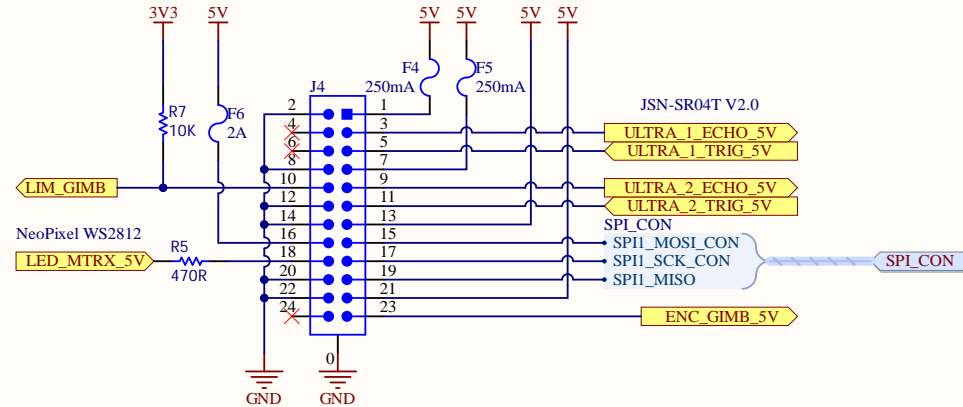


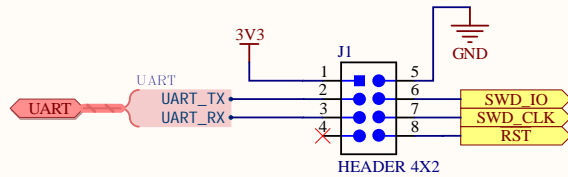
Current Calculations

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

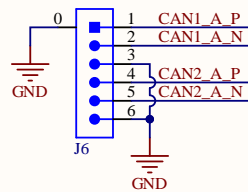
Sensors/Limit Switch/LED Matrix



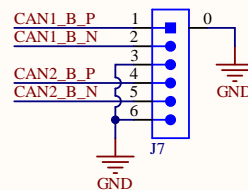
Debug/Programming



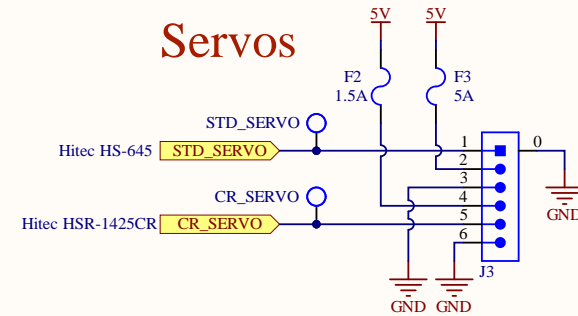
CAN In



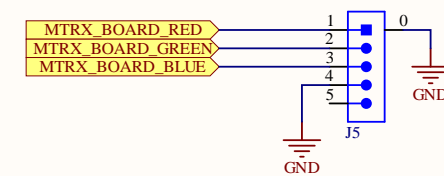
CAN Out



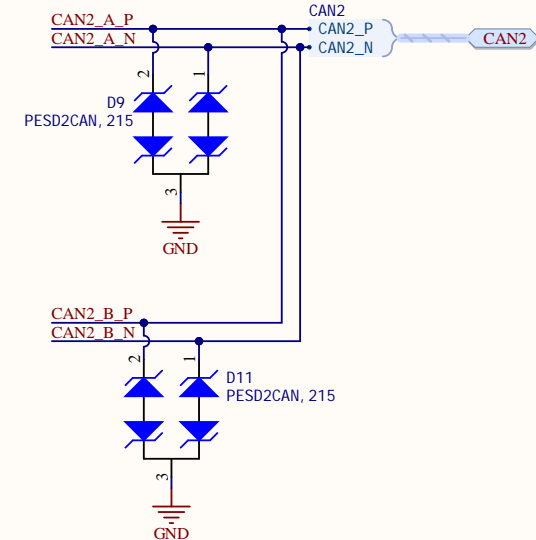
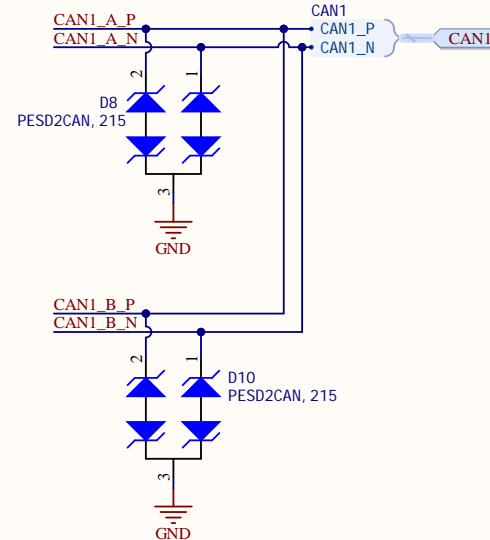
Servos



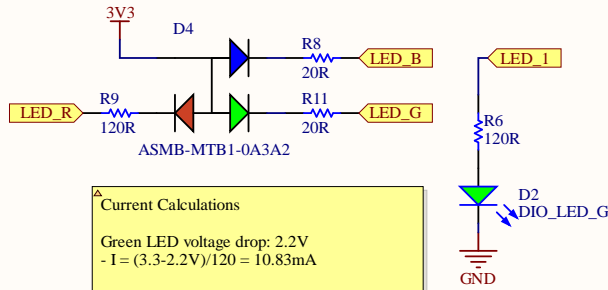
LED Matrix PCB



CAN Protection



Test LEDs

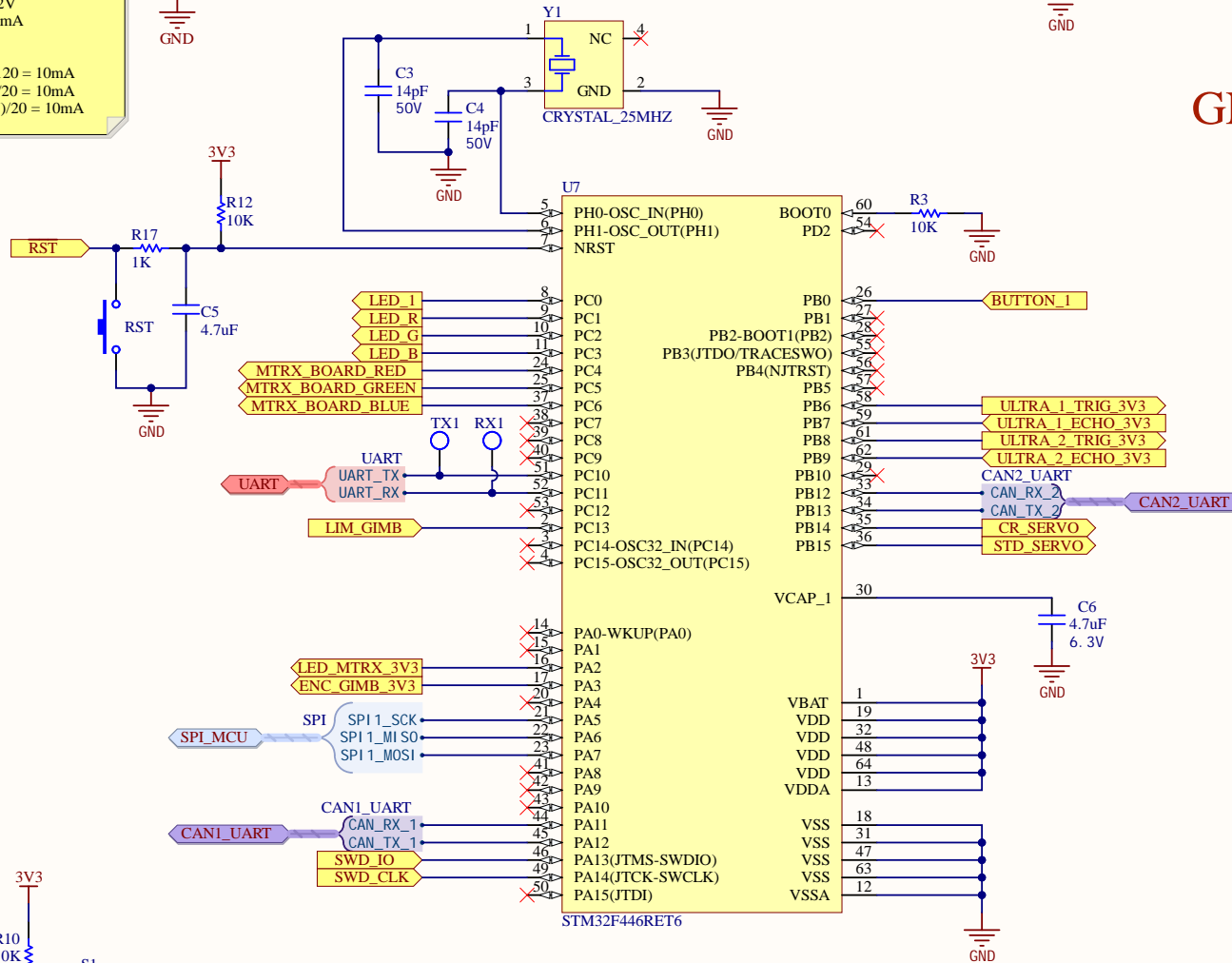


Current Calculations

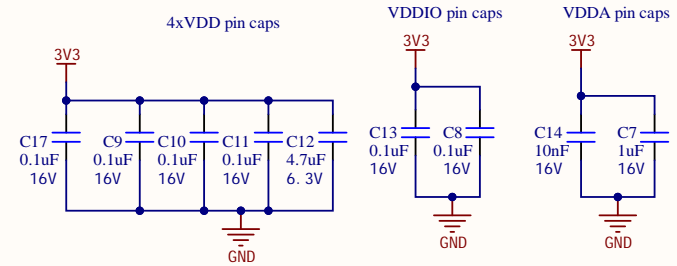
Green LED voltage drop: 2.2V
 $I = (3.3 - 2.2V) / 120 = 10.83mA$

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

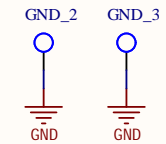
STM32F446RET6



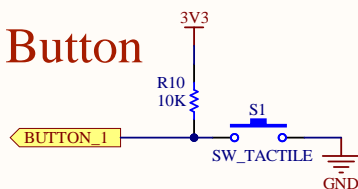
Decoupling Caps



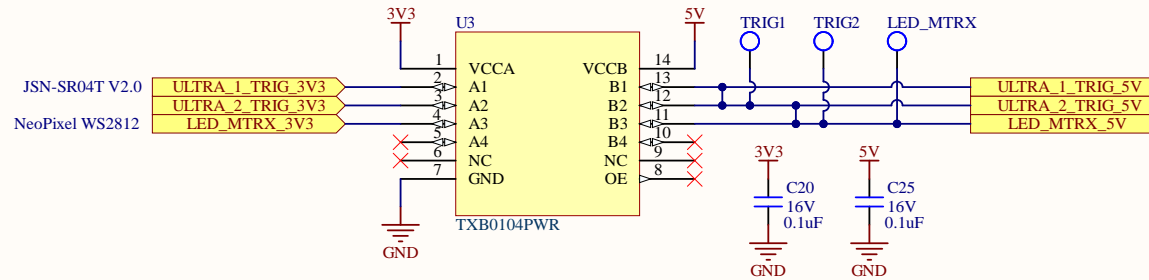
GND Test Points



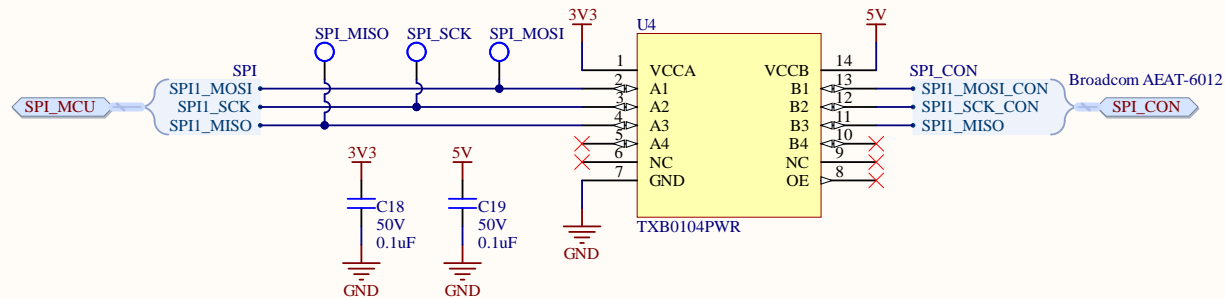
Test Button



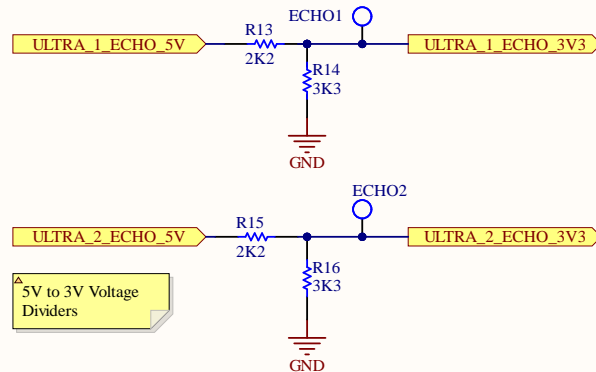
Ultrasonic/LED Matrix Level Shifters



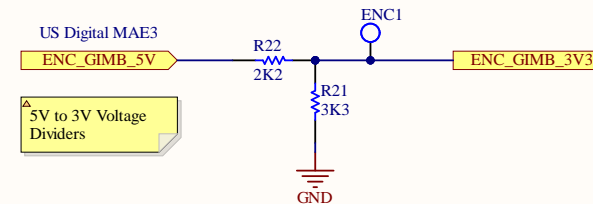
SPI Encoder Level Shifter



Ultrasonic Voltage Dividers



PWM Encoder Voltage Divider



CAN Transceivers

