

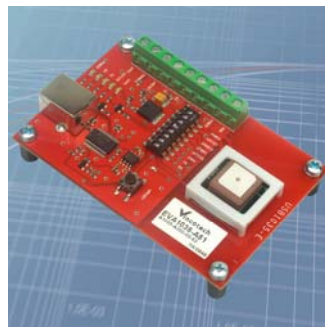


# **GPS Evaluation Kit EVA1035-E**

**A Description of the Evaluation Board  
for Vincotech's GPS Receiver / Smart Antenna Module A1035-E**

## **User's Manual**

**Version 1.0  
Hardware Revision 01**



## Revision History

Rev.	Date	Description
1.0	02-20-09	Initial Release, based on EVA1082-A
	mm-dd-yy	

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# 1 Introduction

## 1.1 Purpose

The GPS Evaluation Kit EVA1035-E allows an easy evaluation of Vincotech's GPS receiver /smart antenna module A1035-E by offering quick access to the ports of the module.

The EVA1035-E serves three major purposes:

- As a demonstration package of the module's capabilities  
Powering the A1035-E GPS receiver module via the USB connector with sufficient view to the sky (or using an external active antenna with sufficient view to the sky) will result in an NMEA output with position information.
- As an example how to integrate the module into a system  
The schematic in chapter "9 Board Schematics" is a basic example of how to integrate the GPS module into an application or system.
- To support an easy temporary design in  
The signals provided on the Evaluation Kit allow direct integration into a surrounding system making it an ideal development tool.

## 1.2 Contents

The EVA1035-E includes the following components:

- Demonstration board (EVA1035-E) with A1015-E GPS receiver
- 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 EVA1035-E contains components that are sensitive to electrostatic discharge (ESD). Please handle with appropriate care.

## 3 Quick Start (using USB connection)

- (1) Connect the EVA1035-E 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 [EVA1035-E 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:

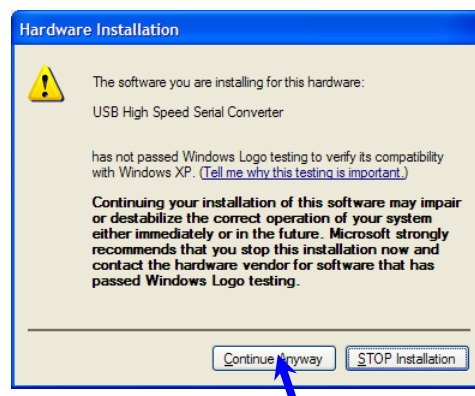


Figure 1: Windows driver installation warning

**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 USB1035-E 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.

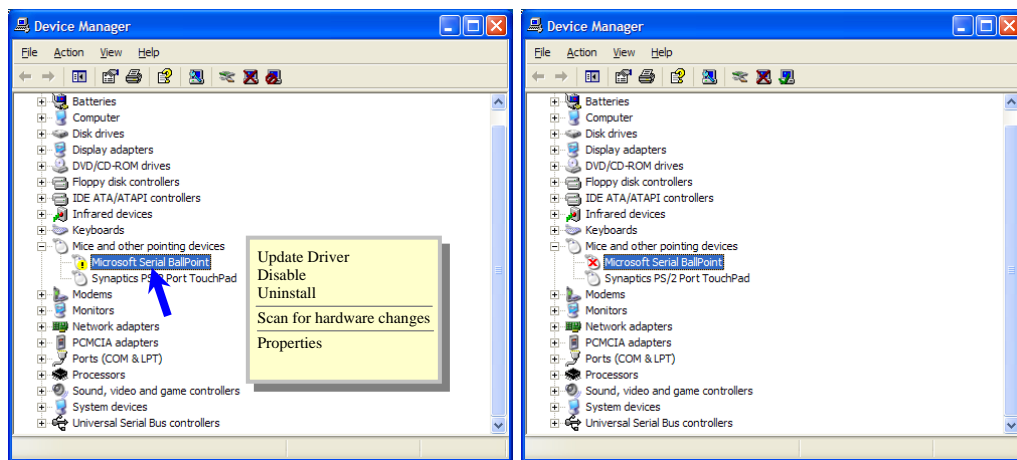


Figure 2: Disabling of Microsoft Serial BallPoint

- (3) Connect the included GPS antenna to the EVA1035-E 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:

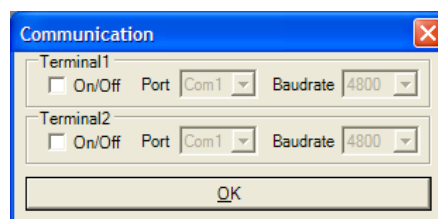


Figure 3: GPS Cockpit communication window - blank

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 19,200 baud (default setting for the A1035-E), and click on “OK”:

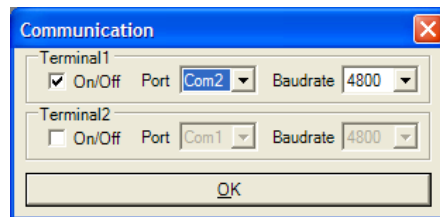


Figure 4: GPS Cockpit communication window – COM2

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:

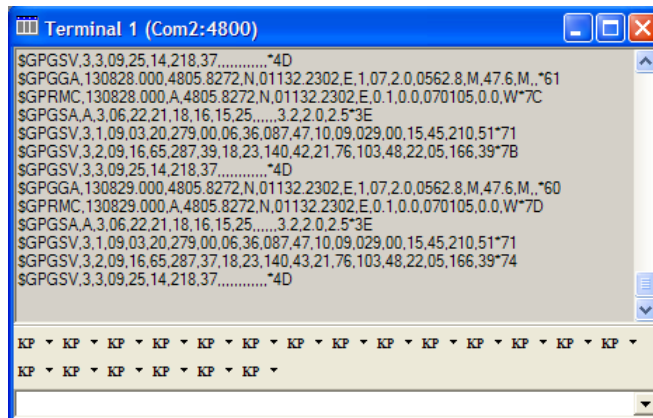


Figure 5: GPS Cockpit NMEA terminal with NMEA data

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

### 4.1 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.

### 4.2 LED's

There are 5 LED's on the EVA1035-E that visualize different signals of the module:

LED	Name	Function	Description
DS3	1PPS	Timing	1PPS signal (pulse per second, duration 200ms)
DS4	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>
DS2	TX	Transmit	Serial data traffic (in)
DS1	RX	Receive	Serial data traffic (out)
DS5	POWER	VCC	Power on LED

Table 1: LED's function and description

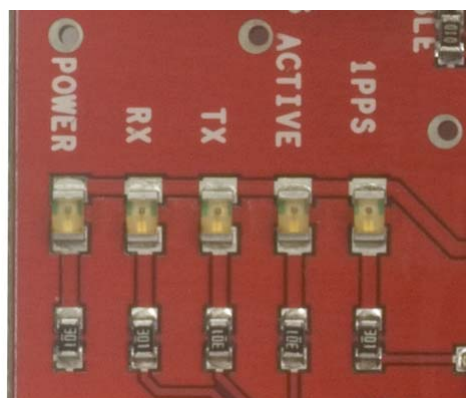


Figure 6: EVA1035-E LED's

## 5 Design-in Support

### 5.1 Power Supply

The EVA1035-E demo board offers the possibility to implement the A1035-H GPS receiver module temporarily into your design by using the terminal block with 9 connections. To operate the EVA1035-E via this terminal block, please check “5.3DIP Switch Settings”.

Please note:

- VCC power input is **not** protected against reversed polarity
- External supply has to be within the range of 1.8 to 1.9 VDC

### 5.2 Terminal Block

The terminal block offers direct access to the A1035-E GPS receiver pins.

Pin	1	2	3	4	5	6	7	8	9
Port	GND	VCC	Active	STDBY	Rx	Tx	nRST	ENABLE	1PPS

Table 2: Terminal block description

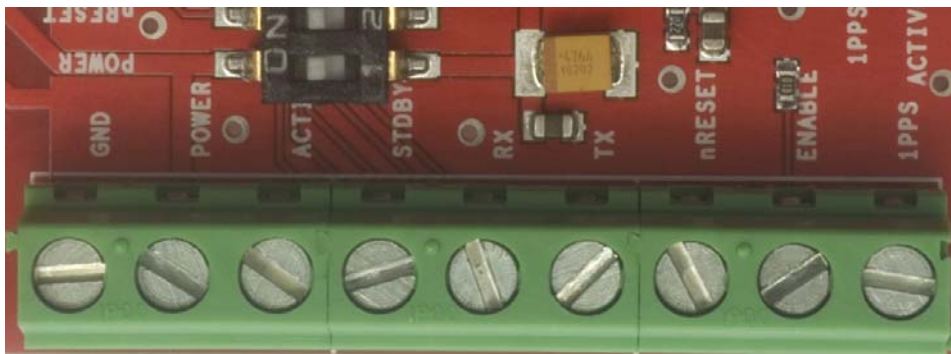


Figure 7: Terminal block

### 5.3 DIP Switch Settings

The following picture shows the DIP switches of the EVA1035-E.

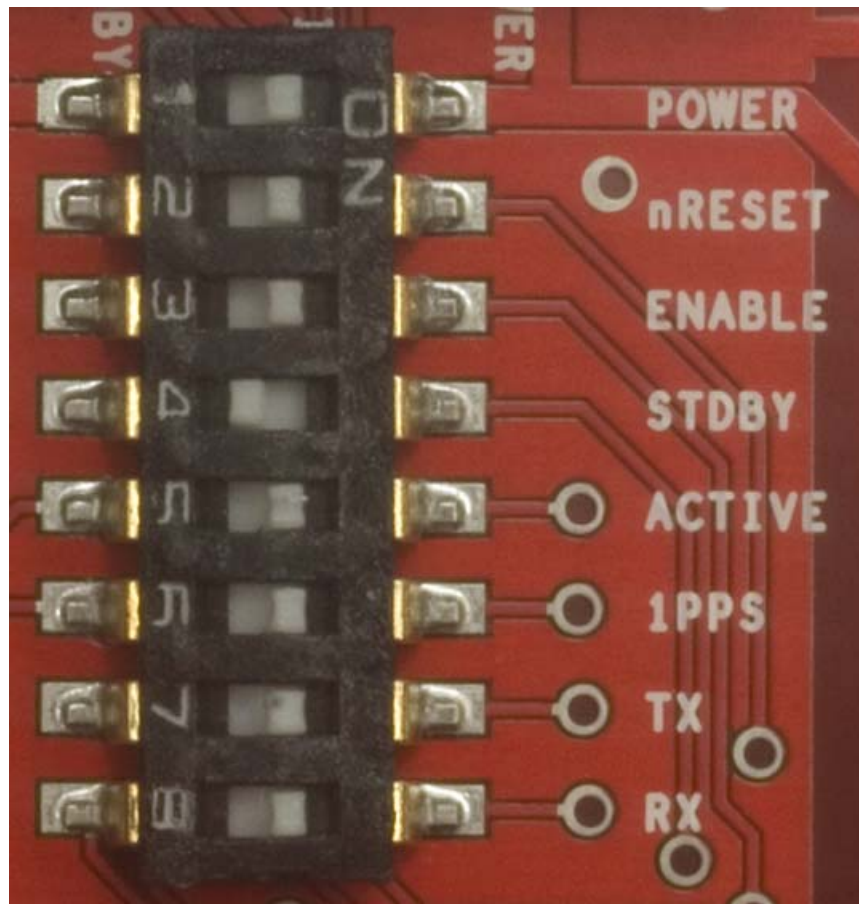


Figure 8: DIP switches

Switch	Function	Operation via USB connector (default settings)	Operation via terminal block
S1	VCC	ON	OFF
S2	nRST	ON	OFF
S3	ENABLE	ON	OFF
S4	STDBY	ON	OFF
S7	Active	ON	<b>OFF</b>
S1	1PPS	ON	OFF
S4	TX (NMEA OUT)	ON	OFF
S5	RX (NMEA IN)	ON	OFF

Table 3: Switch settings

## 6 NMEA Port

- Default setting: 19,200 baud, 8 data bits, no parity, 1 stop bit, no flow control!
- Standard NMEA-0183 output on NMEA, baud rate selectable.
- Standard USB connectors

## 7 EVA1035-E Firmware and NMEA Sentences

See separate document **GPS Firmware** for a detailed description of the standard firmware loaded onto the modules delivered with the EVA1035-E.

## 8 Board Overview

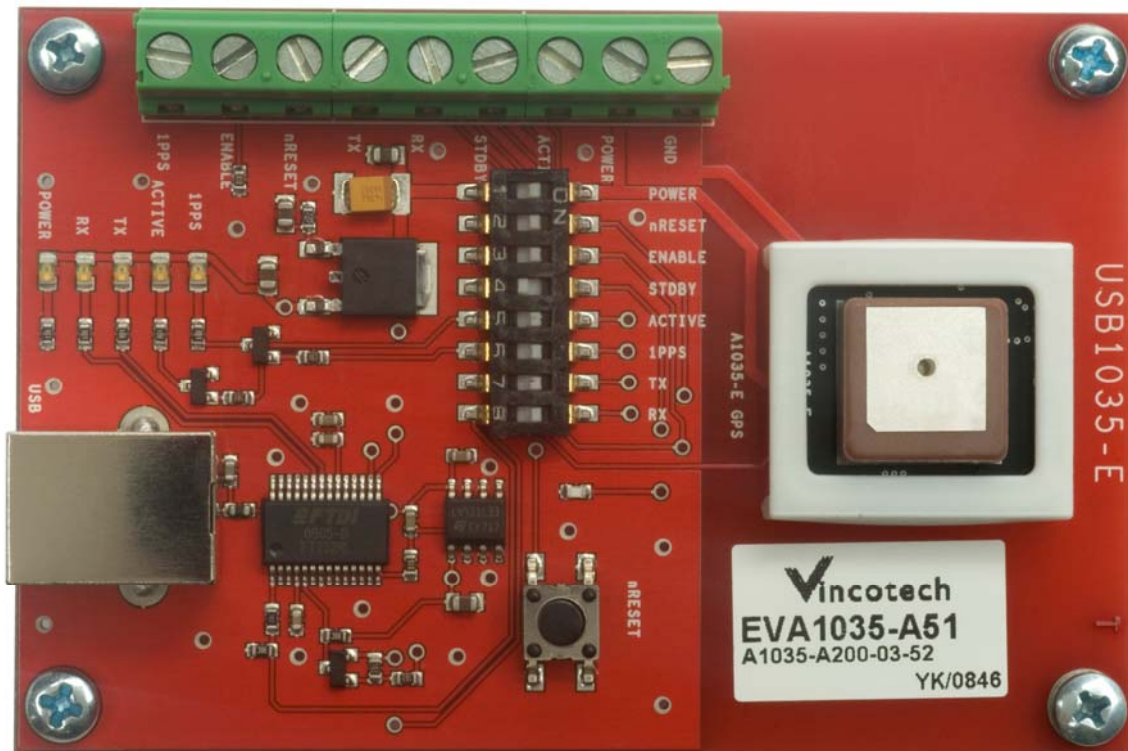


Figure 9: Board overview

# 9 Board Schematics

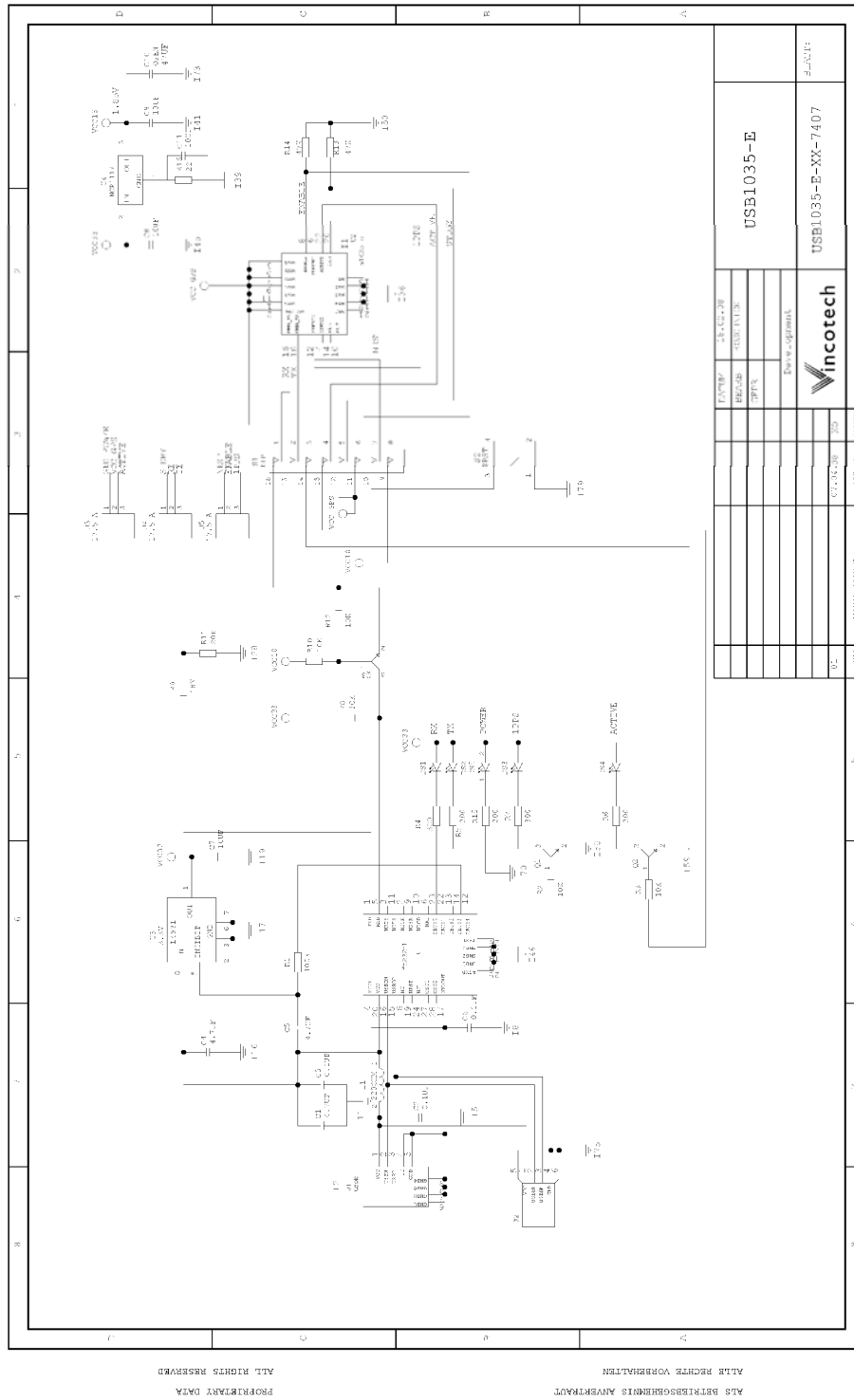


Figure 10: EVA1035-E board schematics

## **10 Related Information**

### **10.1 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.

Inputs regarding errors or mistaken verbalizations and comments or proposals to Vincotech, Germany, for further improvements are highly appreciated.

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### **10.2 Related Documents**

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

### **10.3 Related Tools**

- GPS Cockpit (Vincotech)

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