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

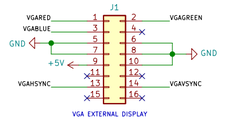
Gianluca Renzi
RetroBit Lab

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

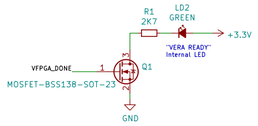
Title: VERA FPGA Audio & Video Board

Size: A4	Date: 2025-09-04	**Rev: 1.0**
KiCad E.D.A. kicad 5.1.9+dfsg1-1+deb11u1		Id: 1/6

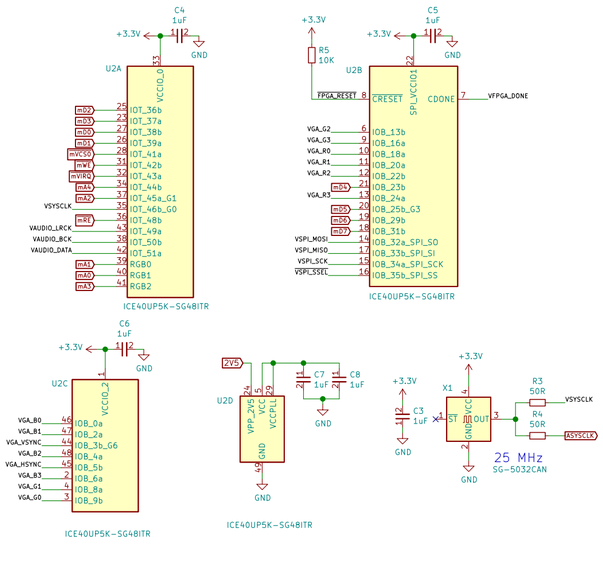
EXTERNAL VIDEO CONNECTOR



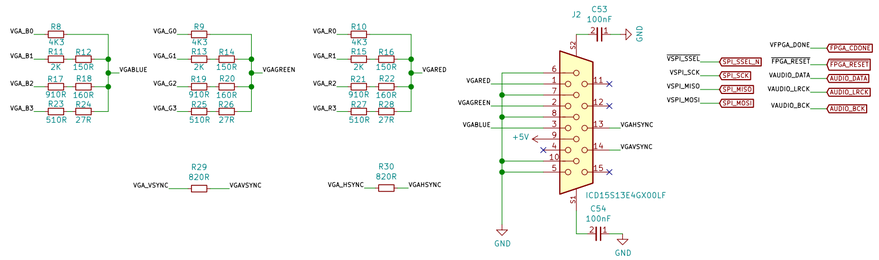
VERA FPGA PROGRAMMED OK



FPGA VERA LOGIC VIDEO & AUDIO CARD

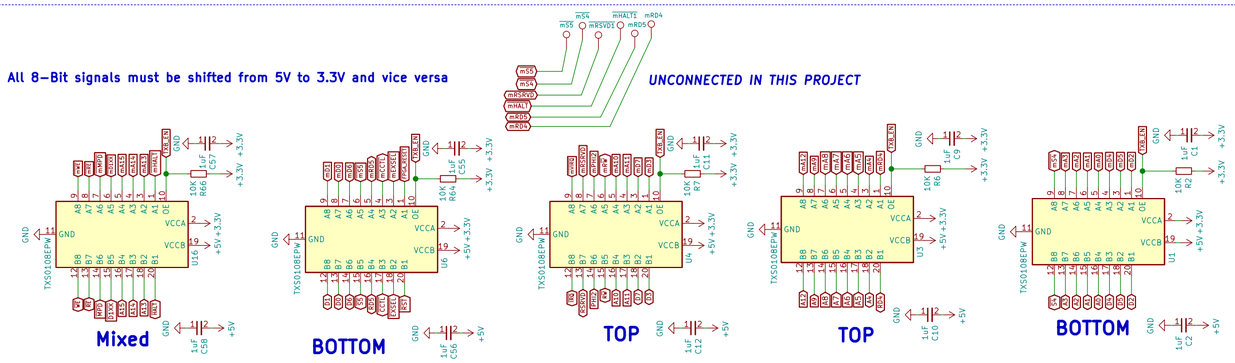


ANALOG VGA SIGNALS



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

UNCONNECTED IN THIS PROJECT



Gianluca Renzi
RetroBit Lab

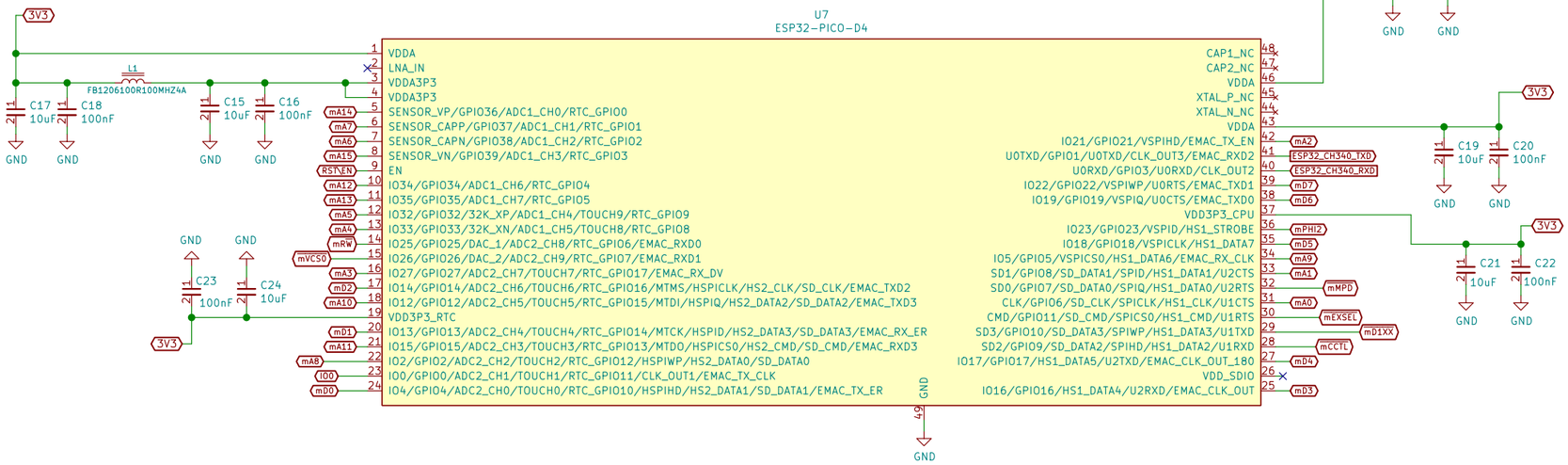
Sheet: /VeraModule/
File: vera-fpga.sch

Title:

Size: A2	Date: 2025-09-04	**Rev: 1.0**
KiCad E.D.A. kicad 5.1.9+dfsg1-1+deb11u1		Id: 2/6

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

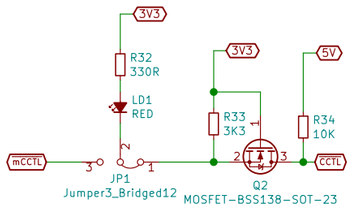
PBI DEVICE ID: software selectable only



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

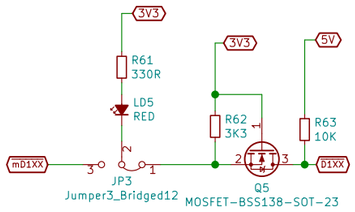
$D1FF access & DATABUS = PBI DEVICE ID –> mVCS0 active/deactive

JP12: CCTL REAL FROM ATARI (XE)
JP23: CCTL from MCU (PBI Bus has no CCTL signal)

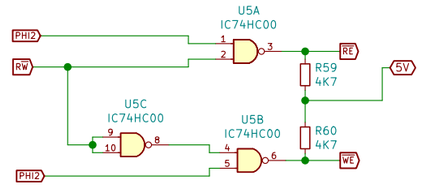


Accessing $D5XX area space

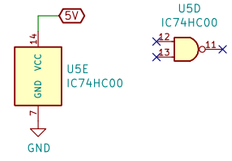
JP12: D1XX REAL FROM ATARI (XE)
JP23: D1XX from MCU



Accessing $D1XX area space



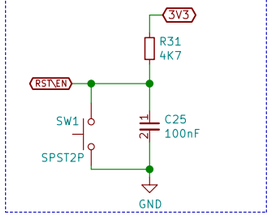
R/$\overline{W}$
Adapter for $\overline{RE}$
and $\overline{WE}$
as VERA MODULE wants



Enternal 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

ESP32 RESET SWITCH



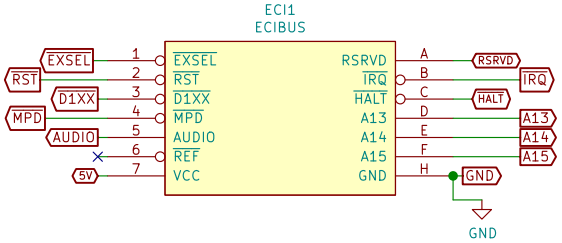
Gianluca Renzi
RetroBit Lab

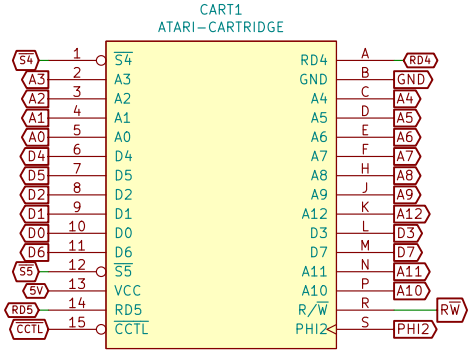
Sheet: /BusDecoder/
File: busdecoder.sch

Title:

Size: A3	Date: 2025–09–04	**Rev: 1.0**
KiCad E.D.A. kicad 5.1.9+dfsg1–1+deb11u1		Id: 3/6

ATARI 130XE ECI & CARTRIDGE INTERFACE





AUDIO MIXER INSIDE ATARI

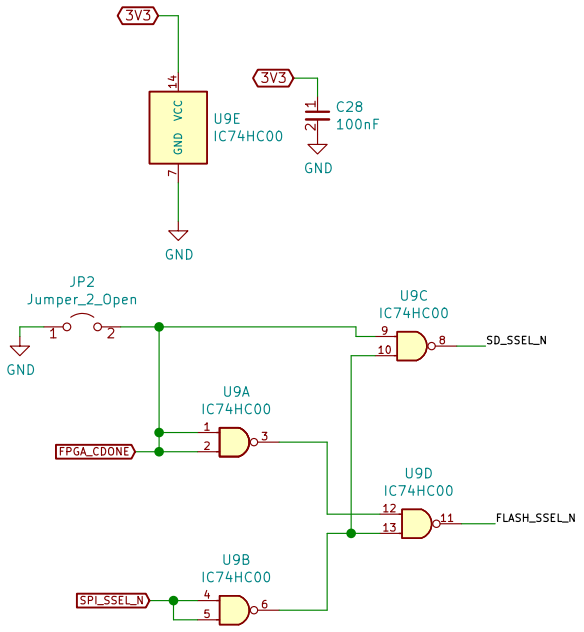
Gianluca Renzi
RetroBit Lab

Sheet: /CartridgeInterface/
File: cartridgeInterface.sch

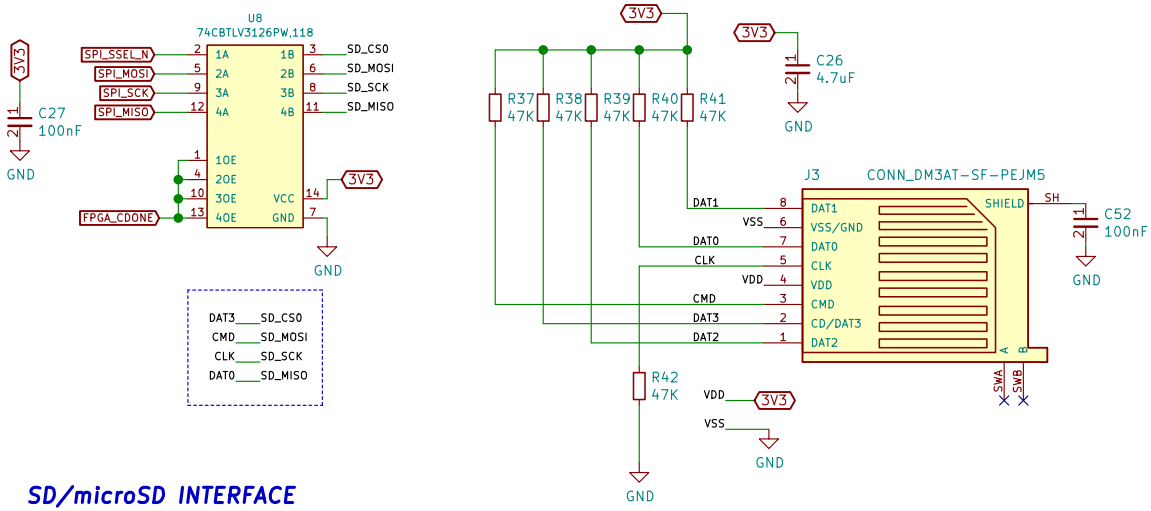
Title:

Size: A4	Date: 2025-09-04	**Rev: 1.0**
KiCad E.D.A. kicad 5.1.9+dfsg1-1+deb11u1		Id: 4/6

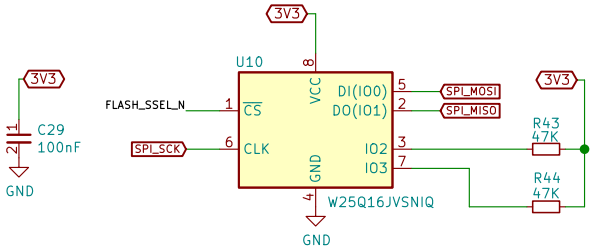
FPGA/SSD Flash Glue Logic



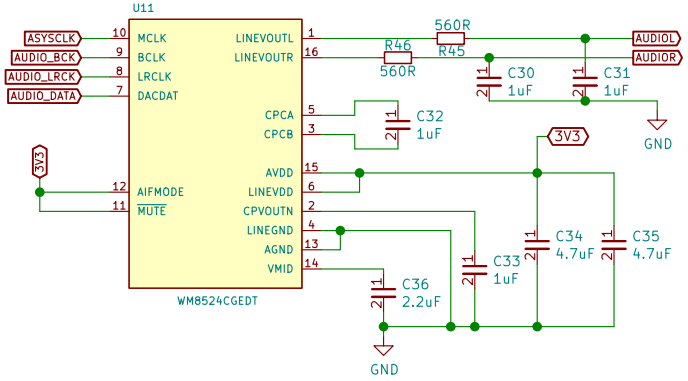
SD/microSD INTERFACE



SPI 16MB FLASH



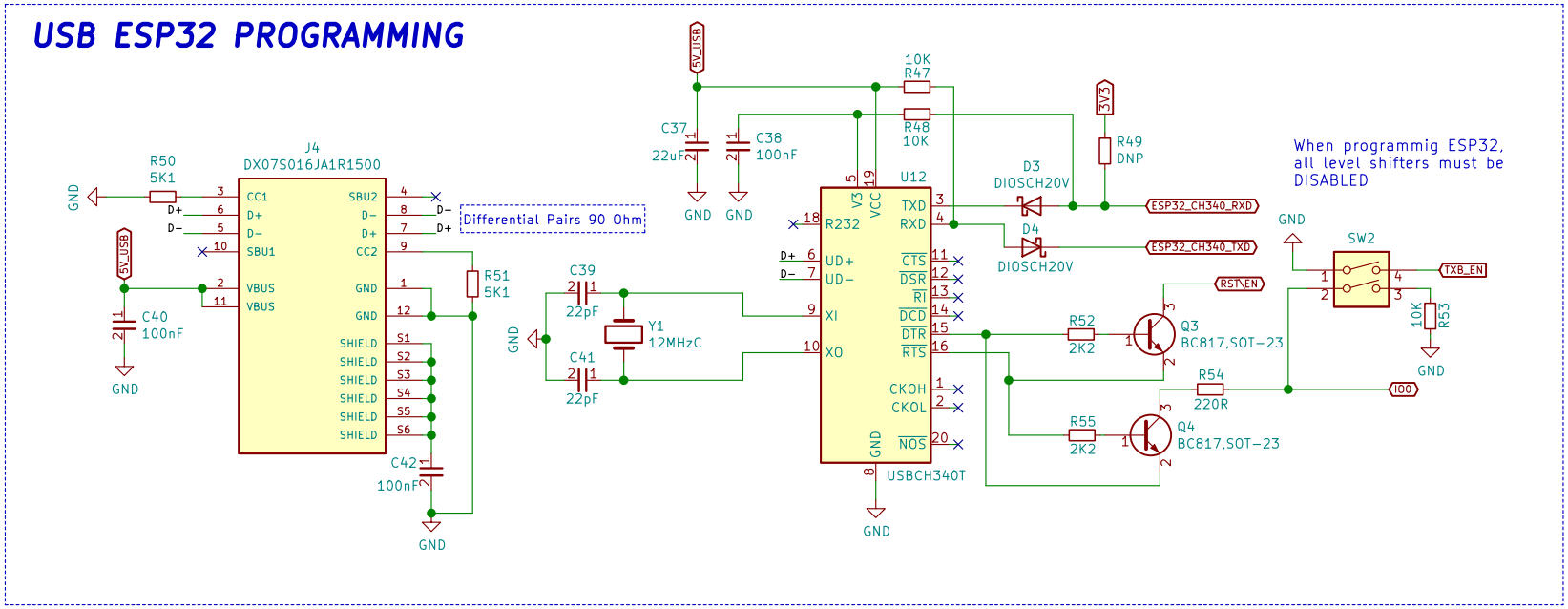
IC DAC/AUDIO 24BIT 192K 16TSSOP

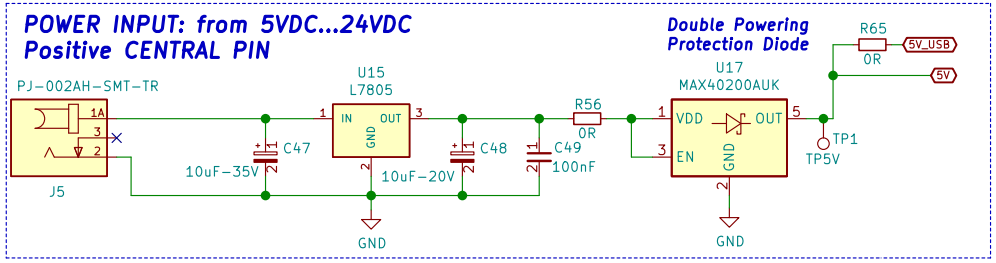


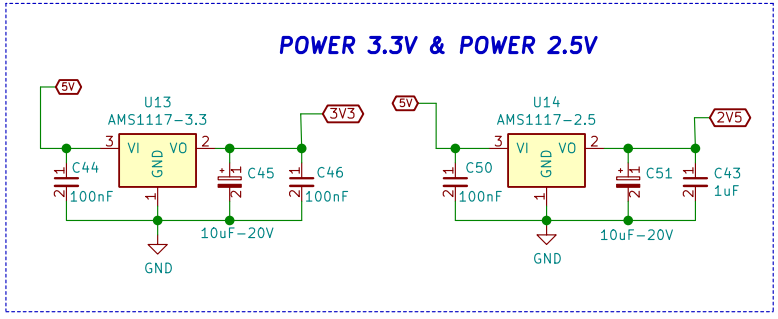
Gianluca Renzi
RetroBit Lab
Sheet: /Vera FPGA flash/
File: vera-fpga-flash.sch

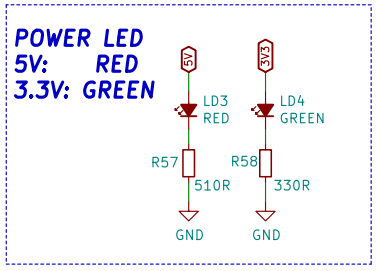
Title:

Size: A4	Date: 2025-09-04	**Rev: 1.0**
KiCad E.D.A. kicad 5.1.9+dfsg1-1+deb11u1		Id: 5/6









Gianluca Renzi **RetroBit Lab**		
Sheet: /PowerSupply/ File: powersupply.sch		
Title: VERA-XE VGA BOARD		
Size: A4	Date: 2025-09-04	**Rev: 1.0**
KiCad E.D.A. kicad 5.1.9+dfsg1-1+deb11u1		Id: 6/6