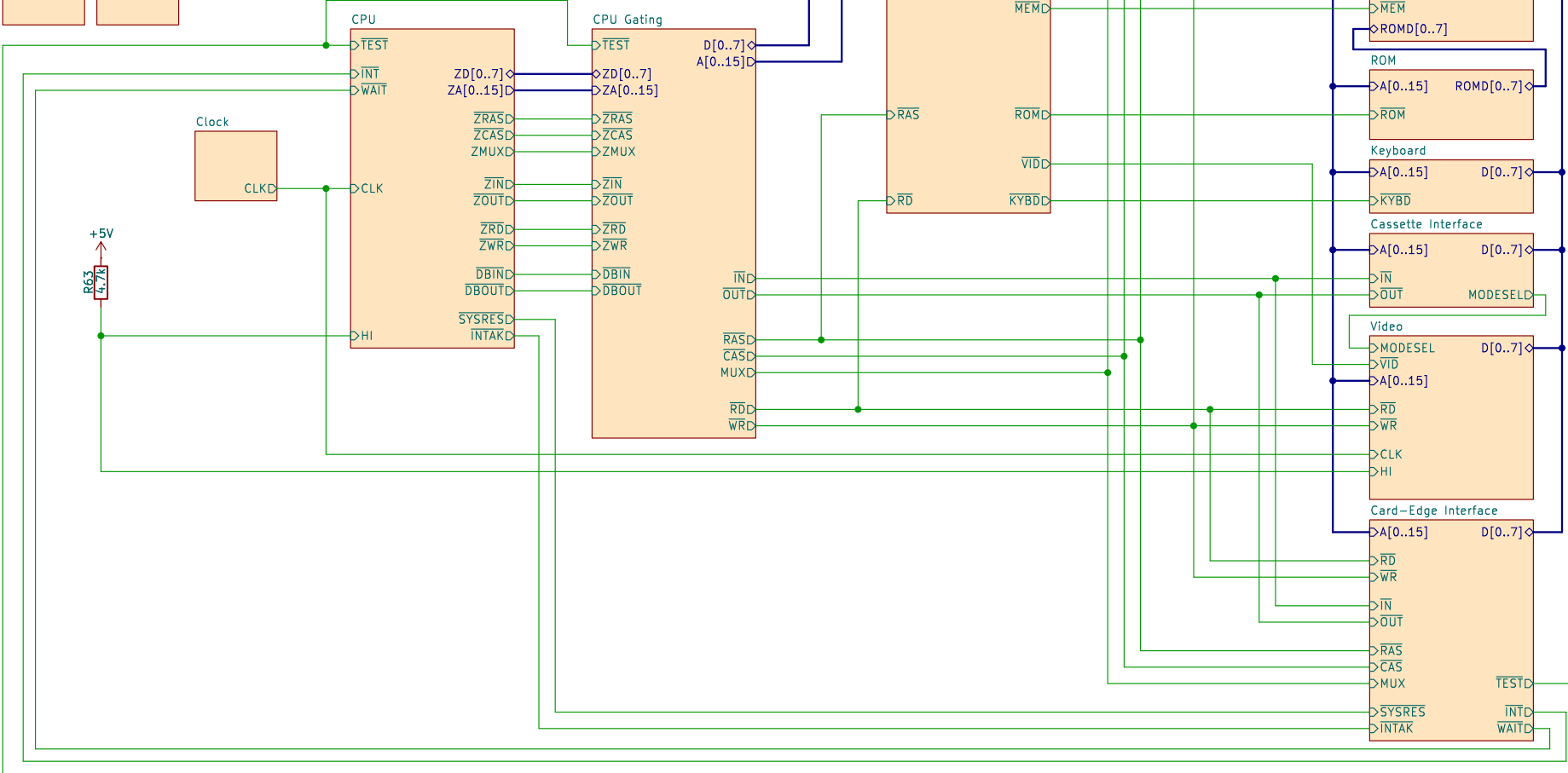
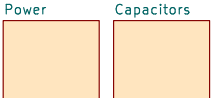


TRS-80 Model I

1700069 A E1



System Overview

Full overview of the system

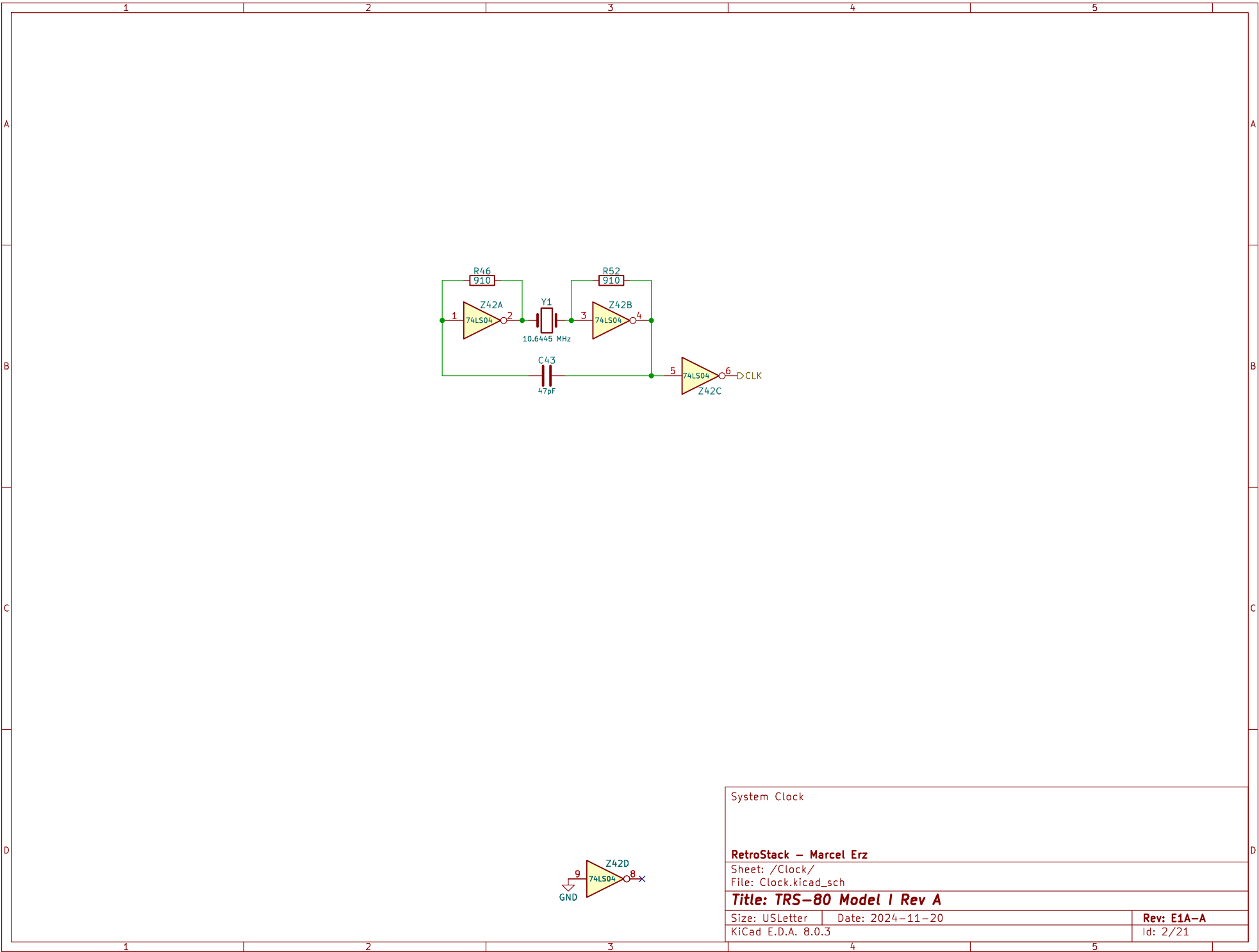
RetroStack – Marcel Erz

Sheet: /
File: TRS80_ModelI_A_E1.kicad_sch

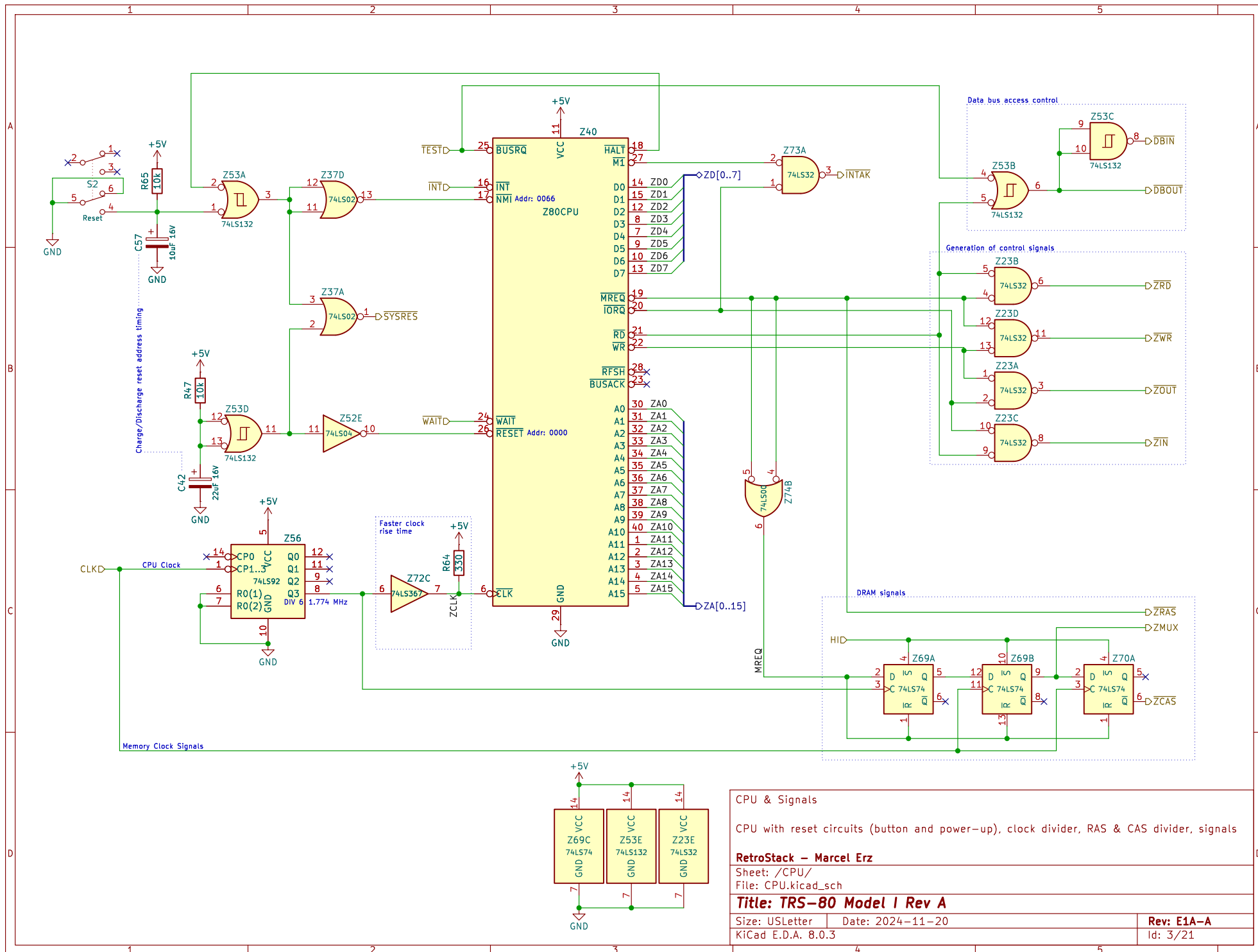
Title: TRS-80 Model I Rev A

Size: USLetter Date: 2024-11-20
KiCad E.D.A. 8.0.3

Rev: E1A-A
Id: 1/21



System Clock	
RetroStack – Marcel Erz	
Sheet: /Clock/ File: Clock.kicad_sch	
Title: TRS-80 Model I Rev A	
Size: USLetter	Date: 2024-11-20
KiCad E.D.A. 8.0.3	Rev: E1A-A Id: 2/21



CPU & Signals

CPU with reset circuits (button and power-up), clock divider, RAS & CAS divider, signals

RetroStack – Marcel Erz

Sheet: /CPU/

File: CPU.kicad_sch

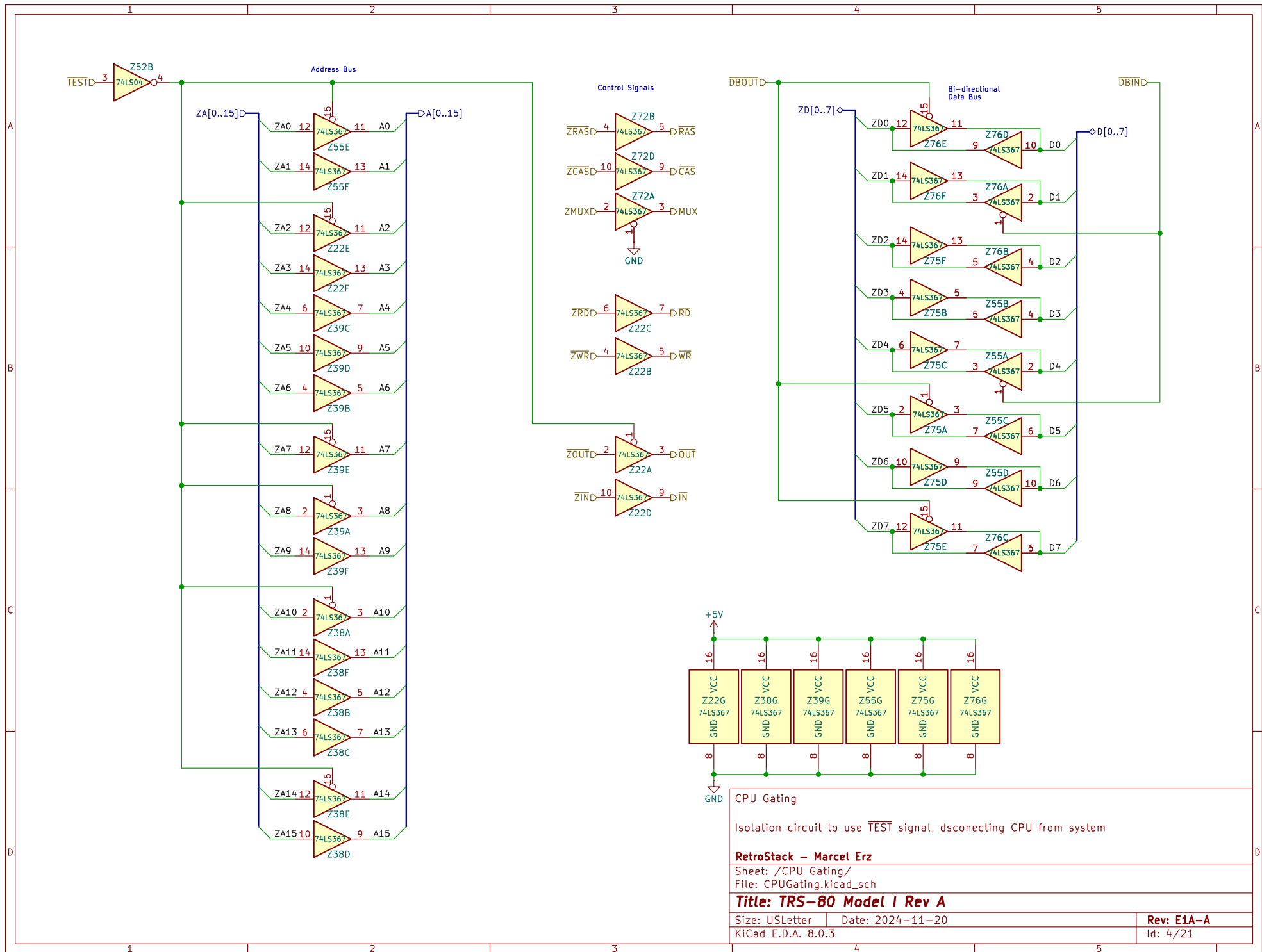
Title: TRS-80 Model I Rev A

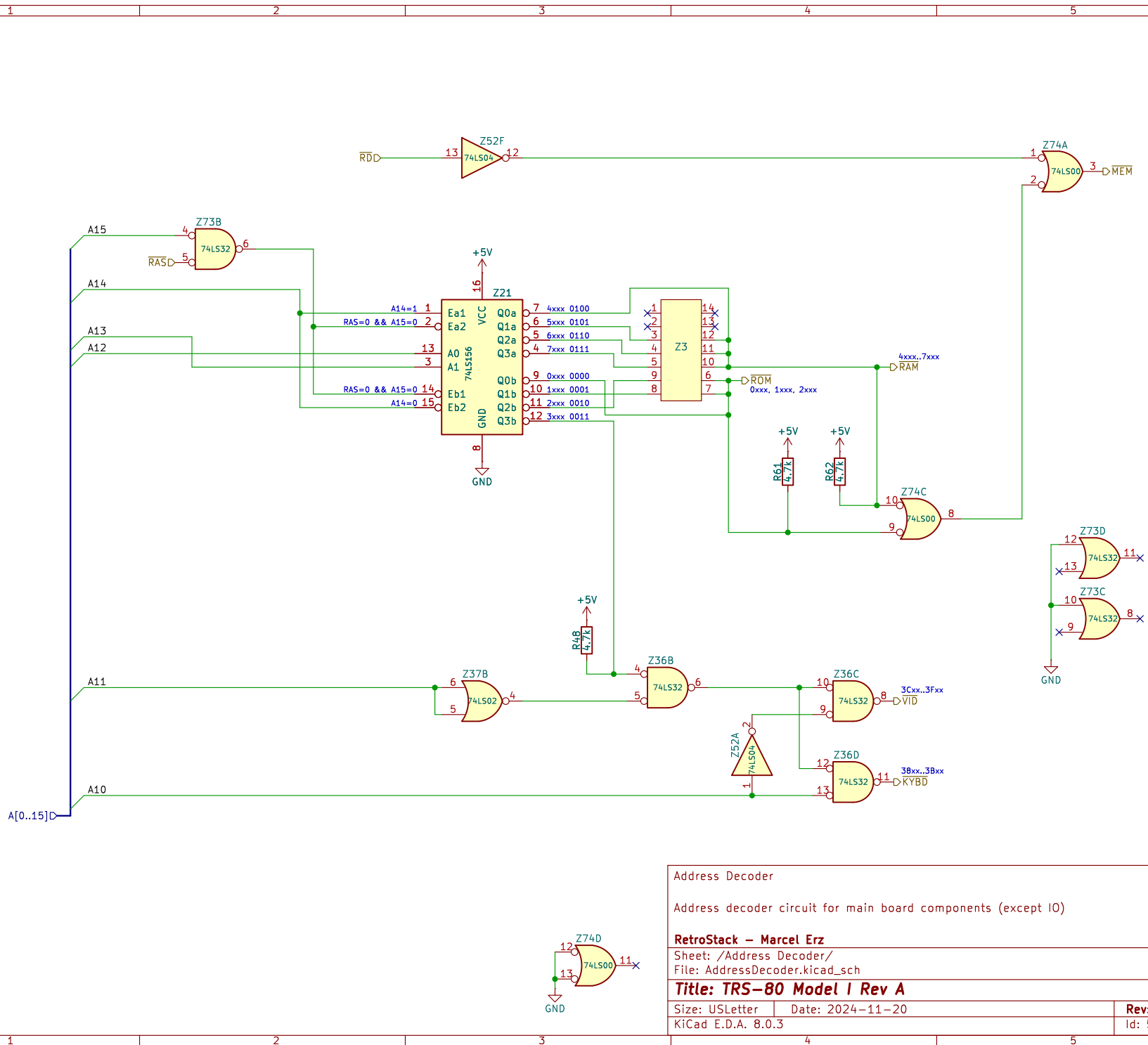
Size: USLetter Date: 2024-11-20

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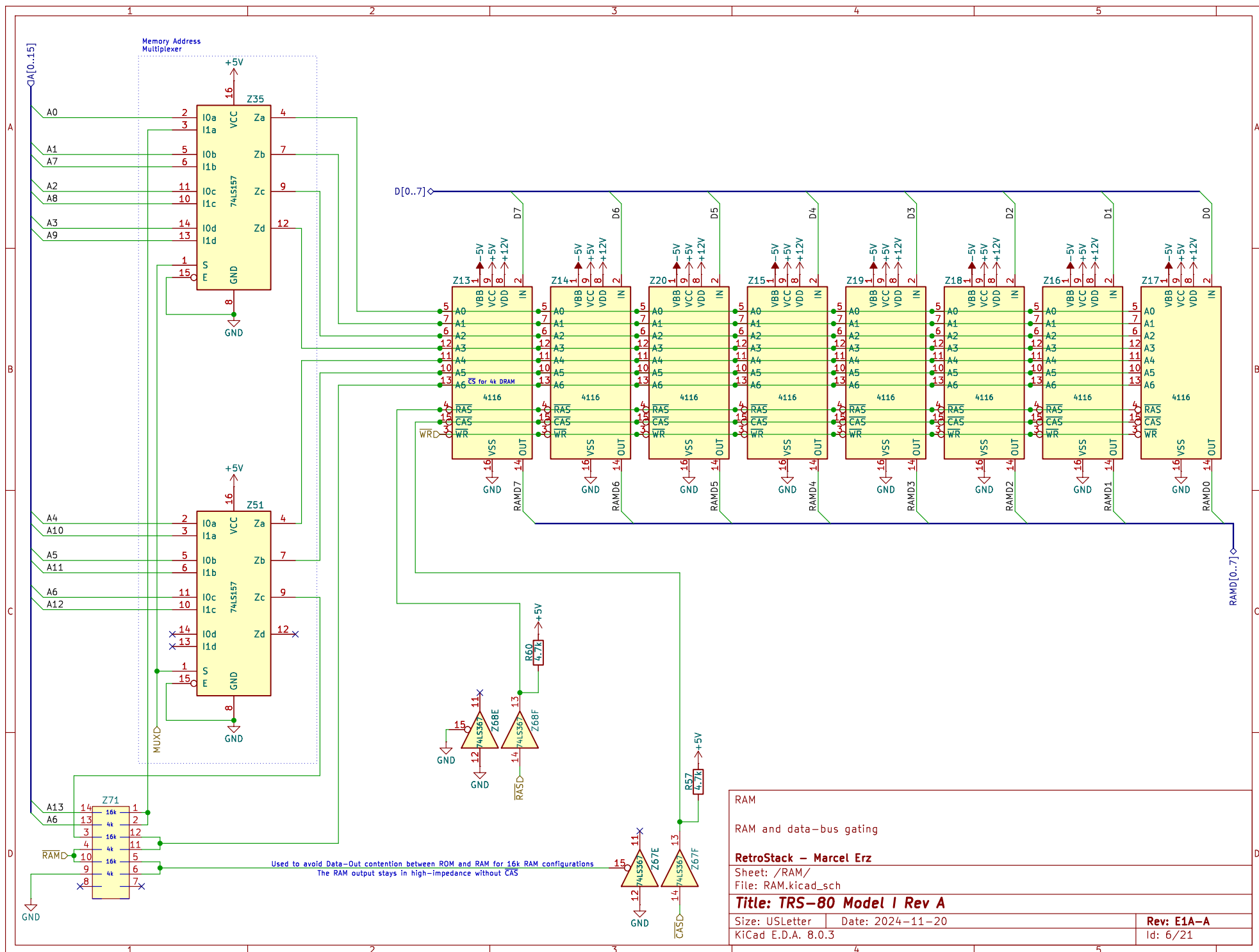
Rev: E1A-A

Id: 3/21





Address Decoder	
Address decoder circuit for main board components (except IO)	
RetroStack – Marcel Erz Sheet: /Address Decoder/ File: AddressDecoder.kicad_sch	
Title: TRS-80 Model I Rev A	
Size: USLetter	Date: 2024-11-20
KiCad E.D.A. 8.0.3	Rev: E1A-A
	Id: 5/21



RAM

RAM and data-bus gating

RetroStack – Marcel Erz

Sheet: /RAM/

File: RAM.kicad_sch

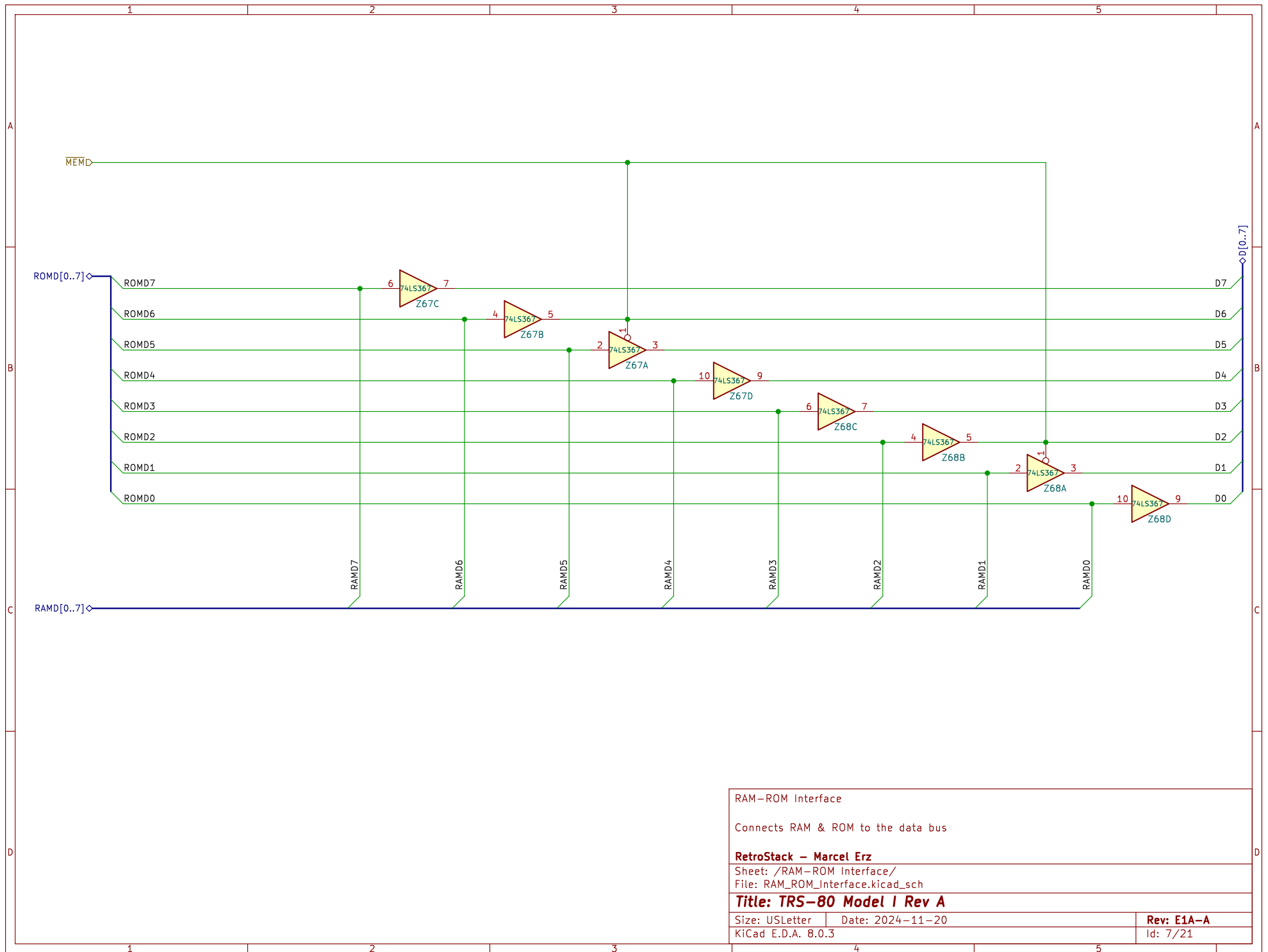
Title: TRS-80 Model I Rev A

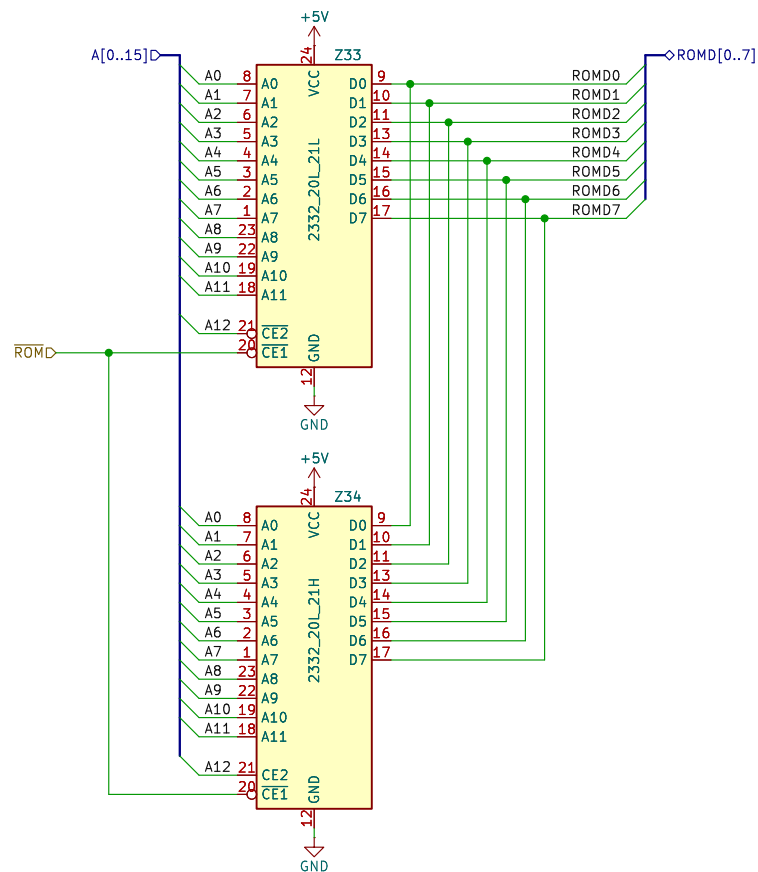
Size: USLetter	Date: 2024-11-20
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Rev: E1A-A

Id: 6/21





- Level I ROMs:
- Intel 2616 EPROM (White Crystal Window)
 - National MM2316 ROM (Colored Ceramic) (R/D=ROM A, S/D=ROM B)
 - Motorola 7800 Series ROMs (7807=ROM A, 7804=ROM B)
 - Motorola 7800 Series ROMs (7809=ROM A & B)
- Level II ROMs:
- Generic 3 ROMs on separate board with logic chip (each 32kbit/4kb)
 - NEC 8043364 & 8043732 (64kbit/8kb & 32kbit/4kb) (early 1979)
 - NEC 8044364 & 8044732 (64kbit/8kb & 32kbit/4kb) (early 1980)

ROM

ROM circuit

RetroStack – Marcel Erz

Sheet: /ROM/

File: ROM.kicad_sch

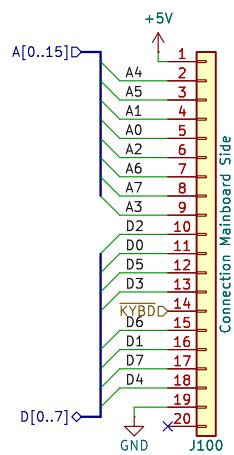
Title: TRS-80 Model I Rev A

Size: USLetter Date: 2024-11-20

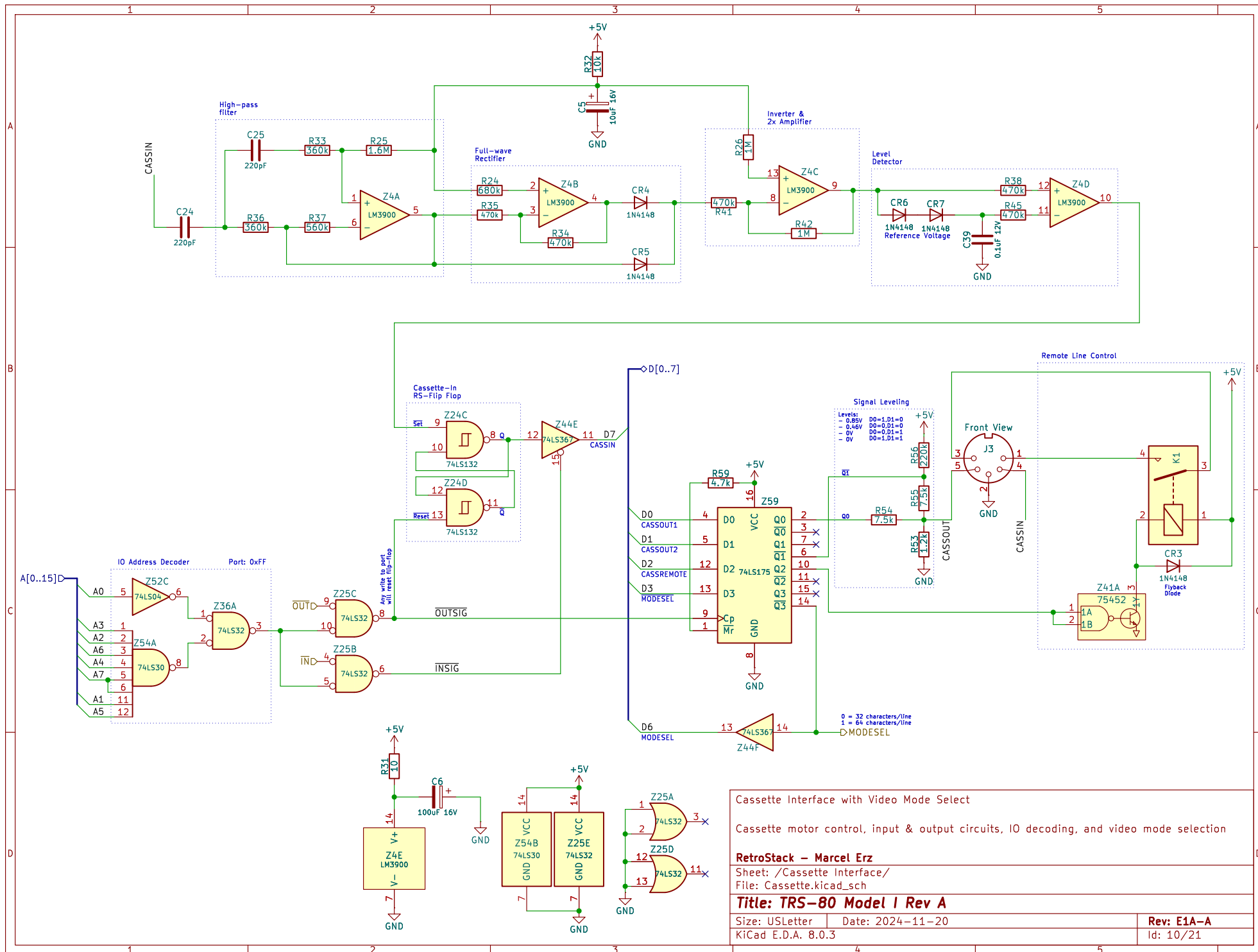
KiCad E.D.A. 8.0.3

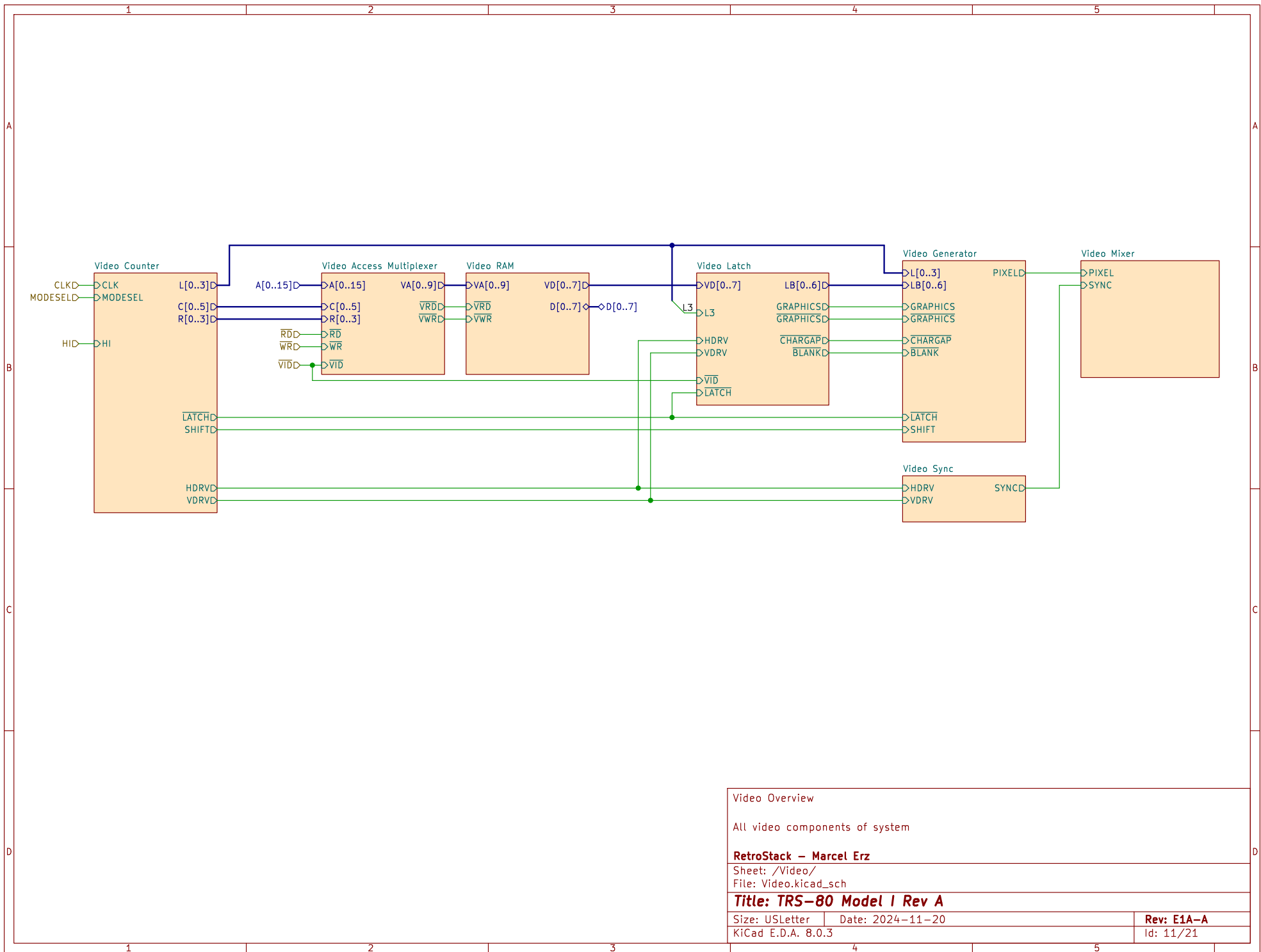
Rev: E1A-A

Id: 8/21

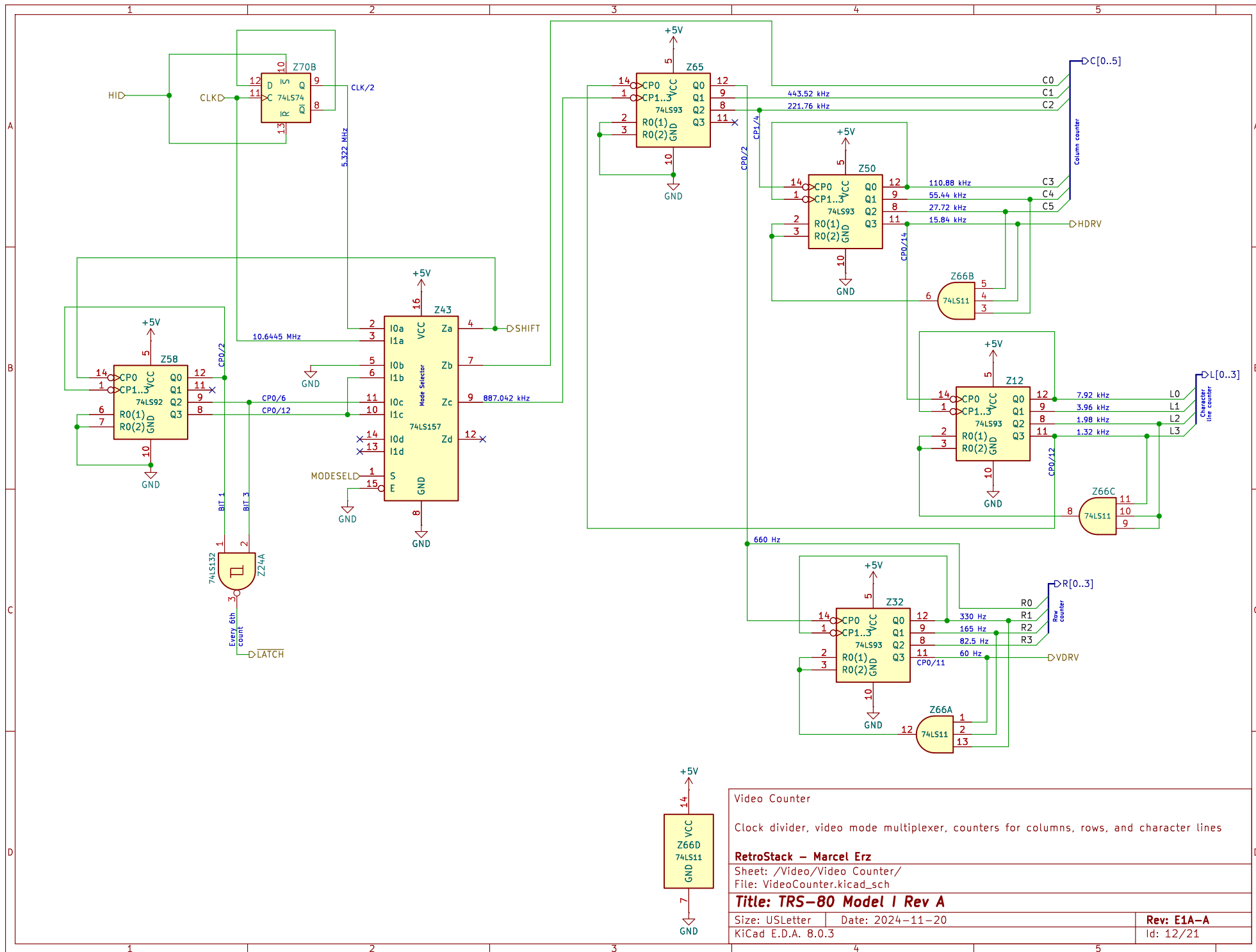


Keyboard & Interface		
Keyboard interface circuit		
RetroStack – Marcel Erz		
Sheet: /Keyboard/ File: Keyboard.kicad_sch		
Title: TRS-80 Model I Rev A		
Size: USLetter	Date: 2024-11-20	Rev: E1A-A
KiCad E.D.A. 8.0.3		Id: 9/21

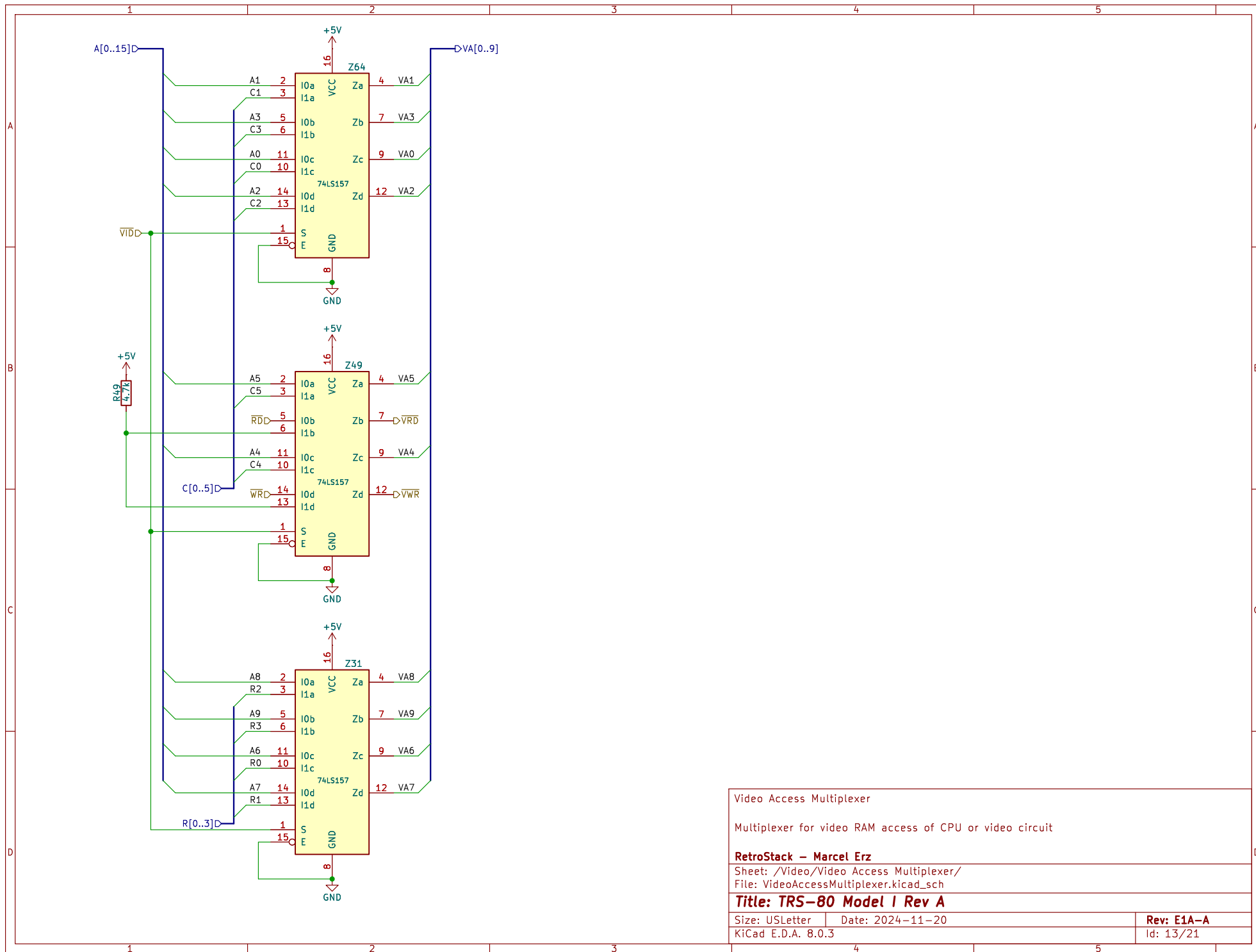




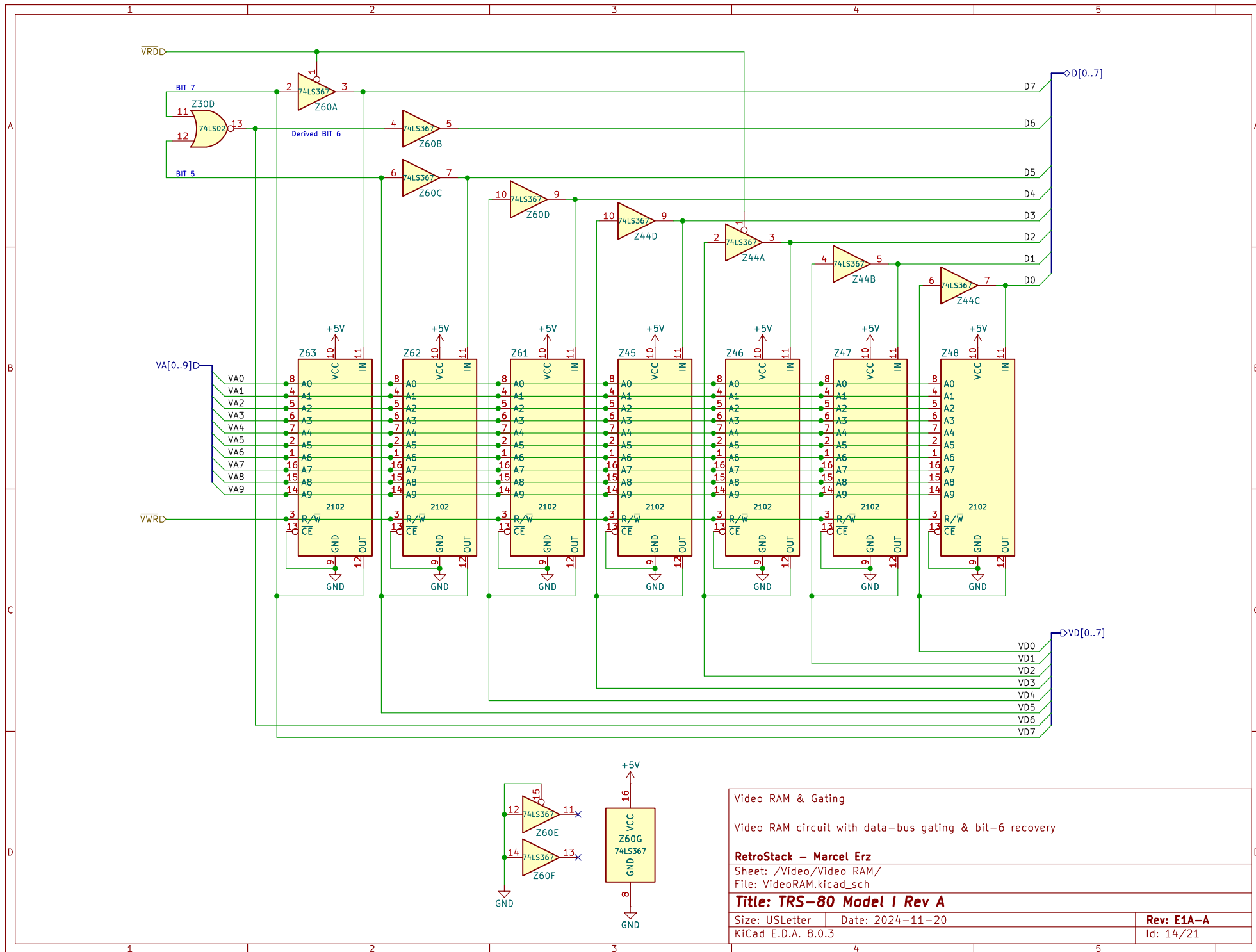
Video Overview		
All video components of system		
RetroStack – Marcel Erz		
Sheet: /Video/ File: Video.kicad_sch		
Title: TRS-80 Model I Rev A		
Size: USLetter	Date: 2024-11-20	Rev: E1A-A
KiCad E.D.A. 8.0.3		Id: 11/21

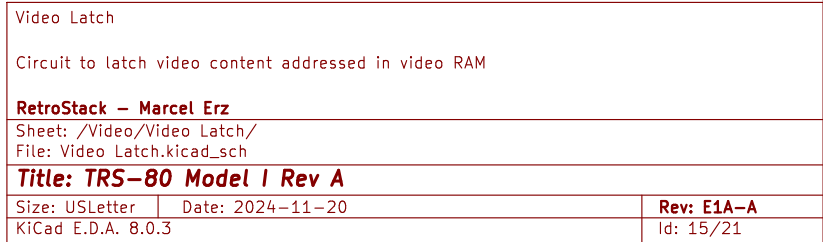


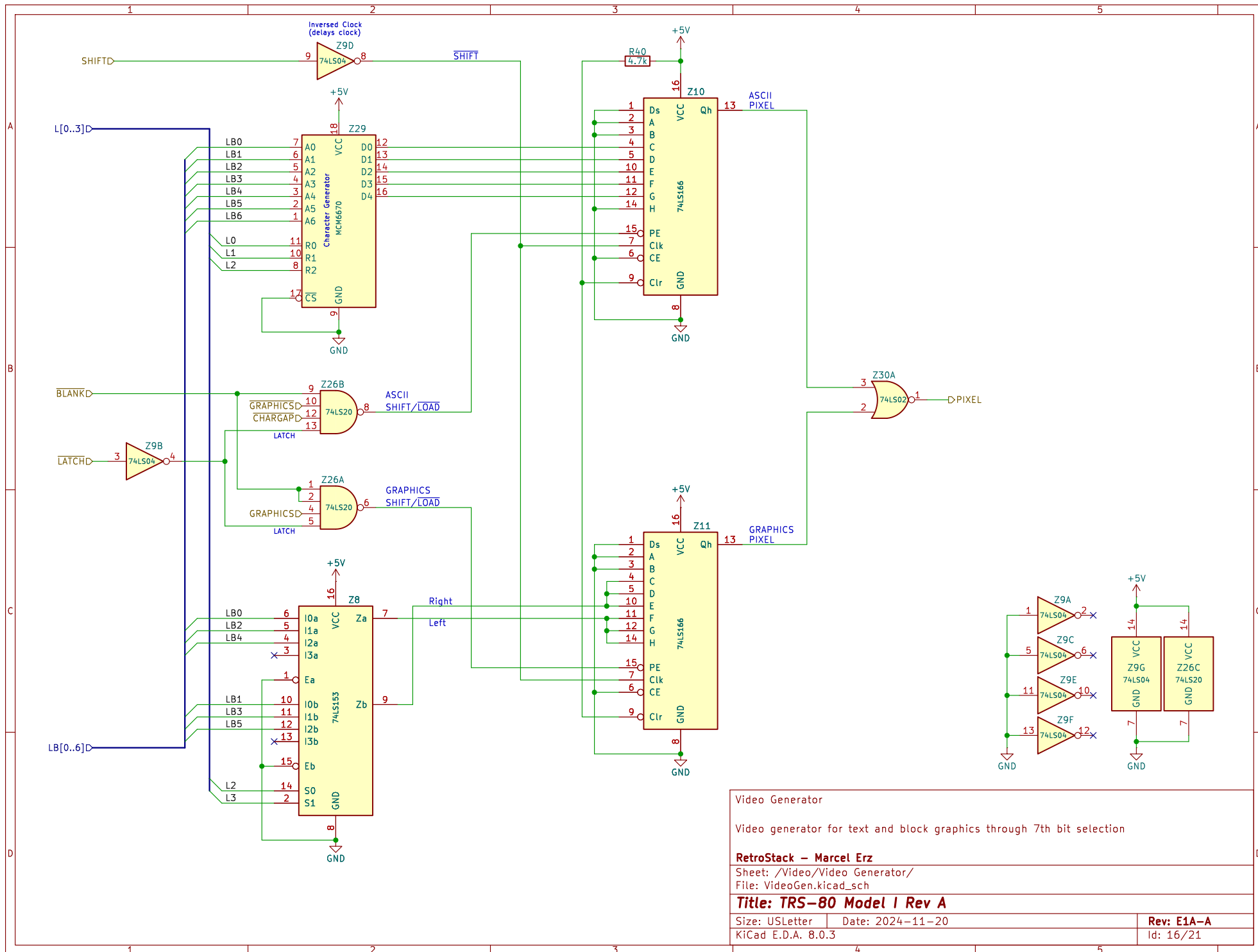
Video Counter	
Clock divider, video mode multiplexer, counters for columns, rows, and character lines	
RetroStack – Marcel Erz	
Sheet: /Video/Video Counter/	
File: VideoCounter.kicad_sch	
Title: TRS-80 Model I Rev A	
Size: USLetter	Date: 2024-11-20
KiCad E.D.A. 8.0.3	Rev: E1A-A
	Id: 12/21

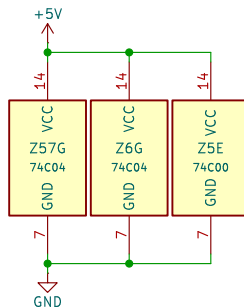
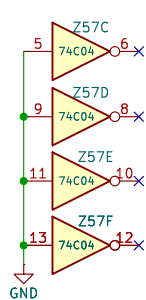
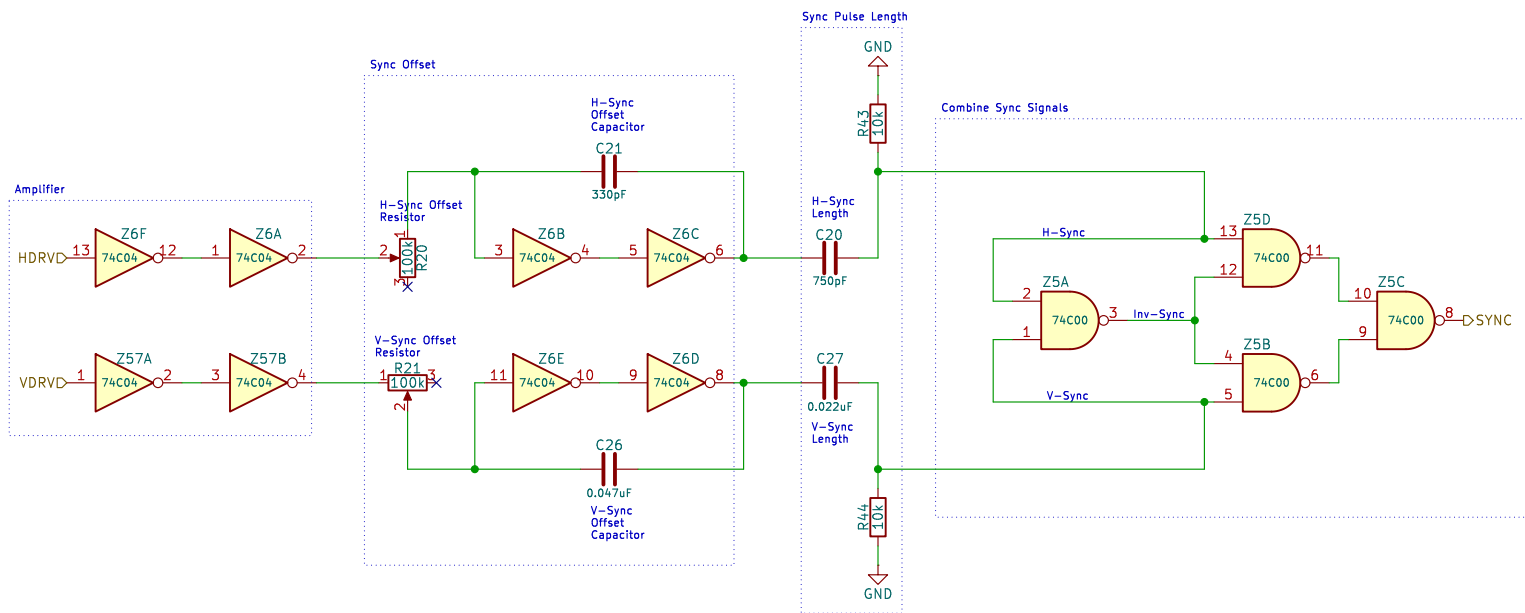


Video Access Multiplexer	
Multiplexer for video RAM access of CPU or video circuit	
RetroStack – Marcel Erz	
Sheet: /Video/Video Access Multiplexer/ File: VideoAccessMultiplexer.kicad_sch	
Title: TRS-80 Model I Rev A	
Size: USLetter	Date: 2024-11-20
KiCad E.D.A. 8.0.3	Rev: E1A-A Id: 13/21









Video Sync

Circuit to combine sync signals and defining front- and back-porches in video signal

RetroStack – Marcel Erz

Sheet: /Video/Video Sync/

File: VideoSync.kicad_sch

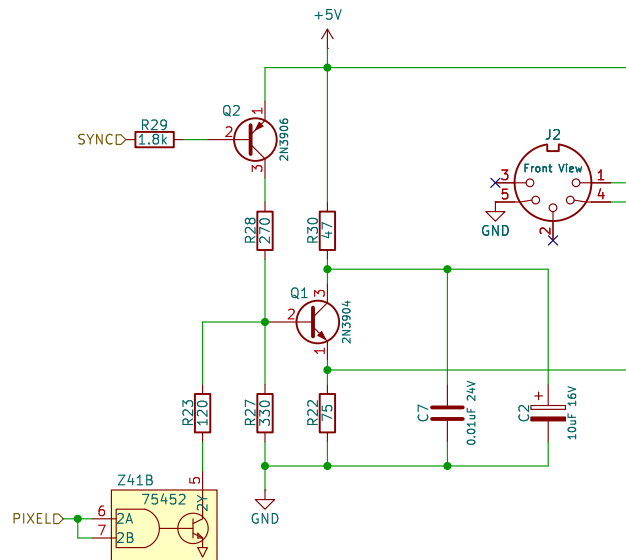
Title: TRS-80 Model I Rev A

Size: USLetter Date: 2024-11-20

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Rev: E1A-A

Id: 17/21



Q2 open, Z41 any => 0V (sync level)
 Q2 closed, Z41 closed => 1.23V (black level) – R28 with series resistors R23 & R27
 Q2 closed, Z41 open => 2.75V (white level) – Only R27 & R28

Video Mixer	
Mixing circuit for sync and pixel data	
RetroStack – Marcel Erz	
Sheet: /Video/Video Mixer/ File: VideoMixer.kicad_sch	
Title: TRS-80 Model I Rev A	
Size: USLetter	Date: 2024-11-20
KiCad E.D.A. 8.0.3	Rev: E1A-A Id: 18/21

