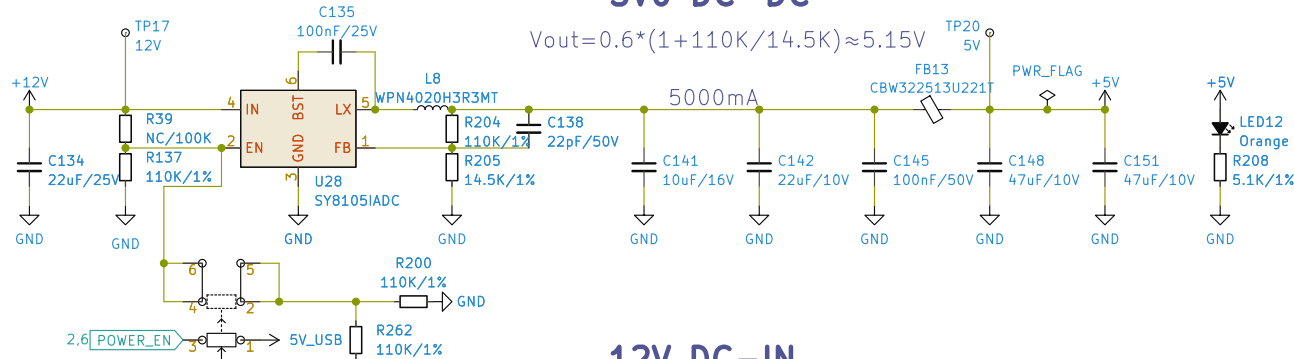
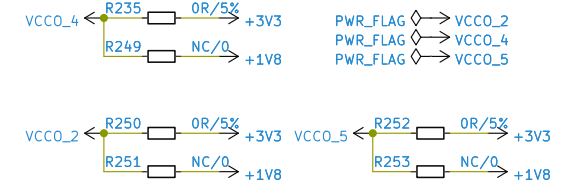


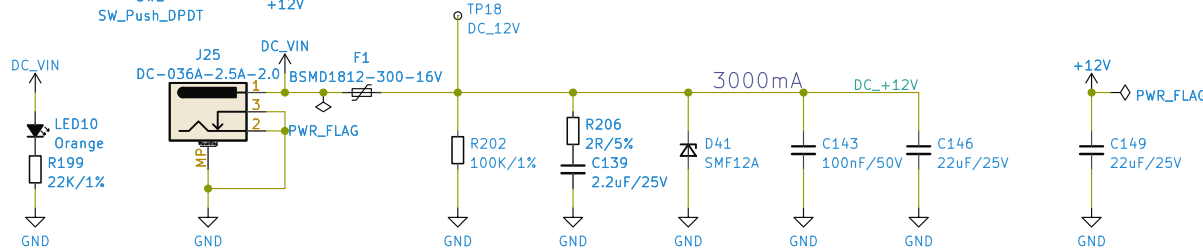
5V0 DC-DC



BANK VOLTAGE SEL.

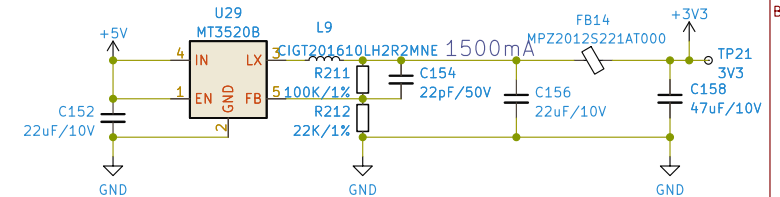


12V DC-IN

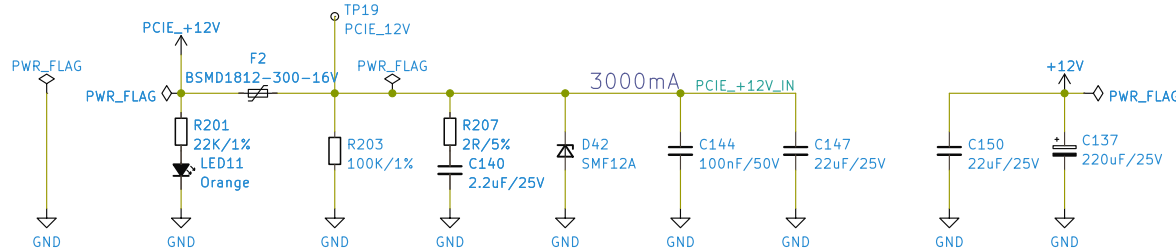


3V3 DC-DC

$$V_{out}=0.6*(1+100K/22K)\approx 3.33V$$

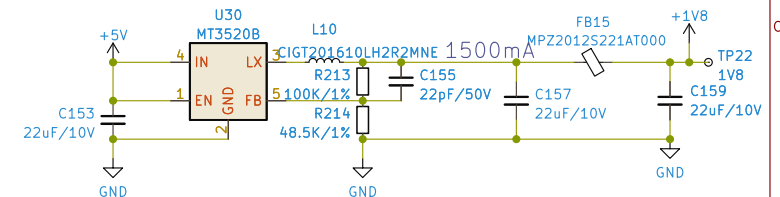


12V PCIE-IN

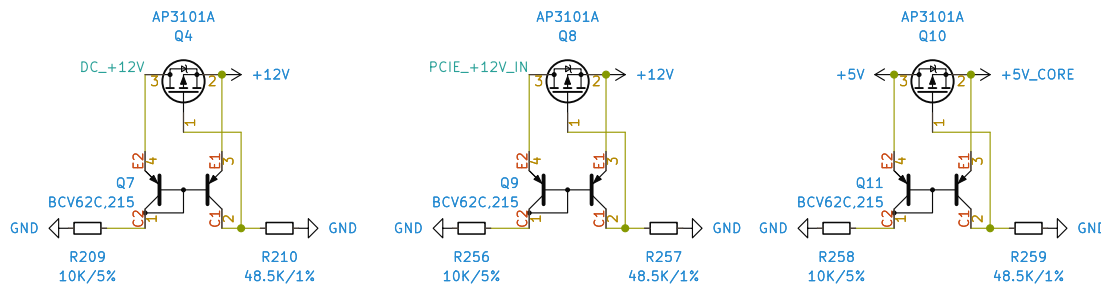


1V8 DC-DC

$$V_{out}=0.6*(1+100K/48.5K)\approx 1.83V$$



POWER-IN ORING



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Sheet: /POWER/
File: POWER.kicad_sch

Title: TANG_MEGA-138K-Pro_Dock-4071d_Schematics

Size: A4 Date: 2023-08-28

KiCad E.D.A. kicad (6.0.7)

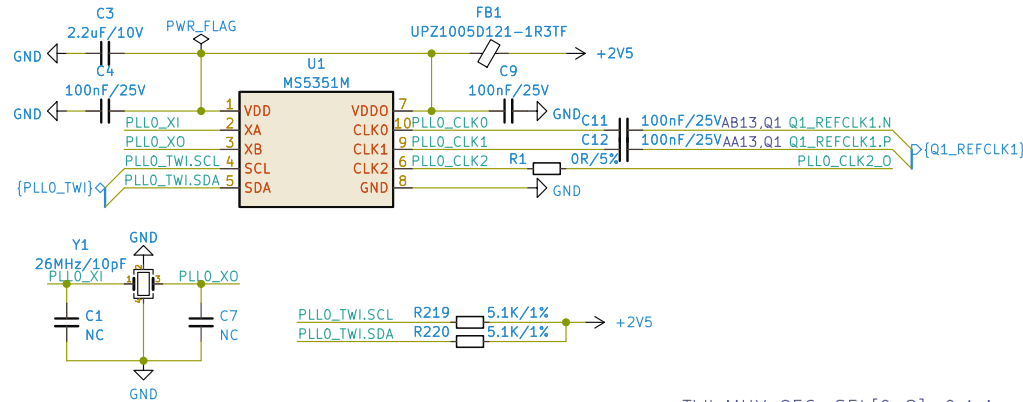
Rev: 1.01

Id: 2/19

CLOCK

EXT. PLL

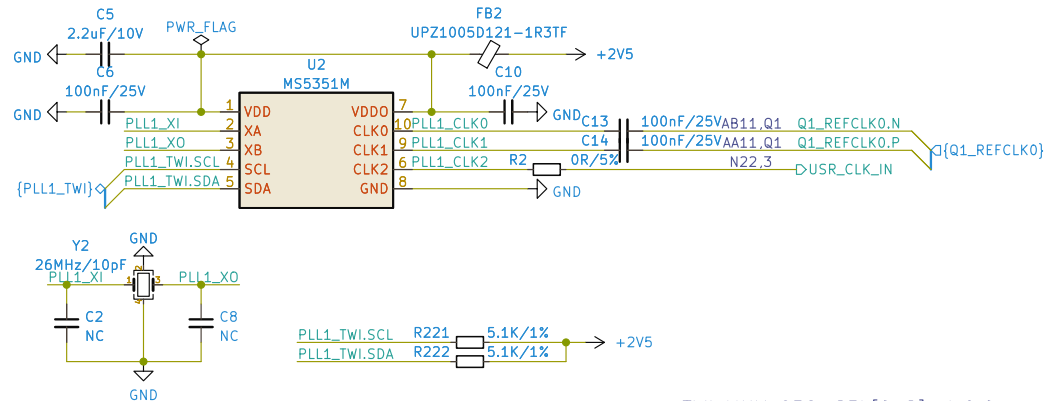
PLL0



TWI_MUX_CFG: SEL[0..2]=0,1,1

{N19,3}: SEL0=0
{P19,3}: SEL1=1
{P26,3}: SEL2=1

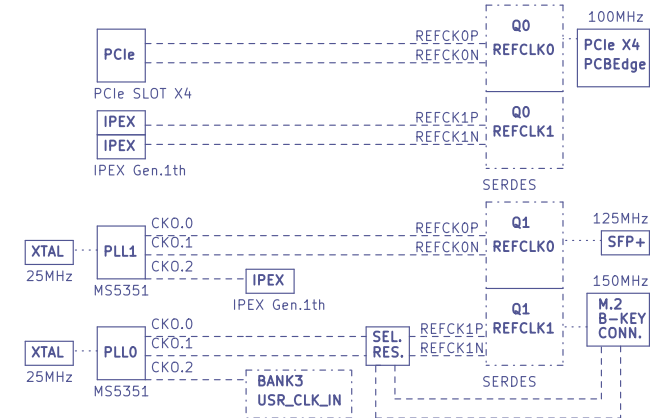
PLL1



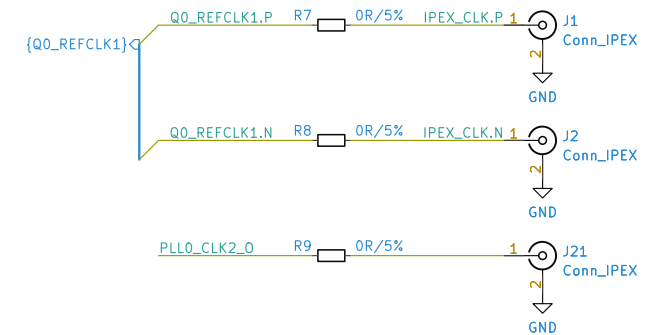
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{P26,3}: SEL2=0

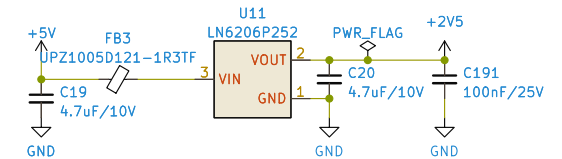
COLCK TREE



IPEX RF CONN.



EXT. PLL POWER



Shenzhen Sipeed Technology Co., Ltd.

Sheet: /FPGA_CLOCK/

File: CLOCK.kicad_sch

Title: TANG_MEGA-138K-Pro_Dock-4071d_Schematics

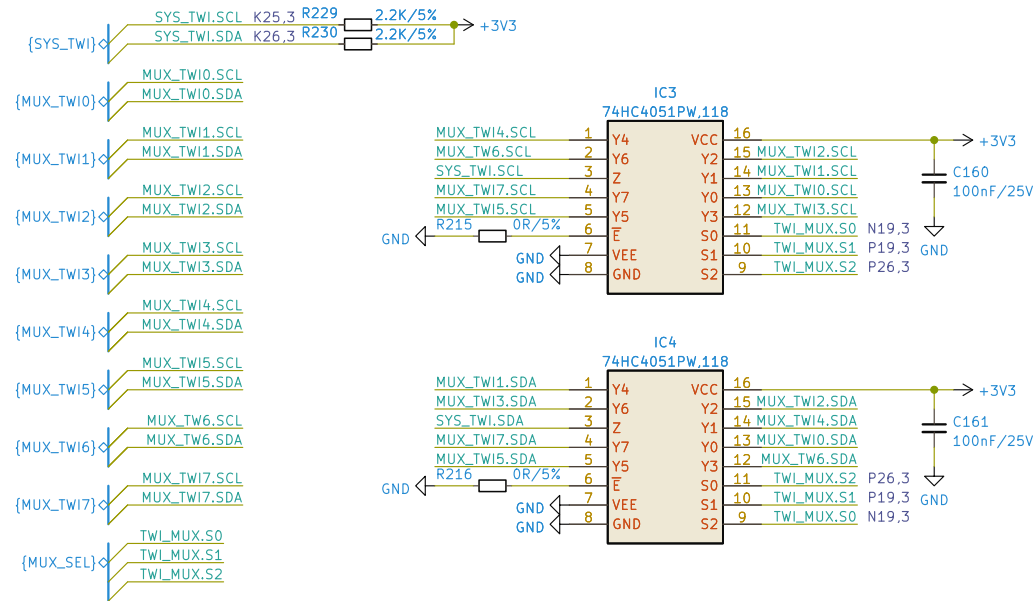
Size: A4 Date: 2023-08-28

KiCad E.D.A. kicad (6.0.7)

Rev: 1.01

Id: 3/19

8-WAY TWI MUX



NO.	CONFIG	SEL0	SEL1	SEL2
0	SFP0	0	0	0
1	SFP1	0	0	1
2	EEPROM	0	1	0
3	DVI_TX_DDC MS5331-0	0	1	1
4	DVI_RX_DDC MS5331-1	1	0	0
5	DVP_CAM	1	0	1
6	MIPL_RX0	1	1	0
7	MIPL_RX1	1	1	1



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Sheet: /TWI_MUX/

File: TWI_MUX.kicad_sch

Title: TANG_MEGA-138K-Pro_Dock-4071d_Schematics

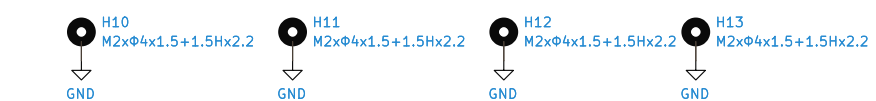
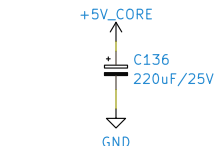
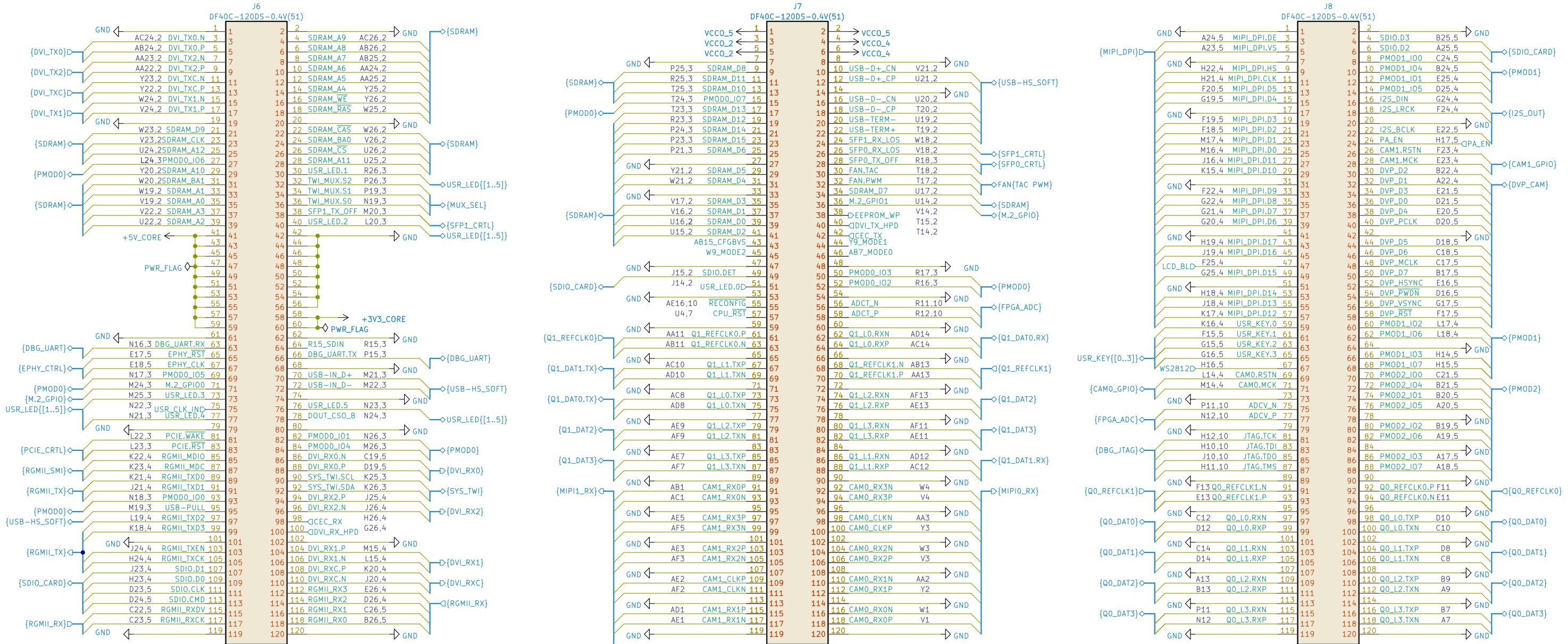
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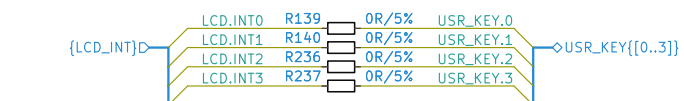
Rev: 1.01

Id: 4/19

FPGA CORE MODULE



CONFIG	MODE0	MODE1	MODE2
JTAG	X	X	X
MSPI	0	0	1
SSPI	0	1	0
MSERIAL	0	0	0
SSERIAL	1	1	1
MCPU	1	0	0
SCPU	1	1	0



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Sheet: /FPGA_BT/

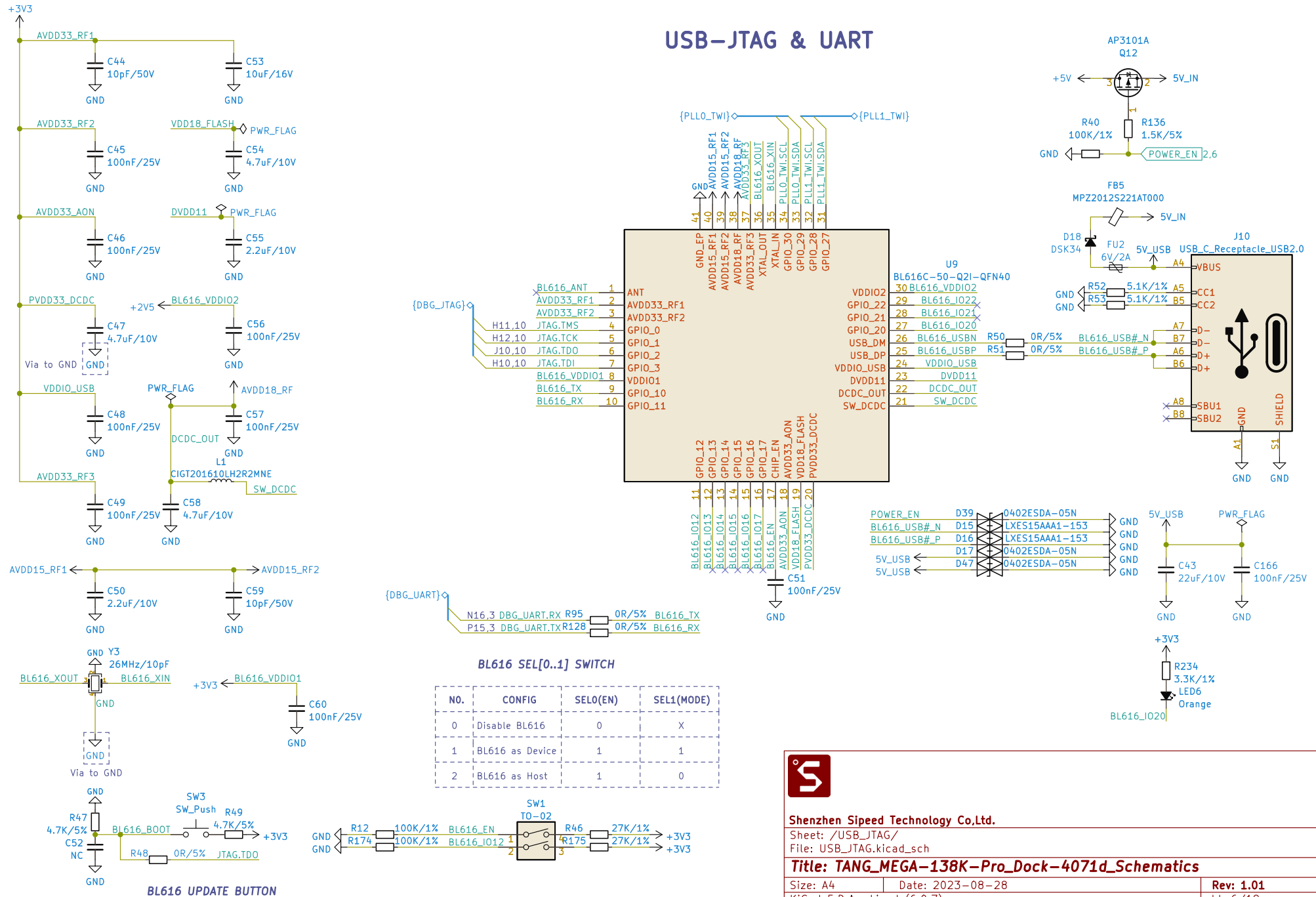
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Title: TANG_MEGA-138K-Pro_Dock-4071d_Schematics

Size: A3 | Date: 2023-08-28 | Rev: 1.01

KiCad E.D.A. kicad (6.0.7) | Id: 5/19

USB-JTAG & UART



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Sheet: /USB_JTAG/
File: USB_JTAG.kicad_sch

Title: TANG_MEGA-138K-Pro_Dock-4071d_Schematics

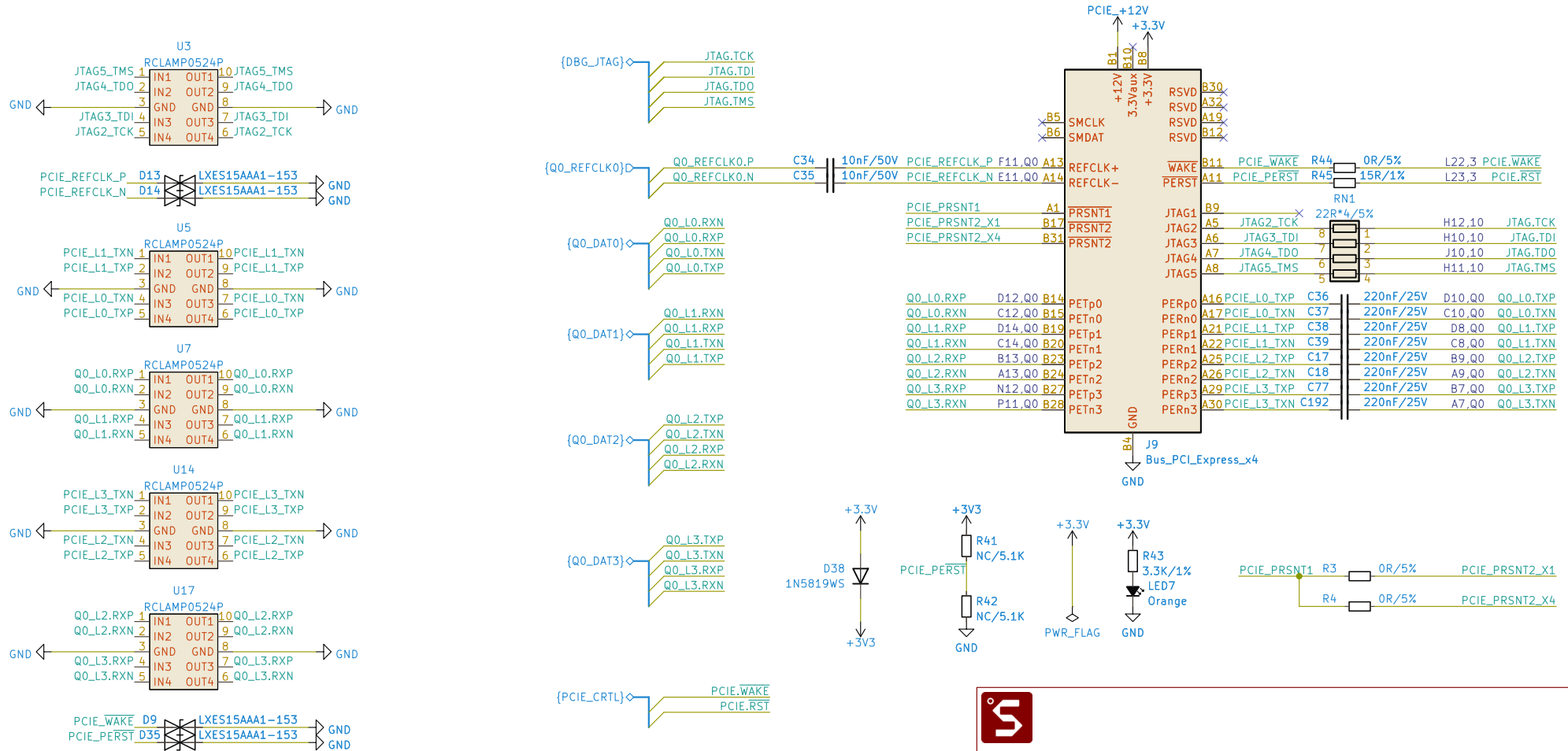
Size: A4 Date: 2023-08-28

KiCad E.D.A. kicad (6.0.7)

Rev: 1.01

Id: 6/19

PCI-Express X4



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Sheet: /FPGA_PCIE/

File: PCIe_sch.kicad_sch

Title: TANG_MEGA-138K-Pro_Dock-4071d_Schematics

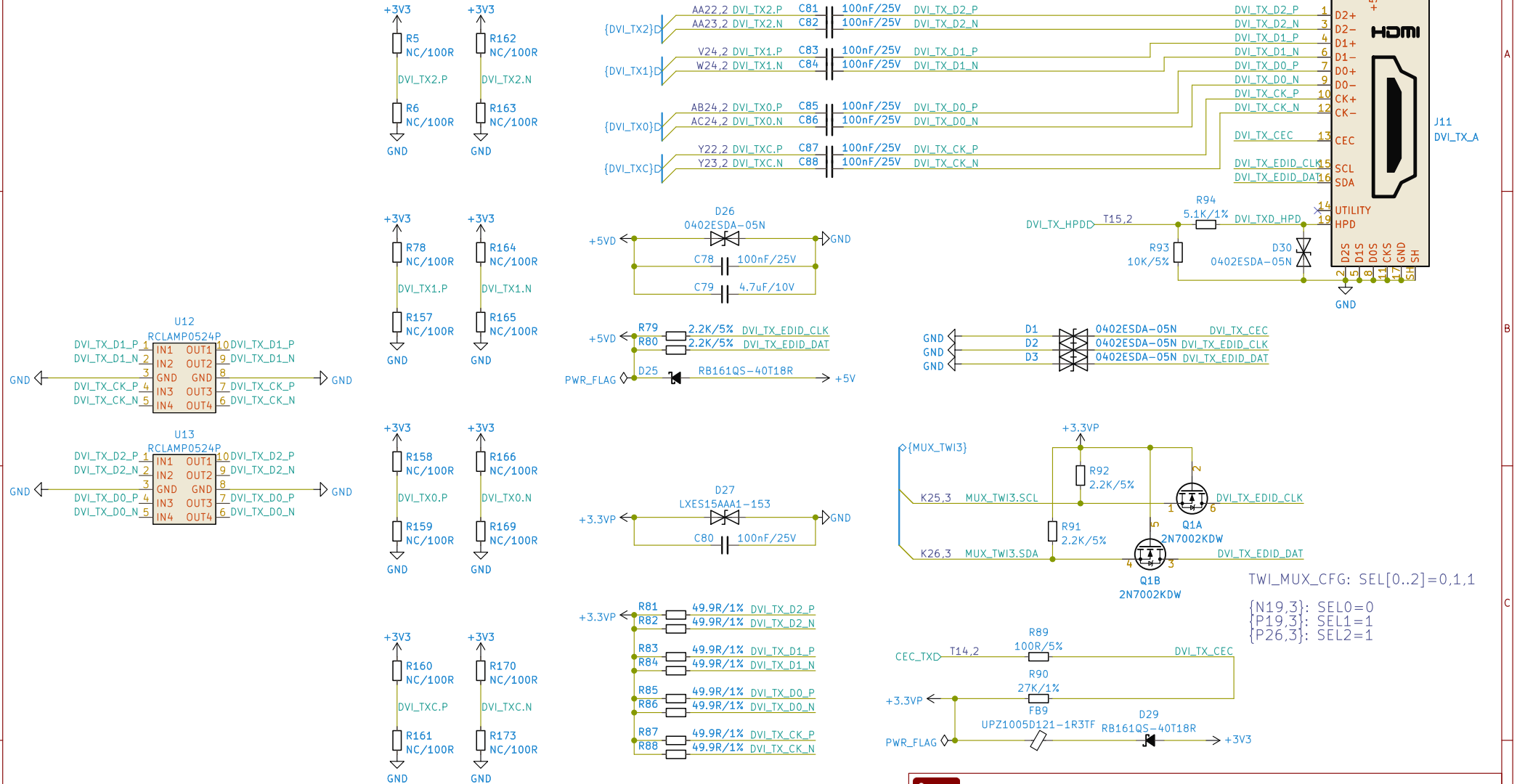
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KiCad E.D.A. kicad (6.0.7)

Rev: 1.01

Id: 7/19

DVI TX



Shenzhen Sipeed Technology Co., Ltd.

Sheet: /FPGA/TMDS_OUT/

File: DVI_TX.kicad_sch

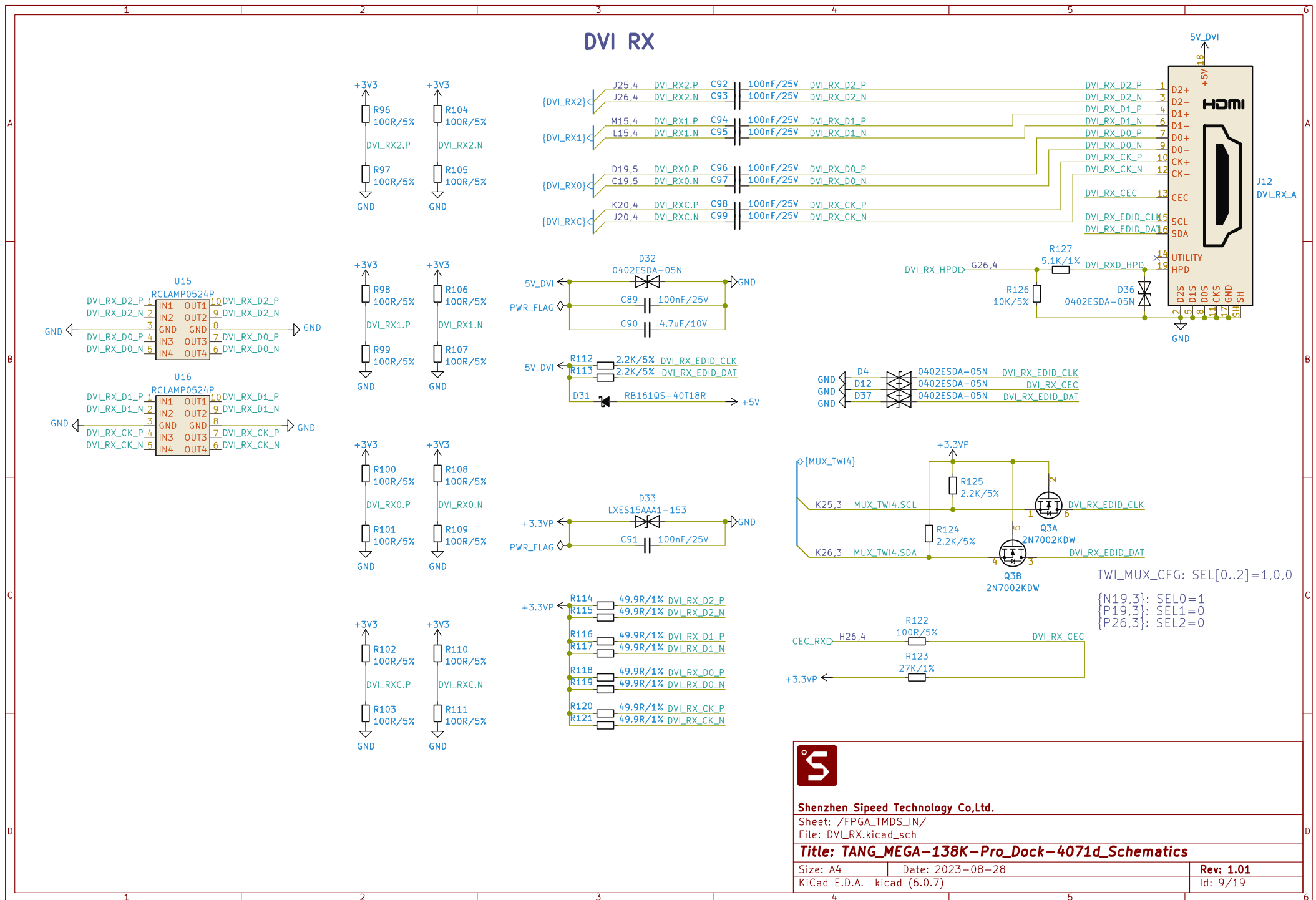
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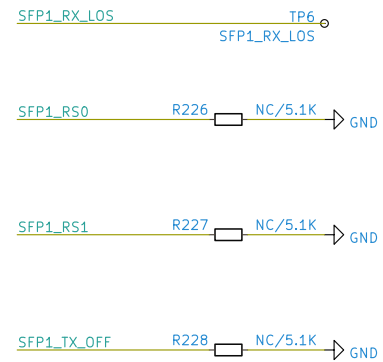
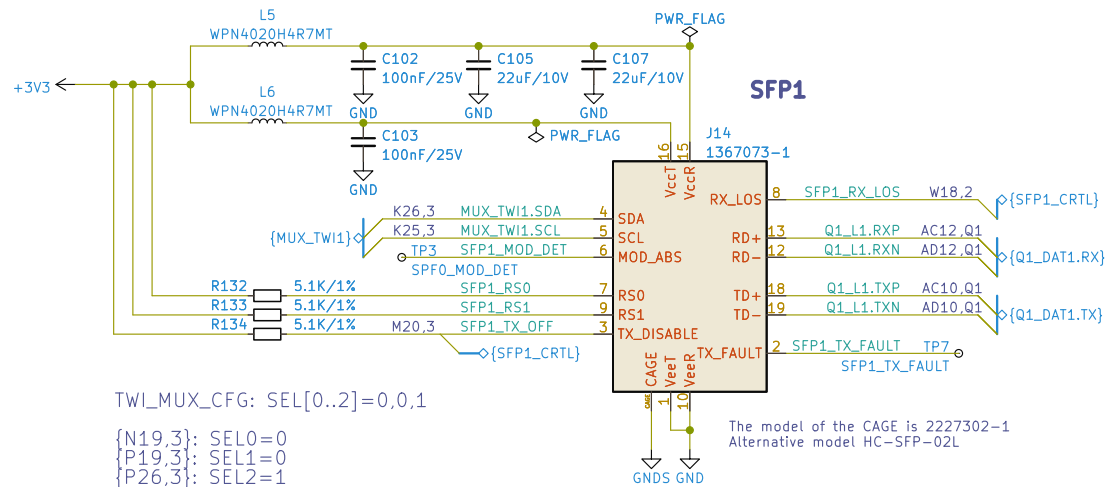
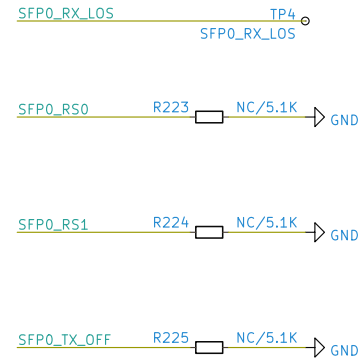
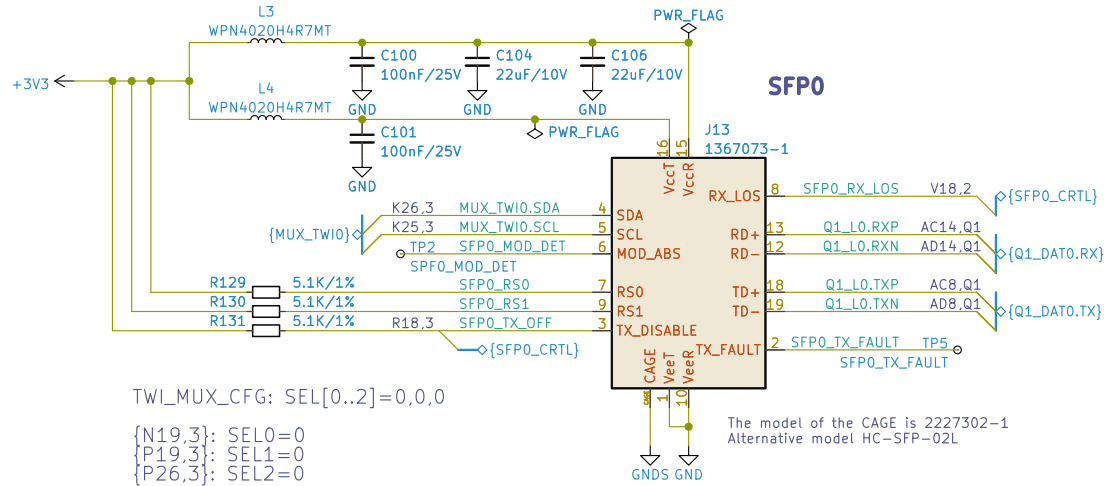
KiCad E.D.A. kicad (6.0.7)

Rev: 1.01

Id: 8/19



SFP+



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Sheet: /FPGA_SFP+/
File: SFP-PLUS.kicad_sch

Title: TANG_MEGA-138K-Pro_Dock-4071d_Schematics

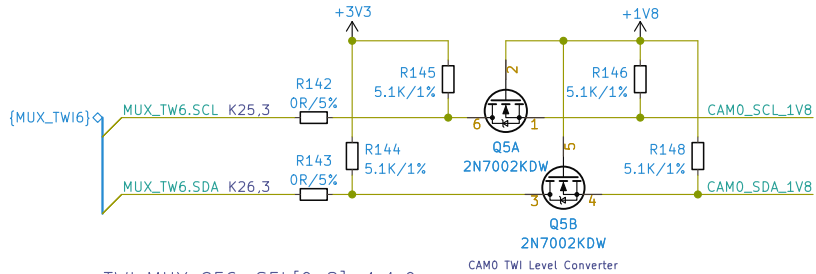
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KiCad E.D.A. kicad (6.0.7)

Rev: 1.01

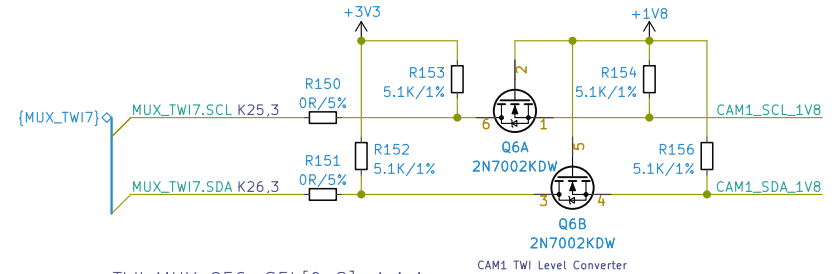
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MIPI RX



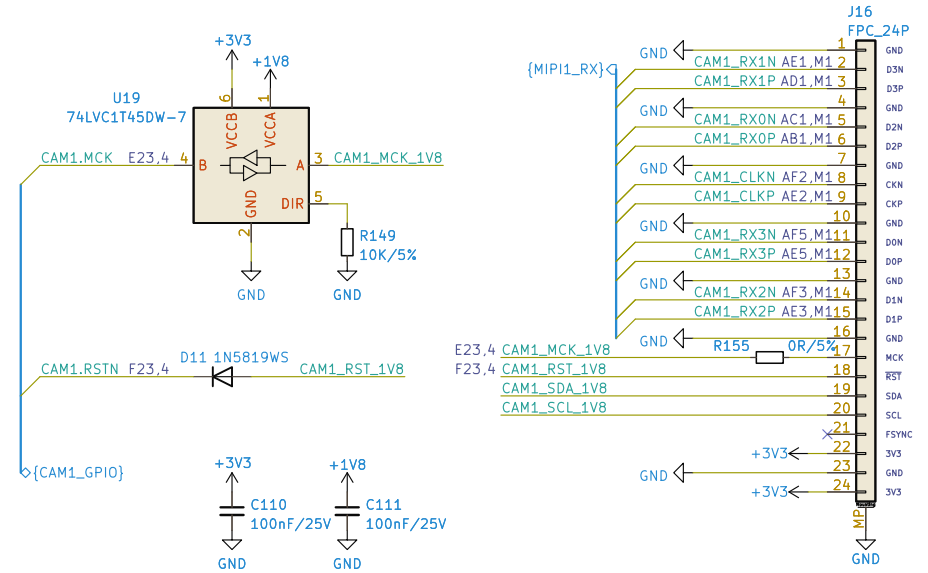
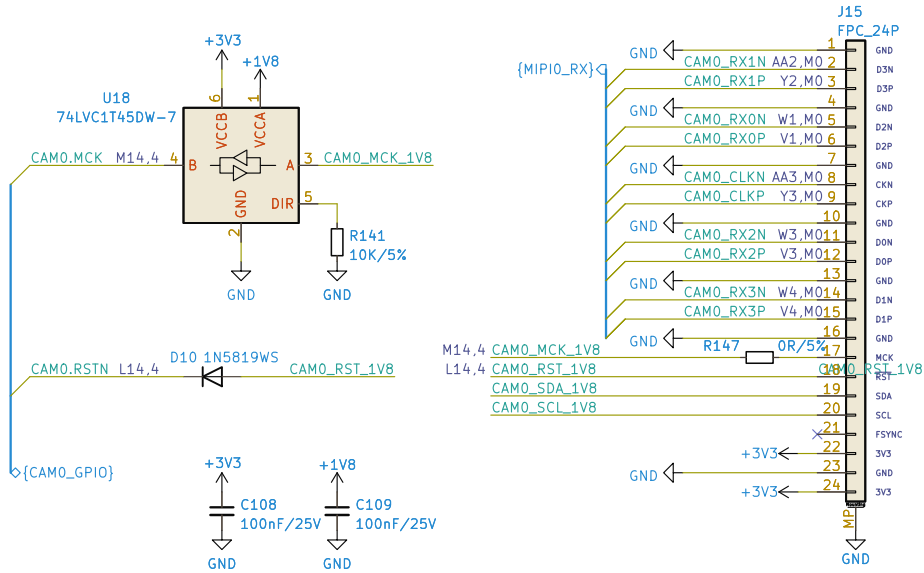
TWI_MUX_CFG: SEL[0..2]=1,1,0

{N19,3}: SEL0=1
{P19,3}: SEL1=1
{P26,3}: SEL2=0



TWI_MUX_CFG: SEL[0..2]=1,1,1

{N19,3}: SEL0=1
{P19,3}: SEL1=1
{P26,3}: SEL2=1



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Sheet: /FPGA_MIPI_RX/

File: MIPI_RX.kicad_sch

Title: TANG_MEGA-138K-Pro_Dock-4071d_Schematics

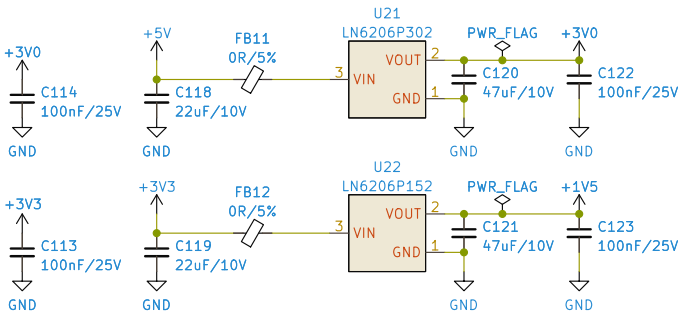
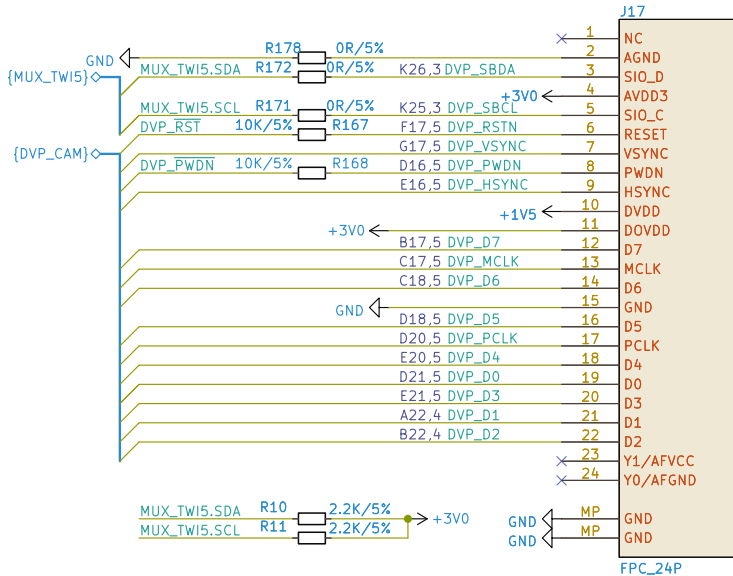
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KiCad E.D.A. kicad (6.0.7)

Rev: 1.01

Id: 11/19

DVP-CAMERA



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Sheet: /DVP_CAMERA/

File: DVP.kicad_sch

Title: TANG_MEGA-138K-Pro_Dock-4071d_Schematics

Size: A4	Date: 2023-08-28
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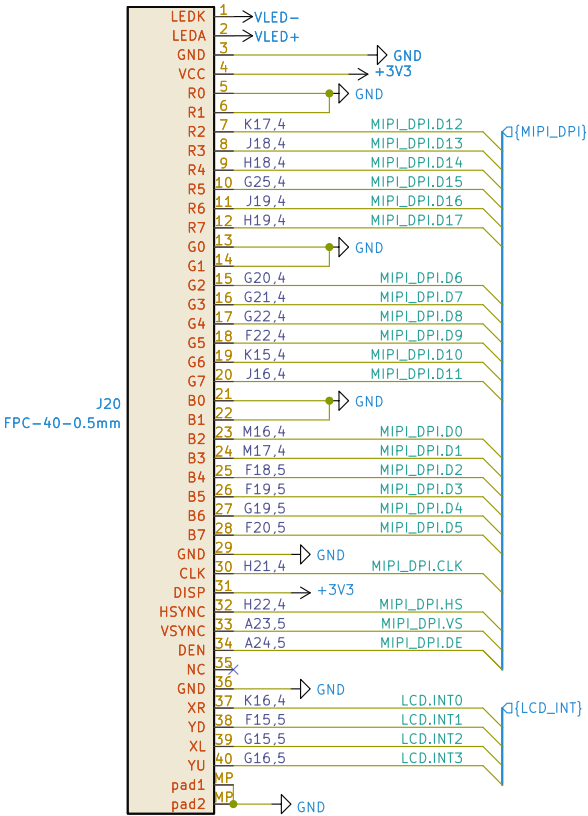
Rev: 1.01

KiCad E.D.A.	kicad (6.0.7)
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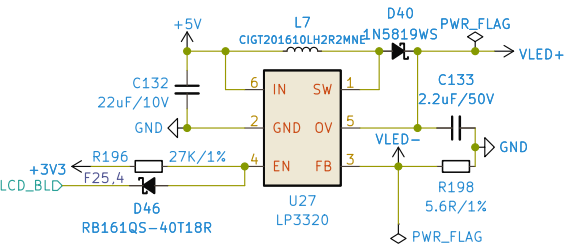
Id: 12/19

FPGA-LCD

MIPI DPI CONN.



LCD BACKLIGHT



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Sheet: /FPGA_LCD/

File: LCD_DPI.kicad_sch

Title: TANG_MEGA-138K-Pro_Dock-4071d_Schematics

Size: A4 Date: 2023-08-28

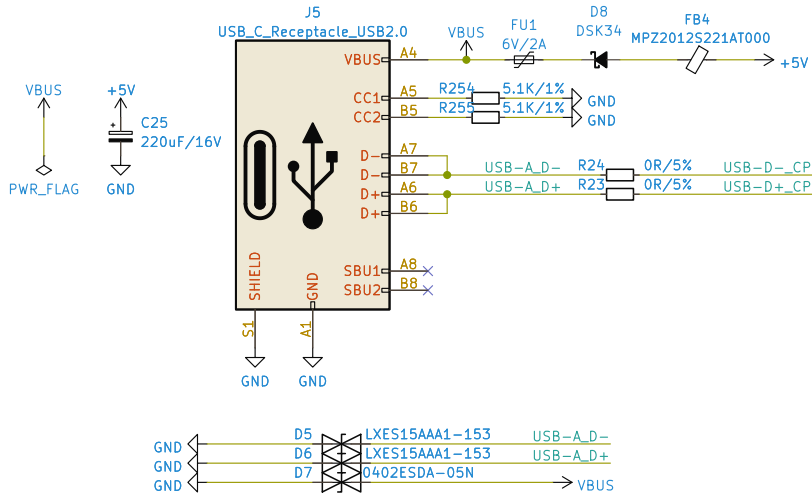
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Rev: 1.01

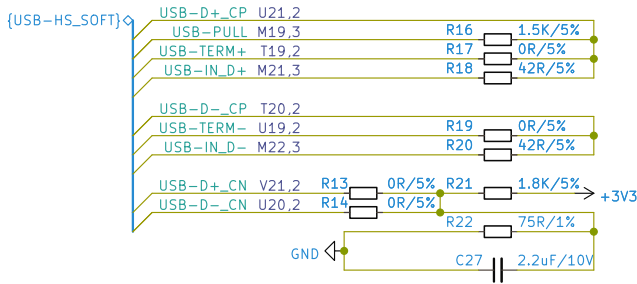
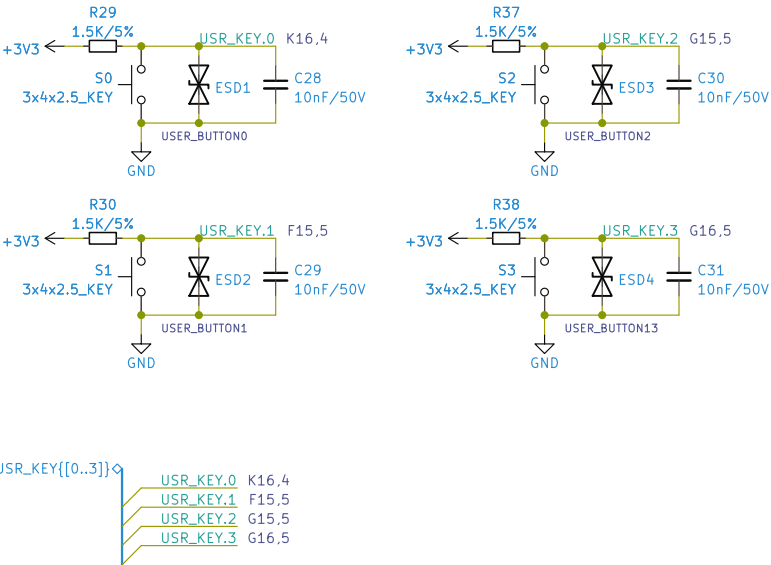
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PERIPHERALS

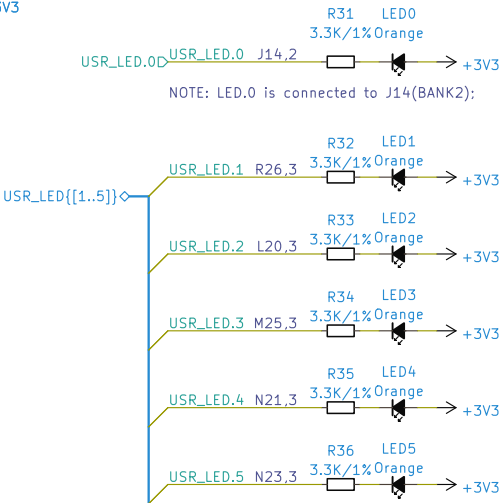
USB2.0-DEV.



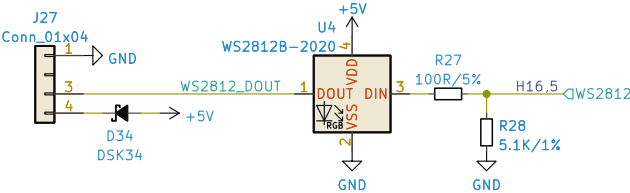
BUTTON



LED



WS2812



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Sheet: /PERIPHERALS/
File: PERIPHERALS.kicad_sch

Title: TANG_MEGA-138K-Pro_Dock-4071d_Schematics

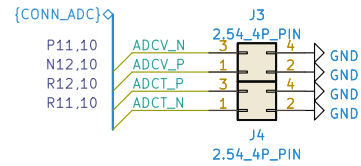
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Date: 2023-08-28

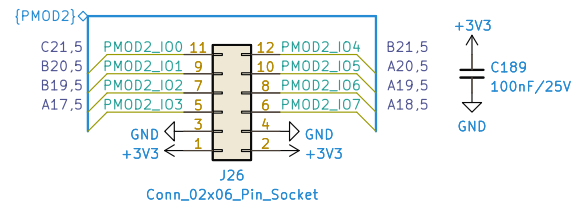
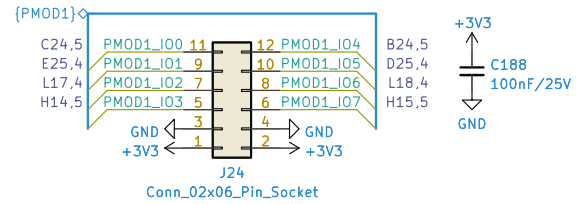
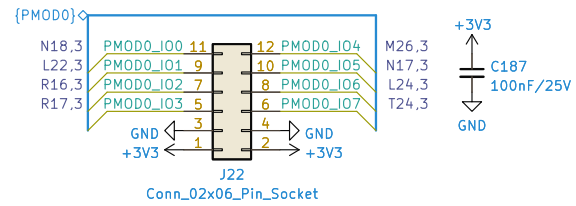
Rev: 1.01
Id: 15/19

EX CONN.

ADC CONN.



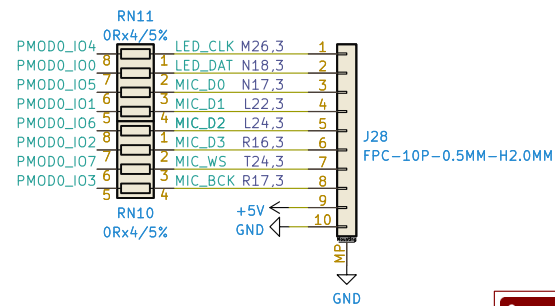
PMOD



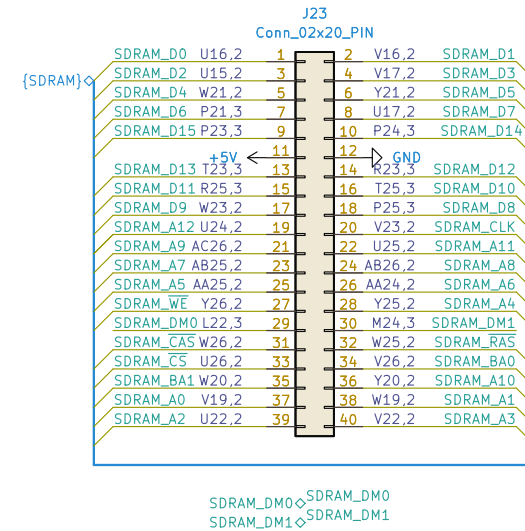
SSPI

PIN	FUNCTION	PMOD0
N18	SSPL_S0	I00
R16	SSPL_CLK	I02
R17	SSPL_WP	I03
N17	SSPL_SI	I05
L24	SSPL_CS	I06
T24	SSPL_HOLD	I07

MIC-ARRAY CONN.



SDRAM CONN.



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Sheet: /FPGA_EXT_CONN./

File: EX_CONN..kicad_sch

Title: TANG_MEGA-138K-Pro_Dock-4071d_Schematics

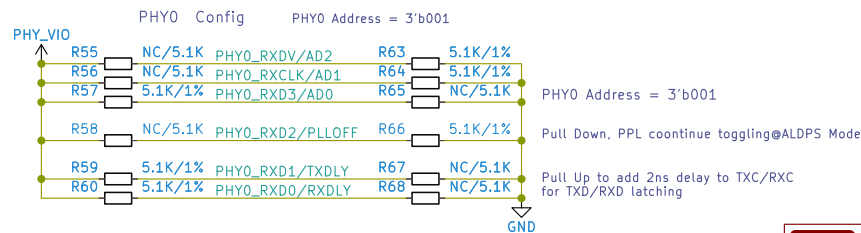
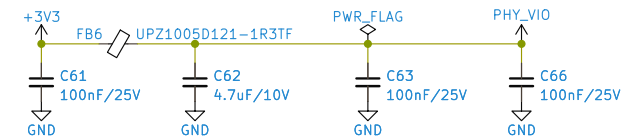
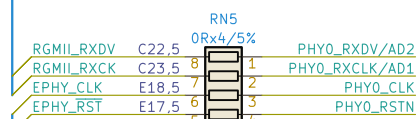
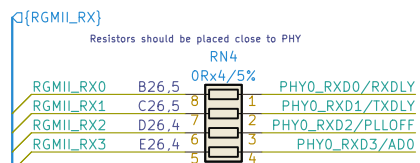
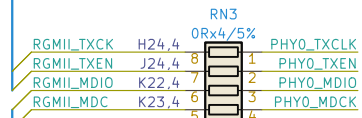
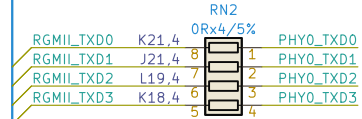
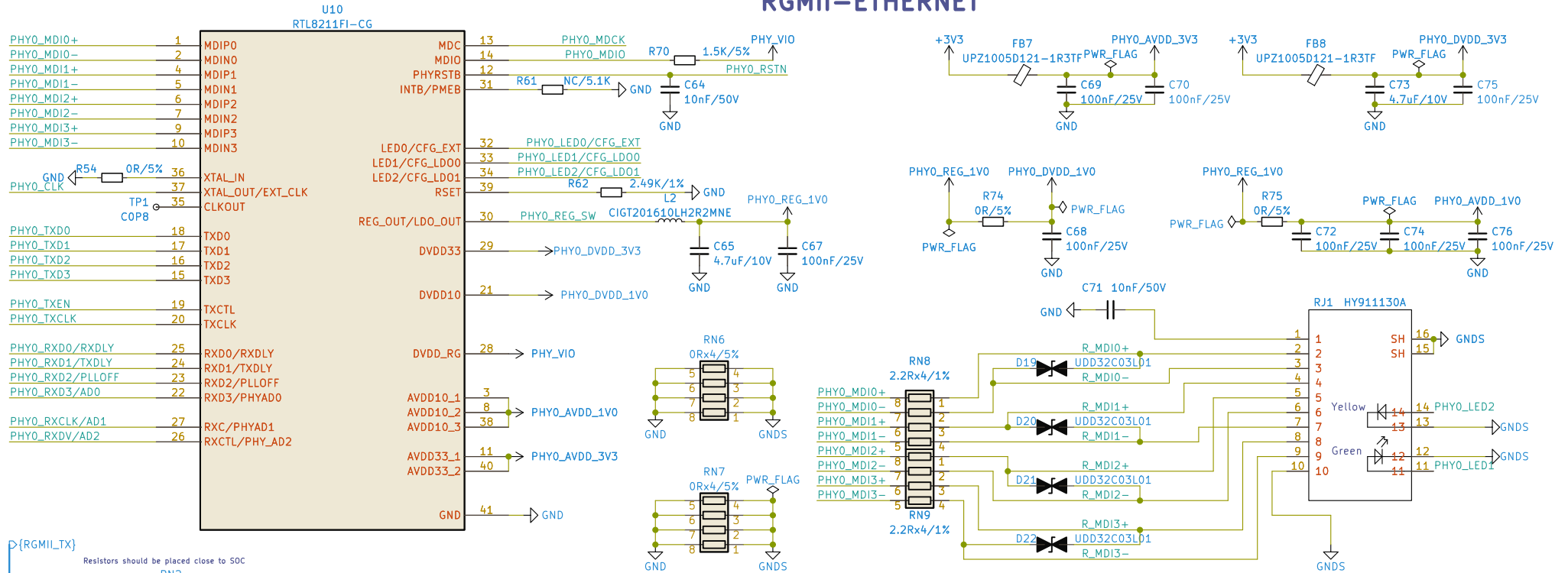
Size: A4	Date: 2023-08-28
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Size: A4	Date: 20
KiCad E.D.A.	kicad (6.0.7)

Rev: 1.01

Id: 16/19

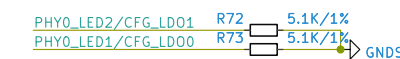
RGMII-ETHERNET



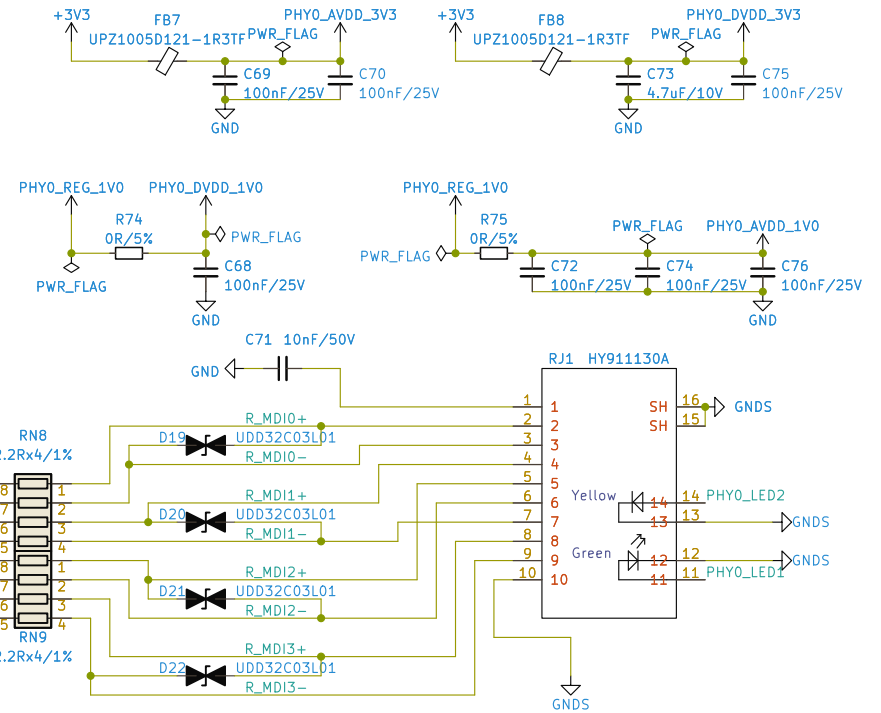
RGMII IO Power	CFG_EXT	CFG_LDO[1:0]
External 3.3V	1'b1	2'b00
External 1.8V	1'b1	2'b10
Internal 1.8V	1'b0	2'b10



Pull up to use external power source for IO



CFG_LDO[1:1]=0x11, select 3.3V external power



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Sheet: /RGMII_ETHNET/

File: RGMII_sch.kicad_sch

Title: TANG_MEGA-138K-Pro_Dock-4071d_Schematics

Size: A4	Date: 2023-08-28
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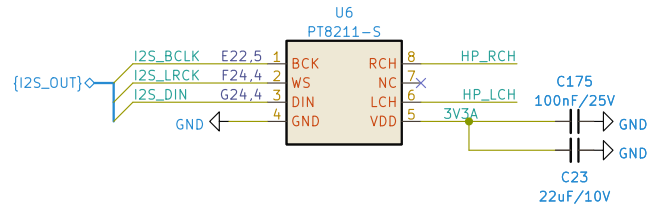
Size: A4	Date: 20
KiCad E.D.A.	kicad (6.0.7)

Rev: 1.01

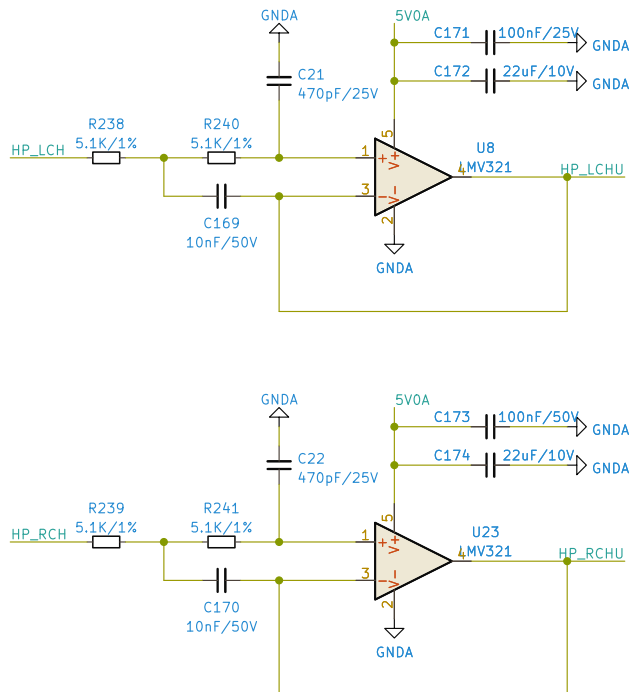
Id: 17/19

FPGA-Audio

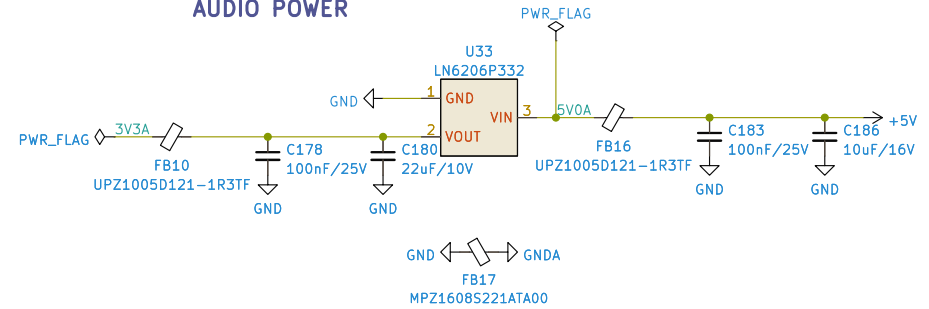
STEREO DAC



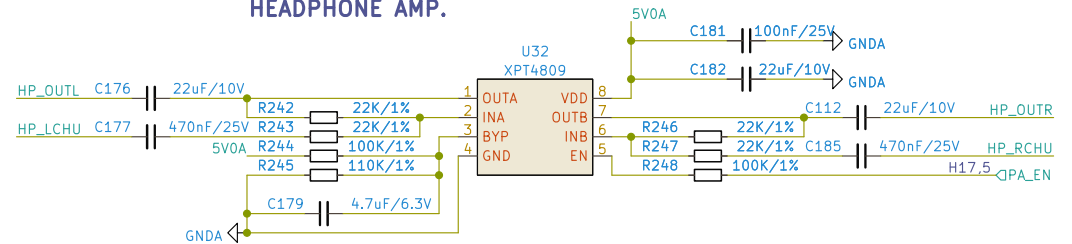
LOW-PASS FILTER



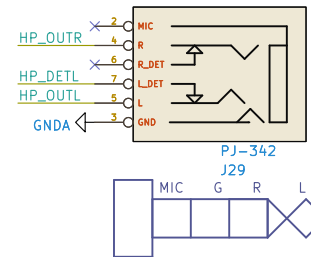
AUDIO POWER



HEADPHONE AMP.

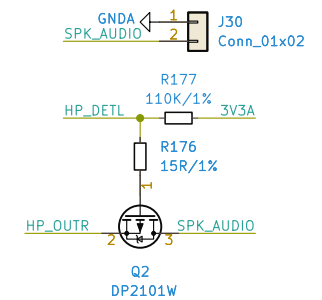


HEADPHONE JACK 3.5MM CTIA



When the jack is unplugged, L/R_DET is connected to L/R.

SPEAKER CONN. R-CH



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Sheet: /FPGA_AUDIO/

File: DAC+PA.kicad_sch

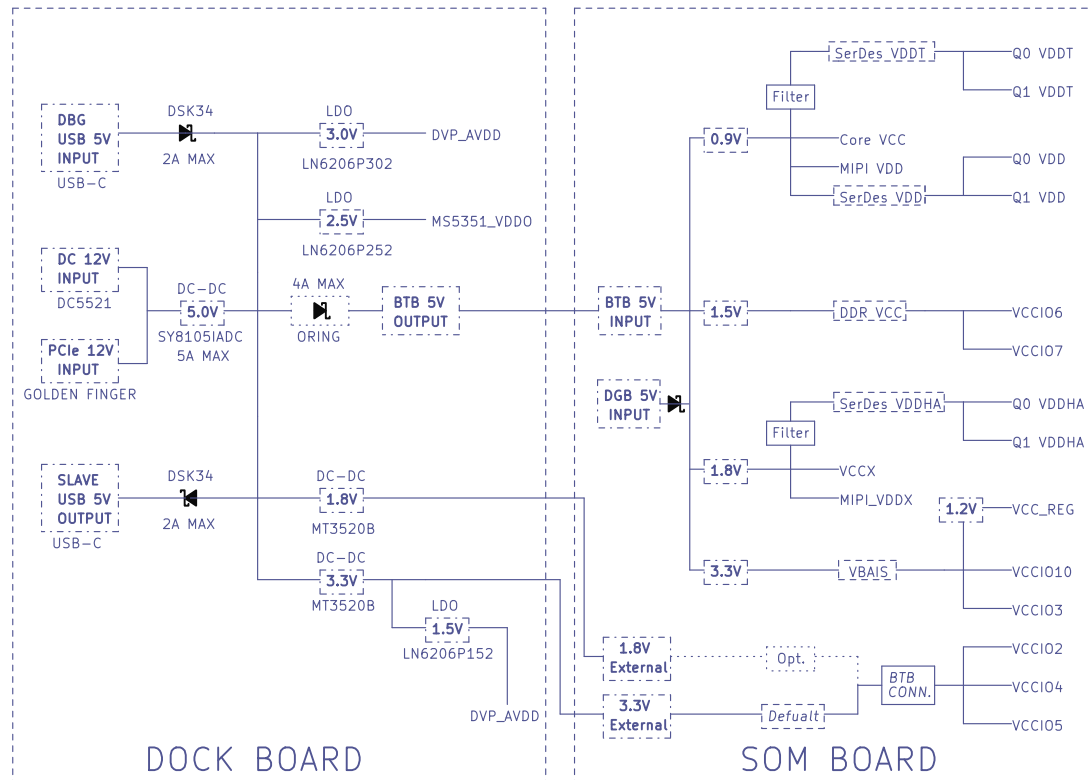
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Size: A4 Date: 2023-08-28

KiCad E.D.A. kicad (6.0.7)

Rev: 1.01

Id: 18/19



Shenzhen Sipeed Technology Co.,Ltd.

Sheet: /POWER_TREE/

File: PT.kicad_sch

Title: TANG_MEGA-138K-Pro_Dock-4071d_Schematics

Size: A4 Date: 2023-08-28

KiCad E.D.A. kicad (6.0.7)

Rev: 1.01

Id: 19/19