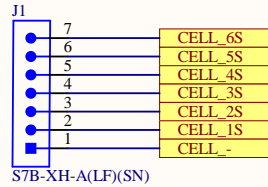
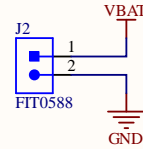


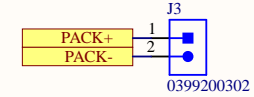
## Battery Balancing



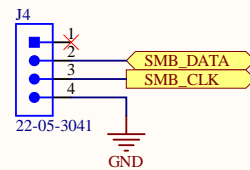
## Battery In



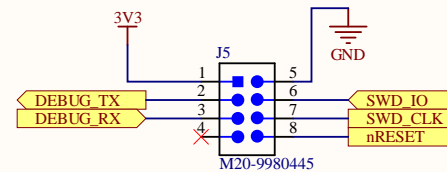
## Pack Out




## EV2400

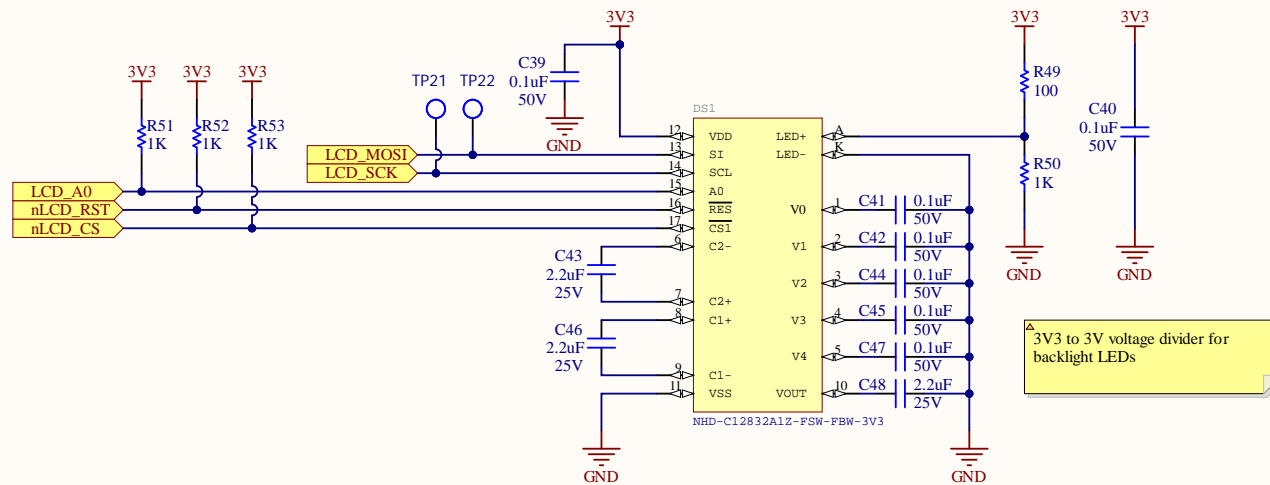


## Debug/Programing

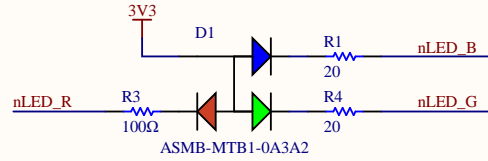


Title Connectors		<i>UW Robotics</i> <i>200 University Avenue</i> <i>Waterloo</i> <i>Ontario</i> <i>Canada N2L 3G6</i>	
Size: <b>Letter</b>	Drawn By: Ayesha Ebrahim		
Date: <b>2020-05-18</b>	Sheet of		
File: C:\Users\ayesh\Documents\GitHub\MarsRover2020-PCB\Projects\BMS\Rev1\Connectors.SchDoc			

# LCD



## Test LEDs

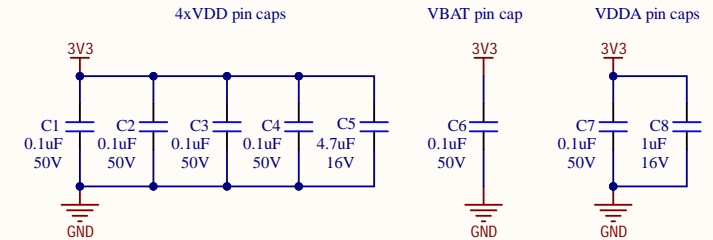


**Current Calculations**

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

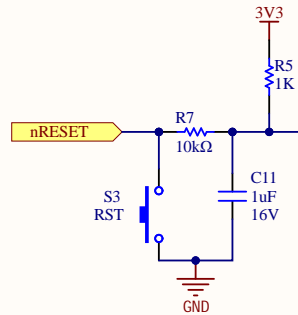
RGB LED voltage drops:  
 - Red: 2.1V:  $I = (3.3 - 2.1V) / 100 = 12mA$   
 - Blue: 3.1V:  $I = (3.3 - 3.1V) / 20 = 10mA$   
 - Green: 3.1V:  $I = (3.3 - 3.1V) / 20 = 10mA$

## Decoupling Caps



## STM32F446RET6

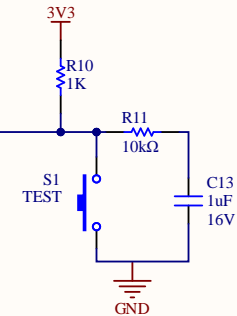
## Reset Button



**For Debounce Circuit:**

$T = RC \rightarrow C = T/R$   
 $C = 10ms / 10kOhms = 1\mu F$

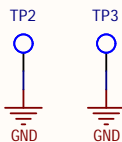
## Test Button



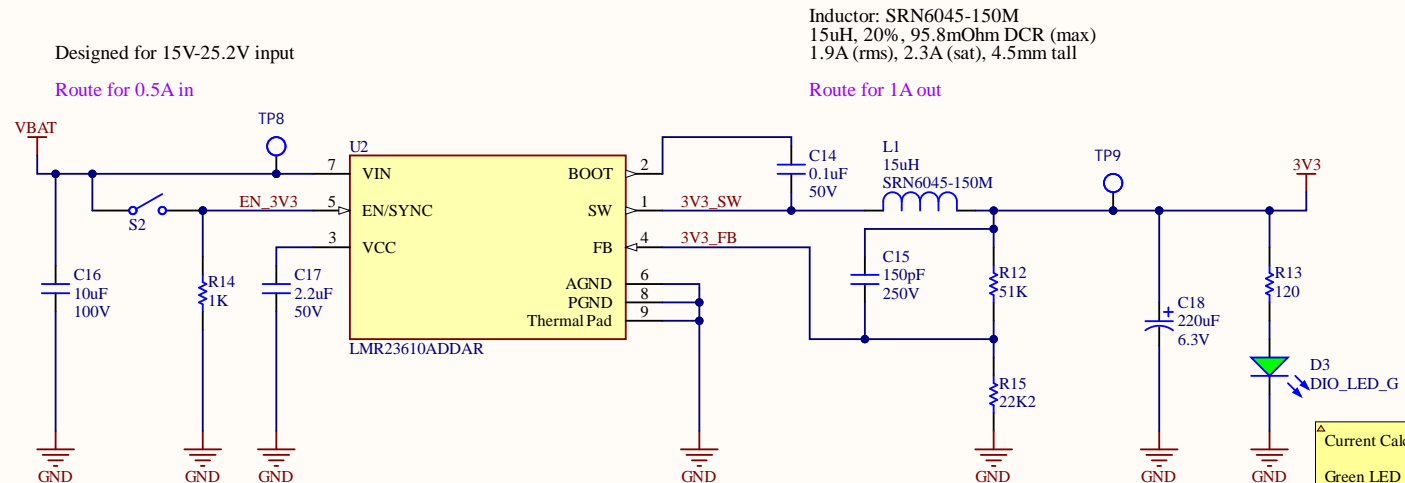
**For Debounce Circuit:**

$T = RC \rightarrow C = T/R$   
 $C = 10ms / 10kOhms = 1\mu F$

## GND Test Points



# 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

