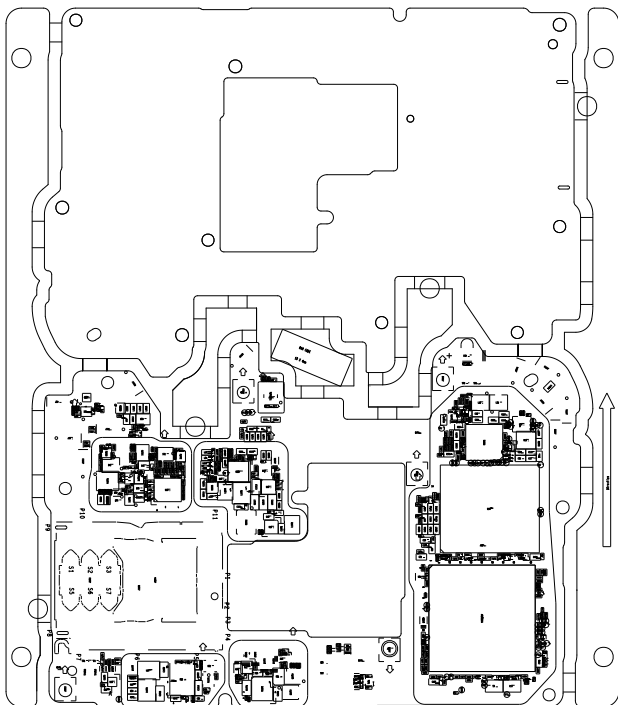
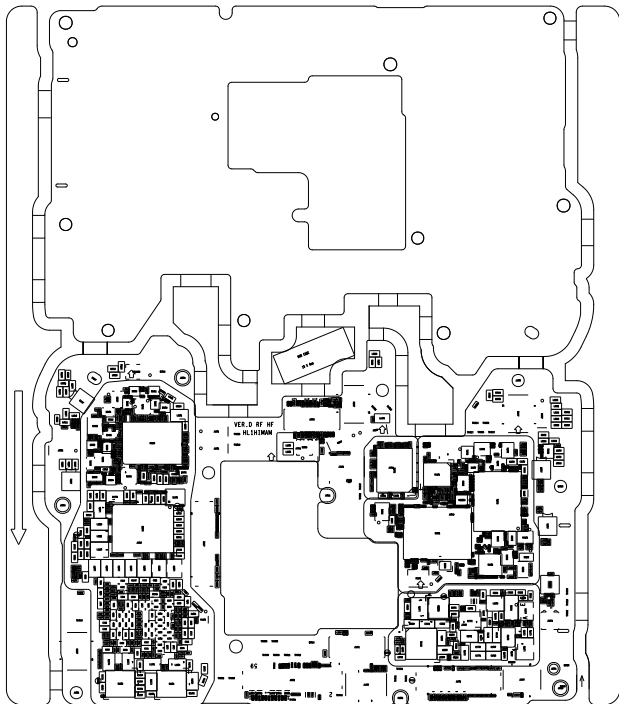




HL1HIMAM VER.D SILKSCREEN TOP
SPELL MODE:1x2



HL1HIMAM VER.D SILKSCREEN BOTTOM
SPELL MODE:1x2

123456

A

Baseband Schematic

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- C
- D
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 2. Block Diagram
 3. SOC PWR1
 4. SOC PWR2
 5. SOC PWR3
 6. SOC HS Interface
 7. SOC GPIO Interface
 8. SOC RF Interface
 9. SOC GND & NC
 10. Hi6421 LDO
 11. Hi6421 BUCK
 12. Hi6421 DIGITAL INTERFACE
 13. HI6422V320
 14. UFS and LPDDR4X
 15. Battery & Fuel gauge
 16. Charge Management
 17. TFT LCD Interface
 18. Direct Charge LoadSwitch
 19. Flash LED&TCAM
 20. Camera Interface
 21. TYPEC INTERFACE
 22. Codec HI6403
 23. MIC/VIB
 24. Headphone
 25. SMART PA
 26. X-Sensor
 27. IRDA
 28. SIM Card NANO SD
 29. FPC Interface
 30. Test Point/Shielding

MODEM Schematic

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34. SKY78113_ULTRA2.5_LB
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42. DRX LNA Band --6H02
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54. WIFI RF0
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56. GPS
57. NFC BB
58. ANT5/6/9 GPS/WIFI ANT
59. ANT3/4 DIV ANT /ANT FPC
60. ANT Tuner

1

2

3

4

5

6

2. Block Diagram

A

A

B

B

C

C

D

D

1

2

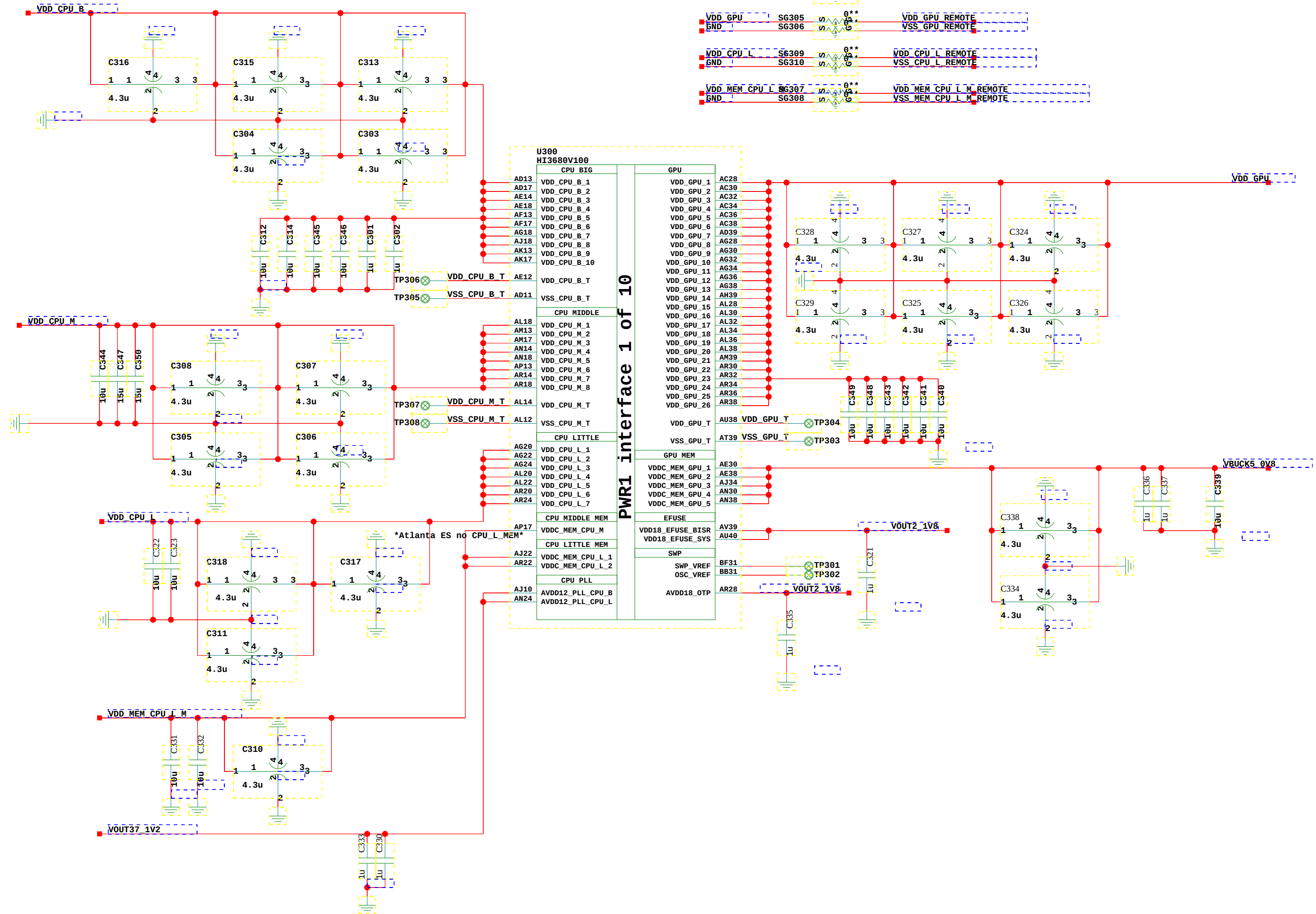
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4

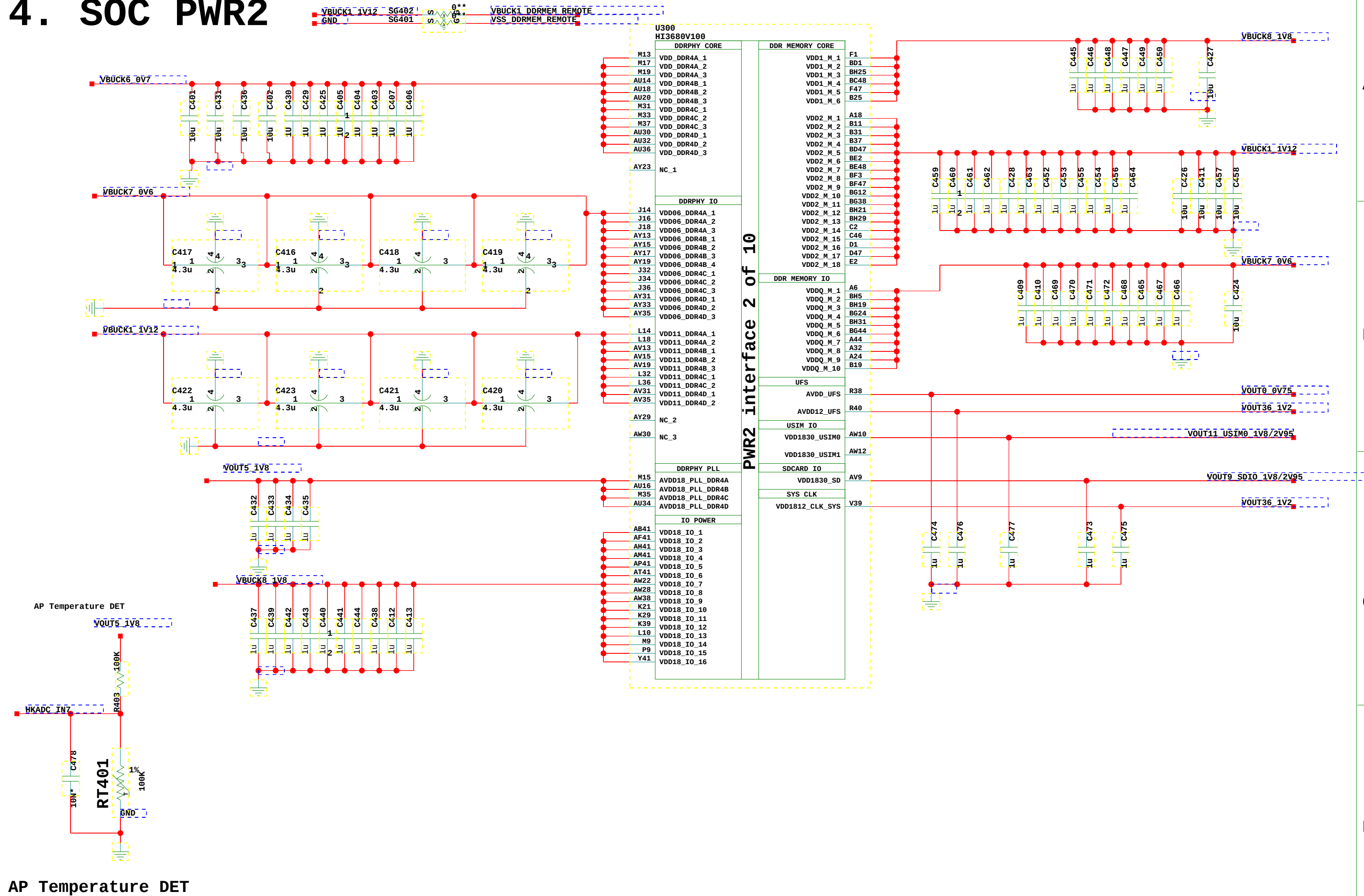
5

6

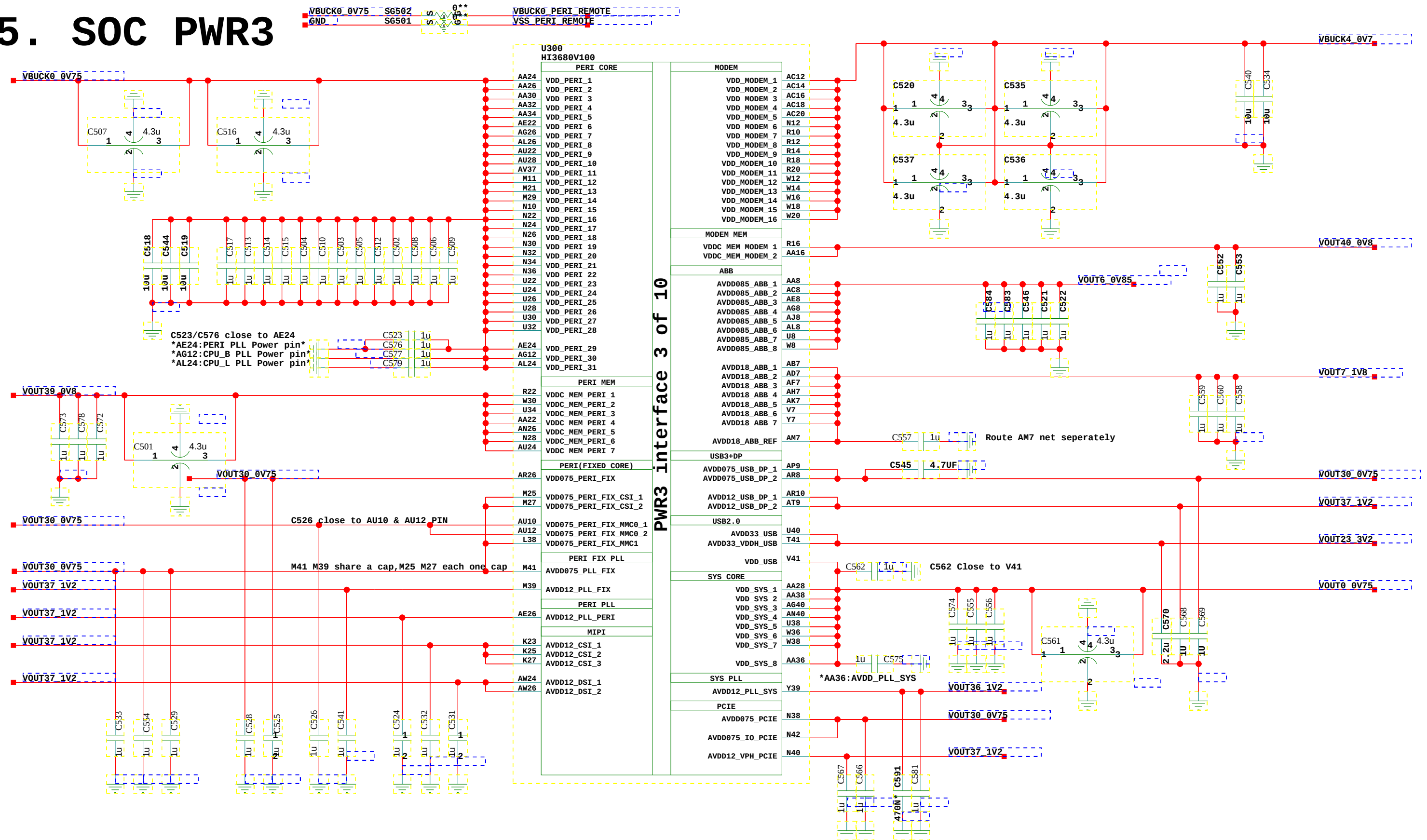
3. SOC PWR1



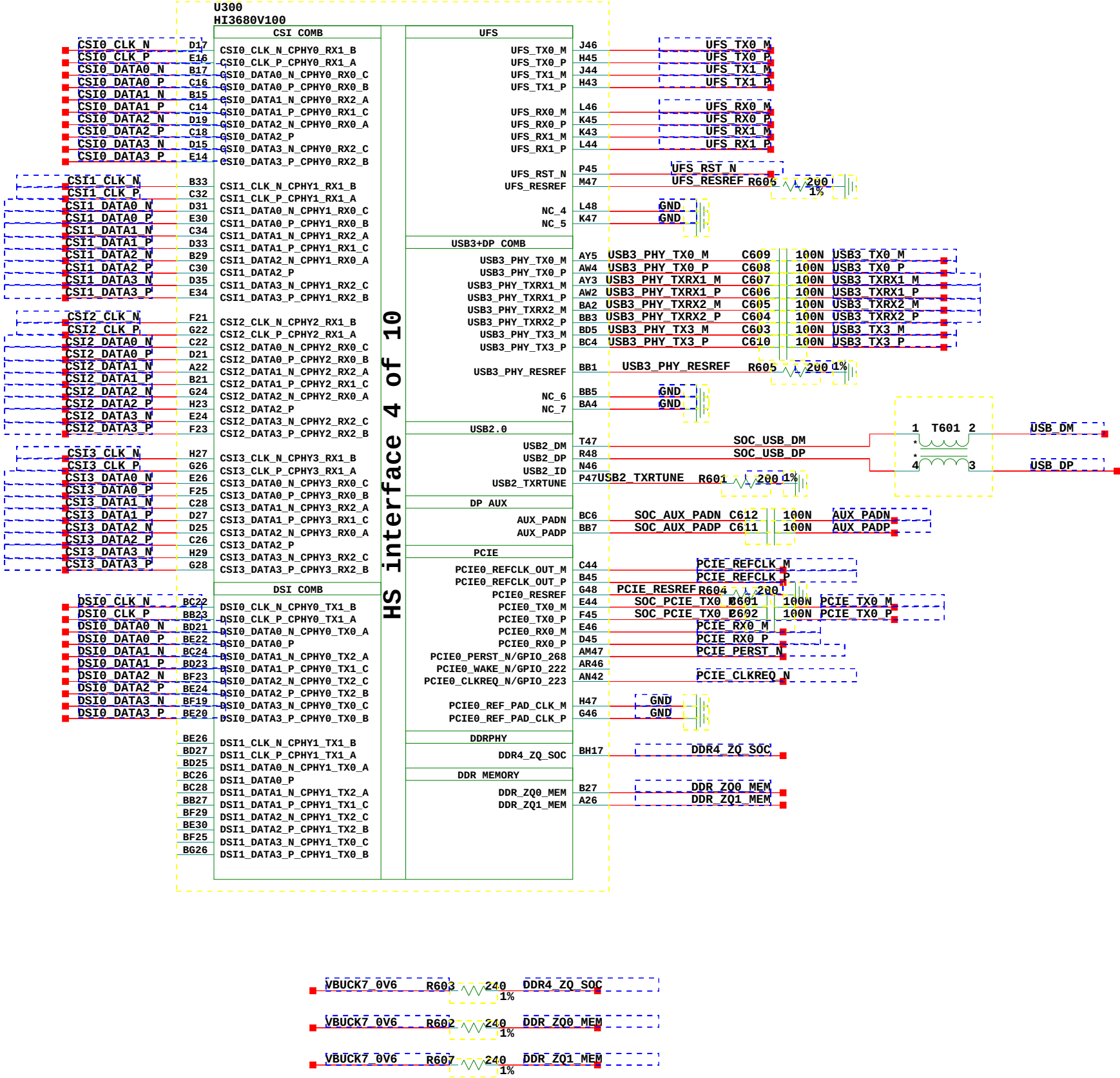
4. SOC PWR2



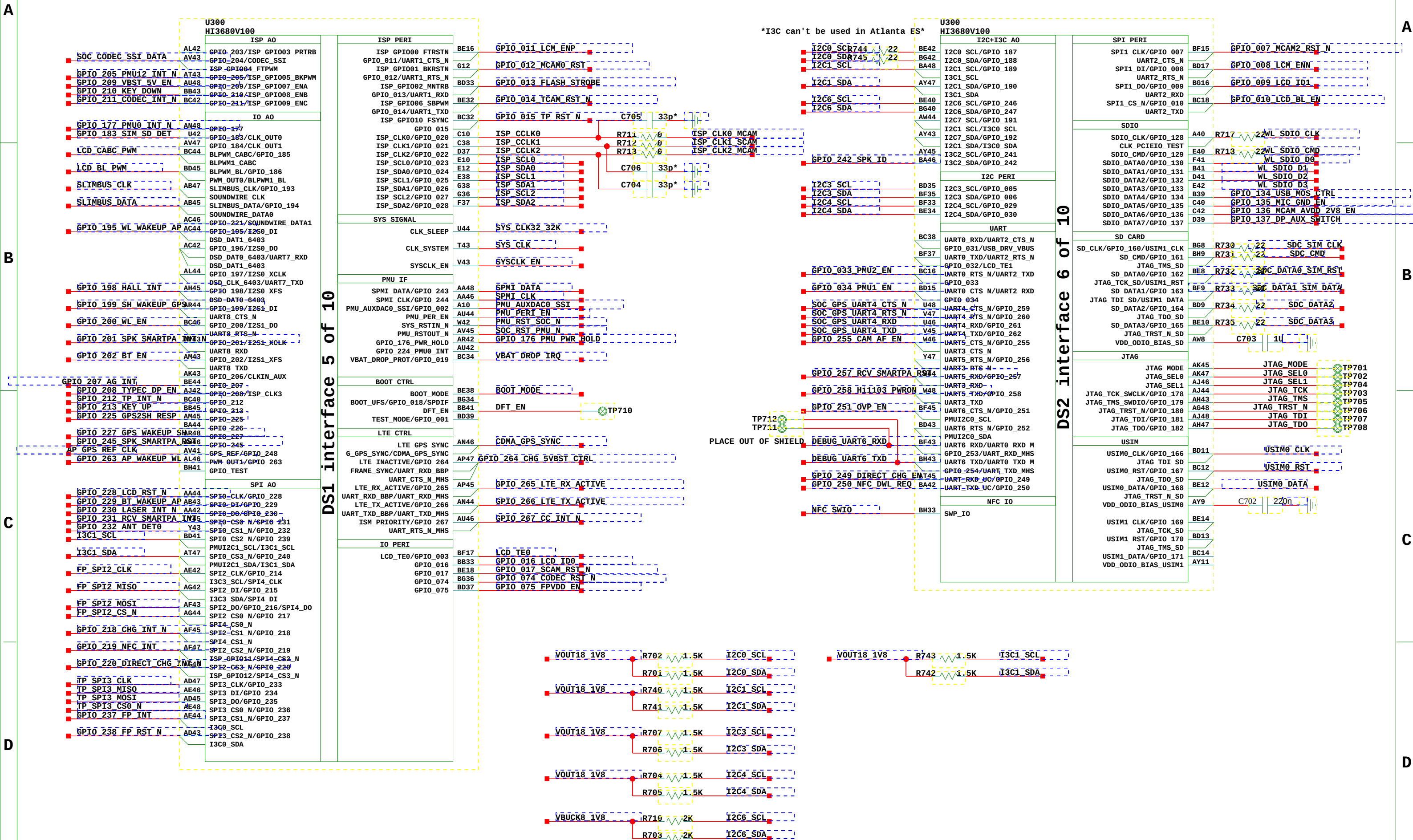
5. SOC PWR3



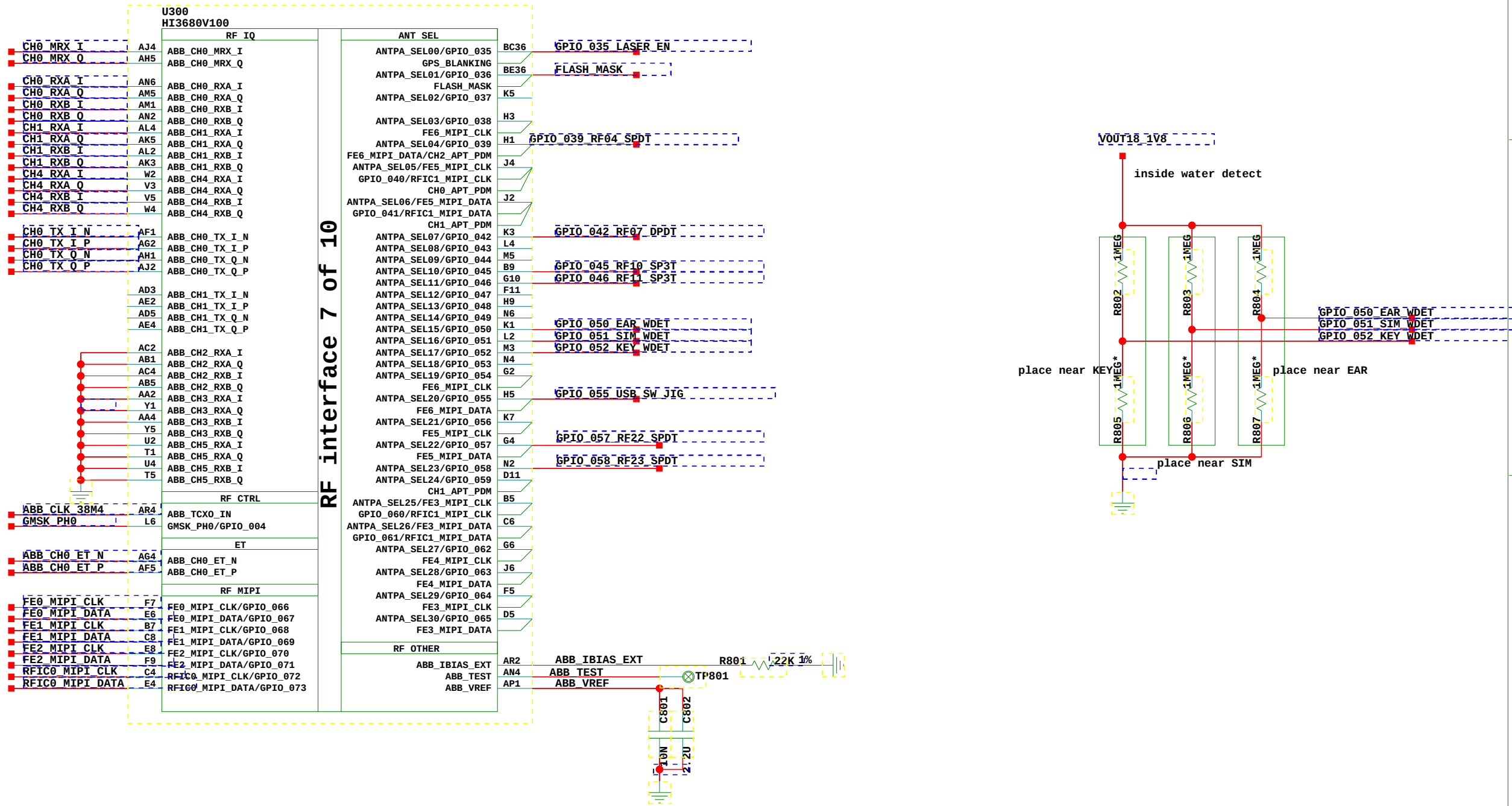
6. SOC HS Interface



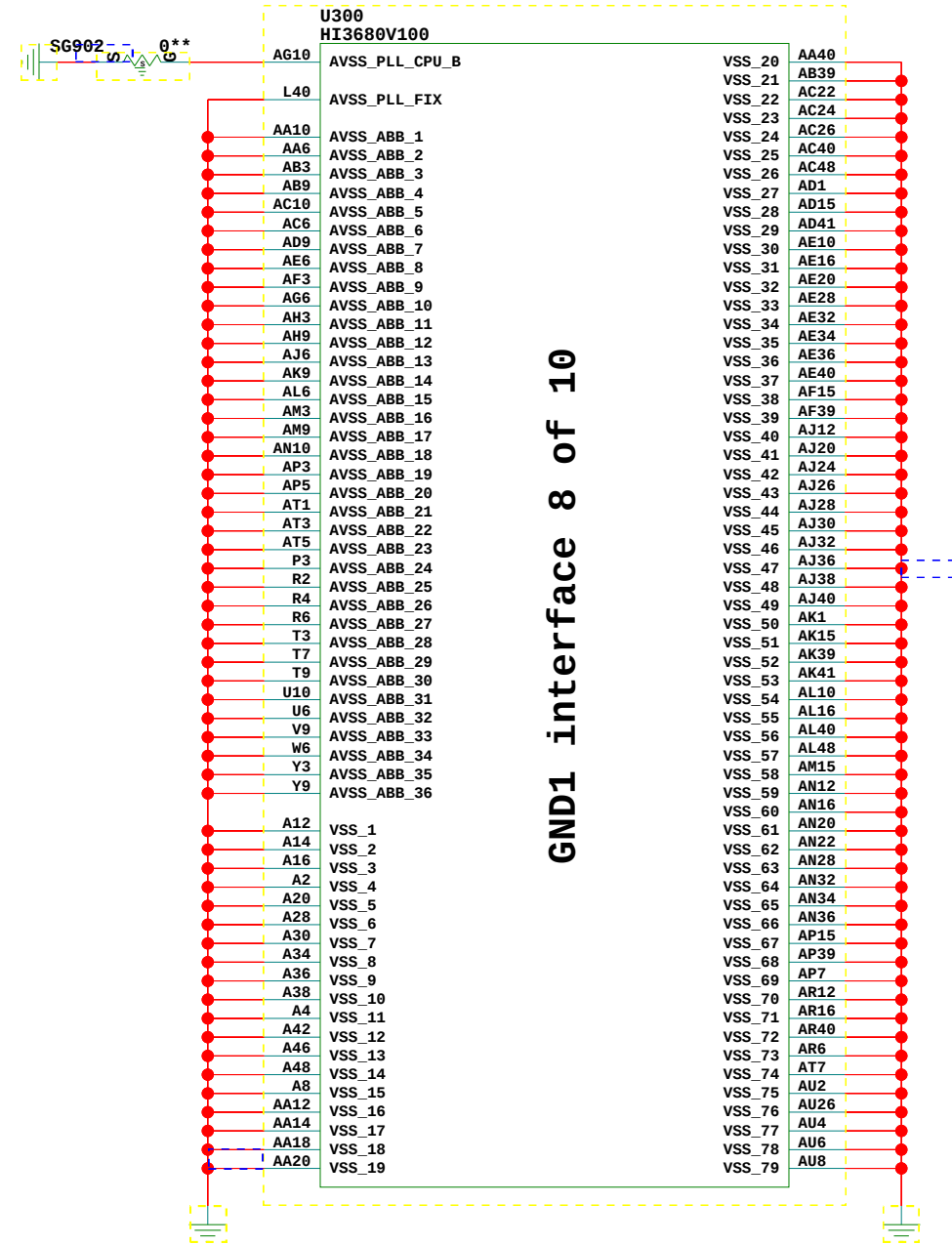
7. SOC GPIO Interface



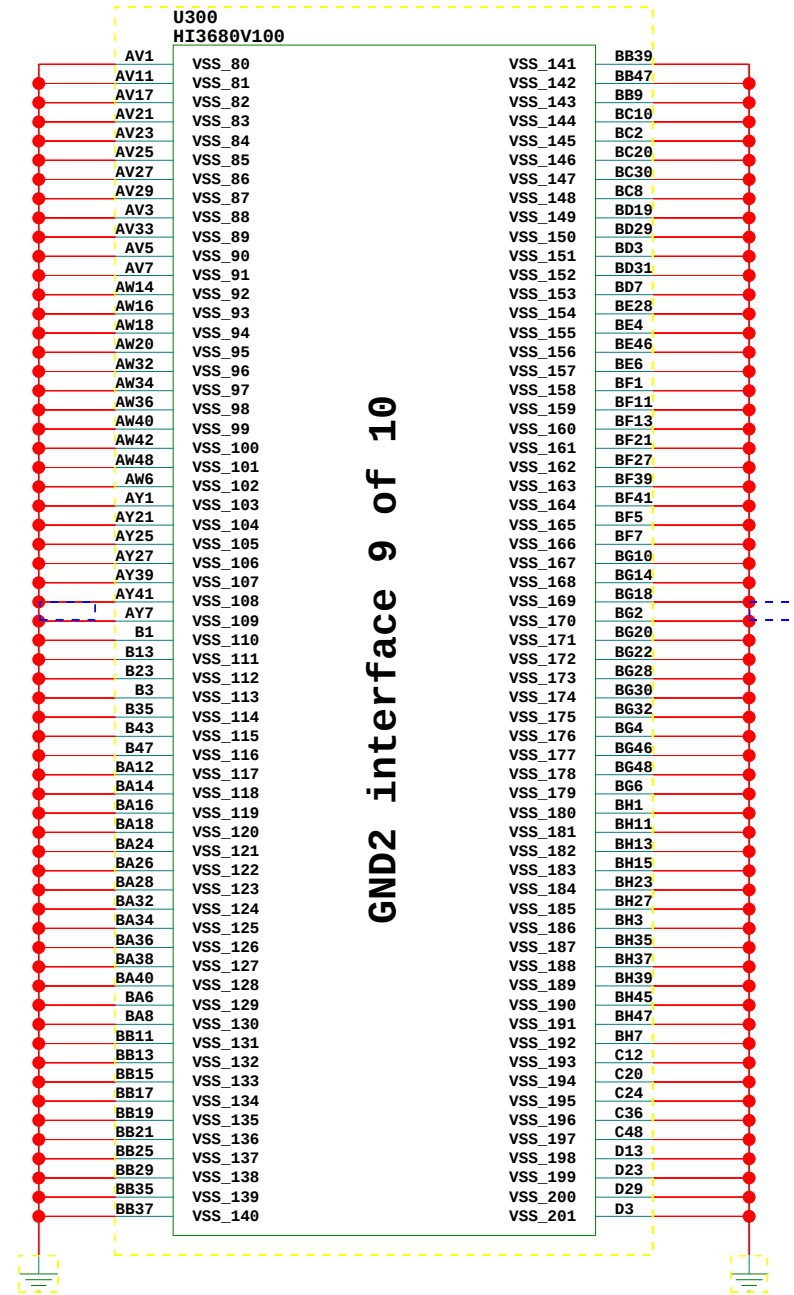
8. SOC RF Interface



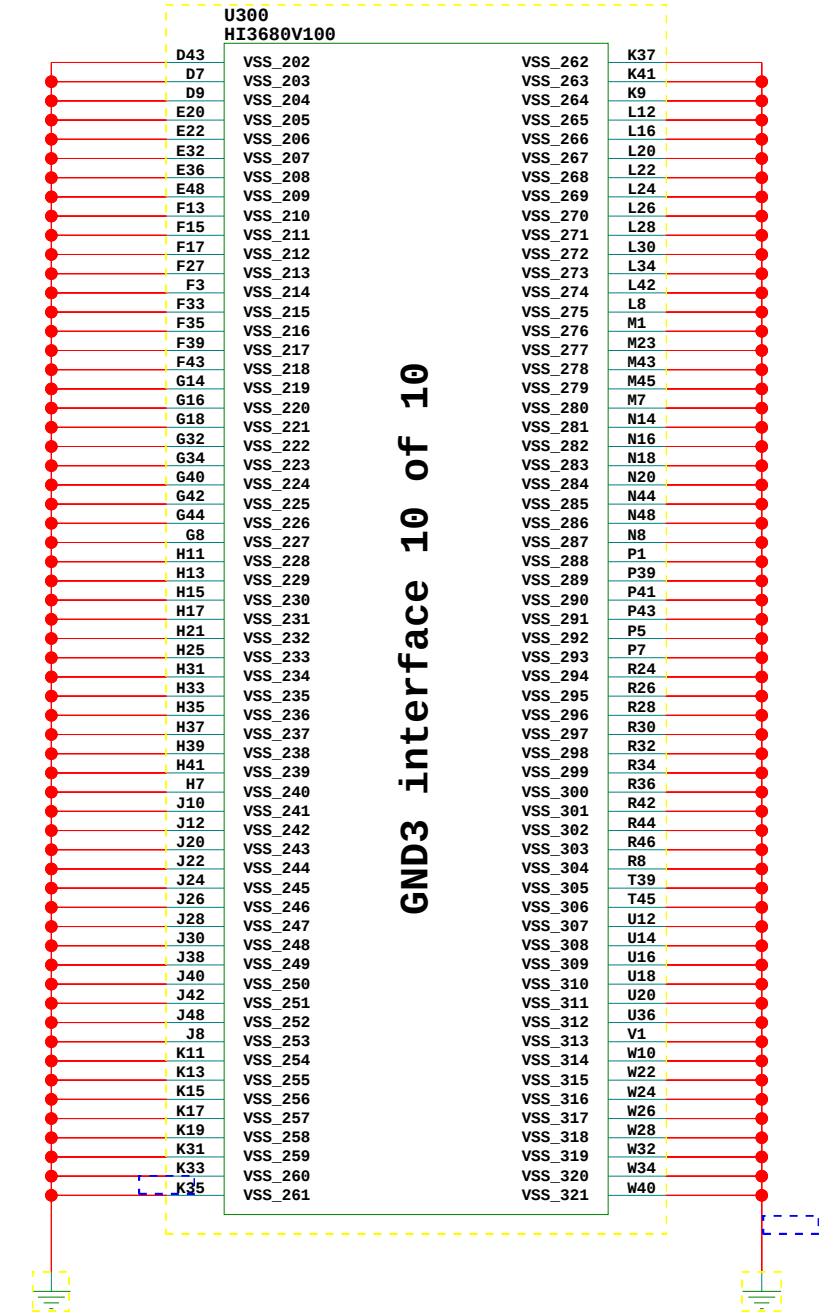
9. SOC GND



GND1 interface 8 of 10



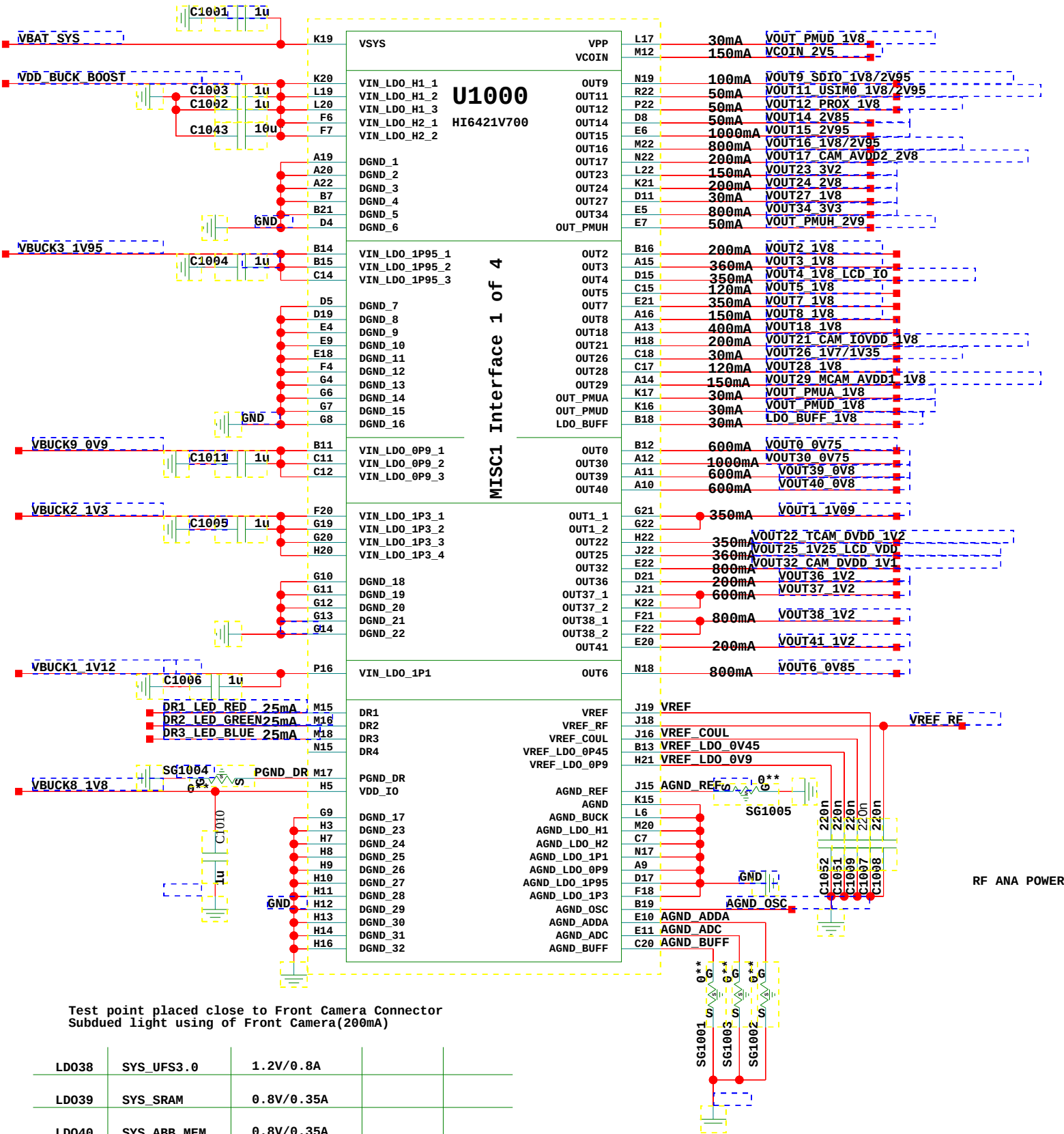
GND2 interface 9 of 10



GND3 interface 10 of 10

10.Hi6421 LDO

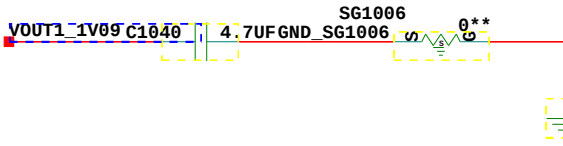
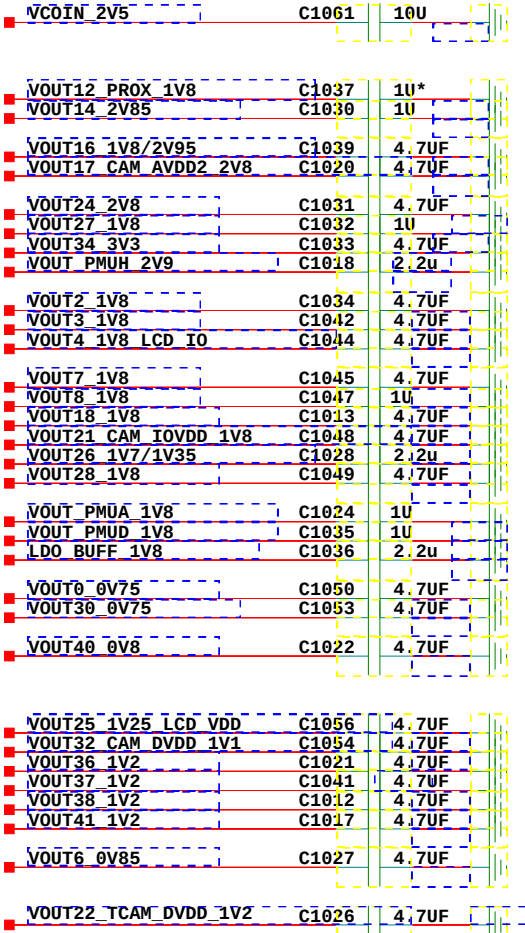
			Default	Sleep
BUCK0	SYS_PERI	0.75V/12A		
BUCK1	SYS_DDR	1.12V/4A		
BUCK2	SYS_POWER	1.3V/4A		
BUCK3	SYS_POWER	1.955/4A		
BUCK4	SYS_MODEM	0.8V/4A		
BUCK5	SYS_GPU_L2	0.8V/2A		
BUCK6	SYS_DDR_Core	0.752V/2A		
BUCK7	SYS_DDR	0.62V/2A		
BUCK8	SYS_DDR_UFS_IO	1.805V/3A		
BUCK9	SYS_POWER	0.9V/3A		
LD00	SYS_PHY_PLL	0.75V/0.6A		
LD01	SYS_RFIC	1.09V/0.35A		
LD02	SYS_HISEC_EFUSE	1.8V/0.2A		
LD03	SYS_RF_LNA	1.8V/0.36A		
LD04	PERI_TPLCD_IO	1.8V/0.35A		
LD05	SYS_ADC_DDR	1.8V/0.12A		
LD06	SYS_ABB_AVDD	0.87V/0.8A		
LD07	SYS_ABB_AVDD	1.8V/0.4A		
LD08	SYS_CODEC_RFIC	1.8V/0.15A		
LD09	PERI_SD_IO	1.8V_2.95V/0.1A		
LD011	SYS_SIM0	1.8V_2.95V/0.05A		
LD012	SYS_SIM1	1.8V_2.95V/0.05A		
LD014	SYS_DAC_RF	2.85V/0.05A		
LD015	SYS_UFS	2.95V/1A		
LD016	PERI_SD	2.95V/0.8A		
? LD017	PERI_AVDD1	3.1V/0.2A		
LD018	PERI_IO	1.8V/0.4A		
LD021	PERI_CAM_IO	1.8V/0.2A		
LD022	SYS_RFIC	1.09V/0.35A		
LD023	SYS_USB3.0_PA	3.2V/0.15A		
? LD024	PERI_AVDD2	2.8V/0.2A		
LD025	PERI_LCD_1.2V	1.2V/0.36A		
LD026	SYS_X0	1.7V/0.03A		
LD027	SYS_ADC_X0	1.8V/0.03A		
LD028	SYS_RF_MIPI	1.8V/0.12A		
LD029	SYS_USB	1.8V/0.15A		
LD030	SYS_HS_CORE	0.75V/1A		
LD032	PERI_CAM_1.2?	1.2V/0.8A		
LD034	PERI_MIC_FP	2.9V/0.8A		
LD035	SYS_X0	1.7V/0.03A		
LD036	SYS_UFS_CLK	1.2V/0.2A		
LD037	SYS_HS_PHY	1.2V/0.6A		



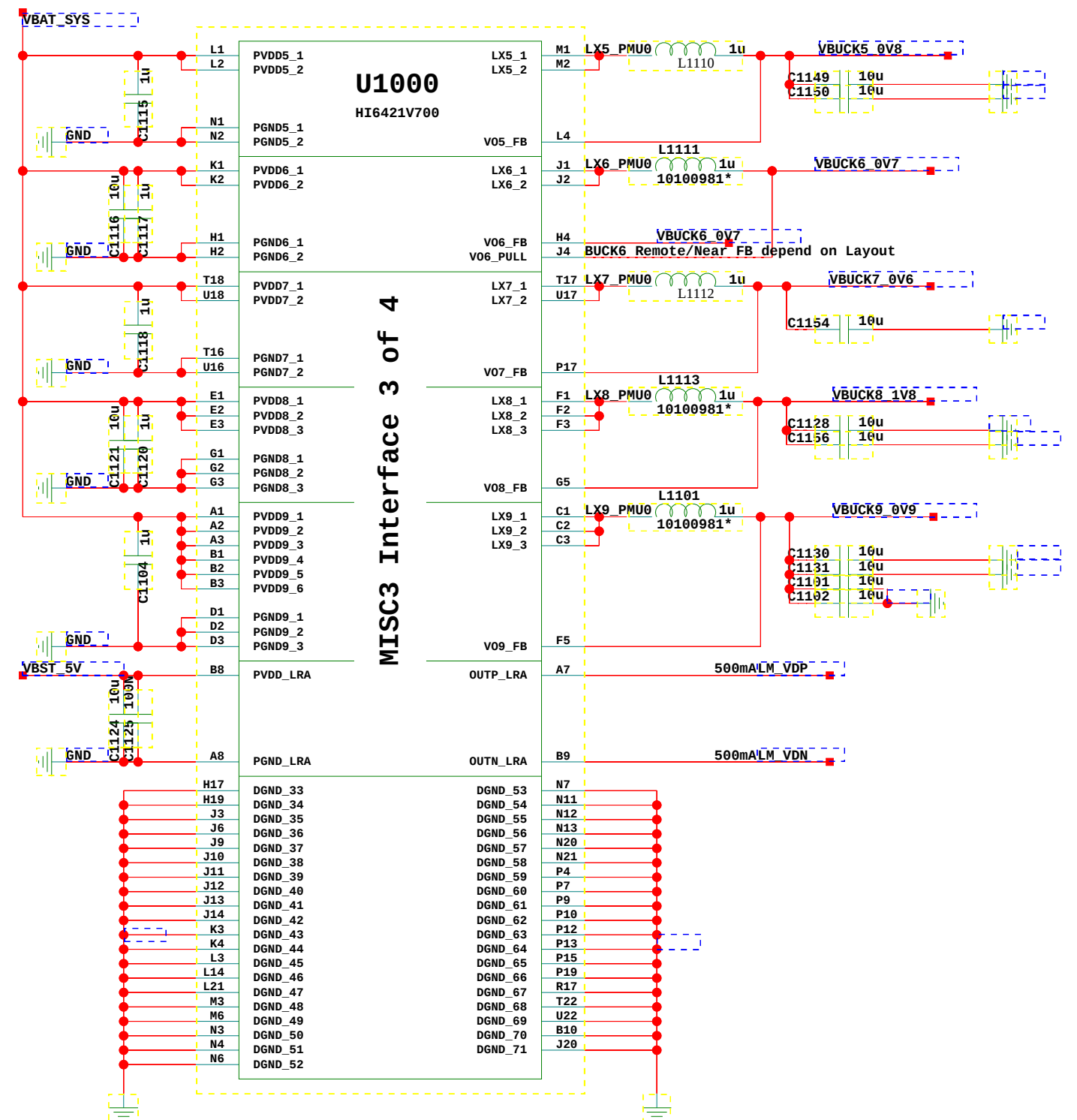
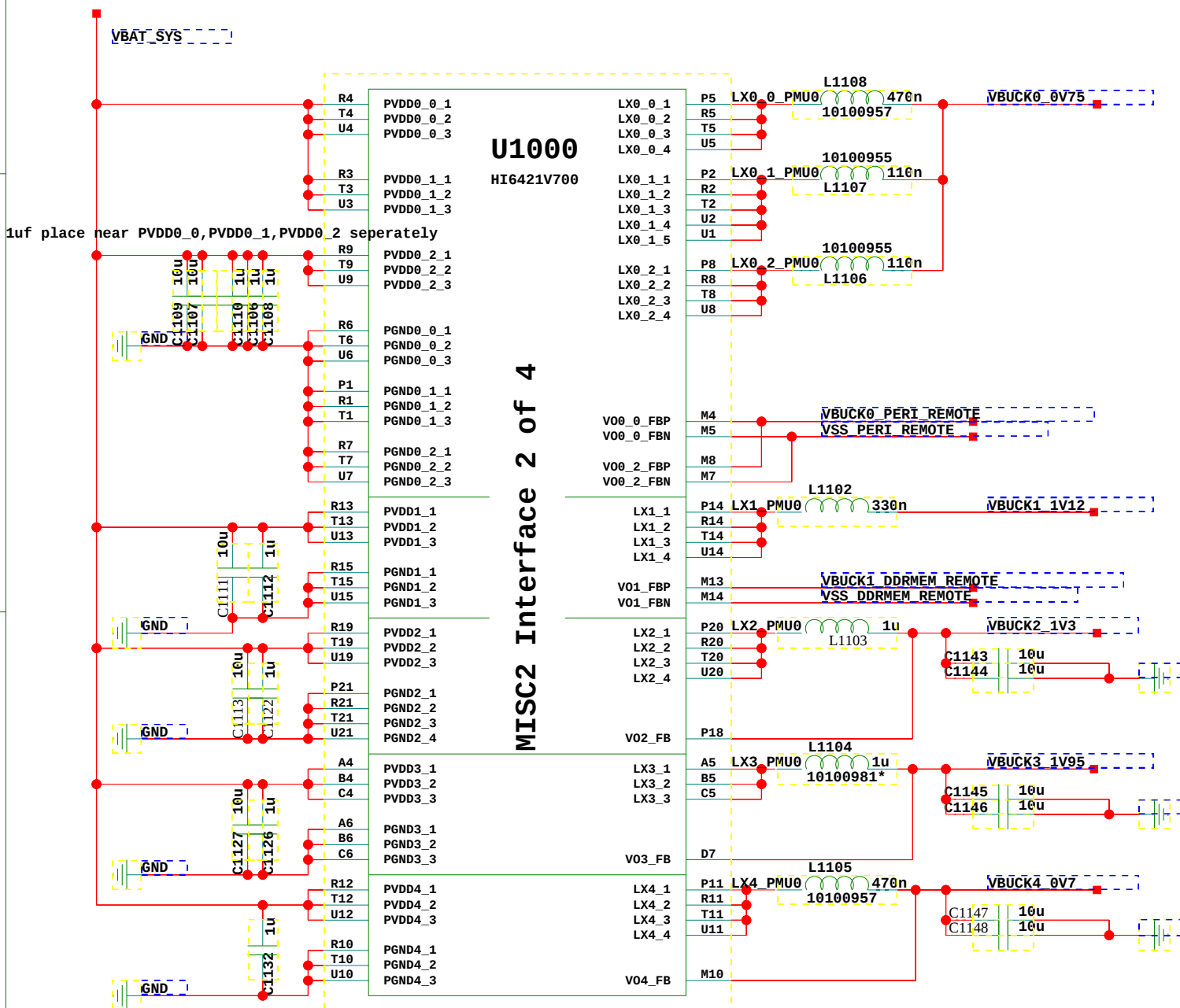
Test point placed close to Front Camera Connector
Subdued light using of Front Camera(200mA)

LD038	SYS_UFS3.0	1.2V/0.8A		
LD039	SYS_SRAM	0.8V/0.35A		
LD040	SYS_ABB_MEM	0.8V/0.35A		
LD041	SYS_CODEC	1.1V/0.15A		
LDO_BUF	SYS_PMU_CLK_BUF	1.8V/0.03A		
PMUA	SYS_PMU_AVDD	1.8V/0.03A		
PMUD	SYS_PMU_DVDD	1.8V/0.03A		
RF_VREF	SYS_RF_VREF	0.75V/0.001A		
PMUH	?	1.1V/0.15A		
VCOIN	SYS_COIN	2.5V/A		

NEAR END CAP NEAR PMU



11.Hi6421 BUCK



12.Hi6421 DIGITAL INTERFACE

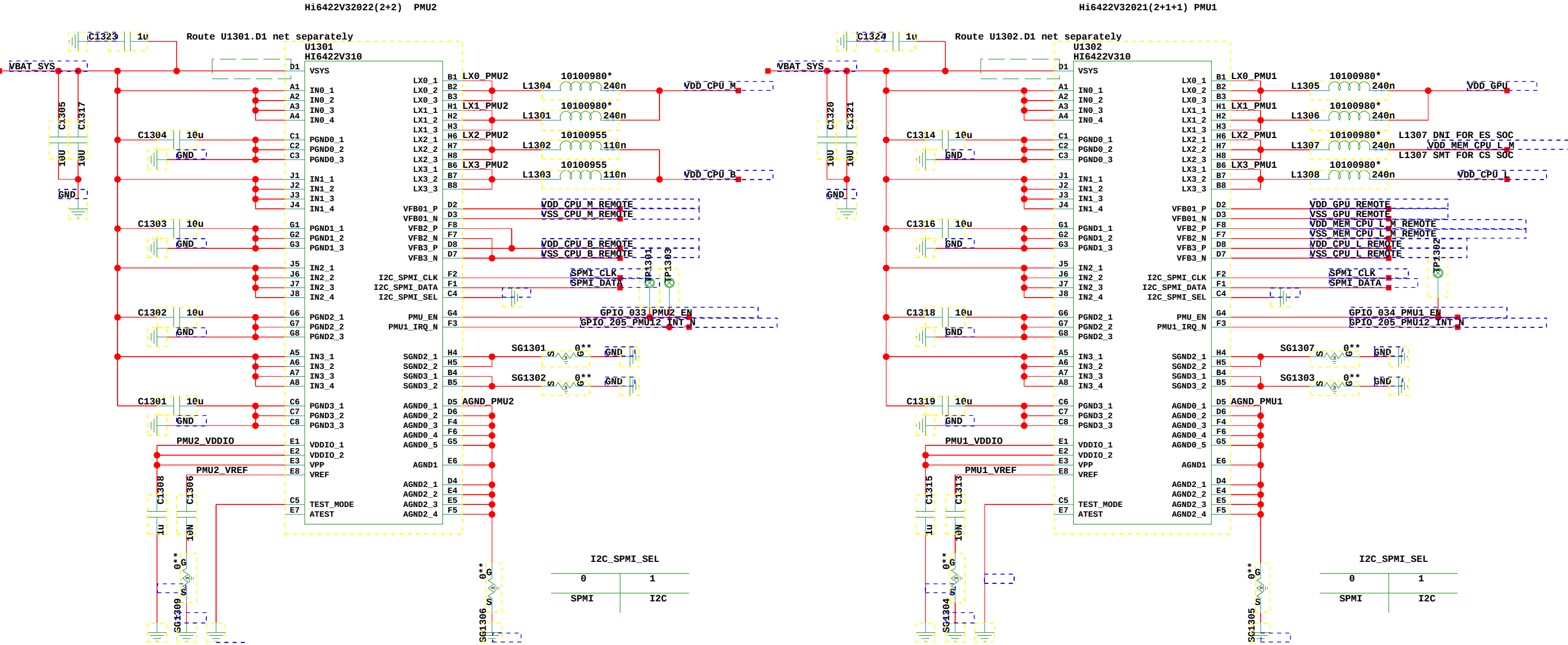
BUCK BOOST

$V_{out}=0.8*(1+R1/R2)=3.467V$

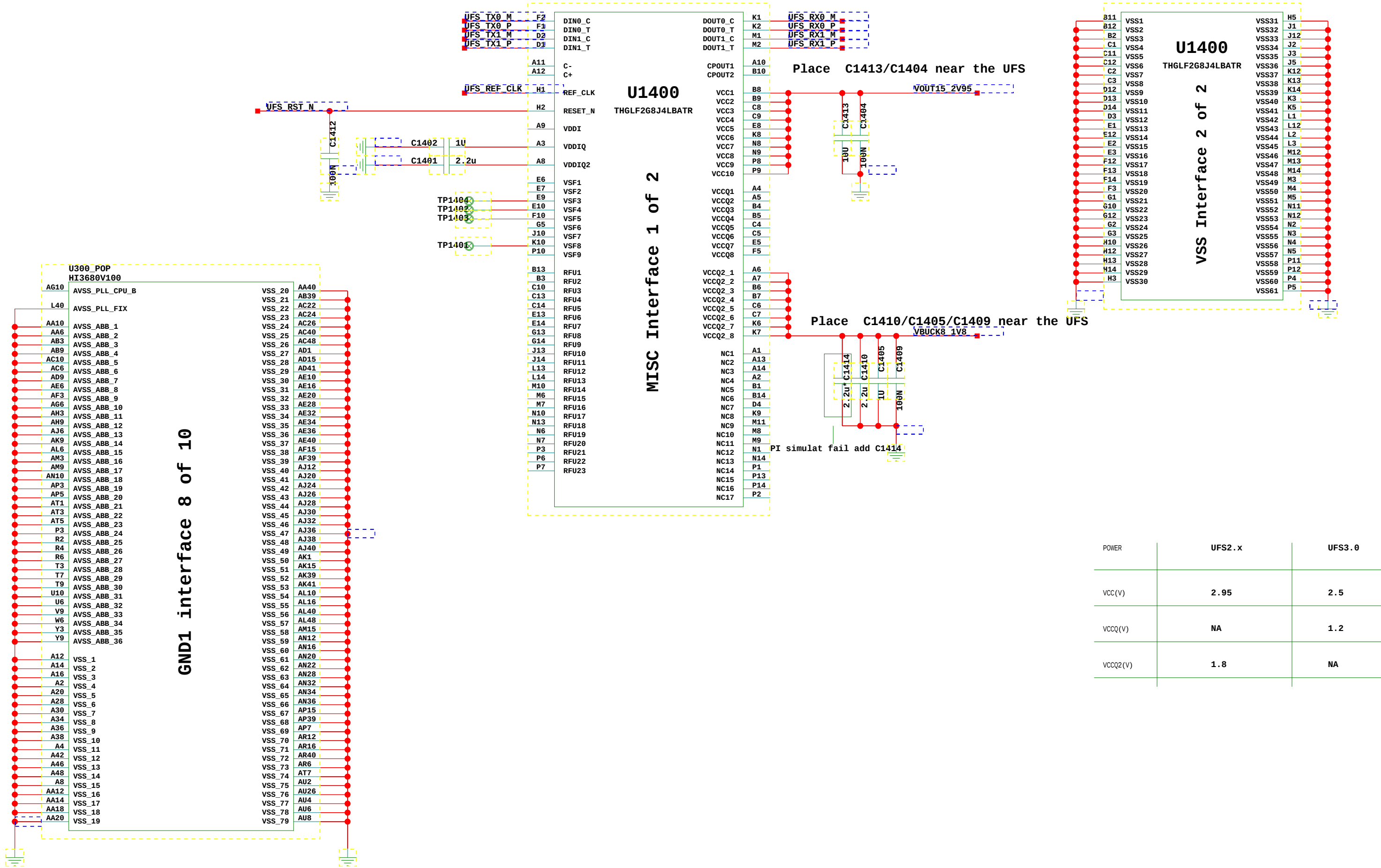
DCX0

Boardid=8404

13. HI6422V320

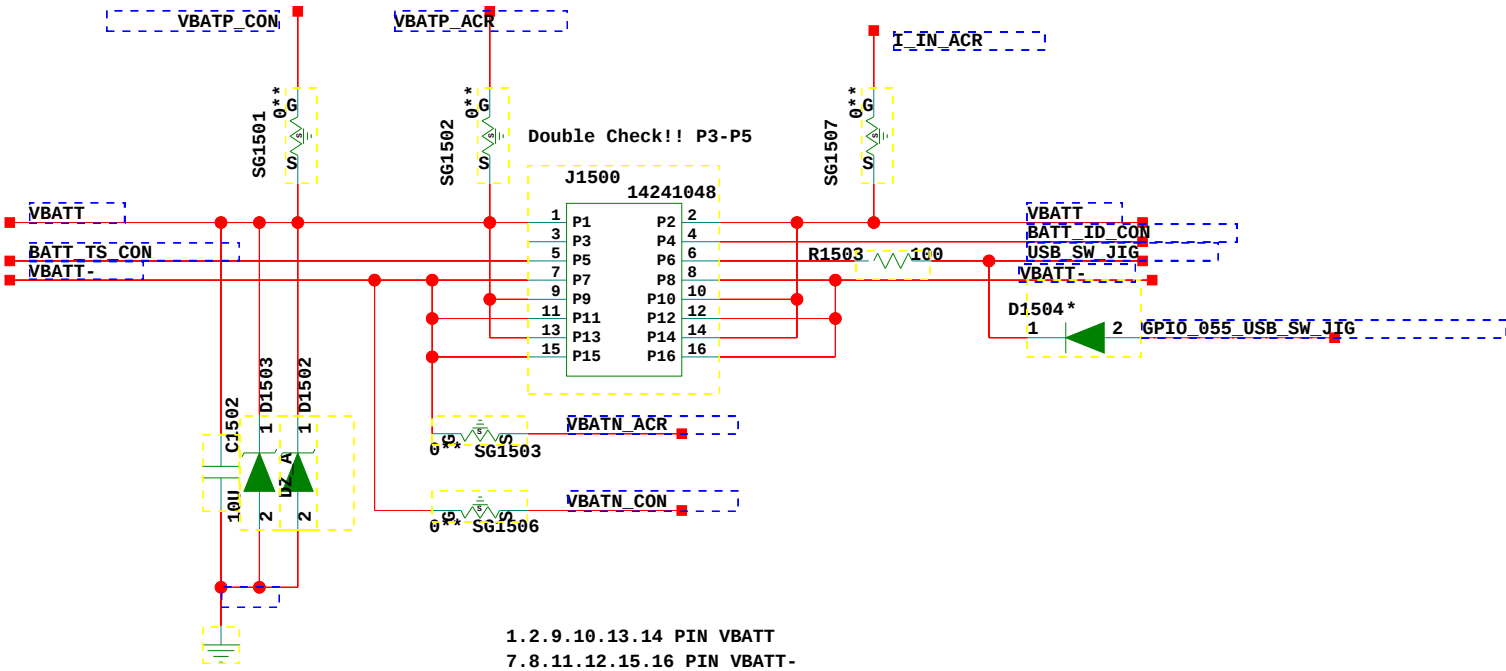


14. UFS and LPDDR4X

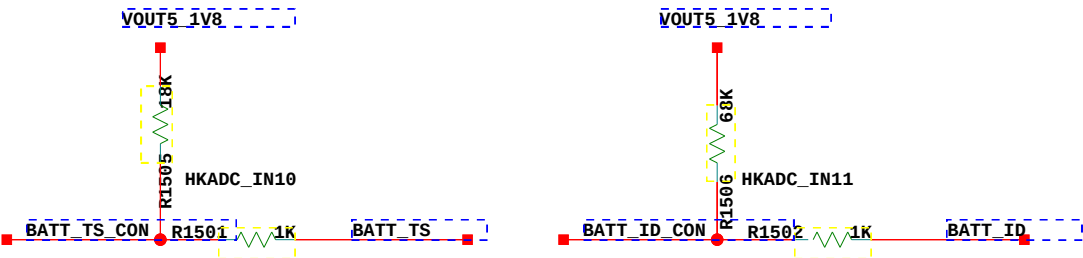
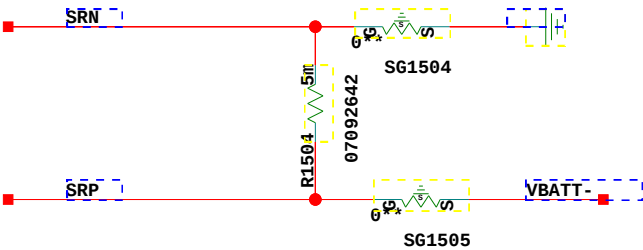


15. Battery & Fuel gauge

Battery Connector



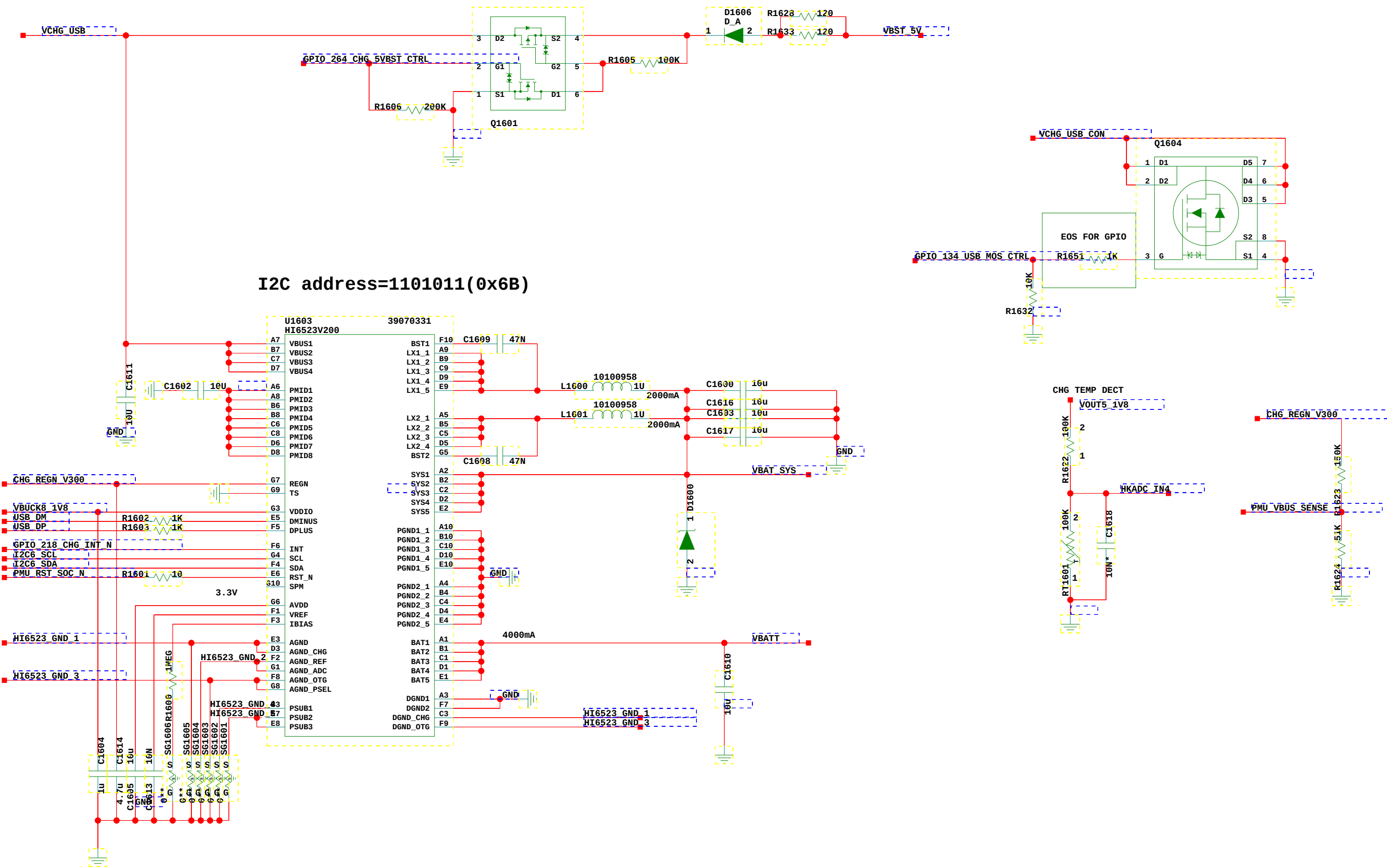
CAD note:1.Trace for 8A
2.Differential trace



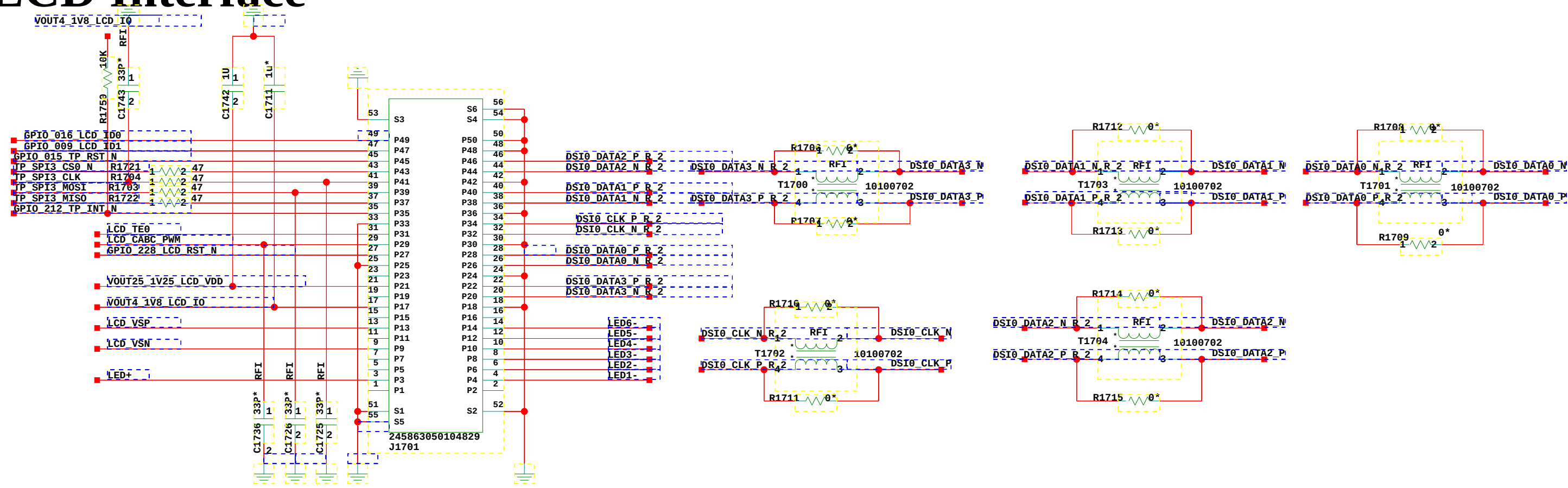
Battery Temperature

Battery ID

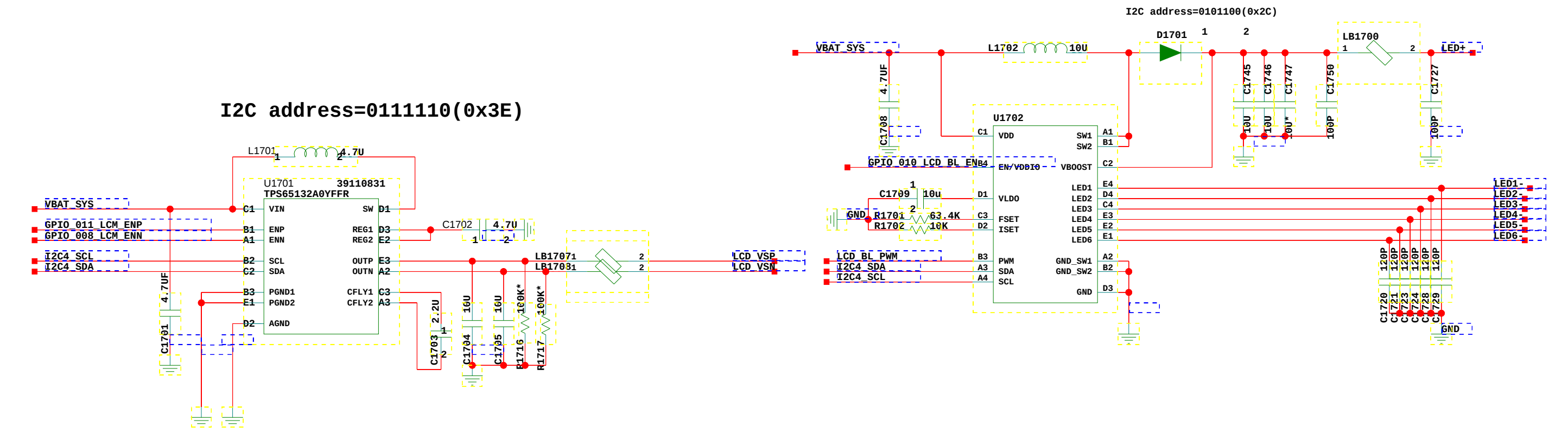
16. Charge Management



17. LCD Interface



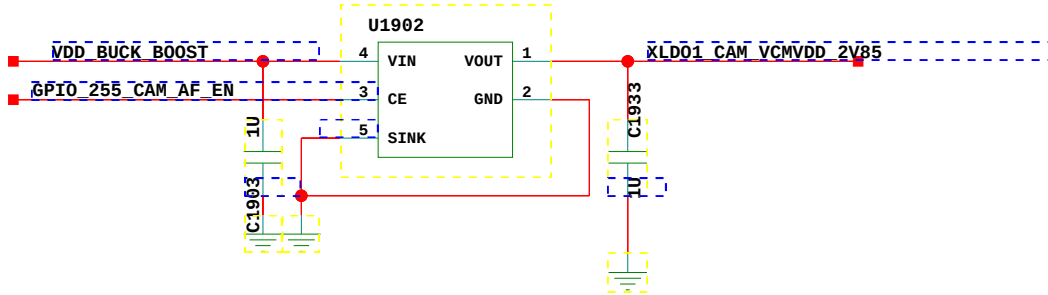
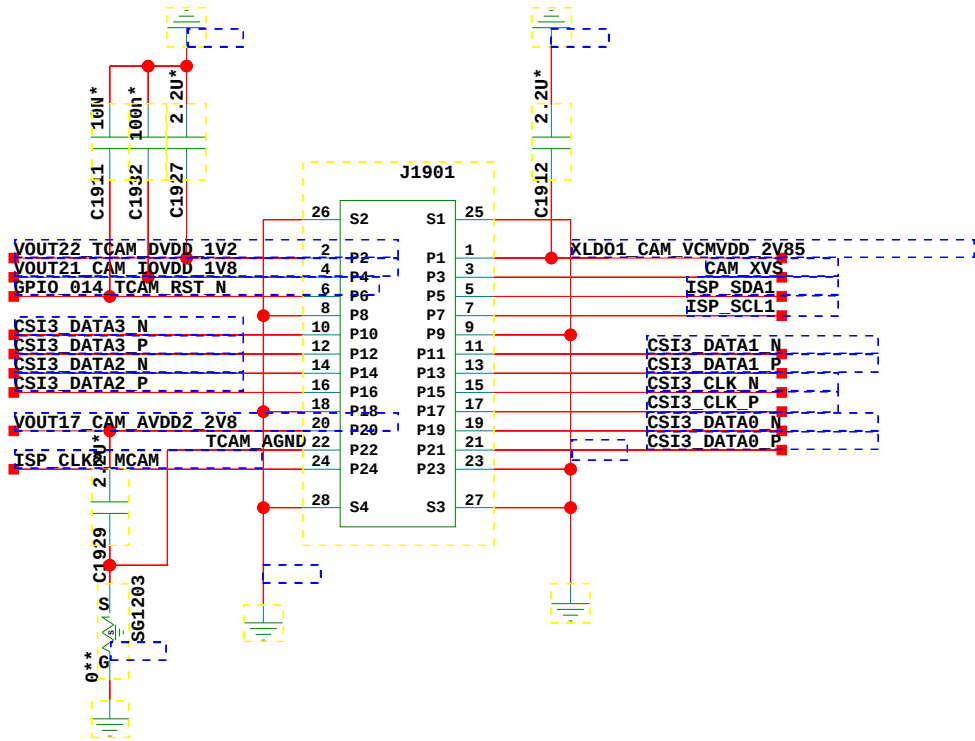
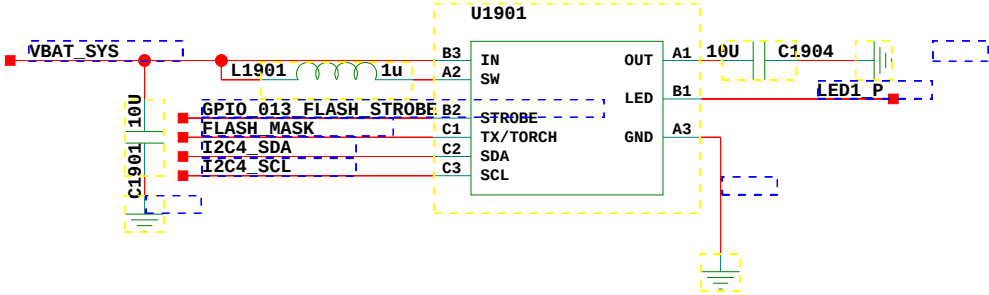
LCD BL DRIVER



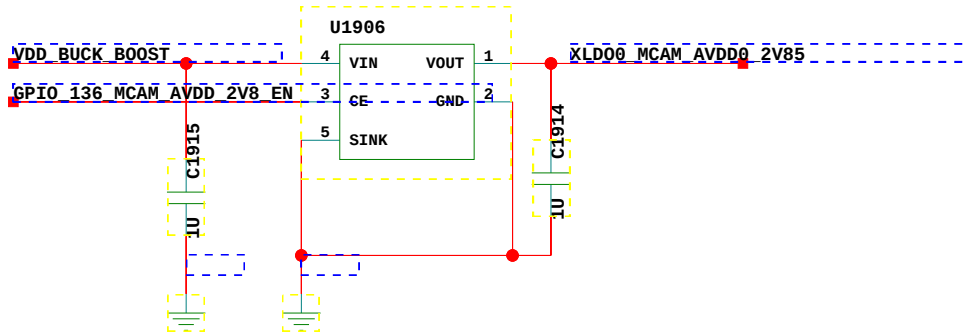
18. Direct Charge LoadSwitch

19. Flash LED&TCAM

I2C address=0x63(TI)/0x67(MPS)
rear camera single flash led
software set the limit current 1.5A



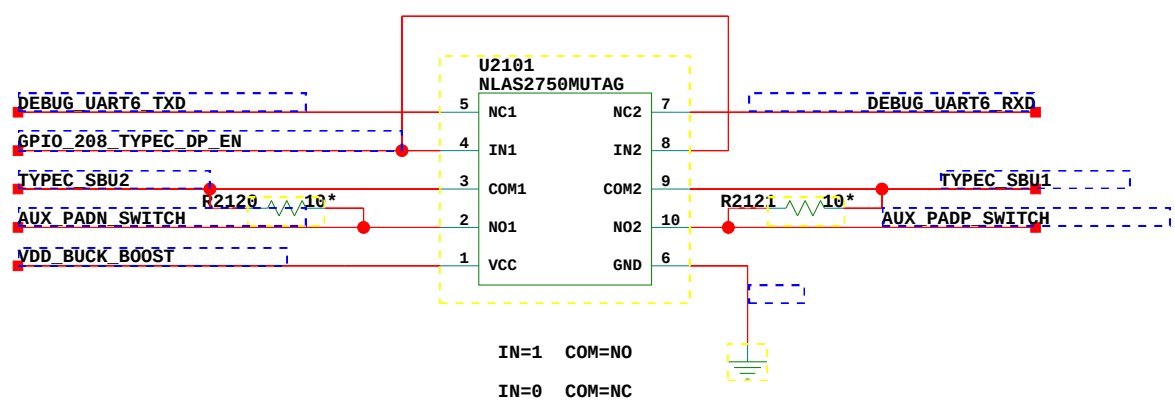
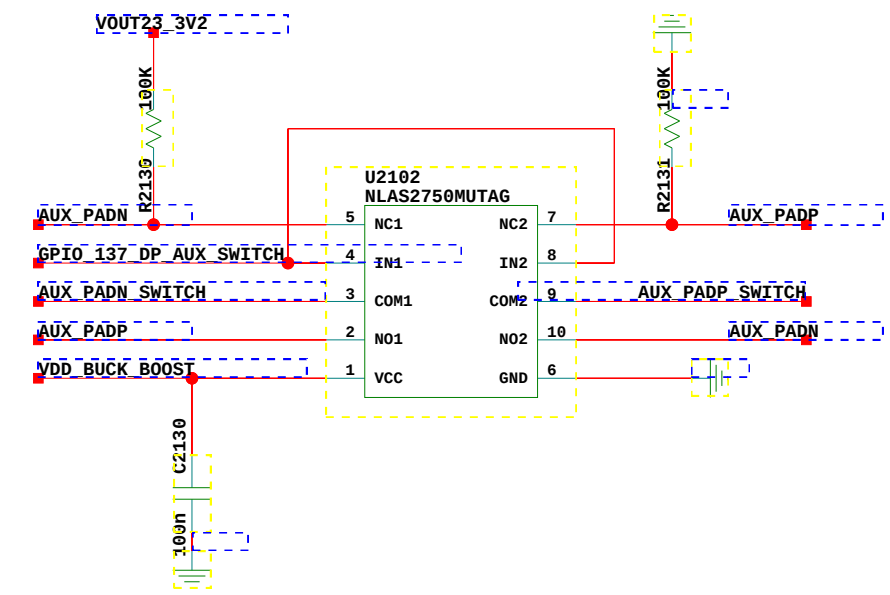
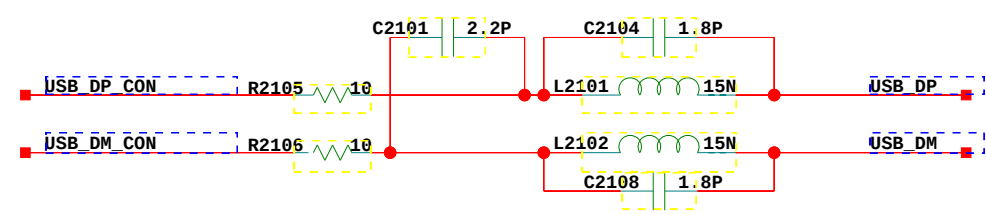
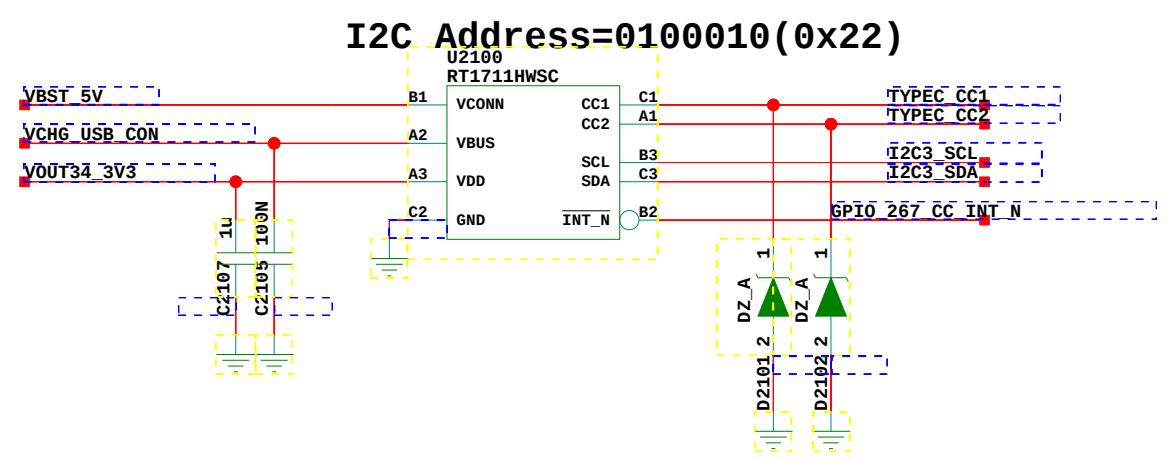
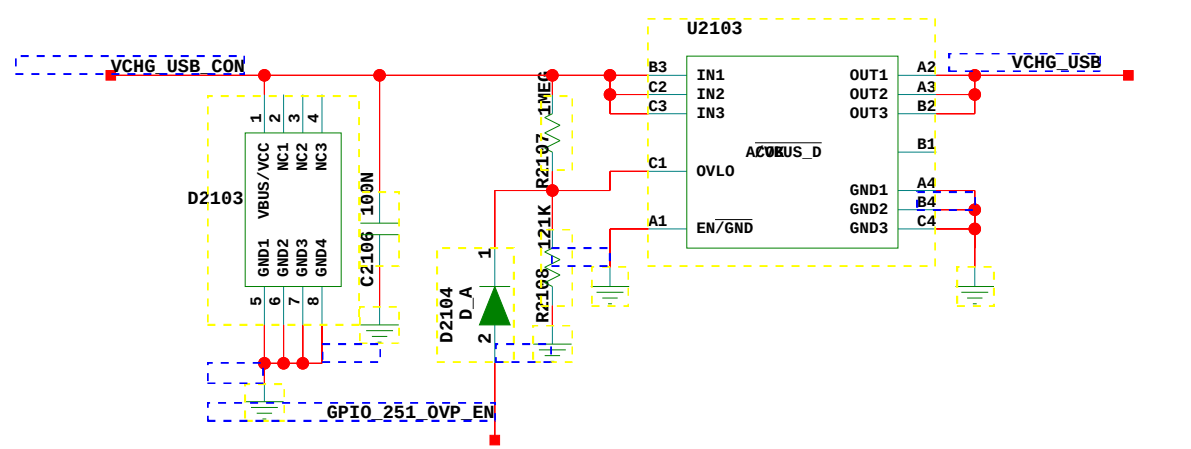
Main Camera Sensor



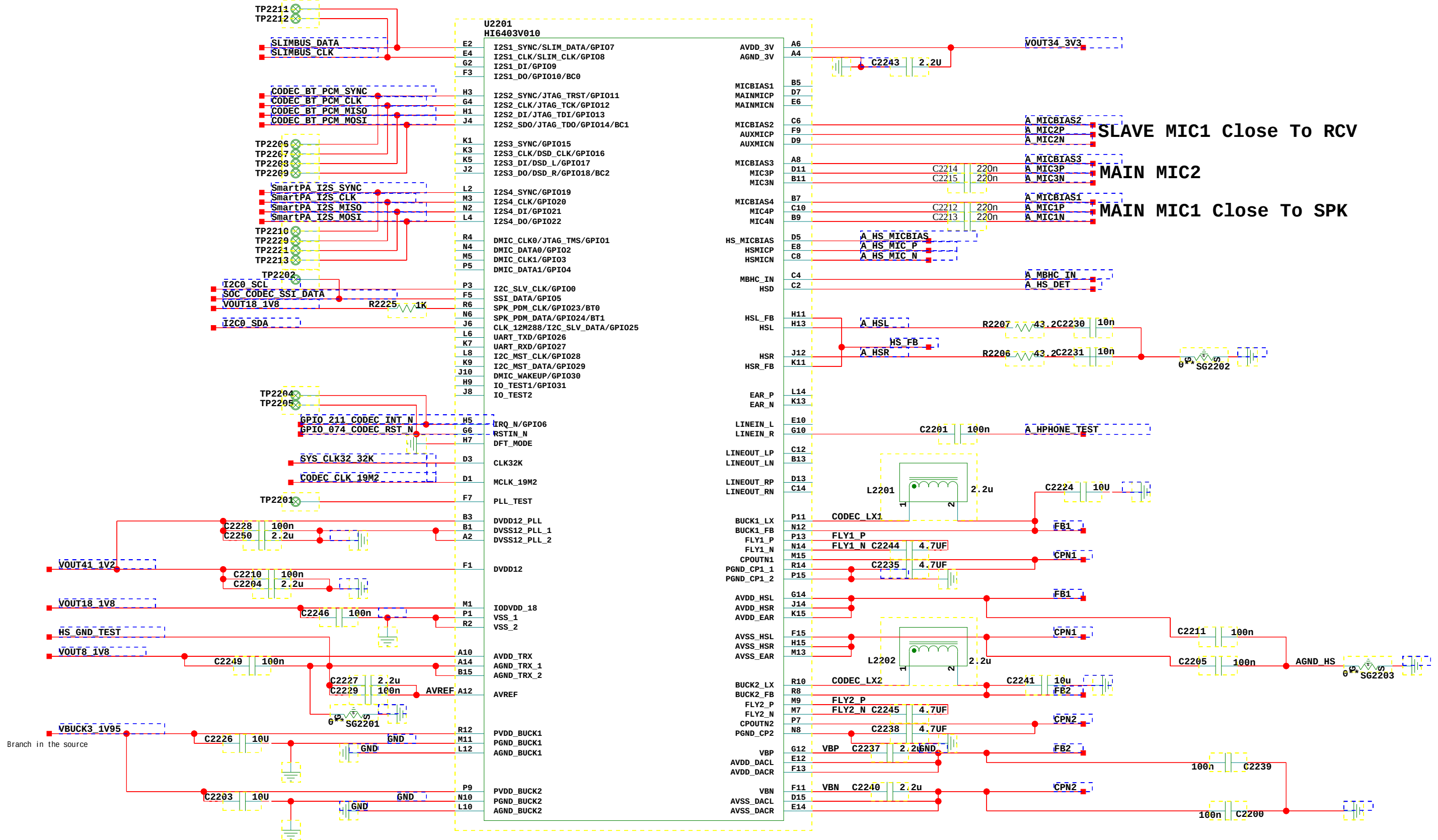
20. Camera



21. TYPEC INTERFACE



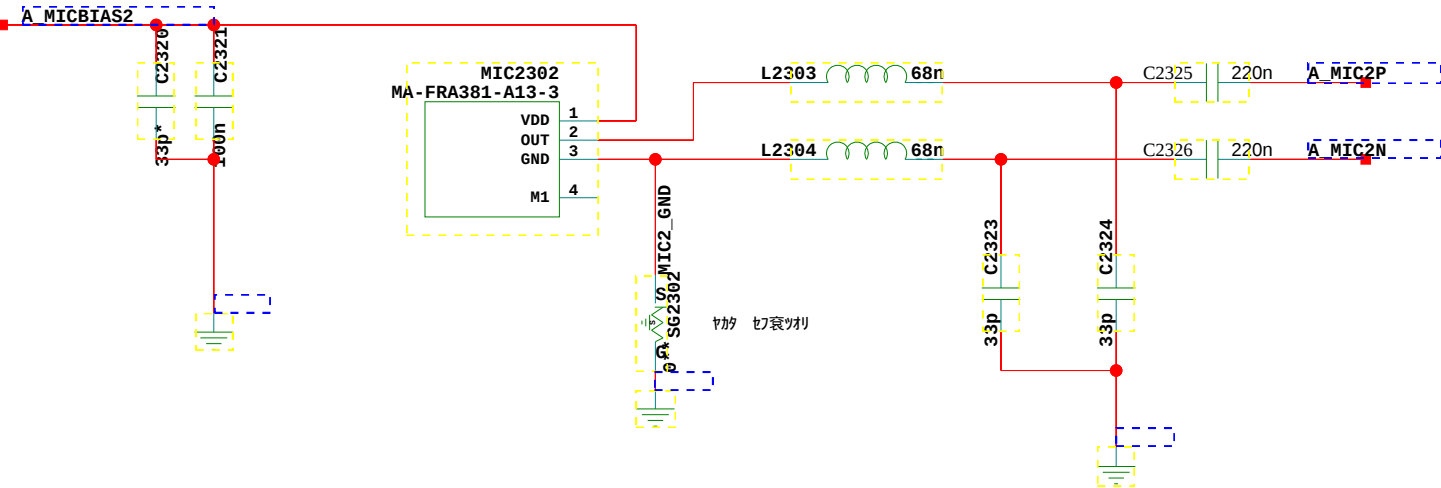
22.CODEC HI6403



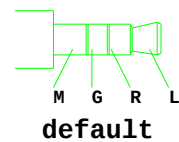
BootMode0	BootMode1	Function(BootROM Start)
1	1	NA
1	0	SSI Start
0	1	I2C Start
0	0	SLIMBUS Start

23. MIC/VIB

Slave MIC



24. Headphone



CAD note:

LB2401/LB2402/LB2403/LB2404/LB2407/LB2408

a. the signal before and after them route can not cross and overlap

b. forbidden to place in parallel, need to place vertically

CAD note:

HSL_TEST/HS_SGNDL need differential trace

HSR_TEST/HS_SGNDR need differential trace

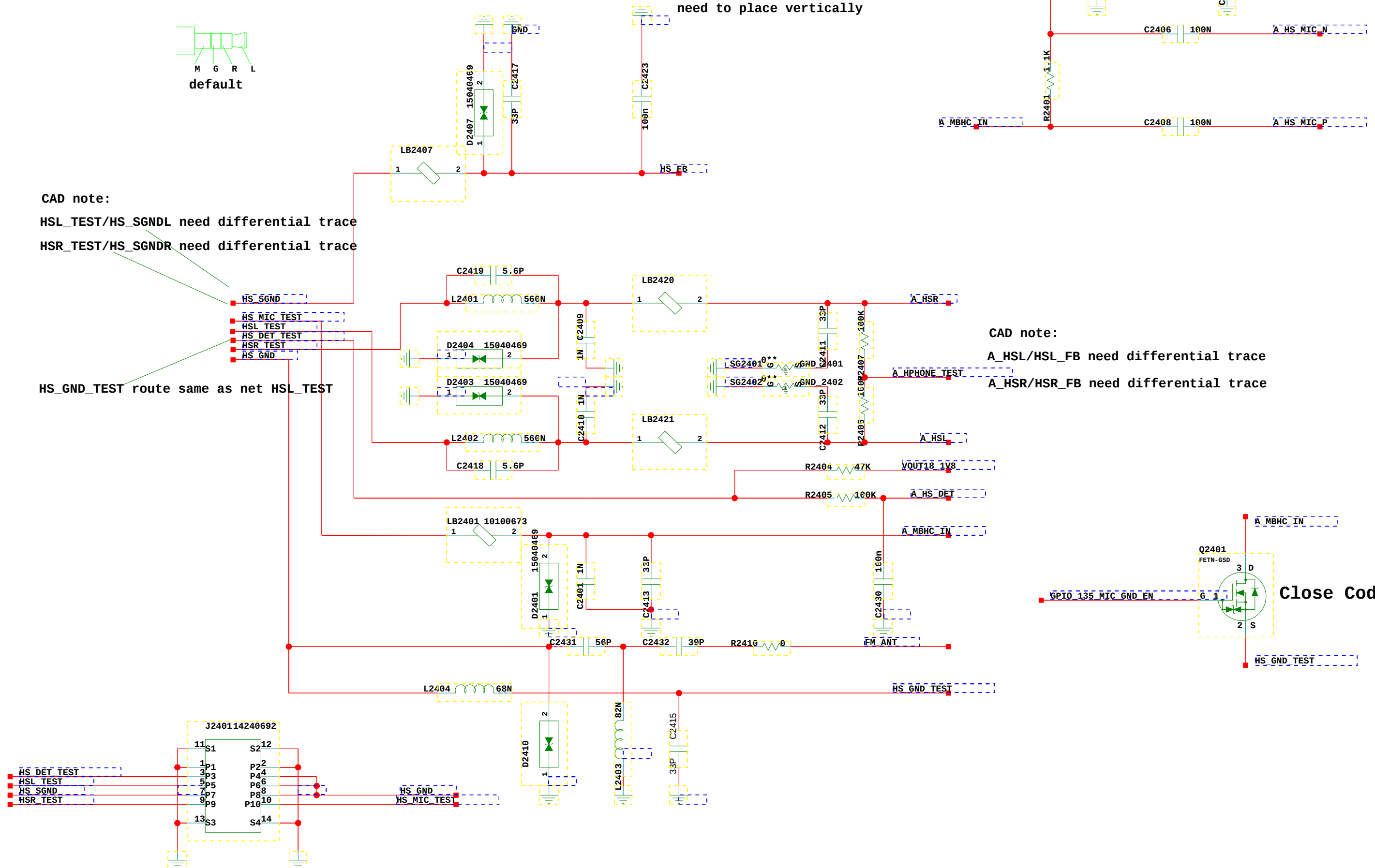
HS_GND_TEST route same as net HSL_TEST

CAD note:

A_HSL/HSL_FB need differential trace

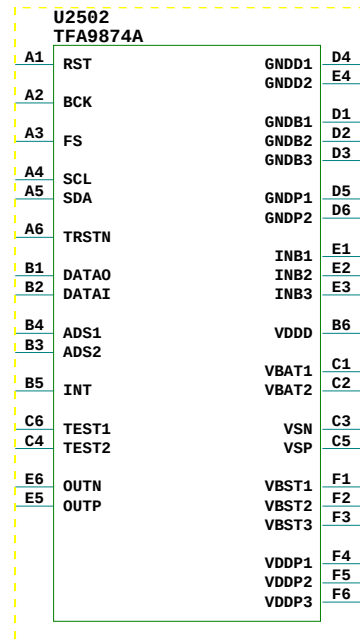
A_HSR/HSR_FB need differential trace

Close Codec U2201

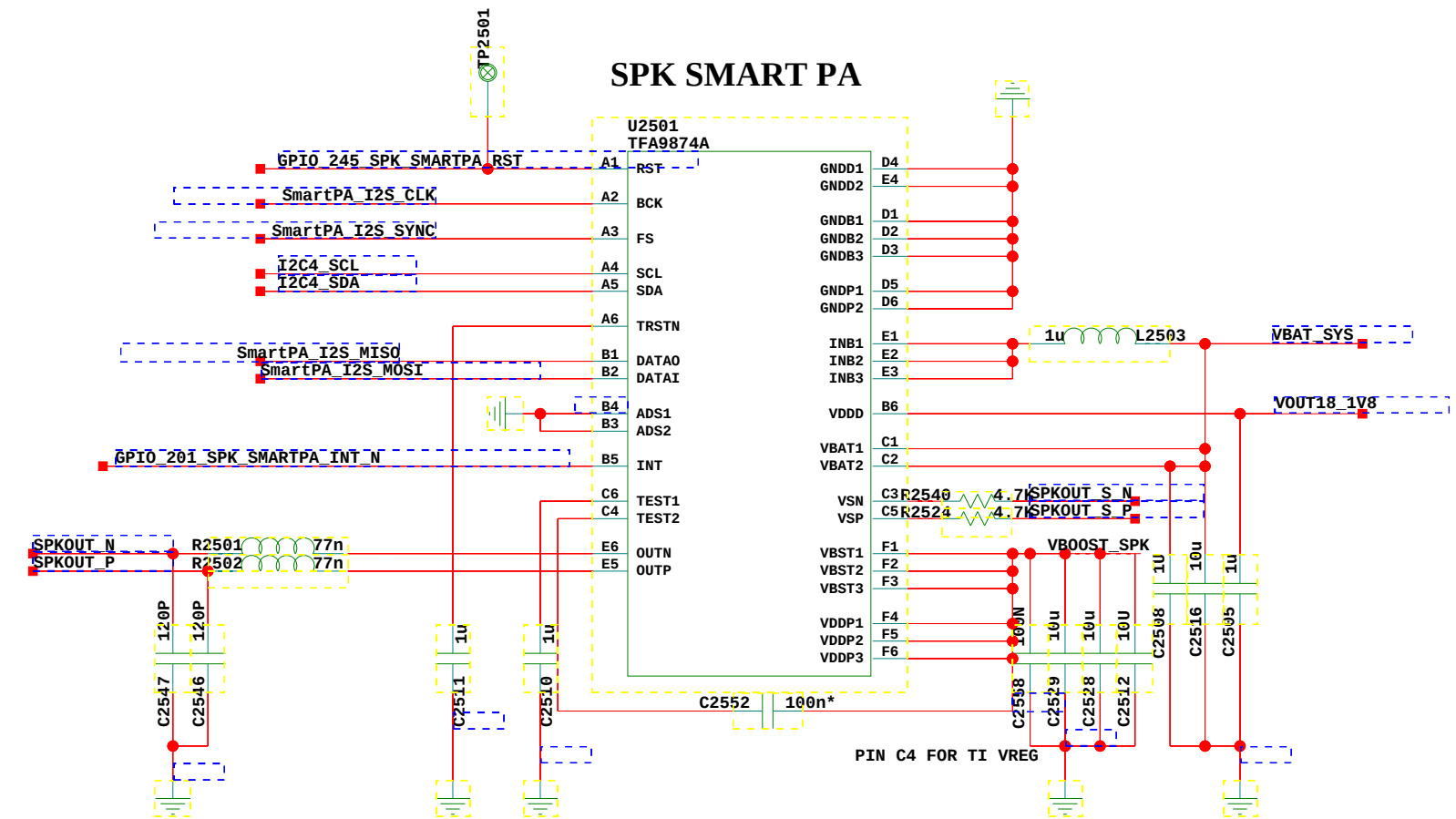
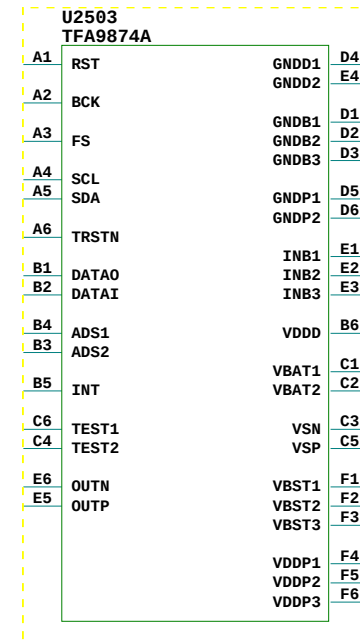


25. Audio

RCV SMART PA For Cirrus Share PAD with U2500

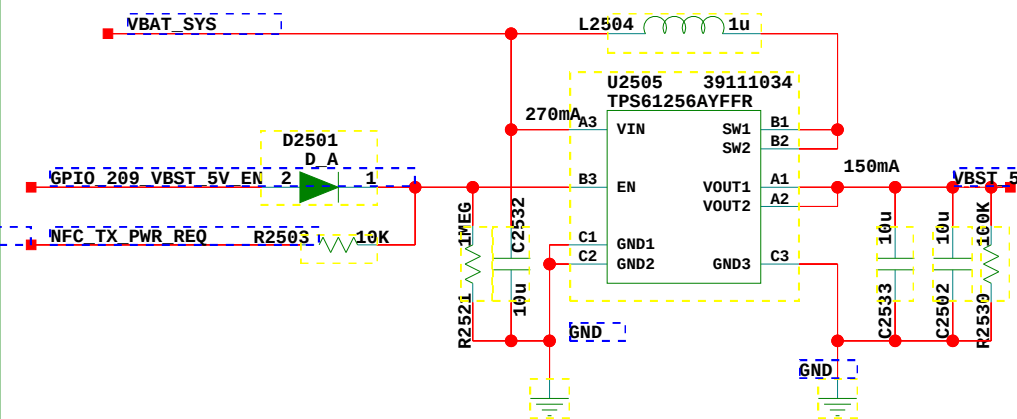
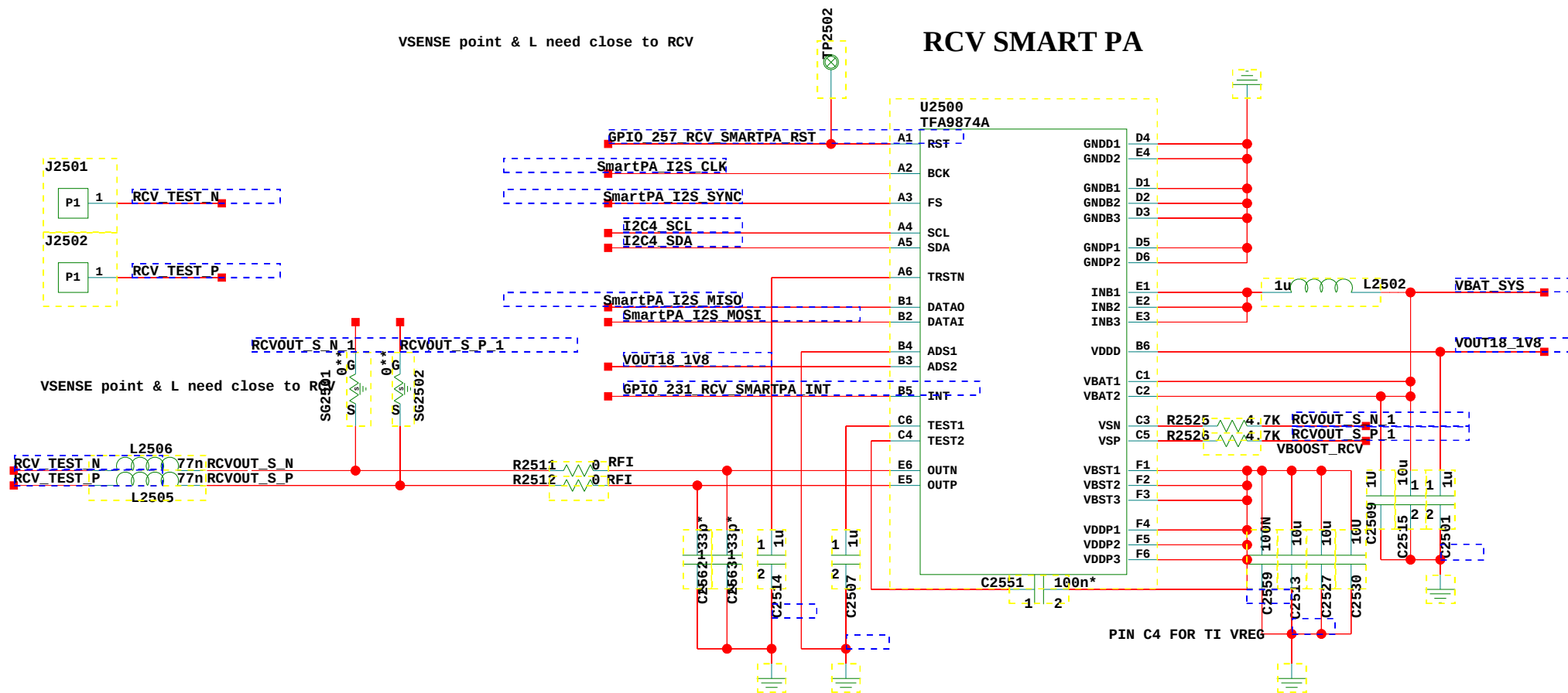


SPK SMART PA For Cirrus Share PAD with U2501



VSENSE point & L need close to RCV

RCV SMART PA



A

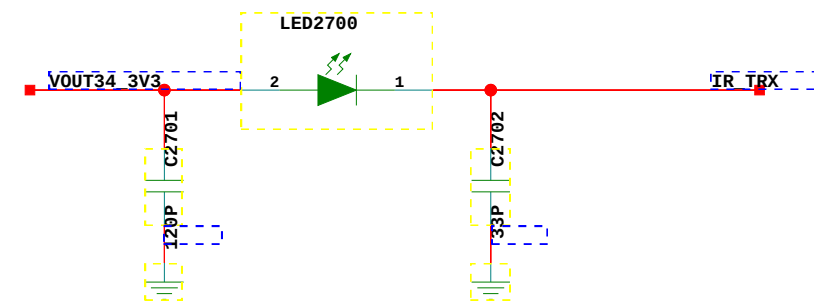
B

C



6

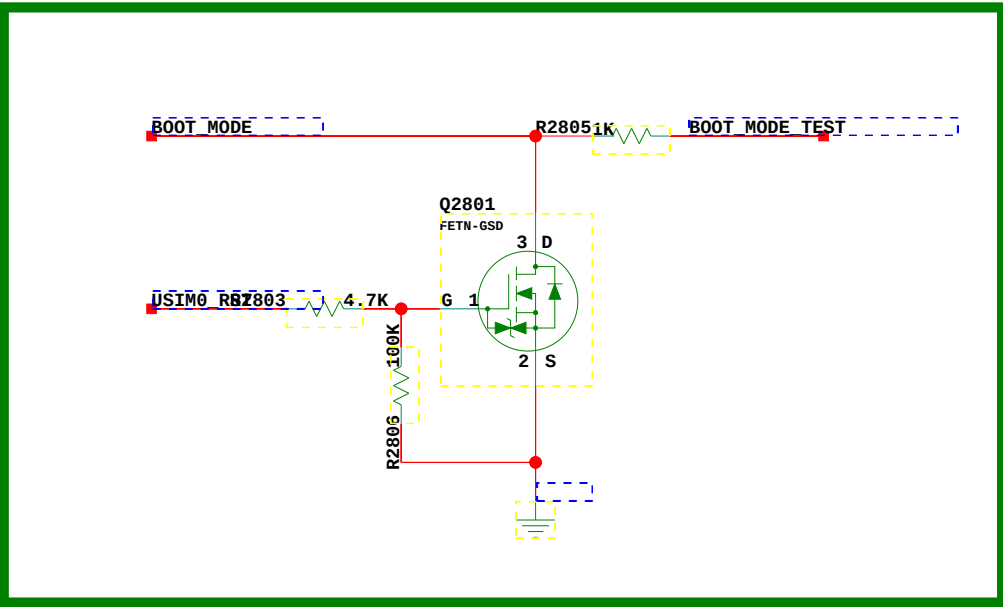
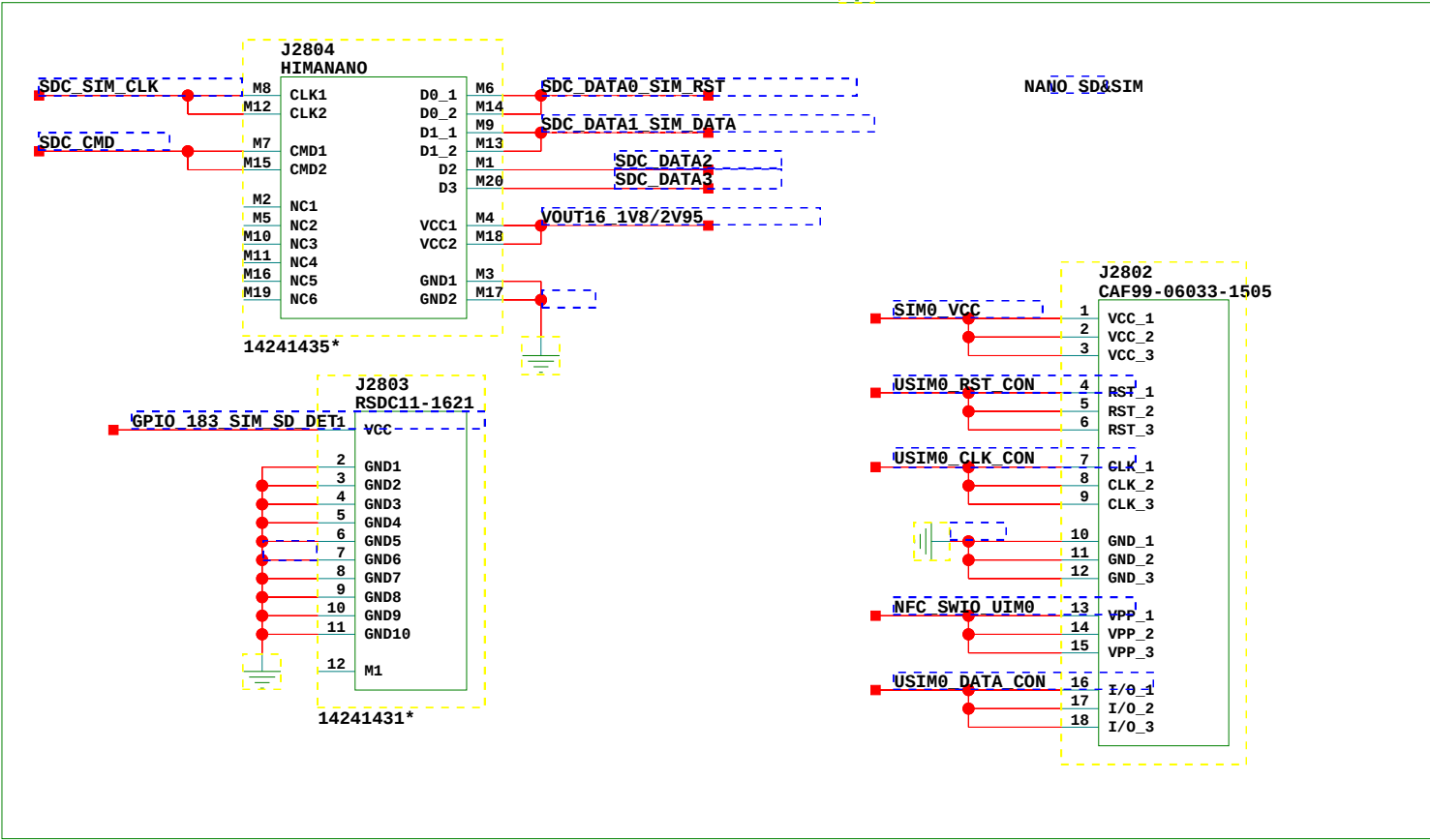
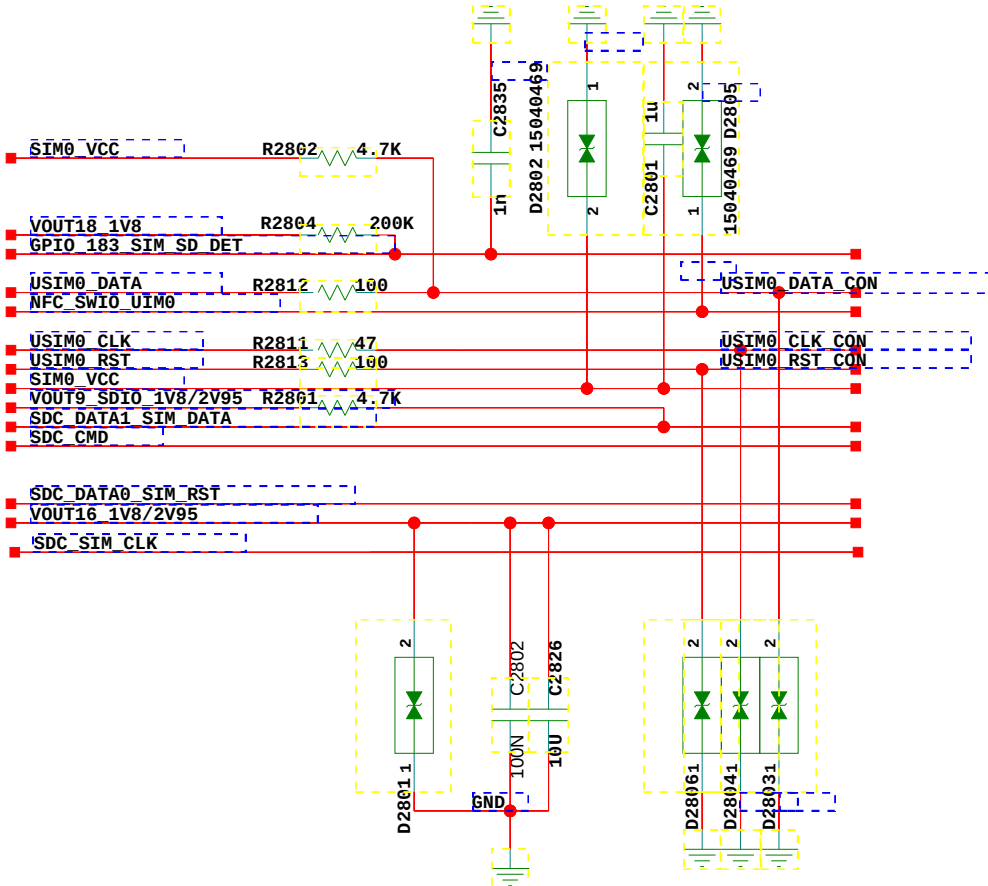
27. X-Sensor+IrDA



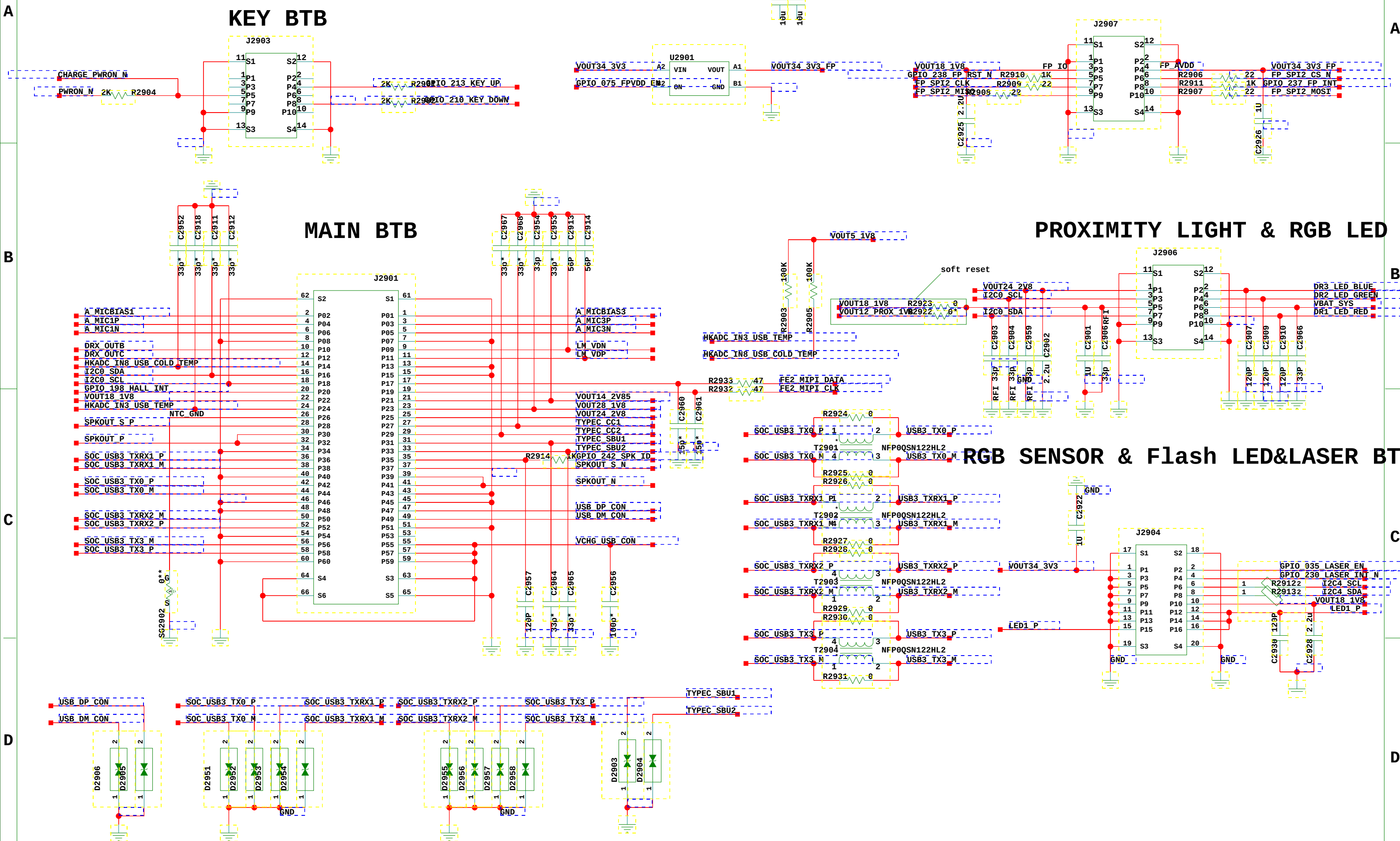
28.SIM/NANO SD Card

SIM0

SIM1&SD

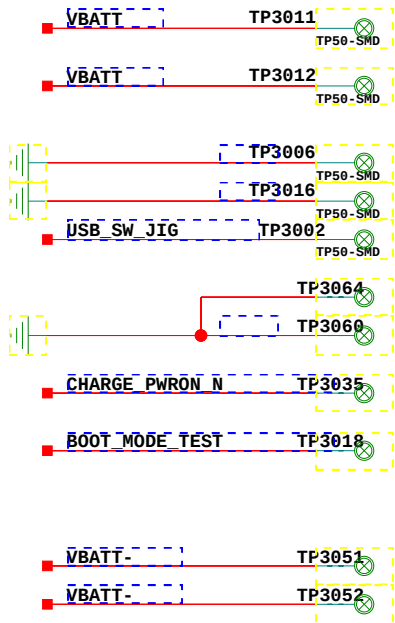


29. FPC Interface

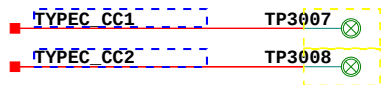


30. Test Points/Shields

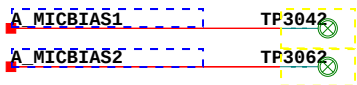
CBT TEST POINT



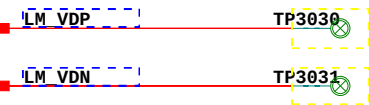
TYPE C



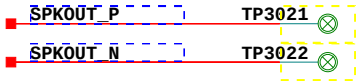
MIC



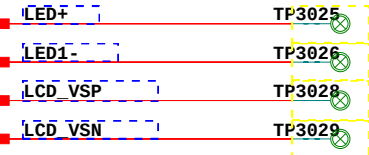
Vibrator



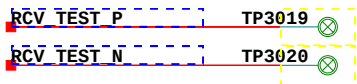
Speaker



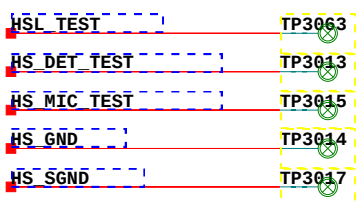
LCD



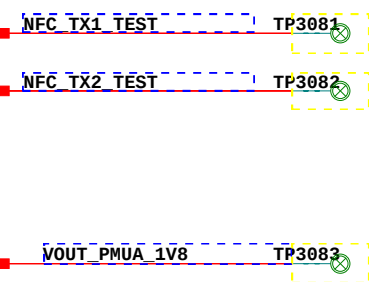
RCV



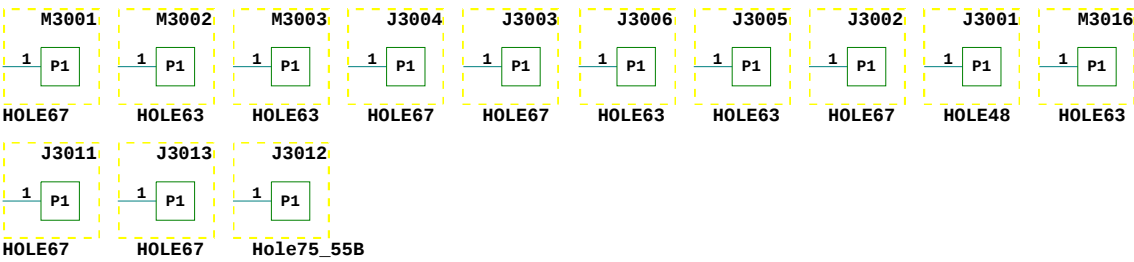
Headset



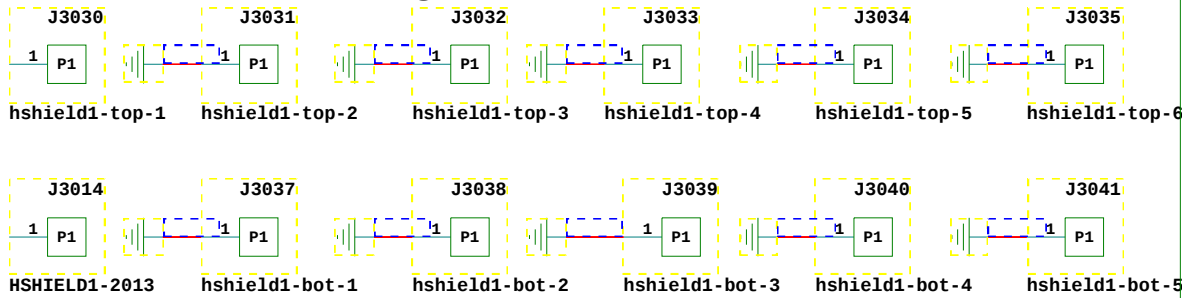
NFC



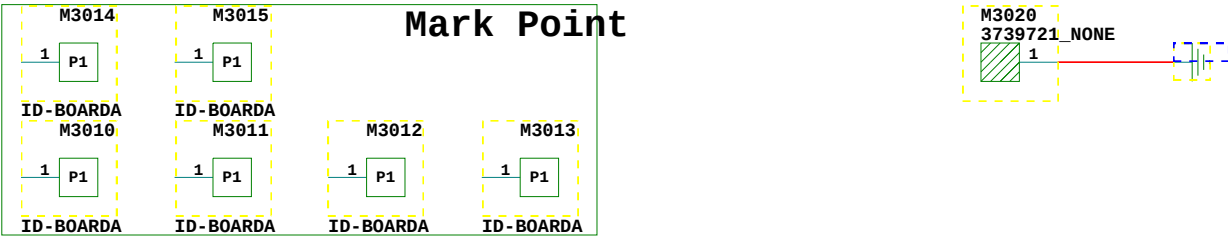
HOLE



SHIELD

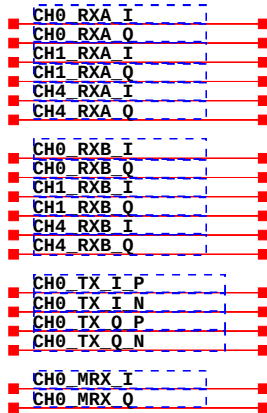


Mark Point

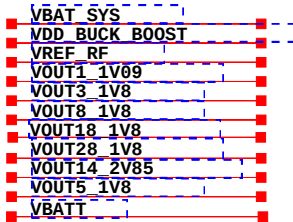


31.RF Interface

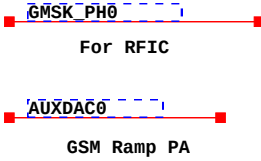
RFIC1 IQ



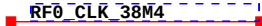
POWER



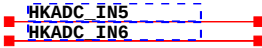
GSM



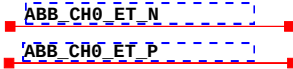
CLK



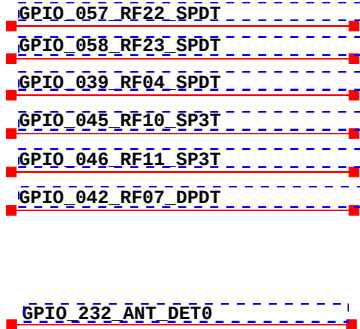
HKADC



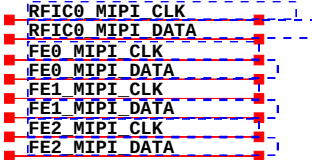
ETM



GPIO Interface

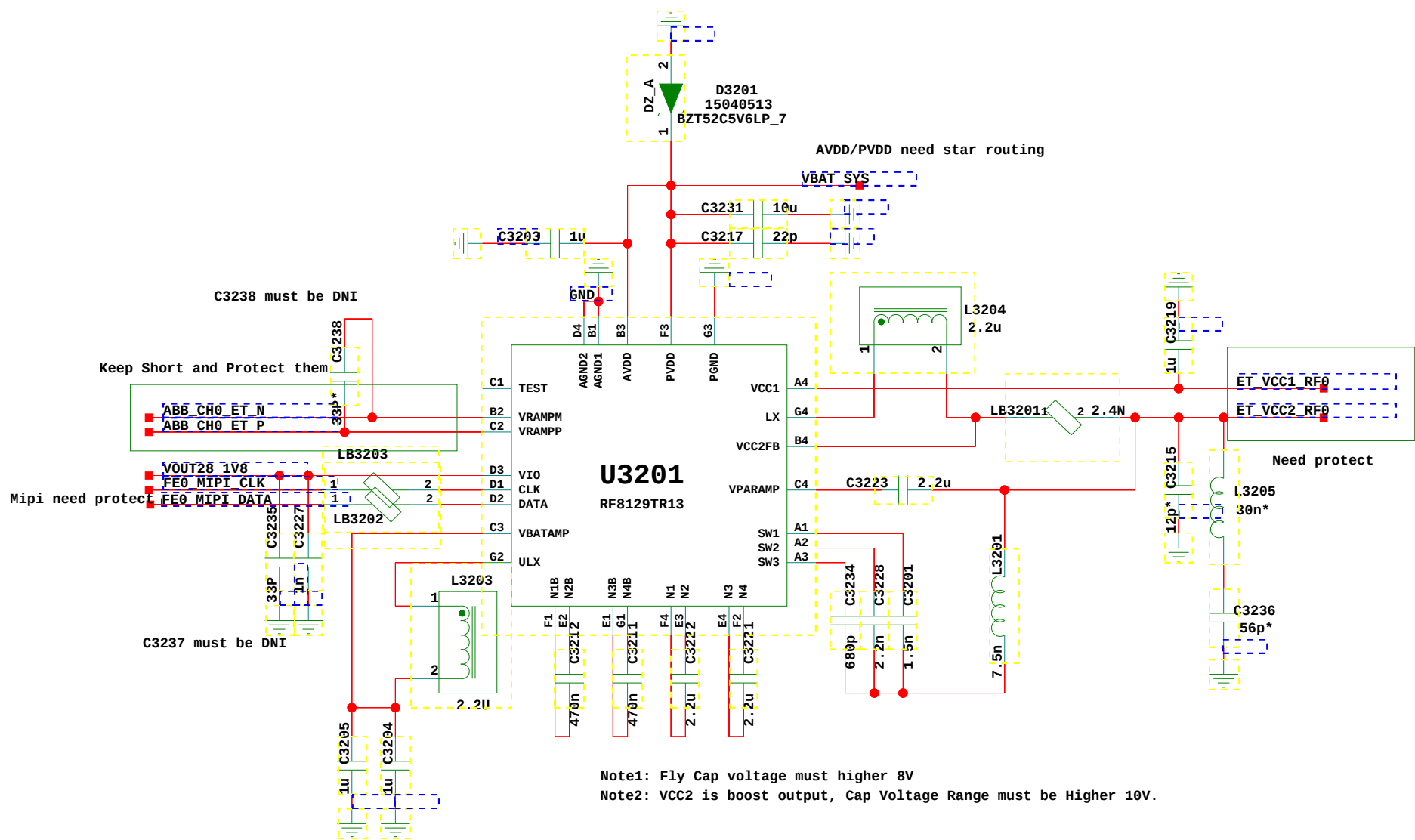


MIPI Interface



32.RF PMU

USID=0XC-1100-12



33. RF Transceiver_HI6363_01

35.MHB_PA

USID=0XE-1110-14(sky-MB)
USID=0XF-1111-15(sky-HB) USID=0XF-1111-15(QORVO)

A

A

B

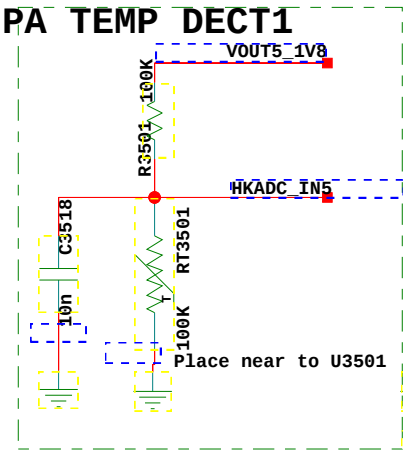
B

C

C

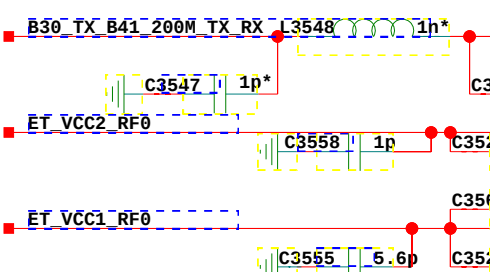
D

D



SKY_B41_200M_TRX

close to U3501



close to U3501

PRX B41_200M LNA IN

Qorvo&Sky_B41_200M_RX

PRX B40 LNA IN

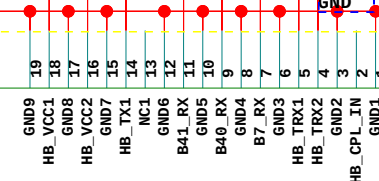
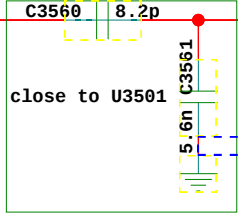
PRX B7 LNA IN

B30 TRX B34_38_39_41 PRX

B41_120M-Trisaw 39+41 CA

MB TRX CN

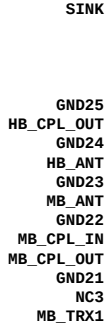
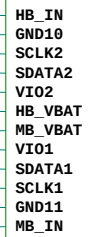
Qorvo MB Demostic/SKY NC



U3501

QM77031

47150671



co-pad co-pad

MHB CPL OUT

B41_200M TRX

SKY_MB_TRX2_41_200M

B2 CA 66 TRX

close to U3501

Qorvo HB Oversea

HB TRX Shasta

Qorvo HB Demostic

HB TRX CN

Qorvo MB Demostic

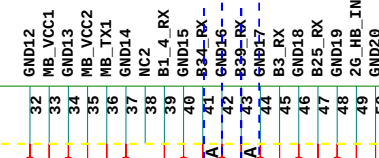
MB TRX CN

SKY MHB

MHB TRX SKY

Qorvo MB Oversea

MB TRX Shasta



If use MB AUX Port
R3502 should be DNI or change as a matching component

GSM HB PA_OUT_MB_AUX

L3511 4.3pRX B2 LNA IN

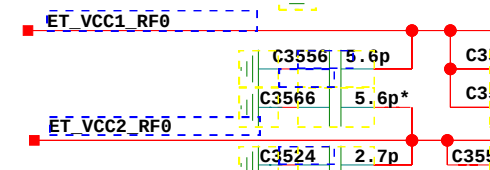
L3529 2.4n*

L3509 5.6nRX B3/9 LNA IN

L3521 5.1n

L3510 3.6n B1/4 LNA IN

L3528 3.6n



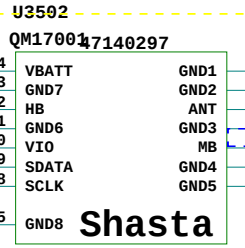
B2_CA_B66_TX_PA_OUT

L3513 1.3n*

C3538 33p*

C3539 1p*

close to U3501



Shasta

USID=0X8-1000-8

HB TRX CN C3519 33p*

MHB TRX SKY C3536 33p*

Co_PAD

C3510 1n

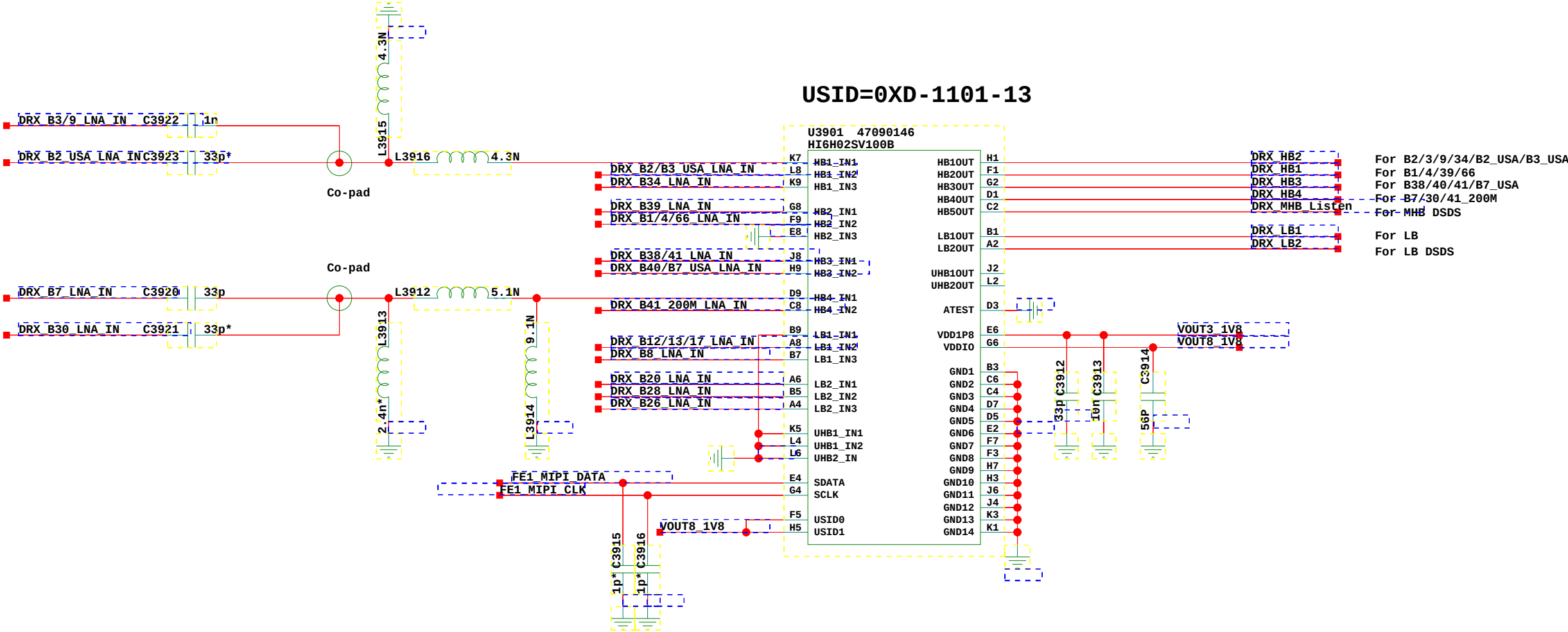
Qorvo MHB Oversea

MB TRX Shasta

	1	2	3	4	5	6
A	37. GSM&B42 PA					
B						
C						
D						



39. DRX LNA Module

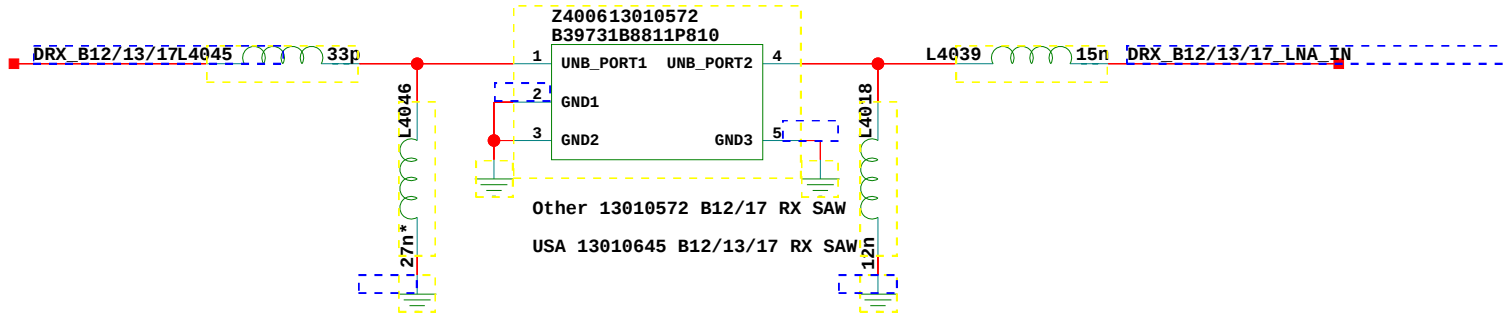
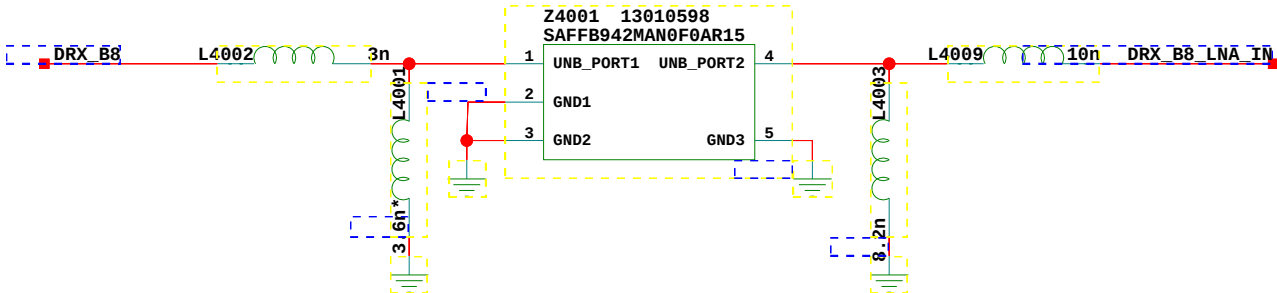
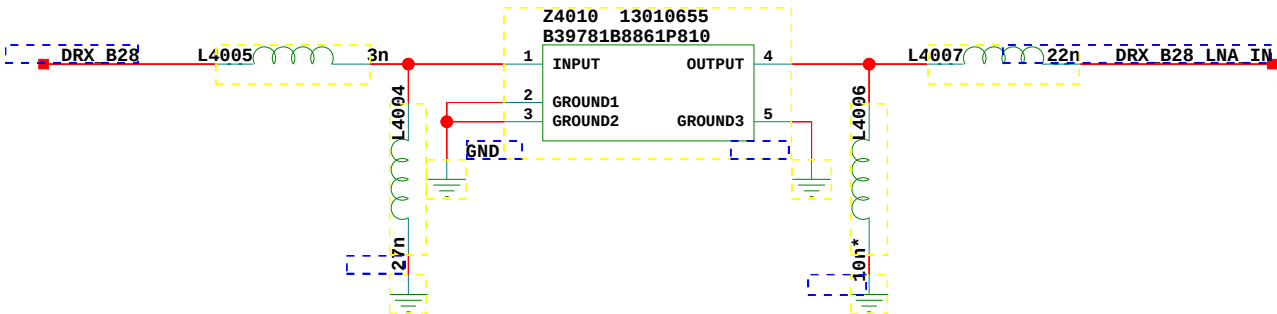
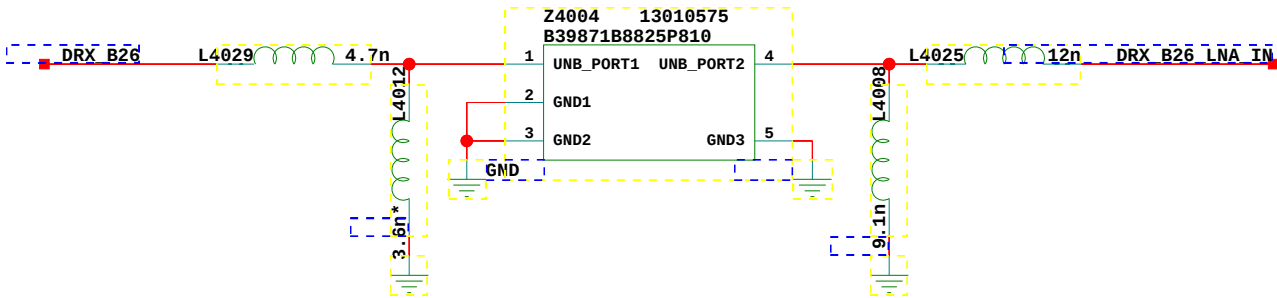
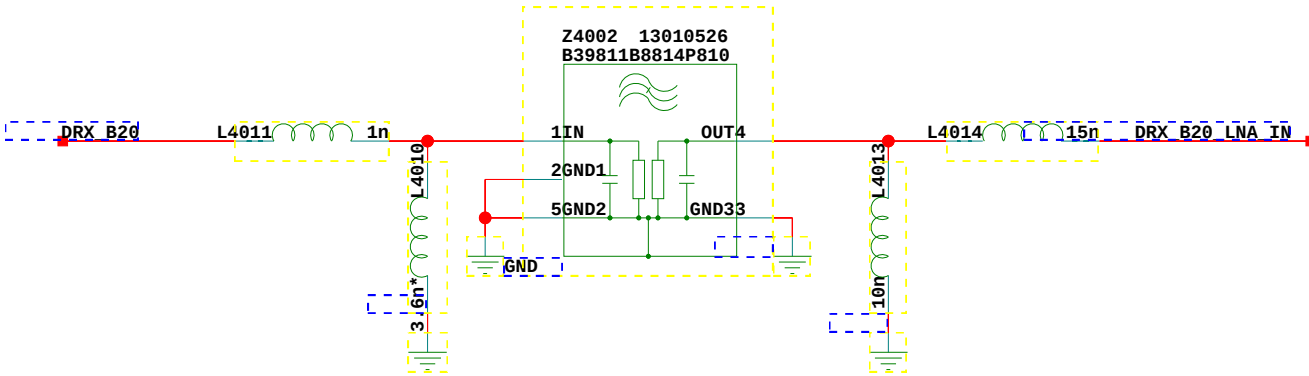
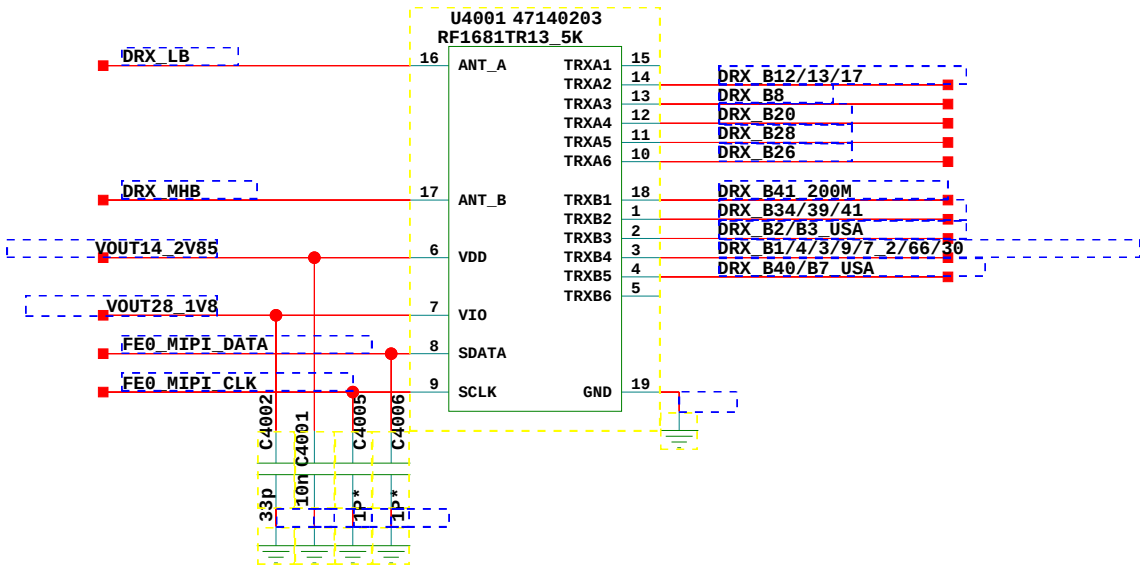


6H0X Frequency Range	
LB1_IN1	460-895MHz
LB1_IN2-3, LB2_IN_1-3	703-960MHz
HB1_IN1-3	1447-2200MHz
HB2_IN1-3	1805-2200MHz
HB3_IN1-2	2100-2690MHz
HB4_IN1-2	2100-2690MHz
UHB1_IN1, UHB2	3400-3800MHz
UHB1_IN2	5150-5925MHz

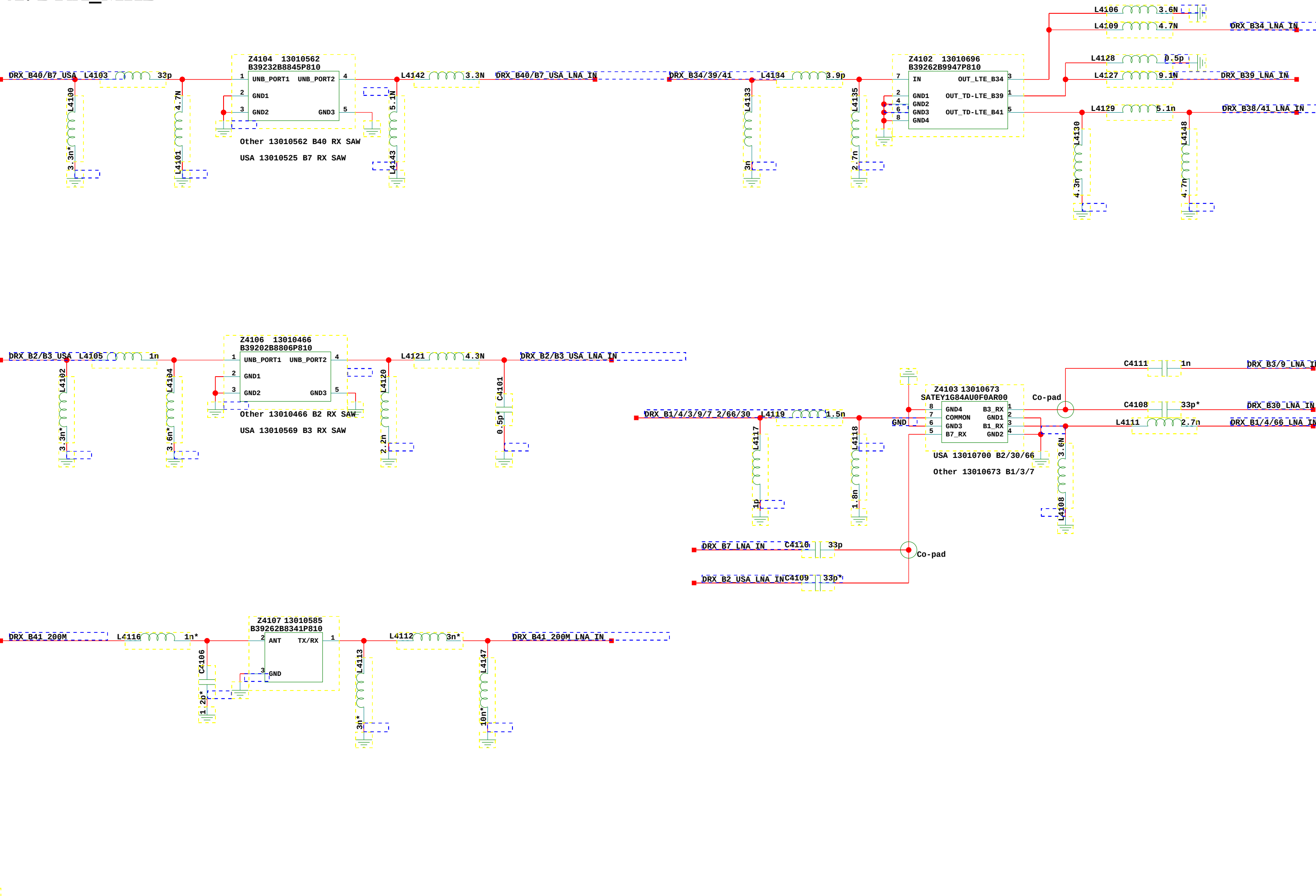
HB3/HB4 1.8-2.1G not support 18dB gain

40. DRX LB

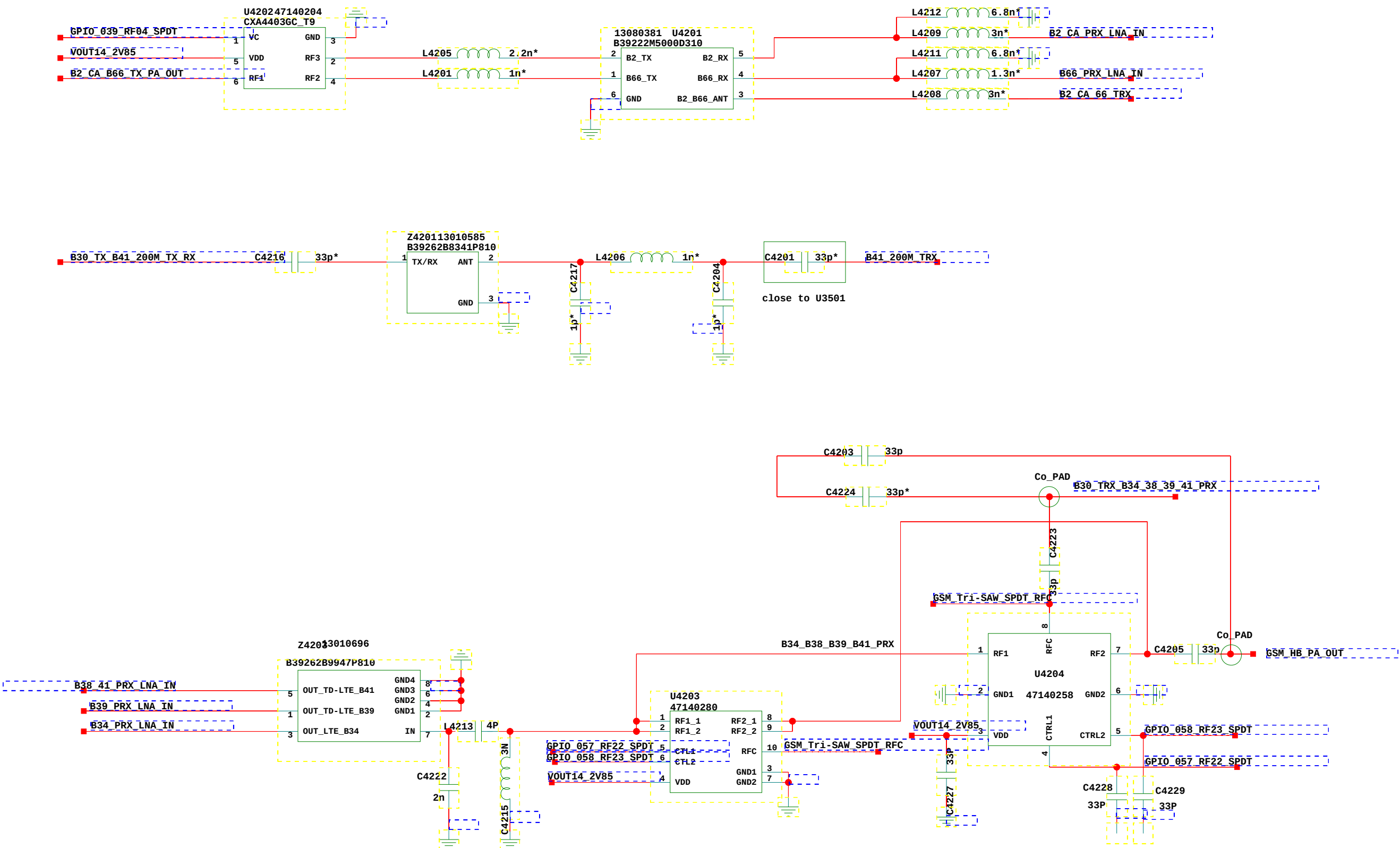
USID=0XA-1010-10



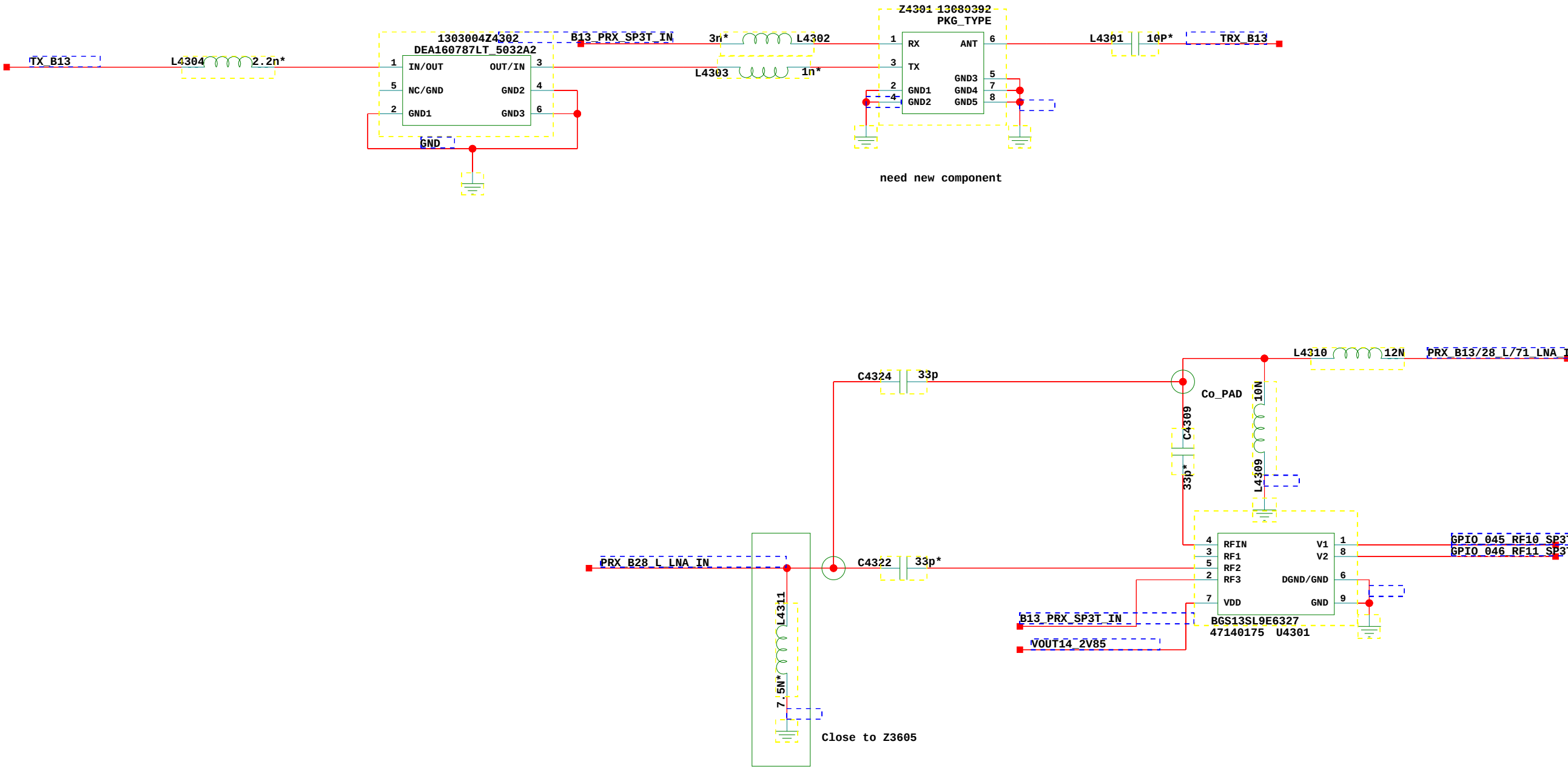
41. DRX_MHB



42. PRX_B2_30_66



43.PRX_B13_B71



	1	2	3	4	5	6
A	44. MIMO_PRX					
B						
C						
D						
	1	2	3	4	5	6

	1	2	3	4	5	6
A	45. RF Transceiver_HI6363 _02					
B						
C						
D						
	1	2	3	4	5	6

	1	2	3	4	5	6
A	46. Reserved for CDMA Modem					
B						
C						
D						
	1	2	3	4	5	6

1

2

3

4

5

6

47. Reserved for CDMA Modem

A

A

B

B

C

C

D

D

1

2

3

4

5

6

1

2

3

4

5

6

48. Reserved

A

A

B

B

C

C

D

D

1

2

3

4

5

6

1

2

3

4

5

6

49. Reserved

A

A

B

B

C

C

D

D

1

2

3

4

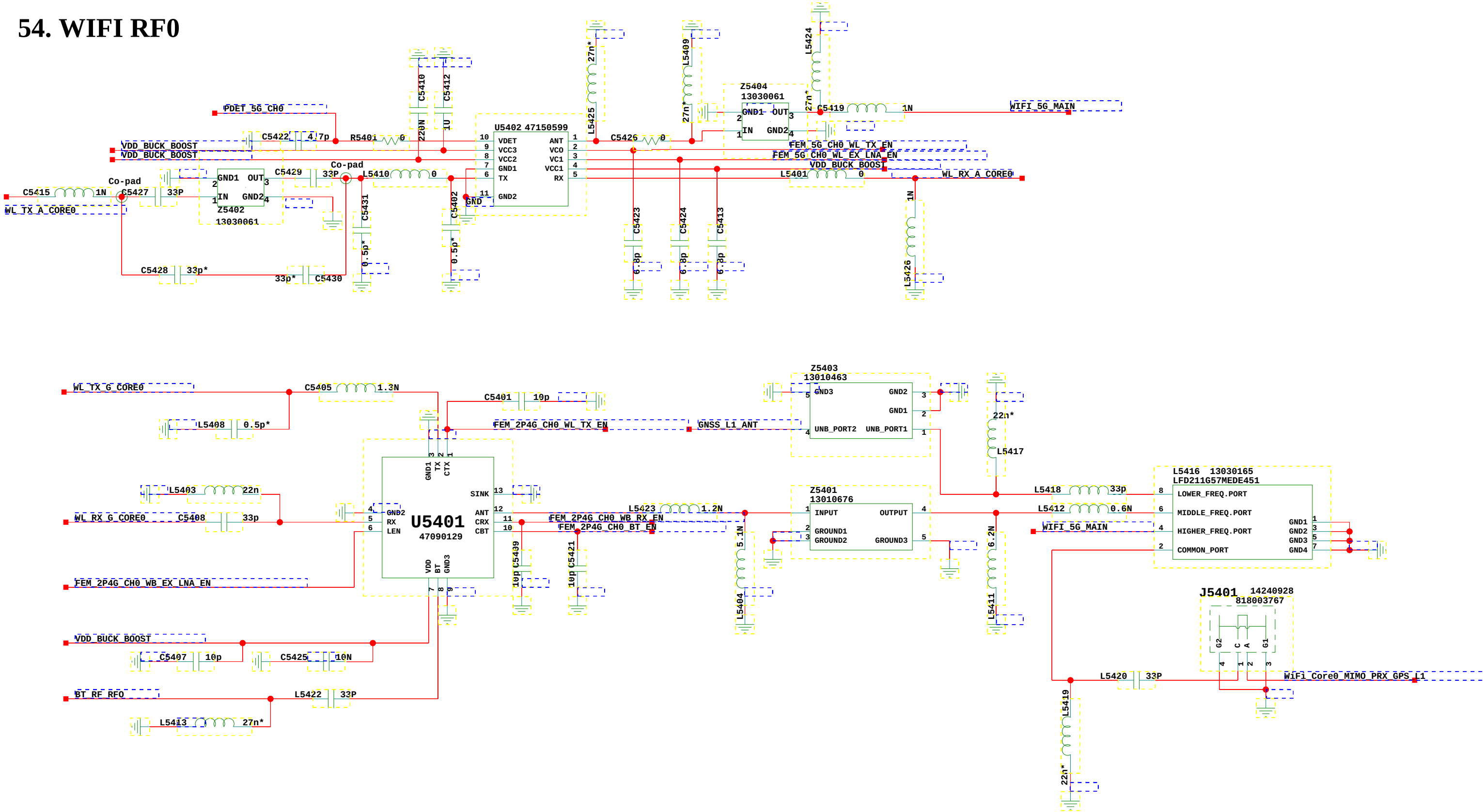
5

6

	1	2	3	4	5	6
A	50. Reserved					
B						
C						
D						
	1	2	3	4	5	6

	1	2	3	4	5	6
A	53.Reserved					
B						
C						
D						

54. WIFI RF0



U5401 Control Logic				
Mode	CBT	CTX	LEN	CRX
ALL OFF	0	0	0	0
WLAN receive LNA	0	0	1	1
WLAN receive bypass	0	0	0	1
Bluetooth	1	0	0	0
WLAN transmit	0	1	0	0

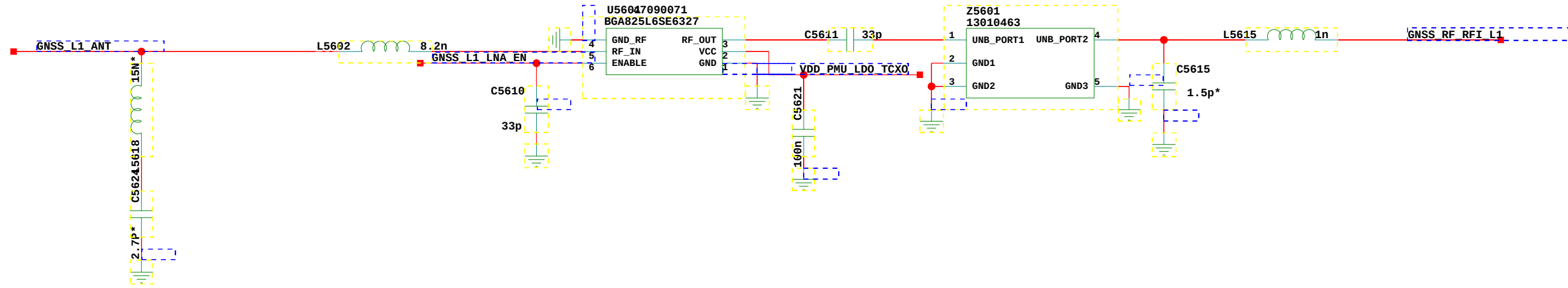
A

D

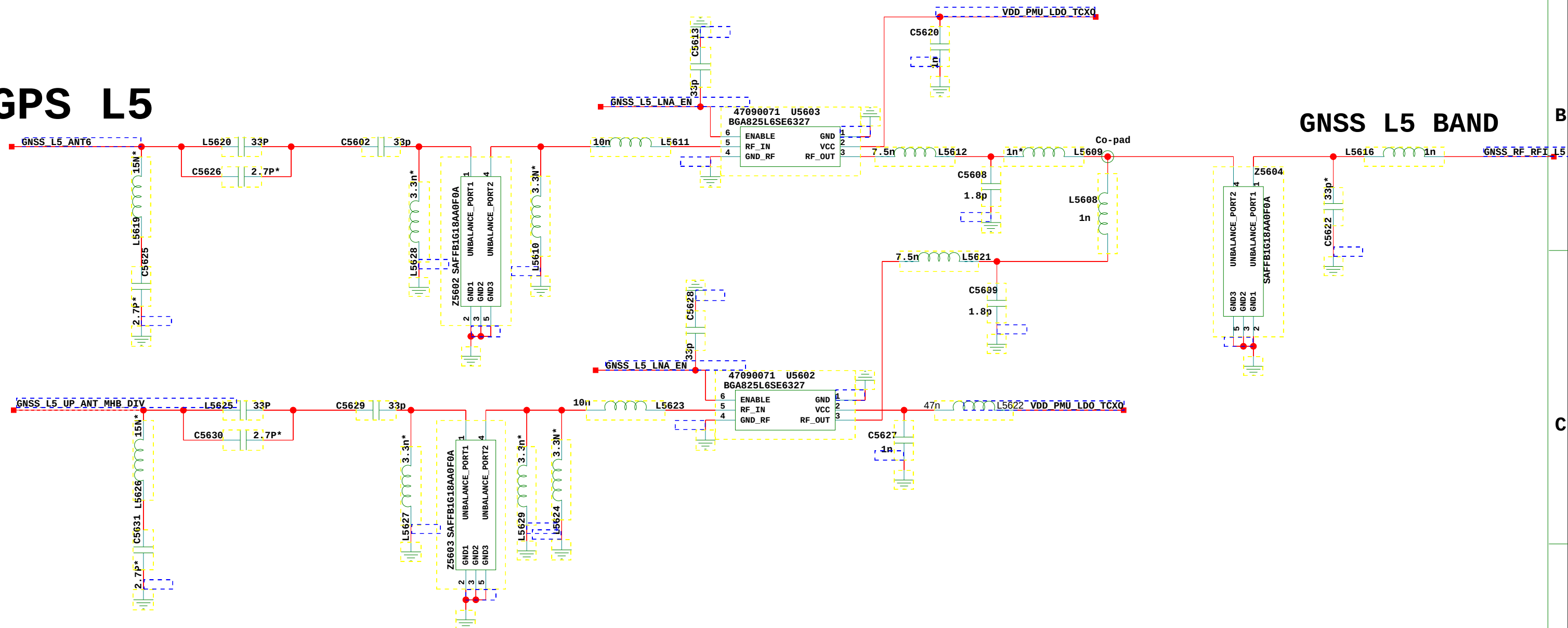
U5502 Control Logic				
Mode	CBT	CTX	LEN	CRX
ALL OFF	0	0	0	0
WLAN receive LNA	0	0	1	1
WLAN receive bypass	0	0	0	1
Bluetooth	1	0	0	0
WLAN transmit	0	1	0	0

56. GPS

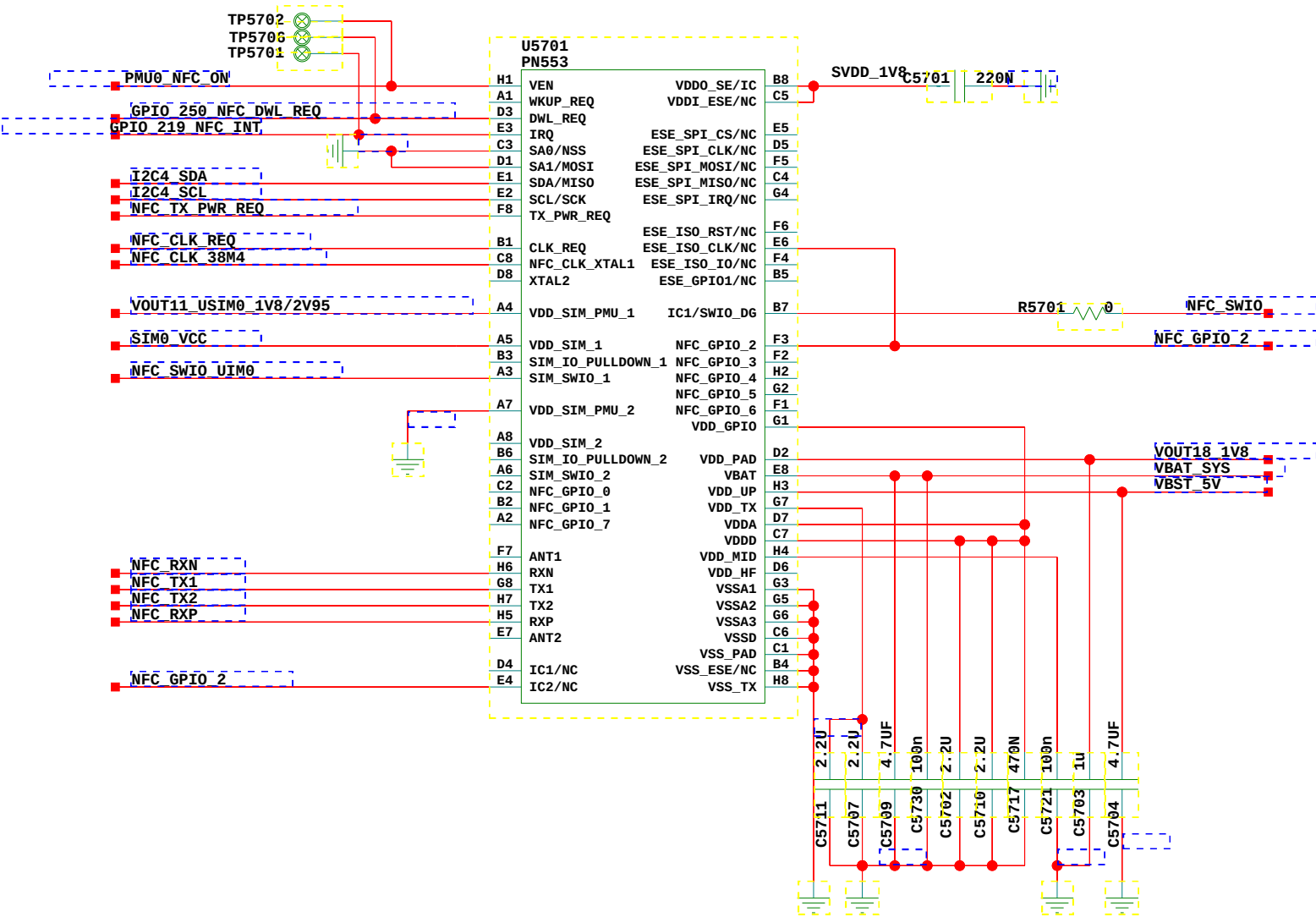
GPS L1



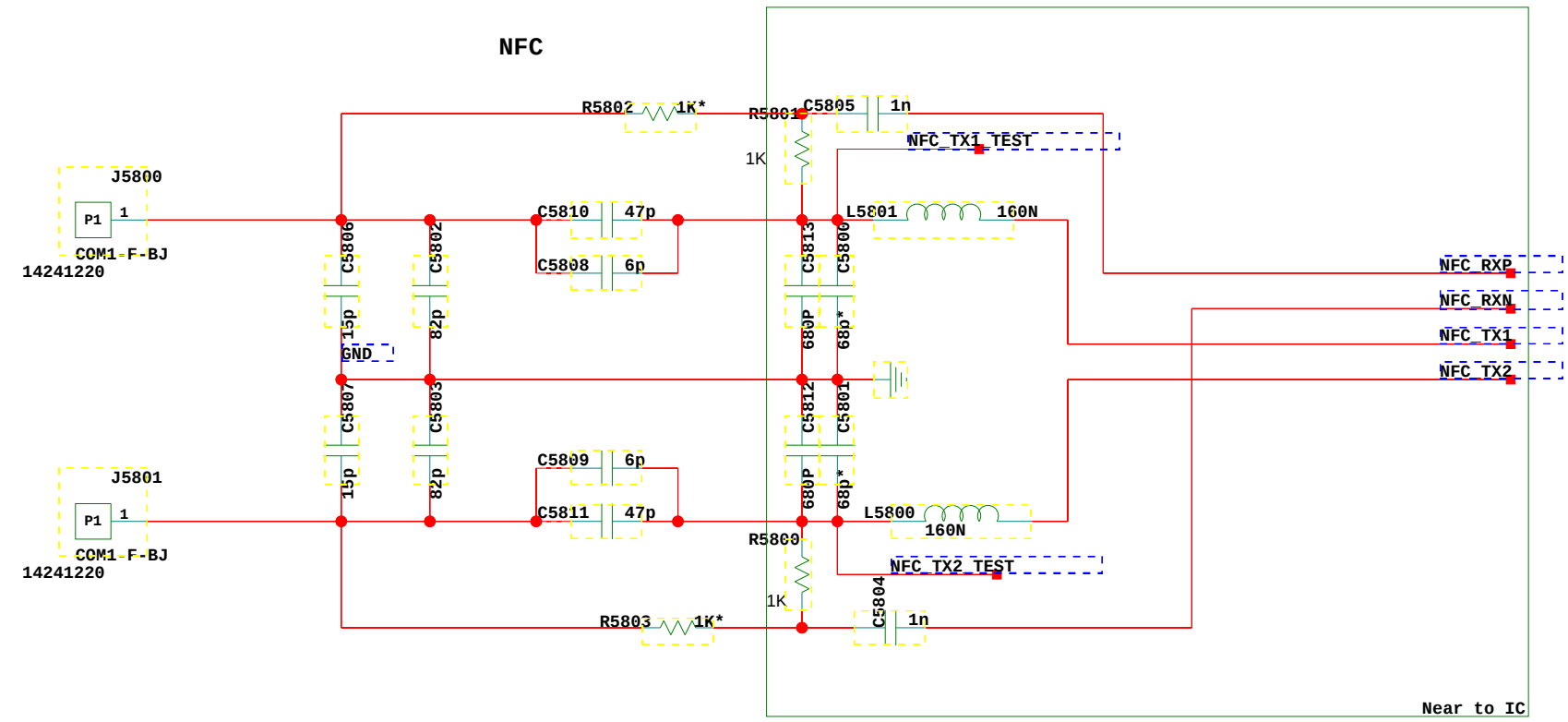
GPS L5



57.NFC



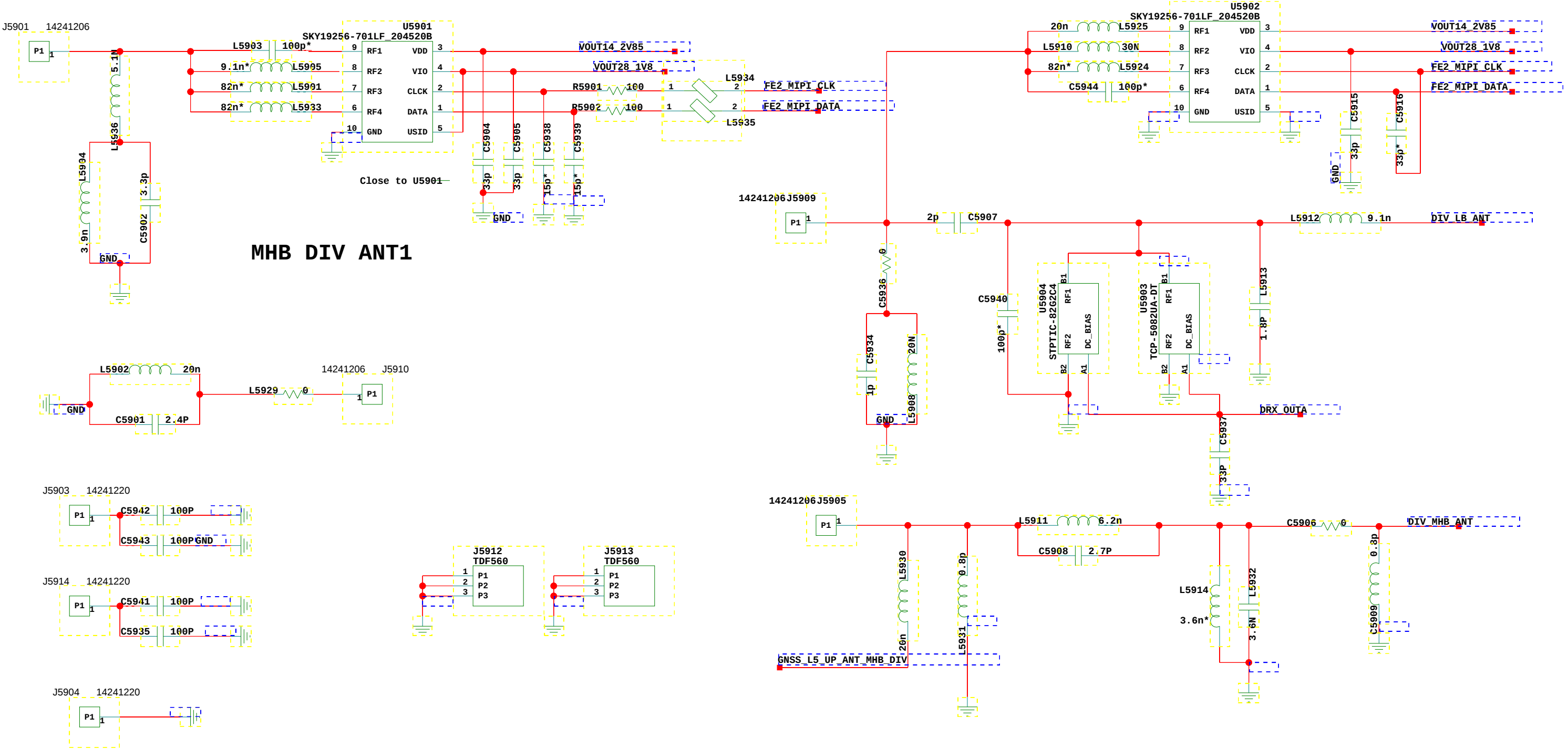
58. NFC Antenna



59.DIV ANT

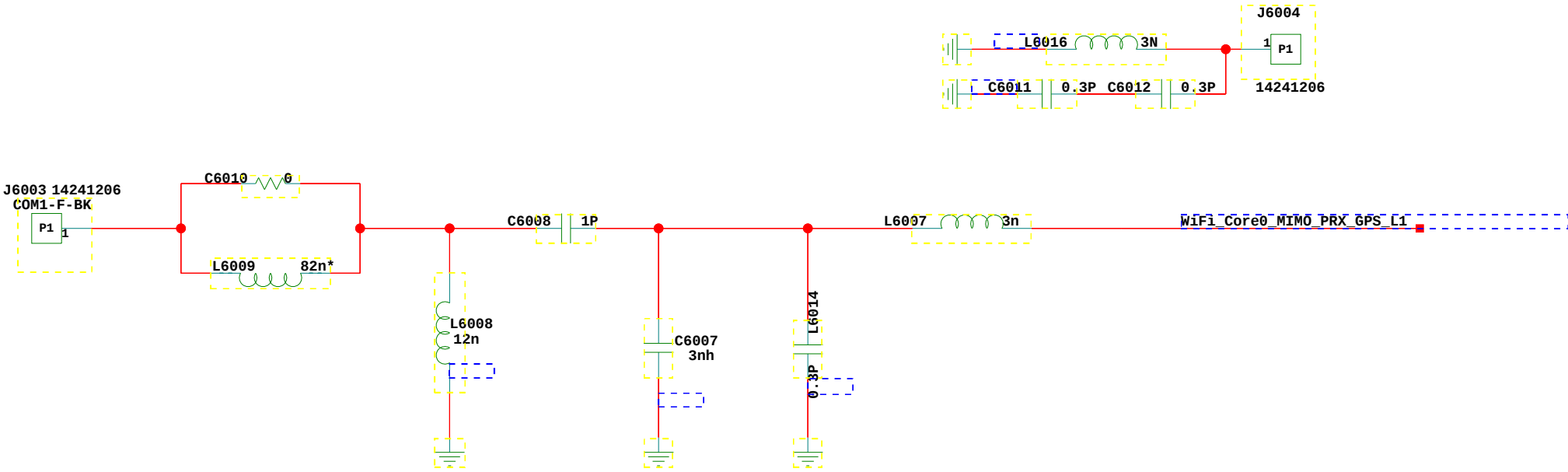
USID=0X9-1001-9

USID=0X6-0110-6

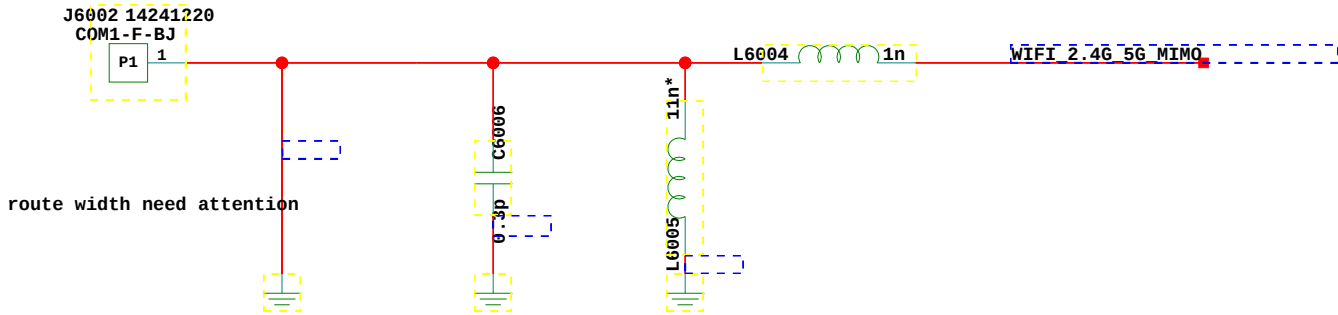


60.GPS/WIFI ANT

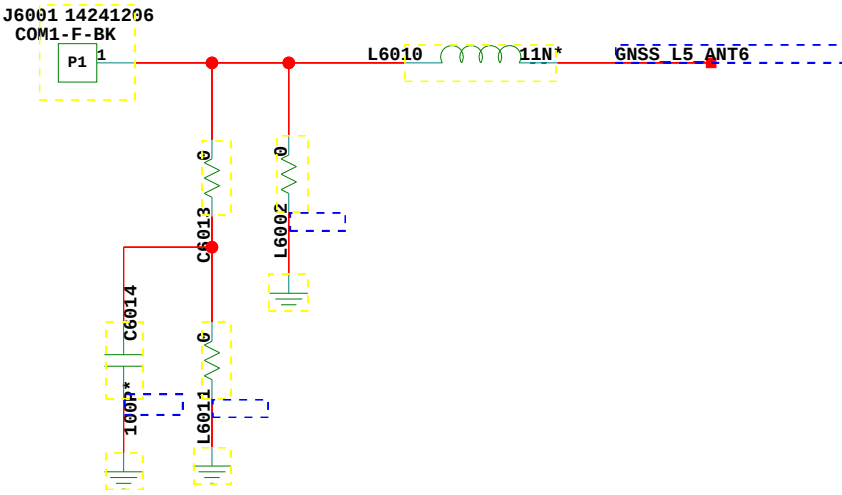
WiFi Core0+MIMO PRX ANT4



WIFI_2.4G_5G_MIMO



GNSS_L5_ANT6



USID=0X7-0111-7 HVDAC

