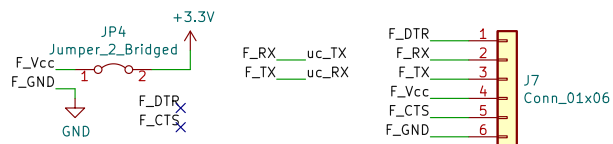
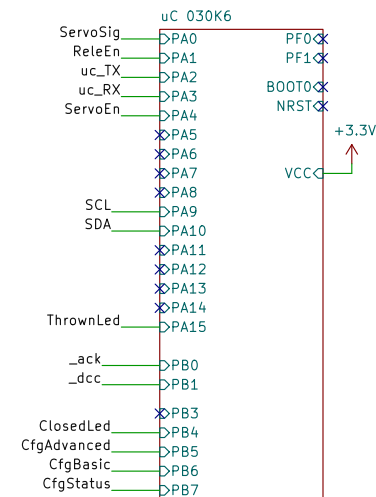
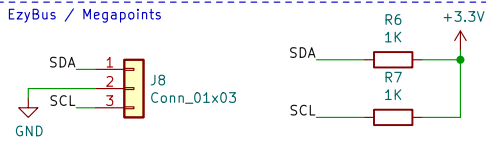


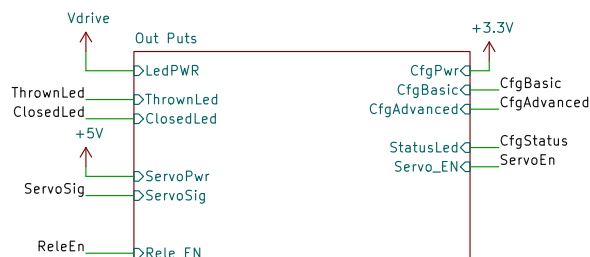
# FTDL\_UART



# I2C / EzyBus / Megapoints

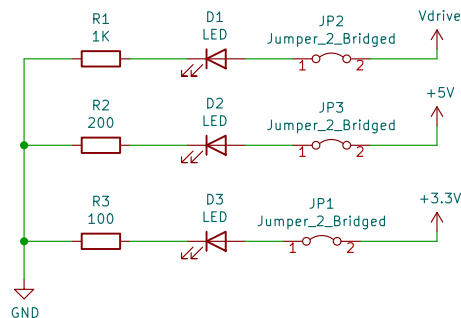


File: STM32F030K6.kicad\_sch

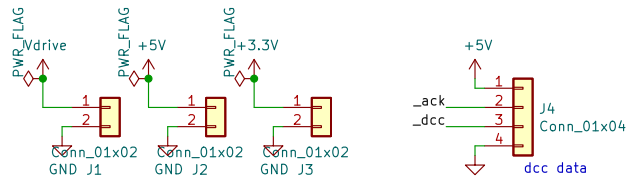


File: OutPuts.kicad\_sch

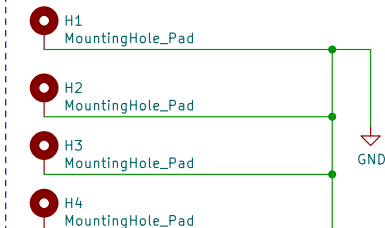
# Status Leds



# Inputs



# Mount Holes micro



Sheet: /  
File: DccDecoder.kicad\_sch

# Title: DCC Decoder Turnout

Size: A4 Date: 2022-07-04 Rev: 0.4.1  
KiCad E.D.A. eeschema 6.0.6-3a73a75311-116-ubuntu22.04.1 Id: 1/3

Led Resistance Calc for 15ma and 2.5V led:

12 V -> 9.5/15\*1000 -> 633 Ohm  
14 V -> 11.5/15\*1000 -> 766 Ohm  
20 V -> 17.5/15\*1000 -> 1166 Ohm

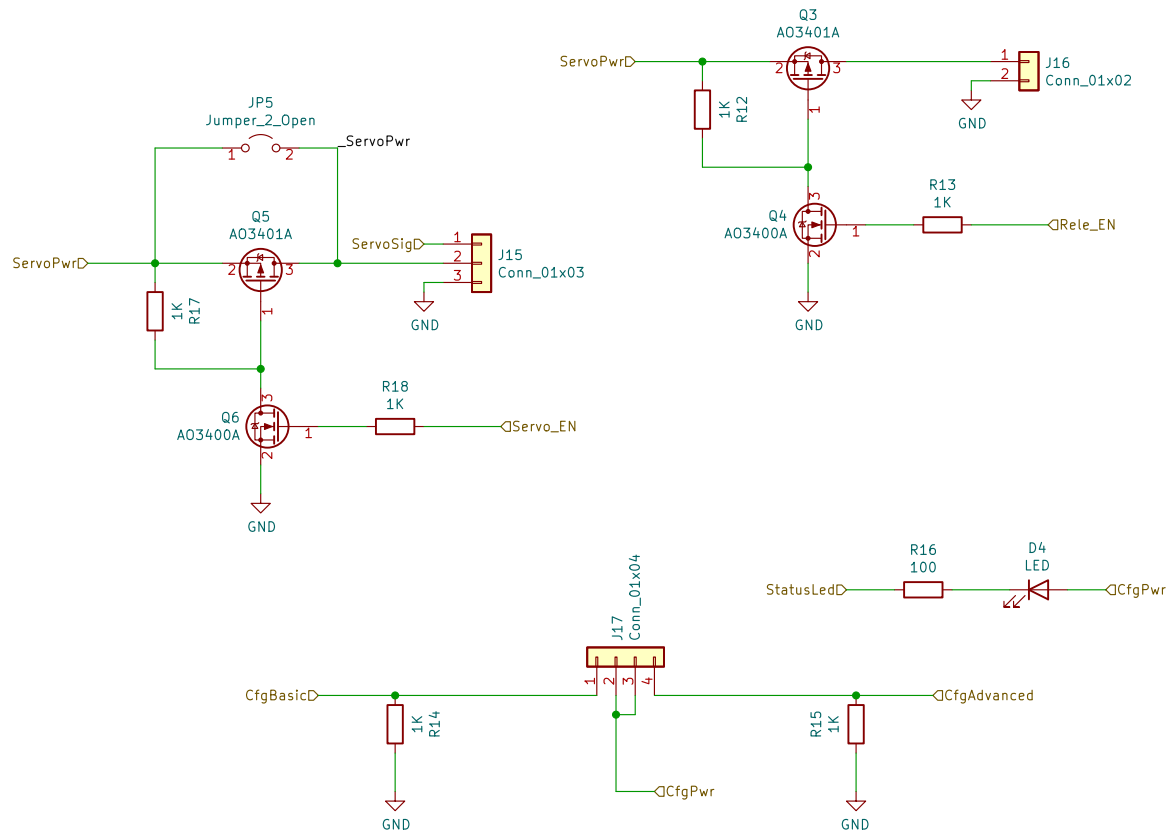
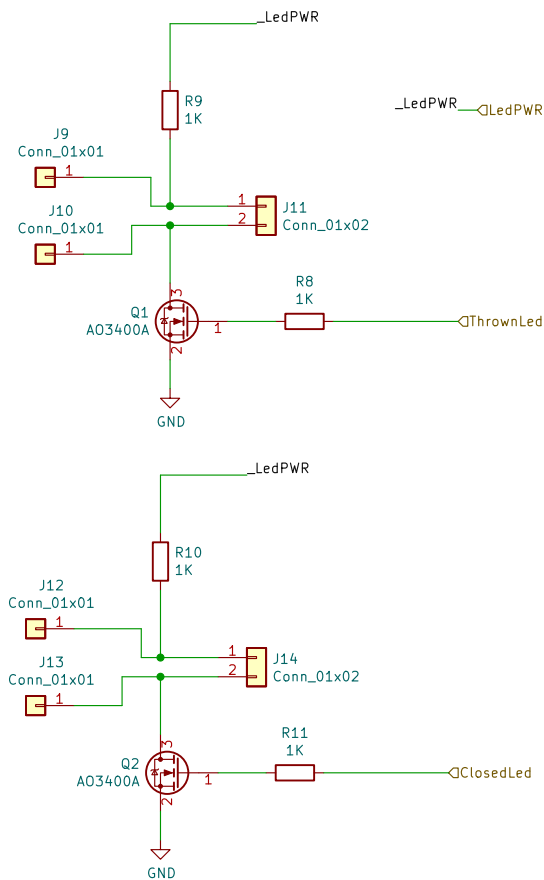
Using a 1K resistor:

In	Led: 2V	2.5V	3V
12V	10ma	9.5ma	9ma
14V	12ma	11.5ma	11ma
20V	18ma	17.5ma	17ma

Expected case:  
12V input, & 2.5V led -> near 10 mAmps, ligh ok

WorstCases:  
12V input, & 3V led -> 9 mAmps, Acceptable  
20V input, & 2V led -> 18 mAmps, under <20ma specs

Future: add a 1K trimmer with 500 Ohm in series



Sheet: /Out Puts/  
File: OutPuts.kicad\_sch

**Title: DCC Decoder Turnout**

Size: A4 Date: 2022-07-04

KiCad E.D.A. eeschema 6.0.6-3a73a75311-116-ubuntu22.04.1

Rev: 0.4.1

Id: 2/3

