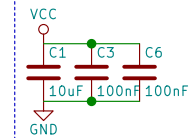
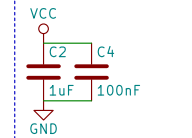


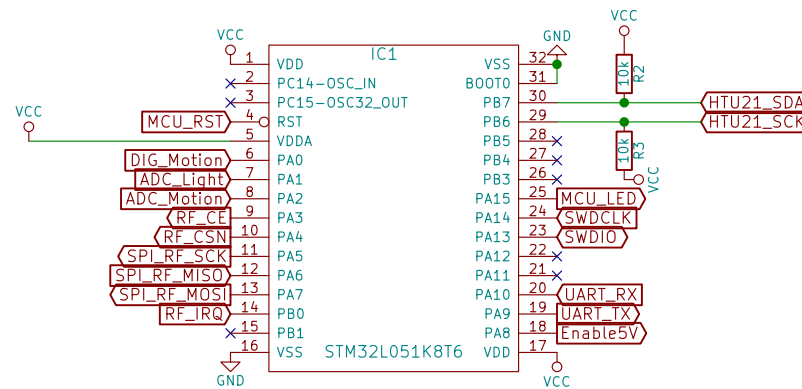
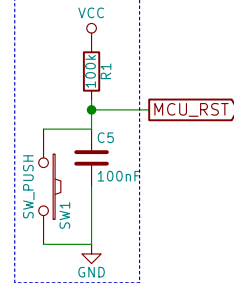
Close to VDD & VSS



Close to VDDA



Reset circuit



Peripherals:
RF module (SPI, CSN, CE, IRQ)
HTU21D (I2C)
Light sensor (adc, enable)
Motion (ADC, enable)
UART
SWD

Philip Luyckx

Sheet: /CPU/

File: cpu.sch

Title: Sensor

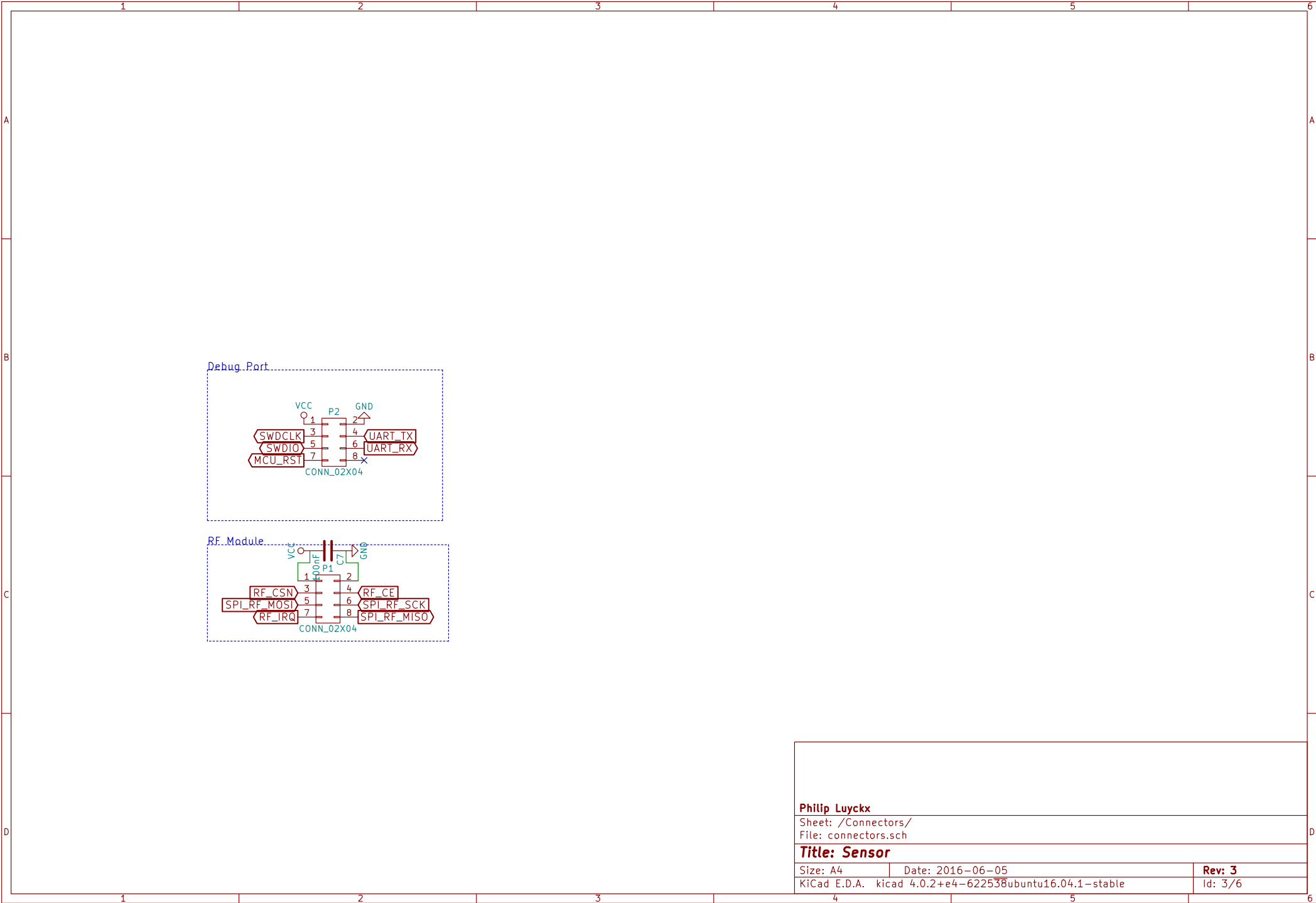
Size: A4

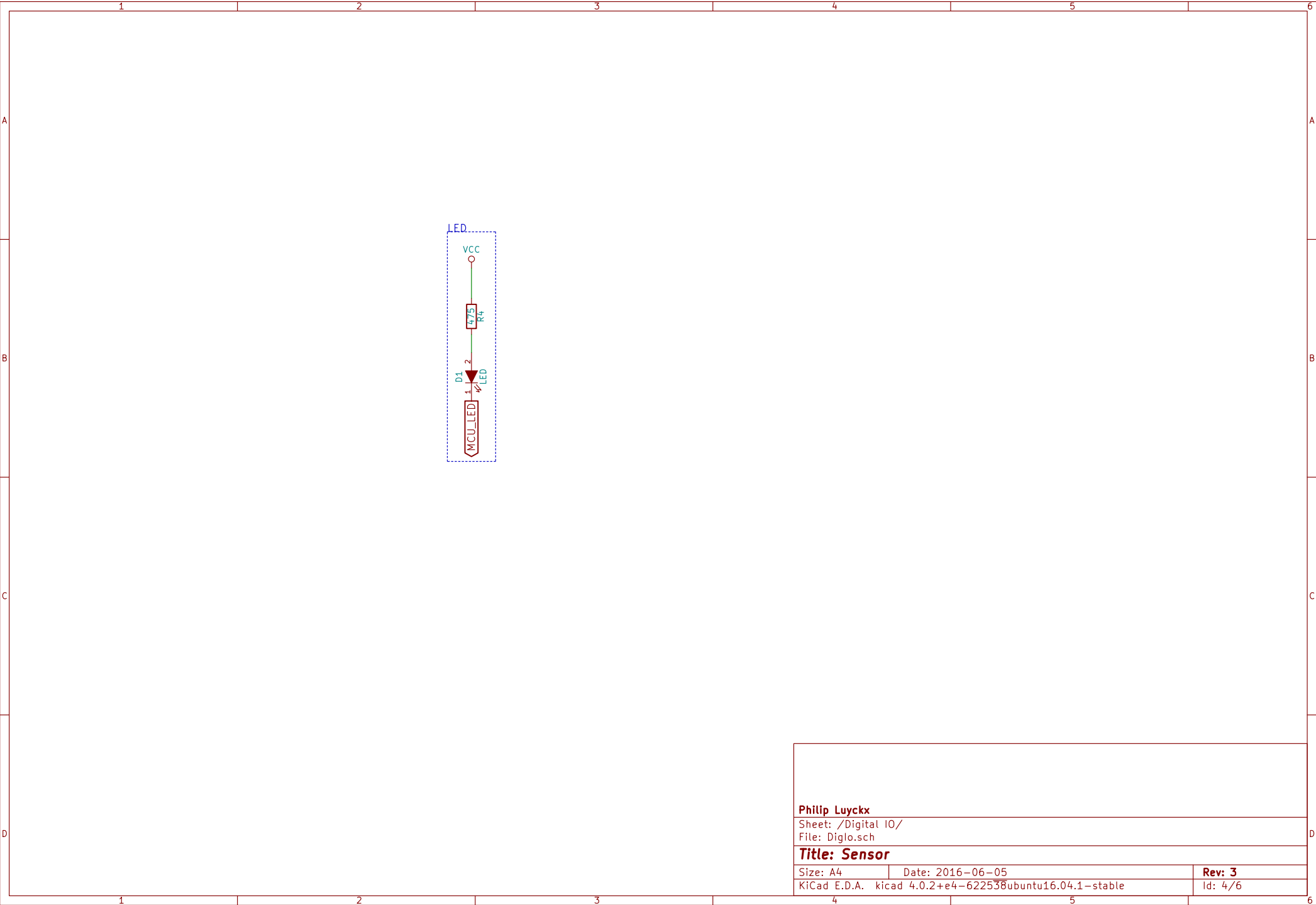
Date: 2016-06-05

Rev: 3

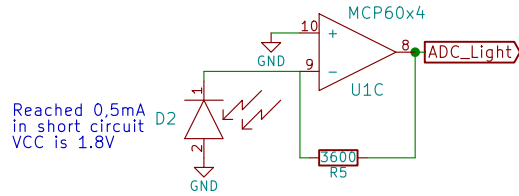
KiCad E.D.A. kicad 4.0.2+e4-62253ubuntu16.04.1-stable

Id: 2/6

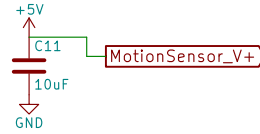




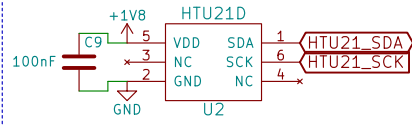
Light Sensor



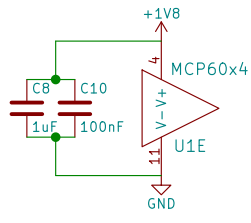
Motion Sensor Power



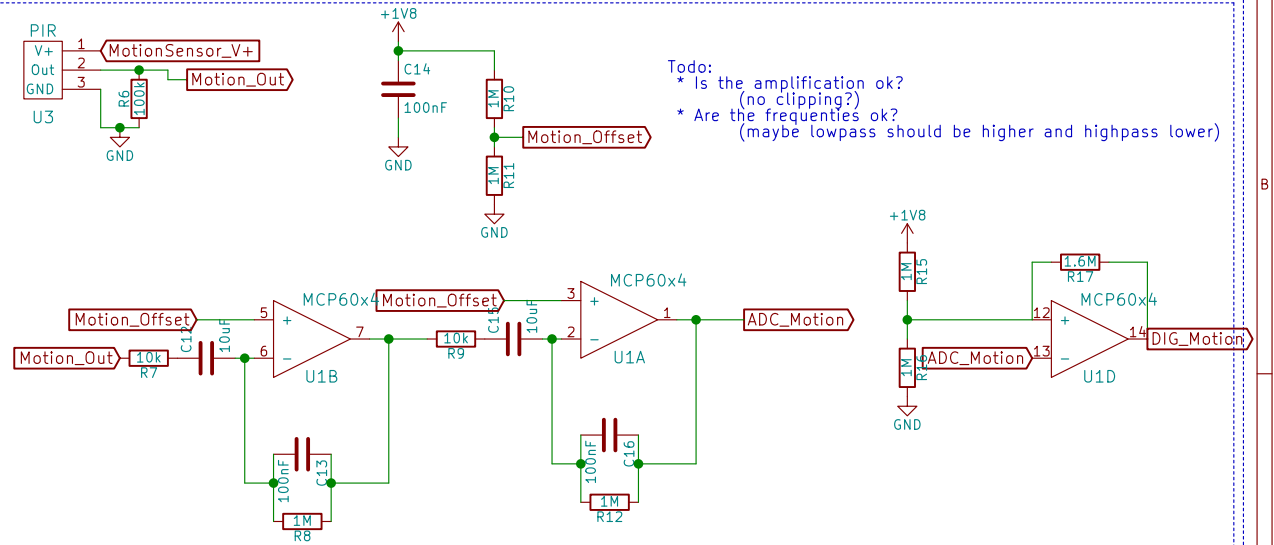
Temperature & Humidity sensor



Opamp supply



Custom Sensor



Todo:
 * Is the amplification ok?
 (no clipping?)
 * Are the frequencies ok?
 (maybe lowpass should be higher and highpass lower)

Amplify the motion output using band amplifiers
 $f_c = 1/(2 \cdot \pi \cdot R \cdot C)$
 $A = R_{\text{lowpass}} / R_{\text{highpass}}$
 The highpass filter is at the input, the lowpass is in the feedback loop
 Here:
 $f_{\text{lowpass}} = 1.6\text{Hz}$
 $f_{\text{highpass}} = 1.6\text{Hz}$
 $A = 100$

Philip Luyckx

Sheet: /Sensors/
 File: Sensors.sch

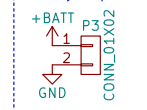
Title: Sensor

Size: A4 Date: 2016-06-05
 KiCad E.D.A. kicad 4.0.2+e4-622538ubuntu16.04.1-stable

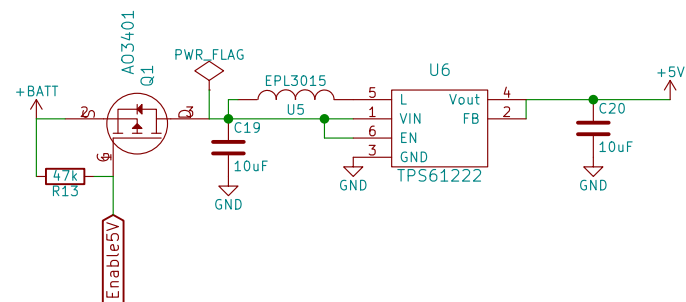
Rev: 3
 Id: 5/6



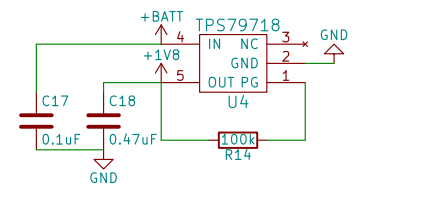
Battery Input



5V Supply



1V8 Supply



Philip Luyckx

Sheet: /Supply/

File: Supply.sch

Title: Sensor

Size: A4

Date: 2016-06-05

Rev: 3

KiCad E.D.A. kicad 4.0.2+e4-622538ubuntu16.04.1-stable

Id: 6/6