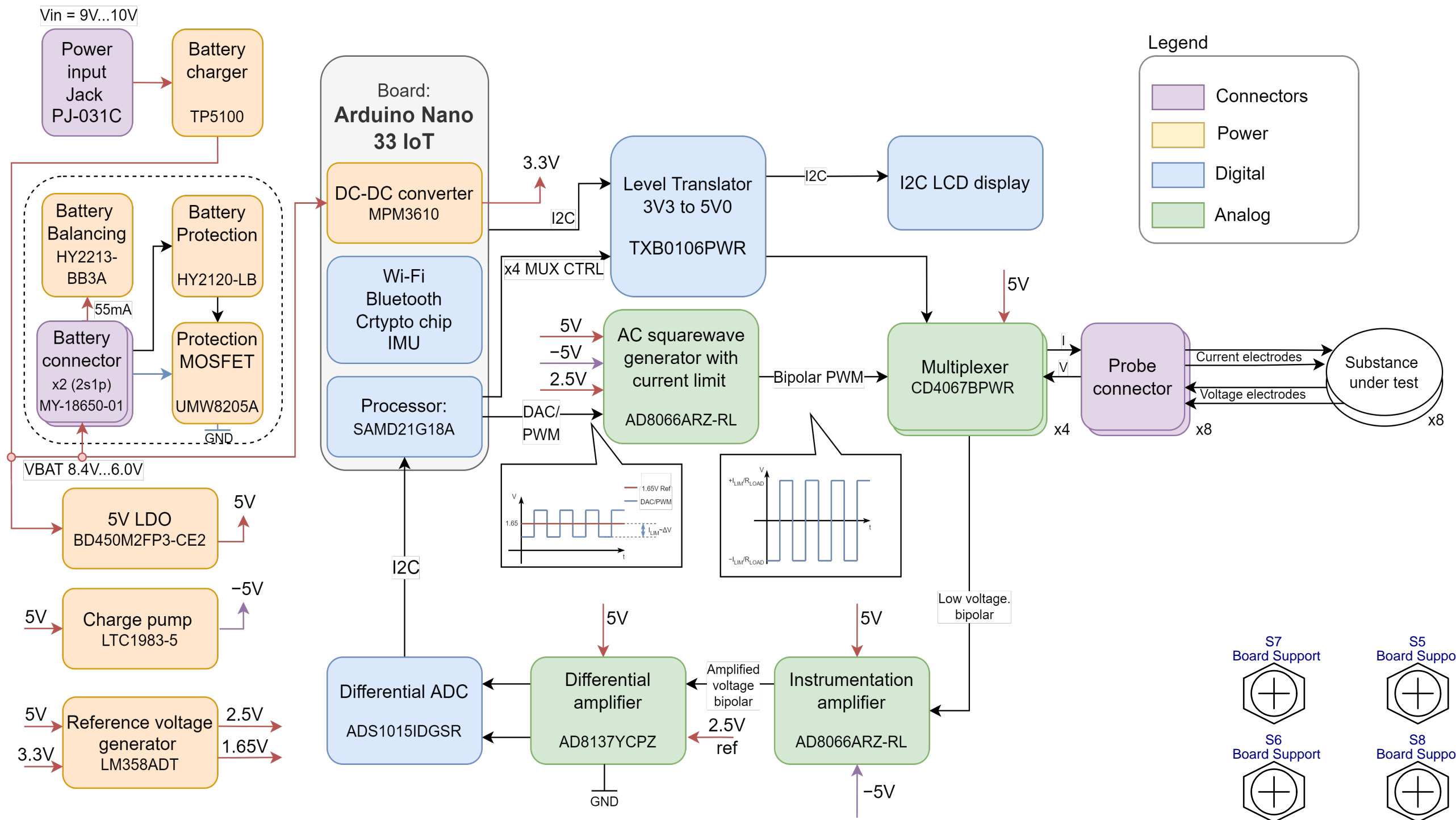


Flexi-TEER block diagramm

Rev.0.3 - 27-Nov-2022



Schematic Revision History

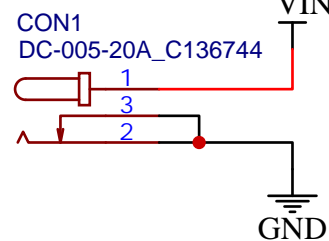
V2.0 July 2022. Contributed by Dennis Yaskevich, Michael Anderson and Jose Yesta Lozano

NOTES

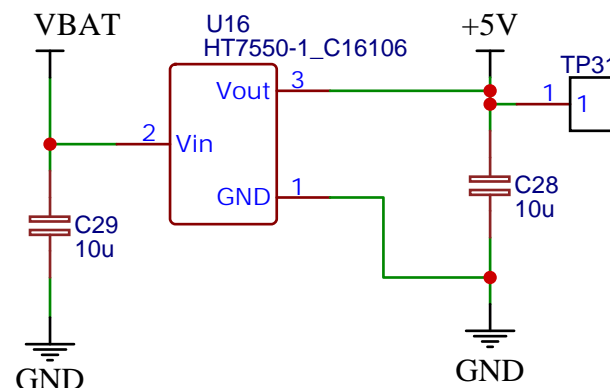
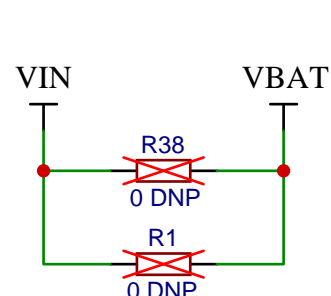
All resistors are 1% tolerance unless otherwise noted

			REV: 2.0
Page name:	Company: Boston Children's Hospital		Sheet: 1/6
Block Diagram	Date: 2022-9-29	Drawn By: MD Anderson	

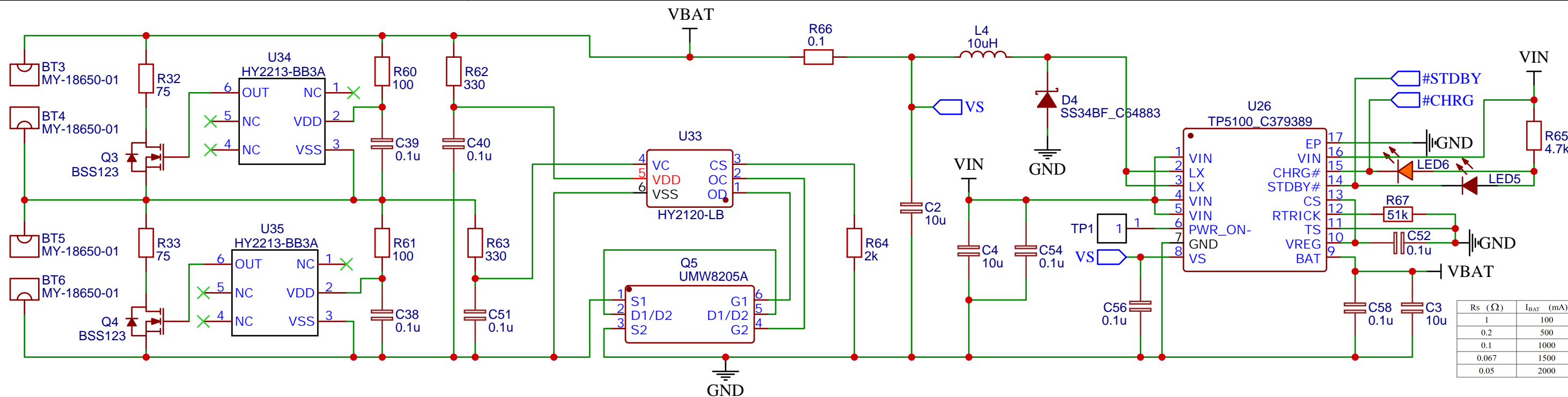
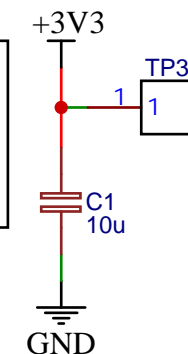
PSU Input



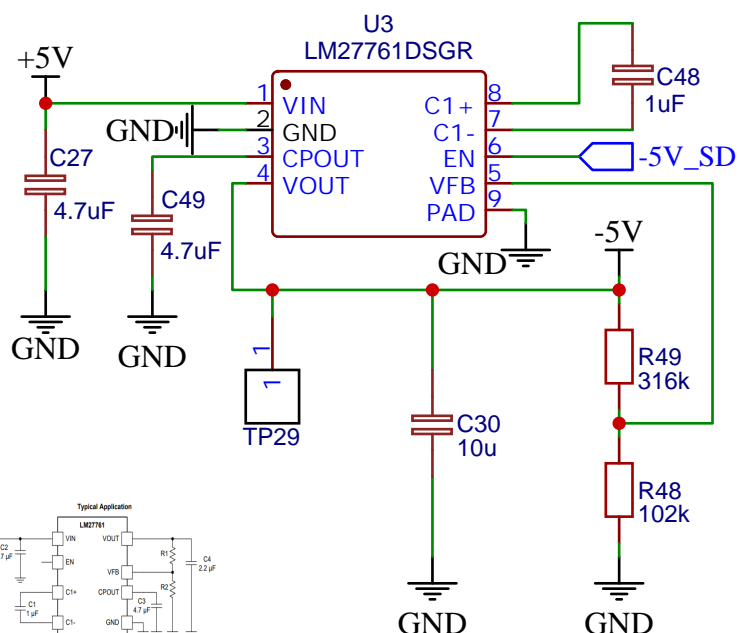
Input Voltage 9V...10V
9V > 10W power supply is recommended
5.5x2.1mm Jack



3.3V power
is provided
by Arduino

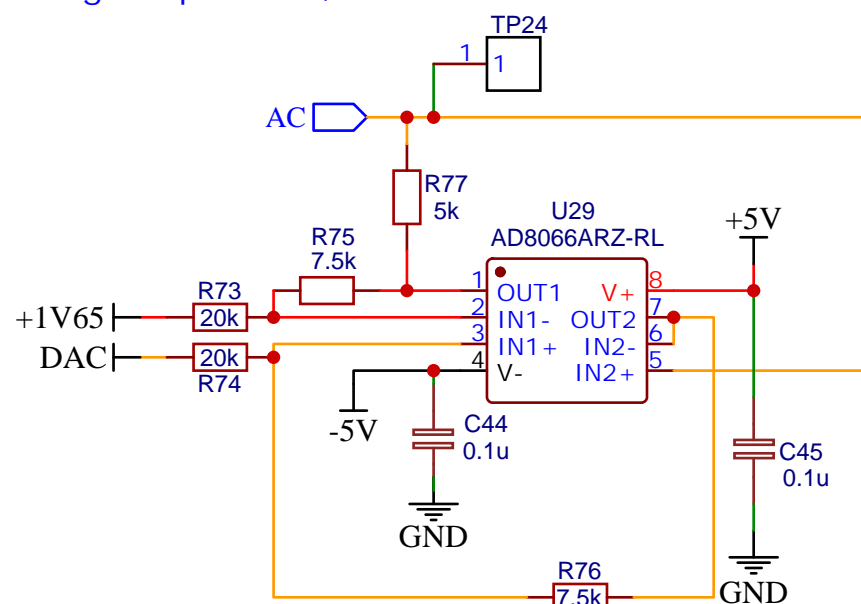


Negative -5V generator



$$V_{out} = -1.22V \cdot (R1 + R2) / R2, R2 > 50k$$

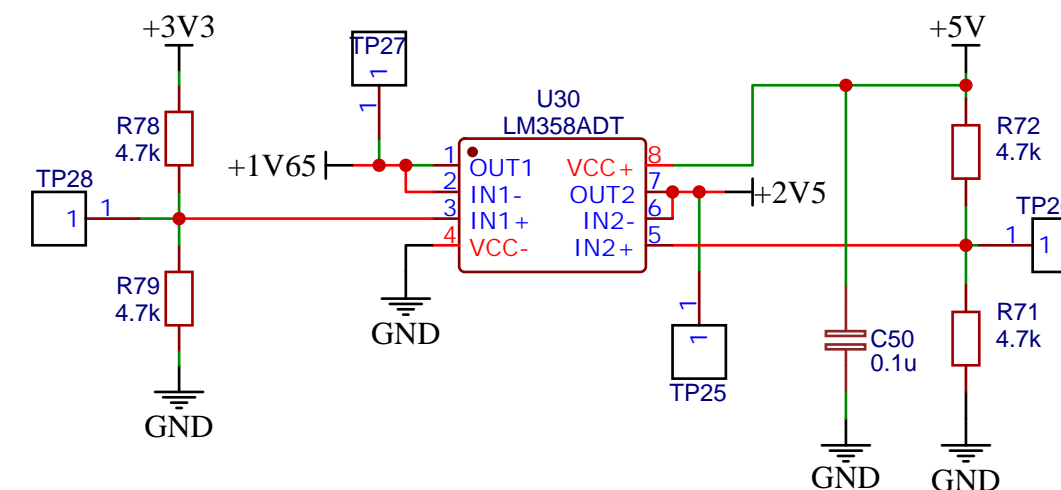
Voltage dependent, fixed Current AC Generation



$$I = \dots$$

$$I_{max} = \dots$$

1.65V and 2.5V ref. voltage buffer generation



FLexi TEER

Page name:
Power

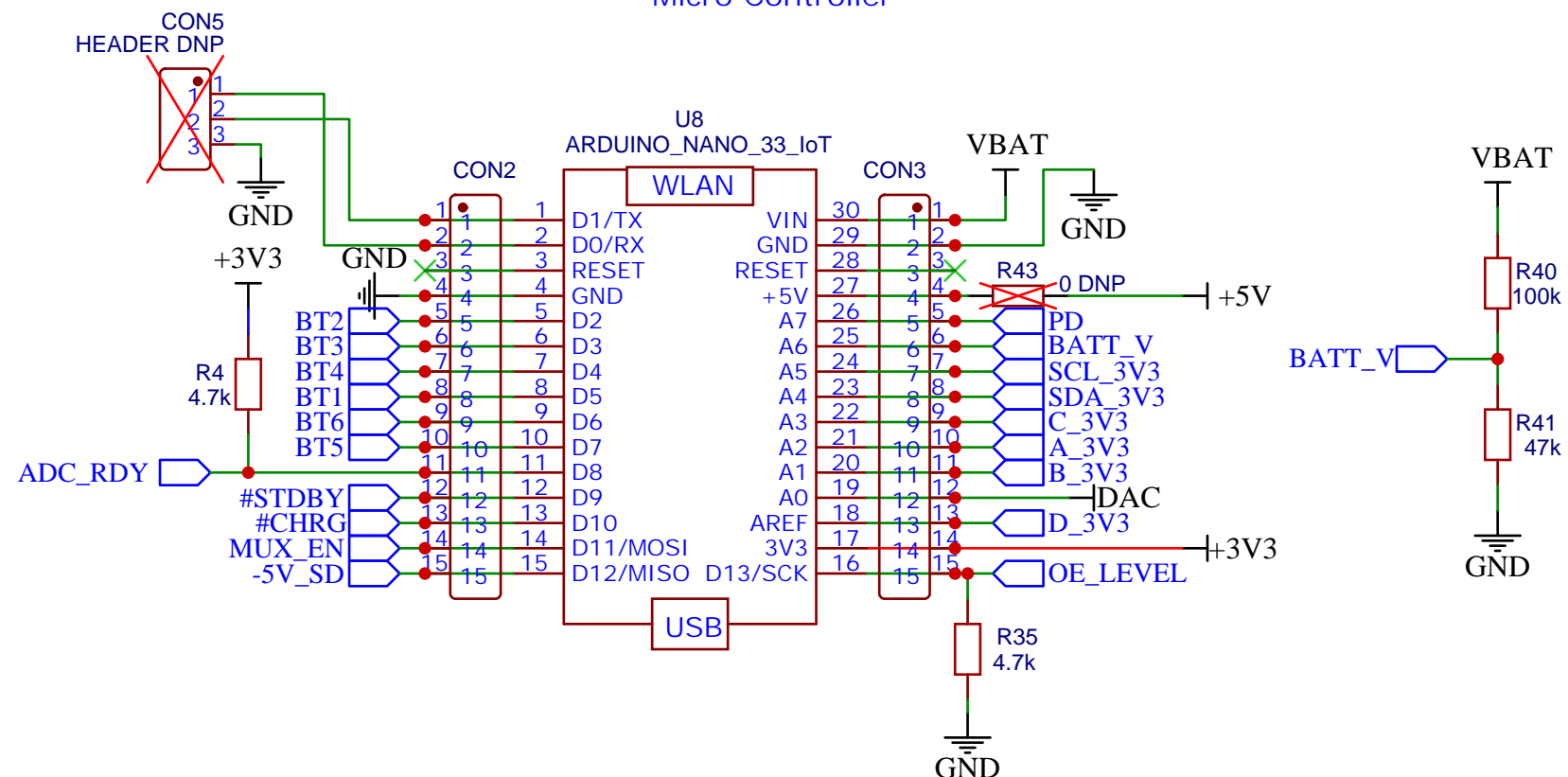
Company: Boston Childrens Hospital

Date: 2022-11-01 Drawn By: MD Anderson

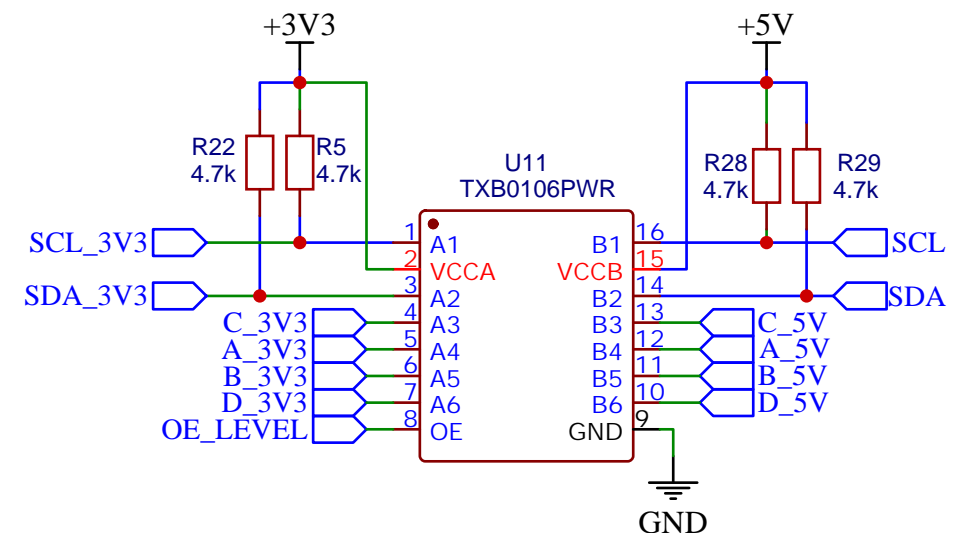
REV: 2.0

Sheet: 2/6

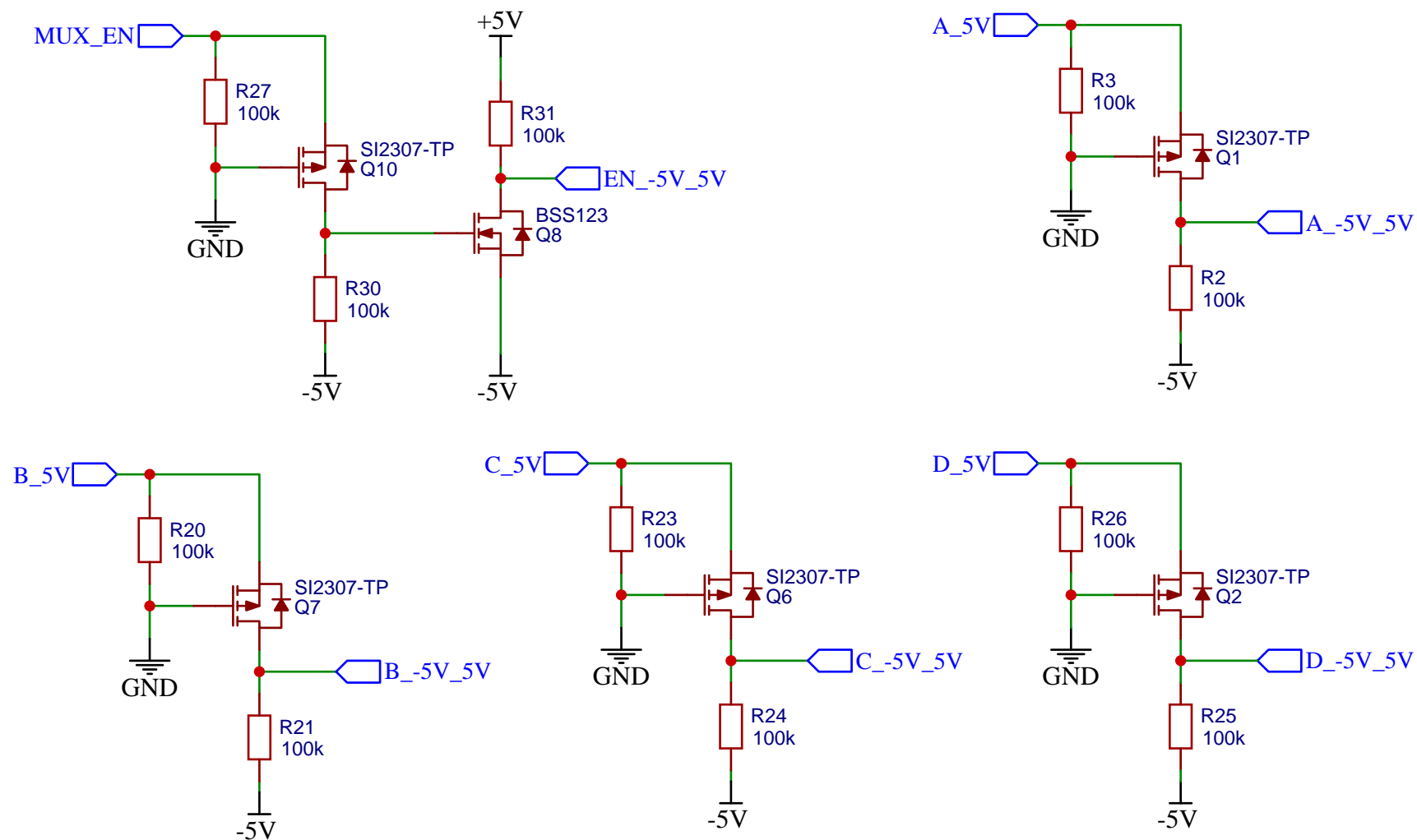
Micro Controller



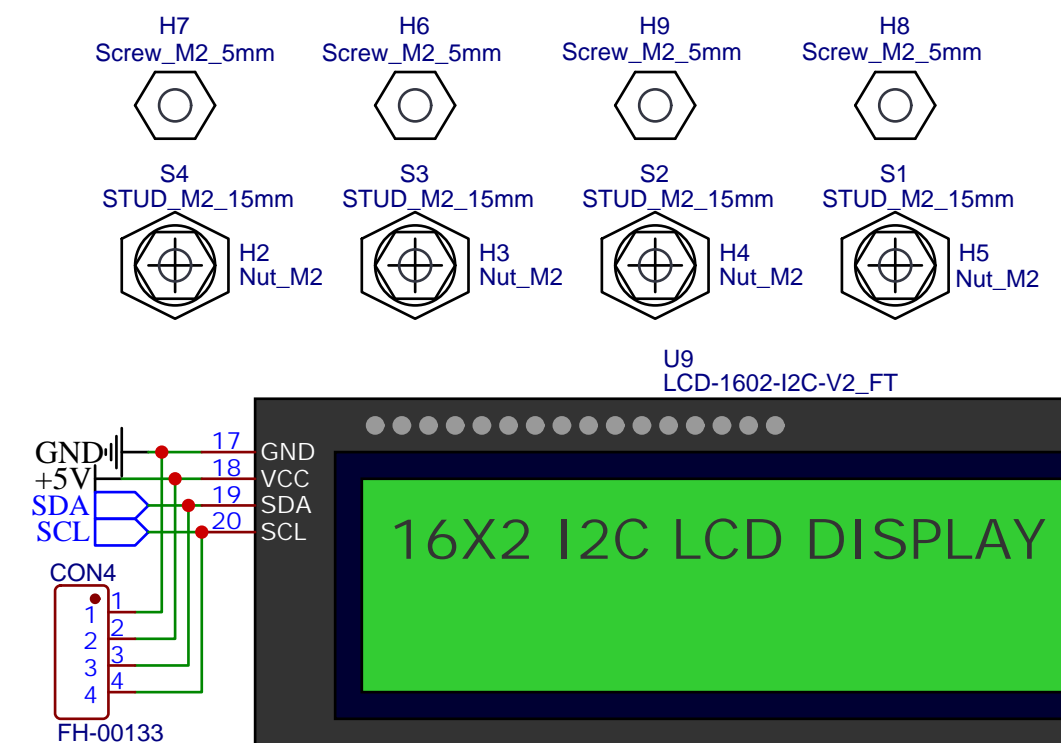
Level translator 3V3..5V



Level translator 0..5V to -5V..+5V

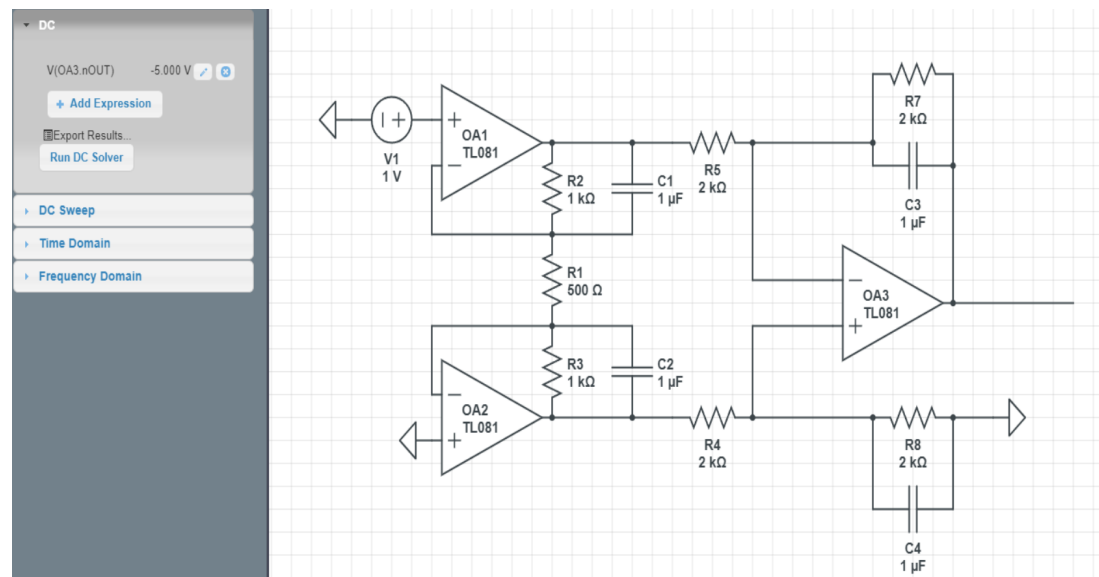
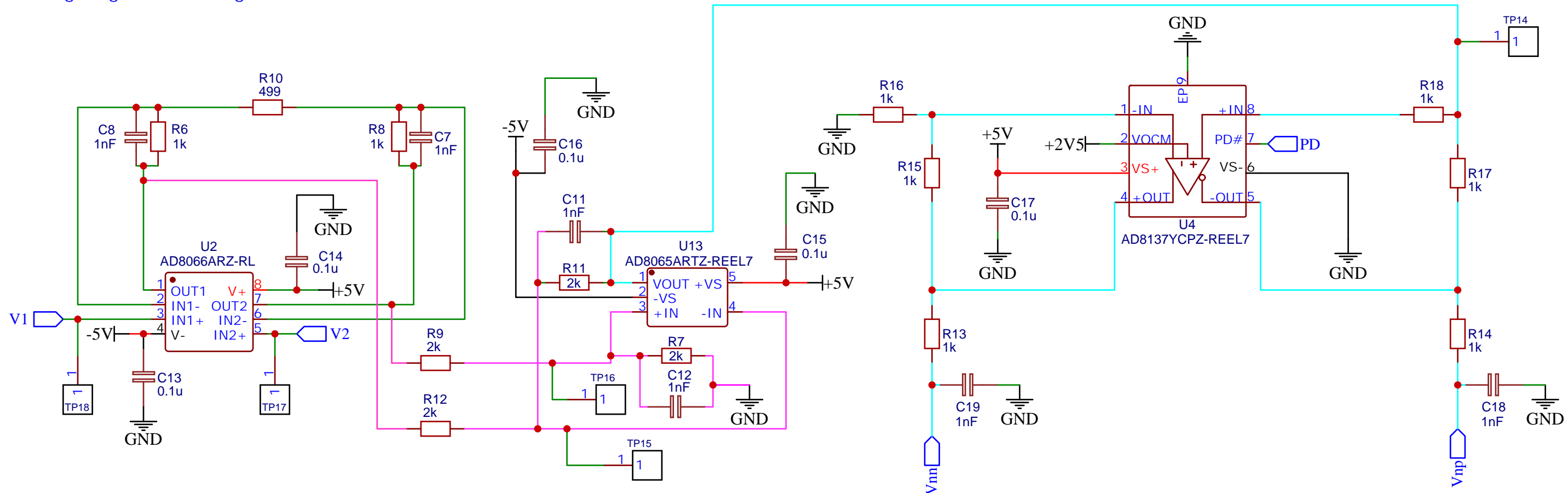


I2C LCD Panel Connection



Any I2C LCD will work.
pcf8574t I2C to LCD expander board used.
Many LCD screens can be purchased
with expander board already attached
<https://www.microcenter.com/product/632704/inland-1602-i2c-lcd-display-module>

Voltage Signal Processing



Explanation picture

ADC

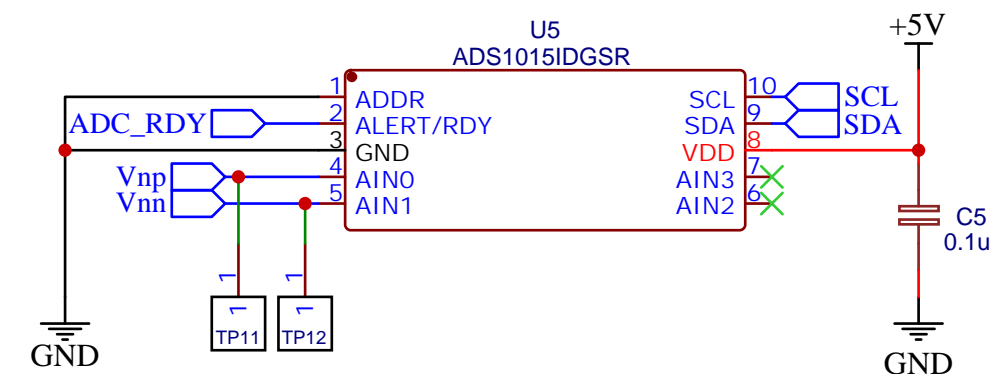
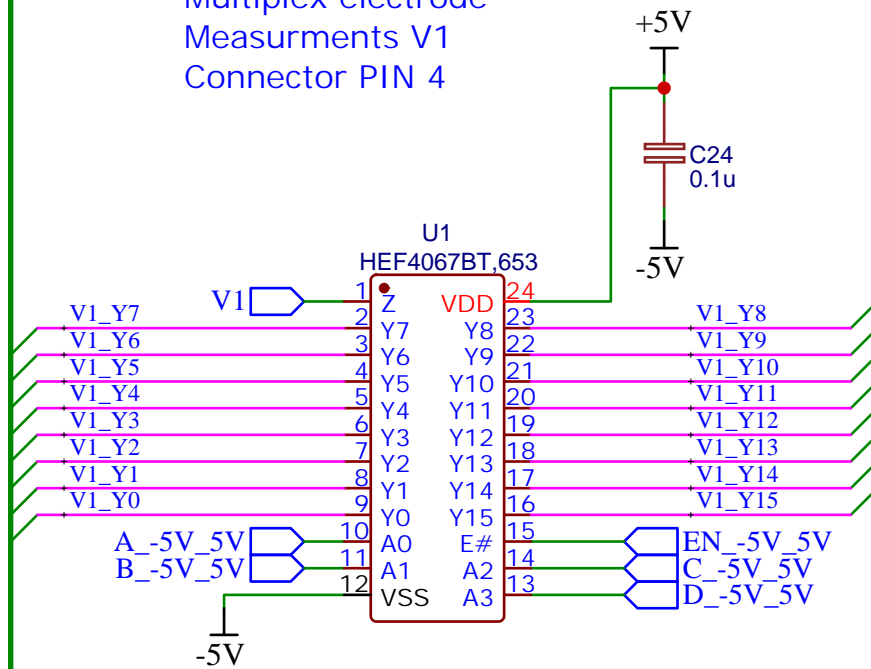


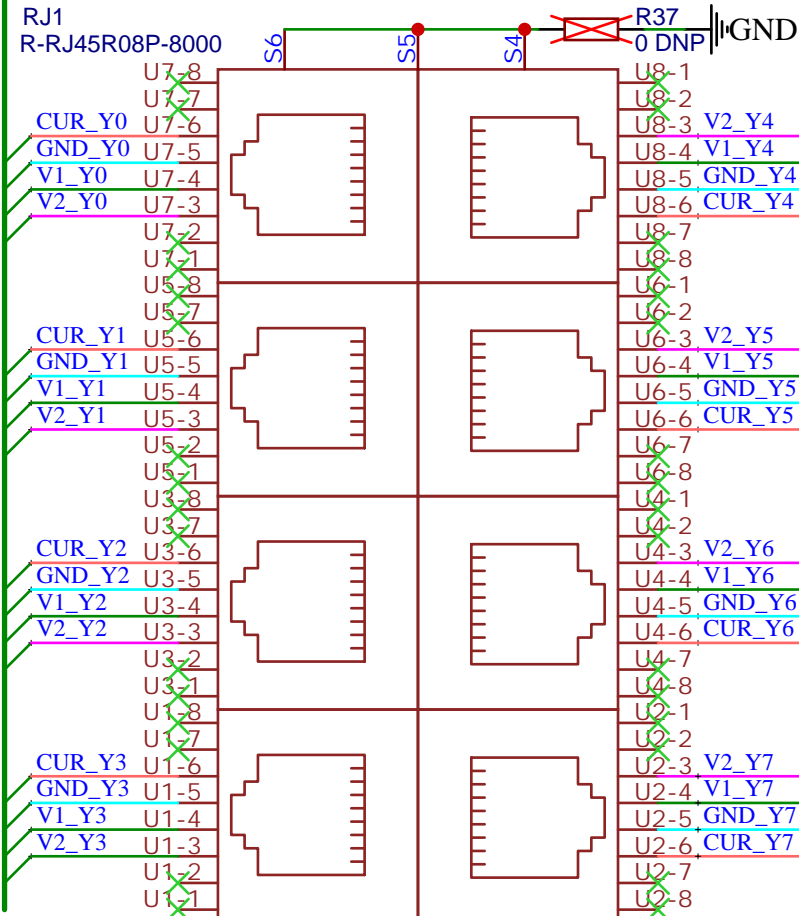
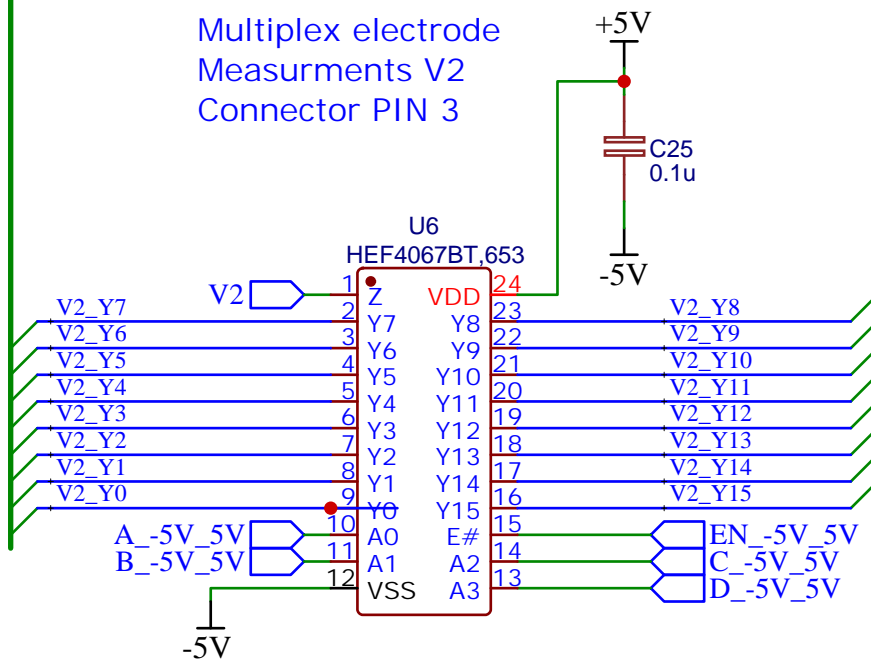
Table 2. ADDR Pin Connection and Corresponding Slave Address

ADDR PIN CONNECTION	SLAVE ADDRESS
GND	1001000
VDD	1001001
SDA	1001010
SCL	1001011

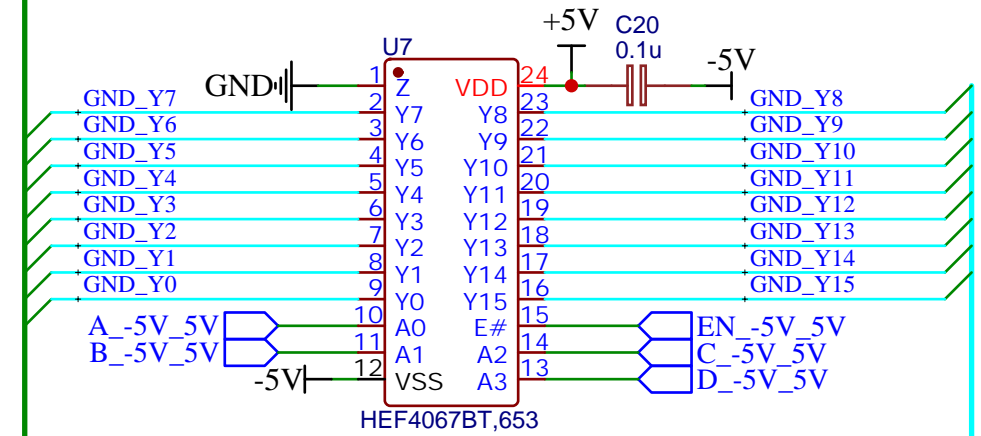
Multiplex electrode
Measurments V1
Connector PIN 4



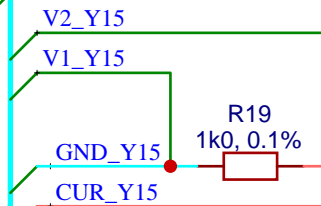
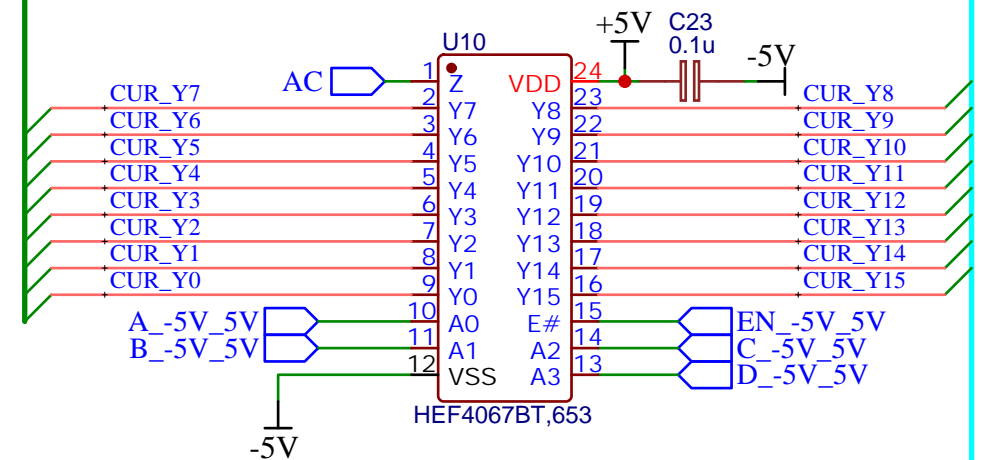
Multiplex electrode
Measurments V2
Connector PIN 3



Multiplex I_1 electrode
Connector PIN 6



Multiplex I_2 electrode
Connector PIN 5



Directly convertible from RJ45 to RJ11
for use on EVOM Meter and vise-versa

Channel 16 (pins 121-128) is reserved for internal calibration of currents via an onboard 1k ohm resistor



REV: 2.0

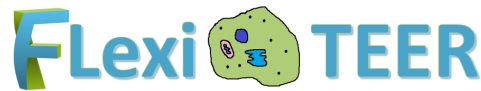
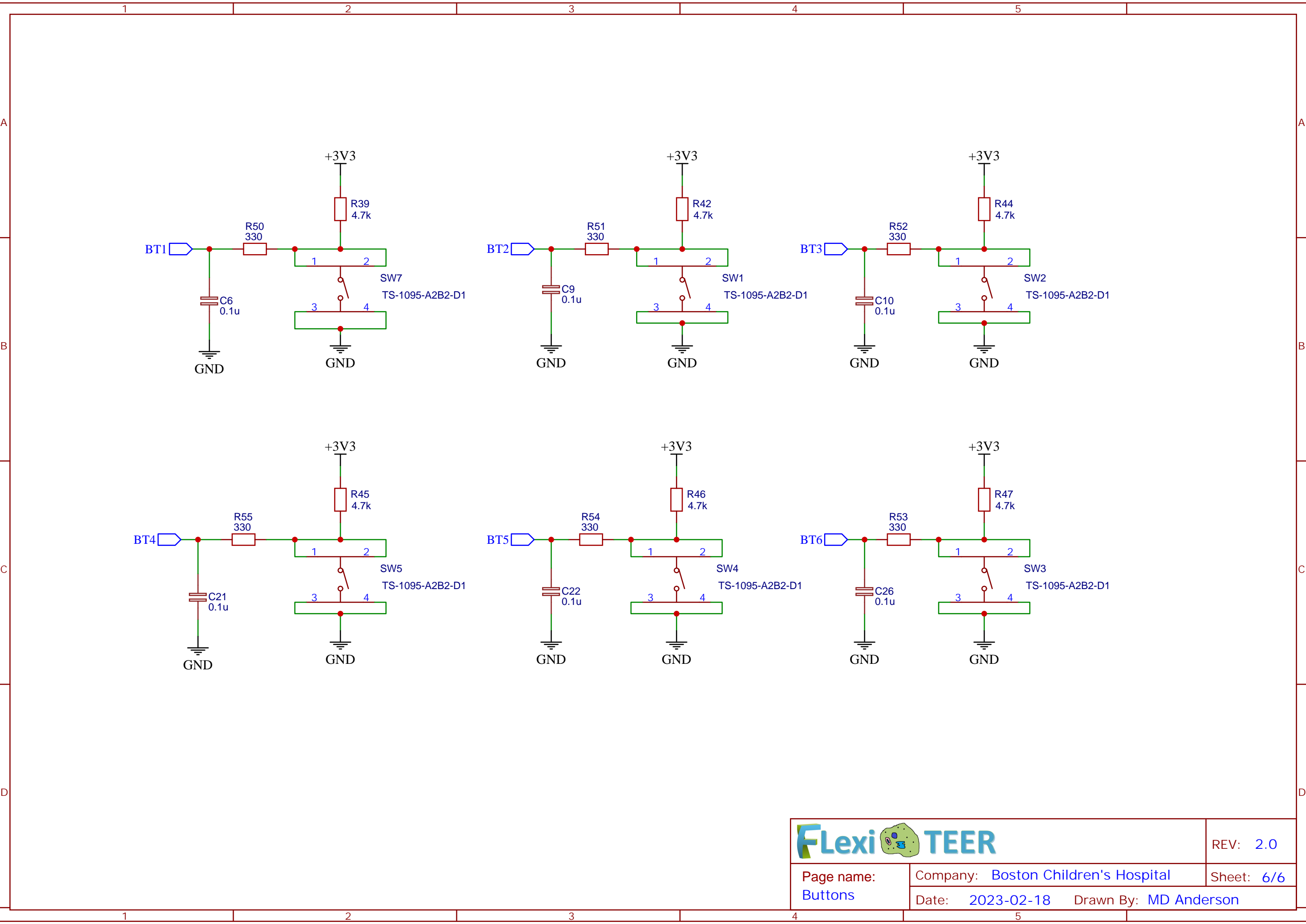
Page name:
Electrodes

Company: Boston Children's Hospital

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Date: 2022-9-29

Drawn By: MD Anderson



REV: 2.0

Page name:
Buttons

Company: Boston Children's Hospital

Sheet: 6/6

Date: 2023-02-18 Drawn By: MD Anderson