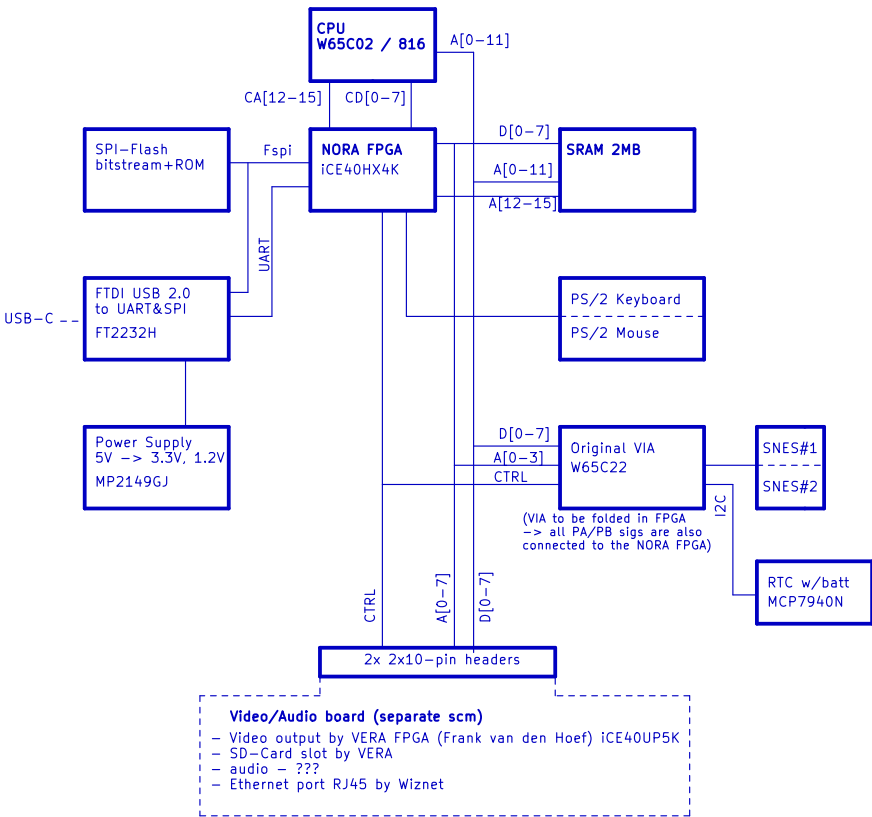


# Computer OpenX65 by X65.EU

MOTHERBOARD (MO-BO) WITH THE CPU W65Cxx

Schematic sheets:

Block Diagram:



Revision History:

rev01 / 30.3.2023	Initial design. PCB 100x100mm, 2-L. First PCB production: PCBWAY on 29.3.2023 file: openx65-mobo-rev01b-grb.zip

CPU+SRAM	2	File: cpu_sram.kicad_sch
FPGA	3	File: fpga.kicad_sch
VIA, RTC, SNES	4	File: via_rtc.kicad_sch
USB-Terminal	5	File: usbdev.kicad_sch
VA-Board, PS2	6	File: b2b-conns.kicad_sch
Power Supply	7	File: pwrsup.kicad_sch

- FID101

Fiducial
- FID102

Fiducial
- FID103

Fiducial
- FID104

Fiducial
- H101

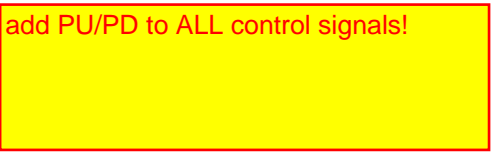
MountingHole
- H102

MountingHole
- H103

MountingHole
- H104

MountingHole

OpenX65 MOTHERBOARD FOR X65.EU DESIGNED BY JSYKORA.INFO		
Sheet: / File: open65.kicad_sch		
Title: OpenX65		
Size: A4	Date: 2023-03-30	Rev: rev01
KiCad E.D.A. kicad (6.0.7)	Id: 1/7	

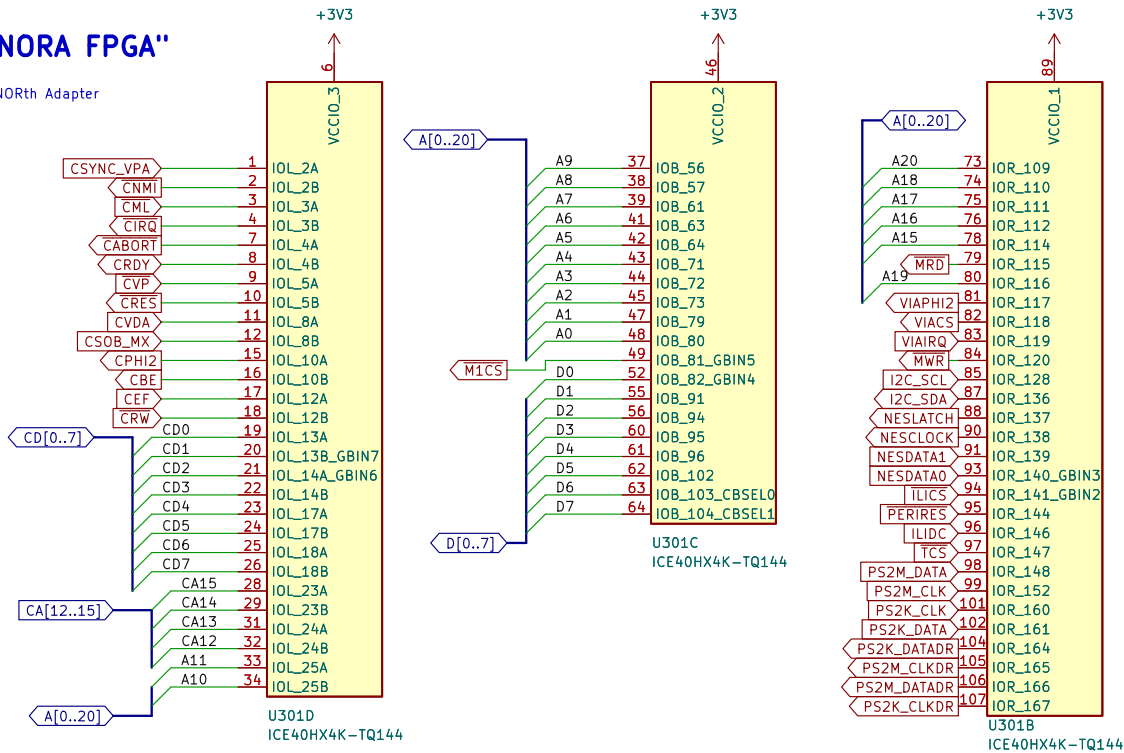


a) W65C02S6TQG-14 => 8-bit CPU  
=> do not populate R208, R210, R213

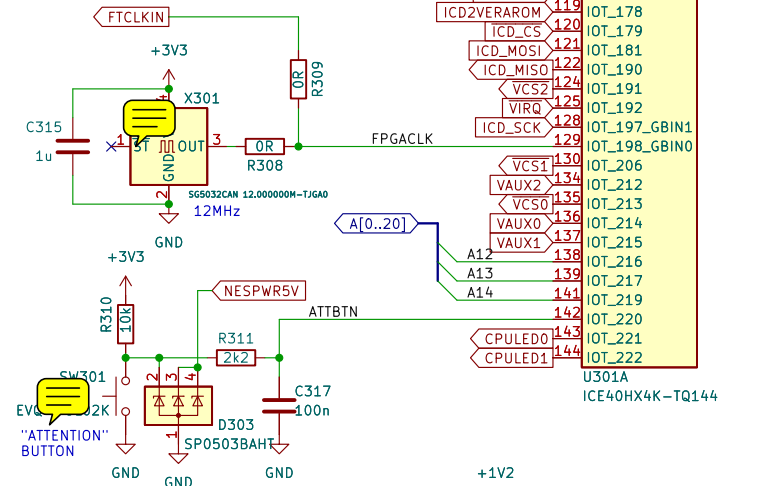
b) W65C816S6TQG-14 => 16-bit CPU (not 100% compatible with the 8-bit!!)  
=> R208=R210=R213=50ohm

## "NORA FPGA"

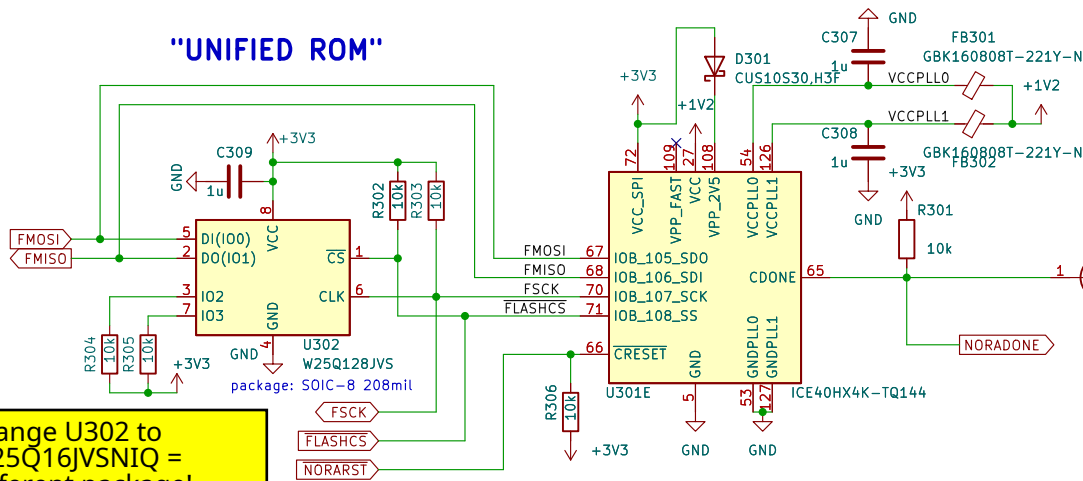
= NORTH Adapter



TIRQ => CPUTYPE02.

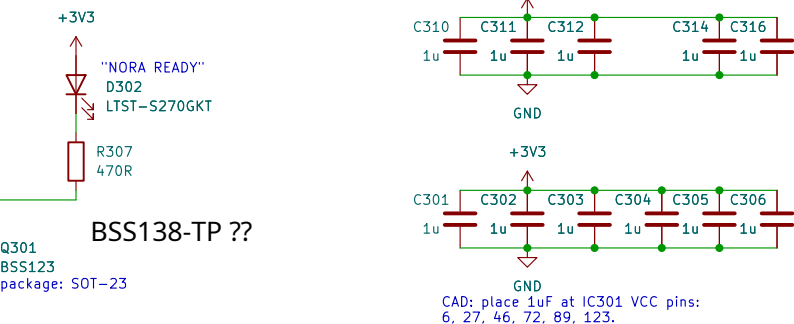


## "UNIFIED ROM"



change U302 to W25Q16JVSNIQ = different package!

ICE40HX DS: VPP\_FAST, used only for fast production programming, must be left floating or unconnected in applications.



OpenX65 MOTHERBOARD  
FOR X65.EU DESIGNED BY JSYKORA.INFO

Sheet: /FPGA/  
File: fpga.kicad\_sch

Title: OpenX65 – NORA FPGA

Size: A4 Date: 2023-03-30

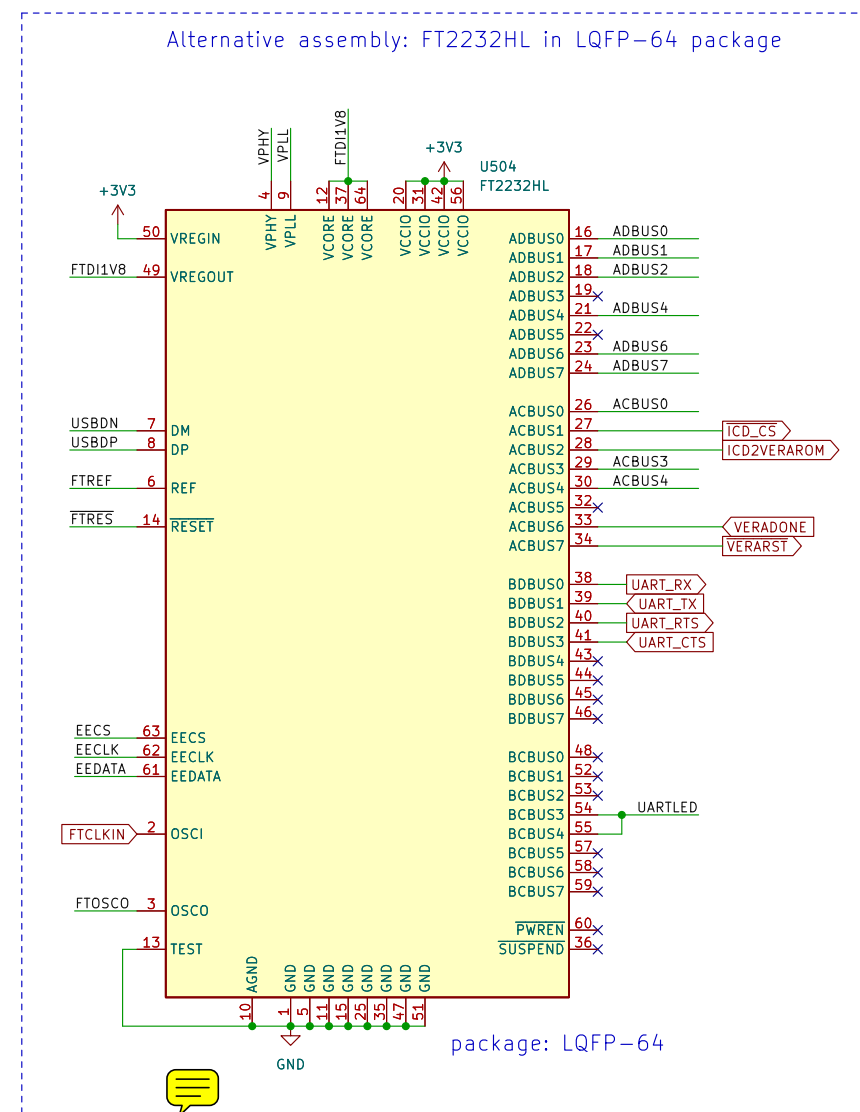
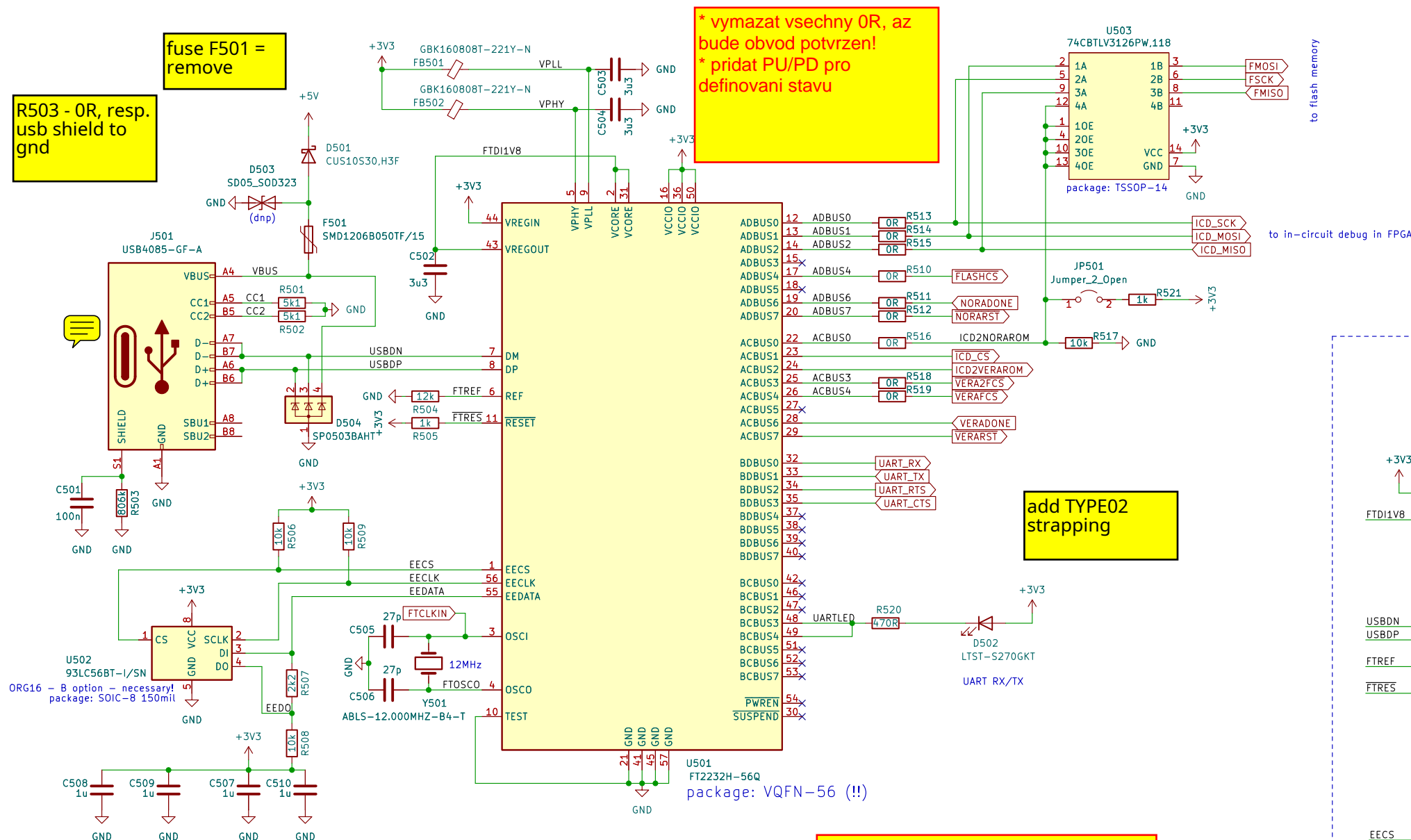
KiCad E.D.A. kicad (6.0.7)

Rev: rev01

Id: 3/7

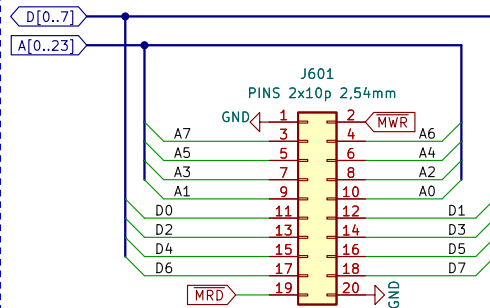


# USB 2.0 WITH USB-C / UART TERMINAL AND ICD (In-Circuit Debugger)

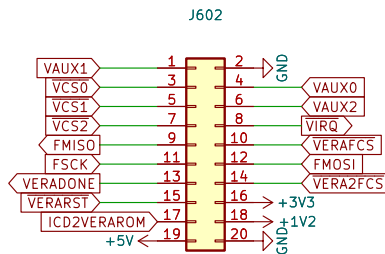


nVERAFCS -> active high;  
nVERA2FCS -> AURAFCS;  
nVERARST -> nVRST;  
ICD2VERAROM -> nARST  
  
ICD2NORAROM -> ICD2FLASH

## B-2-B CONNECTOR TO THE MULTIMEDIA BOARD "VA-BO"

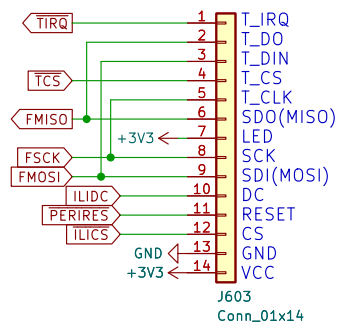
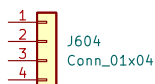


PINS 2x10p 2.54mm

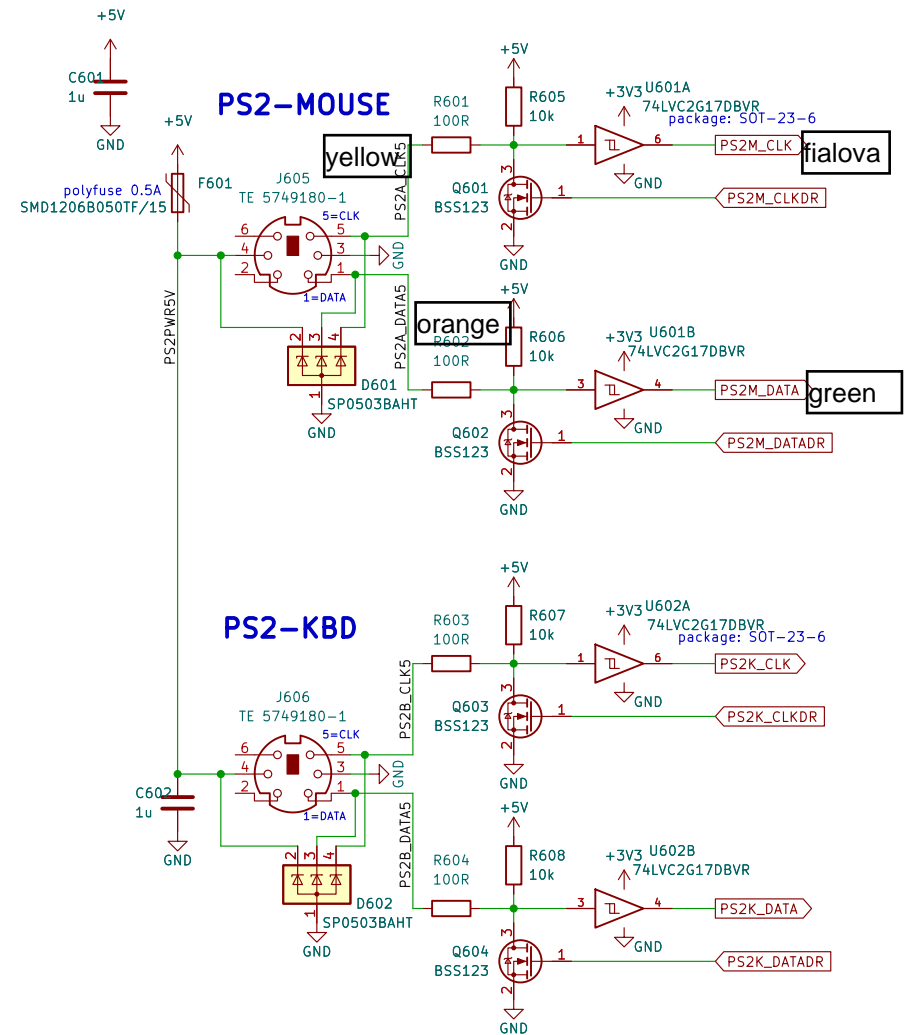
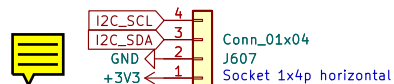


nVERAFCFS -> active high;  
nVERA2FCS -> AURAFCS;  
nVERARST -> nVRST;  
ICD2VERAROM -> nARST

## TFT LCD (ILI9341)



## PMOD I2C



OpenX65 MOTHERBOARD  
FOR X65.EU DESIGNED BY JSYKORA.INFO

Sheet: /VA-Board, PS2/  
File: b2b-conns.kicad\_sch

**Title: OpenX65 – PS/2 and Multimedia Connector**

Size: A4 Date: 2023-03-30

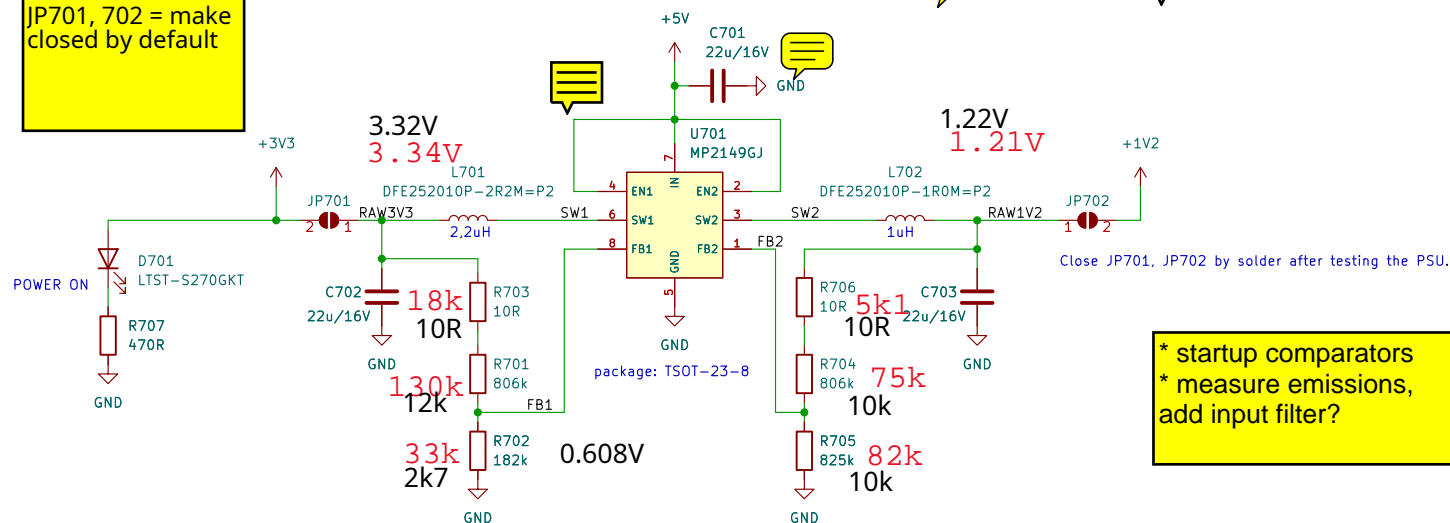
KiCad E.D.A. kicad (6.0.7)

Rev: rev01

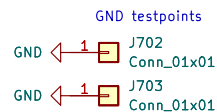
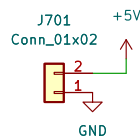
Id: 6/7

POWER SUPPLY  
5V -> 3.3V, 1.2V

JP701, 702 = make  
closed by default



Alternative power input connector



Consumption:  
@3V3: mobo alone = 80mA,  
whole computer = 170-200mA (VGA, CX16 rom  
runs), with LAN = 230mA, +calliope=250mA  
@1V2: 17mA

OpenX65 MOTHERBOARD  
FOR X65.EU DESIGNED BY JSYKORA.INFO

Sheet: /Power Supply/  
File: pwrsup.kicad\_sch

Title: OpenX65 – Power Supply

Size: A4 Date: 2023-03-30

KiCad E.D.A. kicad (6.0.7)

Rev: rev01

Id: 7/7