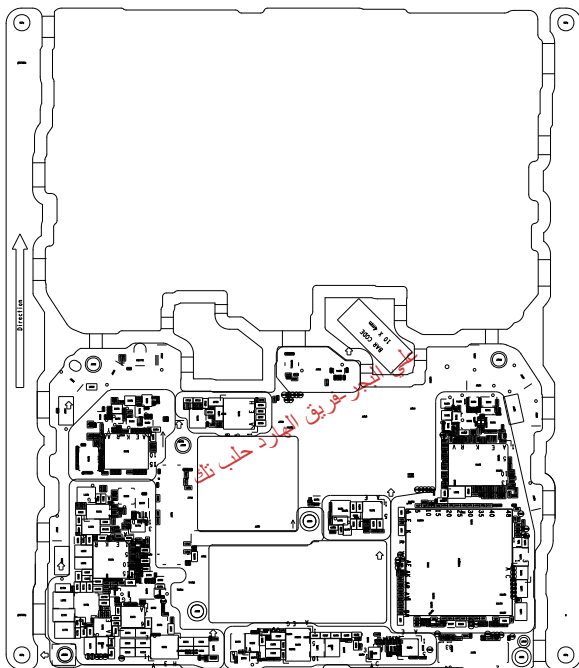
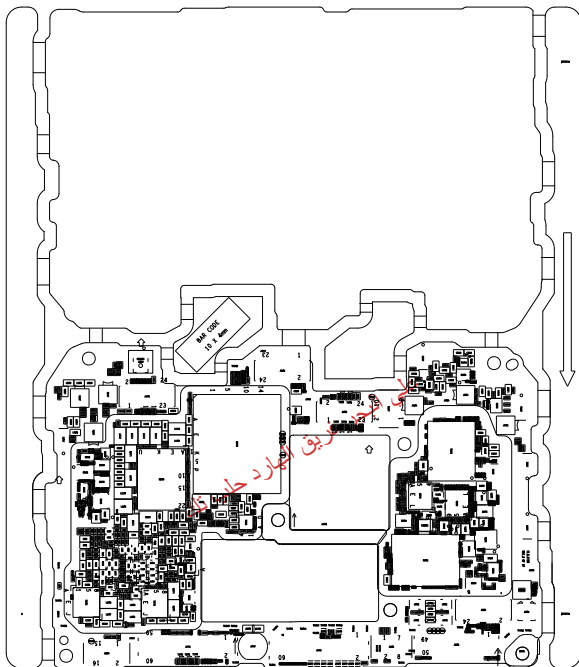




HL1LAYAM VER.D SILKSCREEN TOP
SPELL MODE: 1x2



HL1LAYAM VER.D SILKSCREEN BOTTOM
SPELL MODE:1x2



Baseband Schematic

- 1. Contents
- 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. HI6422-2
- 14. UFS and LPDDR4X
- 15. Battery & Fuel gauge
- 16. Charge Management
- 17. TFT LCD Interface
- 18. Direct Charge LoadSwitch
- 19. Flash LED
- 20. Camera Interface
- 21. ISP Reserved
- 22. Codec HI6403
- 23. MIC/VIB
- 24. Headphone
- 25. Audio
- 26. X-Sensor1
- 27. X-Sensor2
- 28. SIM Card
- 29. FPC Interface
- 30. Test Point/Shielding

MODEM Schematic

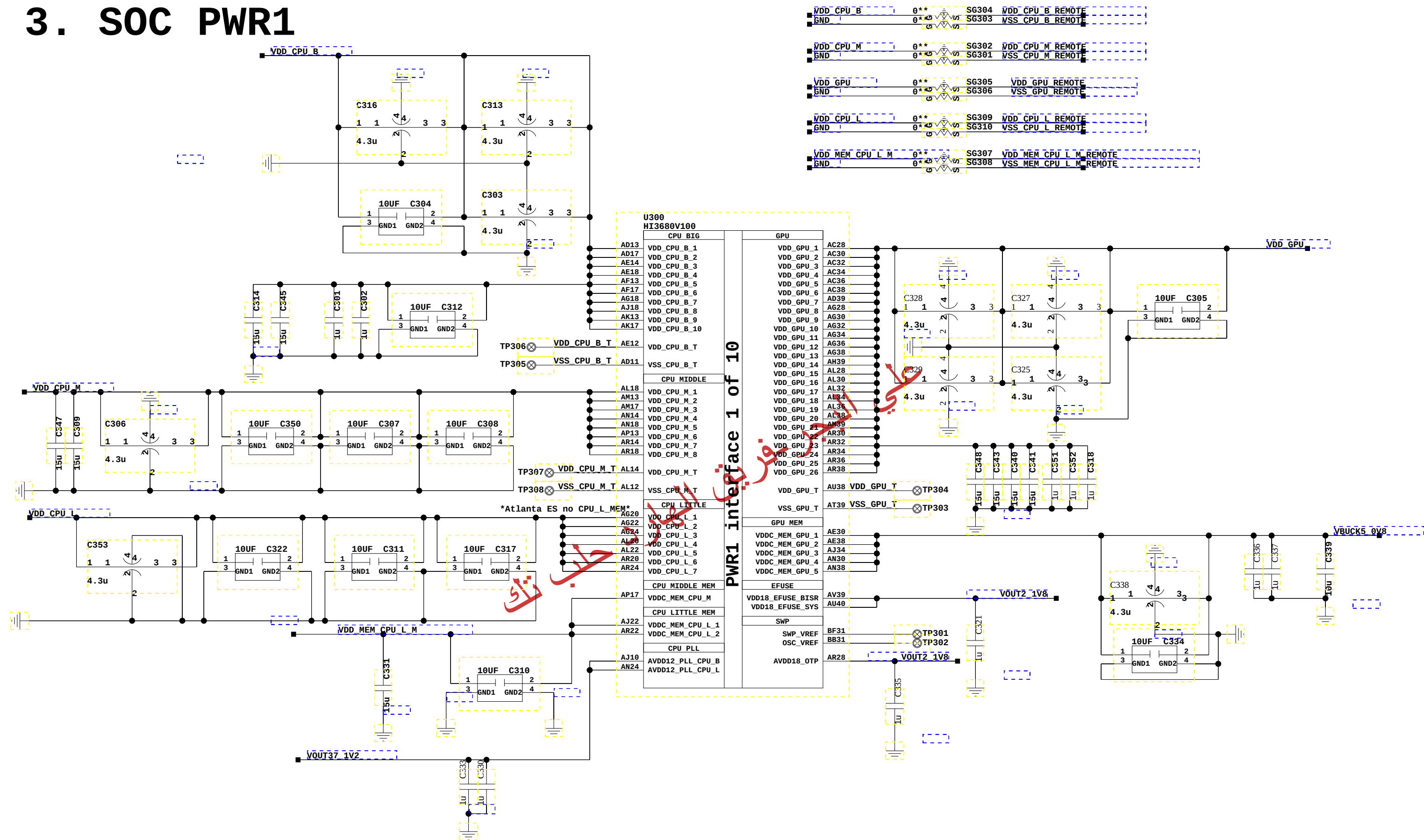
- 31. RF Interface
- 32. RF PMU
- 33. RF Transceiver_HI6363 _01
- 34. PRX LNA-6H01
- 35. SKY78188-11_MHB
- 36. LB Module
- 37. Reserved
- 38. RF Front End Switch
- 39. DRX LNA Module
- 40. DRX LB
- 41. DRX_MHB
- 42. Reserved
- 43. MIMO_DRX
- 44. MIMO_PRX
- 45. RF Transceiver_HI6363 _02
- 46. Reserved
- 47. Reserved
- 48. Reserved
- 49. Reserved
- 50. Reserved
- 51. Hi1103 BB
- 52. Hi1103 PWR
- 53. Reserved
- 54. WIFI RF0
- 55. WIFI RF1
- 56. GPS
- 57. NFC
- 58. UP ANT: ANT4/5/6 GPS/WIFI ANT
- 59. UP ANT: ANT1/2/3/7
- 60. ANT Tuner

البجـر-فريق الهارد حطب نك

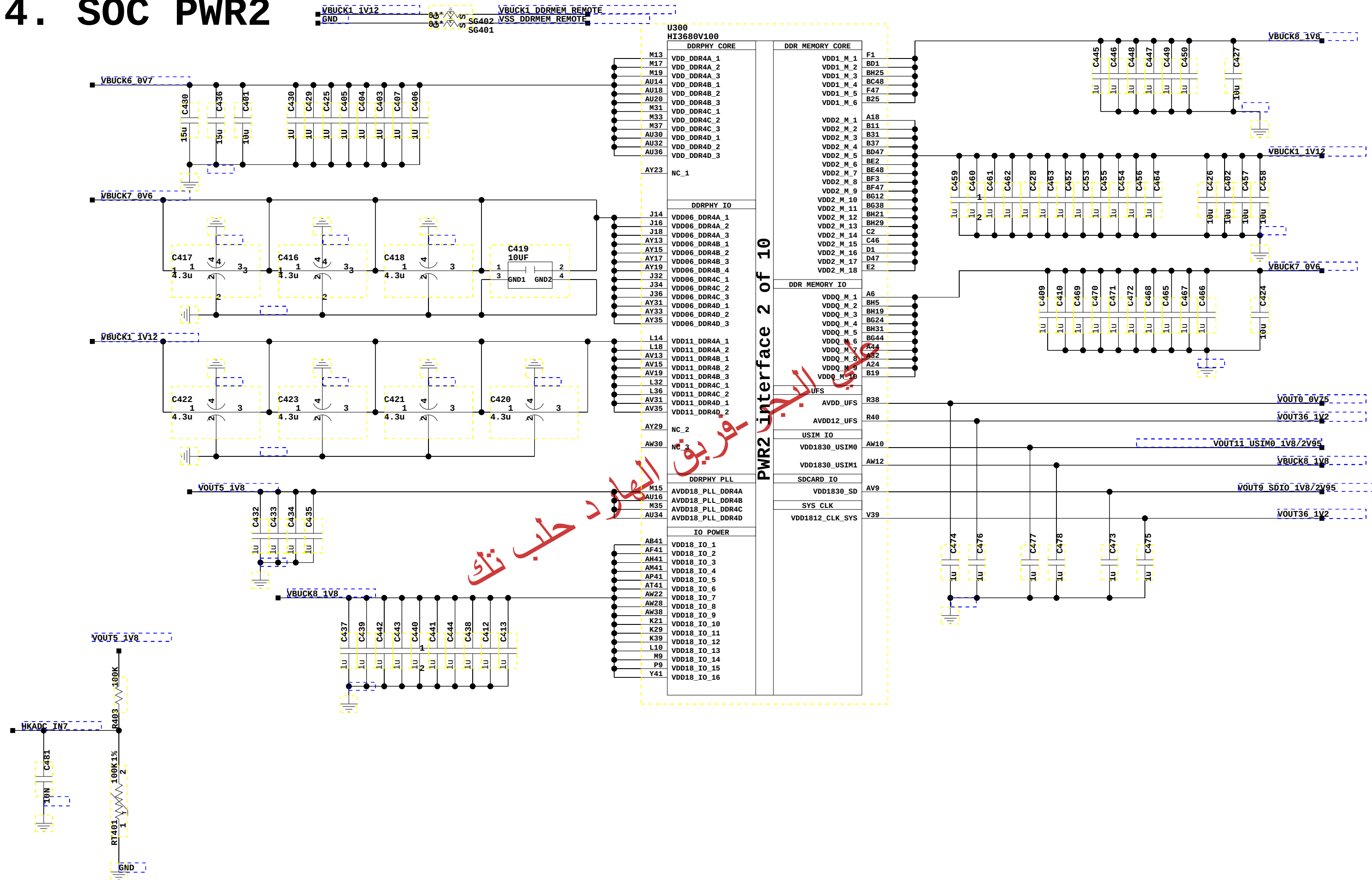
2. Block Diagram

علي البحر-فريق الهارد حطب تلك

3. SOC PWR1



4. SOC PWR2



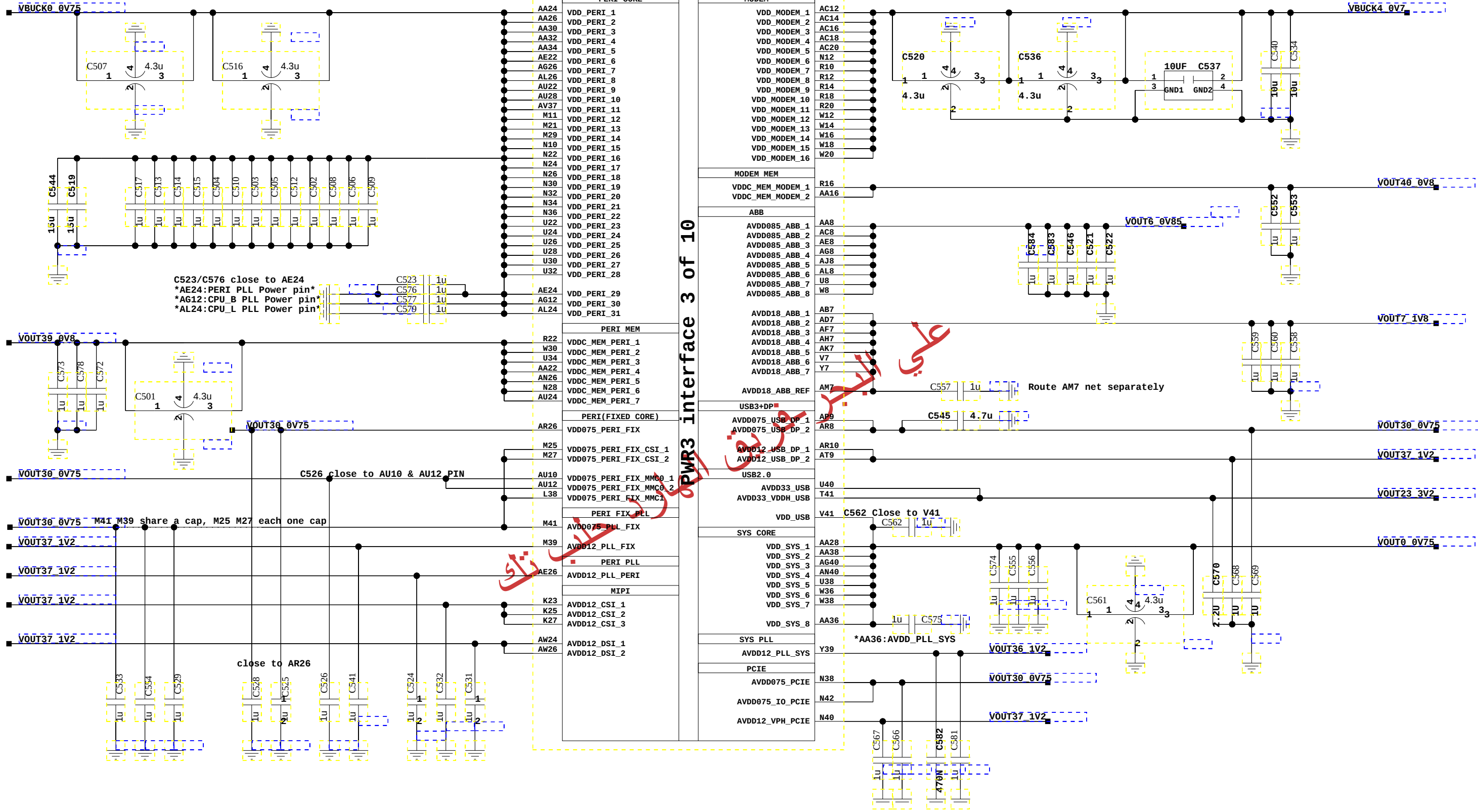
AP Temperature DET

5. SOC PWR3

VBUCK0 0V75	SG502	VBUCK0 PERI REMOTE
GND	SG501	VSS PERI REMOTE
VBUCK6 0V7	SG503	VBUCK6 0V7 REMOTE

U300	HI3680V100
PERI CORE	
AA24	VDD_PERI_1
AA26	VDD_PERI_2
AA30	VDD_PERI_3
AA32	VDD_PERI_4
AA34	VDD_PERI_5
AE22	VDD_PERI_6
AG26	VDD_PERI_7
AL26	VDD_PERI_8
AU22	VDD_PERI_9
AU28	VDD_PERI_10
AV37	VDD_PERI_11
M11	VDD_PERI_12
M21	VDD_PERI_13
M29	VDD_PERI_14
N10	VDD_PERI_15
N22	VDD_PERI_16
N24	VDD_PERI_17
N26	VDD_PERI_18
N30	VDD_PERI_19
N32	VDD_PERI_20
N34	VDD_PERI_21
N36	VDD_PERI_22
U22	VDD_PERI_23
U24	VDD_PERI_24
U26	VDD_PERI_25
U28	VDD_PERI_26
U30	VDD_PERI_27
U32	VDD_PERI_28
AE24	VDD_PERI_29
AG12	VDD_PERI_30
AL24	VDD_PERI_31
PERI MEM	
R22	VDDC_MEM_PERI_1
W30	VDDC_MEM_PERI_2
U34	VDDC_MEM_PERI_3
AA22	VDDC_MEM_PERI_4
AN26	VDDC_MEM_PERI_5
N28	VDDC_MEM_PERI_6
AU24	VDDC_MEM_PERI_7
PERI(FIXED CORE)	
AR26	VDD075_PERI_FIX
M25	VDD075_PERI_FIX_CSI_1
M27	VDD075_PERI_FIX_CSI_2
AU10	VDD075_PERI_FIX_MMIO_1
AU12	VDD075_PERI_FIX_MMIO_2
L38	VDD075_PERI_FIX_MMIO_3
M41	PERI_FIX_PLL
M39	AVDD012_PLL_FIX
PERI PLL	
AE26	AVDD012_PLL_PERI
MIPI	
K23	AVDD012_CSI_1
K25	AVDD012_CSI_2
K27	AVDD012_CSI_3
AW24	AVDD012_DSI_1
AW26	AVDD012_DSI_2
MODEM	
AC12	VDD_MODEM_1
AC14	VDD_MODEM_2
AC16	VDD_MODEM_3
AC18	VDD_MODEM_4
AC20	VDD_MODEM_5
N12	VDD_MODEM_6
R10	VDD_MODEM_7
R12	VDD_MODEM_8
R14	VDD_MODEM_9
R18	VDD_MODEM_10
R20	VDD_MODEM_11
W12	VDD_MODEM_12
W14	VDD_MODEM_13
W16	VDD_MODEM_14
W18	VDD_MODEM_15
W20	VDD_MODEM_16
MODEM MEM	
R16	VDDC_MEM_MODEM_1
AA16	VDDC_MEM_MODEM_2
ABB	
AVDD085_ABB_1	AA8
AVDD085_ABB_2	AC8
AVDD085_ABB_3	AE8
AVDD085_ABB_4	AG8
AVDD085_ABB_5	AJ8
AVDD085_ABB_6	AL8
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	AK7
AVDD18_ABB_6	V7
AVDD18_ABB_7	Y7
AVDD18_ABB_REF	AM7
USB3+DP	
AVDD075_USB_DP_1	AP9
AVDD075_USB_DP_2	AR8
AVDD012_USB_DP_1	AR10
AVDD012_USB_DP_2	AT9
USB2.0	
AVDD33_USB	U40
AVDD33_VDDH_USB	T41
VDD_USB	V41
SYS CORE	
VDD_SYS_1	AA28
VDD_SYS_2	AA38
VDD_SYS_3	AG40
VDD_SYS_4	AN40
VDD_SYS_5	U38
VDD_SYS_6	W36
VDD_SYS_7	W38
VDD_SYS_8	AA36
SYS PLL	
AVDD012_PLL_SYS	Y39
PCIE	
AVDD075_PCIE	N38
AVDD075_IO_PCIE	N42
AVDD012_VPH_PCIE	N40

PWR3 interface 3 of 10



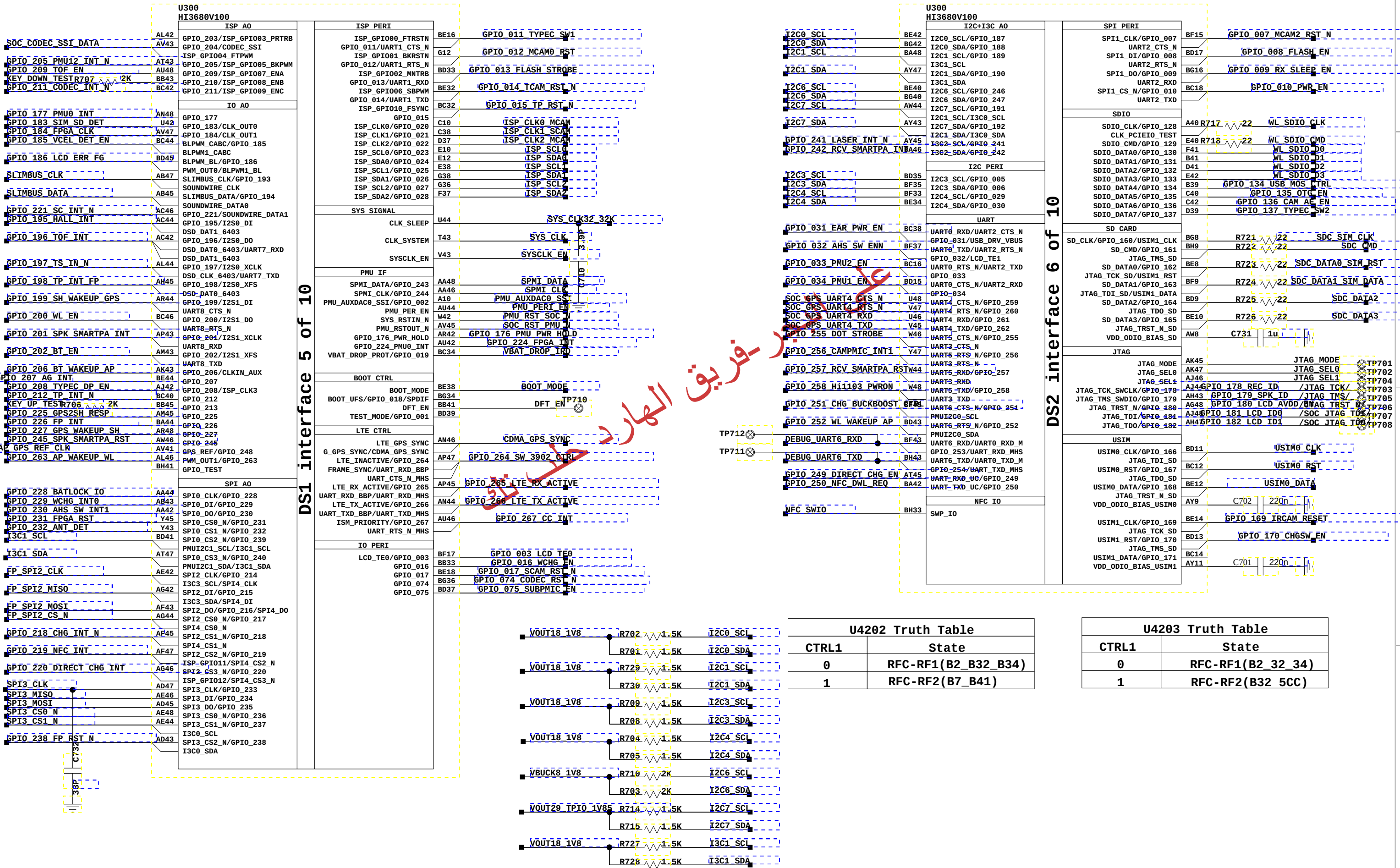
7. SOC GPIO Interface

A

B

C

D



A

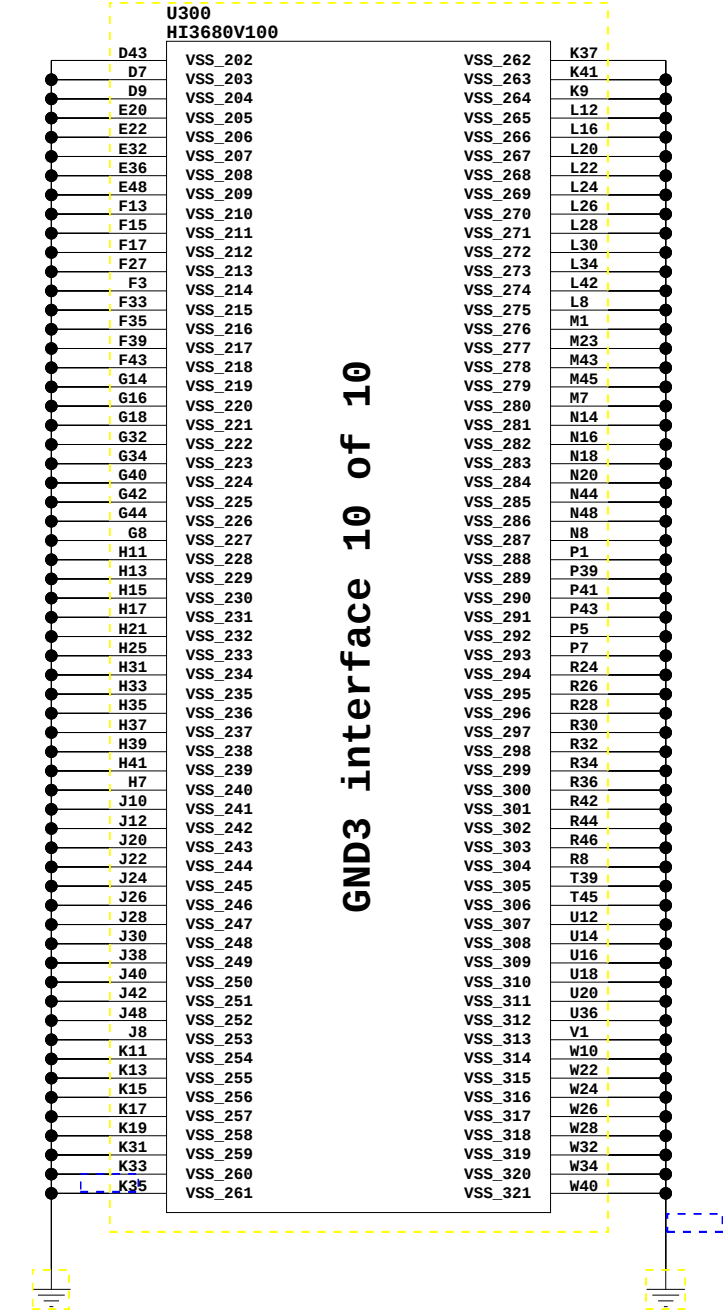
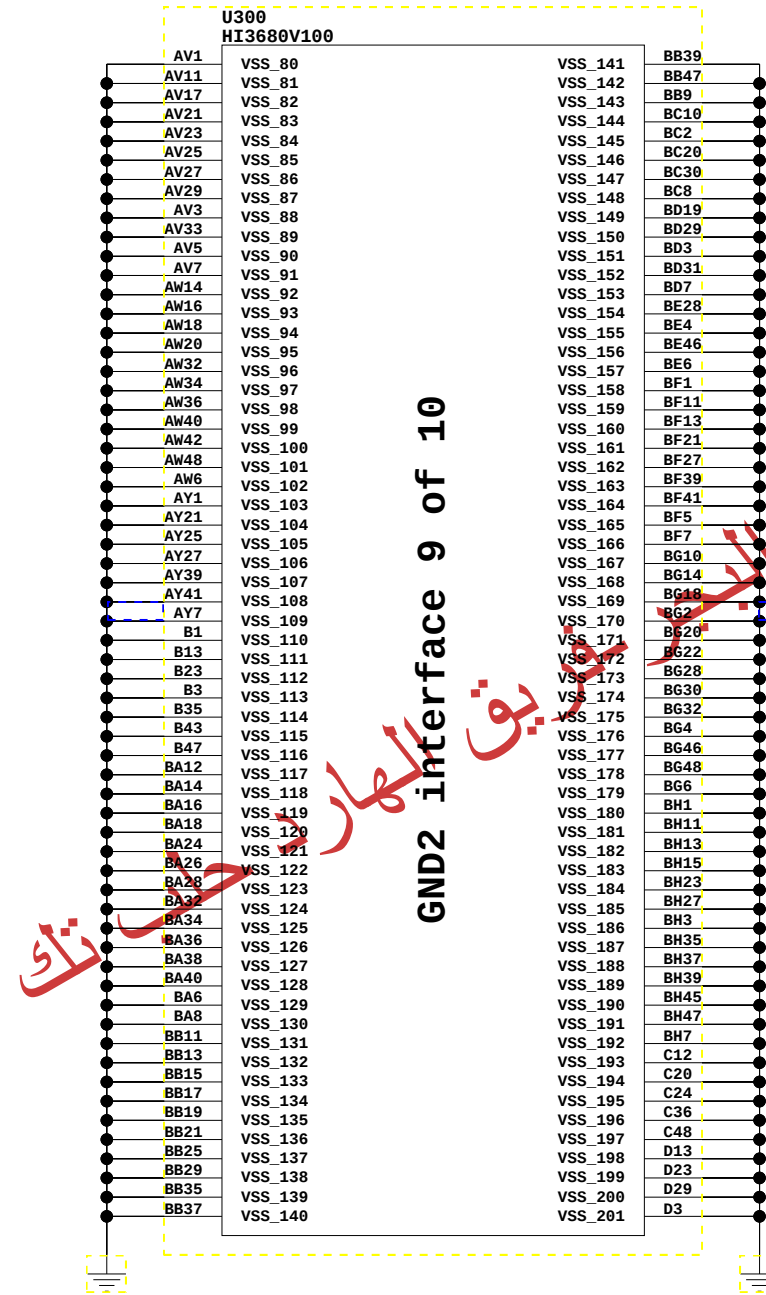
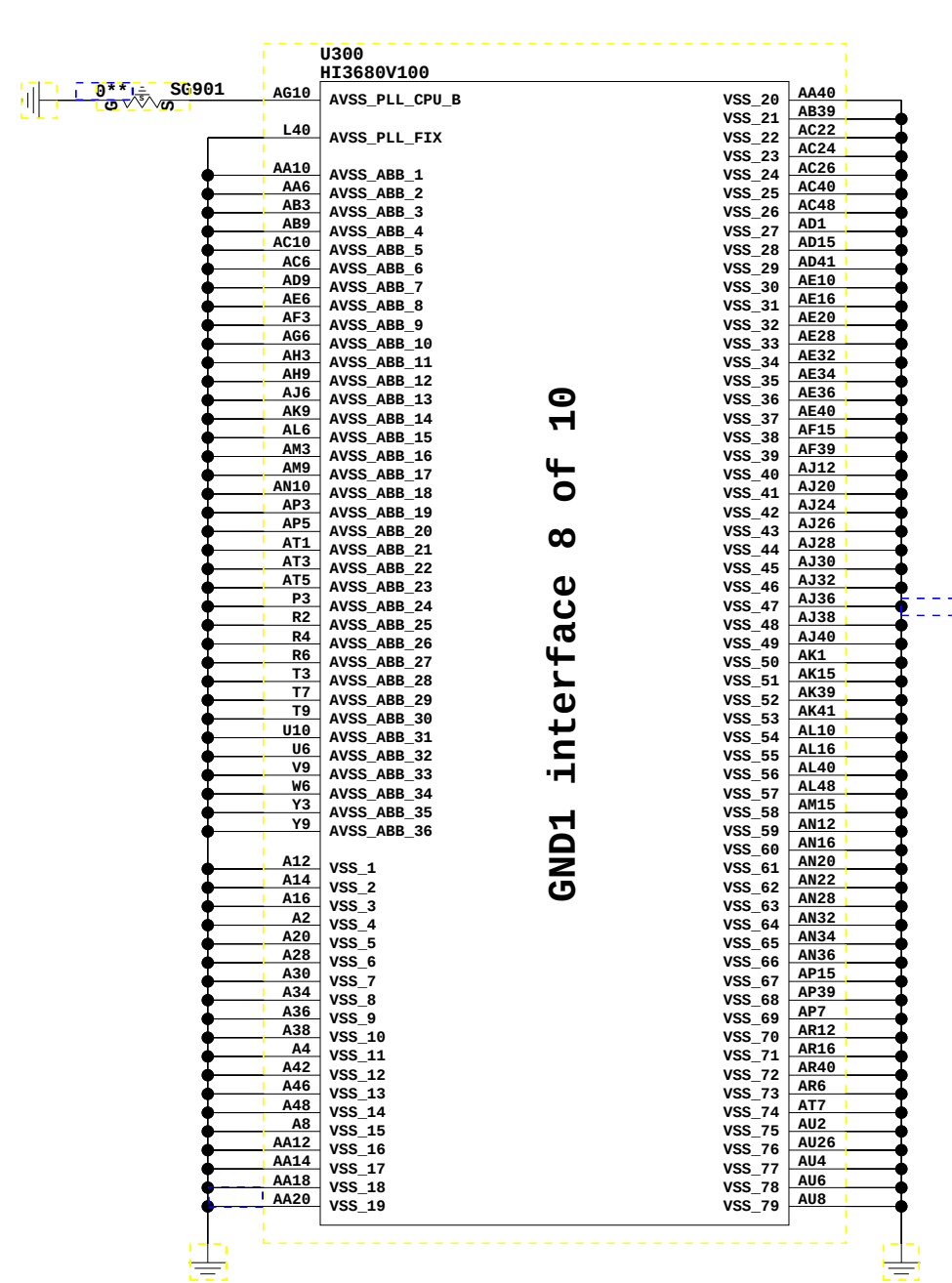
B

C

D

8. SOC RF Interface

9. SOC GND



10.Hi6421 LDO

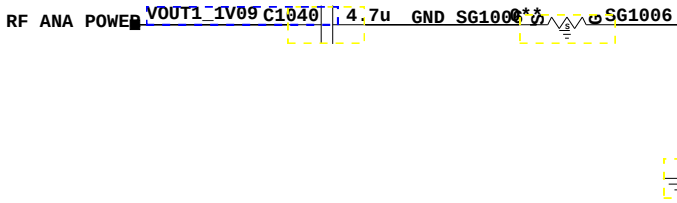
			Default	Sleep
BUCK0	SYS_PERI	0.75V/12A		
BUCK1	SYS_DDR	1.12V/4A		
BUCK2	SYS_POWER	1.3V/4A		
BUCK3	SYS_POWER	1.955/4A		
BUCK4	SYS_MODEM	0.8V/4A		
BUCK5	SYS_GPU_L2	0.8V/2A		
BUCK6	SYS_DDR_Core	0.752V/2A		
BUCK7	SYS_DDR	0.62V/2A		
BUCK8	SYS_DDR_UFS_IO	1.805V/3A		
BUCK9	SYS_POWER	0.9V/3A		
LD00	SYS_PHY_PLL	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		



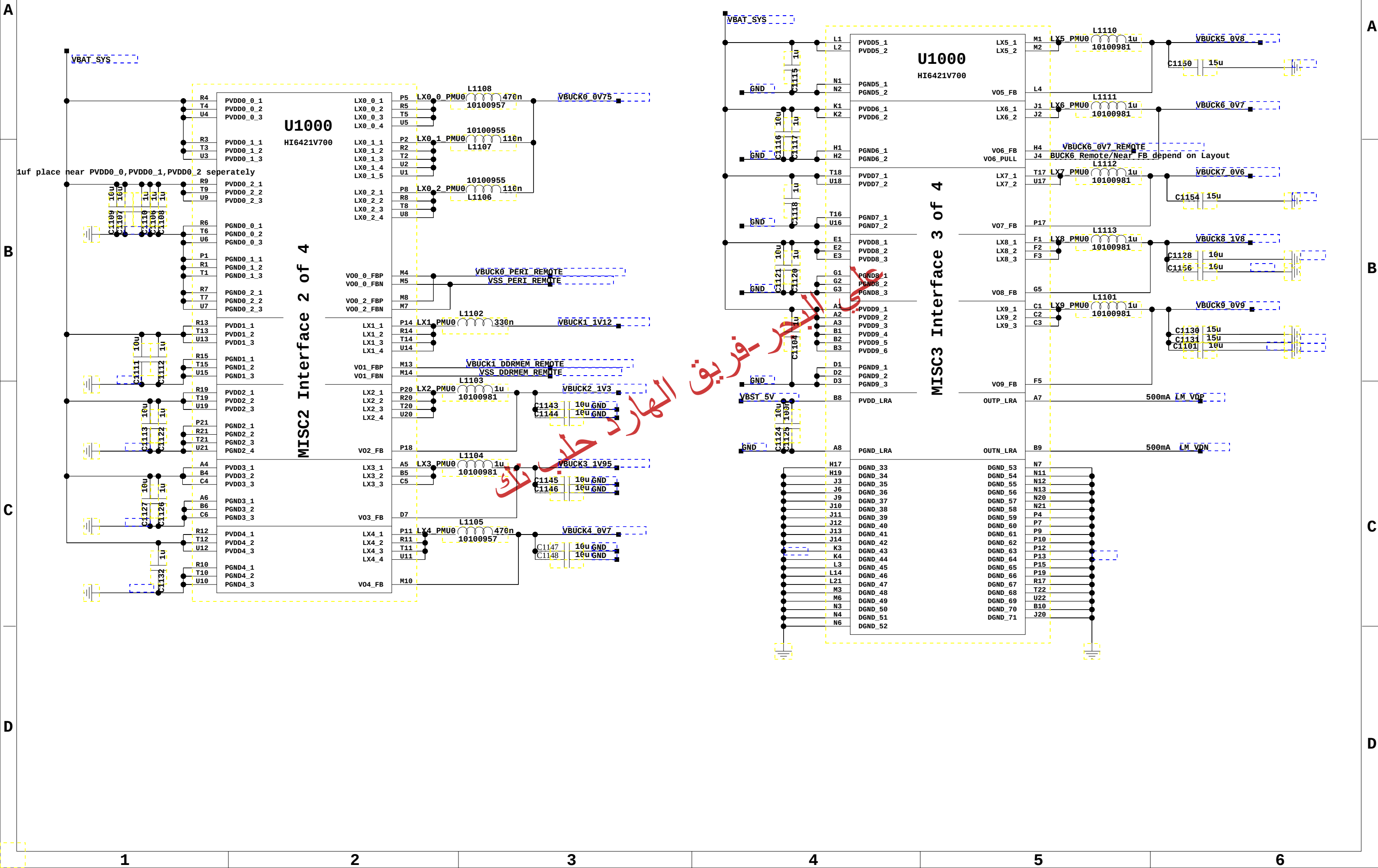
LD038	SYS_UFS3.0	1.2V/0.8A		
LD039	SYS_SRAM	0.8V/0.35A		
LD040	SYS_ABB_MEM	0.8V/0.35A		
LD041	SYS_CODEC	1.1V/0.15A		
LDO_BUF	SYS_PMU_CLK_BUF	1.8V/0.03A		
PMUA	SYS_PMU_AVDD	1.8V/0.03A		
PMUD	SYS_PMU_DVDD	1.8V/0.03A		
RF_VREF	SYS_RF_VREF	0.75V/0.001A		
PMUH	?	1.1V/0.15A		
VCOIN	SYS_COIN	2.5V/A		

NEAR END CAP NEAR PMU

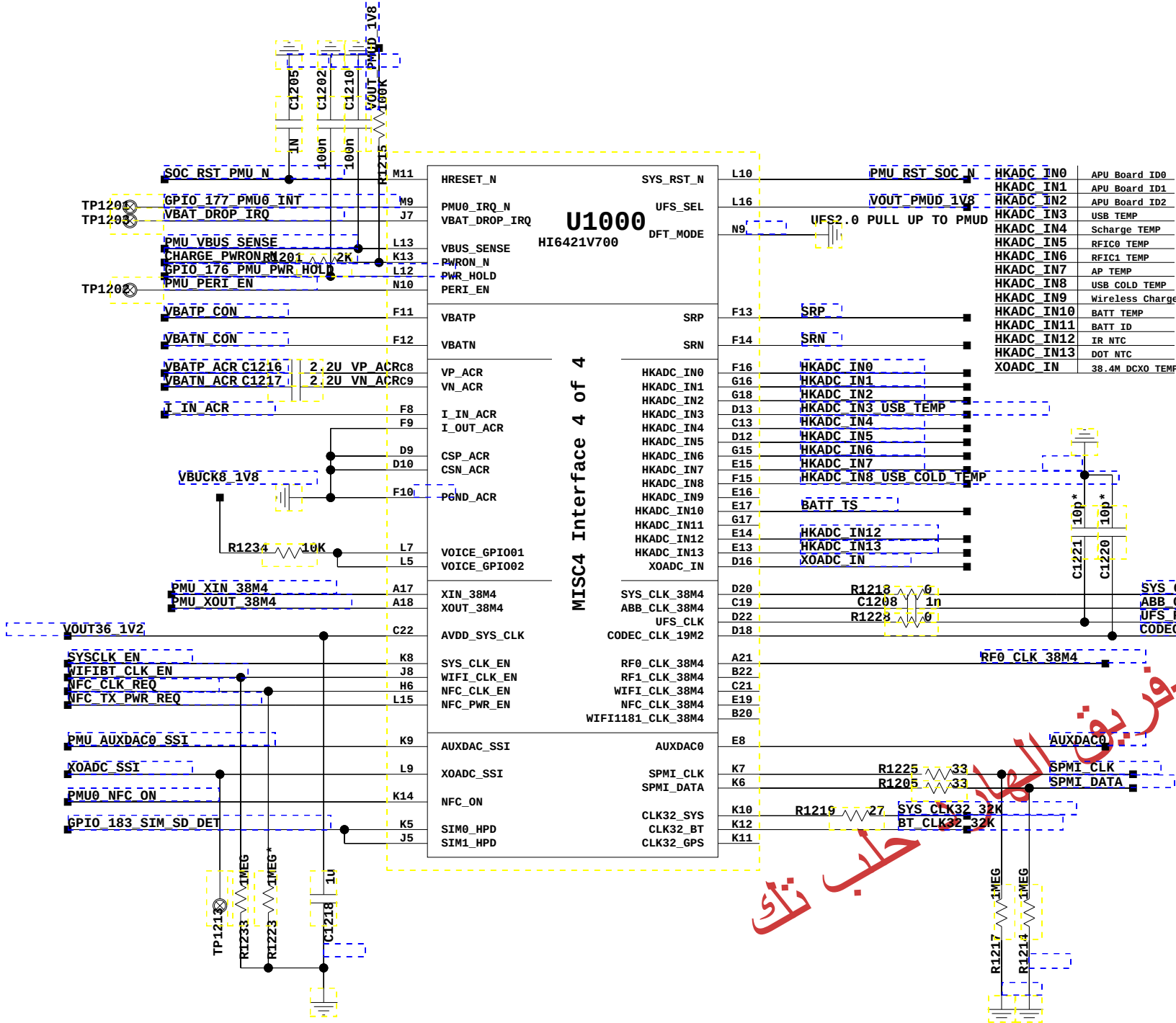
VCOIN 2V5	C1061	10u
VOUT12 USIM1 1V8/2V95	C1062	1u
VOUT14 2V85	C1030	1u
VOUT16 1V8/2V95	C1039	4.7u
VOUT17 TP AVDD 3V3	C1020	4.7u
VOUT24 3V0	C1031	4.7u
VOUT27 1V8	C1032	1u
VOUT34 3V3	C1033	4.7u
VOUT PMUH 2V9	C1018	2.2u
VOUT2 1V8	C1034	4.7u
VOUT3 1V8	C1042	4.7u
VOUT4 1V85 LCD IO	C1044	4.7u
VOUT7 1V8	C1045	4.7u
VOUT8 1V8	C1047	1u
VOUT18 1V8	C1013	2.2u
	C1014	2.2u
VOUT21 CAM IOVDD 1V8	C1060	2.2u
VOUT26 1V7/1V35	C1063	2.2u
VOUT28 1V8	C1028	2.2u
VOUT PMUA 1V8	C1024	1u
VOUT PMUD 1V8	C1035	1u
LDO_BUFF 1V8	C1036	2.2u
VOUT0 0V75	C1050	4.7u
VOUT30 0V75	C1053	4.7u
VOUT40 0V8	C1022	4.7u
VOUT32 CAM DVDD 1V1	C1056	4.7u
VOUT25 LCD DIG 1V2	C1054	4.7u
VOUT36 1V2	C1021	4.7u
VOUT37 1V2	C1041	4.7u
VOUT38 TCAM DVDD 1V2	C1012	4.7u
VOUT41 1V2	C1017	4.7u
VOUT6 0V85	C1027	4.7u



11.Hi6421 BUCK

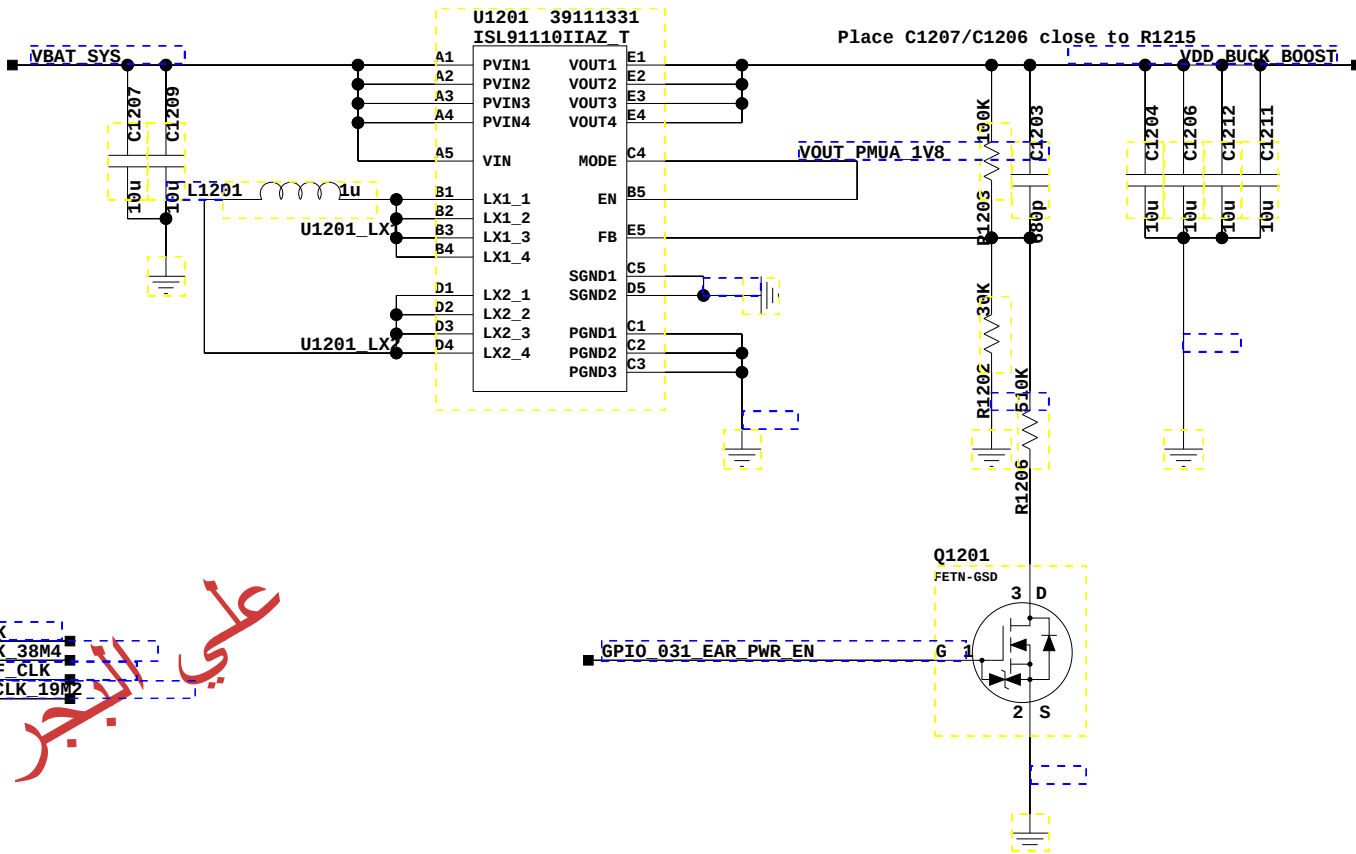


12.Hi6421 DIGITAL INTERFACE

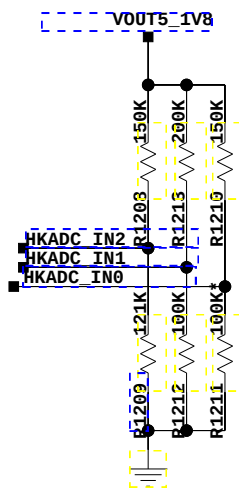


BUCK BOOST

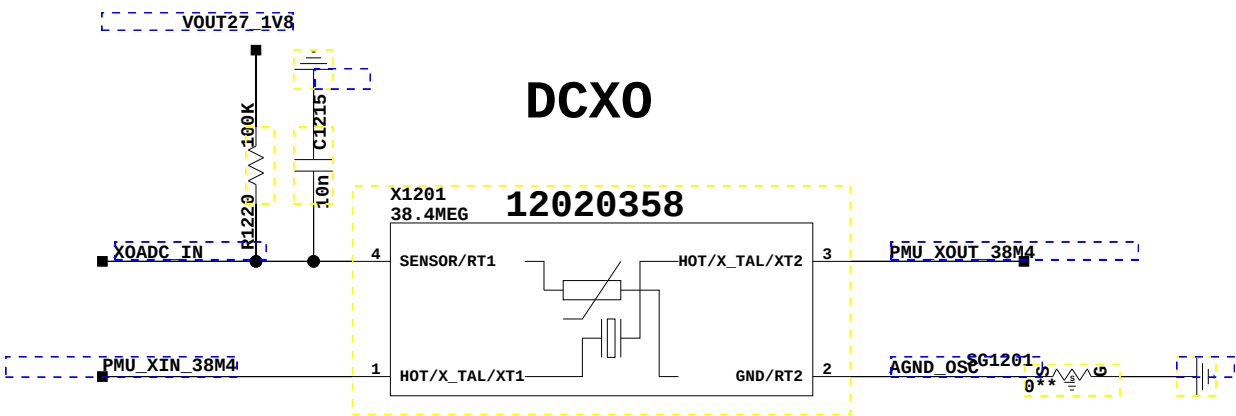
$V_{out} = 0.8 * (1 + R_{1203} / R_{1202}) = 3.467V / 3.623V$



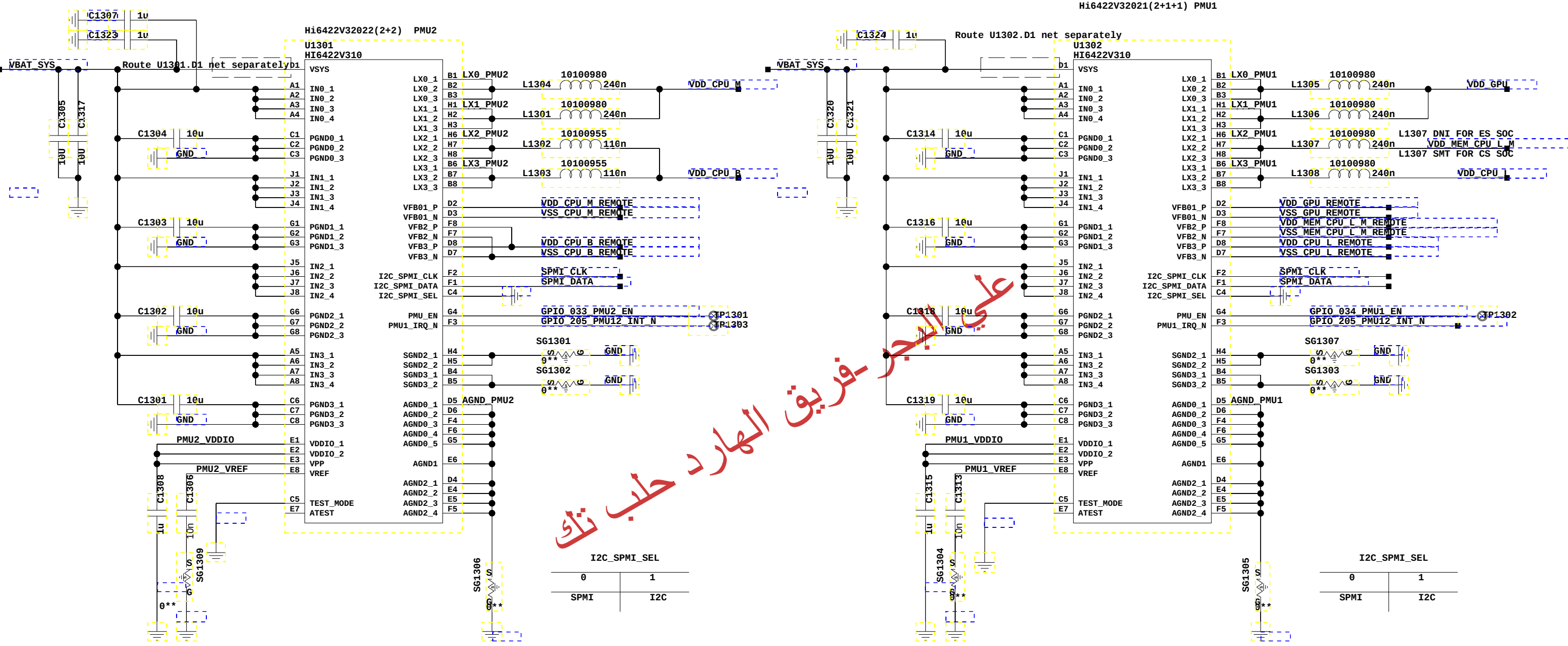
Board ID 8439



DCX0

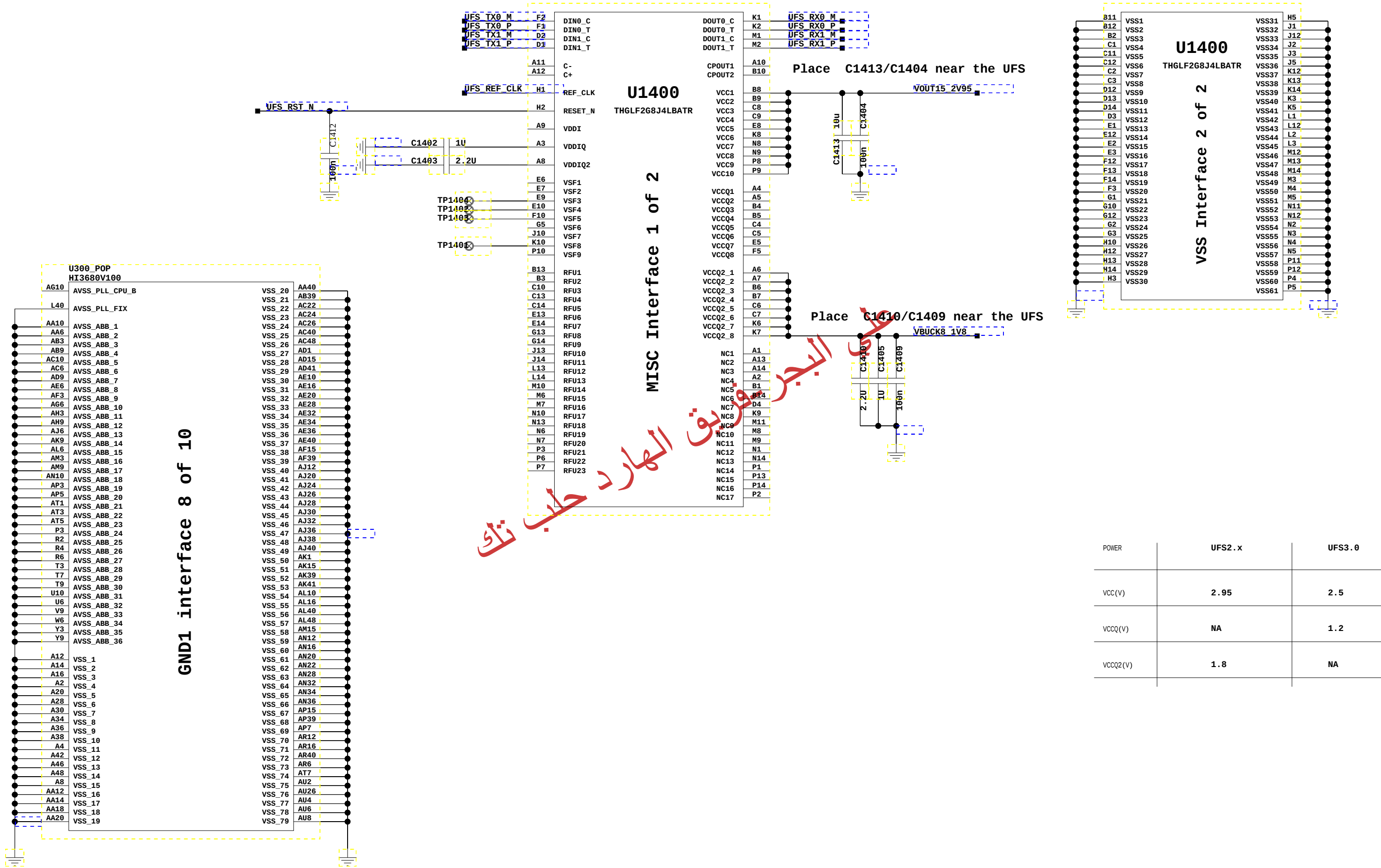


13. HI6422V320



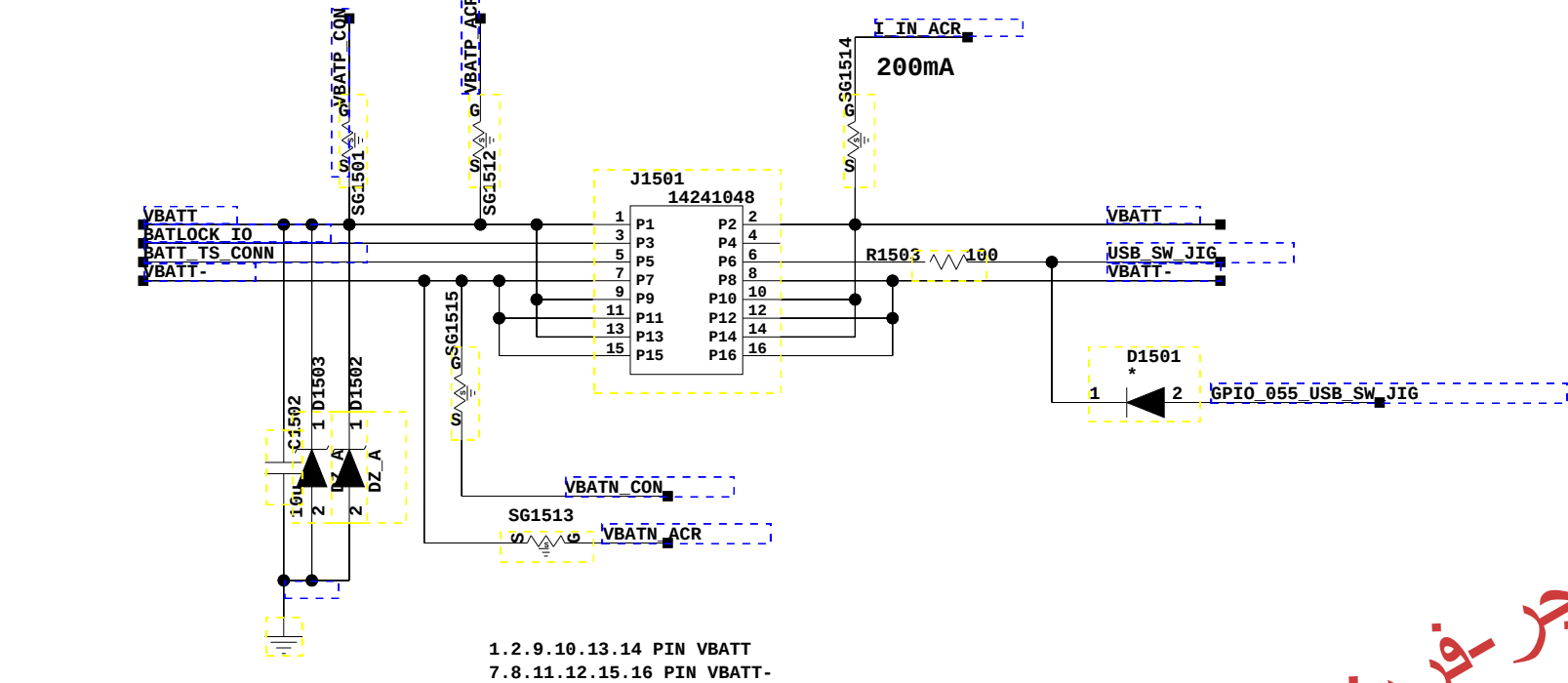
علي الجبر فريق الهارد طب نك

14. UFS and LPDDR4X

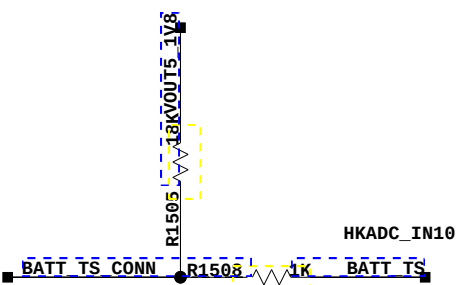


15. Battery & Fuel gauge

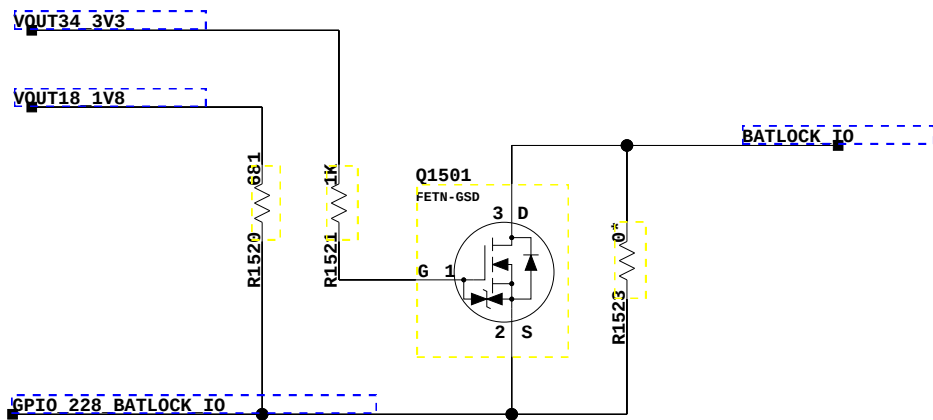
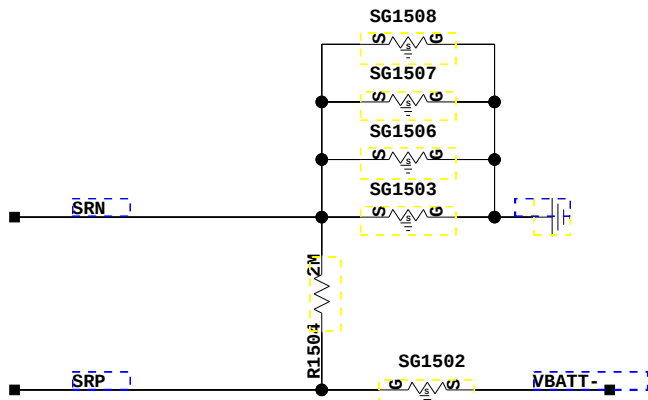
Battery Connector



Battery Temperature



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



A

A

I2C address=1101011 (0x6B)

B

C

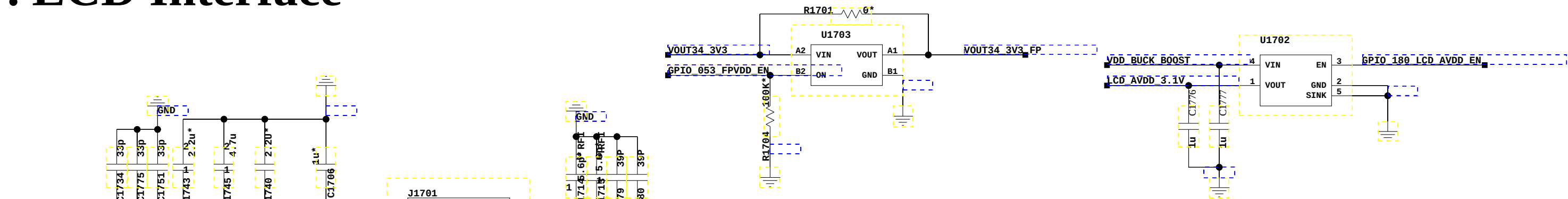
C

D

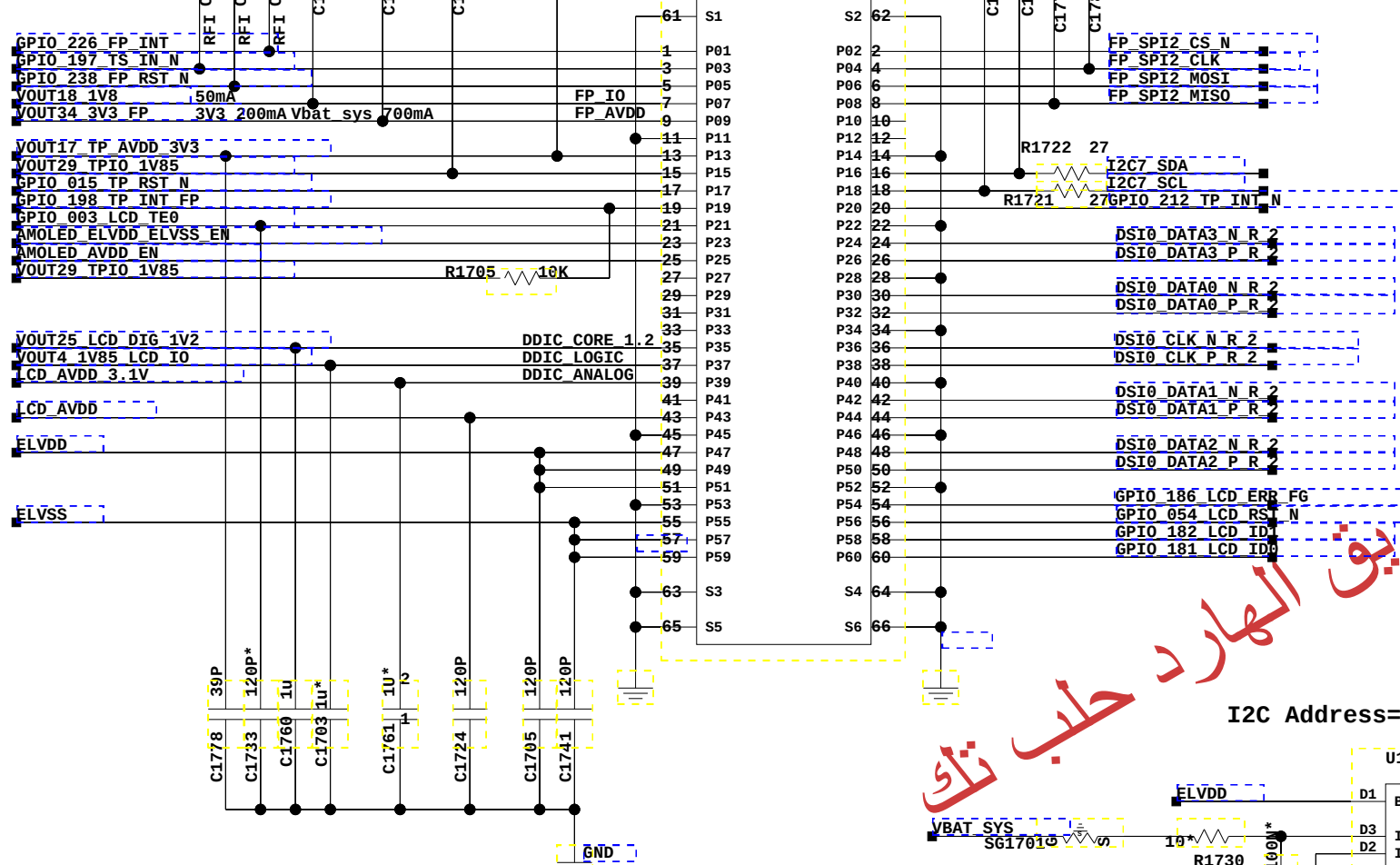
D

17. LCD Interface

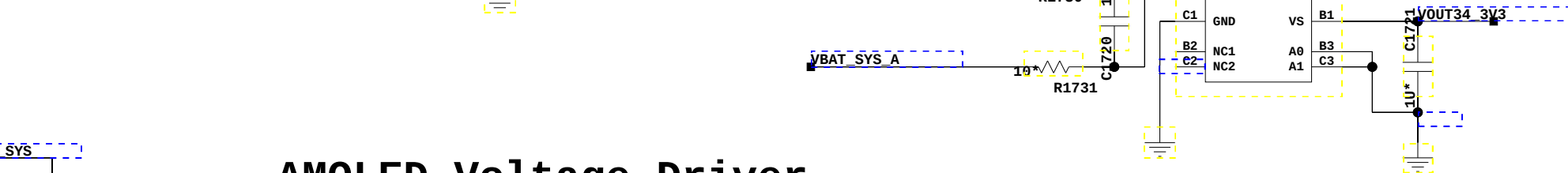
A



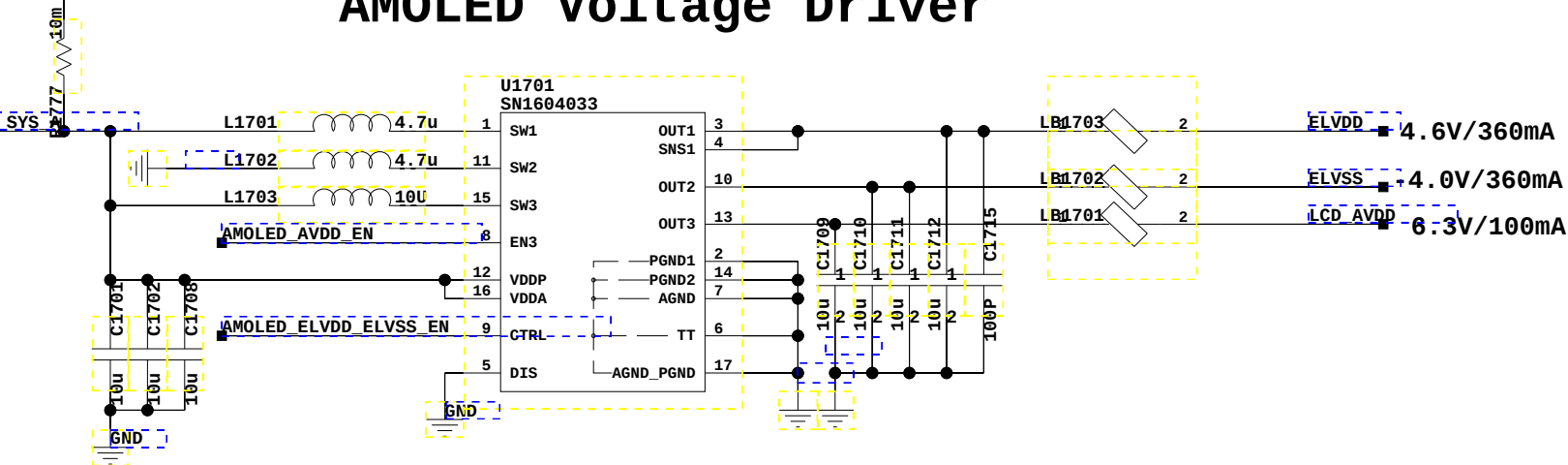
B



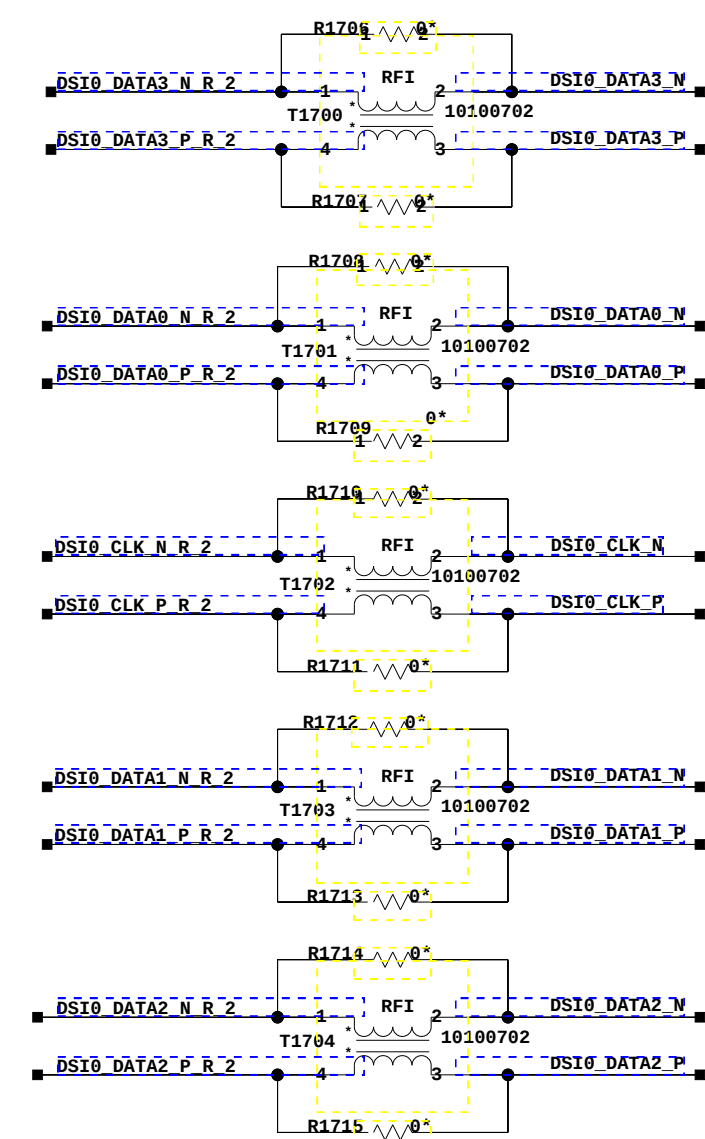
C



D

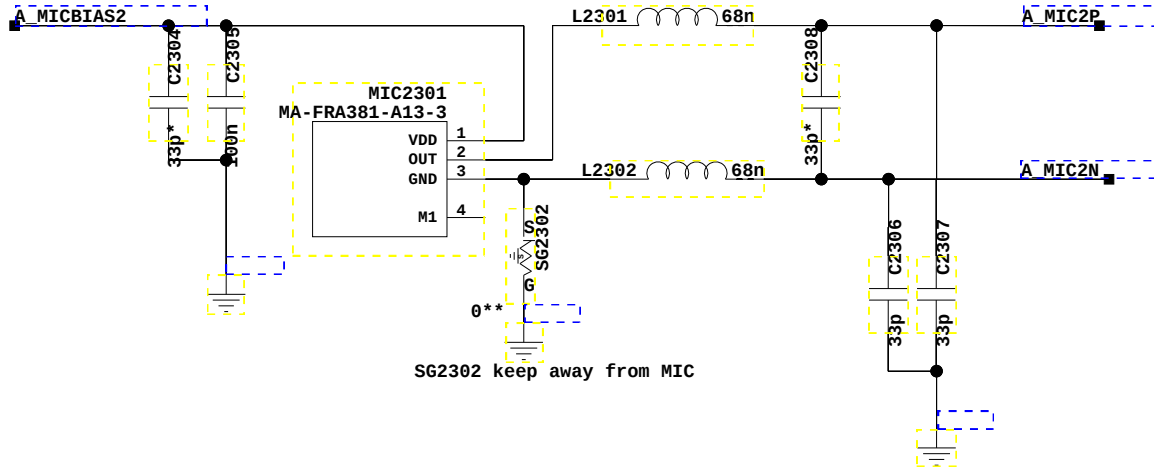


Resistors Share PADS with Inductors



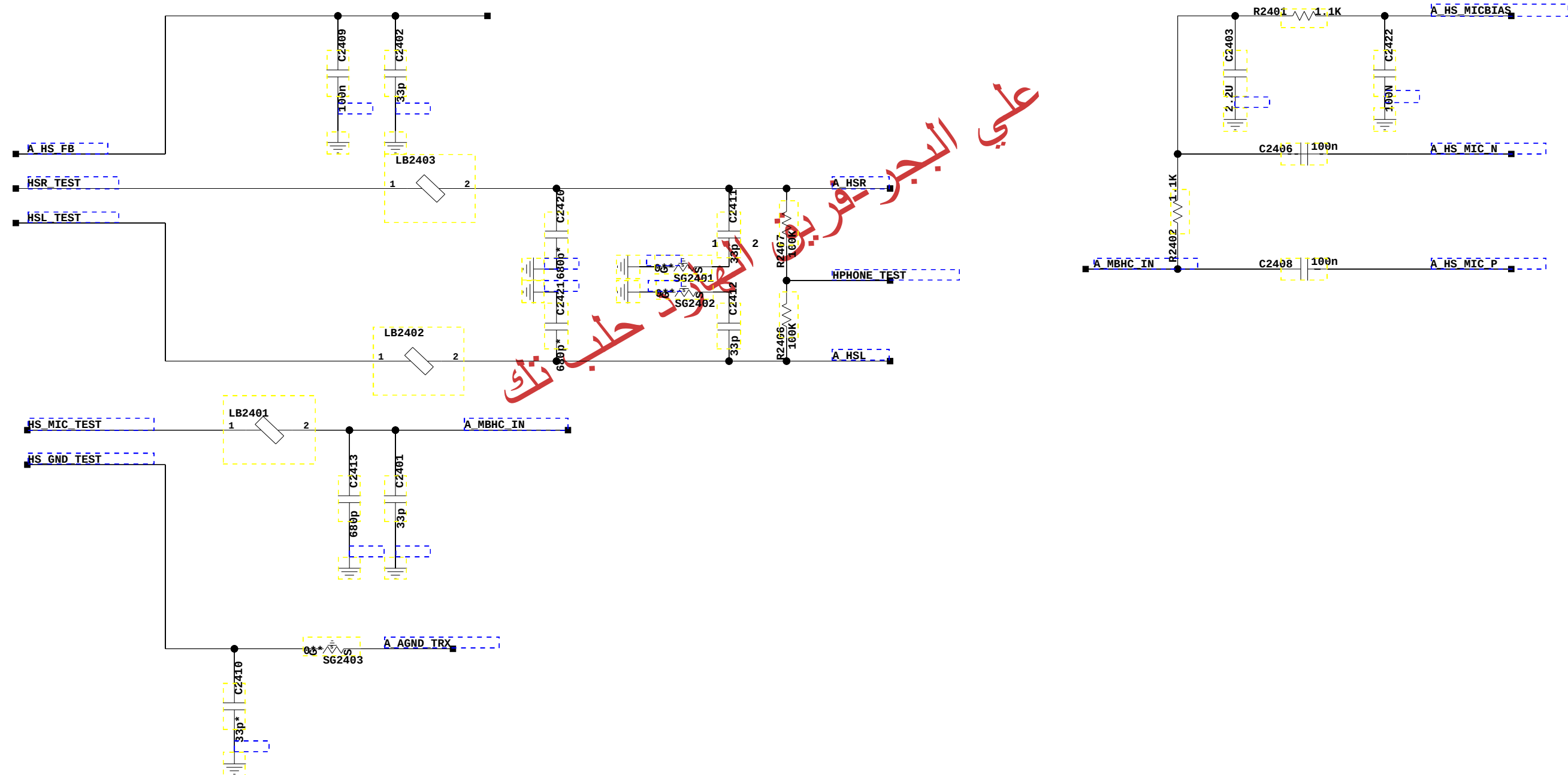
23. MIC/VIB

Slave MIC



علي البحر - فريق الهارد حلب تشار

24. Headphone

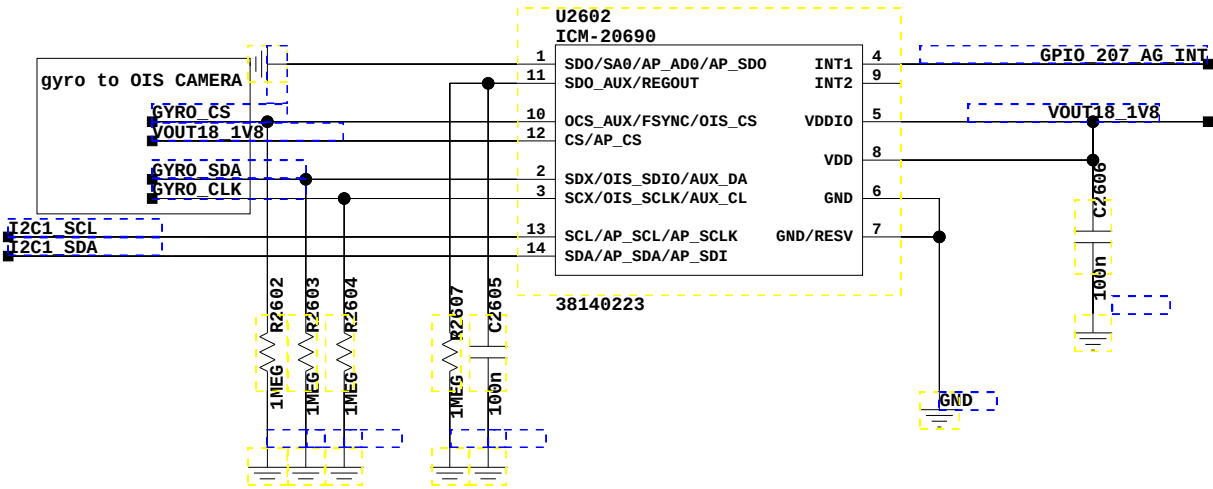


[illegible]

26. X-Sensor

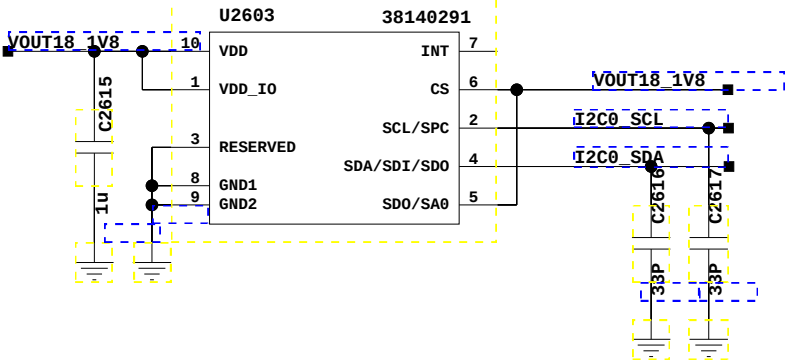
Accelerometer and Gyroscope 6-AXIS SENSOR

SD0=1 ADDRESS=0X6B(ST)/0X69(INVENSENS)
SD0=0 ADDRESS=0X6A(ST)/0X68(INVENSENS)



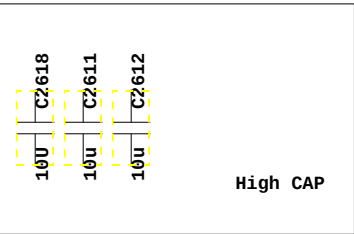
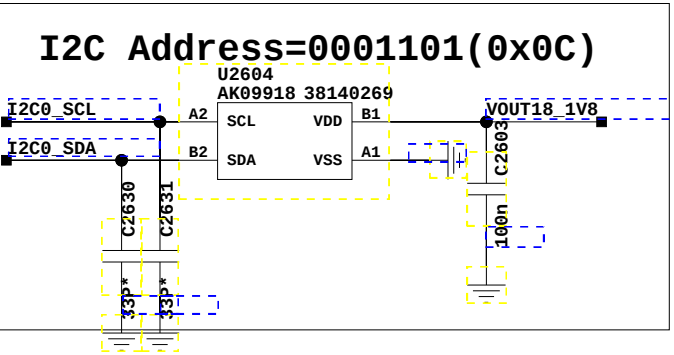
Barometer

I2C Address=1011101(0x5D)



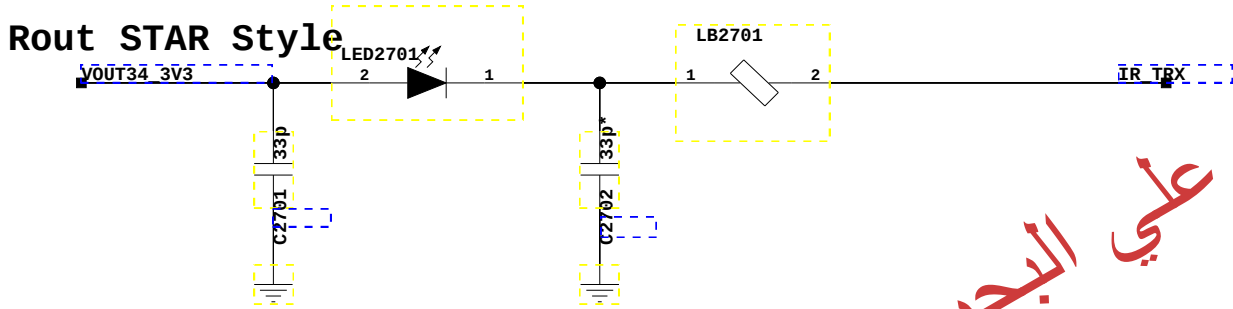
Compass

I2C Address=0001101(0x0C)



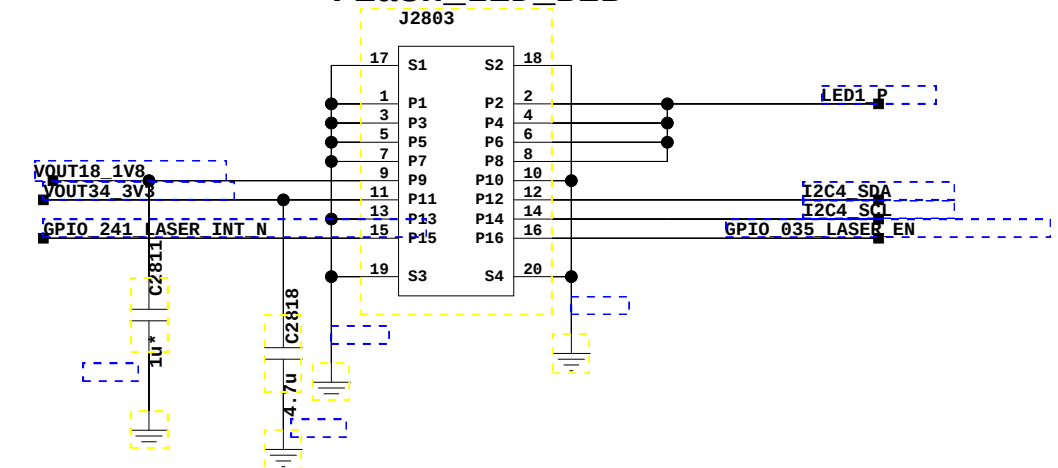
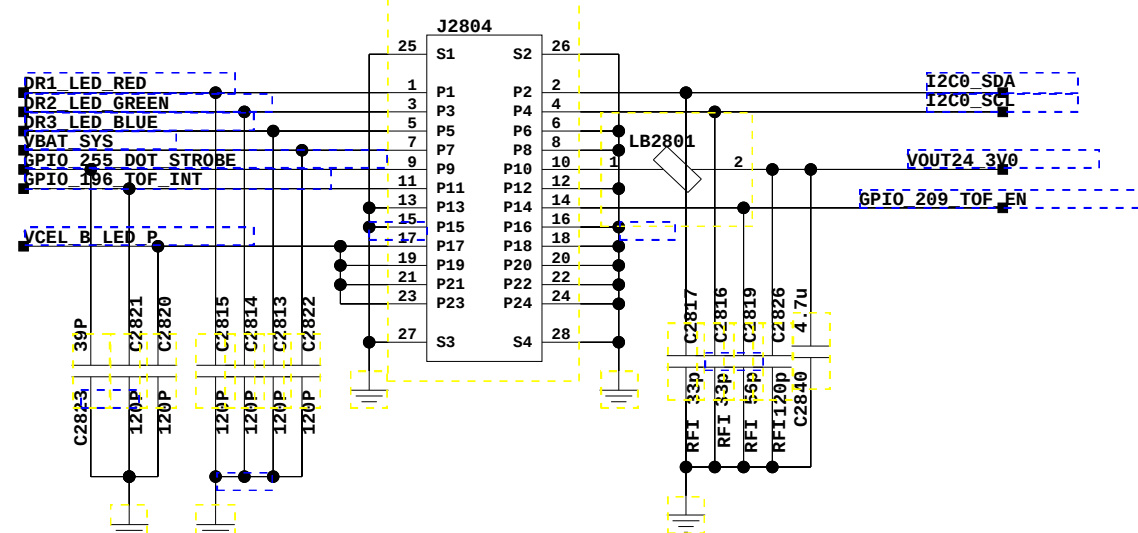
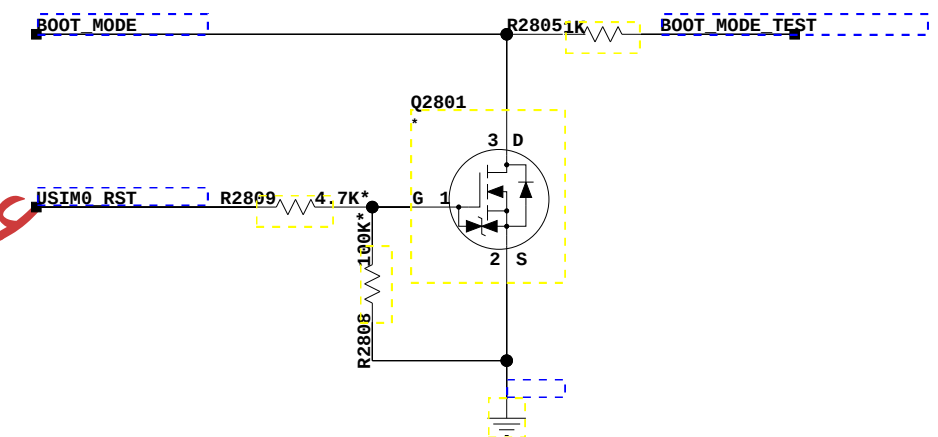
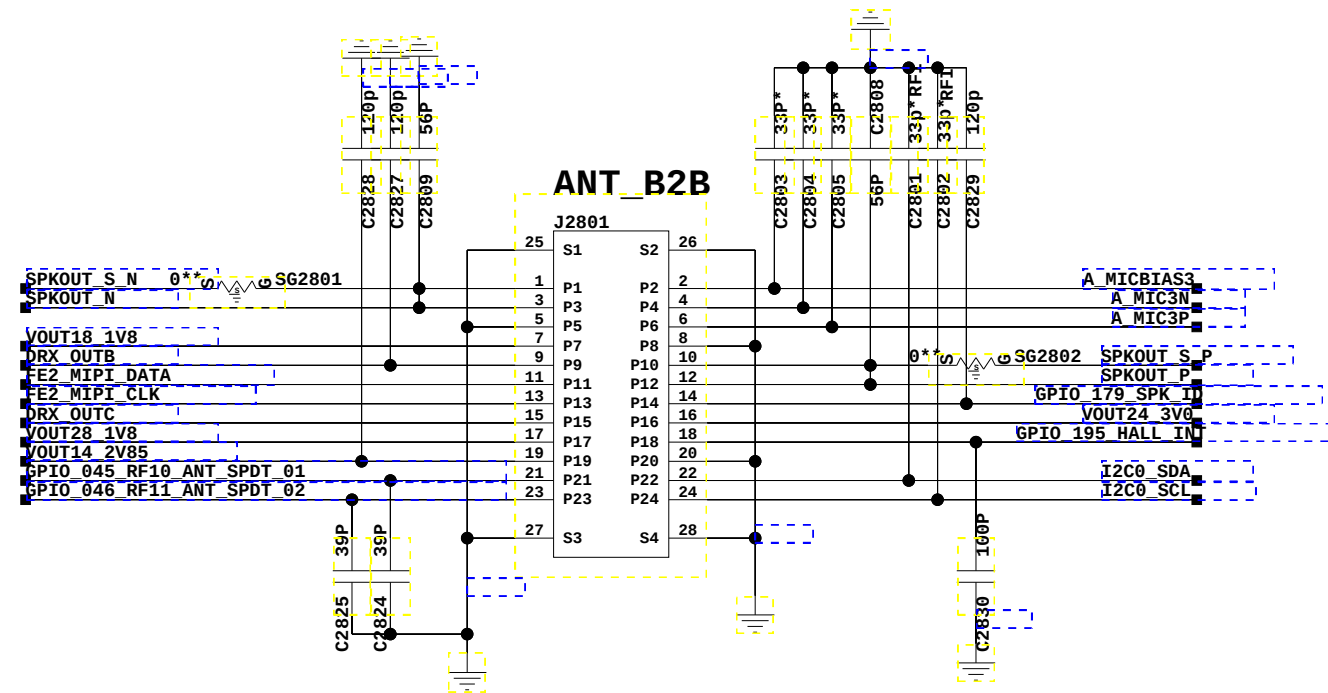
علي البجر فريق الهارد طب تك

27. X-Sensor+IrDA



علي البجر فريق الهارد حطب نك

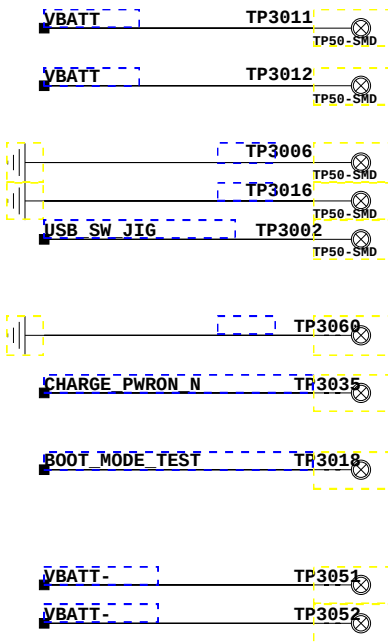
28.BTB interface



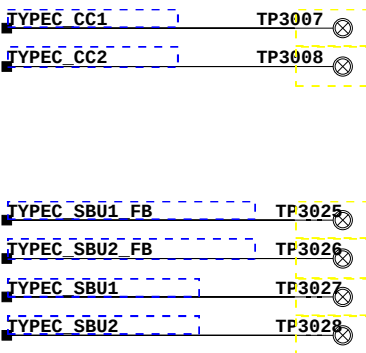
علي البحر - فريق الهارد حلب تلك

30. Test Points/Shields

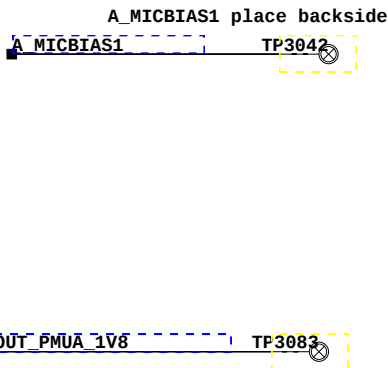
CBT TEST POINT



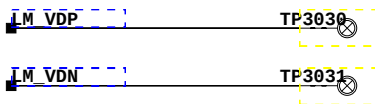
TYPE C



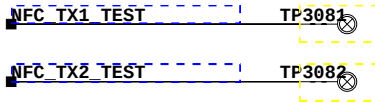
MIC



Vibrator



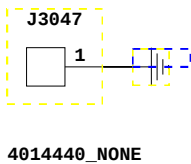
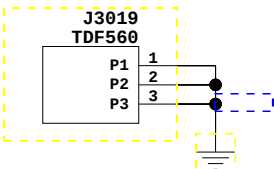
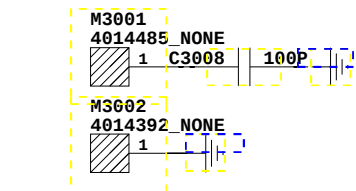
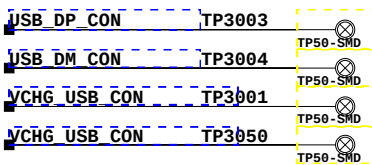
NFC



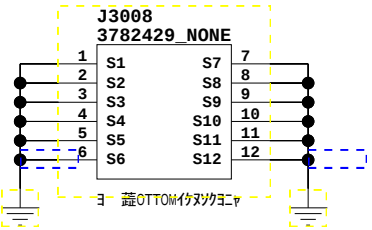
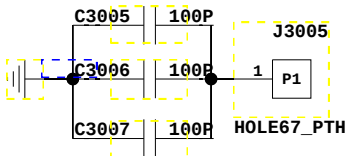
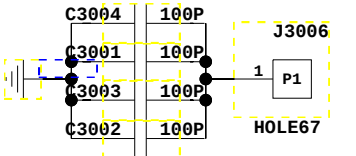
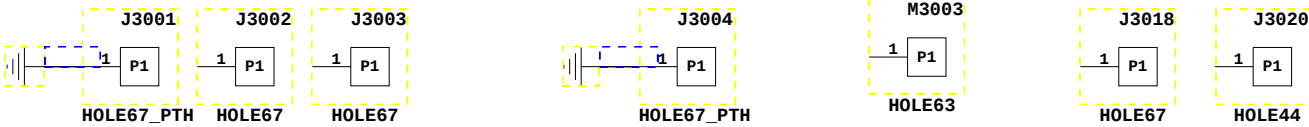
Wireless Charge



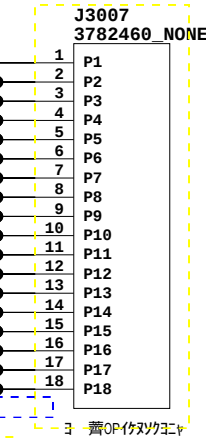
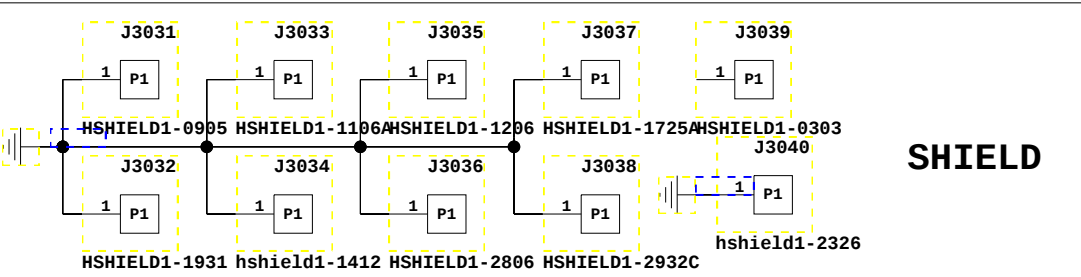
USB



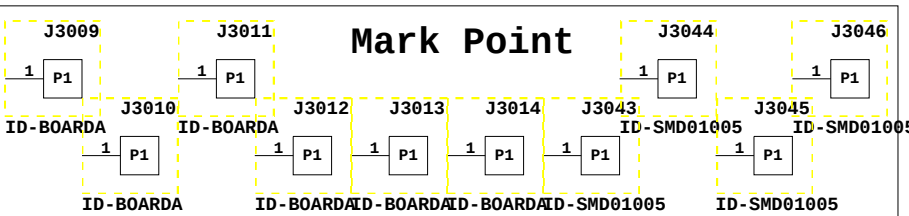
HOLE will be confirmed later

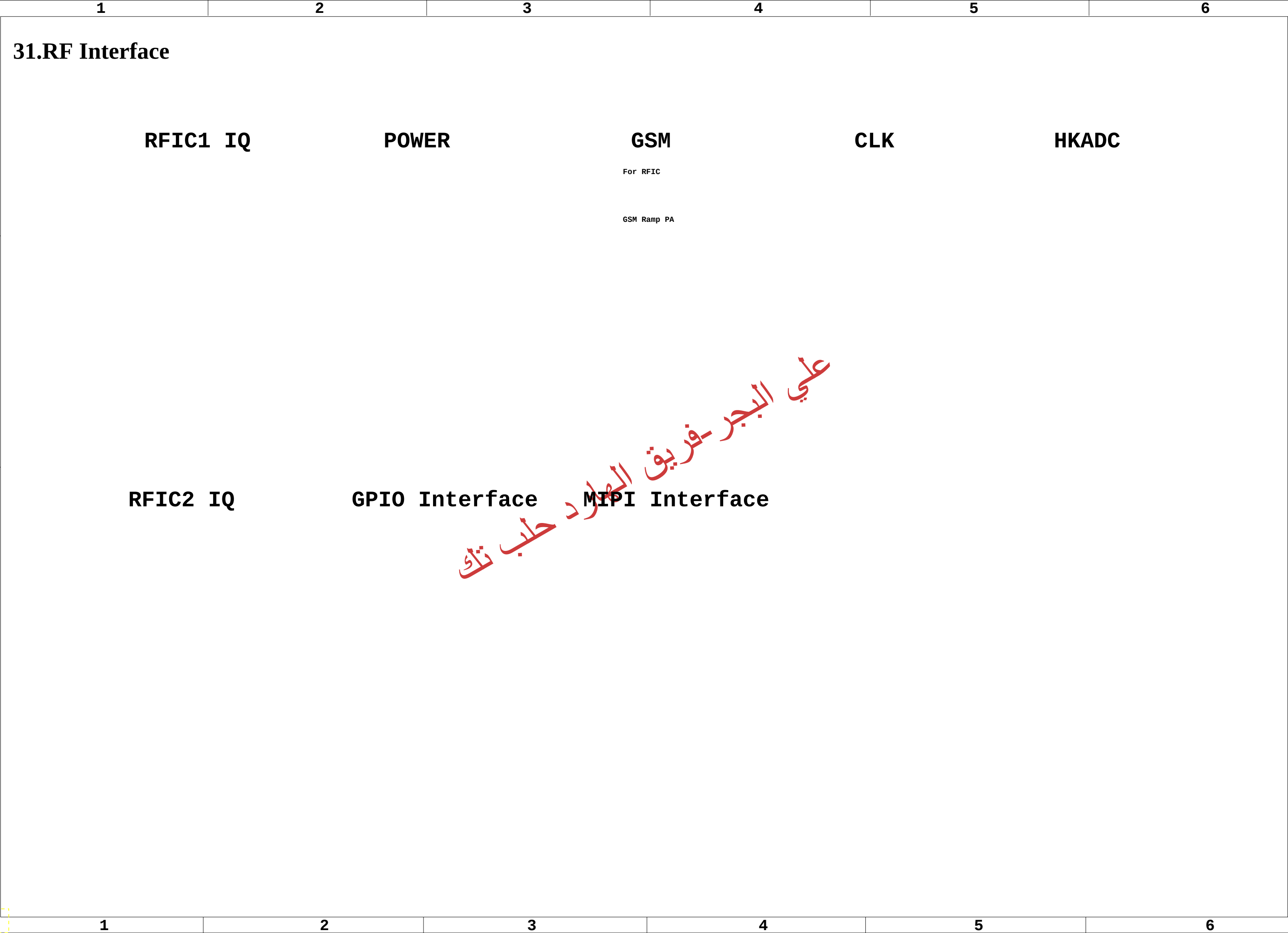


SHIELD



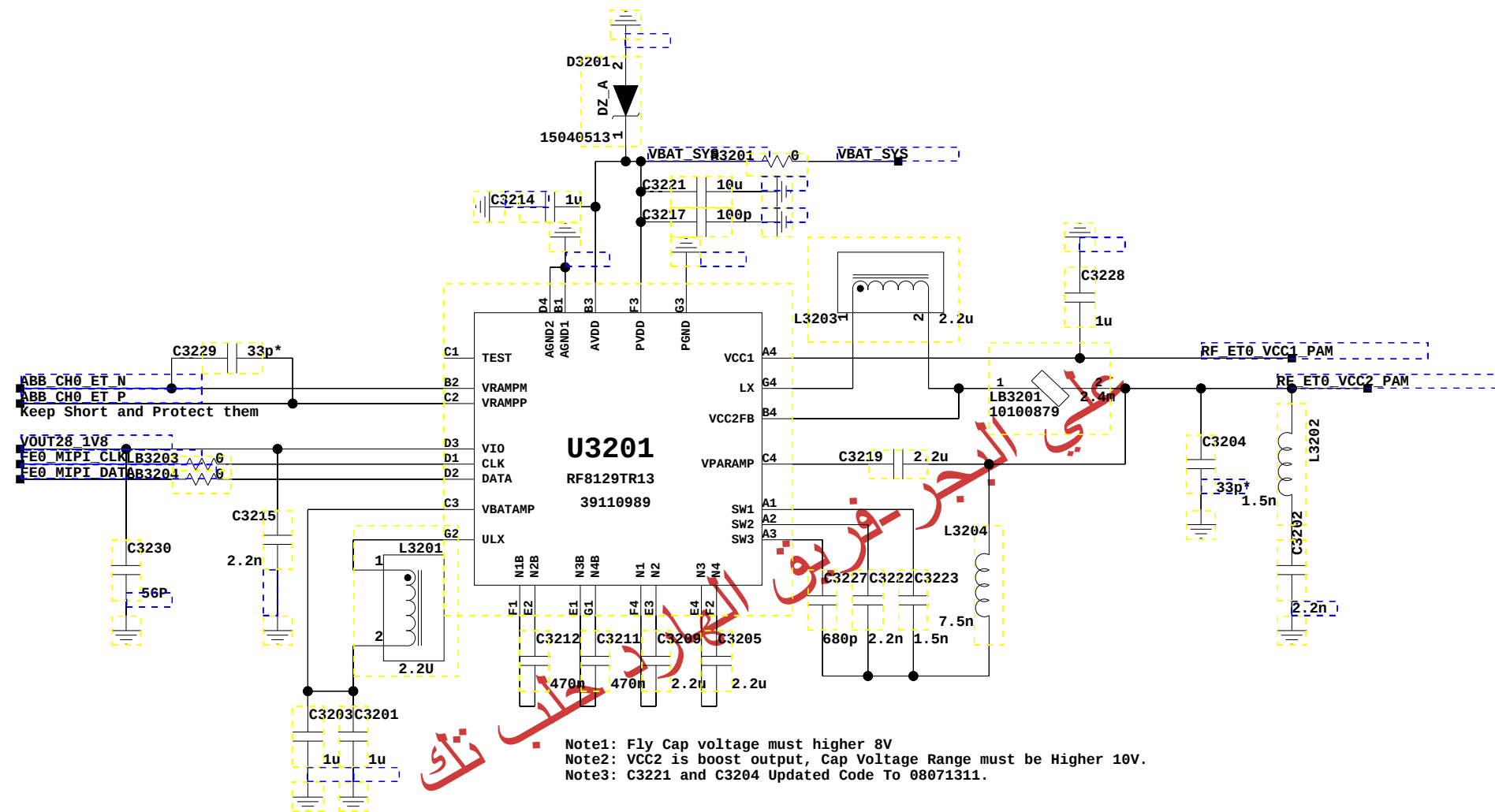
Mark Point



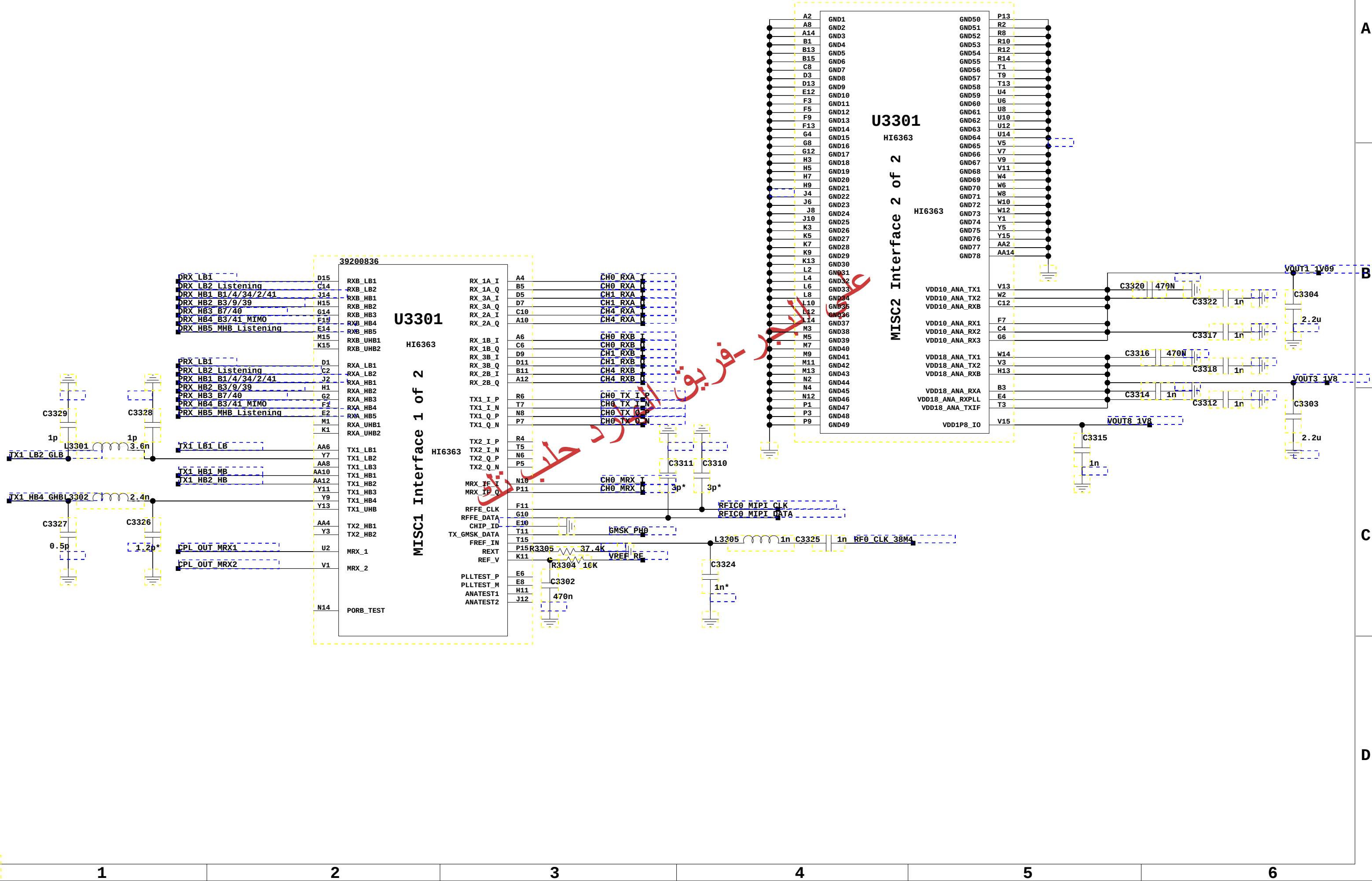


علي البجر-فريق الموارد حطب نك

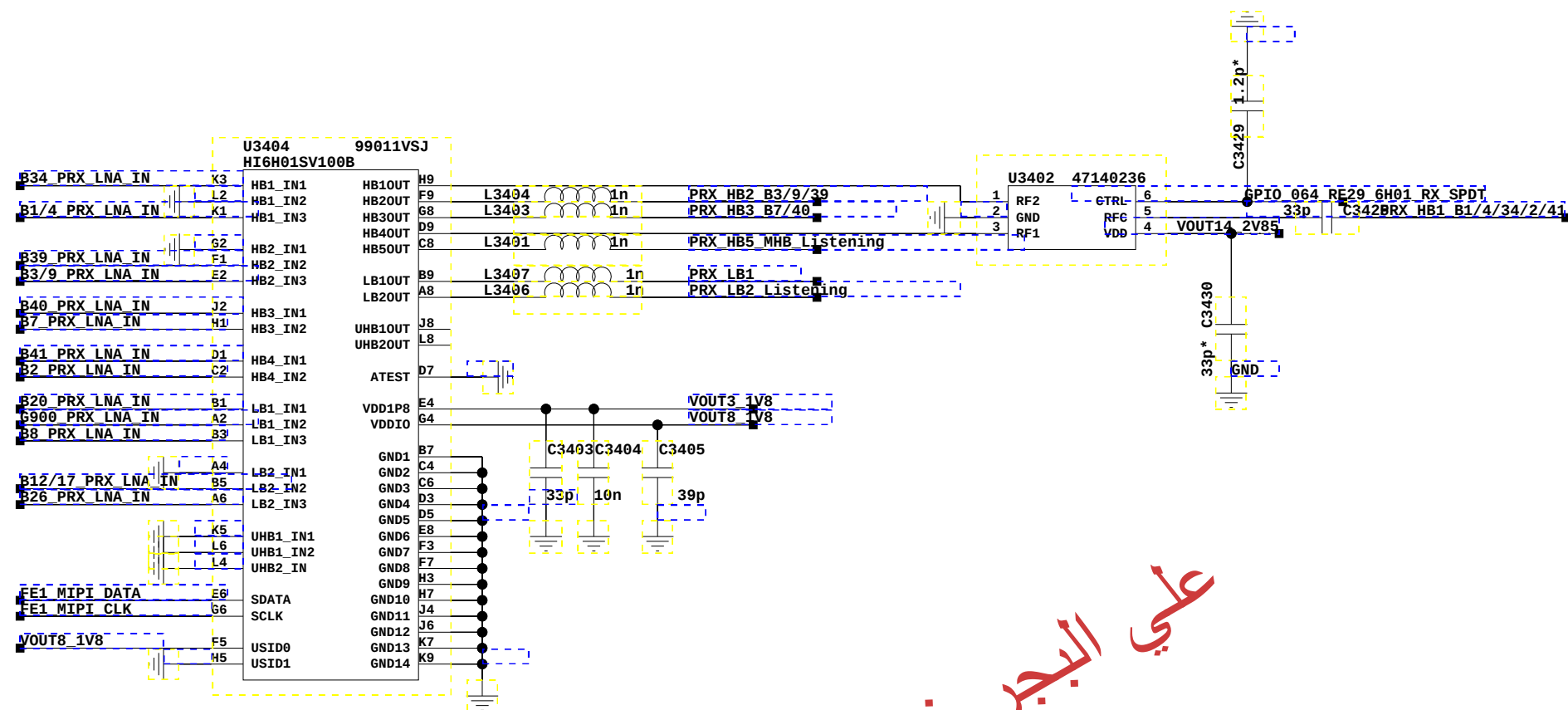
32.RF PMU



33. RF Transceiver_HI6363_01



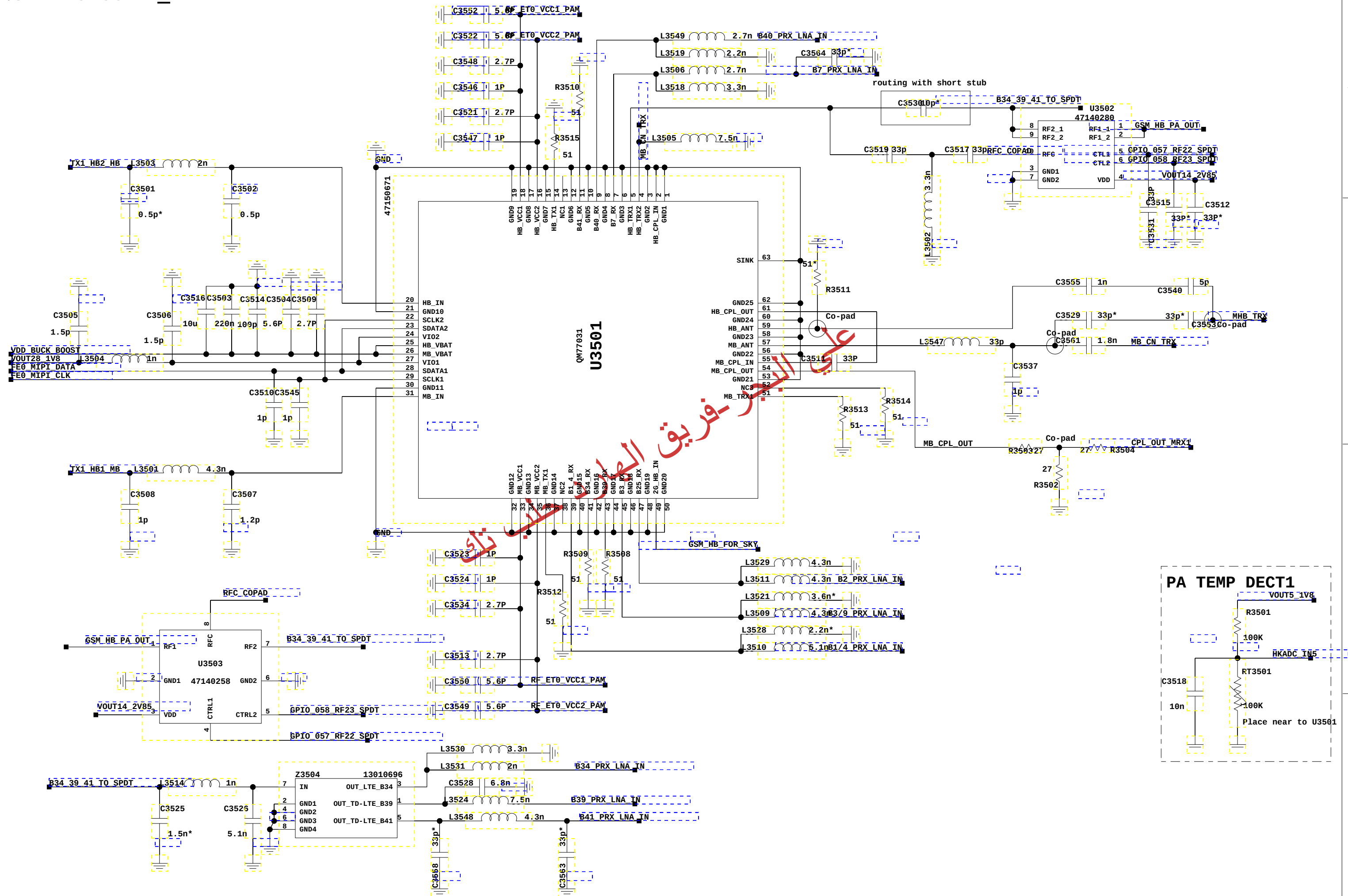
34.PRX LNA-6H01



Free Inputports 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

35.SKY78188-11_MHB



36.QM77033_LB

A

B

C

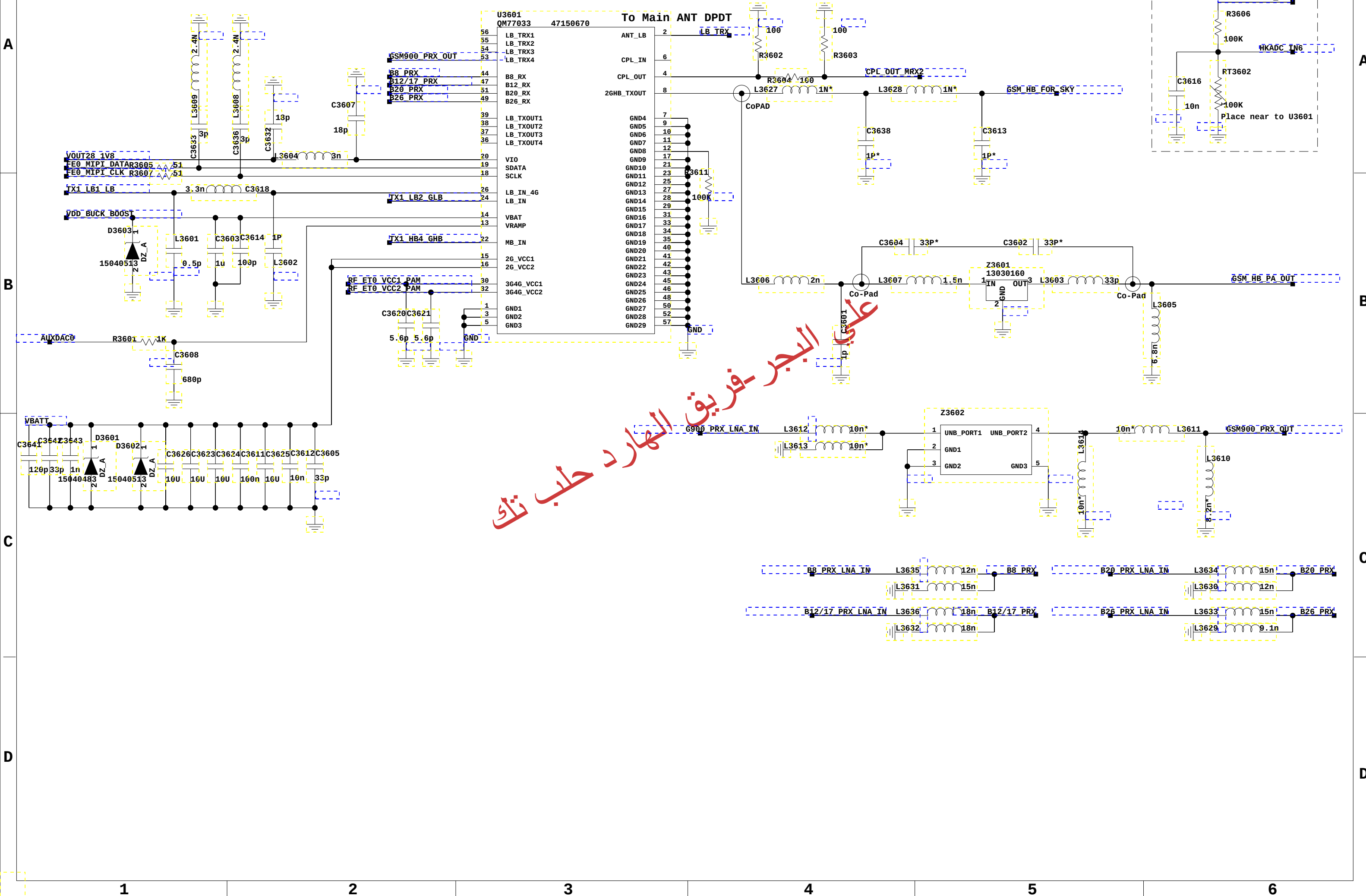
D

A

B

C

D



1

2

3

4

5

6

37. GSM&B42 PA

A

A

B

B

C

C

D

D

علي البحر-فريق الهارد حلب توك

1

2

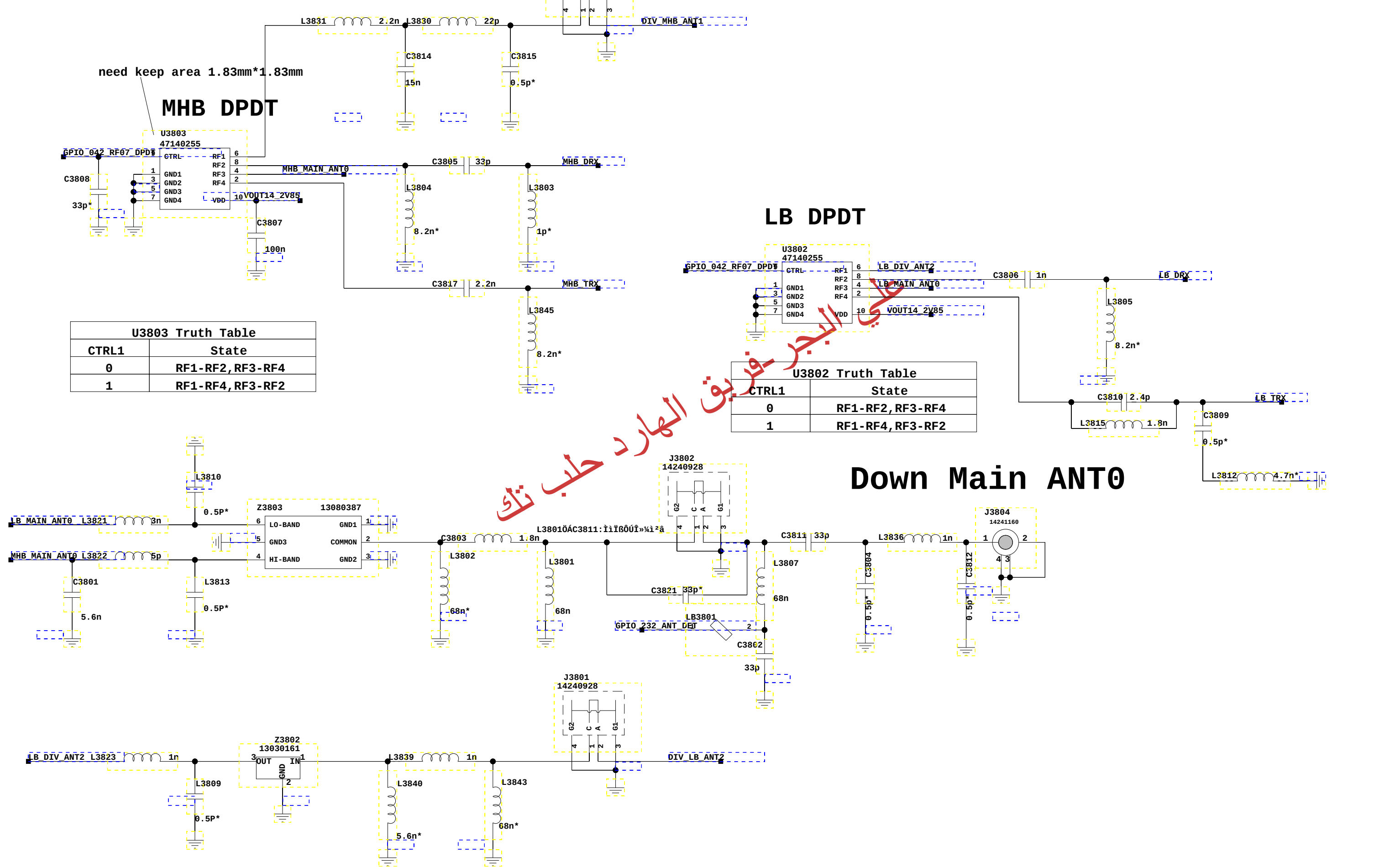
3

4

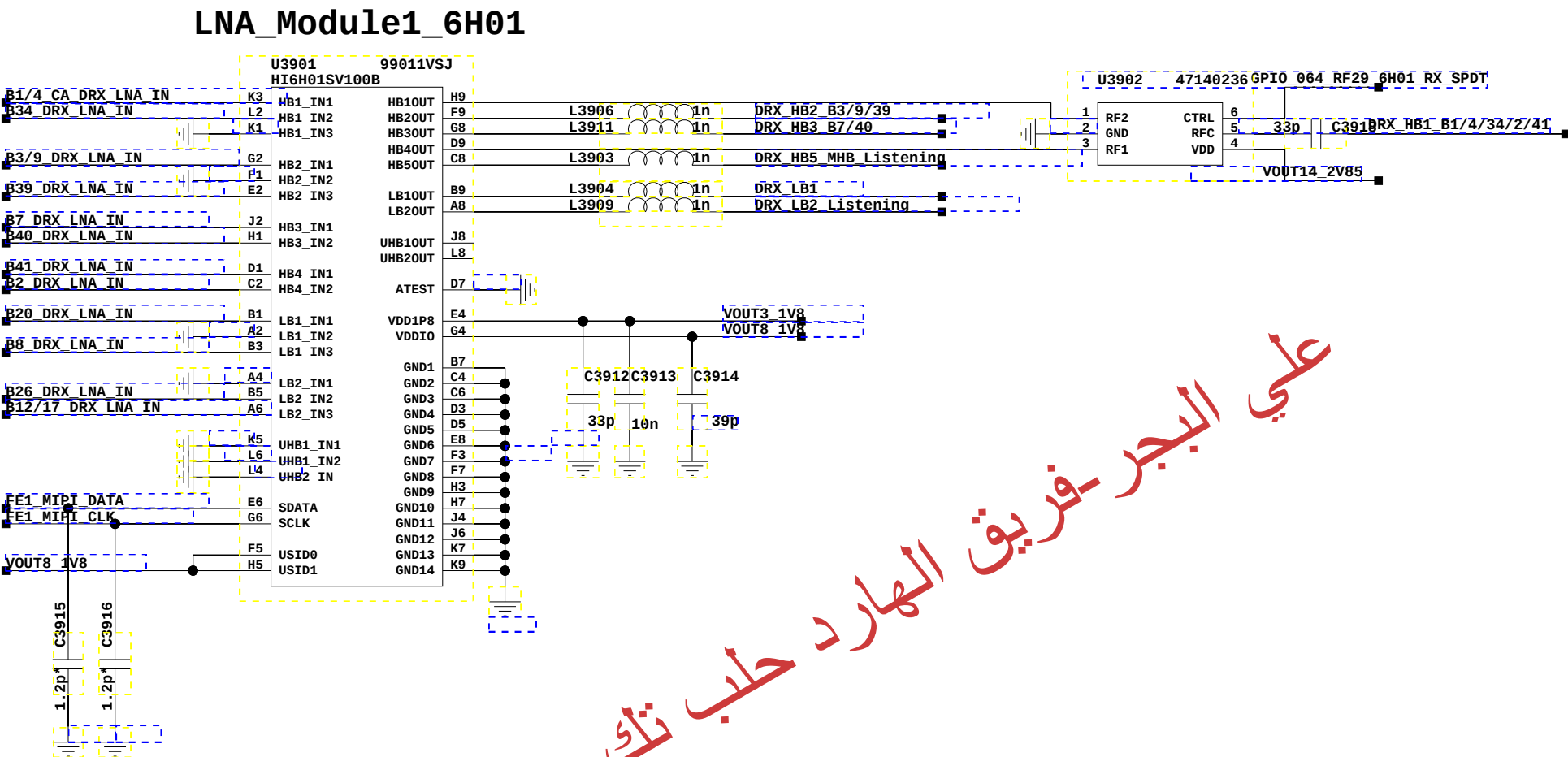
5

6

38. RF Front End Switch



39. LNA Module

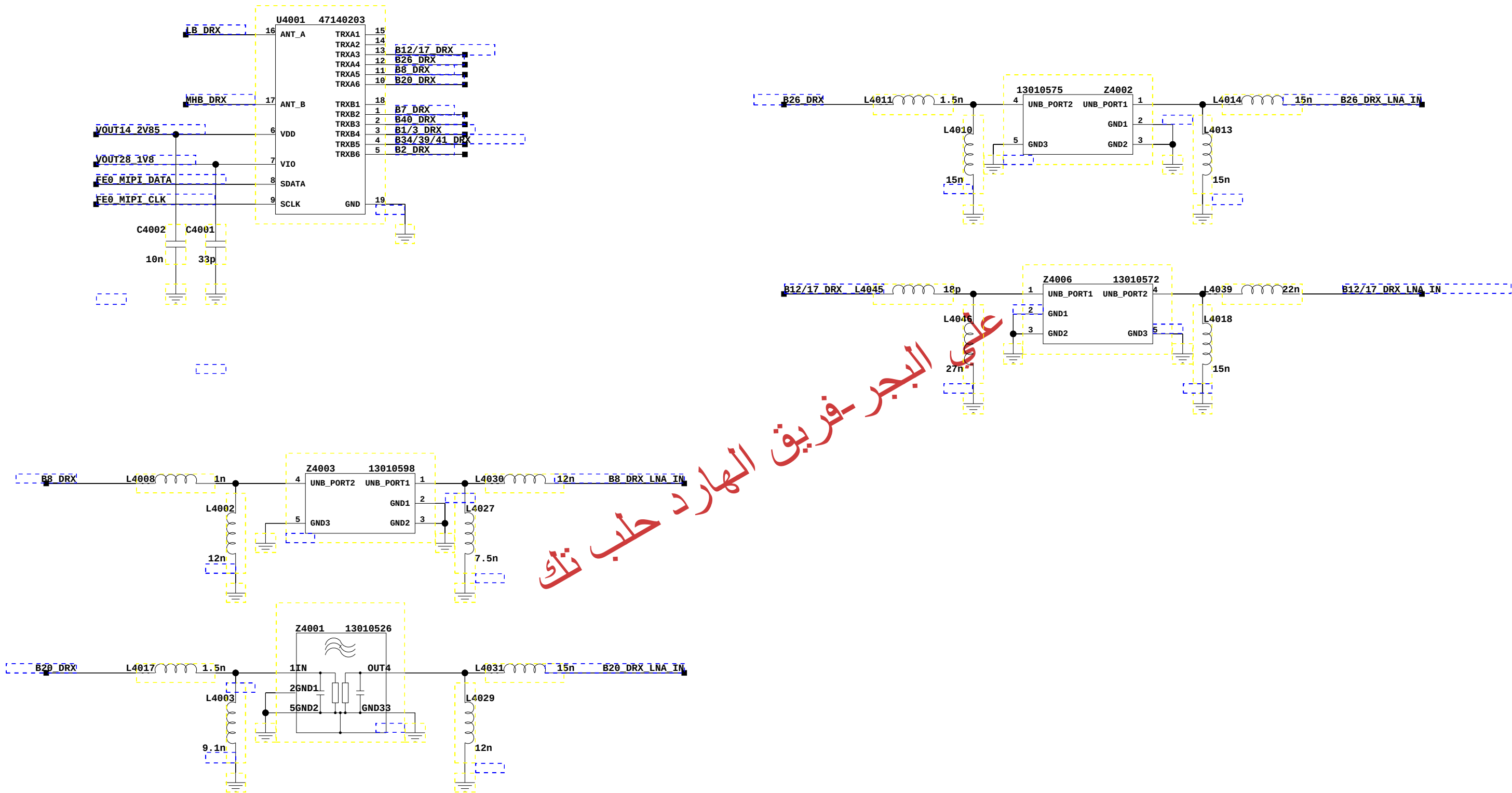


علي البجر فريق الهارد حلب نك

U3901 Truth Table	
CTRL1	State
0	RFC-RF1(B2_B32_B34)
1	RFC-RF2(B7_B41)

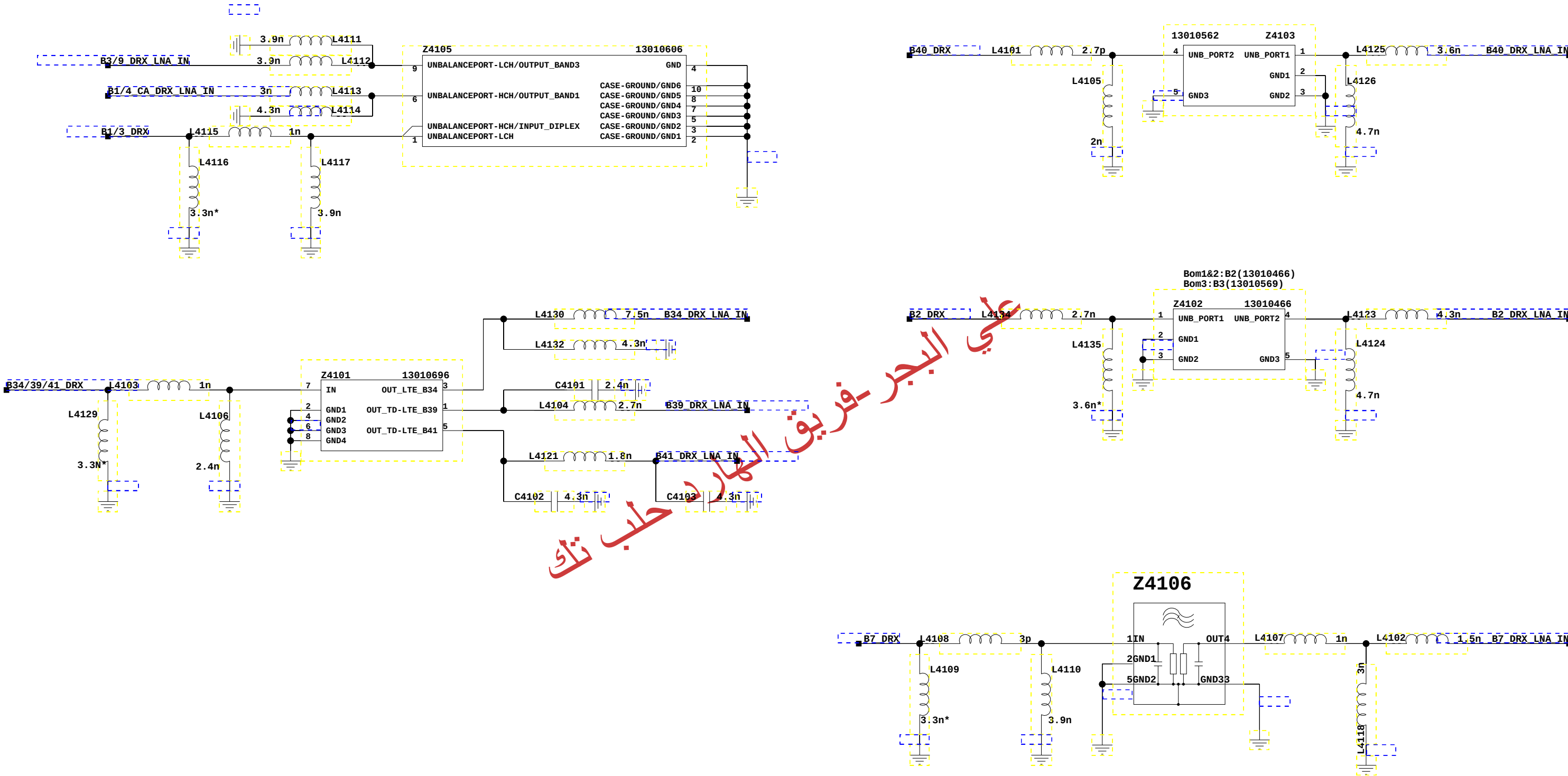
U3903 Truth Table	
CTRL1	State
0	RFC-RF1(B2_B32_B34)
1	RFC-RF2(B32_5CC)

40. DRX LB



علي البجر فريق الهارد طب نك

41. DRX_MHB

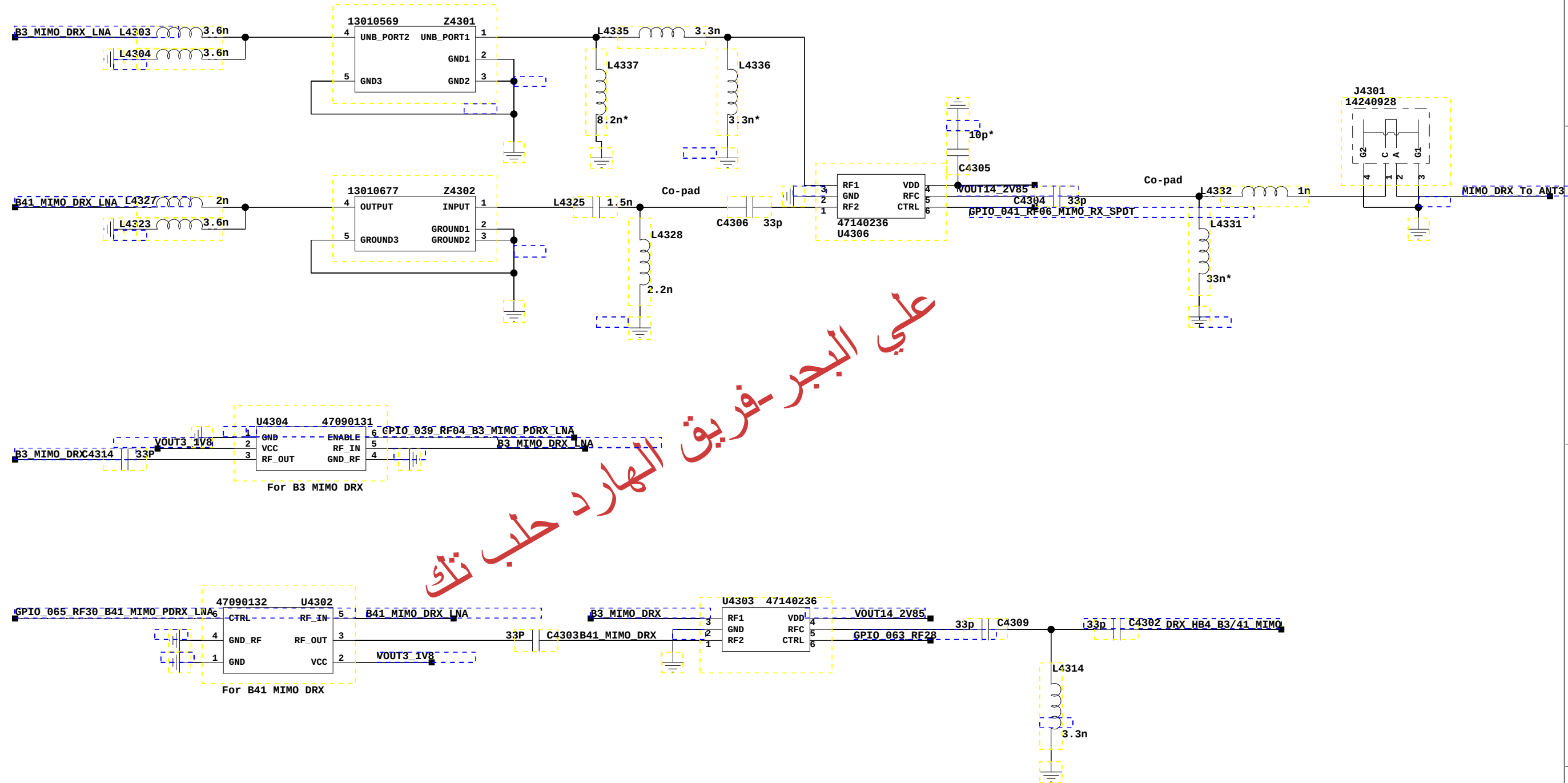


	1	2	3	4	5	6
A						
B						
C						
D						

42. Reaerved

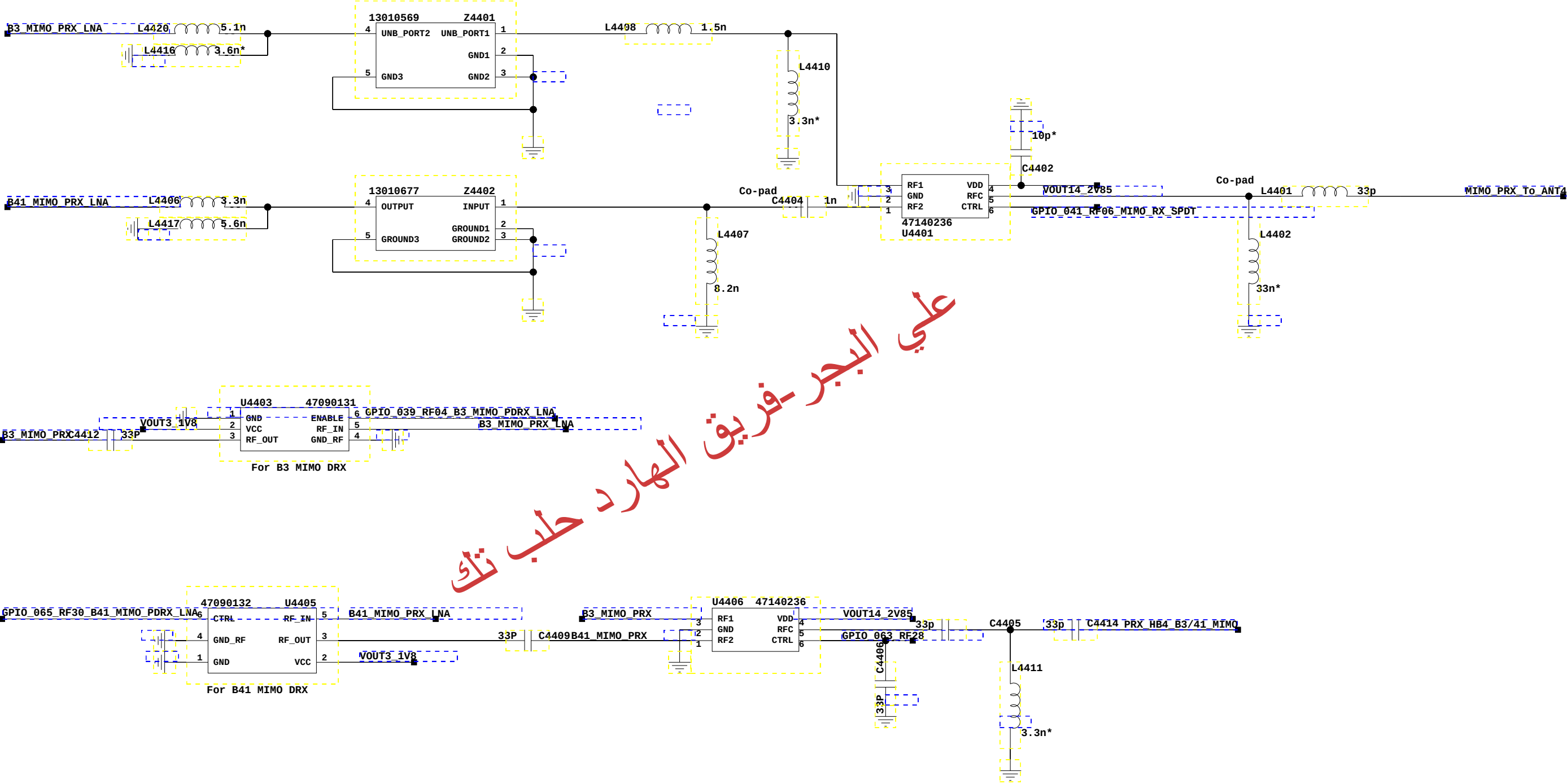
علي البحر-فريق الهارد حطب تلك

43.MIMO_DRX



علي البجر فريق الهارد طب نك

44. MIMO_PRX



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

علي البجر-فريق الهارد حلب تك

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

علي البجر-فريق الهارد حطب نتك

1

2

3

4

5

6

47. Reserved for CDMA Modem

A

A

B

B

C

C

D

D

علي البجر-فريق الهارد حلب توك

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

علي البحر-فريق الهارد حطب نك

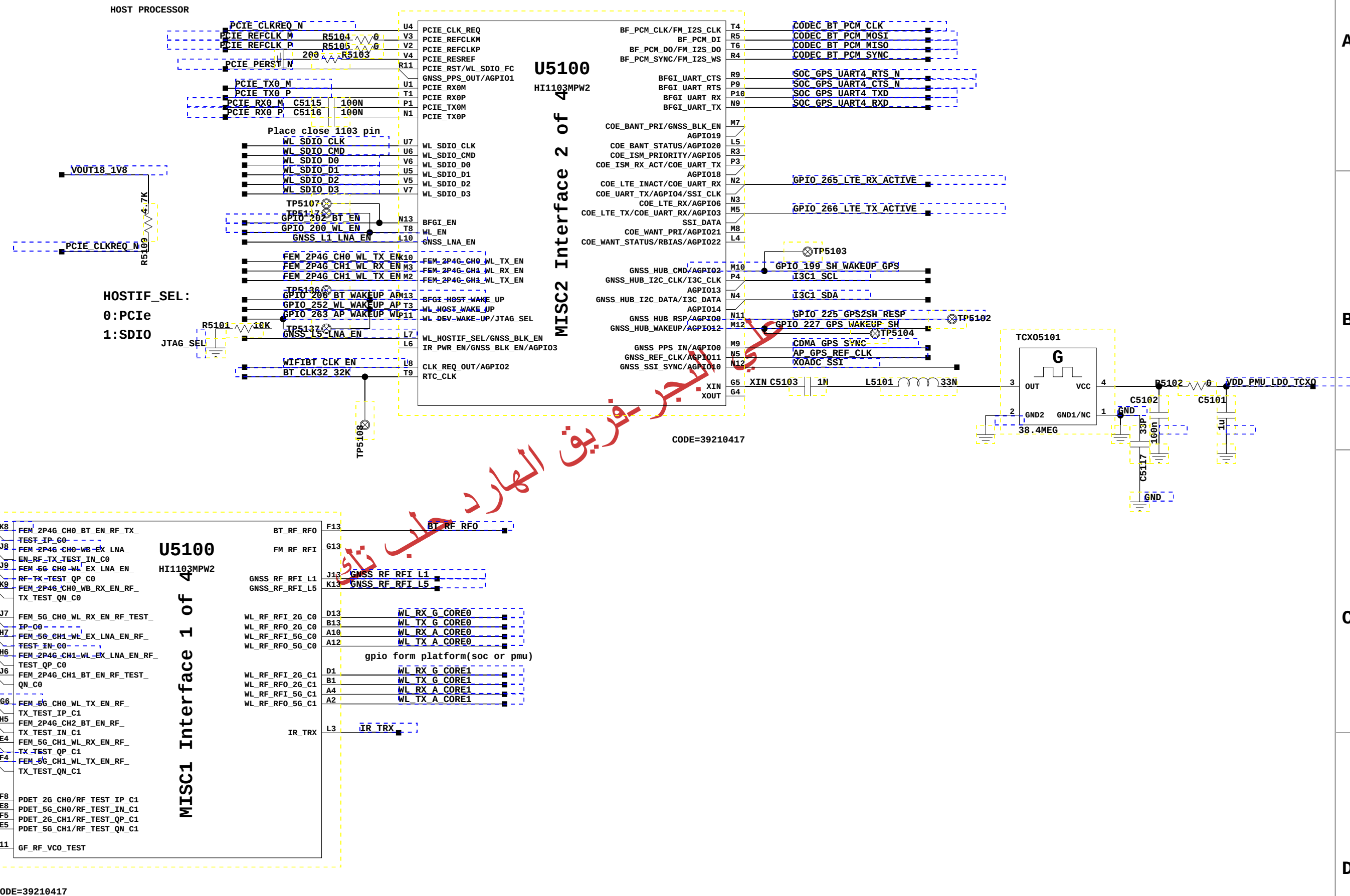
49. Reserved

علي البحر-فريق الهارد حلب توك

50. Reserved

علي البحر-فريق الهارد حلب ناك

51.Hi1103 BB



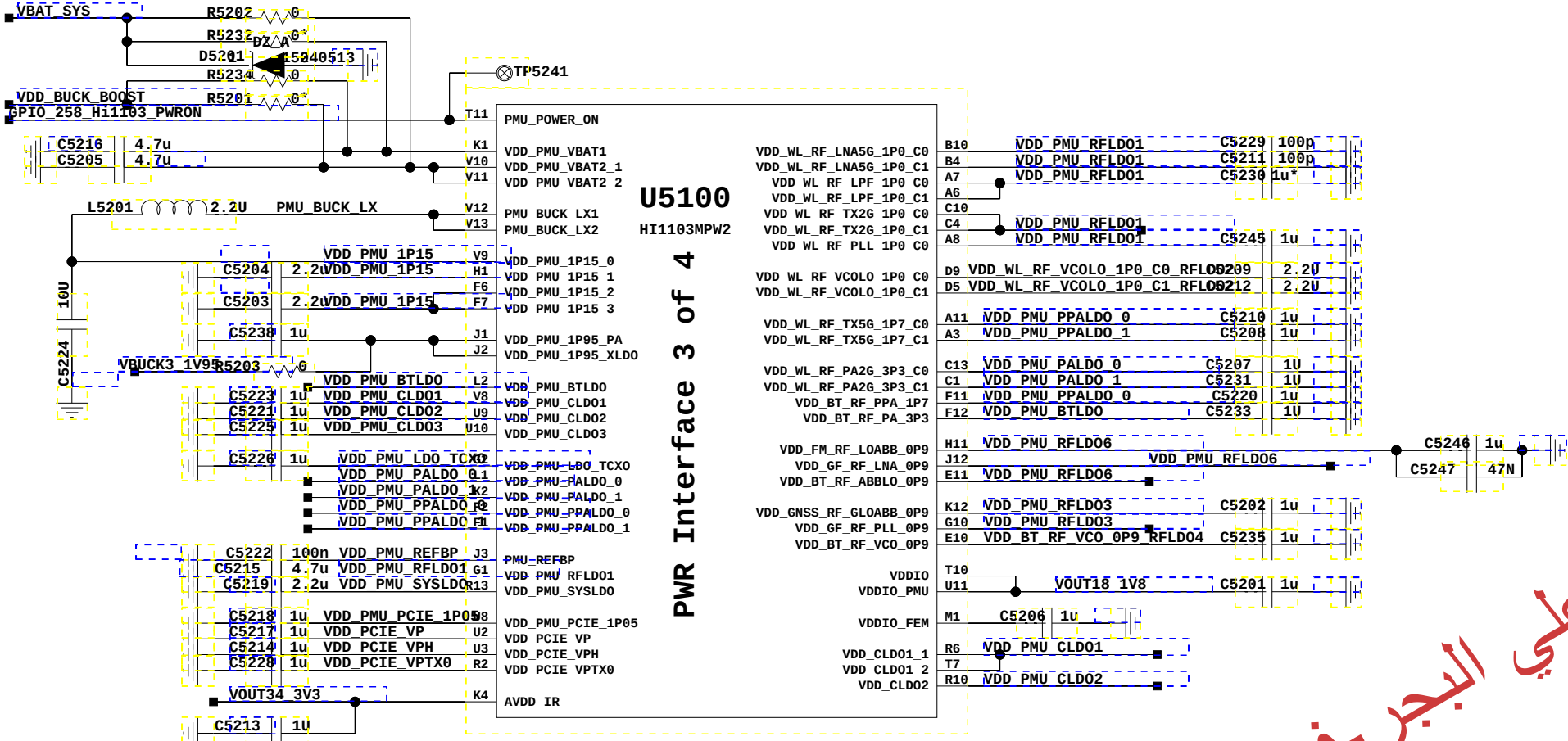
52.Hi1103 PWR

A

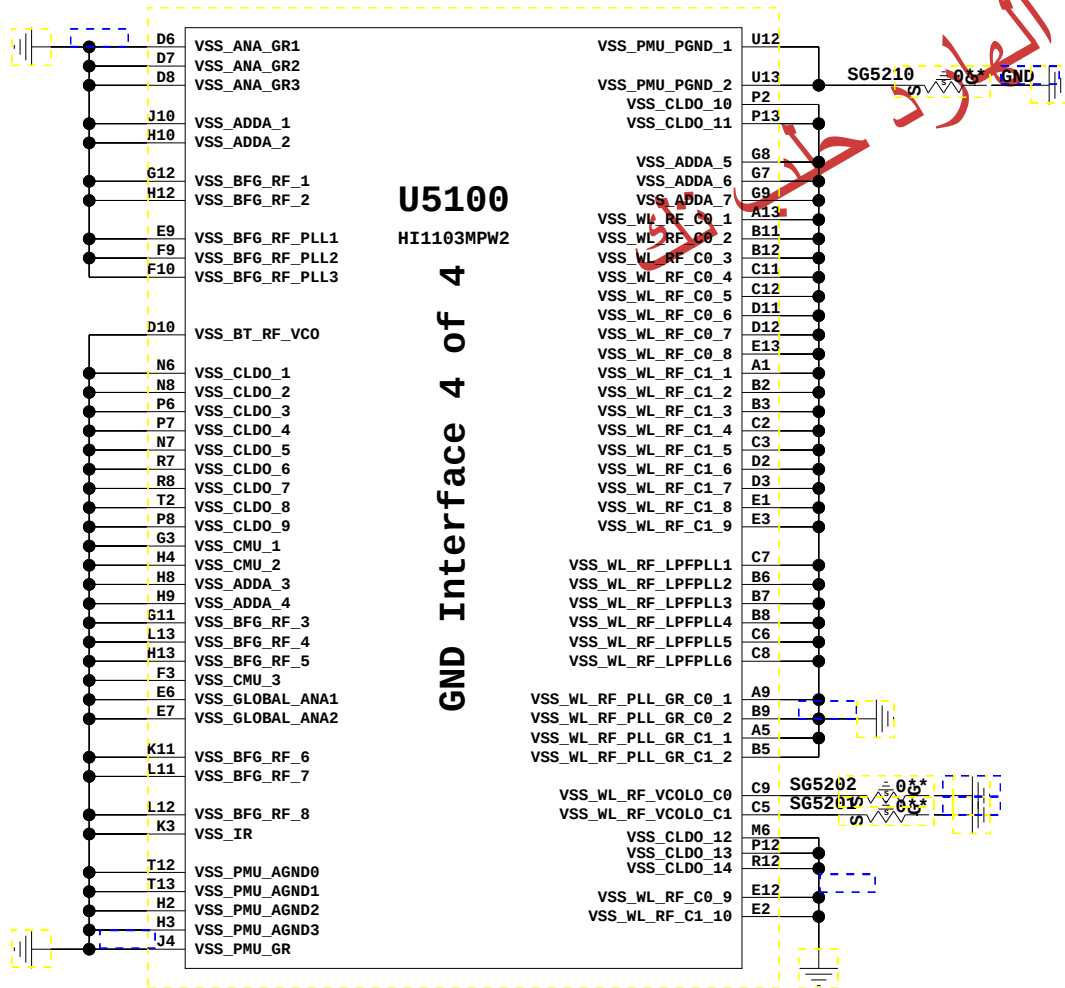
B

C

D



CODE=39210417



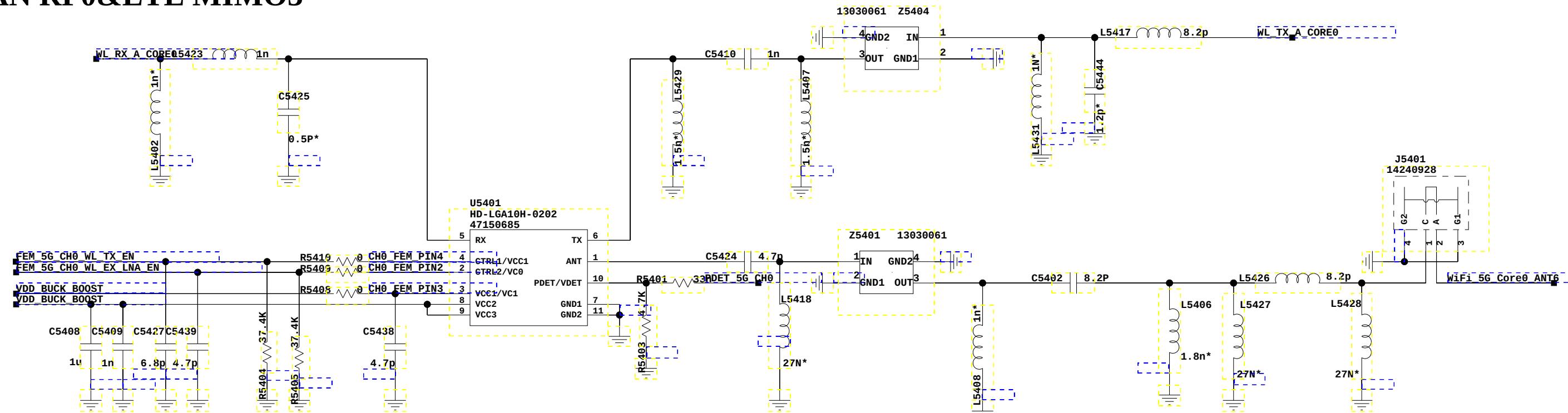
CODE=39210417

二返行釐	鄰	ケ釐
VDD_PMU_1P15	1A	1V1-1V5(1V15)
VDD_PMU_1P95	600mA	1V95
VDD_PMU_BTLD0	200mA	2V-3V5 (3V3)
VDD_PMU_CLD01	400mA	0V6-1V0(0V9)
VDD_PMU_CLD02	150mA	0V6-1V0(0V9)
VDD_PMU_CLD03	50mA	0V6-1V0(0V9)
VDD_PMU_LDO_TCX0	100mA	1V8/2V8
VDD_PMU_PALDO	400mA	2V-3V5 (3V3)
VDD_PMU_PPALDO	250mA	1V7
VDD_PMU_SYSLDO	30mA	0V6-1V0(0V9)
VDD_PMU_RFLD01	250mA	0V85-1V1(1V0)
VDD_PMU_RFLD02	100mA	1V0
VDD_PMU_RFLD03	100mA	0V9
VDD_PMU_RFLD04	50mA	0V9
VDD_PMU_RFLD06	150mA	0V9

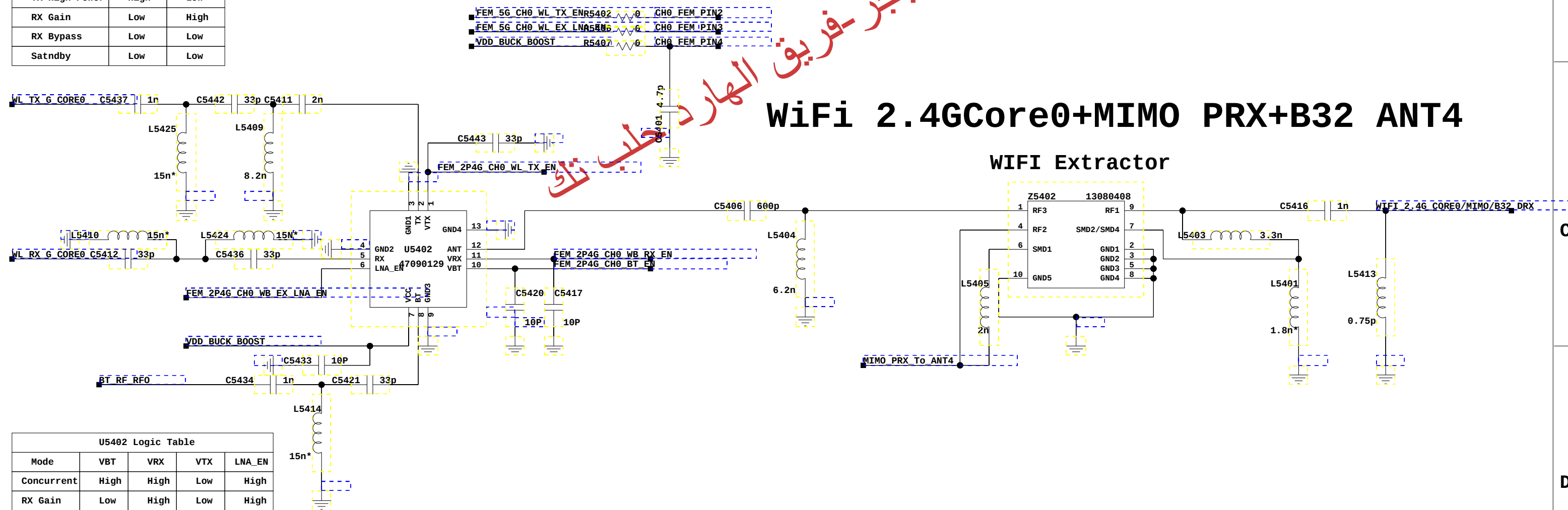
	1	2	3	4	5	6
A	53.Reserved					
B						
C						
D						

علي البحر-فريق الهارد حلب تلك

54.WLAN RF0<E MIMO3

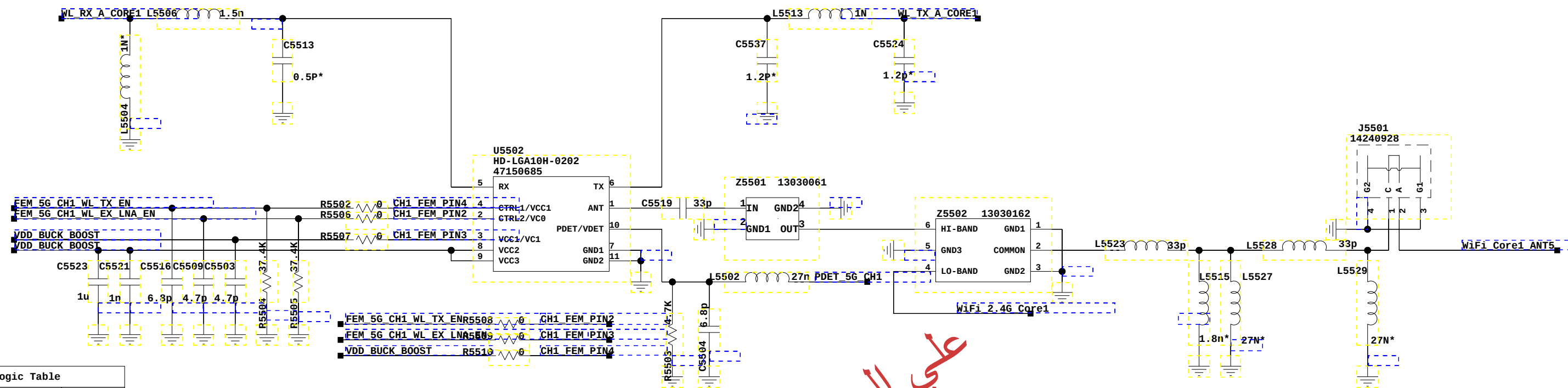


U5401 Logic Table		
Mode	CTRL1	CTRL2
TX High Power	High	Low
RX Gain	Low	High
RX Bypass	Low	Low
Satndby	Low	Low



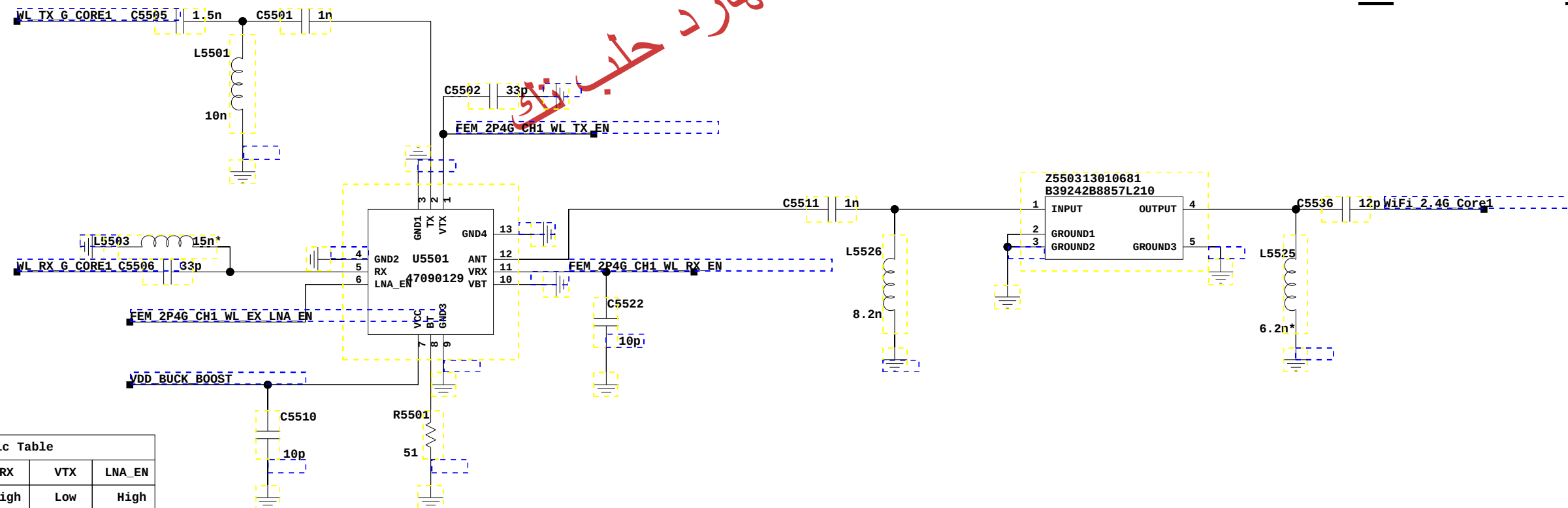
U5402 Logic Table				
Mode	VBT	VRX	VTX	LNA_EN
Concurrent	High	High	Low	High
RX Gain	Low	High	Low	High
RX Bypass	Low	High	Low	Low
TX	Low	Low	High	Low
BT	High	Low	Low	Low
Satndby	Low	Low	Low	Low

55.WLAN RF1



U5502 Logic Table		
Mode	CTRL1	CTRL2
TX High Power	High	Low
RX Gain	Low	High
RX Bypass	Low	Low
Satndby	Low	Low

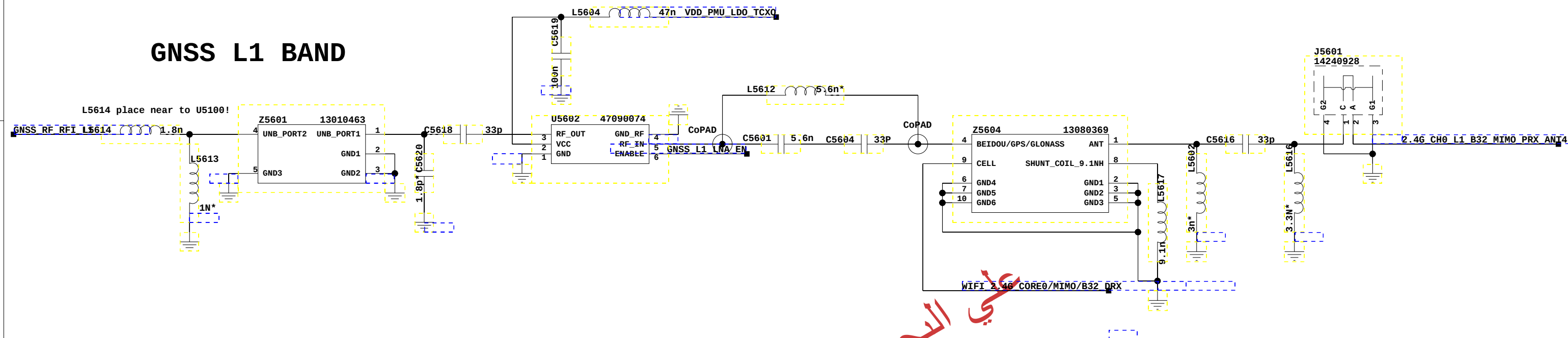
WiFi_Core1_ANT5



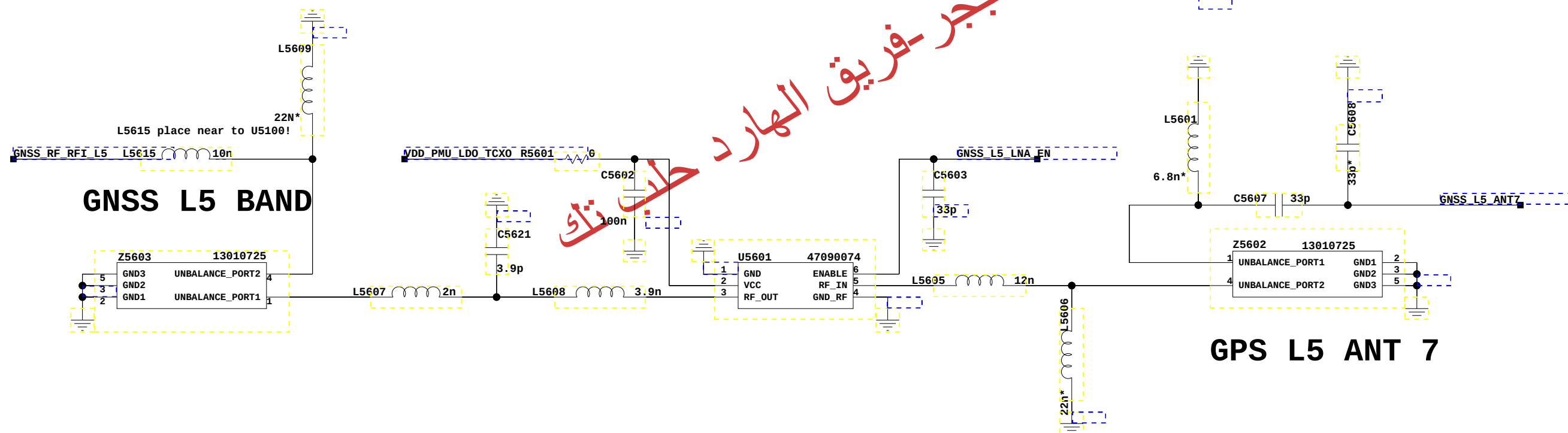
U5501 Logic Table				
Mode	VBT	VRX	VTX	LNA_EN
Concurrent	High	High	Low	High
RX Gain	Low	High	Low	High
RX Bypass	Low	High	Low	Low
TX	Low	Low	High	Low
BT	High	Low	Low	Low
Satndby	Low	Low	Low	Low

56.GNSS RF FE

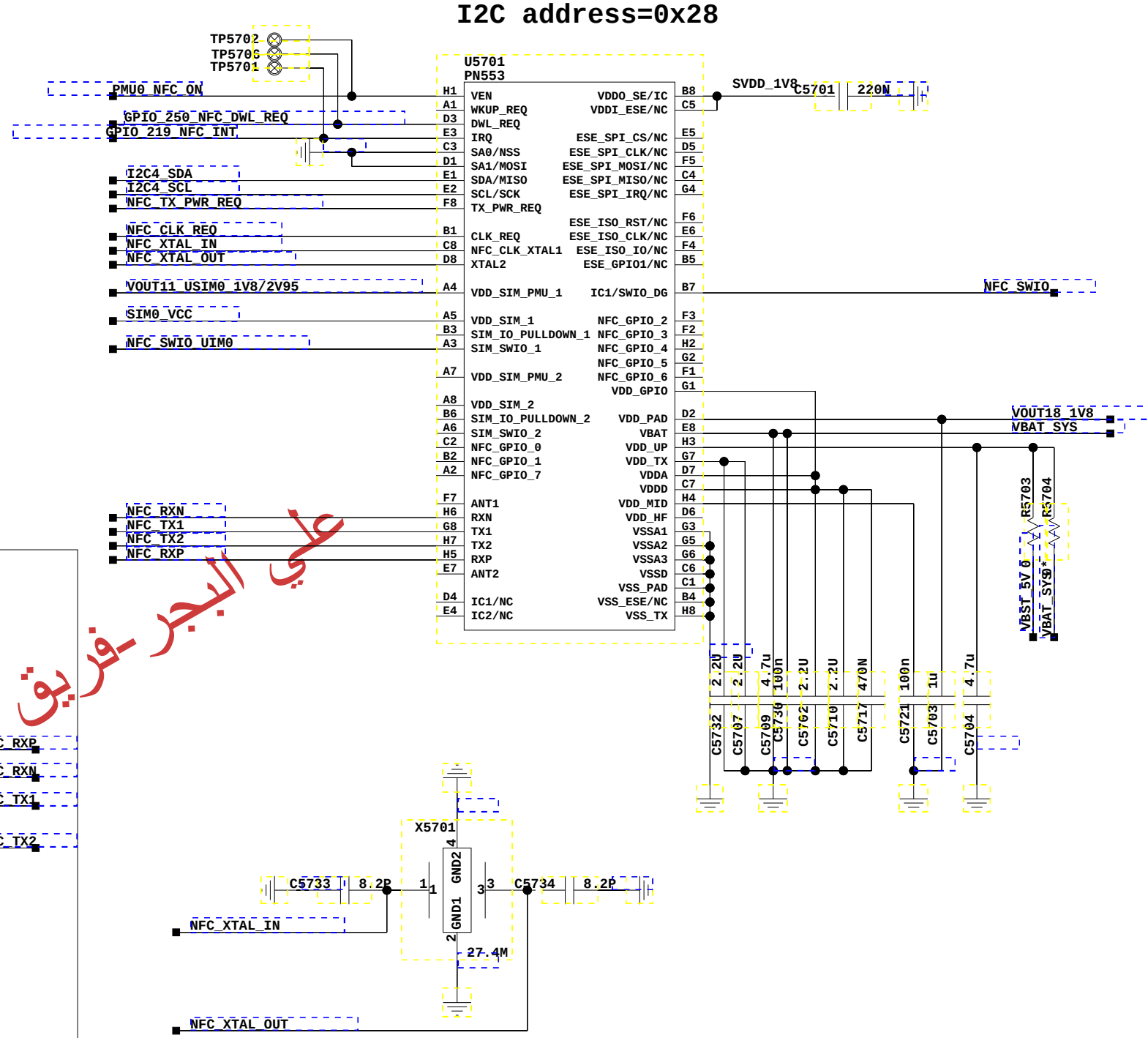
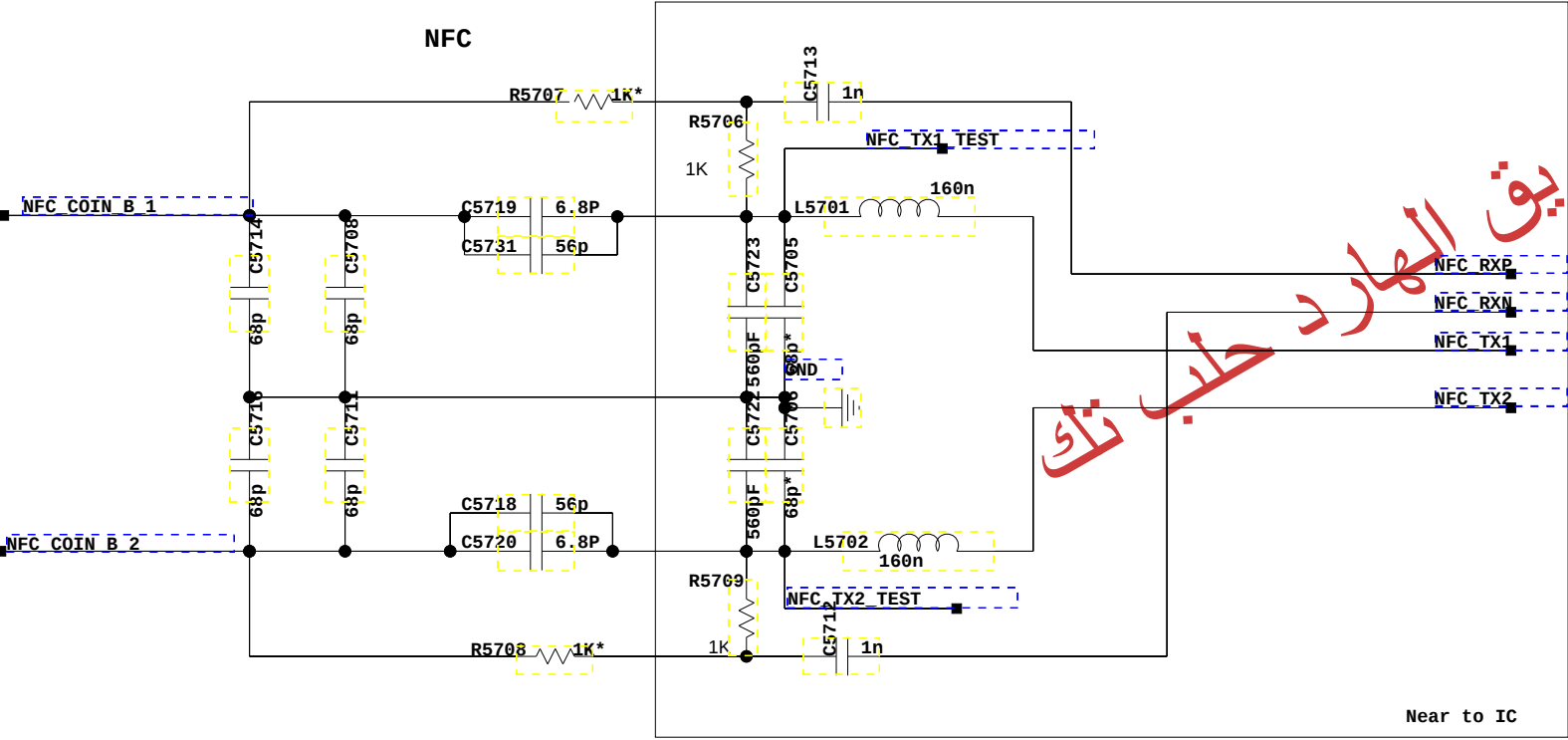
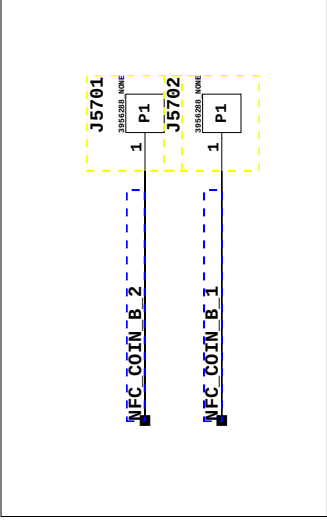
GNSS L1 BAND



GNSS L5 BAND



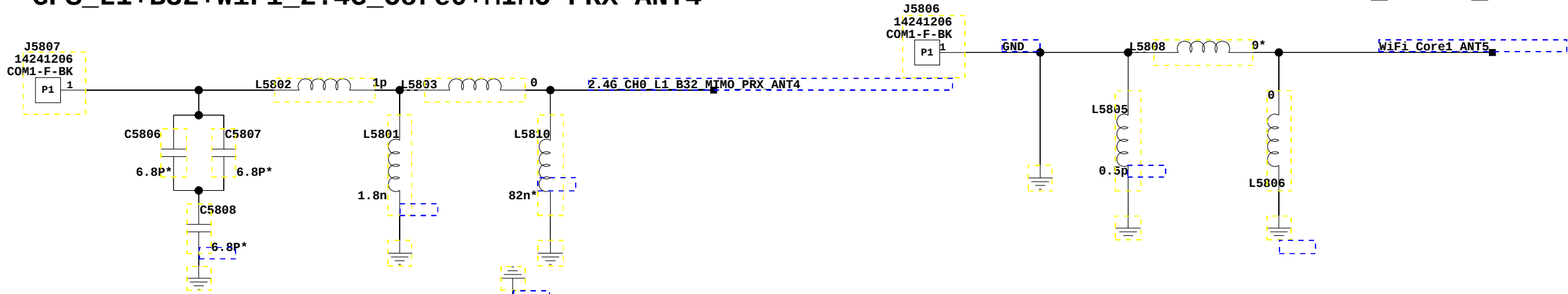
57 . NFC



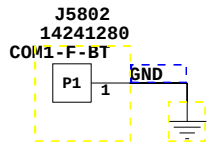
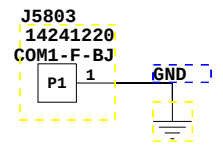
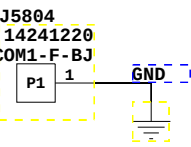
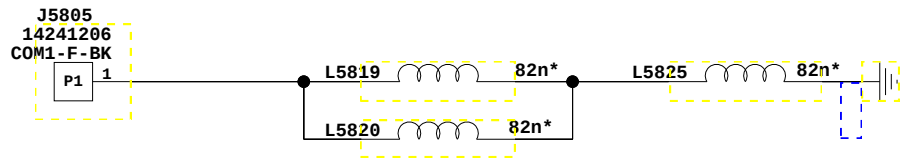
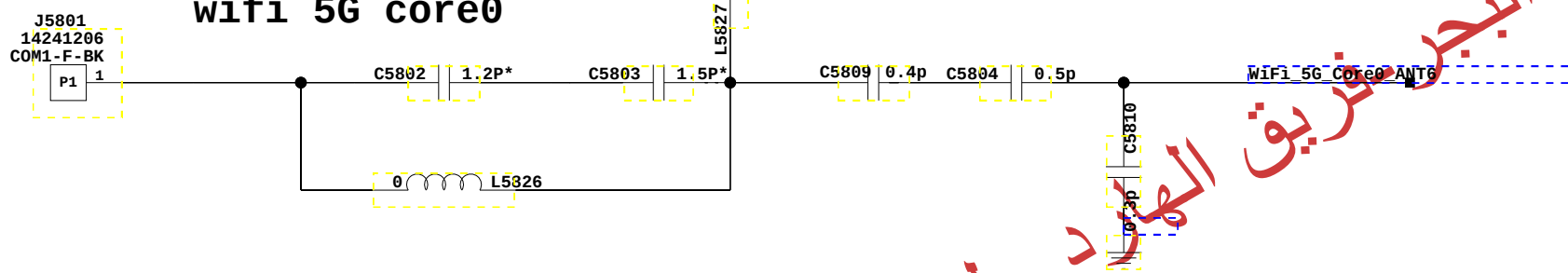
58.UP ANT: ANT4/5/6

GPS_L1+B32+WiFi_2.4G_Core0+MIMO PRX ANT4

WiFi_Core1_ANT5



wifi 5G core0



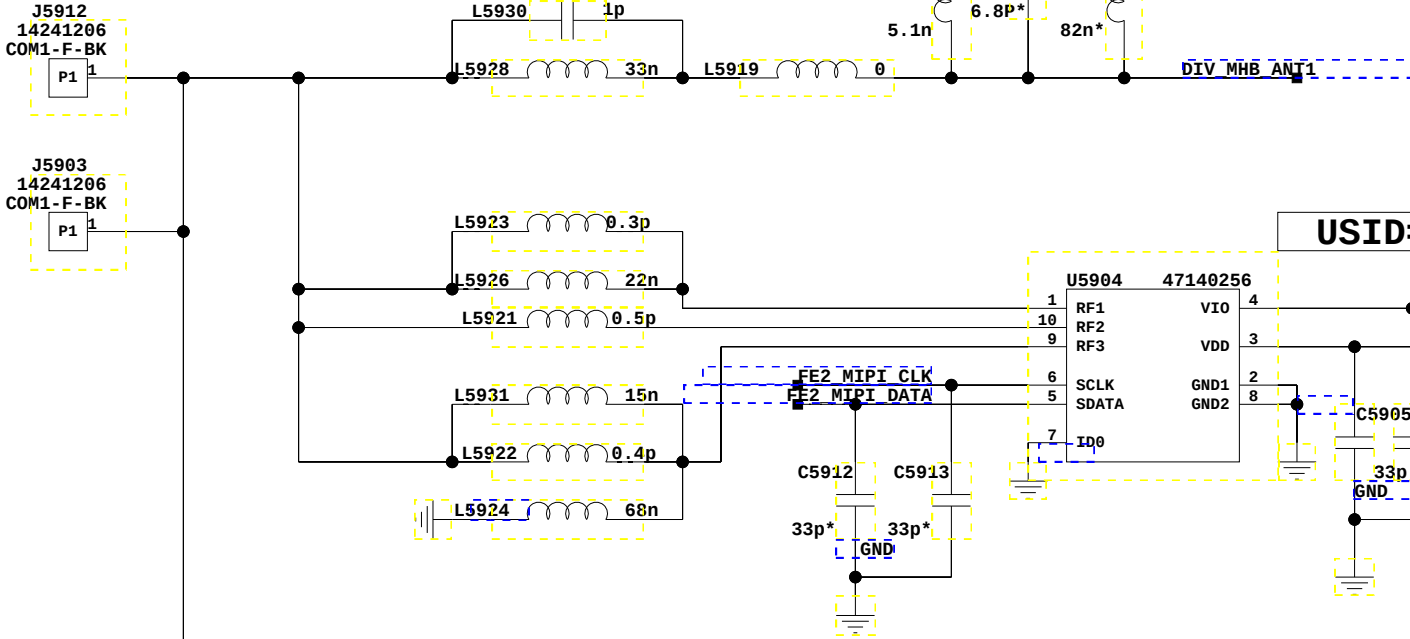
L5 GND

wifi GND1

wifi GND2

59.UP ANT: ANT1/2/3/7

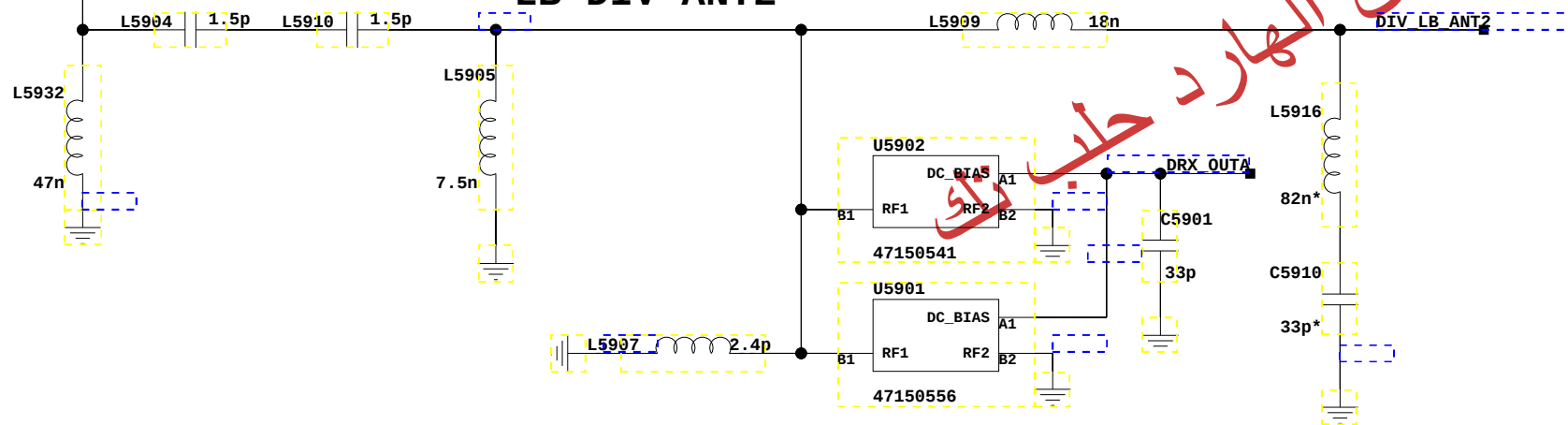
MHB DIV ANT1



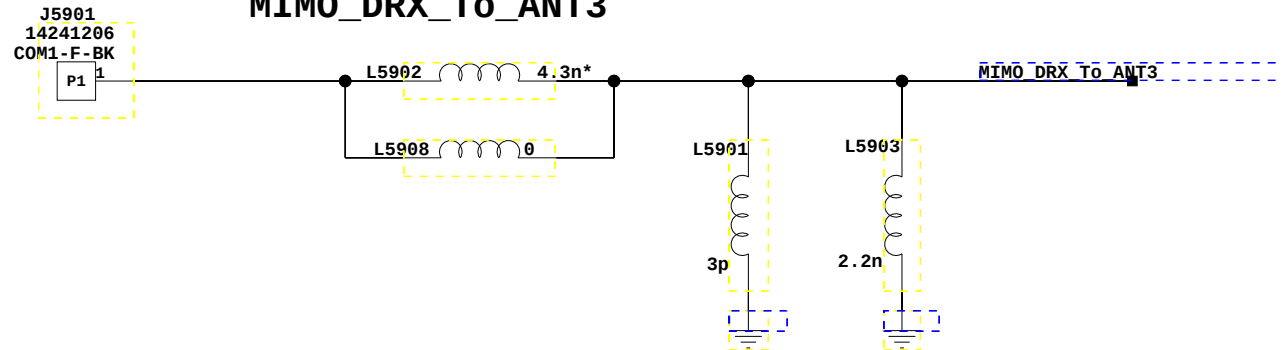
USID=6

USID=7

LB DIV ANT2



MIMO_DRX_To_ANT3



MIMO B3/B1

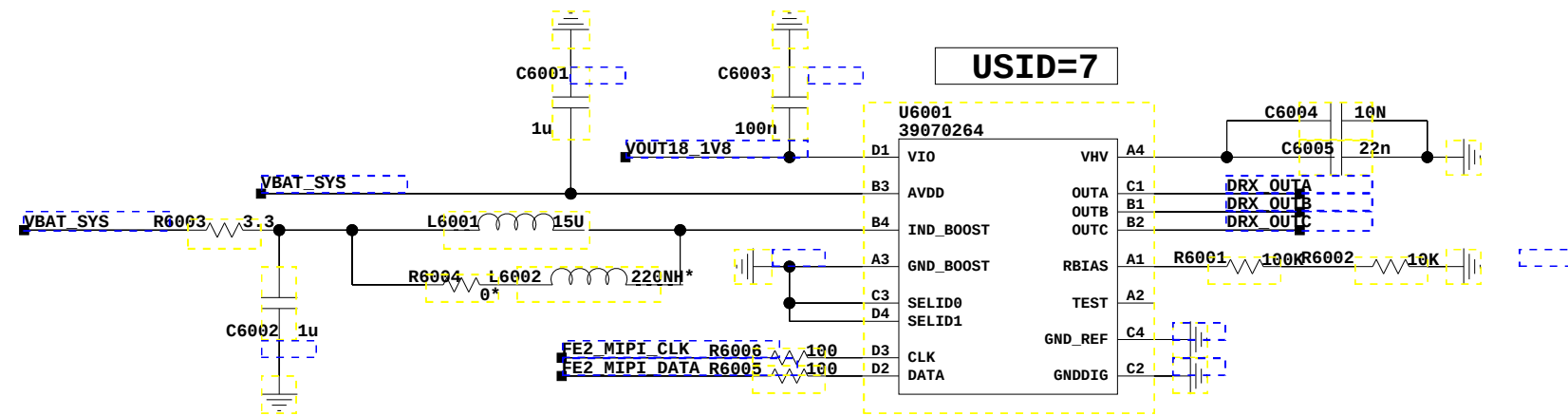
MIMO LINK

IR GND

Filter GND

MHB-MIMO GND

60.Antenna Tunner



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