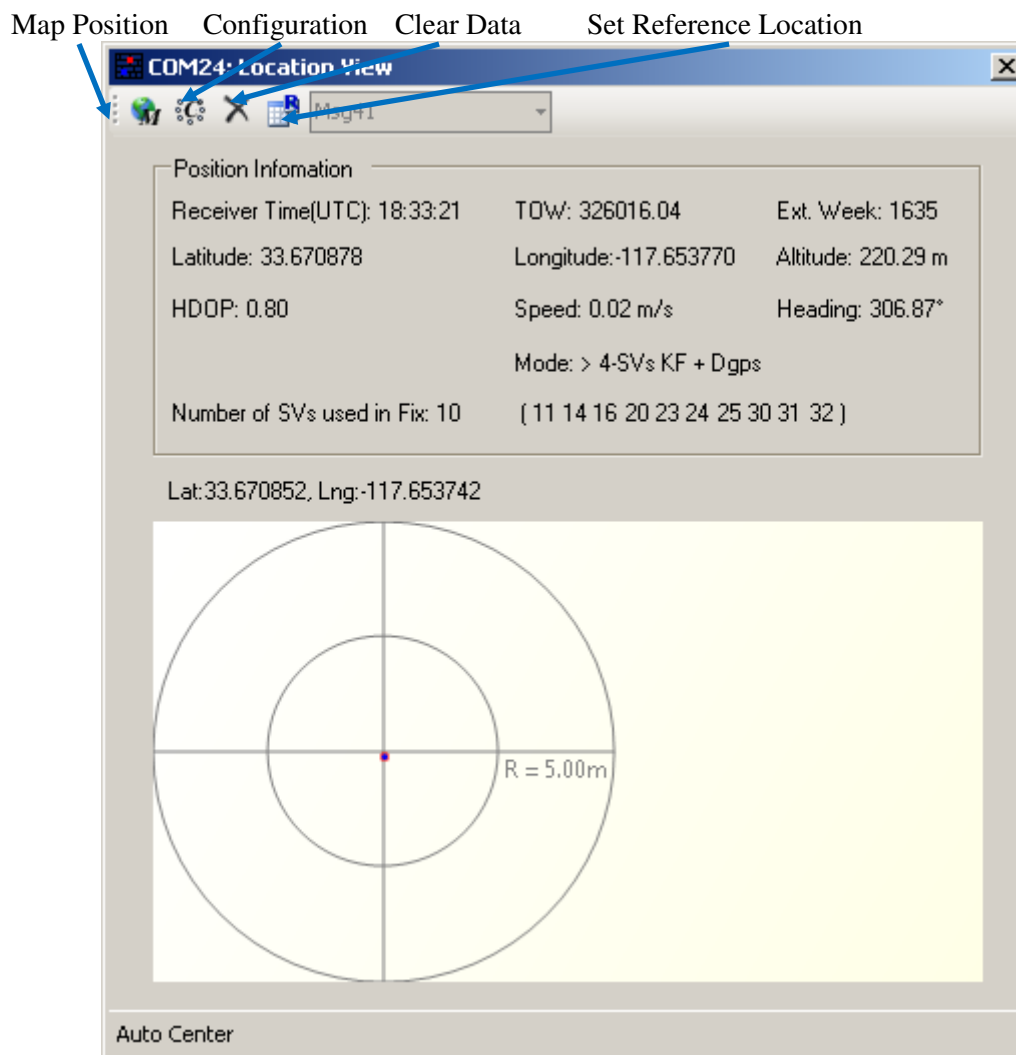


Figure 13: Location view



Map position button requires Internet access to work.



6.4. Receiver Commands

Most of the Receiver Commands can be accessed through the *Main Menu Bar* under “Receiver” > “Command.” There are also shortcuts on the *Main Tool Bar* which will be covered in this section.

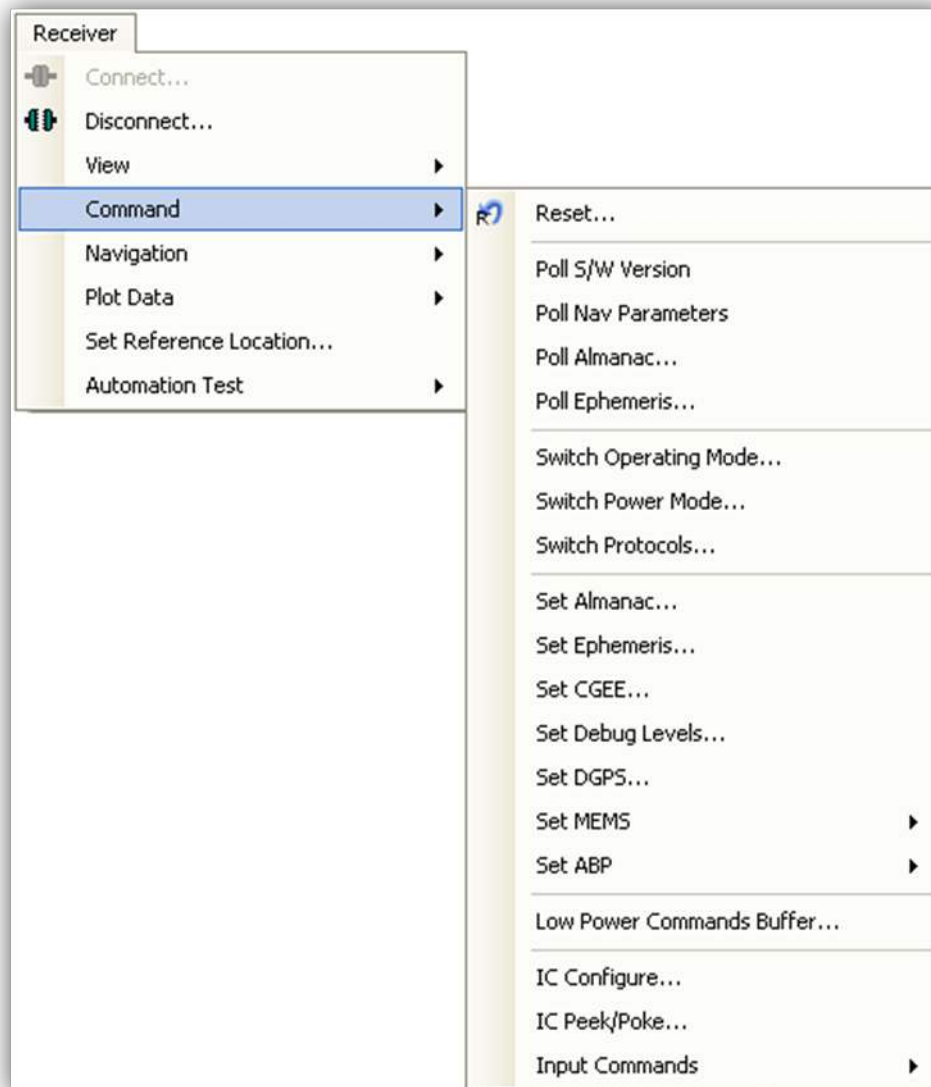


Figure 14: All the commands for the receiver.



All of the *Receiver Commands* become available in One Socket Protocol (OSP) only.

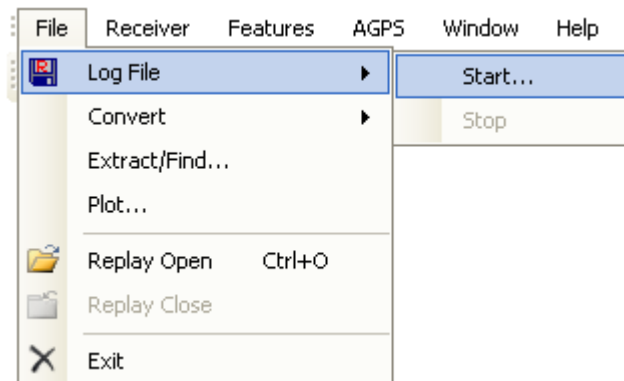


Fig 17: Main Menu Bar access to the Log File command.

- i. The *Log File* window should open, which is shown in Fig 17. Click on the “. . .” button, as indicated by the arrow in Fig 19, to open a window where the user can specify the output folder and the output file name.

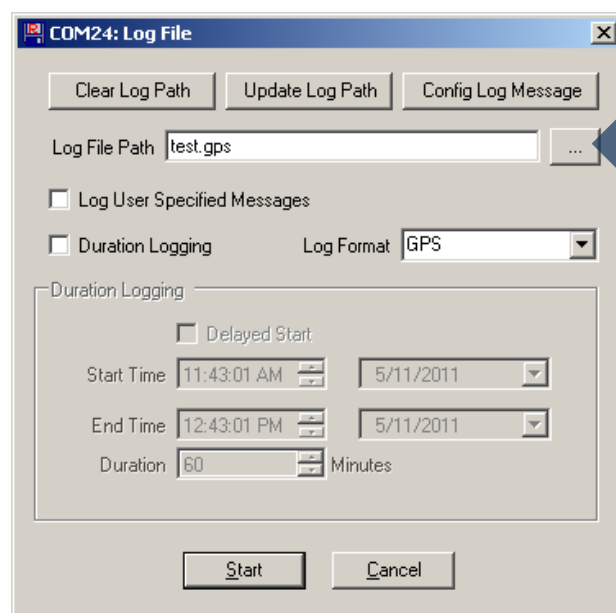


Fig 18: Clicking on the “. . .” button will give the user the control of the output folder and output name

- ii. After specifying the output folder and output name, close the “Specify log file name:” window by clicking *Open* and the “Log File Path:” bar should be filled with the file path. Select the desired Log Format, and click “Start” in order to start logging.



