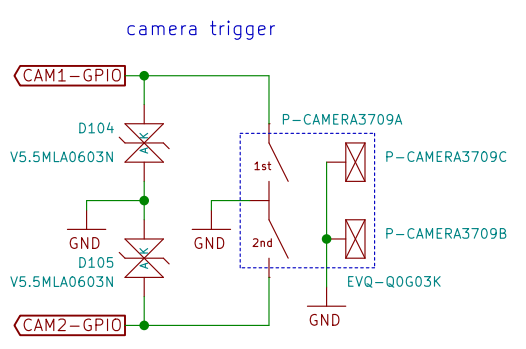
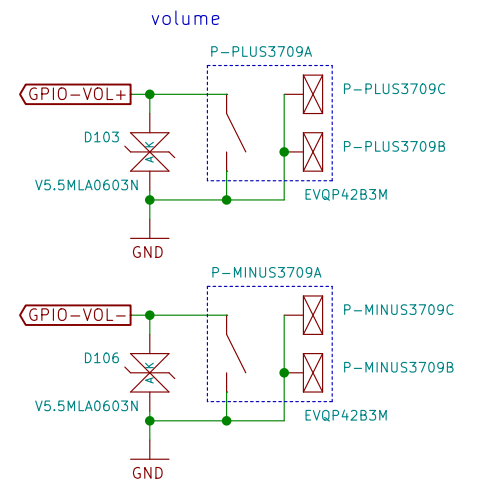
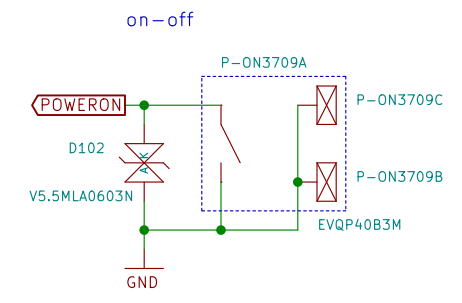
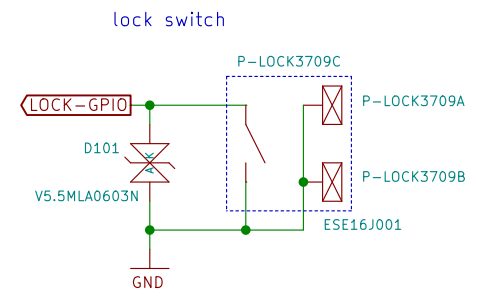


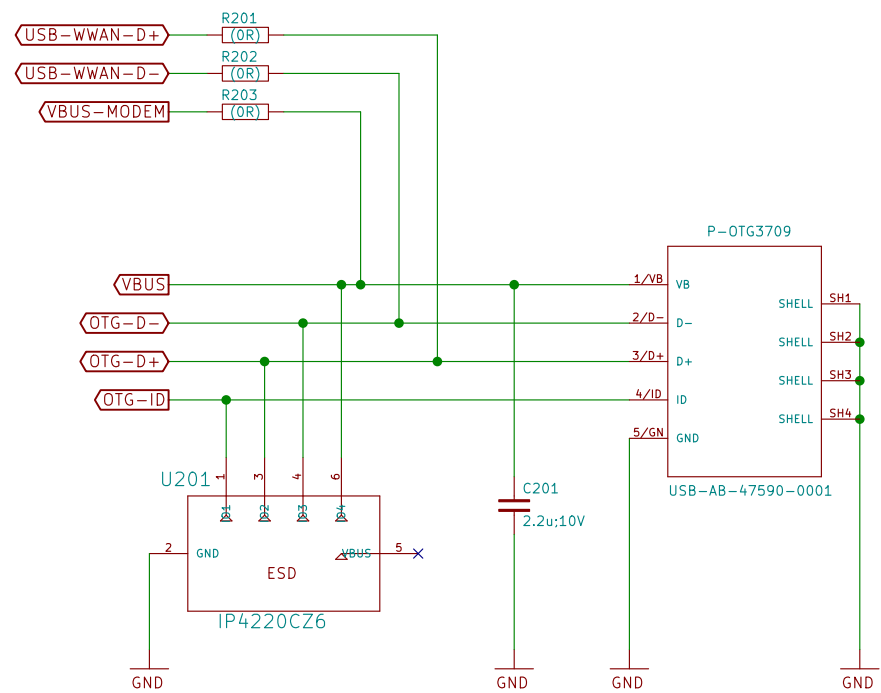
Sheet: /		
File: neo900.sch		
Title: Neo900		
Size: A3	Date: 16 JUL 2016	Rev:
KiCad E.D.A. eschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-product		Id: 1/38



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

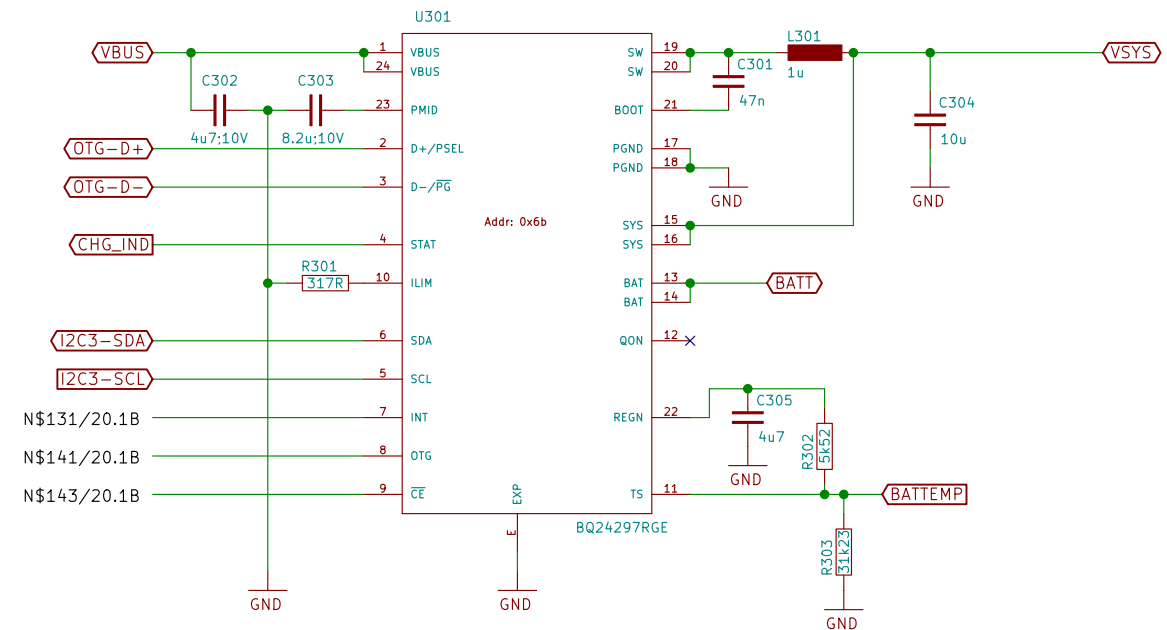
Sheet: /Buttons/ File: neo900_SS_1.sch		
Title: Buttons		
Size: A3	Date: 16 JUL 2016	Rev:
KiCad E.D.A. eeschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-product		Id: 2/38

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

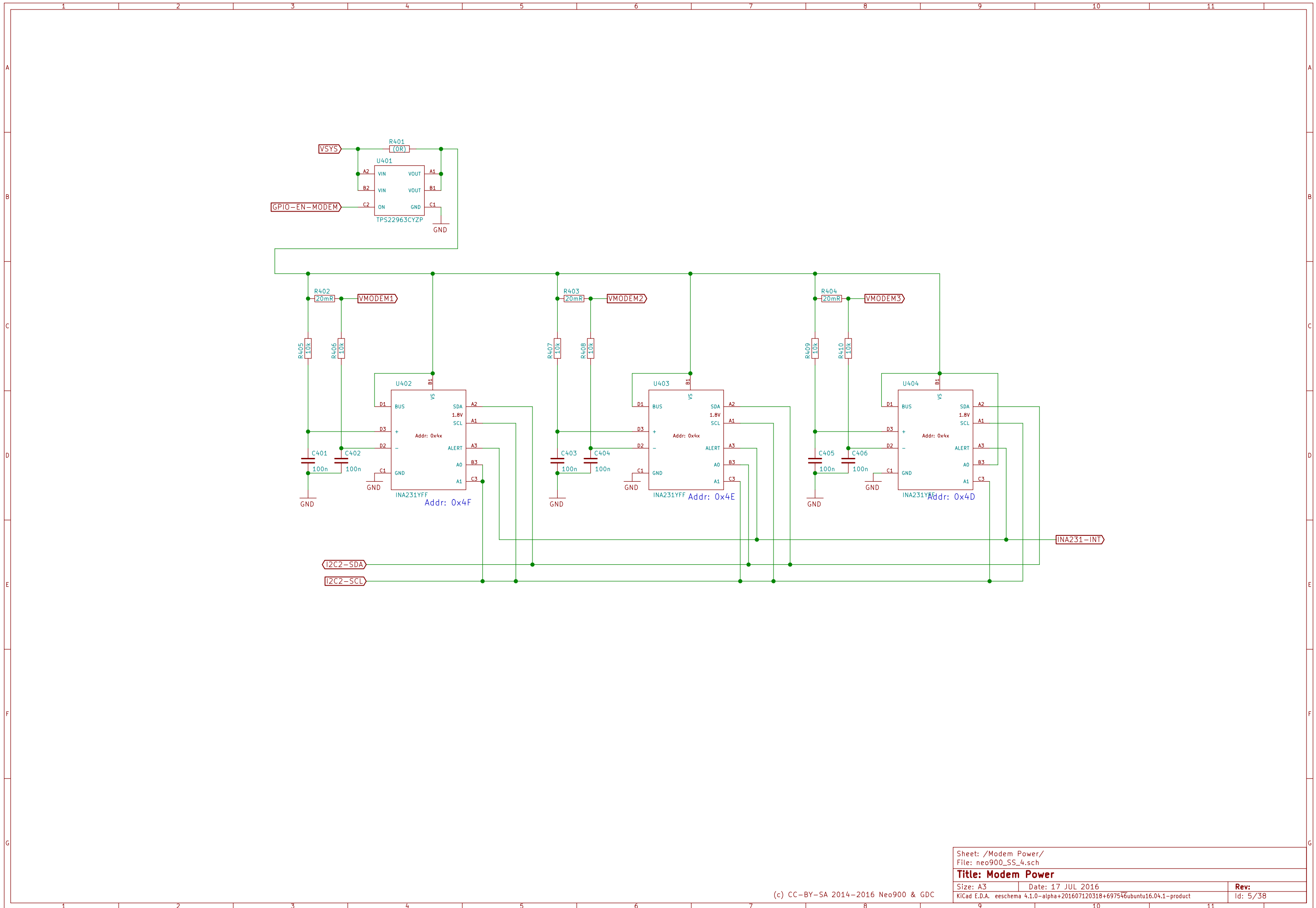


Sheet: /OTG/ File: neo900_SS_2.sch		
Title: OTG		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. eeschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-product		Id: 3/38

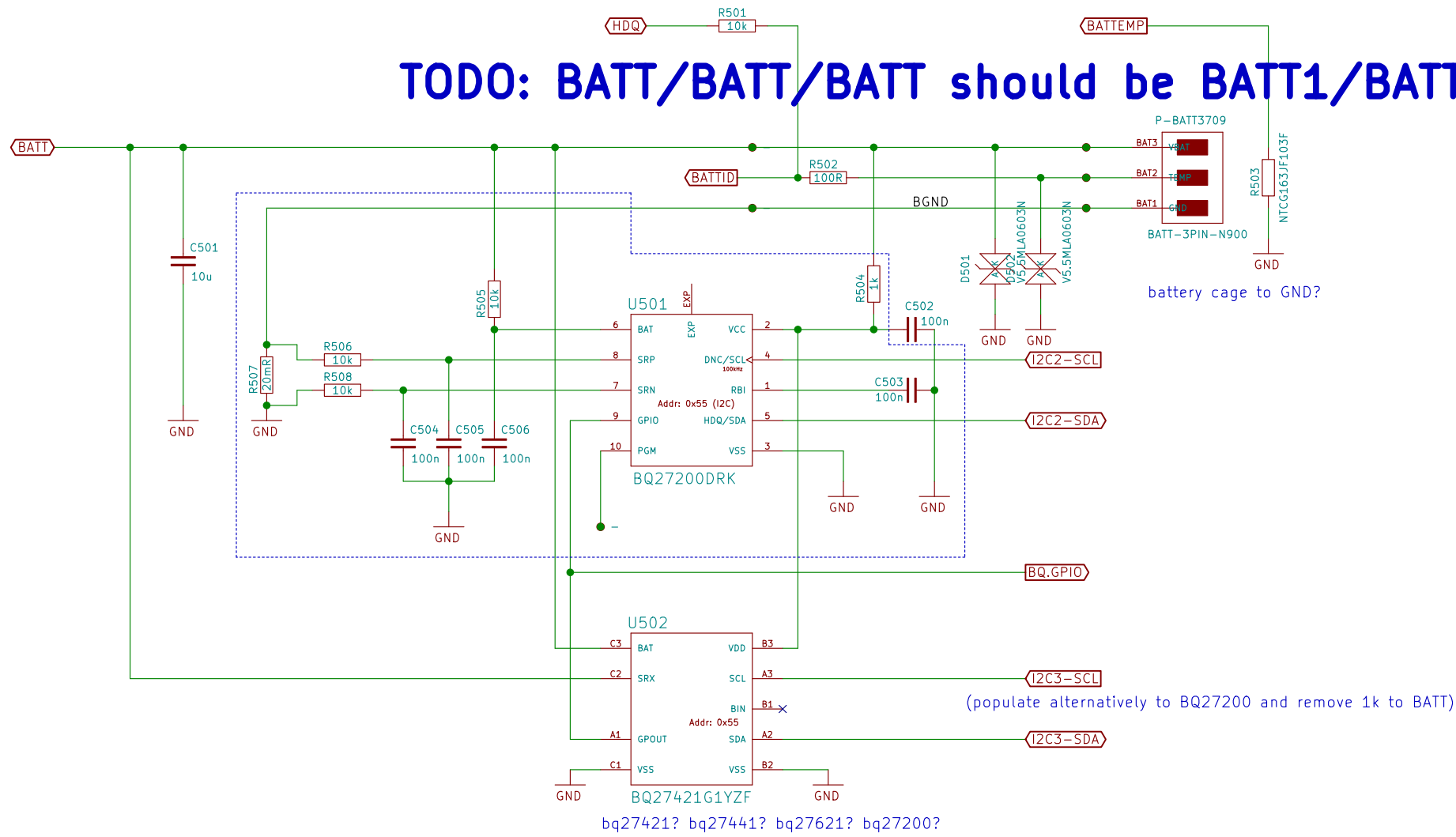
TODO



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



Sheet: /Modem Power/ File: neo900_SS_4.sch		
Title: Modem Power		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. eeschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-product		Id: 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?

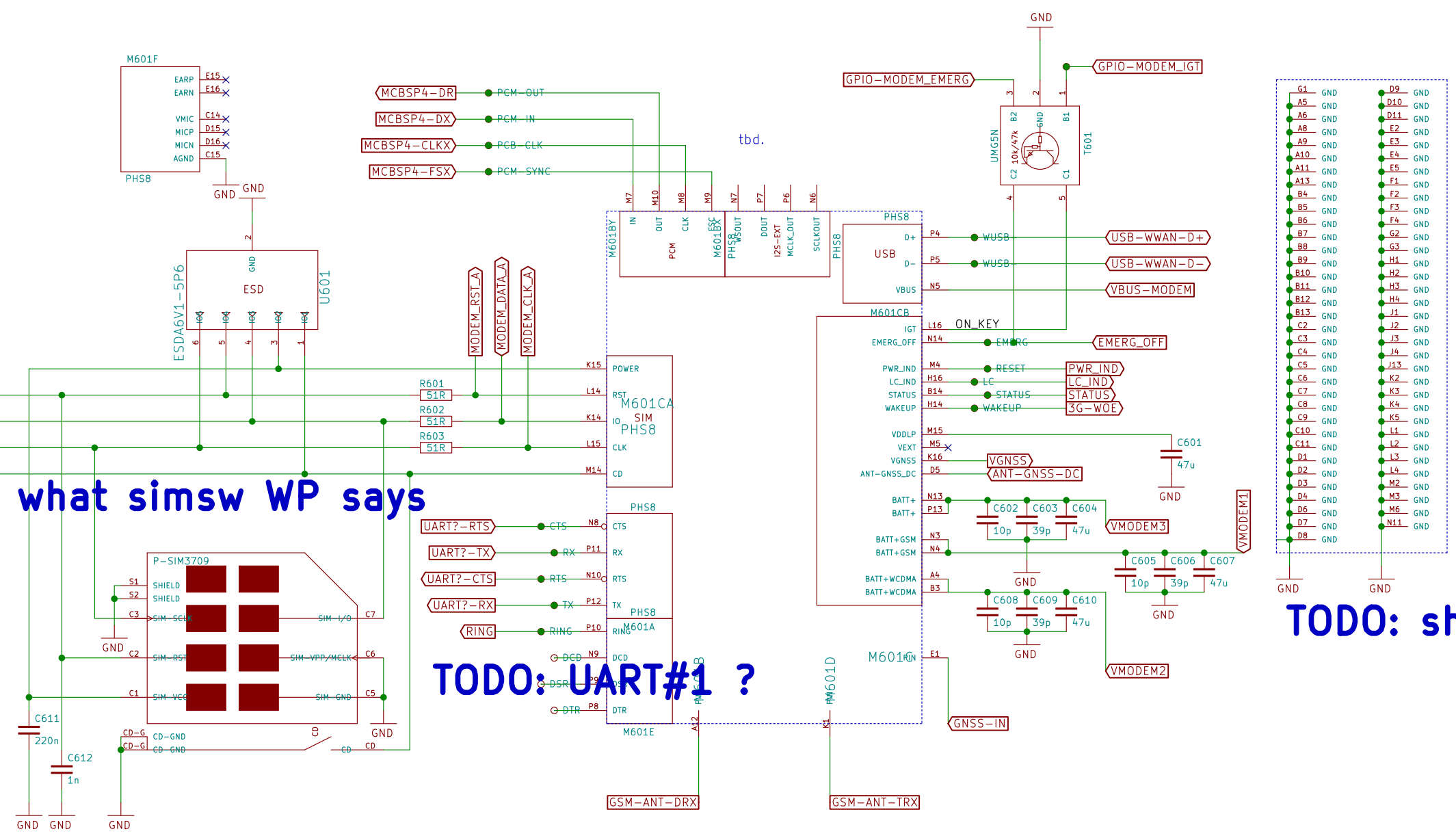
Sheet: /Fuel Gauge/ File: neo900_SS_5.sch		
Title: Fuel Gauge		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. eeschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-product		Id: 6/38

TODO: do what simsw WP says

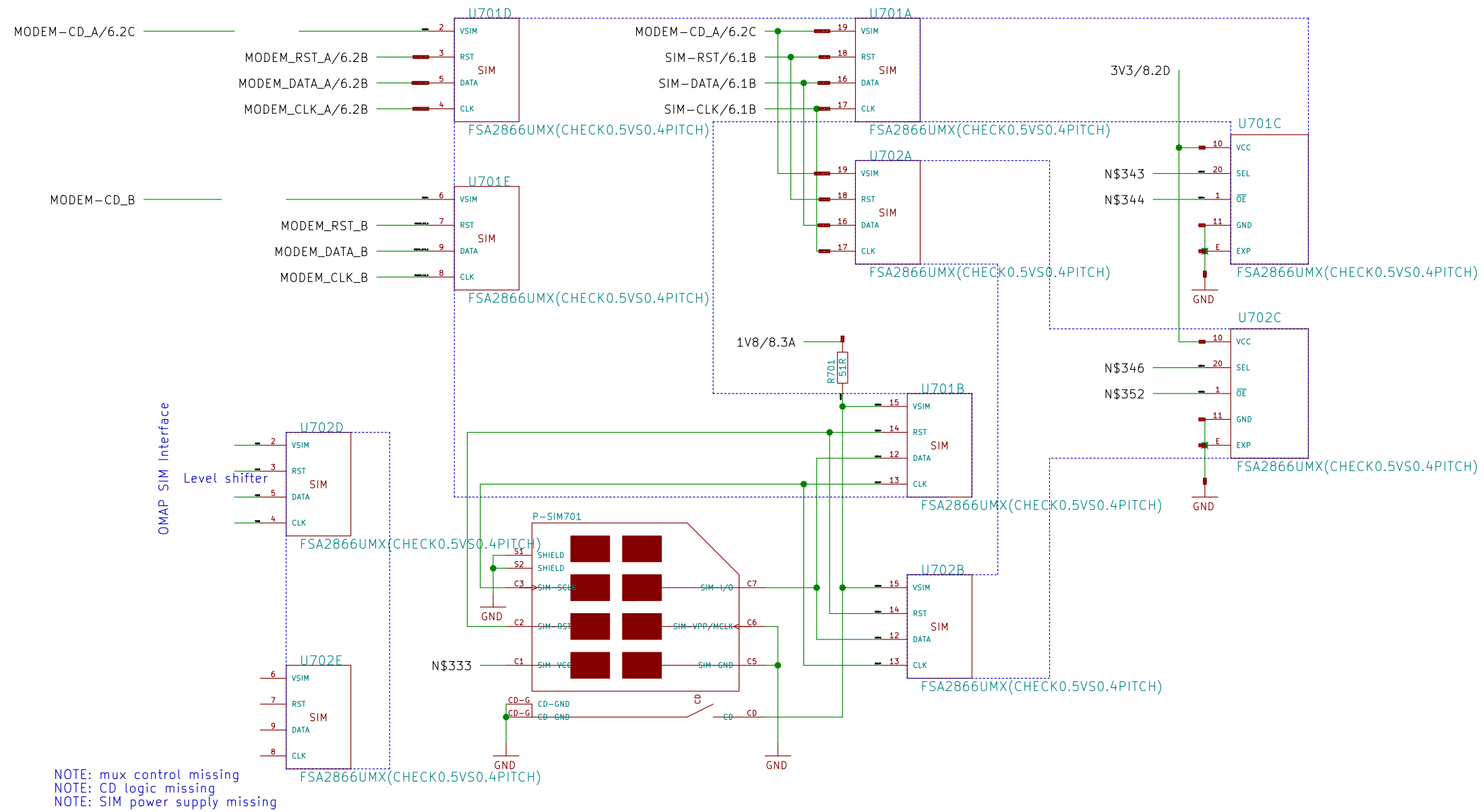
TODO: UART#1 ?

TODO: shield connection near

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

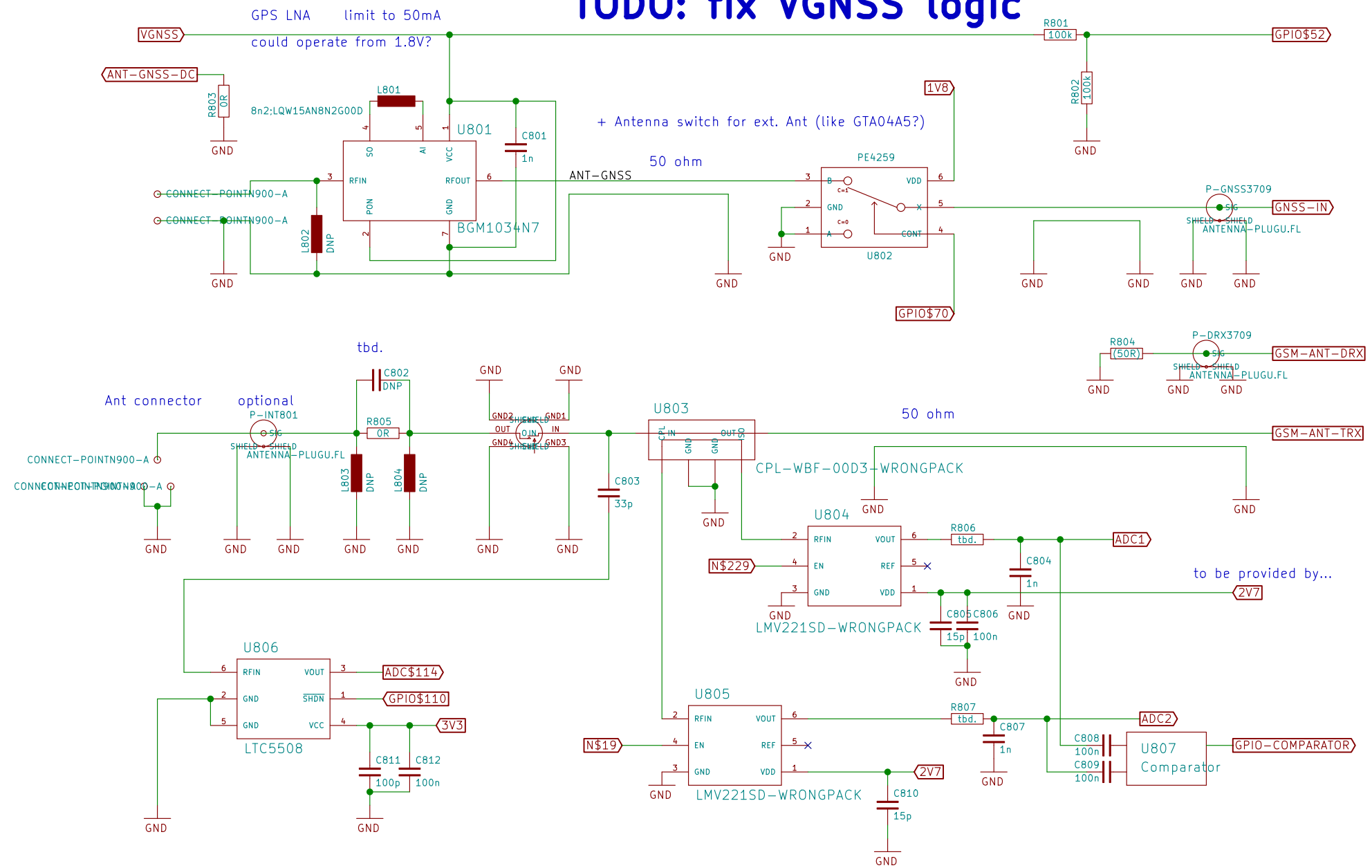


TODO: not cleaned up – needs total rewrite

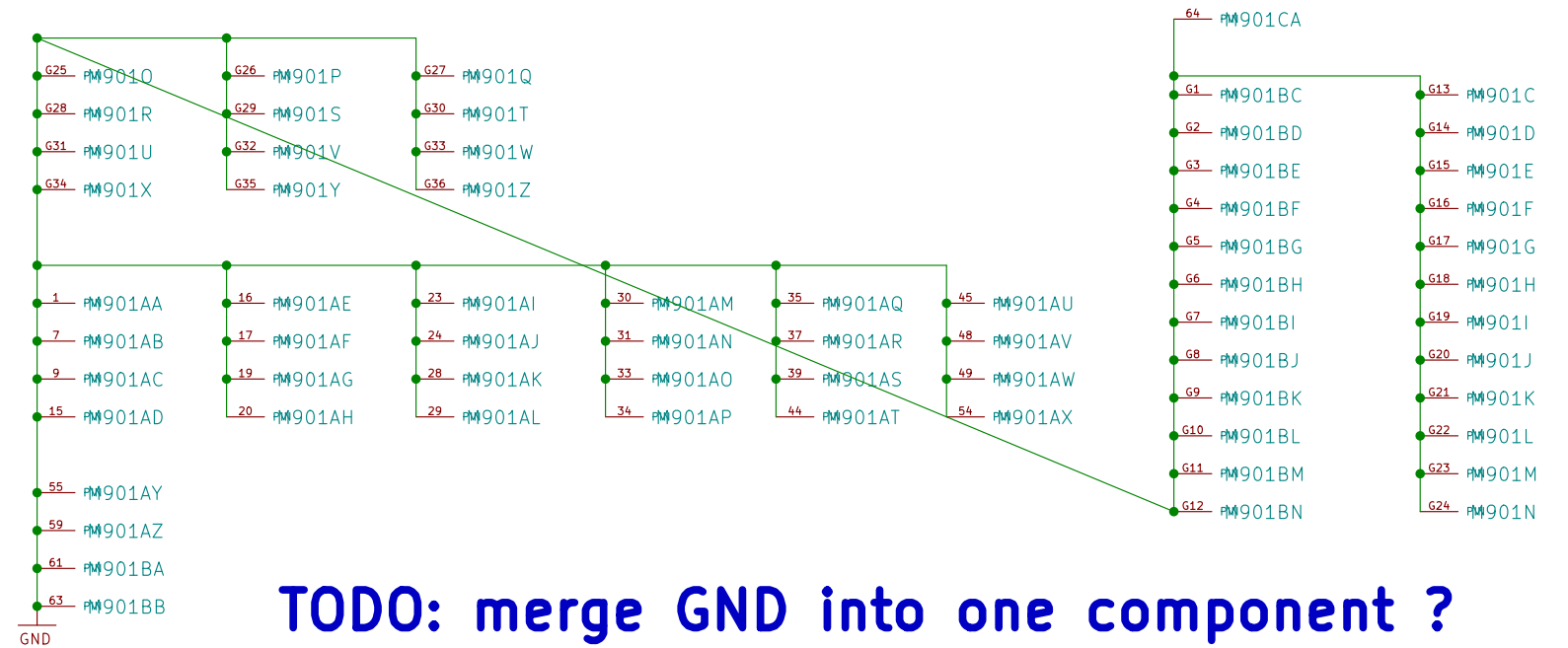
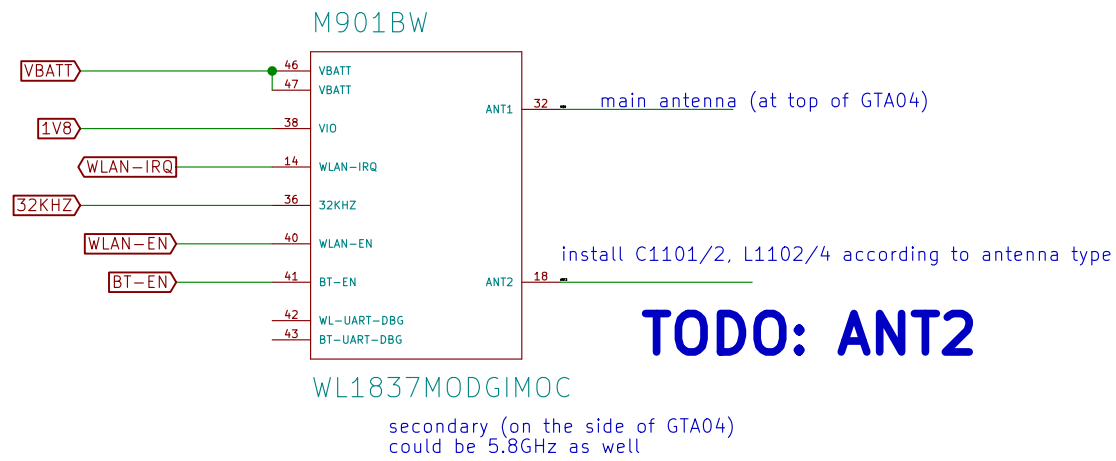


Sheet: /Dual SIM switch/ File: neo900_SS_7.sch		
Title: Dual SIM switch		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. eeschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-product		Id: 8/38

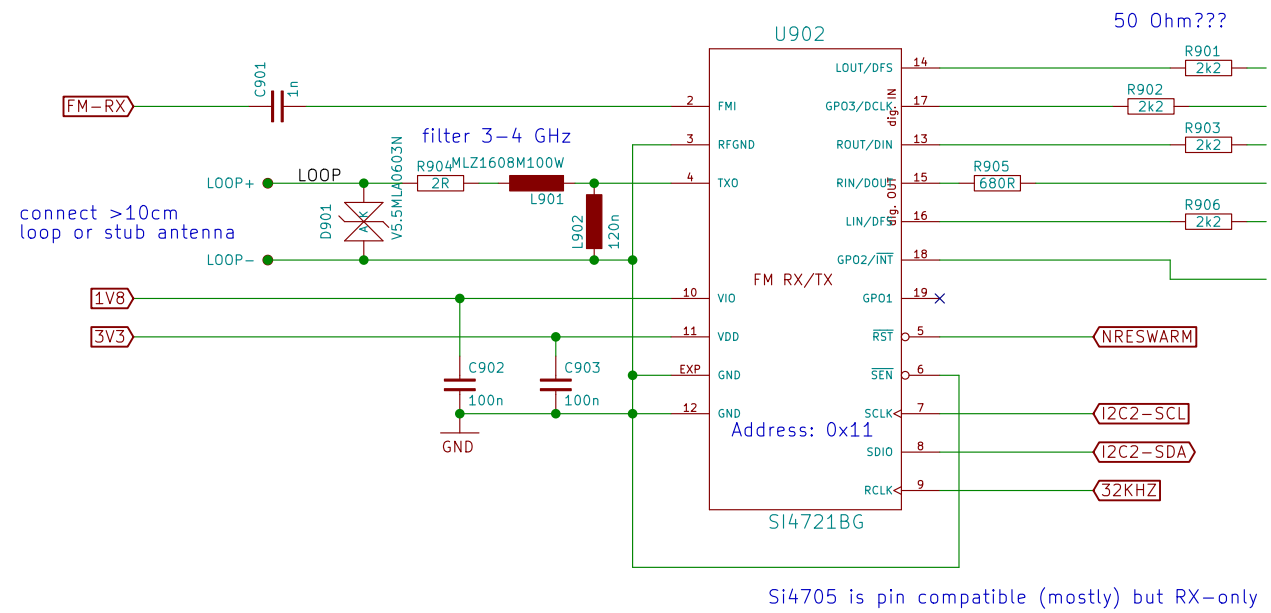
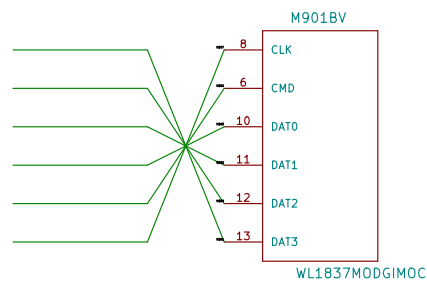
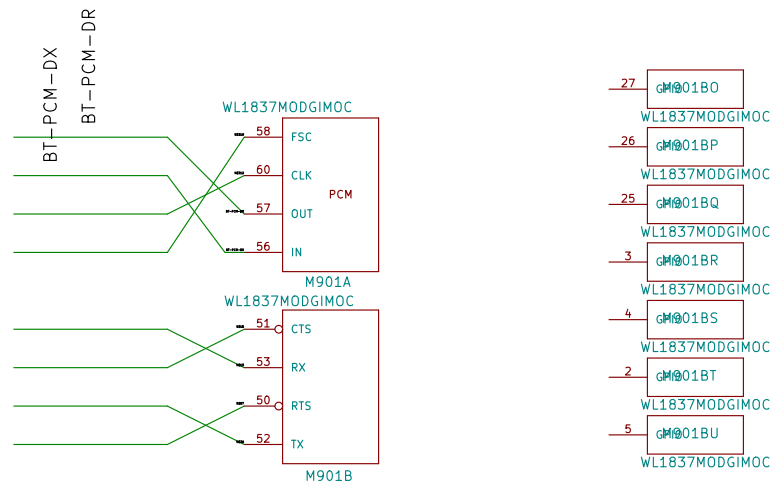
TODO: fix VGNSS logic



TODO: name all the *\$*

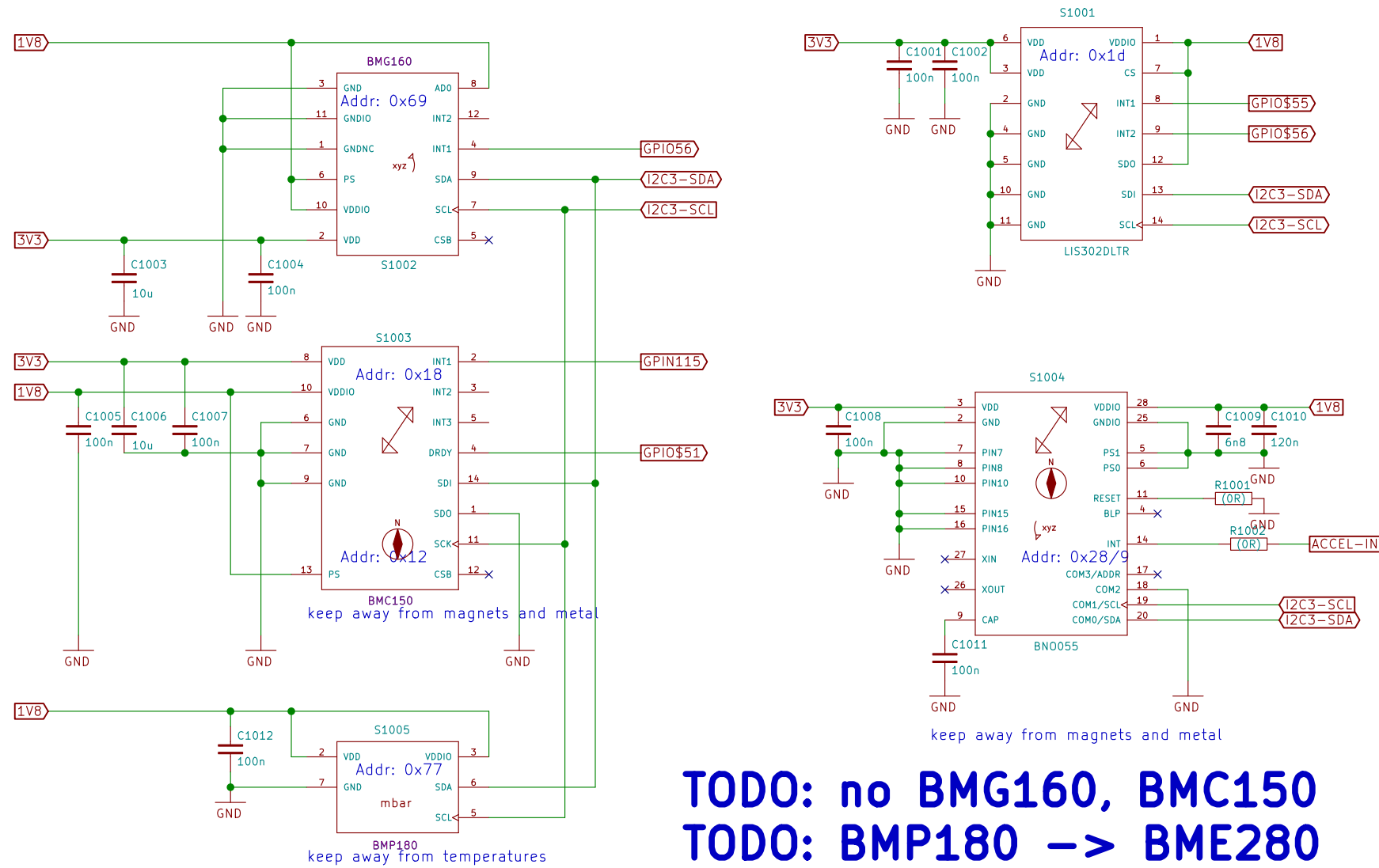


TODO: unfinished



TODO: unfinished

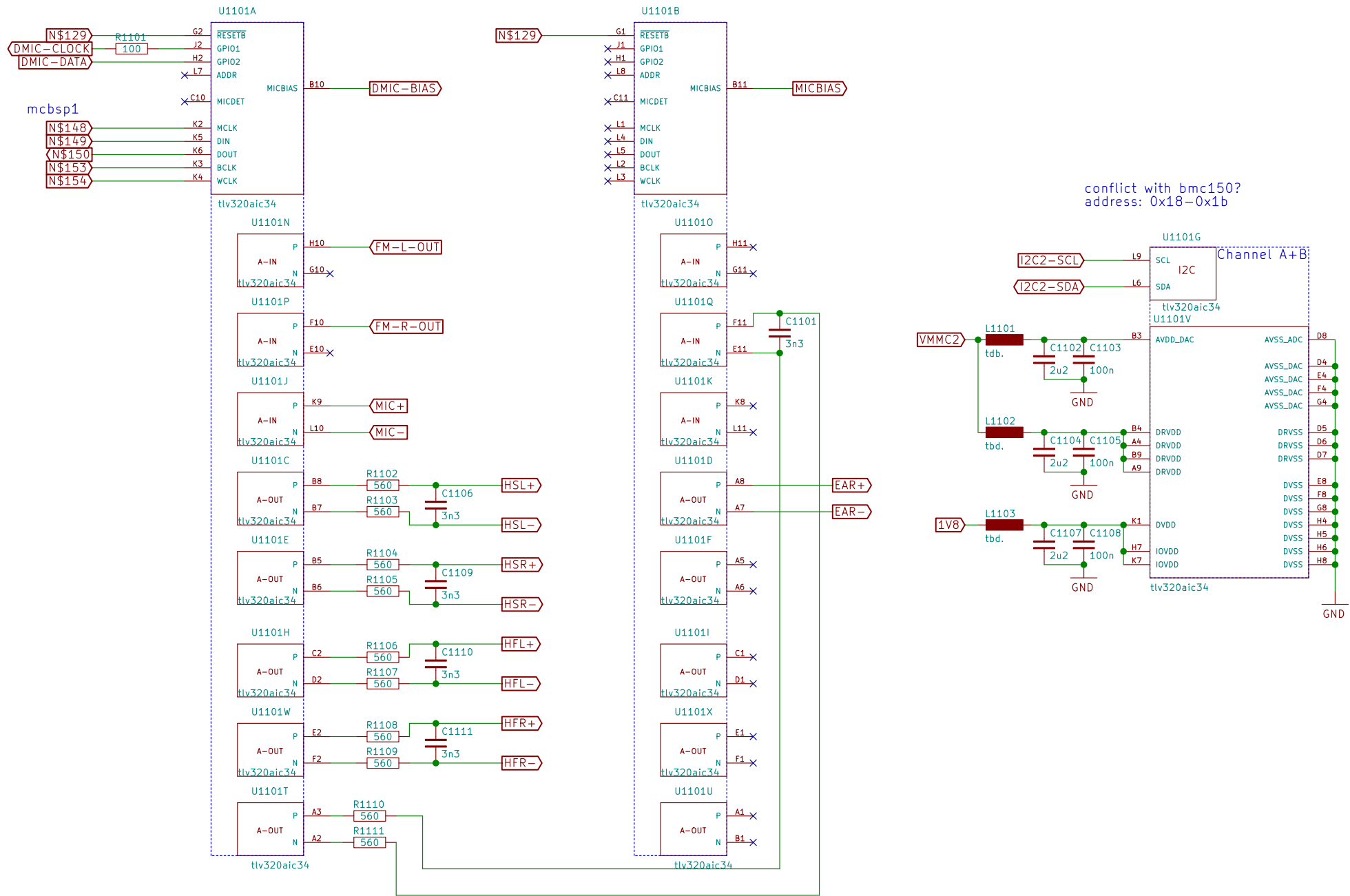
- FSX
- CLKX
- DX
- DR
- FSR
- CLKR



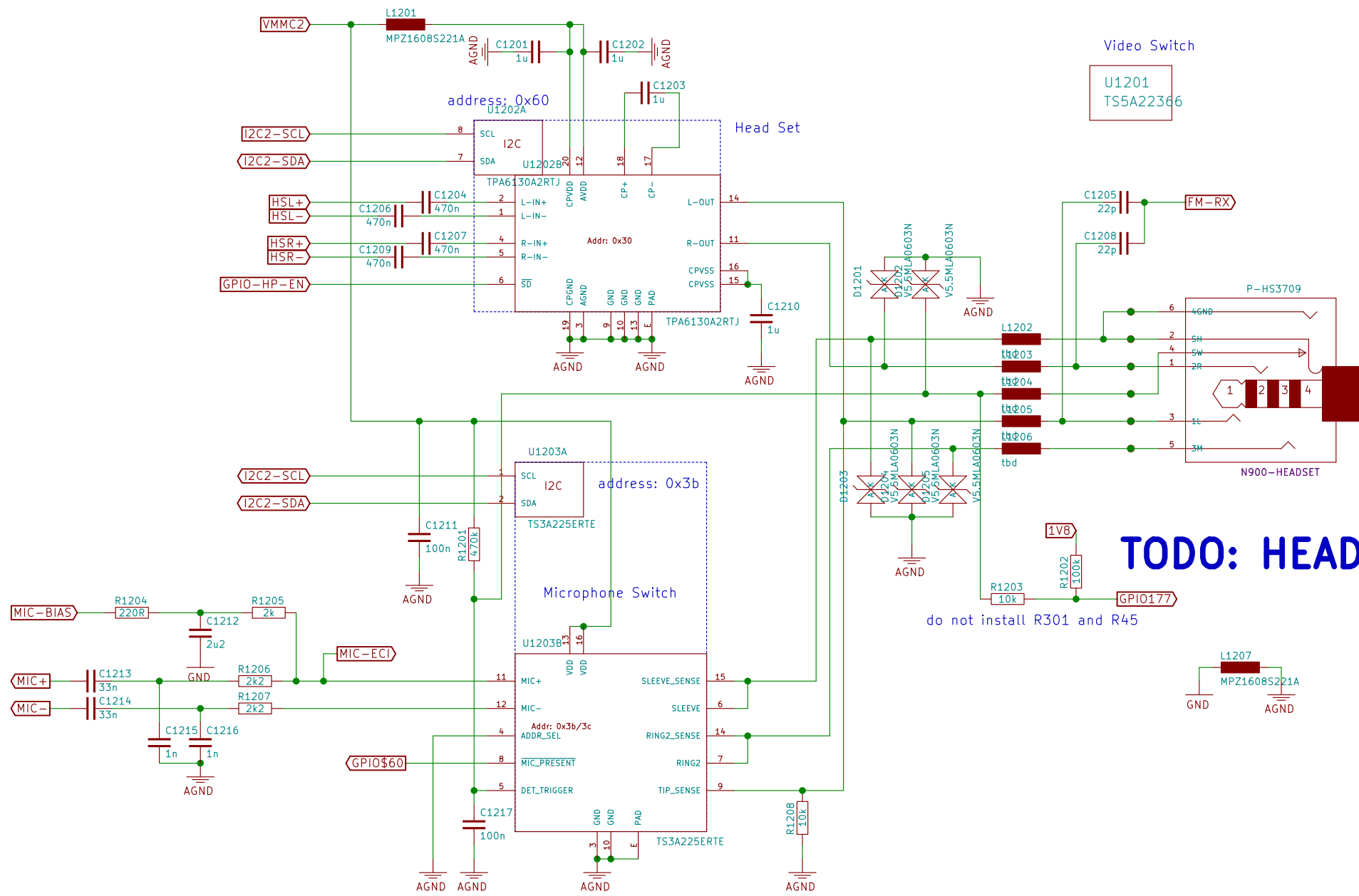
TODO: no BMG160, BMC150
TODO: BMP180 -> BME280
TODO: BNO055 -> BMX055
TODO: INT1/2 sharing

Sheet: /Sensors/ File: neo900_SS_10.sch		
Title: Sensors		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. eeschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-product		Id: 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)



conflict with bmc150?
 address: 0x18-0x1b

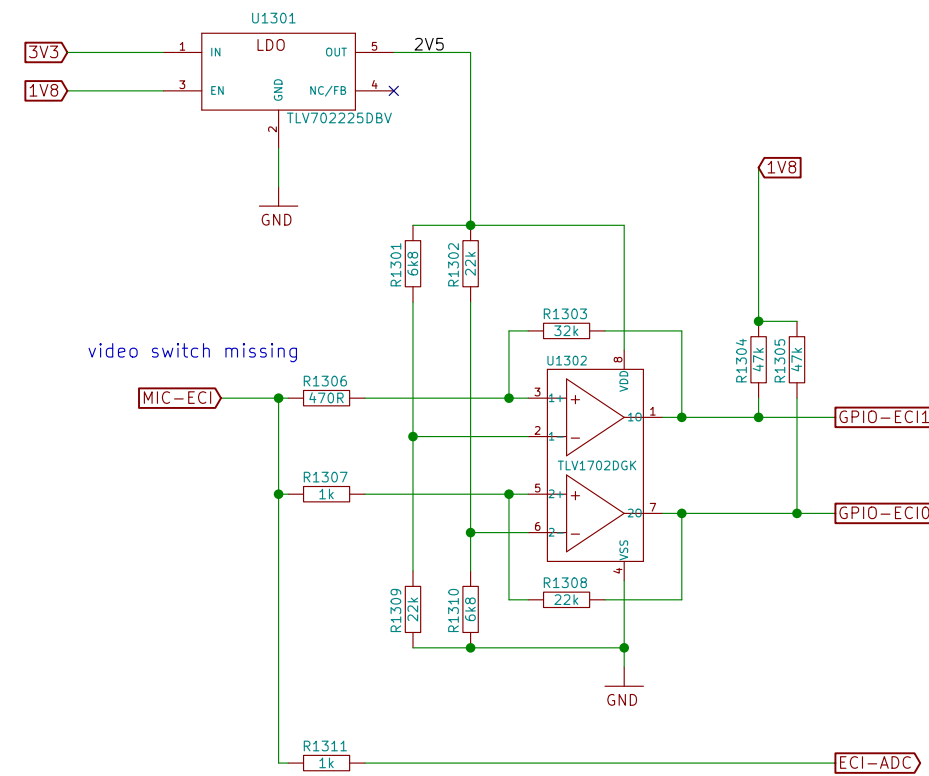


Video Switch
U1201
TS5A22366

TODO: HEADPH_IND ?

do not install R301 and R45

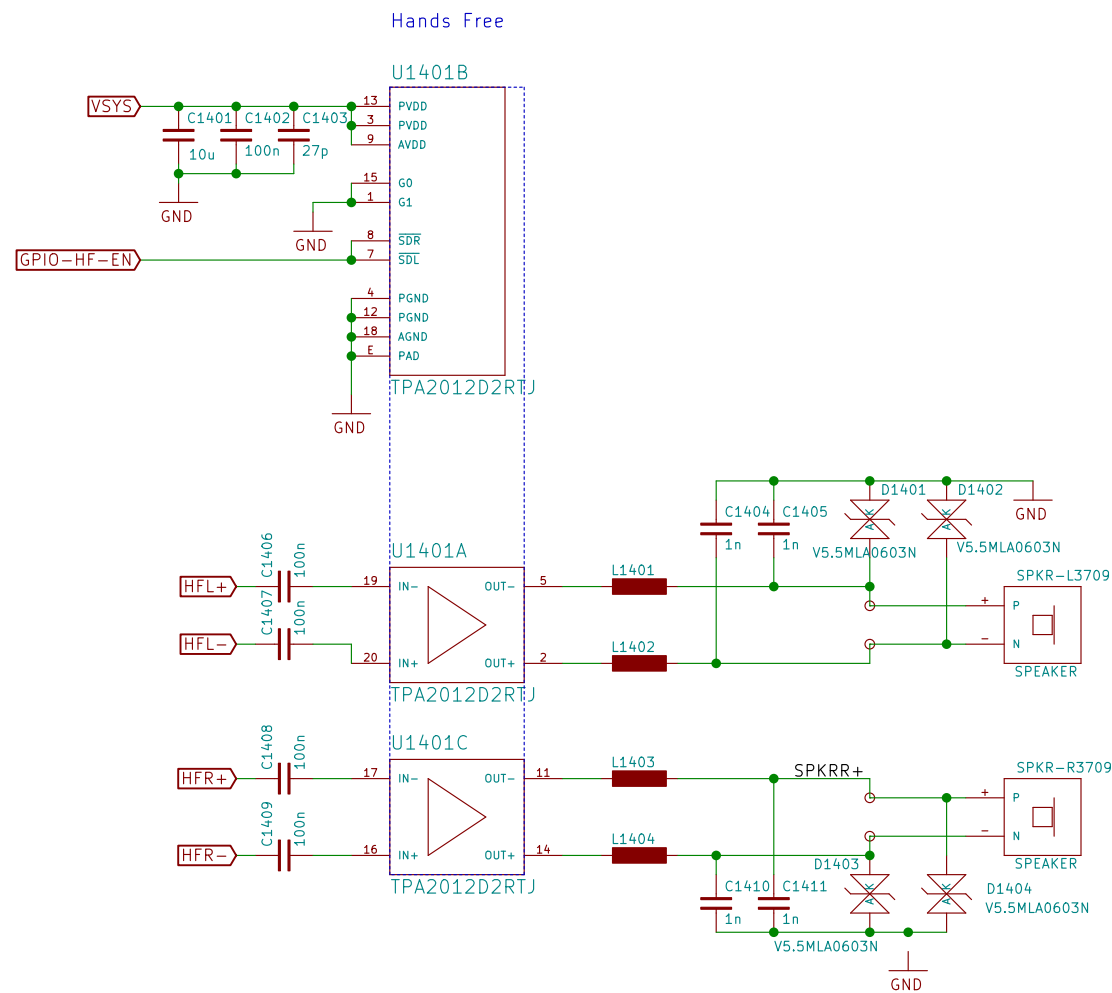
Sheet: /Audio Headset + Mic/		
File: neo900_SS_12.sch		
Title: Audio Headset & Mic		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. eeschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-product		Id: 13/38



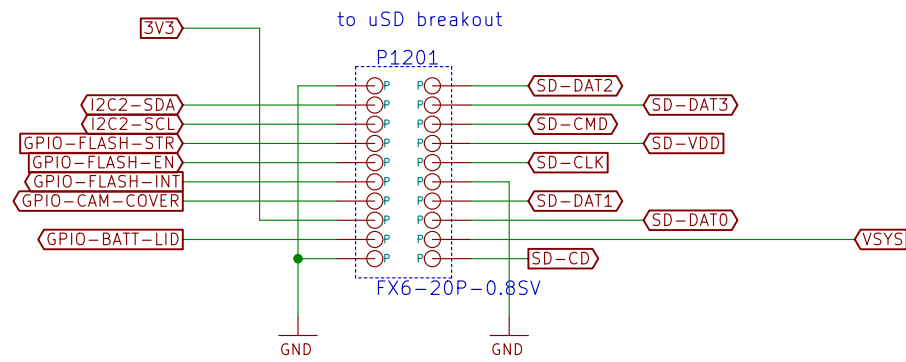
video switch missing

TODO: draw comparator right

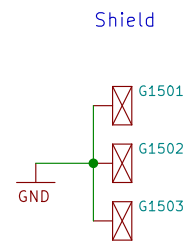
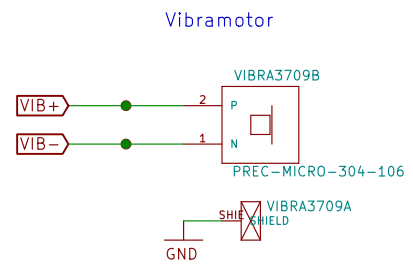
Sheet: /ECI/		
File: neo900_SS_13.sch		
Title: ECI		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. eeschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-product		Id: 14/38

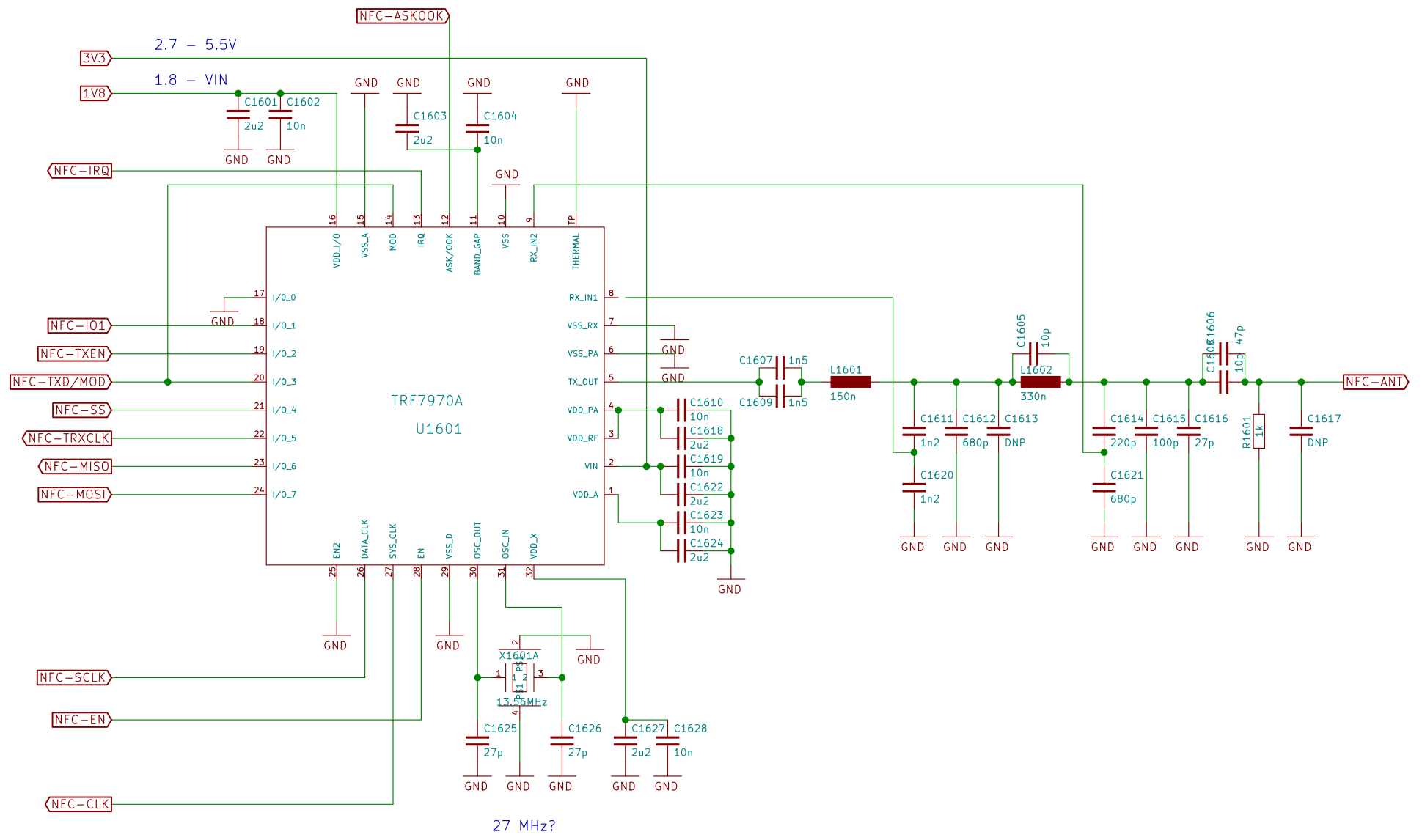


Sheet: /Audio Handsfree/ File: neo900_SS_14.sch		
Title: Audio Handsfree		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. eeschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-product		Id: 15/38



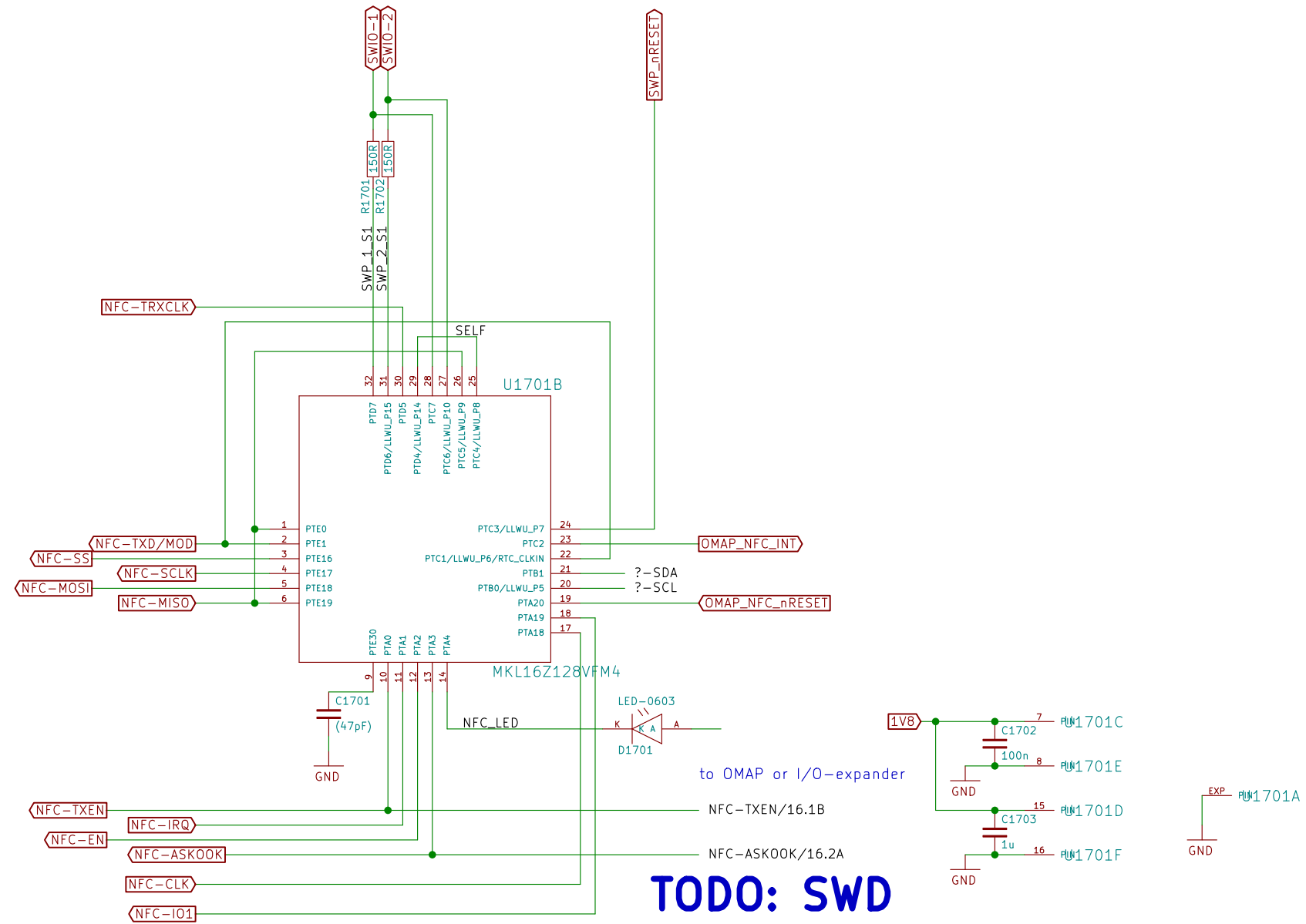
TODO: bogus connector (see HB WP)





27 MHz?

Sheet: /RFID/NFC Reader/ File: neo900_SS_16.sch		
Title: RFID/NFC Reader		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. eeschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-product		Id: 17/38

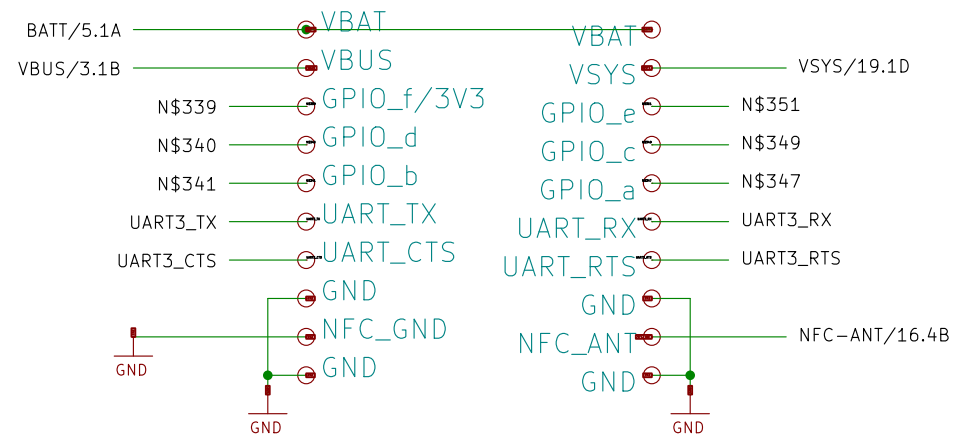
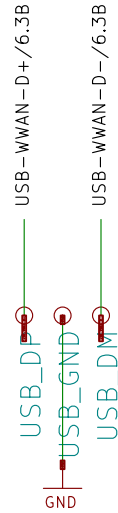


TODO: SWD

Sheet: /RFID/NFC Controller/ File: neo900_SS_17.sch		
Title: RFID/NFC Controller		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. eeschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-product		Id: 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

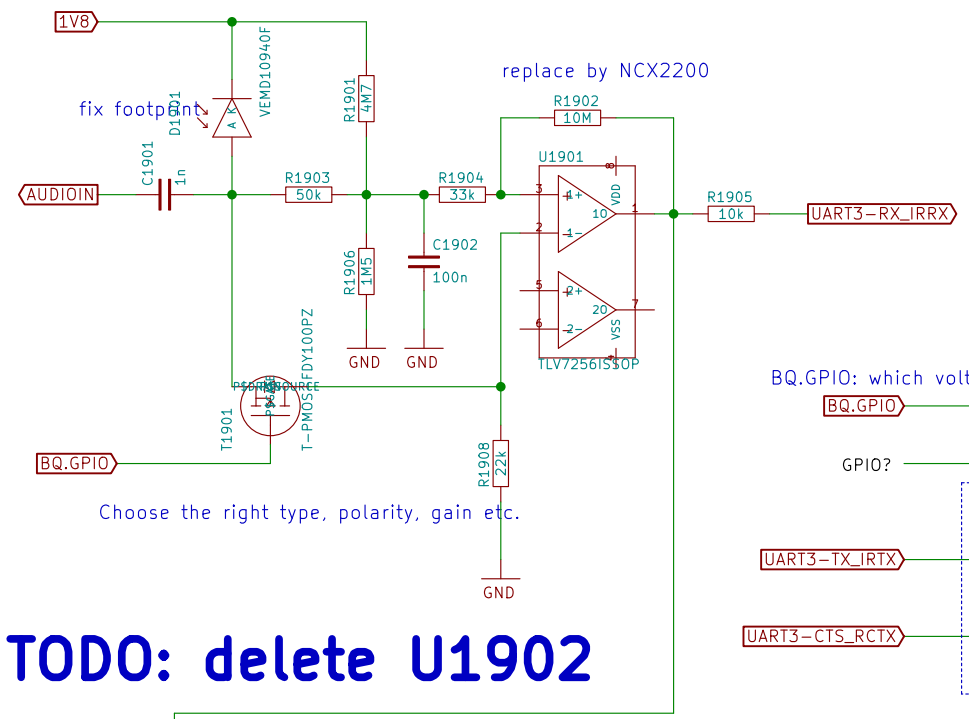


Missing 10 level shifter chip (or do we really have the space for 10x discrete T+R+D ca. 3x3mm each?)
 Missing 6x 2R for alternate function select (do we have the space for ca. 2.5 x 5mm?)

TODO: align with HB WP

Sheet: /Hackerbus/ File: neo900_SS_18.sch		
Title: Hackerbus		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. eschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-product		Id: 19/38

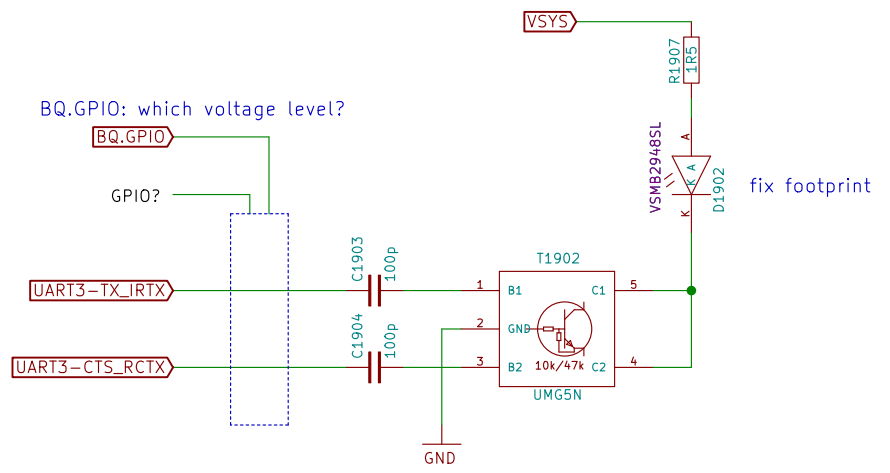
NOTE: 1V8 may be quite noisy



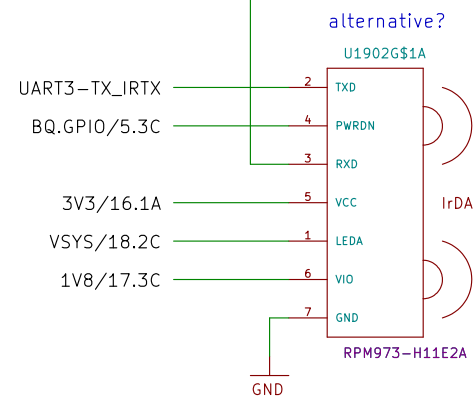
replace by NCX2200

Choose the right type, polarity, gain etc.

TODO: delete U1902



TODO: update to design in IR WP

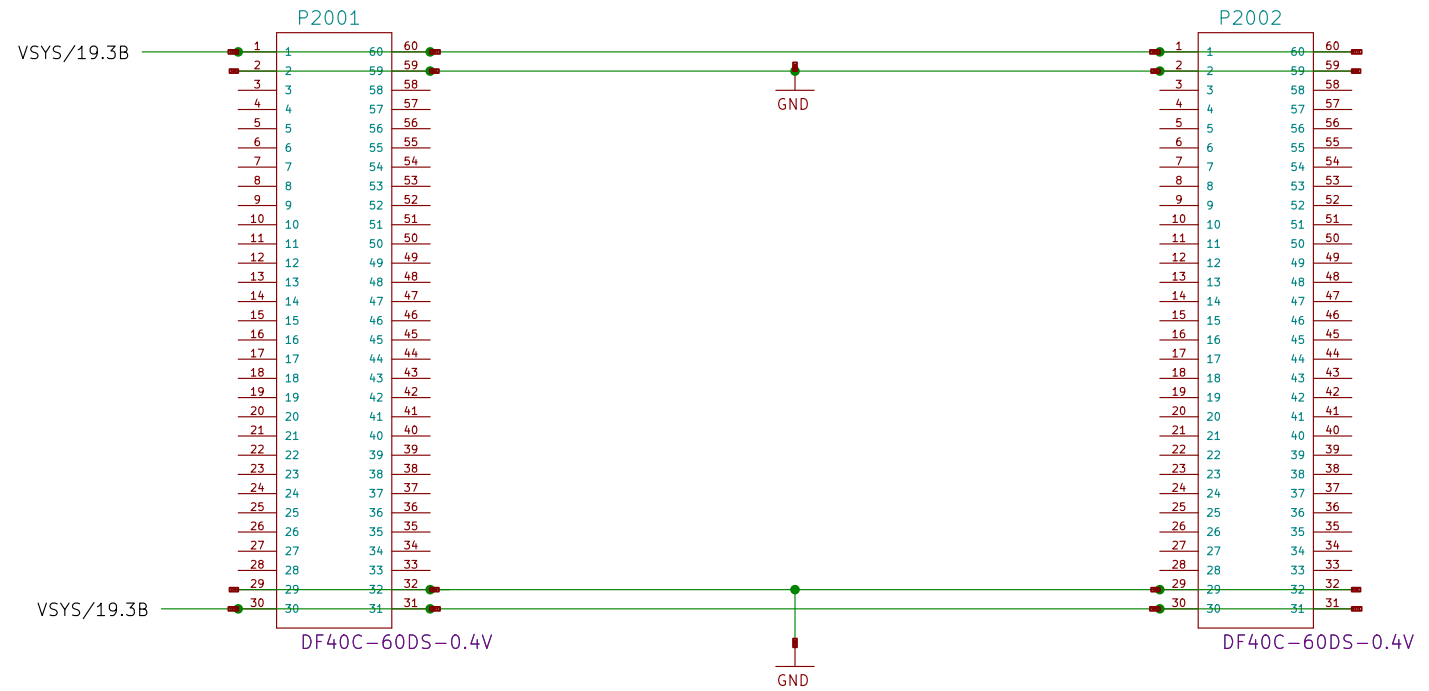


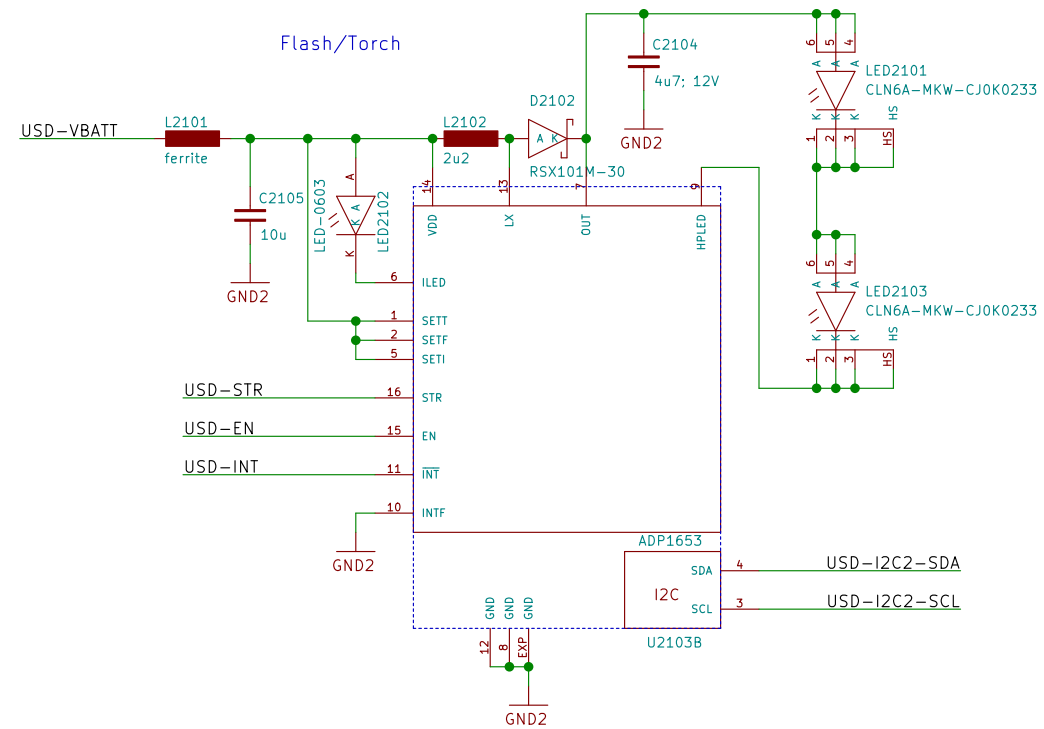
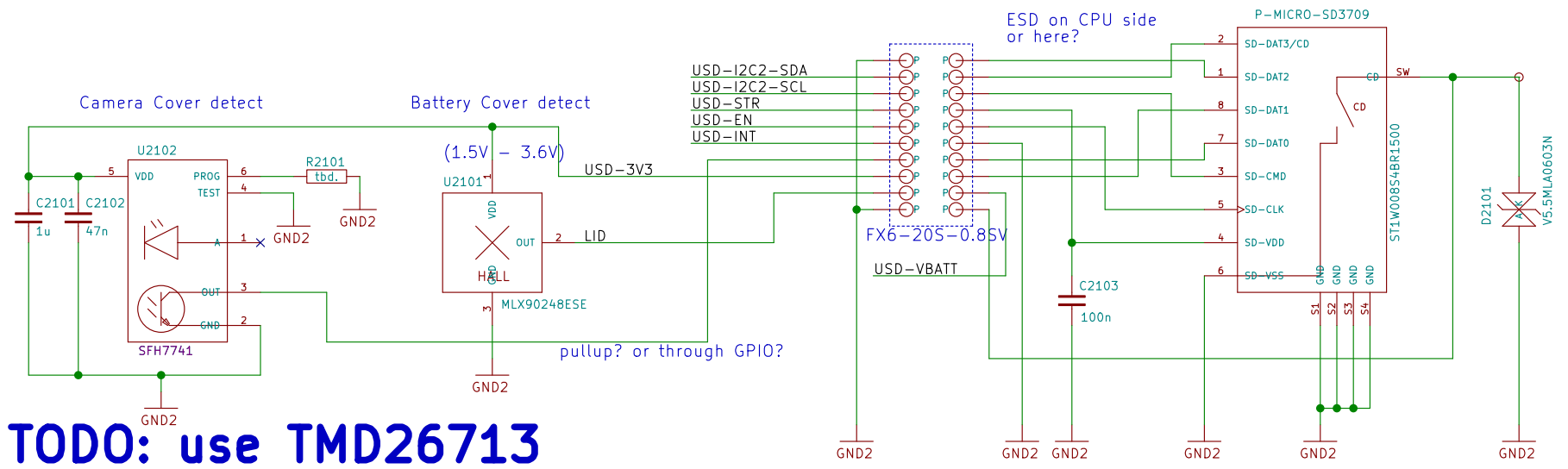
TODO: update when details settle

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

LOCK-GPIO/1.2A	-----	MMC3-DATA1/9.1A	-----
POWERON/1.3A	-----	MMC3-DATA2/9.1A	-----
GPIO-VOL+/1.2B	-----	MMC3-DATA3/9.1A	-----
GPIO-VOL-/1.2B	-----	GPIO-WLAN-IRQ/9.1A	-----
CAM1-GPIO/1.3B	-----	GPIO-BT-EN/9.1C	-----
CAM2-GPIO/1.3C	-----	UART1-RX/9.1C	-----
I2C3-SDA/10.4C	-----	UART1-RTS/9.1C	-----
I2C3-SCL/10.4C	-----	UART1-CTS/9.1D	-----
CHG_IND/3.1B	-----	UART1-TX/9.1D	-----
N\$131/3.1C	-----	MCBSP3-FCK/9.1D	-----
N\$141/3.1C	-----	MCBSP3-CLK/9.1D	-----
N\$143/3.1C	-----	MCBSP3-DR/9.1D	-----
BATTEMP/5.4A	-----	MCBSP3-DX/9.1D	-----
GPIO-EN-MODEM/4.1A	-----	SYSCLK/9.3C	-----
I2C2-SDA/15.1A	-----	32KHZ/9.4A	-----
I2C2-SCL/15.1A	-----	GPIO-FM-EN/9.3A	-----
INA231-INT/4.4C	-----	GPIO-FMIRQ/9.3A	-----
HDQ/5.2A	-----	MCBSP2-FCK/9.3A	-----
GPIO\$70/8.3B	-----	MCBSP2-CLK/9.3A	-----
GPIO\$110/8.1D	-----	MCBSP2-DR/9.3A	-----
N\$19/8.2D	-----	MCBSP2-DX/9.3A	-----
N\$229/8.3C	-----	MCBSP2-DR/9.3A	-----
ADC\$114/8.1C	-----	MCBSP2-DX/9.3A	-----
ADC1/8.4C	-----	GPIN115/10.3B	-----
ADC2/8.4C	-----	GPIO56/10.3A	-----
GPIO-COMPARATOR/8.4D	-----	GPIO\$51/10.3B	-----
MCBSP4-DR/6.2A	-----	GPIO\$55/10.4A	-----
MCBSP4-DX/6.2A	-----	GPIO\$56/10.4A	-----
MCBSP4-CLKX/6.2A	-----	ACCEL-INT/10.4C	-----
MCBSP4-FSX/6.2A	-----	N\$129/11.2A	-----
UART?-RTS/6.2C	-----	N\$148/11.1A	-----
UART?-CTS/6.2C	-----	N\$149/11.1A	-----
UART?-RX/6.2C	-----	N\$150/11.1A	-----
UART?-TX/6.2C	-----	N\$153/11.1A	-----
RING/6.2C	-----	N\$154/11.1A	-----
GPIO-MODEM_JGT/6.3A	-----	GPIO-ECI1/13.3B	-----
GPIO-MODEM_EMERG/6.3A	-----	GPIO-ECIO/13.3C	-----
EMERG_OFF/6.3B	-----	ECI-ADC/13.3C	-----
PWR_IND/6.3B	-----	VMMC2/12.1A	-----
LC_IND/6.3B	-----	GPIO-HP-EN/12.1B	-----
STATUS/6.3B	-----	GPIO\$60/12.2D	-----
3G-WOE/6.3B	-----	GPIO177/12.4C	-----
GPIO\$52/8.4A	-----	GPIO-HF-EN/14.1B	-----
GPIO-WLAN-EN/9.1A	-----	GPIO-FLASH-STR/15.1A	-----
MMC3-CLK/9.1A	-----	GPIO-FLASH-EN/15.1A	-----
MMC3-CMD/9.1A	-----	GPIO-FLASH-INT/15.1A	-----
MMC3-DATA0/9.1A	-----	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

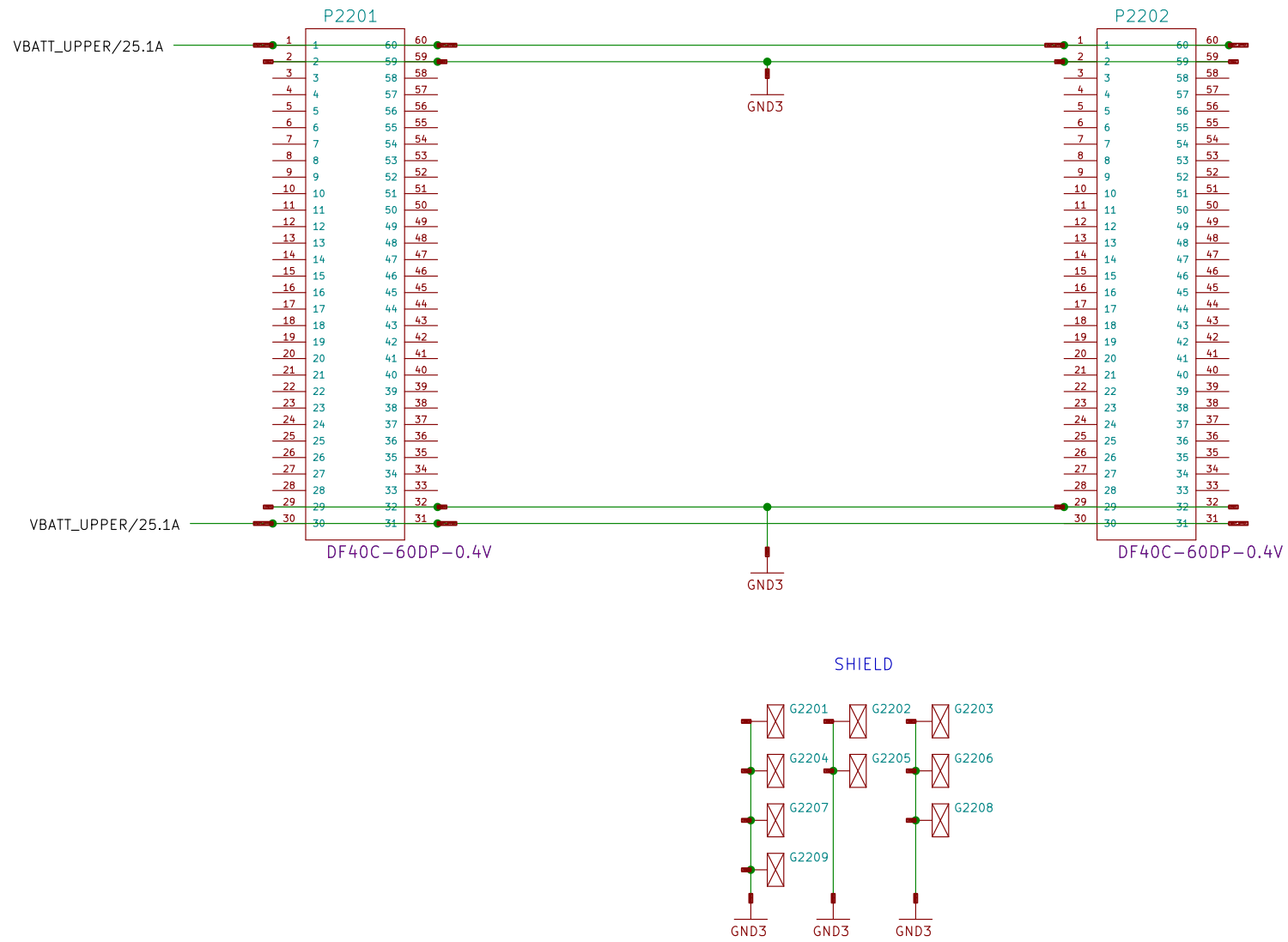




Sheet: /uSD Breakout Board/ File: neo900_SS_21.sch		
Title: uSD Breakout Board		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. eeschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-product		Id: 22/38

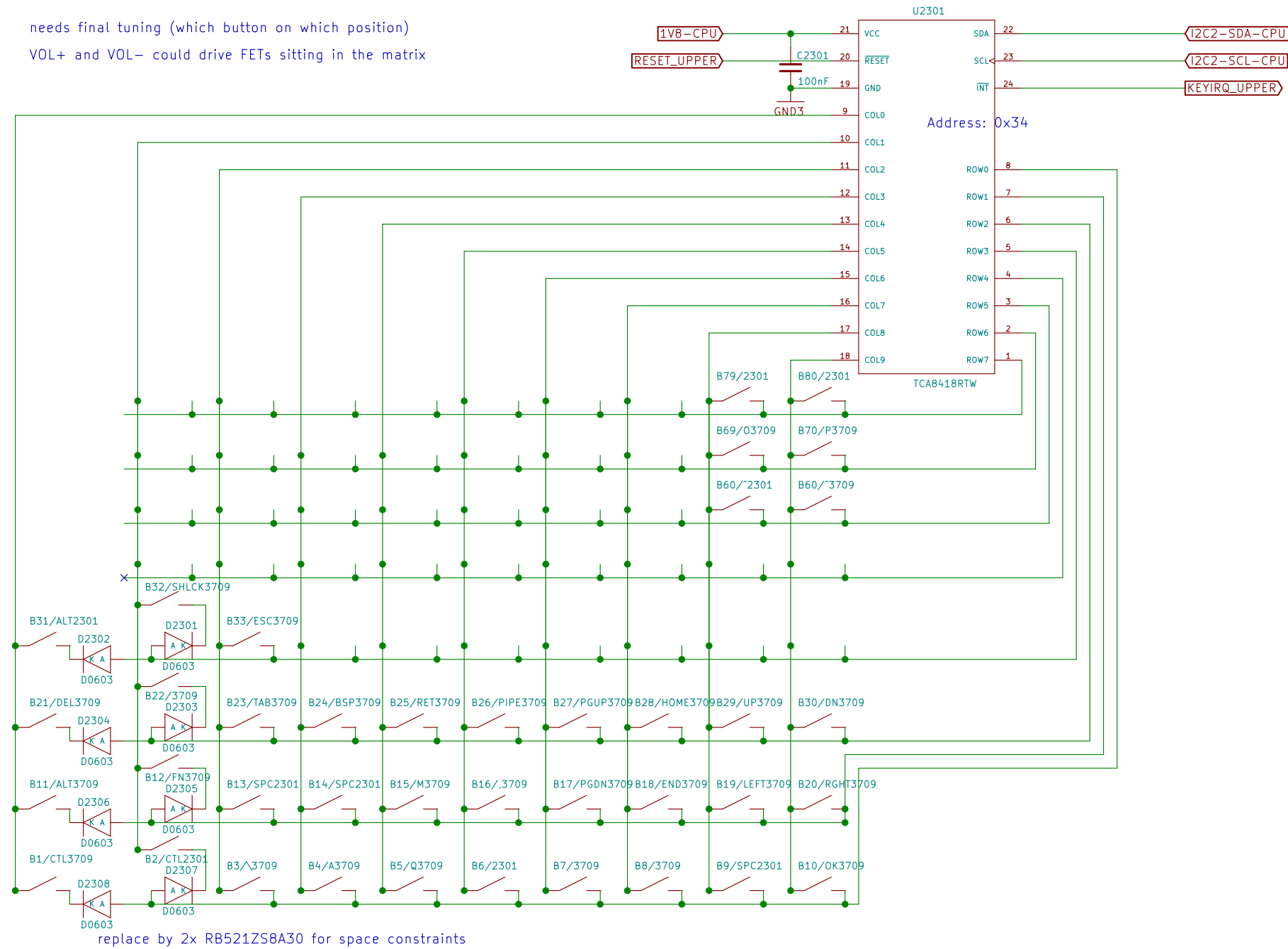
TODO: track B2B to UPPER


 to be adjusted to lower board connector



TODO: *_UPPER names ?

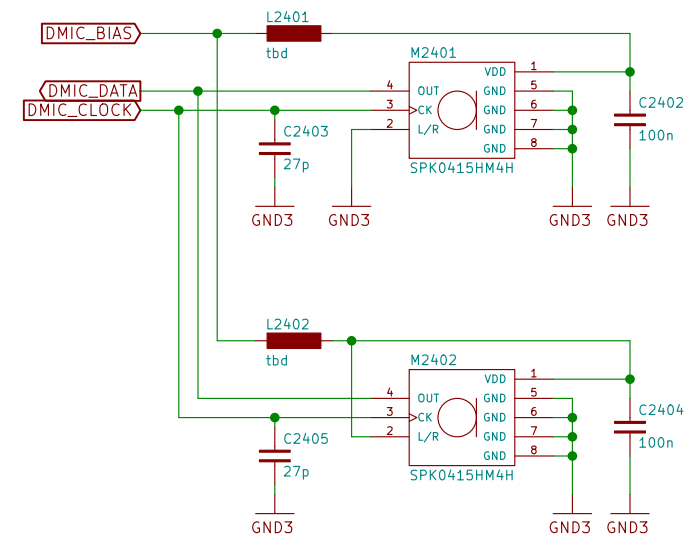
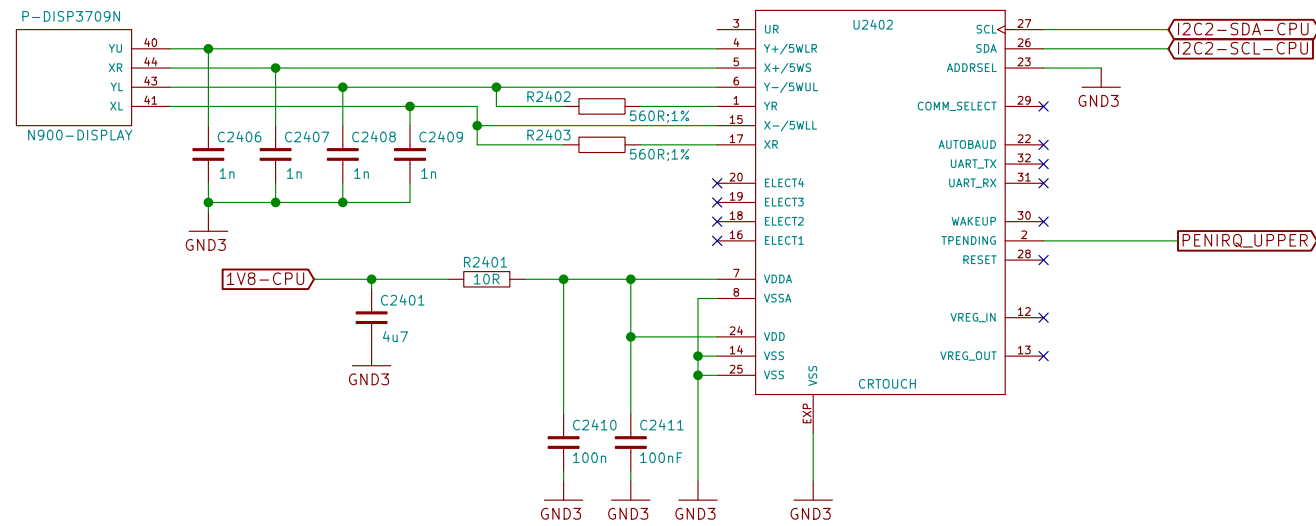
needs final tuning (which button on which position)
VOL+ and VOL- could drive FETs sitting in the matrix

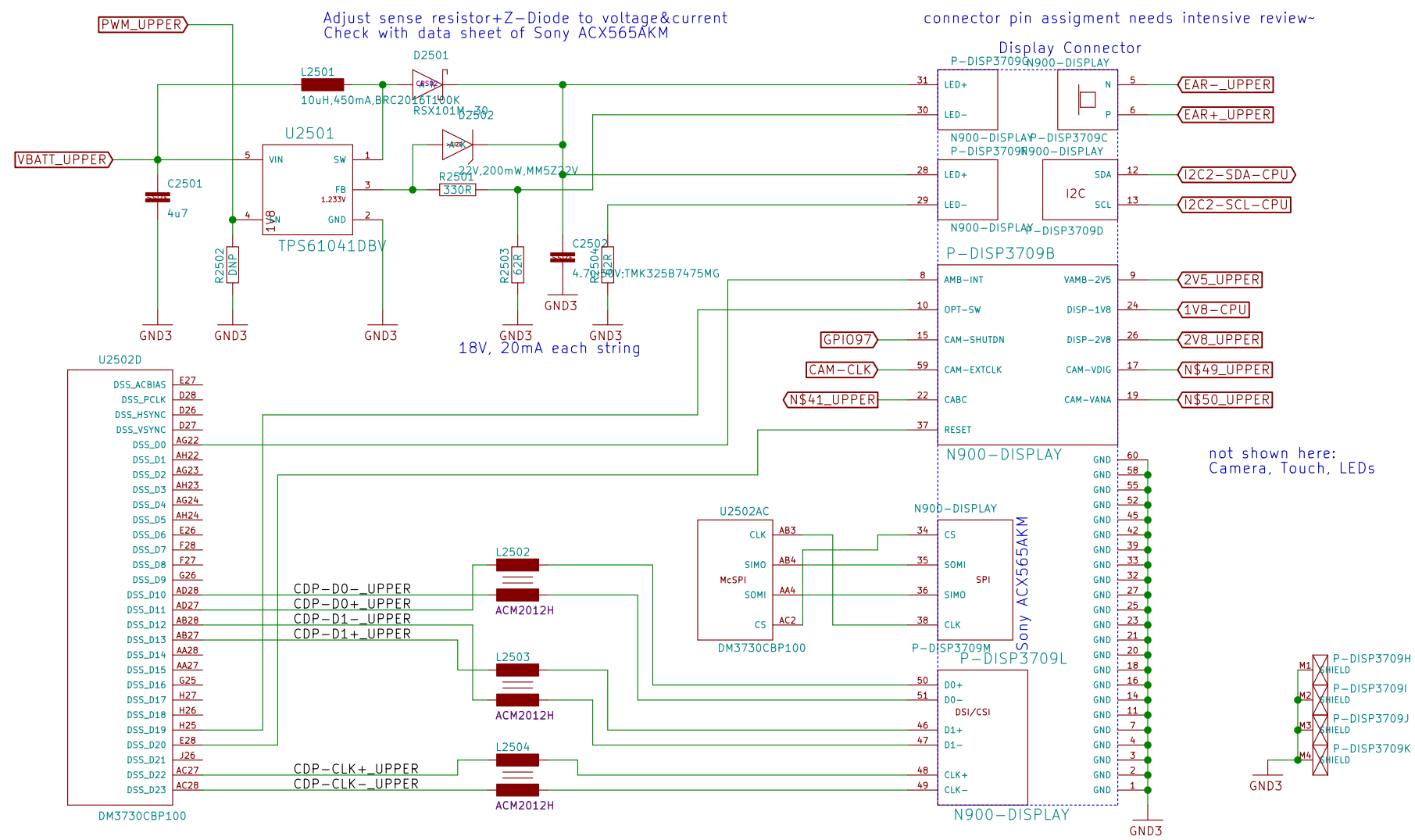


replace by 2x RB521ZS8A30 for space constraints

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

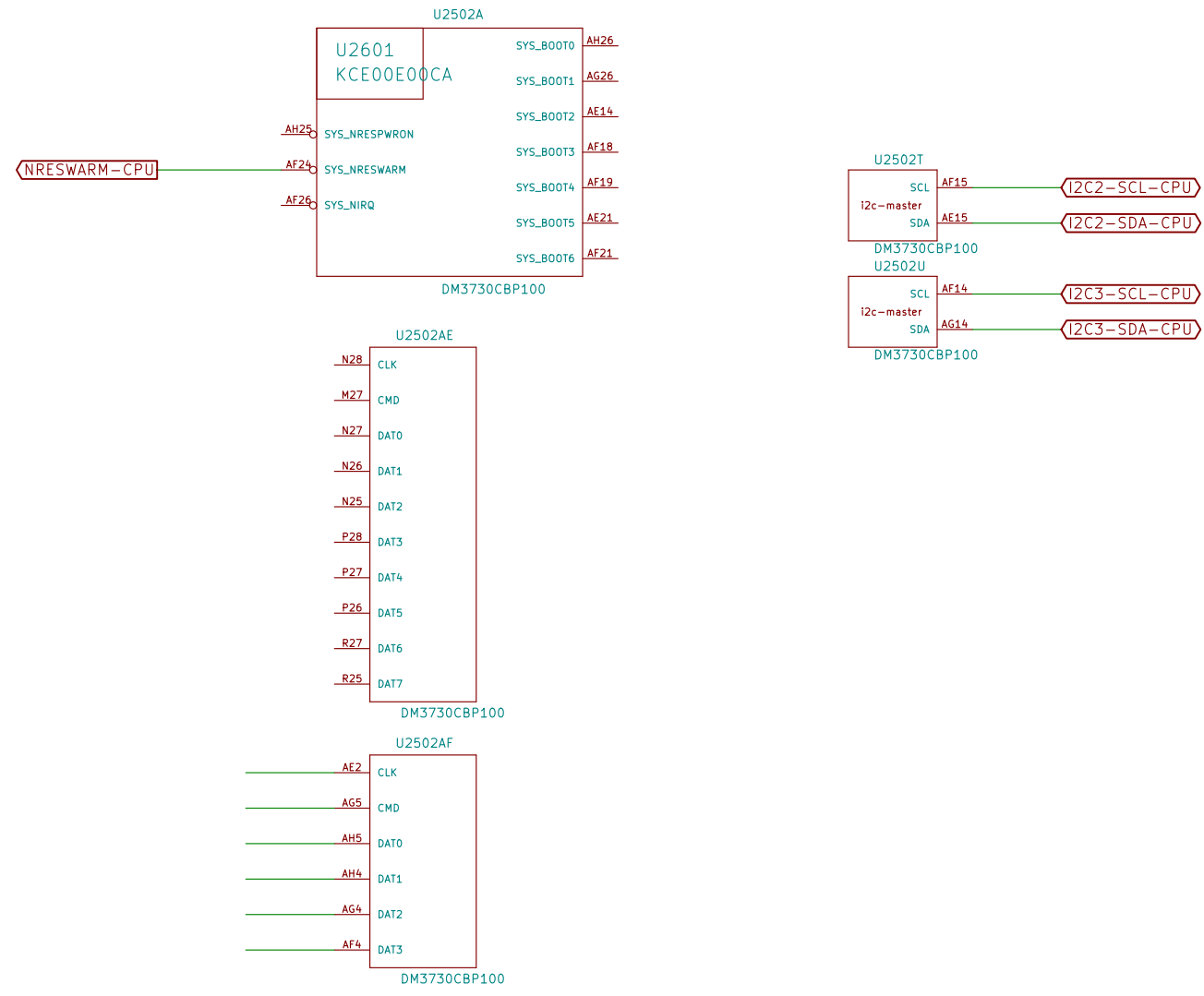
Resistive Touch (display connector)



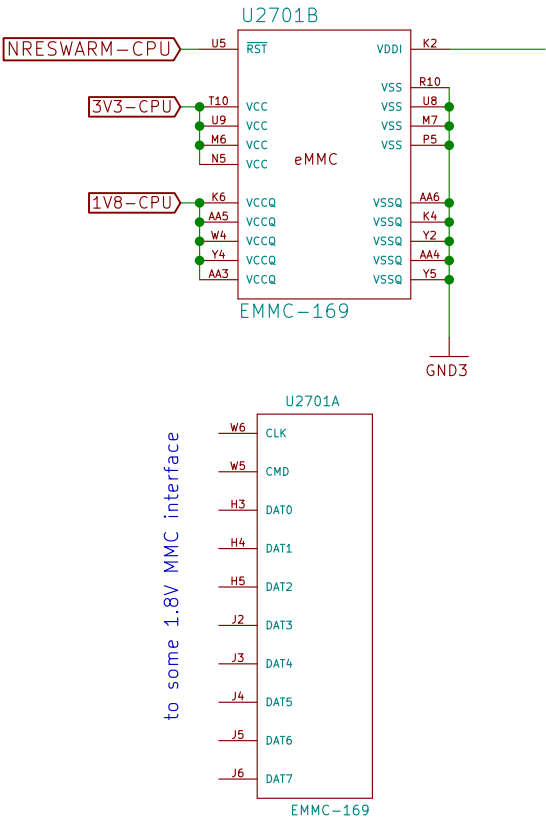


Sheet: /Display-Panel&Power/ File: neo900_SS_25.sch		
Title: Display-Panel&Power		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. eeschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-product		Id: 26/38

INCOMPLETE in V2



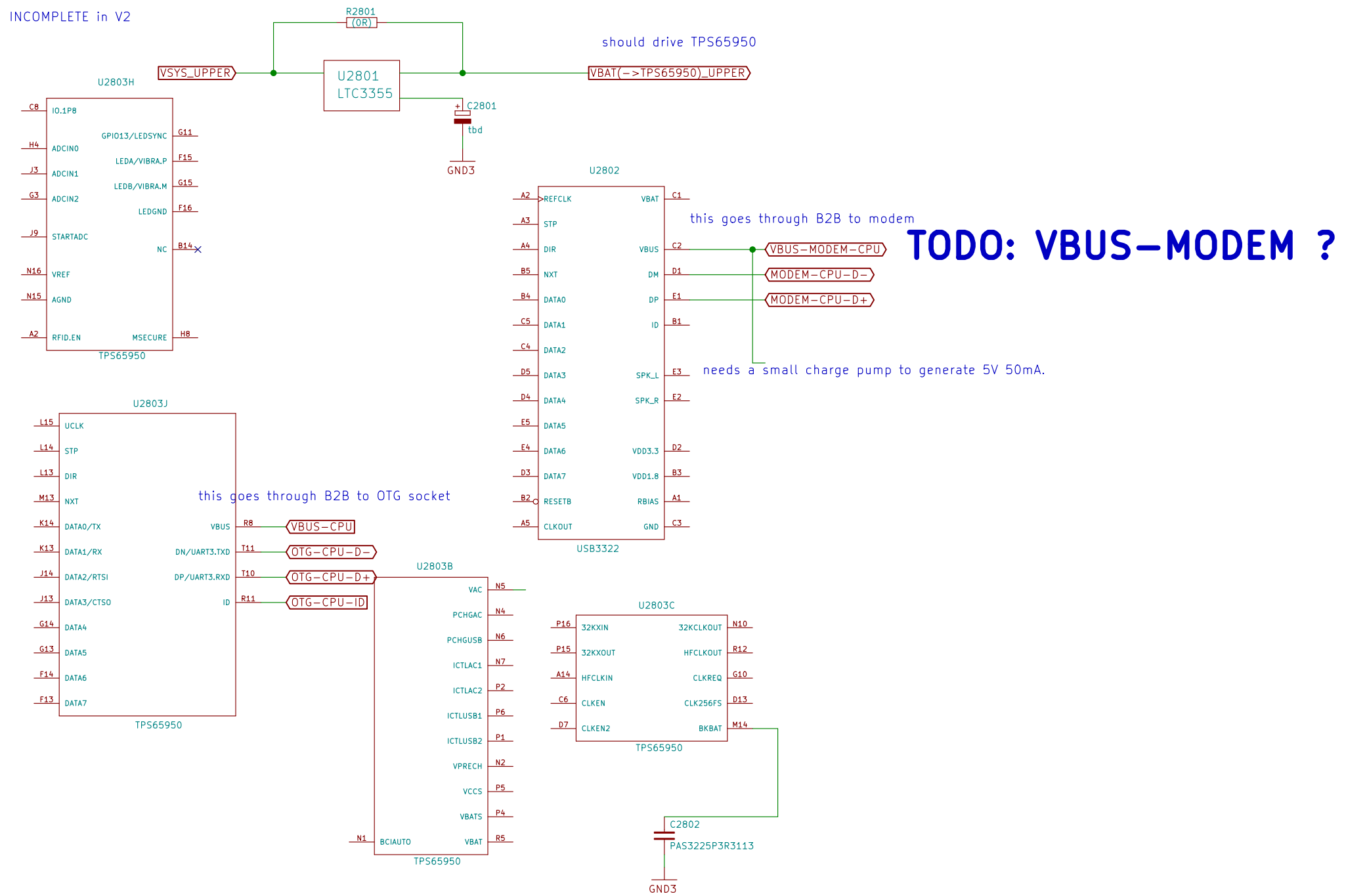
INCOMPLETE in V2



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

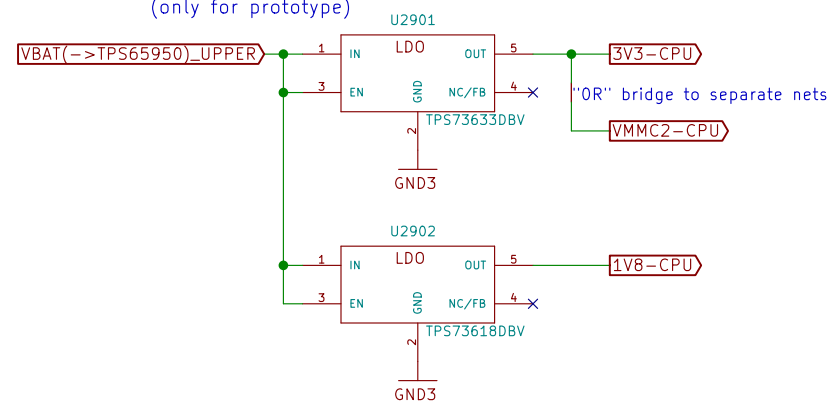
TODO: check role

INCOMPLETE in V2



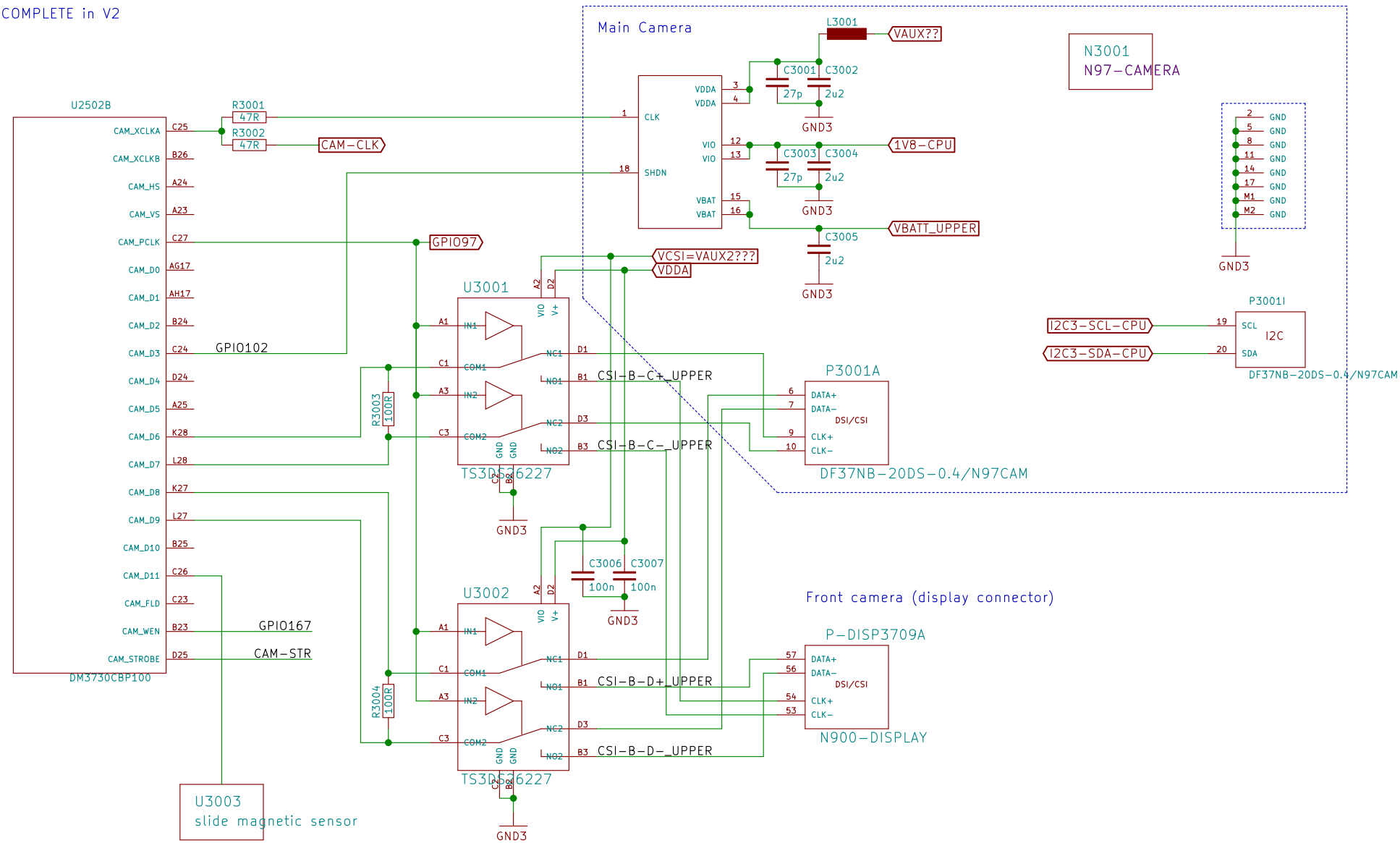
TODO: VBUS-MODEM ?

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

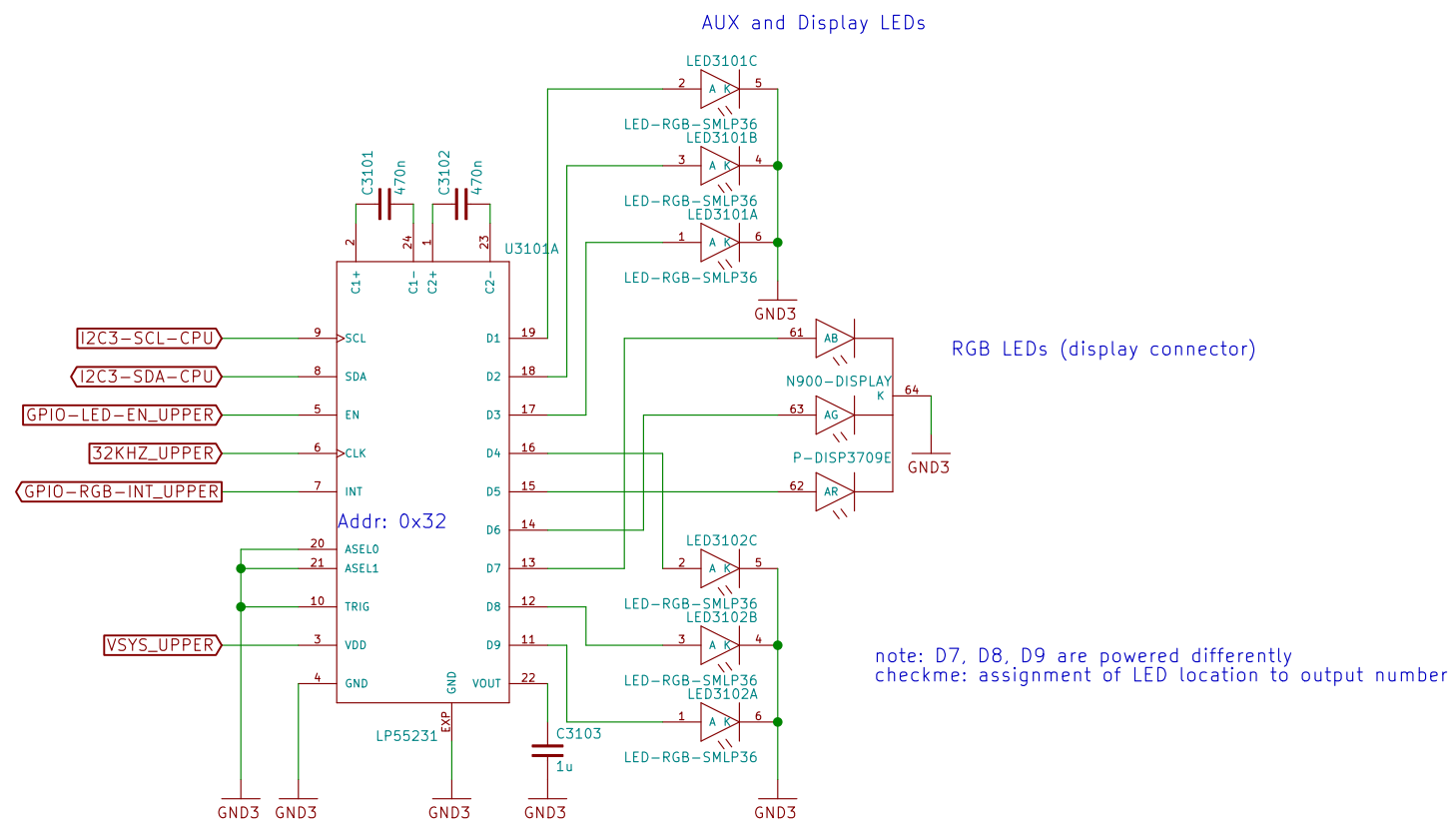


Sheet: /BB-XM Dummy (TWL4030)/		
File: neo900_SS_29.sch		
Title: BB-XM Dummy (TWL4030)		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. eeschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-product		Id: 30/38

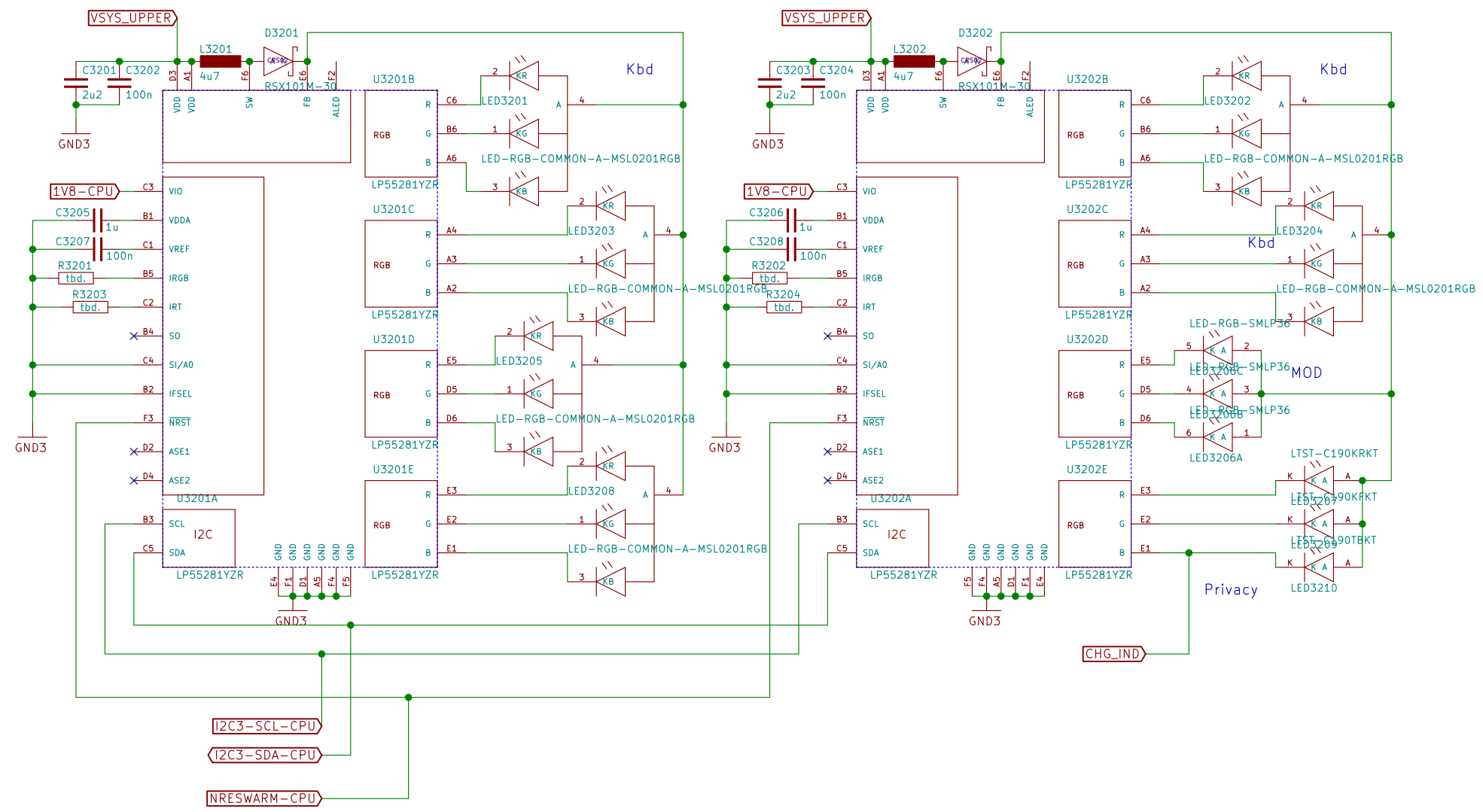
INCOMPLETE in V2



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



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

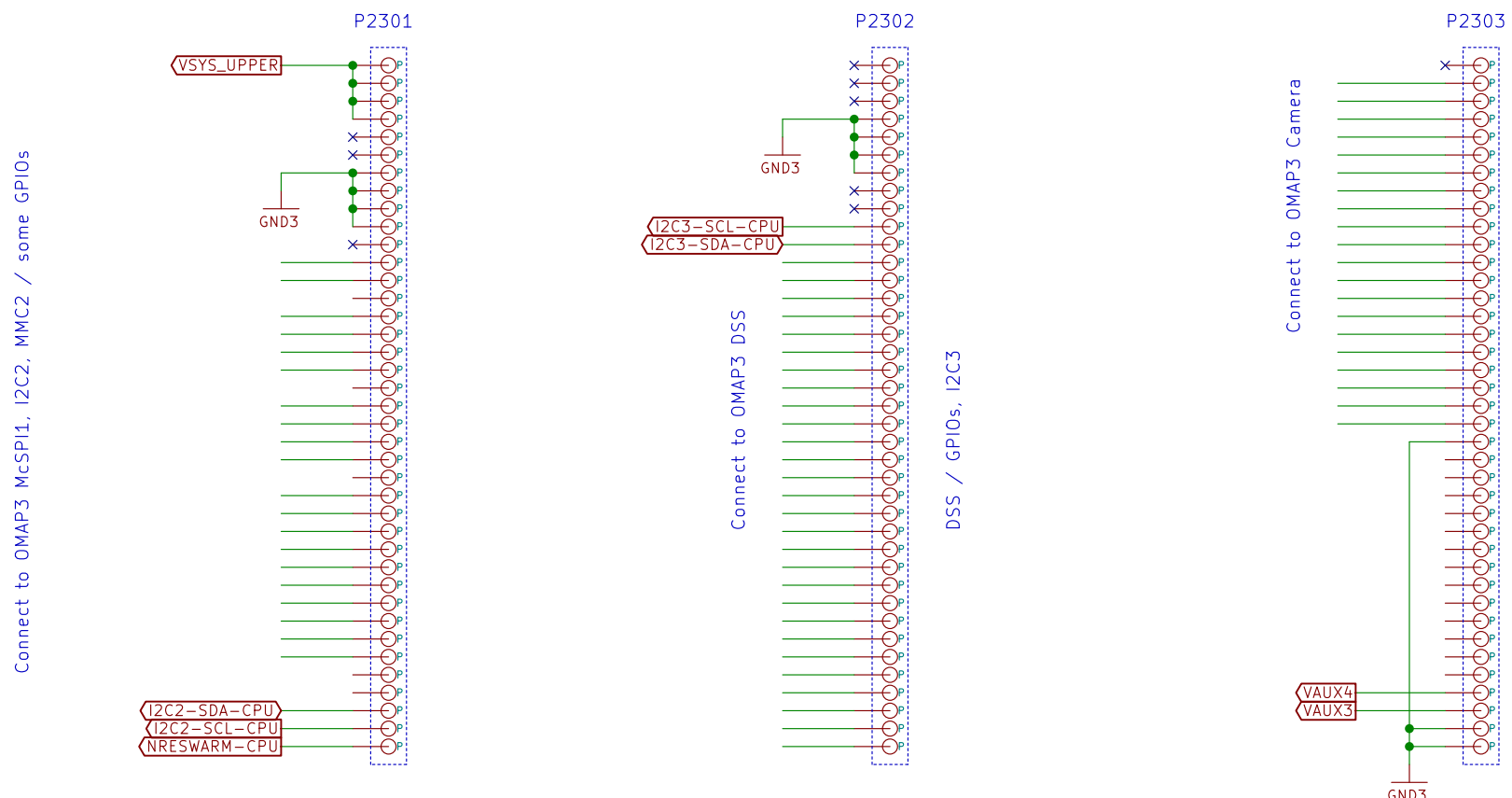


Sheet: /Fancy LEDs/ File: neo900_SS_32.sch		
Title: Fancy LEDs		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. eeschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-product		Id: 33/38

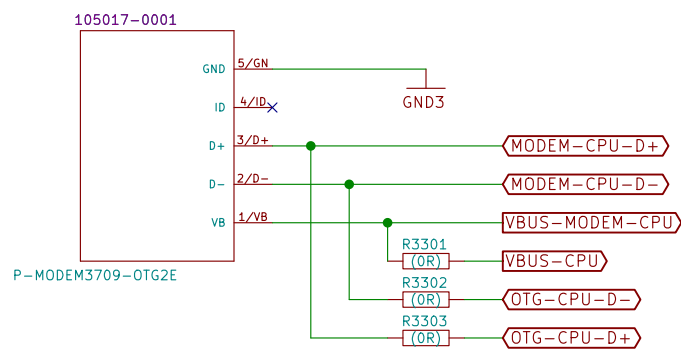
These connectors allow to "emulate" the DM3730 by connecting a BB-XM

INCOMPLETE
prototype only

connect to respective CPU-pads

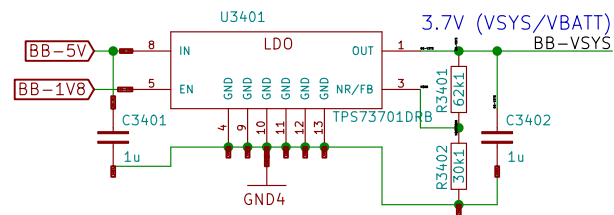


connect to BB
by some Micro-USB cable

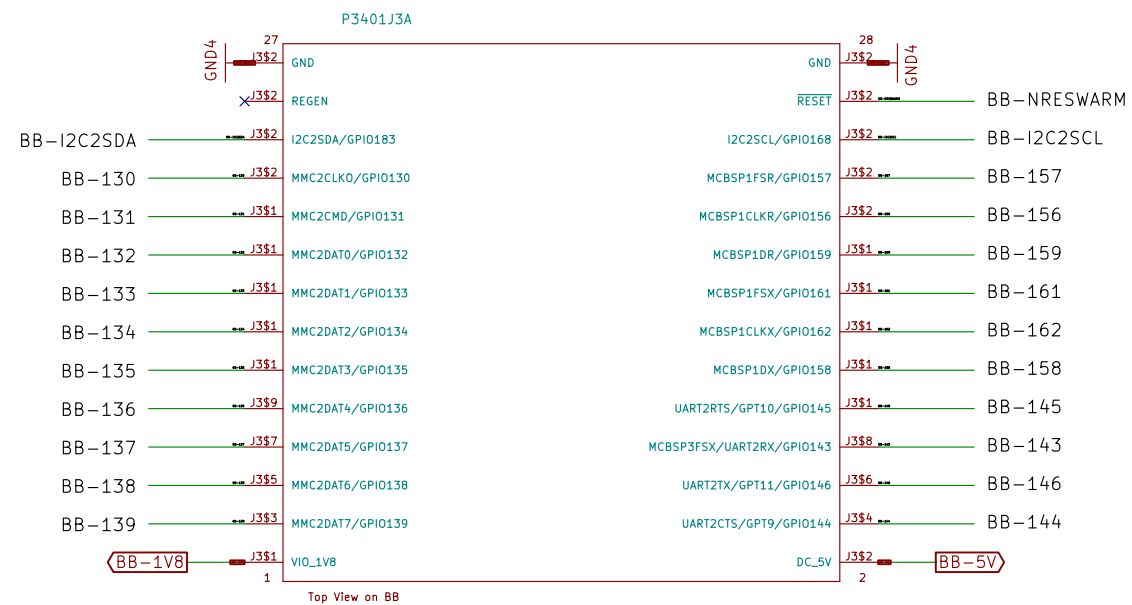
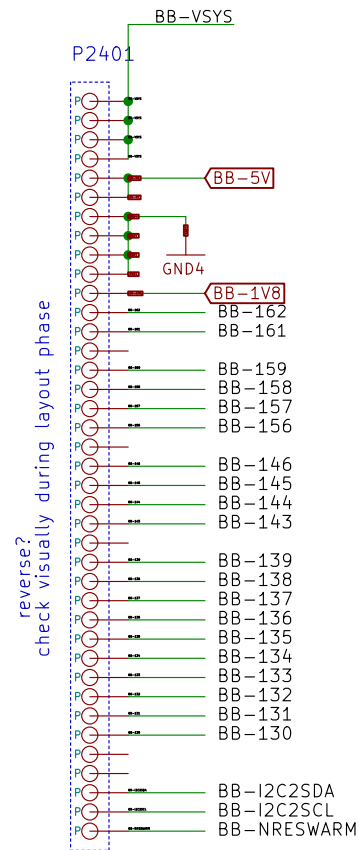


TODO: VBUS-MODEM ?

Sheet: /Connector to BB-XM/ File: neo900_SS_33.sch		
Title: Connector to BB-XM		
Size: A3	Date: 17 JUL 2016	Rev:
KiCad E.D.A. eeschema 4.1.0-alpha+201607120318+697546ubuntu16.04.1-product		Id: 34/38

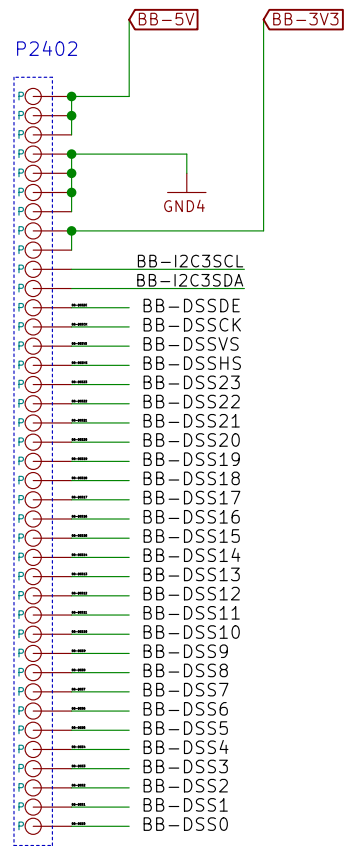


Ersetzen durch 2A buck converter

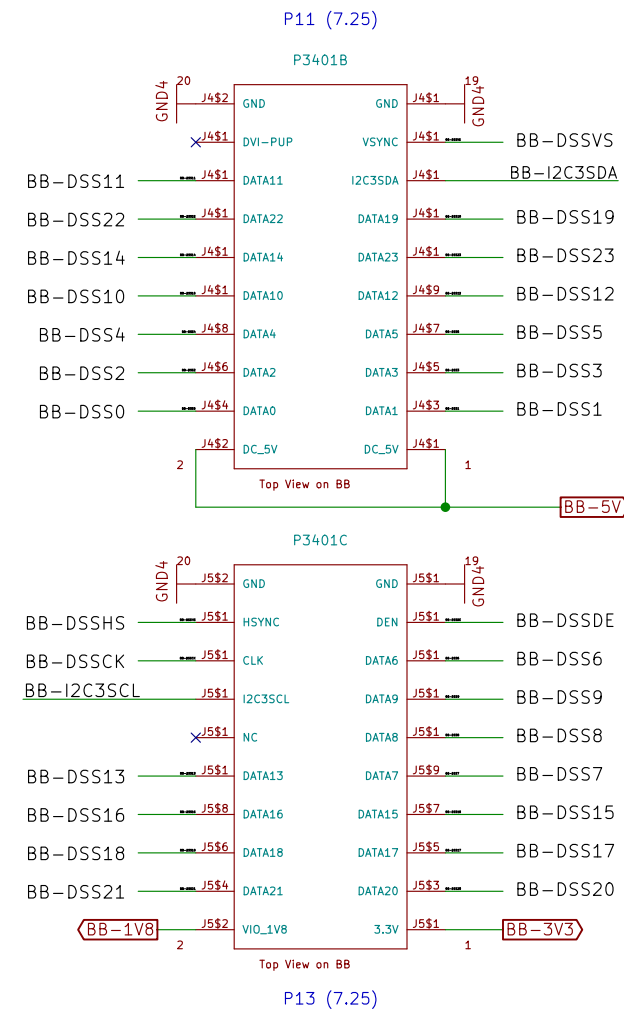


BB-xM Main Expansion Header (7.24)

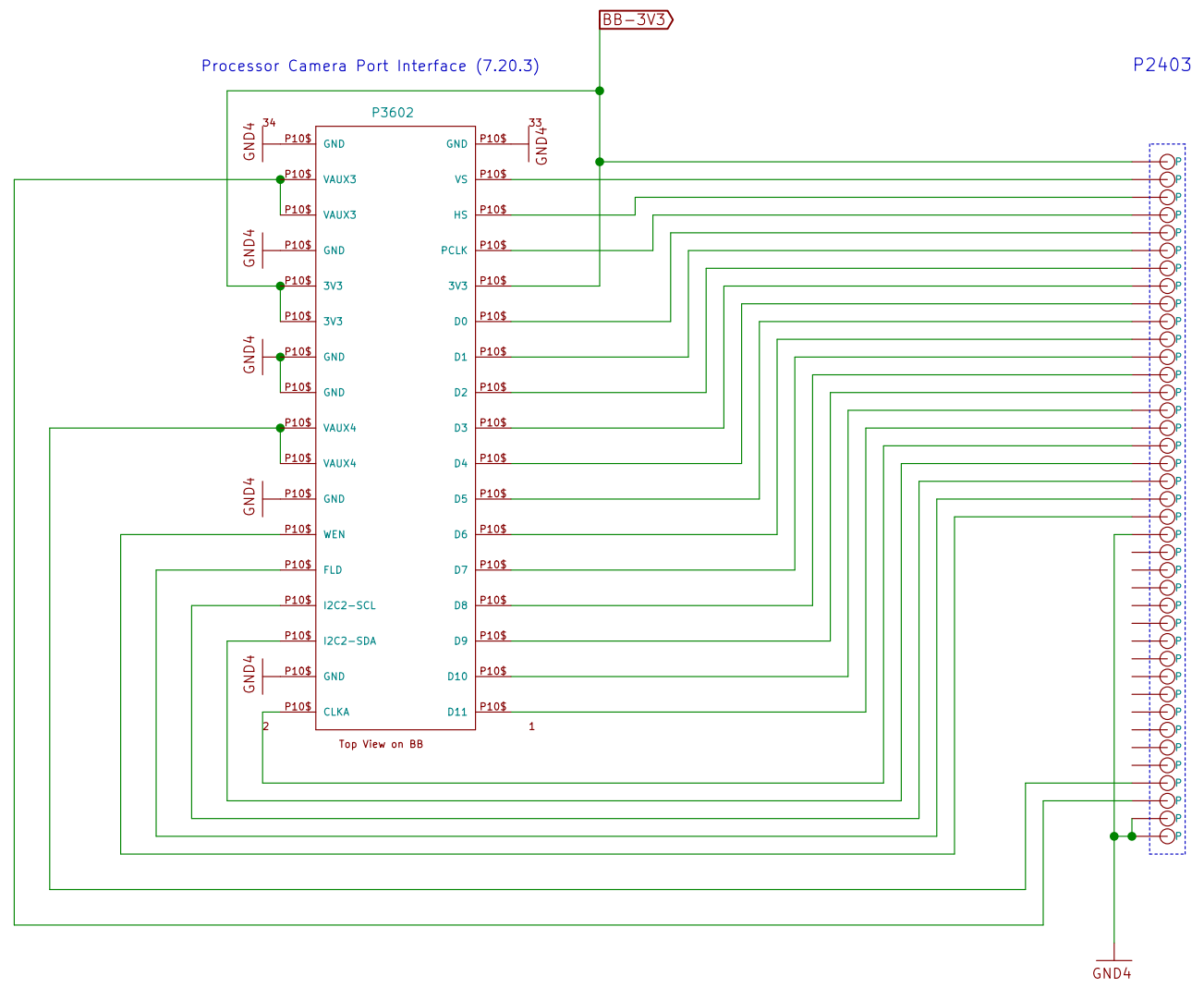
TODO: needs decision on where to take this



reverse?
check visually during layout phase



TODO: needs decision on where to take this



reverse?
check visually during layout phase

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

N3707 STENCIL-TOP

N3708 STENCIL-BOTTOM

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