

A

B

C

D

E

A

B

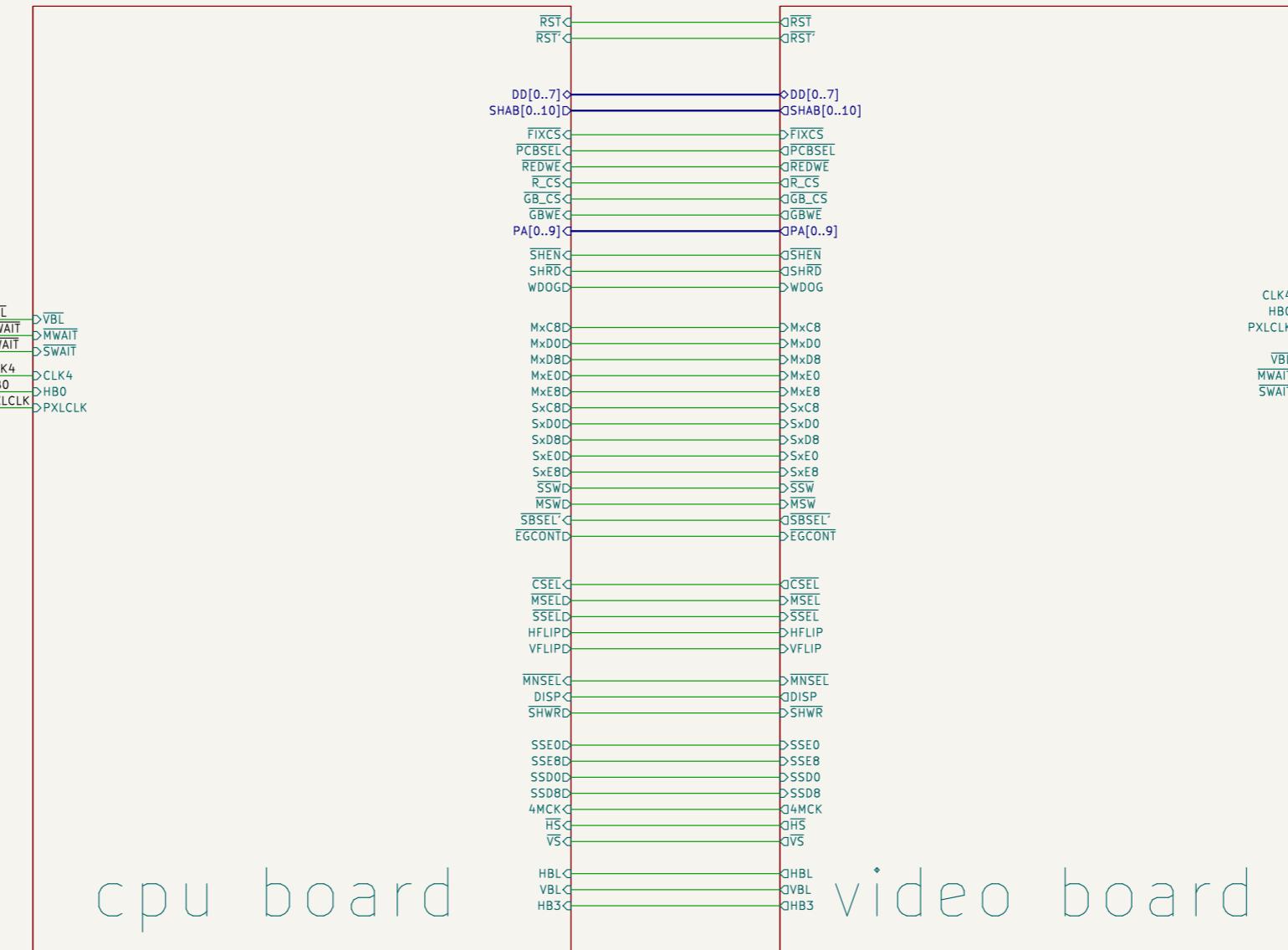
C

D

E

tehkanwch
bootleg board

- original PCB has through-hole vias whereas the bootleg has filled vias
- original uses three custom packages from Mitsubishi with logic inside.
These were replaced by a small daughter board on the bootleg, serving the same functionality
- different edge connectors
- debug edge connector on video board not present on bootleg
- cabinet input logic partly missing and rewired on the bootleg to replace the trackball interface for a joystick one
- different power amplifier for sound without heat sink on the bootleg
- slightly different frequencies for crystal oscillators (cost reduction?)
- device reference markers (silkscreen) on bootleg have reversed order on bootleg



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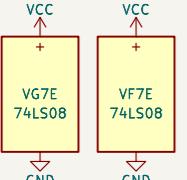
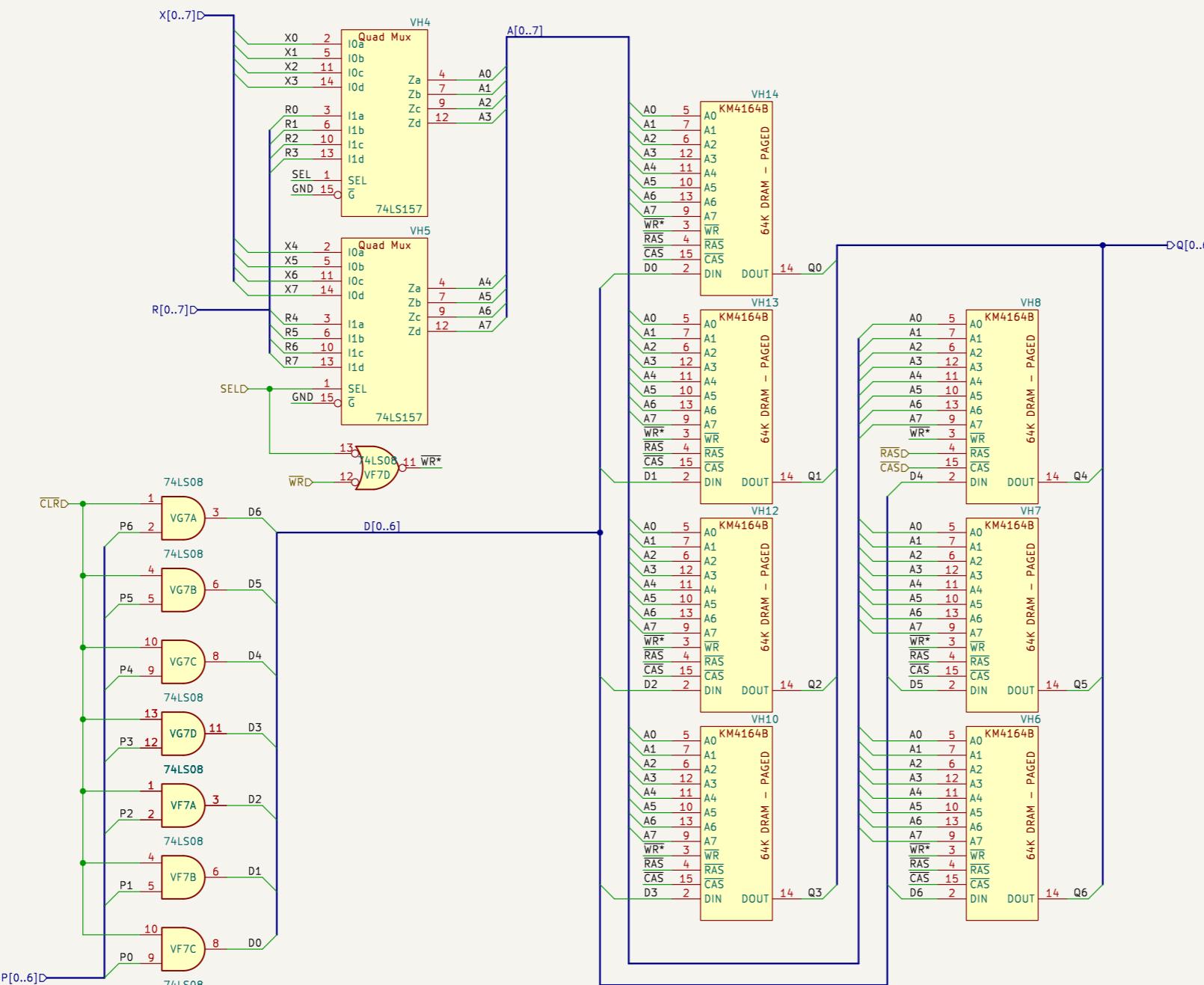
Sheet: /
File: tehkanwch.kicad_sch

Title: TEHKAN WORLD CUP (tehkanwch bootleg)

Size: A3 | Date: 2024-11-15
KiCad E.D.A. 8.0.9



Rev:
Id: 1/26



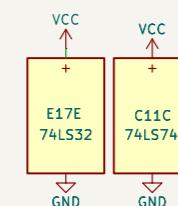
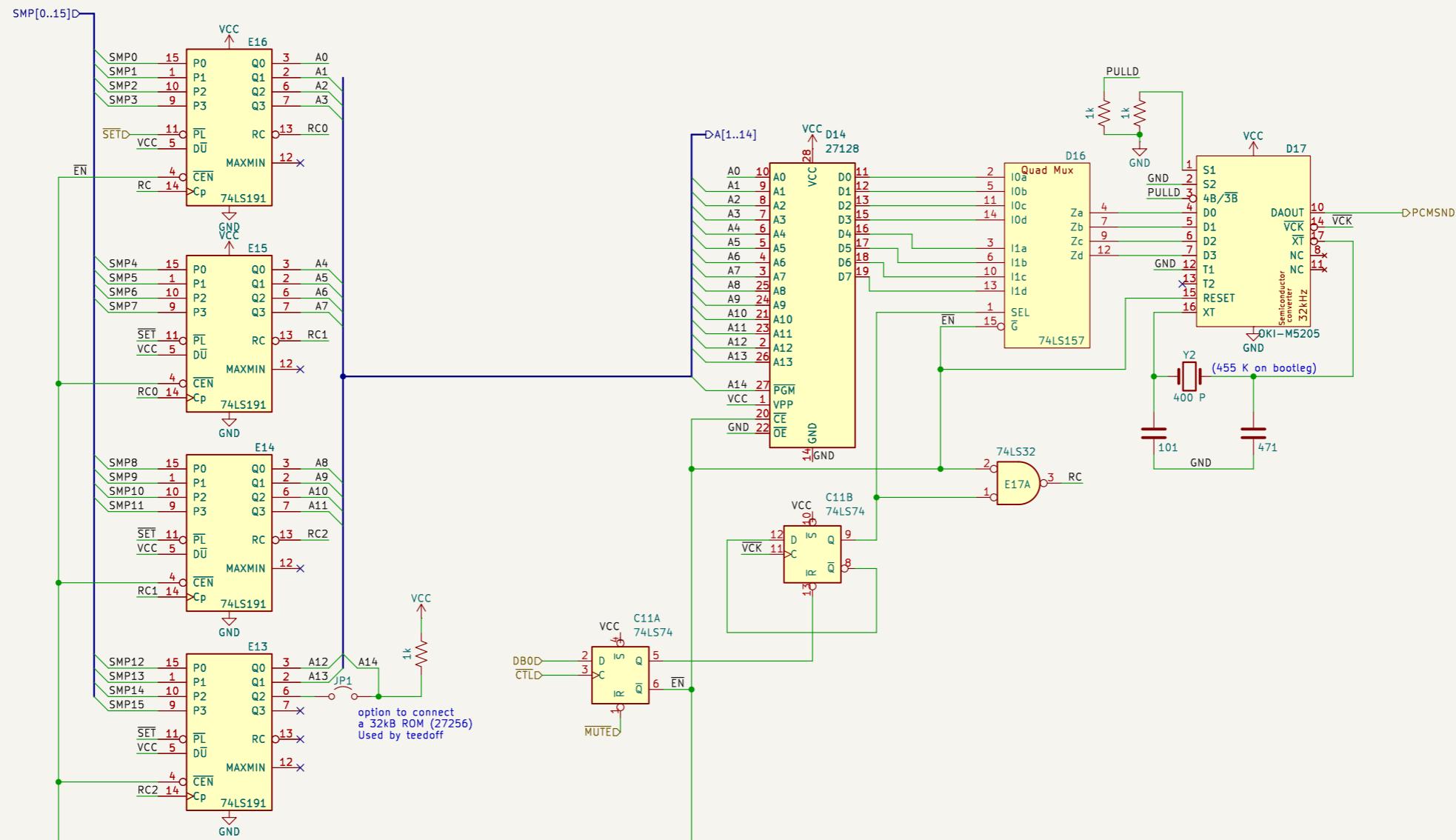
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Sheet: /video board/object/frame buffer B/
File: buffer.kicad_sch

Title: Line Buffer

Size: A3 | Date: 2024-11-15
KiCad E.D.A. 8.0.9

Rev: 2/26



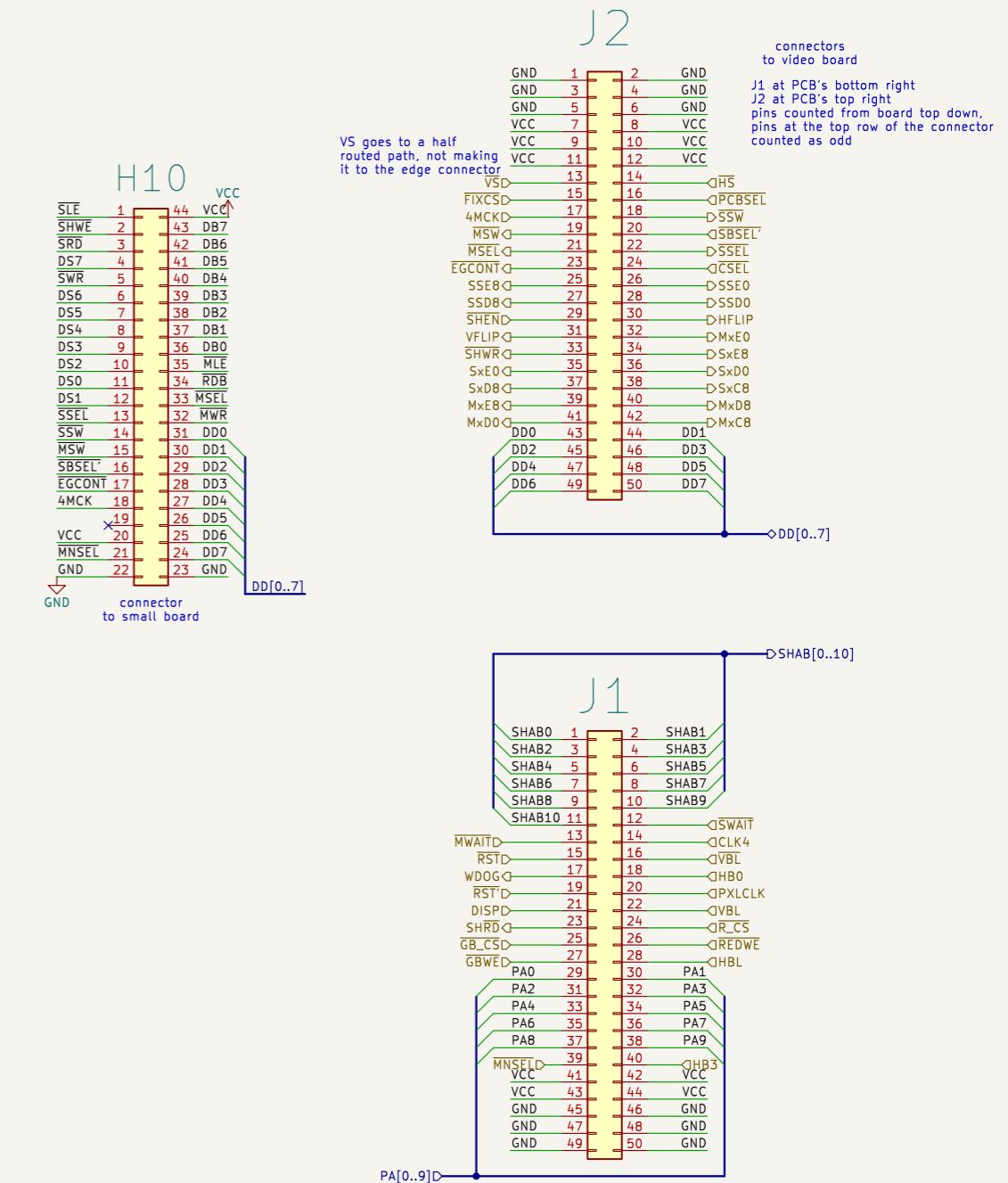
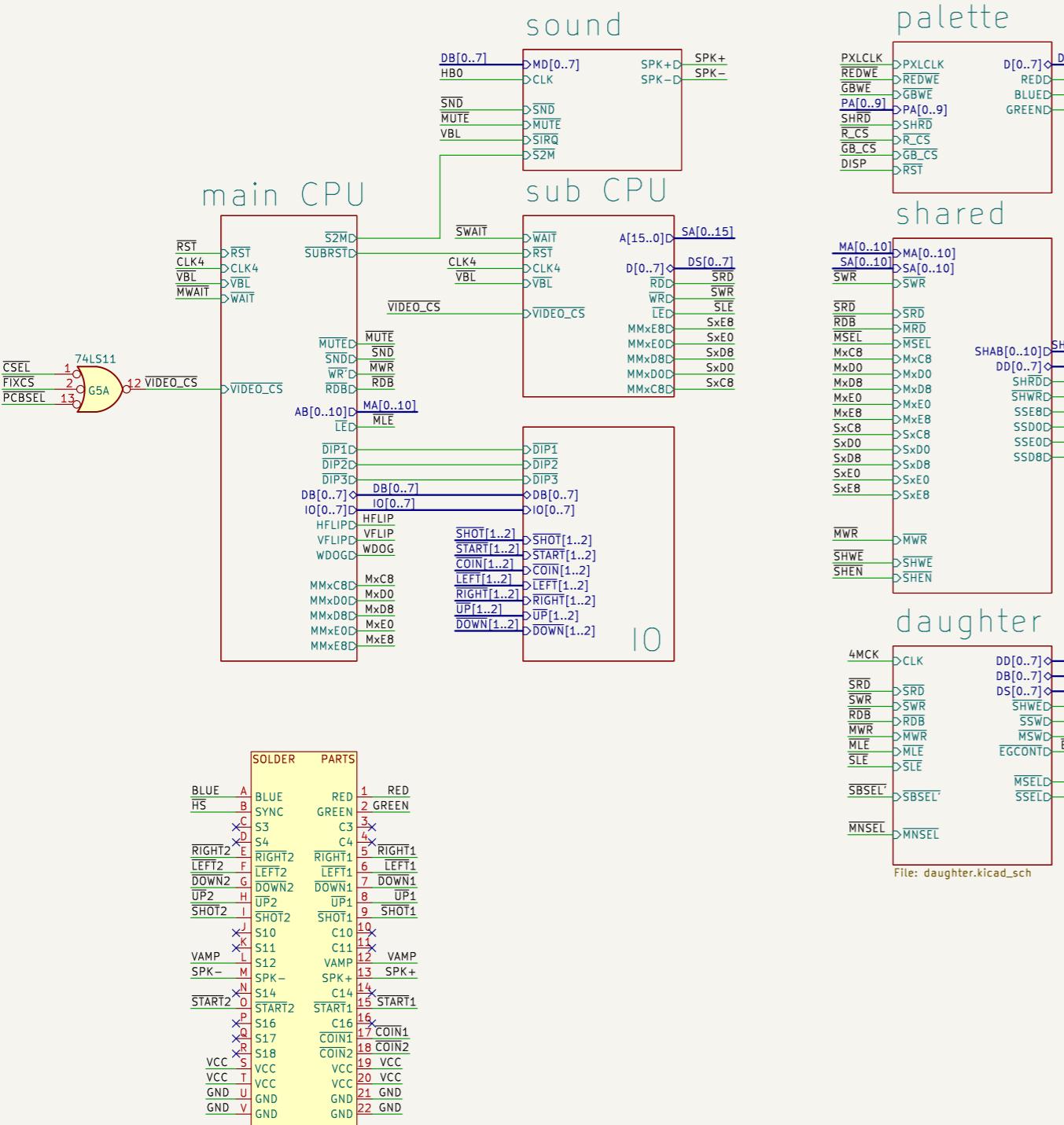
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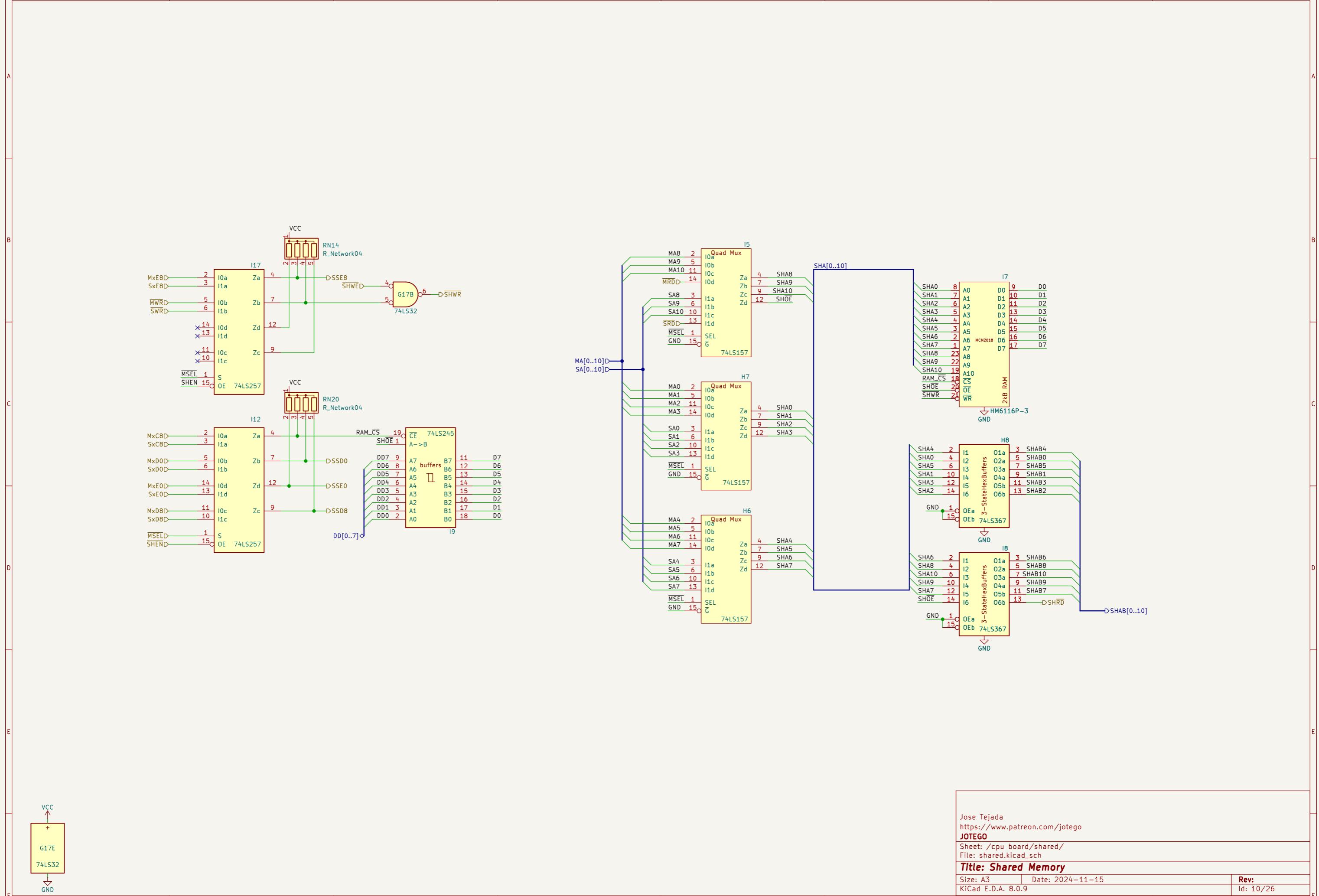
Sheet: /cpu_board/sound/PCM/
File: pcm.kicad_sch

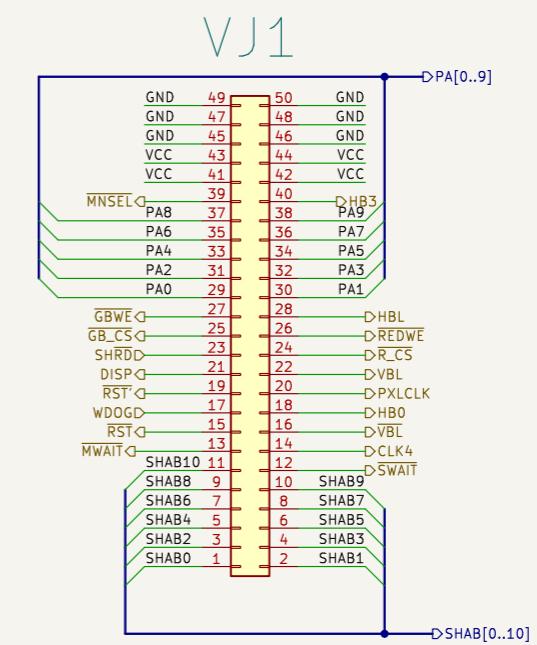
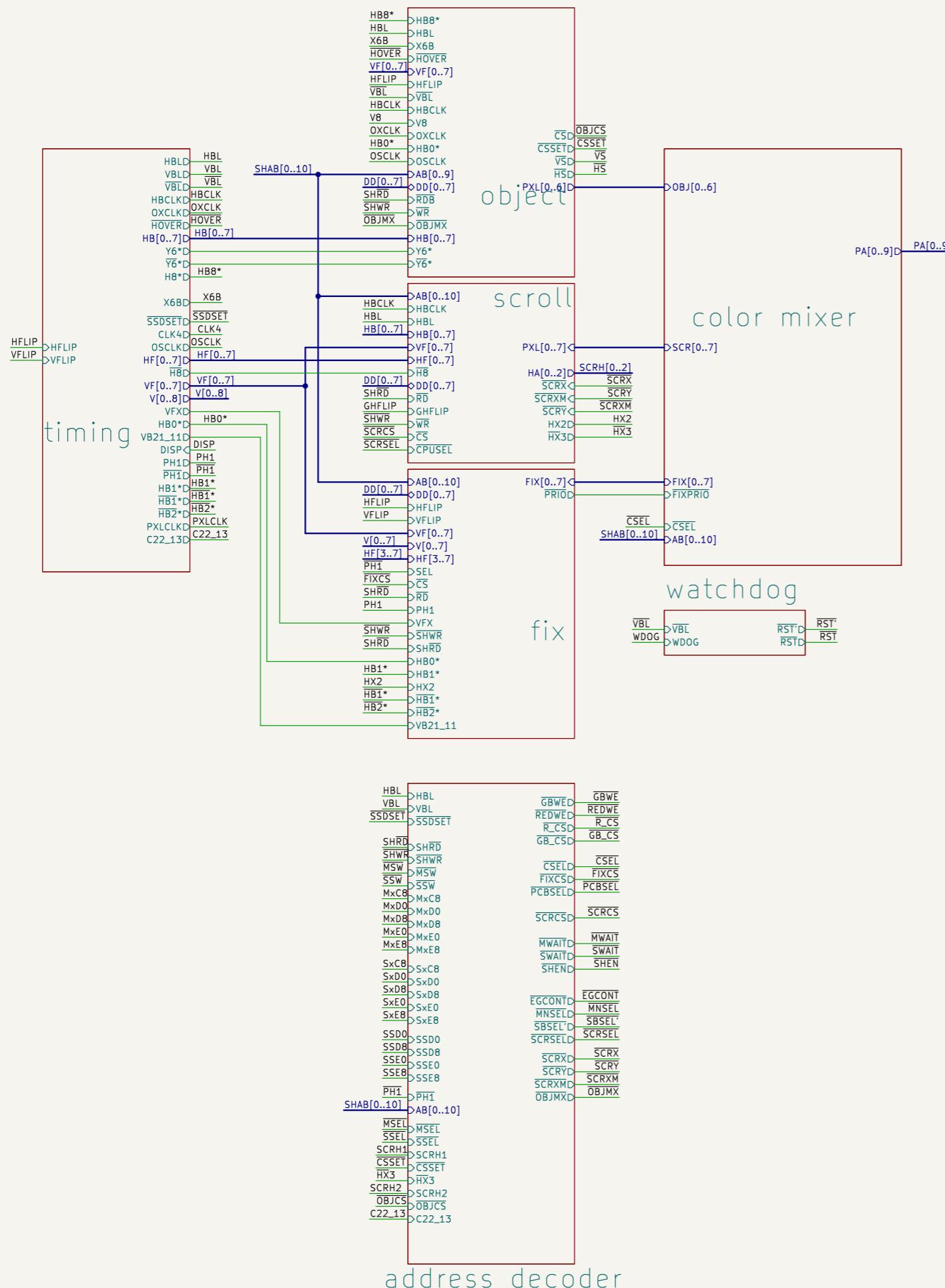
Title: PCM

Size: A3 Date: 2024-11-15
KiCad E.D.A. 8.0.9

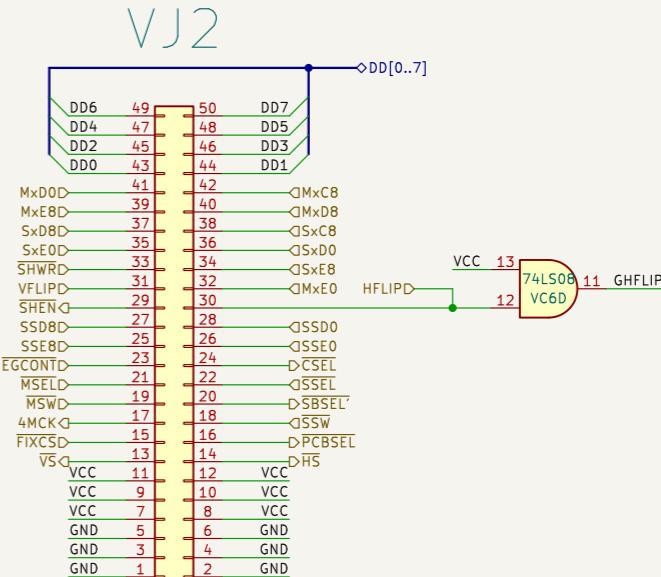
Rev: Id: 5/26







VJ1 at PCB's top right
VJ2 at PCB's bottom right
pins counted from board bottom up,
pins at the top row of the connector
counted as even



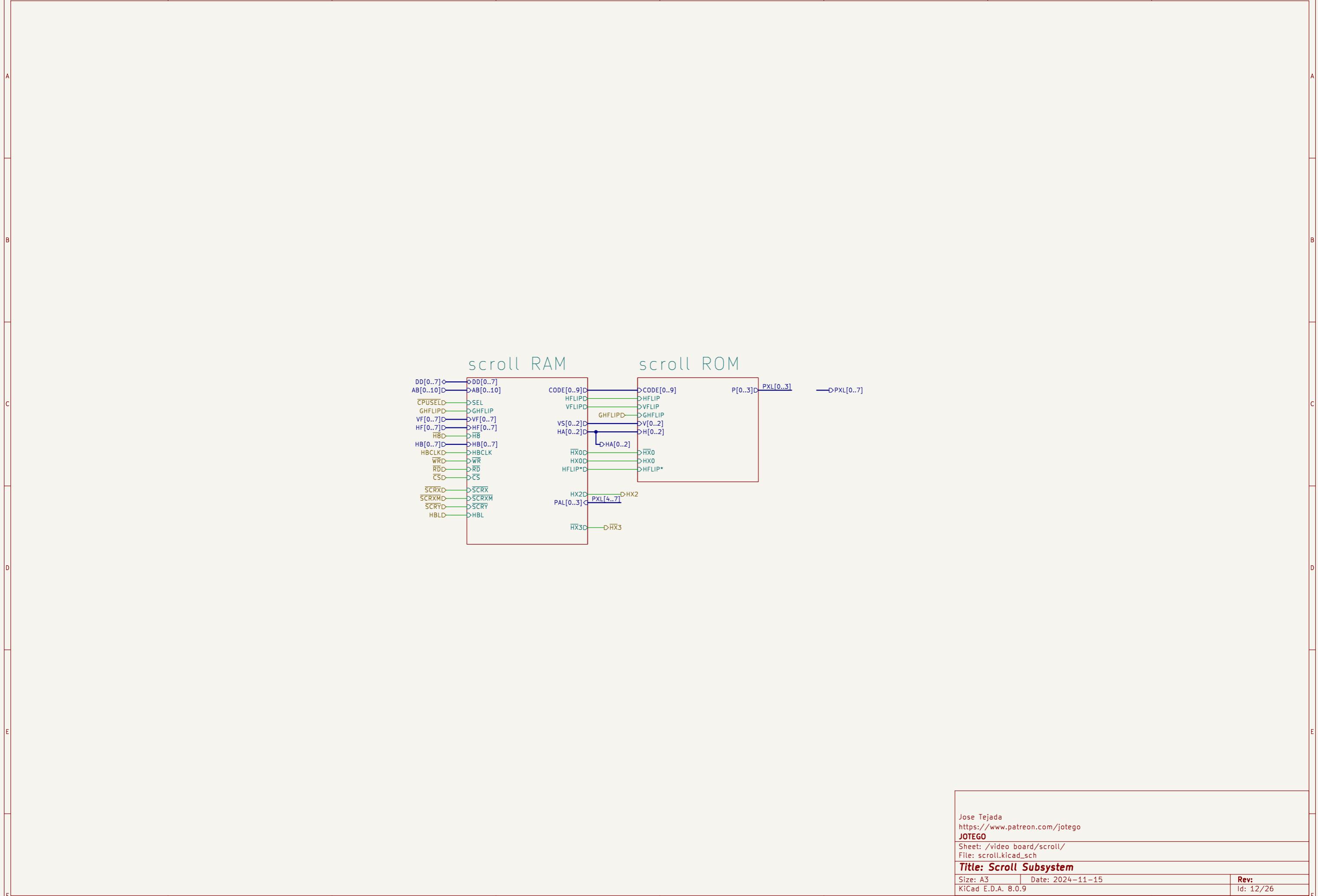
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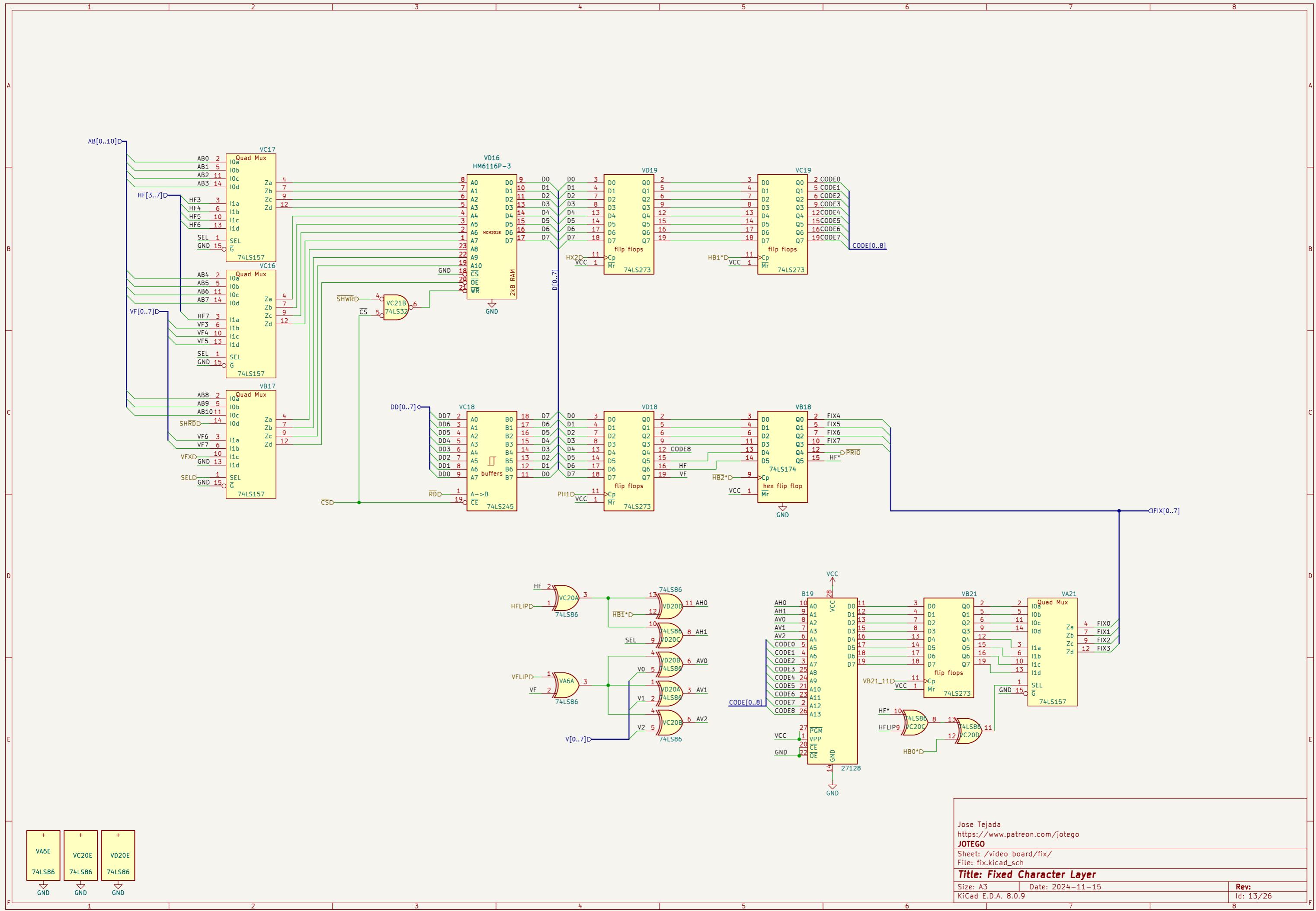
Sheet: /video board/
File: video.kicad_sch

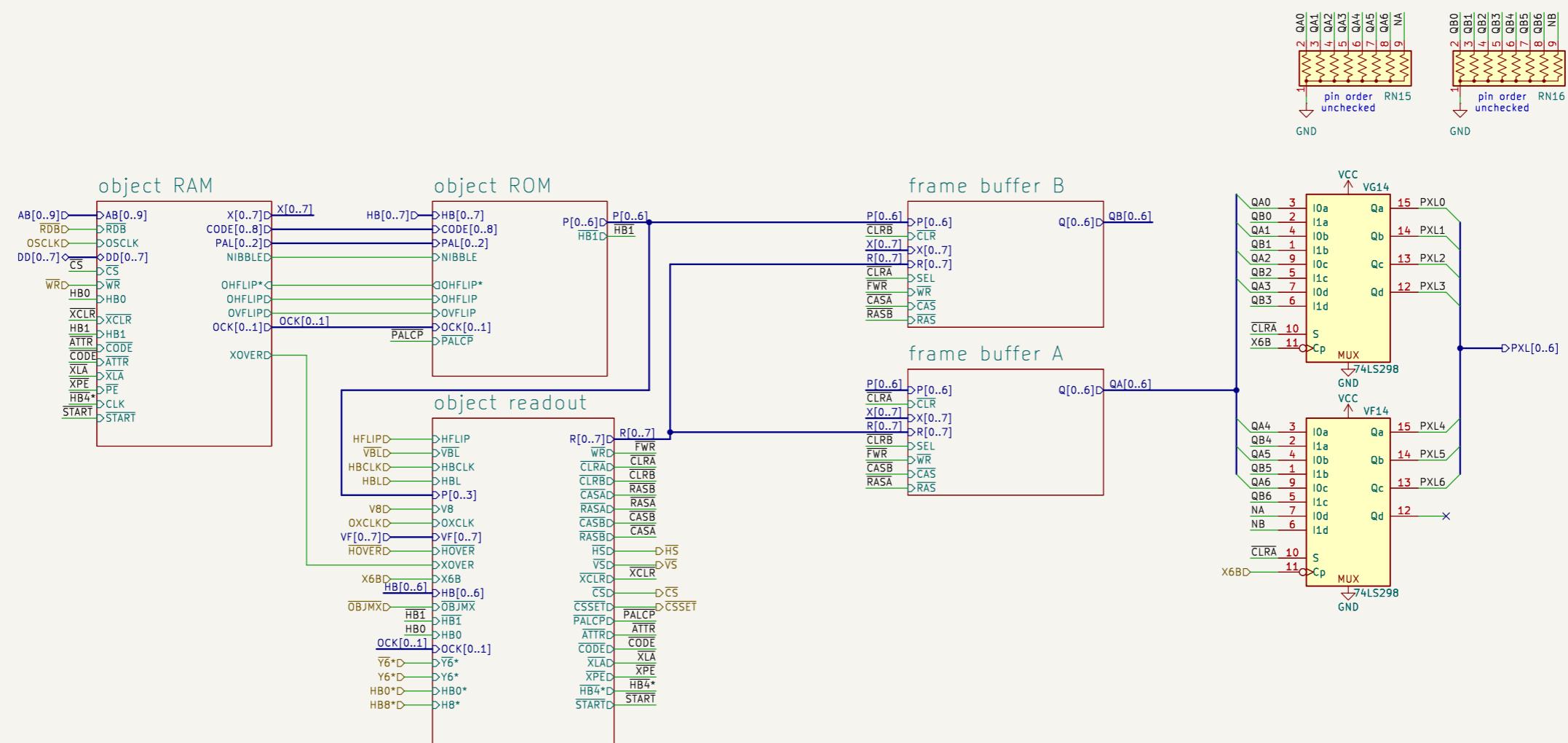
Title: Video board (bottom board)

Size: A3 Date: 2024-11-15
KiCad E.D.A. 8.0.9

Rev: Id: 11/26







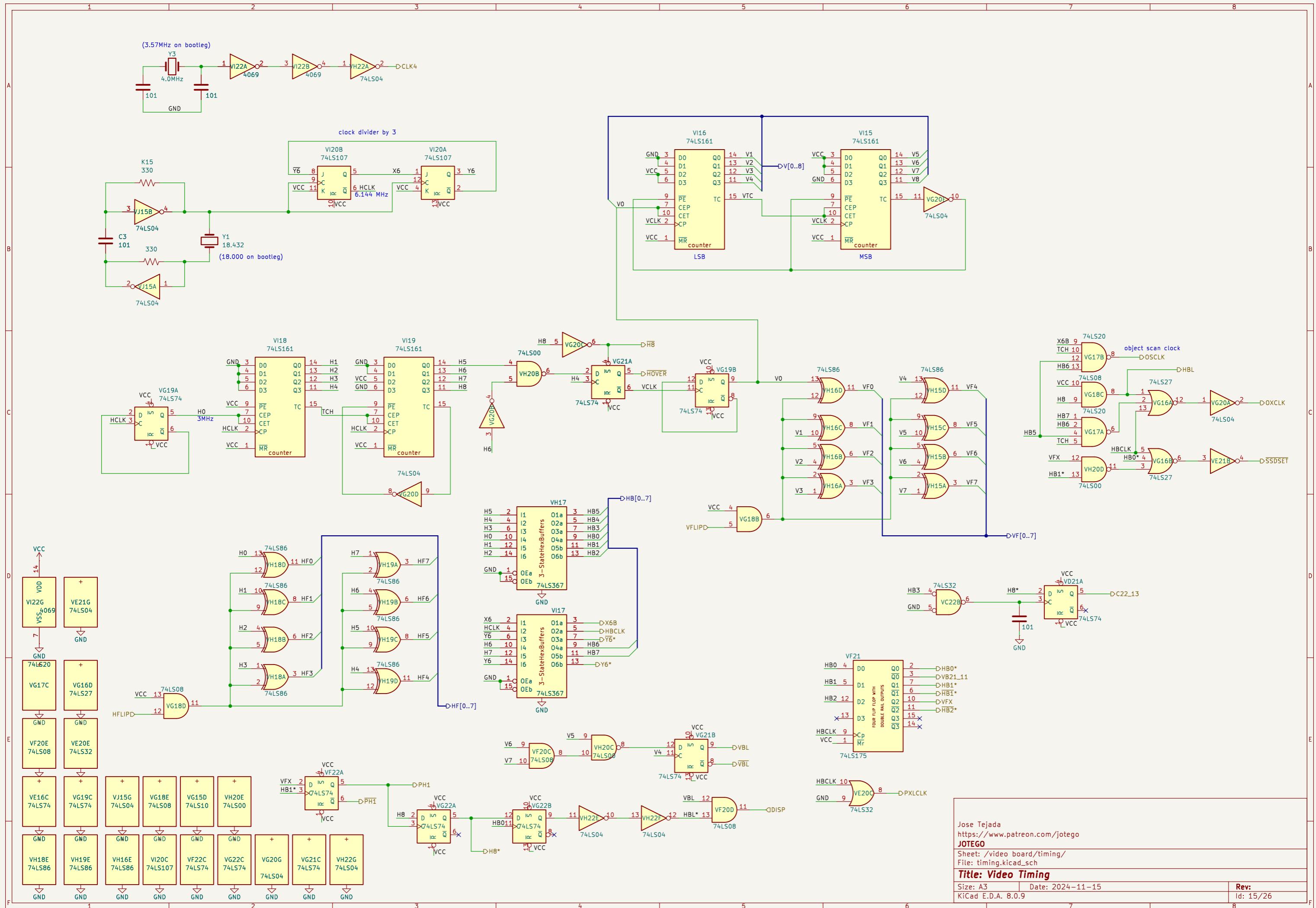
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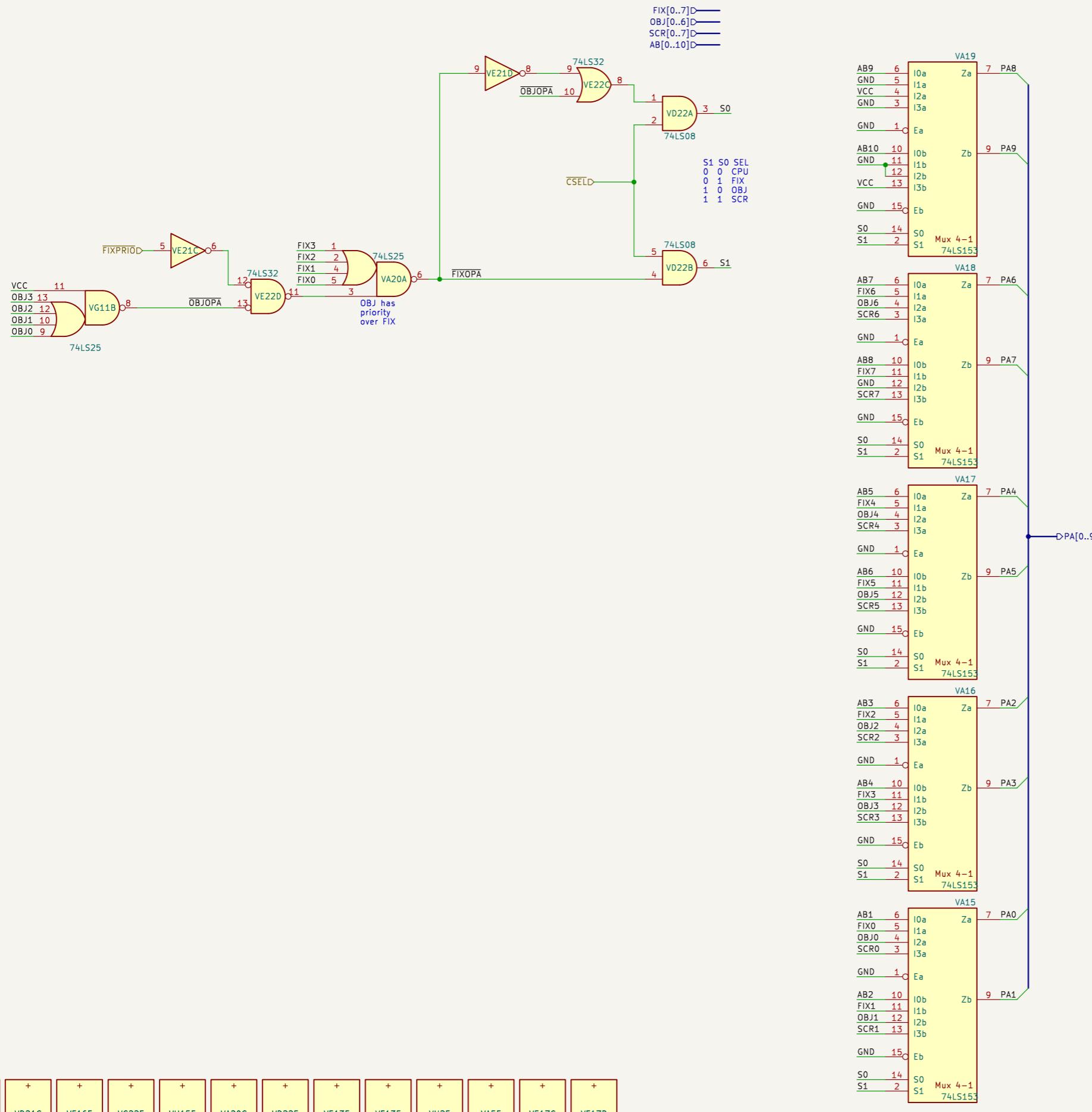
Sheet: /video board/object/
File: object.kicad_sch

Title: Object Subsystem

Size: A3 | Date: 2024-11-15
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Rev: 14/26





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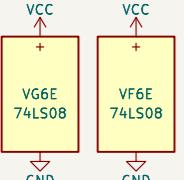
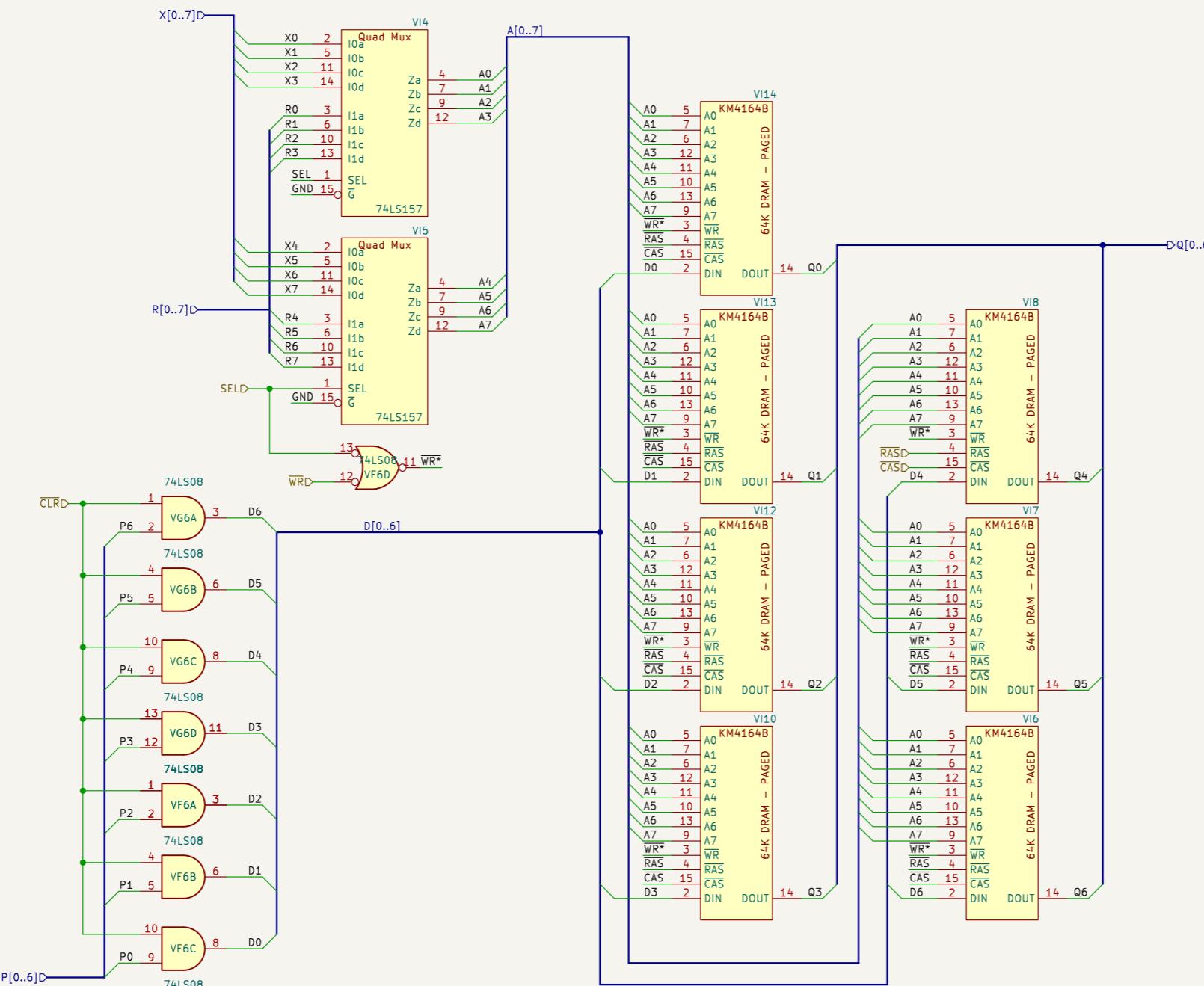
JOTEGO

File: colmix.kicad_sch

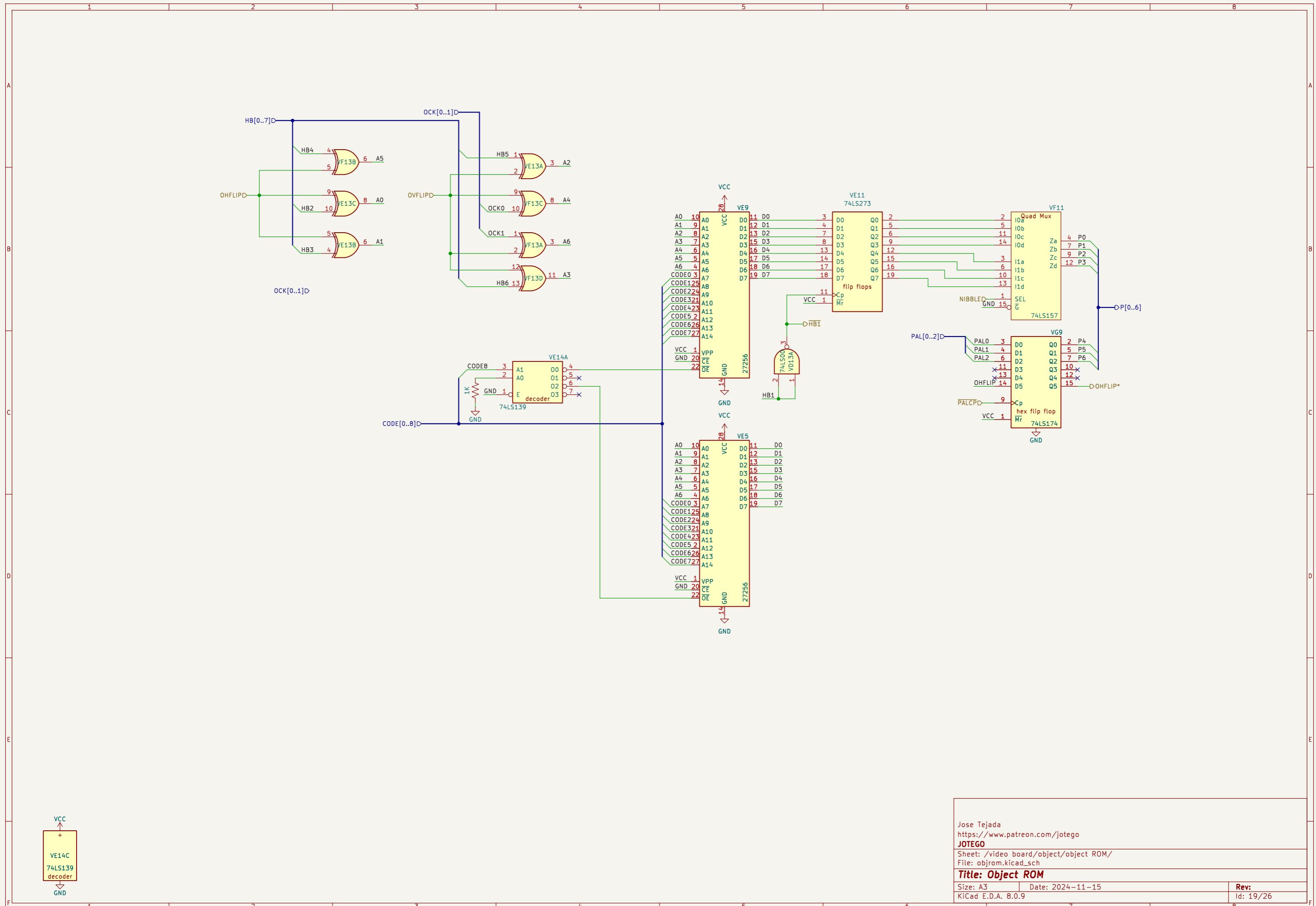
Title: Color mixer

KiCad E.D.A. 8.0.9

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 Sheet: /video board/object/frame buffer A/
 File: buffer.kicad_sch
Title: Line Buffer
 Size: A3 | Date: 2024-11-15
 KiCad E.D.A. 8.0.9 | Rev:
 Id: 17/26



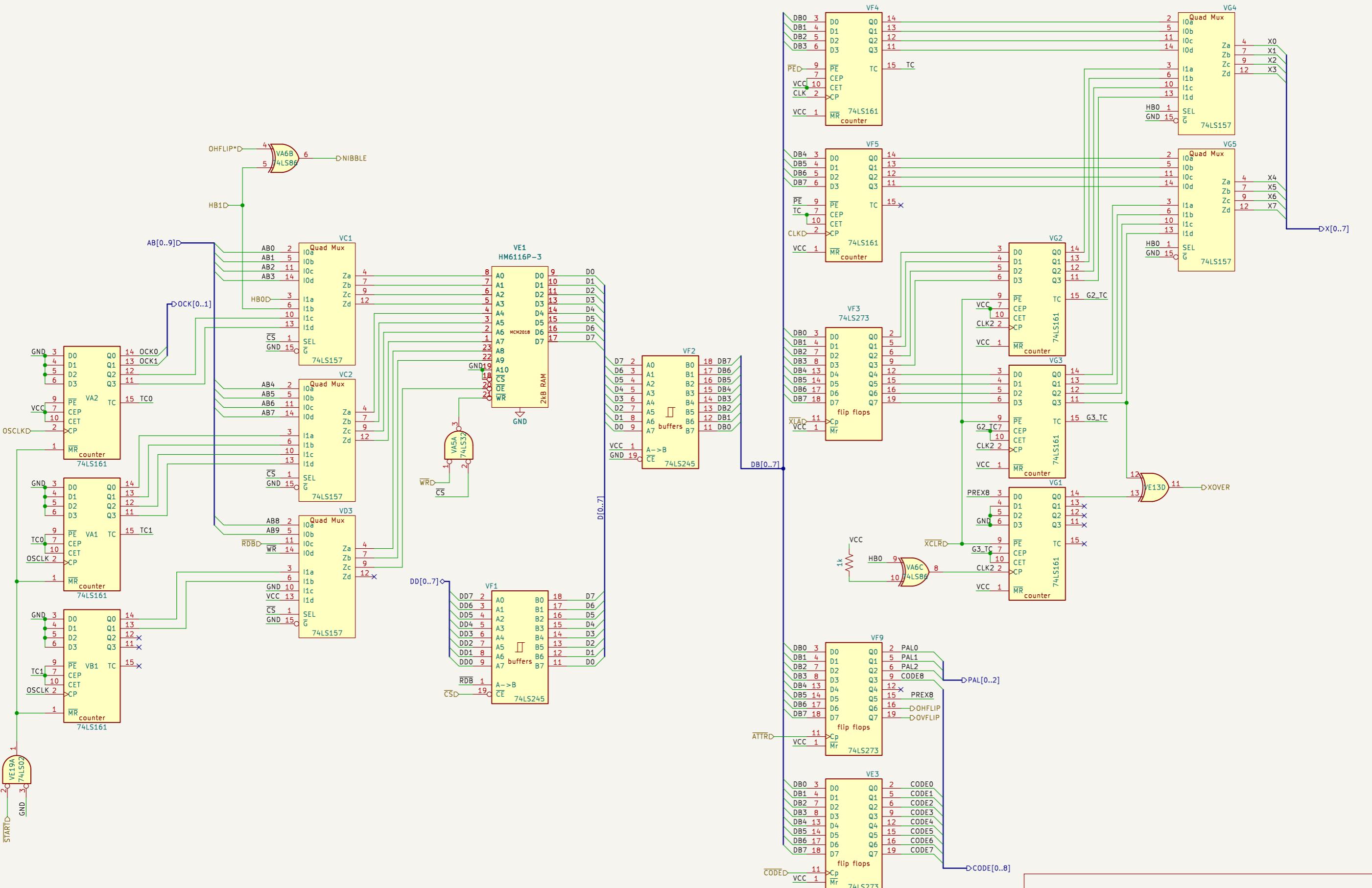
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Sheet: /video board/object/object ROM/
 File: objrom.kicad_sch

Title: Object ROM

Size: A3 | Date: 2024-11-15
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Rev: | Id: 19/26



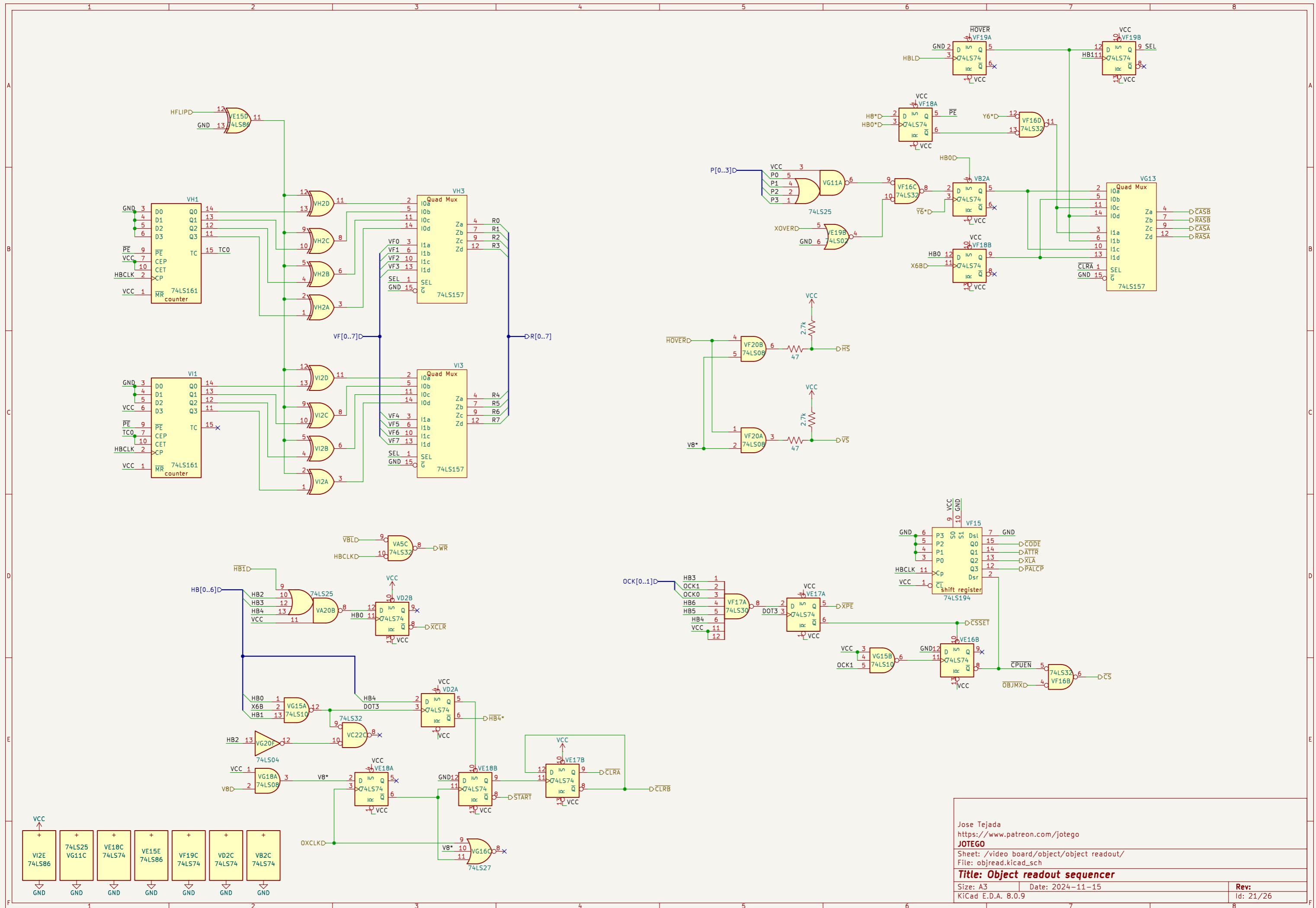
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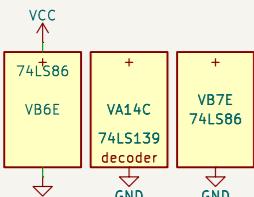
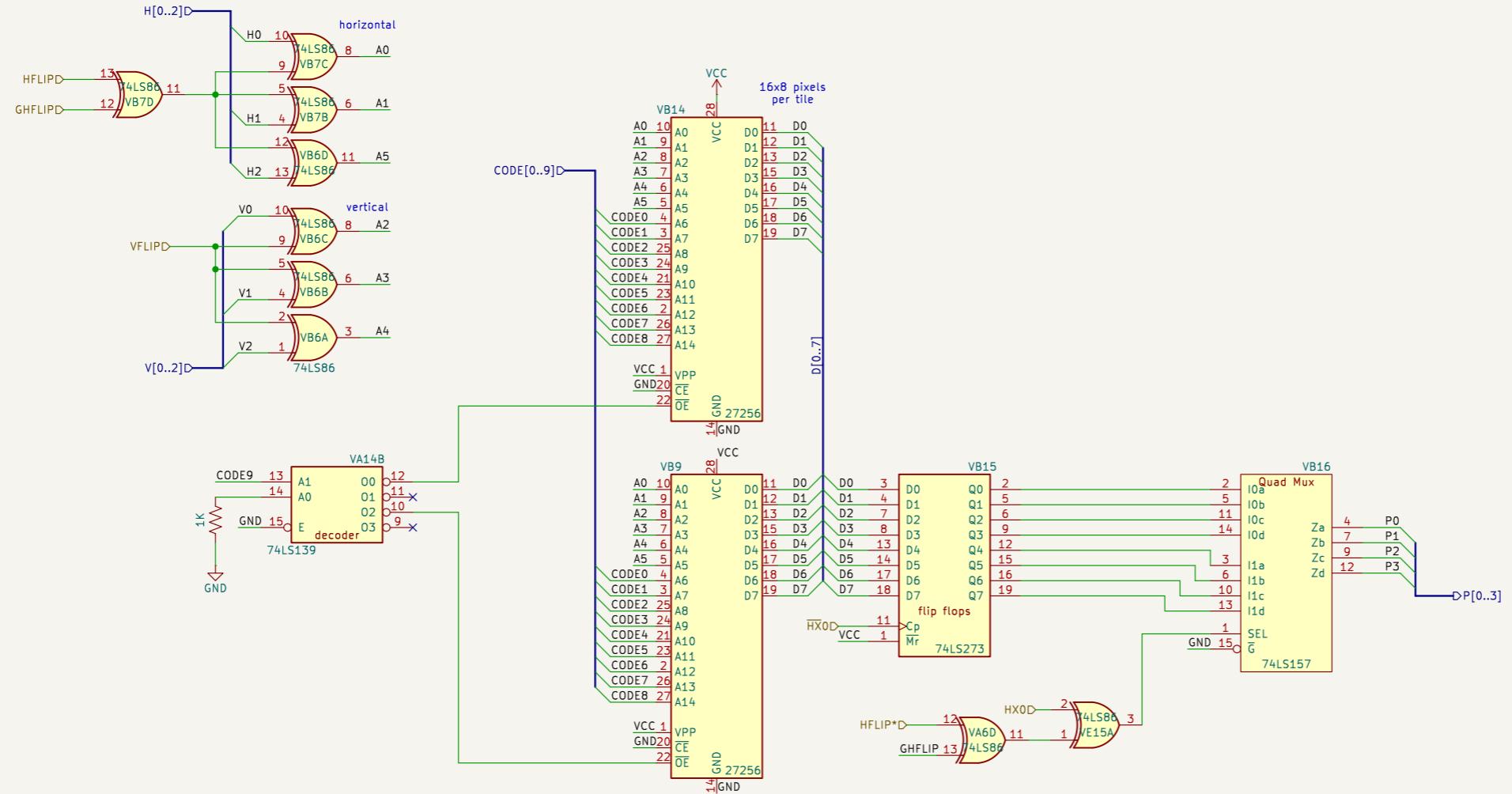
Sheet: /video board/object/object RAM/
File: objram.kicad_sch

Title: Object RAM

Size: A3 | Date: 2024-11-15
KiCad E.D.A. 8.0.9

Rev: | Id: 20/26



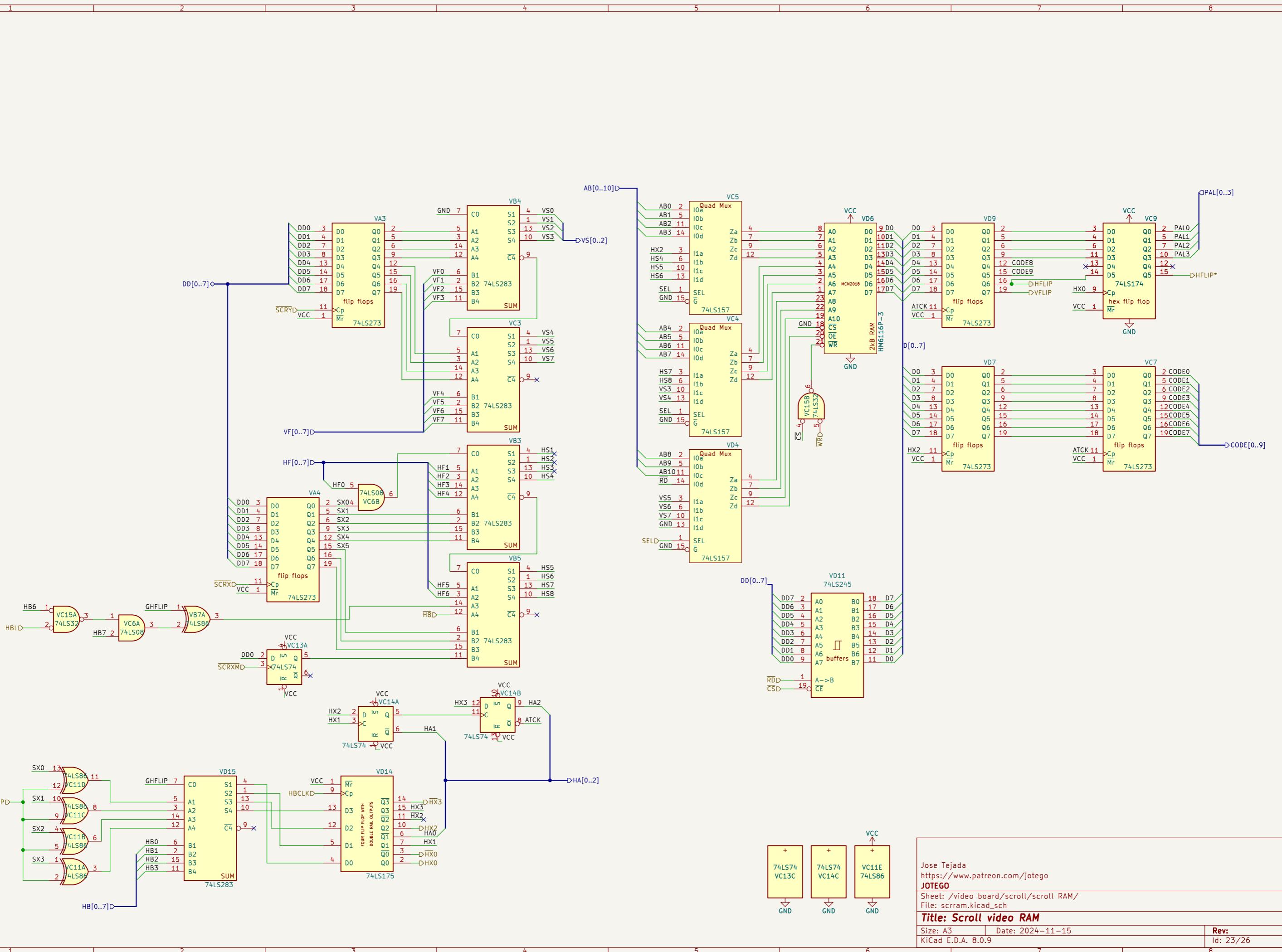


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Sheet: /video board/scroll/scroll ROM/
File: scrrom.kicad_sch

Title: scroll ROM

Size: A3 Date: 2024-11-15
KiCad F D A 8 0 9



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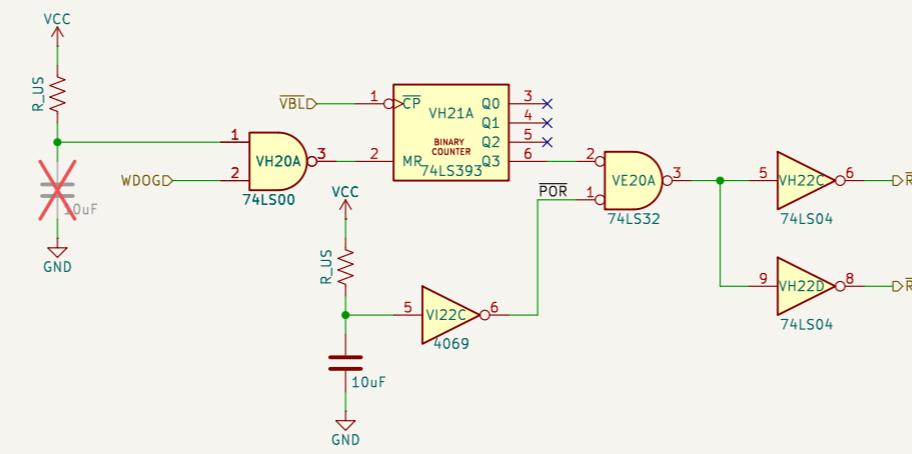
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Sheet: /video board/scroll/scroll RAM/
File: scram.kicad_sch

Title: Scroll video RAM

Size: A3 Date: 2024-11-15
KiCad E.D.A. 8.0.9

Rev: Id: 23/26



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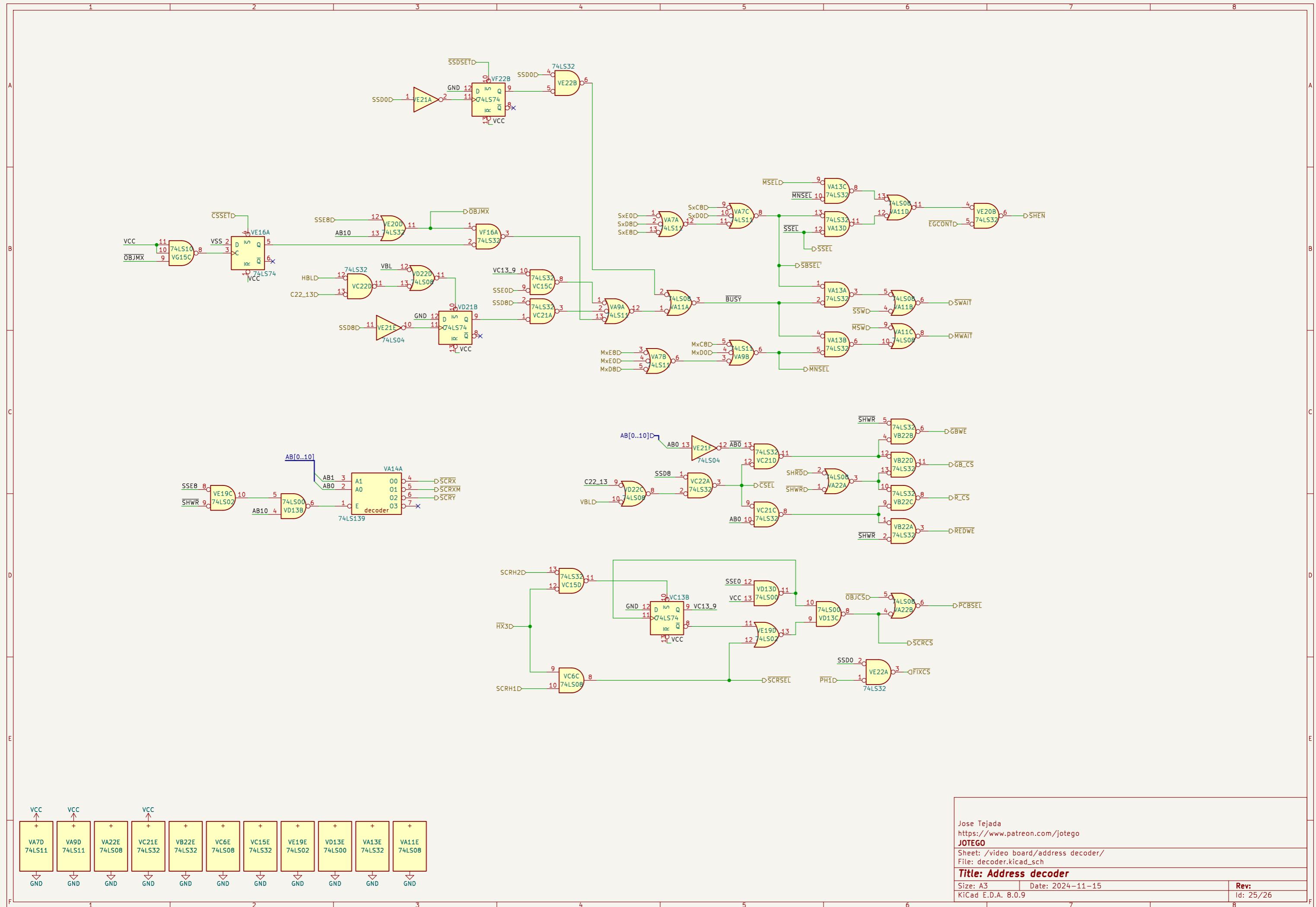
Sheet: /video board/watchdog/
File: watchdog.kicad_sch

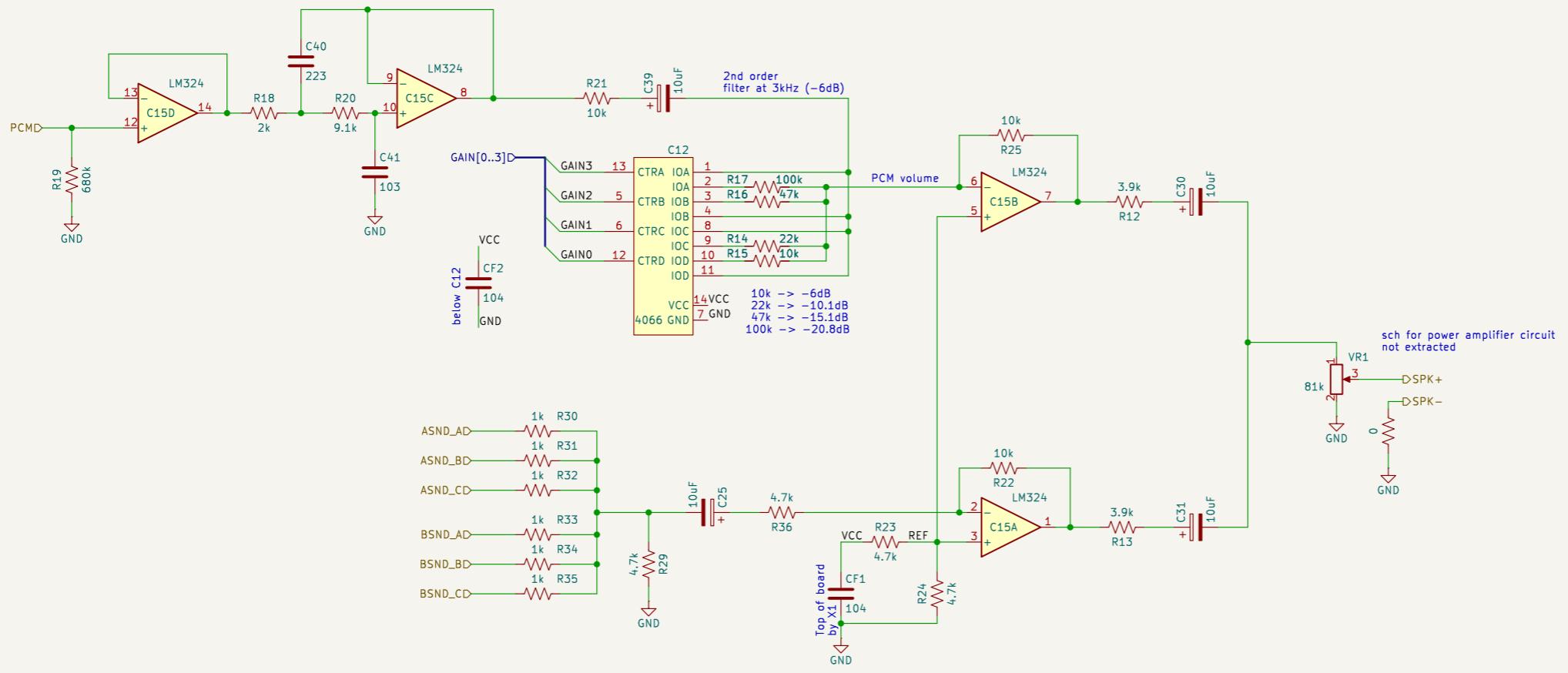
Title: Watchdog Circuit

Size: A3 Date: 2024-11-15
KiCad E.D.A. 8.0.9

7

Rev:
Id: 24/26





Passive component references
when shown, come from original PCB.
The bootleg did not have
references for passives.

Device components follow bootleg references.
The bootleg counts letters from left to right and numbers from bottom to top.
The original counts numbers left to right and letters bottom to top.



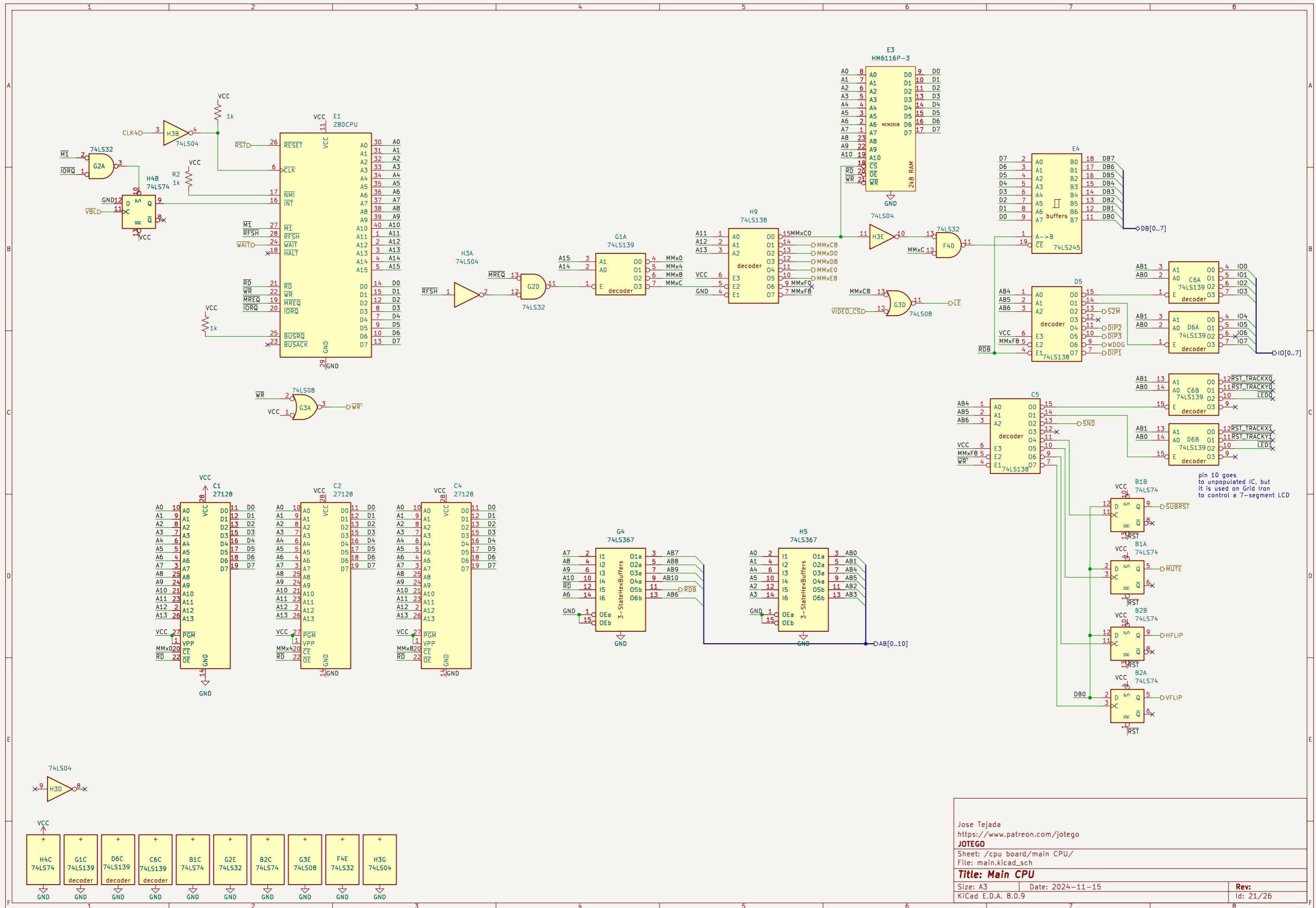
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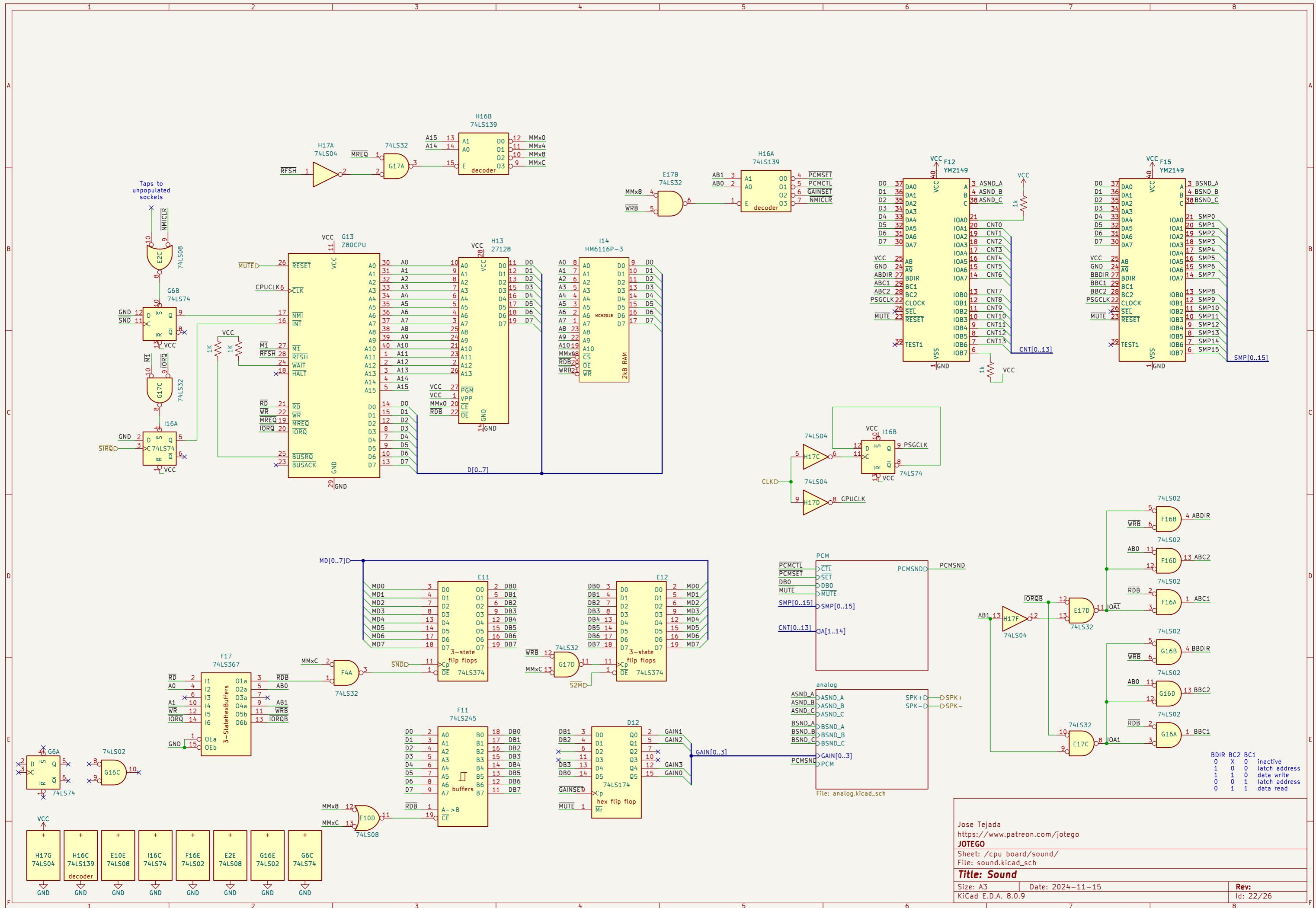
Sheet: /cpu board/sound/analog/
File: analog.kicad_sch

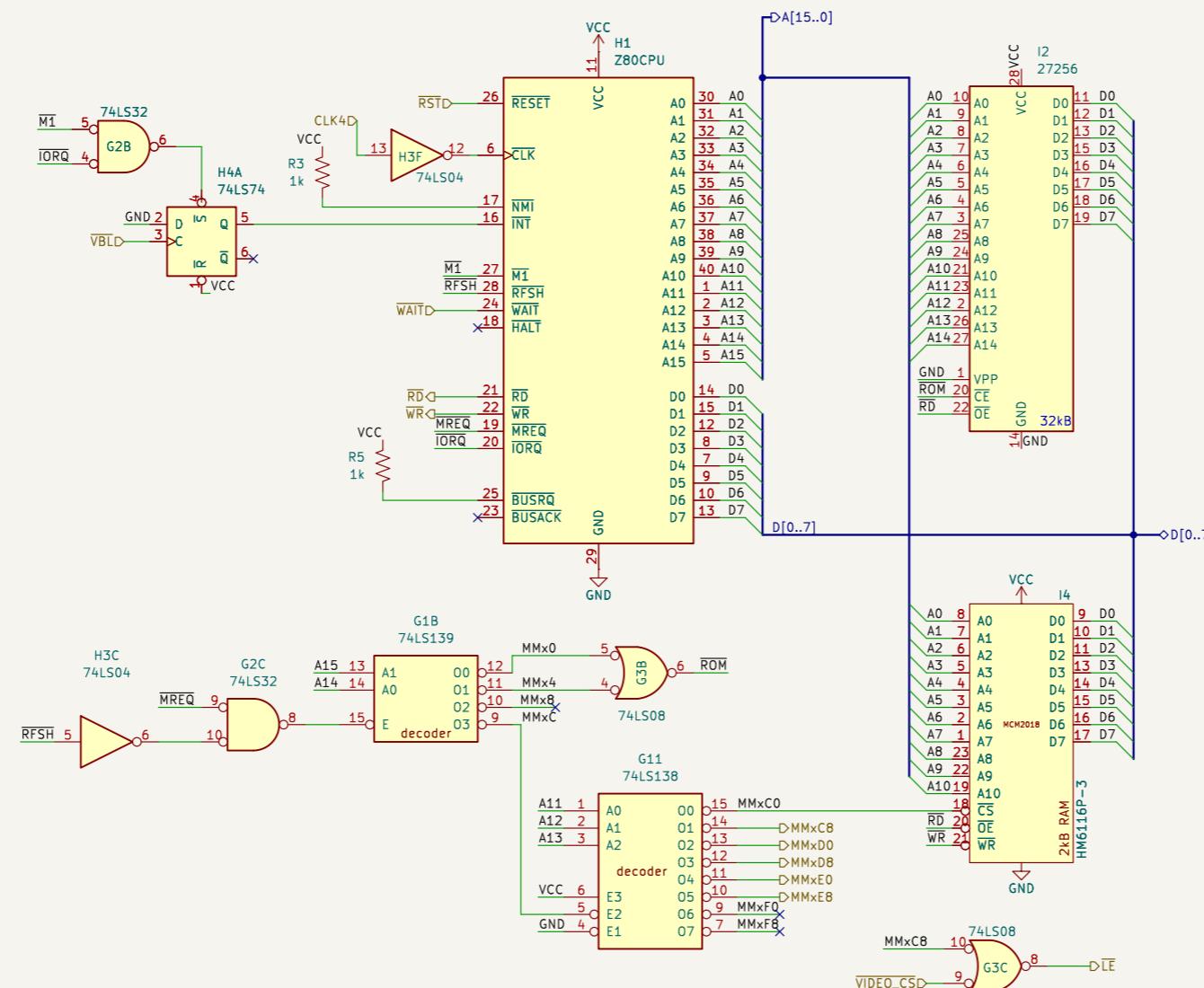
Title: Sound amplifiers

Size: A3 | Date: 2024-11-15
KiCad E.D.A. 8.0.9

Rev: | Id: 26/26







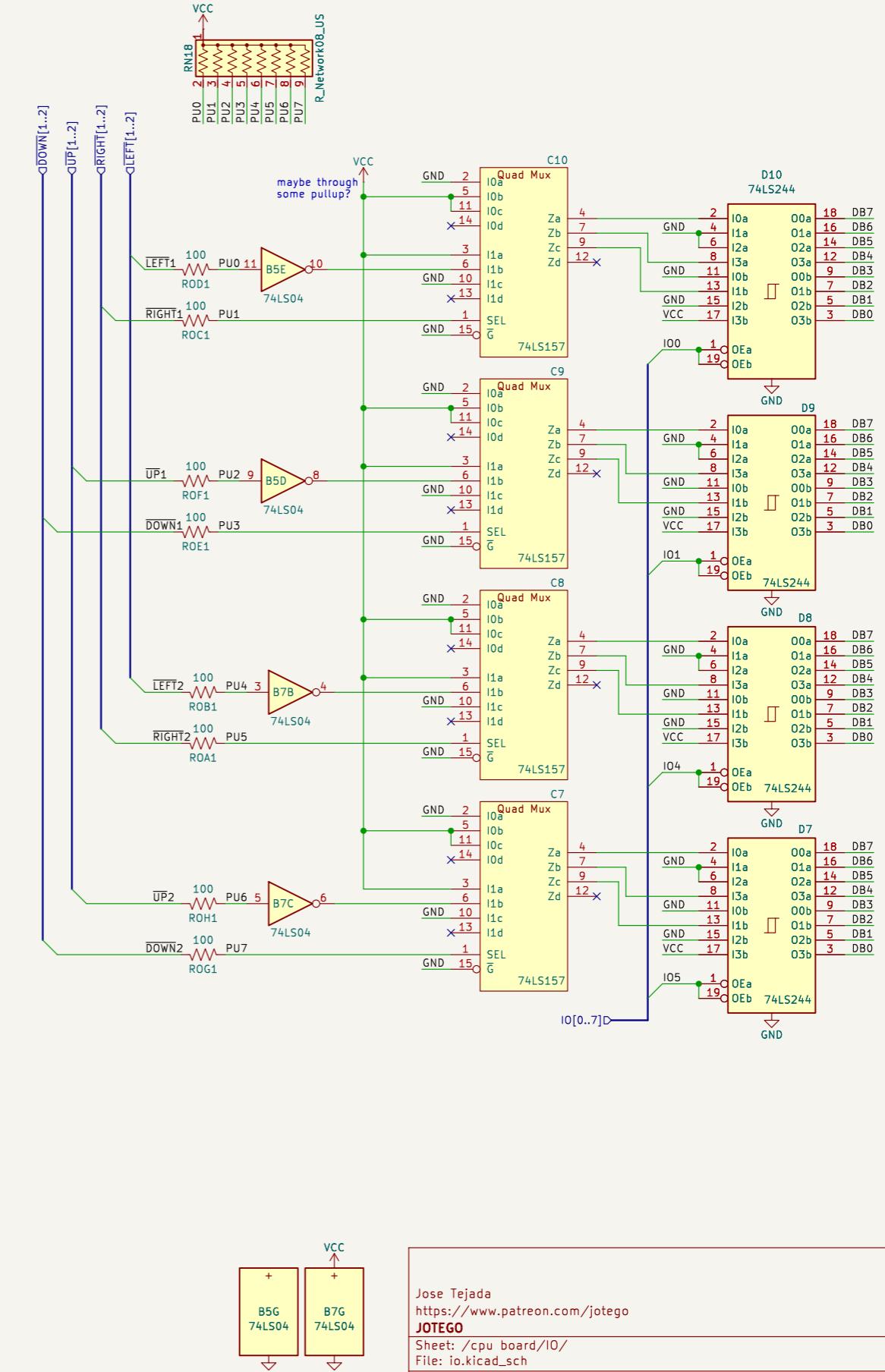
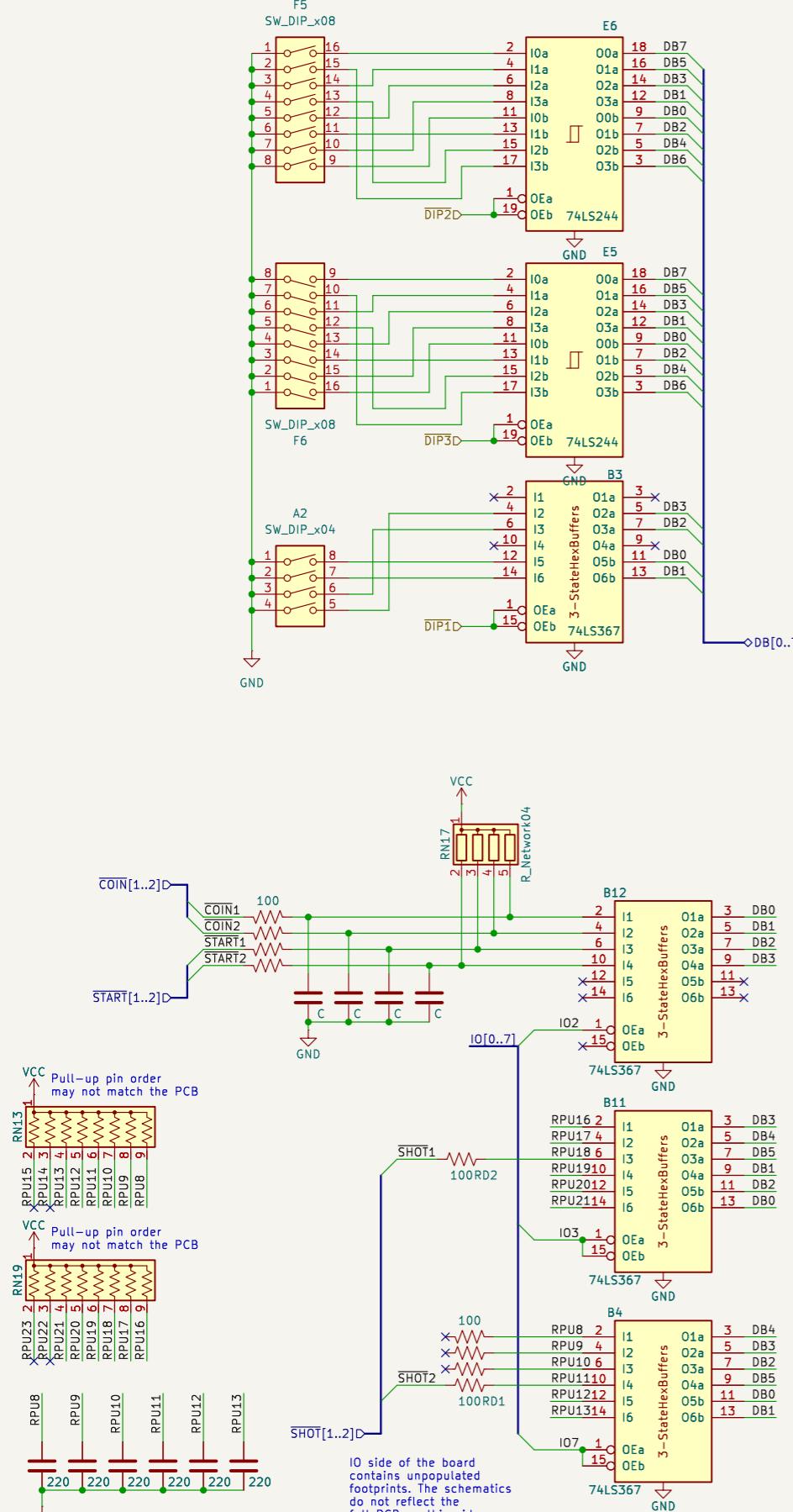
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Sheet: /cpu board/sub CPU/
File: subcpu.kicad_sch

Title: Subordinate CPU

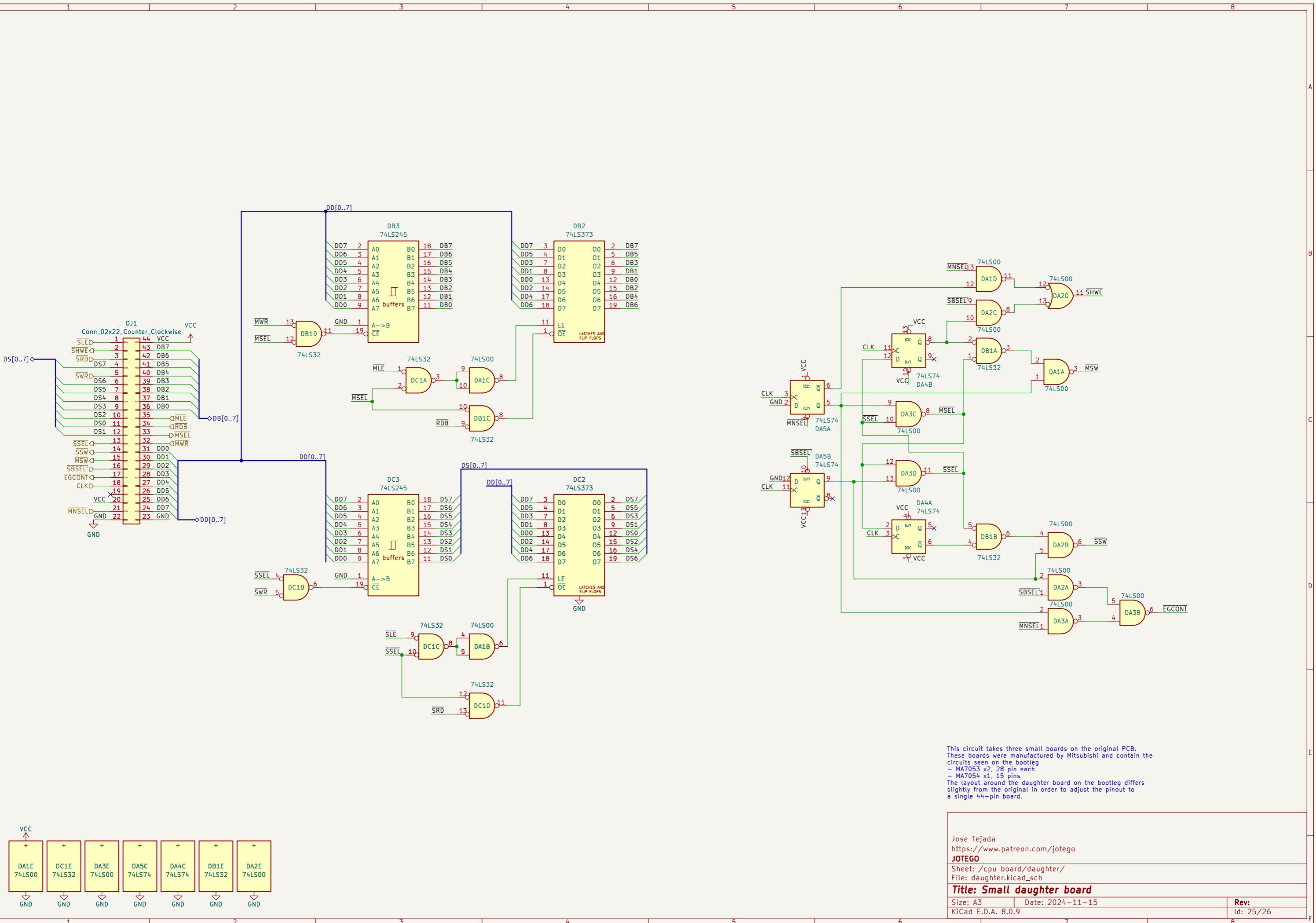
Size: A3 | Date: 2024-11-15
KiCad E.D.A. 8.0.9

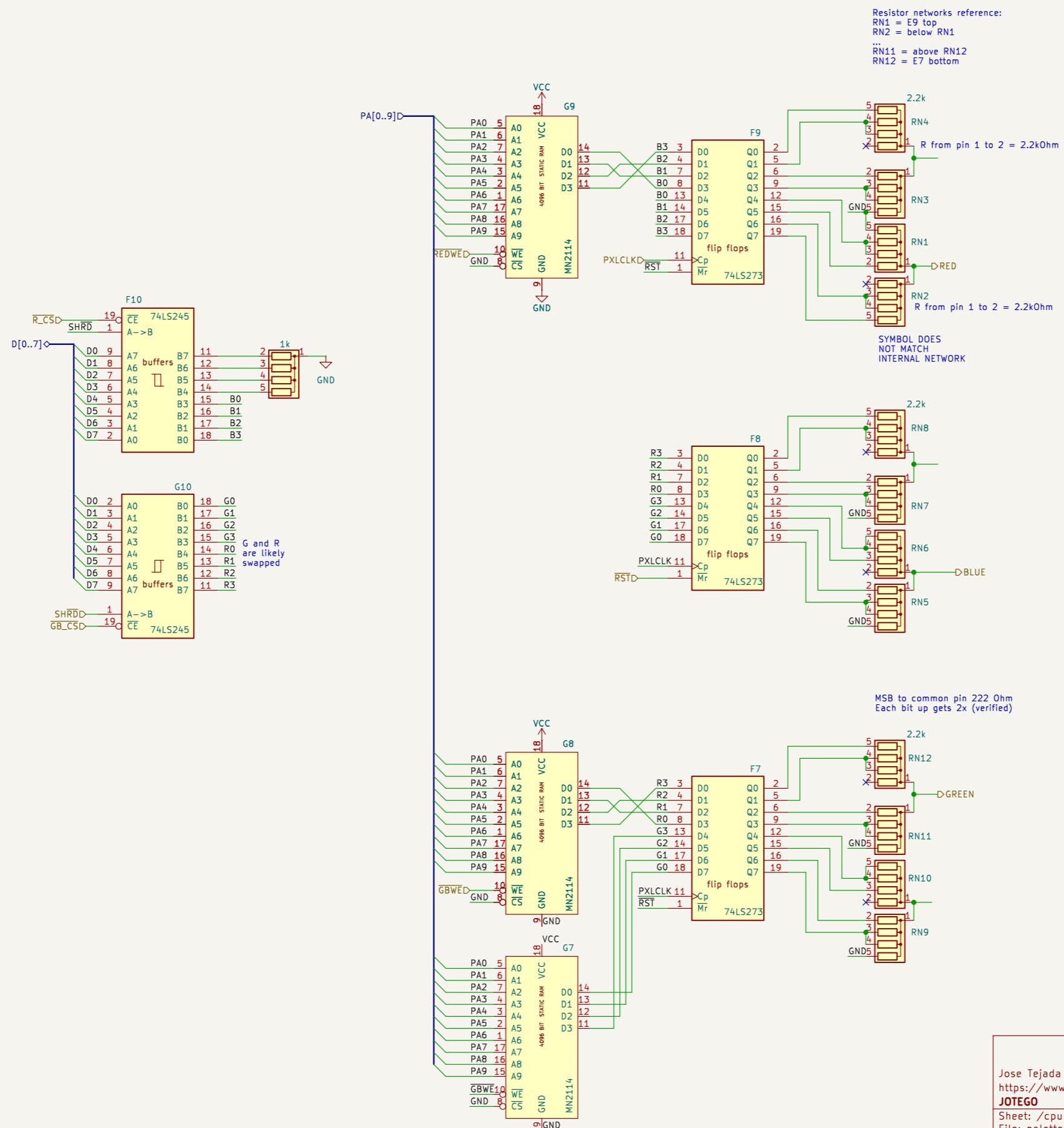
Rev:
Id: 23/26



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heet: /cpu board/IO/
ile: io.kicad_sch





Resistor networks reference:
RN1 = E9 top
RN2 = below RN1
...
RN11 = above RN12
RN12 = E7 bottom

R from pin 1 to 2 = 2.2kOhm

SYMBOL DOES
NOT MATCH
INTERNAL NETWORK

MSB to common pin 222 Ohm
Each bit up gets 2x (verified)

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Sheet: /cpu_board/palette/
File: palette.kicad_sch

Title: Color Palette

Size: A3 | Date: 2024-11-15
KiCad E.D.A. 8.0.9

Rev: #/26