



GPS Evaluation Kit EVA-1082

**A description of an evaluation system
for Vincotech's GPS Receiver Module A1082-A**

User's Manual

**Version 2.1
Hardware Revision 52**



Revision History

Rev.	Date	Description
1.0	27-11-07	Initial Draft
1.1	10-03-08	Some minor changes
2.0	08-22-08	New layout; moved to Vincotech
2.1	10-20-08	VANT jumper description added, new Cockpit software included, ICC jumper explained, other minor changes
	mm-dd-yy	

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1 Introduction

1.1 Purpose

The GPS Evaluation Kit EVA1082-A allows an easy evaluation of Vincotech's GPS module A1082-A by offering access to the ports and pins of the module.

The EVA1082 serves three major purposes:

1. as a demonstration package of the module's capabilities
2. as an example on how to integrate the module into a system
3. to support a temporary design in

Get the EVA1082-A working by just following 2 steps:

- 1) Powering the module and connecting the antenna with sufficient view to the sky will immediately result in an NMEA output with according position information.
- 2) The connections provided on the module allow direct access by a surrounding system and therefore an ideal environment for fast development.

1.2 Contents

The EVA1082-A includes the following components:

- Demonstration board (EVA1082) with A1082-A GPS receiver
- Active GPS antenna
- USB cable to connect to your PC
- CD with complete documentation and Vincotech's GPS Cockpit software

Please check your package for completeness and connect the components properly.

2 Handling Precautions

The EVA1082-A contains components that are sensitive to electrostatic discharge (ESD). Please handle with appropriate care.

3 Quick Start (using USB connection)

- (1) Connect the EVA1082-A to your PC using the included USB cable.
- (2) When the PC asks for drivers select the folder “Tools\ Drivers” of the included CD ROM. Note that two drivers need to be installed, the [EVA1082A FTDI driver](#) and the [USB serial driver](#).

Note: During the driver installation process your Windows system will probably notify you, that the driver did not pass Windows logo testing with a warning:



Figure 1: Windows driver installation warning

Note: After successful driver installation Windows might interpret the data coming over the serial interface as a serial ballpoint mouse! Your mouse pointer can start jumping around. To stop this, disable the according device using your device manager. Leave the USB1082-A kit connected and press and keep pressing the reset button. You will find the device under “Mice and other pointing devices”. Use a right click to open the sub-menu and disable the device.

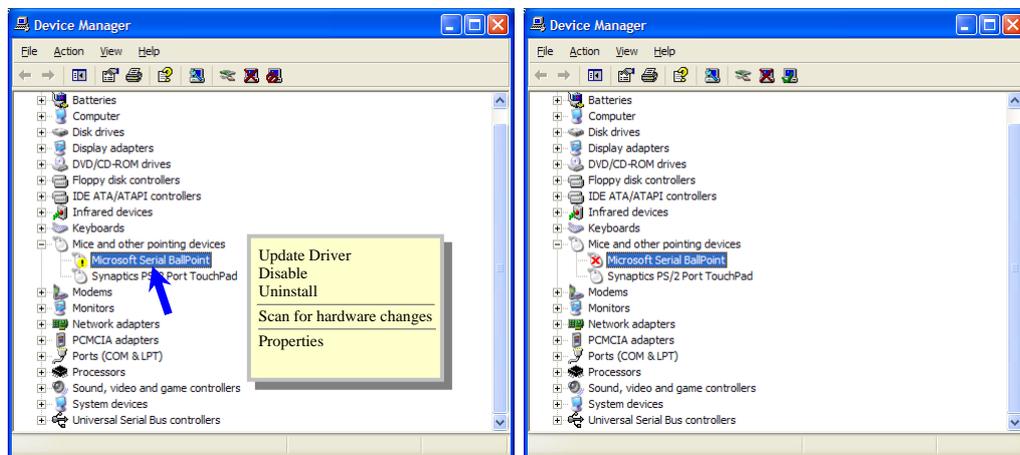


Figure 2: Disabling of Microsoft Serial BallPoint

- (3) Connect the included GPS antenna to the EVA1082-A and make sure that the antenna has a good view to the sky!

To start the GPS Cockpit software which visualizes the NMEA output data coming from the GPS receiver, copy all files from the included CD ROM “Tools/GPS Cockpit” to a folder of your choice on your PC. Then double click the GPSC.exe file. The GPS cockpit software starts without additional software installation.

- (4) Now you need to activate the correct port within GPS Cockpit. You can do this by selecting “COM port connection”. A detailed description of the GPS Cockpit software is included on the CD ROM. In any case, the following window will appear:

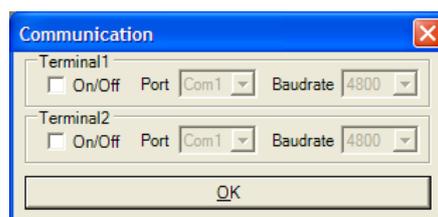


Figure 3: GPS Cockpit communication window - blank

Activate “Terminal 1”, choose the COM port to which the GPS receiver is connected (verify in your system settings - device manager, which communication port is used for this USB serial connection), in our example COM2 at 4800 baud (default setting for the USB1082-A), and click on “OK”:

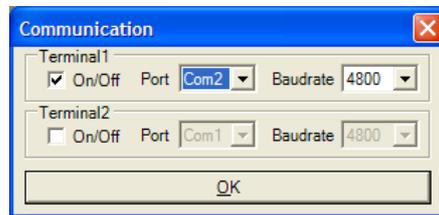


Figure 4: GPS Cockpit communication window – COM2

The connection is established now.

- (5) Open a terminal window to see NMEA sentences by using the “NMEA Terminal” window button. You should then see messages like this:

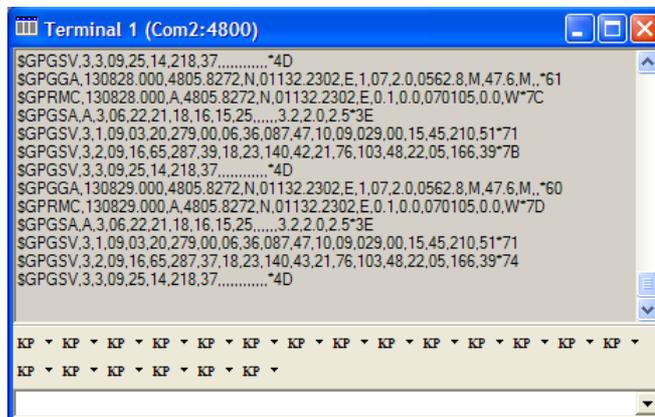


Figure 5: GPS Cockpit NMEA terminal with NMEA data

Now you can start using all the other windows and features of GPS Cockpit. Please refer also to the GPS Cockpit manual and the online help within GPS Cockpit.

4 On-Board Peripherals

- RESET push-button

The RESET button is used to get a full reset of the GPS module. All parameters are stored in non-volatile memory. After pushing this button the module starts again from the beginning.

5 LEDs

There are 5 LEDs on the EVA1082-A that visualize different signals of the module:

LED	Name	Function	Description
D1	TX	Transmit	Serial data traffic (in)
D2	RX	Receive	Serial data traffic (out)
D3	POWER	VCC	Power on LED
D4	1PPS	Timing	1PPS signal (pulse per second, duration 200ms)
D5	Active	Operating mode of Receiver	LED on when GPS receiver is active <i>(please note for your application: the according signal may be used to power down external circuits like LNA and active antenna to reduce power consumption)</i>

Table 1: LEDs function and description

6 Design in support

6.1 Power Supply

The EVA1082-A demo board offers the possibility to implement A1082-A GPS receiver module temporarily into your design by using the screw connectors J7, J8 and J9.

To activate the screw connectors, please check table 2: Switch settings.

Please note:

- J7 power input is **not** protected against reversed polarity.
- External supply has to be within the range of 1,8 to 1,9 VDC, with 50mV max.

6.2 Switch Settings

Switch	Function	USB connection (preset)	Screw connection
S1	1PPS	ON	OFF
S2	ENABLE	ON	OFF
S3	nRST	ON	OFF
S4	TX (NMEA OUT)	ON	OFF
S5	RX (NMEA IN)	ON	OFF
S6	STDBY	OFF	OFF
S7	VCC_CPU	ON	ON
S8	VCC	ON	OFF

Table 2: switch settings

6.3 Screw connector

Connector	J7			J8			J9		
PIN	1	2	3	4	5	6	7	8	9
Port	GND	VCC	STDBY_Out	STDBY	Rx	Tx	nRST	ENABLE	1PPS

Table 3: J7, J8 and J9 screw connector description

6.4 VANT jumper

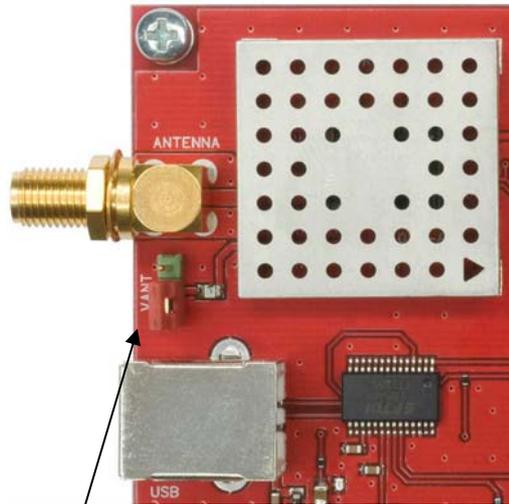


Figure 6: VANT jumper

Figure 6 shows the VANT jumper configured to feed an active antenna connected to the SMA connector with 3.3V and max. 50mA. By leaving off the jumper no antenna supply is provided to the SMA connector.

To feed an external antenna supply voltage to the SMA connector:
 Leave of the red jumper and connect the upper pole to GND and connect the middle pole to the external antenna supply voltage. (max. 5V / max. 50mA)

6.5 ICC jumper

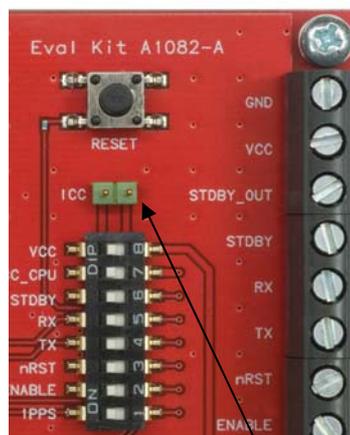


Figure 7: ICC jumper

As long as the VCC DIP switch in “on” the ICC jumper is bridged. By switching switch off the VCC switch the current draw of the A1082 GPS receiver can be measured directly by connecting a low resistance measurement device to the ICC jumper.

The low resistance measurement device should be connected before VCC is switched off!

7 NMEA & USB Port

- Default setting: 19200 baud, 8 data bits, no parity, 1 stop bit, no flow control!
- Standard NMEA-0183 output on NMEA.
- Standard USB connectors.

8 EVA1082-A Firmware and NMEA Sentences

See separate document “**GPS Firmware A1082**” for a detailed description of the standard firmware loaded onto the modules delivered with the A1082-A.

9 Related Information

9.1 Contact

This manual was created with due diligence. We hope that it will be helpful to the user to get the most out of the GPS module.

Anyway, inputs about errors or mistakable verbalizations and comments or proposals to Vincotech, Germany, for further improvements are highly appreciated.

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9.2 Related Documents

- GPS Receiver A1082 (Vincotech)
- GPS Firmware A1082 (Vincotech)
- GPS AppNote A1082 Power Supply (Vincotech)

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