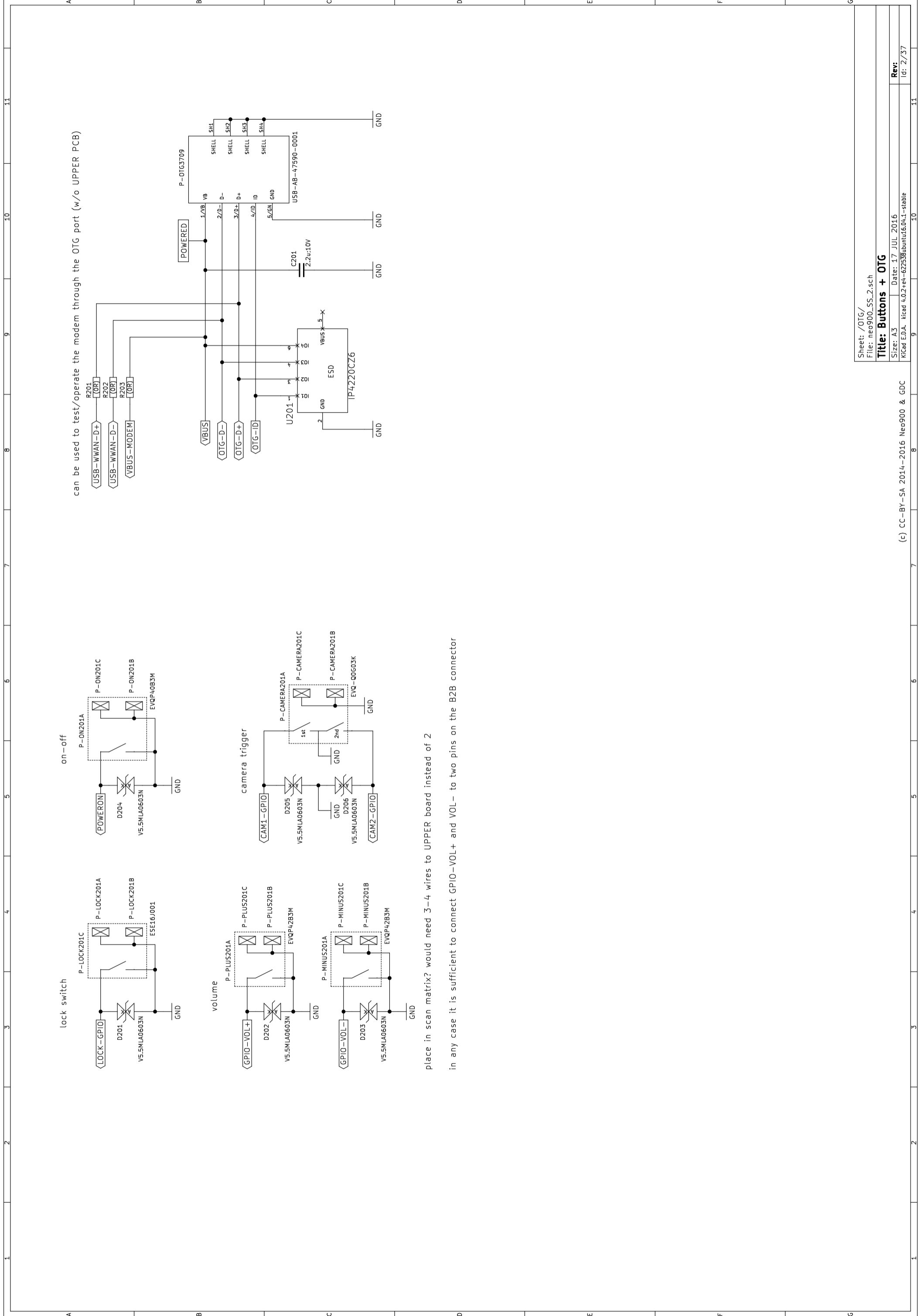
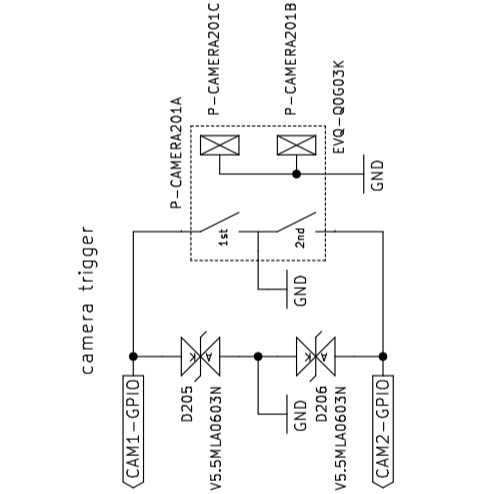
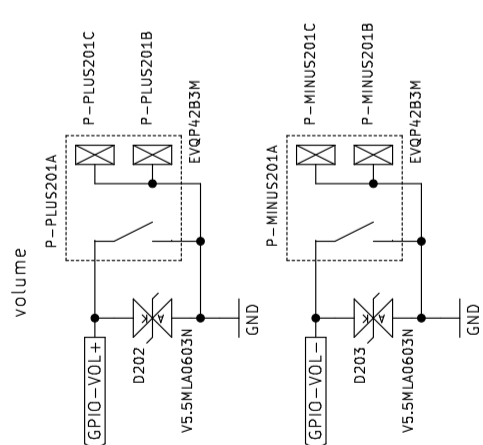
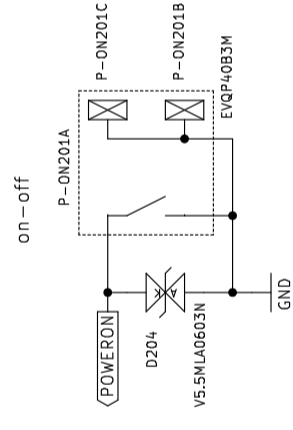
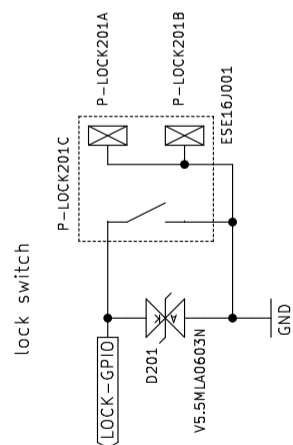


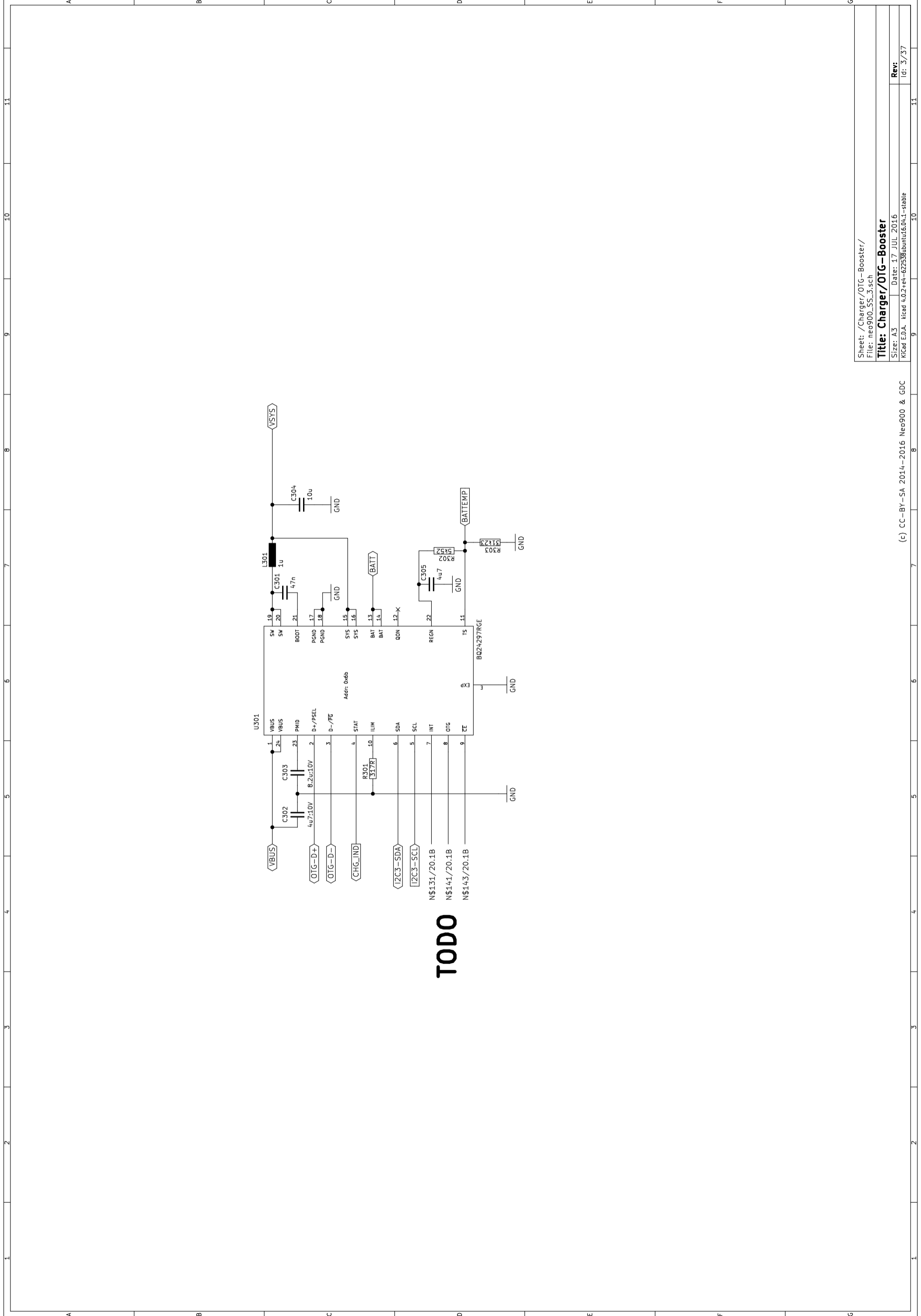
1	2	3	4	5	6	7	8	9	10	11
Click Here	01# Switches			Click Here						
Sheet: OTG	Sheet: Charger/OTG-Booster			Sheet: CPU + PoP RAM/NAND						
File: neo900_SS_2_2.sch	File: neo900_SS_3_3.sch			File: neo900_SS_26.sch						
Sheet: Modem Power	Sheet: Modem Power			Sheet: eMMC						
File: neo900_SS_4_4.sch	File: neo900_SS_4_4.sch			File: neo900_SS_27.sch						
Sheet: Fuel Gauge	Sheet: Fuel Gauge			Sheet: PMU+Codec						
File: neo900_SS_5_5.sch	File: neo900_SS_5_5.sch			File: neo900_SS_28.sch						
Sheet: 3G/4G Modem + SIM	Sheet: 3G/4G Modem + SIM			Sheet: BB-XM Dummy (TWL4030)						
File: neo900_SS_6_6.sch	File: neo900_SS_6_6.sch			File: neo900_SS_29.sch						
Sheet: Dual SIM switch	Sheet: Dual SIM switch			Sheet: Camera						
File: neo900_SS_7_7.sch	File: neo900_SS_7_7.sch			File: neo900_SS_30.sch						
Sheet: Antenna connections	Sheet: Antenna connections			Sheet: LEDs						
File: neo900_SS_8_8.sch	File: neo900_SS_8_8.sch			File: neo900_SS_31.sch						
Sheet: WLAN, Bluetooth, FM	Sheet: WLAN, Bluetooth, FM			Sheet: Fancy LEDs						
File: neo900_SS_9_9.sch	File: neo900_SS_9_9.sch			File: neo900_SS_32.sch						
Sheet: Sensors	Sheet: Sensors			Sheet: Connector to BB-XM						
File: neo900_SS_10_10.sch	File: neo900_SS_10_10.sch			File: neo900_SS_33.sch						
Sheet: Audio Codec	Sheet: Audio Codec			Sheet: BB-XM Adapter (CPU)						
File: neo900_SS_11_11.sch	File: neo900_SS_11_11.sch			File: neo900_SS_34.sch						
Sheet: Audio Headset + Mic	Sheet: Audio Headset + Mic			Sheet: BB-XM Adapter (DISP)						
File: neo900_SS_12_12.sch	File: neo900_SS_12_12.sch			File: neo900_SS_35.sch						
Sheet: ECI	Sheet: ECI			Sheet: BB-XM Adapter (CAM)						
File: neo900_SS_13_13.sch	File: neo900_SS_13_13.sch			File: neo900_SS_36.sch						
Sheet: Audio Handsfree	Sheet: Audio Handsfree			Sheet: No-Solder Components						
File: neo900_SS_14_14.sch	File: neo900_SS_14_14.sch			File: neo900_SS_37.sch						
Sheet: Misc (lower)	Sheet: Misc (lower)									
File: neo900_SS_15_15.sch	File: neo900_SS_15_15.sch									
Sheet: RFID/NFC Reader	Sheet: RFID/NFC Reader									
File: neo900_SS_16_16.sch	File: neo900_SS_16_16.sch									
Sheet: RFID/NFC Controller	Sheet: RFID/NFC Controller									
File: neo900_SS_17_17.sch	File: neo900_SS_17_17.sch									
Sheet: Hackerbus	Sheet: Hackerbus									
File: neo900_SS_18_18.sch	File: neo900_SS_18_18.sch									
Sheet: Infrared	Sheet: Infrared									
File: neo900_SS_19_19.sch	File: neo900_SS_19_19.sch									
Sheet: B2B to UPPER	Sheet: B2B to UPPER									
File: neo900_SS_20_20.sch	File: neo900_SS_20_20.sch									
Sheet: uSD Breakout Board	Sheet: uSD Breakout Board									
File: neo900_SS_21_21.sch	File: neo900_SS_21_21.sch									
Sheet: B2B to LOWER	Sheet: B2B to LOWER									
File: neo900_SS_22_22.sch	File: neo900_SS_22_22.sch									
Sheet: Keypad	Sheet: Keypad									
File: neo900_SS_23_23.sch	File: neo900_SS_23_23.sch									
Sheet: Display-Peripherals	Sheet: Display-Peripherals									
File: neo900_SS_24_24.sch	File: neo900_SS_24_24.sch									
Sheet: Display-Panel&Power	Sheet: Display-Panel&Power									
File: neo900_SS_25_25.sch	File: neo900_SS_25_25.sch									



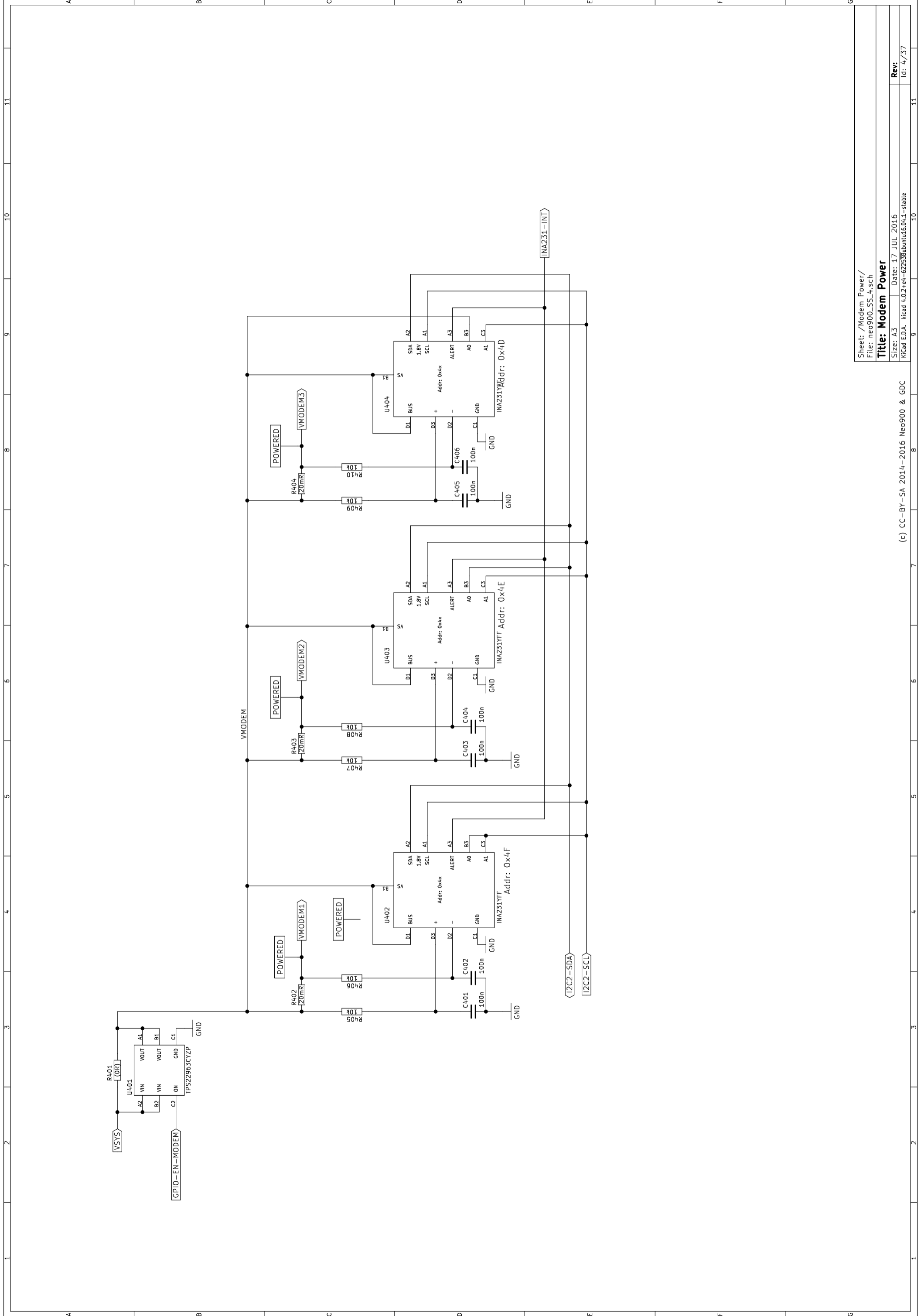
can be used to test/operate the modem through the OTG port (w/o UPPER PCB)

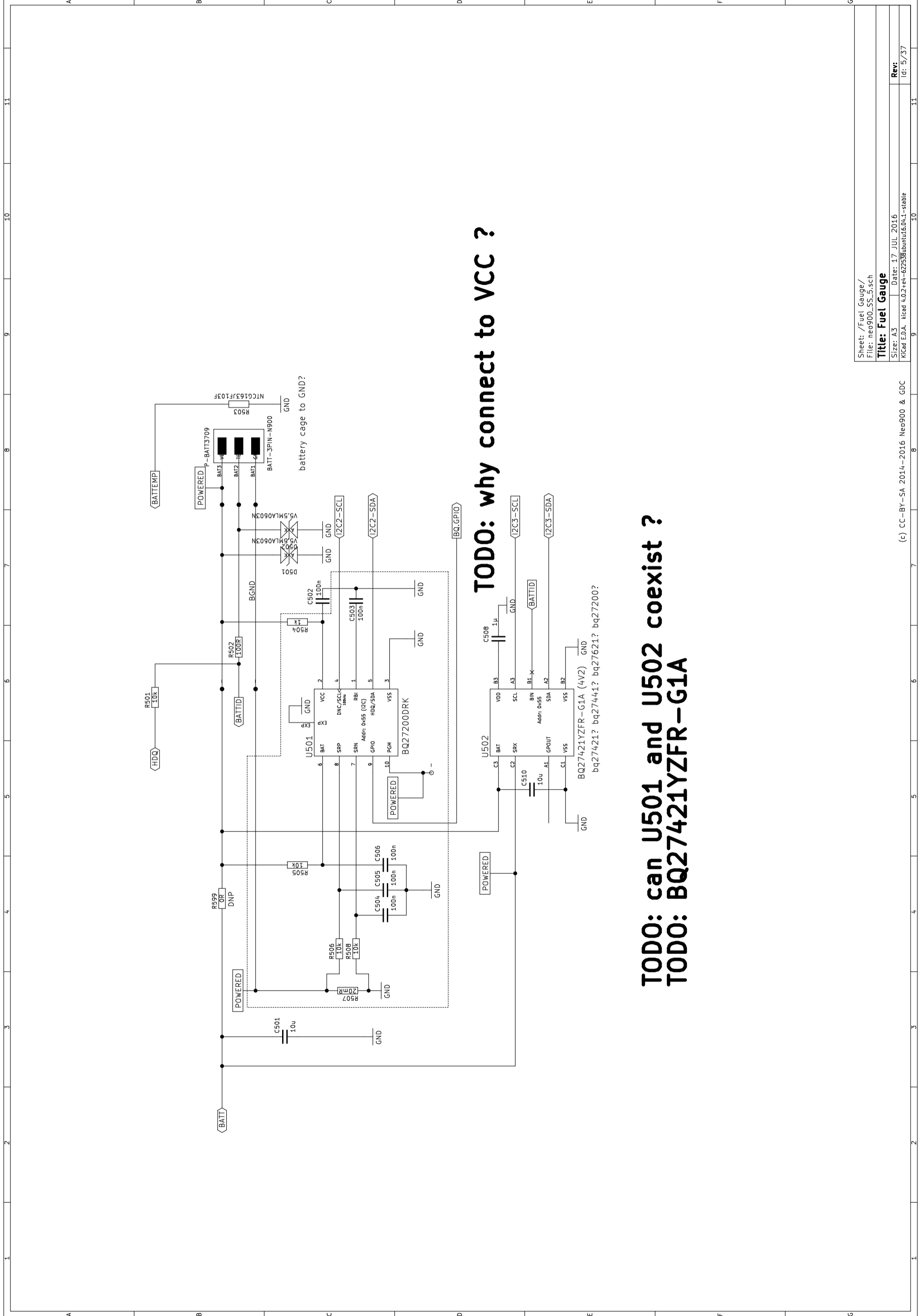


place in scan matrix? would need 3-4 wires to UPPER board instead of 2
in any case it is sufficient to connect GPIO-VOL+ and VOL- to two pins on the B2B connector



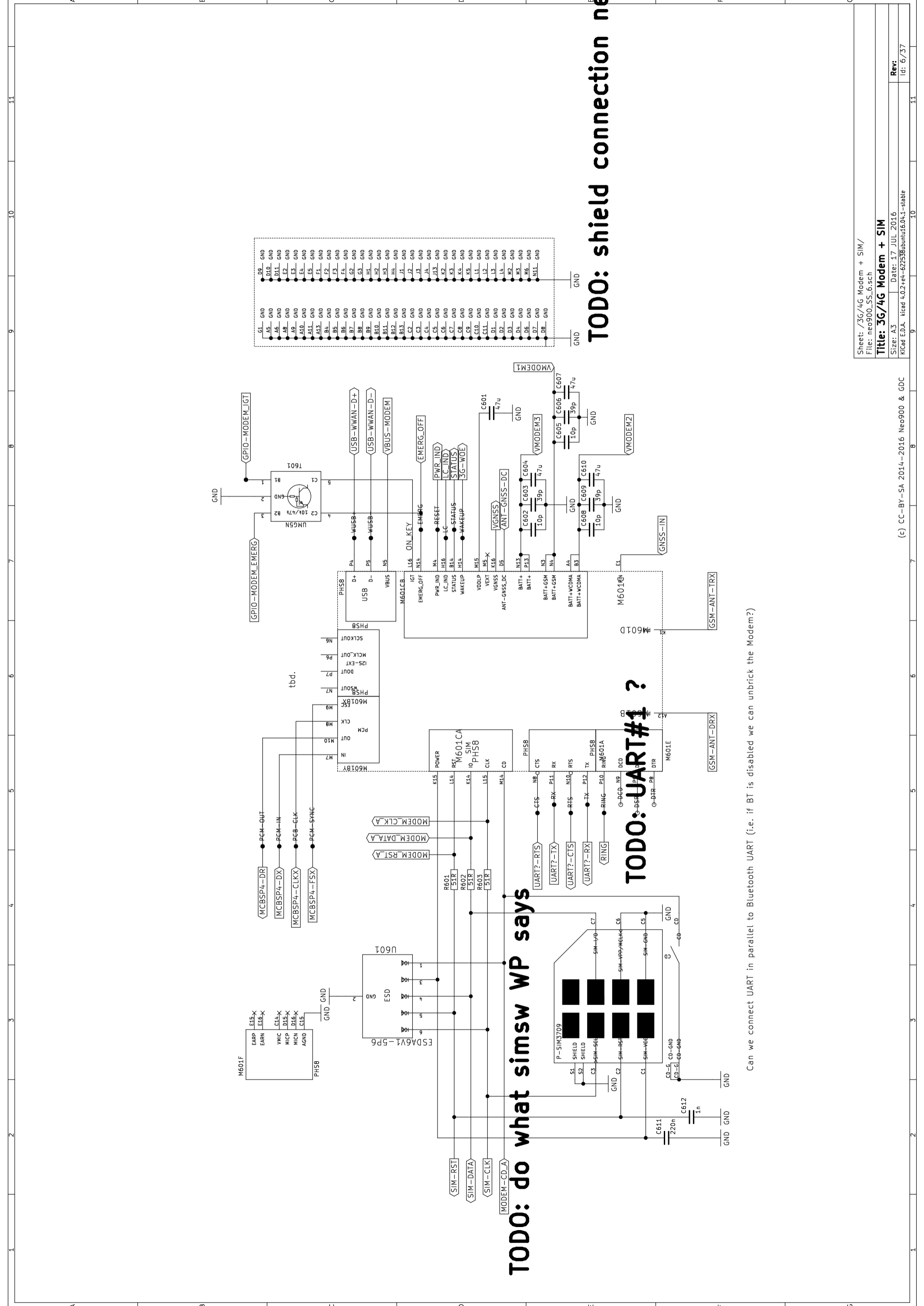
TODO





TODO: why connect to VCC ?

TODO: can U501 and U502 coexist ?
TODO: BQ27421YZFR-G1A



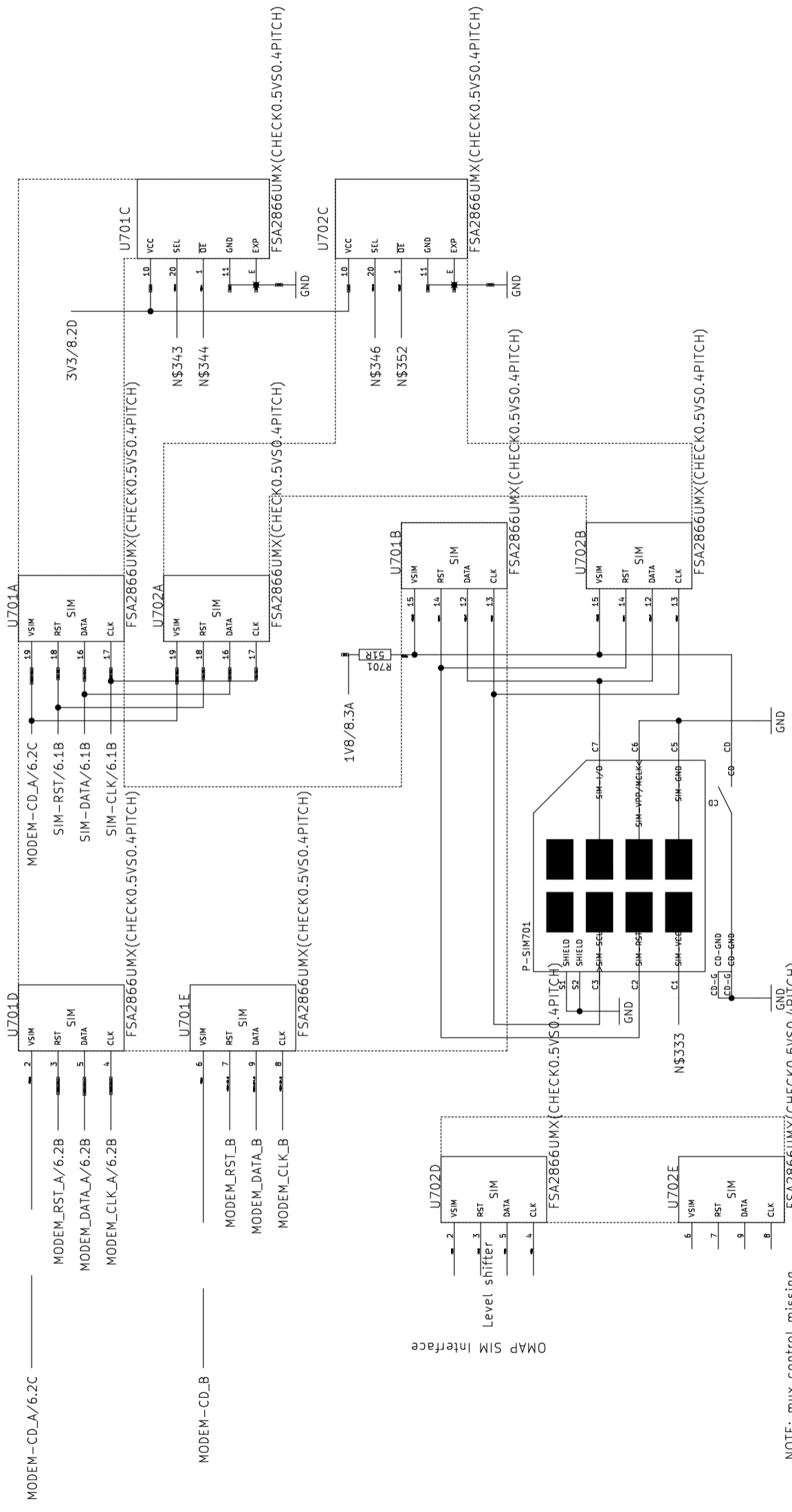
TODO: do what simsw WP says

TODO: UART#1 ?

TODO: shield connection near

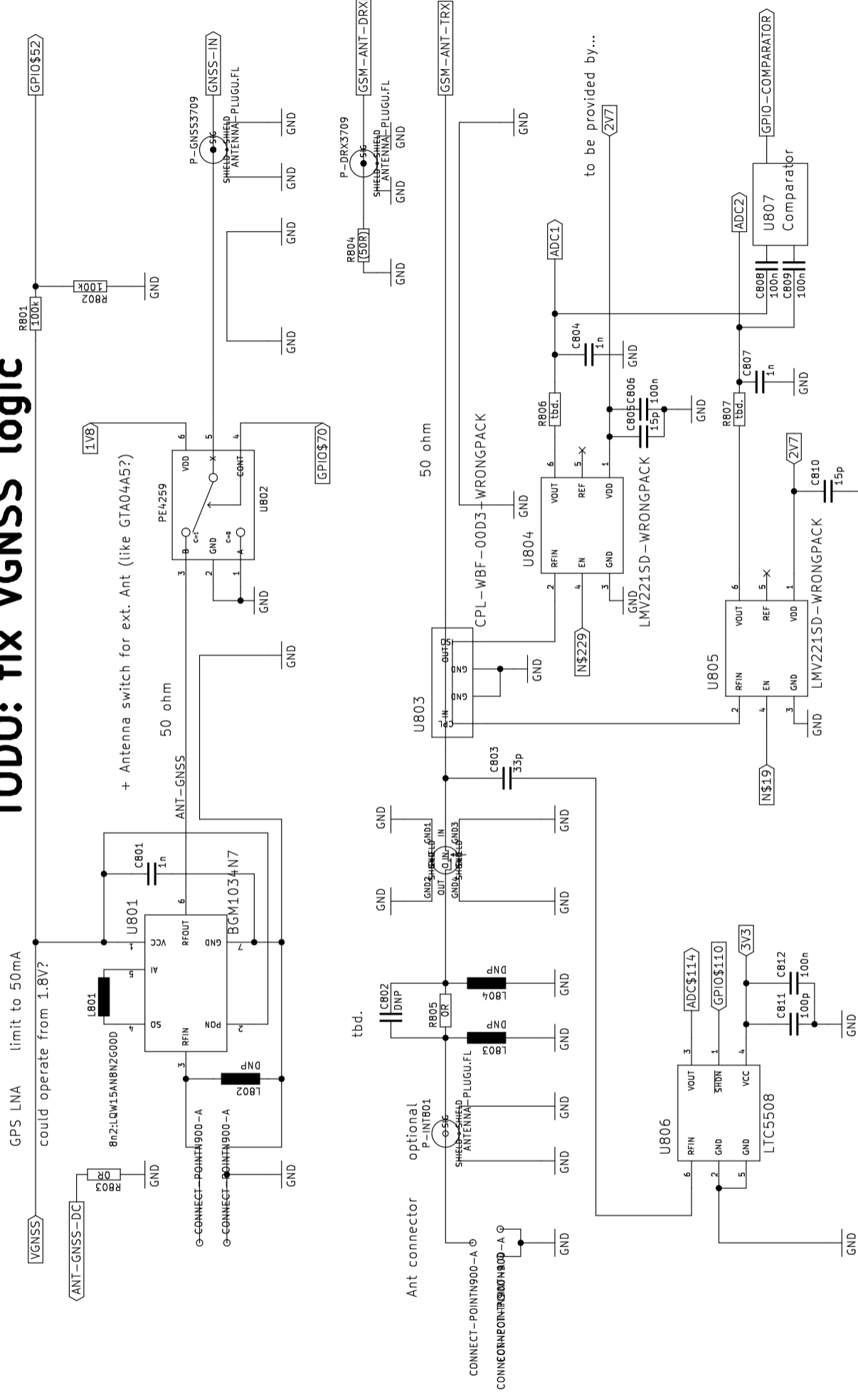
Can we connect UART in parallel to Bluetooth UART (i.e. if BT is disabled we can unbrick the Modem?)

TODO: not cleaned up – needs total rewrite

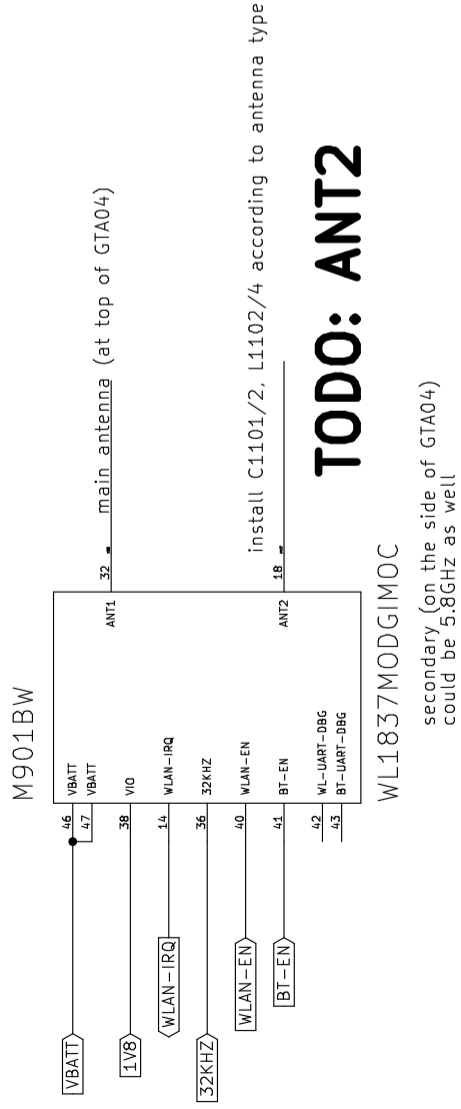


NOTE: mux control missing
 NOTE: CD logic missing
 NOTE: SIM power supply missing

TODO: fix VGNSS logic



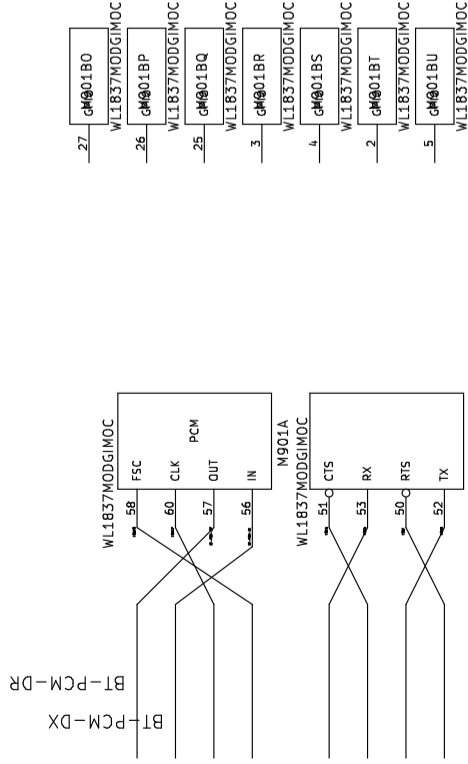
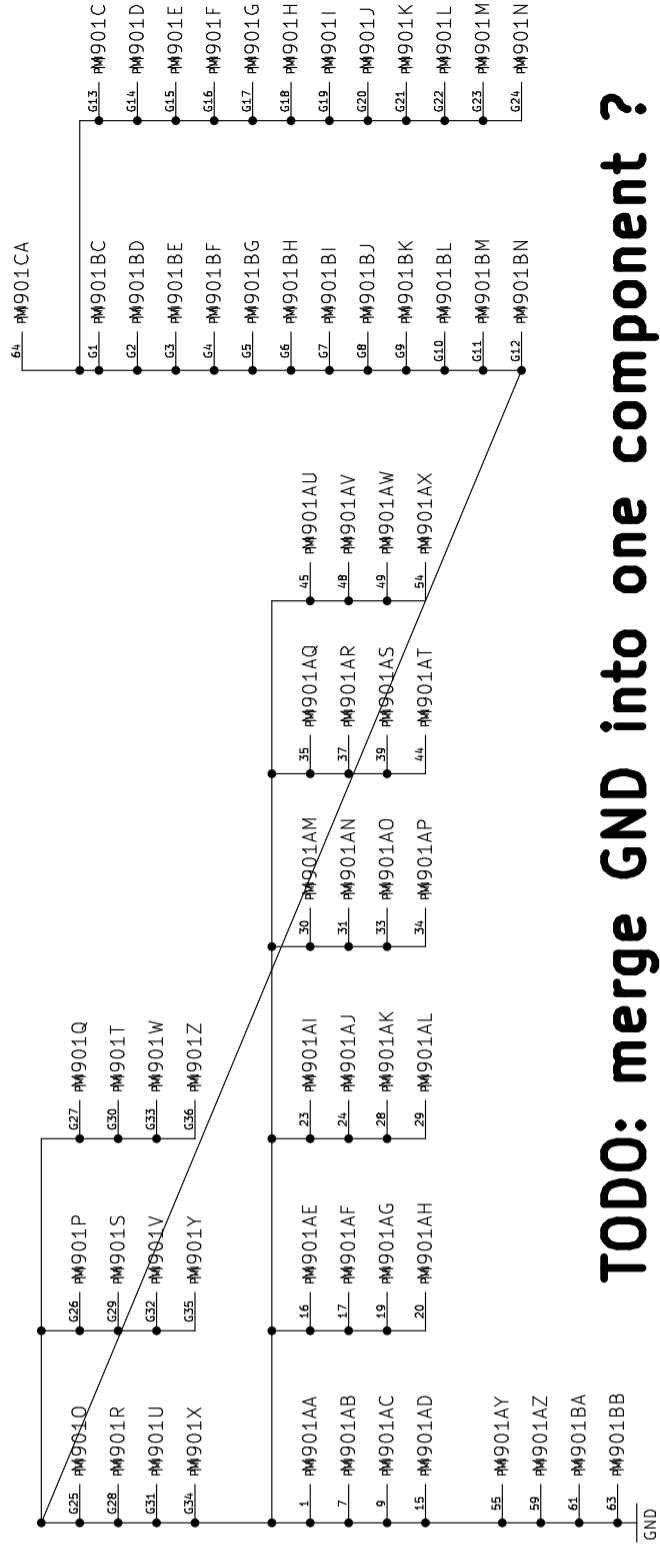
TODO: name all the *\$*



TODO: ANT2

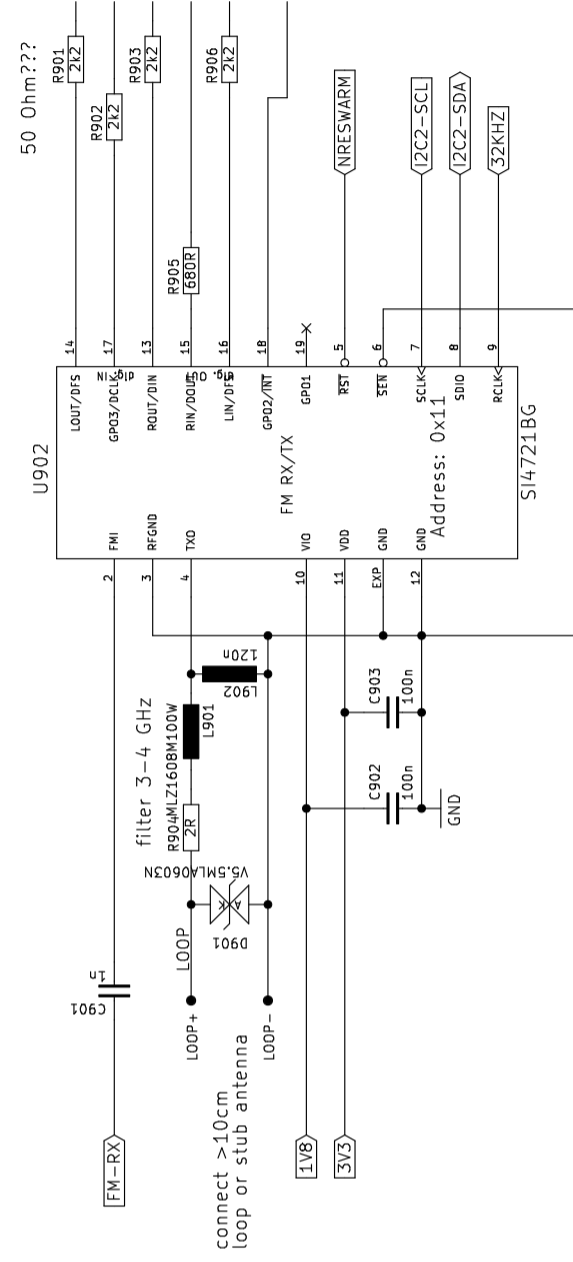
secondary (on the side of GTA04) could be 5.8GHz as well

TODO: merge GND into one component ?



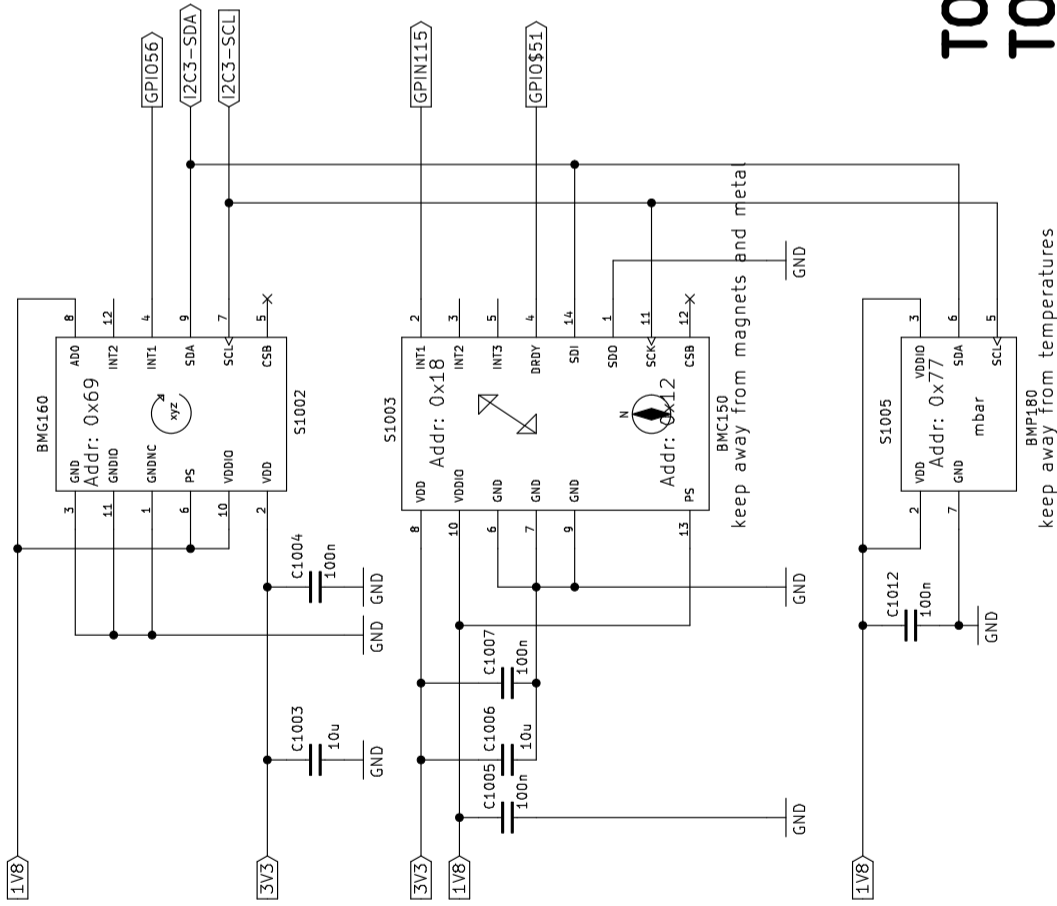
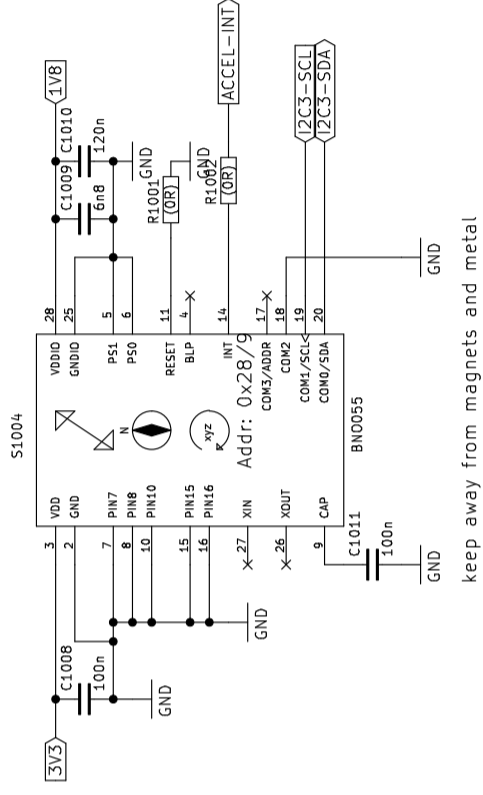
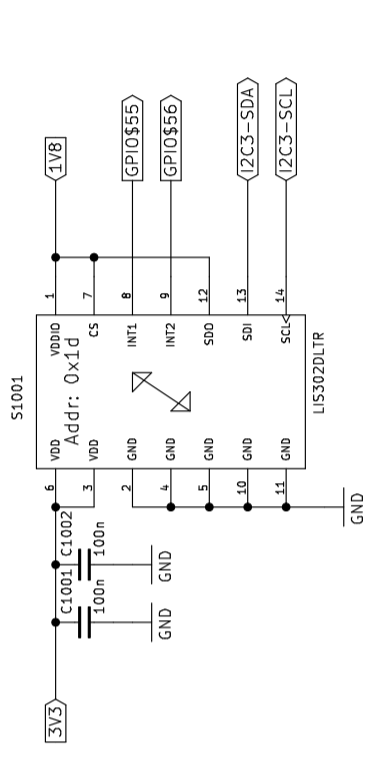
TODO: unfinished

- _____ WLAN-IRQ
- _____ WLAN-EN
- _____ BT-EN
- _____ GPIO175
- _____ KEYIRQ



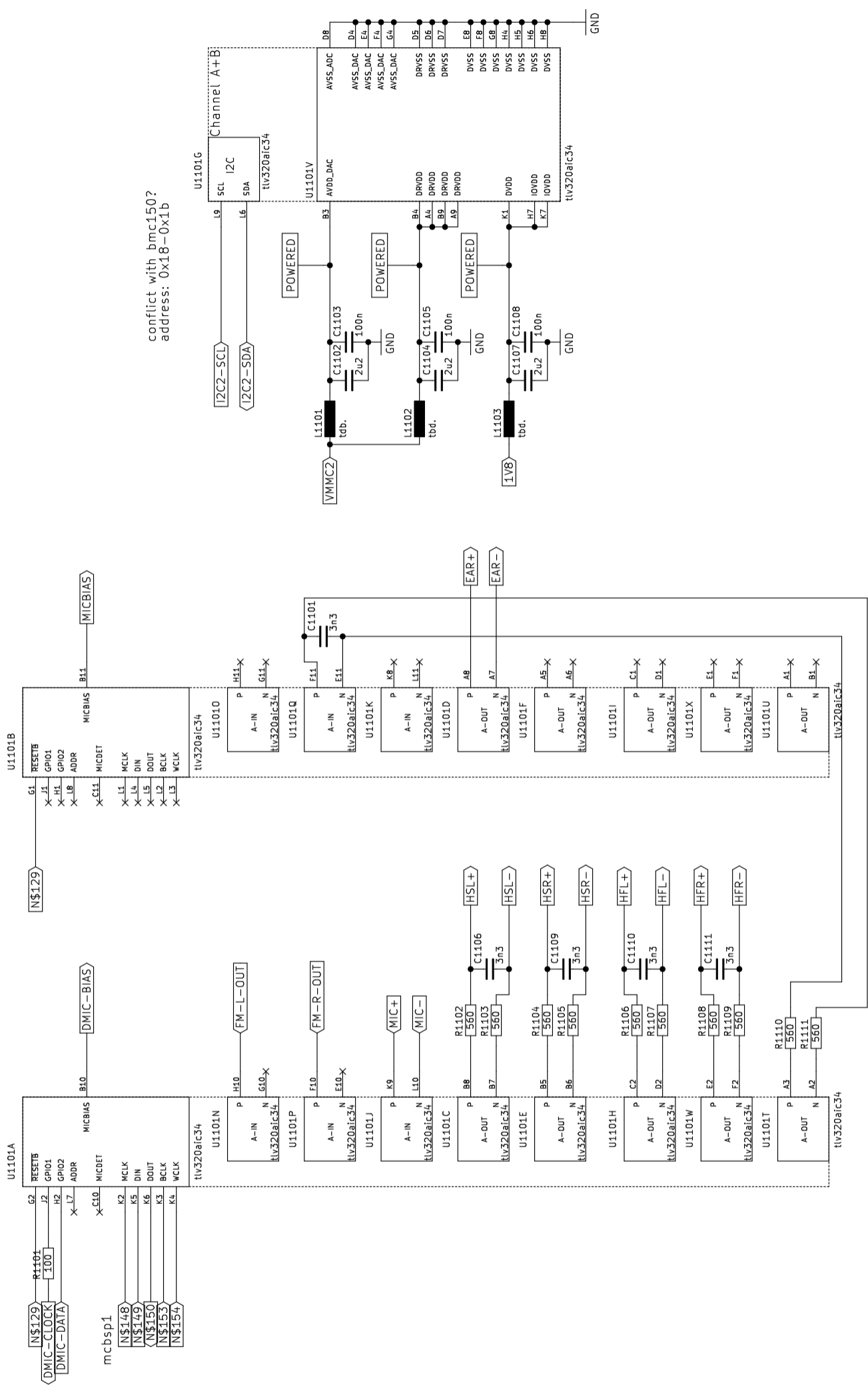
TODO: unfinished

Si4705 is pin compatible (mostly) but RX-only

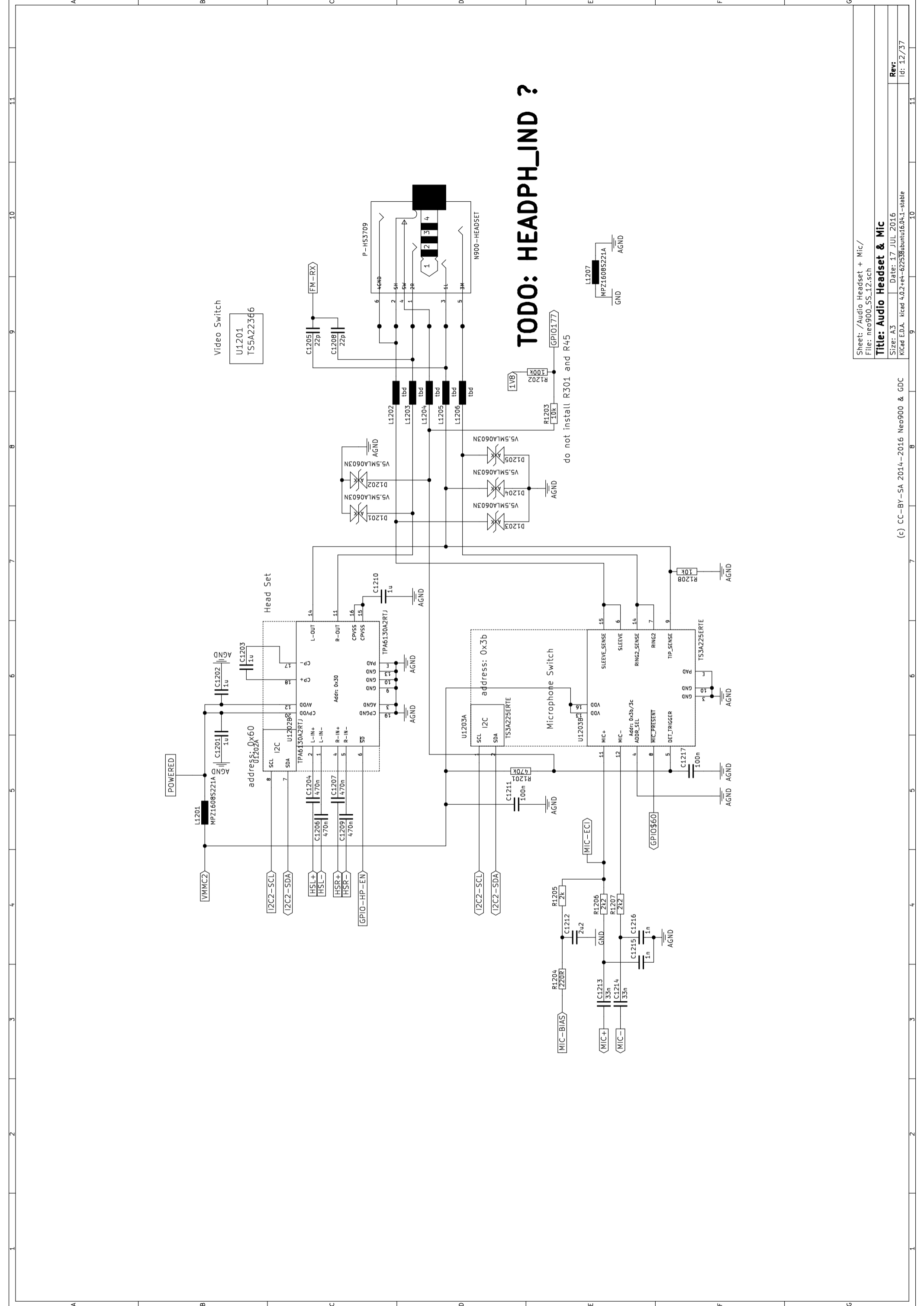


TODO: no BMG160, BMC150
TODO: BMP180 -> BME280
TODO: BNO055 -> BMX055
TODO: INT1/2 sharing

problem: this is a 0.5mm BGA making lower board expensive but it appears to be not extremely critical (only 3 rows and inner ring is GND)
 problem: analog mic is on upper board alternative: place on upper board (to be evaluated)

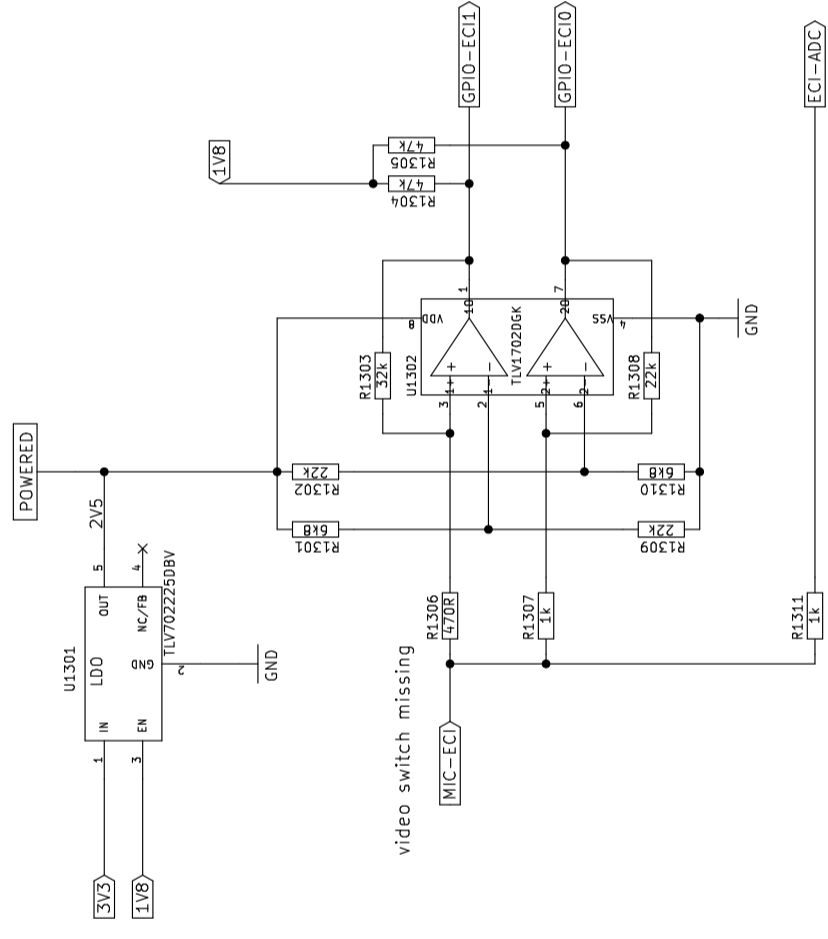


conflict with bmc150?
 address: 0x18-0x1b

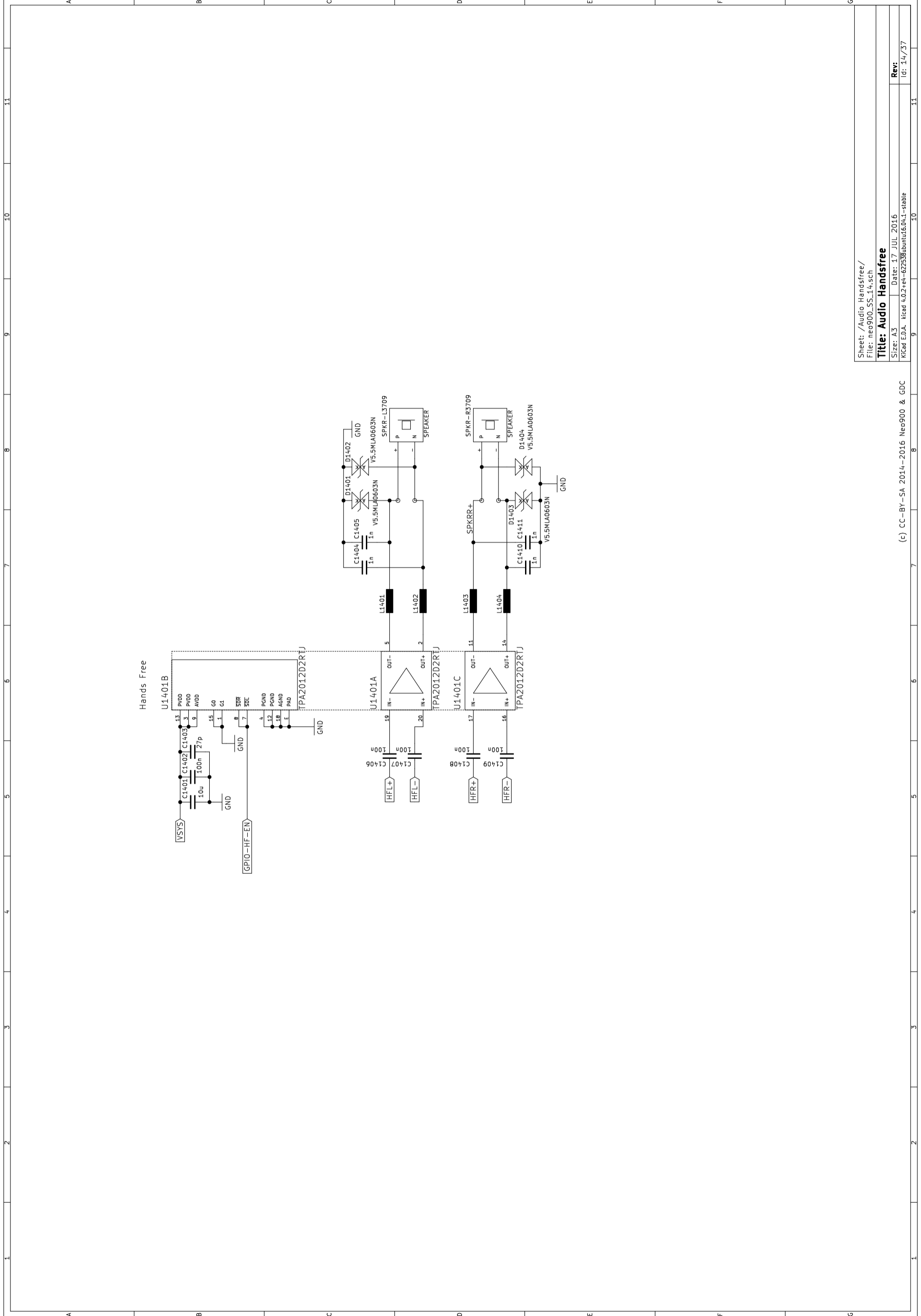


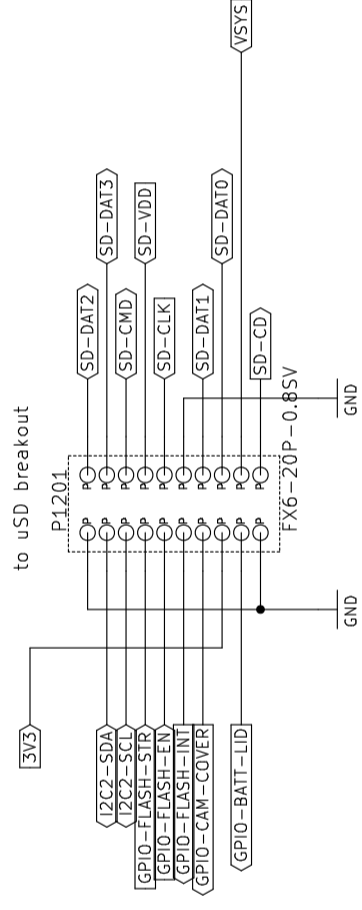
TODO: HEADPH_LIND ?

do not install R301 and R45

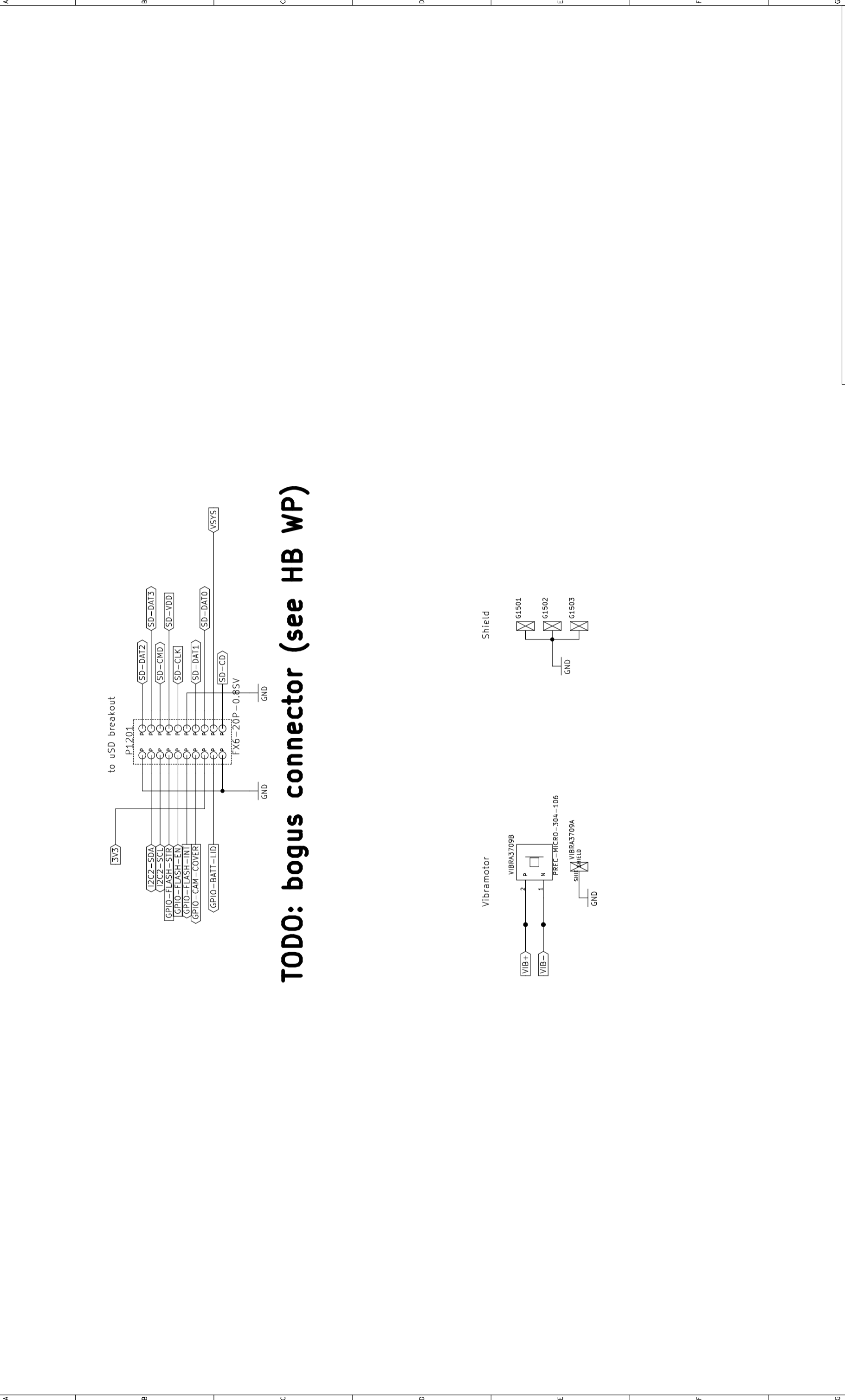
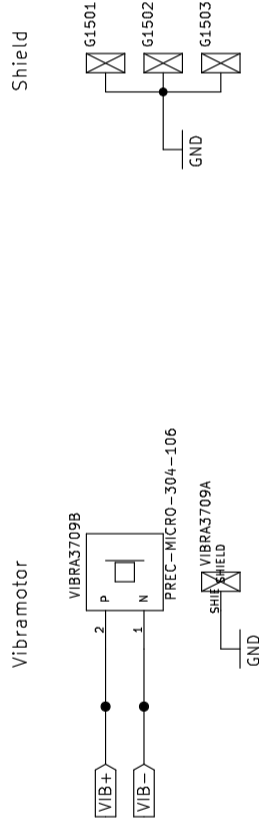


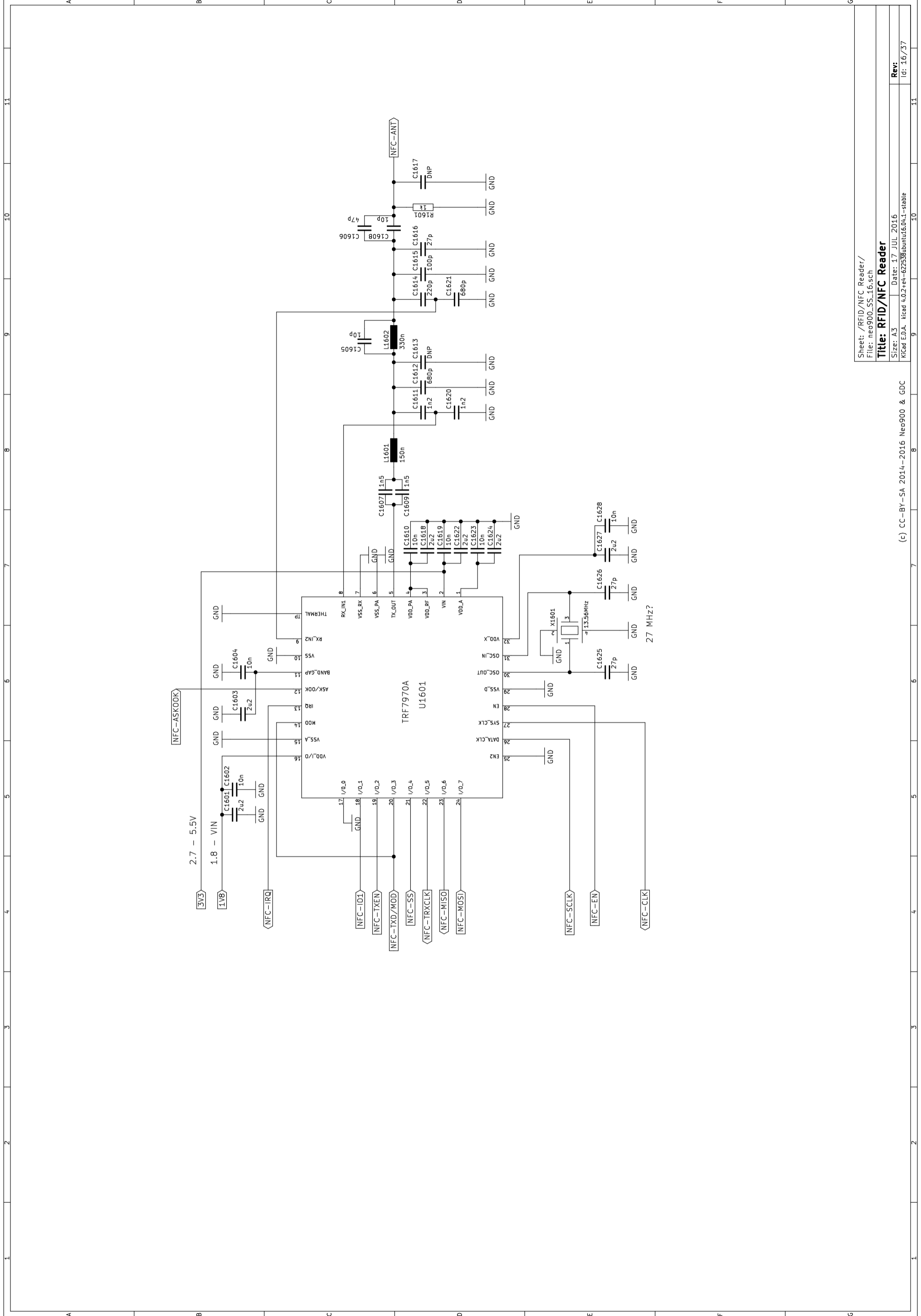
TODO: draw comparator right

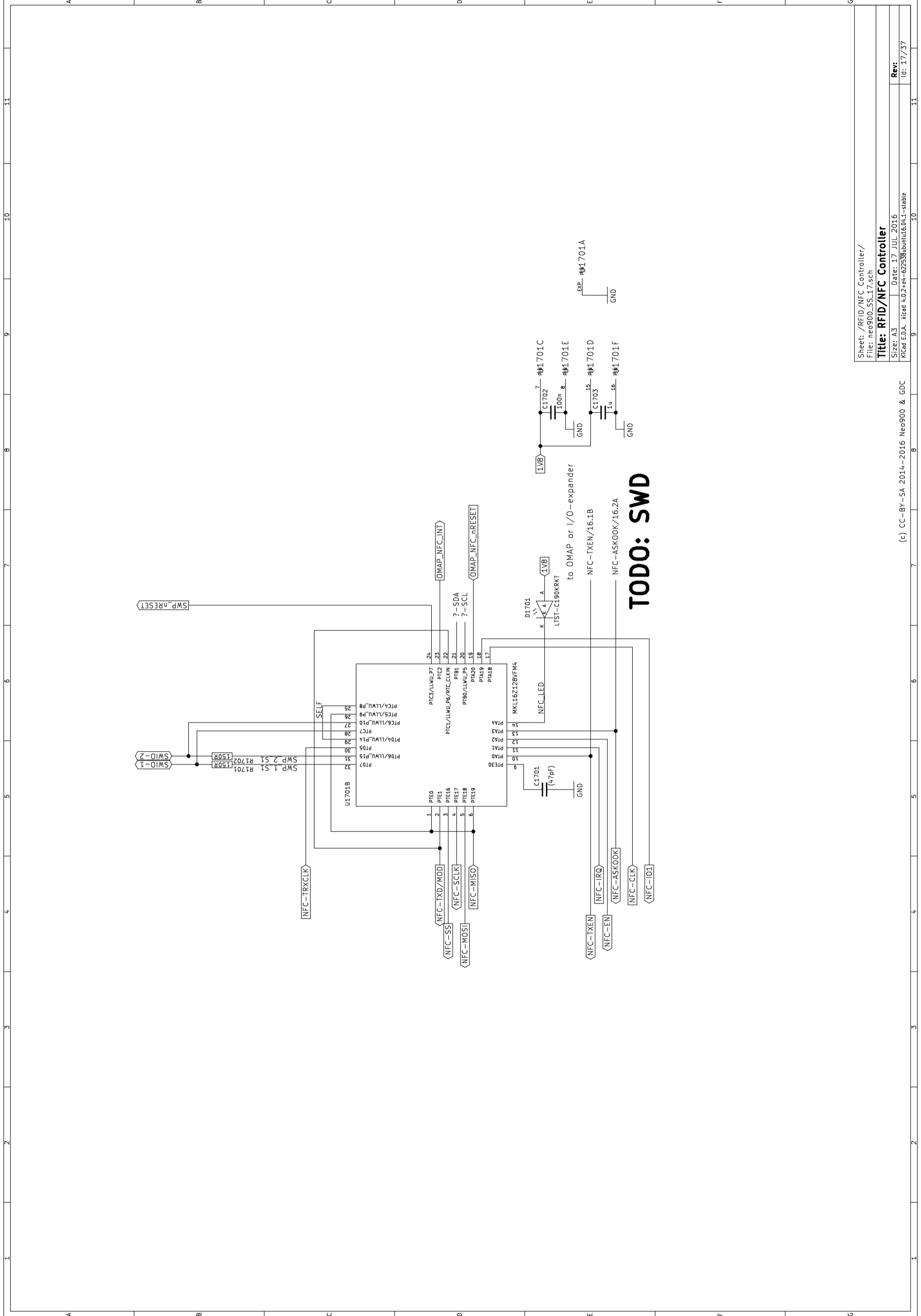




TODO: bogus connector (see HB WP)

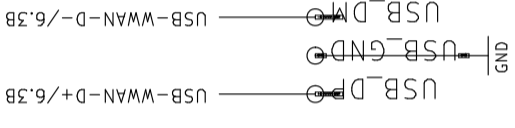




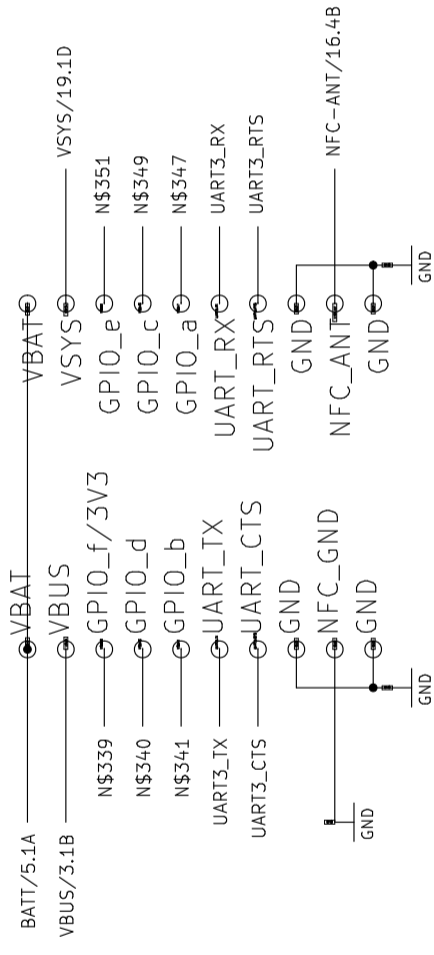


TODO: SWD

NOTE: this is mangling up Breakout and Lower board connectors
 Signals may have to be fed through the breakout board connector increasing resistance



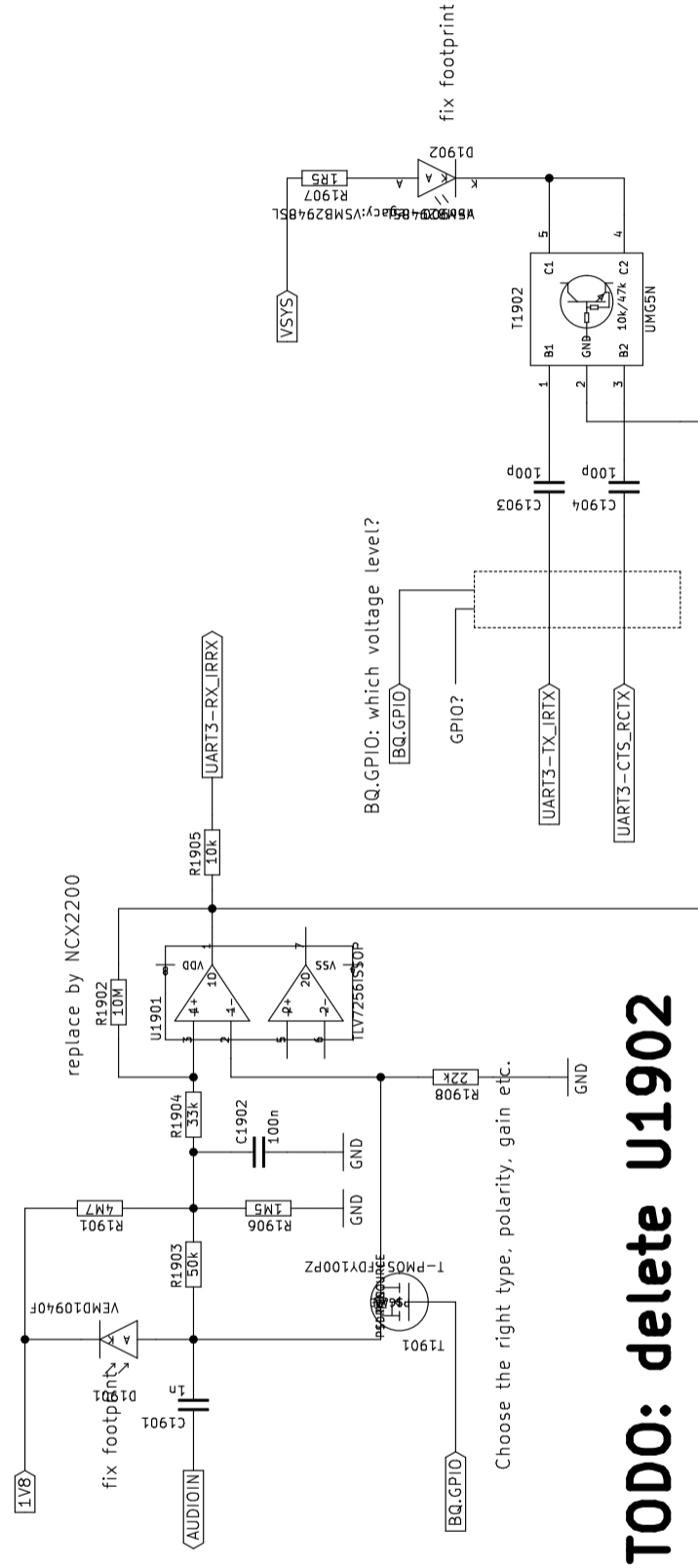
TODO: align with HB WP



Missing 10 level shifter chip (or do we really have the space for 10x discrete T+R+D ca. 3x3mm each?)
 Missing 6x 2R for alternate function select (do we have the space for ca. 2.5 x 5mm?)

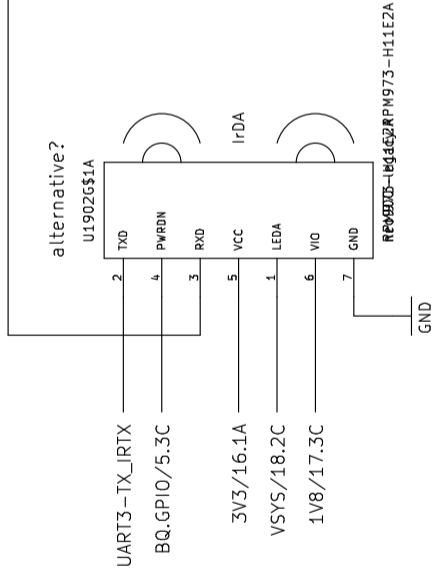
TODO: align with HB WP

NOTE: 1V8 may be quite noisy



Choose the right type, polarity, gain etc.

TODO: delete U1902



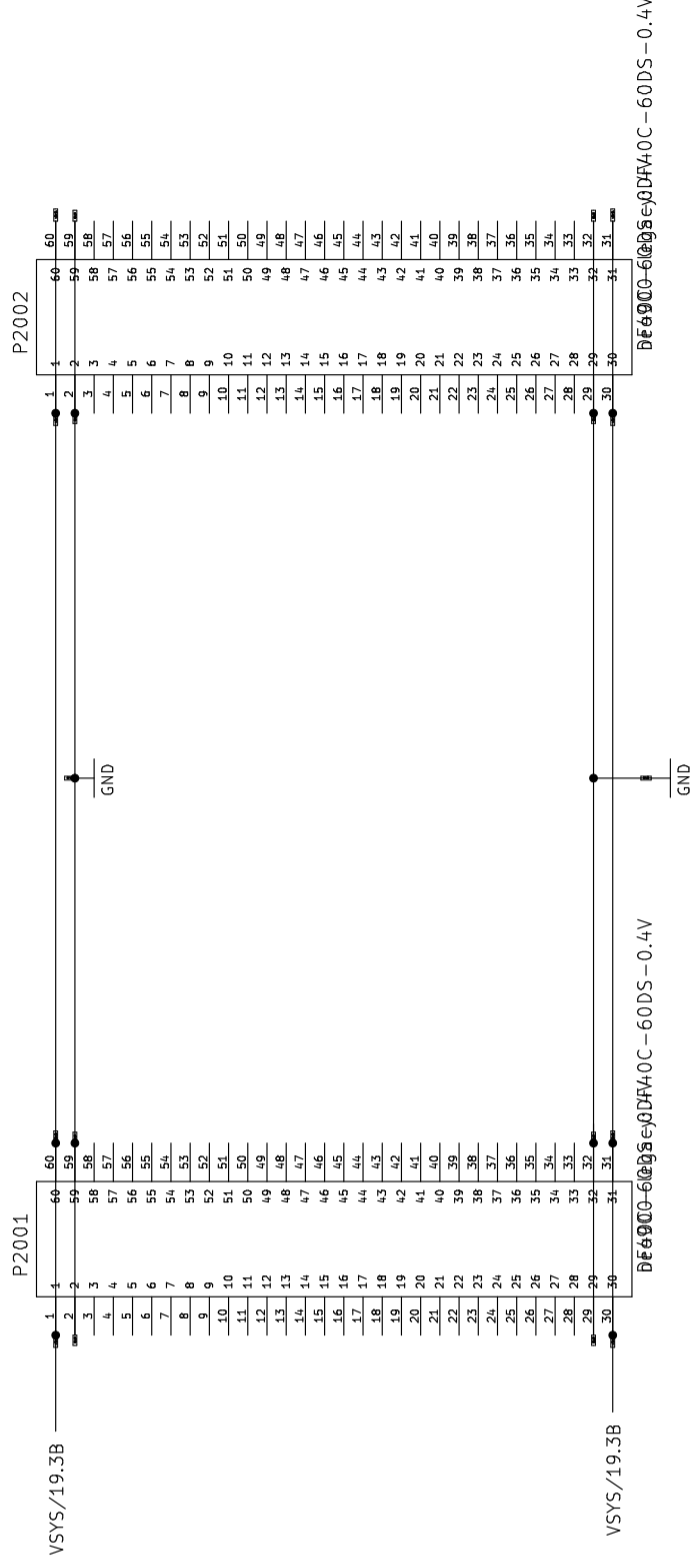
TODO: update to design in IR WP

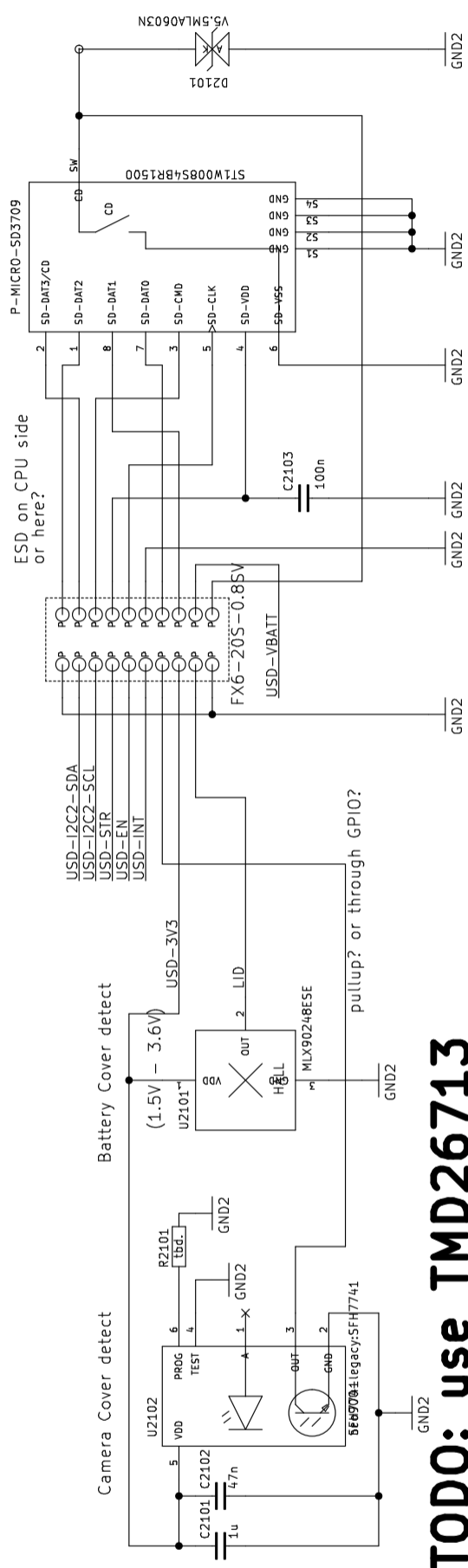
TODO: update when details settle

ca. 130 signals (to be counted exactly after definition of upper/lower split)

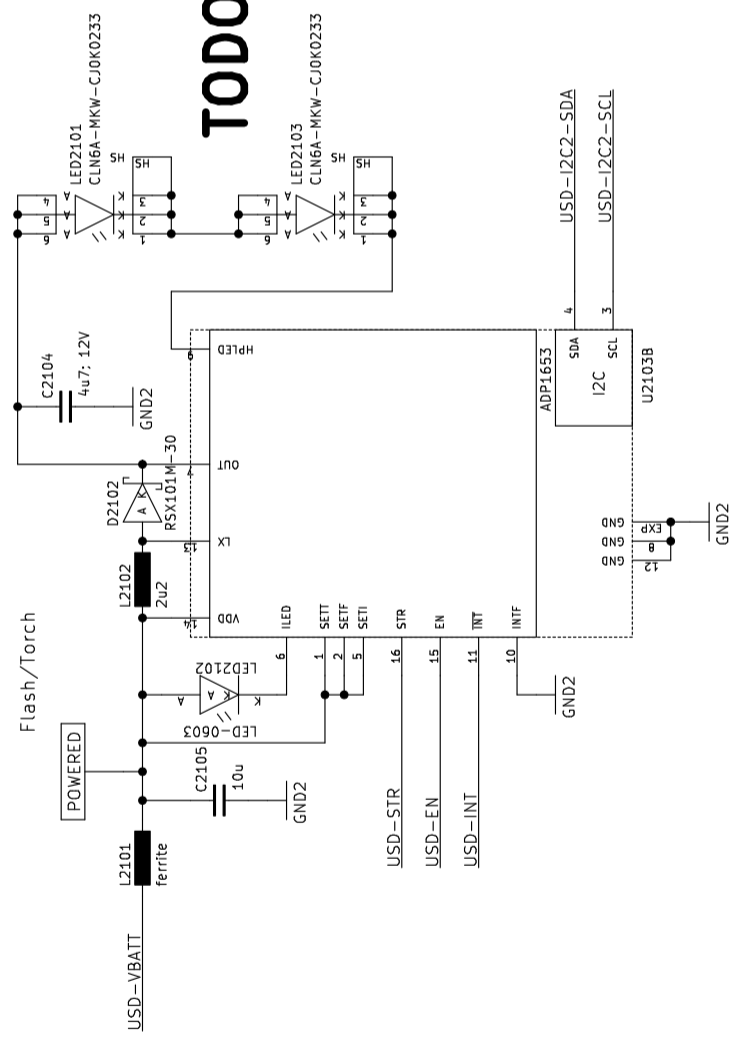
- MMC3-DATA1/9.1A
- MMC3-DATA2/9.1A
- MMC3-DATA3/9.1A
- GPIO-WLAN-IRQ/9.1A
- GPIO-BT-EN/9.1C
- UART1-RX/9.1C
- UART1-RTS/9.1C
- UART1-CTS/9.1D
- UART1-TX/9.1D
- MCBSP3-FCK/9.1D
- MCBSP3-CLK/9.1D
- MCBSP3-DR/9.1D
- MCBSP3-DX/9.1D
- SYSCLK/9.3C
- 32KHZ/9.4A
- GPIO-FM-EN/9.3A
- GPIO-FMIRQ/9.3A
- MCBSP2-FCK/9.3A
- MCBSP2-CLK/9.3A
- MCBSP2-DR/9.3A
- MCBSP2-DX/9.3A
- GPIO115/10.3B
- GPIO56/10.3A
- GPIO55/10.3B
- GPIO55/10.4A
- GPIO56/10.4A
- ACCEL-INT/10.4C
- N\$129/11.2A
- N\$148/11.1A
- N\$149/11.1A
- N\$150/11.1A
- N\$153/11.1A
- N\$154/11.1A
- GPIO-EC1/13.3B
- GPIO-EC10/13.3C
- EC1-ADC/13.3C
- VMMC2/12.1A
- GPIO-HP-EN/12.1B
- GPIO560/12.2D
- GPIO177/12.4C
- GPIO-HF-EN/14.1B
- GPIO-FLASH-STR/15.1A
- GPIO-FLASH-EN/15.1A
- GPIO-FLASH-INT/15.1A
- GPIO-BATT-LID/15.1B
- SD-CMD/15.2A
- SD-CLK/15.2A
- SD-CD/15.2B
- SD-YDD/15.2A
- SD-VDD/15.2A
- SD-DAT0/15.2B
- SD-DAT1/15.2B
- SD-DAT2/15.2A
- SD-DAT3/15.2A
- VIB+/15.1D
- VIB-/15.1D
- 3V3/19.1D
- 2V5/13.3B
- 1V8/19.1D
- VBUS/18.1C
- OTG-D-/3.1B
- OTG-D+/3.1B
- OTG-ID/2.2B
- VBUS-MODEM/6.3B
- USB-WWAN-D+/18.3A
- USB-WWAN-D-/18.3A
- 2V7/8.4C
- GPIO-CAM-COVER/15.1B
- N\$38

Pin assignment must be optimized for final component placement we might have to switch to 80 or 100 pin connectors





TODO: use TMD26713

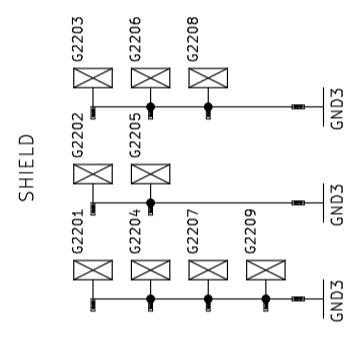
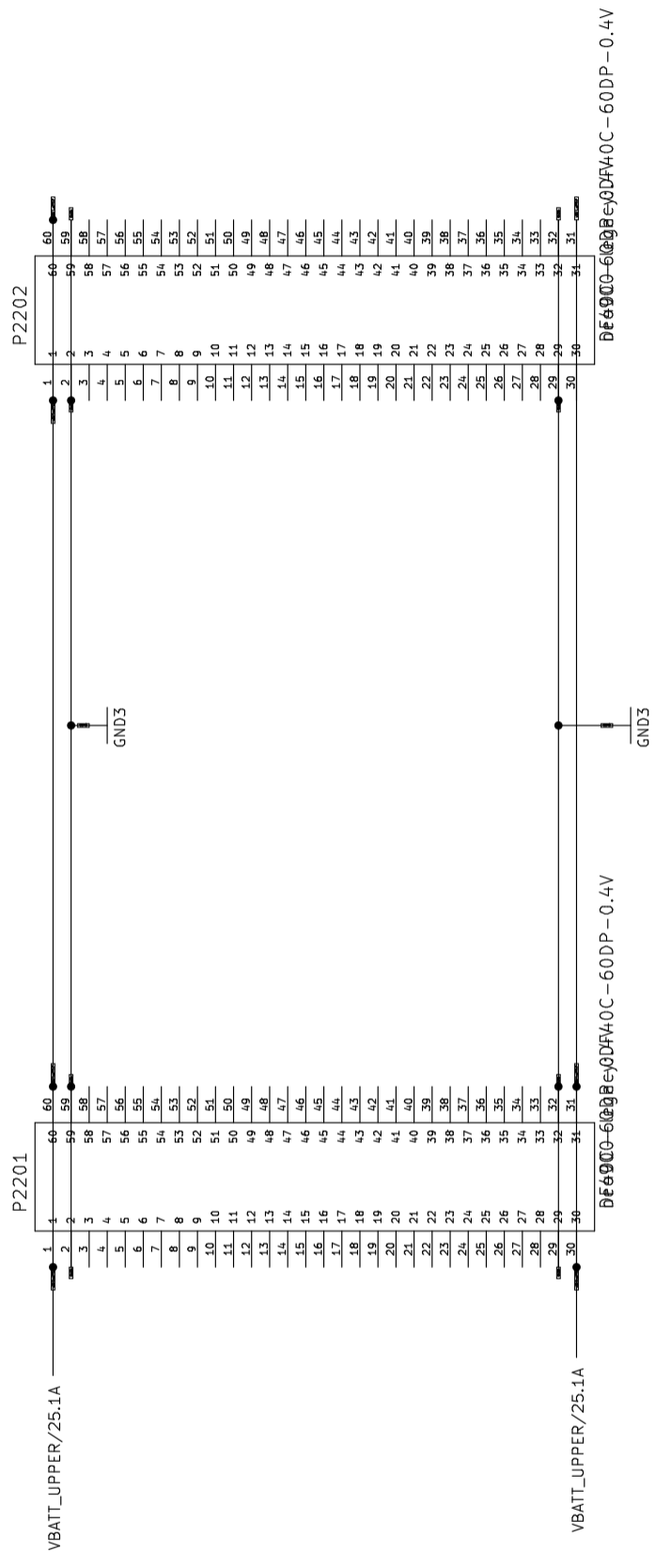
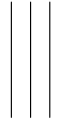


TODO: wrong LEDs

TODO: flash controller is now on LOWER, not BOB

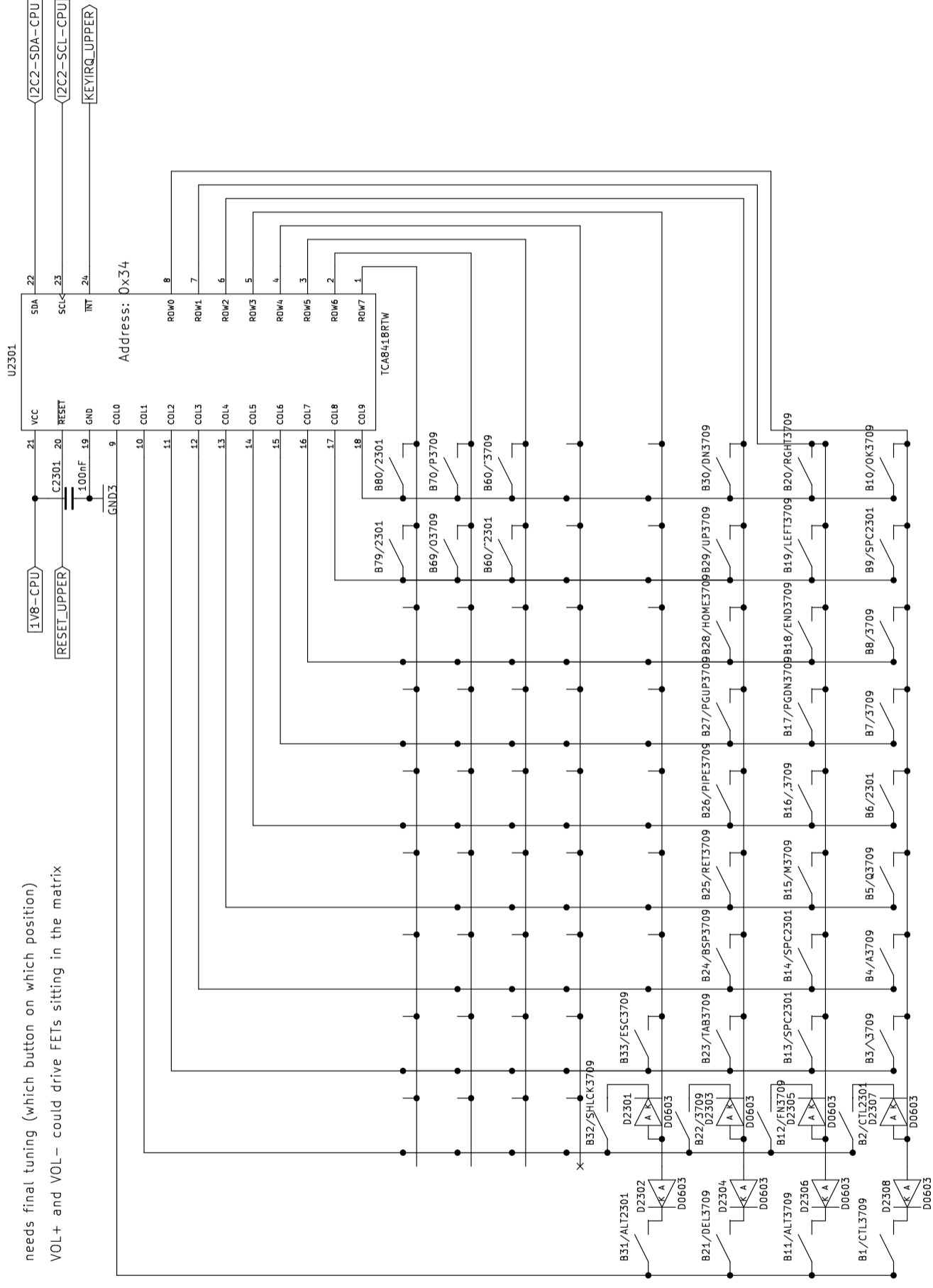
TODO: track B2B to UPPER

to be adjusted to lower board connector



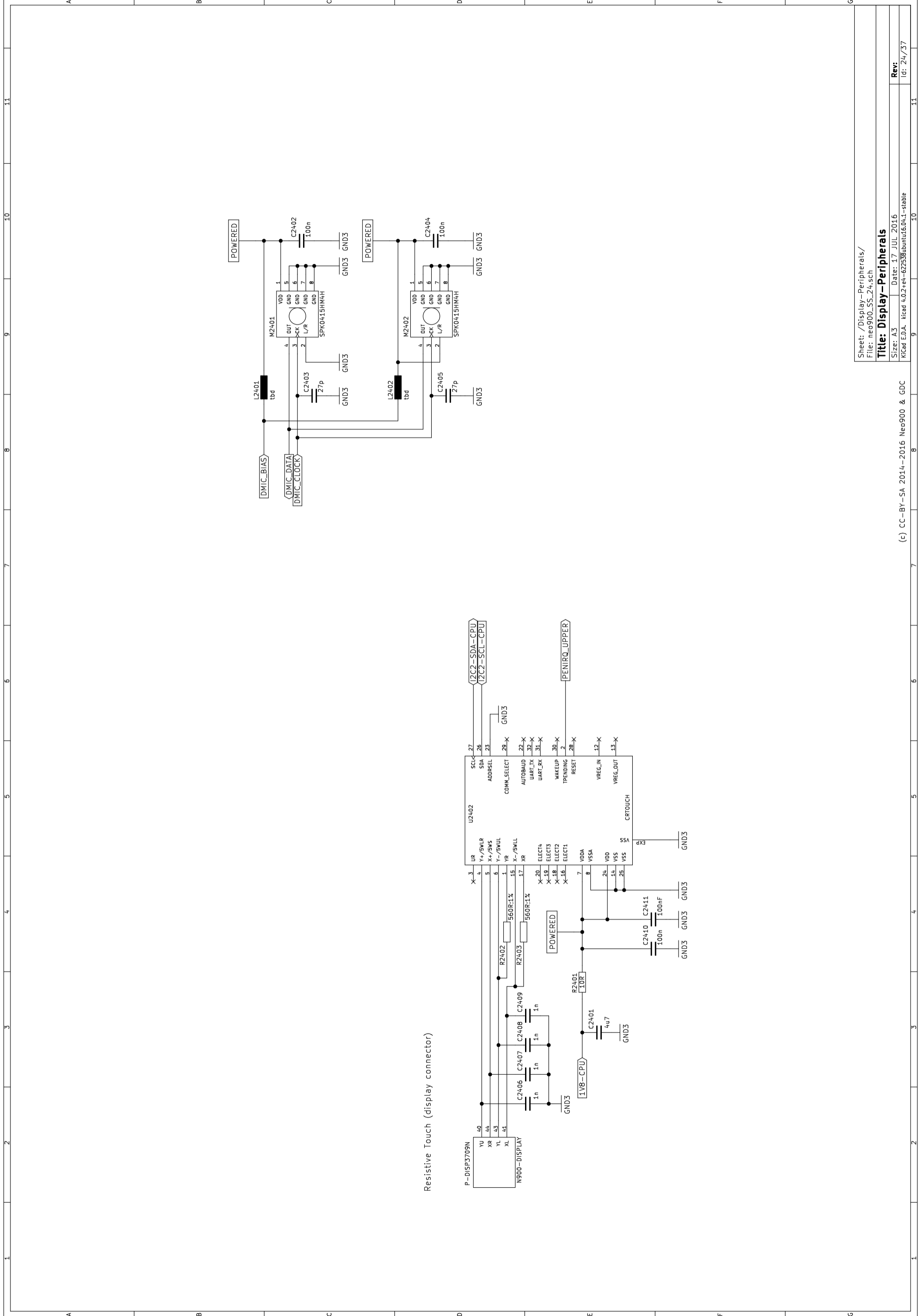
TODO: *_UPPER names ?

needs final tuning (which button on which position)
 VOL+ and VOL- could drive FETs sitting in the matrix

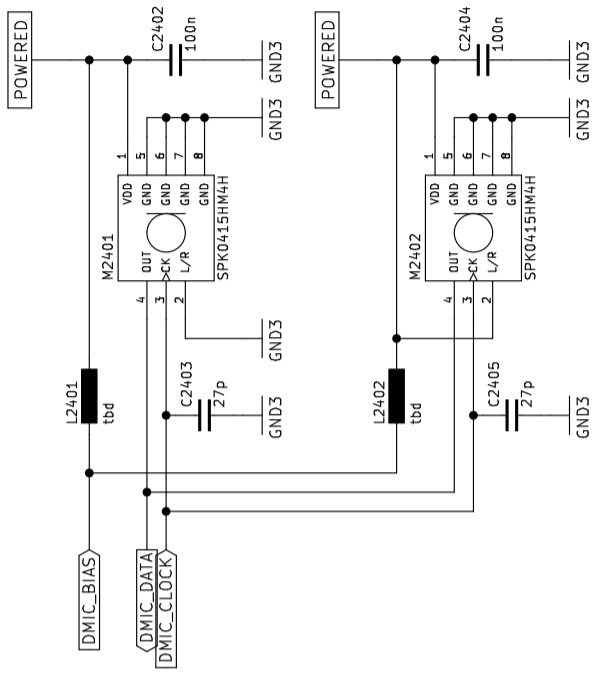


replace by 2x RB521ZS8A30 for space constraints

- TODO: remove 3709 in comp ref**
- TODO: remove keycap from comp ref**
- TODO: sort out 6 "ext" buttons**
- TODO: rearrange matrix to avoid diodes ?**

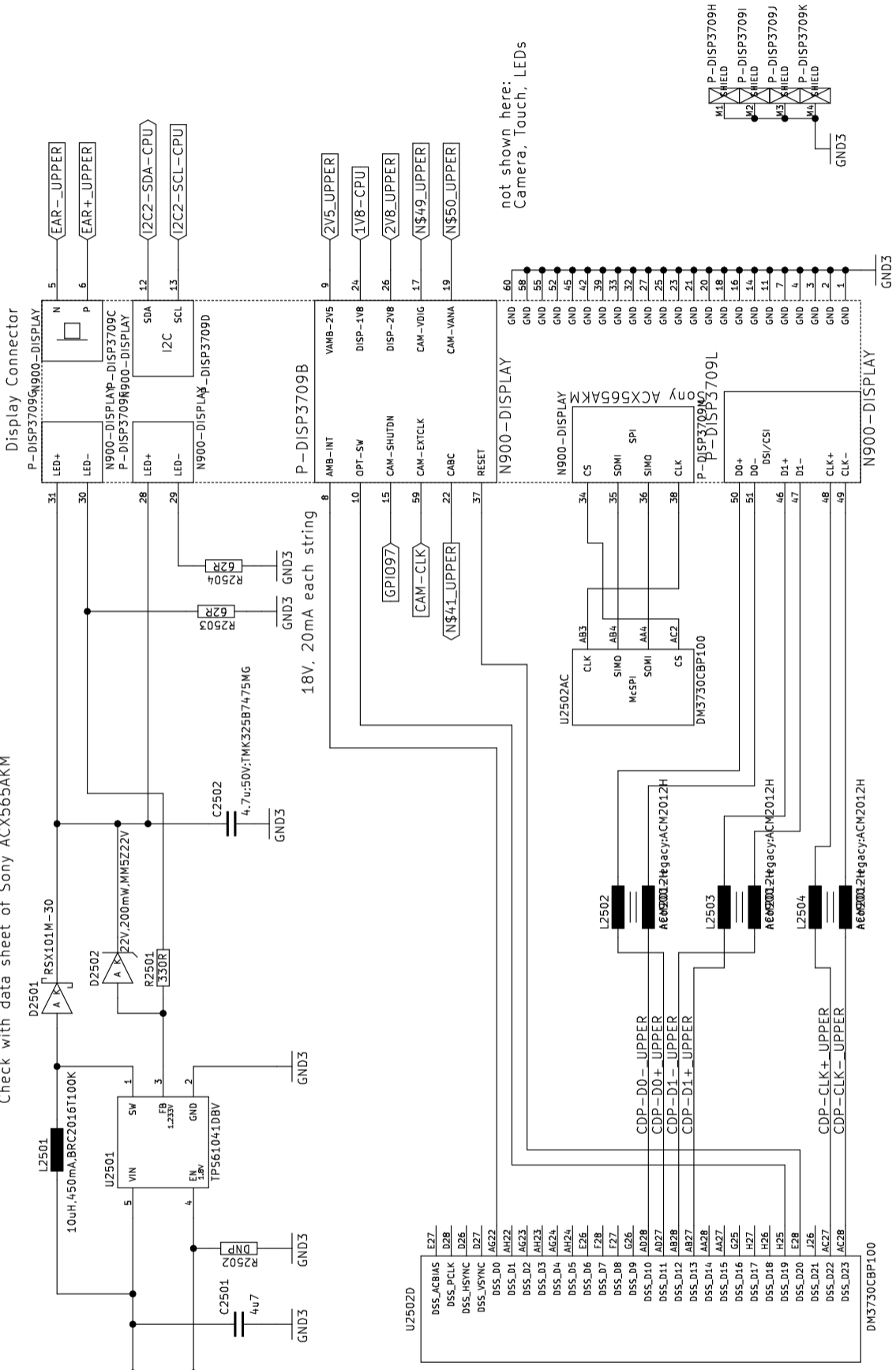


Resistive Touch (display connector)

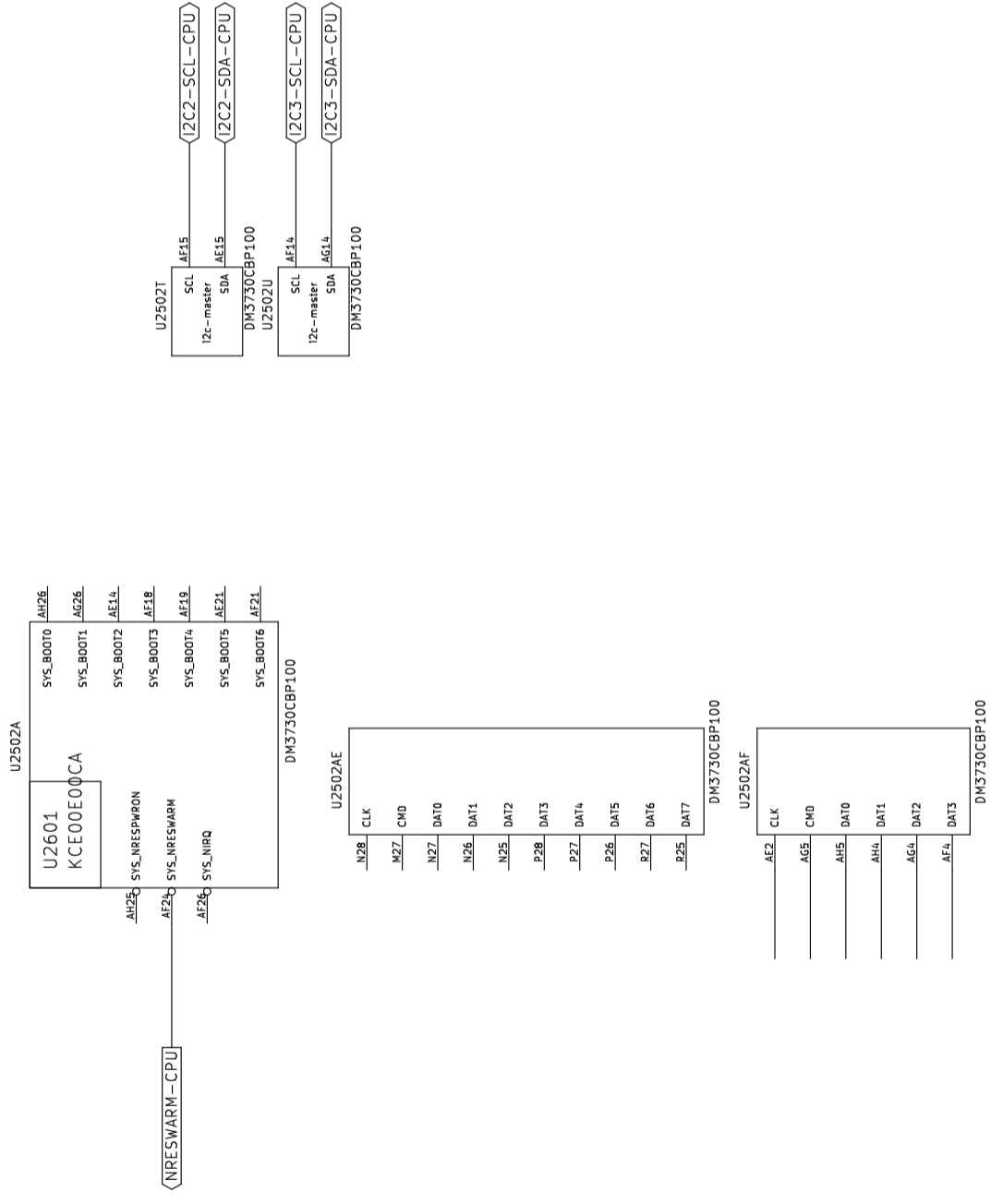


TODO: connector pin assignment needs intensive review

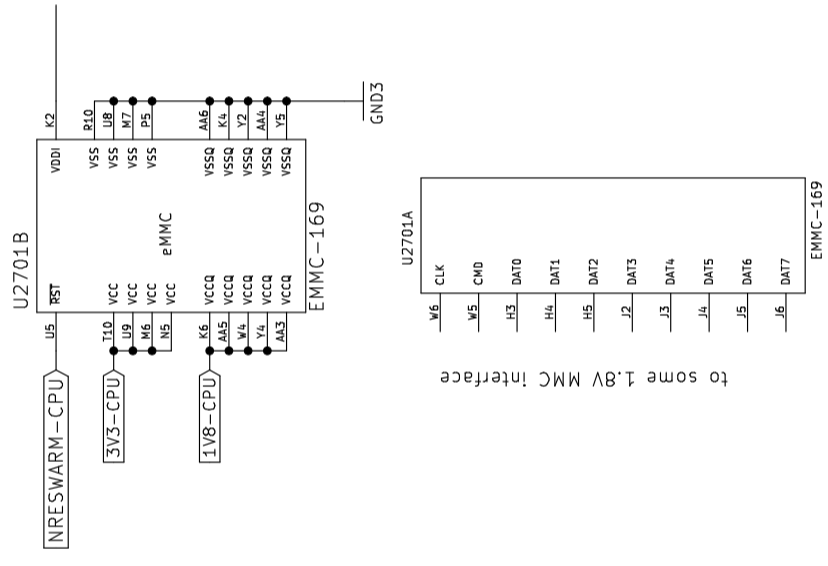
Adjust sense resistor+Z-Diode to voltage¤t
Check with data sheet of Sony ACX565AKM



INCOMPLETE in V2



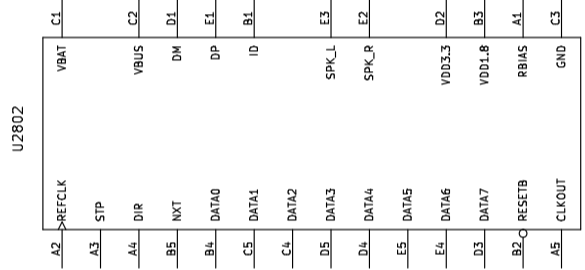
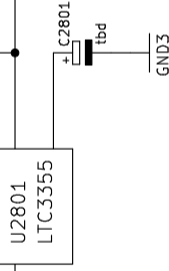
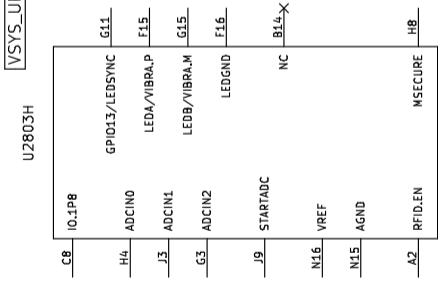
INCOMPLETE in V2



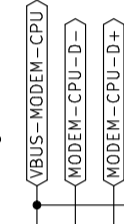
TODO: check role

INCOMPLETE in V2

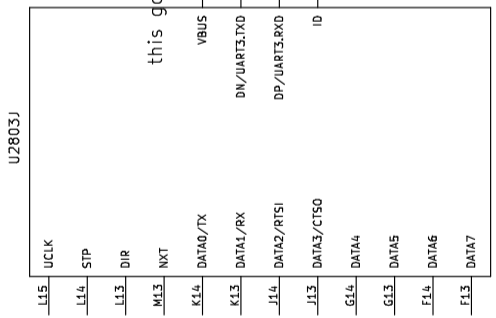
should drive TPS65950
VBAT(->TPS65950)_UPPER



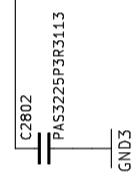
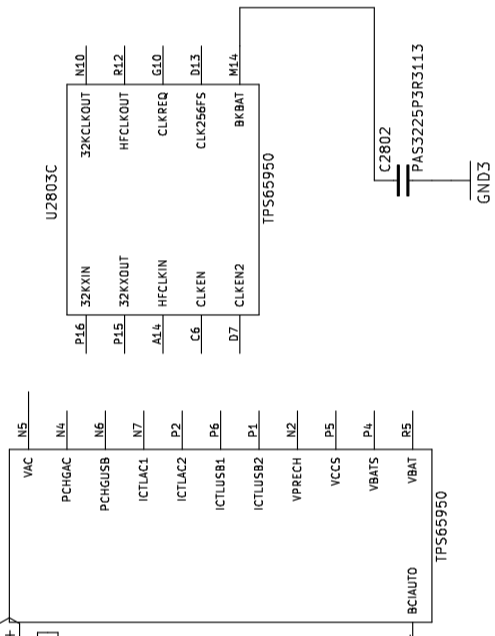
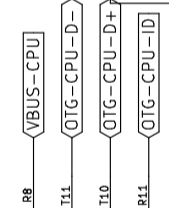
this goes through B2B to modem



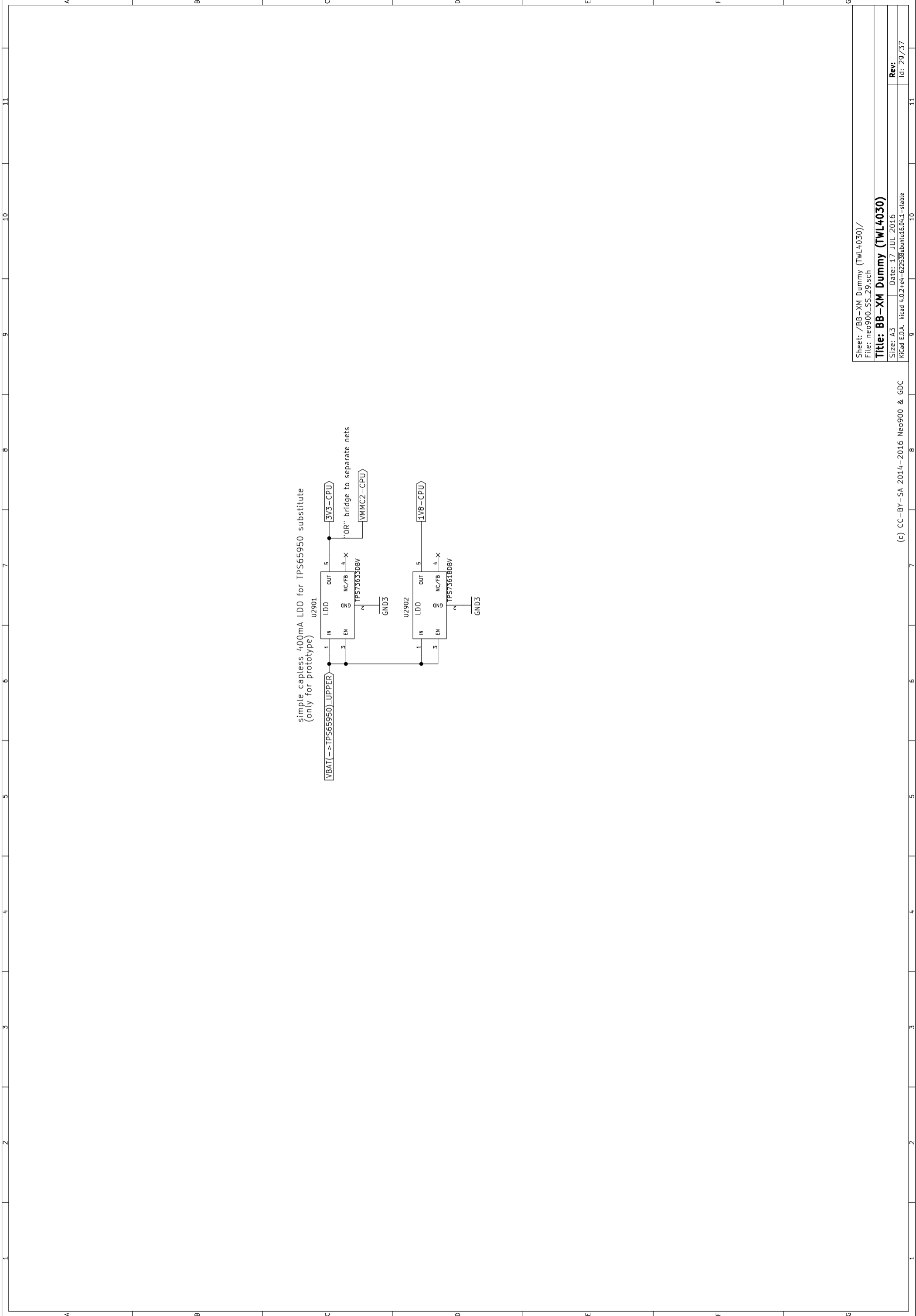
needs a small charge pump to generate 5V 50mA.



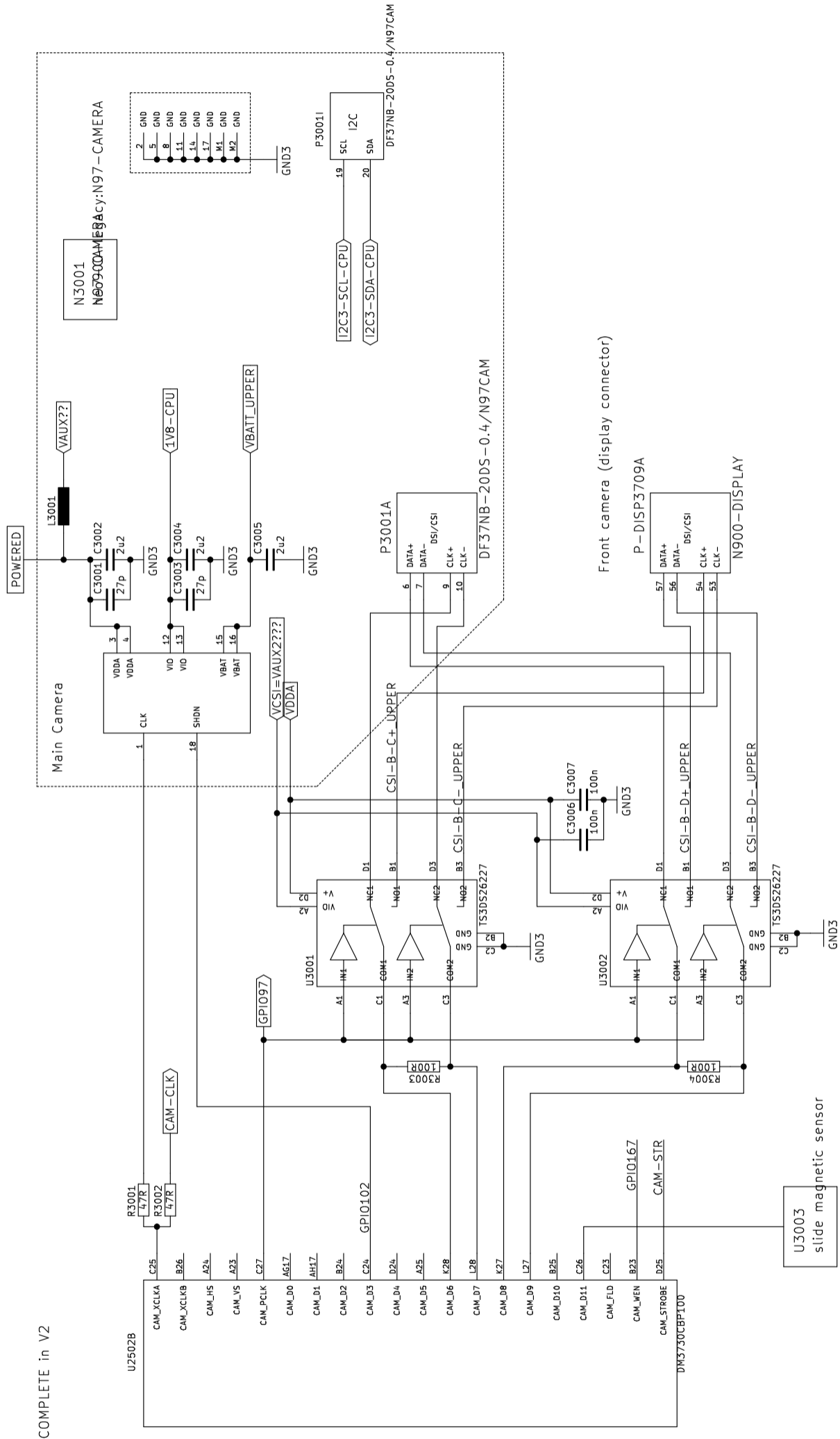
this goes through B2B to OTG socket

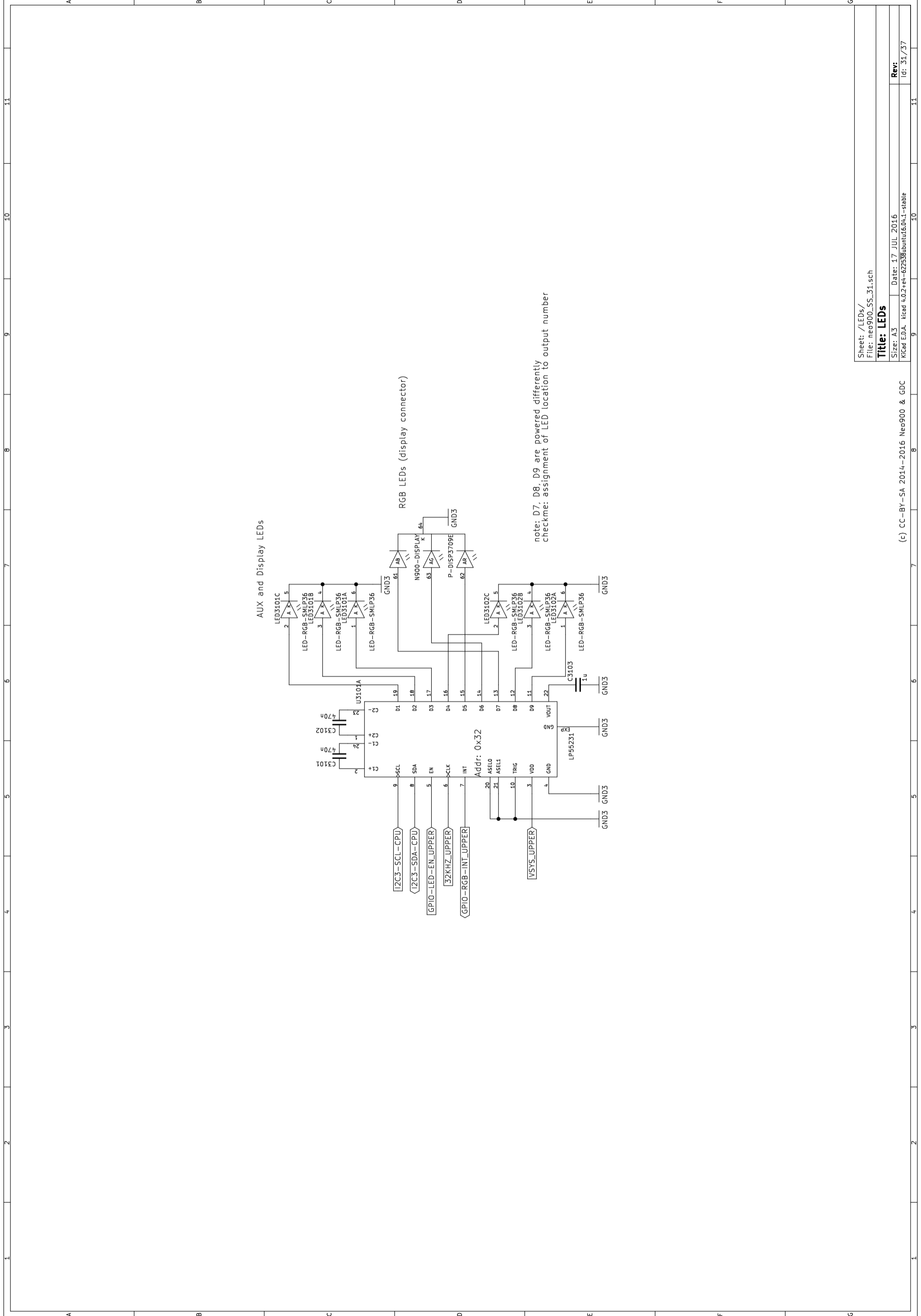


TODO: VBUS-MODEM ?

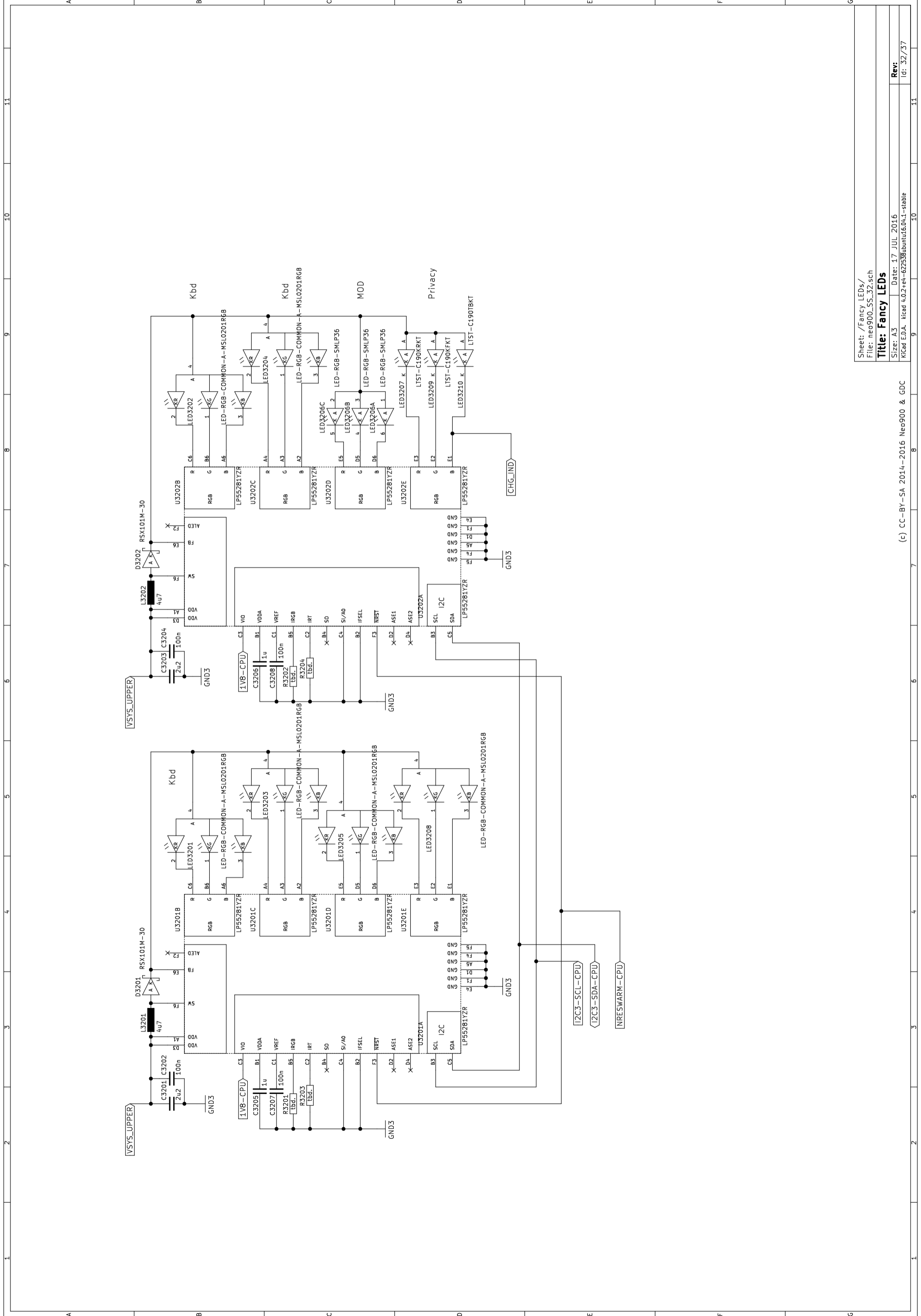


INCOMPLETE in V2





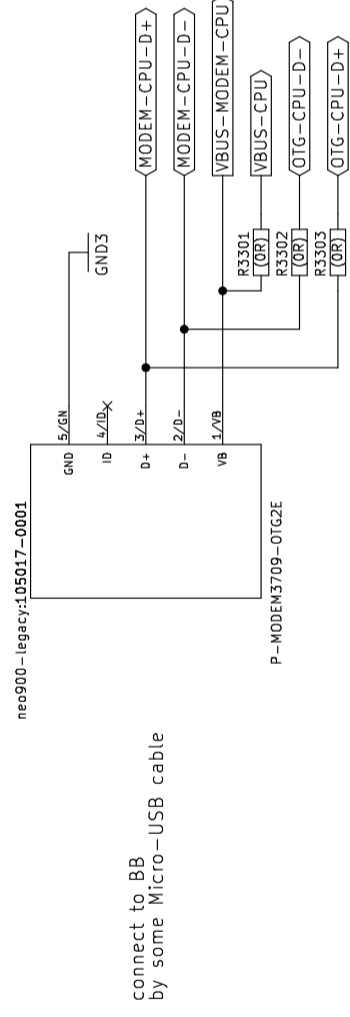
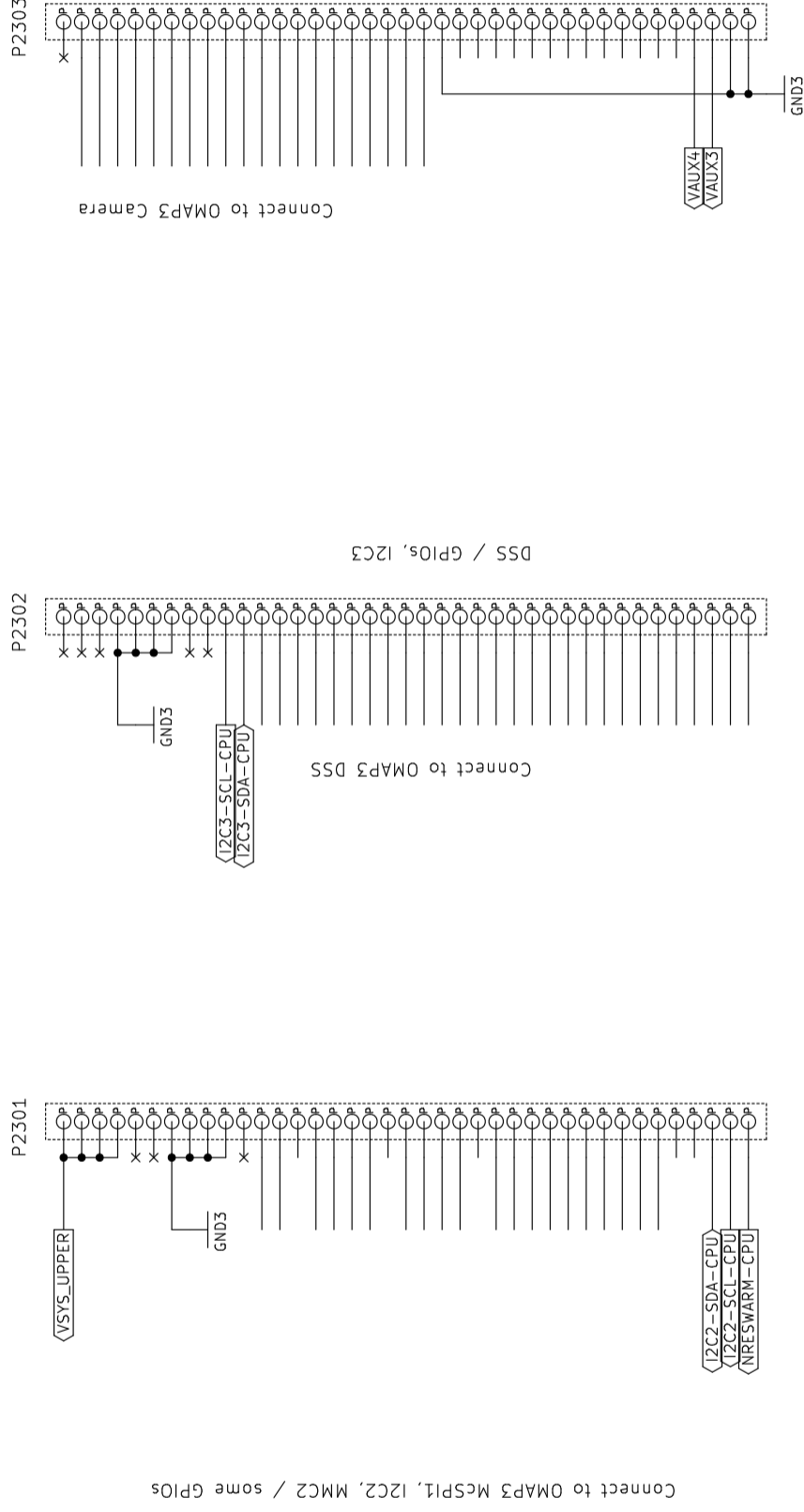
note: D7, D8, D9 are powered differently
 checkme: assignment of LED location to output number



These connectors allow to "emulate" the DM3730 by connecting a BB-XM

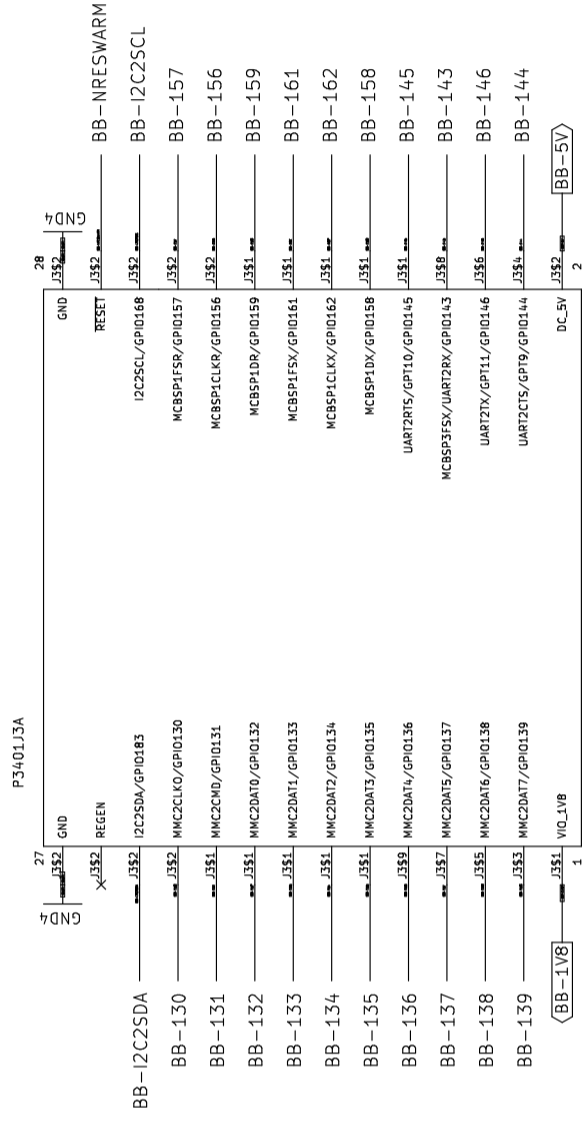
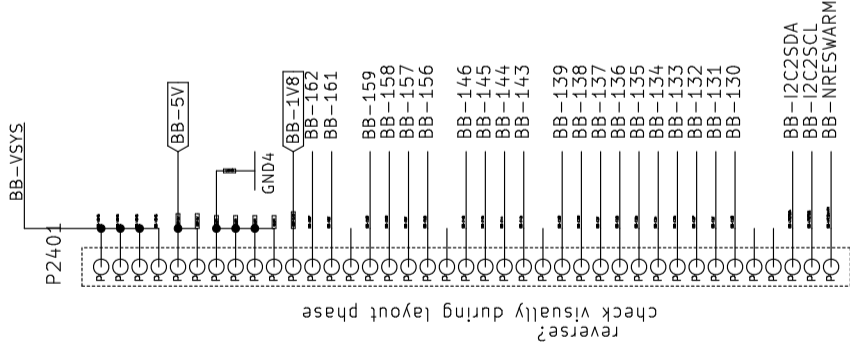
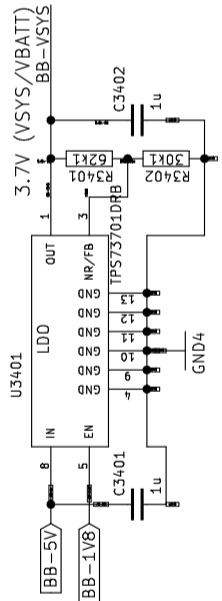
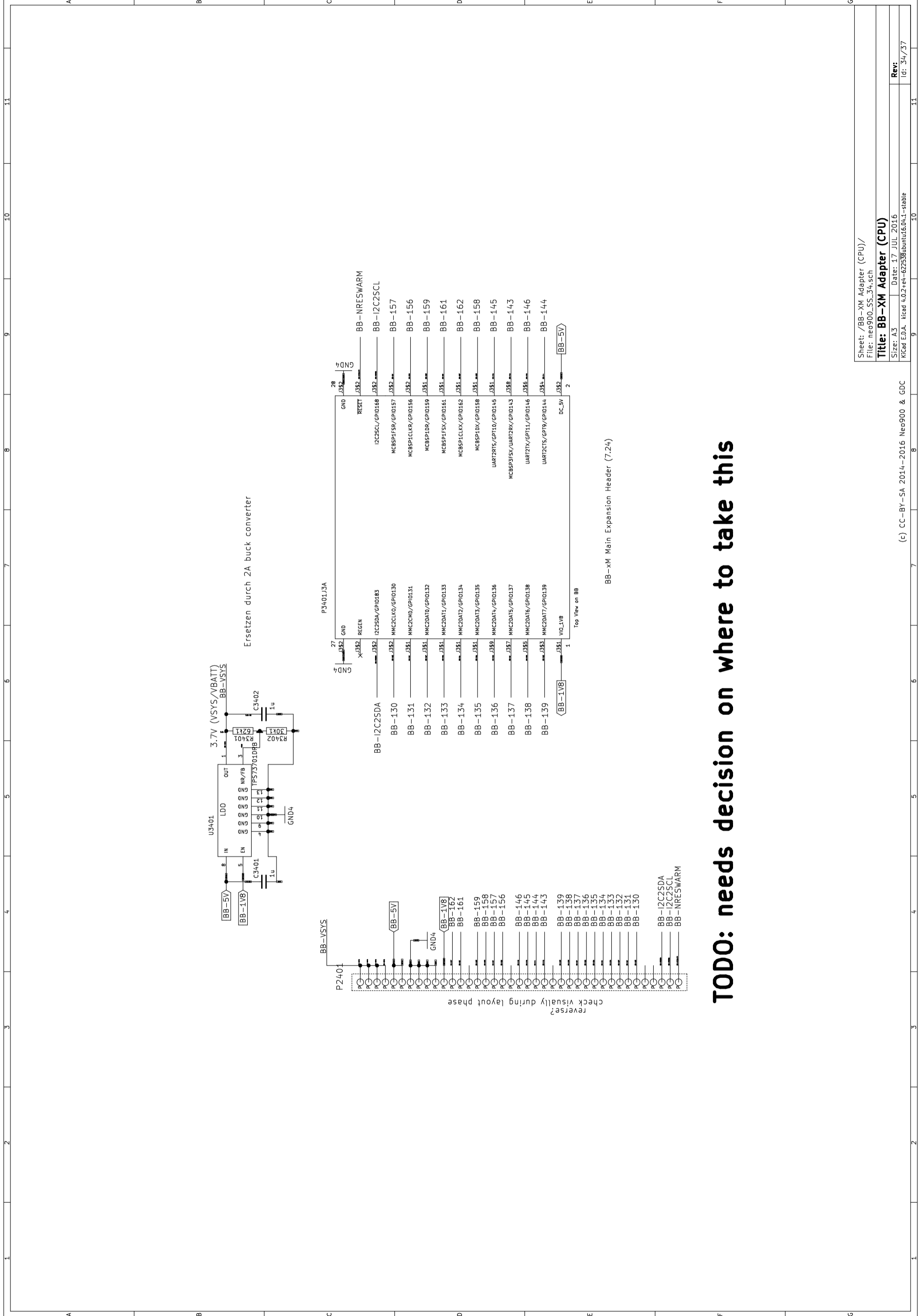
INCOMPLETE
prototype only

connect to respective CPU-pads



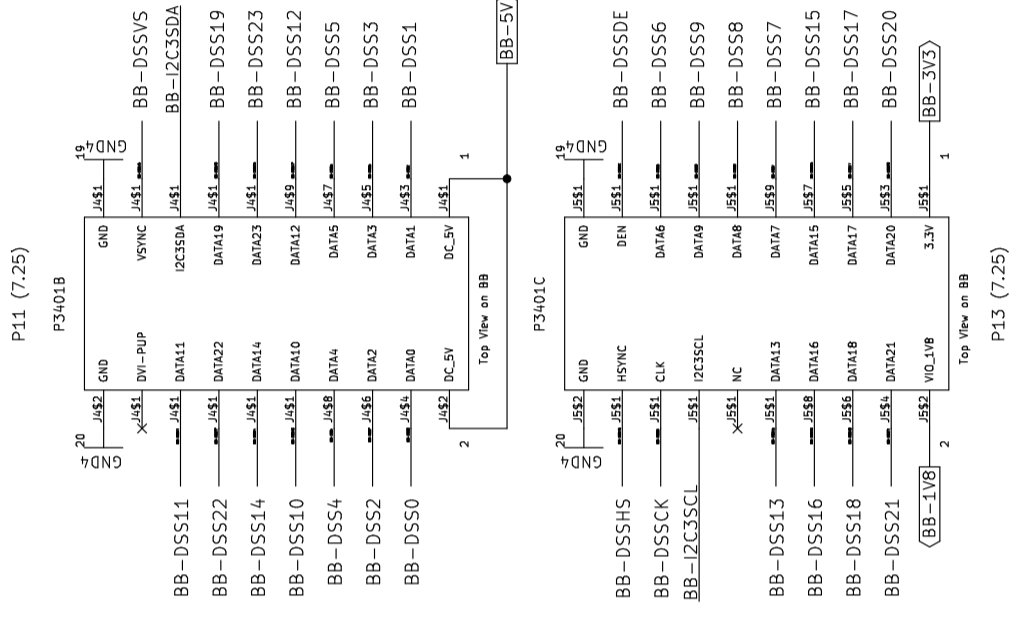
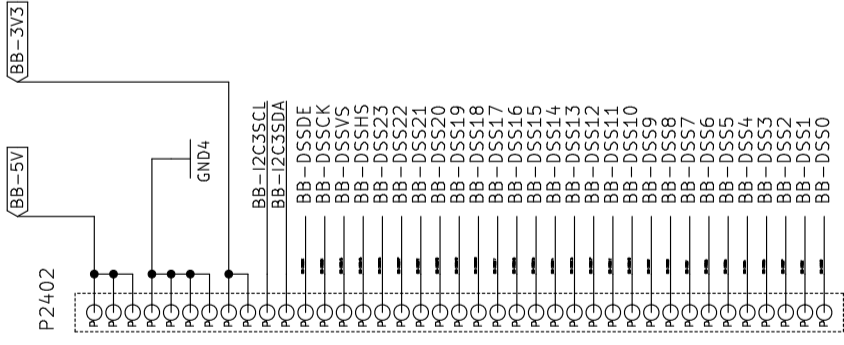
connect to BB
by some Micro-USB cable

TODO: VBUS-MODEM ?

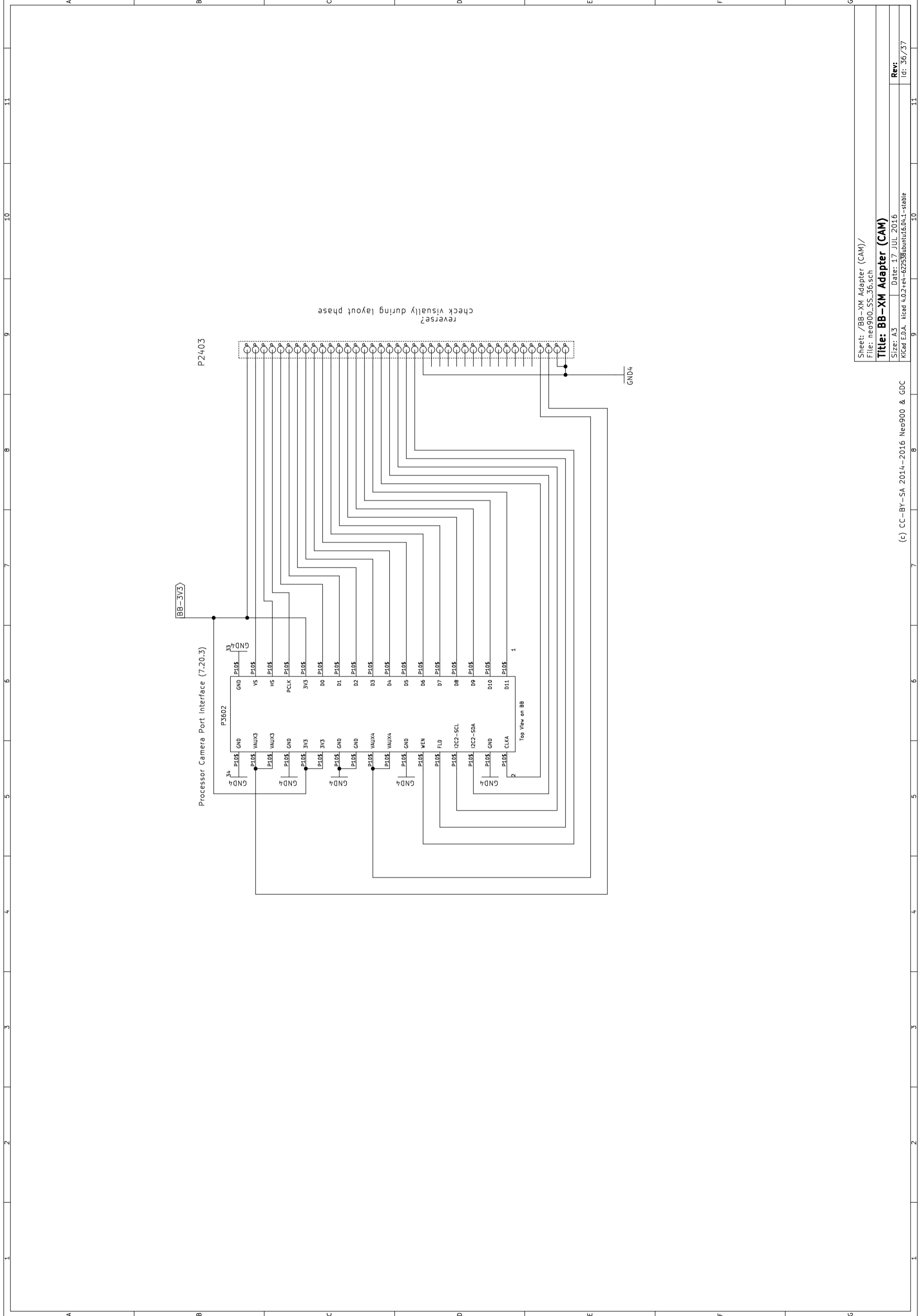


BB-xM Main Expansion Header (7.24)

TODO: needs decision on where to take this



TODO: needs decision on where to take this



Molex Jumper cables to connect BB-XM-Adapter to Uppwer board

N3701
15015-0439

CPU

N3702
15015-0439

DISP

N3703
15015-0439

CAM

N3704
N900 case assembly

N3705
N97-CAMERA-HOLE

N3706
headset jack

N3707
STENCIL-TOP

N3708
STENCIL-BOTTOM