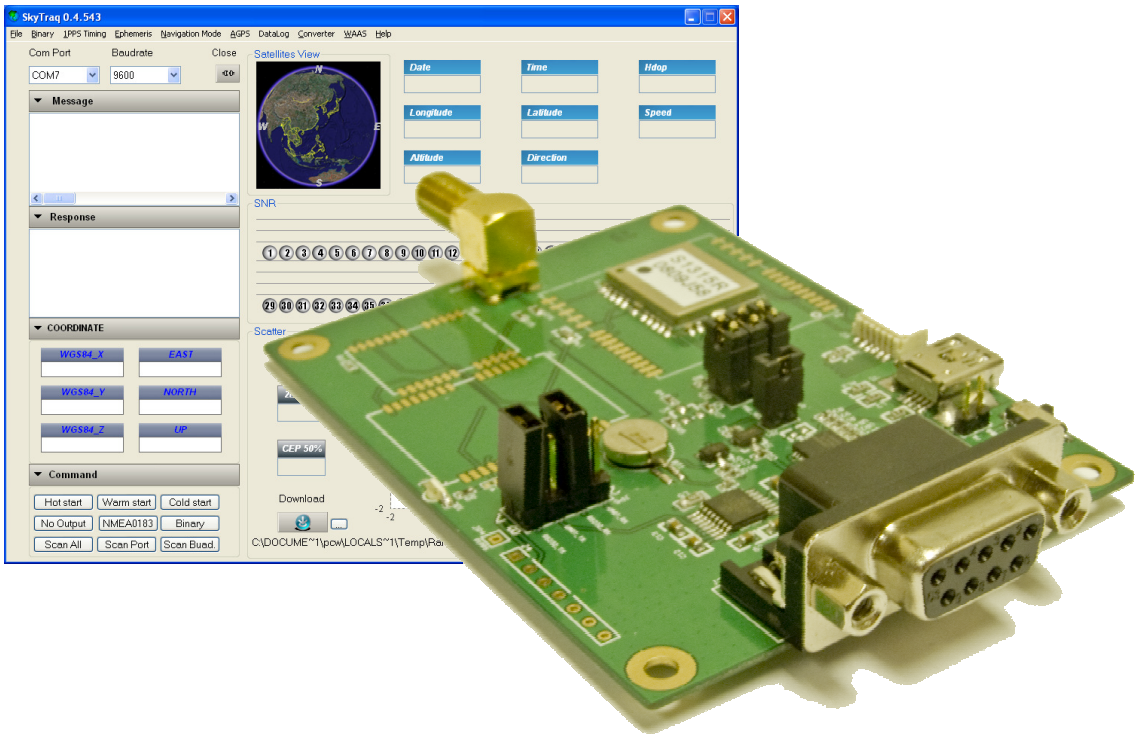
GPS-Evaluation Kit



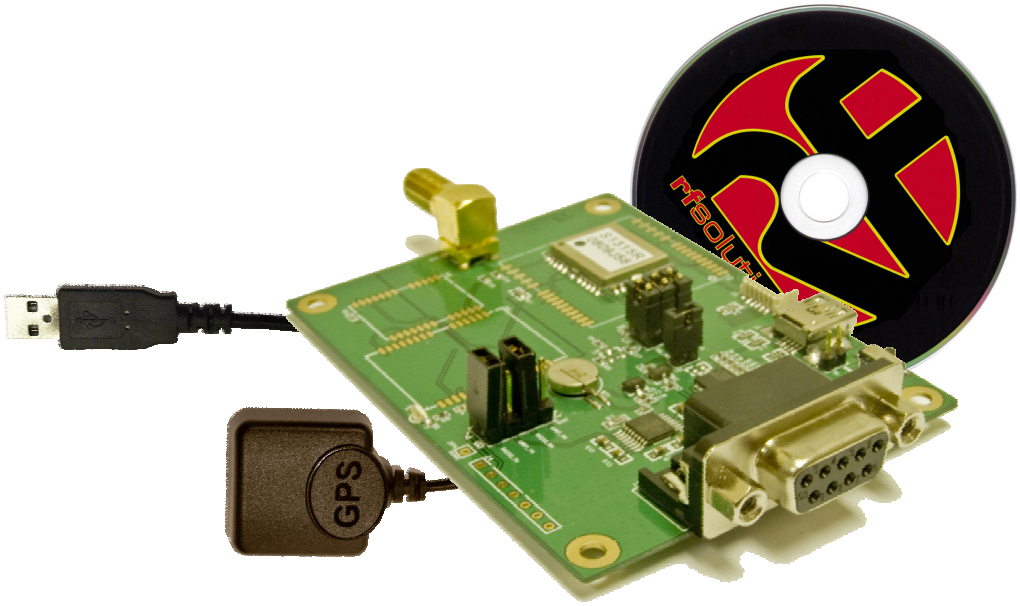
- GPS Evaluation Platform
- Data In Standard NMEA Format
- RS232 & USB Data output
- Link Selectable And Programmable Baud Rates
- Satellite Viewer Software Supplied

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 needs open line of sight to the sky)

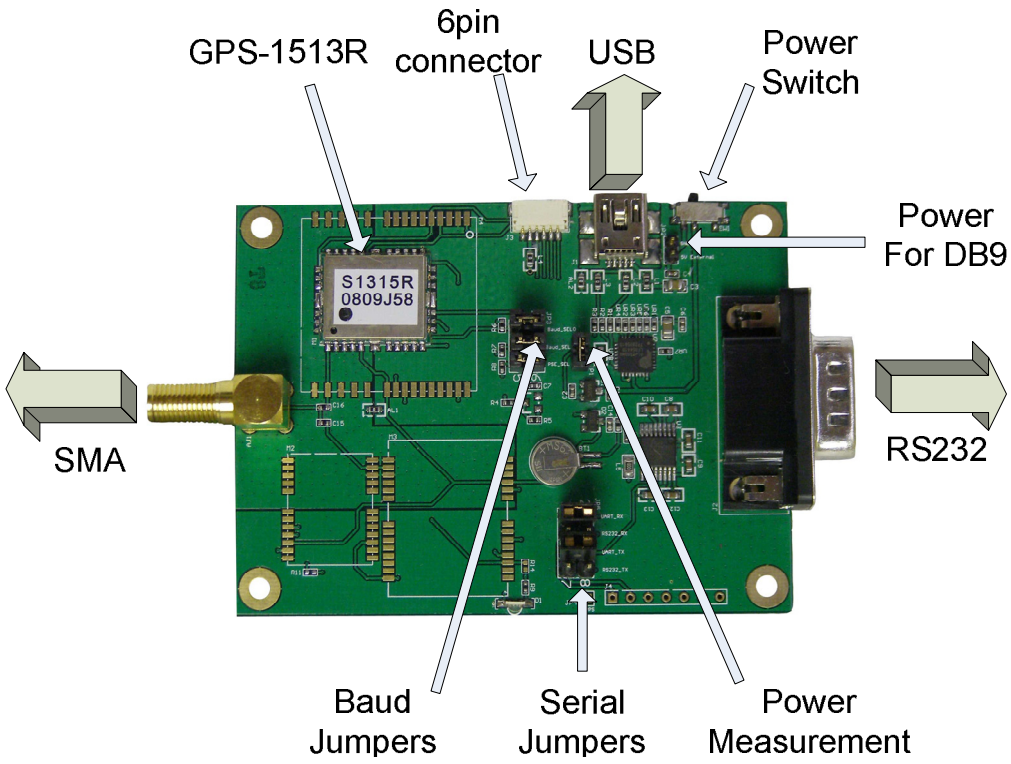
USB Lead: Connects the GPS board to the USB port of a PC.

CD Rom: Contains:

- USB Driver
- Skytraq GPS viewer software

GPS-Evaluation Kit

2. Hardware Functional Description

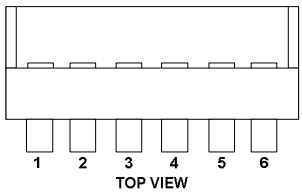


Item	Description
GPS-1513R	GPS Module mounted on the GPS EVAL (please see GPS Module data)
6 Pin connector	Data output UART / RS232
USB	Standard Mini USB output for connection to USB input to a PC
Power Switch	Used to turn Power on / off
Power for DB9	If using RS232 a separate 5V power supply connection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

2.1 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

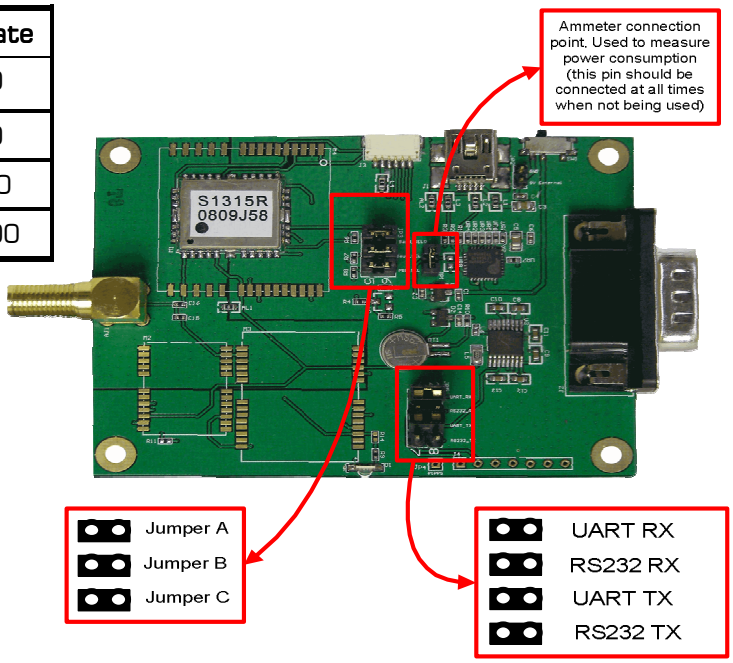
Pin	Name	Type	Description
1	FTXD0	o/p	Serial Data output UART
2	FRXD0	i/p	Serial Data input UART
3	TXD0	o/p	Serial Data output RS-232
4	RXD0	i/p	Serial Data input RS-232
5	Vin	i/p	3.6~6 supply input
6	GND	o/p	GND



2.2 Power Measurement Pins

2.2. Jumper Link Settings

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



2.2.1 Jumper C

Jumper C doubles the search frequency for GPS satellite connections.

2.2.2 Serial output Jumpers

For RS232: Connect the two Jumper links marked as RS232
For UART: Connect the two Jumper links marked as UART

3. Set–up Process

3.1 Software Installation (for USB operation)

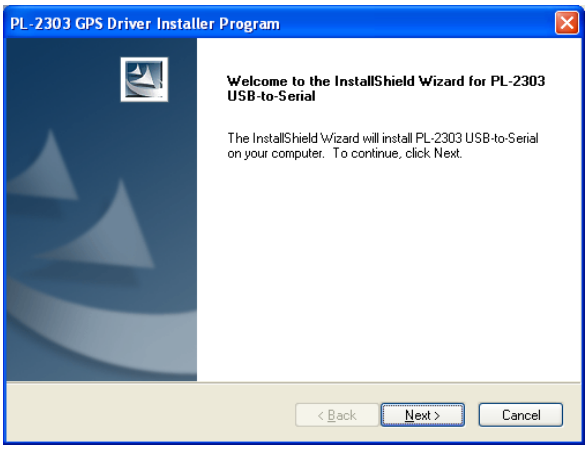
3.1.1 Insert the CD into the CD ROM Drive of your PC.

3.1.2 Navigate to the Folder showing the CD contents.

3.1.3 Open the folder "PL2303_prolfic…"

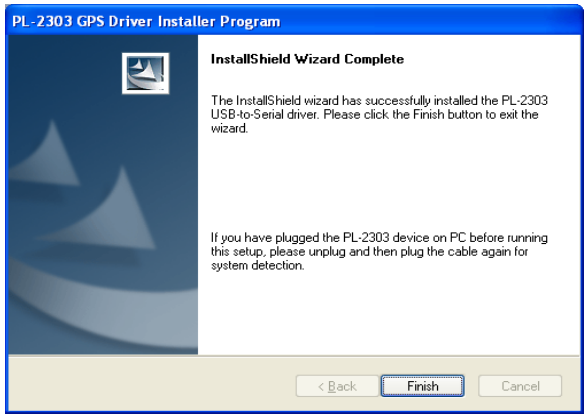
3.1.4 Double click on the exe file of the same name.

3.1.5 Follow the on screen instructions and install the USB-serial device driver.



3.1.6 Once installation is complete, click finish.

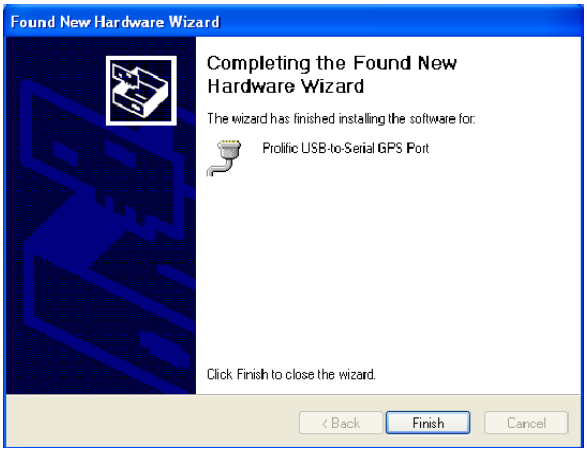
3.1.7 It is advisable to restart your computer after driver installation.



3.1.8 Plug the USB cable into your GPS EVAL PCB's USB mini connector.

3.1.9 Plug the USB cable and GPS Eval PCB in to your PC. The PC will auto find the new device.

3.1.10 Follow the on screen instructions and install the hardware.



3.1.11 Navigate to the CD contents folder and open the "GPS viewer…" folder. Copy the GPS viewer program to your chosen location on your PC.

3.1.12 Run the Program from the new location.

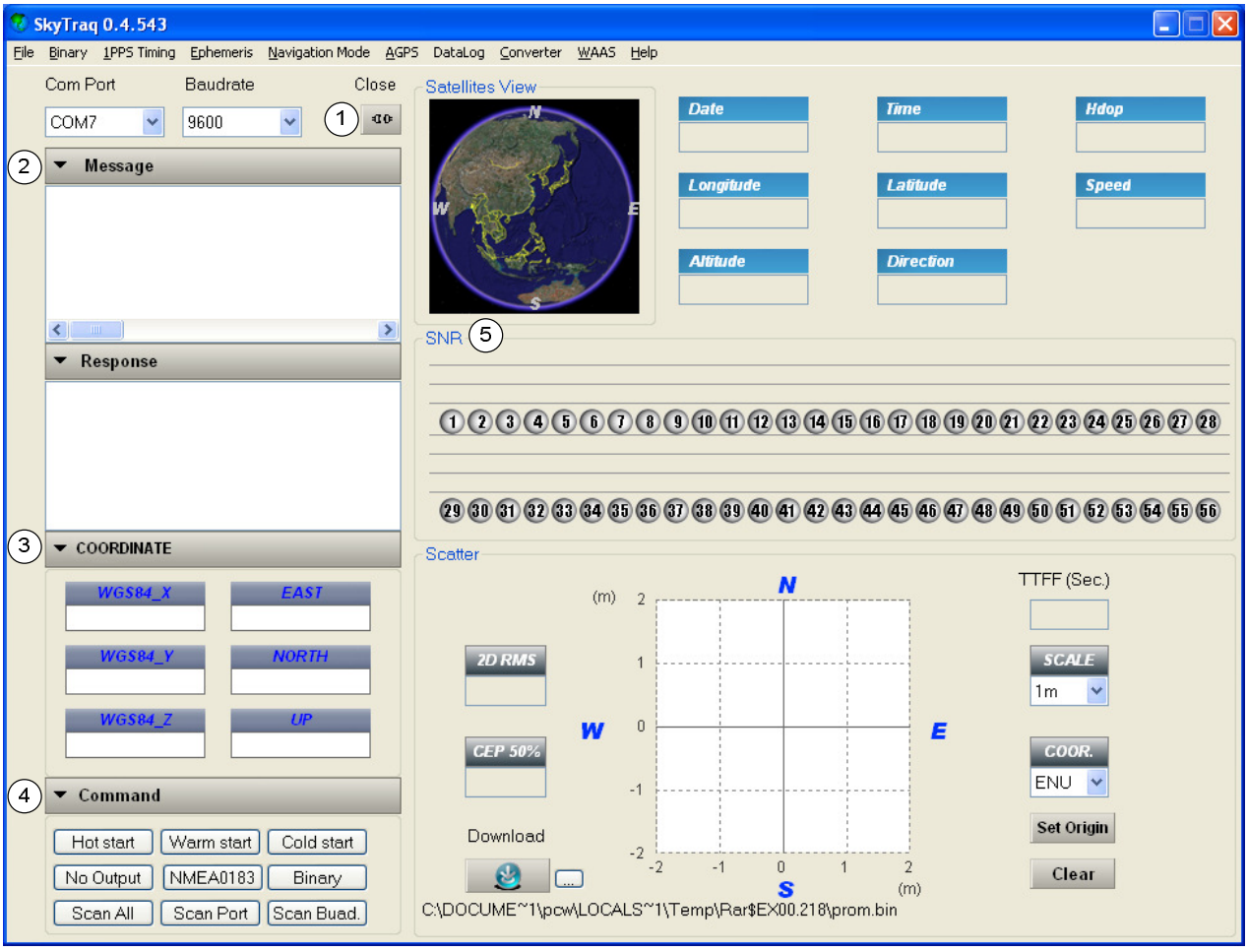
3.2 RS232 (DB9)

If using the RS232 connector on the PCB to communicate to a compatible device or PC, the GPS Eval PCB will need to be powered either via the 5V connectors (see section 2) or via the USB connector.

4. GPS Viewer Program

4.1.1 Identify the correct COM PORT, and select the baud rate according to your chosen Baud rate pin configuration.
4.1.2 Clicking the "Connect" ICON, the GPS Eval board will begin to search the satellites and the program will show data in the message window.

4.2 Software Functional Description



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

5. Technical Specifications

5.1 GPS module:

For Specification of the GPS-1513R please refer to the Datasheet for the Module available from www.rfsolutions.co.uk

5.2 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

5.3 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

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Meets the following EC Directives

DO NOT Discard with normal waste, please recycle.

ROHS Directive
2002/95/EC

Specifies certain limits for hazardous substances.

WEEE Directive
2002/96/EC

Waste Electrical & Electronic Equipment.
This product must be disposed of through a licensed WEEE collection point.
RF Solutions Ltd fulfils its WEEE obligations by membership of an approved compliance scheme.
Environment Agency producer registration number WEE/JB0104WV

Waste Batteries and Accumulators Directive
2006/66/EC

Where batteries are fitted, before recycling the product, the batteries must be removed and disposed of at a licensed collection point.

6. Contact Information

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

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