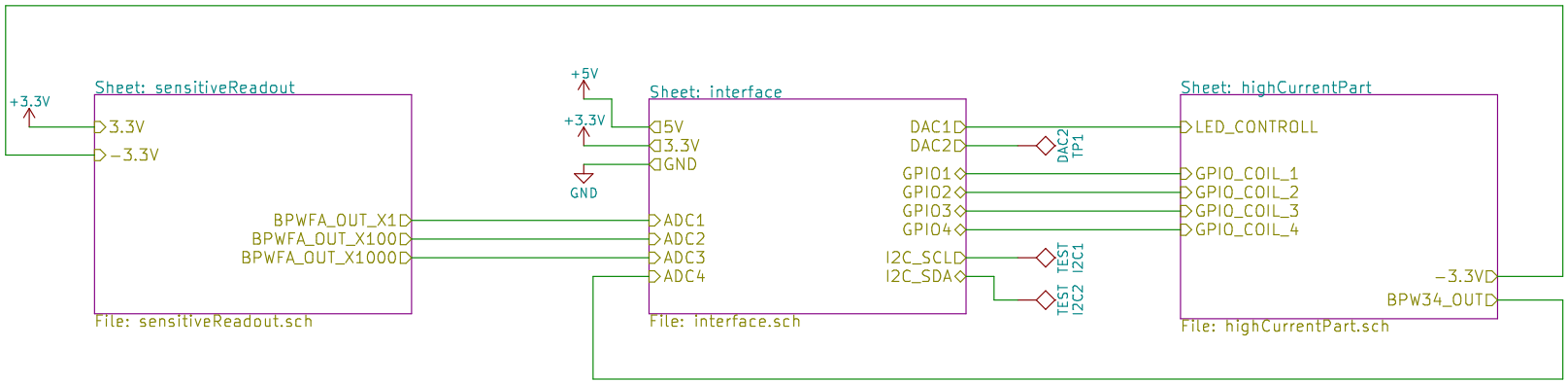
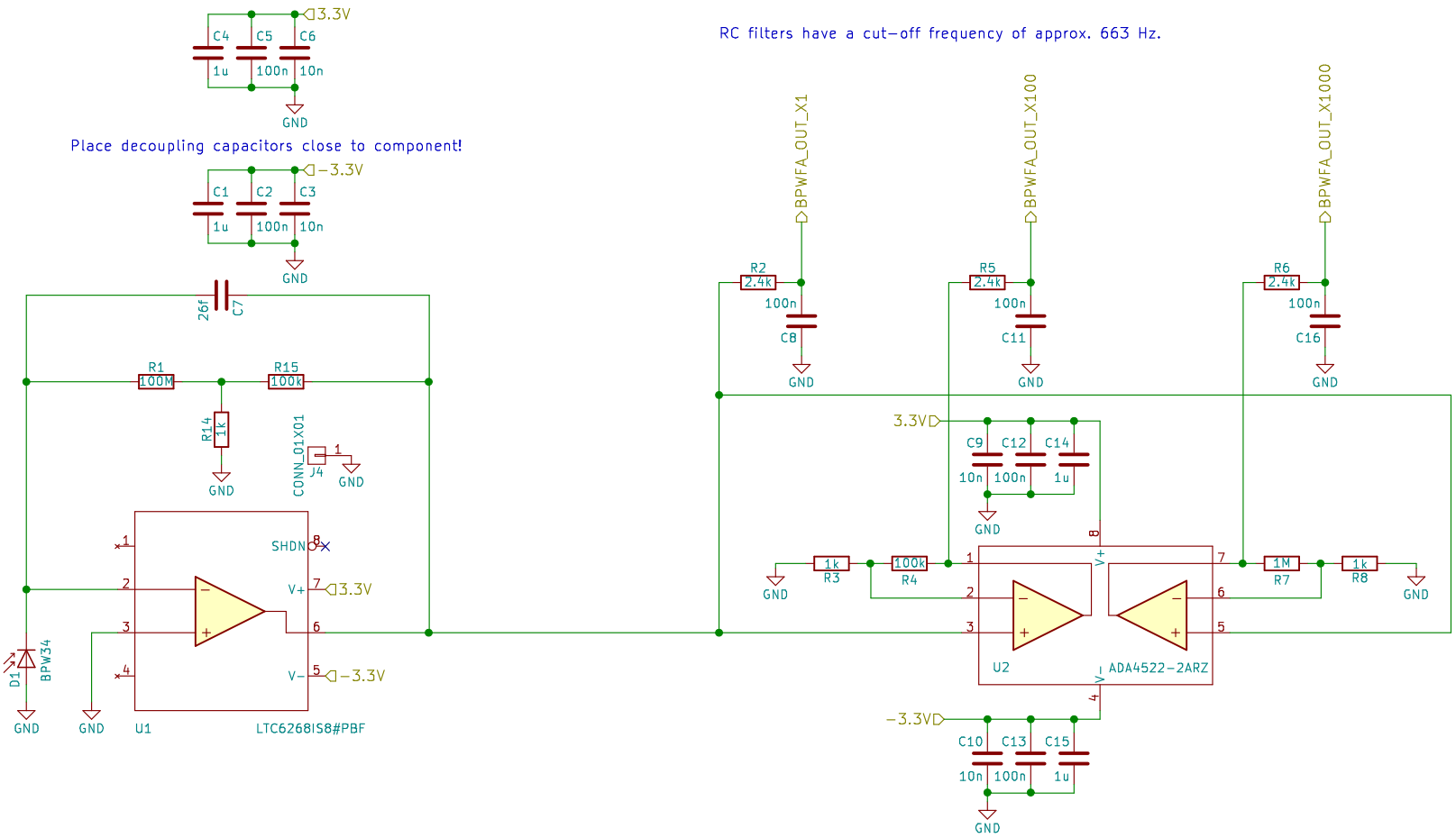


UppSense Heart Failure Diagnostics

Sheet: /
File: analog_board_v0.22.sch

Title: SensUs Sensor Board

Size: A4	Date: 2017-07-05	**Rev: v.0.2**
KiCad E.D.A. kicad 4.0.6-e0-634952ubuntu17.04.1		Id: 1/4



This amplifier is designed so, that the diode sees a resistance of 10 G without having to use 10 G. The equation is Uout = Id * Rf * (1+R1/R2). The cut−off frequency is determined by the capactitor which connects input and output. This cap. is embedded and has acc. to C = (e*A)/ d a capacity of 26fF. The bandwidth is acc. to f = 1/(R*C*2*pi) = 626 Hz.

The second stage amplification will be directly connected to the ADC on the digital board via the backplane.

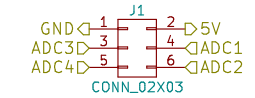
This is another alternative implementation for the analog board version v0.2.

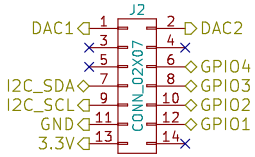
UppSense Heart Failure Diagnostics

Sheet: /sensitiveReadout/
File: sensitiveReadout.sch

Title: Sensitive Measurement Part of Analog Board

Size: A4	Date: 2017−07−05	**Rev: v0.22**
KiCad E.D.A. kicad 4.0.6−e0−634952ubuntu17.04.1		Id: 2/4



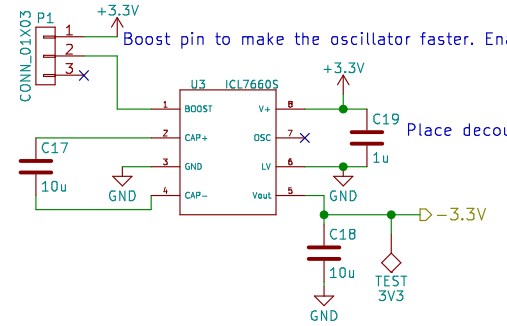


UppSense Heart Failure Diagnostics

Sheet: /interface/
File: interface.sch

Title: Interface to Backplane

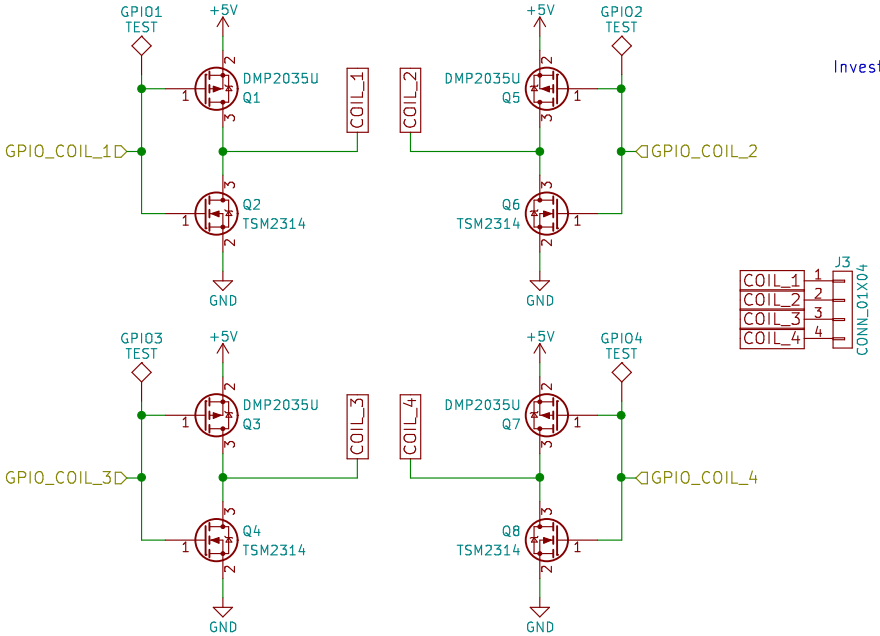
Size: A4	Date: 2017-07-05	**Rev: v0.2**
KiCad E.D.A. kicad 4.0.6-e0-634952ubuntu17.04.1		Id: 3/4



Boost pin to make the oscillator faster. Enabled when connected to 3.3 V.

Place decoupling capacitors close to component!

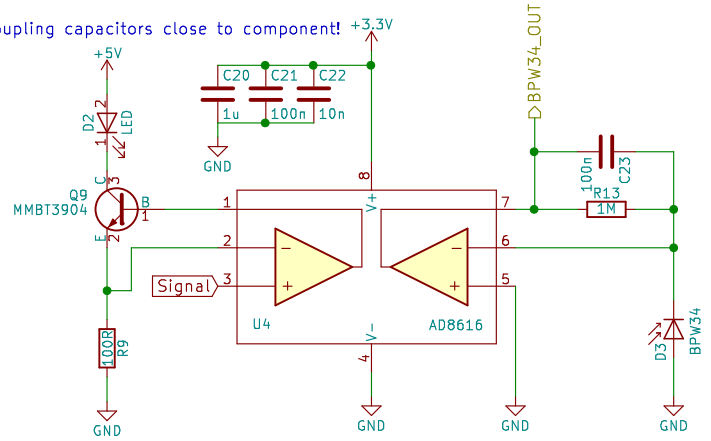
Charge pump to generate −3.3 V.



H bridge for driving a coil with a rectangular signal in the mHz range. Designed for at least 100 mA. Maximum current unknown.

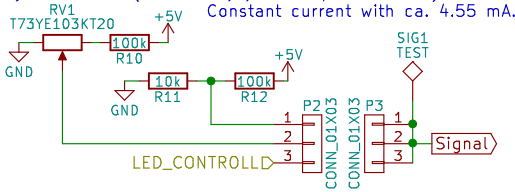
Low−pass has a cut−off freq. of approx. 1.6 Hz, ergo DC.

Place decoupling capacitors close to component!



Investigate if AD8616 here can be replaced by the LM358 (most likely yes, footprints match).

Constant current with ca. 4.55 mA.



Constant current source with 100R sensing resistor. Monitoring diode included with 1uA being translated into 1V.

UppSense Heart Failure Diagnostics

Sheet: /highCurrentPart/
File: highCurrentPart.sch

Title: High Current Part of Analog Board

Size: A4	Date: 2017−07−05	**Rev: v0.2**
KiCad E.D.A. kicad 4.0.6−e0−634952ubuntu17.04.1		Id: 4/4