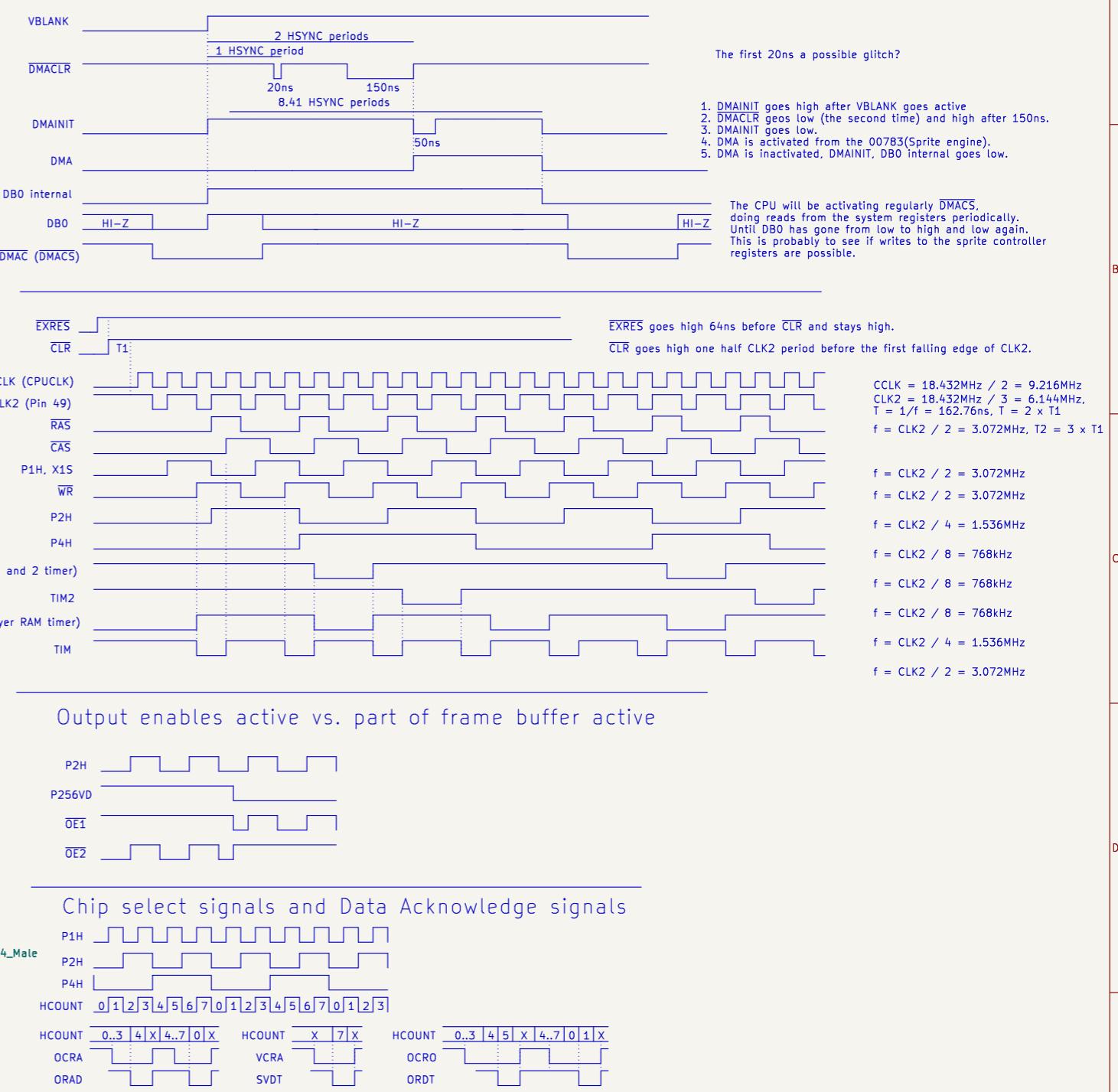
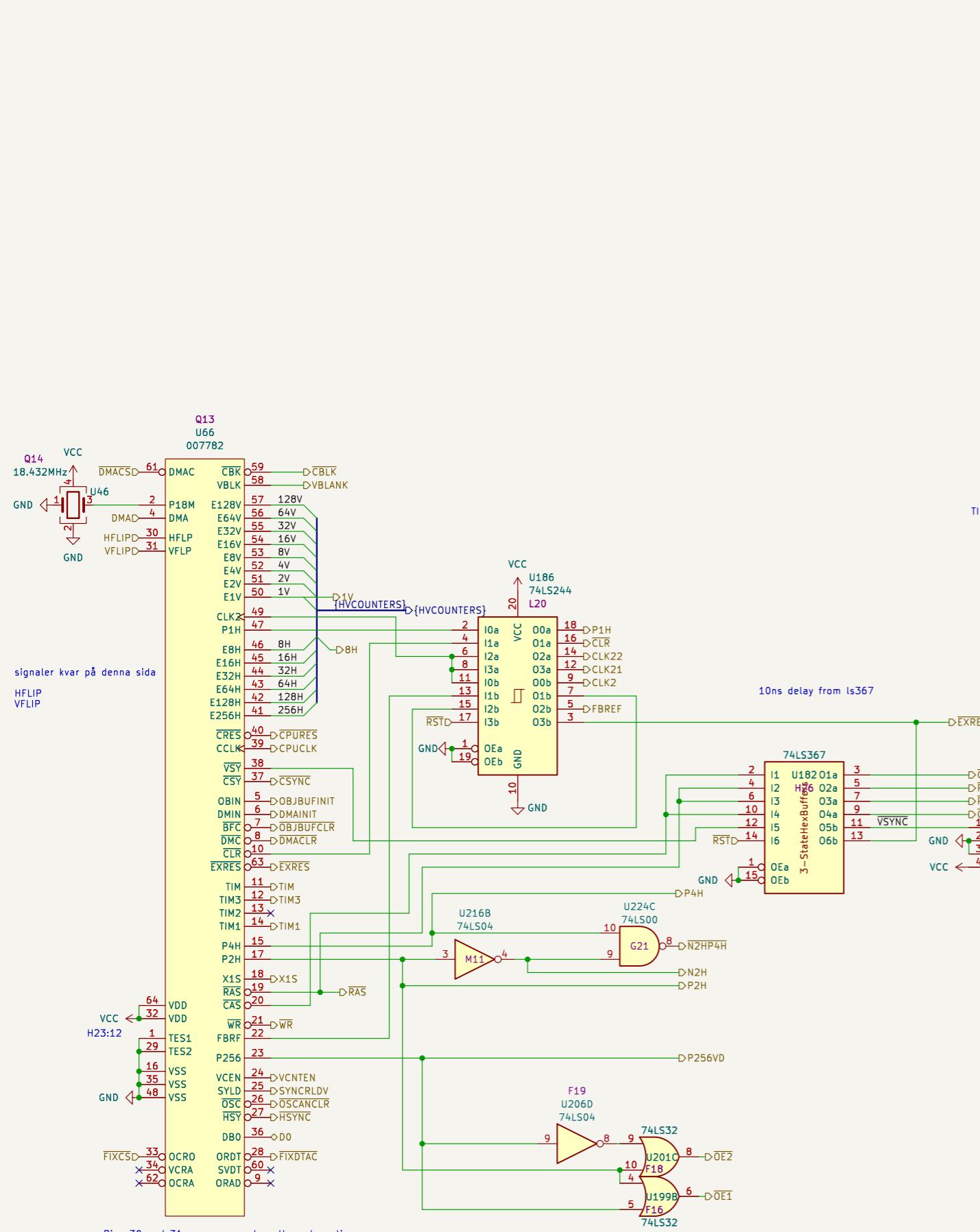


DMA Synchronization



Pins 30 and 31 were swapped on the schematics.

Hiring
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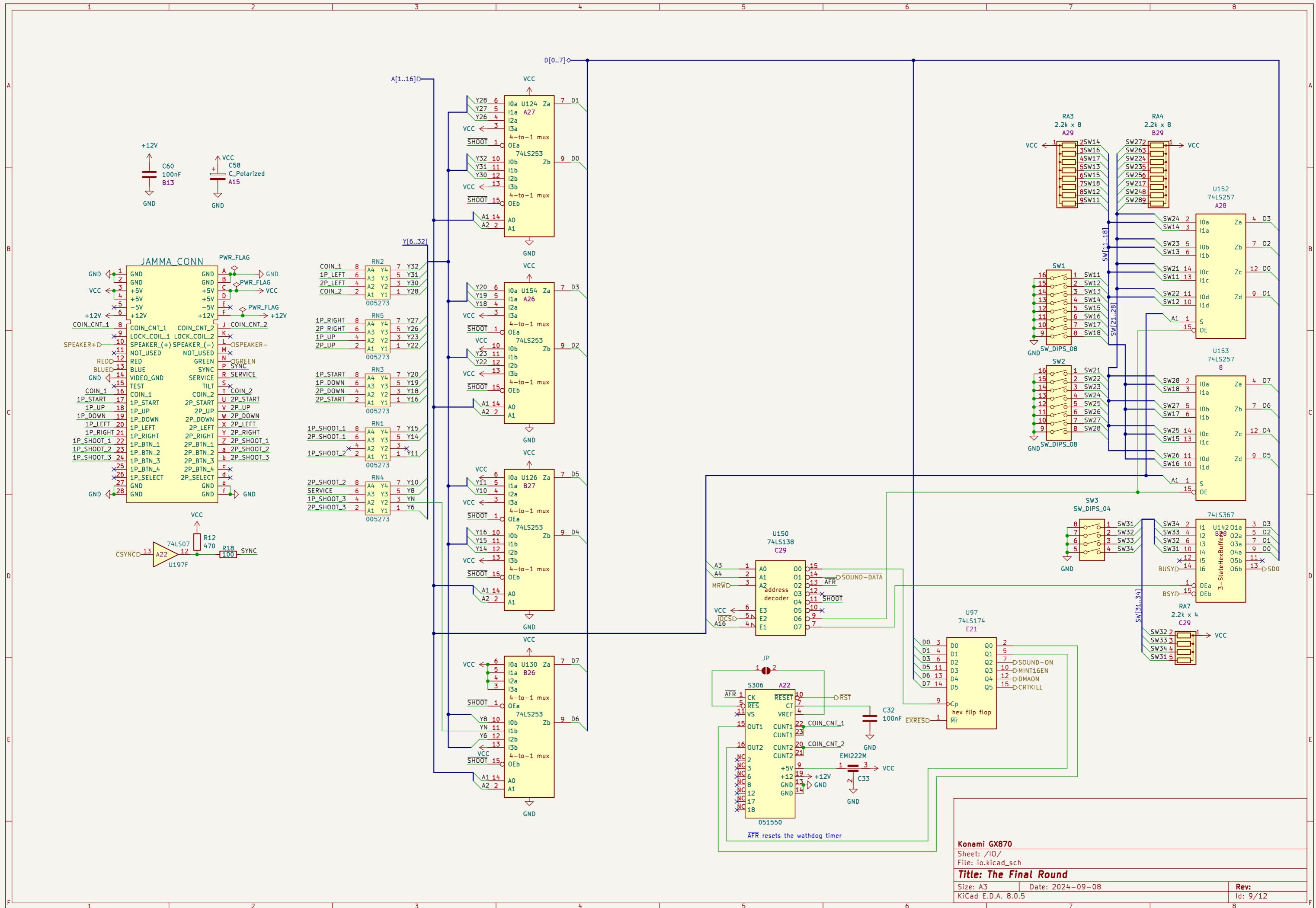
Sheet: /Timing/
File: [Timing.html](#)

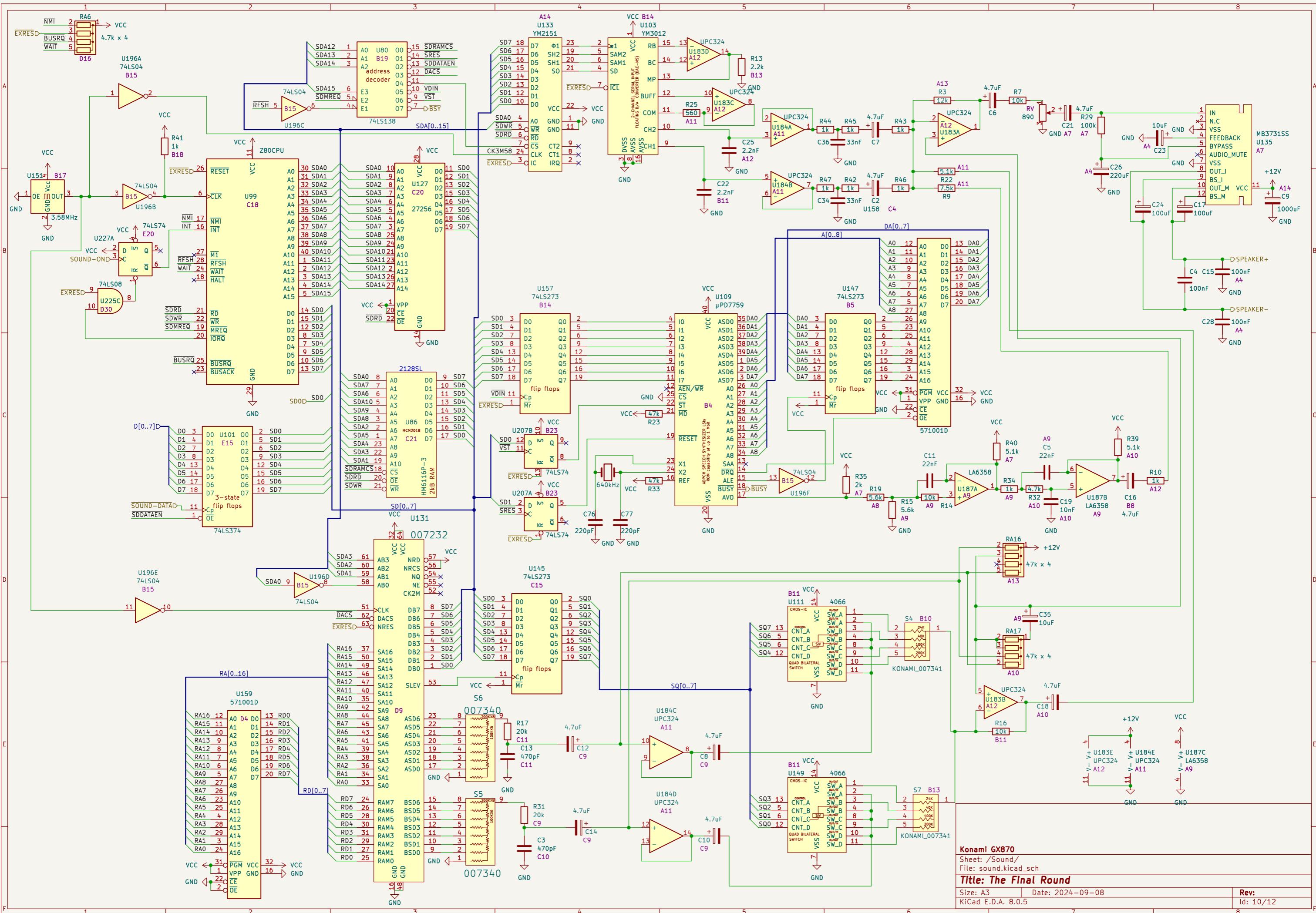
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Title: Title Final

Title: The Final Round

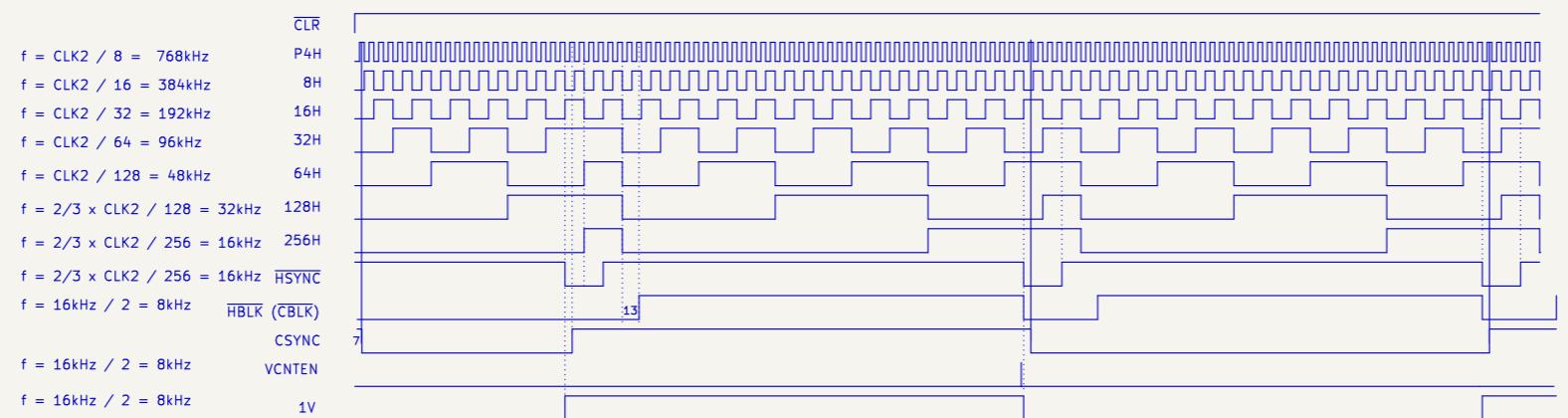
Size: A3 Date: 2024-09-0
KiCad EDA 8.0.5

Rev:
Id: 8/12





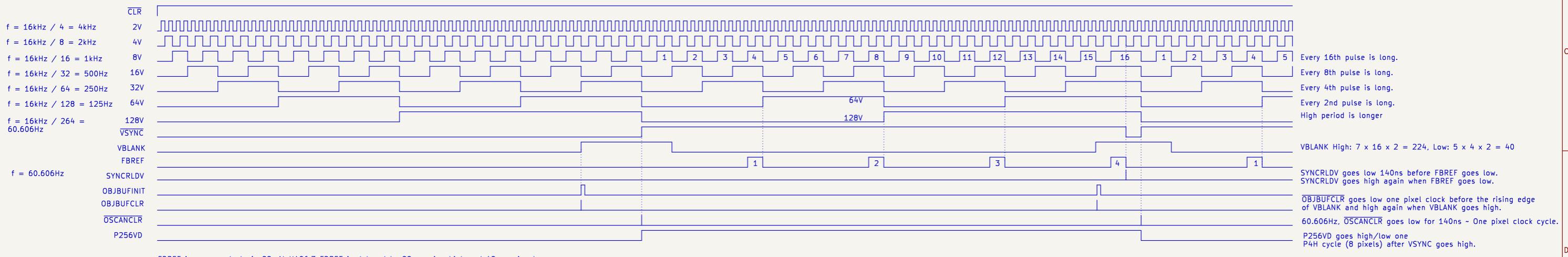
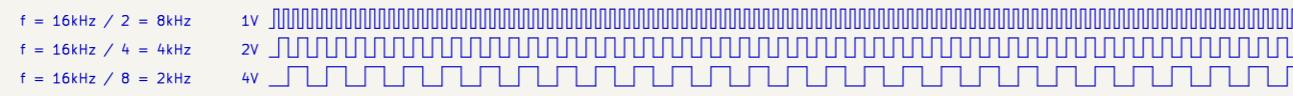
Horizontal signals



- The first VCNTEN is skipped after reset.
It goes low 140ns before HSYNC goes low,
and high again when HSYNC goes low.
VCNTEN is active right before every second falling edge of
HSYNC.

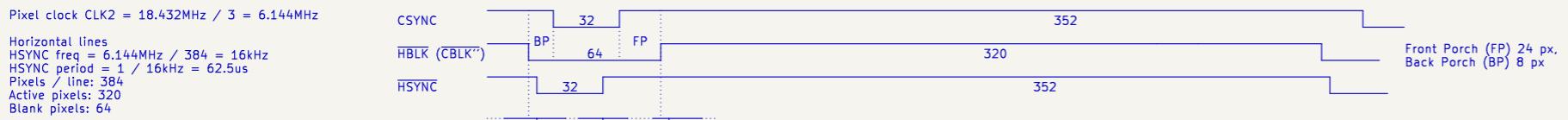
- CPURES goes high, and stays high, on the seventh falling edge
of HSYNC.

Vertical signals

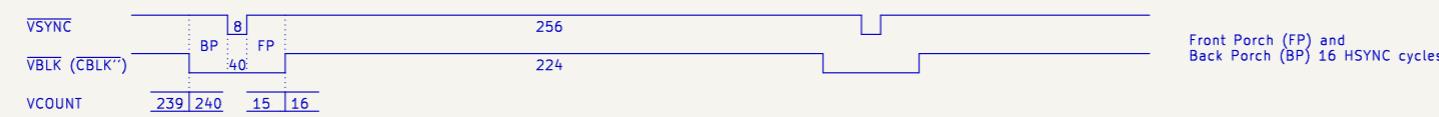


Horizontal and vertical synch timing diagrams

The numbers in the HSYNC and HBLK diagrams are HSYNC cycles.
All edges are synchronised to the rising edge of CLK2.



The numbers in the VSYNC and VBLK diagrams are HSYNC cycles.
All edges are synchronised to the falling edge of HSYNC.



HCOUNT is bits [256H, 128H, 64H, 32H, 16H, 8H, P4H, P2H, P1H]
VCOUNT is bits [128V, 64V, 32V, 16V, 8V, 4V, 2V, 1V]

CBLK^{''} is at the output of color mixer.

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Sheet: /Timing diagrams/
File: timing_diagrams.kicad_sch

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A

B

C

D

E

F

A

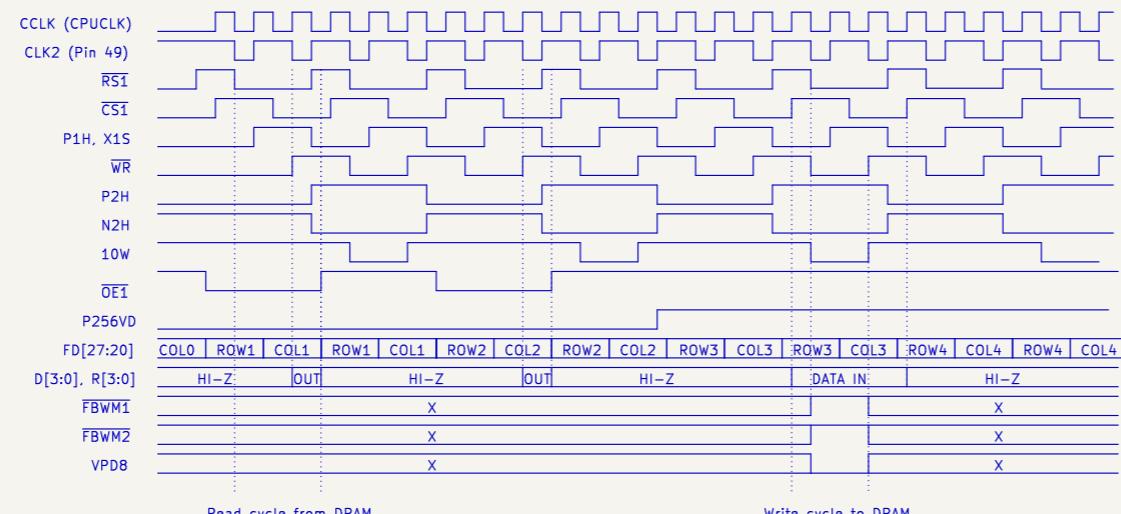
B

C

D

E

F

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Sheet: /Sprite timing diagrams/
File: sprite_timing_diagrams.kicad_sch

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