

DDR3



File: ddr3.kicad\_sch

Clock generator



File: clock\_generator.kicad\_sch

RF Mixer



File: mixer.kicad\_sch

FPGA VCC\_GND



File: fpga\_vcc\_gnd.kicad\_sch

PA



File: pa.kicad\_sch

Analog power



File: analog\_power.kicad\_sch

FPGA PS



File: fpga\_ps.kicad\_sch

RF front end



File: rf\_frontend.kicad\_sch

IMU



File: imu.kicad\_sch

FPGA Power



File: fpga\_power.kicad\_sch

ADC



File: adc.kicad\_sch

IO connectors



File: connectors.kicad\_sch

FPGA Pins



File: fpga\_pins.kicad\_sch

VIN



File: vin.kicad\_sch

USB



File: usb.kicad\_sch

FPGA Config



File: fpga\_config.kicad\_sch

IF amplifier



File: if\_amp.kicad\_sch

PLL



File: pll.kicad\_sch








EMMC



File: emmc.kicad\_sch

Notes:

- Bank 501 voltage is 1.8 V, but should be 3.3 V
- R37 (MIOB) should be 20k pull-down to GND with 3.3 V Bank 501 IO voltage.
- PE43205 (U38) is not available for sale for individuals.

-  H1 MountingHole
-  H2 MountingHole
-  H3 MountingHole
-  H4 MountingHole
-  H5 MountingHole
-  H6 MountingHole
-  H7 MountingHole

SAR FMCW

**Henrik Forstén**

Sheet: /

File: sar\_fmcw.kicad\_sch

**Title: sar\_fmcw**

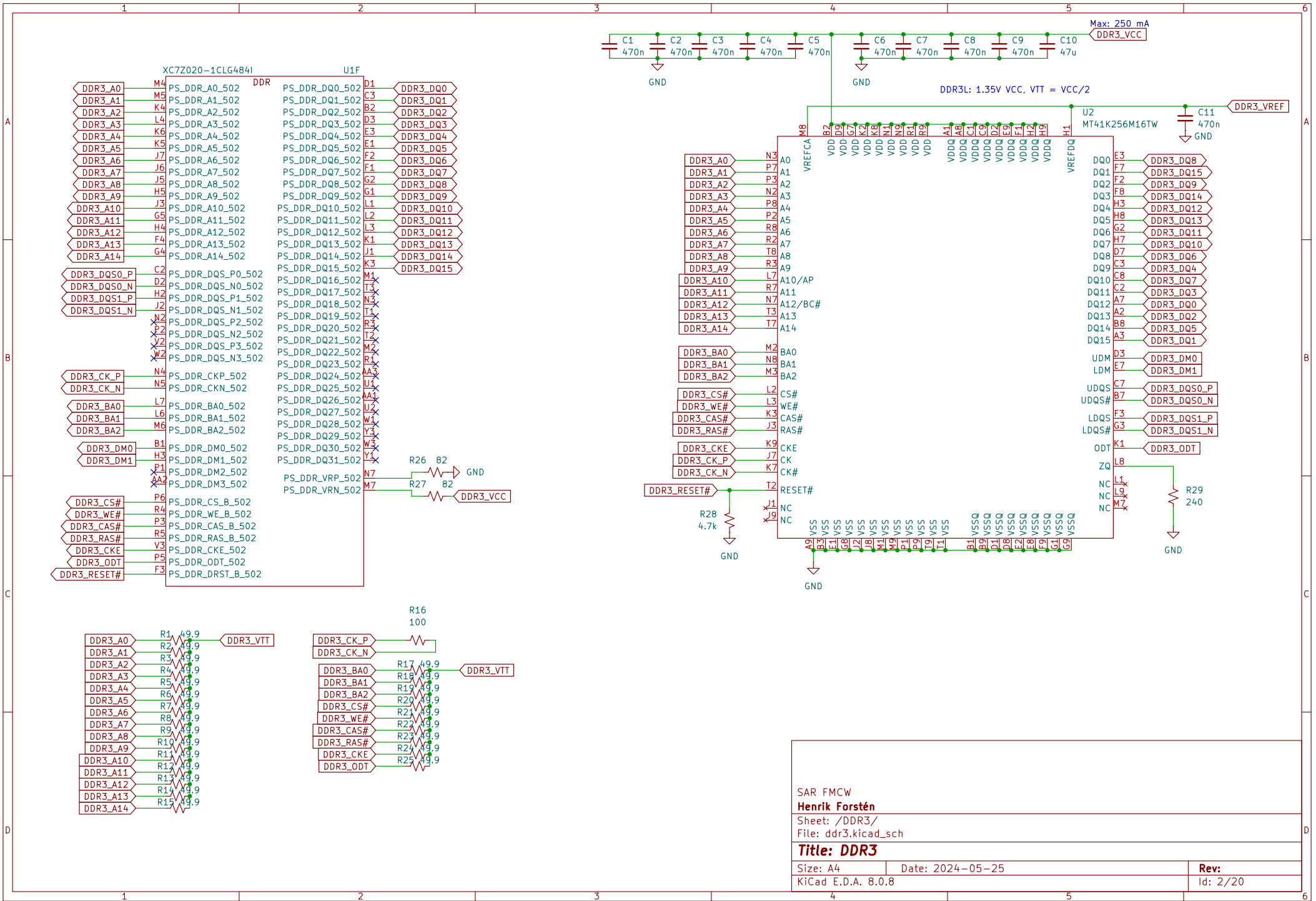
Size: A4

Date: 2024-05-25

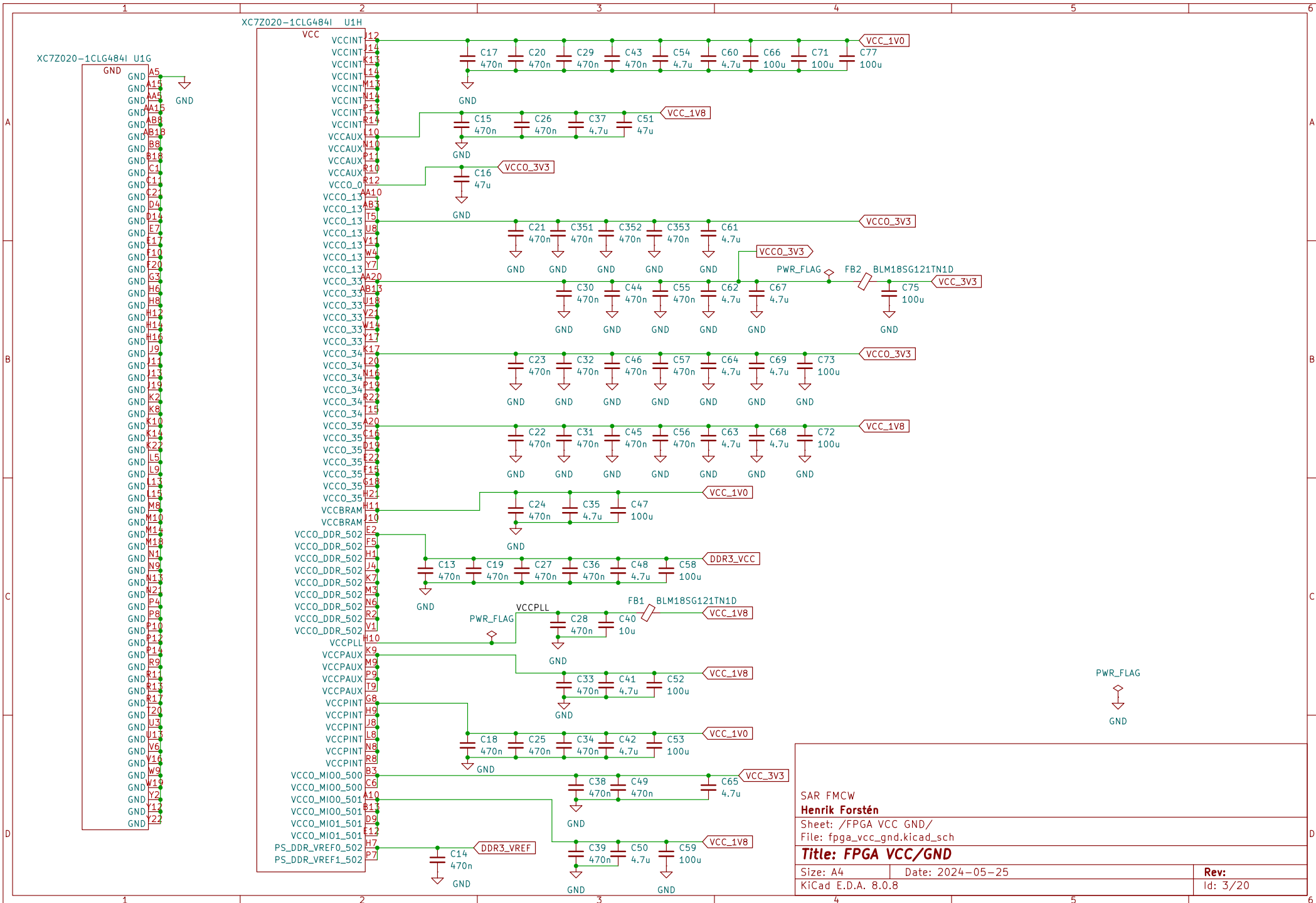
**Rev:**

KiCad E.D.A. 8.0.8

Id: 1/20

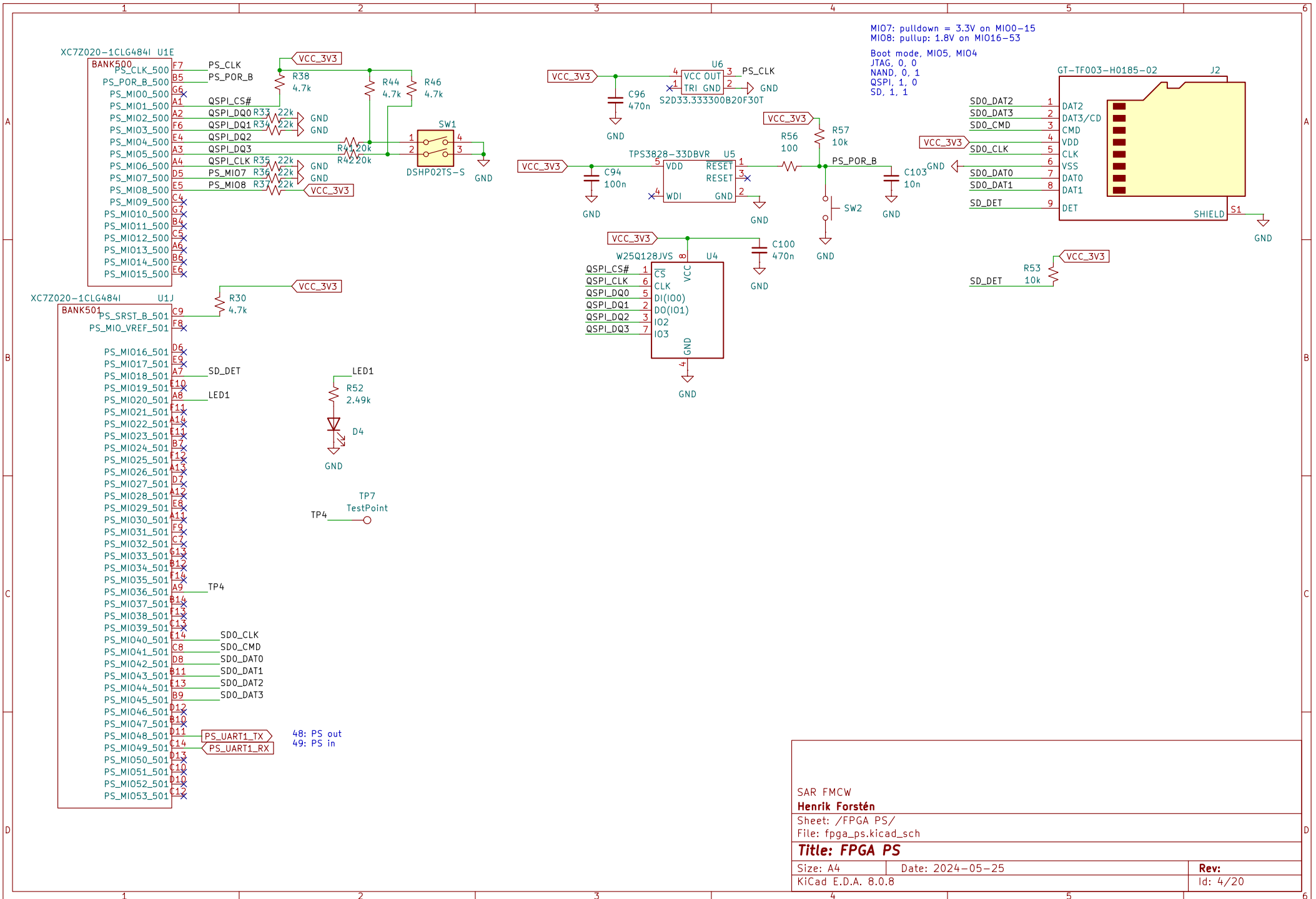


SAR FMCW	
<b>Henrik Forstén</b>	
Sheet: /DDR3/	
File: ddr3.kicad_sch	
<b>Title: DDR3</b>	
Size: A4	Date: 2024-05-25
KiCad E.D.A. 8.0.8	Rev: Id: 2/20



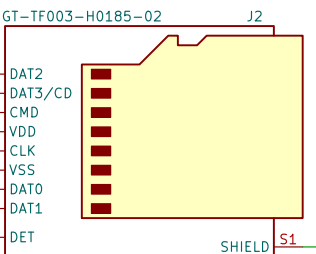
SAR FMCW  
**Henrik Forstén**  
 Sheet: /FPGA VCC GND/  
 File: fpga\_vcc\_gnd.kicad\_sch  
**Title: FPGA VCC/GND**

Size: A4	Date: 2024-05-25	<b>Rev:</b>
KiCad E.D.A. 8.0.8		Id: 3/20

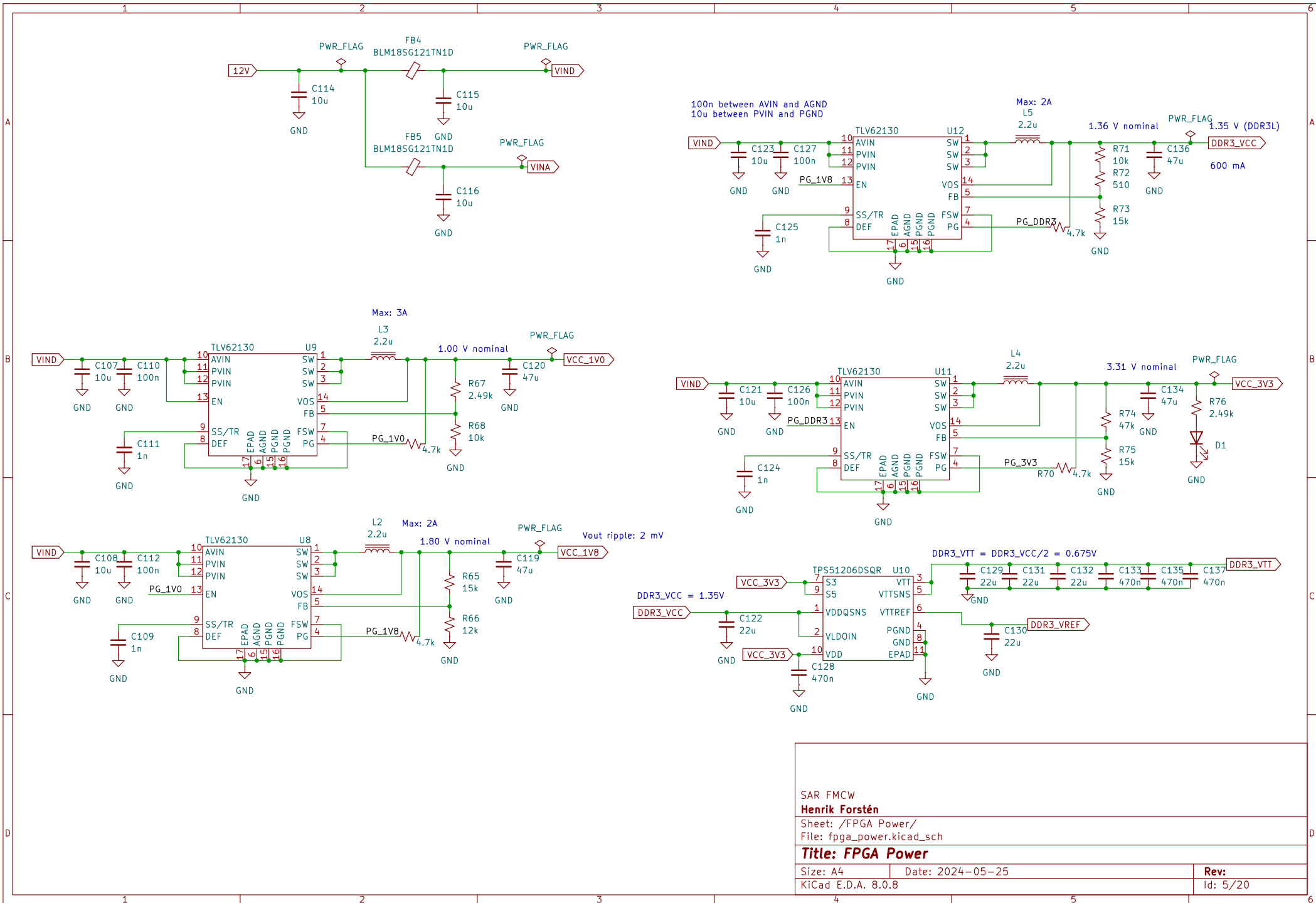


MIO7: pulldown = 3.3V on MIO0-15  
MIO8: pullup: 1.8V on MIO16-53

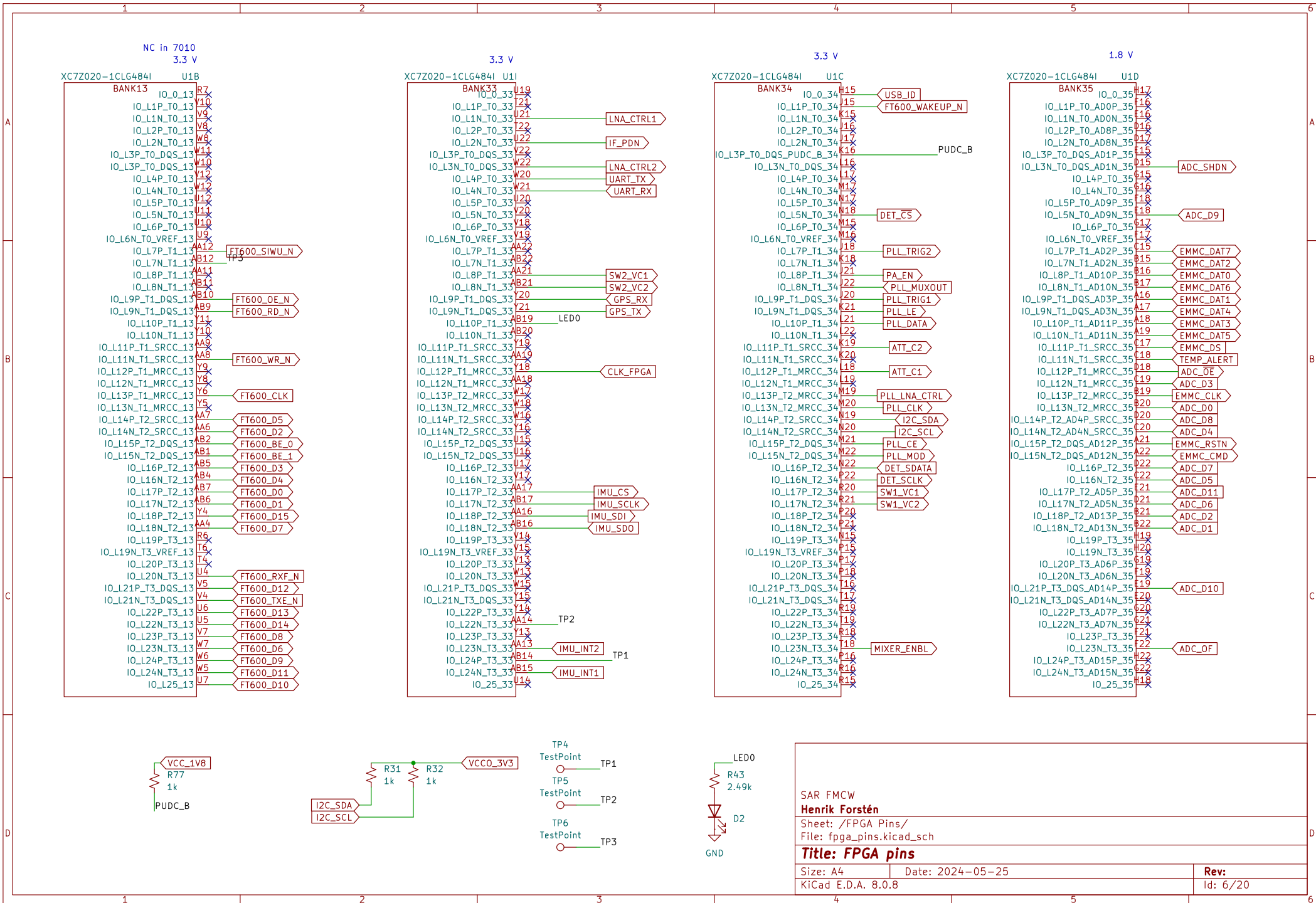
Boot mode, MIO5, MIO4  
JTAG, 0, 0  
NAND, 0, 1  
QSPI, 1, 0  
SD, 1, 1

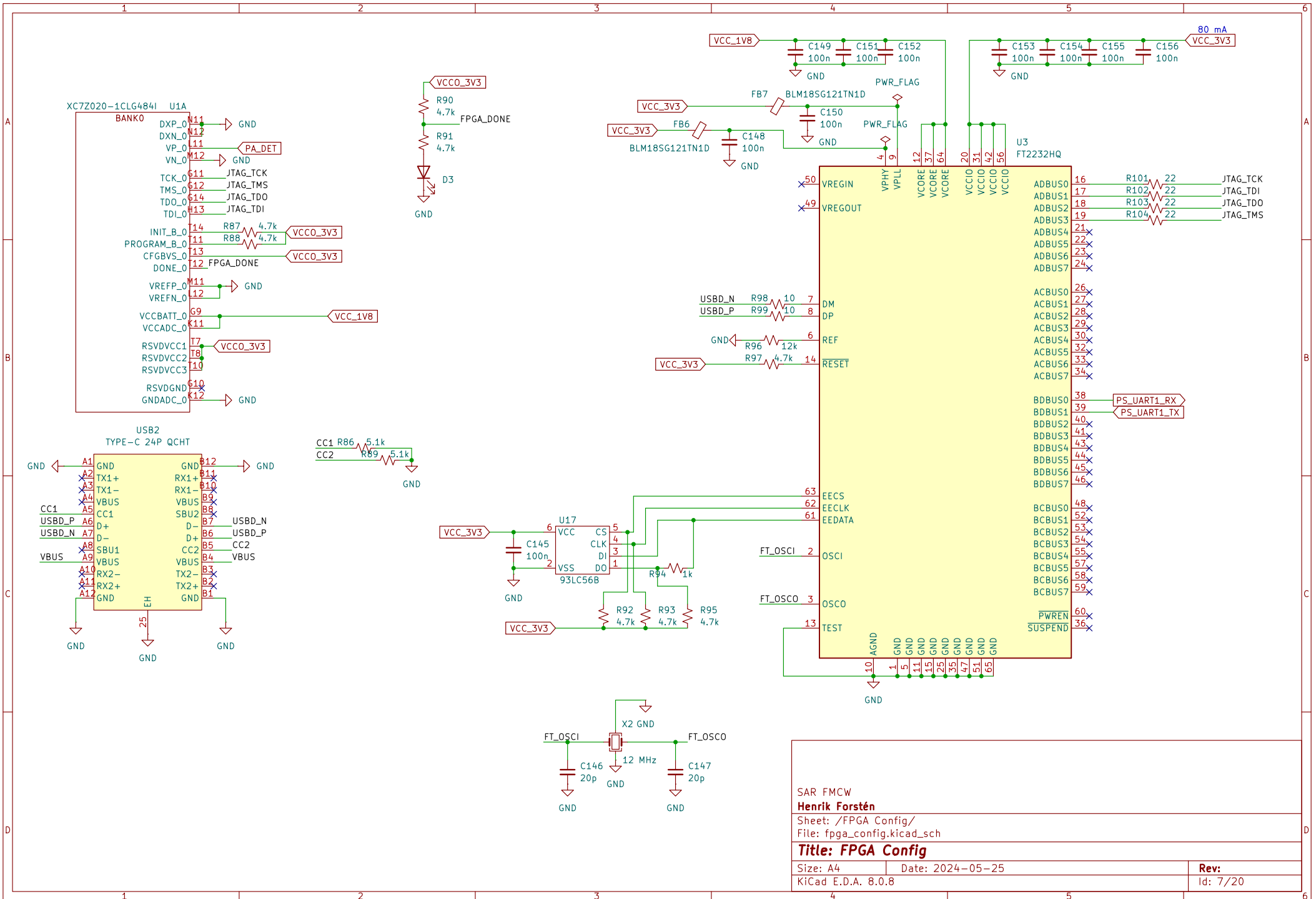


SAR FMCW	
Henrik Forstén	
Sheet: /FPGA PS/	
File: fpga_ps.kicad_sch	
<b>Title: FPGA PS</b>	
Size: A4	Date: 2024-05-25
KiCad E.D.A. 8.0.8	Rev: Id: 4/20

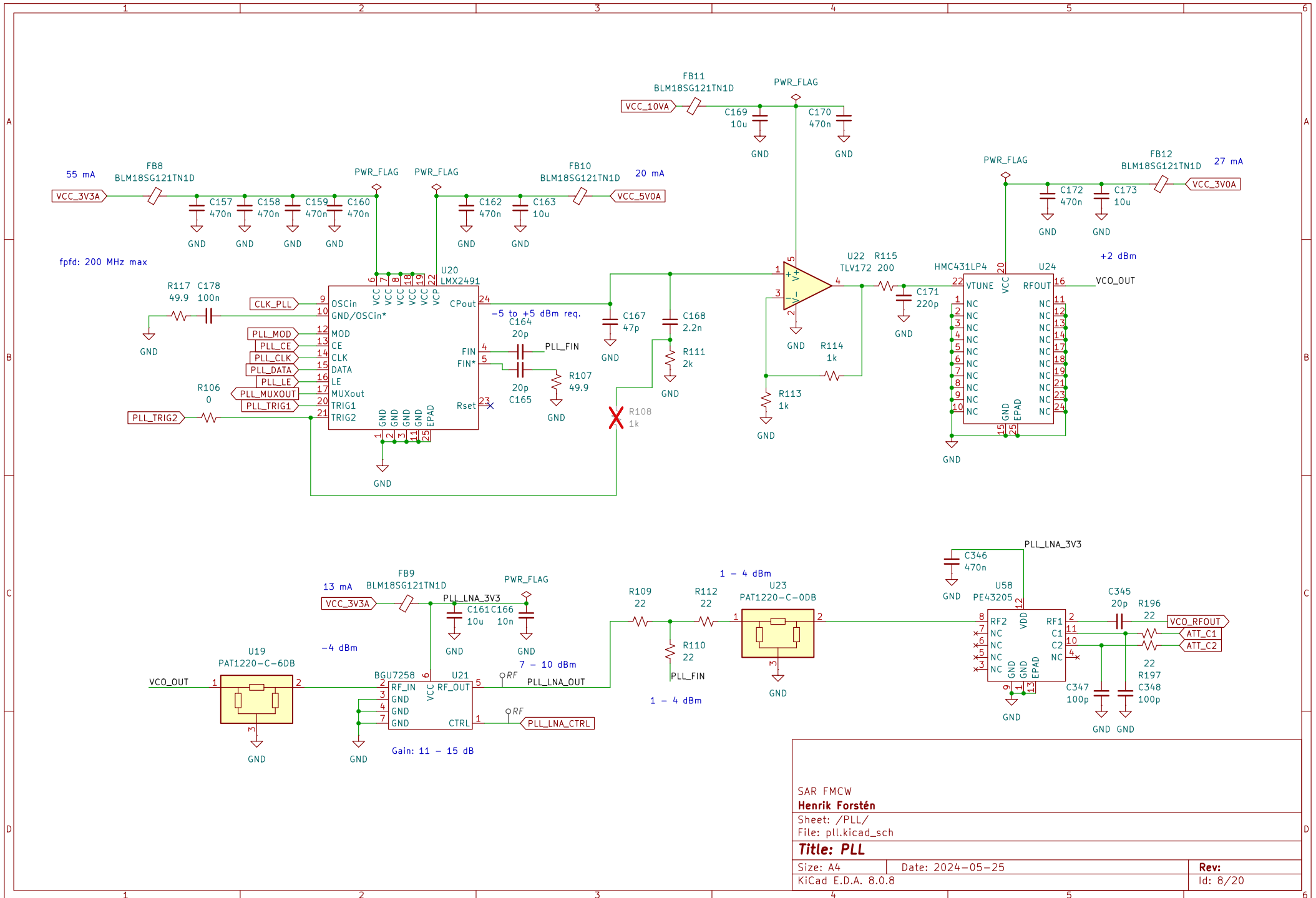


SAR FMCW  
**Henrik Forstén**  
 Sheet: /FPGA Power/  
 File: fpga\_power.kicad\_sch  
**Title: FPGA Power**  
 Size: A4 | Date: 2024-05-25  
 KiCad E.D.A. 8.0.8 | Rev: | Id: 5/20





SAR FMCW	
<b>Henrik Forstén</b>	
Sheet: /FPGA Config/	
File: fpga_config.kicad_sch	
<b>Title: FPGA Config</b>	
Size: A4	Date: 2024-05-25
KiCad E.D.A. 8.0.8	Rev:
	Id: 7/20



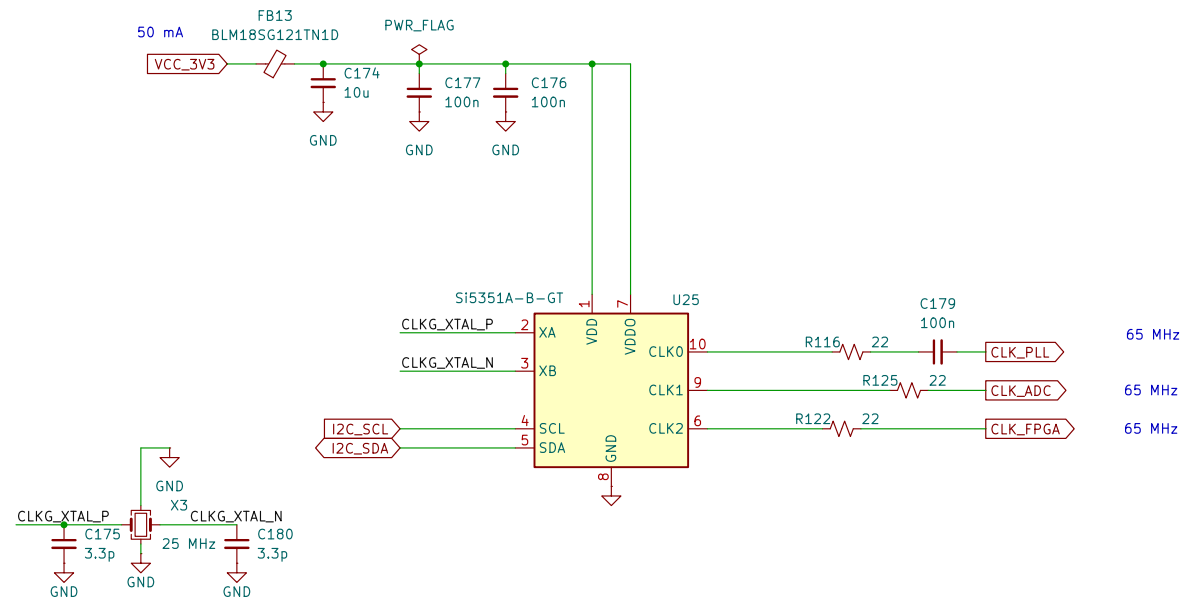
SAR FMCW  
**Henrik Forstén**  
 Sheet: /PLL/  
 File: pll.kicad\_sch

---

**Title: PLL**

Size: A4	Date: 2024-05-25	Rev:
KiCad E.D.A. 8.0.8		Id: 8/20





SAR FMCW

**Henrik Forstén**

Sheet: /Clock generator/

File: clock\_generator.kicad\_sch

**Title: Clock generator**

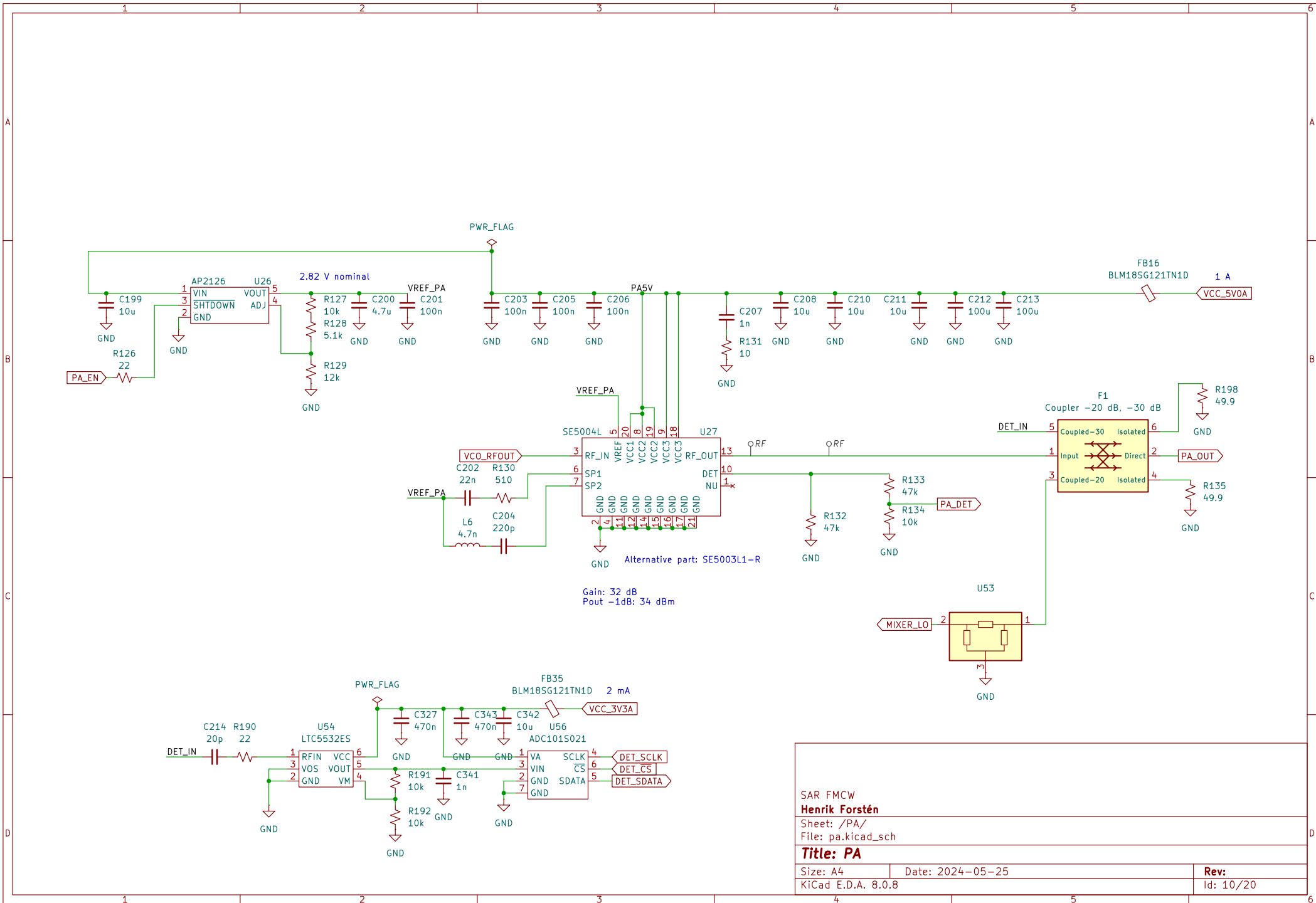
Size: A4

Date: 2024-05-25

**Rev:**

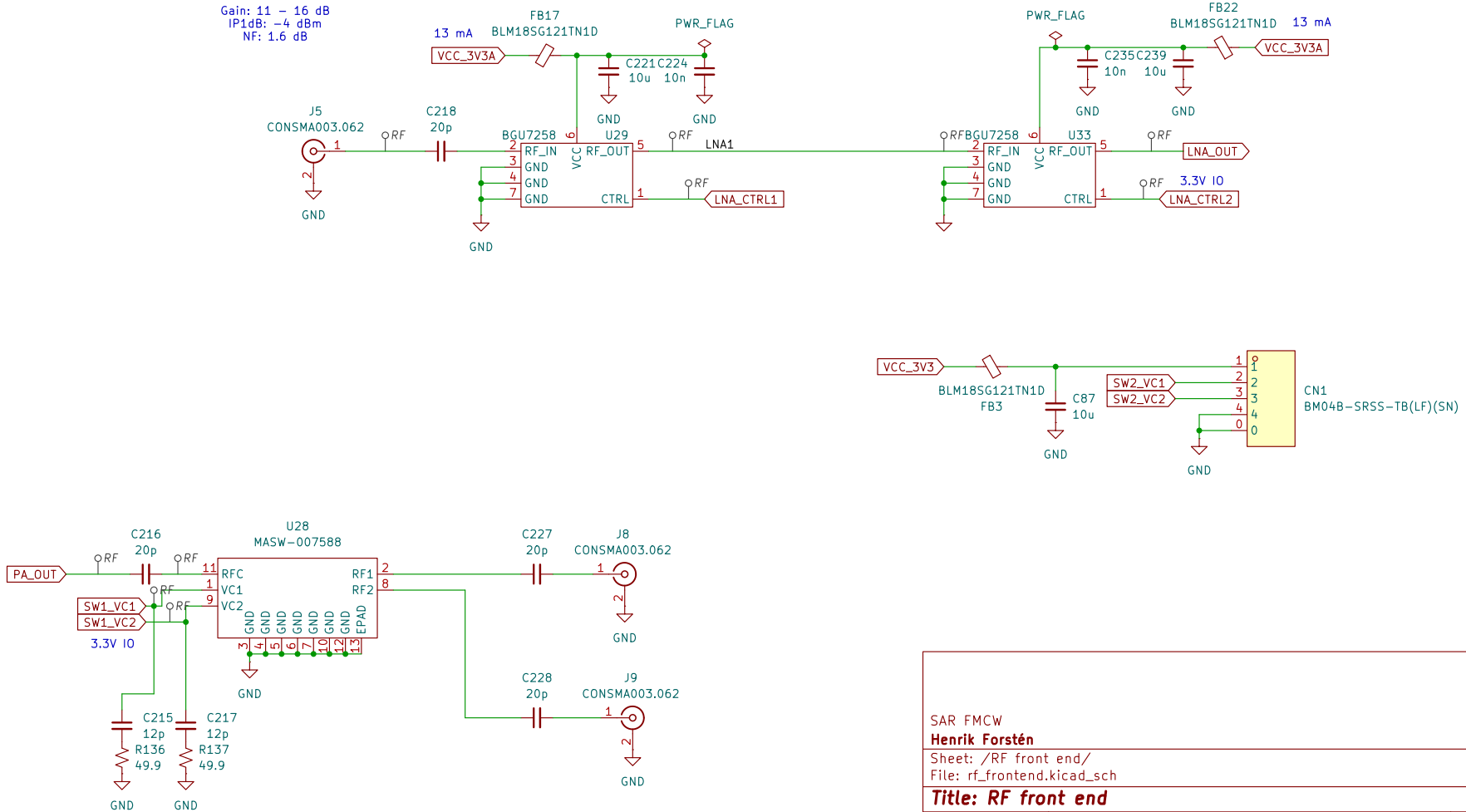
KiCad E.D.A. 8.0.8

Id: 9/20



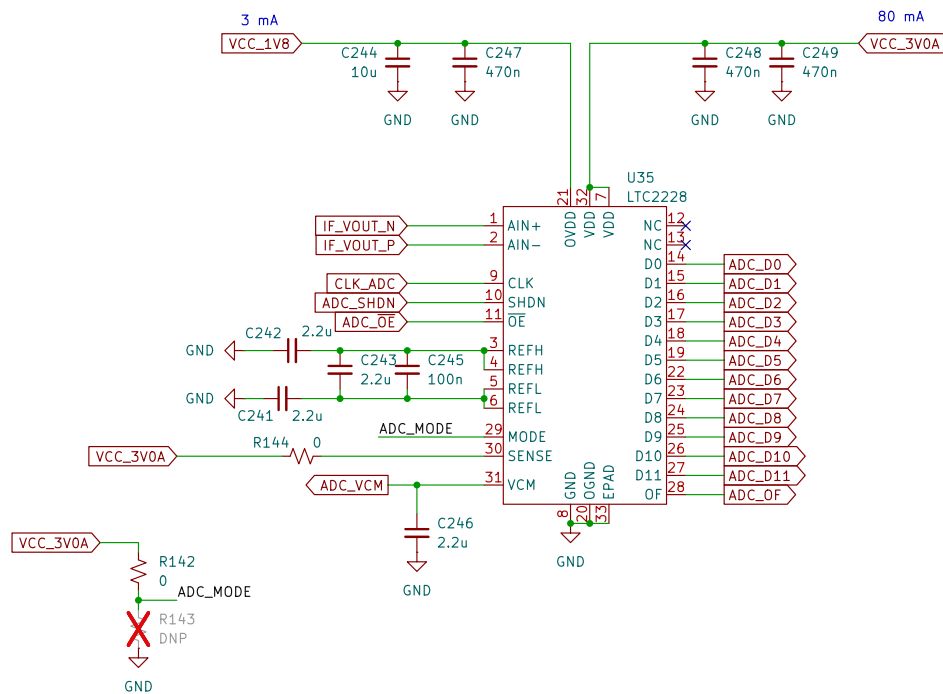
SAR FMCW	
Henrik Forstén	
Sheet: /PA/	
File: pa.kicad_sch	
<b>Title: PA</b>	
Size: A4	Date: 2024-05-25
KiCad E.D.A. 8.0.8	Rev: Id: 10/20

Gain: 11 - 16 dB  
IP1dB: -4 dBm  
NF: 1.6 dB



SAR FMCW  
**Henrik Forstén**  
Sheet: /RF front end/  
File: rf\_frontend.kicad\_sch  
**Title: RF front end**

Size: A4	Date: 2024-05-25	Rev:
KiCad E.D.A. 8.0.8		Id: 11/20

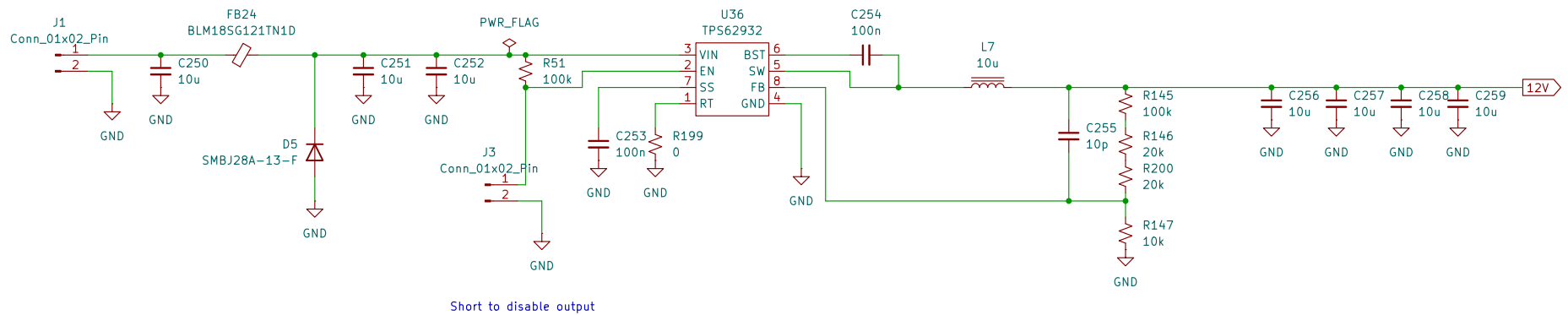


SAR FMCW  
**Henrik Forstén**  
 Sheet: /ADC/  
 File: adc.kicad\_sch

**Title: ADC**

Size: A4 Date: 2024-05-25  
 KiCad E.D.A. 8.0.8

**Rev:**  
 Id: 12/20

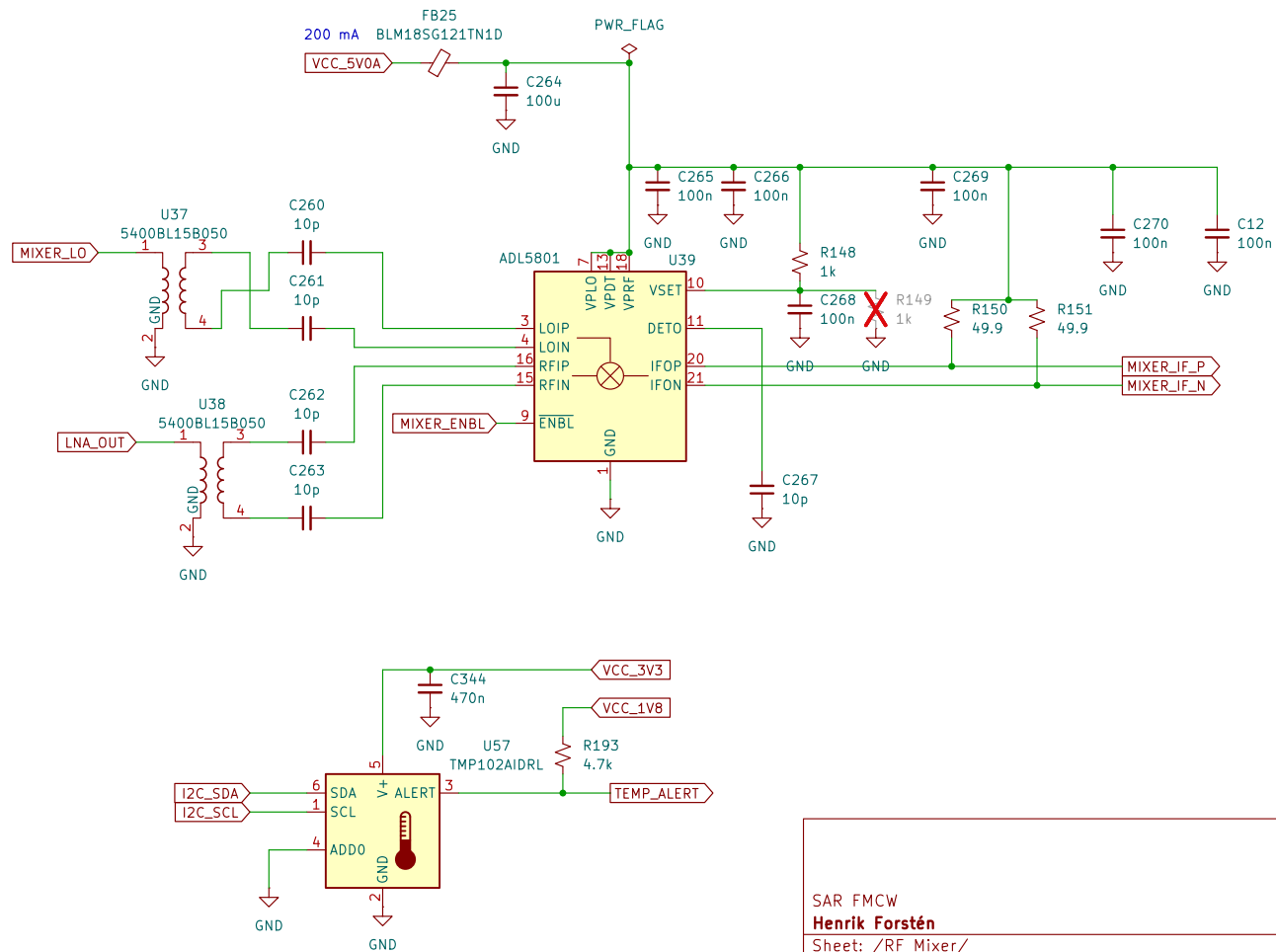


SAR FMCW  
**Henrik Forstén**  
 Sheet: /VIN/  
 File: vin.kicad\_sch

**Title: VIN**

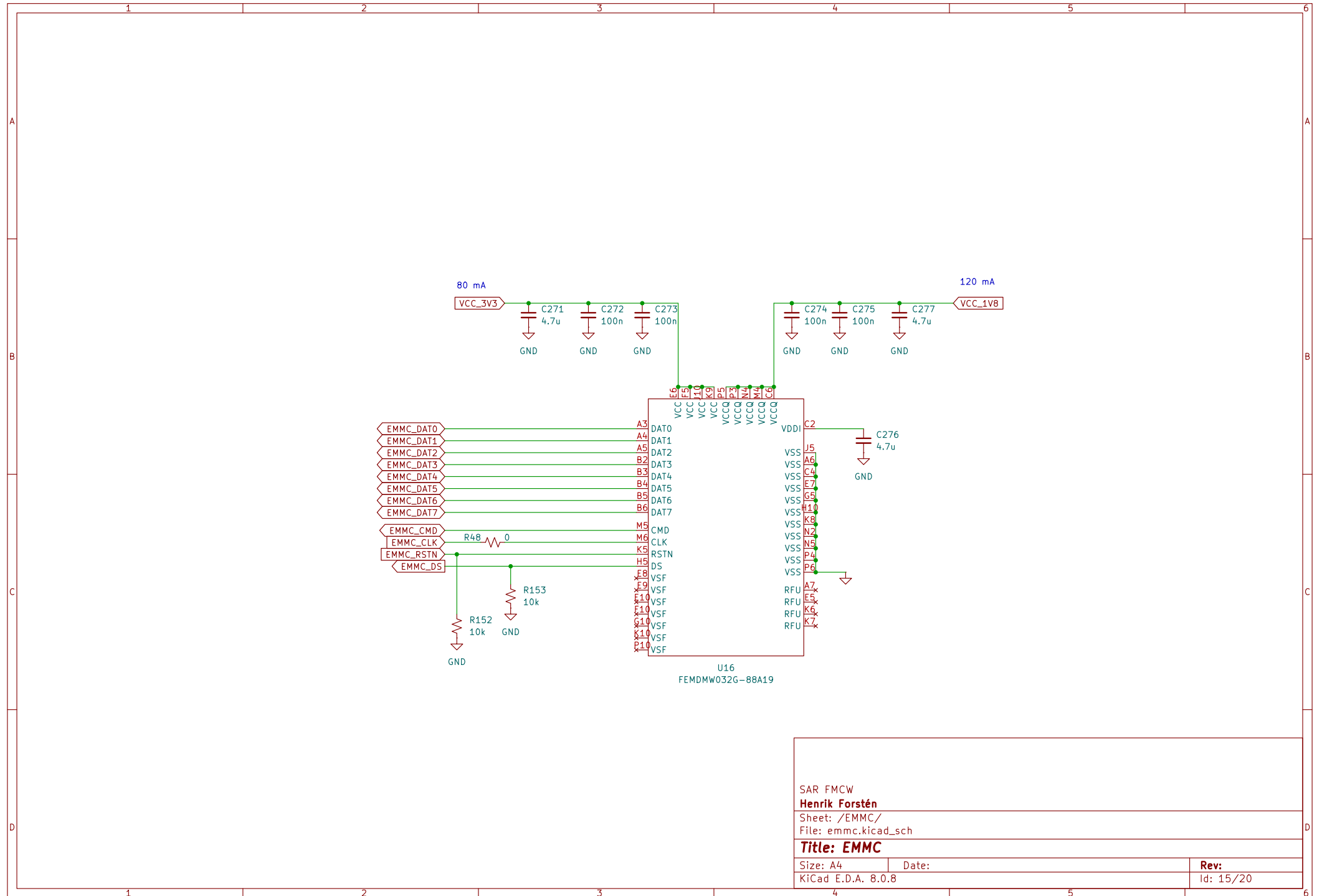
Size: A4 Date: 2024-05-25  
 KiCad E.D.A. 8.0.8

**Rev:**  
 Id: 13/20

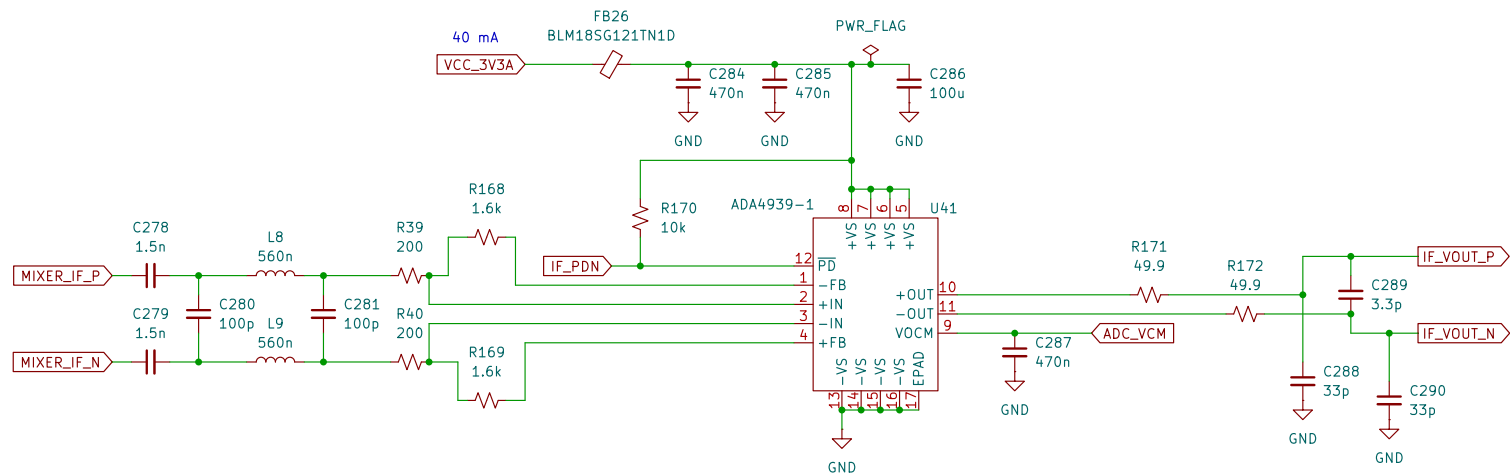


SAR FMCW  
**Henrik Forstén**  
 Sheet: /RF Mixer/  
 File: mixer.kicad\_sch  
**Title: RF Mixer**

Size: A4	Date:	<b>Rev:</b>
KiCad E.D.A. 8.0.8		Id: 14/20



SAR FMCW	
<b>Henrik Forstén</b>	
Sheet: /EMMC/	
File: emmc.kicad_sch	
<b>Title: EMMC</b>	
Size: A4	Date:
KiCad E.D.A. 8.0.8	<b>Rev:</b>
	Id: 15/20



SAR FMCW

**Henrik Forstén**

Sheet: /IF amplifier/

File: if\_amp.kicad\_sch

**Title: IF amplifier**

Size: A4

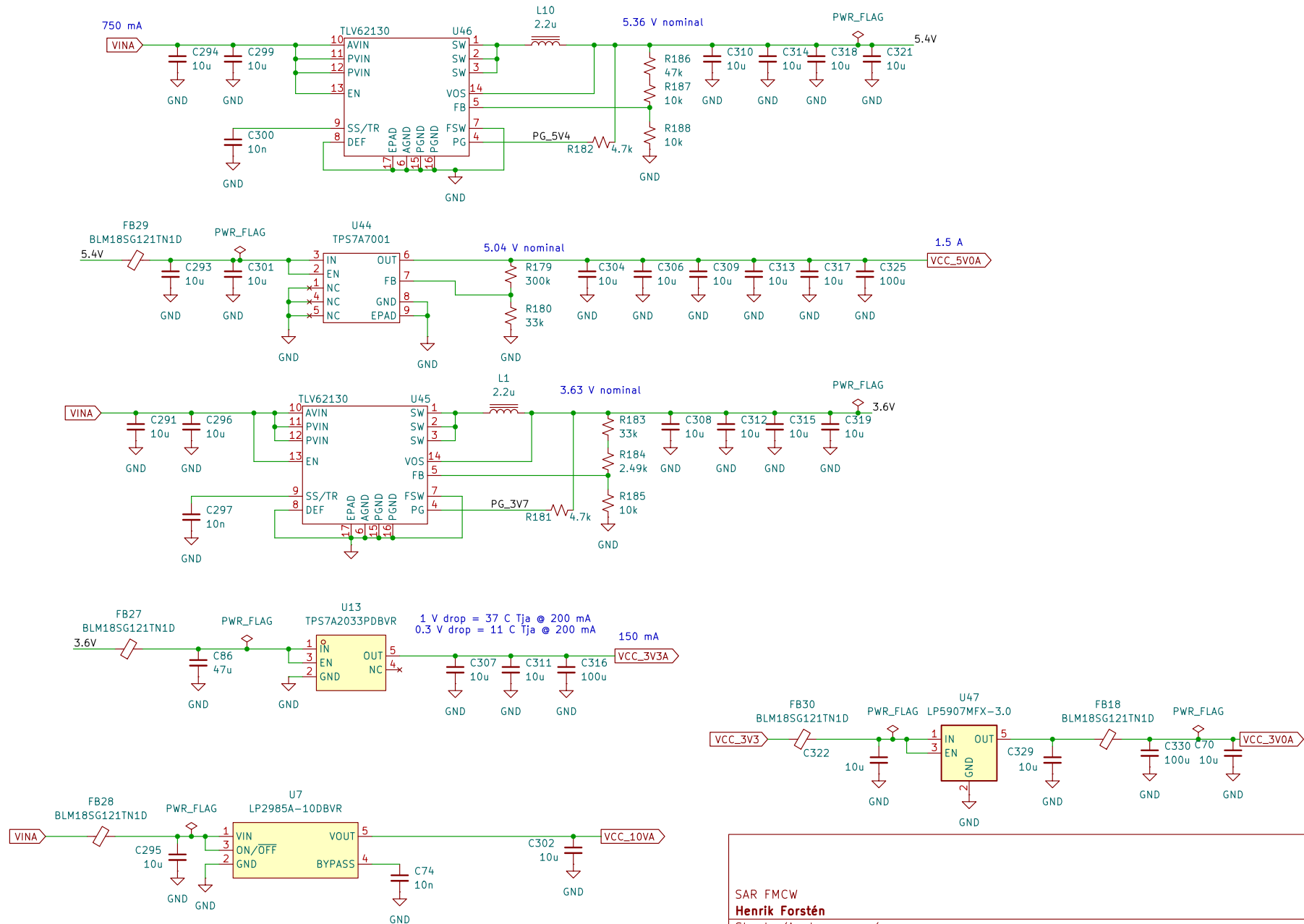
Date:

KiCad E.D.A. 8.0.8

**Rev:**

Id: 16/20



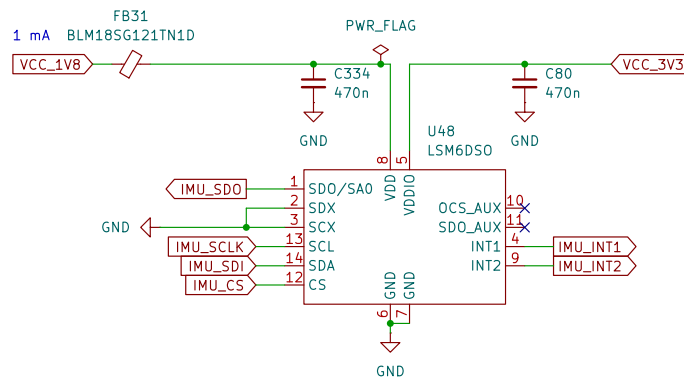


SAR FMCW  
**Henrik Forstén**  
 Sheet: /Analog power/  
 File: analog\_power.kicad\_sch

---

**Title: Analog power**

Size: A4	Date: 2024-03-16	Rev:
KiCad E.D.A. 8.0.8		Id: 17/20



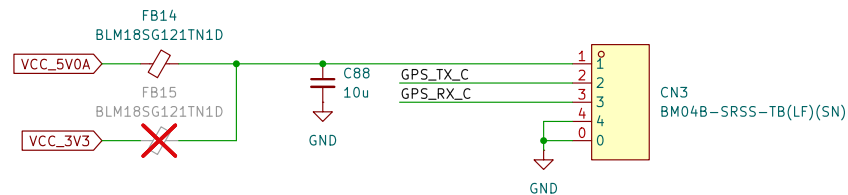
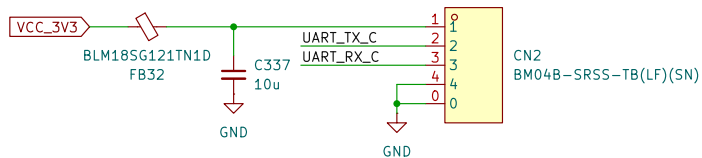
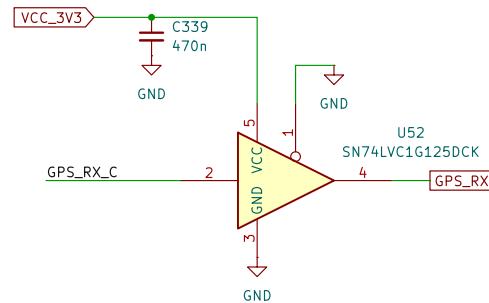
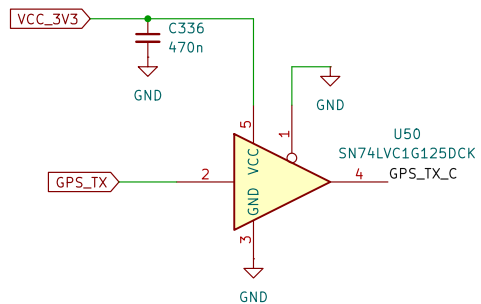
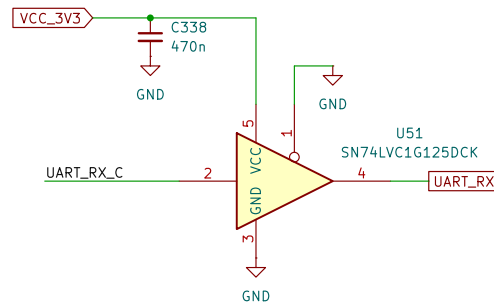
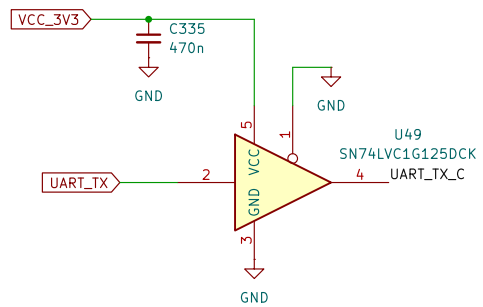
SAR FMCW  
**Henrik Forstén**  
 Sheet: /IMU/  
 File: imu.kicad\_sch

**Title: IMU**

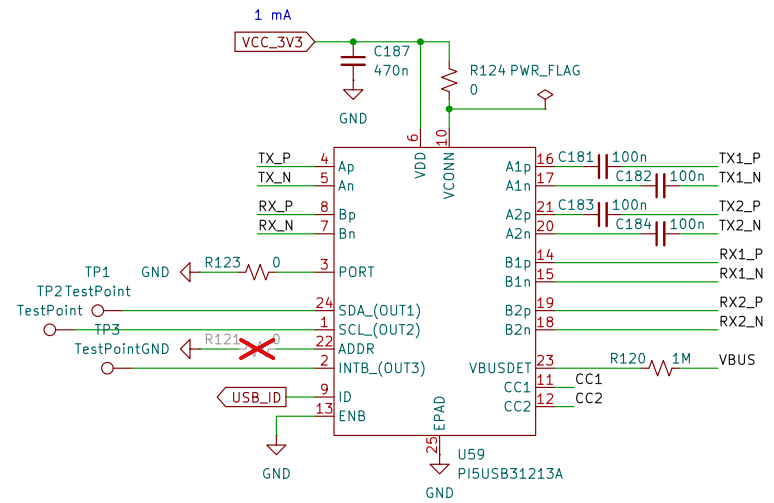
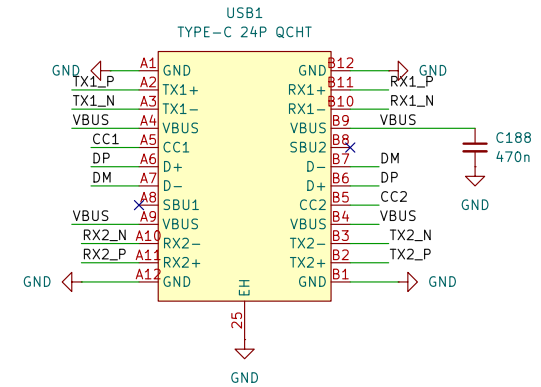
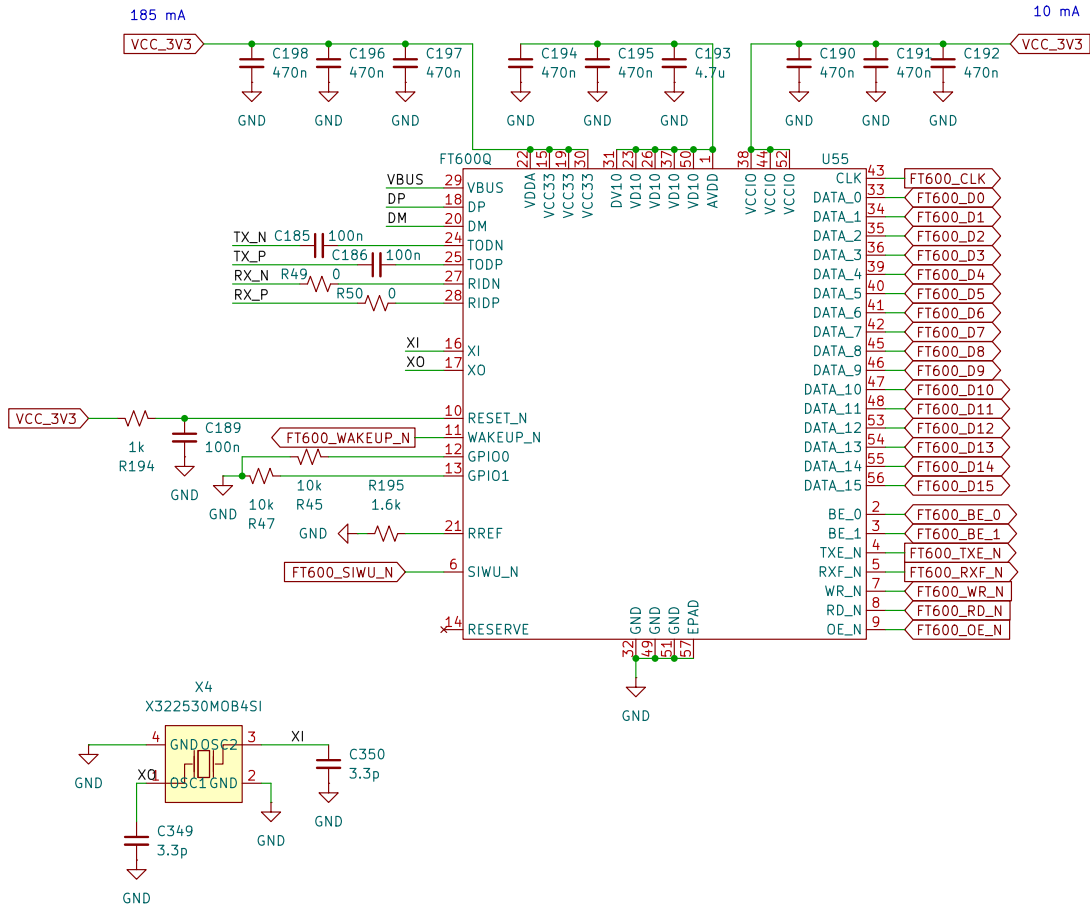
Size: A4  
 KiCad E.D.A. 8.0.8

Date:

**Rev:**  
 Id: 18/20



SAR FMCW  
**Henrik Forstén**  
 Sheet: /IO connectors/  
 File: connectors.kicad\_sch  
**Title: IO connectors**  
 Size: A4 Date:  
 KiCad E.D.A. 8.0.8 Rev:  
 Id: 19/20



SAR FMCW  
**Henrik Forstén**  
 Sheet: /USB/  
 File: usb.kicad\_sch

**Title: USB**

Size: A4	Date:	Rev:
KiCad E.D.A. 8.0.8		Id: 20/20