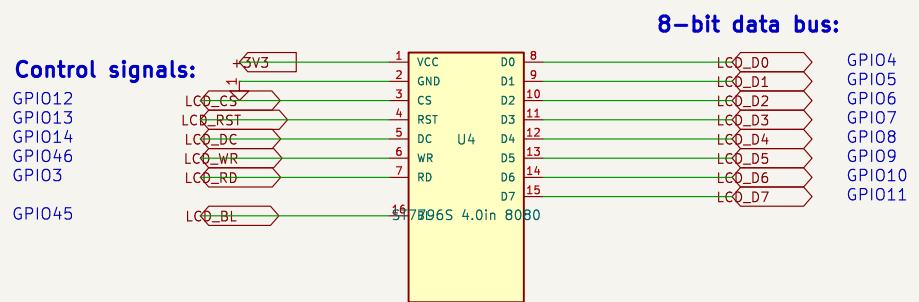


# DISPLAY – ST7796S 4.0in 320x480

8-bit 8080 parallel interface (mandatory for SNES emulation speed)



FPC RIBBON CONNECTOR

LCO_VDD	1	(VDD on PCB back, connects to display module)
LCO_D6	2	
LCO_D5	3	
LCO_D4	4	
LCO_D3	5	
LCO_D2	6	J4
LCO_D1	7	
LCO_D0	8	
LCO_BL	9	
LCO_RD	10	
LCO_WR	11	106P-0.5mm
LCO_DC	12	
LCO_RST	13	
LCO_CS	14	
GND	15	
+4V3	16	

## Design Notes:

- 8080 parallel: 1 pixel (16-bit RGB565) = 2 bus cycles
- SPI alternative: 16 clock cycles per pixel (too slow for 60fps SNES)
- GPIO4–11 form contiguous 8-bit bus for efficient register-level DMA
- WR strobes data on rising edge, RD directly from GPIO3

Generated by scripts/generate\_schematics  
ESP32 Emu Turbo – Handheld Retro Console

Sheet: /  
File: 03-display.kicad\_sch

**Title: Display – ST7796S 4.0in 8080 Parallel**

Size: A4 Date:  
KiCad E.D.A. 9.0.7

Rev: Id: 3/1