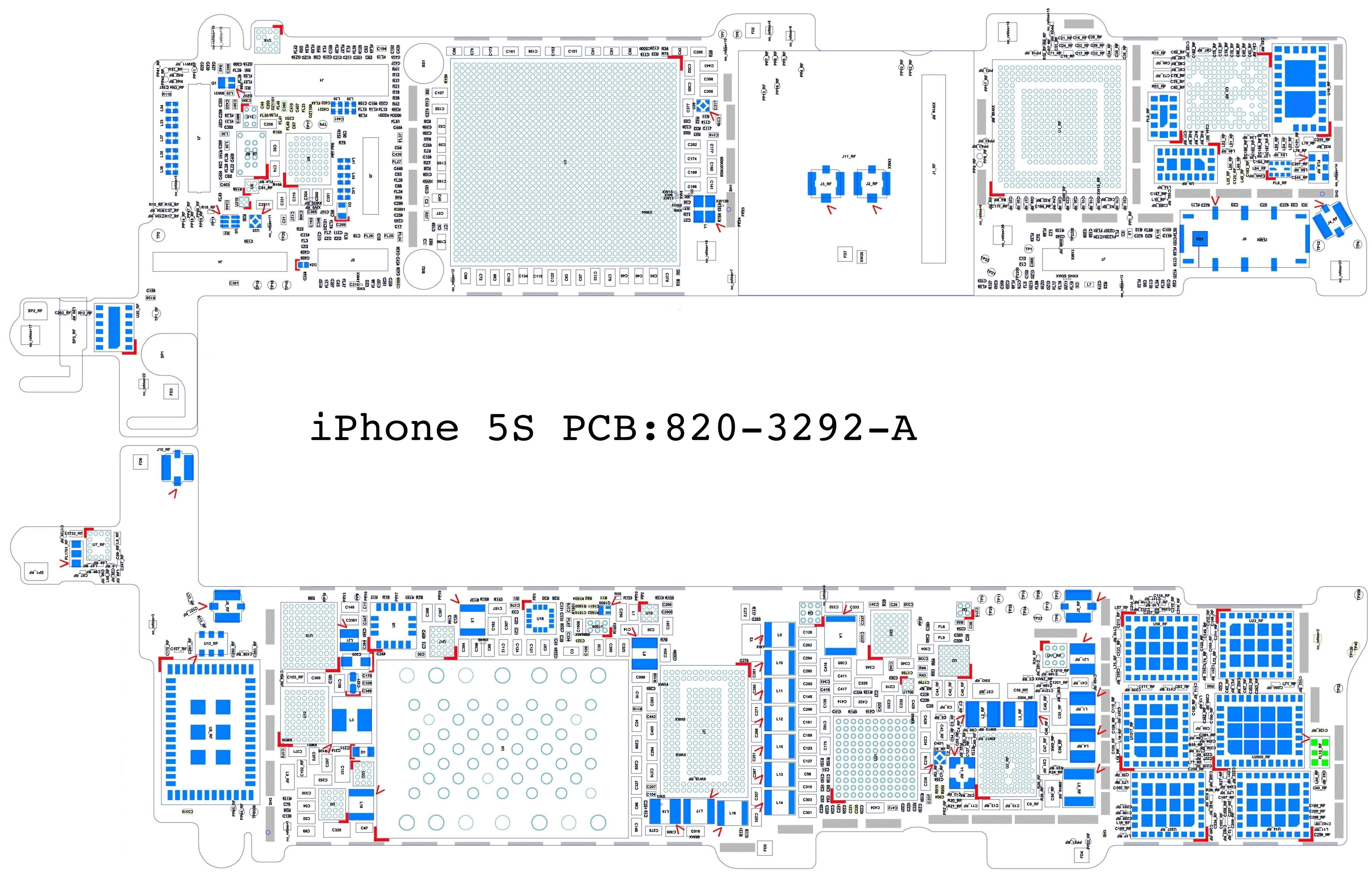


iPhone 5S PCB: 820-3292-A



D

C

B

A

D

C

B

iPhone 5S Datasheet

PCB : 820-3292-A

PDF PAGE	CSA PAGE	CONTENTS	SYNC MASTER	DATE
2	2	H6P JTAG, USB, PLL, HSIC, XTAL	N/A	N/A
3	3	H6P DIGITAL I/O, BOOTSTRAPPING	N/A	N/A
4	4	H6P VDDCA, VDD1/2, VDD, VDD_CPU, VDD_GPU	N/A	N/A
5	5	H6P GND, VDDIO18, VDDIOD, VDD_SRAM, VDD_SOC	N/A	N/A
6	6	H6P NAND, NAND 12X17	N/A	N/A
7	7	H6P HIGH SPEED DIG (CAM, LCM, DP)	N/A	N/A
8	8	BUTTON FLEX B2B	N/A	N/A
9	9	L67 AUDIO CODEC (1/2)	N/A	N/A
10	10	L67 AUDIO CODEC (2/2)	N/A	N/A
11	11	FRONT CAM FLEX B2B	N/A	N/A
12	12	AMBER PMU (1/2)	N/A	N/A
13	13	AMBER PMU (2/2)	N/A	N/A
14	14	CHESTNUT, BACKLIGHT DRIVER, MESA BOOST	N/A	N/A
15	15	SPKR AMP + STROBE DRIVER	N/A	N/A
16	16	TRISTAR, EEPROM	N/A	N/A
17	17	DOCKFLEX B2B	N/A	N/A
18	18	D403 (TOUCH B2B, DRIVER ICS)	N/A	N/A
19	19	LCM B2B	N/A	N/A
20	20	OSCAR + SENSORS	N/A	N/A
21	21	REAR CAM B2B	N/A	N/A
22	22	BATT B2B, TPS, PD FEATURES	N/A	N/A
23	23	VOLTAGE NETS		
24	24	RADIO_MLB HIERARCH. SYMBOL	N/A	N/A
25	25	Cross Reference Page		

SCH 051-9478

BRD 820-3292

MCO 056-5179

BOM 639-4152 (16GB) X145

BOM 639-4153 (32GB) X145

BOM 639-3465 (64GB) X145

D

D

B

A

COMMON PULL UP FOR BOARD_REV, BOARD_ID AND BOOT_CONFIG PINS

R12 MUST WIN OVER 6X INTERNAL PULL-DOWNS THAT ARE ~100K

3	BOARD INFO R	2	01005 NOSTUFF
---	--------------	---	------------------

GPI018 CONFIG0} BOARD INFO}

¹P3001

PCB: PLACE THIS BOTTOM SIDE,
SOUTH END OF SINGLE BRD

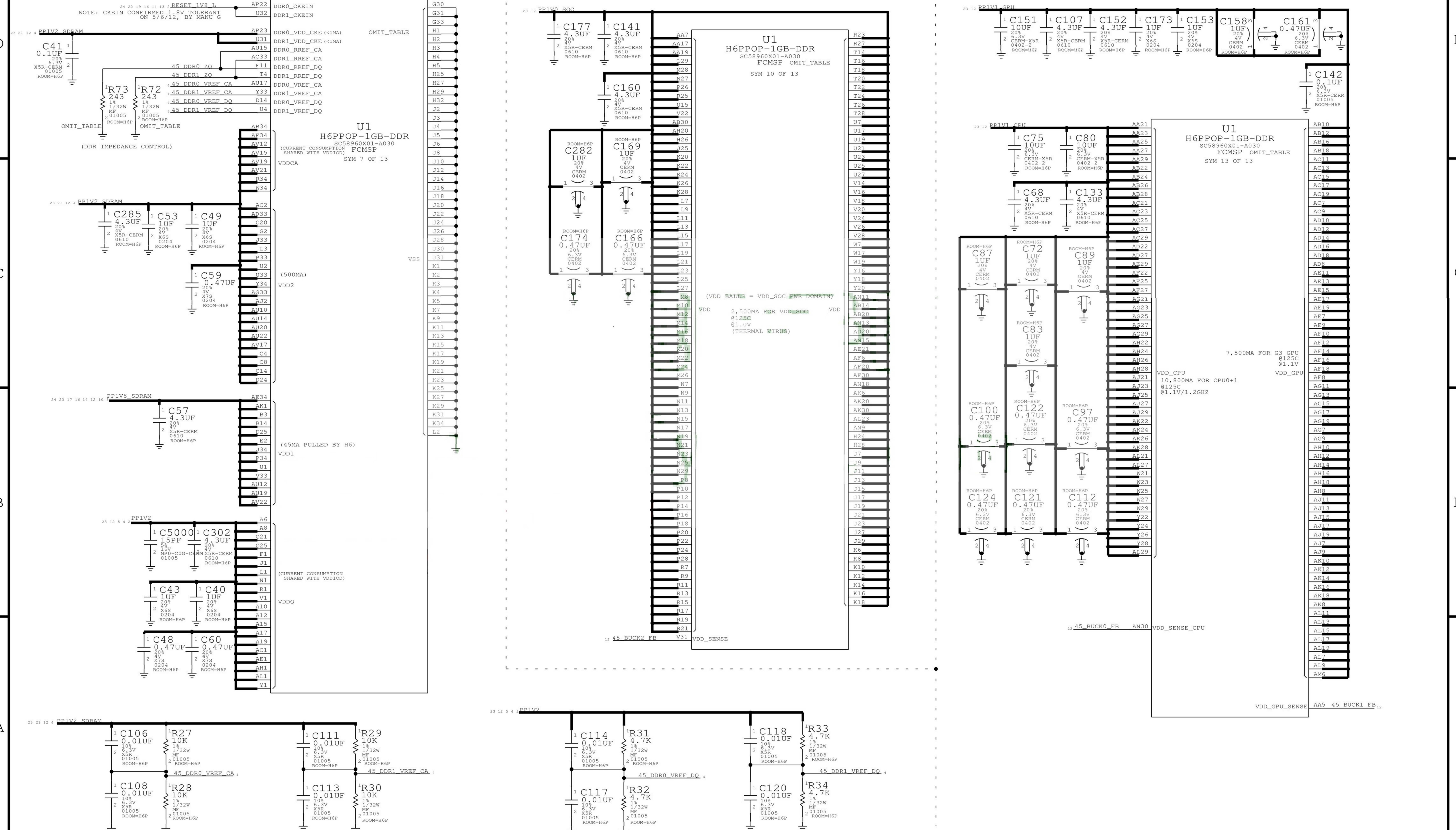
E

H6P: GND, VDDCA, VDD1/2, VDD, VDD_CPU, VDD_GPU

VDDCA, VDD1/2, VDDQ

VDD

VDD_CPU, VDD_GPU

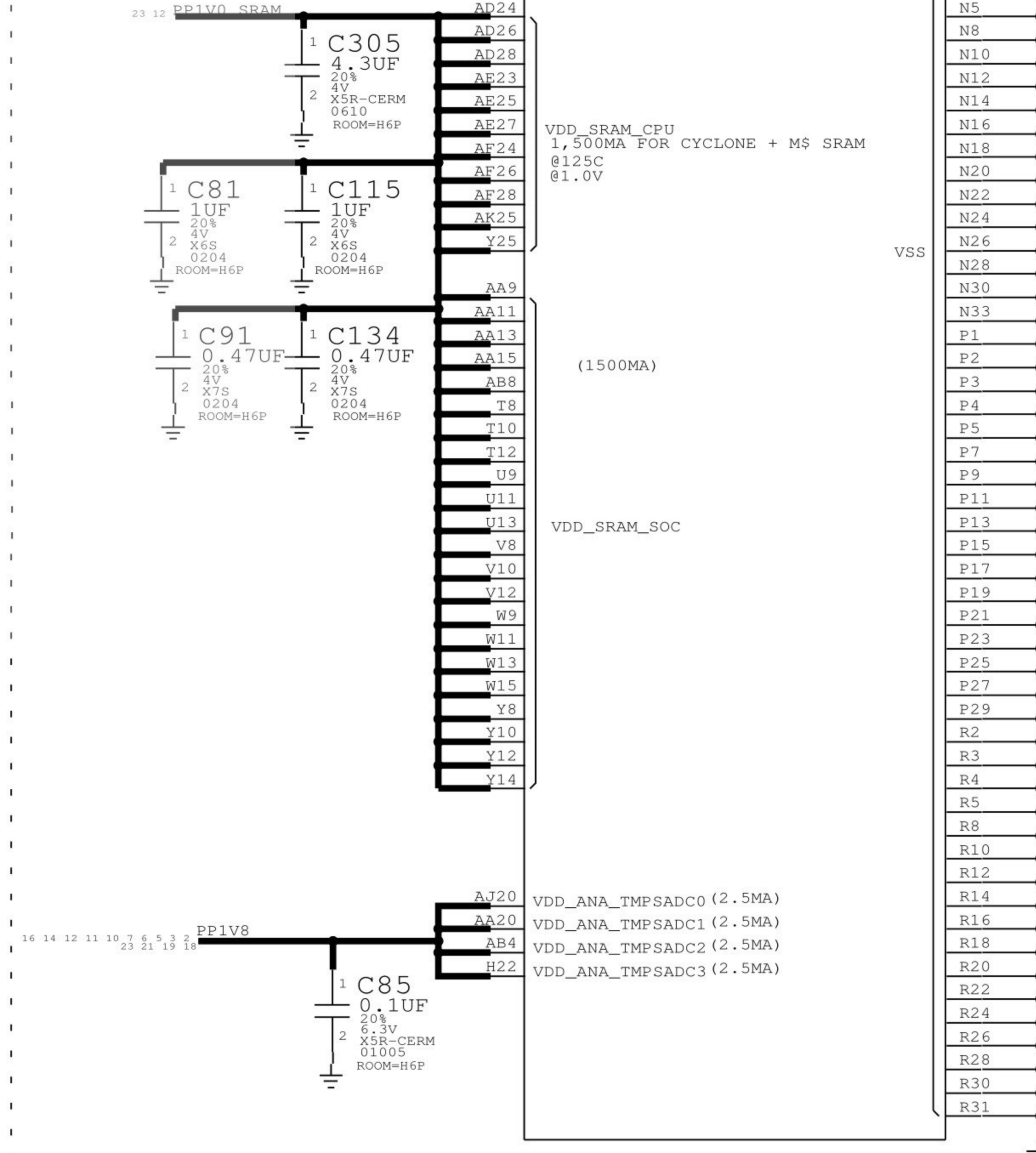
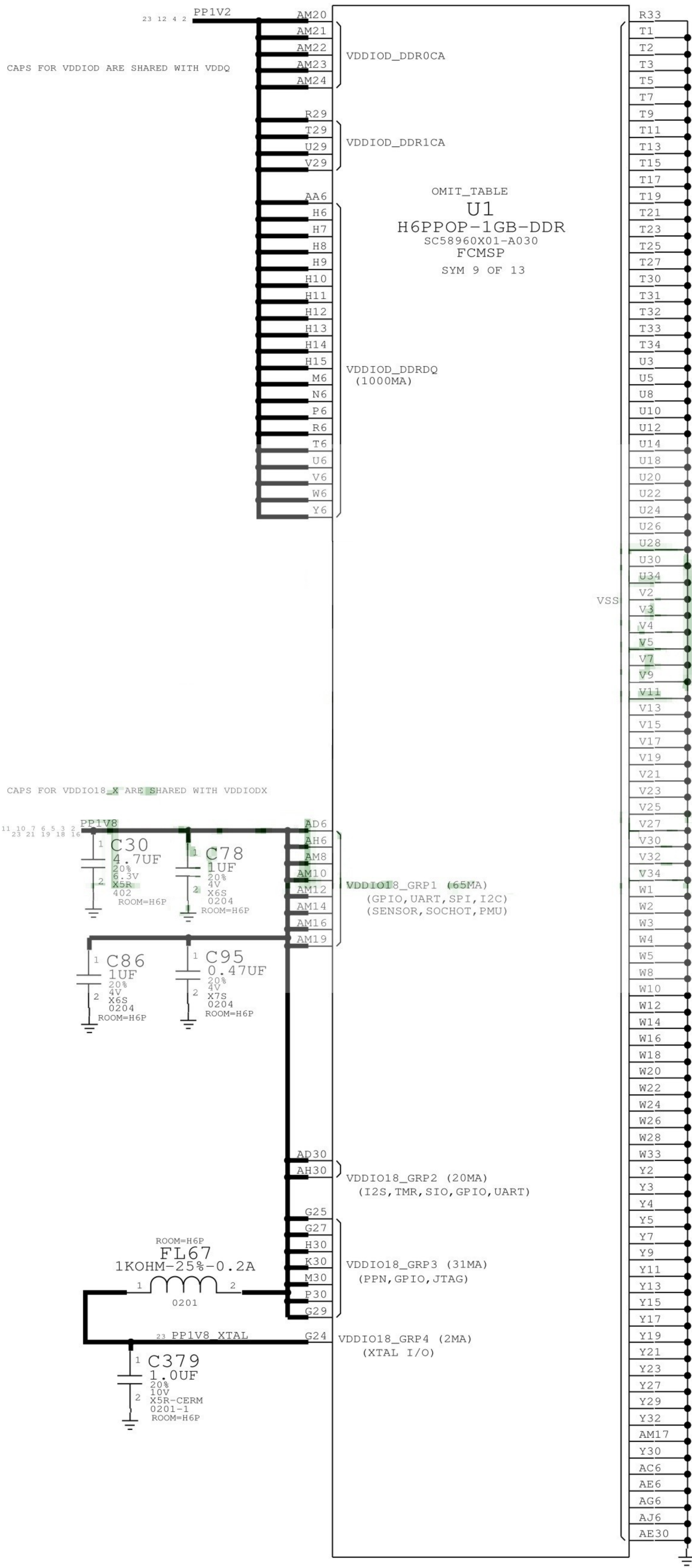
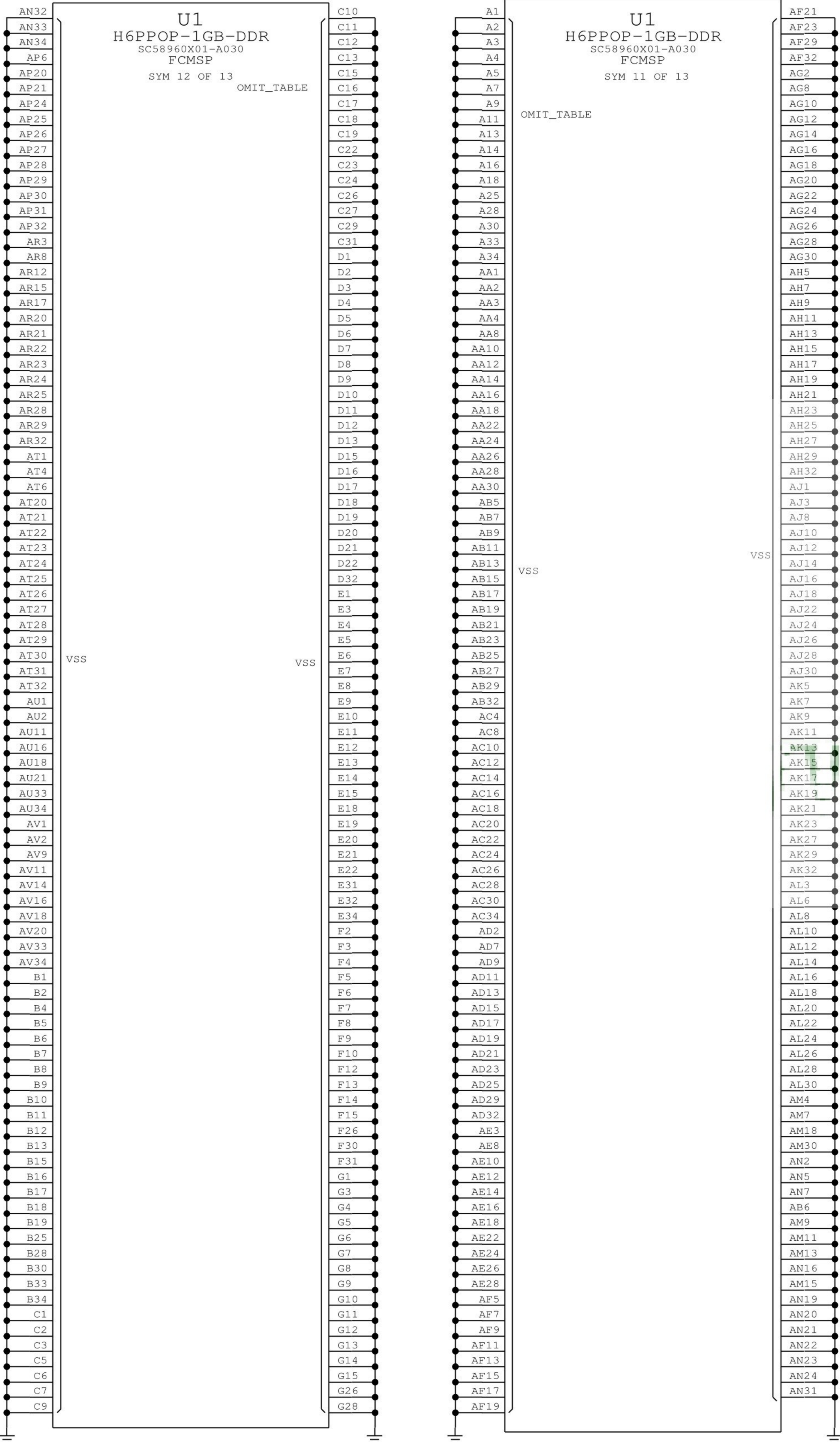


H6P (GND, VDDIO18, VDDIOD, VDD_SRAM, VDD_SOC)

JUST A FEW GNDS

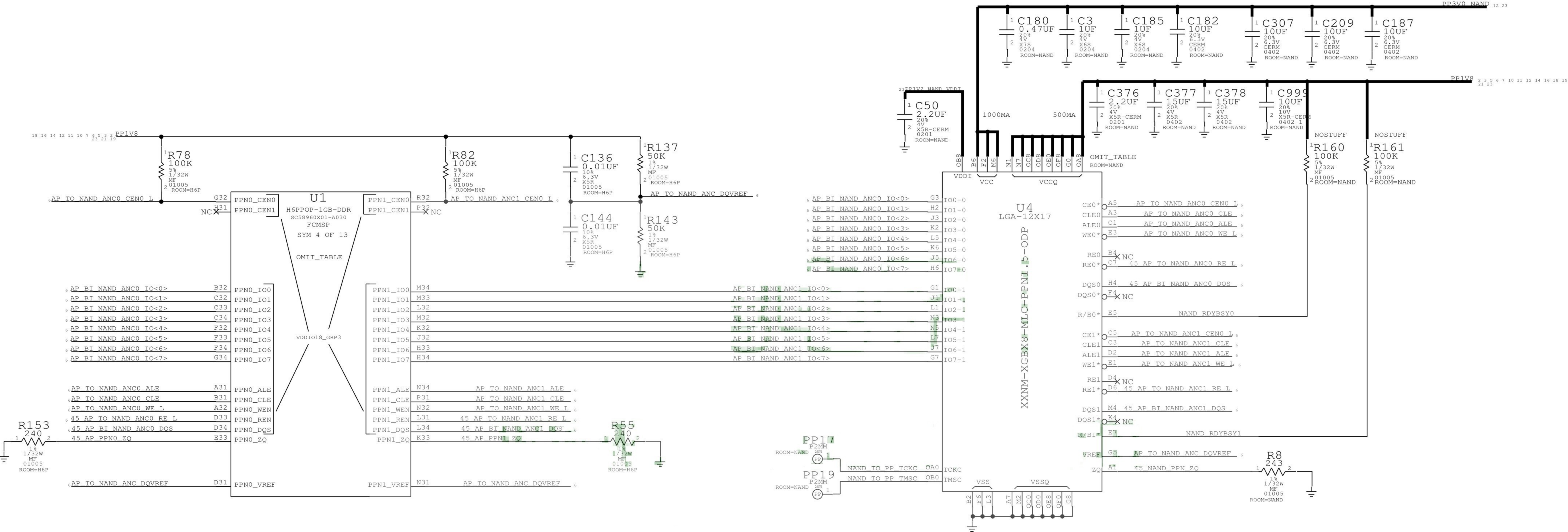
VDDIOD, VDDIO18

VDD_SRAM, VDD_SOC

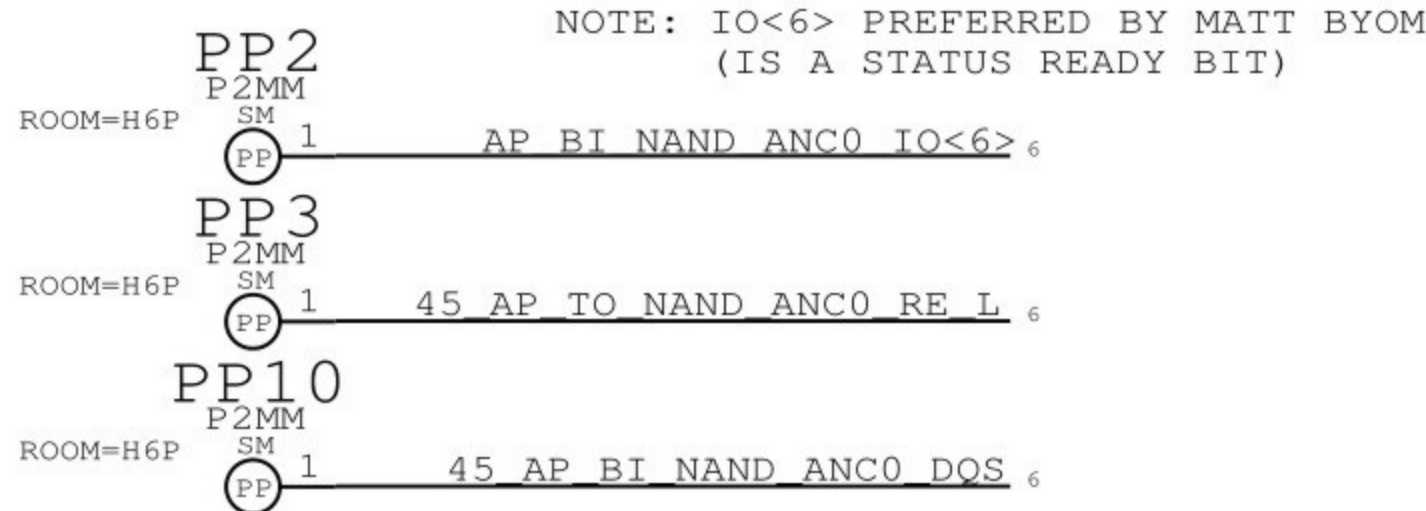


H6P NAND + 12X17 NAND PKG

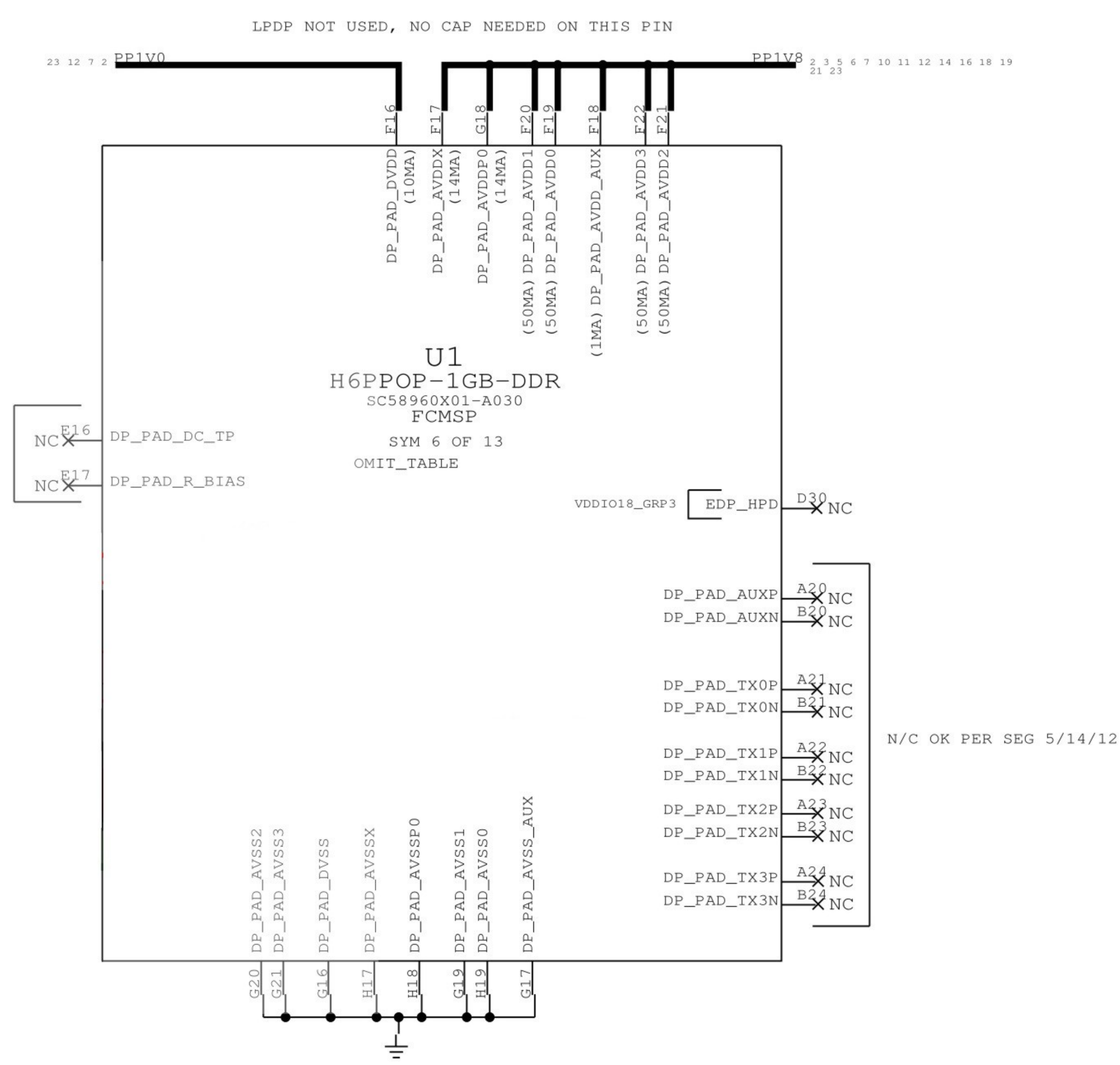
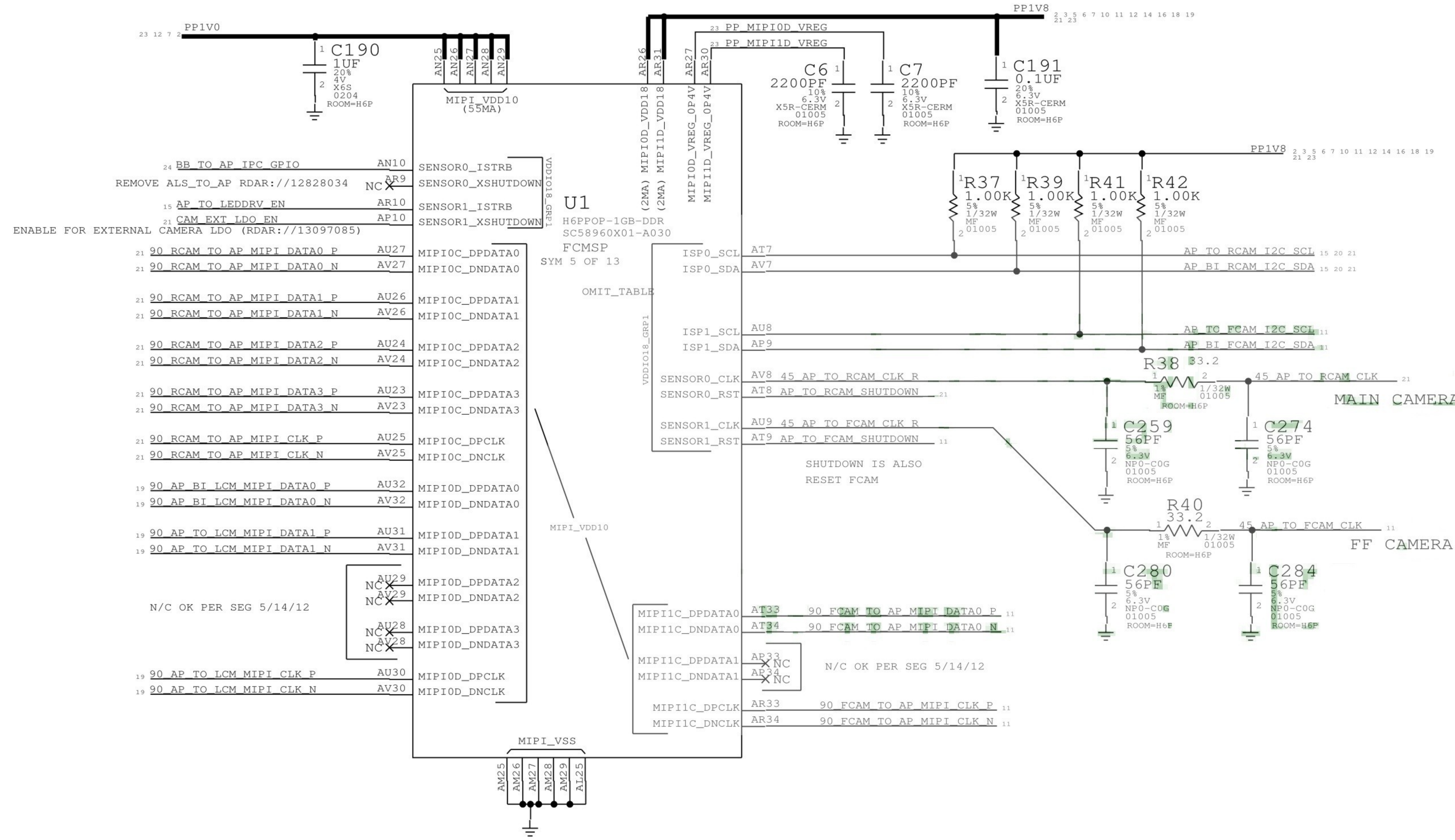
SUPPORT FOR PPN1.5 (1.8V IO) ONLY



NOTE: NAND PADS SHOULD BE SHIELDED FROM TRACES WITH A GROUND PLANE

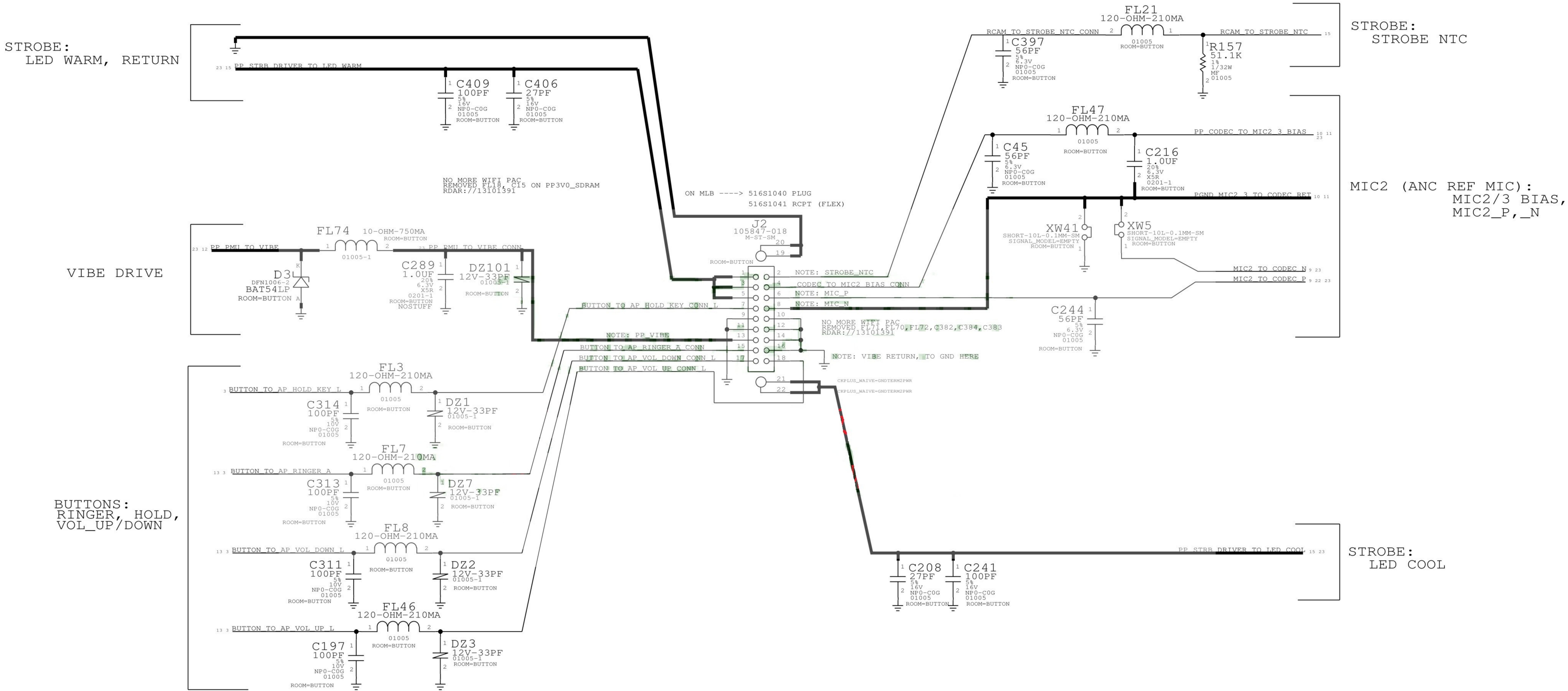


H6P HIGH SPEED DIG (CAM, LCD, DP)



8 7 6 5 4 3 2 1

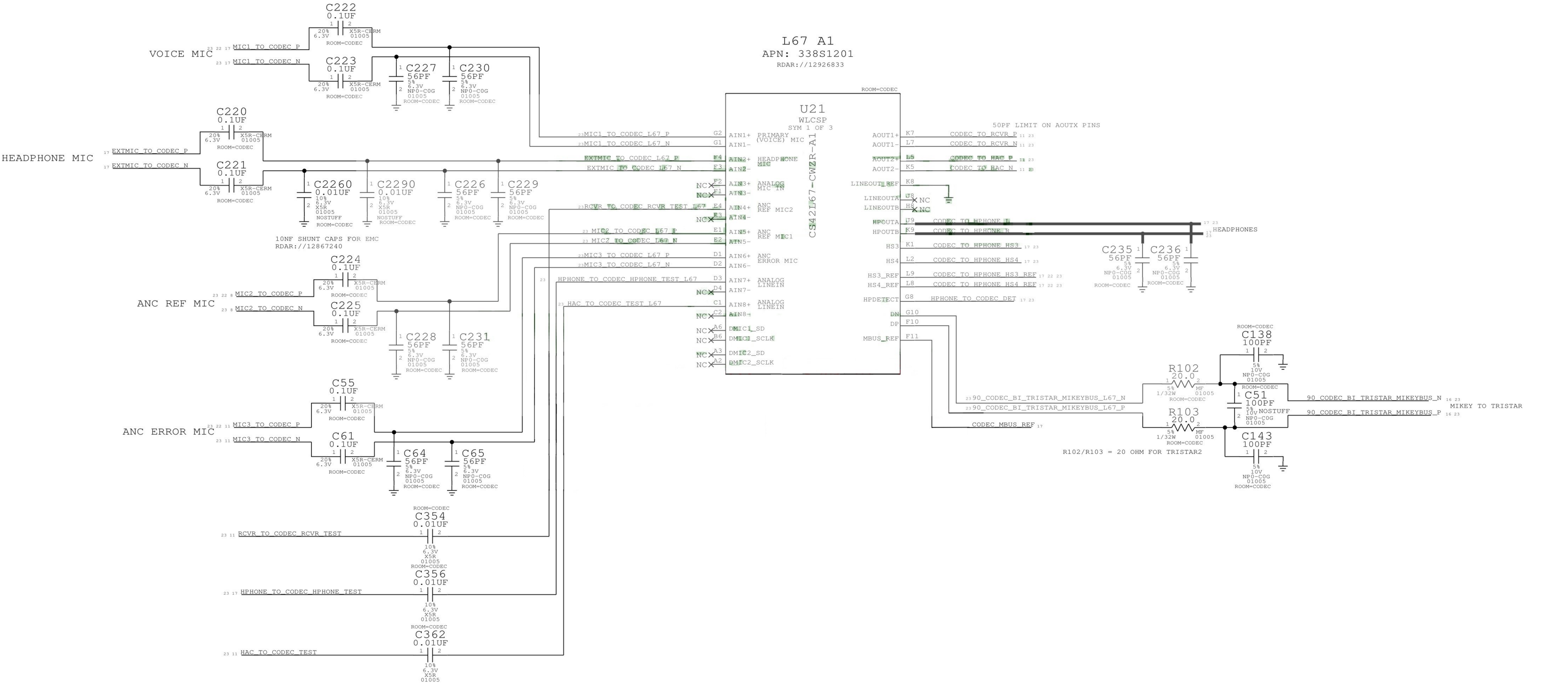
BUTTON FLEX (VIBE DRIVER, BUTTONS, ANC REF MIC, STROBE, STROBE_NTC)



L67 AUDIO CODEC

AUDIO I/O

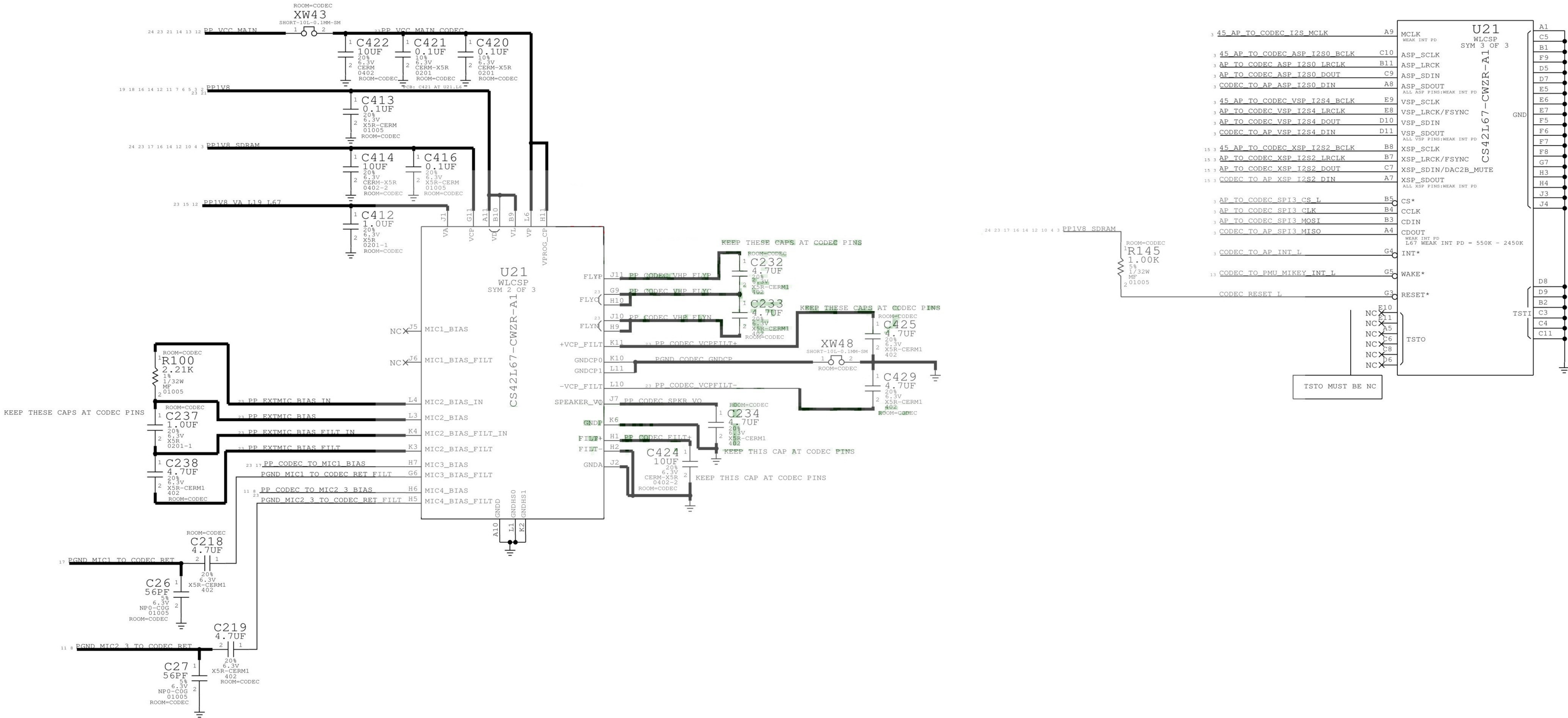
(ANALOG MIC IN, DIG MIC IN, HPOUT, LINEOUT, RECEIVER OUT, MIKEYBUS)



L67 AUDIO CODEC

POWER, MICBIAS

DIGITAL SYSTEM I/O

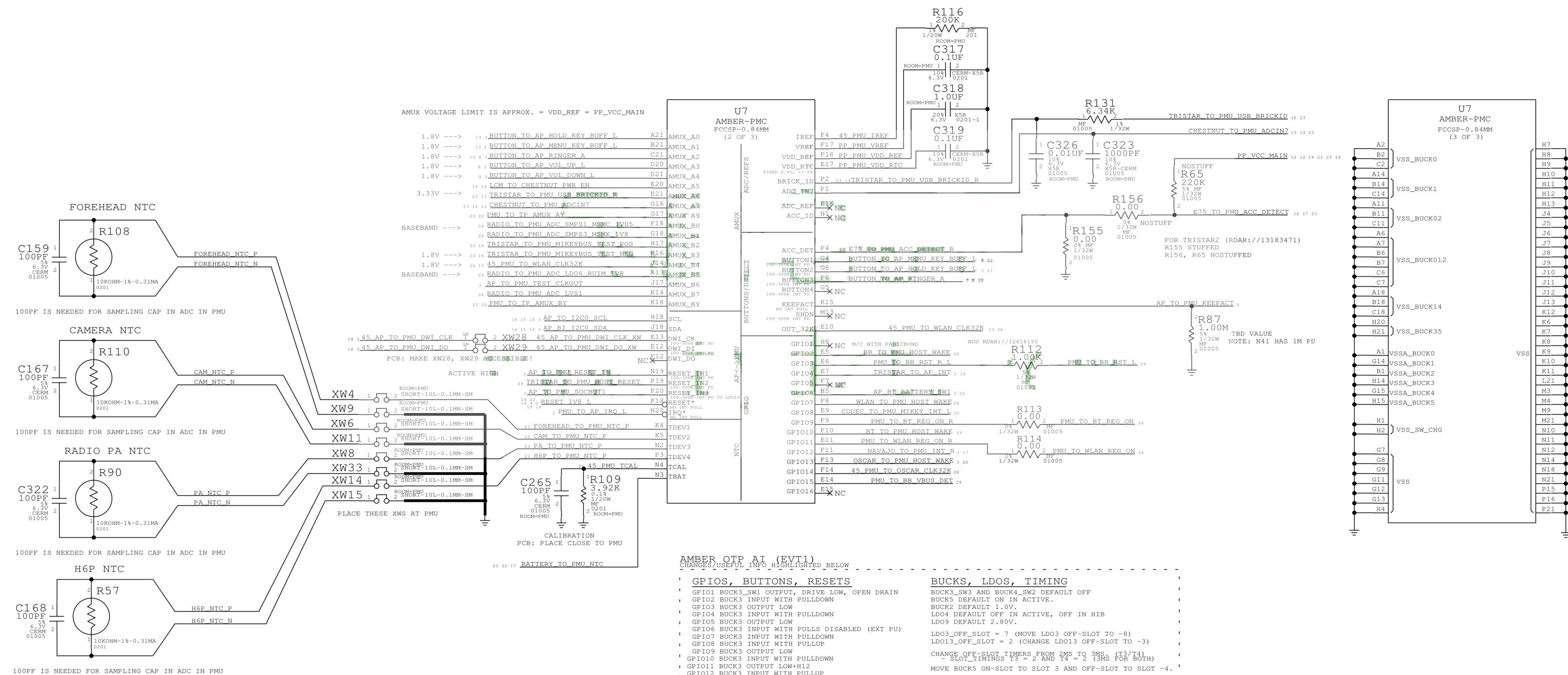


D



CHANGED LDO11 CAP
PER RDAR://12518153


```
(AMUX, GPIO, BUTTONS, ADC, THERMISTORS, SYSTEM I/F, GND)
```



AMBER OTP AI (EVT1)
CHANGES/USEFUL INFO HIGHLIGHTED BELOW

GPIOS, BUTTONS, RESETS

```

GPIO1 BUCK3_SW1 OUTPUT, DRIVE LOW, OPEN DRAIN          BUCK3_SW3 AND B
GPIO2 BUCK3 INPUT WITH PULLDOWN                          BUCK5 DEFAULT 0
GPIO3 BUCK3 OUTPUT LOW                                    BUCK2 DEFAULT 1
GPIO4 BUCK3 INPUT WITH PULLDOWN                          LDO4 DEFAULT 0
GPIO5 BUCK3 OUTPUT LOW                                    LDO9 DEFAULT 2.
GPIO6 BUCK3 INPUT WITH PULLS DISABLED (EXT PU)
GPIO7 BUCK3 INPUT WITH PULLDOWN
GPIO8 BUCK3 INPUT WITH PULLUP
GPIO9 BUCK3 OUTPUT LOW                                     CHANGE OFF-SLOT
GPIO10 BUCK3 INPUT WITH PULLDOWN                          - SLOT_TIMING
GPIO11 BUCK3 OUTPUT LOW+H12                                MOVE BUCK5 ON-S
GPIO12 BUCK3 INPUT WITH PULLUP
GPIO13 BUCK3 INPUT WITH PULLDOWN
GPIO14 BUCK3 OUTPUT LOW
GPIO15 VDD_MAIN OUTPUT LOW
GPIO16 BUCK3_SW1 INPUT WITH PULLDOWN

BUTTON2 WAKE FROM HIB AND STBY.
BUTTON4 PULLUP TO BUCK3

```

BUCKS, LDOS, TIMING

```

BUCK3_SW3 AND BUCK4_SW2 DEFAULT OFF
BUCK5 DEFAULT ON IN ACTIVE.
BUCK2 DEFAULT 1.0V.
LD04 DEFAULT OFF IN ACTIVE, OFF IN HIB
LD09 DEFAULT 2.80V.

LD03_OFF_SLOT = 7 (MOVE LD03 OFF-SLOT TO -8)
LD013_OFF_SLOT = 2 (CHANGE LD013 OFF-SLOT TO -3)

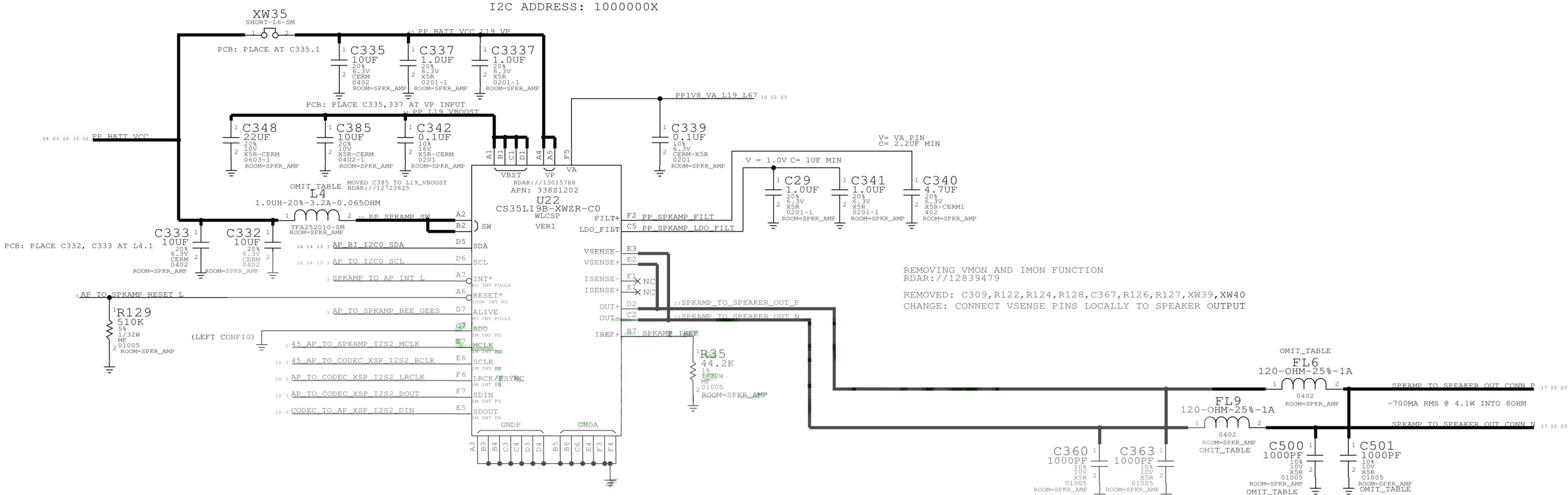
CHANGE OFF-SLOT TIMERS FROM 2MS TO 3MS. (T3/T4)
-SLOT_TIMINGS T3 = 2 AND T4 = 2 (3MS FOR BOTH)

MOVE BUCK5 ON-SLOT TO SLOT 3 AND OFF-SLOT TO SLOT -4

```

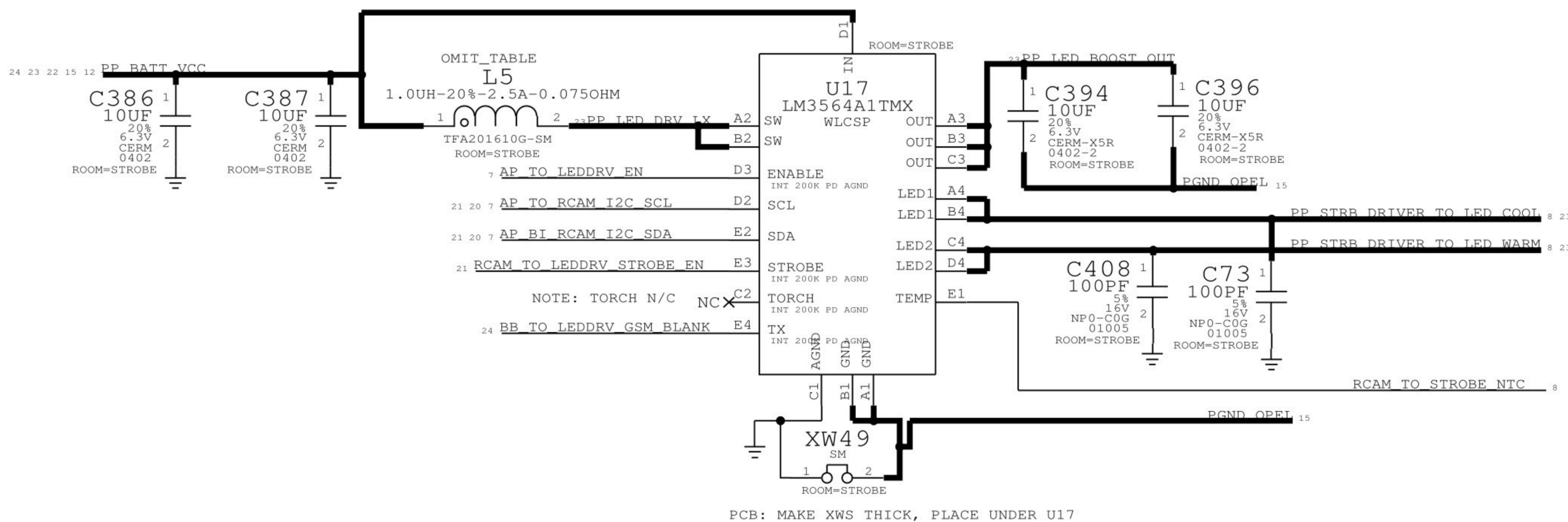

SPEAKER AMP, LED DRIVER

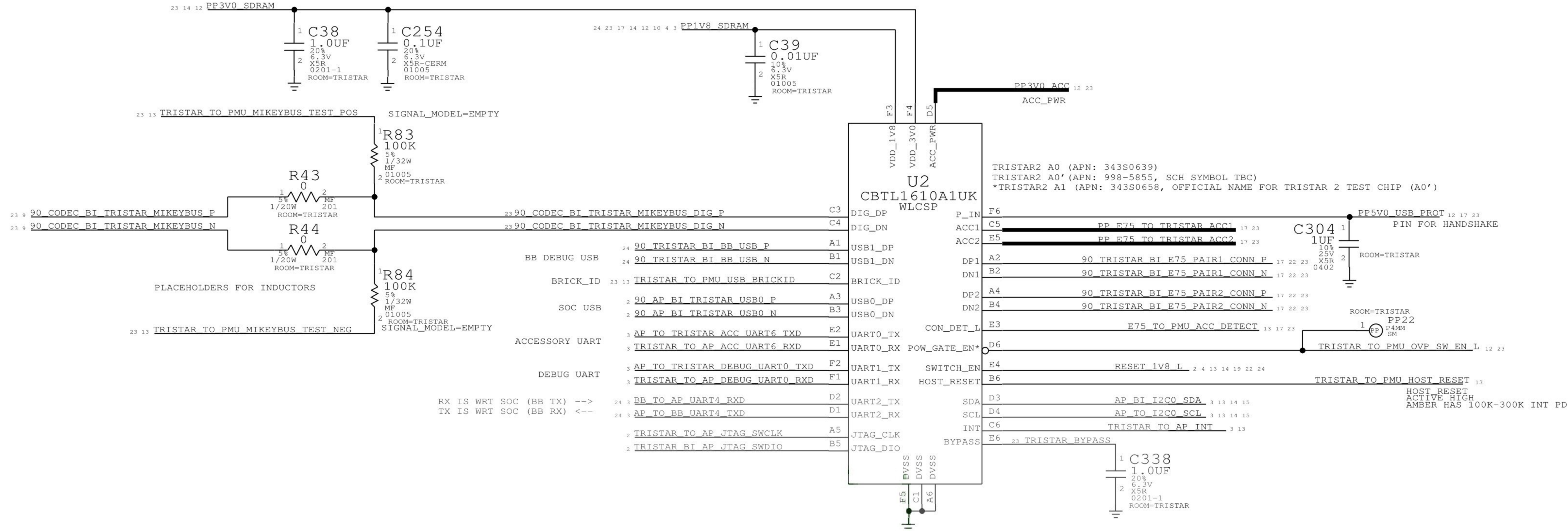
L19 SPEAKER AMP



STROBE DRIVER (OPEL)

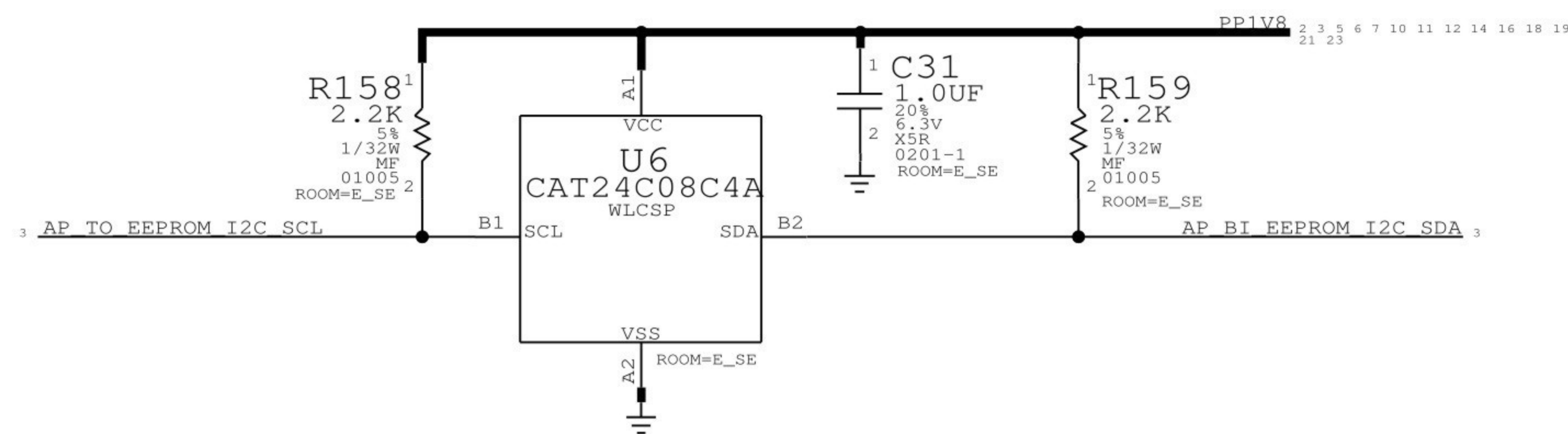
TI: APN 353S3899





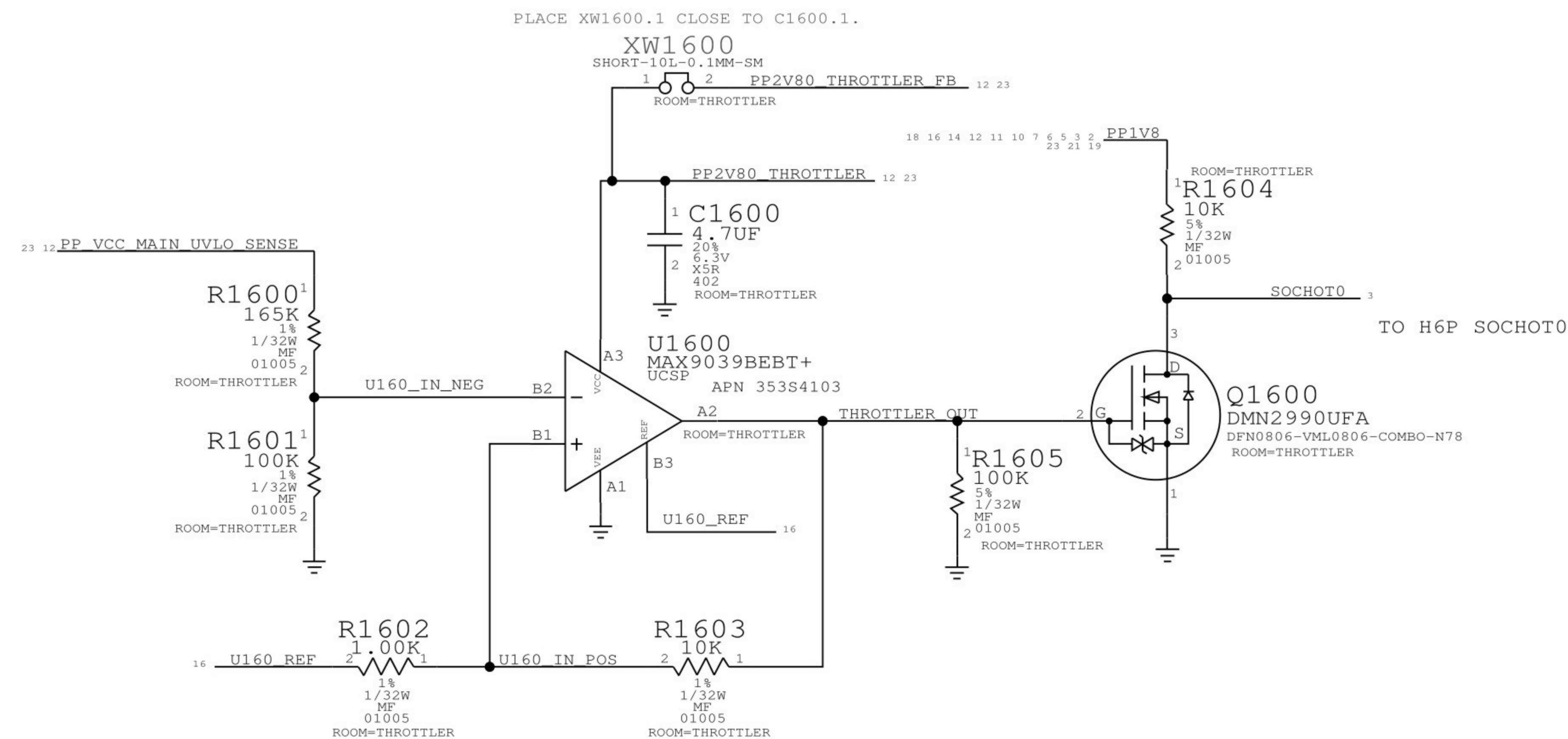
EEPROM

ONSEMI EEPROM
APN:335S0894



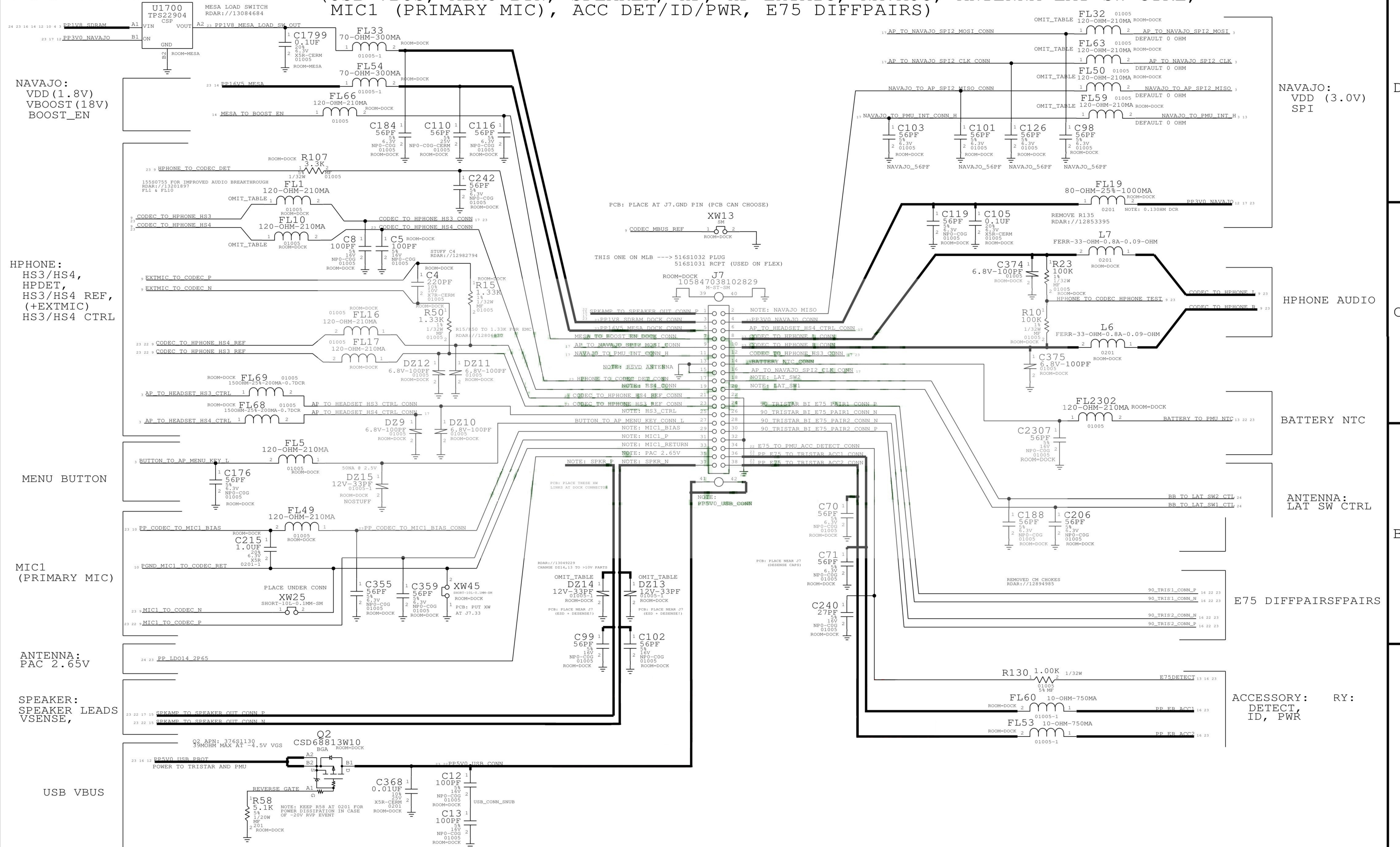
THROTTLER

RDAR://13057149



DOCKFLEX B2B

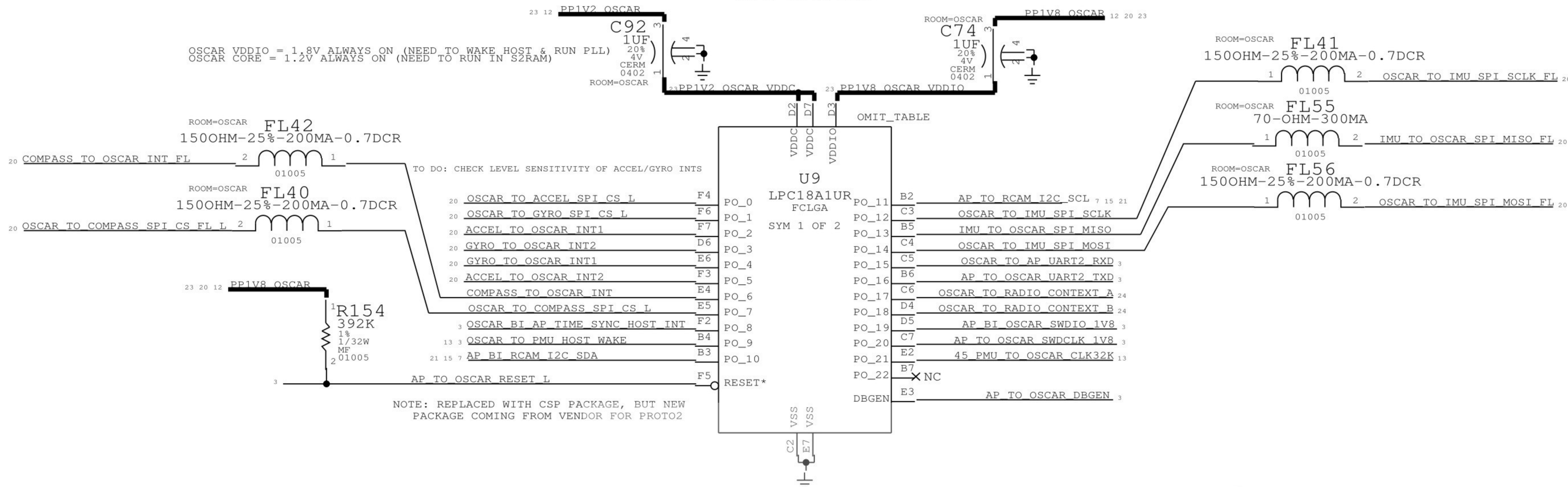
(USB VBUS, MENU BTN, SPEAKER, HP, HP EXTMIC, NAVAJO, ANTENNA LAT SW CTRL,
MIC1 (PRIMARY MIC), ACC DET/ID/PWR, E75 DIFFPAIRS)



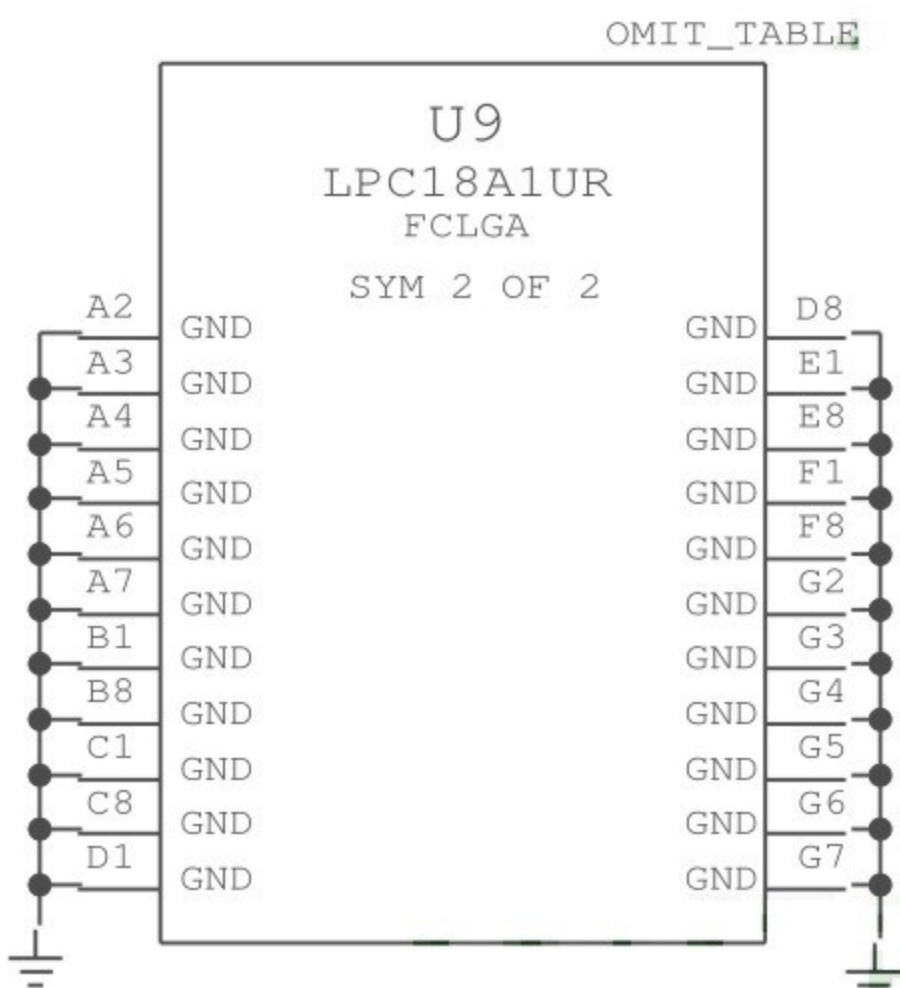
OSCAR + SENSORS

OSCAR MODULE (CONFORMAL COATED)

APN 337S4417



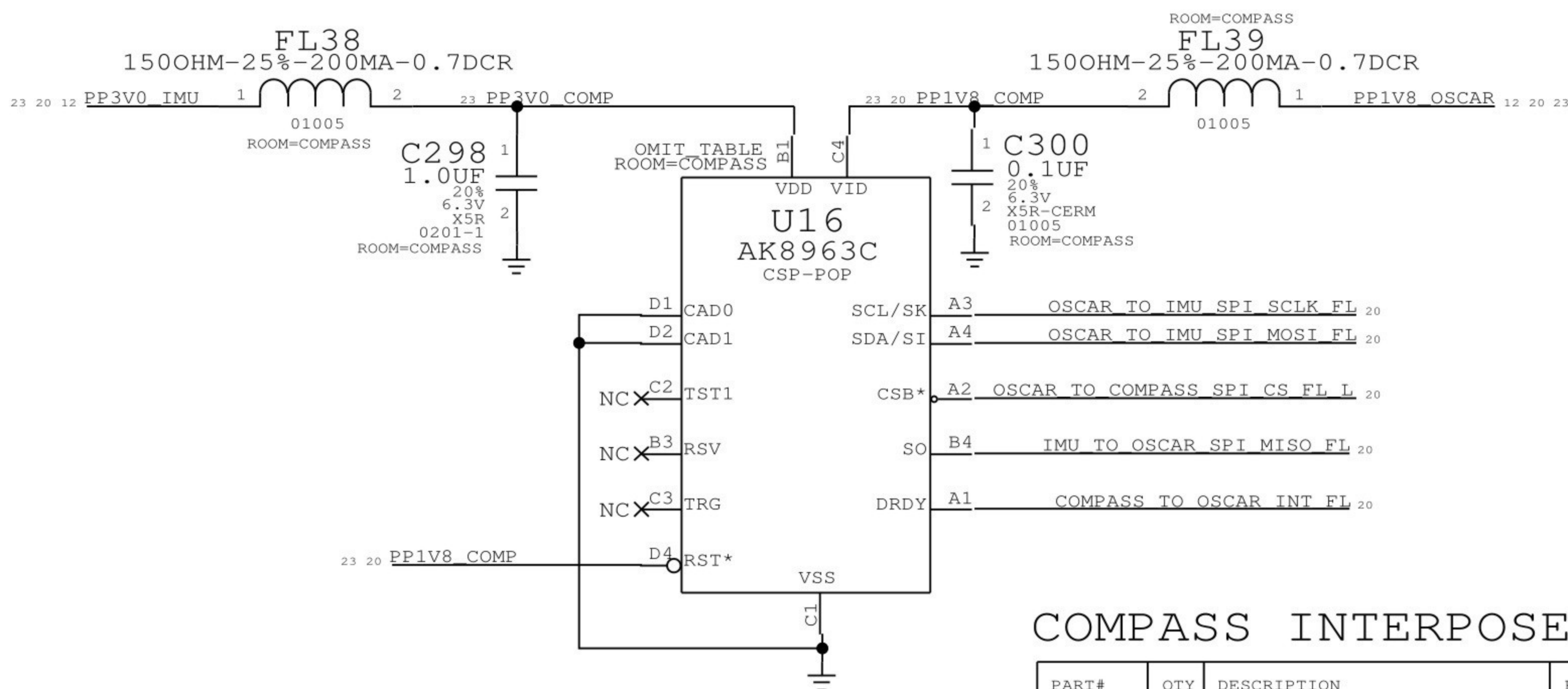
OSCAR MODULE GND BALLS
(THIS SYMBOL DOES NOT EXIST ON OSCAR CSP)



THIS PART OUTSIDE OF SHIELD

COMPASS

COMPASS CSP: 338S1014
COMPASS INTERPOSER (FOOTPRINT ONLY): 998-5120
COMPASS INTERPOSER MODULE: 639-4269



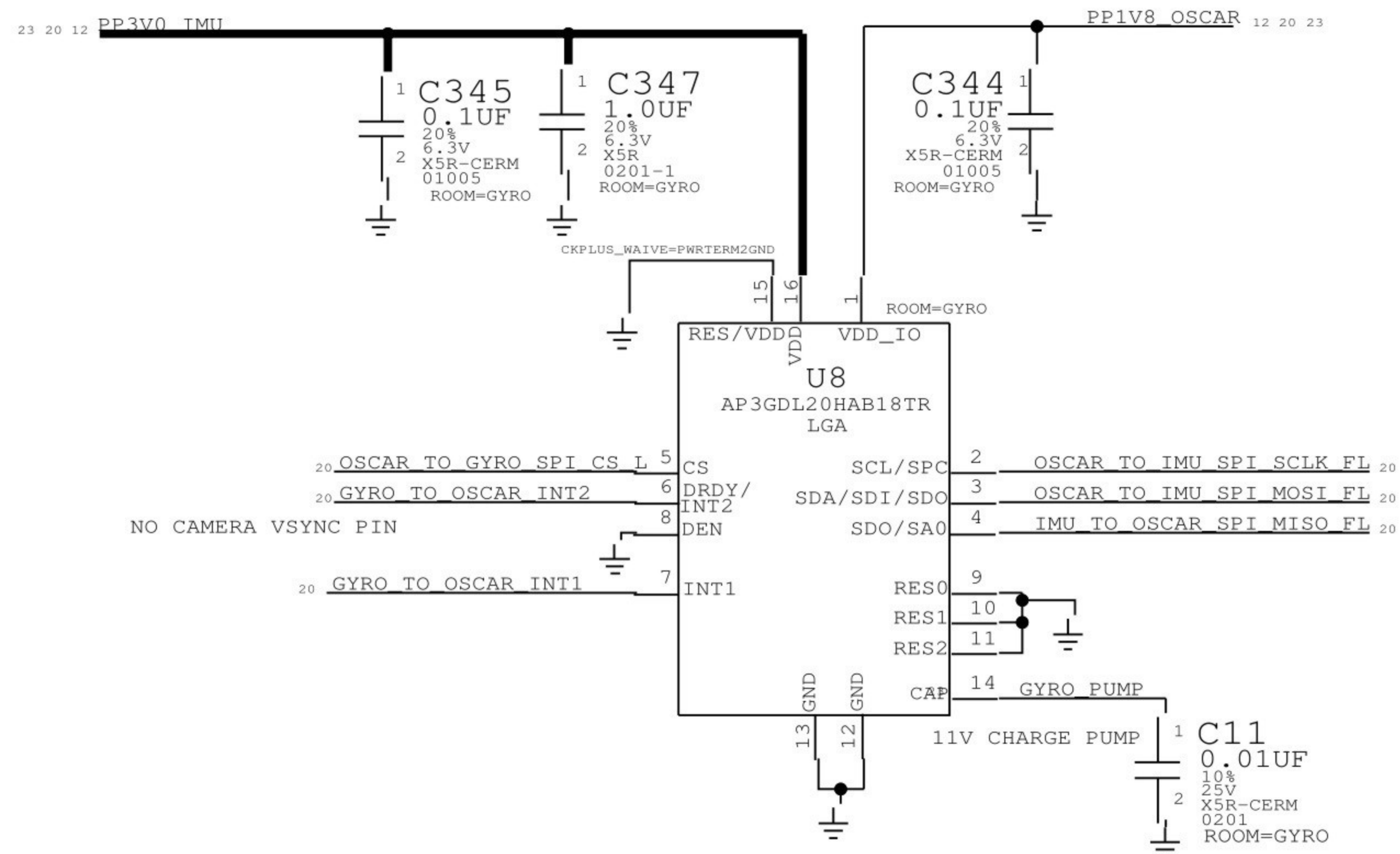
COMPASS INTERPOSER

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
639-4269	1	COMPASS INTERPOSER X152/X145	U16	CRITICAL	COMPASS_INTERPOSER

THESE PARTS INSIDE OF SHIELD

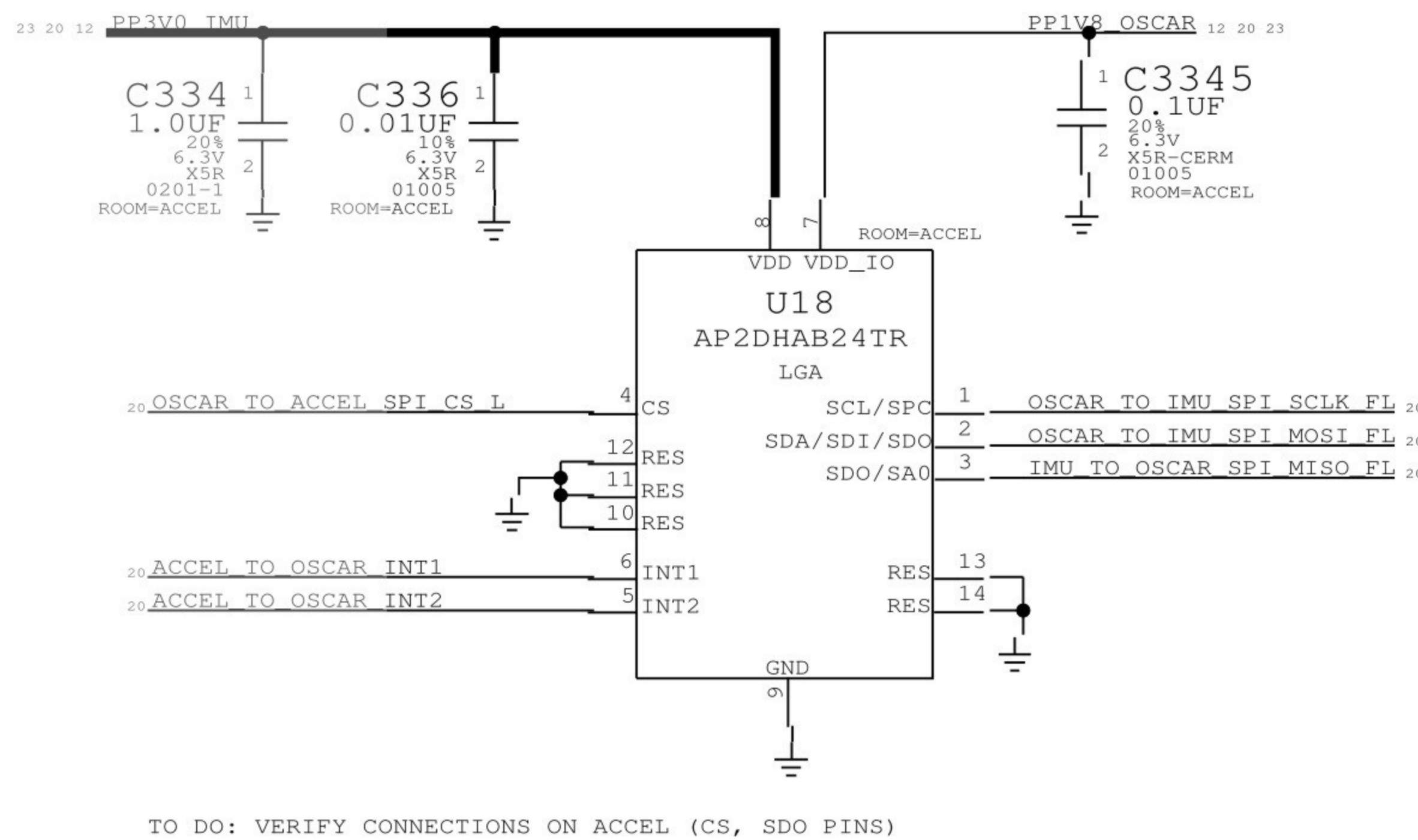
GYRO

ST MICRO AP3GDL20HAB, APN 338S1192



ACCELEROMETER

ST MICRO AP2DHAB, APN 338S1191

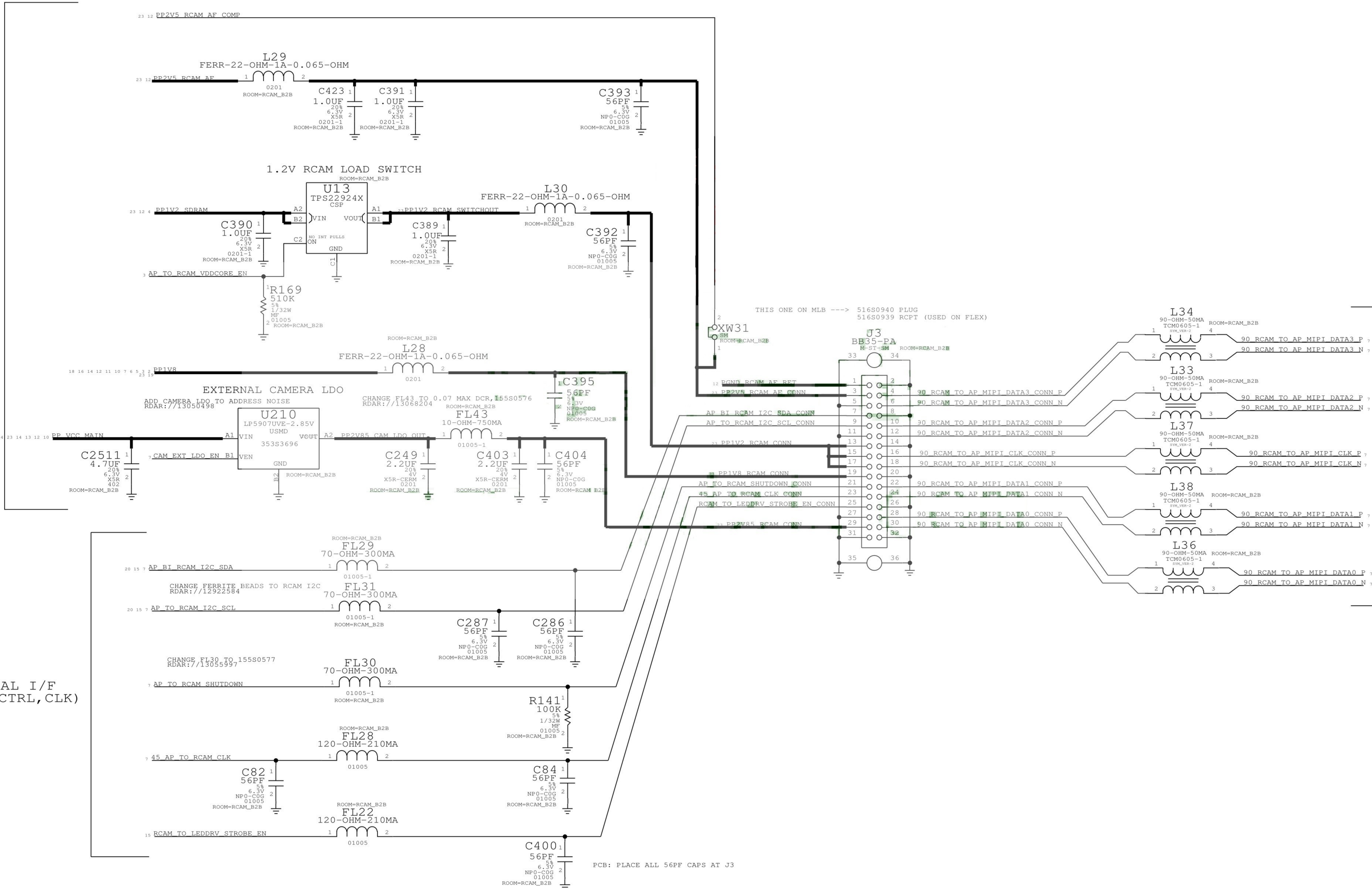


RCAM B2B (REAR CAMERA CONNECTOR)

RCAM:
POWER:
(1.8V DVDD)
(2.8V AVDD)
(1.2V VCC)
(2.5V AF)

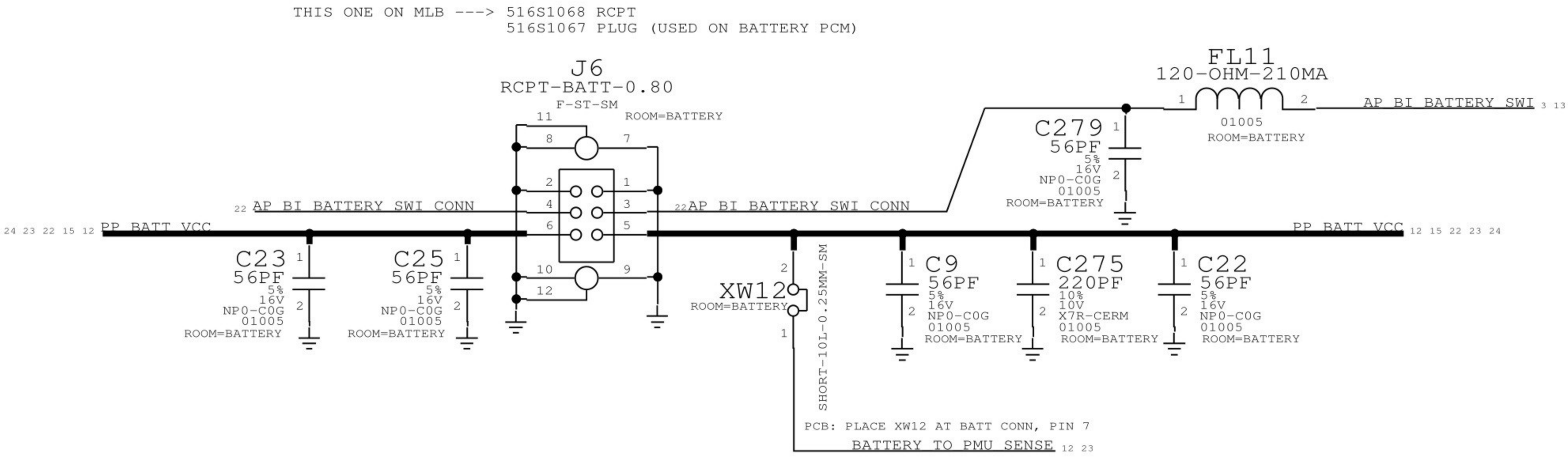
RCAM:
DIGITAL I/F
(I2C, CTRL, CLK)

RCAM:
4-LANE MIPI

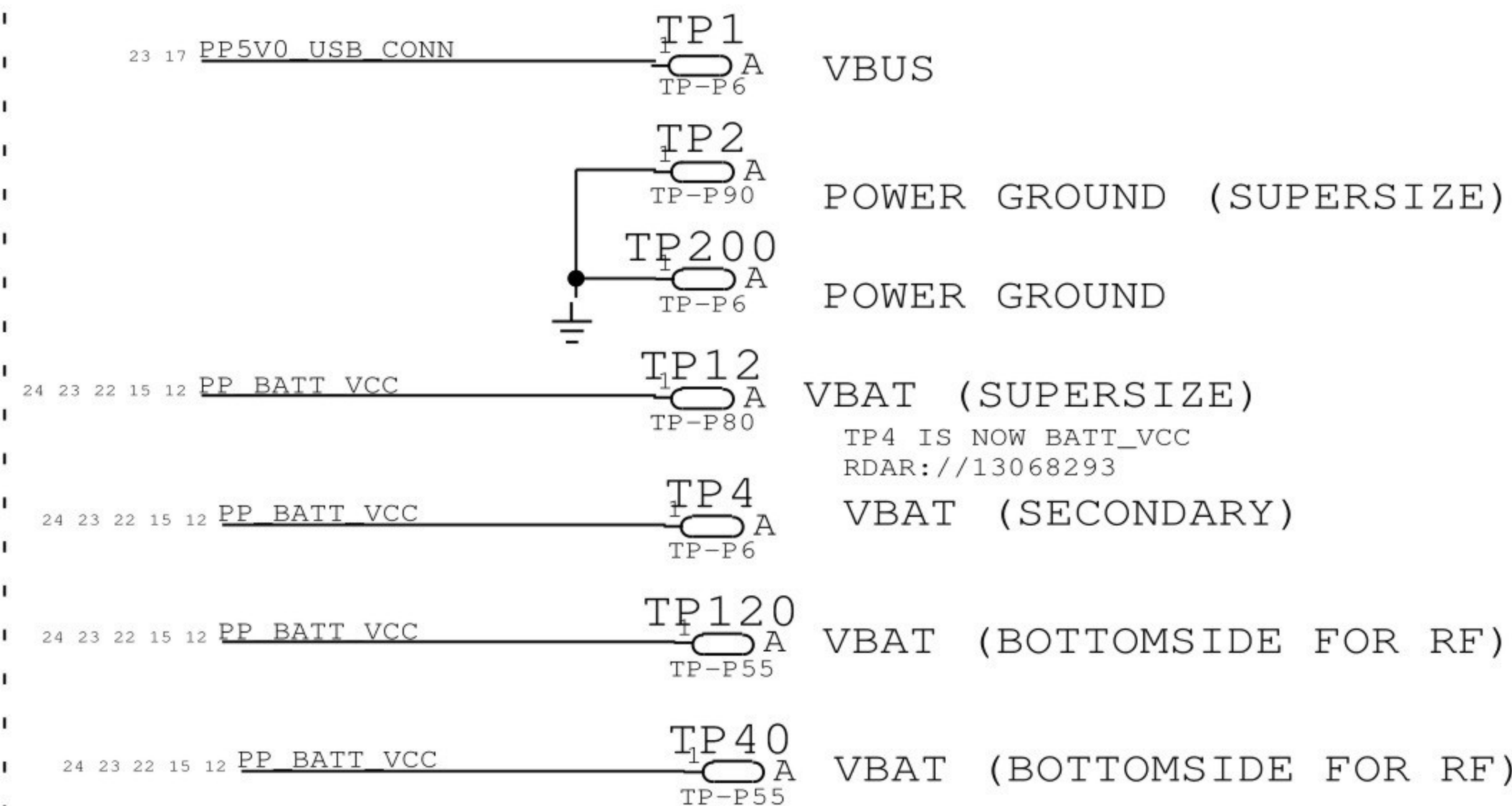


BATT CONN, TPS, STANDOFFS/SHIELDS/FIDUCIALS

BATTERY CONN

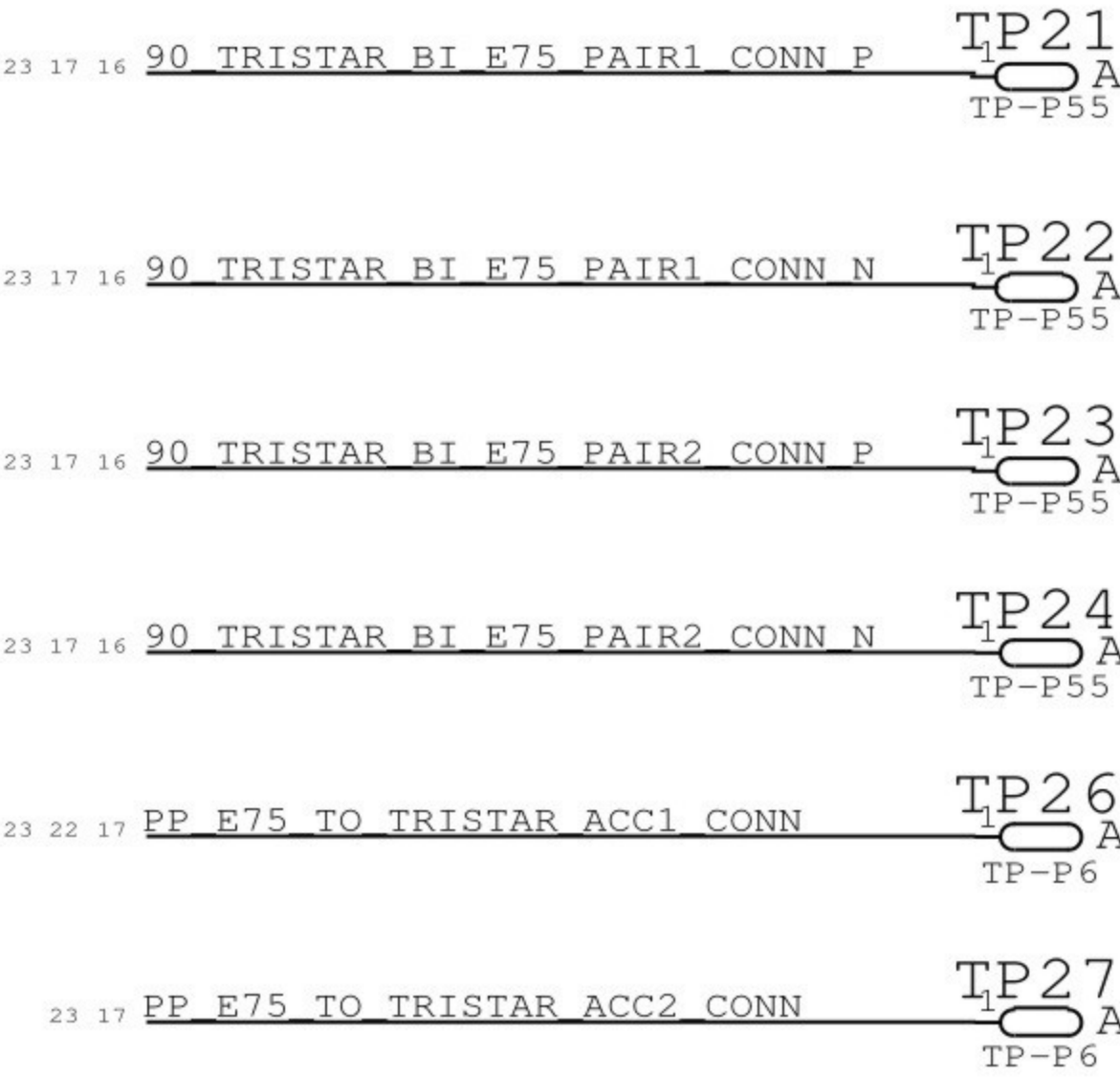


POWER TP



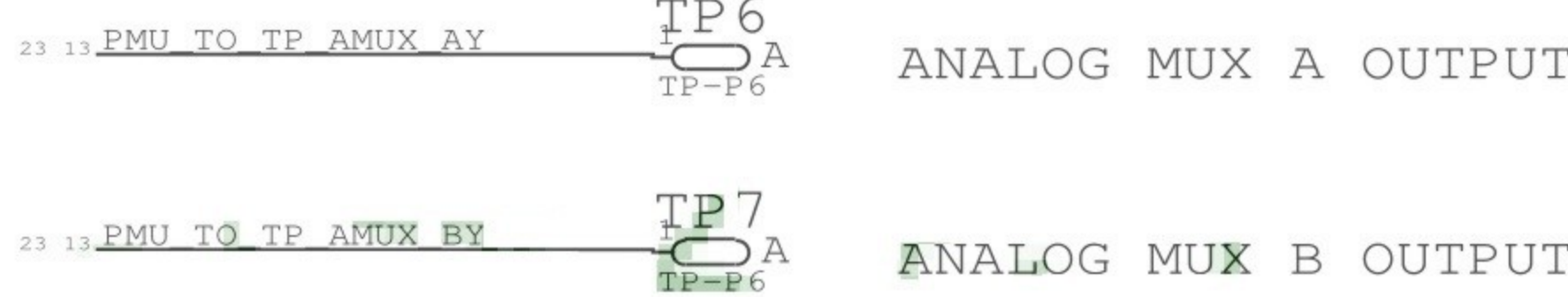
TESTPOINTS

E75 - USB/UART/ID/POWER



ACCESSORY ID AND POWER

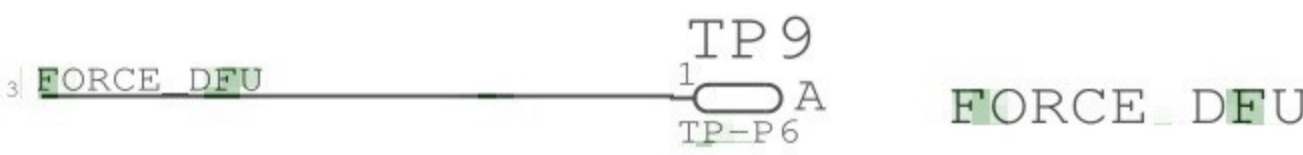
SUPER TP



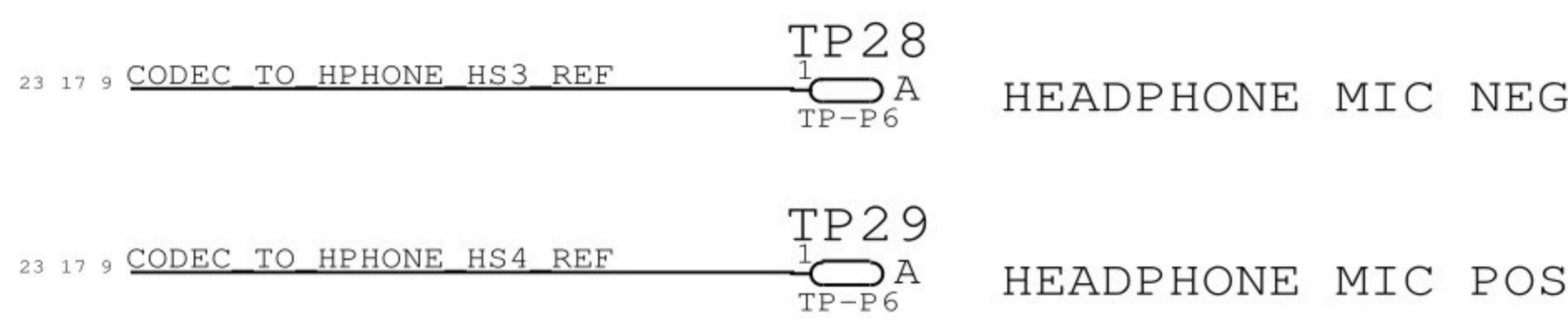
RESET



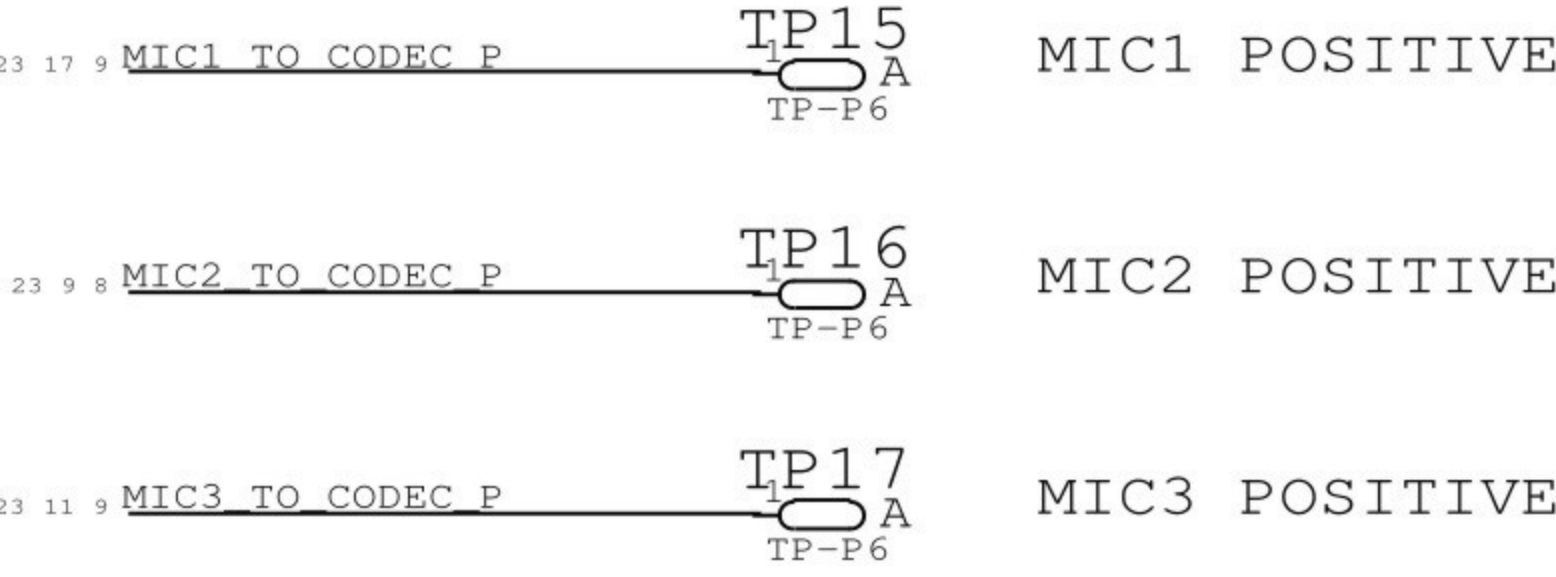
DFU



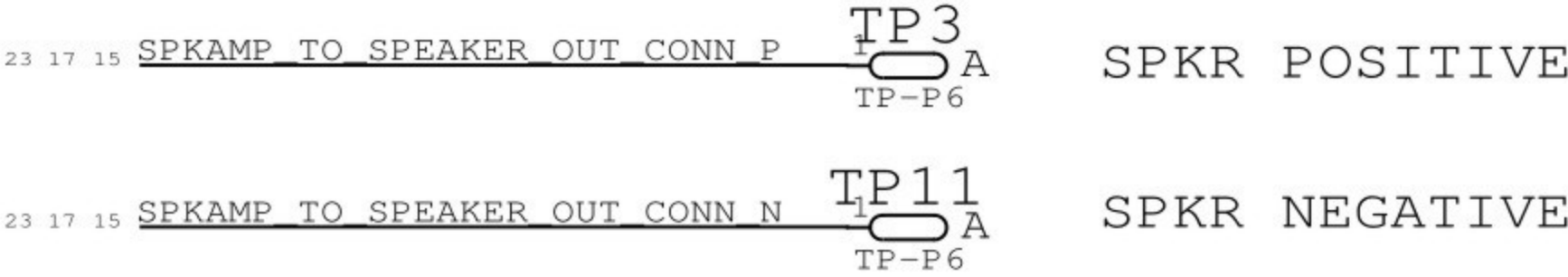
HEADPHONE MIC



MIC AUDIO

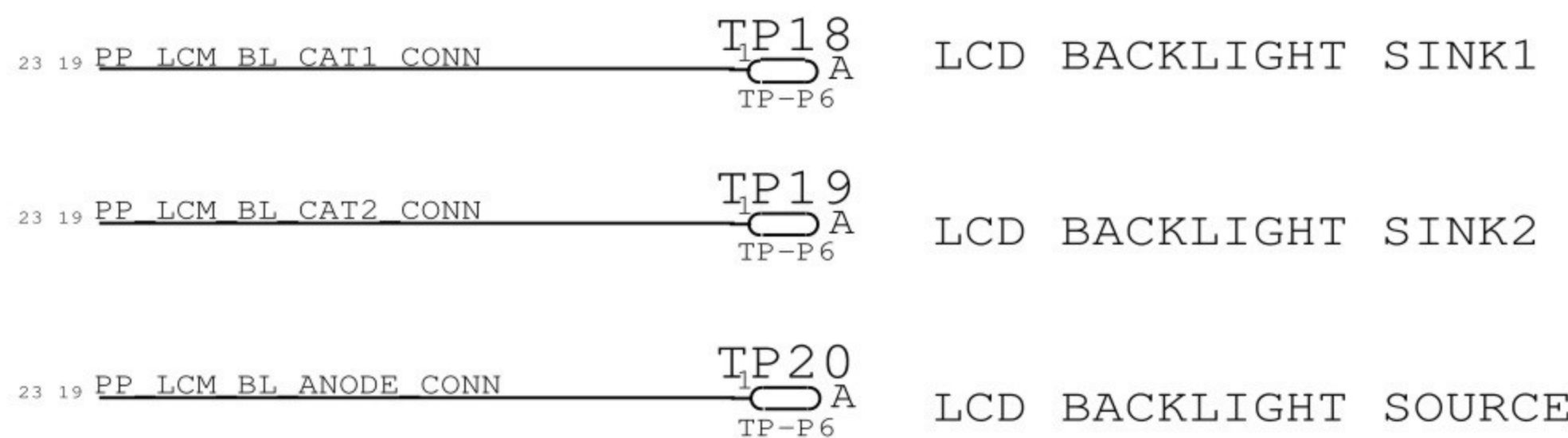


DRIVE MIC WRT NEAREST GROUND TEST POINT

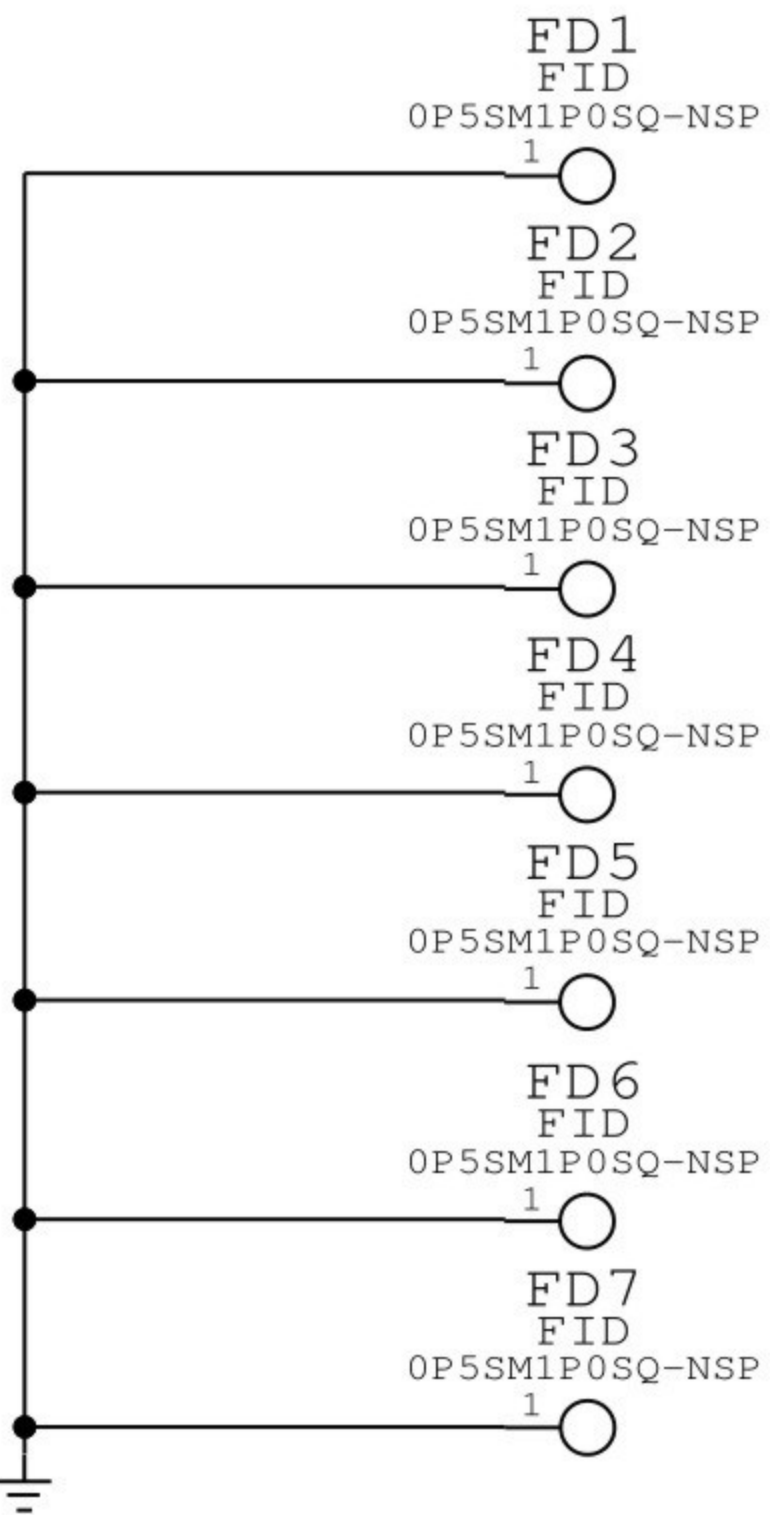


ADDED PER
RDAR://12611131

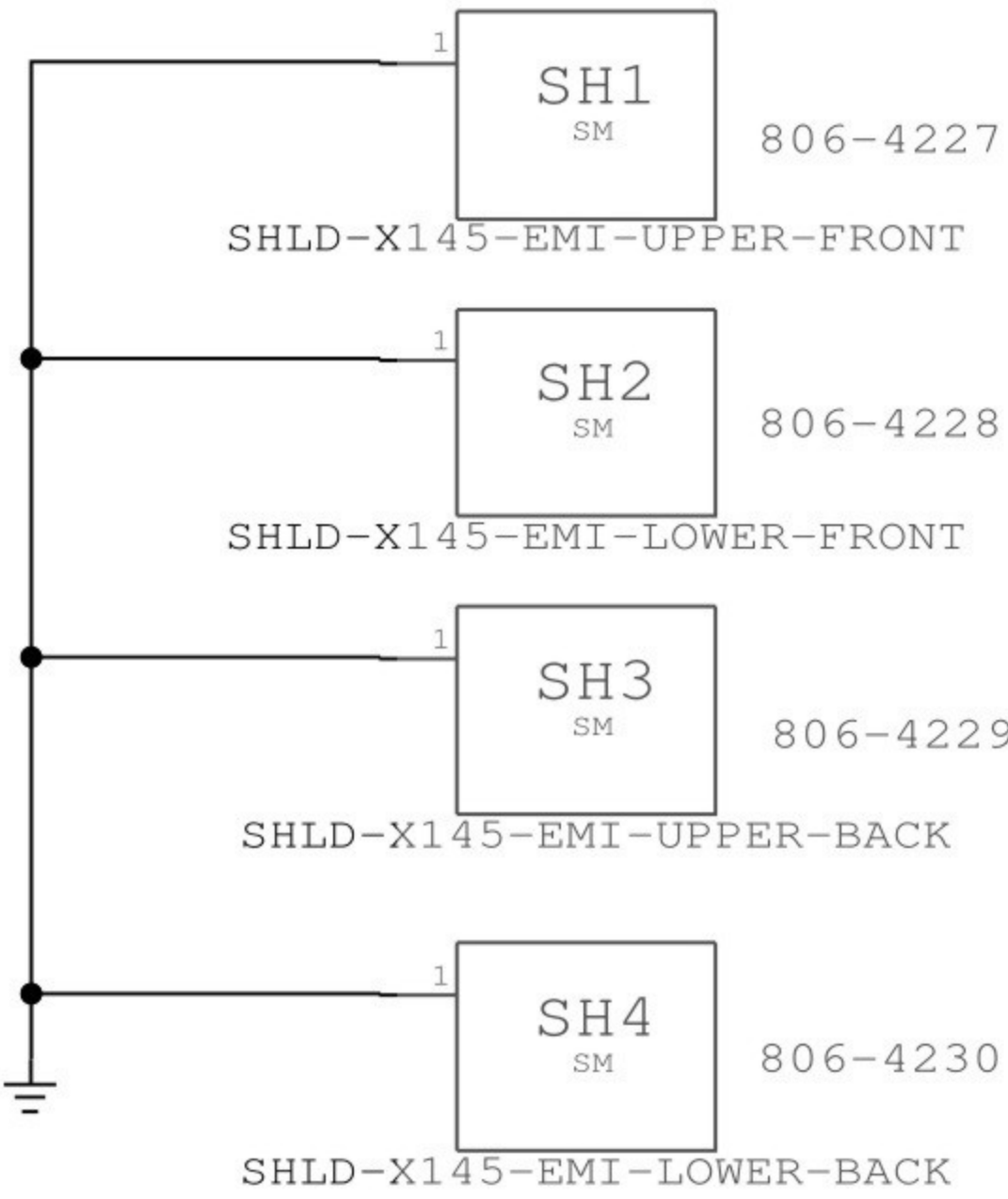
LCM BACKLIGHT



FIDUCIALS



SHIELDS

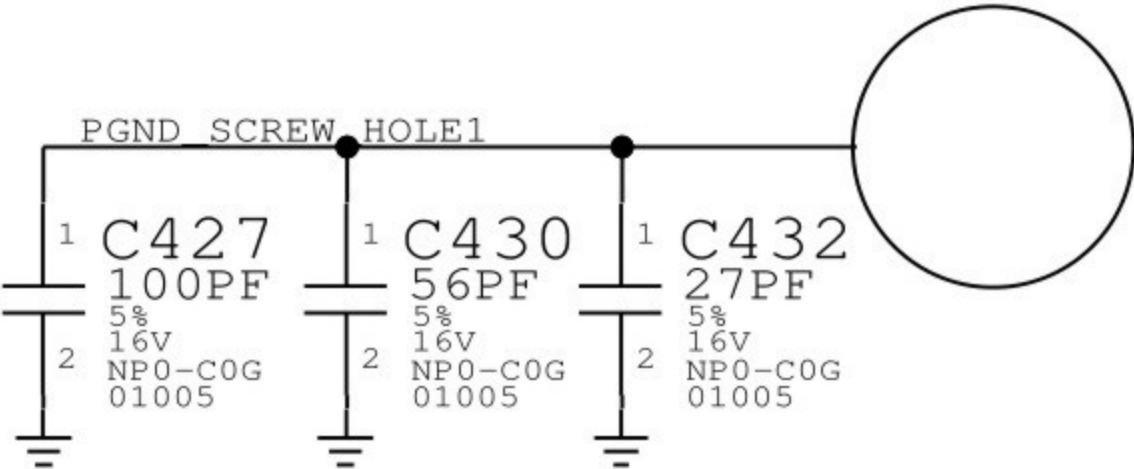


COWLING

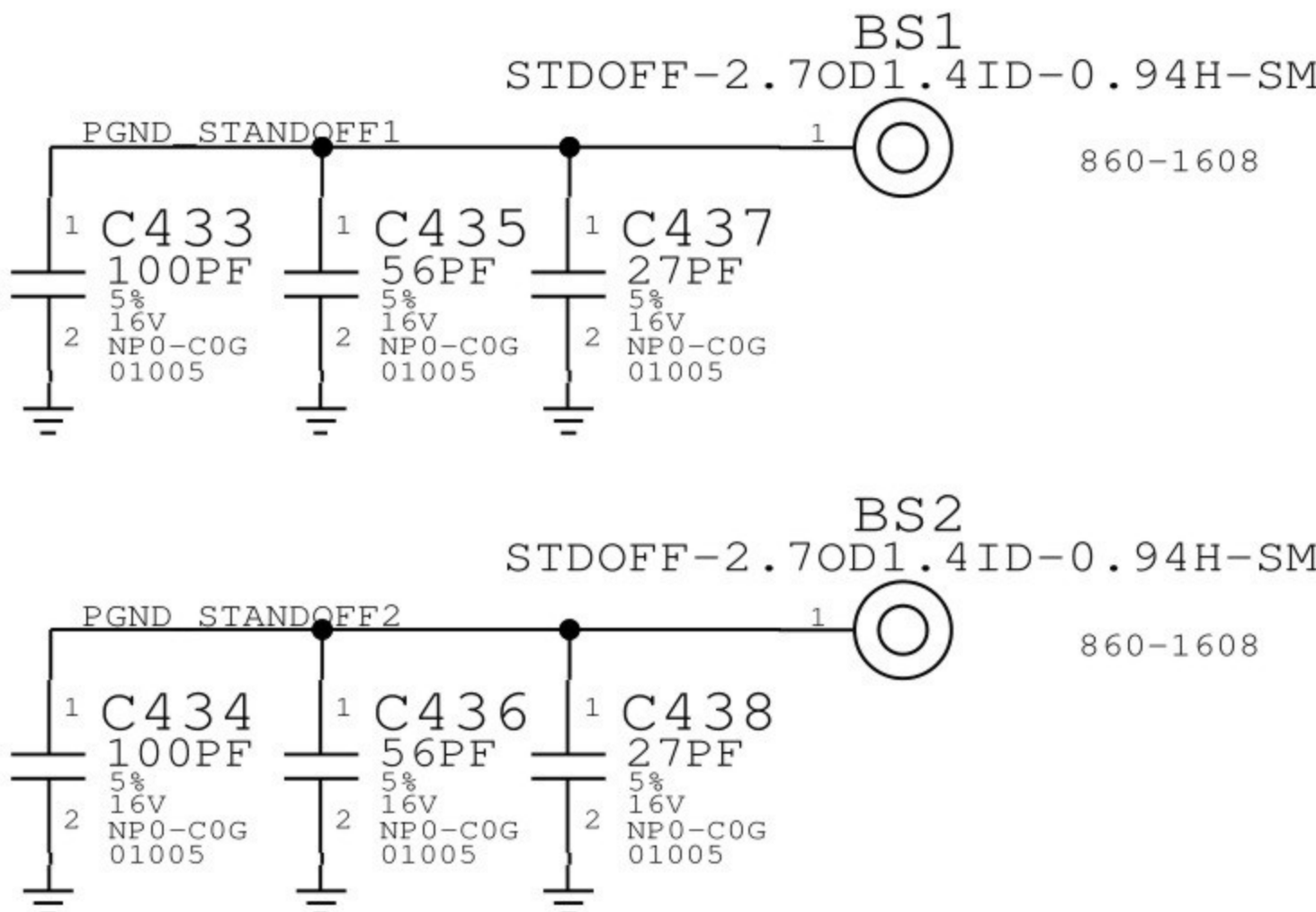


AC COUPLED SCREW HOLES + STANDOFFS
(ON NORTH END OF SINGLE_BRD, TO MITIGATE COMPASS RETURN CURRENTS)

SCREW HOLES



STANDOFFS

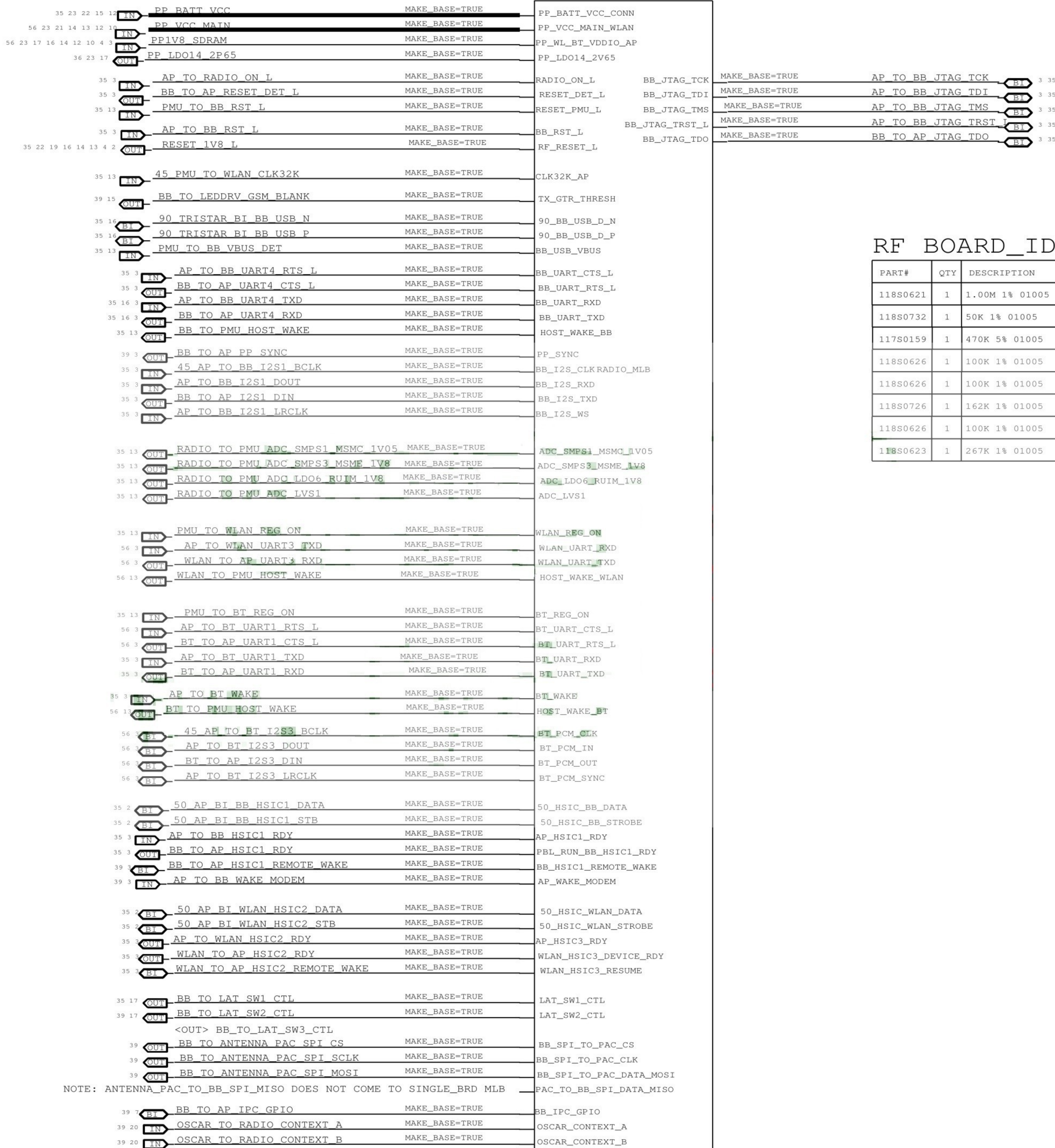




RADIO_MLB HIERARCHICAL SYMBOL

AP/RADIO INTERFACE

SUBDESIGN_SUFFIX=RF
I616



RF BOARD_ID BOM OPTIONS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
118S0621	1	1.00M 1% 01005	R25_RF	CRITICAL	N51_ALL
118S0732	1	50K 1% 01005	R26_RF	CRITICAL	N51_ALL
117S0159	1	470K 5% 01005	R25_RF	CRITICAL	N51_DTD
118S0626	1	100K 1% 01005	R26_RF	CRITICAL	N51_DTD
118S0626	1	100K 1% 01005	R25_RF	CRITICAL	N53_ALL
118S0726	1	162K 1% 01005	R26_RF	CRITICAL	N53_ALL
118S0626	1	100K 1% 01005	R25_RF	CRITICAL	N53_DTD
118S0623	1	267K 1% 01005	R26_RF	CRITICAL	N53_DTD

	8	7	6	5	4	3	2	1
D								
C								
B								
A								

史蒂夫·乔布斯

（1955年2月24日—2011年10月5日），

生于美国旧金山，苹果公司联合创始人。

1976年乔布斯和朋友成立苹果电脑公司，

1985年在苹果高层权力斗争中离开苹果并成立了N eXT公司，

1997年回到苹果接任行政总裁，

2011年8月24日辞去苹果公司行政总裁职位，

2011年10月5日因胰腺癌逝世。

乔布斯让苹果产品引领全球科技潮流，

2012年8月21日，苹果以市值6235亿美元成为世界市值第一的上市公司。

[illegible]

[illegible]

8	7	6	5	4	3	
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8			7			6			5			4			3			2			1		
D	C327	CAP_0402	single_brd[12C1]	D1	DIODE_SCHOT_2P_S0D-9	single_brd[14B6]	F161	FILTER_2P_01005-1	single_brd[19D3]	L72_RF	IND_0201	radio_mlb[45B3]single_brd[24]	C										
	C328	CAP_0201	single_brd[18B3]	D3	DIODE_SCHOT_DFN1006-2	single_brd[8C6]	F162	FILTER_2P_01005	single_brd[19B3]	L73_RF	IND_0201	radio_mlb[46C3]single_brd[24]											
	C329	CAP_0603-1	single_brd[14C3]	DZ1	SUPPR_TRANSIENT_2P1_01005-1	single_brd[8B6]	F163	FILTER_2P_01005	single_brd[17D2]	L74_RF	IND_0201	radio_mlb[47C3]single_brd[24]											
C	C330	CAP_0402-1	single_brd[14C3]	DZ2	SUPPR_TRANSIENT_2P1_01005-1	single_brd[8B6]	F164	FILTER_2P_01005-1	single_brd[11A7]	L75_RF	IND_0201	radio_mlb[47B3]single_brd[24]	B										
	C331	CAP_0402	single_brd[18D4]	DZ3	SUPPR_TRANSIENT_2P1_01005-1	single_brd[8B6]	F165	FILTER_2P_01005-1	single_brd[11A7]	L77_RF	IND_01005	radio_mlb[48B3]single_brd[24]											
	C332	CAP_0402-1	single_brd[15C6]	DZ4	SUPPR_TRANSIENT_2P1_01005-1	single_brd[8B6]	F166	FILTER_2P_01005	single_brd[17D6]	L78_RF	IND_0201	radio_mlb[50B3]single_brd[24]											
B	C333	CAP_0402-1	single_brd[15C7]	DZ7	ZENER_GDZ-0201	single_brd[18D3]	F167	FILTER_2P_0201	single_brd[5A5]	L79_RF	IND_0201	radio_mlb[51C7]single_brd[24]	A										
	C334	CAP_0201-1	single_brd[20C3]	DZ10	SUPPR_TRANSIENT_2P1_01005	single_brd[17B6]	F168	FILTER_2P_01005	single_brd[17B7]	L1732_RF	IND_03015	radio_mlb[53D6]single_brd[24]											
	C335	CAP_0402-1	single_brd[15D6]	DZ11	SUPPR_TRANSIENT_2P1_01005	single_brd[17C6]	F169	FILTER_2P_01005	single_brd[17C7]	PP1_RF	PROBEPOINT_SM	radio_mlb[35D7]single_brd[24]											
A	C336	CAP_01005	single_brd[20C2]	DZ12	SUPPR_TRANSIENT_2P1_01005	single_brd[17C6]	FL74	FILTER_2P_01005-1	single_brd[8C6]	PP2	PROBEPOINT_SM	single_brd[6B8]	D										
	C337	CAP_0201-1	single_brd[15D6]	DZ13	SUPPR_TRANSIENT_2P1_01005	single_brd[17B5]	FL1701_RF	FILTER_3P5_LFE18832M	radio_mlb[53D7]single_brd[24]	PP2_RF	PROBEPOINT_SM	radio_mlb[35D7]single_brd[24]											
	C338	CAP_0201-1	single_brd[16C3]	DZ14	SUPPR_TRANSIENT_2P1_01005-1	single_brd[17B5]	J1	CON_F34ST_D6MT_SM_F-ST-SM	single_brd[11C5]	PP3	PROBEPOINT_SM	single_brd[6A8]											
D	C339	CAP_201	single_brd[15D5]	DZ15	SUPPR_TRANSIENT_2P1_01005-1	single_brd[17B6]	F12302	FILTER_2P_01005	single_brd[17C2]	PP3_RF	PROBEPOINT_SM	radio_mlb[35D7]single_brd[24]	C										
	C340	CAP_402	single_brd[15C4]	DZ16	SUPPR_TRANSIENT_2P1_01005-1	single_brd[11B5]	J1_RF	CON_M54ST_D4MT_SM_M-ST-SM	radio_mlb[35D2]single_brd[24]	PP4_RF	PROBEPOINT_SM	radio_mlb[35B6]single_brd[24]											
	C341	CAP_0201-1	single_brd[15C4]	DZ17	SUPPR_TRANSIENT_2P1_01005-1	single_brd[11B5]	J2	CON_M18ST_D4MT_SM_M-ST-SM	single_brd[8C4]	PP4_RF	PROBEPOINT_SM	radio_mlb[35B6]single_brd[24]											
C	C342	CAP_0201	single_brd[15D6]	DZ18	SUPPR_TRANSIENT_2P1_01005-1	single_brd[11B5]	J2_RF	CON_F1ST_COAX_S3MT_S_M_F-ST-SM	radio_mlb[35B2]single_brd[24]	PP5_RF	PROBEPOINT_SM	radio_mlb[35B6]single_brd[24]	B										
	C343	CAP_0201-1	single_brd[12B7]	DZ19	SUPPR_TRANSIENT_2P1_01005-1	single_brd[11B5]	J3	CON_M32ST_D4MT_SM_M-ST-SM	single_brd[21C4]	PP6_RF	PROBEPOINT_SM	radio_mlb[35B6]single_brd[24]											
	C344	CAP_01005	single_brd[20D2]	DZ101	SUPPR_TRANSIENT_2P1_01005-1	single_brd[8C5]	J4	CON_M42ST_D6MT_SM_M-ST-SM-COMBO	single_brd[18A7]	PP7	PROBEPOINT_SM	single_brd[18B8]											
B	C345	CAP_01005	single_brd[20D3]	DZ1100	SUPPR_TRANSIENT_2P1_01005	single_brd[11C3]	J4_RF	CON_F1ST_COAX_S3MT_S_M_F-ST-SM	radio_mlb[53B8]single_brd[24]	PP7_RF	PROBEPOINT_SM	radio_mlb[35B6]single_brd[24]	A										
	C346	CAP_0201	single_brd[18A3]	DZ1101	SUPPR_TRANSIENT_2P1_01005	single_brd[11B3]	J5	CON_M22ST_D4MT_SM_M-ST-SM	single_brd[19C5]	PP8	PROBEPOINT_SM	single_brd[18B8]											
	C347	CAP_0201-1	single_brd[20D2]	FD1	FIDUCIAL_OP55MIP0SQ-NSP	single_brd[22C8]	J6	CON_F6ST_6MT_BATT_SM_F-ST-SM	single_brd[22D7]	PP8_RF	PROBEPOINT_SM	radio_mlb[35D6]single_brd[24]											
A	C348	CAP_0603-1	single_brd[15D7]	FD2	FIDUCIAL_OP55MIP0SQ-NSP	single_brd[22C8]	J6_RF	CON_F1ST_COAX_S3MT_S_M_F-ST-SM	radio_mlb[53C3]single_brd[24]	PP9	PROBEPOINT_SM	single_brd[18B5]	D										
	C349	CAP_0201	single_brd[18B3]	FD3	FIDUCIAL_OP55MIP0SQ-NSP	single_brd[22B8]	J7	CON_M38ST_D4MT_SM_M-ST-SM	single_brd[17C4]	PP9_RF	PROBEPOINT_SM	radio_mlb[35D6]single_brd[24]											
	C350	CAP_402	single_brd[19D2]	FD4	FIDUCIAL_OP55MIP0SQ-NSP	single_brd[22B8]	J10_RF	CON_F1ST_COAX_S3MT_S_M_F-ST-SM	radio_mlb[56D4]single_brd[24]	PP10	PROBEPOINT_SM	single_brd[6A8]											
D	C351	CAP_402	single_brd[19D2]	FD5	FIDUCIAL_OP55MIP0SQ-NSP	single_brd[22B8]	J11_RF	CON_F6ST_6MT_SIMCARD_S3M3_F-ST-SM	radio_mlb[35A6]single_brd[24]	PP10_RF	PROBEPOINT_SM	radio_mlb[35D6]single_brd[24]	C										
	C354	CAP_01005	single_brd[9A6]	FD6	FIDUCIAL_OP55MIP0SQ-NSP	single_brd[22B8]	L1	IND_0402	single_brd[14B3]	PP11	PROBEPOINT_SM	single_brd[18B1]											
	C355	CAP_01005	single_brd[17B6]	FD7	FIDUCIAL_OP55MIP0SQ-NSP	single_brd[22B8]	L1_RF	IND_0806	radio_mlb[36D3]single_brd[24]	PP11_RF	PROBEPOINT_SM	radio_mlb[35C7]single_brd[24]											
C	C356	CAP_01005	single_brd[9A6]	FL1	FILTER_2P_01005	single_brd[17C7]	L2_RF	IND_0806	radio_mlb[36C3]single_brd[24]	PP12_RF	PROBEPOINT_SM	radio_mlb[35D6]single_brd[24]	B										
	C357	CAP_0402-1	single_brd[12C8]	FL1_RF	FILTER_2P_01005-1	radio_mlb[50C7]single_brd[24]	L3	IND_P_VLF302510T-SM	single_brd[14B7]	PP13	PROBEPOINT_SM	single_brd[3D1]											
	C358	CAP_0402-1	single_brd[12C8]	FL2	FILTER_2P_01005	single_brd[11B7]	L4	IND_TFA252010-SM	radio_mlb[35C6]single_brd[24]	PP13_RF	PROBEPOINT_SM	radio_mlb[35C6]single_brd[24]											
B	C359	CAP_01005	single_brd[17B6]	FL2_RF	FILTER_SAW_LMTFFJGAE	radio_mlb[43C3]single_brd[24]	L4_RF	IND_0806	radio_mlb[36D3]single_brd[24]	PP14	PROBEPOINT_SM	radio_mlb[35C7]single_brd[24]	A										
	C360	CAP_01005	single_brd[15B3]	FL3	FILTER_2P_01005	single_brd[8B6]	L5	IND_P_TFA201610G-SM	single_brd[15B6]	PP14_RF	PROBEPOINT_SM	radio_mlb[35C7]single_brd[24]											
	C362	CAP_01005	single_brd[9A6]	FL4	FILTER_2P_01005	single_brd[11B7]	L5_RF	IND_P_2520-SM	radio_mlb[36C3]single_brd[24]	PP15	PROBEPOINT_SM	single_brd[3D1]											
A	C363	CAP_01005	single_brd[15B3]	FL4_RF	FILTER_2P_01005-1	radio_mlb[39B7]single_brd[24]	L6	IND_0201	single_brd[17C2]	PP15_RF	PROBEPOINT_SM	radio_mlb[35C7]single_brd[24]	D										
	C364	CAP_0201	single_brd[18A3]	FL5	FILTER_2P_01005	single_brd[17B7]	L6_RF	IND_01005	radio_mlb[50C6]single_brd[24]	PP16	PROBEPOINT_SM	radio_mlb[35C6]single_brd[24]											
	C365	CAP_0201	single_brd[18D2]	FL6	FILTER_2P_0402	single_brd[15C2]	L7	IND_0201	single_brd[17C2]	PP16_RF	PROBEPOINT_SM	single_brd[6B4]											
D	C368	CAP_0201	single_brd[17A6]	FL6_RF	FILTER_SAW_UNB2BA1-10P_LGA-1	radio_mlb[43B4]single_brd[24]	L7_RF	IND_01005	radio_mlb[47C6]single_brd[24]	PP17	PROBEPOINT_SM	radio_mlb[35C7]single_brd[24]	C										
	C369	CAP_0402-1	single_brd[18C7]	FL7	FILTER_2P_01005	single_brd[8B6]	L8	IND_P_TFA201610G-SM	single_brd[12C4]	PP17_RF	PROBEPOINT_SM	radio_mlb[35C7]single_brd[24]											
	C370	CAP_402	single_brd[18C7]	FL8	FILTER_2P_01005	single_brd[8B6]	L9	IND_P_TFA201610G-SM	single_brd[12D4]	PP18	PROBEPOINT_SM	radio_mlb[35C7]single_brd[24]											
C	C371	single_brd[18C7]	FL9	FILTER_2P_0402	single_brd[15C2]	FL9_RF	FIL_COUPLER_6P_0805-6SM	radio_mlb[50B2]single_brd[24]	L10	IND_01005	radio_mlb[42B3]single_brd[24]	B											
	C372	CAP_0201-1	single_brd[18C6]	FL10	FILTER_2P_01005	single_brd[17C7]	L10_RF	IND_01005	radio_mlb[44C6]single_brd[24]	L11	IND_P_TFA201610G-SM		radio_mlb[47B6]single_brd[24]										
	C374	SUPPR_TRANSIENT_2P1_01005	single_brd[17C3]	FL10_RF	FIL_COUPLER_6P1_0805	radio_mlb[50C2]single_brd[24]	L12	IND_P_TFA201610G-SM	radio_mlb[42C4]	L11_RF	IND_01005		radio_mlb[44C6]single_brd[24]										
B	C376	CAP_0201	single_brd[6D3]	FL11	FILTER_2P_01005	single_brd[22D6]	L12_RF	IND_01005	radio_mlb[44B6]single_brd[24]	L13	IND_P_TFA201610G-SM	radio_mlb[44B6]single_brd[24]	A										
	C377	CAP_0402	single_brd[6D3]	FL12	FILTER_2P_01005-1	single_brd[11D7]	L13_RF	IND_01005	radio_mlb[50C7]single_brd[24]	L14	IND_P_TFA201610G-SM	radio_mlb[45C7]single_brd[24]											
	C378	CAP_0402	single_brd[6D3]	FL13	FILTER_2P_01005	single_brd[11D7]	L14_RF	IND_01005	radio_mlb[45C7]single_brd[24]	L15	IND_P_TFA201610G-SM	radio_mlb[45B6]single_brd[24]											
A	C379	CAP_0201-1	single_brd[5A5]	FL14	FILTER_2P_01005-1	single_brd[11C7]	L16	IND_P_TFA201610G-SM	single_brd[12D4]	L16_RF	IND_01005	radio_mlb[45B6]single_brd[24]	D										
	C380	CAP_0201-1	single_brd[11C3]	FL15	FILTER_2P_01005-1	single_brd[11D7]	L17	IND_P_TFA201610G-SM	single_brd[12D4]	L17_RF	IND_01005	radio_mlb[45B6]single_brd[24]											
	C381	CAP_0201	single_brd[18D5]	FL16	FILTER_2P_01005	single_brd[17C6]	L18	IND_P_TFA201610G-SM	single_brd[12D4]	L18_RF	IND_01005	radio_mlb[45B6]single_brd[24]											
D	C385	CAP_0402-1	single_brd[15D6]	FL17	FILTER_2P_01005	single_brd[17C6]	L19	IND_P_TFA201610G-SM	single_brd[14D6]	L19_RF	IND_01005	radio_mlb[48B6]single_brd[24]	C										
	C386	CAP_0402-1	single_brd[15B6]	FL18	FILTER_2P_01005	single_brd[17C6]	L20	IND_0201	radio_mlb[52B6]single_brd[24]	L21	IND_PSB12101T-SM	radio_mlb[48C6]single_brd[24]											
	C387	CAP_0402-1	single_brd[15B6]	FL19	FILTER_2P_0201	single_brd[17D2]	L21_RF	IND_P_TFA201610G-SM	single_brd[14D6]	L22	IND_P_TFA201610G-SM	radio_mlb[48C6]single_brd[24]											
C	C389	CAP_0201-1	single_brd[21C6]	FL20	FILTER_2P_01005	single_brd[11B7]	L22_RF	IND_0201	radio_mlb[52B6]single_brd[24]	L23	IND_0201	radio_mlb[52B6]single_brd[24]	B										
	C390	CAP_0201-1	single_brd[21C6]	FL21	FILTER_2P_01005	single_brd[8D3]	L23_RF	IND_0201	radio_mlb[50B3]single_brd[24]	L24	IND_0201	single_brd[21C6]											
	C391	CAP_0201-1	single_brd[21D6]	FL22	FILTER_2P_01005	single_brd[21A6]	L24_RF	IND_0201	radio_mlb[50B3]single_brd[24]	L25	IND_0201	single_brd[21D6]											
B	C392	CAP_01005	single_brd[21C5]	FL23	FILTER_2P_01005-1	single_brd[11C2]	L29	IND_0201	single_brd[21C6]	L29_RF	IND_0201	single_brd[21D6]	A										
	C393	CAP_01005	single_brd[21D5]	FL24	FILTER_2P_0201-1	single_brd[19B3]	L30	IND_0201	single_brd[21C5]	L30_RF	IND_0201	single_brd[21C5]											
	C394	CAP_0402-2	single_brd[15B4]	FL25	FILTER_2P_0201-1	single_brd[19A3]	L31	IND_0201	single_brd[21C2]	L31_RF	IND_0201</												

D

D

C

C

B

B

A

X145 RADIO_MLB SUBDESIGN - EVT1C

PDF PAGE	CONTENTS
2	AP INTERFACE & DEBUG CONNECTORS
3	CELLULAR PMU: (1 OF 2)
4	CELLULAR PMU: (2 OF 2)
5	CELLULAR BASEBAND: (1 OF 2)
6	CELLULAR BASEBAND: (2 OF 2)
7	CELLULAR RF TRANSCEIVER: (1 OF 2)
8	CELLULAR RF TRANSCEIVER: (2 OF 2)
9	CELLULAR FRONT END: TX AND RX MATCHING
10	CELLULAR FRONT END: SAW BANKS
11	CELLULAR FRONT END: BAND 1/4 PAT
12	CELLULAR FRONT END: BAND 2/3 PAD
13	CELLULAR FRONT END: BAND 20 PAD
14	CELLULAR FRONT END: BAND 5/8 PAD
15	CELLULAR FRONT END: BAND 13/17 PAD
16	CELLULAR FRONT END: PA DCDC CONVERTER
17	CELLULAR FRONT END: 2G FEM
18	CELLULAR FRONT END: RX DIVERSITY
19	CELLULAR FRONT END: GPS LNA
20	CELLULAR FRONT END: ANTENNA FEEDS
21	FRONT END LOGIC TABLE (1 OF 2)
22	FRONT END LOGIC TABLE (2 OF 2)
23	WIFI/BT: MODULE AND FRONT END

BOARD_ID BOM OPTIONS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
118S0621	1	1.00M 1% 01005	R25_RF	Y	N51_CFG_A
118S0732	1	50K 1% 01005	R26_RF	Y	N51_CFG_A
117S0199	1	470K 5% 01005	R25_RF	Y	N51_CFG_B
118S0626	1	100K 1% 01005	R26_RF	Y	N51_CFG_B
118S0626	1	100K 1% 01005	R25_RF	Y	N53_CFG_A
118S0726	1	162K 1% 01005	R26_RF	Y	N53_CFG_A
118S0626	1	100K 1% 01005	R25_RF	Y	N53_CFG_B
118S0623	1	267K 1% 01005	R26_RF	Y	N53_CFG_B
118S0659	1	255K 1% 01005	R25_RF	Y	N48_CFG_A
118S0626	1	100K 1% 01005	R26_RF	Y	N48_CFG_A
118S0689	1	147K 1% 01005	R25_RF	Y	N48_CFG_B
118S0626	1	100K 1% 01005	R26_RF	Y	N48_CFG_B
118S0626	1	100K 1% 01005	R25_RF	Y	N49_CFG_A
118S0650	1	499K 1% 01005	R26_RF	Y	N49_CFG_A
118S0732	1	50K 1% 01005	R25_RF	Y	N49_CFG_B
118S0621	1	1.00M 1% 01005	R26_RF	Y	N49_CFG_B

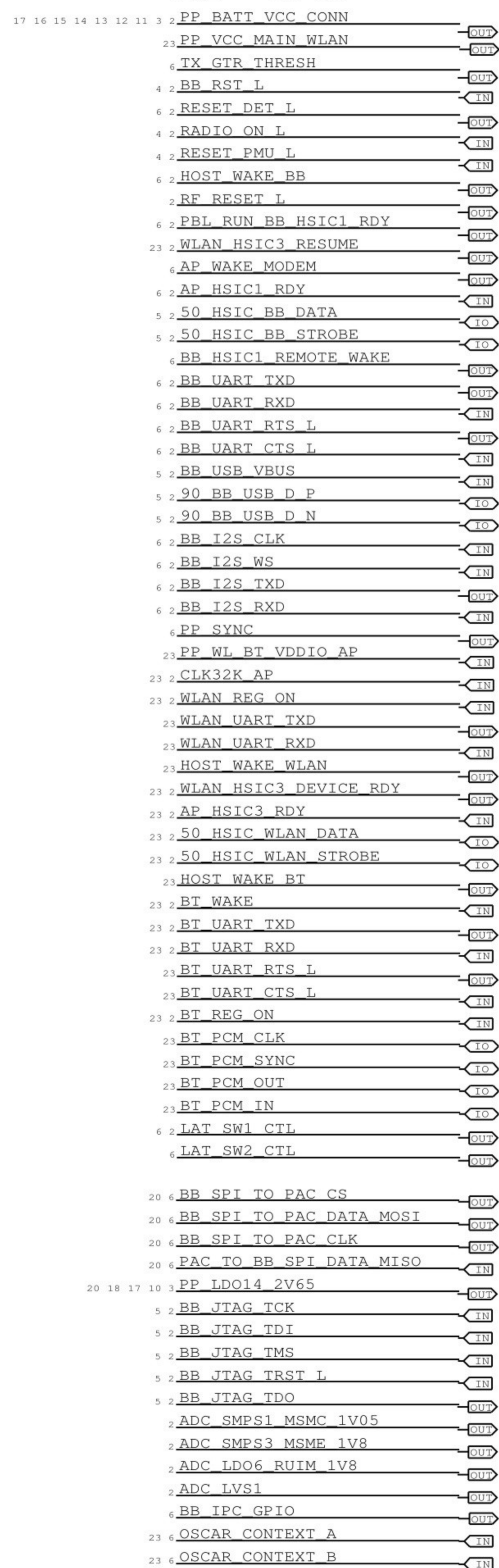
SCH : 951-2446
BOM : 939-0308
BOARD : 920-2148

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
951-2446	1	X145_RADIO_MLB	SCH	Y	
825-2029	1	EEE FOR 939-0308	EEEE_????	Y	NA

AP INTERFACE & DEBUG CONNECTORS

AP CONNECTIONS

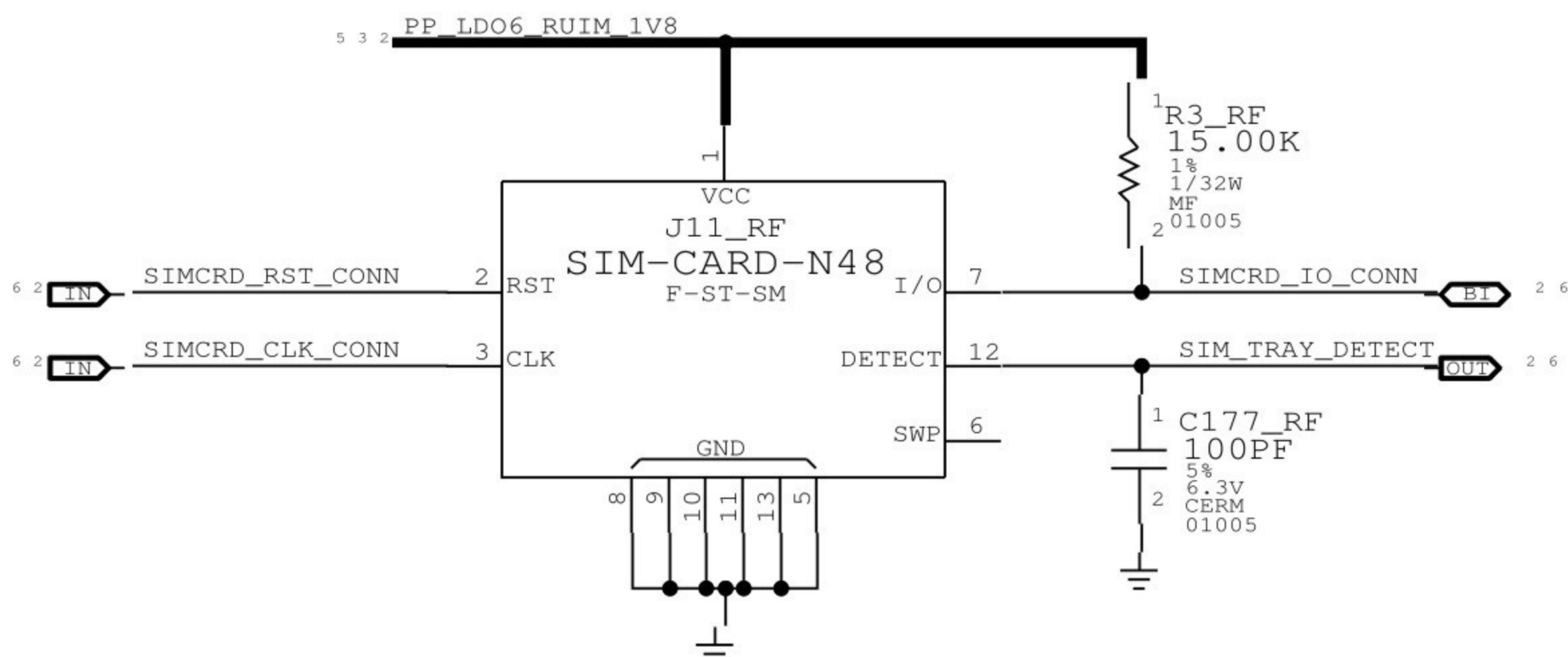
IN = FROM AP
OUT = TO AP



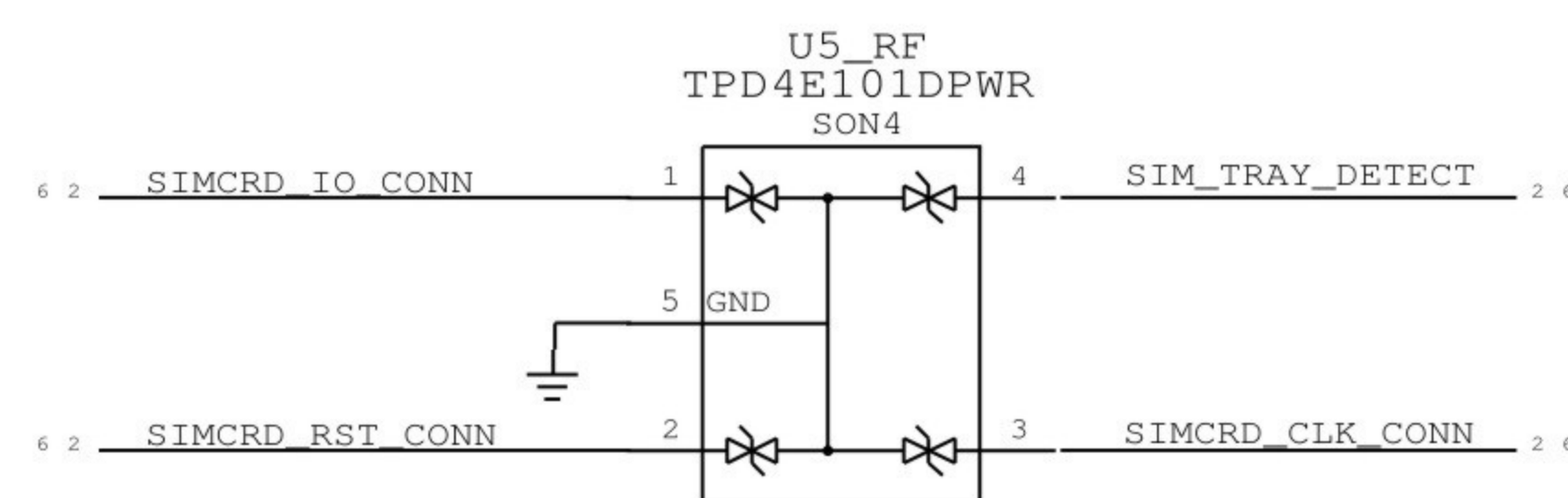
PROBE POINTS



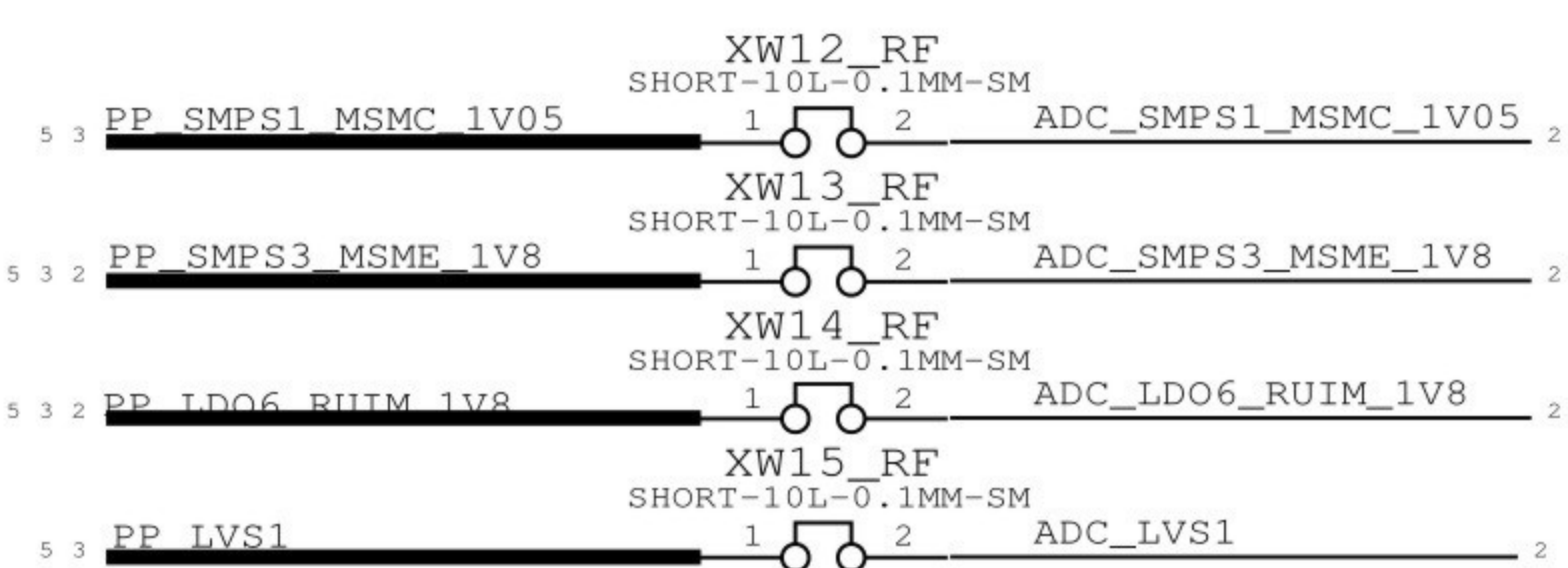
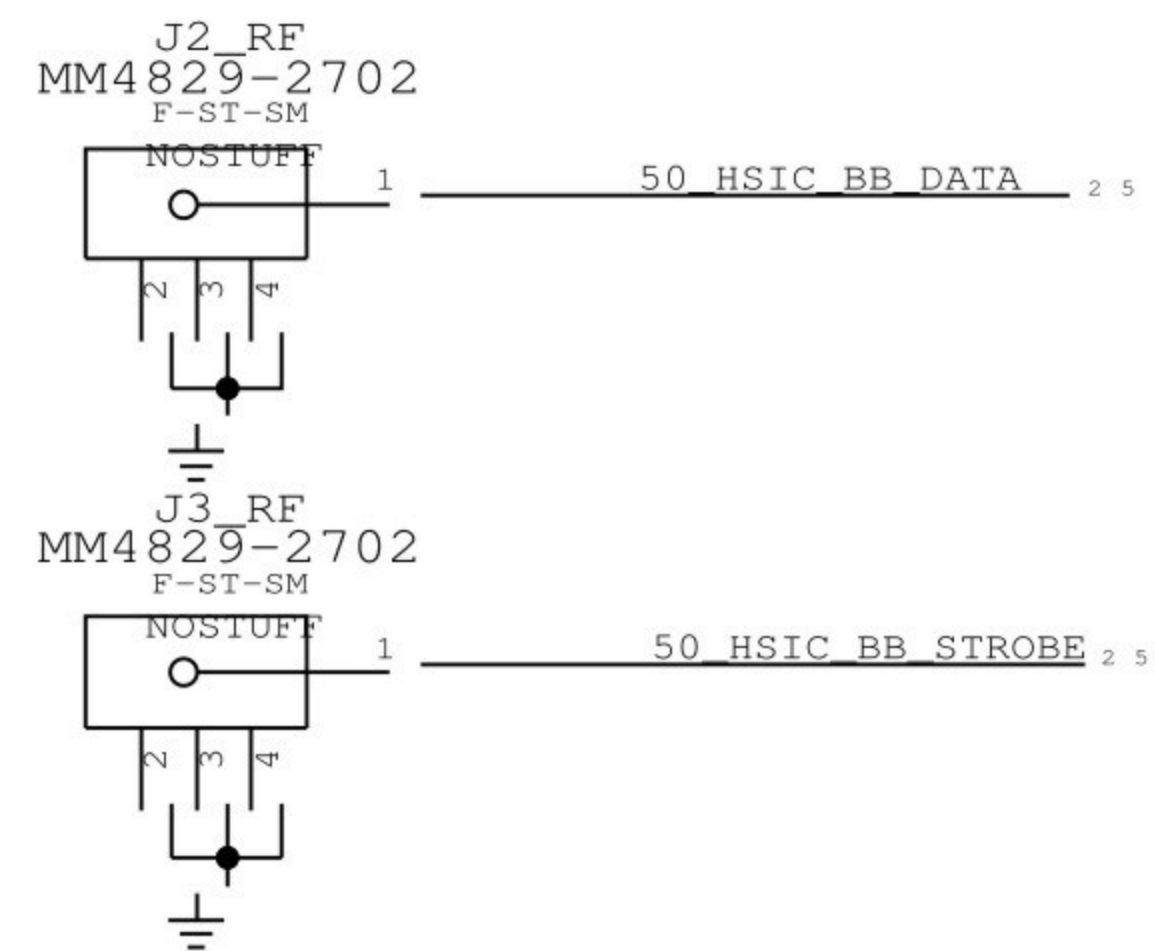
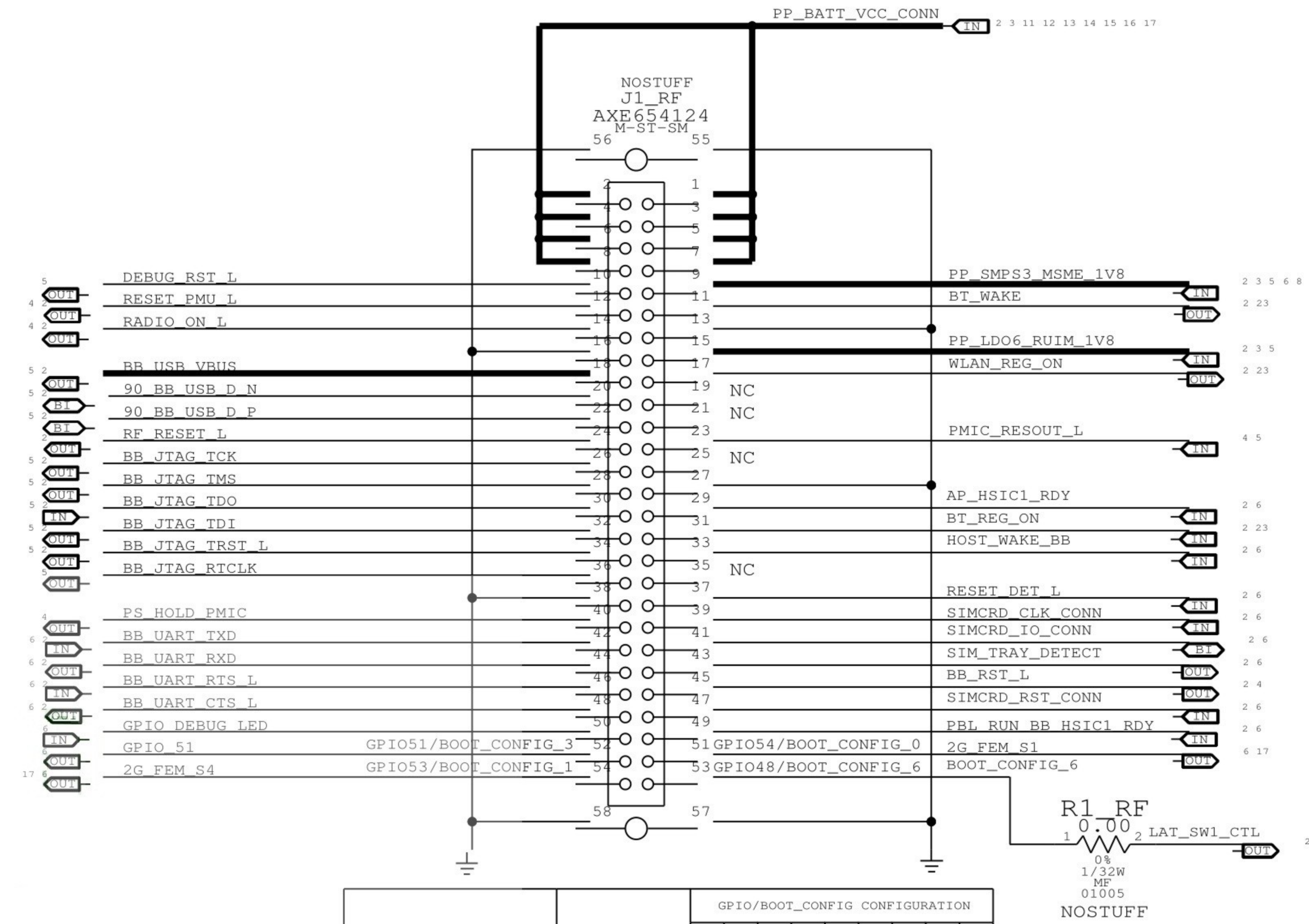
SIM CARD CONNECTOR



SIM CARD ESD PROTECTION



DEBUG CONNECTOR



PMU (1 OF 2)

D

D

C

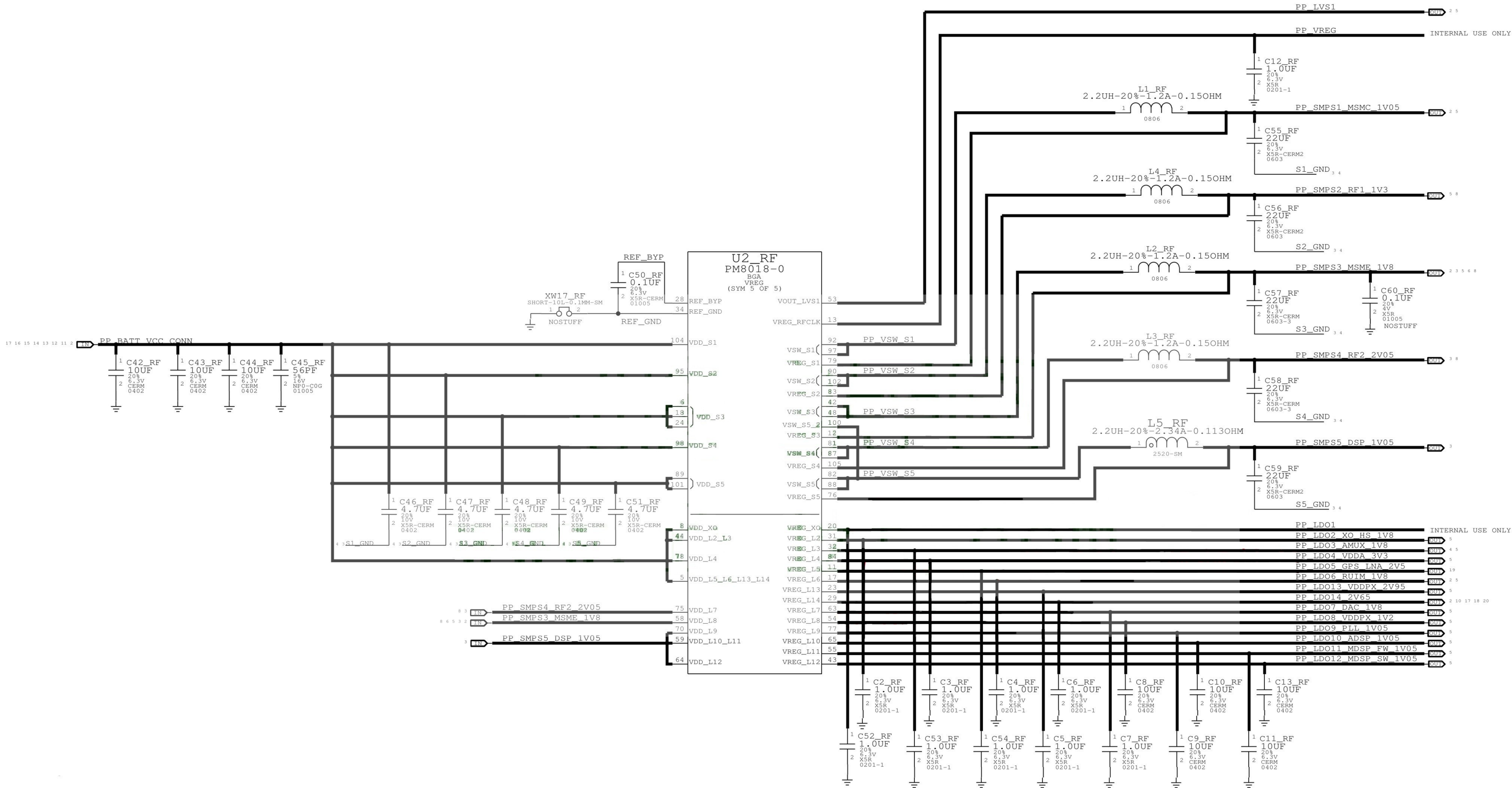
C

B

B

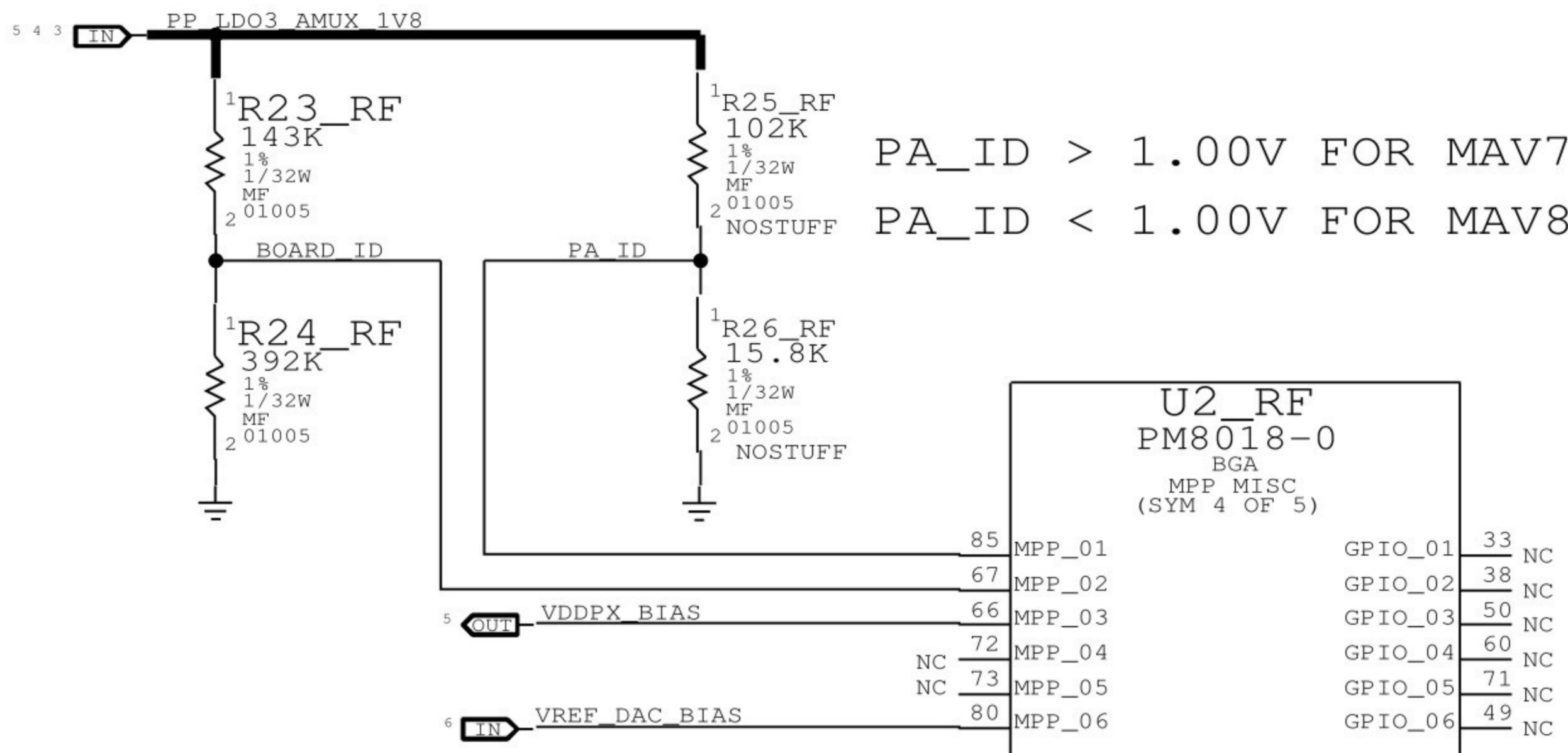
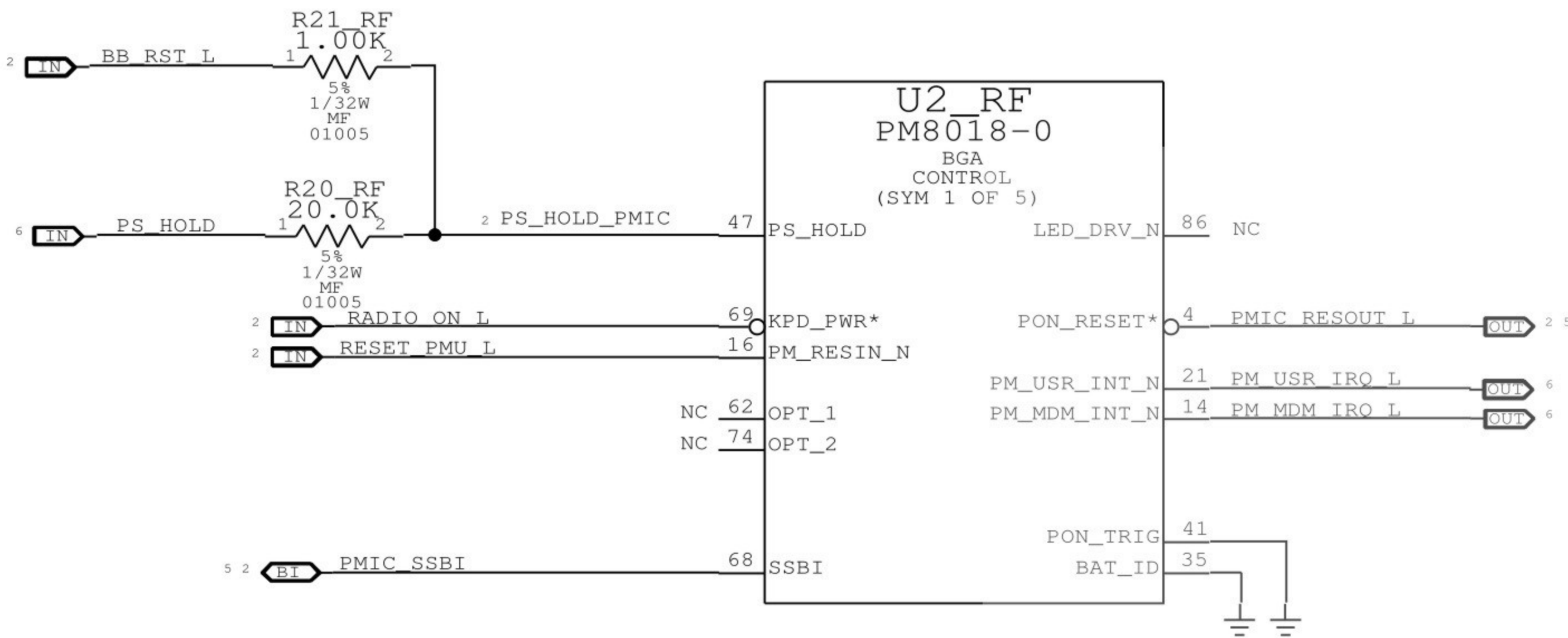
A

A

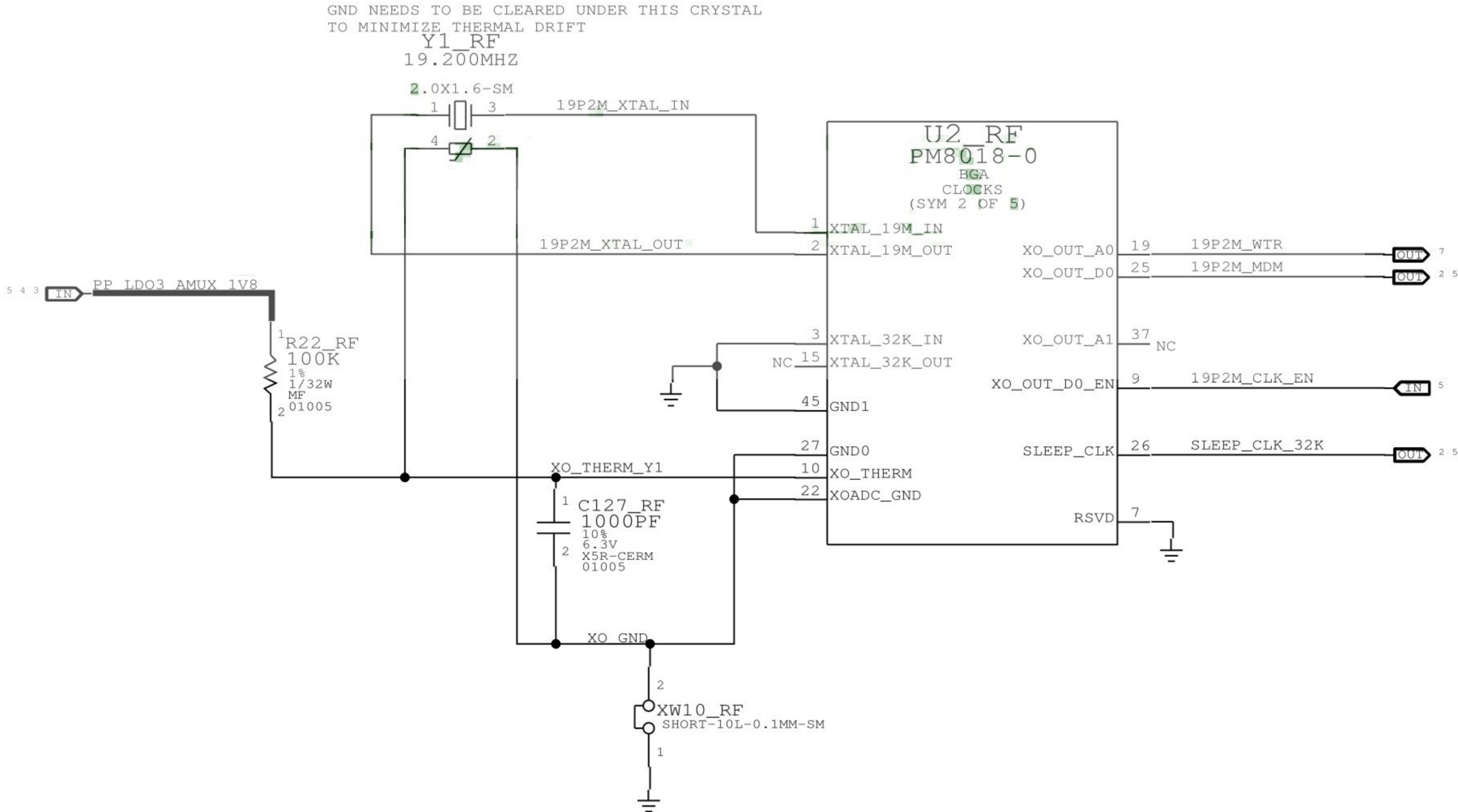
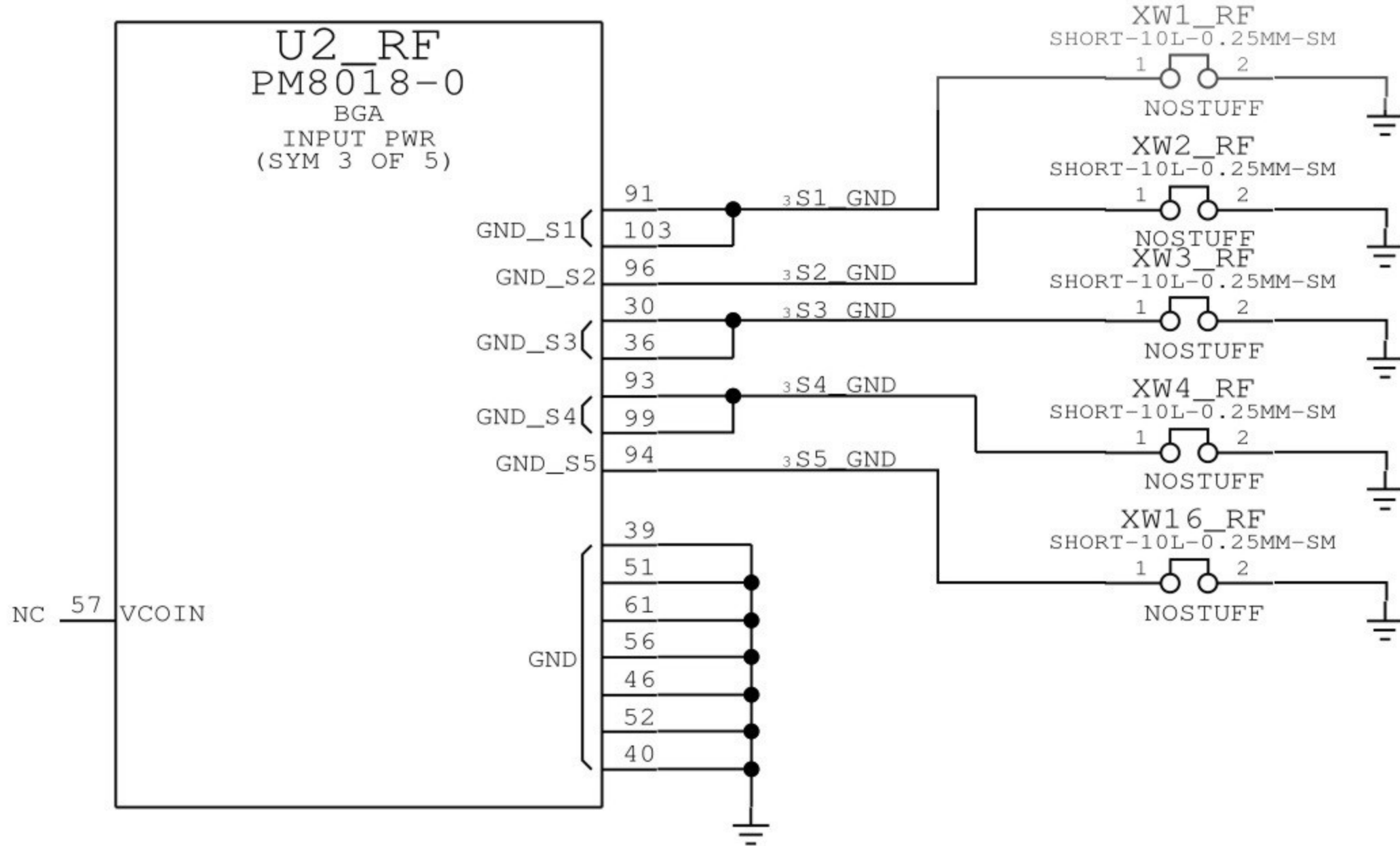


PMU (2 OF 2)

BOARD_ID	REVISION
0.1V	UNUSED
0.3V	UNUSED
0.5V	UNUSED
0.7V	PROTO1
0.9V	PROTO2
1.1V	EVT1
1.3V	E1C
1.5V	EVT2
1.7V	DVT/PVT



PA THERMISTOR REMOVED TO MATCH N41, AP SECTION
NEEDS ITS OWN THERMISTOR PLACED NEAR THE PA'S.



BASEBAND (1 OF 2)

D

C

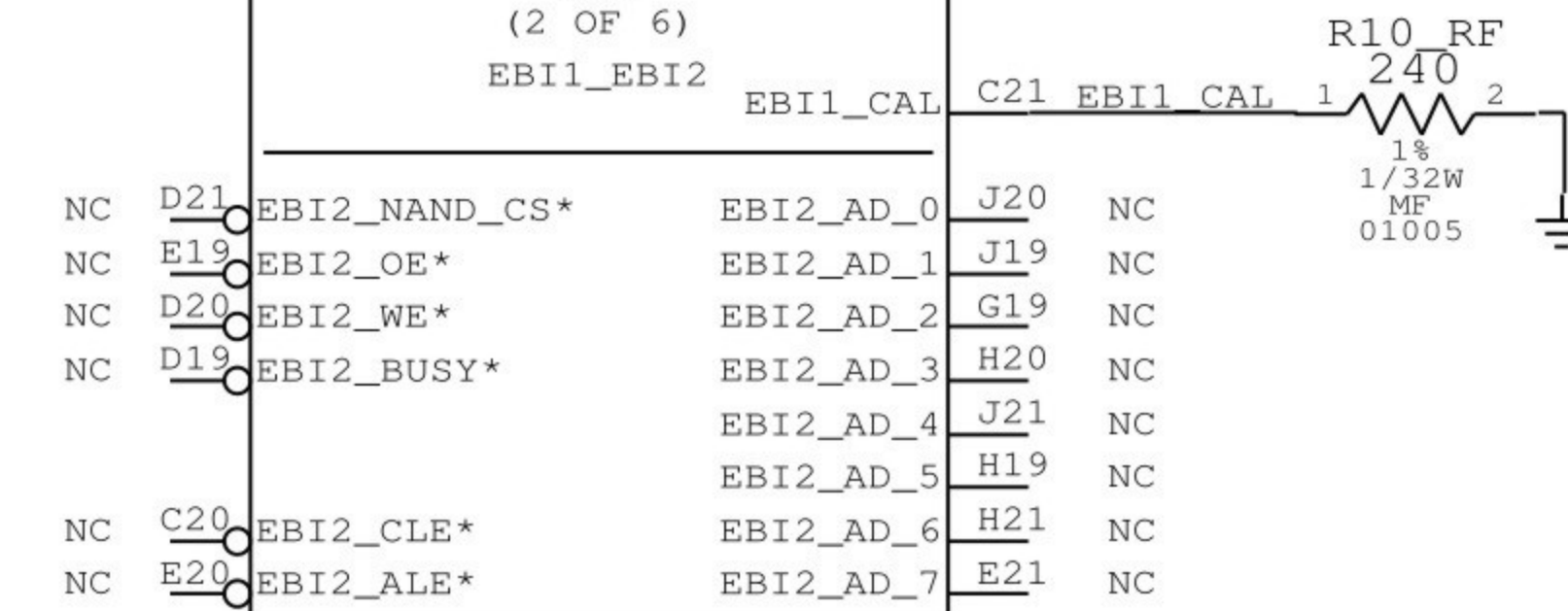
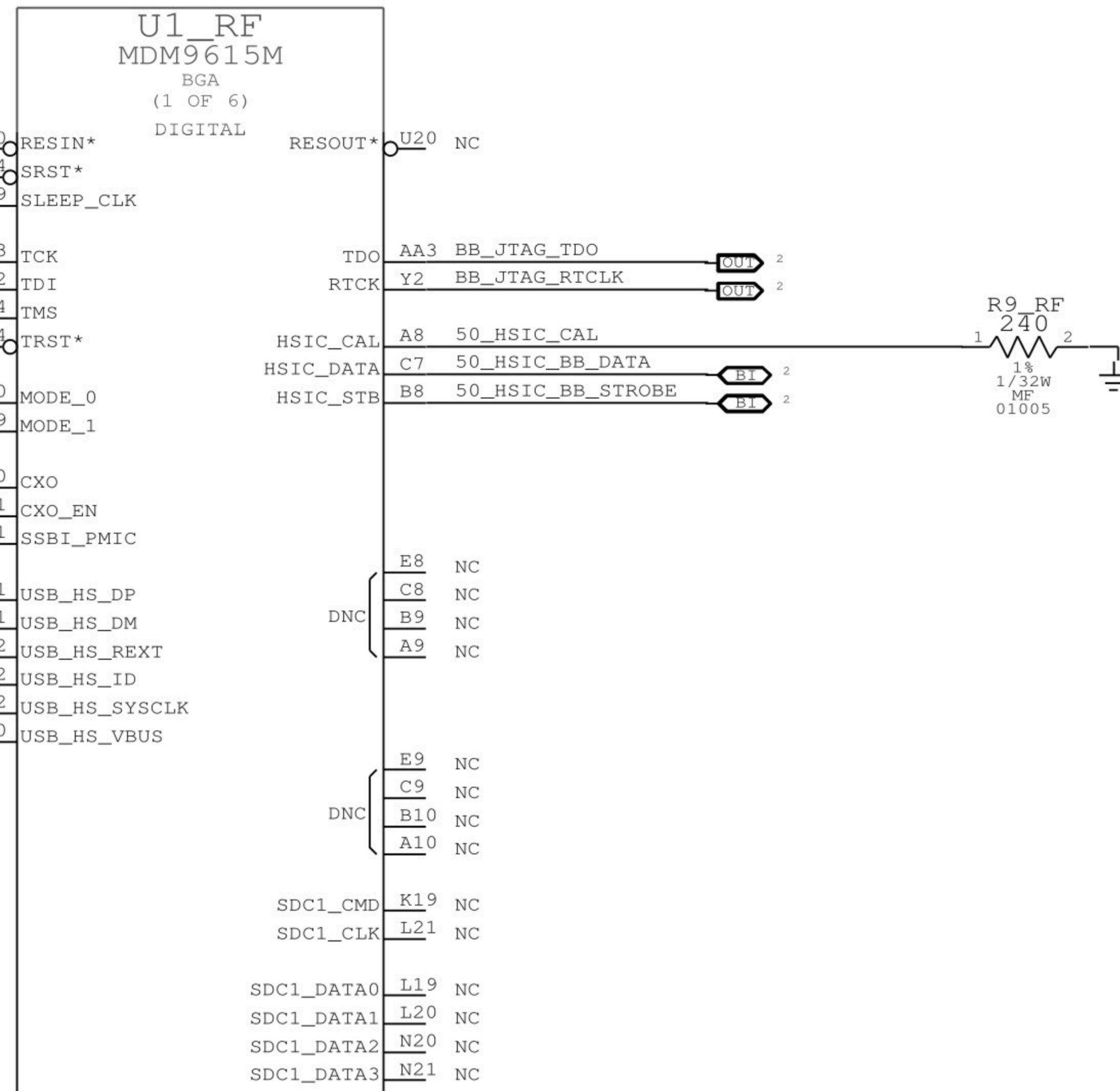
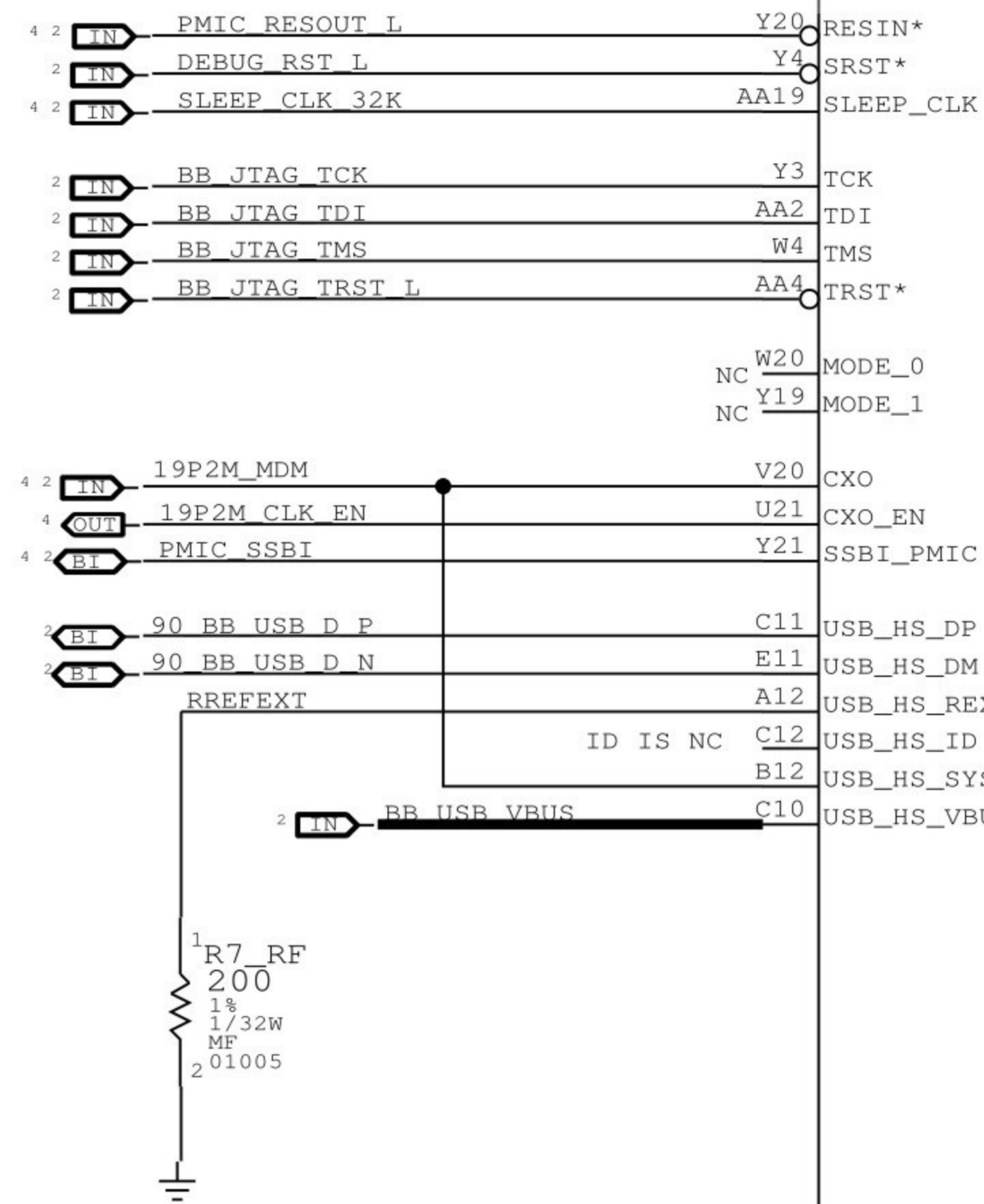
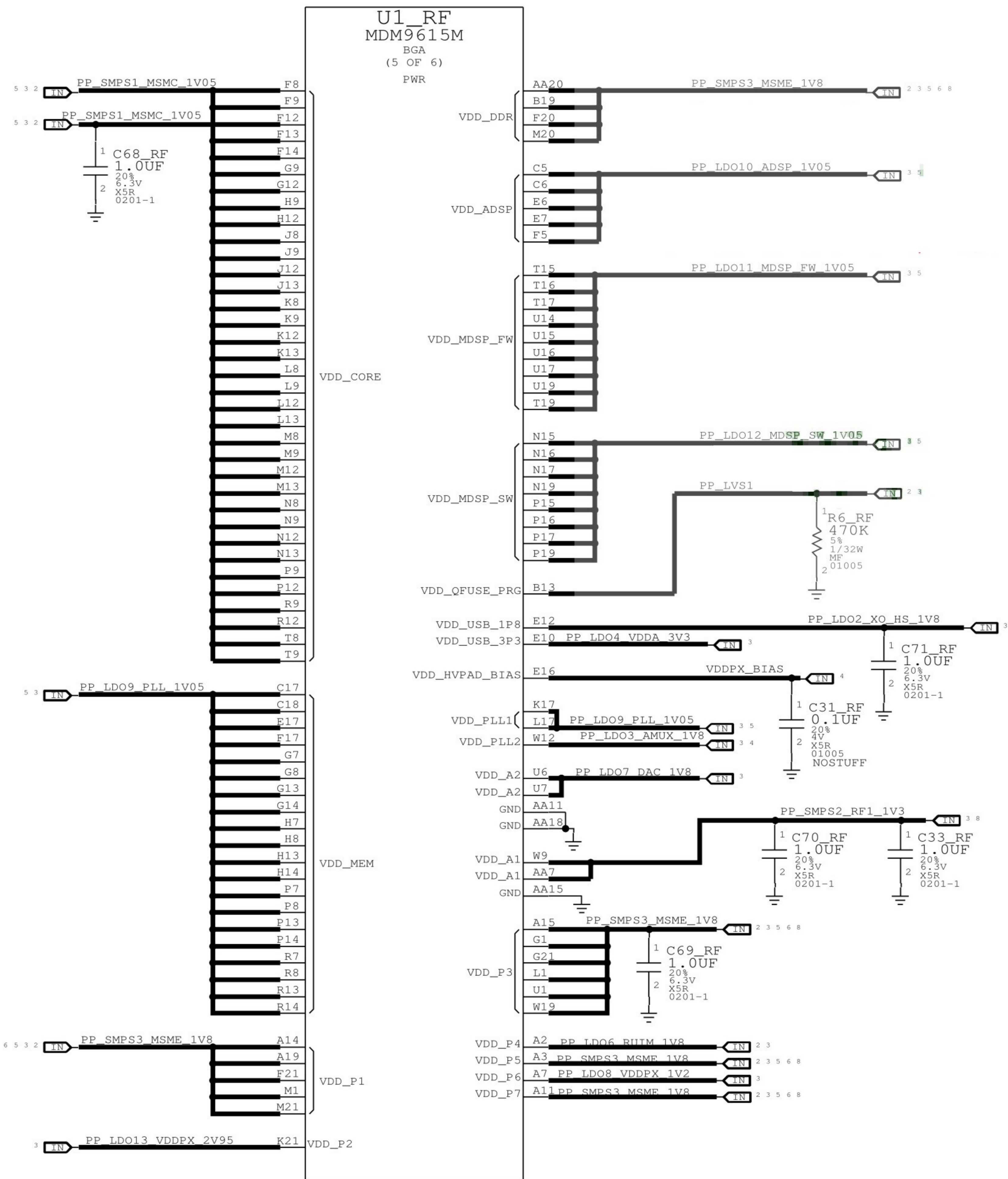
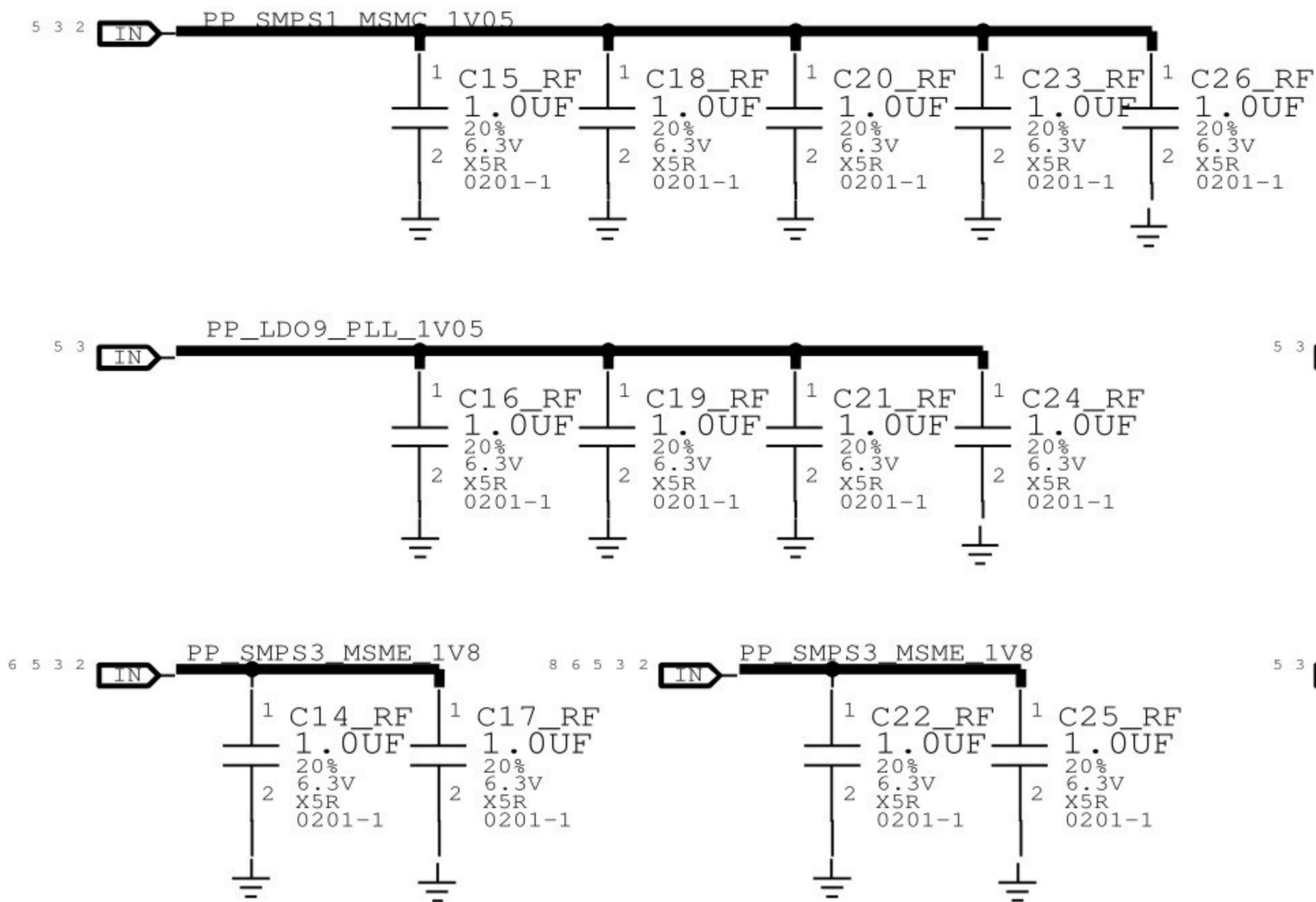
B

A

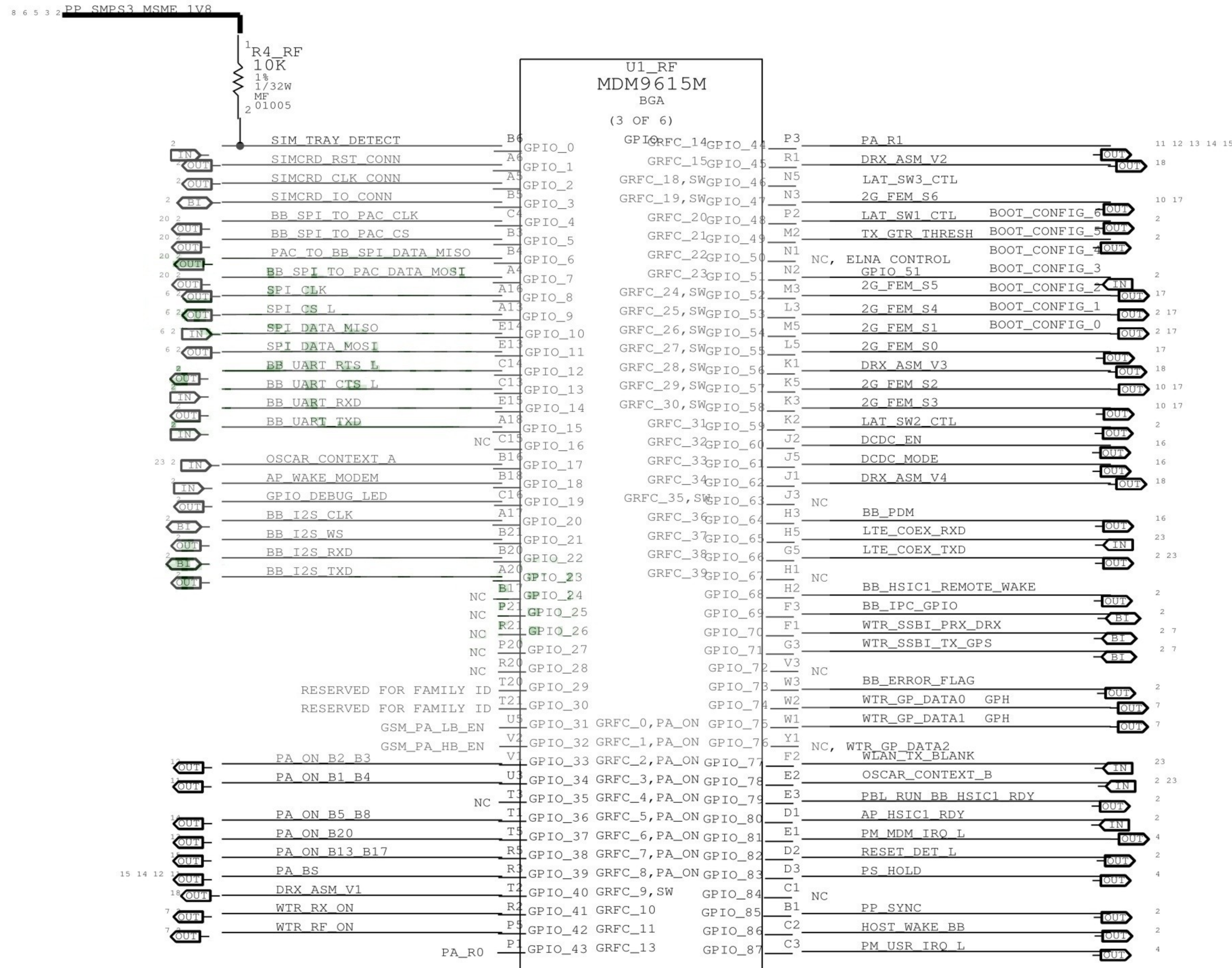
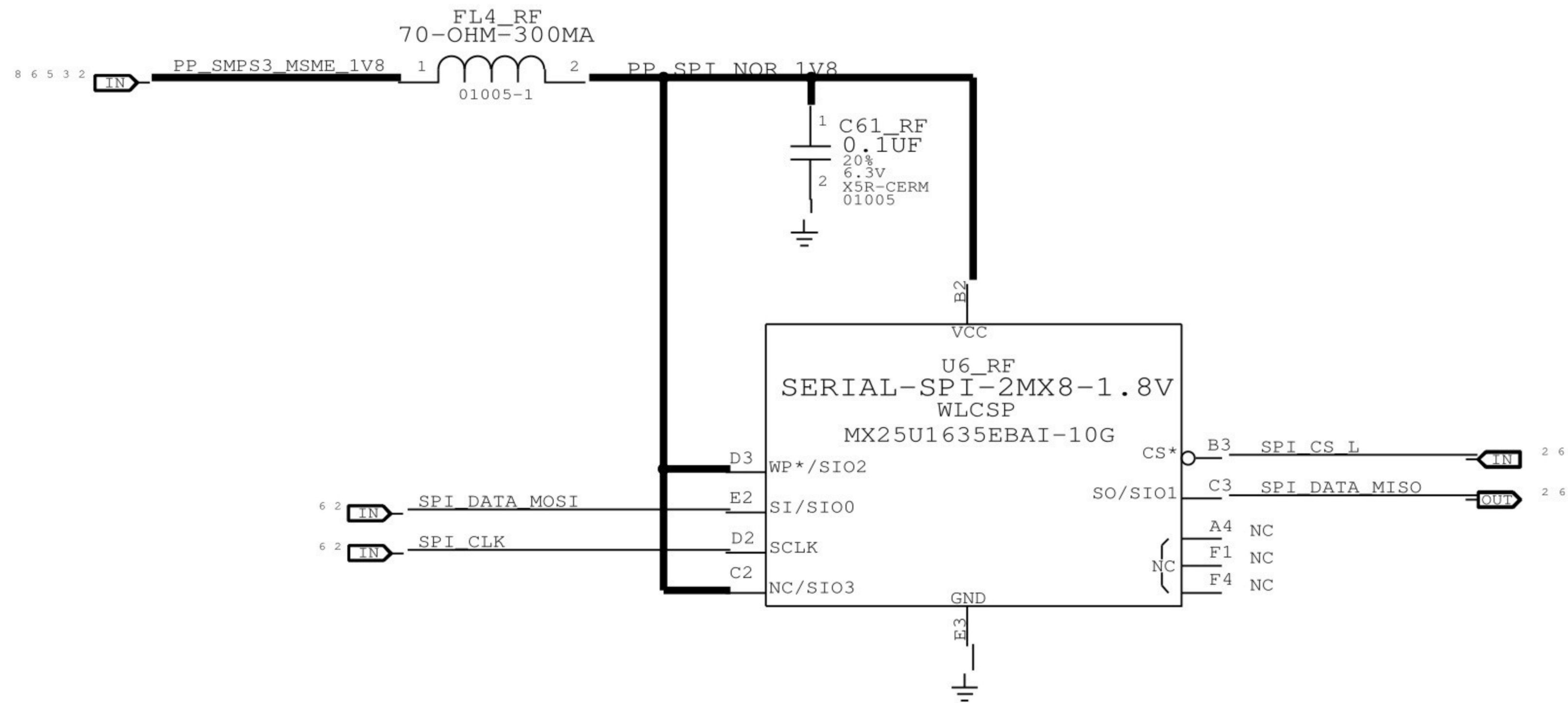
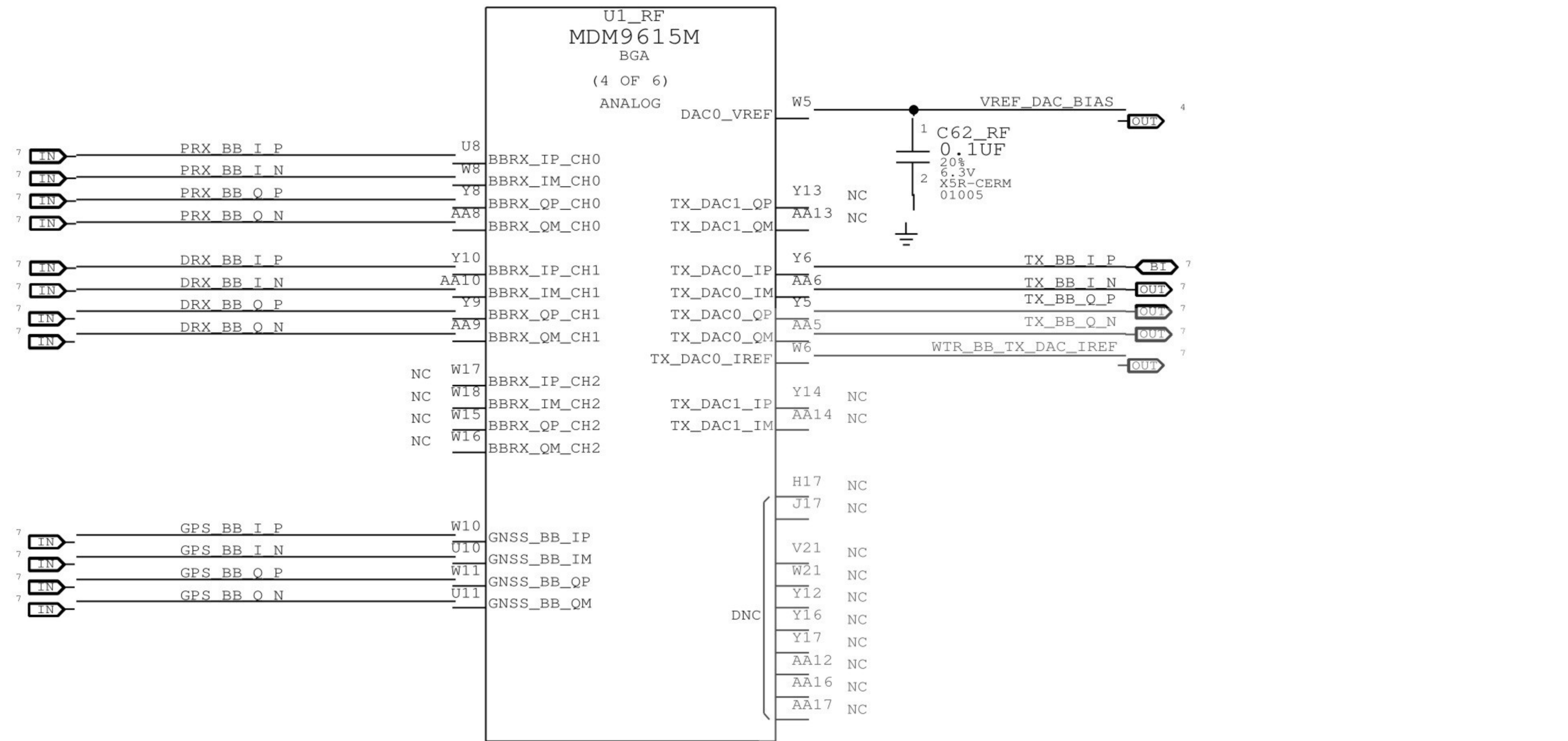
D

C

B



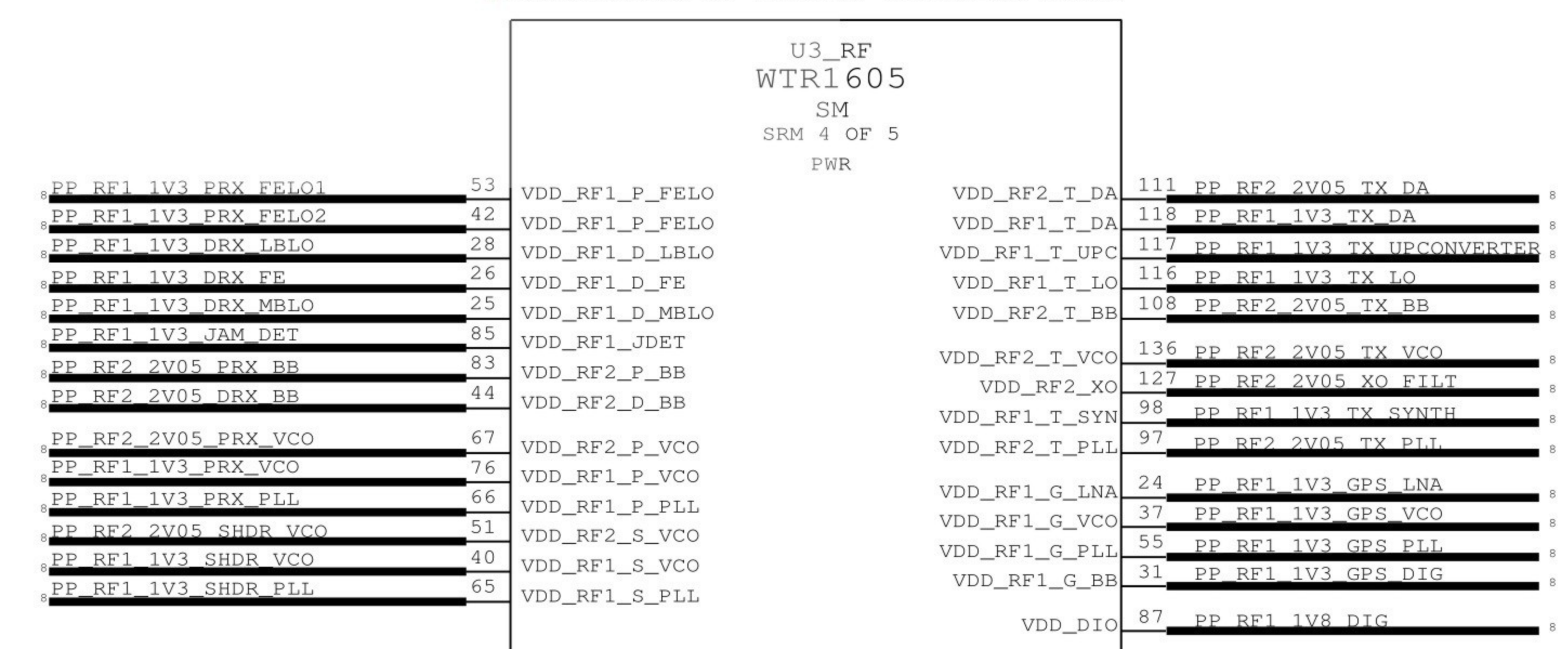
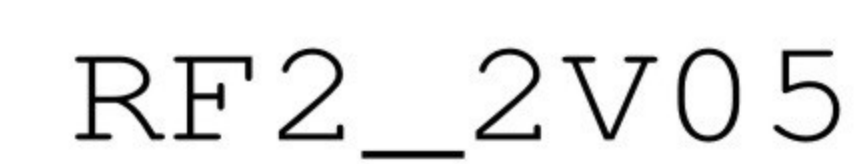
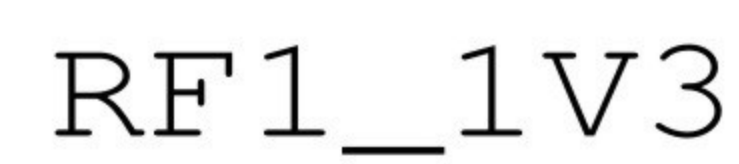
BASEBAND (2 OF 2)



D

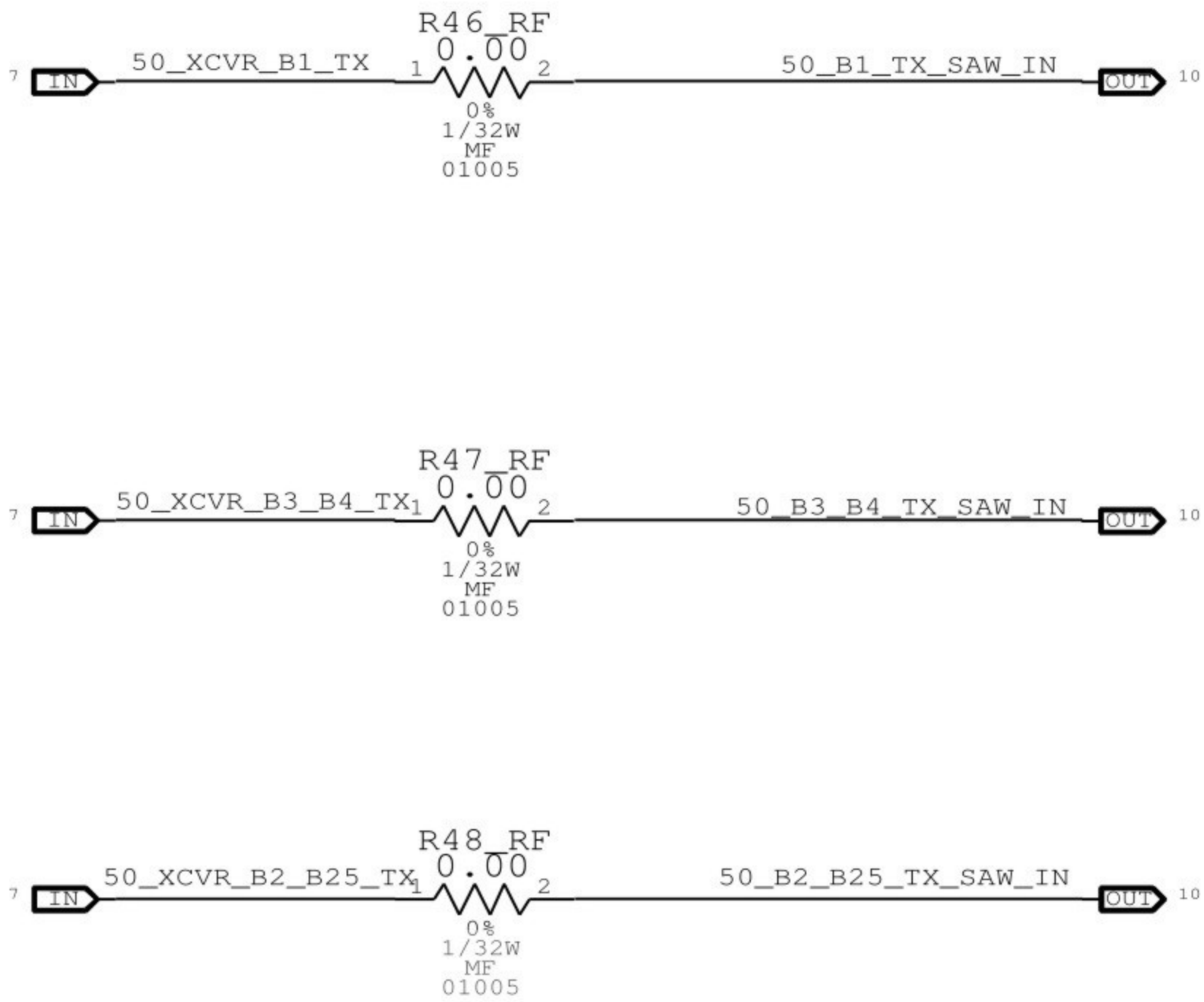


RF TRANSCEIVER (2 OF 2)

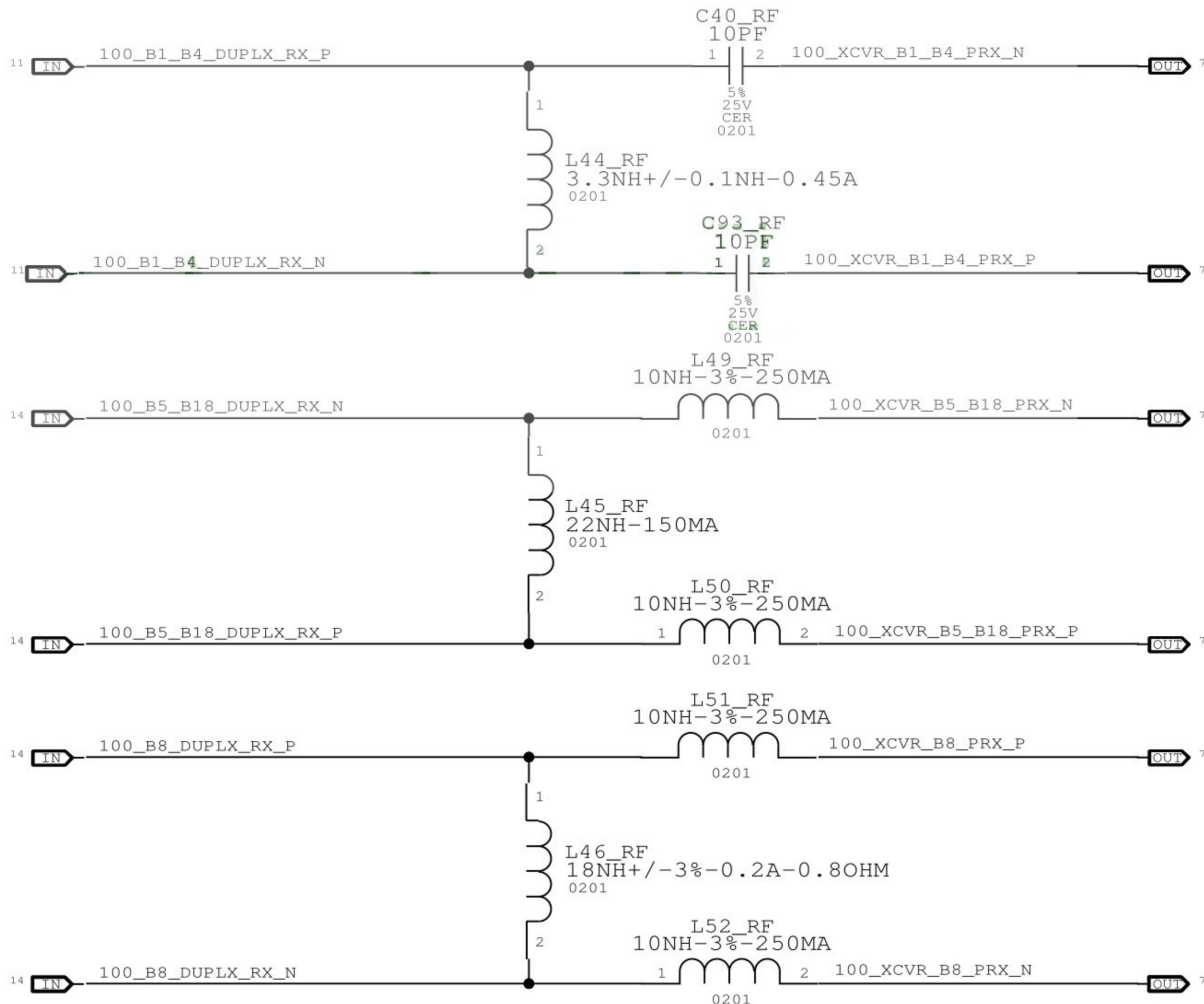
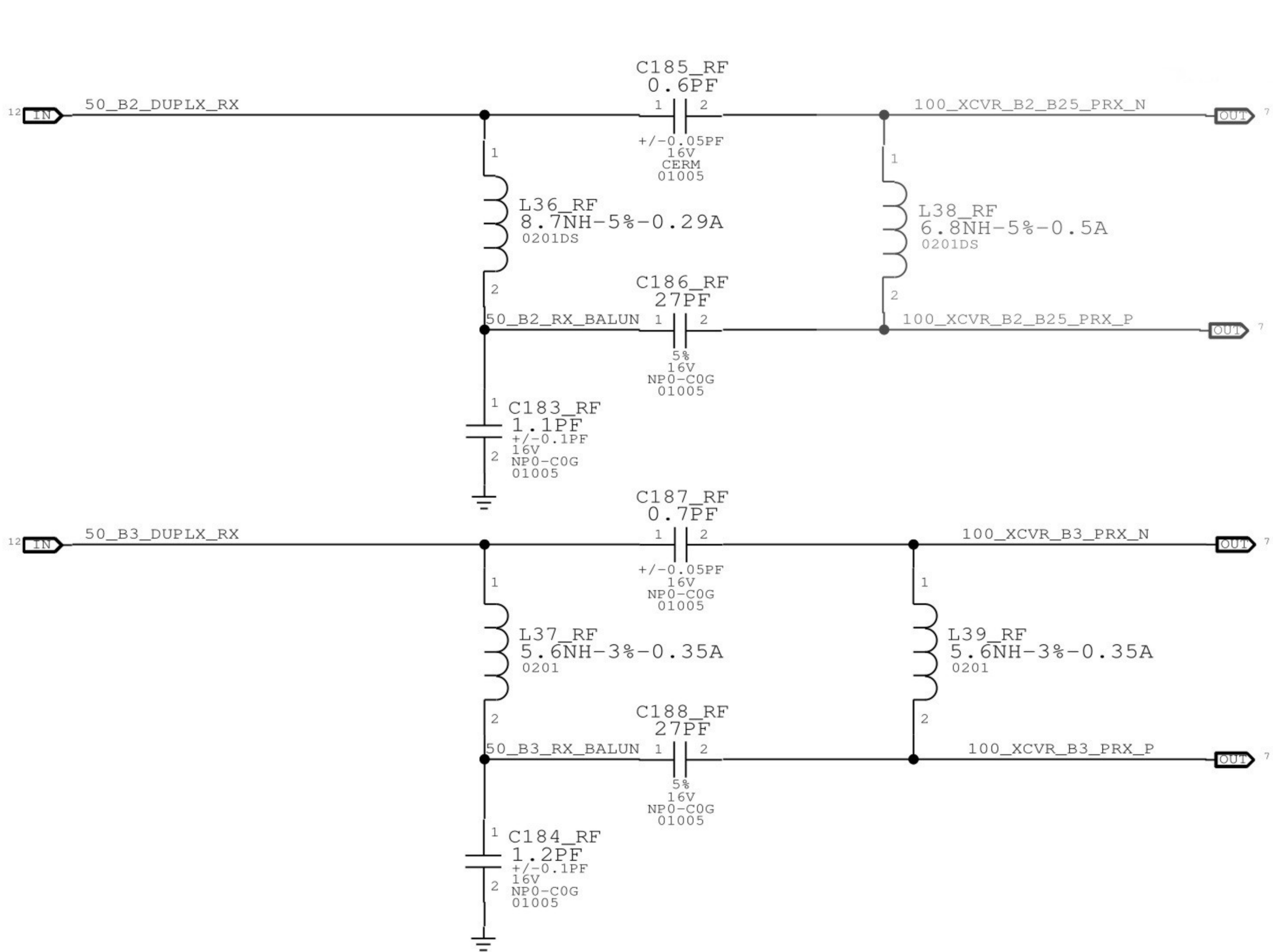


TRANSCEIVER TX AND RX MATCHING

TX MATCHING NETWORKS

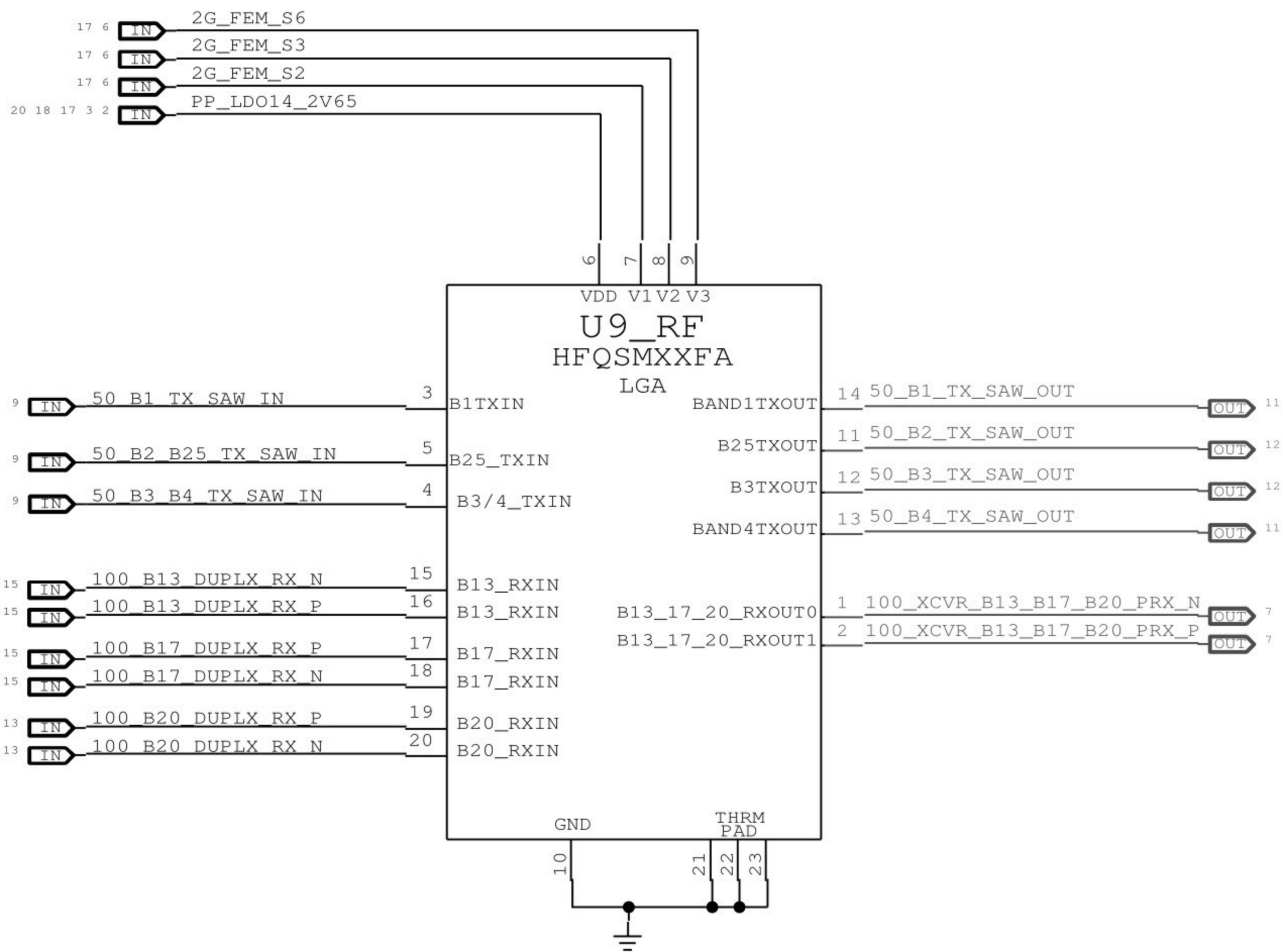


RX MATCHING NETWORKS



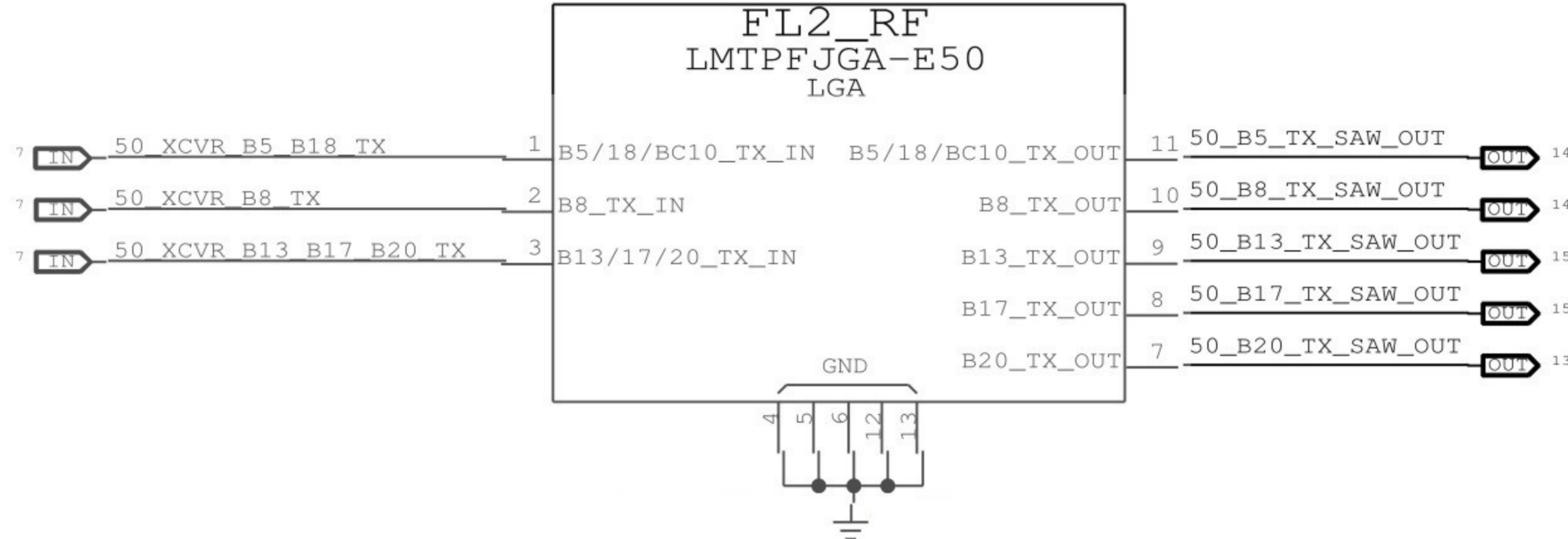
SAW BANKS

HB TX SAW BANK +
B13/B17/B20 DP6T SWITCH AND MATCHING

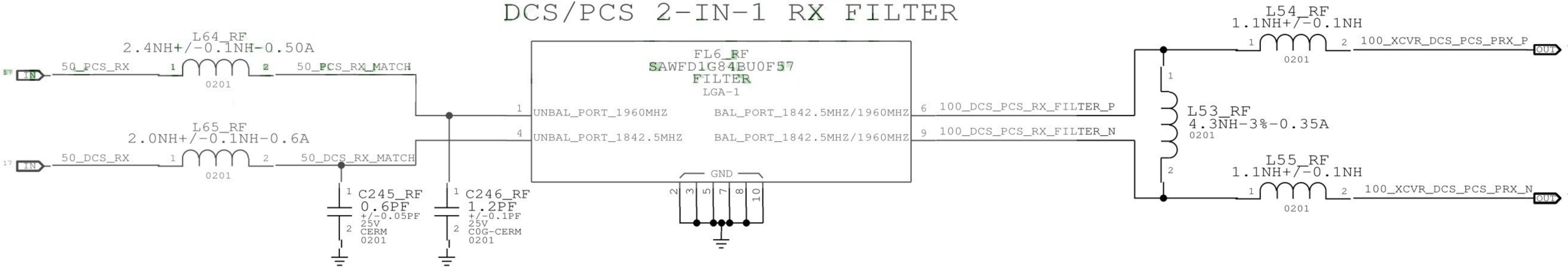


BAND	S6	S3	S2
B3 TX	HIGH	X	X
B4 TX	LOW	X	X
B13 RX	X	HIGH	HIGH
B17 RX	X	HIGH	LOW
B20 RX	X	LOW	HIGH

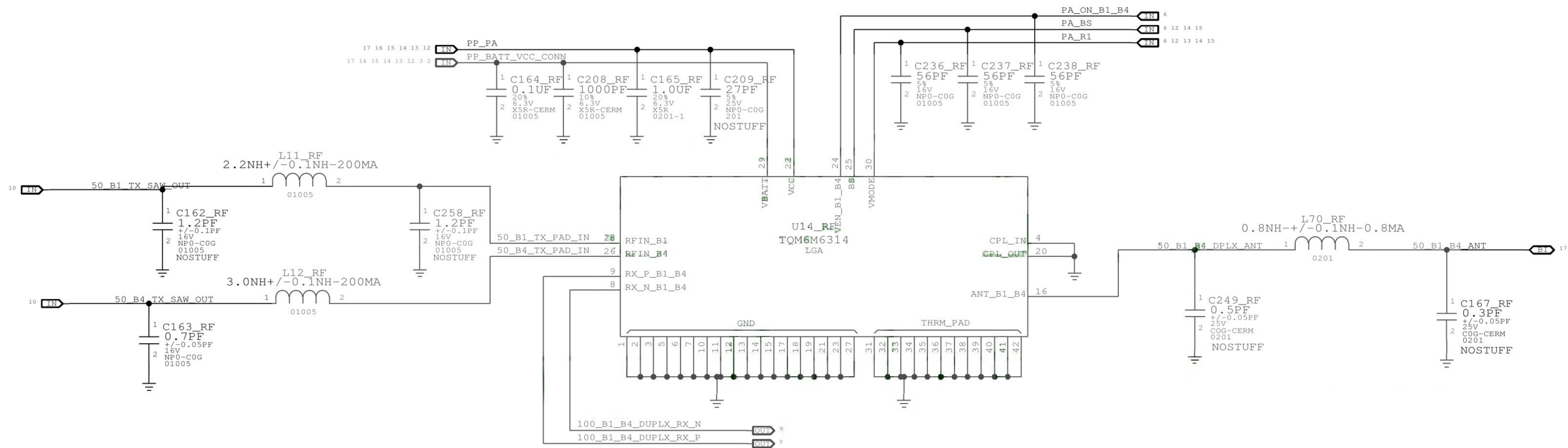
LB TX SAW BANK



DCS/PCS 2-IN-1 RX FILTER

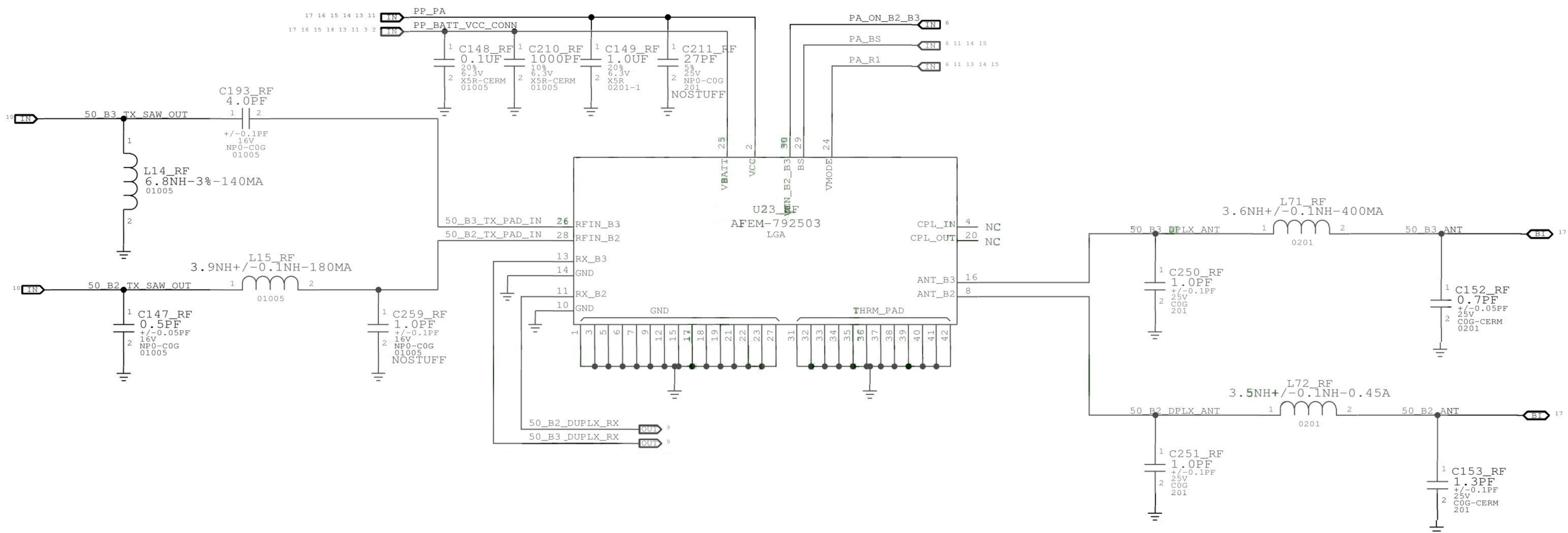


BAND 1/4 PAT



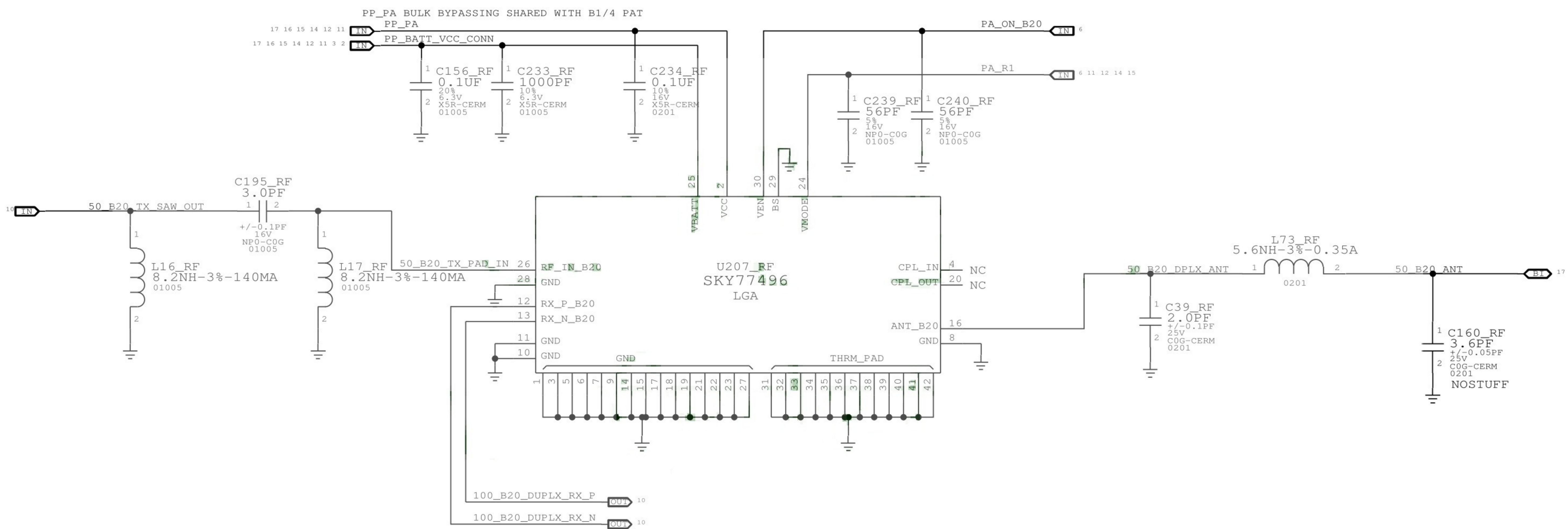
BAND	PA	POWER	MODE	PA_BS	PA_ON_B1_B4	PA_R1
=====	=====	=====	=====	=====	=====	=====
POWER DOWN		X		0	0	0
STANDBY		X		X	0	X
B4		HPM		0	1	0
B4		LPM		0	1	1
B1		HPM		1	1	0
B1		LPM		1	1	1

BAND 2 / 3 PAD



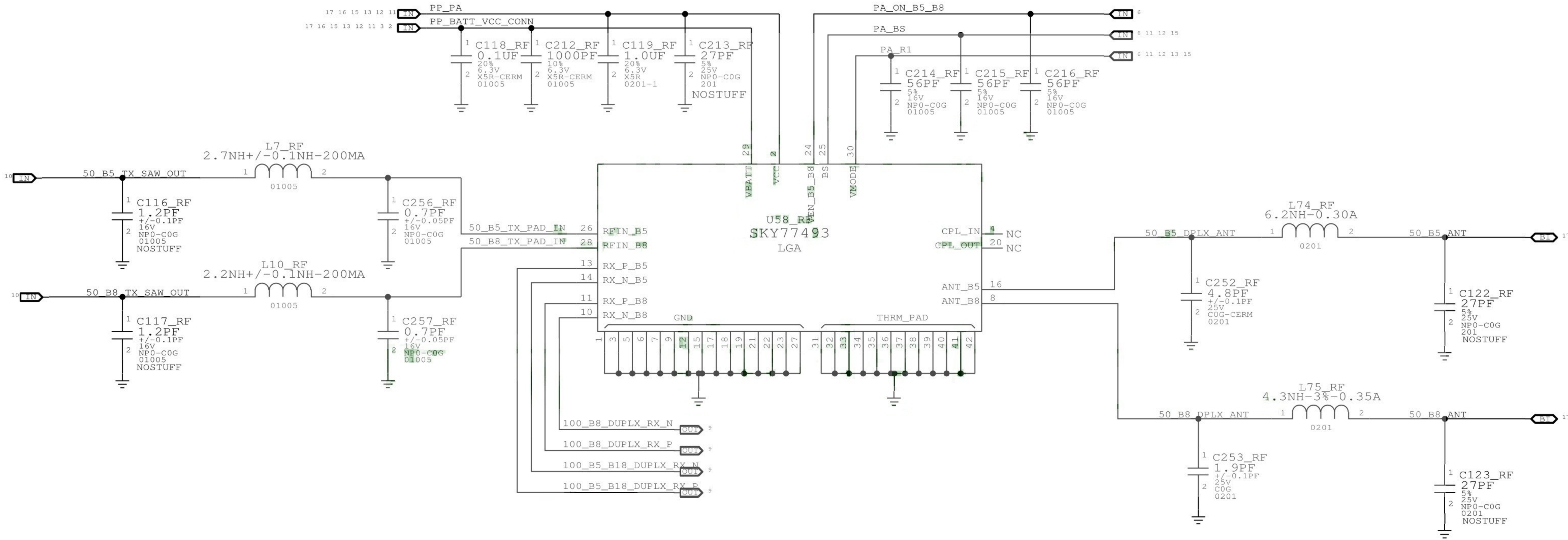
BAND	PA POWER MODE	PA_BS	PA_ON_B2_B3	PA_R1
POWER DOWN	X	0	0	0
STANDBY	X	X	0	X
B3	HPM	0	1	0
B3	LPM	0	1	1
B2	HPM	1	1	0
B2	LPM	1	1	1

BAND 20 PAD



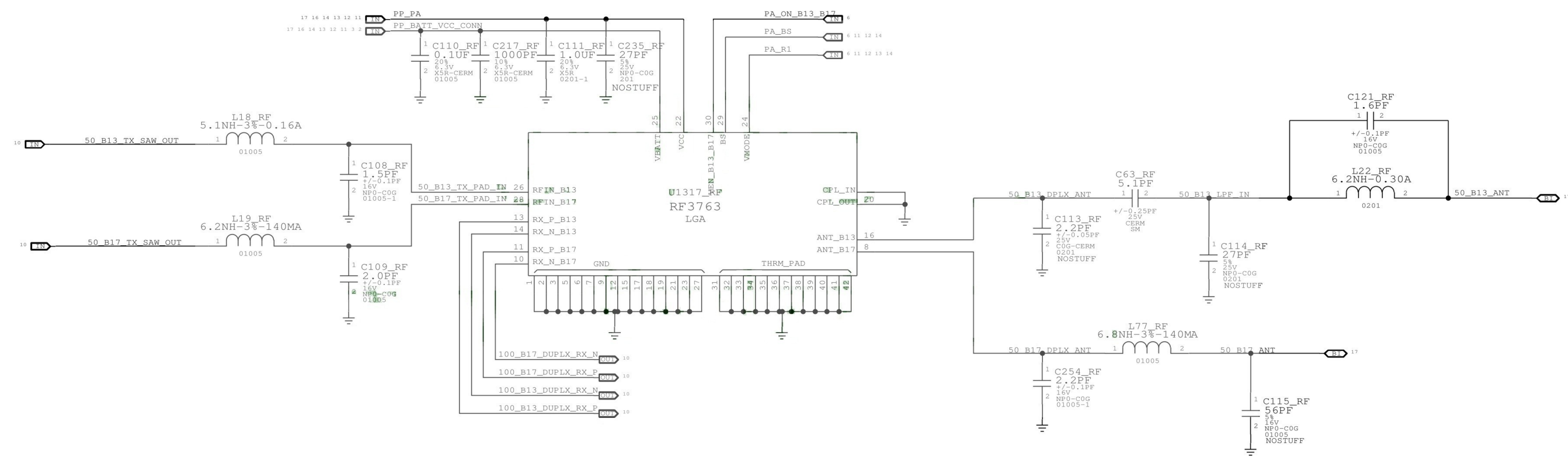
BAND	PA	POWER	MODE	PA_ON_B20	PA_R1
POWER DOWN			LPM	0	0
STANDBY			X	0	X
B20			HPM	1	0
B20			LPM	1	1

BAND 5/8 PAD



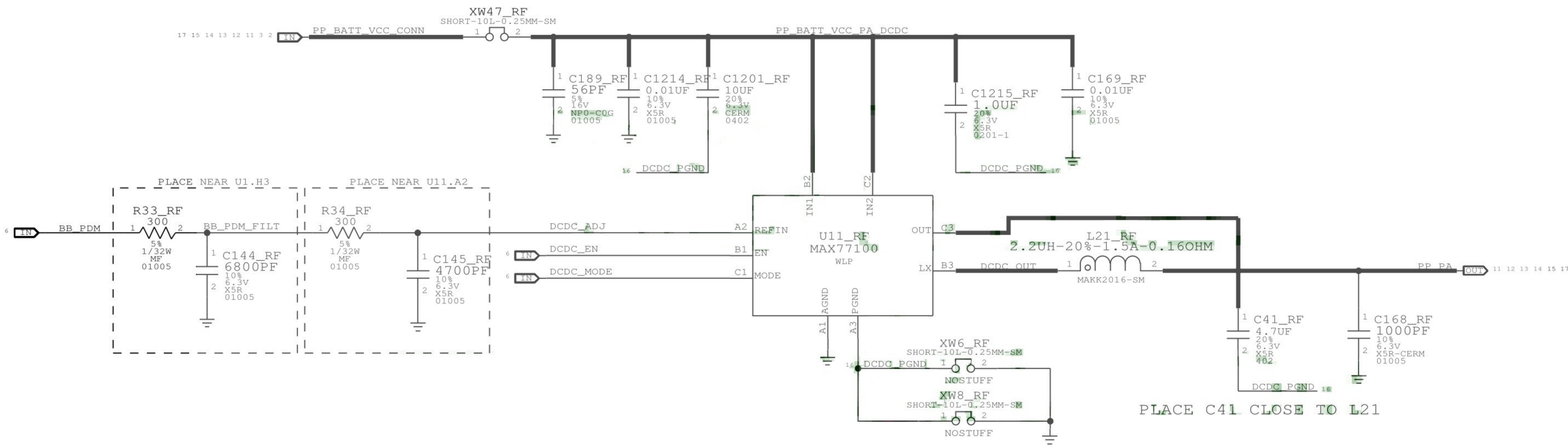
BAND	PA POWER MODE	PA_BS	PA_ON_B5_B8	PA_R1
POWER DOWN	X	0	0	0
STANDBY	X	X	0	X
B5	HPM	0	1	0
B5	LPM	0	1	1
B8	HPM	1	1	0
B8	LPM	1	1	1

BAND 13/17 PAD

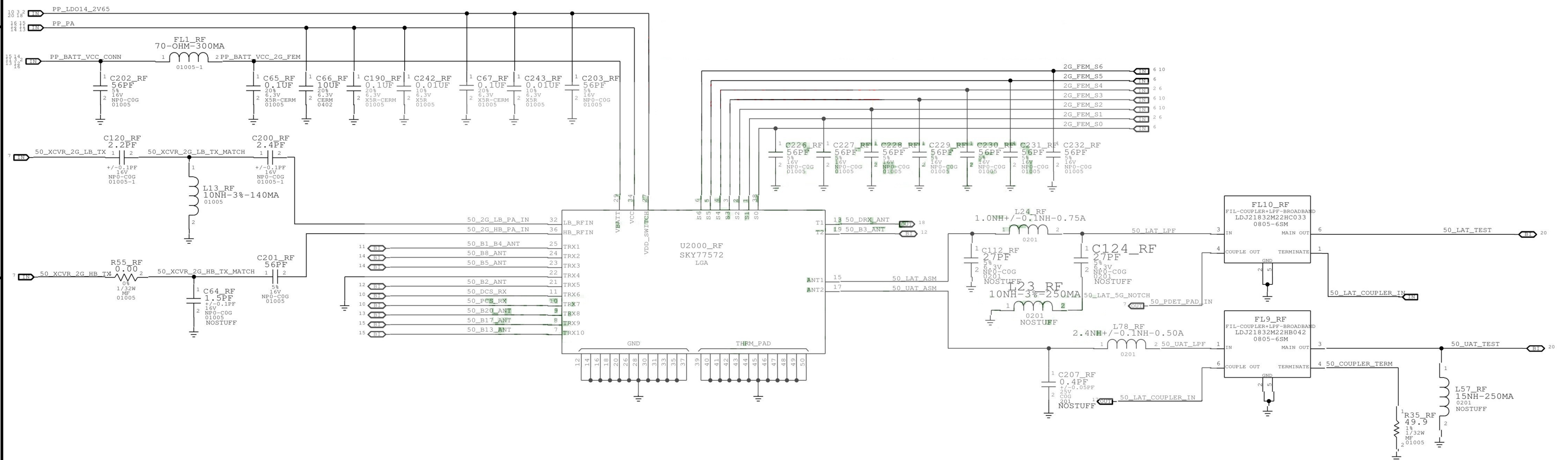


BAND	PA	POWER	MODE	PA_BS	PA_ON_B13_B17	PA_R1
=====	=====	=====	=====	=====	=====	=====
POWER DOWN		X		0	0	0
STANDBY		X		X	0	X
B17		HPM		0	1	0
B17		LPM		0	1	1
B13		HPM		1	1	0
B13		LPM		1	1	1

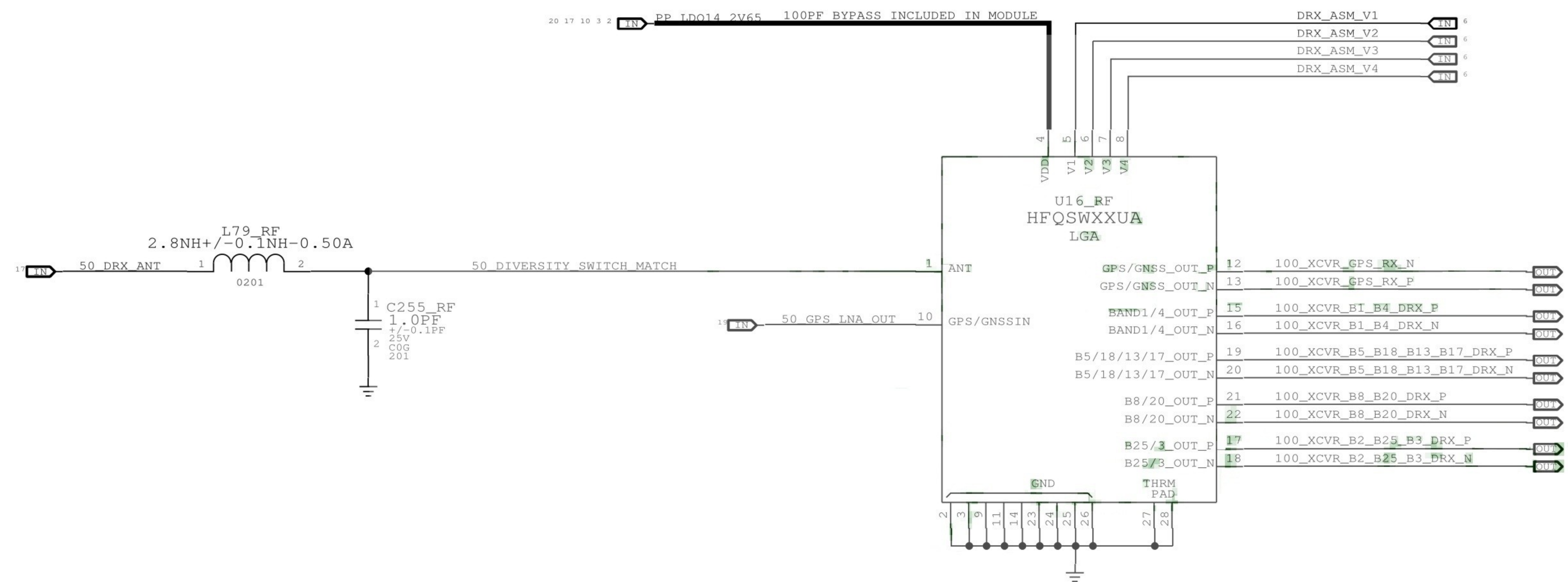
PA DC/DC CONVERTER



SEE PGS. 21-22 FOR 2G FEM LOGIC TABLE



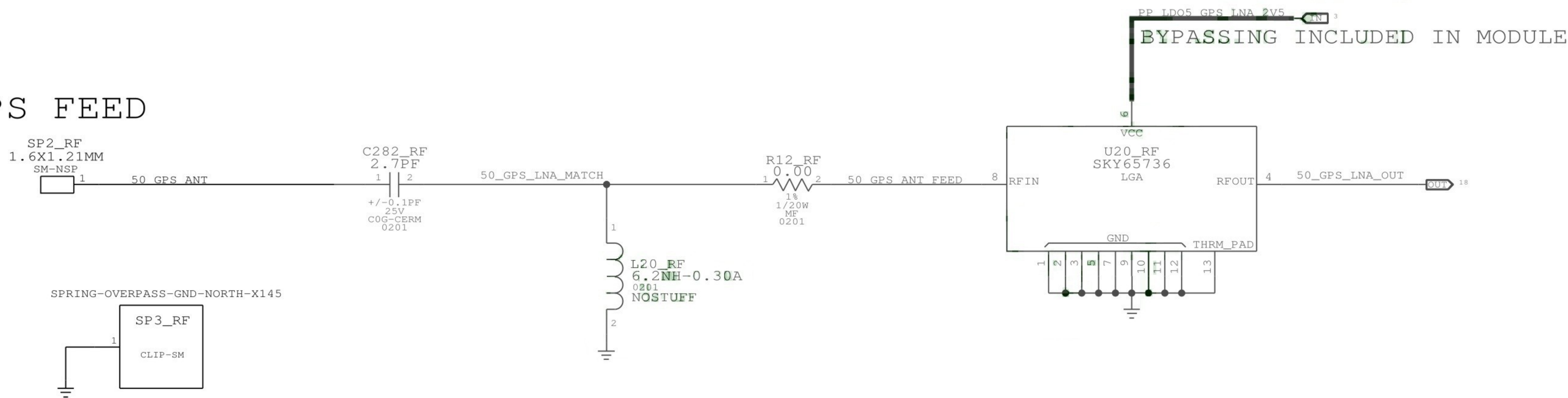
RX DIVERSITY



BAND	DRX_ASM_V4	DRX_ASM_V3	DRX_ASM_V2	DRX_ASM_V1
B1/B4	LOW	LOW	LOW	LOW
B2/25	LOW	HIGH	LOW	LOW
B3	HIGH	LOW	LOW	LOW
B5/6/18	LOW	LOW	HIGH	LOW
B8	LOW	LOW	LOW	HIGH
B13/17	LOW	HIGH	HIGH	HIGH
B20	LOW	HIGH	HIGH	LOW
OFF	LOW	LOW	HIGH	HIGH
SWITCH IS TERMINATED IN ALL OTHER POSSIBLE STATES				

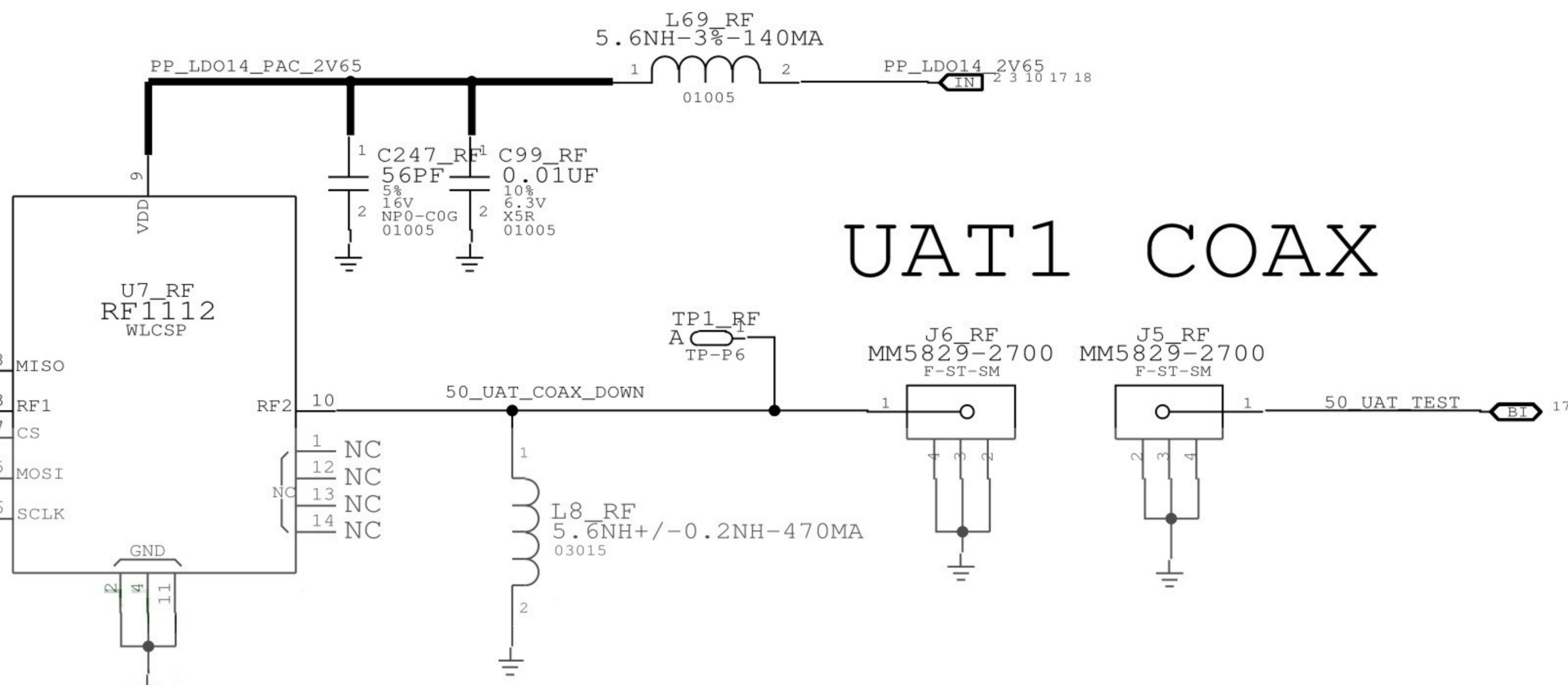
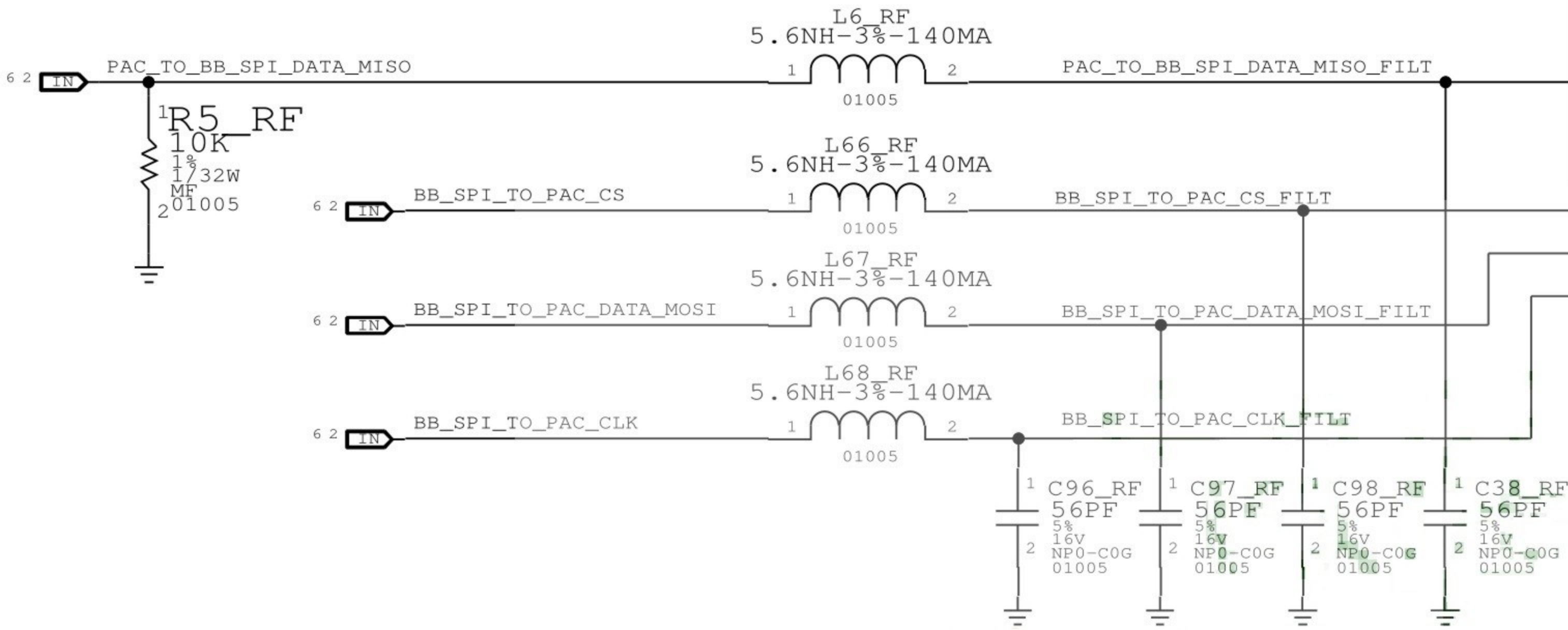
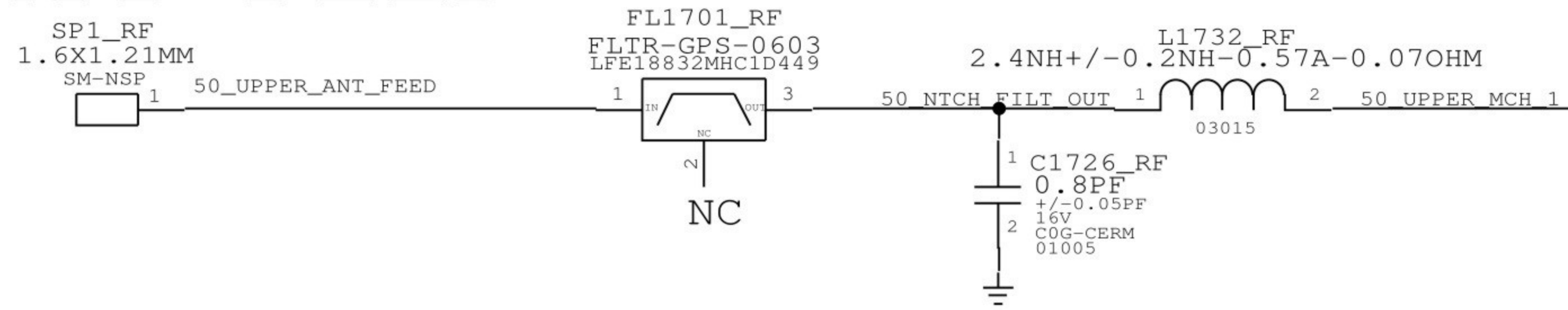
GPS

GPS FEED

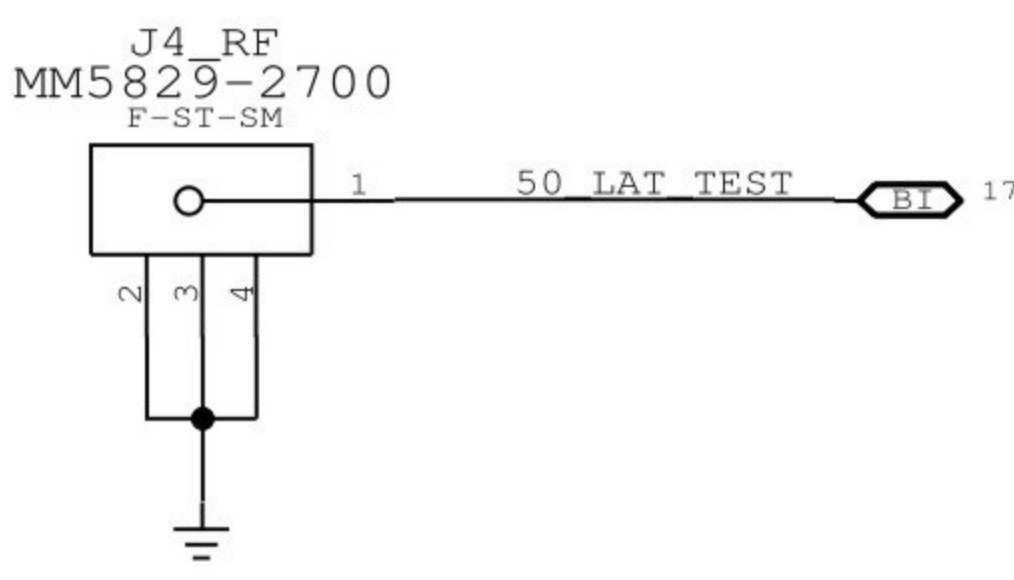


ANTENNA FEEDS

UAT1 FEED



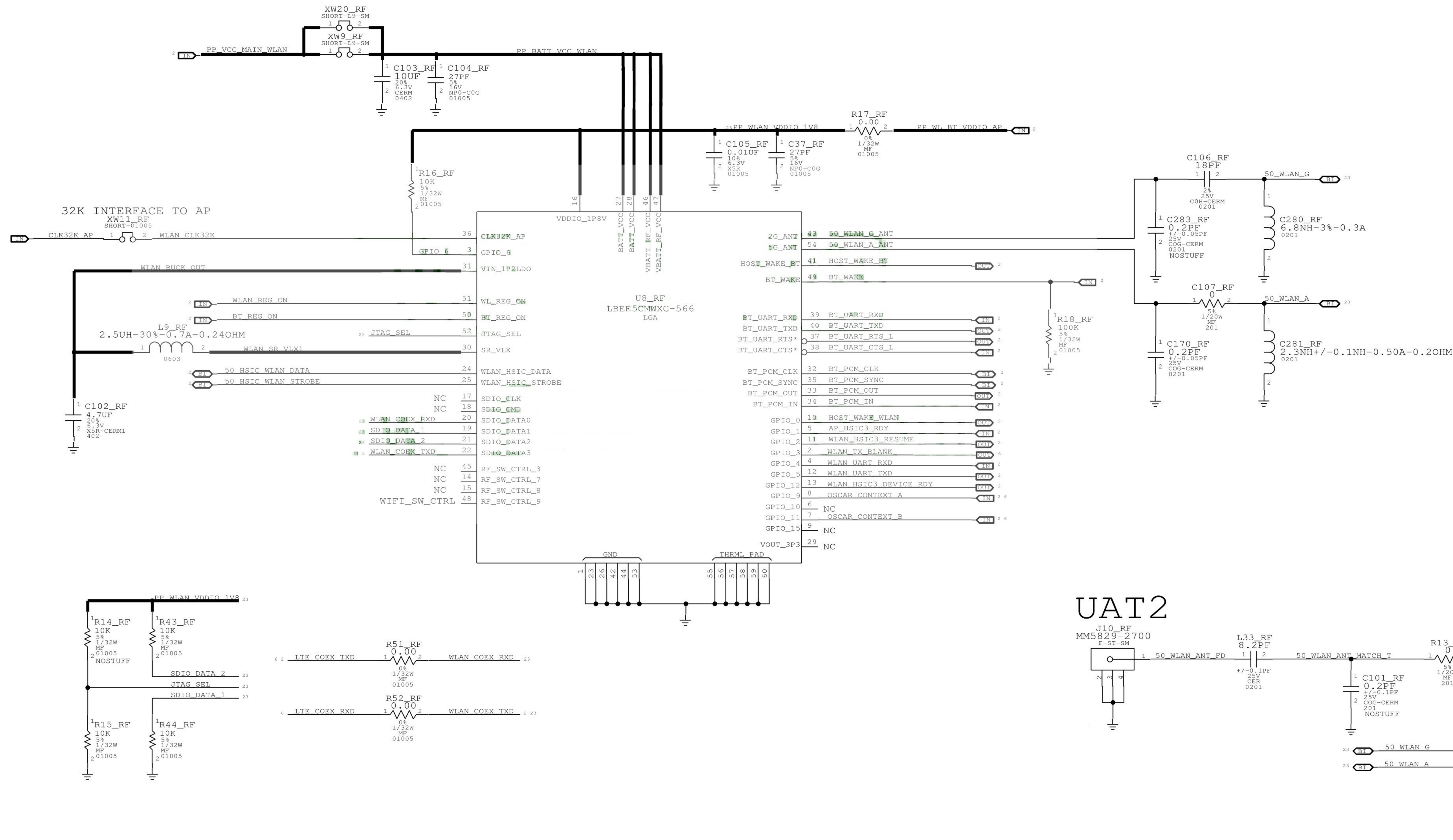
LAT



8		7		6		5		4		3		2		1	
2G FEM LOGIC TABLE (1 OF 2)															
D	BAND		S6	S5	S4	S3	S2	S1	S0	TX/PRX	PATH	DRX		PATH	
	LB TX, IDLE, LAT		HIGH	HIGH	HIGH	LOW	LOW	HIGH	HIGH	LAT	UAT				
	LB TX, IDLE, UAT		HIGH	HIGH	HIGH	LOW	LOW	LOW	HIGH	UAT	LAT				
	LB TX, LAT, HPM		HIGH	HIGH	HIGH	LOW	HIGH	HIGH	HIGH	LAT	UAT				
	LB TX, UAT, HPM		HIGH	HIGH	HIGH	LOW	HIGH	LOW	HIGH	UAT	LAT				
	LB TX, LAT, LPM		HIGH	HIGH	HIGH	LOW	HIGH	HIGH	LOW	LAT	UAT				
	LB TX, UAT, LPM		HIGH	HIGH	HIGH	LOW	HIGH	LOW	LOW	UAT	LAT				
C	LB TX, HIGH Z, LAT, HPM		HIGH	HIGH	LOW	LOW	HIGH	HIGH	HIGH	LAT	UAT				
	LB TX, HIGH Z, UAT, HPM		HIGH	HIGH	LOW	LOW	HIGH	LOW	HIGH	UAT	LAT				
	LB TX, HIGH Z, LAT, LPM		HIGH	HIGH	LOW	LOW	HIGH	HIGH	LOW	LAT	UAT				
	LB TX, HIGH Z, UAT, LPM		HIGH	HIGH	LOW	LOW	HIGH	LOW	LOW	UAT	LAT				
	HB TX, IDLE, LAT		HIGH	HIGH	HIGH	HIGH	LOW	HIGH	HIGH	LAT	UAT				
	HB TX, IDLE, UAT		HIGH	HIGH	HIGH	HIGH	LOW	LOW	HIGH	UAT	LAT				
	HB TX, LAT, HPM		HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	LAT	UAT				
	HB TX, UAT, HPM		HIGH	HIGH	HIGH	HIGH	HIGH	LOW	HIGH	UAT	LAT				
	HB TX, LAT, LPM		HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	LOW	LAT	UAT				
	HB TX, UAT, LPM		HIGH	HIGH	HIGH	HIGH	HIGH	LOW	LOW	UAT	LAT				
B	HB TX, HIGH Z, LAT, HPM		HIGH	HIGH	LOW	HIGH	HIGH	HIGH	HIGH	LAT	UAT				
	HB TX, HIGH Z, UAT, HPM		HIGH	HIGH	LOW	HIGH	HIGH	LOW	HIGH	UAT	LAT				
	HB TX, HIGH Z, LAT, LPM		HIGH	HIGH	LOW	HIGH	HIGH	HIGH	LOW	LAT	UAT				
	HB TX, HIGH Z, UAT, LPM		HIGH	HIGH	LOW	HIGH	HIGH	LOW	LOW	UAT	LAT				
	GSM850 RX, LAT		HIGH	LOW	HIGH	HIGH	LOW	HIGH	HIGH	LAT	UAT				
	GSM850 RX, UAT		HIGH	LOW	HIGH	HIGH	LOW	LOW	HIGH	UAT	LAT				
	GSM900 RX, LAT		HIGH	LOW	HIGH	HIGH	HIGH	HIGH	HIGH	LAT	UAT				
	GSM900 RX, UAT		HIGH	LOW	HIGH	HIGH	HIGH	LOW	HIGH	UAT	LAT				
	GSM1900 RX, LAT		LOW	HIGH	LOW	HIGH	HIGH	HIGH	HIGH	LAT	UAT				
	GSM1900 RX, UAT		LOW	HIGH	LOW	HIGH	HIGH	LOW	HIGH	UAT	LAT				
A	GSM1800 RX, LAT		HIGH	LOW	LOW	HIGH	HIGH	HIGH	HIGH	LAT	UAT				
	GSM1800 RX, UAT		HIGH	LOW	LOW	HIGH	HIGH	LOW	HIGH	UAT	LAT				
	TERMINATED, UAT		HIGH	LOW	HIGH	LOW	HIGH	HIGH	HIGH	UAT	LAT				
	TERMINATED, LAT		HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LAT	UAT				
	LAT = LOWER ANTENNA UAT = UPPER ANTENNA														
8		7		6		5		4		3					

	8	7	6	5	4	3	2	1	
	2G FEM LOGIC TABLE – DEV2 (2 OF 2)								
D	BAND	S6	S5	S4	S3	S2	S1	S0	TX/PRX PATH DRX PATH
	B1/BC6, LAT	LOW	LOW	LOW	LOW	HIGH	HIGH	HIGH	LAT UAT
	B1/BC6, UAT	LOW	LOW	LOW	LOW	HIGH	LOW	HIGH	UAT LAT
	B2/B25/BC1, LAT	LOW	HIGH	LOW	LOW	HIGH	HIGH	HIGH	LAT UAT
	B2/B25/BC1, UAT	LOW	HIGH	LOW	LOW	HIGH	LOW	HIGH	UAT LAT
	B3, LAT	HIGH	LOW	LOW	LOW	HIGH	HIGH	HIGH	LAT UAT
	B3, UAT	HIGH	LOW	LOW	LOW	HIGH	LOW	HIGH	UAT LAT
	B4/BC15, LAT	LOW	LOW	LOW	LOW	HIGH	HIGH	HIGH	LAT UAT
C	B4/BC15, UAT	LOW	LOW	LOW	LOW	HIGH	LOW	HIGH	UAT LAT
	B5/B6/B18/BC0/BC10, LAT	LOW	LOW	HIGH	LOW	HIGH	HIGH	HIGH	LAT UAT
	B5/B6/B18/BC0/BC10, UAT	LOW	LOW	HIGH	LOW	HIGH	LOW	HIGH	UAT LAT
	B8, LAT	LOW	LOW	LOW	HIGH	HIGH	HIGH	HIGH	LAT UAT
	B8, UAT	LOW	LOW	LOW	HIGH	HIGH	LOW	HIGH	UAT LAT
	B13, LAT	LOW	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	LAT UAT
	B13, UAT	LOW	HIGH	HIGH	HIGH	HIGH	LOW	HIGH	UAT LAT
	B17, LAT	LOW	HIGH	HIGH	HIGH	LOW	HIGH	HIGH	LAT UAT
B	B17, UAT	LOW	HIGH	HIGH	HIGH	LOW	LOW	HIGH	UAT LAT
	B20, LAT	LOW	HIGH	HIGH	LOW	HIGH	HIGH	HIGH	LAT UAT
	B20, UAT	LOW	HIGH	HIGH	LOW	HIGH	LOW	HIGH	UAT LAT
	OFF	LOW	LOW	HIGH	HIGH	X	X	X	X X
	STANDBY	LOW	LOW	LOW	LOW	LOW	LOW	LOW	X X
	LAT = LOWER ANTENNA								
	UAT = UPPER ANTENNA								
	OFF = LOWEST POWER STATE WITHOUT REMOVING LDO14_2V65 POWER								
A	STANDBY = ADDED TO SUPPORT EXISTING SW ARCHITECTURE. NOT TO BE USED AS A LOW POWER STATE.								
	8	7	6	5	4	3			

WLAN / BT



PULL-UP ON GPIO6, SDIO_DATA_2 & PULL-DOWN ON SDIO_DATA_1 REQUIRED FOR HSIC BOOTSTRAPPING