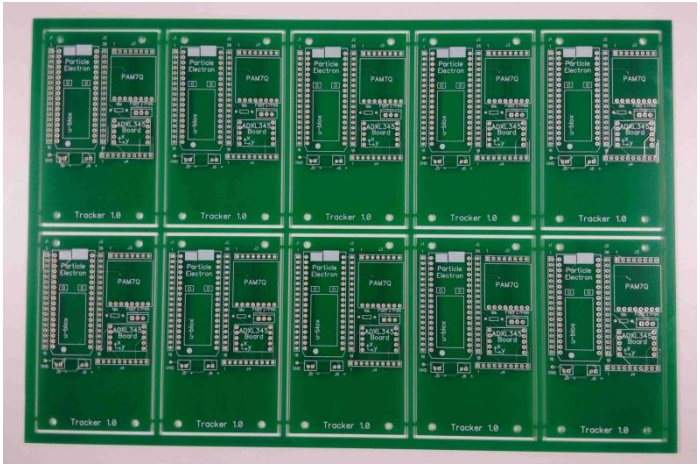
Tracker Assembly Guide, Revision 1.1

Introduction

These instruction are for assembly of the Tracker PCBs and mounting them into a base. Assembly of 95 Tracker units is required. Please pay particular note to the sockets J5/J6 as we need 48 of the units to be assembled with one type of socket and 47 to be assembled with another type of socket.

PCB Break-Out

The PCBs arrive in plates of 10 like this:



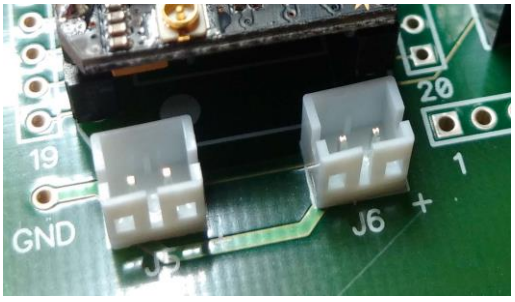
Each individual PCB needs to be trimmed from the carrier.

Soldering PCB

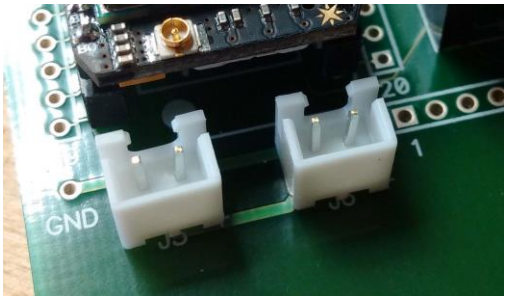
Note for what follows: **J1, J2, J3, J4 and the GND pin are NEVER MOUNTED**; the PCB holes are provided for testing only.

The following components need to be soldered into position (and the following order of assembly is suggested):

- sockets for J5 and J6. **IMPORTANT: there are two types of these sockets: a 2 mm pitch version and a very slightly larger 2.5 mm pitch version. 47 of the PCBs need to be assembled with two of the 2 mm pitch sockets and 48 of the PCBs need to be assembled with two of the 2.5 mm pitch sockets. Inserting the 2.5 mm pitch version will require a good shove as the hole spacing is for the 2 mm version. Please pay attention to the orientation of the two types of socket as they are quite different:**



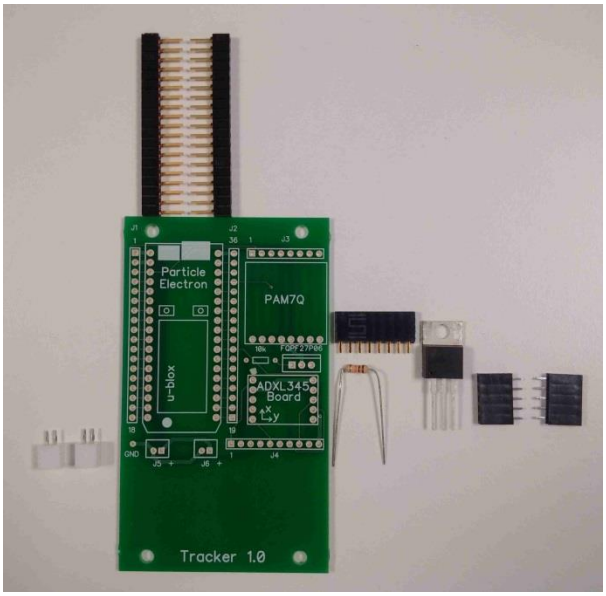
2 mm pitch connector orientation



2.5 mm pitch connector orientation

- 10k resistor,
- 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]; NOTE: the legs of the sockets will stick out a bit but they do not require trimming as there is clearance for them in the mounting to the base,
- 2 x 5 row sockets for the ADXL345 board,
- 1 x 8 row socket for the PAM7Q board,

- FET [the FET is actually an NDP6020P, not an FQPF27P06 as marked on the PCB],

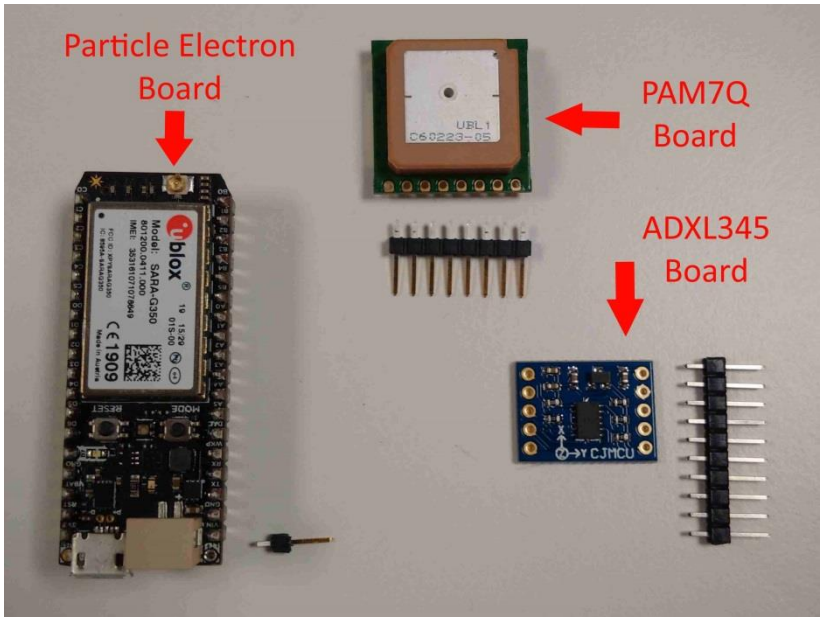


Suggestion: the best way to hold the 19-way and the pair of 5-way sockets straight while soldering may be to insert the associated sub-assembly into the sockets while doing the soldering.

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 into the socket also and then solder the LiPo pin into the Particle Electron board; this ensures that everything is nicely aligned.



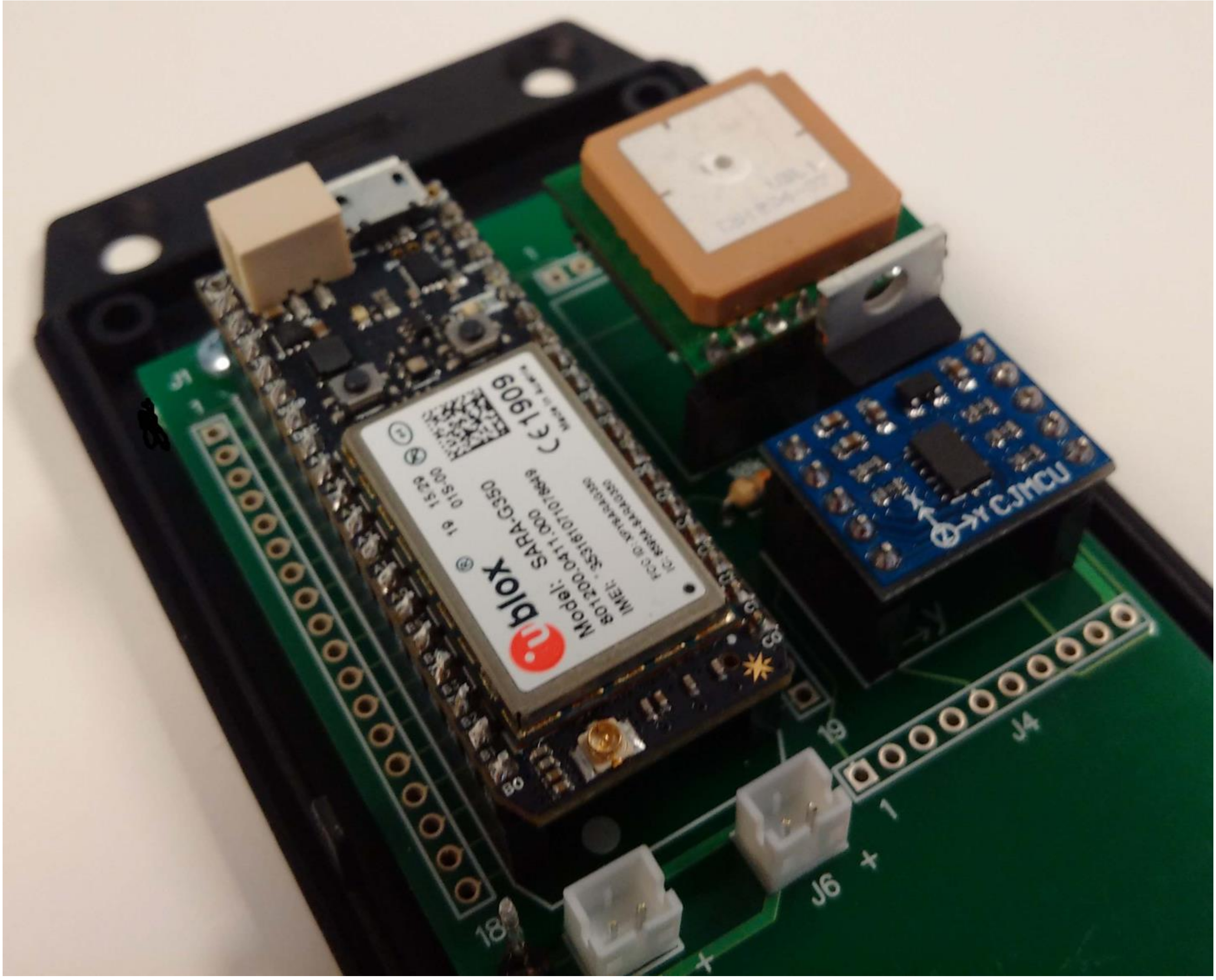
Assembling Into Base

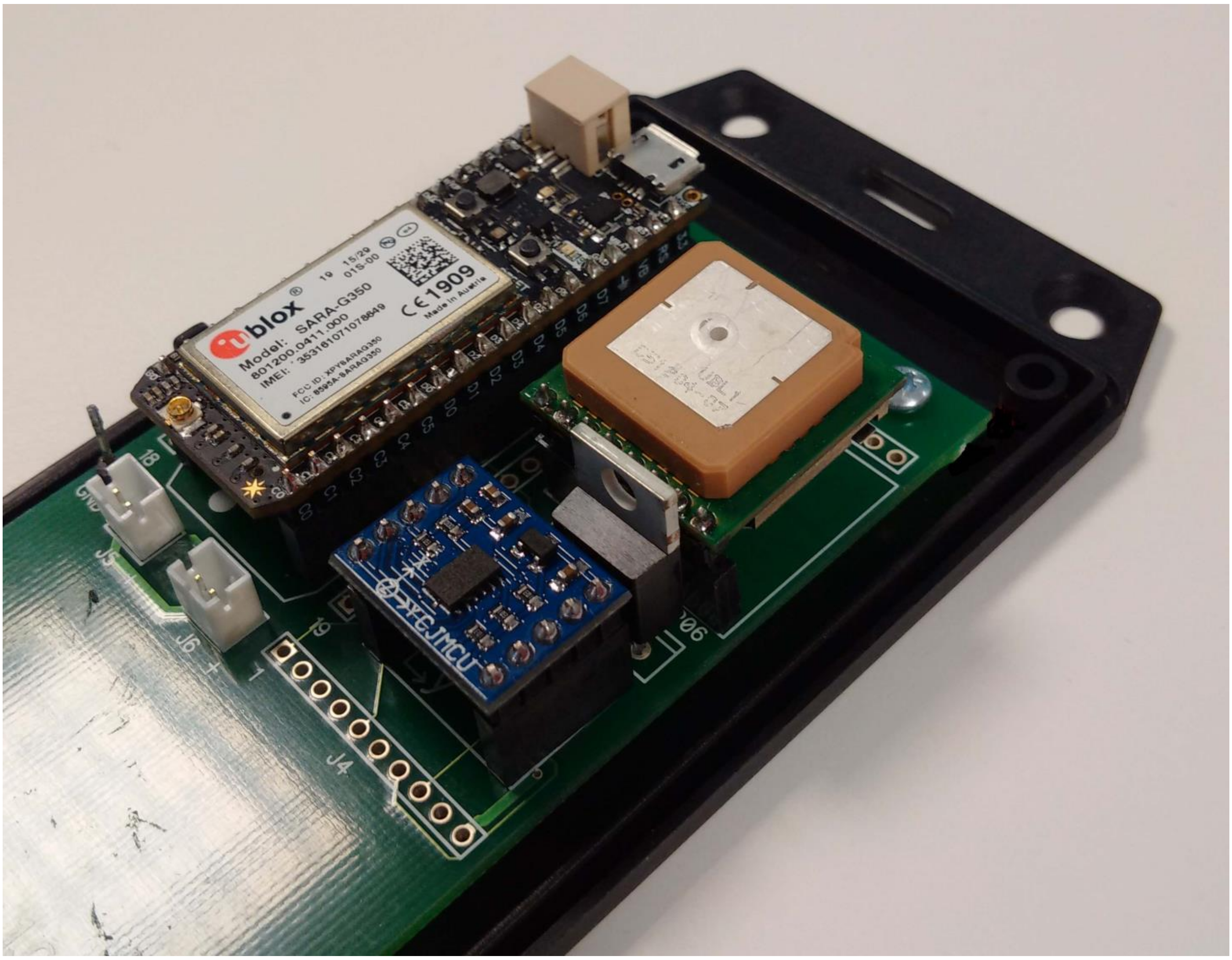
The assembled PCB should be mounted into the base with four screws:

It doesn’t matter which way round the PCB is mounted into the base.

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 on each side and you will add the LiPo pin; these pictures are with the 2 mm pitch J5/J6 socket].


blox
Model:
SARA-G350
CJMCU
J4
J6
19
18
1


blox
Model: SARA-G350
801200.0411.000
IMEI: 353161071078649
FCC ID: XPYSARAG350
IC: 8595A-SARAG350
1909
Made in Austria
J4
J6
J8
GND