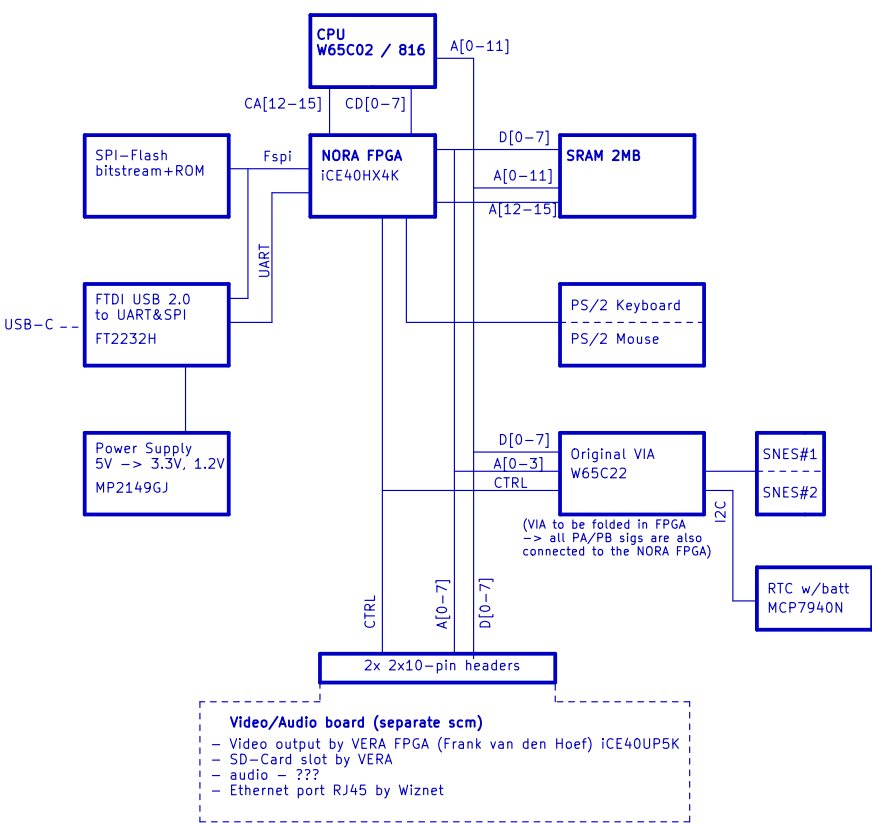


# Computer OpenX65 by X65.EU

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
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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

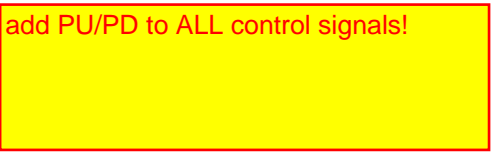
Title: OpenX65

Size: A4  
KiCad E.D.A. kicad (6.0.7)

Date: 2023-03-30

Rev: rev01

Id: 1/7

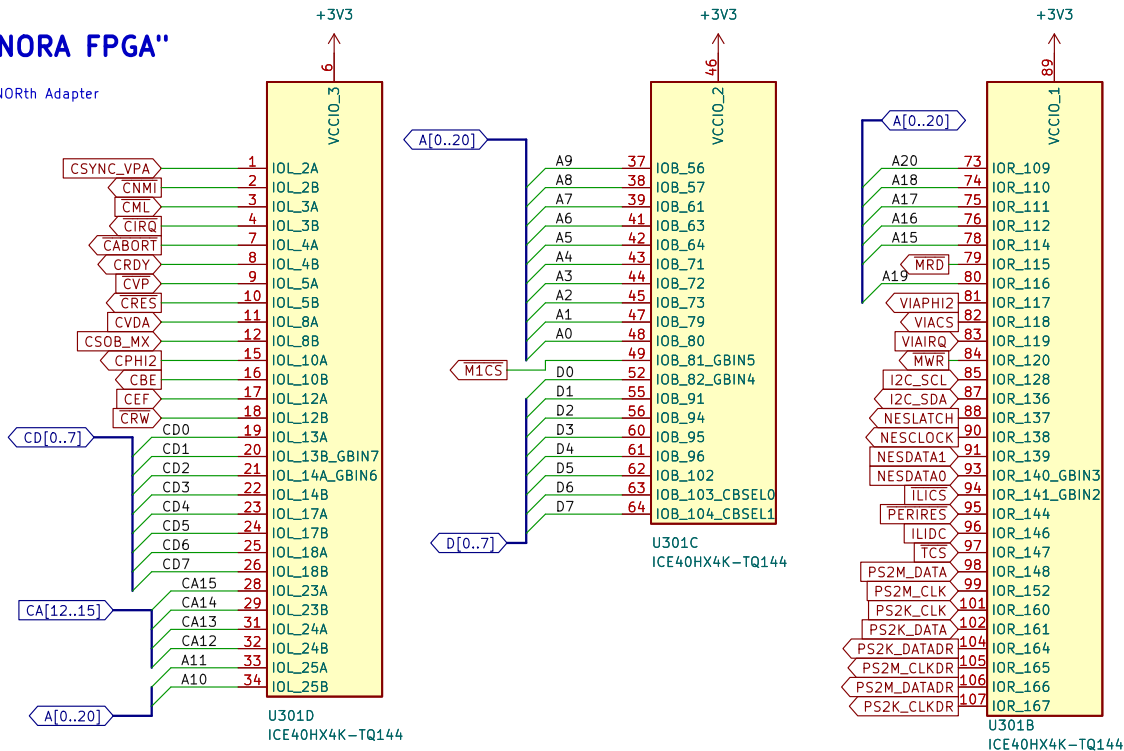


a) W65C02S6TQG-14 => 8-bit CPU  
=> do not populate R208, R210, R213

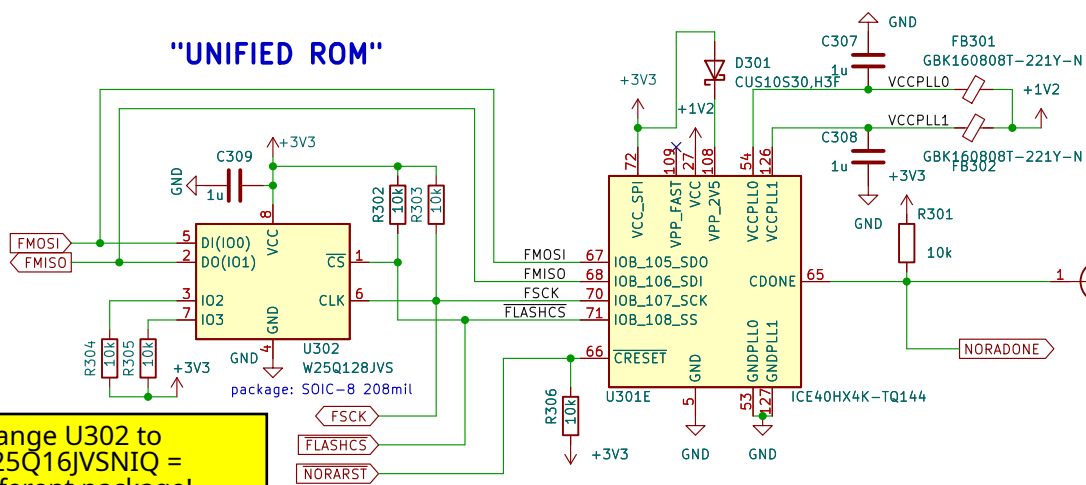
b) W65C816S6TQG-14 => 16-bit CPU (not 100% compatible with the 8-bit!!)  
=> R208=R210=R213=50ohm

## "NORA FPGA"

= NORTH Adapter



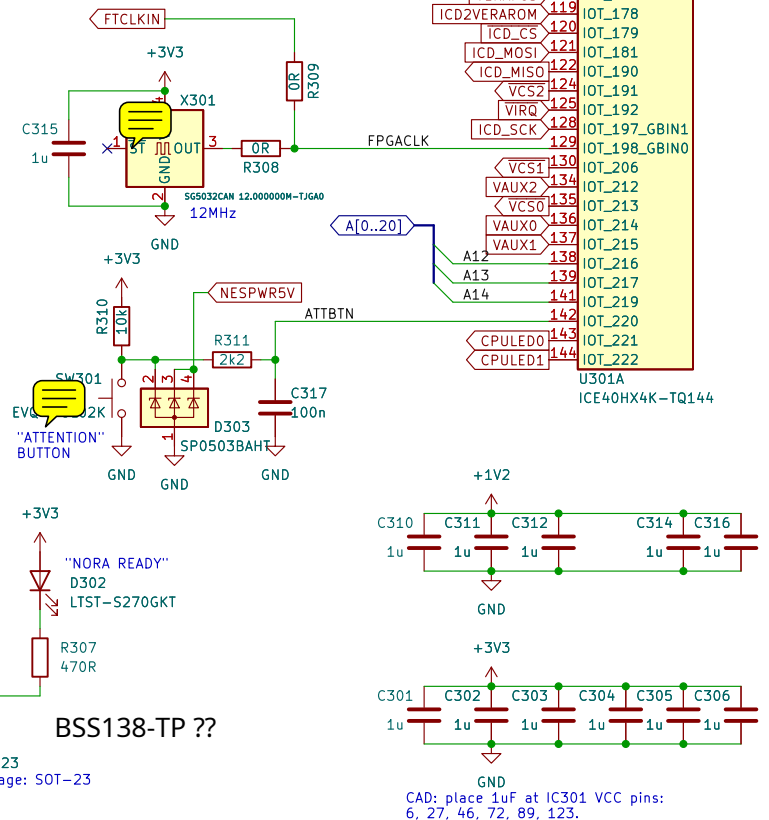
## "UNIFIED ROM"



change U302 to W25Q16JVSNIQ = different package!

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

TIRQ => CPUTYPE02.



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)

R503 - 0R, resp.  
usb shield to  
gnd

fuse F501 =  
remove

\* vymazat vsechny 0R, az  
bude obvod potvrzen!  
\* pridat PU/PD pro  
definovani stavu

add TYPE02 strapping:  
65C02 => pull-up 10k  
65C816 => pull-down 1k

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

Alternative assembly: FT232HL in LQFP-64 package

package: LQFP-64

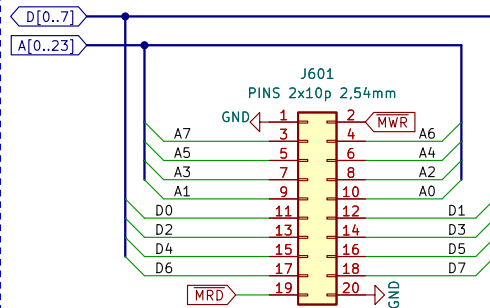
OpenX65 MOTHERBOARD  
FOR X65.EU DESIGNED BY JSYKORA.INFO  
Sheet: /USB-Terminal/  
File: usbdev.kicad\_sch

Title: OpenX65 - USB Terminal with UART and ICD

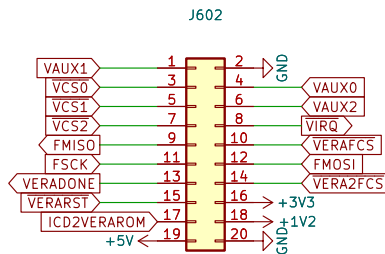
Size: A3 Date: 2023-03-30  
KiCad E.D.A. kicad (6.0.7)

Rev: rev01  
Id: 5/7

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

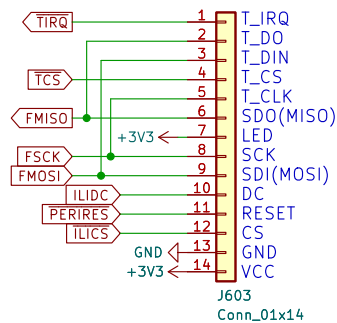
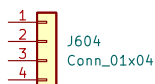


PINS 2x10p 2.54mm

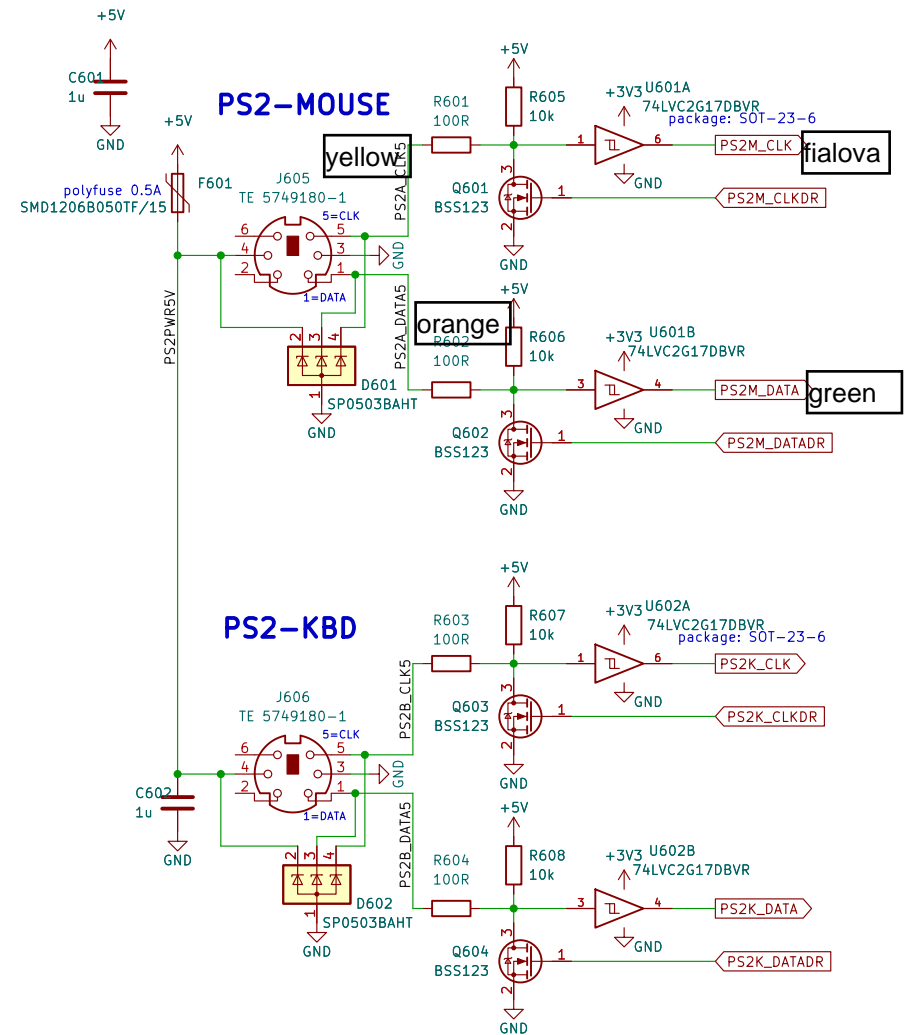
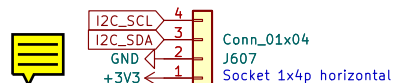


nVERAFCFS -> active high;  
nVERA2FCS -> AURAFCS;  
nVERARST -> nVRST;  
ICD2VERAROM -> nARST

## 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

