GPS MODULE EVALUATION BOARD

Features

- Standard RS232 Data Output Via 9way D Type Connector
- Data In Standard NMEA Format
- Low Power Consumption
- Supplied with
    - o GPS Antenna
    - o Supporting software
    - o RS232 Cable (for PC connection)
- Led Indicators For Valid Almanac And Signal Lock
- Link Selectable And Programmable Baud Rates
- Onboard Regulator Allows 3.3v To 15v Supply
- Compatible With Popular Routing Software

Applications

- Development for embedded GPS
- Asset Management
- Vehicle Tracking / Navigation
- Add On For PDA's

Description

This board is provides a hardware and software evaluation platform for development of the RF Solutions GPS/PVT module. This module provides position, velocity and time information in a standard NMEA string format that is compatible with a range of GPS driven navigation packages including Microsoft AUTOROUTE.
The evaluation board provides a completed design utilising the GPS Module. This provides a direct PC interface via 9 way 'D' type connector and a row of pin headers to enable configuration and monitoring of the GPS signals. Power may be from any dc supply from 3.3 – 15V. Two LEDs provide additional information relating to the signal lock status and the validity of the onboard almanac.

Ordering Information

Part Number	Description
GPS-EVAL2R2	GPS Module Evaluation Board

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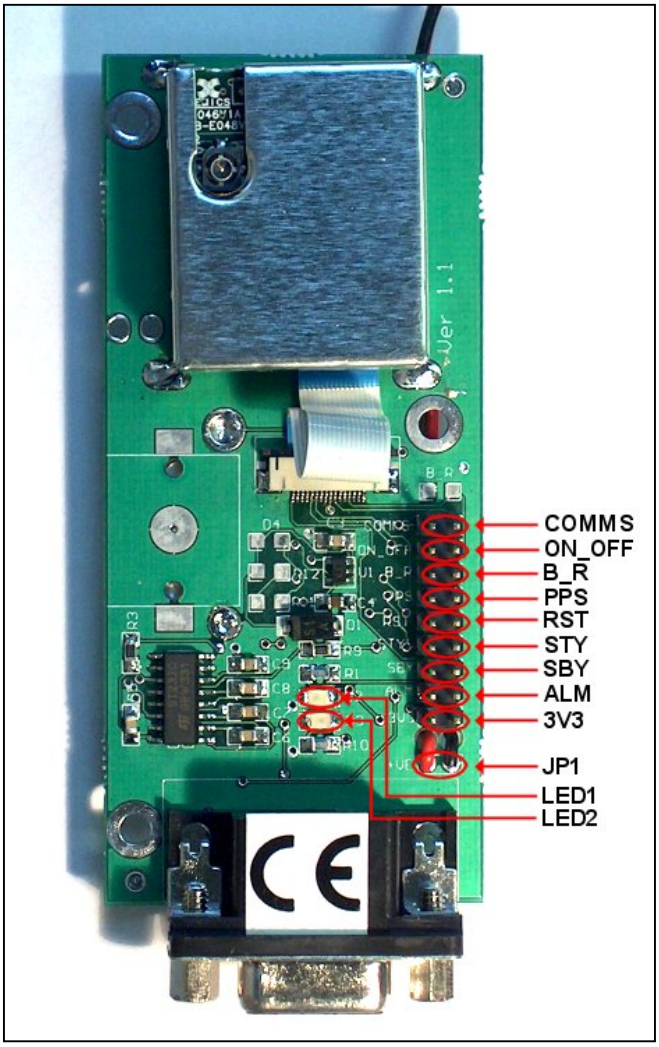
Jumper Settings
The Pin Headers provide access to the GPS modules pins. Pin 1 of each of the pin headers connects through to the GPS module as indicated in the table below. Pin 2 of each pin header is connected to ground.

Please refer to the Data Interface section on page 4 of datasheet DS031 for information on the functionality of these pins.

Jumper Link	GPS Pin	Link Open	Link Closed	I/O
ON_OFF	ON/OFF	ON	OFF	Input
B_R	BAUD RATE	9600	4800	Input
PPS	PPS	N/A	N/A	Output
RST	RESET	-	RESET	Input
STY	STY1	-	STY1	Input
SBY	Standby	-	Standby	Input
ALM	ALMRDY	N/A	N/A	Output



Power Connections
Power can be supplied to the board at either 3.3Vdc or 4-9Vdc via the 3V3 or JP1 pin headers respectively.

Data Connections
Data access is provided at either RS232 or TTL voltage levels.

- The 9-way D-Type connector provides data transfer at RS232 voltage levels. It may be connected directly to a COM port of a PC.
- The COMMS pin header provides direct access to the GPS module 3.3V data lines.
  COMMS_1 = GPS Data Transmit
  COMMS_2 = GPS Data Recieve
  In this case the RS232 Driver chip can be disabled by removing R3 and R9.

Status LEDs
LED1 (the green LED) illuminates to indicate that a valid almanac is available.
LED2 (the red LED) flashes to indicate that no GPS information is available.
LED2 remains off if GPS information is available.

PCB Dimensions: 85.5mm x 33.5mm

Other Information
For a detailed description of the GPS Module please see the following documents:
GPS Datasheet: DS031
GPS Programmers Guide: DS032

Software Information
The following software may be used to operate on a PC in conjunction with the evaluation board:

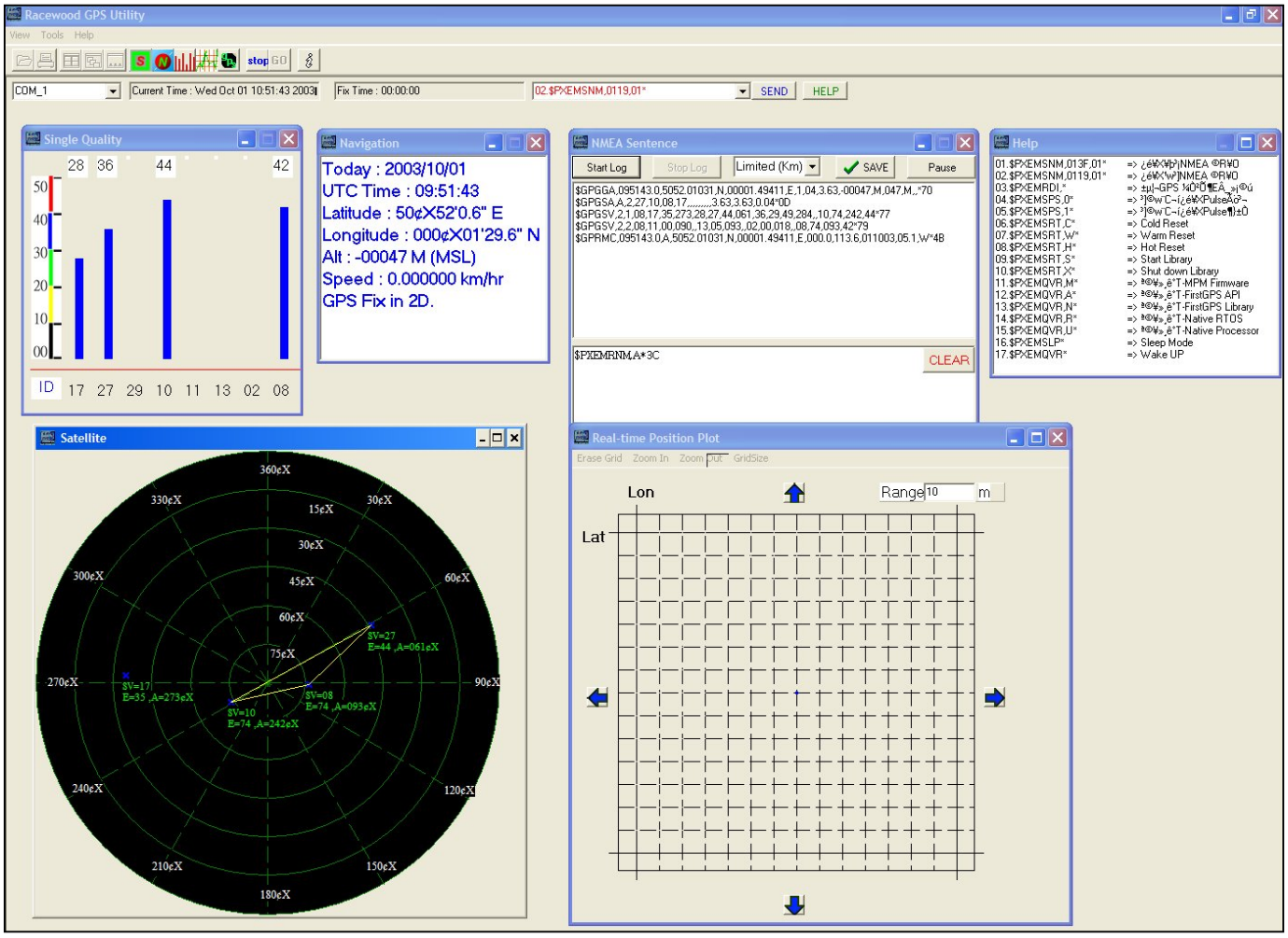
Microsoft Autoroute

- This produces a complete Satellite navigation system. The GPS information is utilised to plot your position on a map of your current location.

- The only connections required to the GPS Evaluation board are an RS232 data cable and power.
- Jumper link JP5 should be fitted to set the baud rate to 4800 baud.
- Please see the Microsoft Autoroute help file for information on configuring the software to work with a GPS receiver

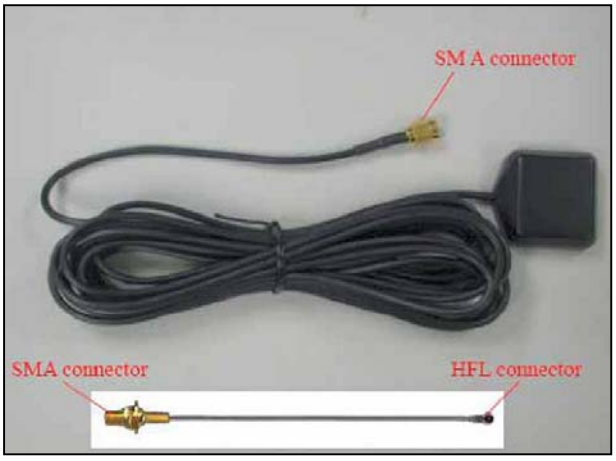
Evaluation Software

- This provides an interface to the GPS receiver. Information including your current Location, a real time position plot, the satellite locations and the satellite signal strength is displayed, as shown below.
- The only connections required to the GPS Evaluation board are an RS232 data cable and power.
- All jumper connections can be left open and the communications can be effected at 9600 baud.



Antenna Information

The GPS antenna is a compact active antenna designed for use with GPS module GPSM001. The antenna is equipped with a magnetic base so can be easily mounted. Due to the low power consumption it is ideal for portable devices.



Features

- Active antenna design
- 5 meter coax connecting cable
- 100 mm SMA-to-HFL conversion cable suppli
- Small size 39 x 35 x 12.5 mm

Parameter	Min	Typ	Max
Foperating		1574.42 MHz	
Bandwidth		2.046 MHz	
Operating Temp range	-20 ^{0}C		85^{0}C
Connector		SMA	
Patch Antenna			
Polarization		R.H.C.P	
Gain to Fo @90^0 elevation		5 Dbi	
Output VSWR			2
Impedance		50 Ohm	
Antenna + LNA			
Gain to Fo	27 dB	29 dB	33 dB
Noise Figure			1.7dB
Voltage Supply	2.7 V	3.3 V	3.9 V
Current Consumption		12 Ma	

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RF Solutions is a member of the Low Power Radio Association