

## Cycle Analogger Modification to Transmit GPS NMEA Data Instructional Notes

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## 1.0 Overview

A standard Cycle Analogger can be modified to transmit standard NMEA format GPS data from the TRS serial data jack for use by a Cycle Analyst. The modification allows certain Cycle Analyst firmware to log unified data records that combine both CA performance data with GPS time and position information.

## 2.0 Modification

- 1. Remove the SD card from the Analogger. Note the orientation for later re-insertion.
- 2. Remove the two Phillips screws holding the back cover on the Analogger case and remove the cover.
- 3. Remove the two small Phillips screws retaining the printed circuit board (PCB) in the case.
- 4. Tip up the side of the circuit board opposite the switch and TRS jack and remove the PCB from the case.
- 5. Modifications are made to the underside of the PCB. Orient the board as shown below and cut the indicated trace using an X-Acto knife or a Dremel tool with very small round burr bit.
- 6. Sleeve one lead of a 4.7K resistor with heatshrink or insulation from a short length of donor wire and solder the resistor as a jumper between the two pads illustrated below.
- 7. Verify the proper points are connected, then reverse steps 1 to 4 above to re-assemble the modified device.

Connect the Analogger to the CA using the original provided Grin cable. The modified unit will operate as before with standard Cycle Analyst firmware, but will also supply GPS data that can be used by special CA firmware versions.

