Attendees: Jen, Brady, Nathaniel, Robyn, Gary, Eric

Boards came back

* Processor board works, programmable, reading from temp sensor works
* Comms board works, has range in OEDK. Eric suggests LOS test at BB track
  + Using PCB antenna, haven’t had to solder on SMA
* Have not tested power board (got the wrong resistor)

Design Review

Comms Board

* Shrunk the comms board (45x40), use headers for mechanical support on corners (power board tight on space)
* Collapsed down the I/O header (previous version had extra pins, we just have 2 extra I/O)
* Weird stopmask errors that Jen somehow got rid of?
* 4 layer- Vdd, Vdds, Vddr, V33 (main power on lower layer)
* Got rid of debug LEDs except 1, combined power header, enable for transistor, I2C line for fuel gauge (passes thru the comms board on way to the power board)
* For this iteration, we are ordering the parts and giving components to MF for them to solder on
* Eric- check to see if we can get the 10 day turn

Power Board

* Removed the Buck Boost converter 5V line
  + Only needed for the dust sensor, so only use that w/ P2
* Have components on the bottom and top (resistors, caps)
* Soldering on battery (be careful!)
* Make power traces thicker
* Energy harvester has inductor- **make the traces to that much larger. Circular current in the inductor is much higher than what it delivers**
* 10 mil trace connects solar cells (make that a little bigger, see what you have room for)
* How flat do solar panels rest on board? ~2mm (does it make sense to layer the solar panels on top of other components?)
* Do we ever want to power the board from the test point? Make that trace thicker
  + Would it work if the solar panels are still there but powering @ test point?
  + Solar cells in parallel, As long as you deliver voltage < open circuit voltage of solar cells (~2V) you can use test points
  + EH has max power point tracking, would it keep bumping up current if you were to give it DC voltage (need to put in current limiting resistor in series w/ supply) - Nice one, Brady!
* **Move C4 on pin 5 of the fuel gauge closer**
* 0603 100uF cap- directional… put some kind of mark on the board
  + **Check the voltage rating on it (make sure it is double what the actual voltage is on the line)**
  + Do have the space if need to move to 0805- would be worth it (generally gets expensive with smaller footprint)
* “Thicker traces”
  + **Generally as thick as possible (but probably <10-20 mil since we’re using small currents), utilize pours**

Processor

* BMA253: Accelerometer 3 axis, SPI/ I2C, probably use motion-triggered interrupt with its low power modes, I2C version
* Took out cap since there’s already a bunch of caps tied to that line
* **Move LED**s close to edge so you can see them from the side and not covered since the antenna board is larger in that direction
* Put **accelerometer on center line of board**
  + Don’t have to worry about compensating for center of mass in one direction
* Lots of extra pins, don’t all need to be on the same I2C bus. Could probably put on different pin- all on UCA vs split between UCA and UCB
  + Quick calculation of datarate
* Don’t need all **pullup resistors** (can put **DNP for R8 and R9**) in **I2C**