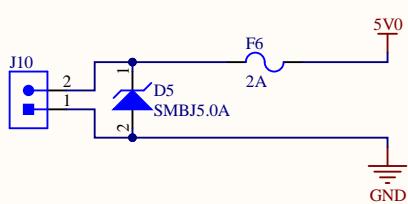


5V - 3.3V Buck Converter

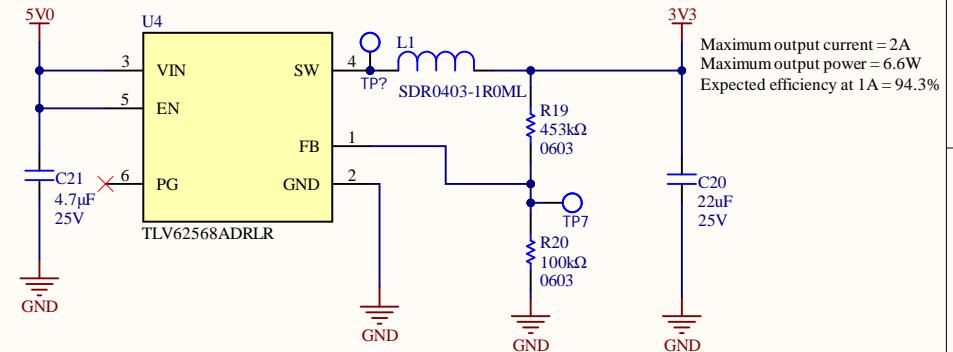


Designed for 3.3V - 5V input

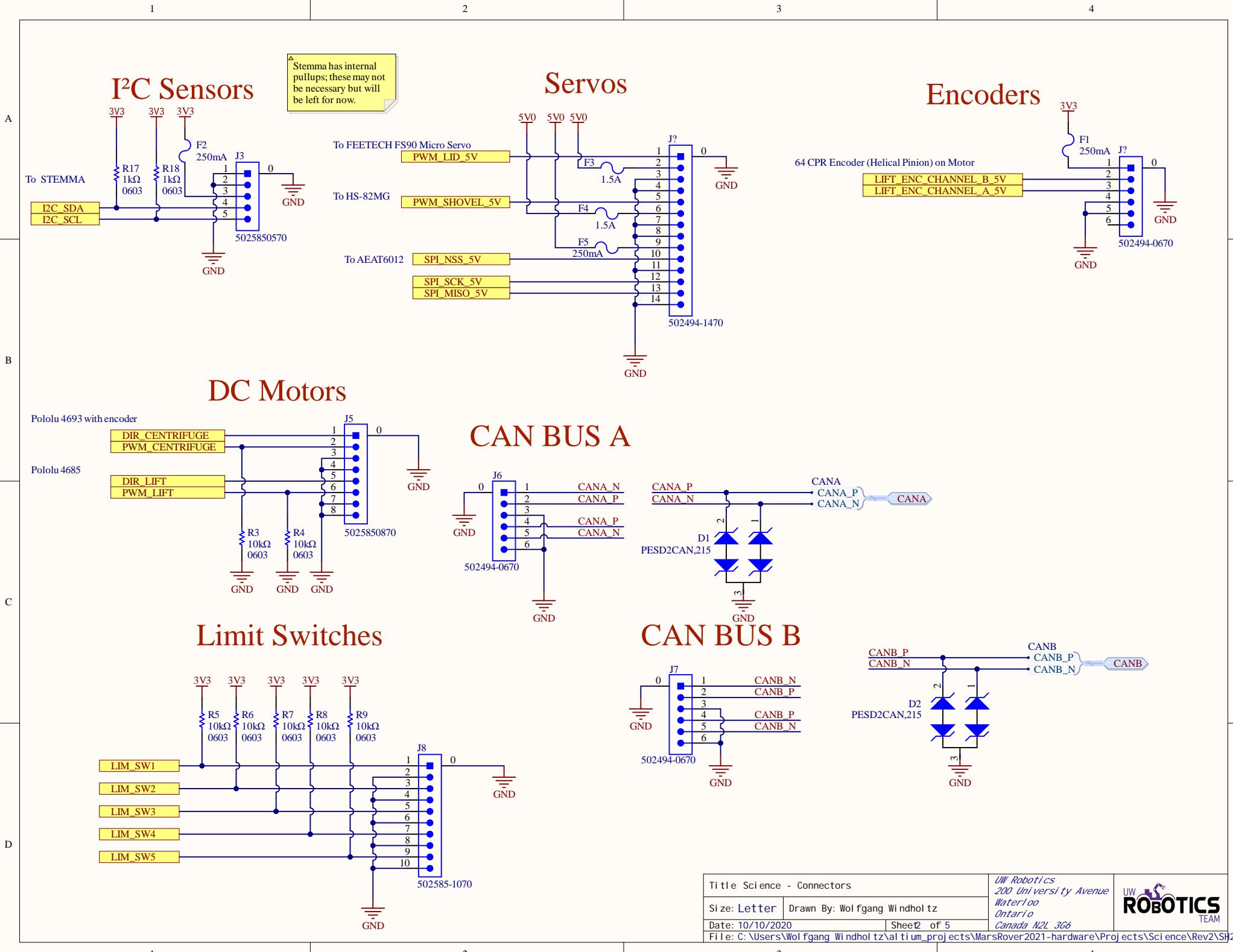
Route for 1A in

Inductor: SDR0403-1R0ML
1uH, 20%, 33mOhm DCR (max)
3.8A (rms), 5.5A (sat), 3.2mm tall

Route for 3A out



Maximum output current = 2A
Maximum output power = 6.6W
Expected efficiency at 1A = 94.3%



A

A

B

B

C

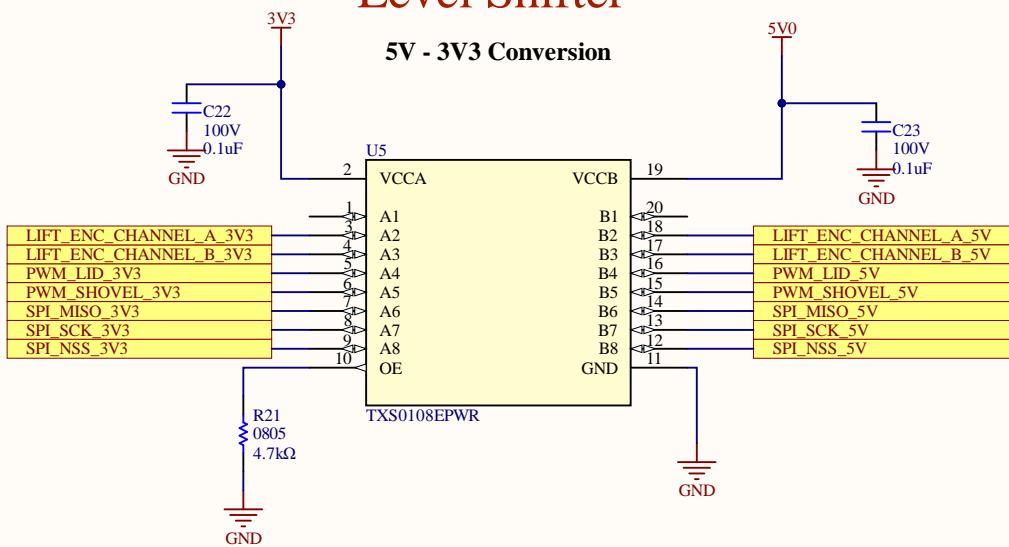
C

D

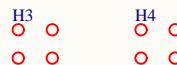
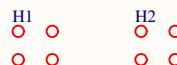
D

Level Shifter

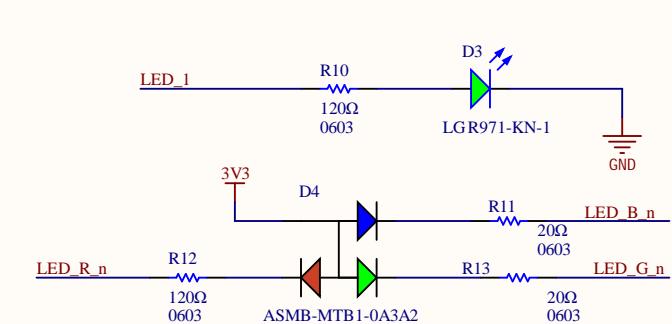
5V - 3V3 Conversion



Mounting Holes



Title: Science - Level_Shifter		UW Robotics 200 University Avenue Waterloo Ontario Canada N2L 3G6
Size: Letter	Drawn By: Wolfgang Windholz	
Date: 10/10/2020	Sheet 3 of 5	
File: C:\Users\Wolfgang.Windholz\alium_projects\MarsRover2021-hardware\Projects\Science\Rev2\SH3 - LE		UW ROBOTICS TEAM



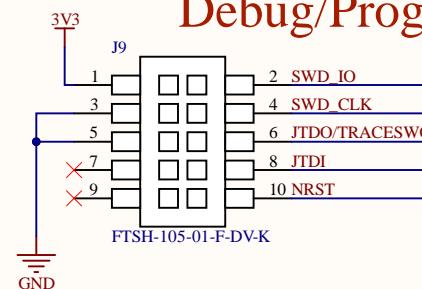
△ Current Calculations

$$\text{Green LED voltage drop: } 2.2V$$

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

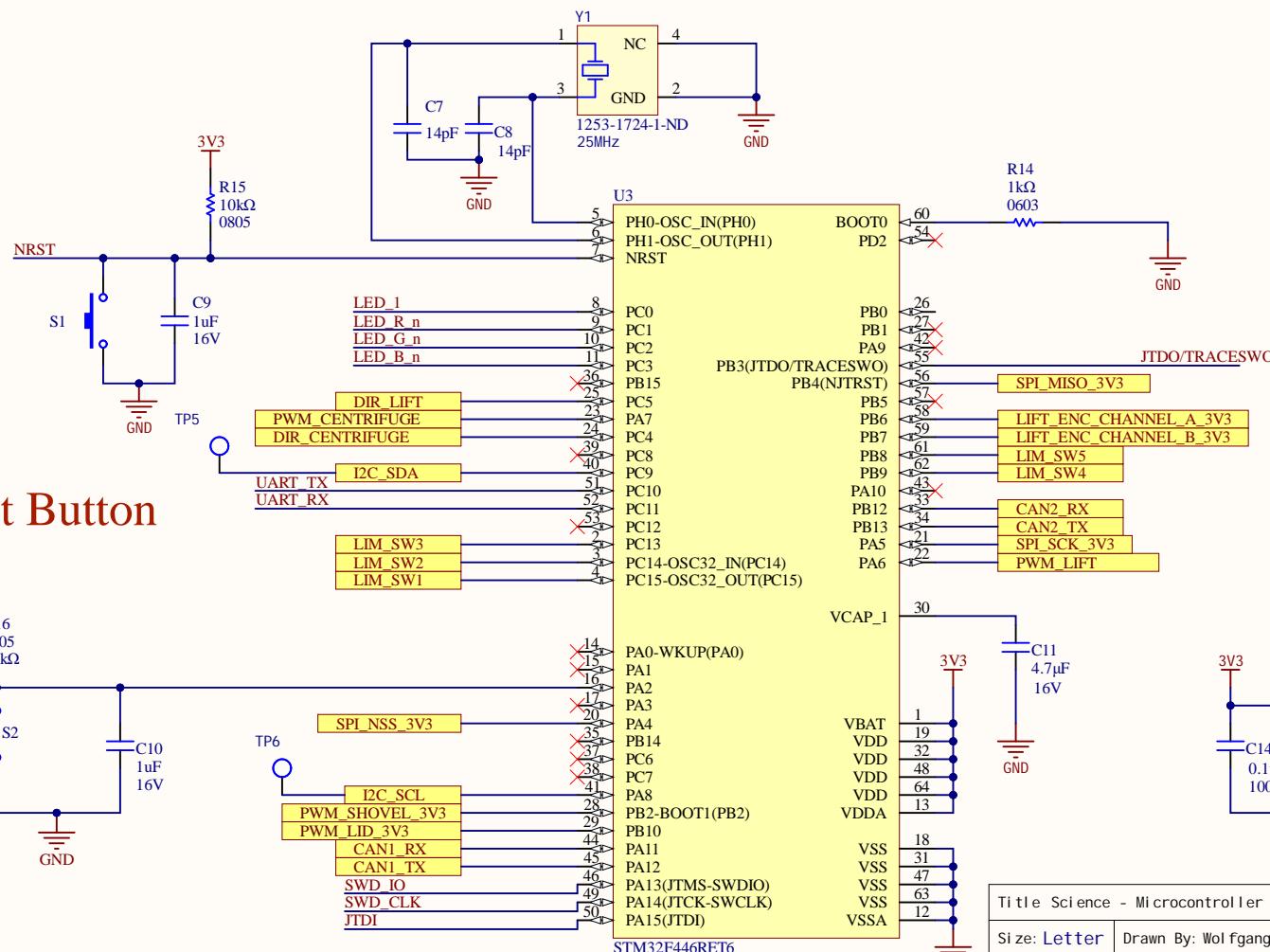
RGB LED voltage drops:

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

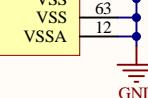
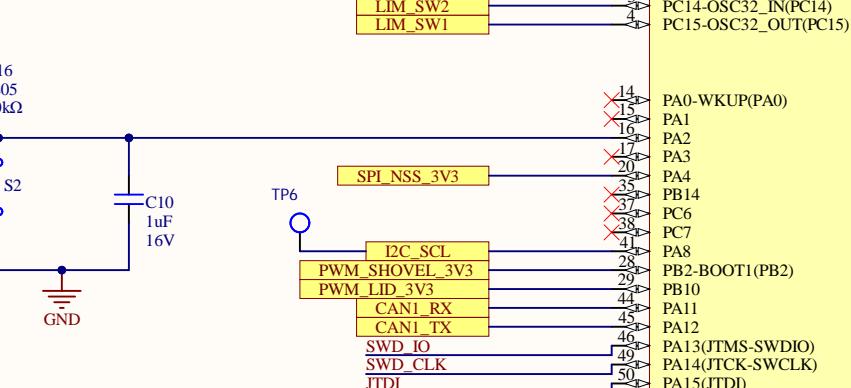


Debug/Programming

STM32



Test Button



Title Science - Microcontroller

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Date: 10/10/2020

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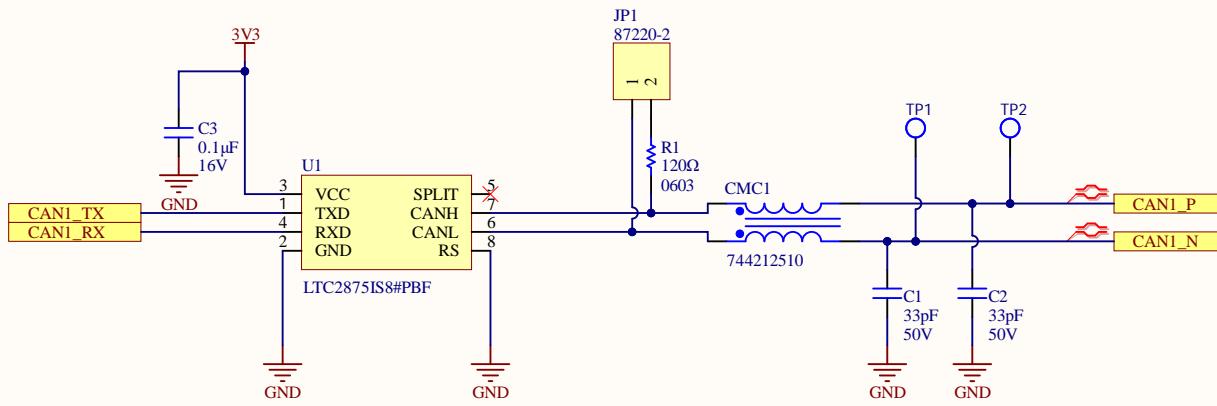
A

A

CAN Transceivers

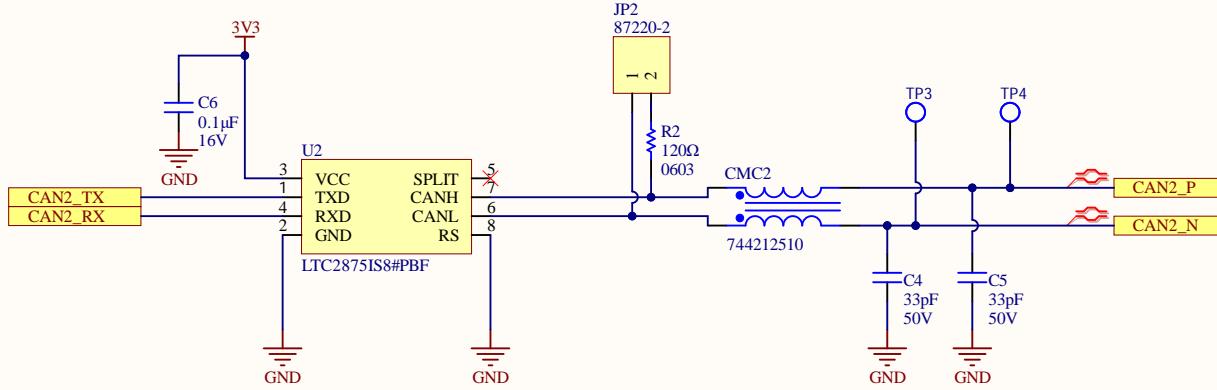
B

B



C

C



D

D

Title: Science - CAN

Size: Letter | Drawn By: Wolfgang Windholz

Date: 10/10/2020 | Sheet 5 of 5

File: C:\Users\Wolfgang\Windholz\atium_projects\MarsRover2021-hardware\Projects\Science\Rev2\SH5 - CAN