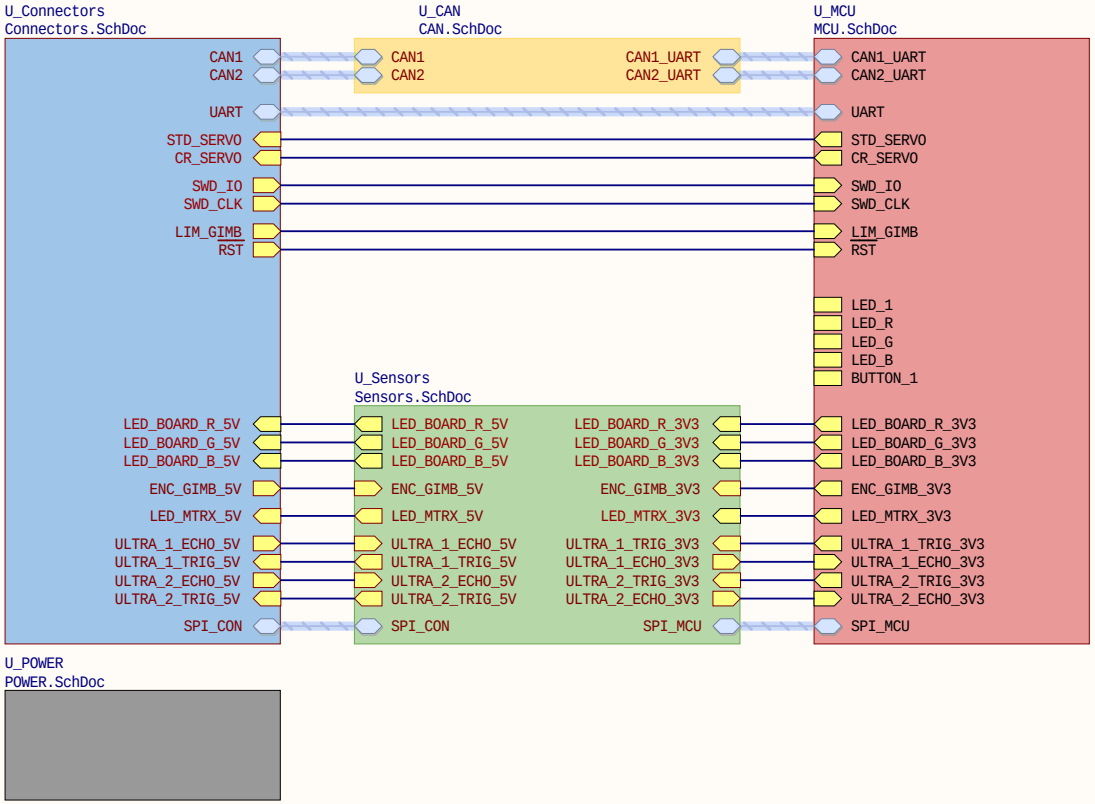

Title Gimbal - Block Diagram		UW Robotics 200 University Avenue Waterloo Ontario Canada N2L 3G6
Size: Letter	Drawn By: Aidan Gratton	
Date: 2020-06-02	Sheet 1 of	
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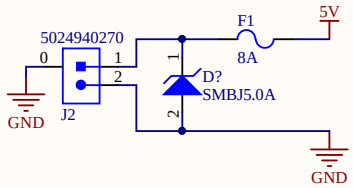
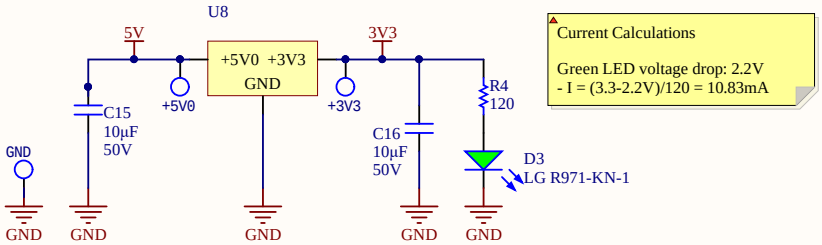
Power In



5V to 3V3 LDO



Title Gimbal - Power		UW Robotics 200 University Avenue Waterloo Ontario Canada N2L 3G6
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Date: 2020-06-02	Sheet2 of 7	
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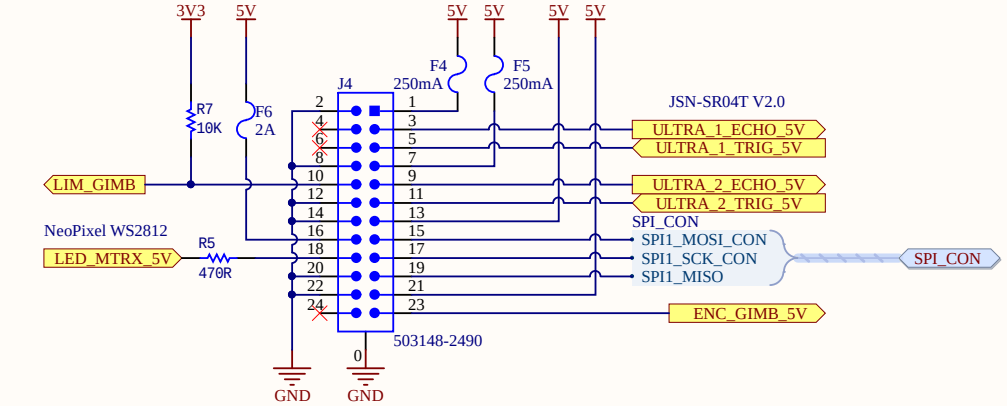
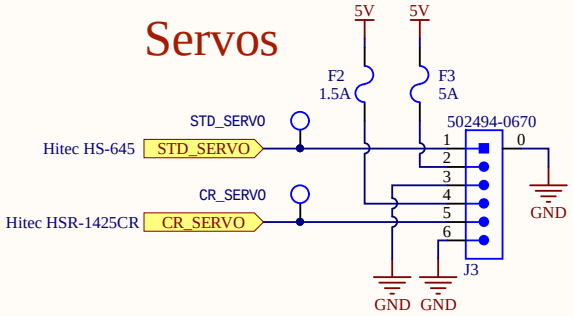
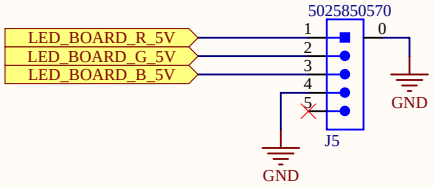
Sensors/Limit Switch/LED Matrix



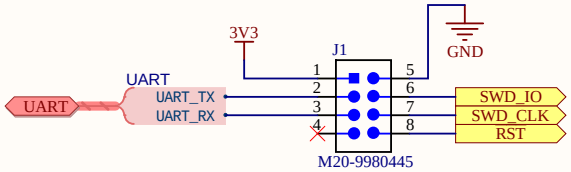
Servos



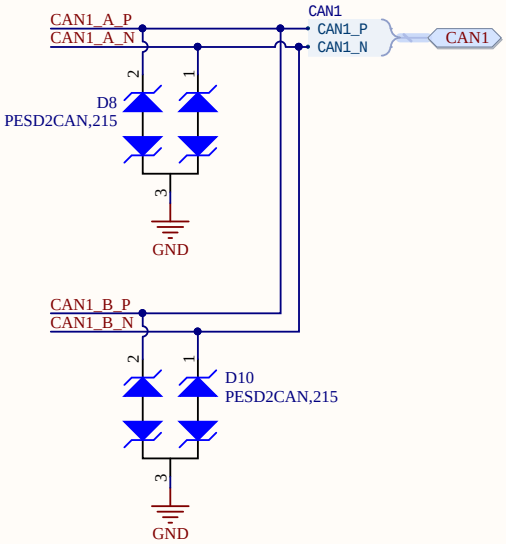
LED Matrix PCB

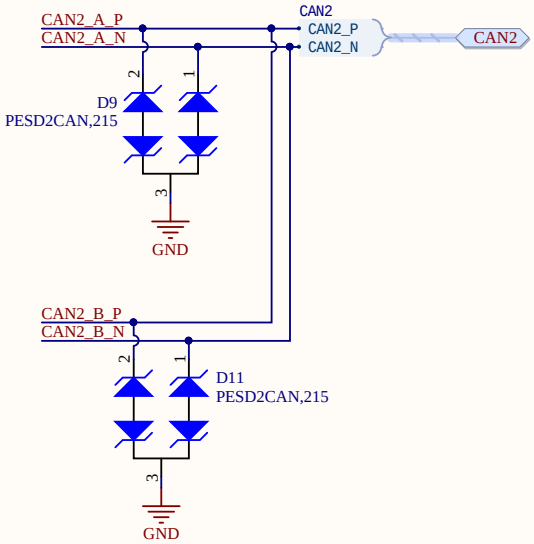


Debug/Programming

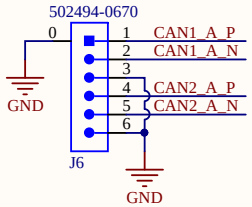


CAN Protection

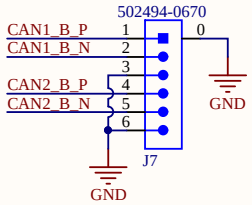




CAN In



CAN Out



Title: Gimbal - Connectors		UW Robotics 200 University Avenue Waterloo Ontario Canada N2L 3G6
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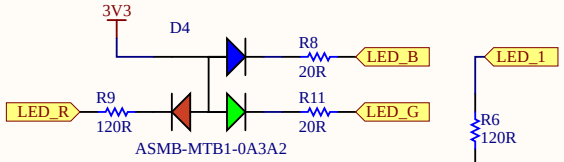
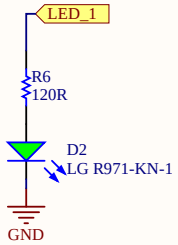
Date: 2020-06-02	Sheet 3 of 7	
File: C:\Users\pkmn0\Desktop\ \Document Archive\Other\Electrical Git Repo\MarsRover2020-PCB\Projects\Gimbal\Rev2\Conne		

Test LEDs



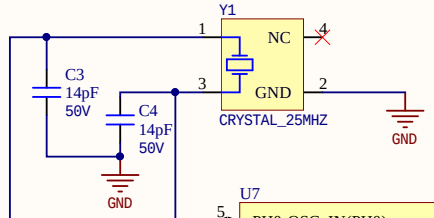


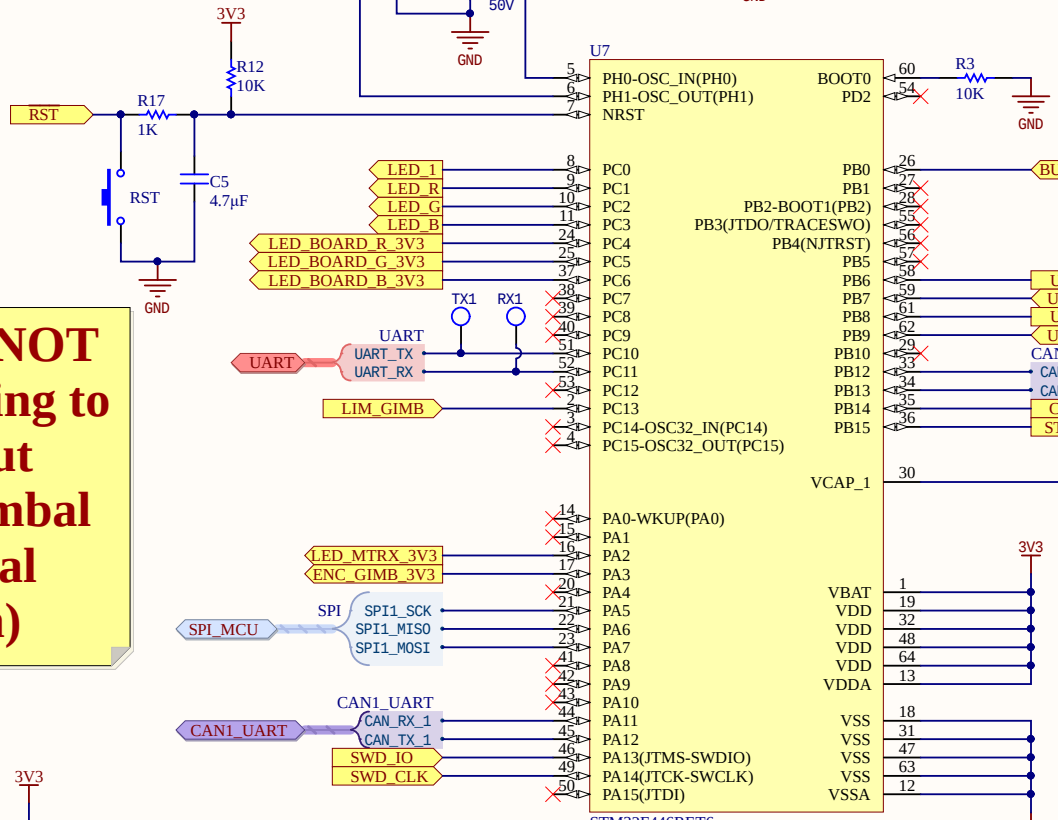
Current Calculations

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

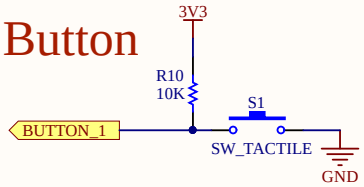
STM32F446RET6



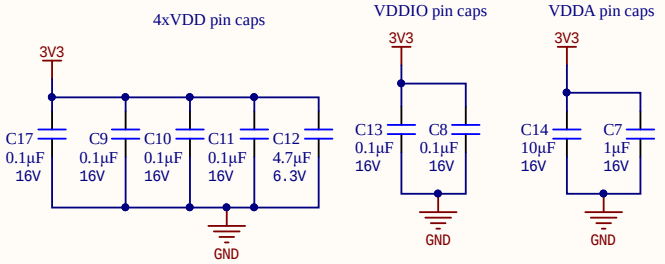


CubeMX is NOT DONE (waiting to hear about potential gimbal mechanical redesign)

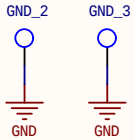
Test Button



Decoupling Caps



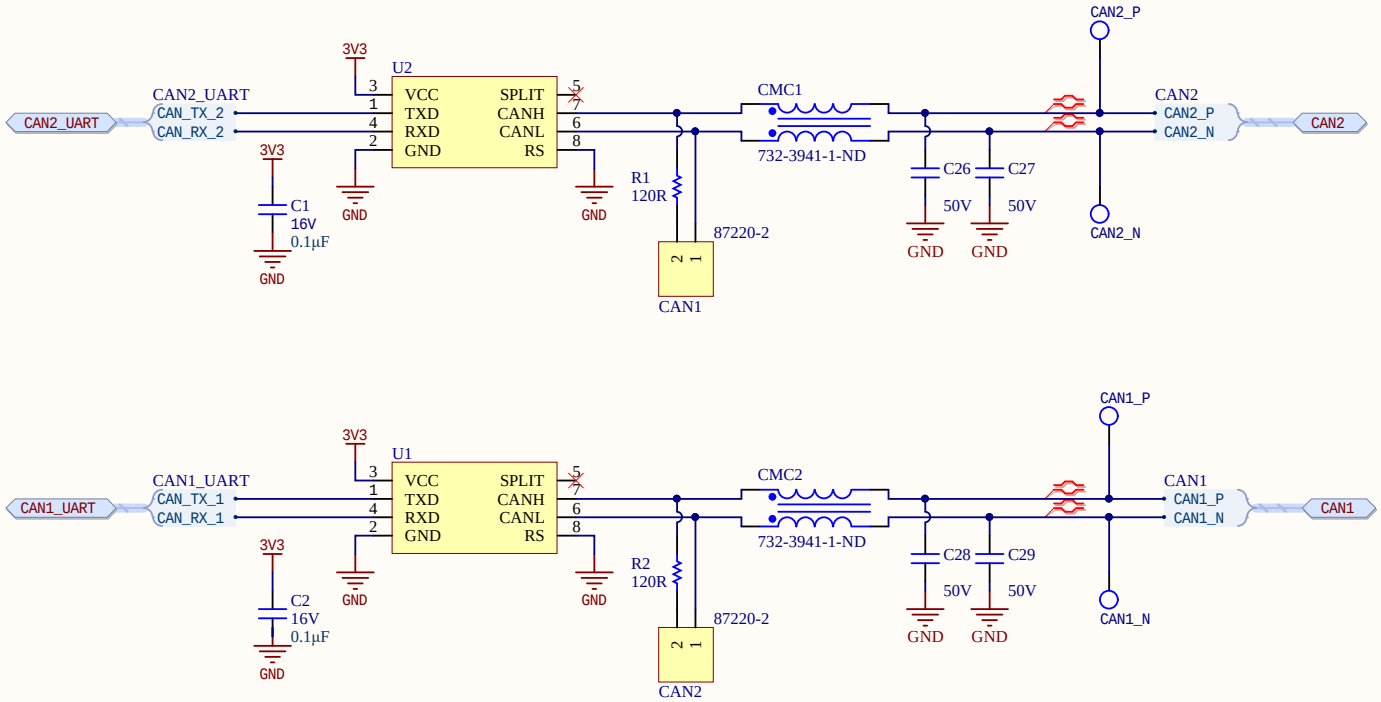
GND Test Points



MOUNTING_HOLES

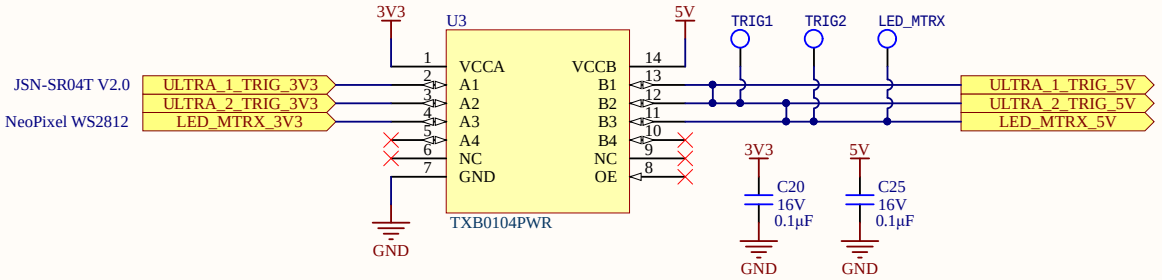
Title: Gimbal - Microcontroller		UW Robotics 200 University Avenue Waterloo Ontario Canada N2L 3G6
Size: Letter	Drawn By: Aidan Gratton	
Date: 2020-06-02	Sheet 4 of 7	
File: C:\Users\pkmn0\Desktop\ \Document Archive\Other\Electrical Git Repo\MarsRover2020-PCB\Projects\Gimbal\Rev2\MCU.S		

CAN Transceivers

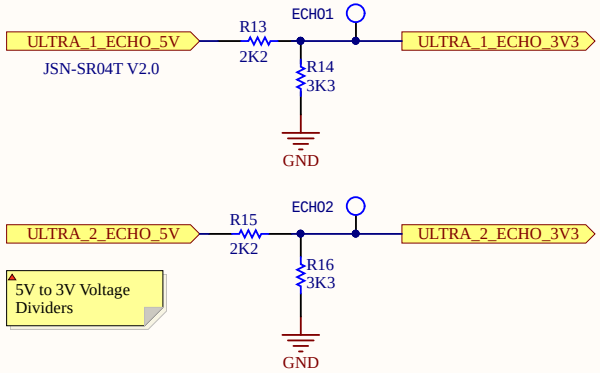


Title Gimbal - CAN		UW Robotics 200 University Avenue Waterloo Ontario Canada N2L 3G6	UW ROBOTICS TEAM
Size: Letter	Drawn By: Aidan Gratton & Jing Hao Yao		
Date: 2020-06-02	Sheet 5 of 7		
File: C:\Users\pkmn0\Desktop\ \Document Archive\Other\Electrical Git Repo\MarsRover2020-PCB\Projects\Gimbal\Rev2\CAN.S			

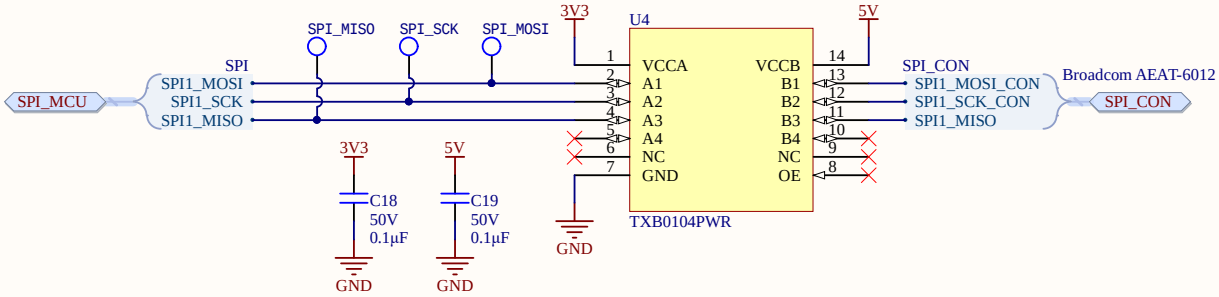
Ultrasonic/LED Matrix Level Shifters



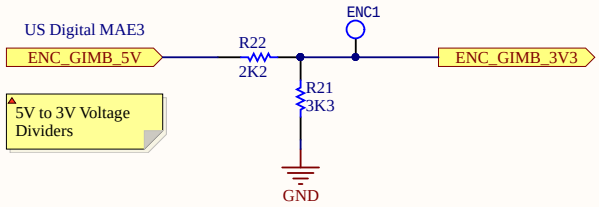
Ultrasonic Voltage Dividers

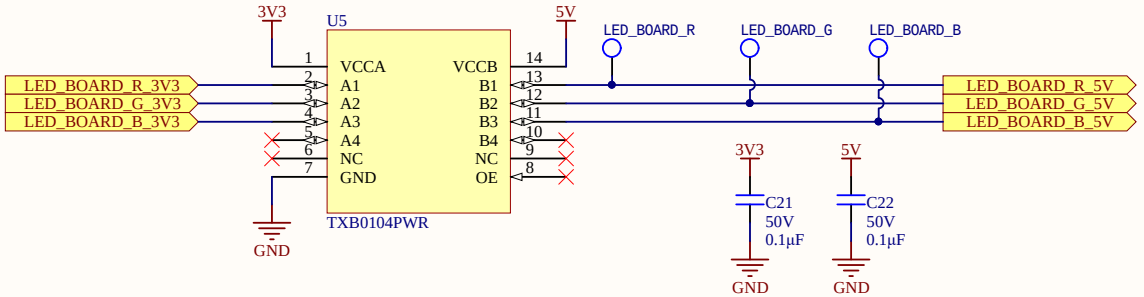


SPI Encoder Level Shifter



PWM Encoder Voltage Divider





Title Gimbal - Sensors		UW Robotics 200 University Avenue Waterloo Ontario Canada N2L 3G6
Size: Letter	Drawn By: Aidan Gratton	
Date: 2020-06-02	Sheet 5 of 7	
File: C:\Users\pkmn0\Desktop\ \Document Archive\Other\Electrical Git Repo\MarsRover2020-PCB\Projects\Gimbal\Rev2\Senso		