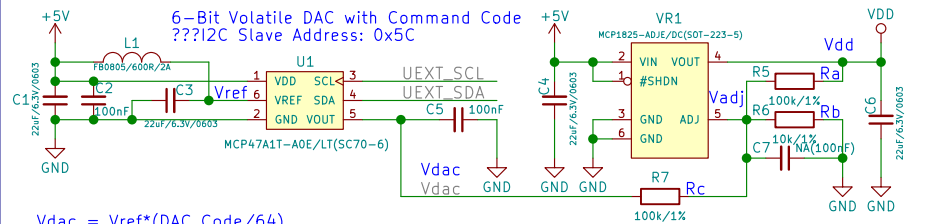
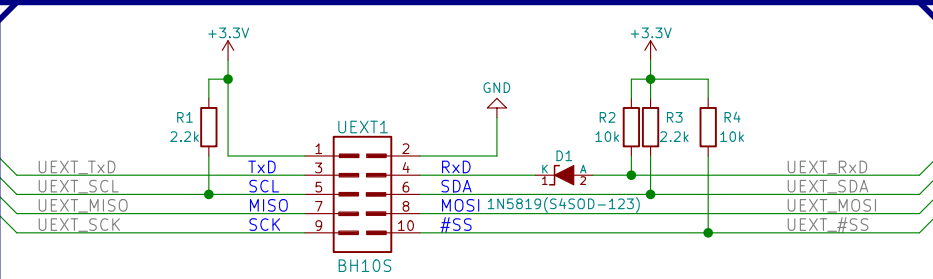
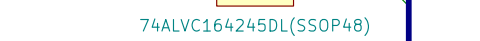
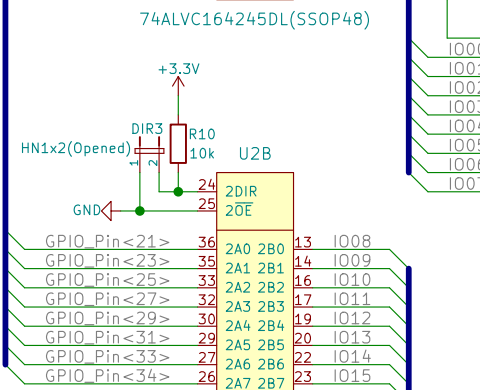
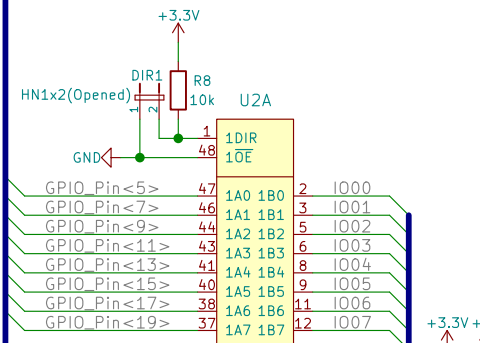
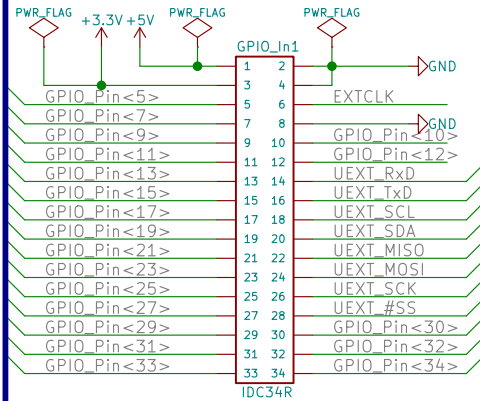


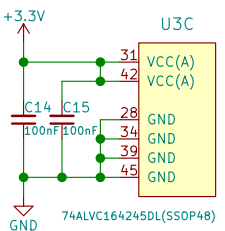
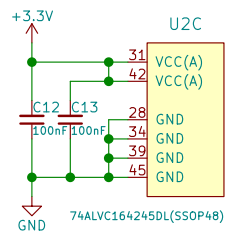
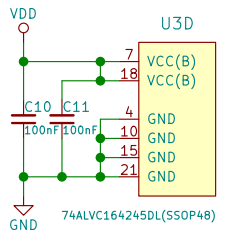
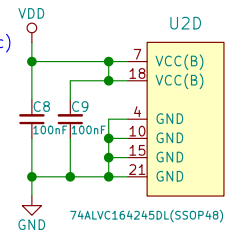
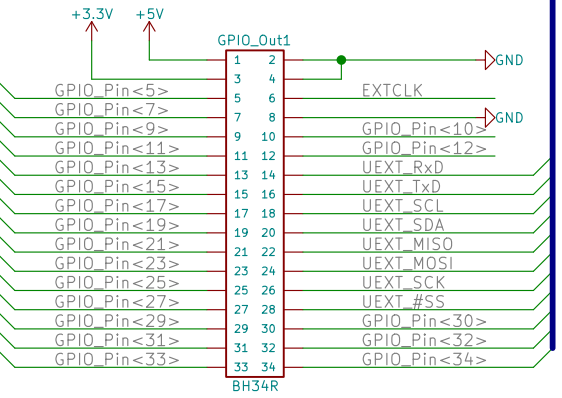
Extension In



$V_{dac} = V_{ref} * (DAC_Code / 64)$
 $V_{ref} = 5V$
 $DAC_Code = 0.64 [DEC]$
 V_{dac} must not exceed: 3.42V
 (See the Very Important Note)
 Then: $DAC_Code [MAX] = 44 [DEC]$
 The proper range is:
 $DAC_Code = 0.44 [DEC]$

According to the datasheet: $V_{adj} = 0.41V$
 Having in mind that $I_{Rb} = I_{Ra} + I_{Rc}$
 Then: $V_{dd} = V_{adj} * (R_a / R_b + R_c / R_b + 1) - V_{dac} * (R_a / R_c)$
 In case: $R_a = R_c$
 $V_{dd} = V_{adj} * (R_a / R_b + 2) - V_{dac}$
 Let's get $R_a = R_c = 100k$ and $R_b = 10k$.
 Then: $V_{dd} = 4.92 - V_{dac}$

Extension Out



=====
!!! Very Important Note !!!
 =====
 In our case, V_{dd} must be in the range: 1.5V to 5.5V, because this is the correct range for 74ALVC164245DL when $V_{CC}(B) = 5V$

<https://www.olimex.com/>
OLimeX LTD
 Sheet: /
 File: ICE40-DIO_Rev_A.sch

Title:	
Size: A4	Date:
KiCad E.D.A. kicad no-vcs-found-36e590658ubuntu16.04.1	
Rev: A	Id: 1/1