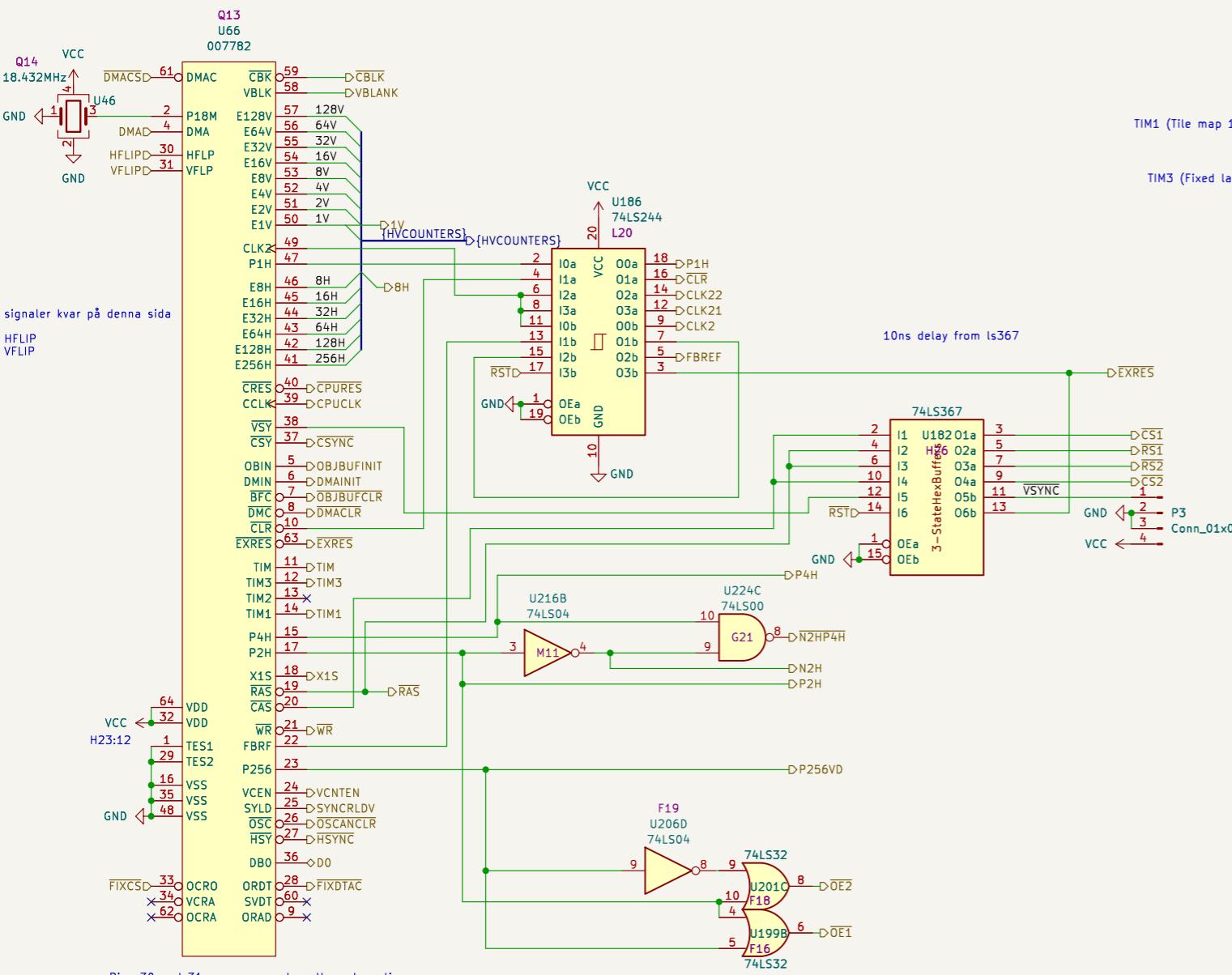
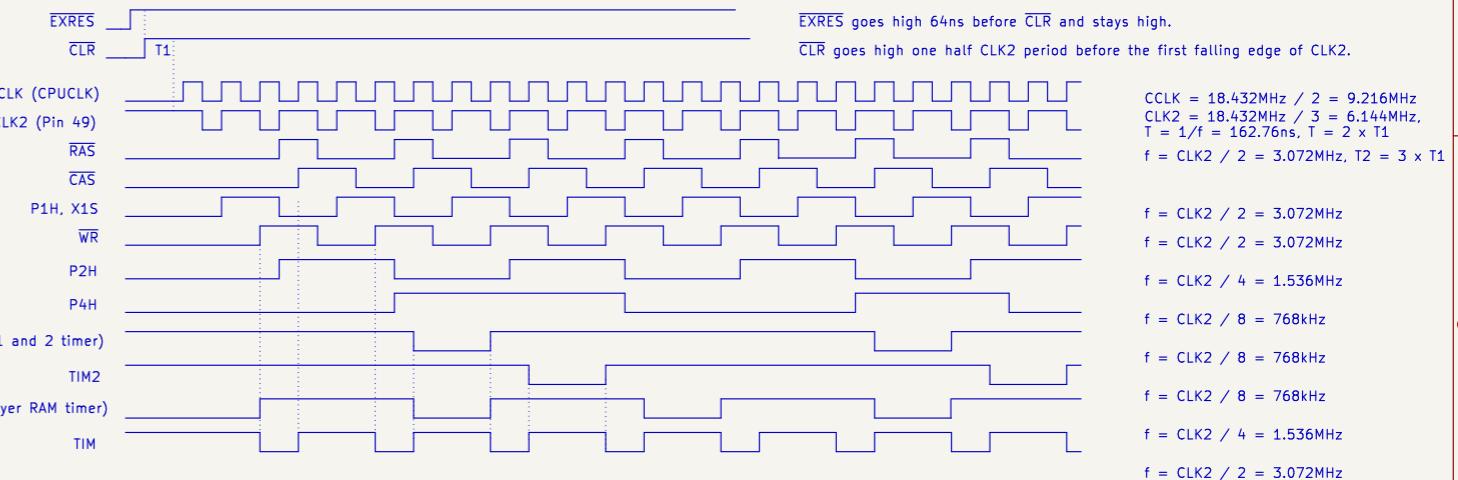
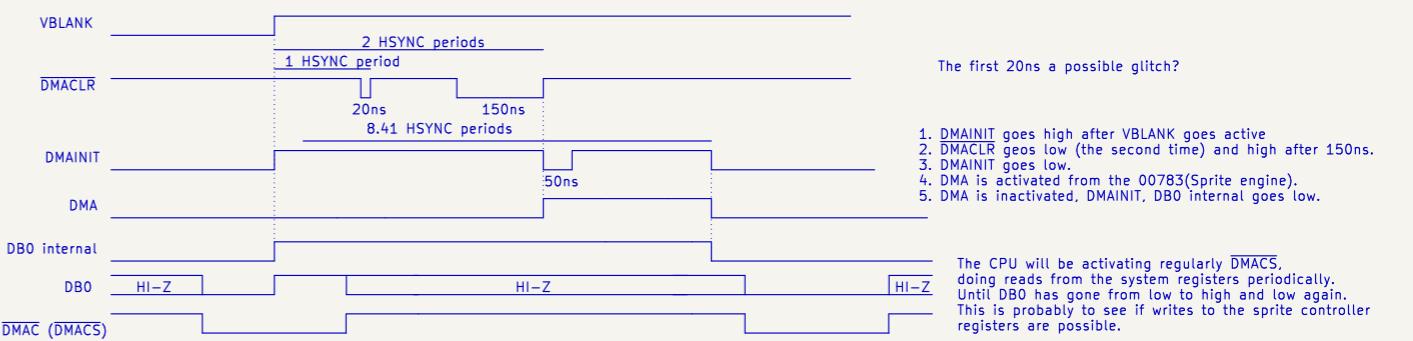
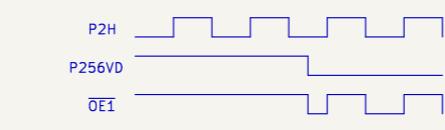


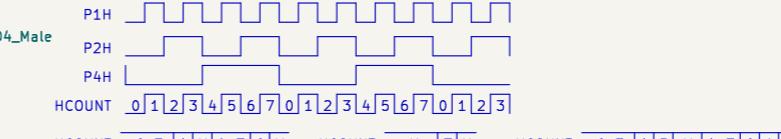
# DMA Synchronization



Output enables active vs. part of frame buffer active



Chip select signals and Data Acknowledge signals

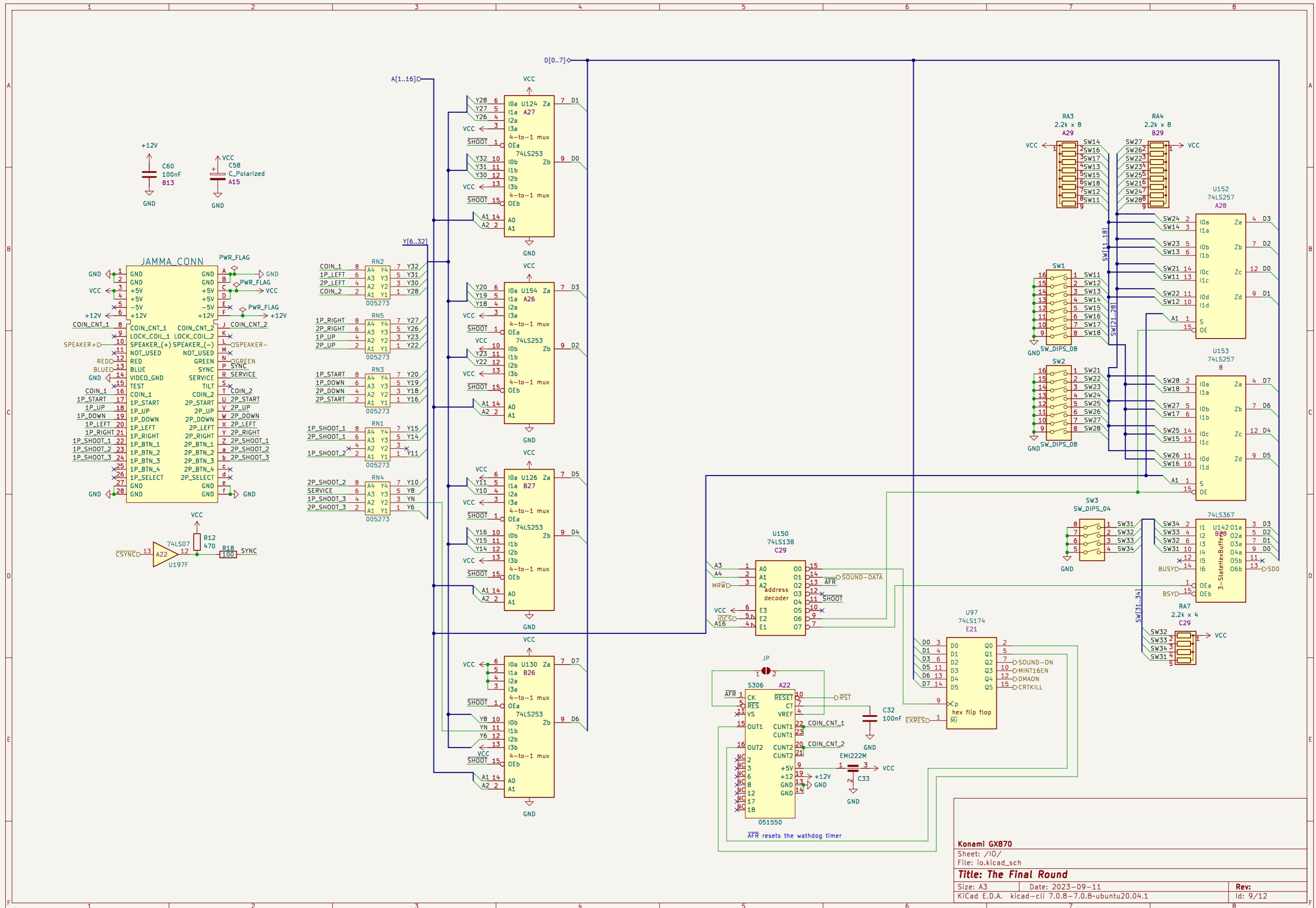


Timing  
**Konami GX870**  
Sheet: /Timing/  
File: timing.kicad\_sch

Title: The Final Round

Size: A3 Date: 2023-09-11  
KiCad E.D.A. kicad-cl 7.0.8-7.0.8-ubuntu20.04.1

Rev:  
Id: 8/12



#### Konami GX870

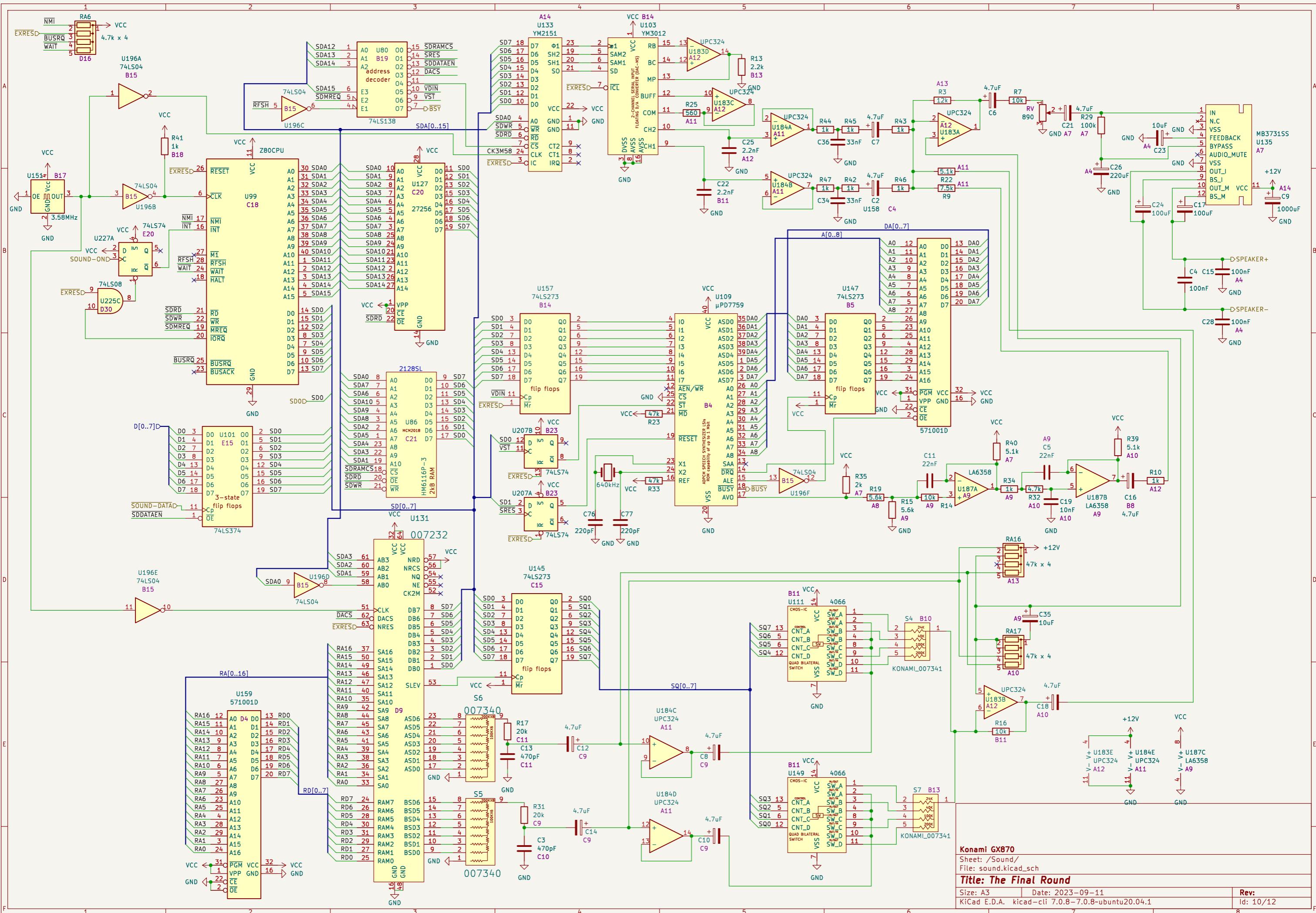
Sheet: /10/

File: io.kicad\_sch

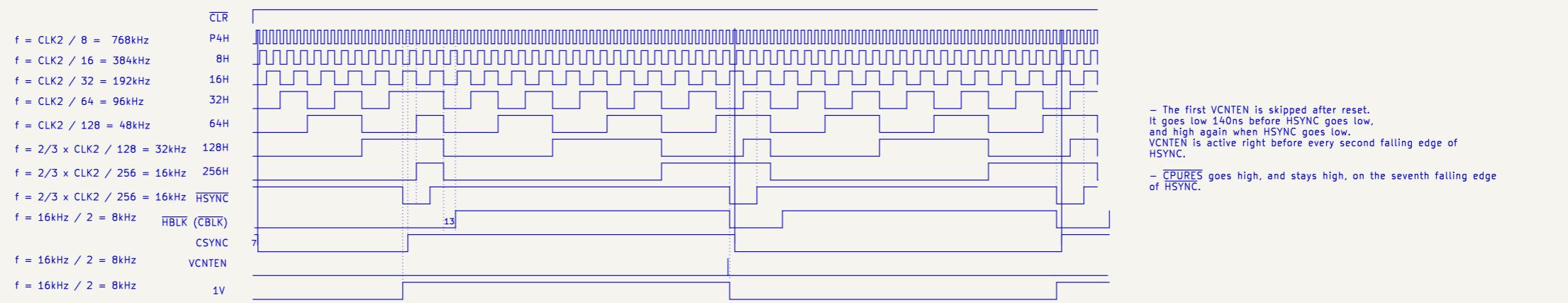
Title: The Final Round

Size: A3 Date: 2023-09-11  
KiCad E.D.A. kicad-cl 7.0.8-7.0.8-ubuntu20.04.1

Rev: Id: 9/12



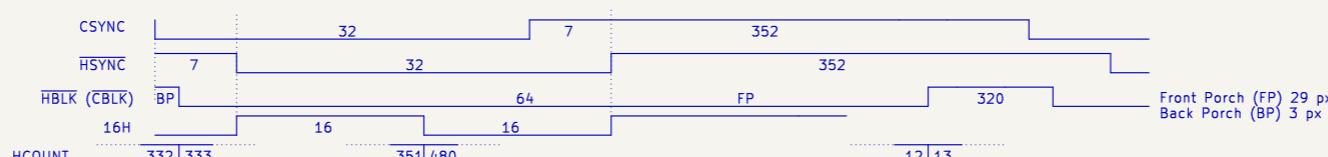
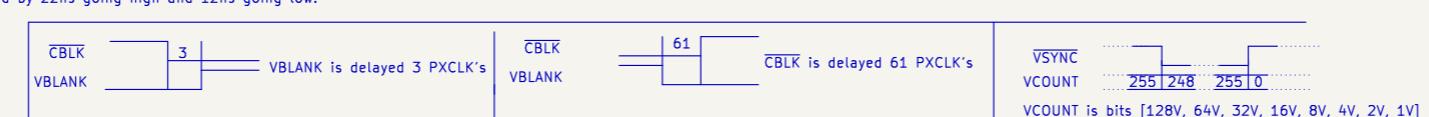
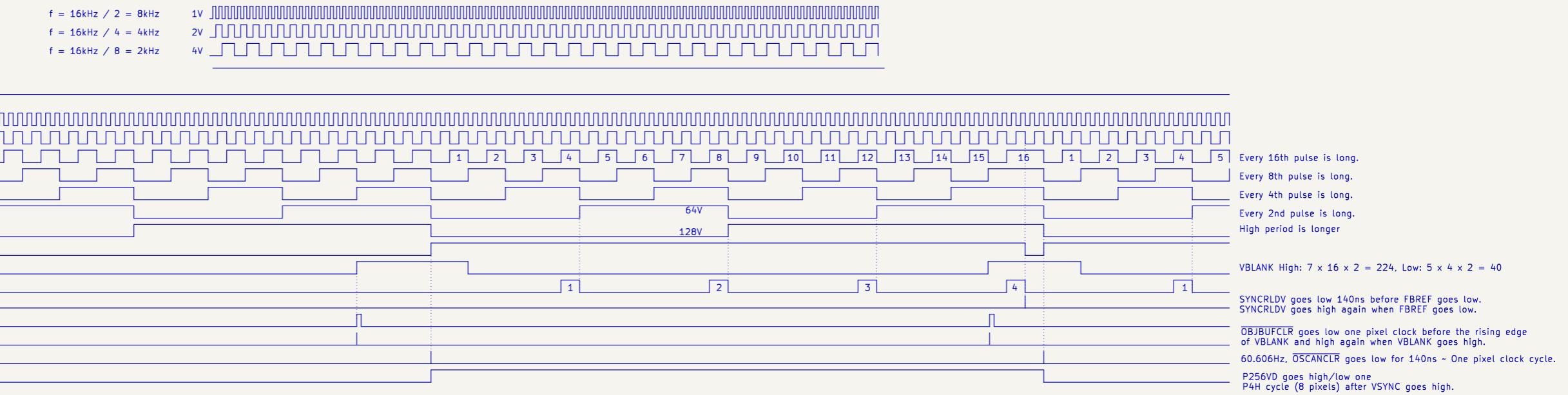
## Horizontal signals



– 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



The horizontal blanking part is shown of the composite blanking signals.

HCOUNT is bits [256H, 128H, 64H, 32H, 16H, 8H, P4H, P2H, P1H]

HSYNC =  $6.144\text{MHz} / 384 = 16\text{kHz}$

### Konami GX870

Sheet: /Timing diagrams/  
File: timing\_diagrams.kicad\_sch

### Title: The Final Round

Size: A3 Date: 2023-09-11  
KiCad E.D.A. kicad-cl 7.0.8-7.0.8-ubuntu20.04.1

Rev: Id: 11/12

A

B

C

D

E

F

A

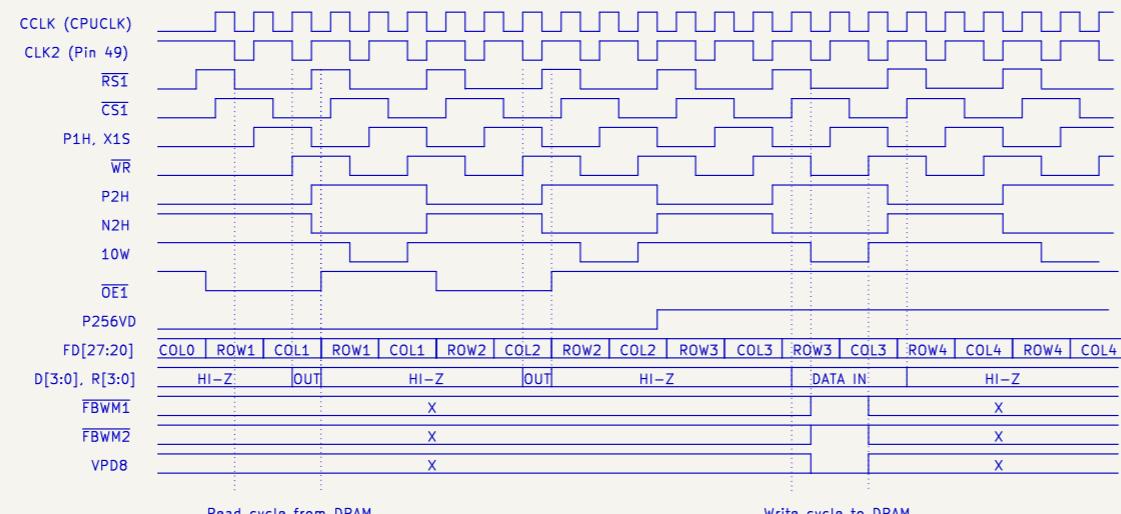
B

C

D

E

F

**Konami GX870**

Sheet: /Sprite timing diagrams/  
File: sprite\_timing\_diagrams.kicad\_sch

**Title: The Final Round**

Size: A3	Date: 2023-09-11
KiCad E.D.A. kicad-cli 7.0.8-7.0.8-ubuntu20.04.1	Rev:

Id: 12/12	8
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