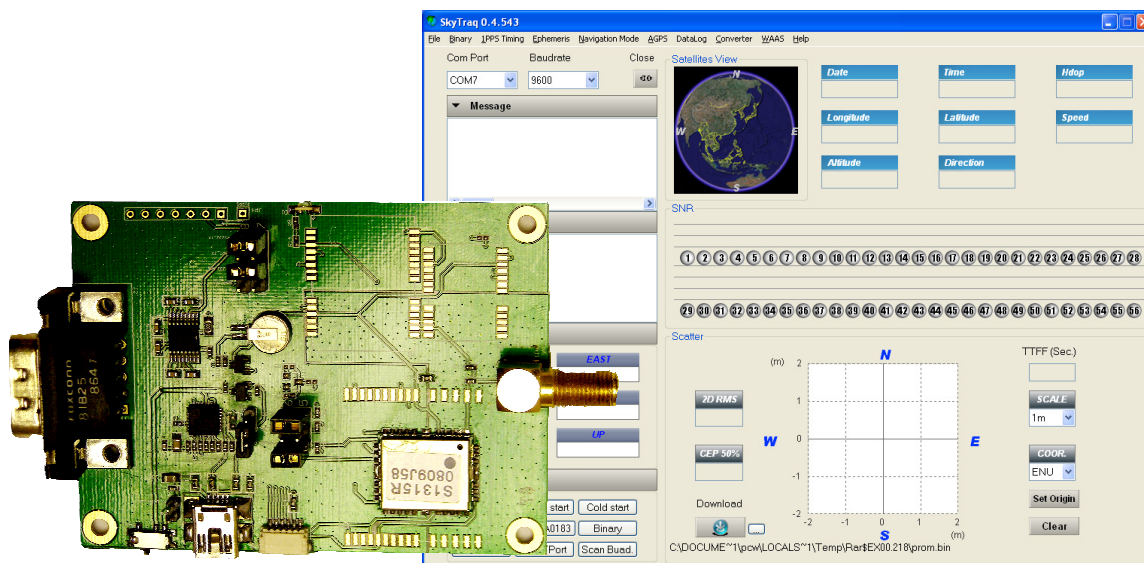


GPS-Evaluation Kit



- GPS Evaluation Platform
- Data In Standard NMEA Format
- RS232 & USB Data output
- Link Selectable And Programmable Baud Rates
- Satellite Viewer Software Supplied
- Includes GPS-1513 Module
- Can be used as Complete GPS System

Description

This kit provides a hardware and software evaluation platform for development of a GPS system. It provides position, velocity and time information in a standard NMEA format that is compatible with a range of GPS driven navigation packages including Microsoft AUTOROUTE.

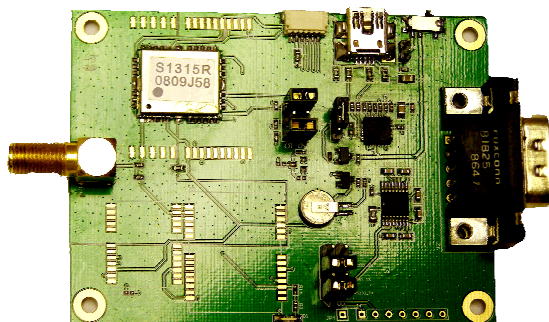
Direct PC interface is via 9 way 'D' type connector and mini USB (cables supplied). Signals are also available from pin headers to enable configuration and monitoring of the GPS signals.





GPS-Evaluation Kit

1. Contents



Item	Description
GPS Eval board	GPS evaluation board, complete with GPS module 1513
GPS Antenna	GPS Antenna, SMA connection,
USB lead.	Standard USB lead for PC connection
CD ROM	Containing drivers and documents.

1.1 Description

GPS Eval board: This contains the GPS Engine, and all circuitry for interface to a PC or external electronics.

GPS Antenna: this is a Mag Mount GPS antenna with LNA which connects to the main GPS board via the SMA connector please note that the antenna must see the sky

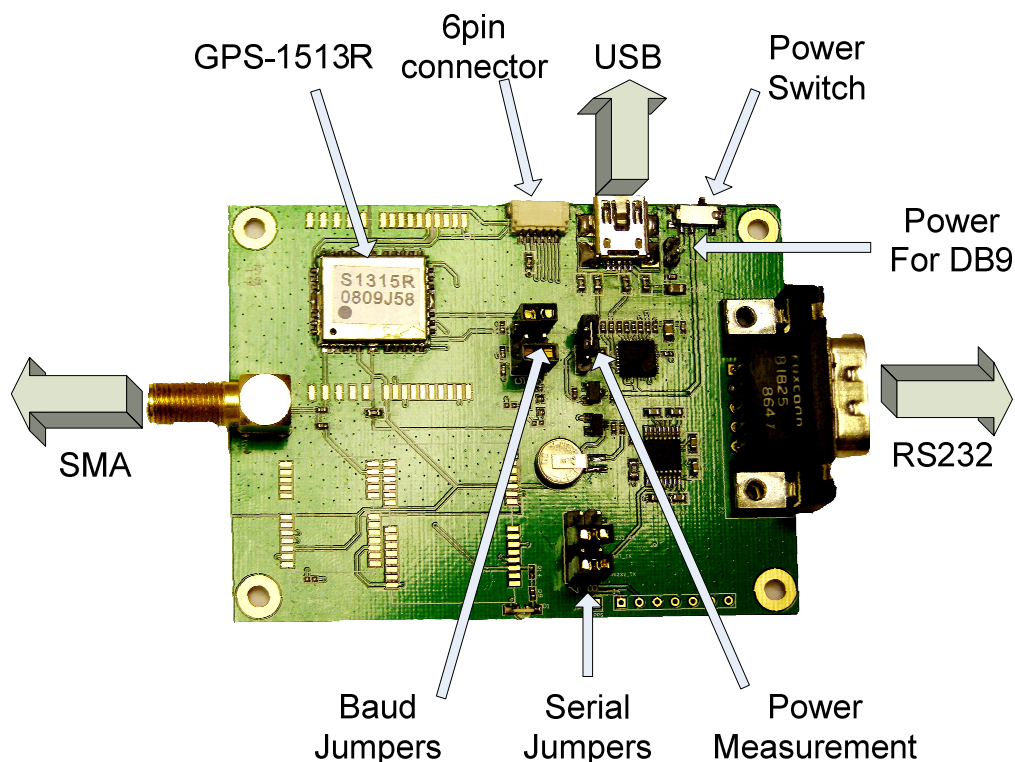
USB Lead: Connects the GPS board to the USB port of a PC

CD Rom: Contains:
Prolific USB Driver
Skytraq GPS viewer software
Data etc

Following the installation of the USB drivers and Skytraq viewer, you will be able to use the evaluation kit to check the GPS module functions and vie satellites.

GPS-Evaluation Kit

2. Hardware Description



Item	Description
GPS-1513R	GPS Module mounted on the GPS EVAL (please see GPS Module data)
6 Pin connector	Data output UART / RS232
USB	Standard Mini USB output for connection to USB input on PC
Power Switch	Used to turn Power on / off
Power for DB9	If using RS232 a separate 5V power supply connection is required here.
RS232	This is a standard 9 Way D Type connector for connecting to a serial port of a PC
Power Measurement	Pins to enable measurement of power consumption
Serial Jumpers	The status of these Jumper links defines the output to be via UART or RS232
Baud Jumpers	The status of these Jumper links defines the baud Rate of the data output and the number of times the GPS searches per minute
SMA	External Antenna Connection. This is a standard SMA (M) connector



GPS-Evaluation Kit

6 Pin connector

The user can measure the power consumption of the GPS engine through this pin header
Power consumption will vary according to the Modules Status

Pin	Name	Type	Description
1	FTXD0	o/p	Serial Data output UART
2	FRXD0	i/p	Serial Data input UART
3	TXD0	o/p	Serial Data output RS-232
4	RXD0	i/p	Serial Data input RS-232
5	Vin	i/p	3.6~6 supply input
6	GND	o/p	GND

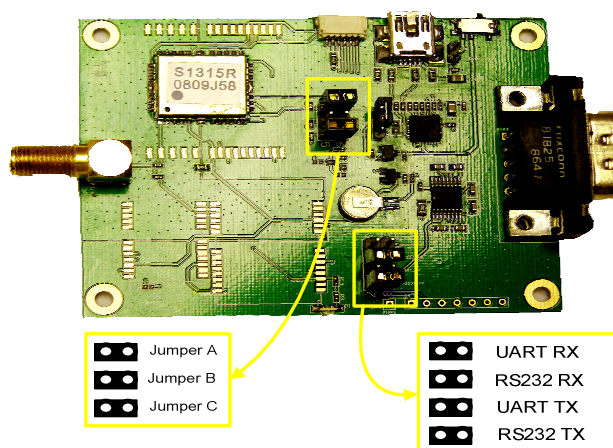


Power Measurement Pins

The user can measure the power consumption of the GPS engine through this pin header
Power consumption will vary according to the Modules Status

3. Jumper Link Settings

Jumper A	Jumper B	Baud Rate
Connected	Open	4800
Open	Open	9600
Open	Connected	38400
Connected	Connected	115200



Jumper C

Enables the GPS chipset to multiply the search function, When jumper link fitted this doubles the chipset search function to increase the searching speed but does increase the power consumption.

Serial Jumpers

For RS232: Connect the two Jumper links marked as RS232

For USB : Connect the two Jumper links marked as USB

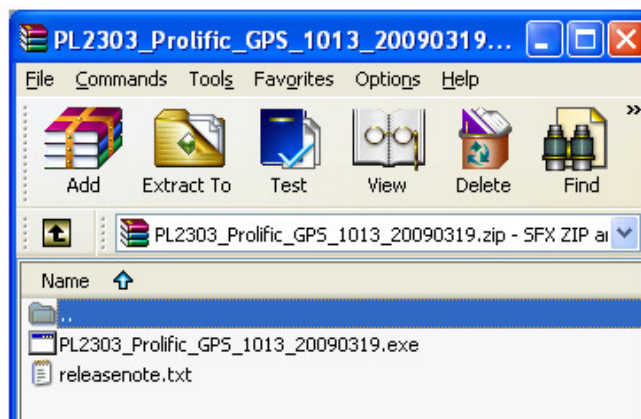


GPS-Evaluation Kit

4. Software Installation

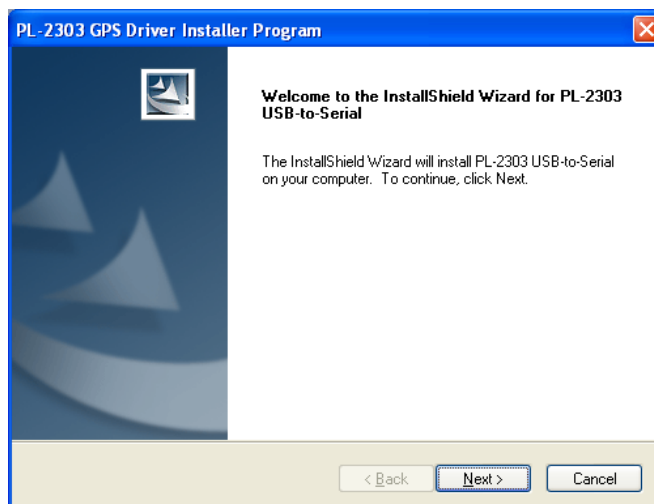
Before connecting the GPS Eval board to the computer install the following USB Driver files: "[PL2303_Prolific_GPS_1013_20090319](#)" from the CD.

Run USB Driver installation

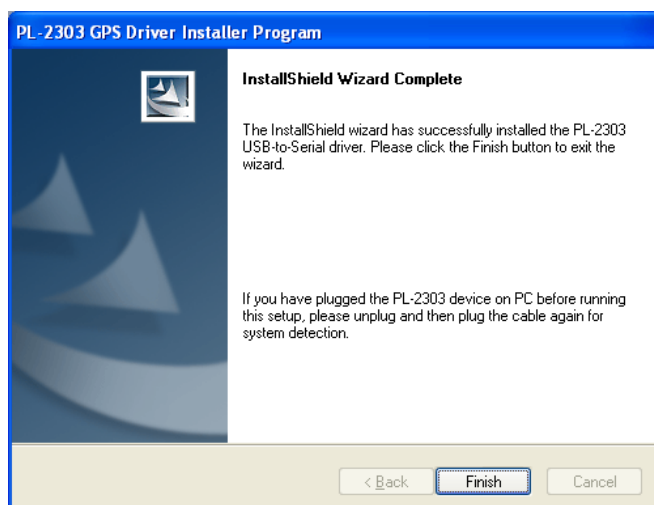


Follow the installation process

If you see a caution prompt, select 'continue anyway'



2.3. Installation complete.

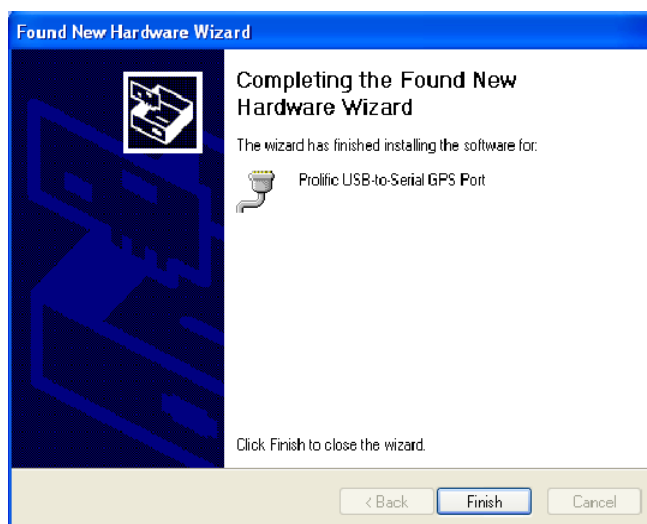


After installing the Prolific USB driver, RE-START your computer

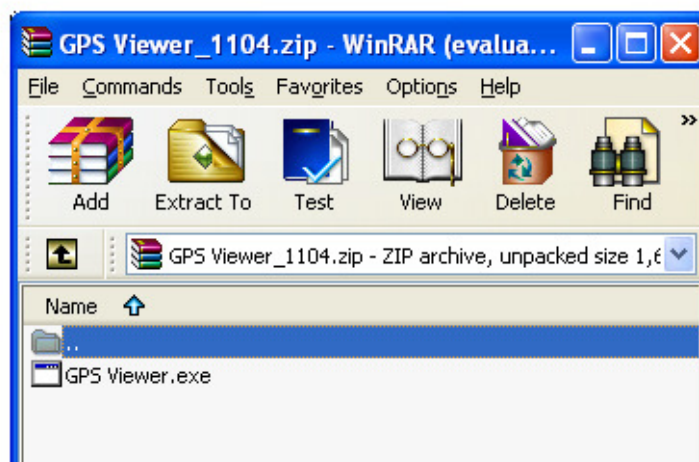


GPS-Evaluation Kit

You can now Plug the USB adapter cable into the computer which will auto find the new device.



Executing the GPS viewer testing programming



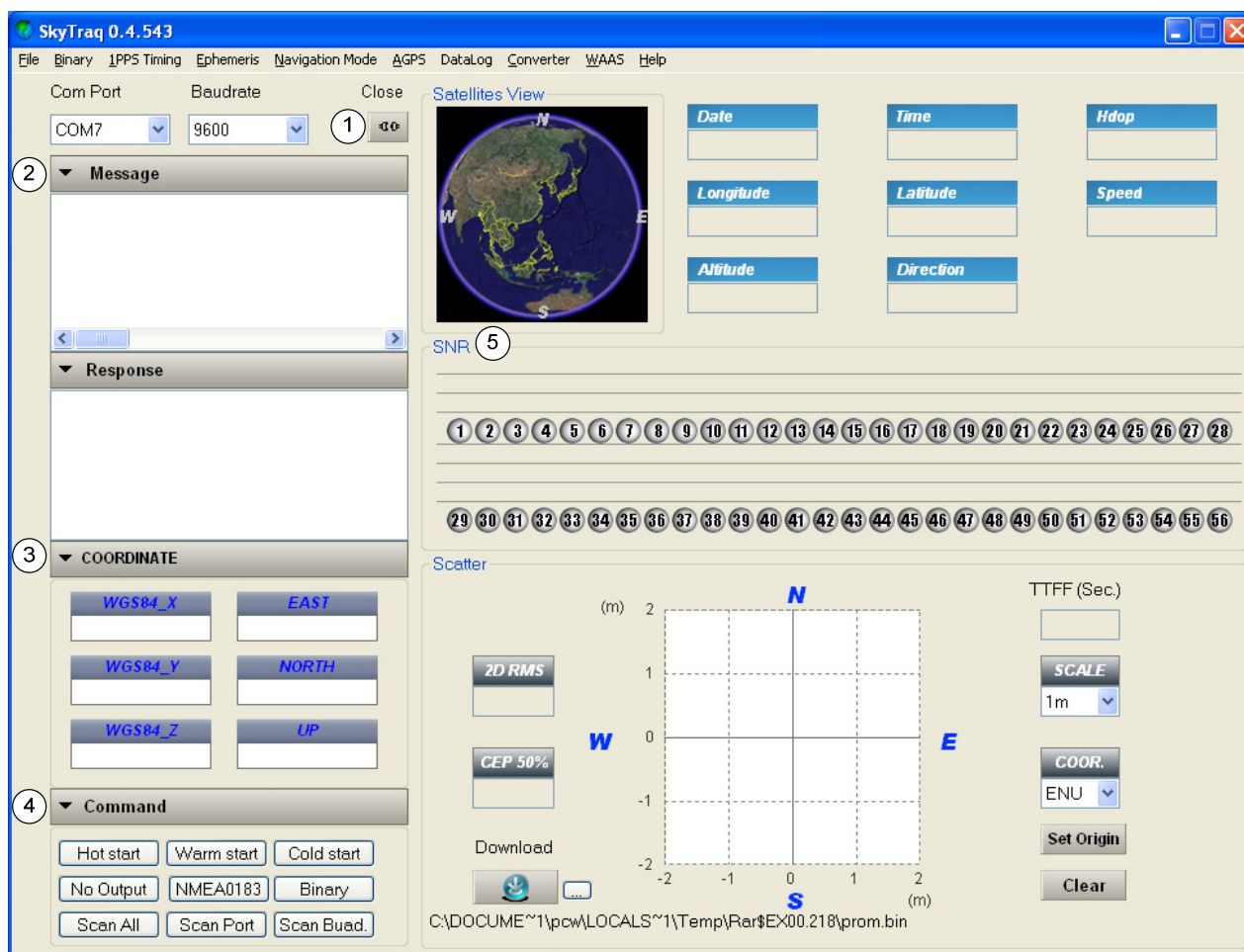
GPS-Evaluation Kit

5. GPS Viewer Programming

Identify the correct COM PORT, and select the baud rate, the default rate is 4800.

Clicking the “Connect” ICON, the GPS Eval board will begin to search the satellites, it will get the

positioning in 30-40 seconds (Cold start), the user can read the message from TTFF column.



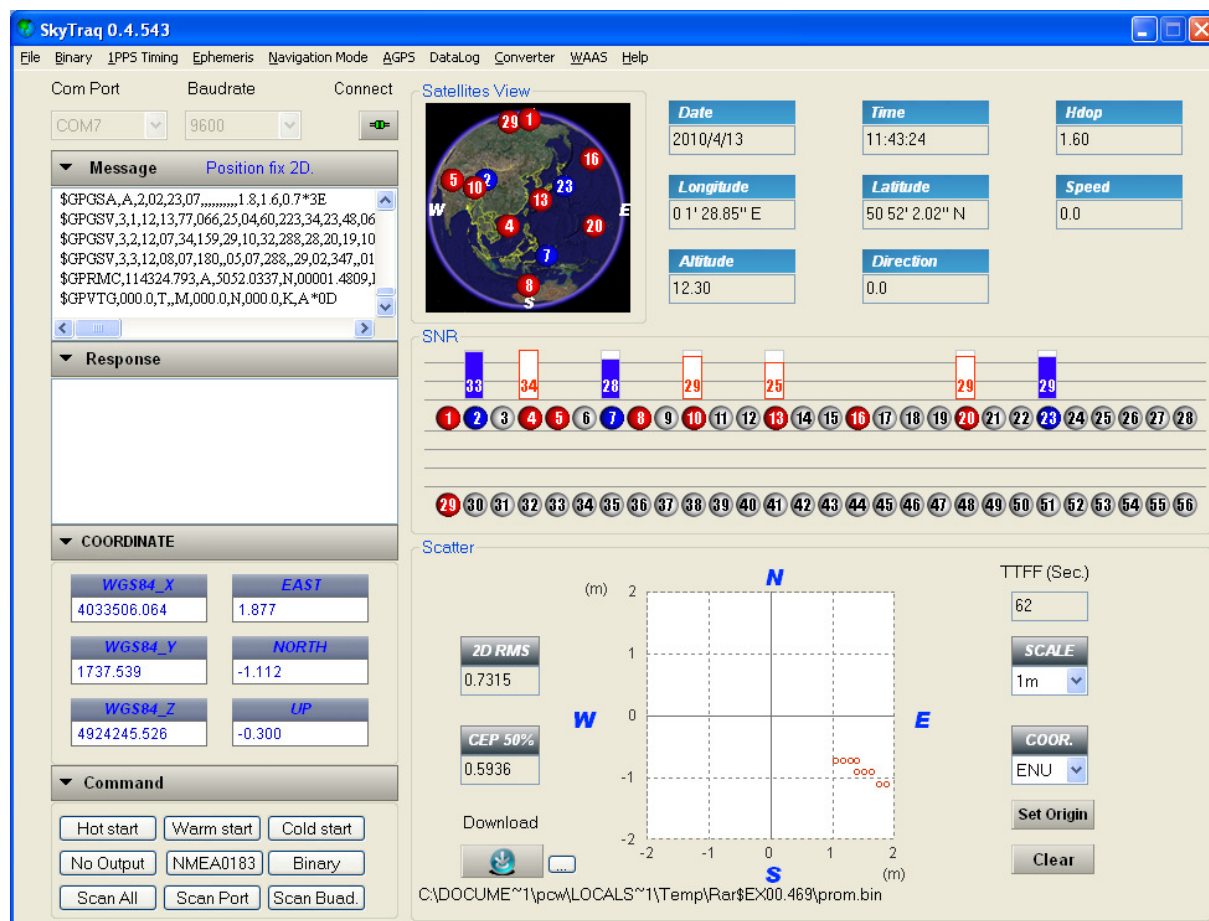
- (1) Connect/disconnect button
- (2) GPS Data output
- (3) Actual location coordinates
- (4) Pre set command list
- (5) Visual representation of connected satellites.

Note: If the baud rate is incorrectly selected, NMEA data will read as erroneous data



GPS-Evaluation Kit

5.1 Your GPS Eval board is now connected.



GPS-Evaluation Kit

Technical Specifications

For Specification of the GPS-1513R please des Datasheet for this Module


GPS Active Antenna

Frequency	1575.42 +/-1.023MHz
Bandwidth	10MHz min
Gain at Zenith	5.0dBic Typ
Gain at 10deg Elevation	-1.0dBic Typ
Polarization	RHCP
Axial Ratio	3.0dB Typ



LNA / Filter Specification

Frequency	1575.42 +/-1.023MHz
Gain	28dB Typ
Noise Figure	15dB Typ
Filter	DR SAW Filter
Output VSWR	2.0Max
Voltage	2.3-5.5V
Current	2.5V: 6.6mA Typ 3V: 8.6mA Typ 4V: 12.6mA Typ 5V: 16.6mA Typ

RF Solutions Ltd RECYCLING NOTICE <small>rfsolutions.co.uk</small> <small>Meets the following EC Directives</small> 
DO NOT Discard with normal waste, please recycle.
ROHS Directive 2002/95/EC <small>Specifies certain limits for hazardous substances.</small>
WEEE Directive 2002/96/EC <small>Waste Electrical & Electronic Equipment.</small> <small>This product must be disposed of through a licensed WEEE collection point.</small> <small>RF Solutions Ltd fulfils its WEEE obligations by membership of an approved compliance scheme.</small> <small>Environment Agency producer registration number WEE-0B0104WV</small>
Waste Batteries and Accumulators Directive 2006/66/EC <small>Where batteries are fitted, before recycling the product, the batteries must be removed and disposed of at a licensed collection point.</small>

R F Solutions Ltd. ,

Unit 21, Cliffe Industrial Estate,
Lewes, E. Sussex. BN8 6JL. England.

Email : sales@rfsolutions.co.uk <http://www.rfsolutions.co.uk>

Tel: +44 (0)1273 898 000 Fax: +44 (0)1273 480 661



GPS-Evaluation Kit

6. Contact Information

We hope this datasheet will be helpful to the user to get the most out of the GPS module, furthermore feedback inputs about errors or mistakable verbalizations and comments or proposals to **RF Solutions Ltd.** for further improvements are highly appreciated.

© 2009 RF Solutions Ltd. All rights reserved.

Not to be reproduced in whole or part for any purpose without written permission of **RF Solutions Ltd.** Information provided by **RF Solutions Ltd** is believed to be accurate and reliable. These materials are provided by **RF Solutions Ltd** as a service to its customers and may be used for informational purposes only. **RF Solutions Ltd** assumes no responsibility for errors or omissions in these materials, nor for its use **RF Solutions Ltd** reserves the right to change specification at any time without notice.

These materials are provides "as is" without warranty of any kind, either expressed or implied, relating to sale and/or use of **RF Solutions Ltd** products including liability or warranties relating to fitness for a particular purpose, consequential or incidental damages, merchantability, or infringement of any patent, copyright or other intellectual property right. **RF Solutions Ltd** further does not warrant the accuracy or completeness of the information, text, graphics or other items contained within these materials. **RF Solutions Ltd** shall not be liable for any special, indirect, incidental, or consequential damages, including without limitation, lost revenues or lost profits, which may result from the use of these materials.

RF Solutions Ltd products are not intended for use in medical, life-support devices, or applications involving potential risk of death, personal injury, or severe property damage in case of failure of the product.

R F Solutions Ltd.,

Unit 21, Cliffe Industrial Estate,

Lewes, E. Sussex. BN8 6JL. England.

Email : sales@rfsolutions.co.uk <http://www.rfsolutions.co.uk>

Tel: +44 (0)1273 898 000 Fax: +44 (0)1273 480 661