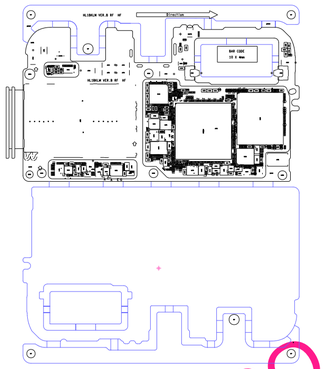
ART FILM - adt

VERSIONS		
VER	DESIGNER	DATE
A	zhaokai	2017-08-09
B	zhaokai	2017-08-08
C		
D		
E		
F		



ALI PRO +967777617810

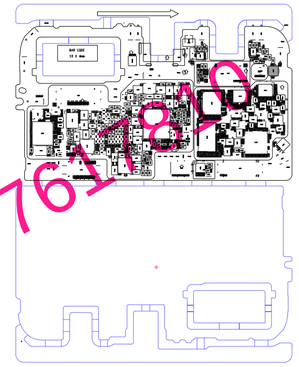
HL1BKEM VER.B SILKSCREEN TOP
SPELL MODE:1*2

		B	03024TWR	1:1	A2

ART FILM - adt

ART FILM - adb

VERSIONS		
VER	DESIGNER	DATE
A	zhoukai	2017-08-09
B	zhoukai	2017-09-08
C		
D		
E		
F		



HL1BKLM VER.B SILKSCREEN BOTM
SPELL MODE:1*2

ALI PRO +967776119519

				09-23
		B	030241WR 1:1 A2	

ART FILM - adb

Baseband Schematic

1. Contents
2. RES
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. PMU LDO
11. PMU BUCK
12. PMU MISC & BUCKBOOST
13. HI6422
14. UFS and LPDDR4
15. Battery & Fuel gauge
16. Charge Management
17. LCD Interface
18. Flash /Front CAM
19. Main CAM
20. USB
21. Main FPC
22. Codec HI6403
23. Direct Charger
24. SMART PA
25. Audio
26. Headphone
27. X-Sensor
28. SIM Card/SD
29. LED /KEY/IR
30. Test Point/Shielding

MODEM Schematic

31. RF Interface
32. APT Power
33. RF Transceiver_0
34. RF FRONT END HB
35. RF FRONT END B42
36. RF FRONT END MB
37. RF Front End LB
38. RF Front End Switch /Main ANT
39. RF Front End Diversity
40. RF Front End Diversity
41. Reserved for CDMA Modem
42. Reserved for CDMA Modem
43. Reserved for CDMA Modem
44. Reserved for CDMA Modem
45. Reserved for CDMA Modem
46. Reserved for CDMA Modem
47. Reserved for CDMA Modem
48. Reserved for CDMA Modem
49. Reserved
50. Reserved
51. BCM43455 BB
52. BCM43455 POWER
53. Reserved
54. WALN RF0
55. WLAN RF1
56. GPS
57. NFC
58. RF Transceiver2
59. Reserved
60. ANT Tuner

ALI PRO +96777617810

2.RES

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3.SOC PWR1

PWR1 interface 1 of 10

VDD_CPU_B
VDD_CPU_B_REMOTE
GND
VSS_CPU_B_REMOTE
VDD_GPU
VDD_GPU_REMOTE
VSS_GPU_REMOTE

3ｸ uF｣ｨC306\C304\C326｣ｯｺﾏｲ「ﾎｪ1ｸ カヒラモ｣ｨC306｣ｯ
4ｸ uF｣ｨC310\C322\C325\C323｣ｯｺﾏｲ「ﾎｪ1ｸ カヒラモ｣ｨC310｣ｯ
6ｸ 0uFｺﾏｲ「ﾎｪ3ｸ 2uF

U300
HI3670CSSOC

CPU_BIG		GPU	
AJ12	VDD_CPU_B_1	VDD_GPU_1	AU36
AJ14	VDD_CPU_B_2	VDD_GPU_2	AA28
AJ16	VDD_CPU_B_3	VDD_GPU_3	AA30
AJ18	VDD_CPU_B_4	VDD_GPU_4	AA32
AJ20	VDD_CPU_B_5	VDD_GPU_5	AA34
AN10	VDD_CPU_B_6	VDD_GPU_6	AA36
AN12	VDD_CPU_B_7	VDD_GPU_7	AA40
AN14	VDD_CPU_B_8	VDD_GPU_8	AE28
AN16	VDD_CPU_B_9	VDD_GPU_9	AE32
AN20	VDD_CPU_B_10	VDD_GPU_10	AE34
AU10	VDD_CPU_B_11	VDD_GPU_11	AE36
AU14	VDD_CPU_B_12	VDD_GPU_12	AE40
AU16	VDD_CPU_B_13	VDD_GPU_13	AJ28
AU18	VDD_CPU_B_14	VDD_GPU_14	AJ32
		VDD_GPU_15	AJ34
		VDD_GPU_16	AJ36
		VDD_GPU_17	AJ38
		VDD_GPU_18	AJ40
		VDD_GPU_19	AN30
		VDD_GPU_20	AN32
		VDD_GPU_21	AN34
		VDD_GPU_22	AN36
		VDD_GPU_23	AU40
		VDD_GPU_24	AU28
		VDD_GPU_25	AU32
		VDD_GPU_26	AU34
		VDD_GPU_27	AA38
		VDDC_GPU_MEM_1	AE30
		VDDC_GPU_MEM_2	AE38
		VDDC_GPU_MEM_3	AL30
		VDDC_GPU_MEM_4	AN38
		VDDC_GPU_MEM_5	AU30
		VDDC_GPU_MEM_6	AU38
		VDDC_GPU_MEM_7	AJ30
		VDD_GPU_T	AL40
		VSS_GPU_T	AN40
		GPU_Tsensor	
		AVDD18_TS_GPU	AW40
CPU_PLL			
AR20	AVDD18_PLL_CPU		
CPU_LITTLE			
AL24	VDD_CPU_L_1		
AL26	VDD_CPU_L_2		
AR22	VDD_CPU_L_3		
AR24	VDD_CPU_L_4		
AR26	VDD_CPU_L_5		
AU22	VDD_CPU_L_6		
AU24	VDD_CPU_L_7		
AU26	VDD_CPU_L_8		
SWP			
BH35	SWP_VREF		
BH17	OSC_VREF		
AY21	AVDD18_OTP		
EFUSE			
BA40	VDD18_EFUSE_BISR		
AY39	VDD18_EFUSE_SYS		

PWR1 interface 1 of 10

TP308 VDD_CPU_B_T AY11
TP304 VSS_CPU_B_T AW10
TP301 SWP_VREF BH35
TP302 SE_OSC_VREF BH17
TP306 VDD_GPU_T
TP307 VSS_GPU_T

C375 C372 C371 C369 C379 C376 C312 C309 C383 C384 C385 C386 C341 C342 C382 C378 C377 C311 C308 C316 C330 C355 C354 C346 C344 C343 C314 C302 C324 C307 C320 C313 C387 C319 C360 C362 C364 C306 C336 C365 C361 C310 C301 C380

VDD_CPU_B
VDD_CPU_L
VOUT5_1V8
VOUT2_1V8
VDD_GPU
GND
VBUCK6_0V75

AP Temperature DET

VOUT27_1V8
HKADC_IN7
R301
C303
07/25
RT301

ALI PRO 1967701810

4.SOC PWR2

PWR2 interface 2 of 10

Ensure VBUCK1_1V1_FB_R and VBUCK7_0V6_FB_R near the CAP

U300
HI3670CSSOC

VBUCK1_1V1
VBUCK7_0V6
VOUT5_1V8
VBUCK8_1V8
VBUCK8_1V8
VBUCK1_1V1
GND
VBUCK7_0V6 SG401 VBUCK7_0V6_REMOTE
VBUCK7_0V6
VOUT0_0V75
VOUT29_1V8
VOUT36_1V2
VOUT11_USIM0_1V8/2V95
VOUT12_USIM1_1V8/2V95
VOUT09_SDIO_1V8/2V95

C427 C424 C422 C428
C429 C423 C425 C421
C443
C418 C420 C413 C462 C472 C473 C474 C475
C483 C484 C426 C431 C430 C432 C466
C406 C407 C414 C415 C482 C481 C436 C437 C438 C434 C401 C442 C464
C449 C404 C405 C402 C403 C410 C411 C412 C409 C408 C463 C454 C465
C468 C469 C441 C440 C439 C435

DDRPHY		DDR MEMORY CORE	
H13	VDD11_DDR4A_1	VDD1_M_1	F1
H17	VDD11_DDR4A_2	VDD1_M_2	BD1
BA14	VDD11_DDR4B_1	VDD1_M_3	BH23
BA18	VDD11_DDR4B_2	VDD1_M_4	BC48
H31	VDD11_DDR4C_1	VDD1_M_5	E48
H35	VDD11_DDR4C_2	VDD1_M_6	A24
BA32	VDD11_DDR4D_1		
BA36	VDD11_DDR4D_2		
F13	VDD06_DDR4A_1	VDD2_M_1	C2
F15	VDD06_DDR4A_2	VDD2_M_2	D1
H19	VDD06_DDR4A_3	VDD2_M_3	D3
BC14	VDD06_DDR4B_1	VDD2_M_4	B31
BC16	VDD06_DDR4B_2	VDD2_M_5	B19
BC18	VDD06_DDR4B_3	VDD2_M_6	A12
F31	VDD06_DDR4C_1	VDD2_M_7	BE2
F33	VDD06_DDR4C_2	VDD2_M_8	BF3
F35	VDD06_DDR4C_3	VDD2_M_9	BG12
BC32	VDD06_DDR4D_1	VDD2_M_10	BG22
BC34	VDD06_DDR4D_2	VDD2_M_11	BG28
BC36	VDD06_DDR4D_3	VDD2_M_12	BH37
		VDD2_M_13	BE48
		VDD2_M_14	BF47
		VDD2_M_15	C46
		VDD2_M_16	D47
		VDD2_M_17	B37
DDRPHY PLL		**DDR MEMORY IO**	
J14	AVDD18_PLL_DDR4A	VDDQ_M_1	A6
AY15	AVDD18_PLL_DDR4B	VDDQ_M_2	BH5
J34	AVDD18_PLL_DDR4C	VDDQ_M_3	BH19
AY35	AVDD18_PLL_DDR4D	VDDQ_M_4	BG32
		VDDQ_M_5	BH25
		VDDQ_M_6	BH43
		VDDQ_M_7	A44
		VDDQ_M_8	A32
		VDDQ_M_9	B25
		VDDQ_M_10	A20
IO POWER		**UFS**	
H9	VDD18_IO_1	AVDD075_UFS_1	M41
H11	VDD18_IO_2	AVDD075_UFS_2	N40
K7	VDD18_IO_3		
M7	VDD18_IO_4	AVDD18_VPH_UFS_1	N42
H21	VDD18_IO_5	AVDD18_VPH_UFS_2	P41
H29	VDD18_IO_6		
H39	VDD18_IO_7	VDD1812_UFS	T41
AA42	VDD18_IO_8		
AC42	VDD18_IO_9		
AJ42	VDD18_IO_10		
AL42	VDD18_IO_11		
AN42	VDD18_IO_12		
AY41	VDD18_IO_13		
U42	VDD18_IO_14		
W42	VDD18_IO_15		
BB29	VDD18_IO_16		
BA20	VDD18_IO_17		
PCIE		**USIM IO**	
L40	AVDD075_PCIE	VDD1830_USIM0	BB9
K41	AVDD18_VPH_PCIE	VDD1830_USIM1	BB11
G42	AVDD18_PCIE_IO	**SDCARD IO**	
		VDD1830_SD_1	AY7

PWR2 interface 2 of 10

08/02

4ｸ uFｼC443\C444\C445\C446ｼｳｺﾏｲ｢ﾈｴ1ｸ ｶﾋﾗﾓｼC443ｼｳ

ｲｻﾖｧｳﾖPCIE」ｬｺ」ﾋｼxuxiaoweiﾈｷﾈﾏｴﾋﾈ ﾂｷｵ醸ｴﾊ菠 ﾓｵﾘ

ALI PRO +96777

5.SOC PWR3

PWR3 interface 3 of 10

U300
HI3670CSSOC

PERI CORE
VDD075_PERI_1 AC20
VDD075_PERI_2 AC22
VDD075_PERI_3 AC24
VDD075_PERI_4 AC26
VDD075_PERI_5 AG20
VDD075_PERI_6 AG22
VDD075_PERI_7 AL22
VDD075_PERI_8 AN22
VDD075_PERI_9 AN28
VDD075_PERI_10 AT41
VDD075_PERI_11 AY27
VDD075_PERI_12 BA42
VDD075_PERI_13 J8
VDD075_PERI_14 L20
VDD075_PERI_15 L22
VDD075_PERI_16 L24
VDD075_PERI_17 L26
VDD075_PERI_18 L28
VDD075_PERI_19 L30
VDD075_PERI_20 L32
VDD075_PERI_21 L34
VDD075_PERI_22 L36
VDD075_PERI_23 N8
VDD075_PERI_24 R20
VDD075_PERI_25 R22
VDD075_PERI_26 R24
VDD075_PERI_27 R26
VDD075_PERI_28 R28
VDD075_PERI_29 R30
VDD075_PERI_30 R32
VDD075_PERI_31 R34
VDD075_PERI_32 R36
VDD075_PERI_33 W20
VDD075_PERI_34 W22
VDD075_PERI_35 W24
VDD075_PERI_36 W26
VDD075_PERI_37 W28
VDD075_PERI_38 W30
VDD075_PERI_39 W32
VDD075_PERI_40 W34
VDD075_PERI_41 AY17
VDD075_PERI_42 AW20

DDR_CORE
VDD075_PERI_43 J12
VDD075_PERI_44 J18
VDD075_PERI_45 J30
VDD075_PERI_46 J36
VDD075_PERI_47 AY13
VDD075_PERI_48 AY19
VDD075_PERI_49 AY31
VDD075_PERI_50 AY37

PERI(FIXED CORE)
VDD075_PERI_FIX_1 AV9
VDD075_PERI_FIX_2 AY9
VDD075_PERI_FIX_3 K39
VDD075_PERI_FIX_4 AY25
VDD075_PERI_FIX_5 J24

PERI FIX PLL
AVDD075_PLL_FIX J40
AVDD18_PLL_FIX H41

PERI PLL
AVDD075_PLL_PERI AG24
AVDD18_PLL_PERI AJ26

MIPI
AVDD18_CSI_1 H23
AVDD18_CSI_2 H25
AVDD18_DSI_1 BA24
AVDD18_DSI_2 BA26

MODEM
VDD075_MODEM_1 AC10
VDD075_MODEM_2 AC12
VDD075_MODEM_3 AC14
VDD075_MODEM_4 AC16
VDD075_MODEM_5 AC18
VDD075_MODEM_6 AG10
VDD075_MODEM_7 AG12
VDD075_MODEM_8 AG14
VDD075_MODEM_9 AG16
VDD075_MODEM_10 AG18
VDD075_MODEM_11 J10
VDD075_MODEM_12 L10
VDD075_MODEM_13 L12
VDD075_MODEM_14 L18
VDD075_MODEM_15 R10
VDD075_MODEM_16 R12
VDD075_MODEM_17 R14
VDD075_MODEM_18 R16
VDD075_MODEM_19 R18
VDD075_MODEM_20 W10
VDD075_MODEM_21 W12
VDD075_MODEM_22 W14
VDD075_MODEM_23 W16
VDD075_MODEM_24 W18
VDD075_MODEM_25 L14
VDD075_MODEM_26 L16

ABB
AVDD085_ABB_1 AA8
AVDD085_ABB_2 AC8
AVDD085_ABB_3 AE8
AVDD085_ABB_4 AG8
AVDD085_ABB_5 AJ8
AVDD085_ABB_6 R8
AVDD085_ABB_7 U8
AVDD085_ABB_8 W8
AVDD18_ABB_1 AB7
AVDD18_ABB_2 AD7
AVDD18_ABB_3 AF7
AVDD18_ABB_4 AH7
AVDD18_ABB_5 T7
AVDD18_ABB_6 V7
AVDD18_ABB_7 Y7
AVDD18_REF_ABB AL8

USB+DP
AVDD075_USB_DP_1 AP7
AVDD075_USB_DP_2 AT7
DVDD075_USB AW8
AVDD18_USB_DP_1 AN8
AVDD18_USB_DP_2 AR8
AVDD18_USB_DP_3 AU8
AVDD33_USB AV7

SYS CORE
VDD075_SYS_1 AD41
VDD075_SYS_2 AE24
VDD075_SYS_3 AH41
VDD075_SYS_4 AM41
VDD075_SYS_5 N38
VDD075_SYS_6 R38
VDD075_SYS_7 U40
VDD075_SYS_8 W40

SYS PLL
AVDD075_PLL_SYS U38
AVDD18_PLL_SYS W38

PI Monitor
PI_VREF BA22

VDD_PERI_0V75
VDD_PERI_0V75
GND
SG501
SG502
VDD_ISP_REMOTE
VSS_ISP_REMOTE
C534 C596 C595 C537 C524 C521
C507 C576 C523 C577
3ケ uFｼｨC534\C531\C515ｼｮｺﾏｲ「ﾎｴ1ｹ .7uFｼｨC534ｼｮ
3ケ uFｼｨC507\C520\C532ｼｮｺﾏｲ「ﾎｴ1ｹ .3uFｼｨC507ｼｮ
4ケ uFｼｨC523\C533\C528\C516ｼｮｸﾄﾎｴ1ｹ ｶﾋﾗﾓｼｨC523ｼｮ

ﾔﾚｵﾚﾌｲ翩ｿｽﾓAU20ﾍ 郵ﾄｴ ﾗ
VDD075 For VDD_PLL_CPU
C590 C591 C517 C518 C519 C501
C522 C555 C556 C573 C578 C593 C586 C504 C530
C555/C556 Close to AY25 PIN
VOUT30_0V75
VOUT30_0V75
VDD_PERI_0V75
VOUT5_1V8
VOUT5_1V8
VOUT5_1V8

VBUCK4_0V75
3A
GND
C553 C508
C550 C552 C554 C561
16ケ uFｸﾄﾎｴ4ｹ ｶﾋﾗﾓｼｨC550\C552\C554\C561ｼｮ

VOUT6_0V85
C512
5ケ uFｼｨC512\C535\C511\C514\C513ｼｮｸﾄﾎｴ1ｹ .3uFﾈ ｶﾋﾗﾓｼｨC512ｼｮ

VOUT7_1V8
C502 C503
3ケ uFｼｨC502\C509\C503ｼｮｸﾄﾎｴ1ｹ .7uFｼｨC502ｼｮ
6.15: ﾔ ﾓ1ｹ uF(C503)

Route U300.AL8 net separately
C505

VOUT30_0V75
VOUT5_1V8
VOUT23_3V2
VOUT0_0V75
C557 C526 C525 C506 C581 C529
08/05
GND

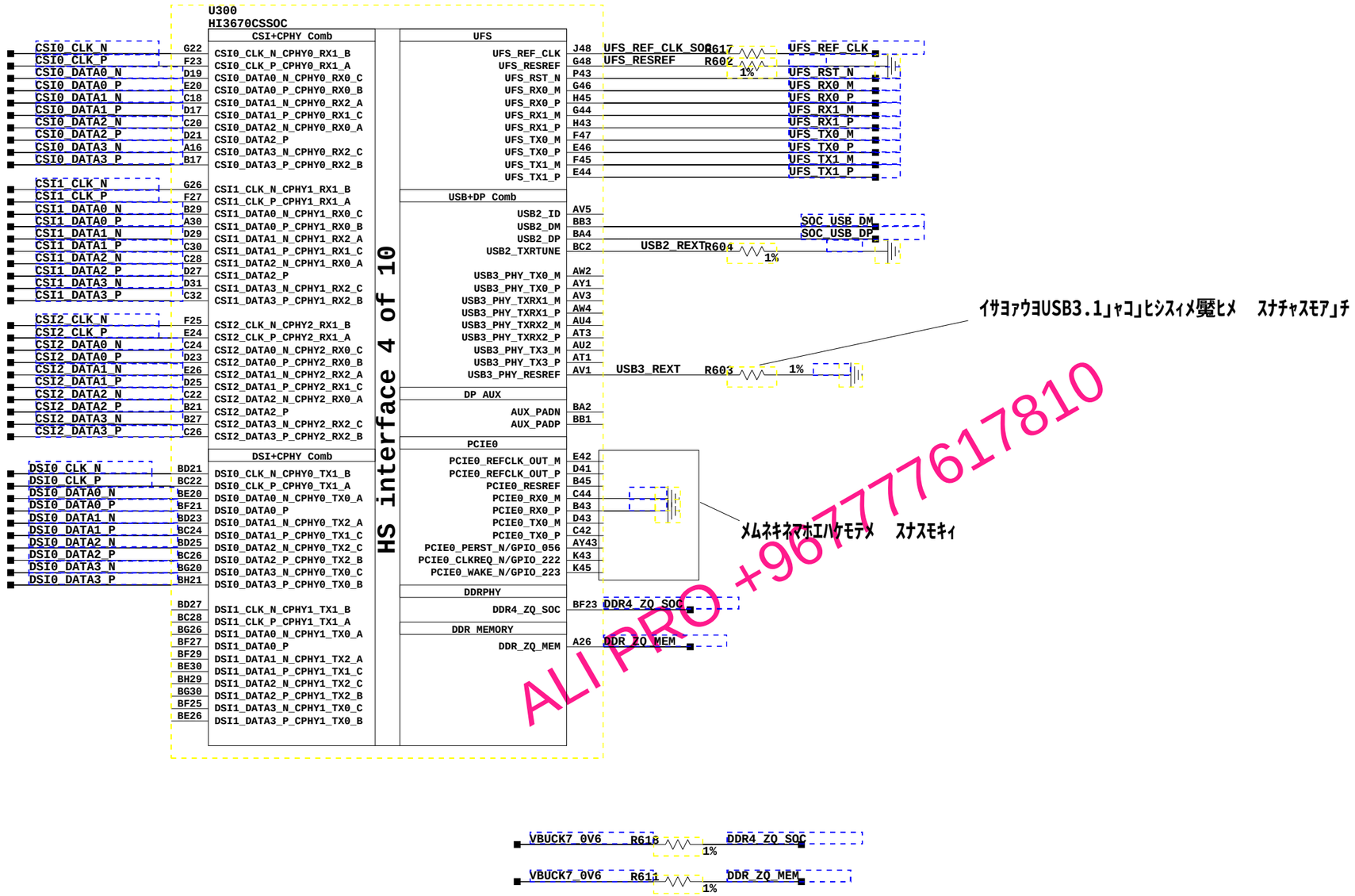
C527
C538
08/02
3ケ uFｼｨC538\C539\C540ｼｮｺﾏｲ「ﾎｴ1ｹ ｶﾋﾗﾓｼｨC538ｼｮ

VOUT0_0V75
VOUT29_1V8
C571 C572

ｲｻﾖｧｳﾖPCIE」ｬｺ」ﾋｼxuxiaoweiﾈｷﾈﾏｴﾋﾈ ﾂｷｵ醸ｴﾊ菠 ﾓｵﾘ

ALL TO FREE
PWR3 interface 3 of 10
0-907-7617810

6.SOC HS INTERFACE



ALI PRO +967777617810

7.SOC GPIO INTERFACE1

U300
HI3670CSSOC

ISP AO
GPIO_202/ISP_GPIO03_PRTRB
GPIO_203/ISP_GPIO04_FTPWM
CODEC_SSI
GPIO_204/ISP_GPIO05_BKPWM
GPIO_209/ISP_GPIO08_ENB
GPIO_208/ISP_GPIO07_ENA
GPIO_207/ISP_GPIO09_ENC
GPIO_218/ISP_GPIO11
SPI2_CS2_N/SPI4_CS2_N
GPIO_219/ISP_GPIO12
SPI2_CS3_N/SPI4_CS3_N

IO AO
GPIO_177
GPIO_182/CLK_OUT0/I3C_SCL
GPIO_183/CLK_OUT1/I3C_SDA
BLPWM_CABC/GPIO_184
BLPWM_BL/GPIO_185
PWM_OUT0
SLIMBUS_CLK/GPIO_192
SLIMBUS_DATA/GPIO_193
GPIO_194/I2S0_DI
DSD_DAT1_6403
GPIO_195/I2S0_DO
DSD_DAT0_6403/UART7_RXD
GPIO_196/I2S0_XCLK
DSD_CLK_6403/UART7_TXD
GPIO_197/I2S0_XFS
GPIO_201/I2S2_XFS
UART8_TXD
GPIO_200/I2S2_XCLK
UART8_RXD
GPIO_205/CLKIN_AUX
GPIO_206
GPIO_210
GPIO_211
GPIO_212
GPIO_220
GPIO_221
GPIO_224

SPI AO
SPI0_CLK/GPIO_227/I3C_SCL
SPI0_DI/GPIO_228/I3C_SDA
SPI0_DO/GPIO_229
SPI0_CS0_N/GPIO_230
SPI0_CS1_N/GPIO_231
SPI2_CLK/GPIO_213
SPI4_CLK
SPI2_DI/GPIO_214
SPI4_DI
SPI2_DO/GPIO_215
SPI4_DO
SPI2_CS0_N/GPIO_216
SPI4_CS0_N
SPI2_CS1_N/GPIO_217
SPI4_CS1_N
SPI3_CLK/GPIO_144
SPI3_DI/GPIO_145
SPI3_DO/GPIO_146
SPI3_CS0_N/GPIO_147
I2C7_SCL
SPI3_CS1_N/GPIO_148
I2C7_SDA
SPI3_CS2_N/GPIO_149
CDMA_GPS_SYNC/LTE_GPS_SYNC

DS1 interface 5 of 10

ISP PERI
ISP_GPIO00_FTRSTN
GPIO_012
ISP_GPIO01_BKRSTN
GPIO_013
ISP_GPIO02_MNTRB
GPIO_014
ISP_GPIO06_FSYNC
GPIO_015
ISP_GPIO10_SBPWM
GPIO_016/LCD_TE0
ISP_CLK0/GPIO_017
ISP_CLK1/GPIO_018
ISP_CLK2/GPIO_019
ISP_SCL0/GPIO_020
ISP_SDA0/GPIO_021
ISP_SCL1/GPIO_022
ISP_SDA1/GPIO_023
ISP_SCL2/GPIO_024
ISP_SDA2/GPIO_025

SYS SIGNAL
CLK_SLEEP
CLK_SYSTEM
SYSCLK_EN

PMU IF
SPMI_CLK/GPIO_226
SPMI_DATA/GPIO_225
PMU0_SSI
PMU_AUXDAC0_SSI/GPIO_049
PMU_AUXDAC1_SSI/GPIO_050
PMU_PER_EN
SYS_RSTIN_N
PMU_RSTOUT_N
GPIO_176_PWR_HOLD

BOOT CTRL
BOOT_MODE
DFT_EN
TEST_MODE/GPIO_001

LTE CTRL
LTE_INACTIVE/GPIO_051
FRAME_SYNC
UART_RXD_BBP/UART_CTS_N_MHS
LTE_RX_ACTIVE/GPIO_052
UART_RXD_BBP/UART_RXD_MHS
LTE_TX_ACTIVE/GPIO_053
UART_TXD_BBP/UART_TXD_MHS
ISM_PRIORITY/GPIO_054
UART_RTS_N_MHS

PERI IO
GPS_REF/GPIO_005
PWM_OUT1/GPIO_047
GPIO_000_SWP
GPIO_055/ONEWIRE
BOOT_UFS/SPDIF

C706 C707 C708

U300
HI3670CSSOC

I2C AO
I2C0_SCL/GPIO_186/I3C_SCL
I2C0_SDA/GPIO_187/I3C_SDA
I2C1_SCL/GPIO_188
I2C1_SDA/GPIO_189
I2C2_SCL/GPIO_190
I2C7_SCL
I2C2_SDA/GPIO_191
I2C7_SDA
PMUI2C1_SCL/GPIO_150
SPMI_CLK
PMUI2C1_SDA/GPIO_151
SPMI_DATA/PMU0_SSI
I2C6_SCL/GPIO_199
I2S2_DO/UART8_RTS_N
I2C6_SDA/GPIO_198
I2S2_DI/UART8_CTS_N

I2C PERI
I2C3_SCL/GPIO_006
I2C3_SDA/GPIO_007
I2C4_SCL/GPIO_026
I2C4_SDA/GPIO_027
PMUI2C0_SCL/GPIO_003
PMUI2C0_SDA/GPIO_004

UART
UART2_CTS_N/GPIO_031
UART0_RXD
UART2_RTS_N/GPIO_032/LCD_TE1
UART0_TXD
UART2_TXD/GPIO_033
UART0_RTS_N
UART2_RXD/GPIO_034
UART0_CTS_N
UART3_CTS_N/GPIO_039
UART5_CTS_N
UART3_RTS_N/GPIO_040
UART5_RTS_N
UART3_RXD/GPIO_041
UART5_RXD
UART3_TXD/GPIO_042
UART5_TXD
UART4_CTS_N/GPIO_043
UART4_RTS_N/GPIO_044
UART4_RXD/GPIO_045
UART4_TXD/GPIO_046
UART6_CTS_N/GPIO_035
UART0_RXD
UART6_RTS_N/GPIO_036
UART0_TXD
UART6_RXD/GPIO_037
UART0_RXD_M/UART_RXD_MHS
UART6_TXD/GPIO_038
UART0_TXD_M/UART_TXD_MHS
UART_RXD_UC/GPIO_029
UART_TXD_UC/GPIO_030

SPI PERI
SPI1_CLK/GPIO_008
UART2_CTS_N
SPI1_DI/GPIO_009
UART2_RTS_N/SPDIF
SPI1_DO/GPIO_010
UART2_RXD
SPI1_CS_N/GPIO_011
UART2_TXD

SDIO
SDIO_CLK/GPIO_128
SDIO_CMD/GPIO_129
SDIO_DATA0/GPIO_130
SDIO_DATA1/GPIO_131
SDIO_DATA2/GPIO_132
SDIO_DATA3/GPIO_133
SDIO_DATA4/GPIO_134
SDIO_DATA5/GPIO_135
SDIO_DATA6/GPIO_136
SDIO_DATA7/GPIO_137

SD CARD
SD_CLK/GPIO_160
SD_CMD/GPIO_161
JTAG_TMS_SD
SD_DATA0/GPIO_162
JTAG_TCK_SD
SD_DATA1/GPIO_163
JTAG_TDI_SD
SD_DATA2/GPIO_164
JTAG_TDO_SD
SD_DATA3/GPIO_165
JTAG_TRST_N_SD
VDD_ODIO_BIAS_SD

AO JTAG
JTAG_MODE
JTAG_SEL0
JTAG_SEL1
JTAG_TCK_SWCLK/GPIO_178
JTAG_TDI/GPIO_180
JTAG_TDO/GPIO_181
JTAG_TMS_SWDIO/GPIO_179
JTAG_TRST_N

USIM
USIM0_CLK/GPIO_166
USIM0_RST/GPIO_167
USIM0_DATA/GPIO_168
VDD_ODIO_BIAS_USIM0
USIM1_CLK/GPIO_169
USIM1_RST/GPIO_170
USIM1_DATA/GPIO_171
VDD_ODIO_BIAS_USIM1

NFC IO
SWP_IO

DS2 interface 6 of 10

GPIO_009_LCD0_ID0
GPIO_010_TYPEC_EN
GPIO_011_LCD_BL_EN
WL_SDIO_CLK
WL_SDIO_CMD
WL_SDIO_DATA0
WL_SDIO_DATA1
WL_SDIO_DATA2
WL_SDIO_DATA3
GPIO_134_SPK_SMARTPA_RST
GPIO_136_MCAM2_RST
SD_CLK
SD_CMD
SD_DATA0
SD_DATA1
SD_DATA2
SD_DATA3
C702
JTAG_MODE
JTAG_SEL0
JTAG_SEL1
SOC_JTAG_TCK_SWCLK
SOC_JTAG_TDI
SOC_JTAG_TDO
SOC_JTAG_TMS_SWDIO
SOC_JTAG_TRST_N
USIM0_CLK
USIM0_RST_N
USIM0_DATA
VDD_ODIO_BIAS_USIM0 C704
USIM1_CLK
USIM1_RST_N
USIM1_DATA
VDD_ODIO_BIAS_USIM1 C705
NFC_SWIO 7/27

TP702 TP717 TP712 TP713 TP701 TP714 TP715 TP704 TP705 TP706 TP707 TP708 TP709 TP710 TP711 TP716

R736 R737 R738 R739 R749 R741

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VOUT18_1V8 R719 I2C0_SCL
R718 I2C0_SDA
VOUT18_1V8 R716 I2C3_SCL
R717 I2C3_SDA
VOUT18_1V8 R710 I2C4_SCL
R711 I2C4_SDA
VOUT4_1V85 R702 I2C7_SCL
R701 I2C7_SDA

VBUCK8_1V8 R708 I2C6_SCL
R709 I2C6_SDA
VBUCK8_1V8 R706 I2C1_SCL
R707 I2C1_SDA

I2C For Charger Circuts pulled to BUCK8

8.SOC RF INTERFACE

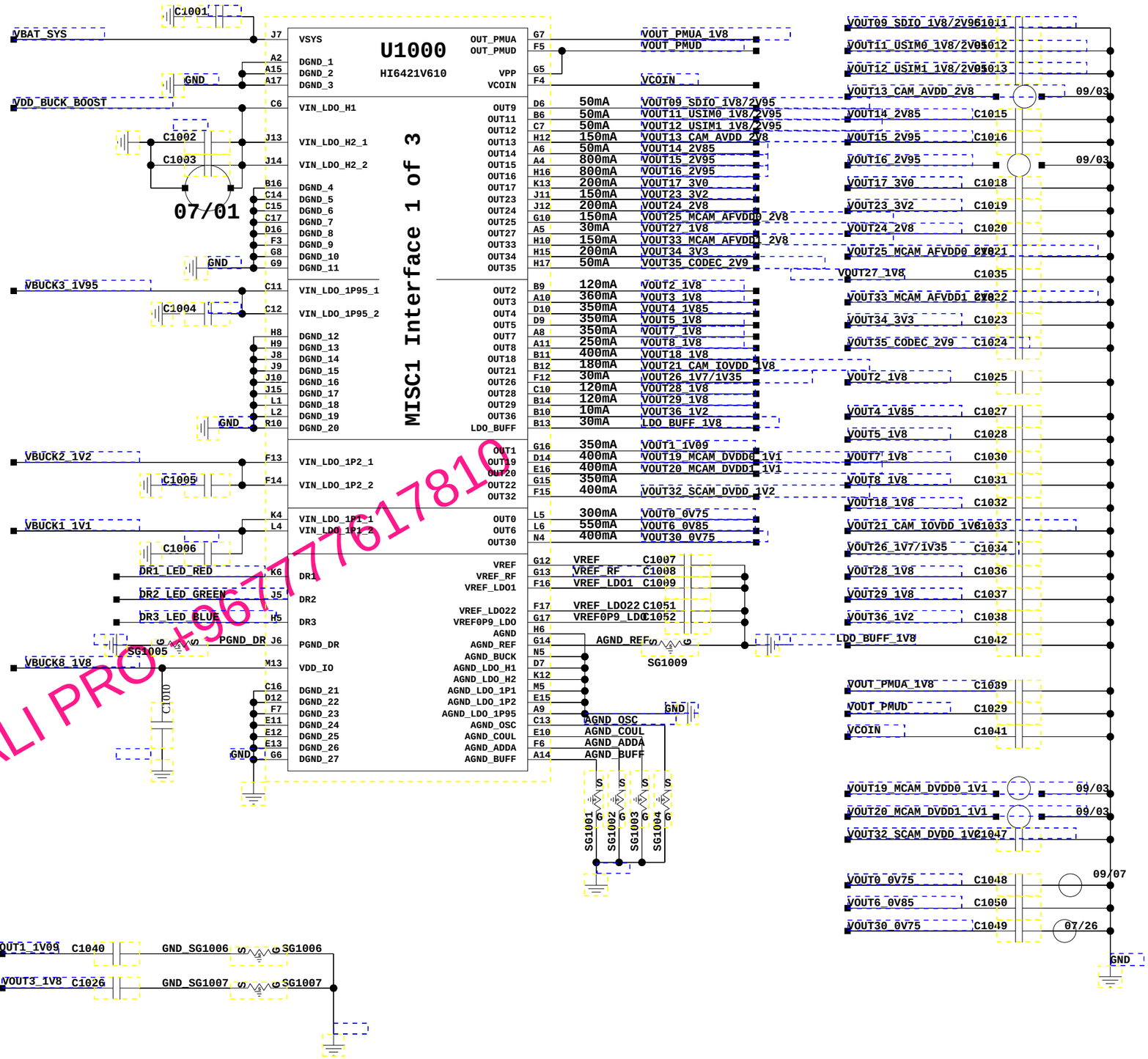
ALI PUBLIC 1967777617810

9.SOC GND

ALEXRO +967717917810

10. Hi6421 LDO

NUM	Vol	Current	Function
LDO0	0.75	300	SOC:UFS,SYS,PLL_SYS
LDO1	1.09	350	RFIC0 AVDD10
LDO2	1.8	120	SOC_EFUSE&HISEE
LDO3	1.8	360	RFIC AVDD18,LNA_VDD
LDO4	1.85	350	LCD&TP 1.8V IO
LDO5	1.8	350	SOC 1.8V AVDD
LDO6	0.85	550	SOC:AVDD085_ABB
LDO7	1.8	350	SOC:AVDD18_ABB
LDO8	1.8	250	IOVDD FOR Codec/RF
LDO9	1.8	50	SOC SDIO 1.8V
LDO11	1.8/2.95	50	SIM0
LDO12	1.8/2.95	50	SIM1
LDO13	2.8	150	CAM_AVDD
LDO14	2.85	50	RF switch VDD
LDO15	2.95	800	UFS_VCC
LDO16	2.95	800	SDCARD VDD
LDO17	3.3	200	MOTOR
LDO18	1.8	400	PERI IOVDD
LDO19	1.2	400	MCAM_DVDD0
LDO20	1.1	400	MCAM_DVDD1
LDO21	1.8	180	CAM IOVDD
LDO22	1.09	350	RESEVERD
LDO23	3.2	150	USB 2.0 PHY/PA
LDO24	2.8	200	Sensor VDD
LDO25	2.85	150	MCAM_AFVDD0
LDO26	1.7	30	38.4MHZ XO CORE
LDO27	1.8	30	HKADC,XOADC
LDO28	1.8	120	RF switch VIO
LDO29	1.8	120	VPH_UFS,PLL_SYS
LDO30	0.75	400	FIX 0.75 For SOC
LDO32	1.1	400	SlaveCAM_DVDD
LDO33	2.8	150	MCAM_AVDD0
LDO34	3.3	200	FP VDD
LDO35	2.9	50	CODEC_AVDD
LDO36	1.2	10	UFS refclk/rst IO



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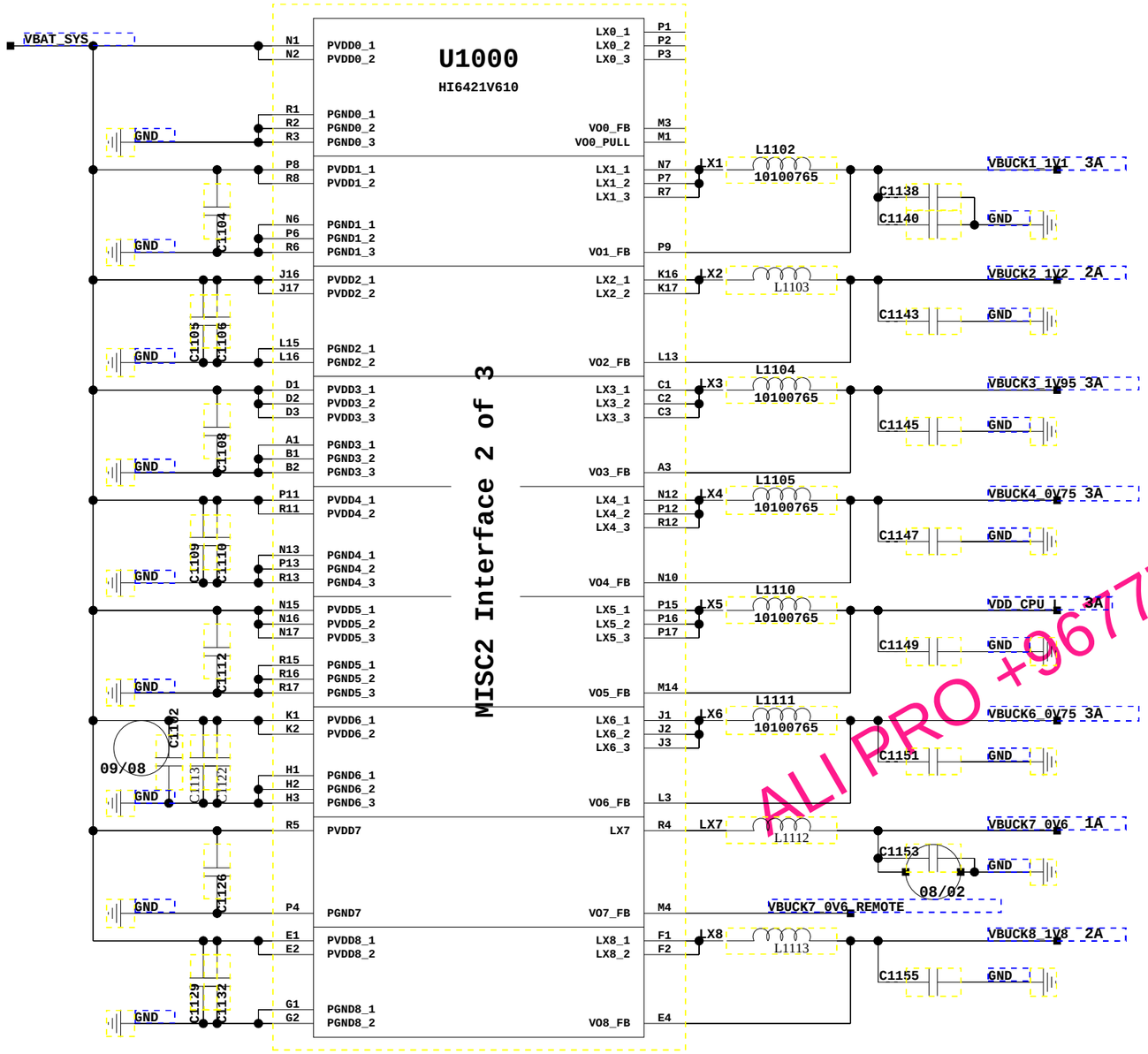
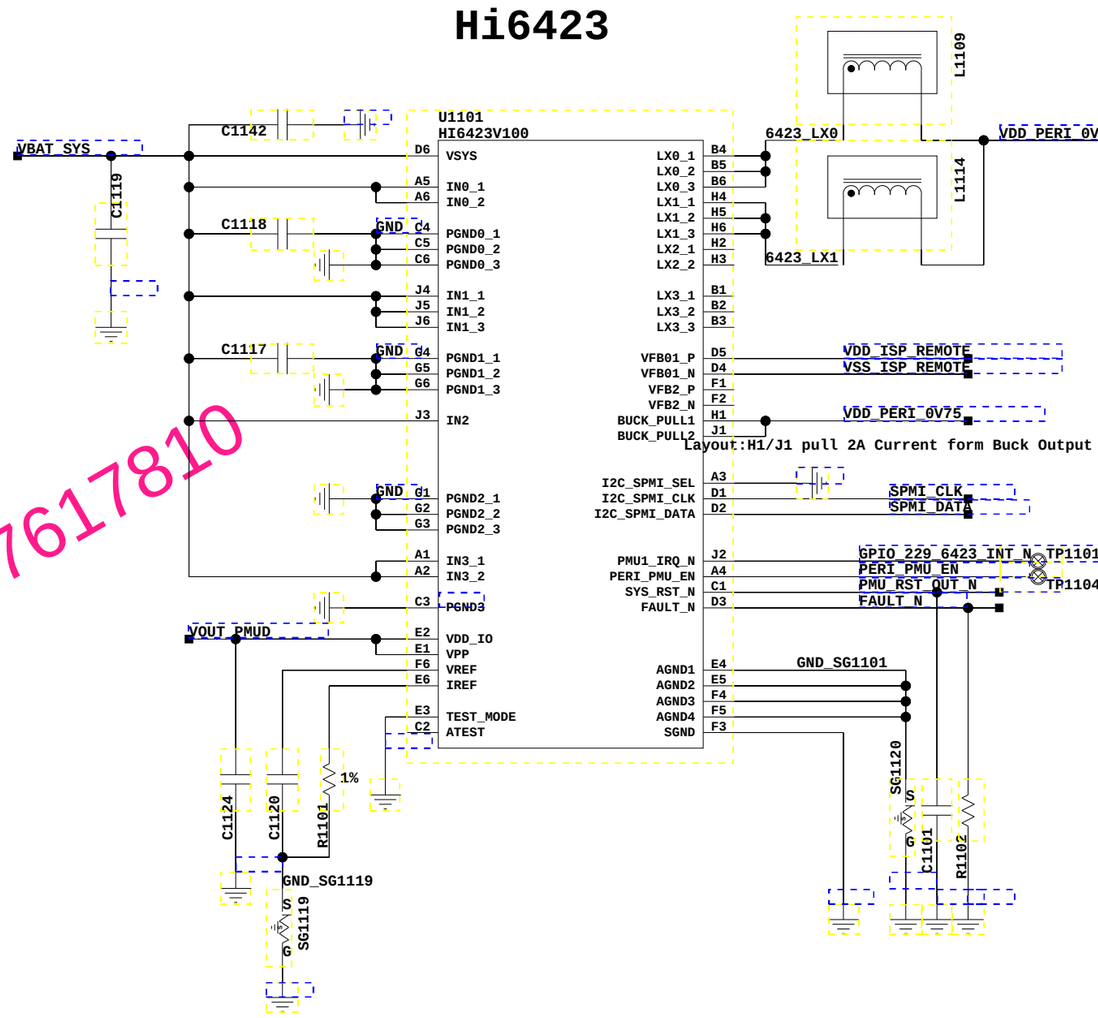
11.Hi6421 BUCK AND Hi6423





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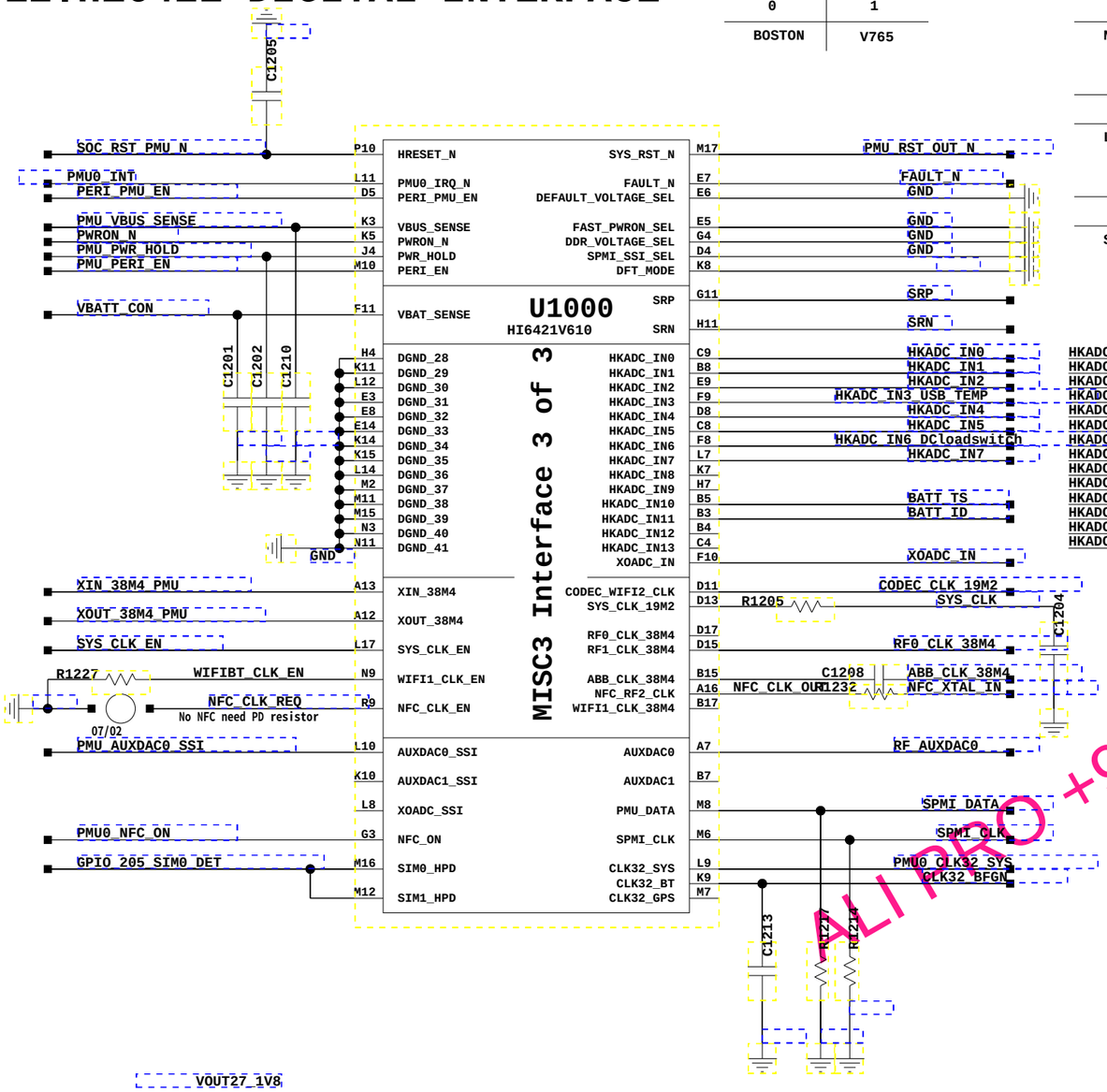
12.Hi6421 DIGITAL INTERFACE

DEFAULT_VOLTAGE_SEL	
0	1
BOSTON	V765

FAST_PWRON_SEL	
0	1
NORMAL	FAST

DDR_VOLTAGE_SEL	
0	1
LPDDR4x	LPDDR3

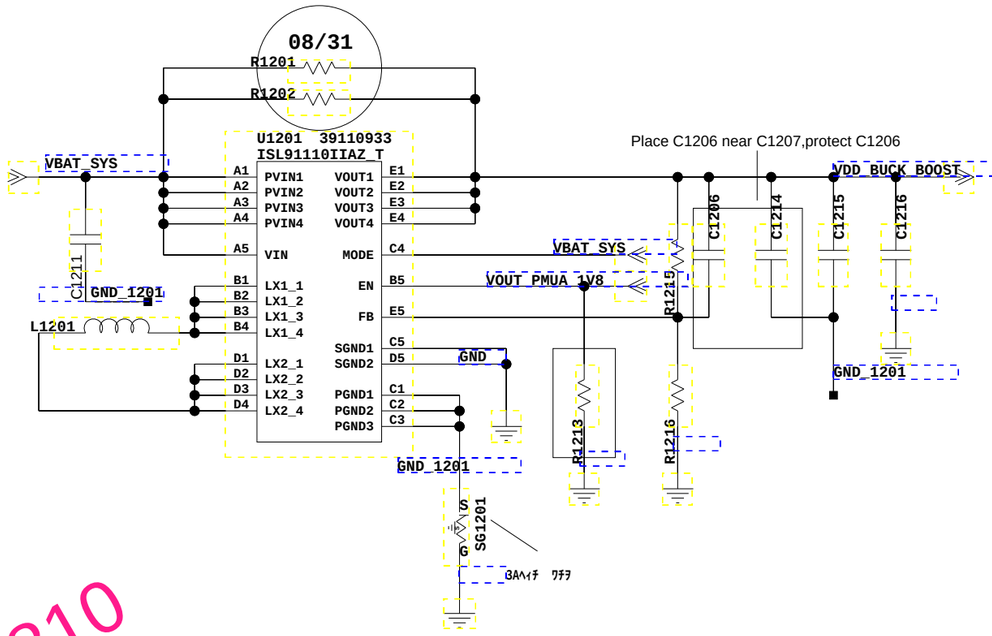
SPMI_SSI_SEL	
0	1
SPMI	SSI



HKADC_IN0	APU Board ID0
HKADC_IN1	APU Board ID1
HKADC_IN2	APU Board ID2
HKADC_IN3	TypeC TEMP
HKADC_IN4	RFIC0 TEMP
HKADC_IN5	Charge TEMP
HKADC_IN6	RESERVED
HKADC_IN7	AP TEMP
HKADC_IN8	RESERVED
HKADC_IN9	RFIC1 TEMP
HKADC_IN10	BATT TEMP
HKADC_IN11	BATT ID
HKADC_IN12	RESERVED
HKADC_IN13	RESERVED

BUCK BOOST

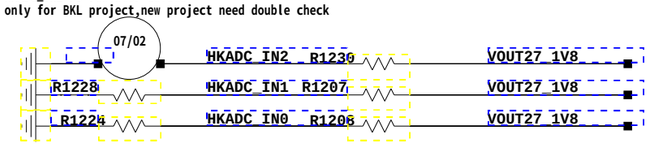
Vout=0.8*(1+R1/R2)=3.467V



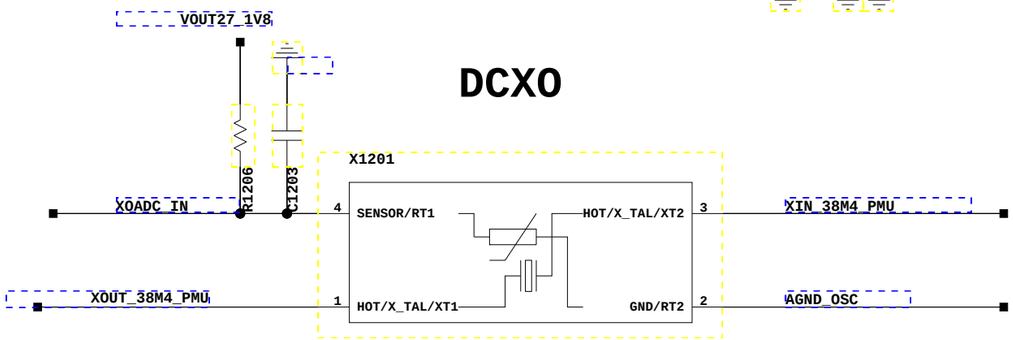
BOARD ID Table

Board ID	HKADC2	HKADC1	HKADC0
V1	9	0	1
V3			

HKADC_IN2 PD resistor delete
only for BKL project,new project need double check



DCXO



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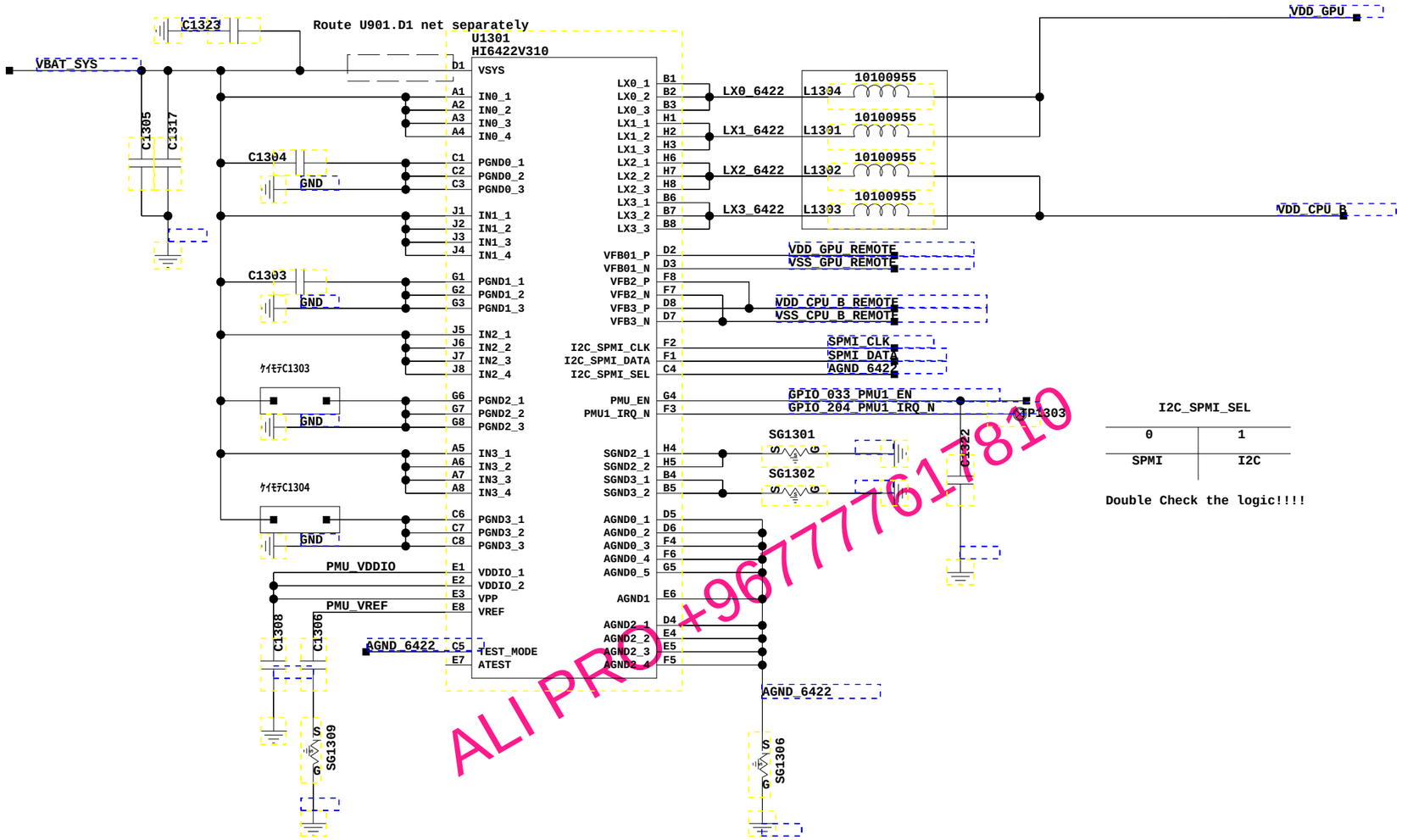
13.Hi6422V300



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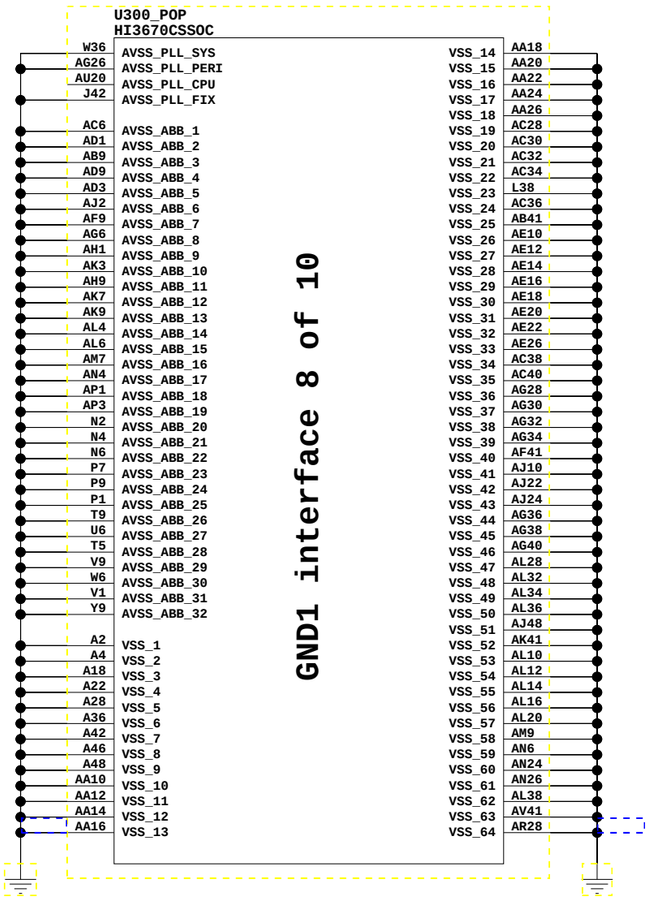
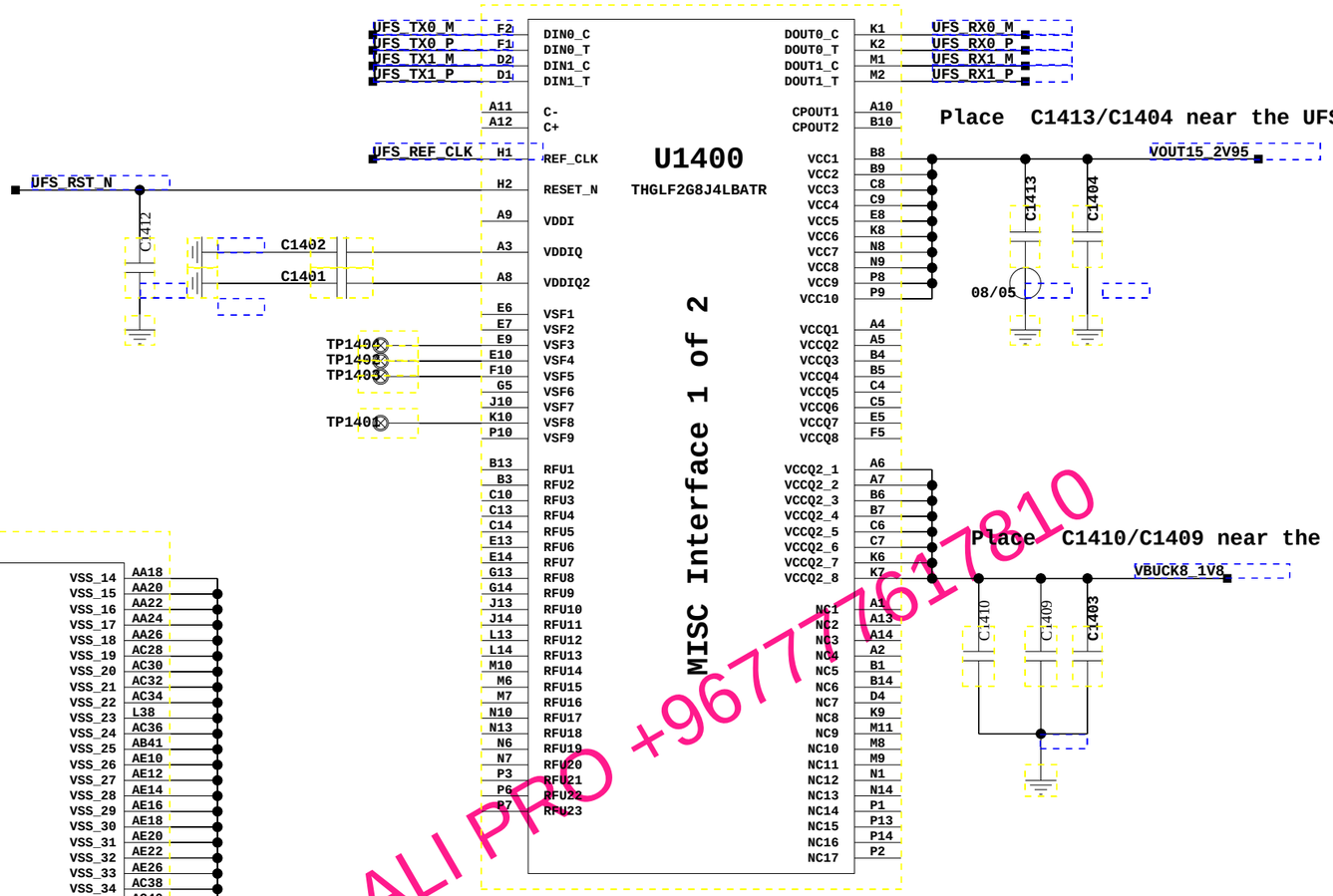
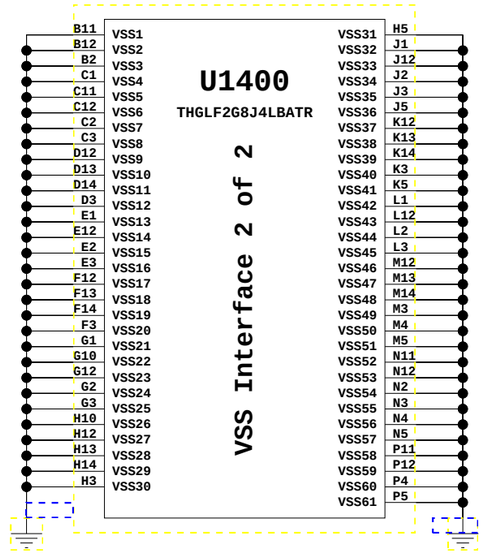
14.UFS and LPDDR4X

64G 40060893
128G 40060894
256G 40060823

4G 40020441
6G 40020442







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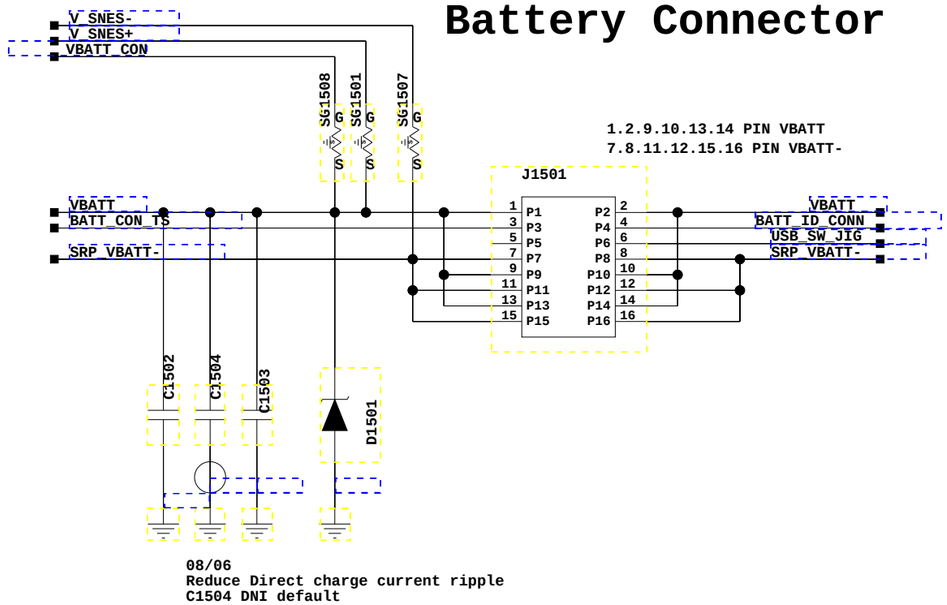
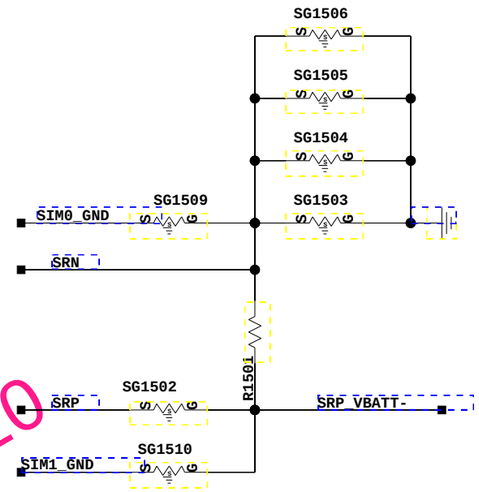
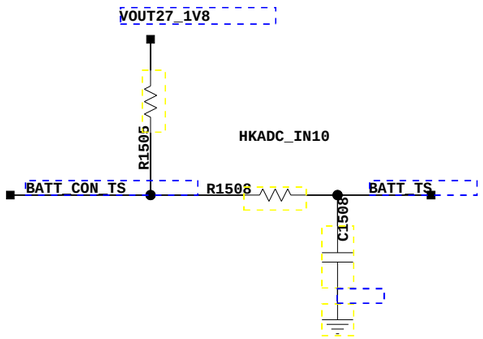
15. Battery & Fuel guage

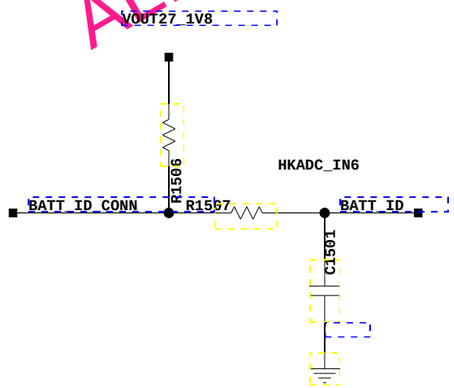




CAD note:
1.Trace for 9A
2.Differential trace



Battery Temperature



Battery ID

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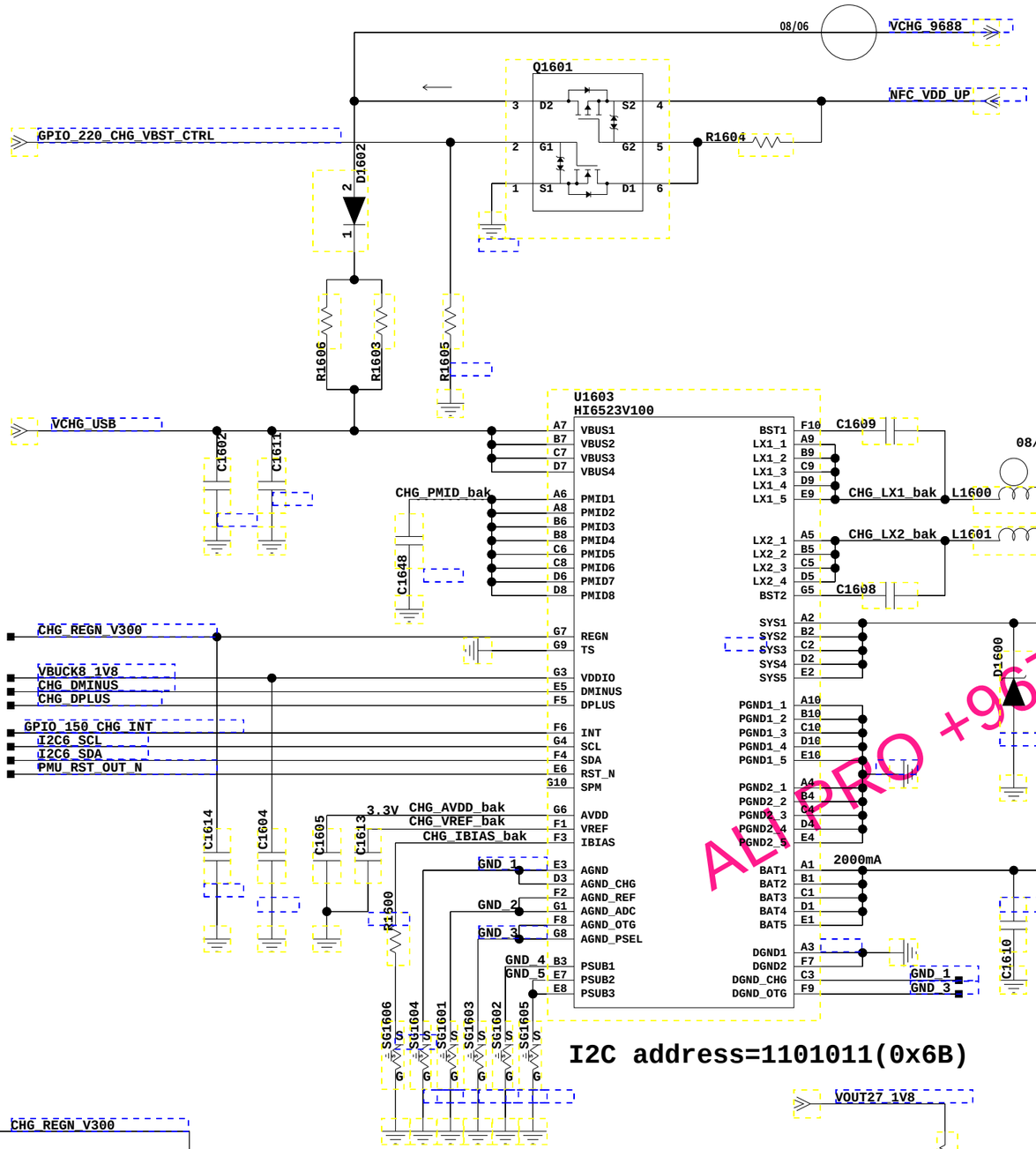
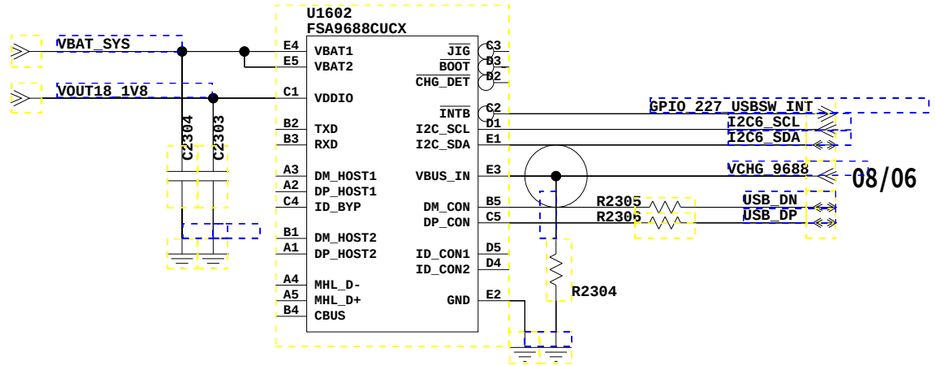
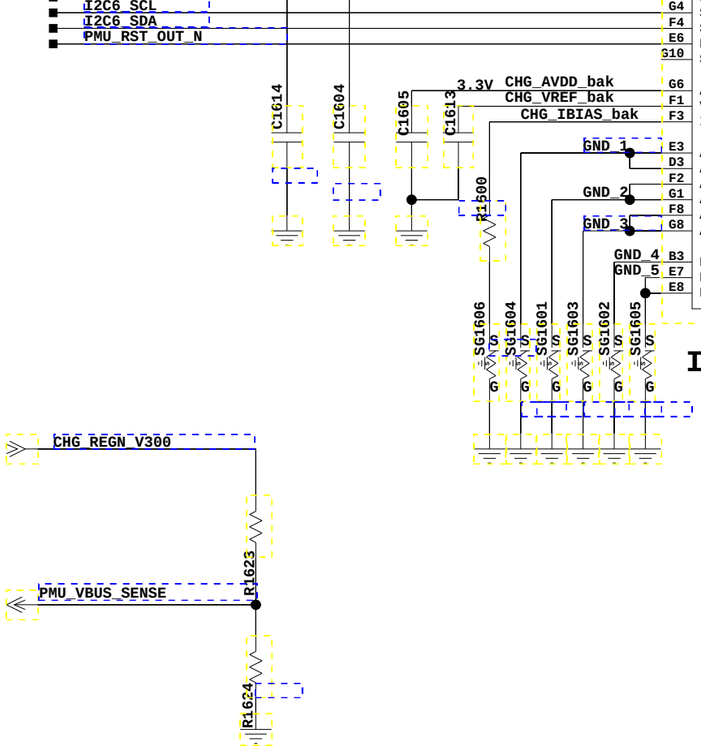
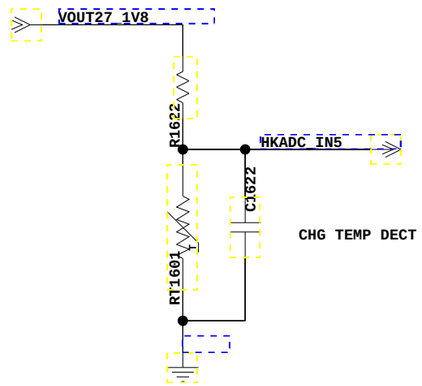
16. Charge Management

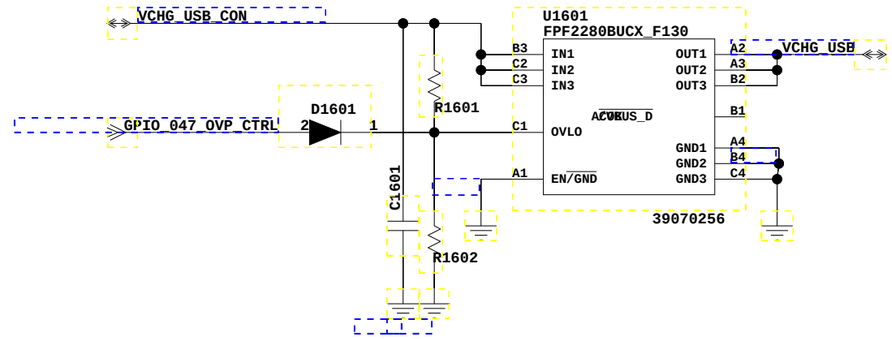








OVP



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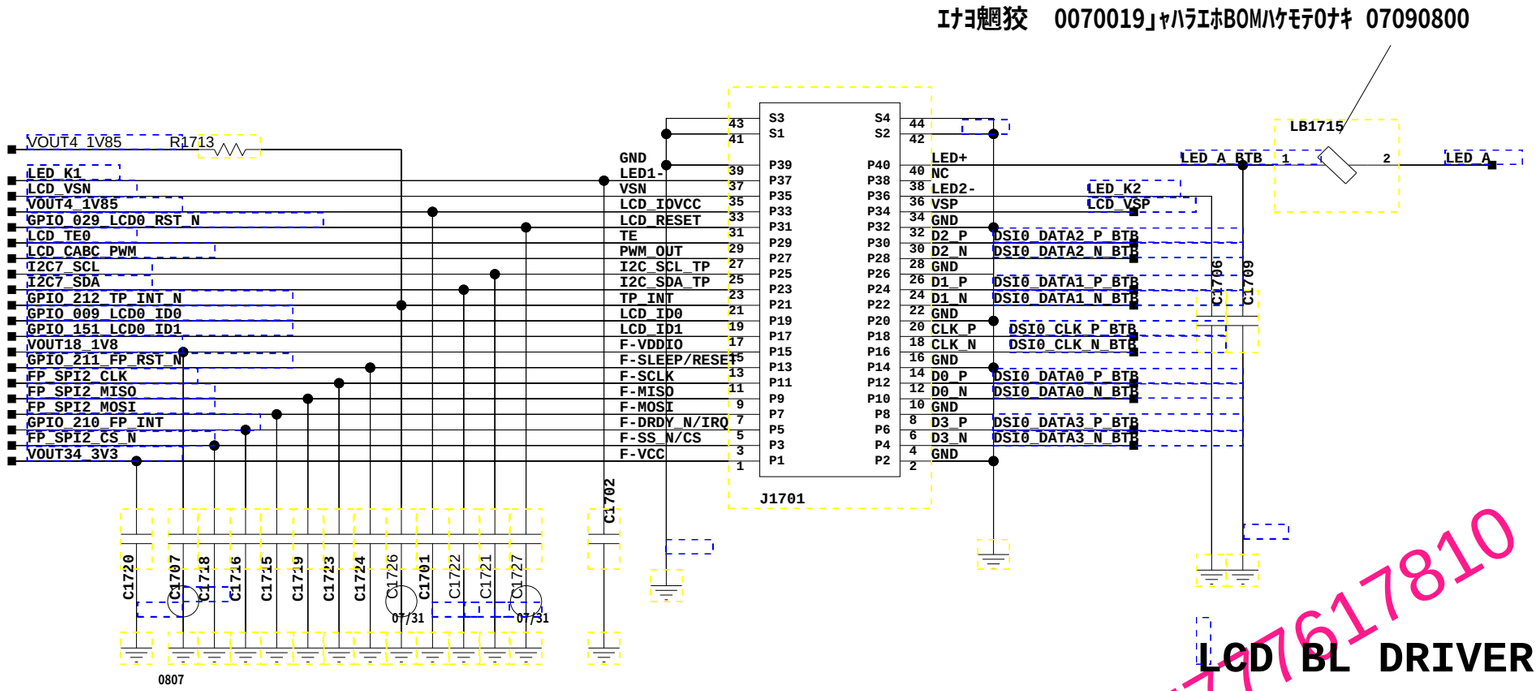
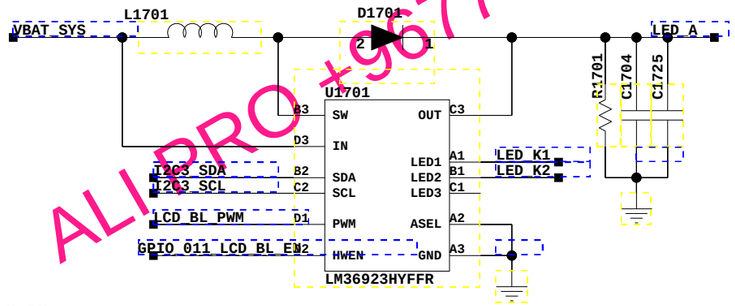
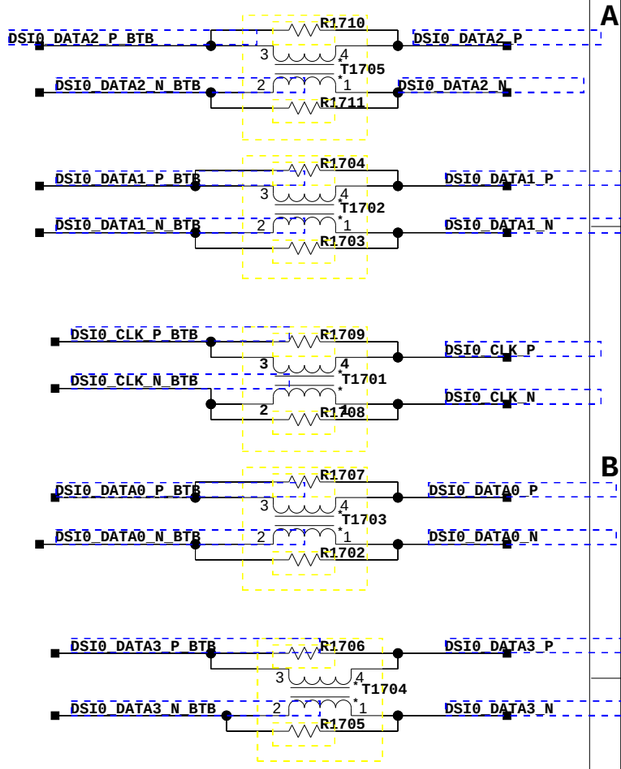
17. LCD and TP INTERFACE



LCD BL DRIVER



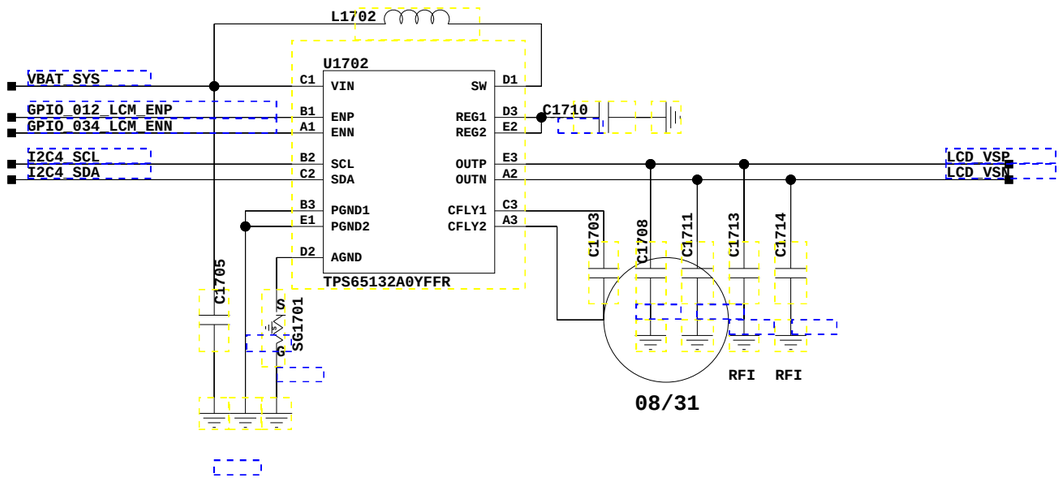
CAP tolerance above 50V



LCD POS/NEG Voltage Driver

I2C address=0111110(0x3E)

I2C address=0110110(0x36) for TI and MPS



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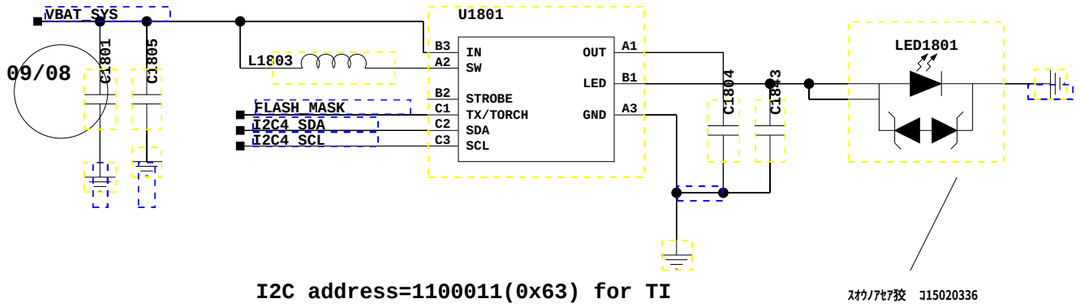
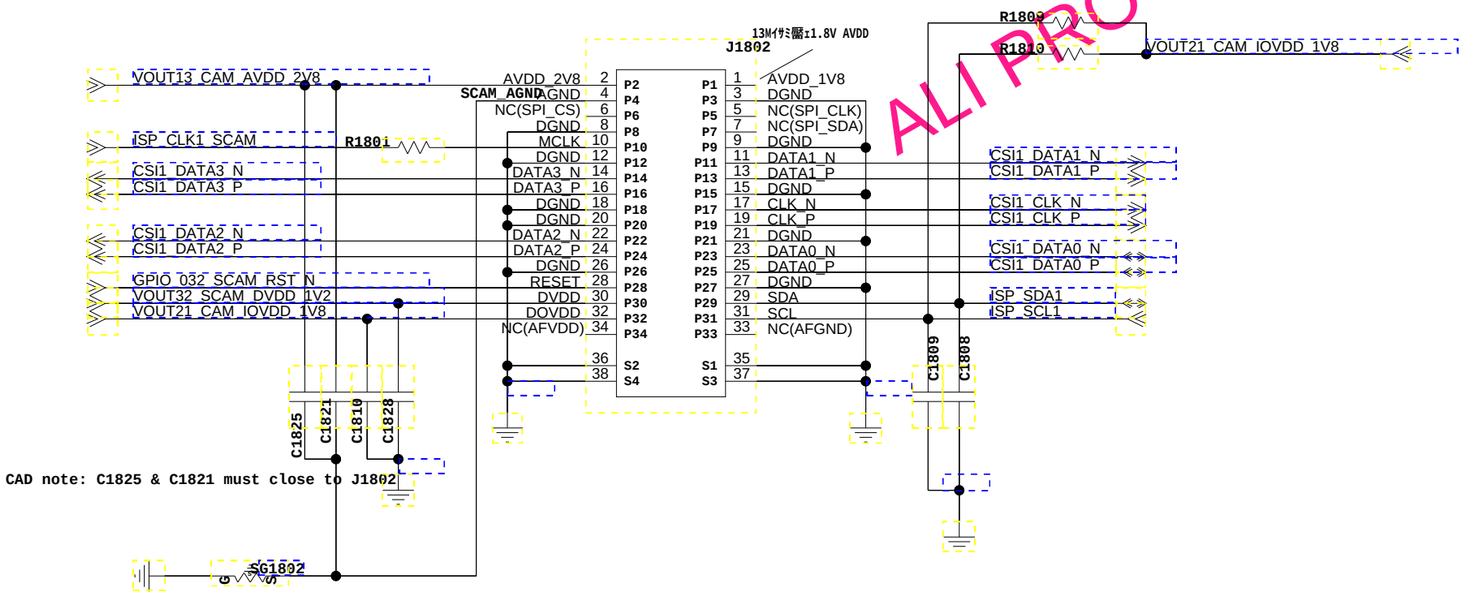
18. Flash/front Camera

Flash LED



I2C address=1100011(0x63) for TI
I2C address=1100111(0x67) for MPS

スオウノアセア技 J15020336



CAD note: C1825 & C1821 must close to J1802

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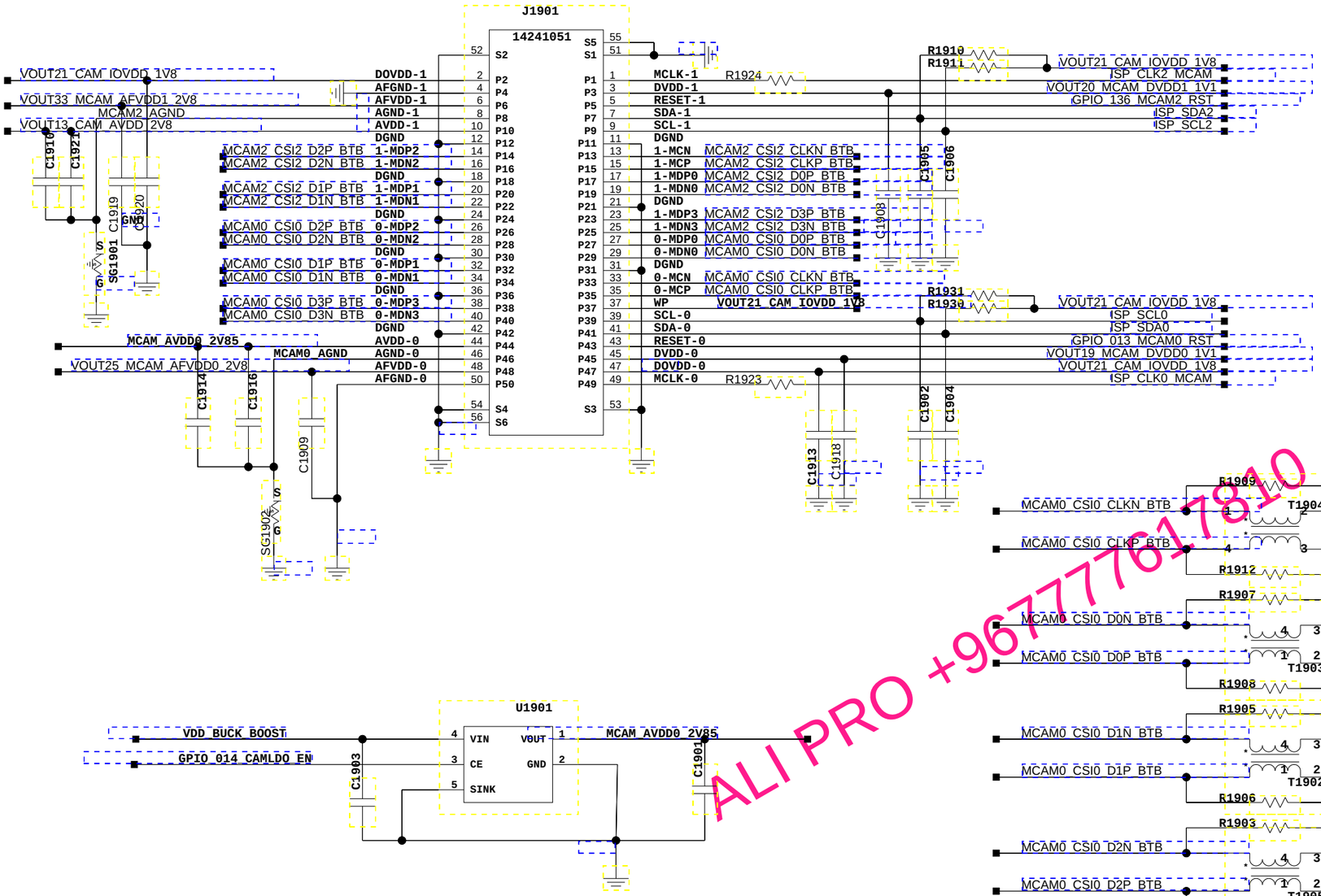
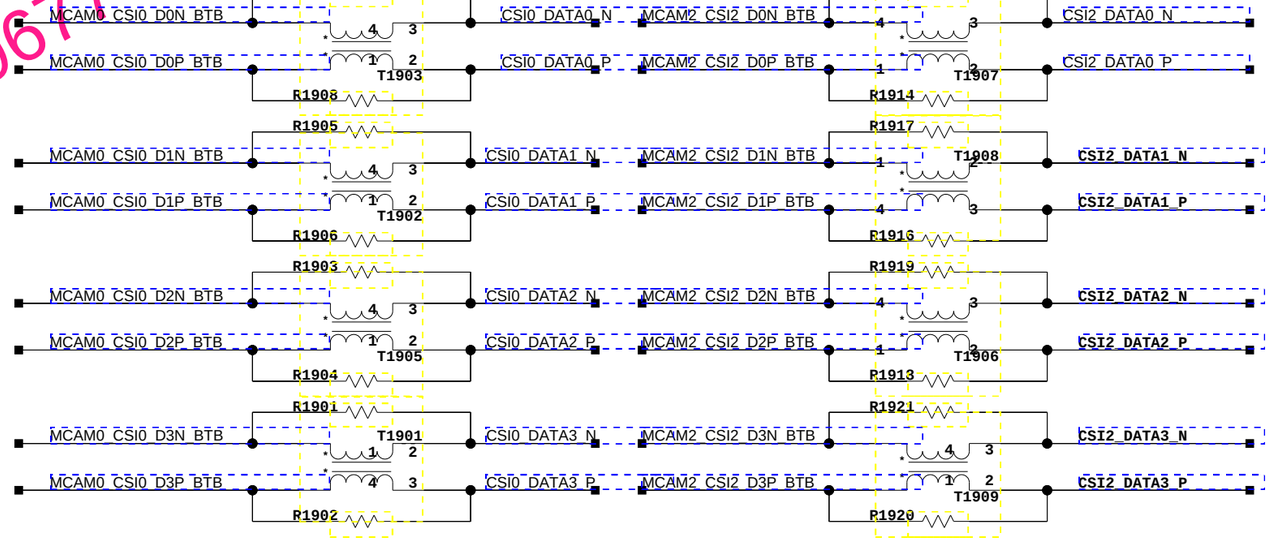
19. M1/M2





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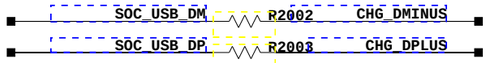
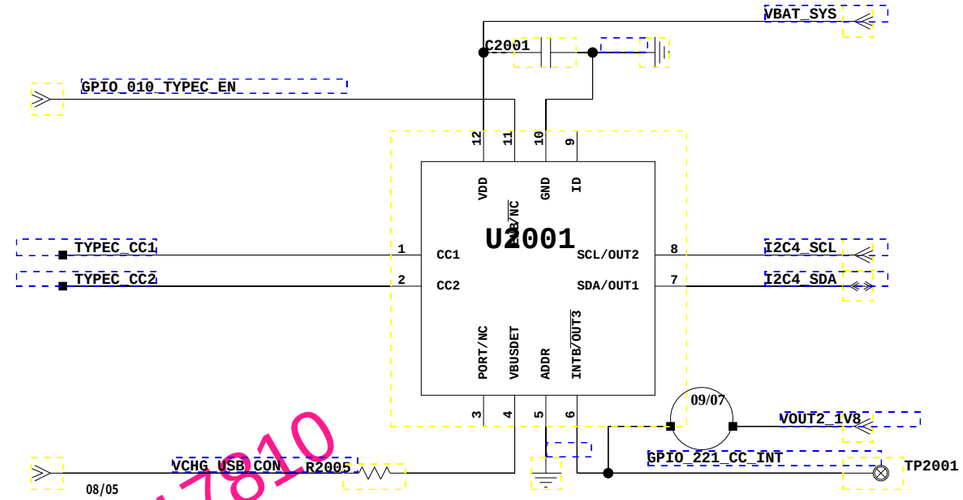
20. USB

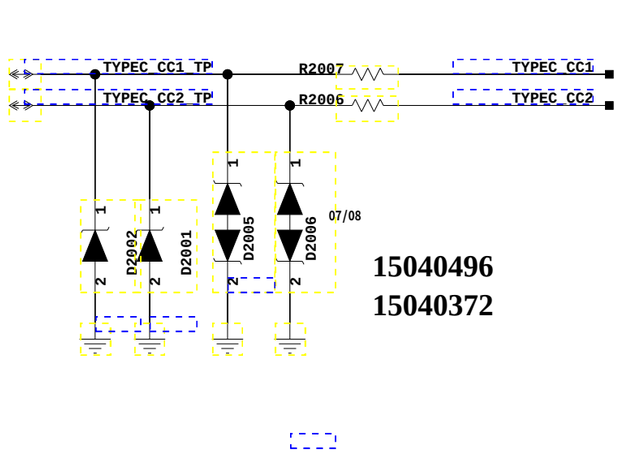
SOC



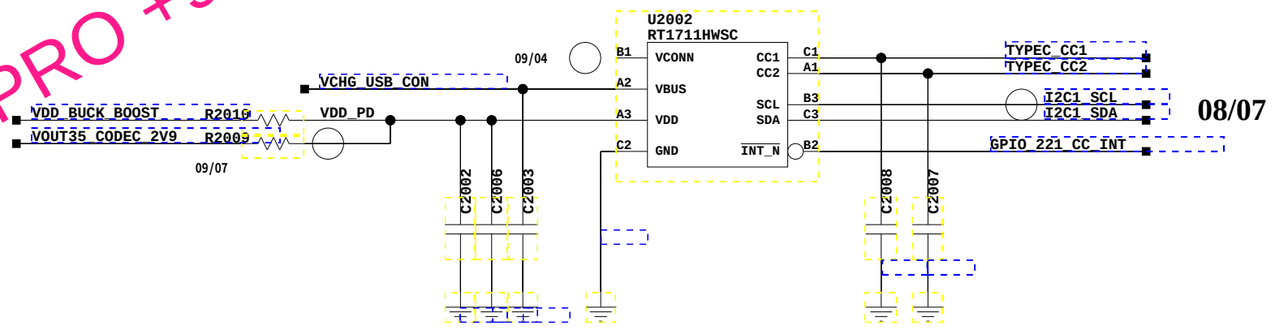
HI6523

USB CON





15040496
15040372



08/07

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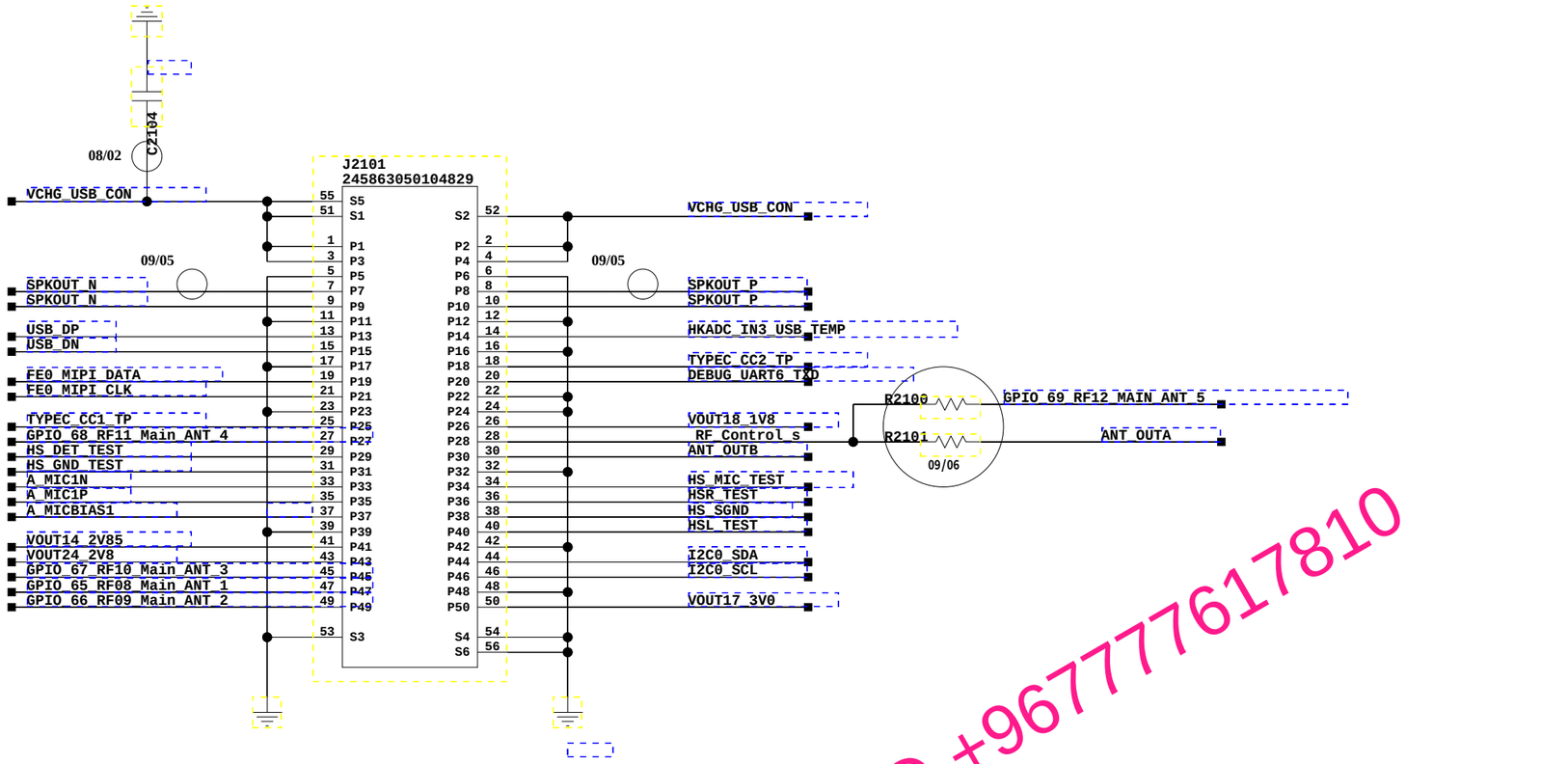
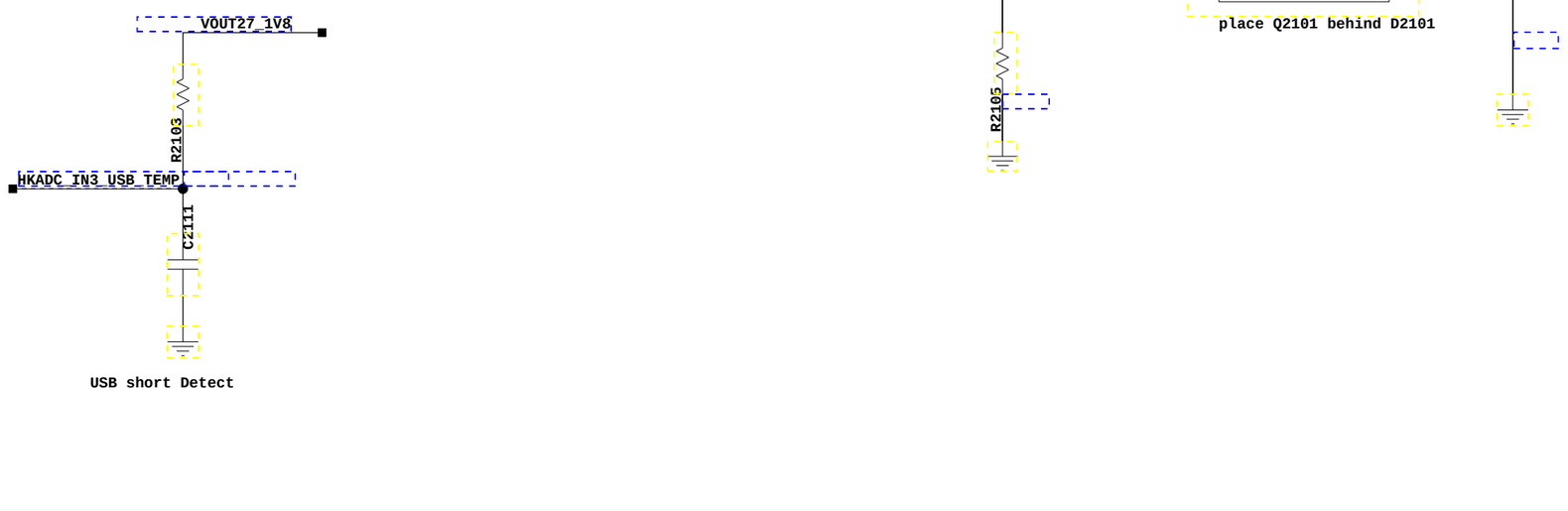
21. Main FPC





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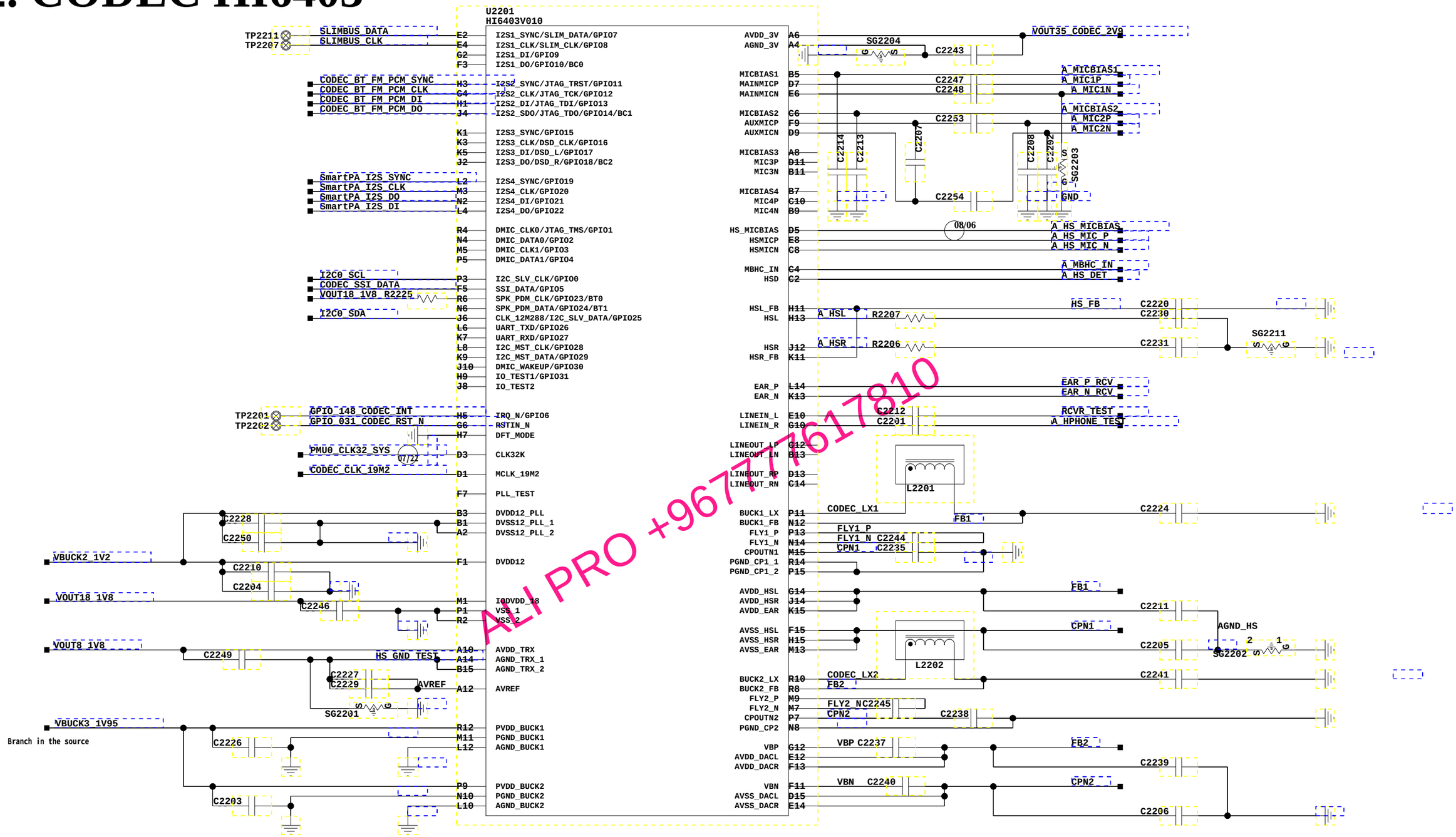
22. CODEC HI6403



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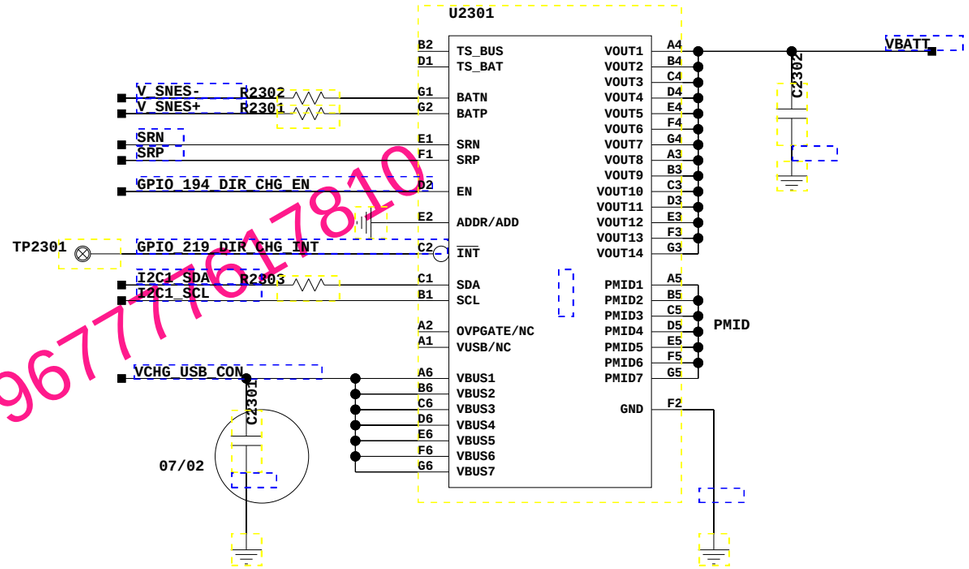
BootMode0	BootMode1	Function(BootROM Start)
1	1	SPI Start
1	0	SSI Start
0	1	I2C Start
0	0	SLIMBUS Start

23. Direct Charger LoadSwitch

I2C Address=1100111(0x67)



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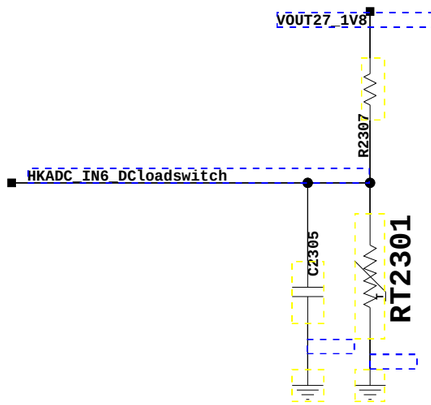
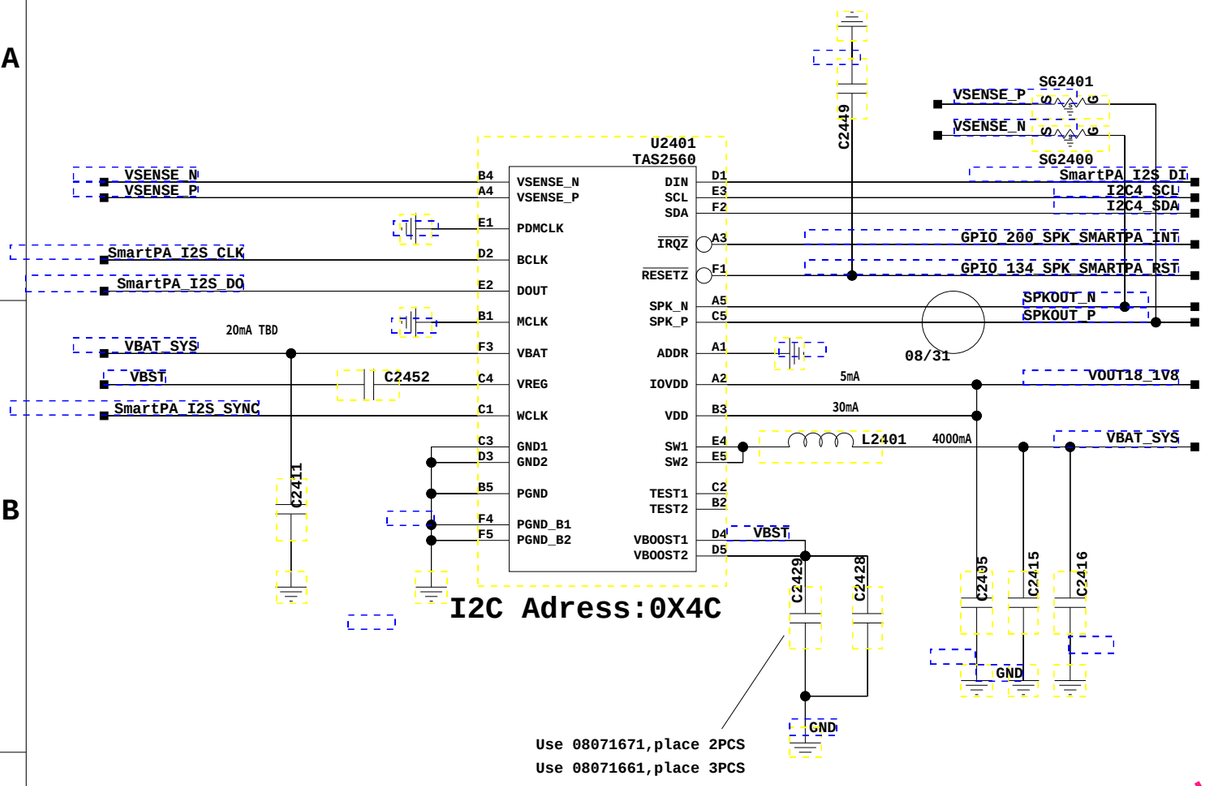
Direct charger Temperature DET



24. SPK SMART PA



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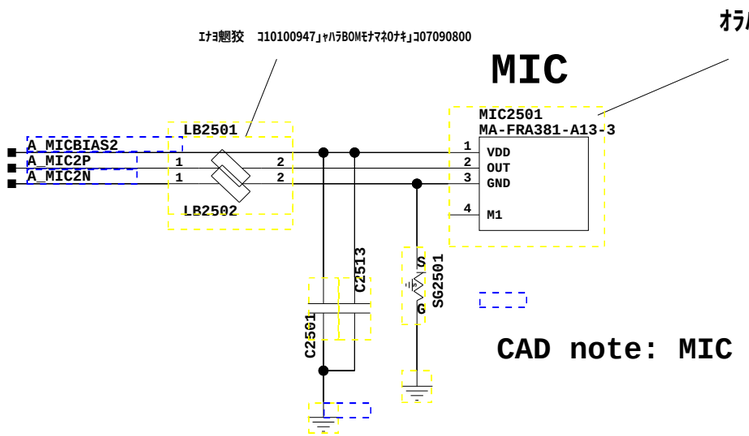
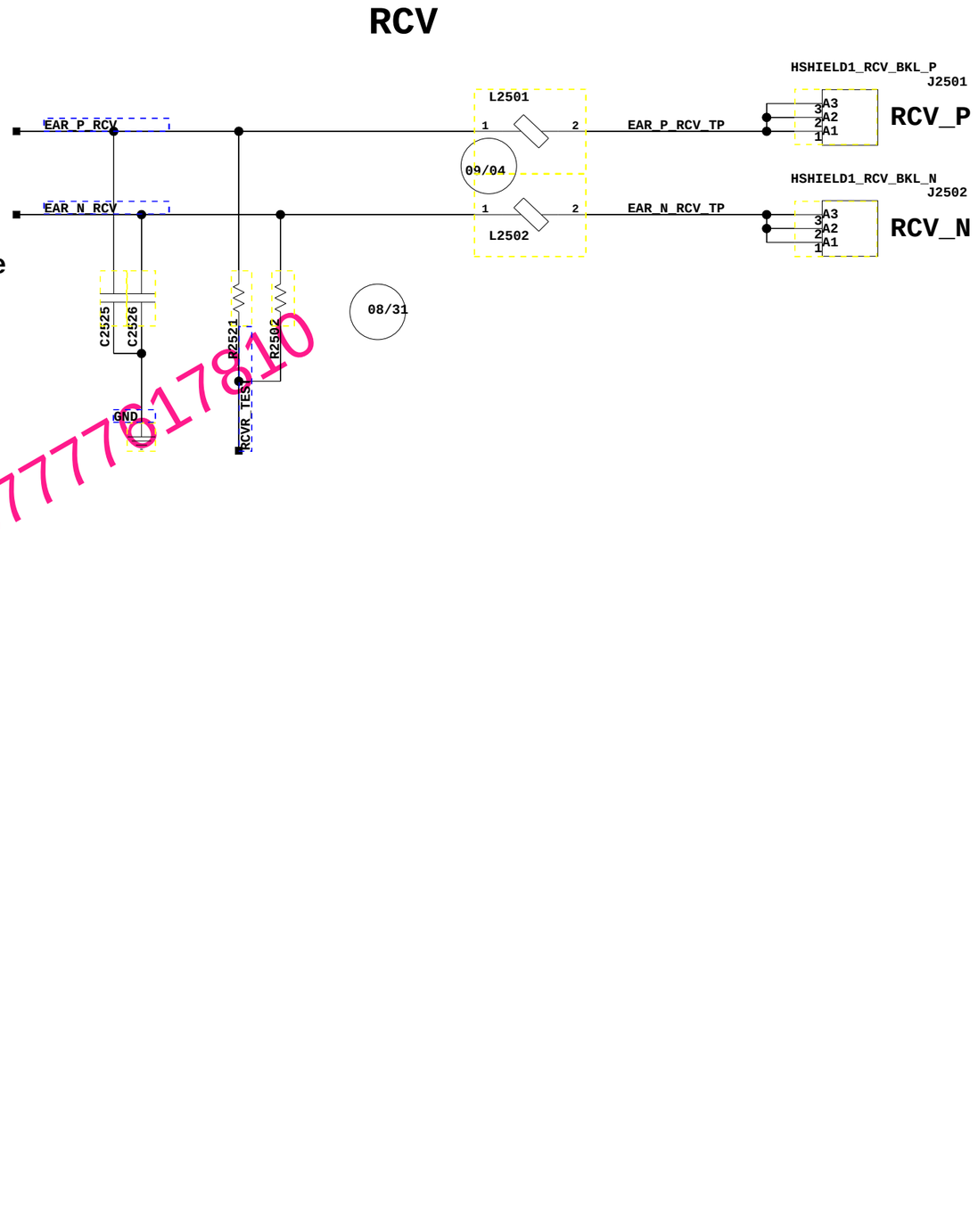
25. MIC/REC/HAC

ユナフ惕



CAD note: MIC need differential trace



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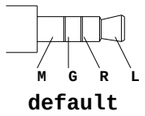
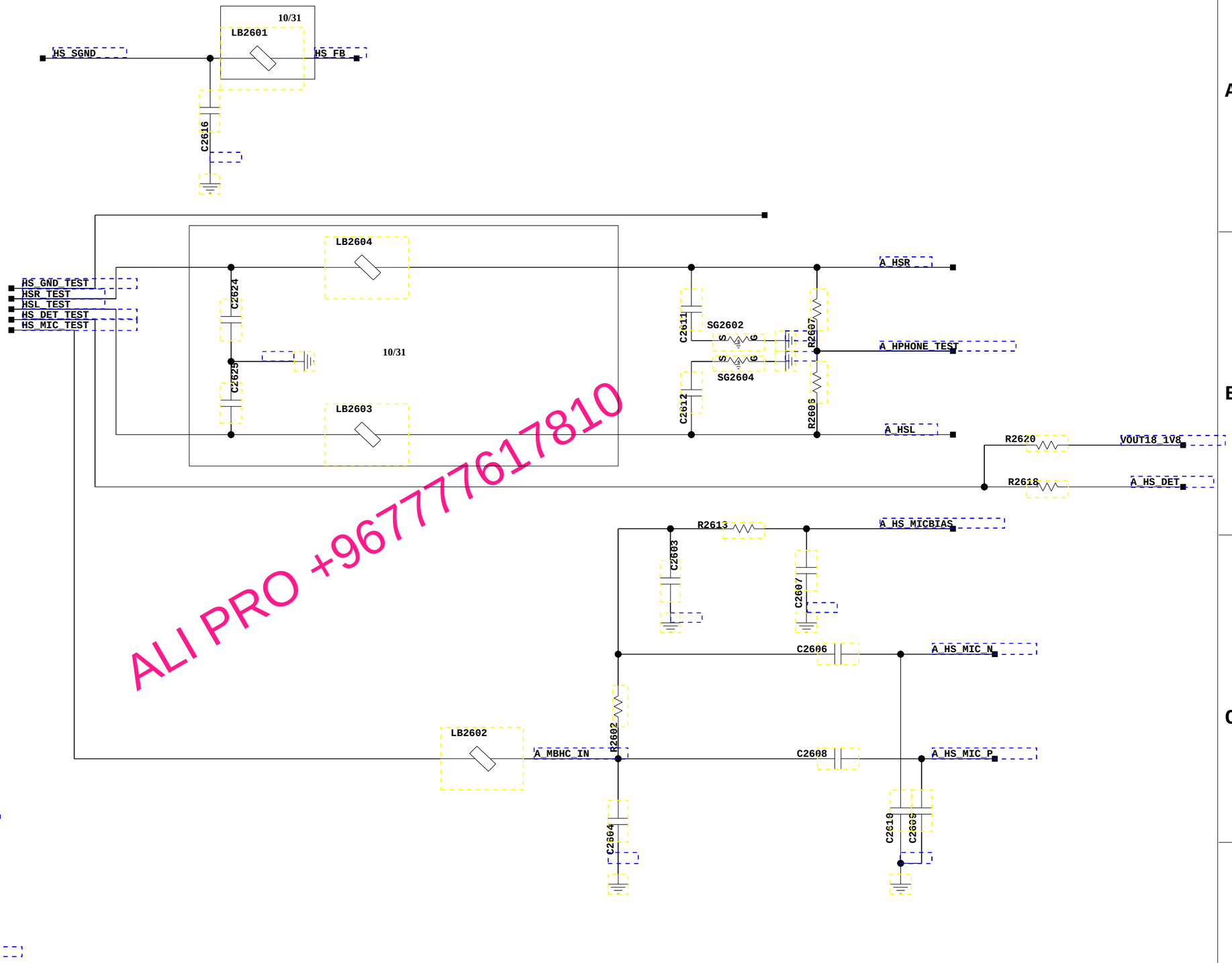
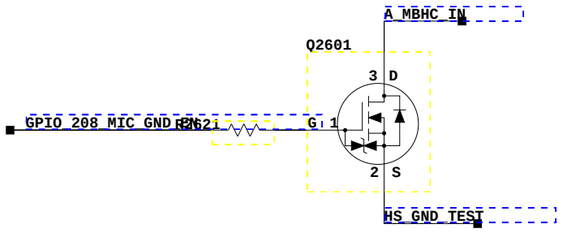
26. Headphone







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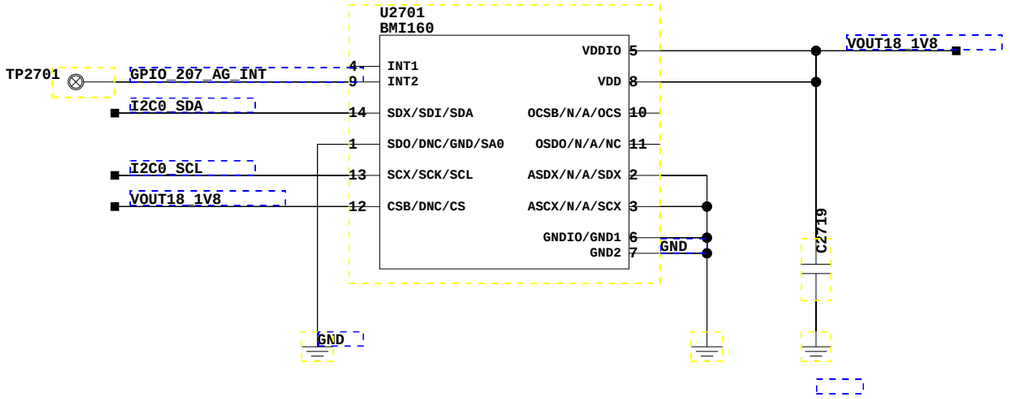
27. X-Sensor

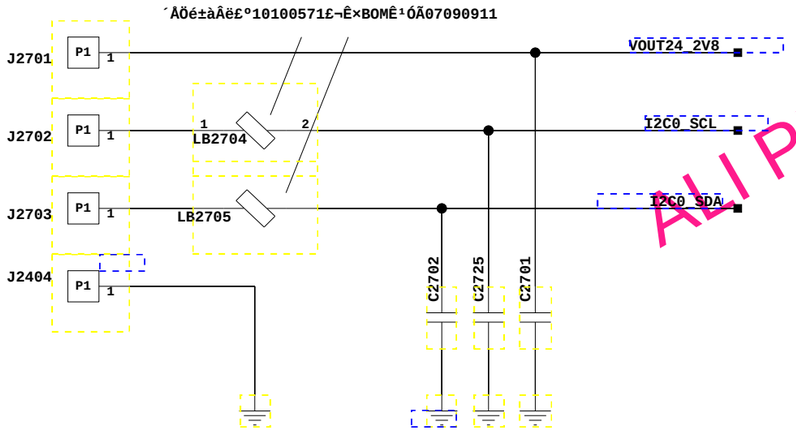
Accelerometer and Gyroscope 6-AXIS SENSOR



SDO=1 ADDRESS=0X6B(ST)/0X69(BOSCH)
SDO=0 ADDRESS=0X6A(ST)/0X68(BOSCH)

PROXIMITY&RGB AMBIENT

PROX ADDRESS=0X1E AMB ADDRESS=0X38



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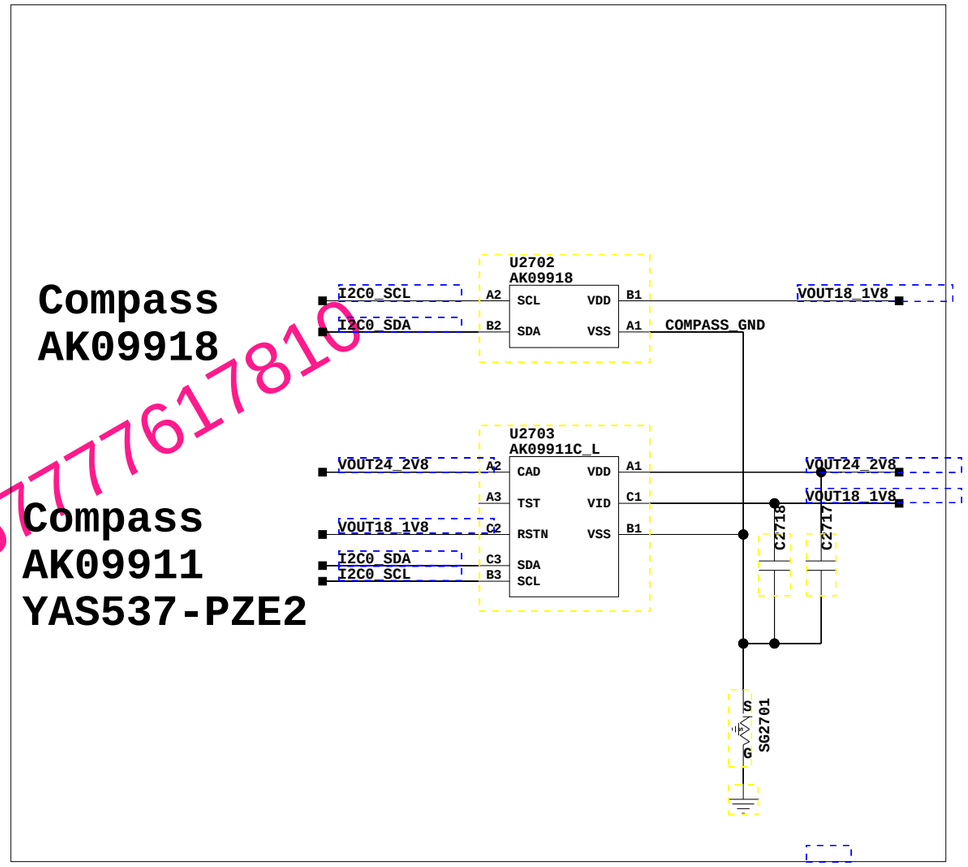
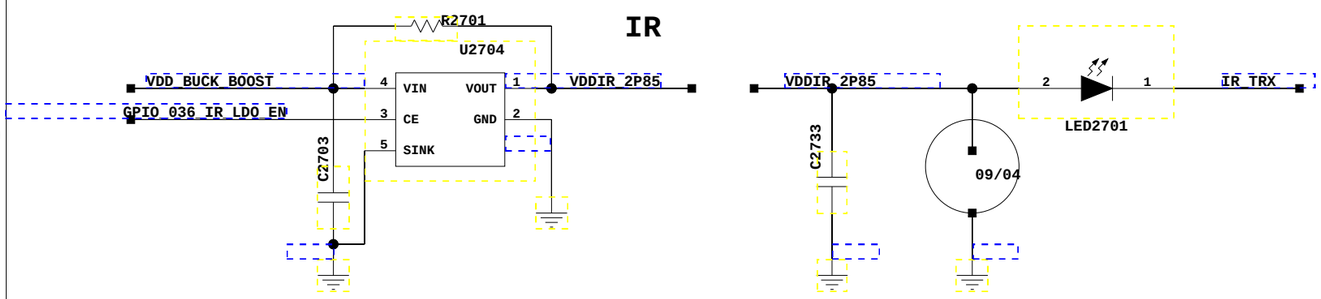
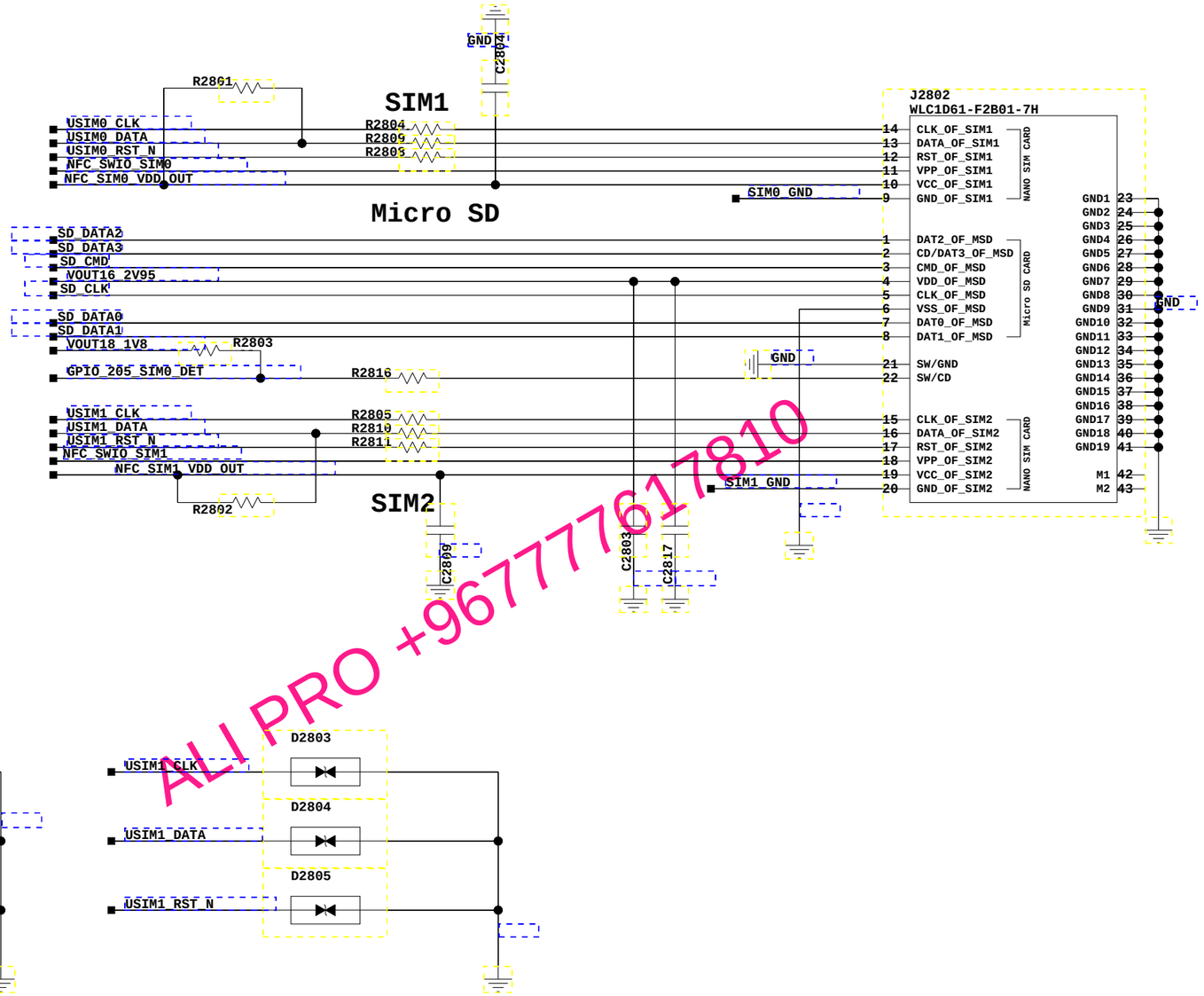
Compass
AK09918
Compass
AK09911
YAS537-PZE2

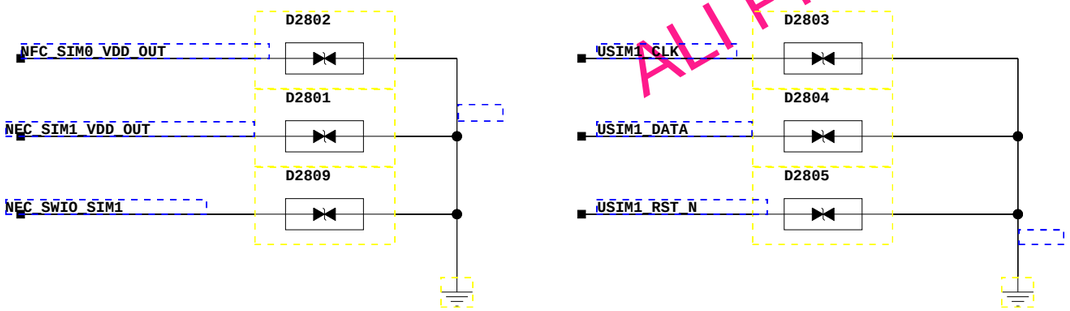


IR



28.SIM/uSD Card





GPIO_202 \ SIM1_VCC	SE_VCC	VOUT12_2V95
H		○
L	○	

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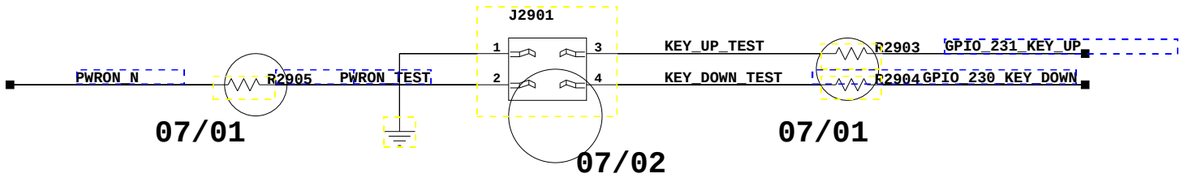
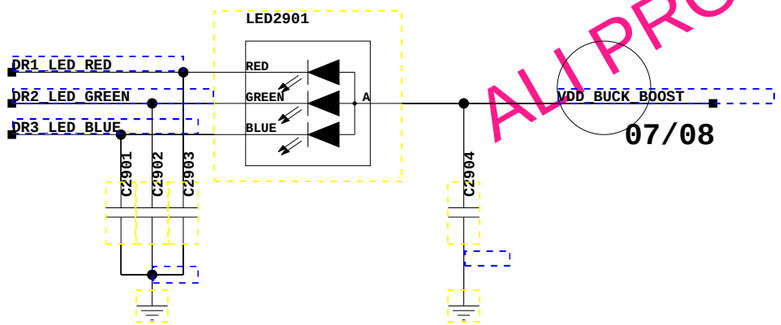
29. LED/FP/Key

KEY SPRING



RGB LED



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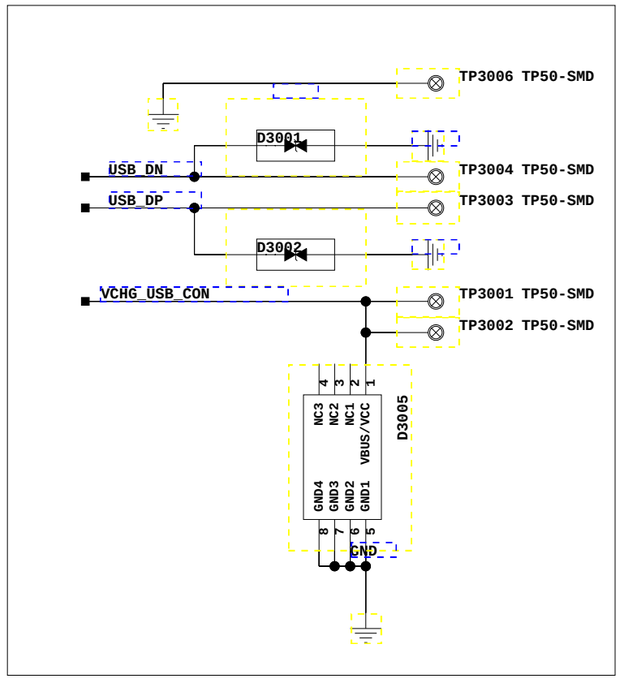
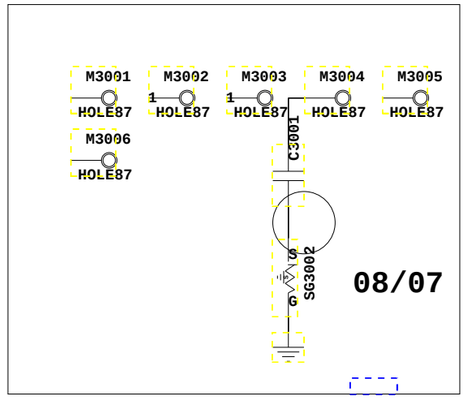
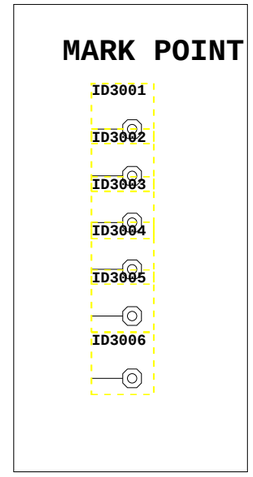
30. Test Points/Shields

VBUS/VBATT/D+/D-/USB_SW_JIG_TEST/:2*TP50

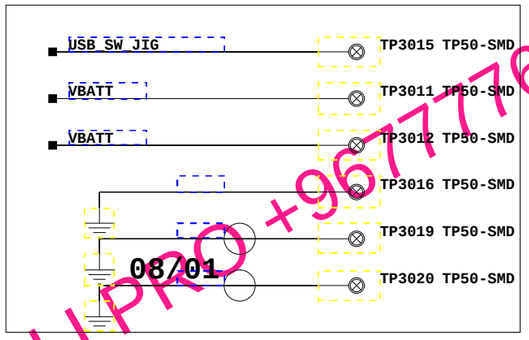
TEST POINT for CT and BT







TEST POINT for PT



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PMU
J3001
P1
hshield1-4124

AP
J3002
P1
hshield1-3624

RF
J3003
P1
hshield1-2219a

J3009
P1
hshield1-0303e
XO

Charger
J3004
P1
hshield1-2104a

J3007
P1
hshield1-0604a
CHG PRT

J3012
P1
CAM

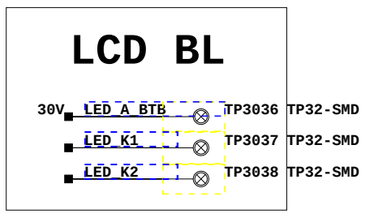
BALUN
J3006
P1
hshield1-0803a

J3013
P1
CAM

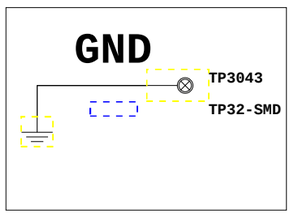
Second MIC
J3015
P1
hshield1-0404J

FUNCTION TEST

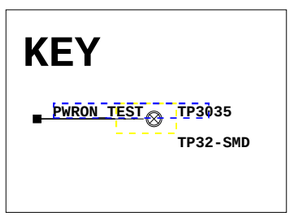
LCD BL



GND



KEY



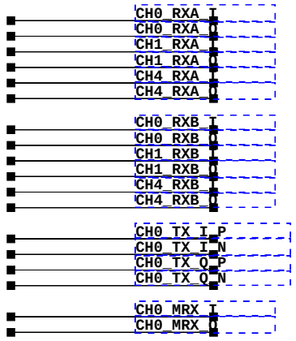
Front Camera
J3005
P1
hshield1-1305

ANT
J3008
P1
hshield1-0402p

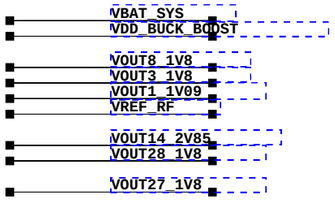
Front Camera 2
J3016
P1
HSHIELD1_1510E

31.RF Interface

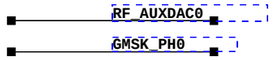
RFIC IQ



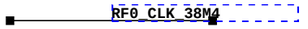
POWER



GSM

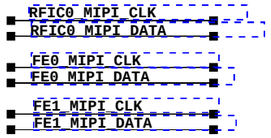


CLK

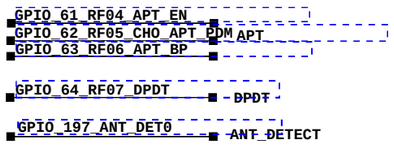


HKADC

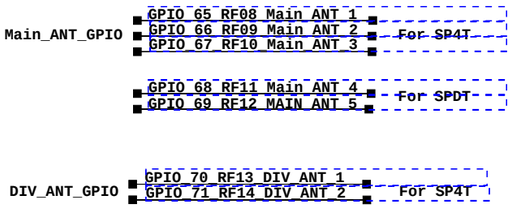
MIPI Interface



GPIO Interface



ANT Interface



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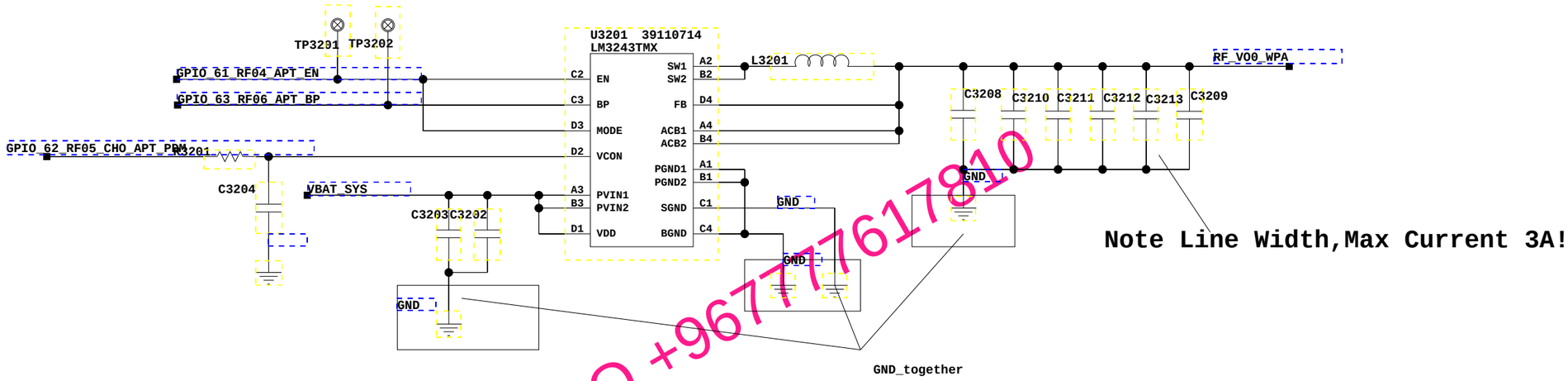
32 APT_LM3243



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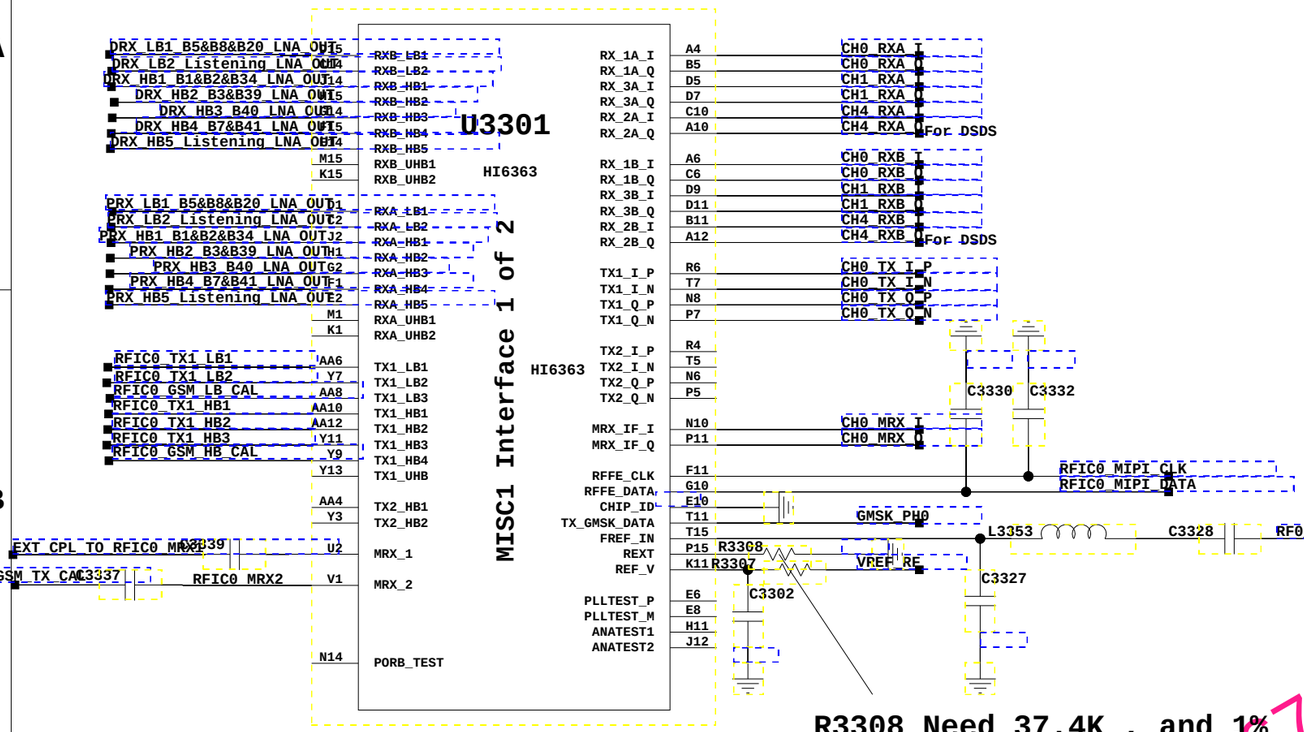
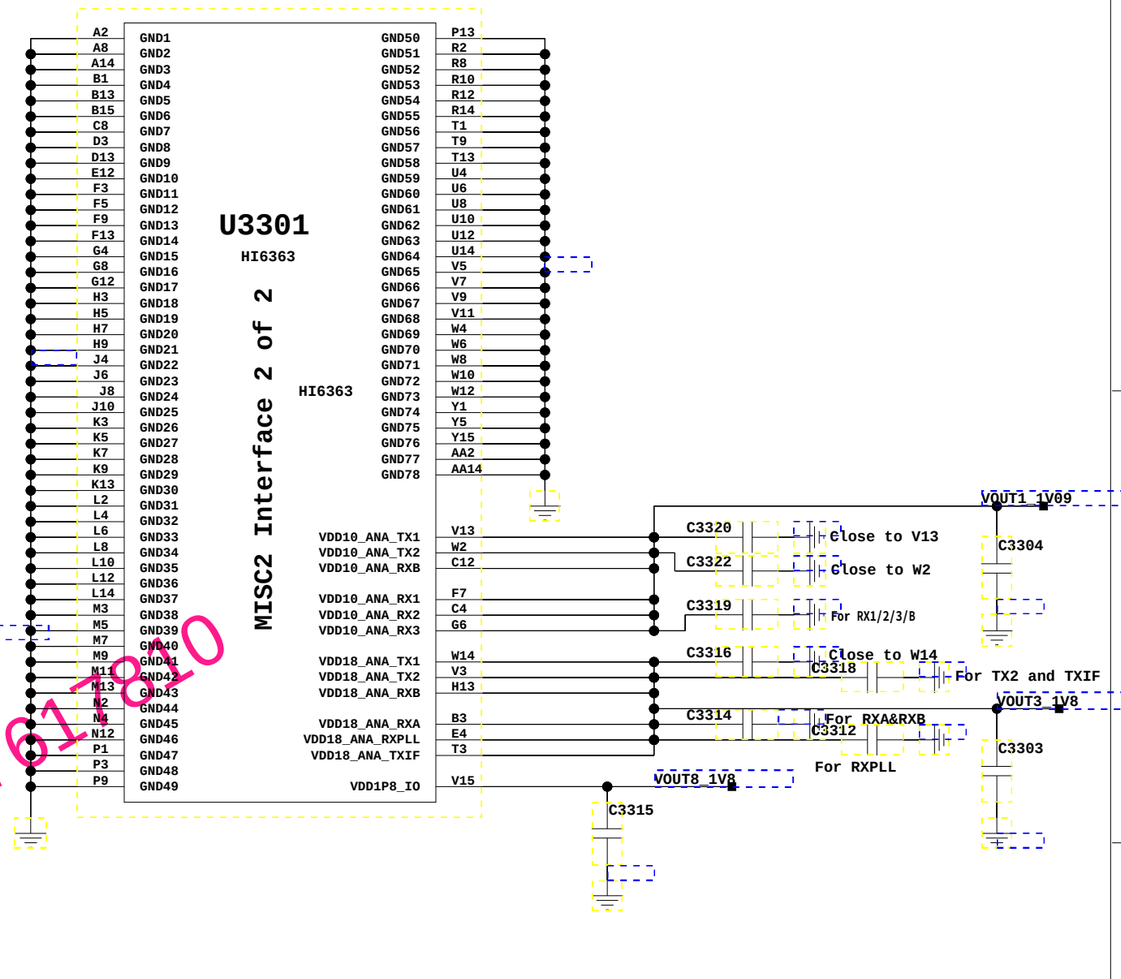
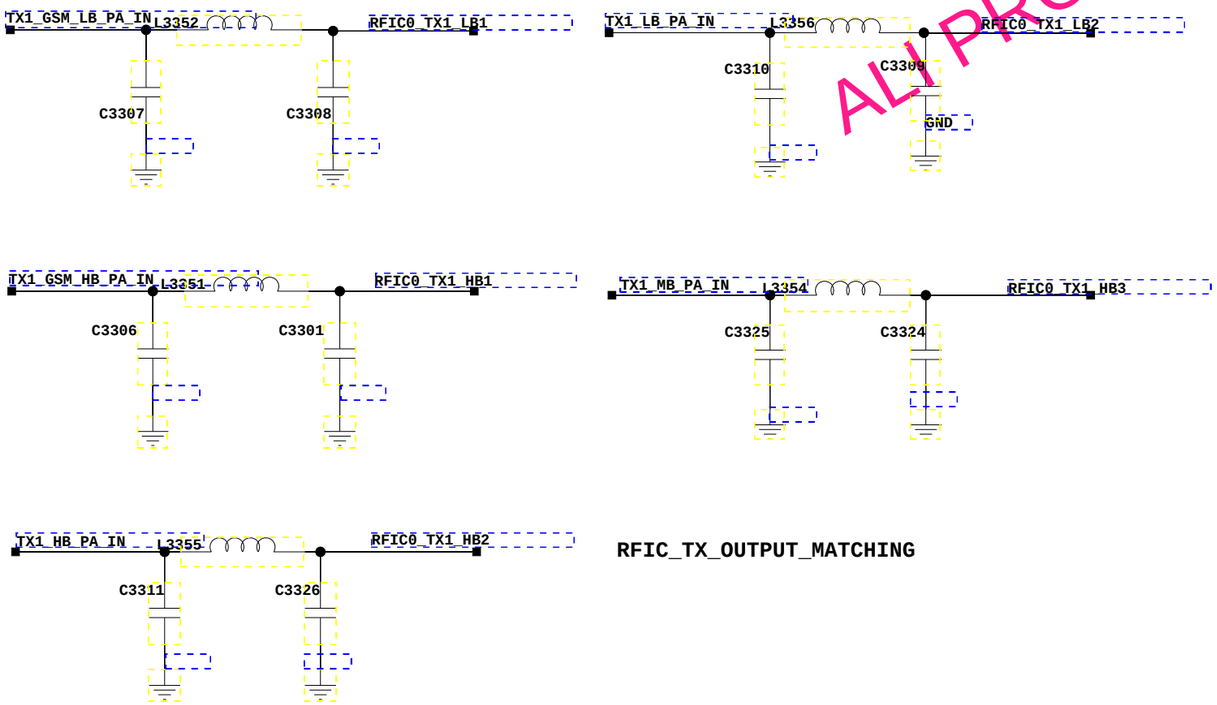
33.RFIC0_Hi6363

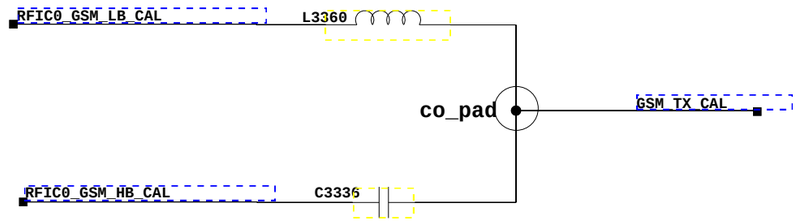


R3308 Need 37.4K , and 1%





RFIC_TX_OUTPUT_MATCHING



Design For GSM_TX_CAL

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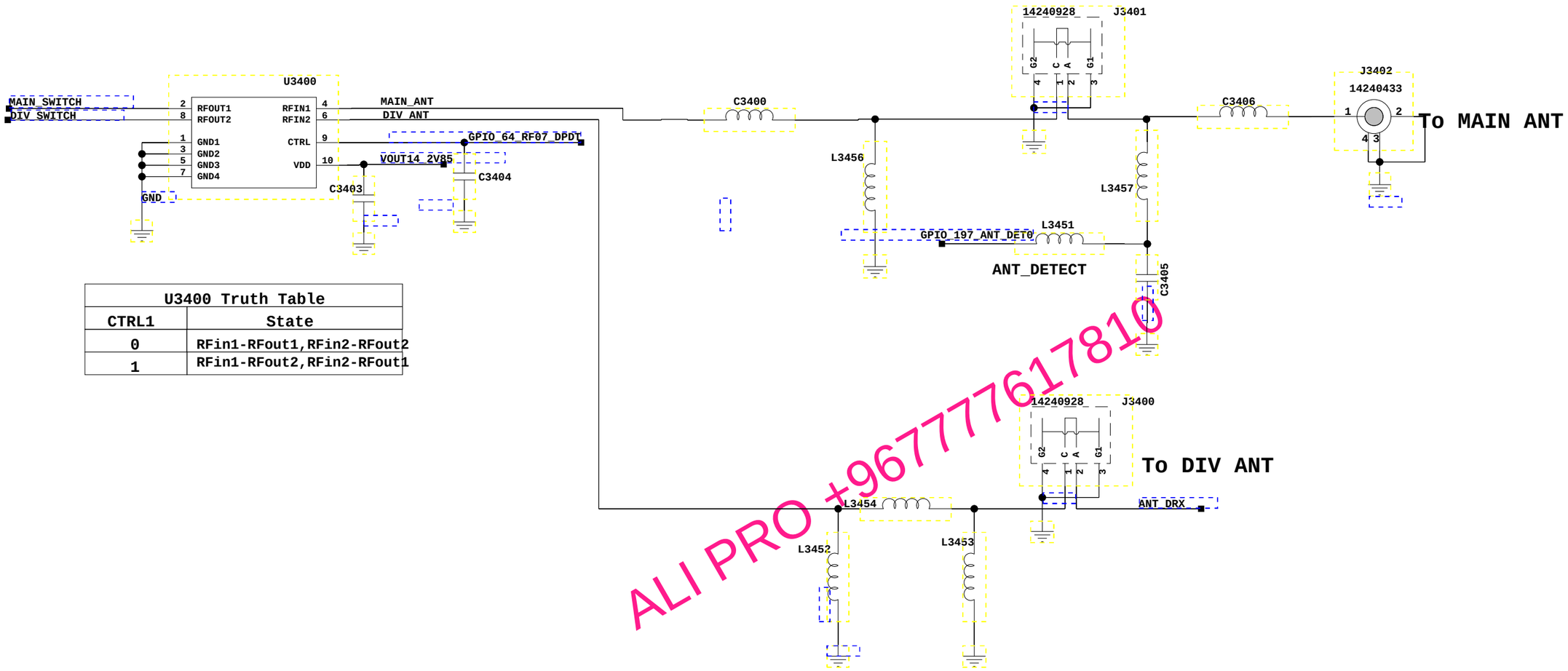
34 DPDT_Connector



U3400 Truth Table	
CTRL1	State
0	RFin1-RFout1,RFin2-RFout2
1	RFin1-RFout2,RFin2-RFout1

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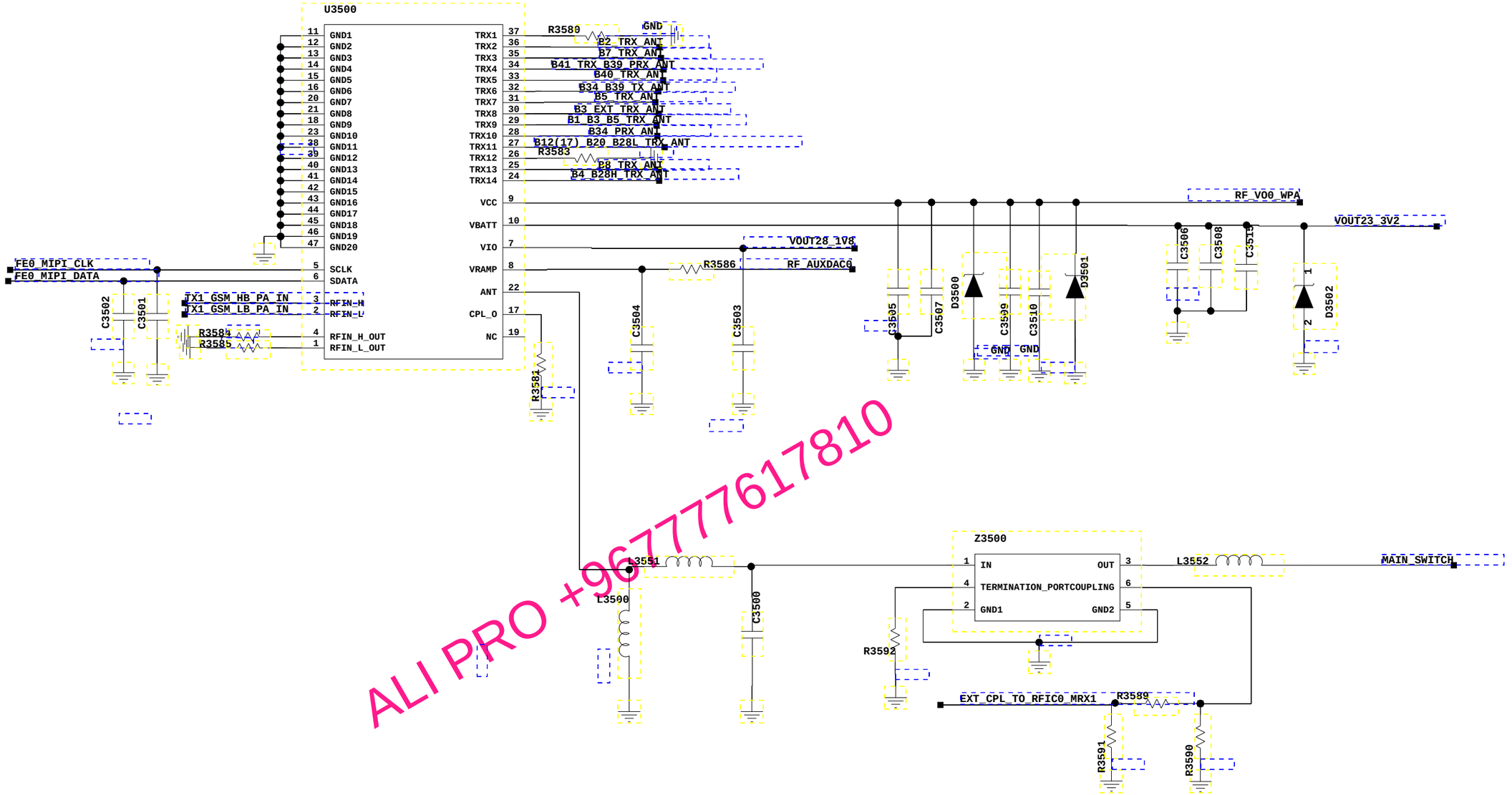
35. TXM



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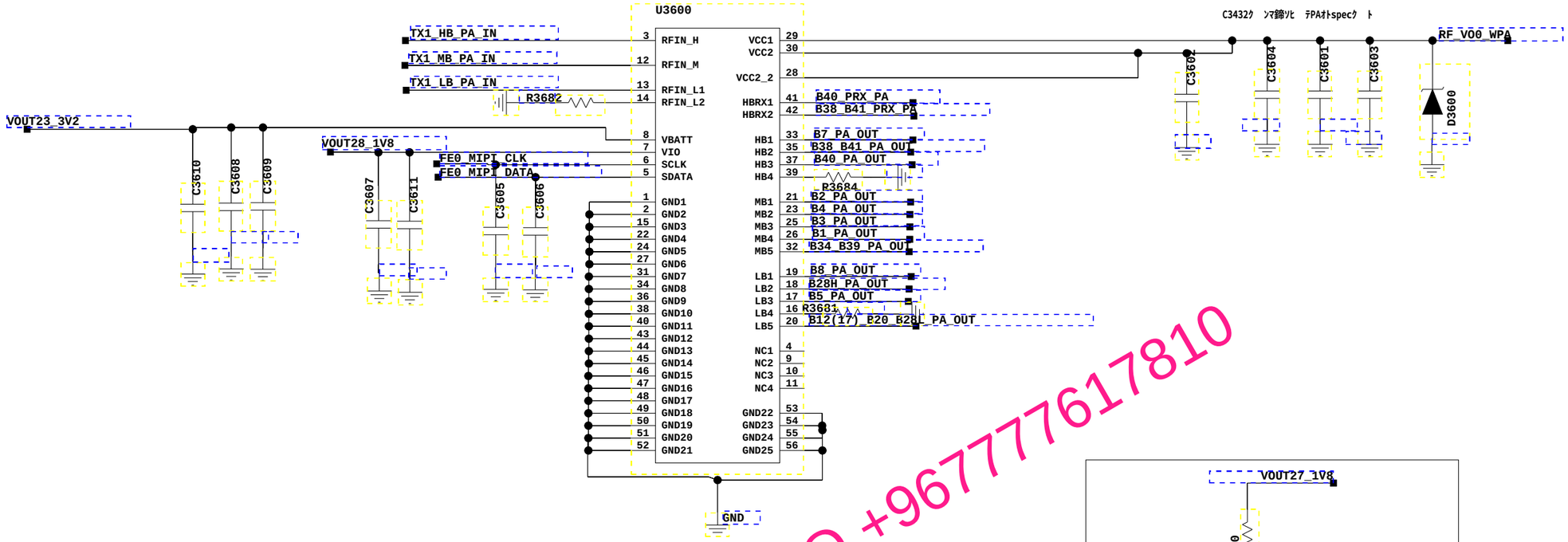
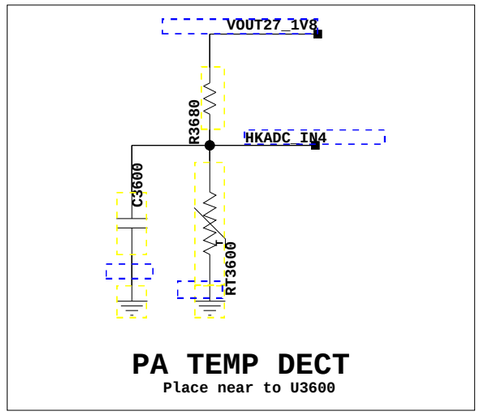
36 MMBPA





PA TEMP DECT

Place near to U3600

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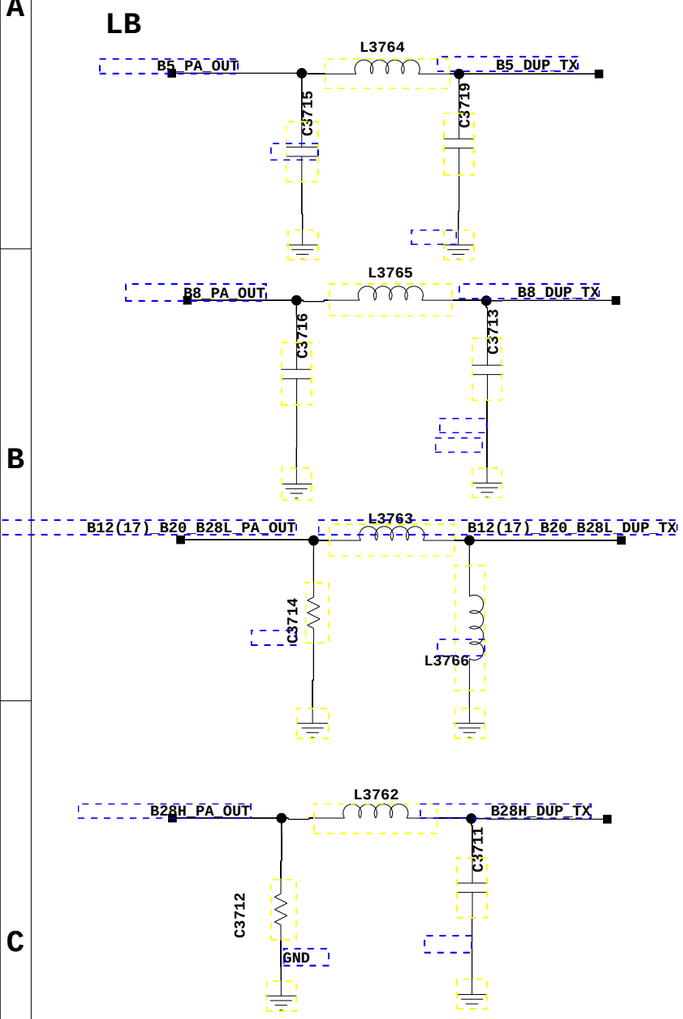
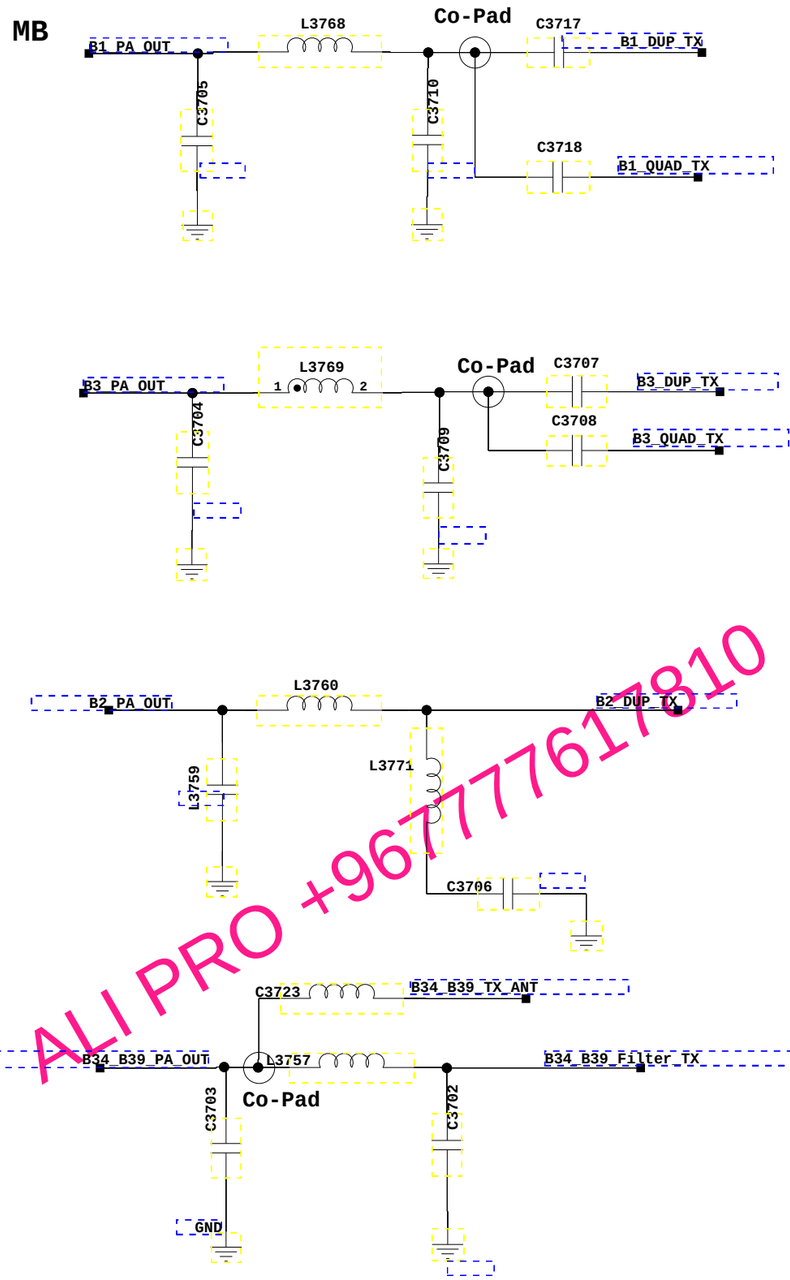
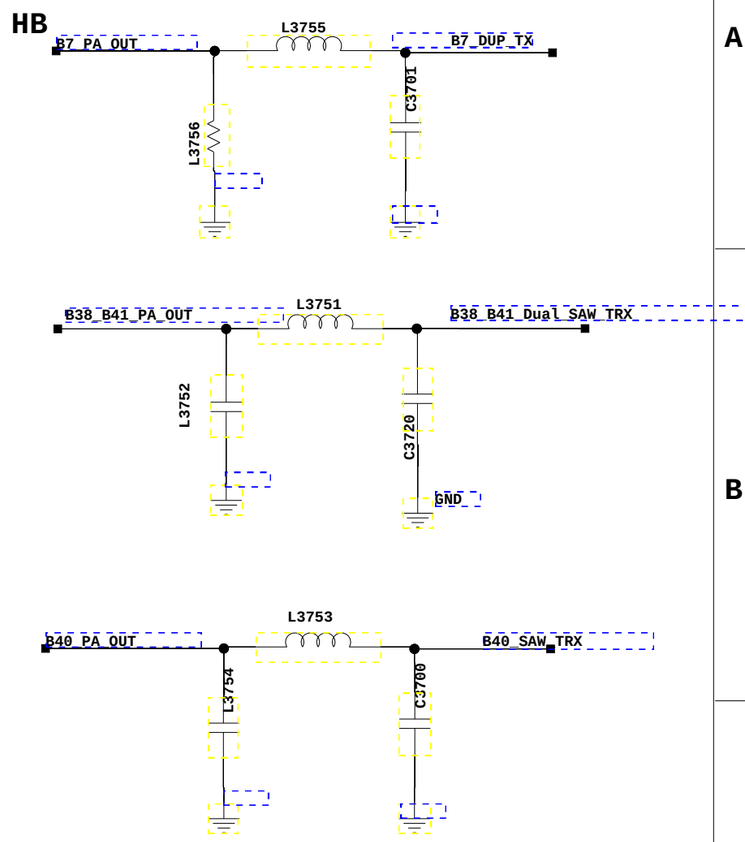
37.TX_Loadpull







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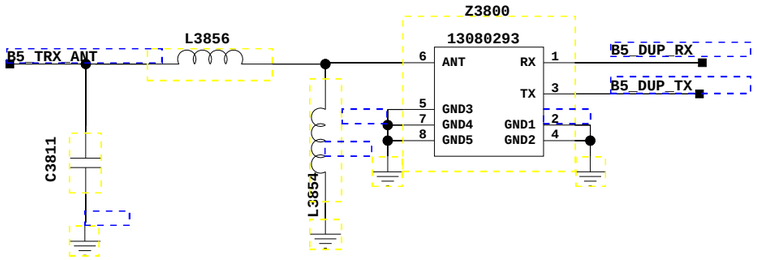
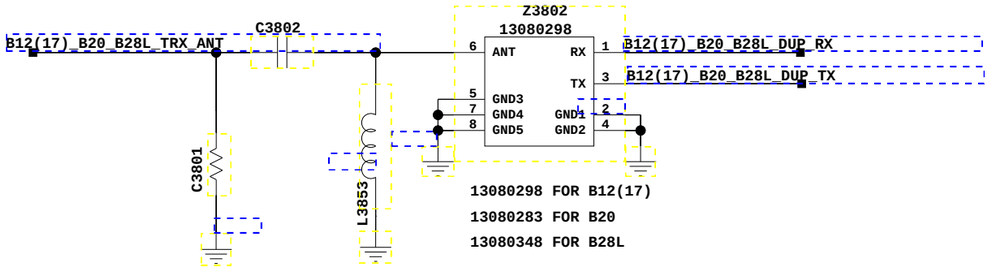
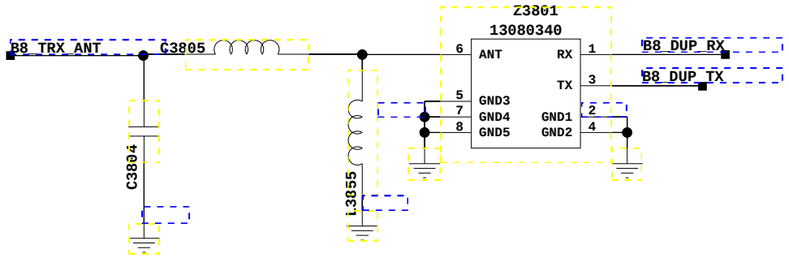
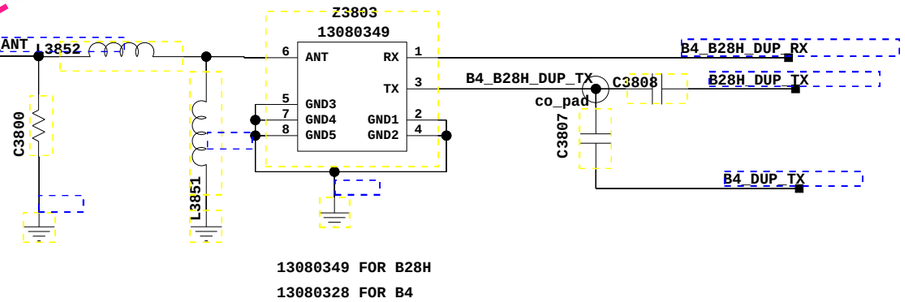
38 TRX_LB_1









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39 TRX_LB_2

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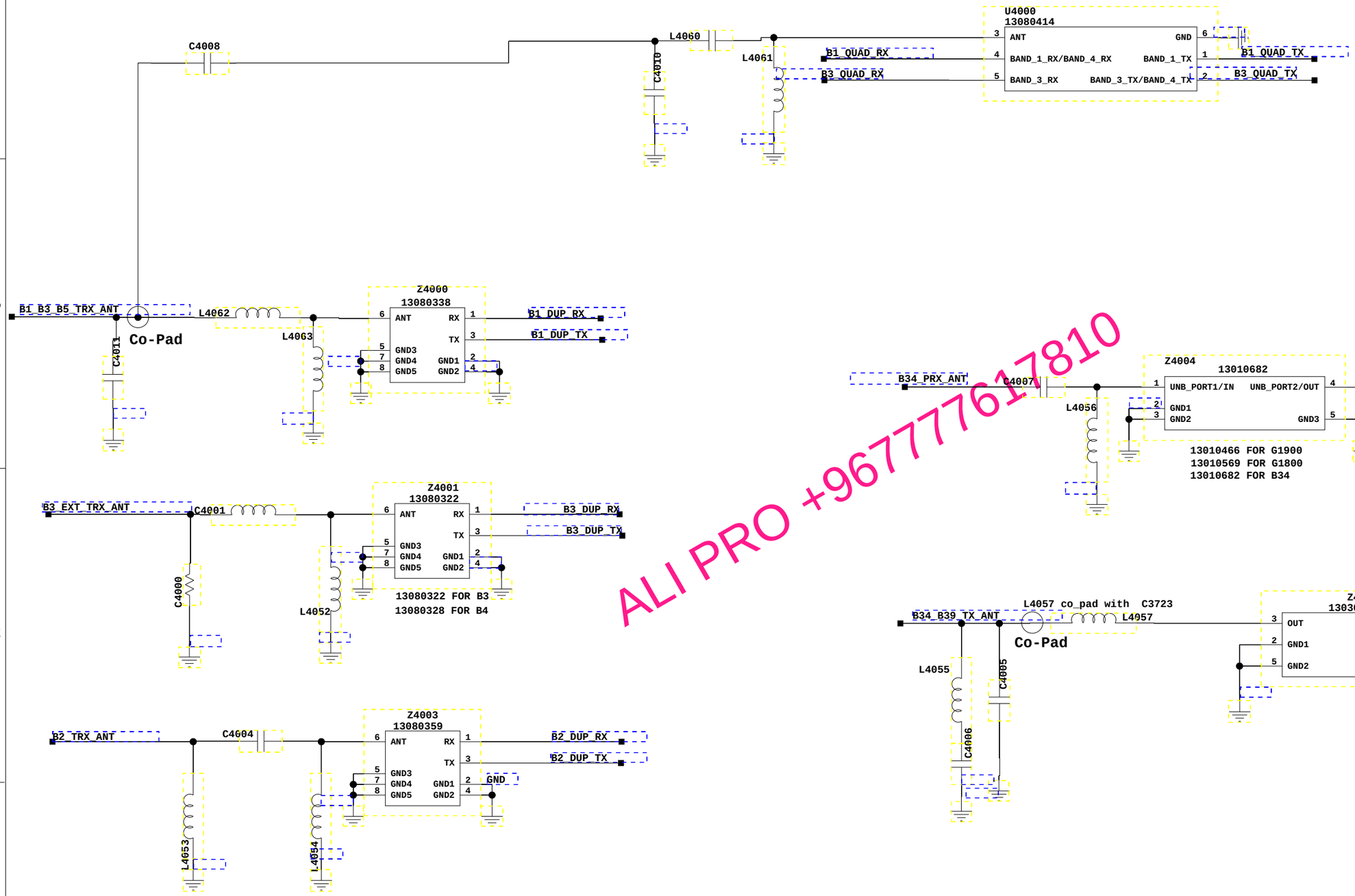
40 TRX_MB_1



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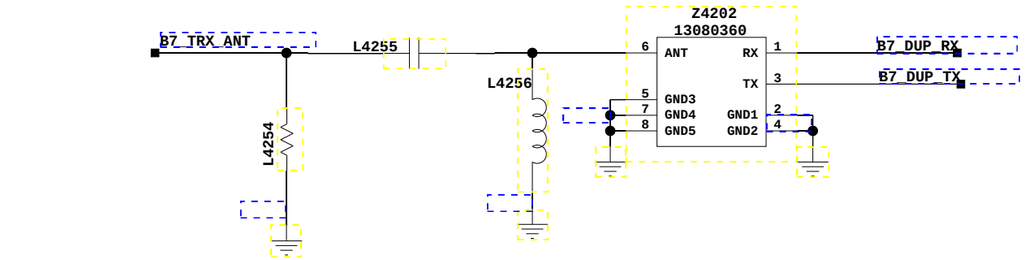
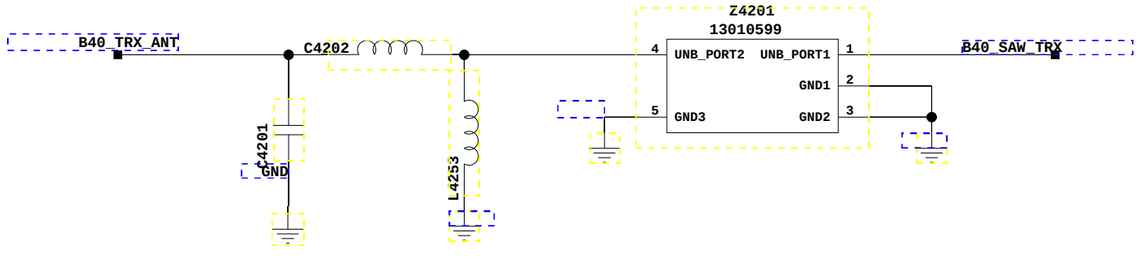
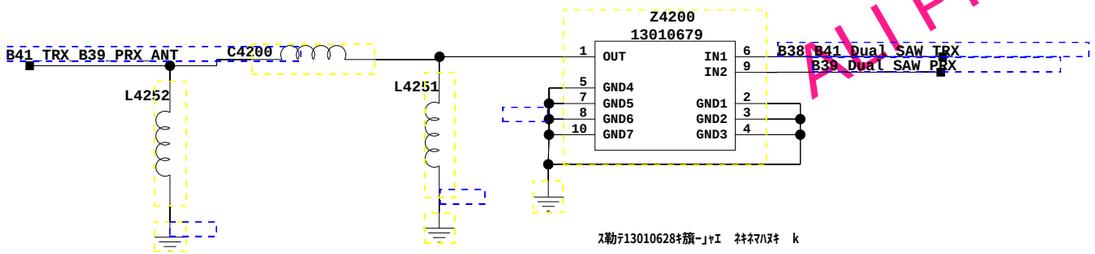
41 TRX_MB_2

ALI PRO +967777617810

42 TRX_HB_1







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43. TRX_HB_2

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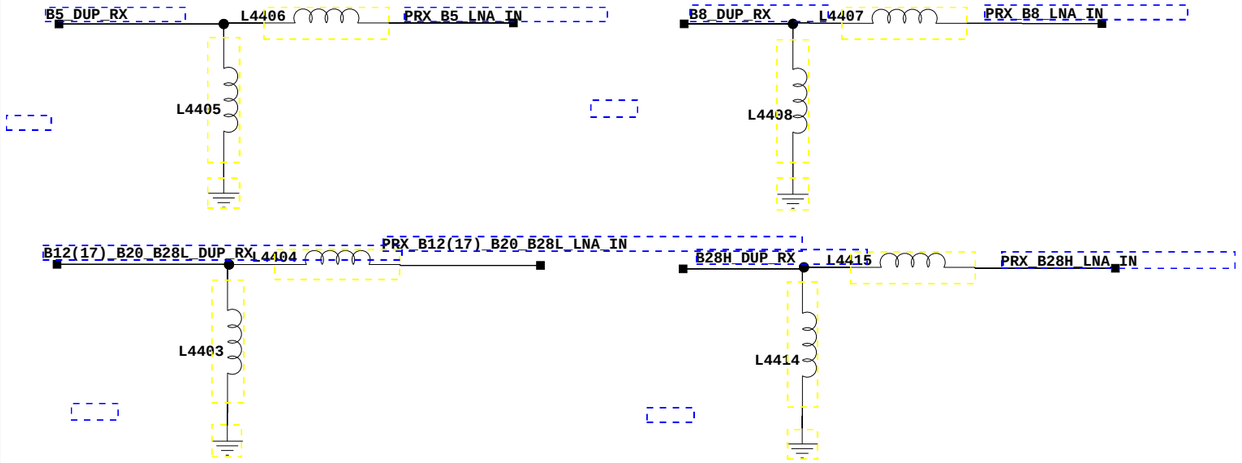
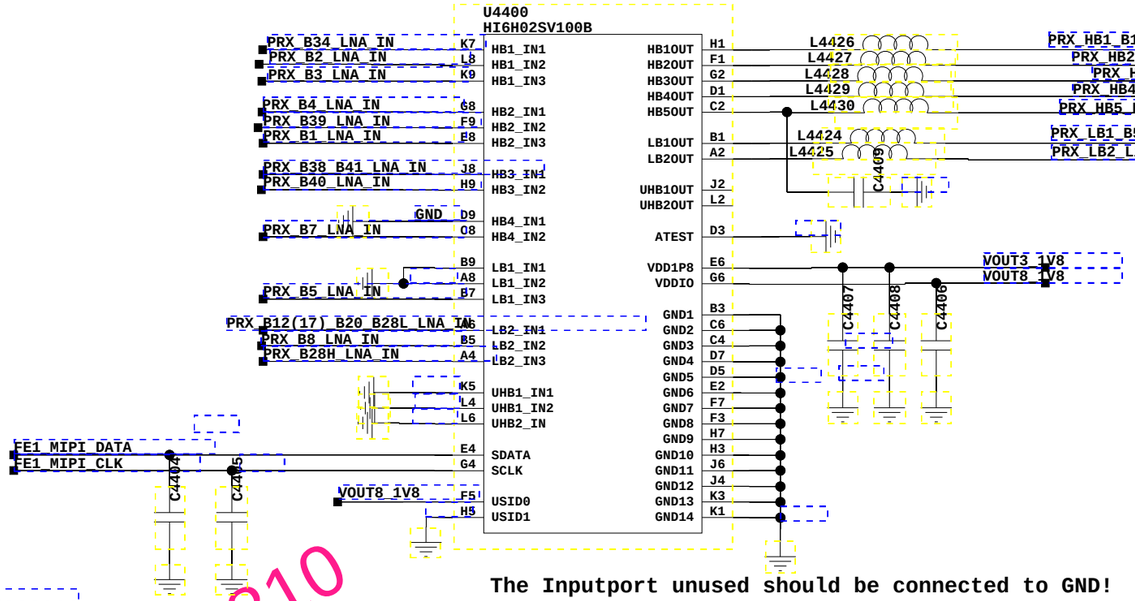
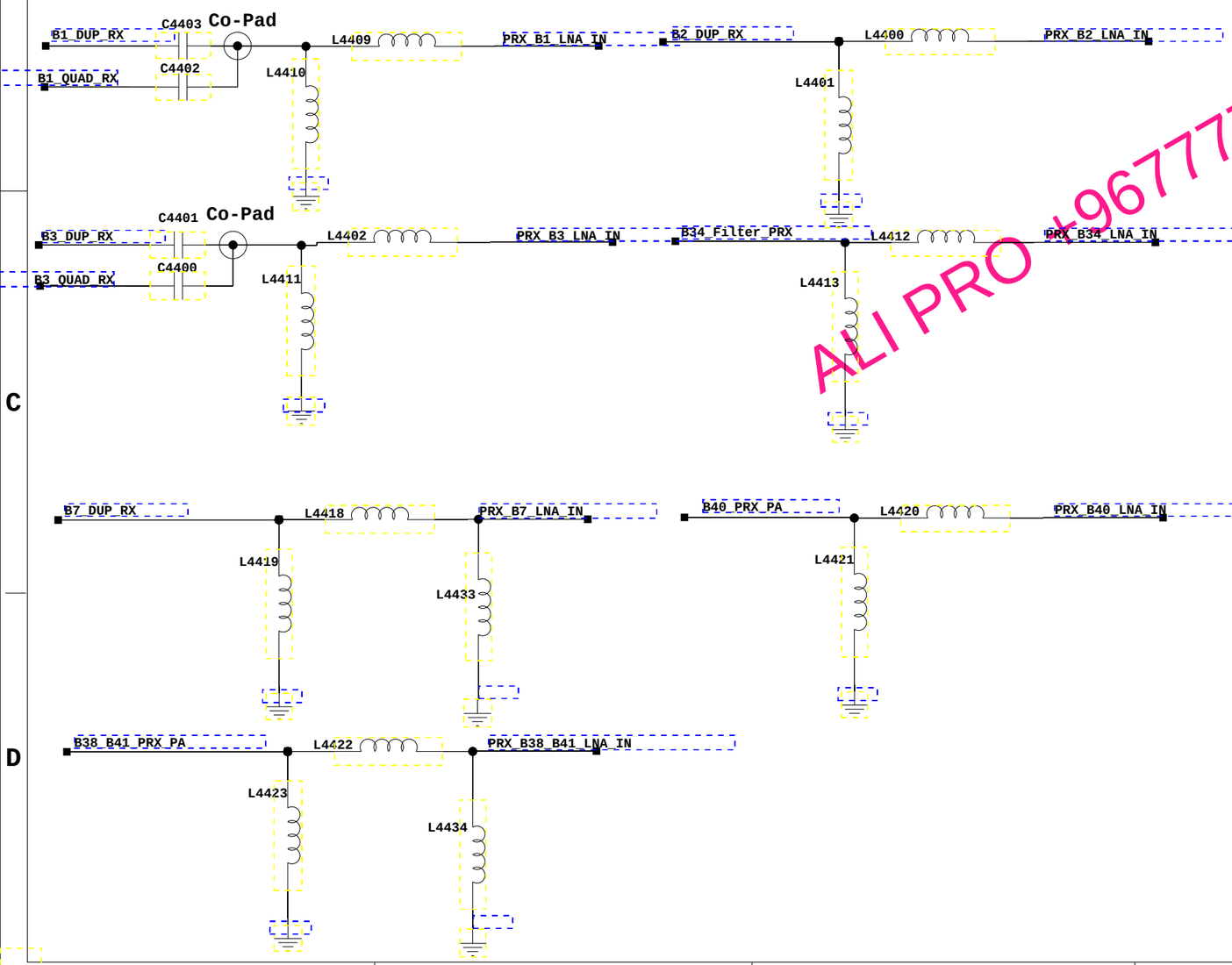
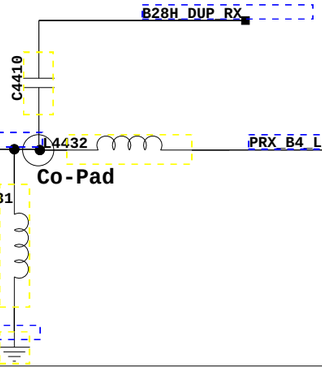
44. PRX_LNA_Module





The Inputport unused should be connected to GND!





6H01 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	2000-2690MHz
HB4_IN1-2	2000-2690MHz
UHB1_IN1,UHB2	3400-3800MHz
UHB1_IN2	5150-5925MHz

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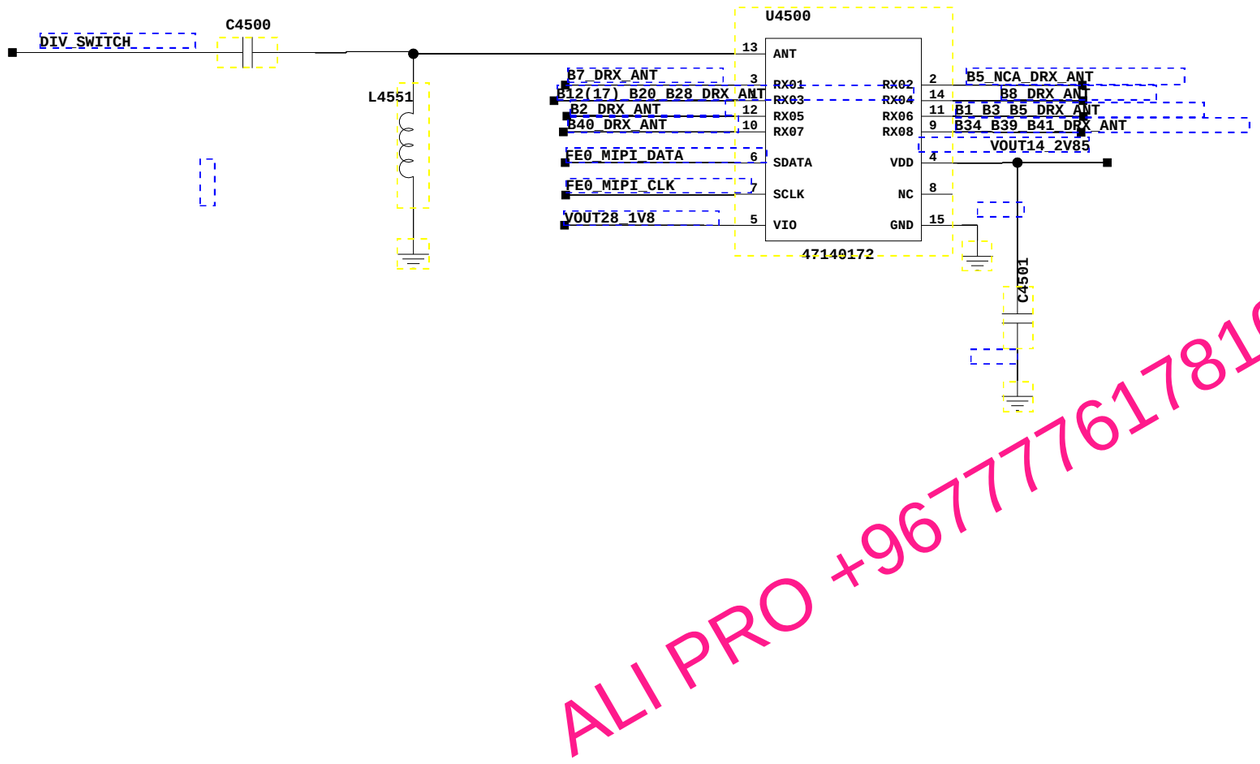
45.DRX_SWITCH



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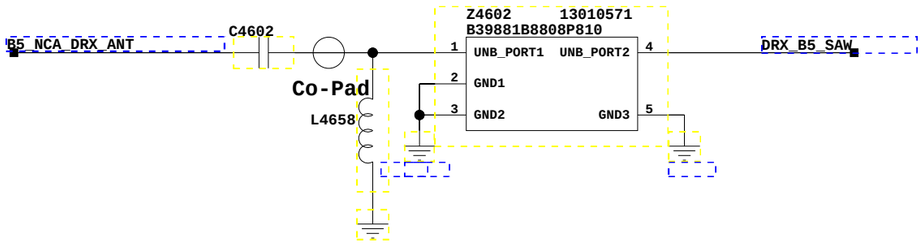
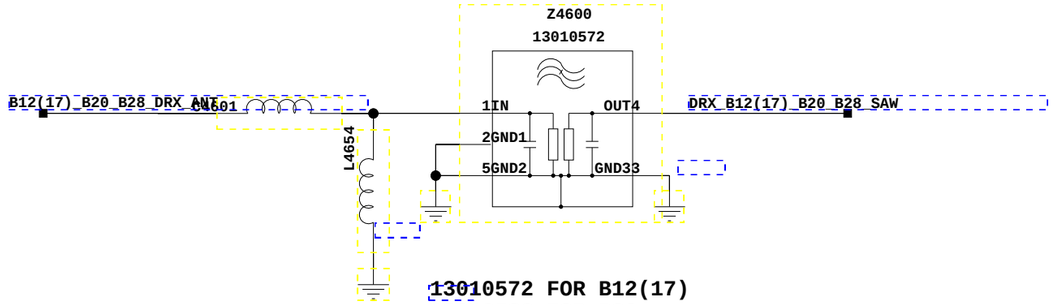
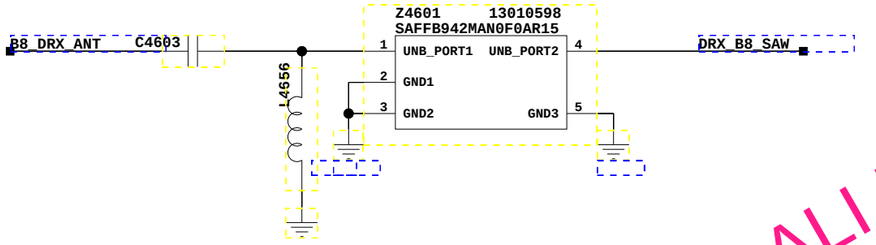
46. DRX_LB







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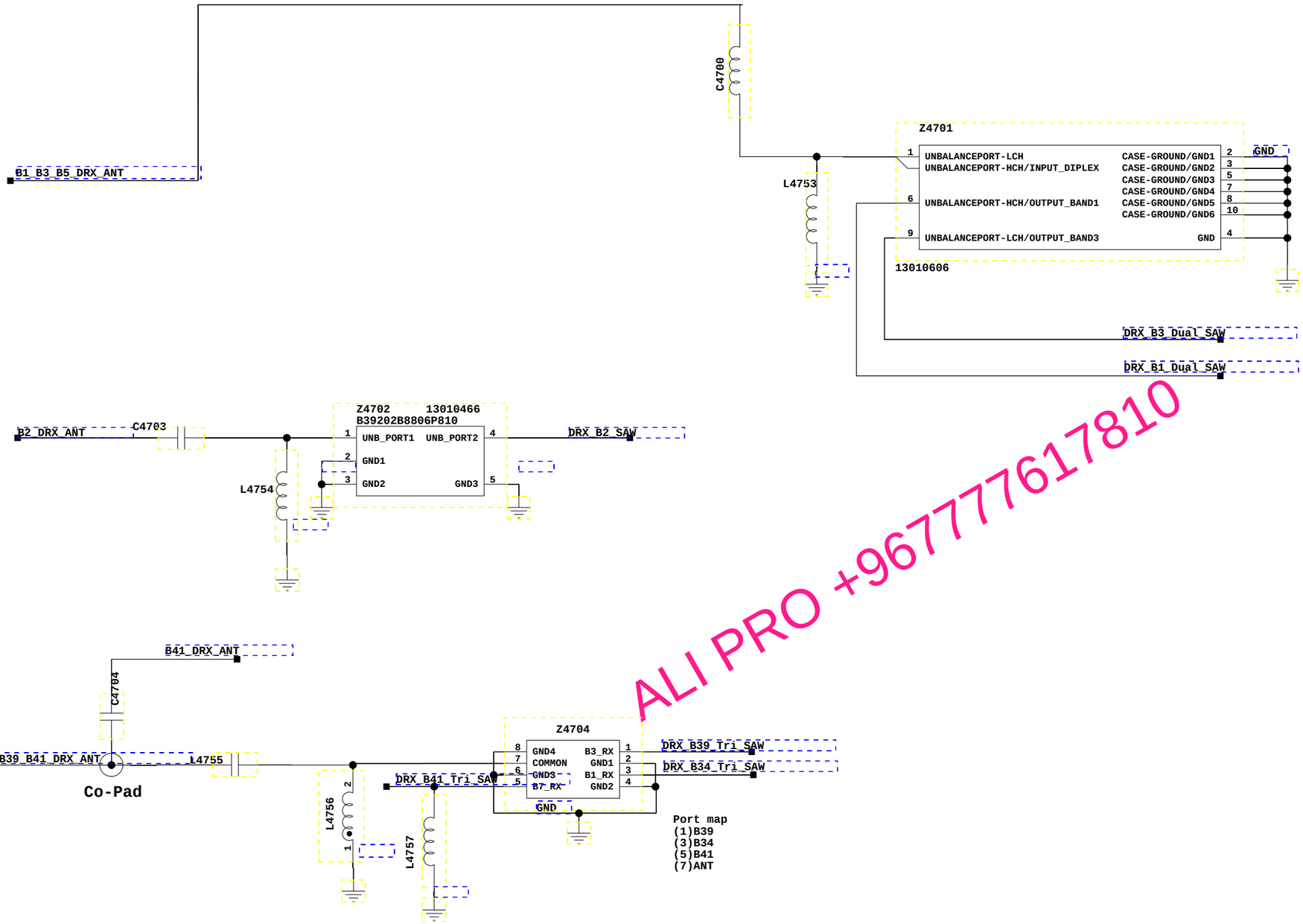
47. DRX_MB



B34/39/41 Tri_SAW does not have a package;we use the package of Band 20 duplexer as its package temporarily

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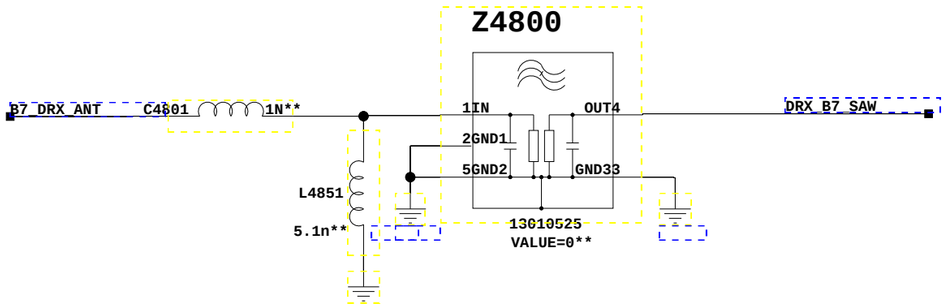
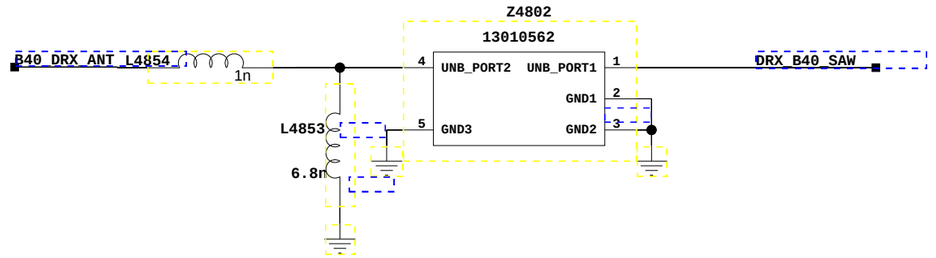
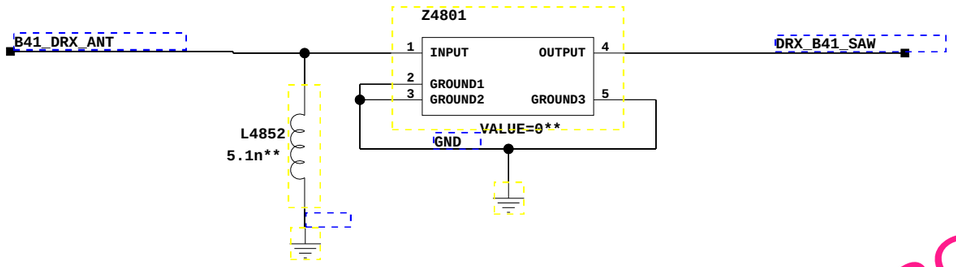
48. DRX_HB







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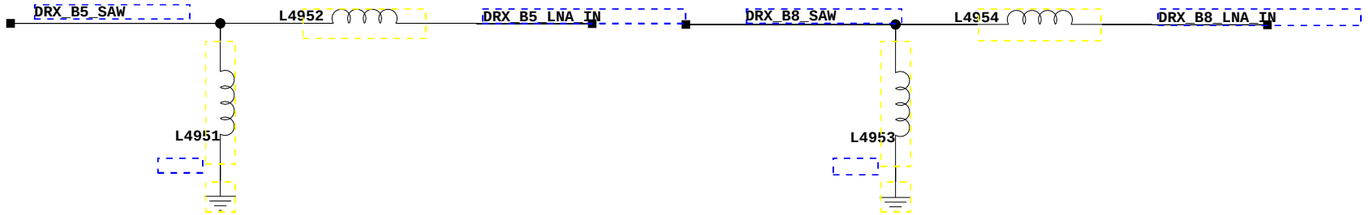
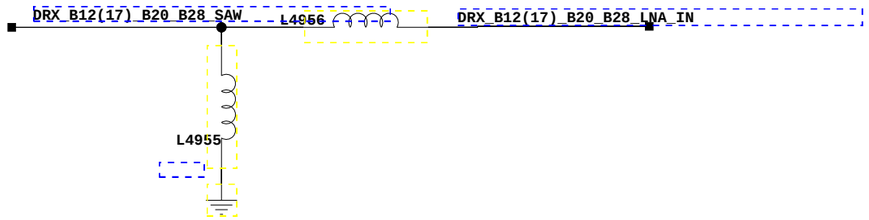
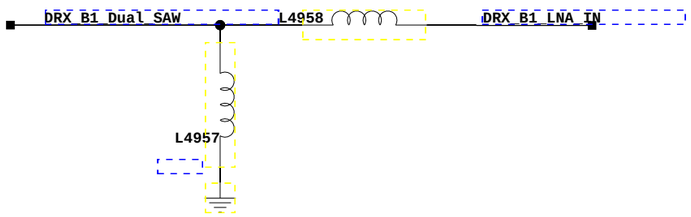
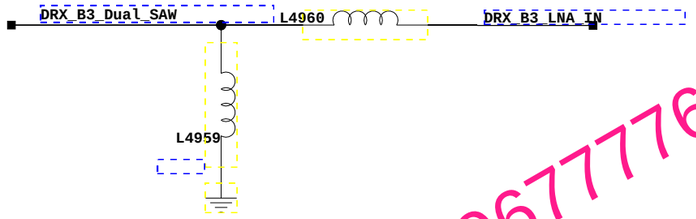
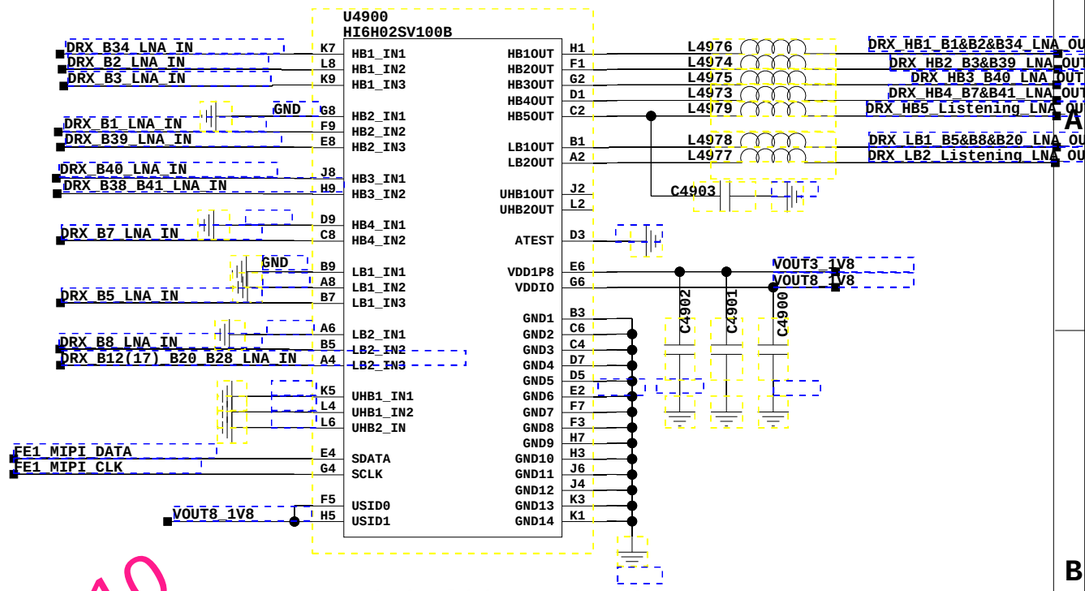
49. DRX_LNA_Module



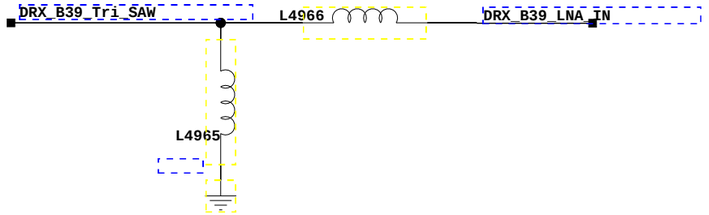


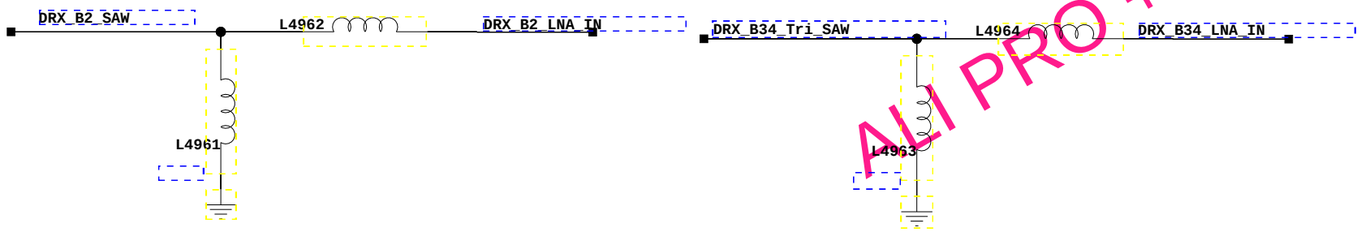


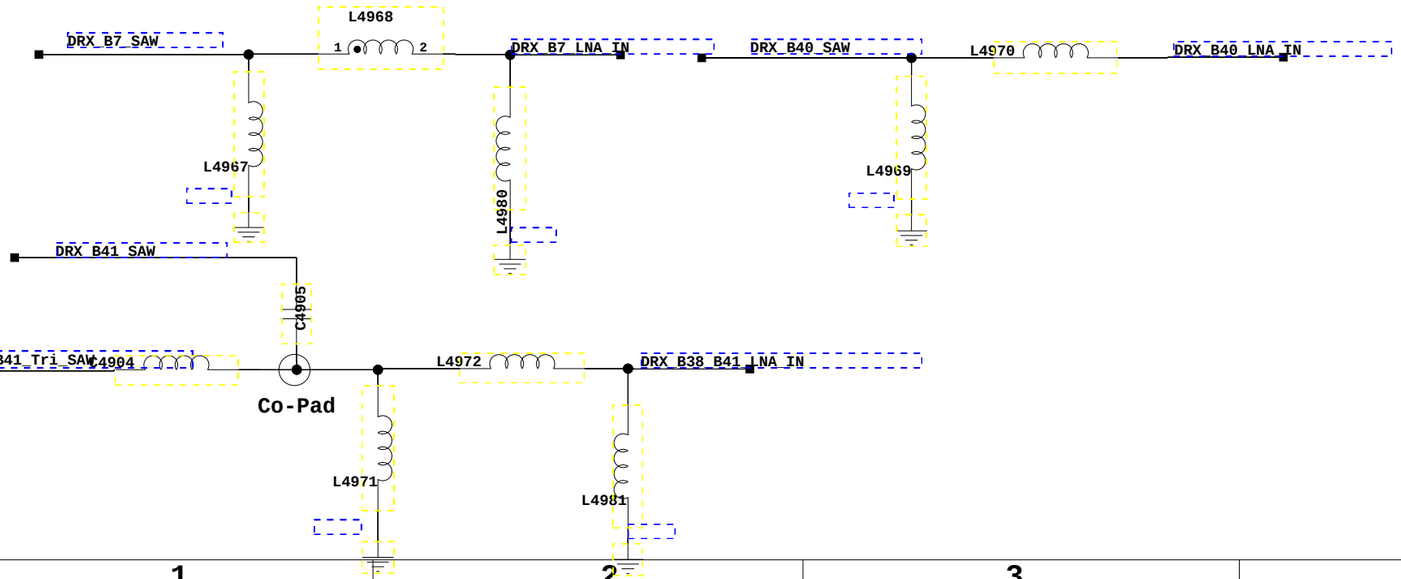




The Inputport unused should be connected to GND!







6H01 Frequency Range	
LB1_IN1	460-895MHz
LB1_IN2-3,LB2_IN_1-3	703-960MHz
HB1_IN1-3	1447-2200MHz
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HB4_IN1-2	2000-2690MHz
UHB1_IN1,UHB2	3400-3800MHz
UHB1_IN2	5150-5925MHz

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50. Reserved

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51. Reserved_RFIC1

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52. Reserved_APT1

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53. Reserved_MIMO_DRX2

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54. Reserved_DRX3

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55. Reserved_PA_SUB_6G

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56. Reserved_TRX_SUB_6G

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57. Reserved_DRX_SUB_6G

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58.Reserved

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59. Reserved

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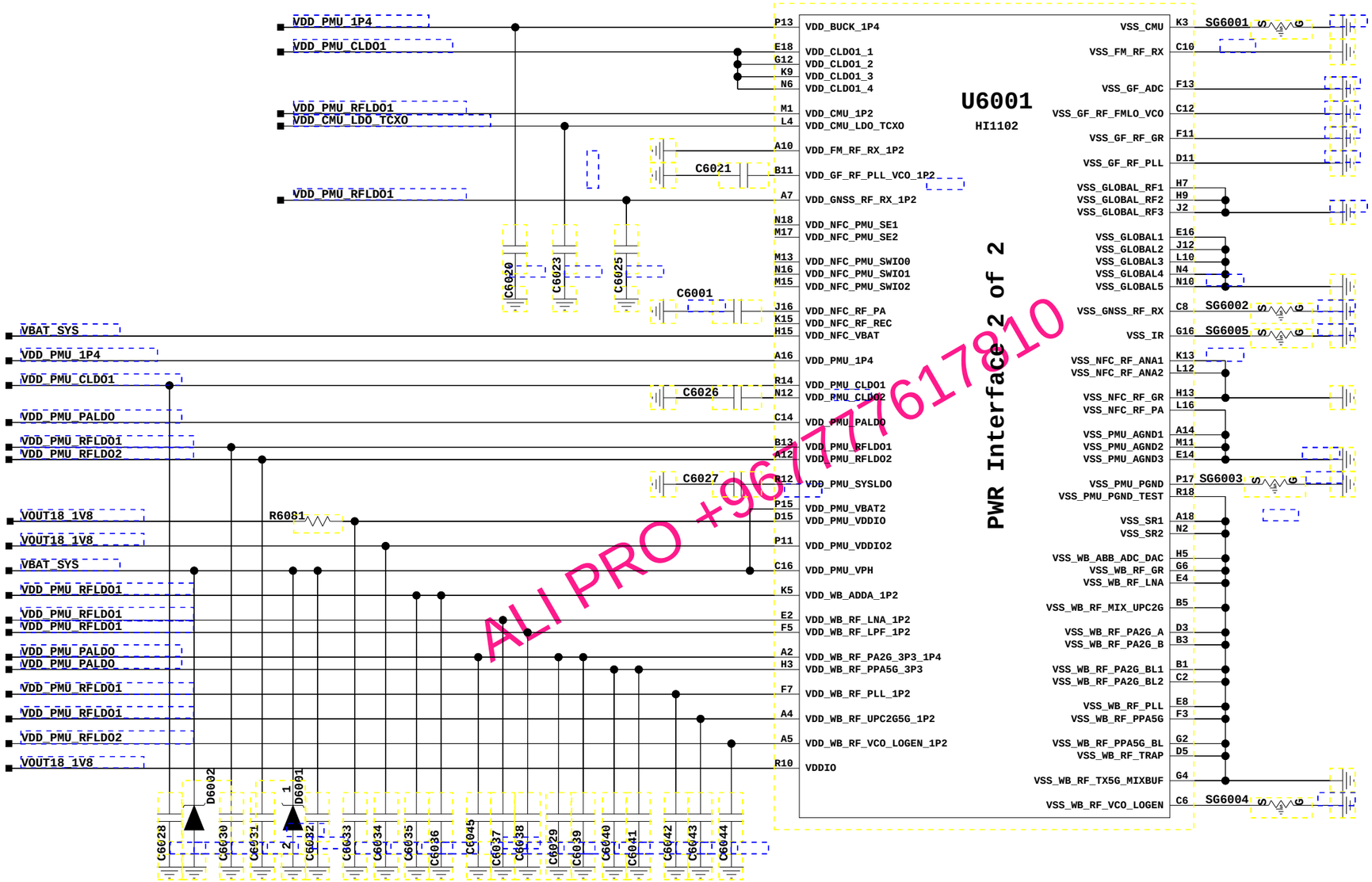
60 NC_POWER



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61 NC_BB

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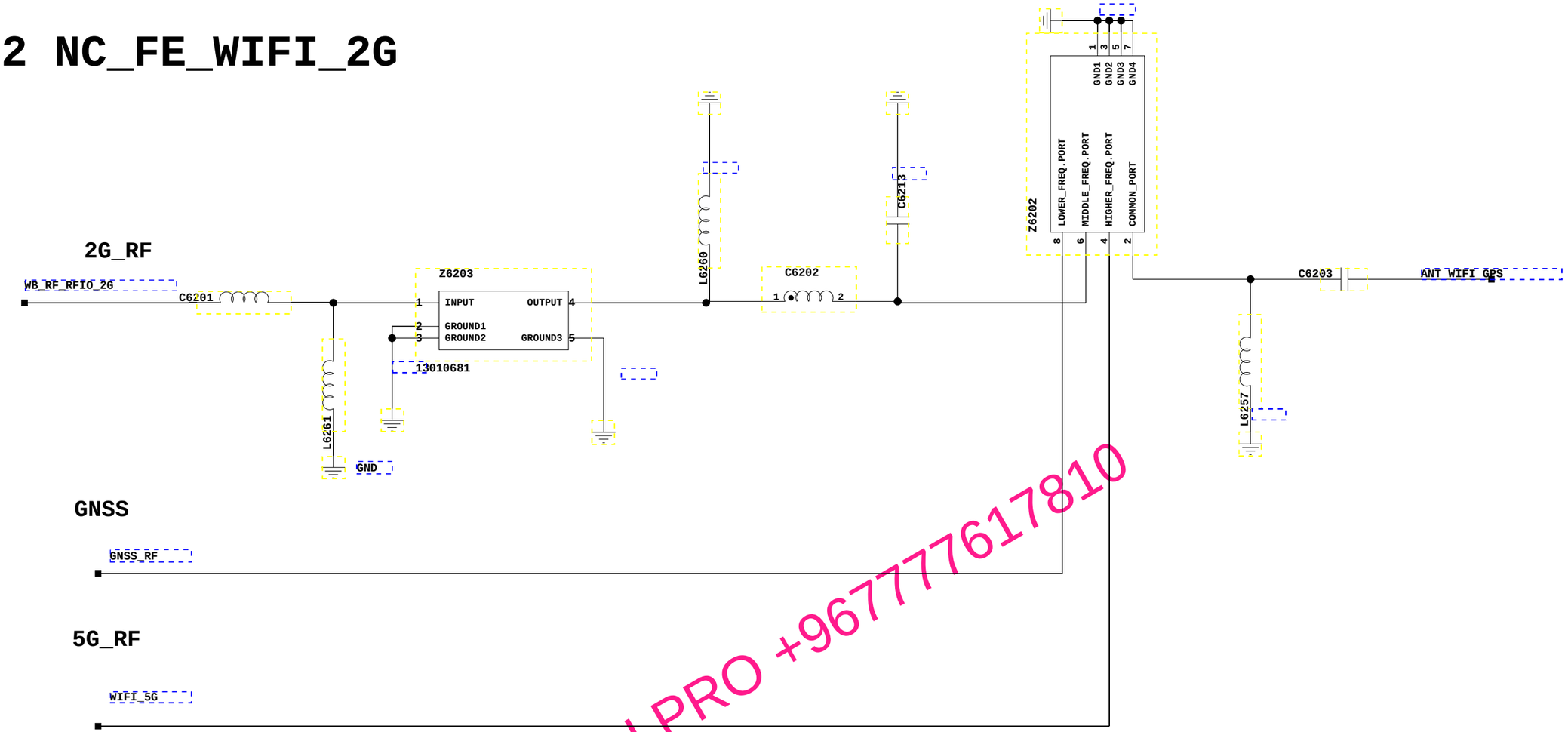
62 NC_FE_WIFI_2G



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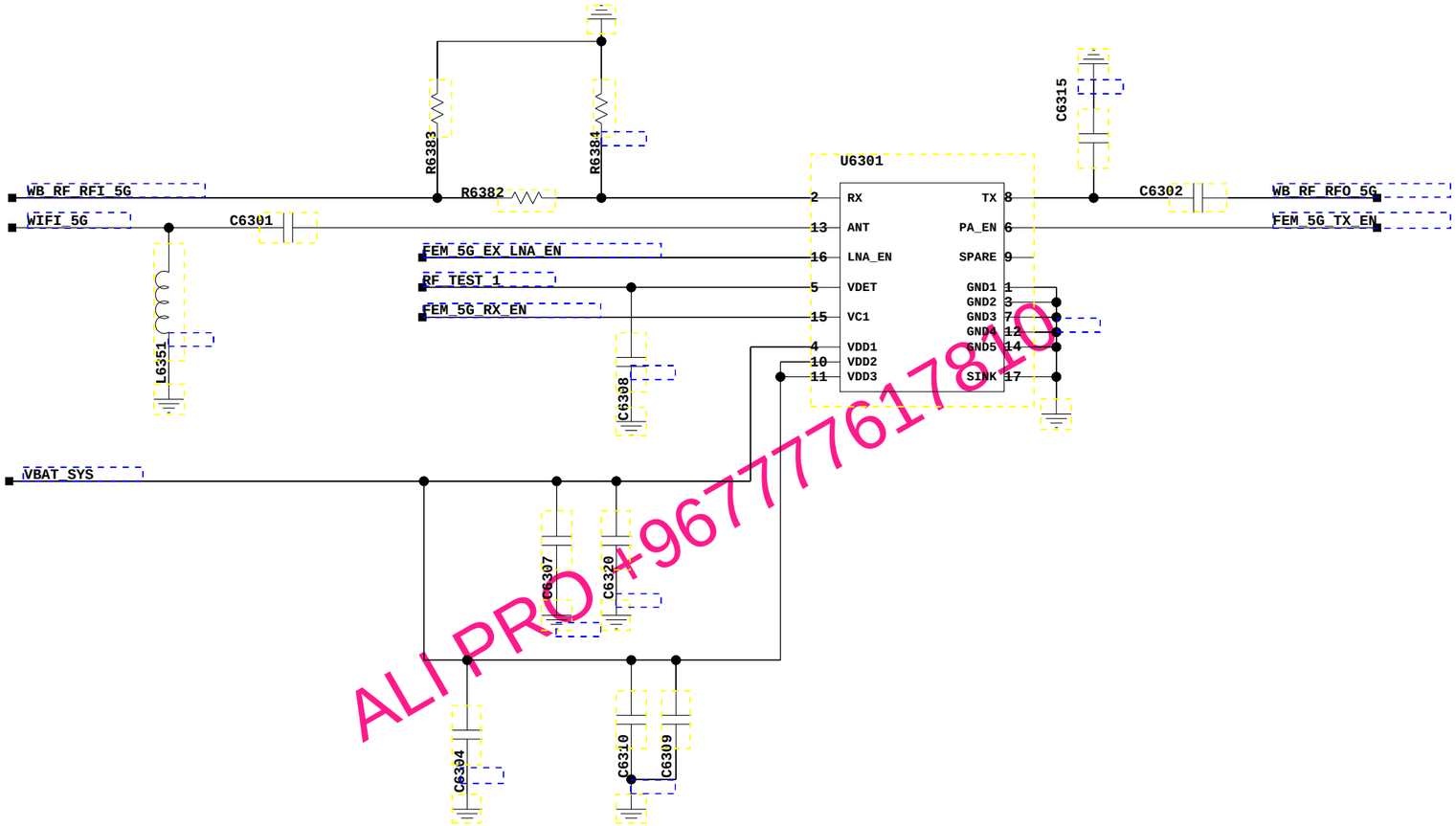
63 NC_FE_WIFI_5G



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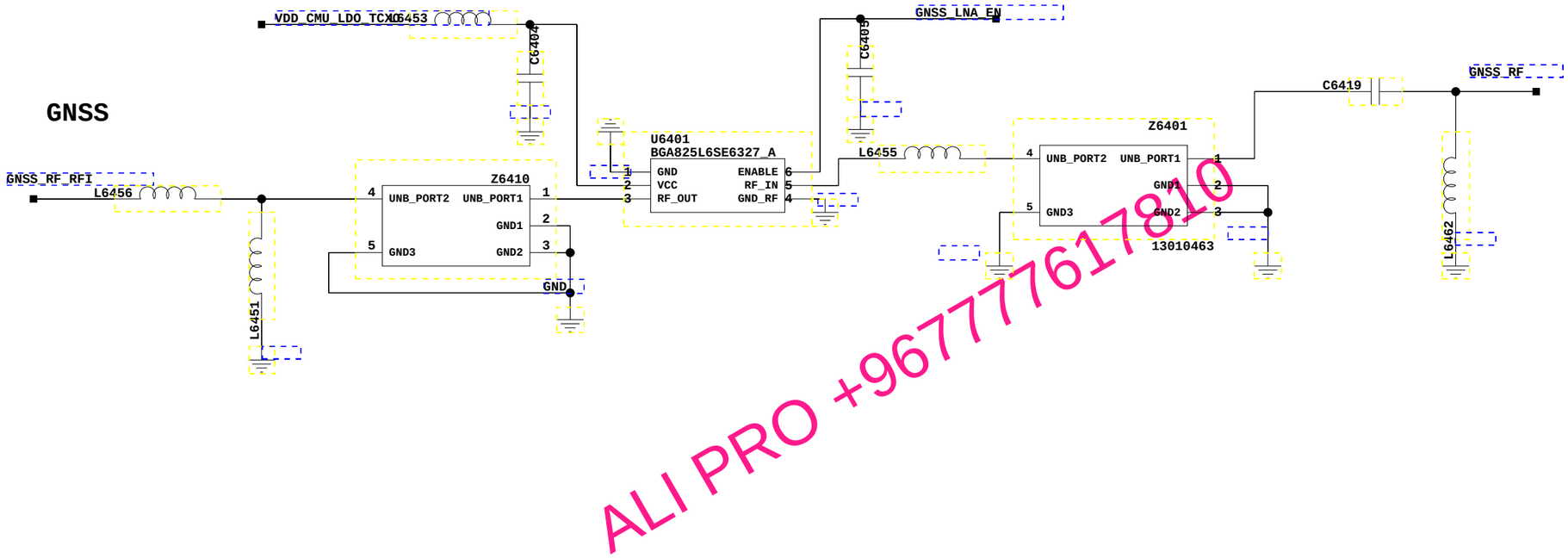
The type and specification of the components refer to the BOM

64 NC_GPS



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65 RES

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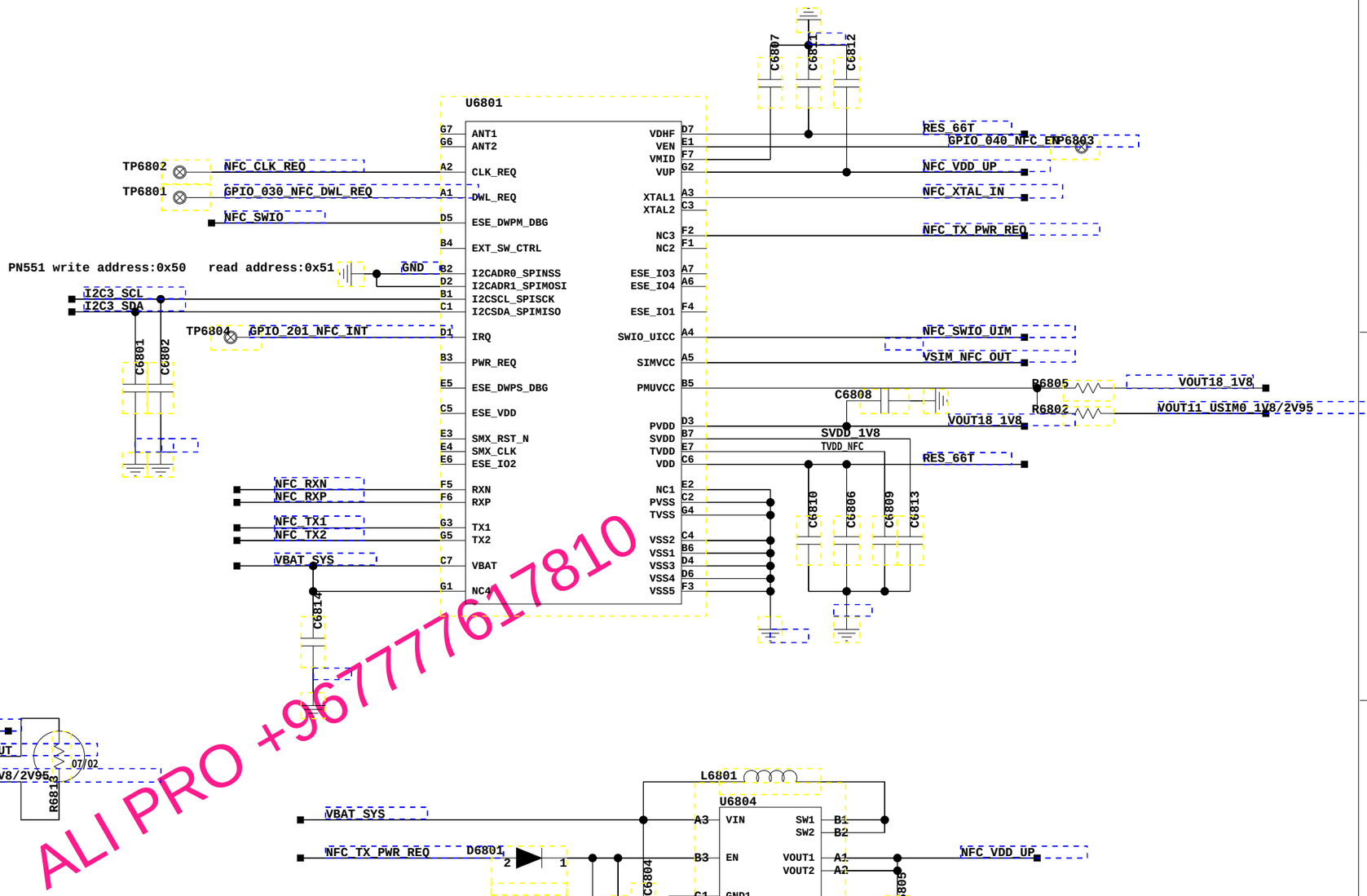
66 RES

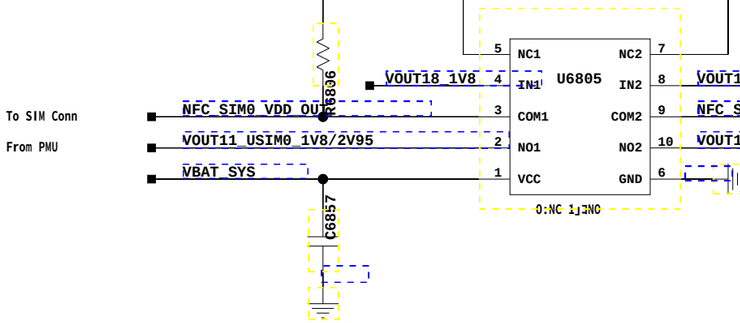
ALI PRO +967777617810

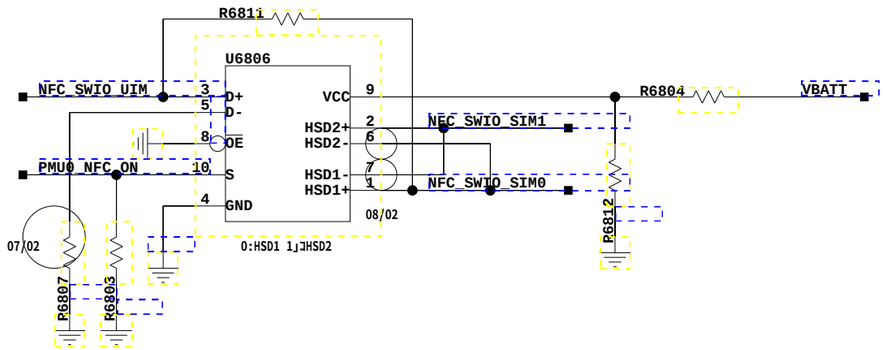
67 RES

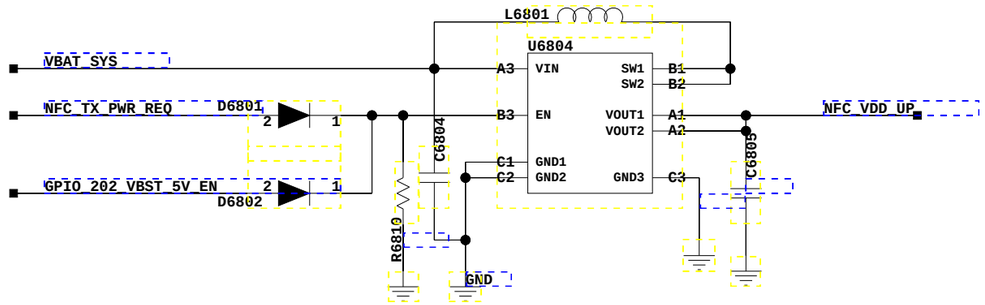
ALI PRO +967777617810

68. NFC_BB









ﾑ鮟､NFC_ONﾊﾇｷ ﾐﾏﾏﾀｭ」ｬﾈ郡鈎ｻﾓﾐﾐ醐ｴﾌ ﾏR6803ｱ」ｳﾕﾇﾈｷｶｨﾗｴﾌｬ」ｬﾓ ･ﾋｵｿｨｷｽｰｸｼ殷ﾇﾝﾎﾞｹﾘ

NFCﾋｵｿｨBOM」ｺR6802\R6806\R6811\R6813 DNI」ｻ
ｿｴｹﾘ。「NFCﾏ犹ﾘｵ酋ﾄｷSMT

NFCｵ･ｿｨBOM」ｺR6802\R6806\R6811\NFCﾏ犹ﾘｵ酋ﾄｷSMT」ｻ
U6805\U6806\C6857\R6812\R6804\R6805 DNI

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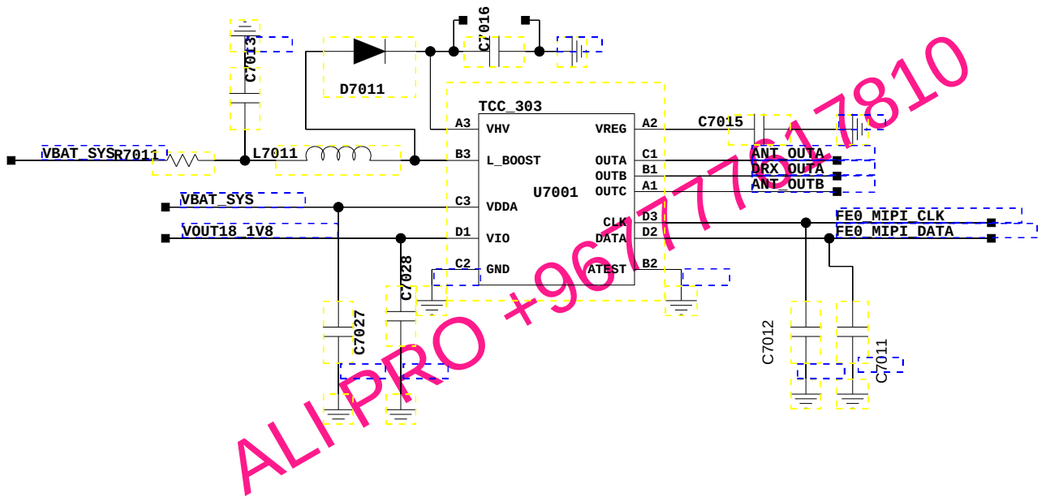
67 RES

ALI PRO +967777617810

70.ANT_Tuner_Controller



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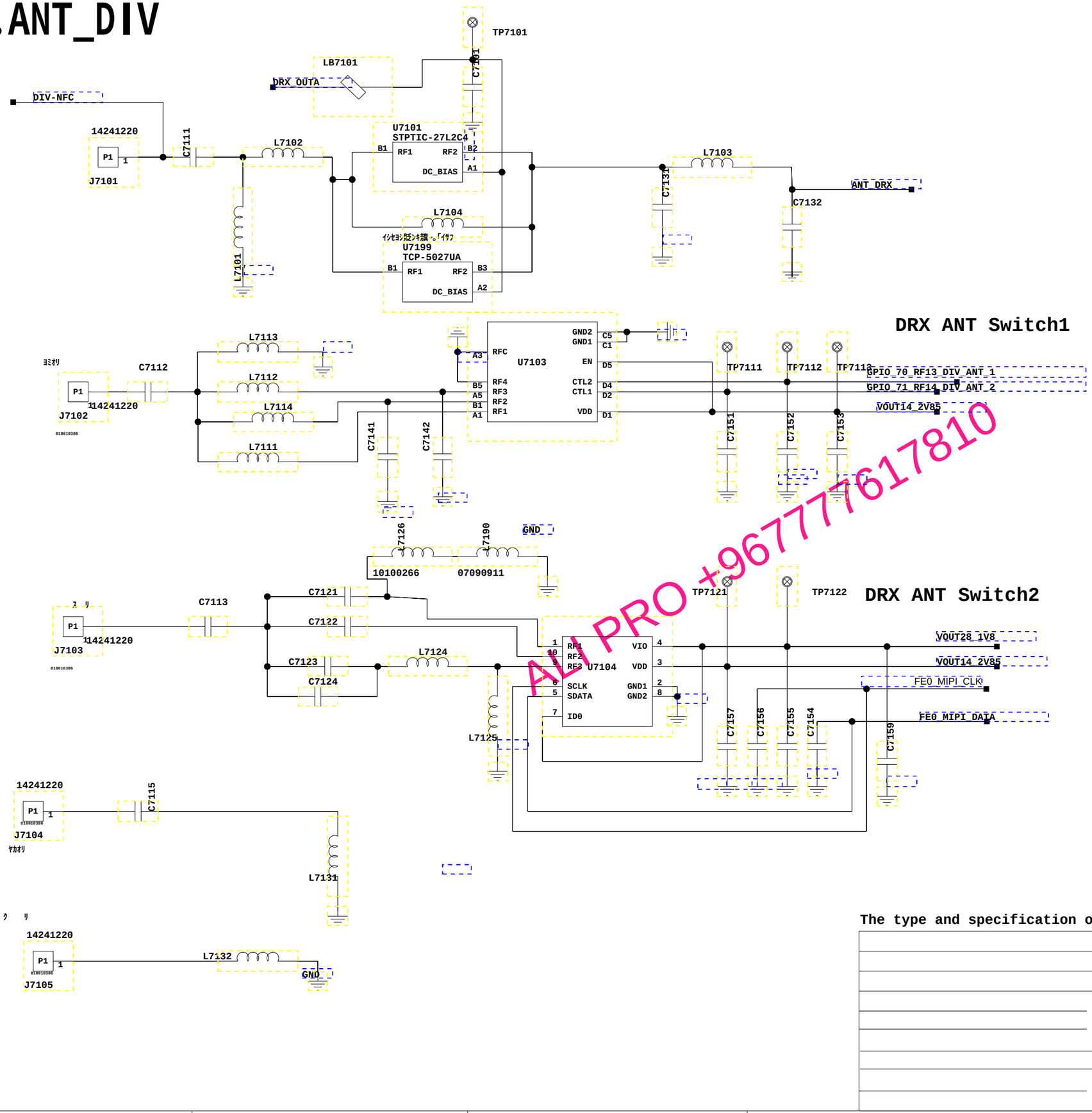
71.ANT_DIV



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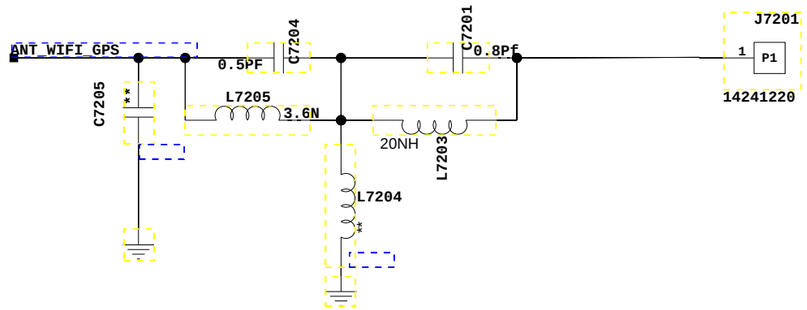
The type and specification of the components refer to the BOM

1	2	3	4	5	6

72 ANT_GPS_WIFI

2.4G/5GWiFi&GPSAnt



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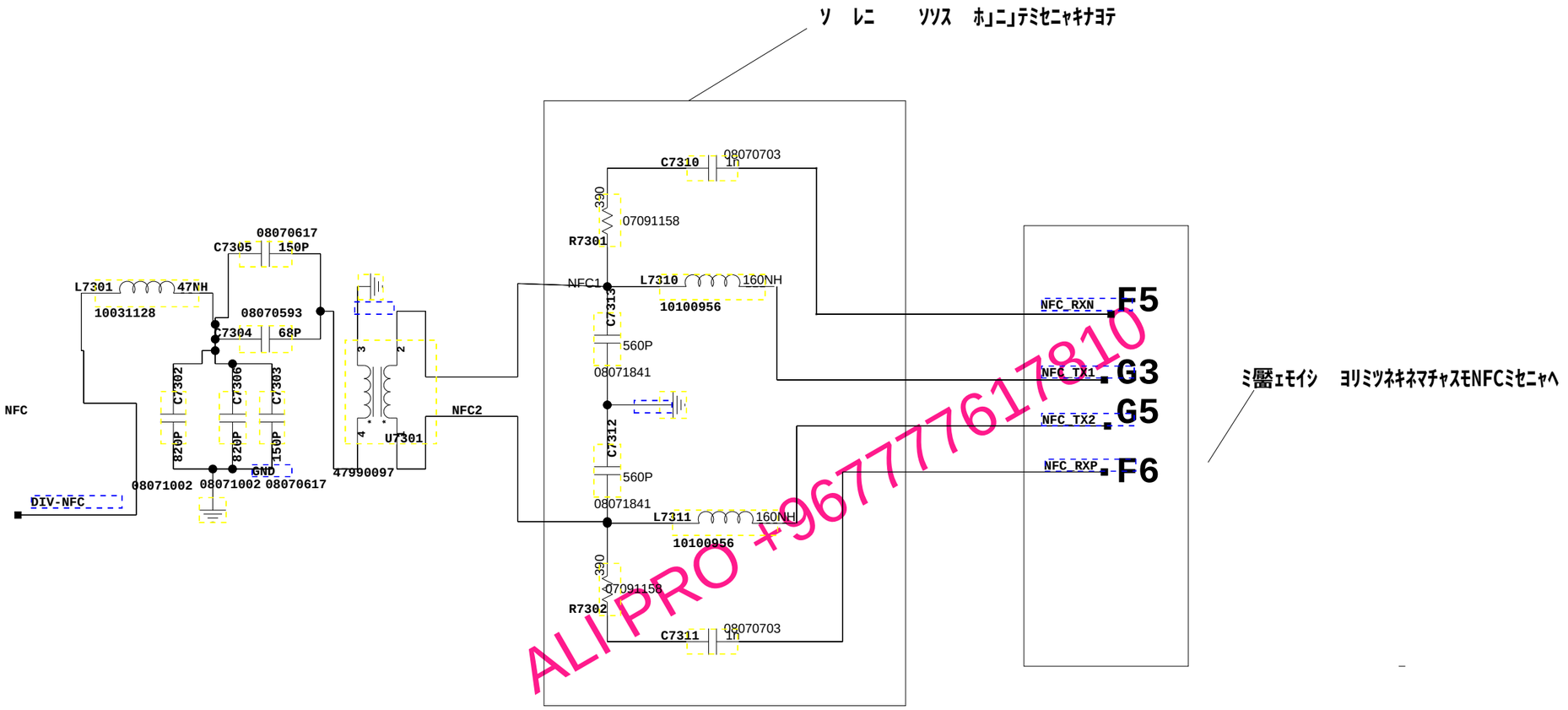
73. ANT_NFC



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74. ANT_CELL_MIMO

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75. Reserved

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76. Reserved

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77. Reserved

ALI PRO +967777617810

78. Reserved

ALI PRO +967777617810

79. Reserved

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