

Click | Here
v

01# Switches

Sheet: OTG

02# OTG

File: neo900_SS_2.sch

Sheet: Charger/OTG-Booster

Charger/OTG-Booster

File: neo900_SS_3.sch

Sheet: Modem Power

Modem Power

File: neo900_SS_4.sch

Sheet: Fuel Gauge

Fuel Gauge

File: neo900_SS_5.sch

Sheet: 3G/4G Modem + SIM

3G/4G Modem + SIM

File: neo900_SS_6.sch

Sheet: Dual SIM switch

Dual SIM switch

File: neo900_SS_7.sch

Sheet: Antenna connections

Antenna connections

File: neo900_SS_8.sch

Sheet: WLAN, Bluetooth, FM

WLAN, Bluetooth, FM

File: neo900_SS_9.sch

Sheet: Sensors

Sensors

File: neo900_SS_10.sch

Sheet: Audio Codec

Audio Codec

File: neo900_SS_11.sch

Sheet: Audio Headset + Mic

Audio Headset + Mic

File: neo900_SS_12.sch

Sheet: ECI

ECI

File: neo900_SS_13.sch

Sheet: Audio Handsfree

Audio Handsfree

File: neo900_SS_14.sch

Sheet: Misc (lower)

Misc (lower)

File: neo900_SS_15.sch

Sheet: RFID/NFC Reader

RFID/NFC Reader

File: neo900_SS_16.sch

Sheet: RFID/NFC Controller

RFID/NFC Controller

File: neo900_SS_17.sch

Sheet: Hackerbus

Hackerbus

File: neo900_SS_18.sch

Sheet: Infrared

Infrared

File: neo900_SS_19.sch

Sheet: B2B to UPPER

B2B to UPPER

File: neo900_SS_20.sch

Sheet: uSD Breakout Board

uSD Breakout Board

File: neo900_SS_21.sch

Sheet: B2B to LOWER

B2B to LOWER

File: neo900_SS_22.sch

Sheet: Keypad

Keypad

File: neo900_SS_23.sch

Sheet: Display-Peripherals

Display-Peripherals

File: neo900_SS_24.sch

Sheet: Display-Panel&Power

Display-Panel&Power

File: neo900_SS_25.sch

Click | Here
v

Sheet: CPU + PoP RAM/NAND

CPU + PoP RAM/NAND

File: neo900_SS_26.sch

Sheet: eMMC

eMMC

File: neo900_SS_27.sch

Sheet: PMU+Codec

PMU+Codec

File: neo900_SS_28.sch

Sheet: BB-XM Dummy (TWL4030)

BB-XM Dummy (TWL4030)

File: neo900_SS_29.sch

Sheet: Camera

Camera

File: neo900_SS_30.sch

Sheet: LEDs

LEDs

File: neo900_SS_31.sch

Sheet: Fancy LEDs

Fancy LEDs

File: neo900_SS_32.sch

Sheet: Connector to BB-XM

Connector to BB-XM

File: neo900_SS_33.sch

Sheet: BB-XM Adapter (CPU)

BB-XM Adapter (CPU)

File: neo900_SS_34.sch

Sheet: BB-XM Adapter (DISP)

BB-XM Adapter (DISP)

File: neo900_SS_35.sch

Sheet: BB-XM Adapter (CAM)

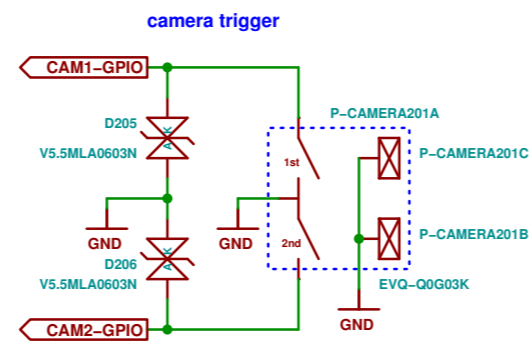
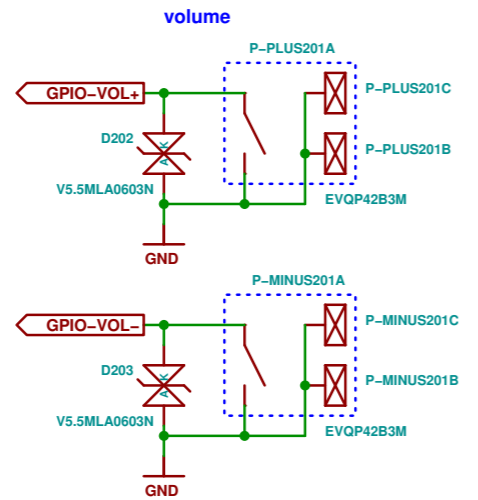
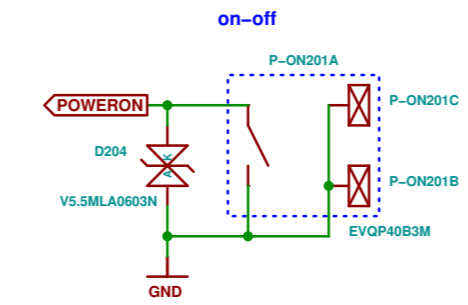
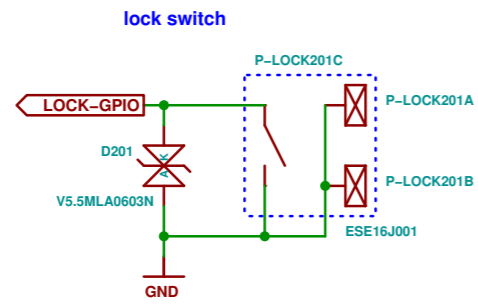
BB-XM Adapter (CAM)

File: neo900_SS_36.sch

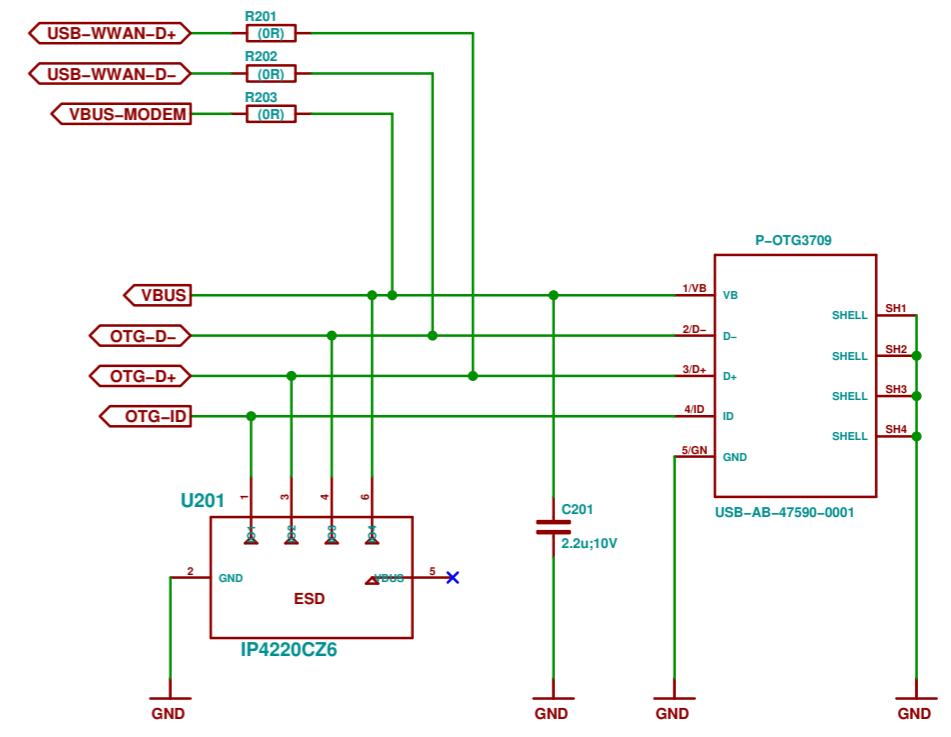
Sheet: No-Solder Components

No-Solder Components

File: neo900_SS_37.sch



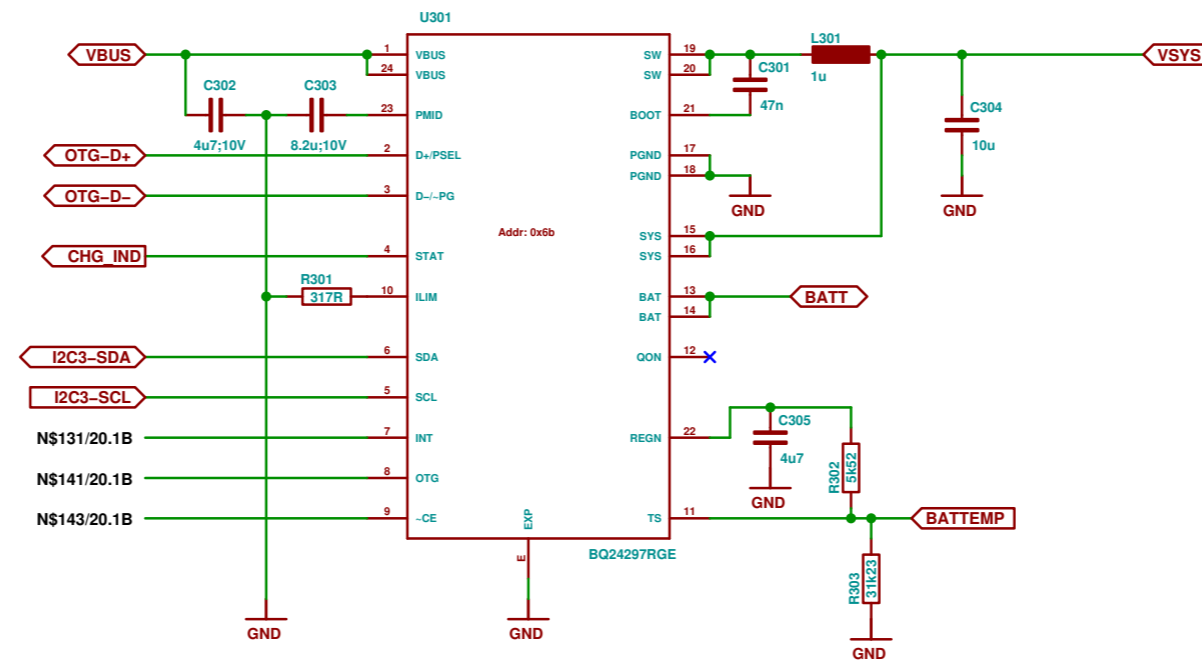
can be used to test/operate the modem through the OTG port (w/o UPPER PCB)

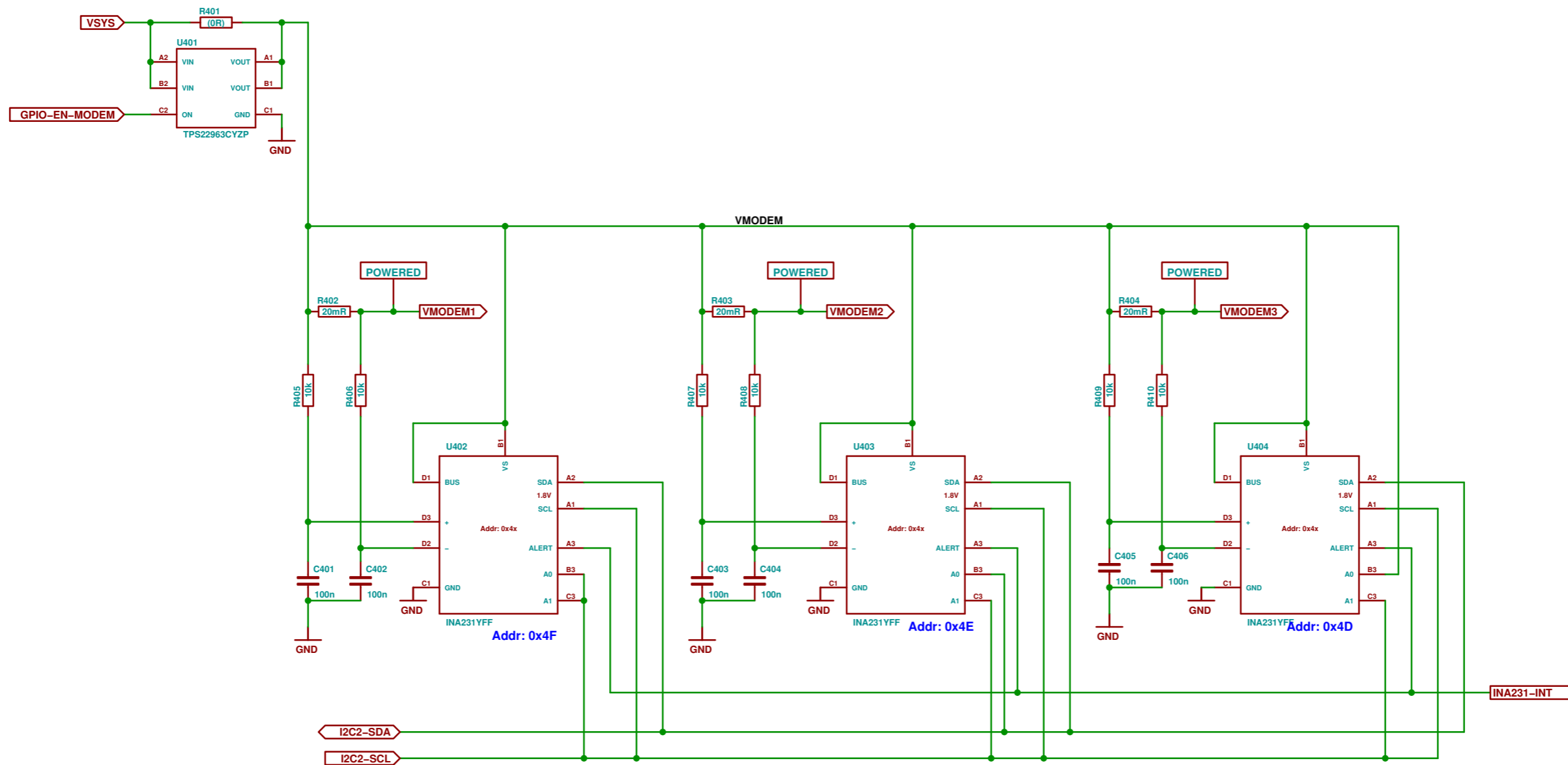


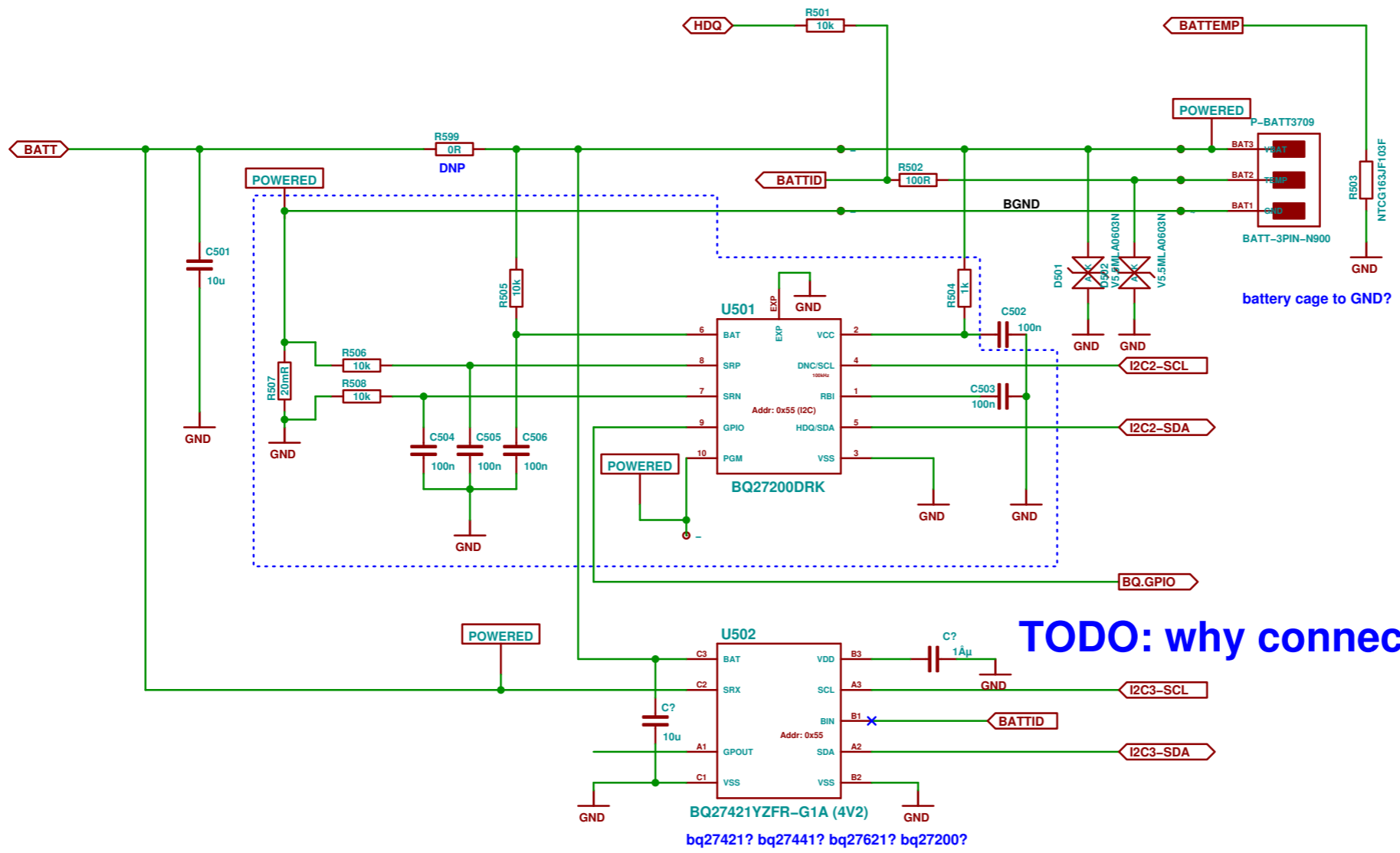
place in scan matrix? would need 3-4 wires to UPPER board instead of 2-

in any case it is sufficient to connect GPIO-VOL+ and VOL- to two pins on the B2B connector

TODO

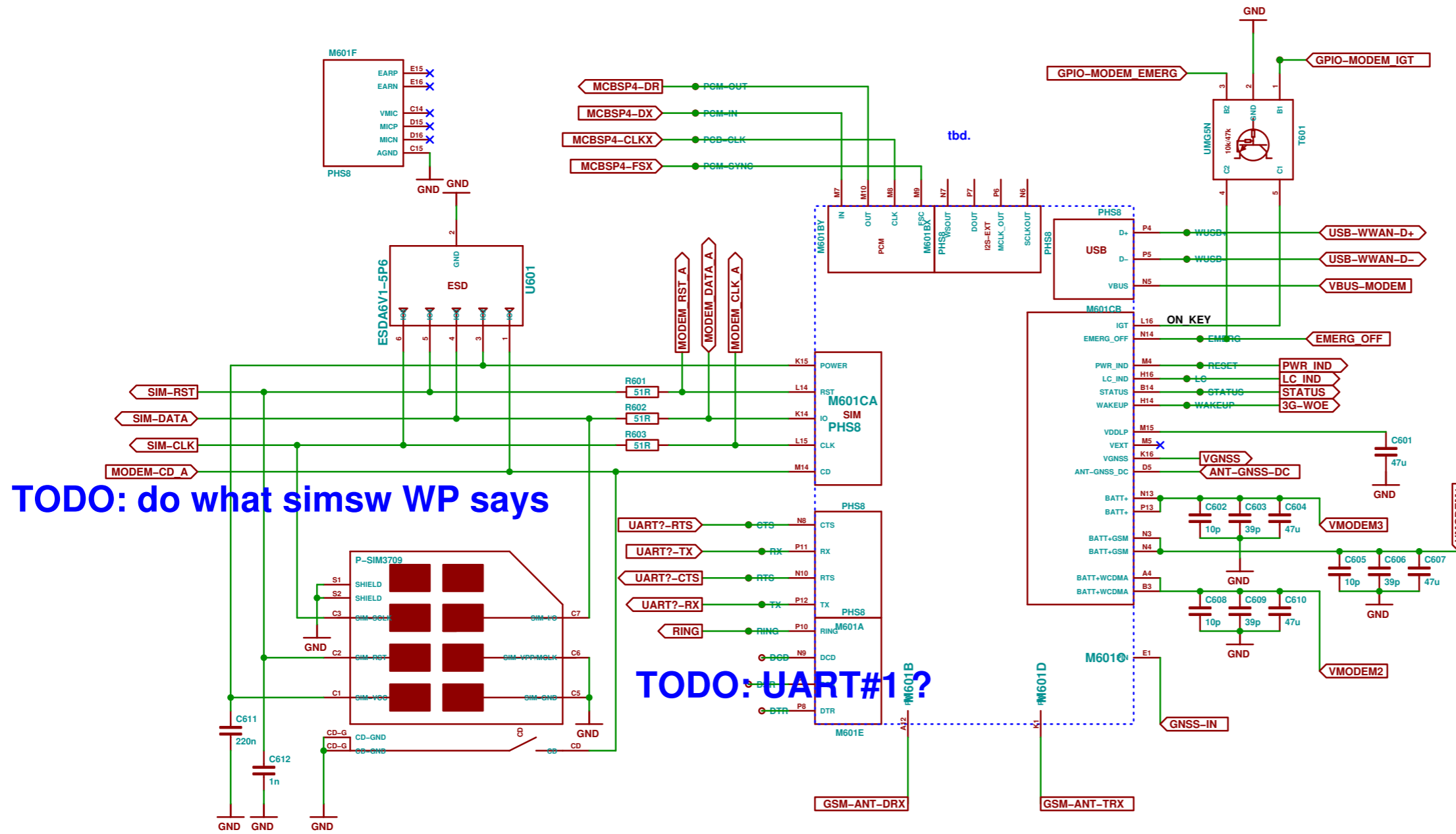






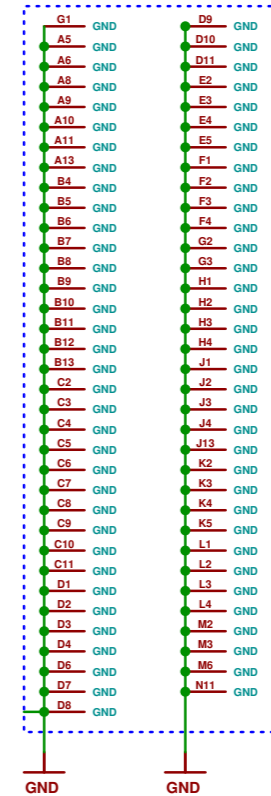
TODO: why connect to VCC ?

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



TODO: do what simsw WP says

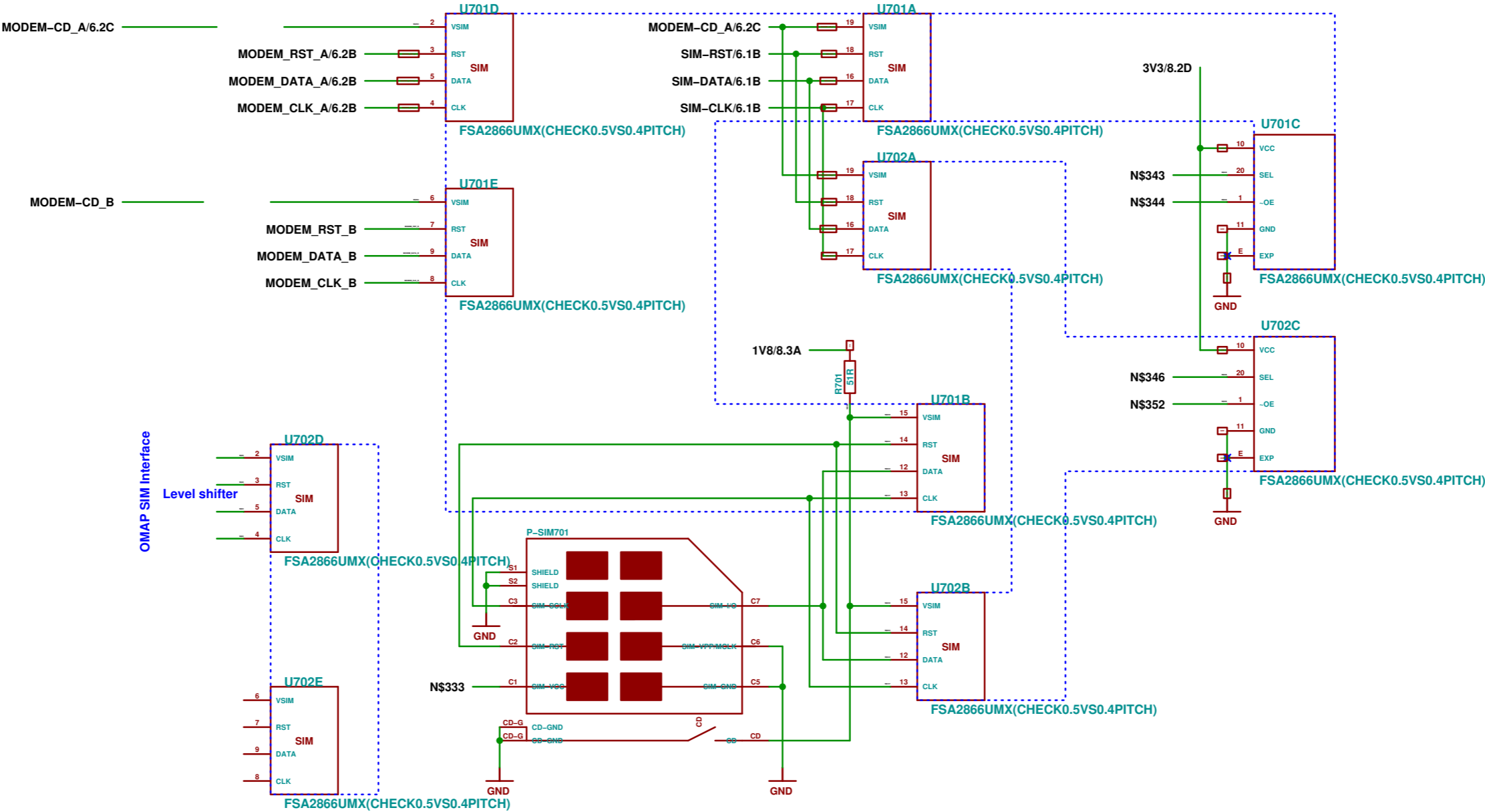
TODO: UART#1?



TODO: shield connection near D

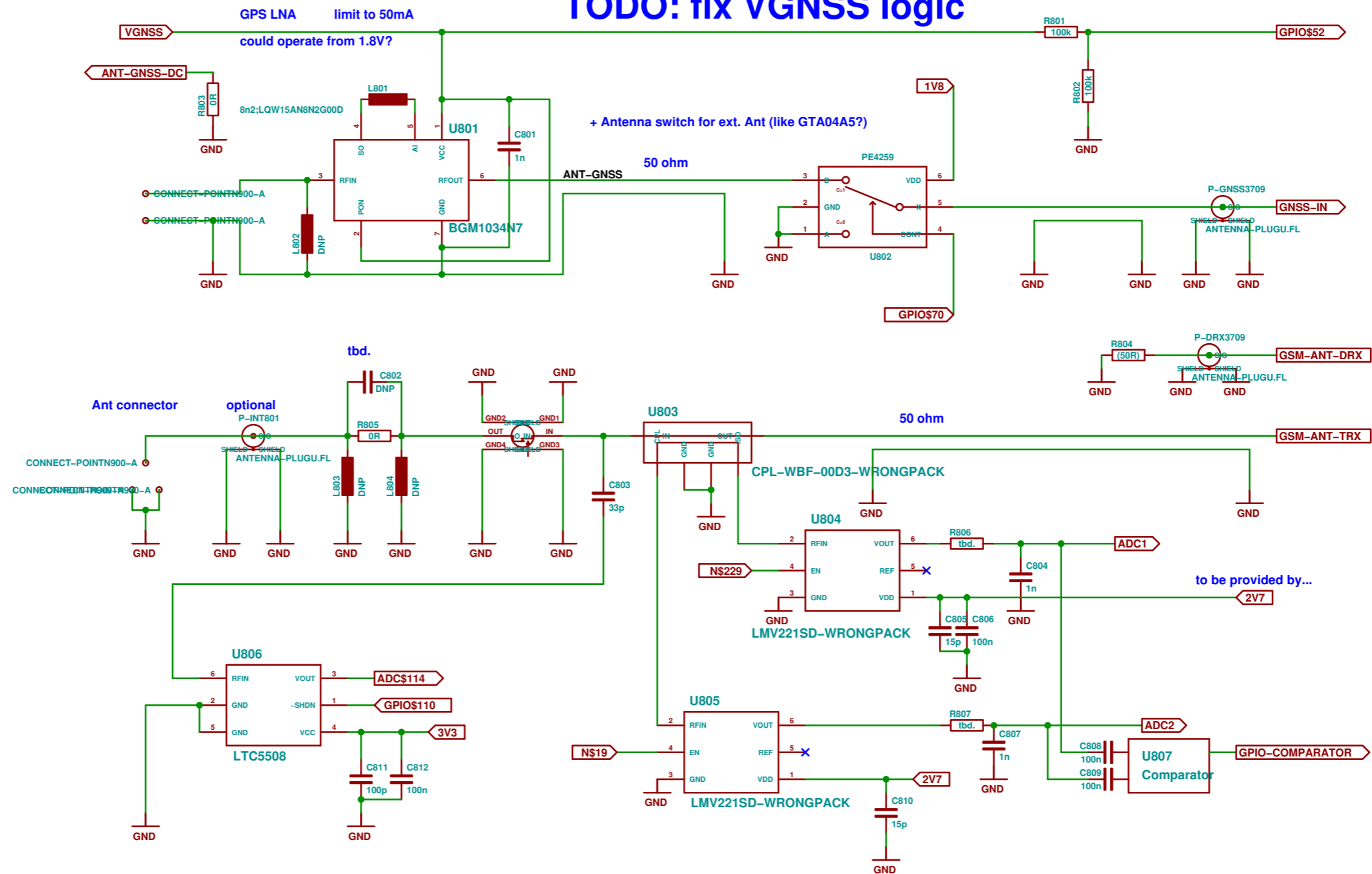
Can we connect UART in parallel to Bluetooth UART (i.e. if BT is disabled we can unbrick the Modem?)

TODO: not cleaned up – needs total rewrite

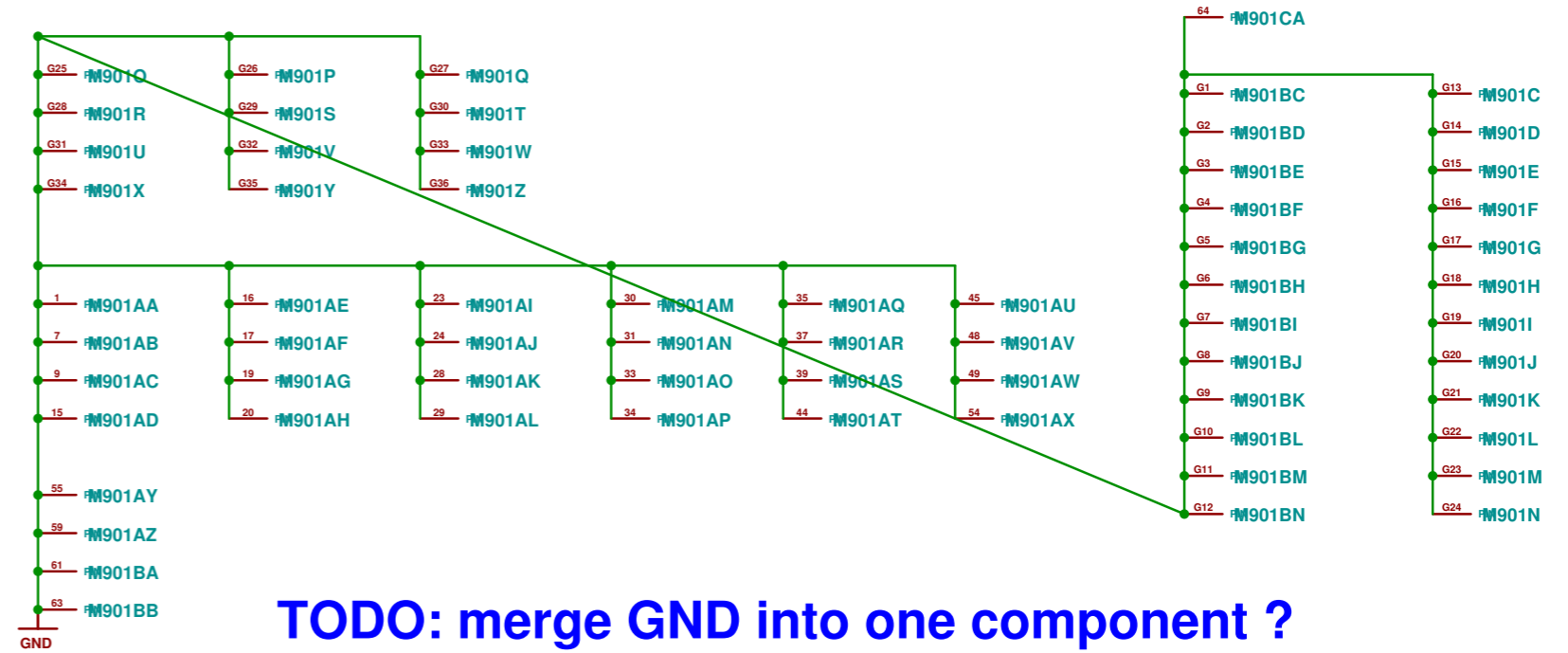
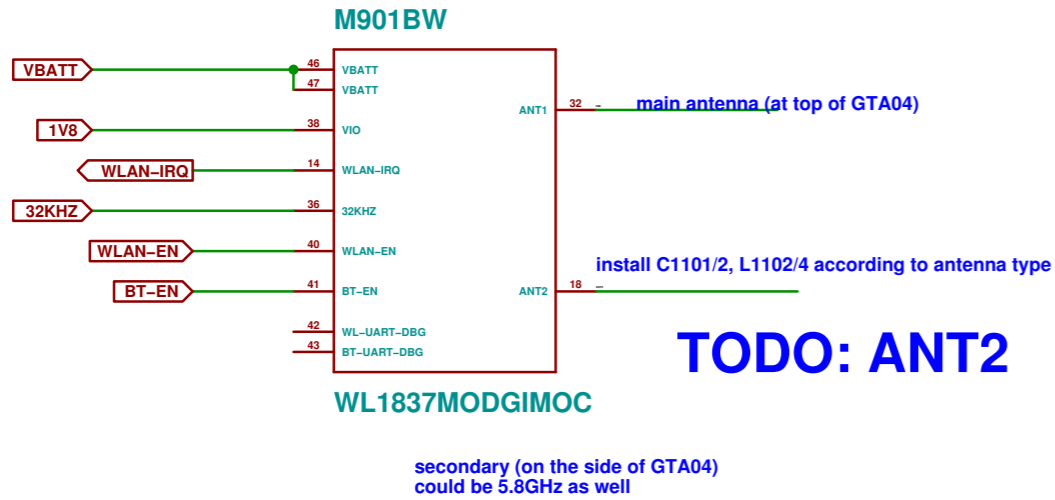


NOTE: mux control missing
 NOTE: CD logic missing
 NOTE: SIM power supply missing

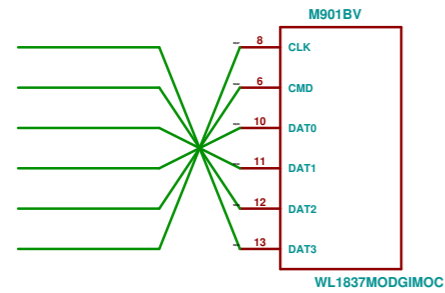
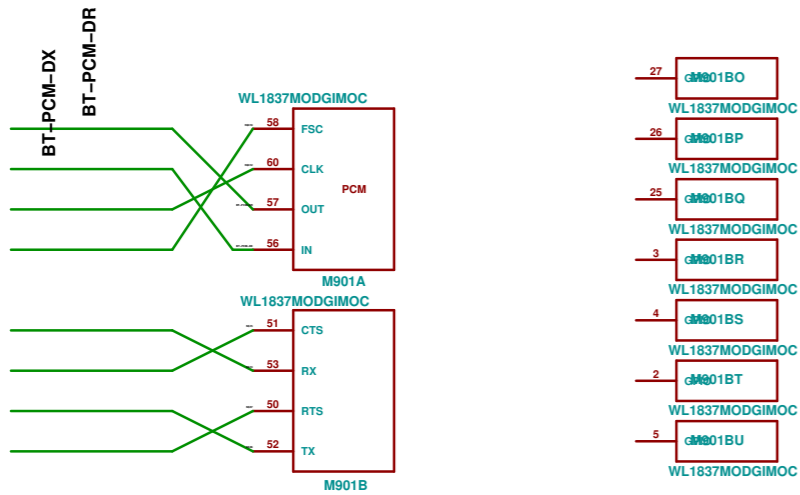
TODO: fix VGNSS logic



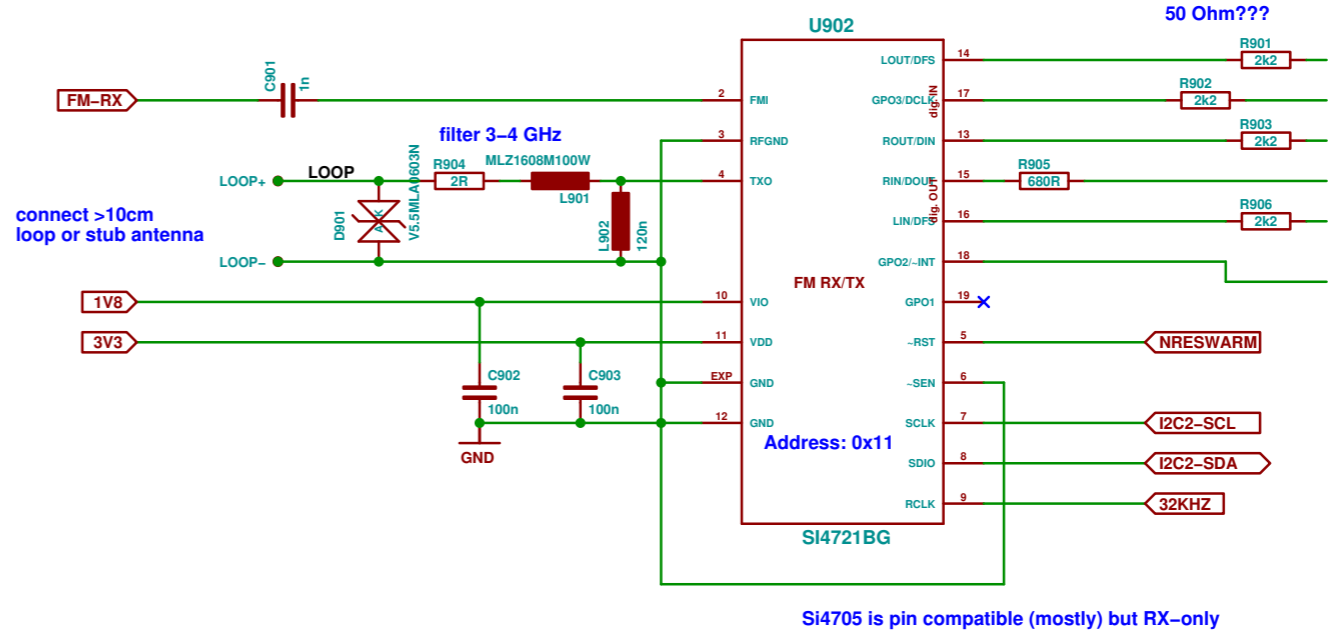
TODO: name all the *\$*



TODO: unfinished



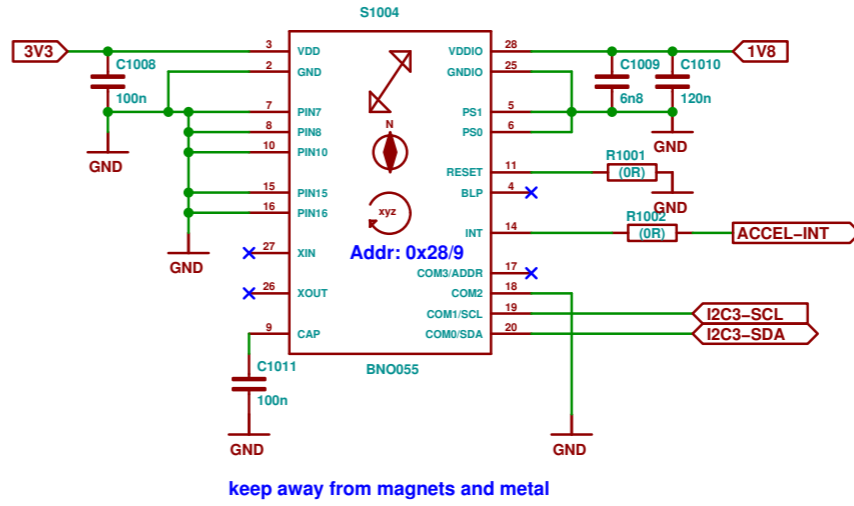
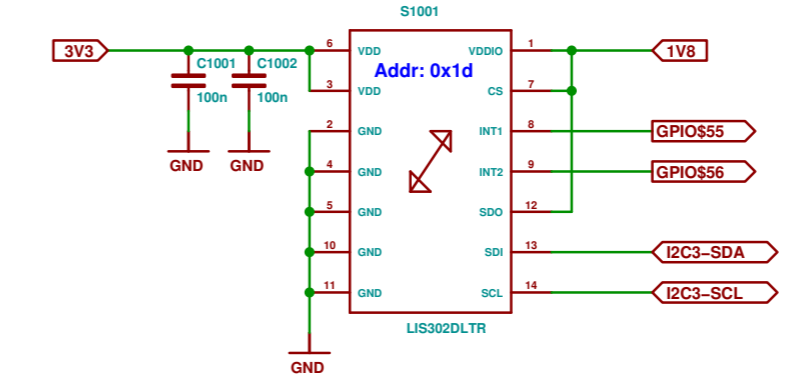
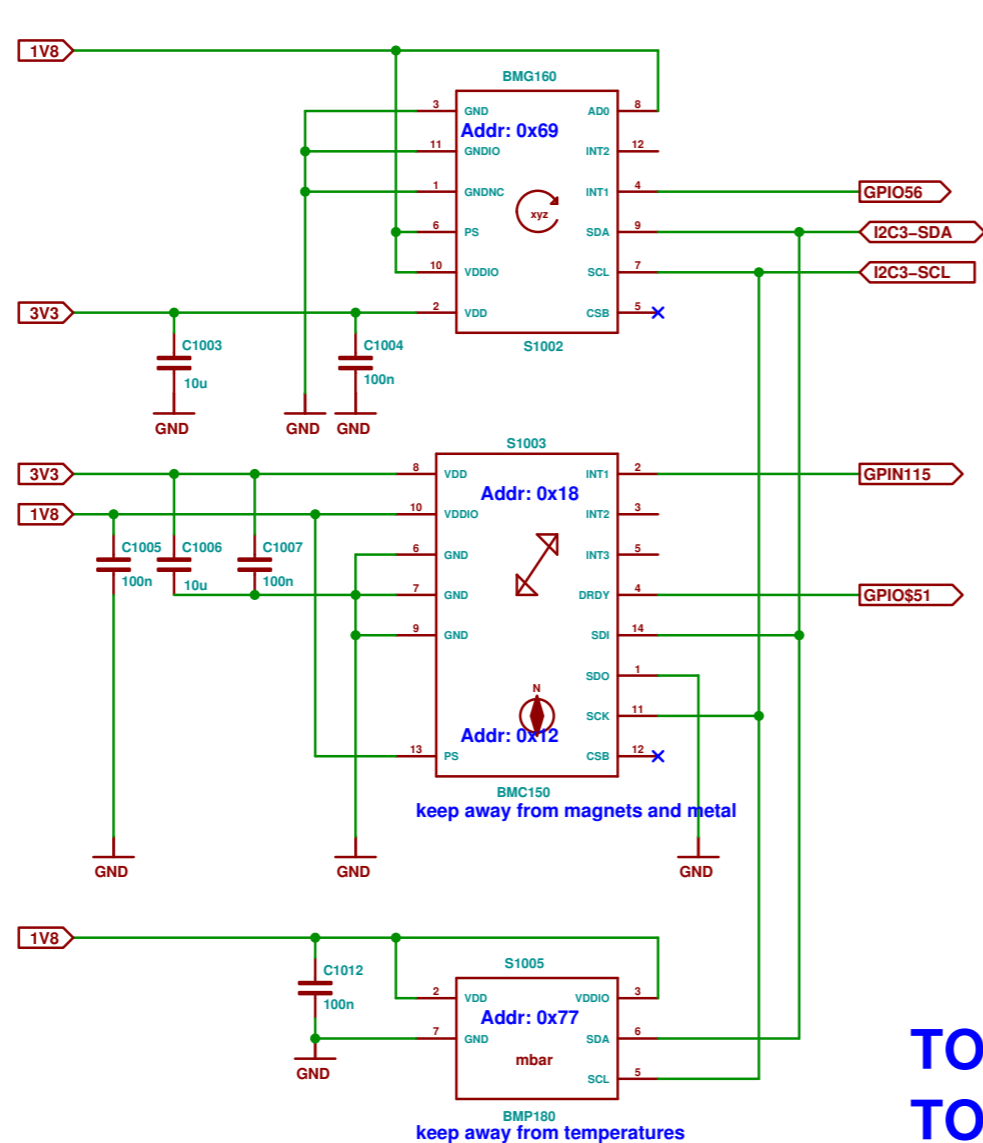
- _____ WLAN-IRQ
- _____ WLAN-EN
- _____ BT-EN
- _____ GPIO175
- _____ KEYIRQ



TODO: unfinished

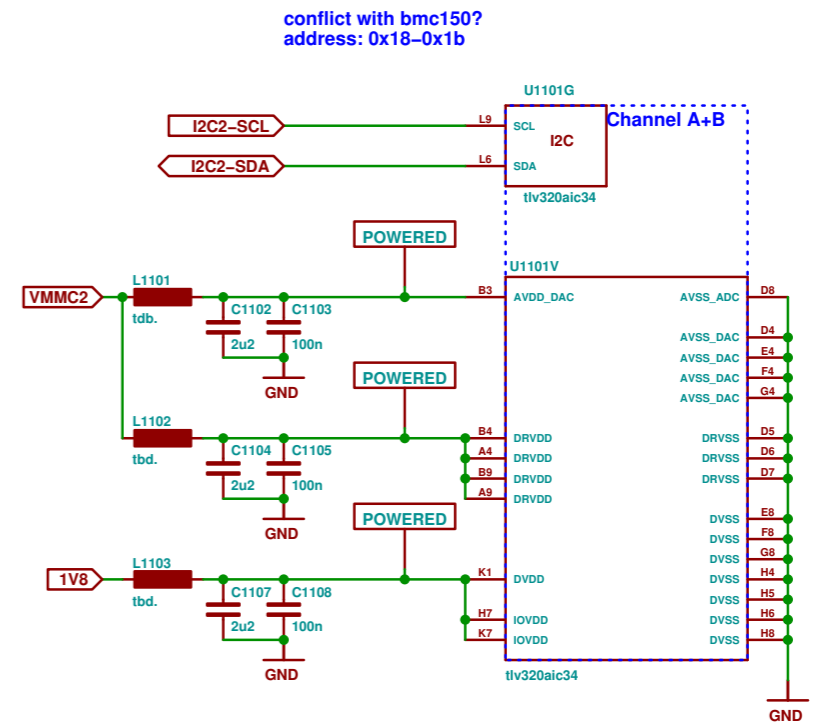
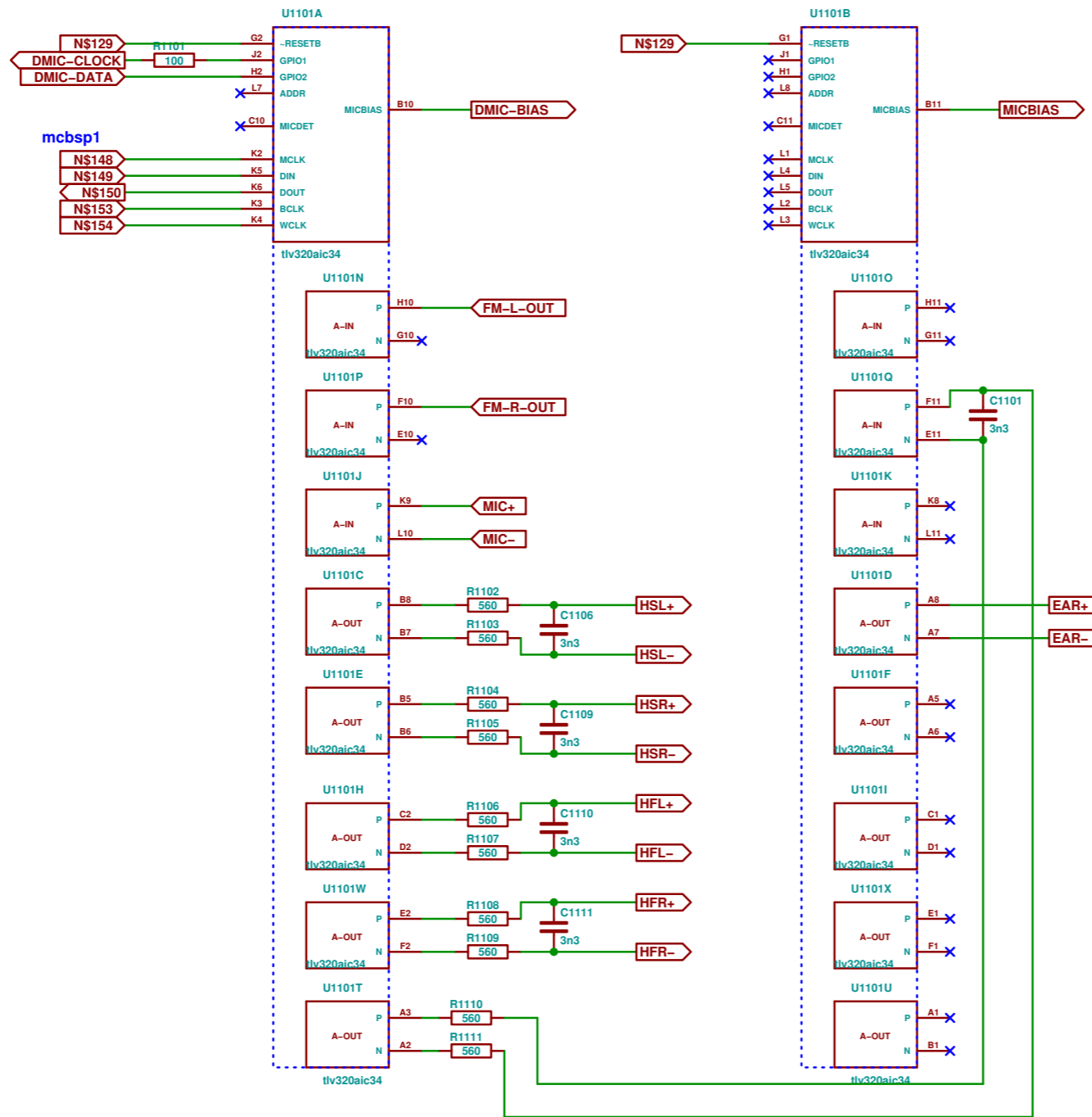
- FSX
- CLKX
- DX
- DR
- FSR
- CLKR

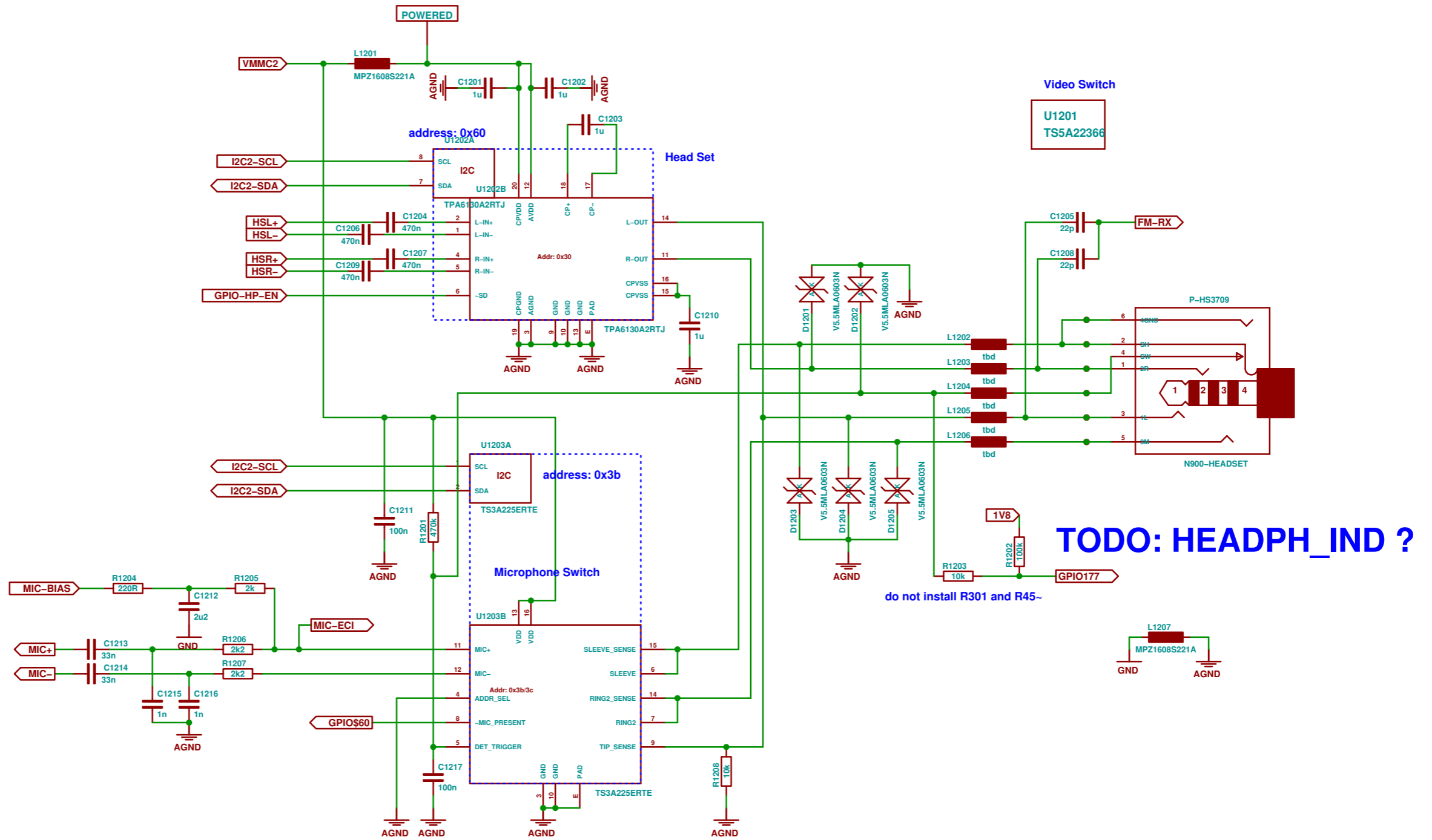




TODO: no BMG160, BMC150
TODO: BMP180 -> BME280
TODO: BNO055 -> BMX055
TODO: INT1/2 sharing

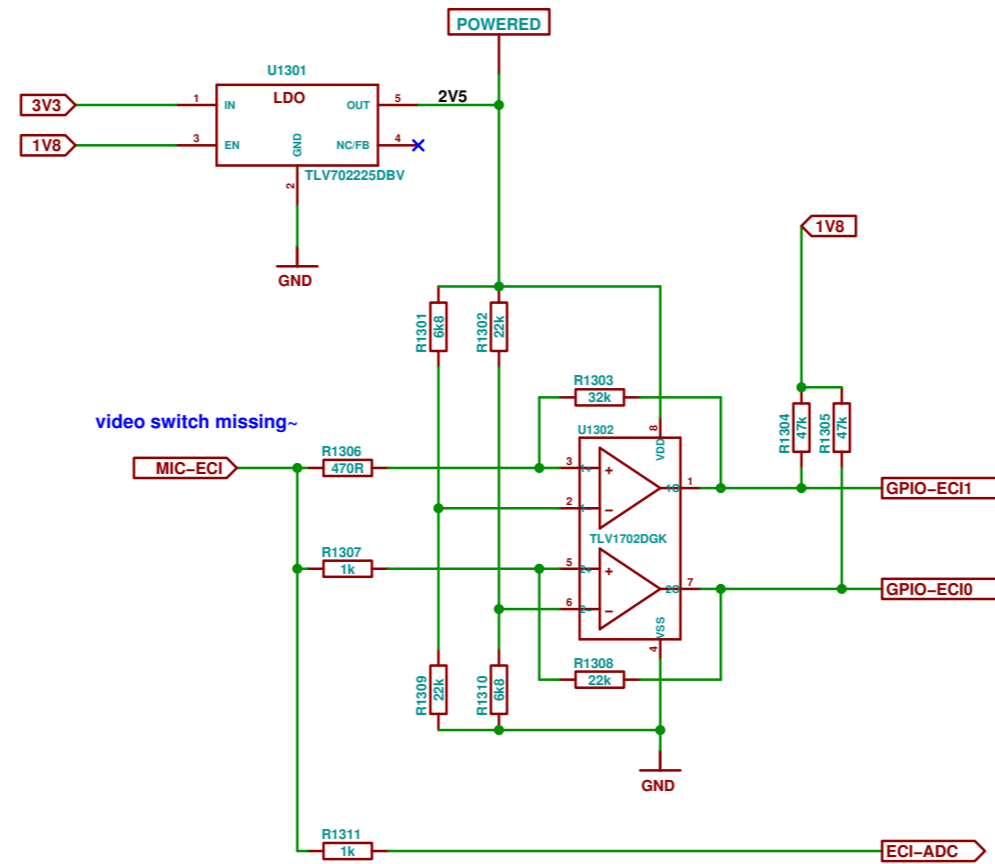
problem: this is a 0.5mm BGA making lower board expensive~
 but it appears to be not extremely critical (only 3 rows and inner ring is GND)
 problem: analog mic is on upper board~
 alternative: place on upper board (to be evaluated)





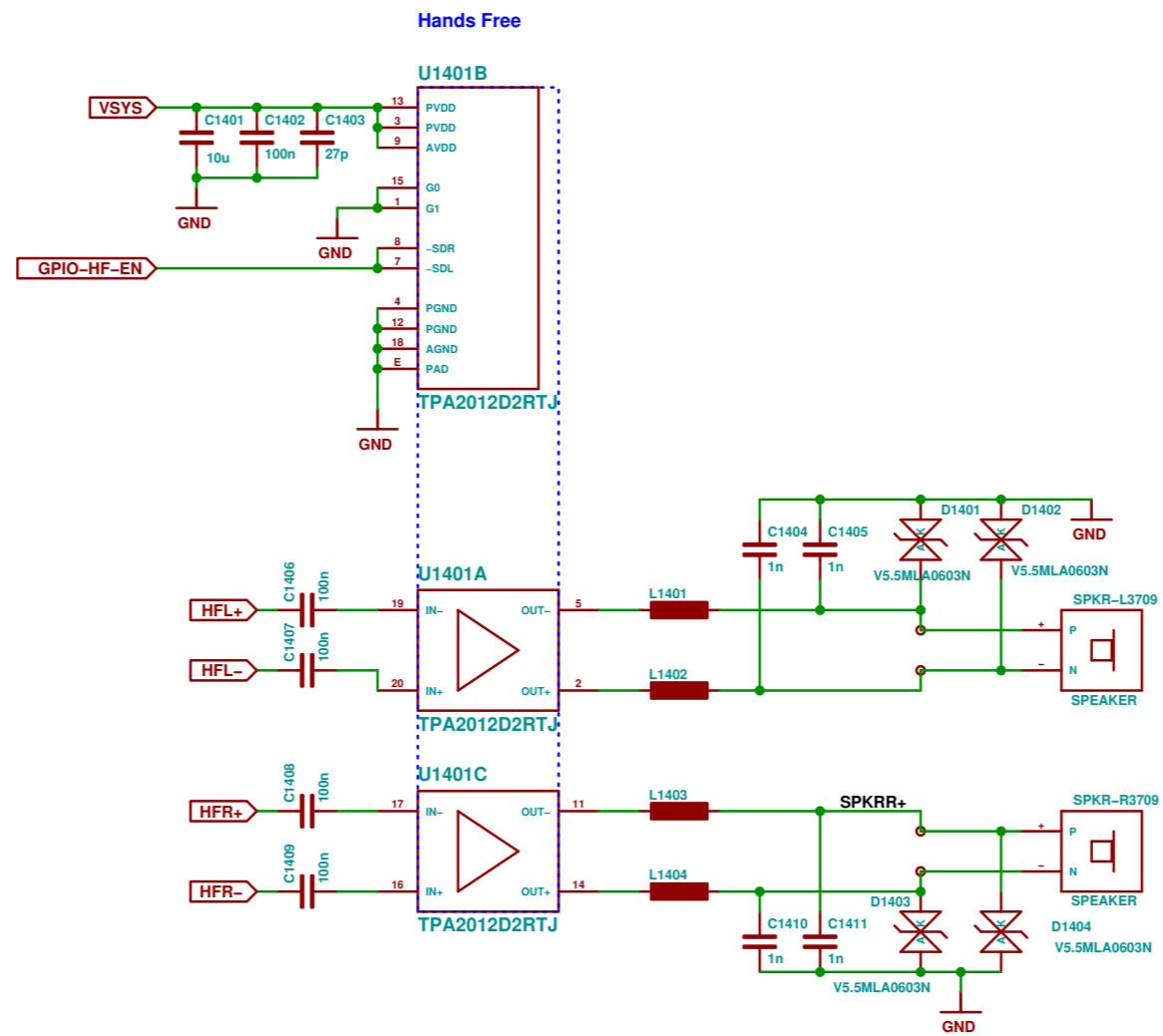
12

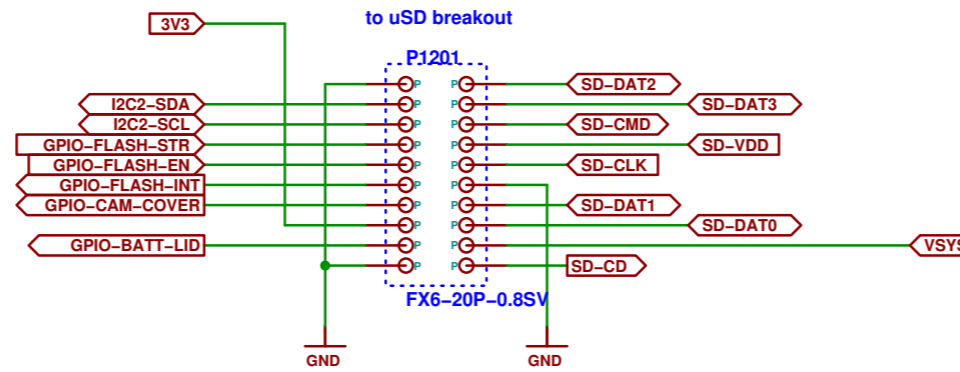
Audio Headset + Mic



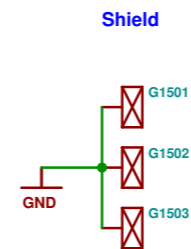
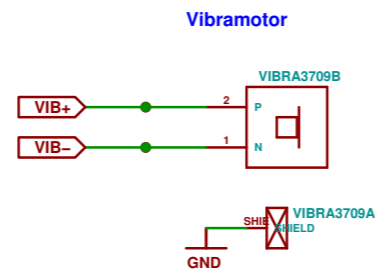
video switch missing~

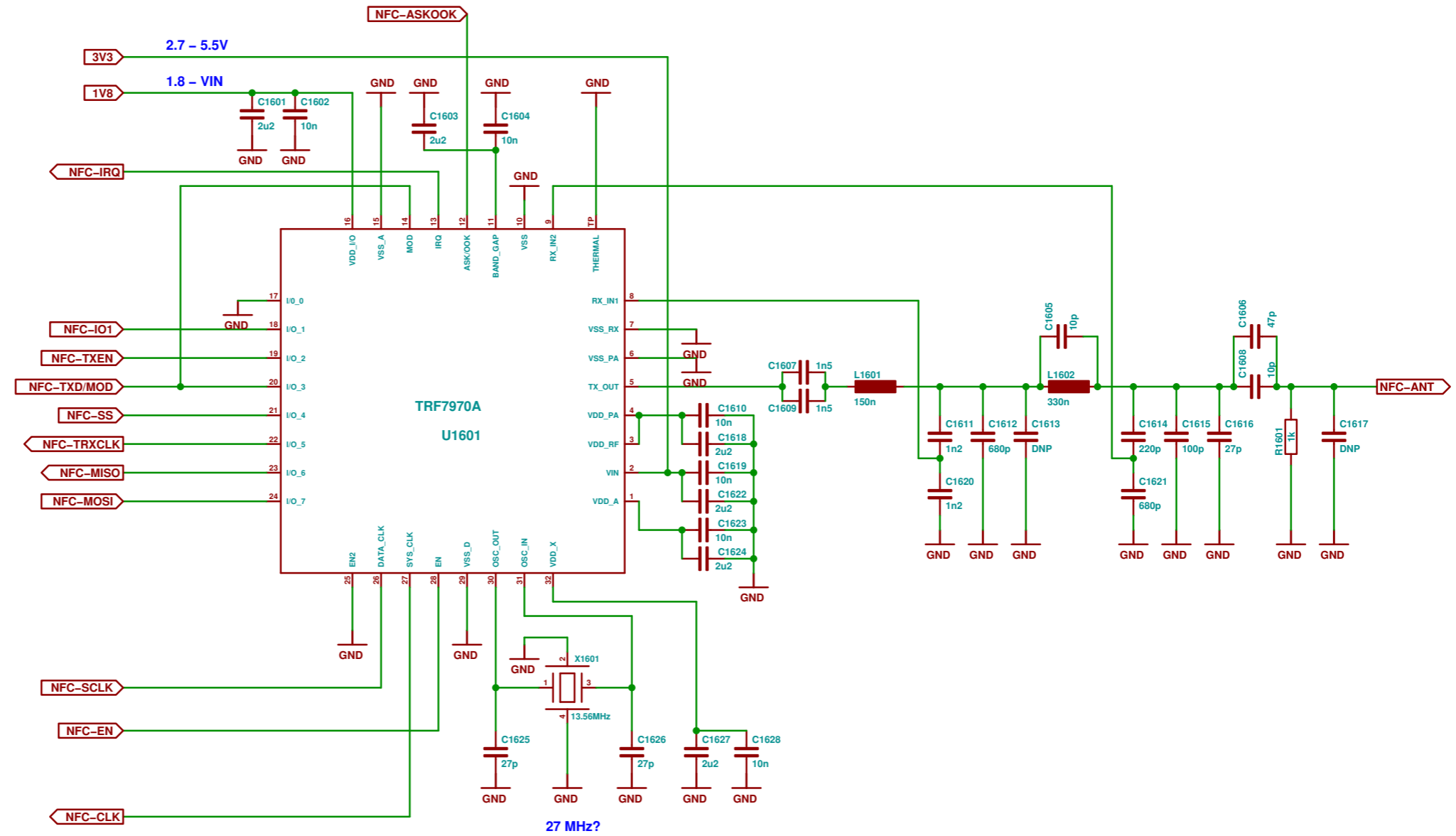
TODO: draw comparator right



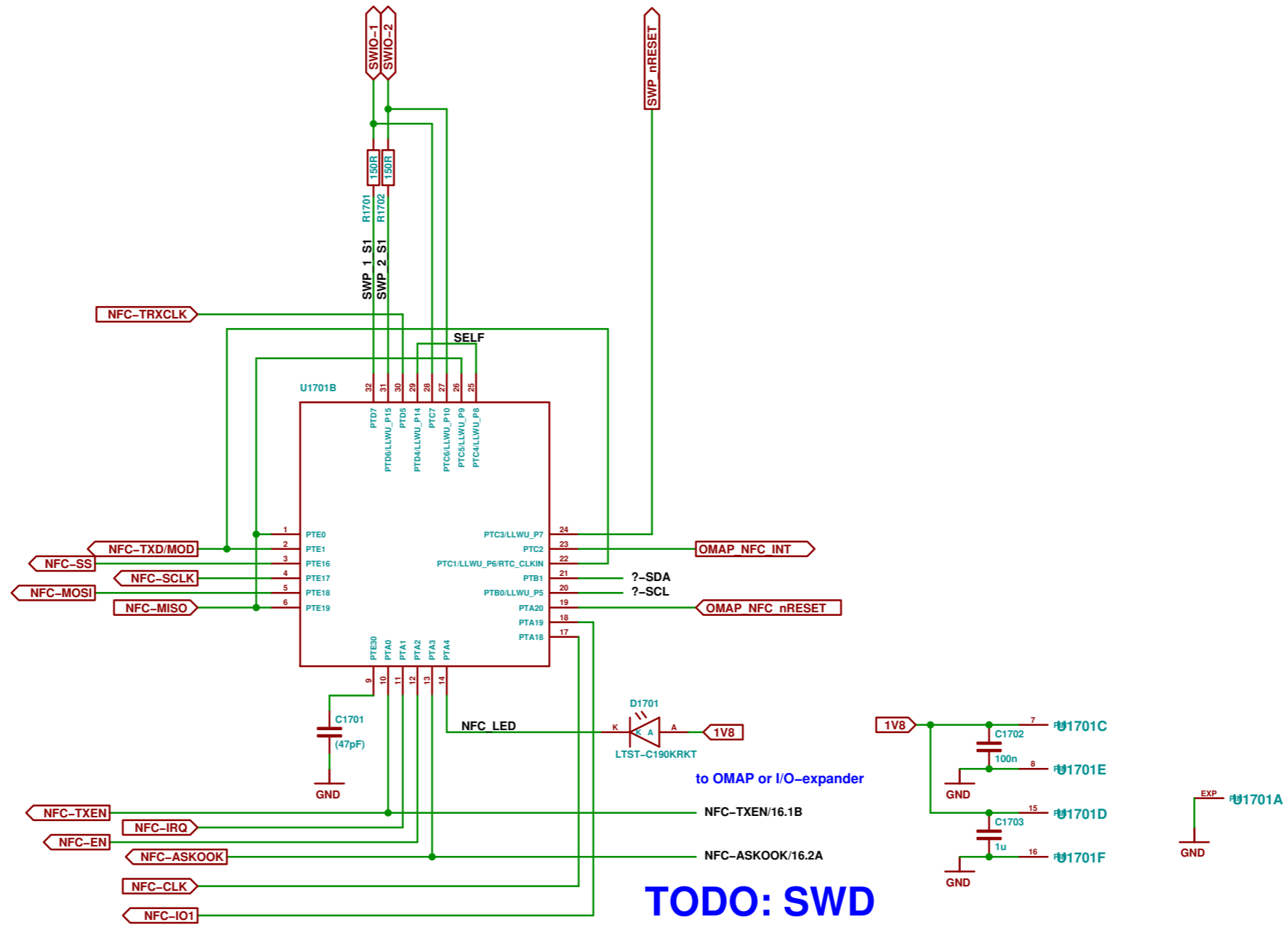


TODO: bogus connector (see HB WP)



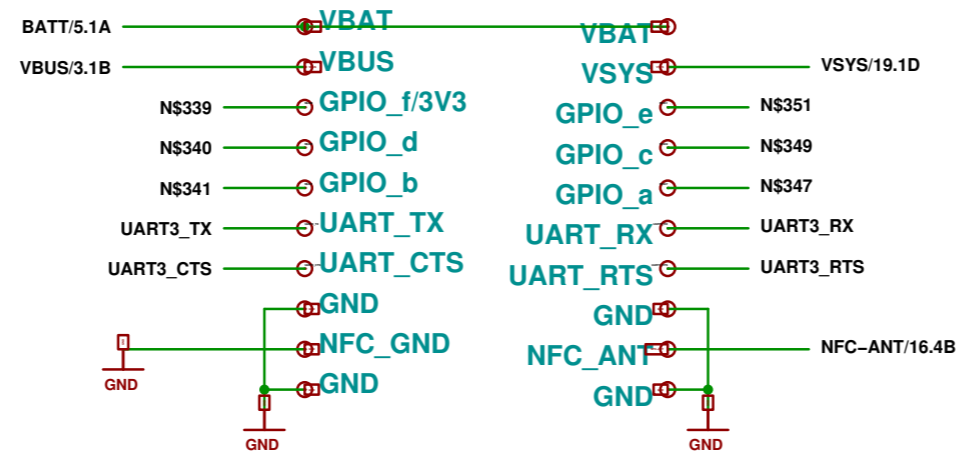
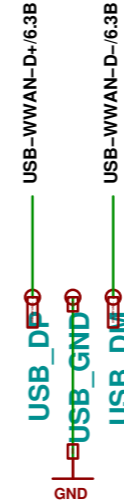


27 MHz?



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

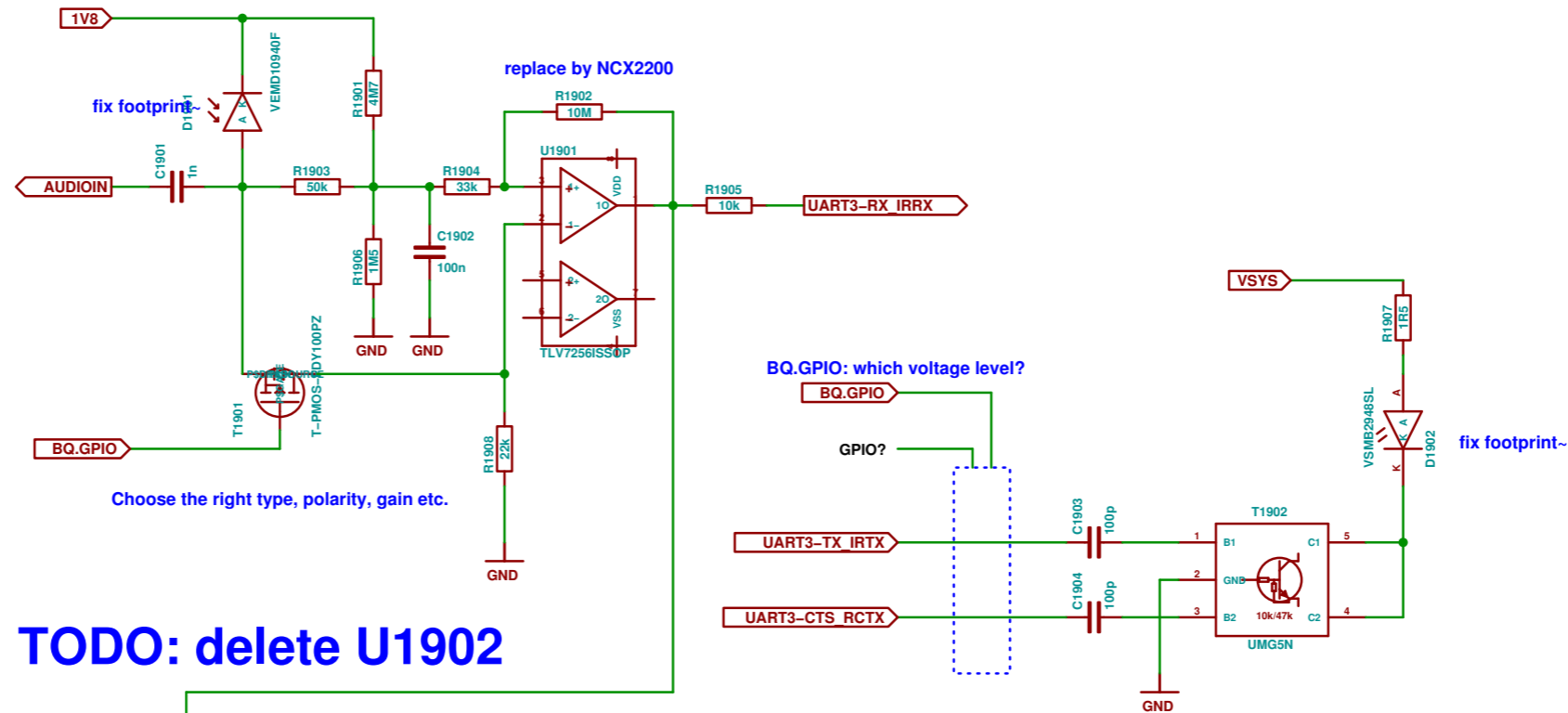


Missing 10 level shifter chip (or do we really have the space for 10x discrete T+R+D ca. 3x3mm each?)

Missing 6x 2R for alternate function select (do we have the space for ca. 2.5 x 5mm?)

TODO: align with HB WP

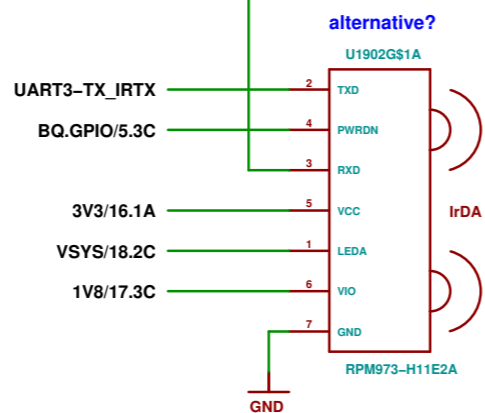
NOTE: 1V8 may be quite noisy~



Choose the right type, polarity, gain etc.

TODO: delete U1902

TODO: update to design in IR WP

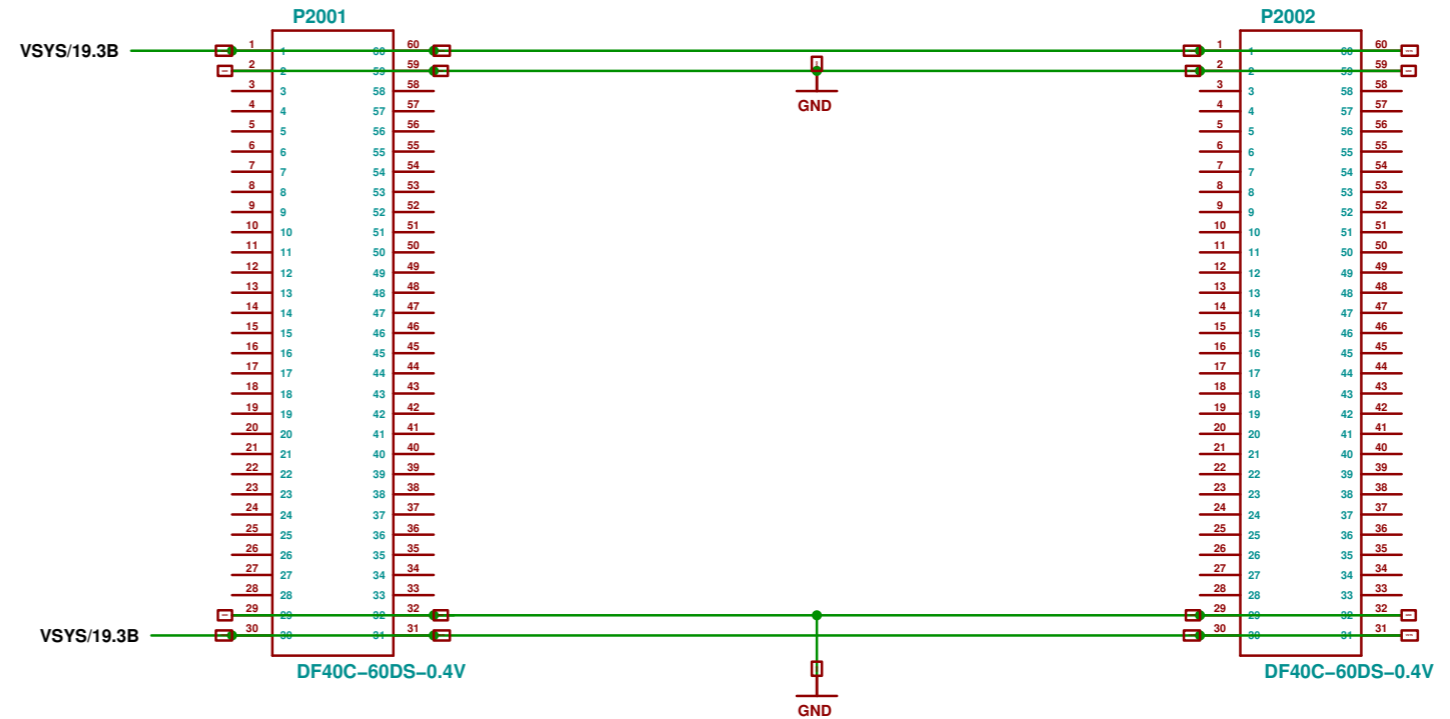


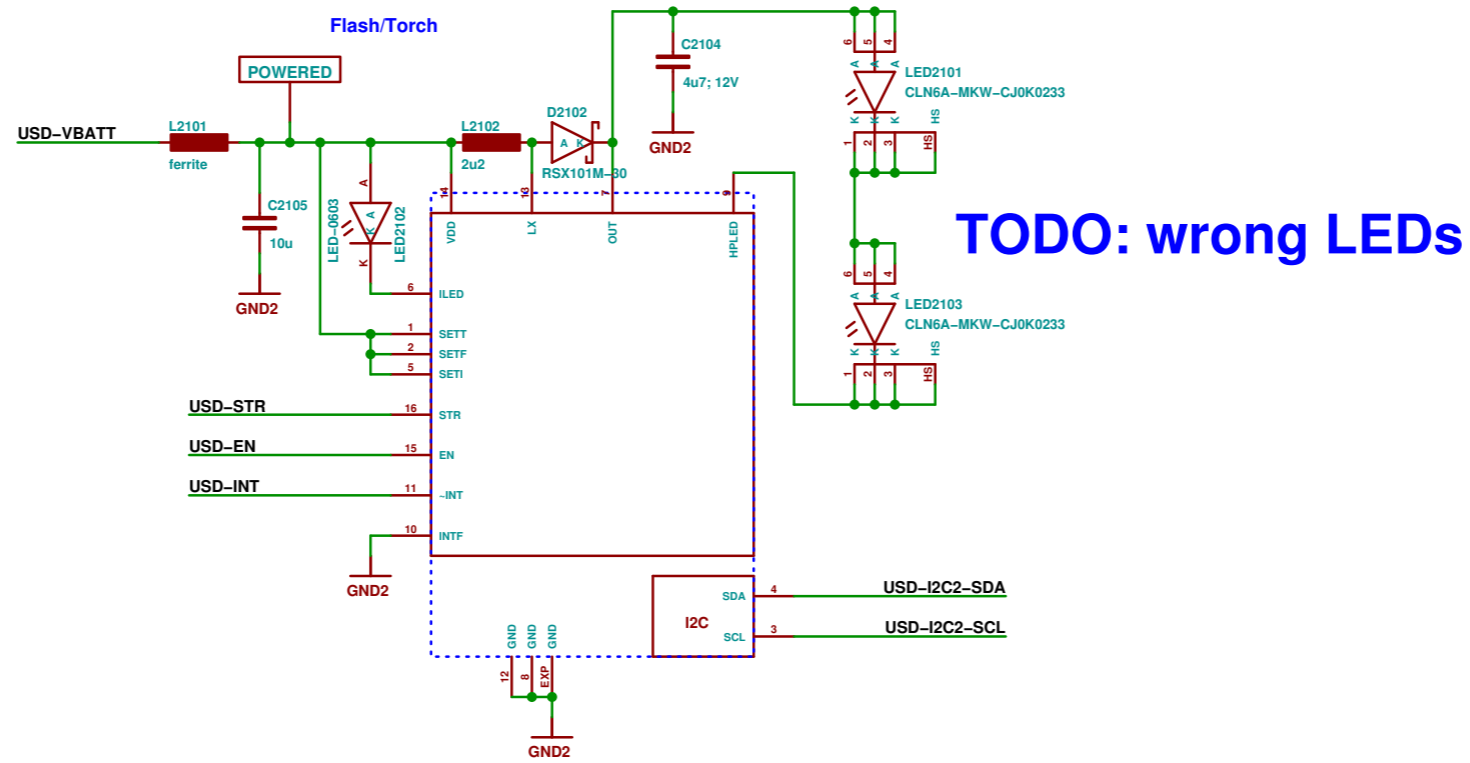
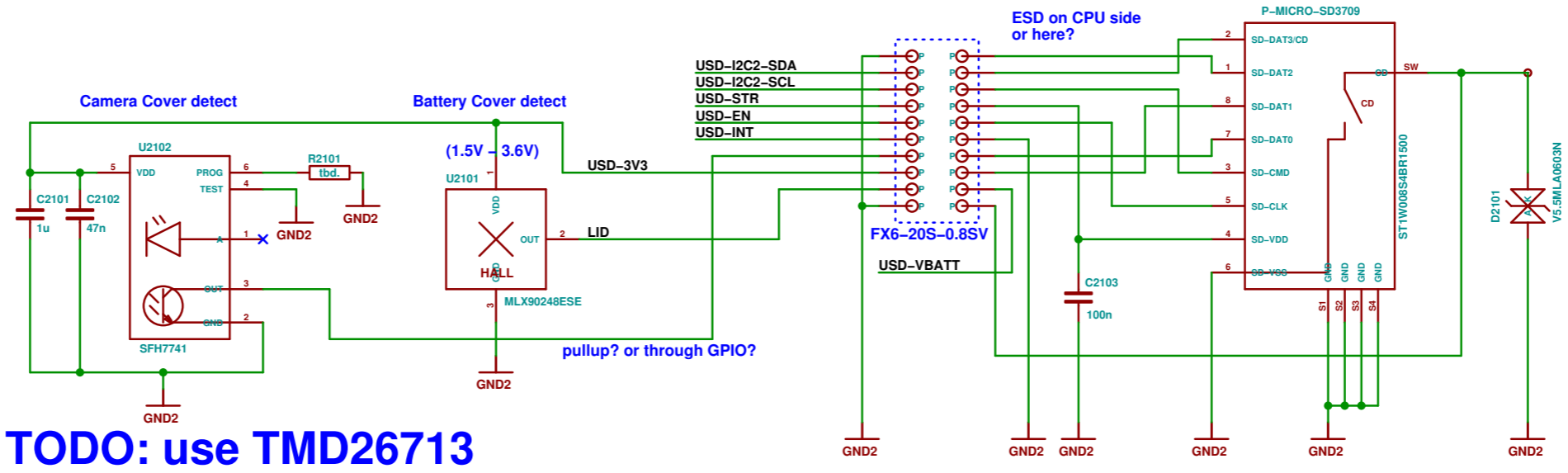
TODO: update when details settle

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
- GPIN115/10.3B
- GPIO56/10.3A
- GPIO51/10.3B
- 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-ECI1/13.3B
- GPIO-ECI0/13.3C
- ECI-ADC/13.3C
- VMMC2/12.1A
- GPIO-HP-EN/12.1B
- GPIO\$60/12.2D
- 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-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



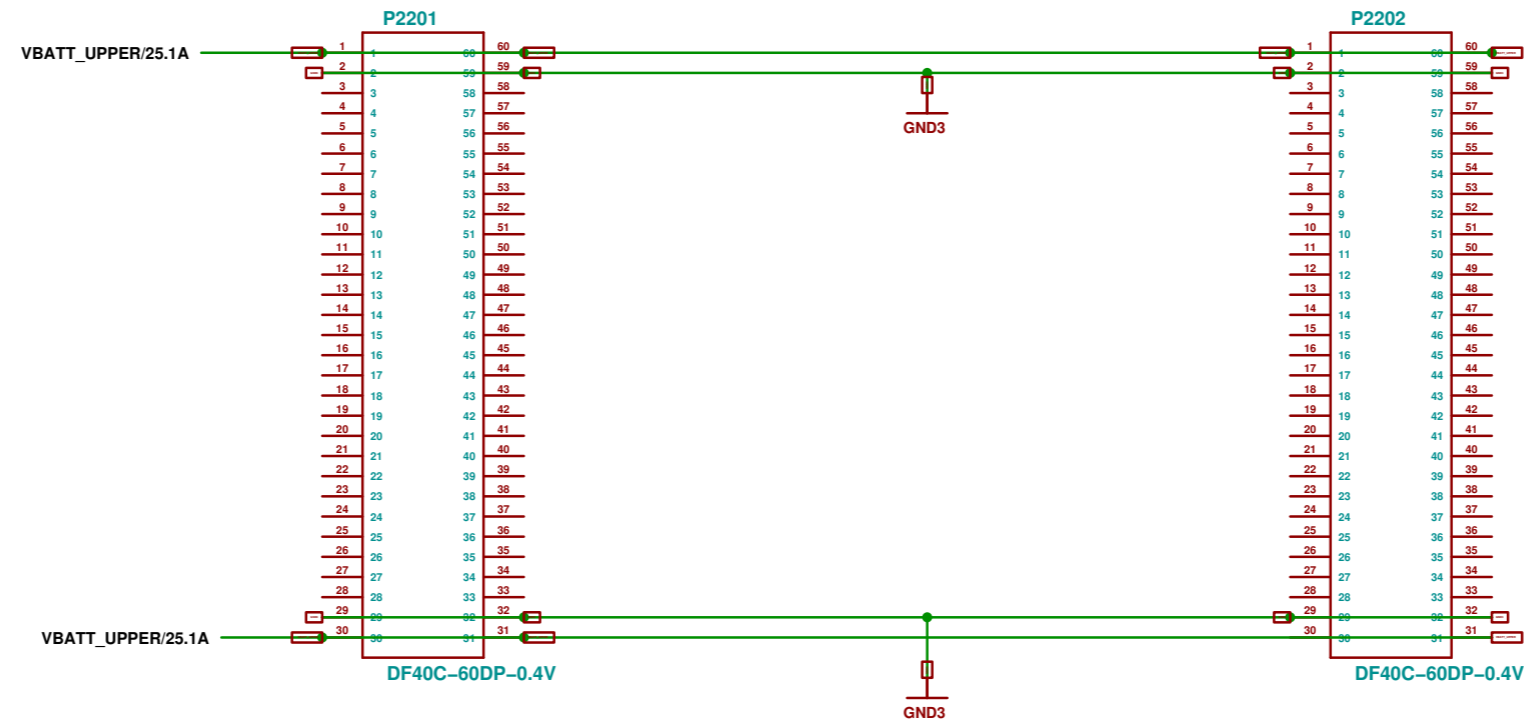


TODO: flash controller is now on LOWER, not BOB

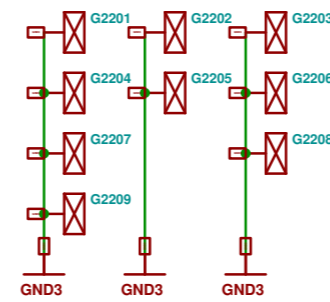
TODO: track B2B to UPPER



to be adjusted to lower board connector



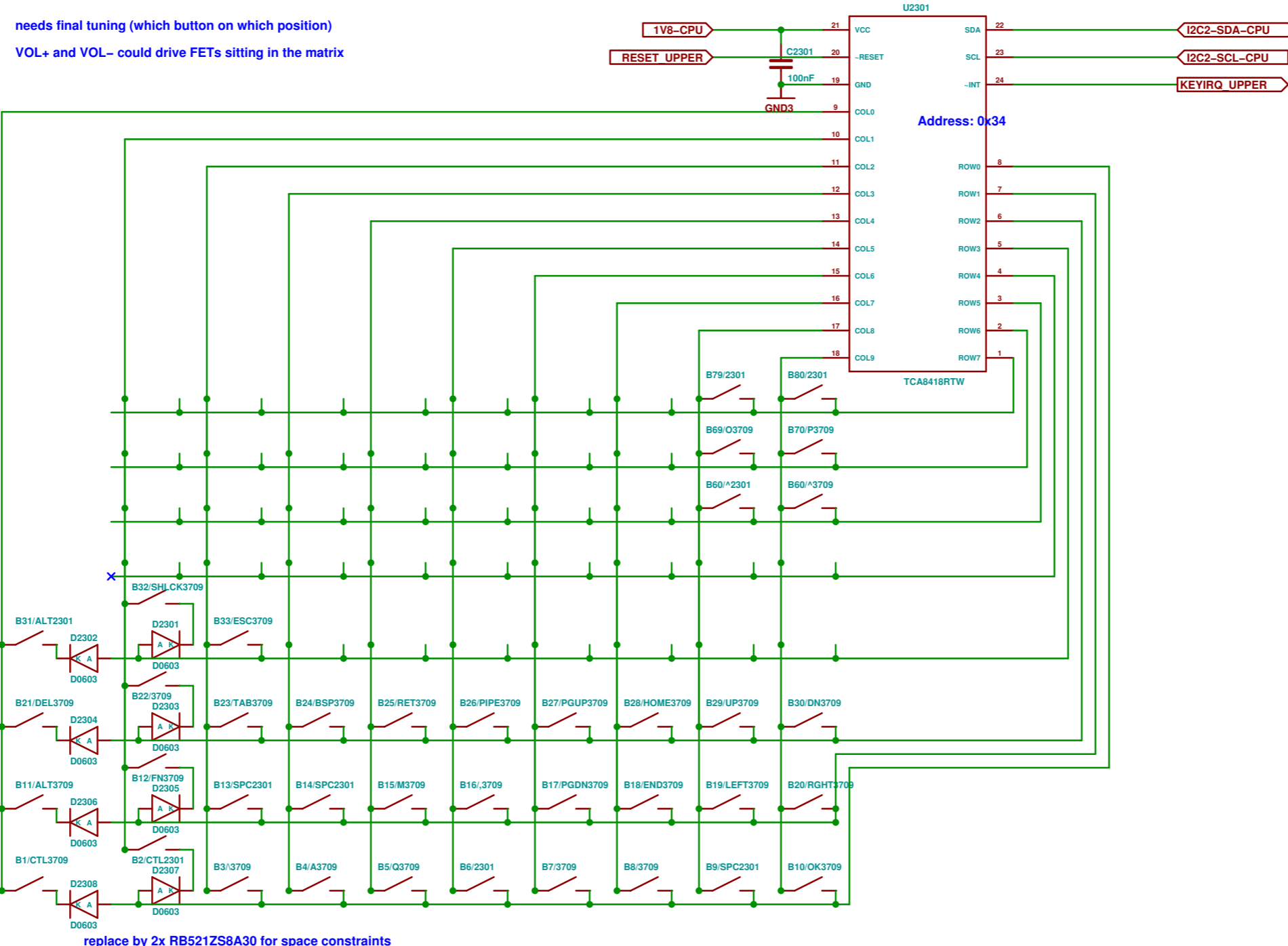
SHIELD



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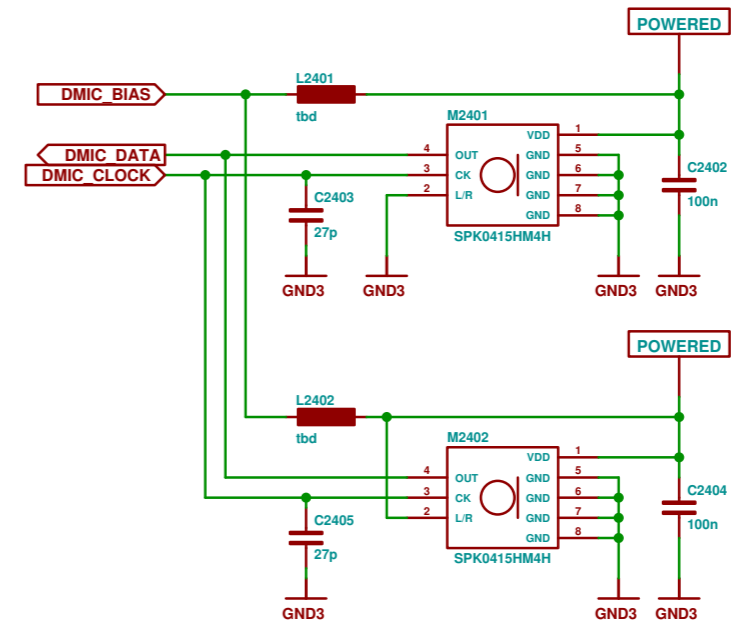
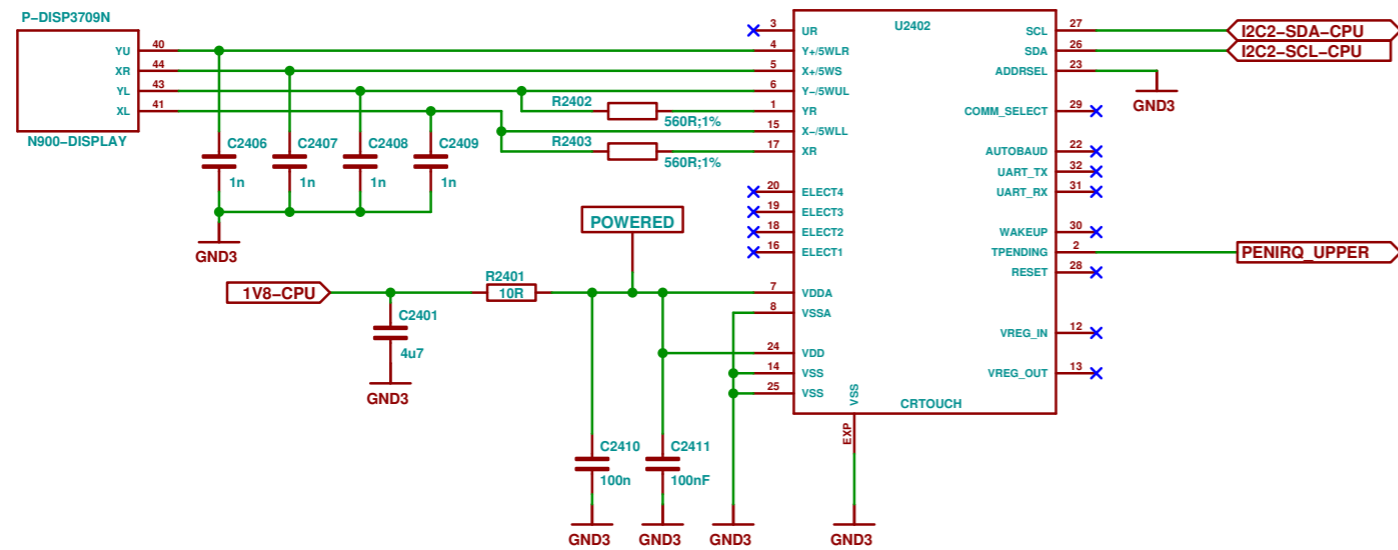
B2B to LOWER

TODO: *_UPPER names ?

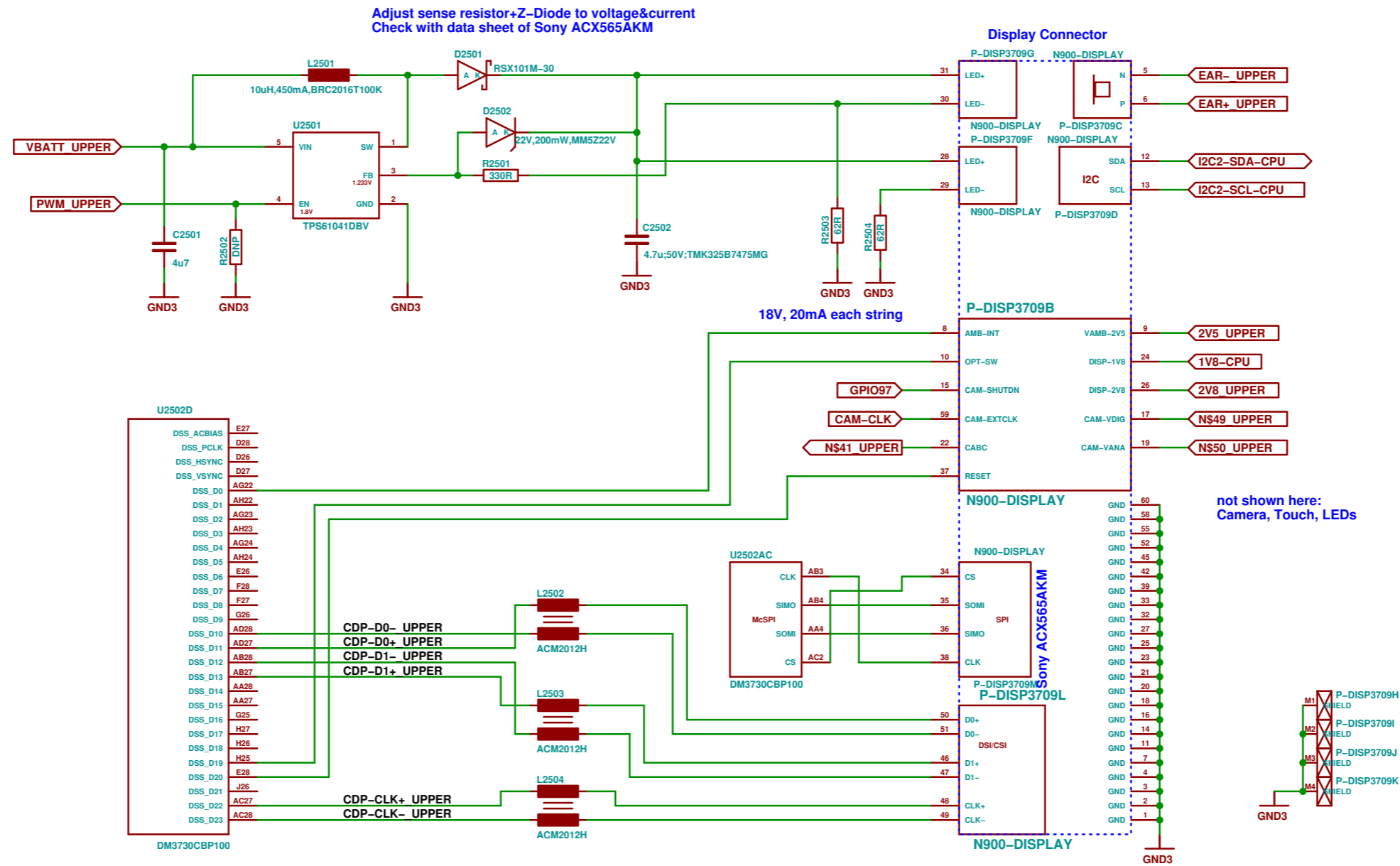


- TODO: remove 3709 in comp ref
- TODO: remove keycap from comp ref
- TODO: sort out 6 "ext" buttons
- TODO: rearrange matrix to avoid diodes ?

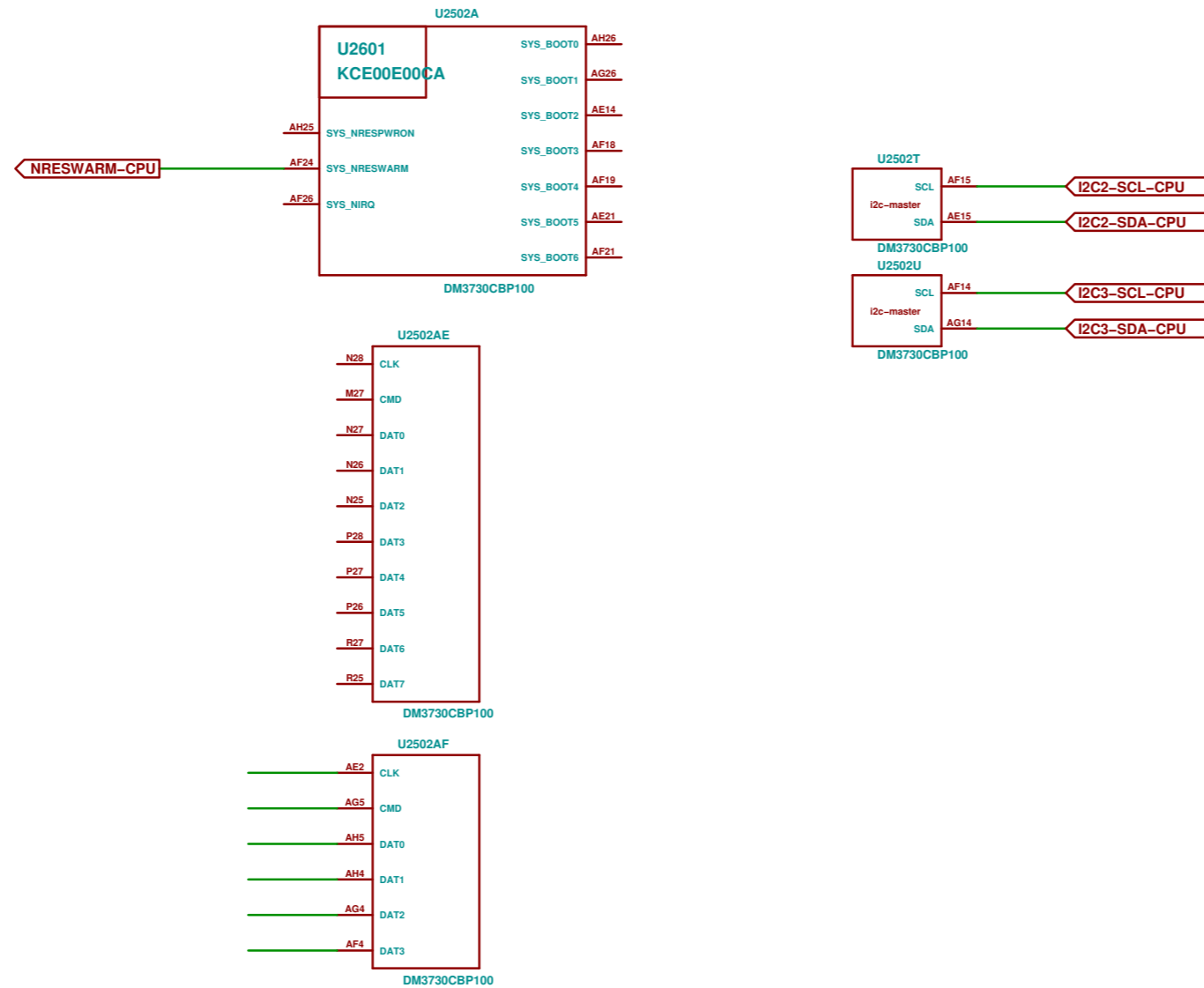
Resistive Touch (display connector)



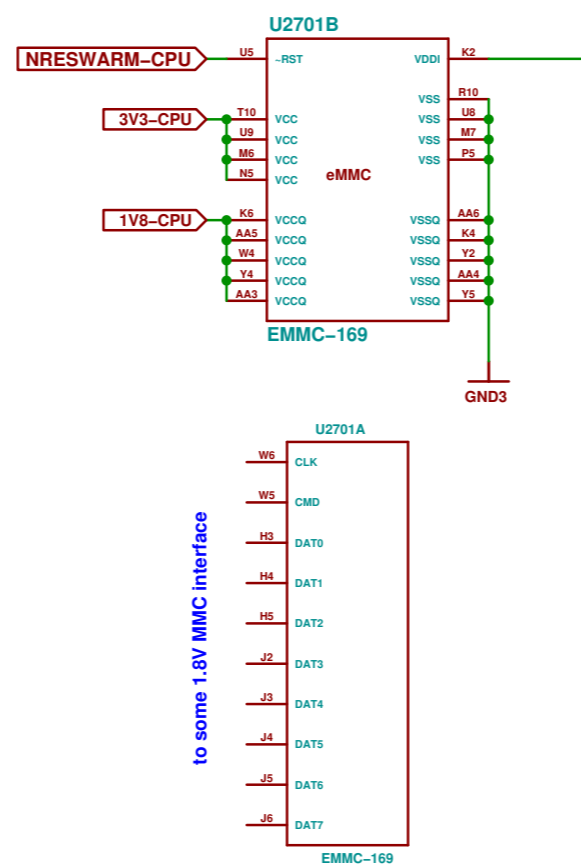
TODO: connector pin assigment needs intensive review



INCOMPLETE in V2

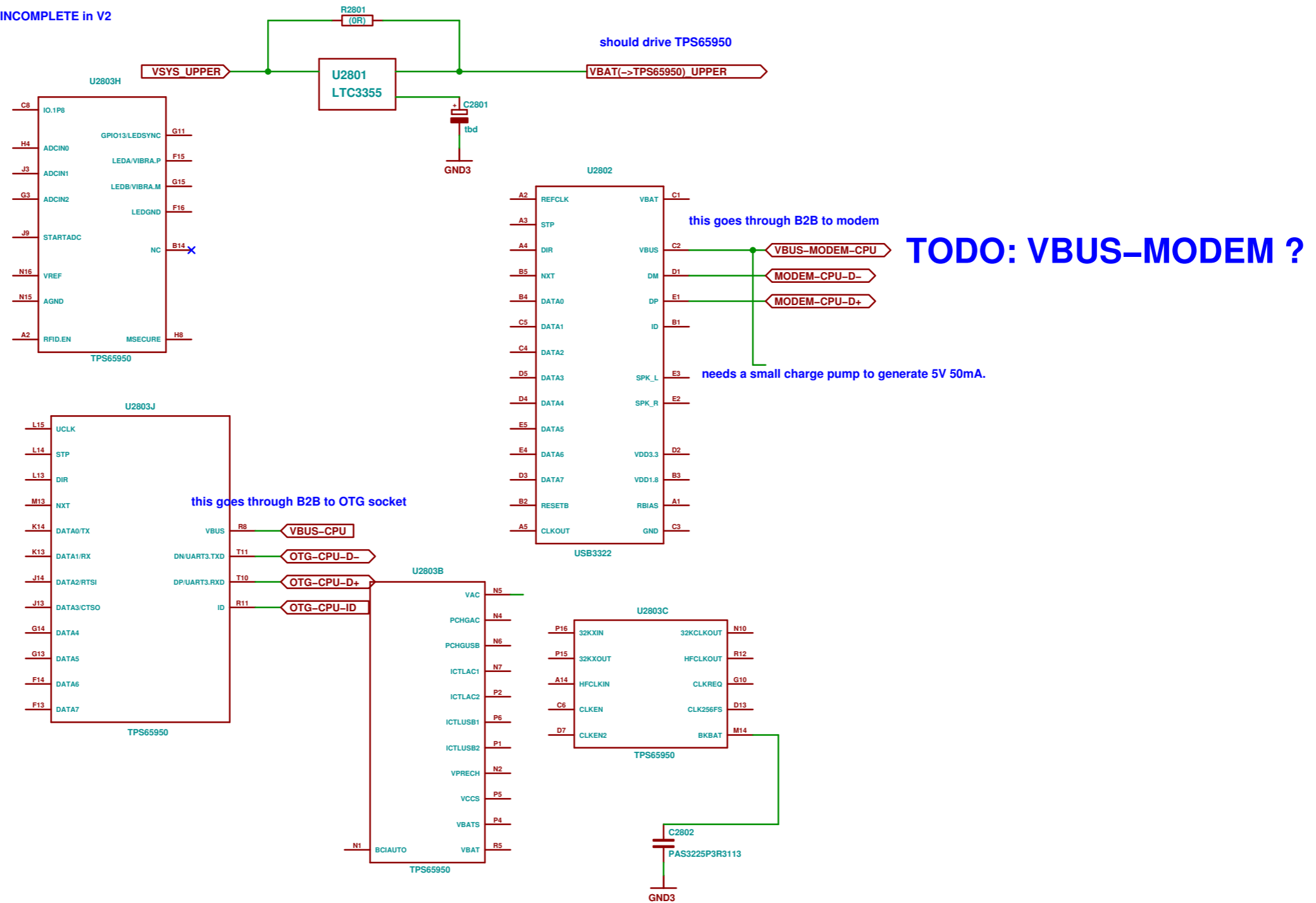


INCOMPLETE in V2

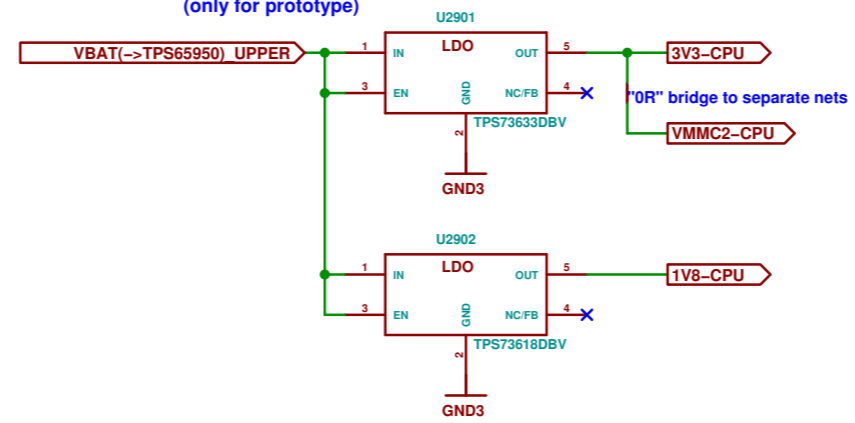


TODO: check role

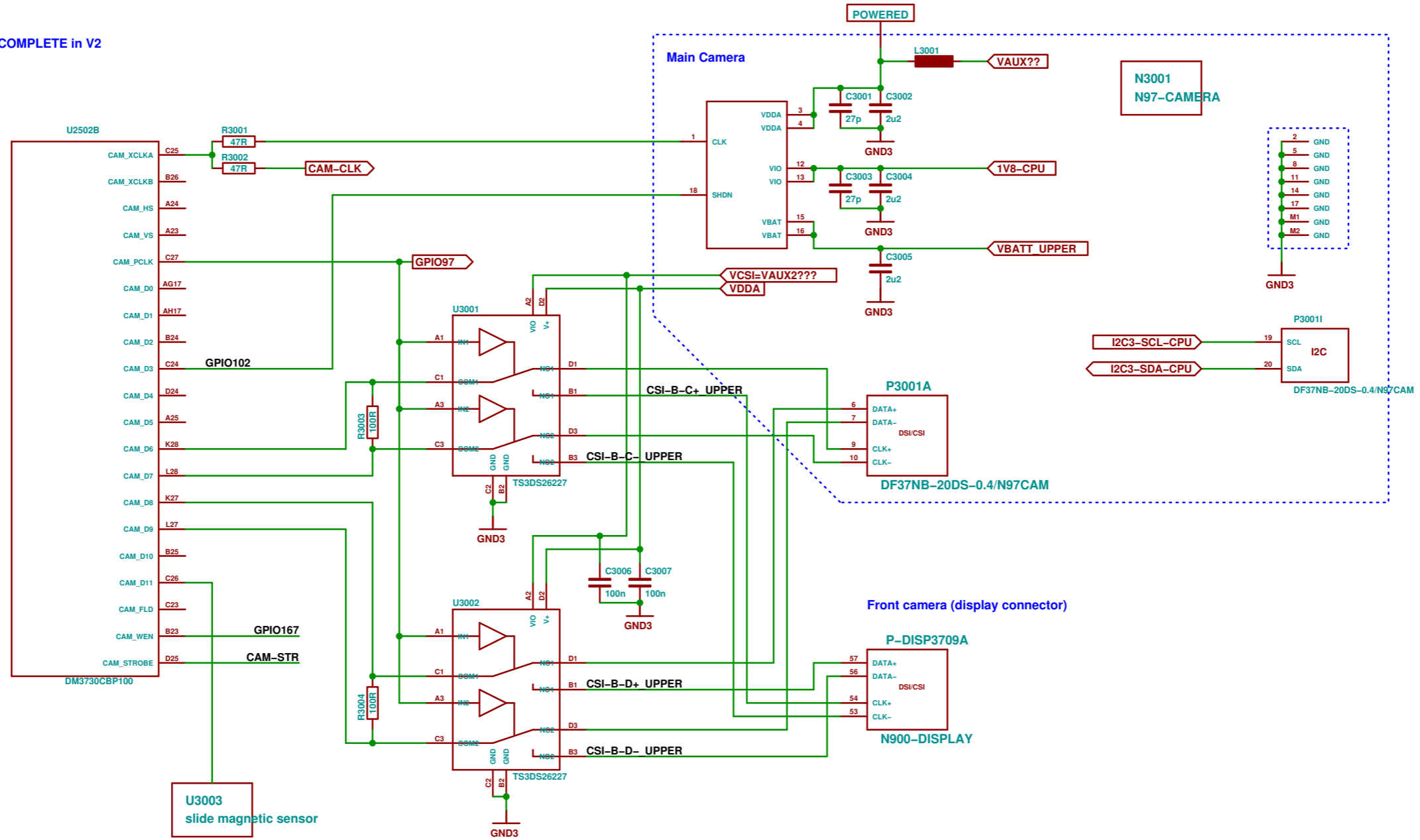
INCOMPLETE in V2

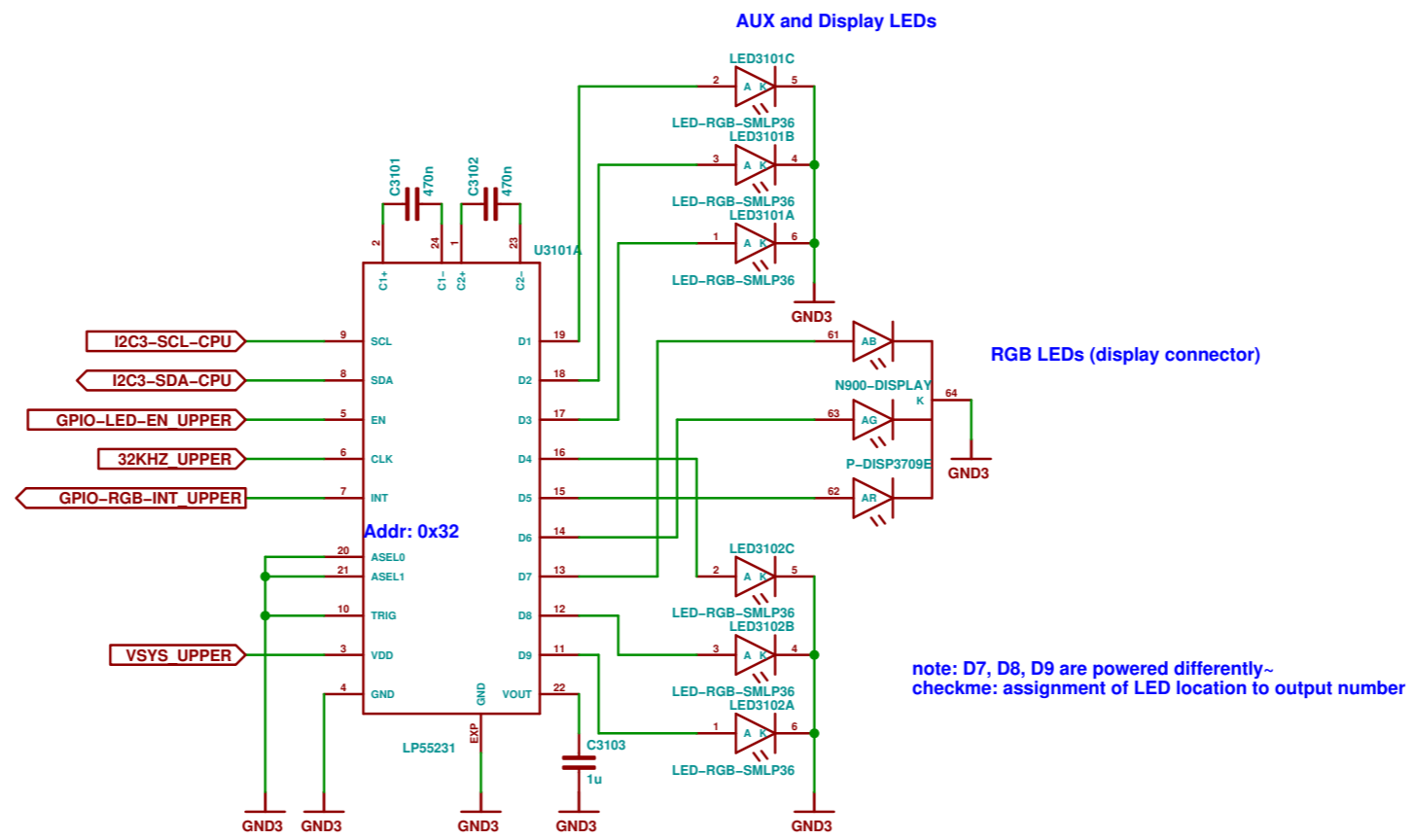


simple capless 400mA LDO for TPS65950 substitute
(only for prototype)

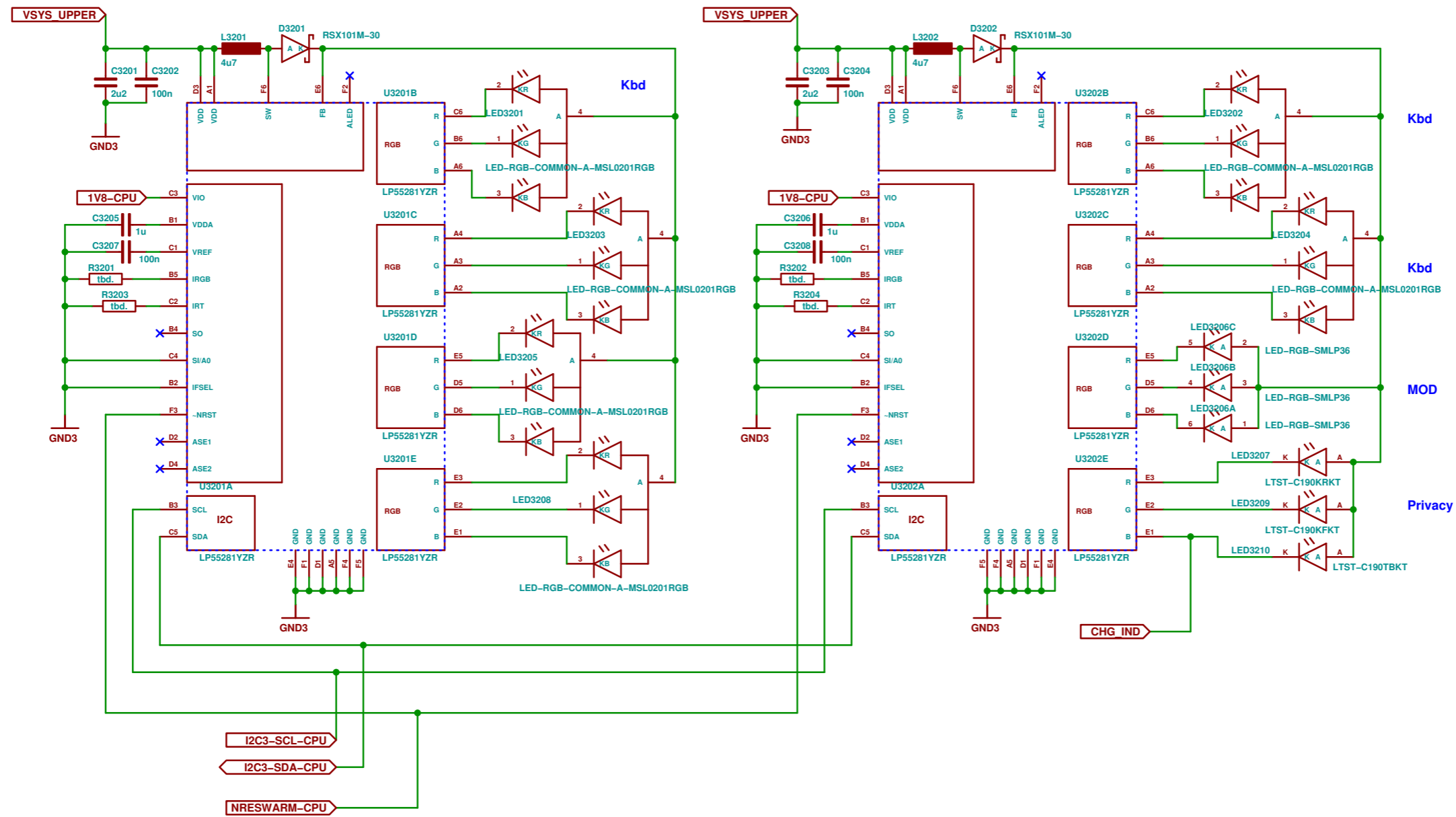


INCOMPLETE in V2





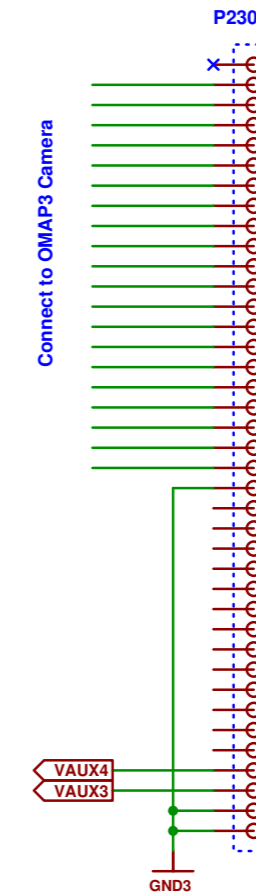
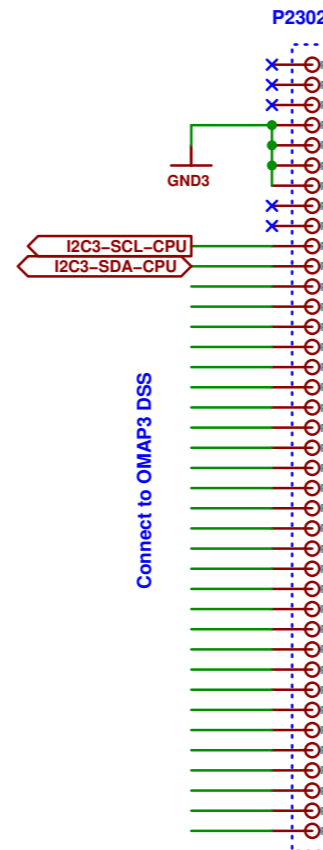
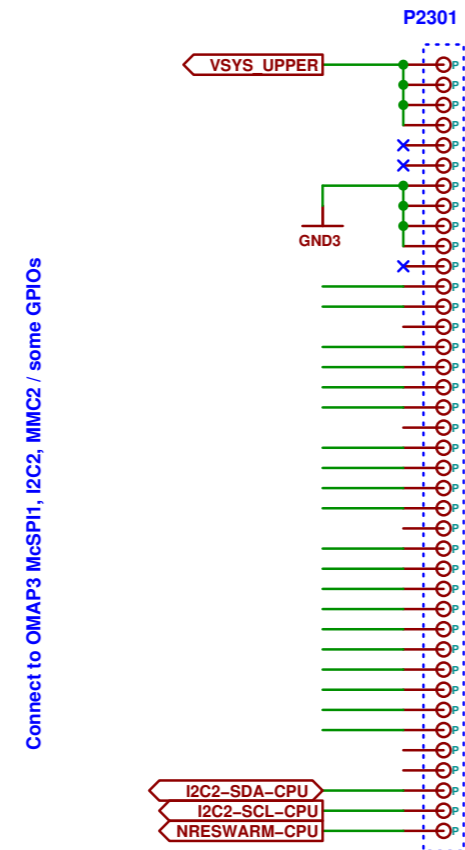
31
LEDs



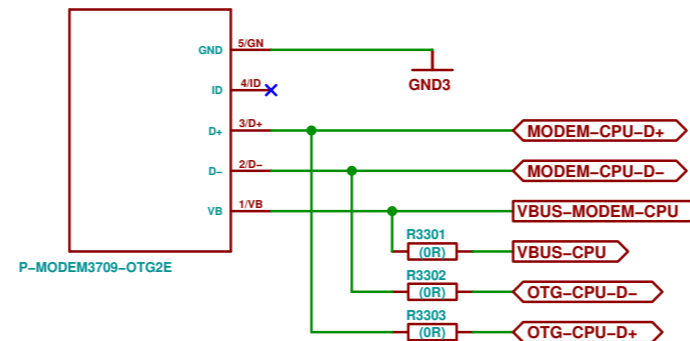
These connectors allow to "emulate" the DM3730 by connecting a BB-XM

INCOMPLETE
prototype only

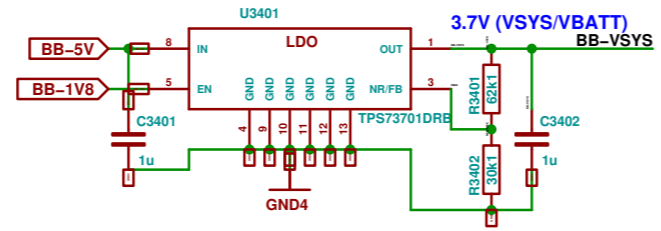
connect to respective CPU-pads



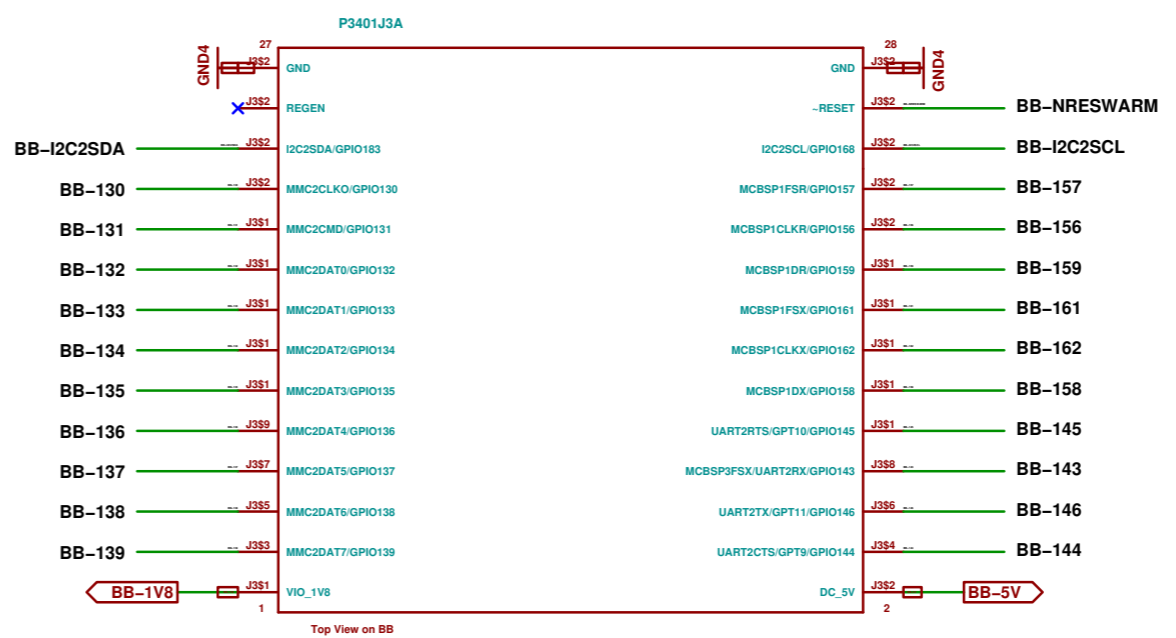
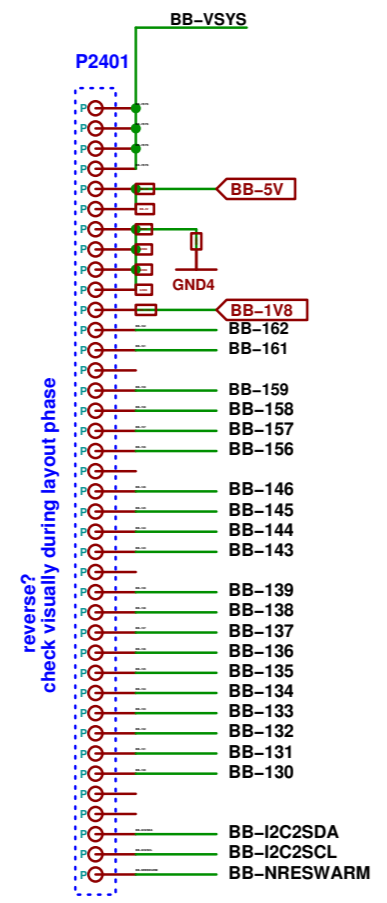
connect to BB
by some Micro-USB cable



TODO: VBUS-MODEM ?

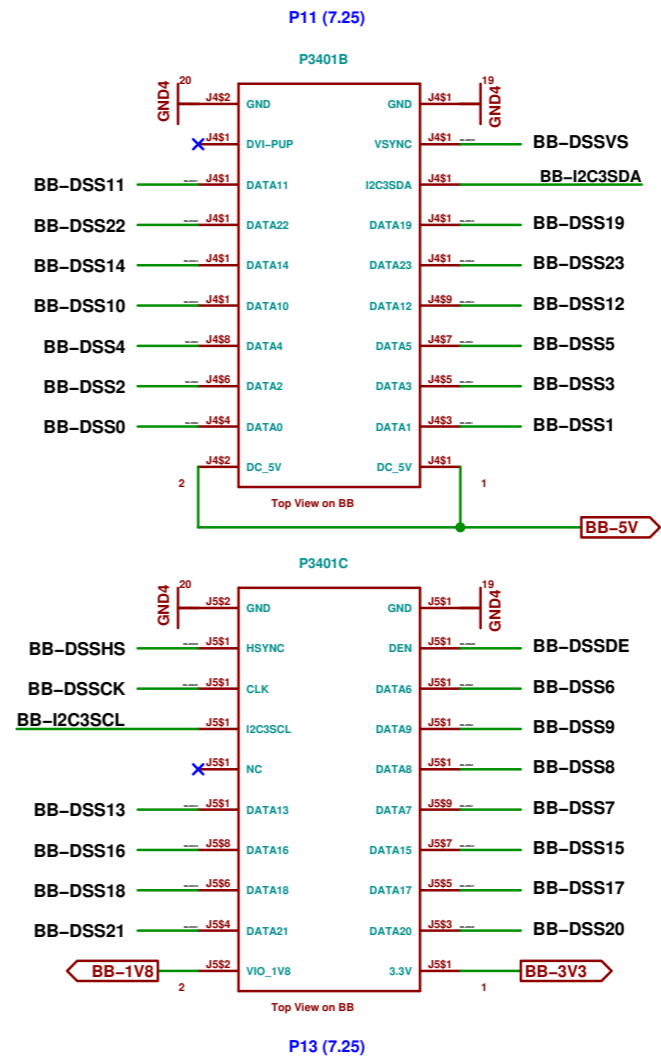
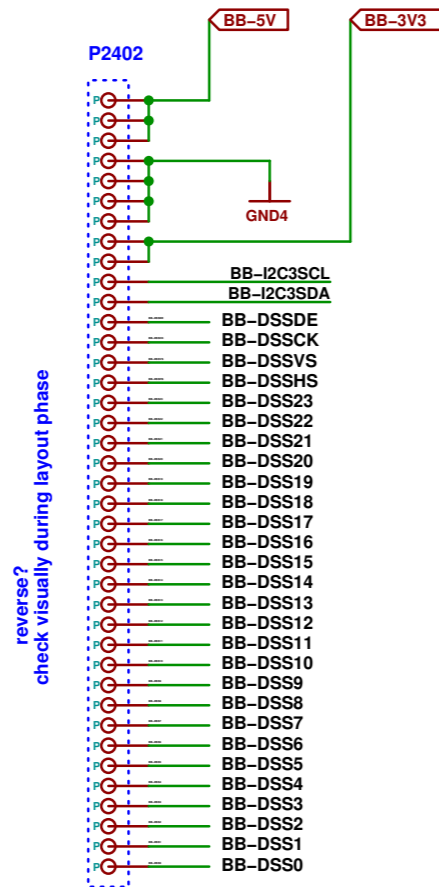


Ersetzen durch 2A buck converter

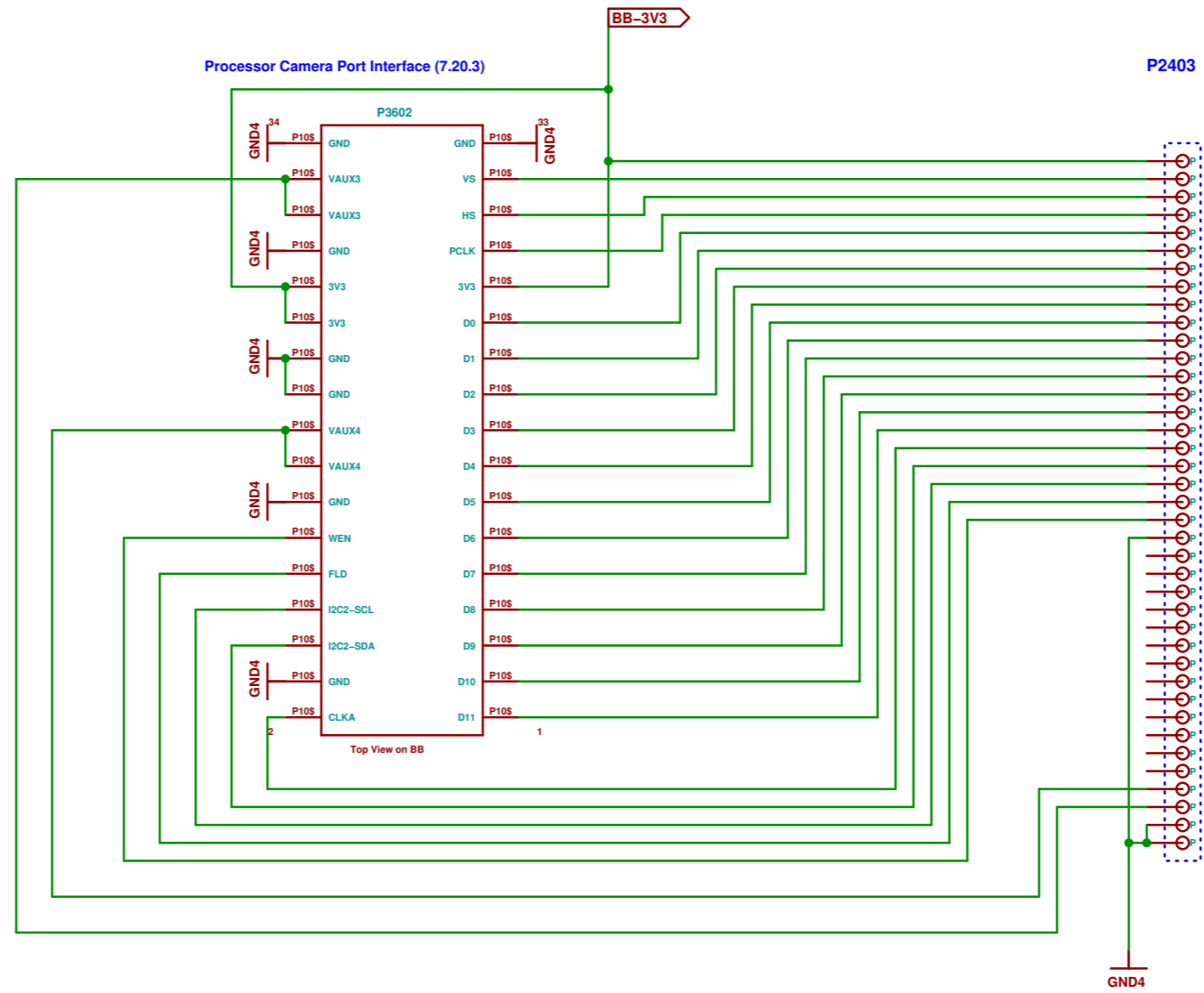


BB-xM Main Expansion Header (7.24)

TODO: needs decision on where to take this



TODO: needs decision on where to take this



reverse?
check visually during layout phase

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

