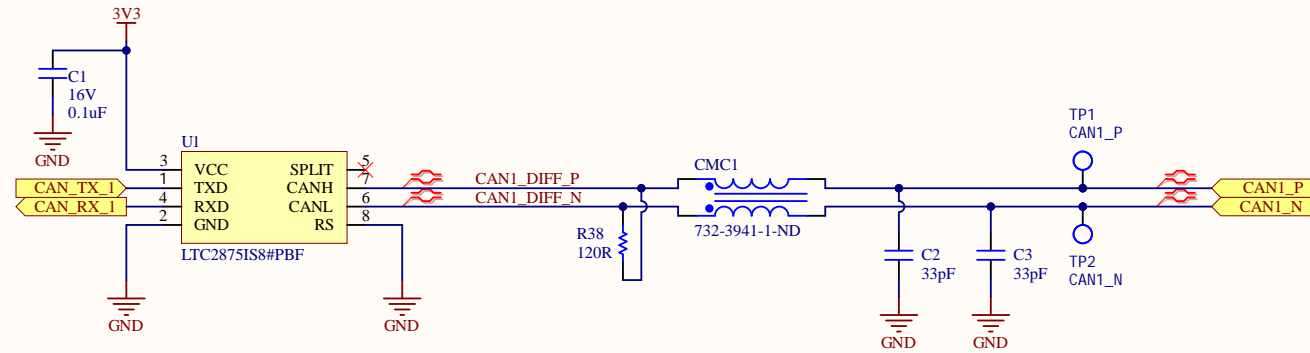
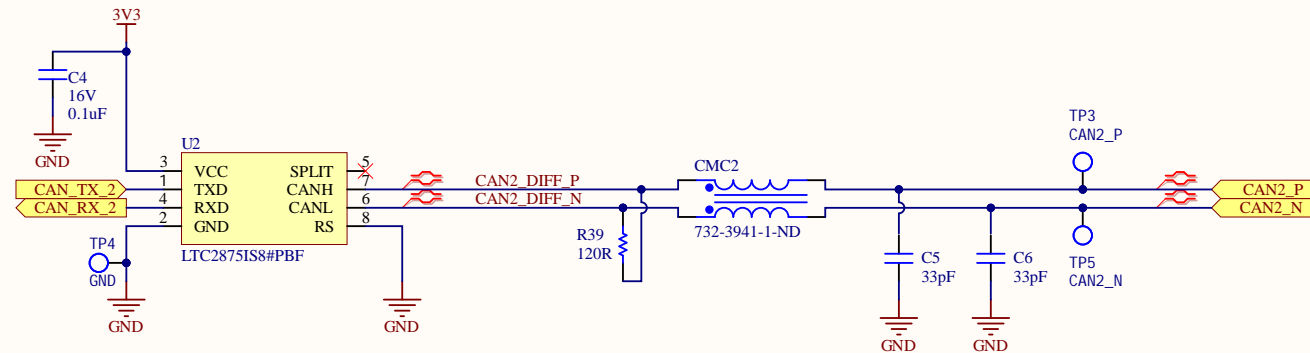


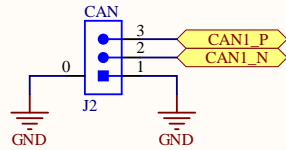
CAN 1



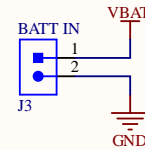
CAN 2



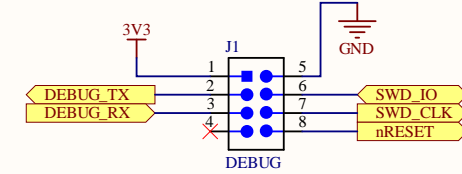
CAN



Battery In

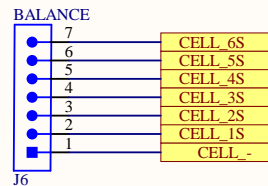


Debug/Programing

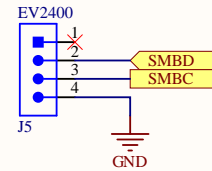


Double check balance connector direction (which pin is GND) and that footprint for xt90 is okay. Also check pin ordering on ev2400 (make sure its no mirrored or smthg)

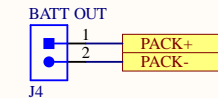
Battery Balancing



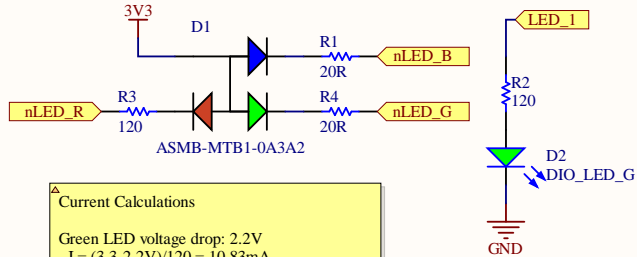
EV2400



Pack Out



Test LEDs



Current Calculations

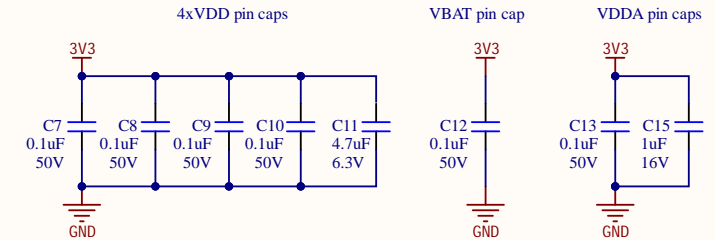
Green LED voltage drop: 2.2V
 $I = (3.3 - 2.2V) / 120 = 10.83mA$

RGB LED voltage drops:

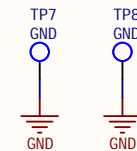
- Red: 2.1V; $I = (3.3 - 2.1V) / 120 = 10mA$
 - Blue: 3.1V; $I = (3.3 - 3.1V) / 20 = 10mA$
 - Green: 3.1V; $I = (3.3 - 3.1V) / 20 = 10mA$

STM32F446RET6

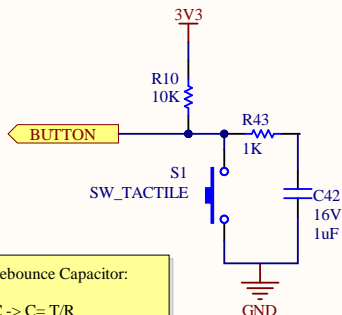
Decoupling Caps



GND Test Points

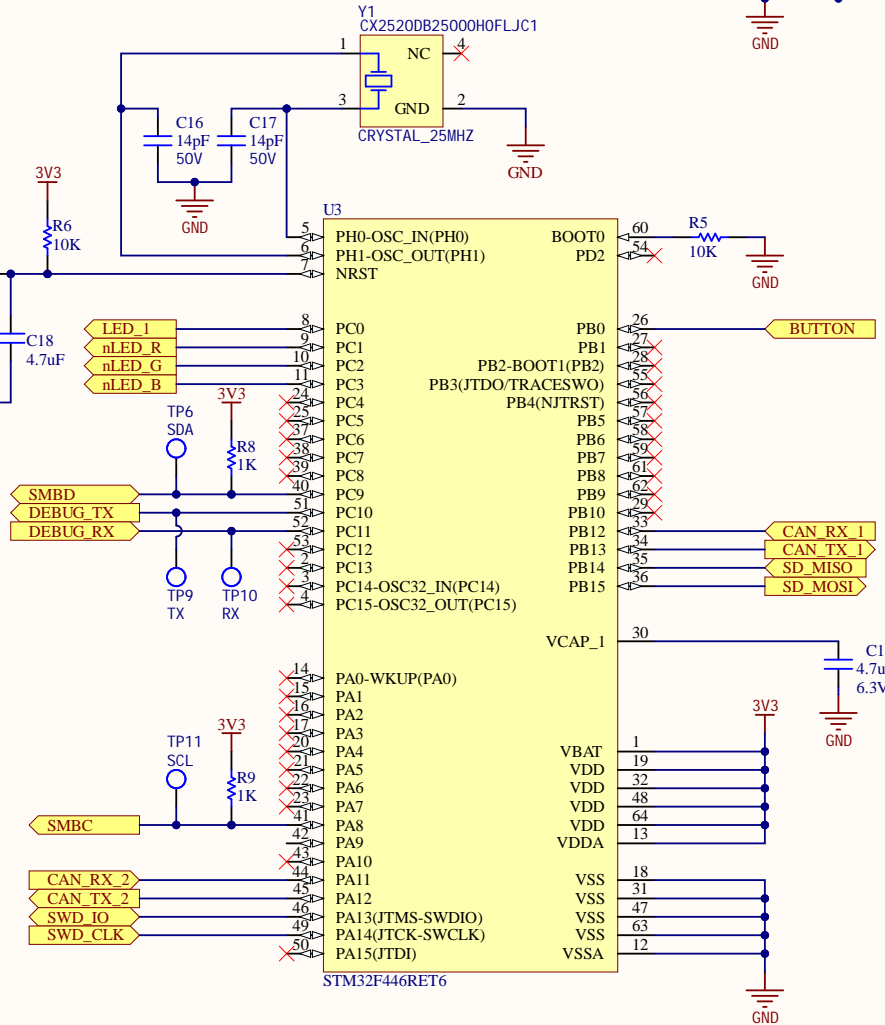


Test Button



For Debounce Capacitor:

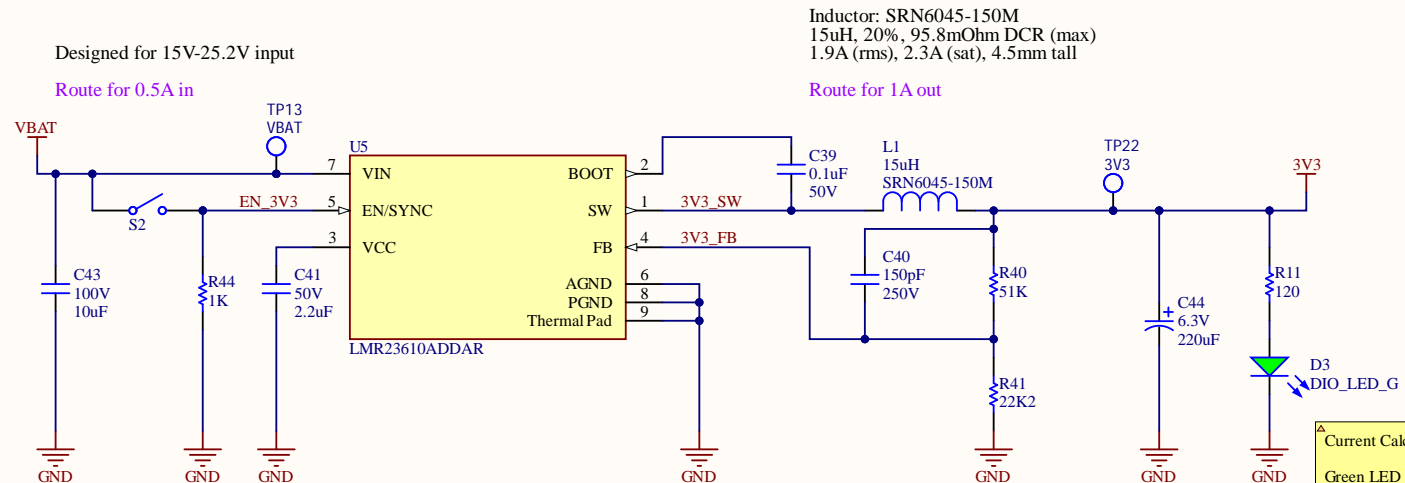
$T = RC \rightarrow C = T/R$
 $C = 0.001ms / 1000Ohms = 1uF$



Title	MCU	*
Size:	Letter	Drawn By: Ayesha Ebrahim
Date:	2020-05-07	Sheet* of *
File:	C:\Users\ayesh\Documents\GitHub\MarsRover2020-PCB\Projects\BMS\Rev1\MCU_SchDoc	



Battery Voltage to 3V3 Buck @ 1A Max



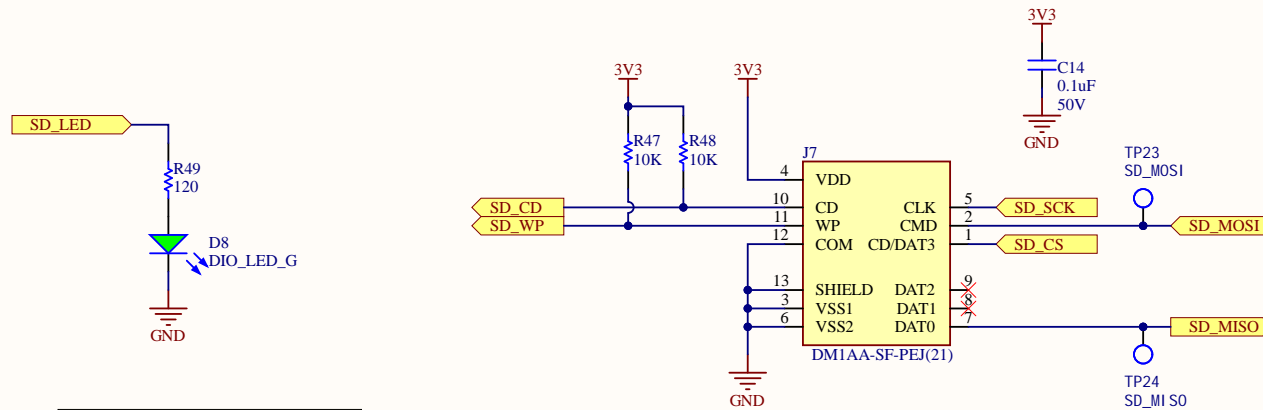
Current Calculations

Green LED voltage drop: 2.2V

$I = (3.3 - 2.2V) / 120 = 10.83mA$

Max expected power on output = 1.65W
Max current = 0.5A
Expected Efficiency at 1A > 87.7%

SD Card Connector



LED Current Calculation

Green LED voltage drop: 2.2V
 $- I = (3.3 - 2.2V) / (120\Omega) = 10.83\text{mA}$

Title	SD Card	*
Size: Letter	Drawn By: Ayesha Ebrahi m	*
Date: 2020-05-07	Sheet* of *	*
File: C:\Users\ayesh\Documents\GitHub\MarsRover2020-PCB\Projects\BMS\Rev1\SD Card.SchDoc		

