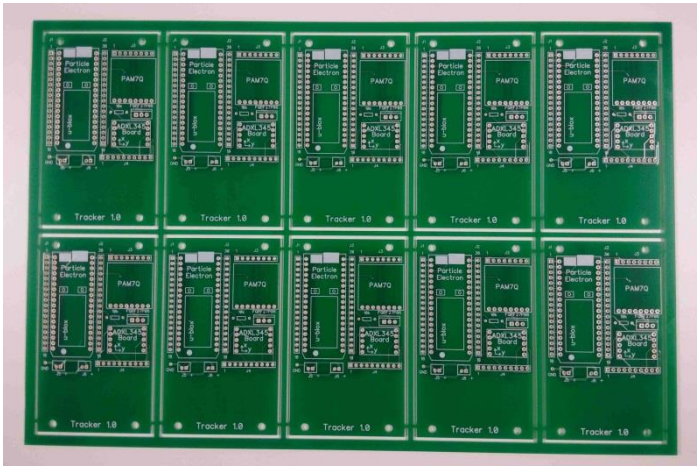
Tracker Assembly Guide, Revision 1.0

PCB Break-Out

The PCBs arrive in plates of 10 like this:



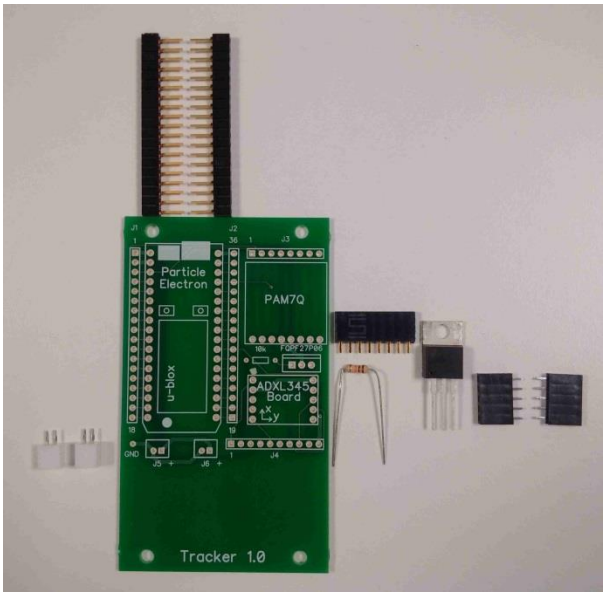
Each individual PCB needs to be trimmed from the carrier.

Soldering PCB

Note for what follows: **J1, J2, J3, J4 and the GND pin are NEVER MOUNTED**. The PCB holes are provided for testing only.

The following components need to be soldered into position:

- 2 x 19 row socket for the Particle Electron board [the PCB below shows only 18 holes, there will be 19 holes on the PCBs you get],
- 1 x 8 row socket for the PAM7Q board,
- 2 x 5 row socket for the ADXL345 board,
- 10k resistor,
- FET [the FET is actually an NDP6020P, not an FQPF27P06 as marked on the PCB],
- sockets for J5 and J6 (for orientation, see picture of assembled unit at end). **IMPORTANT: these sockets come in two forms: a 2 mm pitch version (shown below) and a very slightly larger 2.5 mm pitch version. 50 of the PCBs need to be assembled with the 2 mm pitch version and 50 of the PCBs need to be assembled with the 2.5 mm pitch version. Inserting the 2.5 mm pitch version will require some bodging.**

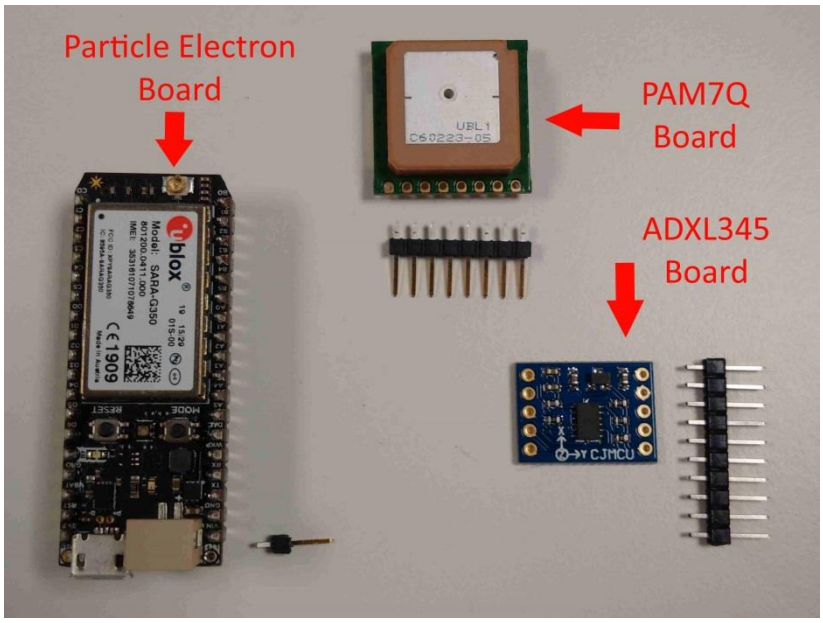


Suggestion: the best way to hold the 19-way and the pair of 5-way sockets at the correct angle while soldering may be to insert one of the associated sub-assembly into the sockets while doing the soldering.

Soldering Sub-Assemblies

Separately, pins need to be soldered into the following sub-assemblies:

- 8-way pins into the PAM7Q board, oriented so that the pins point downward with the antenna side (the side *without* the u-blox logo on it, as shown below) upper-most,
- 2 x 5 way pins into the ADXL345 board (break the provided set of 10 into 2 x 5) such that the pins point downward with component side upper-most (as shown below),
- 1 pin into the unpopulated LiPo pin on the Particle Electron board. Suggestion: it may be simplest to push the single pin into the mounted 19-pin socket, then push the Particle Electron board in and solder the LiPo pin to the Particle Electron board; this ensures that everything is nicely aligned.

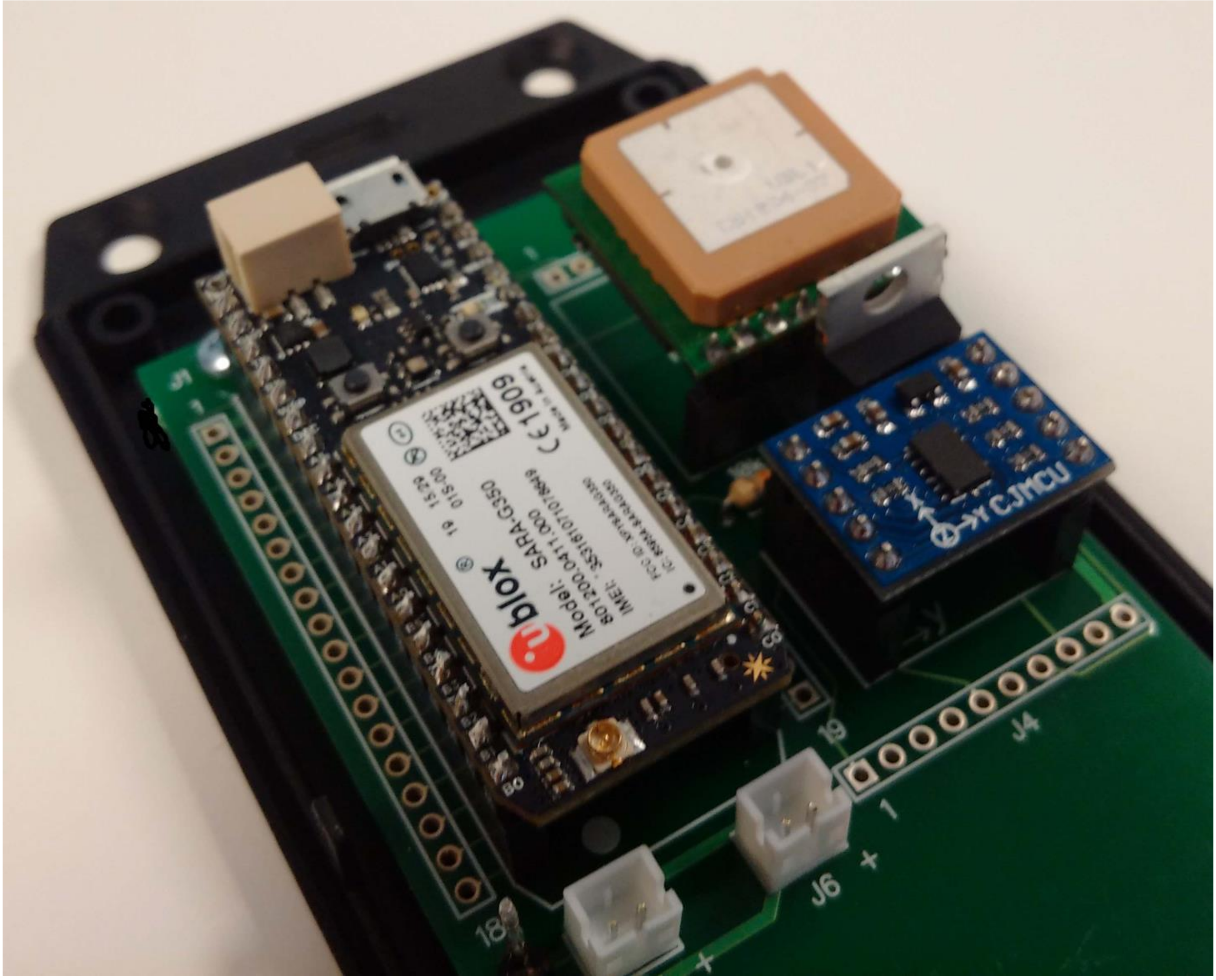


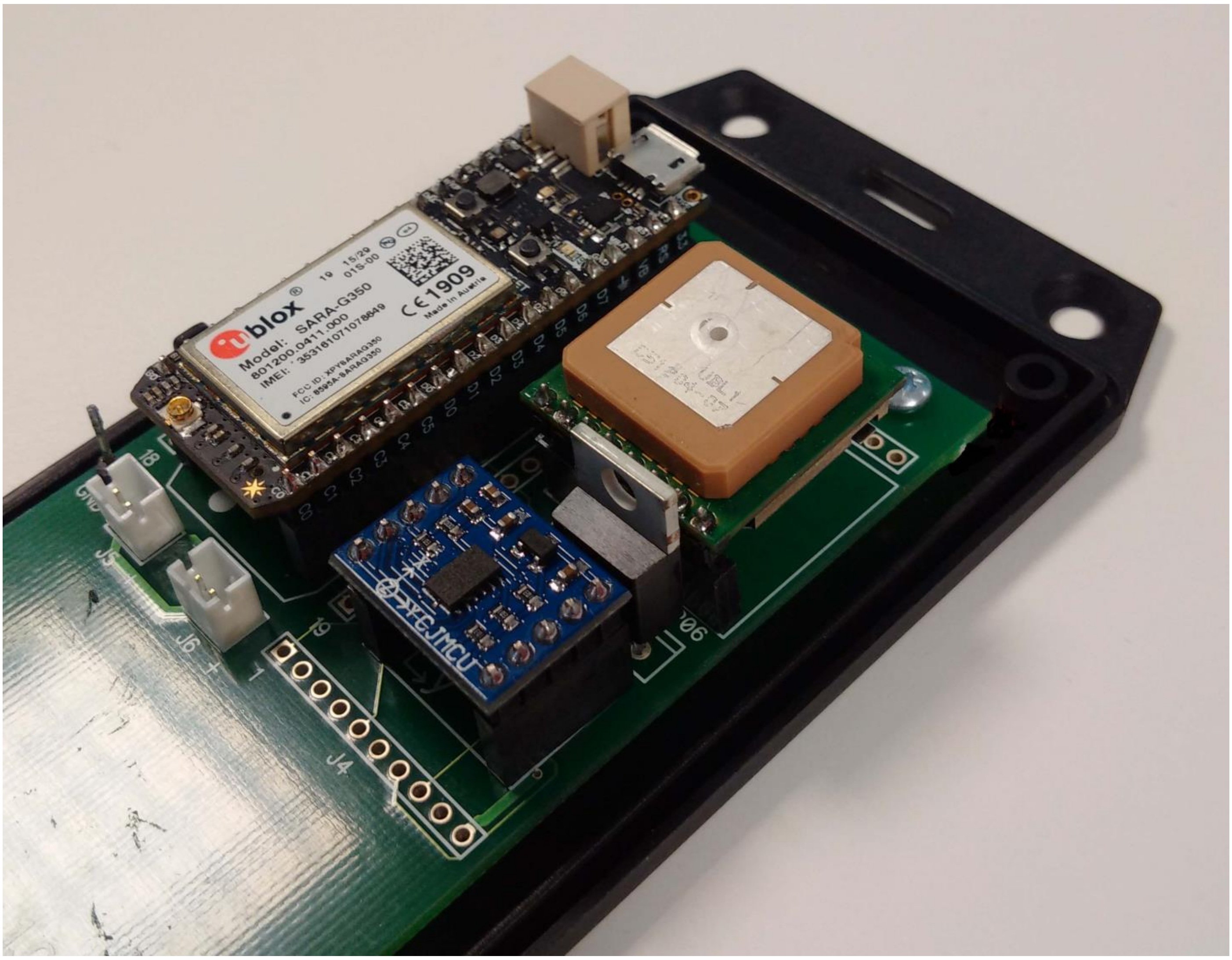
Assembling Into Base

The assembled PCB should be mounted into the base with four screws:

Assembled Unit Pictures

The assembled unit should look as follows [noting that the board in the picture has 18 holes for each of the two long sockets and the LiPo pin not present, whereas you will have a board with 19 holes and you will add the LiPo pin]:


blox
SARA-G350
CJMCU
J4
J6
19
18



blox
Model: SARA-G350
CE 1909
Made in Austria
J4
J6