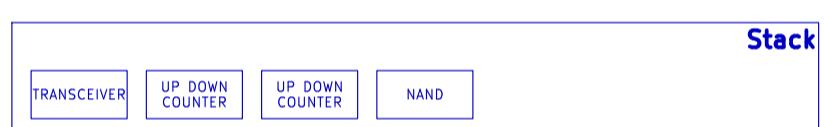
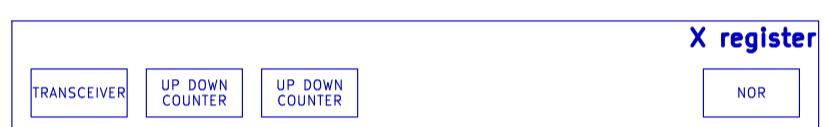
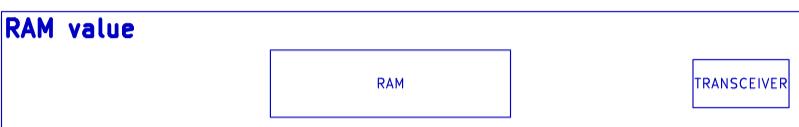
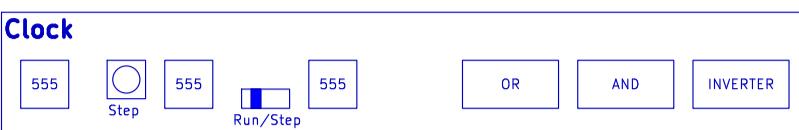


BUS VISUALIZER

**TBR Designs**

Sheet: /Breadboard Layout/
File: breadboard-layout.kicad_sch

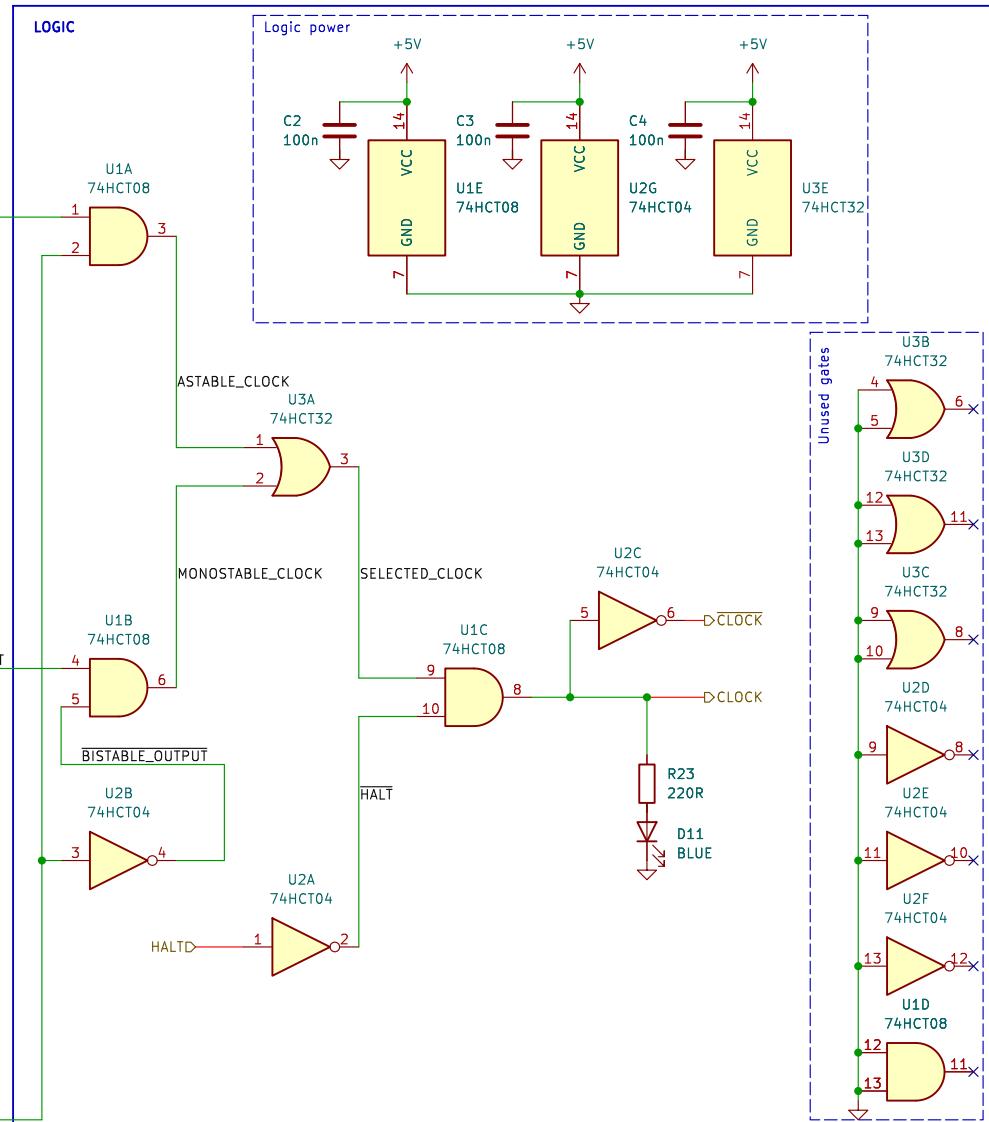
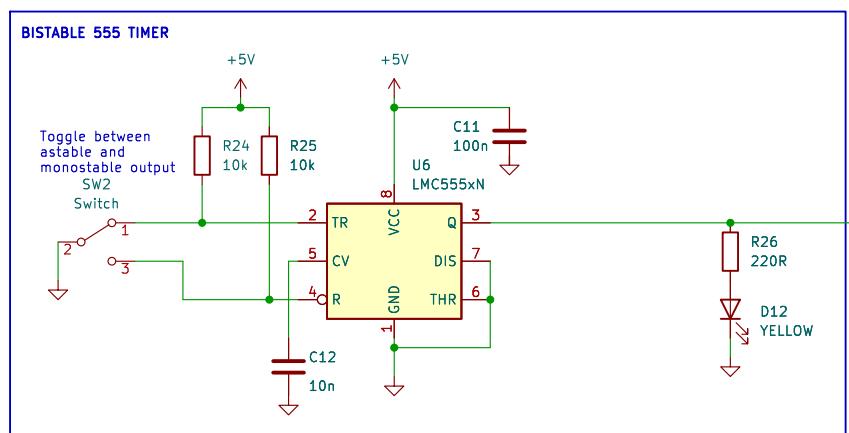
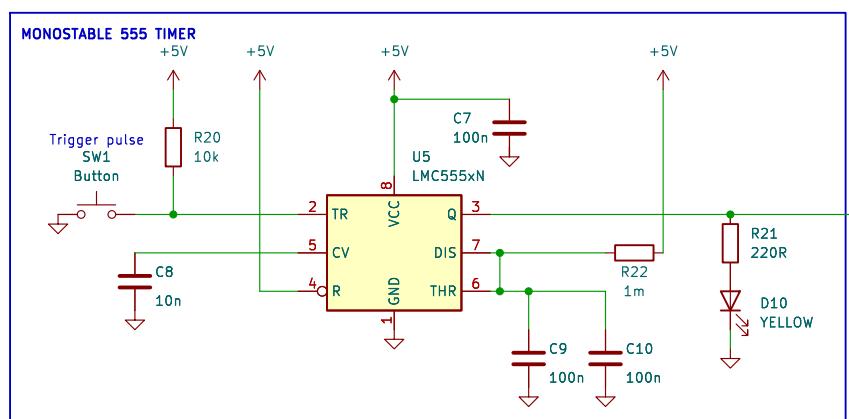
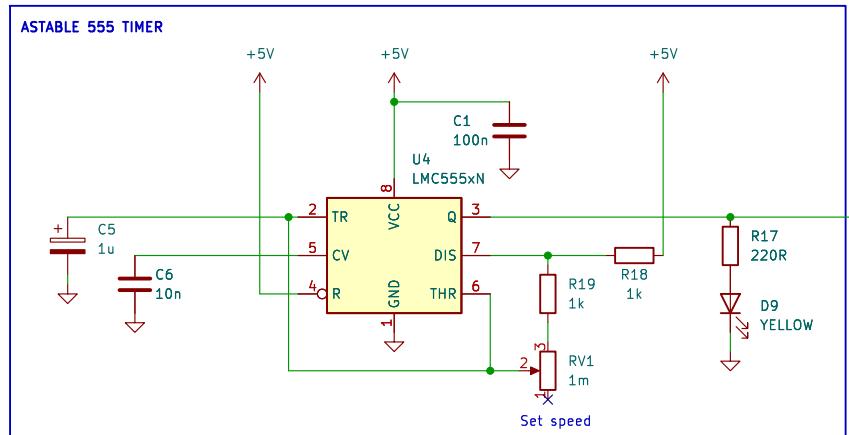
Title: 8-bit CPU

Size: A3 Date: 2023-11-28

KiCad E.D.A. kicad 7.0.9

Rev: 1.0

Id: 2/22



Provides a clock pulse and inverted clock pulse.
Speed can be set with the potentiometer.
Manual pulse can be chosen with the switch and pulsed with the button.
If HALT is HIGH no pulse is outputted.

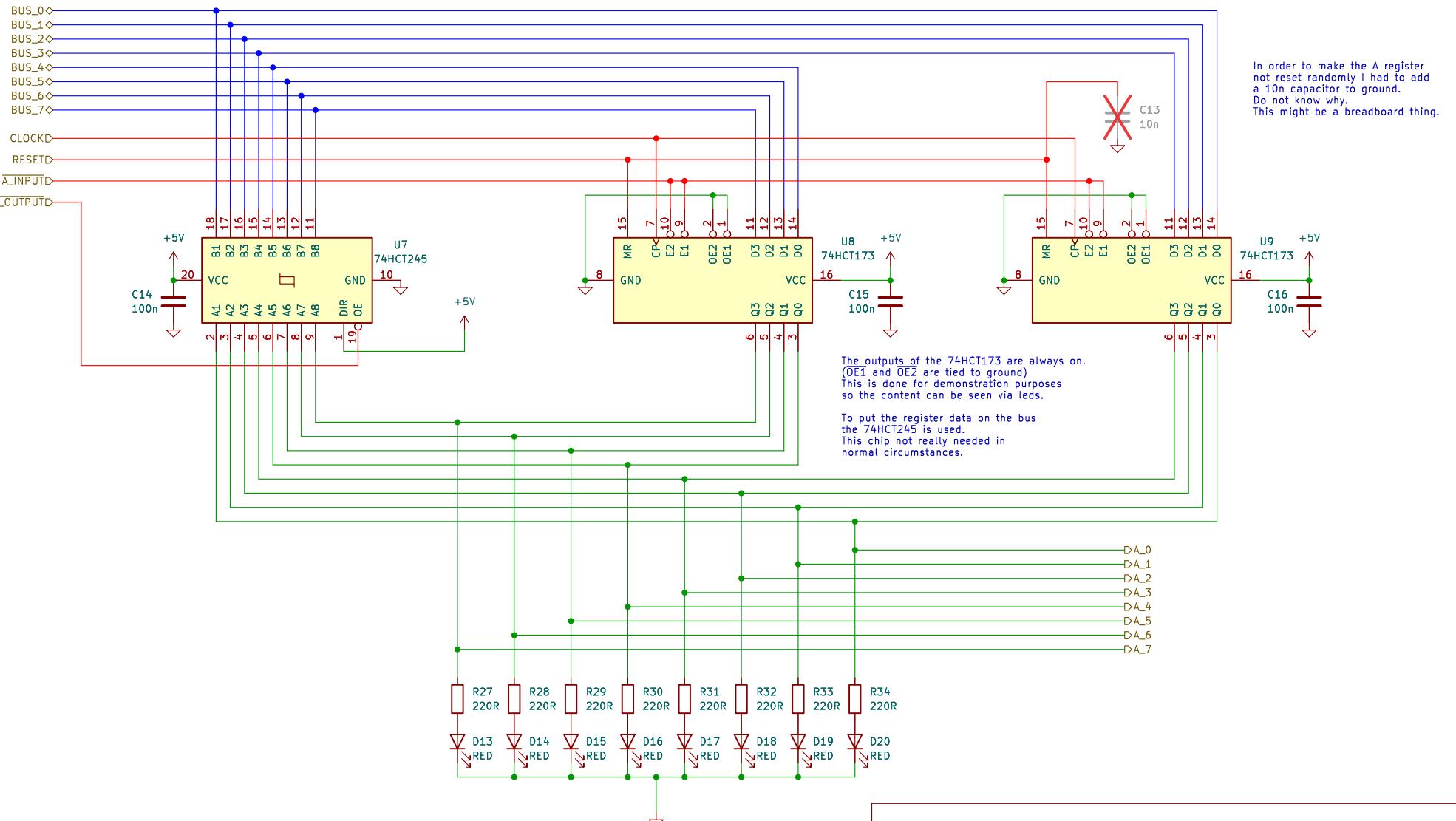
TBR Designs

Sheet: /Clock/
File: clock.kicad_sch

Title: 8-bit CPU

Size: A4 Date: 2023-11-28
KiCad E.D.A. kicad 7.0.9

Rev: 1.0
Id: 3/22



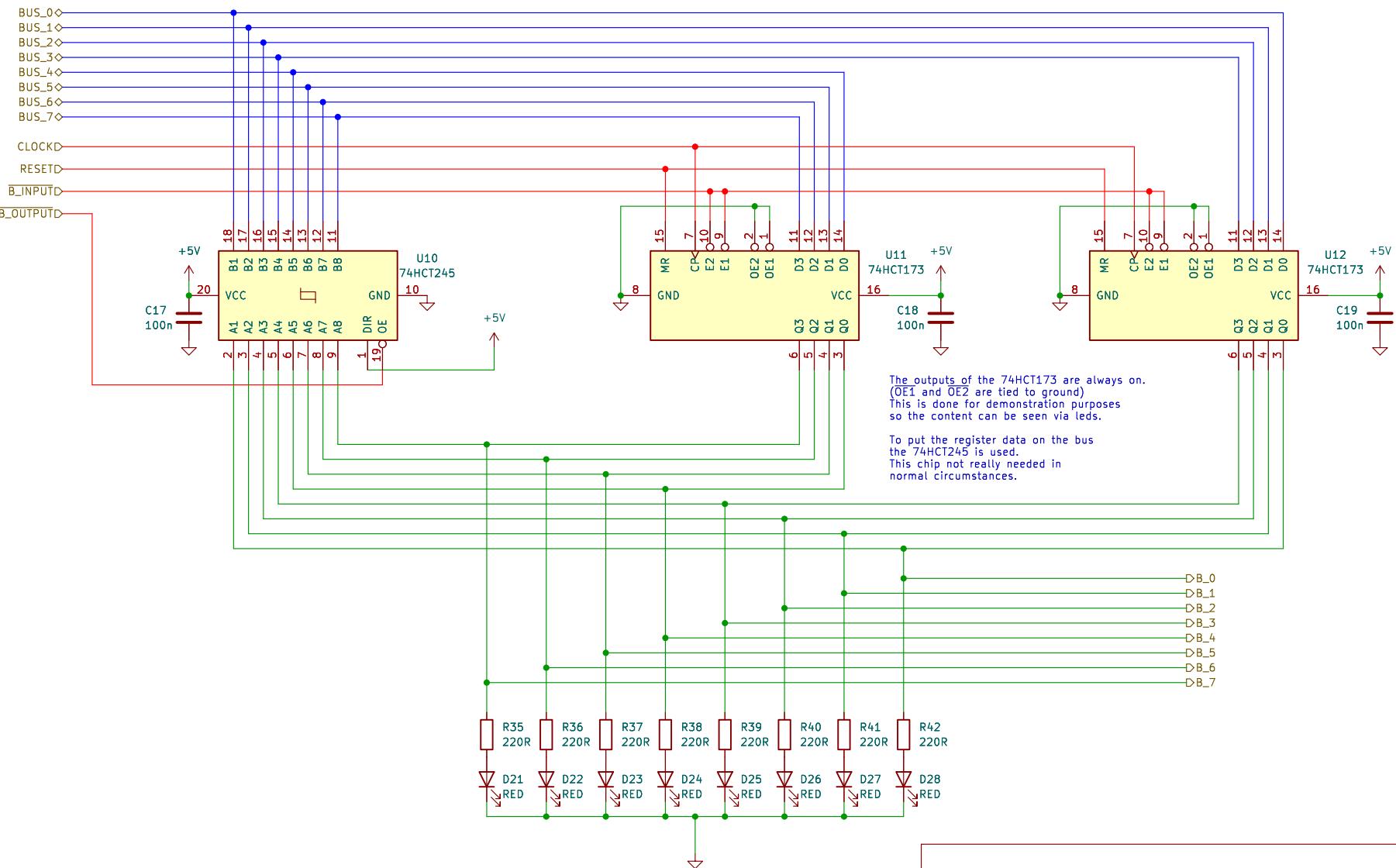
TBR Designs

Sheet: /A register/
File: a-register.kicad_sch

Title: 8-bit CPU

Size: A4 | Date: 2023-11-28
KiCad E.D.A. kicad 7.0.9

Rev: 1.0
Id: 4/22



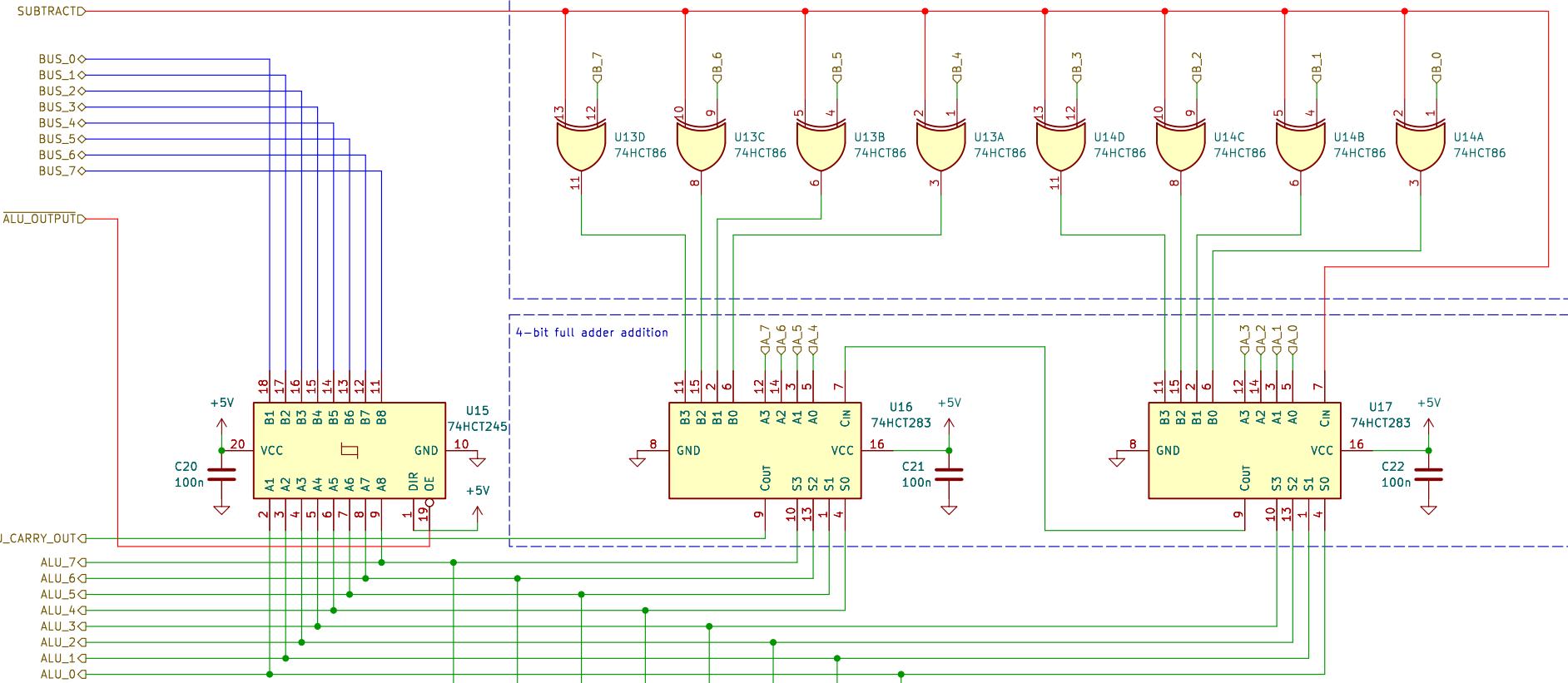
TBR Designs

Sheet: /B register/
File: b-register.kicad_sch

Title: 8-bit CPU

Size: A4 | Date: 2023-11-28
KiCad E.D.A. kicad 7.0.9

Rev: 1.0
Id: 5/22



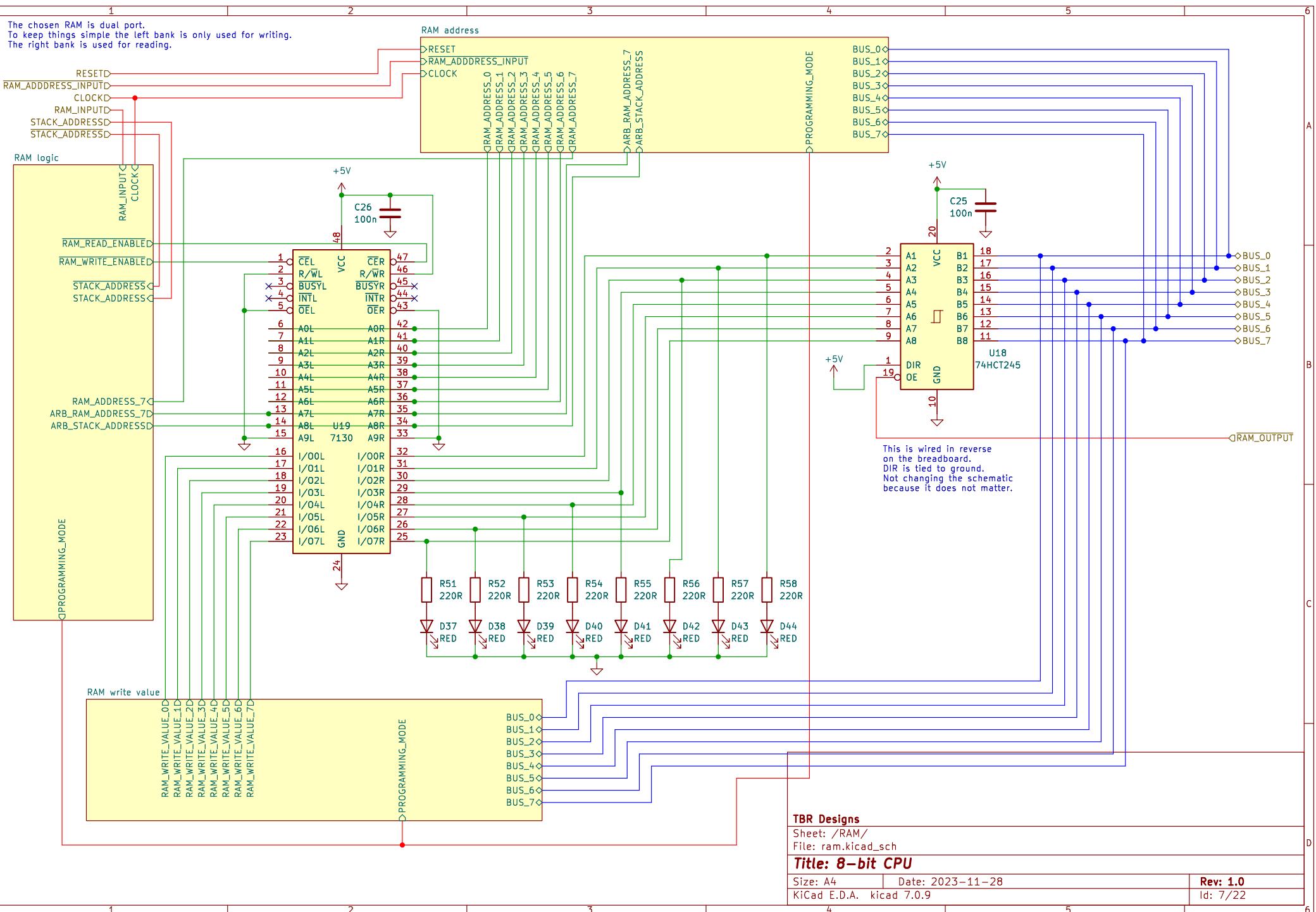
TBR Designs

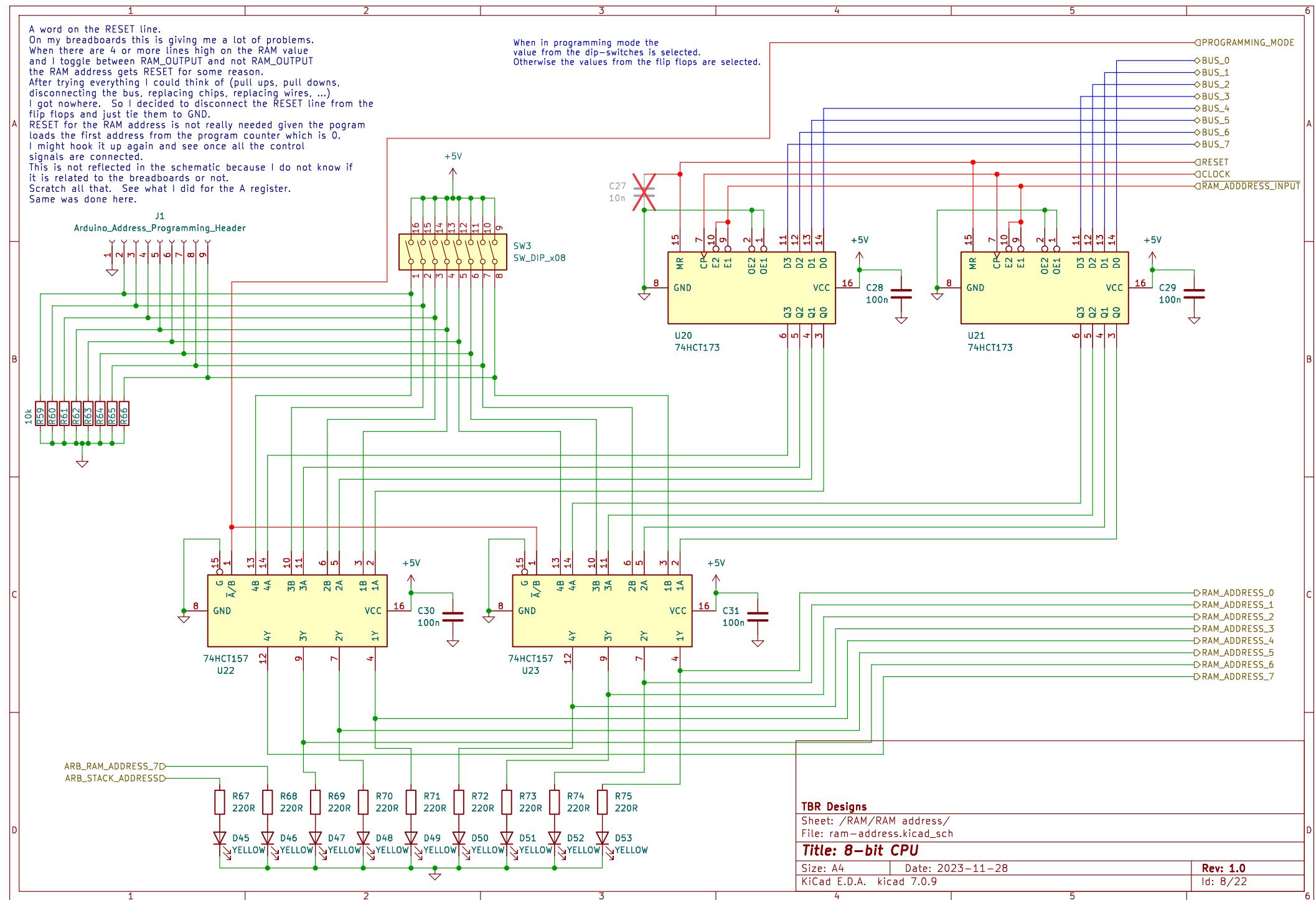
Sheet: /ALU/
File: alu.kicad_sch

Title: 8-bit CPU

Size: A4 Date: 2023-11-28
KiCad E.D.A. kicad 7.0.9

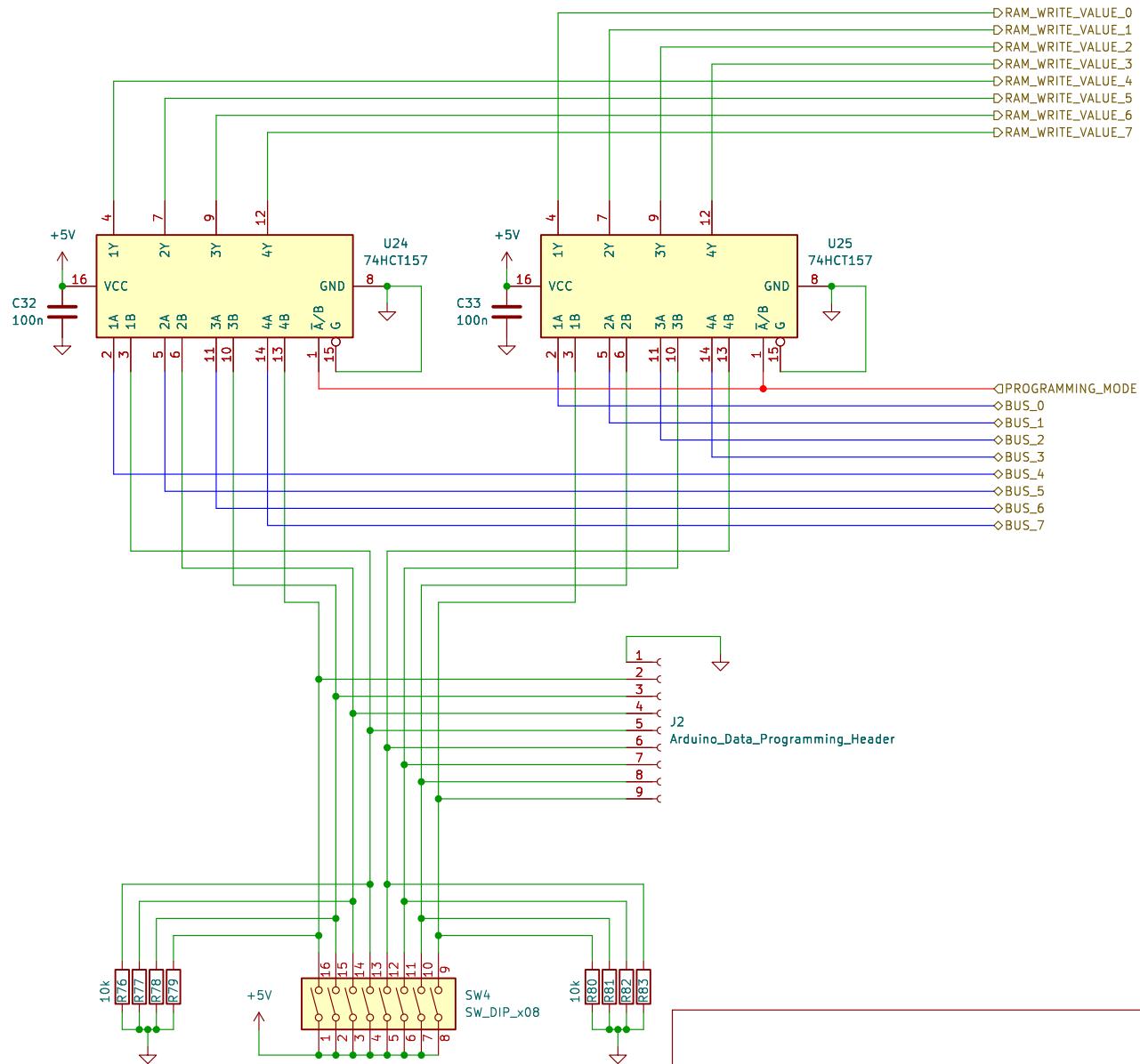
Rev: 1.0
Id: 6/22





1 2 3 4 5 6

When in programming mode the value from the dip-switches is selected.
Otherwise the value from the bus is selected.



TBR Designs

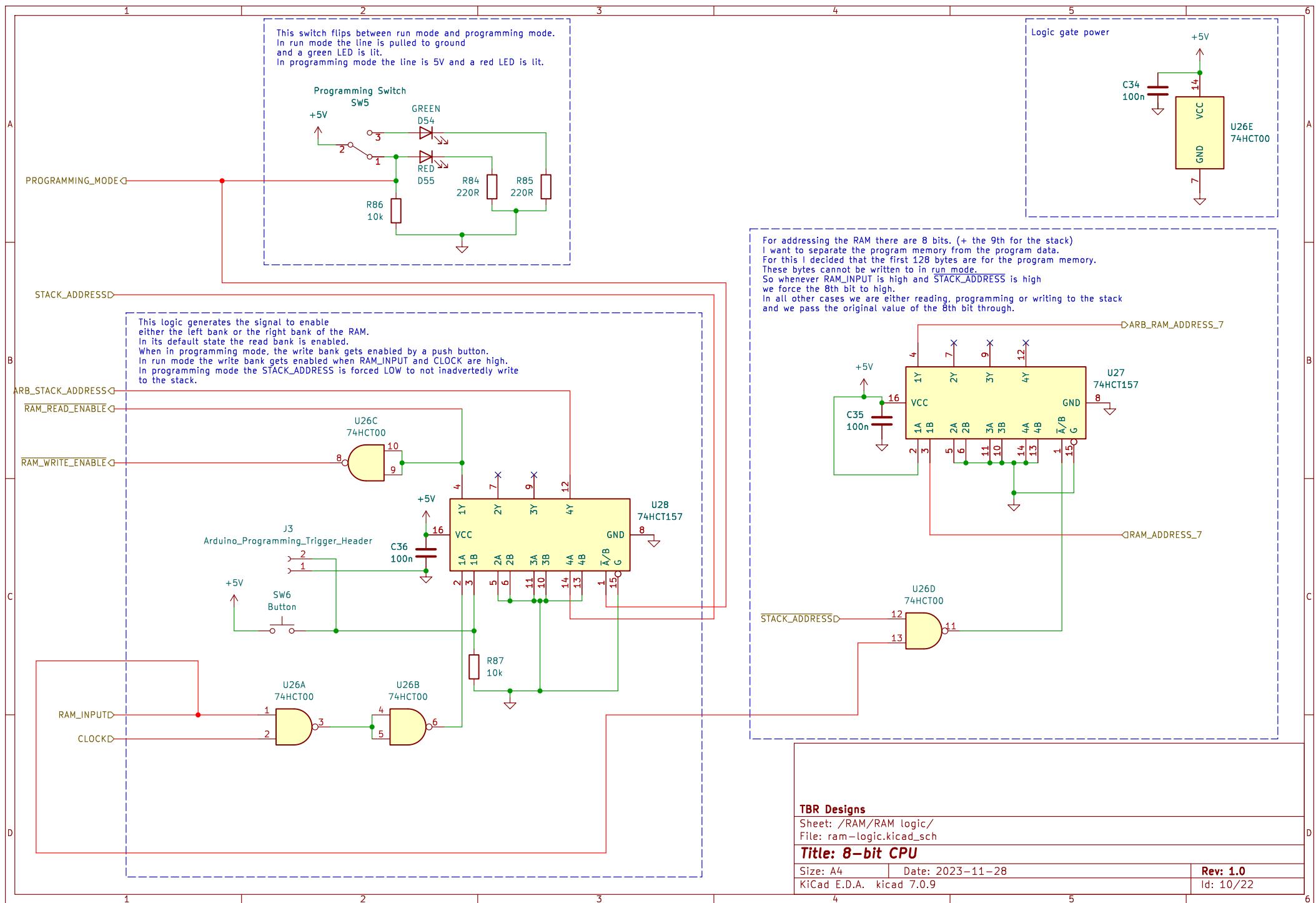
Sheet: /RAM/RAM write value/
File: ram-write-value.kicad_sch

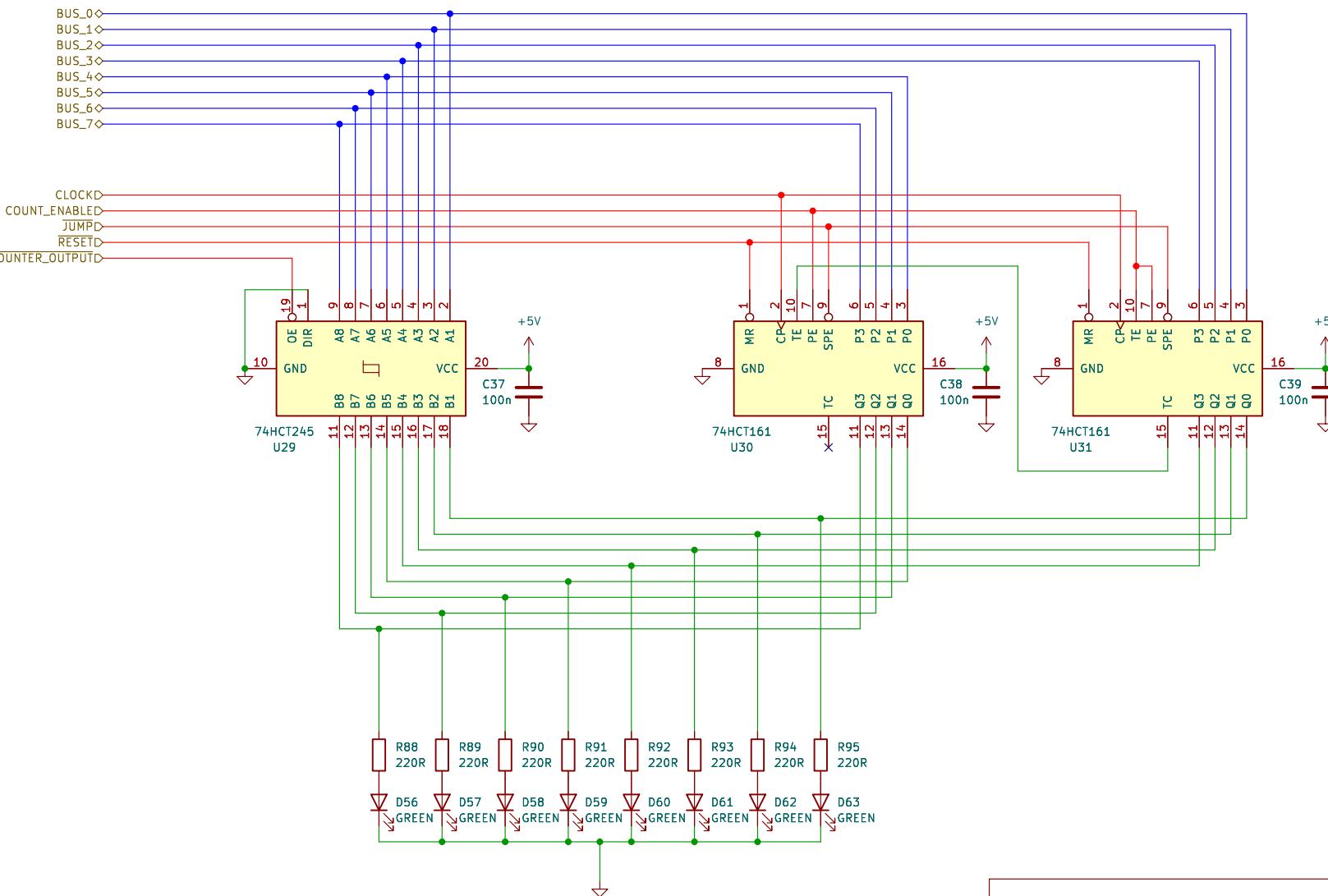
Title: 8-bit CPU

Size: A4 Date: 2023-11-28
KiCad E.D.A. kicad 7.0.9

Rev: 1.0
Id: 9/22

1 2 3 4 5 6





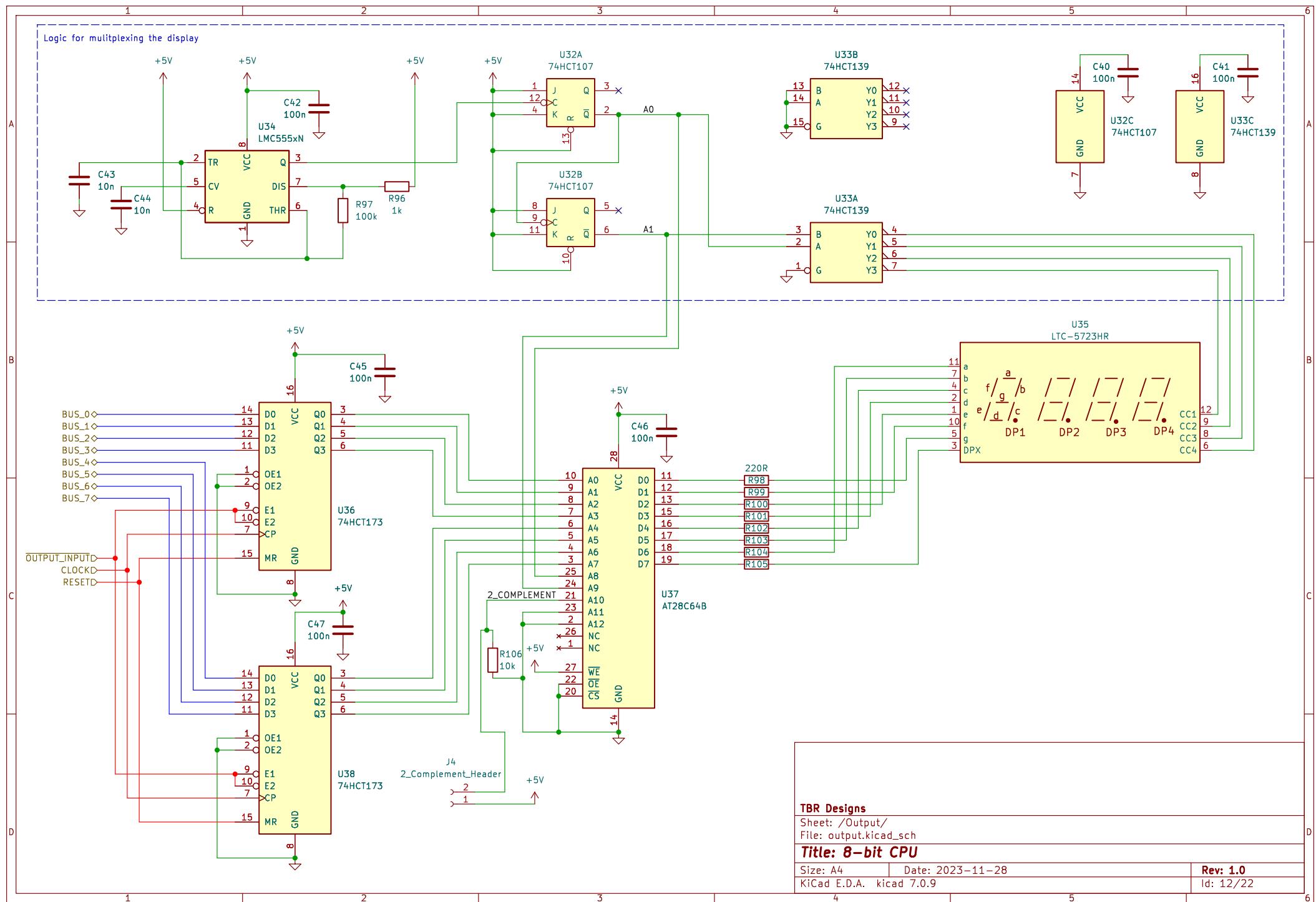
TBR Designs

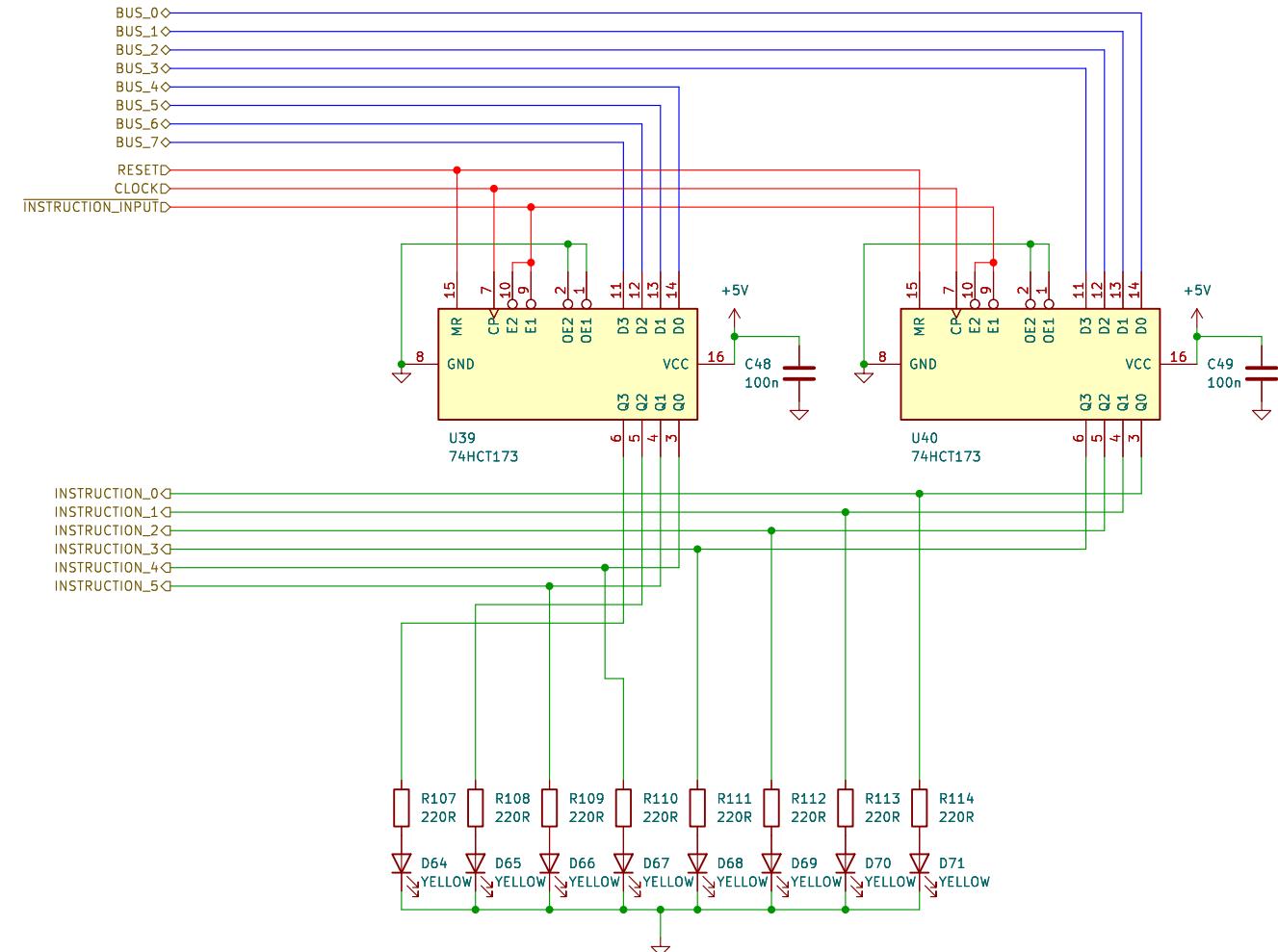
Sheet: /Program Counter/
File: program-counter.kicad_sch

Title: 8-bit CPU

Size: A4 | Date: 2023-11-28
KiCad E.D.A. kicad 7.0.9

Rev: 1.0
Id: 11/22





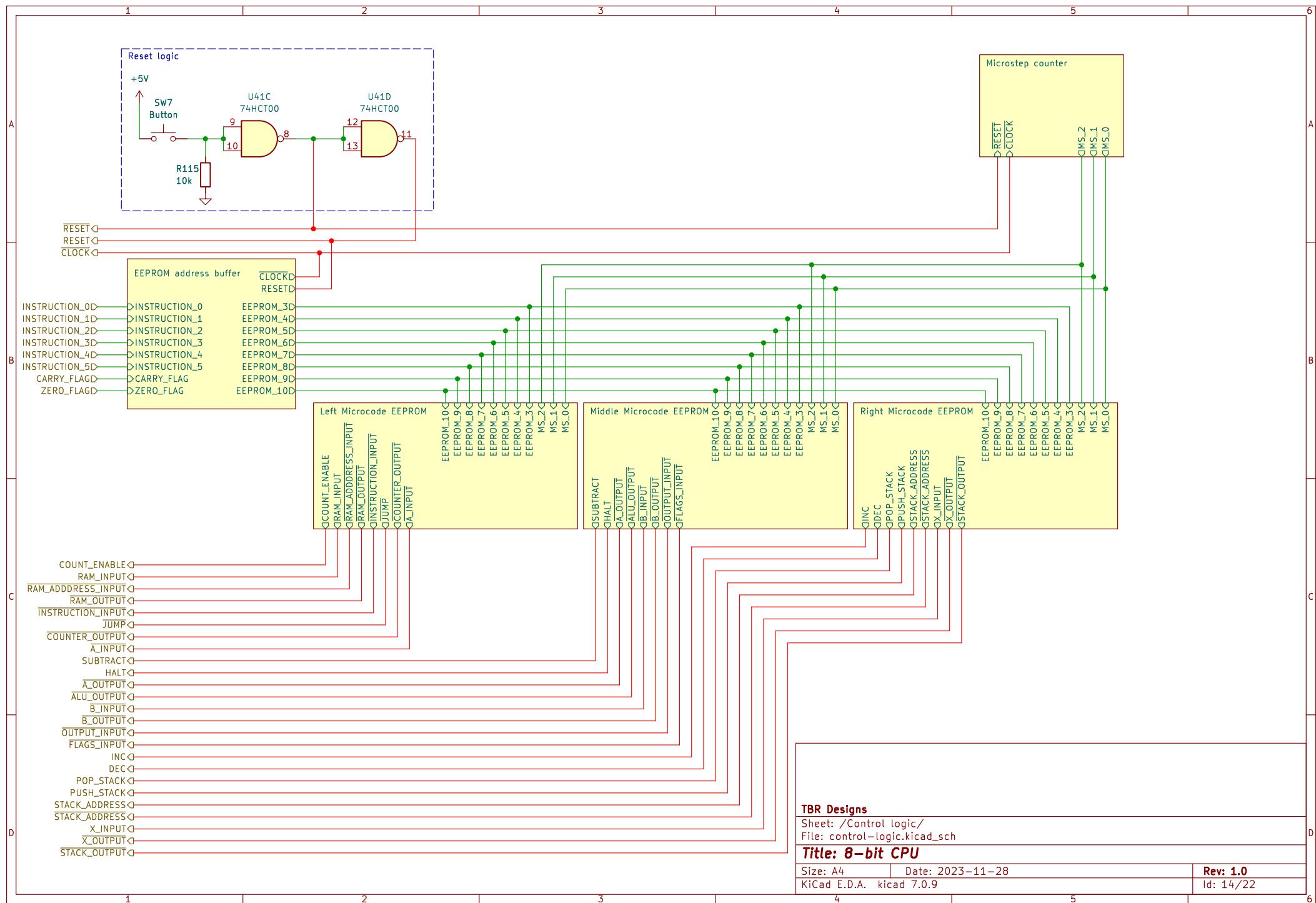
TBR Designs

Sheet: /Instruction register/
 File: instruction-register.kicad_sch

Title: 8-bit CPU

Size: A4 | Date: 2023-11-28
 KiCad E.D.A. kicad 7.0.9

Rev: 1.0
 Id: 13/22



This address buffer triggers on the inverted CLOCK.
 I had to include this because during an address transition the outputs of the EEPROM's are undefined.
 They vary wildly and random actions were triggered briefly.
 Making the address change on the inverted CLOCK seems to solve this issue because all of the other logic is triggered on the CLOCK.

A

B

C

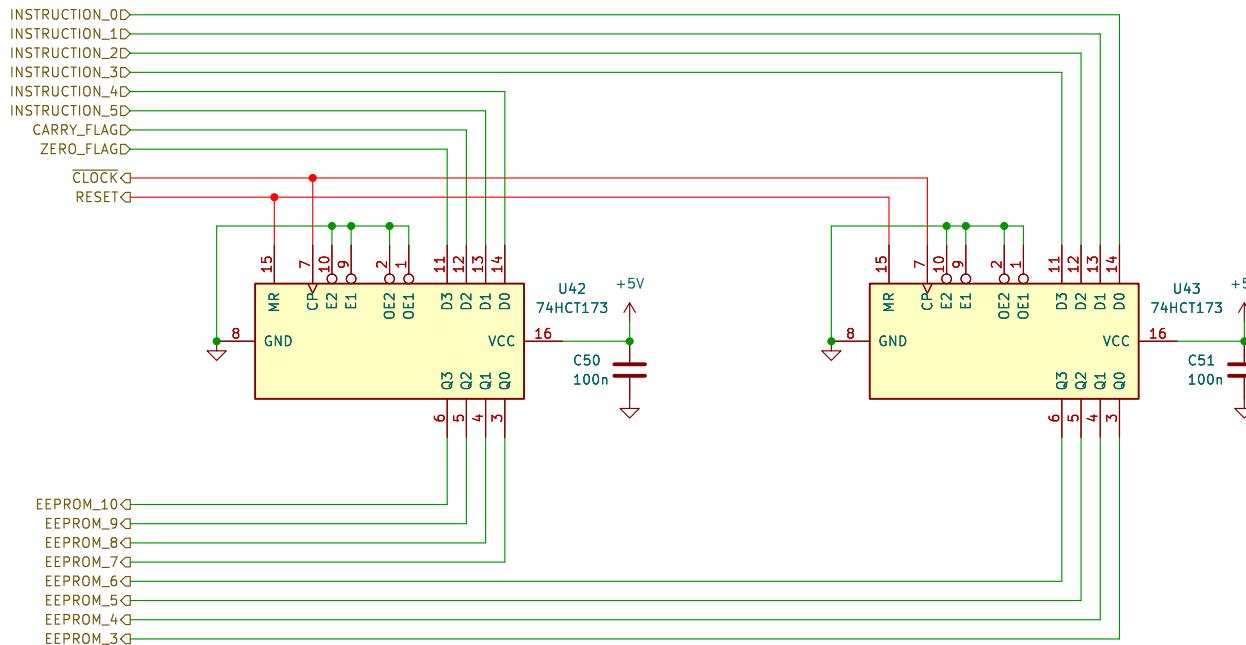
D

A

B

C

D



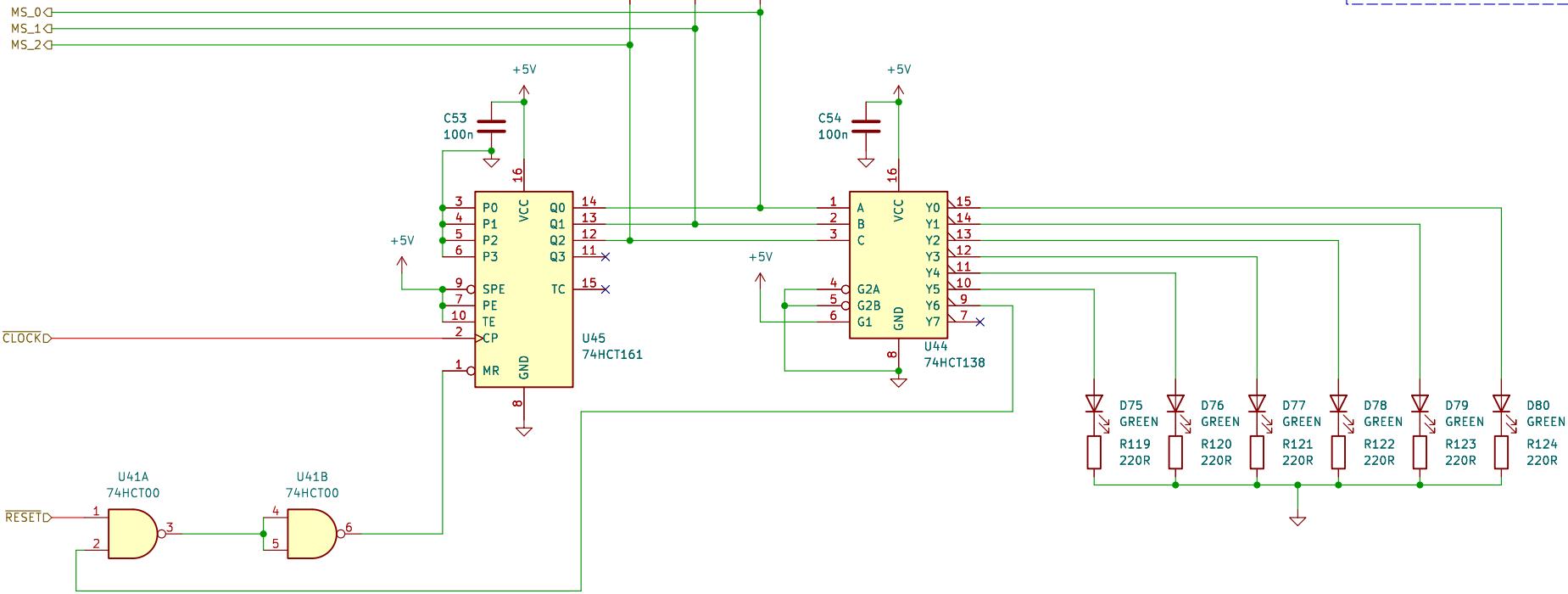
TBR Designs

Sheet: /Control logic/EEPROM_address_buffer/
 File: eeprom-address-buffer.kicad_sch

Title: 8-bit CPU

Size: A4 | Date: 2023-11-28
 KiCad E.D.A. kicad 7.0.9

Rev: 1.0
 Id: 15/22



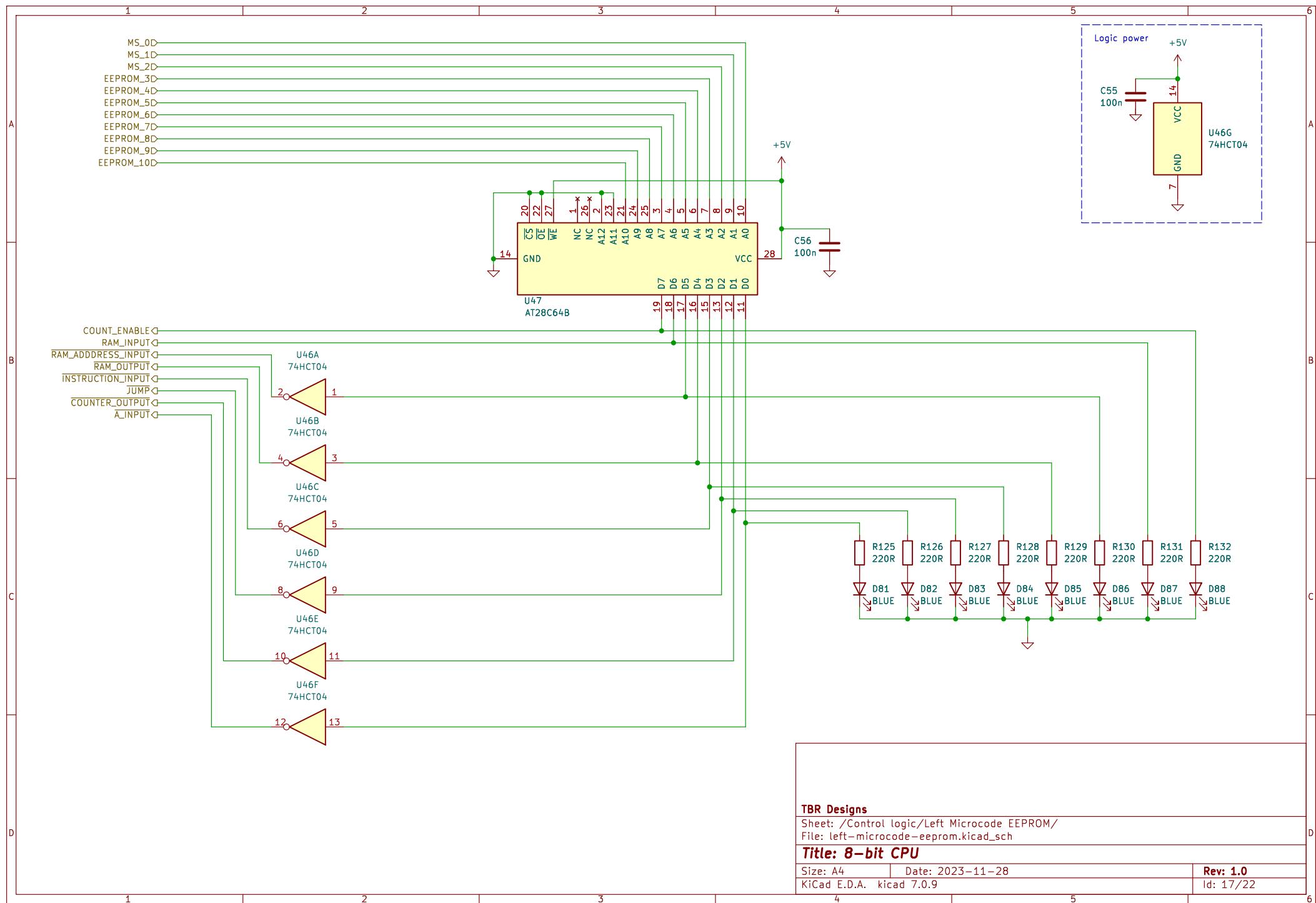
TBR Designs

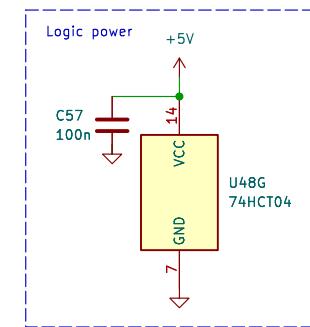
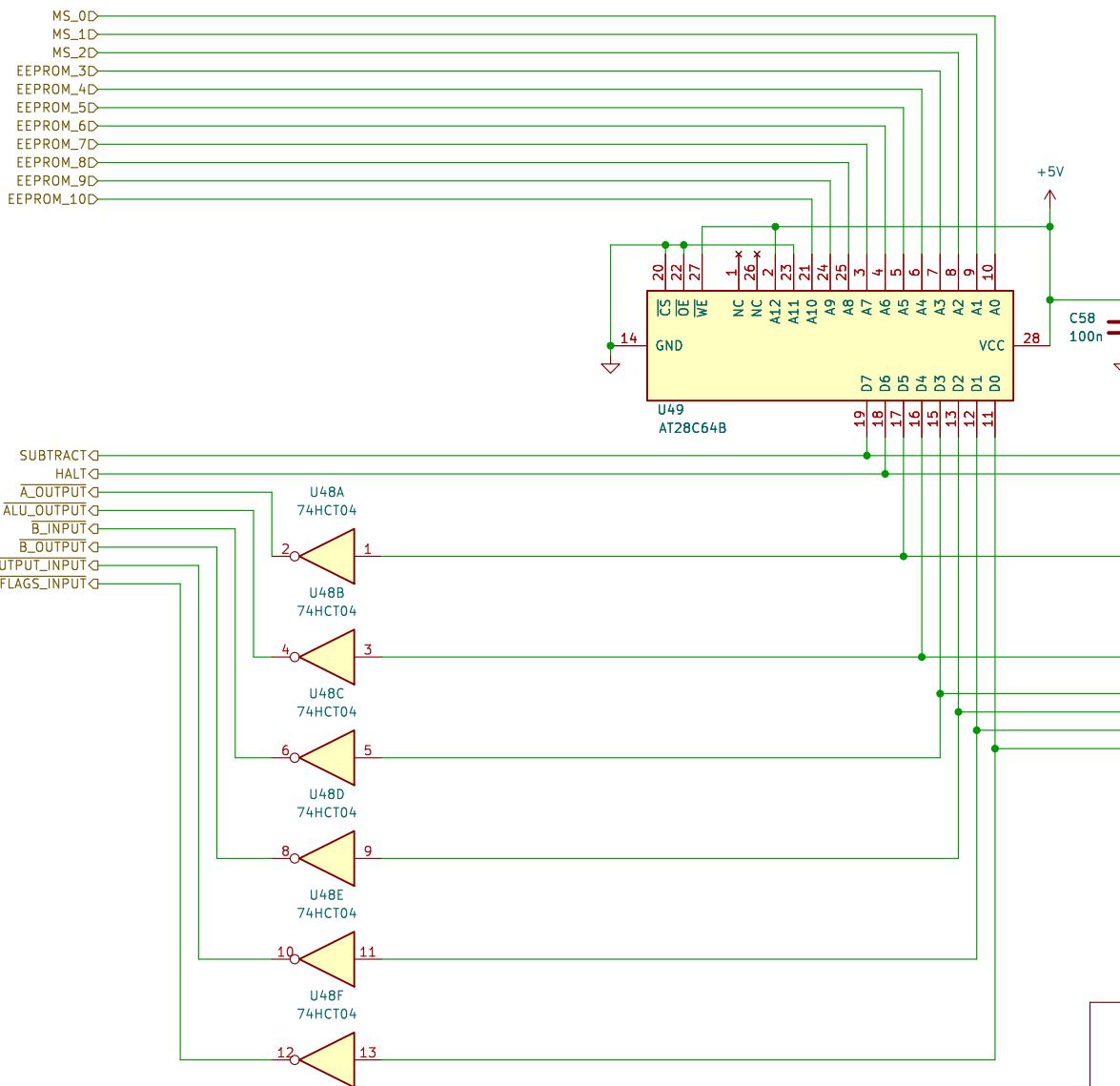
Sheet: /Control logic/Microstep counter/
File: microstep-counter.kicad_sch

Title: 8-bit CPU

Size: A4 Date: 2023-11-28
KiCad E.D.A. kicad 7.0.9

Rev: 1.0
Id: 16/22





TBR Designs

Sheet: /Control logic/Middle Microcode EEPROM/
File: middle-microcode-eeprom.kicad_sch

Title: 8-bit CPU

Size: A4 Date: 2023-11-28
KiCad E.D.A. kicad 7.0.9

Rev: 1.0
Id: 18/22

