

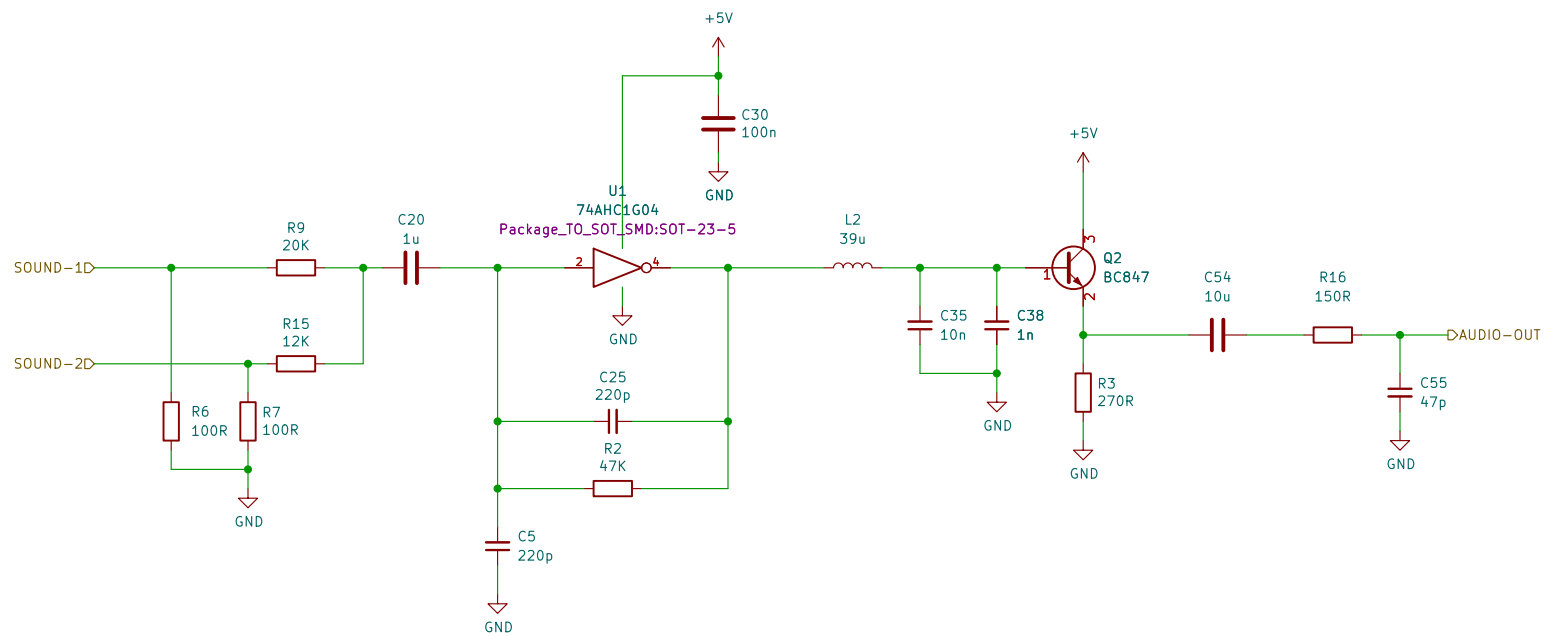
# Late to the Game

Sheet: /  
File: ingameNES.kicad\_sch

**Title: InGame-NES MMC3**

Size: A Date: 2022-08-02  
KiCad E.D.A. kicad (6.0.7)

Rev: 2  
Id: 1/9



# Late to the Game

Sheet: /Audio/  
File: audio.kicad\_sch

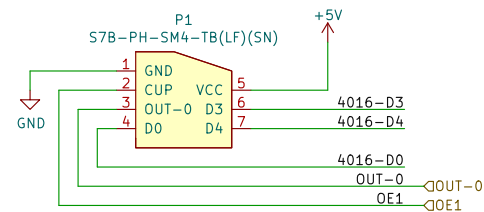
## Title: InGame-NES MMC3

Size: A Date: 2022-08-02  
KiCad E.D.A. kicad (6.0.7)

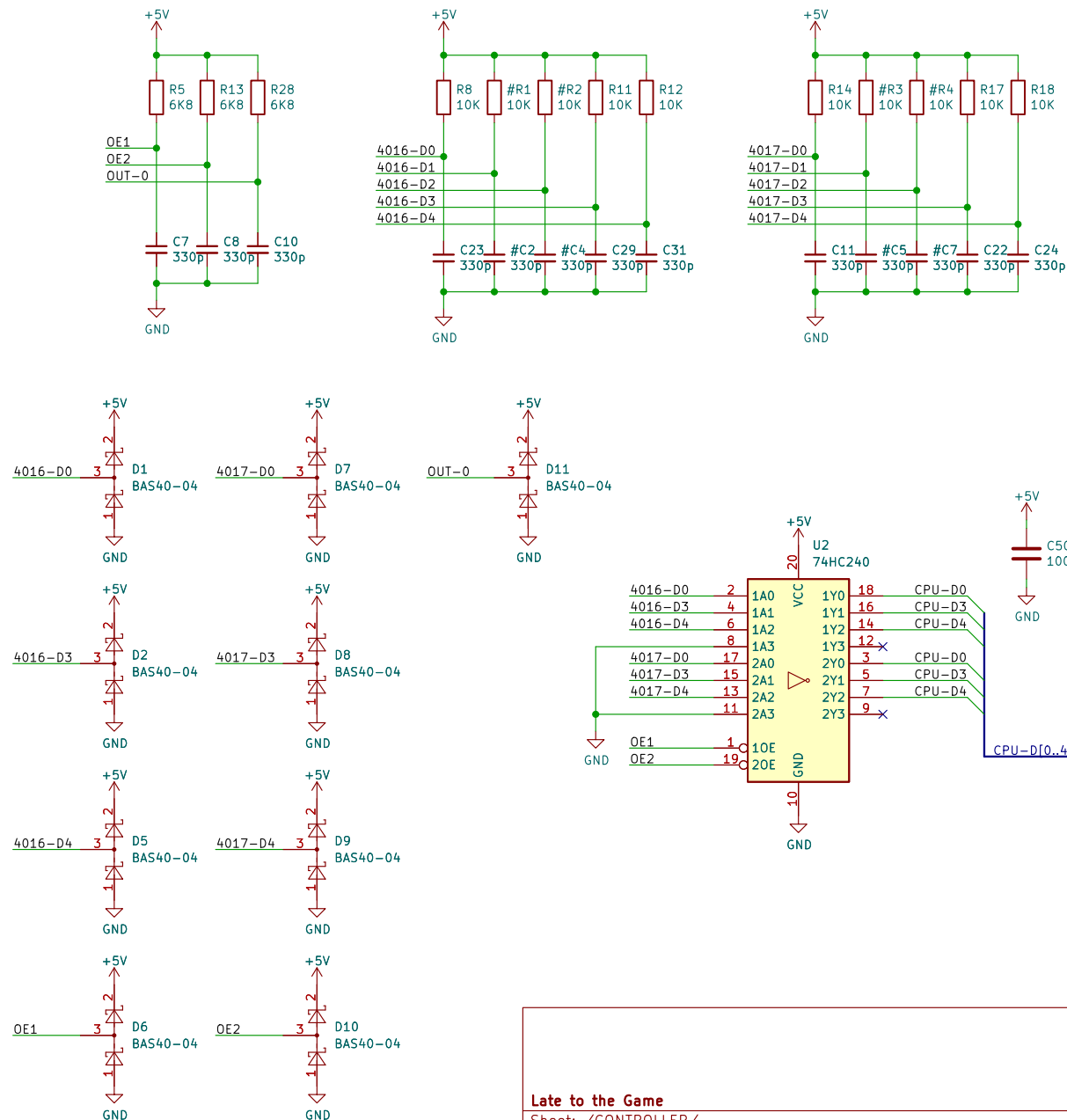
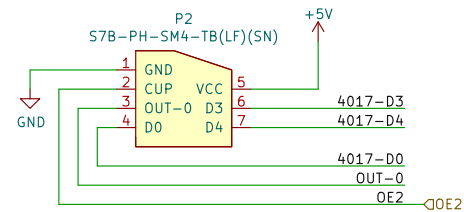
Rev: 2  
Id: 2/9

Joypad1 \$4016 CLK, D0, OUT0  
 Joypad2 \$4017 CLK, D0, OUT0, (Microphone FC \$4016 D2)  
 Joypad3 (Famicom) \$4016 CLK, D1, OUT0  
 Joypad4 (Famicom) \$4017 CLK, D1, OUT0  
 Zapper P1 \$4016 D3, D4  
 Zapper P2 (Famicom) \$4017 D3, D4

D0 - NES standard controller, Famicom hardwired controller  
 D1 - Famicom expansion port controller  
 D2 - Famicom microphone (controller 2 only)  
 D3 - Zapper light sense  
 D4 - Zapper trigger



#### CONTROLLER PORTS



#### Late to the Game

Sheet: /CONTROLLER/  
 File: INPUT.kicad\_sch

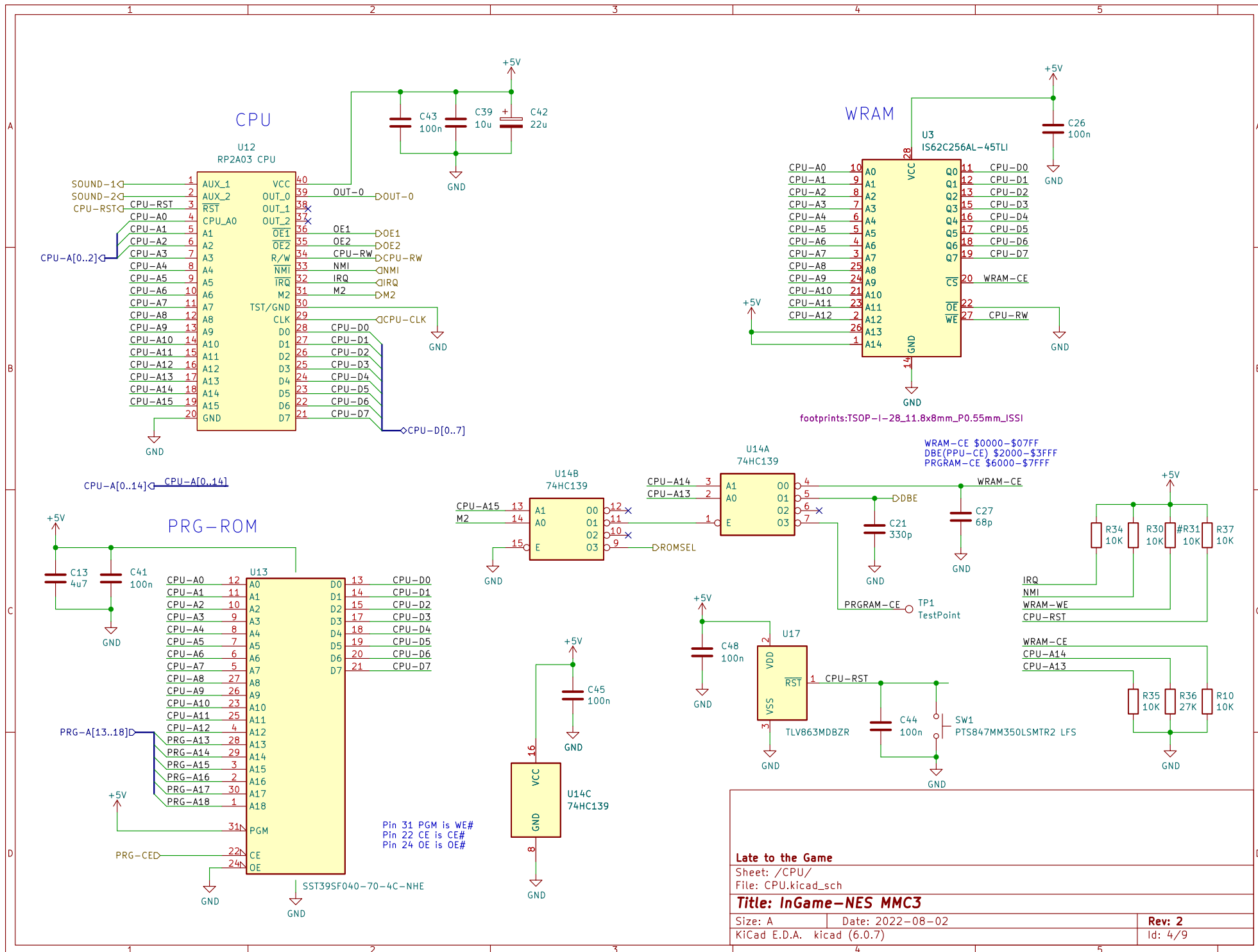
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Size: A4 Date: 2022-08-02

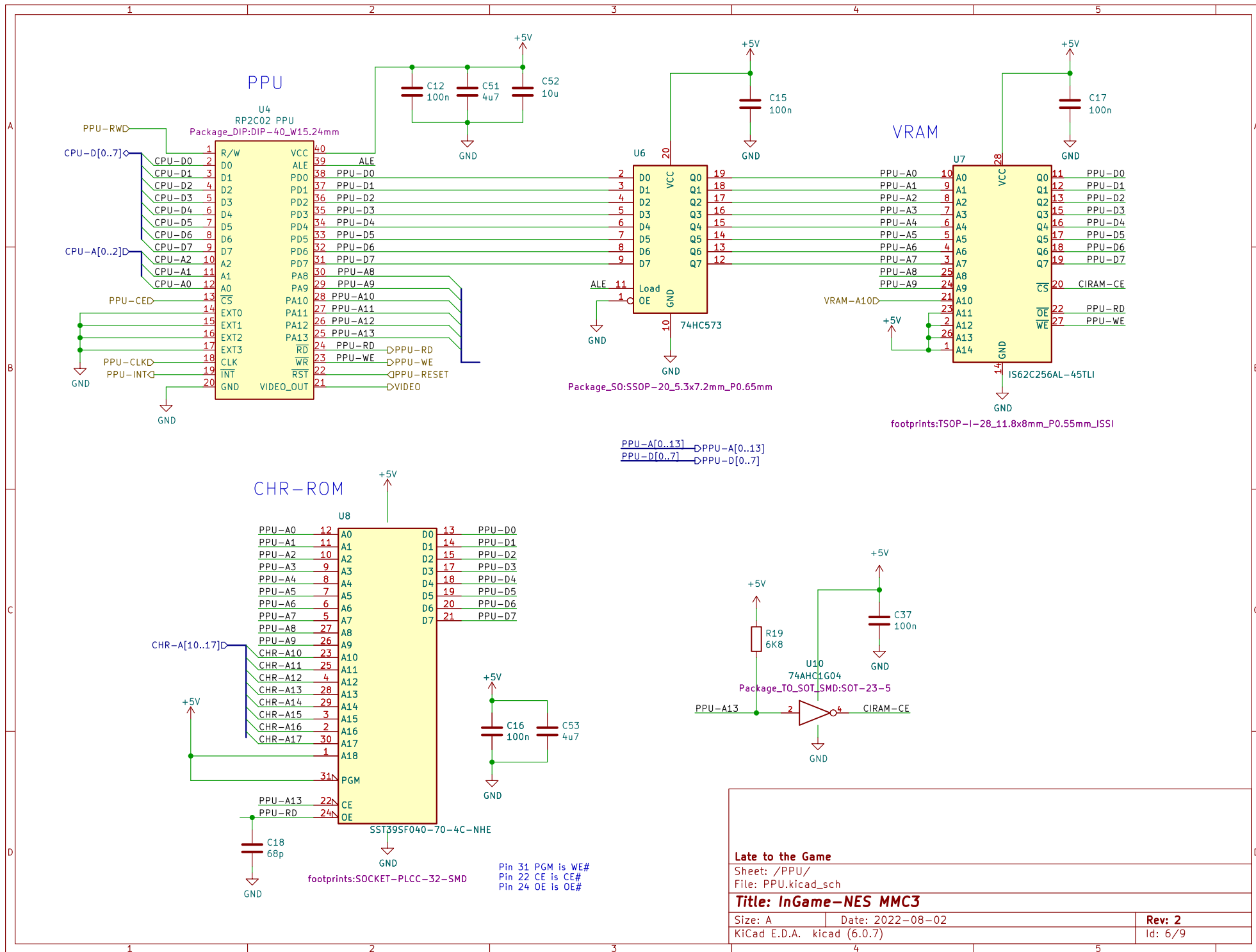
KiCad E.D.A. kicad (6.0.7)

Rev: 2

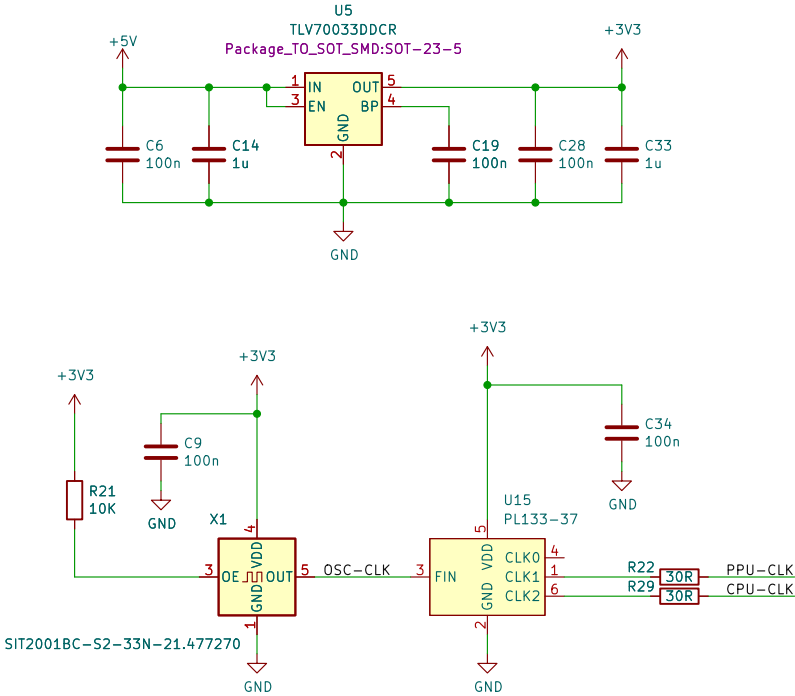
Id: 3/9







NTSC frequency (315/88) = 3.57954545  
Master CLock = (315/88) \* (6) = 21.4772727  
NES CPU (315/88) \* (6/12) = 1.789772727  
NES PPU (315/88) \* (6/4) = 5.36931818



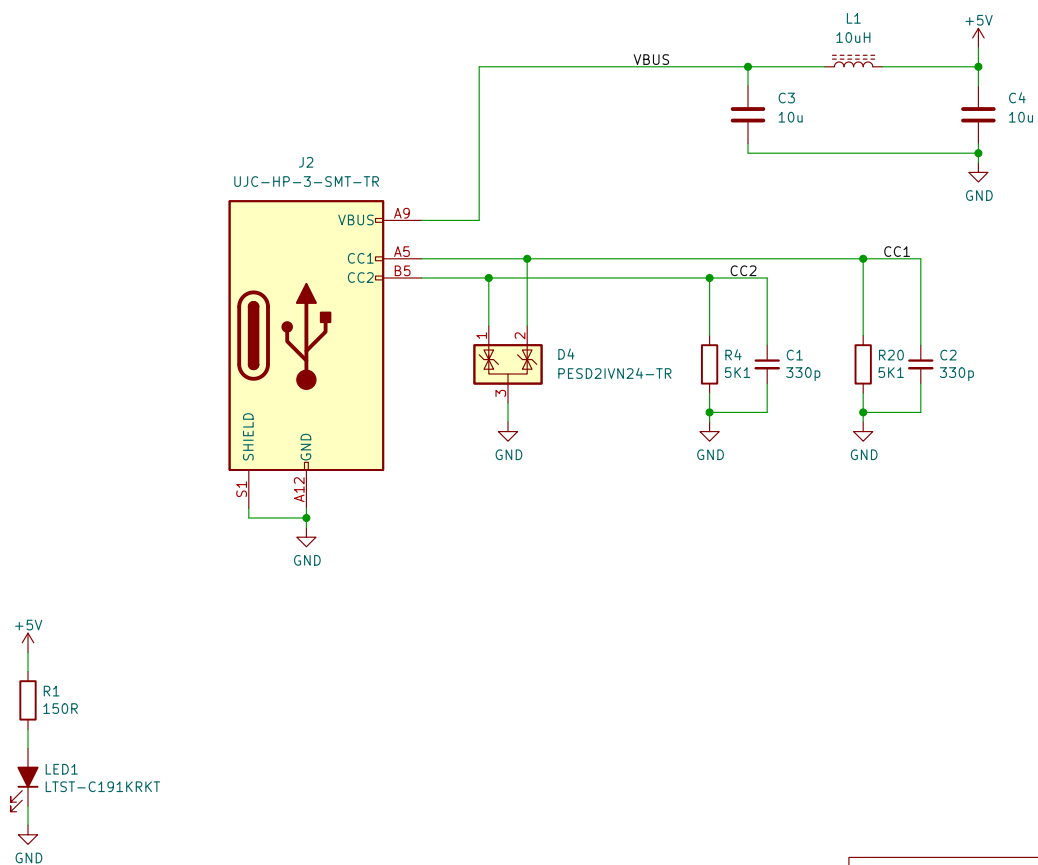
**Late to the Game**

Sheet: /TIMING/  
File: CLOCK.kicad\_sch

**Title: InGame-NES MMC3**

Size: A Date: 2022-08-02  
KiCad E.D.A. kicad (6.0.7)

Rev: 2  
Id: 8/9



# **Late to the Game**

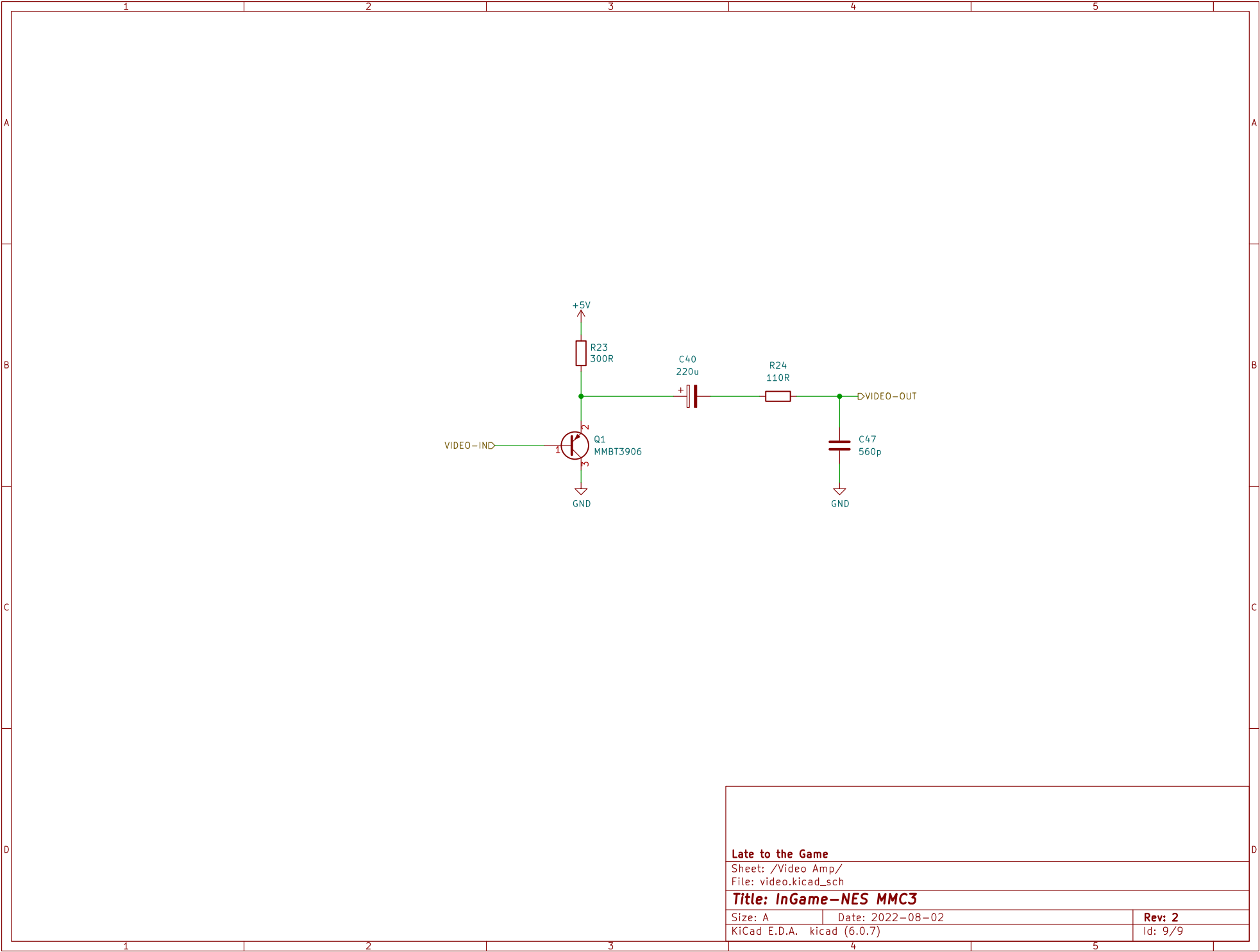
Sheet: /USB-C-POWER/  
File: USB-C.kicad\_sch

## **Title: InGame-NES MMC3**

Size: A Date: 2022-08-02  
KiCad E.D.A. kicad (6.0.7)

Rev: 2  
Id: 9/9





**Late to the Game**

Sheet: /Video Amp/  
File: video.kicad\_sch

**Title: InGame-NES MMC3**

Size: A	Date: 2022-08-02	Rev: 2
KiCad E.D.A. kicad (6.0.7)		Id: 9/9