

A

A

B

B

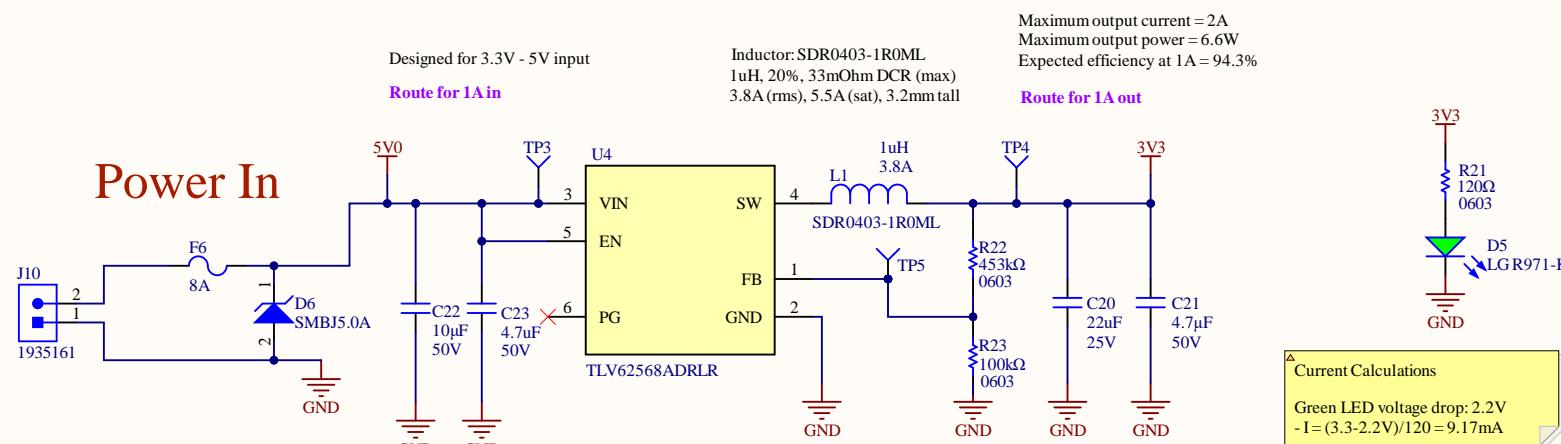
C

C

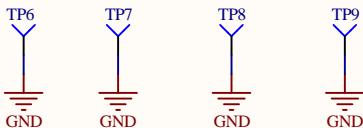
D

D

5V - 3.3V Buck Converter

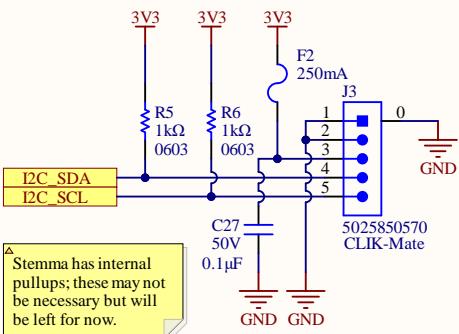


GND Test Points

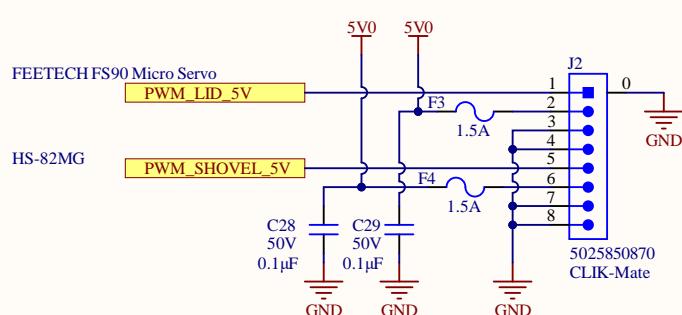


Title: Science - Power		UW Robotics 200 University Avenue Waterloo Ontario Canada N2L 3G6
Size: Letter	Drawn By: Wolfgang Windholz	
Date: 10/14/2020	Sheet 1 of 5	
File: C:\Users\Wolfgang_Windholz\ati\um_projects\MarsRover2021-hardware\Projects\Science\Rev2\SH1 - P0		UW ROBOTICS TEAM

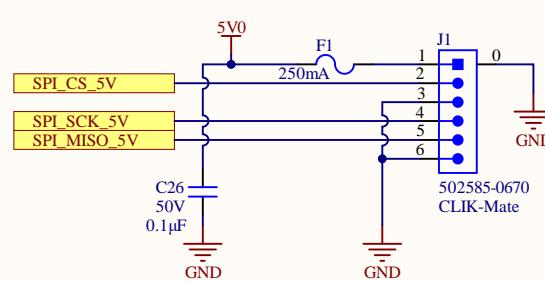
STEMMA Moisture Sensor



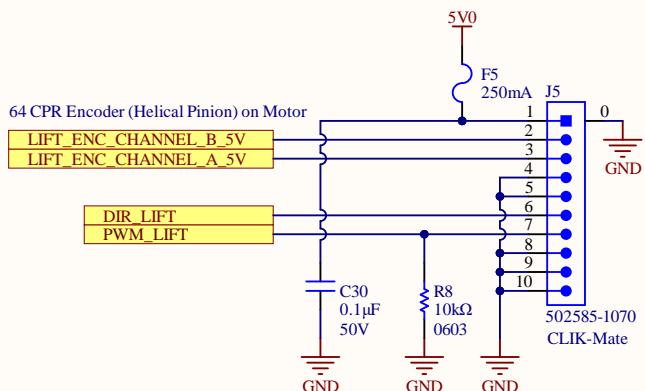
Servos



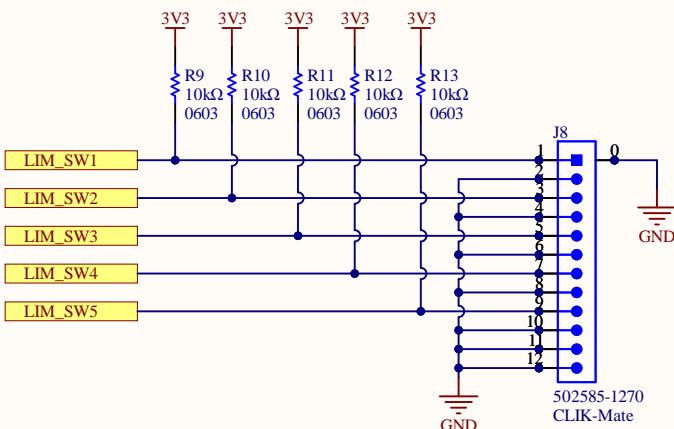
Broadcom AEAT6012 Encoder



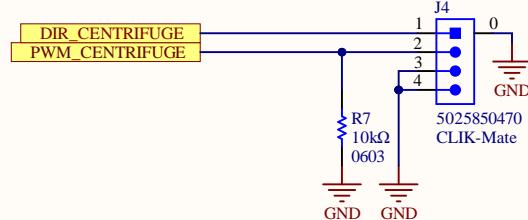
Pololu 4693 Motor



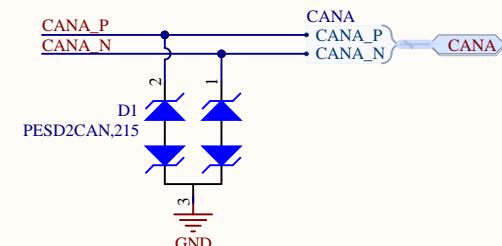
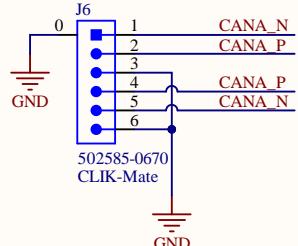
Limit Switches



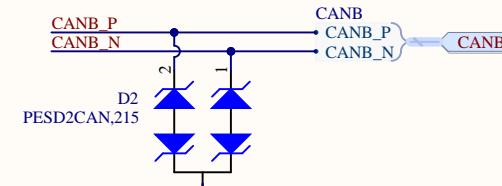
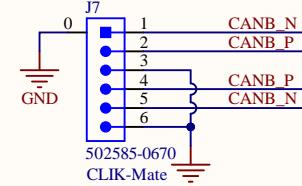
Pololu 4685 Motor



CAN BUS A



CAN BUS B



A

A

B

B

C

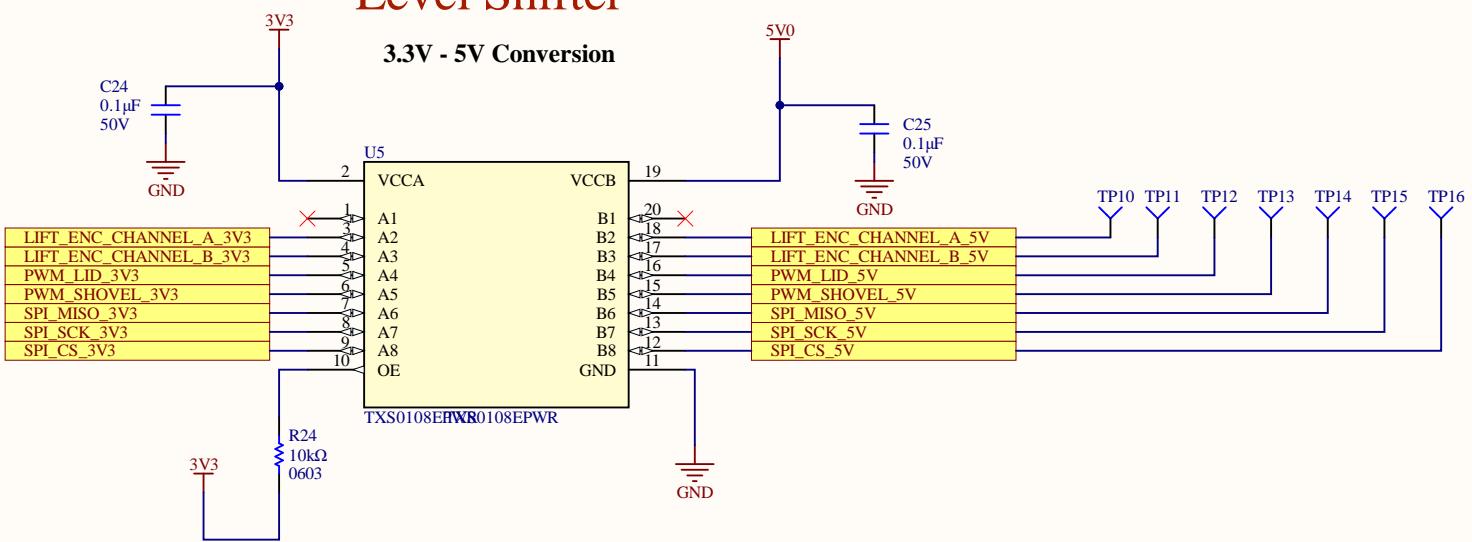
C

D

D

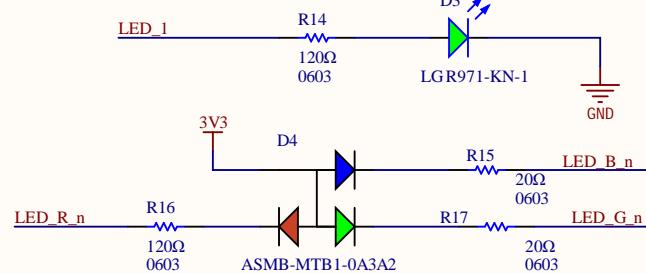
Level Shifter

3.3V - 5V Conversion



Mounting Holes



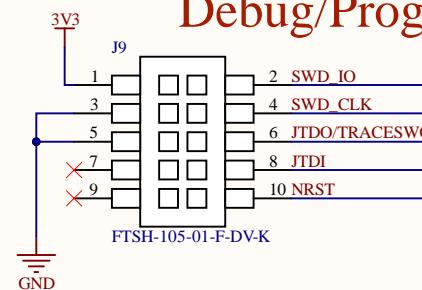


Current Calculations

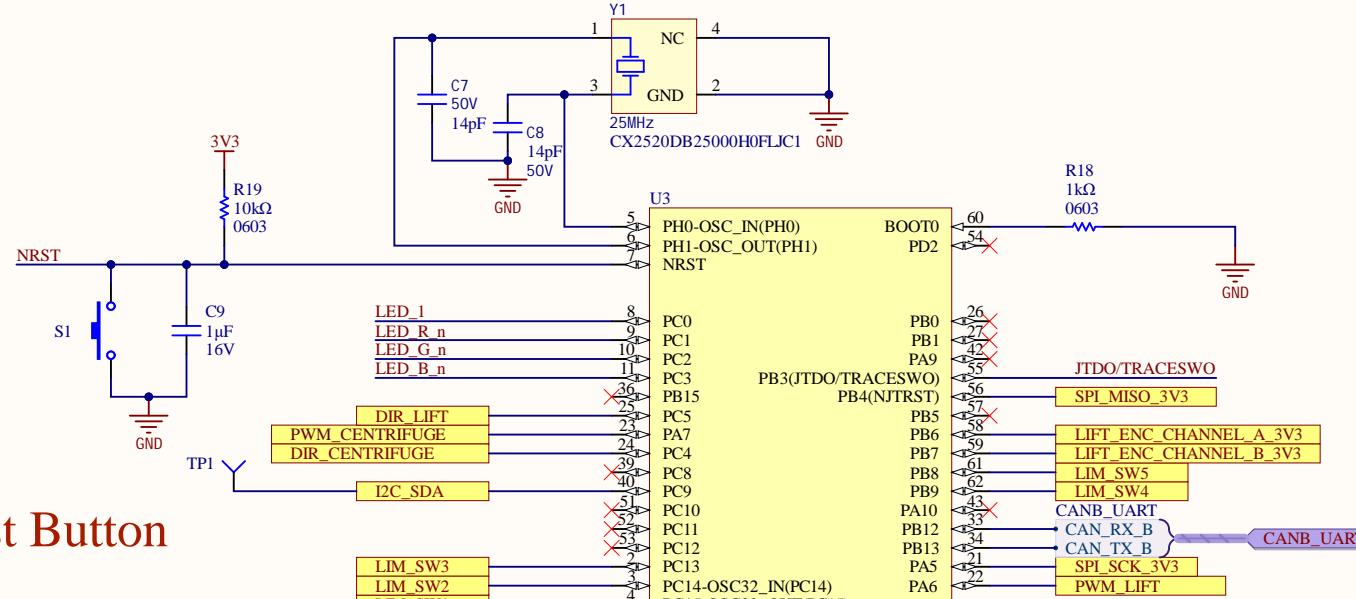
Green LED voltage drop: 2.2V
 $I = (3.3 - 2.2)/120 = 10.83\text{mA}$

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: $I = (3.3 - 3.1)/20 = 10\text{mA}$

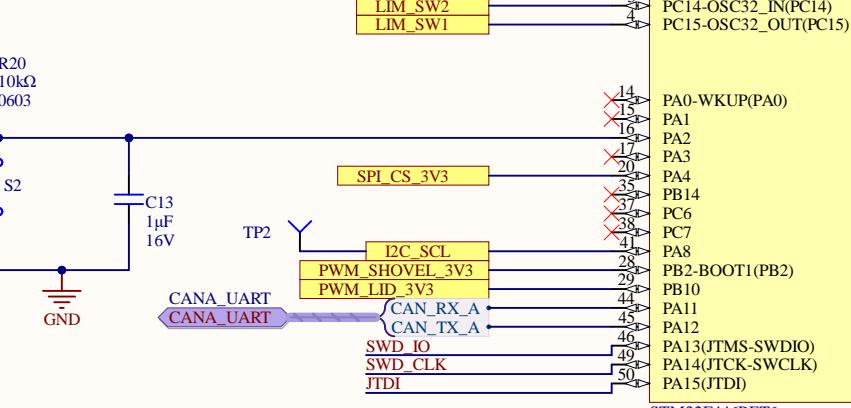
Debug/Programming



STM32



Test Button



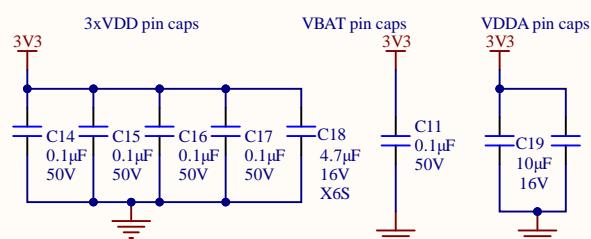
STM32F446RET6

VCAP_1

Title: Science - Microcontroller

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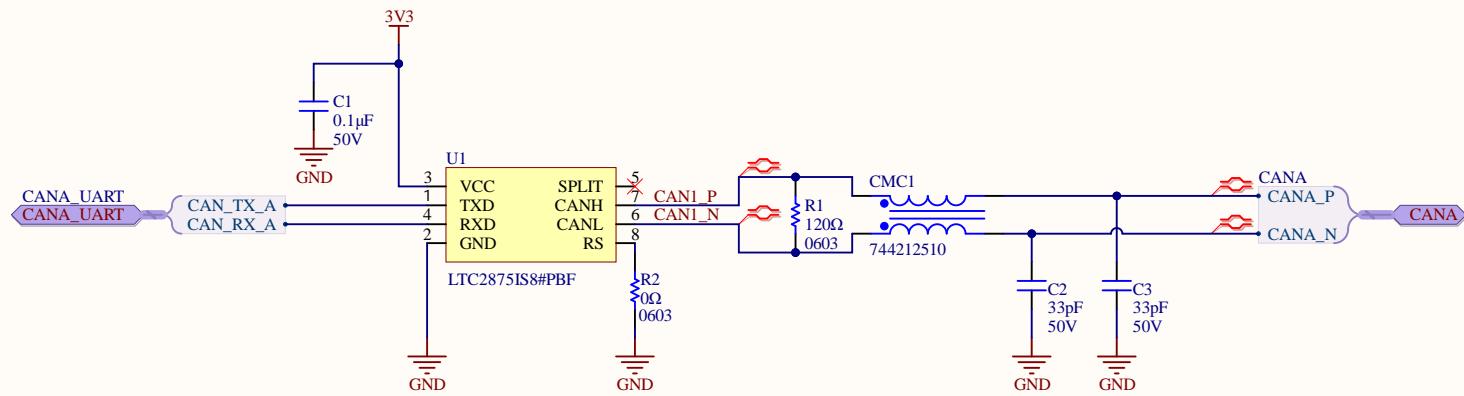
A

A

CAN Transceivers

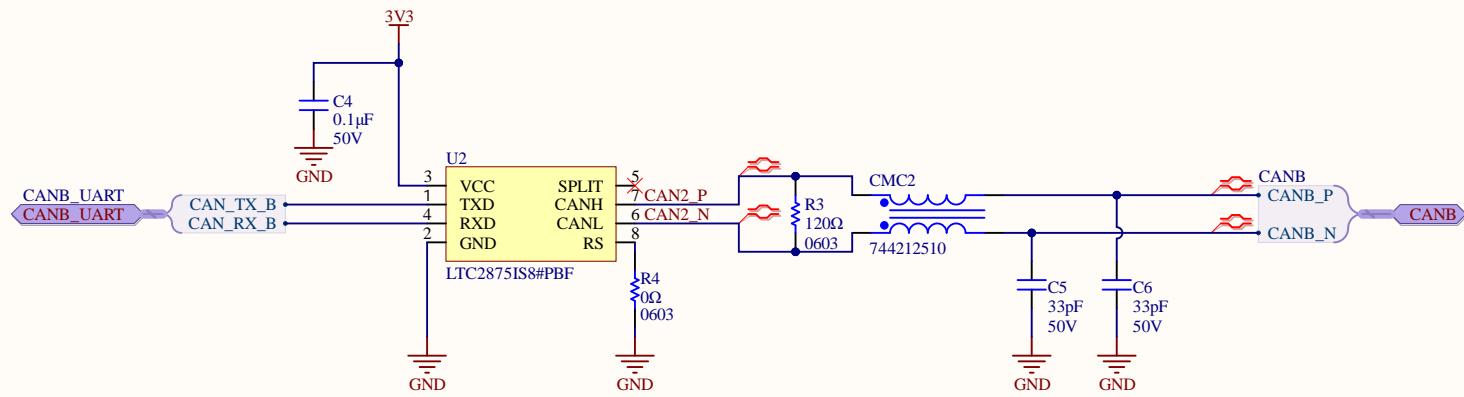
B

B



C

C



D

D

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