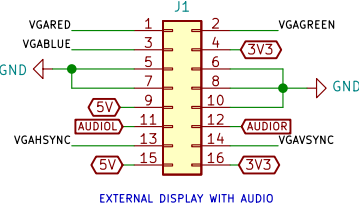
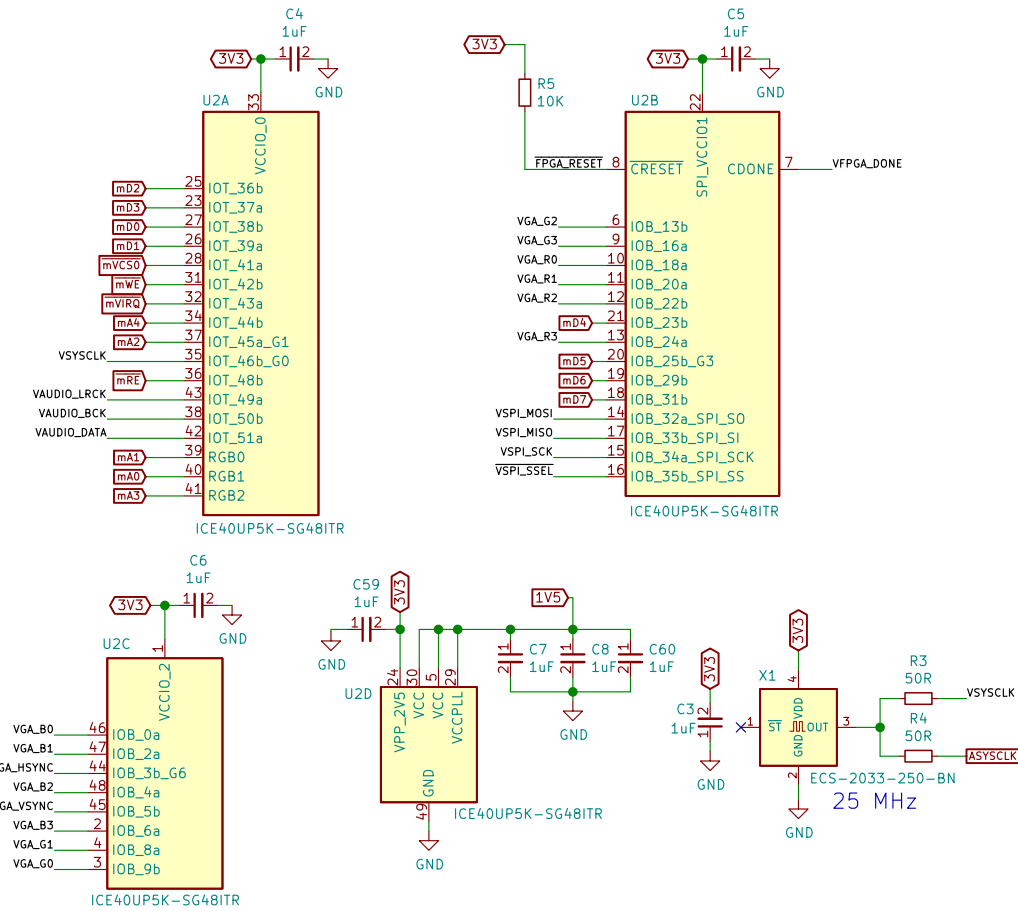


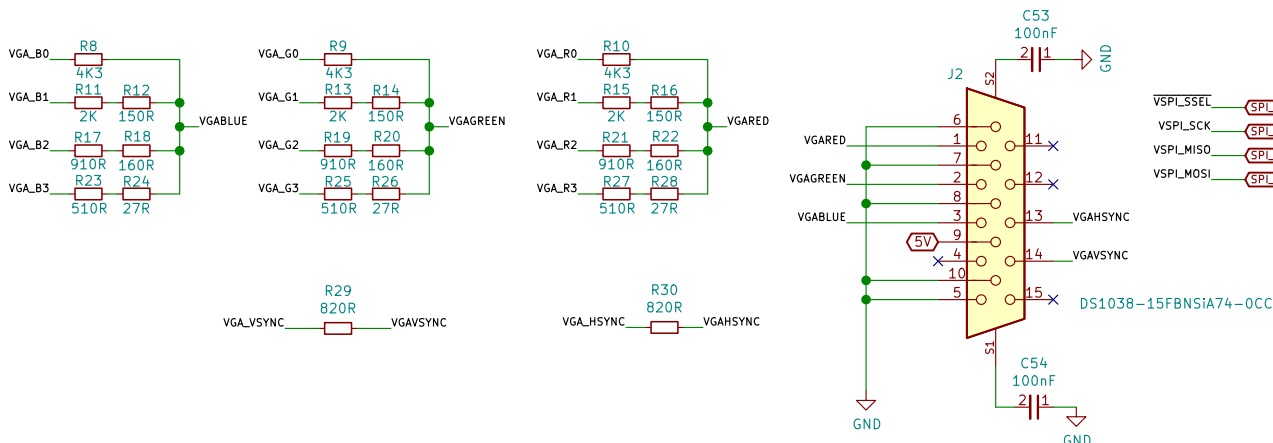
EXTERNAL VIDEO CONNECTOR



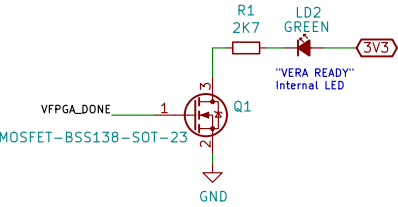
FPGA VERA LOGIC VIDEO & AUDIO CARD



ANALOG VGA SIGNALS

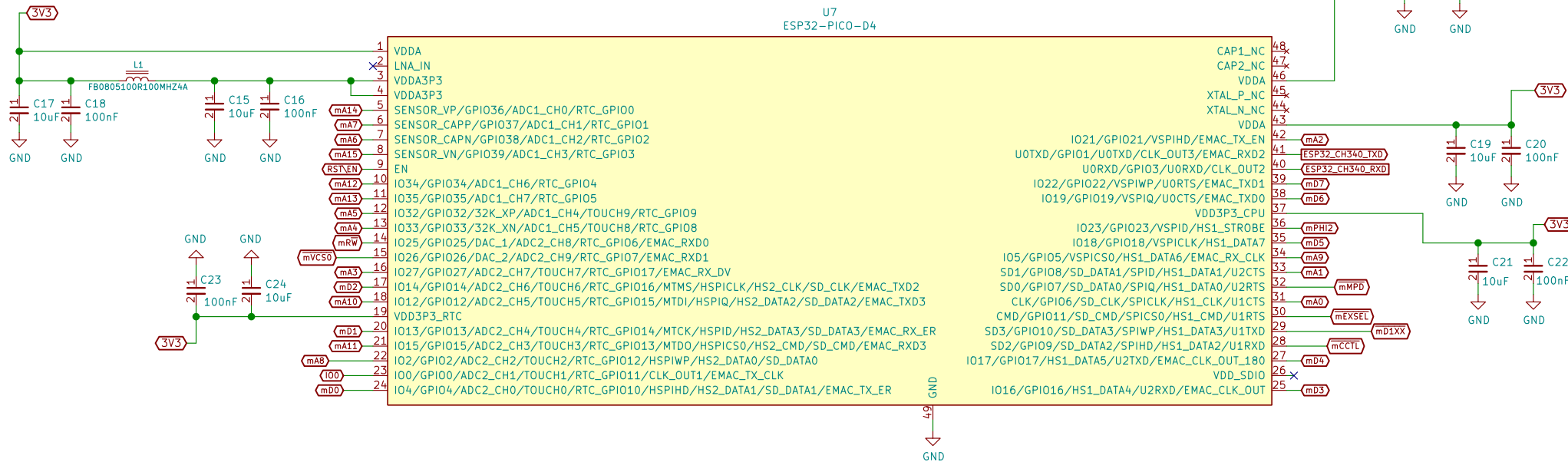


VERA FPGA PROGRAMMED OK



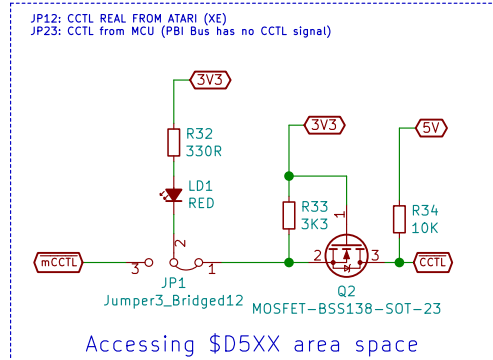
PBI Bus Interface Decoder:
\$D1XX, \$D1FF, MPD, \$D8XX-\$DFXX, EX(T)SEL

PBI DEVICE ID: software selectable only

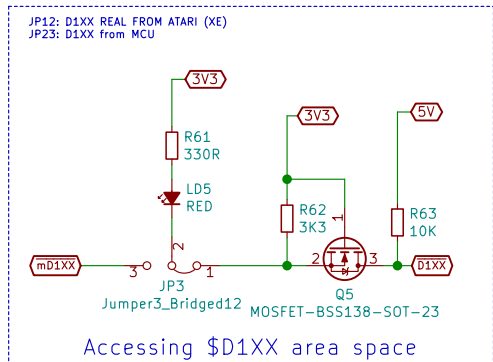


mVCS0 active & A15..A0 \$D8XX-\$DFXX -> MPD active (Internal 2K ROM)

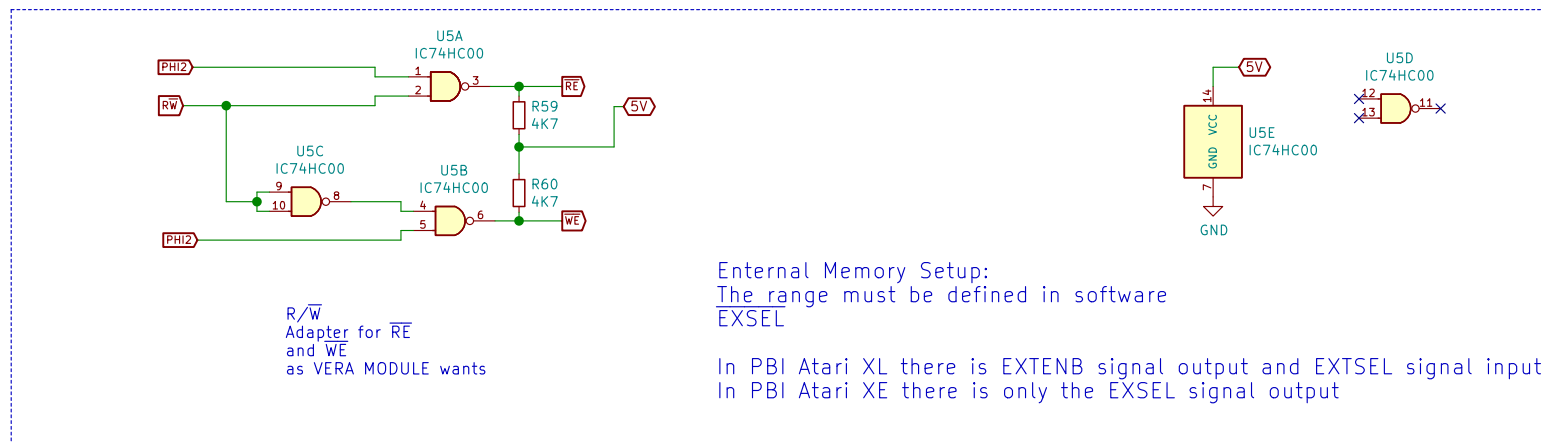
\$D1FF access & DATABUS = PBI DEVICE ID -> mVCS0 active/deactive



Accessing \$D5XX area space



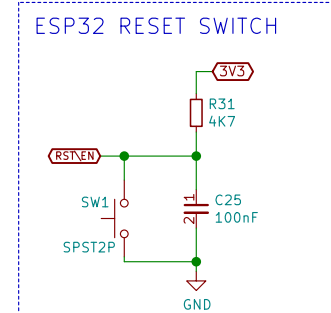
Accessing \$D1XX area space



R/W Adapter for RE and WE as VERA MODULE wants

External Memory Setup:
The range must be defined in software
EXSEL

In PBI Atari XL there is EXTENB signal output and EXTSEL signal input
In PBI Atari XE there is only the EXSEL signal output



Gianluca Renzi

RetroBit Lab

Sheet: /BusDecoder/

File: busdecoder.sch

Title: BUS DECODER

Size: A3

Date: 2025-09-10

Rev: 1.0

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

Id: 3/6

The diagram illustrates the internal components of an Atari 2600 console, showing the connection between the console's internal components and the Atari Cartridge.

EC11 ECIBUS: This component is connected to the console's internal components. Its pins are labeled as follows:

- 1: EXSEL
- 2: RST
- 3: D1XX
- 4: MPD
- 5: AUDIO
- 6: REF
- 7: VCC

ATARI-CARTRIDGE: This component is connected to the console's internal components. Its pins are labeled as follows:

- 1: S4
- 2: A3
- 3: A2
- 4: A1
- 5: A0
- 6: D4
- 7: D5
- 8: D2
- 9: D1
- 10: D0
- 11: D6
- 12: S5
- 13: VCC
- 14: RD5
- 15: CCTL

AUDIO MIXER INSIDE ATARI: This component is connected to the console's internal components. Its pins are labeled as follows:

- 1: RD4
- 2: B
- 3: C
- 4: A4
- 5: A5
- 6: A6
- 7: A7
- 8: A8
- 9: A9
- 10: A12
- 11: D3
- 12: D7
- 13: N
- 14: P
- 15: R
- 16: S

The diagram shows the connection between the console's internal components and the Atari Cartridge, highlighting the audio mixer and the EC11 ECIBUS.

All 8-Bit signals must be shifted from 5V to 3.3V and vice versa

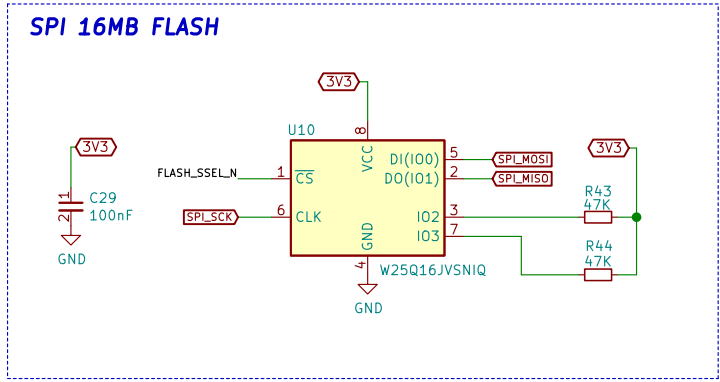
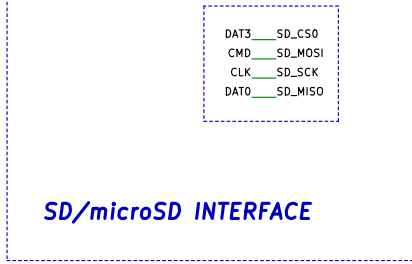
Mixed

BOTTOM

TOP

TOP

BOTTOM



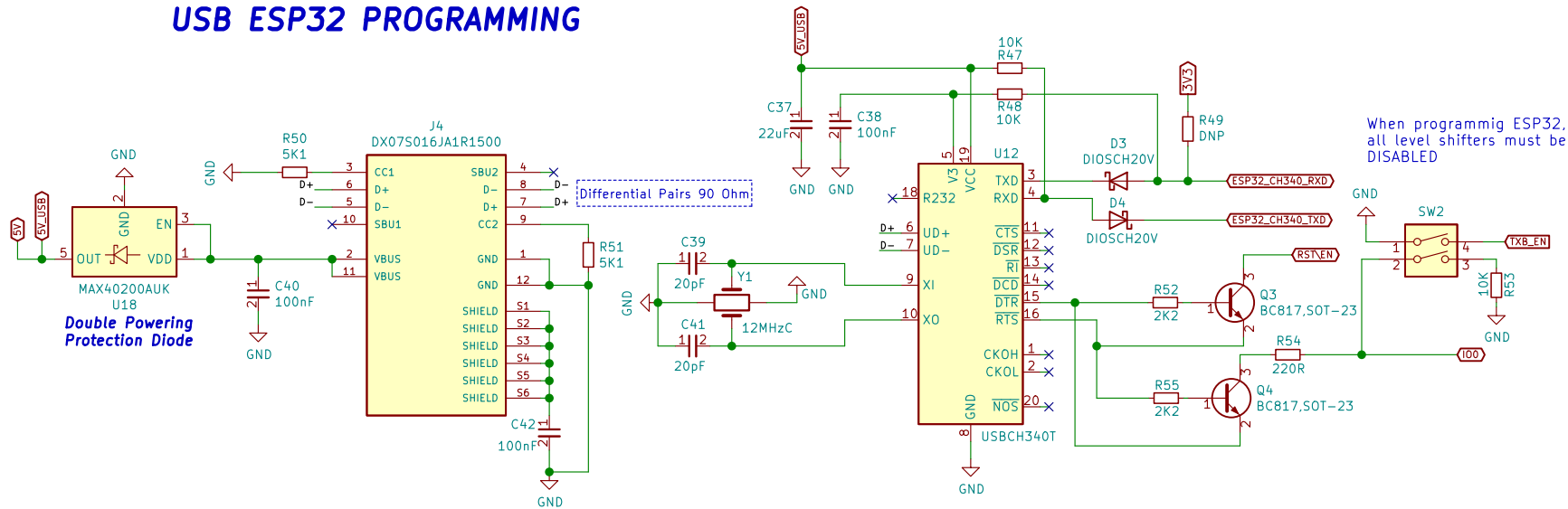
IC DAC/AUDIO 24BIT 192K 16TSSOP

The diagram shows the WM8524CGEDT IC with the following connections:

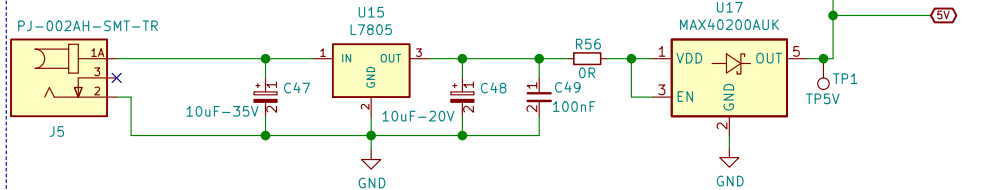
- Pin 10:** MCLK connected to ASYSCLK.
- Pin 9:** BCLK connected to AUDIO_BCK.
- Pin 8:** LRCLK connected to AUDIO_LRCK.
- Pin 7:** DACDAT connected to AUDIO_DATA.
- Pin 12:** AIFMODE connected to 3V3.
- Pin 11:** MUTE connected to 3V3.
- Pin 1:** LINEVOUTL connected to 560R resistor, then to R46 (560R) and C30 (1uF) in parallel, then to AUDIOIN.
- Pin 16:** LINEVOUTR connected to 560R resistor, then to R45 (560R) and C31 (1uF) in parallel, then to AUDIOR.
- Pin 5:** CPCA connected to C32 (1uF) to GND.
- Pin 3:** CPCB connected to C32 (1uF) to GND.
- Pin 15:** AVDD connected to 3V3.
- Pin 6:** LINEVDD connected to 3V3.
- Pin 2:** CPVOUTN connected to C33 (1uF) to GND.
- Pin 4:** LINEGND connected to C33 (1uF) to GND.
- Pin 13:** AGND connected to C36 (2.2uF) to GND.
- Pin 14:** VMID connected to C33 (1uF) to GND.
- Other components:** C34 (4.7uF) and C35 (4.7uF) are connected to 3V3 and GND. C36 (2.2uF) is connected to GND.

Id: 5/6

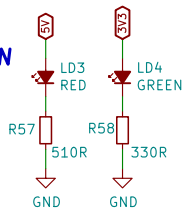
USB ESP32 PROGRAMMING



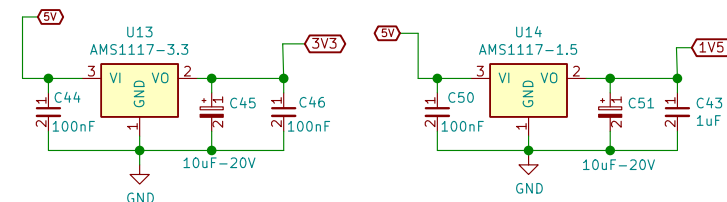
POWER INPUT: from 5VDC...24VDC Positive CENTRAL PIN



POWER LED 5V: RED 3.3V: GREEN



POWER 3.3V & POWER 2.5V



Gianluca Renzi
RetroBit Lab

Sheet: /PowerSupply/
File: powersupply.sch

Title: **POWERSUPPLY and USB**

Size: A4 Date: 2025-09-10
KiCad E.D.A. kicad 5.1.9+dfsg1-1+deb11u1

Rev: 1.0
Id: 6/6