

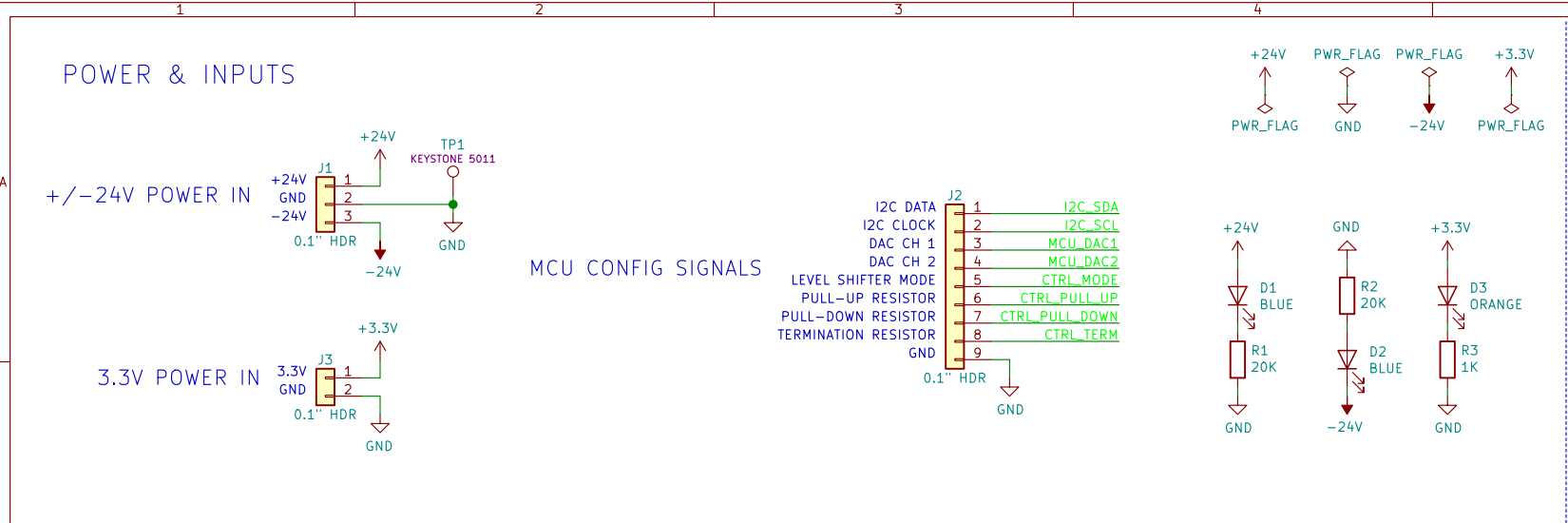
POWER & INPUTS

+/-24V POWER IN

3.3V POWER IN

MCU CONFIG SIGNALS

OUTPUTS

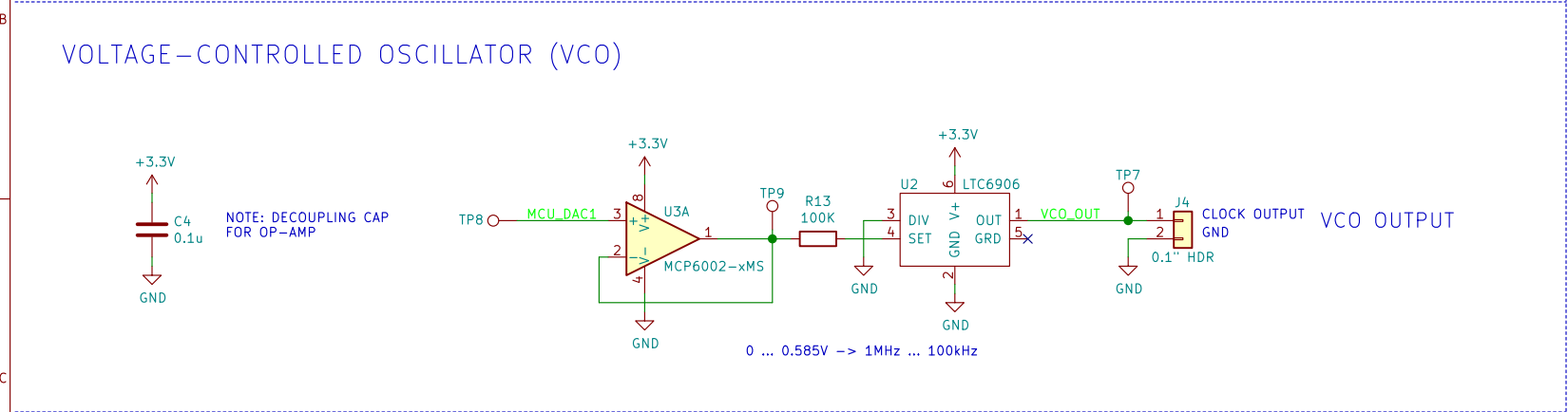


VOLTAGE-CONTROLLED OSCILLATOR (VCO)

The diagram illustrates a Voltage-Controlled Oscillator (VCO) circuit. It begins with a decoupling capacitor C4 (0.1uF) connected to a +3.3V supply and ground. The input signal, labeled MCU_DAC1 at TP8, is connected to the non-inverting input (pin 3) of the MCP6002 op-amp (U3A). The op-amp is configured as a voltage follower, with its output (pin 1) connected to its inverting input (pin 2) and also to a 100k resistor R13. The output of R13 is connected to the DIV pin (pin 3) of the LTC6906 divider (U2). The LTC6906 is also powered by +3.3V and ground. Its output (pin 1) is labeled VCO_OUT at TP7. The output is connected to a 0.1" HDR connector J4, which provides the CLOCK OUTPUT. The output frequency range is specified as 0 ... 0.585V -> 1MHz ... 100kHz.

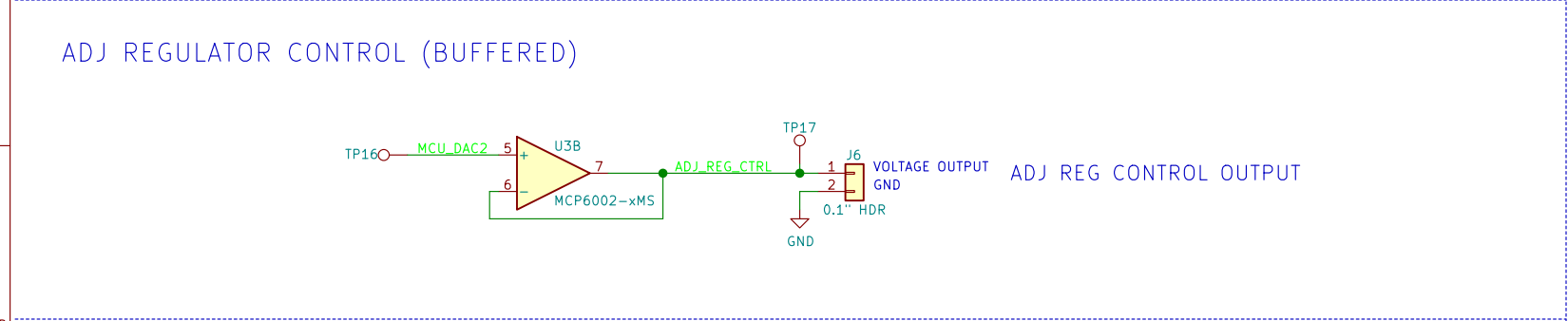
NOTE: DECOUPLING CAP FOR OP-AMP

0 ... 0.585V -> 1MHz ... 100kHz



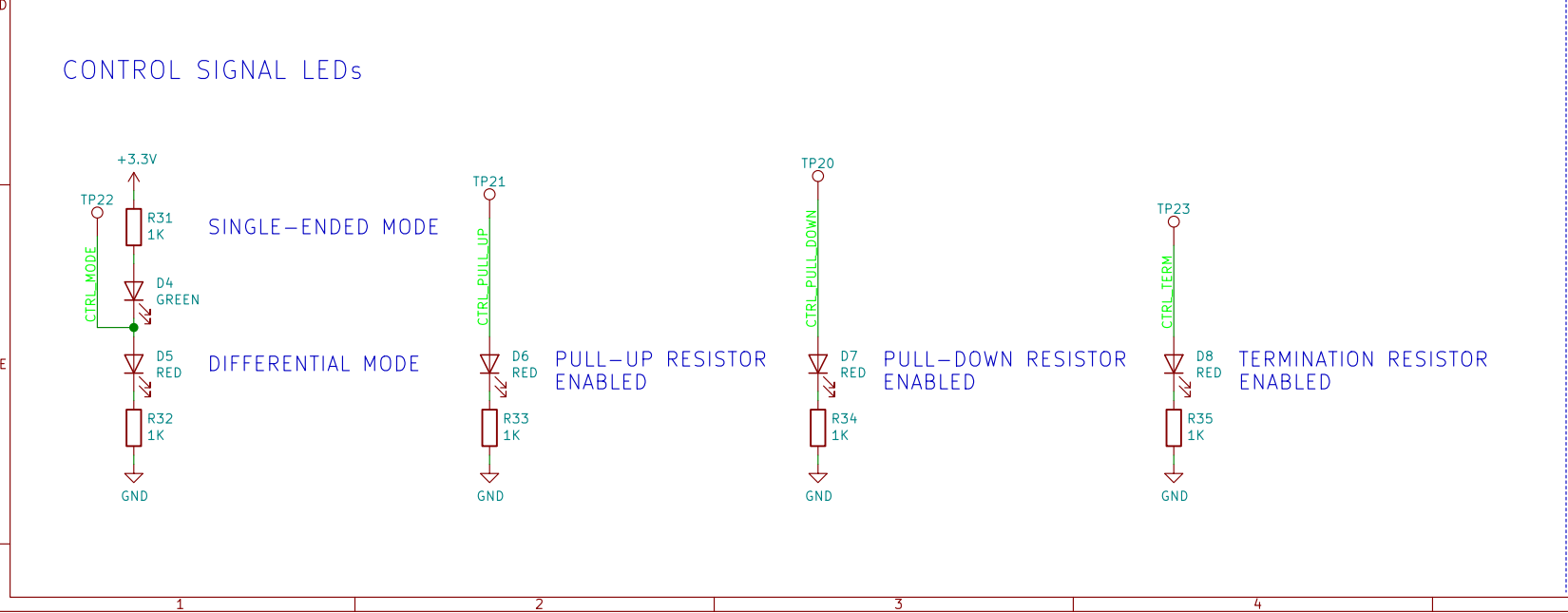
ADJ REGULATOR CONTROL (BUFFERED)

ADJ REG CONTROL OUTPUT



The schematic diagram illustrates the CONTROL SIGNAL LEDs section, featuring four test points (TP22, TP21, TP20, TP23) and their associated components:

- TP22:** Connected to +3.3V through resistor R31 (1K). It branches into two paths:
 - SINGLE-ENDED MODE:** Through LED D4 (GREEN) to GND.
 - DIFFERENTIAL MODE:** Through LED D5 (RED) and resistor R32 (1K) to GND.
- TP21:** Connected to GND through LED D6 (RED) and resistor R33 (1K). Labeled "PULL-UP RESISTOR ENABLED".
- TP20:** Connected to GND through LED D7 (RED) and resistor R34 (1K). Labeled "PULL-DOWN RESISTOR ENABLED".
- TP23:** Connected to GND through LED D8 (RED) and resistor R35 (1K). Labeled "TERMINATION RESISTOR ENABLED".



LOGIC LEVEL GENERATOR

NOTE: DECOUPLING CAPS FOR OP-AMP

C1 0.1u
C2 0.1u
GND
+24V
-24V

$VH1 = 1000/68 * (1.65V - V_{dac})$

NOTE: DECOUPLING CAP FOR DAC

+3.3V
C3 0.1u
GND

NOTE: THIS P/N IS PREPROGRAMMED WITH I2C ADDRESS 0

TP10 I2C_SCL
TP11 I2C_SDA
TP12 SCL
TP13 SDA
TP12 LDAC
TP13 RDY/BSY

U4 MCP4728A0
SCL
SDA
LDAC
RDY/BSY
VDD
VSS
VOUTA
VOUTB
VOUTC
VOUTD

U1A ADA4522-4
R4 1M
R5 68K
R6 68K
R7 1M
R8 10K
R9 10K
TP2
TP3
TP4
TP5
TP14
TP15
TP18
TP19

U1B ADA4522-4
R10 1M
R11 68K
R12 68K
R14 1M
R17 10K
R18 10K
VL1

U1C ADA4522-4
R19 1M
R20 68K
R21 68K
R22 1M
R23 10K
R24 10K
VH2

U1D ADA4522-4
R25 1M
R26 68K
R27 68K
R28 1M
R29 10K
R30 10K
VL2

J5 0.1" HDR
VH PIN 1
VL PIN 1
VH PIN 2
VL PIN 2
GND

DAC OUTPUT

TP24 DO NOT POP R36
TP25 DO NOT POP R37
TP26 DO NOT POP R38
TP27 DO NOT POP R39
TP28
TP29
TP30
TP31

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Title: DEVICE CONFIGURATION DEMO BOARD

Size: B Date: 2019-11-05

KiCad E.D.A. kicad 5.1.4

Rev:

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