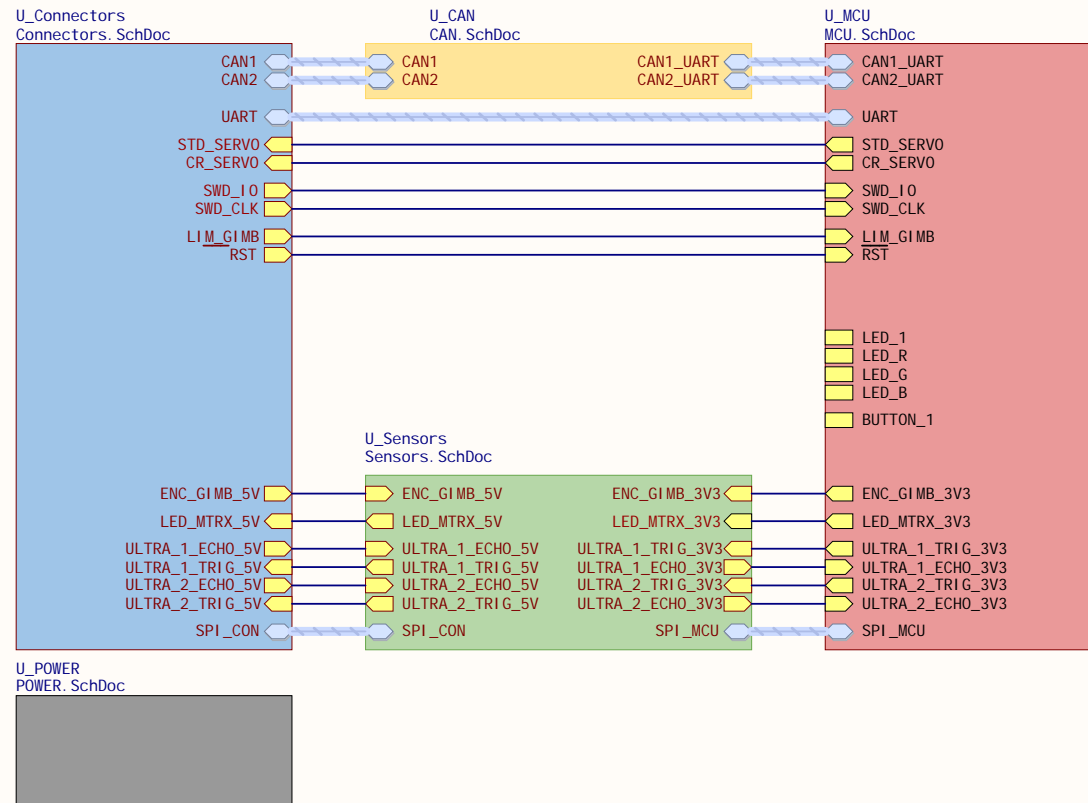
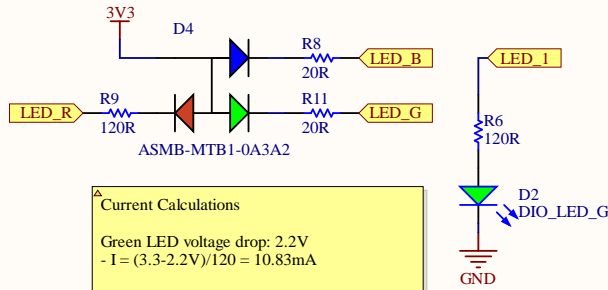


Heirarchical Design



Test LEDs

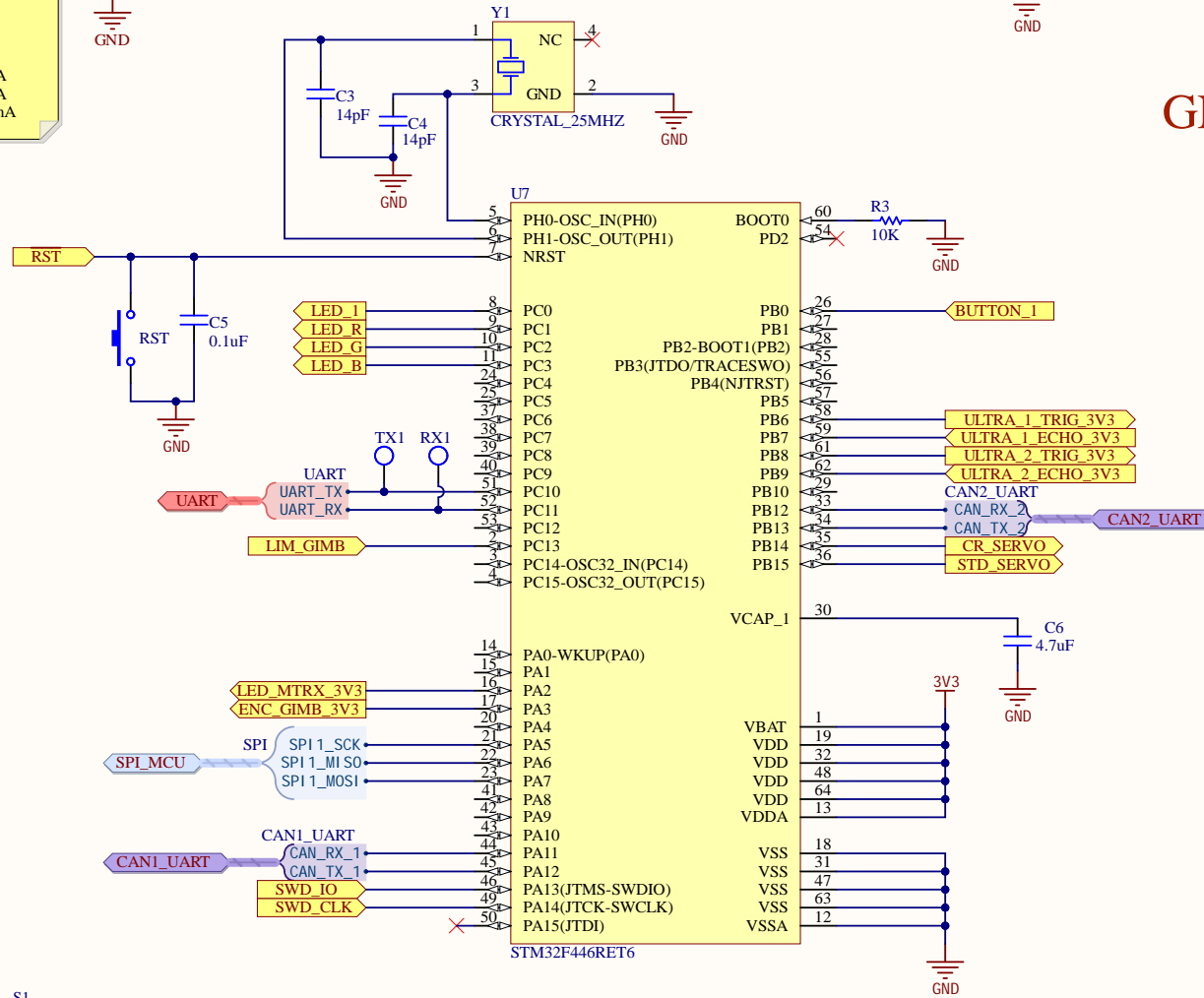


Current Calculations

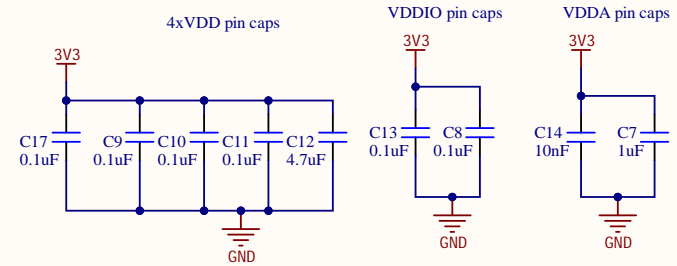
Green LED voltage drop: 2.2V
 $I = (3.3 - 2.2V) / 120 = 10.83mA$

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: $I = (3.3 - 3.1V) / 20 = 10mA$

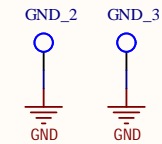
STM32F446RET6



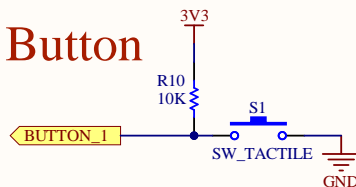
Decoupling Caps



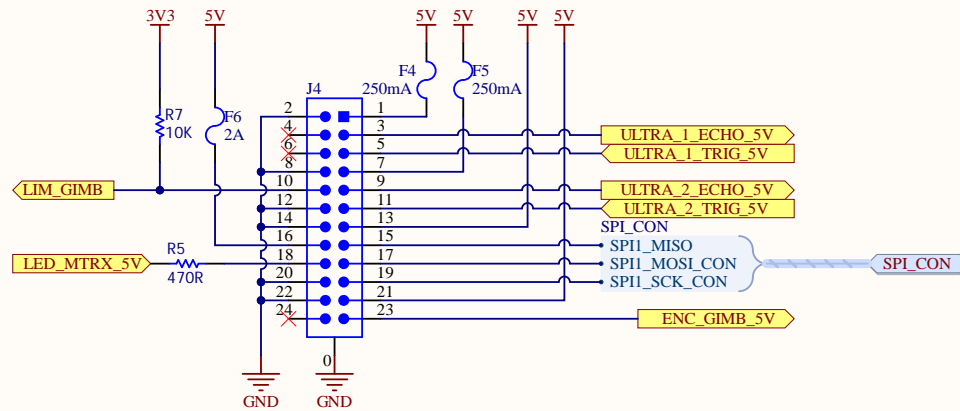
GND Test Points



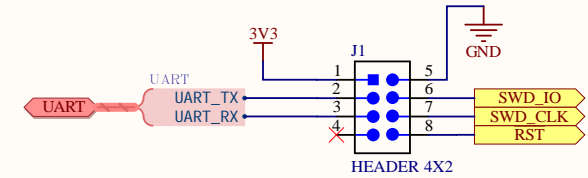
Test Button



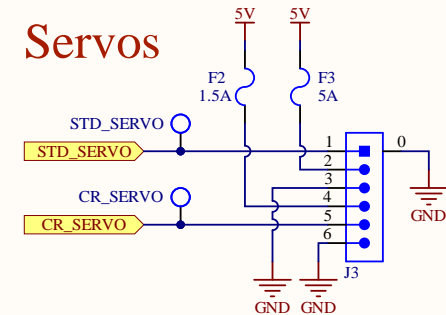
Sensors/Limit Switch/LED Matrix



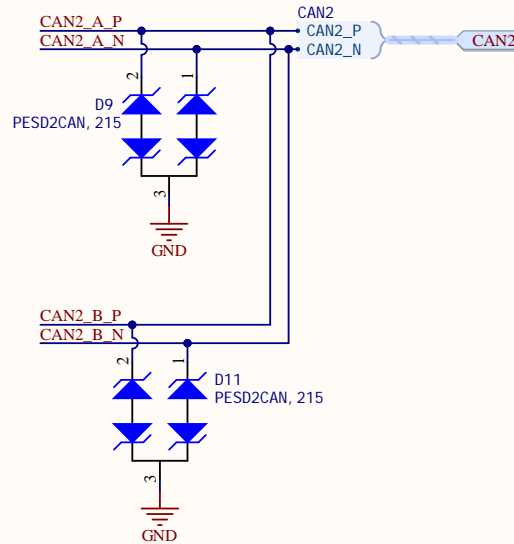
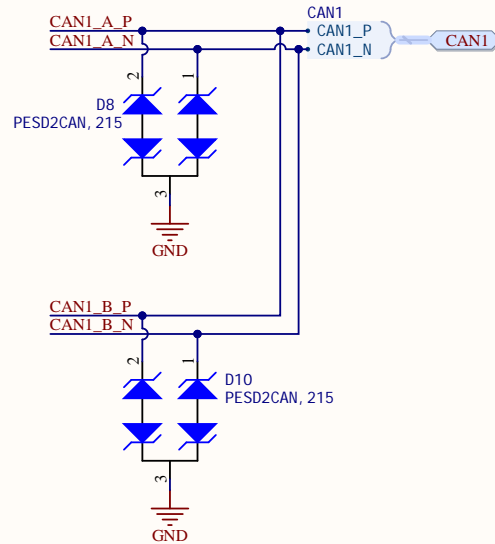
Debug/Programming



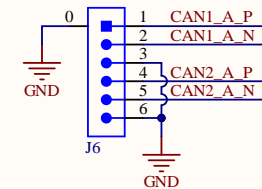
Servos



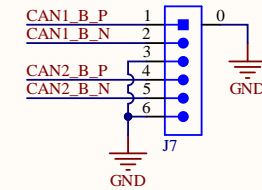
CAN Support



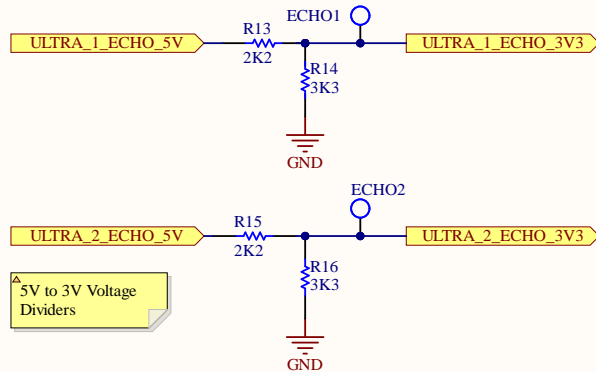
CAN Incoming



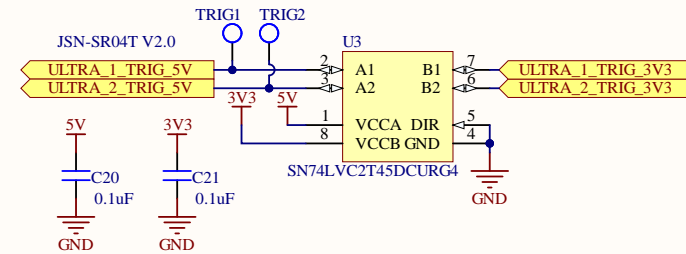
CAN Outgoing



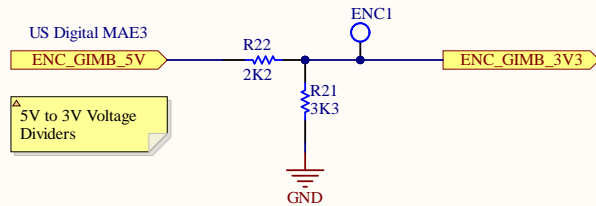
Ultrasonic Voltage Dividers



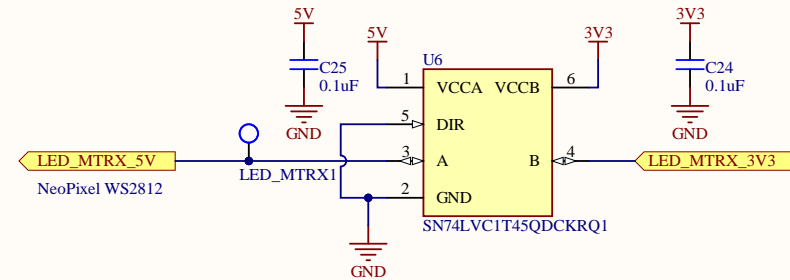
Ultrasonic Level Shifters



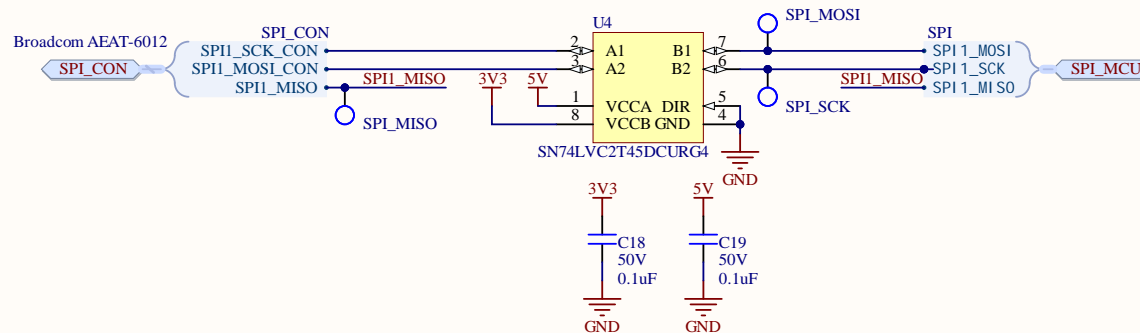
PWM Encoder Voltage Divider



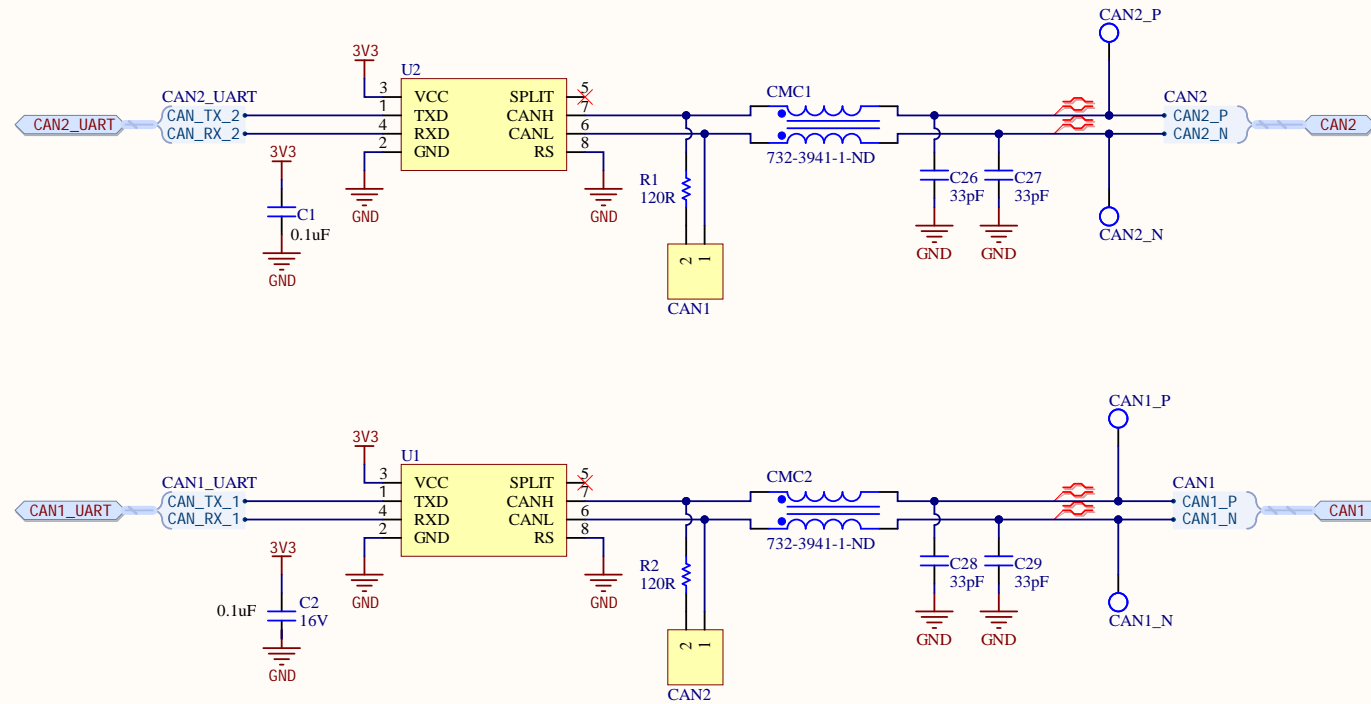
LED Matrix Level Shifter



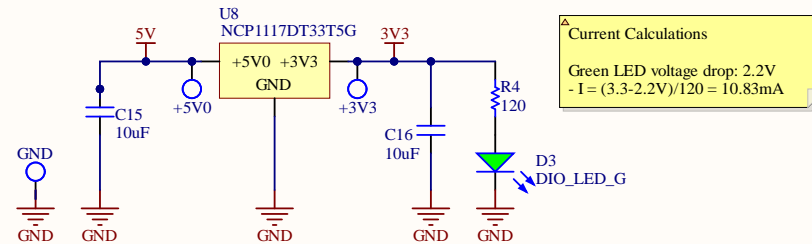
SPI Encoder Level Shifter



CAN Transceivers



5V to 3V3 LDO



Power In

