



GPS Evaluation Kit A1080

**A description of an evaluation system
for Vincotech's GPS Receiver Module A1080-A/-B**

User's Manual

**Version 3.0
Hardware Revision 01**



Revision History

Rev.	Date	Description
1.0	12-05-06	Initial Draft.
2.0	04-01-07	Minor changes; new design
3.0	08-04-08	Removed A1037; new layout; moved to Vincotech
	mm-dd-yy	

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1 Introduction

1.1 Purpose

The GPS Evaluation Kit EVA1080 allows an easy evaluation of Vincotech's GPS module A1080-A by offering easy access to the ports of the module.

The EVA1080 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 an easy temporary design in

Get the EVA1080 working by just following 3 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.
- 3) The schematics in chapter "10 Board schematics" can serve as examples on how to integrate the GPS module in an easy way.

A supercap is used to continue RTC operation during power off periods. The software on the A1080-A delivered with the EVA1080 is identical to the standard software.

1.2 Contents

The EVA1080 includes the following components:

- Demonstration board (labeled EVA1080) with A1080-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 EVA1080 contains components that are sensitive to electrostatic discharge (ESD). Please handle with appropriate care.

3 Quick Start (using USB connection)

- (1) Connect the EVA1080 with your PC using the included USB cable.
- (2) When the PC asks for drivers select the folder “[Tools\USB1080 drivers](#)” of the included CD ROM. Note that two drivers need to be installed, the [USB1080 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:

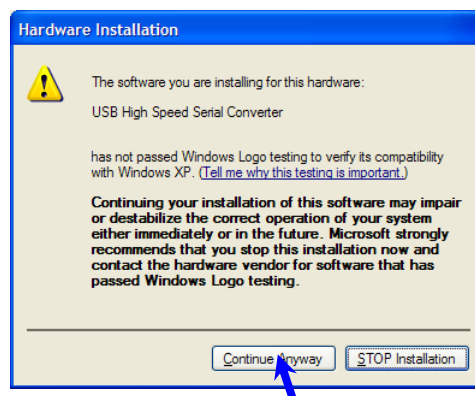


Figure 1: Windows driver installation warning

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 EVA1080 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.

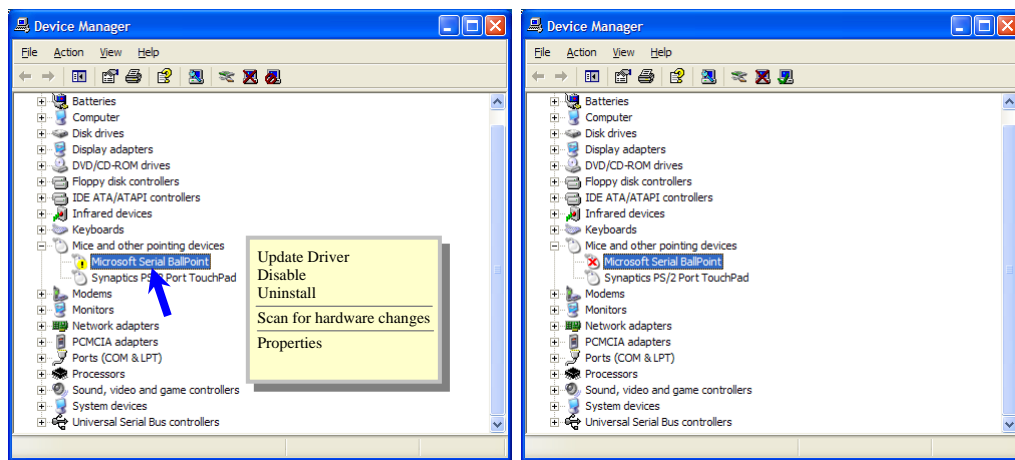


Figure 2: Disabling of Microsoft Serial BallPoint

- (3) Connect the included GPS antenna to the EVA1080 and make sure that the antenna has a good view to the sky!
- (4) In order to install GPS Cockpit please use the provided “setup.exe”. When starting “setup.exe”, you will see the following screen:



Figure 3: GPS Cockpit installation wizard

Please follow the instructions in order to install GPS Cockpit on your computer. GPS Cockpit was designed for use with the operating systems Windows2000™ and WindowsXP™.

- (5) Start GPS Cockpit (which should be installed in your program list).
- (6) Now you need to activate the correct port within GPS Cockpit. You can do this by either selecting “Connect using serial port” in the “Connect to GPS” menu

item or by simply clicking the “Connect Serial” button. In any case, the following window will appear:

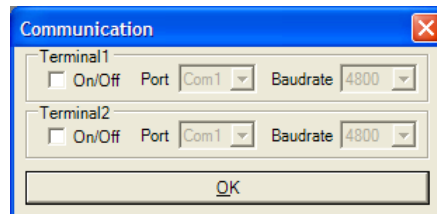


Figure 4: GPS Cockpit communication window - blank

Activate “Terminal 1”, choose the COM port to which the GPS receiver was 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 EVA1080), and click on “OK”:

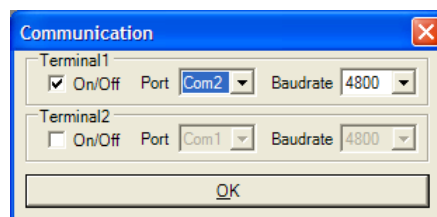


Figure 5: GPS Cockpit communication window – COM2

The connection is established now.

- (7) Open a terminal window to see NMEA sentences by using the “Terminal Window (1)” button. You should then see messages like this:
- (8)

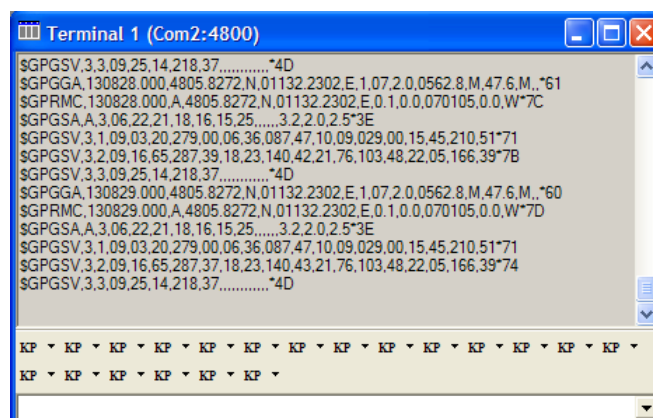


Figure 6: GPS Cockpit terminal window with NMEA data

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
- BOOT 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.

The BOOT button is used to flash Firmware to A1080-A module. Push RESET and BOTT button at the same time and release RESET button prior BOOT button. The A1080-A is now waiting to receiver new firmware data via RX1.

5 LEDs

There are 4 LEDs on the EVA1080 that visualize different signals of the module:

LED	Name	Function	Description
LD1	VCC	POWER	Power on LED
LD2	1PPS	Timing	1PPS signal (pulse per second, duration 200ms) This LED will not work with A1080-A because of short signal duration
LD3	RX1	Receive	Serial data traffic (out)
LD4	TX1	Transceive	Serial data traffic (in)

Table 1: LEDs function and description

6 Design in support

6.1 Power Supply

The EVA1080 demo board offers the possibility to implement A1080-A GPS receiver module temporarily into your design by using the screw connectors J3 and J4. To activate the screw connectors, please check table 2: Switch settings.

Please note:

- J3 power input is **not** protected against reversed polarity.
- External supply has to be within the range of 3,3 to 3,6 VDC,
- RTC backup: Supercap soldered to the board can be used

6.2 Switch Settings

Switch	Function	USB connection (preset)	Screw connection
S1	Backup	Closed	Open / Close *1
S2	Config 1	Open	Closed
S3	Config 2	Open	Closed
S4	Vcc	Closed	Open
S5	RX2	Open	Closed
S6	RX1 (NMEA IN)	Closed	Open
S7	TX2	Open	Closed
S8	TX1 (NMEA OUT)	Closed	Open

Table 2: switch settings

*1: S1 have to be closed to use external Goldcap.
S1 have to be open to use onboard Goldcap

6.3 Screw connector

Pin	1	2	3	4	5	6
Port	NMEA in	NMEA out	1PPS	3.3V	GND	Backup

Table 3: J3 and J4 screw connector description

7 NMEA Port

- Default setting: 4800 baud, 8 data bits, no parity, 1 stop bit, no flow control!
- Standard NMEA-0183 output on NMEA, baud rate selectable.
- Standard USB connectors.

8 EVA1080 Firmware and NMEA Sentences

See separate document **GPS Firmware** for a detailed description of the standard firmware loaded onto the modules delivered with the EVA1080.

9 Board Overview

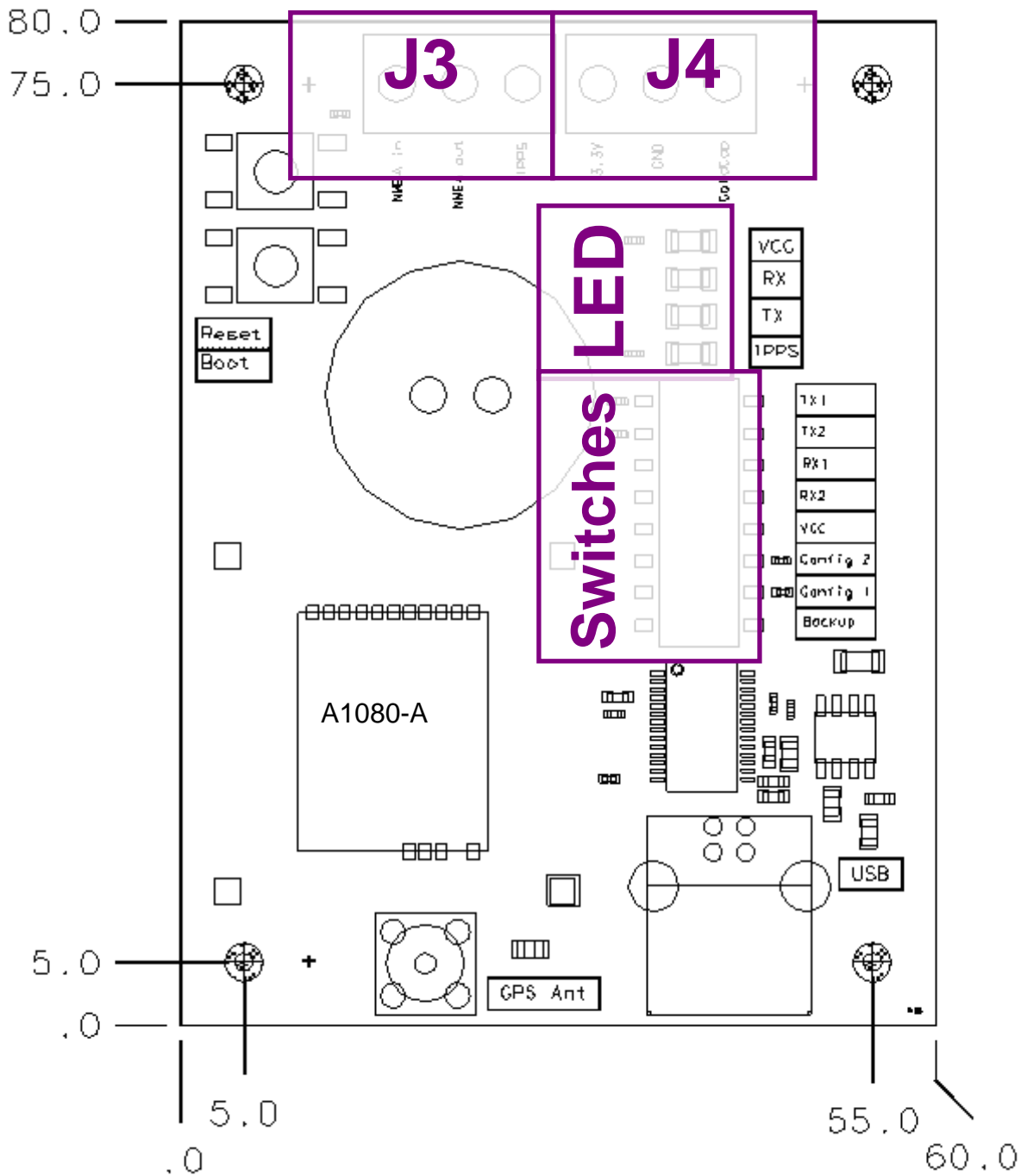


Figure 7: Board overview

10 Board schematics

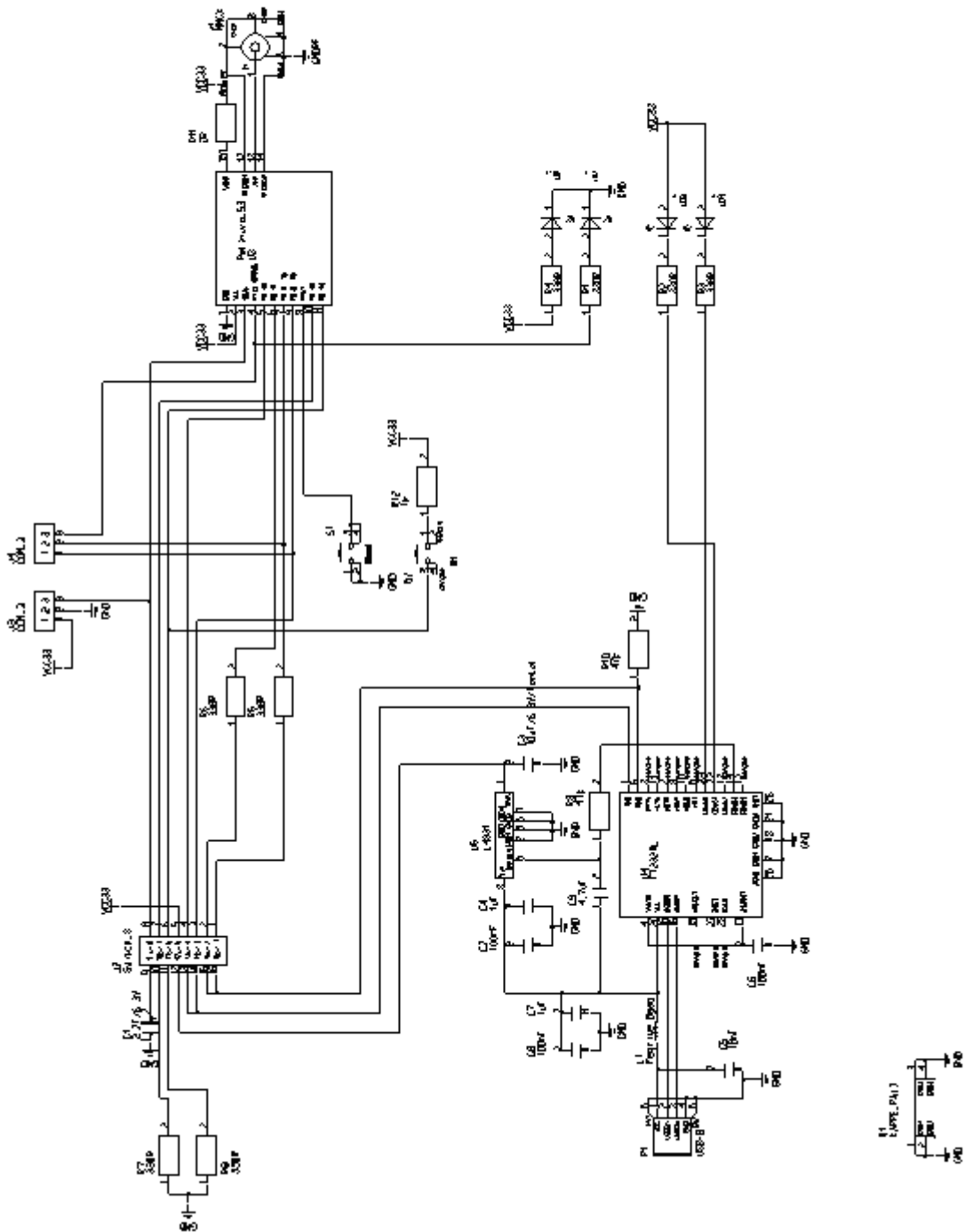


Figure 8: Board schematics

11 Top view

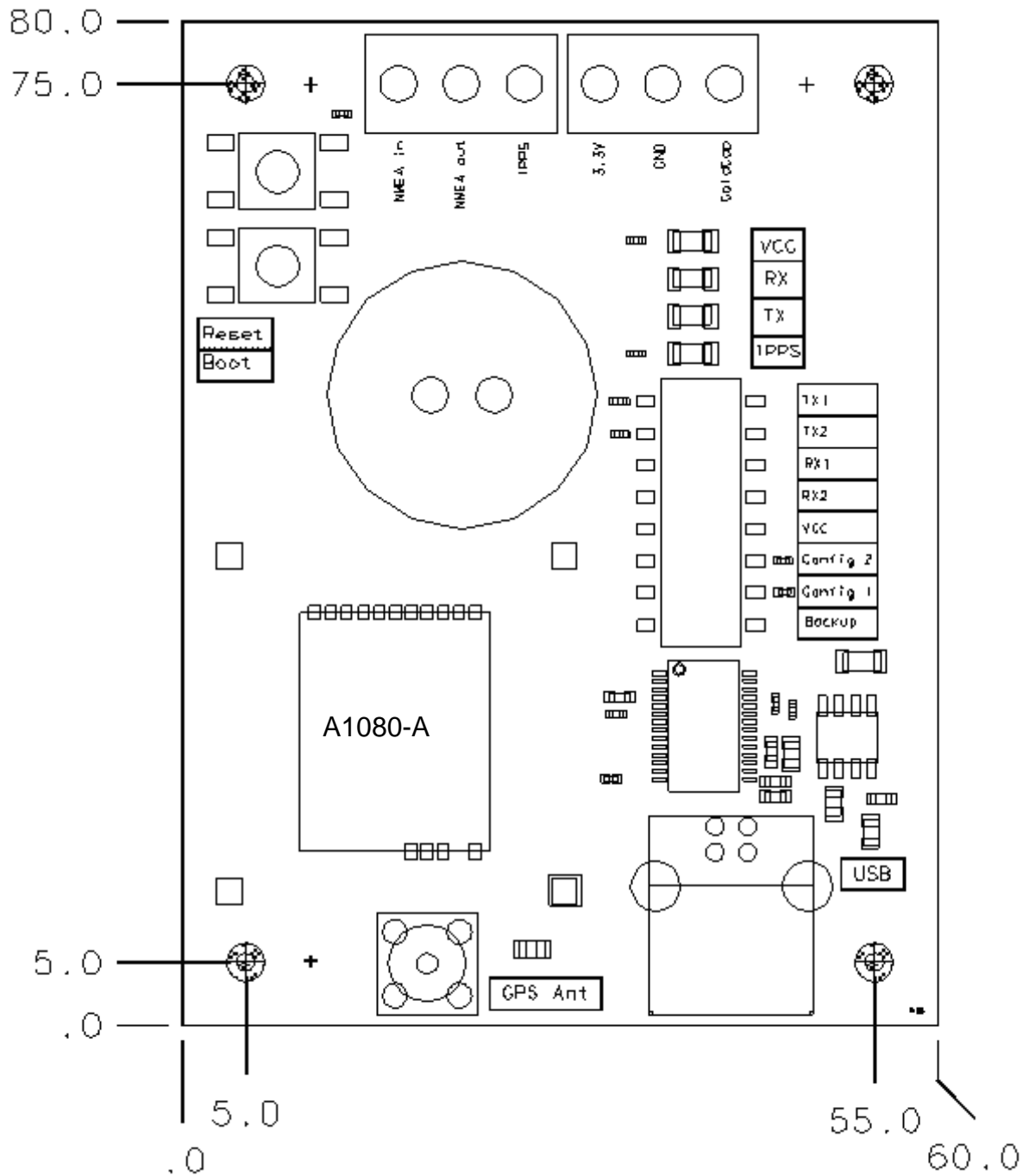


Figure 9: Top view

12 Related Information

12.1 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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12.2 Related Documents

- GPS Receiver A1080 (Vincotech)
- GPS Firmware A1080 (Vincotech)
- GPS AppNote A1080 EDLC-Backup (Vincotech)
- GPS AppNote A1080 Backup (Vincotech)
- GPS AppNote A1080 GeoHelix Antenna (Vincotech)
- GPS AppNote A1080 Firmware (Vincotech)
- GPS AppNote A1080 nRST (Vincotech)
- GPS AppNote A1080 RF-shield (Vincotech)

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