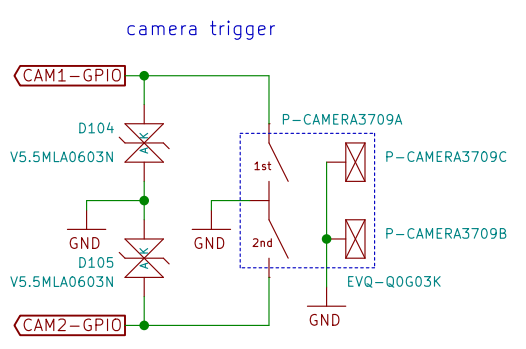
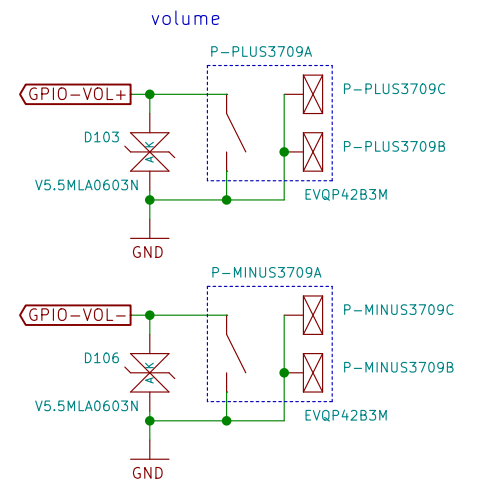
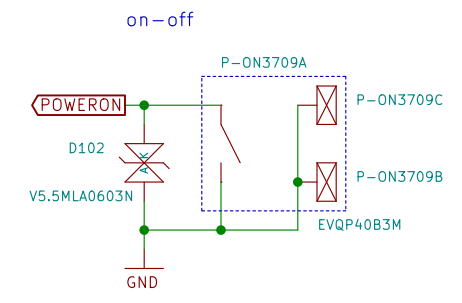
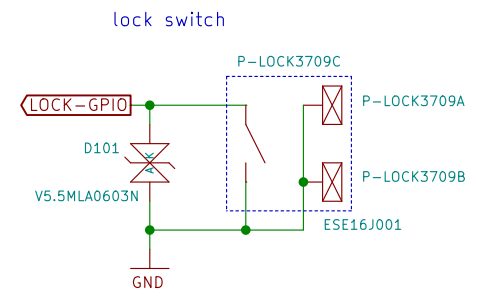


Sheet: /		
File: neo900.sch		
<b>Title: Neo900</b>		
Size: A3	Date: 16 JUL 2016	Rev:
KiCad E.D.A. eschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-productId: 1/38		

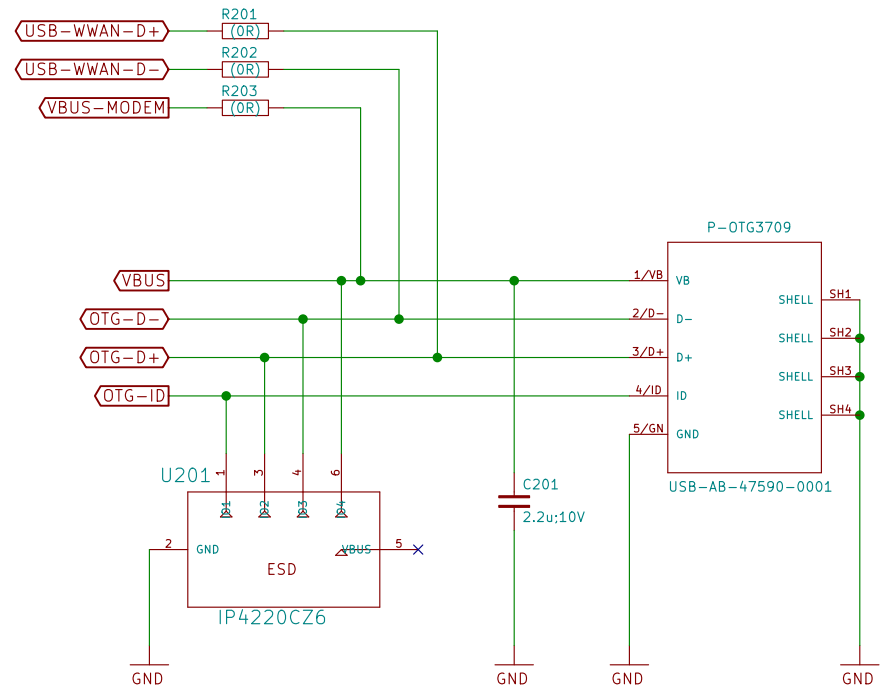


place in scan matrix? would need 3-4 wires to UPPER board instead of 2  
 No. VOL+ or VOL- can either be connected to GPIOs  
 or drive two FETs that sit in the keyboard matrix  
 in any case it is sufficient to connect GPIO-VOL+ and VOL- to two pins on the B2B connector

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Sheet: /Buttons/ File: neo900_SS_1.sch		
<b>Title: Buttons</b>		
Size: A3	Date: 16 JUL 2016	Rev:
KiCad E.D.A. eeschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-productId: 2/38		8

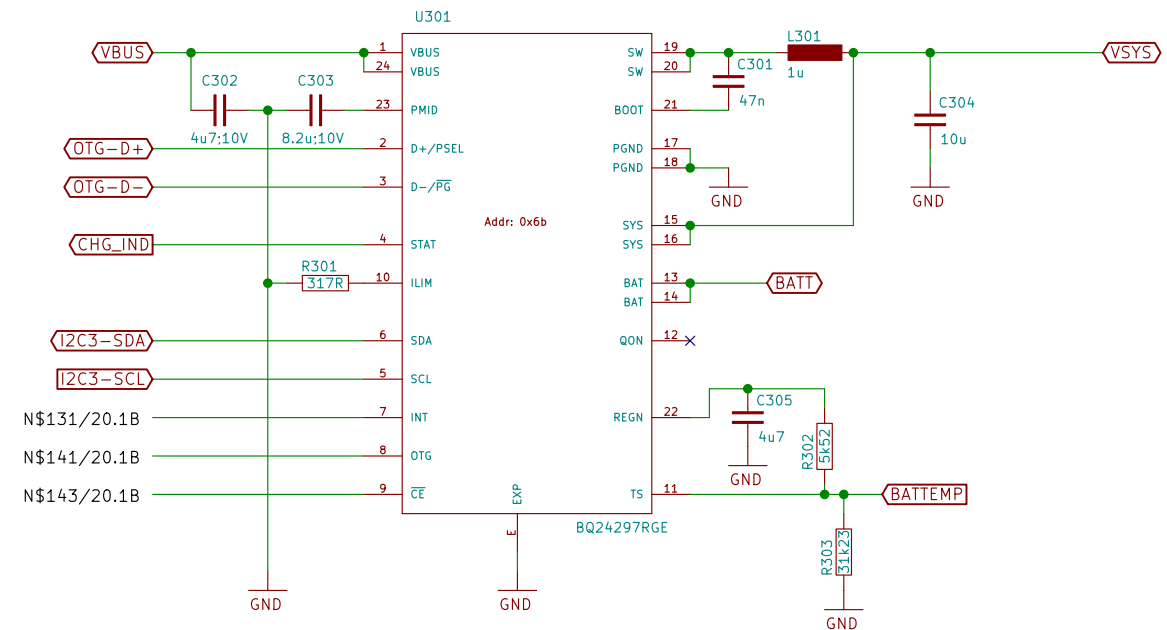
can be used to test/operate the modem through the OTG port (w/o UPPER PCB)



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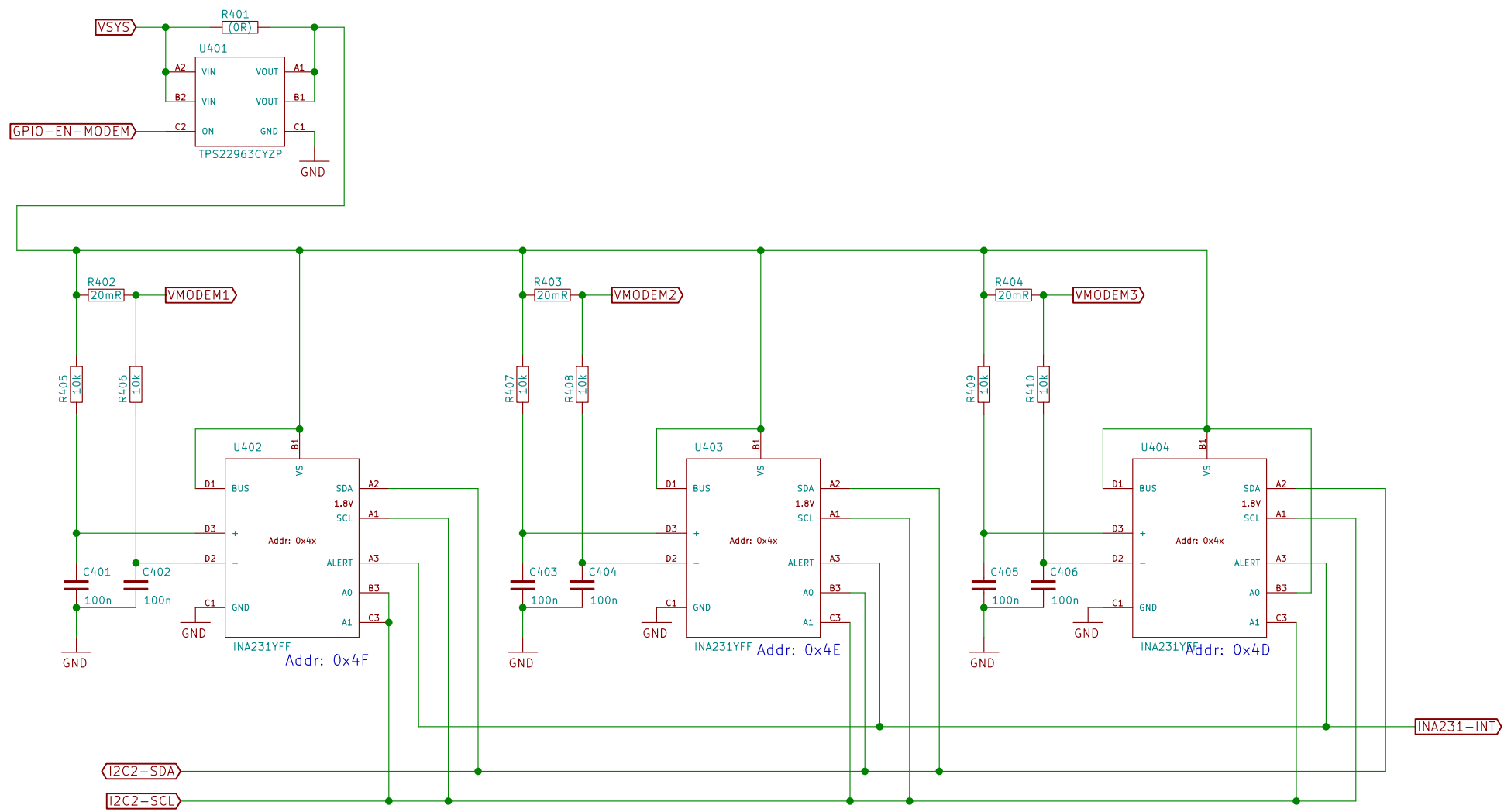
Sheet: /OTG/ File: neo900_SS_2.sch		
<b>Title: OTG</b>		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. eeschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-productId: 3/38		

TODO



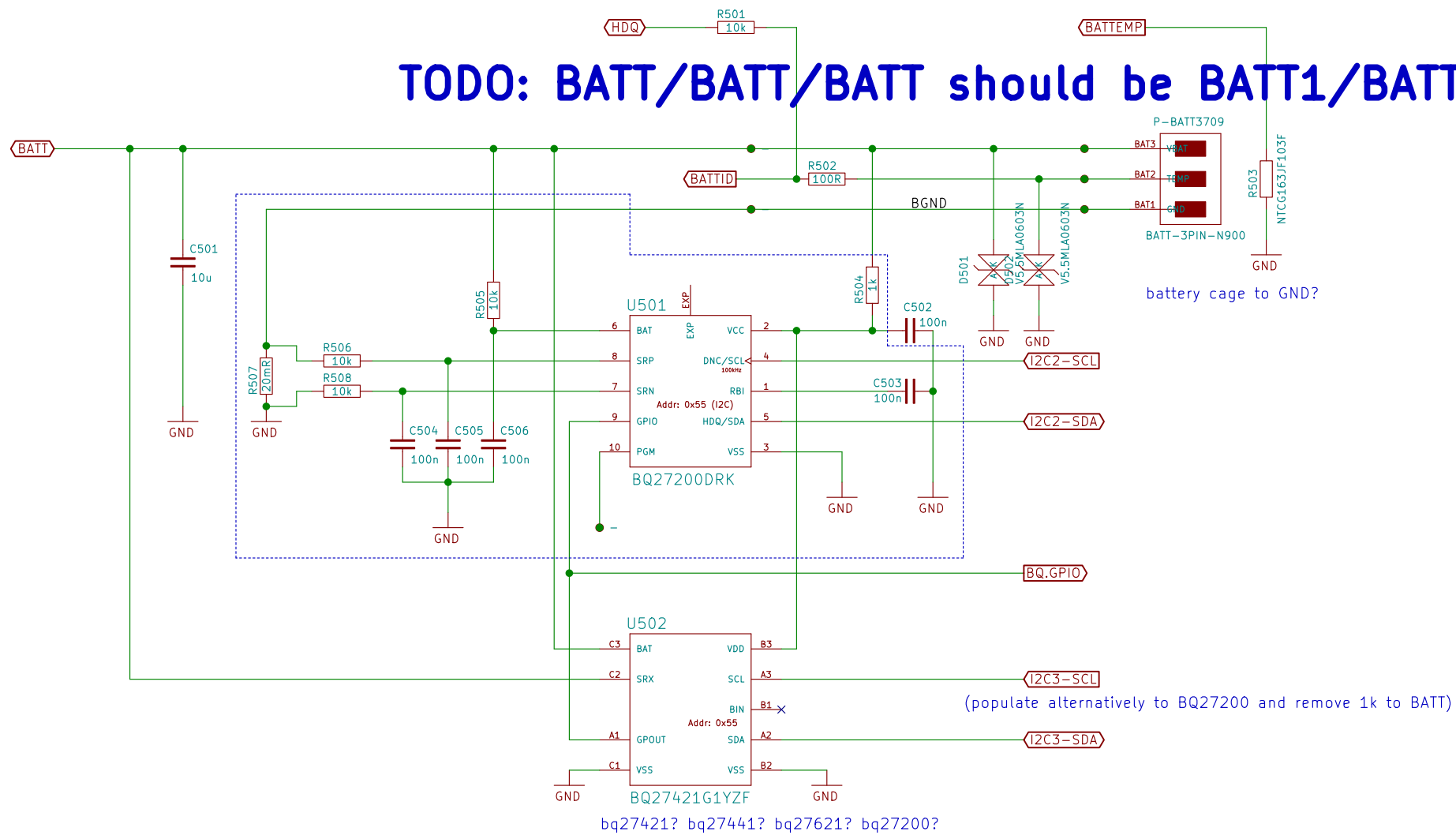
(c) 2014 Golden Delicious Computers GmbH&Co. KG. Licensed under CC-BY-SA.

Sheet: /Charger/OTG-Booster/ File: neo900_SS_3.sch		
<b>Title: Charger/OTG-Booster</b>		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. - eeschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-productId: 4/38		



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Sheet: /Modem Power/		
File: neo900_SS_4.sch		
<b>Title: Modem Power</b>		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. - eeschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-productId: 5/38		



**TODO: BATT/BATT/BATT should be BATT1/BATT2/BATT3**

battery cage to GND?

(populate alternatively to BQ27200 and remove 1k to BATT)

**TODO: U502 BAT and SRX short**  
**TODO: can U501 and U502 coexist ?**  
**TODO: BQ27421YZFR-G1A or B ?**

bq27421? bq27441? bq27621? bq27200?

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Sheet: /Fuel Gauge/ File: neo900_SS_5.sch		
<b>Title: Fuel Gauge</b>		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. eeschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-productId: 6/38		

TODO: do what simsw WP says

TODO: UART#1 ?

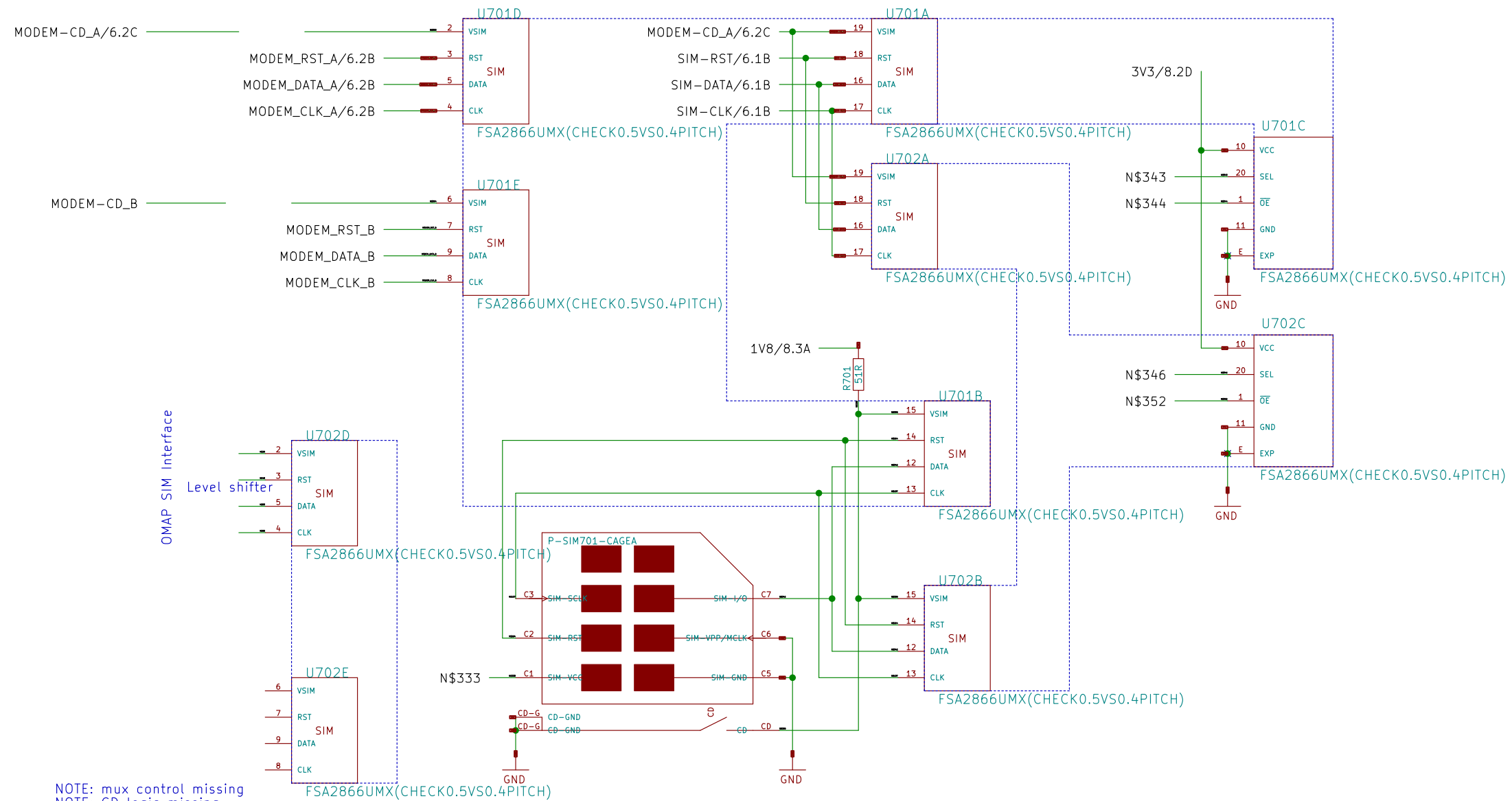
TODO: shield connection near

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

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Sheet: /3G/4G Modem + SIM/ File: neo900_SS_6.sch		
<b>Title: 3G/4G Modem + SIM</b>		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. eeschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-productId: 7/38		

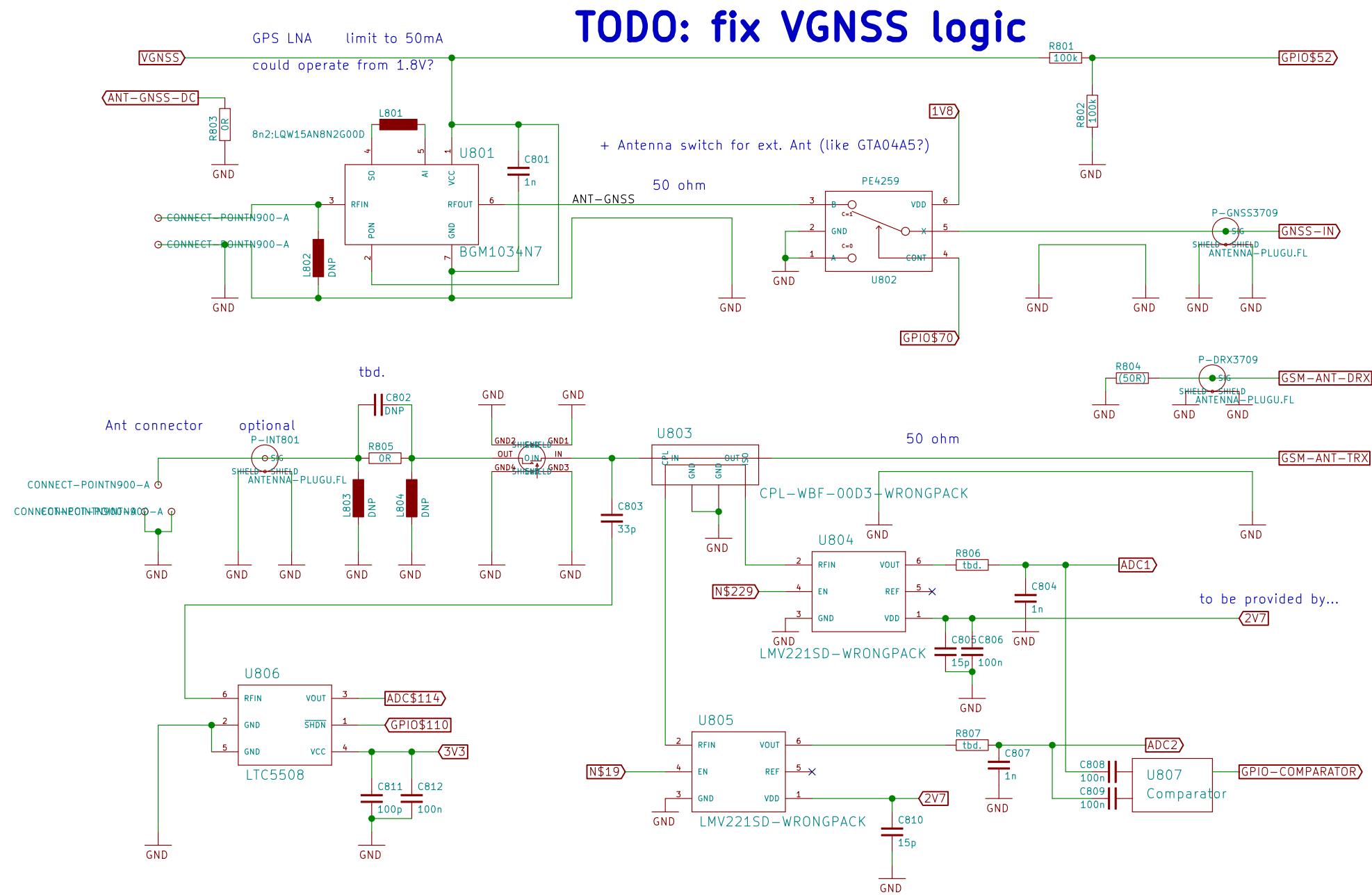
**TODO: not cleaned up – needs total rewrite**



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Sheet: /Dual SIM switch/ File: neo900_SS_7.sch		
<b>Title: Dual SIM switch</b>		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. eeschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-productId: 8/38		

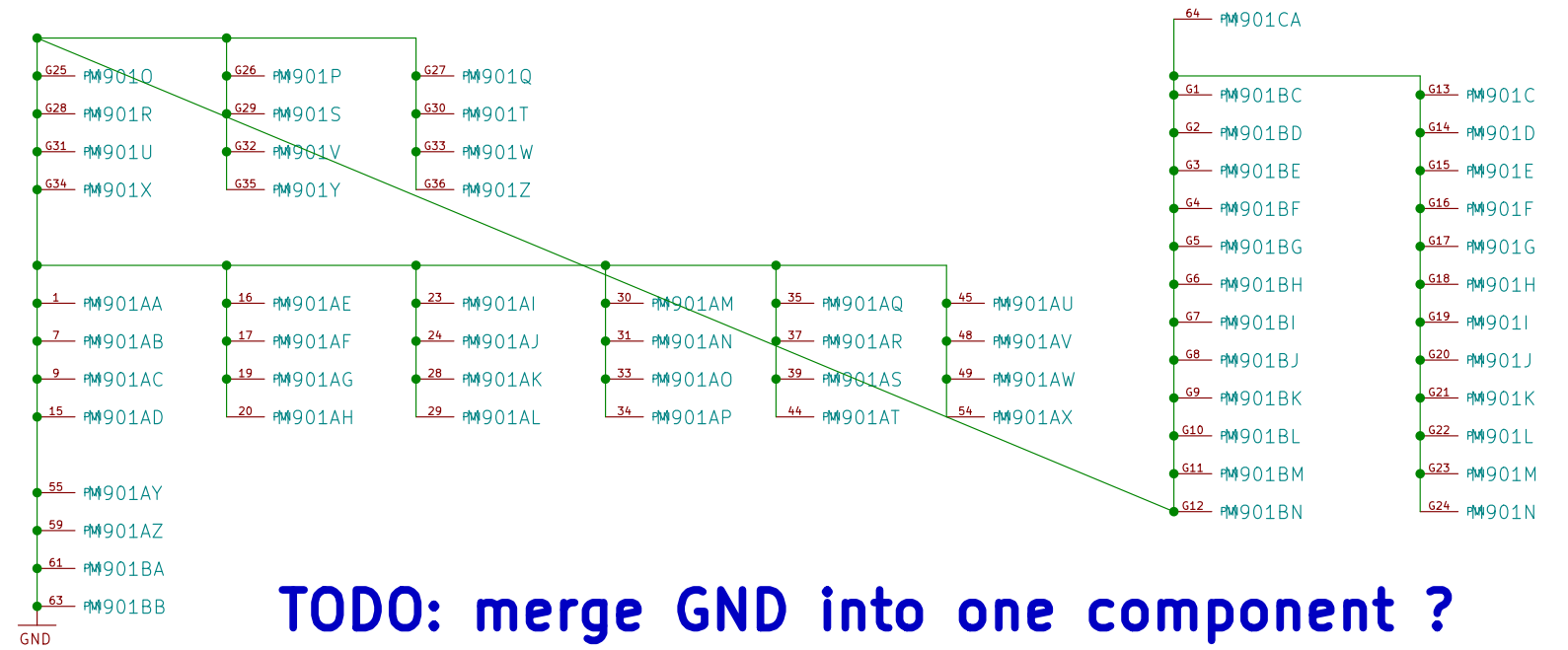
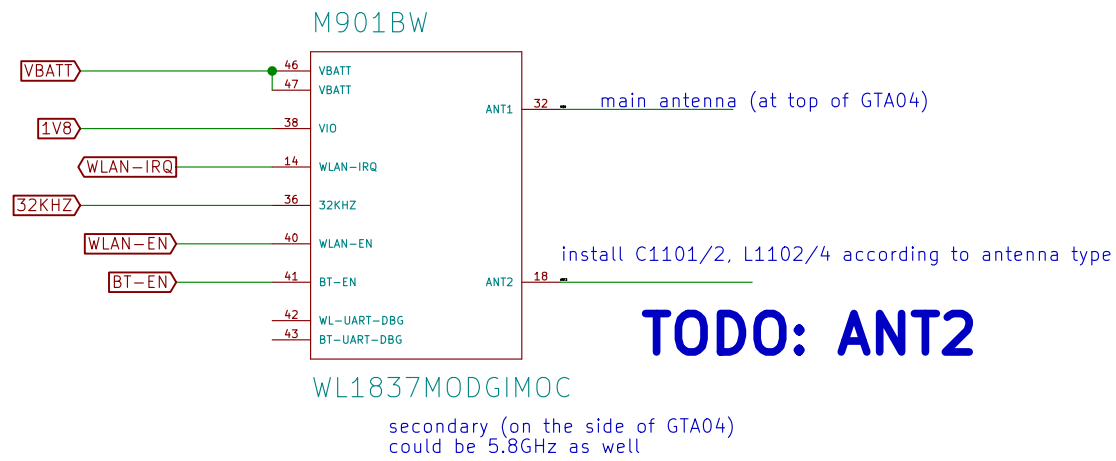




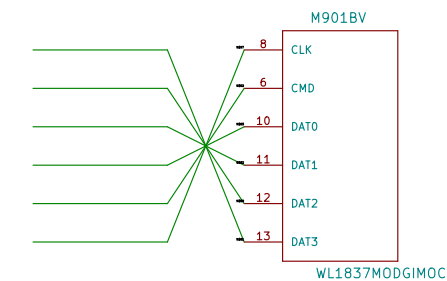
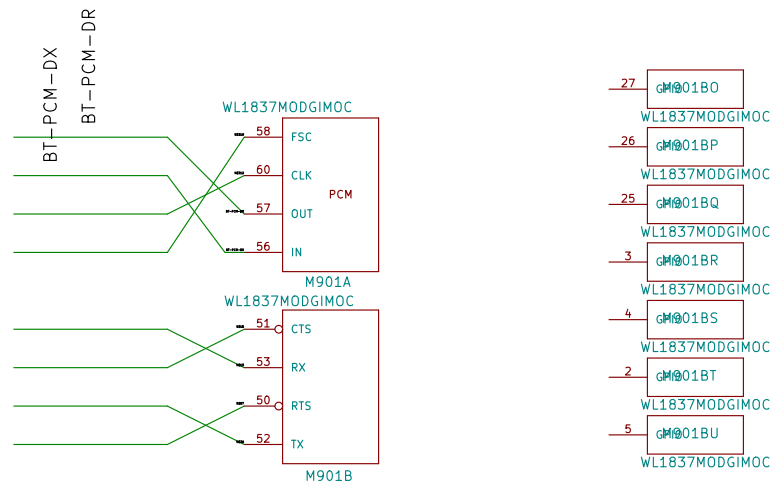
**TODO: name all the \*\$\***

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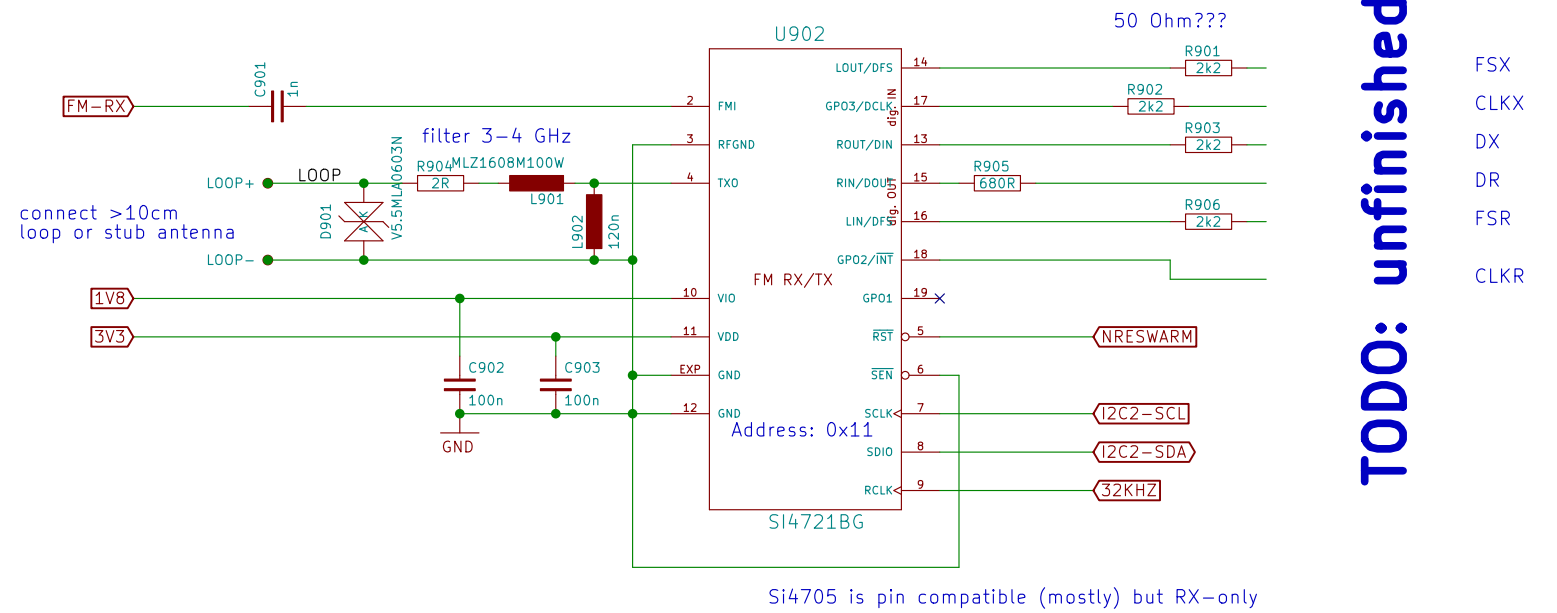
Sheet: /Antenna connections/ File: neo900_SS_8.sch		
<b>Title: Antenna connections</b>		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. - eeschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-productId: 9/38		



**TODO: unfinished**



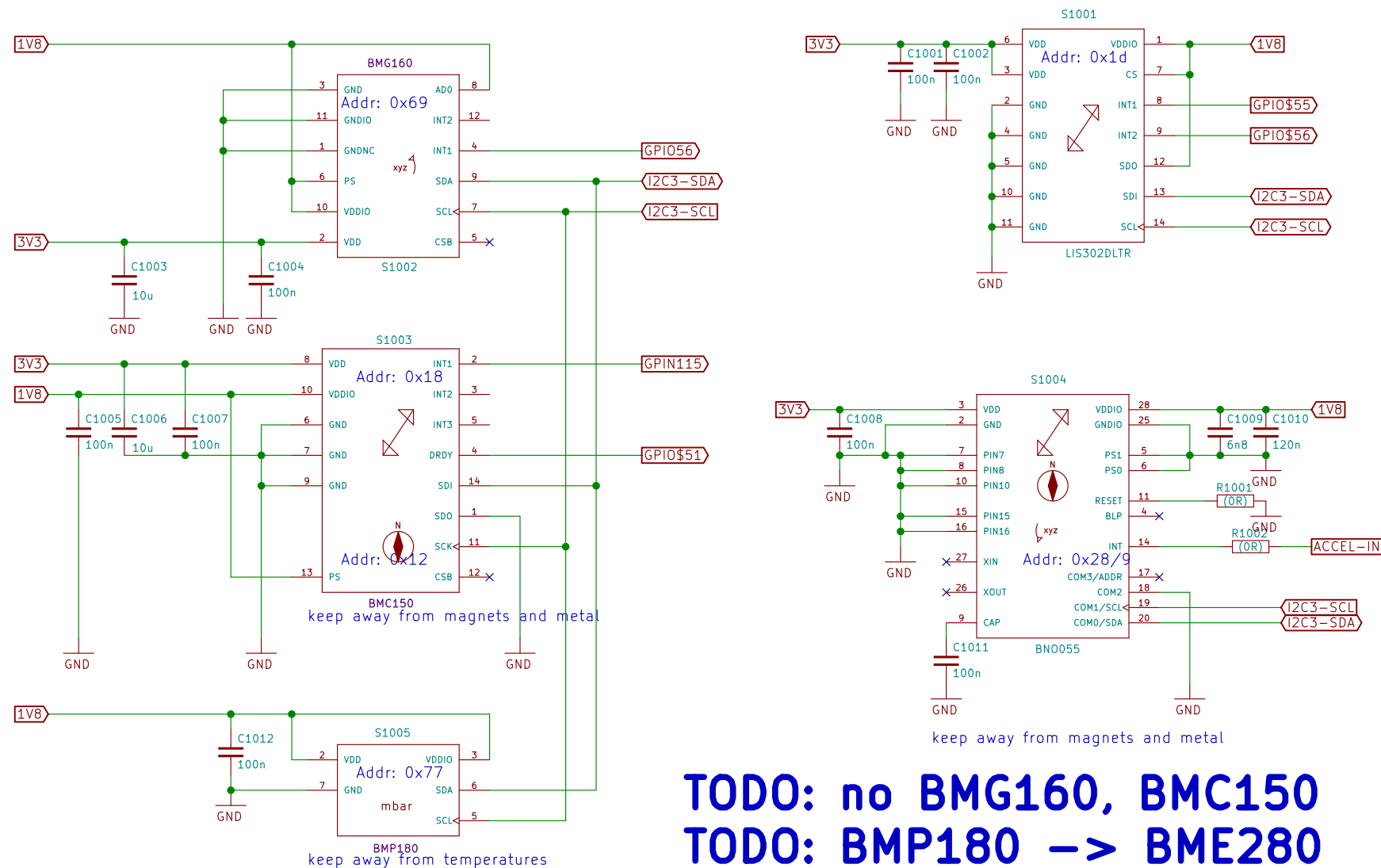
- WLAN-IRQ
- WLAN-EN
- BT-EN
- GPIO175
- KEYIRQ



**TODO: unfinished**

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

Sheet: /WLAN, Bluetooth, FM/		
File: neo900_SS_9.sch		
<b>Title: WLAN, Bluetooth, FM</b>		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. eeschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-productId: 10/38		

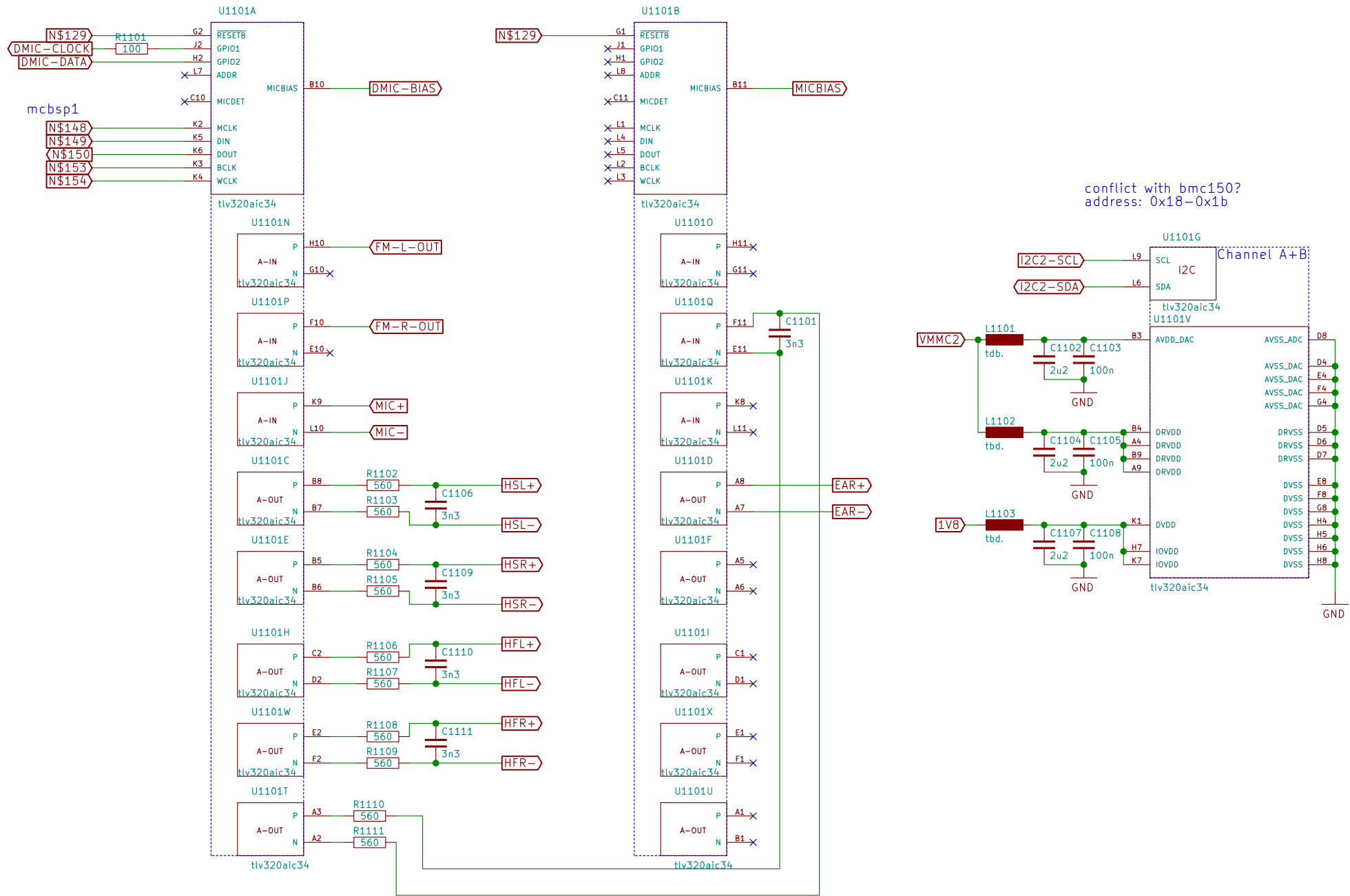


**TODO: no BMG160, BMC150**  
**TODO: BMP180 -> BME280**  
**TODO: BNO055 -> BMX055**  
**TODO: INT1/2 sharing**

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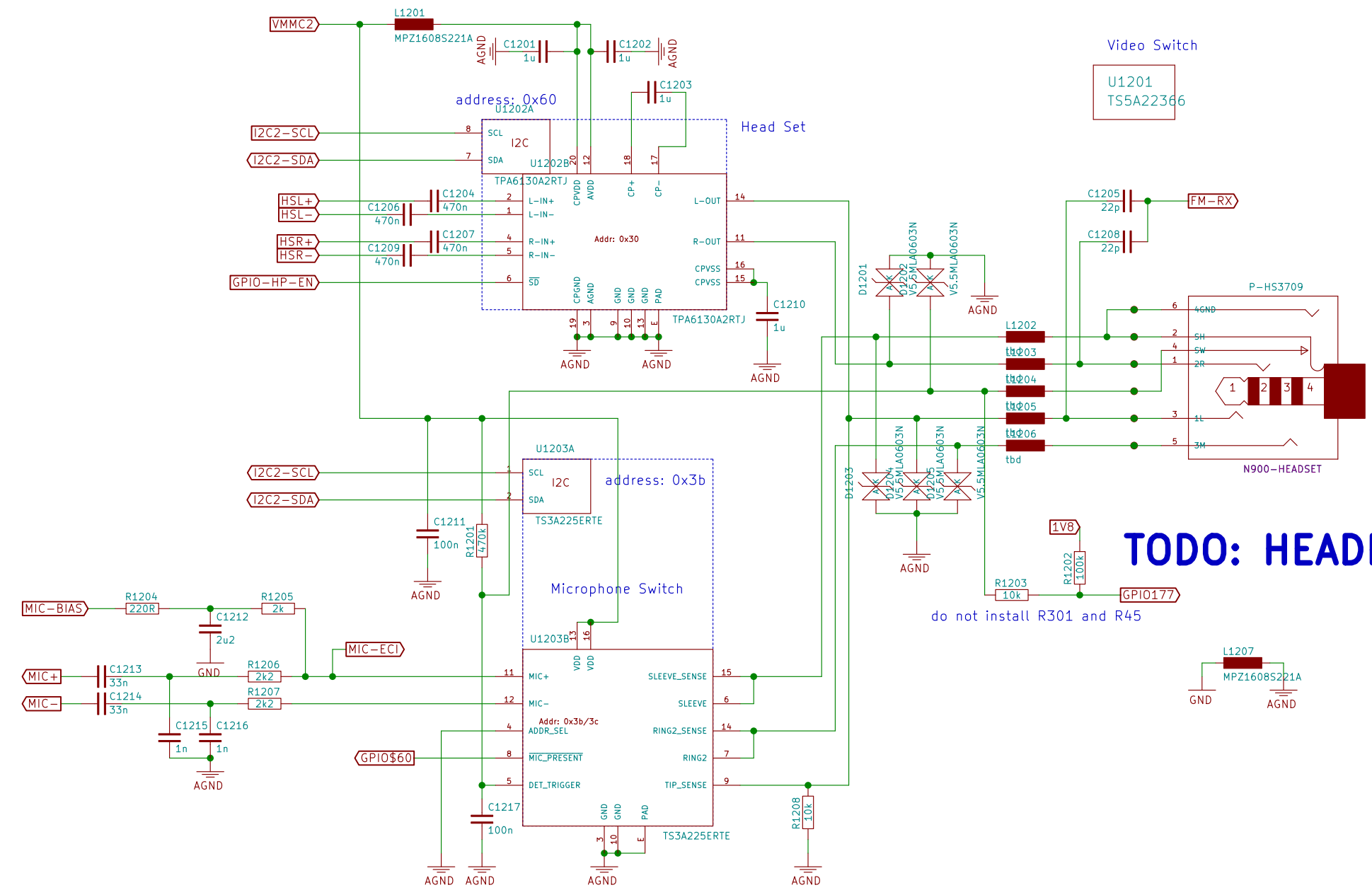
Sheet: /Sensors/		
File: neo900_SS_10.sch		
<b>Title: Sensors</b>		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. eeschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-productId: 11/38		

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)



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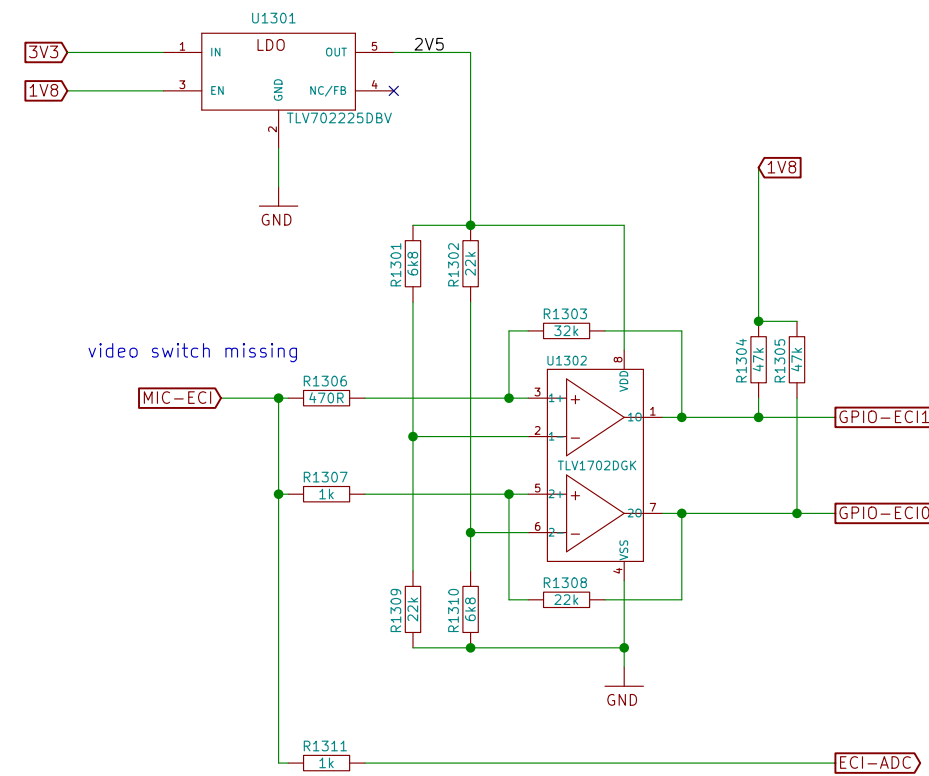
Sheet: /Audio Codec/ File: neo900_SS_11.sch		
<b>Title: Audio Codec</b>		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. eschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-productId: 12/38		



**TODO: HEADPH\_IND ?**

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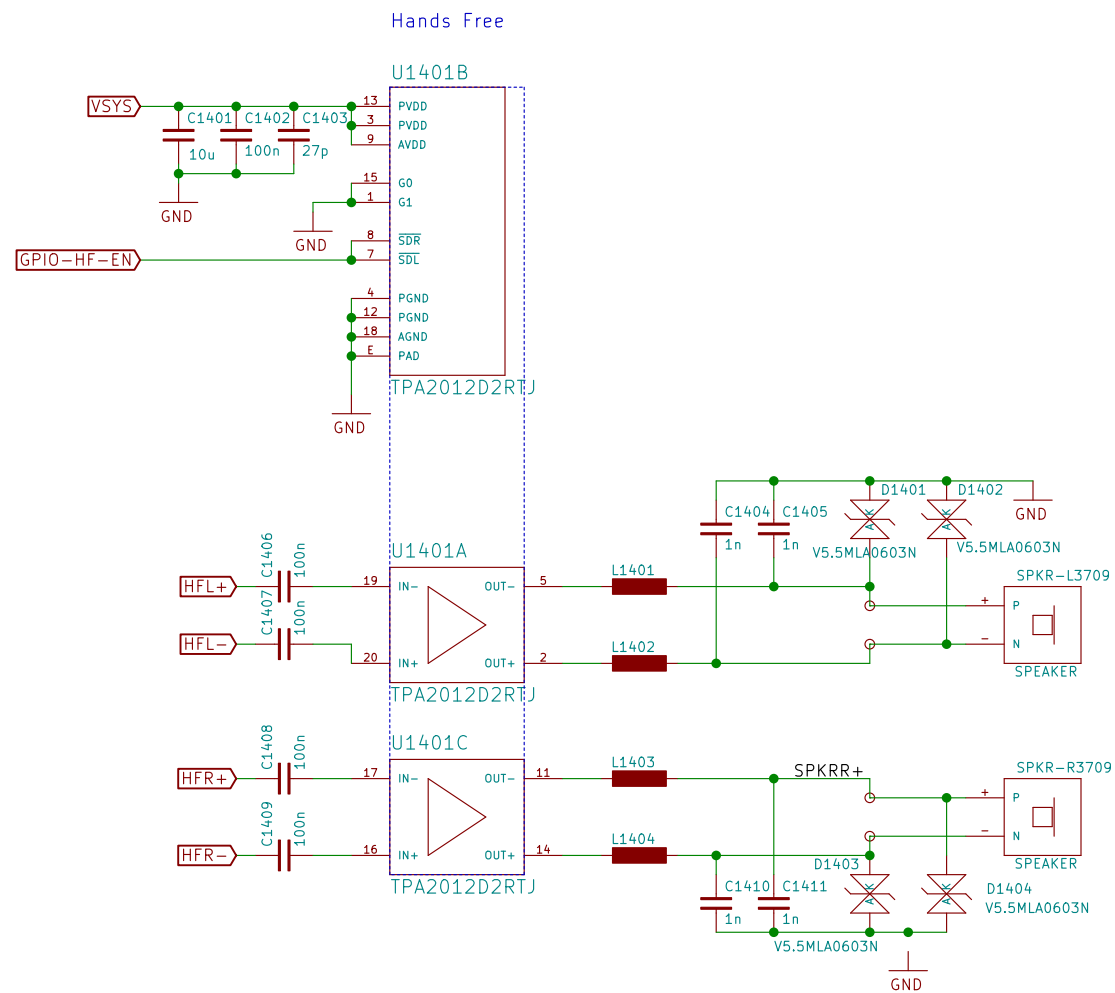
Sheet: /Audio Headset + Mic/		
File: neo900_SS_12.sch		
<b>Title: Audio Headset &amp; Mic</b>		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. eschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-productId: 13/38		



**TODO: draw comparator right**

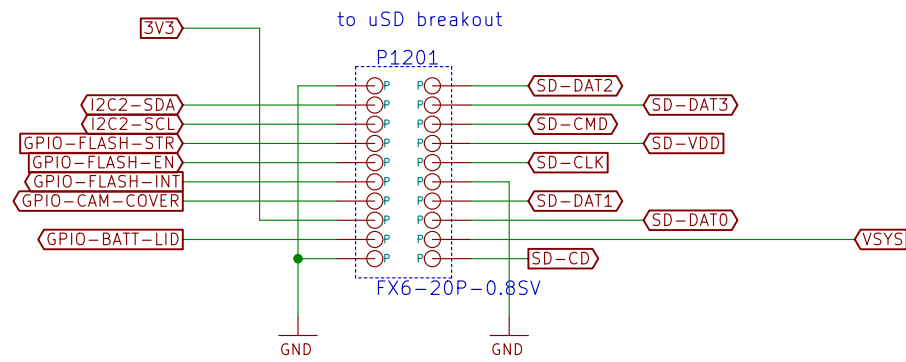
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Sheet: /ECI/		
File: neo900_SS_13.sch		
<b>Title: ECI</b>		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. eeschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-productId: 14/38		

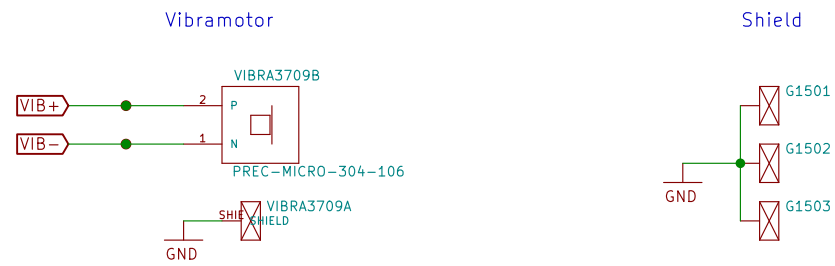


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Sheet: /Audio Handsfree/ File: neo900_SS_14.sch		
<b>Title: Audio Handsfree</b>		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. - eschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-productId: 15/38		8



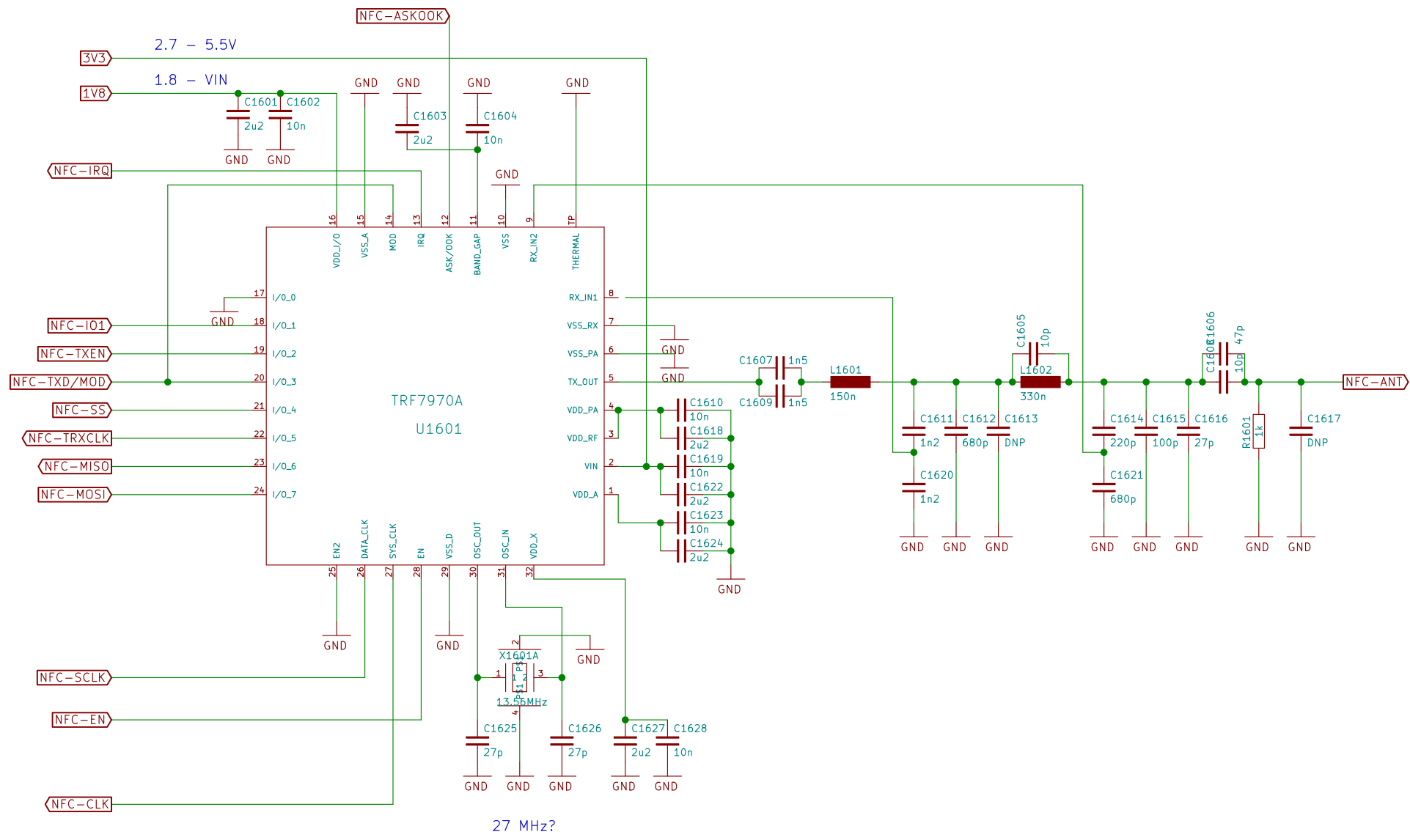
**TODO: bogus connector (see HB WP)**



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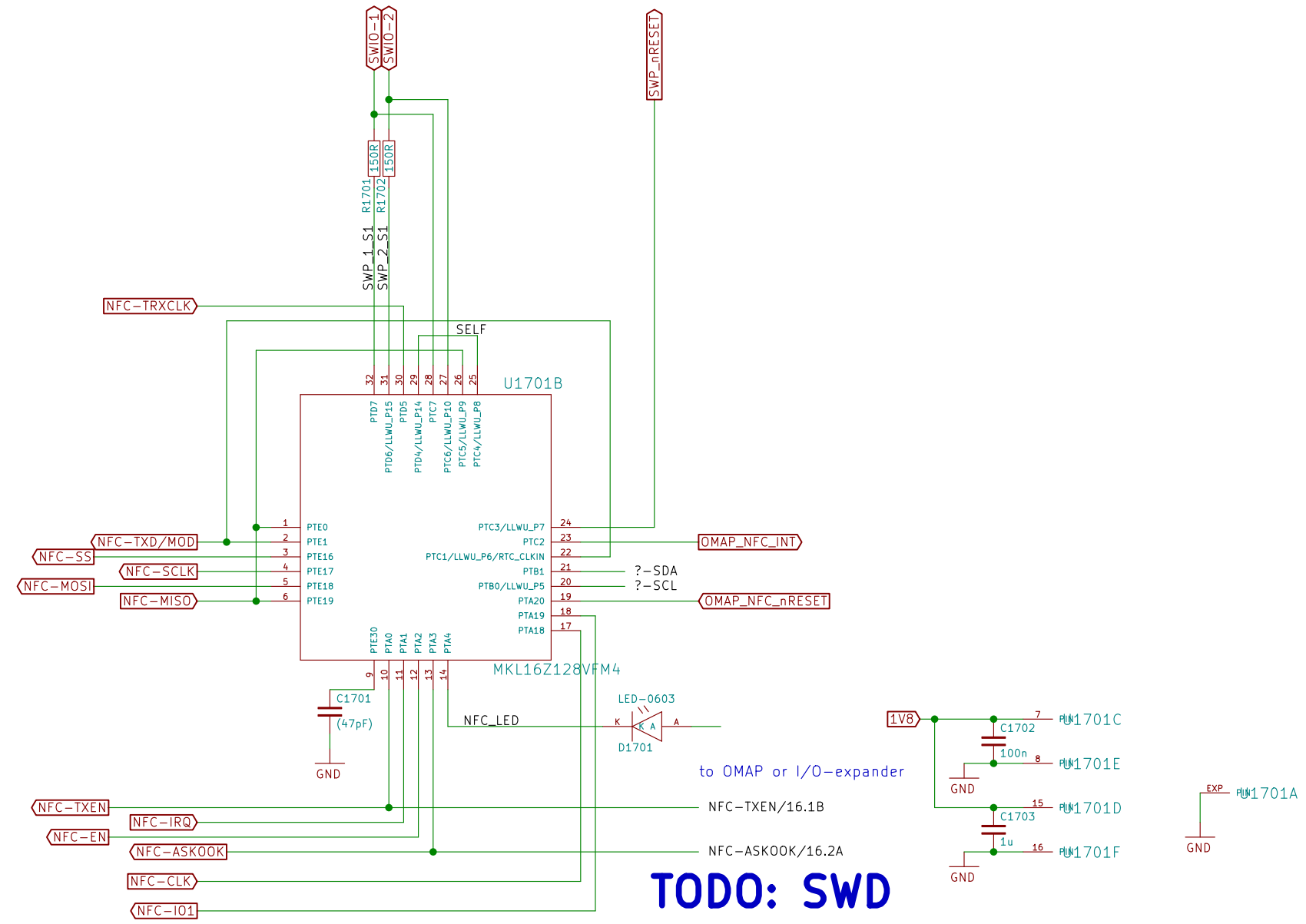
Sheet: /Misc (lower)/		
File: neo900_SS_15.sch		
<b>Title: Misc (lower)</b>		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. eeschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-productId: 16/38		





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Sheet: /RFID/NFC Reader/ File: neo900_SS_16.sch		
<b>Title: RFID/NFC Reader</b>		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. - eschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-productId: 17/38		



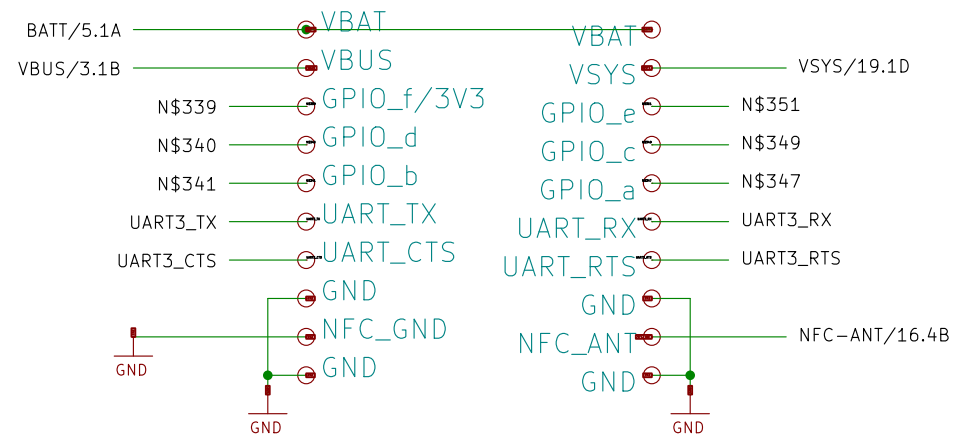
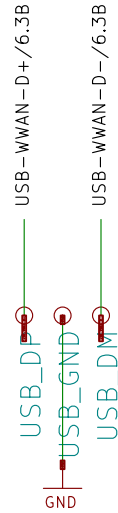
**TODO: SWD**

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Sheet: /RFID/NFC Controller/ File: neo900_SS_17.sch		
<b>Title: RFID/NFC Controller</b>		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. - eeschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-productId: 18/38		

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**



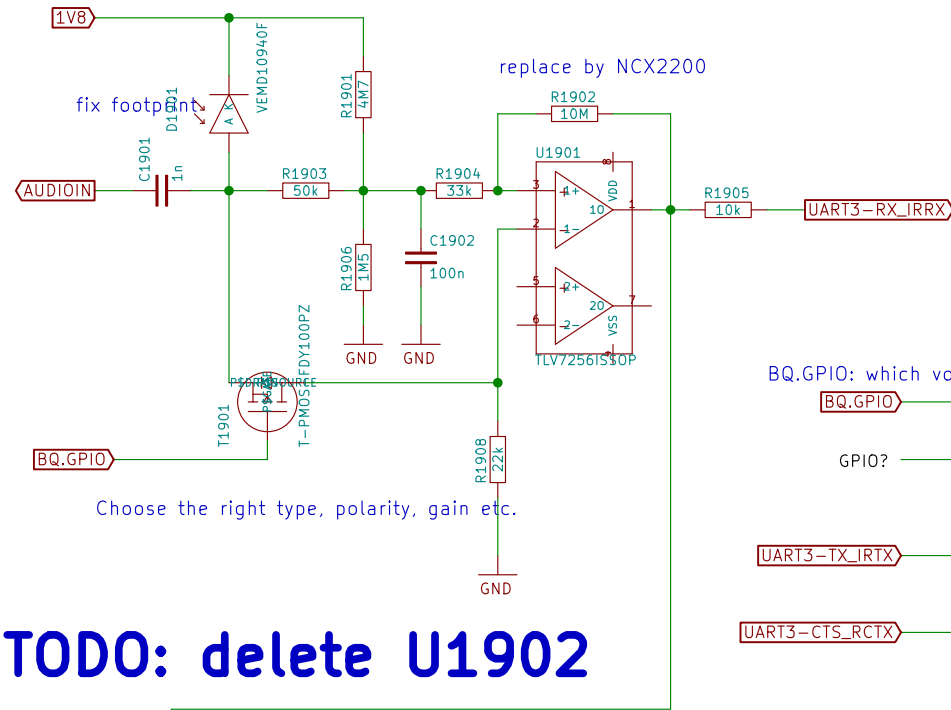
Missing 10 level shifter chip (or do we really have the space for 10x discrete T+R+D ca. 3x3mm each?)  
Missing 6x 2R for alternate function select (do we have the space for ca. 2.5 x 5mm?)

**TODO: align with HB WP**

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Sheet: /Hackerbus/ File: neo900_SS_18.sch		
<b>Title: Hackerbus</b>		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. - eeschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-productId: 19/38		

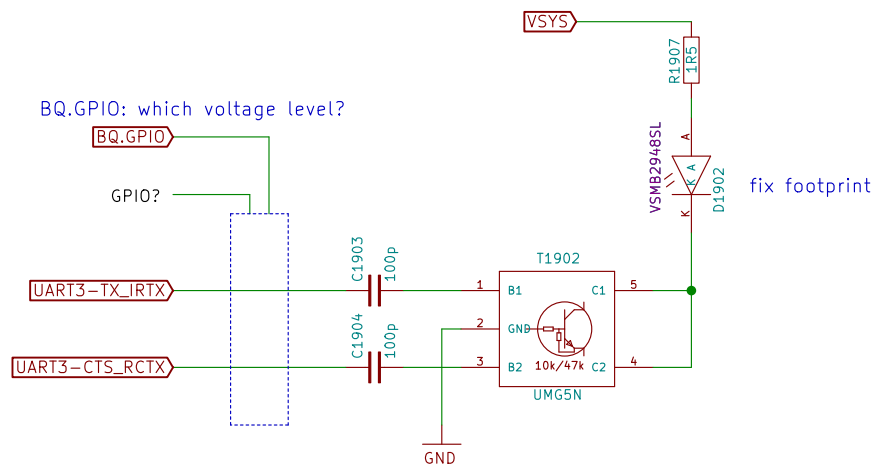
NOTE: 1V8 may be quite noisy



replace by NCX2200

Choose the right type, polarity, gain etc.

**TODO: delete U1902**

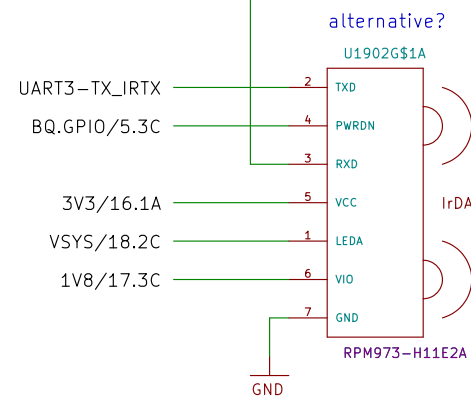


BQ.GPIO: which voltage level?

BQ.GPIO

GPIO?

**TODO: update to design in IR WP**



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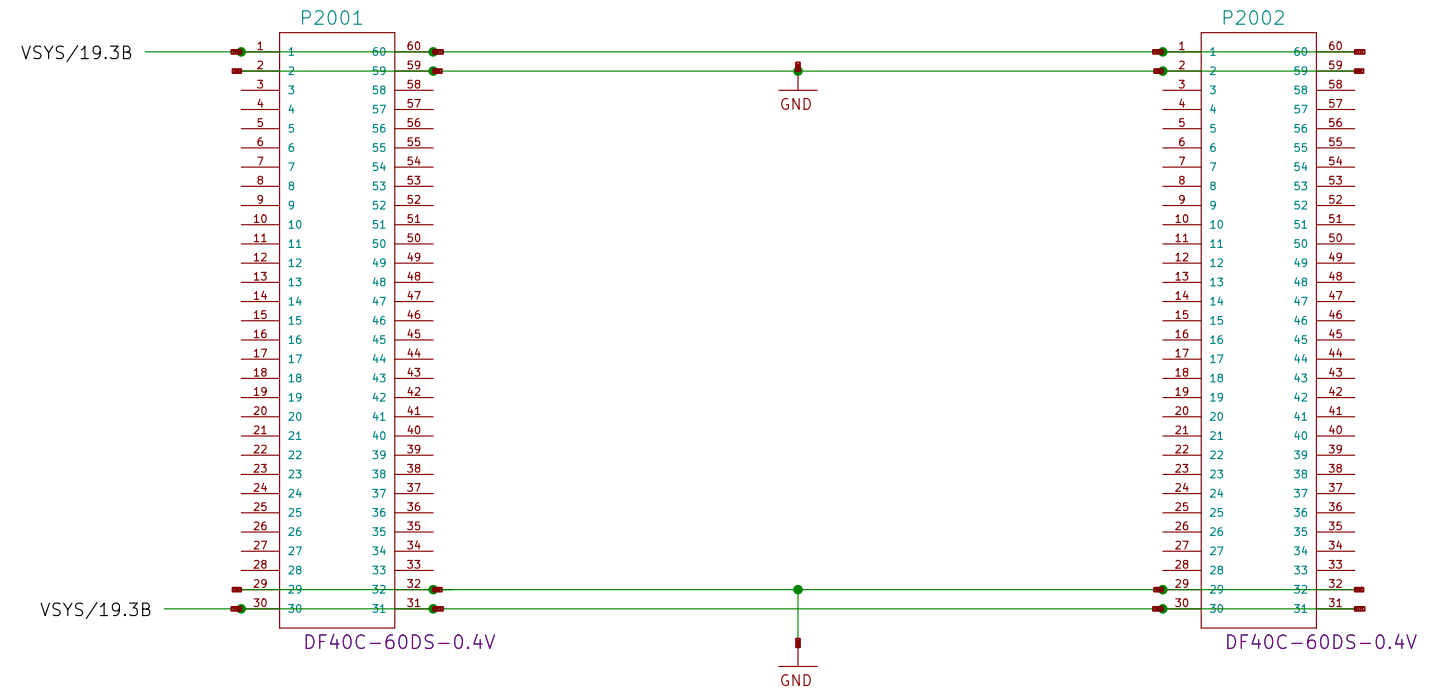
Sheet: /Infrared/		
File: neo900_SS_19.sch		
<b>Title: Infrared</b>		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. eeschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-productId: 20/38		

# TODO: update when details settle

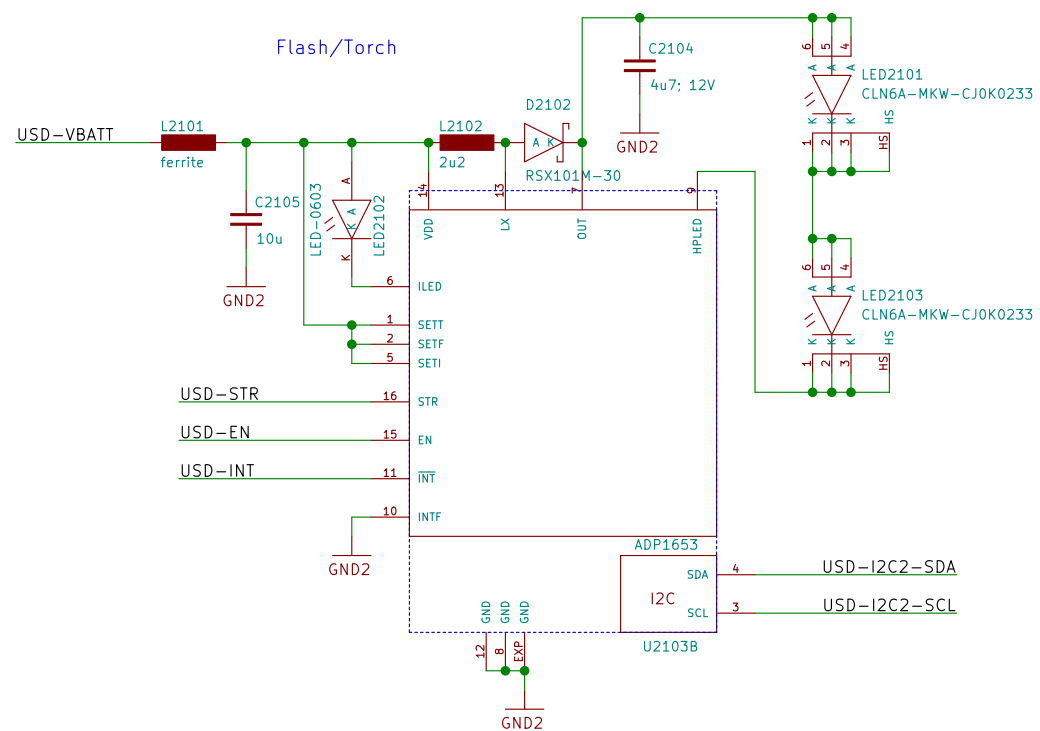
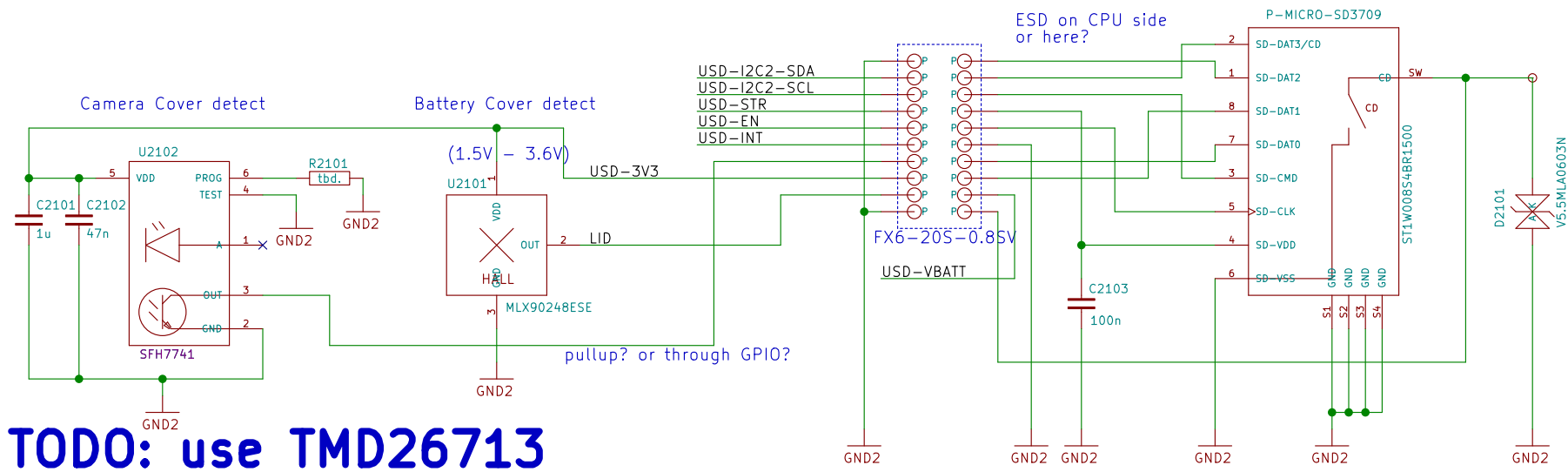
ca. 130 signals (to be counted exactly after definition of upper/lower split)

- 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
- GPIO551/10.3B
- GPIO555/10.4A
- GPIO556/10.4A
- 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-ECIO/13.3C
- ECI-ADC/13.3C
- VMMC2/12.1A
- GPIO-HP-EN/12.1B
- GPIO60/12.2D
- 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
- LOCK-GPIO/1.2A
- POWERON/1.3A
- GPIO-VOL+/1.2B
- GPIO-VOL-/1.2B
- CAM1-GPIO/1.3B
- CAM2-GPIO/1.3C
- I2C3-SDA/10.4C
- I2C3-SCL/10.4C
- CHG\_IND/3.1B
- N\$131/3.1C
- N\$141/3.1C
- N\$143/3.1C
- BATTEMP/5.4A
- GPIO-EN-MODEM/4.1A
- I2C2-SDA/15.1A
- I2C2-SCL/15.1A
- INA231-INT/4.4C
- HDQ/5.2A
- GPIO70/8.3B
- GPIO110/8.1D
- N\$19/8.2D
- N\$229/8.3C
- ADC114/8.1C
- ADC1/8.4C
- ADC2/8.4C
- GPIO-COMPARATOR/8.4D
- MCBSP4-DR/6.2A
- MCBSP4-DX/6.2A
- MCBSP4-CLKX/6.2A
- MCBSP4-FSX/6.2A
- UART?-RTS/6.2C
- UART?-CTS/6.2C
- UART?-RX/6.2C
- UART?-TX/6.2C
- RING/6.2C
- GPIO-MODEM\_JGT/6.3A
- GPIO-MODEM\_EMERG/6.3A
- EMERG\_OFF/6.3B
- PWR\_IND/6.3B
- LC\_IND/6.3B
- STATUS/6.3B
- 3G-WOE/6.3B
- GPIO52/8.4A
- GPIO-WLAN-EN/9.1A
- MMC3-CLK/9.1A
- MMC3-CMD/9.1A
- MMC3-DATA0/9.1A

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



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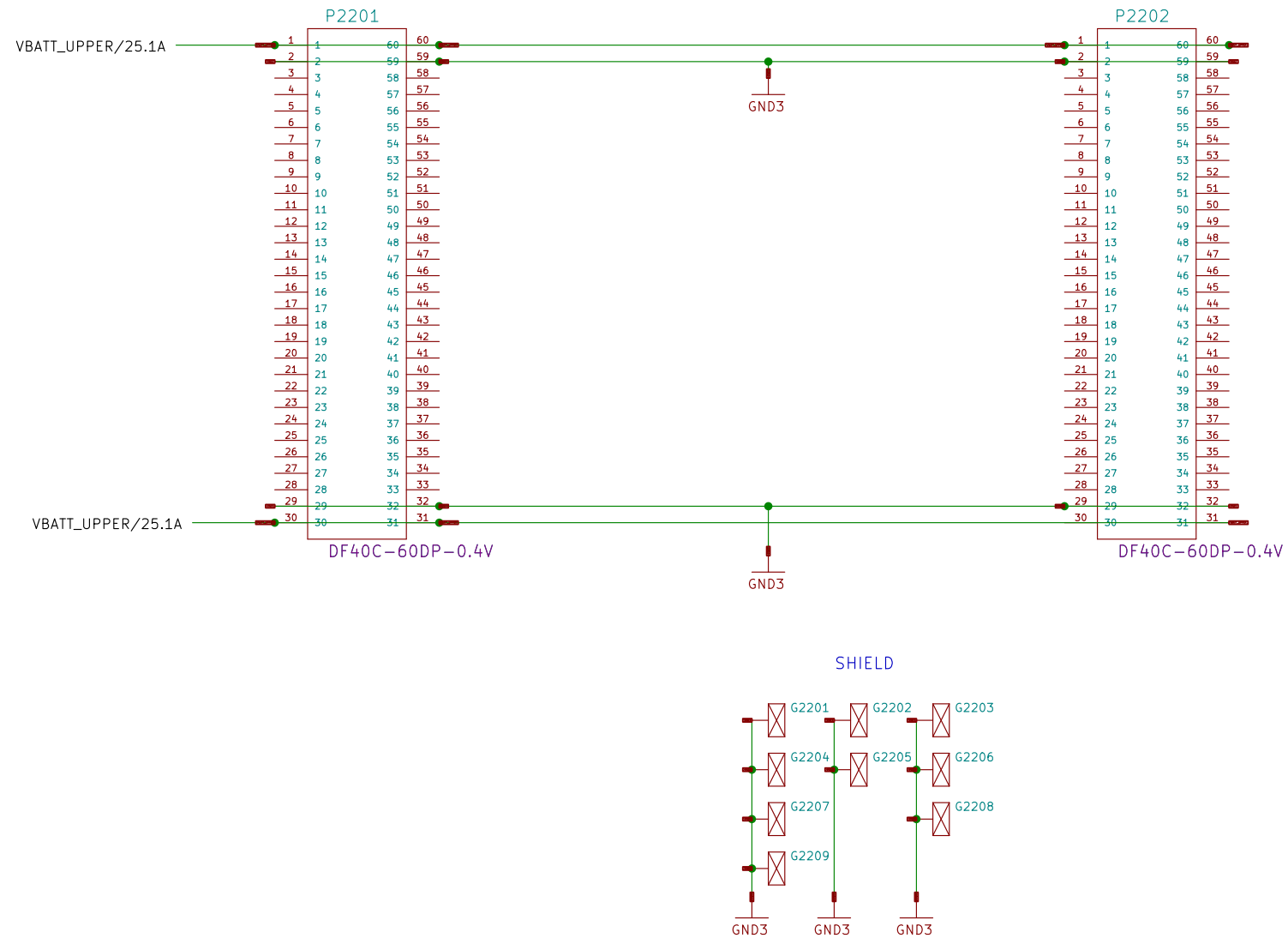
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**TODO: flash controller is now on LOWER, not BOB**

Sheet: /uSD Breakout Board/		
File: neo900_SS_21.sch		
<b>Title: uSD Breakout Board</b>		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. eschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-productId: 22/38		

# TODO: track B2B to UPPER

to be adjusted to lower board connector

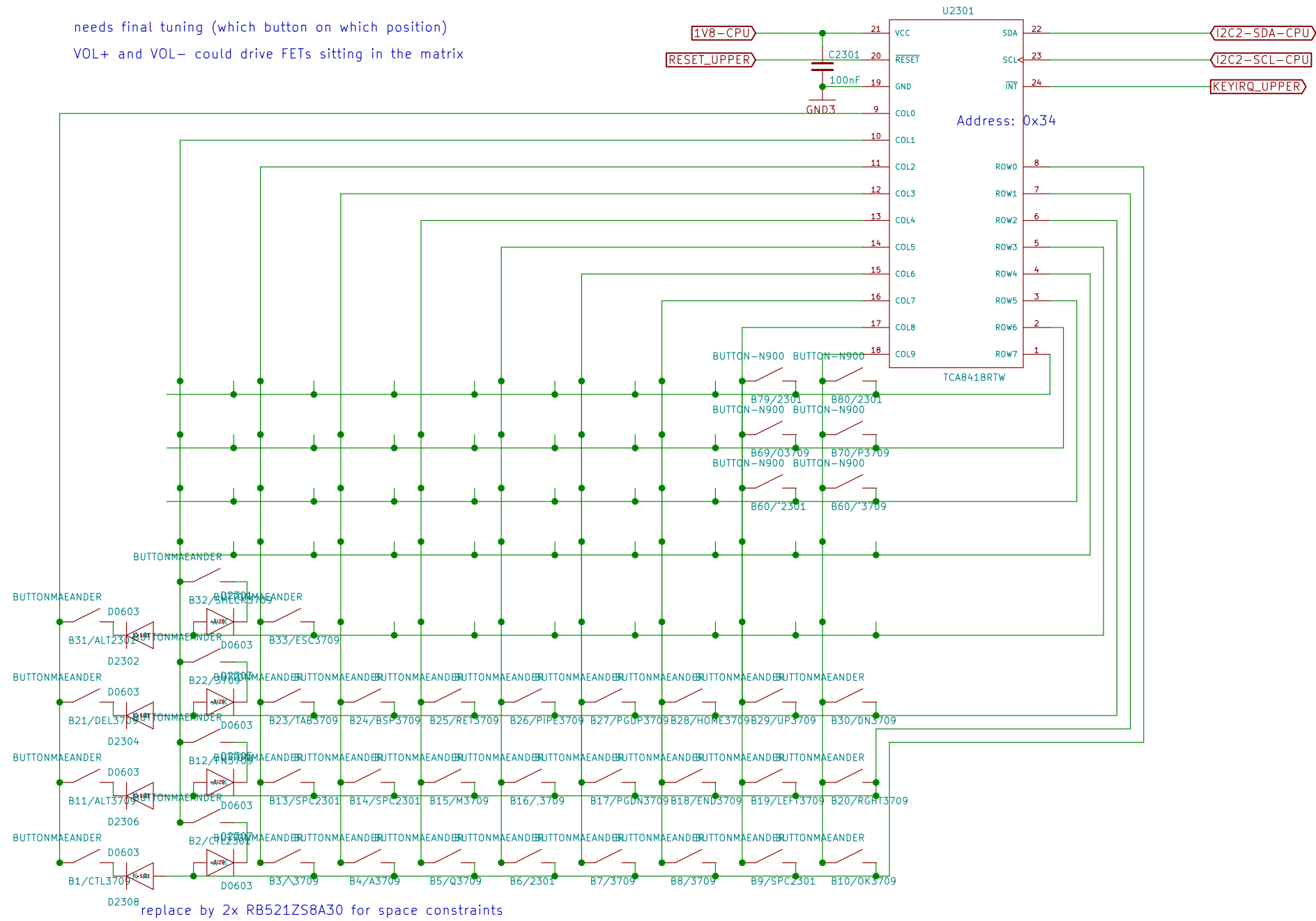


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Sheet: /B2B to LOWER/ File: neo900_SS_22.sch		
<b>Title: B2B to LOWER</b>		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. - eschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-productId: 23/38		

# TODO: \*\_UPPER names ?

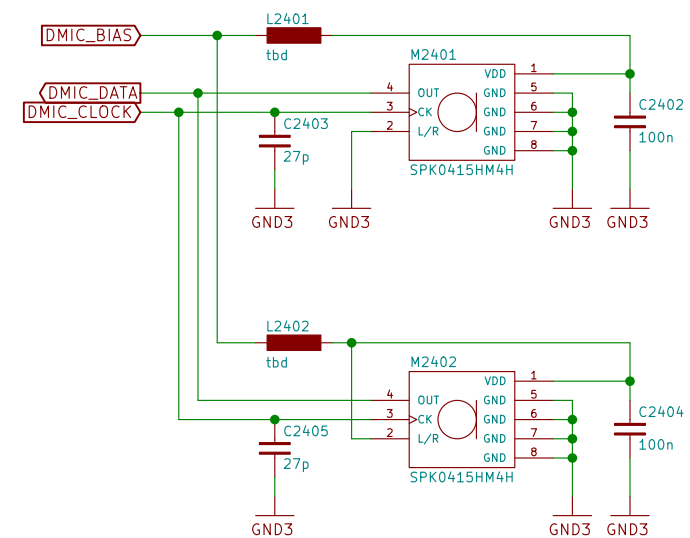
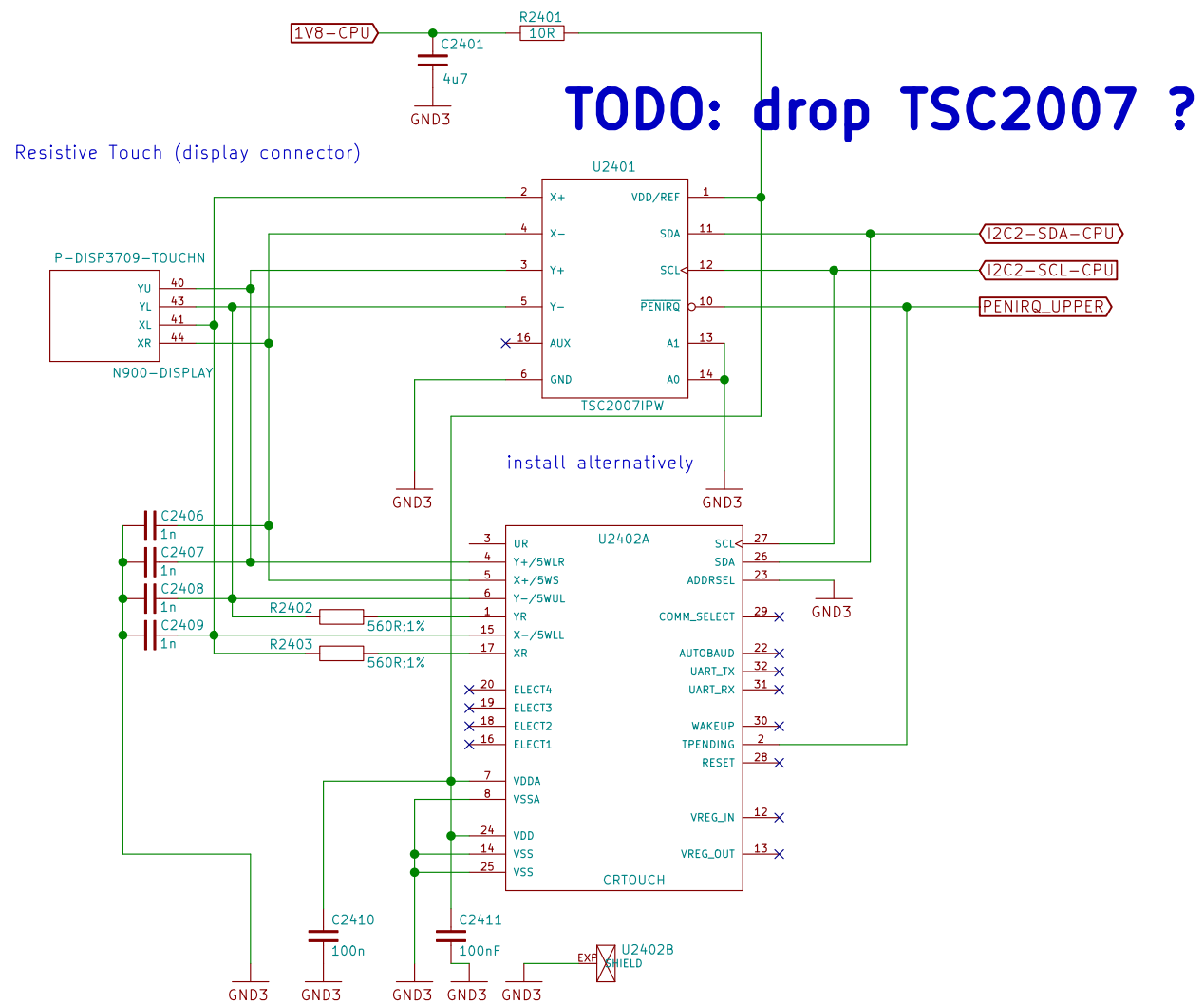
needs final tuning (which button on which position)  
VOL+ and VOL- could drive FETs sitting in the matrix



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Sheet: /Keypad/ File: neo900_SS_23.sch		
<b>Title: Keypad</b>		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. eschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-productId: 24/38		



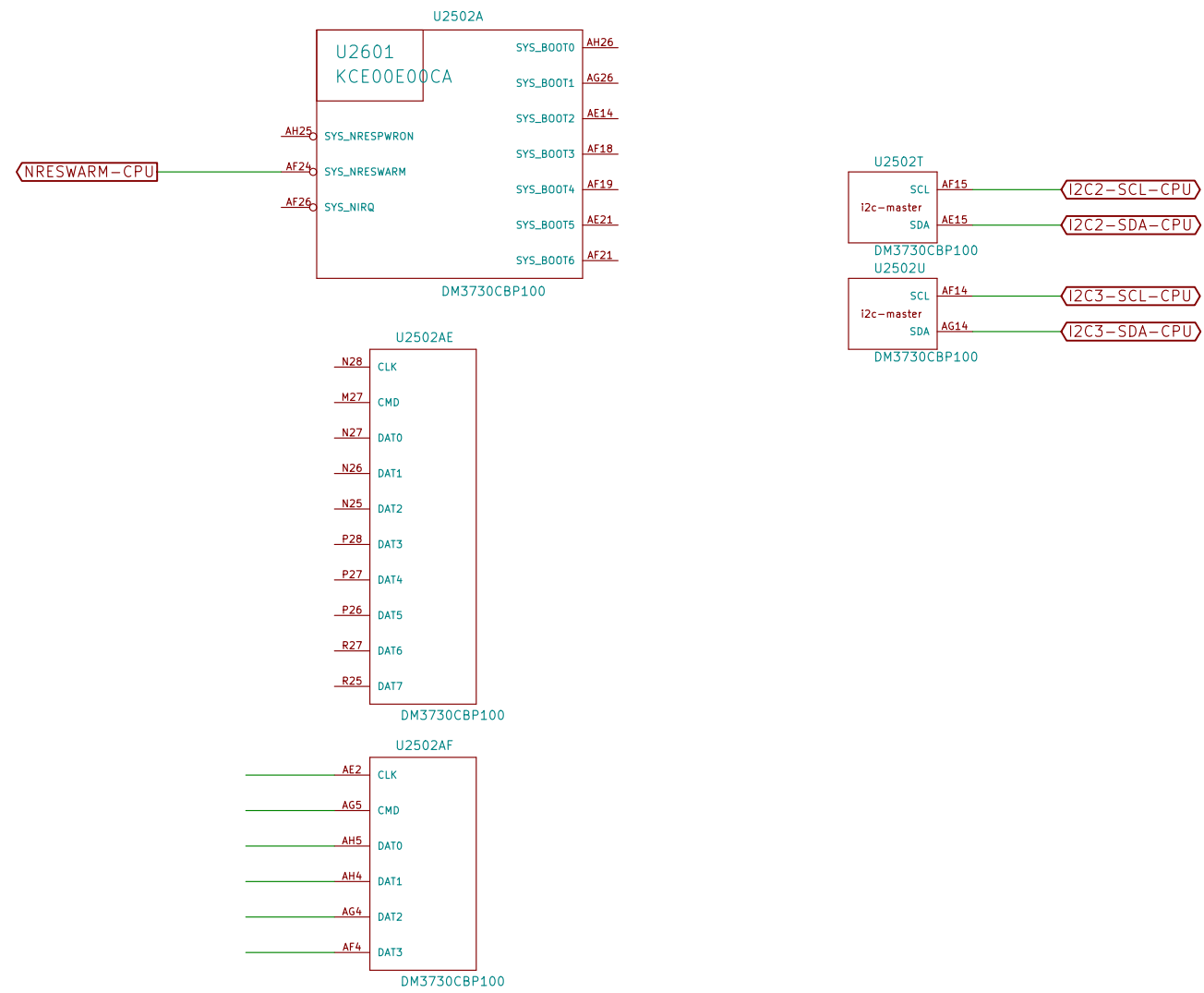


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Sheet: /Display-Peripherals/		
File: neo900_SS_24.sch		
<b>Title: Display-Peripherals</b>		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. eschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-productId: 25/38		



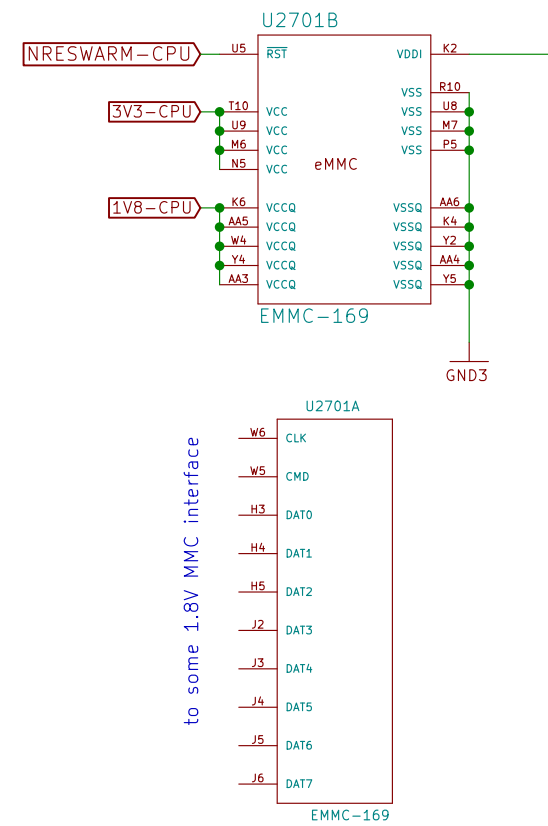
INCOMPLETE in V2



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Sheet: /CPU + PoP RAM/NAND/ File: neo900_SS_26.sch		
<b>Title: CPU + PoP RAM/NAND</b>		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. - eeschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-productId: 27/38		

INCOMPLETE in V2

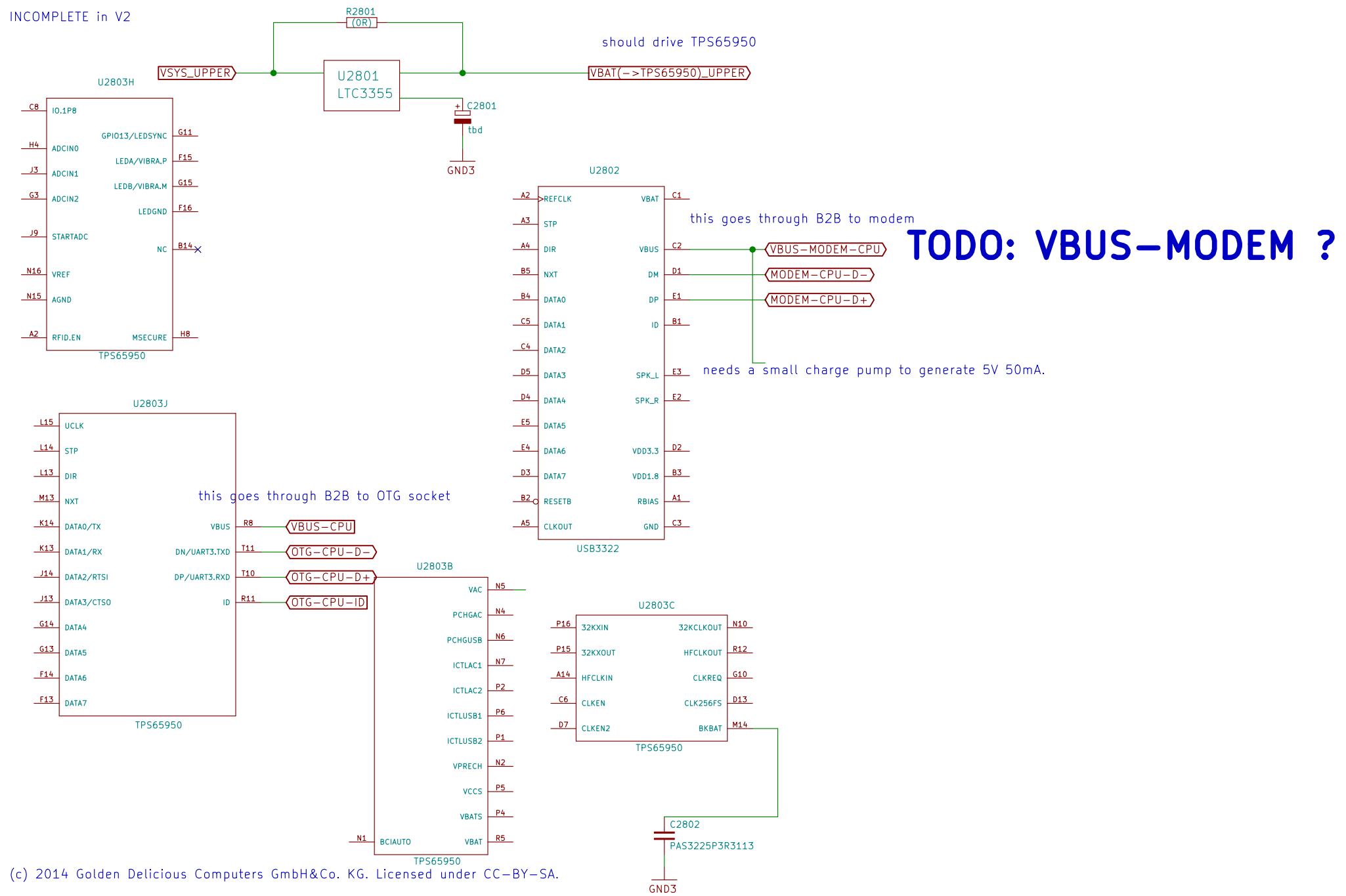


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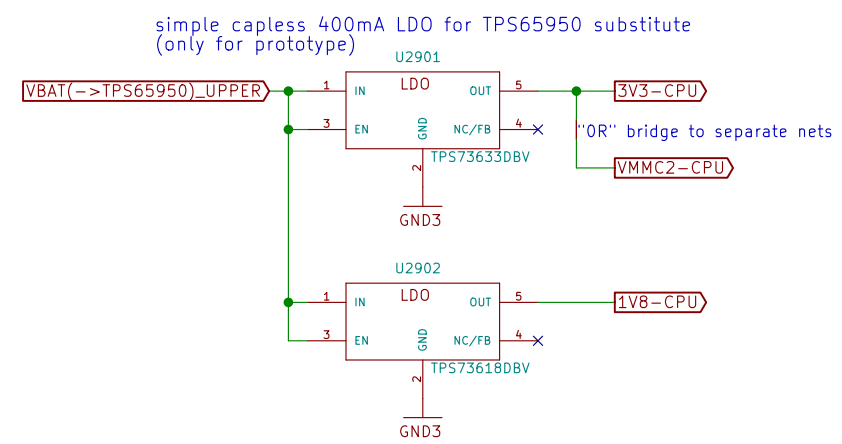
Sheet: /eMMC/ File: neo900_SS_27.sch		
<b>Title: eMMC</b>		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. eeschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-productId: 28/38		

# TODO: check role

INCOMPLETE in V2



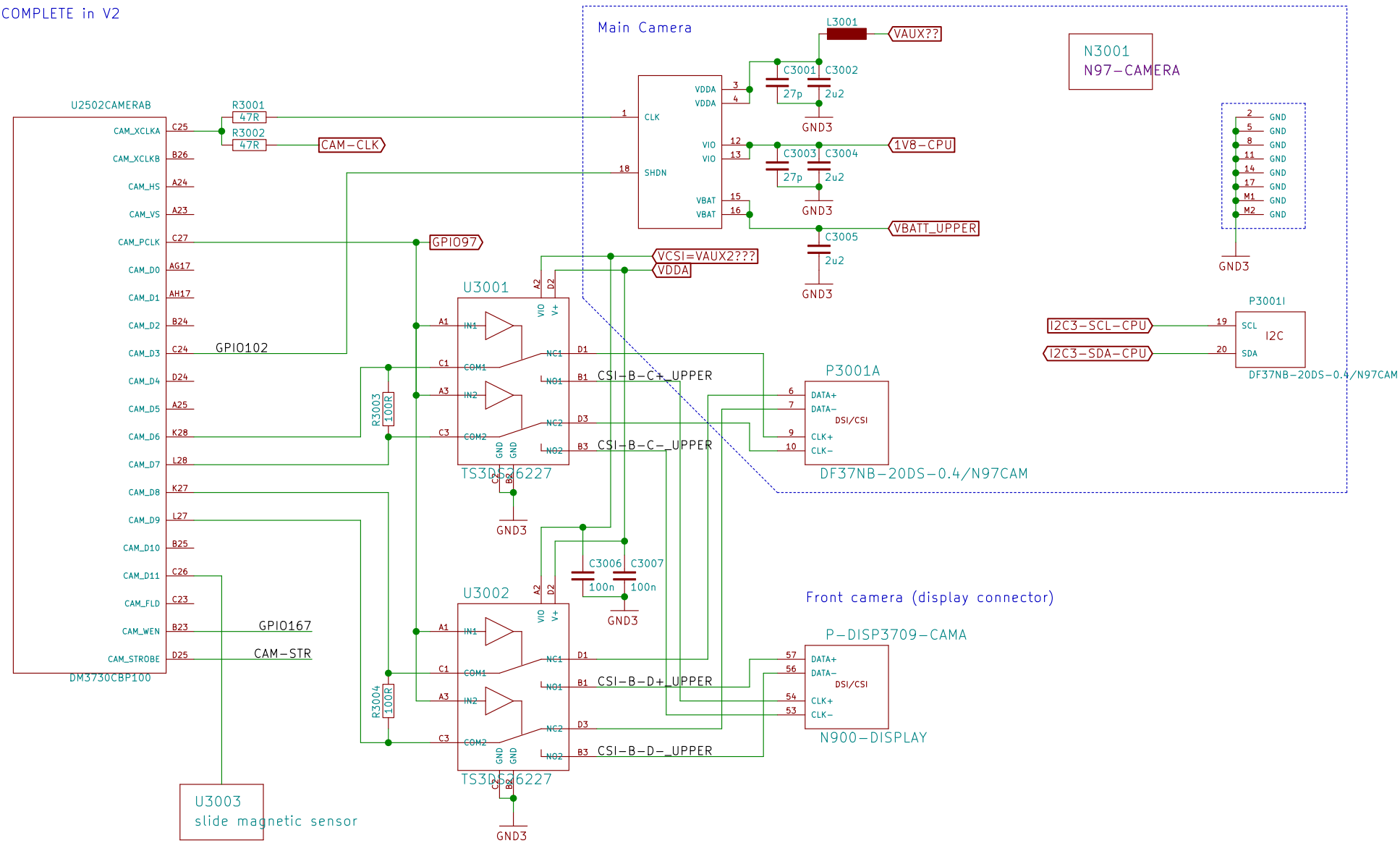
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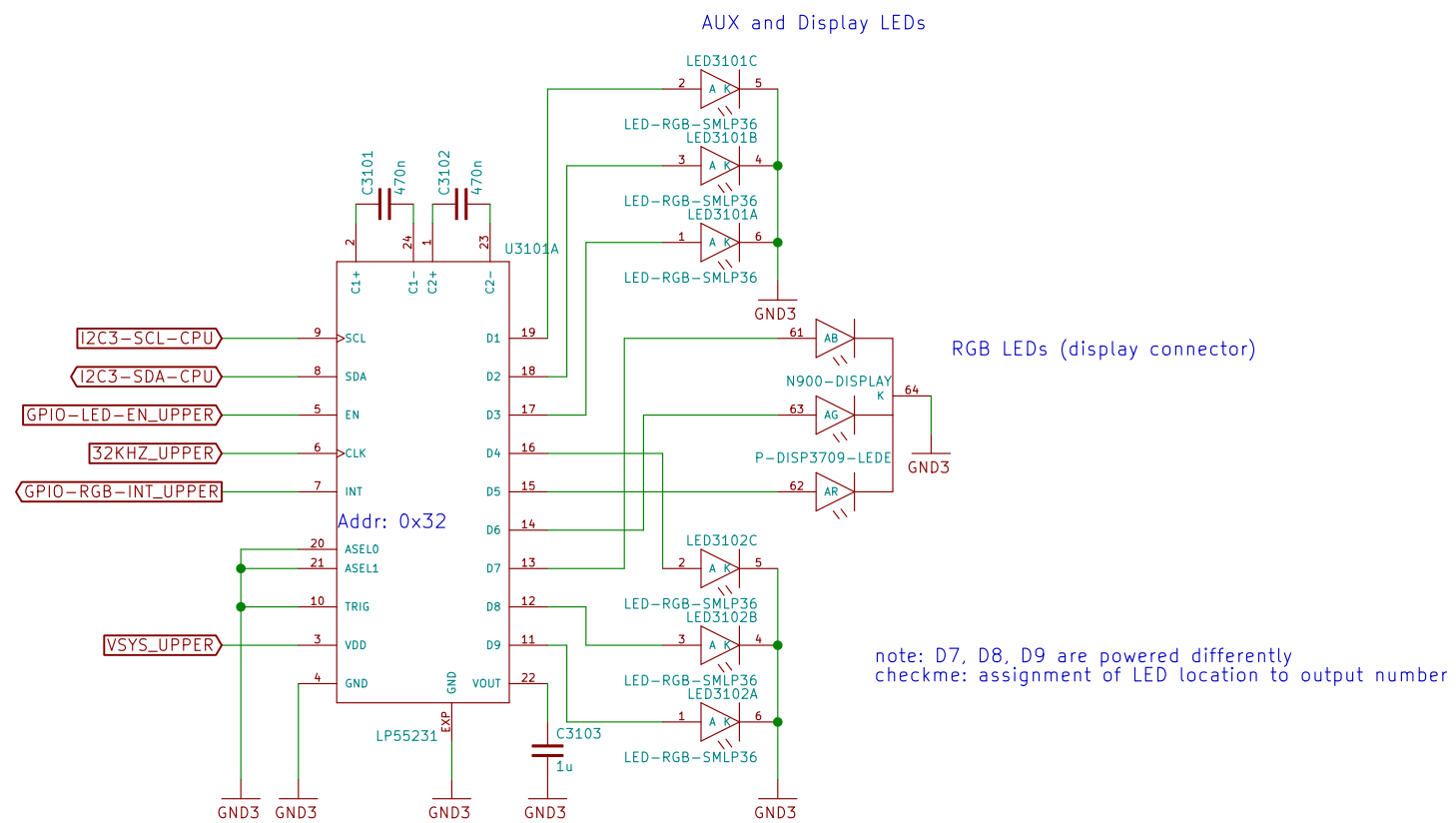
Sheet: /BB-XM Dummy (TWL4030)/		
File: neo900_SS_29.sch		
<b>Title: BB-XM Dummy (TWL4030)</b>		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. eeschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-product		Id: 30/38

INCOMPLETE in V2



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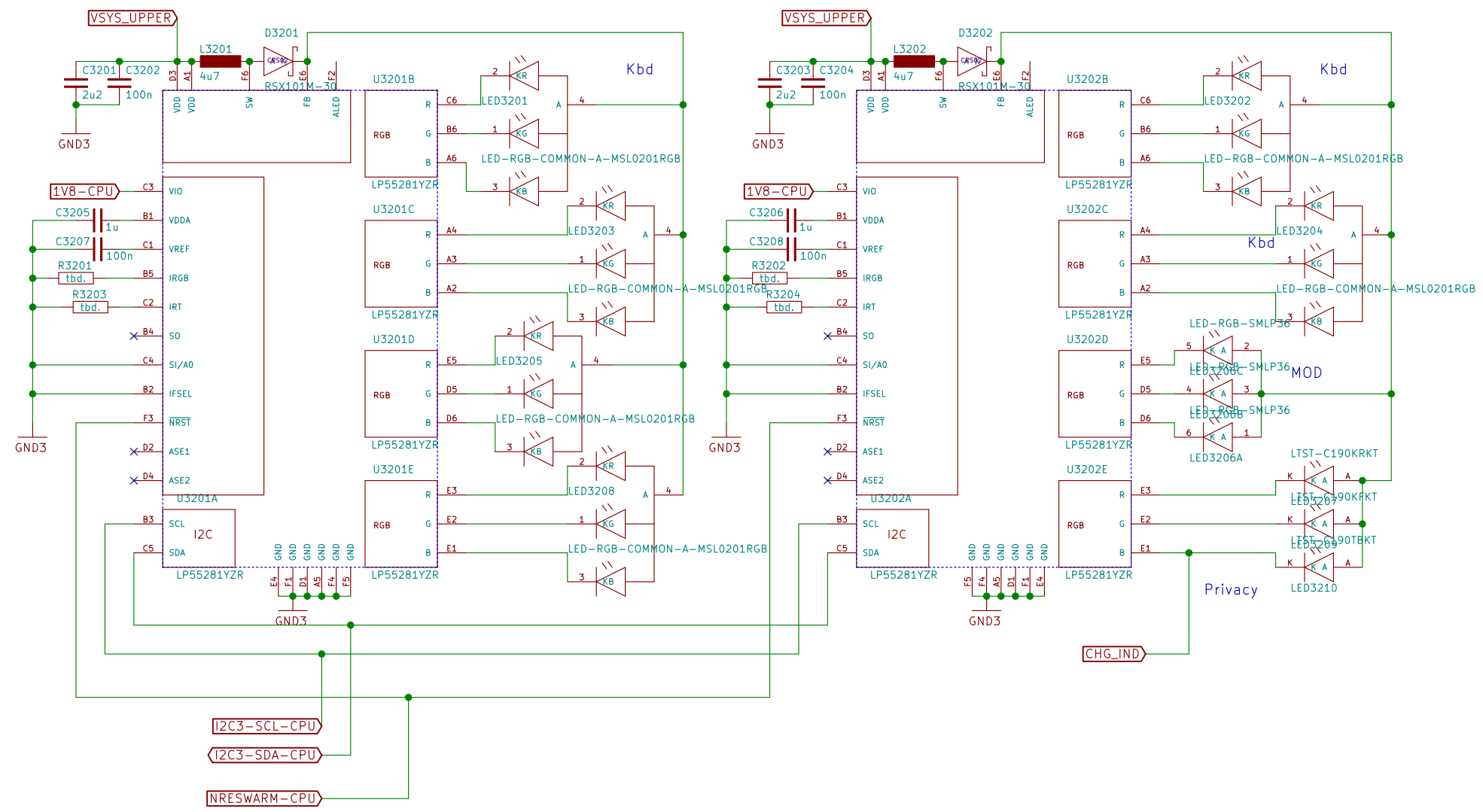
Sheet: /Camera/ File: neo900_SS_30.sch		
<b>Title: Camera</b>		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. - eeschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-productId: 31/38		



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Sheet: /LEDs/ File: neo900_SS_31.sch		
<b>Title: LEDs</b>		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. eeschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-productId: 32/38		





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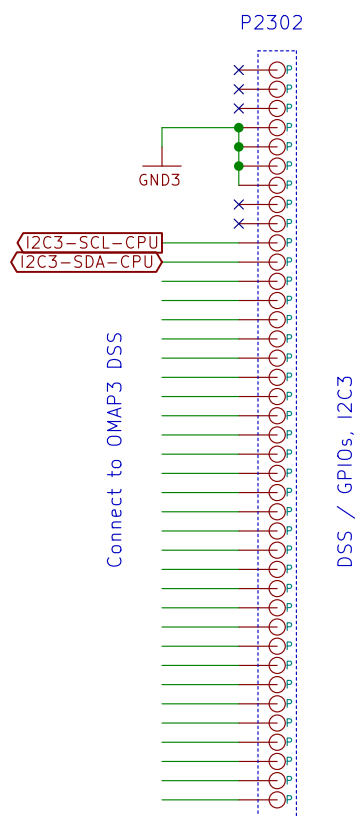
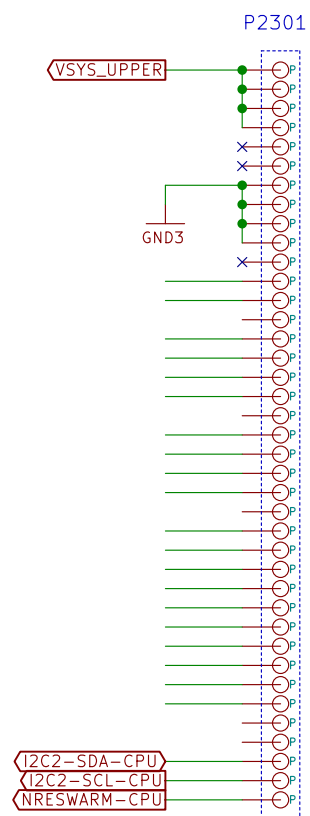
Sheet: /Fancy LEDs/		
File: neo900_SS_32.sch		
<b>Title: Fancy LEDs</b>		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. - eeschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-productId: 33/38		

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

INCOMPLETE  
prototype only

connect to respective CPU-pads

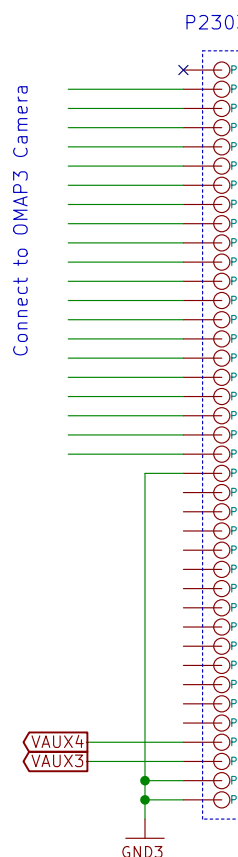
Connect to OMAP3 McSPI1, I2C2, MMC2 / some GPIOs



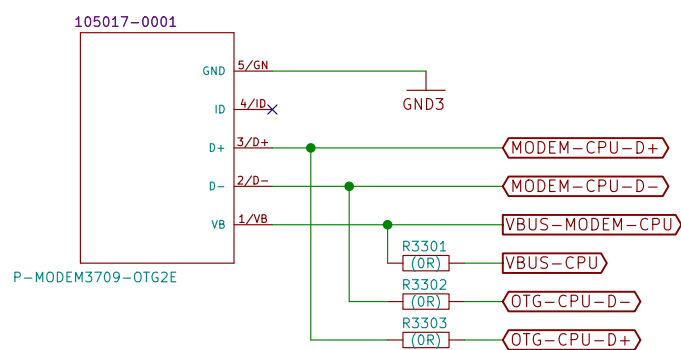
Connect to OMAP3 DSS

DSS / GPIOs, I2C3

Connect to OMAP3 Camera

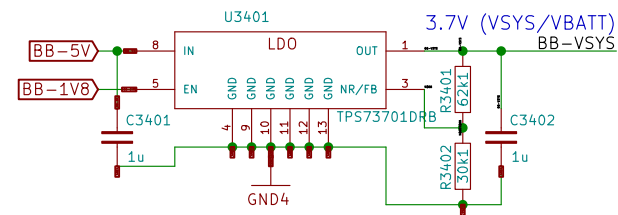


connect to BB  
by some Micro-USB cable

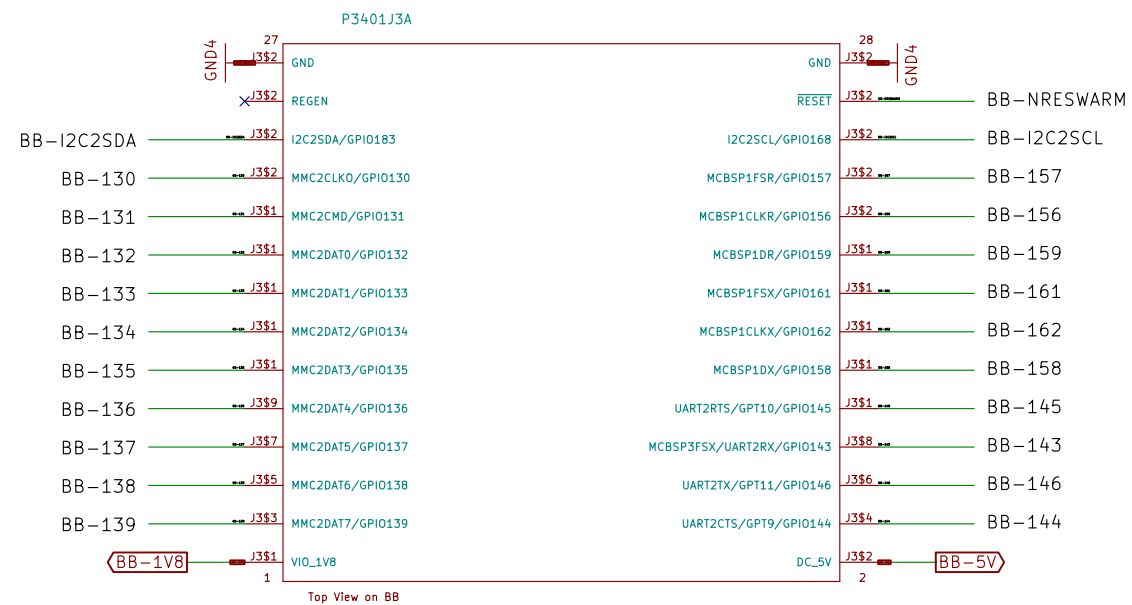
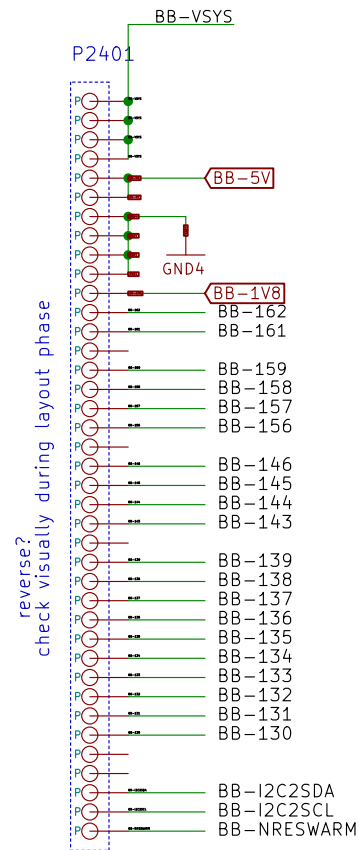


**TODO: VBUS-MODEM ?**

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Ersetzen durch 2A buck converter

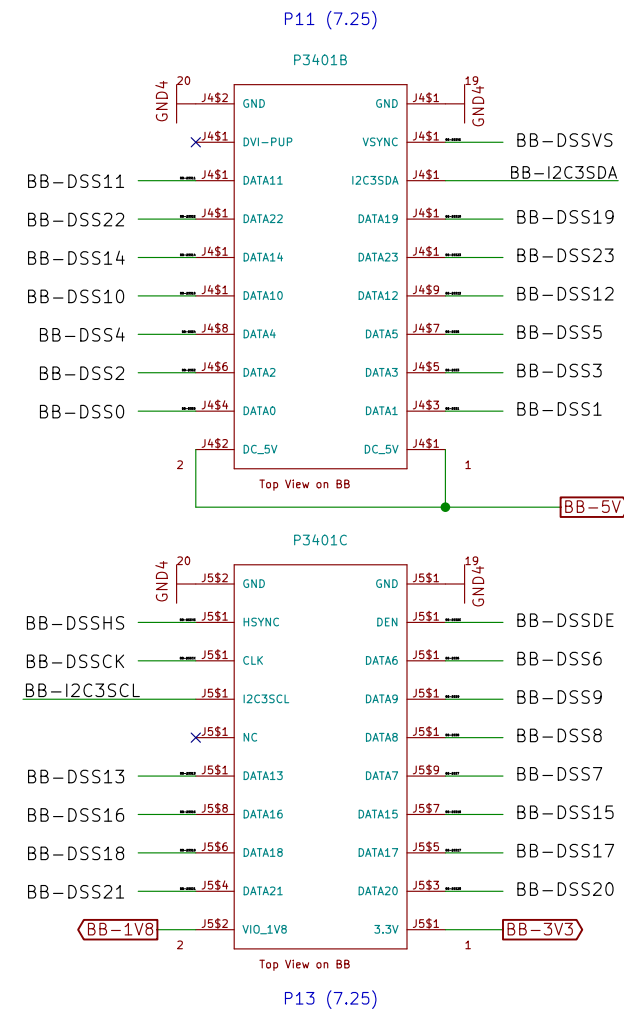
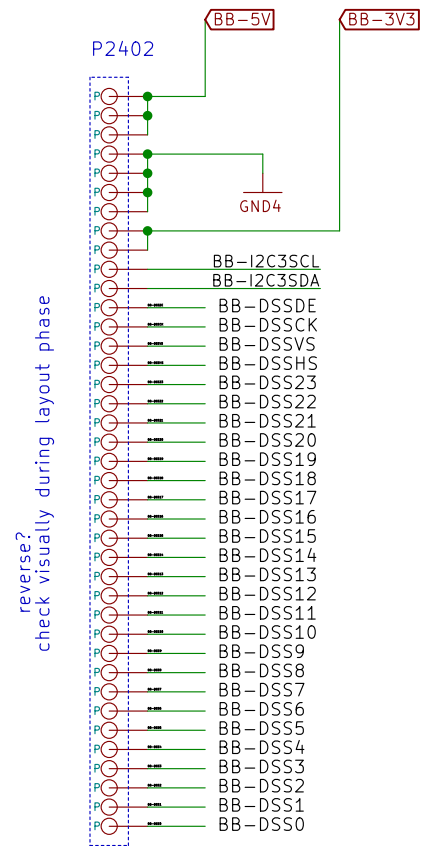


BB-xM Main Expansion Header (7.24)

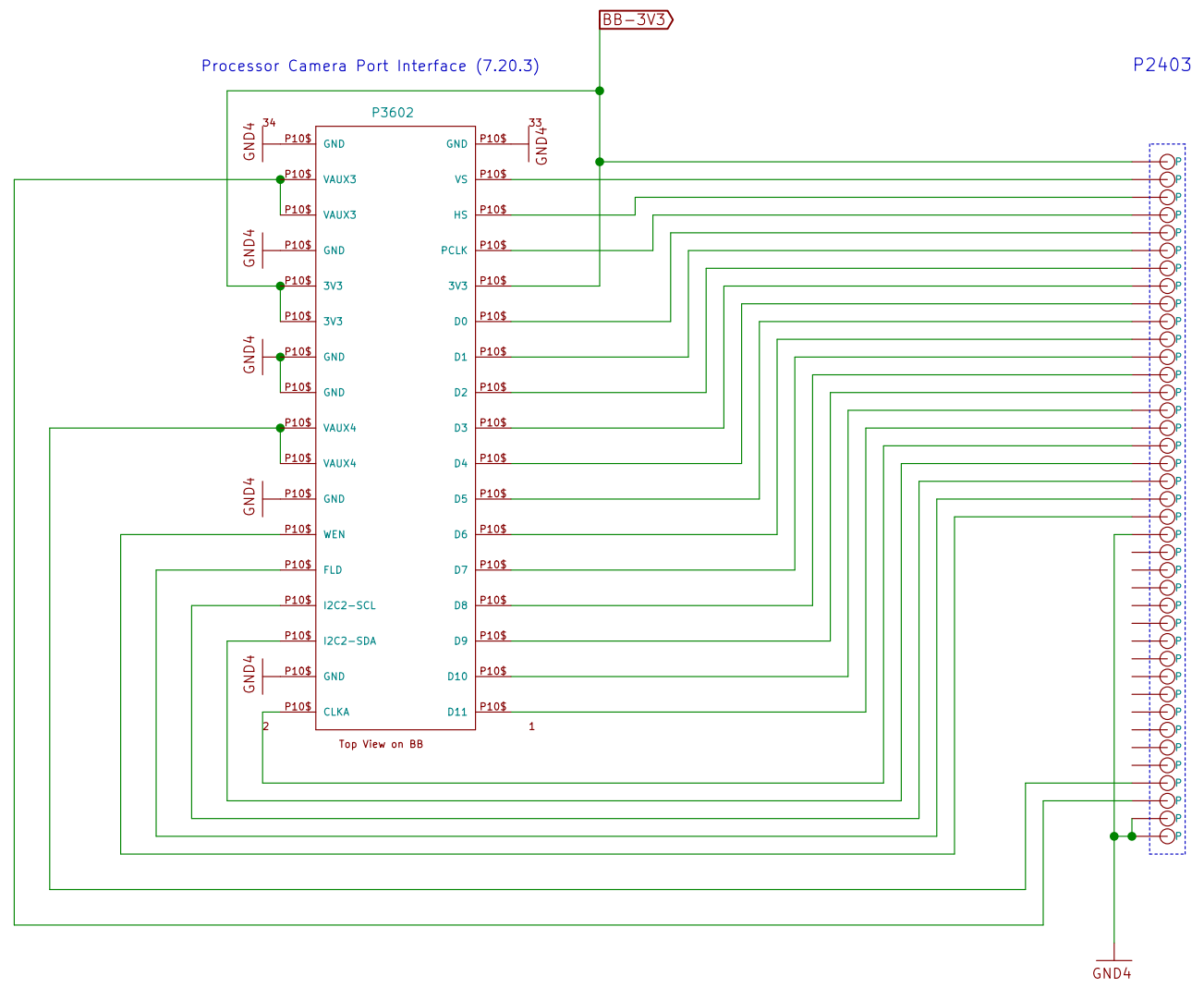
**TODO: needs decision on where to take this**

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Sheet: /BB-XM Adapter (CPU)/		
File: neo900_SS_34.sch		
<b>Title: BB-XM Adapter (CPU)</b>		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. - eschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-productId: 35/38		



**TODO: needs decision on where to take this**



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Sheet: /BB-XM Adapter (CAM)/		
File: neo900_SS_36.sch		
<b>Title: BB-XM Adapter (CAM)</b>		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. - eeschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-productId: 37/38		

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

N3701 15015-0439	N3702 15015-0439	N3703 15015-0439
CPU	DISP	CAM

N3704 N900 case assembly
-----------------------------

N3705 N97-CAMERA-HOLE
--------------------------

N3706 headset jack
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N3707 STENCIL-TOP
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N3708 STENCIL-BOTTOM
-------------------------

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Sheet: /No-Solder Components/ File: neo900_SS_37.sch		
<b>Title: No-Solder Components</b>		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. eeschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-productId: 38/38		