

A

A

B

B

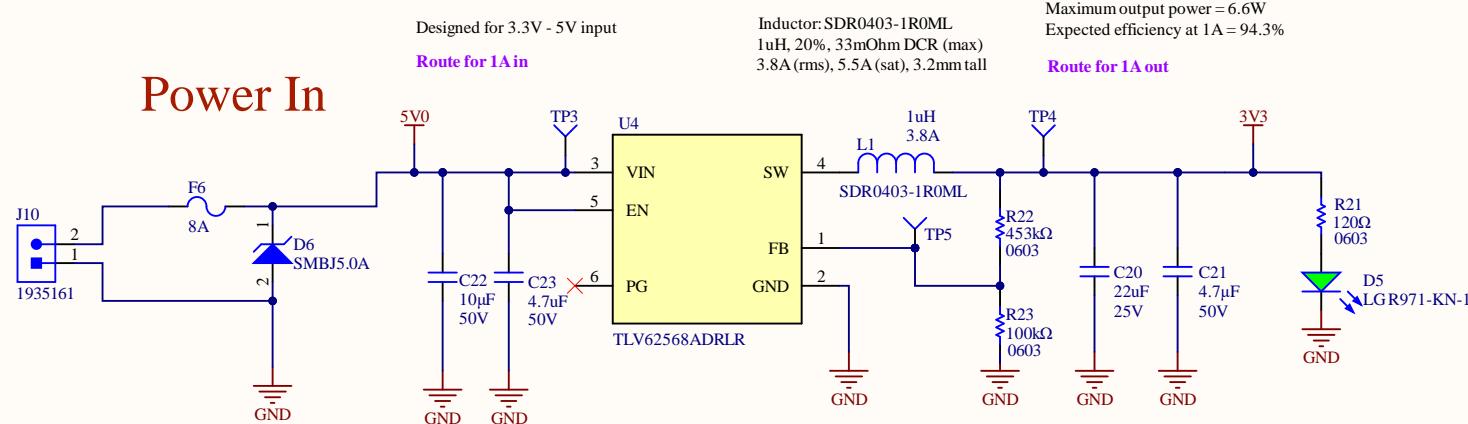
C

C

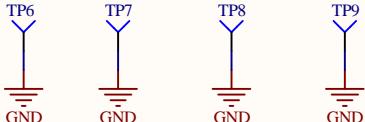
D

D

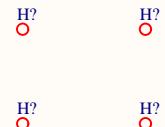
5V - 3.3V Buck Converter



GND Test Points



Mounting Holes

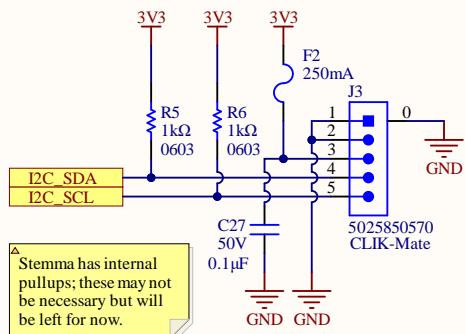


Current Calculations

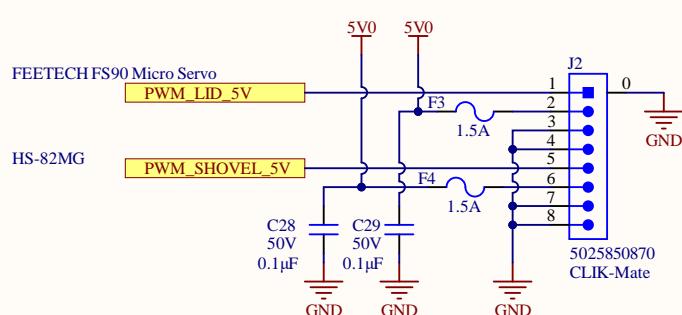
Green LED voltage drop: 2.2V
 $-I = (3.3 - 2.2V)/120 = 9.17mA$

Title: Science - Power	UW Robotics 200 University Avenue Waterloo Ontario Canada N2L 3G6
Size: Letter	Drawn By: Wolfgang Windholz
Date: 10/15/2020	Sheet 1 of 5
File: C:\Users\Wolfgang_Windholz\ati\um_projects\MarsRover2021-hardware\Projects\Science\Rev2\SH1 - PO	

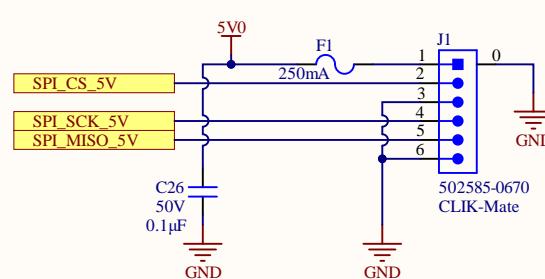
STEMMA Moisture Sensor



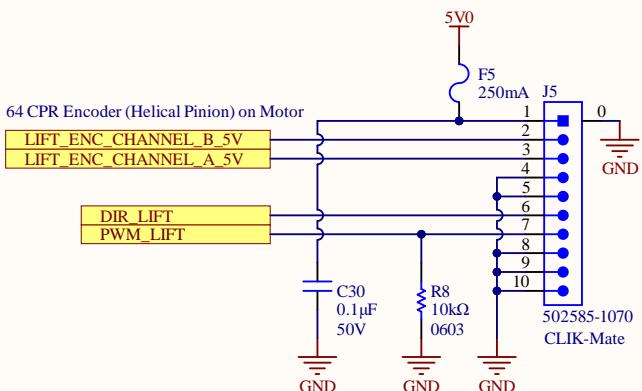
Servos



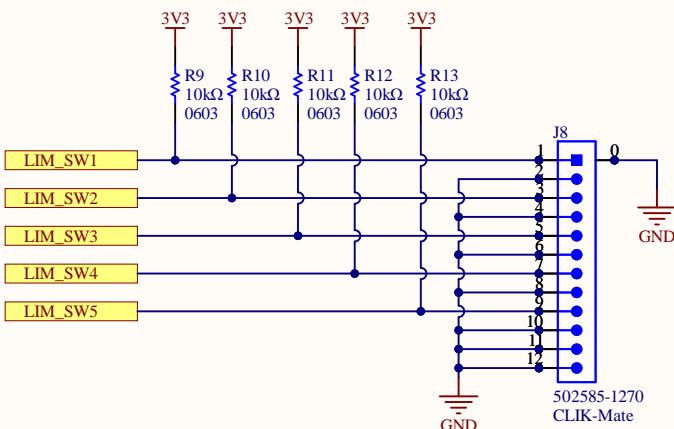
Broadcom AEAT6012 Encoder



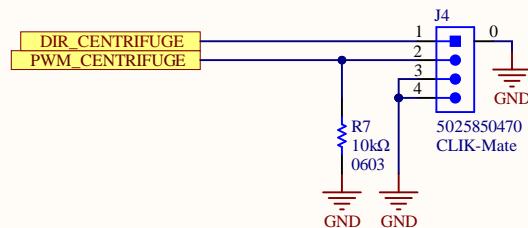
Pololu 4693 Motor



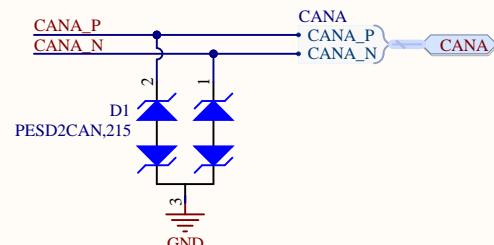
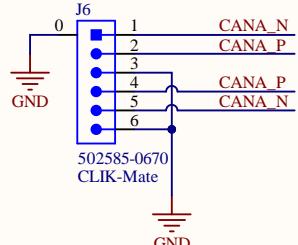
Limit Switches



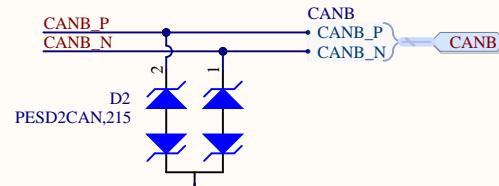
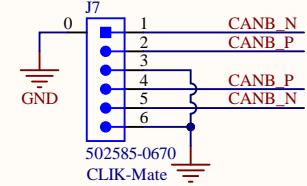
Pololu 4685 Motor



CAN BUS A



CAN BUS B



A

A

B

B

C

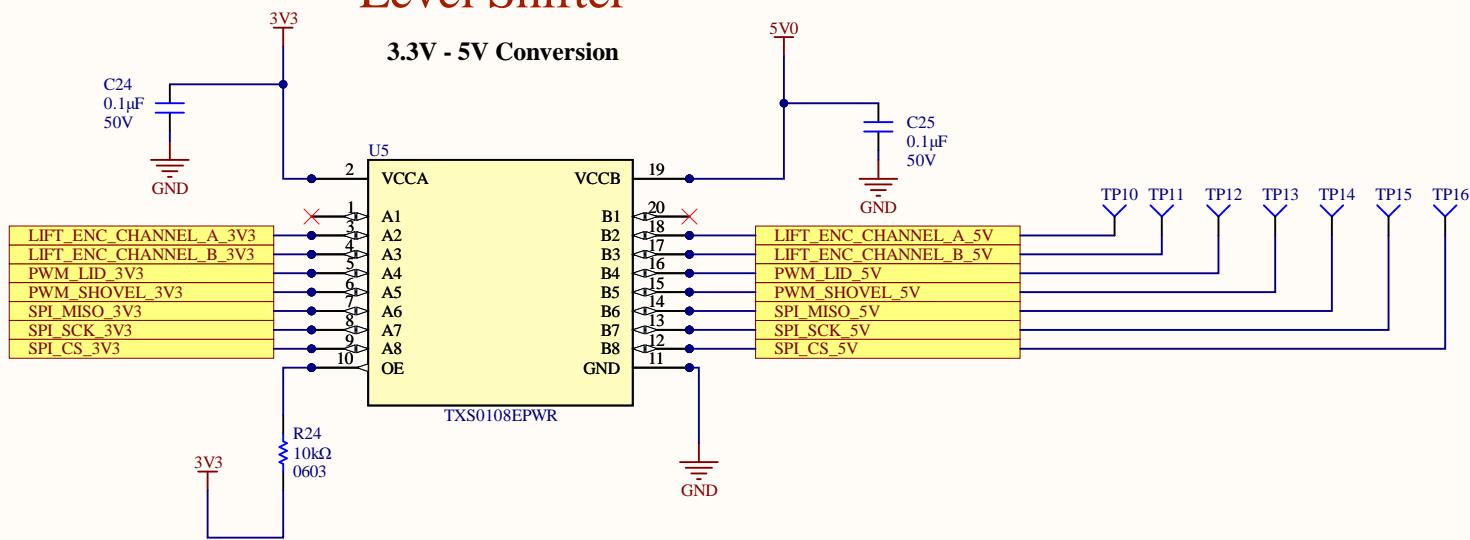
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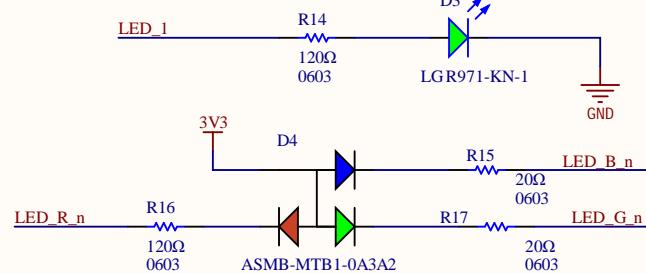
D

D

Level Shifter

3.3V - 5V Conversion



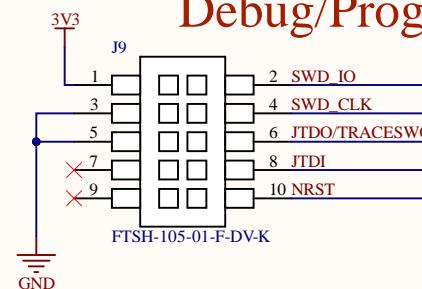


Current Calculations

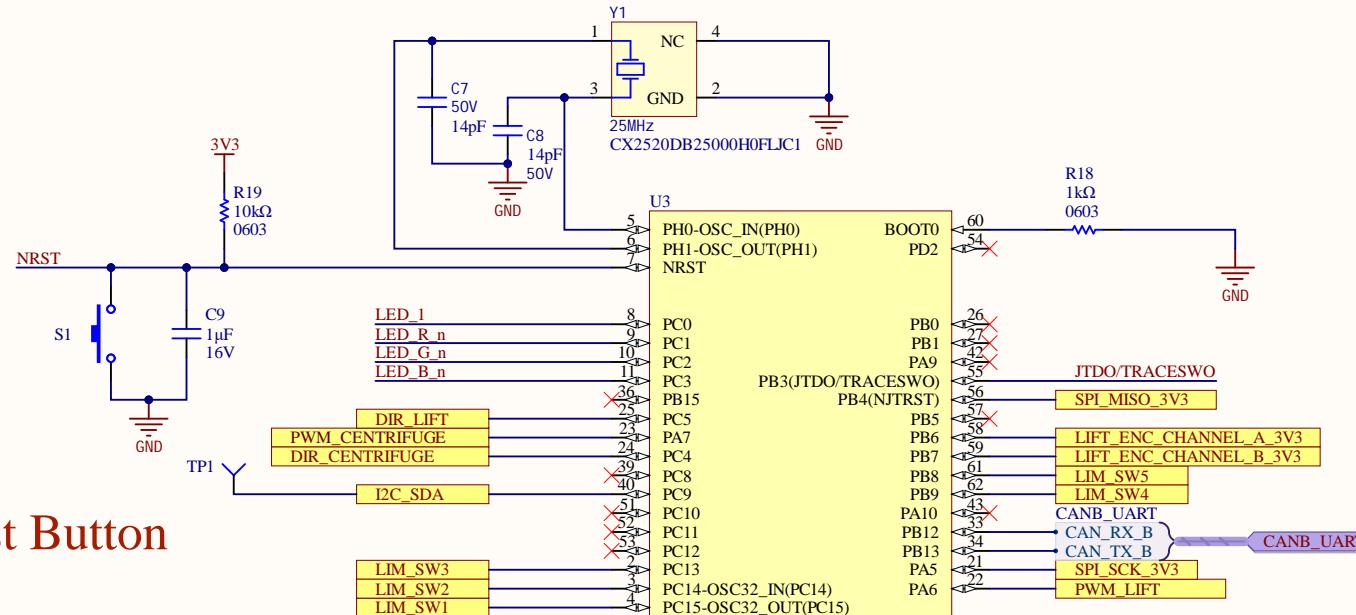
Green LED voltage drop: 2.2V
 $I = (3.3 - 2.2)/120 = 9.167\text{mA}$

RGB LED voltage drops:
 - Red: 2.1V: $I = (3.3 - 2.1)/120 = 10\text{mA}$
 - Blue: 3.1V: $I = (3.3 - 3.1)/20 = 10\text{mA}$
 - Green: 3.1V: $I = (3.3 - 3.1)/20 = 10\text{mA}$

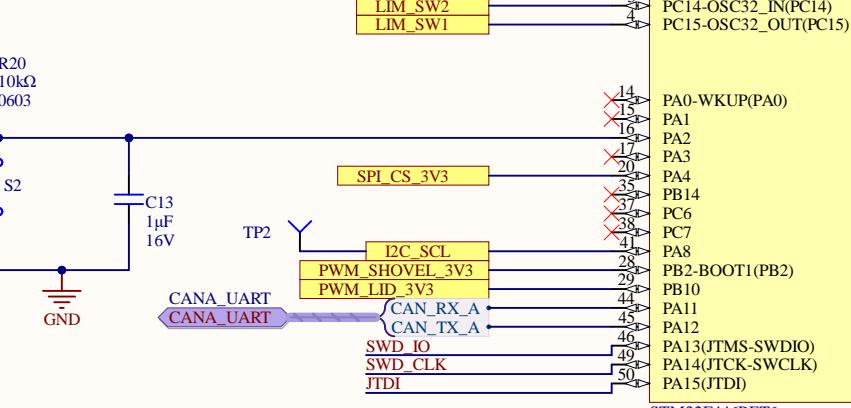
Debug/Programming



STM32



Test Button



STM32F446RET6

VCAP_1

3V3

GND

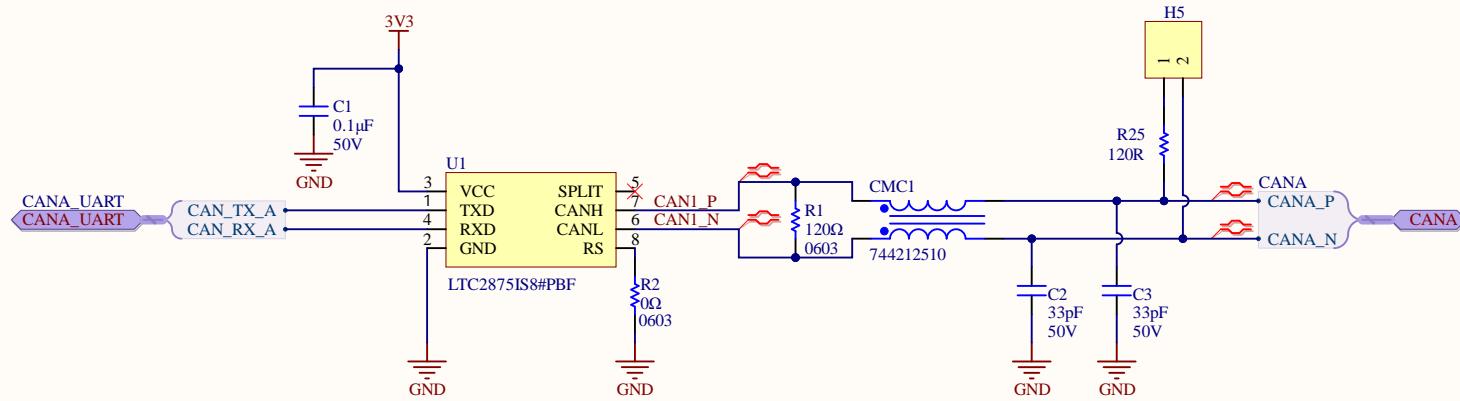
A

A

CAN Transceivers

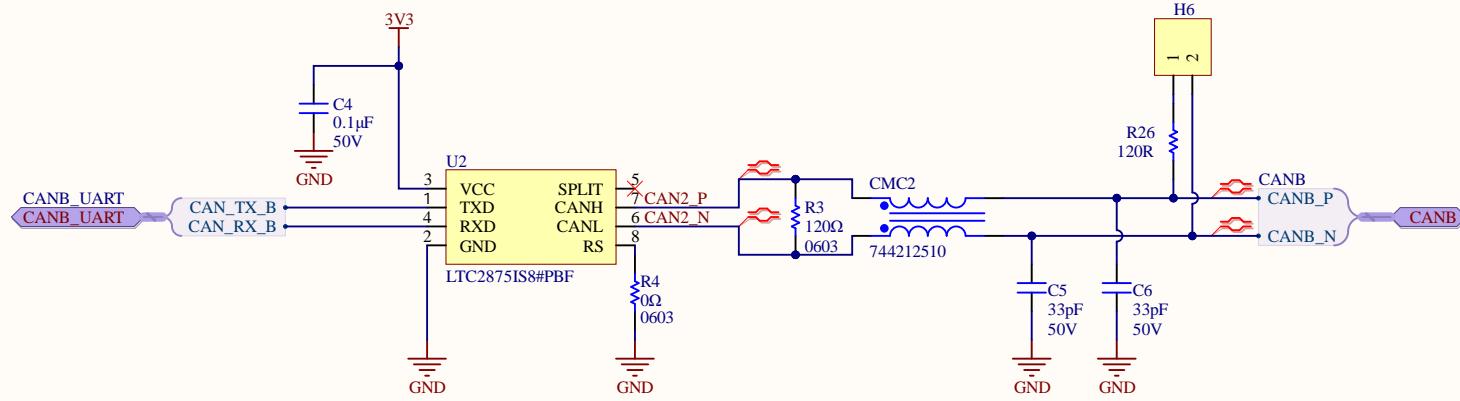
B

B



C

C



D

D

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