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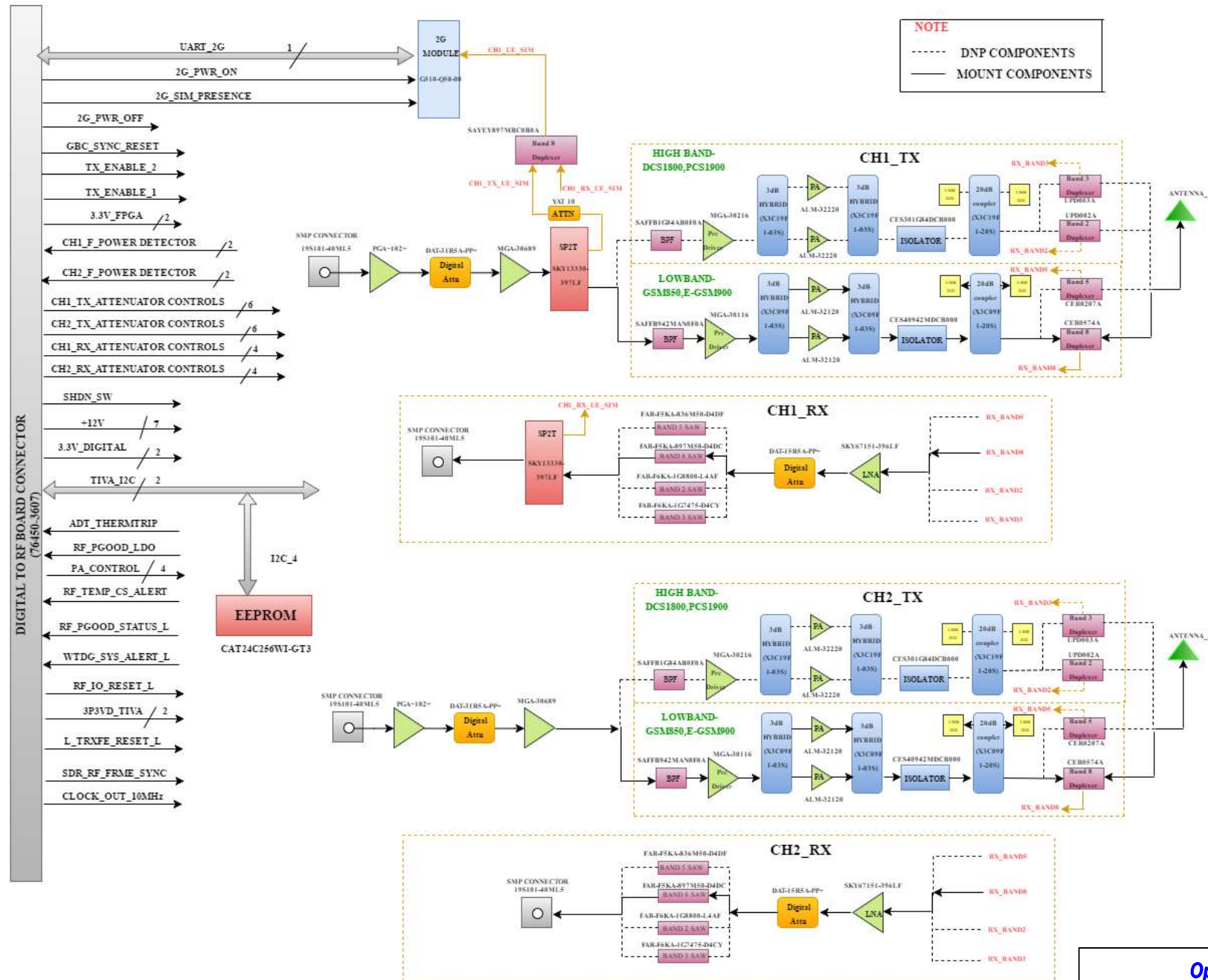
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REVISION HISTORY			
DATE	VERSION	UPDATED BY	REMARKS
02 FEB 2016	1.00		REV A RELEASE
16 JUN 2016	2.00		REV B RELEASE
30 NOV 2016	3.00		REV C RELEASE

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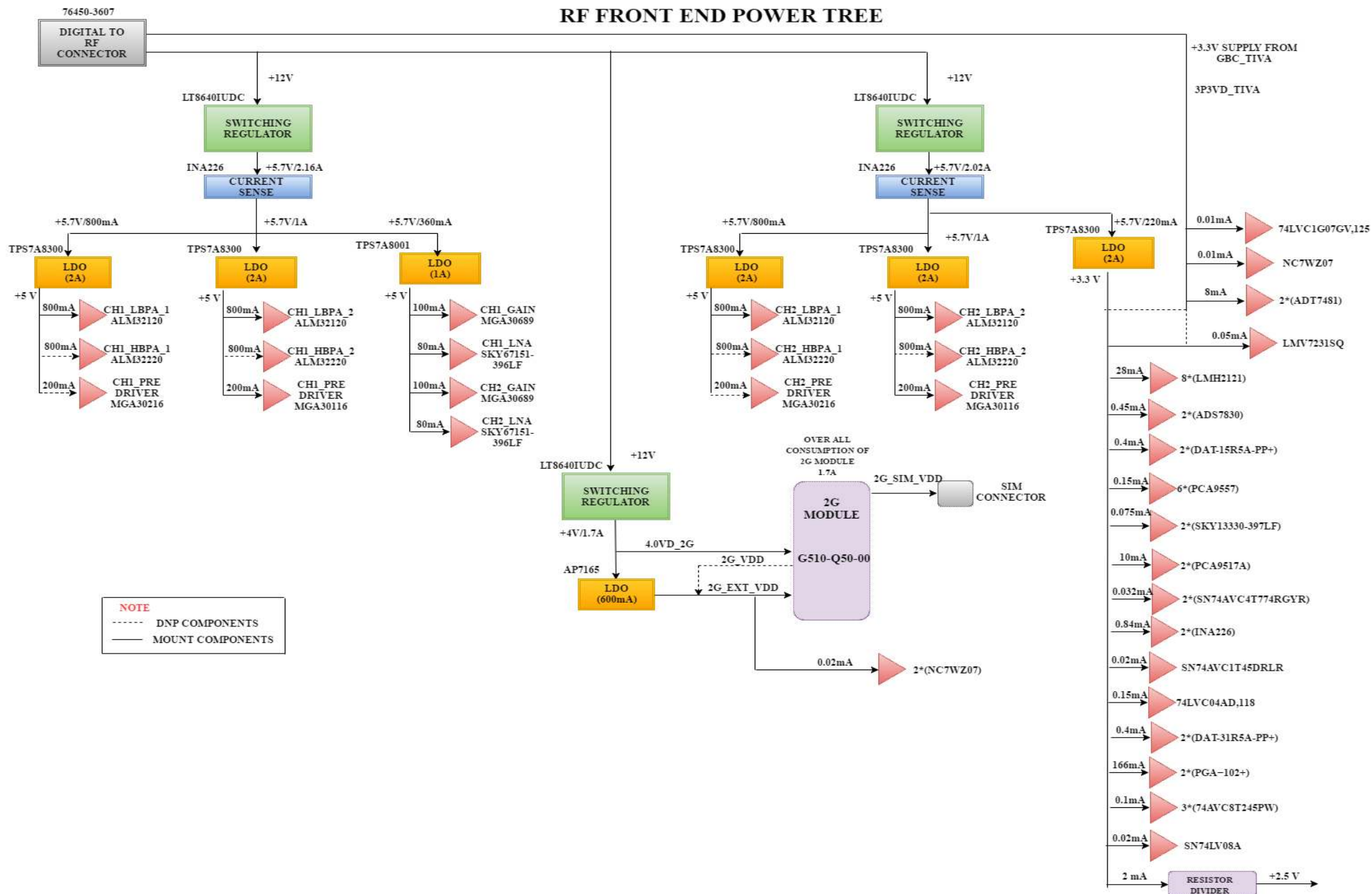
# RF FRONT END BLOCK DIAGRAM



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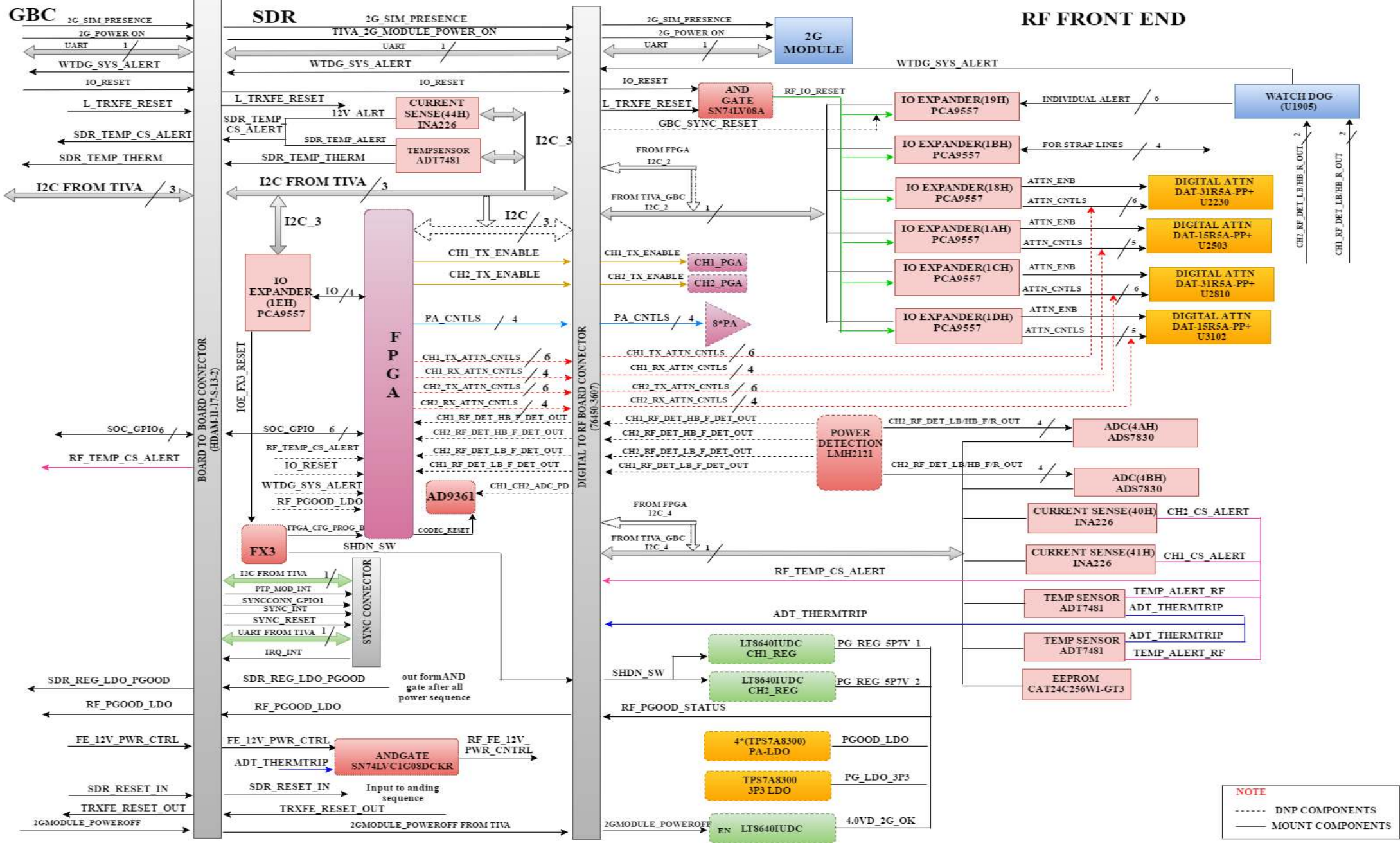
Title		RF Block Diagram	
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# RF FRONT END POWER TREE



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POWER TREE		
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# REG\_12V\_5P7V

Place the testpoint TP57 near to the power plane P12V

LT8640 INT VCC 1 internal 3.4V regulator Bypass (Do not load the INTVCC pin with external circuitry)

Place the testpoint TP58 near to the power plane 5P7V\_REG\_1

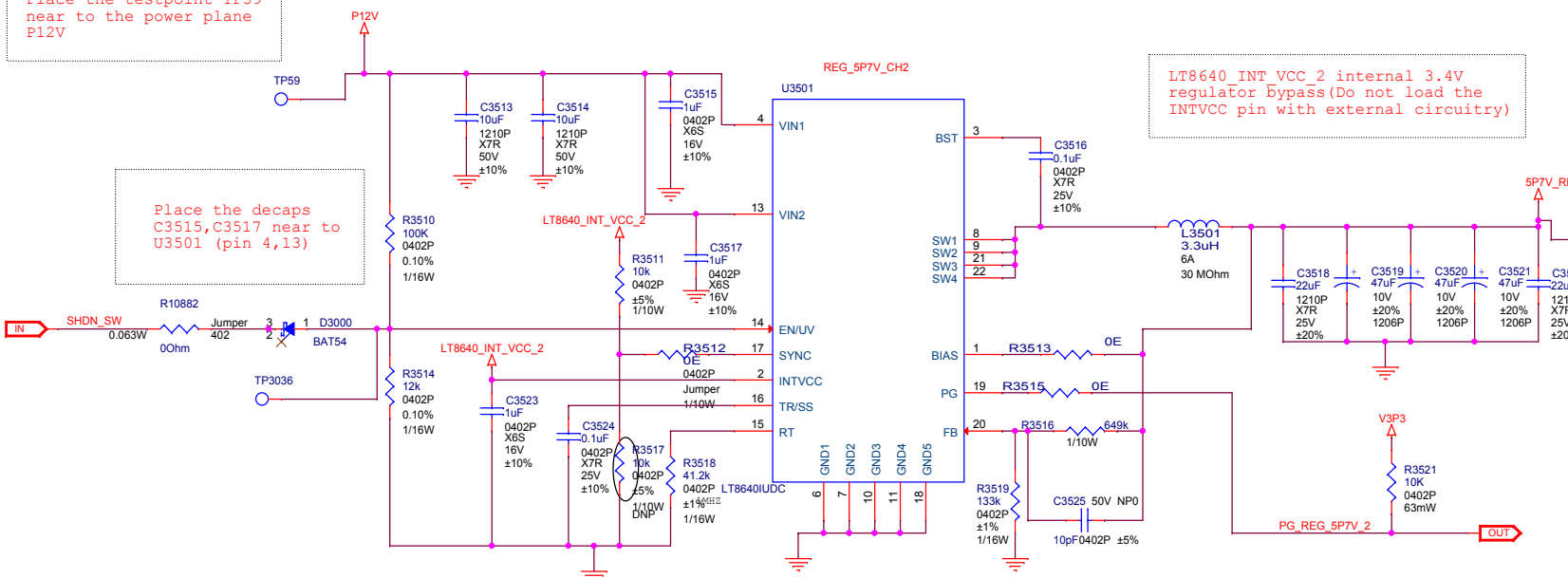
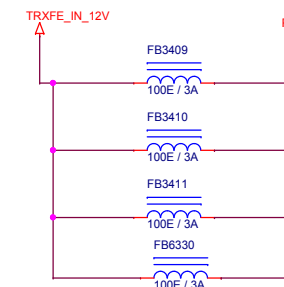
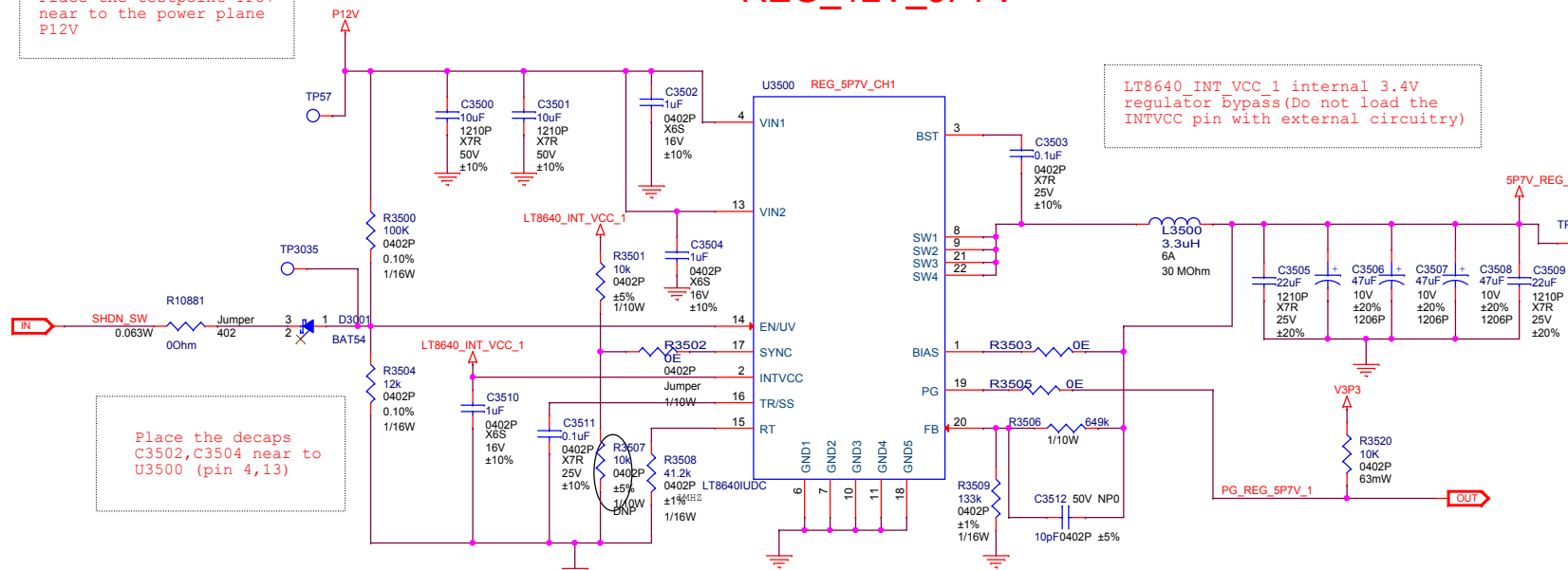
Place the decaps C3502,C3504 near to U3500 (pin 4,13)

SHDN SW is board shutdown from FX3(USB controller)

Place the testpoint TP59 near to the power plane P12V

Place the decaps C3515,C3517 near to U3501 (pin 4,13)

Place the testpoint TP60 near to the power plane 5P7V\_REG\_2

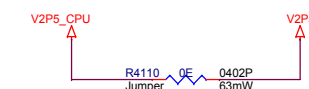
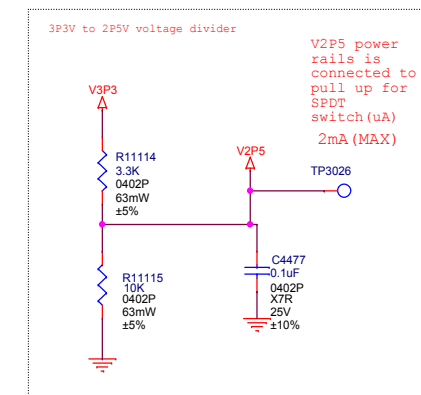
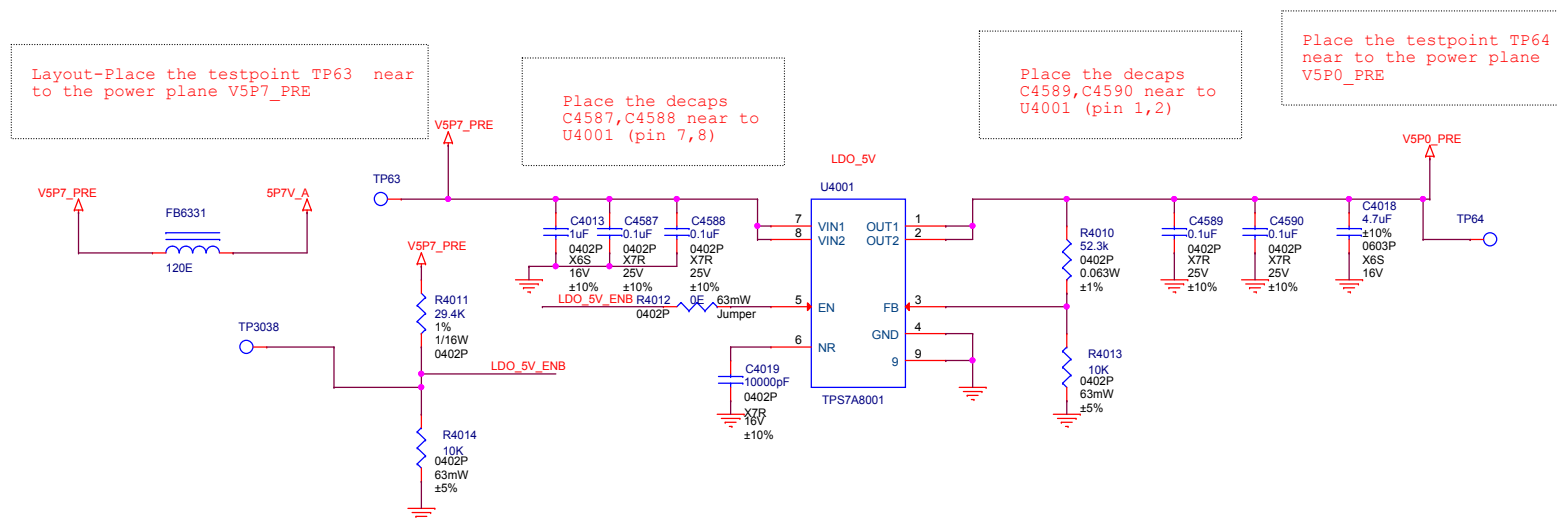
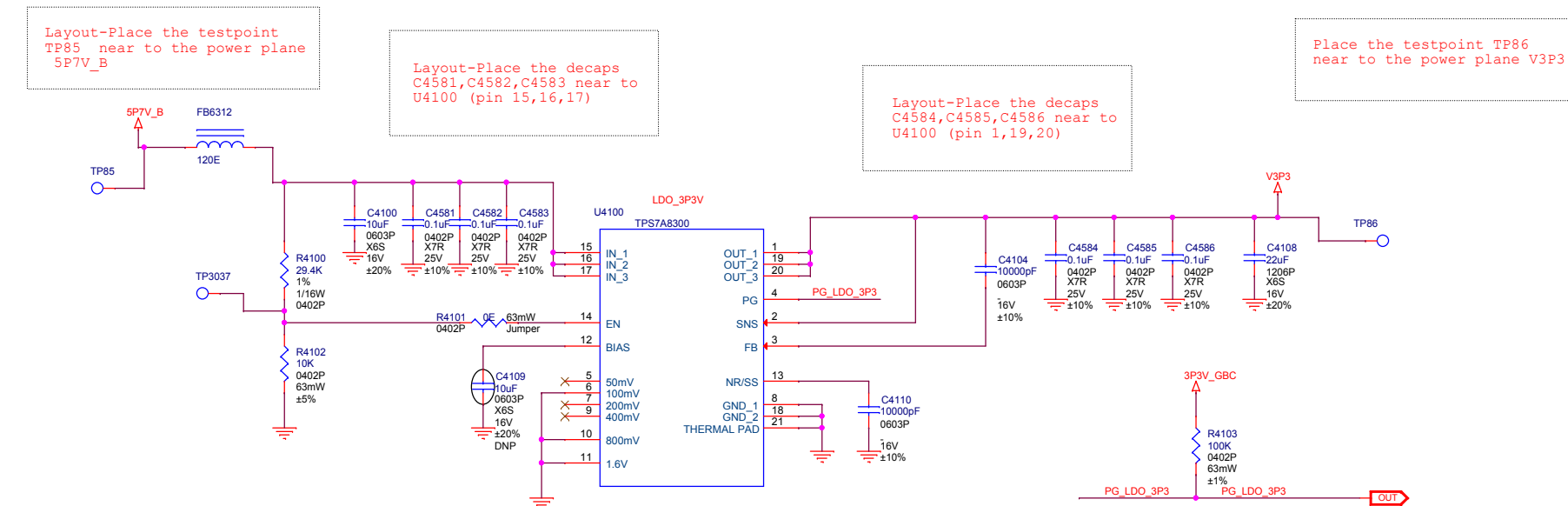


LT8640 INT VCC 2 internal 3.4V regulator Bypass (Do not load the INTVCC pin with external circuitry)

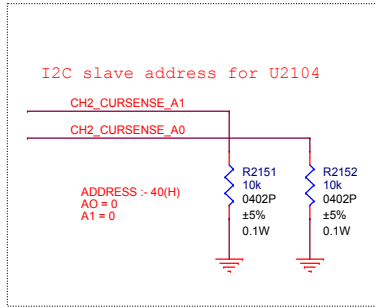
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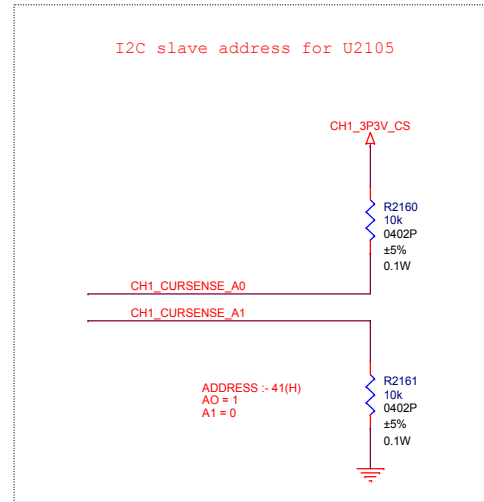
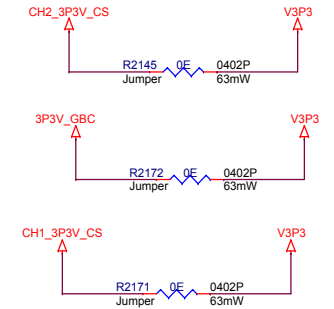
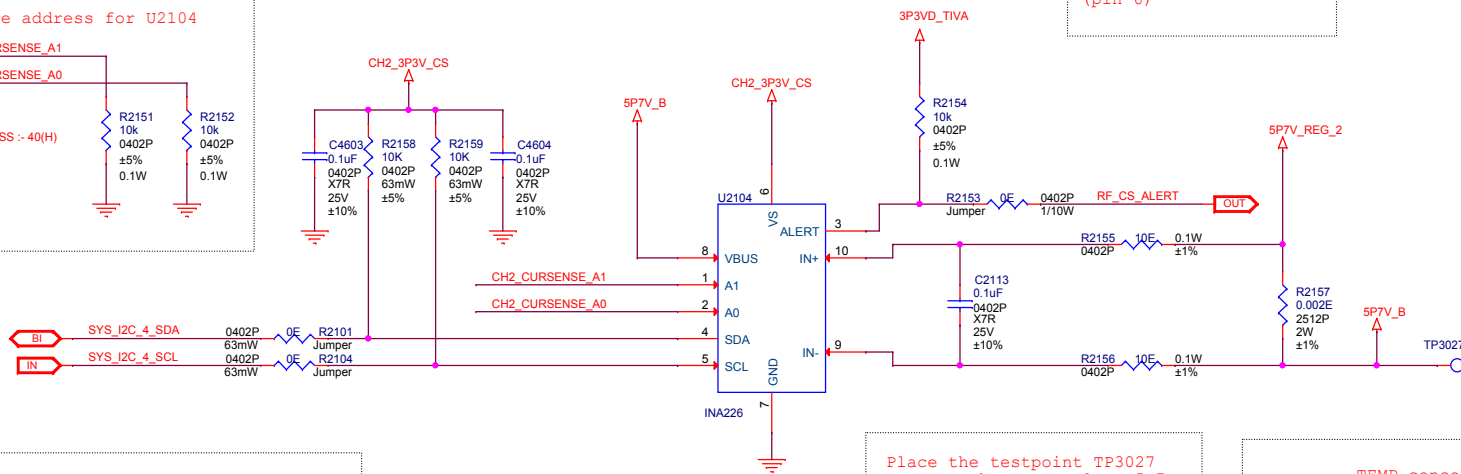
LDO\_3P3V\_LDO\_5V



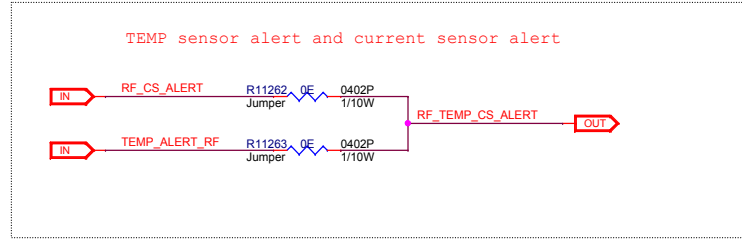
# CURRENT SENSING FOR CH1&CH2



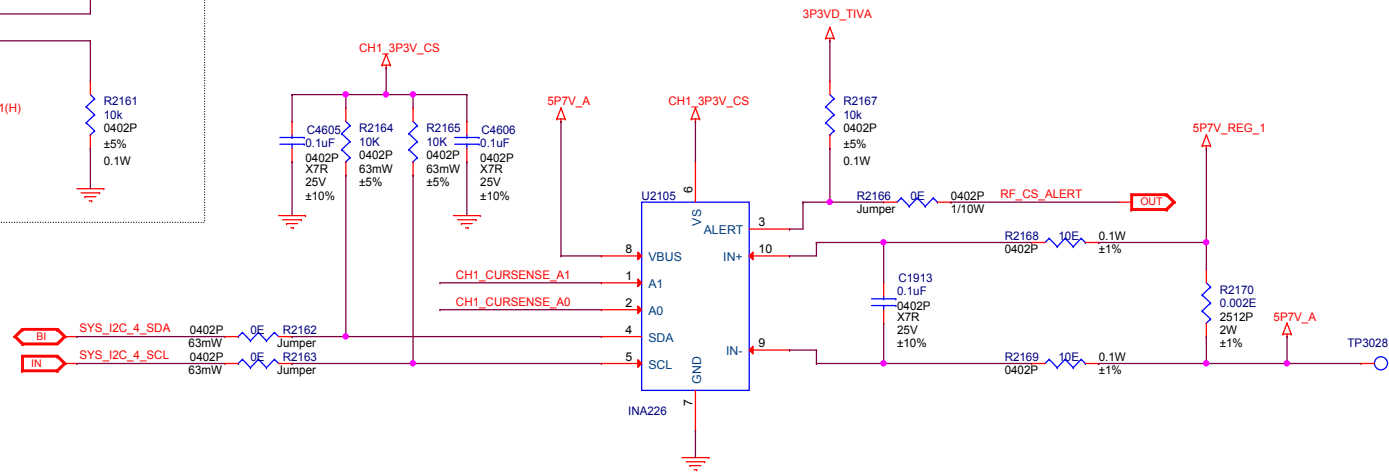
Layout-Place the decap C4604 near to U2104 (pin 6)



Place the testpoint TP3027 near to the power plane 5P7V\_B



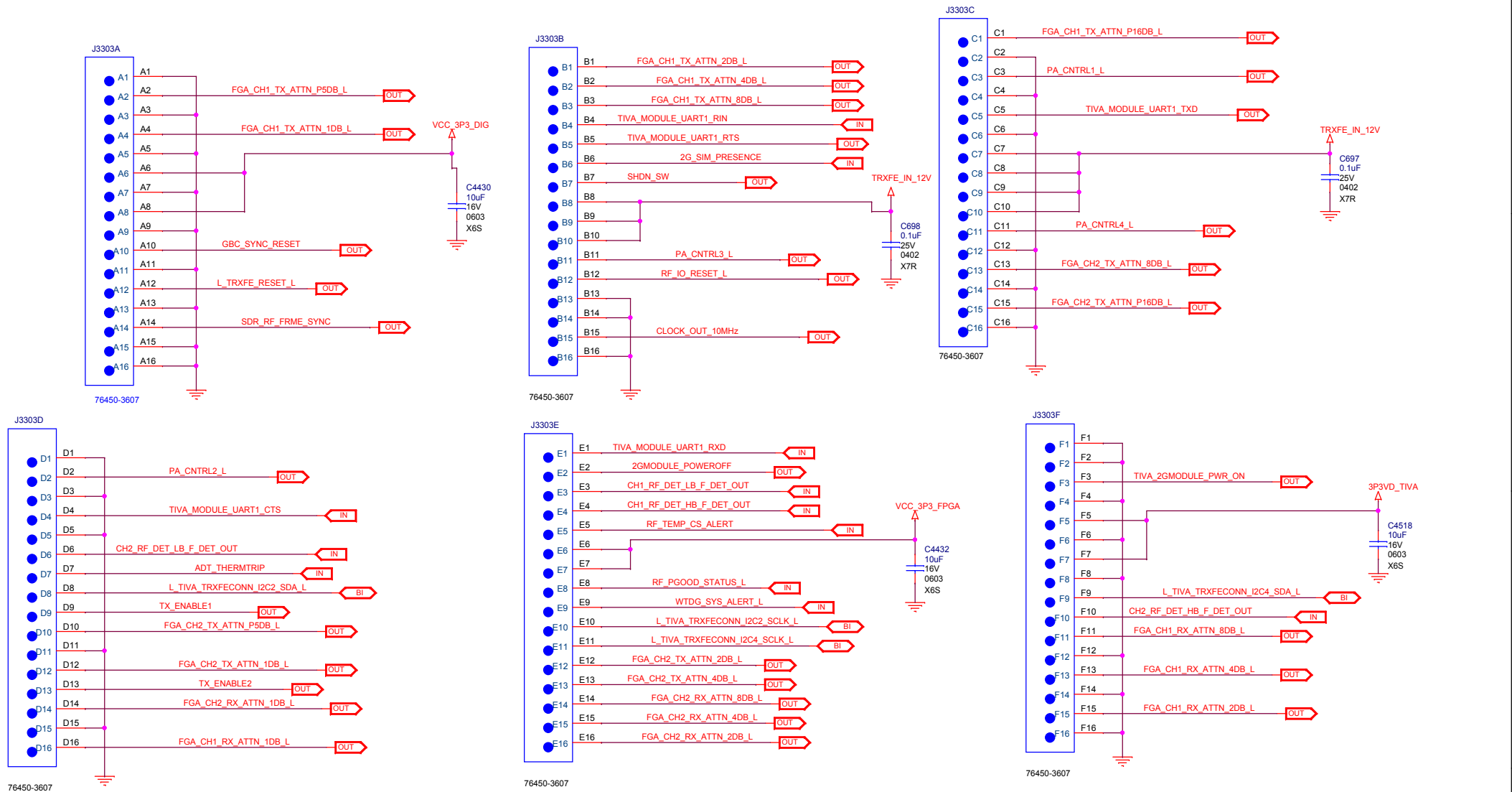
Layout-Place the decaps C4606 near to U2105 (pin 6)



Place the testpoint TP3028 near to the power plane 5P7V\_A

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CUR SENSE FOR CH1&CH2			
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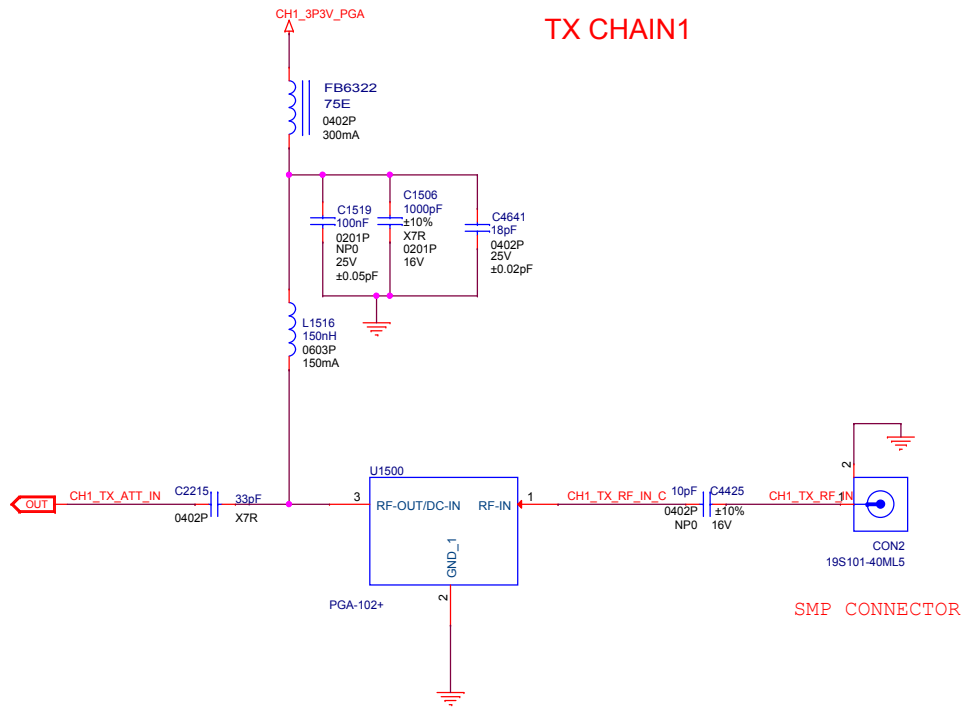
# DIGITAL BOARD CONNECTOR



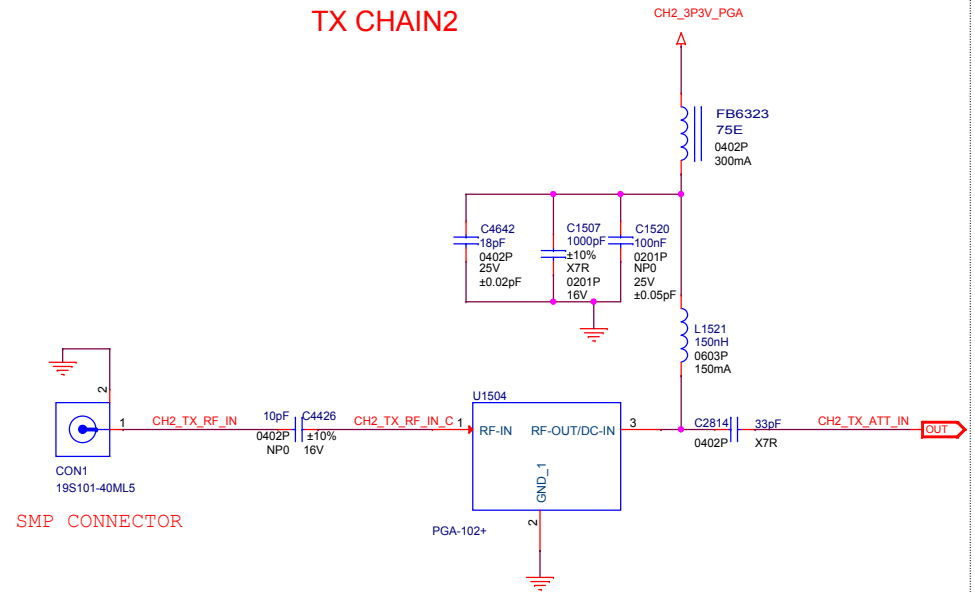


# TX\_RF\_CONNECTOR

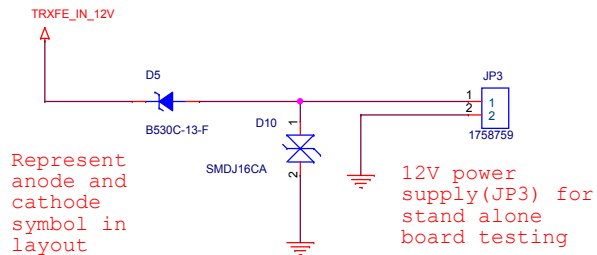
## TX CHAIN1



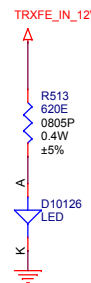
## TX CHAIN2



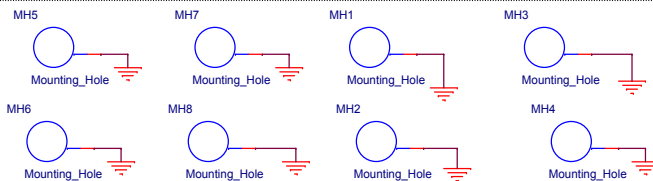
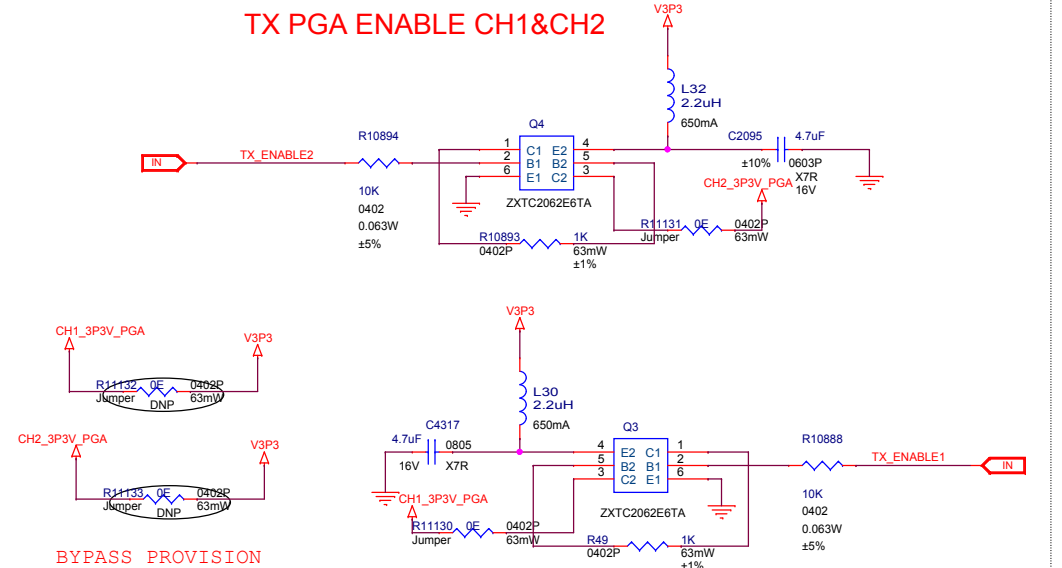
## 12 Volt Supply



## 12 Volt LED



## TX PGA ENABLE CH1&CH2

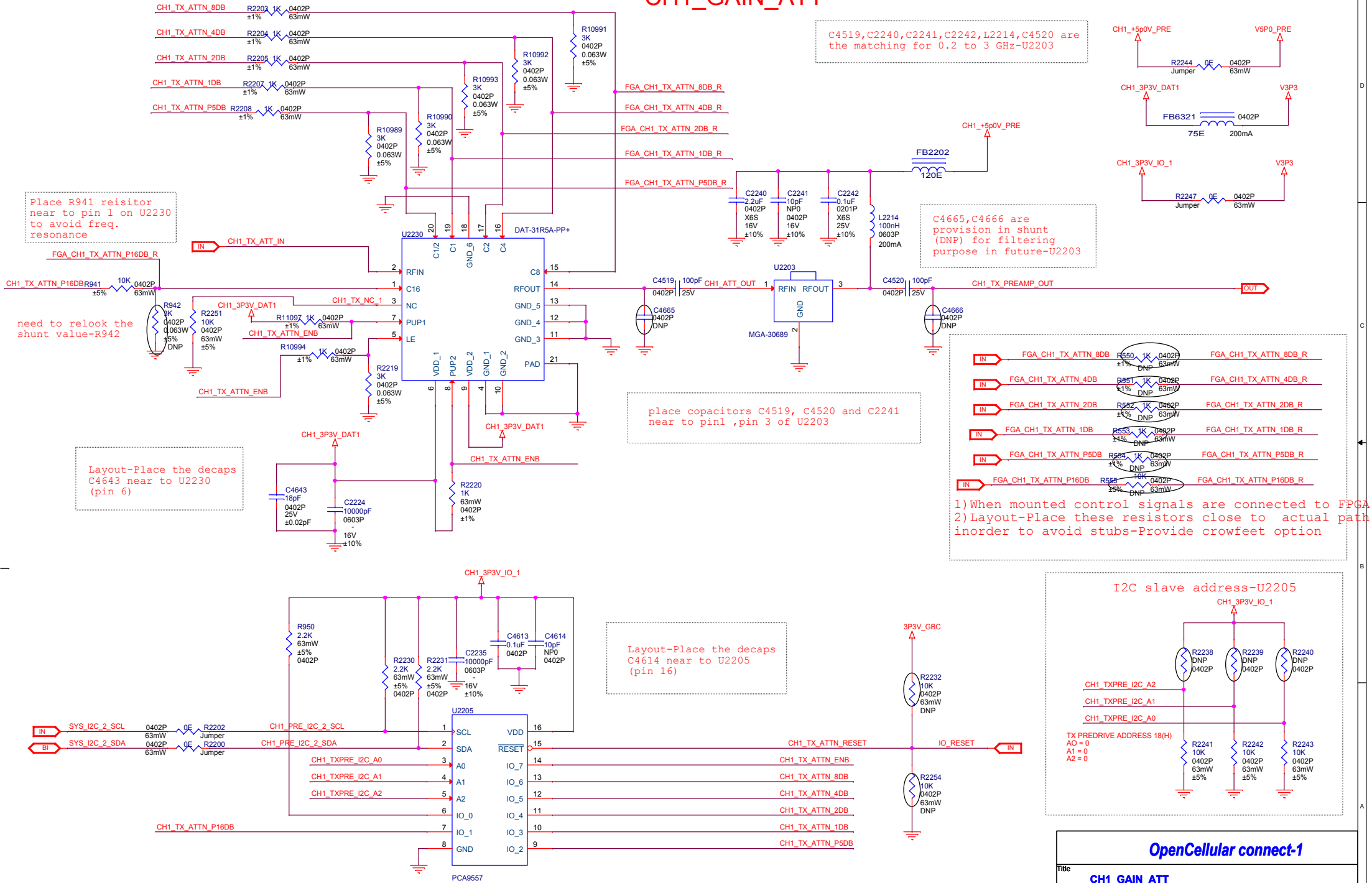


## MOUNTING HOLES

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TX_RF_CONNECTOR			Rev
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## CH1\_GAIN\_ATT

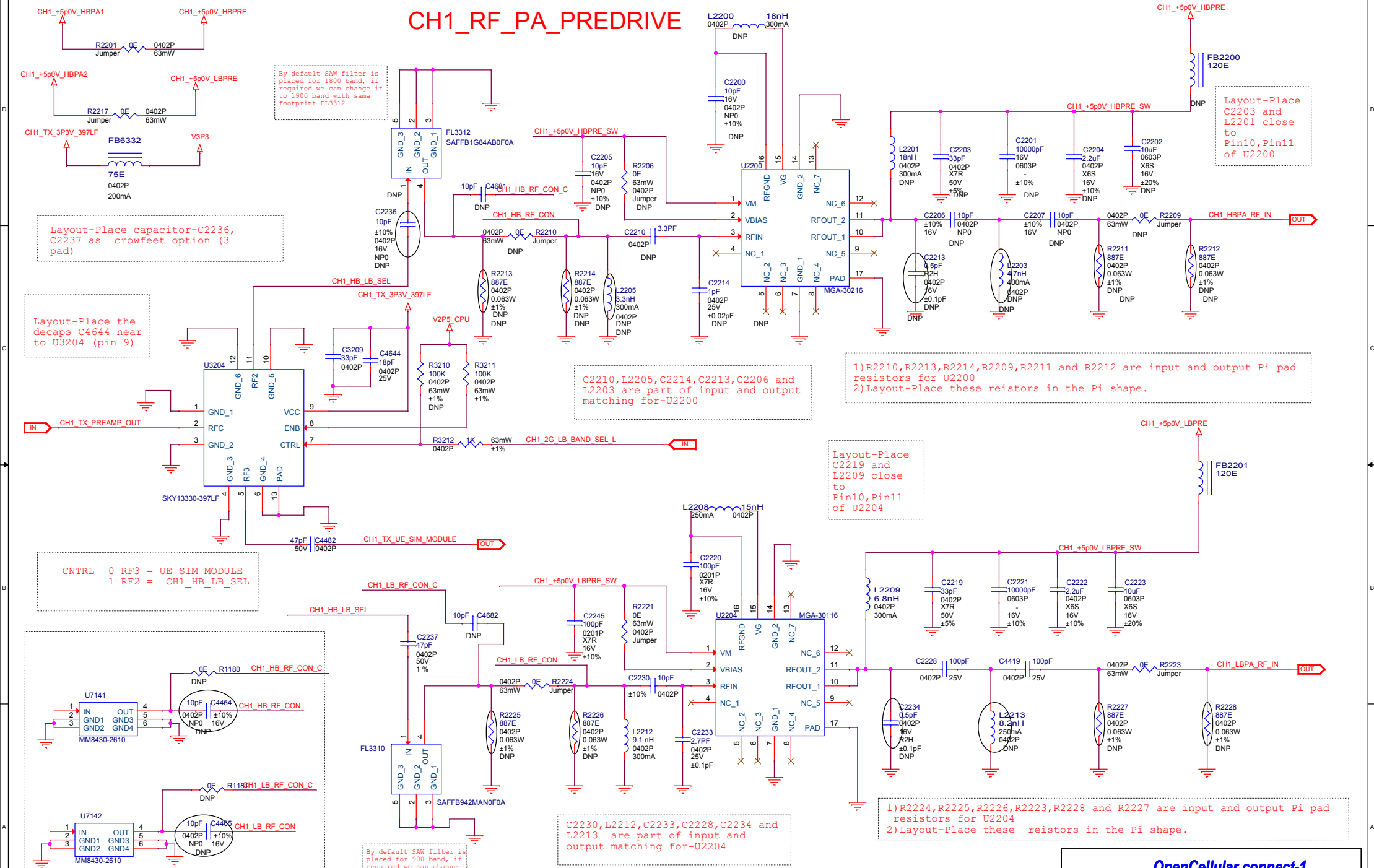


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## CH1\_RF\_PA\_PREDRIVE

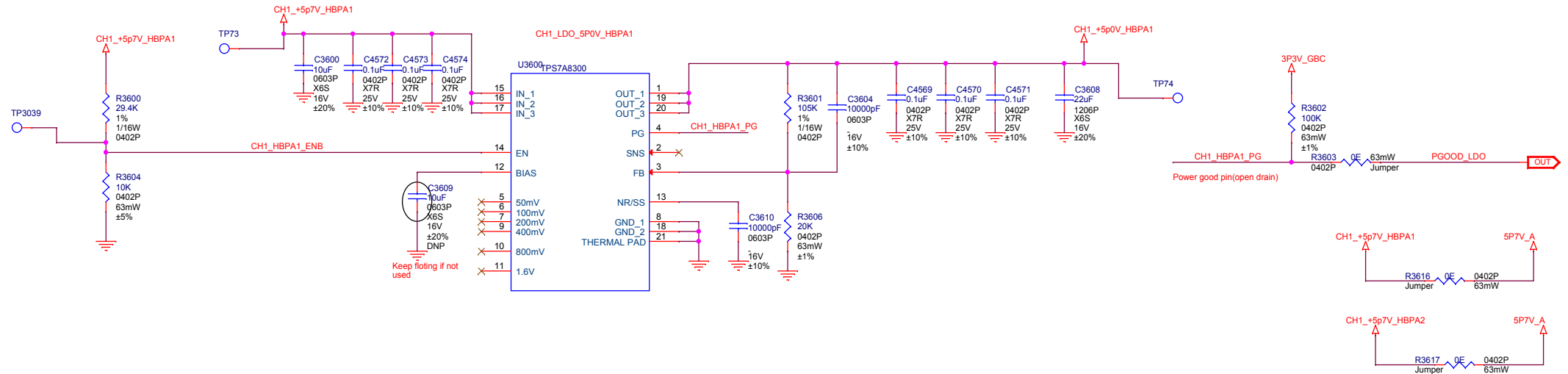


Layout-Place DNP capacitor as crowfeet option (3 pad) near to R2210 ,R2224 respectively

Place the testpoint TP73 near to the power plane CH1\_+5p7V\_HBPA1-U3600

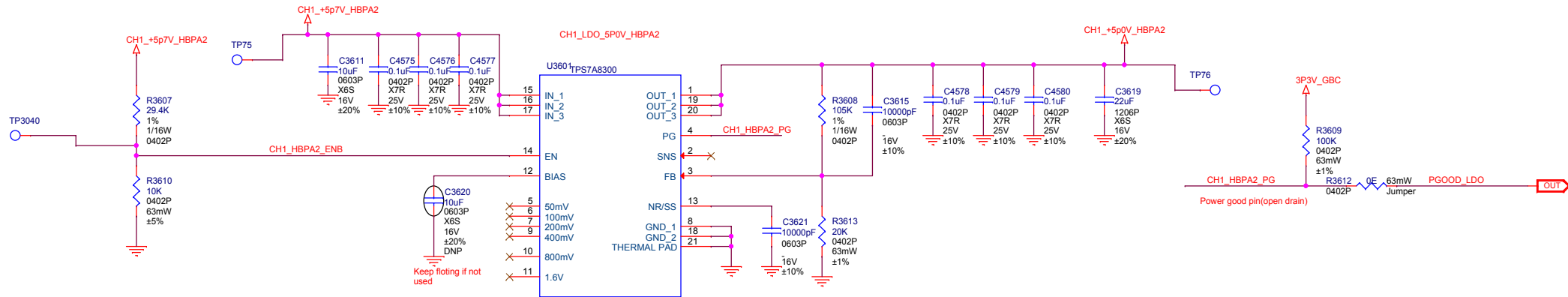
## CH1\_HB\_LDO

Place the testpoint TP74 near to the power plane CH1\_+5p0V\_HBPA1-U3600

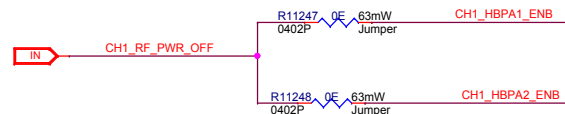


Place the testpoint TP75 near to the power plane CH1\_+5p7V\_HBPA2-U3601

Place the testpoint TP76 near to the power plane CH1\_+5p0V\_HBPA2-U3601



### CH1 power off control



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# CH1\_RF\_PA\_LB

Layout-Place DNP capacitor-C4413 as crowfoot option (3 pad) near to C4447

Layout-1)Place C2403 capacitor near to pin 20 of -U2400  
2)Place C2404 capacitor near to pin 18 of U2400

C2410,C2413,L2402,C2411,C2414,C4421 and L2403 are part of input and output matching for-U2400

R853,R854,R855 are the PI pad resistors for the ISO port of-U2403

R850,R851,R852 are the PI pad resistors for the ISO port of-U2402

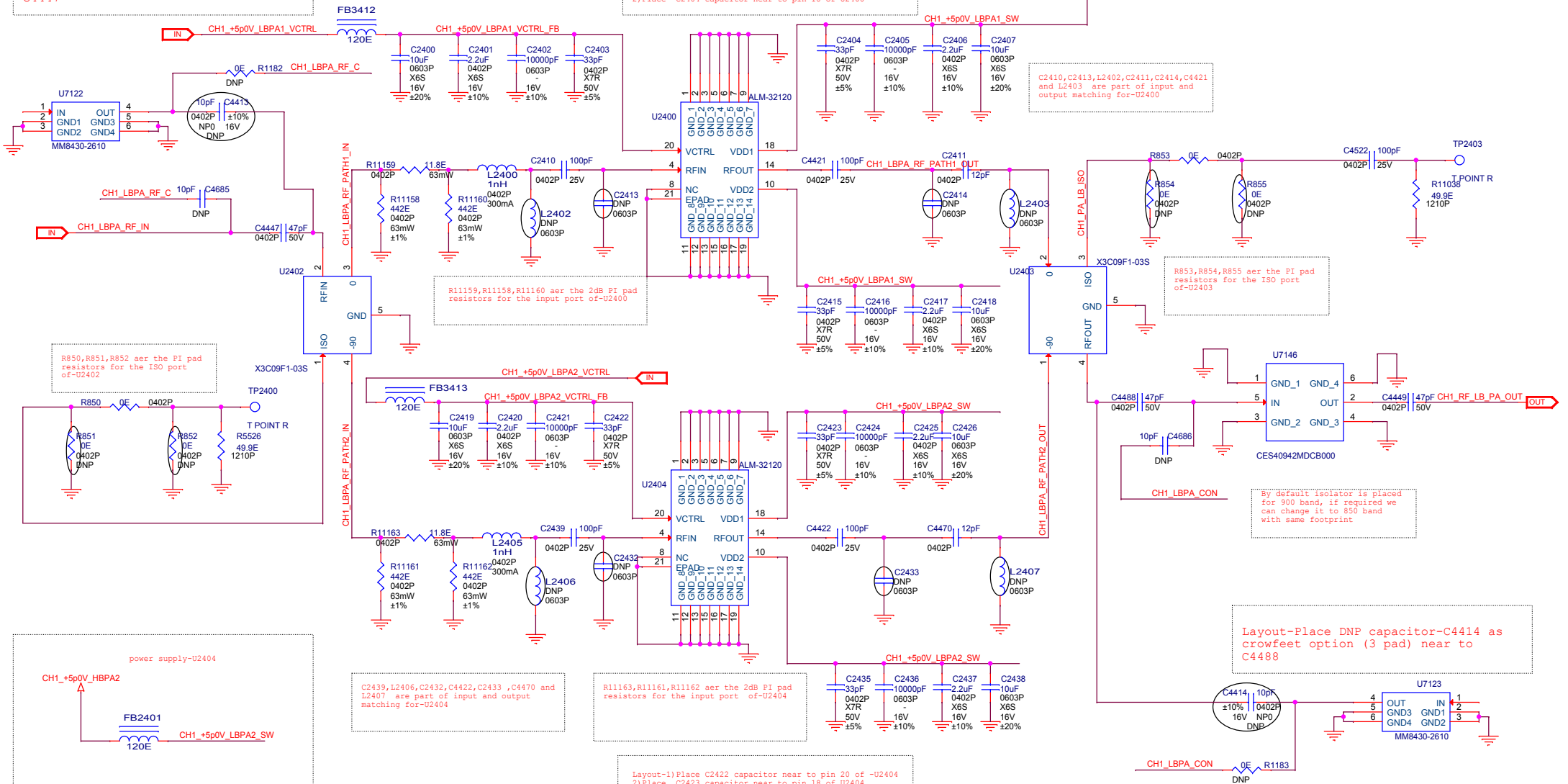
By default isolator is placed for 900 band, if required we can change it to 850 band with same footprint

Layout-Place DNP capacitor-C4414 as crowfoot option (3 pad) near to C4488

C2439,L2406,C2432,C4422,C2433 ,C4470 and L2407 are part of input and output matching for-U2404

R11163,R11161,R11162 are the 2dB PI pad resistors for the input port of-U2404

Layout-1)Place C2422 capacitor near to pin 20 of -U2404  
2)Place C2423 capacitor near to pin 18 of U2404



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# CH1\_RF\_PA\_HB

Layout-Place DNP capacitor-C4415 as crowfeet option (3 pad) near to C4450

Layout-1)Place C2304 capacitor near to pin 20 of -U2301  
2)Place C2305 capacitor near to pin 18 of U2301

R859,R860,R861 are the PI pad resistors for the ISO port of-U2303

R1168,R1166,R1167 are the 2dB PI pad resistors for the input port of-U2301

L2300,C2310,L2303,C2314,C2313,C2311,L2302 are part of input and output matching for-U2301

Layout-1)Place C2322 capacitor near to pin 20 of -U2304  
2)Place C2323 capacitor near to pin 18 of U2304

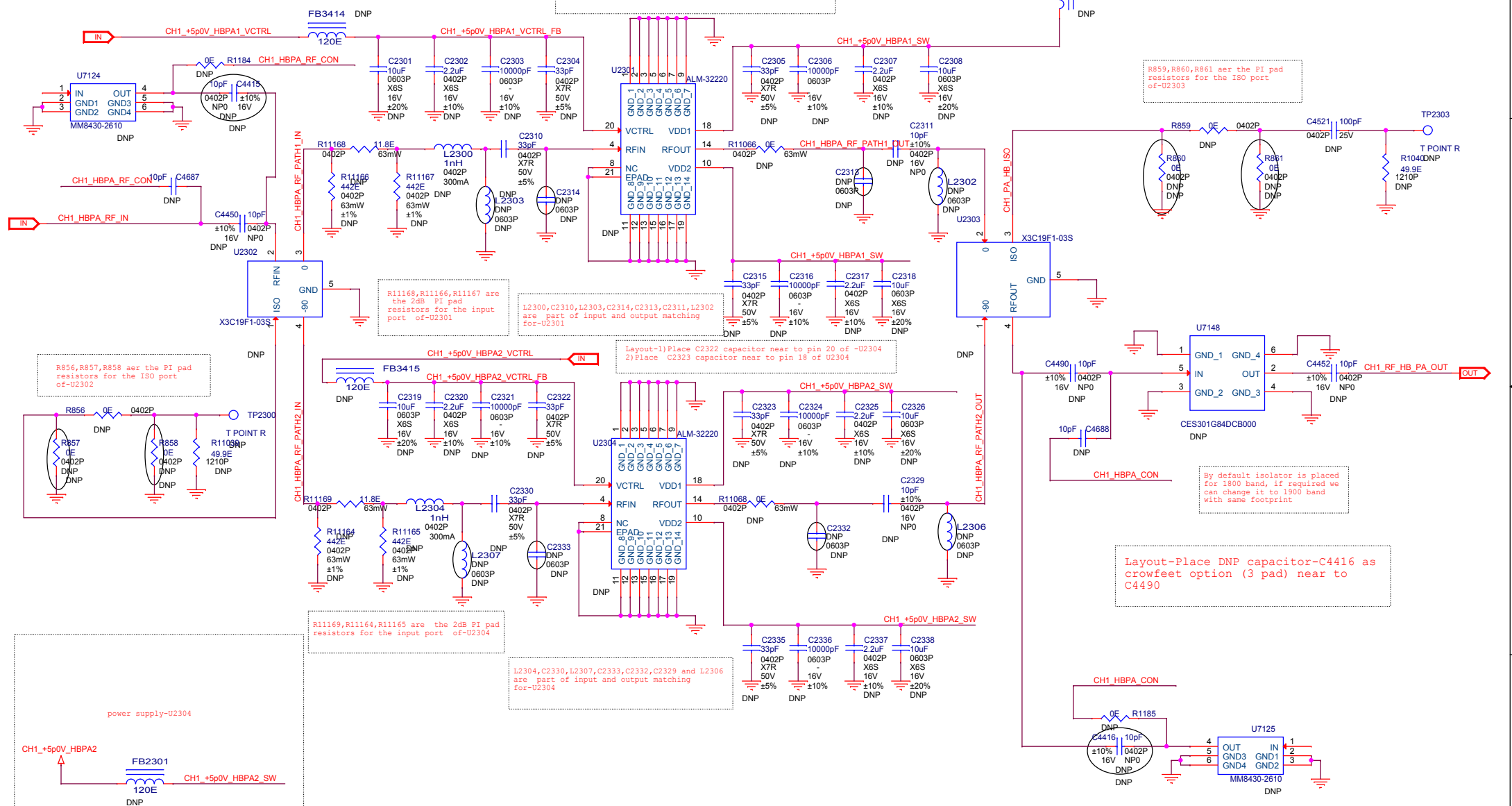
By default isolator is placed for 1800 band, if required we can change it to 1900 band with same footprint

Layout-Place DNP capacitor-C4416 as crowfeet option (3 pad) near to C4490

R1169,R1164,R1165 are the 2dB PI pad resistors for the input port of-U2304

L2304,C2330,L2307,C2333,C2332,C2329 and L2306 are part of input and output matching for-U2304

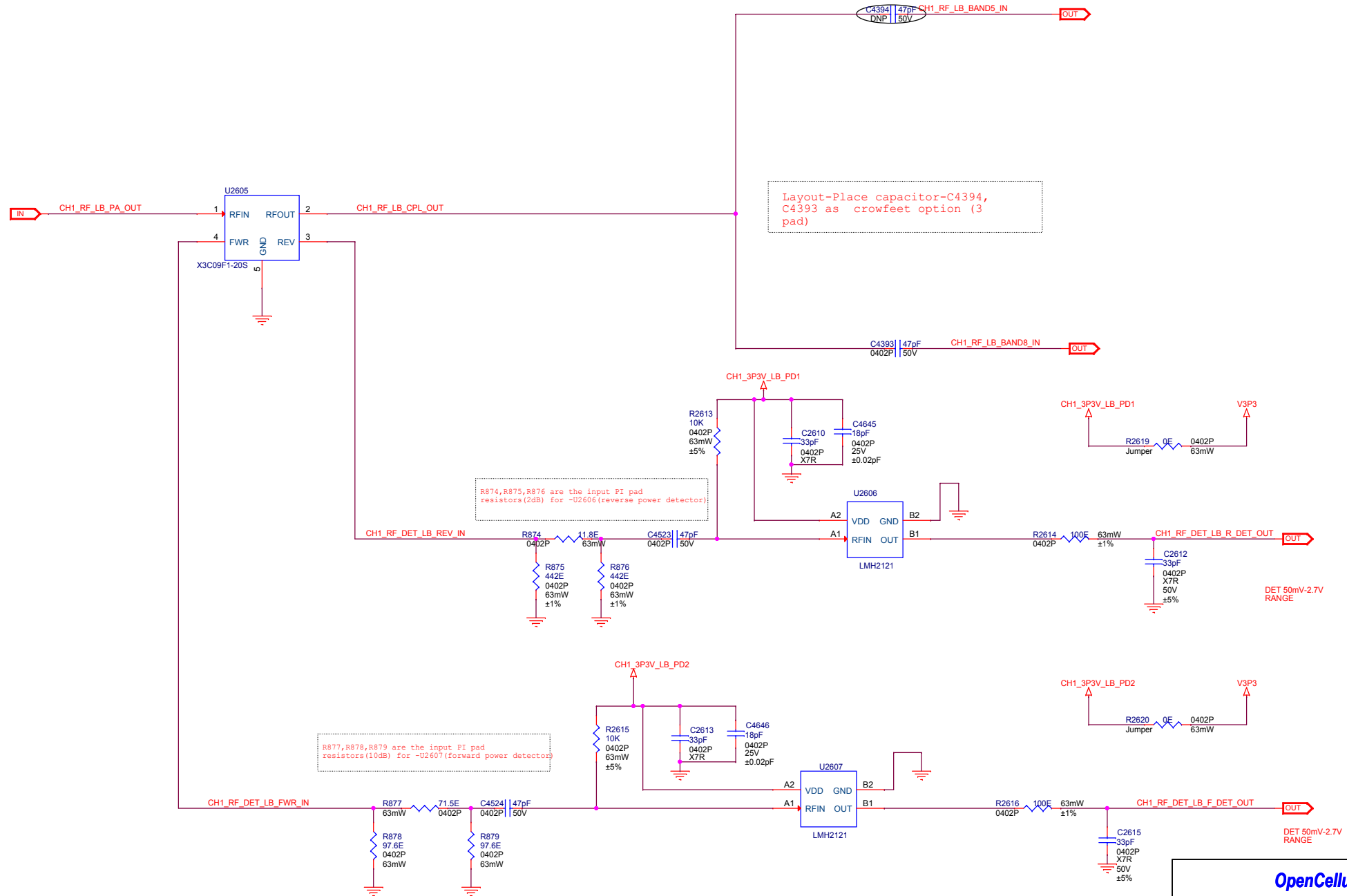
power supply-U2304



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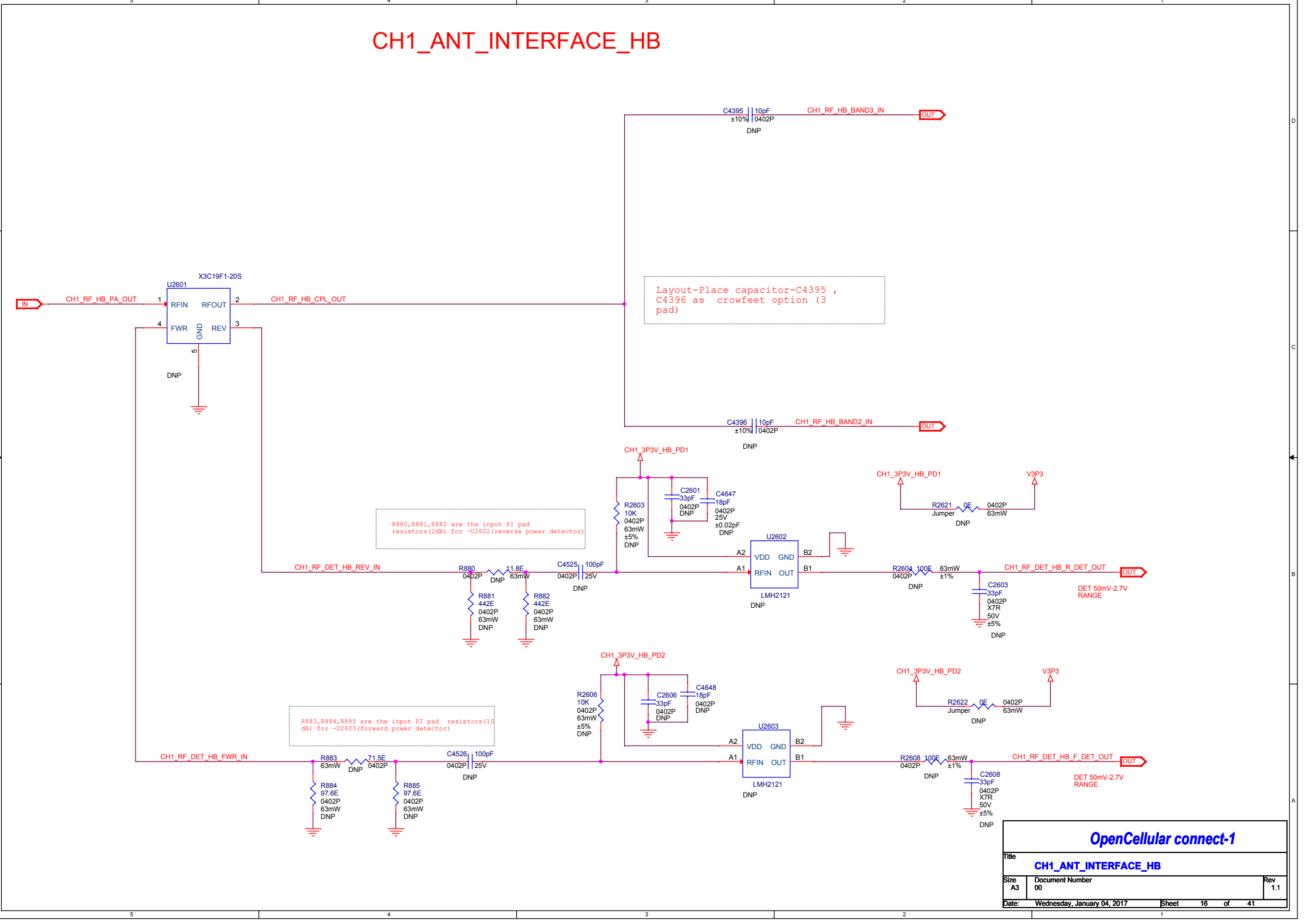
# CH1\_ANT\_INTERFACE\_LB



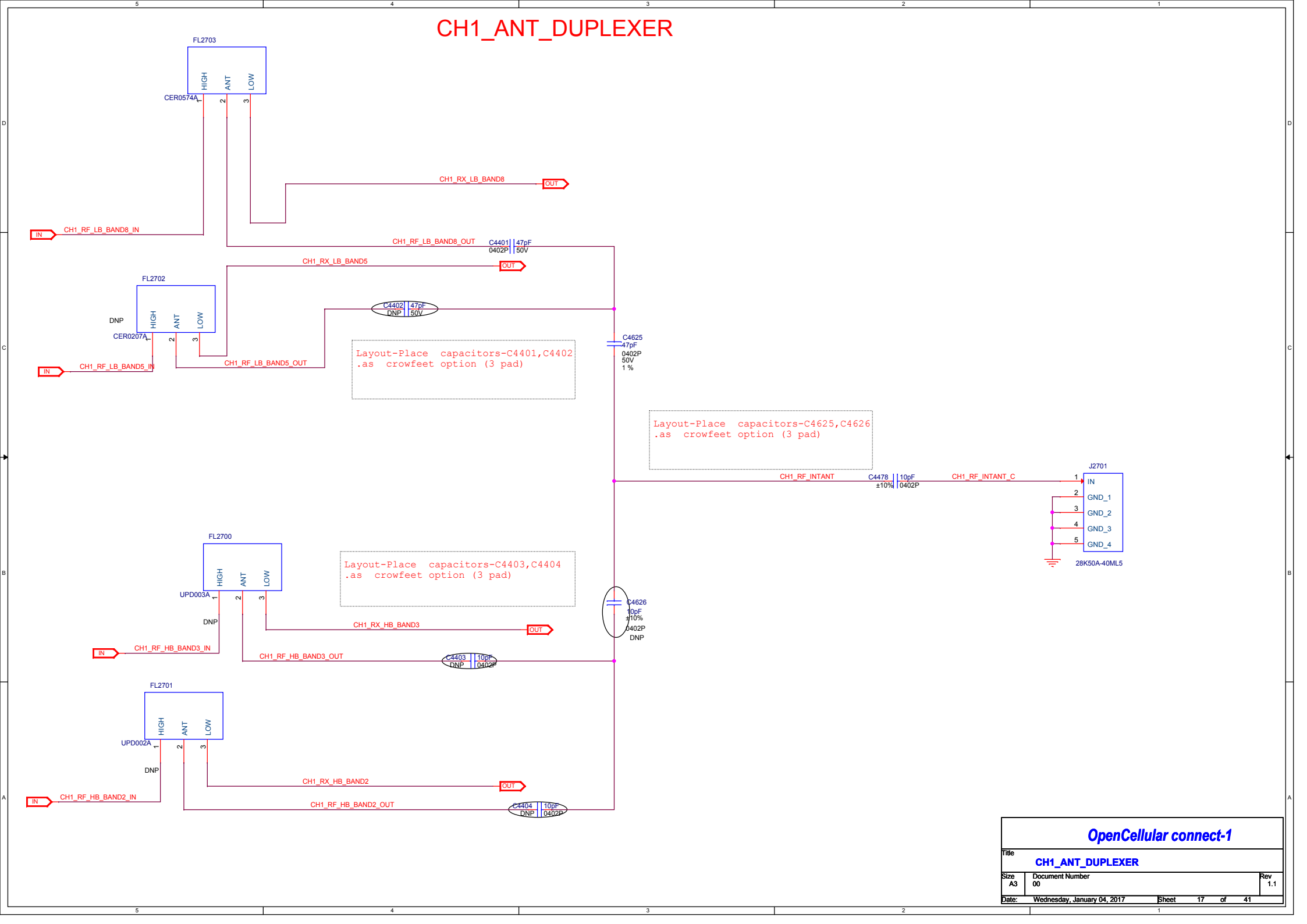
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# CH1\_ANT\_INTERFACE\_HB

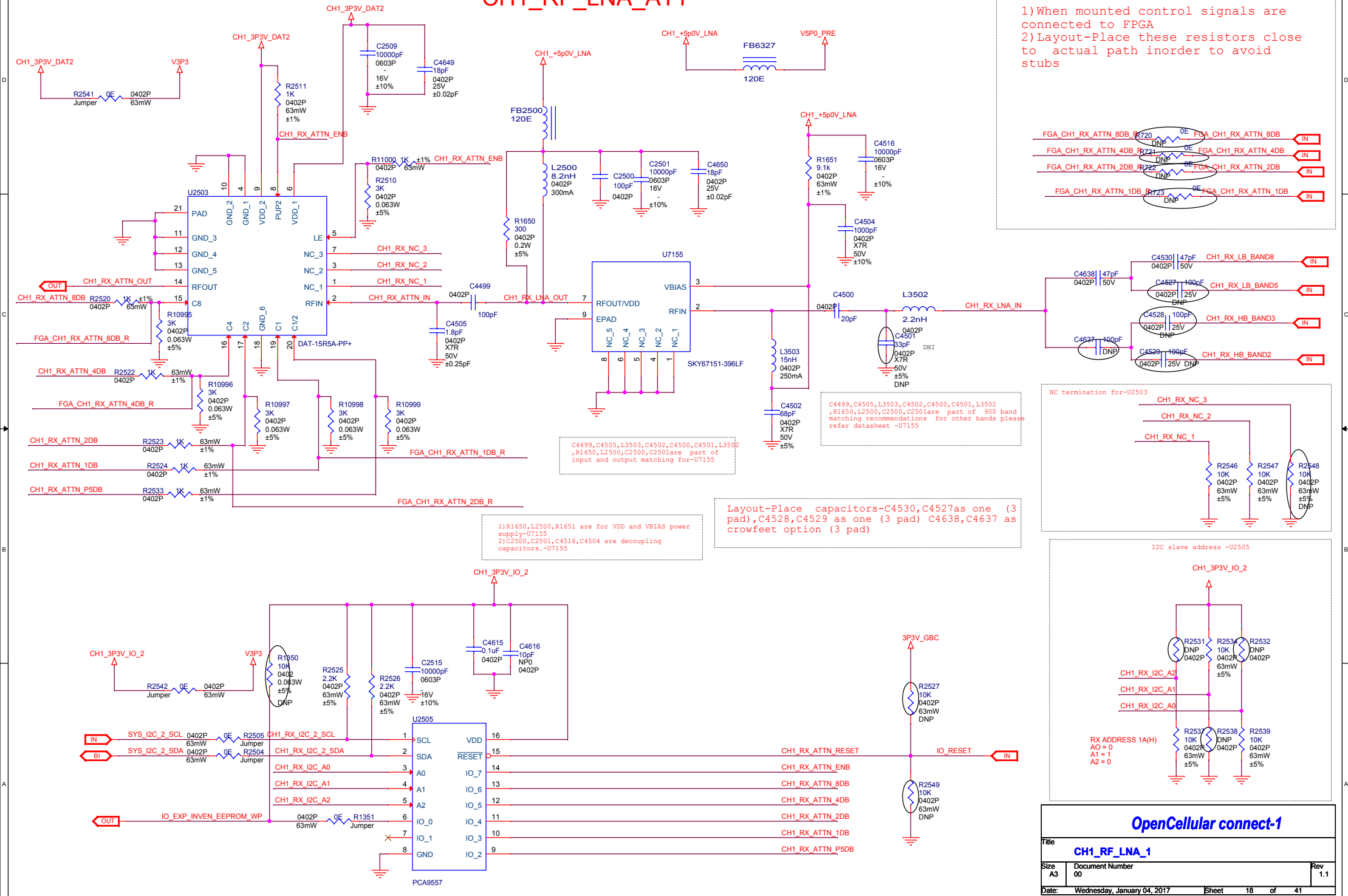
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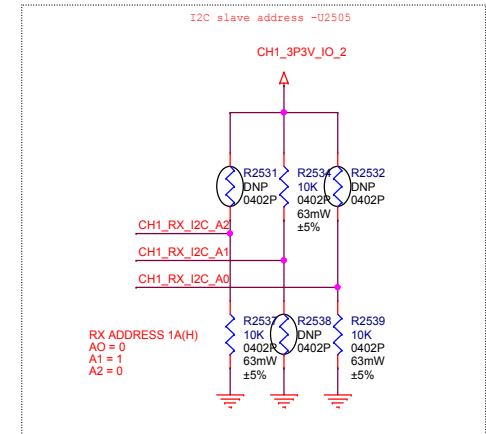
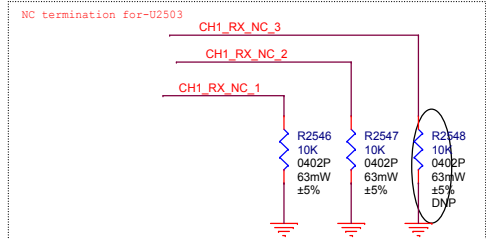
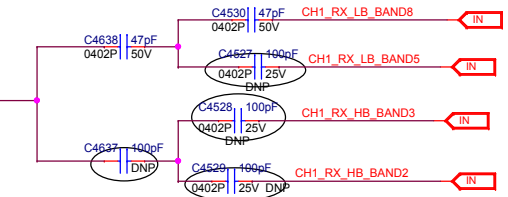
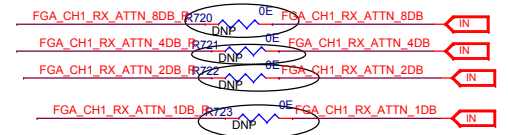
CH1\_ANT\_DUPLEXER



## CH1\_RF\_LNA\_ATT



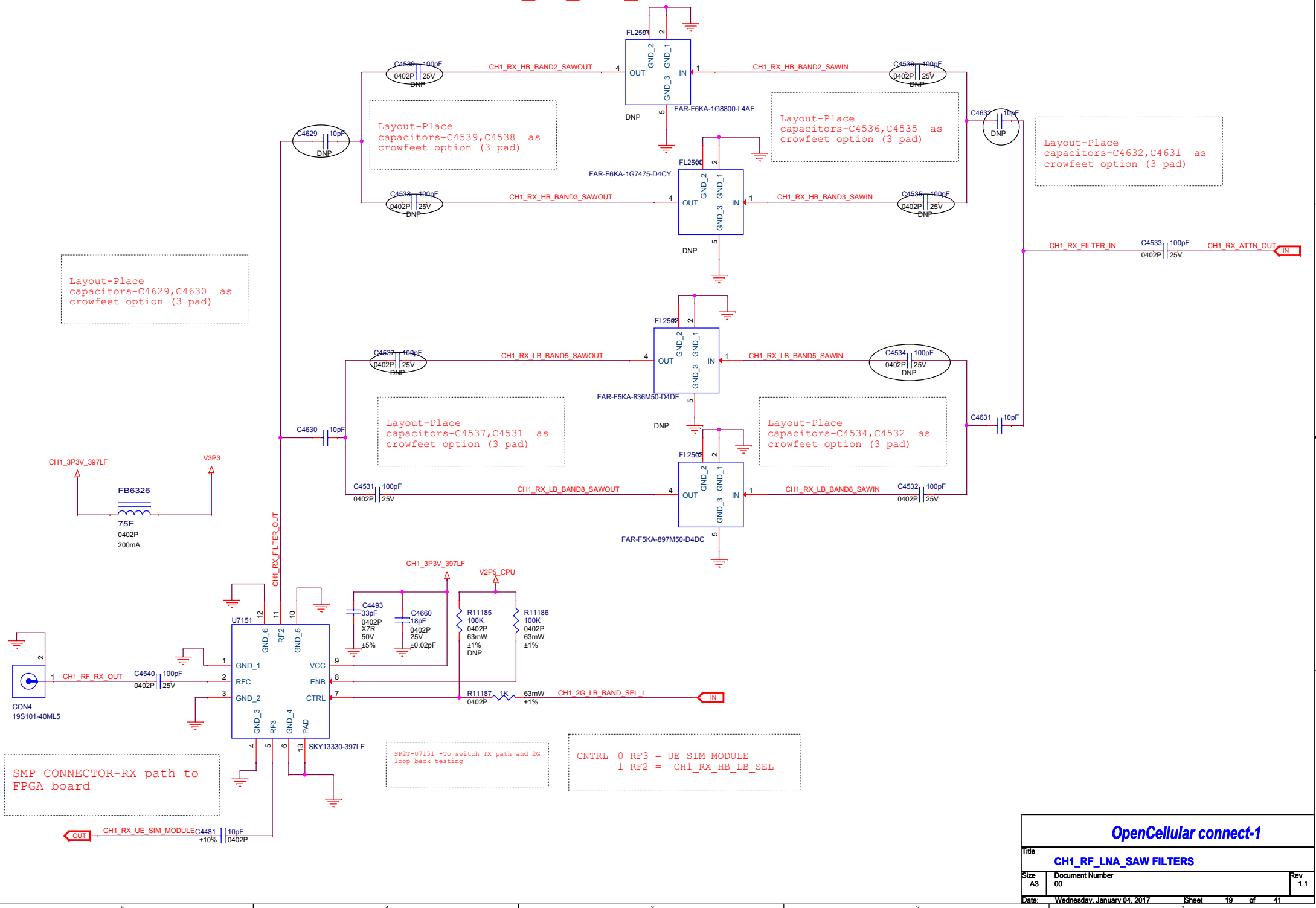
- 1)When mounted control signals are connected to FPGA
- 2)Layout-Place these resistors close to actual path inorder to avoid stubs



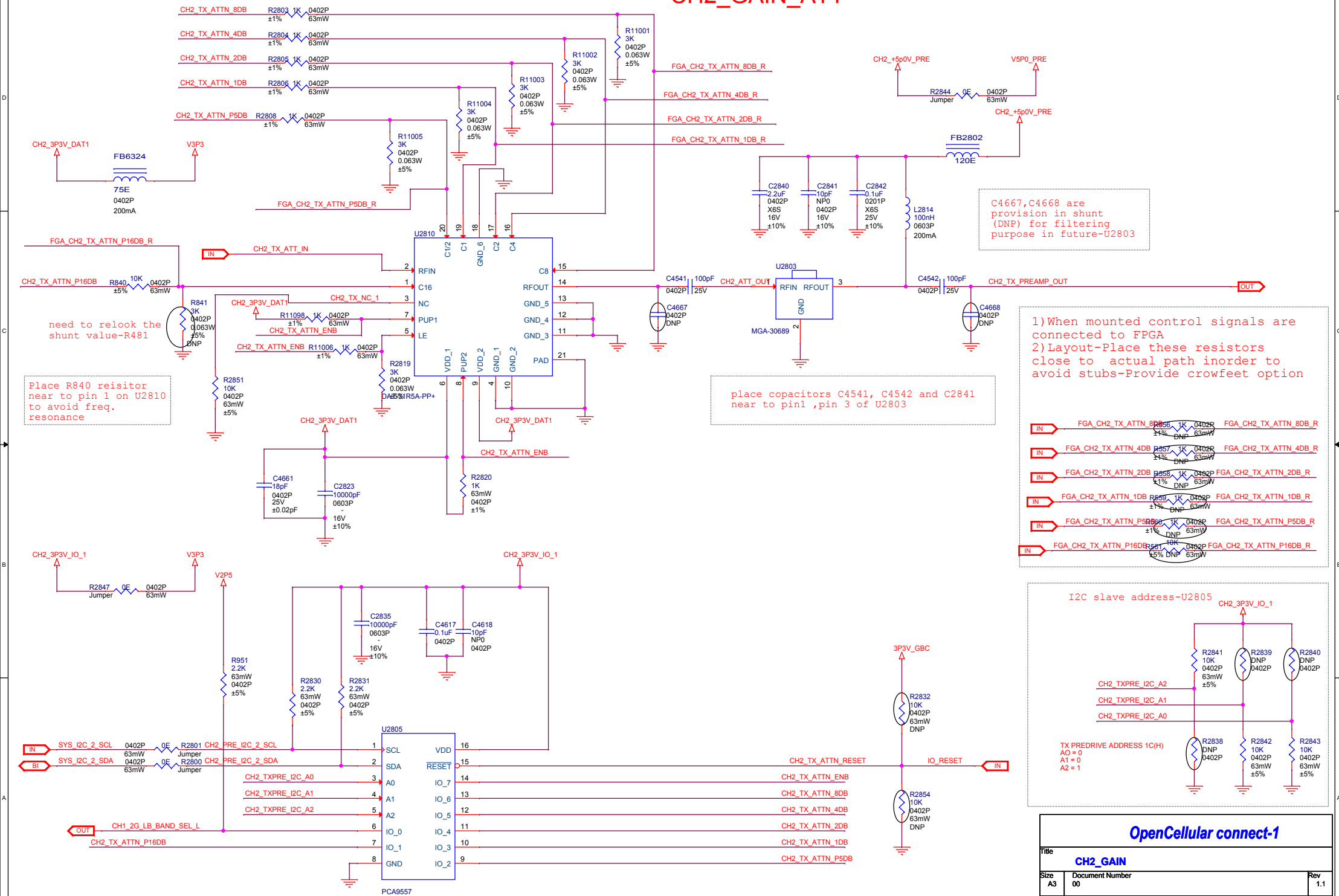
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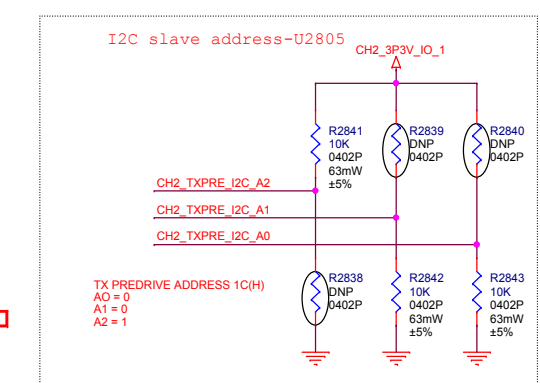
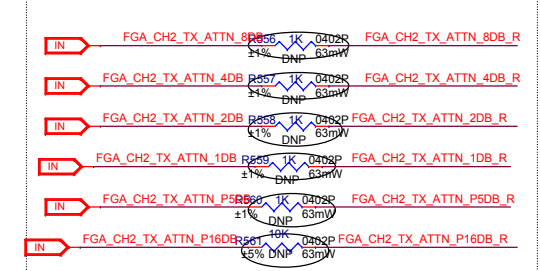
# CH1\_RF\_LNA\_SAWFILTERS



## CH2\_GAIN\_ATT



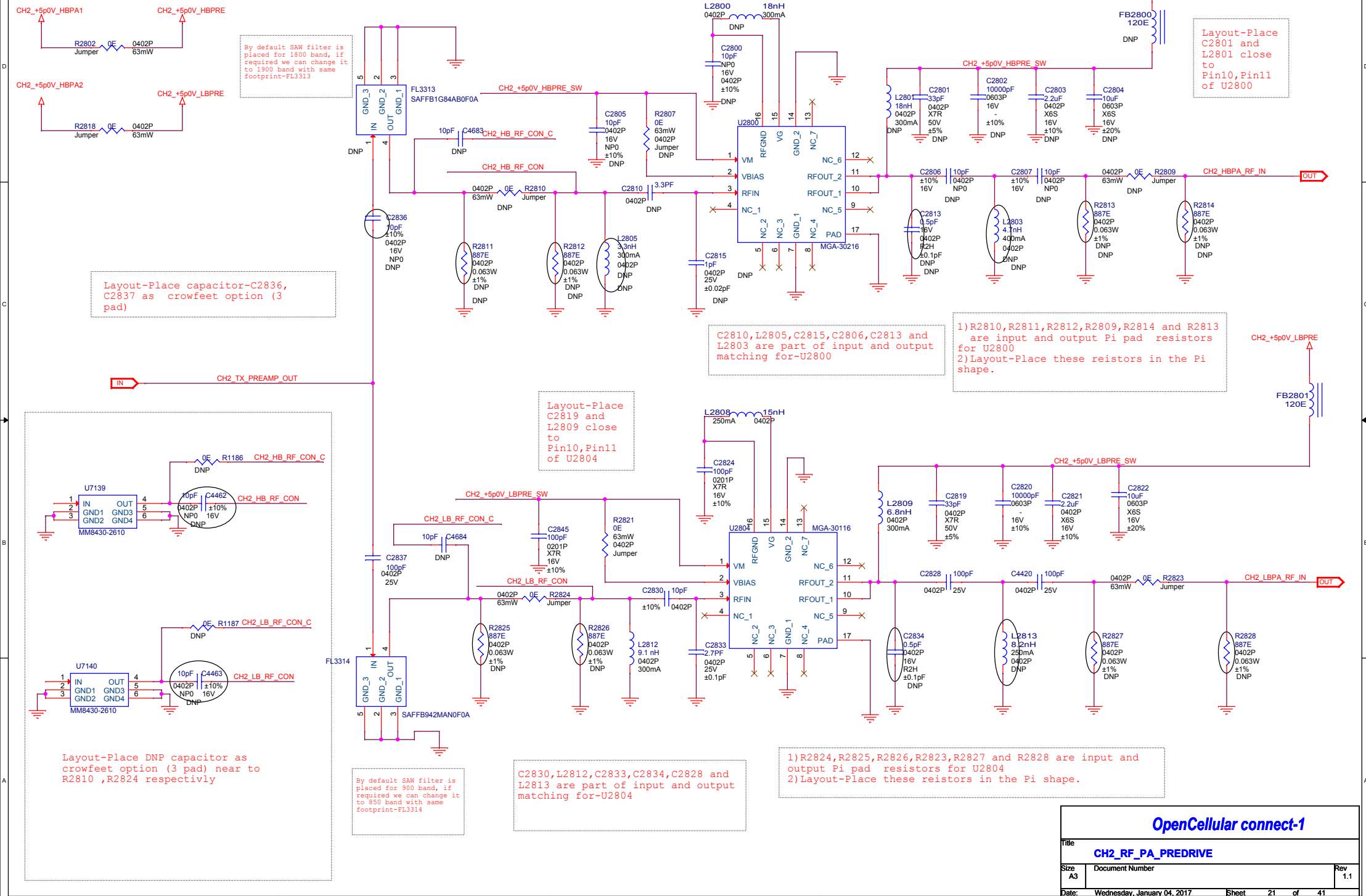
- 1)When mounted control signals are connected to FPGA
- 2)Layout-Place these resistors close to actual path inorder to avoid stubs-Provide crowfeet option



<h1 style="text-align: center; color: blue;">OpenCellular connect-1</h1>			
<p>Title: <b>CH2_GAIN</b></p>			
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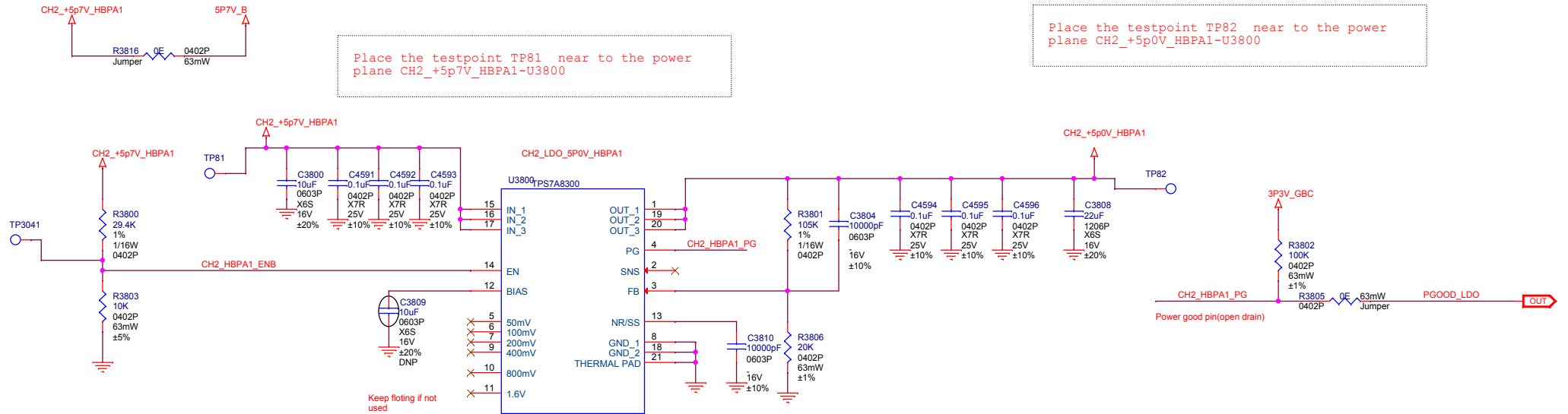
## CH2\_RF\_PA\_PREDRIVE



# CH2\_HB\_LDO

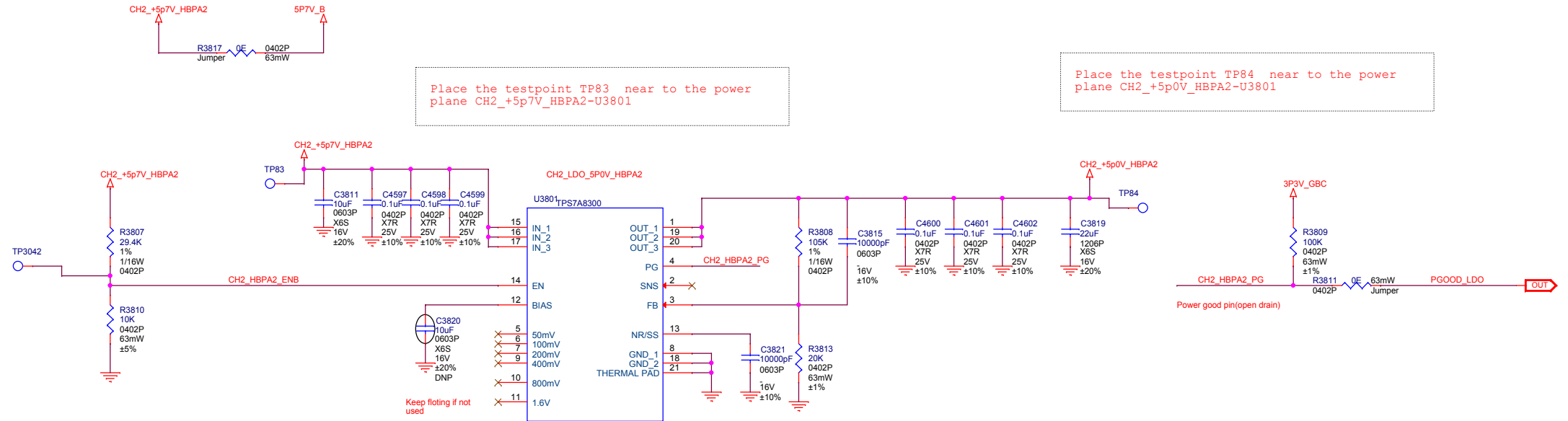
Place the testpoint TP82 near to the power plane CH2\_+5p0V\_HBPA1-U3800

Place the testpoint TP81 near to the power plane CH2\_+5p7V\_HBPA1-U3800

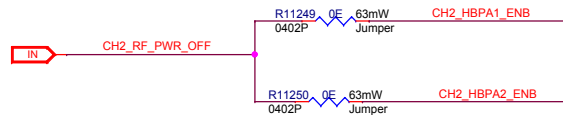


Place the testpoint TP84 near to the power plane CH2\_+5p0V\_HBPA2-U3801

Place the testpoint TP83 near to the power plane CH2\_+5p7V\_HBPA2-U3801



CH2 power off control



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CH2_HB_LDO		
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# CH2\_RF\_PA\_LB

Layout-Place DNP capacitor-C4453 as crowfeet option (3 pad) near to C4455

Layout-1)Place C3003 capacitor near to pin 20 of -U3000  
2)Place C3004 capacitor near to pin 18 of U3000

R865,R866,R867 are the PI pad resistors for the ISO port of-U3003

R11171,R11175,R11174 are the 2dB PI pad resistors for the input port of-U3000

L3000,C3010,L3002,C3013,C4423,C3014,C4471,L3003 are part of input and output matching for-U3000

R862,R863,R864 are the PI pad resistors for the ISO port of-U3002

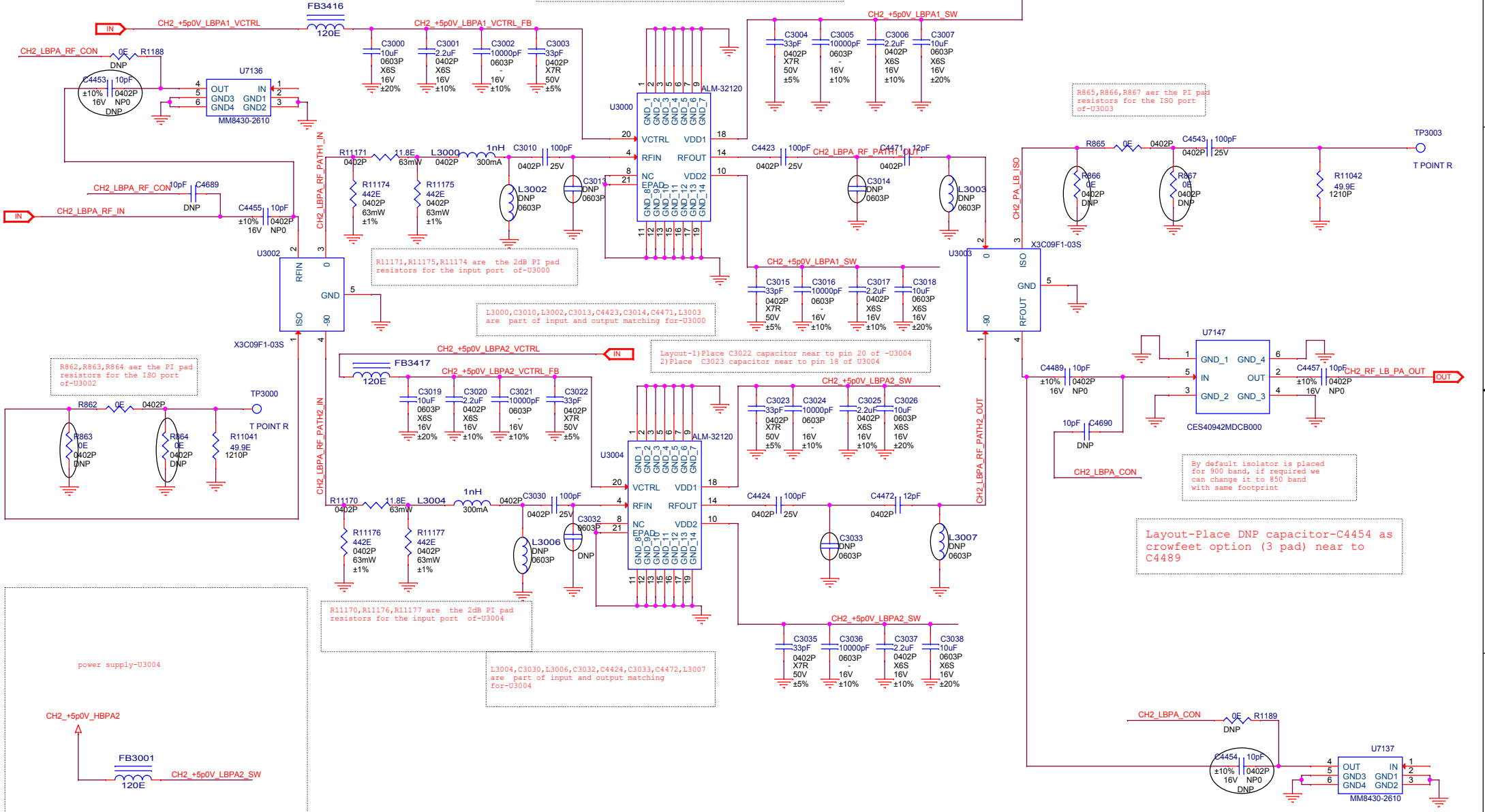
Layout-1)Place C3022 capacitor near to pin 20 of -U3004  
2)Place C3023 capacitor near to pin 18 of U3004

By default isolator is placed for 900 band, if required we can change it to 850 band with same footprint

Layout-Place DNP capacitor-C4454 as crowfeet option (3 pad) near to C4489

power supply-U3004

L3004,C3030,L3006,C3032,C4424,C3033,C4472,L3007 are part of input and output matching for-U3004



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CH2_RF_PA_LB		
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# CH2\_RF\_PA\_HB

Layout-Place DNP capacitor-C4458 as crowfeet option (3 pad) near to C4459

Layout-1)Place C2904 capacitor near to pin 20 of -U2900  
2)Place C2905 capacitor near to pin 18 of U2900

R871,R872,R873 aer the PI pad resistors for the ISO port of-U2903

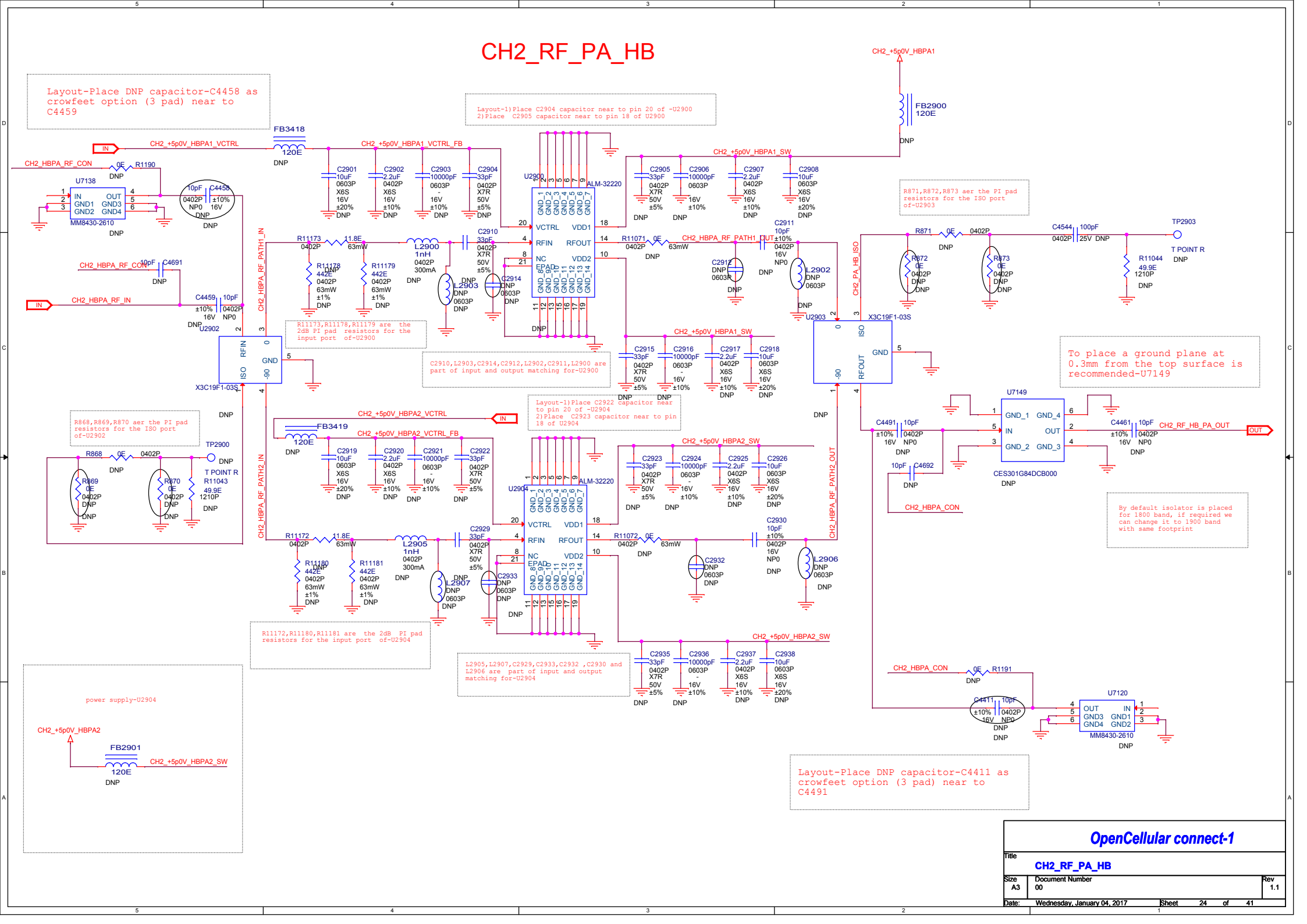
To place a ground plane at 0.3mm from the top surface is recommended-U7149

R868,R869,R870 aer the PI pad resistors for the ISO port of-U2902

By default isolator is placed for 1800 band, if required we can change it to 1900 band with same footprint

power supply-U2904

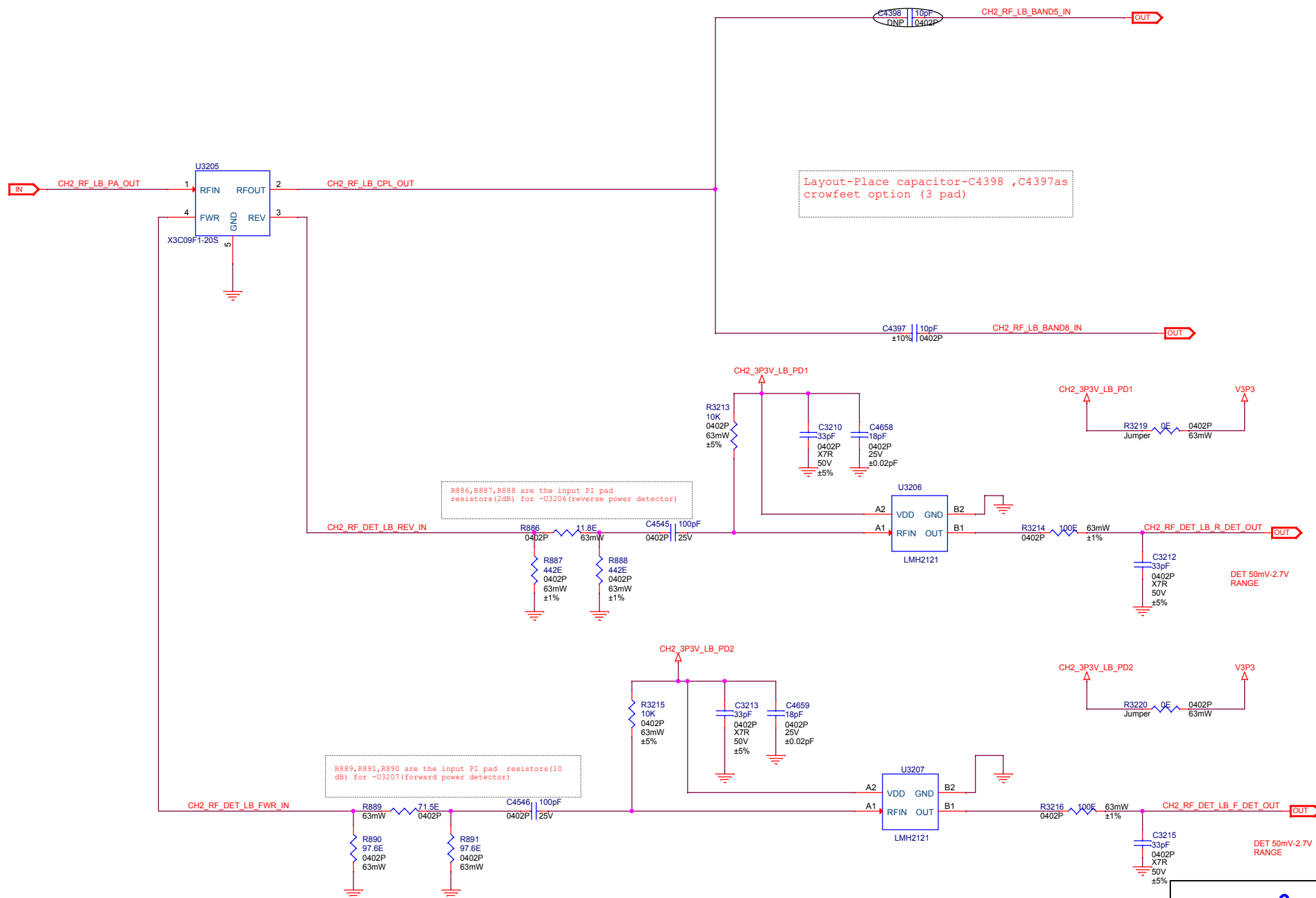
Layout-Place DNP capacitor-C4411 as crowfeet option (3 pad) near to C4491



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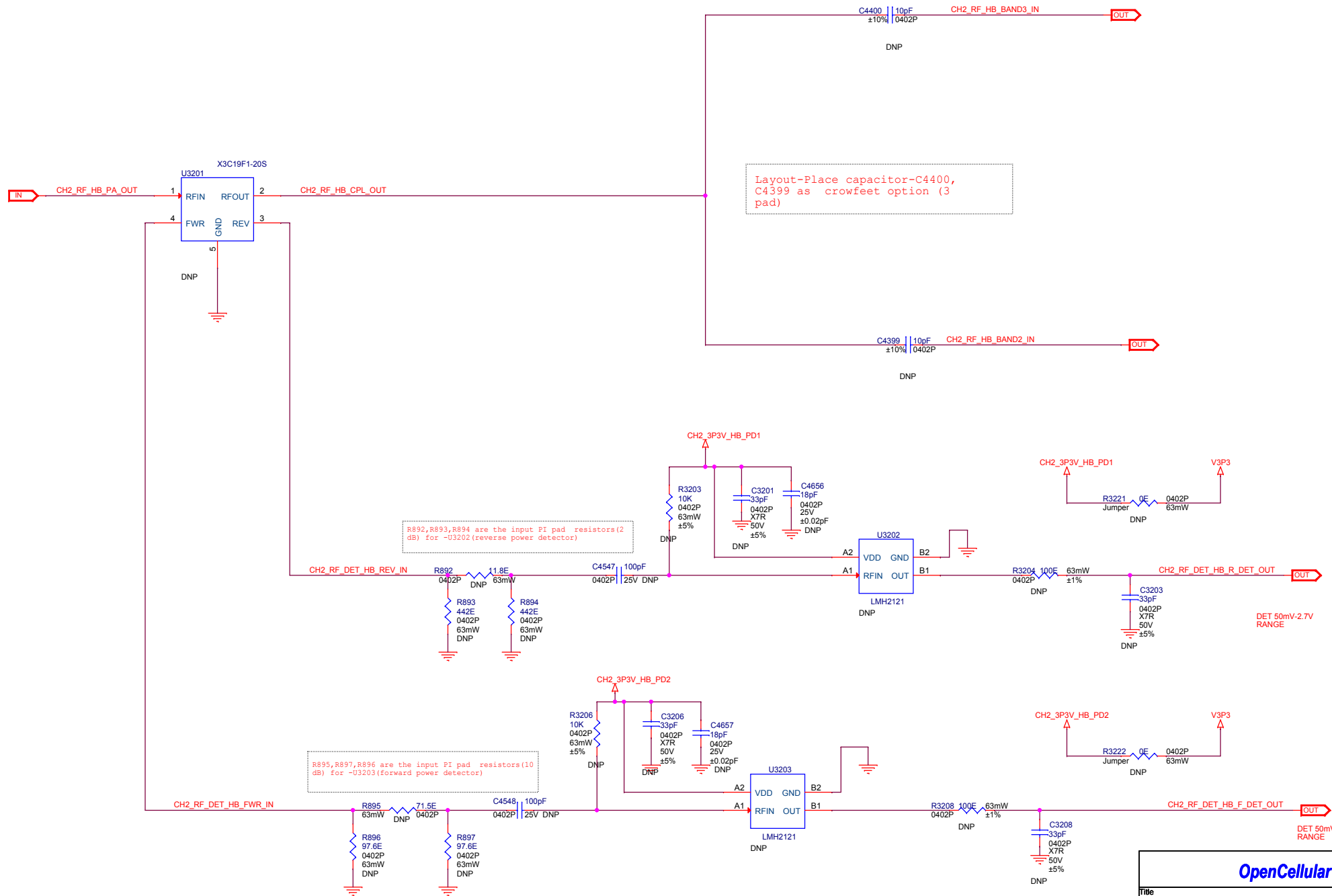
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# CH2\_ANT\_INTERFACE\_LB



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CH2_ANT_INTERFACE_LB		
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## CH2\_ANT\_INTERFACE\_HB

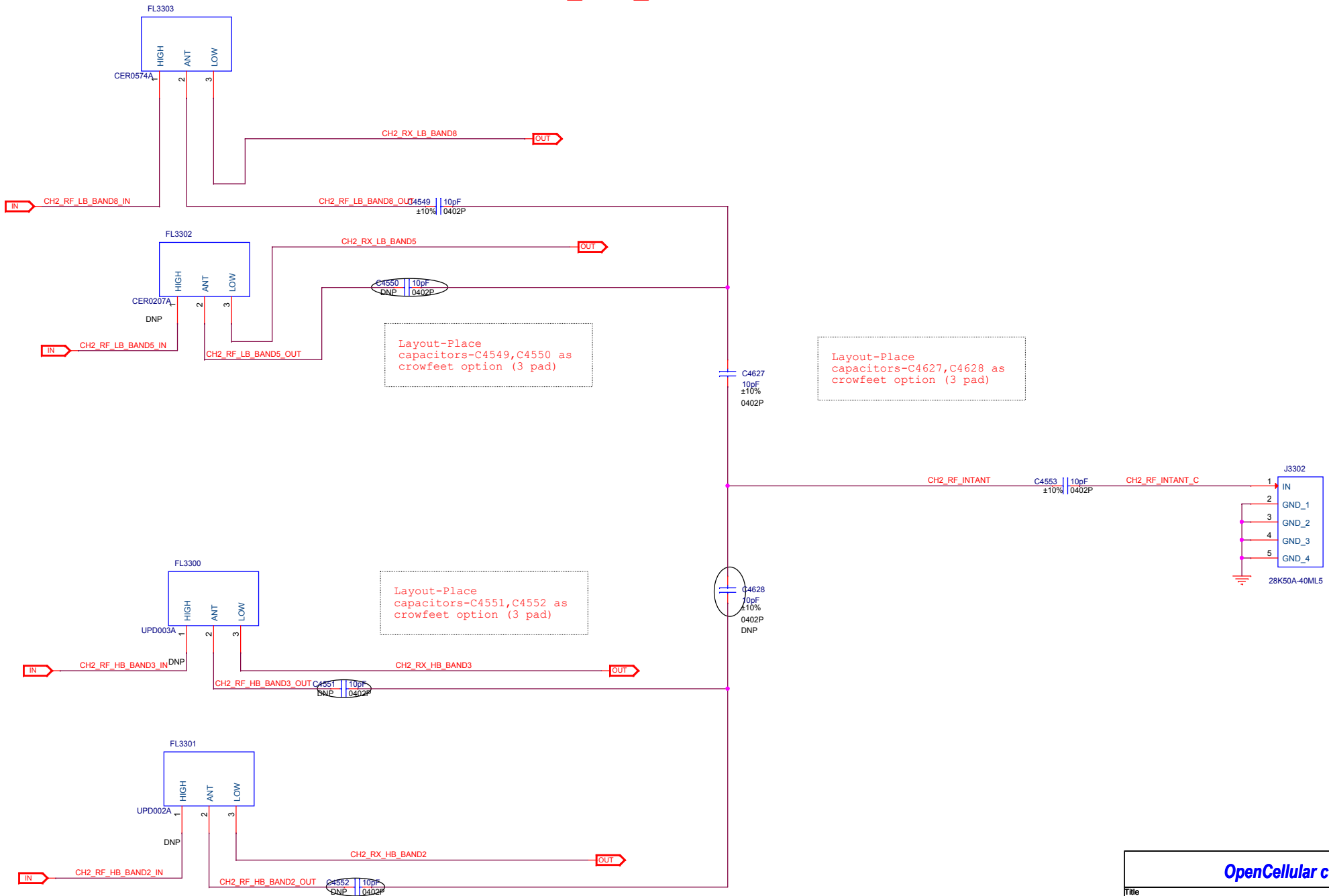


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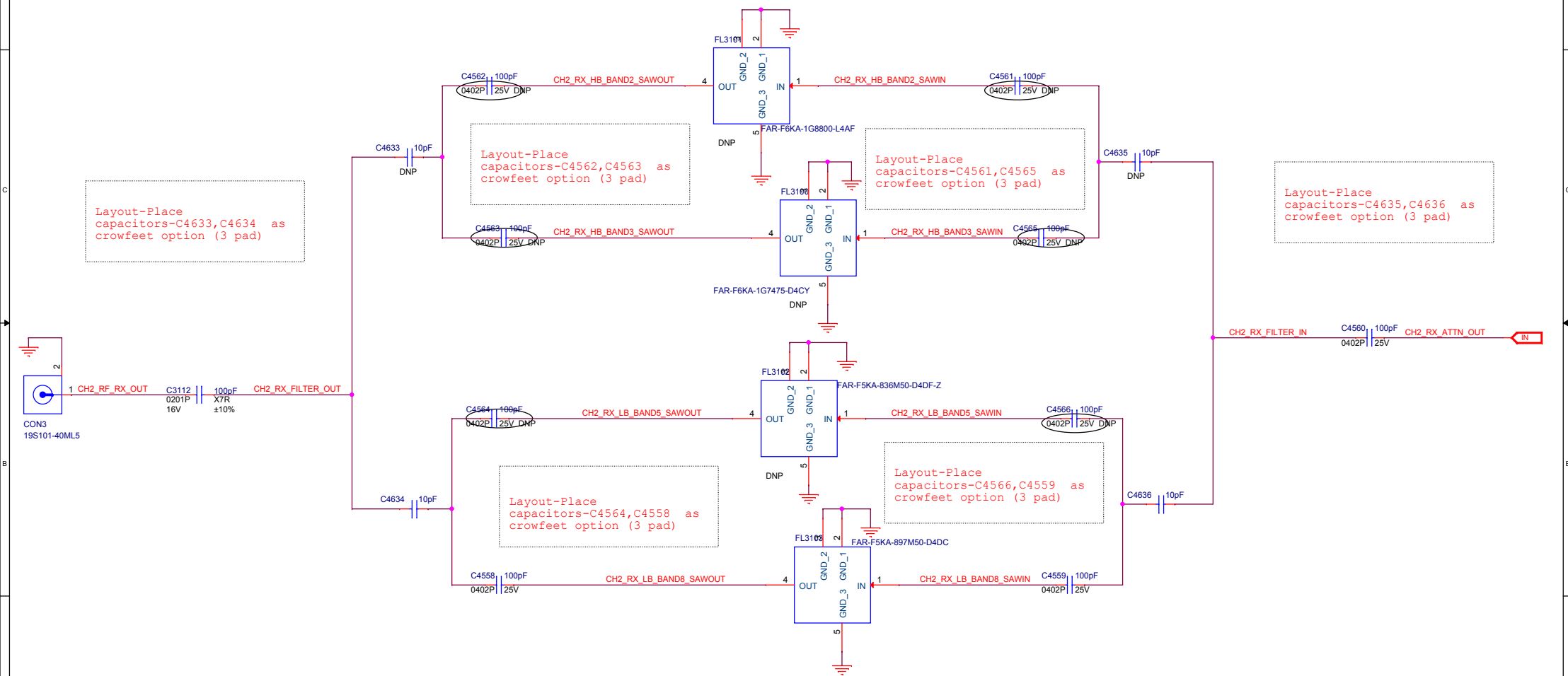


## CH2\_ANT\_DUPLEXER



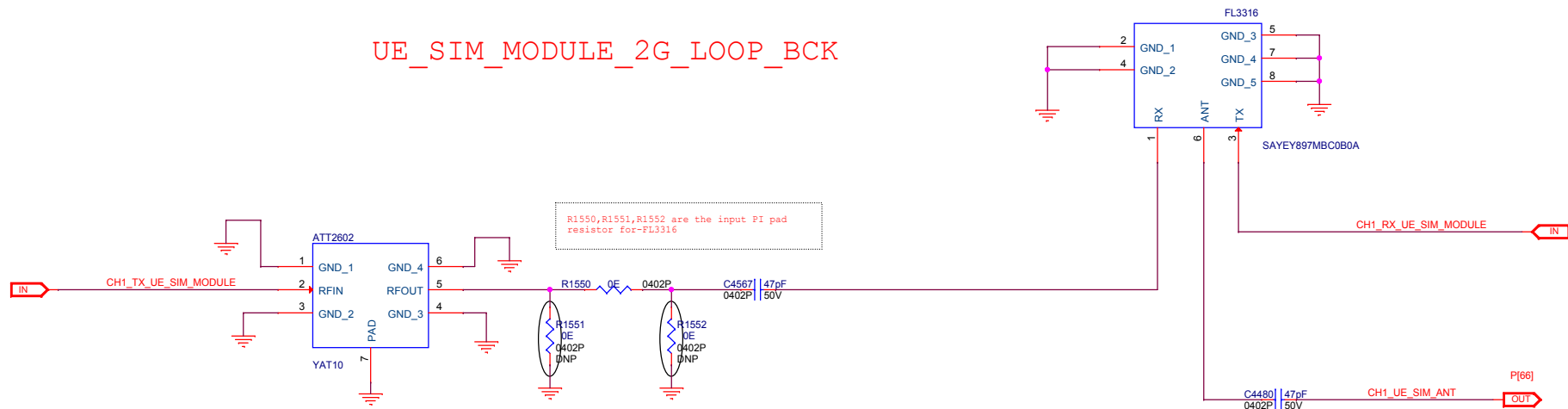


# CH2\_RF\_LNA\_SAWFILTERS

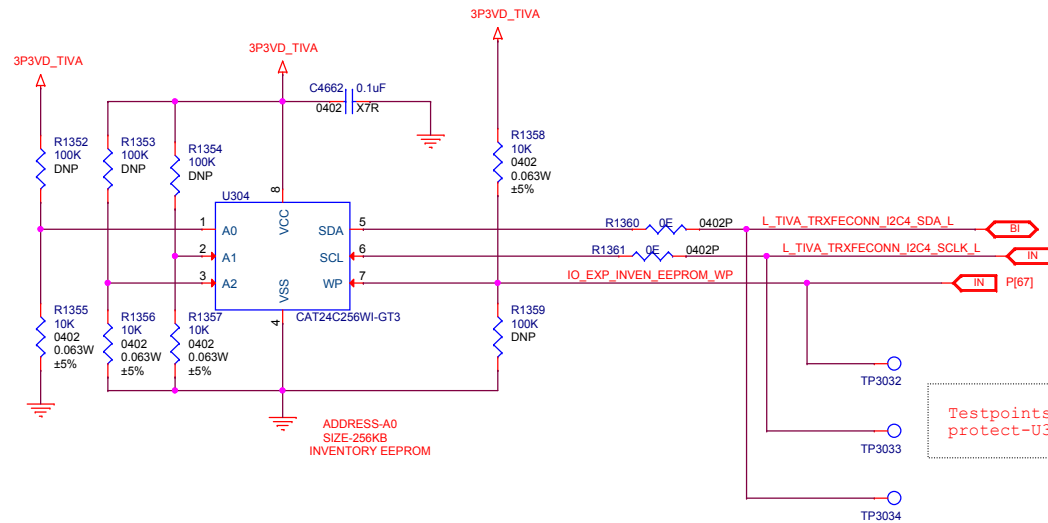


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Title			
CH2_RF_LNA_2			
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## UE\_SIM\_MODULE\_2G\_LOOP\_BCK



## INVENTORY EEPROM-256KB

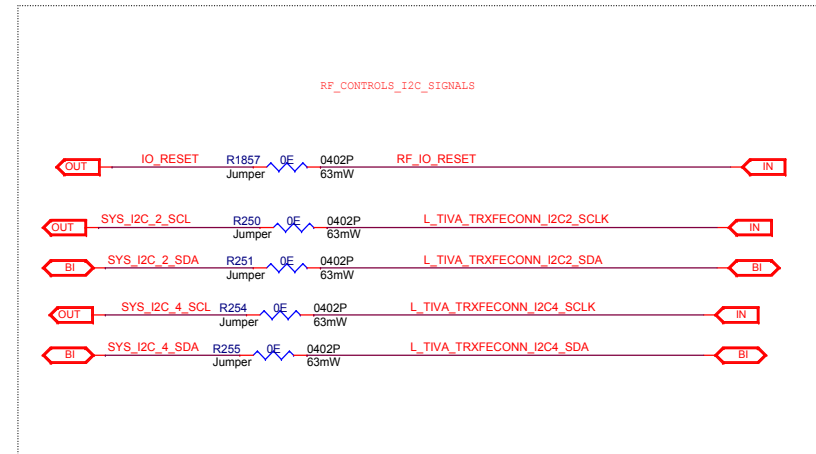
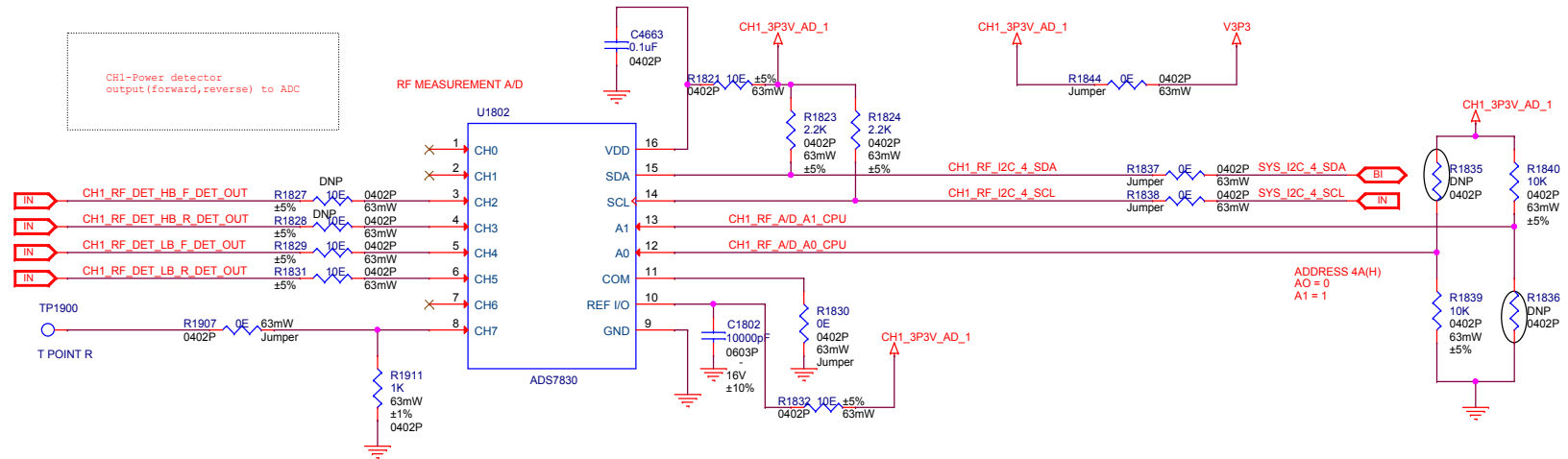


Testpoints for EEPROM I2C and write protect-U304

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UE_SIM_MODULE		
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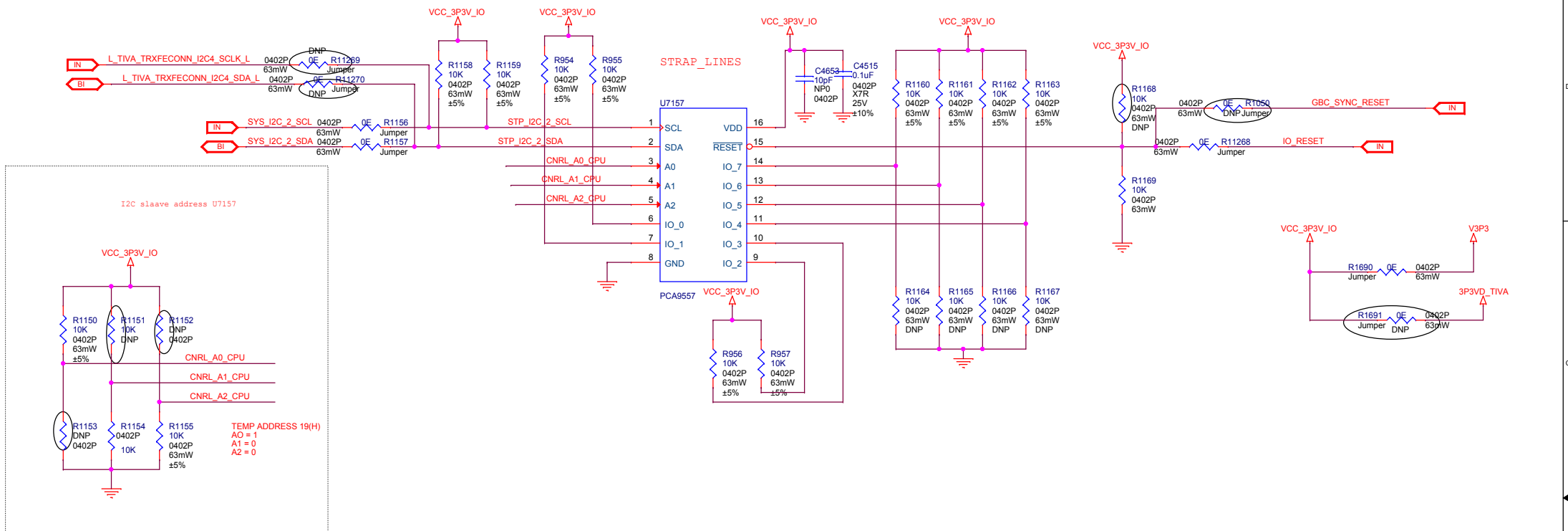
# CONTROL\_SECTION\_1



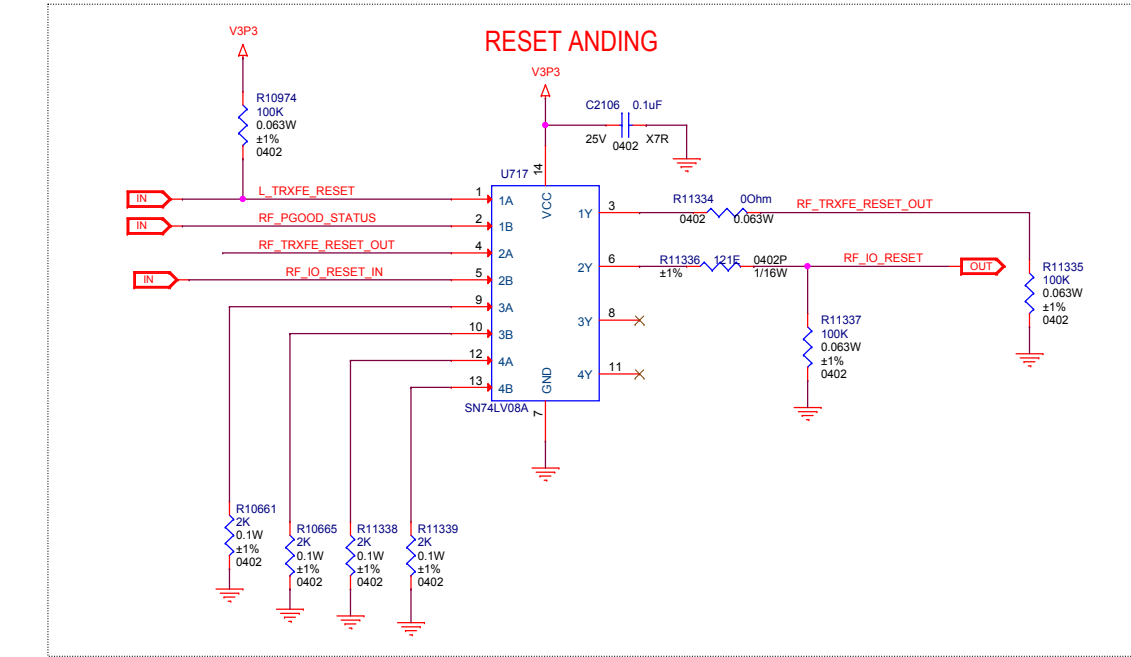
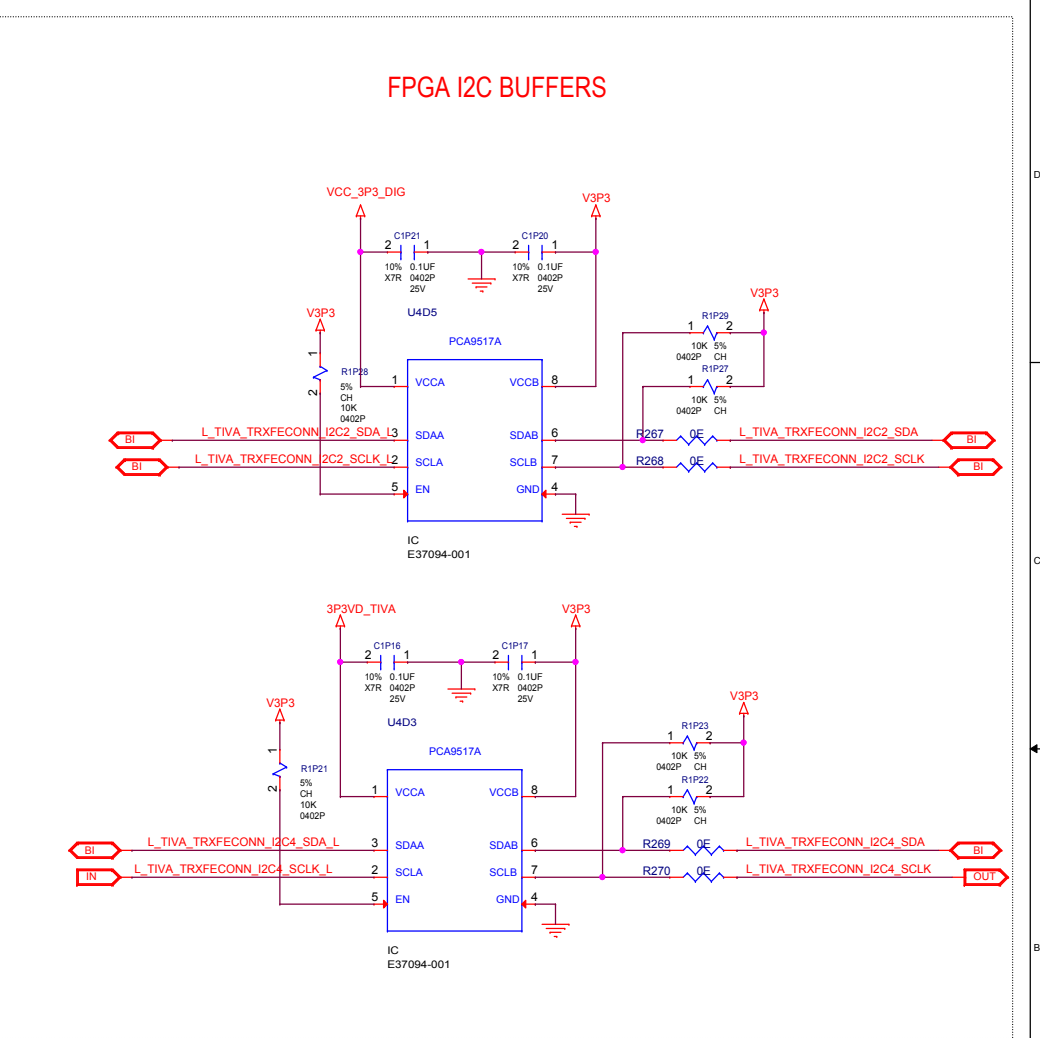
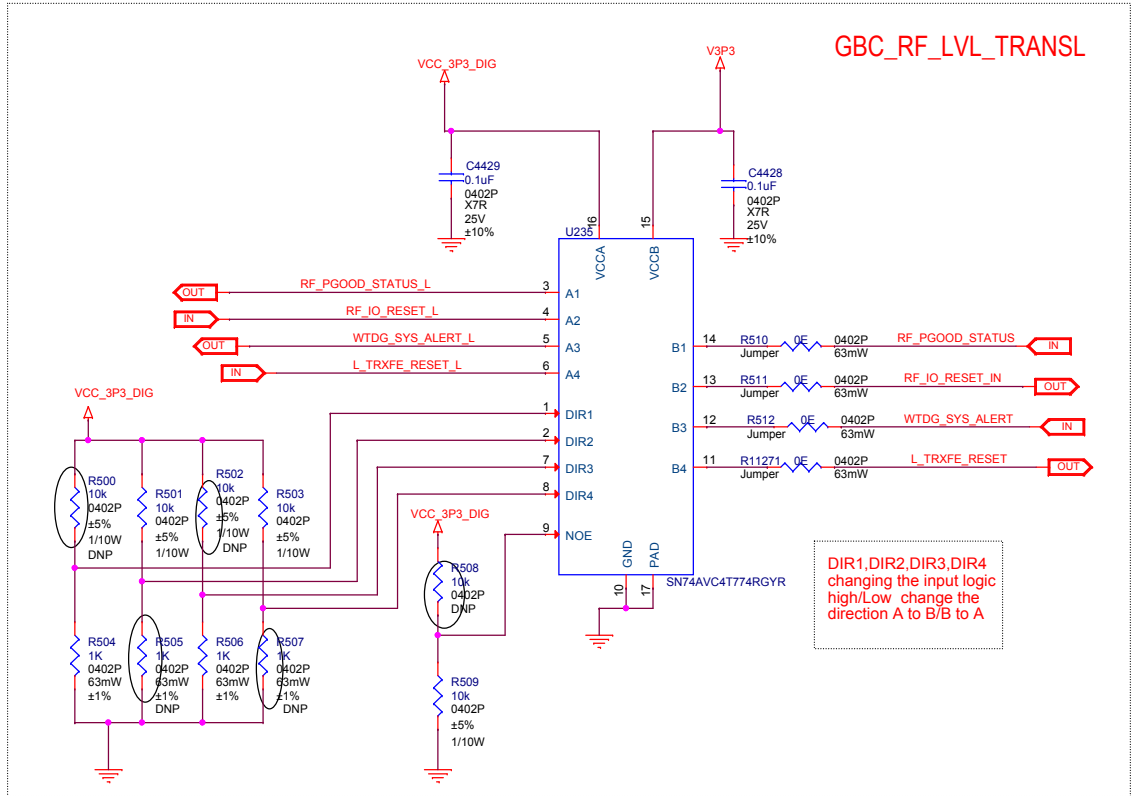
OpenCellular connect-1

Title		
CH1_CPU_SECTION_1		
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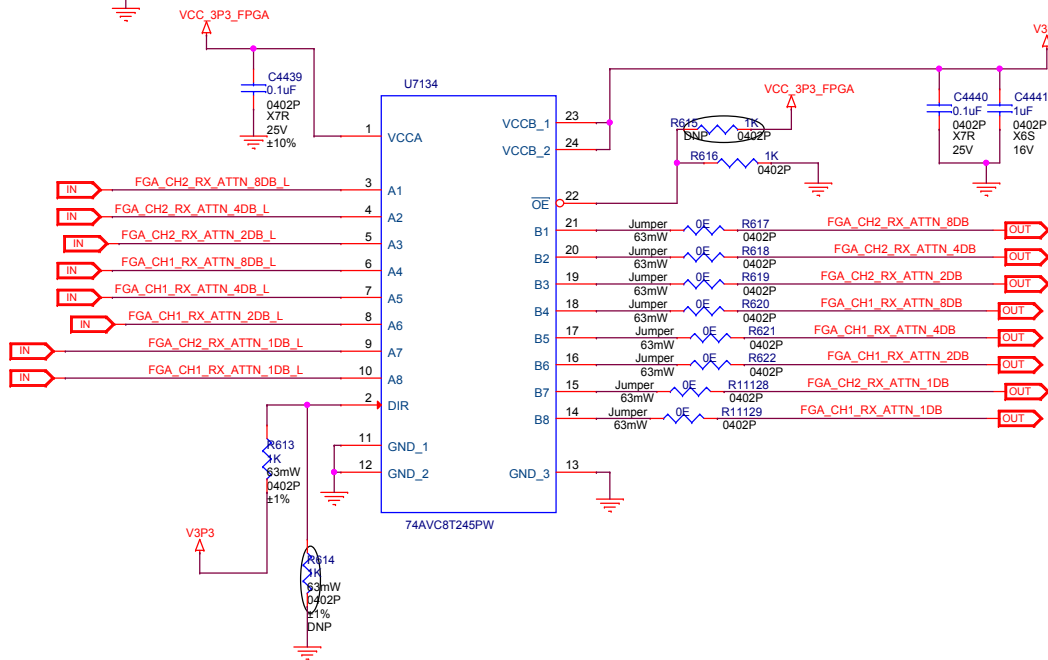
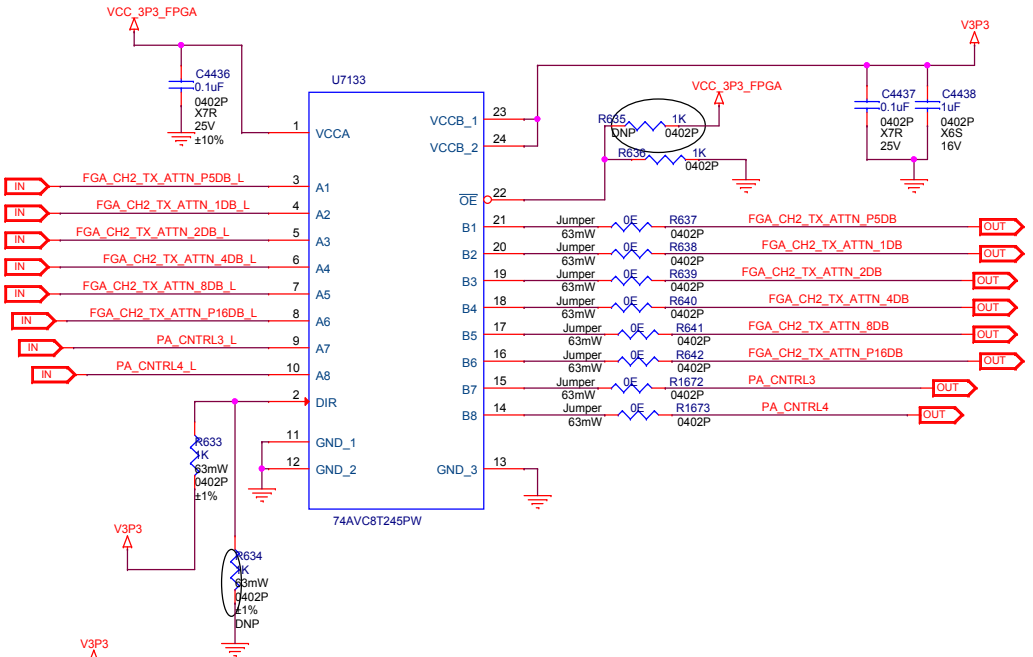
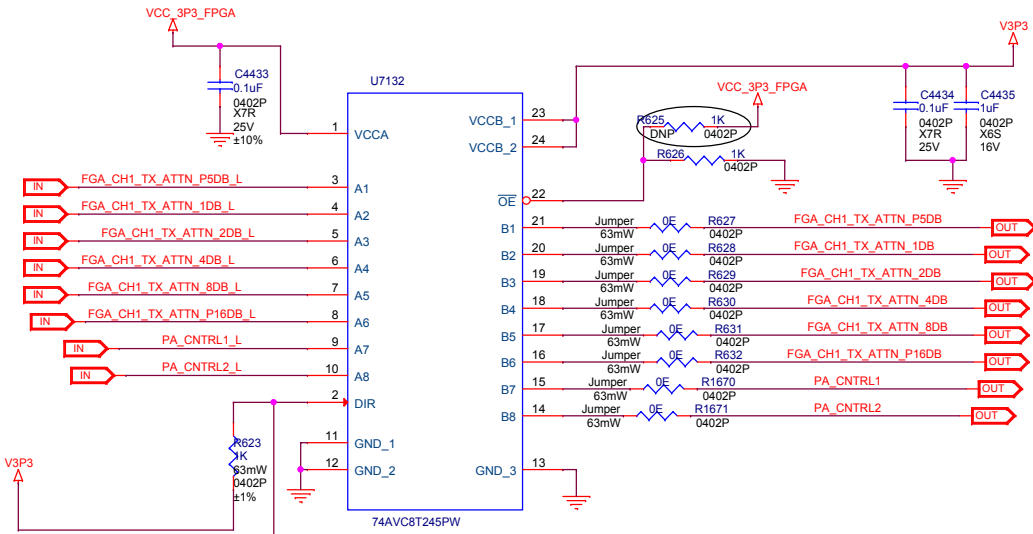
# CONTROL\_SECTION\_2





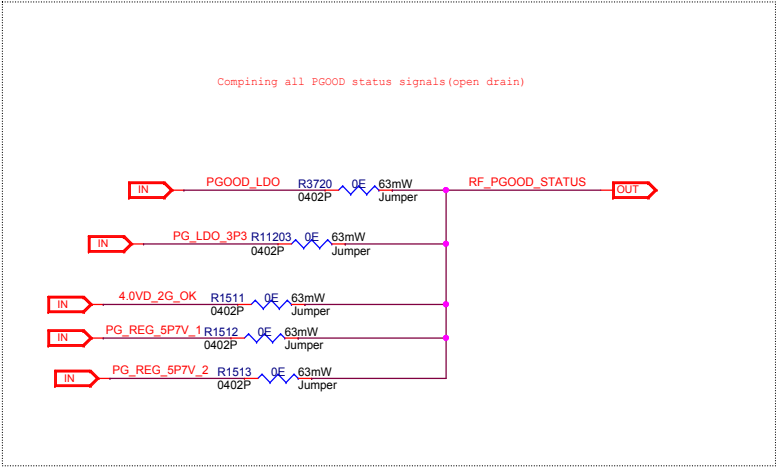


# FPGA\_RF\_LVL\_TRANSL

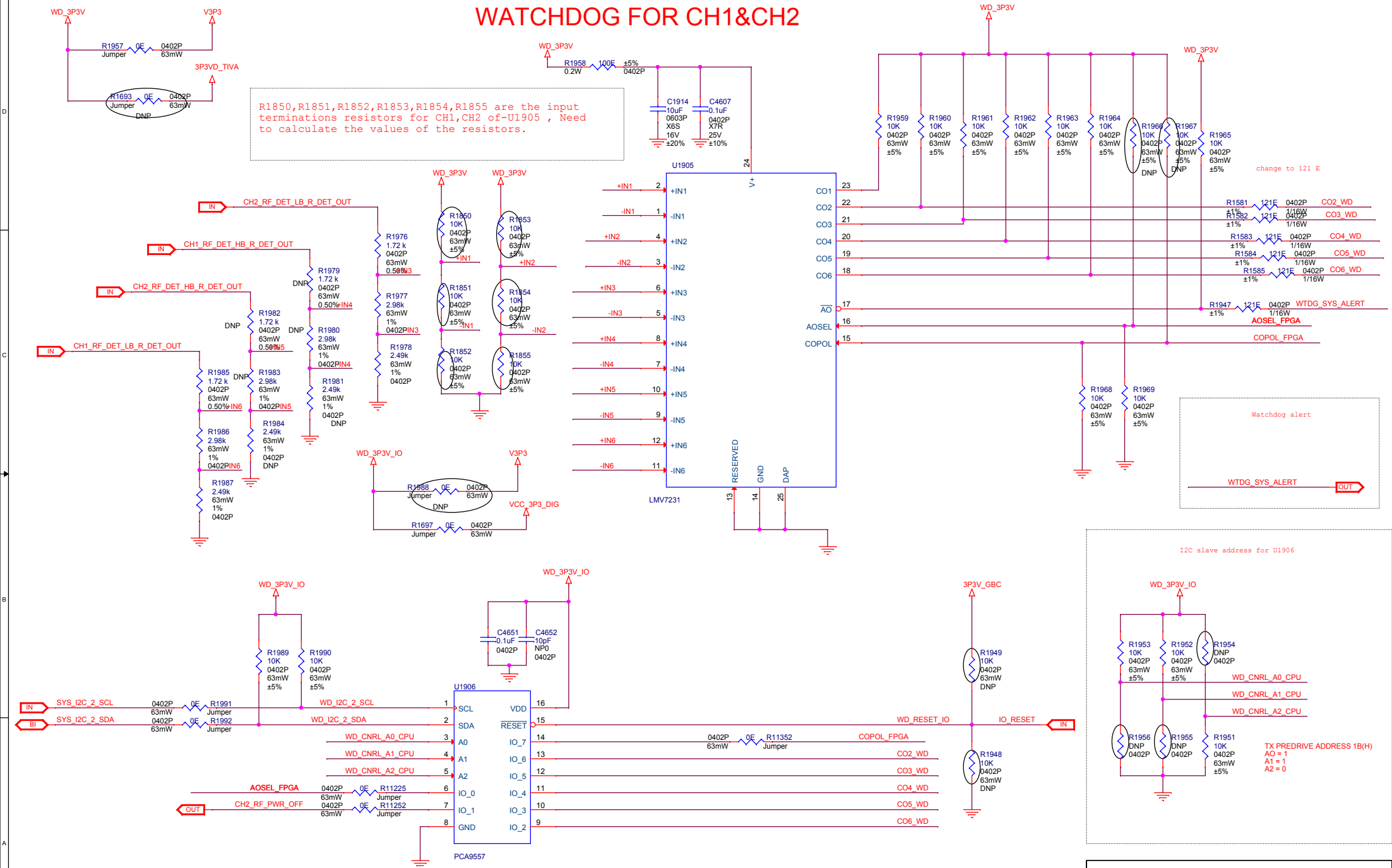


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TX ENABLE LVL TRNSL



## WATCHDOG FOR CH1&CH2



### OpenCellular connect-1

Title	<b>WATCHDOG FOR CH1&amp;CH2</b>
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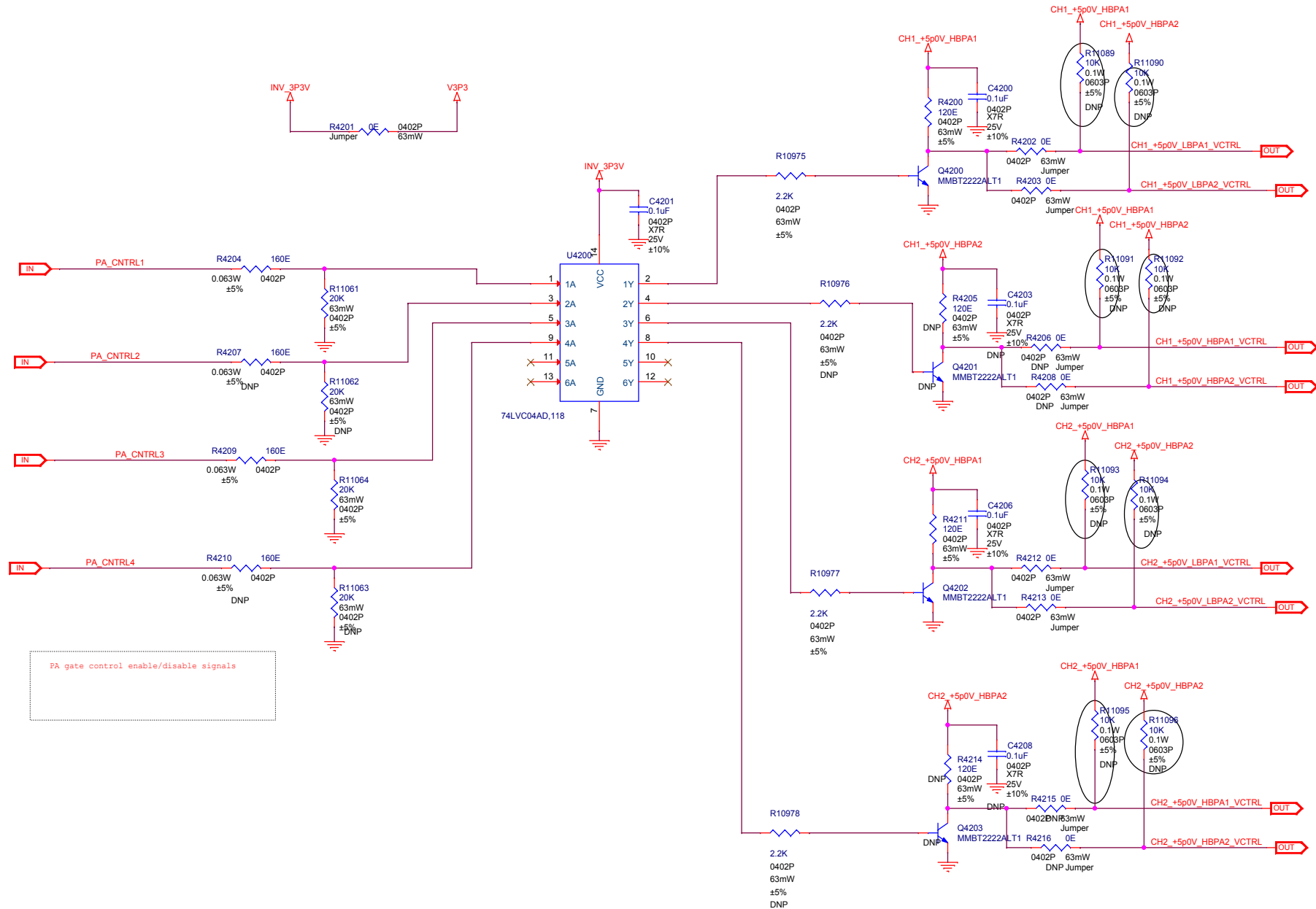
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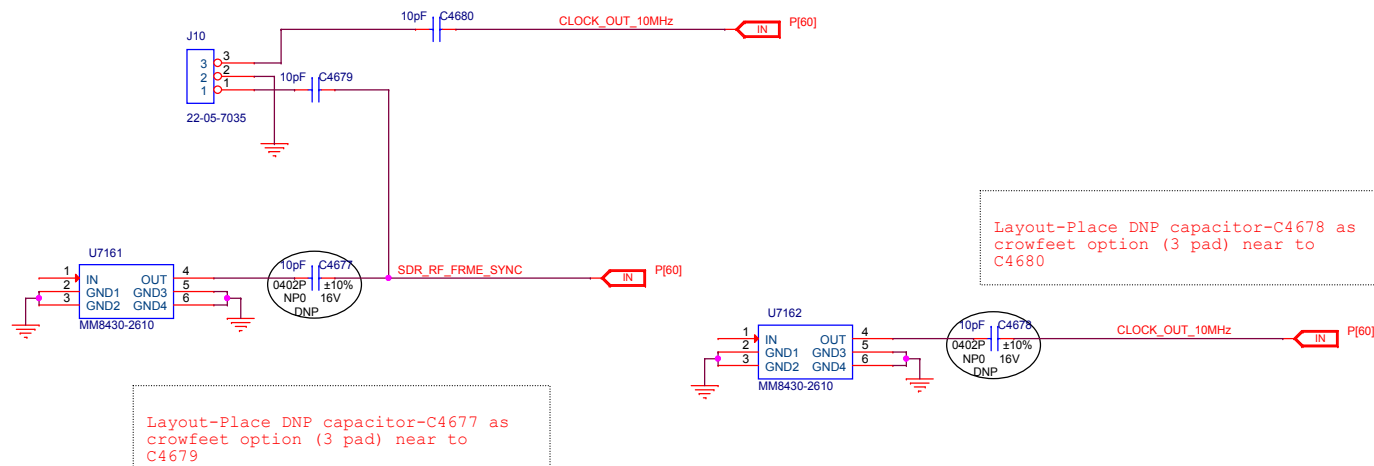
# PA\_ENABLE\_CIRCUIT



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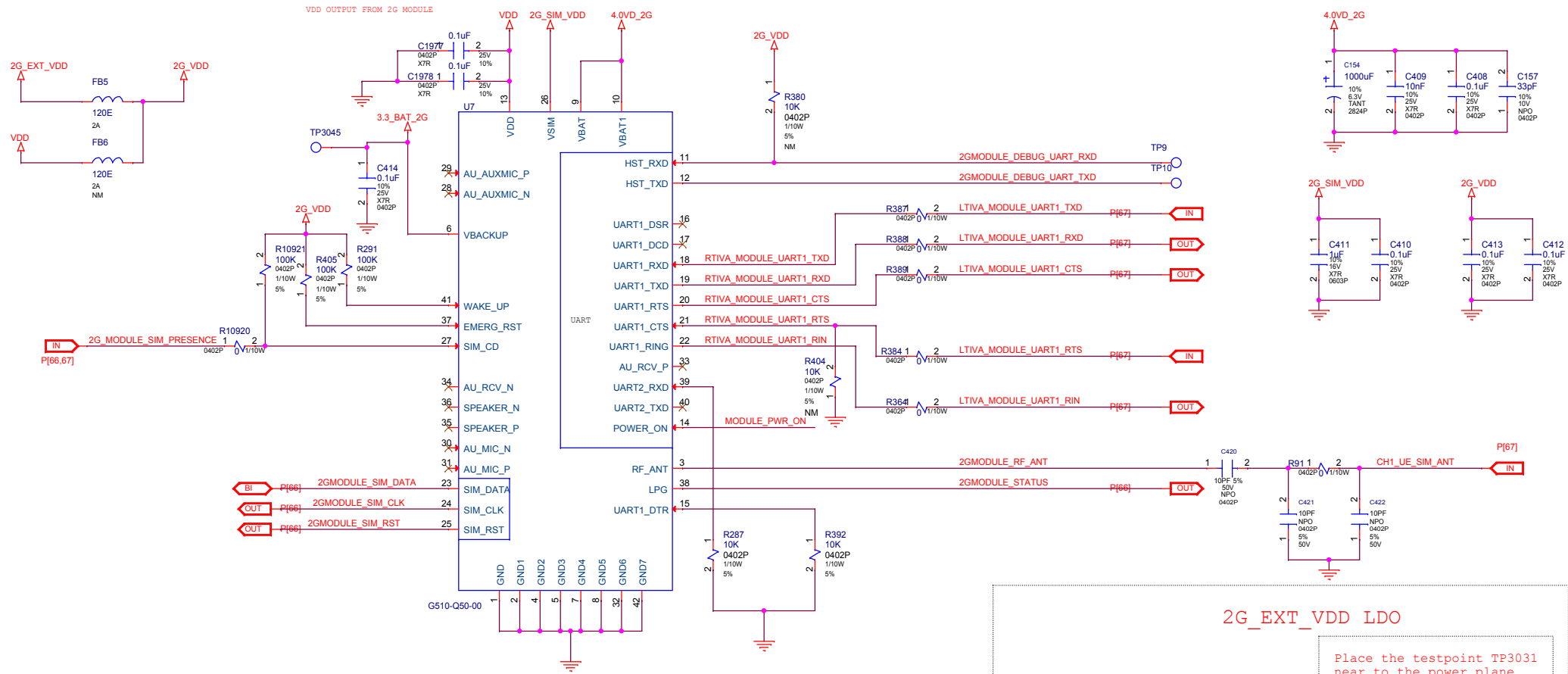
Title		
PA_ENABLES		
Size	Document Number	
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TEST CONNECTORS-10MHz, FRAM\_SYNC

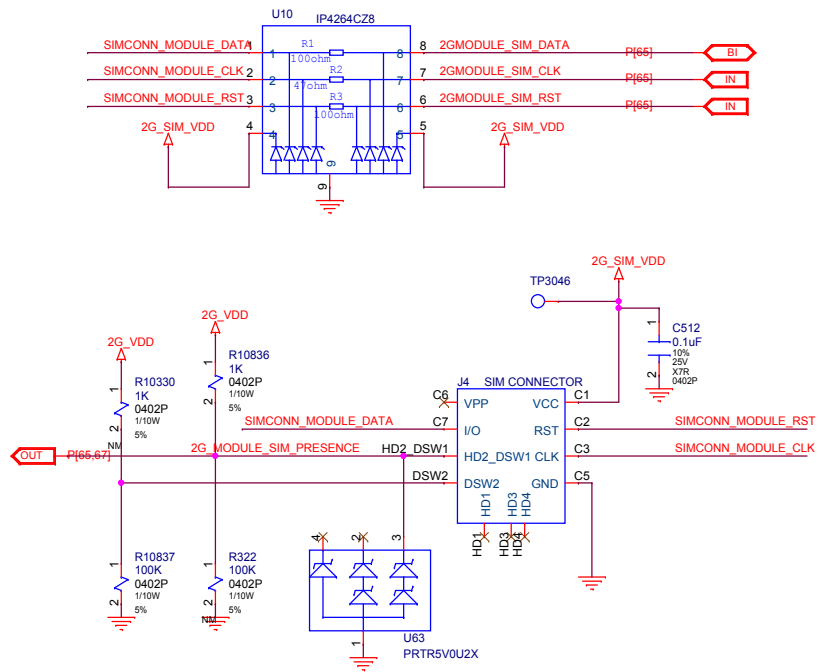


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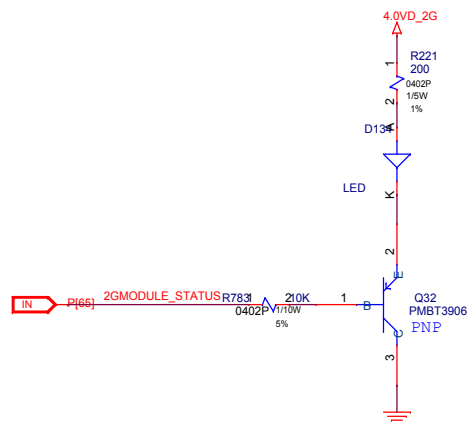
## 2G MODULE



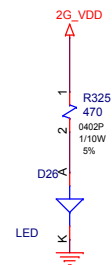
## SIM CONNECTOR



## 2G\_MODULE STATUS LED INDICATION

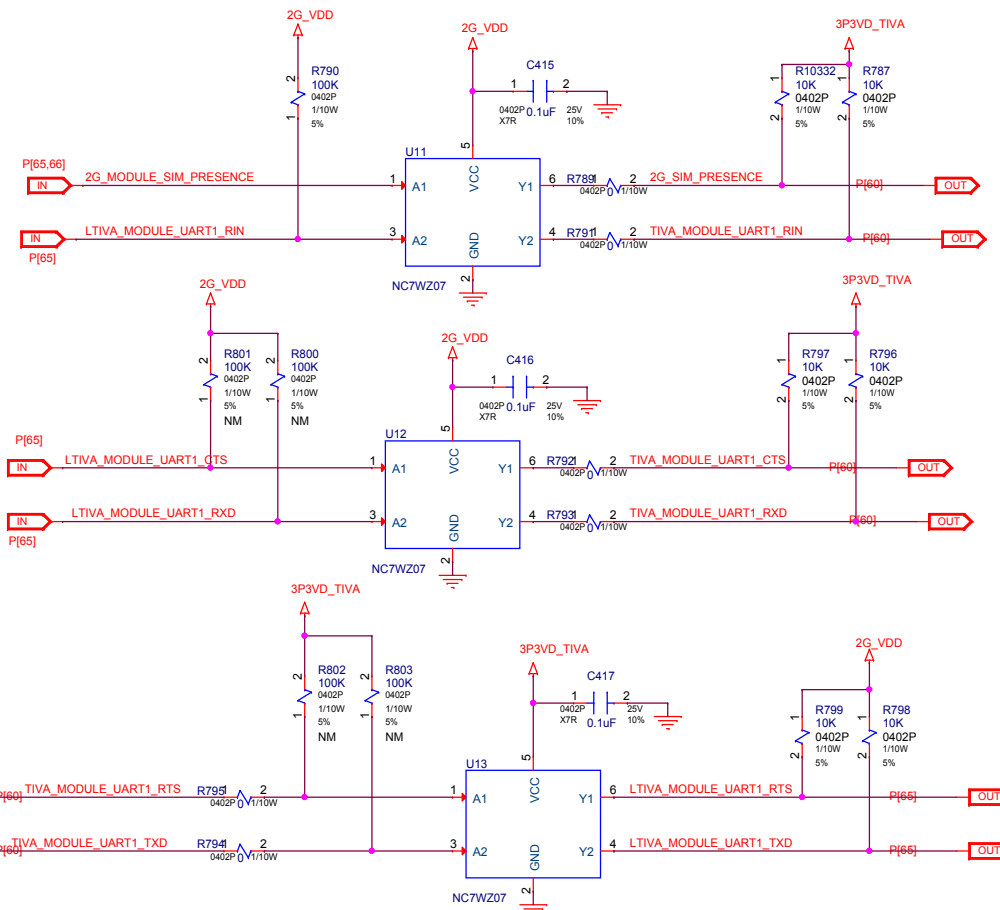


## 2G\_VDD LED INDICATION



## 2G MODULE 2

## DUAL BUFFER

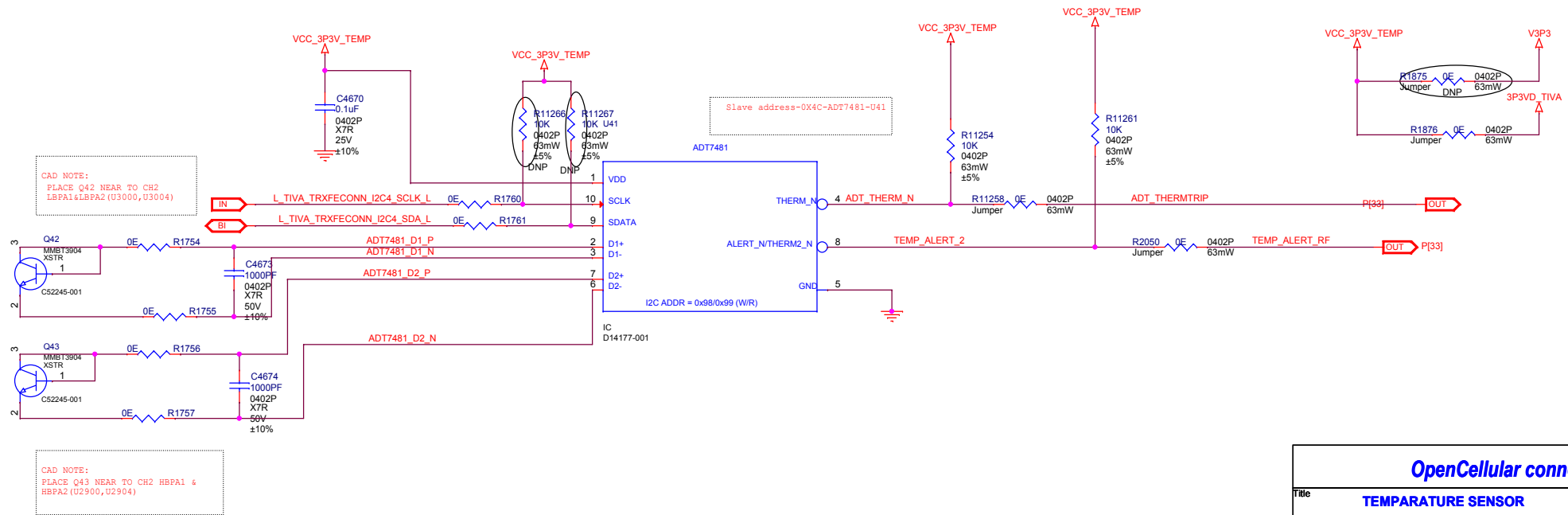
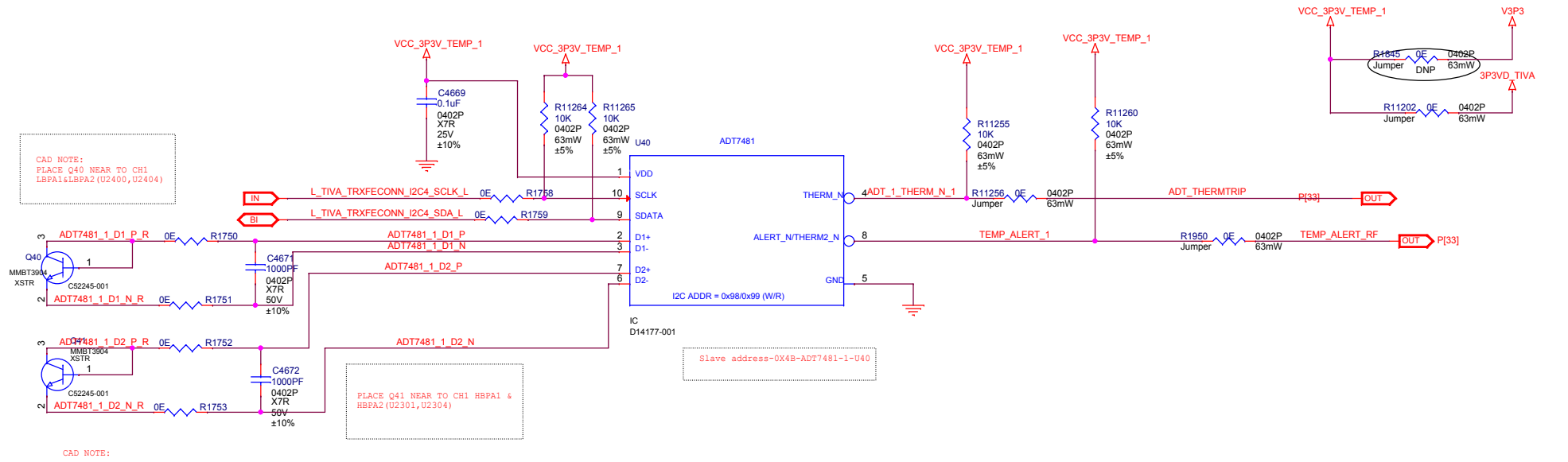


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2G MODULE_2			
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# TEMPERATURE SENSOR



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