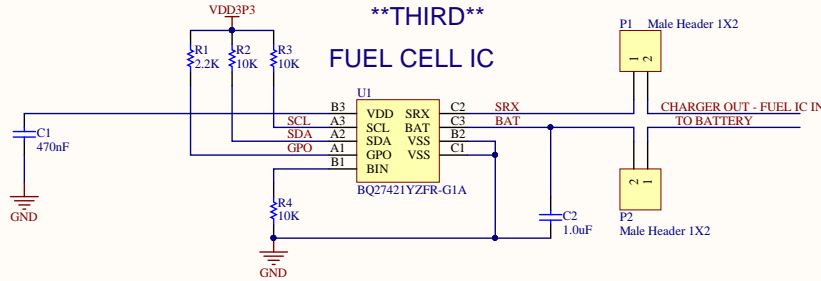


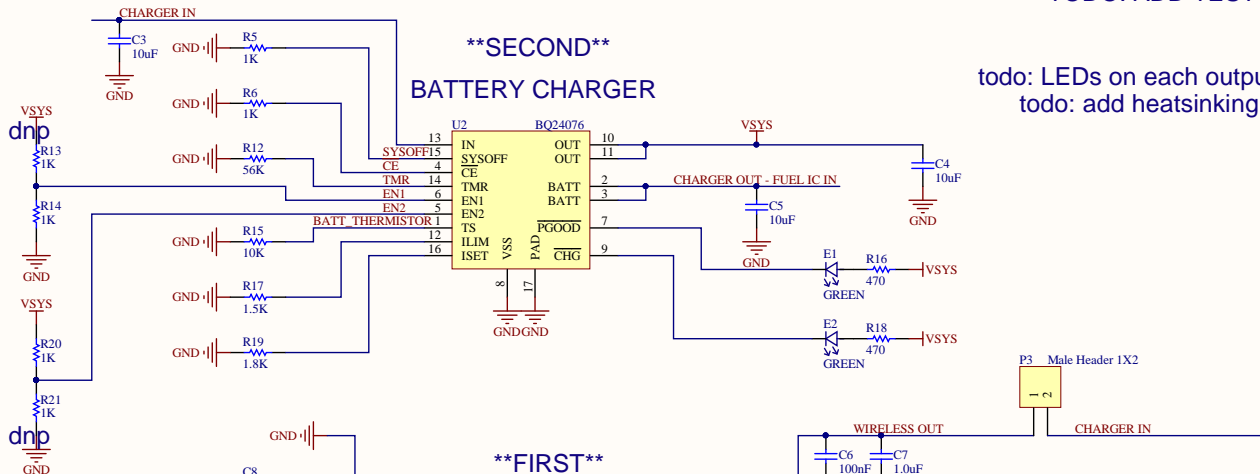
CURRENT FLOW:
BQ51013B --> BQ24076 --> BQ27421

****THIRD****
FUEL CELL IC



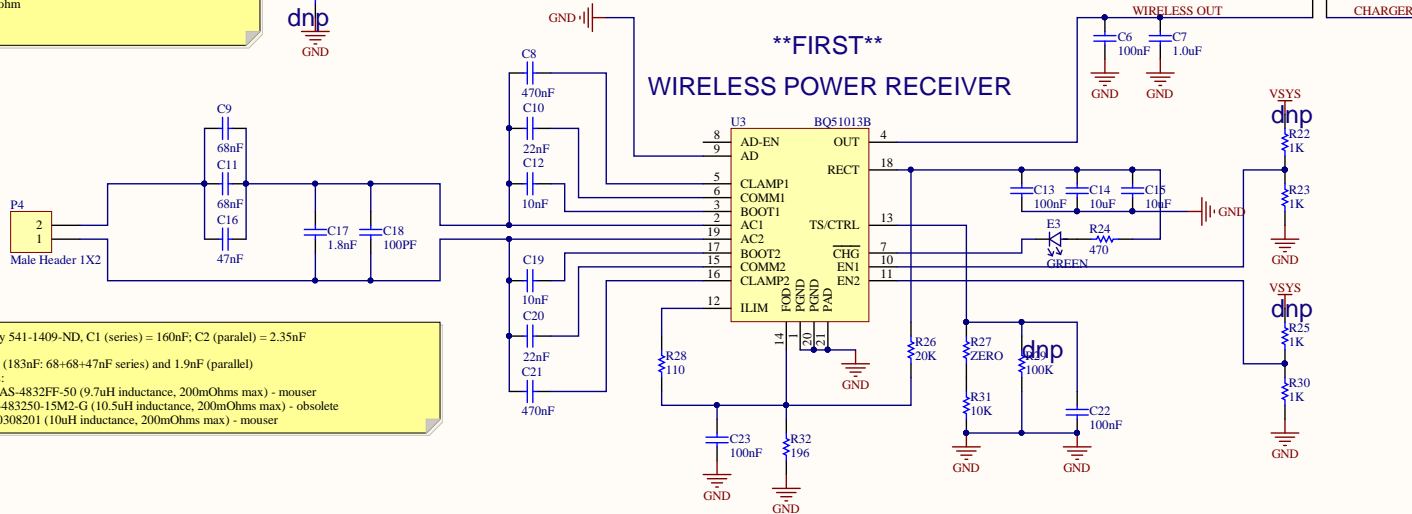
TODO: ADD TEST POINTS FOR CHG & PGOOD

****SECOND****
BATTERY CHARGER



todo: LEDs on each output voltage
todo: add heatsinking

****FIRST****
WIRELESS POWER RECEIVER



Ros = FOD to RECT 20k default, may need adjusting
Rfod = FOD to GND = 196 ohm default
Ilim = K/R = (314ohm) / (Rilim + Rfod)
Ilim = 314/(196 + 110) = 1.0A
Rilim = 110 ohm

For 8 hour safety timer, Rtmr = 60k
18kOhm < Rtmr < 72kOhm
For 7 hour, Rtmr = 52.5
56k = 7.5 hours

EN2=1, EN1=0: input current is set by ILIM resistor
EN2=0, EN1=1: input current is 500mA

Input current limit: Rilim = Kilim / Imax
Kilim = 1550Aohm
Maximum input current of 1A: Rilim = K1 = 1500 ohms

Maximum charging current for battery (from spec sheet) is 644mA (0.2C, total capacity is 3.22Ah)
Therefore fastest charging is in 5 hours. Datasheet says it will take 6 hours total.
Setting charge current to 500mA will be 6.4 hours, max.
Riset = Kiset / Ichg = 890AOhms / 0.5A = 1.8k ohms

For Vishay 541-1409-ND, C1 (series) = 160nF; C2 (paralel) = 2.35nF
EVK uses (183nF: 68+68+47nF series) and 1.9nF (parallel)
EVK coils:
Vishay WAS-4832FF-50 (9.7uH inductance, 200mOhms max) - mouser
TDK WR-483250-15M2-G (10.5uH inductance, 200mOhms max) - obsolete
Würth 760308201 (10uH inductance, 200mOhms max) - mouser

Title Receiver.SchDoc		
Size B	Number TBD	Revision X01
Date: File:	2/21/2018 C:\AltiumDesigns\Receiver.SchDoc	Sheet 1 of 5 Drawn By: SMITH