

HydroWatch Meeting Notes

2-13-2019

Tansy and Becca: Working with RSL10 kitboard → looking into heartrate project (skin contact, battery level, heart rate data) to change around the data... once we get out a csv file, we can make a matlab file better equipped to use the skin contact determination and other data that we need

LEDs/photodiodes → tested by Mark and Adam to see if the functionality of the LEDs is what we expect.

Different current values than we expected to have them to operate (some didn't require the actual amount of current that the datasheets depicted)

- *Light needs to go through skin, so we need to figure out how much current

- *Higher test current for the SMD LEDs → they can get rid of heat better so you can run them better (Most people trying to get most light possible out of the LED = more current)

- *Last year's group attempted to use current limiting resistors on the LEDs when they didn't need to, since the AFE already controls the current coming to the LEDs (don't make the same mistakes)

Different AFEs with current limits (guess is that 50 mA or lower does the job)

- Development software for the board → see how their settings work for their LEDs

- *tend towards the lower current to keep the "magic smoke" inside everything

How should we test the photodiodes?

- *made little boards with two pads on them last year, eventually have to figure out that there is something that is contact the skin... in the interim, solution could be little boards OR solder wires to them (surface mount could be using those little boards made by previous groups)

- One board with 3 different sized LEDs on it and put things in parallel, etc and a pad for the photodiode **board development required**

- Find land patterns for the different LEDs/photodiodes and set up a basic AFE light up/reading layout → make the little board as soon as possible with the required signals connected and coming out for the LEDs and photodiode to function with the AFE board and see the functionality that we expect to occur

Working on connections between RSL10/AFE on the schematic

Compare pulse ox to the dev board application → DB9 connector female with solder cups to connect directly to the AFE board without having to use the jumper cables. Trying to read out the values from pulse ox clip and determine if register values are correct for our applications.

*Use the app for AFE board to see if you get similar results

*when we figure out the SPI on the RSL10 be careful of the remappable pins and ALWAYS use the logic analyzer

Questions:

-Charging/Voltage regulation on the board → those parts work pretty well and we shouldn't reinvent the wheel if we don't have to

-Getting eclipse on the desktop here in 205 hard to figure out without Admin privileges → RMS helped install eclipse as was needed.