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

Sheet: VGA Analog

VGA ANALOG

File: vga-analog.sch

FIDUCIAL TOP

FID3 Fiducial

FID4 Fiducial

FIDUCIAL BOTTOM

FID2 Fiducial

FID1 Fiducial

LOGO1
VERA X16 LOGO

LOGO2
ATARI READY

LOGO3
KiCAD DESIGN

LOGO4
ATARI DUO BUS

LOGO5
ESP32_BOBOARD

LBL1

H1
MountingHole

H2
MountingHole

H3
MountingHole

H4
MountingHole

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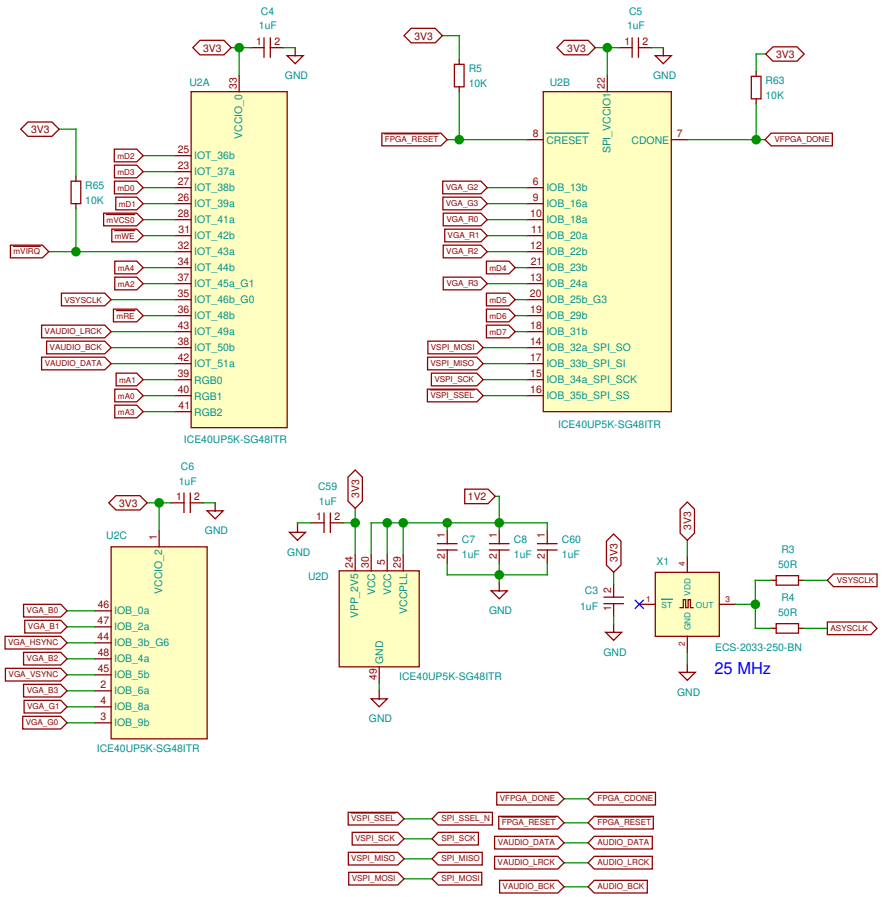
Sheet: /
File: VERA-MODULE-RBL.sch

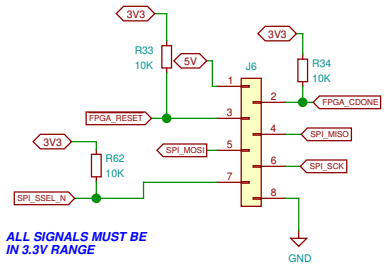
Title: VERA FPGA Audio & Video Board

Size: A4	Date: 2025-10-27	Rev: 1.0
Plotted by eeshow 3a954ac 20251029-15:26Z		Id: 1/7

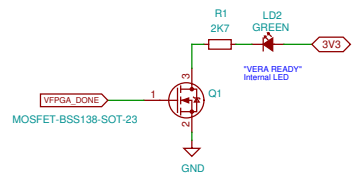
FPGA VERA LOGIC VIDEO & AUDIO CARD



iceprog programmer USB FTDI / SPI



VERA FPGA PROGRAMMED OK



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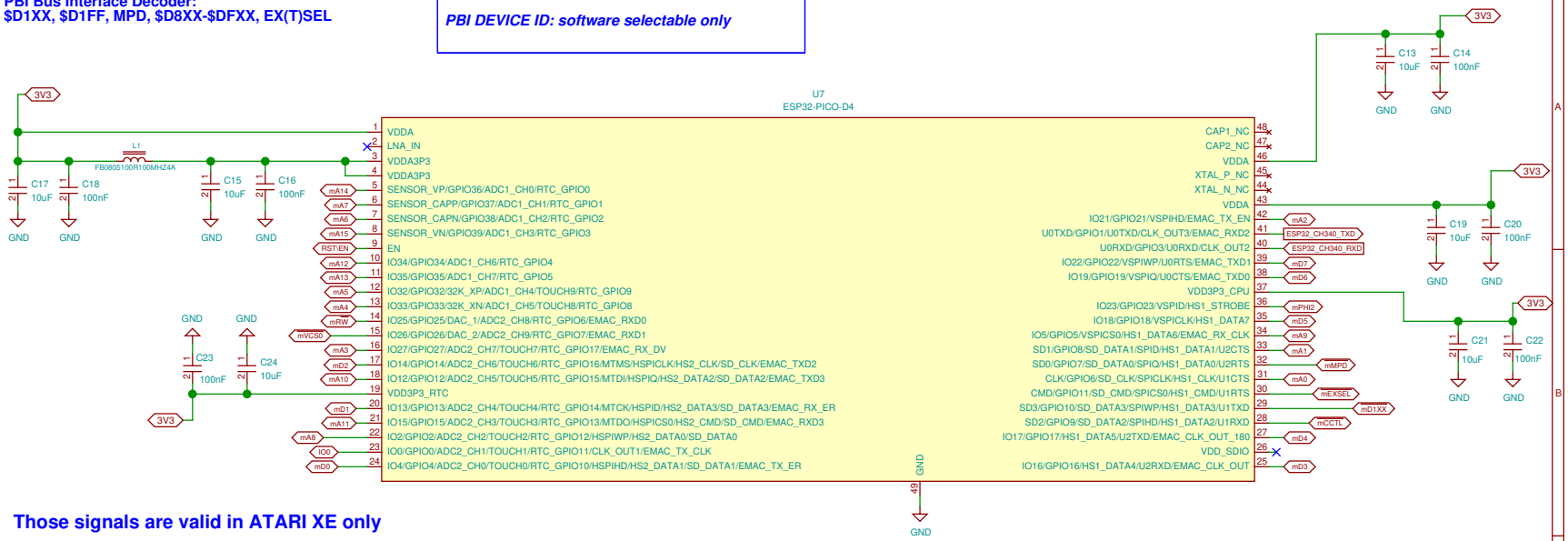
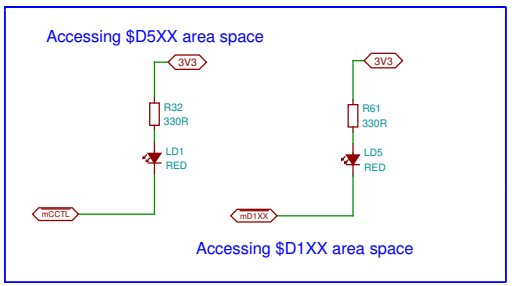
Sheet: /VeraModule/ File: vera-fpga.sch		
Title: VeraModule		
Size: A4	Date: 2025-10-27	Rev: 1.0
Plotted by eeshow 3a954ac 20251029-15:26Z		Id: 2/7

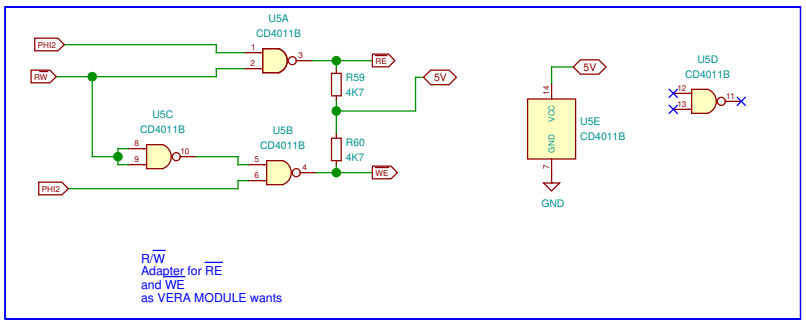
PBI Bus Interface Decoder:
$D1XX, $D1FF, MPD, $D8XX-$DFXX, EX(T)SEL

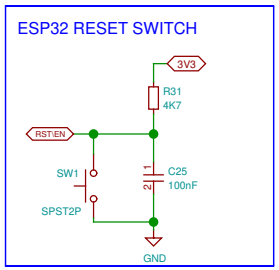
PBI DEVICE ID: software selectable only



Those signals are valid in ATARI XE only







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

mVCS0 active & A15..A0 $D8XX-$DFXX -> MPD active (Internal 2K ROM)
$D1FF access & DATABUS = PBI DEVICE ID -> mVCS0 active/deactive

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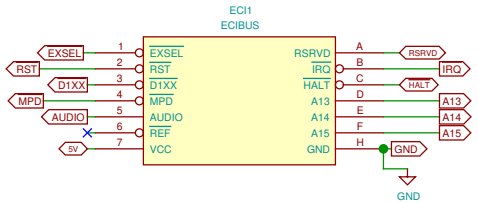
Sheet: /BusDecoder/
File: busdecoder.sch

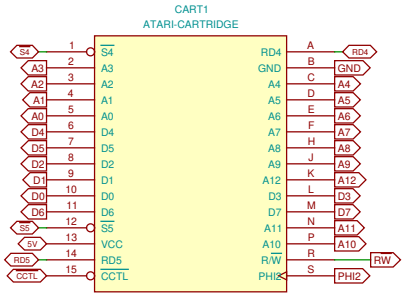
Title: BusDecoder

Size: A4	Date: 2025-10-27	Rev: 1.0
Plotted by eeshow 3a954ac 20251029-15:26Z		Id: 3/7

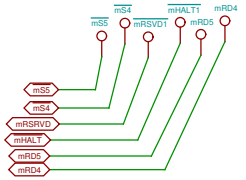
ATARI 130XE ECI & CARTRIDGE INTERFACE

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

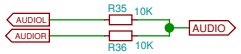


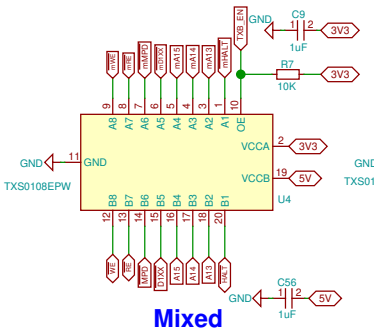


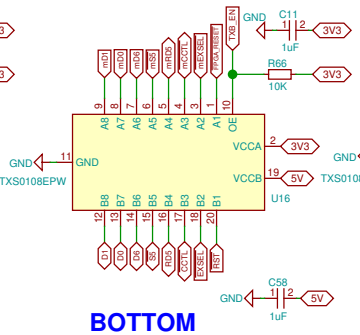
UNCONNECTED IN THIS PROJECT

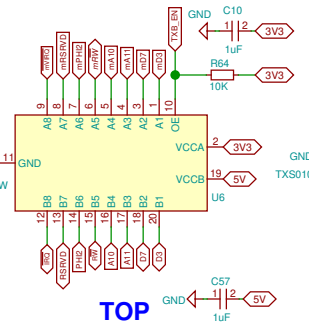


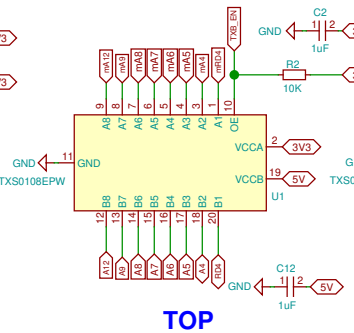
AUDIO MIXER INSIDE ATARI

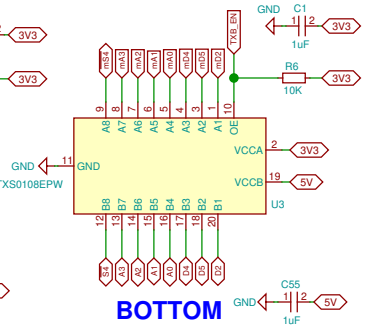












BUS LOGIC LEVEL SHIFTERS

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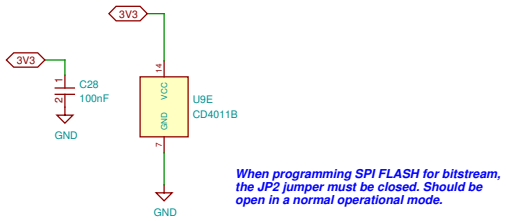
RetroBit Lab

Sheet: /CartridgeInterface/
File: cartridgeInterface.sch

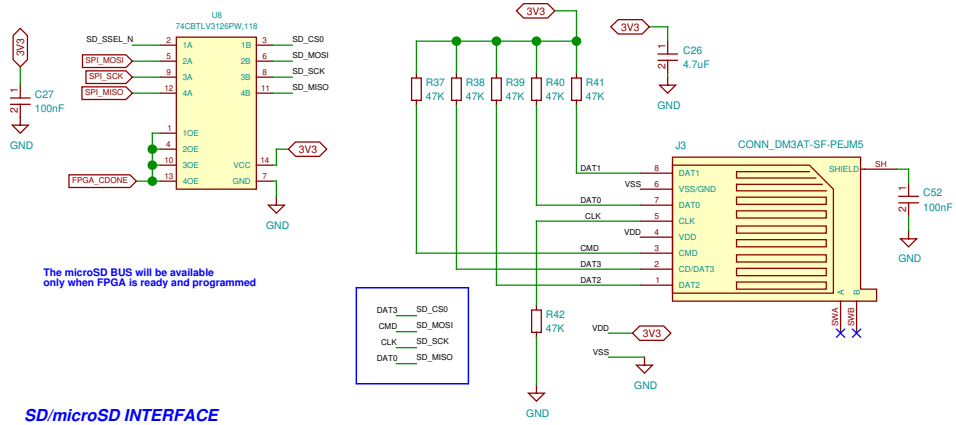
Title: CartridgeInterface

Size: A4	Date: 2025-10-27	Rev: 1.0
Plotted by eeshow 3a954ac 20251029-15:26Z		Id: 4/7

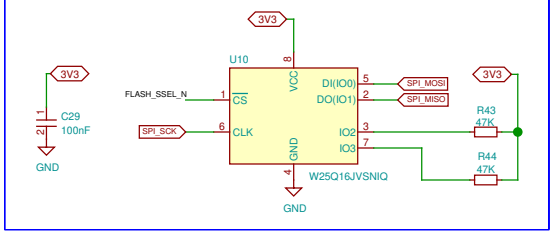
FPGA/SSD Flash Glue Logic



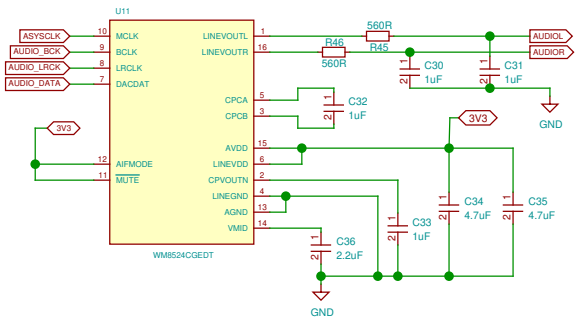
SD/microSD INTERFACE



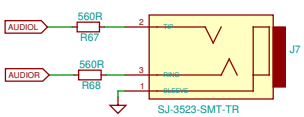
SPI 16MB FLASH



IC DAC/AUDIO 24BIT 192K 16TSSOP



AUDIO 3.5mm OUTPUT



AUDIO SECTION

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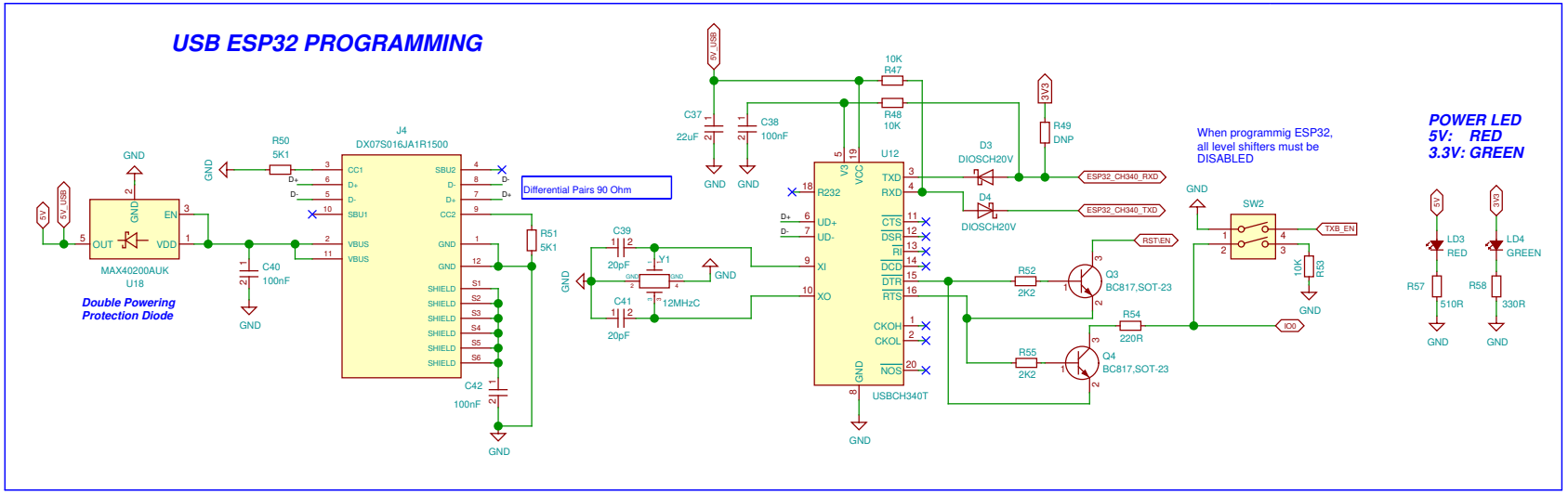
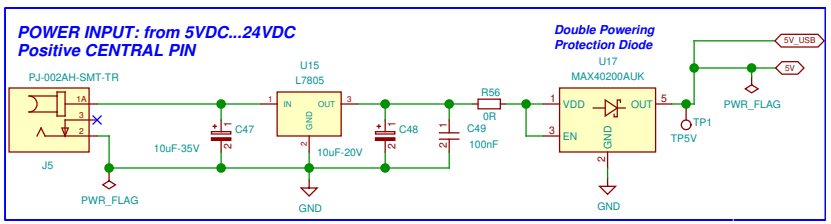
RetroBit Lab

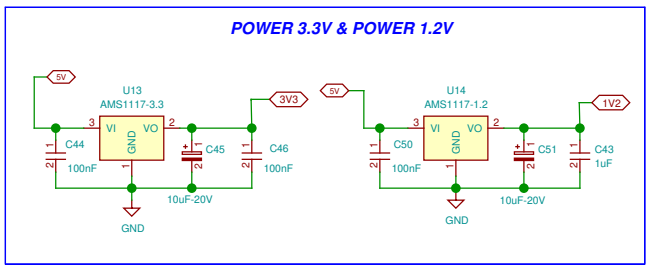
Sheet: /Vera FPGA flash/
File: vera-fpga-flash.sch

Title: Vera FPGA flash

Size: A4	Date: 2025-10-27	Rev: 1.0
Plotted by eeshow 3a954ac 20251029-15:26Z		Id: 5/7







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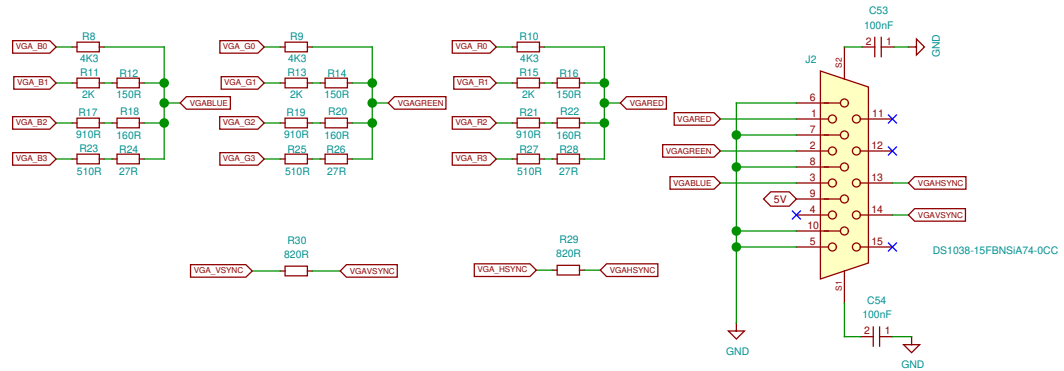
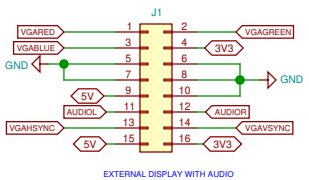
Sheet: /PowerSupply/		
File: powersupply.sch		
Title: PowerSupply		
Size: A4	Date: 2025-10-27	Rev: 1.0
Plotted by eeshow 3a954ac 20251029-15:26Z		Id: 6/7

ANALOG VGA SIGNALS



EXTERNAL VIDEO CONNECTOR



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RetroBit Lab		
Sheet: /VGA Analog/		
File: vga-analog.sch		
Title: VGA Analog		
Size: A4	Date: 2025-10-27	Rev: 1.0
Plotted by eeshow 3a954ac 20251029-15:26Z		Id: 7/7