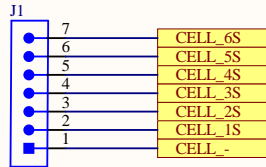
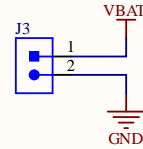


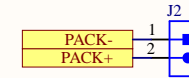
Battery Balancing



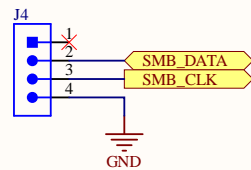
Battery In



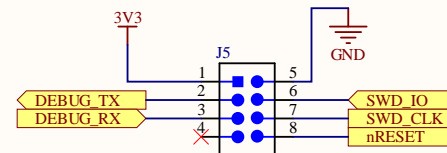
Pack Out




EV2400

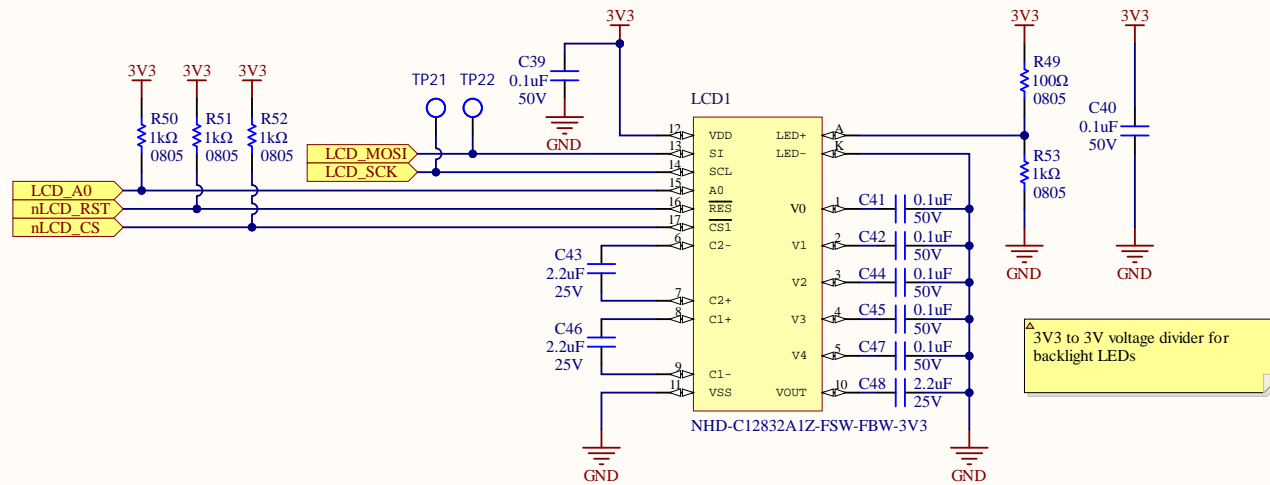


Debug/Programing

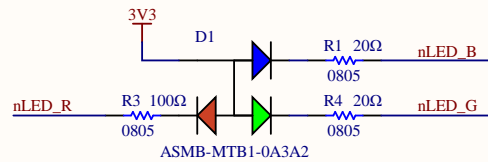


Title Connectors		UW Robotics 200 University Avenue Waterloo Ontario Canada N2L 3G6		
Size: Letter	Drawn By: Ayesha Ebrahim			
Date: 2020-05-23	Sheet of			
File: C:\Users\ayesh\Documents\GitHub\MarsRover2020-PCB\Projects\BMS\Rev1\Connectors.SchDoc				

LCD



Test LEDs

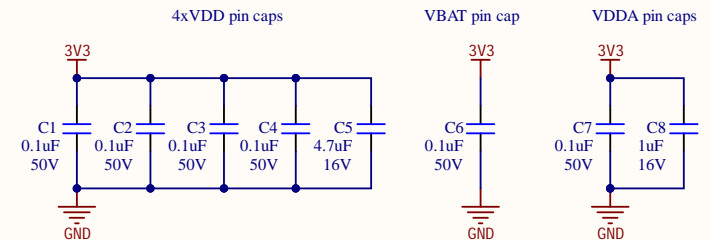


Current Calculations

Green LED voltage drop: 2.2V
 $I = (3.3 - 2.2V) / 100 = 11mA$

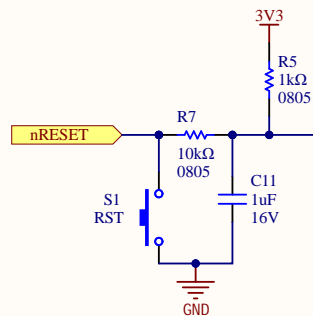
RGB LED voltage drops:
 - Red: 2.1V: $I = (3.3 - 2.1V) / 100 = 12mA$
 - Blue: 3.1V: $I = (3.3 - 3.1V) / 20 = 10mA$
 - Green: 3.1V: $I = (3.3 - 3.1V) / 20 = 10mA$

Decoupling Caps



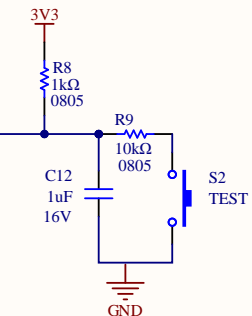
STM32F446RET6

Reset Button



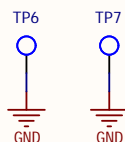
For Debounce Circuit:
 $T = RC \rightarrow C = T/R$
 $C = 10ms / 10kOhms = 1uF$

Test Button



For Debounce Circuit:
 $T = RC \rightarrow C = T/R$
 $C = 10ms / 10kOhms = 1uF$

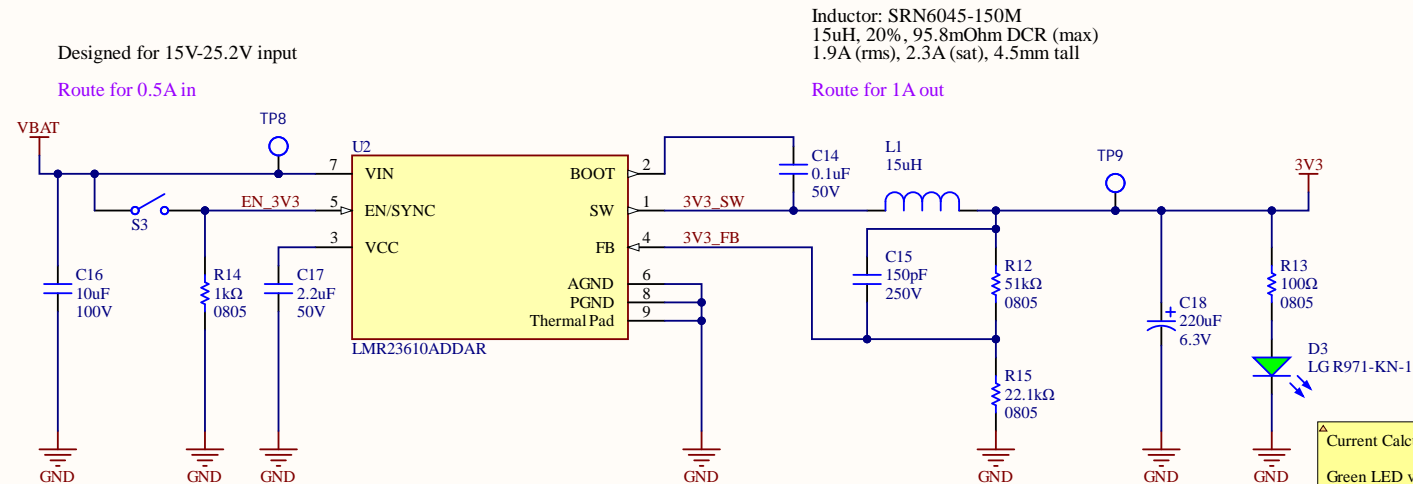
GND Test Points



Title	MCU	*
Size:	Letter	*
Drawn By:	Ayesha Ebrahimi	*
Date:	2020-05-23	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
 $I = (3.3 - 2.2V) / 100 = 11mA$

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

SD Card Connector

