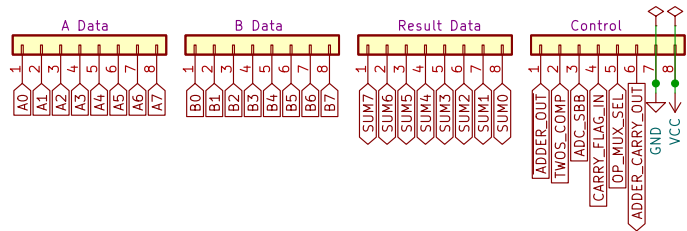


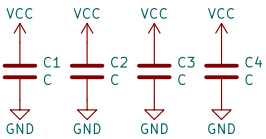
# Arithmetic Module

8bit Arithmetic Module provides: ADD, ADC, SUB, SBB, INC, DEC

## CPU Connections

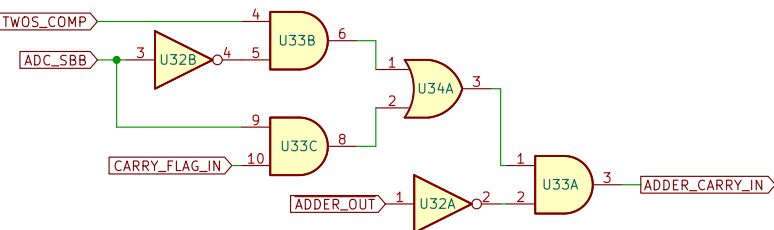


## Decoupling



## Arithmetic Carry In Logic

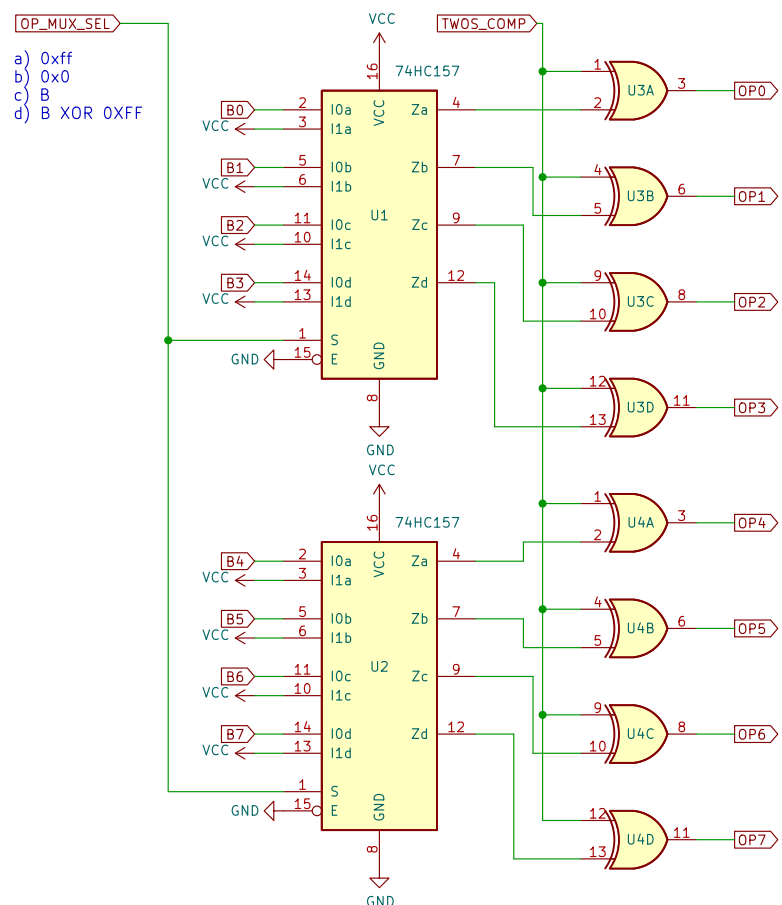
- a) If two's complement, or
- b) if ADC or SBB, and current carry flag status is active



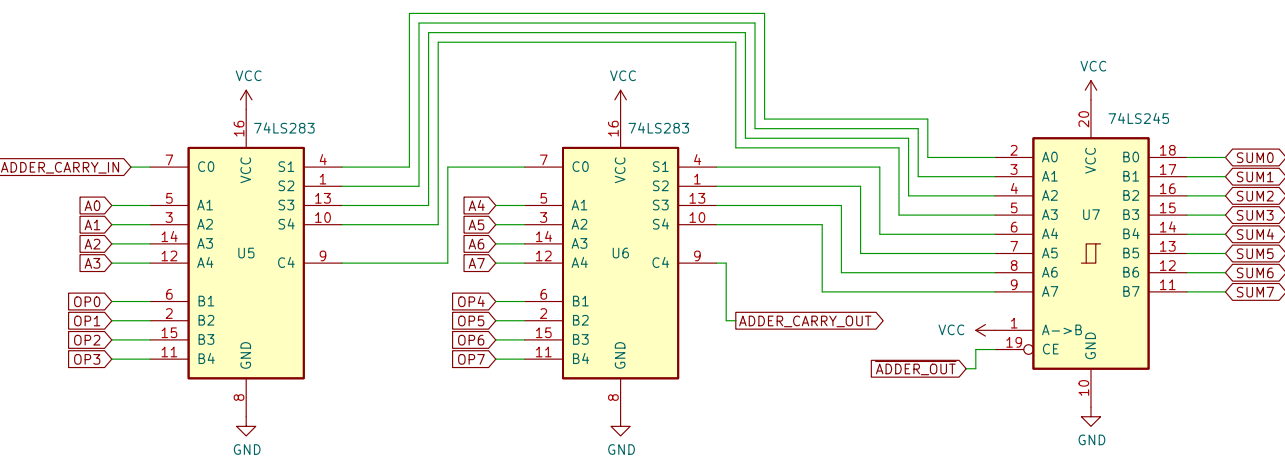
## Control Word Decoding

- DEC A: MUX\_SEL: 1, TC: 0, CI: 0
- A - B: MUX\_SEL: 0, TC: 1, CI: 1
- A + B: MUX\_SEL: 0, TC: 0, CI: 0
- INC A: MUX\_SEL: 1, TC: 1, CI: 1
- A - B - Ci: MUX\_SEL: 0, TC: 1, CI: ?
- A + B + Ci: MUX\_SEL: 0, TC: 0, CI: ?

## Operand Multiplexer

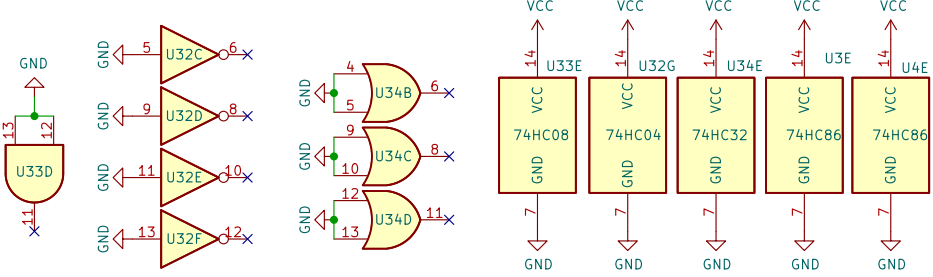


## Full Adder w/ Carry



NOTE: Should have used 74HC283

## Logic Power & Unused Gates



ADD / SUB / ADC / SBB / INC / DEC

Sheet: /  
File: Arithmetic.kicad\_sch

Title: Arithmetic Module

Size: User Date:  
KiCad E.D.A. kicad (6.0.0-0)

Rev: 3  
Id: 1/1