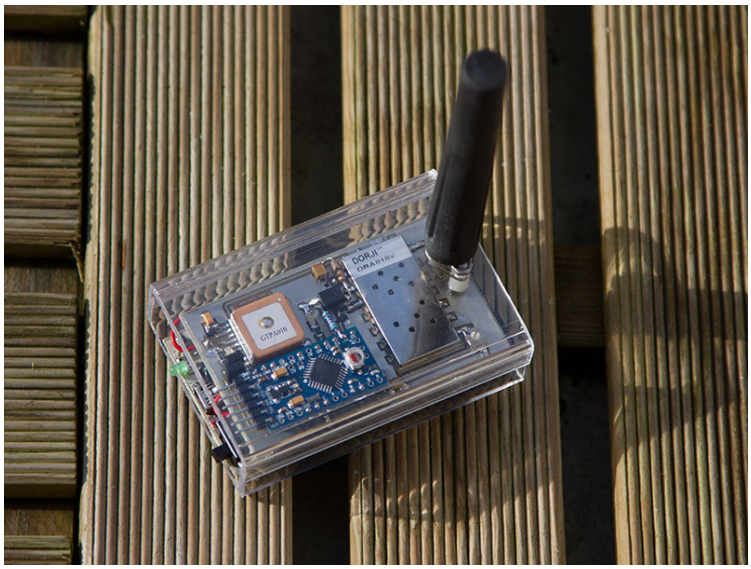
APRS TRACKER WITH DRA818V

Small prototype of combination between trackuino and DRA818V,

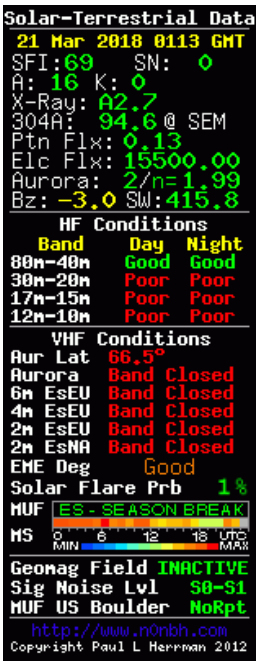
Overview

“Trackuino is intended for use by licensed radio amateurs. By operating on the standard APRS frequency, the signal can be picked up by an Internet gateway and reported on aprs.fi, so anyone with an Internet connection can track the tracker”

The idea of this project was to build a trackuino board with small gps module, low power arduino pro mini (3.3v @8mhz), a VHF transceiver DRA818V, and power management integrated.



µC: The Arduino pro mini is intentionally clocked to 8mhz to ensure a less power consumption. Trackuino code was modified to send data to the VHF module, a resistors divider provide voltage batterie monitoring, and a LM60, the global board temperature. PTT on pin 10, Wakup/Sleep mode

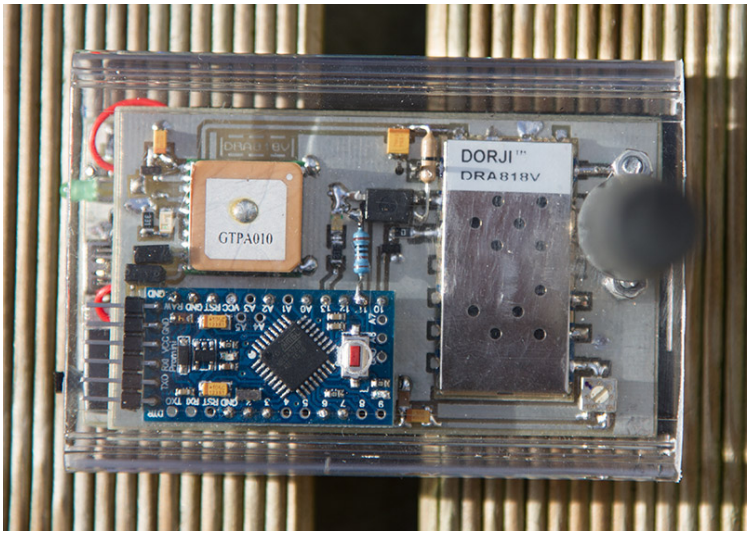


control on pin 11, and APRS audio modulation, pin 9, with a capacitor link and adjustable resistor (100k).

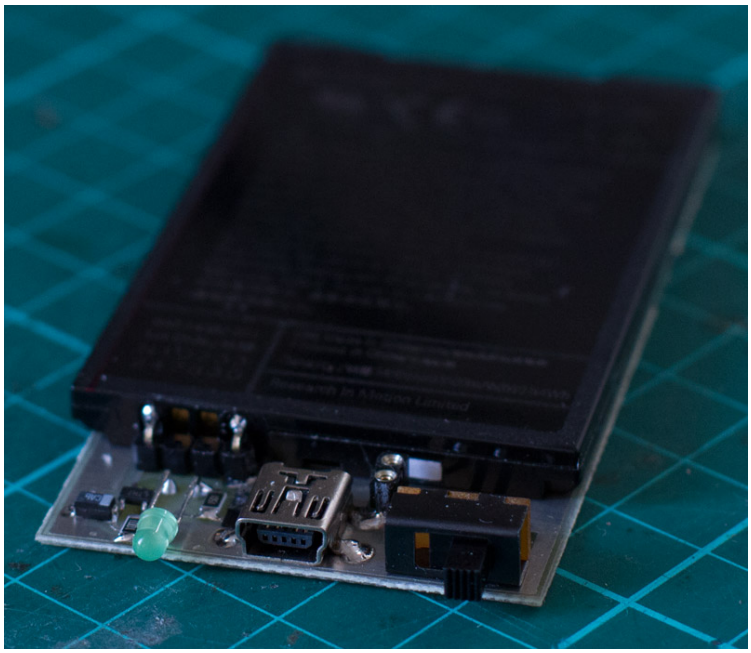
GPS: is a 4D Systems | GPS-PA6B (16x16mm!), Enable pin is wired to a MOSFET, for a futur power management control function (pin 2 of Arduino).

Radio: Ensured by a Chinese TRX DRA818V VHF module, power output is selectable between 500mw/1W, the module is drives by a UART communication bus on pin 7/12 from Arduino. also, he provide a Power saving control mode. I have put a low pass filter from minicircuit to avoid spurious modulation, the antenna is a 169Mhz version from Lextronic on a SMA connector. All of component are powered under 3.7v.

Dimension are 80x56mm. Weight 78g.



Power: A batteries from smartphone provide 3.7v@1450Mah, and can be charged with a dedicated chip, LTC4054.



Trackuino modified source code can be download here.

Schematic is here. Fell free to improve it.

If you are a licensed radio amateur you can use this @30db power on VHF APRS band 144.800, 144.390. If you are not, the ISM European 169mhz is open @27db max power output with 1% duty-cycle without licence. *Be carreful to respect your local laws.*

Tags: aprs, dra818v, tracker, vhf

43 Responses

george / 4-4-2016 / ·

excellent do you have any fritzing schetc?

Also if you are transimiting something in this specific frequensy , everybody in this freq can listen your data?

what if someone got two of these moduiles