

Rethera

FB-04 Adat Interface

Schematics

Subschematics:

- IO board

Sheetfile: io_board.kicad_sch
- Power Supply

Sheetfile: power_supply.kicad_sch
- MCU and USB

Sheetfile: main_board.kicad_sch
- FPGA config and peripherals

File: peripherals.kicad_sch
- FPGA and clock generators

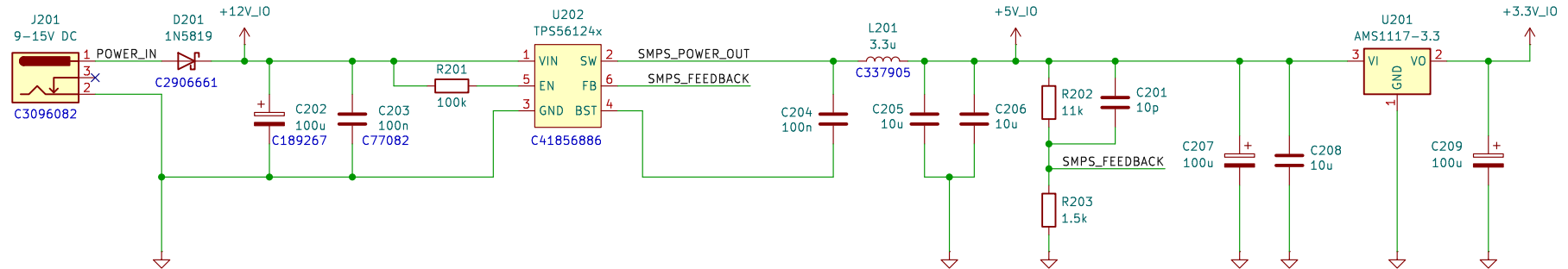
Sheetfile: fpga.kicad_sch
- IO main

Sheetfile: io.kicad_sch
- Display board

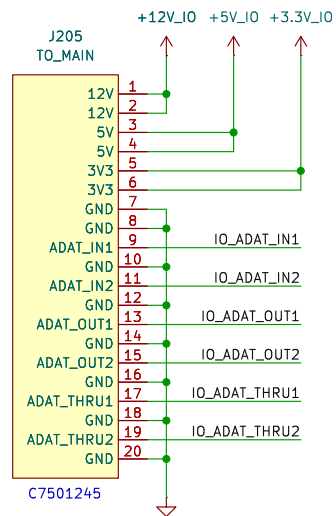
Sheetfile: display_board.kicad_sch

| | | |
|--|------------------|-----------|
| Drawn by Łukasz Świszcz | | |
| Rethera | | |
| Sheet: / | | |
| File: adatv2.kicad_sch | | |
| Title: 16-in, 16-out USB <--> ADAT interface | | |
| Size: A4 | Date: 2025-09-29 | Rev: 1.0a |
| KiCad E.D.A. 9.0.3 | Id: 1/8 | |

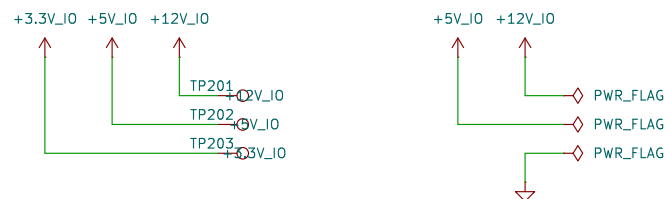
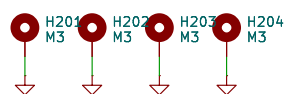
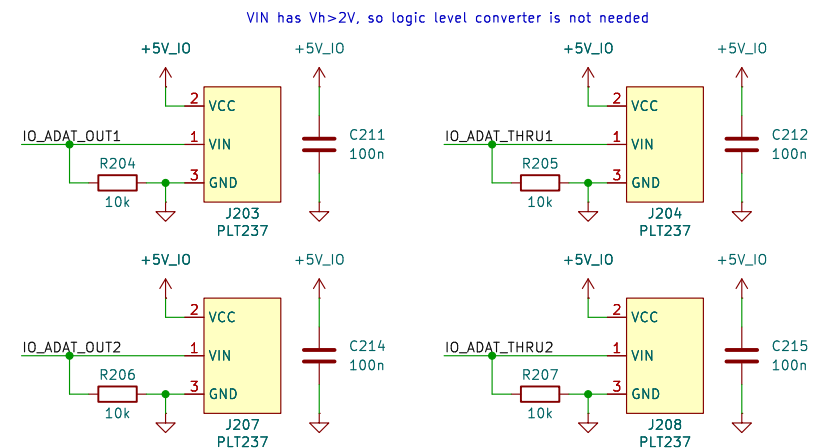
Power Supply: 9-15V -SMPS-> 5V -LDO-> 3V3



IDC Connector



ADAT Terminals



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Rethera

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Size: A4

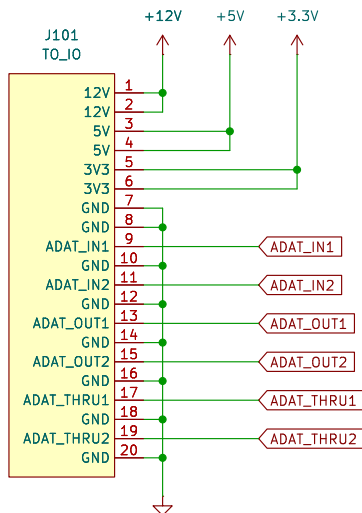
Date: 2025-09-29

Rev: 1.0a

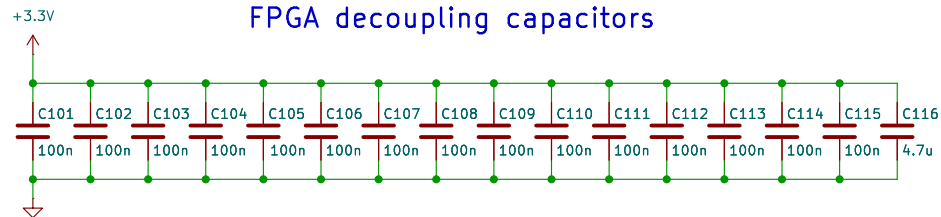
KiCad E.D.A. 9.0.3

Id: 2/8

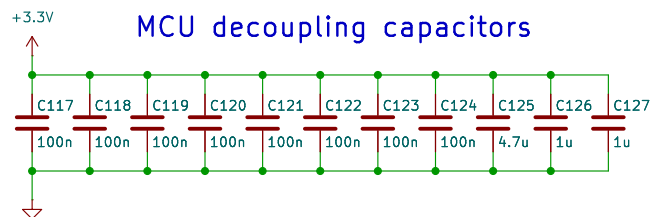
IDC Connector



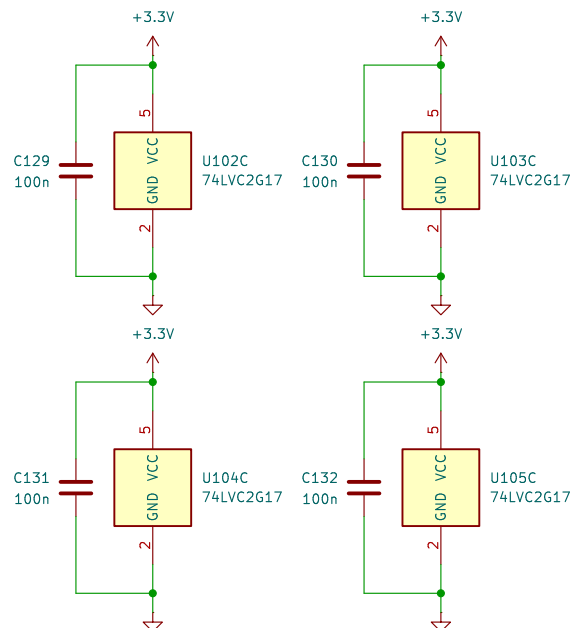
FPGA decoupling capacitors



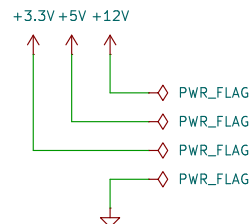
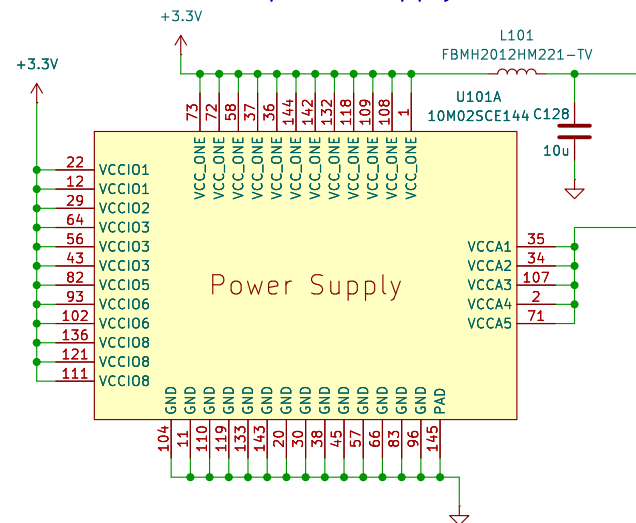
MCU decoupling capacitors



IC supplies



FPGA power supply



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Rethera

Sheet: /Power Supply/

File: power_supply.kicad_sch

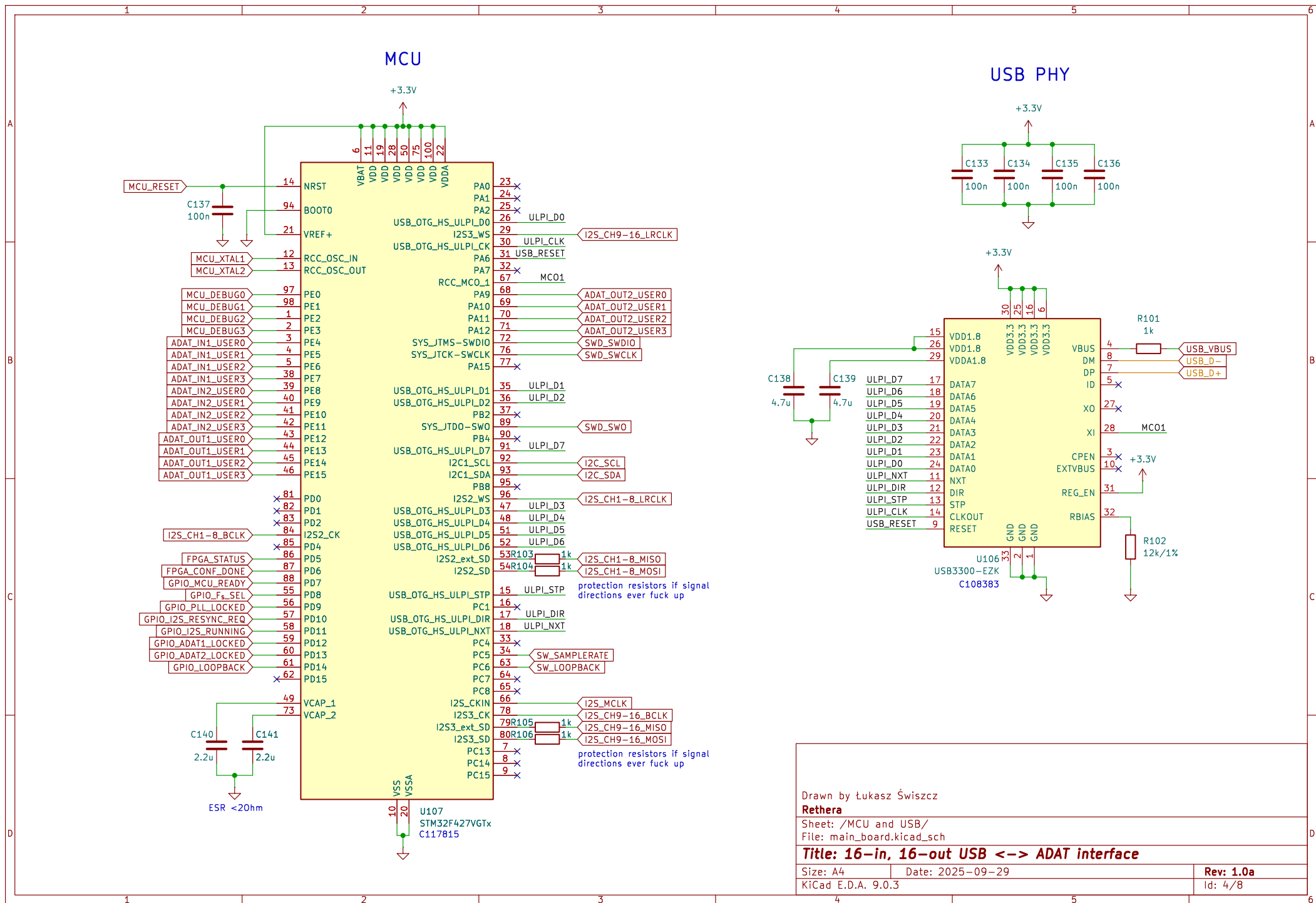
Title: 16-in, 16-out USB <--> ADAT interface

Size: A4 Date: 2025-09-29

KiCad E.D.A. 9.0.3

Rev: 1.0a

Id: 3/8



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Rethera

Sheet: /MCU and USB/

File: main_board.kicad_sch

Title: 16-in, 16-out USB <--> ADAT interface

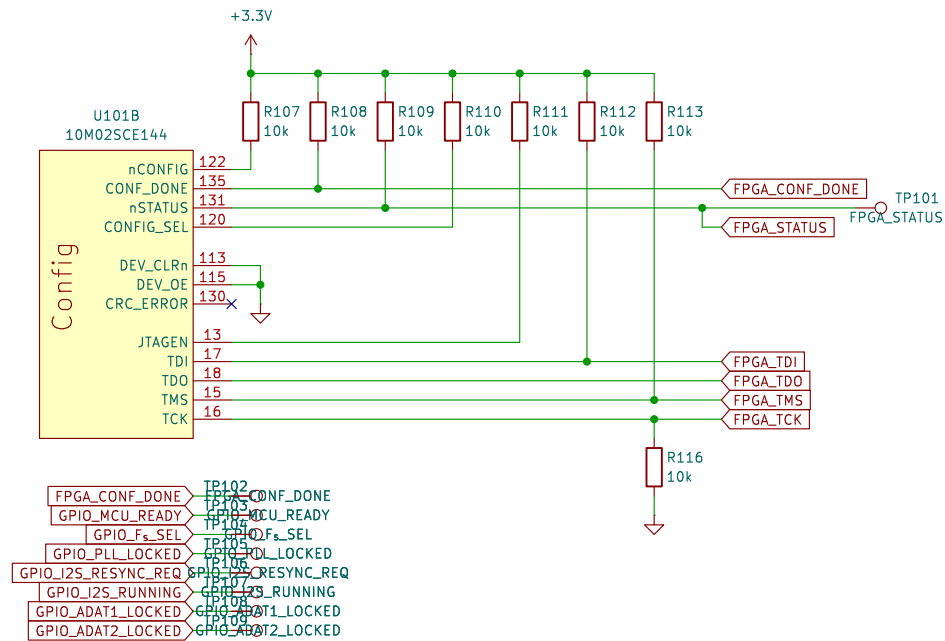
Size: A4 Date: 2025-09-29

KiCad E.D.A. 9.0.3

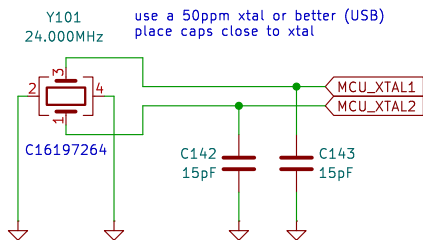
Rev: 1.0a

Id: 4/8

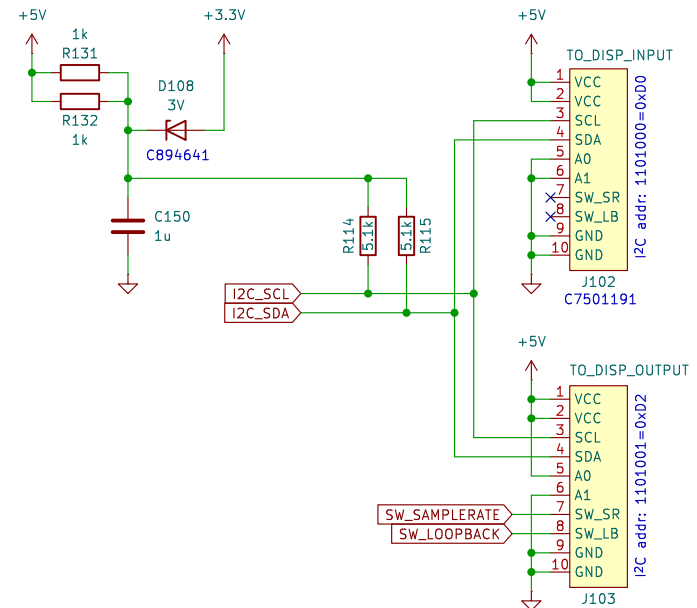
FPGA config



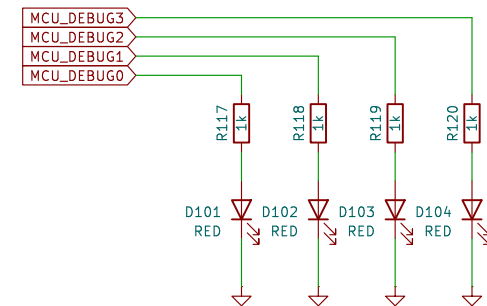
MCU/USB XTAL



IDC connectors



Debug LEDs



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Rethera

Sheet: /FPGA config and peripherals/

File: peripherals.kicad_sch

Title: 16-in, 16-out USB <-> ADAT interface

Size: A4

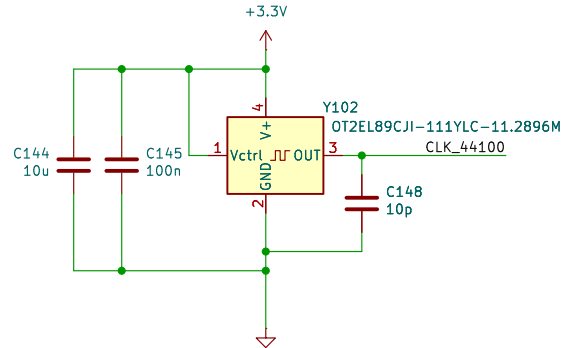
Date: 2025-09-29

Rev: 1.0a

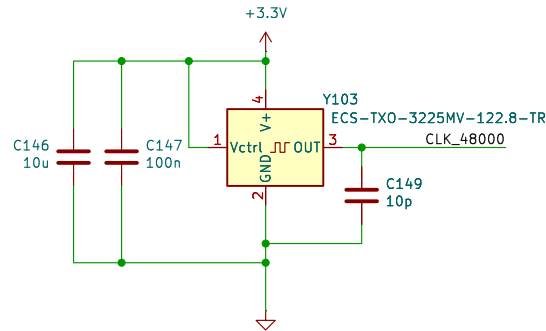
KiCad E.D.A. 9.0.3

Id: 5/8

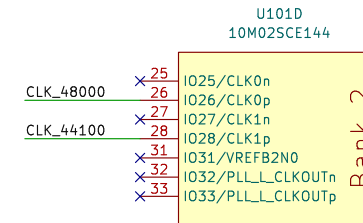
44.1kHz XTAL OSC (11.2896MHz)



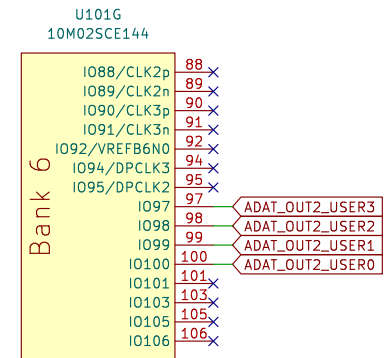
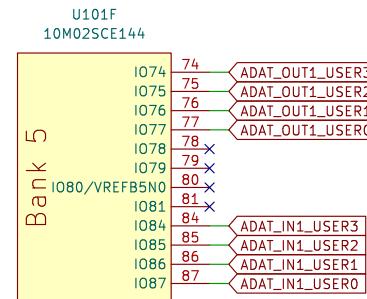
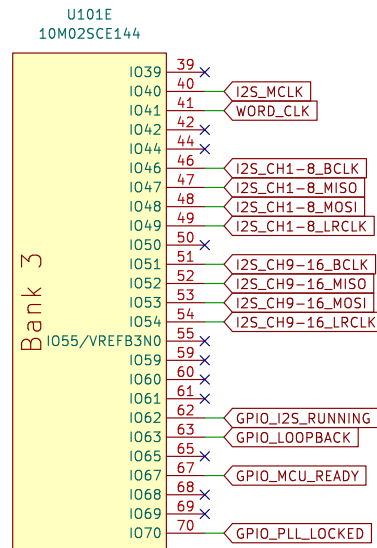
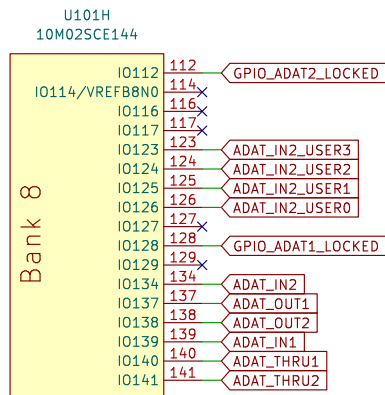
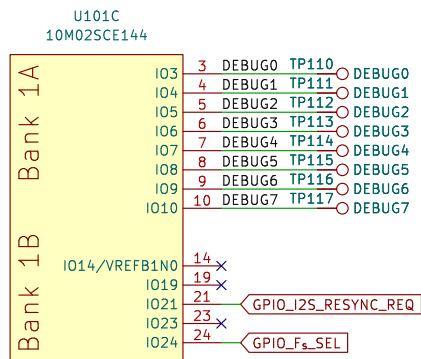
48kHz TCXO (12.288MHz)



FPGA clock input



FPGA IO pins



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Rethera

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File: fpga.kicad_sch

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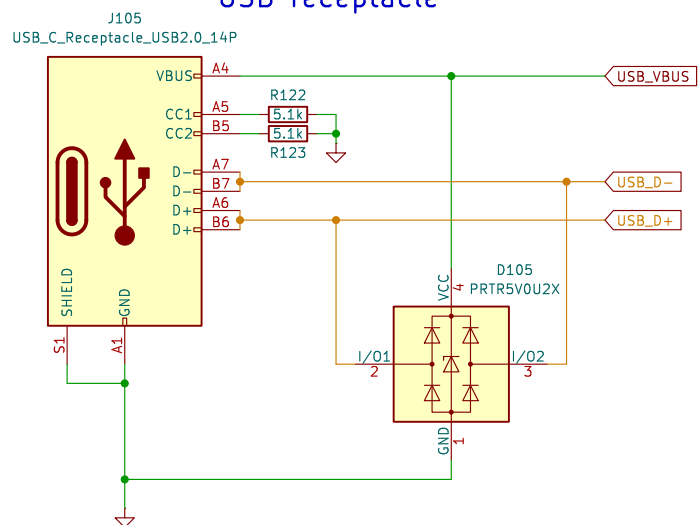
Date: 2025-09-29

Rev: 1.0a

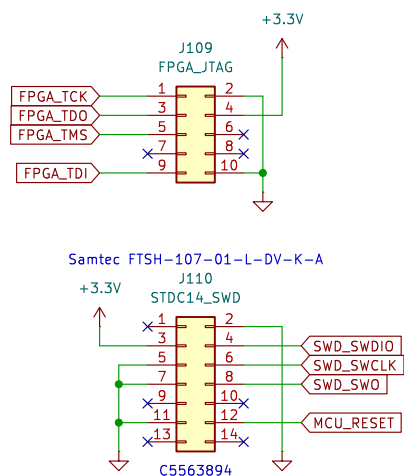
KiCad E.D.A. 9.0.3

Id: 6/8

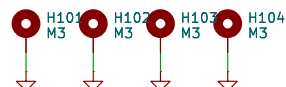
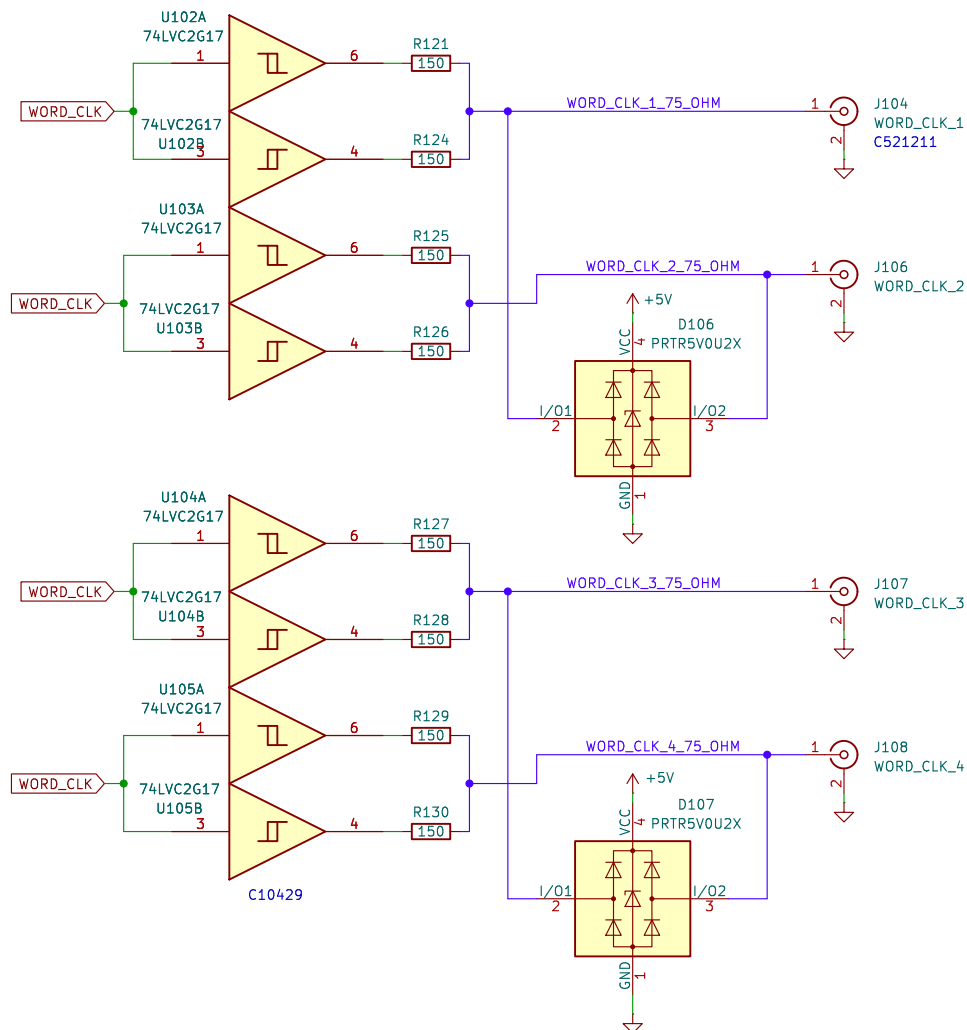
USB receptacle



ISP connectors



Line drivers



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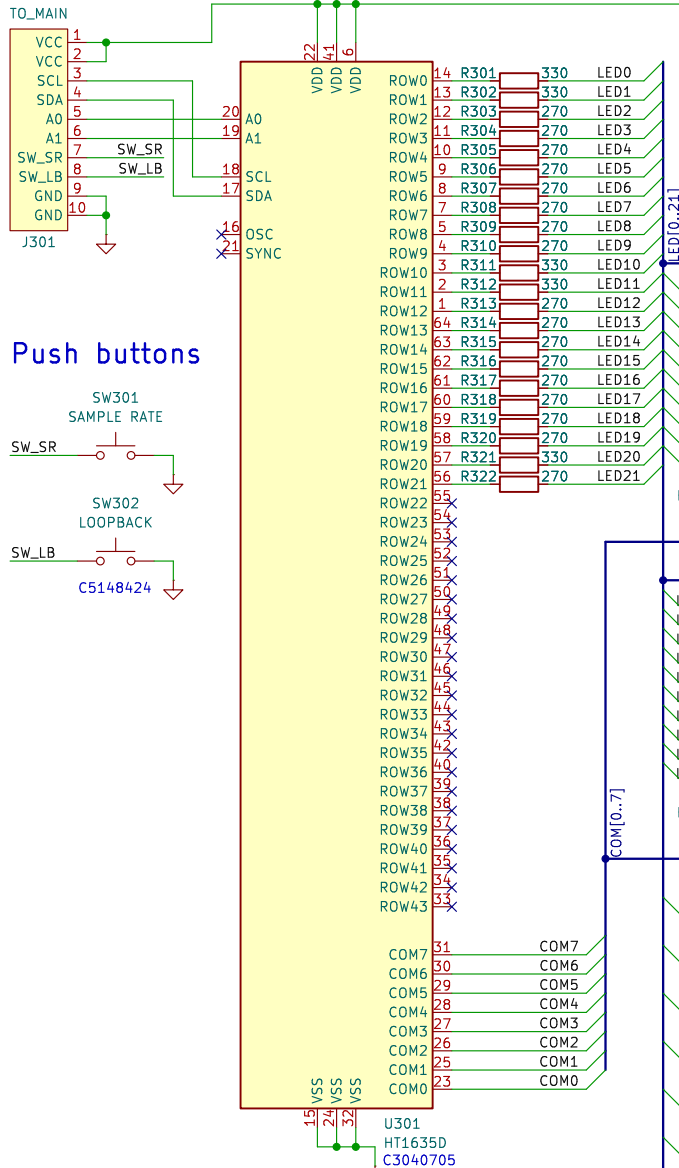
KiCad E.D.A. 9.0.3

Rev: 1.0a

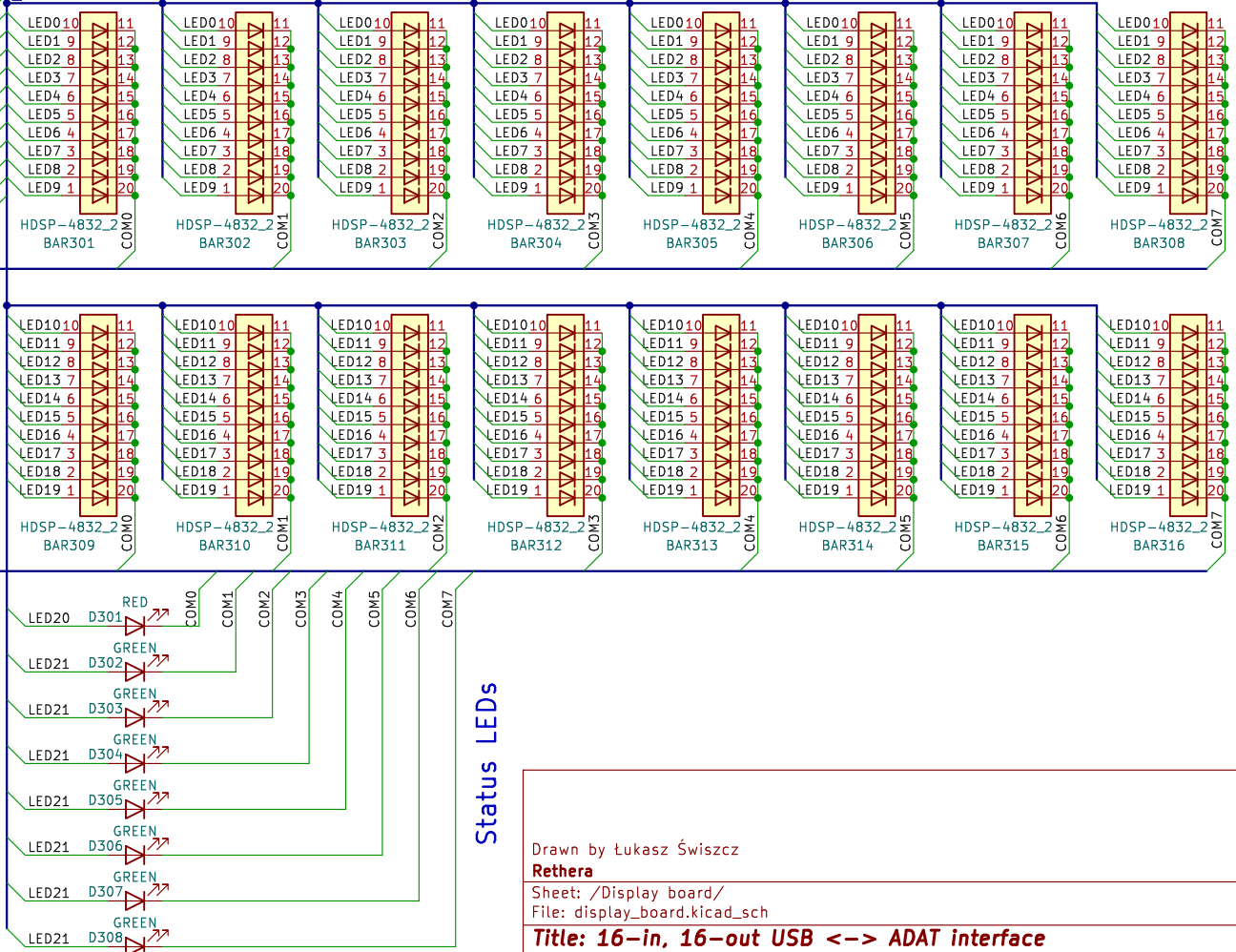
Id: 7/8

Display driver

must be powered from the 5V rail,
place level converter on the main board



LED signal level indicators



Status LEDs

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