

Sheet: VeraModule

VERA FPGA

File: vera-fpga.sch

Sheet: BusDecoder

BUS DECODER

File: busdecoder.sch

Sheet: Vera FPGA flash

VERA SPI FLASH SD CARD INTERFACE

File: vera-fpga-flash.sch

Sheet: CartridgeInterface

CARTRIDGE INTERFACE

File: cartridgeInterface.sch

Sheet: PowerSupply

POWER SUPPLY

File: powersupply.sch

Gianluca Renzi
RetroBit Lab

Sheet: /
File: VERA-MODULE-RBL.sch

Title: VERA FPGA Audio & Video Board

Size: A4 Date: 2025-09-04

KiCad E.D.A. kicad 5.1.9+dfsg1-1+deb11u1

Rev: 1.0

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Diagram of a 15-pin D-sub connector (J1) showing pin connections for a VGA external display. The connector has two rows of pins. The top row (pins 1-9) is connected to VGARED (1), VGABLUE (3), GND (5), GND (7), +5V (9), and GND (11). The bottom row (pins 10-16) is connected to VGAGREEN (2), GND (4), VGABLUE (6), VGABLUE (8), VGAGREEN (10), VGASYN (12), VGASYN (14), and VGASYN (16). Pins 11, 13, 15, 17, and 18 are marked with an 'X' indicating they are not connected.

BOTTOM

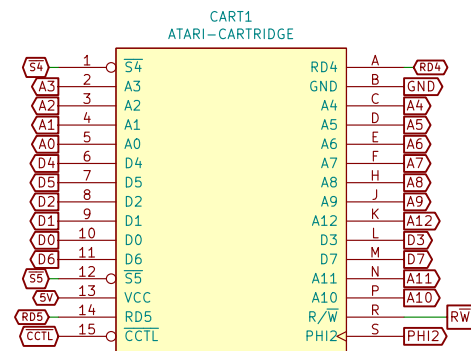
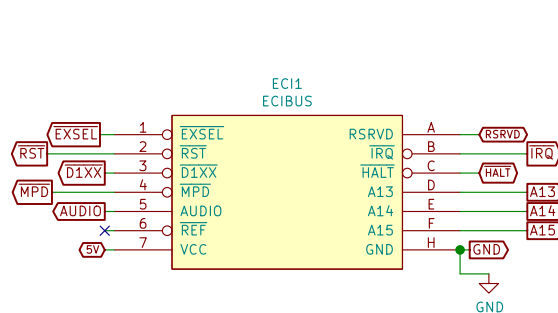
Pin connections for the bottom view of the TX50108EPW package:

- GND:** Pins 1, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
- VCCA (+3.3V):** Pins 1, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
- +5V:** Pins 1, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.

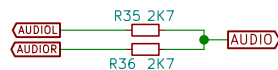
PBI DEVICE ID: software selectable only



ATARI 130XE ECI & CARTRIDGE INTERFACE



AUDIO MIXER INSIDE ATARI



Gianluca Renzi

RetroBit Lab

Sheet: /CartridgeInterface/

File: cartridgeInterface.sch

Title:

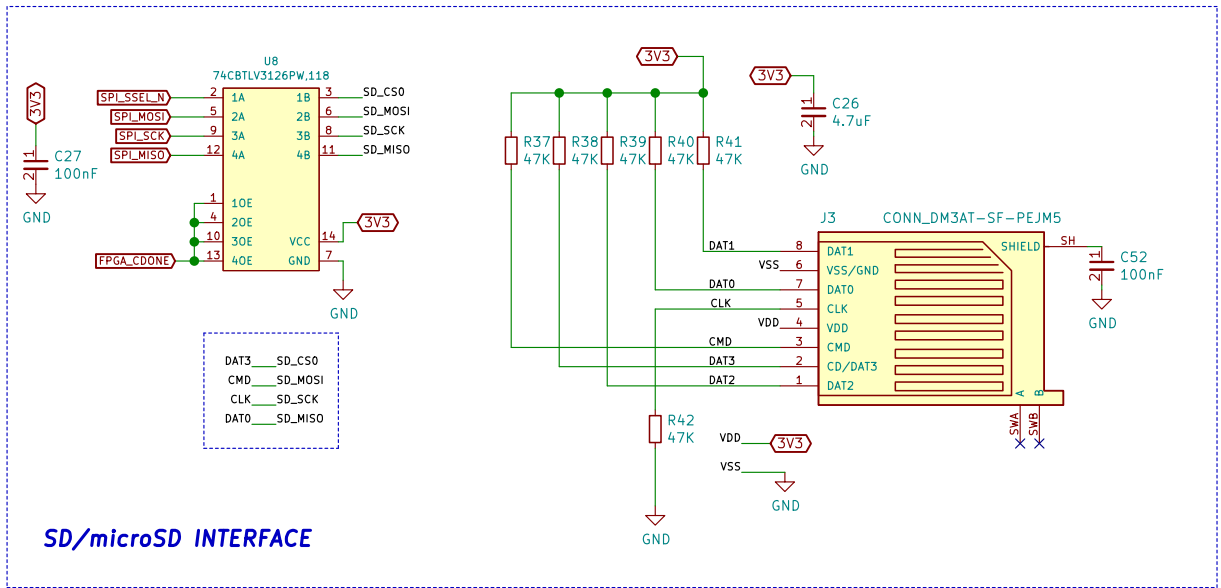
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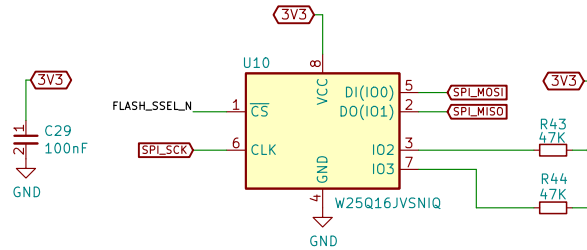
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SPI 16MB FLASH

The diagram shows the SPI 16MB FLASH (W25Q16JVSNIQ) chip (U10) connected to a 3V3 supply. The chip is labeled U10. The connections are as follows:

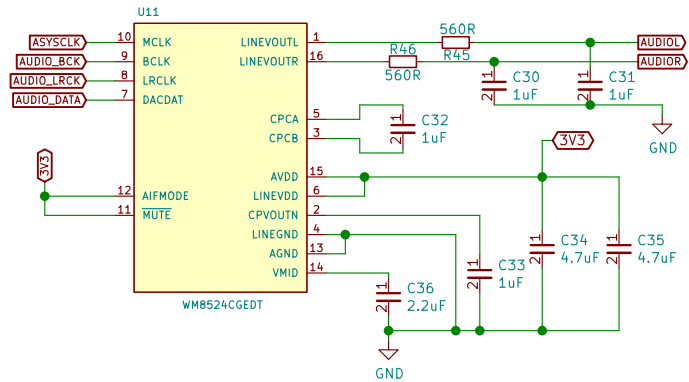
- Pin 1 (CS) is connected to FLASH_SSSEL_N.
- Pin 6 (CLK) is connected to SPI_SCK.
- Pin 8 (VCC) is connected to 3V3.
- Pin 4 (GND) is connected to GND.
- Pin 5 (DI(100)) is connected to SPL_MOSI.
- Pin 2 (DO(101)) is connected to SPL_MISO.
- Pin 3 (IO2) is connected to R43 (47K).
- Pin 7 (IO3) is connected to R44 (47K).
- The other end of R43 and R44 is connected to 3V3.



IC DAC/AUDIO 24BIT 192K 16TSSOP

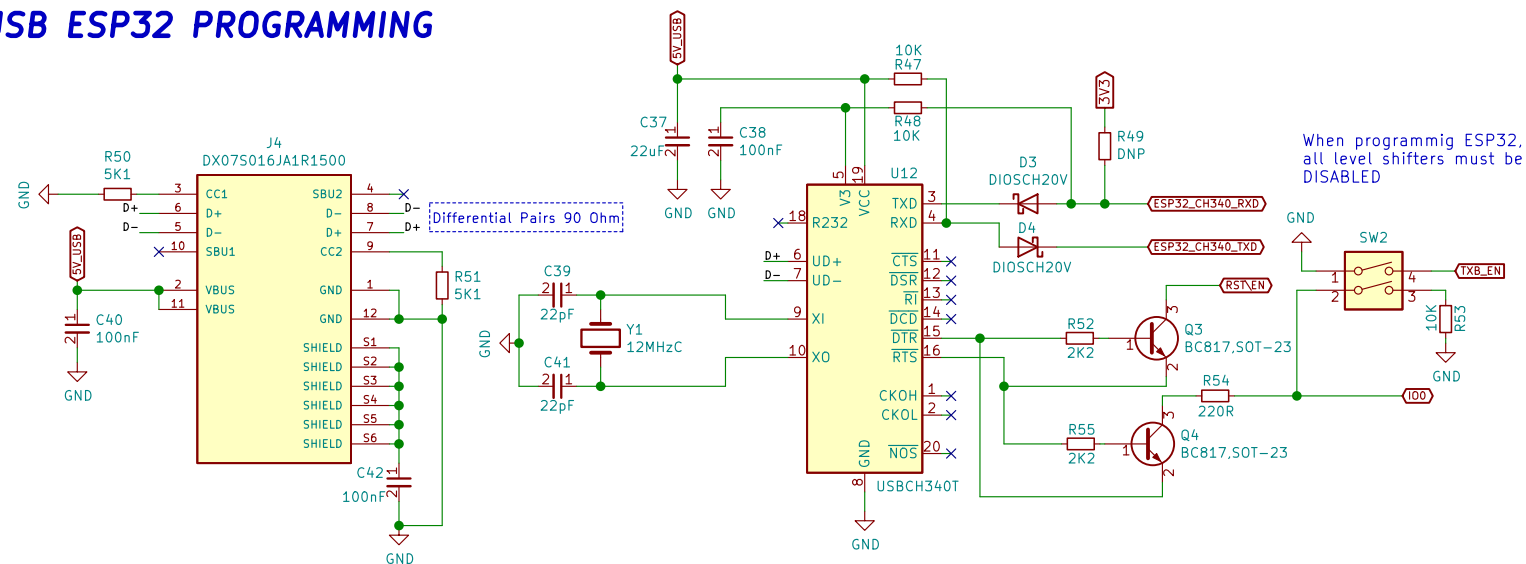
The diagram shows the WM8524CGEDT IC with the following connections:

- Inputs:**
 - 10: ASYSCLK
 - 9: AUDIO_BCK
 - 8: AUDIO_LRCK
 - 7: AUDIO_DATA
- Outputs:**
 - 1: LINEVOUTL
 - 16: LINEVOUTR
- Control/Status:**
 - 5: CPCA
 - 3: CPCB
 - 15: AVDD
 - 6: LINEVDD
 - 2: CPVOUTN
 - 4: LINEGND
 - 13: AGND
 - 14: VMID
 - 12: AIFMODE
 - 11: MUTE
- Power/Reference:**
 - 3V3 supply connected to AVDD (pin 15), LINEVDD (pin 6), and AGND (pin 13).
 - Ground (GND) connected to VMID (pin 14), and the common ground for the output capacitors.
- Passive Components:**
 - Resistors: R45 (560R), R46 (560R), R47 (560R).
 - Capacitors: C30 (2uF), C31 (1uF), C32 (2uF), C33 (1uF), C34 (4.7uF), C35 (4.7uF).
- Connections:**
 - LINEVOUTL (pin 1) is connected to R45, which is then connected to the output and C30.
 - LINEVOUTR (pin 16) is connected to R46, which is then connected to the output and C31.
 - AVDD (pin 15) is connected to the 3V3 supply and C32.
 - LINEVDD (pin 6) is connected to the 3V3 supply and C33.
 - AGND (pin 13) is connected to the 3V3 supply and C34.
 - VMID (pin 14) is connected to GND and C35.

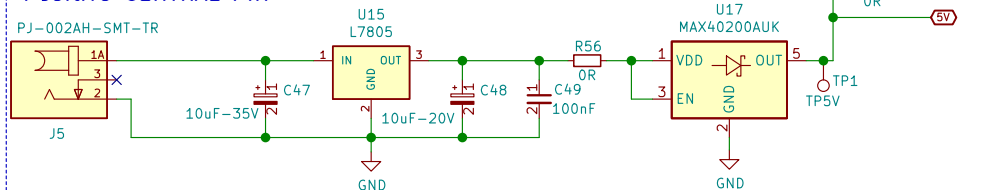


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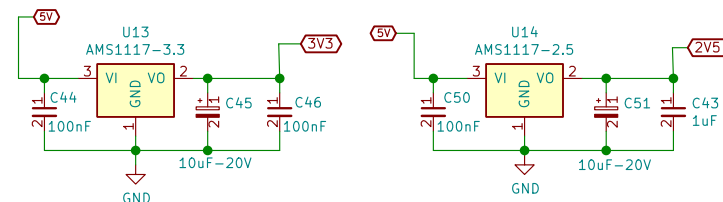
USB ESP32 PROGRAMMING



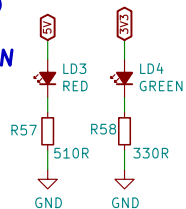
POWER INPUT: from 5VDC...24VDC Positive CENTRAL PIN



POWER 3.3V & POWER 2.5V



POWER LED 5V: RED 3.3V: GREEN



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