

Thu Apr 17 17:11:44 2014

- 1. ALL RESISTANCE VALUES ARE IN OHMS, 0.1 WATT +/- 5%.
- 2. ALL CAPACITANCE VALUES ARE IN MICROFARADS.
- 3. ALL CRYSTALS & OSCILLATOR VALUES ARE IN HERTZ.

REV	ECN	DESCRIPTION OF REVISION	CK APPD	DATE
7	0002727241	ENGINEERING RELEASED		2014-04-18

# N61 CARRIER BUILD

## N61 BOM CALLOUTS

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40	2G PA	N61_RADIO_MLB	03/24/2014
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44	HIGH BAND PAD	N61_RADIO_MLB	03/24/2014
45	ANTENNA SWITCH	N61_RADIO_MLB	03/24/2014
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47	RX DIVERSITY	N61_RADIO_MLB	03/24/2014
48	GPS	N61_RADIO_MLB	03/24/2014
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50	ANTENNA FEEDS	N61_RADIO_MLB	03/24/2014
51	WIFI/BT: MODULE AND FRONT END	N61_RADIO_MLB	03/24/2014
52		N61_RADIO_MLB	03/24/2014
53	JUMPER	N61_RADIO_MLB	03/24/2014
54	JUMPER	N61_RADIO_MLB	03/24/2014

### NAND BOM OPTIONS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
335S0998	1	NAND, 19NM, 16GX8, MLC, PPN1.5	U0604	CRITICAL	NAND_16G
335S0993	1	NAND, 19NM, 32GX8, MLC, PPN1.5	U0604	CRITICAL	NAND_32G
335S0994	1	NAND, 19NM, 64GX8, MLC, PPN1.5	U0604	CRITICAL	NAND_64G
335S00010	1	NAND, 19NM, 128GX8, TLC, PPN1.5	U0604	CRITICAL	NAND_128G
138S0867	1	CAP,XSR,10UF,20%,6.3V,0.65MM,HRTZ,0402	C0610,C0611,C0614,C0634	CRITICAL	NAND_16G
138S0867	1	CAP,XSR,10UF,20%,6.3V,0.65MM,HRTZ,0402	C0613,C0633,C0610,C0611,C0614,C0634	CRITICAL	NAND_32G & NAND_64G
138S00003	1	CAP,XSR,15UF,20%,6.3V,0.65MM,HRTZ,0402	C0613,C0633,C0610,C0611,C0614,C0634	CRITICAL	NAND_128G

### ALTERNATE NAND BOM OPTIONS

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
335S0992	335S0998	ALTERNATE	J0604	TOSHIBA,NAND,16GB
335S1038	335S0998	ALTERNATE	J0604	HYNIX,NAND,16GB
335S1040	335S0994	ALTERNATE	J0604	HYNIX,NAND,64GB
335S00014	335S0994	ALTERNATE	J0604	TOSHIBA,NAND,64GB
335S00015	335S00010	ALTERNATE	J0604	TOSHIBA,NAND128GB
335S00009	335S0994	ALTERNATE	J0604	SANDISK,NAND,64GB,TLC

### SHIELD BOM OPTIONS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
604-00241	1	SUBASSY, SHIELD, UPPER FRONT, N61	SH2501	CRITICAL	COMMON
604-00242	1	SUBASSY, SHIELD, LOWER FRONT, N61	SH2502	CRITICAL	COMMON
604-00243	1	SUBASSY, SHIELD, LOWER BACK, N61	SH2504	CRITICAL	COMMON
604-00244	1	SUBASSY, SA SHIELD, N61	SH2506	CRITICAL	COMMON

### ALTERNATE BOM OPTIONS

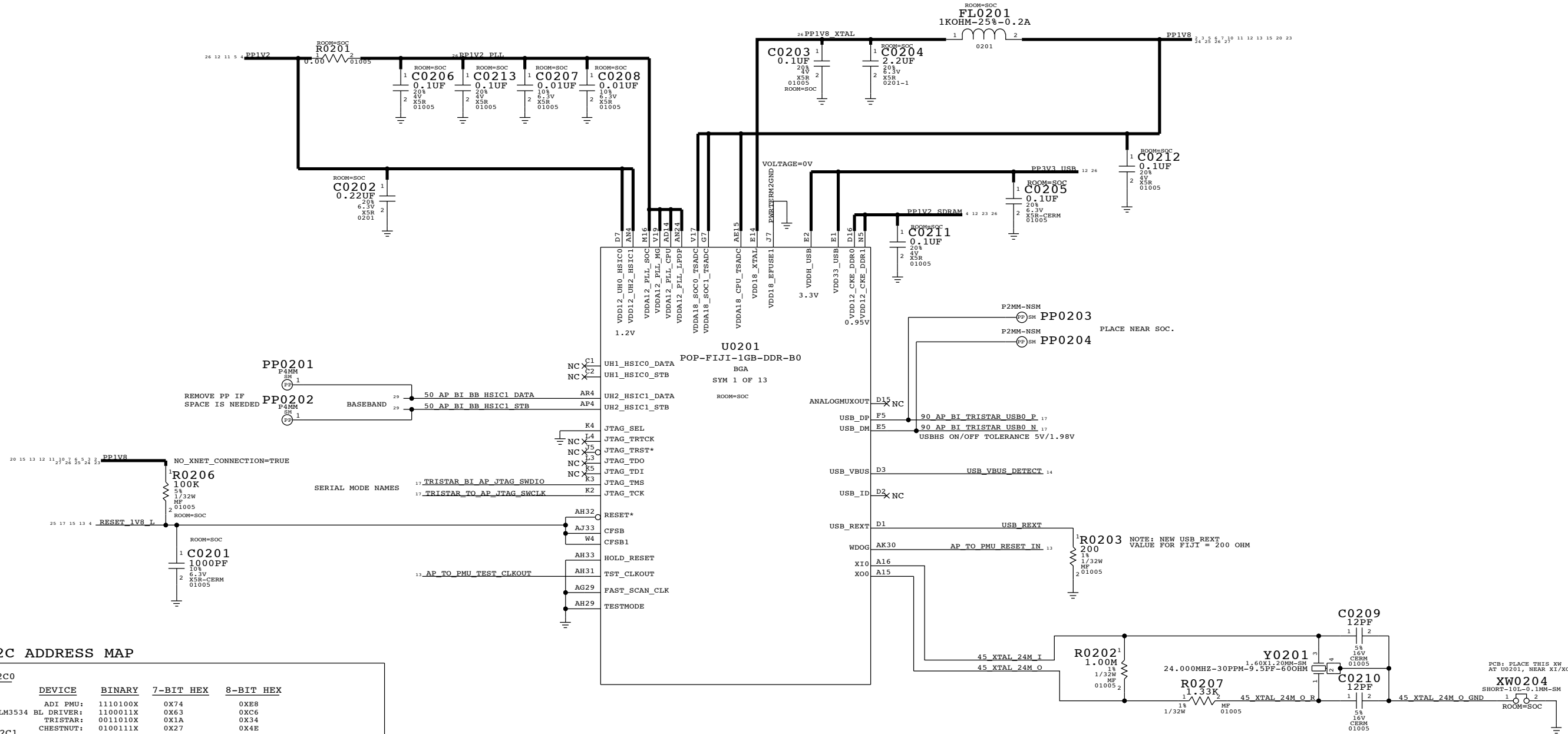
PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
152S1844	152S1836	ALTERNATE	L1604	TY ALT INDUCTOR
152S1842	152S1849	ALTERNATE	L1519	TY ALT INDUCTOR
197S0392	197S0369	ALTERNATE	Y1200	ESPON ALT XTAL
197S0399	197S0369	ALTERNATE	Y1200	NDK ALT XTAL
338S1285	338S1202	ALTERNATE	U1601	L21 SPKAMP
152S2034	152S2033	ALTERNATE	L1135	1.2MM 1.0UH, CYNTEC
152S00004	152S2049	ALTERNATE	L1135	1.2MM 0.47UH, CYNTEC
339S00005	339S0246	ALTERNATE	U0201	FIJI, B0, SAMSUNG
339S0247	339S0246	ALTERNATE	U0201	FIJI, B0, HYNIX
339S00006	339S0246	ALTERNATE	U0201	FIJI, B1, E
339S00007	339S0246	ALTERNATE	U0201	FIJI, B1, H
339S00008	339S0246	ALTERNATE	U0201	FIJI, B1, S
155S0773	155S0453	ALTERNATE	R1309	TY 1200HM FERRITE
118S0764	118S0717	ALTERNATE	R1309	3.92KOHM, 01005
343S0688	343S0638	ALTERNATE	U2401	CUMULUS C1, FAB4
138S00005	138S00003	ALTERNATE	C1290	15UF,0402,HRTZL CAP
155S00011	155S00008	ALTERNATE	L1135	CMC,900HM,MURATA
377S0168	377S0140	ALTERNATE	DZ1113	SUPPL,TRANS,VARIABLE,MOTEC
155S0895	155S0610	ALTERNATE	FL1802,FL1803	FERR BE,1500HM,200HM,01005
138S0648	138S0652	ALTERNATE	C1018	CAP,4.7UF,20%,6.3V,0402,B=0.65MM
138S0657	138S0702	ALTERNATE	C1106	CAP,4.7UF,20%,4V,0402
338S00028	338S00017	ALTERNATE	U2203	CARBON, BOSCH, BMI142BC
338S00029	338S00017	ALTERNATE	U2203	CARBON, ST, AP60S2AA
335S00013	335S0894	ALTERNATE	J0301	ST BK EEPROM

SCH 051-9903  
BRD 820-3486  
MCO 056-6825

- BOM 639-4237 (16GB, BETTER)
- BOM 639-5838 (32GB, BEST)
- BOM 639-5839 (64GB, ULTRA)
- BOM 639-00208 (16GB, BETTER, DTD)
- BOM 639-00209 (32GB, BEST, DTD)
- BOM 639-00210 (64GB, ULTRA, DTD)
- BOM 639-00025 (128GB, SUPREME, TLC)
- BOM 639-00212 (128GB, SUPREME, TLC, DTD)

DRAWING TITLE		SCHEM,MLB,N61	
Apple Inc.	DRAWING NUMBER	051-9903	SIZE D
	REVISION	7.0.0	
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# FIJI: JTAG, USB, HSIC, XTAL



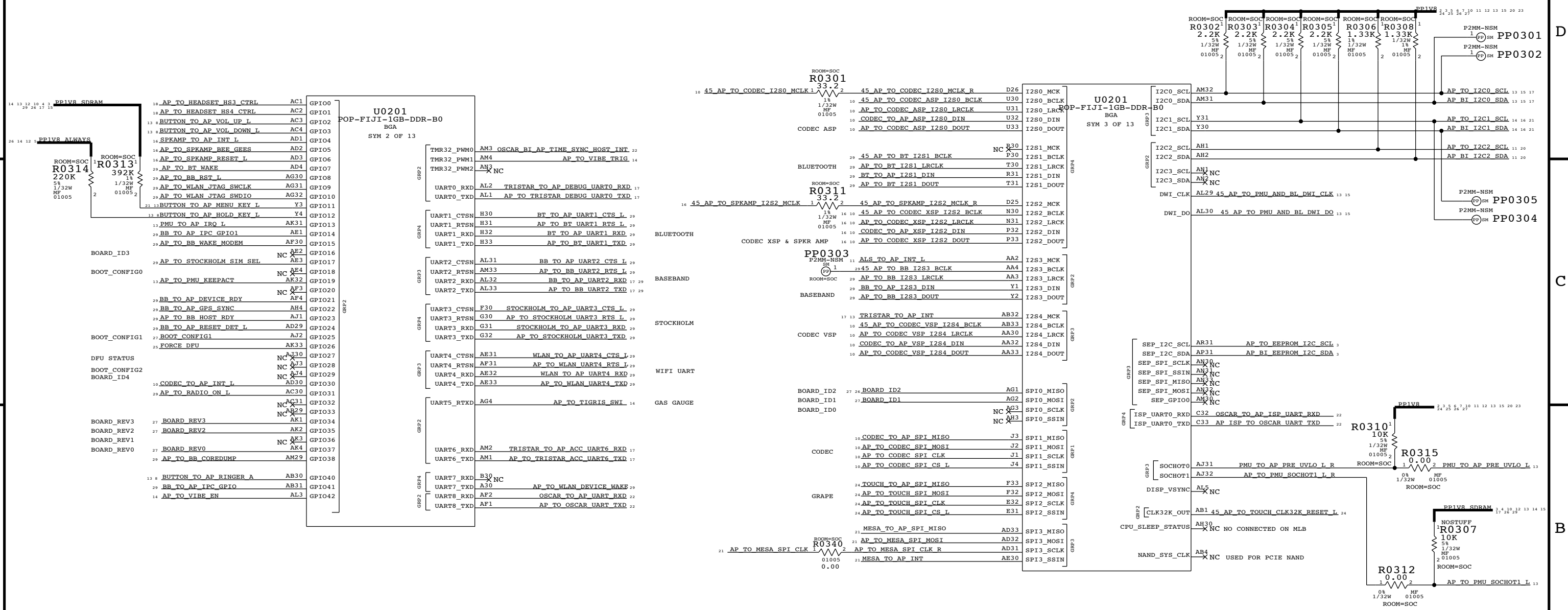
## I2C ADDRESS MAP

I2C0	DEVICE	BINARY	7-BIT HEX	8-BIT HEX
I2C0	ADI PMU:	1110100X	0X74	0XE8
	LM3534 BL DRIVER:	1100011X	0X63	0XC6
	TRISTAR:	0011010X	0X1A	0X34
	CHESTNUT:	0100111X	0X27	0X4E
I2C1	TIGRIS CHARGER:	1110101X	0X75	0XEA
	LINEAR VIBE:	1011010X	0X5A	0XB4
	CS35L19B AMP:	1000000X	0X40	0X80
	MESA EEPROM (MEMORY):	1010110X	0X56	0XAC
	MESA EEPROM (ID):	1011110X	0X5E	0XBC
I2C2	CT814 ALS:	0101001X	0X29	0X52
	DISPLAY EEPROM:	1010001X	0X51	0XA2
RCAM I2C	OPEL STROBE DRIVER:	1100011X	0X63	0XC6
	REAR FACING CAM:	0010000X	0X10	0X20
	VCM AF DRIVER:	0001100X	0X0C	0X18
FCAM I2C	FRONT FACING CAM:	0010000X	0X10	0X20

NOTE: ACCEL, GYRO, COMPASS ALL USING SPI (VIA OSCAR) FOR AP COMMUNICATION.

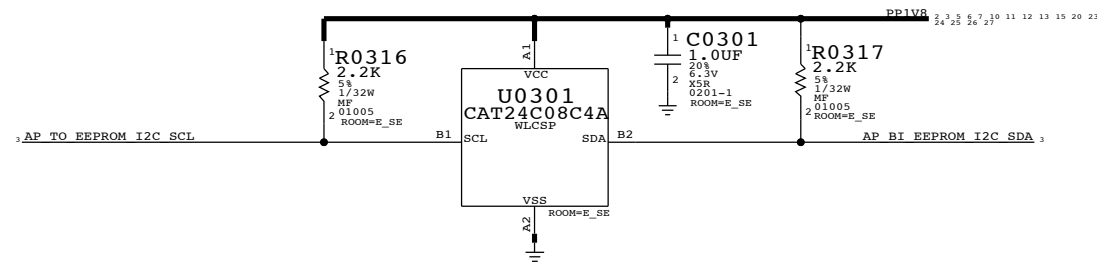
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<b>SOC:MAIN</b>			
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# FIJI: DIGITAL I/O, BOOTSTRAPPING



ANTI-ROLLBACK EEPROM  
 ONSEMI EEPROM  
 APN: 335S0894

REMOVED HOLD + MENU KEY  
 BUFFERS SINCE NOT NEEDED FOR FIJI



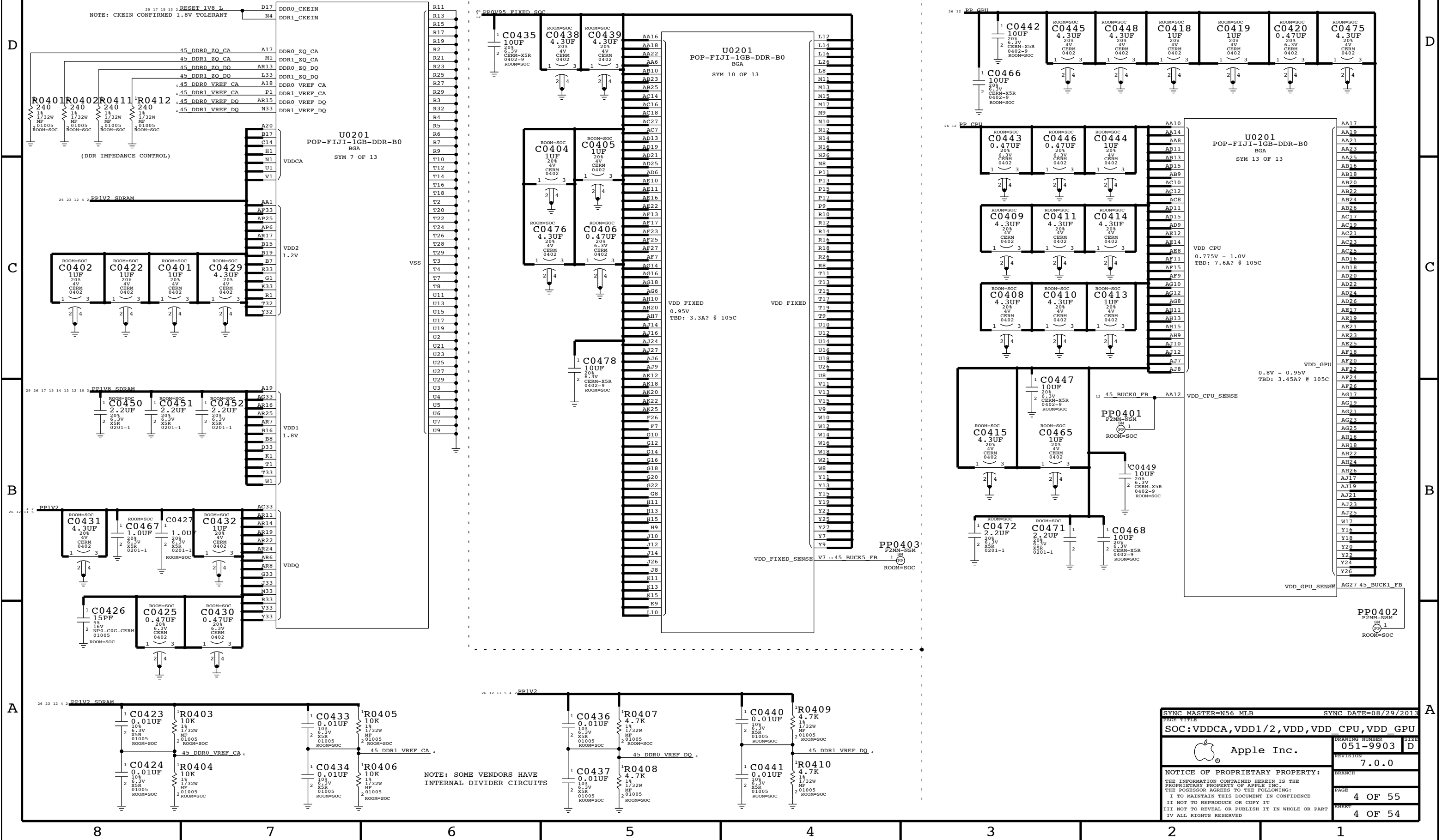
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# FIJI: VDDCA, VDD1/2, VDDQ, VDD, VDD\_FIXED, VDD\_CPU, VDD\_GPU

VDDCA, VDD1/2, VDDQ

VDD

VDD\_CPU, VDD\_GPU

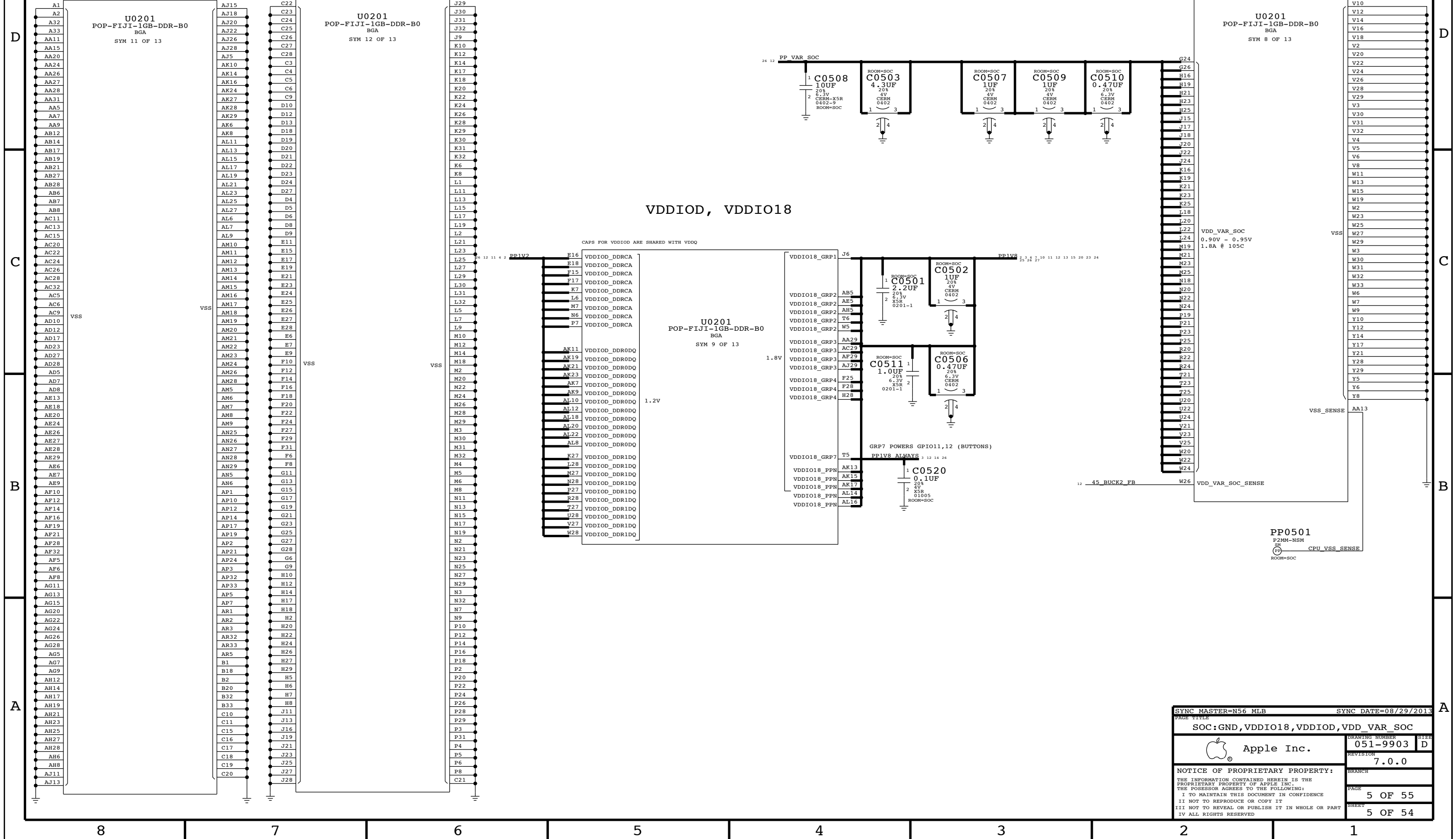


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SOC:VDDCA,VDD1/2,VDD,VDD_CPU,VDD_GPU			
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# FIJI: VDDIOD, VDDIO18, VDD\_VAR\_SOC

JUST A FEW GNDS

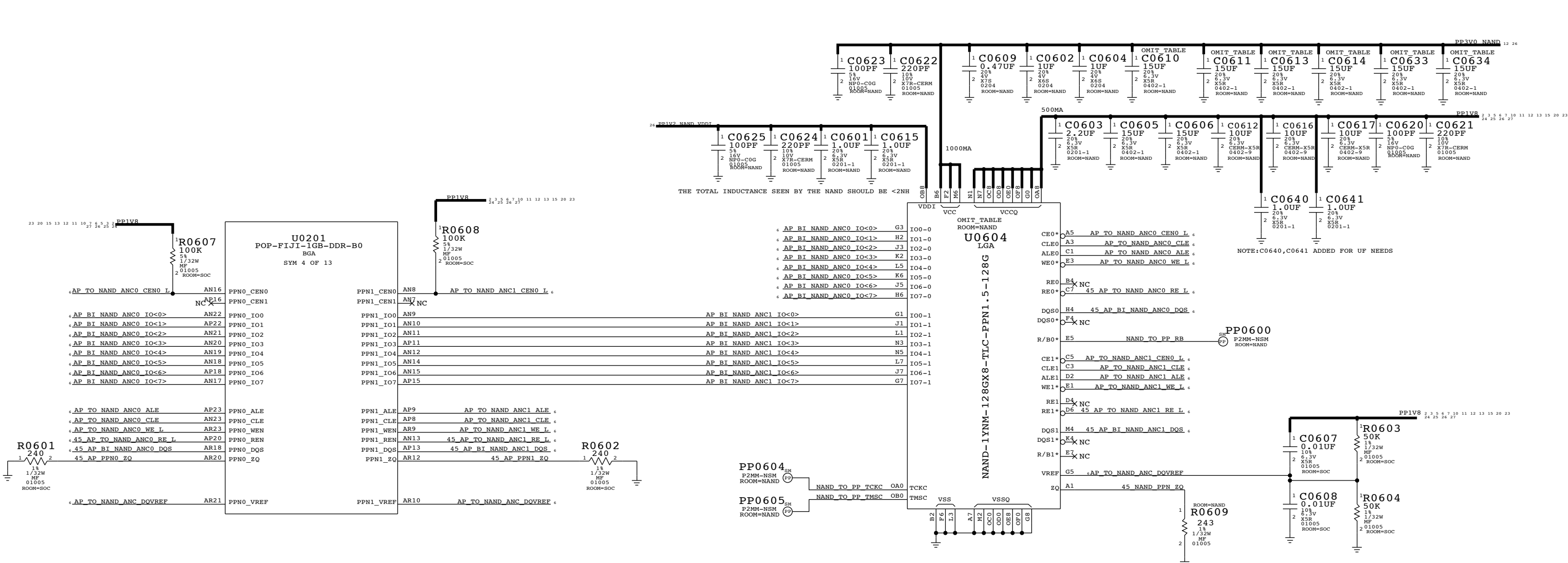
VDD\_SRAM, VDD\_SOC



SYNC MASTER=N56 MLB		SYNC DATE=08/29/2013	
PAGE TITLE SOC:GND,VDDIO18,VDDIOD,VDD_VAR_SOC			
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# FIJI: NAND + 12X17 NAND PKG

SUPPORT FOR PPN1.5 (1.8V IO) ONLY



NOTE: IO<6> PREFERRED BY MATT BYOM (N51)  
(IS A STATUS READY BIT)

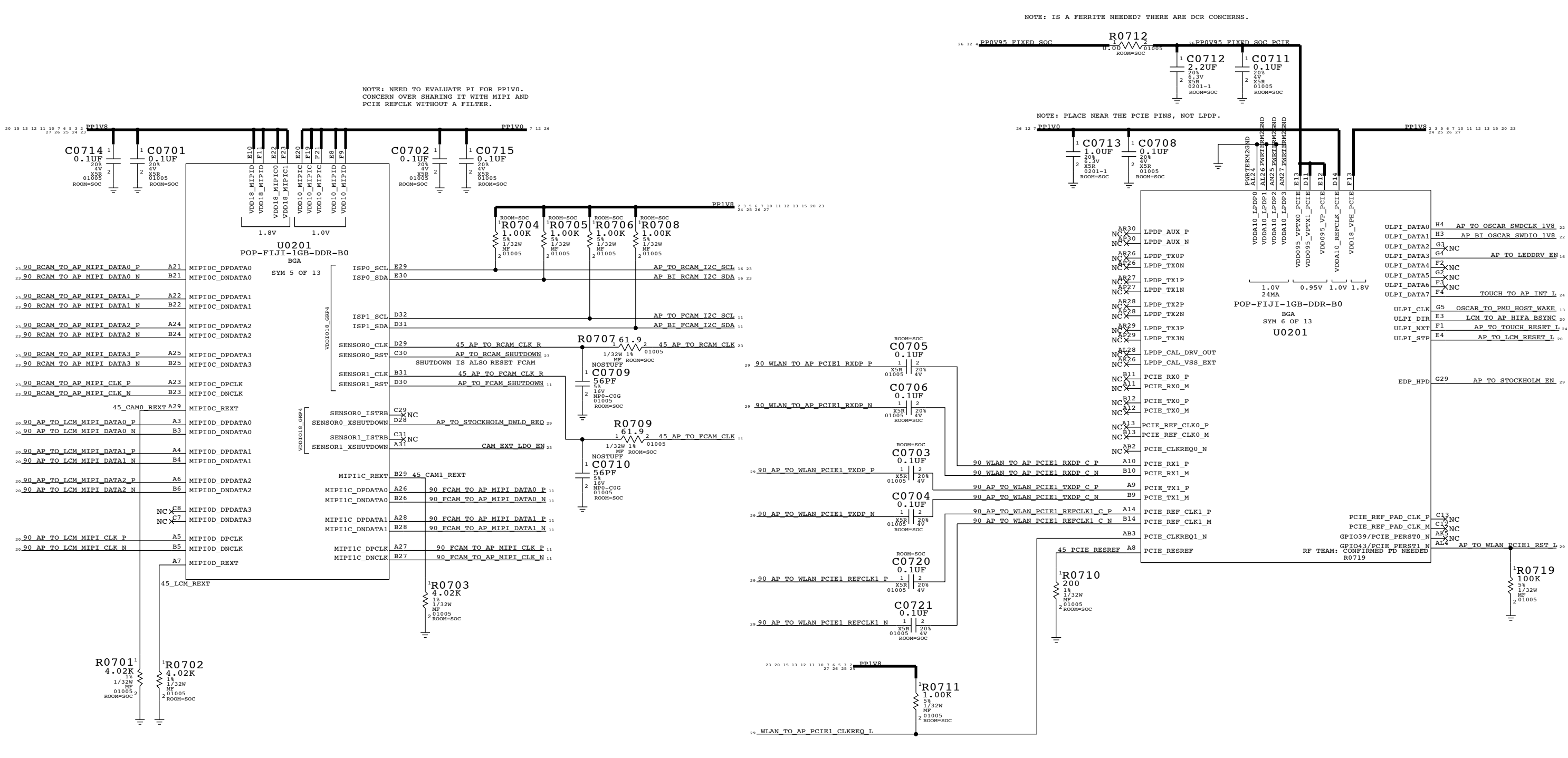
PP0601 P4MM ROOM=SOC 1 AP BI NAND ANCO IO<6>

PP0602 P4MM ROOM=SOC 1 45 AP TO NAND ANCO RE L

PP0603 P4MM ROOM=SOC 1 45 AP BI NAND ANCO DOS

SYNC MASTER=N56 MLB		SYNC DATE=08/29/2013	
PAGE TITLE			
<b>SOC: NAND</b>			
		DRAWING NUMBER	051-9903
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		SIZE	D

# FIJI: HIGH SPEED DIG (CAM, LCD, LPDP, PCIE)



NOTE: NEED TO EVALUATE PI FOR PPIV0. CONCERN OVER SHARING IT WITH MIPI AND PCIE REFCLK WITHOUT A FILTER.

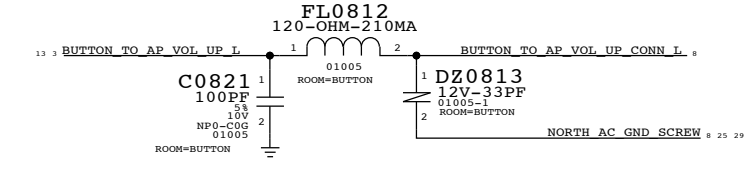
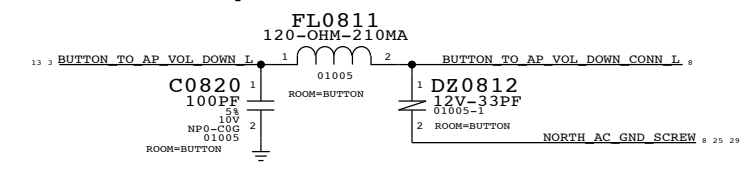
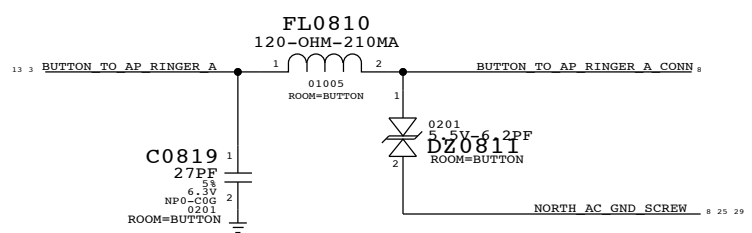
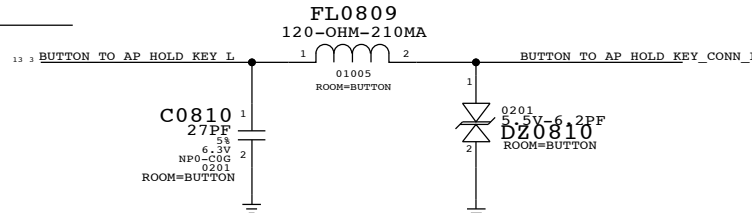
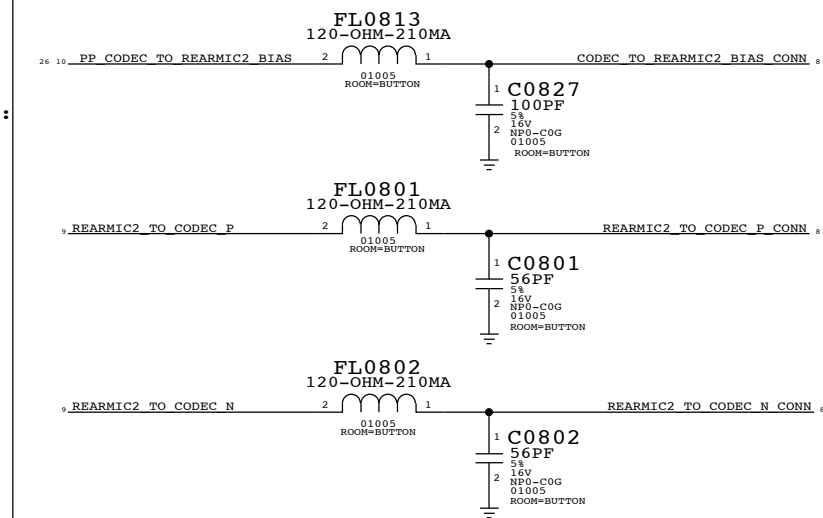
NOTE: IS A FERRITE NEEDED? THERE ARE DCR CONCERNS.

NOTE: PLACE NEAR THE PCIE PINS, NOT LPDP.

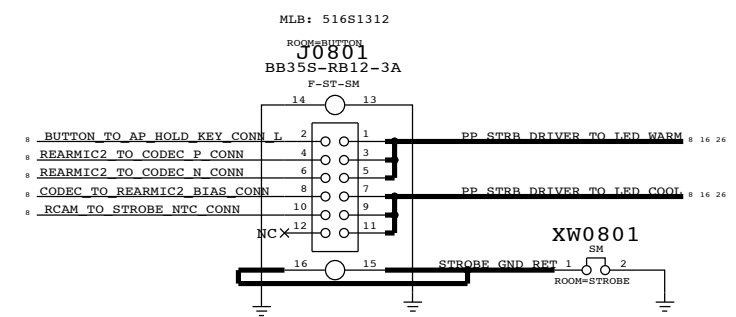
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# BUTTON FLEX (BUTTONS, ANC REF MIC, STROBE, STROBE\_NTC, WIFI FLEX PAC)

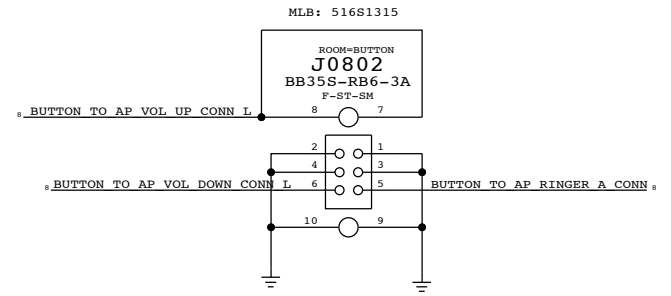
MIC2 (ANC REF MIC):  
MIC2\_4 BIAS,  
MIC2\_P,\_N



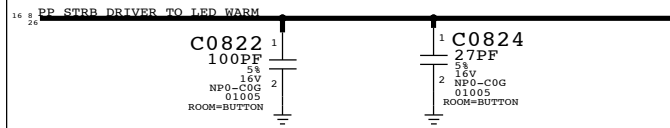
## RIGHT BUTTON B2B



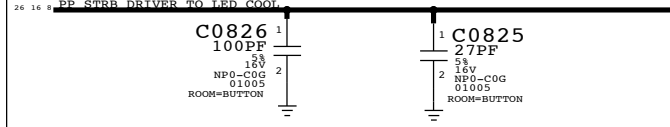
## LEFT BUTTON B2B



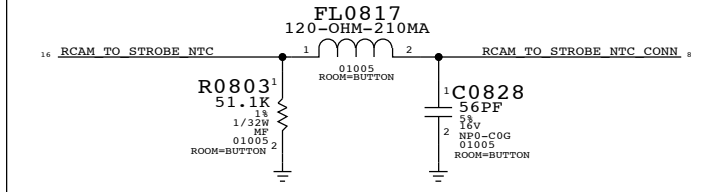
STROBE:  
LED WARM



STROBE:  
LED COOL



STROBE:  
NTC



BUTTONS:  
RINGER, HOLD,  
VOL\_UP/DOWN,

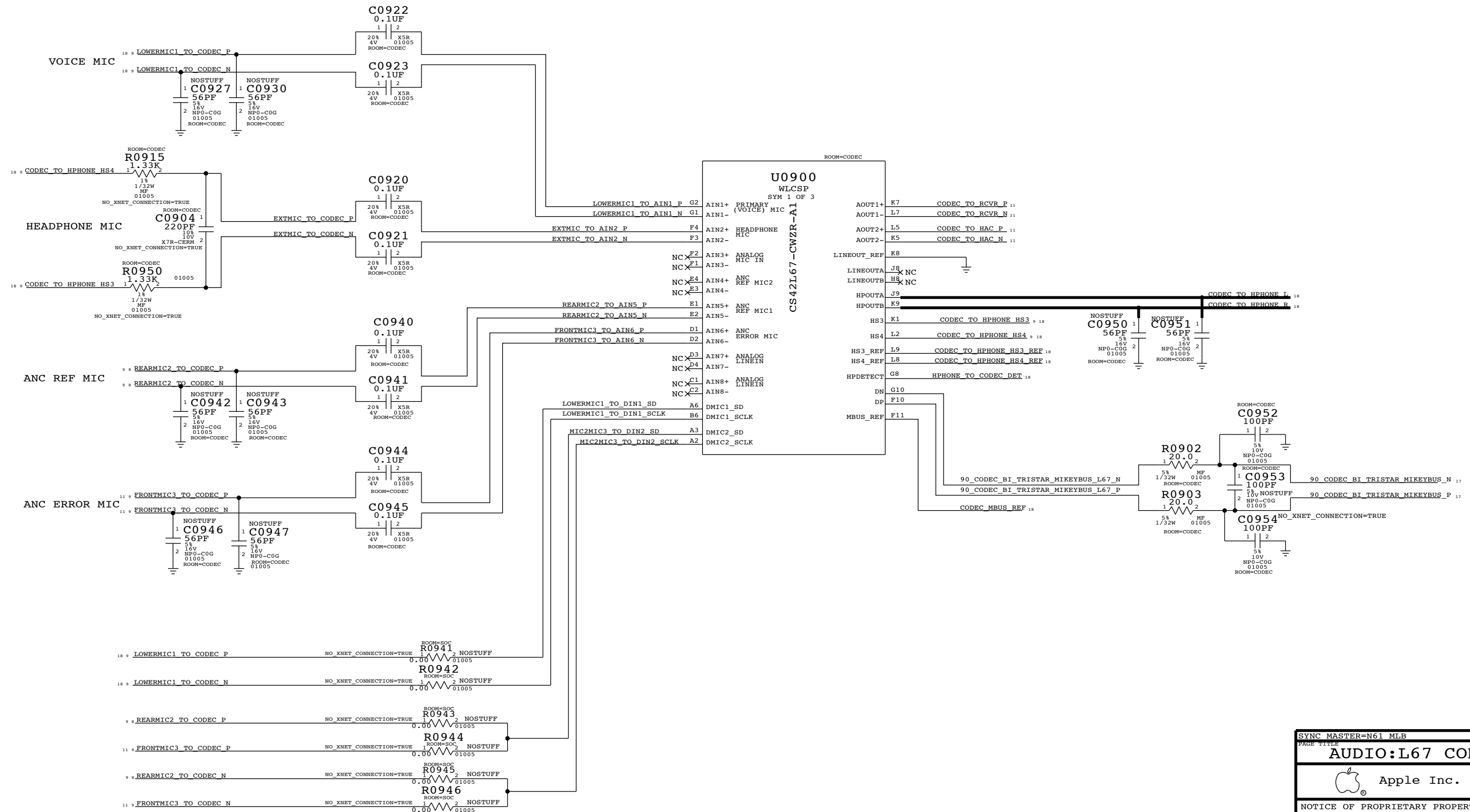
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<b>IO:BUTTON FLEX CONN</b>			
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# L67 AUDIO CODEC

## AUDIO I/O

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



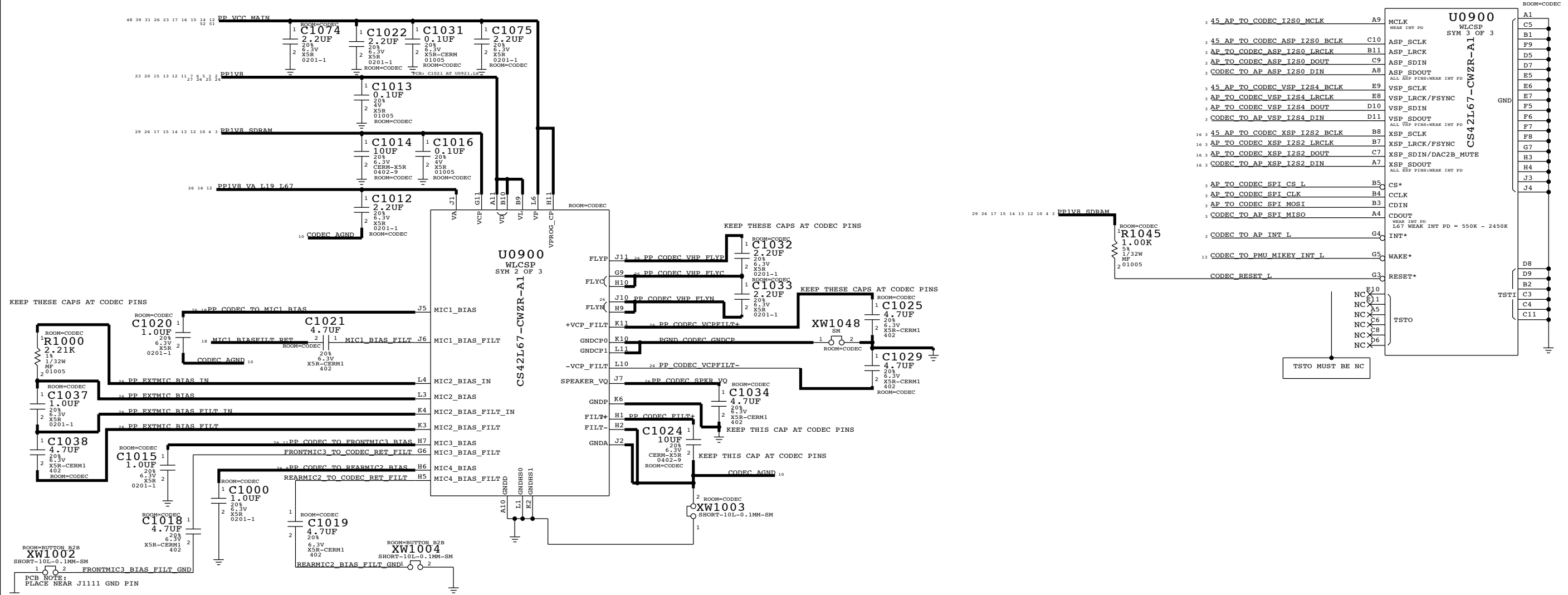
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		REVISION	7.0.0
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# L67 AUDIO CODEC

## POWER, MICBIAS

## DIGITAL SYSTEM I/O

NOTE: C1022 WAS REDUCED TO 2.2UF BECAUSE OF ADDITIONAL NEARBY VCC MAIN CAPS

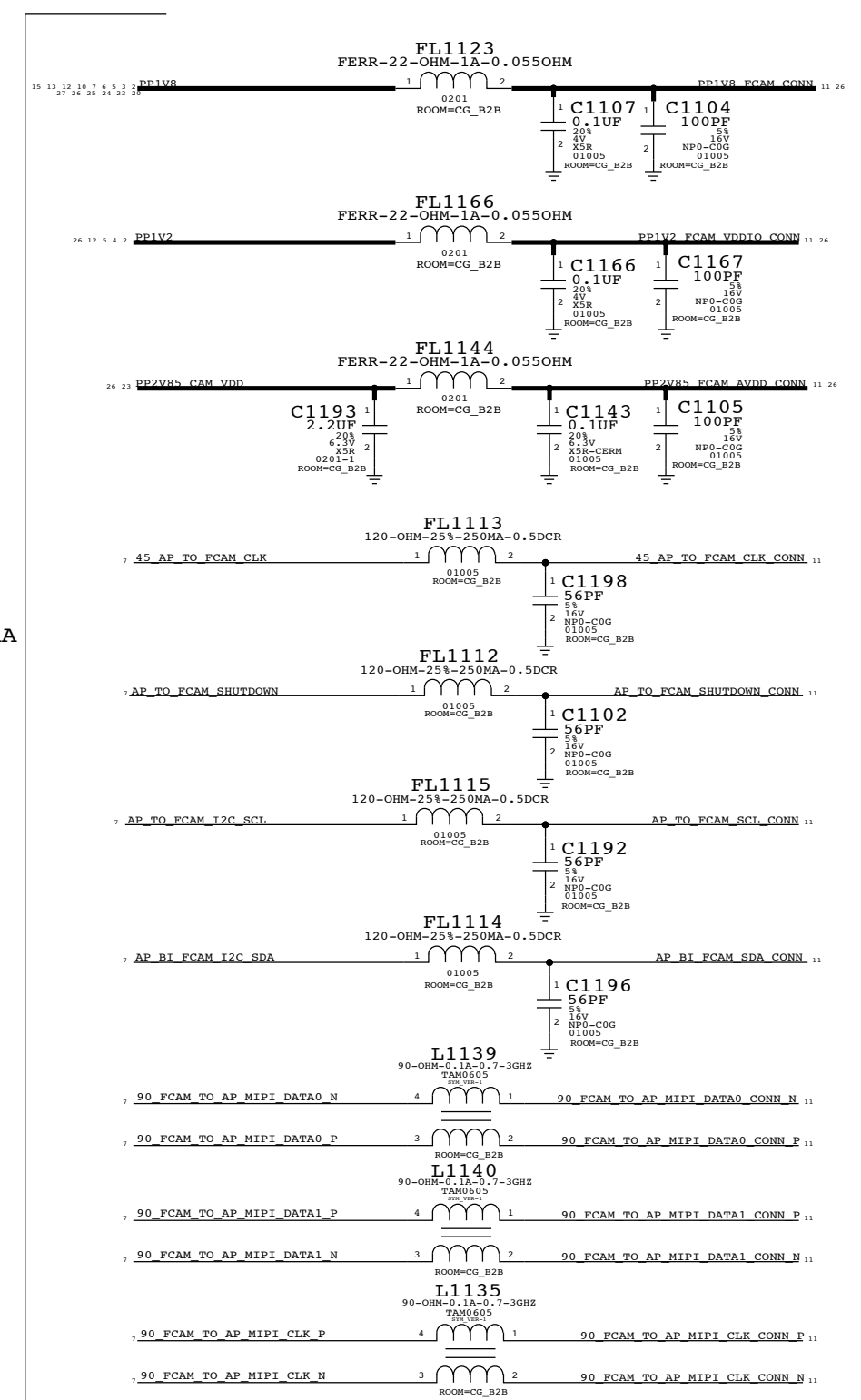
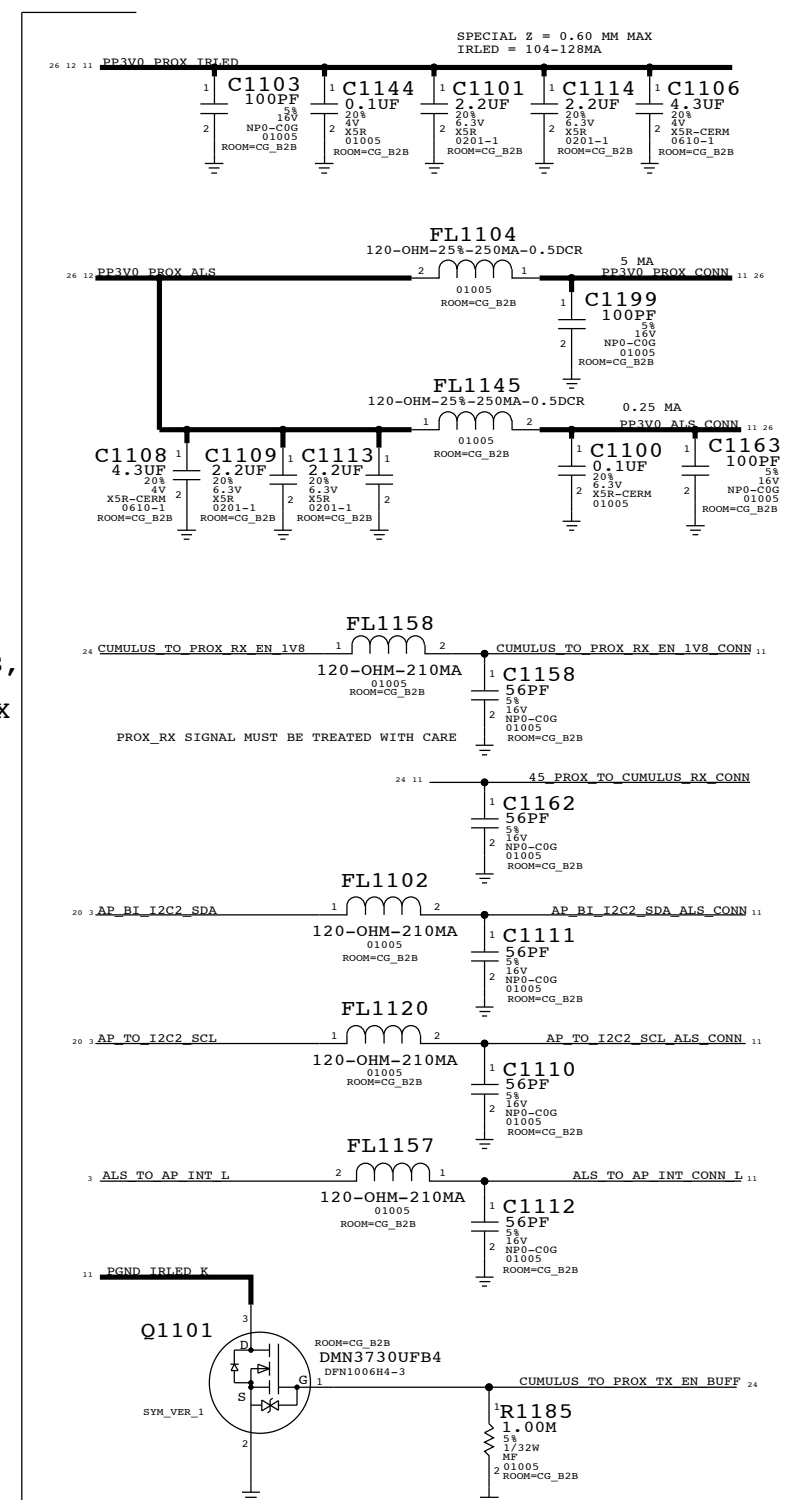
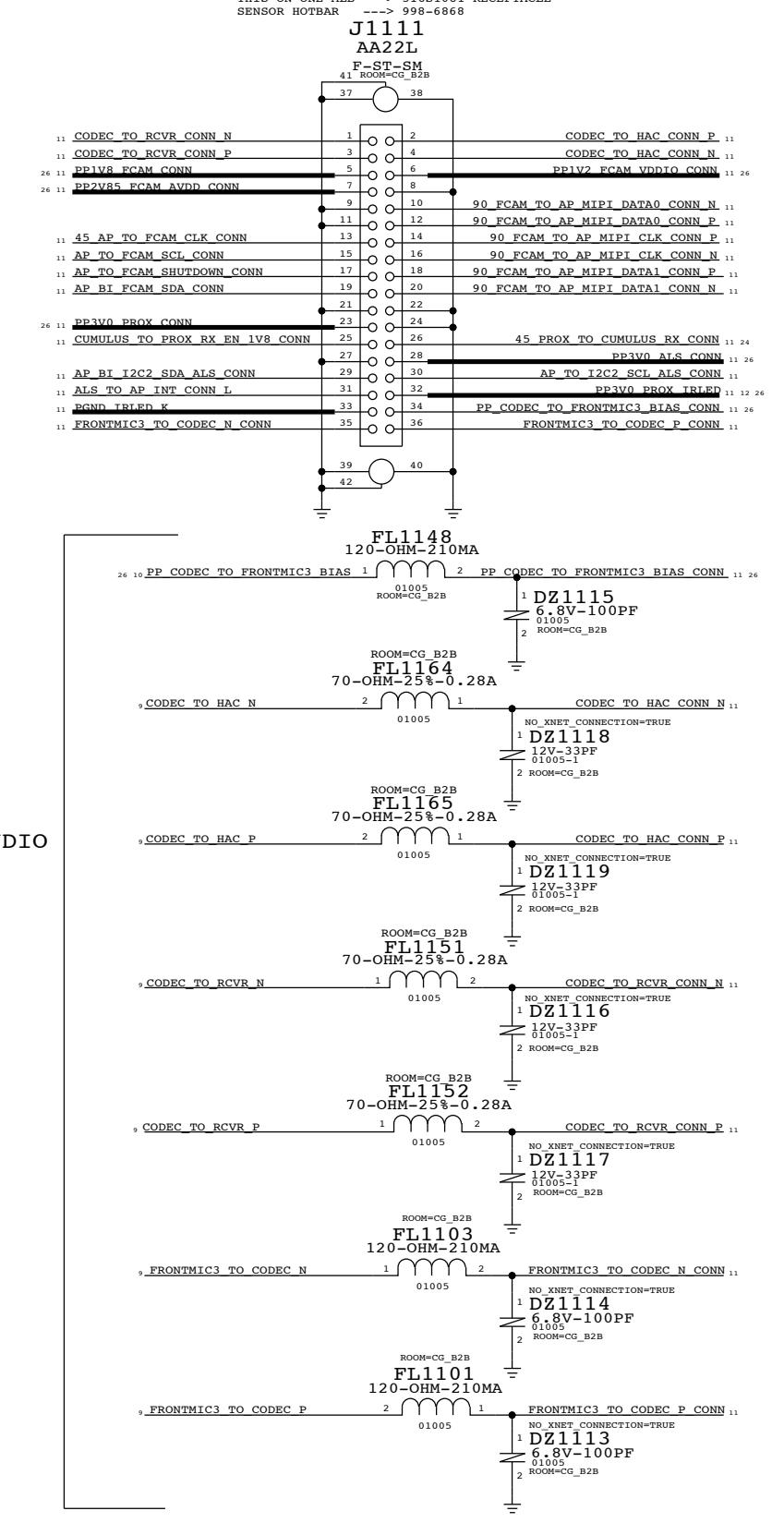


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# FRONT CAM FLEX B2B

(FCAM, PROX, ALS, RECEIVER, ANC ERROR MIC)

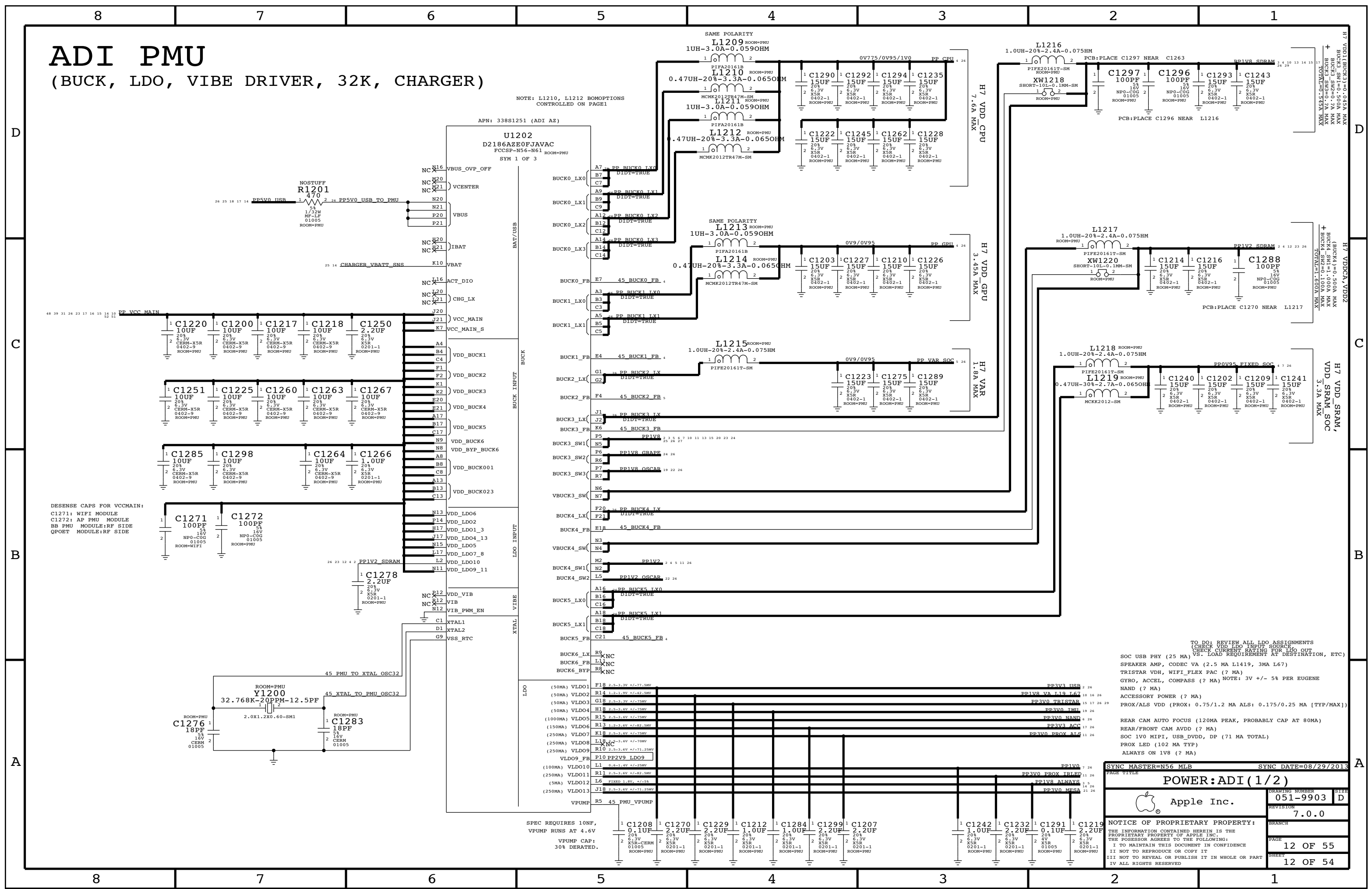
THIS ON ONE MLB ---> 516S1081 RECEPTACLE  
 SENSOR HOTBAR ---> 998-6868



SYNC MASTER=N61 MLB		SYNC DATE=08/26/2013	
<b>CAMERA: FRONT FLEX CONN</b>			
Apple Inc.		DRAWING NUMBER	051-9903
		REVISION	7.0.0
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		PAGE	11 OF 55
		SHEET	11 OF 54

# ADI PMU

(BUCK, LDO, VIBE DRIVER, 32K, CHARGER)



NOTE: L1210, L1212 BOMPTIONS CONTROLLED ON PAGE1

APN: 338S1251 (ADI AZ)

U1202  
D2186AZE0FJAVAC  
FCCSP-N56-N61 ROOM=PMU  
SYM 1 OF 3

DESENSE CAPS FOR VCCMAIN:  
C1271: WIFI MODULE  
C1272: AP PMU MODULE  
BB PMU MODULE:RF SIDE  
QP0ET MODULE:RF SIDE

SPEC REQUIRES 10NF,  
VPUMP RUNS AT 4.6V  
VPUMP CAP:  
30% DERATED.

TO DO: REVIEW ALL LDO ASSIGNMENTS  
(CHECK VDD LDO INPUT SOURCE)  
CHECK CURRENT RATING FOR LDO OUT  
VS. LOAD REQUIREMENT AT DESTINATION, ETC)

SOC USB PHY (25 MA)  
SPEAKER AMP, CODEC VA (2.5 MA L1419, 3MA L67)  
TRISTAR VDH, WIFI\_FLEX PAC (? MA)  
GYRO, ACCEL, COMPASS (? MA) NOTE: 3V +/- 5% PER EUGENE  
NAND (? MA)  
ACCESSORY POWER (? MA)  
PROX/ALS VDD (PROX: 0.75/1.2 MA ALS: 0.175/0.25 MA [TYP/MAX])

REAR CAM AUTO FOCUS (120MA PEAK, PROBABLY CAP AT 80MA)  
REAR/FRONT CAM AVDD (? MA)  
PP3V0\_ALWAYS  
PP3V0\_ACC  
PP3V0\_PROX\_ALS

REAR LED (102 MA TYP)  
ALWAYS ON I1V8 (? MA)

SYNC MASTER=N56 MLB SYNC DATE=08/29/2013

PAGE TITLE: **POWER:ADI (1/2)**

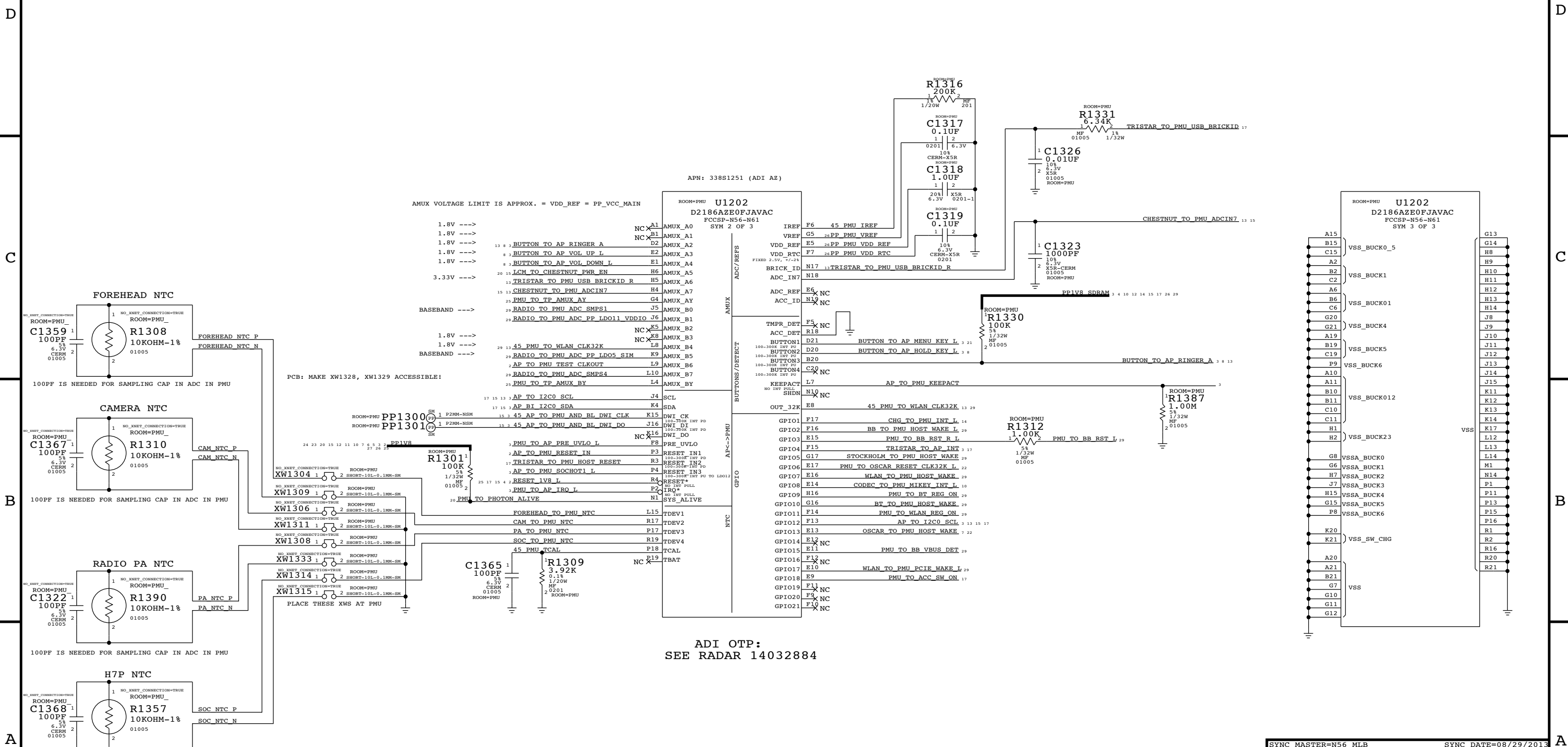
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DRAWING NUMBER	051-9903	SIZE	D
REVISION	7.0.0	BRANCH	
PAGE	12 OF 55	SHEET	12 OF 54

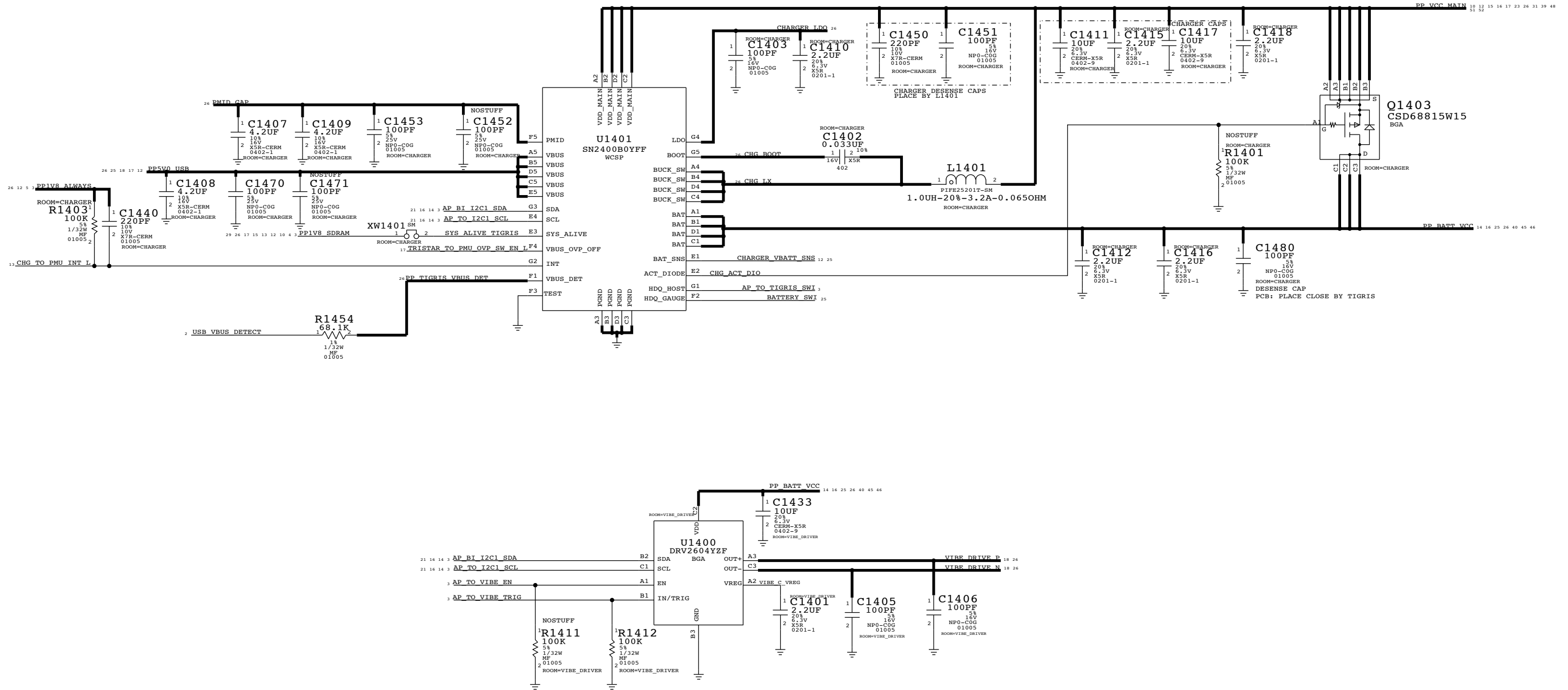
# ADI PMU

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



SYNC MASTER=N56 MLB		SYNC DATE=08/29/2013	
<b>POWER:ADI (2/2)</b>			
Apple Inc.	DRAWING NUMBER	051-9903	SIZE D
	REVISION	7.0.0	
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		SHEET	13 OF 54

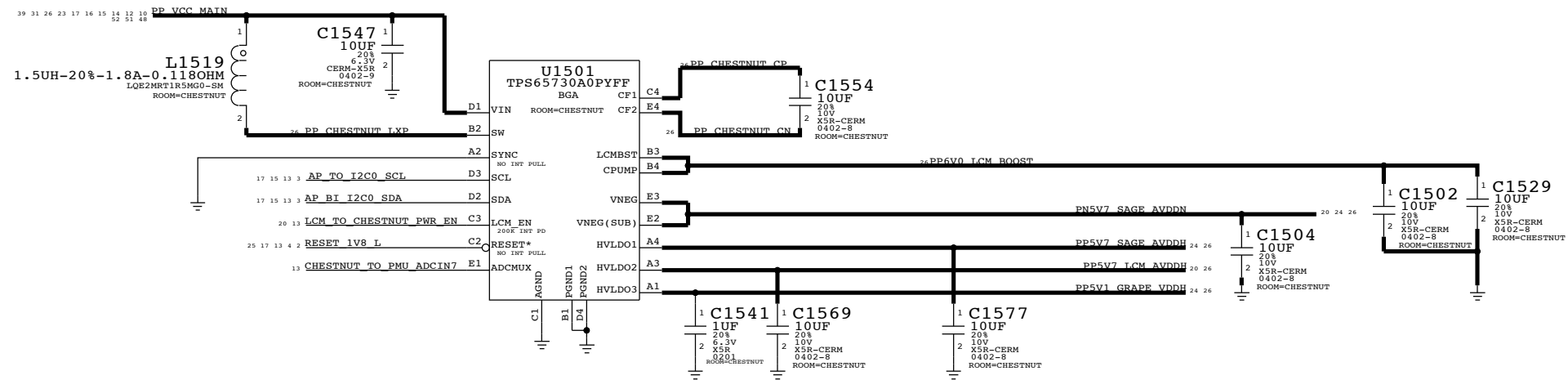
# TIGRIS CHARGER & VIBE DRIVER



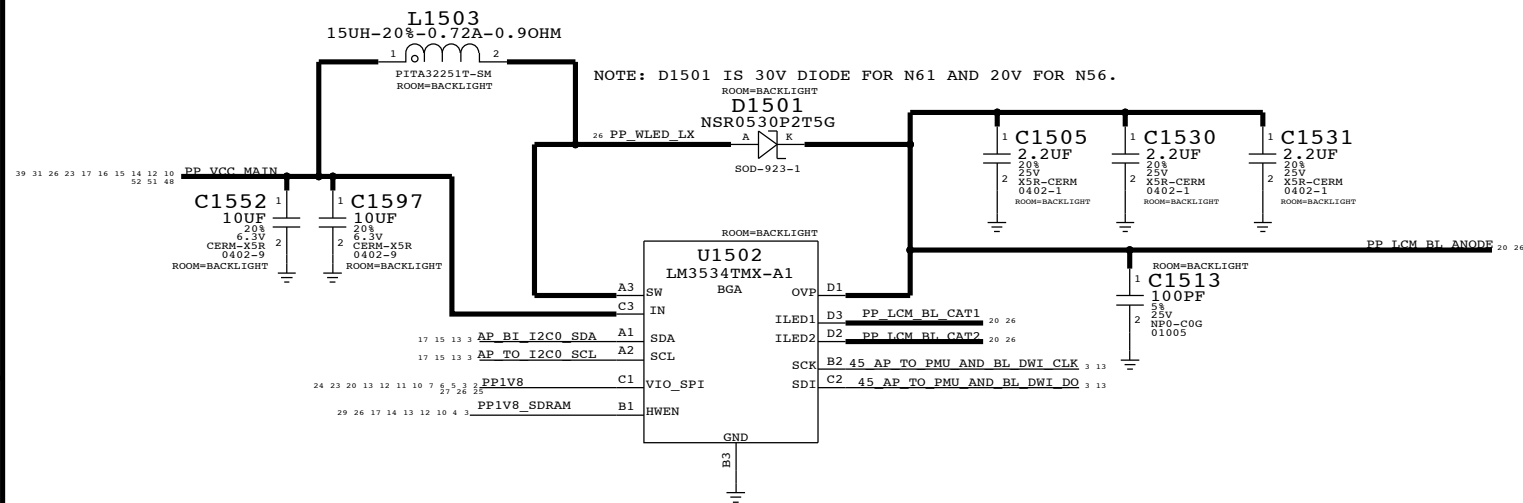
PAGE TITLE		
POWER:TIGRISR,VIBE DRIVER		
Apple Inc.	DRAWING NUMBER	051-9903
	REVISION	7.0.0
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	SHEET	14 OF 54

# CHESTNUT, BACKLIGHT DRIVER, MESA BOOST

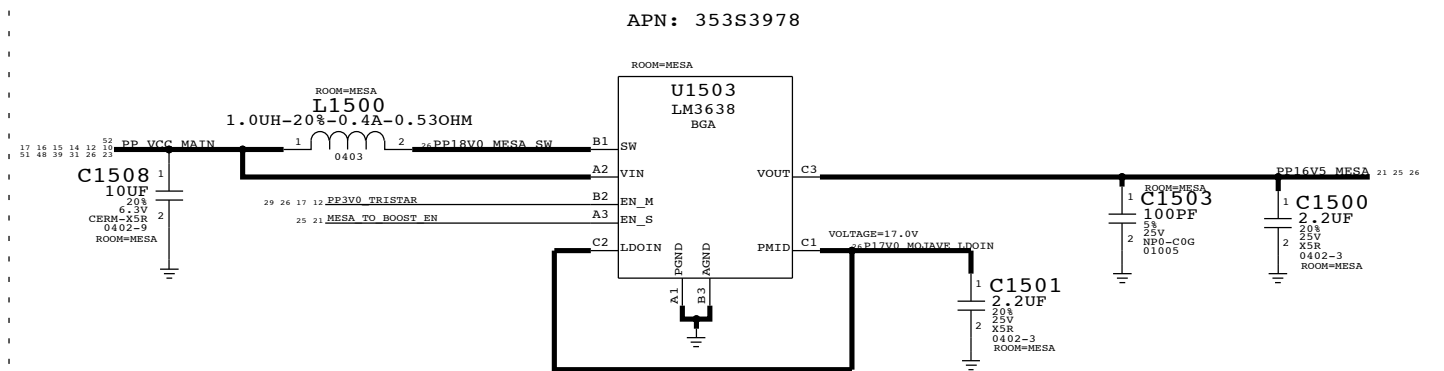
## D500 DISPLAY PMU (TI CHESTNUT, 338S1149)



## D500 BACKLIGHT DRIVER



## MESA BOOST A0

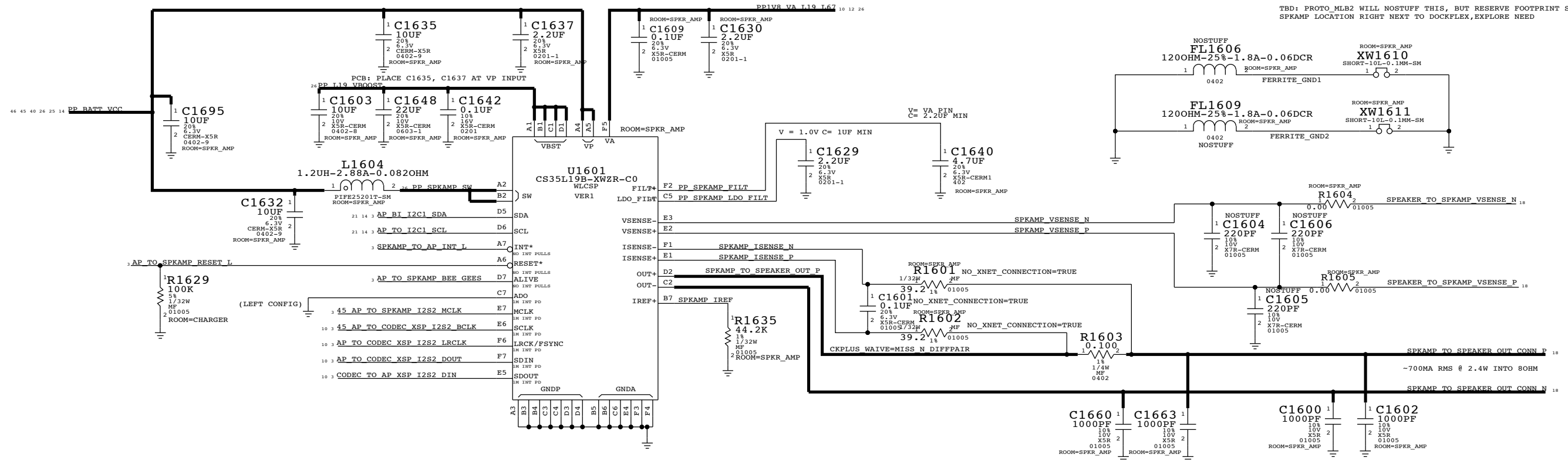


SYNC MASTER=N61 MLB		SYNC DATE=08/26/2013	
PAGE TITLE DISPLAY:CHESTNUT, BACKLIGHT DRIVER			
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REVISION 7.0.0		BRANCH	
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PAGE 15 OF 55		SHEET 15 OF 54	

# SPEAKER AMP, LED DRIVER

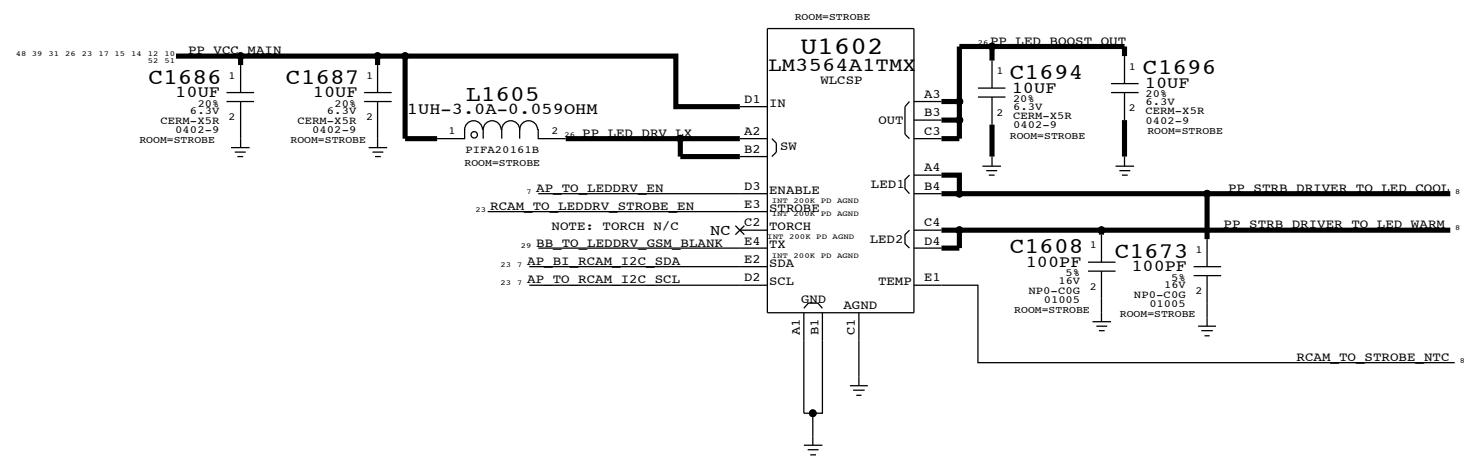
## SPEAKER AMP

I2C ADDRESS: 1000000X



## STROBE DRIVER

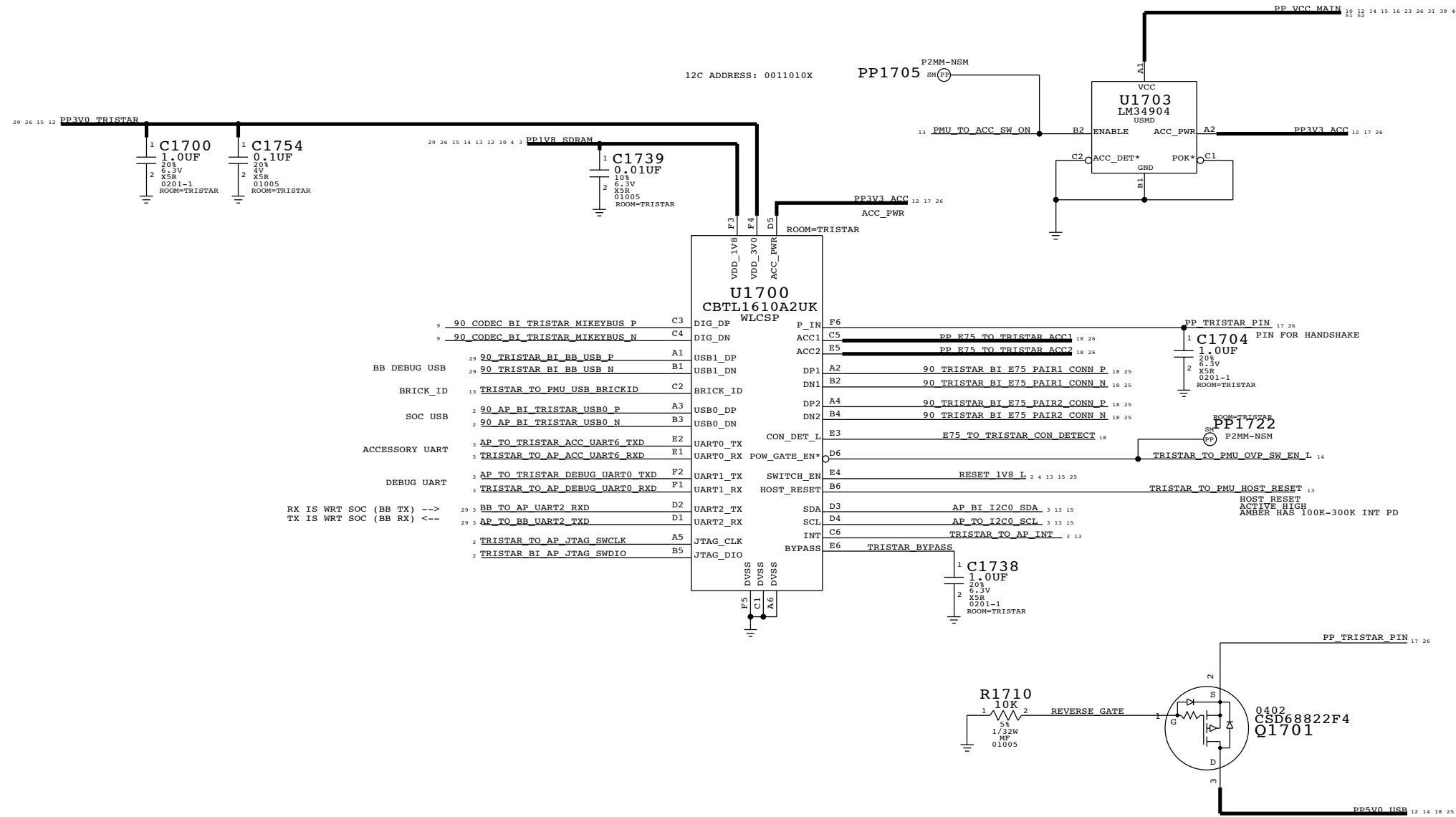
TI: APN 353S3899



PAGE TITLE		SYNC DATE=08/26/2013	
AUDIO:SPKR AMP,STROBE		DRAWING NUMBER	051-9903
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# TRISTAR2



SYNC MASTER=N61 MLB		SYNC DATE=08/26/2013	
<b>IO:TRISTAR2</b>			
Apple Inc.		DRAWING NUMBER	051-9903
		REVISION	7.0.0
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		PAGE	17 OF 55
		SHEET	17 OF 54

# DOCKFLEX B2B (USB VBUS, SPEAKER, ANTENNA LAT SW CTRL, MIC1 (PRIMARY MIC), ACC DET/ID/PWR, E75 DIFFPAIRS)

MLB: 51681281 (RCPT)

ROOM=DOCK\_B2B J1817  
24-5859-036-201-829  
F-ST-SM

D  
LOWER MIC1  
(PRIMARY  
VOICE MIC)

C  
HEADPHONE

B

A  
CODEC TO  
HEADPHONE

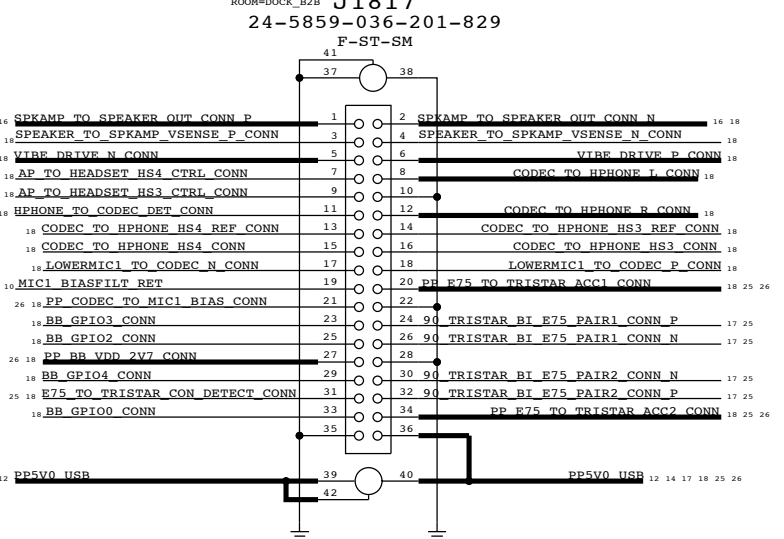
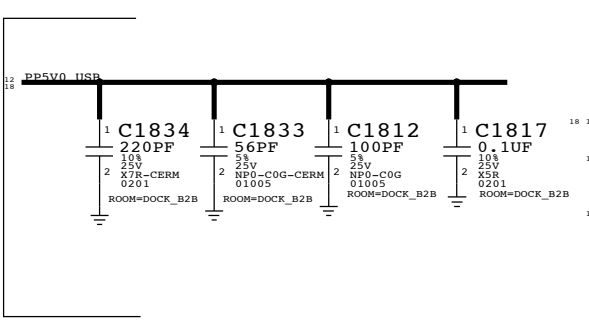
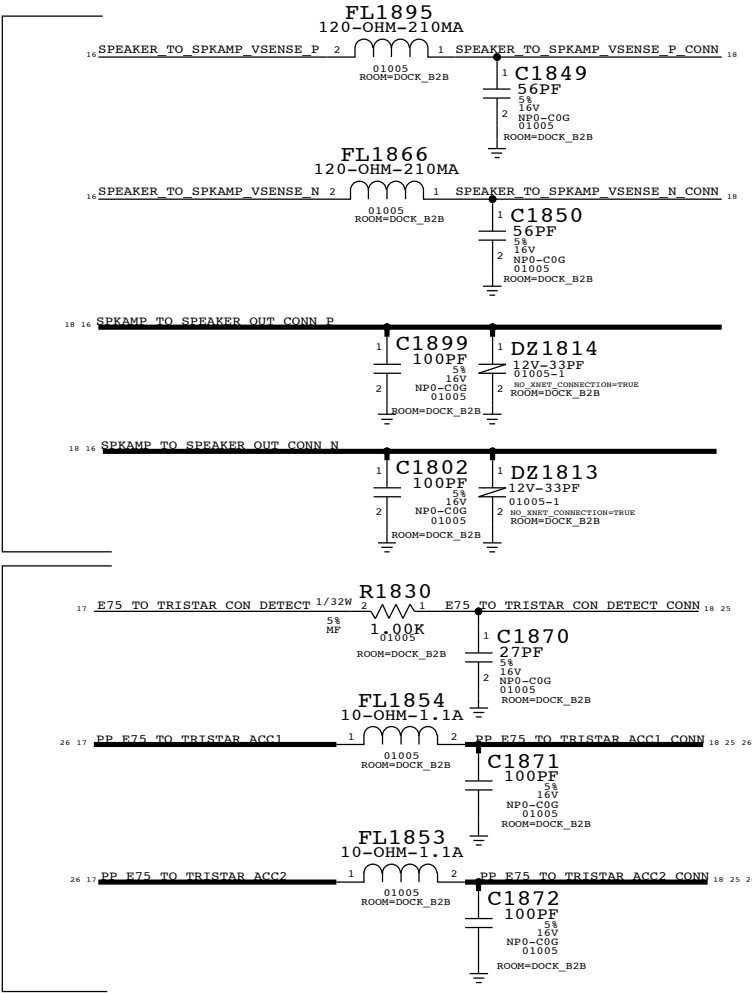
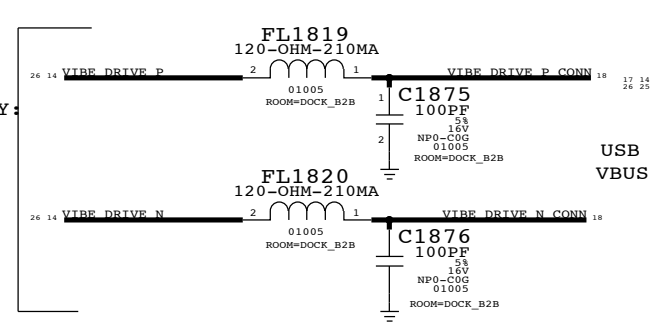
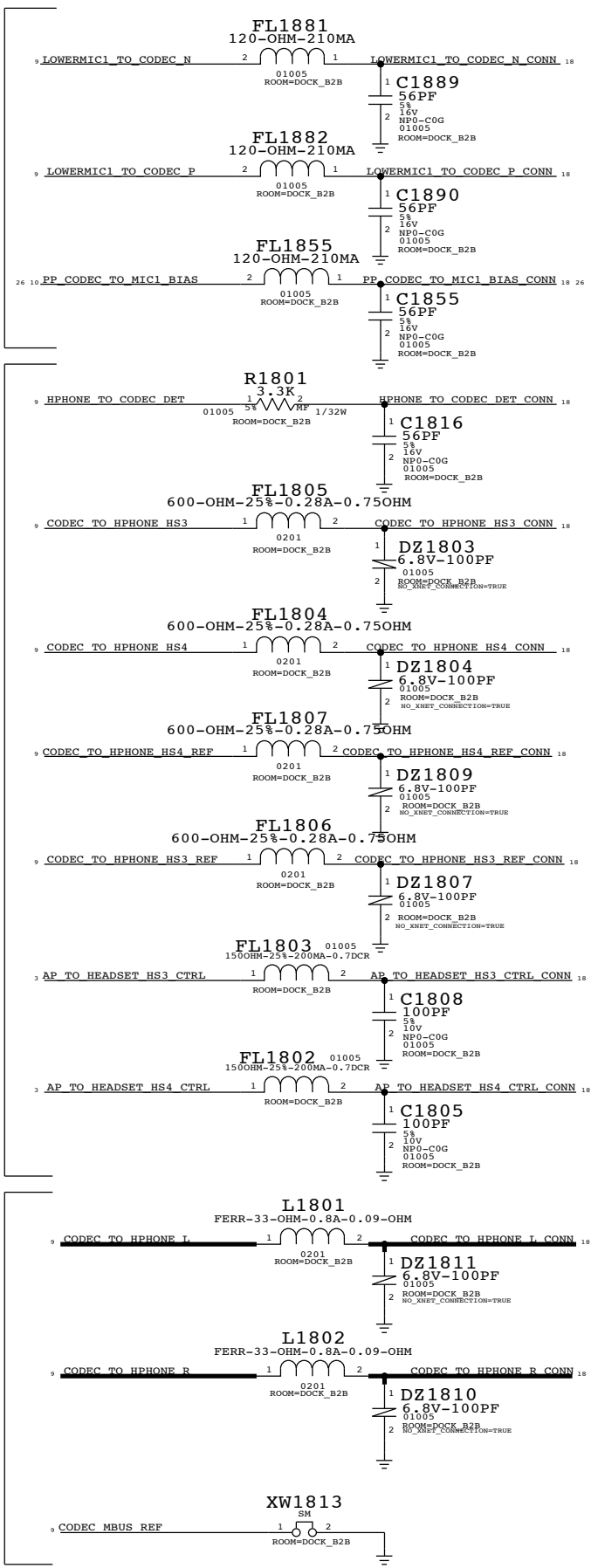
ACCESSORY:  
VIBE  
DRIVE

USB  
VBUS

SPEAKER:  
LEADS,  
VSENSE

TRISTAR

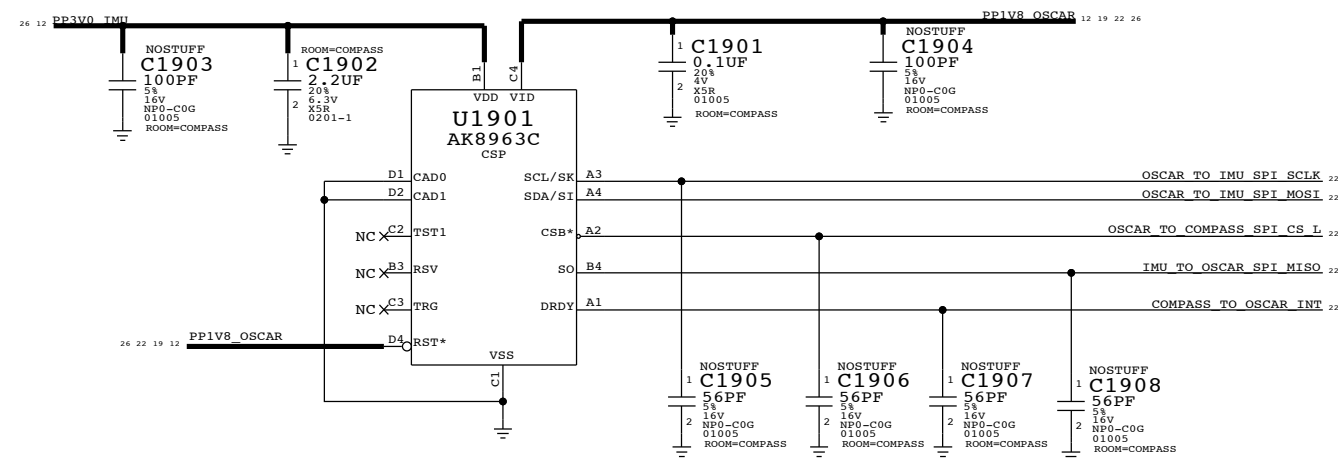
ANTENNA



SYNC MASTER=N61 MLB		SYNC DATE=08/26/2013	
PAGE TITLE			
<b>IO:DOCK FLEX CONN</b>			
Apple Inc.	DRAWING NUMBER	051-9903	SIZE D
	REVISION	7.0.0	BRANCH
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			SHEET 18 OF 54

# COMPASS - AKM COMPASS IN POR LOCATION

COMPASS CSP: 338S1014

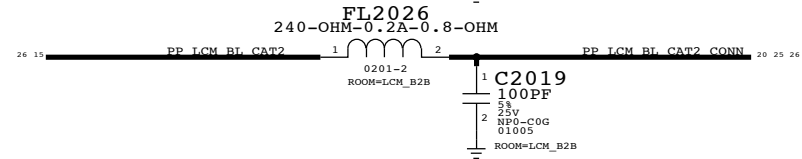
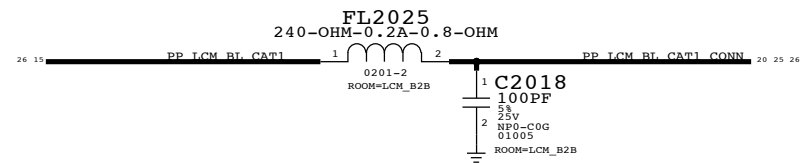
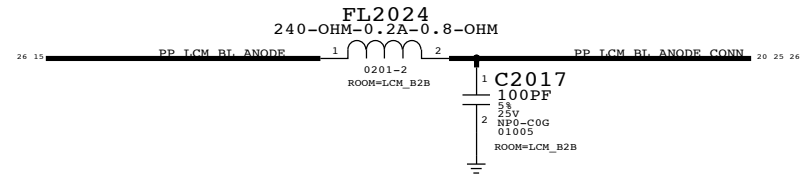


SYNC MASTER=N61 MLB		SYNC DATE=08/26/2013	
<b>SENSORS: COMPASS</b>			
Apple Inc.		DRAWING NUMBER	SIZE
		051-9903	D
		REVISION	
		7.0.0	
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		SHEET	19 OF 54

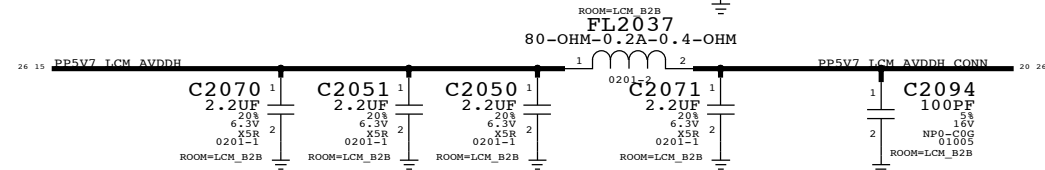
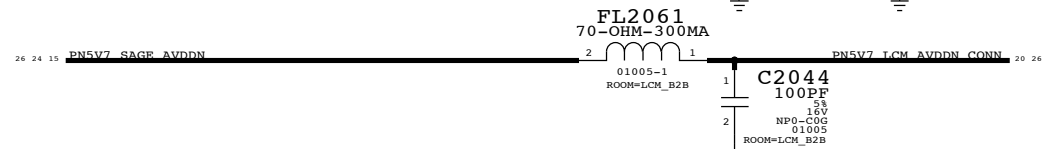
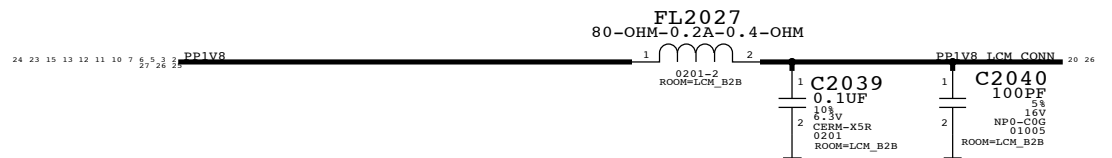
# LCD B2B

## Backlight

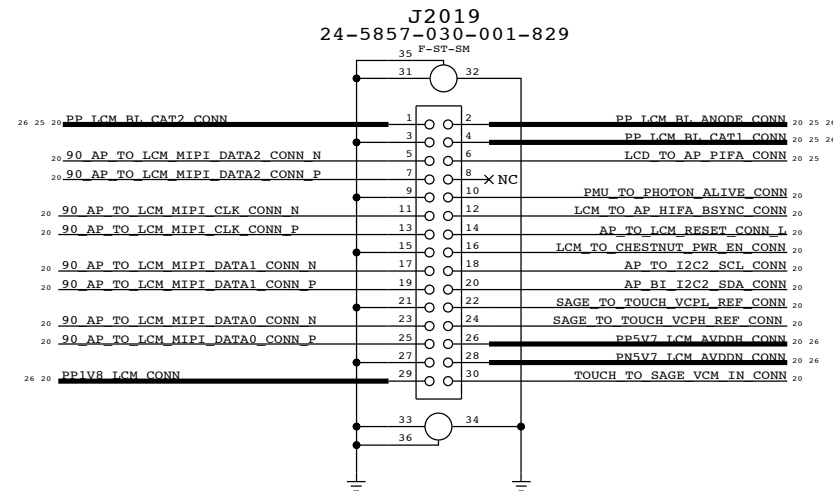
(N56 HAS A 2ND SET OF BL SIGNALS ON P. 19).



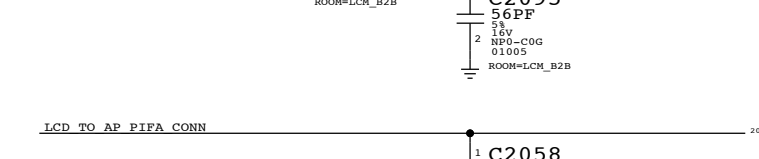
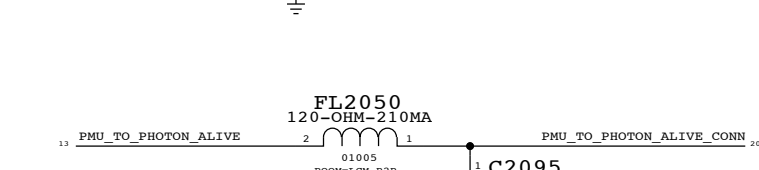
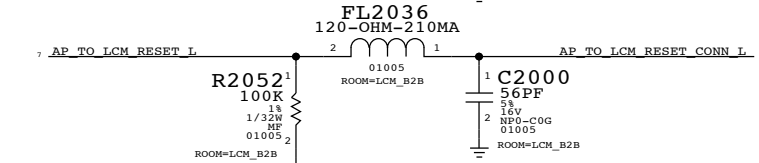
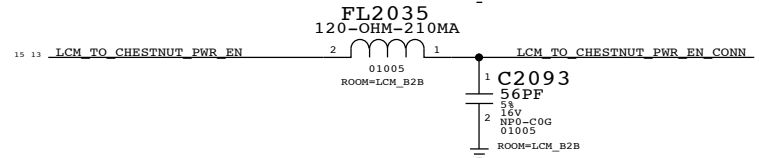
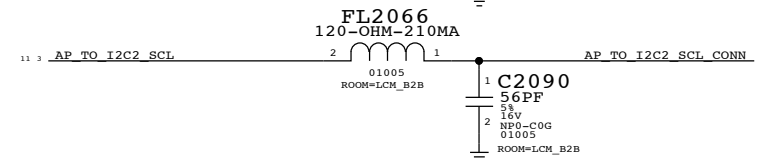
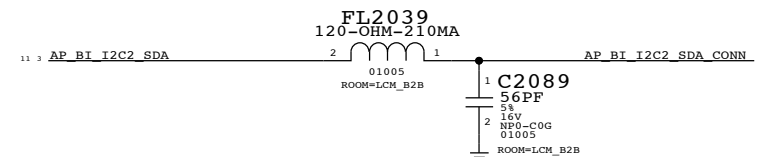
## LCM Supplies



THIS ONE ON MLB ----> 516S1164

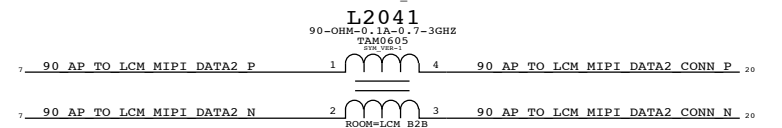
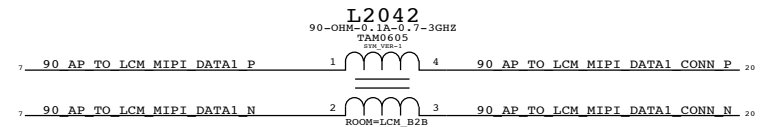
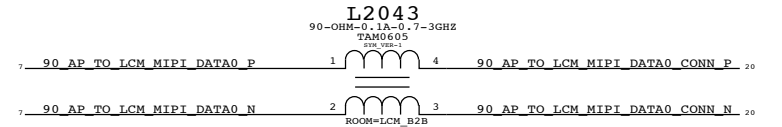
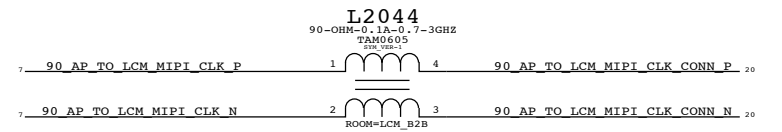


## Digital Interfaces

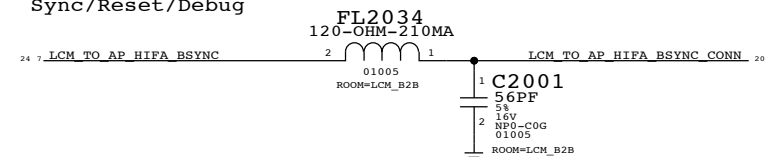


## MIPI Common Mode Chokes

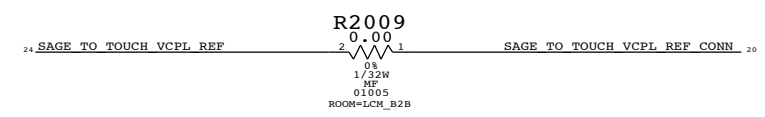
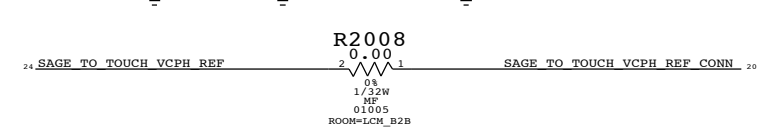
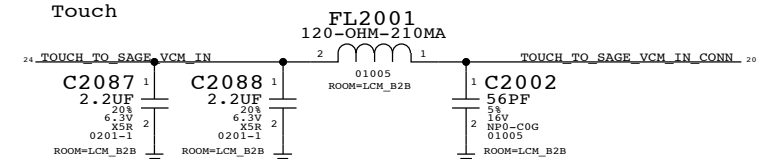
(N56 HAS A 4TH MIPI LANE ON P. 19).



## Sync/Reset/Debug



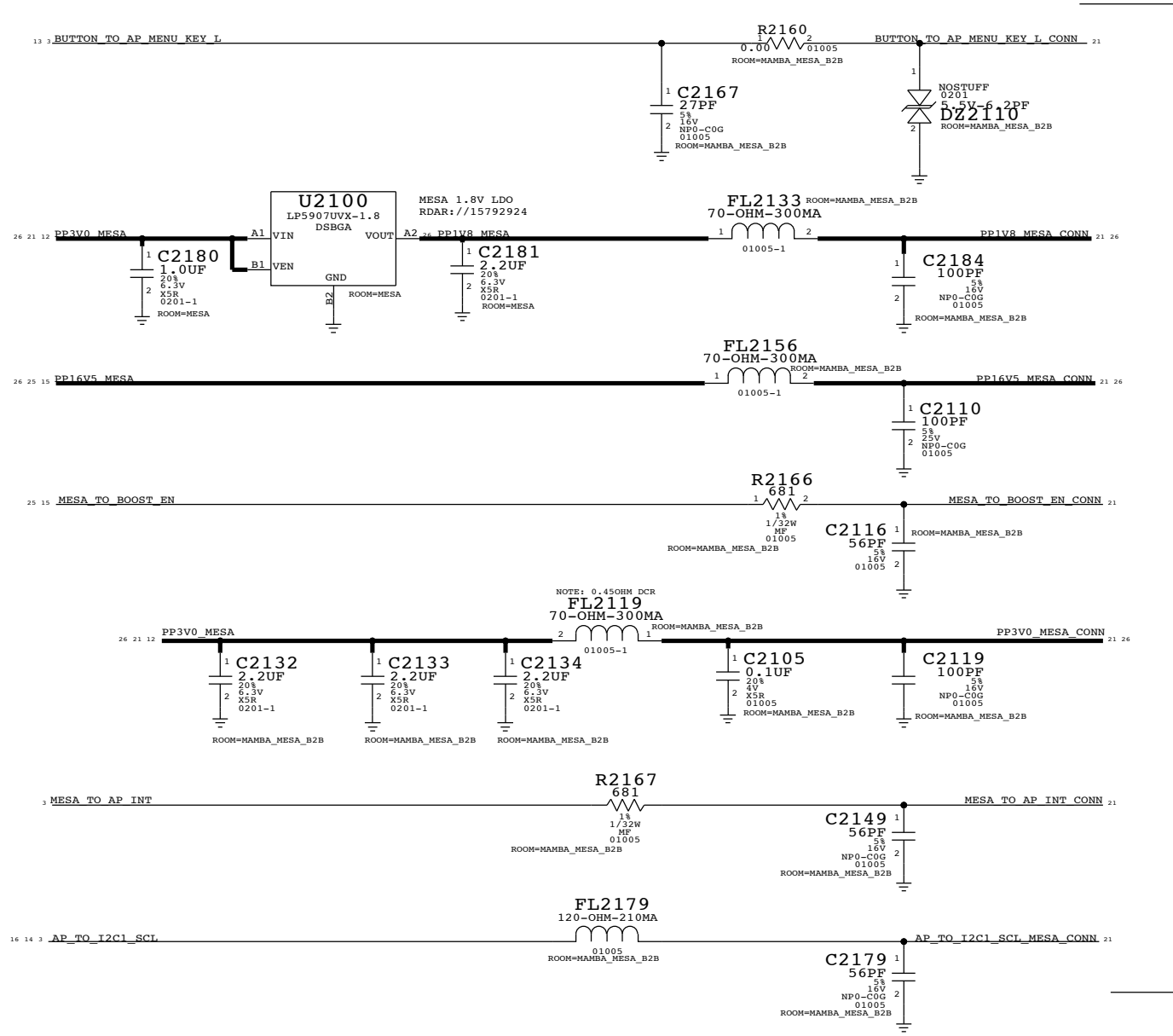
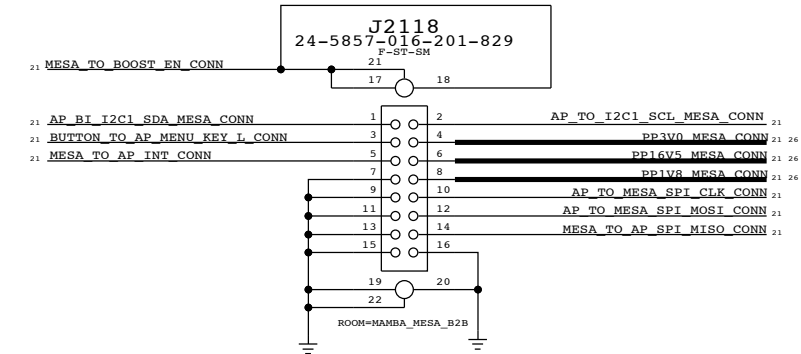
## Touch



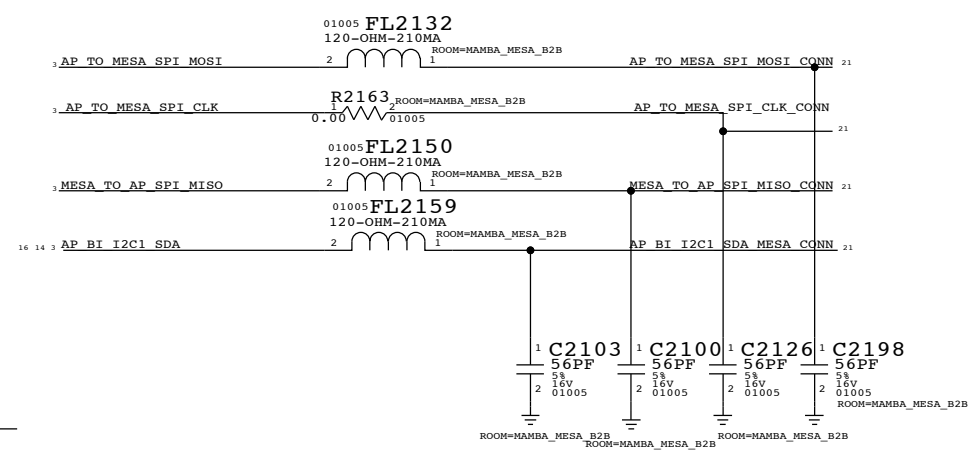
SYNC MASTER=N61 MLB		SYNC DATE=08/26/2013	
<b>DISPLAY: FLEX CONN</b>			
Apple Inc.		DRAWING NUMBER	SIZE
		051-9903	D
		REVISION	
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# MESA CONNECTOR

MLB: 516S1278



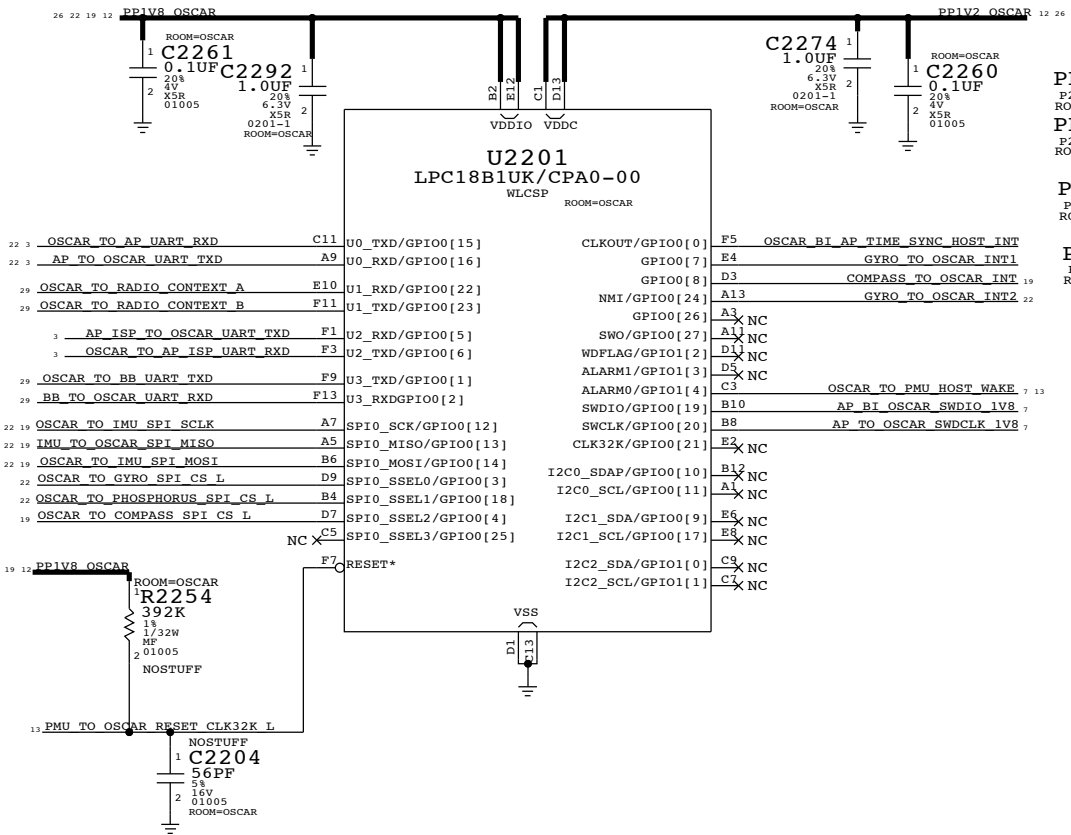
MESA SENSOR:



PAGE TITLE		
<b>SENSORS:MESA FLEX CONN</b>		
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	REVISION	7.0.0
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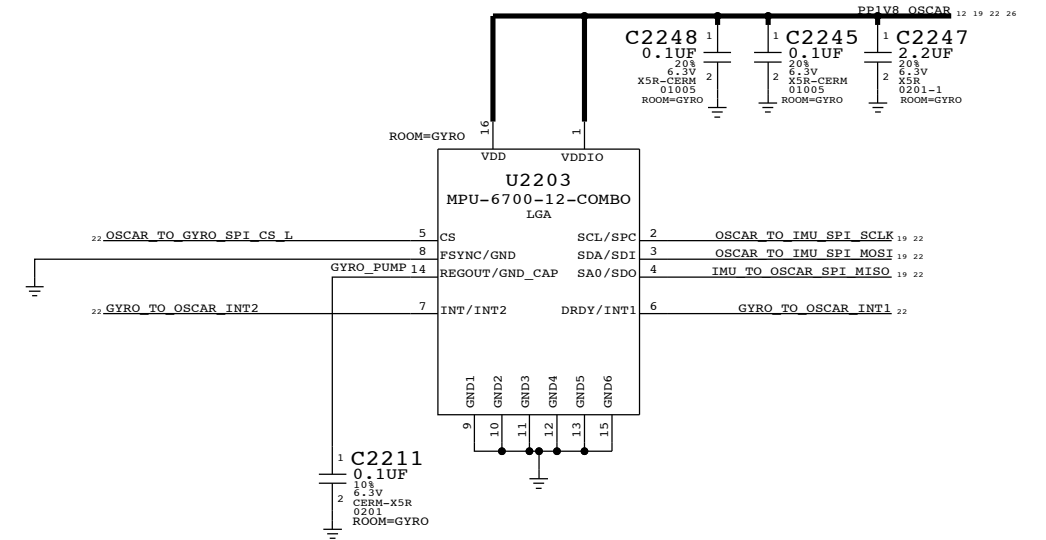
# OSCAR + SENSORS

OSCAR VDDIO = 1.8V ALWAYS ON (NEED TO MAKE HOST & RUN PLL)  
OSCAR CORE = 1.2V ALWAYS ON (NEED TO RUN IN SRAM)

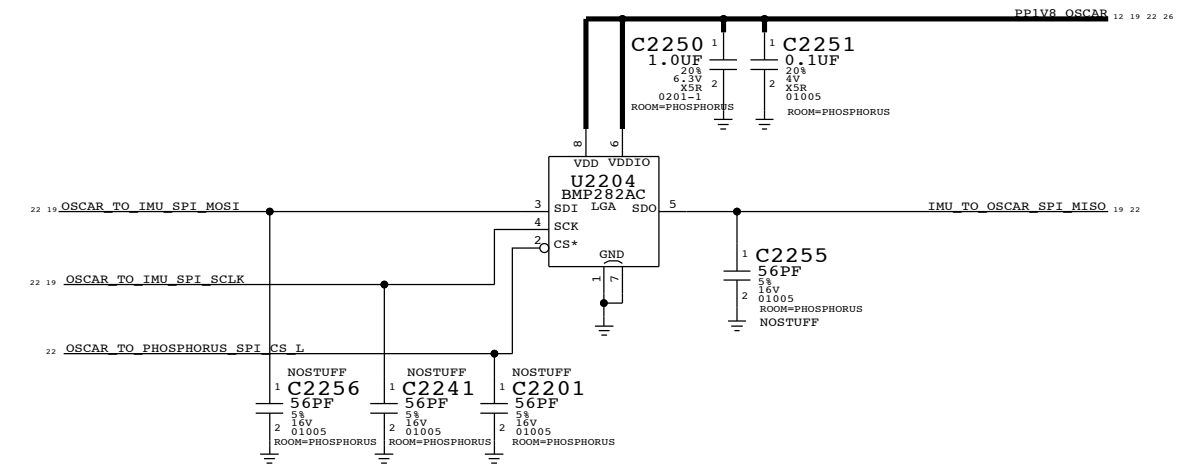


# CARBON (ACCEL GYRO COMBO)

INVENSENSE, APN 338S00017, C2211=0.1UF  
BOSCH, APN 338S00028, C2211=0.1UF  
ST, APN 338S00029, C2211=0.01UF,25V



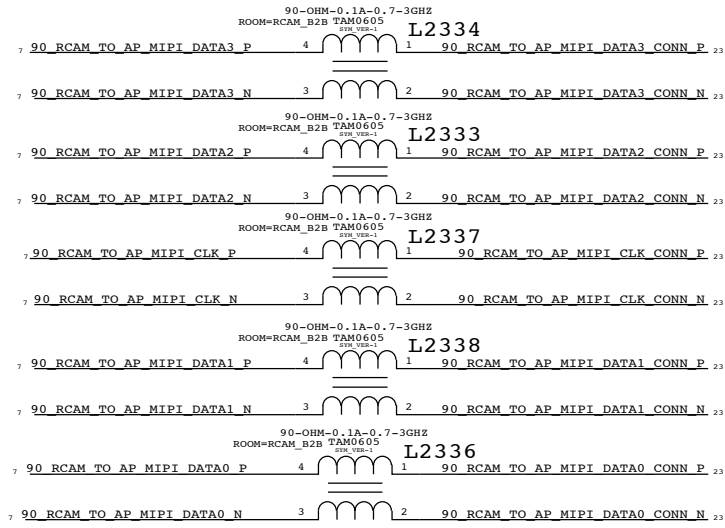
THIS IS OUTSIDE OF SHIELD IN  
TO THE RIGHT OF THE NAND  
**PHOSPHORUS**



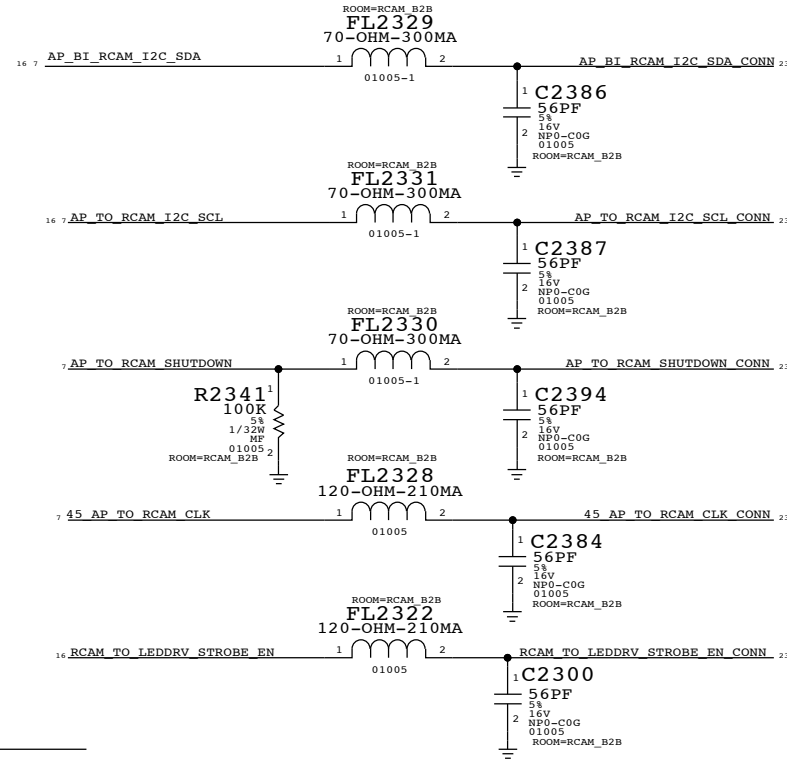
SYNC MASTER=N61 MLB		SYNC DATE=08/26/2013	
PAGE TITLE SENSORS:OSCAR,CARBON,PHOS,MAGNESIUM			
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# RCAM B2B (REAR CAMERA CONNECTOR)

RCAM:  
4-LANE MIPI

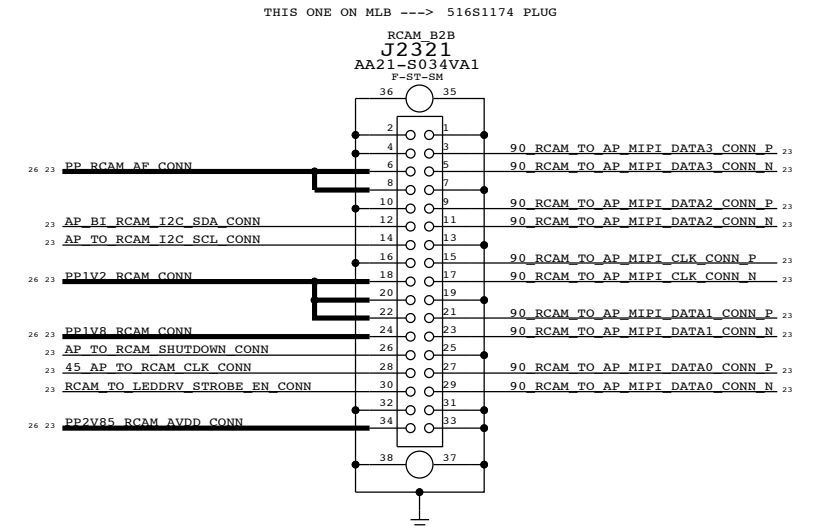
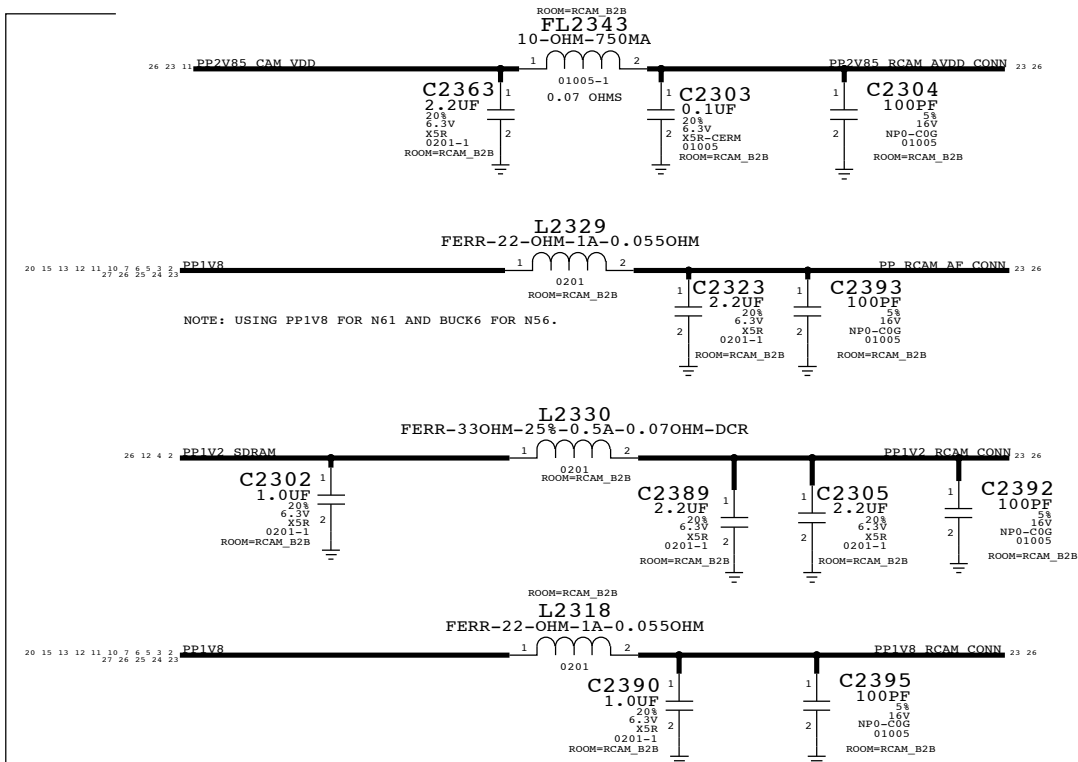


RCAM:  
DIGITAL I/F  
(I2C, CTRL, CLK)



RCAM/FCAM AVDD RAIL EXT. LDO:

RCAM:  
POWER:  
(1.8V DVDD)  
(2.8V AVDD)  
(1.2V VCC)  
(1.8V/2V AF)



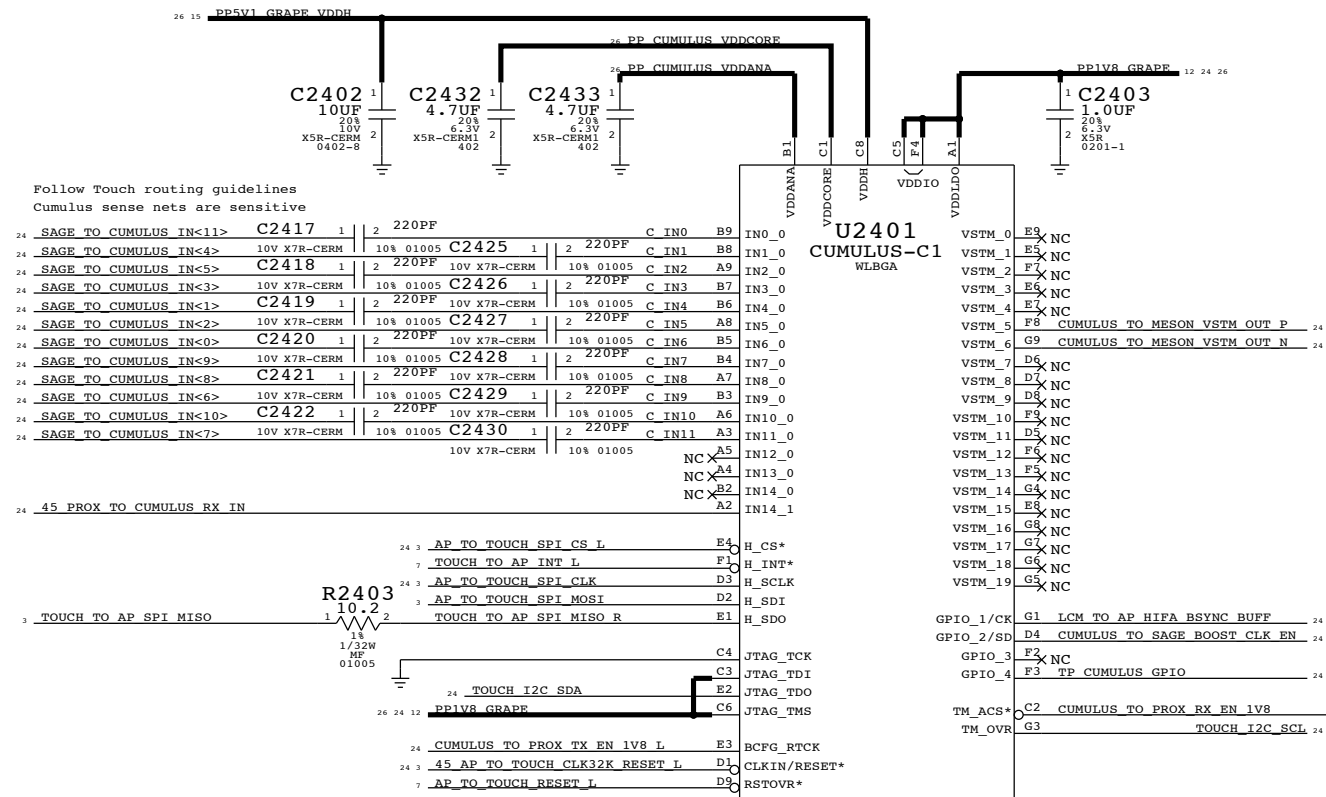
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CAMERA: REAR FLEX CONN			
Apple Inc.		DRAWING NUMBER	051-9903
		REVISION	7.0.0
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# Touch (B2B, Driver ICs)

## Cumulus

APN: 343S0638

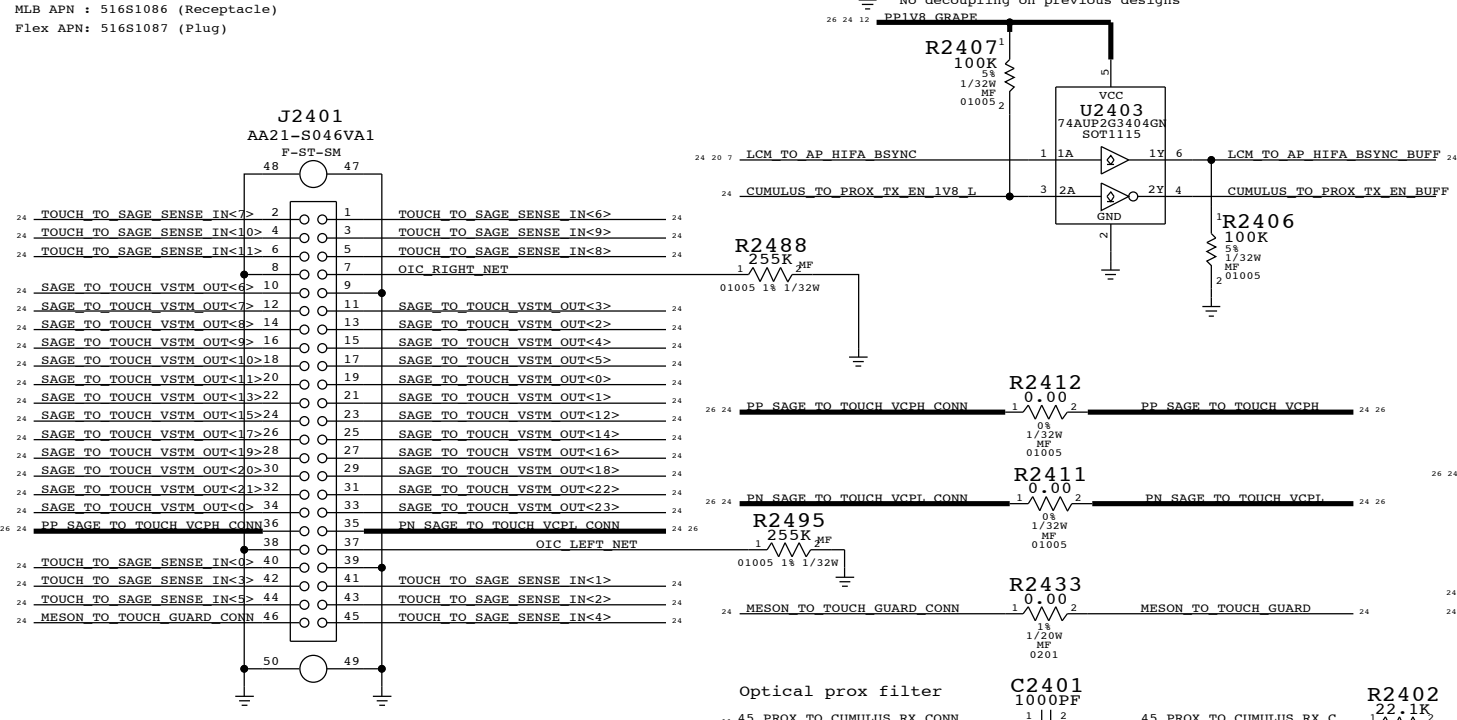
Turn on is later than PPIV8\_GRAPE  
Turn off is same time as PPIV8\_GRAPE



## Touch B2B

MLB APN : 516S1086 (Receptacle)  
Flex APN: 516S1087 (Plug)

Radars for KW  
rdar://12773579  
rdar://12611242

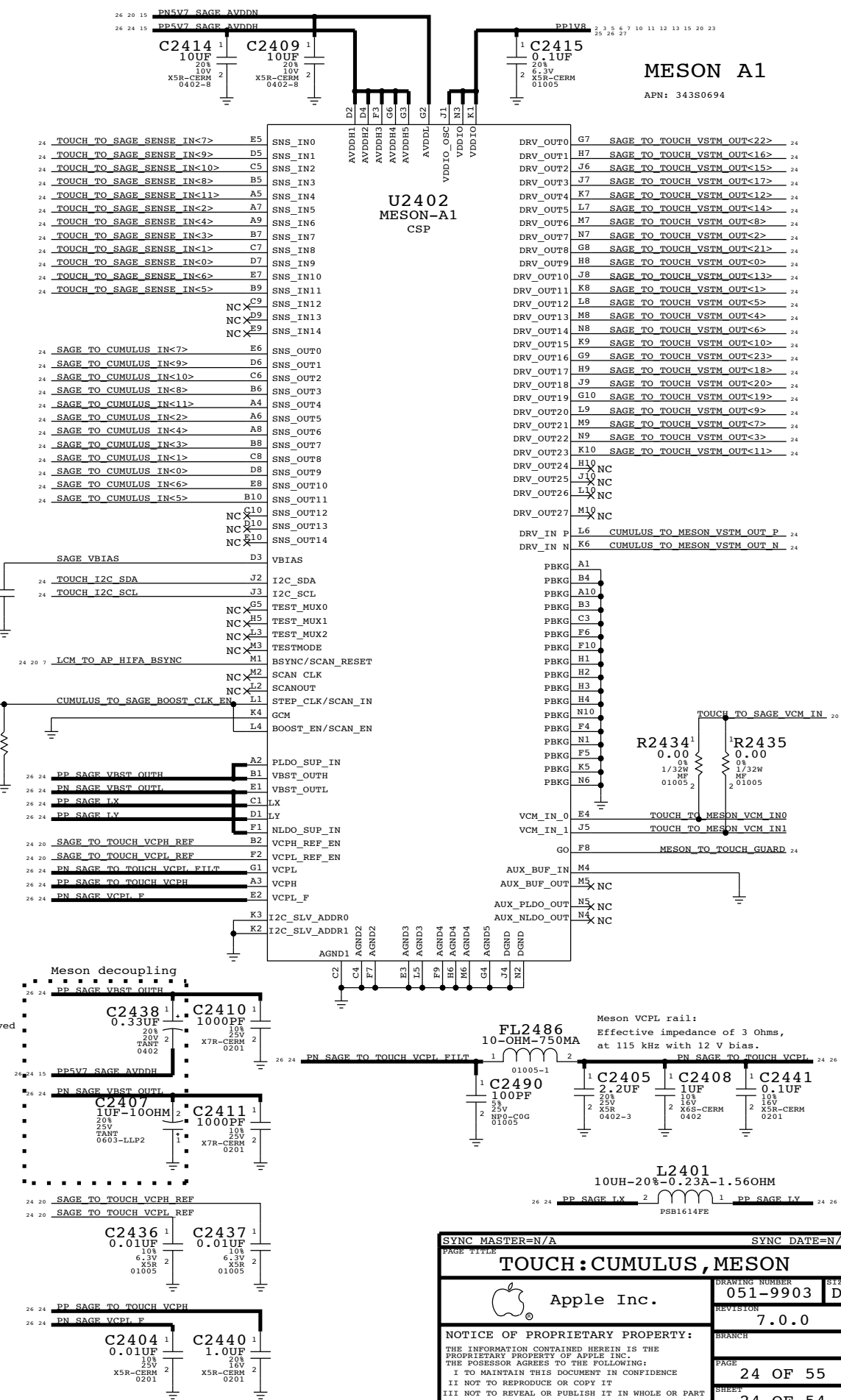


## Touch probe points

- PP2402 CUMULUS TO SAGE BOOST CLK EN
- PP2403 AP TO TOUCH SPI CS L
- PP2404 AP TO TOUCH SPI CLK
- PP2405 LCM TO AP HIFA\_BSYNC
- PP2408 TP\_CUMULUS\_GPIO
- PP2410 CUMULUS TO MESON VSTM\_OUT\_N
- PP2411 CUMULUS TO MESON VSTM\_OUT\_P
- PP2412 45 AP TO TOUCH CLK32K RESET L

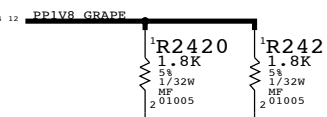
## MESON A1

APN: 343S0694

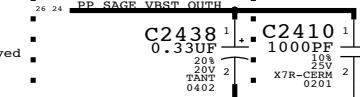


Tantalums solved singing caps issue. Validate issue is resolved with Meson and replace with 0402 ceramics.

## I2C pull-ups



## Meson decoupling



Meson VCPL rail:  
Effective impedance of 3 Ohms, at 115 kHz with 12 V bias.

PAGE TITLE		SYNC DATE=N/A	
<b>TOUCH : CUMULUS , MESON</b>			
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# VOLTAGE PROPERTIES

E55	VOLTAGE=3.3V	PP3V3 USB	2 12
E56	VOLTAGE=1.8V	PP1V8 VA I19 I67	10 12 16
E57	VOLTAGE=3.0V	PP3V0 TRISTAR	12 15 17 29
E58	VOLTAGE=3.0V	PP3V0 TMU	12 19
E59	VOLTAGE=3.0V	PP3V0 NAND	6 12
E60	VOLTAGE=3.0V	PP3V3 ACC	12 17
E61	VOLTAGE=3.0V	PP3V0 PROX ALS	11 12
E62	VOLTAGE=4.6V	PP VCC MAIN	10 12 14 15 16 17 23 31 39
E63	VOLTAGE=1.0V	PP1V0	7 12
E64	VOLTAGE=3.0V	PP3V0 PROX TRIPD	11 12
E65	VOLTAGE=1.8V	PP1V8 ALWAYS	3 5 12 14
E66	VOLTAGE=3.0V	PP3V0 MESA	12 21
E67	VOLTAGE=1.1V	PP CPU	4 12
E68	VOLTAGE=1.1V	PP GPU	4 12
E69	VOLTAGE=1.2V	PP1V2 SDRAM	2 4 12 23
E70	VOLTAGE=1.8V	PP1V8 SDRAM	3 4 10 12 13 14 15 17 29
E71	VOLTAGE=1.8V	PP1V8	2,3,5,7,10,11,12,13,15,20,23
E72	VOLTAGE=1.8V	PP1V8 GRAPE	12 24
E73	VOLTAGE=1.8V	PP1V8 OSCAR	12 19 22
E74	VOLTAGE=1.2V	PP1V2 NAND VDDT	6
E75	VOLTAGE=1.8V	PP EXTMIC BIAS FILT IN	10
E76	VOLTAGE=1.8V	BOARD ID2	3 27
E77	VOLTAGE=1.2V	PP1V2	3 4 5 11 12
E78	VOLTAGE=5.0V	PP E75 TO TRISTAR ACC1 CONN	18 25
E79	VOLTAGE=5.0V	PP E75 TO TRISTAR ACC1	17 18
E80	VOLTAGE=22.0V	PP LCM BL ANODE	15 20
E81	VOLTAGE=0.2V	PP LCM BL CAT2	15 20
E82	VOLTAGE=0.2V	PP LCM BL CAT1	15 20
E83	VOLTAGE=0.2V	PP LCM BL CAT2 CONN	20 25
E84	VOLTAGE=0.2V	PP LCM BL CAT1 CONN	20 25
E85	VOLTAGE=-5.7V	PN5V7 SAGE AVDDN	15 20 24
E86	VOLTAGE=1.2V	PP1V2 OSCAR	12 22
E87	VOLTAGE=3.0V	PP3V0 MESA CONN	21
E88	VOLTAGE=6V	PP6V0 LCM BOOST	15
E89	VOLTAGE=5.0V	PP STRB DRIVER TO LED WARM	8 16
E90	VOLTAGE=5.0V	PP STRB DRIVER TO LED COOL	8 16
E91	VOLTAGE=1.8V	PP CODEC TO MIC1 BIAS	10 18
E92	VOLTAGE=1.8V	PP EXTMIC BIAS IN	10
E93	VOLTAGE=1.8V	PP EXTMIC BIAS FILT	10
E94	VOLTAGE=1.8V	PP CODEC TO FRONTMIC3 BIAS	10 11
E95	VOLTAGE=1.8V	PP CODEC TO REARMIC2 BIAS	8 10
E96	VOLTAGE=1.8V	PP CODEC FILT4	10
E97	VOLTAGE=2.2V	PP CODEC SPKR VO	10
E98	VOLTAGE=2.5V	PP CODEC VCPFL1L	10
E99	VOLTAGE=2.5V	PP CODEC VCPFL1L	10
E100	VOLTAGE=2.5V	PP CODEC VHP FLV	10
E101	VOLTAGE=0.2V	PP CODEC VHP FLV	10
E102	VOLTAGE=2.5V	PP CODEC VHP FLV	10
E103	VOLTAGE=1.8V	PP1V8 FCAM CONN	11
E104	VOLTAGE=3.0V	PP2V85 FCAM AVDD CONN	11
E105	VOLTAGE=1.8V	PP CODEC TO FRONTMIC3 BIAS CONN	11
E106	VOLTAGE=3.0V	PP3V0 ALS CONN	11
E107	VOLTAGE=1.2V	PP1V2 FCAM VDDIO CONN	11
E108	VOLTAGE=5.0V	PP5V0 USB	12 14 17 18 25
E109	VOLTAGE=5.0V	PP5V0 USB TO PMU	12
E110	VOLTAGE=4.6V	PP BUCK5 LX0	12
E111	VOLTAGE=4.6V	PP BUCK3 LX	12
E112	VOLTAGE=4.6V	PP BUCK4 LX	12
E113	VOLTAGE=4.6V	PP BUCK2 LX	12
E114	VOLTAGE=4.6V	PP BUCK1 LX1	12
E115	VOLTAGE=4.6V	PP BUCK1 LX0	12
E116	VOLTAGE=4.6V	PP BUCK0 LX3	12
E117	VOLTAGE=4.6V	PP BUCK0 LX2	12
E118	VOLTAGE=4.6V	PP BUCK0 LX1	12
E119	VOLTAGE=4.6V	PP BUCK0 LX0	12
E120	VOLTAGE=6.0V	PP CHESTNUT LXP	15
E121	VOLTAGE=6.0V	PP CHESTNUT CP	15
E122	VOLTAGE=6.0V	PP CHESTNUT CN	15
E123	VOLTAGE=5.7V	PP5V7 SAGE AVDDH	15 24
E124	VOLTAGE=5.7V	PP5V7 LCM AVDDH	15 20
E125	VOLTAGE=5.1V	PP5V1 GRAPE VDDH	15 24
E126	VOLTAGE=22.0V	PP WLED LX	15
E127	VOLTAGE=18.0V	PP18V0 MESA SW	15
E128	VOLTAGE=17.0V	PP17V0 NOJAVE LDOIN	15
E129	VOLTAGE=16.5V	PP16V5 MESA	15 21 25
E130	VOLTAGE=8.0V	PP SPKAMP SW	16
E131	VOLTAGE=8.0V	PP I19 VBOOST	16
E132	VOLTAGE=1.8V	PP SPKAMP FILT	16
E133	VOLTAGE=1.8V	PP SPKAMP LDO FILT	16
E134	VOLTAGE=5.0V	PP LED DRV LX	16
E135	VOLTAGE=5.0V	PP LED BOOST OUT	16
E136	VOLTAGE=2.9V	PP2V9 LDO9	12
E137	VOLTAGE=1.8V	PP CODEC TO MIC1 BIAS CONN	18
E138	VOLTAGE=4.6V	PP E75 TO TRISTAR ACC2	17 18
E139	VOLTAGE=4.6V	PP E75 TO TRISTAR ACC2 CONN	18 25
E140	VOLTAGE=1.8V	PP1V8 LCM CONN	20
E141	VOLTAGE=22.0V	PP LCM BL ANODE CONN	20 25
E142	VOLTAGE=-5.7V	PN5V7 LCM AVDDN CONN	20
E143	VOLTAGE=5.7V	PP5V7 LCM AVDDH CONN	20
E144	VOLTAGE=1.8V	PP1V8 MESA	21
E145	VOLTAGE=16.5V	PP16V5 MESA CONN	21
E146	VOLTAGE=5.0V	PP TRISTAR PIN	17
E147	VOLTAGE=1.2V	PP1V2 FCAM CONN	23
E148	VOLTAGE=1.8V	PP1V8 FCAM CONN	23
E149	VOLTAGE=3.0V	PP2V85 CAM VDD	11 23
E150	VOLTAGE=1.8V	PP2V85 FCAM AVDD CONN	23
E151	VOLTAGE=1.8V	PP CUMIULUS VDDCORE	24
E152	VOLTAGE=1.2V	PP CUMIULUS VDDANA	24
E153	VOLTAGE=13.5V	PP SAGE TO TOUCH VCPH CONN	24
E154	VOLTAGE=-12V	PN SAGE TO TOUCH VCPH CONN	24
E155	VOLTAGE=13.5V	PP SAGE TO TOUCH VCPH	24
E156	VOLTAGE=-12V	PN SAGE TO TOUCH VCPH	24
E157	VOLTAGE=-12V	PN SAGE VCPH F	24
E158	VOLTAGE=5.7V	PP SAGE LX	24
E159	VOLTAGE=17.0V	PP SAGE LX	24
E160	VOLTAGE=1.8V	PP PMU VREF	13
E161	VOLTAGE=14V	PP SAGE VBST OUTH	24
E162	VOLTAGE=5.0V	PP TIGRIS VBIUS DET	14
E163		PP1V8 PLL	
E164		PP MIPIOD VREG	
E165		BOARD ID0	
E166	VOLTAGE=2.5V	PP PMU VDD REF	13
E167	VOLTAGE=1.8V	PP EXTMIC BIAS	10
E168	VOLTAGE=1.8V	PP1V8 XTAL	2
E169	VOLTAGE=1.8V	PP PMU VDD RTC	13
E170	VOLTAGE=4.6V	PP BATT VCC	14 16 25 40 45 46
E171	VOLTAGE=1.8V	PP1V8 MESA CONN	21
E172	VOLTAGE=3.0V	PP3V0 PROX CONN	11
E173	VOLTAGE=1.0V	PP0V95 FIXED SOC	4 7 12
E174	VOLTAGE=1.0V	PP0V95 FIXED SOC PCIE	7
E175	VOLTAGE=1.2V	PP1V2 PLL	2
E176	VOLTAGE=1.0V	PP BUCK5 LX1	12
E177	VOLTAGE=1.0V	PP VAR SOC	5 12
E178	VOLTAGE=5.0V	PMID CAP	14
E179	VOLTAGE=5.0V	CHARGER LDO	14
E180	VOLTAGE=4.6V	CHG BOOT	14
E181	VOLTAGE=4.6V	CHG LX	14
E182	VOLTAGE=3.0V	VIBR DRIVE P	14 18
E183	VOLTAGE=3.0V	VIBR DRIVE N	14 18
E184	VOLTAGE=1.8V	PP RCAM AE CONN	23
E185	VOLTAGE=-14.0V	PN SAGE VBST OUTH	24
E186	VOLTAGE=-12.0V	PN SAGE TO TOUCH VCPH FILT	24
E187	VOLTAGE=2.7V	PP BB VDD 2V7 CONN	18

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# N61 SPECIFIC

## BOOTSTRAPPING (BOARD\_REV, BOARD\_ID, BOOT\_CFG)

```
BOARD_REV[3:0]={GPIO34, GPIO35, GPIO36, GPIO37}
FLOAT=LOW, PULLUP=HIGH
```

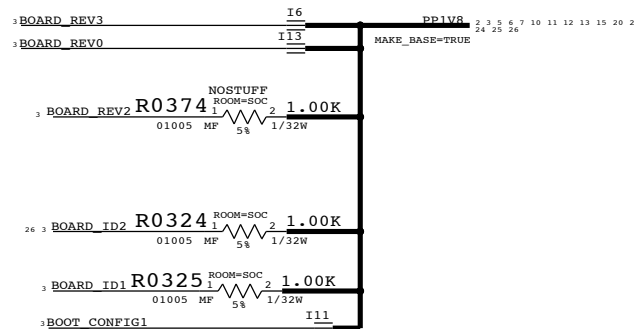
```
1111 PROTOMLB1
1110 PROTOMLB2
1101 PROTO1
1100 PROTO2
1011 EVT
1010 EVT SPLIT CARBON DOE
1001 CARRIER BUILD <---- SELECTED
1000 DVT
```

```
BOARD_ID[4:0]={GPIO29, GPIO16, SPI0_MISO, SPI0_MOSI, SPI0_SCLK}
FLOAT=LOW, PULLUP=HIGH
```

```
00100 N56, T133 MLB
00101 N56 DEV
00110 FIJI N61 MLB <---- SELECTED
```

```
BOOT_CONFIG[2:0]={GPIO28, GPIO25, GPIO18}
FLOAT=LOW, PULLUP=HIGH
```

```
000 SPI0
001 SPI0 TEST MODE
010 NAND <---- SELECTED
011 NAND TEST MODE
100 NVME
101 NVME TEST MODE
111 FAST SPI
```



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# RADIO\_MLB HIERARCHICAL SYMBOL

## POWER

VCC\_MAIN, VBAT GOES TO RADIO\_MLB DIRECTLY  
CHECK ALL PAGES IN RF SIDE!

## CELLULAR HOUSE KEEPING

AP TO RADIO ON L	MAKE_BASE+TRIG	I325	RADIO ON L	30	32
BB TO AP RESET DET L	MAKE_BASE+TRIG	I324	BB RESET DET L	30	35
PMU TO BB RST L	MAKE_BASE+TRIG	I326	RF PMIC RESET L	30	32
AP TO BB RST L	MAKE_BASE+TRIG	I327	BB RST L	30	32
AP TO BB WAKE MODEM	MAKE_BASE+TRIG	I329	AP WAKE MODEM	30	35
BB TO PMU_HOST_WAKE L	MAKE_BASE+TRIG	I328	BB WAKE HOST L	30	35
BB TO AP IPC GPIO	MAKE_BASE+TRIG	I331	BB IPC GPIO	30	35
BB TO LEDDRV_GSM_BLANK	MAKE_BASE+TRIG	I330	GSM TXBURST IND	30	35
BB TO AP_GPS_SYNC	MAKE_BASE+TRIG	I332	BB_GPS_SYNC	30	35

## HSIC IPC

50 AP BI BB HSIC1 DATA	MAKE_BASE+TRIG	I368	50 BB HSIC DATA	30	34
50 AP BI BB HSIC1 STB	MAKE_BASE+TRIG	I369	50 BB HSIC STROBE	30	34
AP TO BB HOST_RDY	MAKE_BASE+TRIG	I371	BB_HOST_RDY	30	35
BB TO AP_DEVICE_RDY	MAKE_BASE+TRIG	I370	BB_DEVICE_RDY	30	35
BB TO AP_IPC_GPIO1	MAKE_BASE+TRIG	I372	BB_IPC_GPIO1	30	35

## UART IPC

AP TO BB_UART2_RTS_L	MAKE_BASE+TRIG	I373	BB_UART2_CTS_L	30	35
BB TO AP_UART2_CTS_L	MAKE_BASE+TRIG	I376	BB_UART2_RTS_L	30	35
AP TO BB_UART2_TXD	MAKE_BASE+TRIG	I374	BB_UART2_RXD	30	35
BB TO AP_UART2_RXD	MAKE_BASE+TRIG	I375	BB_UART2_TXD	30	35

## AUDIO I2S

45 AP TO BB_I2S3_BCLK	MAKE_BASE+TRIG	I377	BB_I2S3_CLK	30	35
AP TO BB_I2S3_DOUT	MAKE_BASE+TRIG	I378	BB_I2S3_RXD	30	35
BB TO AP_I2S3_DIN	MAKE_BASE+TRIG	I379	BB_I2S3_TXD	30	35
AP TO BB_I2S3_LRCLK	MAKE_BASE+TRIG	I380	BB_I2S3_WS	30	35

## OSCAR UART

OSCAR TO BB_UART_TXD	MAKE_BASE+TRIG	I382	BB_OTHER_RXD	30	35
BB TO OSCAR_UART_RXD	MAKE_BASE+TRIG	I381	BB_OTHER_TXD	30	35

## BB DEBUG INTERFACES

AP TO BB_COREDUMP	MAKE_BASE+TRIG	I384	BB_CORE_DUMP	30	35
PMU TO BB_VBUS_DET	MAKE_BASE+TRIG	I387	BB_USB_VBUS	30	34
90 TRISTAR BI_BB_USB_N	MAKE_BASE+TRIG	I386	90_BB_USB_N	30	34
90 TRISTAR BI_BB_USB_P	MAKE_BASE+TRIG	I388	90_BB_USB_P	30	34

## RADIO ANTENNA CONTROL

PP_BB_VDD_2V7	MAKE_BASE+TRIG	I389	PP_LDO14_RFSW	31	41
BB_GPIO0	MAKE_BASE+TRIG	I390	BB_LAT_GPIO0	30	35
BB_GPIO2	MAKE_BASE+TRIG	I391	BB_LAT_GPIO2	30	35
BB_GPIO3	MAKE_BASE+TRIG	I392	BB_LAT_GPIO3	30	35
BB_GPIO4	MAKE_BASE+TRIG	I394	BB_LAT_GPIO4	30	35

## FCT TESTING

RADIO_TO_PMU_ADC_SMP51	MAKE_BASE+TRIG	I395	ADC_SMP51	30	30
RADIO_TO_PMU_ADC_PP_LDO11_VDDIO	MAKE_BASE+TRIG	I396	ADC_PP_LDO11	30	30
RADIO_TO_PMU_ADC_PP_LDO5_SIM	MAKE_BASE+TRIG	I398	ADC_PP_LDO5	30	30
RADIO_TO_PMU_ADC_SMP54	MAKE_BASE+TRIG	I397	ADC_SMP54	30	30

## UPPER RADIO ANTENNA CONTROL

50 AP_WIFI_5G_CONN_ANT	MAKE_BASE+TRIG	I410	50_WIFI_5G_CONN_ANT	50	50
50 AP_UAT_FEED	MAKE_BASE+TRIG	I409	50_UPPER_ANT_FEED	50	50
UAT_ANT_GND	MAKE_BASE+TRIG	I411	ANT_GND	50	50
PP3V0_TRISTAR	MAKE_BASE+TRIG	I404	PAC_VDD_3V0	53	53
NORTH_AC_GND_SCREW	MAKE_BASE+TRIG	I412	NORTH_ANT_GND	50	50

## POWER



## WLAN/BT HOUSE KEEPING

45 PMU TO WLAN_CLK32K	MAKE_BASE+TRIG	I316	CLK32K AP	30	51
PMU TO WLAN_REG_ON	MAKE_BASE+TRIG	I317	WLAN_REG_ON	30	51
WLAN TO PMU_HOST_WAKE	MAKE_BASE+TRIG	I318	HOST_WAKE_WLAN	30	51
PMU TO BT_REG_ON	MAKE_BASE+TRIG	I319	BT_REG_ON	30	51
AP TO BT_WAKE	MAKE_BASE+TRIG	I320	WAKE_BT	30	51
BT TO PMU_HOST_WAKE	MAKE_BASE+TRIG	I321	HOST_WAKE_BT	51	51

AP TO WLAN_JTAG_SWCLK	MAKE_BASE+TRIG	I333	WLAN_JTAG_SWCLK	30	51
AP TO WLAN_JTAG_SWDIO	MAKE_BASE+TRIG	I334	WLAN_JTAG_SWDIO	30	51
WLAN TO PMU_PCIE_WAKE_L	MAKE_BASE+TRIG	I335	WLAN_PCIE_WAKE_L	30	51
AP TO WLAN_DEVICE_WAKE	MAKE_BASE+TRIG	I336	PCIE_DEV_WAKE	30	51
90 WLAN TO AP_PCIE1_RXDP_P	MAKE_BASE+TRIG	I337	90_WLAN_PCIE_TDP	30	51
90 WLAN TO AP_PCIE1_RXDP_N	MAKE_BASE+TRIG	I338	90_WLAN_PCIE_TDN	30	51
90 AP TO WLAN_PCIE1_TXDP_P	MAKE_BASE+TRIG	I338	90_WLAN_PCIE_RDP	30	51
90 AP TO WLAN_PCIE1_TXDP_N	MAKE_BASE+TRIG	I339	90_WLAN_PCIE_RDN	30	51
90 AP TO WLAN_PCIE1_REFCLK1_P	MAKE_BASE+TRIG	I342	90_WLAN_PCIE_REFCLK_P	51	51
90 AP TO WLAN_PCIE1_REFCLK1_N	MAKE_BASE+TRIG	I341	90_WLAN_PCIE_REFCLK_N	51	51
WLAN TO AP_PCIE1_CLKREQ_L	MAKE_BASE+TRIG	I344	WLAN_PCIE_CLKREQ_L	30	51
AP TO WLAN_PCIE1_RST_L	MAKE_BASE+TRIG	I343	WLAN_PCIE_PERST_L	30	51

## WLAN HSIC IPC

WLAN TO AP_UART4_RXD	MAKE_BASE+TRIG	I345	WLAN_UART_TXD	30	51
AP TO WLAN_UART4_TXD	MAKE_BASE+TRIG	I346	WLAN_UART_RXD	30	51
WLAN TO AP_UART4_CTS_L	MAKE_BASE+TRIG	I347	WLAN_UART_RTS_L	30	51
AP TO WLAN_UART4_RTS_L	MAKE_BASE+TRIG	I346	WLAN_UART_CTS_L	30	51

## BT UART IPC

AP TO BT_UART1_RTS_L	MAKE_BASE+TRIG	I349	BT_UART2_CTS_L	51	51
BT TO AP_UART1_CTS_L	MAKE_BASE+TRIG	I352	BT_UART2_RTS_L	51	51
AP TO BT_UART1_TXD	MAKE_BASE+TRIG	I351	BT_UART2_RXD	30	51
BT TO AP_UART1_RXD	MAKE_BASE+TRIG	I350	BT_UART2_TXD	30	51

## BT AUDIO PCM

45 AP TO BT_I2S1_BCLK	MAKE_BASE+TRIG	I354	BT_PCM_CLK	51	51
AP TO BT_I2S1_DOUT	MAKE_BASE+TRIG	I353	BT_PCM_IN	51	51
BT TO AP_I2S1_DIN	MAKE_BASE+TRIG	I355	BT_PCM_OUT	51	51
AP TO BT_I2S1_LRCLK	MAKE_BASE+TRIG	I356	BT_PCM_SYNC	51	51

## OSCAR STATES

OSCAR_TO_RADIO_CONTEXT_A	MAKE_BASE+TRIG	I358	OSCAR_CONTEXT_A	51	51
OSCAR_TO_RADIO_CONTEXT_B	MAKE_BASE+TRIG	I357	OSCAR_CONTEXT_B	51	51

## STOCKHOLM

STOCKHOLM_TO_AP_UART3_CTS_L	MAKE_BASE+TRIG	I359	STOCKHOLM_RTS_L	30	52
AP TO STOCKHOLM_UART3_RTS_L	MAKE_BASE+TRIG	I360	STOCKHOLM_CTS_L	30	52
STOCKHOLM_TO_AP_UART3_RXD	MAKE_BASE+TRIG	I361	STOCKHOLM_UART_TXD	30	52
AP TO STOCKHOLM_UART3_TXD	MAKE_BASE+TRIG	I362	STOCKHOLM_UART_RXD	30	52
AP TO STOCKHOLM_DWLD_REQ	MAKE_BASE+TRIG	I363	STOCKHOLM_FW_DWLD_REQ	52	52
STOCKHOLM_TO_PMU_HOST_WAKE	MAKE_BASE+TRIG	I364	STOCKHOLM_HOST_WAKE	30	52
AP TO STOCKHOLM_EN	MAKE_BASE+TRIG	I365	STOCKHOLM_ENABLE	52	52
PP3V0_TRISTAR	MAKE_BASE+TRIG	I366	STOCKHOLM_VDD_MUX_3V0	54	54
AP TO STOCKHOLM_SIM_SEL	MAKE_BASE+TRIG	I367	STOCKHOLM_SIM_SEL	54	54
AP TO STOCKHOLM_ANT	MAKE_BASE+TRIG	I406	STOCKHOLM_ANT	52	52

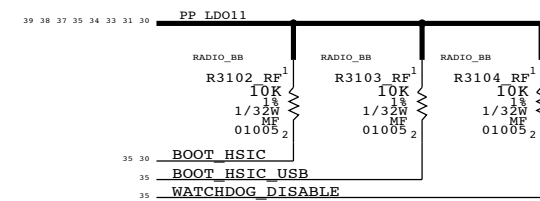
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# AP INTERFACE & DEBUG CONNECTORS

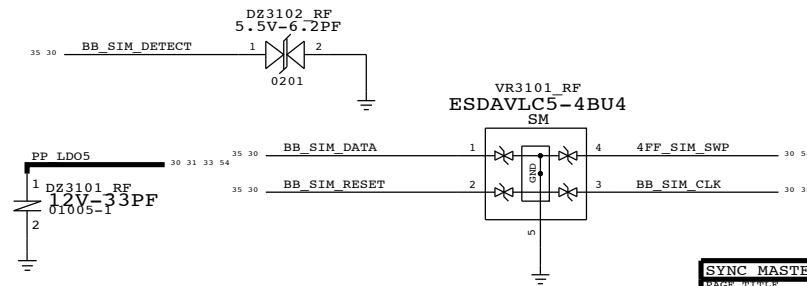
## PROBE POINTS

PP3105 RF P2MM-NSM SM 1 CLK32K AP 29 51 WIFI_BT	PP3121 RF P2MM-NSM SM 1 STOCKHOLM_HOST_WAKE 29 52 RADIO_STOCKHOLM	PP3115 RF P4MM-NSM SM 1 50_BB_HSIC_STROBE 29 34 SIM_DEBUG	PP3130 RF P4MM-NSM SM 1 BB_JTAG_RST_L 29 34 SIM_DEBUG	PP3141 RF P4MM-NSM SM 1 BB_UART_TXD 29 35 SIM_DEBUG	PP3170 RF P4MM-NSM SM 1 RFFE1_CLK 35 39 40 41 42 43 44 RF_DEBUG
PP3113 RF P4MM-NSM SM 1 BB_COEX_UART_RXD 35 51 WIFI_BT	PP3122 RF P4MM-NSM SM 1 BB_REQUEST_XO_CLK 32 52 SIM_DEBUG	PP3116 RF P4MM-NSM SM 1 50_BB_HSIC_DATA 29 34 SIM_DEBUG	PP3131 RF P4MM-NSM SM 1 BB_JTAG_TCK 29 34 SIM_DEBUG	PP3142 RF P4MM-NSM SM 1 BB_UART_RXD 29 35 SIM_DEBUG	PP3171 RF P4MM-NSM SM 1 RFFE1_DATA 35 39 40 41 42 43 44 RF_DEBUG
PP3114 RF P4MM-NSM SM 1 BB_COEX_UART_TXD 35 51 WIFI_BT	PP3123 RF P2MM-NSM SM 1 STOCKHOLM_UART_RXD 29 52 RADIO_STOCKHOLM	PP3101 RF P4MM-NSM SM 1 BB_DEBUG_ERROR 35 SIM_DEBUG	PP3132 RF P4MM-NSM SM 1 BB_JTAG_TMS 29 34 SIM_DEBUG	PP3143 RF P4MM-NSM SM 1 BB_UART_RTS_L 29 35 SIM_DEBUG	PP3172 RF P4MM-NSM SM 1 RFFE2_CLK 35 45 46 48 RF_DEBUG
PP3119 RF P2MM-NSM SM 1 BT_UART_TXD 29 51 WIFI_BT	PP3124 RF P2MM-NSM SM 1 STOCKHOLM_UART_TXD 29 52 RADIO_STOCKHOLM	PP3102 RF P4MM-NSM SM 1 RF_PMIC_RESET_L 29 32 SIM_DEBUG	PP3133 RF P4MM-NSM SM 1 BB_JTAG_TDO 29 34 SIM_DEBUG	PP3144 RF P4MM-NSM SM 1 BB_UART_CTS_L 29 35 SIM_DEBUG	PP3173 RF P4MM-NSM SM 1 RFFE2_DATA 35 45 46 48 RF_DEBUG
PP3120 RF P2MM-NSM SM 1 BT_UART_RXD 29 51 WIFI_BT	PP3125 RF P2MM-NSM SM 1 STOCKHOLM_CTS_L 29 52 RADIO_STOCKHOLM	PP3103 RF P4MM-NSM SM 1 PS_HOLD_PMIC 32 SIM_DEBUG	PP3134 RF P4MM-NSM SM 1 BB_JTAG_TDI 29 34 SIM_DEBUG	PP3145 RF P4MM-NSM SM 1 BB_HOST_RDY 29 35 SIM_DEBUG	PP3175 RF P4MM-NSM SM 1 BB_I2S_WS 29 35 RF_DEBUG
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PP3154 RF P4MM-NSM SM 1 BT_REG_ON 29 51 WIFI_BT	PP3174 RF P4MM-NSM SM 1 STOCKHOLM_SIM_SWP 52 54 SIM_DEBUG	PP3109 RF P4MM-NSM SM 1 PP_LDO11 30 31 33 34 35 37 38 SIM_DEBUG	PP3137 RF P4MM-NSM SM 1 BB_CORE_DUMP 29 35 SIM_DEBUG	PP3148 RF P4MM-NSM SM 1 BB_WAKE_HOST_L 29 35 SIM_DEBUG	PP3178 RF P4MM-NSM SM 1 BB_OTHER_TXD 29 35 RF_DEBUG
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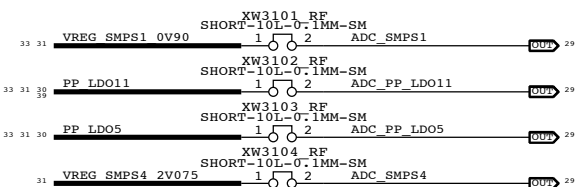
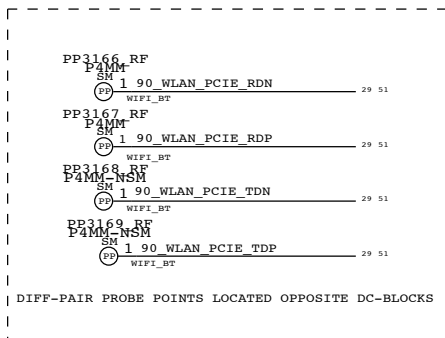
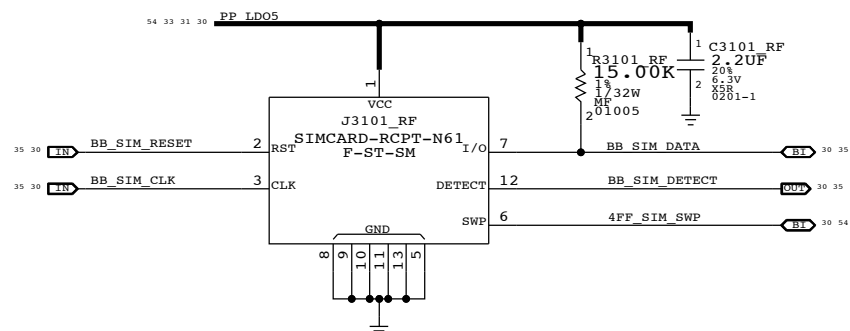
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138S00005	138S00003	ALTERNATE	C3216_RF	15UF CAPACITOR
138S0739	138S0706	ALTERNATE	C4207_RF	1.0UF CAPACITOR
138S0945	138S0706	ALTERNATE	C4207_RF	1.0UF CAPACITOR
138S1103	138S0719	ALTERNATE	C4007_RF	4.7UF CAPACITOR
339S0231	339S0228	ALTERNATE	U5201_RF	CORONA MODULE USI
339S0242	339S0228	ALTERNATE	U5201_RF	CORONA MODULE TDK
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## SIM CARD ESD PROTECTION



## SIM CARD CONNECTOR

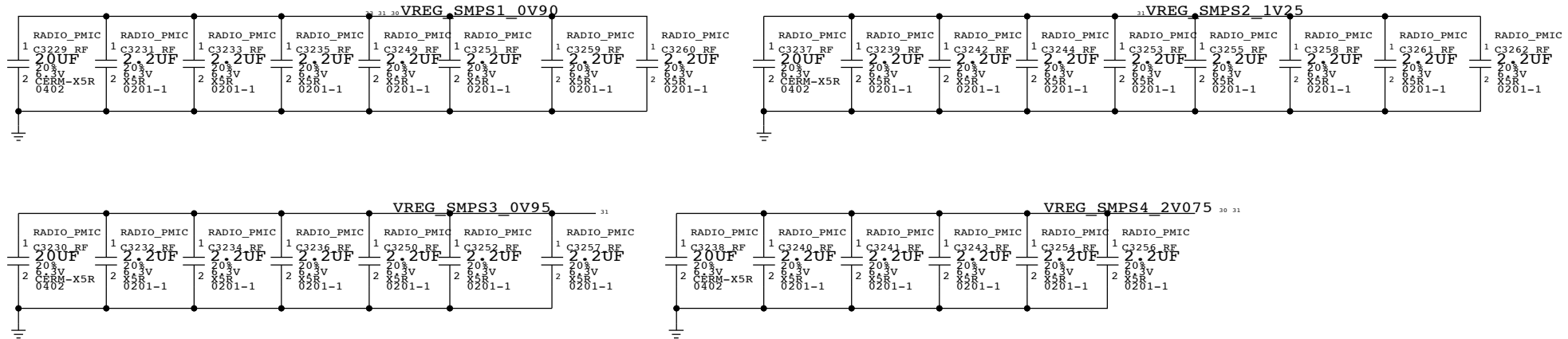


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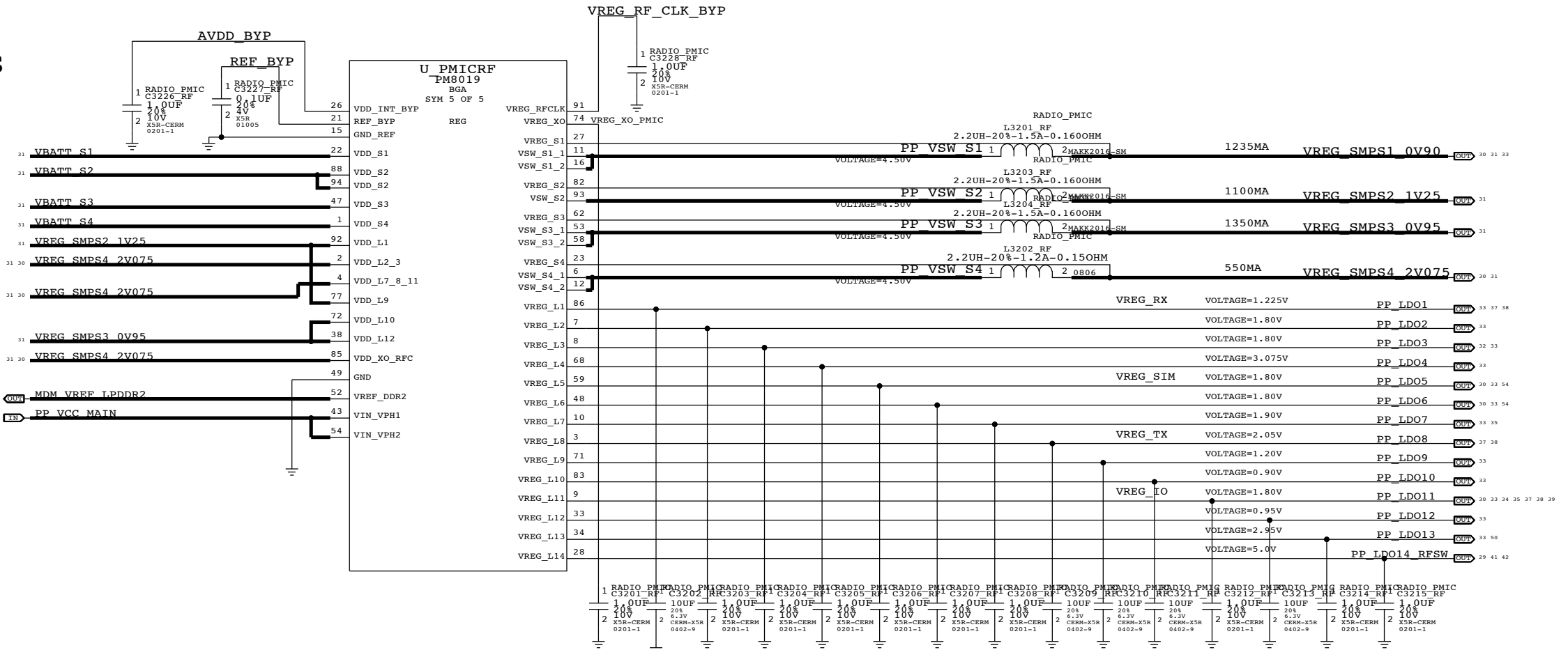
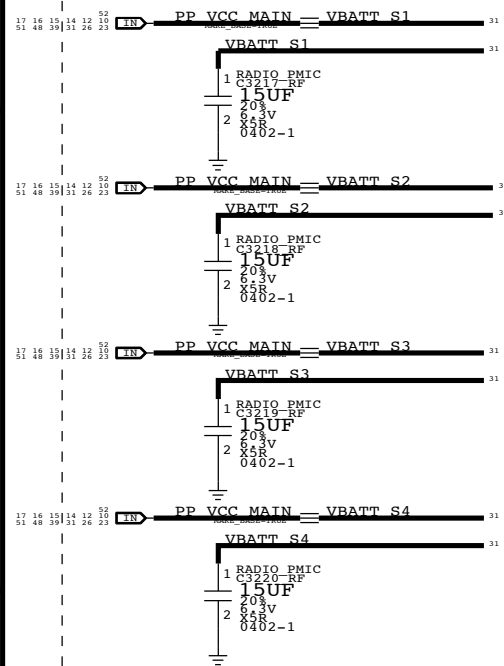
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## SWITCHERS OUTPUT CAPS



## SWITCHERS BULK CAPS



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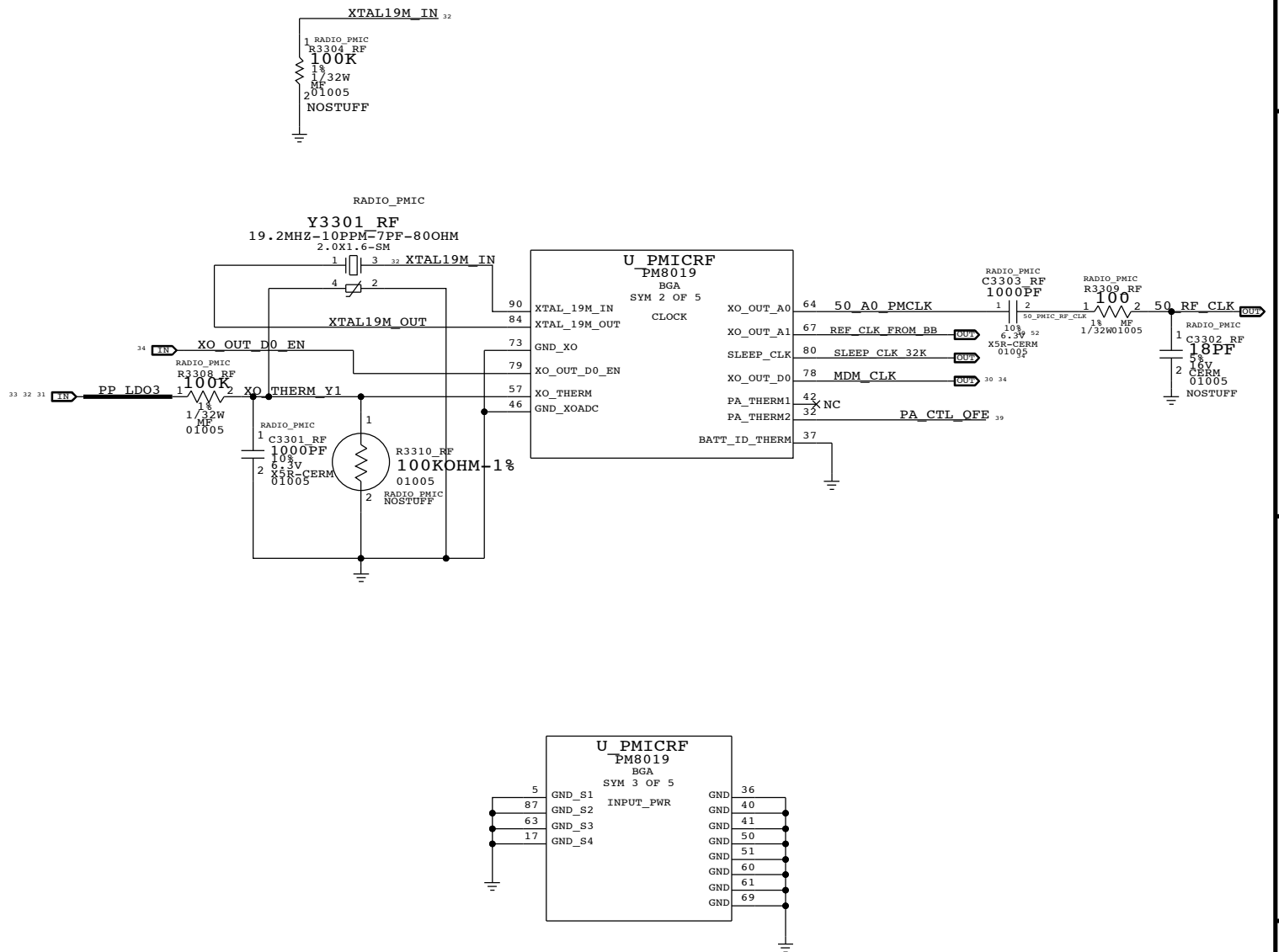
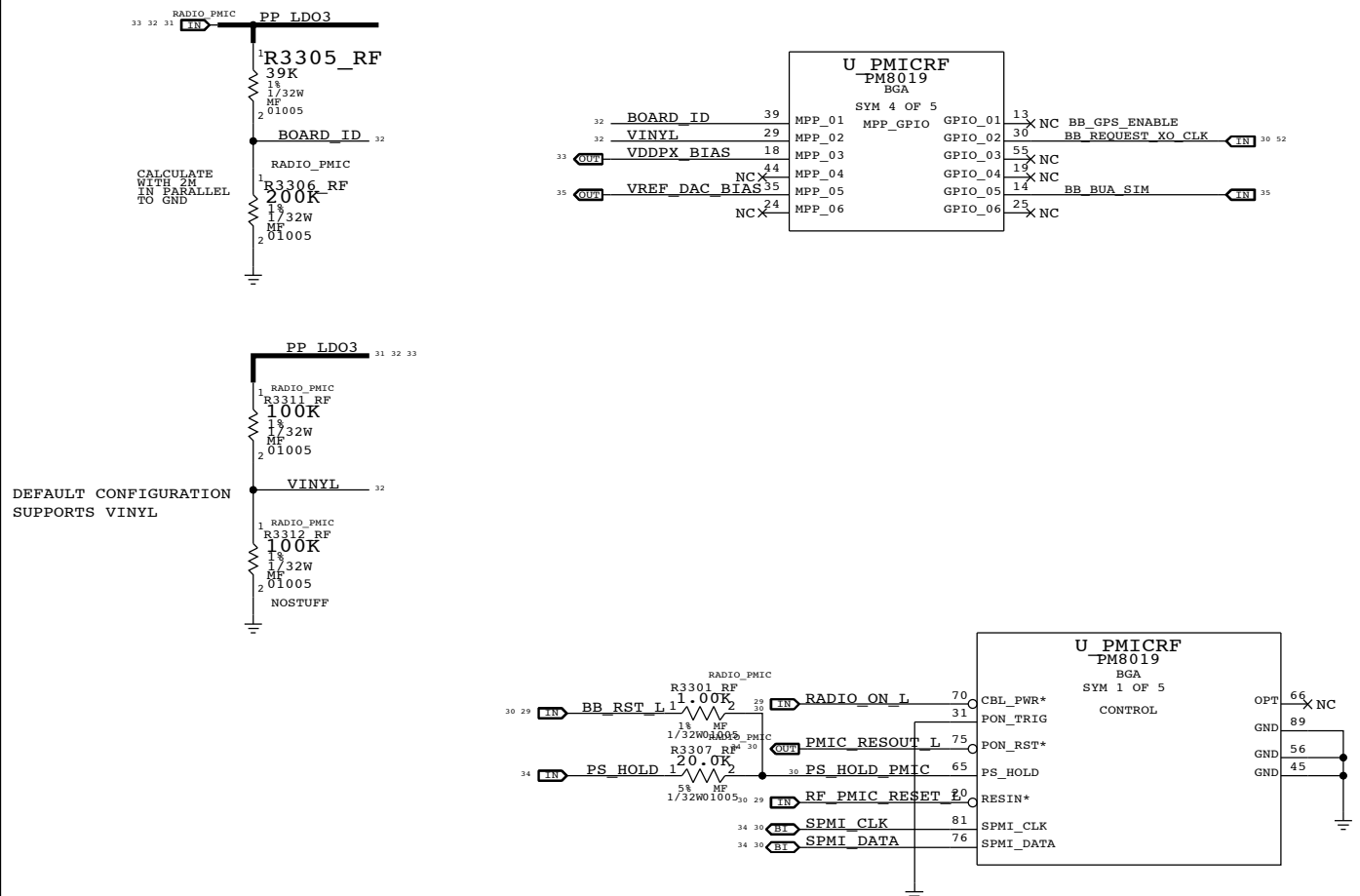
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C401  
R411  
L400  
U404

BOARD ID	REVISION
0.00V	N61 PROTO MLB1
0.50V	N61 DEV3
0.70V	N61 DEV4
0.90V	N61 PROTO MLB2
1.10V	N61/N56 PROTO1
1.30V	N61/N56 PROTO2
1.40V	N61/N56 EVT1
1.50V	N61/N56 EVT2 (CARRIER)
1.60V	N61/N56 DVT
1.70V	N61/N56 PVT



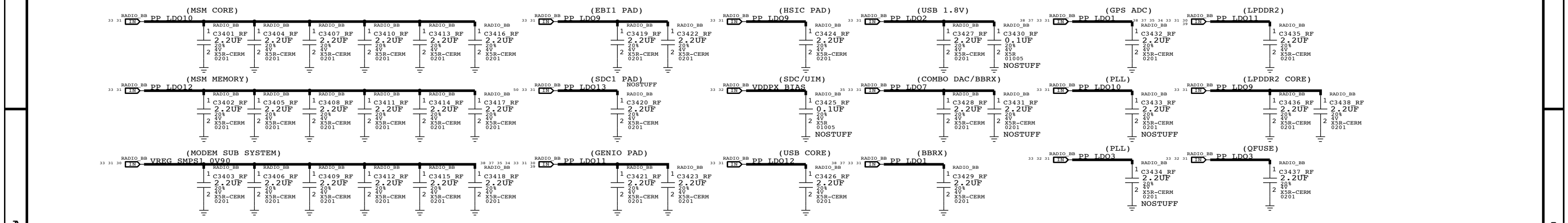
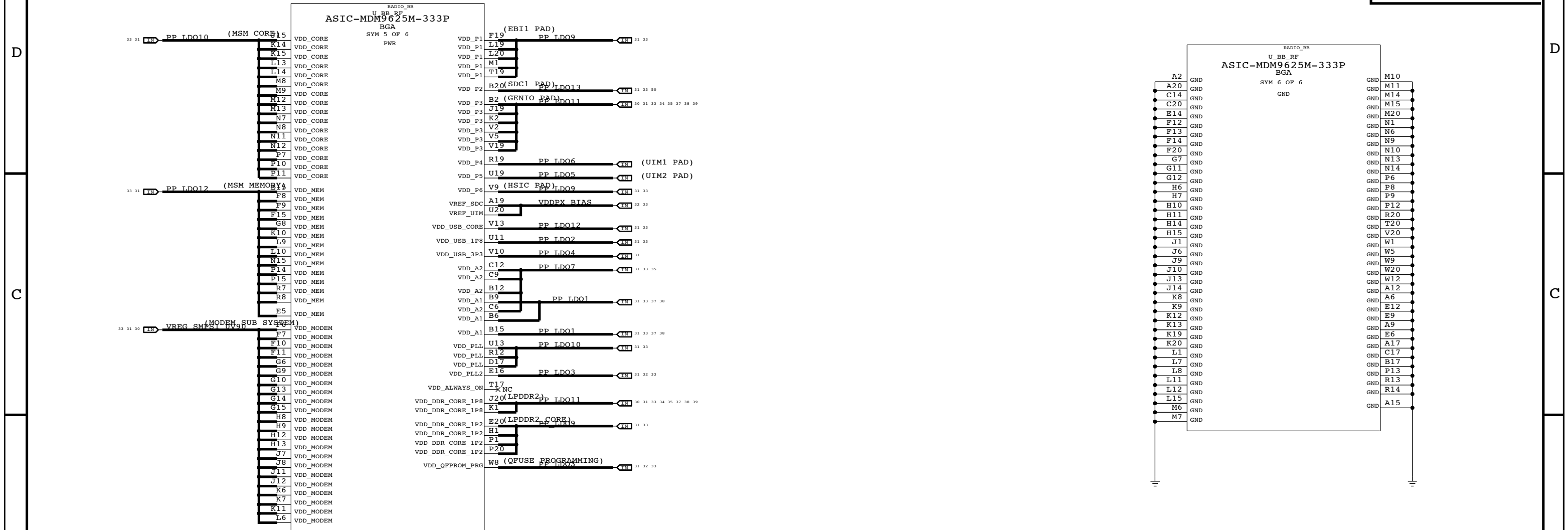
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# BASEBAND (1 OF 3)

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C538  
R500  
L500  
U502

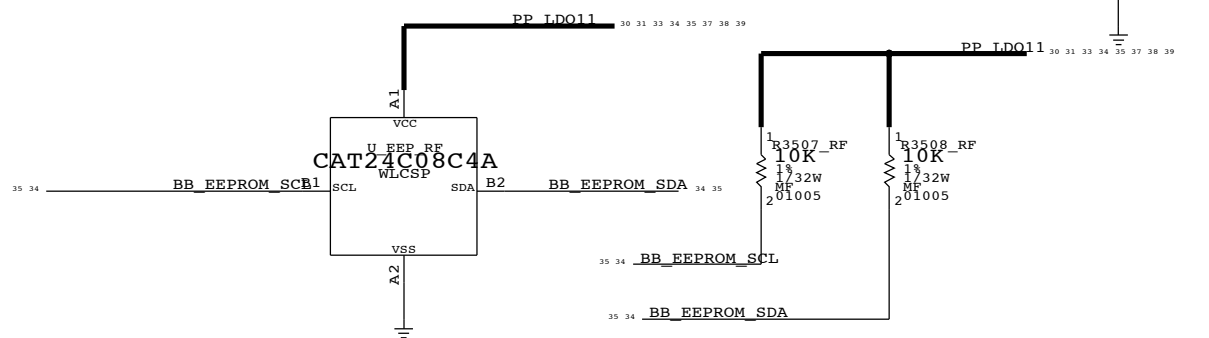
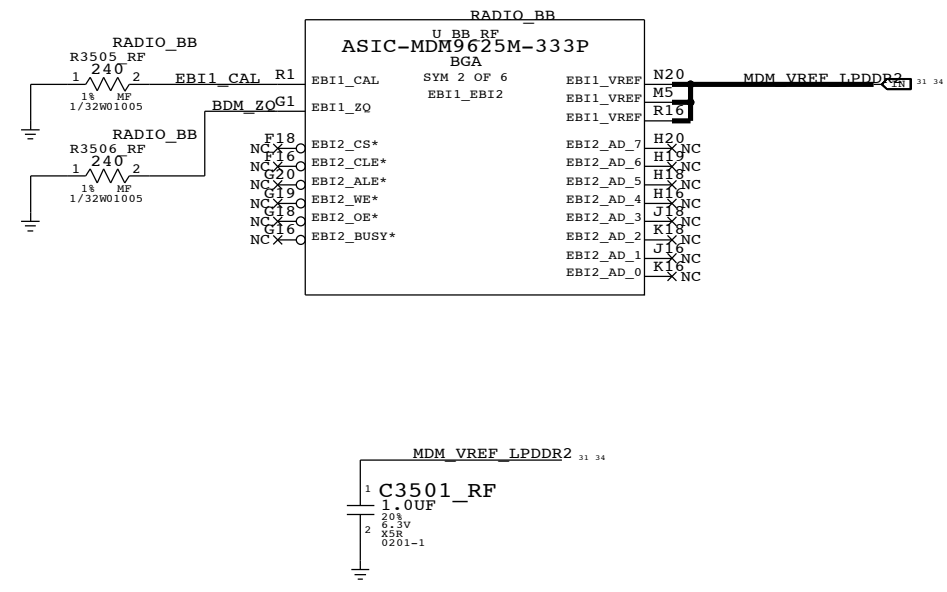
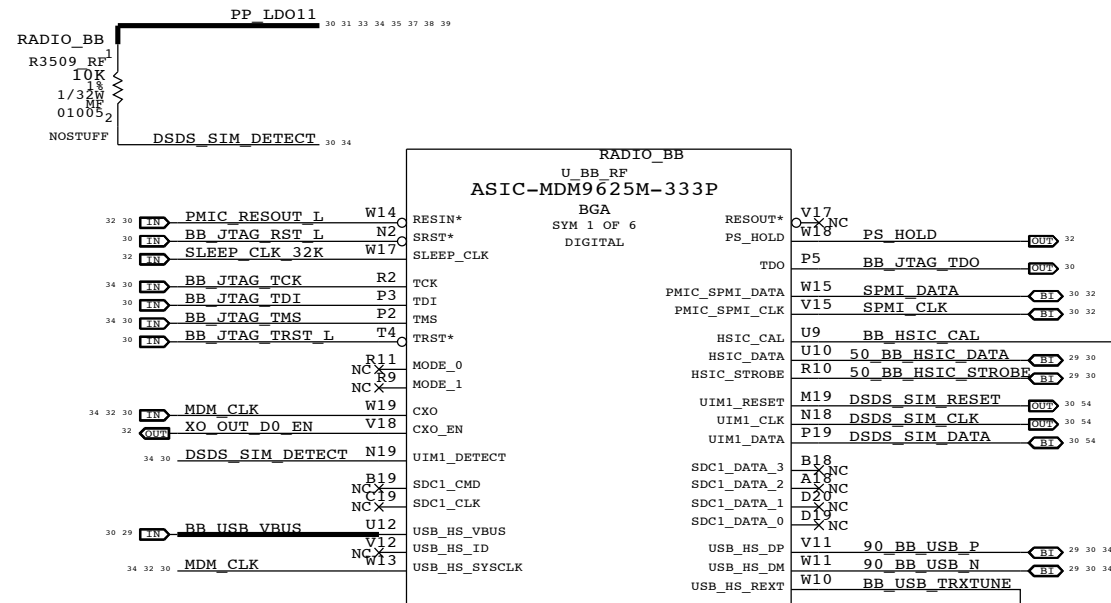
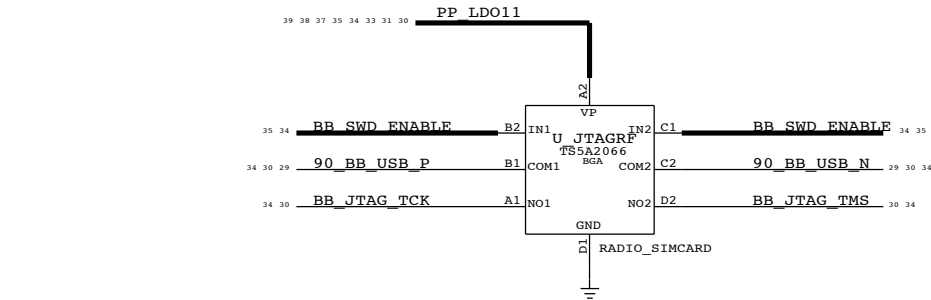


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# BASEBAND (2 OF 3)

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C600  
R606  
L600  
U602

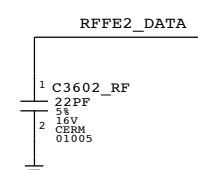
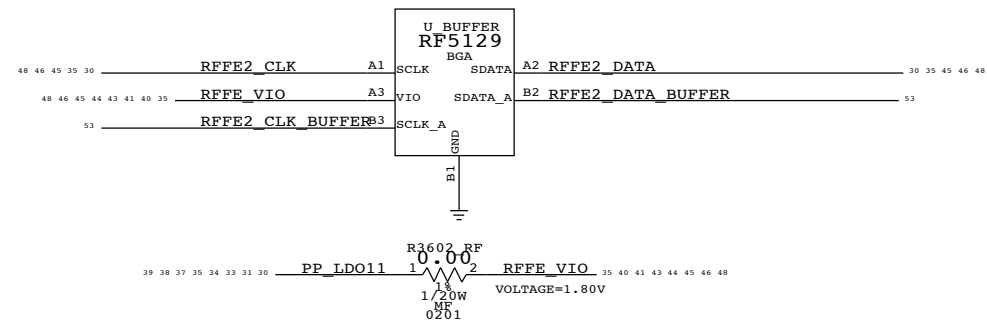
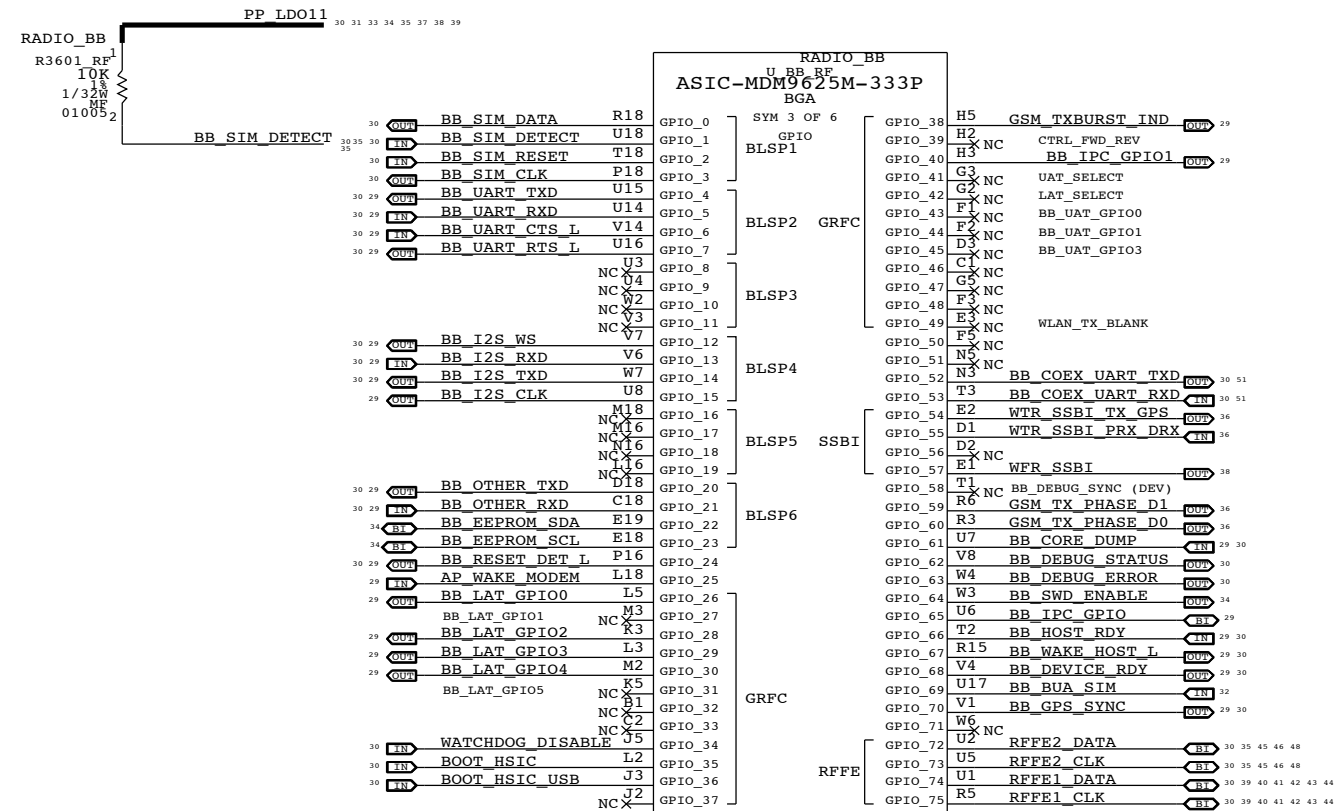
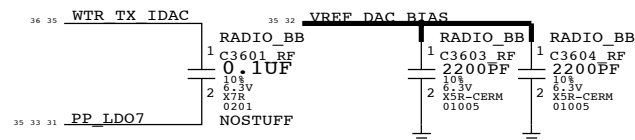
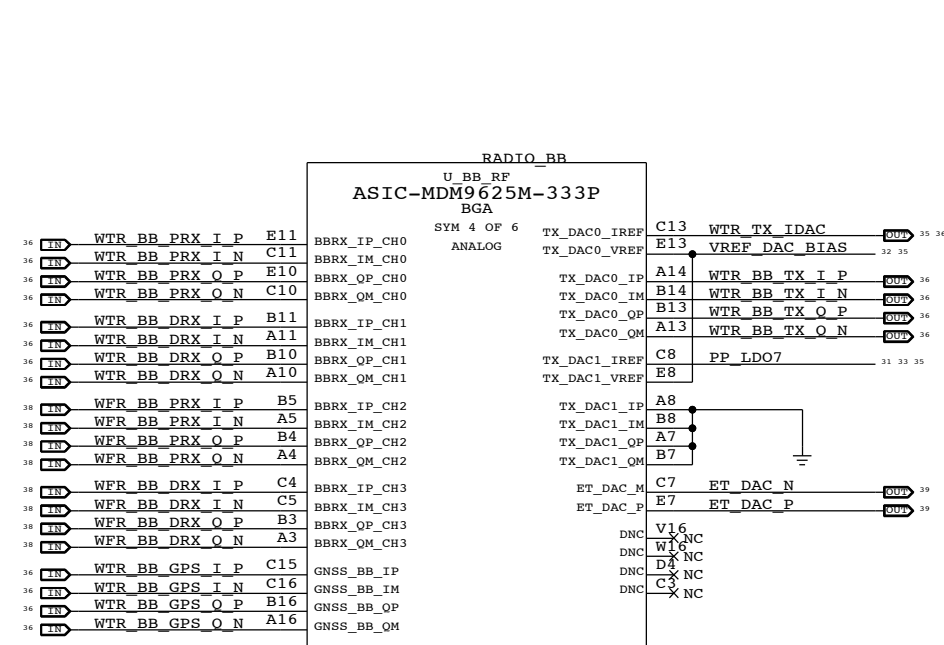


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# BASEBAND (3 OF 3)

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C704  
R700  
L700  
U702



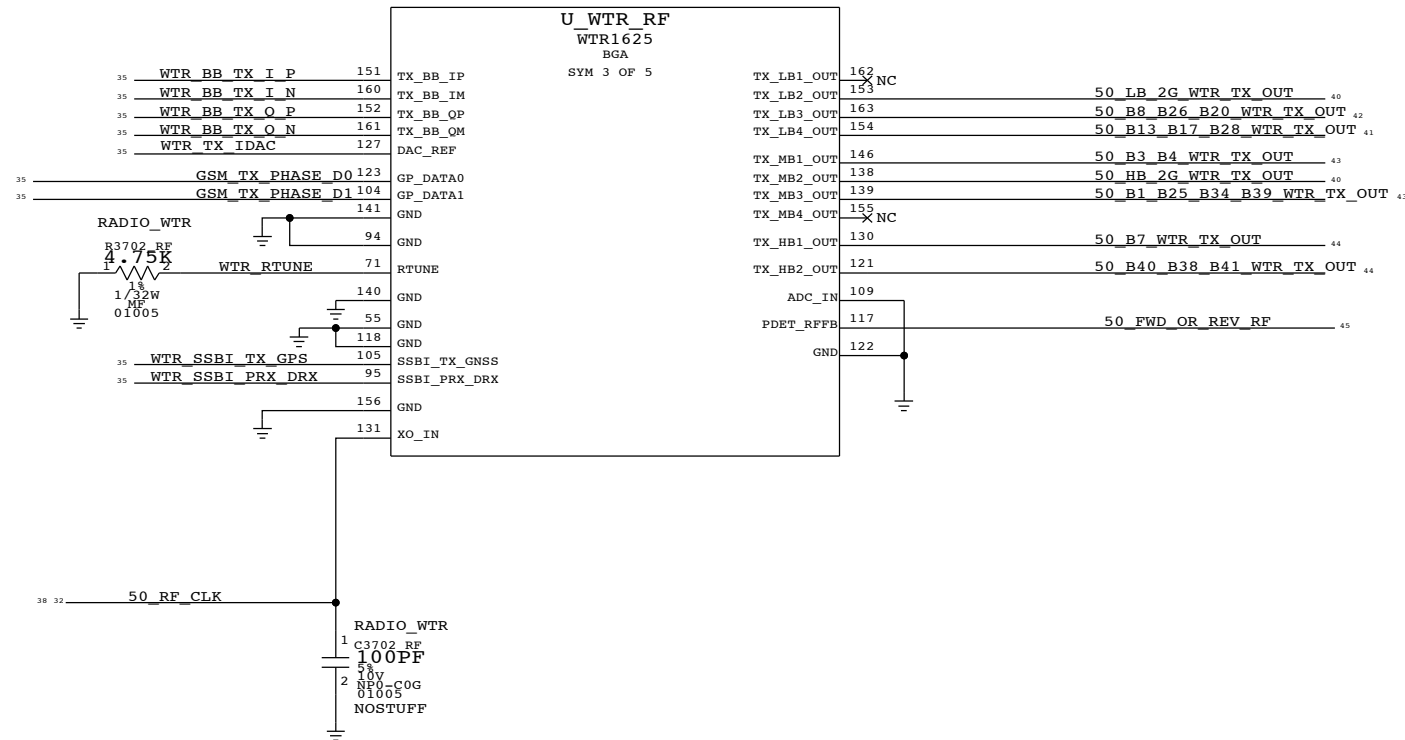
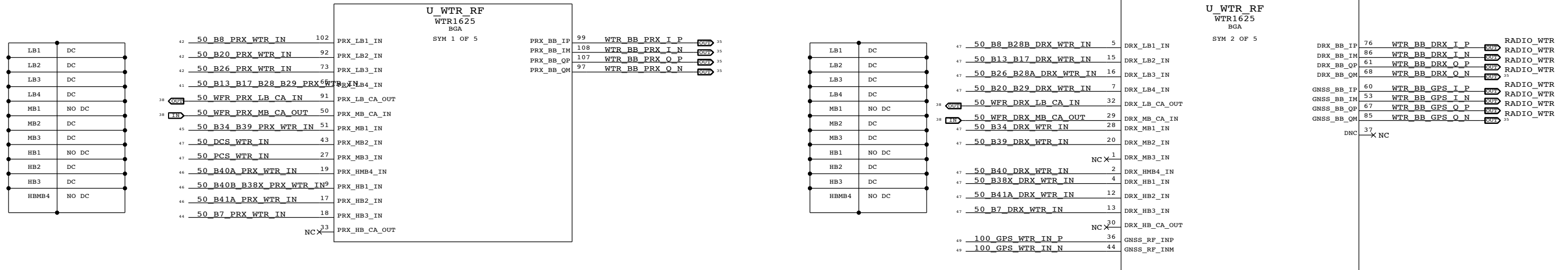
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# WTR TRANSCEIVER (1 OF 2)

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C802  
R802  
L800  
U803



RF\_CLK IS SHARED BETWEEN WTR AND WFR. LENGTH DIFFERENCE BETWEEN THE TWO SHOULD BE < 5MM.

## RF TRANSCEIVER (1 OF 3)

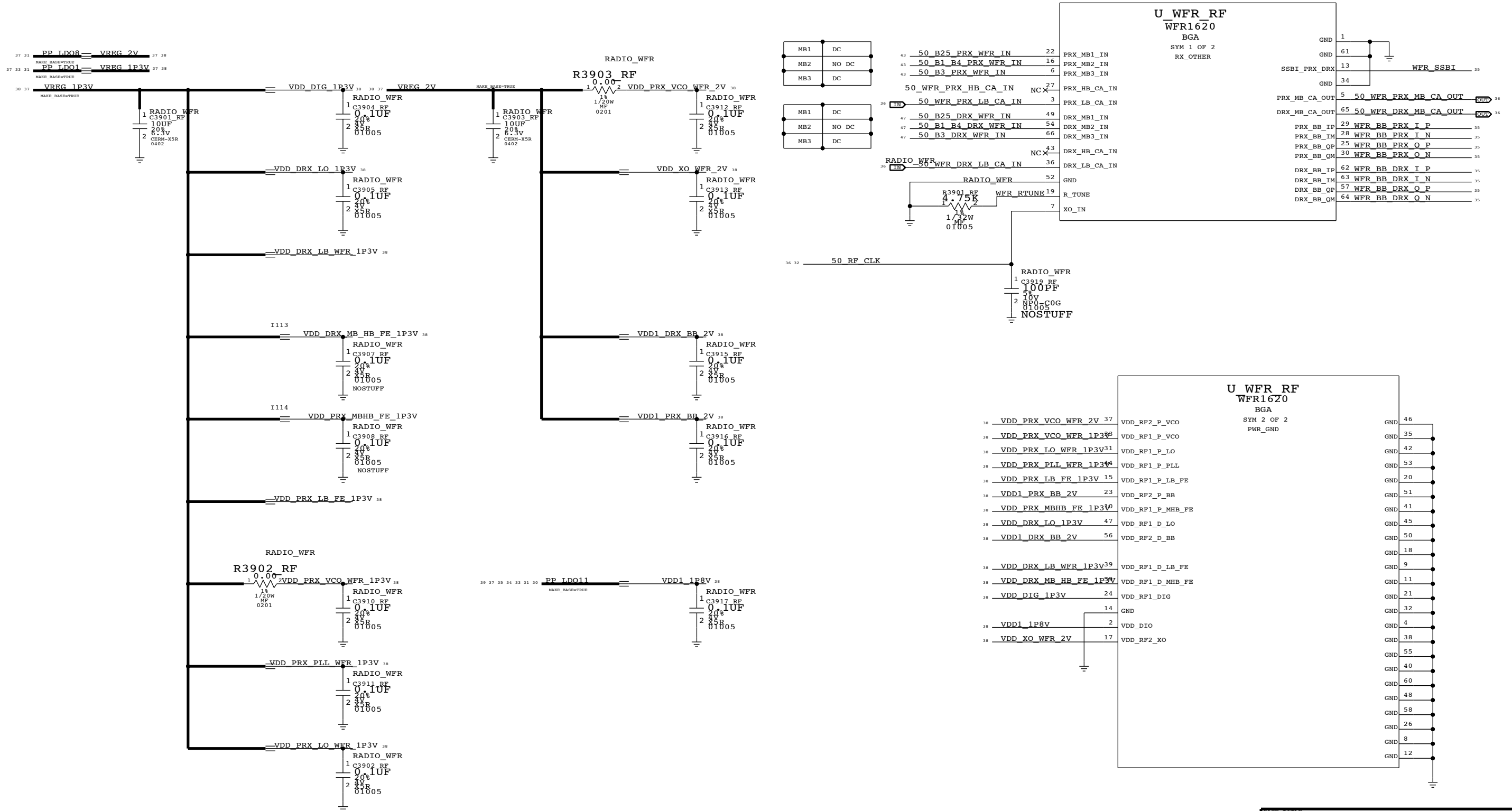
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# WFR TRANSCEIVER

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C1019  
R1016  
L1000  
U1002



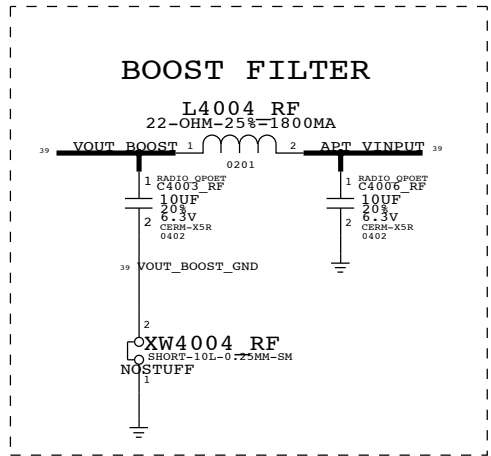
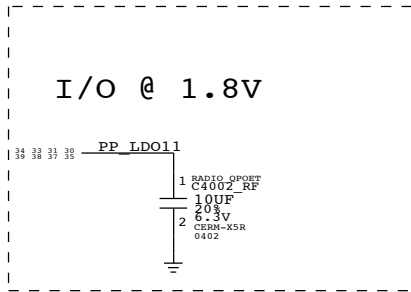
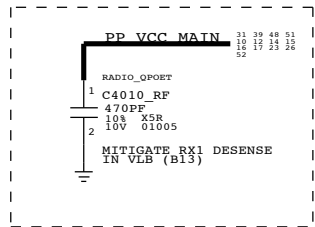
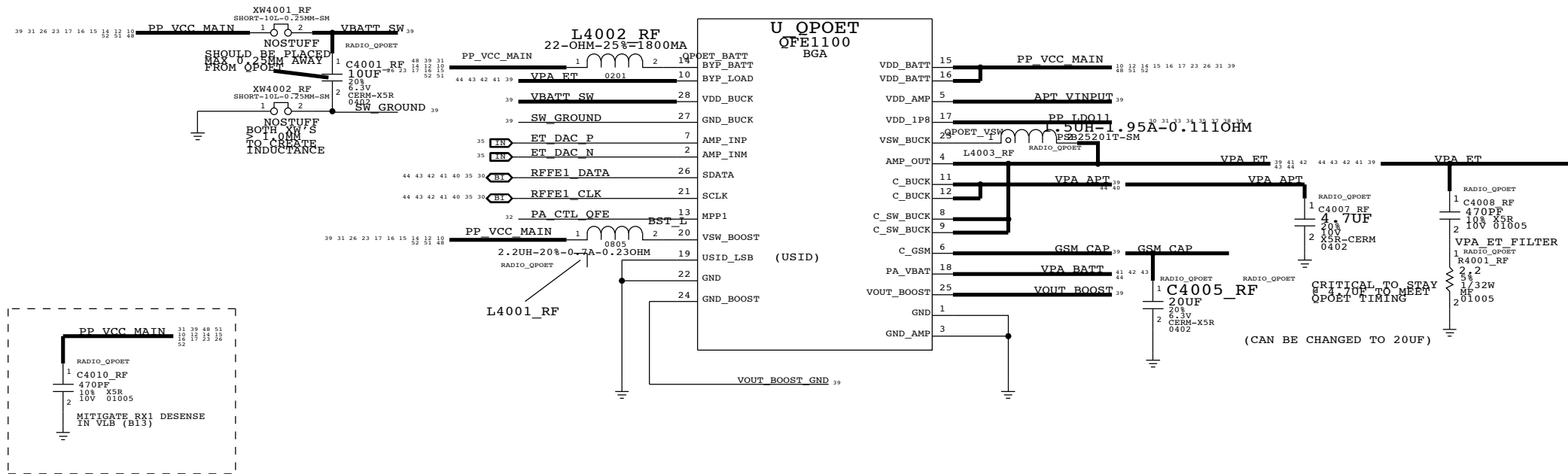
RF TRANSCEIVER (3 OF 3)

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# QFE DCDC

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C1110
R1102
L1104
U1101

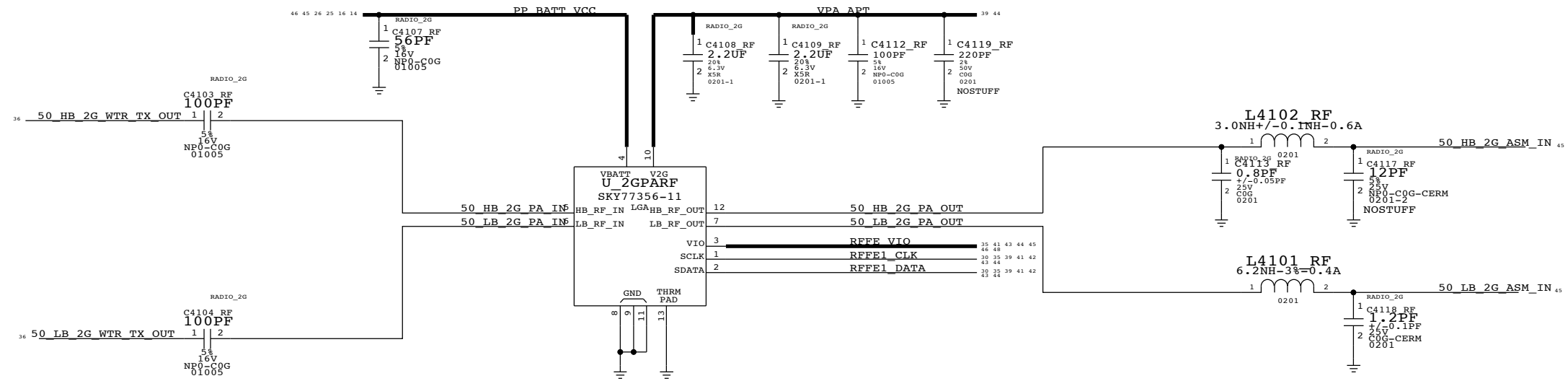


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# 2G PA

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C1208  
R1200  
L1204  
U1201



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# VERY LOW BAND PAD (B13, B17, B28)

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C1332  
R1300  
L4215 RF  
U1304

D

D

C

C

B

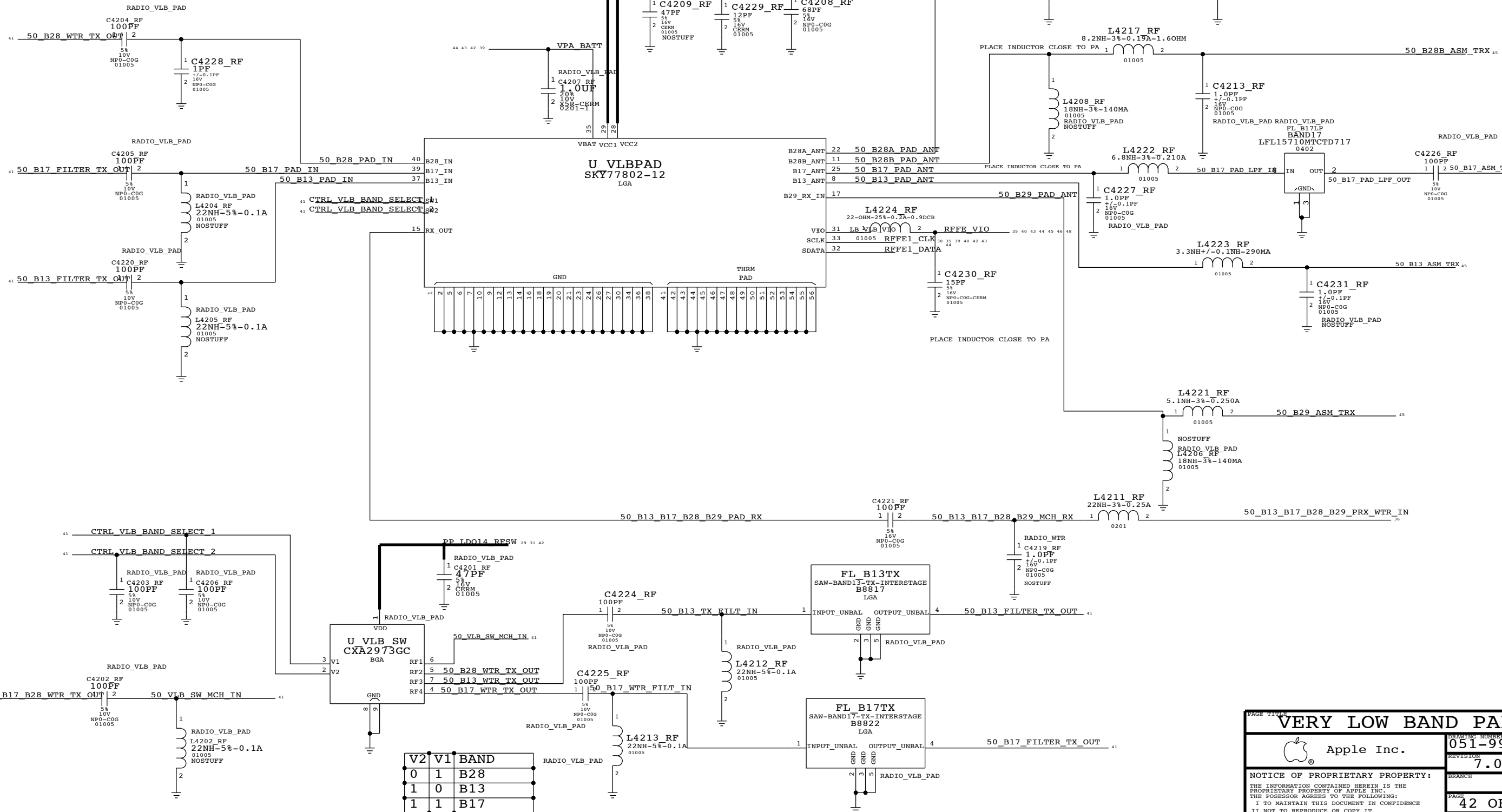
B


A

A

8 7 6 5 4 3 2 1

8 7 6 5 4 3 2 1

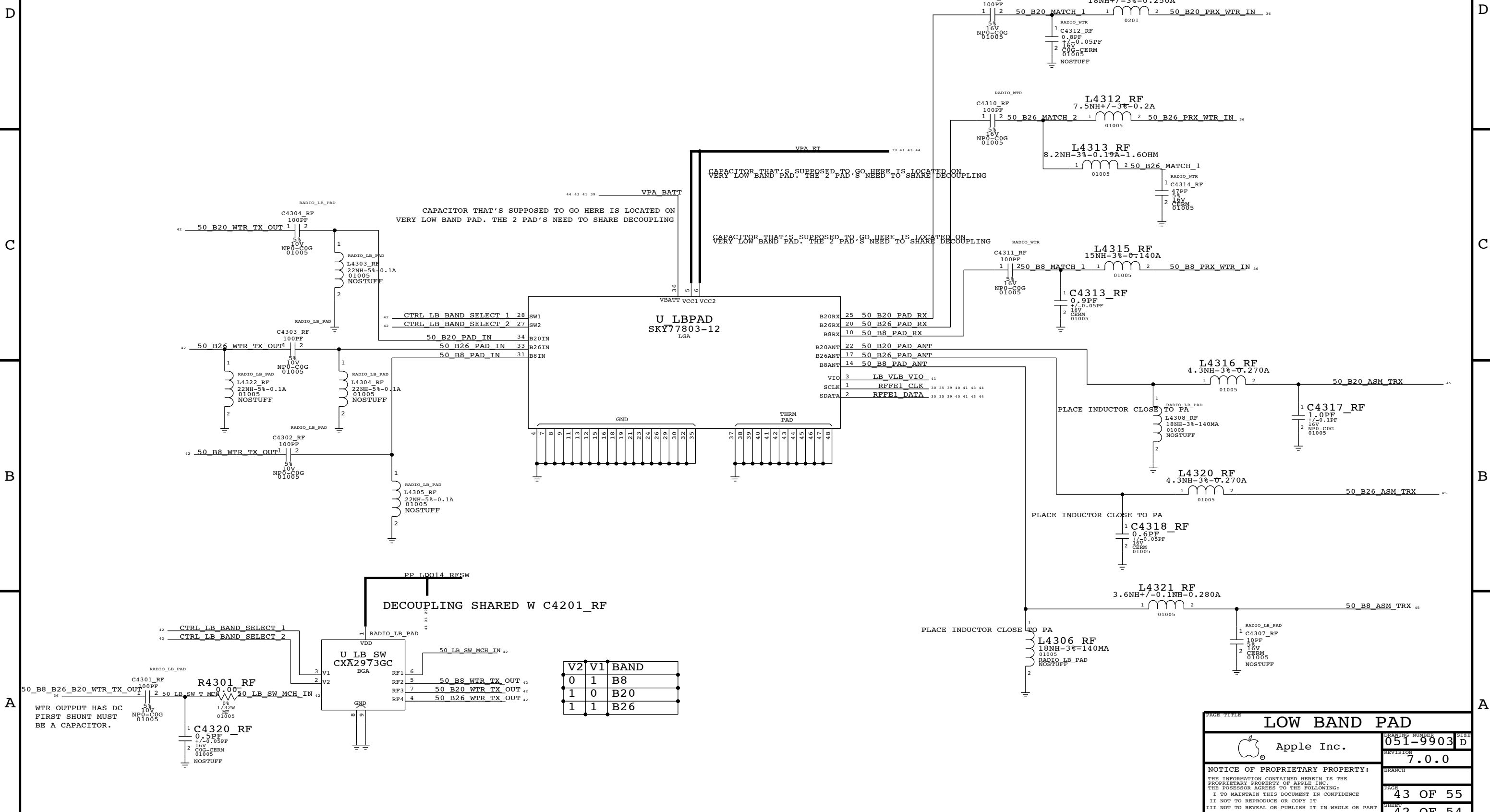


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# LOW BAND PAD (B8, B26, B20)

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C4318 RF  
R1400  
L4322 RF  
U1402



V2	V1	BAND
0	1	B8
1	0	B20
1	1	B26

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# MID BAND PAD (B1, B25, B3, B4, B34, B39)

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C4426 RF  
R1500  
L4409 RF  
U1501

D

C

B

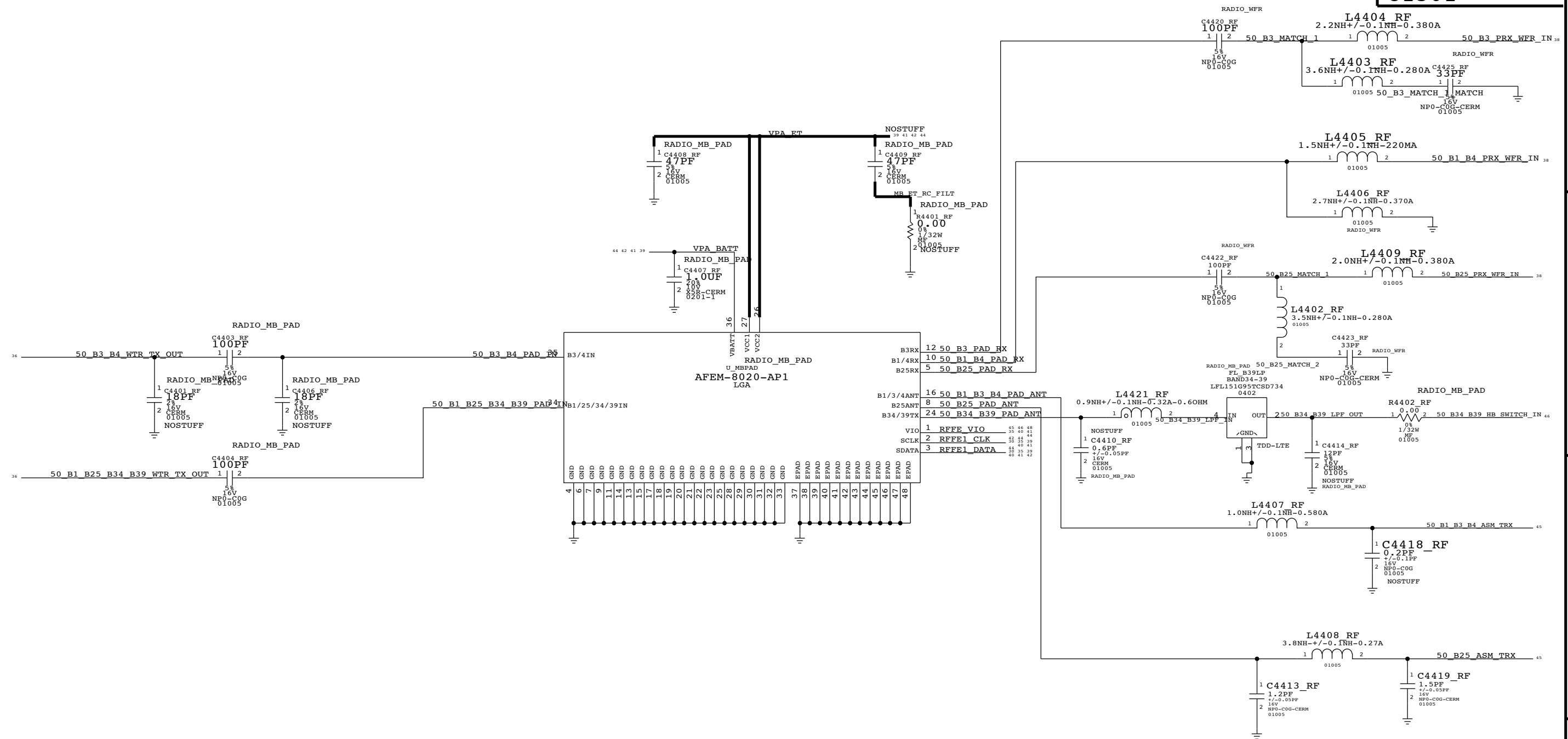
A

D

C

B

A



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8

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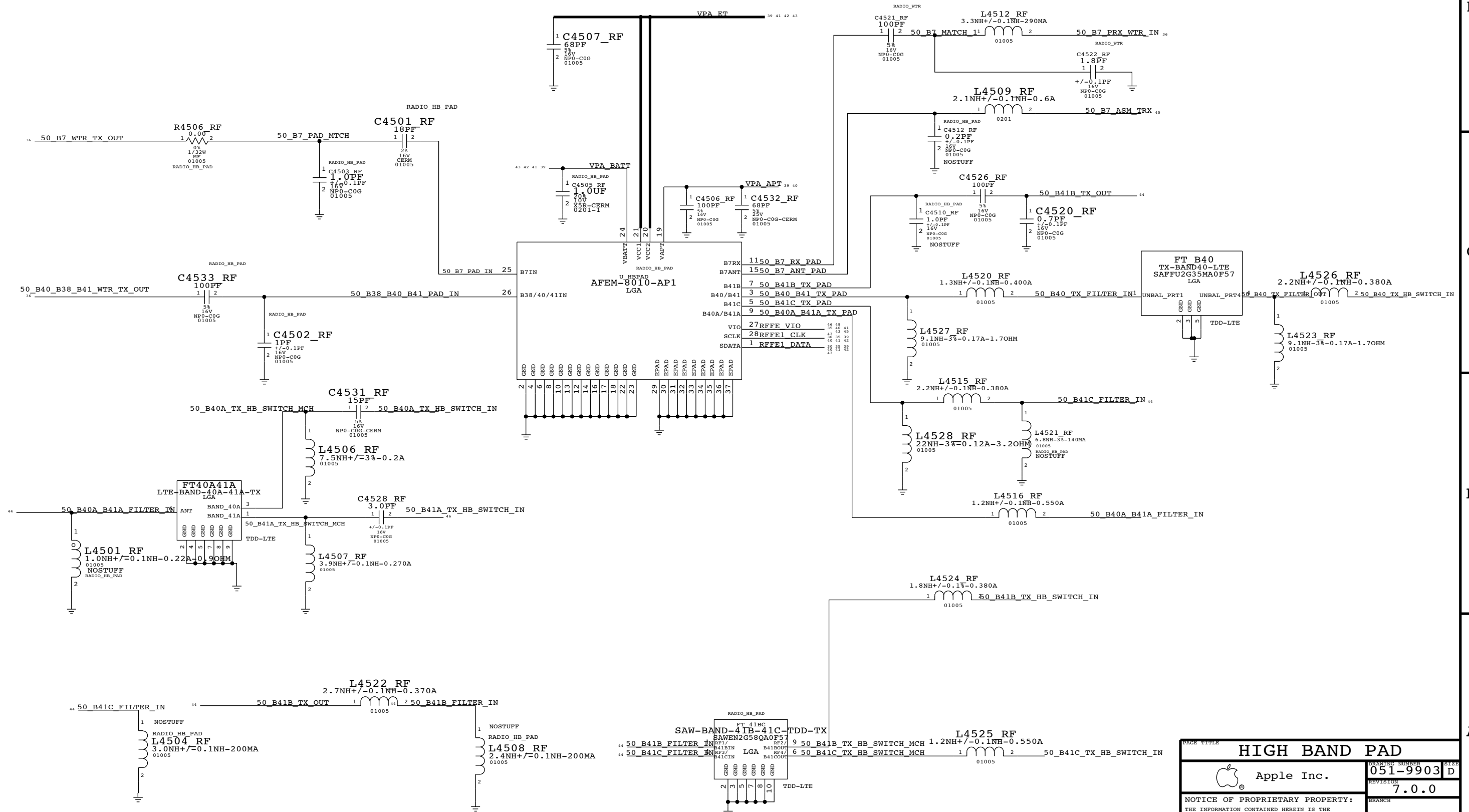
2

1

# HIGH BAND PAD (B7, B38, B40, B41, XGP)

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C4533 RF  
R1600  
L1616  
U1601

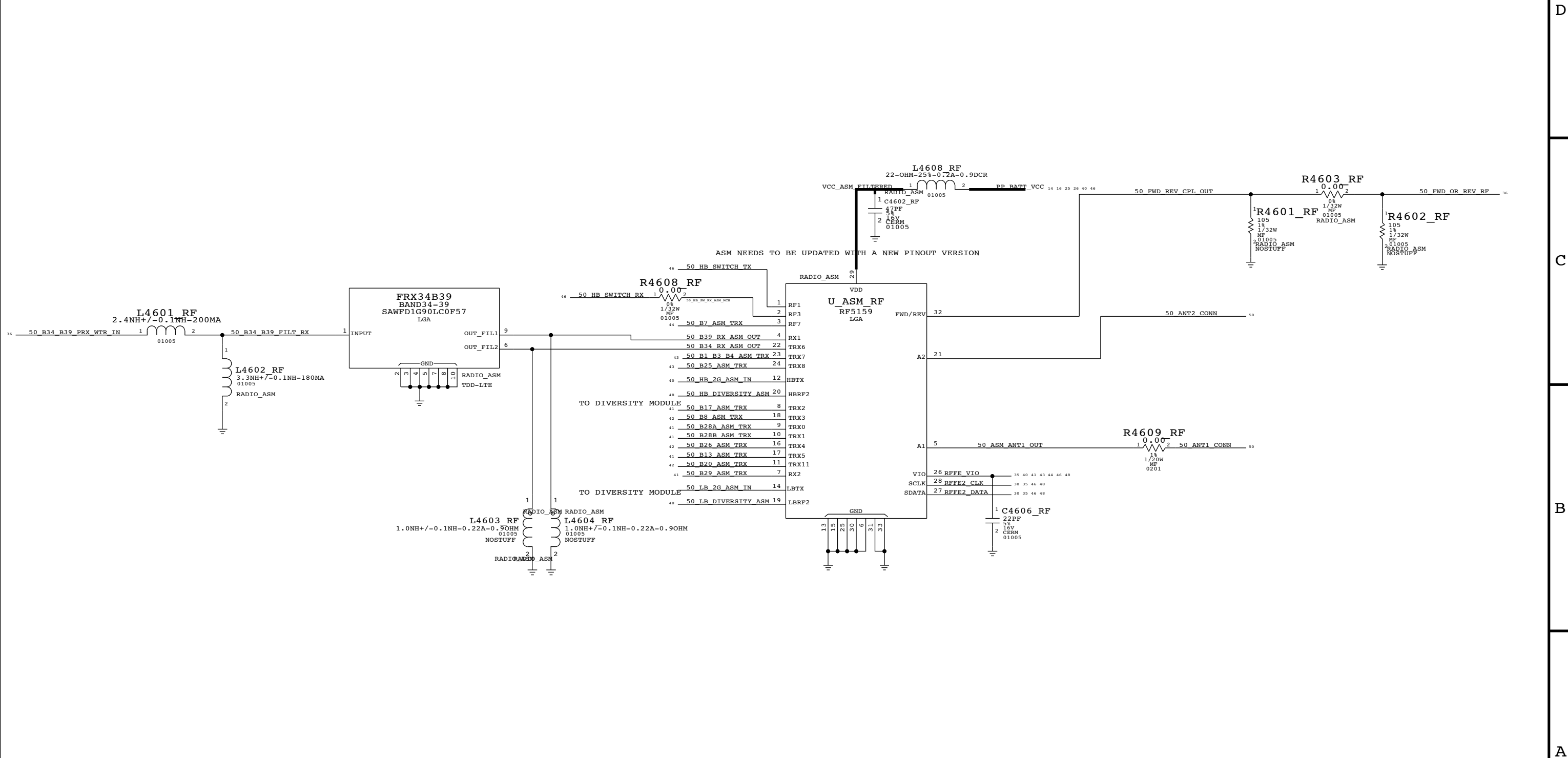


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# ANTENNA SWITCH

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C1702
R1700
L4608 RF
U1702

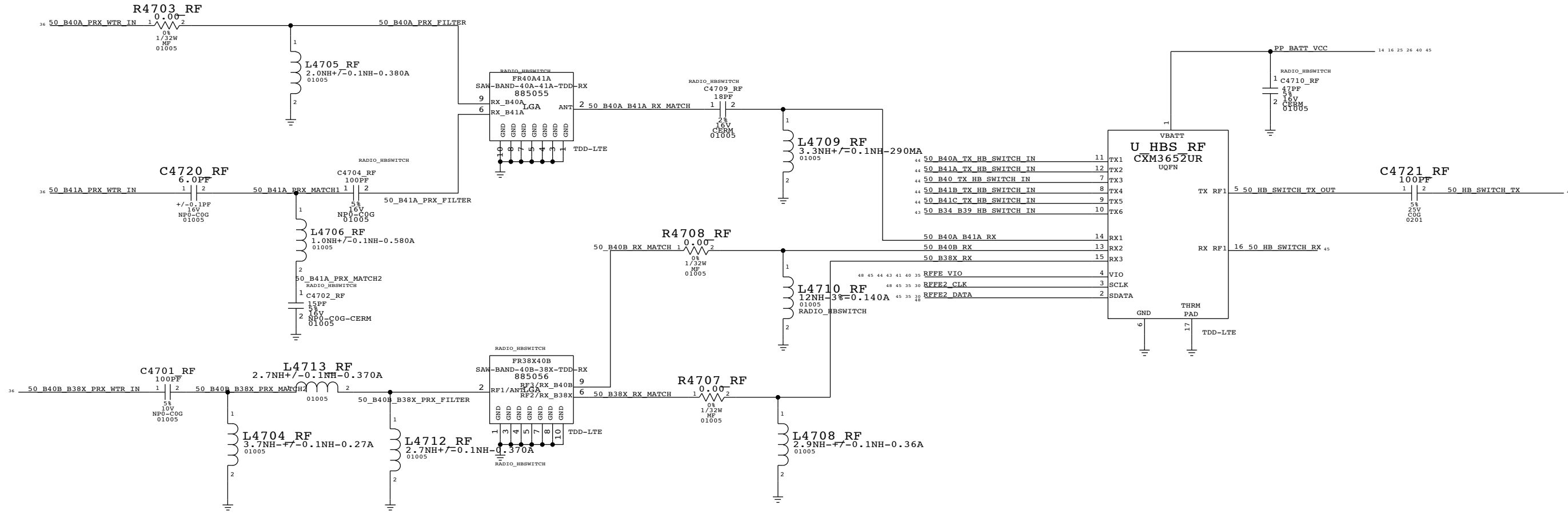


ASM NEEDS TO BE UPDATED WITH A NEW PINOUT VERSION

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# HIGH BAND SWITCH

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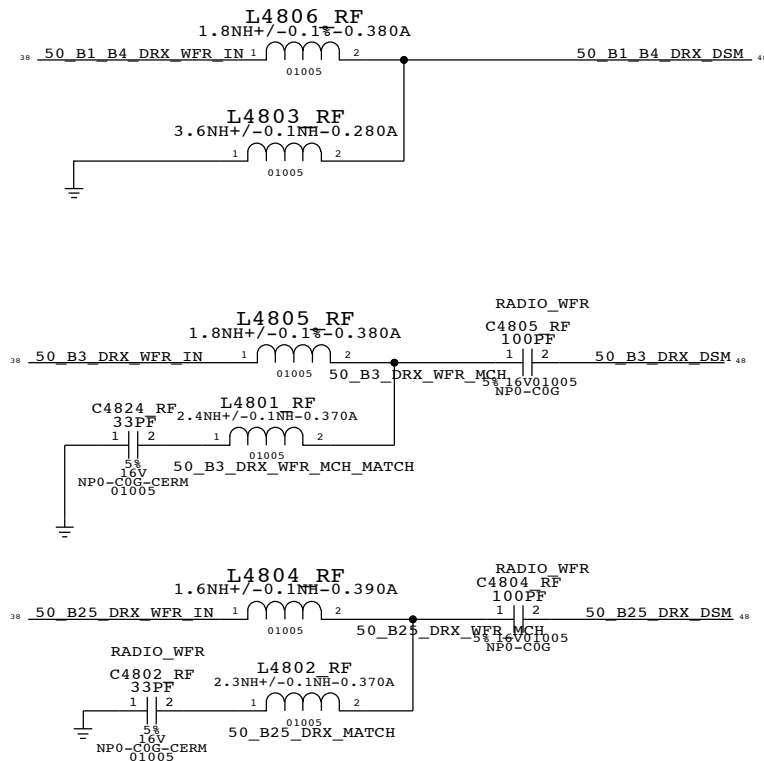
PAGE TITLE <b>HIGH BAND SWITCH</b>		
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# RX DIVERSITY (1)

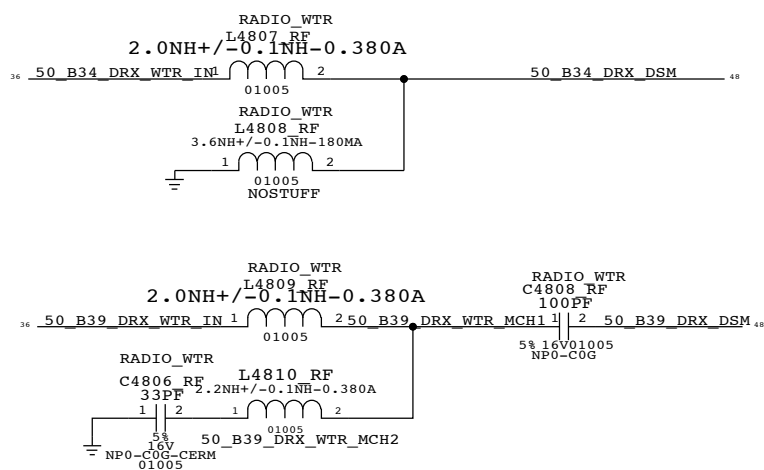
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C4826 RF  
R1800  
L1829  
U1801

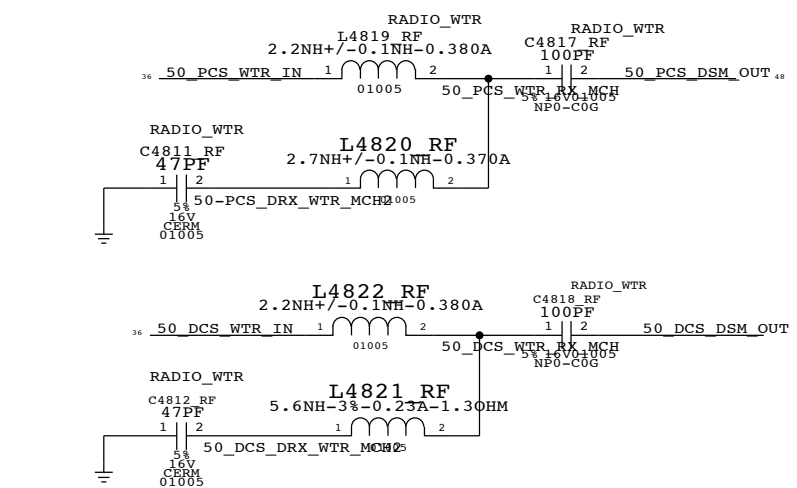
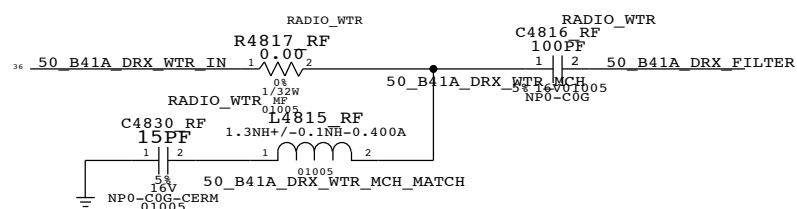
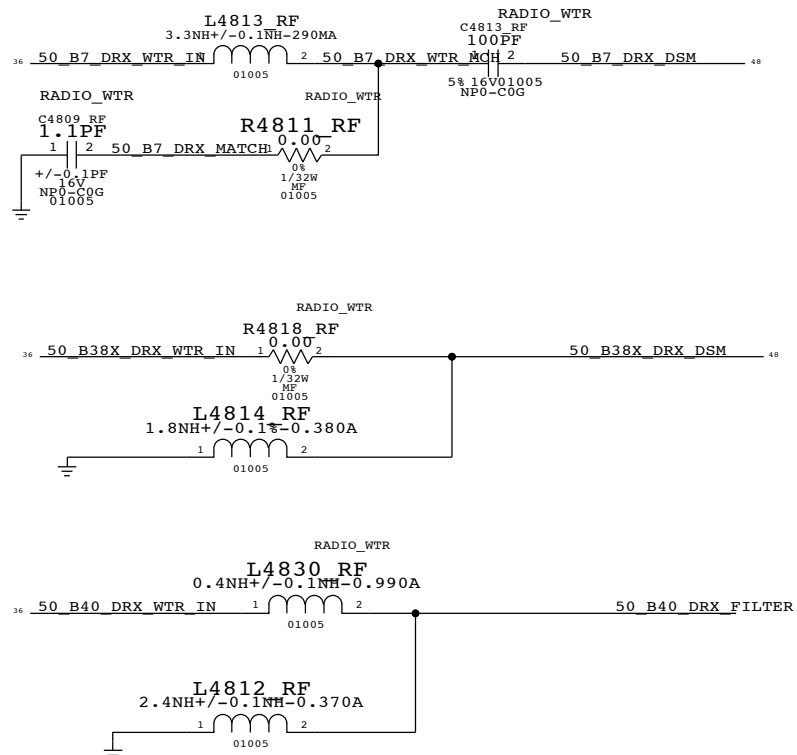
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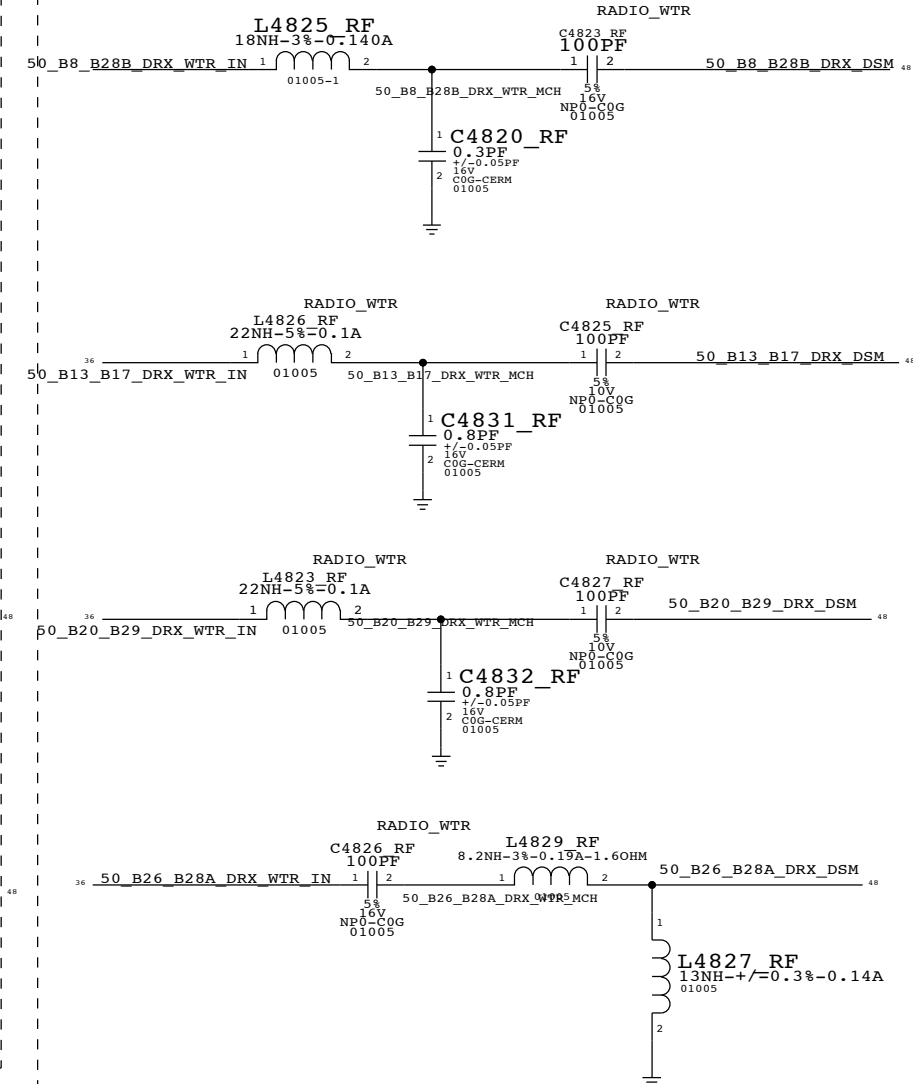
## MIDBAND DIVERSITY - WTR



## HIGHBAND DIVERSITY - WTR



## LOWBAND DIVERSITY - WTR

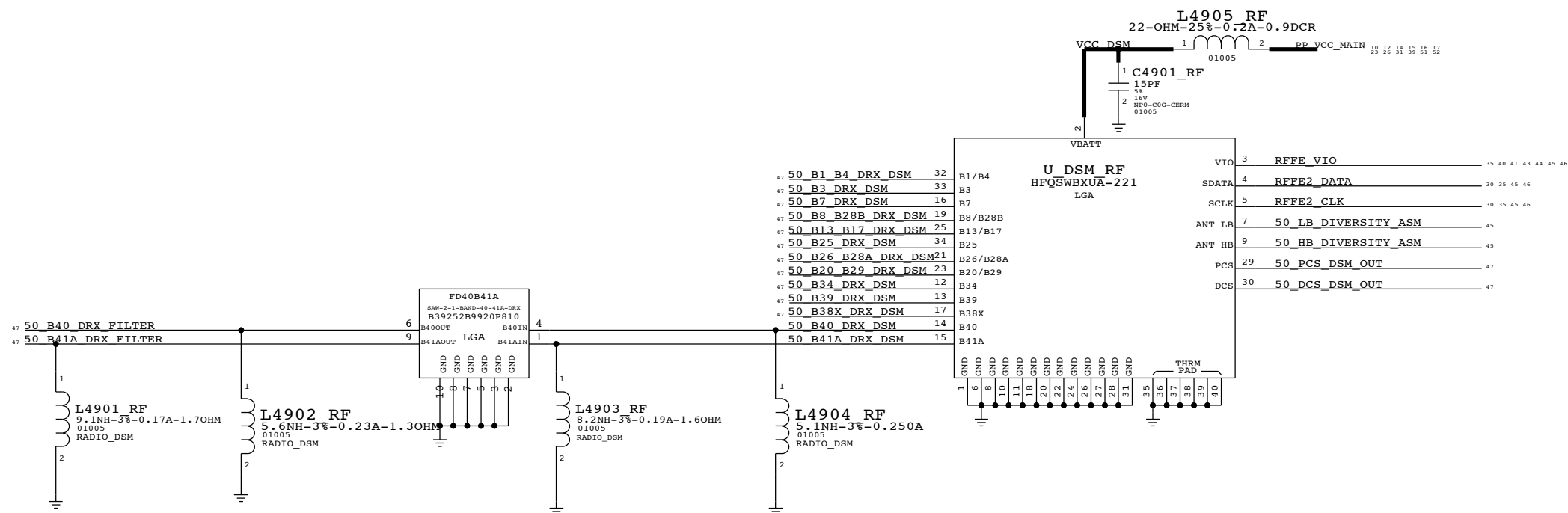


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# RX DIVERSITY (2)

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C1900  
R1900  
L1900  
U1901



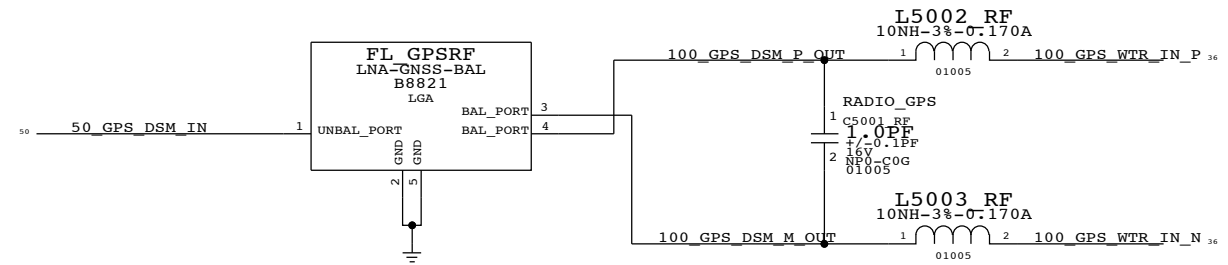
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# GPS

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C1900  
R1900  
L1900  
U1901

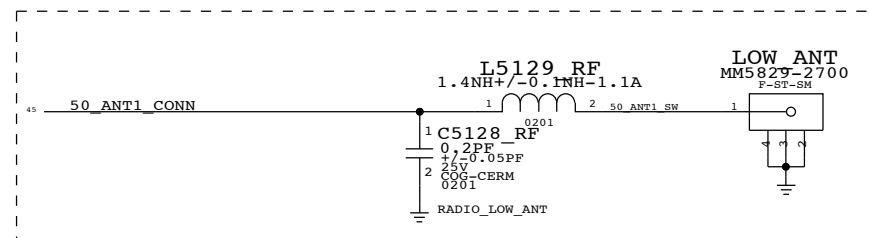
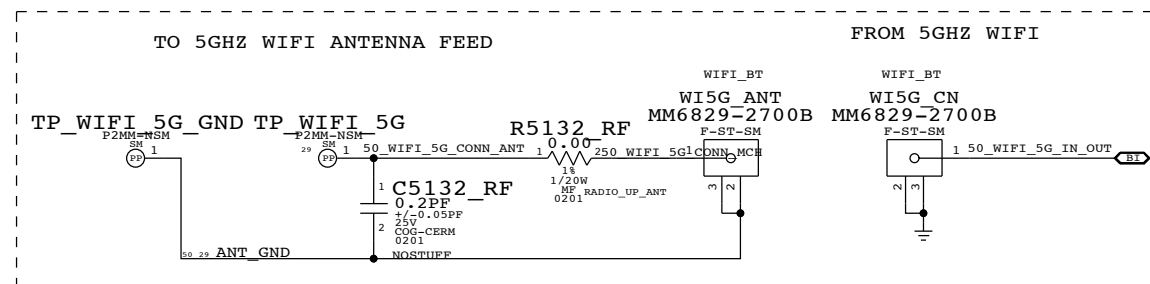
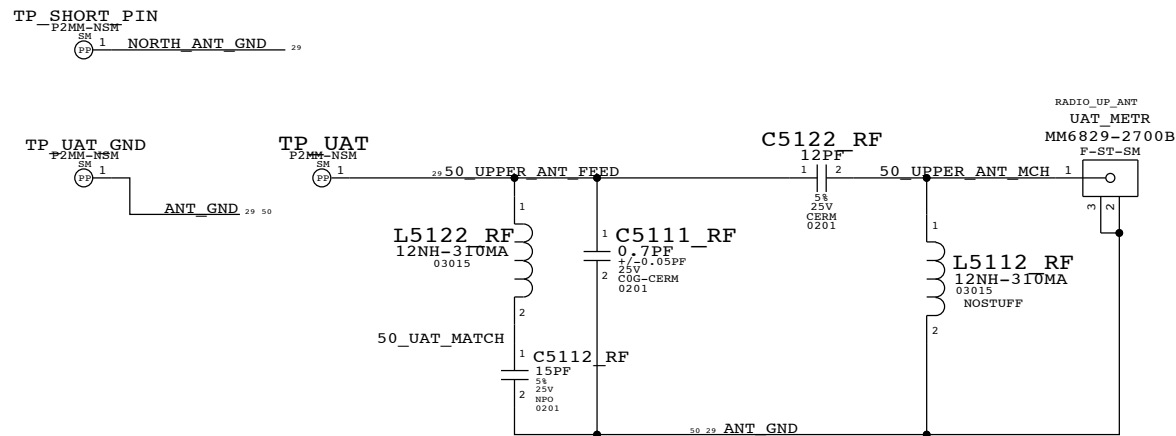
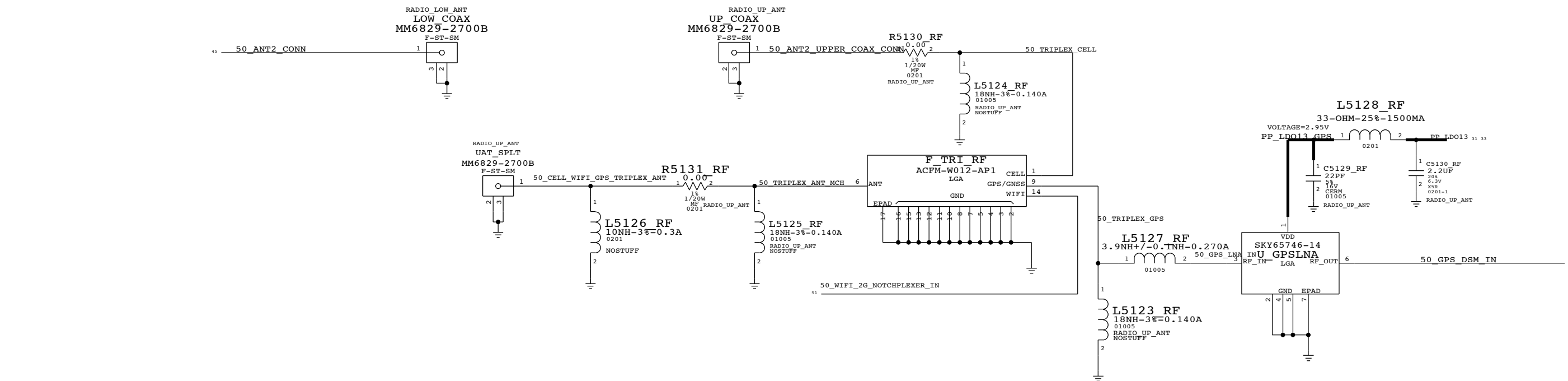


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# ANTENNA FEED'S

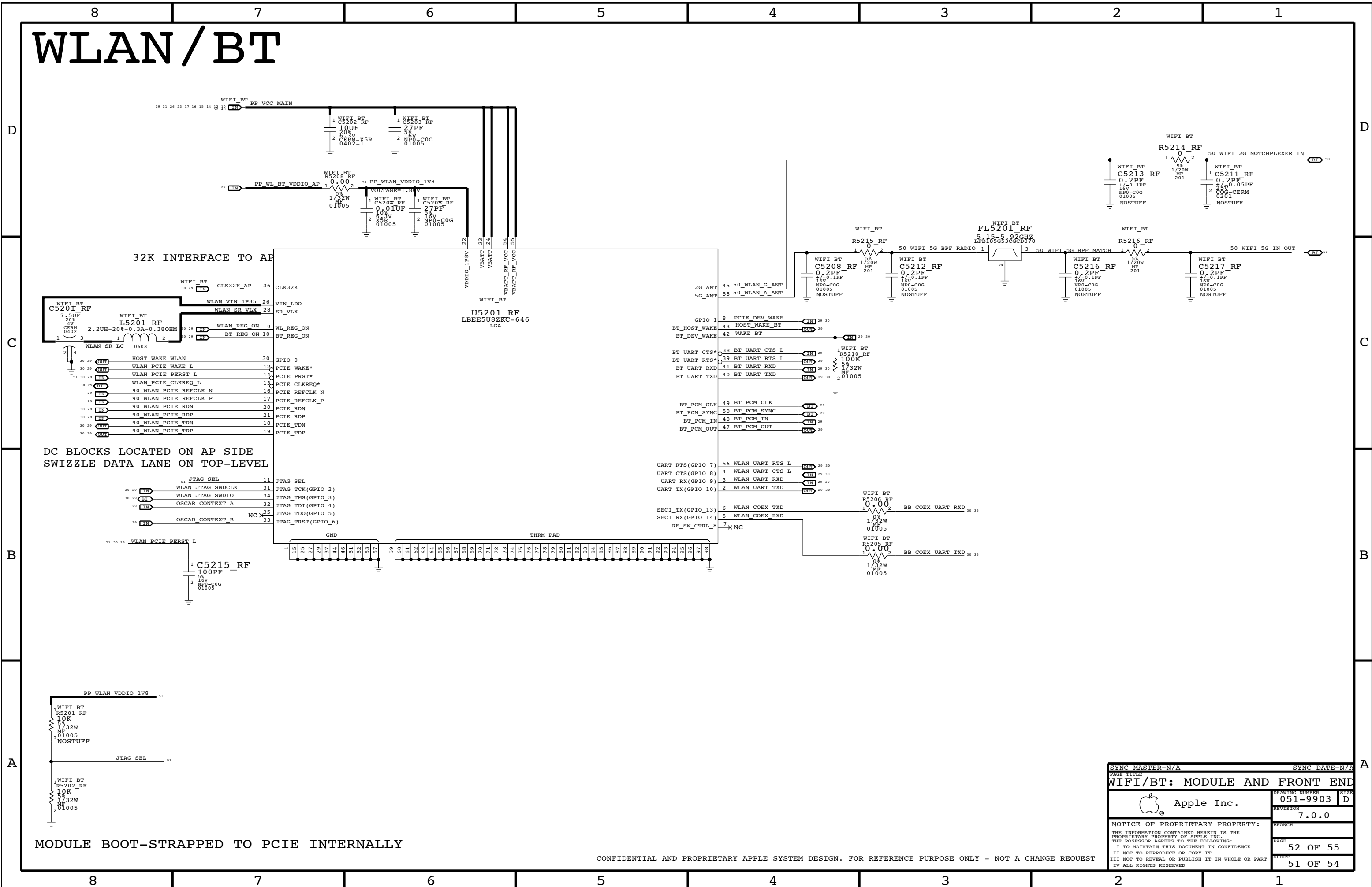
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TEST & COAX CONNECTOR FOR LOWER SECTION OF MLB

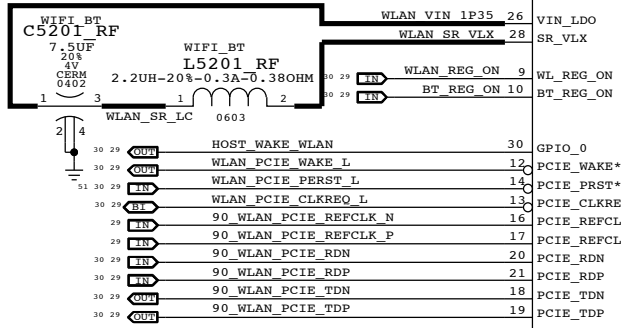


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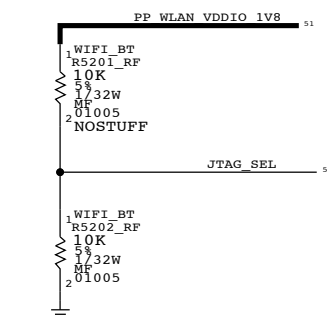
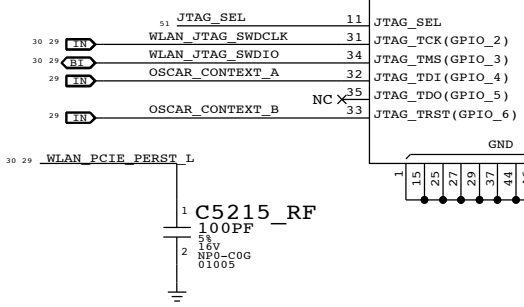
# WLAN/BT



### 32K INTERFACE TO AP



### DC BLOCKS LOCATED ON AP SIDE SWIZZLE DATA LANE ON TOP-LEVEL



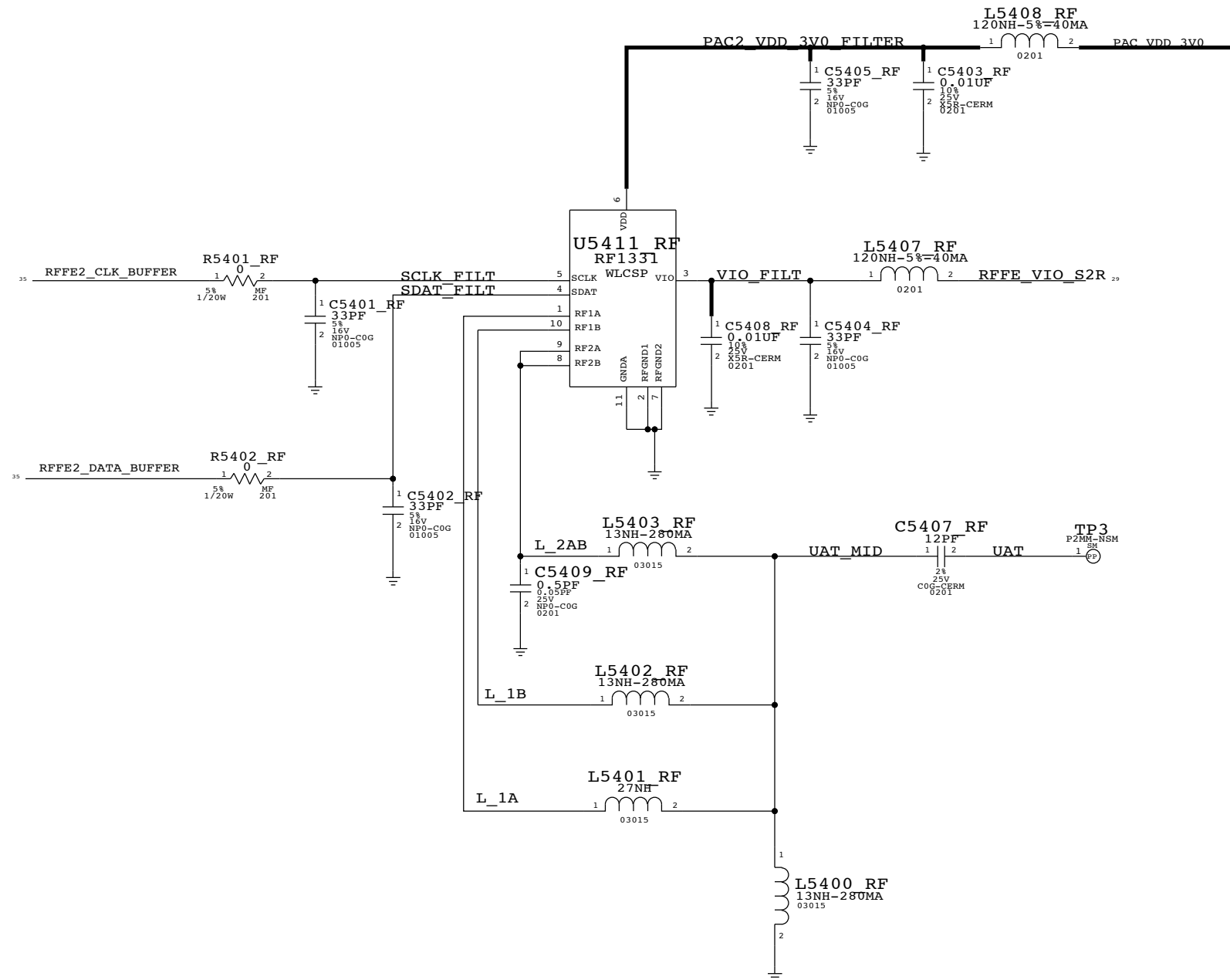
MODULE BOOT-STRAPPED TO PCIe INTERNALLY


SYNC MASTER=N/A		SYNC DATE=N/A	
PAGE TITLE <b>WIFI/BT: MODULE AND FRONT END</b>			
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# ON-BOARD JUMPER FLEX

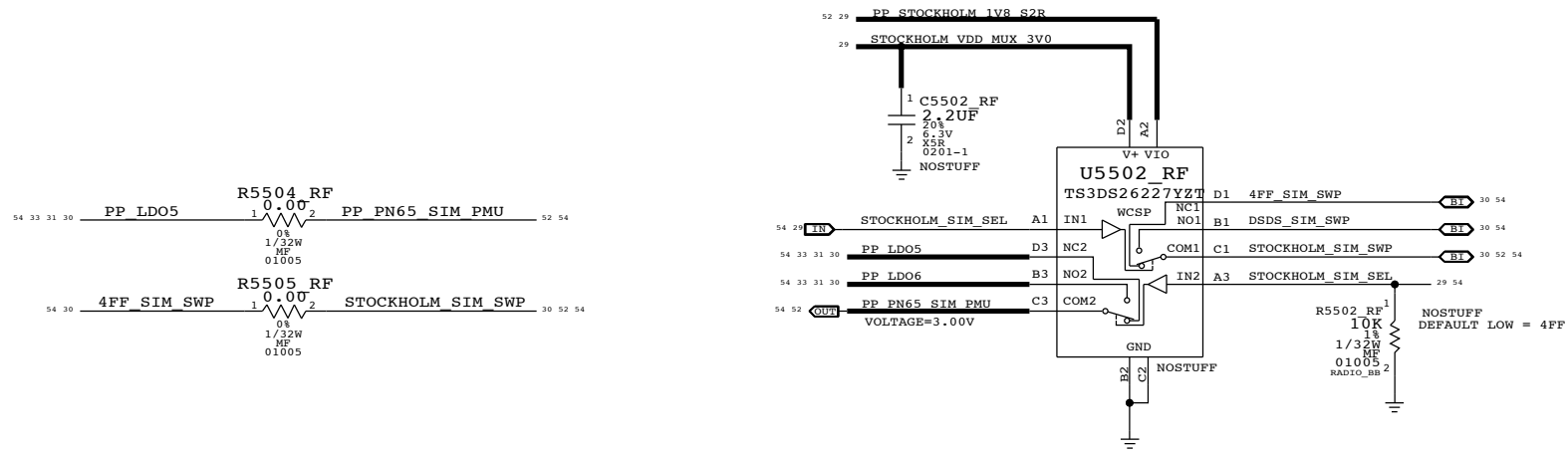
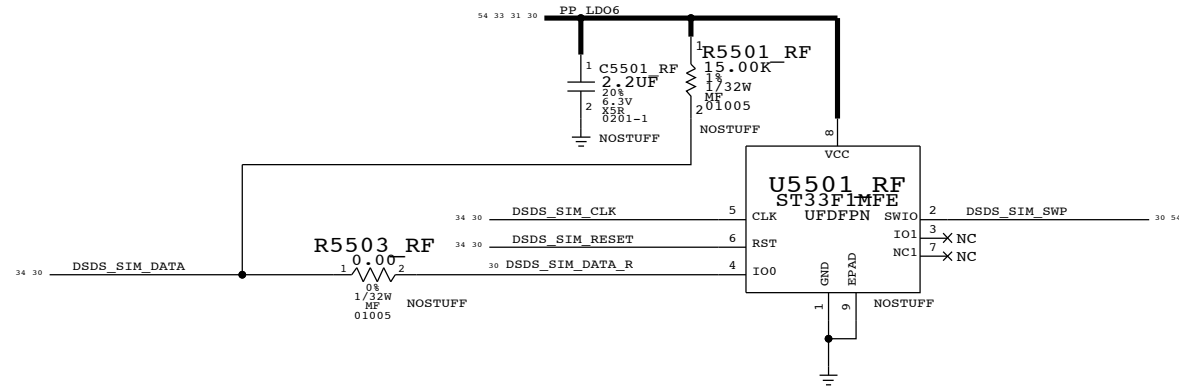
## UAT JUMPER




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# DSDS

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