

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.

Fri May 9 13:11:49 2014

REV	ECN	DESCRIPTION OF REVISION	CK APPD	DATE
6	0002780389	ENGINEERING RELEASED		2014-05-09

N56 MLB: CARRIER BUILD

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N56 BOM CALLOUTS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
051-0517	1	SCH,MLB,N56	SCH	CRITICAL	?
820-3675	1	PCBF,MLB,N56	PCB	CRITICAL	?
825-6838	1	EEEE FOR 639-4924 16GB	EEEE_FKVB	CRITICAL	EEEE_16G
825-6838	1	EEEE FOR 639-6157 32GB	EEEE_FRR9	CRITICAL	EEEE_32G
825-6838	1	EEEE FOR 639-6158 64GB	EEEE_FRRC	CRITICAL	EEEE_64G
825-6838	1	EEEE FOR 639-00150 128GB	EEEE_G05J	CRITICAL	EEEE_128G
825-6838	1	EEEE FOR 639-00196 16GB NON-TDD-LTE	EEEE_G166	CRITICAL	EEEE_16G_DTD
825-6838	1	EEEE FOR 639-00194 32GB NON-TDD-LTE	EEEE_G163	CRITICAL	EEEE_32G_DTD
825-6838	1	EEEE FOR 639-00195 64GB NON-TDD-LTE	EEEE_G165	CRITICAL	EEEE_64G_DTD
825-6838	1	EEEE FOR 639-00197 128GB NON-TDD-LTE	EEEE_G164	CRITICAL	EEEE_128G_DTD

NAND BOM OPTIONS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
335S0992	1	NAND,17NM,16GBX8,MLC,PP 1.5,64G,MLC260	U0604	CRITICAL	NAND_16G
335S0993	1	NAND,17NM,32GBX8,MLC,PP 1.5,64G,MLC260	U0604	CRITICAL	NAND_32G
335S1000	1	NAND,19NM,64GBX8,MLC,PPN1.5	U0604	CRITICAL	NAND_64G
335S00010	1	NAND,19NM,128GBX8,TLC,PPN1.5	U0604	CRITICAL	NAND_128G
138S00003	1	CAP,XSR,10UF,20V,6.3V,0.65MM,HEMTL,0402	C0614,C0633	CRITICAL	NOSTUFF
138S0867	1	CAP,XSR,10UF,20V,6.3V,0.65MM,HEMTL,0402	C0610,C0611,C0613,C0626	CRITICAL	NAND_16G
138S0867	1	CAP,XSR,10UF,20V,6.3V,0.65MM,HEMTL,0402	C0610,C0611,C0613,C0626,C0614,C0633	CRITICAL	NAND_32G
138S0867	1	CAP,XSR,10UF,20V,6.3V,0.65MM,HEMTL,0402	C0610,C0611,C0613,C0626,C0614,C0633	CRITICAL	NAND_64G
138S00003	1	CAP,XSR,10UF,20V,6.3V,0.65MM,HEMTL,0402	C0610,C0611,C0613,C0626,C0614,C0633	CRITICAL	NAND_128G

INVENSENSE ACCEL/GYRO

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
338S00017	1	IC,CARBON,MPU-6700-12,LGA16	U2203	CRITICAL	INVSNS_GYRO
132S0395	1	CAP,CER,0.1UF,10V,6.3V,X6G,0201	C2211	CRITICAL	INVSNS_GYRO

BOSCH ACCEL/GYRO

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
338S00028	1	IC,CARBON,BMI162BC,LGA16	U2203	CRITICAL	BOSCH_GYRO
132S0395	1	CAP,CER,0.1UF,10V,6.3V,X6G,0201	C2211	CRITICAL	BOSCH_GYRO

ST ACCEL/GYRO

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
338S00029	1	IC,CARBON,AP6DS2AA,LGA16	U2203	CRITICAL	ST_GYRO
132S0391	1	CAP,CER,0.01UF,10V,25V,X5R,0201	C2211	CRITICAL	ST_GYRO

ALTERNATE BOM OPTIONS

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
152S1844	152S1836	ALTERNATE	L1604	TY ALT INDUCTOR
152S1802	152S1849	ALTERNATE	L1519	CYNTEC ALT INDUCTOR
152S1842	152S1849	ALTERNATE	L1519	TY ALT INDUCTOR
197S0392	197S0369	ALTERNATE	Y1200	ESON ALT XTAL
197S0399	197S0369	ALTERNATE	Y1200	NDK ALT XTAL
338S1285	338S1202	ALTERNATE	U1601	L21 B0
152S2034	152S2033	ALTERNATE	L1605	CYNTEC 1.0UH 1.2MM
152S2034	152S2033	ALTERNATE	L1605	CYNTEC 1.0UH 1.2MM
152S00004	152S2049	ALTERNATE	L1605	CYNTEC 0.47UH 1.2MM
343S0688	343S0638	ALTERNATE	U2401	CUMULUS C1, FAB14
155S00012	155S00009	ALTERNATE	R1309	MURATA, 65OHM CHOKE
118S0764	118S0717	ALTERNATE	F10801	3.92KOHM, 01005
155S0773	155S0453	ALTERNATE	F10801	TY, 120OHM, FERRITE
155S0885	155S0610	ALTERNATE	F10802,F11803	TY, 150OHM, FERRITE
377S0168	377S0140	ALTERNATE	DR1113	AMOTECH, 6.8V, 100PF
138S0648	138S0652	ALTERNATE	C1018	TY, 4.7UF, 0402
138S0657	138S0702	ALTERNATE	C1018	SAMSUNG, 4.3UF, 0610
138S00005	138S00003	ALTERNATE	C0605	TY, 15UF, HRTL, 0402
152S2031	152S1800	ALTERNATE	L1401	MURATA, 1UH, 2520
152S1840	152S1801	ALTERNATE	L1215	TY, 1UH, 2016
335S00013	335S0894	ALTERNATE	U0201	ST 8K EEPROM
339S0247	339S0246	ALTERNATE	U0201	FIJI 1GB HYNIX B0
339S00006	339S0246	ALTERNATE	U0201	FIJI,B1,E
339S00007	339S0246	ALTERNATE	U0201	FIJI,B1,H
339S00008	339S0246	ALTERNATE	U0201	FIJI,B1,S

138S0917 WILL NOT BE USED AT THE CARRIER BUILD AND WILL BE REPLACED BY 138S0831 AT DVT.

138S0831	138S0917	ALTERNATE	C0204	MURATA, 2.2UF, 0201
138S00019	138S0917	ALTERNATE	C0204	KYOCERA, 2.2UF, 0201

ALTERNATE NAND BOM OPTIONS

335S1038	335S0992	ALTERNATE	U0604	NAND HYNIX 16GB
335S0994	335S1000	ALTERNATE	U0604	NAND TOSHIBA 64GB
335S1040	335S1000	ALTERNATE	U0604	NAND HYNIX 64GB
335S00009	335S1000	ALTERNATE	U0604	NAND SANDISK 64GB TLC
335S00014	335S1000	ALTERNATE	U0604	NAND TOSHIBA 64GB TLC
335S00015	335S00010	ALTERNATE	U0604	NAND TOSHIBA 128GB

BOM DEVIATIONS

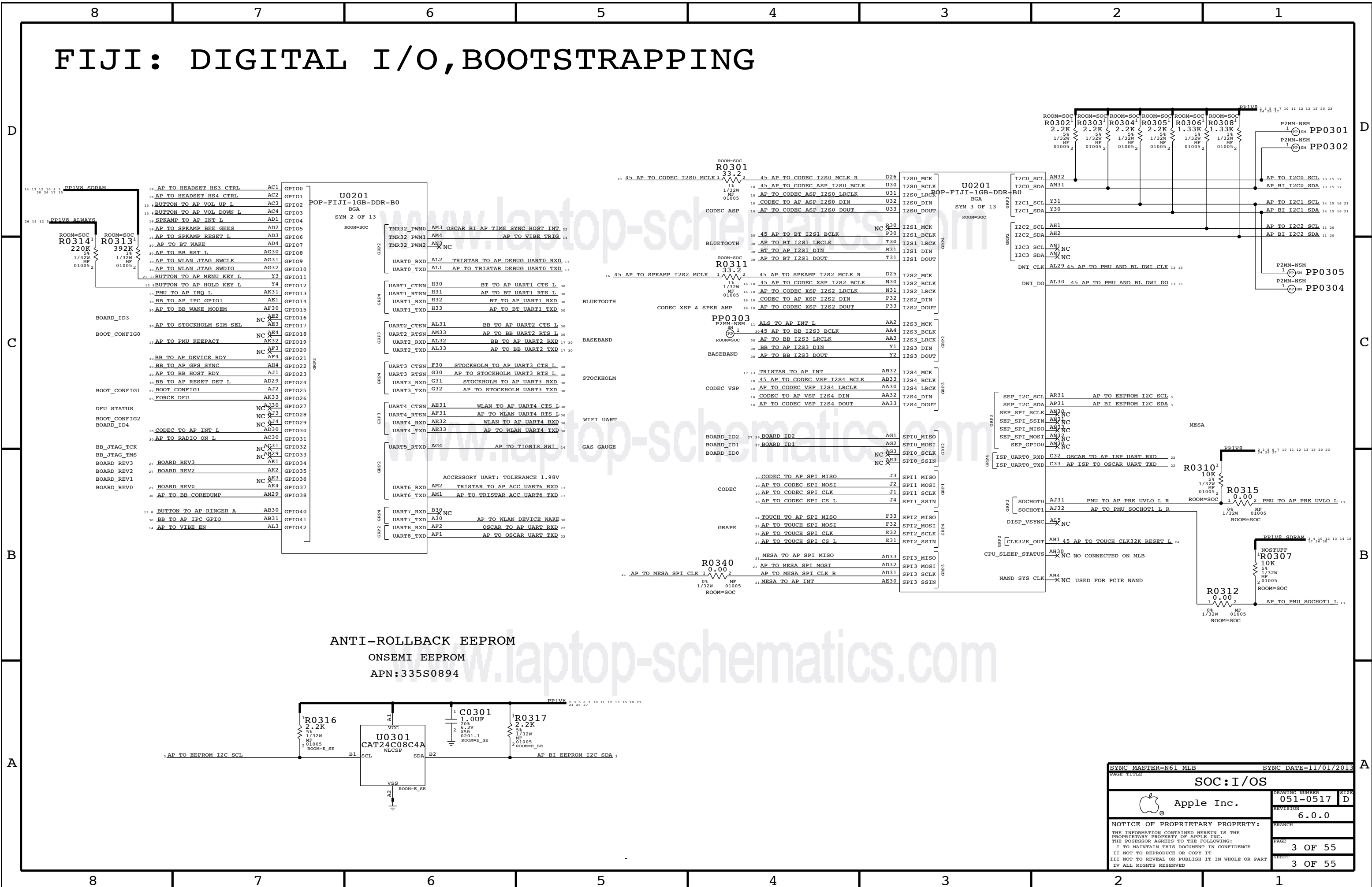
PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
604-00416	1	ASSY,SHIELD,LOWER BACK,1P,N56	SH2501	CRITICAL	COMMON
604-8159	1	ASSY,SHIELD,LOWER FRONT,N56	SH2502	CRITICAL	COMMON
806-00401	1	SHIELD,EM,UPPER ACK,EXTENDED FOOT,N56	SH2503	CRITICAL	COMMON
604-8158	1	ASSY,SHIELD,UPPER FRONT,N56	SH2504	CRITICAL	COMMON
604-00244	1	SUBASSY,SHIELD,SA	SH2505	CRITICAL	COMMON

SCH 051-0517
 BRD 820-3675
 MCO 056-6398

BOM 639-4924 (16GB) BOM 639-00196 (16GB, DTD)
 BOM 639-6157 (32GB) BOM 639-00194 (32GB, DTD)
 BOM 639-6158 (64GB) BOM 639-00195 (64GB, DTD)
 BOM 639-00150 (128GB) BOM 639-00197 (128GB, DTD)

DRAWING TITLE		SCHEM,MLB,N56	
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FIJI: DIGITAL I/O, BOOTSTRAPPING



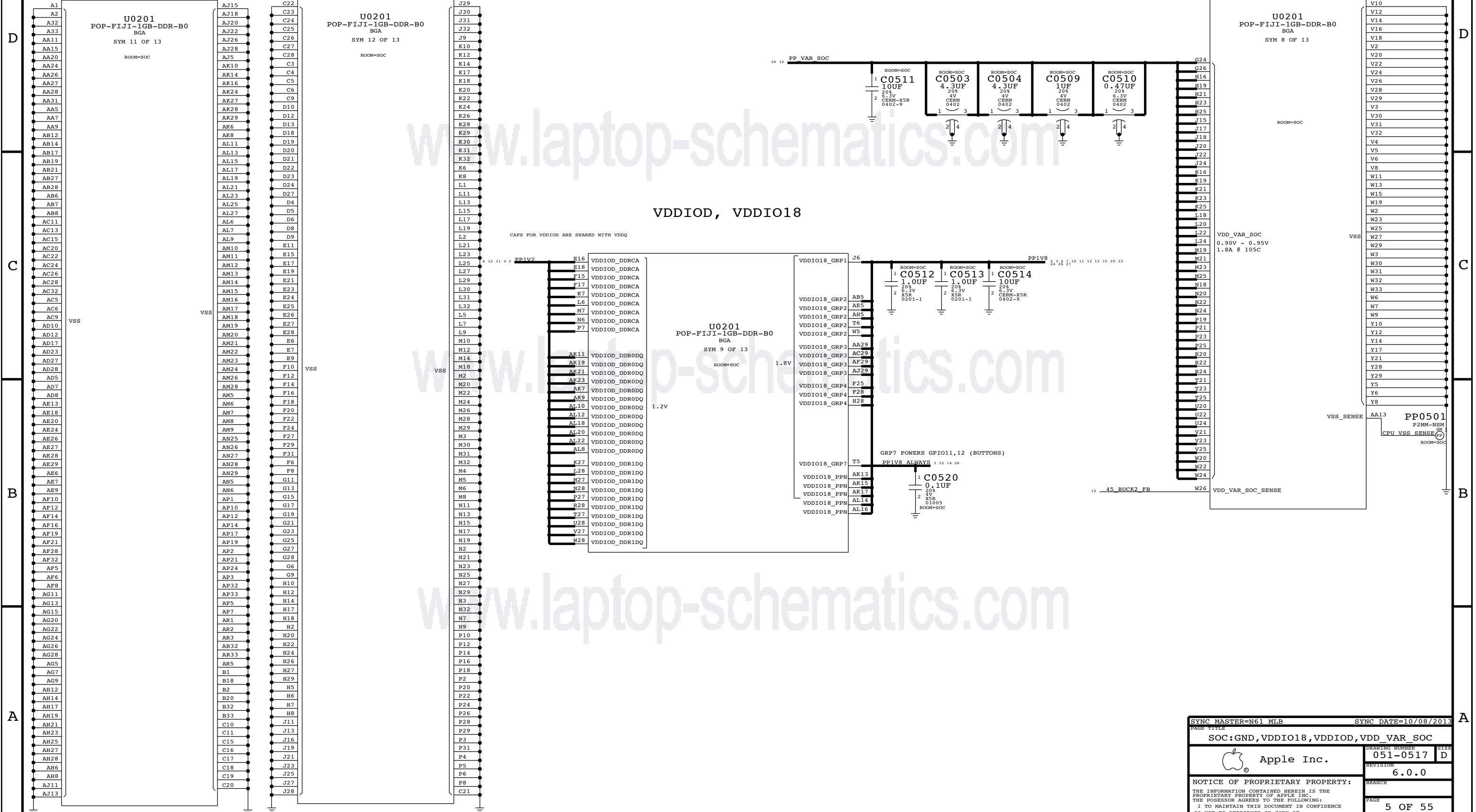
ANTI-ROLLBACK EEPROM
 ONSEMI EEPROM
 APN: 335S0894

SYNC MASTER=N61 MLB		SYNC DATE=11/01/2013	
PAGE TITLE			
SOC: I/O/S		DRAWING NUMBER	SIZE
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FIJI: VDDIOD, VDDIO18, VDD_VAR_SOC

JUST A FEW GNDS

VDD_SRAM, VDD_SOC

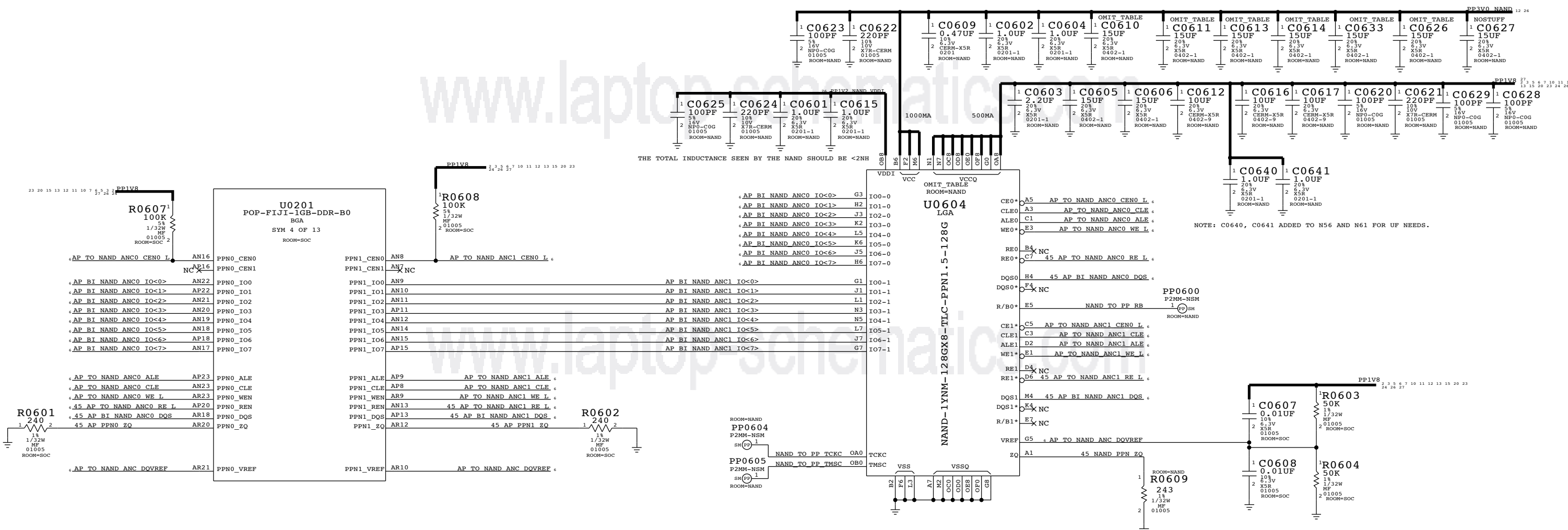


SYNC MASTER=N61 MLB		SYNC DATE=10/08/2013	
PAGE TITLE SOC:GND, VDDIO18, VDDIOD, VDD_VAR_SOC			
DRAWING NUMBER 051-0517		SIZE D	
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FIJI: NAND + 12X17 NAND PKG

SUPPORT FOR PPN1.5 (1.8V IO) ONLY

www.laptop-schematics.com



THE TOTAL INDUCTANCE SEEN BY THE NAND SHOULD BE <2NH

NOTE: C0640, C0641 ADDED TO N56 AND N61 FOR UP NEEDS.

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

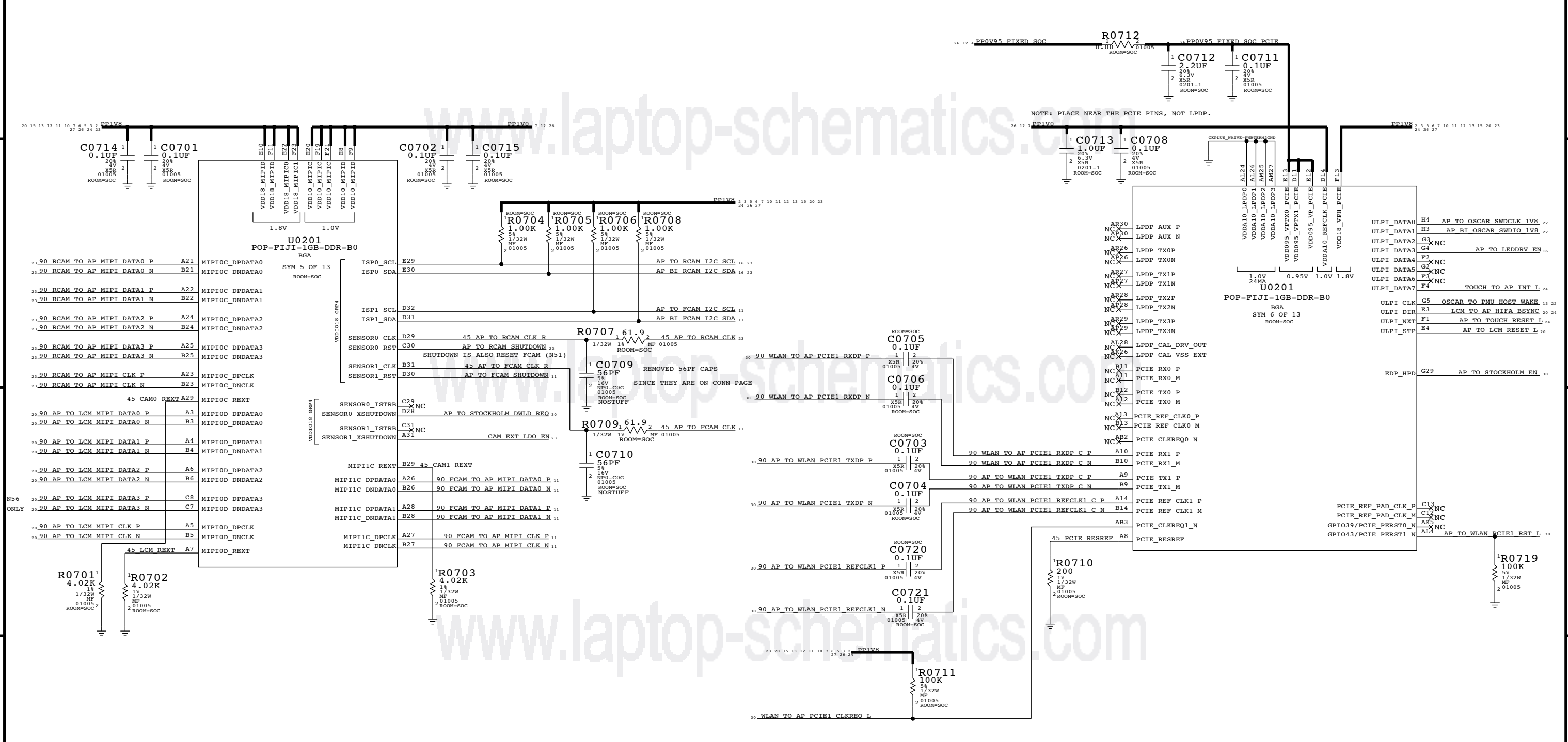
PP0601
P4MM-NSM
ROOM=SOC
1 45 AP BI NAND ANCO IO<6> .

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

PP0603
P4MM-NSM
ROOM=SOC
1 45 AP BI NAND ANCO DQS .

SYNC MASTER=N61 MLB		SYNC DATE=11/01/2013	
SOC: NAND			
Apple Inc.		DRAWING NUMBER	SIZE
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		REVISION	
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		PAGE	6 OF 55
		SHEET	6 OF 55

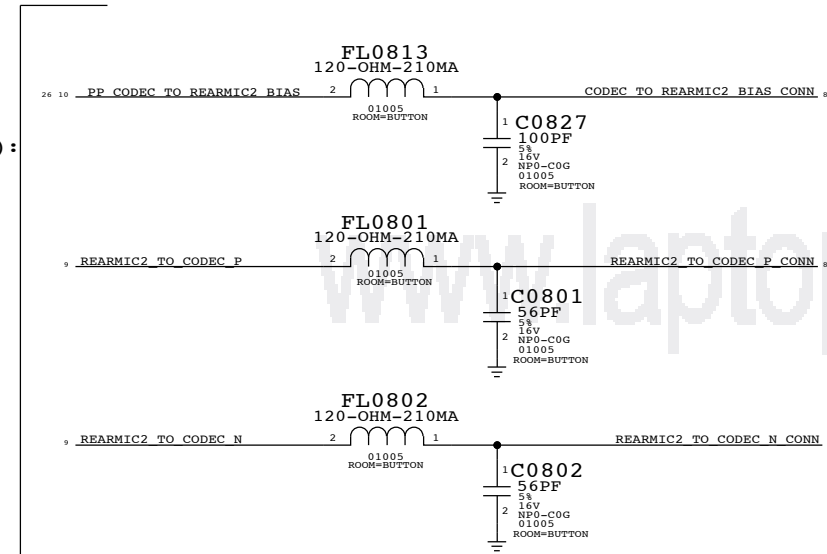
FIJI: HIGH SPEED DIG (CAM, LCD, LPDP, PCIE)



SYNC MASTER=N61 MLB		SYNC DATE=11/01/2013	
PAGE TITLE			
SOC:CAM, LCD, LPDP, PCIE			
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		REVISION	6.0.0
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BUTTON FLEX (BUTTONS, ANC REF MIC, STROBE, STROBE_NTC, WIFI FLEX PAC)

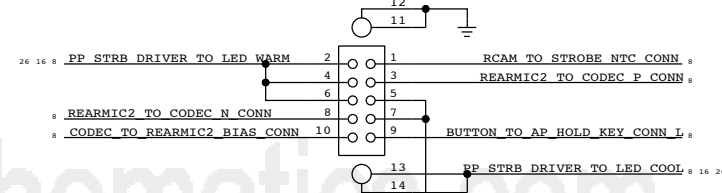
MIC2 (ANC REF MIC):
MIC2/4 BIAS,
MIC2_P,_N



RIGHT BUTTON FLEX B2B

APN: 516S1187 (RCPT)

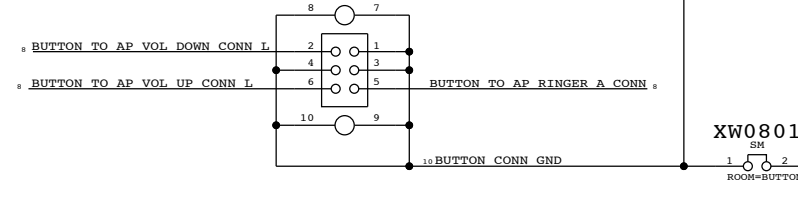
J0801
AA25D-S010VA1
F-ST-SM



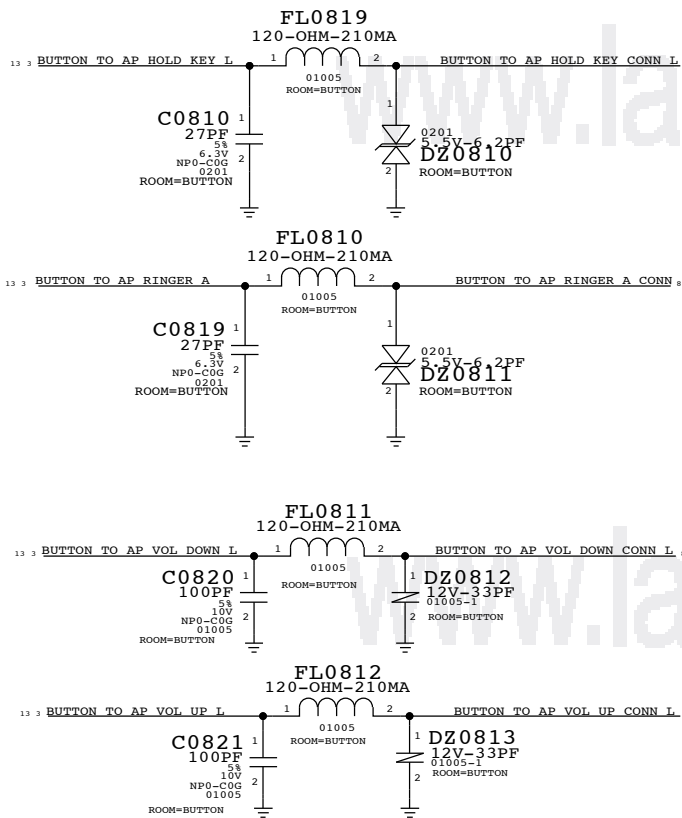
LEFT BUTTON FLEX B2B

APN: 516S1317 (RCPT)

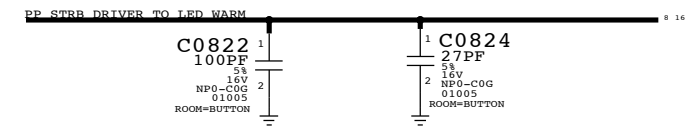
J0802
505066-0610
F-ST-SM



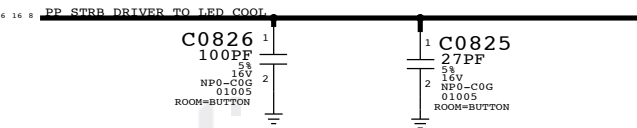
BUTTONS:
RINGER, HOLD,
VOL_UP/DOWN,



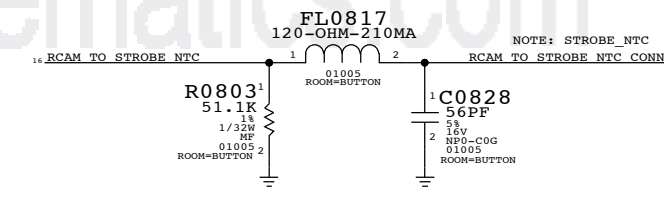
STROBE:
LED WARM



STROBE:
LED COOL



STROBE:
NTC

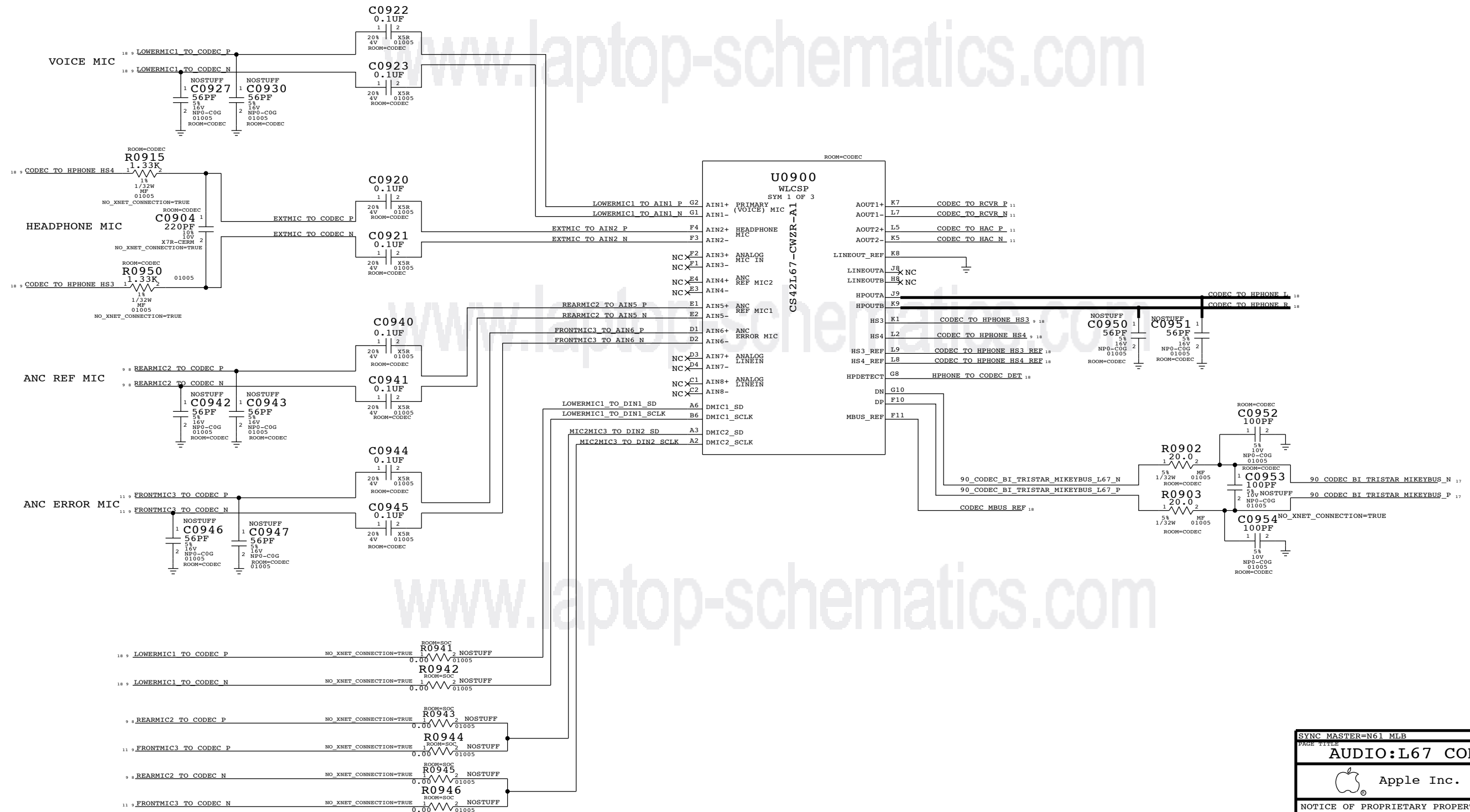


SYNC MASTER=N61 MLB		SYNC DATE=11/01/2013	
PAGE TITLE IO:BUTTON FLEX CONN			
Apple Inc.		DRAWING NUMBER 051-0517	SIZE D
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		SHEET	8 OF 55

L67 AUDIO CODEC

AUDIO I/O

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



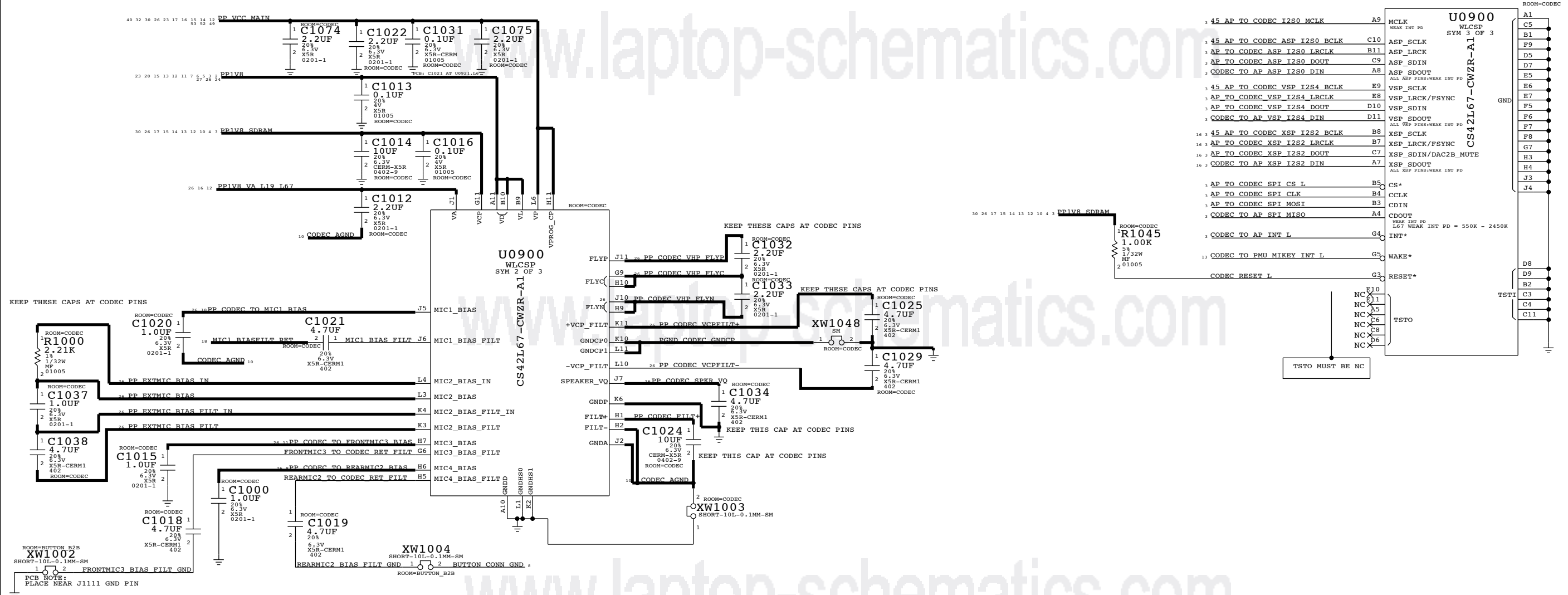
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AUDIO:L67 CODEC (1/2)			
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L67 AUDIO CODEC

POWER, MICBIAS

DIGITAL SYSTEM I/O

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



SYNC MASTER=N61 MLB		SYNC DATE=11/01/2013	
PAGE TITLE			
AUDIO:L67 CODEC (2/2)		DRAWING NUMBER	051-0517
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ADI PMU

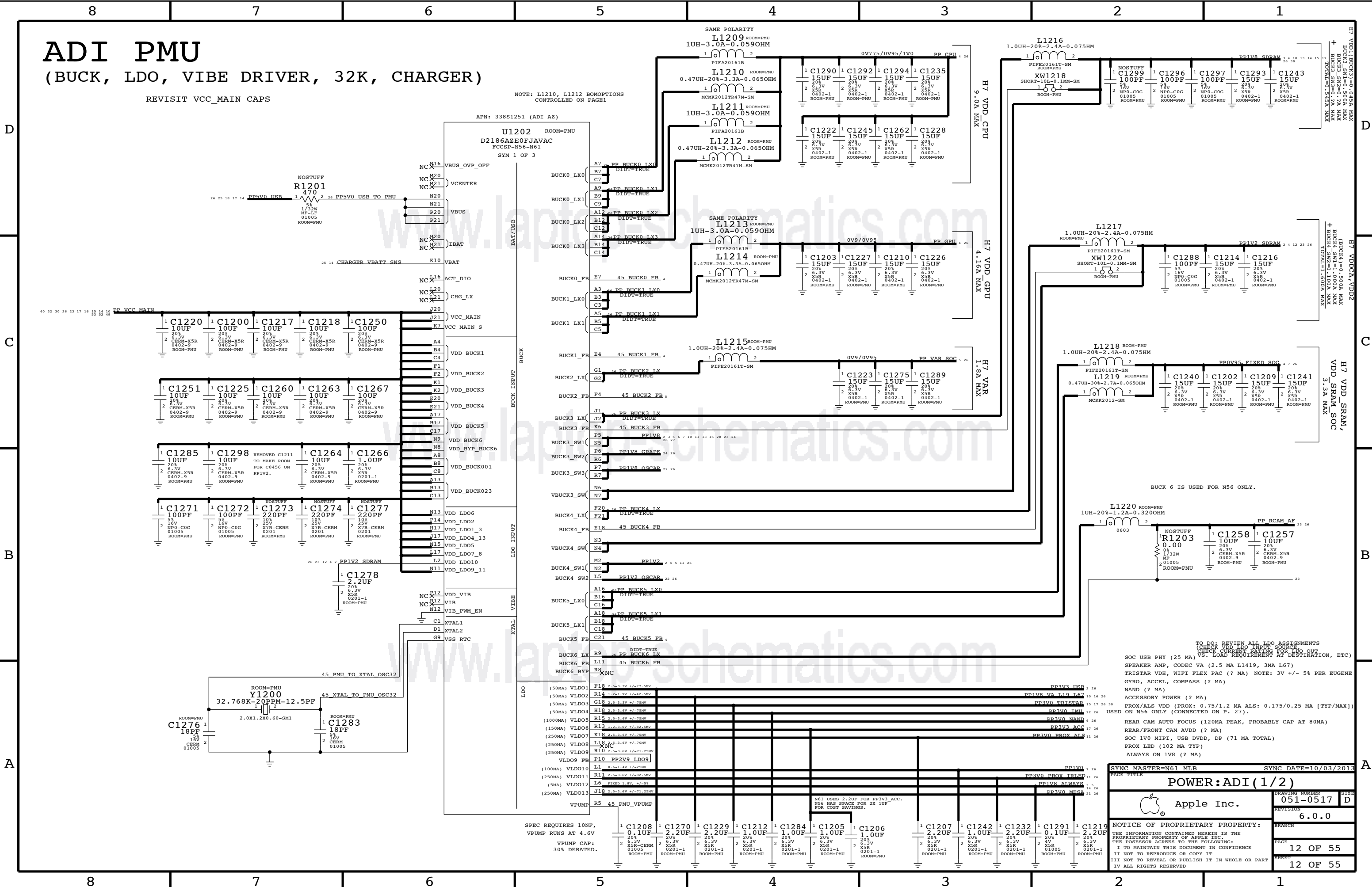
(BUCK, LDO, VIBE DRIVER, 32K, CHARGER)

REVISIT VCC_MAIN CAPS

NOTE: L1210, L1212 BOMPTIONS CONTROLLED ON PAGE1

APN: 338S1251 (ADI AZ)

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



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) NOTE: 3V +/- 5% PER EUGENE
GYRO, ACCEL, COMPASS (? MA)
NAND (? MA)
ACCESSORY POWER (? MA)
PROX/ALS VDD (PROX: 0.75/1.2 MA ALS: 0.175/0.25 MA [TYP/MAX])
USED ON N56 ONLY (CONNECTED ON P. 27).
REAR CAM AUTO FOCUS (120MA PEAK, PROBABLY CAP AT 80MA)
REAR/FRONT CAM AVDD (? MA)
PP3V3 ACC
SOC IVO MIPI, USB_DVDD, DP (71 MA TOTAL)
PROX LED (102 MA TYP)
ALWAYS ON IVB (? MA)

SYNC MASTER=N61 MLB SYNC DATE=10/03/2013

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

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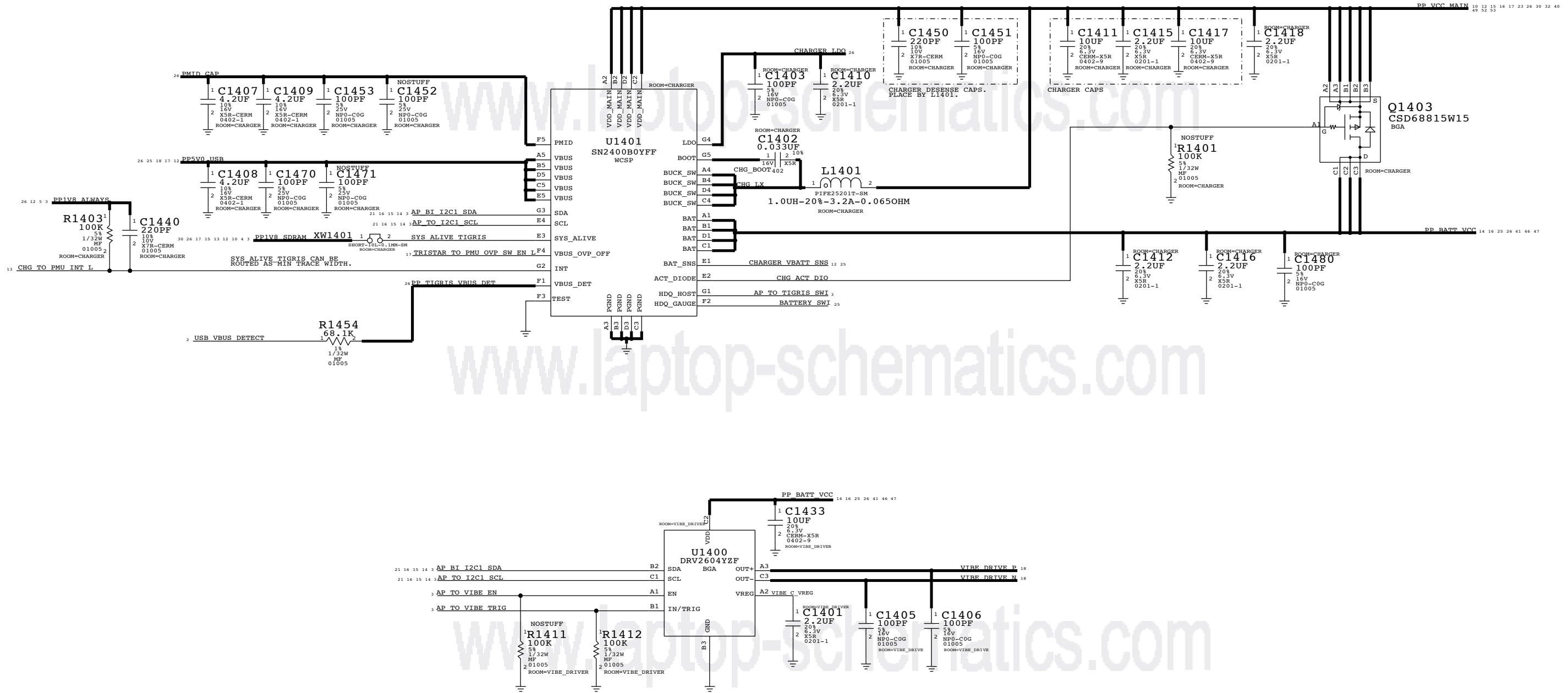
BRANCH: 12 OF 55

SHEET: 12 OF 55

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

N61 USES 2.2UF FOR PP3V3 ACC. N56 HAS SPACE FOR 2X 1UF FOR COST SAVINGS.

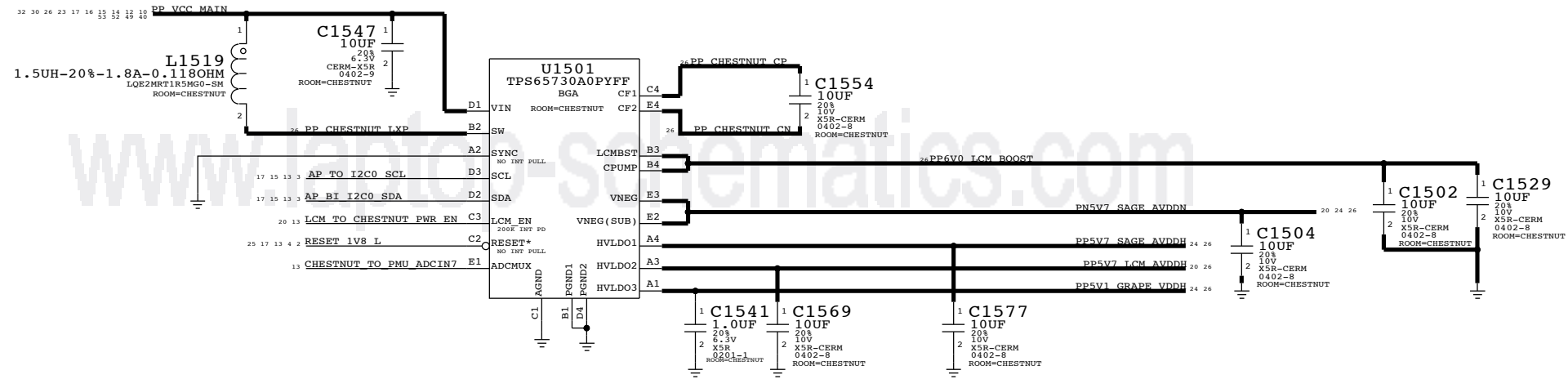
TIGRIS CHARGER & VIBE DRIVER



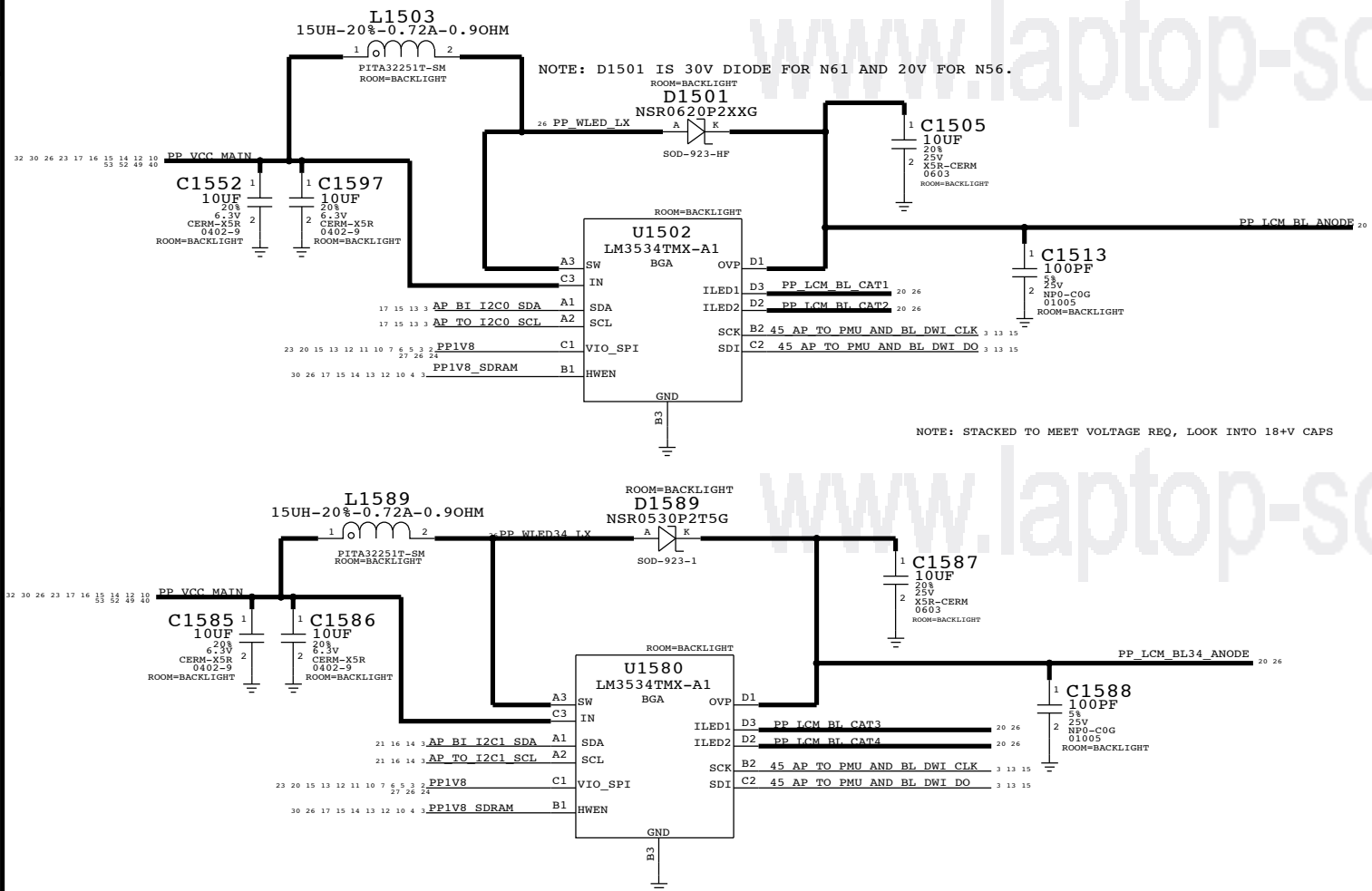
PAGE TITLE POWER:TIGRISR,VIBE DRIVER		
Apple Inc.	DRAWING NUMBER	051-0517
	REVISION	6.0.0
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	PAGE	14 OF 55
	SHEET	14 OF 55

CHESTNUT, BACKLIGHT DRIVER, MESA BOOST

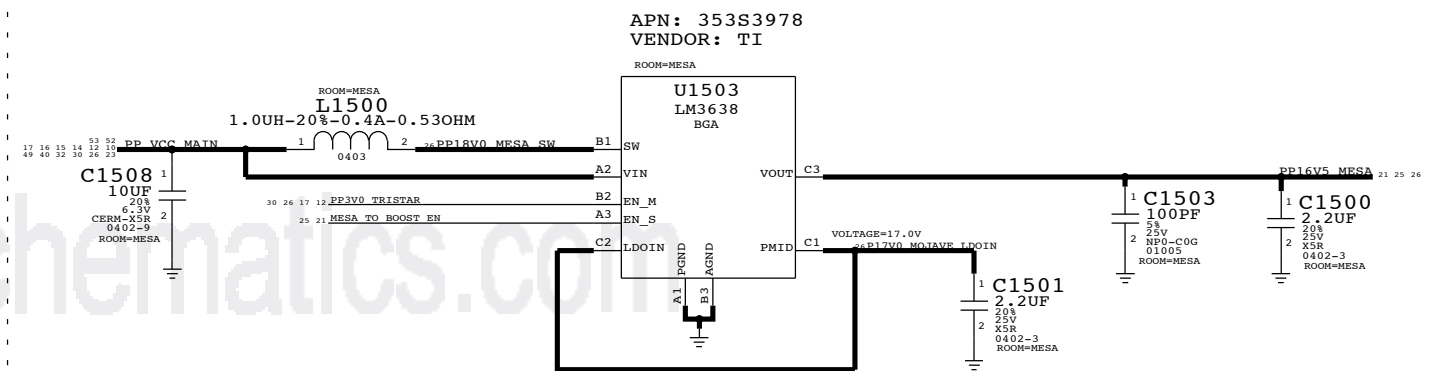
DISPLAY PMU (TI CHESTNUT, 338S1149)



BACKLIGHT DRIVERS



MESA BOOST

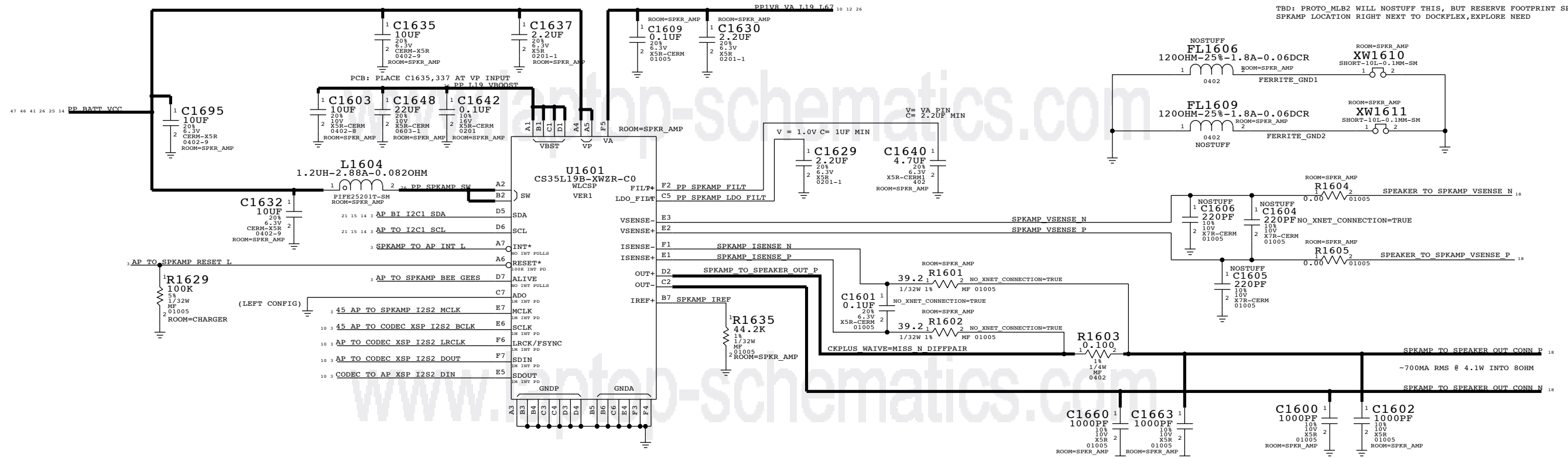


PAGE TITLE		SYNC DATE=11/01/2013	
DISPLAY:CHESTNUT, BACKLIGHT DRIVER			
Apple Inc.		DRAWING NUMBER	051-0517
		REVISION	6.0.0
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SPEAKER AMP, LED DRIVER

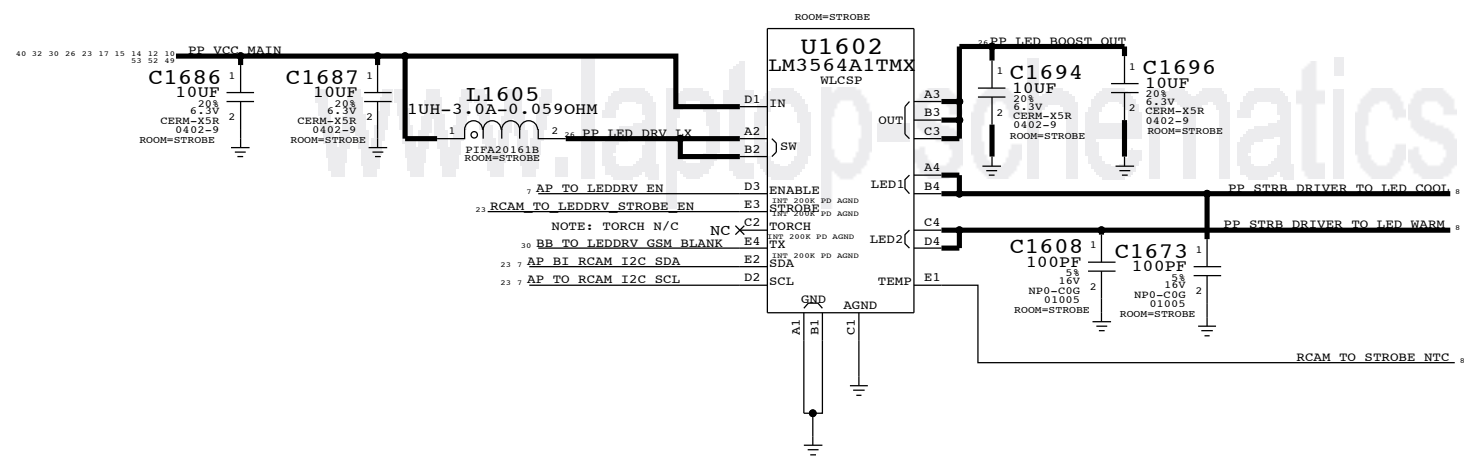
SPEAKER AMP

I2C ADDRESS: 1000000X



STROBE DRIVER

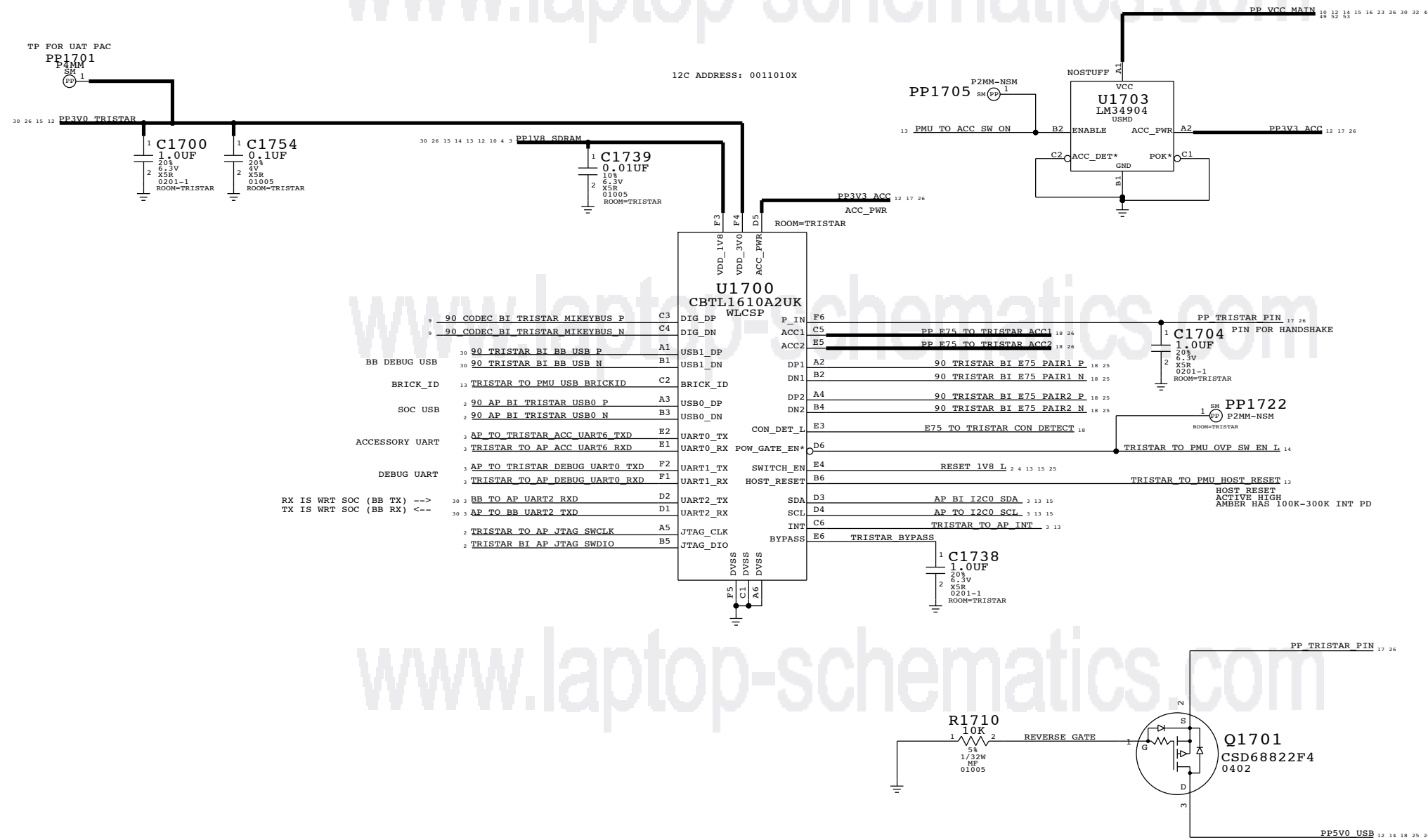
TI: APN 353S3899



SYNC MASTER=N61 MLB		SYNC DATE=11/01/2013	
PAGE TITLE			
AUDIO:SPKR AMP,STROBE			
Apple Inc.		DRAWING NUMBER	051-0517
		REVISION	6.0.0
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TRISTAR2

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SYNC MASTER=N61 MLB		SYNC DATE=11/01/2013	
IO:TRISTAR2			
Apple Inc.		DRAWING NUMBER	051-0517
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		PAGE	17 OF 55
		SHEET	17 OF 55

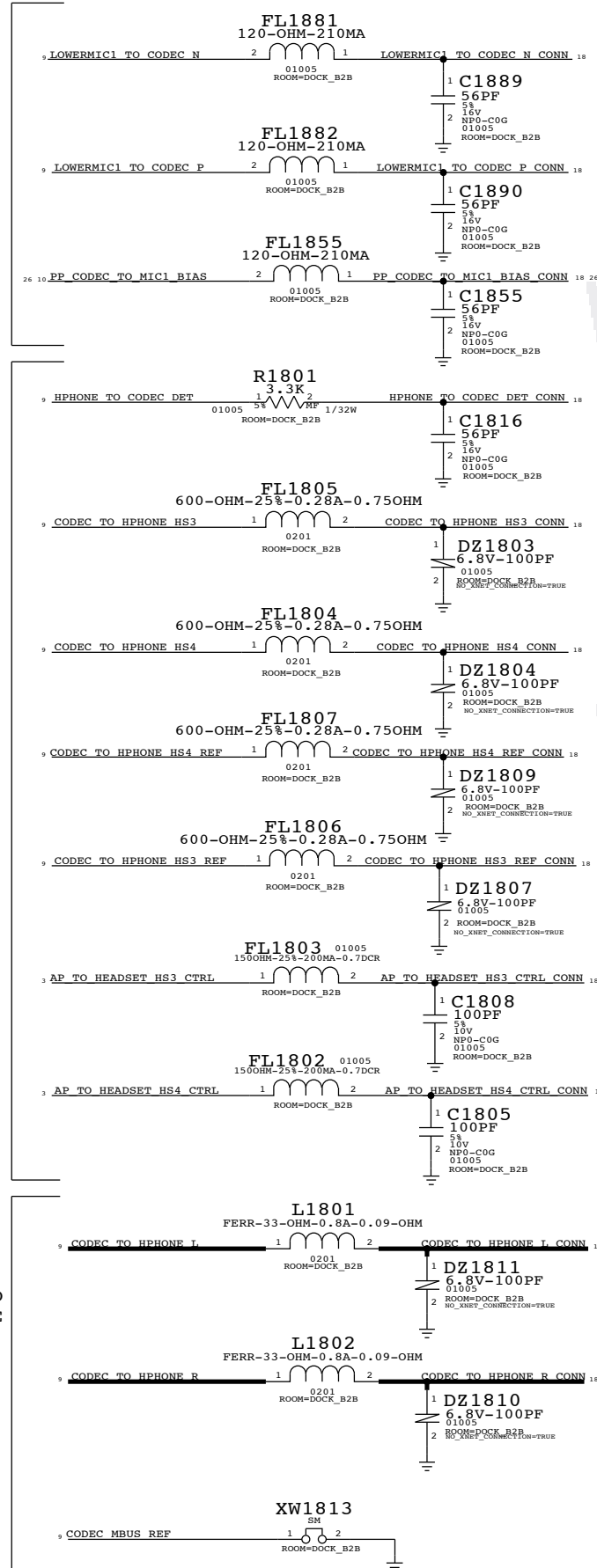
DOCKFLEX B2B (USB VBUS, SPEAKER, ANTENNA LAT SW CTRL, MIC1 (PRIMARY MIC), ACC DET/ID/PWR, E75 DIFFPAIRS)

D
LOWER MIC1
(PRIMARY
VOICE MIC)

C
HEADPHONE

B

A

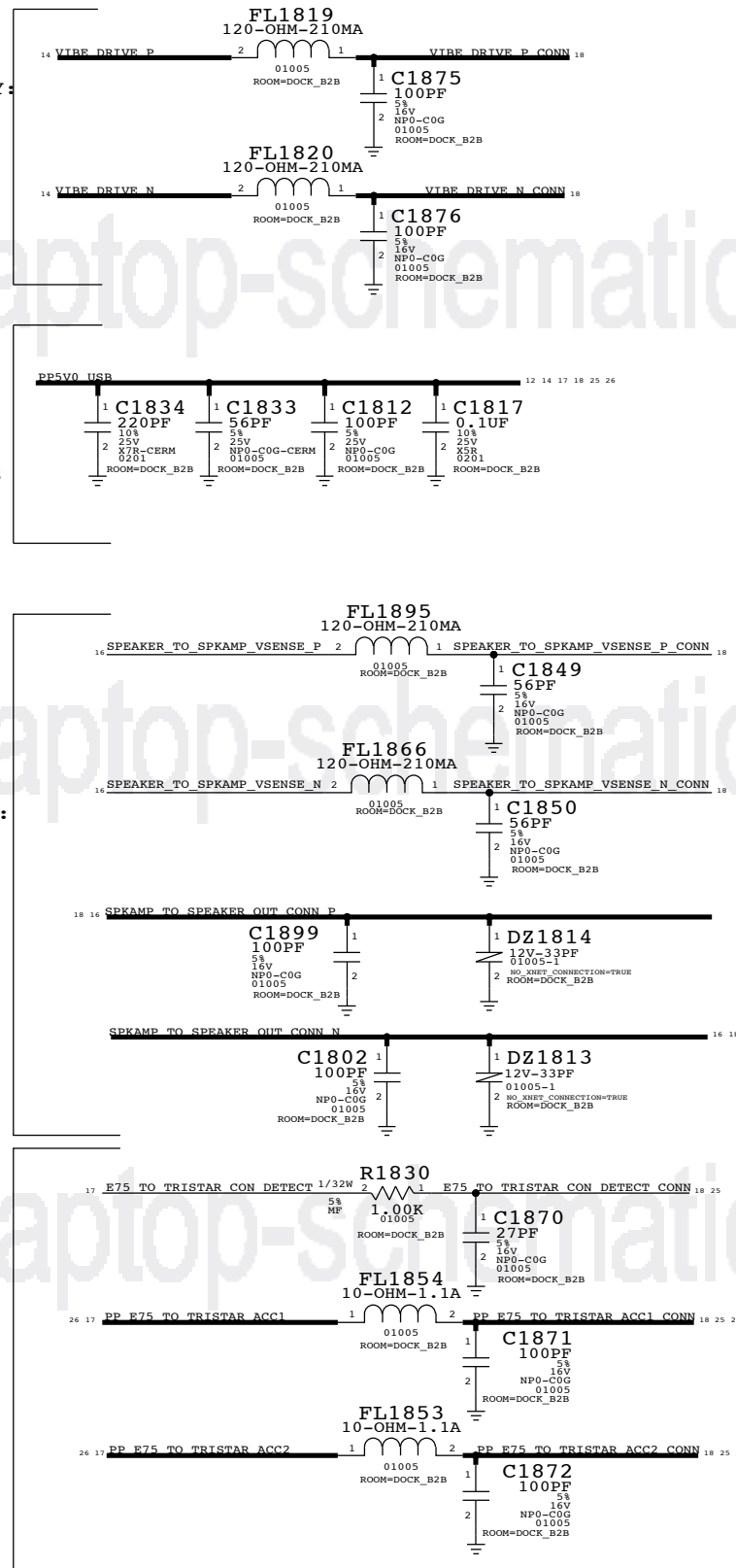


ACCESSORY:
VIBE
DRIVE

USB
VBUS

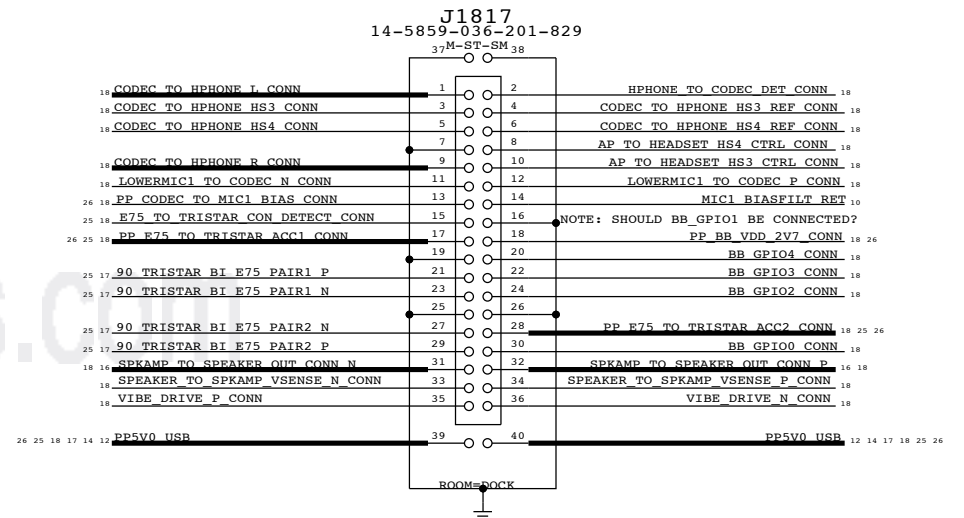
SPEAKER:
LEADS,
VSENSE

TRISTAR



ANTENNA

MLB: 516S1282 (PLUG)



SYNC MASTER=N61 MLB		SYNC DATE=10/08/2013	
PAGE TITLE			
IO:DOCK FLEX CONN		DRAWING NUMBER	051-0517
Apple Inc.		REVISION	6.0.0
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8

7

6

5

4

3

2

1

D

D

C

C

B

B

A

A

8

7

6


5

4

3

2

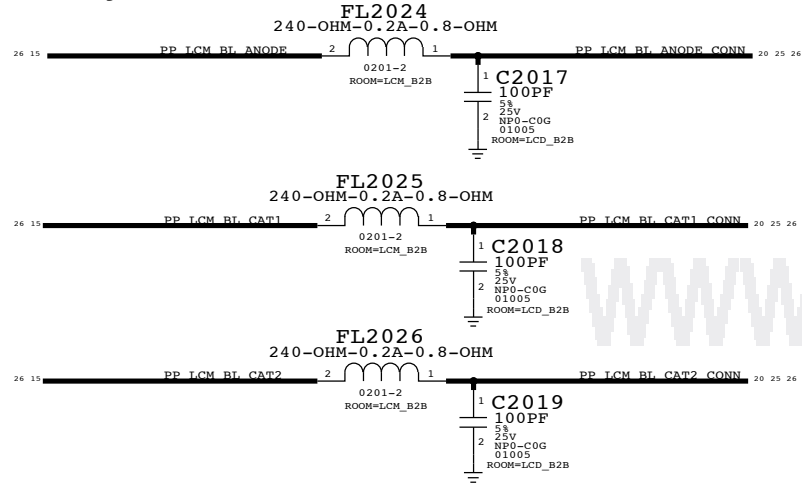
1

SYNC MASTER=N/A		SYNC DATE=N/A	
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		REVISION	6.0.0
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		PAGE	19 OF 55
		SHEET	19 OF 55

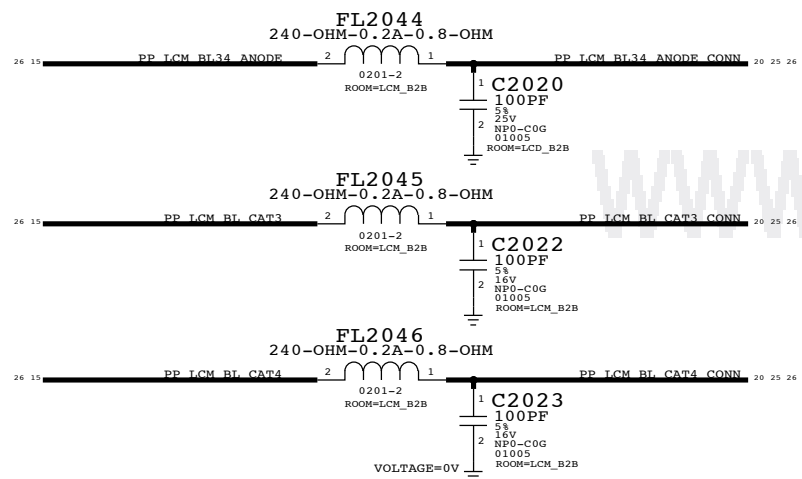
LCD B2B

MLB: 516S1185 (RCPT)
(516S1184 ON FLEX)
J2019
20-5857-036-001-829
F-ST-SM

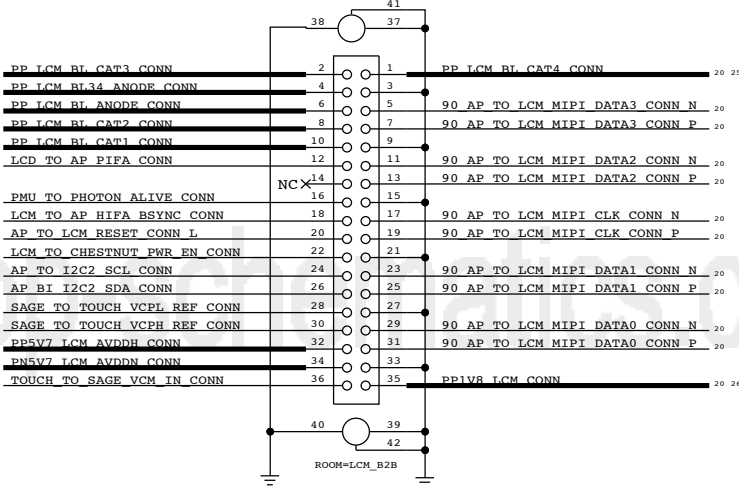
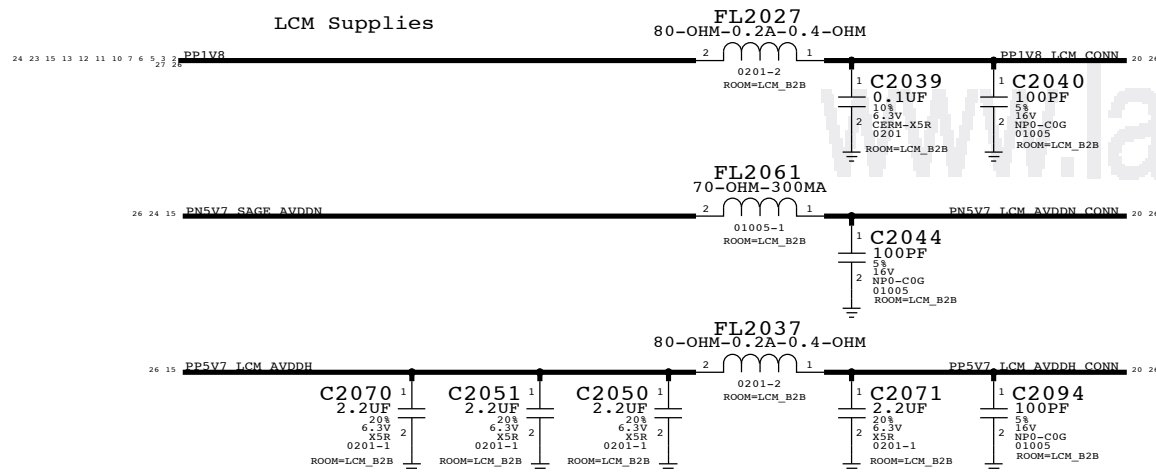
Backlight



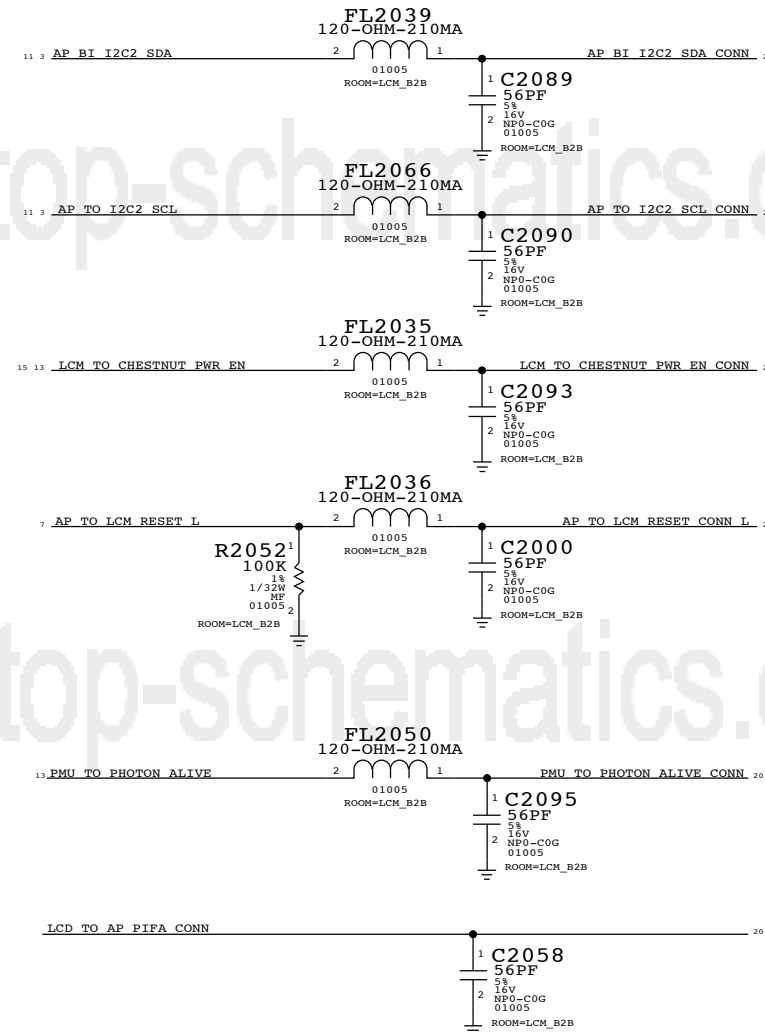
BACKLIGHT 2 (N56 ONLY)



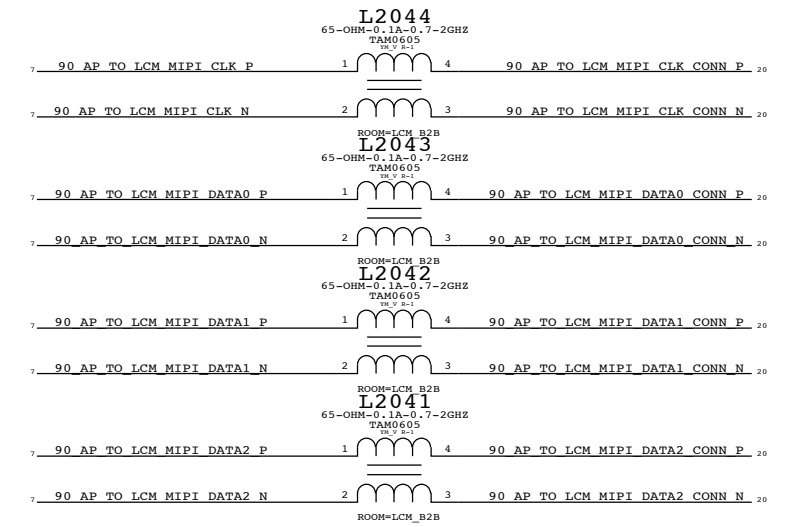
LCM Supplies



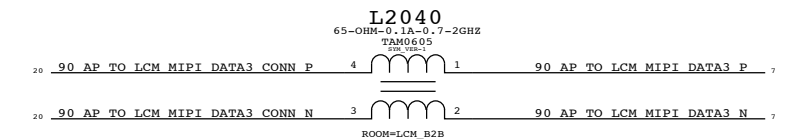
Digital Interfaces



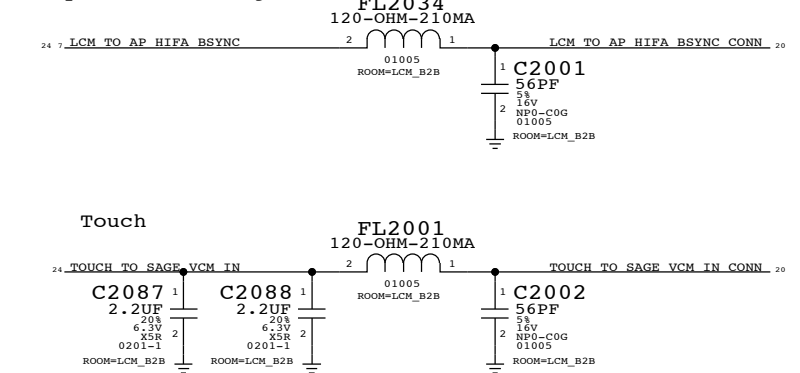
MIPI Common Mode Chokes



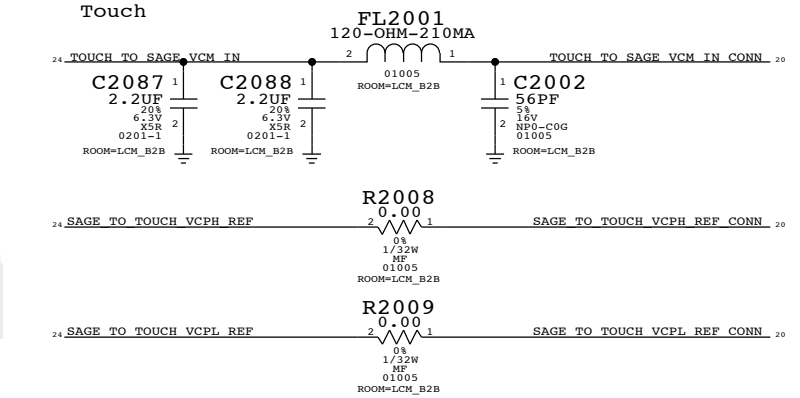
MIPI LANE 3 (N56 ONLY)



Sync/Reset/Debug



Touch



SYNC MASTER=N61 MLB		SYNC DATE=11/01/2013	
PAGE TITLE			
DISPLAY: FLEX CONN			
Apple Inc.		DRAWING NUMBER	051-0517
		REVISION	6.0.0
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MESA CONNECTOR

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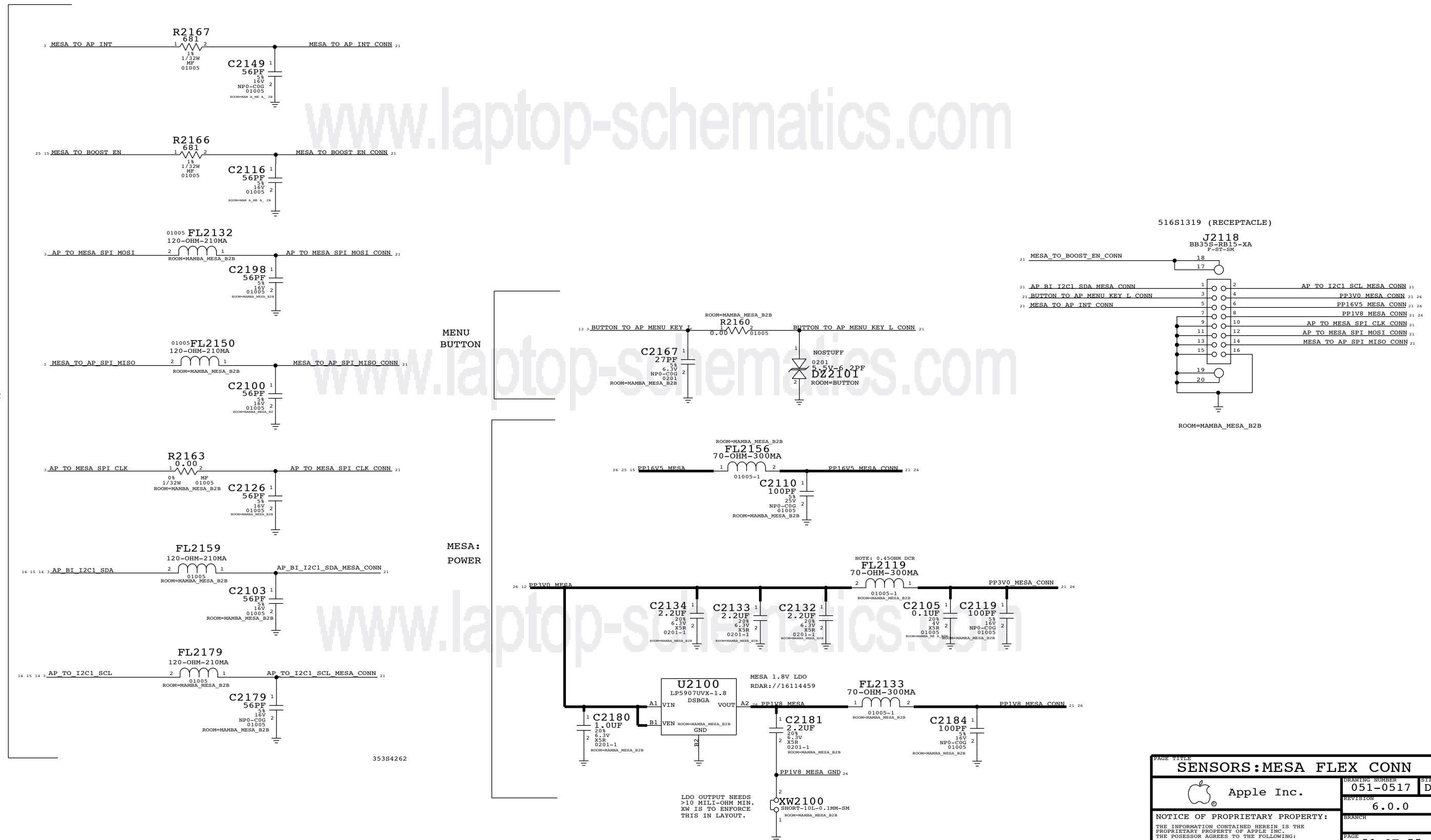
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MESA:
INT, EN, SPI, I2C

MENU
BUTTON

MESA:
POWER



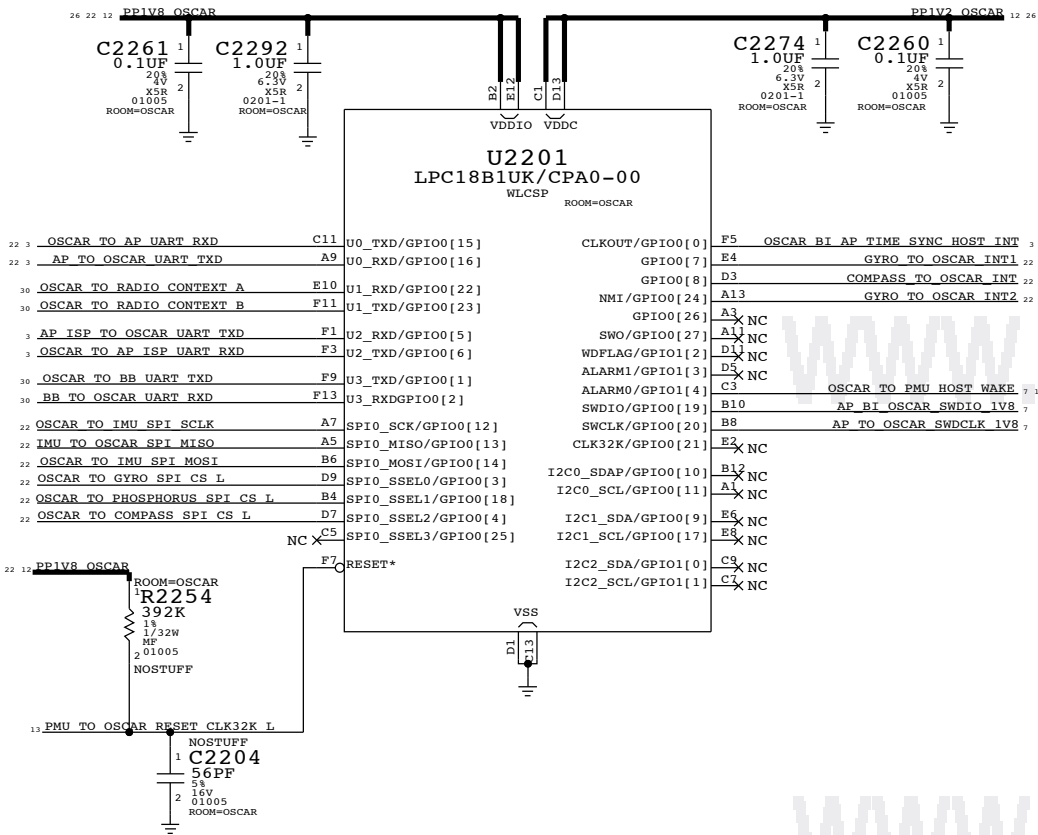
353S4262

LDO OUTPUT NEEDS
>10 MILLI-OHM MIN.
XW IS TO ENFORCE
THIS IN LAYOUT.

PAGE TITLE		
SENSORS:MESA FLEX CONN		
Apple Inc.	DRAWING NUMBER	051-0517
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	PAGE	21 OF 55
	SHEET	21 OF 55

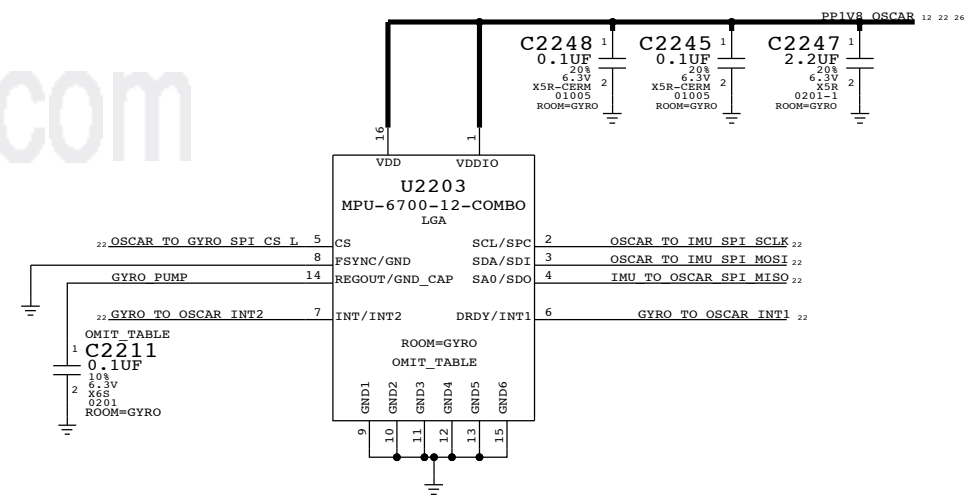
OSCAR + SENSORS

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



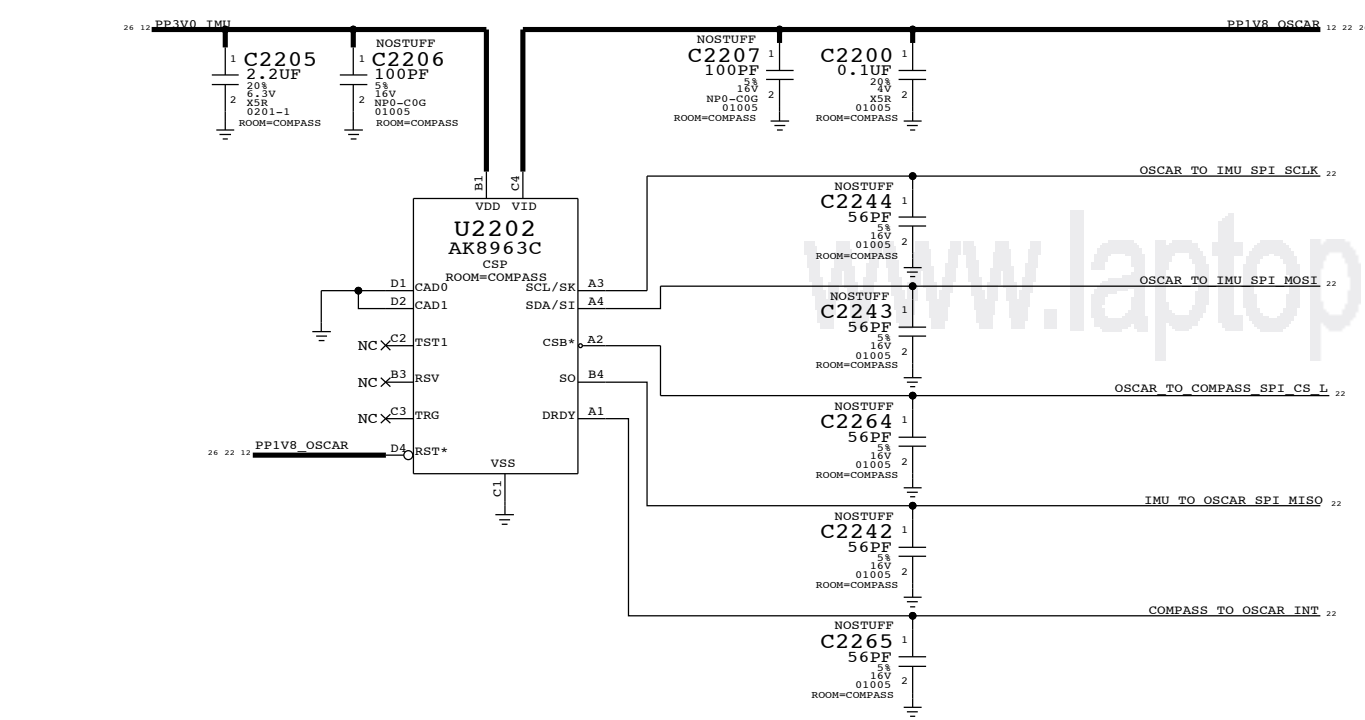
CARBON (ACCEL GYRO COMBO)

INVENSENSE, APN 338S00017, C2211=0.1UF (132S0395)
BOSCH, APN 338S00028, C2211=0.1UF (132S0395)
ST, APN 338S00029, C2211=0.01UF,25V (132S0391)

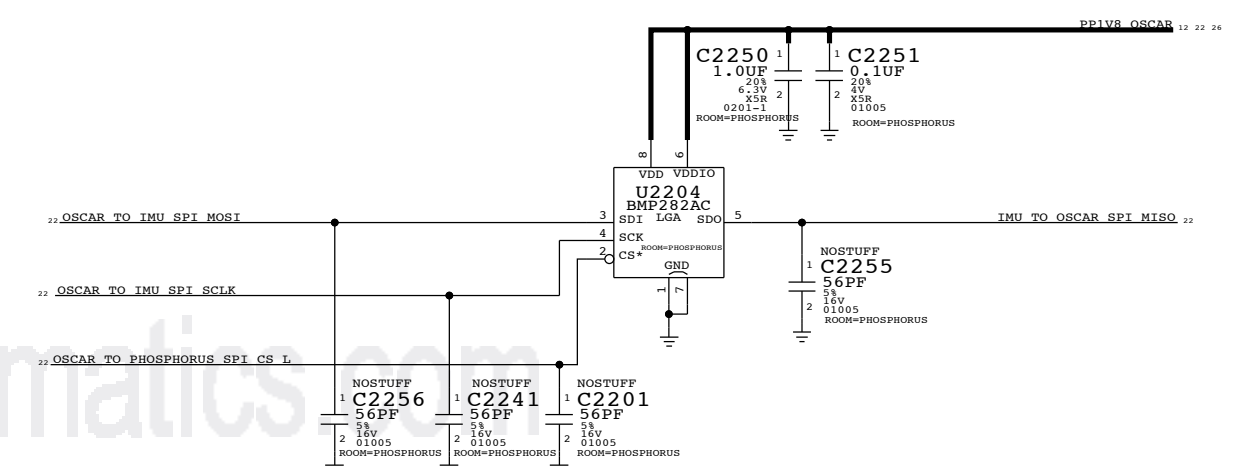


THIS PART OUTSIDE OF SHIELD ON THE PENINSULA

COMPASS



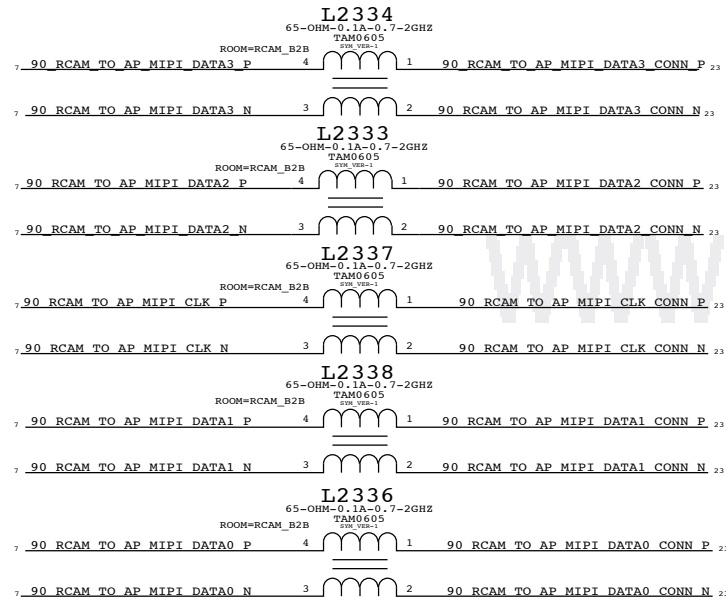
THIS IS OUTSIDE OF SHIELD IN TO THE RIGHT OF THE NAND
PHOSPHORUS



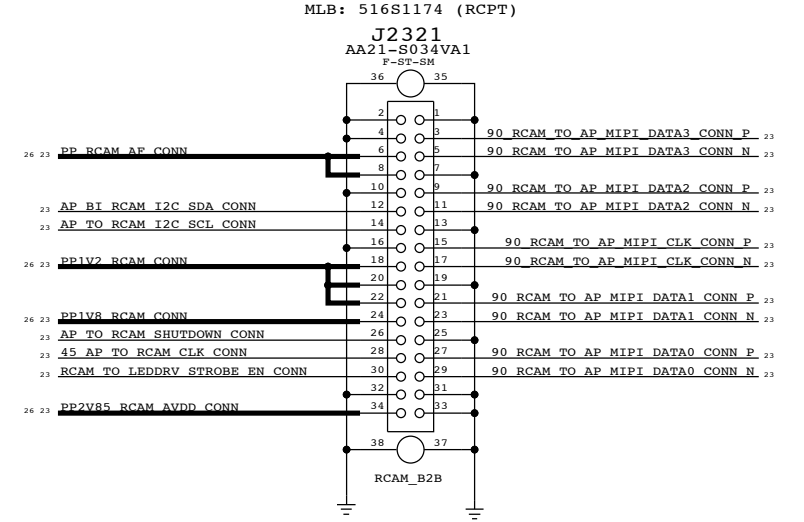
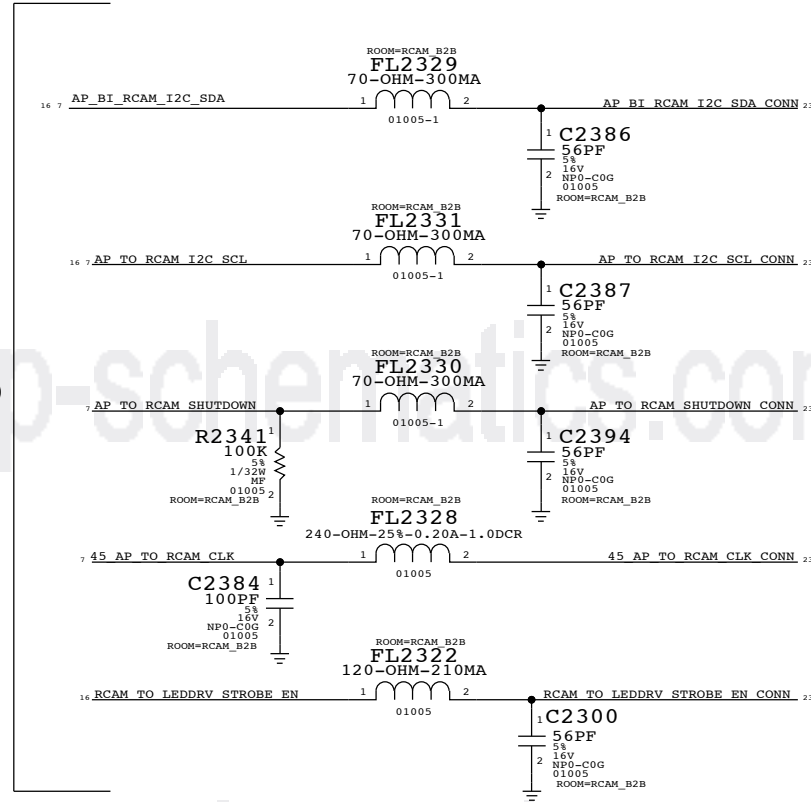
SYNC MASTER=N61 MLB		SYNC DATE=10/08/2013	
PAGE TITLE			
SENSORS:OSCAR,CARBON,PHOS,MAGNESIUM			
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RCAM B2B (REAR CAMERA CONNECTOR)

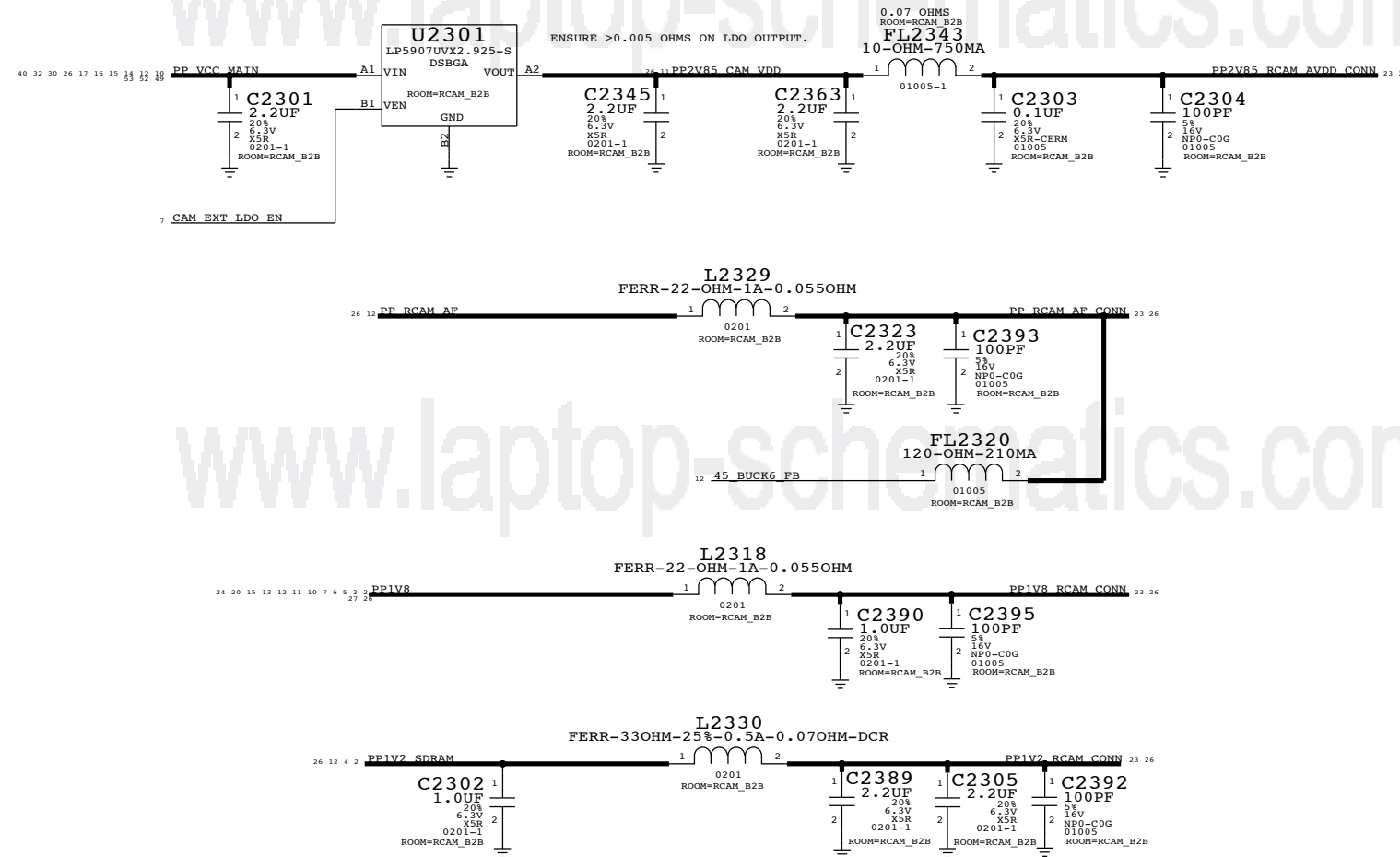
RCAM:
4-LANE MIPI



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



RCAM:
POWER:
(1.8V DOVDD)
(2.9V AVDD)
(1.2V DVDD)
(2V AF)

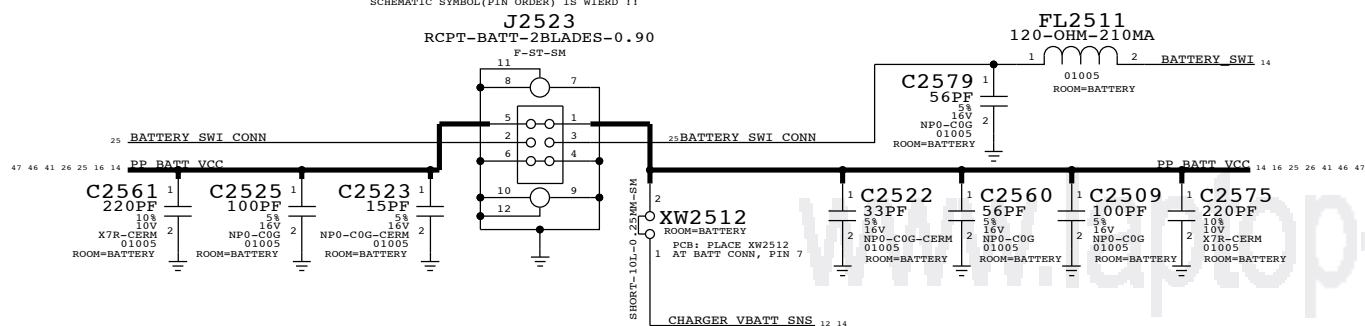


SYNC MASTER=N61 MLB		SYNC DATE=11/01/2013	
CAMERA: REAR FLEX CONN			
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		REVISION	6.0.0
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BATT CONN, TPS, STANDOFFS / SHIELDS / FIDUCIALS

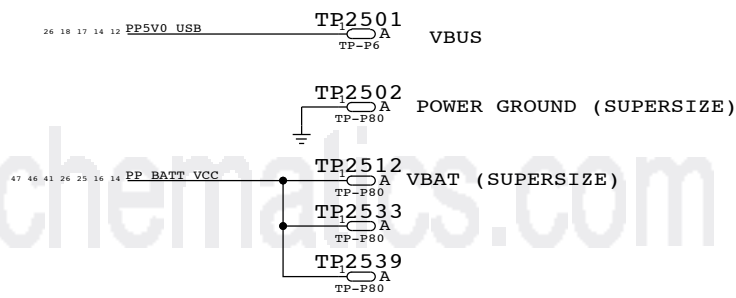
BATTERY CONN

THIS ONE ON MLB ---> 516S1080 RCPT
SCHEMATIC SYMBOL (PIN ORDER) IS WIERD !!

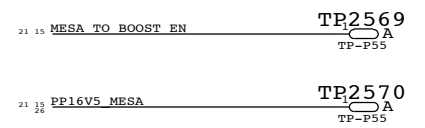


TESTPOINTS

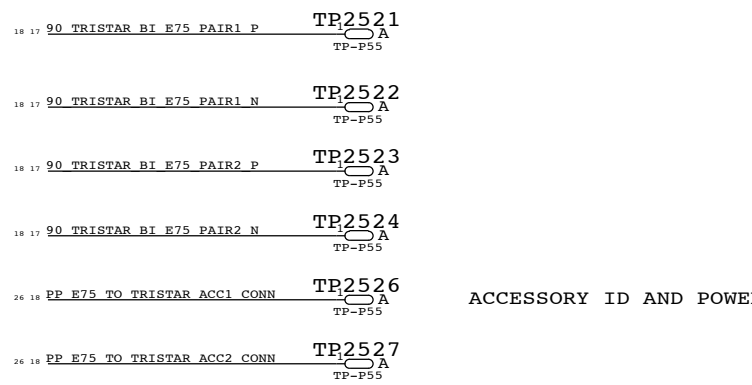
POWER TP



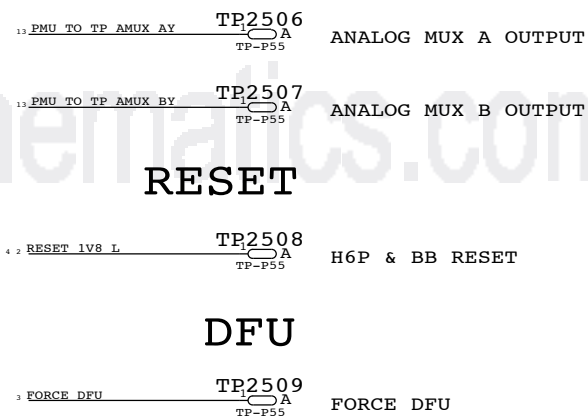
MOJAVE TP



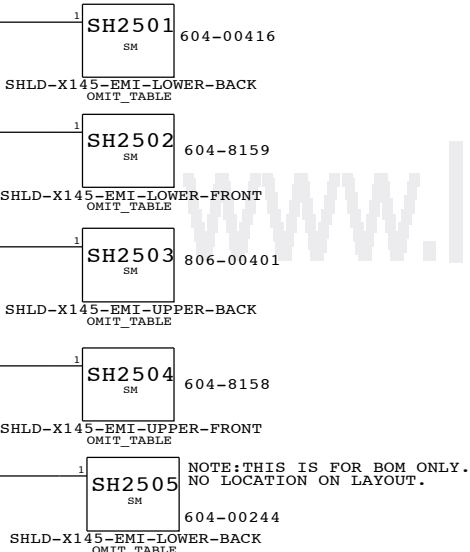
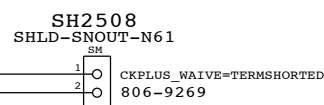
E75 - USB/UART/ID/POWER



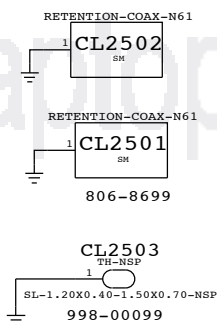
SUPER TP



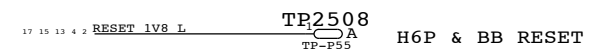
SHIELDS



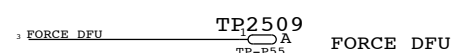
RF CLIPS



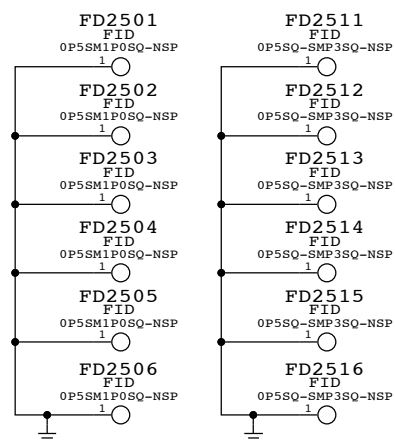
RESET



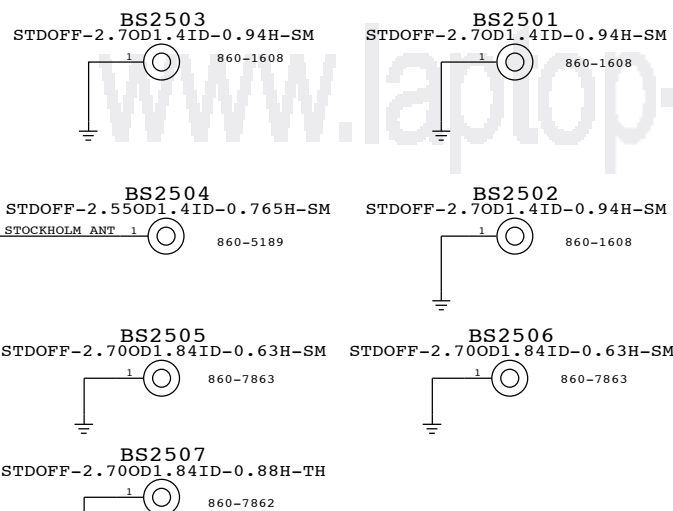
DFU



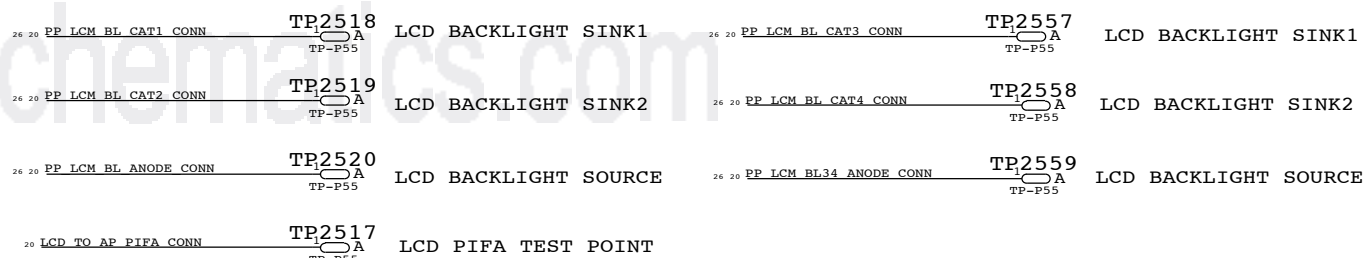
FIDUCIALS



STANDOFFS

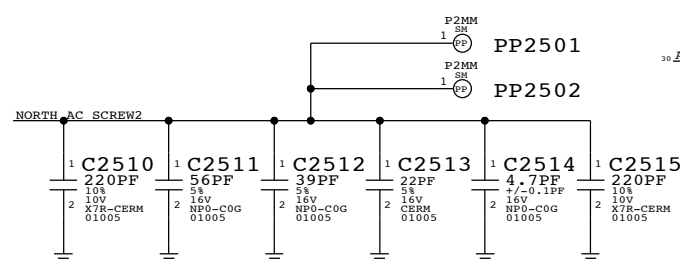


LCM BACKLIGHT



SCREW HOLES + STANDOFFS

PROBE POINTS TO BE PLACED NEAR THROUGH-HOLE IN UPPER LEFT OF BOARD. ONE FOR TOP, ONE FOR BOTTOM.



PAGE TITLE		SYNC DATE=N/A	
POWER: BATT CONN, TPS, PD FEATURES			
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REVISION		6.0.0	
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VOLTAGE PROPERTIES

E58	VOLTAGE=3.3V	PP3V3 USB	2 12
E59	VOLTAGE=1.8V	PP1V8 VA I19 I67	10 12 16
E60	VOLTAGE=3.0V	PP3V0 TRISTAR	12 15 17 30
E61	VOLTAGE=3.0V	PP3V0 TMU	12 22
E62	VOLTAGE=3.0V	PP3V0 NAND	6 12
E63	VOLTAGE=3.0V	PP3V3 ACC	12 17
E64	VOLTAGE=3.0V	PP3V0 PROX ALS	11 12
E65	VOLTAGE=3.0V	PP2V9 IDO9	12
E66	VOLTAGE=4.6V	PP VCC MAIN	10 12 14 15 16 17 23 30 32
E67	VOLTAGE=1.0V	PP1V0	7 12
E68	VOLTAGE=3.0V	PP3V0 PROX TRIPD	11 12
E69	VOLTAGE=1.8V	PP1V8 ALWAYS	3 5 12 14
E70	VOLTAGE=3.0V	PP3V0 MESA	12 21
E71	VOLTAGE=1.1V	PP CPU	4 12
E72	VOLTAGE=1.1V	PP GPU	4 12
E73	VOLTAGE=1.2V	PP1V2 SDRAM	2 4 12 23
E74	VOLTAGE=1.8V	PP1V8 SDRAM	3 4 10 12 13 14 15 17 30
E75	VOLTAGE=1.8V	PP1V8	2 4 5 6 7 10 11 12 13 15 20 23
E76	VOLTAGE=1.8V	PP1V8 GRAPE	12 24
E77	VOLTAGE=1.8V	PP1V8 OSCAR	12 22
E78	VOLTAGE=1.2V	PP1V2 NAND VDDT	6
E79	VOLTAGE=1.8V	PP EXTMIC BIAS FILT IN	10
E80	VOLTAGE=1.8V	BOARD ID2	3 27
E81	VOLTAGE=1.2V	PP1V2	3 4 5 11 12
E82	VOLTAGE=5.0V	PP E75 TO TRISTAR ACC1 CONN	18 25
E83	VOLTAGE=5.0V	PP E75 TO TRISTAR ACC1	17 18
E84	VOLTAGE=22.0V	PP LCM BL ANODE	15 20
E85	VOLTAGE=0.2V	PP LCM BL CAT2	15 20
E86	VOLTAGE=0.2V	PP LCM BL CAT1	15 20
E87	VOLTAGE=0.2V	PP LCM BL CAT2 CONN	20 25
E88	VOLTAGE=0.2V	PP LCM BL CAT1 CONN	20 25
E89	VOLTAGE=-5.7V	PP5V7 SAGE AVDDN	15 20 24
E90	VOLTAGE=1.2V	PP1V2 OSCAR	12 22
E91	VOLTAGE=3.0V	PP3V0 MESA CONN	21
E92	VOLTAGE=6V	PP6V0 LCM BOOST	8 16
E93	VOLTAGE=5.0V	PP STRB DRIVER TO LED WARM	8 16
E94	VOLTAGE=5.0V	PP STRB DRIVER TO LED COOL	8 16
E95	VOLTAGE=1.8V	PP CODEC TO MIC1 BIAS	10 18
E96	VOLTAGE=1.8V	PP EXTMIC BIAS IN	10
E97	VOLTAGE=1.8V	PP EXTMIC BIAS FILT	10
E98	VOLTAGE=1.8V	PP CODEC TO FRONTMIC3 BIAS	10 11
E99	VOLTAGE=1.8V	PP CODEC TO REARMIC2 BIAS	8 10
E100	VOLTAGE=1.8V	PP CODEC FILT4	10
E101	VOLTAGE=2.2V	PP CODEC SPKR VO	10
E102	VOLTAGE=2.5V	PP CODEC VCPFL1	10
E103	VOLTAGE=2.5V	PP CODEC VCPFL2	10
E104	VOLTAGE=2.5V	PP CODEC VHP FLN	10
E105	VOLTAGE=0.2V	PP CODEC VHP FLN	10
E106	VOLTAGE=2.5V	PP CODEC VHP FLN	10
E107	VOLTAGE=1.8V	PP1V8 FCAM CONN	11
E108	VOLTAGE=3.0V	PP2V85 FCAM AVDD CONN	11
E109	VOLTAGE=1.8V	PP CODEC TO FRONTMIC3 BIAS CONN	11
E110	VOLTAGE=3.0V	PP3V0 ALS CONN	11
E111	VOLTAGE=1.2V	PP1V2 FCAM VDDIO CONN	11
E112	VOLTAGE=5.0V	PP5V0 USB	12 14 17 18 25
E113	VOLTAGE=5.0V	PP5V0 USB TO PMU	12
E114	VOLTAGE=4.6V	PP BUCK5 LX	12
E115	VOLTAGE=4.6V	PP BUCK3 LX	12
E116	VOLTAGE=4.6V	PP BUCK4 LX	12
E117	VOLTAGE=4.6V	PP BUCK2 LX	12
E118	VOLTAGE=4.6V	PP BUCK1 LX	12
E119	VOLTAGE=4.6V	PP BUCK1 LX	12
E120	VOLTAGE=4.6V	PP BUCK0 LX	12
E121	VOLTAGE=4.6V	PP BUCK0 LX	12
E122	VOLTAGE=4.6V	PP BUCK0 LX	12
E123	VOLTAGE=4.6V	PP BUCK0 LX	12
E124	VOLTAGE=4.6V	PP BUCK0 LX	12
E125	VOLTAGE=6.0V	PP CHESTNUT LXP	15
E126	VOLTAGE=6.0V	PP CHESTNUT CP	15
E127	VOLTAGE=6.0V	PP CHESTNUT CN	15
E128	VOLTAGE=5.7V	PP5V7 SAGE AVDDH	15 24
E129	VOLTAGE=5.7V	PP5V7 LCM AVDDH	15 20
E130	VOLTAGE=5.1V	PP5V1 GRAPE VDDH	15 24
E131	VOLTAGE=22.0V	PP WLED LX	15
E132	VOLTAGE=18.0V	PP18V0 MESA SW	15
E133	VOLTAGE=17.0V	PP17V0 NOVAE IDOIN	15
E134	VOLTAGE=16.5V	PP16V5 MESA	15 21 25
E135	VOLTAGE=8.0V	PP SPKAMP SW	16
E136	VOLTAGE=8.0V	PP I19 VBOOST	16
E137	VOLTAGE=1.8V	PP SPKAMP FILT	16
E138	VOLTAGE=1.8V	PP SPKAMP IDO FILT	16
E139	VOLTAGE=5.0V	PP LED DRV LX	16
E140	VOLTAGE=5.0V	PP LED BOOST OUT	16
E141	VOLTAGE=2.7V	PP BB VDD 2V7 CONN	18
E142	VOLTAGE=1.8V	PP CODEC TO MIC1 BIAS CONN	18
E143	VOLTAGE=4.6V	PP E75 TO TRISTAR ACC2	17 18
E144	VOLTAGE=4.6V	PP E75 TO TRISTAR ACC2 CONN	18 25
E145	VOLTAGE=1.8V	PP1V8 LCM CONN	20
E146	VOLTAGE=22.0V	PP LCM BL ANODE CONN	20 25
E147	VOLTAGE=-5.7V	PP5V7 LCM AVDDN CONN	20
E148	VOLTAGE=5.7V	PP5V7 LCM AVDDH CONN	20
E149	VOLTAGE=2.95V	PP IDO13 GPS	51
E150	VOLTAGE=1.8V	PP1V8 MESA	21
E151	VOLTAGE=16.5V	PP16V5 MESA CONN	21
E152	VOLTAGE=5.0V	PP TRISTAR PIN	17
E153	VOLTAGE=1.2V	PP1V2 FCAM CONN	23
E154	VOLTAGE=1.8V	PP1V8 FCAM CONN	23
E155	VOLTAGE=3.0V	PP2V85 CAM VDD	23 25
E156	VOLTAGE=1.8V	PP2V85 FCAM AVDD CONN	23
E157	VOLTAGE=1.8V	PP CHIMULUS VDDCORE	24
E158	VOLTAGE=1.2V	PP CHIMULUS VDDANA	24
E159	VOLTAGE=13.5V	PP SAGE TO TOUCH VCPH CONN	24
E160	VOLTAGE=-12V	PP SAGE TO TOUCH VCPH CONN	24
E161	VOLTAGE=13.5V	PP SAGE TO TOUCH VCPH	24
E162	VOLTAGE=-12V	PP SAGE TO TOUCH VCPH	24
E163	VOLTAGE=-12V	PP SAGE VCPH F	24
E164	VOLTAGE=5.7V	PP SAGE LX	24
E165	VOLTAGE=17.0V	PP SAGE LX	24
E166	VOLTAGE=1.8V	PP PMU VREF	13
E167	VOLTAGE=14V	PP SAGE VBST OUTH	24
E168	VOLTAGE=5.0V	PP TIGRIS VBIUS DET	14
E169	VOLTAGE=2.5V	PP PMU VDD REF	13
E170	VOLTAGE=1.8V	PP EXTMIC BIAS	10
E171	VOLTAGE=1.8V	PP1V8 XTAL	2
E172	VOLTAGE=1.8V	PP PMU VDD RTC	13
E173	VOLTAGE=3.80V	PP BATT VCC	14 16 25 41 46 47
E174	VOLTAGE=1.8V	PP1V8 MESA CONN	21
E175	VOLTAGE=3.0V	PP3V0 PROX CONN	11
E176	VOLTAGE=1.0V	PP0V95 FIXED SOC	4 7 12
E177	VOLTAGE=1.0V	PP0V95 FIXED SOC PCIE	7
E178	VOLTAGE=1.2V	PP1V2 PLL	2
E179	VOLTAGE=1.0V	PP BUCK5 LX1	12
E180	VOLTAGE=1.0V	PP VAR SOC	5 12
E181	VOLTAGE=3.00V	PP DN65 SIM PMU	53 55
E182	VOLTAGE=1.8V	PP1V8 HALL CONN	21
E183	VOLTAGE=1.8V	PP1V8 MESA GND	21
E184	VOLTAGE=5.0V	CHARGER LDO	14
E185	VOLTAGE=5.0V	PMID CAP	14

N56 SPECIFIC VOLTAGE PROPERTIES

E186	VOLTAGE=22.0V	PP WLED34 LX	15
E187	VOLTAGE=22.0V	PP LCM BL34 ANODE	15 20
E188	VOLTAGE=22.0V	PP LCM BL34 ANODE CONN	20 25
E189	VOLTAGE=0.2V	PP LCM BL CAT3	15 20
E190	VOLTAGE=0.2V	PP LCM BL CAT4	15 20
E191	VOLTAGE=0.2V	PP LCM BL CAT3 CONN	20 25
E192	VOLTAGE=0.2V	PP LCM BL CAT4 CONN	20 25
E193	VOLTAGE=-12V	PP SAGE TO TOUCH VCPH FILT	24
E194	VOLTAGE=2.0V	PP RCAM AF	12 23
E195	VOLTAGE=2.0V	PP RCAM AF CONN	23
E196	VOLTAGE=-14.0V	PP SAGE VBST OUTL	24
E197	VOLTAGE=-5.7V	PP5V7 SAGE AVDDN FILT	24
E198	VOLTAGE=2.0V	PP BUCK6 LX	12

PAGE TITLE SYSTEM:VOLTAGE PROPERTIES		
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N56 SPECIFIC

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BOOTSTRAPPING (BOARD_REV, BOARD_ID, BOOT_CFG, DISPLAY ID)

```
BOARD_REV[3:0]={GPIO34, GPIO35, GPIO36, GPIO37}
```

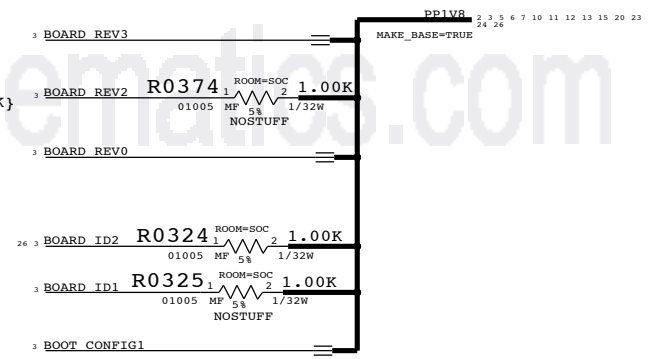
```
FLOAT=LOW, PULLUP=HIGH
1111 PROTO1
1110 PROTO1, ALTERNATE
1100 PROTO2
1011 EVT
1001 CARRIER BUILD <--- SELECTED
```

```
BOARD_ID[4:0]={GPIO29, GPIO16, SPI00_MISO, SPI0_MOSI, SPI0_SCLK}
```

```
FLOAT=LOW, PULLUP=HIGH
00100 N56, T133 MLB <--- SELECTED
00101 N56 DEV
00110 FIJI N61 MLB
```

```
BOOT_CONFIG[2:0]={GPIO28, GPIO25, GPIO18}
```

```
FLOAT=LOW, PULLUP=HIGH
000 SPI0
001 SPI0 TEST MODE
010 NAND
011 NAND TEST MODE <--- SELECTED
100 NVME
101 NVME TEST MODE
111 FAST SPI
```



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RADIO_MLB HIERARCHICAL SYMBOL

POWER

32	30	26	23	17	16	15	14	13	12	10	PP_VCC_MAIN	MAKE_BASE+TRUE	PP_VCC_MAIN	10	12	14	15	16	17	23	26	30	32

CELLULAR HOUSE KEEPING

3	AP_TO_RADIO_ON_L	MAKE_BASE+TRUE	144	RADIO_ON_L	31	33
3	BB_TO_AP_RESET_DET_L	MAKE_BASE+TRUE	145	BB_RESET_DET_L	31	36
13	PMU_TO_BB_RST_L	MAKE_BASE+TRUE	146	RF_PMIC_RESET_L	31	33
3	AP_TO_BB_RST_L	MAKE_BASE+TRUE	147	BB_RST_L	31	33
			190			
3	AP_TO_BB_WAKE_MODEM	MAKE_BASE+TRUE	150	AP_WAKE_MODEM	36	
3	BB_TO_PMU_HOST_WAKE_L	MAKE_BASE+TRUE	151	BB_WAKE_HOST_L	31	36
13	BB_TO_AP_IPC_GPIO	MAKE_BASE+TRUE	152	BB_IPC_GPIO	36	
16	BB_TO_LEDDRVM_GSM_BLANK	MAKE_BASE+TRUE	153	GSM_TXBURST_IND	36	
3	BB_TO_AP_IPC_GPIO1	MAKE_BASE+TRUE	154	BB_IPC_GPIO1	36	

HSIC IPC

2	50_AP_BI_BB_HSIC1_DATA	MAKE_BASE+TRUE	154	50_BB_HSIC_DATA	31	35
2	50_AP_BI_BB_HSIC1_STB	MAKE_BASE+TRUE	155	50_BB_HSIC_STROBE	31	35
3	AP_TO_BB_HOST_RDY	MAKE_BASE+TRUE	156	BB_HOST_RDY	31	36
3	BB_TO_AP_DEVICE_RDY	MAKE_BASE+TRUE	157	BB_DEVICE_RDY	31	36
3	BB_TO_AP_GPS_SYNC	MAKE_BASE+TRUE	158	BB_GPS_SYNC	31	36

UART IPC

3	AP_TO_BB_UART2_RTS_L	MAKE_BASE+TRUE	159	BB_UART_CTS_L	31	36
3	BB_TO_AP_UART2_CTS_L	MAKE_BASE+TRUE	160	BB_UART_RTS_L	31	36
17	AP_TO_BB_UART2_TXD	MAKE_BASE+TRUE	161	BB_UART_RXD	31	36
17	BB_TO_AP_UART2_RXD	MAKE_BASE+TRUE	162	BB_UART_TXD	31	36

AUDIO I2S

3	45_AP_TO_BB_I2S3_BCLK	MAKE_BASE+TRUE	163	BB_I2S_CLK	36	
3	AP_TO_BB_I2S3_DOUT	MAKE_BASE+TRUE	164	BB_I2S_RXD	31	36
3	BB_TO_AP_I2S3_DIN	MAKE_BASE+TRUE	165	BB_I2S_TXD	31	36
3	AP_TO_BB_I2S3_LRCLK	MAKE_BASE+TRUE	166	BB_I2S_WS	31	36

OSCAR UART

22	OSCAR_TO_BB_UART_TXD	MAKE_BASE+TRUE	167	BB_OTHER_RXD	31	36
22	BB_TO_OSCAR_UART_RXD	MAKE_BASE+TRUE	168	BB_OTHER_TXD	31	36

BB DEBUG INTERFACES

3	AP_TO_BB_COREDUMP	MAKE_BASE+TRUE	170	BB_CORE_DUMP	31	36
13	PMU_TO_BB_VBUS_DET	MAKE_BASE+TRUE	171	BB_USB_VBUS	31	35
17	90_TRISTAR_BI_BB_USB_N	MAKE_BASE+TRUE	172	90_BB_USB_N	31	35
17	90_TRISTAR_BI_BB_USB_P	MAKE_BASE+TRUE	173	90_BB_USB_P	31	35

RADIO ANTENNA CONTROL

18	PP_BB_VDD_2V7	MAKE_BASE+TRUE	175	PP_LDO14_RFSW	32	42	43	51
18	BB_GPIO0	MAKE_BASE+TRUE	176	BB_LAT_GPIO0	36			
18	BB_GPIO2	MAKE_BASE+TRUE	177	BB_LAT_GPIO2	36			
18	BB_GPIO3	MAKE_BASE+TRUE	178	BB_LAT_GPIO3	36			
18	BB_GPIO4	MAKE_BASE+TRUE	179	BB_LAT_GPIO4	36			

FCT TESTING

13	RADIO_TO_PMU_ADC_SMPS1	MAKE_BASE+TRUE	182	ADC_SMPS1	31	
13	RADIO_TO_PMU_ADC_PP_LDO11_VDDIO	MAKE_BASE+TRUE	183	ADC_PP_LDO11	31	
13	RADIO_TO_PMU_ADC_PP_LDO5_SIM	MAKE_BASE+TRUE	184	ADC_PP_LDO5	31	
13	RADIO_TO_PMU_ADC_SMPS4	MAKE_BASE+TRUE	185	ADC_SMPS4	31	

UPPER RADIO ANTENNA CONTROL

30	26	17	15	12	PP3V0_TRISTAR	MAKE_BASE+TRUE	PAC_VDD_3V0	54
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POWER

26	17	15	14	13	12	10	4	3	PP1V8_SDRAM	MAKE_BASE+TRUE	PP_WL_BT_VDDIO_AP	52

WLAN/BT HOUSE KEEPING

13	45_PMU_TO_WLAN_CLK32K	MAKE_BASE+TRUE	181	CLK32K_AP	31	52
13	PMU_TO_WLAN_REG_ON	MAKE_BASE+TRUE	182	WLAN_REG_ON	31	52
13	WLAN_TO_PMU_HOST_WAKE	MAKE_BASE+TRUE	183	HOST_WAKE_WLAN	31	52
13	PMU_TO_BT_REG_ON	MAKE_BASE+TRUE	184	BT_REG_ON	31	52
3	AP_TO_BT_WAKE	MAKE_BASE+TRUE	185	WAKE_BT	31	52
13	BT_TO_PMU_HOST_WAKE	MAKE_BASE+TRUE	186	HOST_WAKE_BT	52	

I9

3	AP_TO_WLAN_JTAG_SWCLK	MAKE_BASE+TRUE	187	WLAN_JTAG_SWCLK	31	52
3	AP_TO_WLAN_JTAG_SWDIO	MAKE_BASE+TRUE	188	WLAN_JTAG_SWDIO	31	52
13	WLAN_TO_PMU_PCIE_WAKE_L	MAKE_BASE+TRUE	189	WLAN_PCIE_WAKE_L	31	52
3	AP_TO_WLAN_DEVICE_WAKE	MAKE_BASE+TRUE	190	PCIE_DEV_WAKE	31	52
7	90_WLAN_TO_AP_PCIE1_RXDP_P	MAKE_BASE+TRUE	191	90_WLAN_PCIE_TDP	31	52
7	90_WLAN_TO_AP_PCIE1_RXDP_N	MAKE_BASE+TRUE	192	90_WLAN_PCIE_TDN	31	52
7	90_AP_TO_WLAN_PCIE1_TXDP_P	MAKE_BASE+TRUE	193	90_WLAN_PCIE_RDP	31	52
7	90_AP_TO_WLAN_PCIE1_TXDP_N	MAKE_BASE+TRUE	194	90_WLAN_PCIE_RDN	31	52
7	90_AP_TO_WLAN_PCIE1_REFCLK1_P	MAKE_BASE+TRUE	195	90_WLAN_PCIE_REFCLK_P	52	
7	90_AP_TO_WLAN_PCIE1_REFCLK1_N	MAKE_BASE+TRUE	196	90_WLAN_PCIE_REFCLK_N	52	
7	WLAN_TO_AP_PCIE1_CLKREQ_L	MAKE_BASE+TRUE	197	WLAN_PCIE_CLKREQ_L	31	52
7	AP_TO_WLAN_PCIE1_RST_L	MAKE_BASE+TRUE	198	WLAN_PCIE_PERST_L	31	52

WLAN HSIC IPC

3	WLAN_TO_AP_UART4_RXD	MAKE_BASE+TRUE	199	WLAN_UART_TXD	31	52
3	AP_TO_WLAN_UART4_TXD	MAKE_BASE+TRUE	200	WLAN_UART_RXD	31	52
3	WLAN_TO_AP_UART4_CTS_L	MAKE_BASE+TRUE	201	WLAN_UART_RTS_L	31	52
3	AP_TO_WLAN_UART4_RTS_L	MAKE_BASE+TRUE	202	WLAN_UART_CTS_L	31	52

BT UART IPC

3	AP_TO_BT_UART1_RTS_L	MAKE_BASE+TRUE	203	BT_UART_CTS_L	52	
3	BT_TO_AP_UART1_CTS_L	MAKE_BASE+TRUE	204	BT_UART_RTS_L	52	
3	AP_TO_BT_UART1_TXD	MAKE_BASE+TRUE	205	BT_UART_RXD	31	52
3	BT_TO_AP_UART1_RXD	MAKE_BASE+TRUE	206	BT_UART_TXD	31	52

BT AUDIO PCM


3	45_AP_TO_BT_I2S1_BCLK	MAKE_BASE+TRUE	207	BT_PCM_CLK	52	
3	AP_TO_BT_I2S1_DOUT	MAKE_BASE+TRUE	208	BT_PCM_IN	52	
3	BT_TO_AP_I2S1_DIN	MAKE_BASE+TRUE	209	BT_PCM_OUT	52	
3	AP_TO_BT_I2S1_LRCLK	MAKE_BASE+TRUE	210	BT_PCM_SYNC	52	

OSCAR STATES

22	OSCAR_TO_RADIO_CONTEXT_A	MAKE_BASE+TRUE	211	OSCAR_CONTEXT_A	52	
22	OSCAR_TO_RADIO_CONTEXT_B	MAKE_BASE+TRUE	212	OSCAR_CONTEXT_B	52	

STOCKHOLM

3	STOCKHOLM_TO_AP_UART3_CTS_L	MAKE_BASE+TRUE	213	STOCKHOLM_RTS_L	31	53
3	AP_TO_STOCKHOLM_UART3_RTS_L	MAKE_BASE+TRUE	214	STOCKHOLM_CTS_L	31	53
3	STOCKHOLM_TO_AP_UART3_RXD	MAKE_BASE+TRUE	215	STOCKHOLM_UART_TXD	31	53
3	AP_TO_STOCKHOLM_UART3_TXD	MAKE_BASE+TRUE	216	STOCKHOLM_UART_RXD	31	53
3	AP_TO_STOCKHOLM_DWLD_REQ	MAKE_BASE+TRUE	217	STOCKHOLM_FW_DWLD_REQ	53	
15	STOCKHOLM_TO_PMU_HOST_WAKE	MAKE_BASE+TRUE	218	STOCKHOLM_HOST_WAKE	31	53
3	AP_TO_STOCKHOLM_EN	MAKE_BASE+TRUE	219	STOCKHOLM_ENABLE	53	
3	PP3V0_TRISTAR	MAKE_BASE+TRUE	220	STOCKHOLM_VDD_MUX_3V0	55	
3	AP_TO_STOCKHOLM_SIM_SEL	MAKE_BASE+TRUE	221	STOCKHOLM_SIM_SEL	55	
25	AP_TO_STOCKHOLM_ANT	MAKE_BASE+TRUE	222	STOCKHOLM_ANT	53	

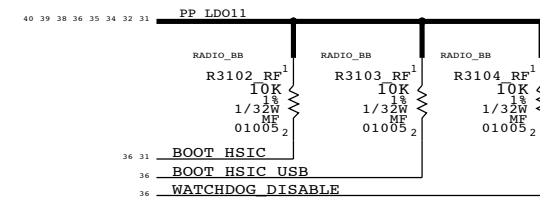
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AP INTERFACE & DEBUG CONNECTORS

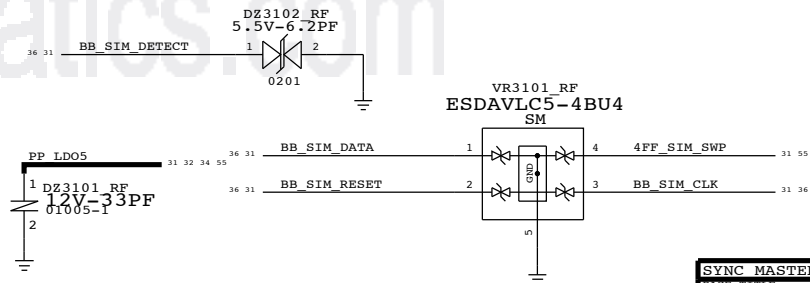
PROBE POINTS

PP3105 RF P2MM-NSM SM 1 CLK32K AP 30 52 WIFI_BT	PP3121 RF P2MM-NSM SM 1 STOCKHOLM_HOST_WAKE 30 53 RADIO_STOCKHOLM	PP3115 RF P4MM-NSM SM 1 50_BB_HSIC_STROBE 30 35 SIM_DEBUG	PP3130 RF P4MM-NSM SM 1 BB_JTAG_RST_L 30 35 SIM_DEBUG	PP3141 RF P4MM-NSM SM 1 BB_UART_TXD 30 36 SIM_DEBUG	PP3170 RF P4MM-NSM SM 1 RFFE1_CLK 36 40 41 42 43 44 45 RF_DEBUG
PP3113 RF P4MM-NSM SM 1 BB_COEX_UART_RXD 36 52 WIFI_BT	PP3122 RF P4MM-NSM SM 1 BB_REQUEST_XO_CLK 33 53 SIM_DEBUG	PP3116 RF P4MM-NSM SM 1 50_BB_HSIC_DATA 30 35 SIM_DEBUG	PP3131 RF P4MM-NSM SM 1 BB_JTAG_TCK 30 35 SIM_DEBUG	PP3142 RF P4MM-NSM SM 1 BB_UART_RXD 30 36 SIM_DEBUG	PP3171 RF P4MM-NSM SM 1 RFFE1_DATA 36 40 41 42 43 44 45 RF_DEBUG
PP3114 RF P4MM-NSM SM 1 BB_COEX_UART_TXD 36 52 WIFI_BT	PP3123 RF P2MM-NSM SM 1 STOCKHOLM_UART_RXD 30 53 RADIO_STOCKHOLM	PP3101 RF P4MM-NSM SM 1 BB_DEBUG_ERROR 36 SIM_DEBUG	PP3132 RF P4MM-NSM SM 1 BB_JTAG_TMS 30 35 SIM_DEBUG	PP3143 RF P4MM-NSM SM 1 BB_UART_RTS_L 30 36 SIM_DEBUG	PP3172 RF P4MM-NSM SM 1 RFFE2_CLK 36 46 47 49 RF_DEBUG
PP3119 RF P2MM-NSM SM 1 BT_UART_TXD 30 52 WIFI_BT	PP3124 RF P2MM-NSM SM 1 STOCKHOLM_UART_TXD 30 53 RADIO_STOCKHOLM	PP3102 RF P4MM-NSM SM 1 RF_PMIC_RESET_L 30 33 SIM_DEBUG	PP3133 RF P4MM-NSM SM 1 BB_JTAG_TDO 30 35 SIM_DEBUG	PP3144 RF P4MM-NSM SM 1 BB_UART_CTS_L 30 36 SIM_DEBUG	PP3173 RF P4MM-NSM SM 1 RFFE2_DATA 36 46 47 49 RF_DEBUG
PP3120 RF P2MM-NSM SM 1 BT_UART_RXD 30 52 WIFI_BT	PP3125 RF P2MM-NSM SM 1 STOCKHOLM_CTS_L 30 53 RADIO_STOCKHOLM	PP3103 RF P4MM-NSM SM 1 PS_HOLD_PMIC 33 SIM_DEBUG	PP3134 RF P4MM-NSM SM 1 BB_JTAG_TDI 30 35 SIM_DEBUG	PP3145 RF P4MM-NSM SM 1 BB_HOST_RDY 30 36 SIM_DEBUG	PP3175 RF P4MM-NSM SM 1 BB_I2S_WS 30 36 RF_DEBUG
PP3152 RF P2MM-NSM SM 1 WAKE_BT 30 52 WIFI_BT	PP3126 RF P2MM-NSM SM 1 STOCKHOLM_RTS_L 30 53 RADIO_STOCKHOLM	PP3127 RF P4MM-NSM SM 1 PMIC_RESOUT_L 33 35 SIM_DEBUG	PP3135 RF P4MM-NSM SM 1 BB_JTAG_TRST_L 30 35 SIM_DEBUG	PP3146 RF P4MM-NSM SM 1 BB_DEVICE_RDY 30 36 SIM_DEBUG	PP3176 RF P4MM-NSM SM 1 BB_I2S_RXD 30 36 RF_DEBUG
PP3153 RF P2MM-NSM SM 1 WLAN_REG_ON 30 52 WIFI_BT	PP3128 RF P4MM-NSM SM 1 PP_PN65_VCC_SIM 53 SIM_DEBUG	PP3104 RF P4MM-NSM SM 1 MDM_CLK 33 35 SIM_DEBUG	PP3136 RF P4MM-NSM SM 1 BB_DEBUG_STATUS 36 SIM_DEBUG	PP3147 RF P4MM-NSM SM 1 BB_GPS_SYNC 30 36 SIM_DEBUG	PP3177 RF P4MM-NSM SM 1 BB_I2S_TXD 30 36 RF_DEBUG
PP3154 RF P4MM-NSM SM 1 BT_REG_ON 30 52 WIFI_BT	PP3174 RF P4MM-NSM SM 1 STOCKHOLM_SIM_SWP 53 55 SIM_DEBUG	PP3109 RF P4MM-NSM SM 1 PP_LDO11 31 32 34 35 36 38 39 40 SIM_DEBUG	PP3137 RF P4MM-NSM SM 1 BB_CORE_DUMP 30 36 SIM_DEBUG	PP3148 RF P4MM-NSM SM 1 BB_WAKE_HOST_L 30 36 SIM_DEBUG	PP3178 RF P4MM-NSM SM 1 BB_OTHER_TXD 30 36 RF_DEBUG
PP3155 RF P2MM-NSM SM 1 HOST_WAKE_WLAN 30 52 WIFI_BT	PP3129 RF P4MM-NSM SM 1 REF_CLK_FROM_BB 33 53 SIM_DEBUG	PP3110 RF P4MM-NSM SM 1 RADIO_ON_L 30 33 SIM_DEBUG	PP3138 RF P4MM-NSM SM 1 BB_USB_VBUS 30 35 SIM_DEBUG	PP3149 RF P4MM-NSM SM 1 BB_RESET_DET_L 30 36 SIM_DEBUG	PP3179 RF P4MM-NSM SM 1 BB_OTHER_RXD 30 36 RF_DEBUG
PP3156 RF P2MM-NSM SM 1 WLAN_PCIE_WAKE_L 30 52 WIFI_BT	PP3160 RF P4MM-NSM SM 1 DS_DS_SIM_CLK 35 55 SIM_DEBUG	PP3111 RF P4MM-NSM SM 1 SPMI_DATA 33 35 SIM_DEBUG	PP3139 RF P4MM-NSM SM 1 90_BB_USB_N 30 35 SIM_DEBUG	PP3150 RF P4MM-NSM SM 1 BB_RST_L 30 33 SIM_DEBUG	PP3182 RF P4MM-NSM SM 1 RFFE2_CLK_BUFFER 36 54 RF_DEBUG
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PP3159 RF P4MM-NSM SM 1 PCIE_DEV_WAKE 30 52 WIFI_BT	PP3186 RF P4MM-NSM SM 1 DS_DS_SIM_DETECT 35 SIM_DEBUG				
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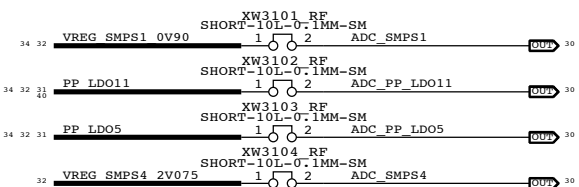
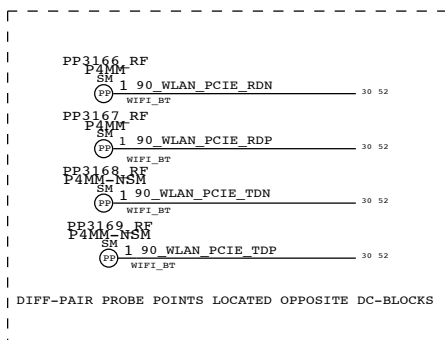
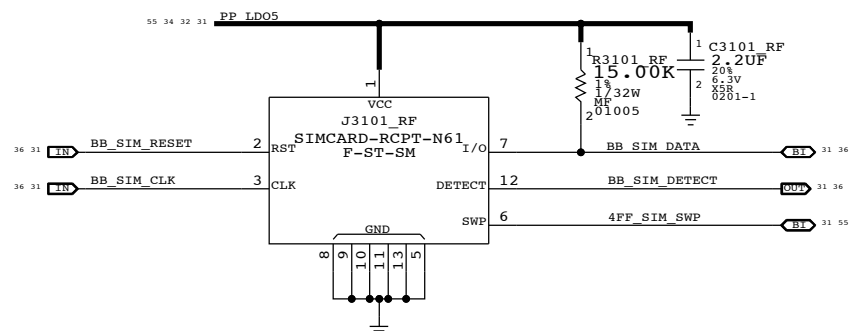
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197S0598	197S0593	ALTERNATE	Y3301_RF	AVX 19.2MHZ XTAL
138S00005	138S00003	ALTERNATE	C3216_RF	15UF CAPACITOR
138S0739	138S0706	ALTERNATE	C4207_RF	1.0UF CAPACITOR
138S0945	138S0706	ALTERNATE	C4207_RF	1.0UF CAPACITOR
138S1103	138S0719	ALTERNATE	C4007_RF	4.7UF CAPACITOR
339S0231	339S0228	ALTERNATE	U5201_RF	CORONA MODULE USI
339S0242	339S0228	ALTERNATE	U5201_RF	CORONA MODULE TDK
155S00024	155S0950	ALTERNATE	F_TRI_RF	TRIPLEXER BIN2



SIM CARD ESD PROTECTION



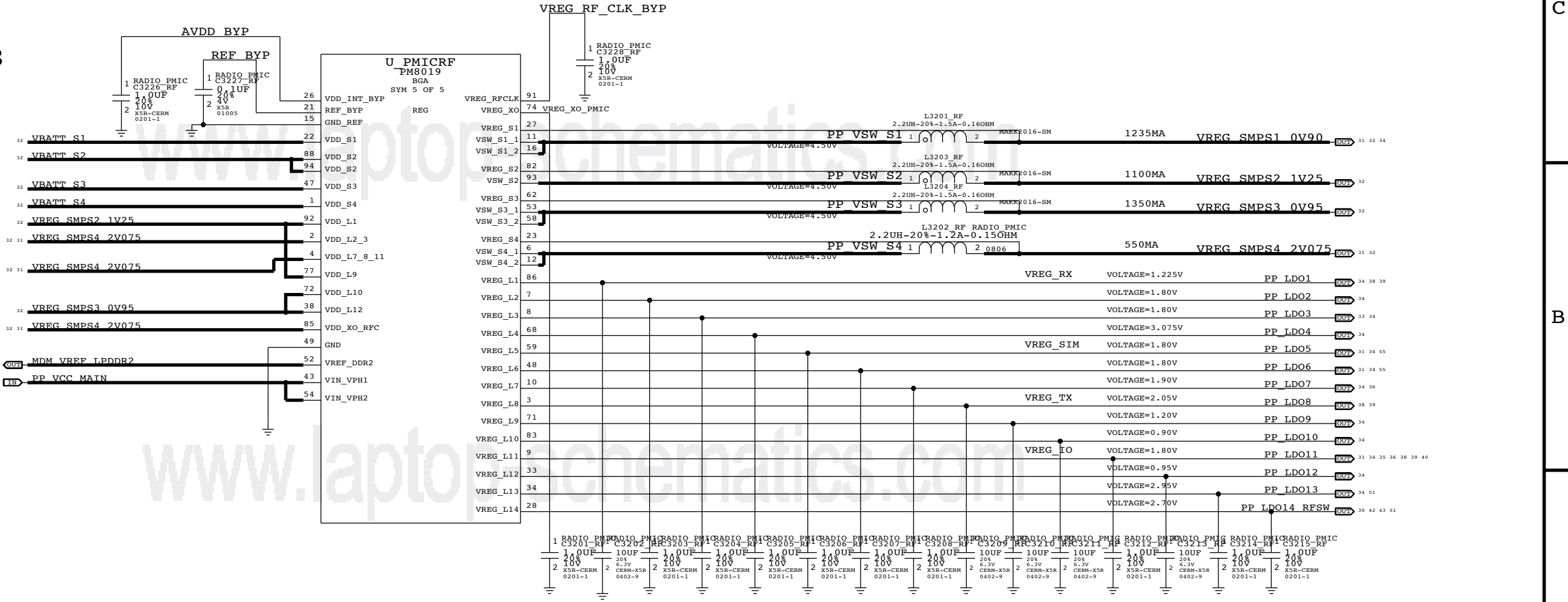
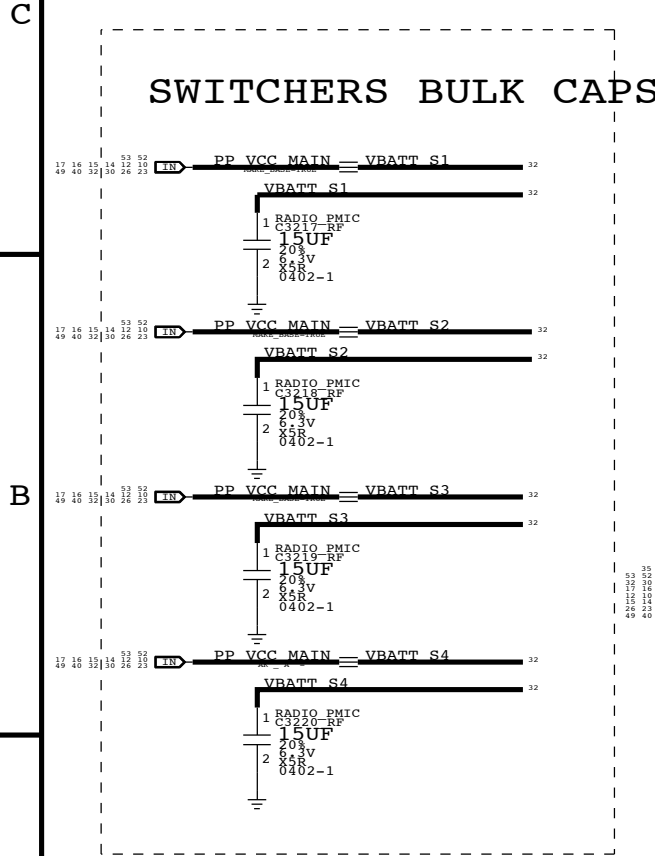
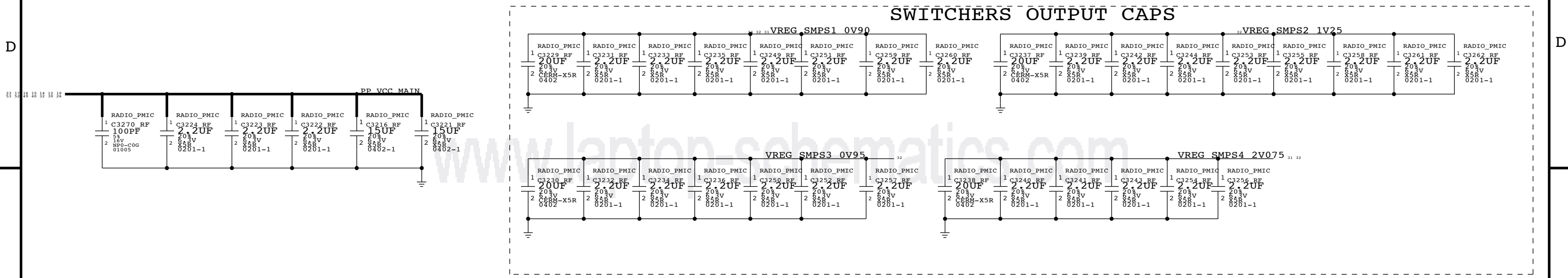
SIM CARD CONNECTOR



SYNC MASTER=N56 RADIO MLB		SYNC DATE=05/07/2014	
AP INTERFACE & DEBUG CONNECTORS			
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		REVISION	6.0.0
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BASEBAND PMU (1 OF 2)

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BASEBAND PMU (1 OF 2)

Apple Inc.

051-0517 D

6.0.0

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BASEBAND PMU (2 OF 2)

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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

D

D

C

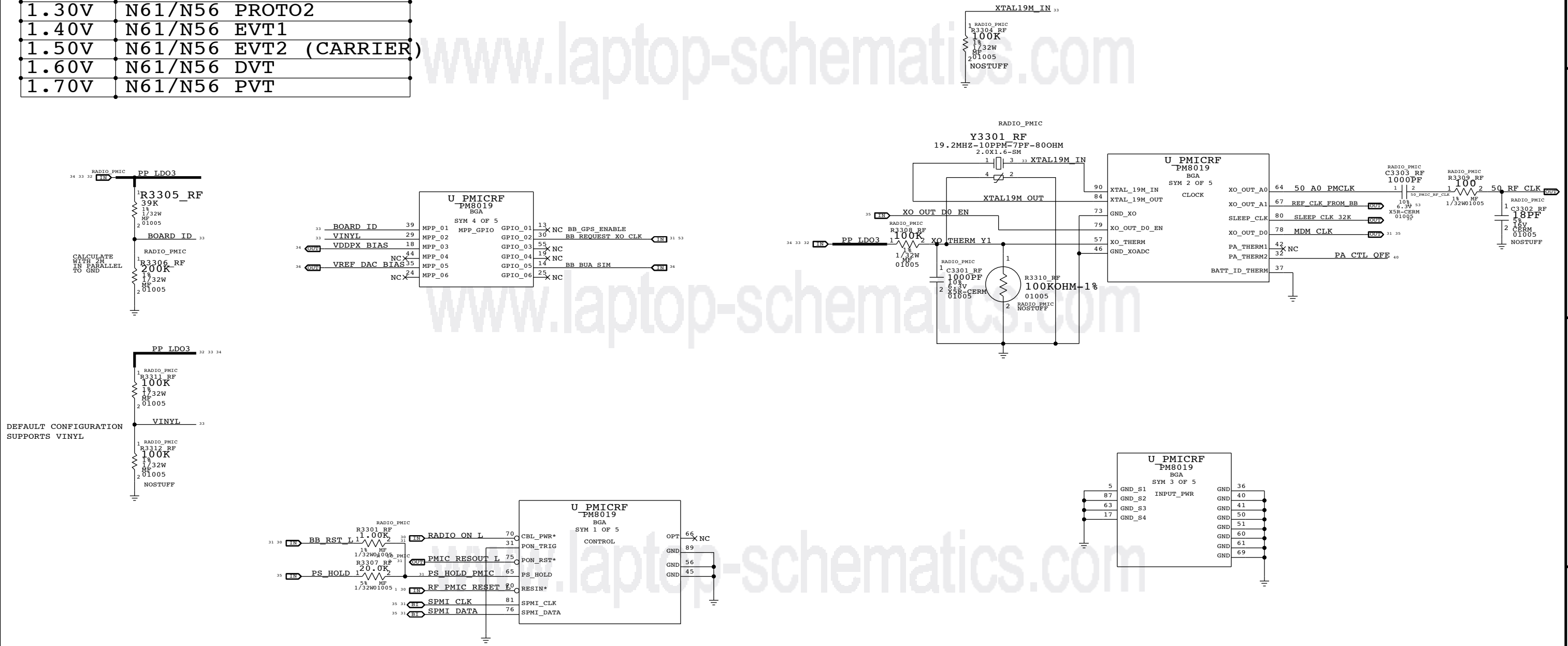
C

B

B

A

A

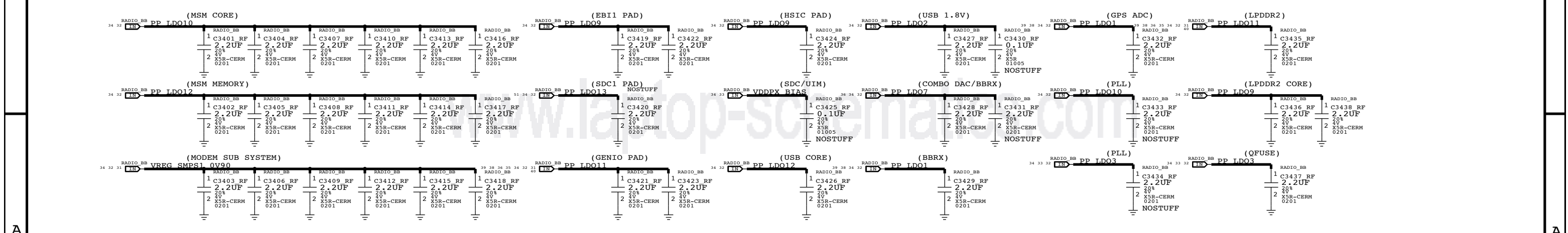
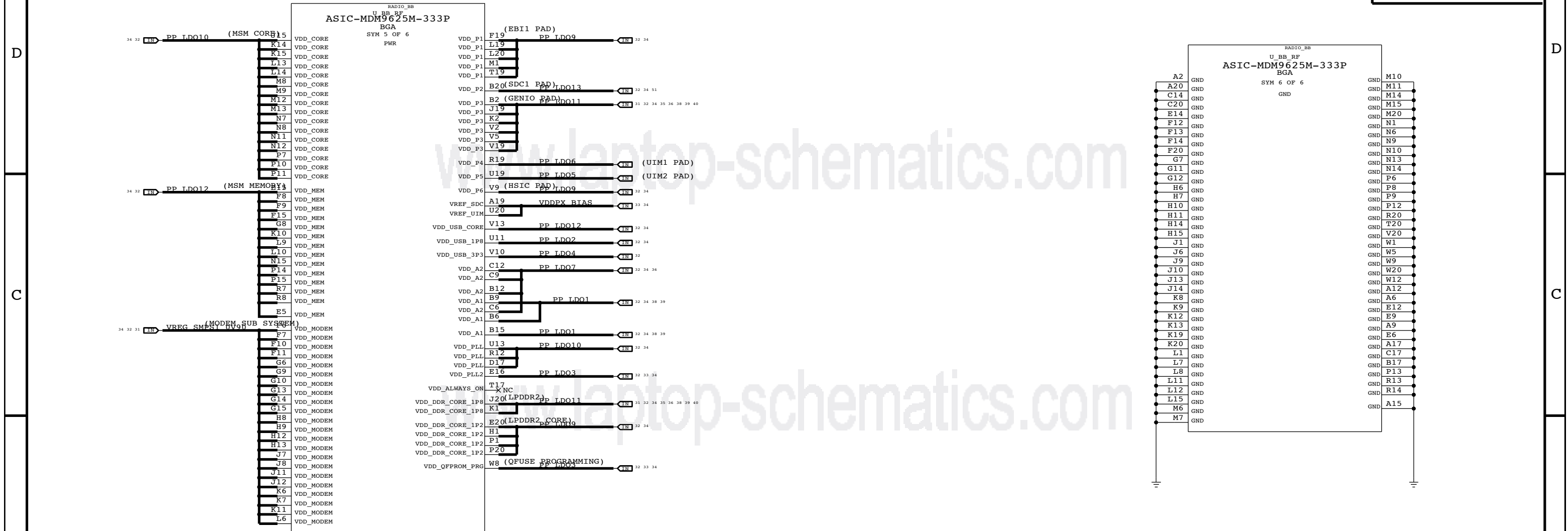


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SHEET: 33 OF 55	SIZE:

BASEBAND (1 OF 3)

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C538
R500
L500
U502

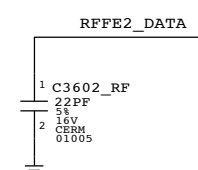
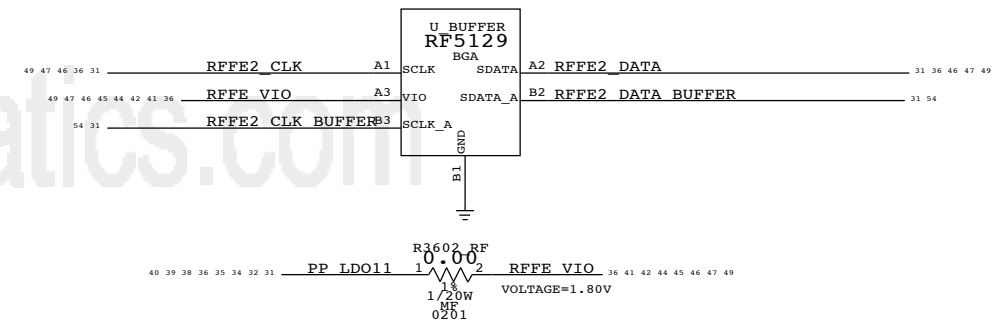
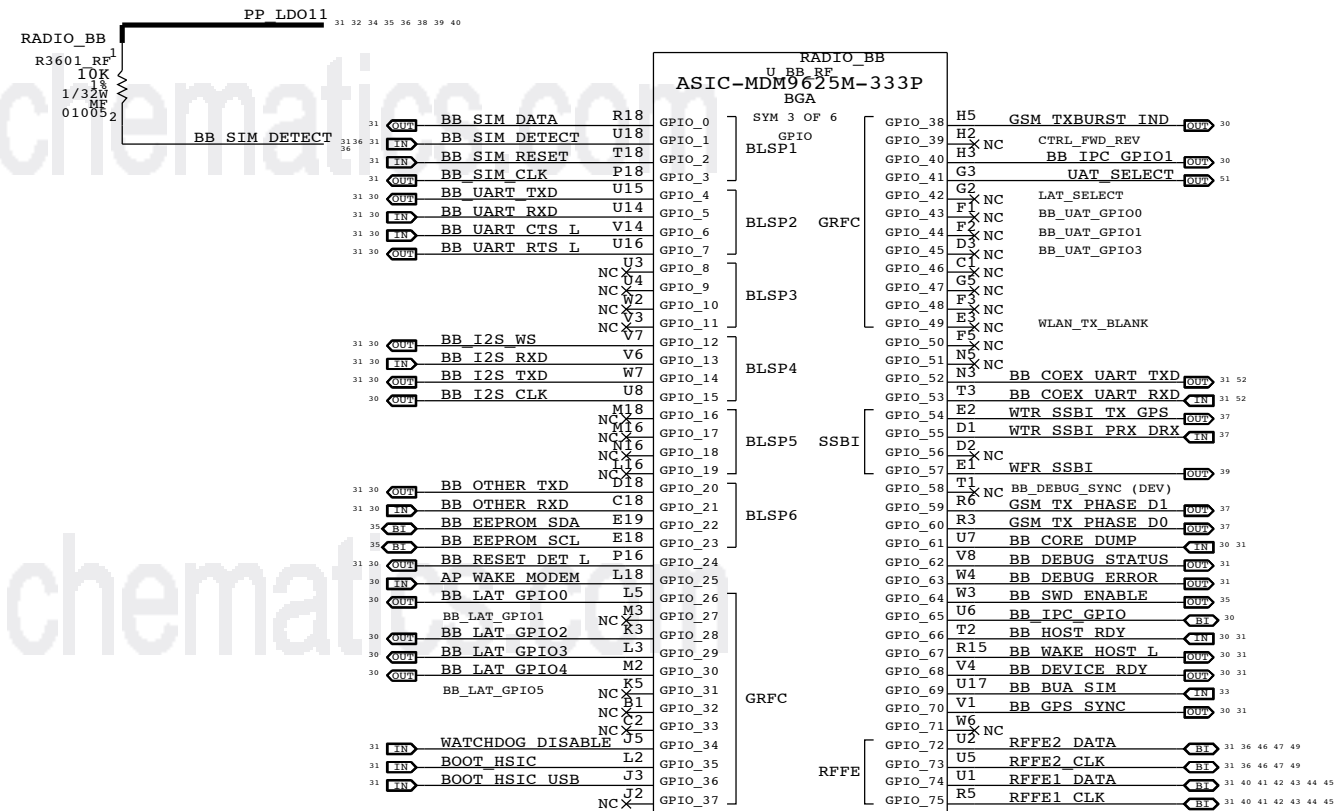
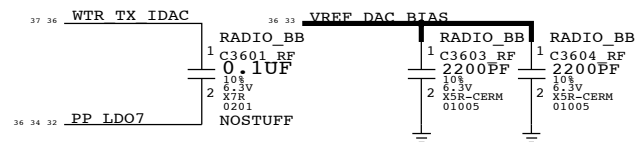
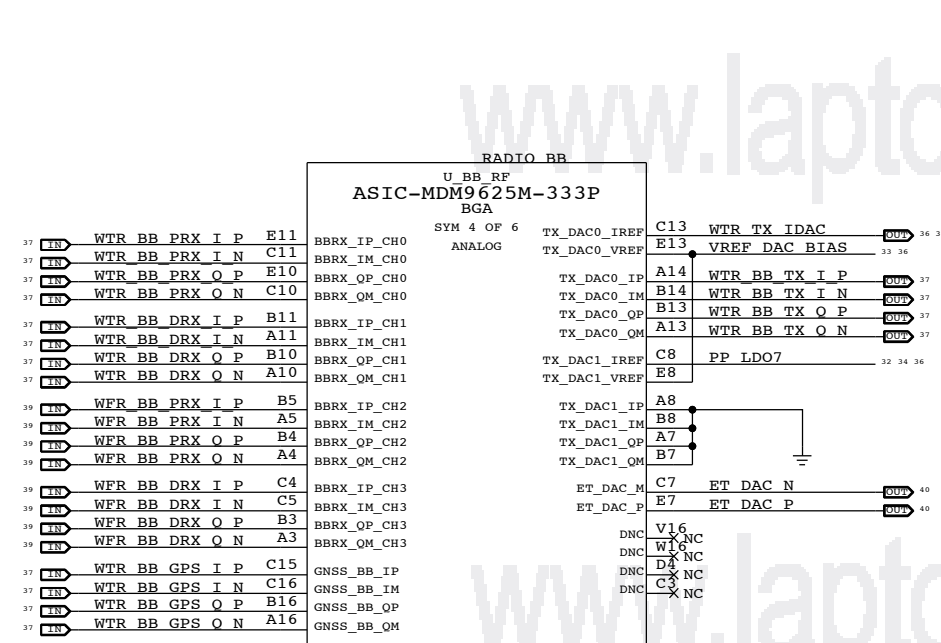


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BASEBAND (3 OF 3)

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C704
R700
L700
U702



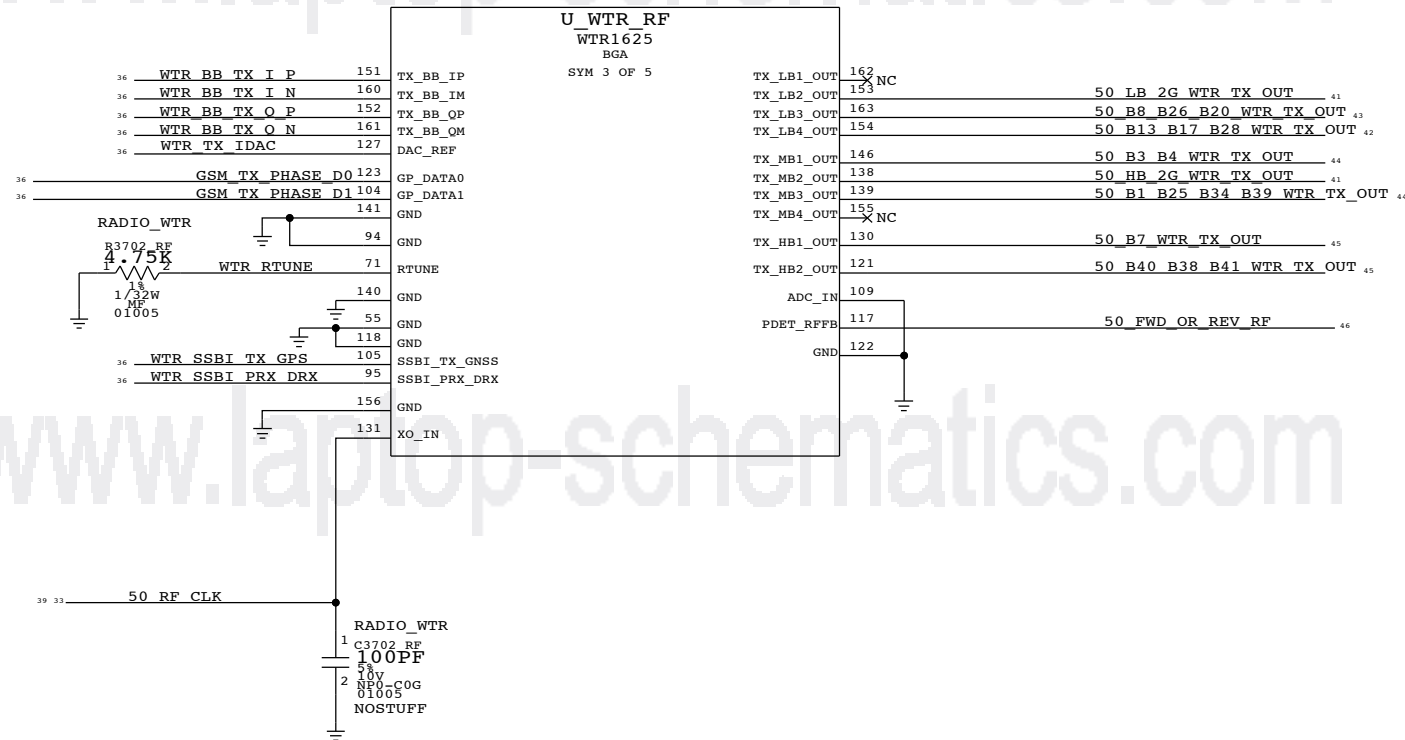
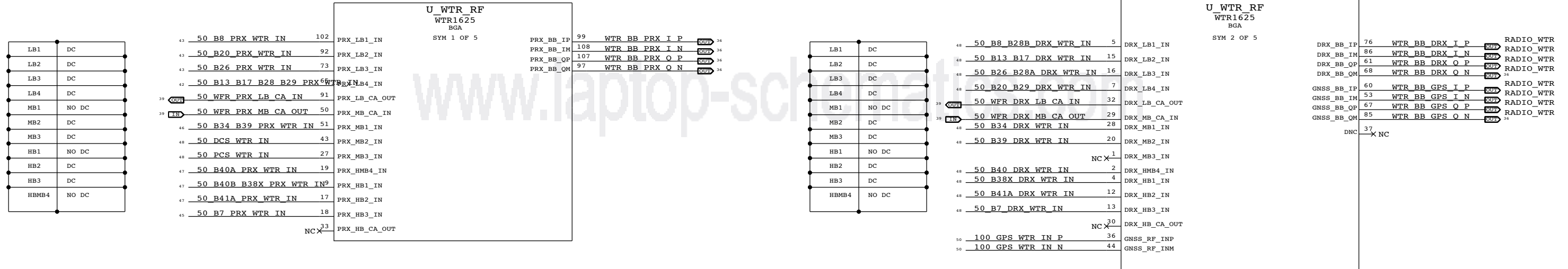
MOBILE DATA MODEM (2 OF 2)

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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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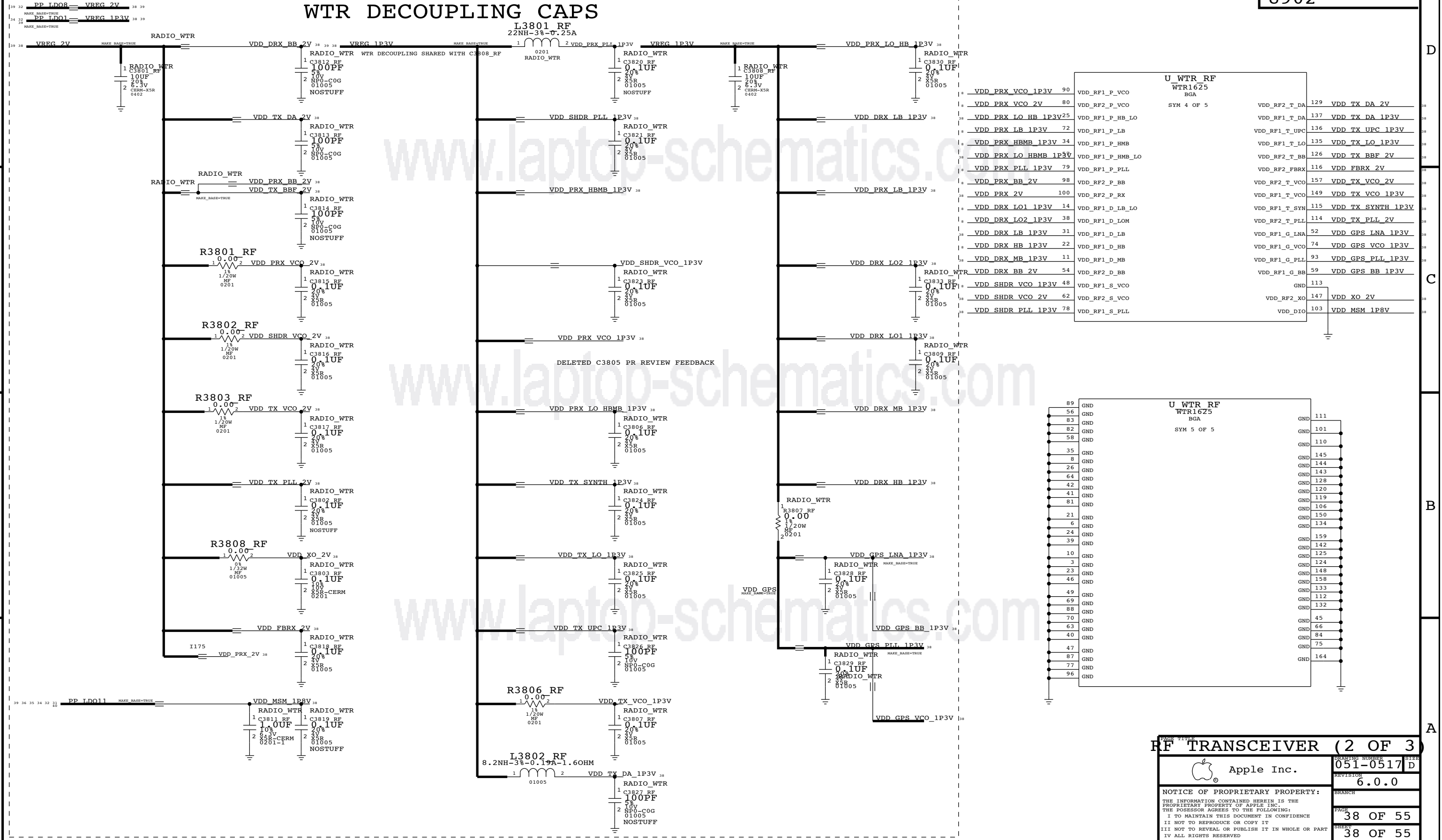
WTR TRANSCEIVER (2 OF 2)

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C934
R926
L3802 RF
U902

WTR DECOUPLING CAPS

L3801 RF
22NH-3%-0.25A



RF TRANSCEIVER (2 OF 3)

Apple Inc.

051-0517 D

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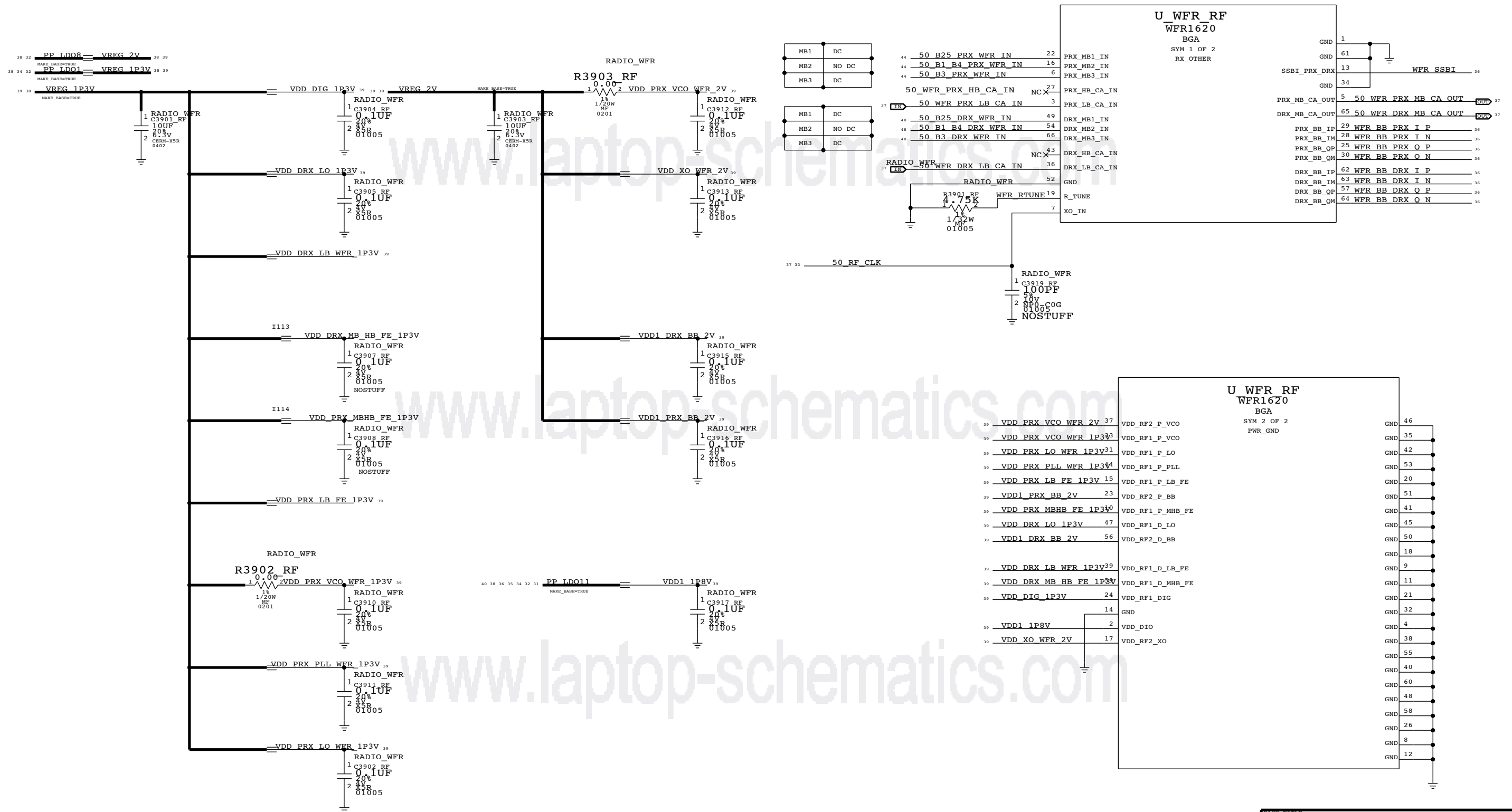
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WFR TRANSCEIVER

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C1019
R1016
L1000
U1002



RF TRANSCEIVER (3 OF 3)

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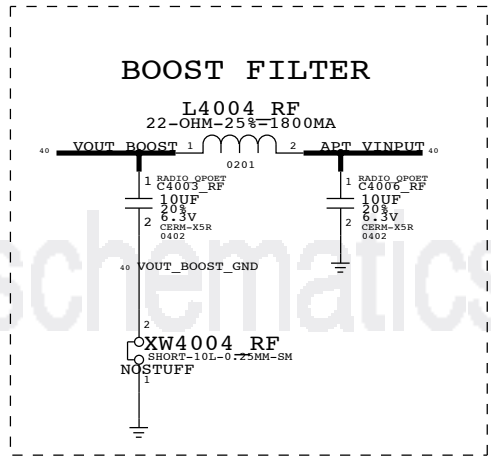
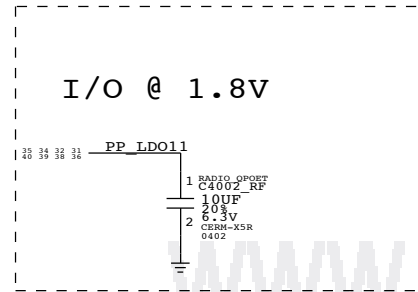
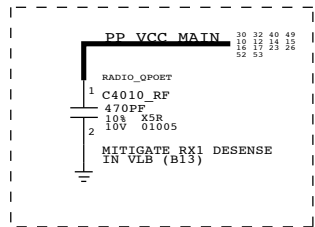
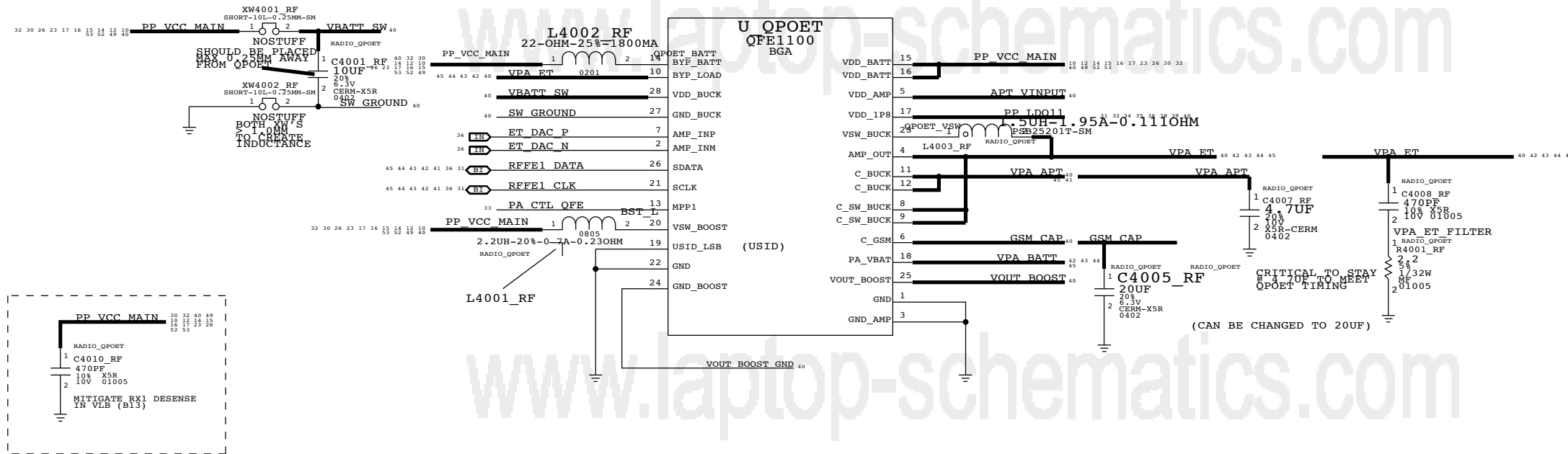
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QFE DCDC

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C1110
R1102
L1104
U1101

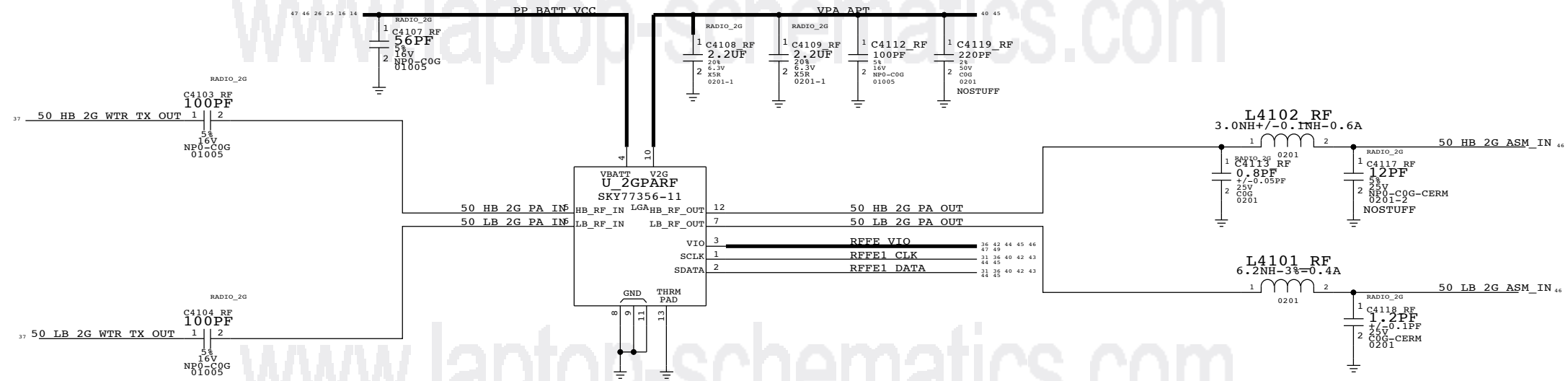


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2G PA

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C1208
R1200
L1204
U1201



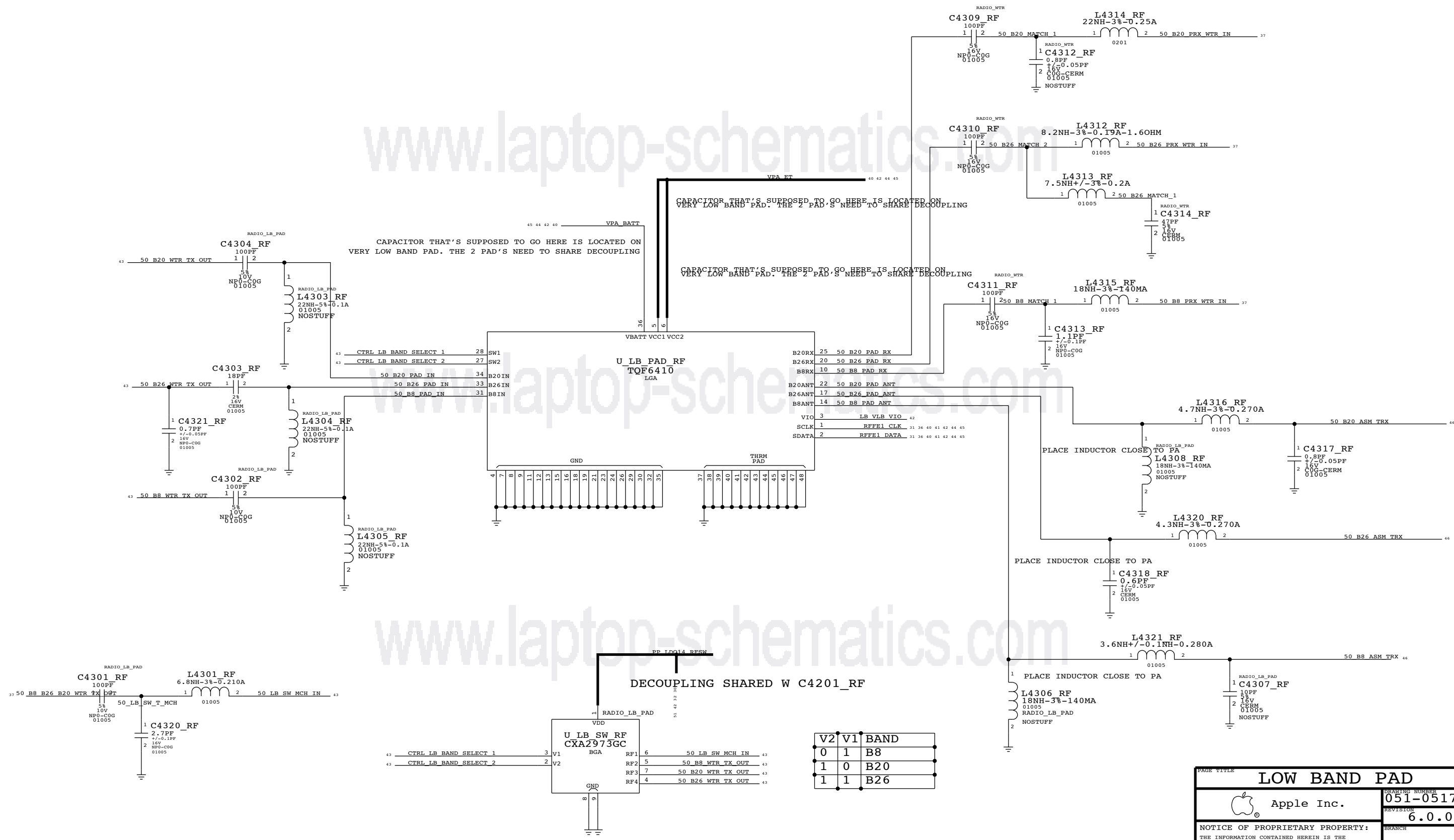
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LOW BAND PAD (B8, B26, B20)

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C4318 RF
R1400
L4322 RF
U1402

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DECOUPLING SHARED W C4201_RF

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

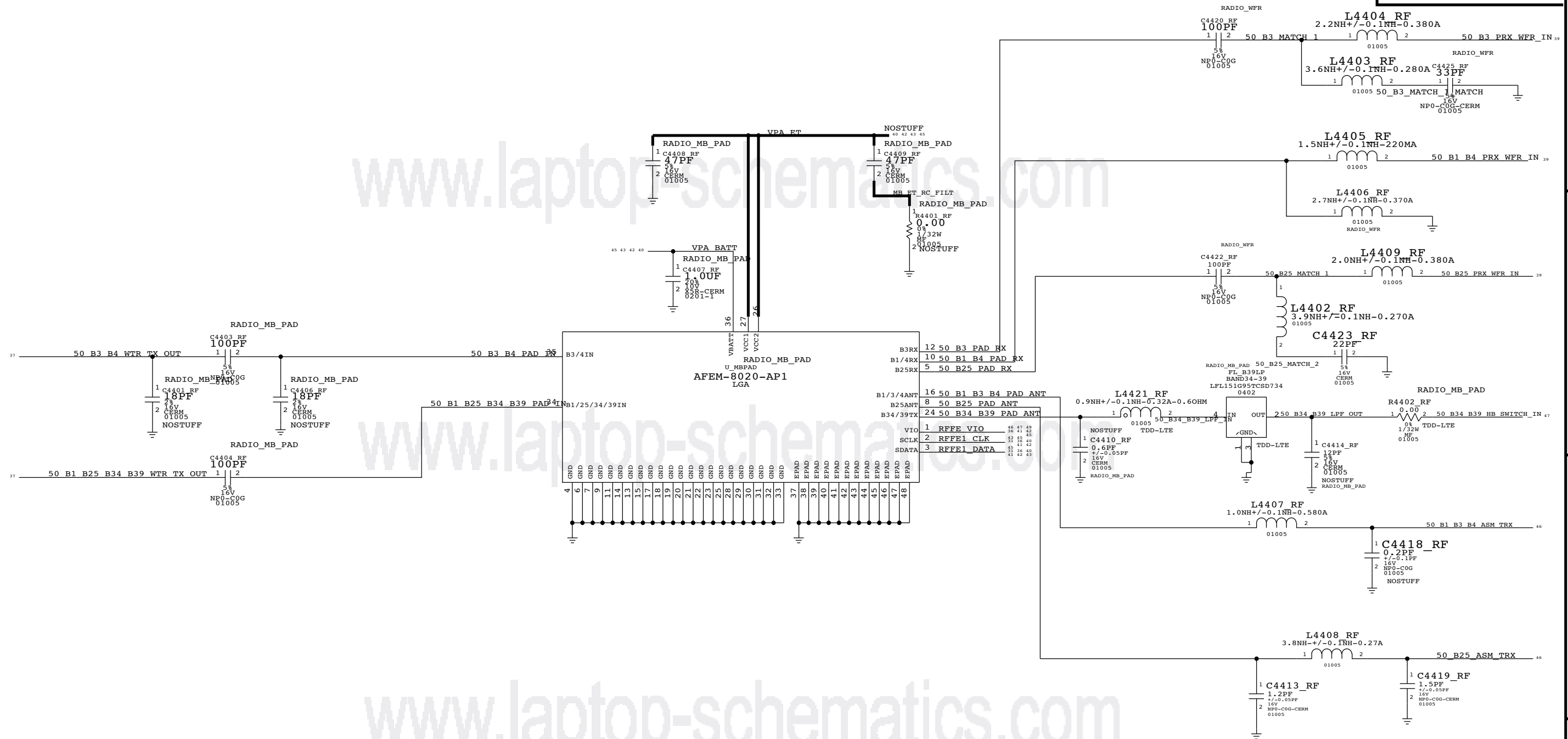
A

D

C

B

A



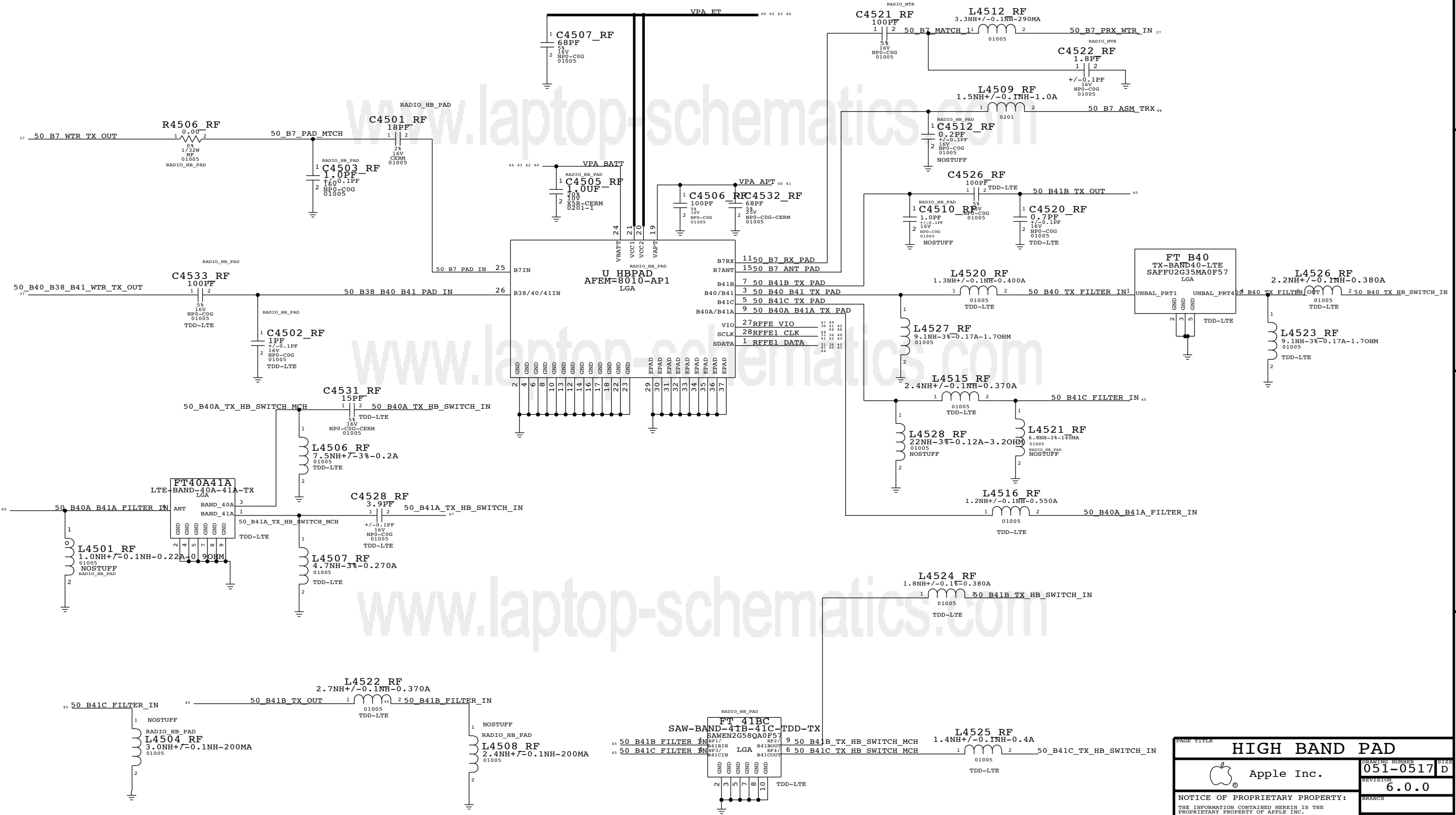
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HIGH BAND PAD (B7, B38, B40, B41, XGP)

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C4533 RF
R1600
L1616
U1601



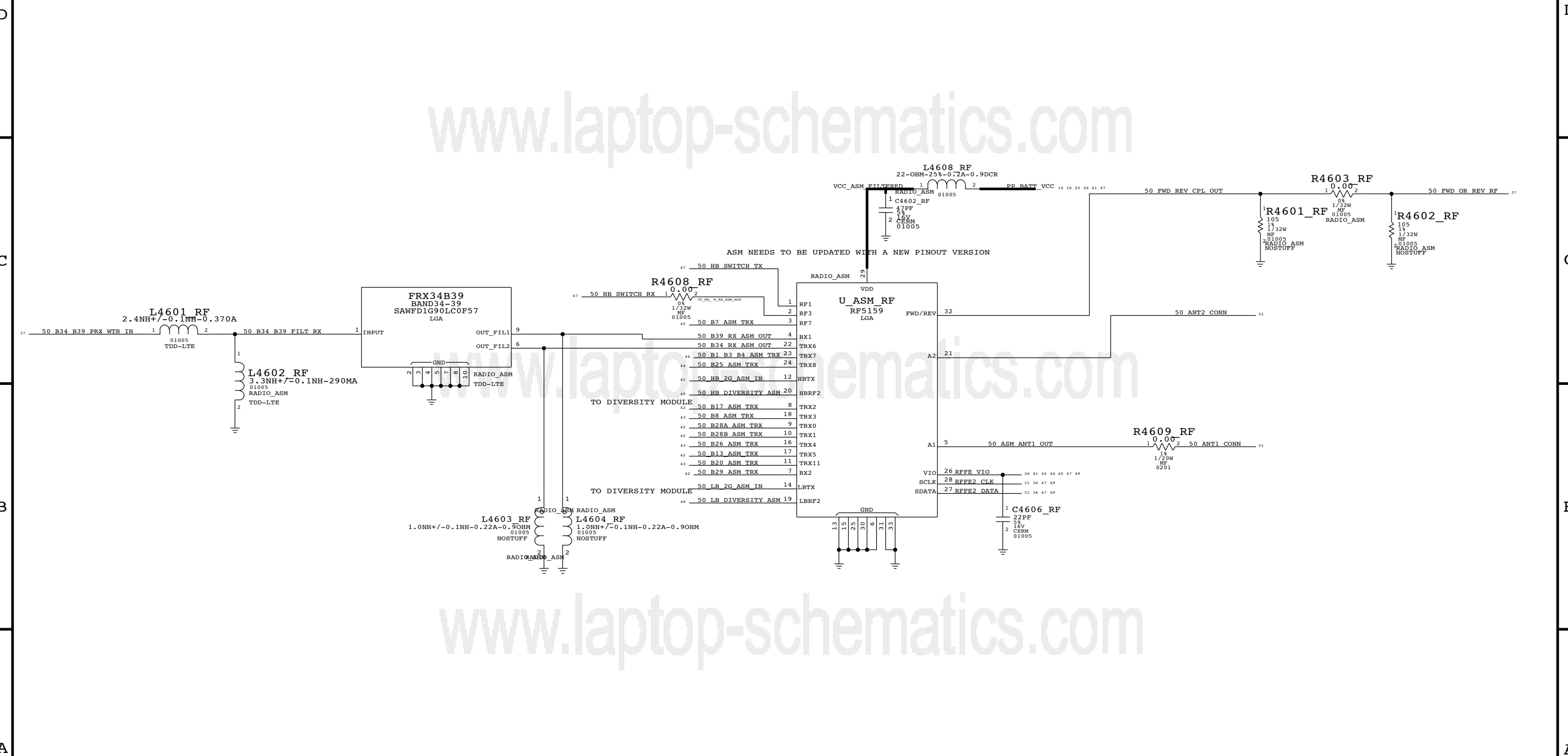
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ANTENNA SWITCH

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C1702
R1700
L4608 RF
U1702

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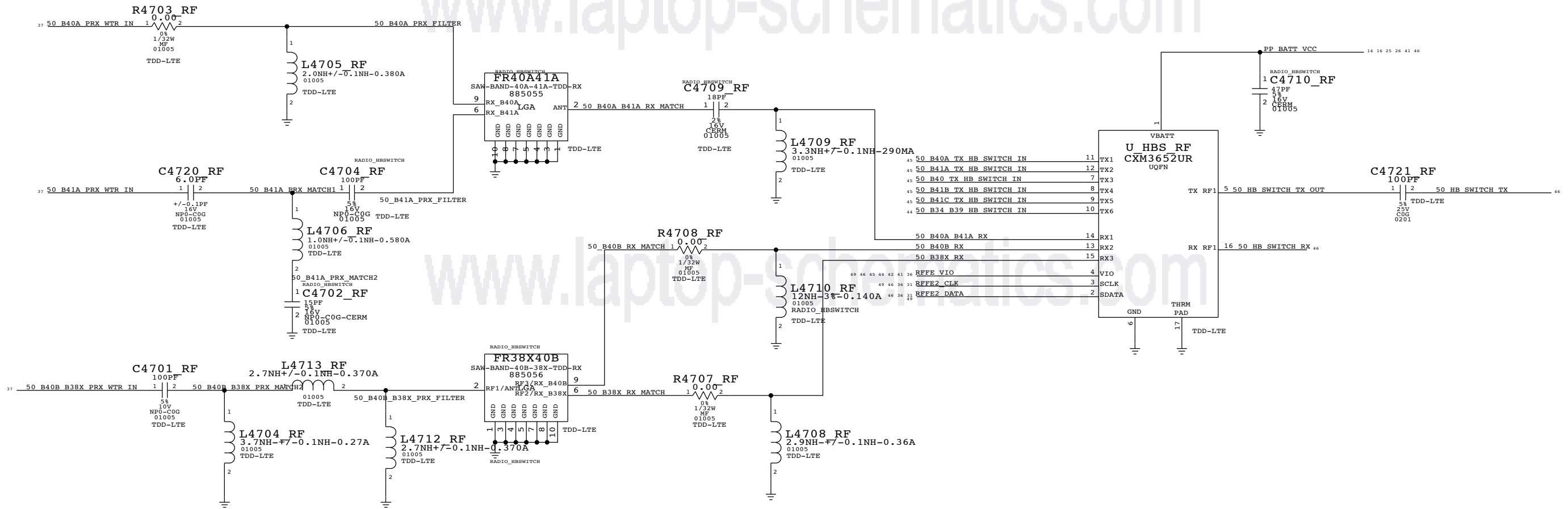
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HIGH BAND SWITCH

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RX DIVERSITY (1)

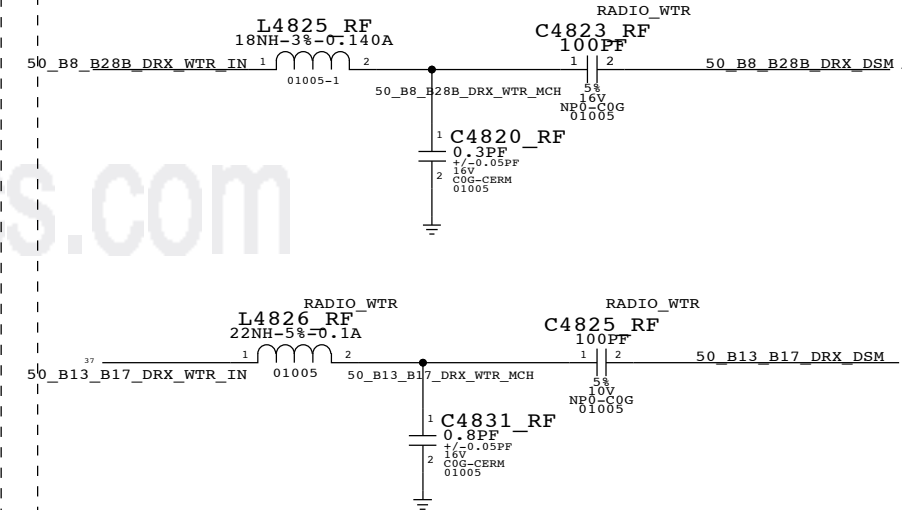
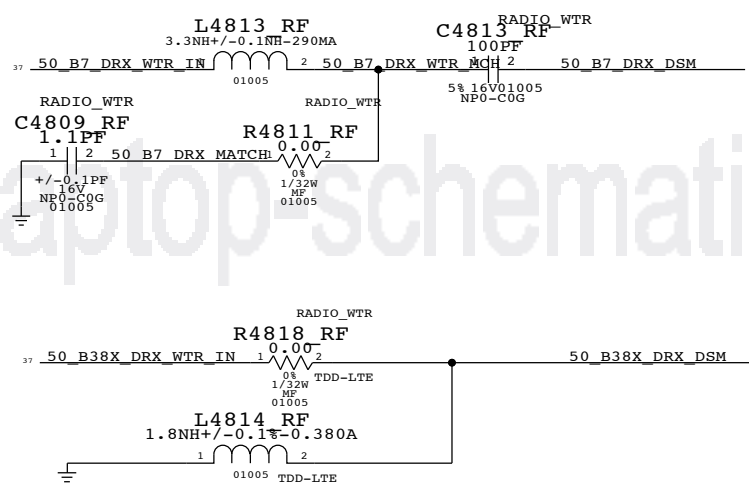
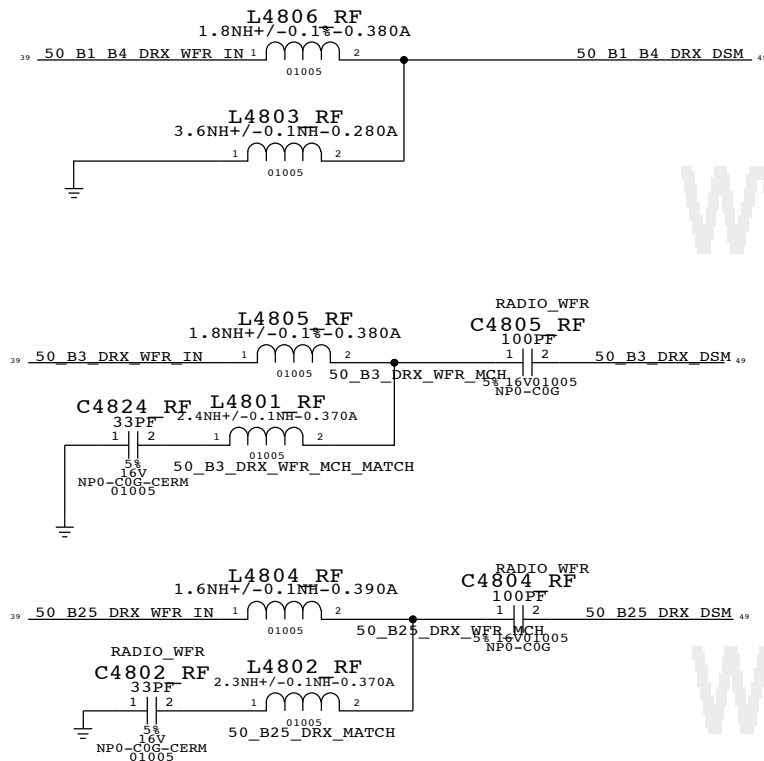
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C4826 RF
R1800
L1829
U1801

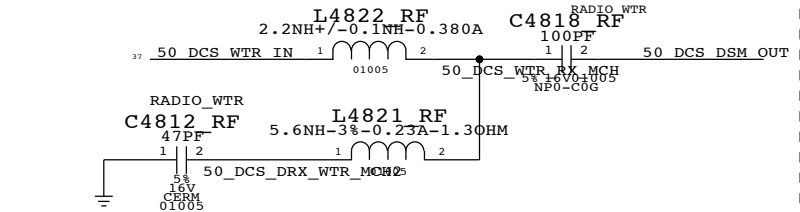
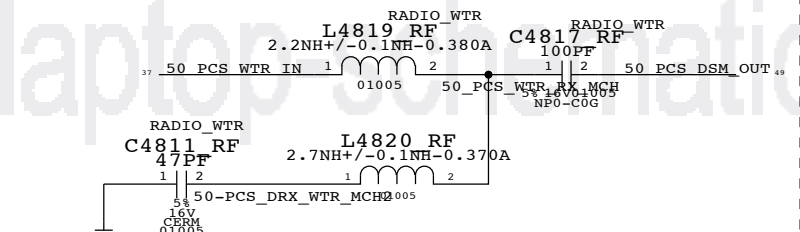
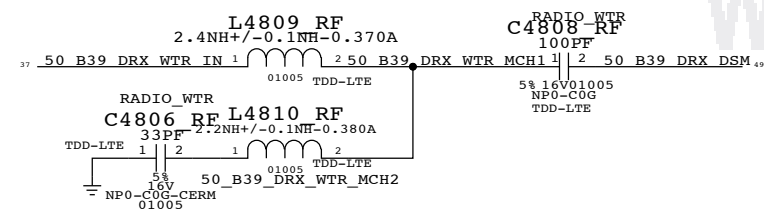
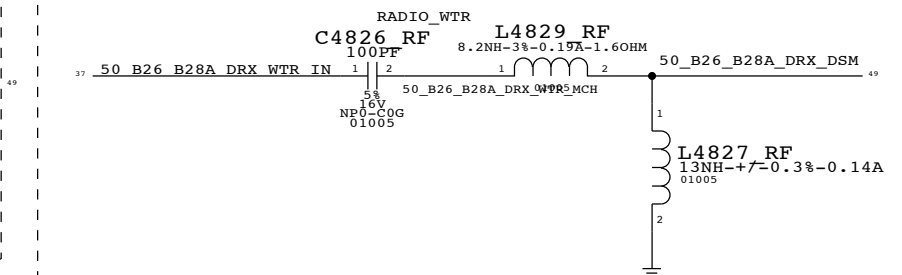
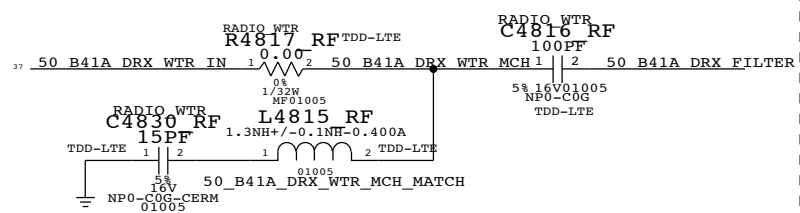
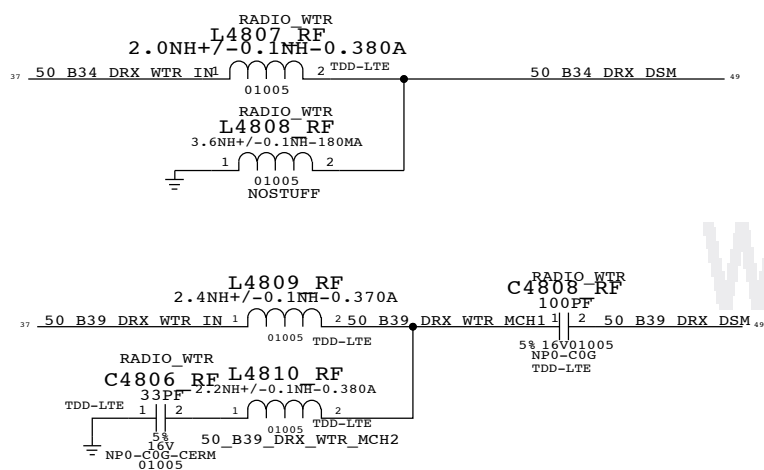
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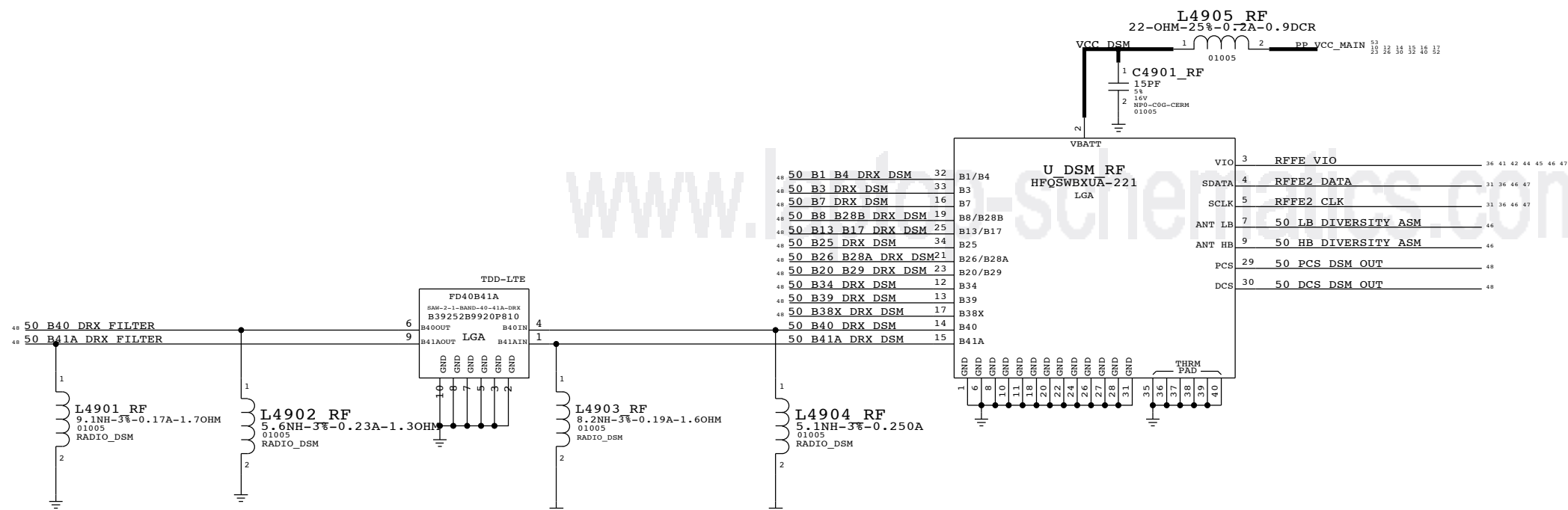
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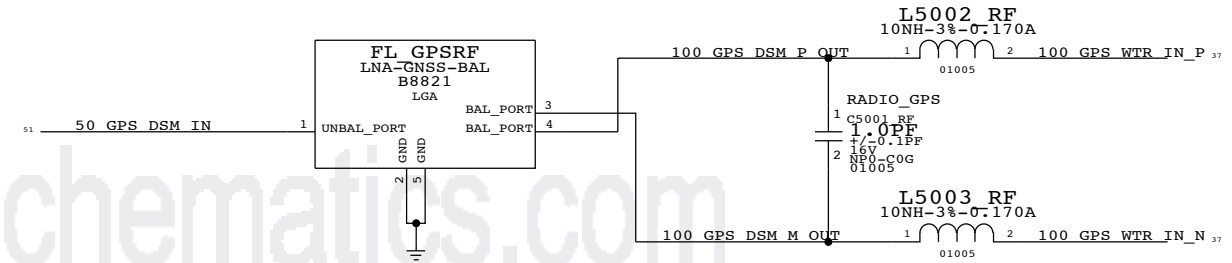
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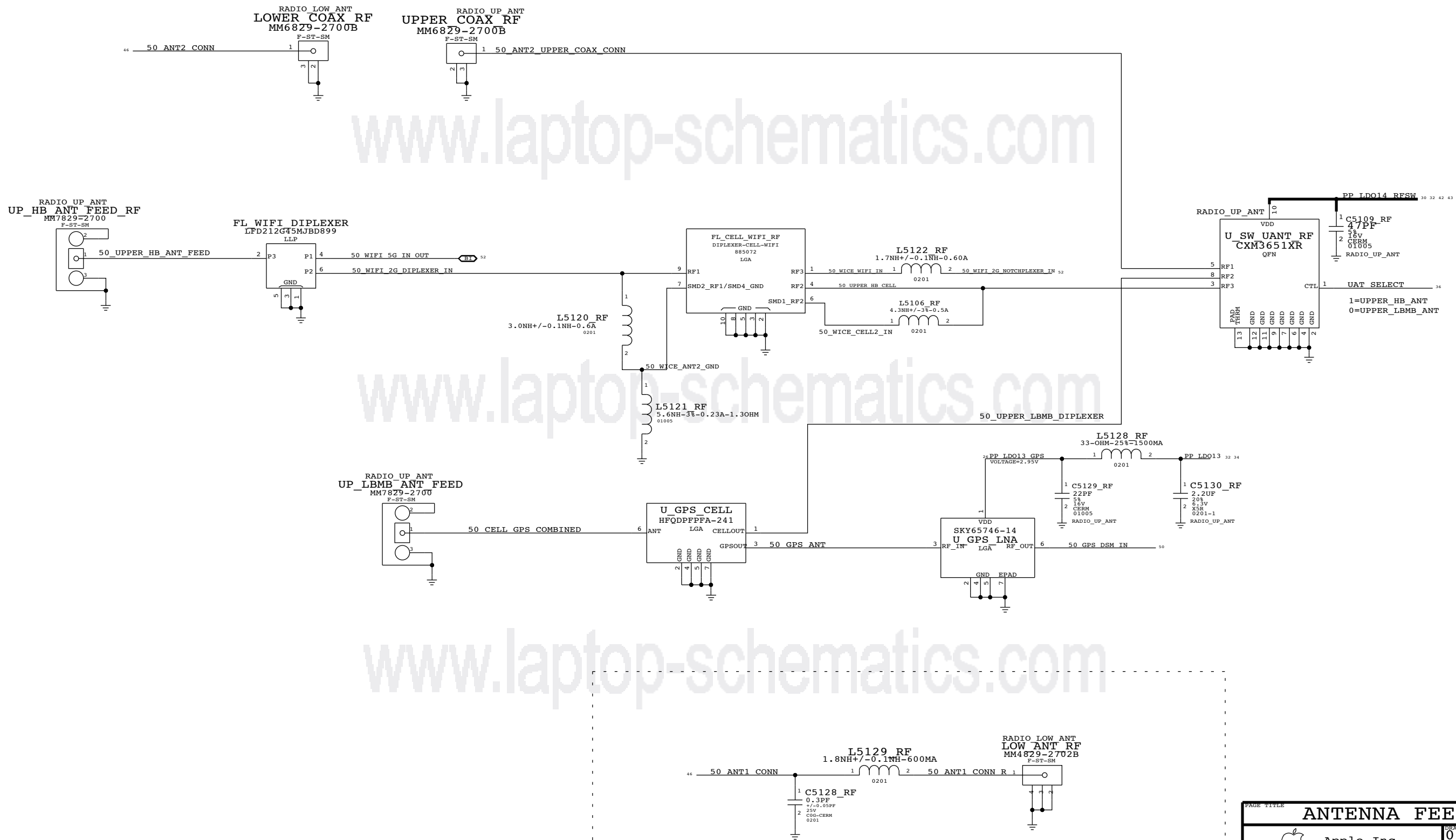


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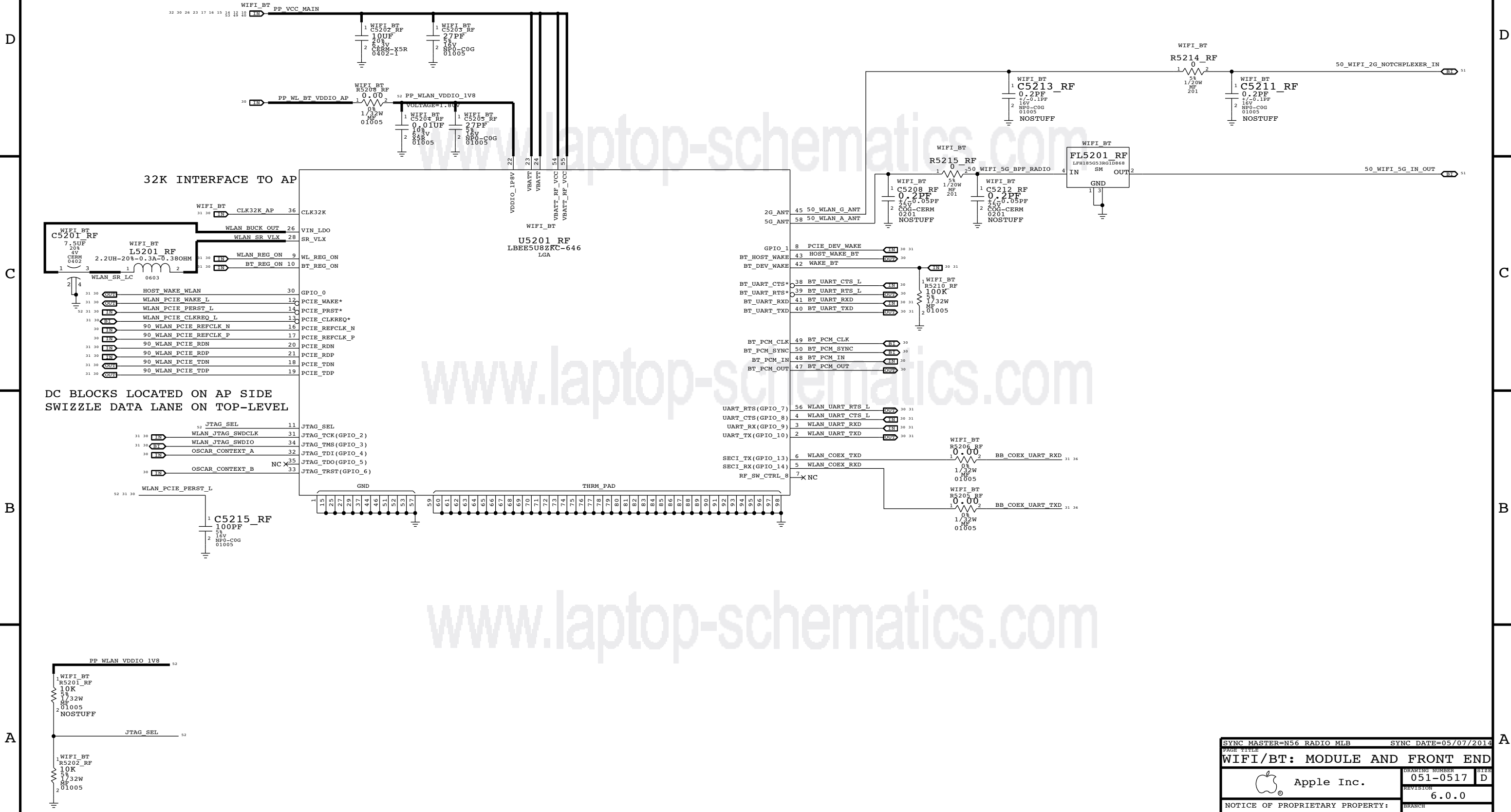
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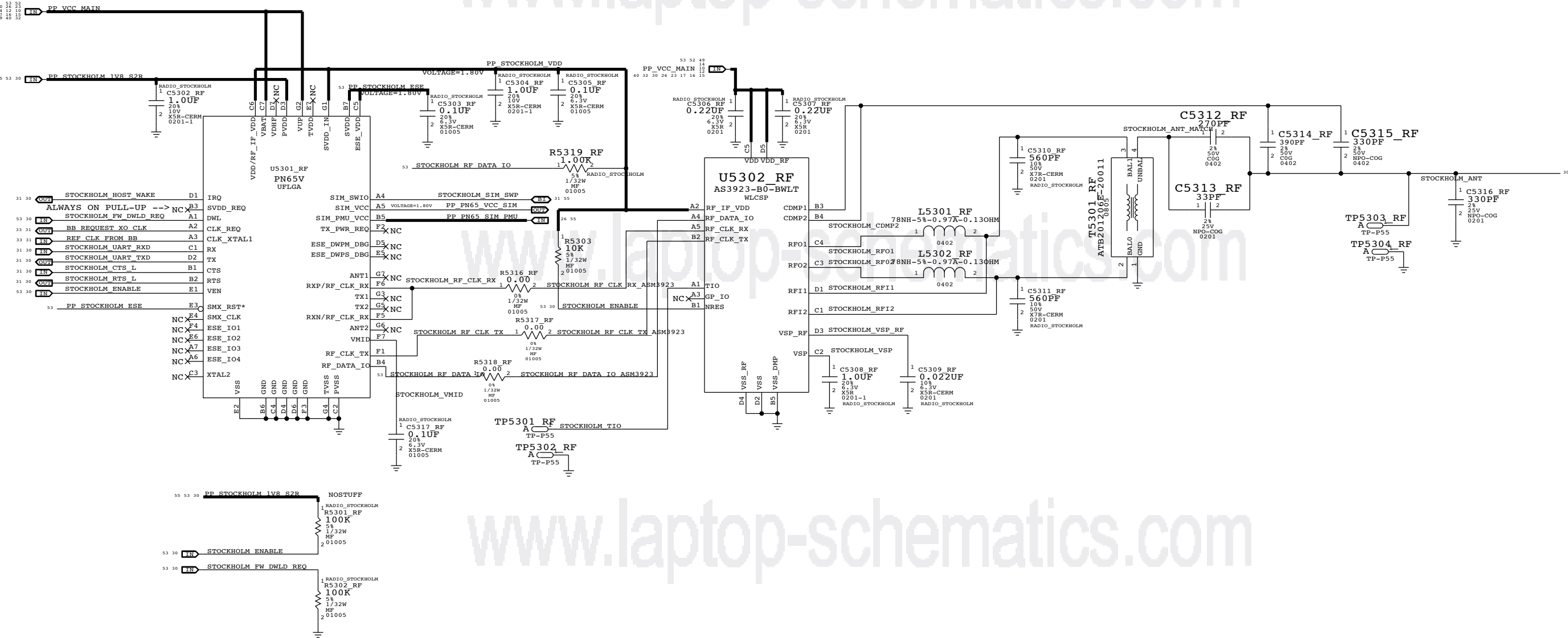
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REMOVING BULK CAP 4.7UF 0402 -->
BECAUSE OF OTHER BULK CAPS IN LAYOUT

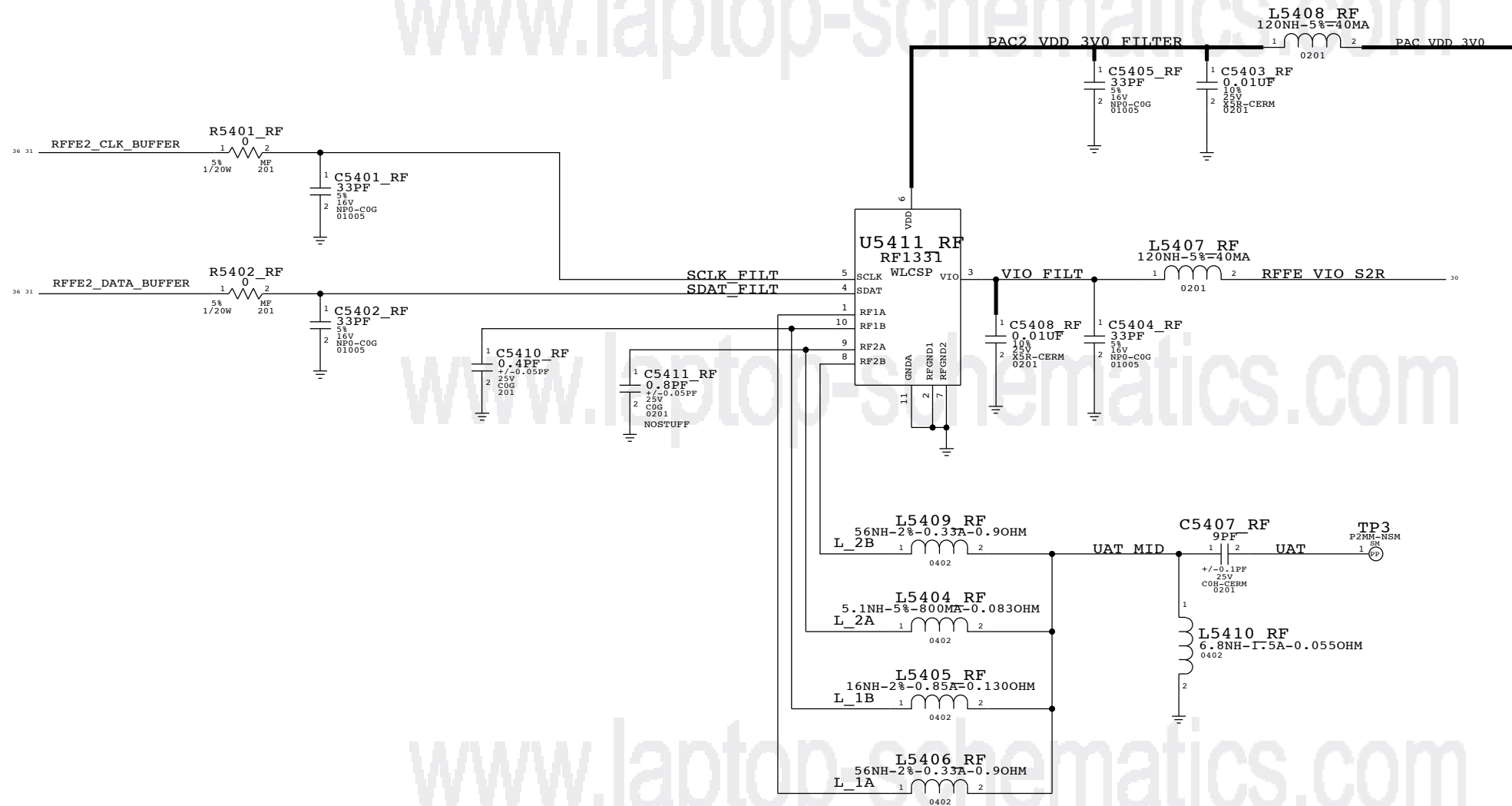



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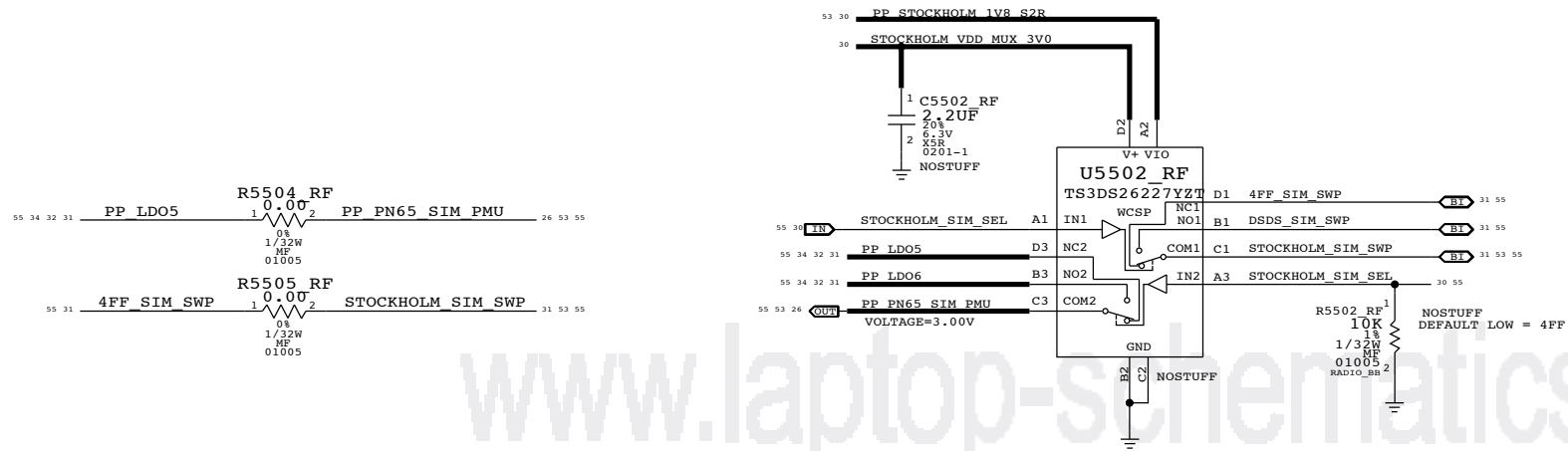
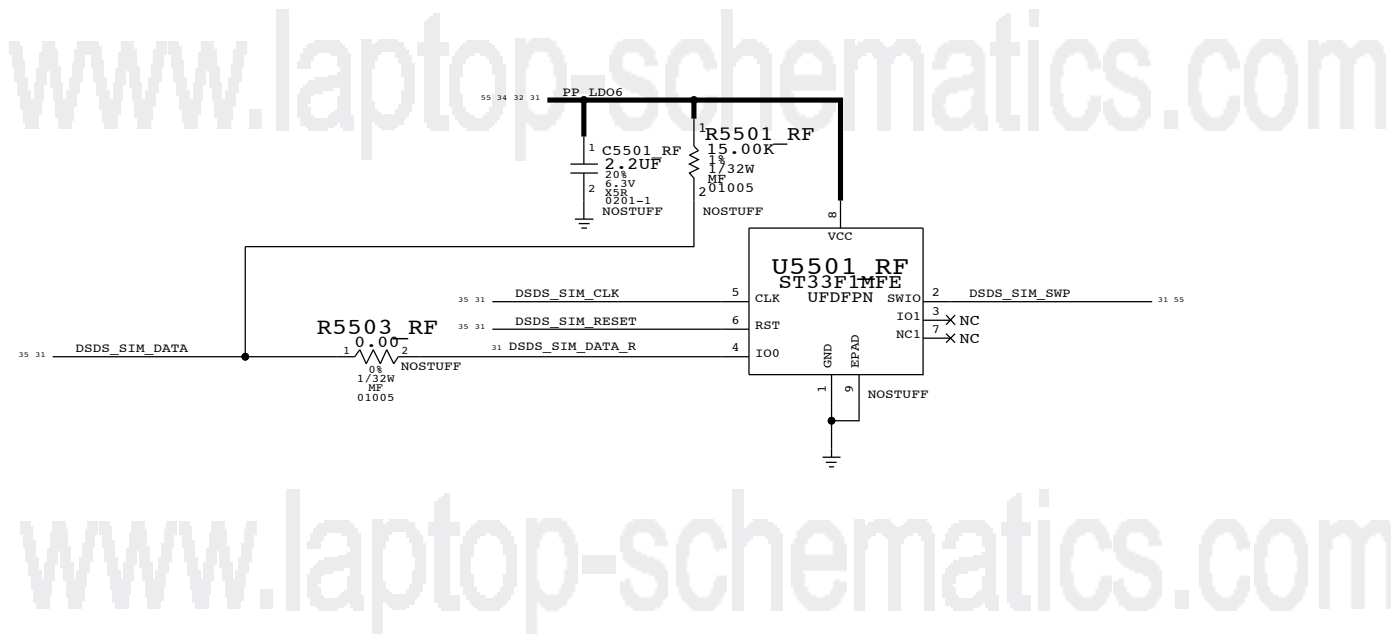
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