

HL1JATM VER.F TOP



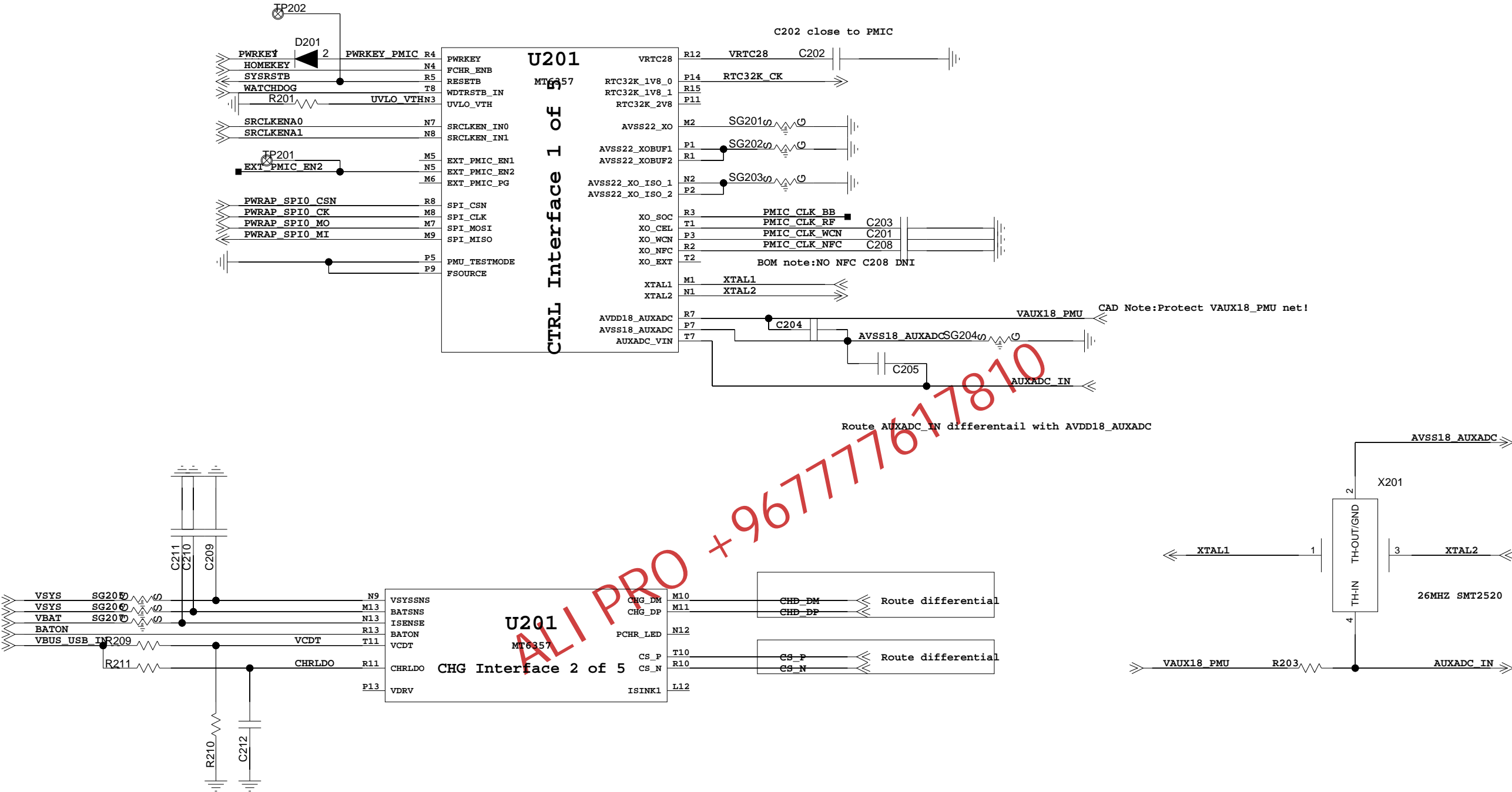
HL1JATM VER.F

BOTTOM

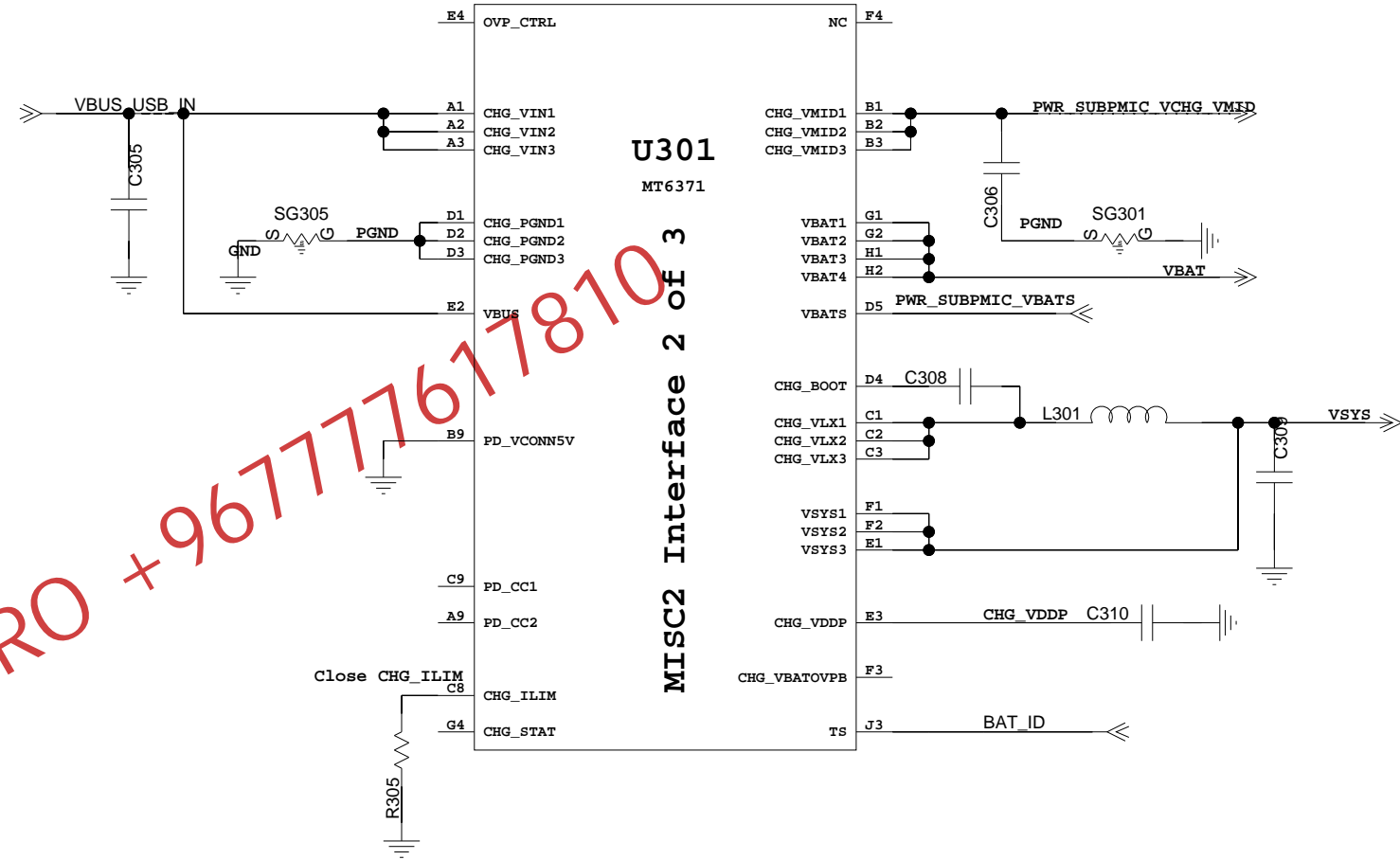
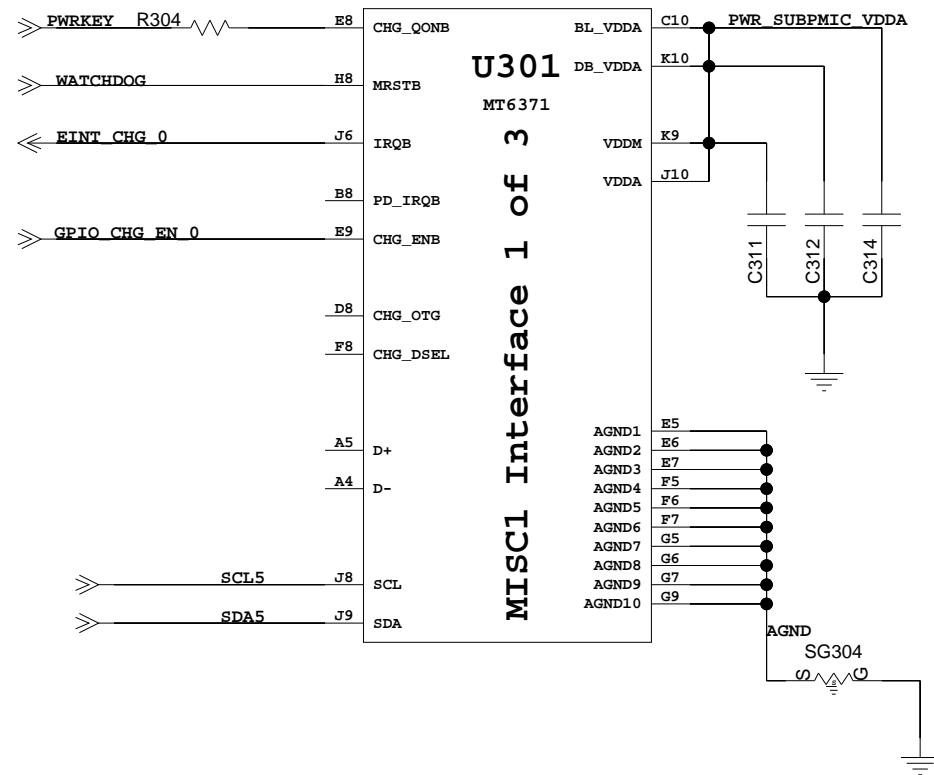
AP SCHEMETIC

1. Index
2. MT6357 Control
3. MT6371 Charger
4. MT6371 POWER/Contrl
5. MT6357 Buck
6. MT6357 LDO
7. MT6357 Codec
8. MT6762 Control
9. MT6762 EBIF MIPI
10. MT6762 GPIO
11. MT6762 RF IF.
12. MT6762 Power1
13. MT6762 Power2
14. Ext\_BUCK/LDO
15. eMMC and LPDDR3
16. Battery/Micro USB Connector
17. Speaker and Vibrator
18. MIC and Receiver
19. Earphone
20. LCD interface and backlight driver
21. Main/Slave Camera and Flash LED
22. Sensor
23. SIM/TF card
24. Keypad/LED/Status indicator
25. Flash LED
26. RESERVED
27. RESERVED
28. RESERVED
29. Subconnector
30. Test Points/Shields
- 31.RF Interface
- 32.RESERVED
- 33.Main Antenna Switcher
- 34.RESERVED
- 35.RESERVED
- 36.RESERVED
- 37.QFE2320(MMPA)
- 38.Circuit of MMPA
- 39.TRX\_B1
- 40.TRX\_B8
- 41.TRX\_B5
- 42.TRX\_B3/GSM1900
- 43.RESERVED
- 44.RESERVED
- 45.DRX LNA B3/B26
- 46.RESERVED
- 47.TRX\_B41
- 48.RESERVED
- 49.RESERVED
- 50.RESERVED
- 51.DRX LNA B41/B1
- 52.DRX\_B1/B3/B26
- 53.RESERVED
- 54.DRX\_B41
- 55.DRX\_ANT\_SWITCH
- 56.WTR4905
- 57.RESERVED
- 58.ET\_APT
- 59.GPS
- 60.WIFI/BT BB
- 61.WIFI/BT RF
- 62.Reserved
- 63.NFC
- 64.RESERVED
- 65.RESERVED
- 66.ANT Match
- 67.MAIN ANT Tuner
- 68.NFC\_BB
- 69.Reserved

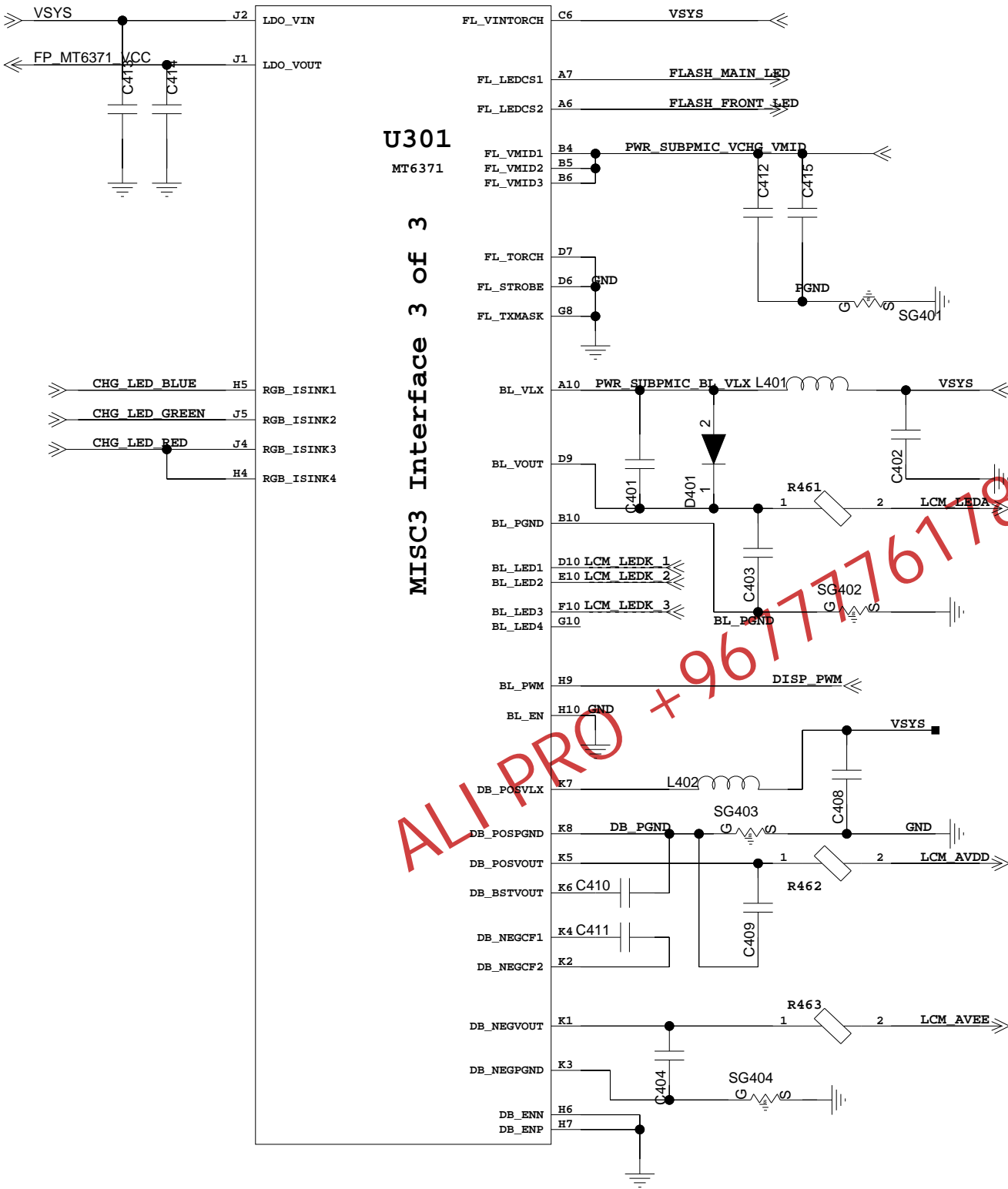
2. MT6357 Control



3. MT6371 Charger

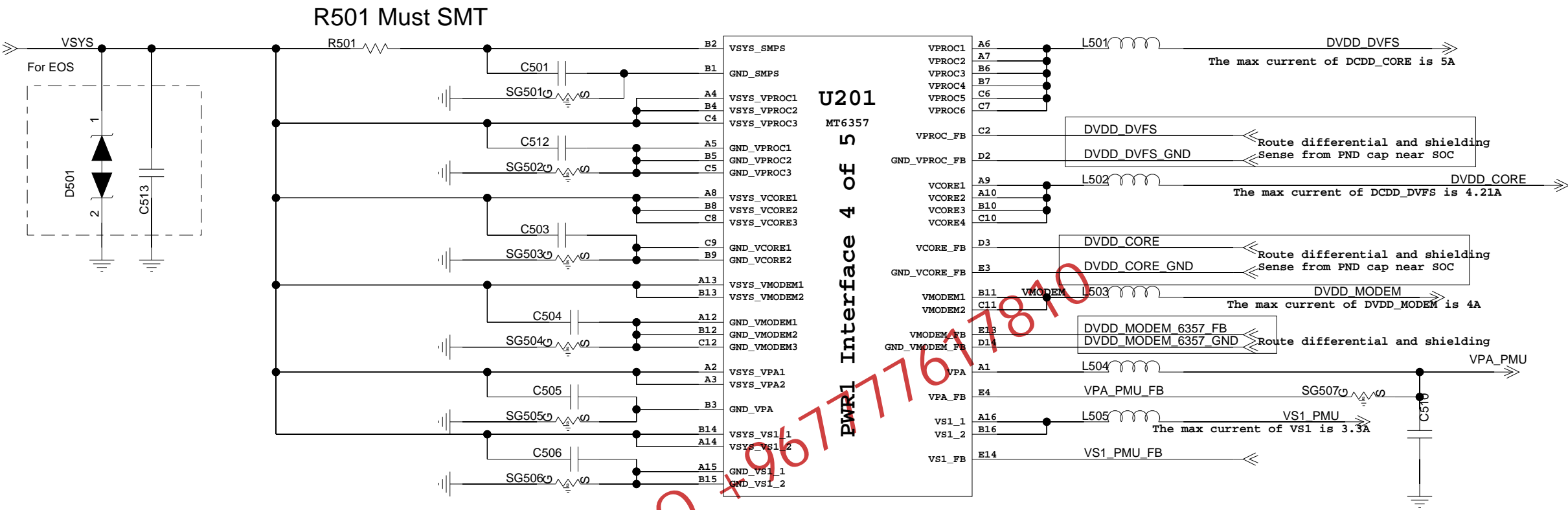


4. MT6371 POWER/Contrl

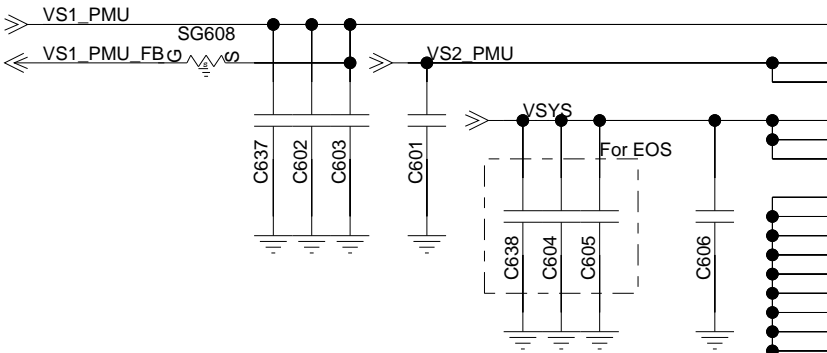


COMPONENT\_HIGH\_MAX=0.6MM

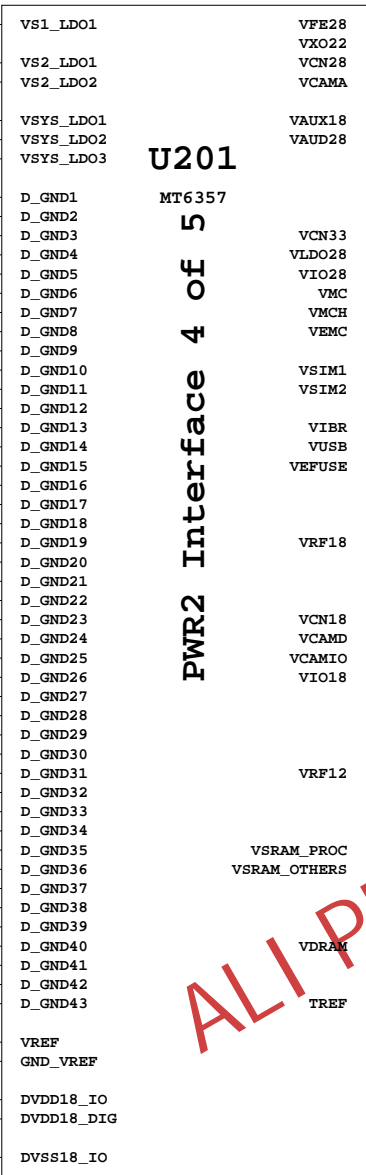
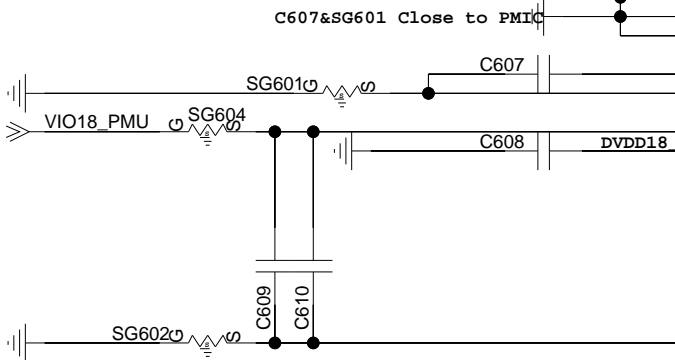
5. MT6357 Buck



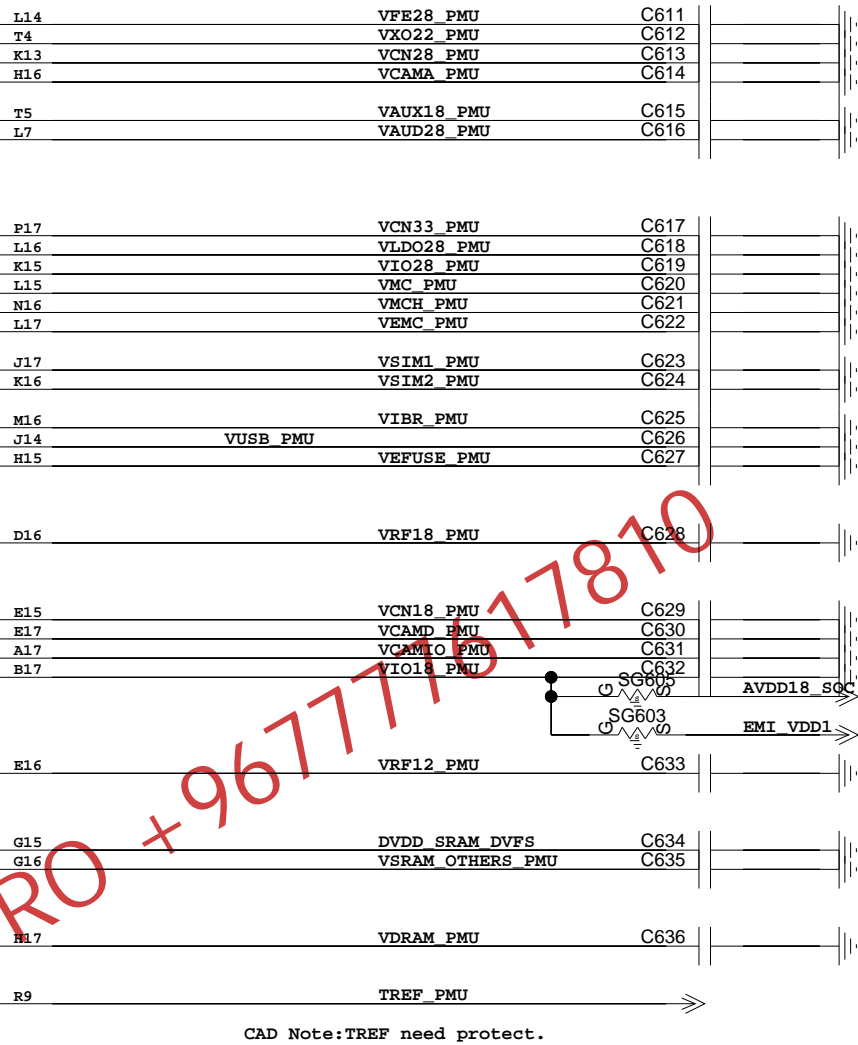
6. MT6357 LDO



All LDO inout Caps close to PMIC



U201  
MT6357  
PWR2 Interface 4 of 5

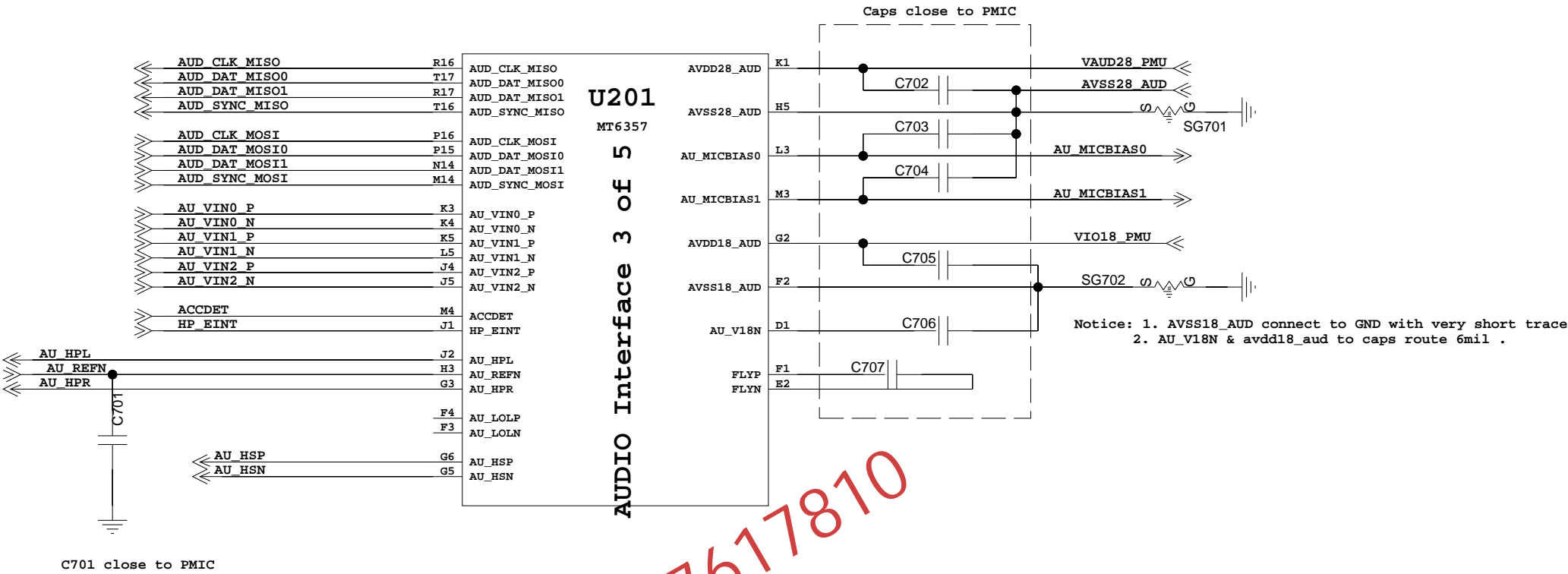


CAD Note:TREF need protect.

NAME	Output Voltage(V)	I <sub>max</sub> (mA)	Cap range
VFE28	2.8	40	1---2.2
VXO22	2.24	25	2.2--2.3
VRF18	1.81	450	9.4--10.4
VRF12	1.2	200	1---2.2
VEFUSE	1.2/1.3/1.5/1.8/2.0/2.8/3.0/3.3	200	1---2.2
VCN33	3.3/3.4/3.5/3.6	400	1---1.47
VCN28	2.8	40	1---2.2
VCN18	1.8	200	1---2.2
VCAMA	1.8/2.5/2.7/2.8/2.9/2.95/3	145	1---11
VCAMD	1/1.05/1.1/1.2/1.3/1.5/1.8	350(<=1.5) 200(1.8)	1---5.7
VCAMIO	1.8	140	1---4
VLDO28	2.8/3.0	360	1---7.7
VAUX18	1.8	20	1---2.2
VAUD28	2.8	50	1---2.2
VIO28	2.8	200	1---4
VIO18	1.8	600	4.7-21
VSRAM_PROC	0.75--1.31(1.25)	130	2.2--3.61
VSRAM_OTHERS	0.75---1.3(1.25)	200	2.2--3.61
VDRAM	1.12/1.24	1200	4.7--44
VMC	1.86/2.9/3.0/3.3	200	1---2.2
VMCH	2.9/3.0/3.3	800	1---5.9
VEMC	2.9/3.0/3.3	400	1---5.9
VSIM1	1.7/1.8/1.86/2.76/3.0/3.1	50	1---2.2
VSIM2	1.7/1.8/1.86/2.76/3.0/3.1	50	1---2.2
VIBR	1.2/1.3/1.5/1.8/2.0/2.8/3.0/3.3	200	1---2.2
VUSB	3.07	50	1---2.2
VRTC28	2.8	2	Near end:0.1uF Far:1.5K+super Cap
DVDD18_DIG	1.8	10	1

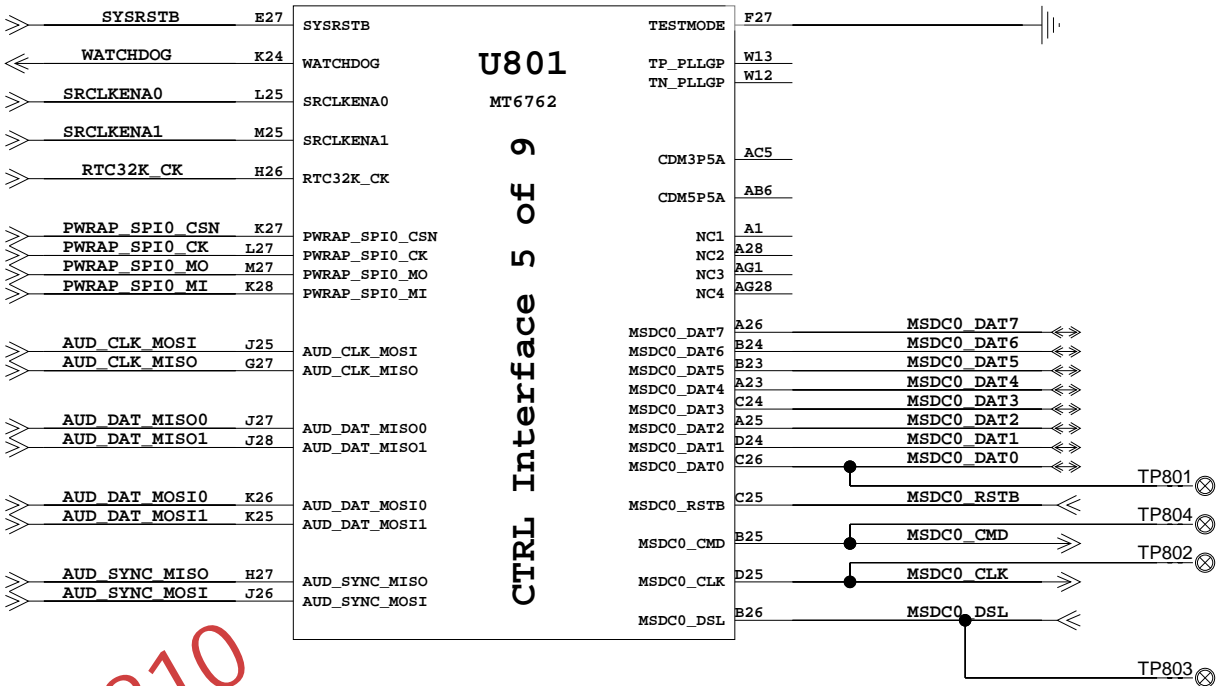


7. MT6357 Codec



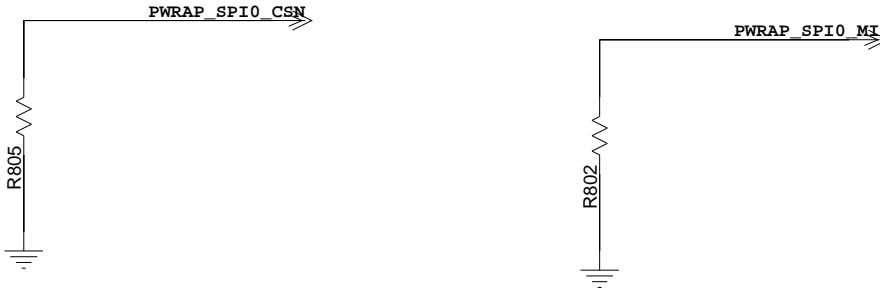
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8. MT6762 Control

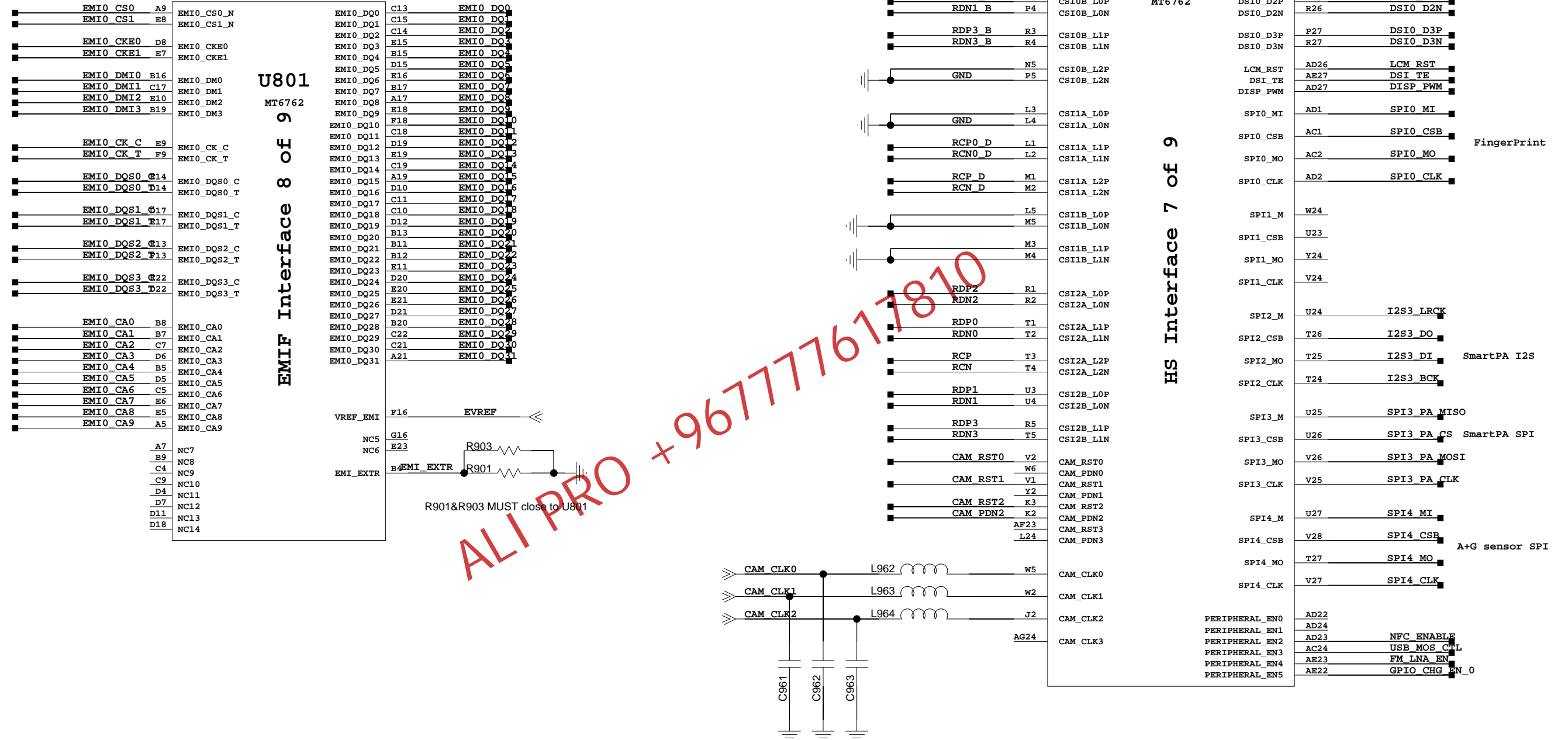


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AP JTAG:CS LO,MOSI LO.  
Default:No JTAG modem. BOM SMT as Value



## 9. MT6762 EBIF MIPI



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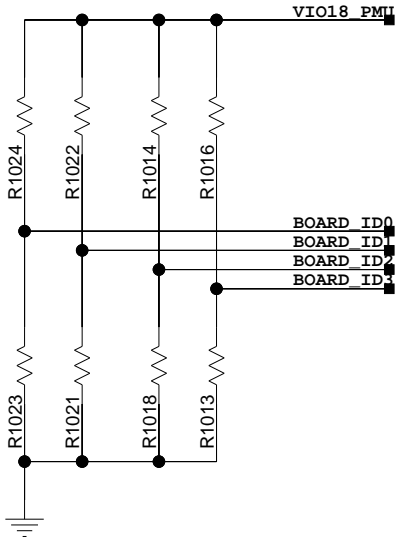
10. MT6762 GPIO

A

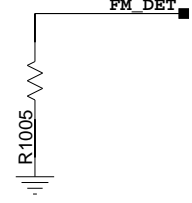
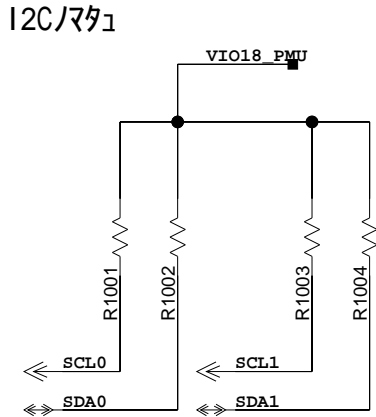
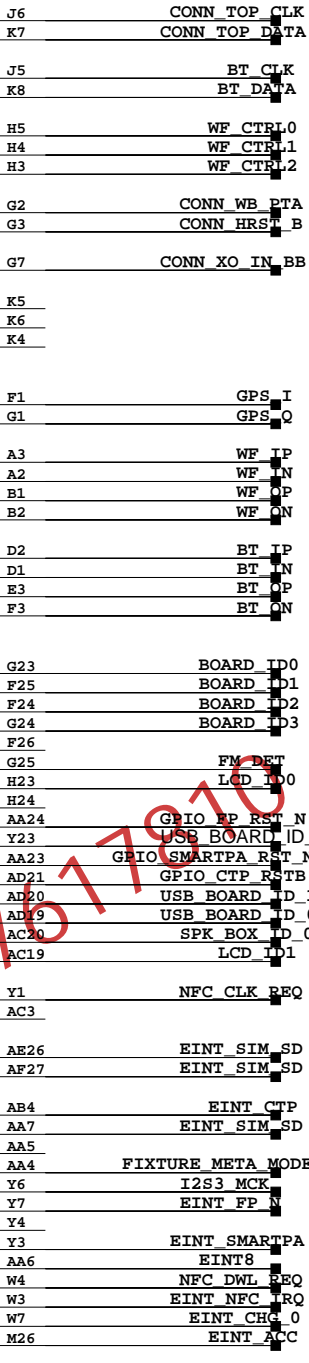
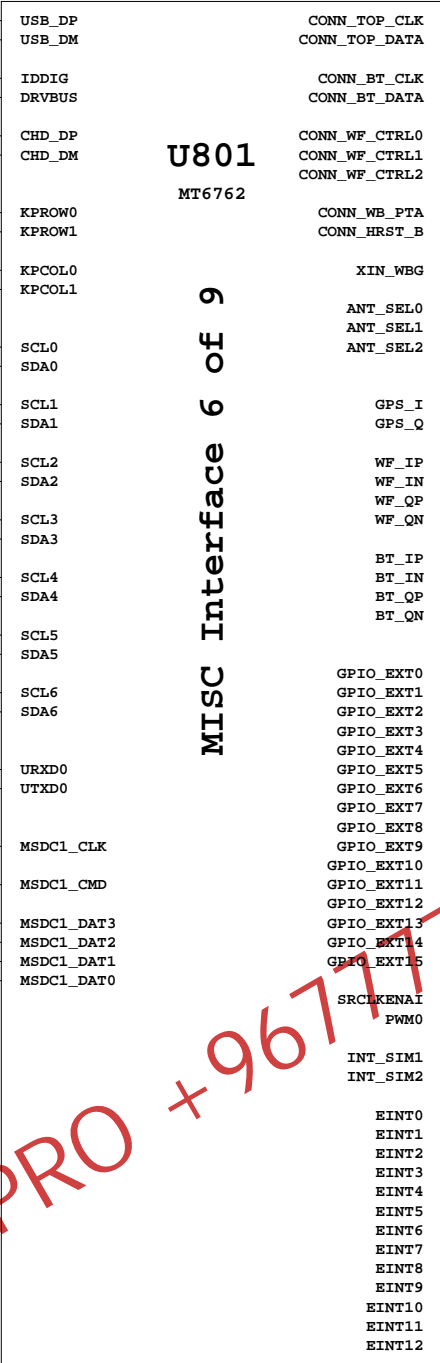
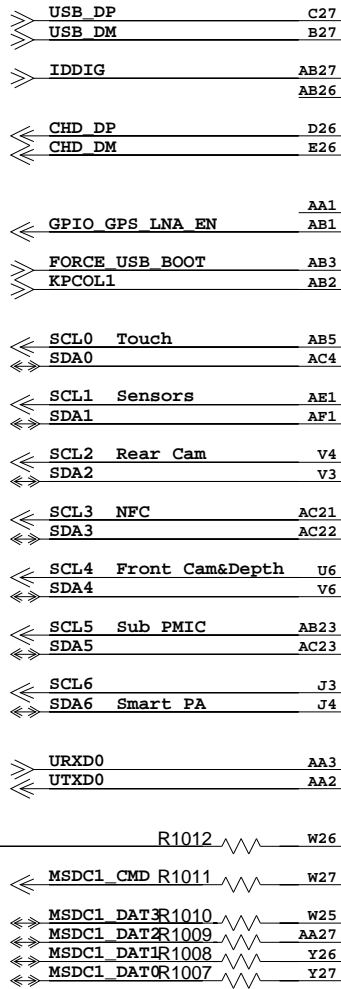
B

C

D



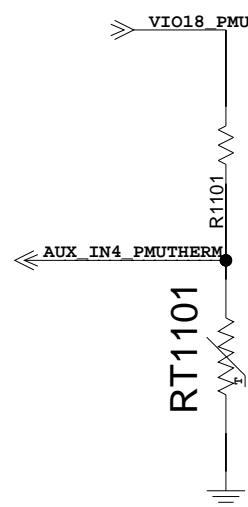
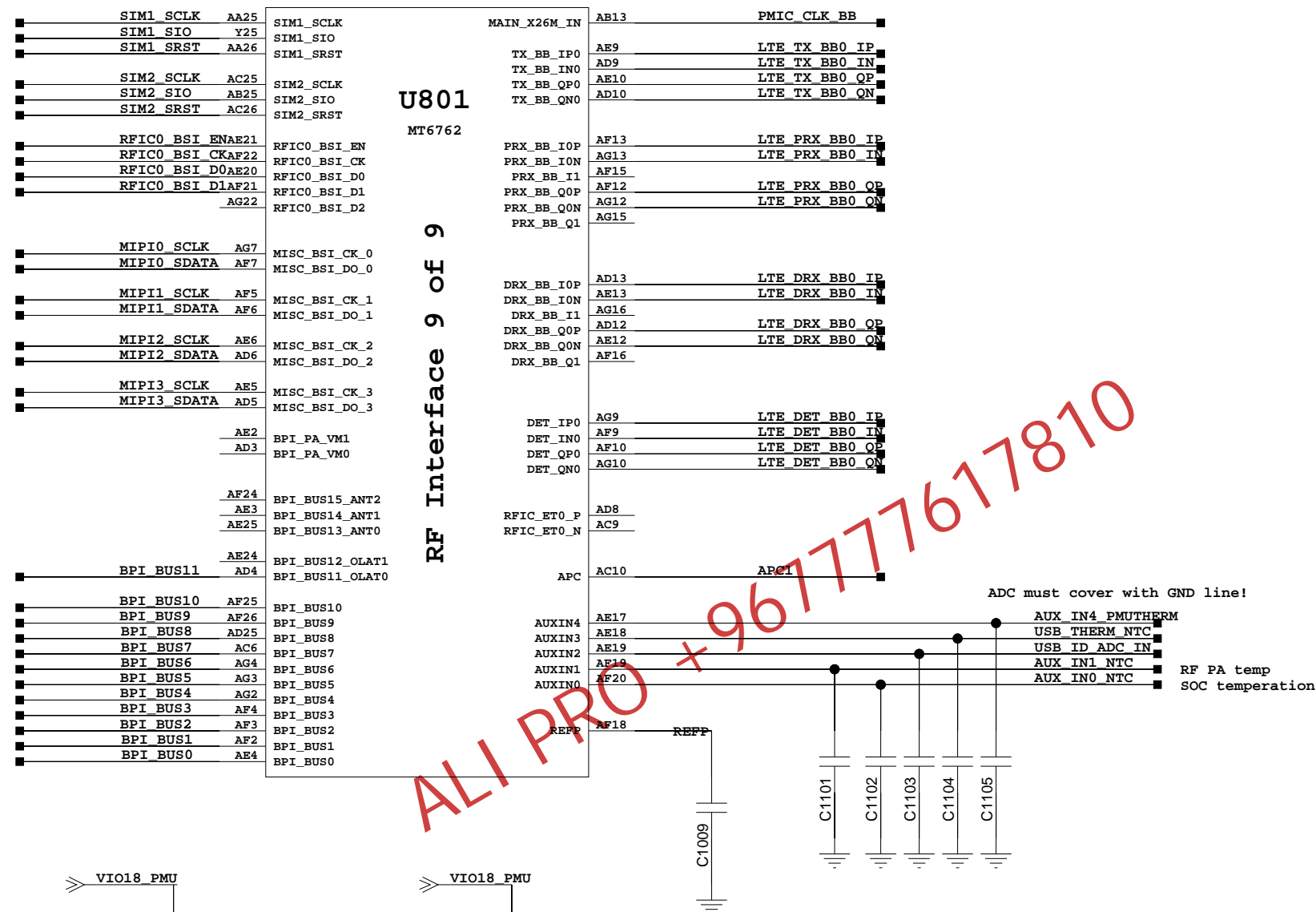
	R1024	R1023	R1022	R1021	R1014	R1018	R1016	R1013
MRD L23/L03	DNI	SMT	DNI	SMT	DNI	SMT	DNI	DNI
MRD L01/L21A	DNI	SMT	SMT	DNI	DNI	SMT	DNI	SMT
MRD L11	DNI	SMT	SMT	DNI	DNI	SMT	DNI	DNI
MRD L22/L02	DNI	SMT	SMT	DNI	DNI	SMT	SMT	DNI
MRD AL00A	DNI	SMT	SMT	DNI	DNI	DNI	DNI	SMT
MRD TL00A	DNI	SMT	SMT	DNI	DNI	DNI	SMT	DNI
JAT L23	DNI	SMT	DNI	SMT	SMT	DNI	SMT	DNI
JAT L21A/L21B	DNI	SMT	DNI	SMT	DNI	DNI	SMT	DNI
JAT L29	DNI	SMT	DNI	SMT	SMT	DNI	DNI	DNI
JAT AL00A/AL00B	DNI	SMT	DNI	SMT	SMT	DNI	DNI	SMT
JAT TL00	DNI	SMT	DNI	SMT	DNI	DNI	DNI	DNI



BOM Note:R1005 SMT with U1901

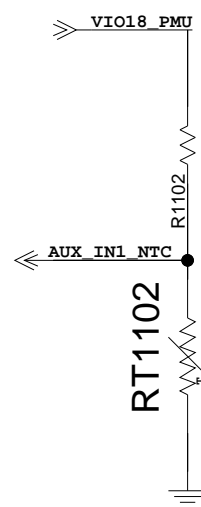
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# 11. MT6762 RF IF



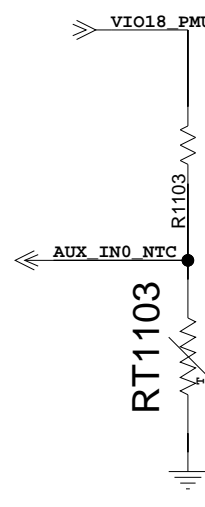
Thermistor to sense CHARGER.

3 to 5mm far away from charger. other 10mm more.



Thermistor to sense RF PA

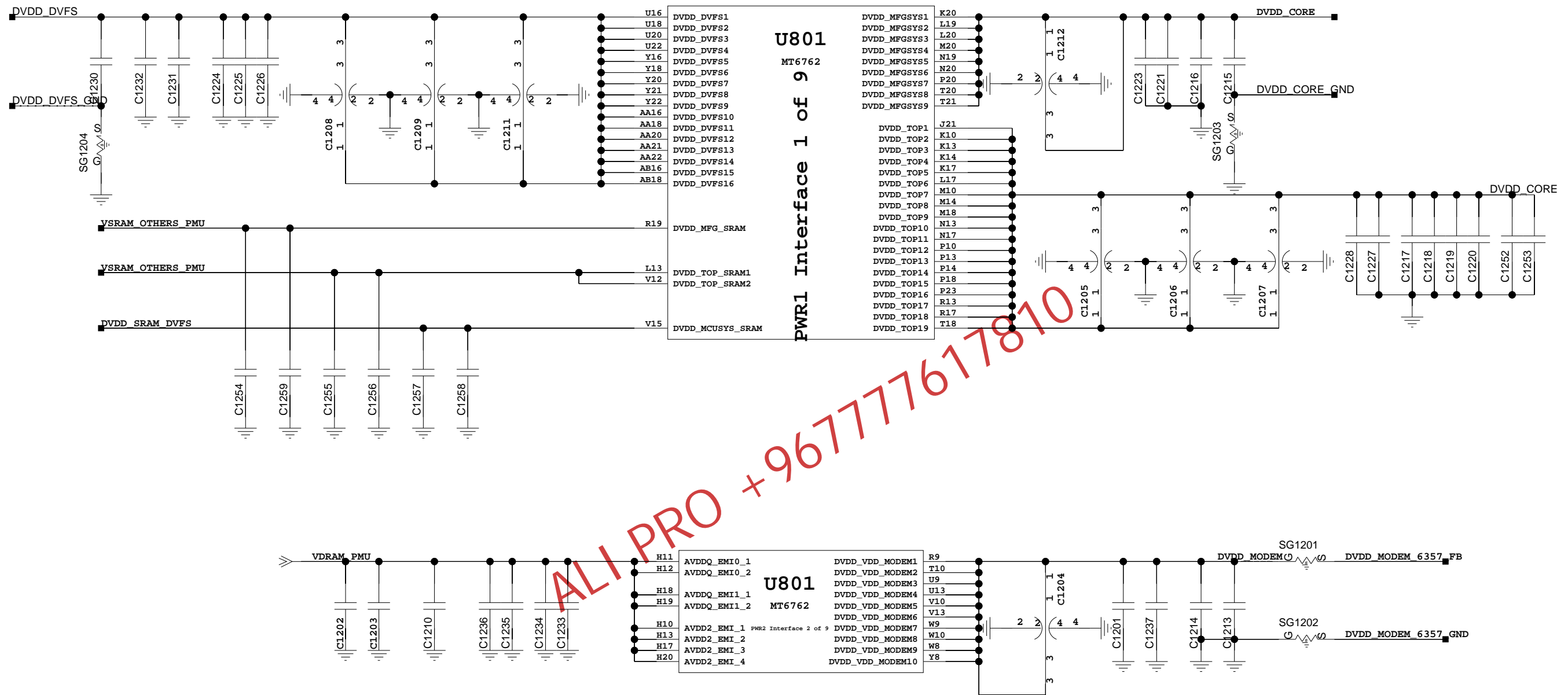
must close to PA or the hottest PA <2mm. must keep a distance about 68 mm away from AP. other heat sources 10 mm at least.



Thermistor to sense AP

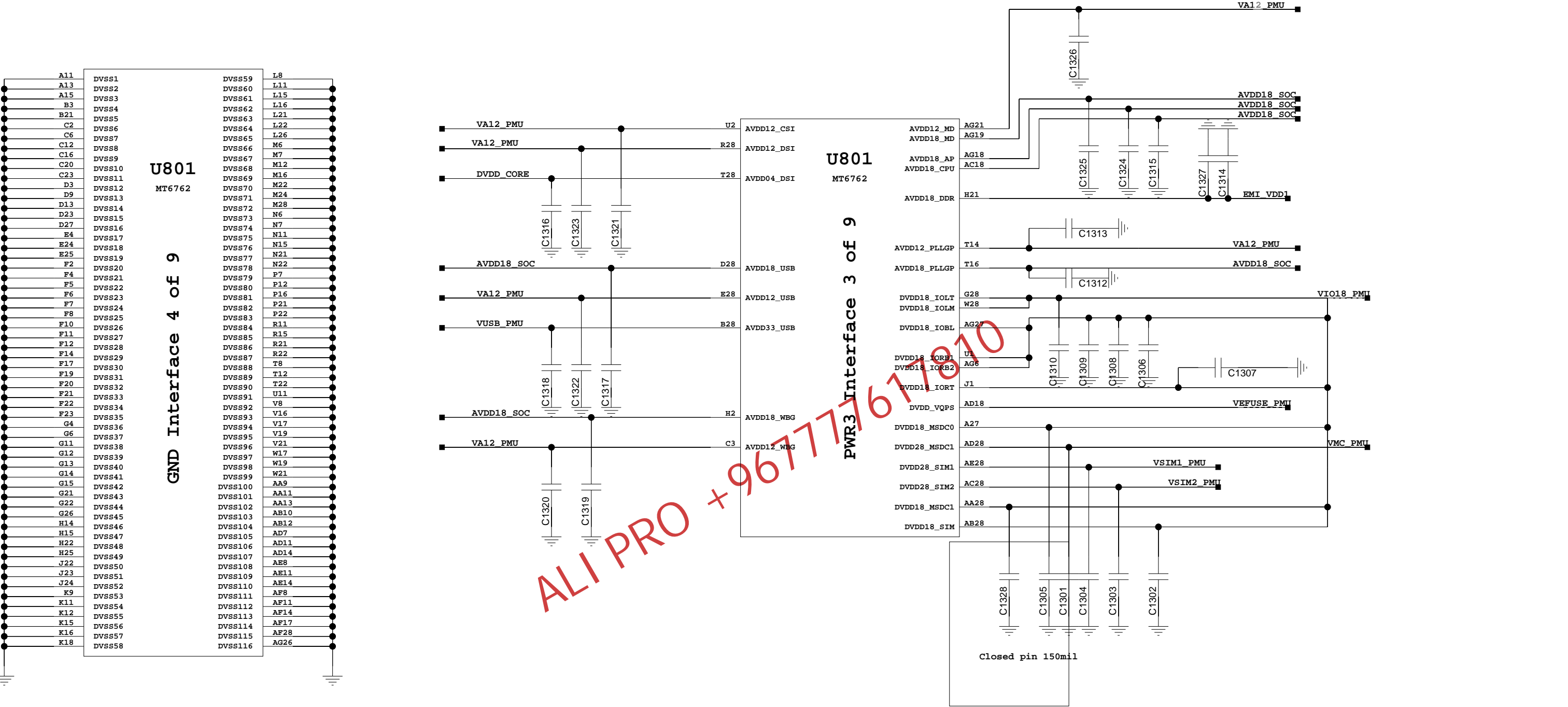
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# 12. MT6762 Power1

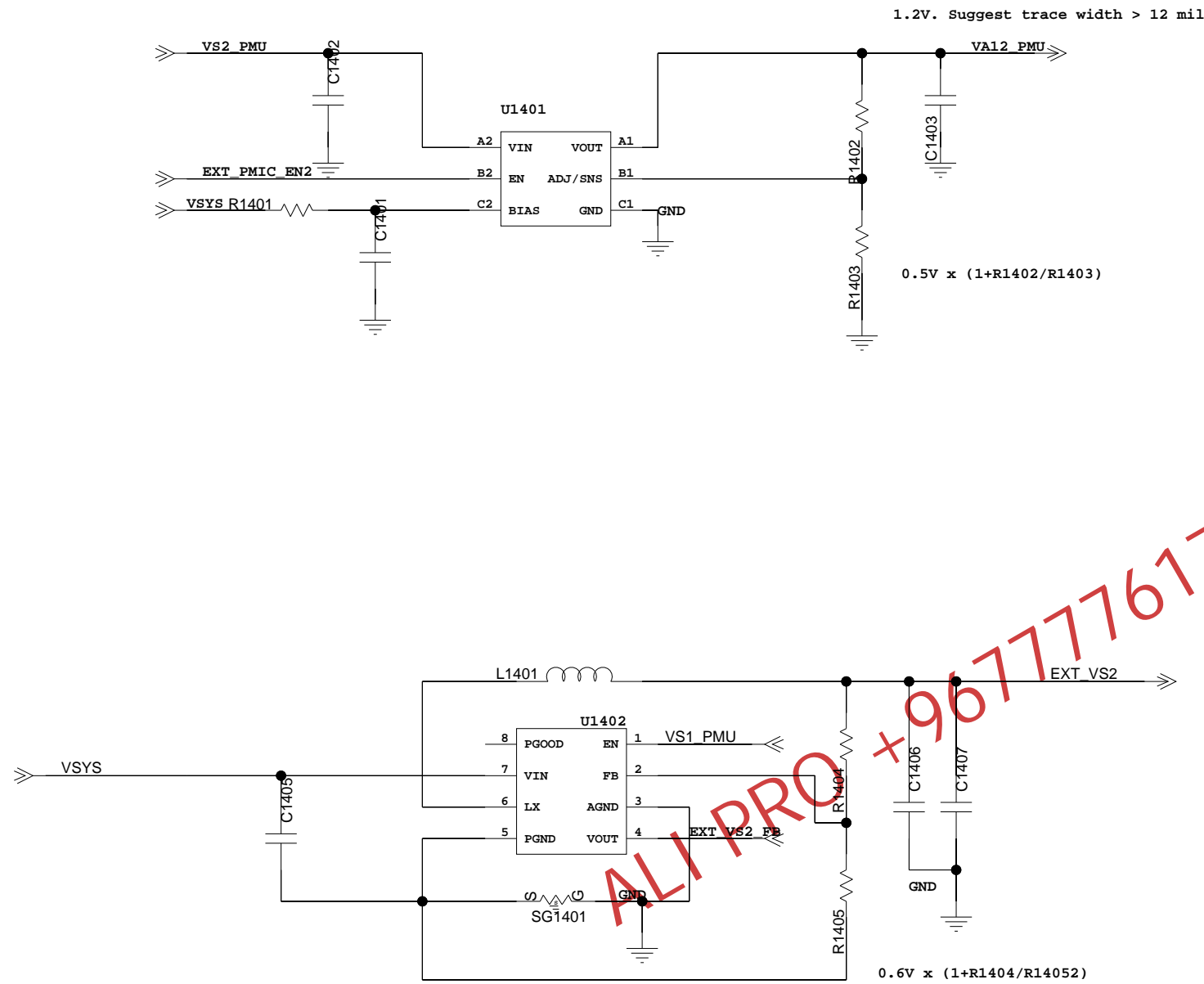


C1221,C1222,C1223,C1224,C1229,C1230,C1231,C1227  
Capacitor value changed according to the simulation results.

13. MT6762 Power2



14. Ext\_BUCK/LDO





15. eMMC and LPDDR3

\*\*BOM Notes:

1+16 1+8 2+16 3+32



U1501  
MISC Interface 1 of 2

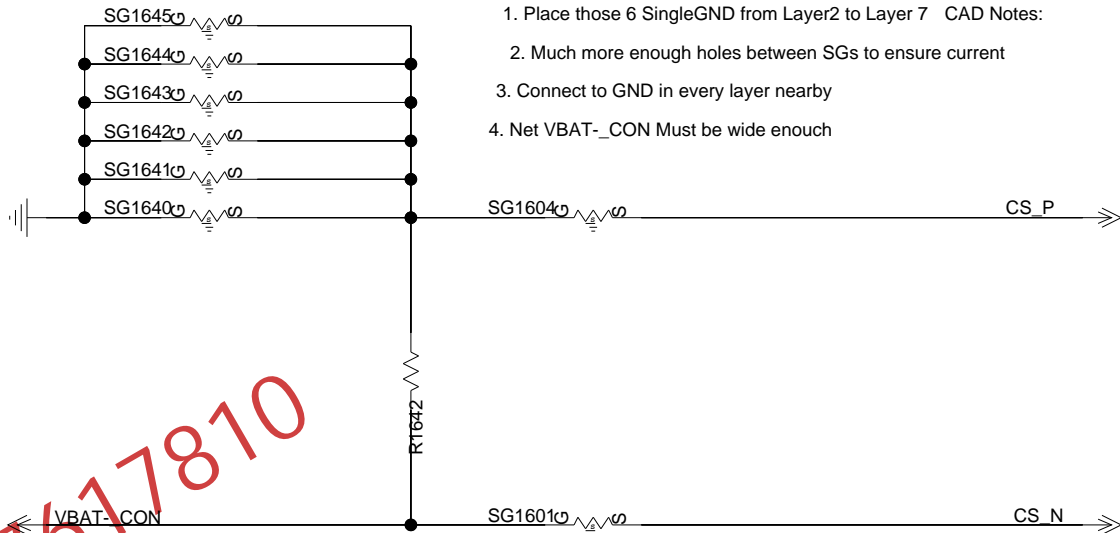
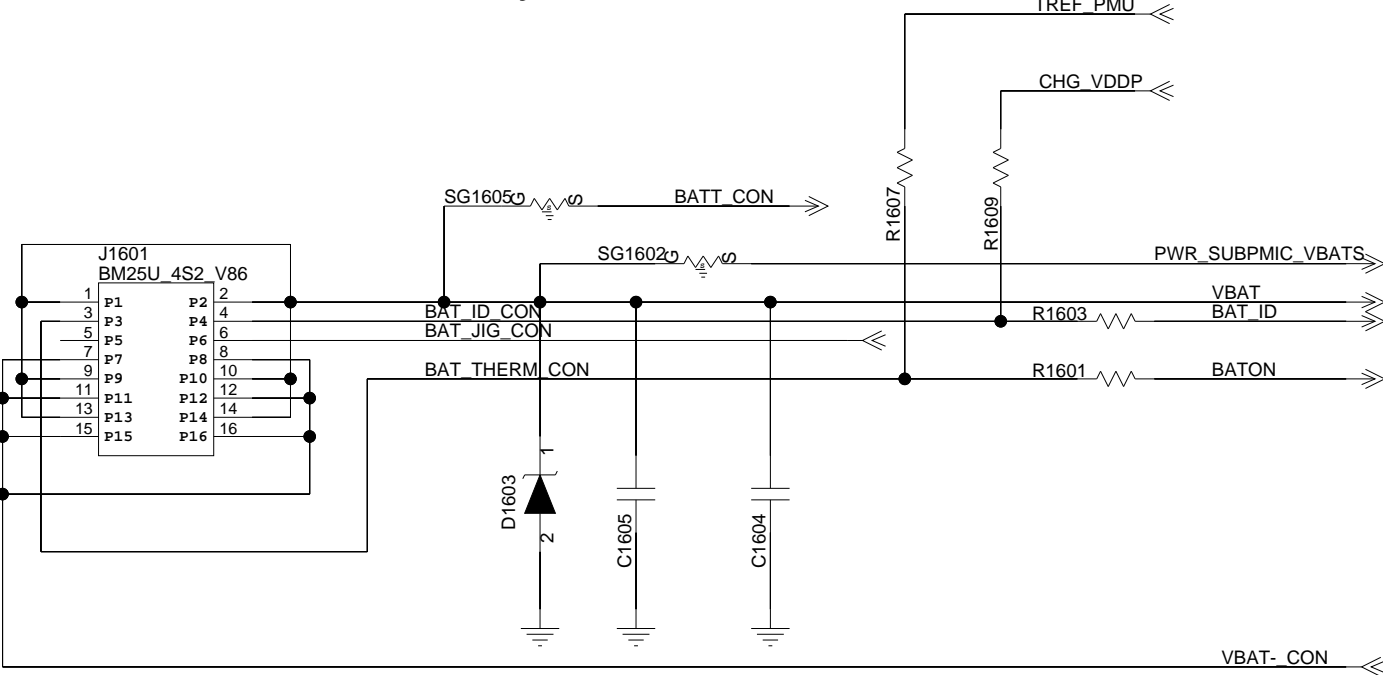
U1501  
PWR Interface 2 of 2

BOM notes:default MT6762

Project	C1523	C1524
MT6762	08071733	08071128
MT6761	08072061	08072061

16. Battery/USB IF.

Battery Conector

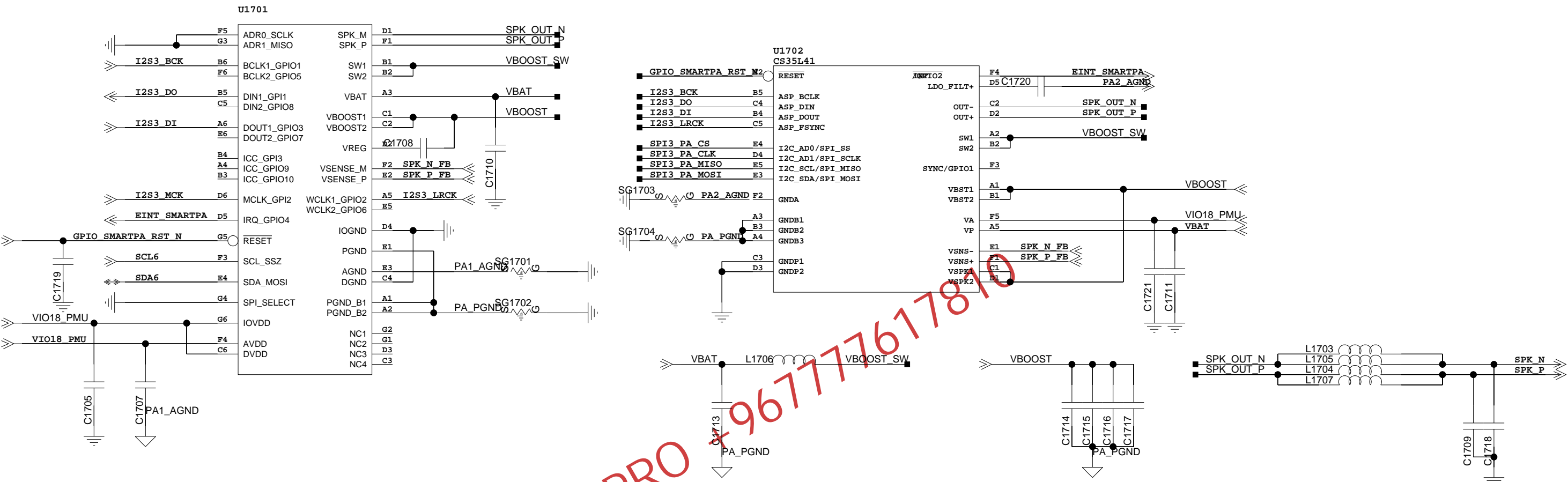


- 1. Place those 6 SingleGND from Layer2 to Layer 7 CAD Notes:
- 2. Much more enough holes between SGs to ensure current
- 3. Connect to GND in every layer nearby
- 4. Net VBAT-\_CON Must be wide enough

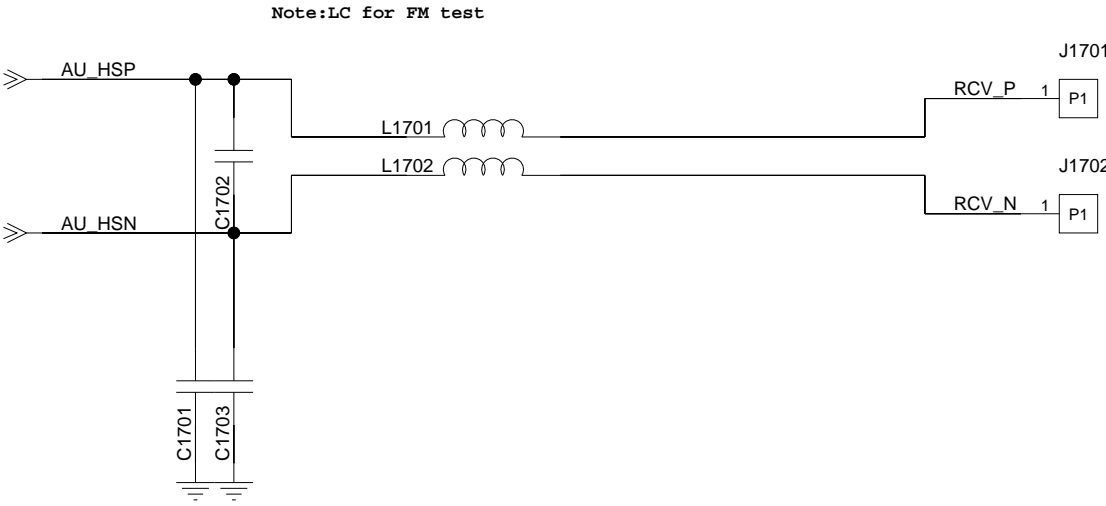
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# 17. Receiver/SPK/Vibrator

## TI



### Receiver

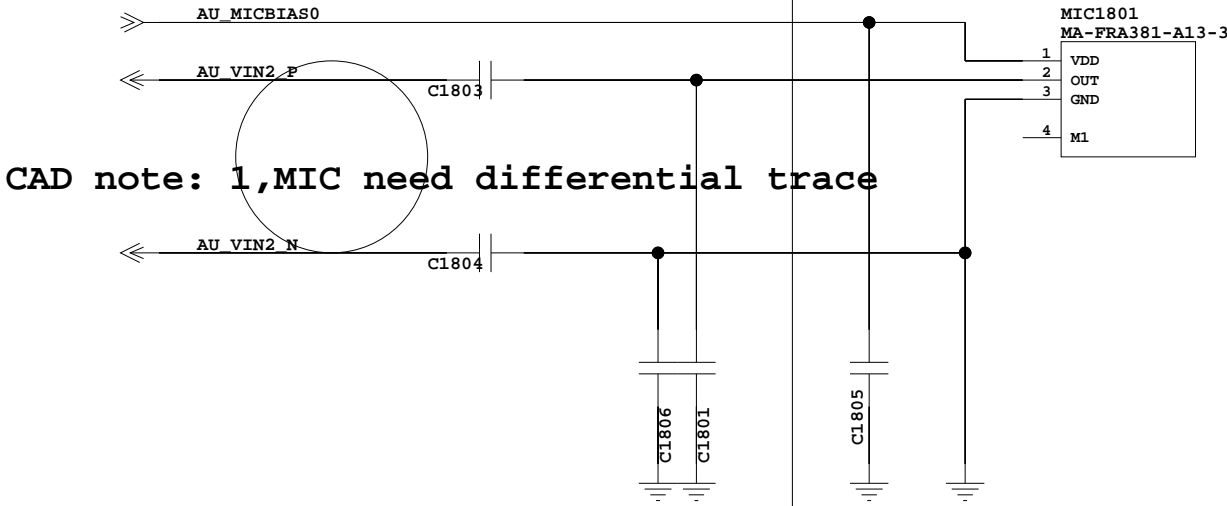


18. MIC

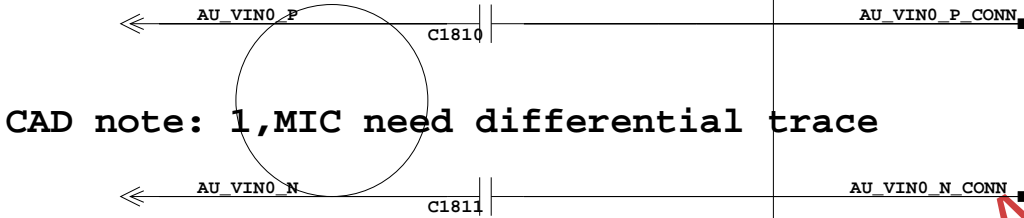
Sub MIC

Close to PMU

Close to MIC



Main MIC



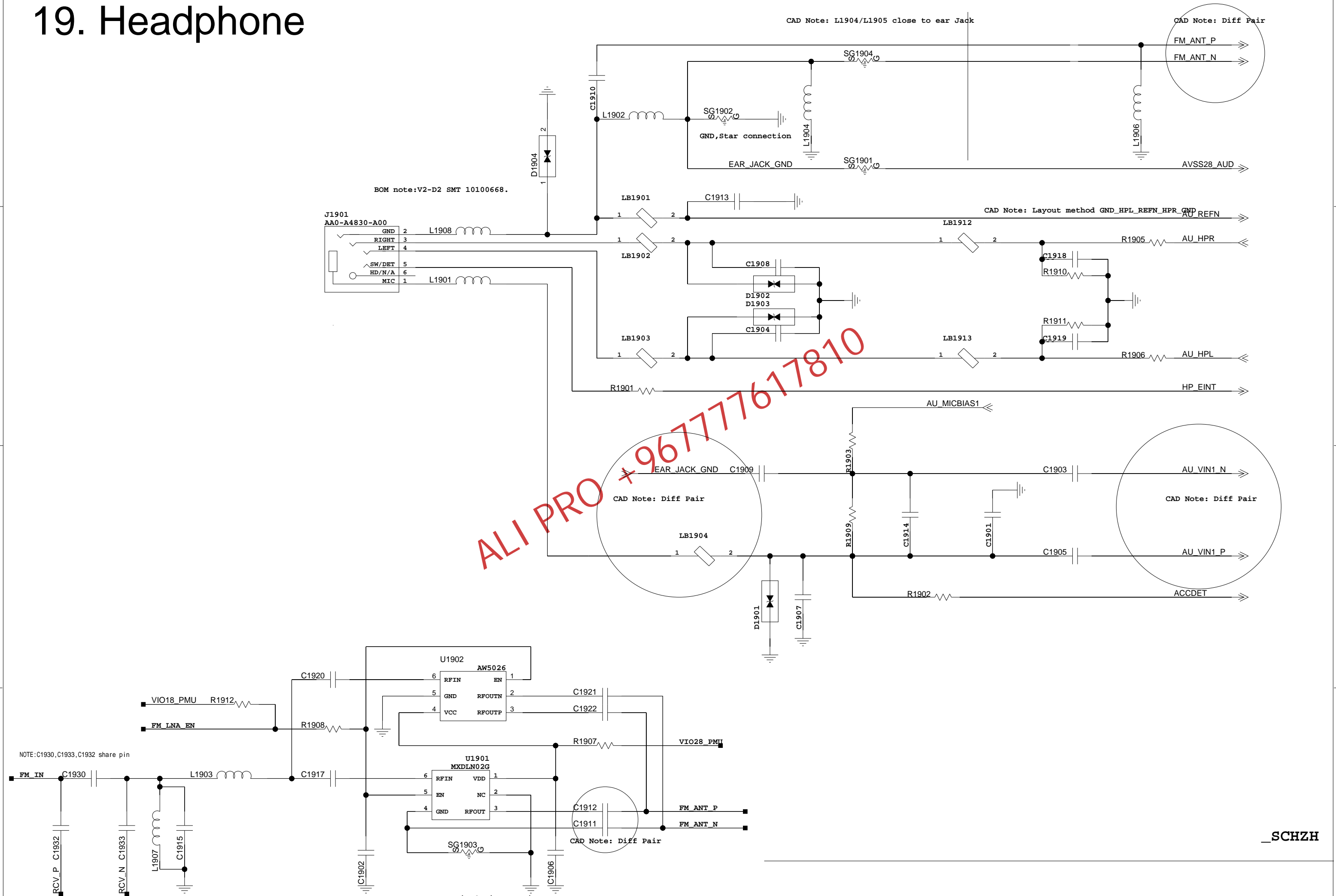
19. Headphone

A

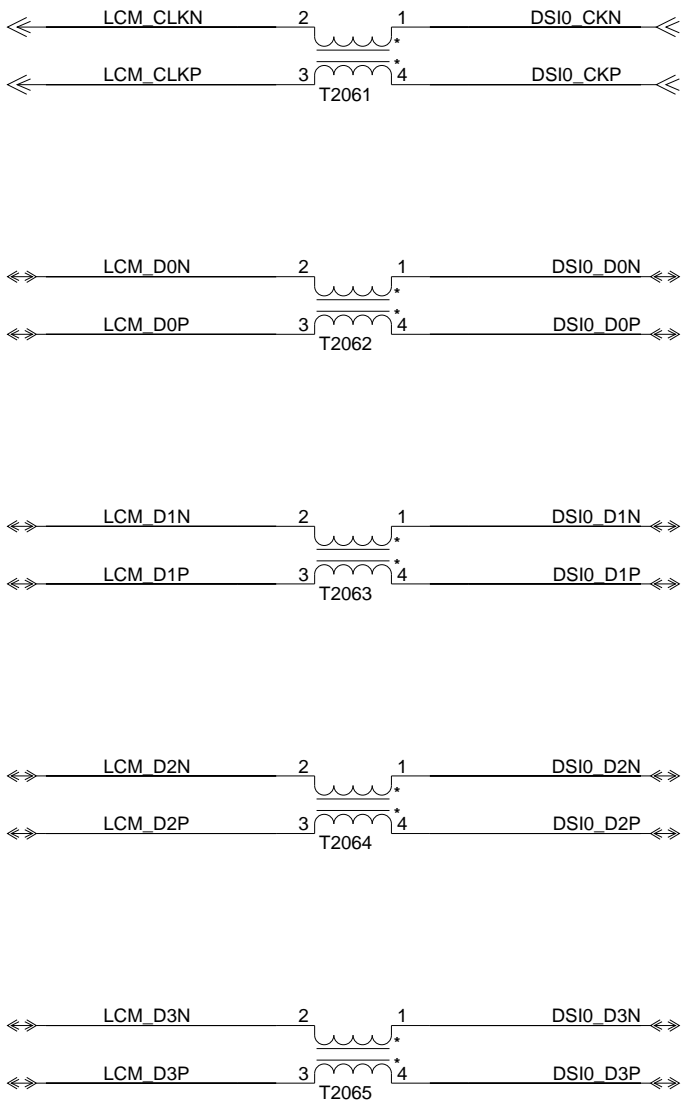
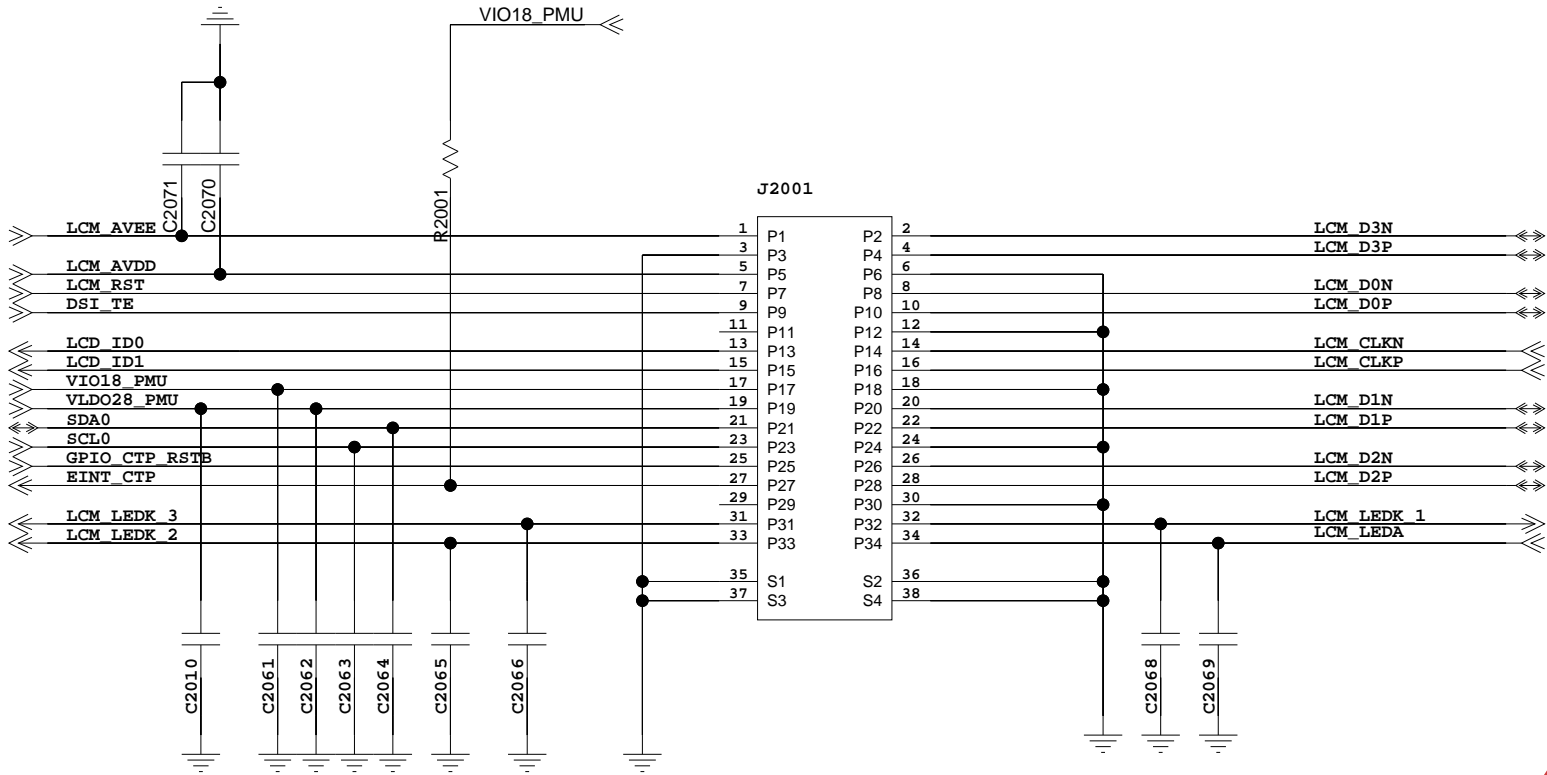
B

C

D

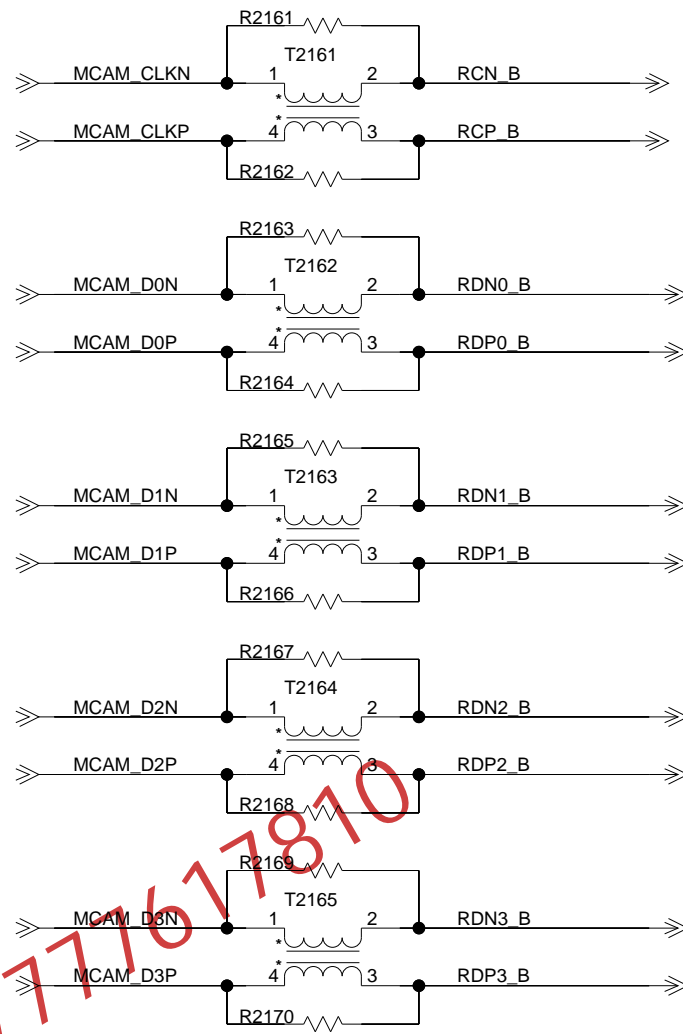
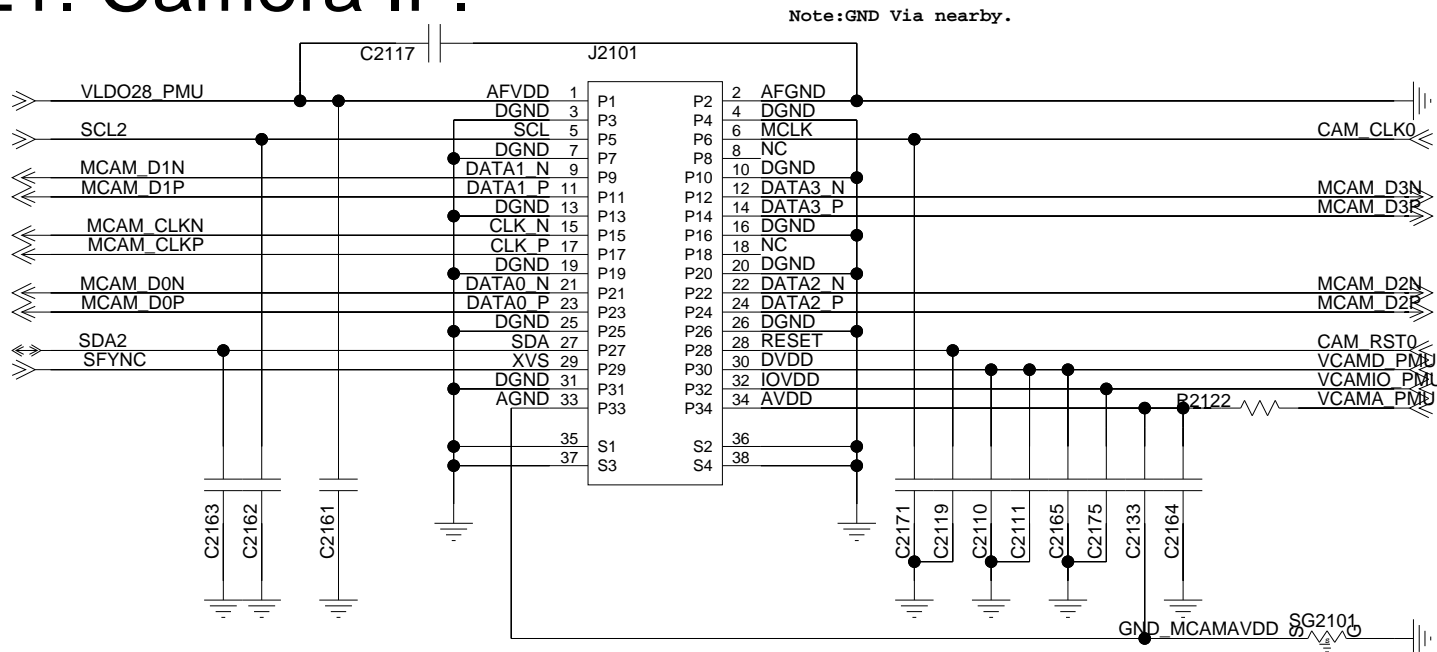


20. LCD/CTP IF.

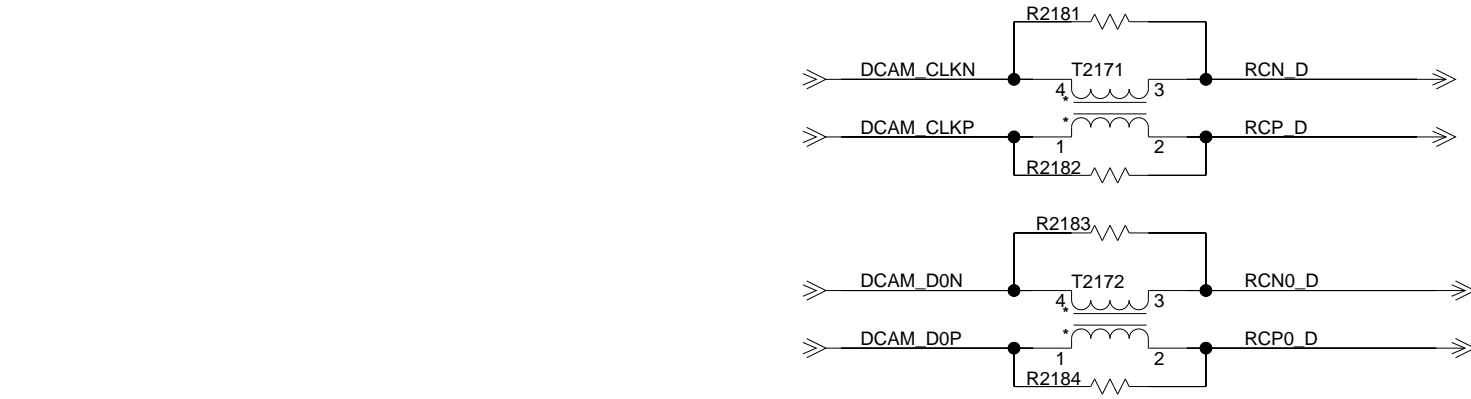
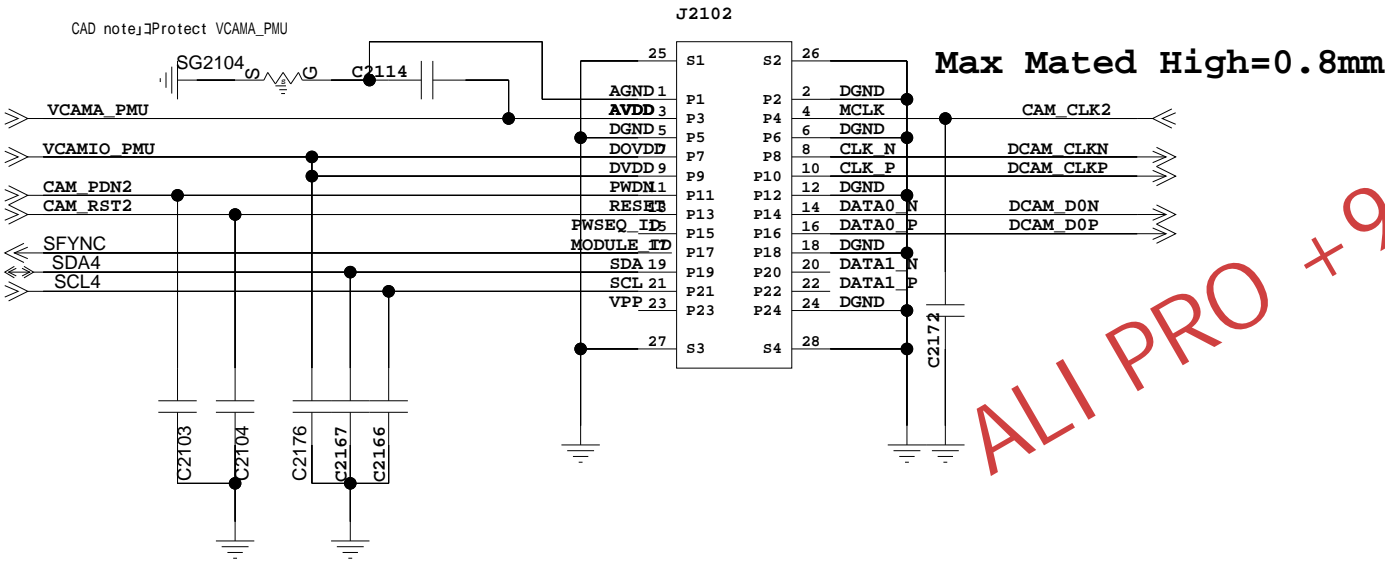


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21. Camera IF. 13M Main



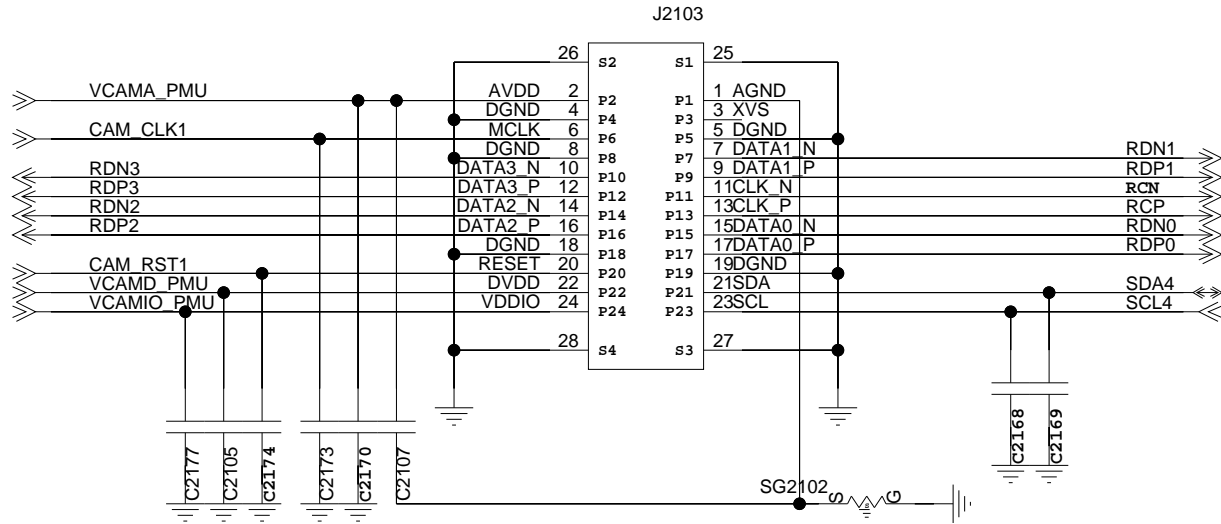
2M Depth



Front SUB Camera

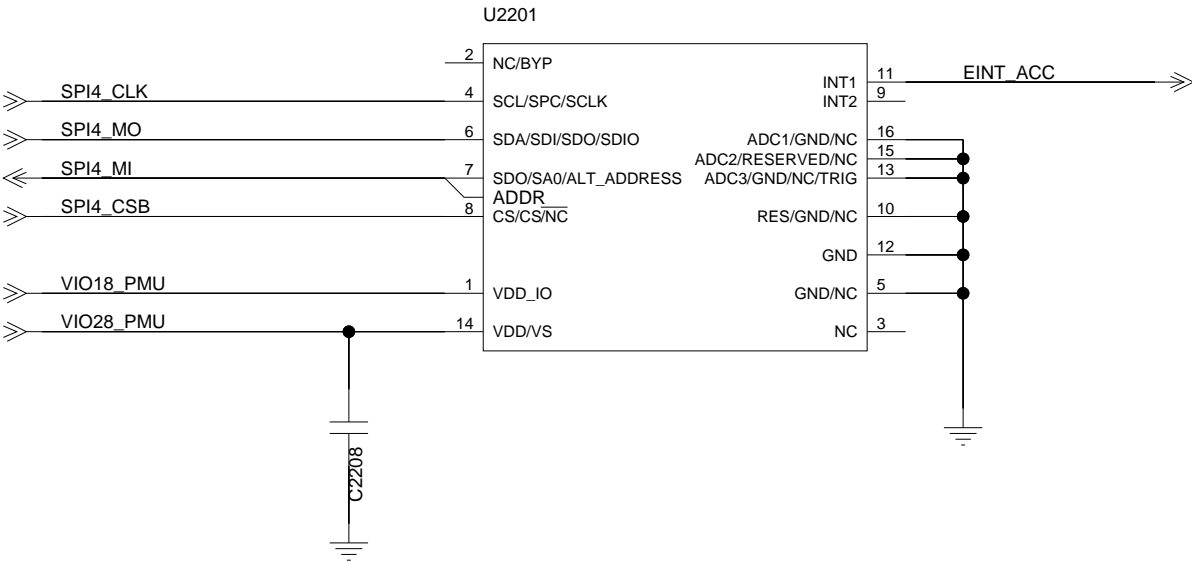
5/8M Sub

Max Mated High=0.8mm

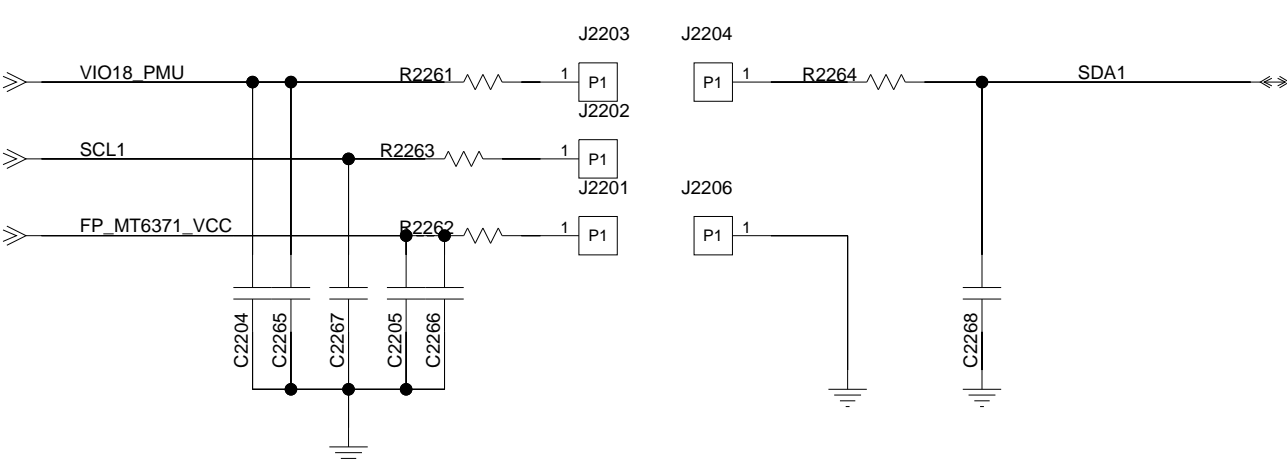


22. Sensor

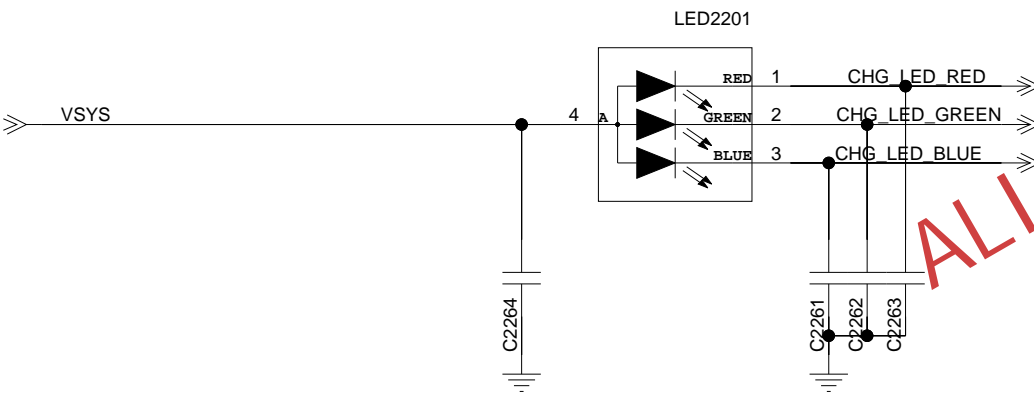
Accelerometer



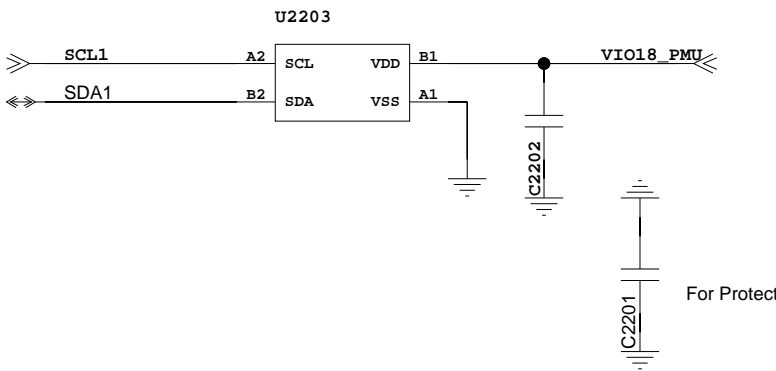
Ambient Light



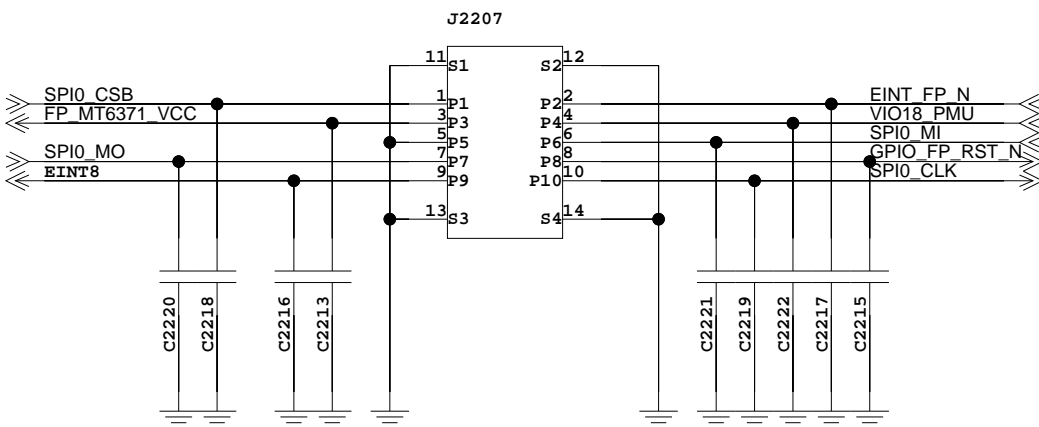
Status indicator



Compass

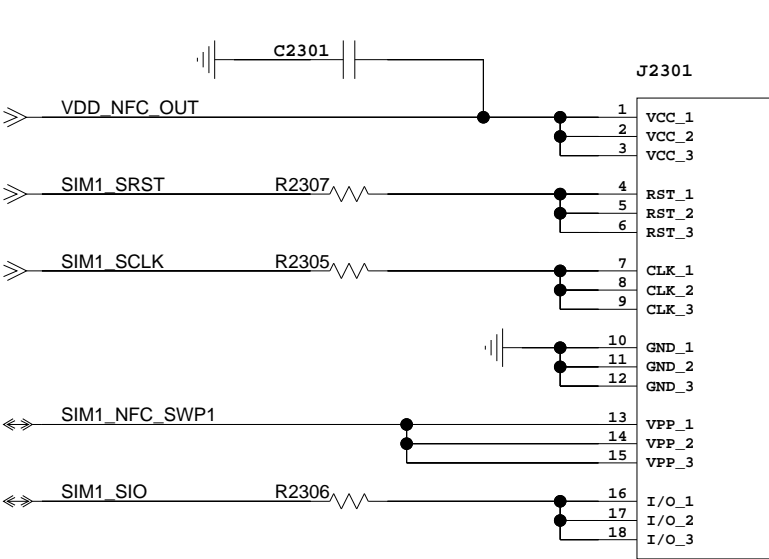


FingerPrint

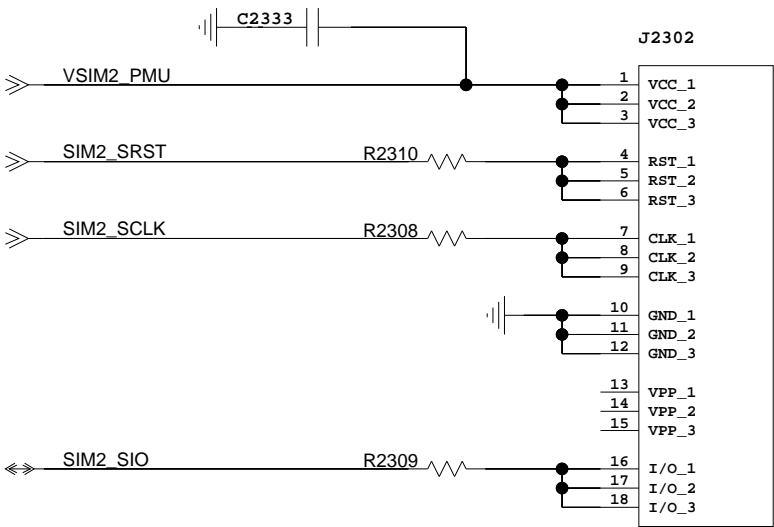




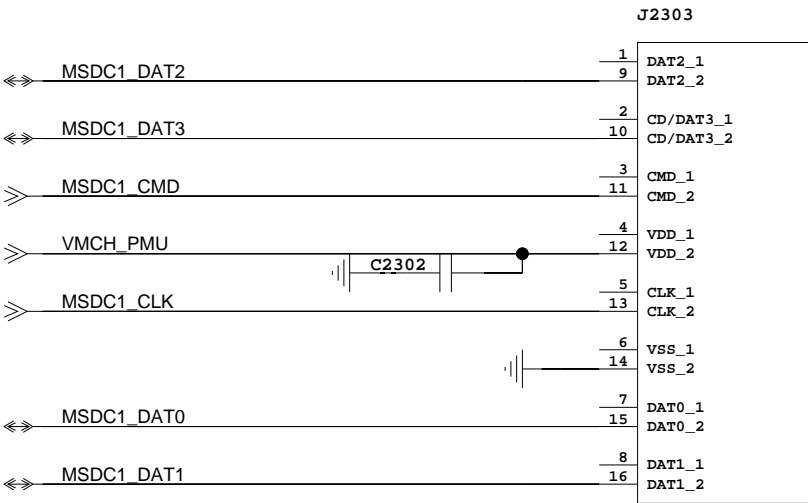
23. SIM/TF IF.



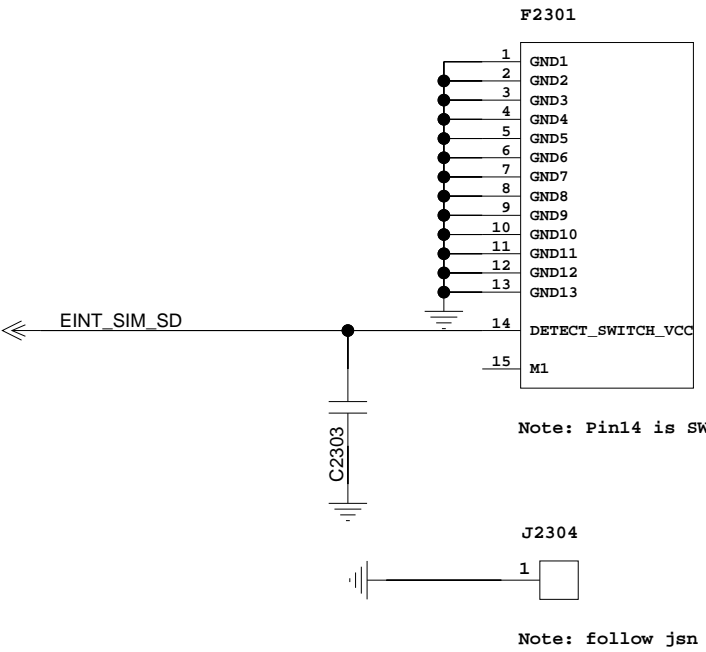
SIM1



SIM2



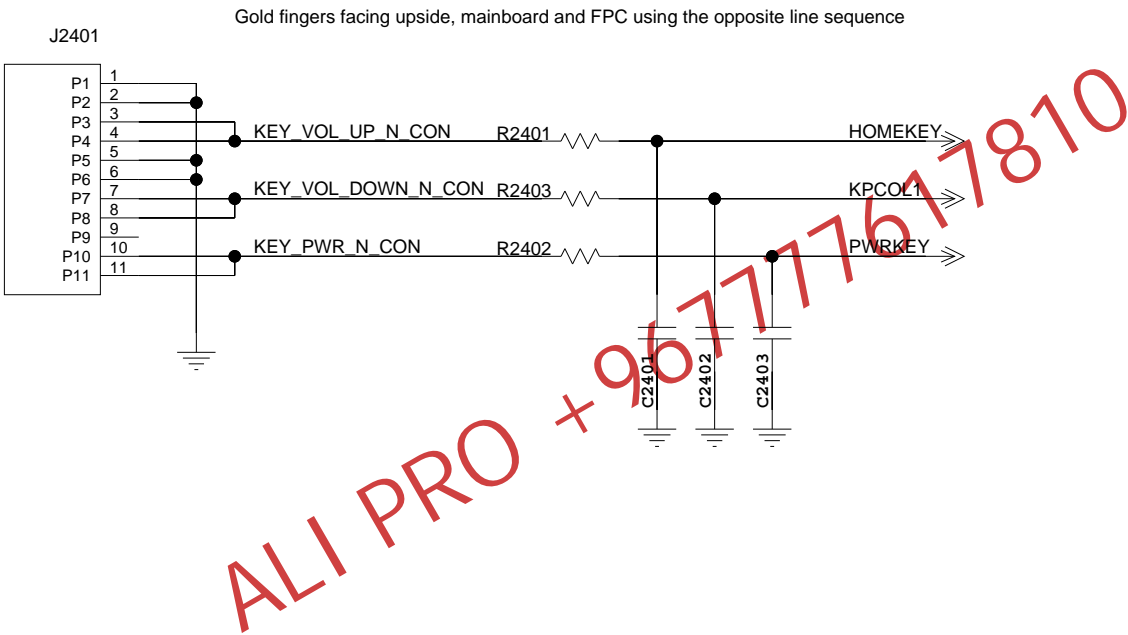
Micro SD



Holder

24. Sidekey

Side KEY



# 25. Flash



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1

2

3

4

5

6

26\_Reserved

A

A

B

B

C

C

D

D

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\_SCHZH

1

2

3

4

5

6

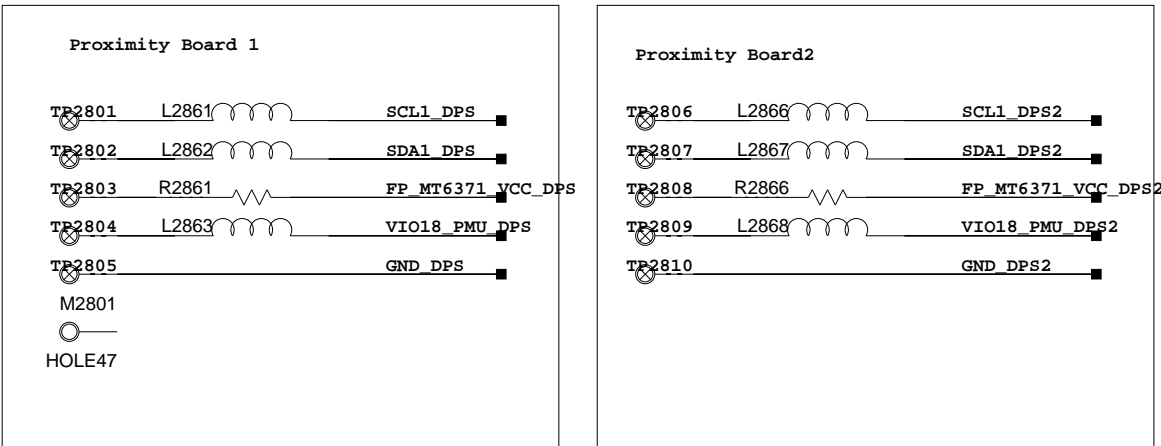
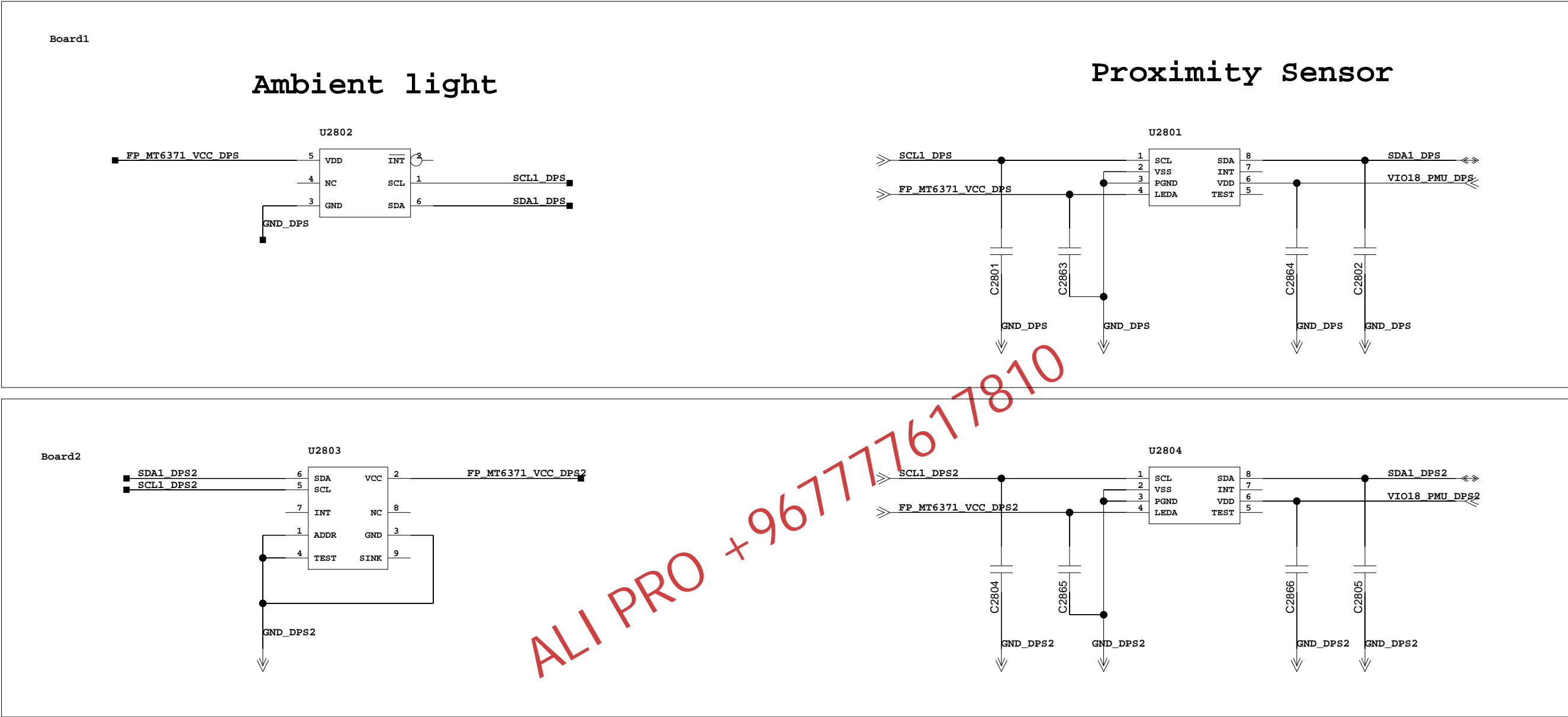
27\_Reserved

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\_SCHZH

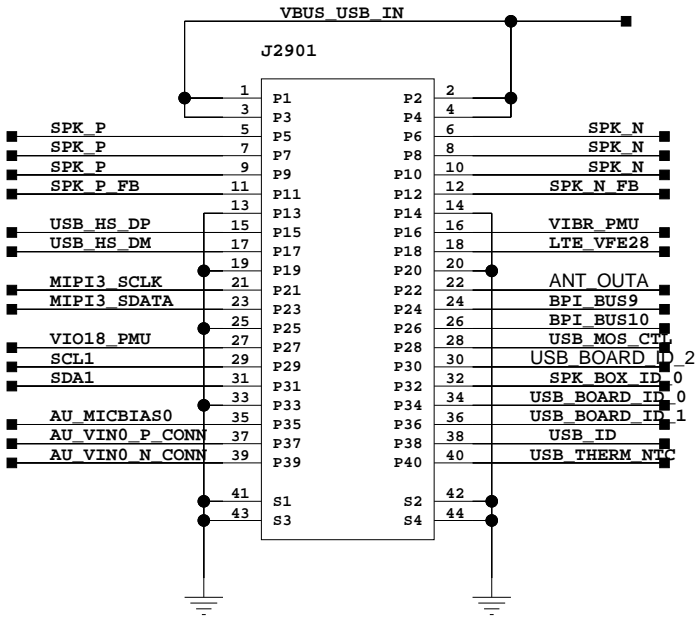
28. PROXIMITY AMBIENT Sensor

BOM note: Don't SMT board 1 & board 2 simultaneously, refer to BOM checklist carefully



29\_Sub PCB IF

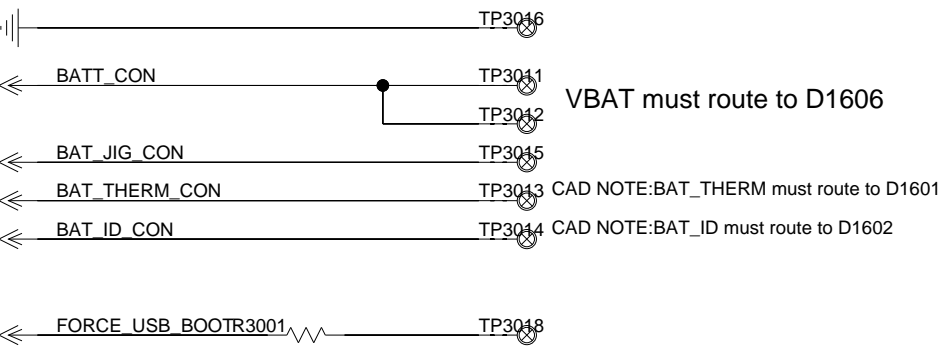
Main FPC BTB



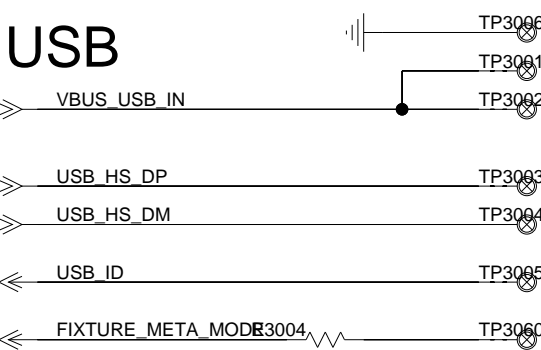
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30. Test Points/Shields

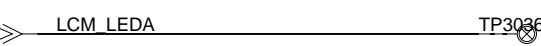
CT BT



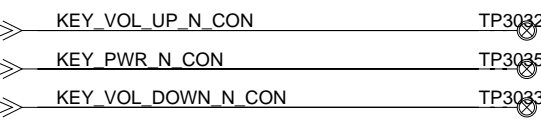
USB



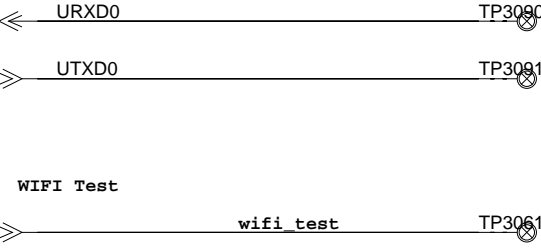
LCM



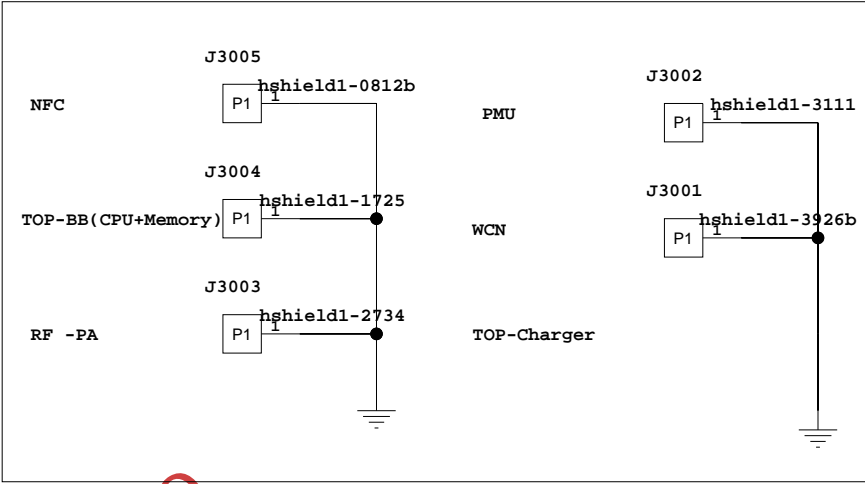
Keys



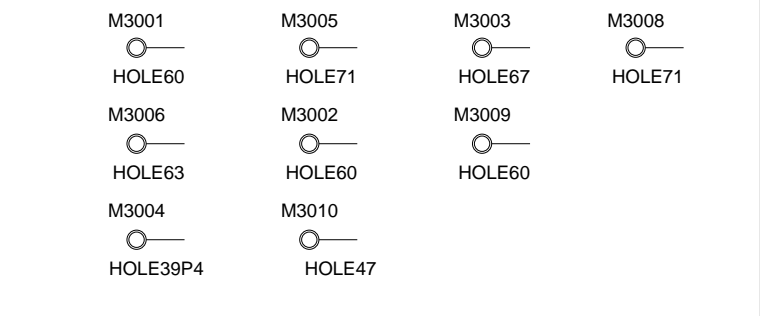
UART



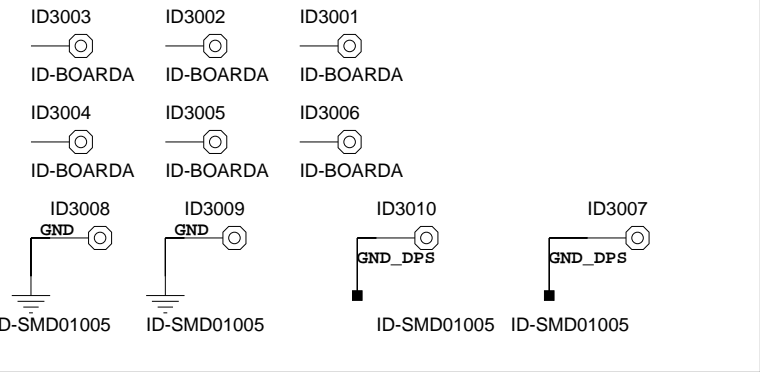
Shielding



HOLE



MARK POINT



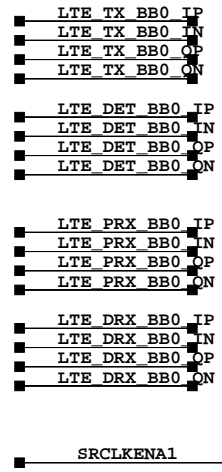


31.RF Interface

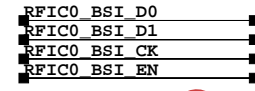
- 32.RESERVED
- 33.Main Antenna Switcher
- 34.Primary ASM
- 35.RF\_SWITCH
- 36.MMPA
- 37.MATCHING\_CIRCUIT\_of\_MMMBPA
- 38.TR\_B1\_TRX\_DUP
- 39.TRX\_B2\_TRX\_DUP
- 40.TRX B3/B4\_TRX\_dup
- 41.Reserved
- 42.RESERVED
- 43.RESERVED
- 44.TRX B5/8
- 45.TRX B12/20/28
- 46.Reserved
- 47.TRX B40/41
- 48.TRX B7
- 49.TRX\_B34/39
- 50.Diversity\_ASM
- 51.DRX\_B7
- 52.DRX\_B34/B39
- 53.DRX\_B40/41
- 54.DRX B1+3/2+4
- 55.DRX B12/20/28
- 56.DRX B5/B8
- 57.Reserved
- 58.Reserved
- 59.MT6177
- 60.GPS
- 61.MT6631 BB
- 62.MT6631 RF
- 63.RESERVED
- 64.RESERVED
- 65.RESERVED

- 66.ANT TUNER
- 67.ANTENNA MATCH
- 68.Reserved
- 69.Reserved

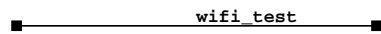
Transceiver RF Interface



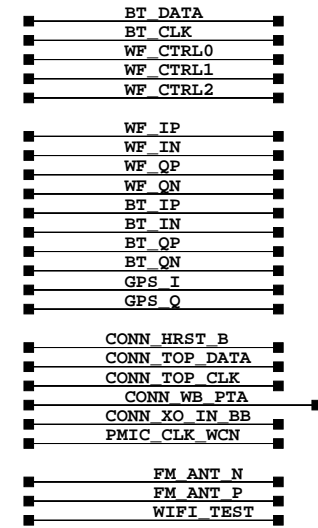
Transceiver BSI Interface



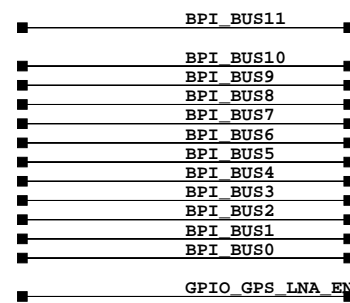
IIC Interface



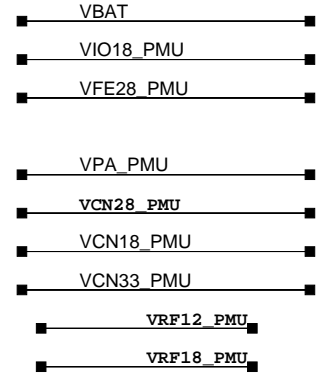
NC Interface



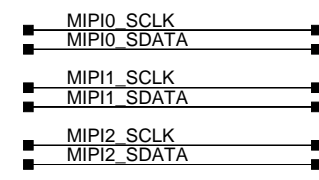
GPIO Interface



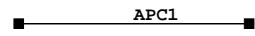
PWR Interface



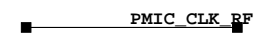
MIPI Interface



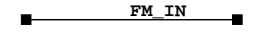
PA ramp



Clock Interface



FM



32\_Reserved

1	2	3	4	5	6
A					A
B					B
C					C
D					D

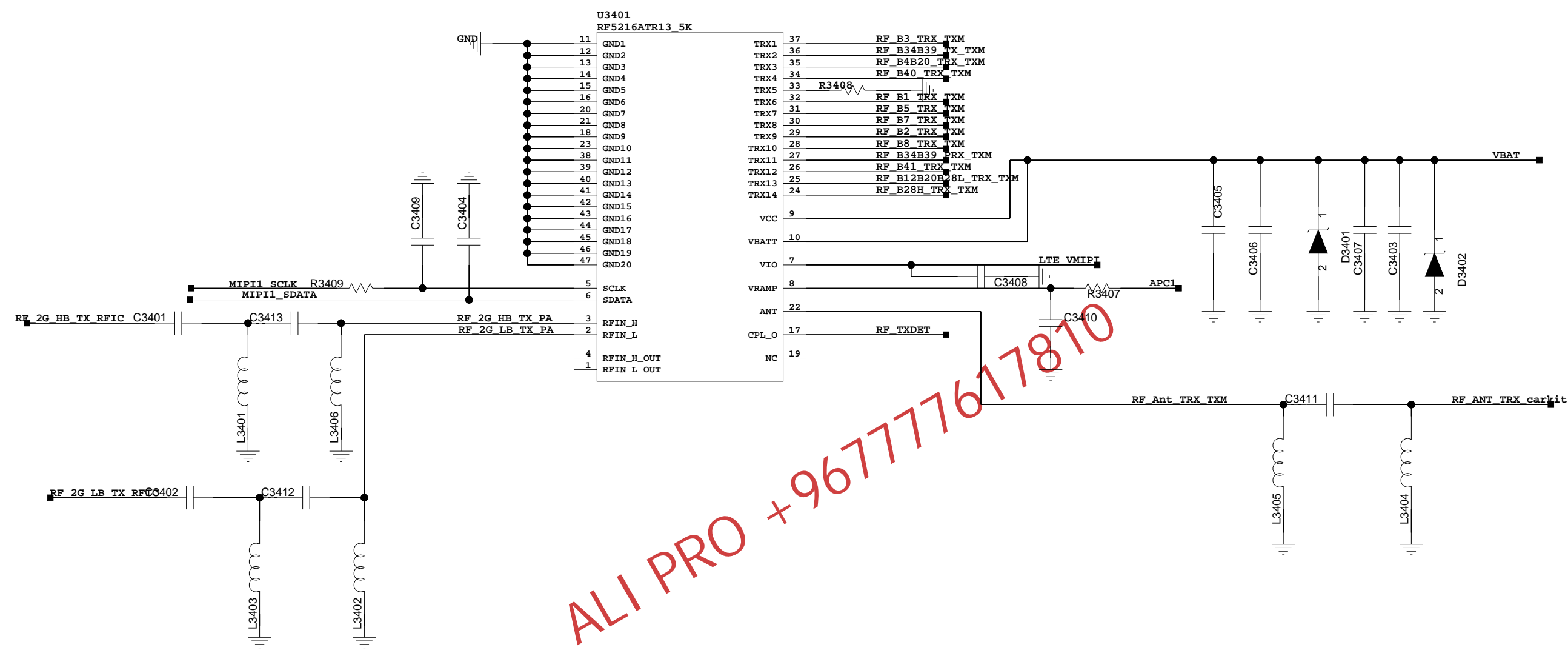
ALI PRO +967777617810

33\_Reserved

1	2	3	4	5	6
A					A
B					B
C					C
D					D

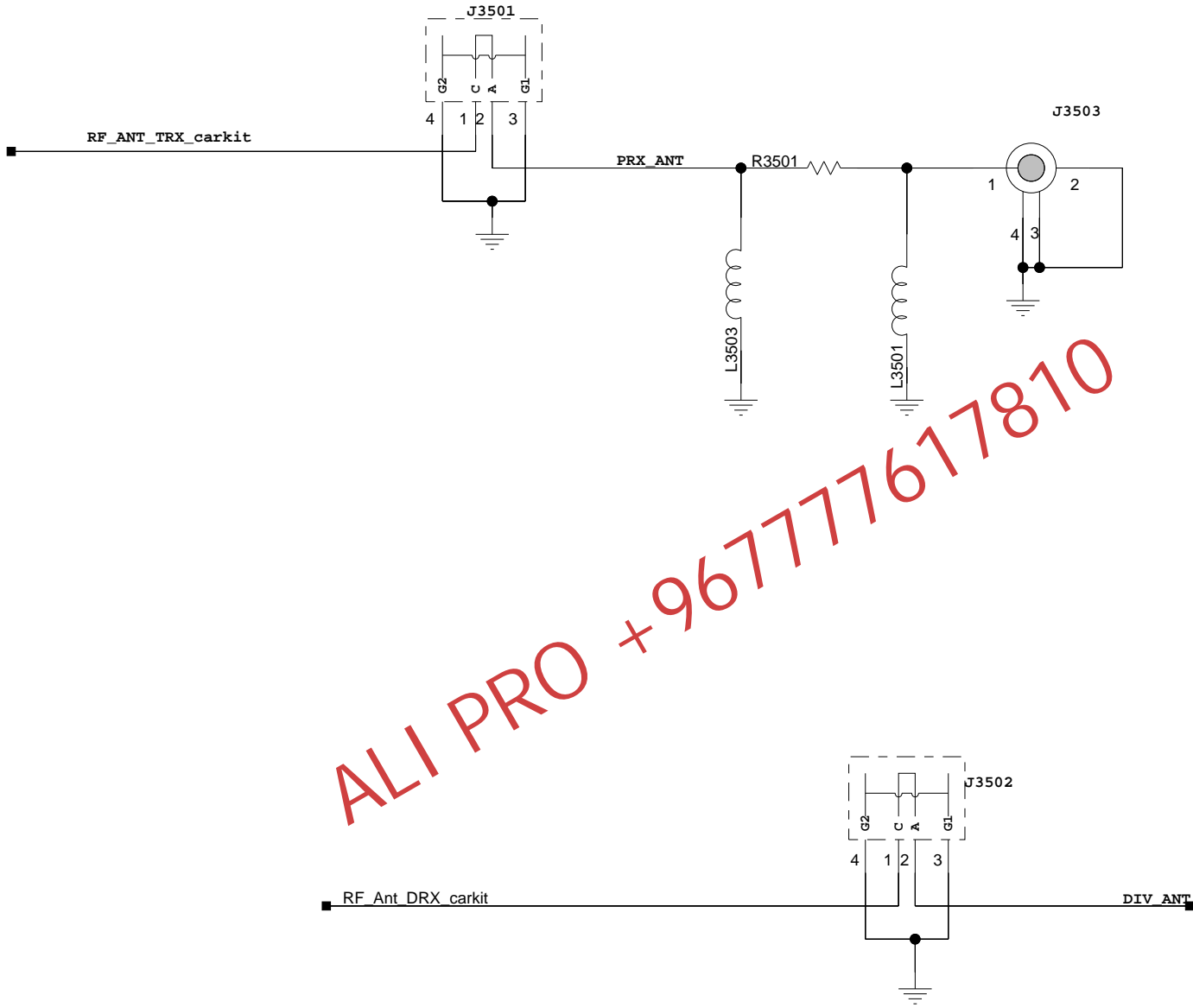
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34\_Primary ASM

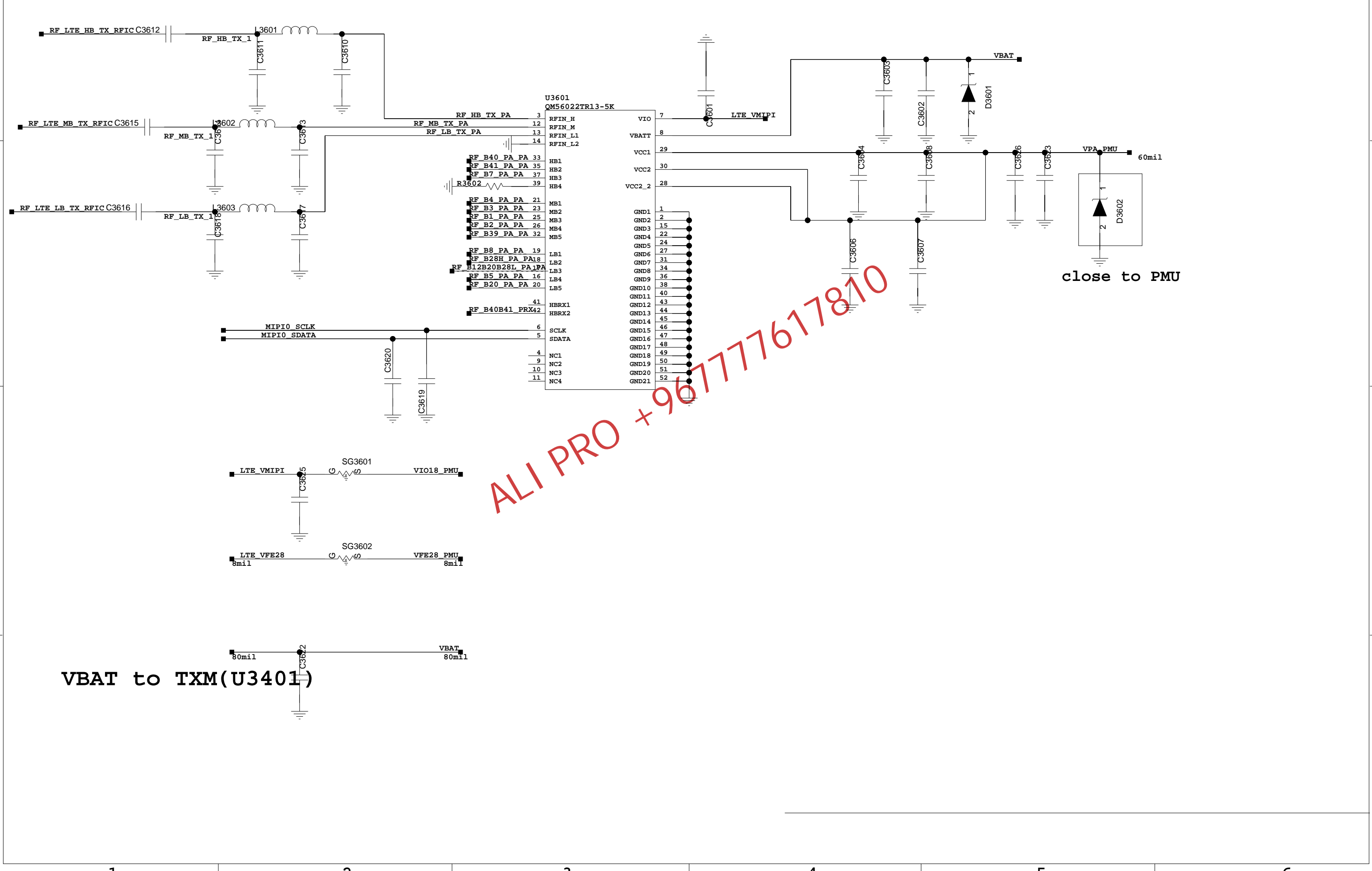


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35\_RF SWITCH

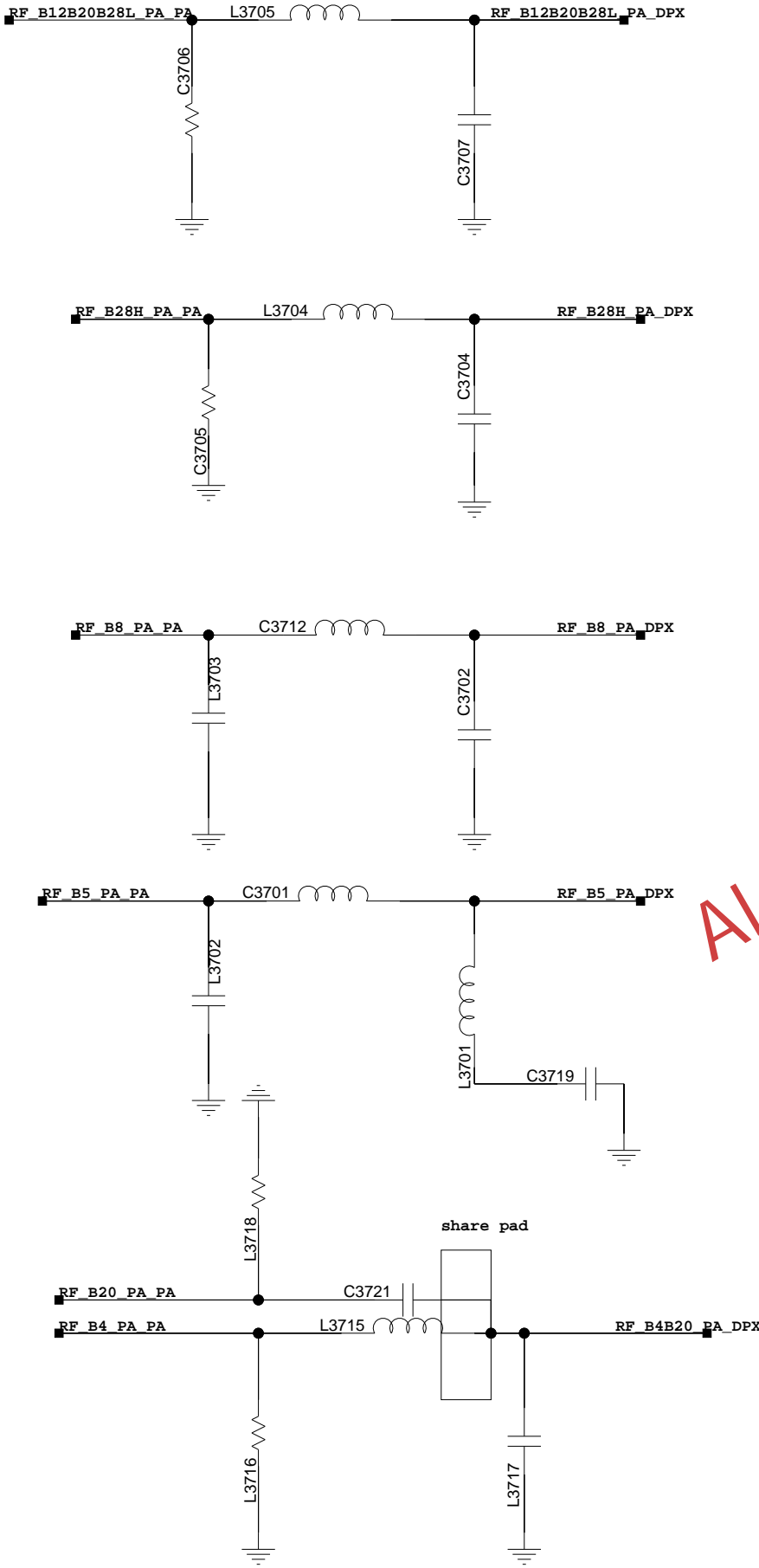


36\_MMPA

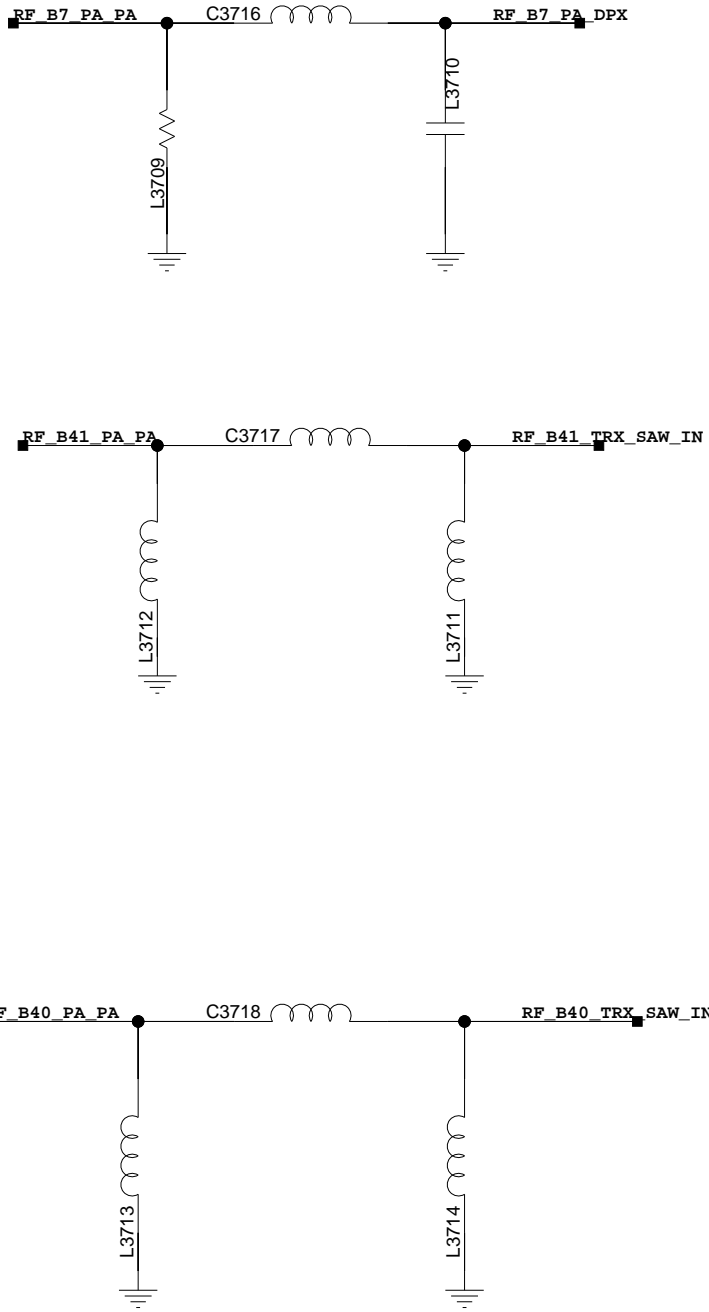
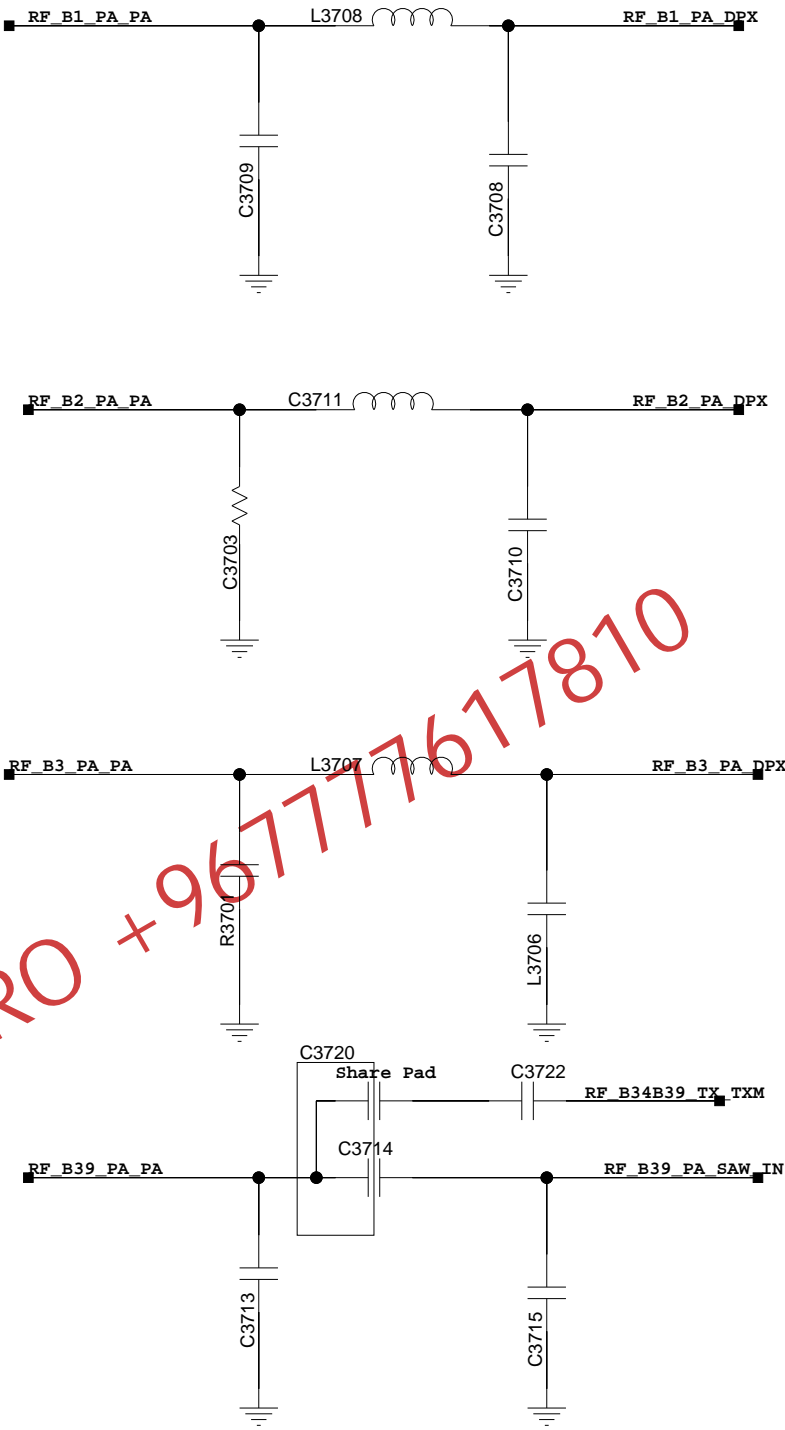


# 37\_MATCHING\_CIRCUIT\_of\_MMMBPA

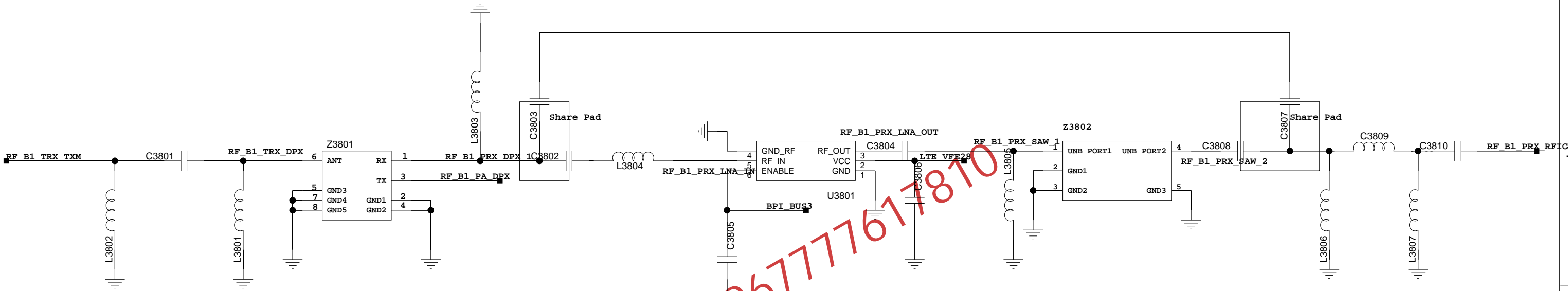
Close to MMB PA



Close to MMB PA

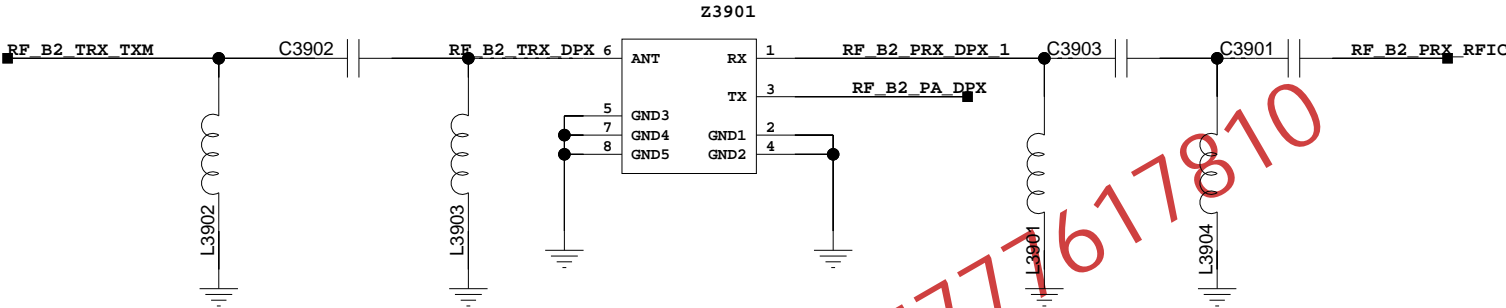


38\_TRX B1 TRX



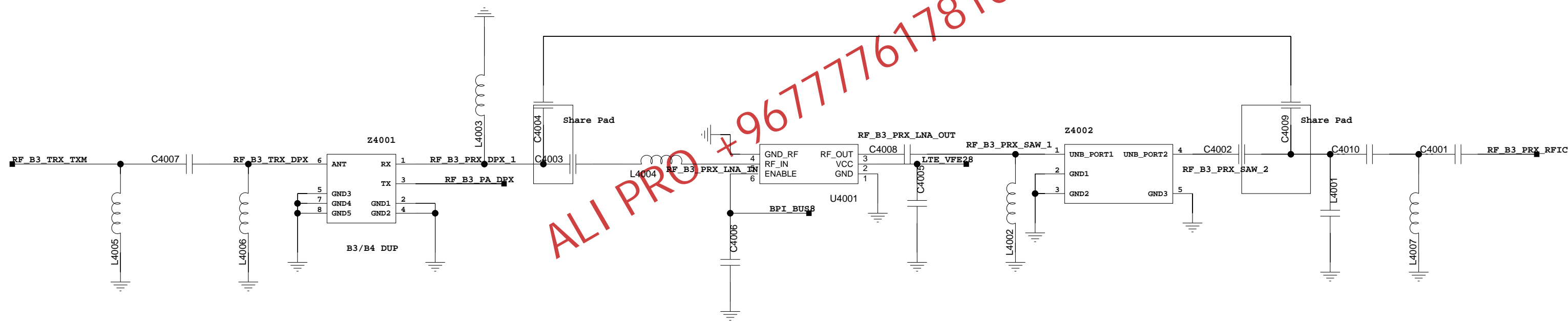


40\_TRX\_B2

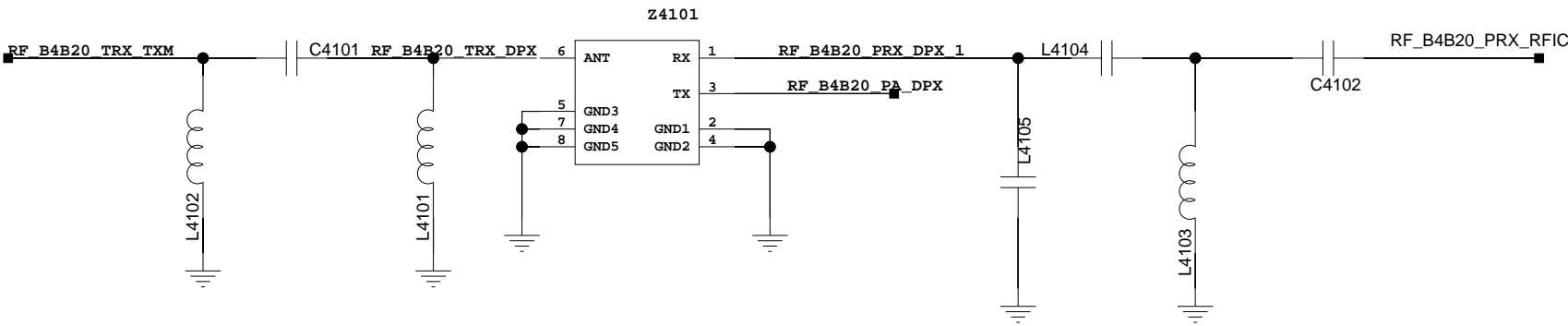


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40\_TRX B3



41\_TRX\_B4/B28\_TRX\_dup



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42\_Reserved

123456

A

B

C

D

ALI PRO +967777617810

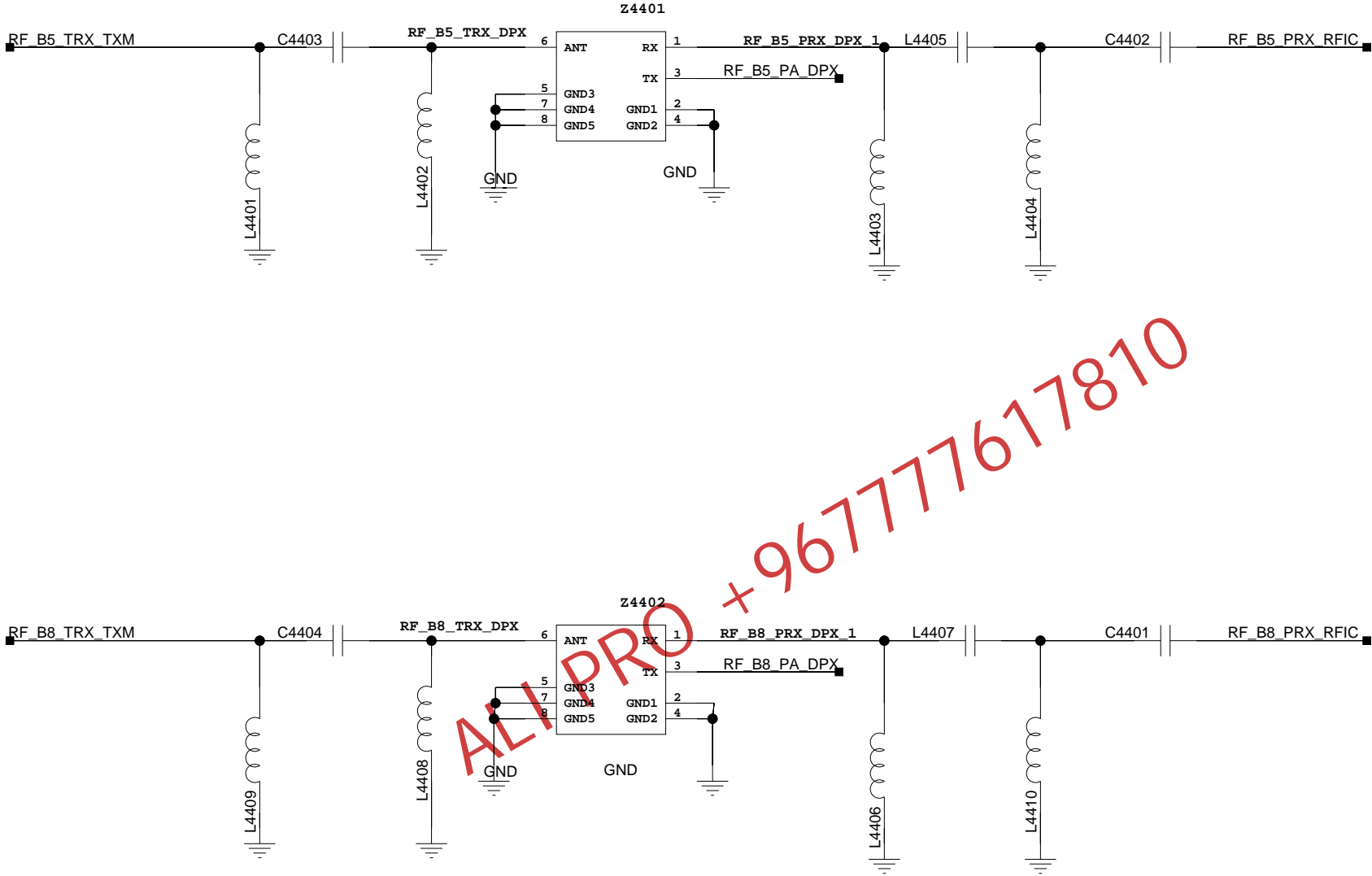
123456

43\_Reserved

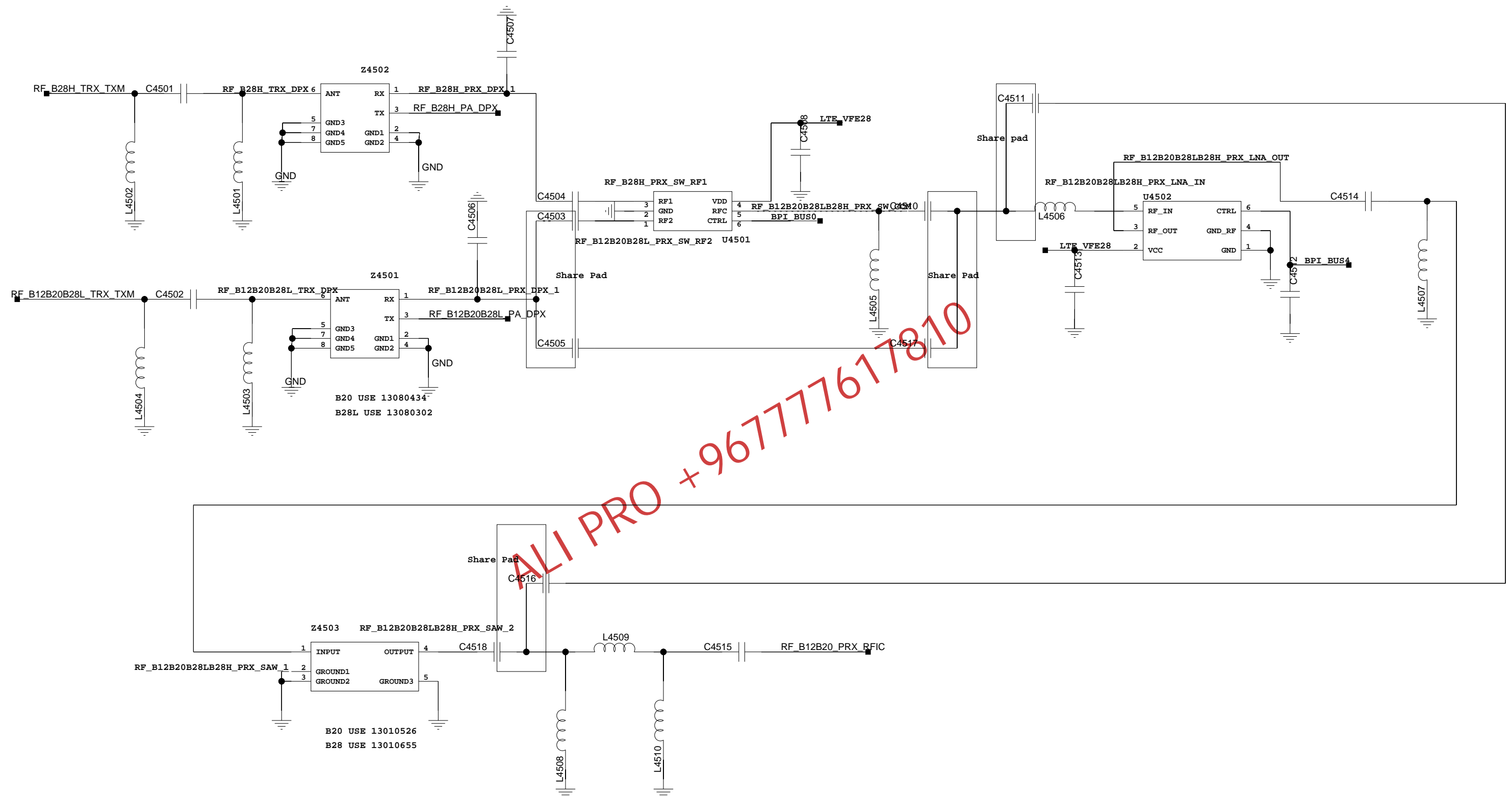
1	2	3	4	5	6
A					A
B					B
C					C
D					D

ALI PRO +967777617810

44\_TRX\_B5/8



45 TRX B12/B20/28	
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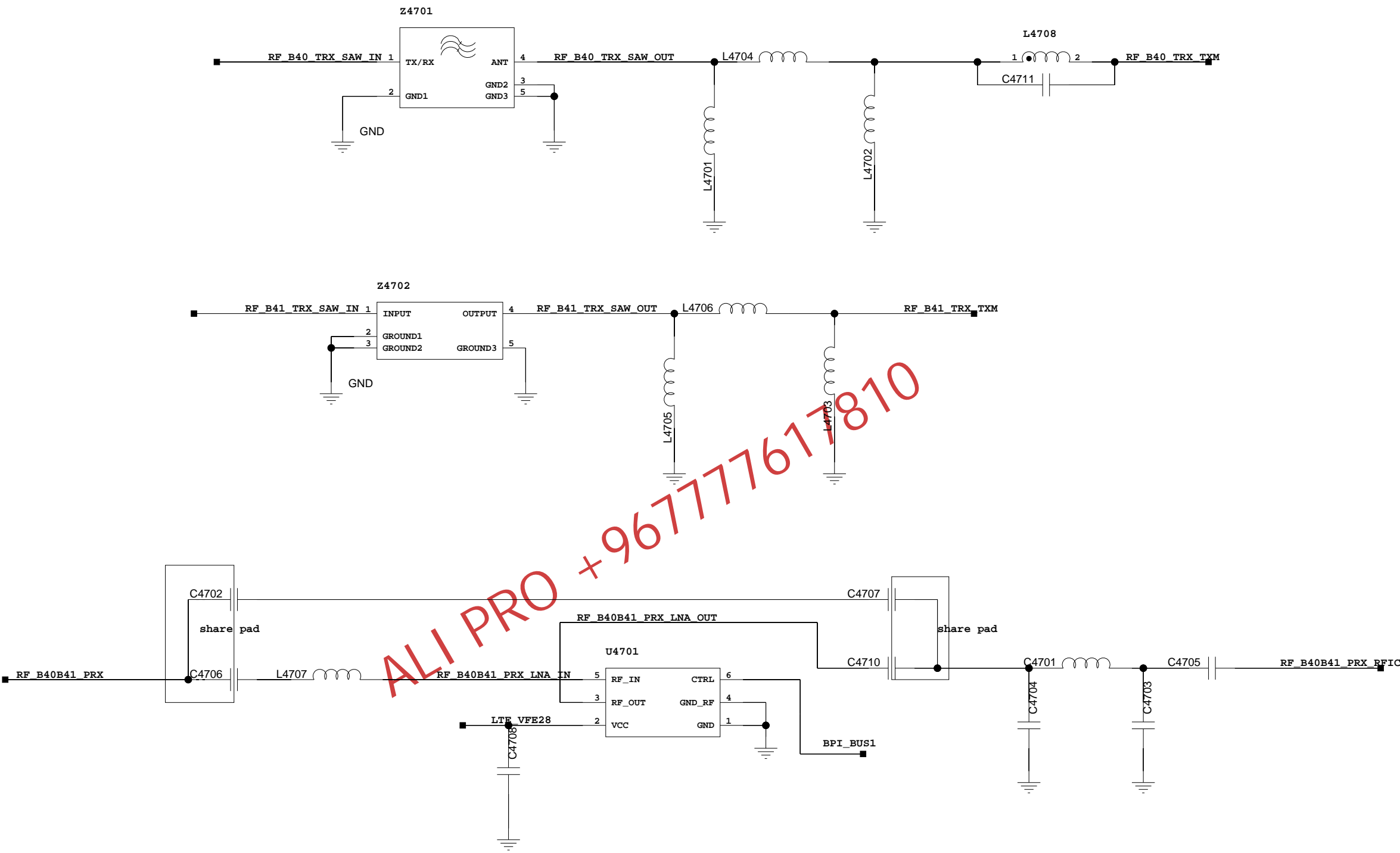
46\_Reserved

1	2	3	4	5	6
A					A
B					B
C					C
D					D

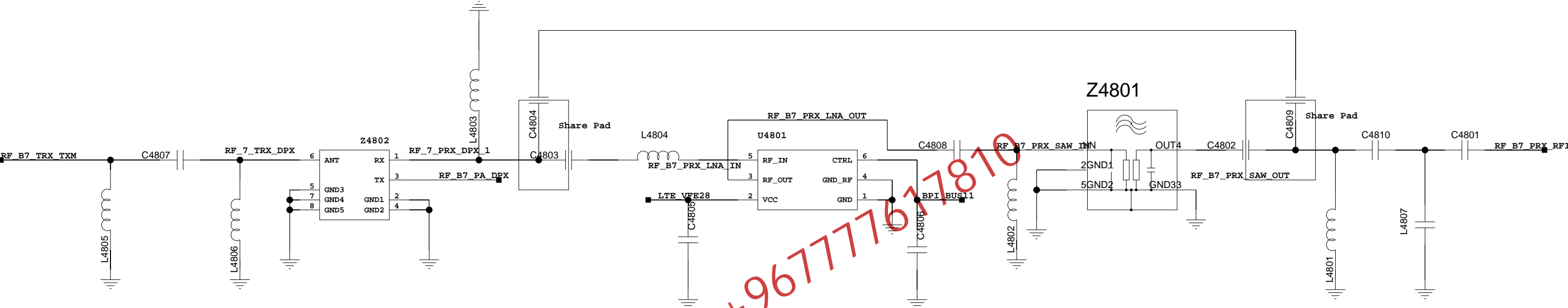
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47\_TRX\_40&PRX\_B38/B41

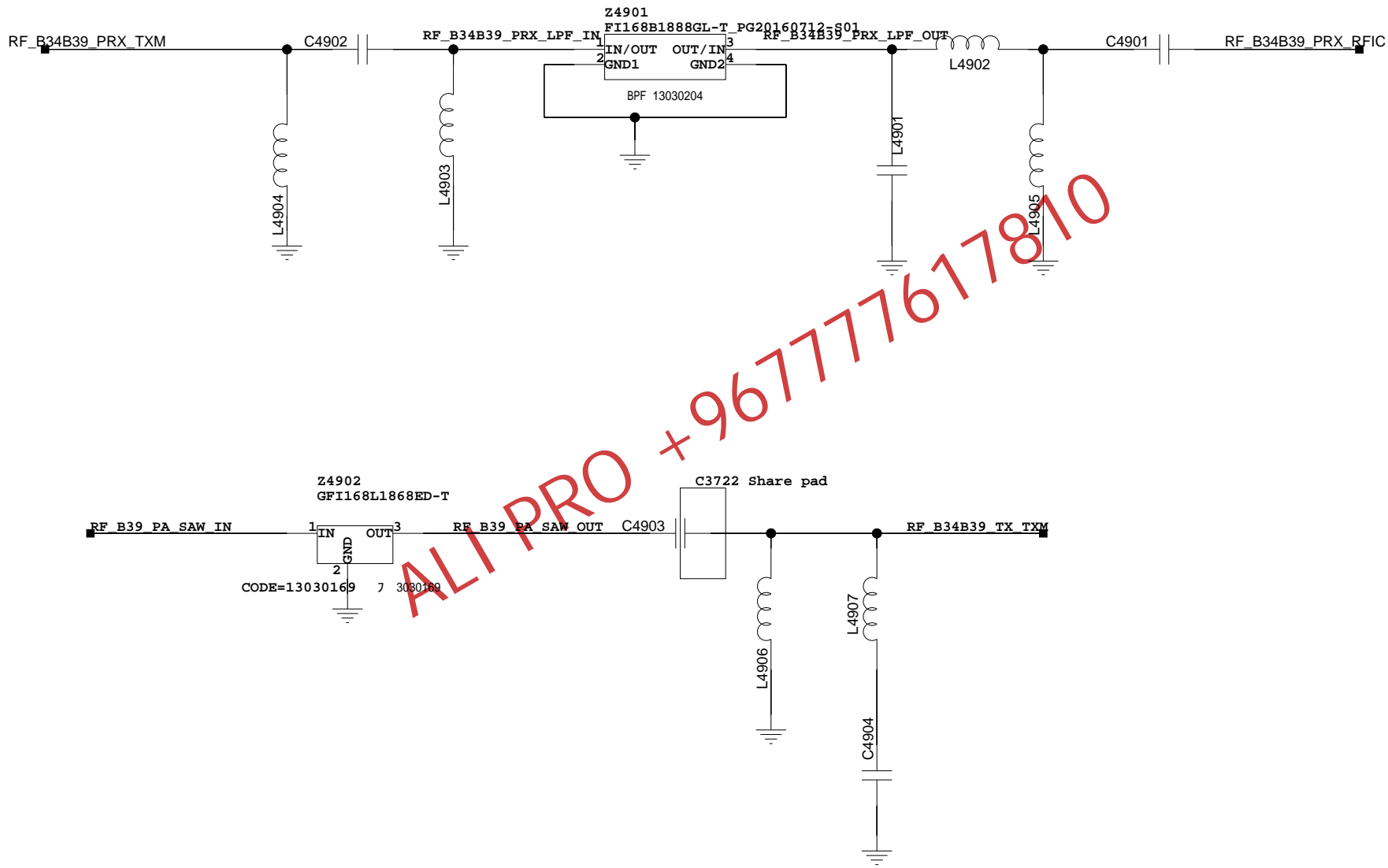


48\_TRX\_B7

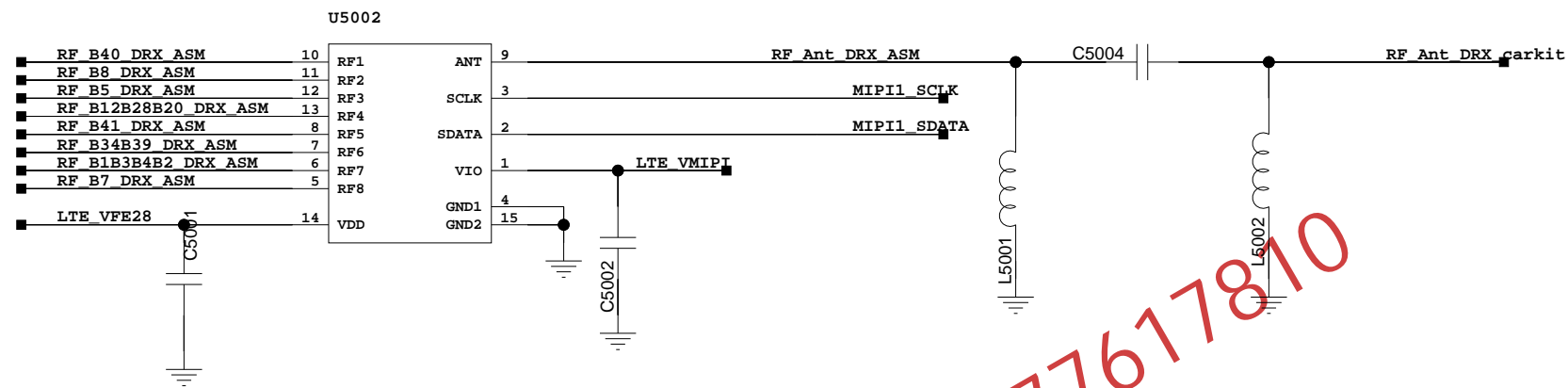


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49\_TRX\_B34/B39

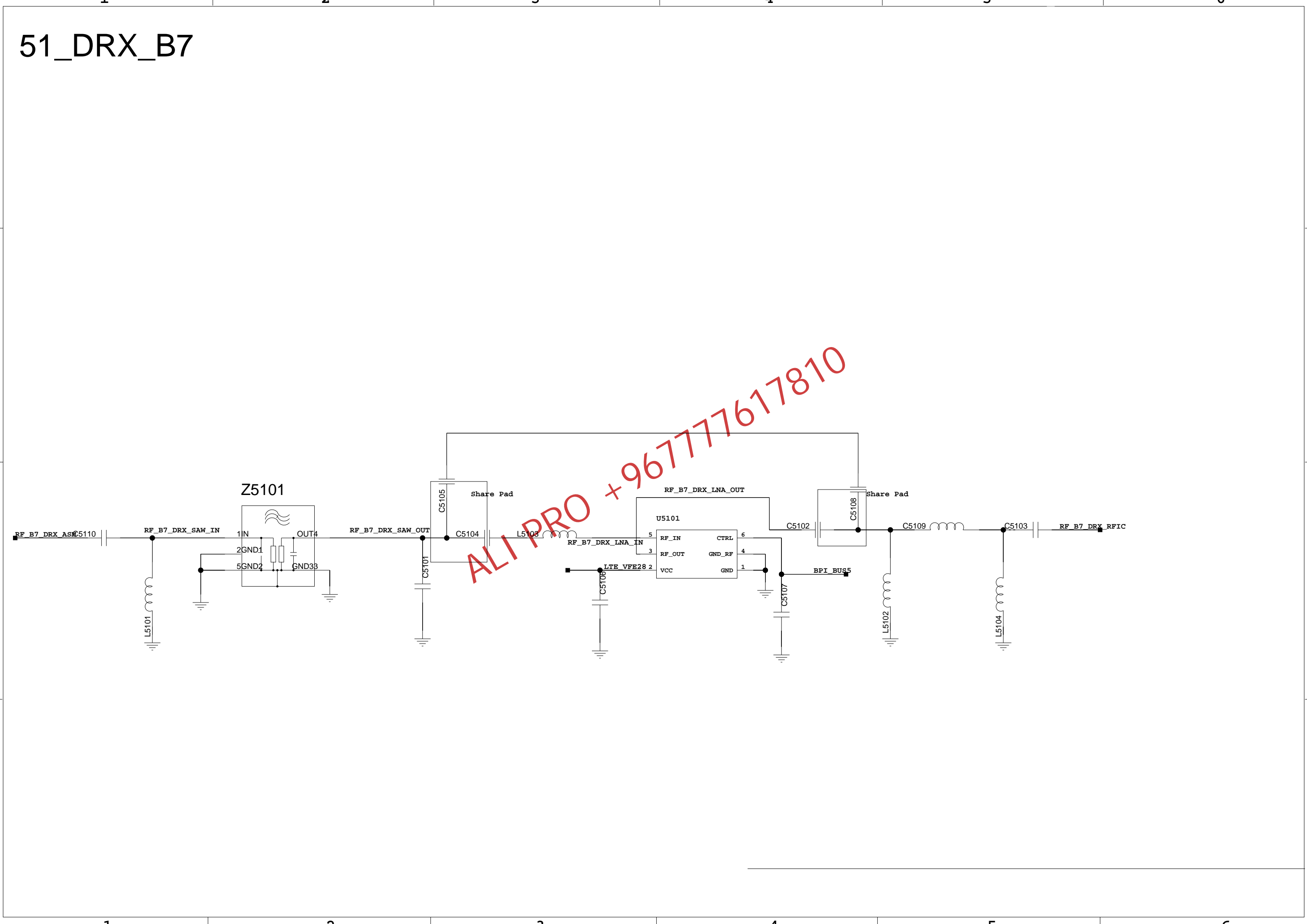


# 50\_Diversity\_ASM

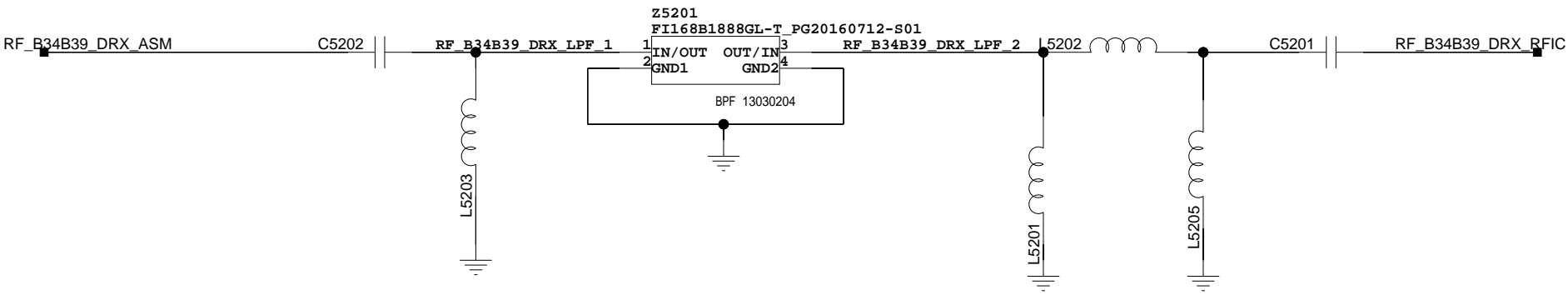


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51\_DRX\_B7

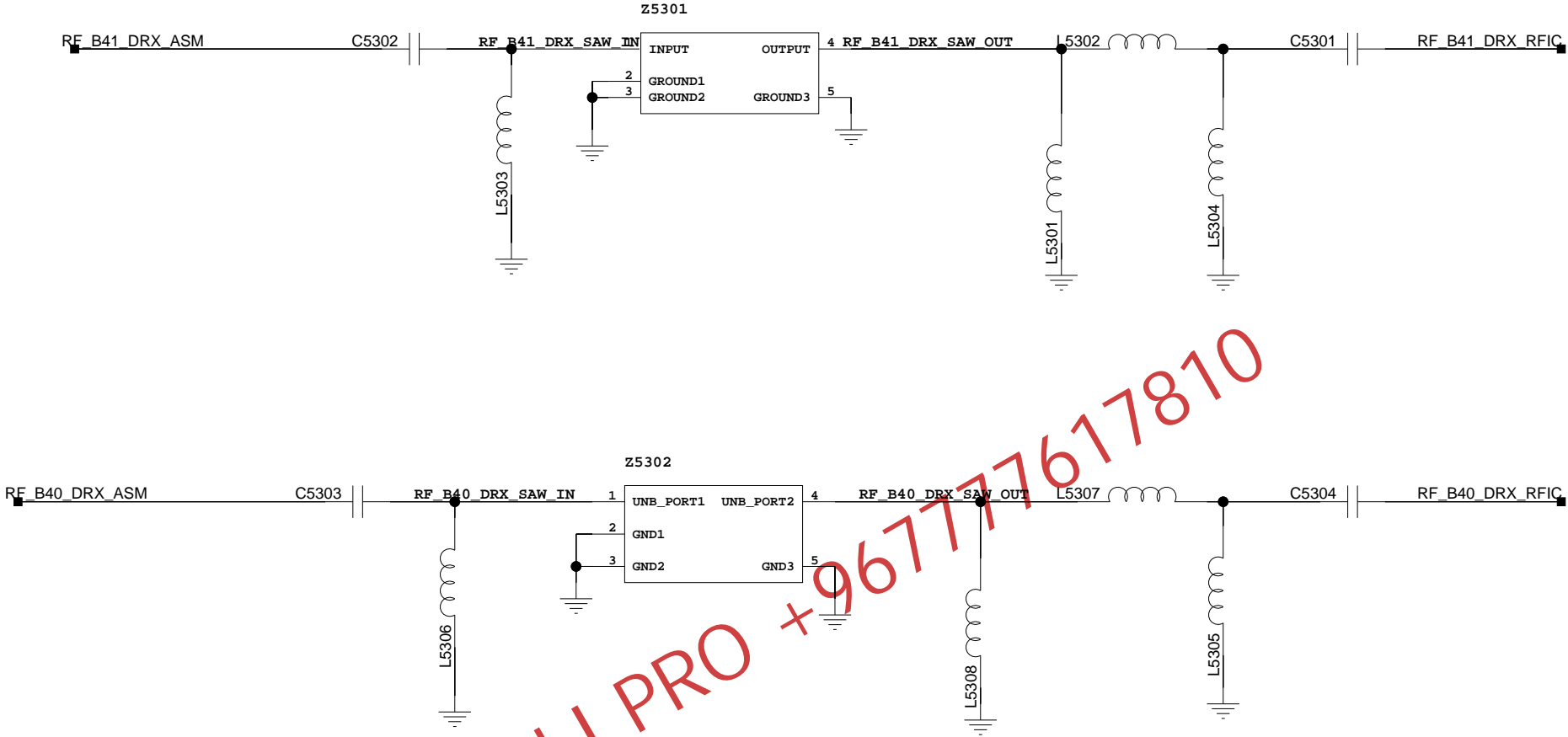


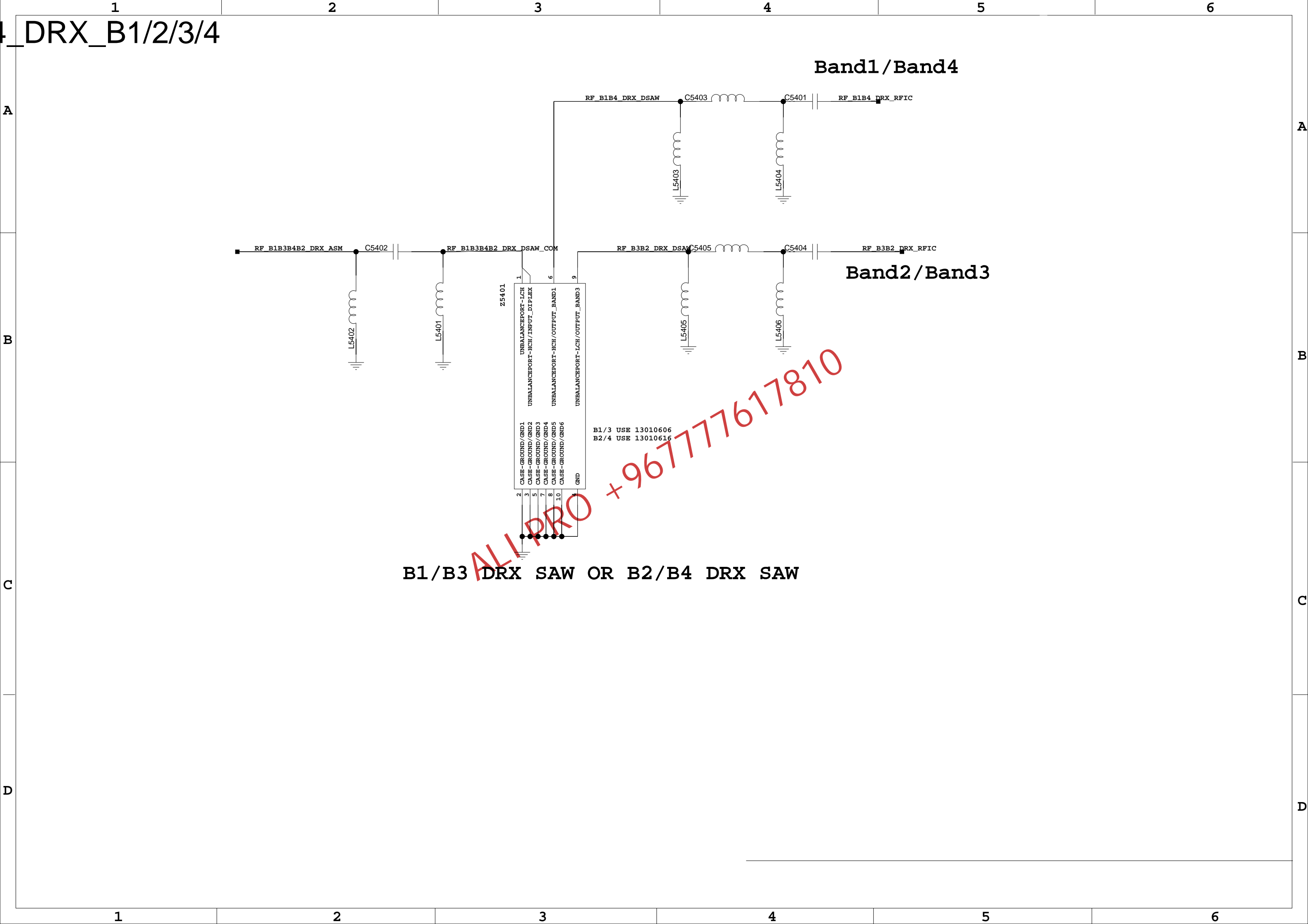
52\_DRX\_B34/39



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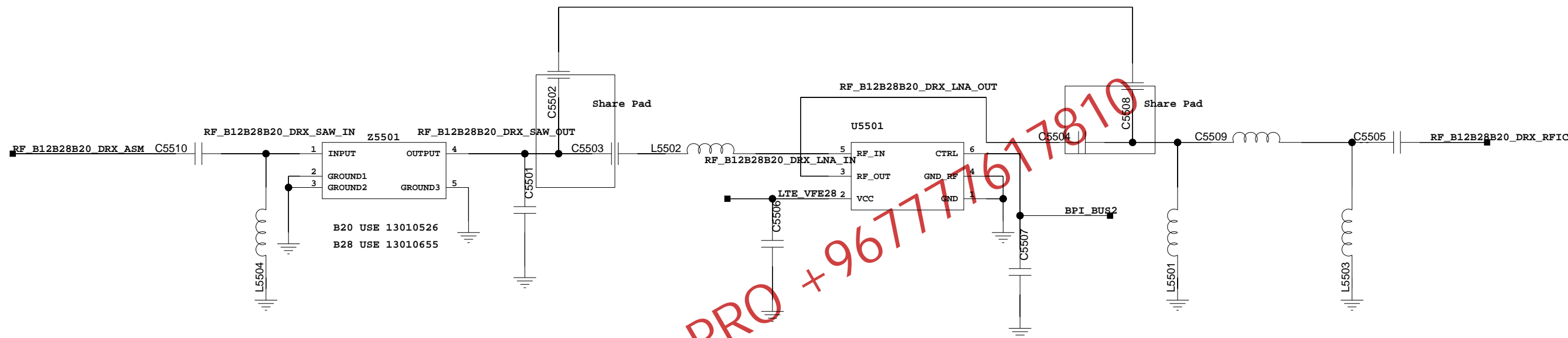
53\_DRX\_B38/41/40



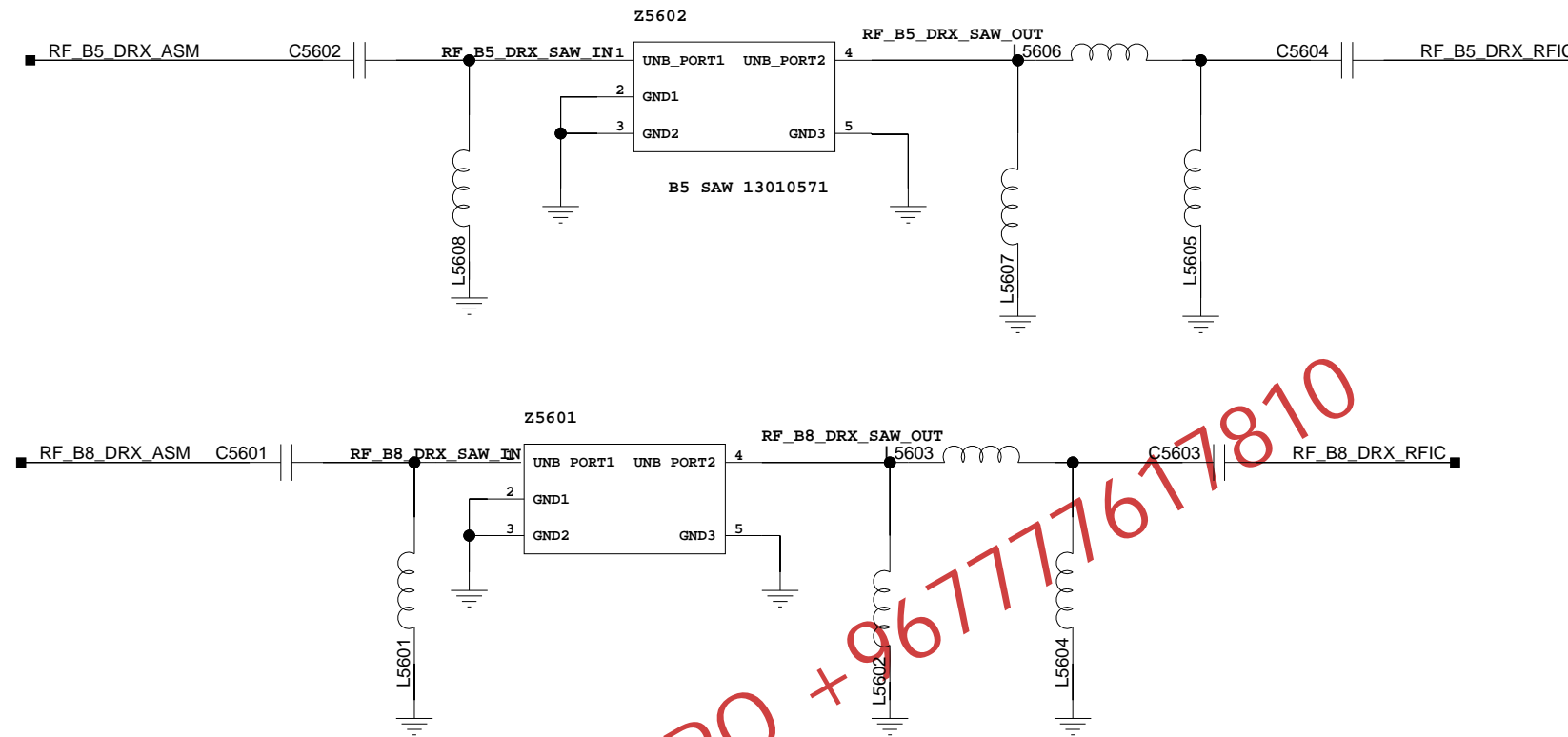




# 55\_DRX\_B28/20/12



# 56\_DRX\_B5/B8



57\_Reserved

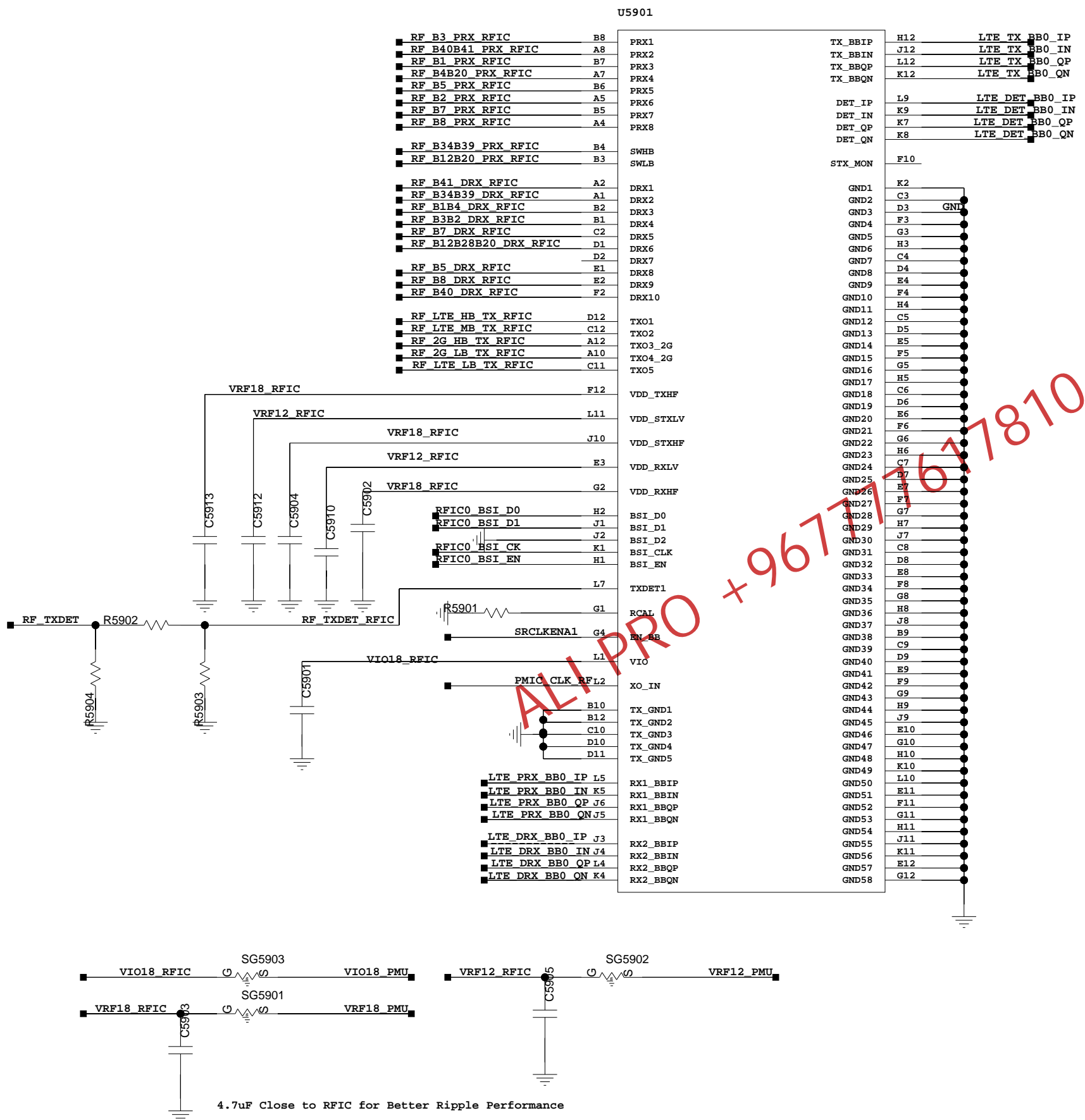
	1	2	3	4	5	6
A						
B						
C						
D						

ALI PRO +967777617810

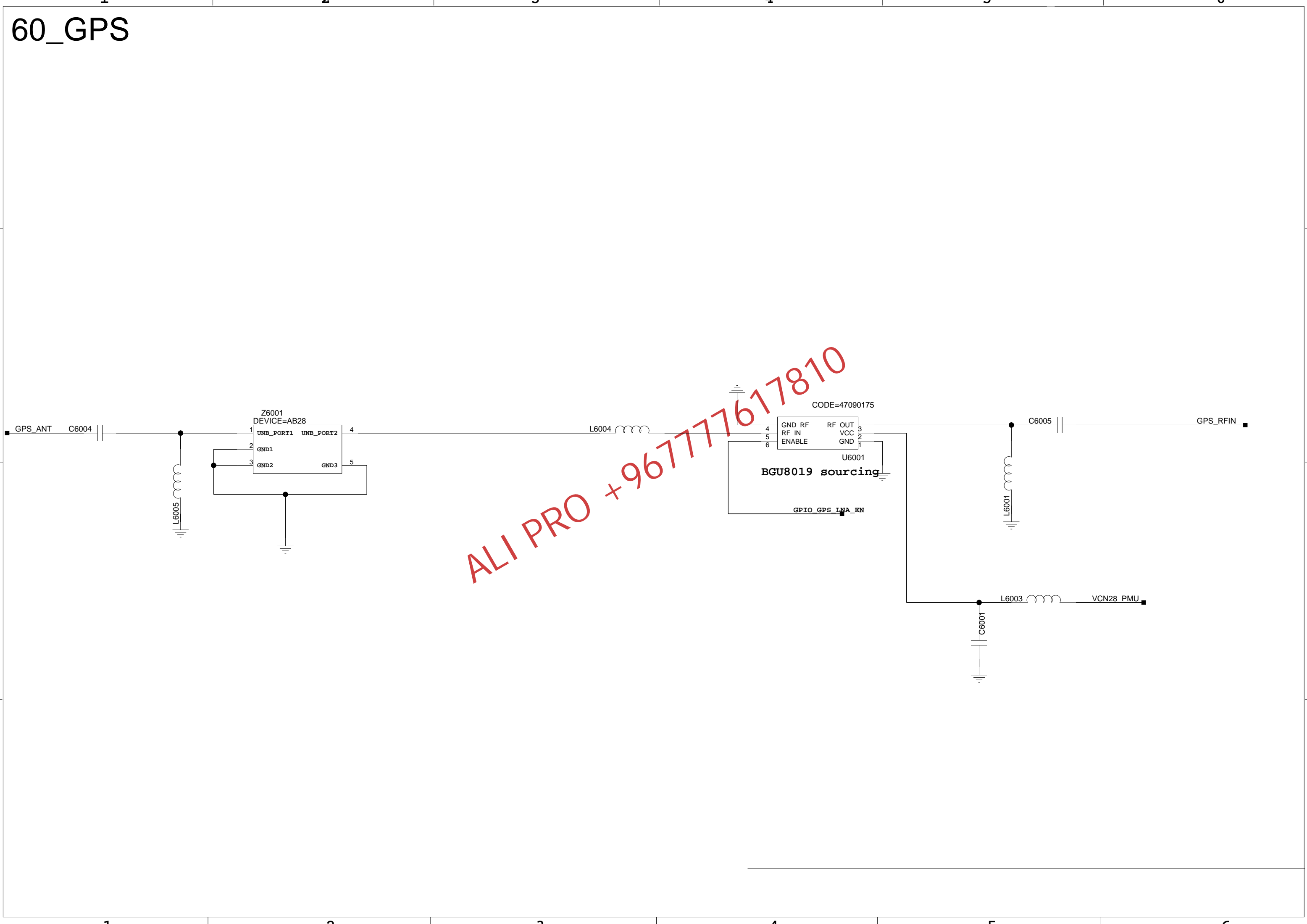
58\_Reserved

1	2	3	4	5	6
A					A
B					B
C					C
D					D

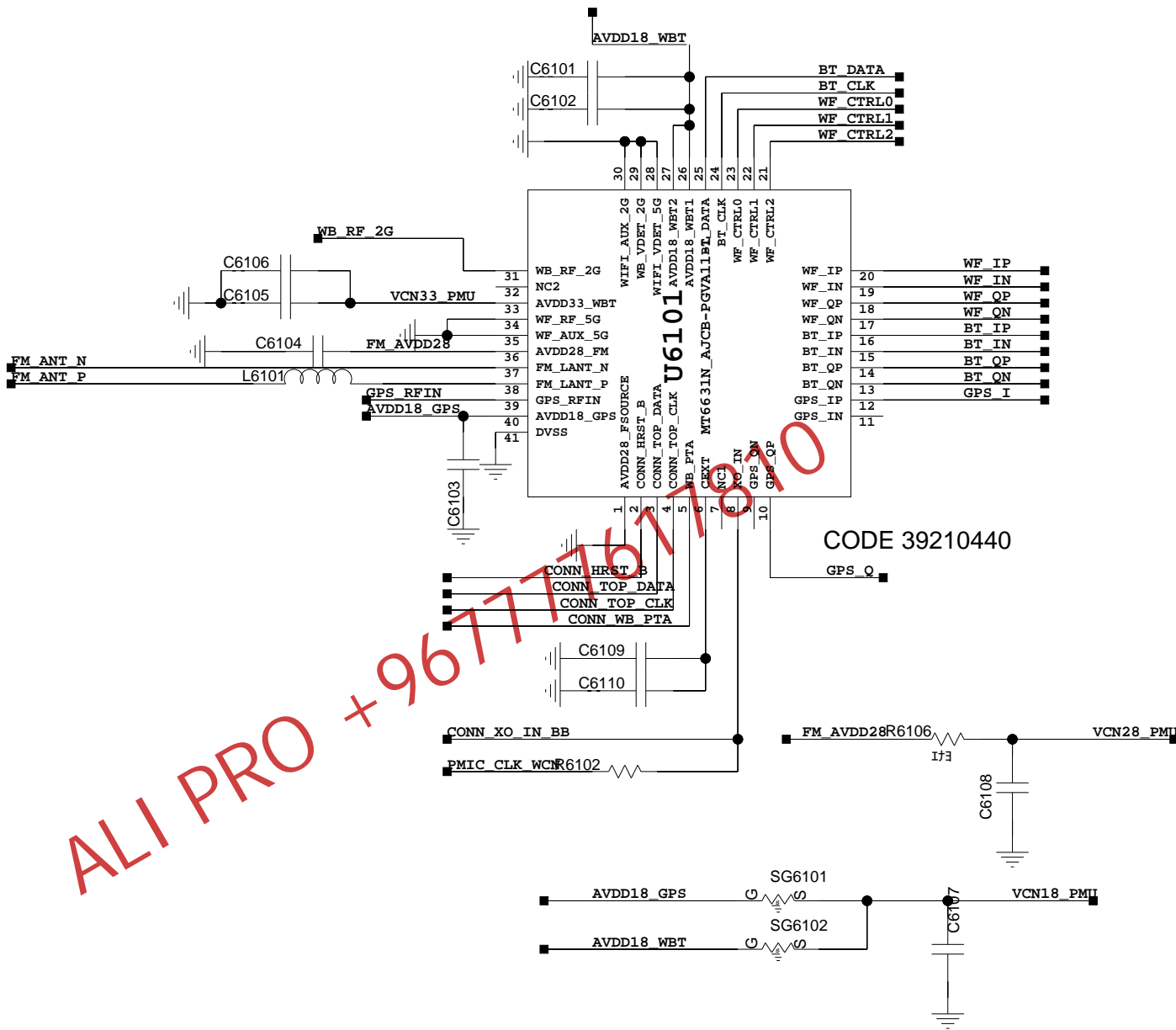
ALI PRO +967777617810



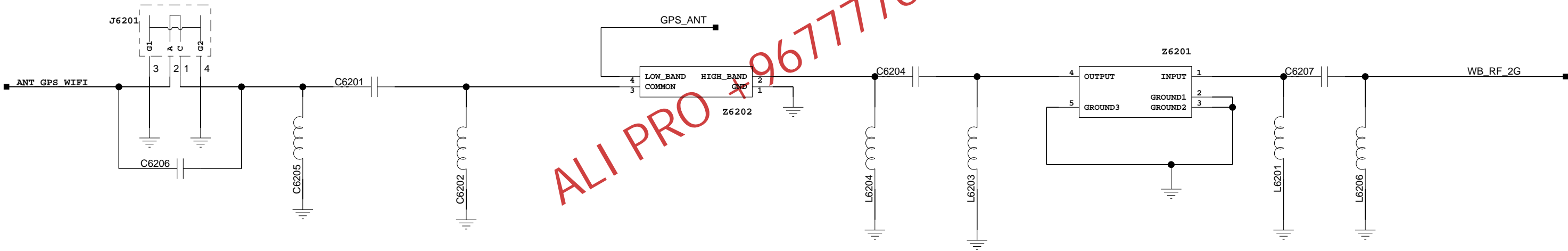
60\_GPS



61\_MT6631B



62\_MT6625 RF





63.Reserved

A

B

C

D

A

B

C

D

1

2

3

4

5

6

1

2

3

4

5

6

ALI PRO +967777617810

	1	2	3	4	5	6
A	65.Reserved					
B						
C						
D						

ALI PRO +967777617810

1

2

3

4

5

6

65.Reserved

A

A

B

B

C

C

D

D

1

2

3

4

5

6

ALI PRO +967777617810

# 66 ANT TUNER

ALI PRO +967777617810

1

2

3

4

5

6

# 67.ANTENNA MATCH

A

A

B

B

C

C

D

D

1

2

3


4


5


6

ALI PRO +967777617810

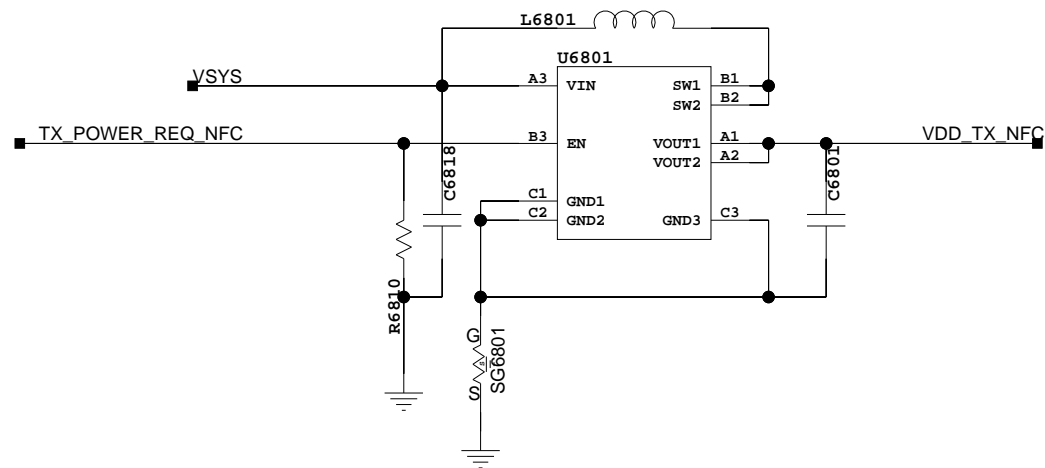
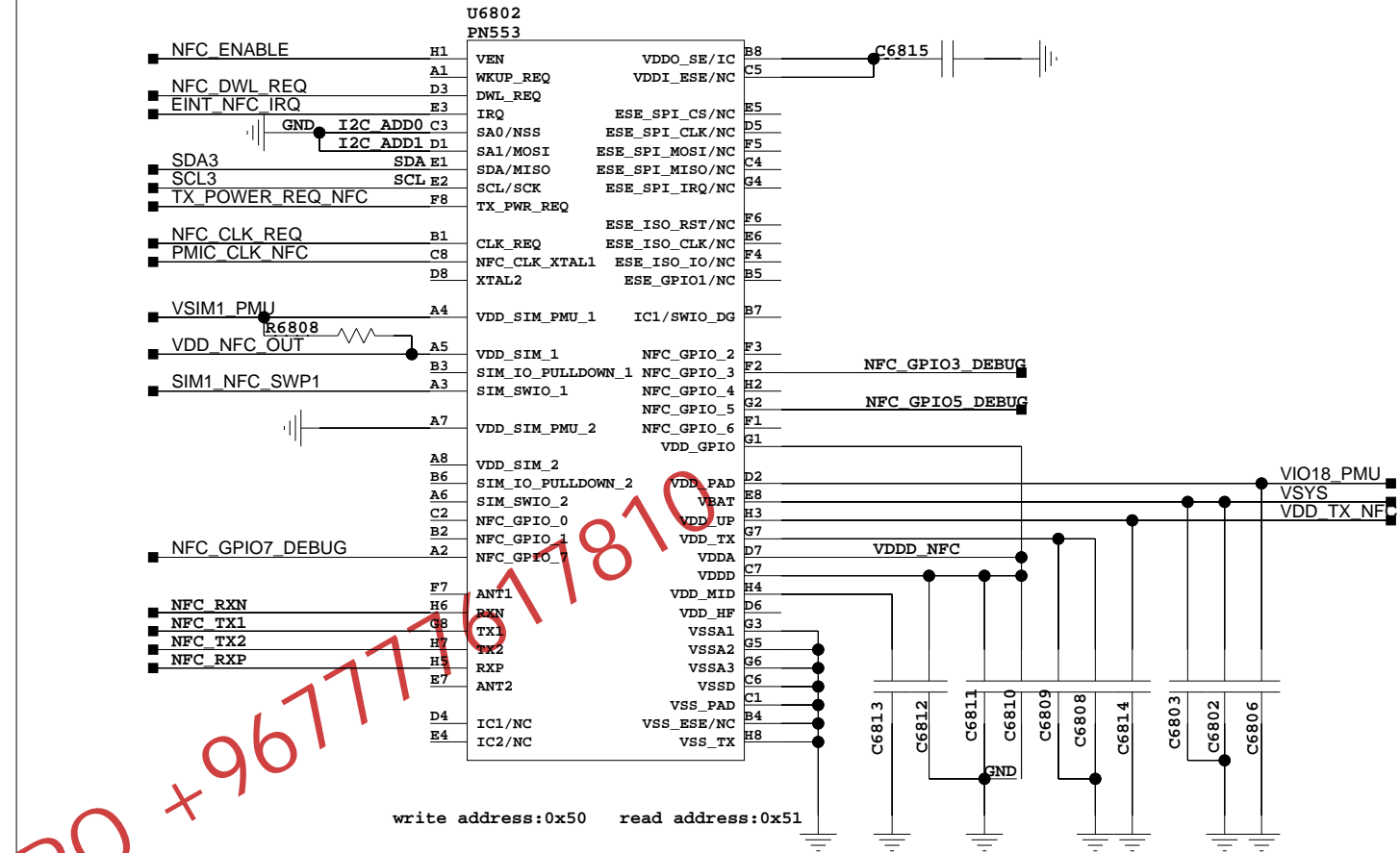
## 68. NFC\_BB

TP6808  NFC\_GPIO7\_DEBUG

TP6803  NFC\_GPIO3\_DEBUG

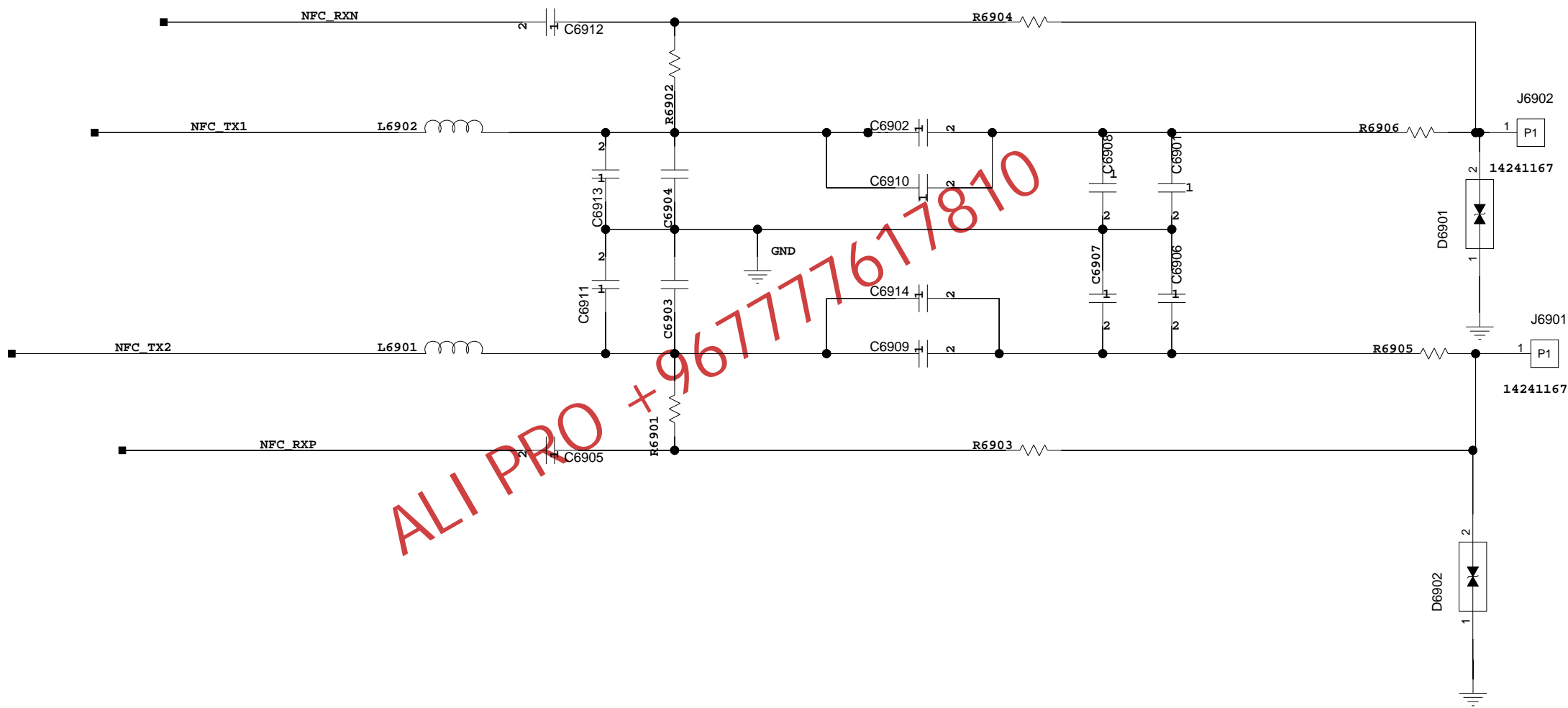
TP6810  NFC\_GPIO5\_DEBUG

Page	Refdes	NFC SMT	NFC NC
page68	R6808	DNI	SMT
page2	C208	SMT	DNI



\_SCHZH

69. ANT\_NFC



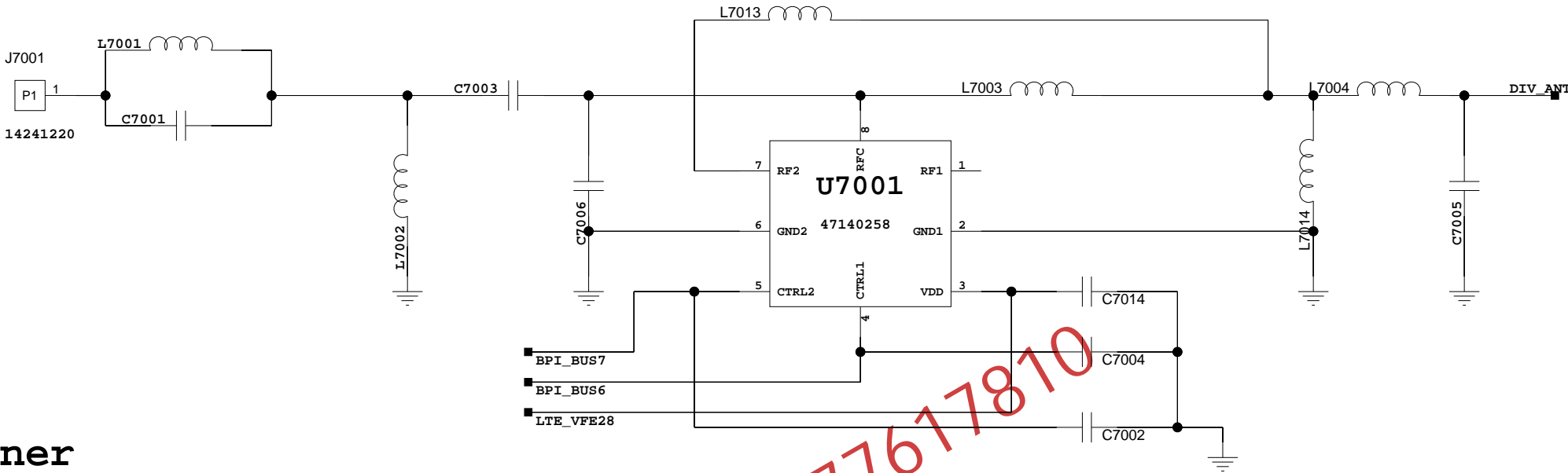
\_SCHZH

70.ANT\_DIV

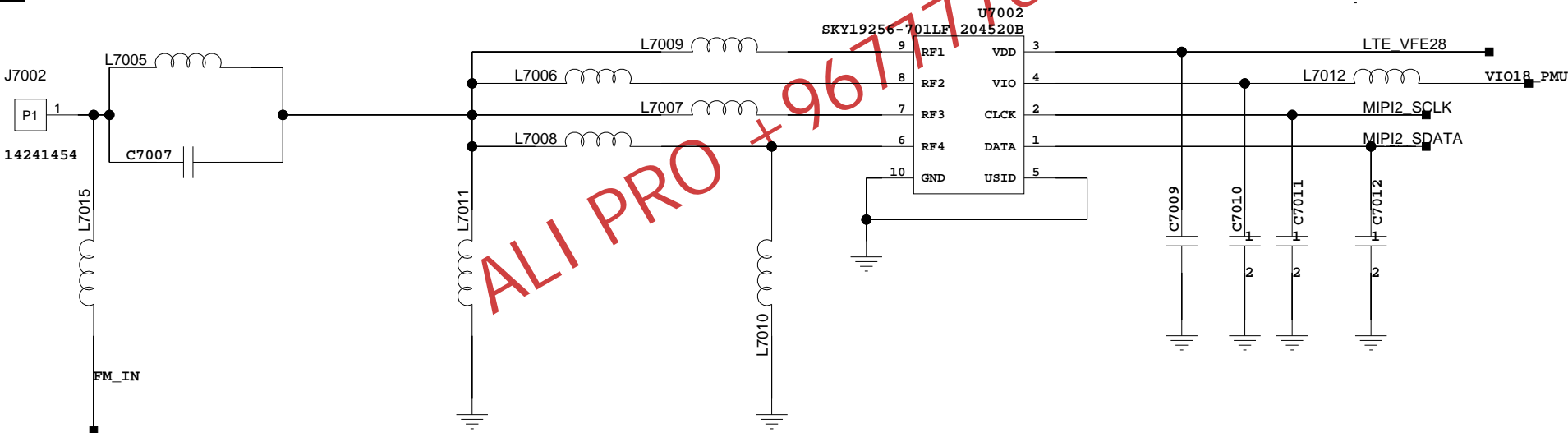
USID Setting Table(Register:0X1F D3:D0)

USID PIN BIAS Condition	USID			
	D3	D2	D1	D0
GND	0	1	1	0
Open	0	1	1	1
VIO	1	0	0	1

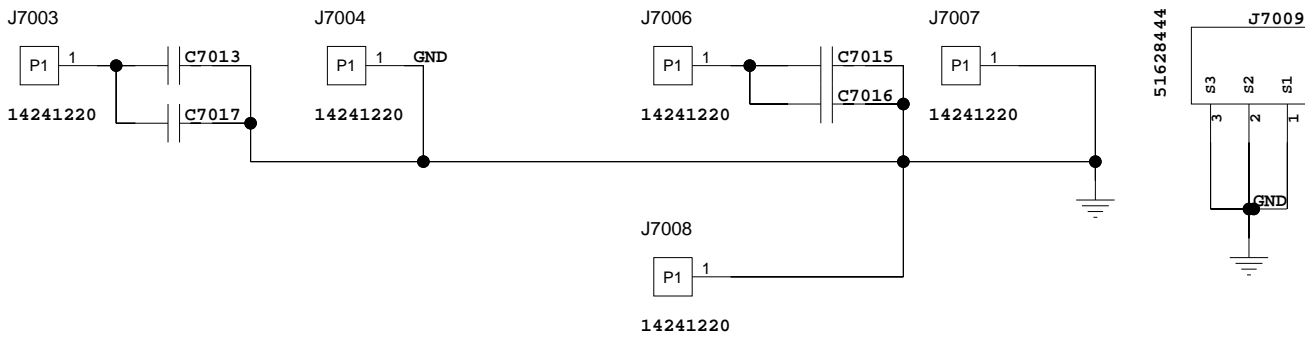
DIV ANT



Div\_Tuner



GND on TOP

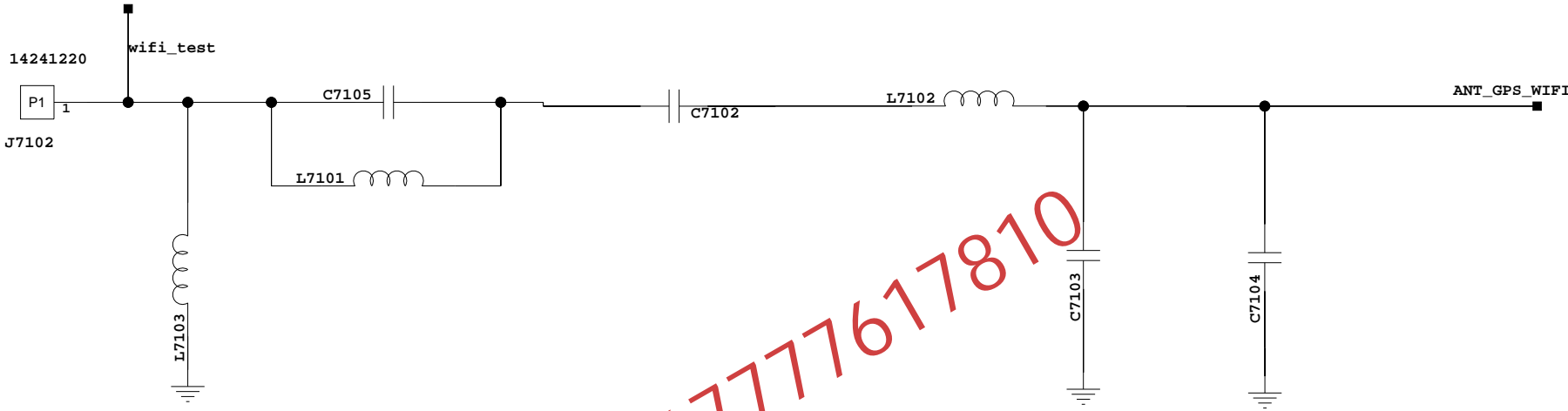


\_SCHZH

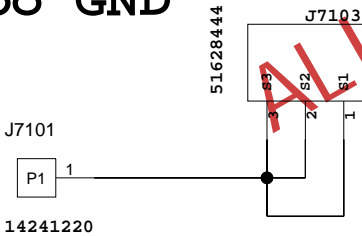


71 ANT\_GPS\_WIFI

Combo Feed



Combo GND



72.ANT\_Tuner\_Controller

