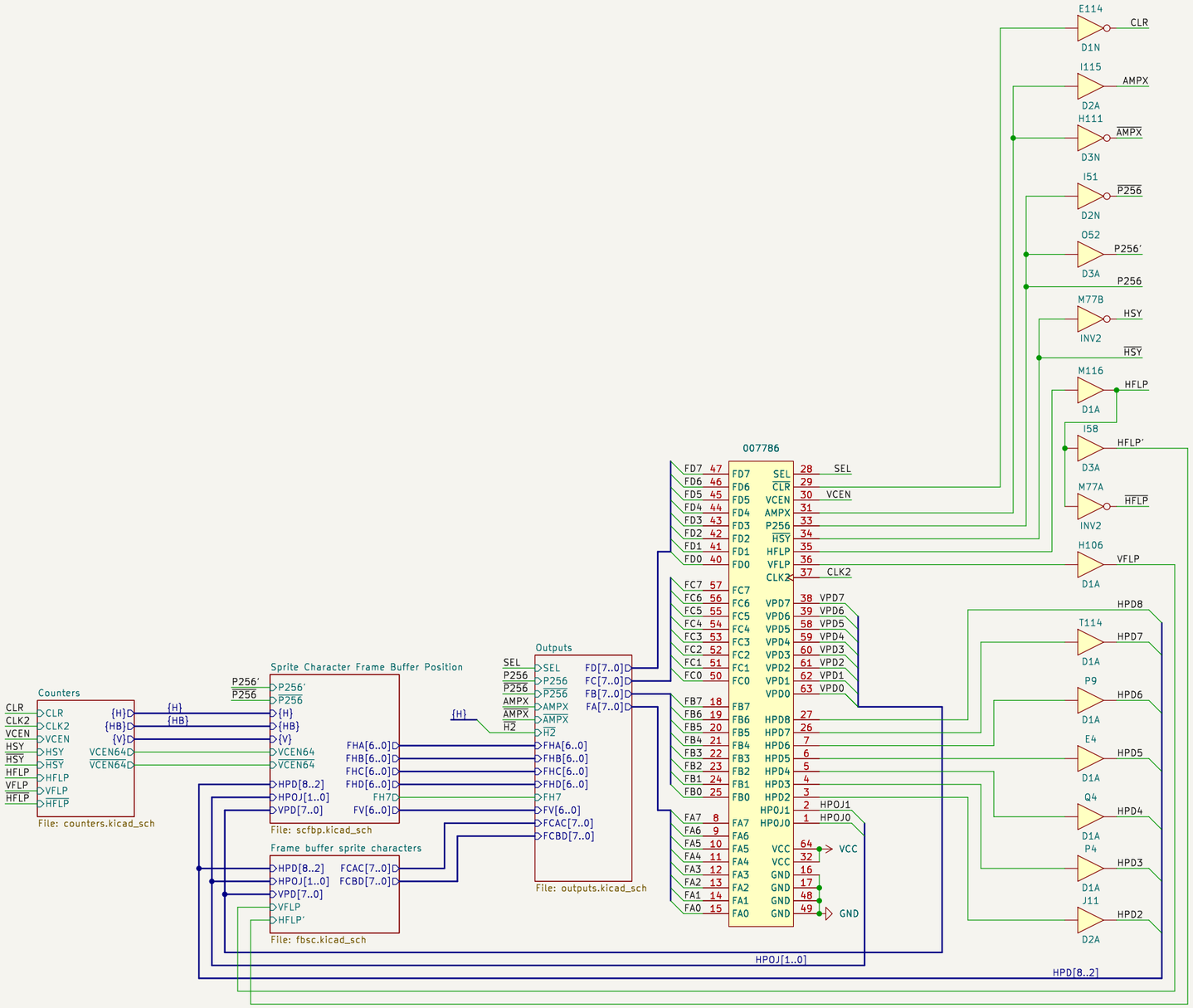

The 007786 is a sprite frame buffer controller.
It works in two modes:
- When SEL = 0, it generates addresses for the frame buffer.
- When SEL = 1, it parses sprite character data

It also handles refreshing of data in the DRAM memory.

The 007786 uses an OKI 74V000 CMOS gate array
with 2400 unit cells.

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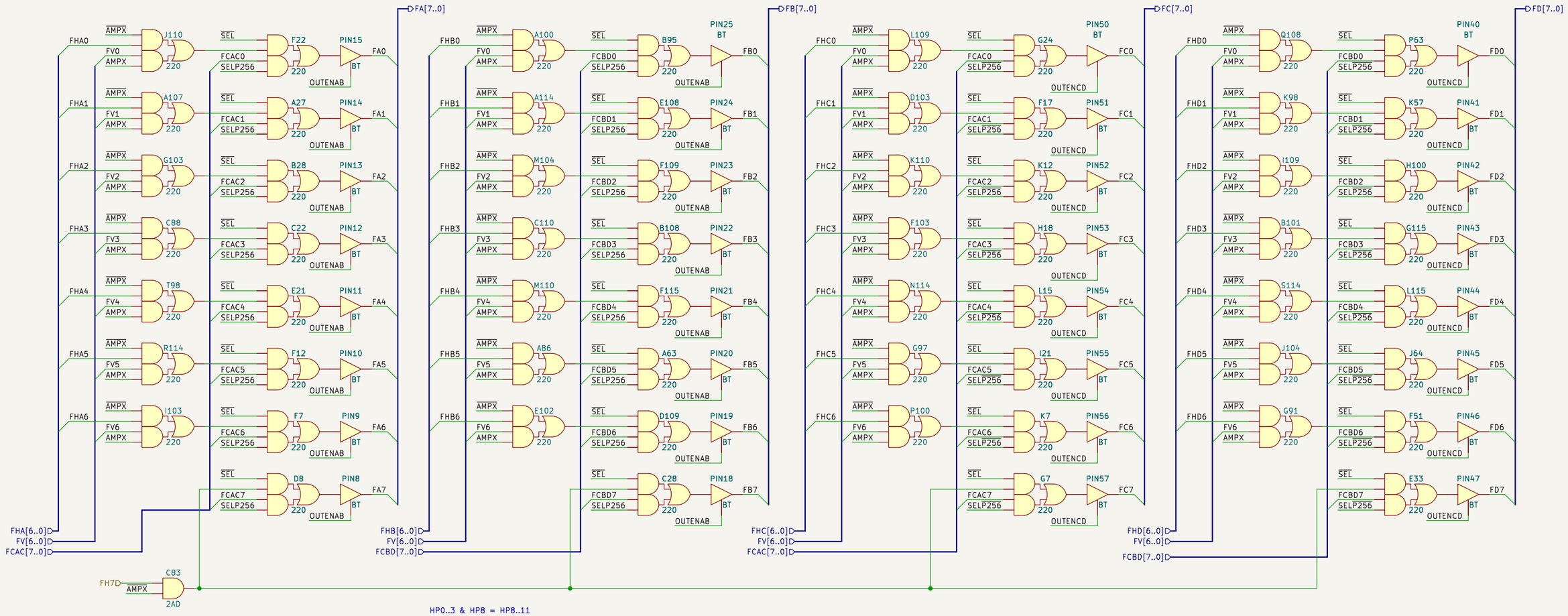
Sheet: /
File: 007786.kicad_sch

Title: Konami 007786

Size: A3	Date: 2024-01-28	**Rev:**
KiCad E.D.A. 8.0.9		Id: 1/5



Output buffer enable

Addressing mode, SEL = 0

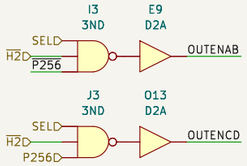
Outputs are enabled all the time when the 007786 is used for addressing sprite characters in the frame buffer, SEL = 0.

Sprite character mode, SEL = 1

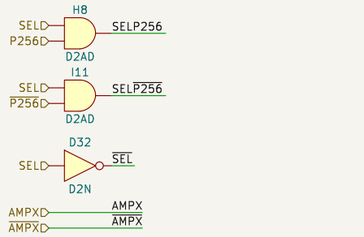
When used for writing sprite characters to the frame buffer it is enabled when H2 = 1 or for FA and FB outputs when P256 = 1. The corresponding for C and D outputs is when P256 = 0.

A and B output
OUTENAB =
~SEL | ~H2 | ~P256 =
~SEL | H2 | P256

OUTENCD =
~SEL | ~H2 | ~P256 =
~SEL | H2 | P256



SCM, P256 = 1, AB out enabled.



AMPX and AMPX selects between Row and Columns in the frame buffer DRAM.

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Sheet: /Outputs/
File: outputs.kicad_sch

Title: Konami 007786

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V1F is synchronized to $\overline{HSY}$ while the other vertical counters are synchronized to VCEN.

H16B is the same as H16 but shifted one half H8 period later (90 deg).

H8B = -H8

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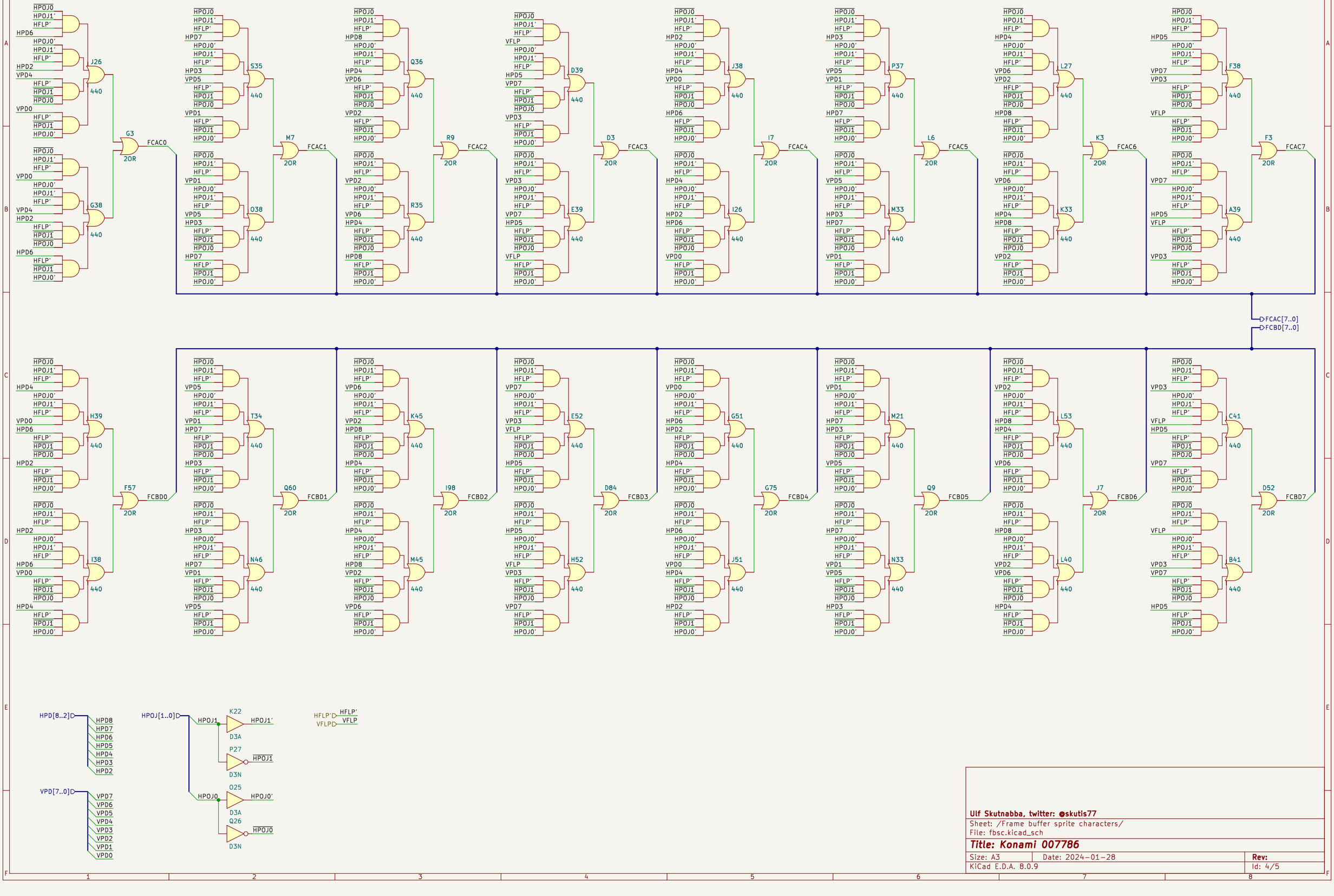
Sheet: /Counters/		
File: counters.kicad_sch		
Title: Konami 007786		
Size: A3	Date: 2024-01-28	**Rev:**
KiCad E.D.A. 8.0.9		Id: 3/5



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Sheet: /Frame buffer sprite characters/

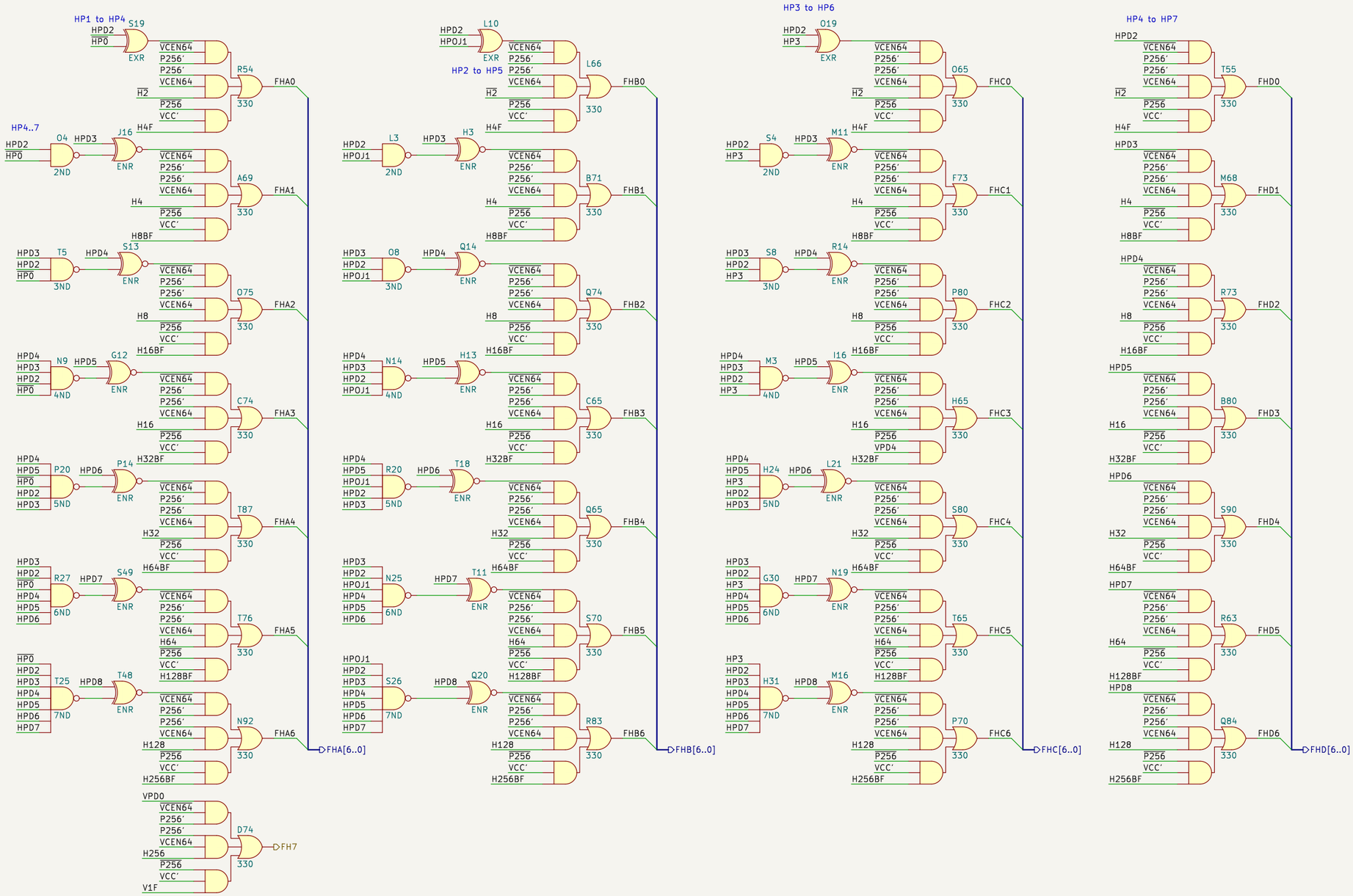
File: fbsc.kicad_sch

Title: Konami 007786

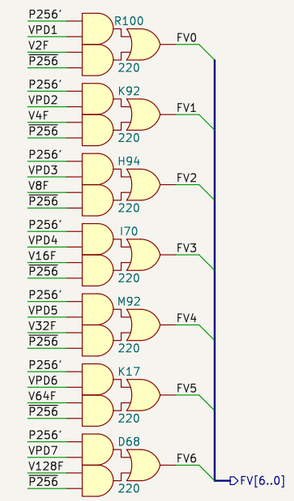
Size: A3	Date: 2024-01-28	Rev:
KiCad E.D.A. 8.0.9		Id: 4/5

Horizontal Position

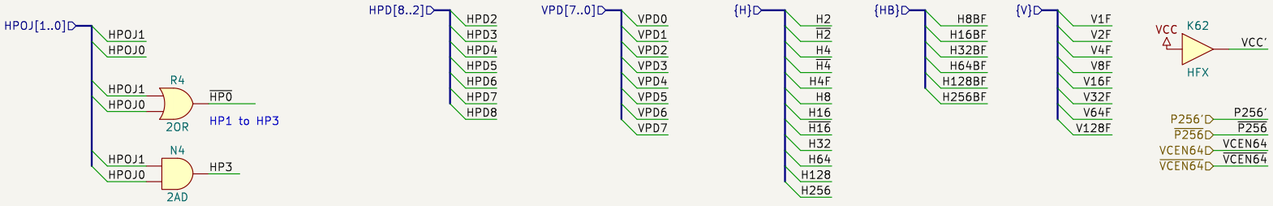
$\overline{VCEN64}$ active: Data is written to the frame buffer
VCEN64 active, four times pre frame: Data is refreshed in DRAM, every 4ms.



Vertical Position



P256' active: Write addressing
P256 active: Read addressing



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Sheet: /Sprite Character Frame Buffer Position/
File: scfbp.kicad_sch

Title: Konami 007786

Size: A3	Date: 2024-01-28	**Rev:**
KiCad E.D.A. 8.0.9		Id: 5/5