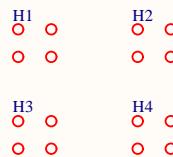
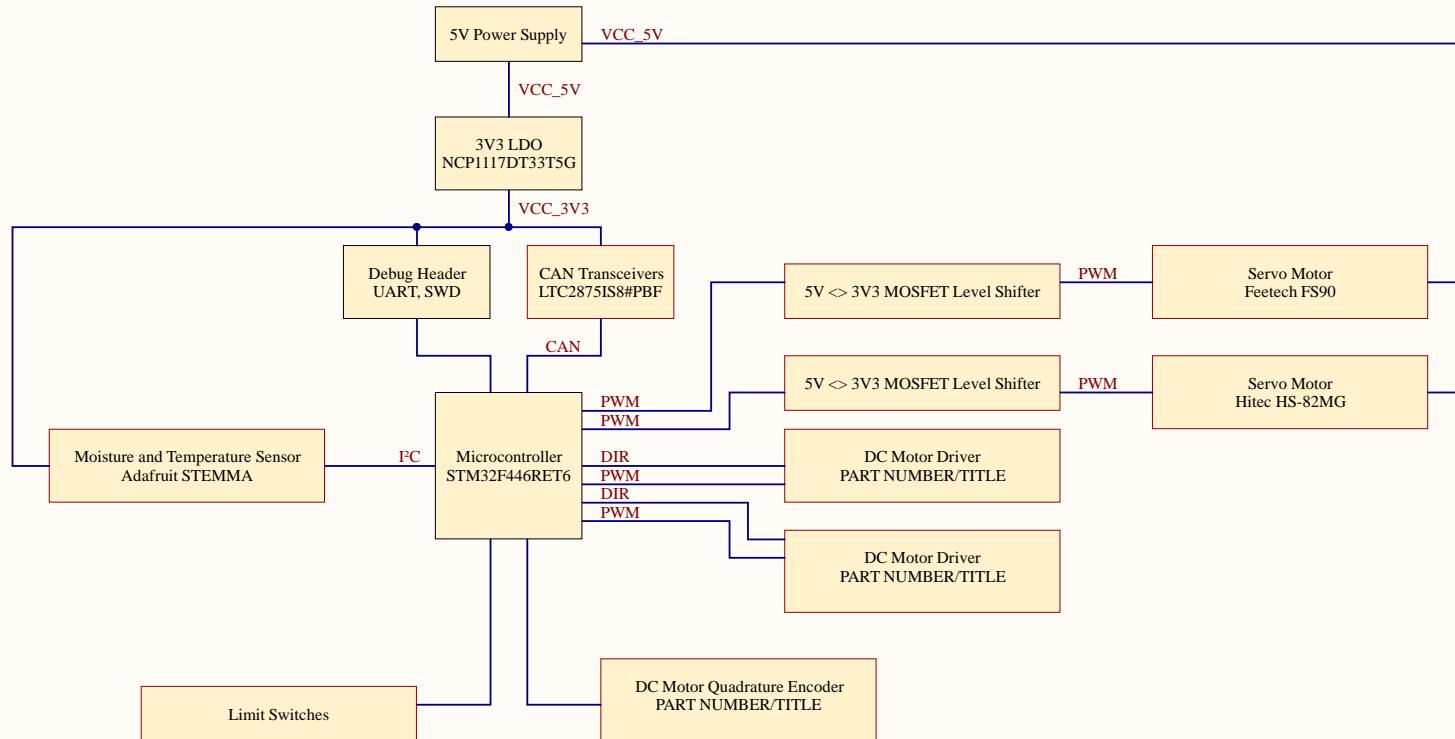


A

## Mounting Holes



B



A

B

C

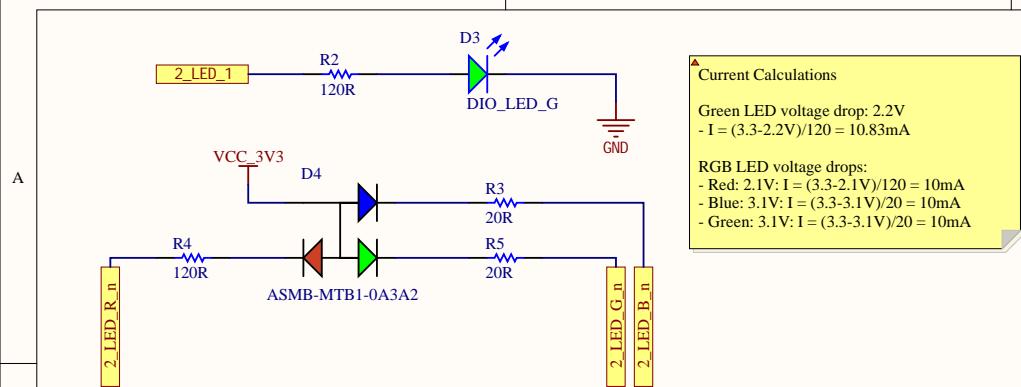
D

1

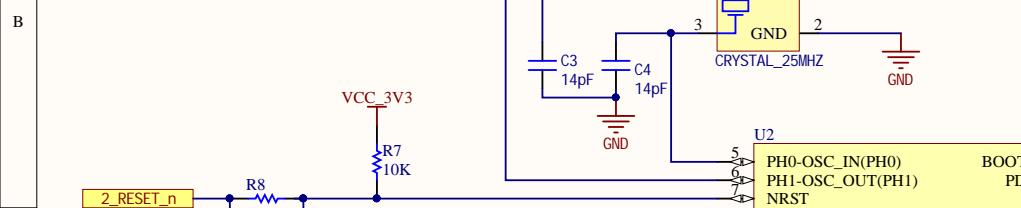
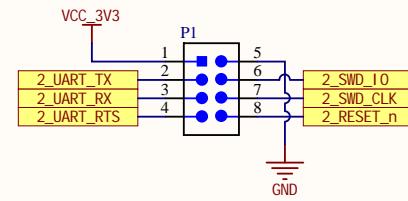
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3

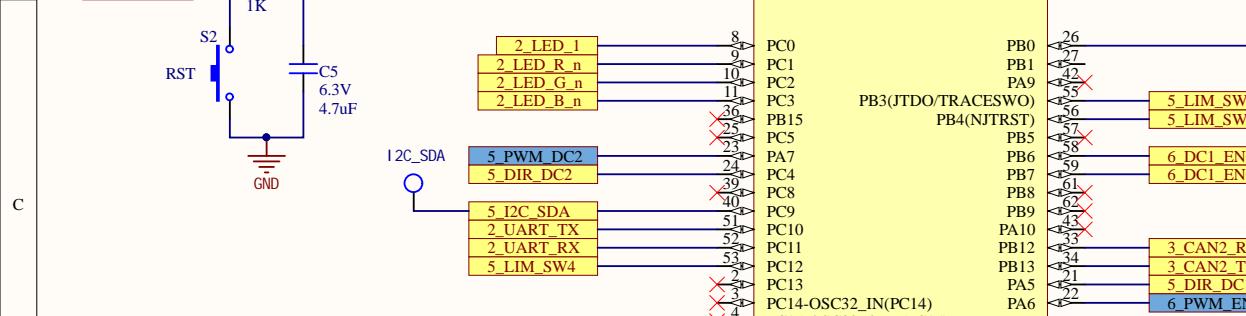
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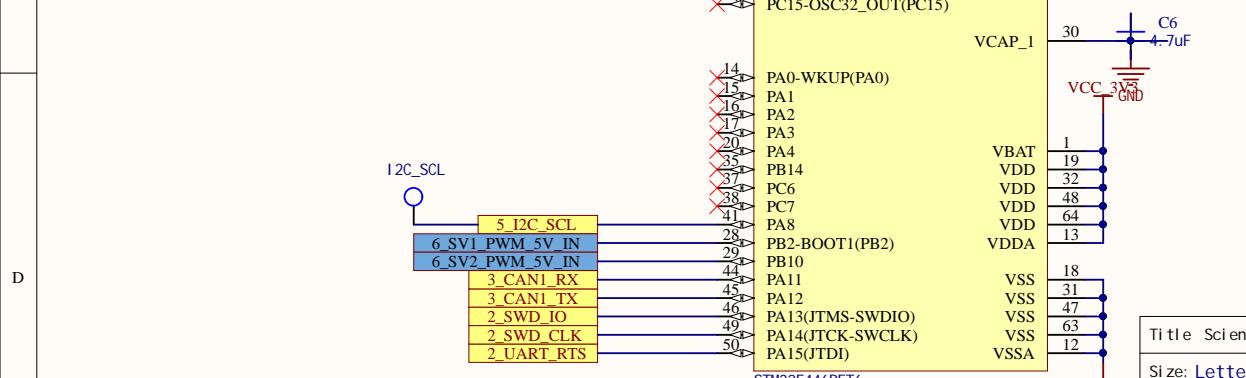
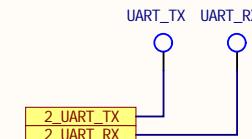
## Debug/Programming



## STM32F446RET6

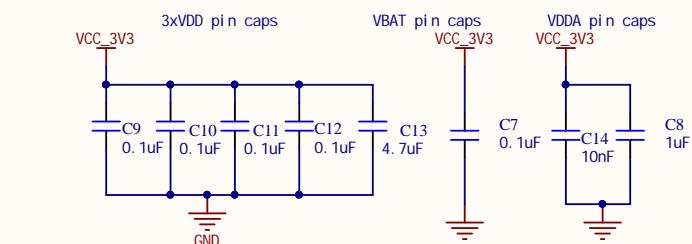
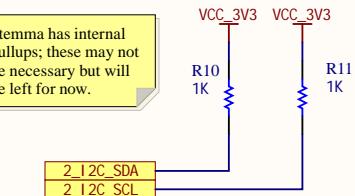


## Testpoints



## I<sup>2</sup>C Pullups

Stemma has internal pullups; these may not be necessary but will be left for now.



Title: Science - 2\_MCU

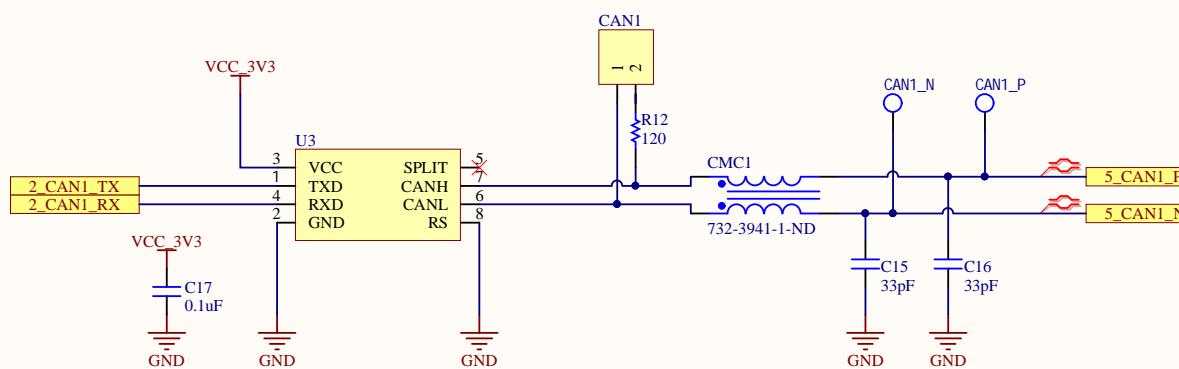
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Date: 2020-04-28 Sheet 2 of 6  
File: C:\Users\pkmn0\Desktop\Document Archive\Other\Electrical Git Repo\MarsRover2020-PCB\Projects\Science\Rev2\sch\

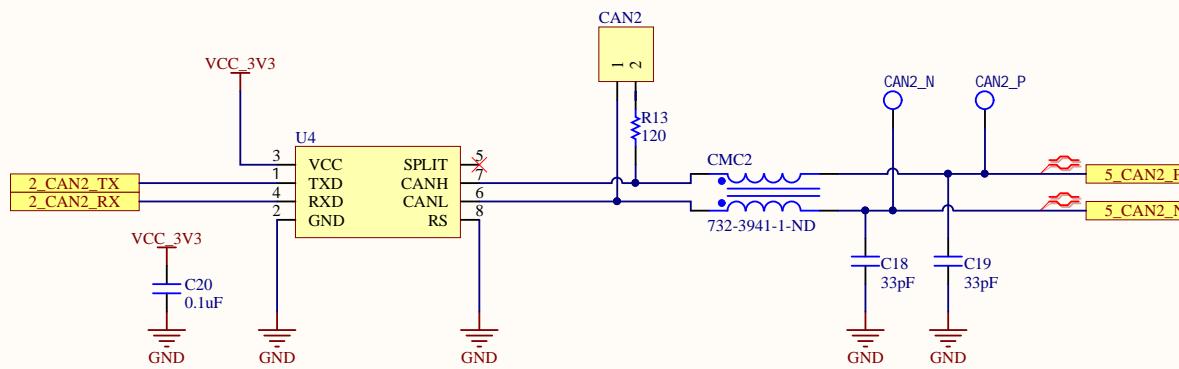
A

## CAN Transceivers

B



C



D

Title: Science - 3_CAN	UW Robotics
Size: Letter	Drawn By: Christopher Arjune
Date: 2020-04-28	Sheet3 of 6
File: C:\Users\pkmn0\Desktop\Document Archive\Other\Electrical Git Repo\MarsRover2020-PCB\Projects\Science\Rev2\sch\	Canada N2L 3G6



A

A

B

B

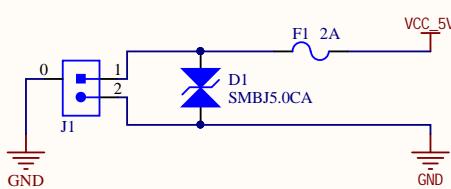
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C

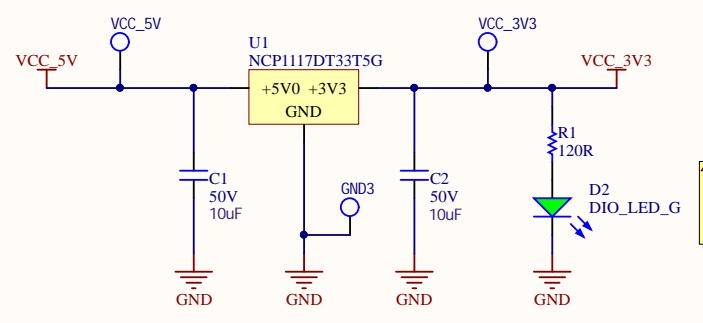
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D

## Power In

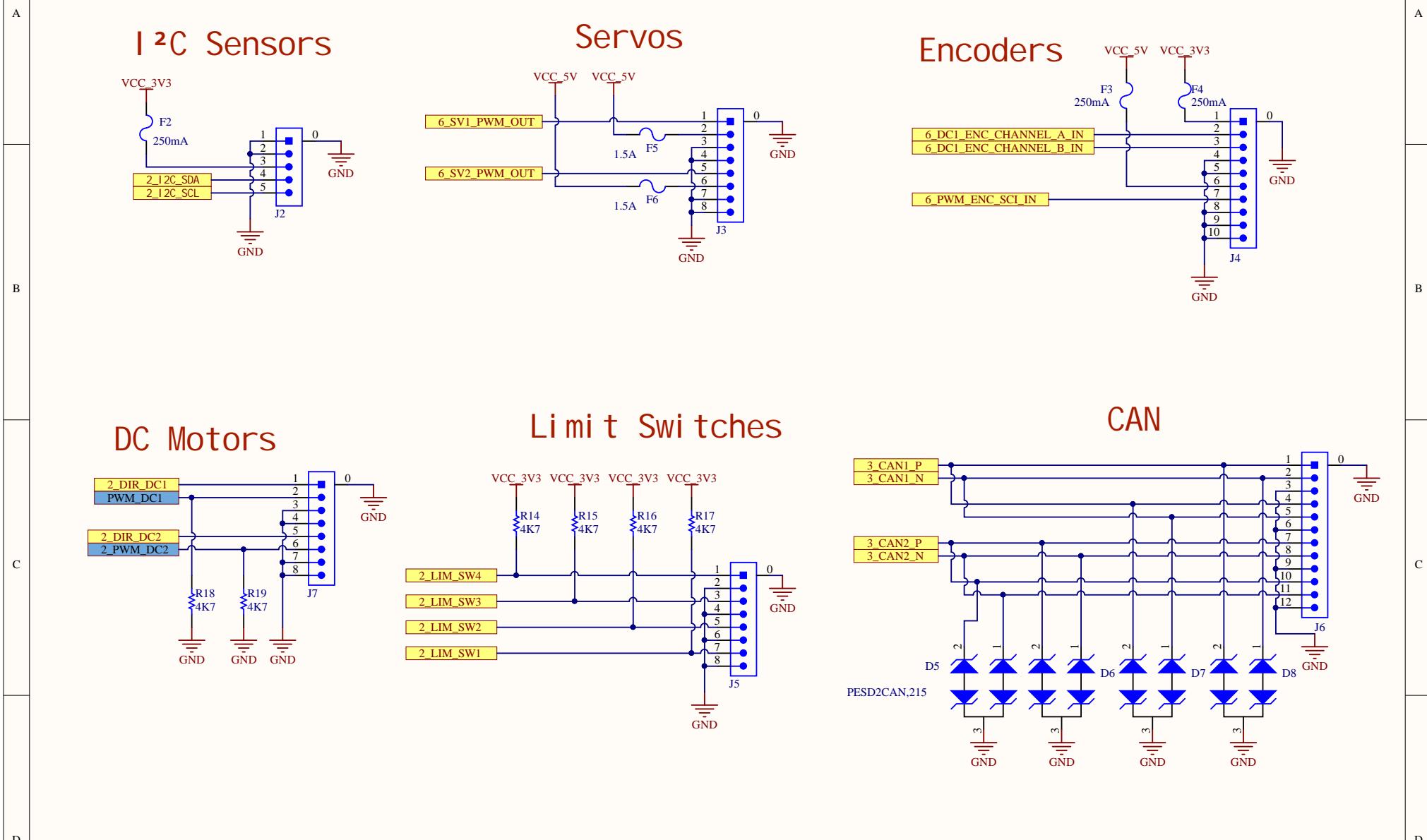


## 5V → 3V3 LDO



LED forward voltage: 2.2V  
 $I = (3.3-2.2)/120 = 9.17\text{mA}$

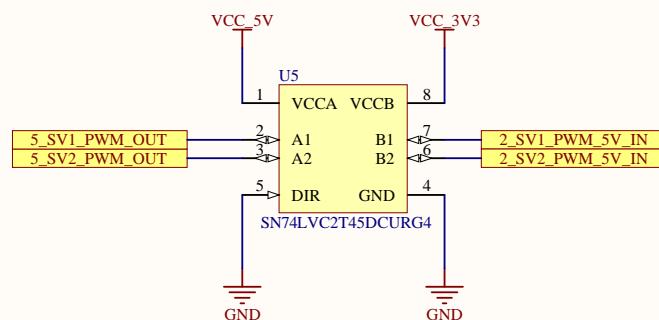
- V2: Replace LDO with an LDO with less ESR requirements  
- Explore adding bulk capacitor



A

A

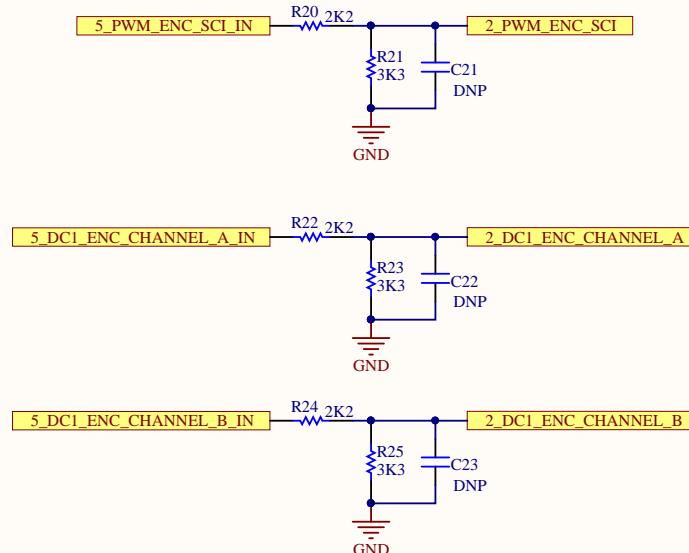
## Servo Level Shifters



B

B

## Encoder Voltage Dividers



C

C

Low-pass filter cutoff frequency:  
 $f_c = 1 / (2\pi \cdot 3.3k \cdot ?)$   
 $= ? \text{ Hz}$

Voltage Division:  
 $V_{out} = 5 * 3.3k / (2.2k + 3.3k)$

D

D

