

A

A

B

B

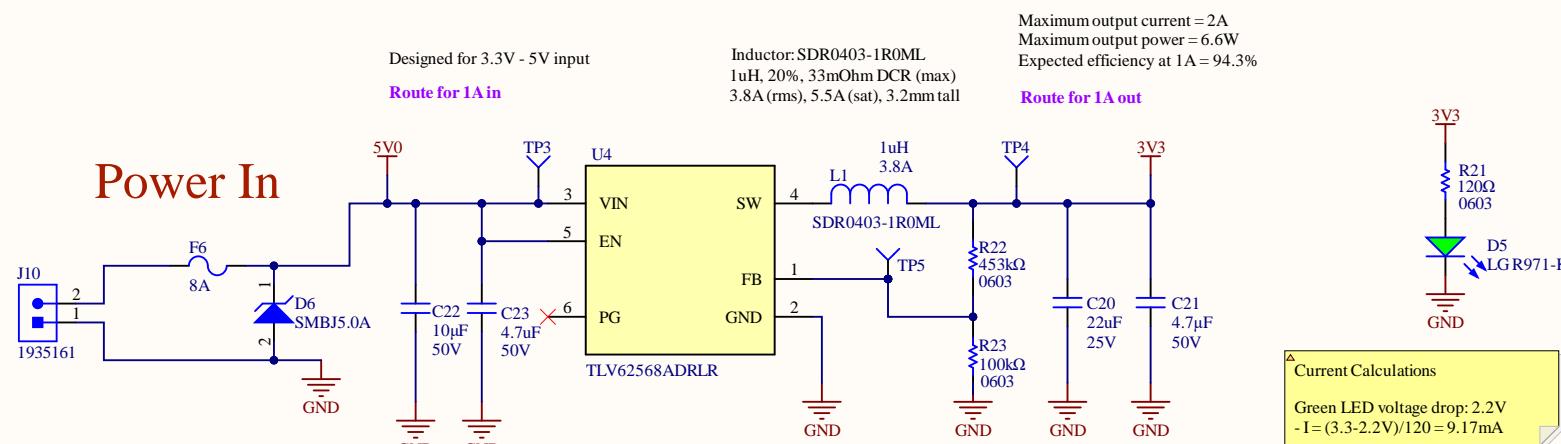
C

C

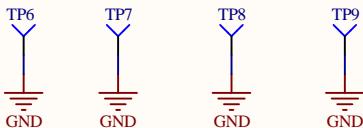
D

D

## 5V - 3.3V Buck Converter

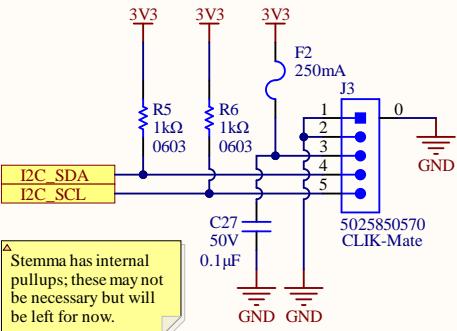


## GND Test Points

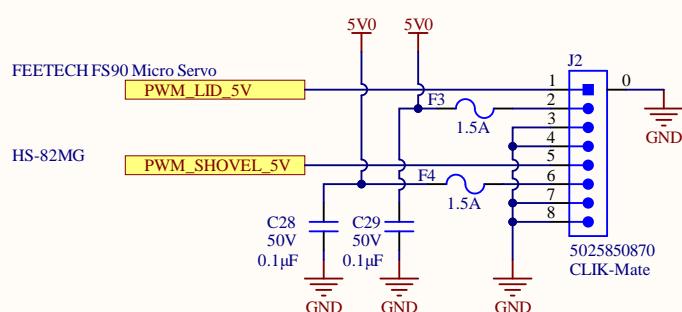


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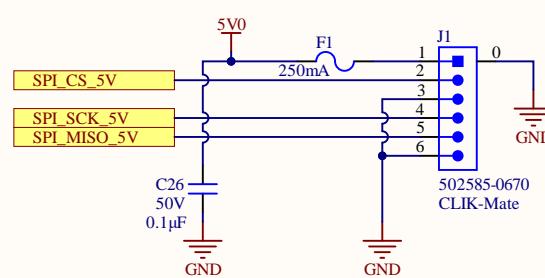
## STEMMA Moisture Sensor



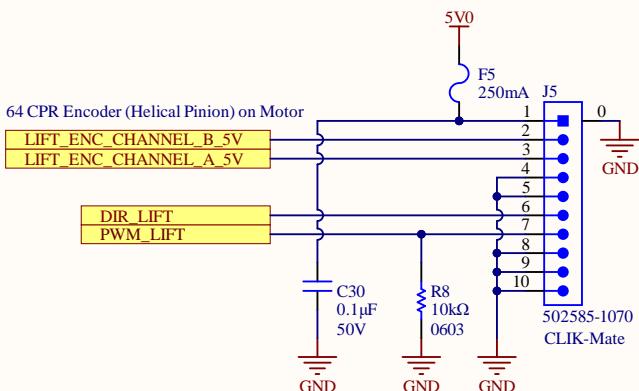
## Servos



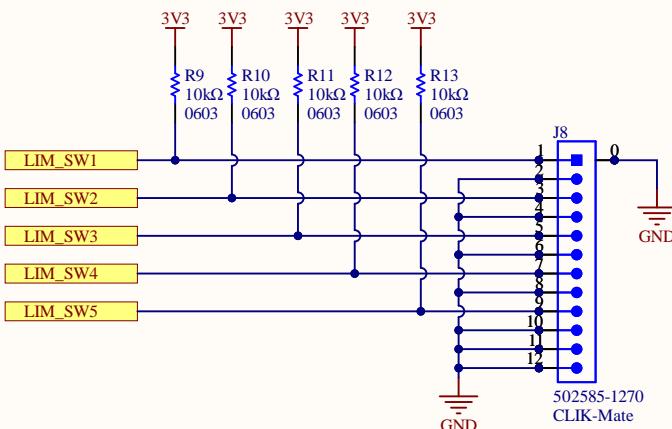
## Broadcom AEAT6012 Encoder



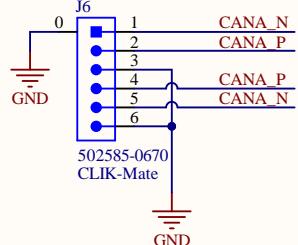
## Pololu 4693 Motor



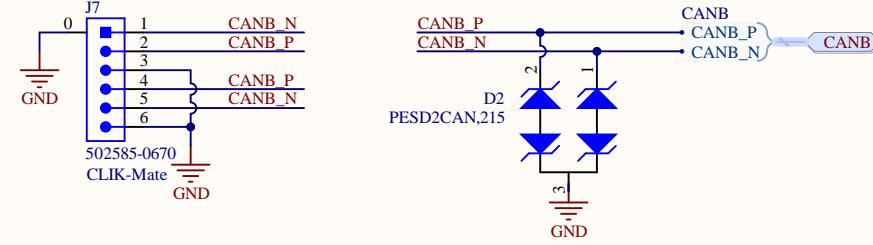
## Limit Switches



## CAN BUS A

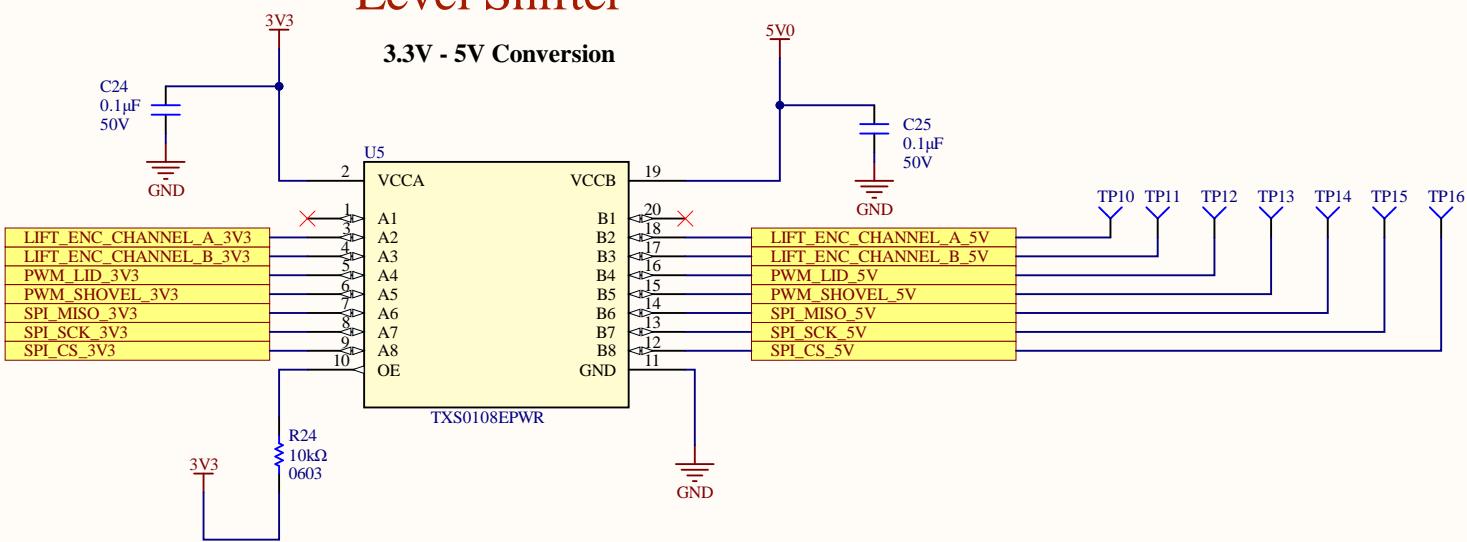


## CAN BUS B



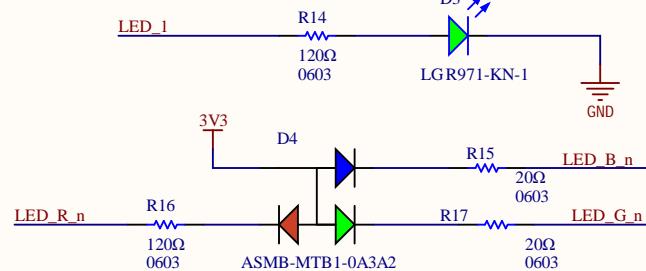
## Level Shifter

### 3.3V - 5V Conversion



## Mounting Holes



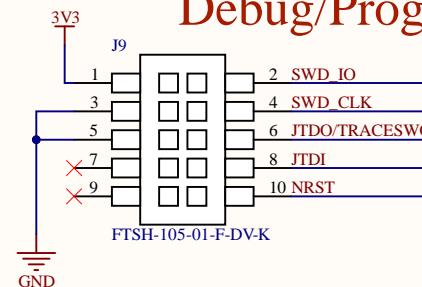


### Current Calculations

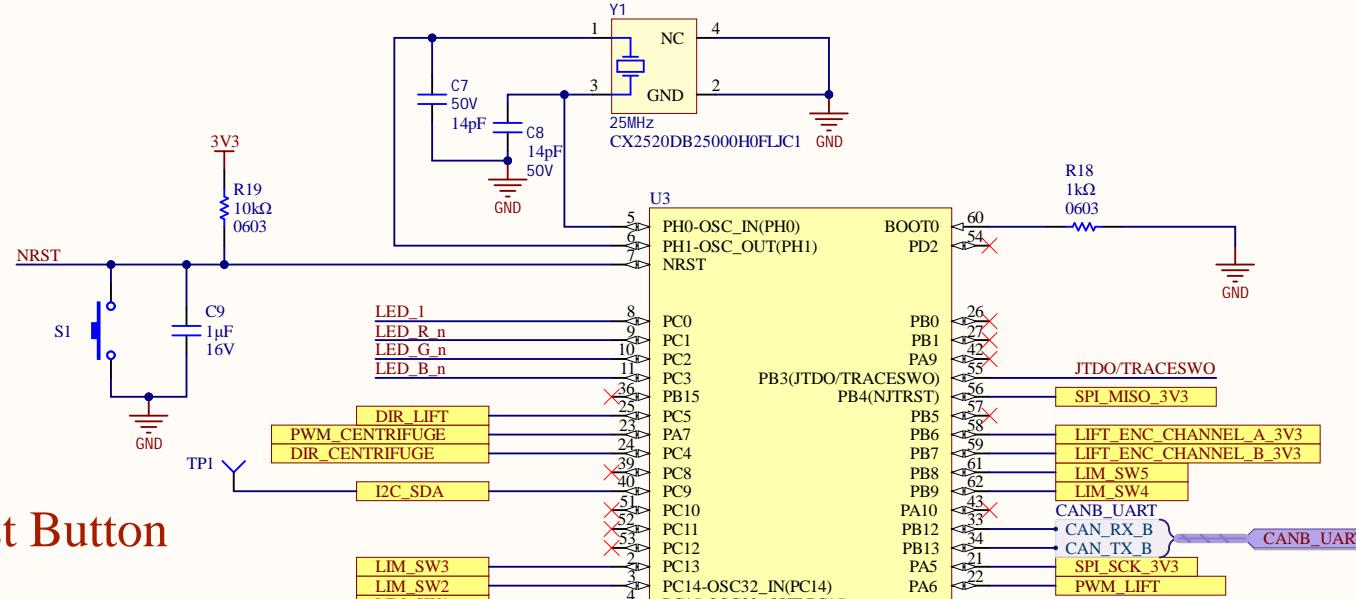
Green LED voltage drop: 2.2V  
 $I = (3.3 - 2.2)/120 = 9.167\text{mA}$

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

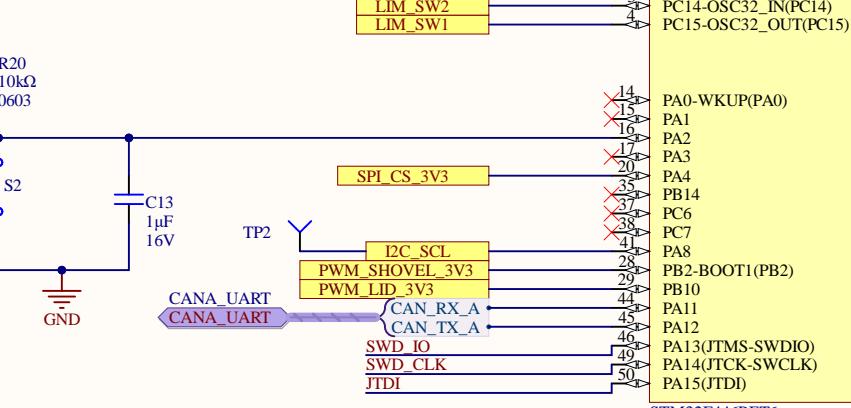
## Debug/Programming



## STM32



## Test Button



STM32F446RET6

VCAP\_1

Title: Science - Microcontroller

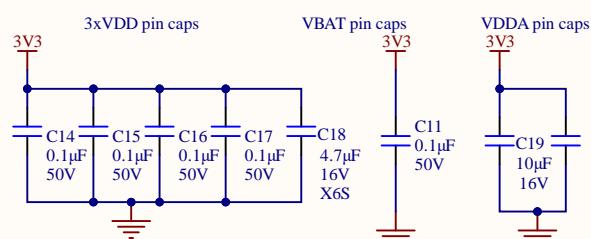
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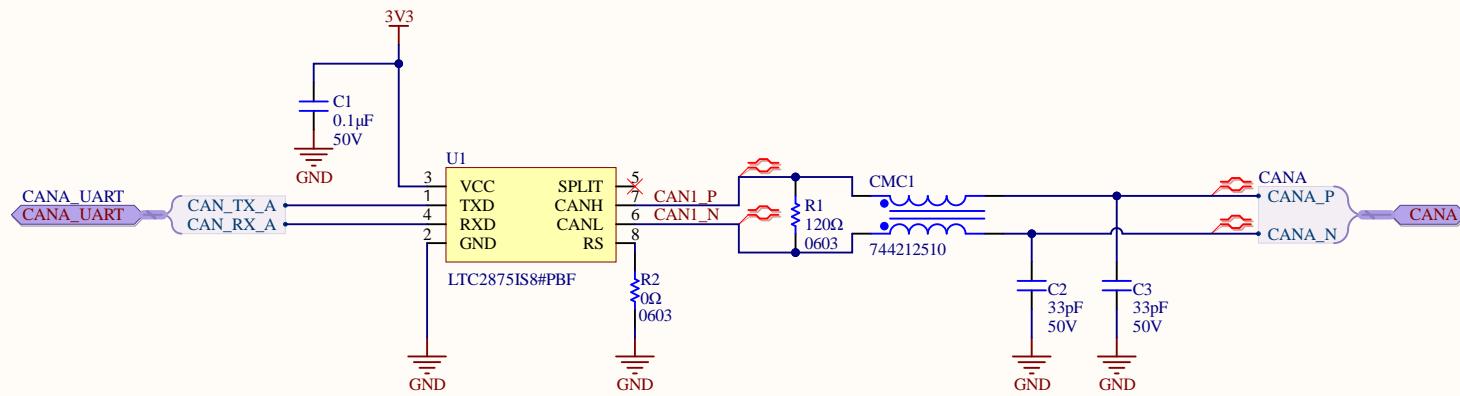
A

A

## CAN Transceivers

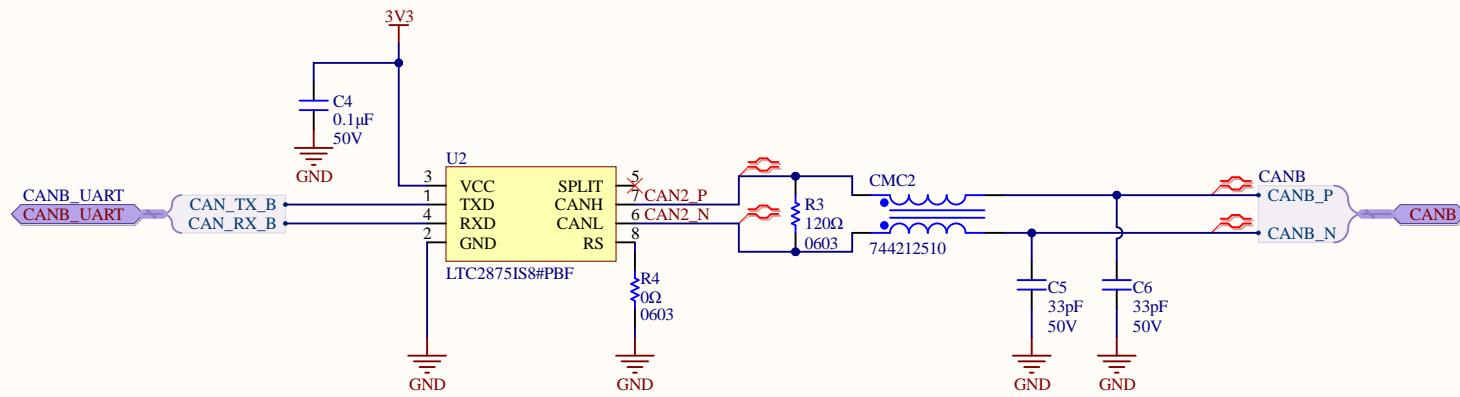
B

B



C

C



D

D

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