

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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55	JUMPER	N56 RADIO MLB	05/07/2014

## 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

## 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
152S0004	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	F10801	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

## NAND BOM OPTIONS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
335S0992	1	NAND, 17NM 16GB, MLC, PP 1.5, 64G, MLC260	U0604	CRITICAL	NAND_16G
335S0993	1	NAND, 17NM 32GB, MLC, PP 1.5, 64G, MLC260	U0604	CRITICAL	NAND_32G
335S1000	1	NAND, 19NM, 64GB, MLC, PPN1.5	U0604	CRITICAL	NAND_64G
335S00010	1	NAND, 19NM, 128GB, TLC, PPN1.5	U0604	CRITICAL	NAND_128G
138S00003	1	CAP, XSR, 10UF, 20V, 6.3V, 6.3MM, HRTL, 0402	C0614, C0633	CRITICAL	NOSTUFF
138S0867	1	CAP, XSR, 10UF, 20V, 6.3V, 6.3MM, HRTL, 0402	C0610, C0611, C0613, C0626	CRITICAL	NAND_16G
138S0867	1	CAP, XSR, 10UF, 20V, 6.3V, 6.3MM, HRTL, 0402	C0610, C0611, C0613, C0626, C0614, C0633	CRITICAL	NAND_32G
138S0867	1	CAP, XSR, 10UF, 20V, 6.3V, 6.3MM, HRTL, 0402	C0610, C0611, C0613, C0626, C0614, C0633	CRITICAL	NAND_64G
138S00003	1	CAP, XSR, 10UF, 20V, 6.3V, 6.3MM, HRTL, 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, X68, 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, X68, 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

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

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
138S0831	1	MURATA, 2.2UF, 0201	C0204	CRITICAL	MURATA, 2.2UF, 0201
138S00019	1	KYOCERA, 2.2UF, 0201	C0204	CRITICAL	KYOCERA, 2.2UF, 0201

## ALTERNATE NAND BOM OPTIONS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
335S1038	1	NAND HYNIX 16GB	U0604	ALTERNATE	NAND HYNIX 16GB
335S0994	1	NAND TOSHIBA 64GB	U0604	ALTERNATE	NAND TOSHIBA 64GB
335S1040	1	NAND HYNIX 64GB	U0604	ALTERNATE	NAND HYNIX 64GB
335S00009	1	NAND SANDISK 64GB TLC	U0604	ALTERNATE	NAND SANDISK 64GB TLC
335S00014	1	NAND TOSHIBA 64GB TLC	U0604	ALTERNATE	NAND TOSHIBA 64GB TLC
335S00015	1	NAND TOSHIBA 128GB	U0604	ALTERNATE	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, EN, 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

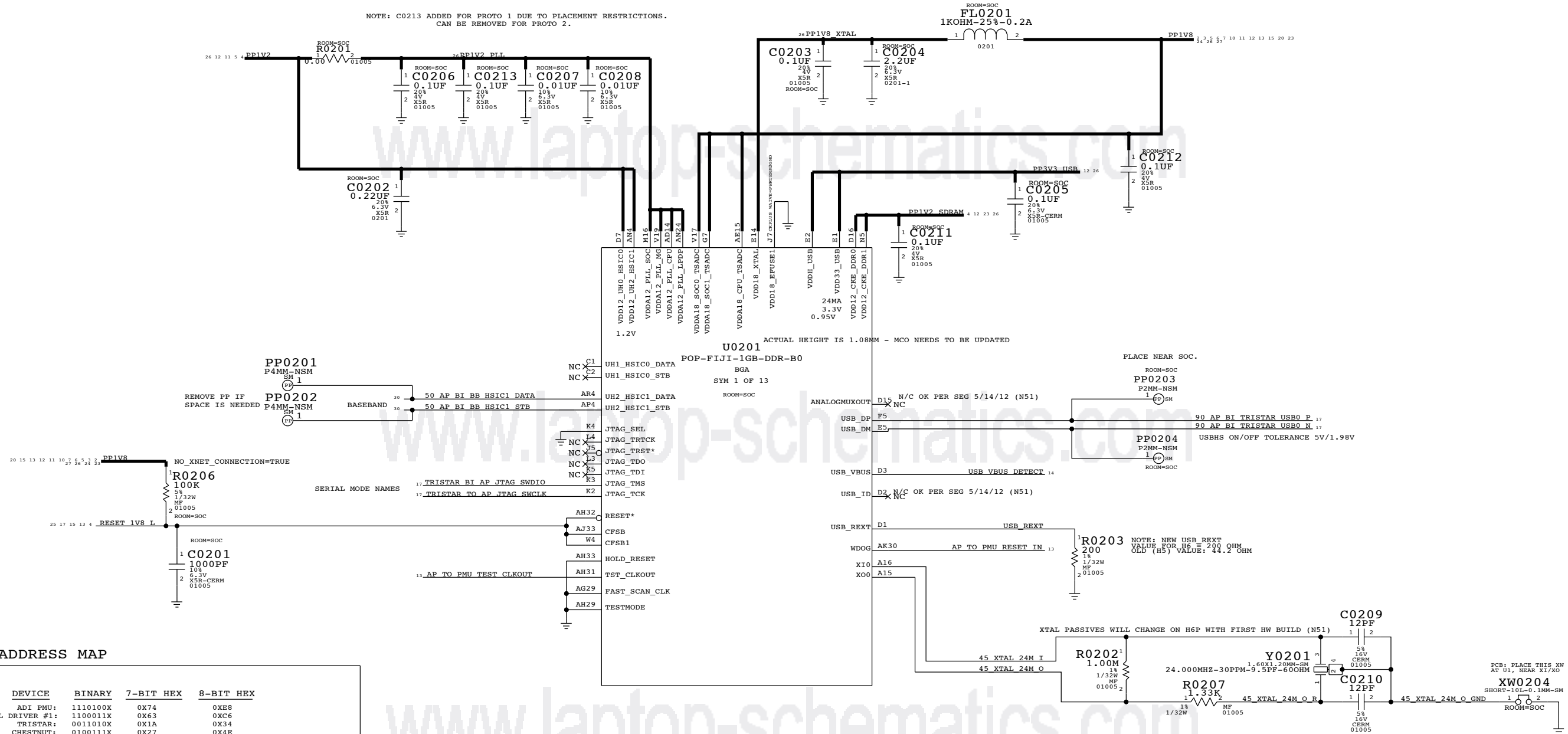
SCH 051-0517  
 BRD 820-3675  
 MCO 056-6398

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)

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# FIJI: JTAG, USB, HSIC, XTAL

NOTE: C0213 ADDED FOR PROTO 1 DUE TO PLACEMENT RESTRICTIONS.  
CAN BE REMOVED FOR PROTO 2.



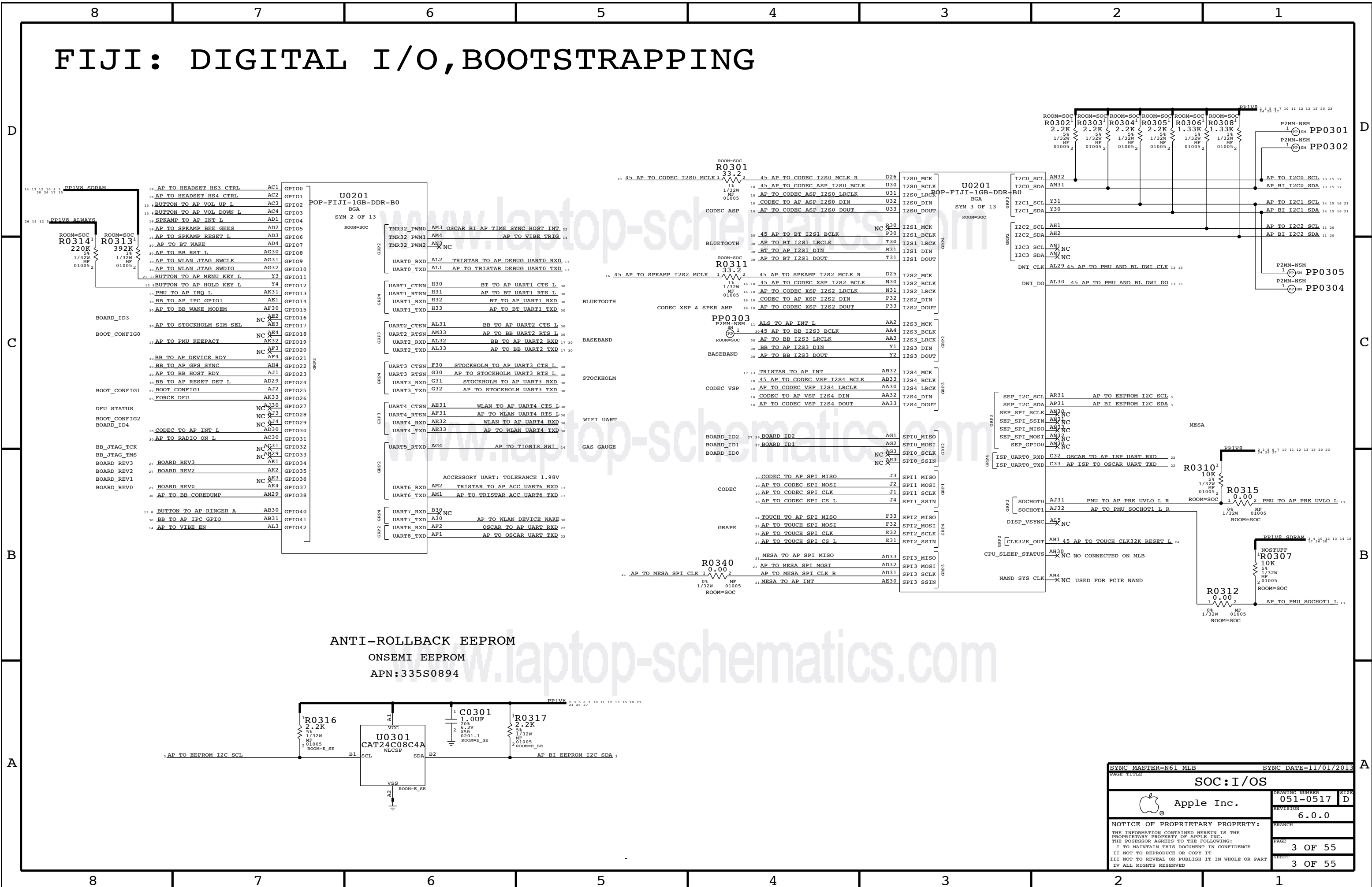
## I2C ADDRESS MAP

I2C0	DEVICE	BINARY	7-BIT HEX	8-BIT HEX
I2C0	ADI PMU:	1110100X	0X74	0XE8
	LM3534 BL DRIVER #1:	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
	LM3534 BL DRIVER #2:	1100011X	0X63	0XC6
	MESA EEPROM (MEMORY):	1010110X	0X56	0XAC
MESA EEPROM (ID):	1011110X	0X5E	0XBC	
I2C2	DISPLAY EEPROM:	1010001X	0X51	0XA2
	CT814 ALS:	0101001X	0X29	0X52
RCAM I2C	OPEL STROBE DRIVER:	1100011X	0X63	0XC6
	REAR FACING CAM:	0010000X	0X10	0X20
	VCM AF DRIVER:	0001110X	0X0E	0X1C
	VCM AF DRIVER:	0001111X	0X0F	0X1E
FCAM I2C	FRONT FACING CAM:	0010000X	0X10	0X20

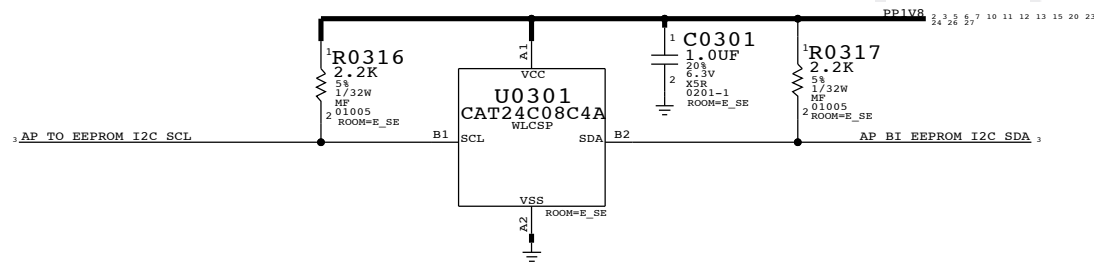
NOTE: ACCEL, GYRO, COMPASS ALL USING SPI (VIA OSCAR) FOR AP COMMUNICATION.

SYNC MASTER=N61 MLB		SYNC DATE=11/01/2013	
<b>SOC:MAIN</b>			
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		PAGE	2 OF 55
		SHEET	2 OF 55

# FIJI: DIGITAL I/O, BOOTSTRAPPING



ANTI-ROLLBACK EEPROM  
 ONSEMI EEPROM  
 APN: 335S0894



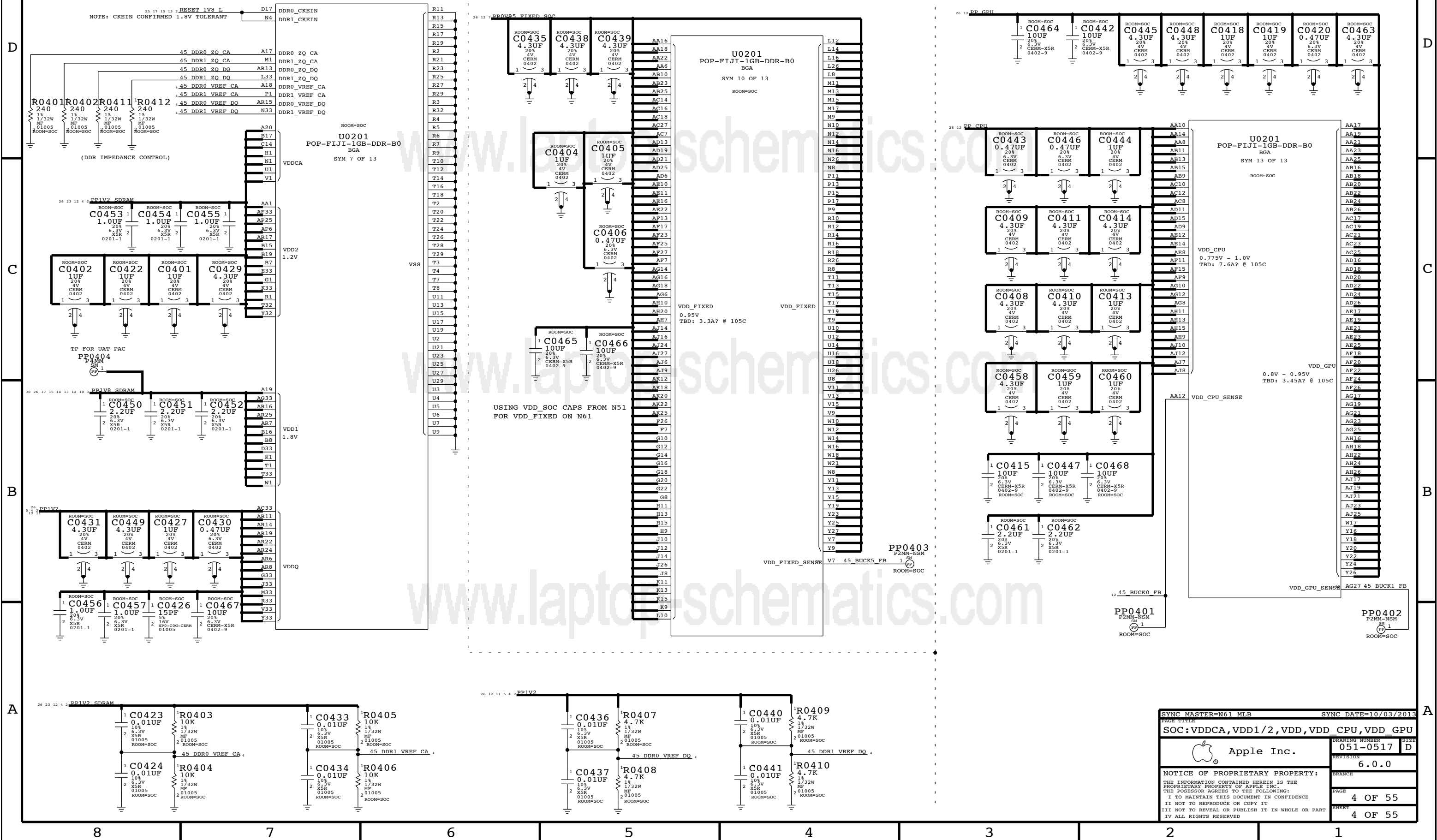
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SOC: I/O/S		DRAWING NUMBER	SIZE
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# FIJI: VDDCA, VDD1/2, VDDQ, VDD, VDD\_FIXED, VDD\_CPU, VDD\_GPU

VDDCA, VDD1/2, VDDQ

VDD

VDD\_CPU, VDD\_GPU

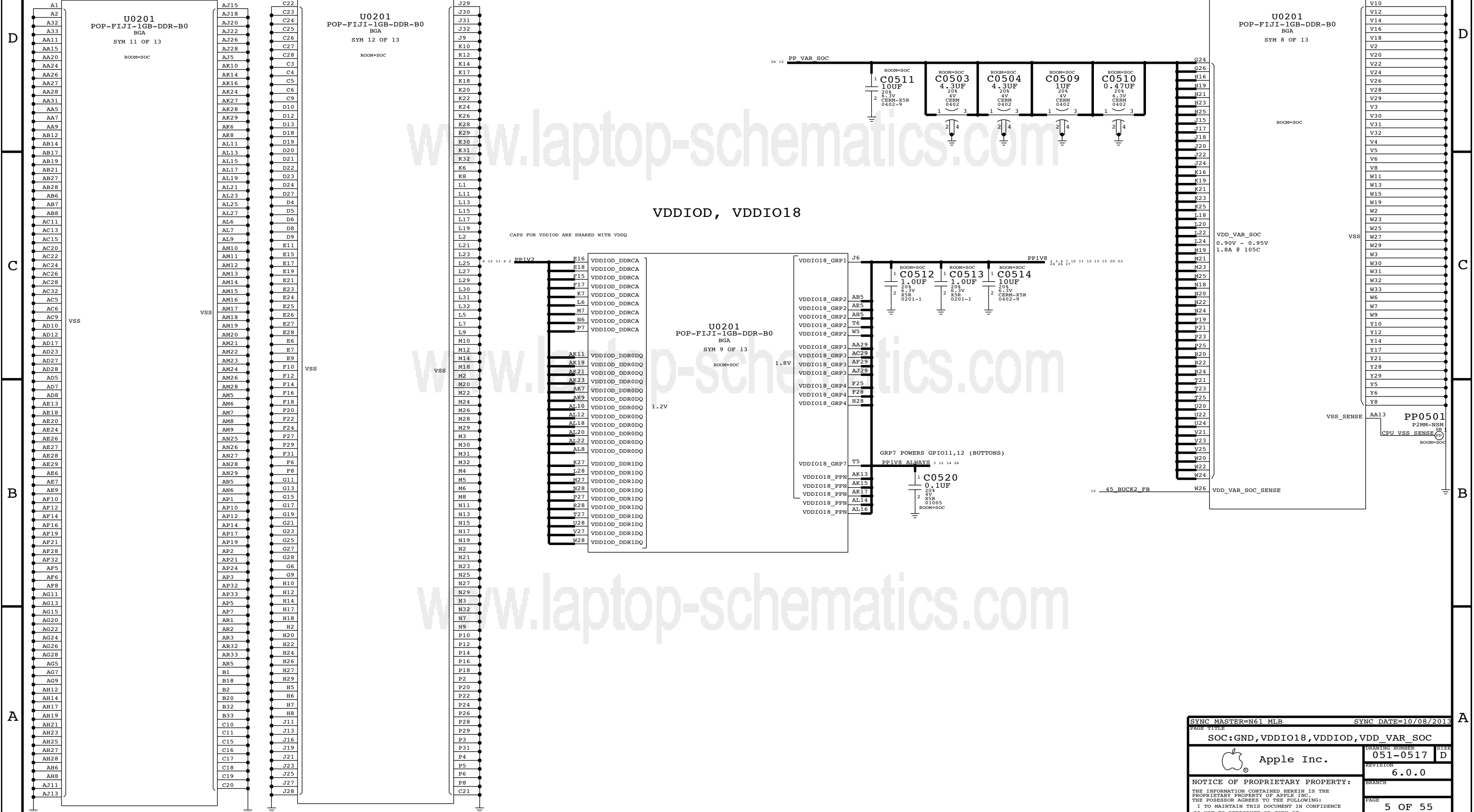


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PAGE TITLE			
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# FIJI: VDDIOD, VDDIO18, VDD\_VAR\_SOC

JUST A FEW GNDS

VDD\_SRAM, VDD\_SOC

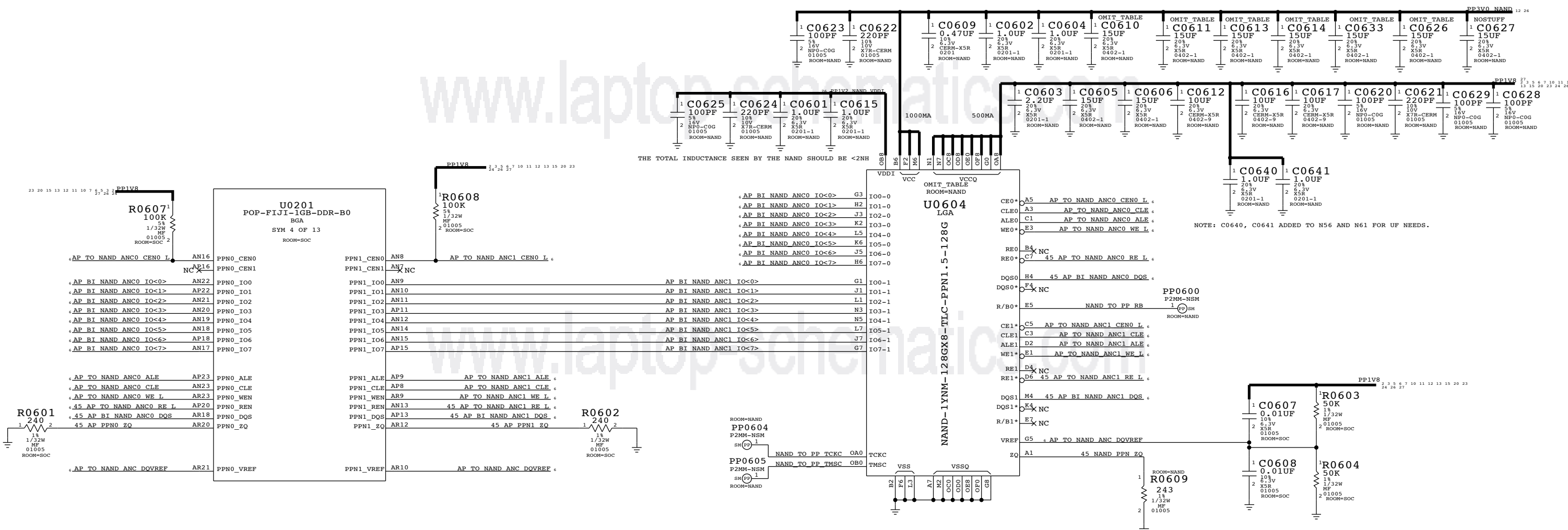


SYNC MASTER=N61 MLB		SYNC DATE=10/08/2013	
SOC:GND,VDDIO18,VDDIOD,VDD_VAR_SOC			
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# FIJI: NAND + 12X17 NAND PKG

SUPPORT FOR PPN1.5 (1.8V IO) ONLY

www.laptop-schematics.com



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

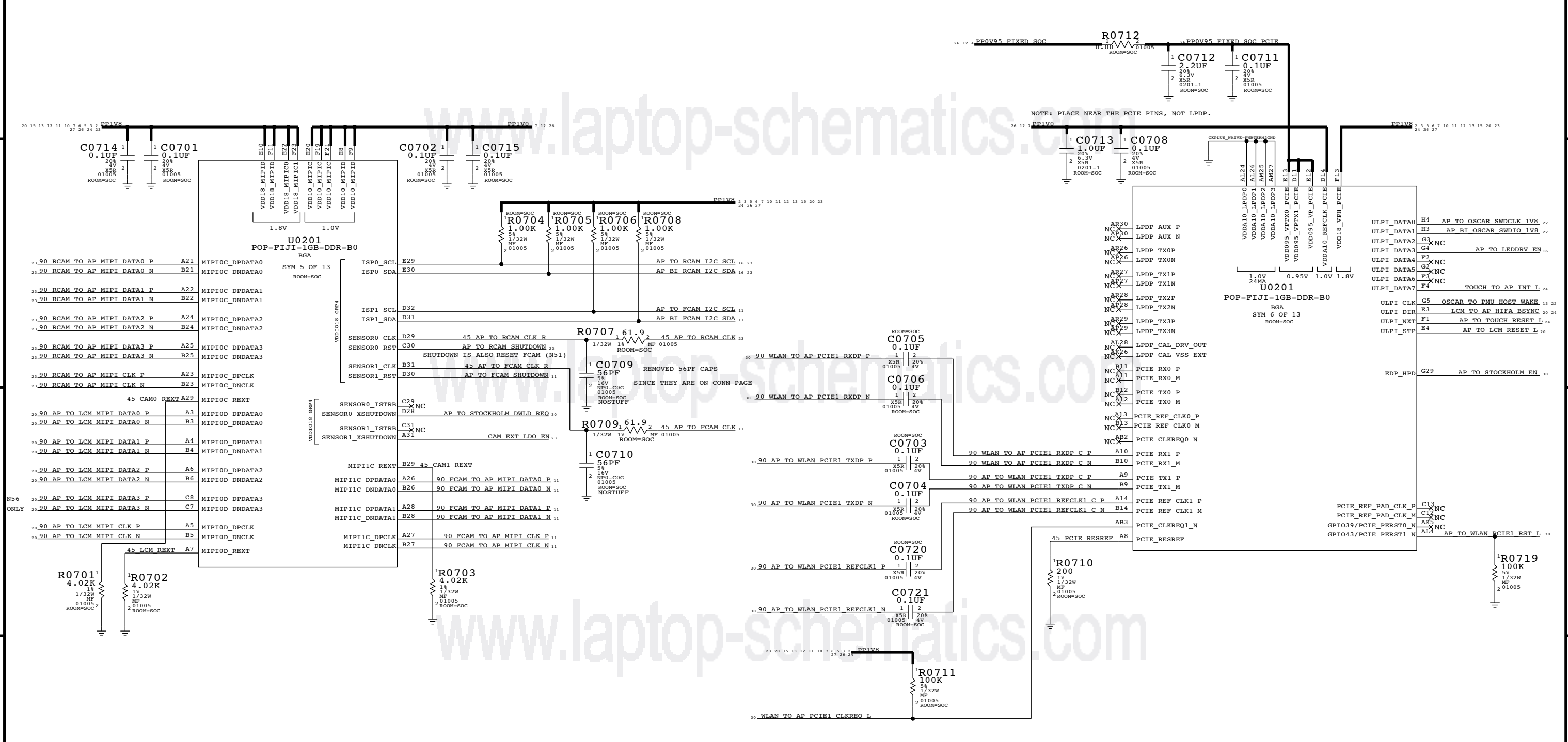
PP0601 P4MM-NSM  
ROOM=SOC  
1 45 AP BI NAND ANCO IO<6> .

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	
<b>SOC: NAND</b>			
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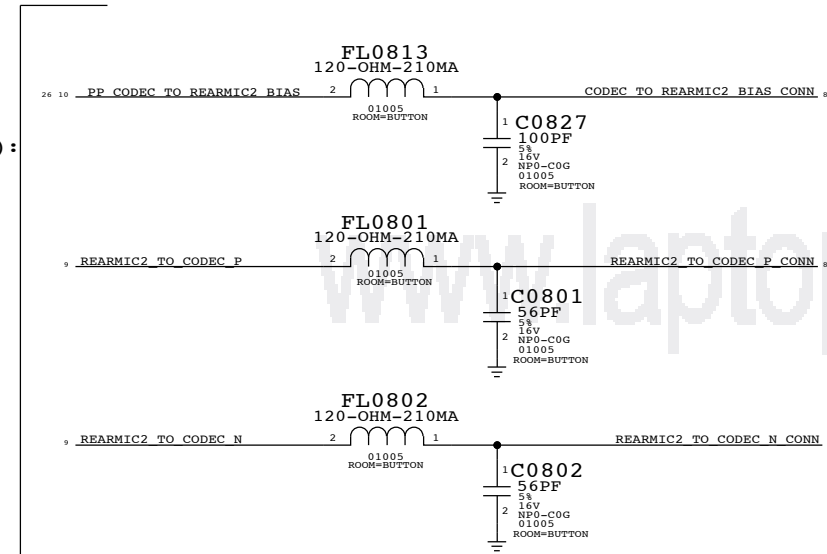
# FIJI: HIGH SPEED DIG (CAM, LCD, LPDP, PCIE)



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

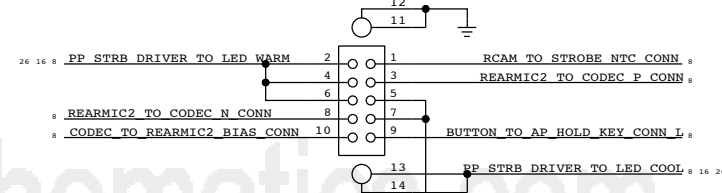
MIC2 (ANC REF MIC):  
MIC2/4 BIAS,  
MIC2\_P,\_N



## RIGHT BUTTON FLEX B2B

APN: 516S1187 (RCPT)

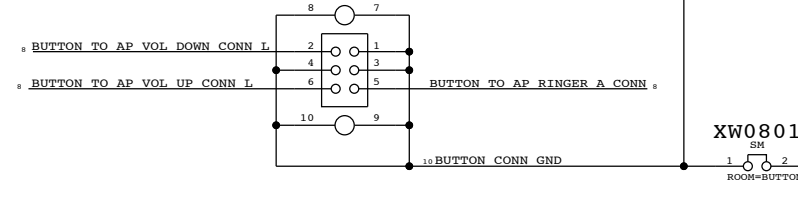
J0801  
AA25D-S010VA1  
F-ST-SM



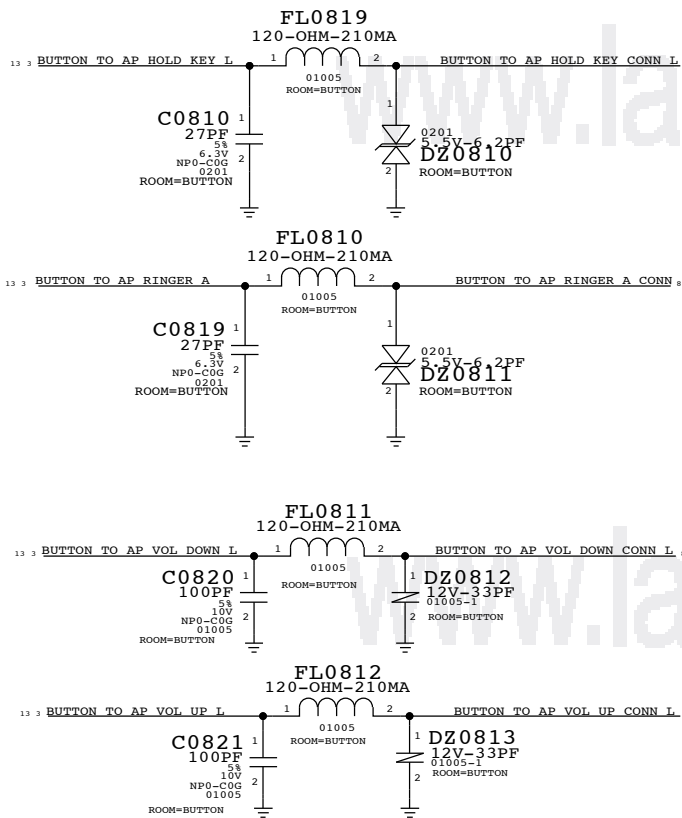
## LEFT BUTTON FLEX B2B

APN: 516S1317 (RCPT)

J0802  
505066-0610  
F-ST-SM



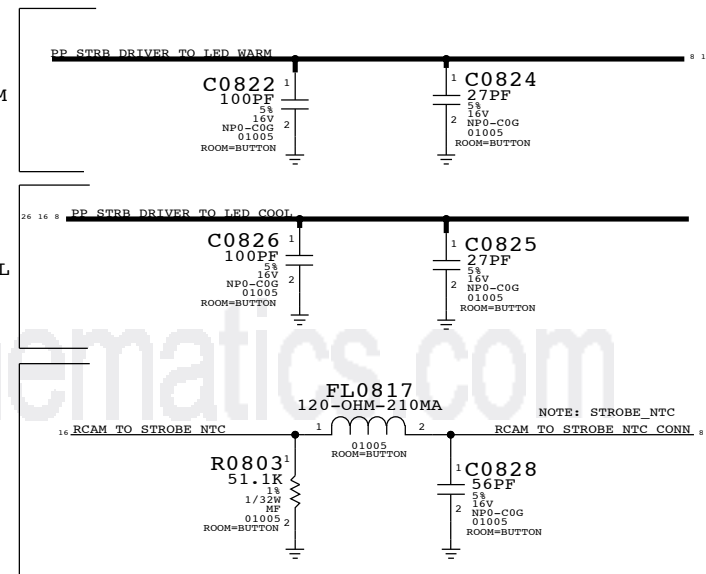
BUTTONS:  
RINGER, HOLD,  
VOL\_UP/DOWN,



STROBE:  
LED WARM

STROBE:  
LED COOL

STROBE:  
NTC

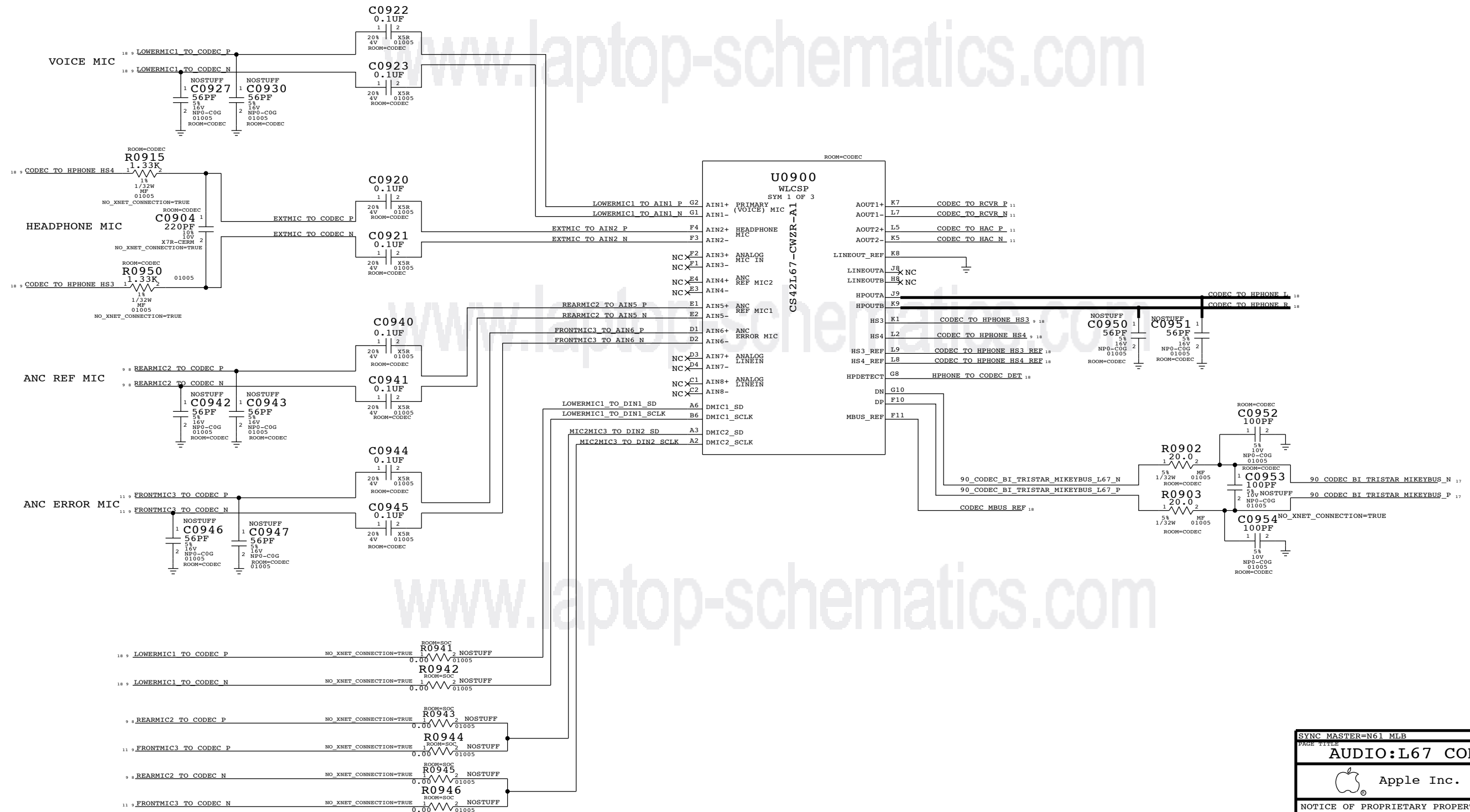


SYNC MASTER=N61 MLB		SYNC DATE=11/01/2013	
PAGE TITLE <b>IO:BUTTON FLEX CONN</b>			
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# L67 AUDIO CODEC

## AUDIO I/O

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



SYNC MASTER=N61 MLB		SYNC DATE=11/01/2013	
PAGE TITLE			
AUDIO:L67 CODEC (1/2)			
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		REVISION	6.0.0
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# ADI PMU

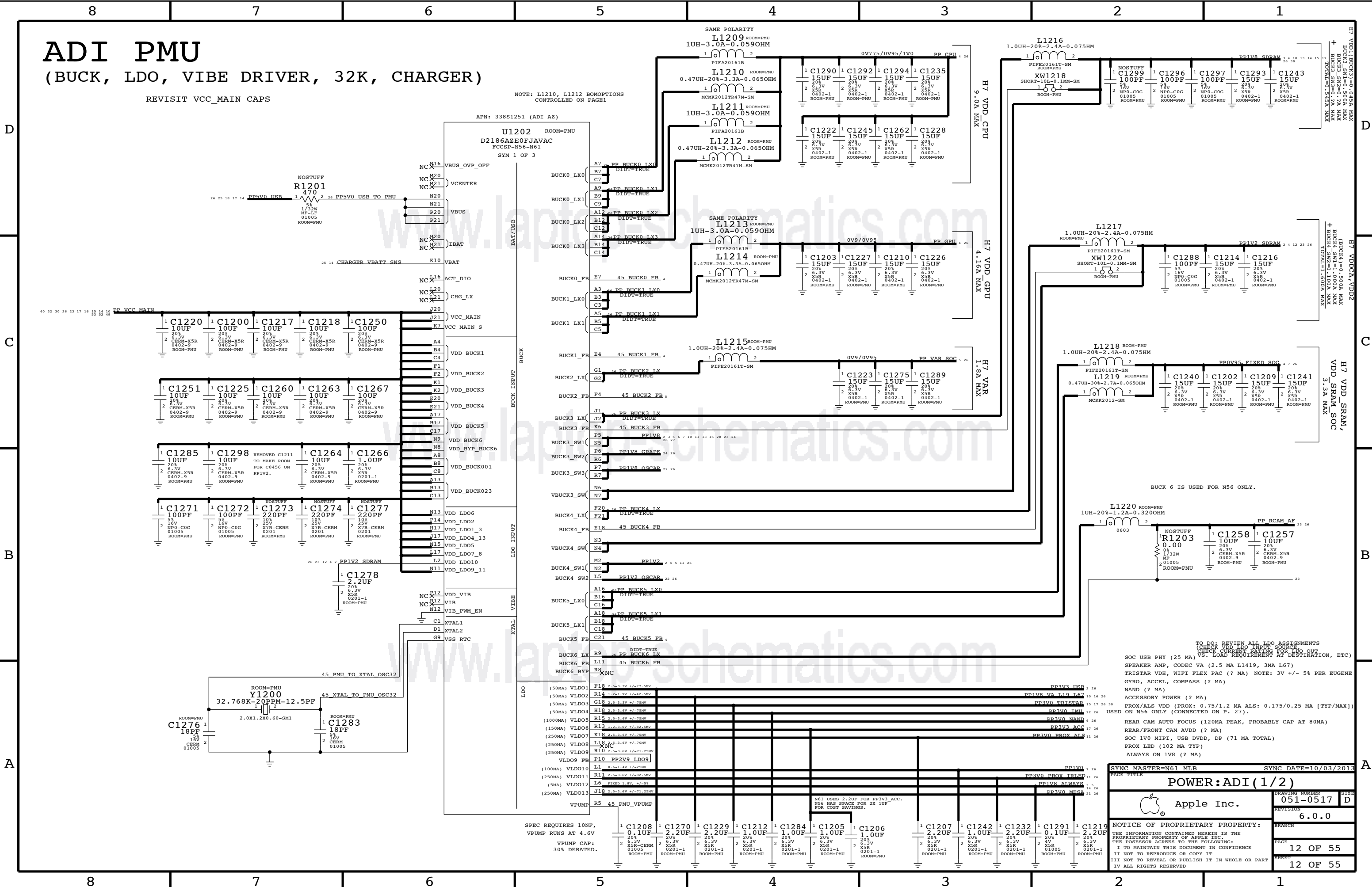
## (BUCK, LDO, VIBE DRIVER, 32K, CHARGER)

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, 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)  
PP3V0 PROX\_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)**

Apple Inc.

DRAWING NUMBER: 051-0517 SITE: D

REVISION: 6.0.0

BRANCH:

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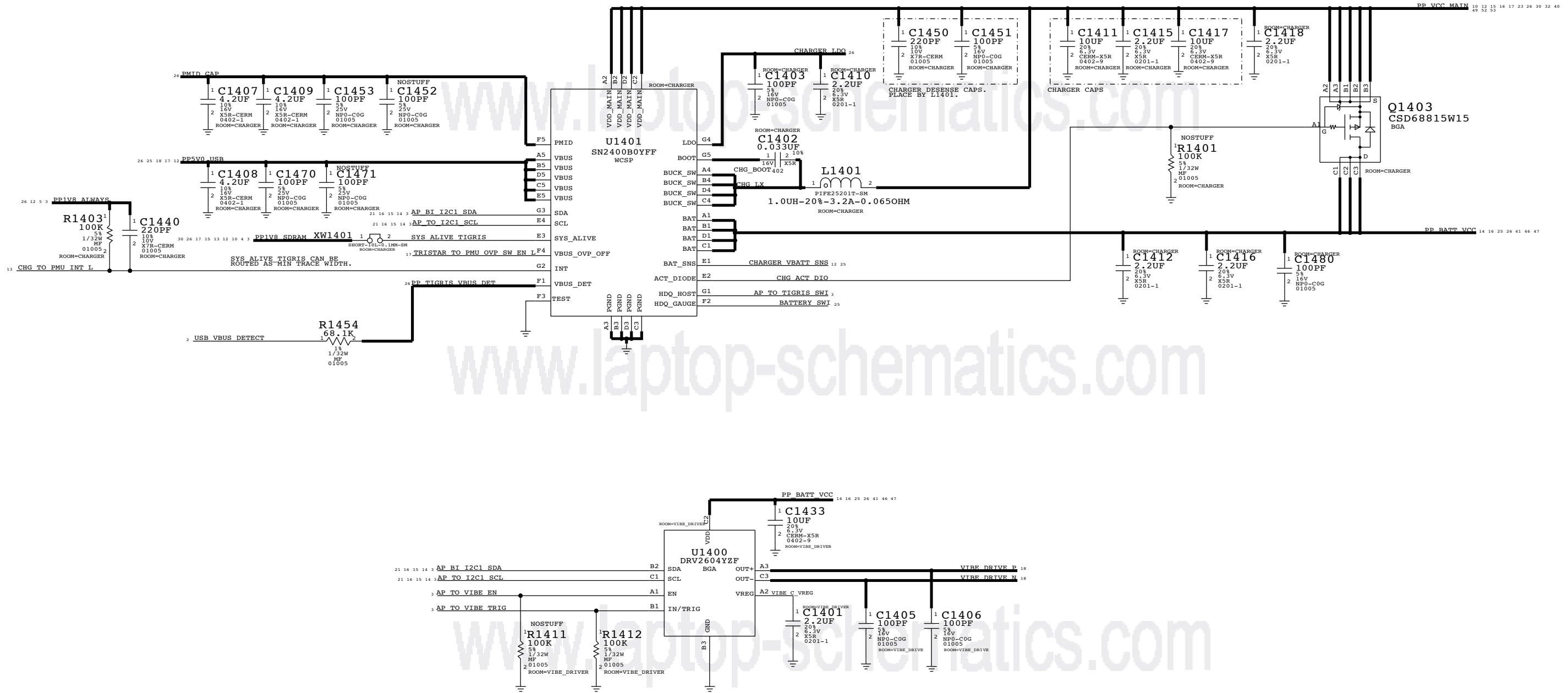
PAGE: 12 OF 55  
SHEET: 12 OF 55

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

N61 USES 2.2UF FOR PP3V0\_ACC. N56 HAS SPACE FOR 2X 1UF FOR COST SAVINGS.



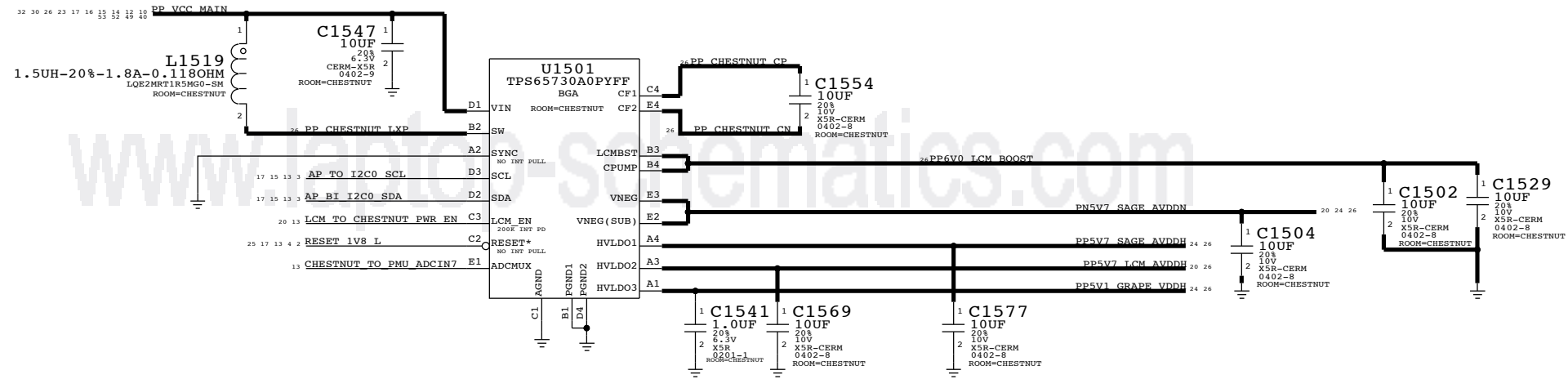
# TIGRIS CHARGER & VIBE DRIVER



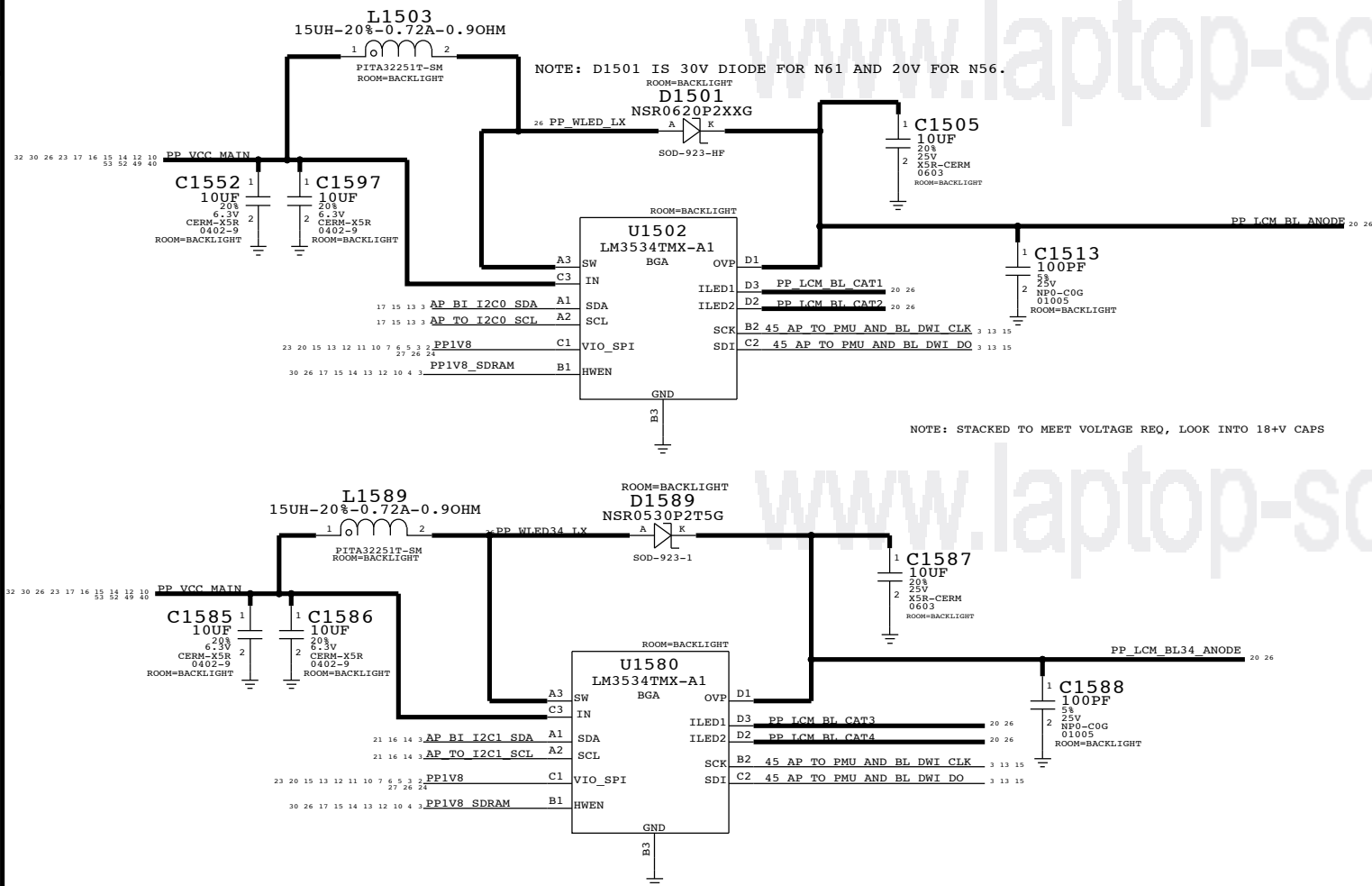
PAGE TITLE <b>POWER:TIGRISR,VIBE DRIVER</b>		
Apple Inc.	DRAWING NUMBER	051-0517
	REVISION	6.0.0
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BRANCH	PAGE	14 OF 55
SHEET	14 OF 55	

# CHESTNUT, BACKLIGHT DRIVER, MESA BOOST

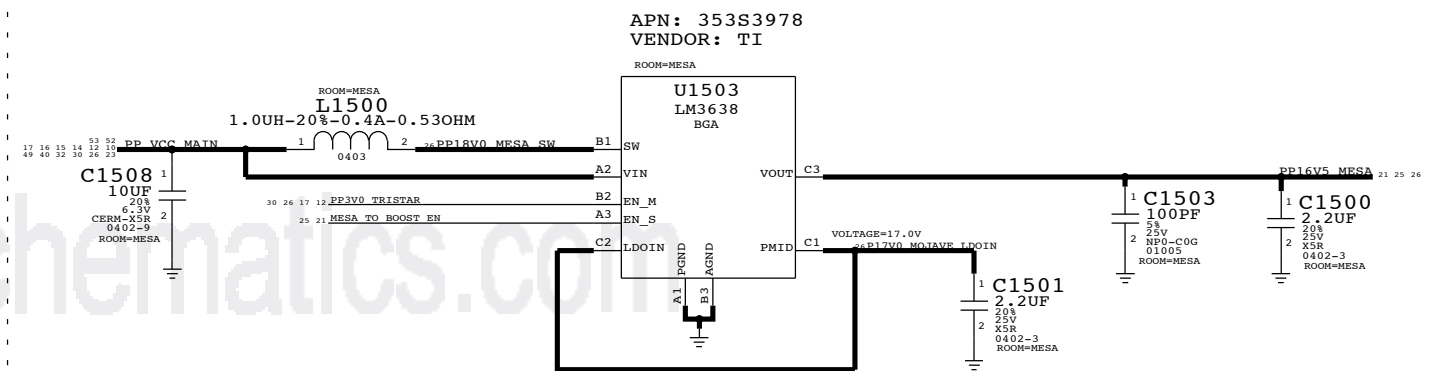
DISPLAY PMU (TI CHESTNUT, 338S1149)



## BACKLIGHT DRIVERS



## MESA BOOST

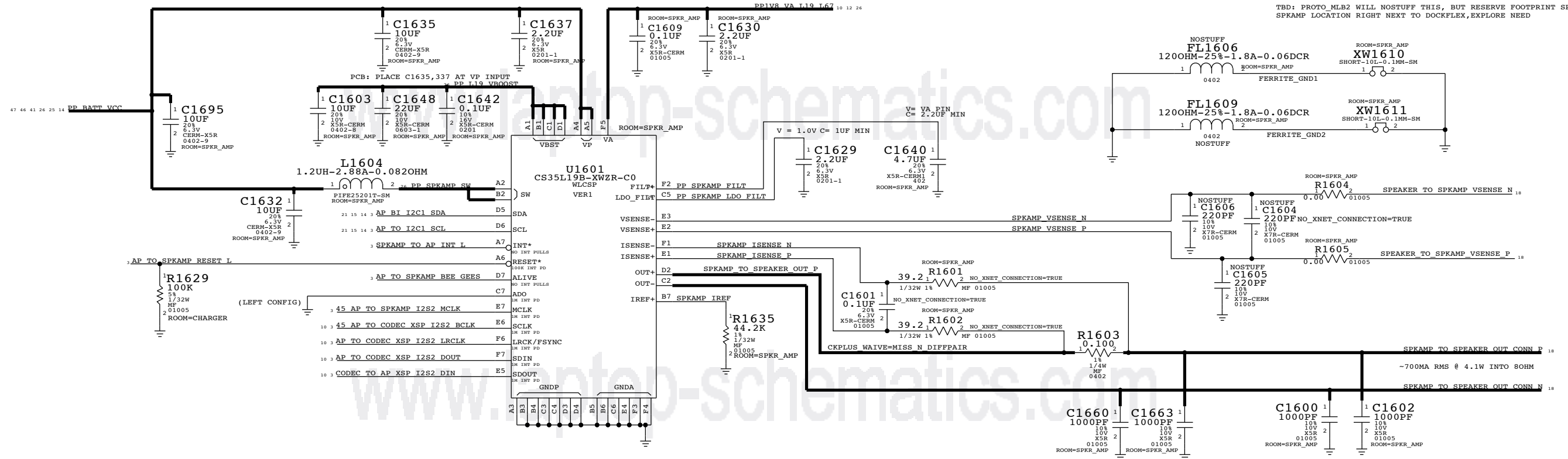


PAGE TITLE		SYNC DATE=11/01/2013	
DISPLAY:CHESTNUT, BACKLIGHT DRIVER			
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		REVISION	6.0.0
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# SPEAKER AMP, LED DRIVER

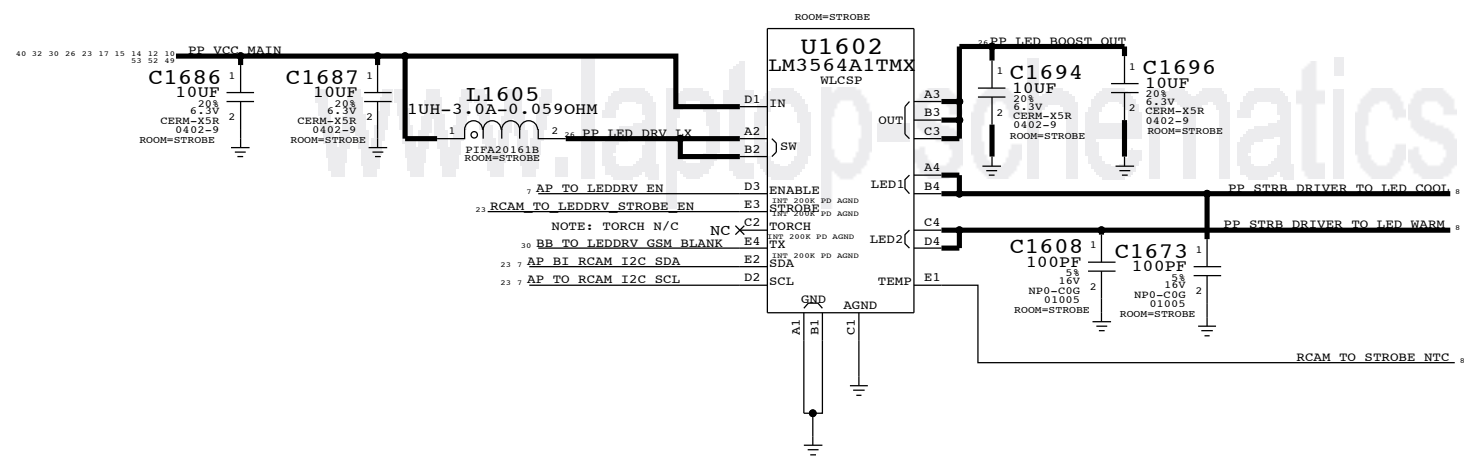
## SPEAKER AMP

I2C ADDRESS: 1000000X



## STROBE DRIVER

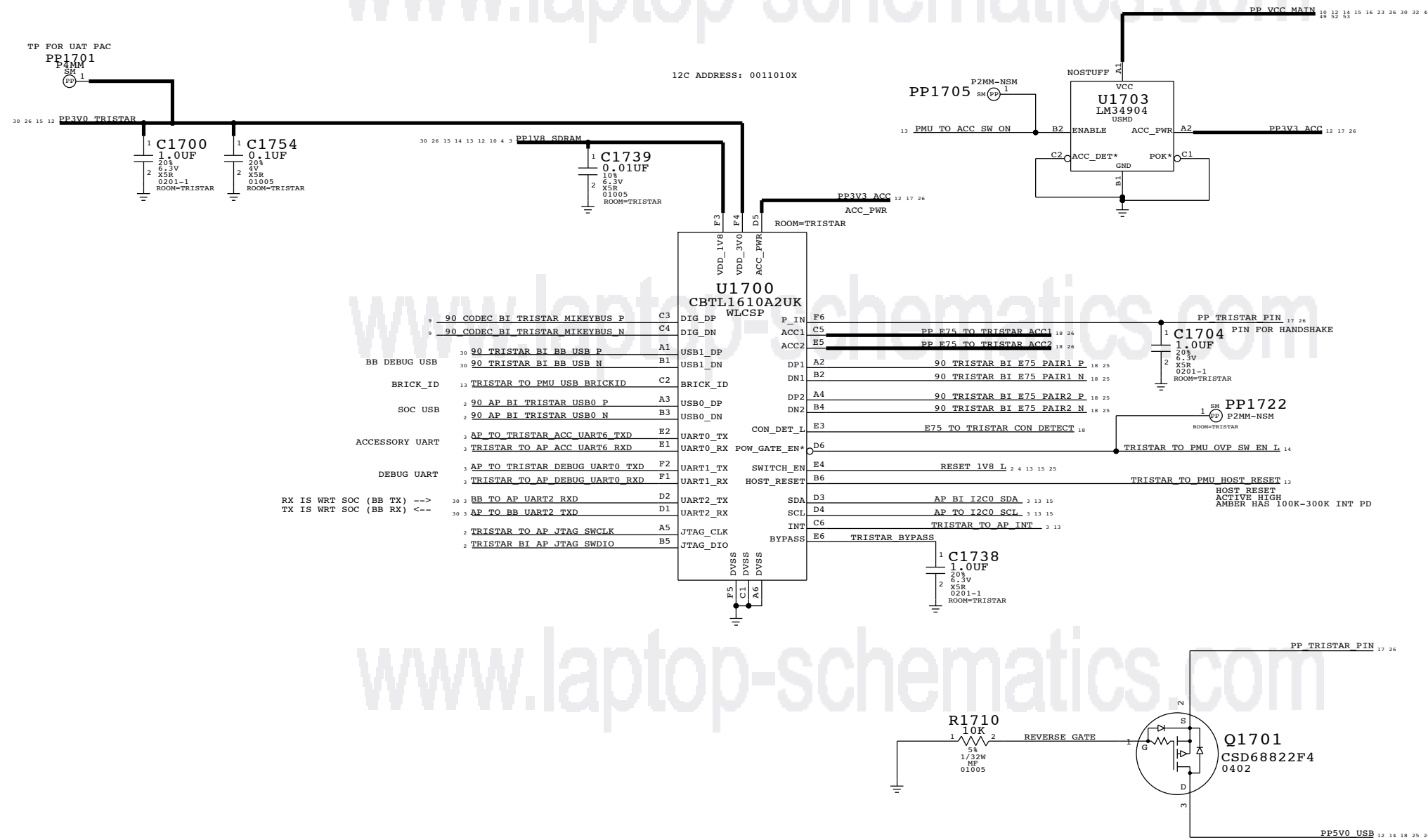
TI: APN 353S3899



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

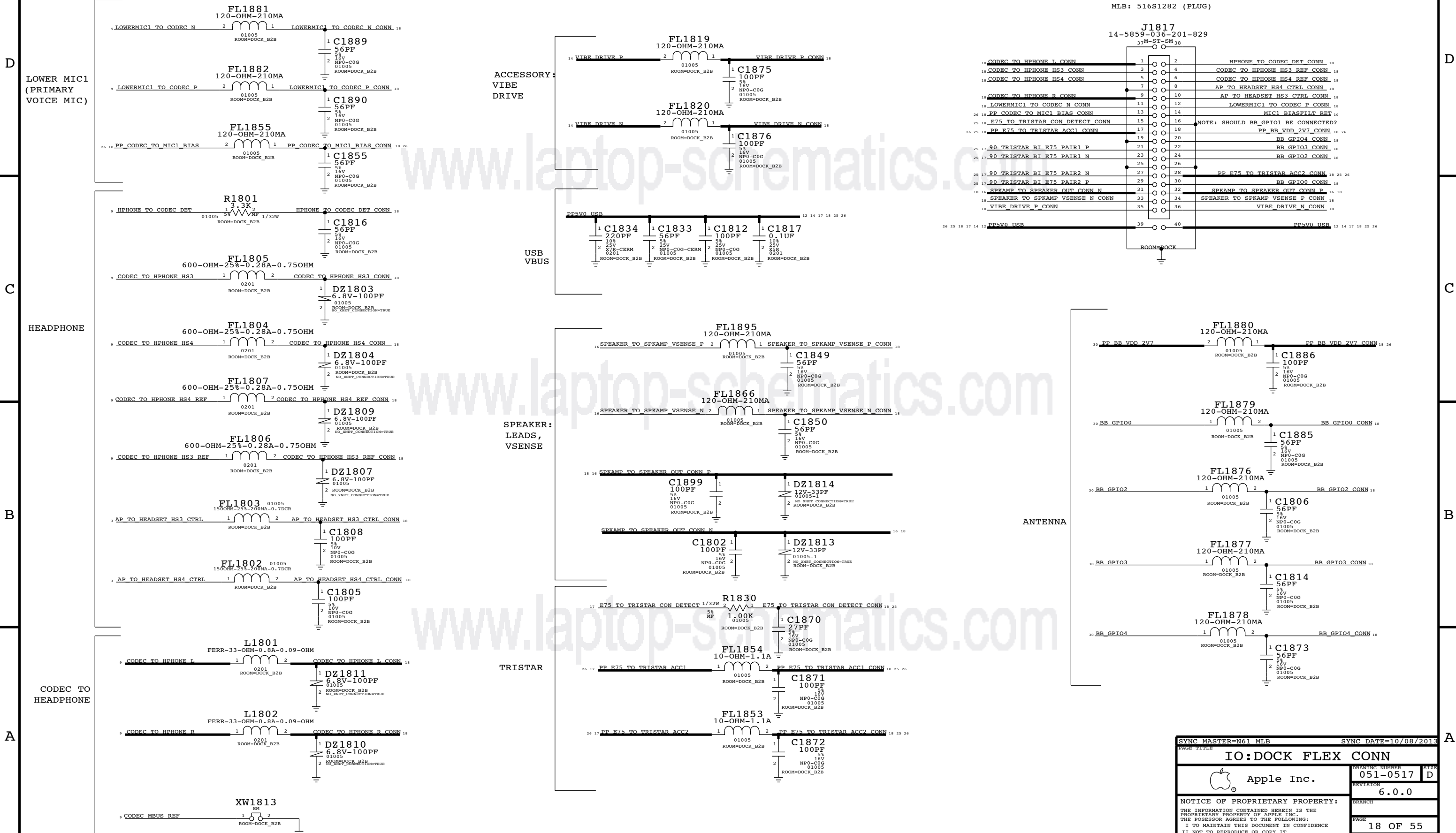
www.laptop-schematics.com



www.laptop-schematics.com

SYNC MASTER=N61 MLB		SYNC DATE=11/01/2013	
<b>IO:TRISTAR2</b>			
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)



SYNC MASTER=N61 MLB		SYNC DATE=10/08/2013	
<b>IO:DOCK FLEX CONN</b>			
Apple Inc.		DRAWING NUMBER	051-0517
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		PAGE	18 OF 55
		SHEET	18 OF 55

8

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C

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SYNC MASTER=N/A		SYNC DATE=N/A	
<b>BLANK</b>			
 Apple Inc.		DRAWING NUMBER	051-0517
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		PAGE	19 OF 55
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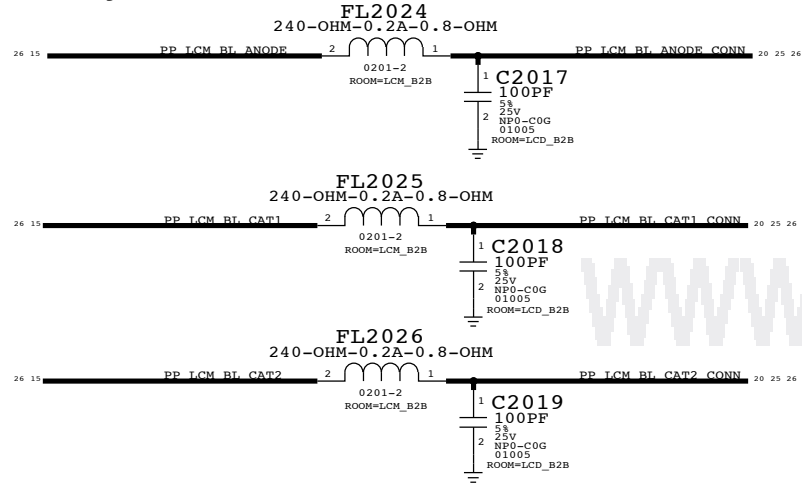
2

1

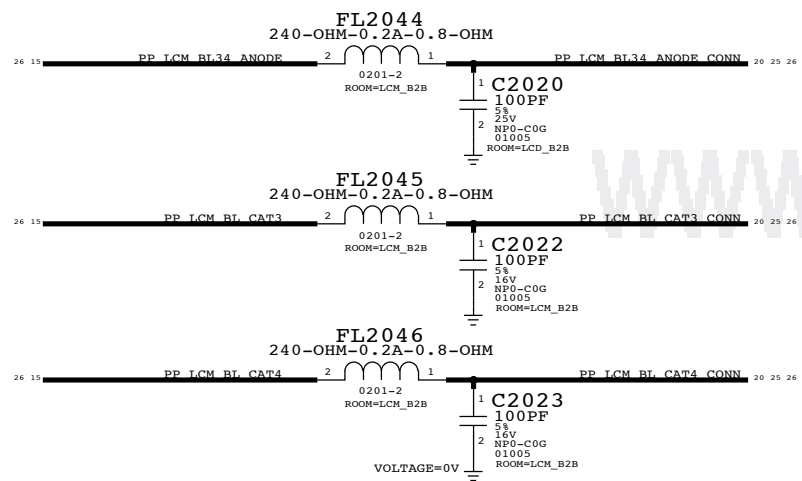
# LCD B2B

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

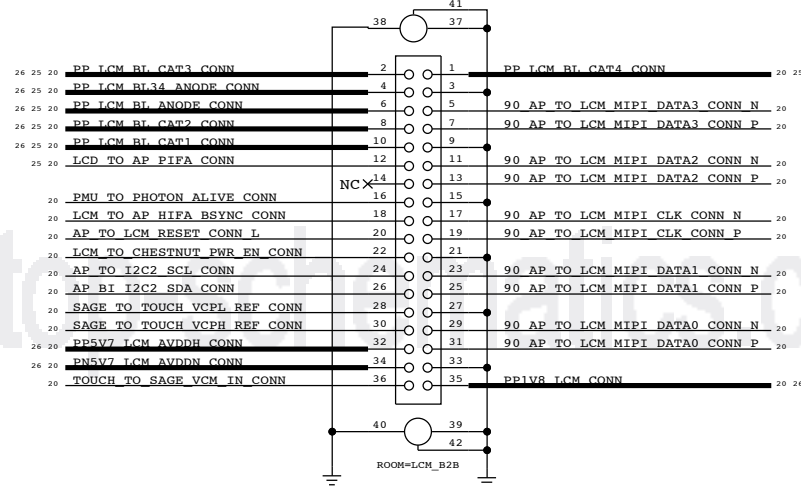
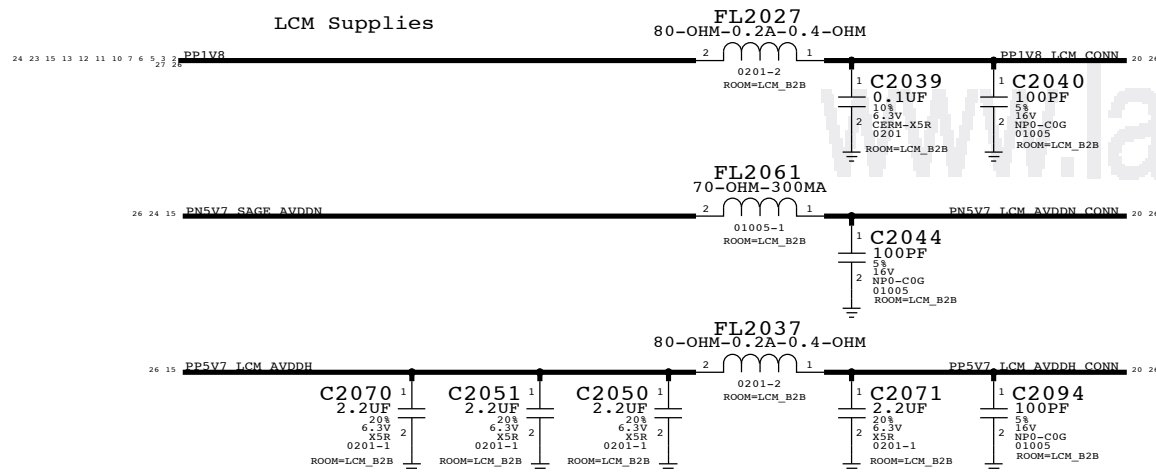
## Backlight



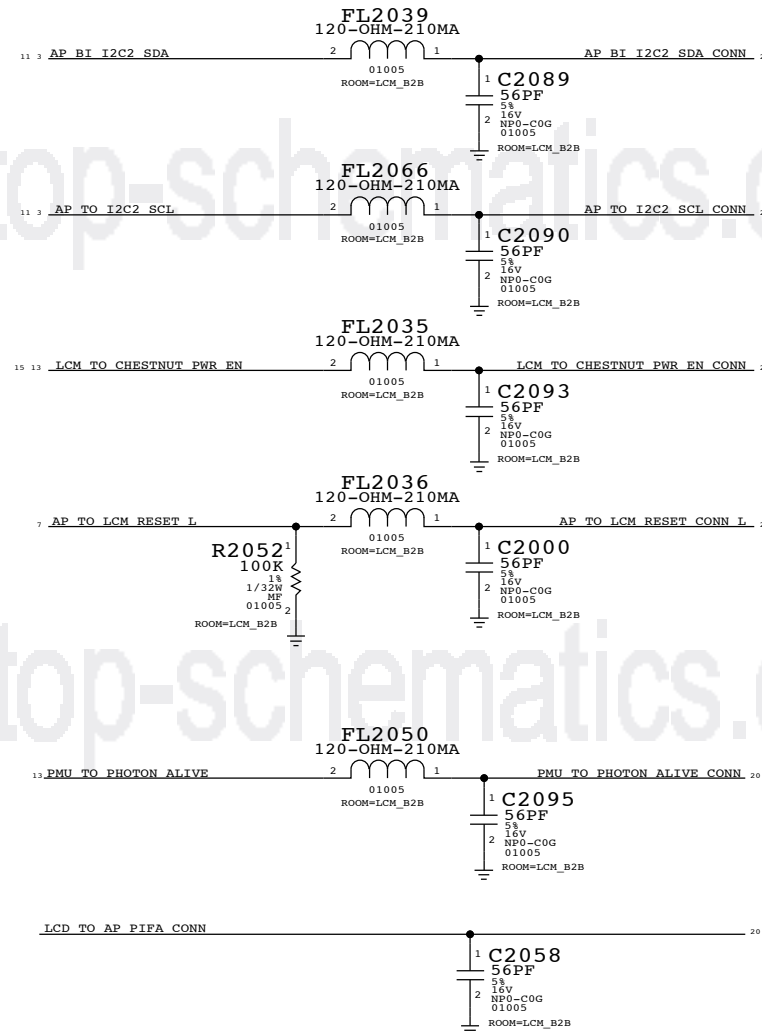
## BACKLIGHT 2 (N56 ONLY)



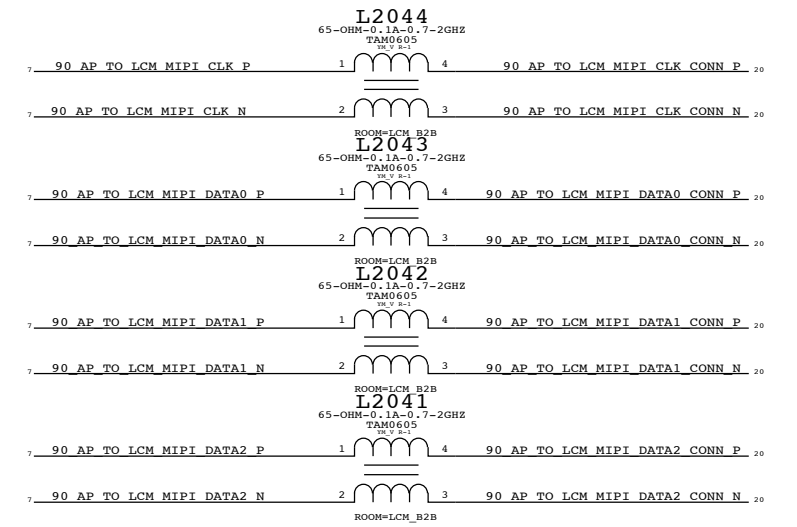
## LCM Supplies



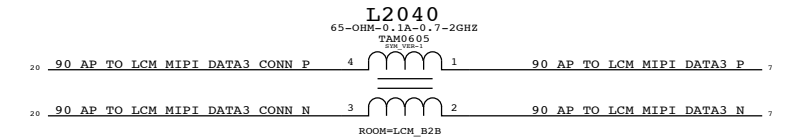
## Digital Interfaces



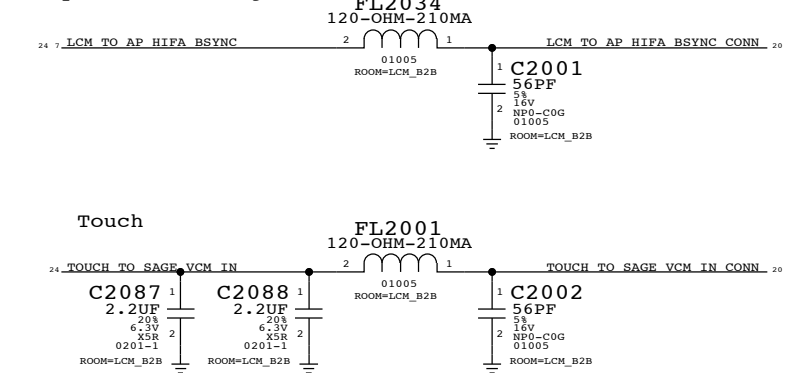
## MIPI Common Mode Chokes



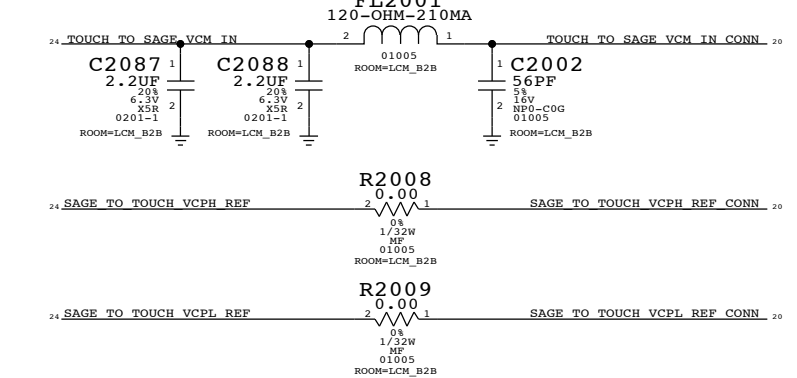
## MIPI LANE 3 (N56 ONLY)



## Sync/Reset/Debug



## Touch



SYNC MASTER=N61 MLB		SYNC DATE=11/01/2013	
PAGE TITLE			
DISPLAY: FLEX CONN			
DRAWING NUMBER		SIZE	
051-0517		D	
REVISION		PAGE	
6.0.0		20 OF 55	
BRANCH		SHEET	
		20 OF 55	
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# MESA CONNECTOR

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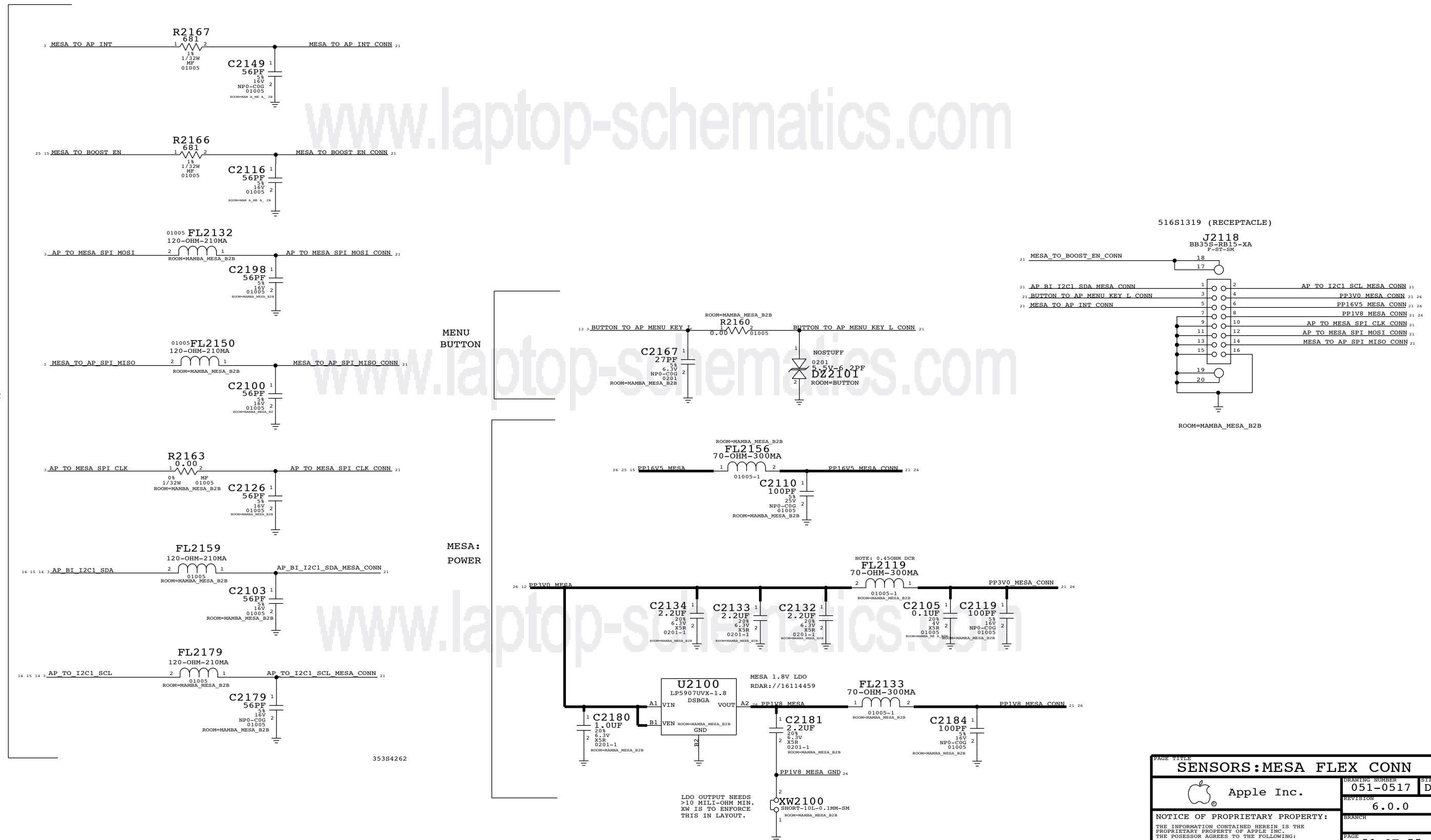
www.laptop-schematics.com

www.laptop-schematics.com

MESA:  
INT, EN, SPI, I2C

MENU  
BUTON

MESA:  
POWER



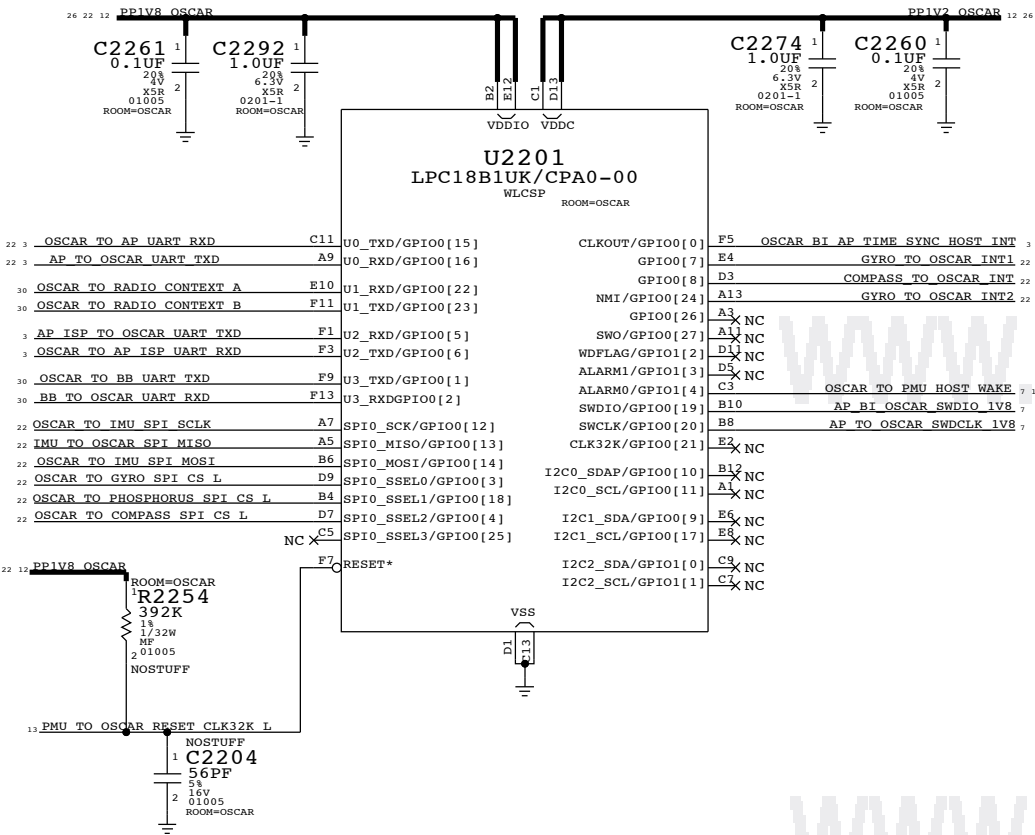
35384262

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

PAGE TITLE		
SENSORS:MESA FLEX CONN		
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	REVISION	6.0.0
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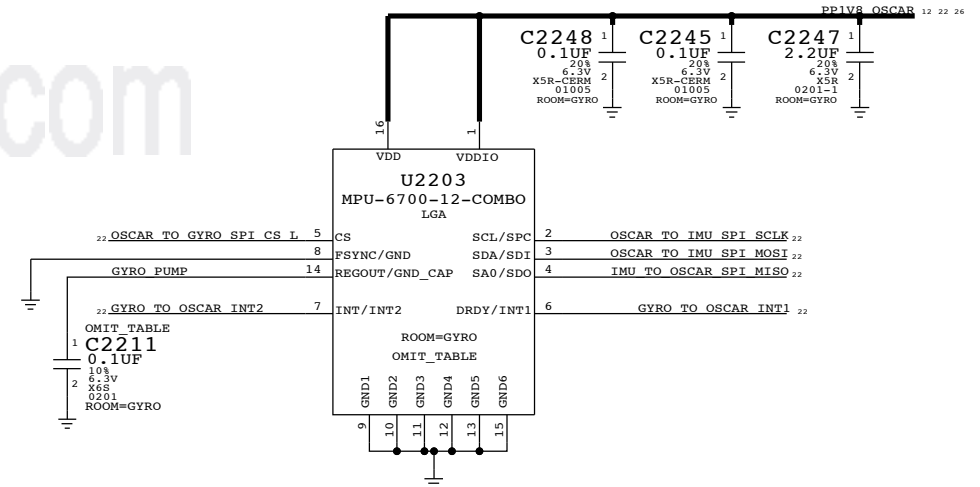
# OSCAR + SENSORS

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



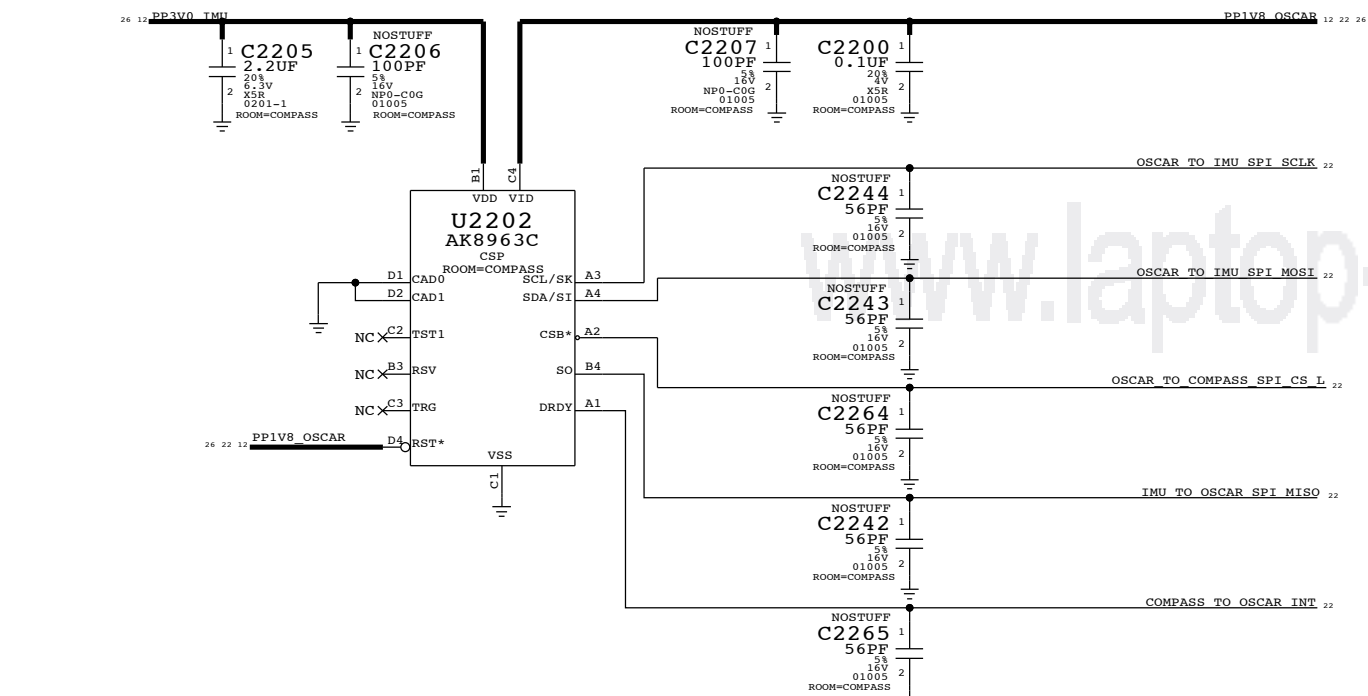
# CARBON (ACCEL GYRO COMBO)

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

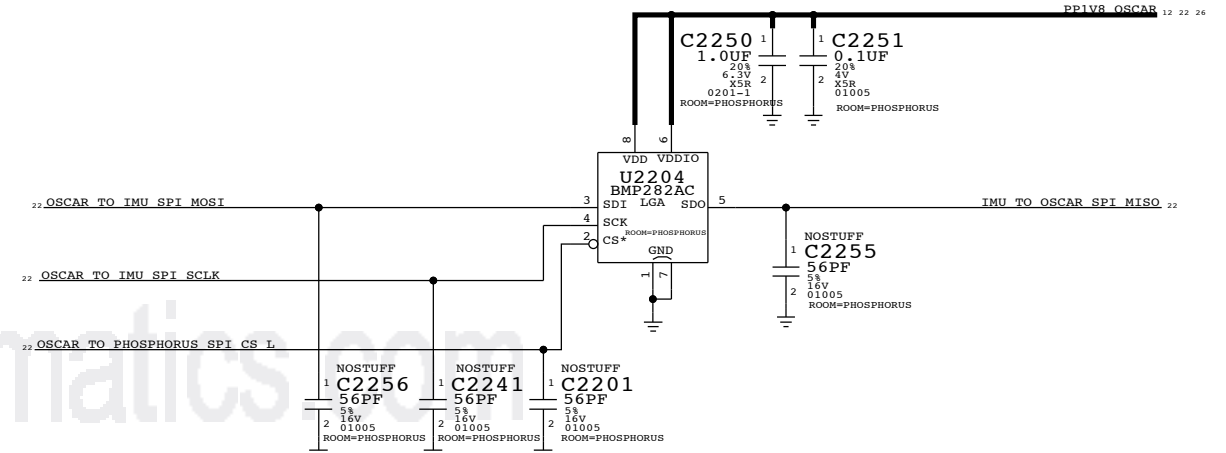


THIS PART OUTSIDE OF SHIELD ON THE PENINSULA

# COMPASS



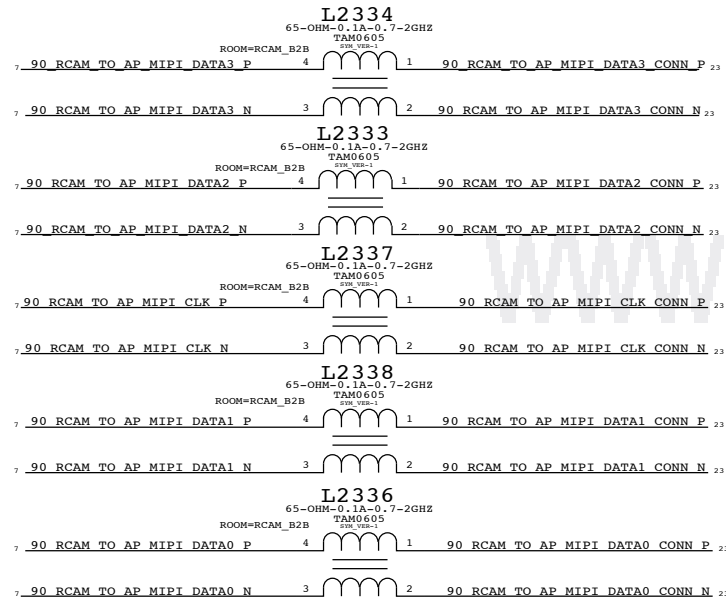
THIS IS OUTSIDE OF SHIELD IN TO THE RIGHT OF THE NAND  
**PHOSPHORUS**



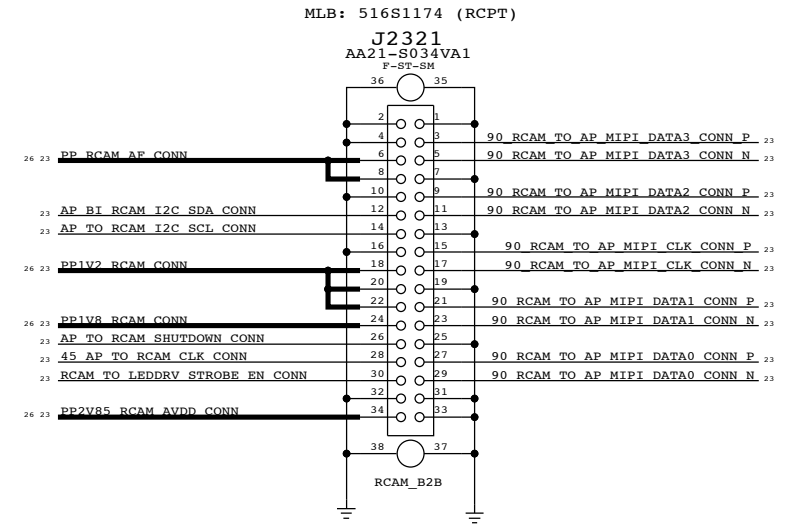
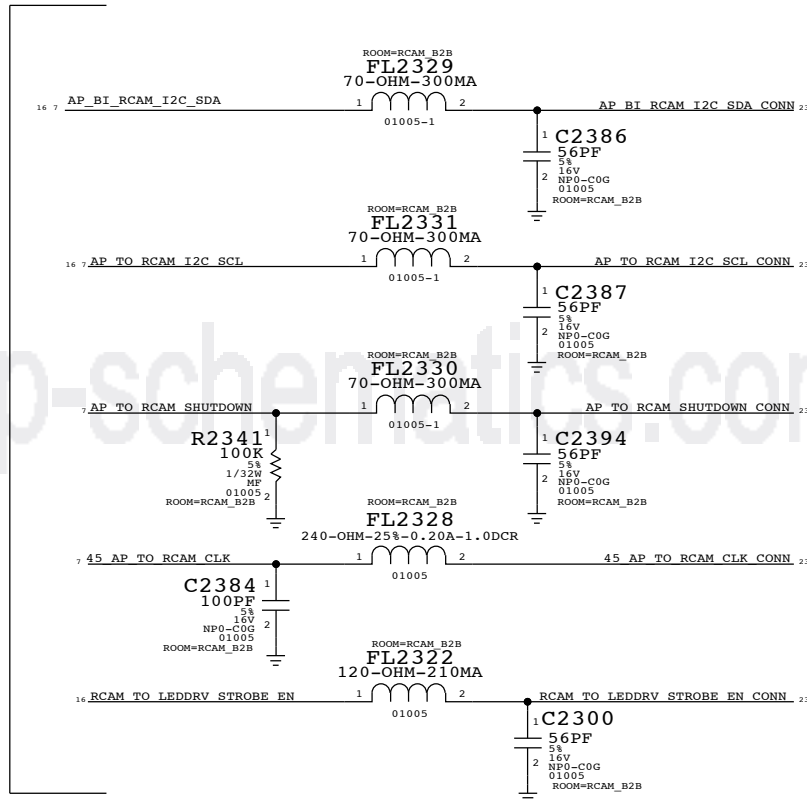
SYNC MASTER=N61 MLB		SYNC DATE=10/08/2013	
PAGE TITLE			
SENSORS:OSCAR,CARBON,PHOS,MAGNESIUM			
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# RCAM B2B (REAR CAMERA CONNECTOR)

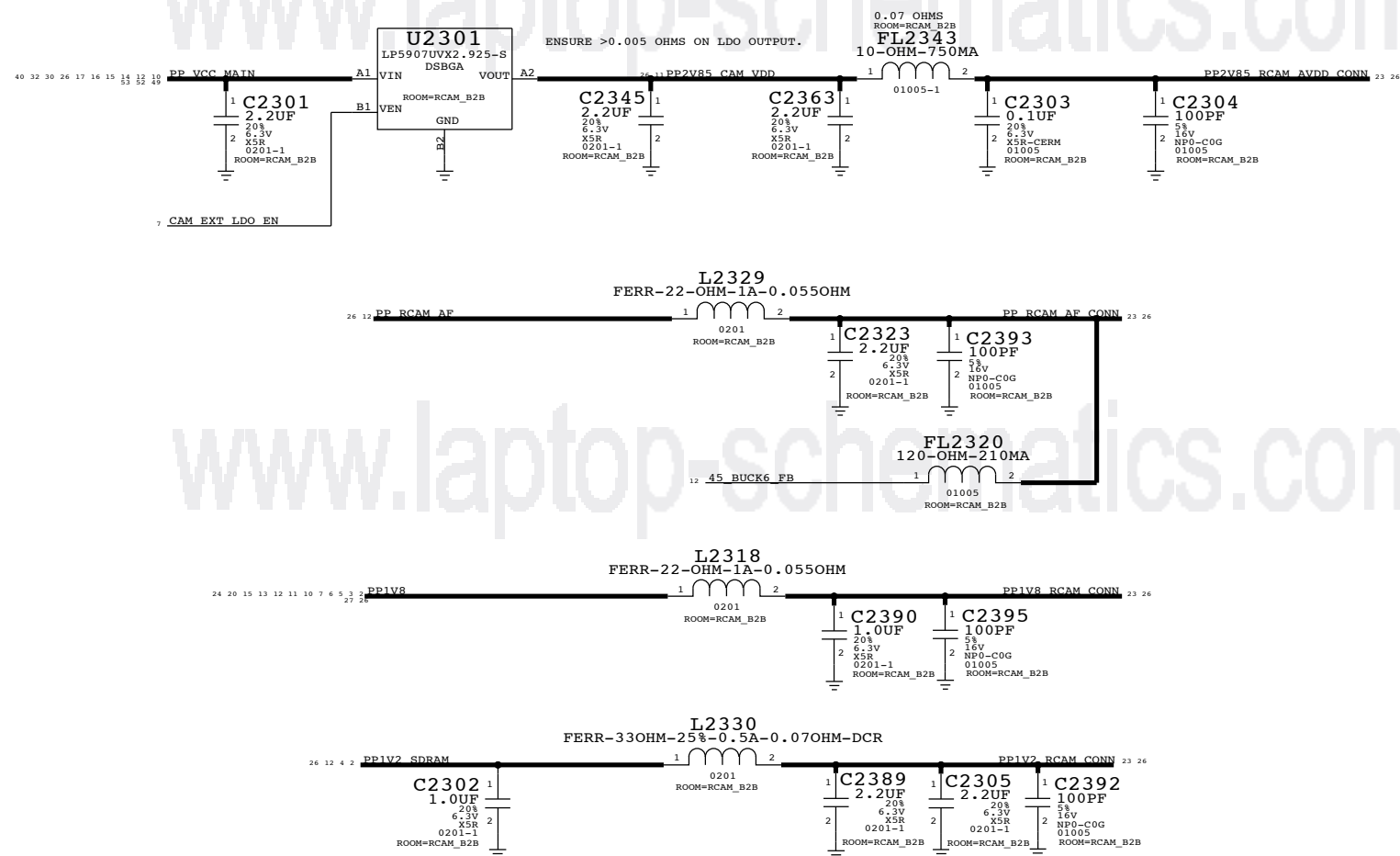
RCAM:  
4-LANE MIPI



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



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



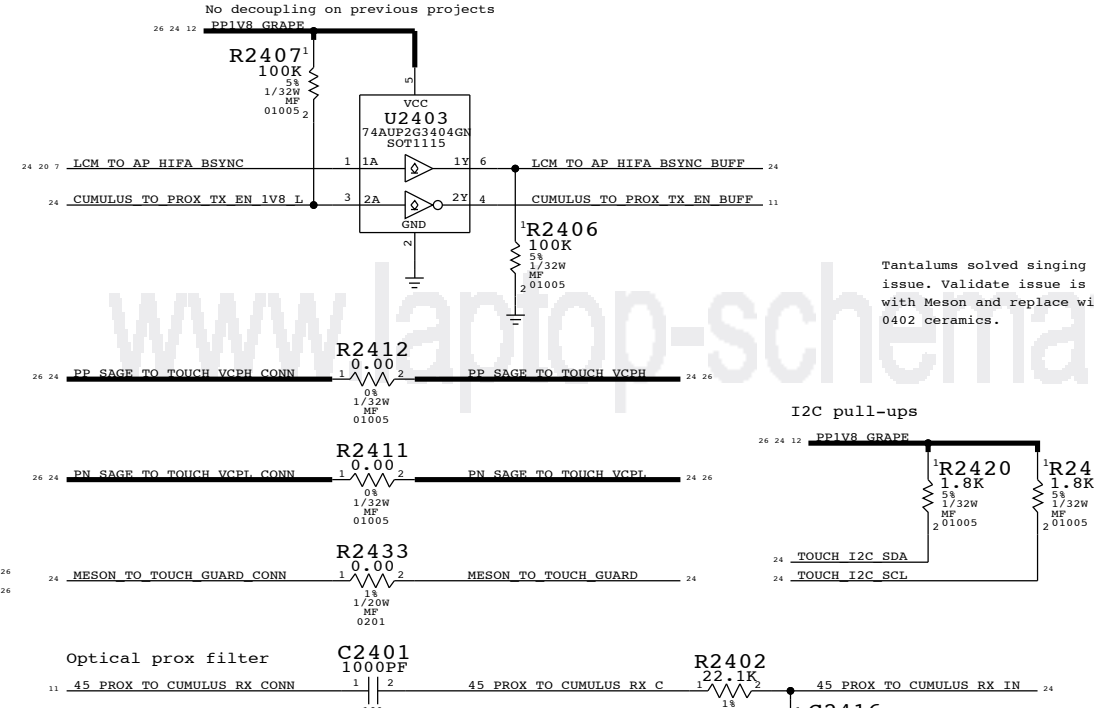
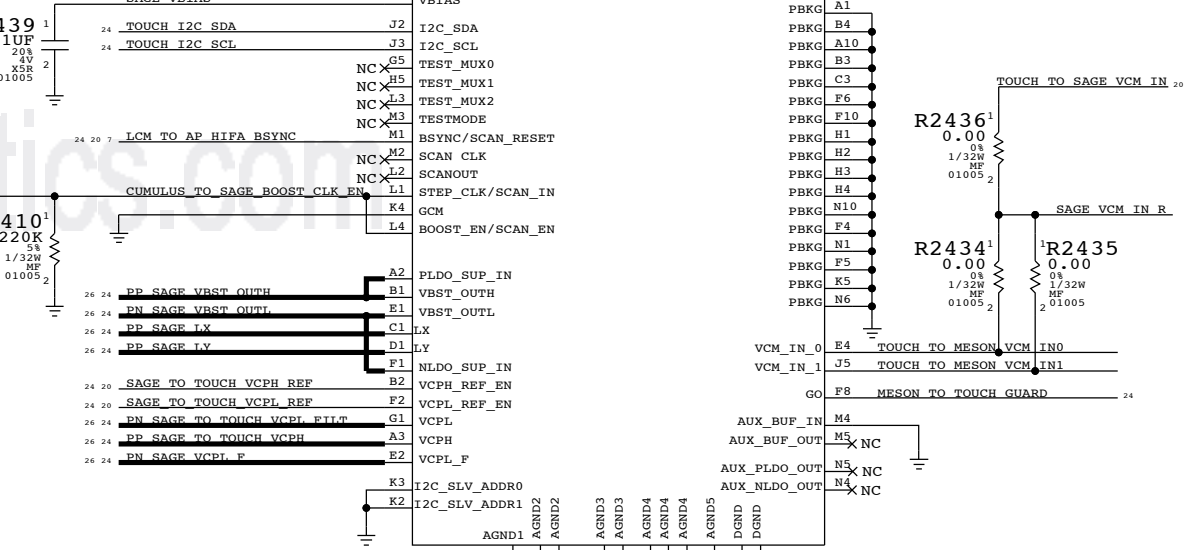
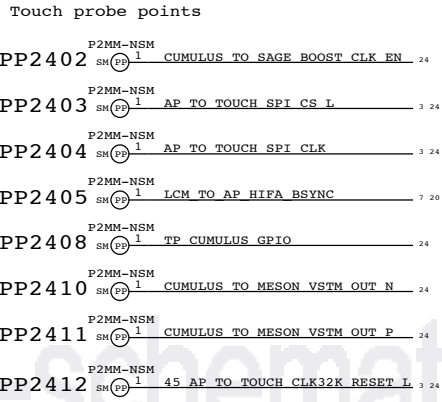
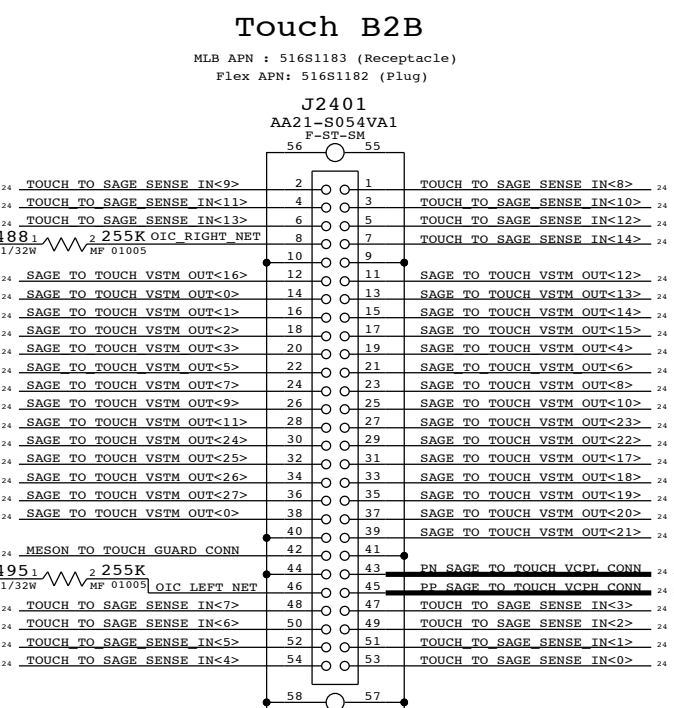
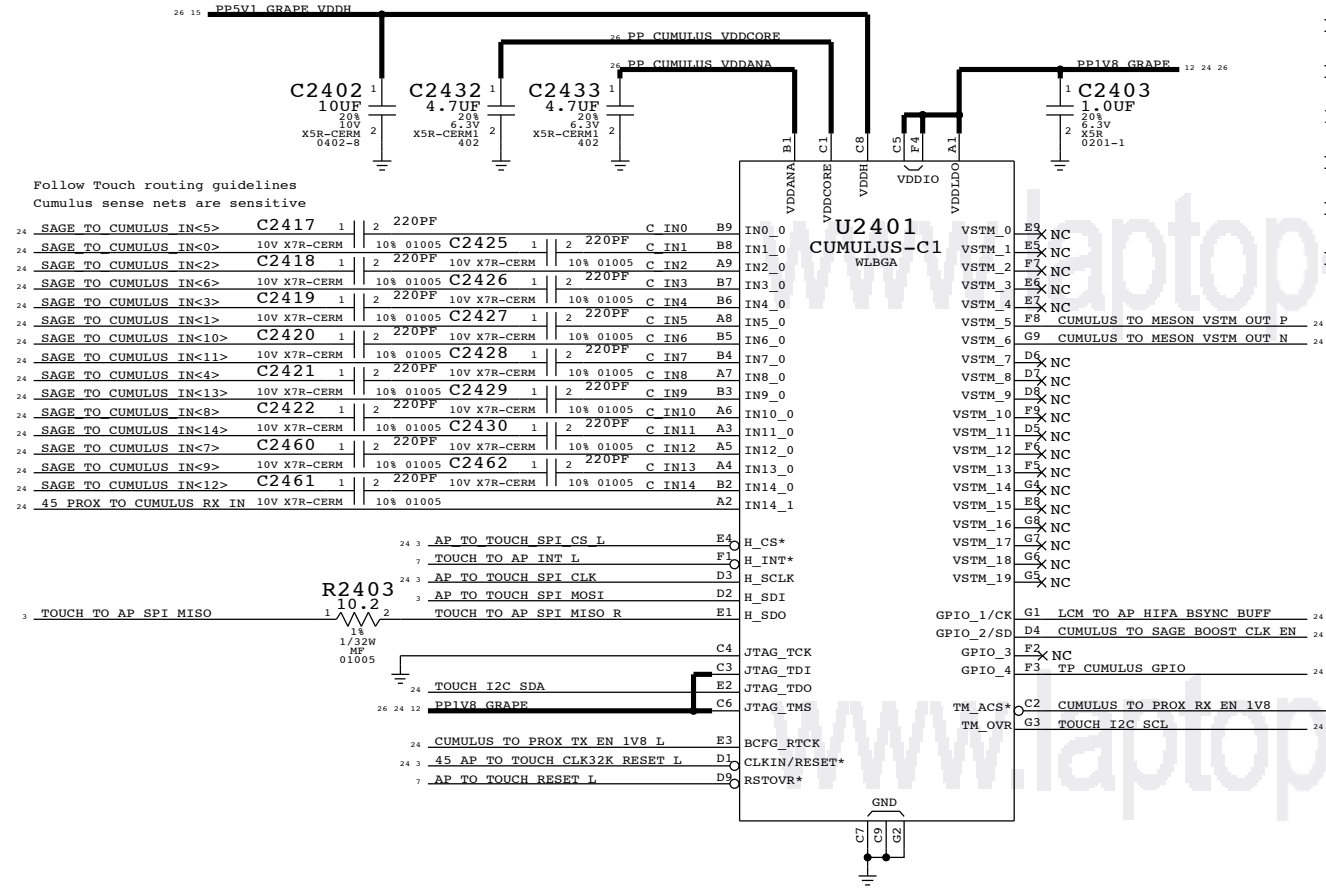
SYNC MASTER=N61 MLB		SYNC DATE=11/01/2013	
CAMERA: REAR FLEX CONN			
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# Touch (B2B, Driver ICs)

## Cumulus

APN: 34350638

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

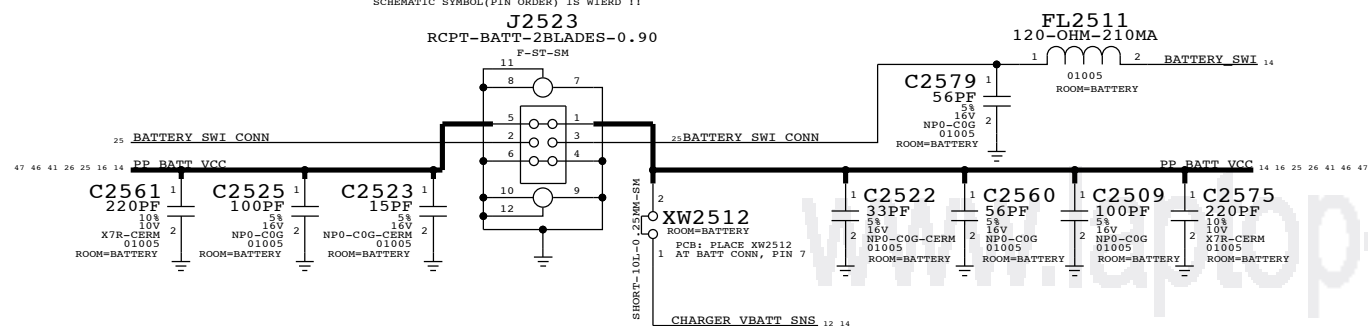


PAGE TITLE		SYNC MASTER=N/A		SYNC DATE=N/A	
<b>TOUCH : CUMULUS , MESON</b>					
Apple Inc.		DRAWING NUMBER	051-0517	SIZE	D
		REVISION	6.0.0	BRANCH	
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		PAGE	24 OF 55	SHEET	24 OF 55

# BATT CONN, TPS, STANDOFFS / SHIELDS / FIDUCIALS

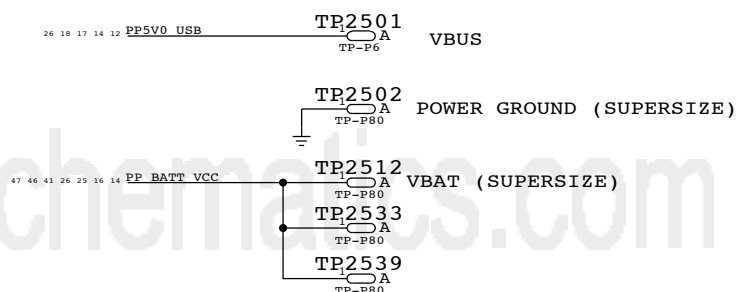
## BATTERY CONN

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

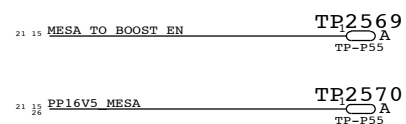


## TESTPOINTS

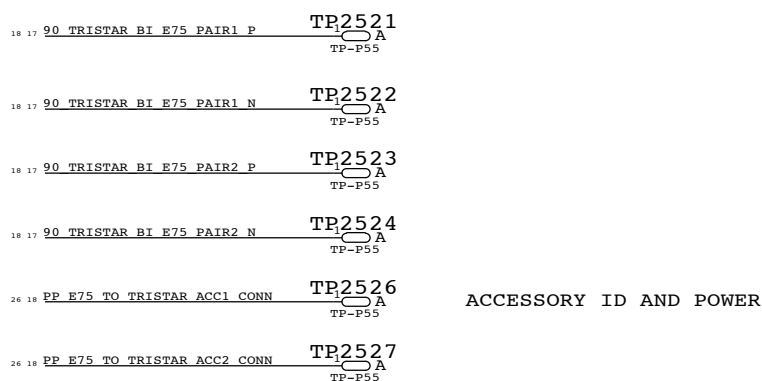
### POWER TP



### MOJAVE TP

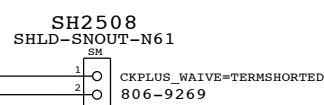


### E75 - USB/UART/ID/POWER

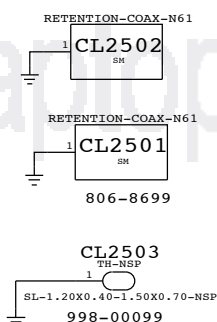


ACCESSORY ID AND POWER

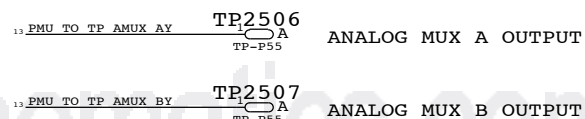
## SHIELDS



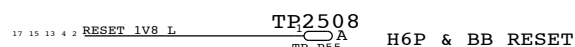
## RF CLIPS



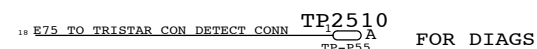
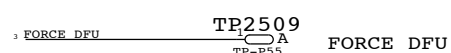
## SUPER TP



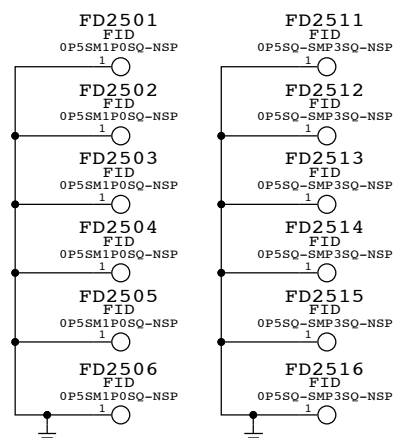
## RESET



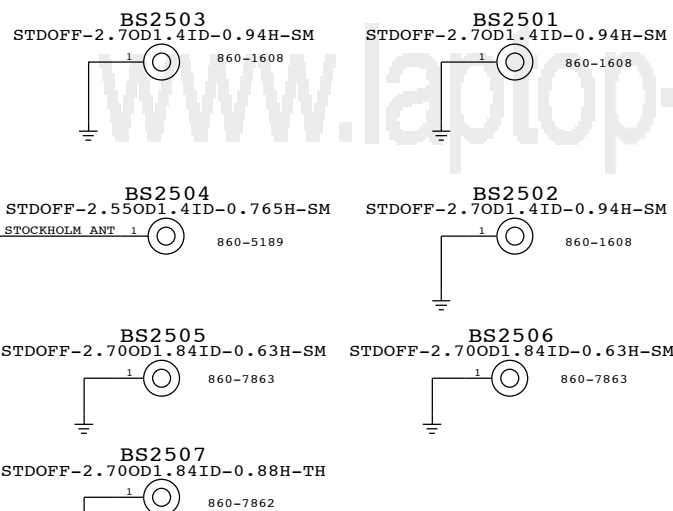
## DFU



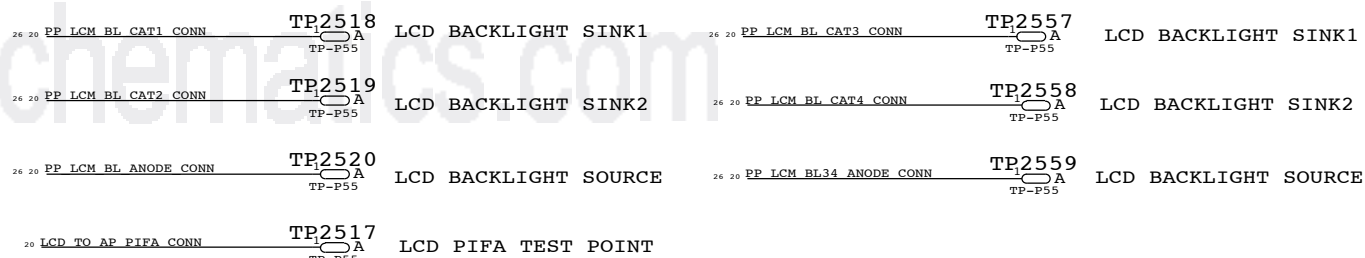
## FIDUCIALS



## STANDOFFS

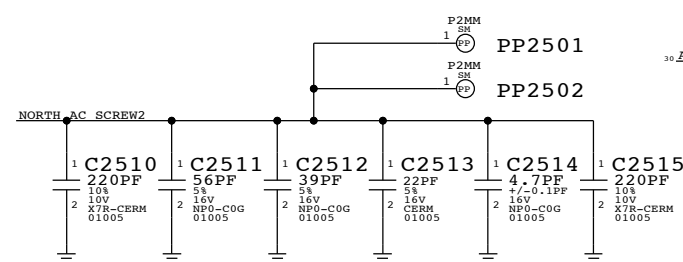


## LCM BACKLIGHT



## 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			
DRAWING NUMBER		SIZE	
051-0517		D	
REVISION		BRANCH	
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PAGE		SHEET	
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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 LDO9	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 3 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 I2OIN	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 I2O 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 I2O13 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

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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}
```

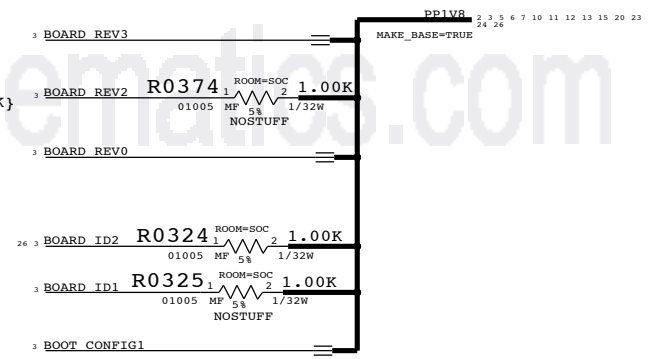
```
FLOAT=LOW, PULLUP=HIGH
1111 PROTO1
1110 PROTO1, ALTERNATE
1100 PROTO2
1011 EVT
1001 CARRIER BUILD <--- SELECTED
```

```
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 <--- SELECTED
011 NAND TEST MODE
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	I42	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	I44	RADIO_ON_L	31	33
3	BB_TO_AP_RESET_DET_L	MAKE_BASE+TRUE	I45	BB_RESET_DET_L	31	36
13	PMU_TO_BB_RST_L	MAKE_BASE+TRUE	I46	RF_PMIC_RESET_L	31	33
3	AP_TO_BB_RST_L	MAKE_BASE+TRUE	I47	BB_RST_L	31	33
			I190			
3	AP_TO_BB_WAKE_MODEM	MAKE_BASE+TRUE	I50	AP_WAKE_MODEM	31	36
3	BB_TO_PMU_HOST_WAKE_L	MAKE_BASE+TRUE	I51	BB_WAKE_HOST_L	31	36
13	BB_TO_AP_IPC_GPIO	MAKE_BASE+TRUE	I52	BB_IPC_GPIO	31	36
3	BB_TO_LEDDRVM_GSM_BLANK	MAKE_BASE+TRUE	I53	GSM_TXBURST_IND	31	36
3	BB_TO_AP_IPC_GPIO1	MAKE_BASE+TRUE	I54	BB_IPC_GPIO1	31	36

## HSIC IPC

2	50_AP_BI_BB_HSIC1_DATA	MAKE_BASE+TRUE	I55	50_BB_HSIC_DATA	31	35
2	50_AP_BI_BB_HSIC1_STB	MAKE_BASE+TRUE	I56	50_BB_HSIC_STROBE	31	35
3	AP_TO_BB_HOST_RDY	MAKE_BASE+TRUE	I57	BB_HOST_RDY	31	36
3	BB_TO_AP_DEVICE_RDY	MAKE_BASE+TRUE	I58	BB_DEVICE_RDY	31	36
3	BB_TO_AP_GPS_SYNC	MAKE_BASE+TRUE	I59	BB_GPS_SYNC	31	36

## UART IPC

3	AP_TO_BB_UART2_RTS_L	MAKE_BASE+TRUE	I60	BB_UART_CTS_L	31	36
3	BB_TO_AP_UART2_CTS_L	MAKE_BASE+TRUE	I61	BB_UART_RTS_L	31	36
17	AP_TO_BB_UART2_TXD	MAKE_BASE+TRUE	I62	BB_UART_RXD	31	36
17	BB_TO_AP_UART2_RXD	MAKE_BASE+TRUE	I63	BB_UART_TXD	31	36

## AUDIO I2S

3	45_AP_TO_BB_I2S3_BCLK	MAKE_BASE+TRUE	I64	BB_I2S_CLK	31	36
3	AP_TO_BB_I2S3_DOUT	MAKE_BASE+TRUE	I65	BB_I2S_RXD	31	36
3	BB_TO_AP_I2S3_DIN	MAKE_BASE+TRUE	I66	BB_I2S_TXD	31	36
3	AP_TO_BB_I2S3_LRCLK	MAKE_BASE+TRUE	I67	BB_I2S_WS	31	36

## OSCAR UART

22	OSCAR_TO_BB_UART_TXD	MAKE_BASE+TRUE	I68	BB_OTHER_RXD	31	36
22	BB_TO_OSCAR_UART_RXD	MAKE_BASE+TRUE	I69	BB_OTHER_TXD	31	36

## BB DEBUG INTERFACES

3	AP_TO_BB_COREDUMP	MAKE_BASE+TRUE	I70	BB_CORE_DUMP	31	36
13	PMU_TO_BB_VBUS_DET	MAKE_BASE+TRUE	I71	BB_USB_VBUS	31	35
17	90_TRISTAR_BI_BB_USB_N	MAKE_BASE+TRUE	I72	90_BB_USB_N	31	35
17	90_TRISTAR_BI_BB_USB_P	MAKE_BASE+TRUE	I73	90_BB_USB_P	31	35

## RADIO ANTENNA CONTROL

18	PP_BB_VDD_2V7	MAKE_BASE+TRUE	I75	PP_LDO14_RFSW	32	42	43	51
18	BB_GPIO0	MAKE_BASE+TRUE	I76	BB_LAT_GPIO0	31	36		
18	BB_GPIO2	MAKE_BASE+TRUE	I77	BB_LAT_GPIO2	31	36		
18	BB_GPIO3	MAKE_BASE+TRUE	I78	BB_LAT_GPIO3	31	36		
18	BB_GPIO4	MAKE_BASE+TRUE	I79	BB_LAT_GPIO4	31	36		

## FCT TESTING

13	RADIO_TO_PMU_ADC_SMPS1	MAKE_BASE+TRUE	I82	ADC_SMPS1	31	
13	RADIO_TO_PMU_ADC_PP_LDO11_VDDIO	MAKE_BASE+TRUE	I83	ADC_PP_LDO11	31	
13	RADIO_TO_PMU_ADC_PP_LDO5_SIM	MAKE_BASE+TRUE	I84	ADC_PP_LDO5	31	
13	RADIO_TO_PMU_ADC_SMPS4	MAKE_BASE+TRUE	I85	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	I2	PP_WL_BT_VDDIO_AP	52

## WLAN/BT HOUSE KEEPING

13	45_PMU_TO_WLAN_CLK32K	MAKE_BASE+TRUE	I3	CLK32K_AP	31	52
13	PMU_TO_WLAN_REG_ON	MAKE_BASE+TRUE	I4	WLAN_REG_ON	31	52
13	WLAN_TO_PMU_HOST_WAKE	MAKE_BASE+TRUE	I5	HOST_WAKE_WLAN	31	52
13	PMU_TO_BT_REG_ON	MAKE_BASE+TRUE	I6	BT_REG_ON	31	52
3	AP_TO_BT_WAKE	MAKE_BASE+TRUE	I7	WAKE_BT	31	52
13	BT_TO_PMU_HOST_WAKE	MAKE_BASE+TRUE	I8	HOST_WAKE_BT	52	

## I9

3	AP_TO_WLAN_JTAG_SWCLK	MAKE_BASE+TRUE	I9	WLAN_JTAG_SWCLK	31	52
3	AP_TO_WLAN_JTAG_SWDIO	MAKE_BASE+TRUE	I10	WLAN_JTAG_SWDIO	31	52
13	WLAN_TO_PMU_PCIE_WAKE_L	MAKE_BASE+TRUE	I11	WLAN_PCIE_WAKE_L	31	52
3	AP_TO_WLAN_DEVICE_WAKE	MAKE_BASE+TRUE	I12	PCIE_DEV_WAKE	31	52
3	90_WLAN_TO_AP_PCIE1_RXDP_P	MAKE_BASE+TRUE	I13	90_WLAN_PCIE_TDP	31	52
3	90_WLAN_TO_AP_PCIE1_RXDP_N	MAKE_BASE+TRUE	I14	90_WLAN_PCIE_TDN	31	52
7	90_AP_TO_WLAN_PCIE1_TXDP_P	MAKE_BASE+TRUE	I15	90_WLAN_PCIE_RDP	31	52
7	90_AP_TO_WLAN_PCIE1_TXDP_N	MAKE_BASE+TRUE	I16	90_WLAN_PCIE_RDN	31	52
7	90_AP_TO_WLAN_PCIE1_REFCLK1_P	MAKE_BASE+TRUE	I17	90_WLAN_PCIE_REFCLK_P	52	
7	90_AP_TO_WLAN_PCIE1_REFCLK1_N	MAKE_BASE+TRUE	I18	90_WLAN_PCIE_REFCLK_N	52	
7	WLAN_TO_AP_PCIE1_CLKREQ_L	MAKE_BASE+TRUE	I19	WLAN_PCIE_CLKREQ_L	31	52
7	AP_TO_WLAN_PCIE1_RST_L	MAKE_BASE+TRUE	I20	WLAN_PCIE_PERST_L	31	52

## WLAN HSIC IPC

3	WLAN_TO_AP_UART4_RXD	MAKE_BASE+TRUE	I21	WLAN_UART_TXD	31	52
3	AP_TO_WLAN_UART4_TXD	MAKE_BASE+TRUE	I22	WLAN_UART_RXD	31	52
3	WLAN_TO_AP_UART4_CTS_L	MAKE_BASE+TRUE	I23	WLAN_UART_RTS_L	31	52
3	AP_TO_WLAN_UART4_RTS_L	MAKE_BASE+TRUE	I24	WLAN_UART_CTS_L	31	52

## BT UART IPC

3	AP_TO_BT_UART1_RTS_L	MAKE_BASE+TRUE	I26	BT_UART_CTS_L	52	
3	BT_TO_AP_UART1_CTS_L	MAKE_BASE+TRUE	I27	BT_UART_RTS_L	52	
3	AP_TO_BT_UART1_TXD	MAKE_BASE+TRUE	I28	BT_UART_RXD	31	52
3	BT_TO_AP_UART1_RXD	MAKE_BASE+TRUE	I29	BT_UART_TXD	31	52

## BT AUDIO PCM


3	45_AP_TO_BT_I2S1_BCLK	MAKE_BASE+TRUE	I29	BT_PCM_CLK	52	
3	AP_TO_BT_I2S1_DOUT	MAKE_BASE+TRUE	I30	BT_PCM_IN	52	
3	BT_TO_AP_I2S1_DIN	MAKE_BASE+TRUE	I31	BT_PCM_OUT	52	
3	AP_TO_BT_I2S1_LRCLK	MAKE_BASE+TRUE	I32	BT_PCM_SYNC	52	

## OSCAR STATES

22	OSCAR_TO_RADIO_CONTEXT_A	MAKE_BASE+TRUE	I34	OSCAR_CONTEXT_A	52	
22	OSCAR_TO_RADIO_CONTEXT_B	MAKE_BASE+TRUE	I35	OSCAR_CONTEXT_B	52	

## STOCKHOLM

3	STOCKHOLM_TO_AP_UART3_CTS_L	MAKE_BASE+TRUE	I36	STOCKHOLM_RTS_L	31	53		
3	AP_TO_STOCKHOLM_UART3_RTS_L	MAKE_BASE+TRUE	I37	STOCKHOLM_CTS_L	31	53		
3	STOCKHOLM_TO_AP_UART3_RXD	MAKE_BASE+TRUE	I38	STOCKHOLM_UART_TXD	31	53		
3	AP_TO_STOCKHOLM_UART3_TXD	MAKE_BASE+TRUE	I39	STOCKHOLM_UART_RXD	31	53		
3	AP_TO_STOCKHOLM_DWLD_REQ	MAKE_BASE+TRUE	I40	STOCKHOLM_FW_DWLD_REQ	53			
15	STOCKHOLM_TO_PMU_HOST_WAKE	MAKE_BASE+TRUE	I41	STOCKHOLM_HOST_WAKE	31	53		
3	AP_TO_STOCKHOLM_EN	MAKE_BASE+TRUE	I42	STOCKHOLM_ENABLE	53			
3	PP3V0_TRISTAR	MAKE_BASE+TRUE	I43	STOCKHOLM_VDD_MIX_3V0	53			
30	26	17	15	12	AP_TO_STOCKHOLM_SIM_SEL	MAKE_BASE+TRUE	STOCKHOLM_SIM_SEL	55
3	AP_TO_STOCKHOLM_ANT	MAKE_BASE+TRUE	I44	STOCKHOLM_ANT	53			

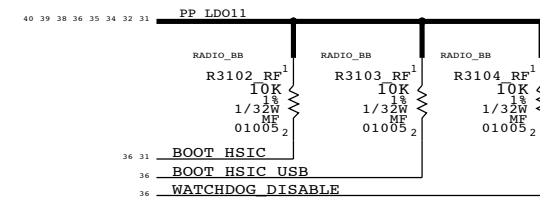
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# AP INTERFACE & DEBUG CONNECTORS

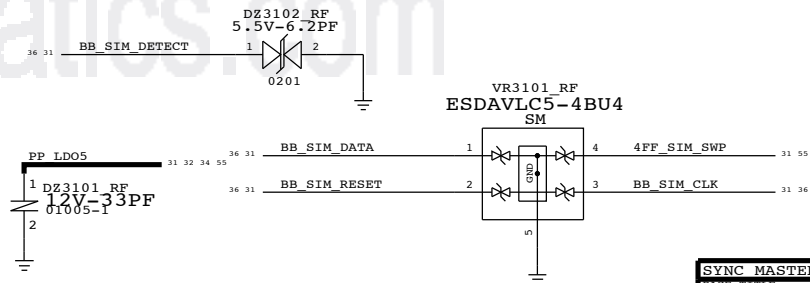
## PROBE POINTS

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PP3113 RF P4MM-NSM SM 1 BB_COEX_UART_RXD 36 52 EP WIFI_BT	PP3122 RF P4MM-NSM SM 1 BB_REQUEST_XO_CLK 33 53 EP SIM_DEBUG	PP3116 RF P4MM-NSM SM 1 50_BB_HSIC_DATA 30 35 EP SIM_DEBUG	PP3131 RF P4MM-NSM SM 1 BB_JTAG_TCK 30 35 EP SIM_DEBUG	PP3142 RF P4MM-NSM SM 1 BB_UART_RXD 30 36 EP SIM_DEBUG	PP3171 RF P4MM-NSM SM 1 RFFE1_DATA 36 40 41 42 43 44 45 EP RF_DEBUG
PP3114 RF P4MM-NSM SM 1 BB_COEX_UART_TXD 36 52 EP WIFI_BT	PP3123 RF P2MM-NSM SM 1 STOCKHOLM_UART_RXD 30 53 EP RADIO_STOCKHOLM	PP3101 RF P4MM-NSM SM 1 BB_DEBUG_ERROR 36 EP SIM_DEBUG	PP3132 RF P4MM-NSM SM 1 BB_JTAG_TMS 30 35 EP SIM_DEBUG	PP3143 RF P4MM-NSM SM 1 BB_UART_RTS_L 30 36 EP SIM_DEBUG	PP3172 RF P4MM-NSM SM 1 RFFE2_CLK 36 46 47 49 EP RF_DEBUG
PP3119 RF P2MM-NSM SM 1 BT_UART_TXD 30 52 EP WIFI_BT	PP3124 RF P2MM-NSM SM 1 STOCKHOLM_UART_TXD 30 53 EP RADIO_STOCKHOLM	PP3102 RF P4MM-NSM SM 1 RF_PMIC_RESET_L 30 33 EP SIM_DEBUG	PP3133 RF P4MM-NSM SM 1 BB_JTAG_TDO 30 35 EP SIM_DEBUG	PP3144 RF P4MM-NSM SM 1 BB_UART_CTS_L 30 36 EP SIM_DEBUG	PP3173 RF P4MM-NSM SM 1 RFFE2_DATA 36 46 47 49 EP RF_DEBUG
PP3120 RF P2MM-NSM SM 1 BT_UART_RXD 30 52 EP WIFI_BT	PP3125 RF P2MM-NSM SM 1 STOCKHOLM_CTS_L 30 53 EP RADIO_STOCKHOLM	PP3103 RF P4MM-NSM SM 1 PS_HOLD_PMIC 33 EP SIM_DEBUG	PP3134 RF P4MM-NSM SM 1 BB_JTAG_TDI 30 35 EP SIM_DEBUG	PP3145 RF P4MM-NSM SM 1 BB_HOST_RDY 30 36 EP SIM_DEBUG	PP3175 RF P4MM-NSM SM 1 BB_I2S_WS 30 36 EP RF_DEBUG
PP3152 RF P2MM-NSM SM 1 WAKE_BT 30 52 EP WIFI_BT	PP3126 RF P2MM-NSM SM 1 STOCKHOLM_RTS_L 30 53 EP RADIO_STOCKHOLM	PP3127 RF P4MM-NSM SM 1 PMIC_RESOUT_L 33 35 EP SIM_DEBUG	PP3135 RF P4MM-NSM SM 1 BB_JTAG_TRST_L 30 35 EP SIM_DEBUG	PP3146 RF P4MM-NSM SM 1 BB_DEVICE_RDY 30 36 EP SIM_DEBUG	PP3176 RF P4MM-NSM SM 1 BB_I2S_RXD 30 36 EP RF_DEBUG
PP3153 RF P2MM-NSM SM 1 WLAN_REG_ON 30 52 EP WIFI_BT	PP3128 RF P4MM-NSM SM 1 PP_PN65_VCC_SIM 53 EP SIM_DEBUG	PP3104 RF P4MM-NSM SM 1 MDM_CLK 33 35 EP SIM_DEBUG	PP3136 RF P4MM-NSM SM 1 BB_DEBUG_STATUS 36 EP SIM_DEBUG	PP3147 RF P4MM-NSM SM 1 BB_GPS_SYNC 30 36 EP SIM_DEBUG	PP3177 RF P4MM-NSM SM 1 BB_I2S_TXD 30 36 EP RF_DEBUG
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PP3155 RF P2MM-NSM SM 1 HOST_WAKE_WLAN 30 52 EP WIFI_BT	PP3129 RF P4MM-NSM SM 1 REF_CLK_FROM_BB 33 53 EP SIM_DEBUG	PP3110 RF P4MM-NSM SM 1 RADIO_ON_L 30 33 EP SIM_DEBUG	PP3138 RF P4MM-NSM SM 1 BB_USB_VBUS 30 35 EP SIM_DEBUG	PP3149 RF P4MM-NSM SM 1 BB_RESET_DET_L 30 36 EP SIM_DEBUG	PP3179 RF P4MM-NSM SM 1 BB_OTHER_RXD 30 36 EP RF_DEBUG
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PP3157 RF P2MM-NSM SM 1 WLAN_PCIE_PERST_L 30 52 EP WIFI_BT	PP3183 RF P4MM-NSM SM 1 DSDS_SIM_RESET 35 55 EP SIM_DEBUG	PP3112 RF P4MM-NSM SM 1 SPMI_CLK 33 35 EP SIM_DEBUG	PP3140 RF P4MM-NSM SM 1 90_BB_USB_P 30 35 EP SIM_DEBUG	PP3151 RF P4MM-NSM SM 1 BOOT_HSIC 31 36 EP SIM_DEBUG	PP3185 RF P4MM-NSM SM 1 RFFE2_DATA_BUFFER 36 54 EP RF_DEBUG
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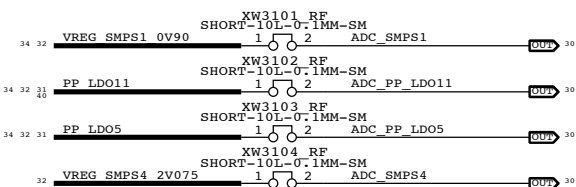
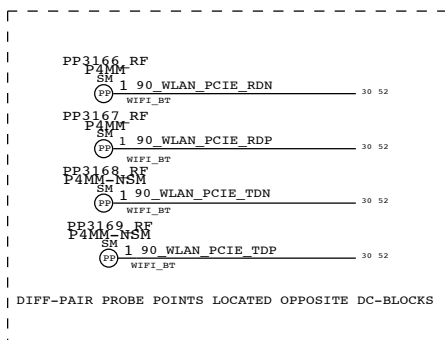
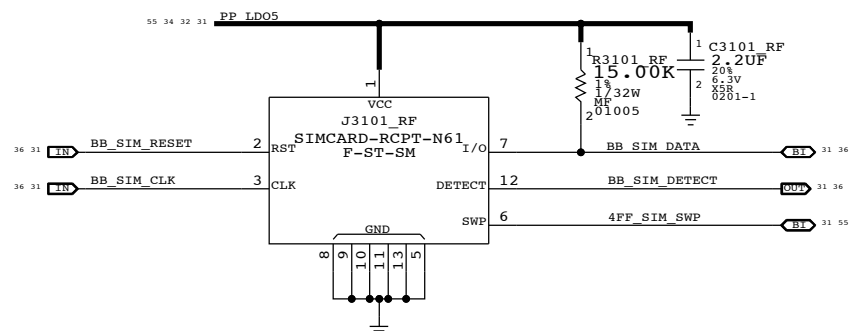
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138S00005	138S00003	ALTERNATE	C3216_RF	15UF CAPACITOR
138S0739	138S0706	ALTERNATE	C4207_RF	1.0UF CAPACITOR
138S0945	138S0706	ALTERNATE	C4207_RF	1.0UF CAPACITOR
138S1103	138S0719	ALTERNATE	C4007_RF	4.7UF CAPACITOR
339S0231	339S0228	ALTERNATE	U5201_RF	CORONA MODULE USI
339S0242	339S0228	ALTERNATE	U5201_RF	CORONA MODULE TDK
155S00024	155S0950	ALTERNATE	F_TRI_RF	TRIPLEXER BIN2



## SIM CARD ESD PROTECTION



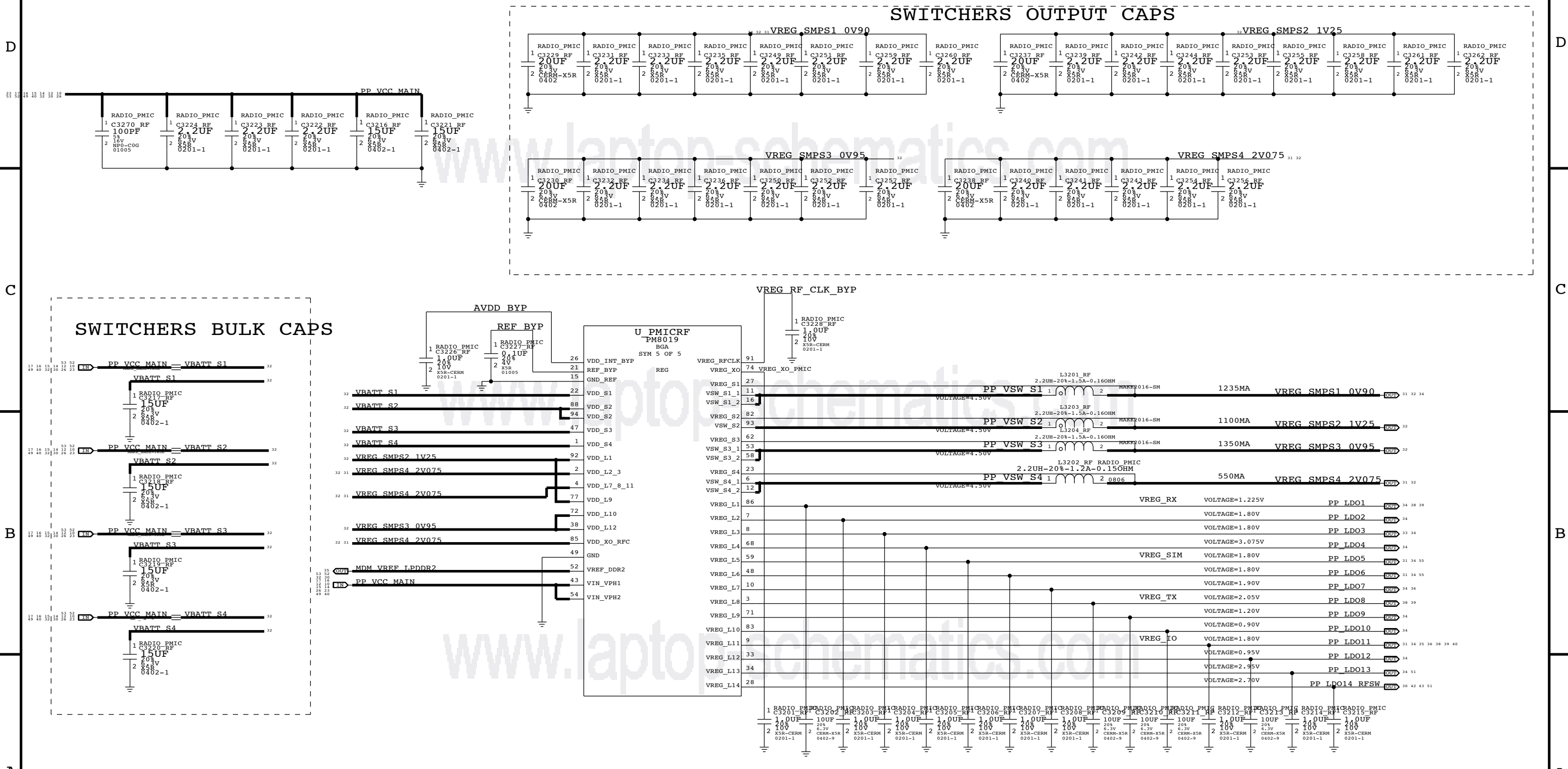
## SIM CARD CONNECTOR



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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

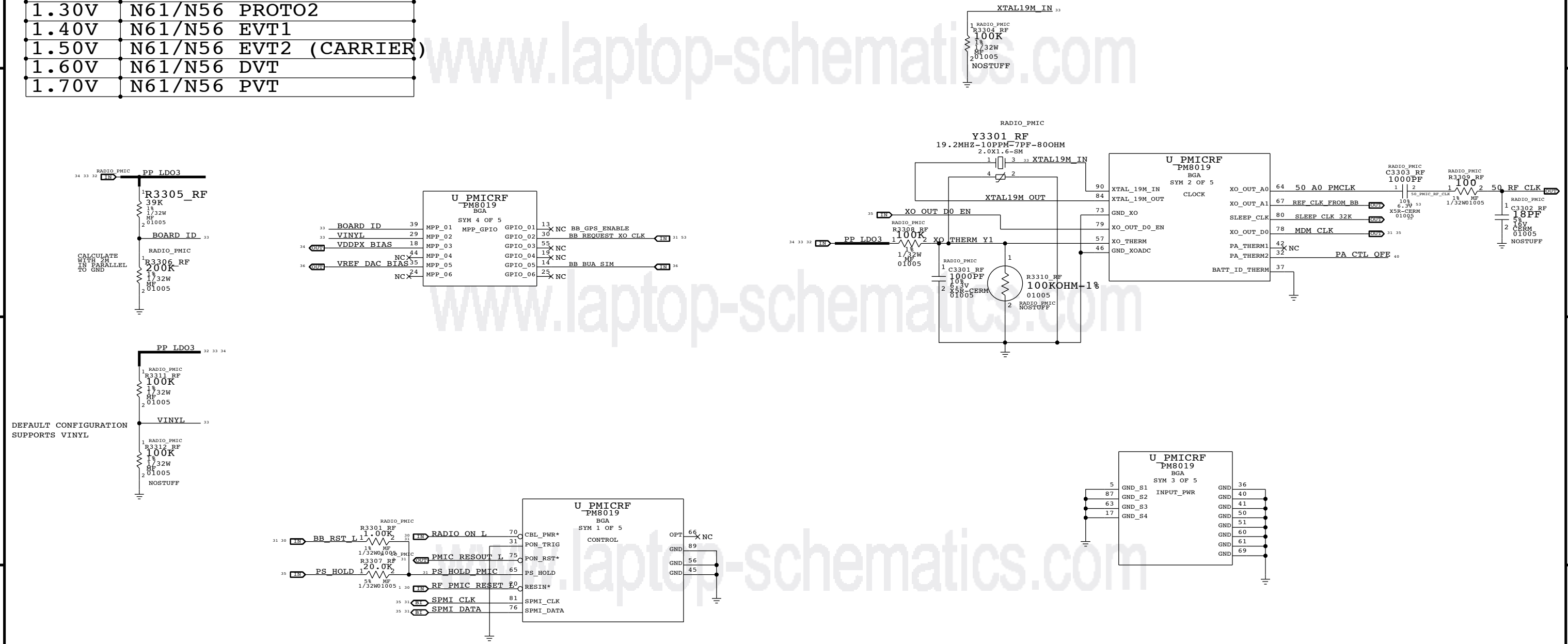
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B

B

A

A

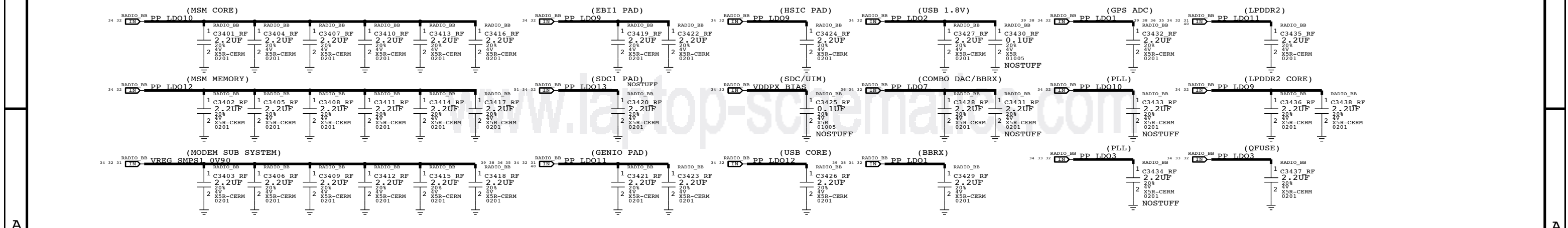
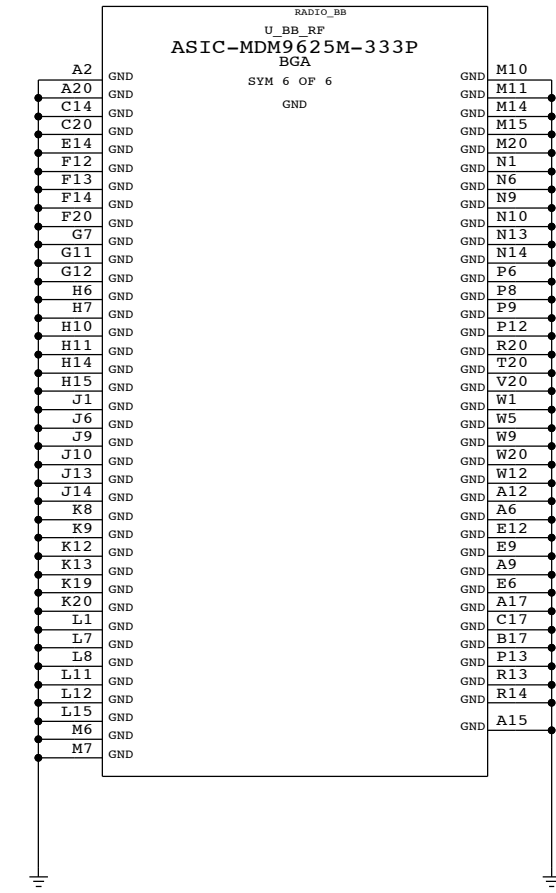
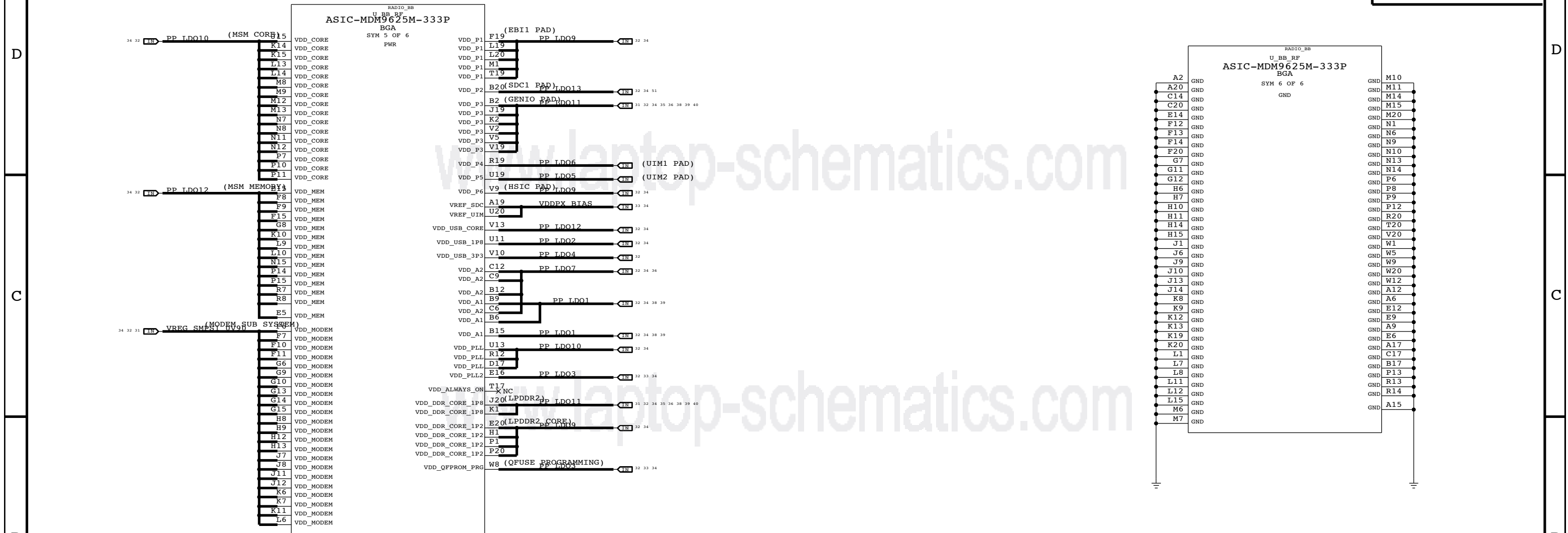


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C538  
R500  
L500  
U502



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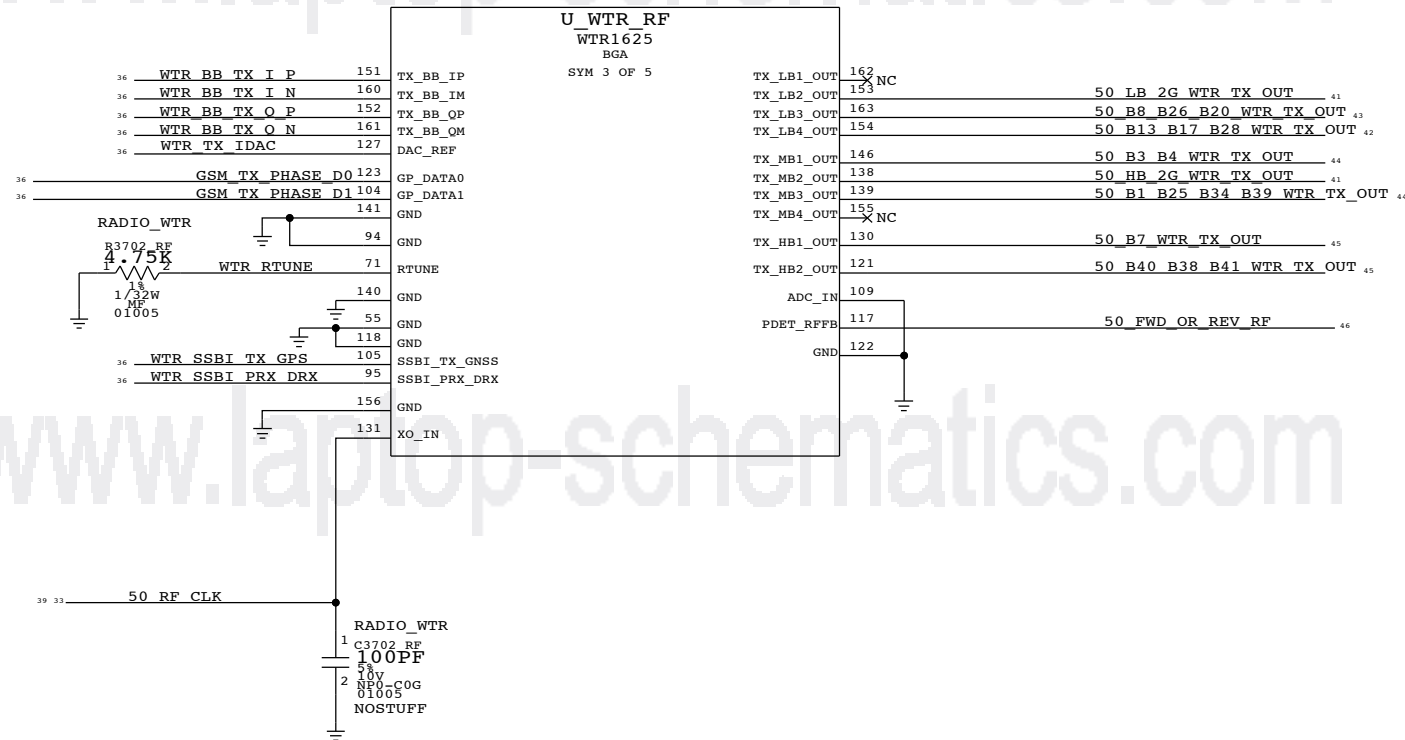
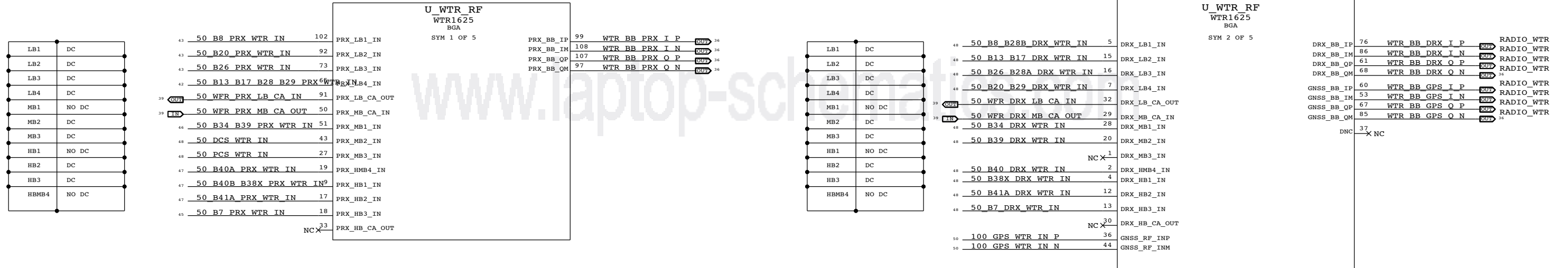




# WTR TRANSCEIVER (1 OF 2)

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C802  
R802  
L800  
U803



RF TRANSCEIVER (1 OF 3)

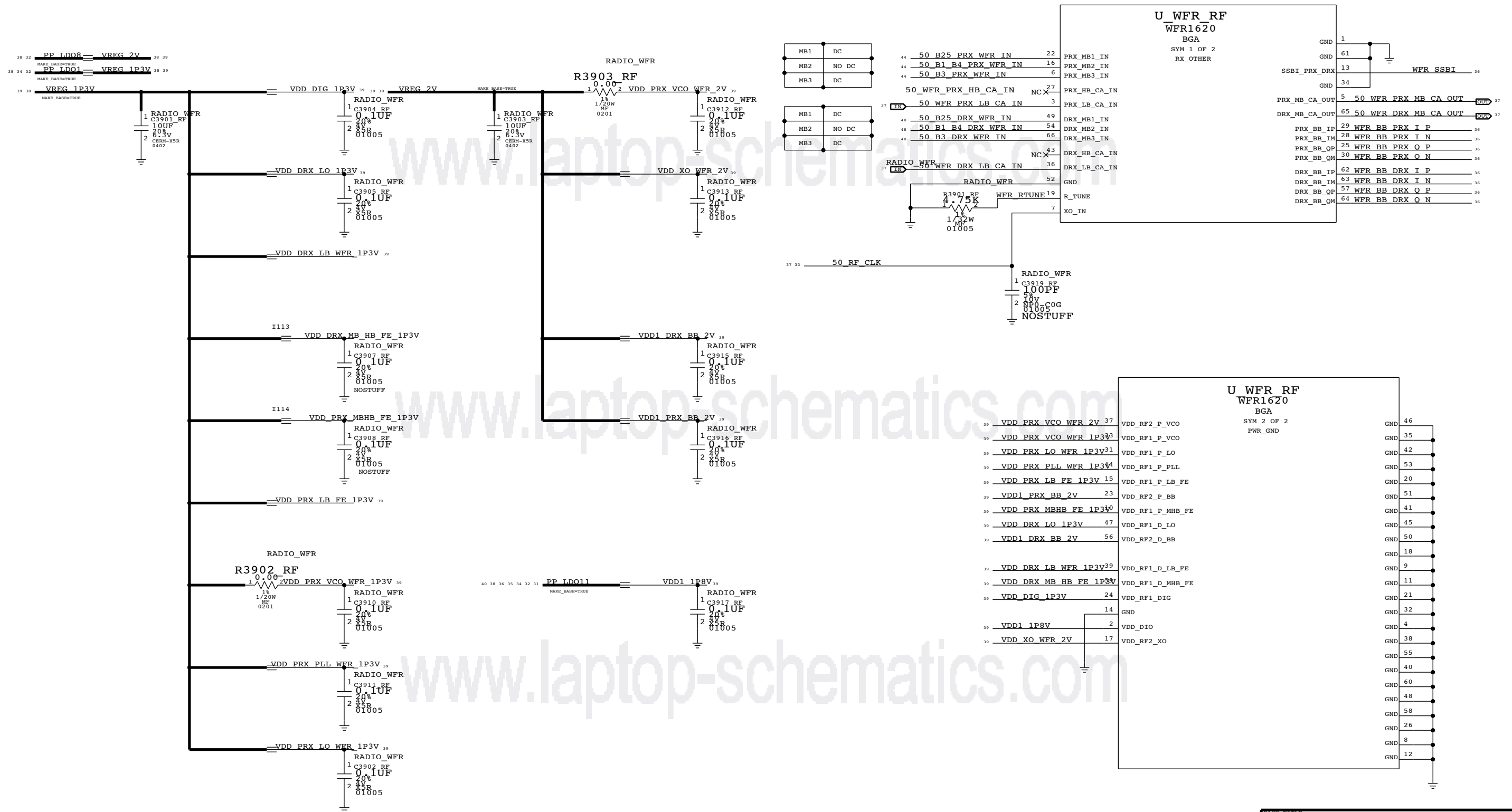
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# WFR TRANSCEIVER

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C1019  
R1016  
L1000  
U1002



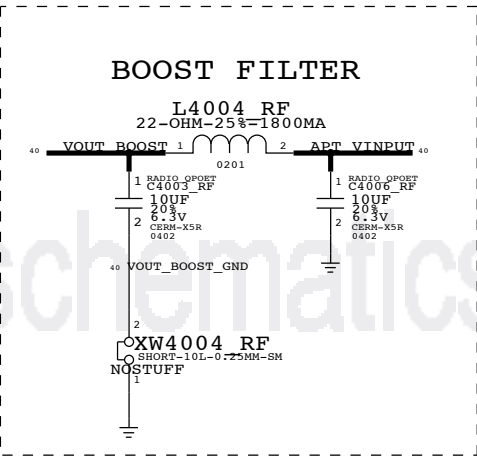
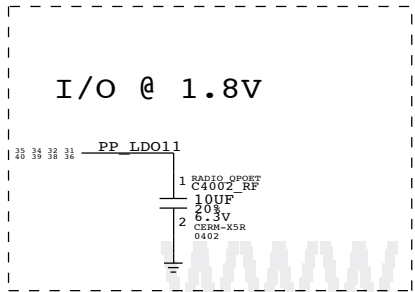
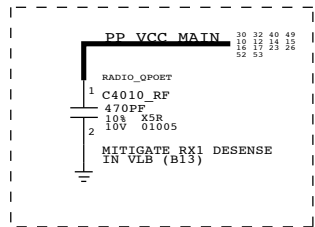
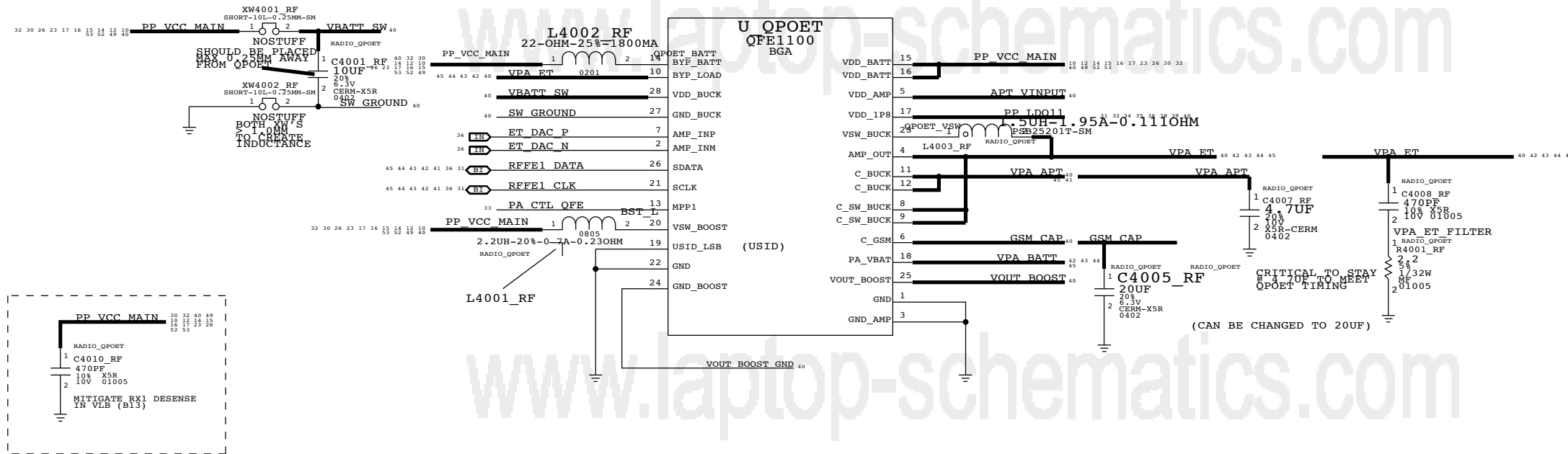
RF TRANSCEIVER (3 OF 3)

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# QFE DCDC

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C1110  
R1102  
L1104  
U1101

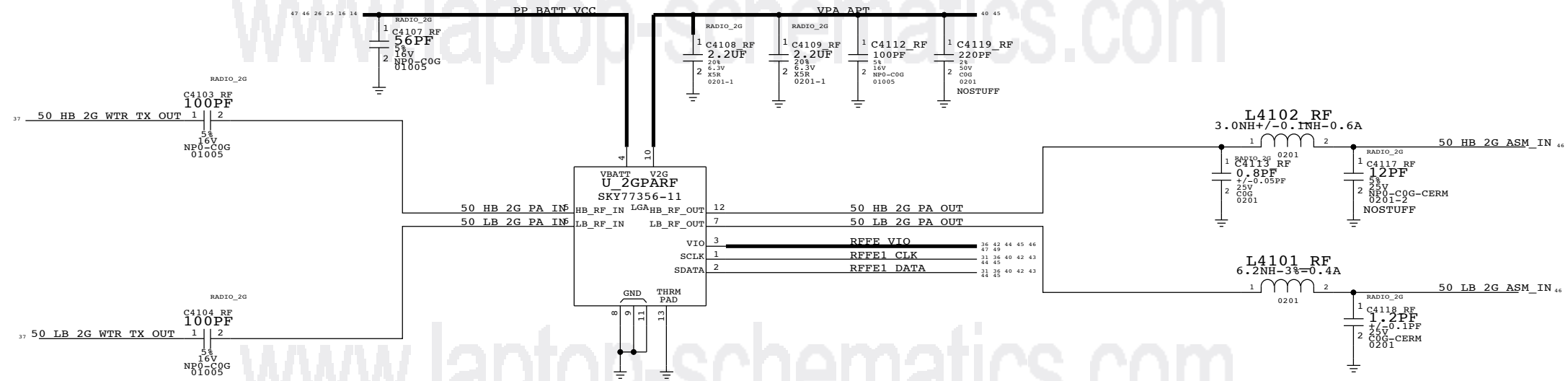


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# 2G PA

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C1208  
R1200  
L1204  
U1201



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C1332  
R1300  
L4215 RF  
U1304

D

D

C

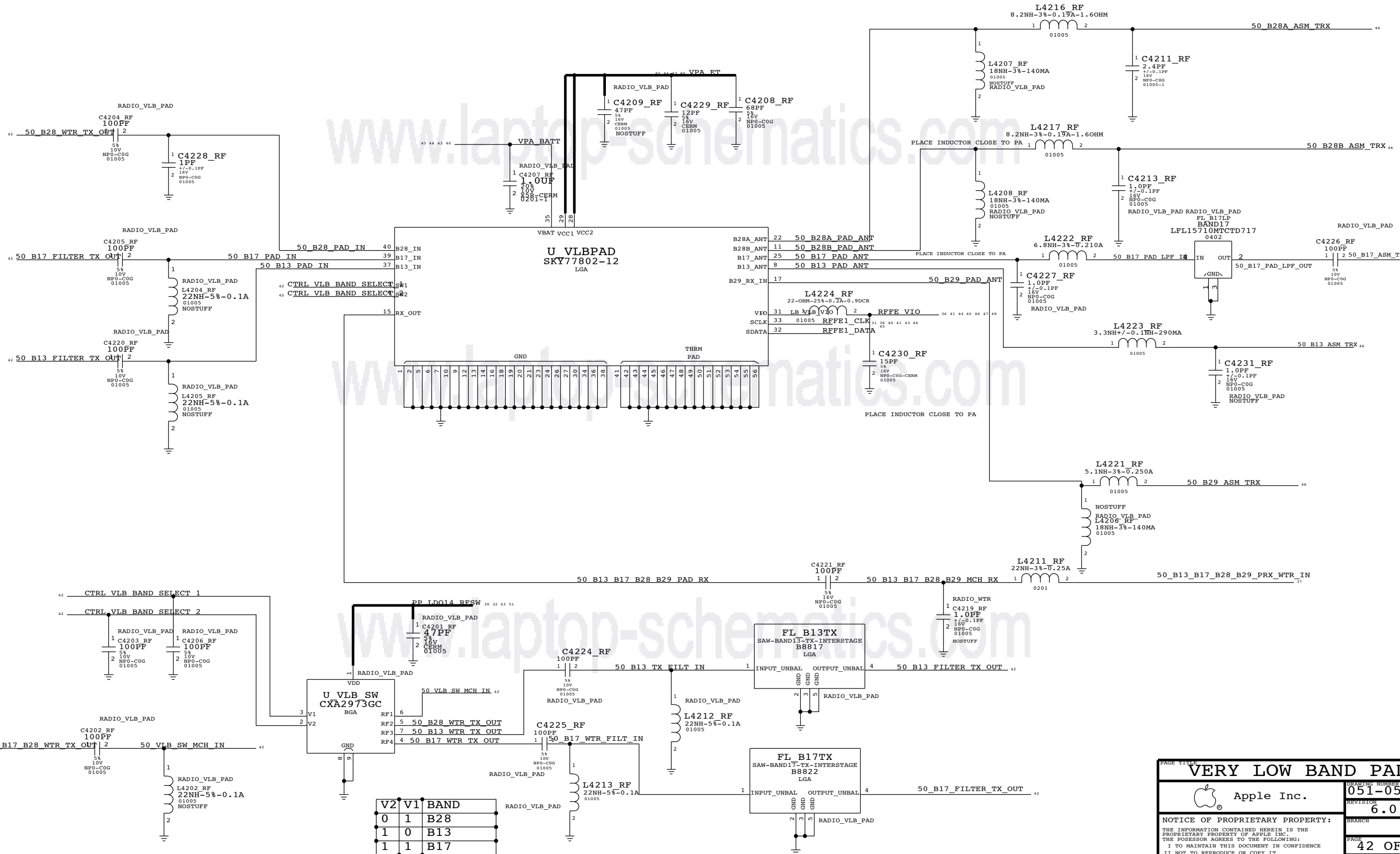
C

B

B

A

A



V2	V1	BAND
0	1	B28
1	0	B13
1	1	B17

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# LOW BAND PAD (B8, B26, B20)

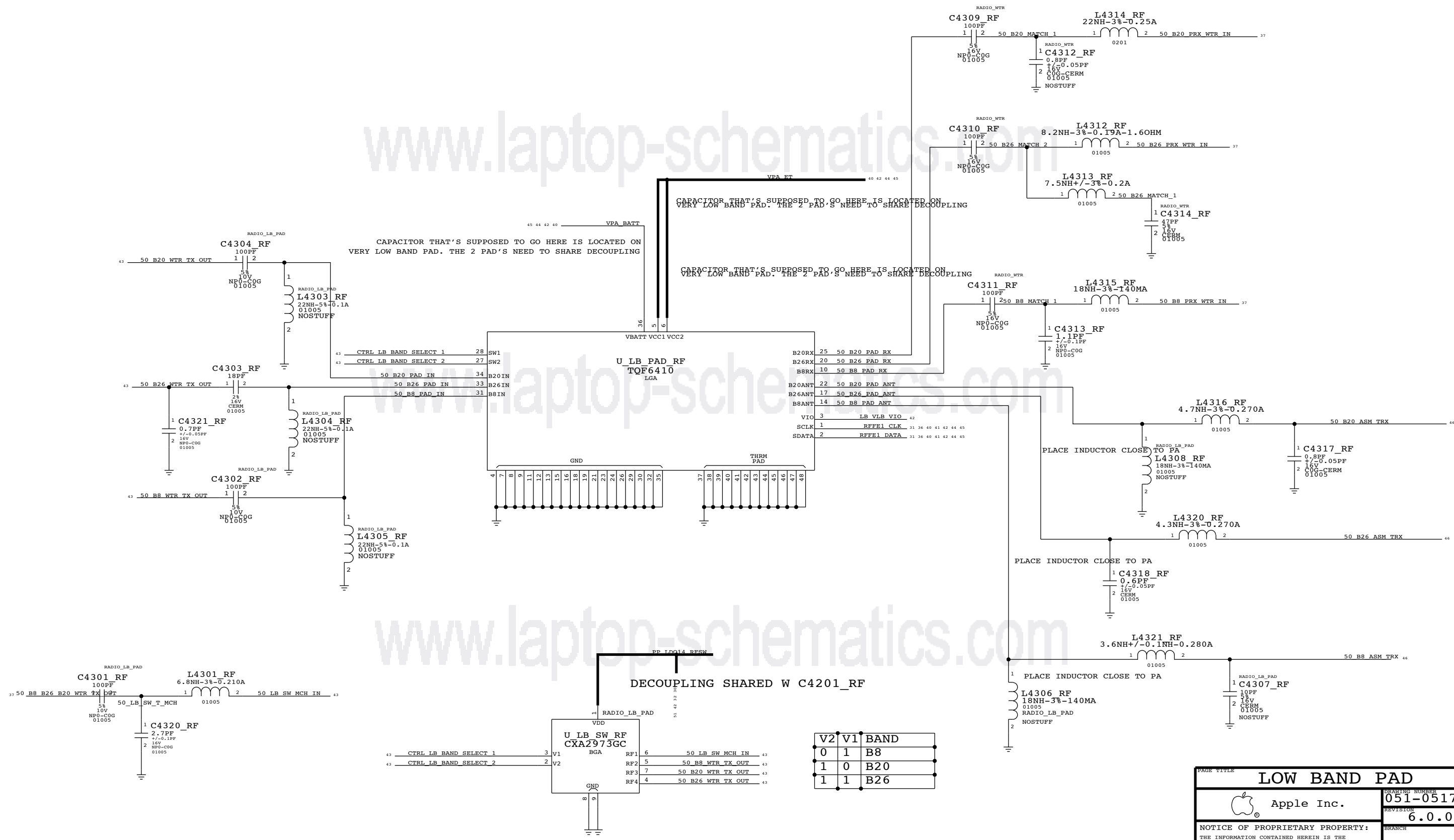
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C4318 RF
R1400
L4322 RF
U1402

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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

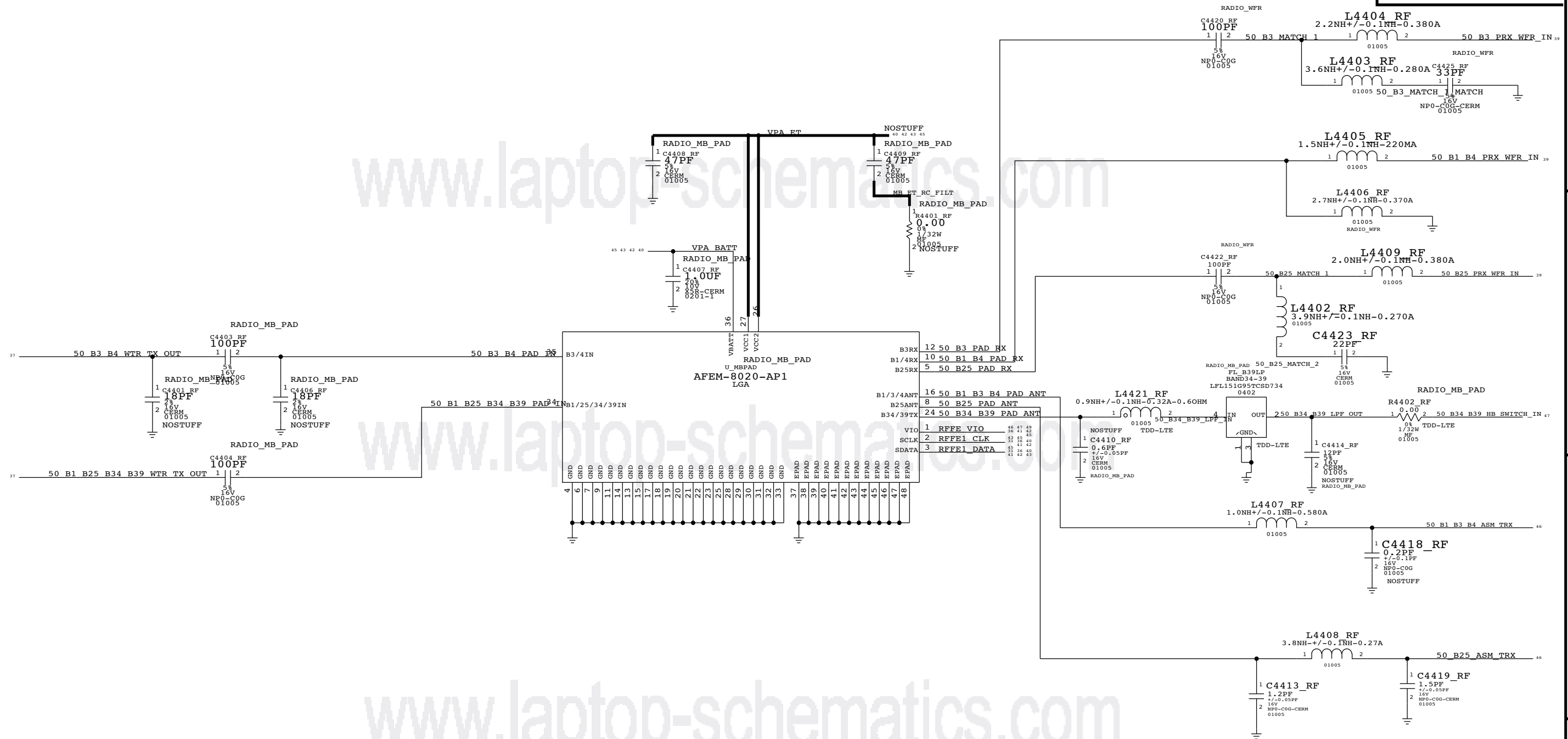
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D

C

B

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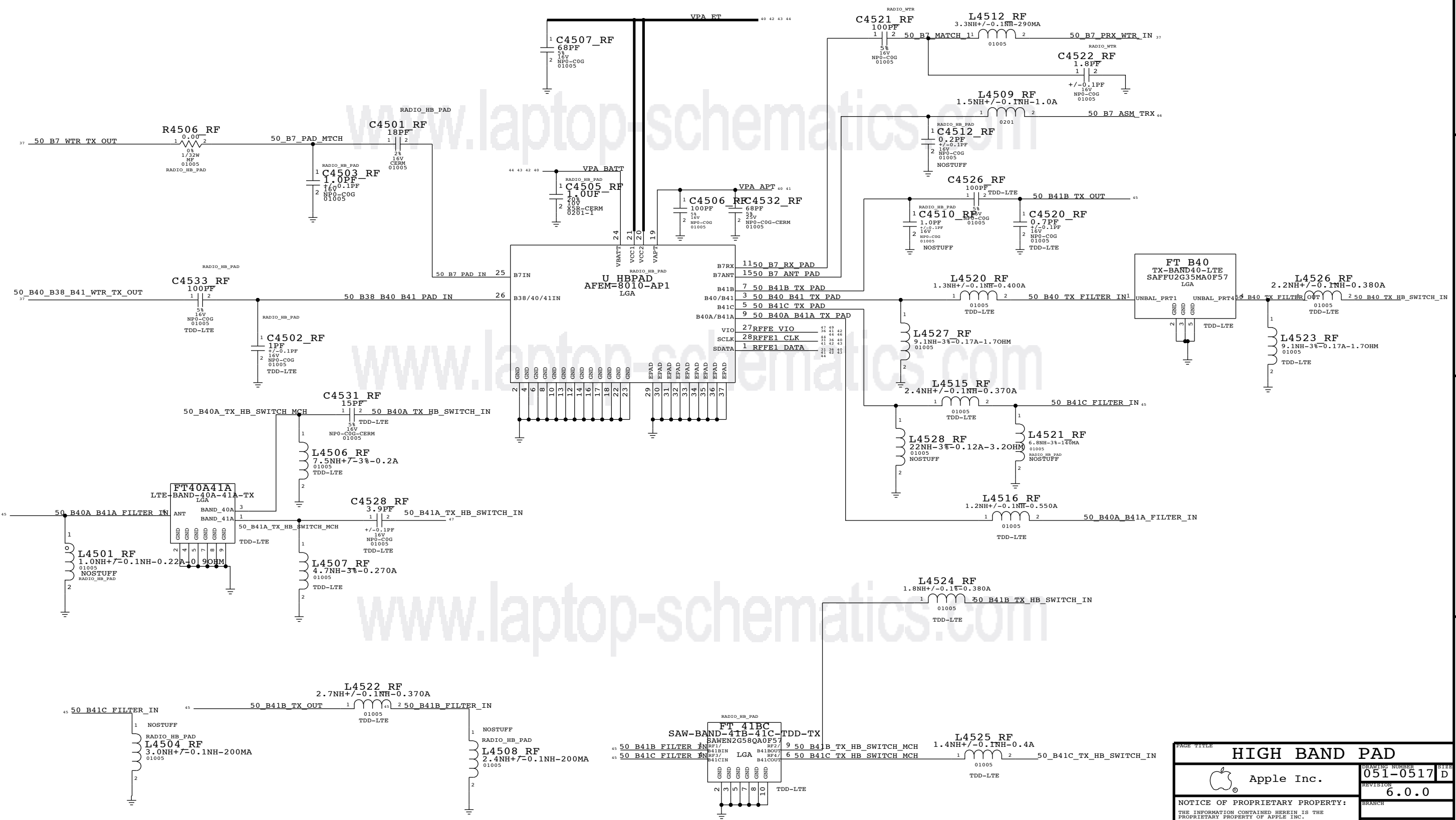


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# HIGH BAND PAD (B7, B38, B40, B41, XGP)

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C4533 RF
R1600
L1616
U1601



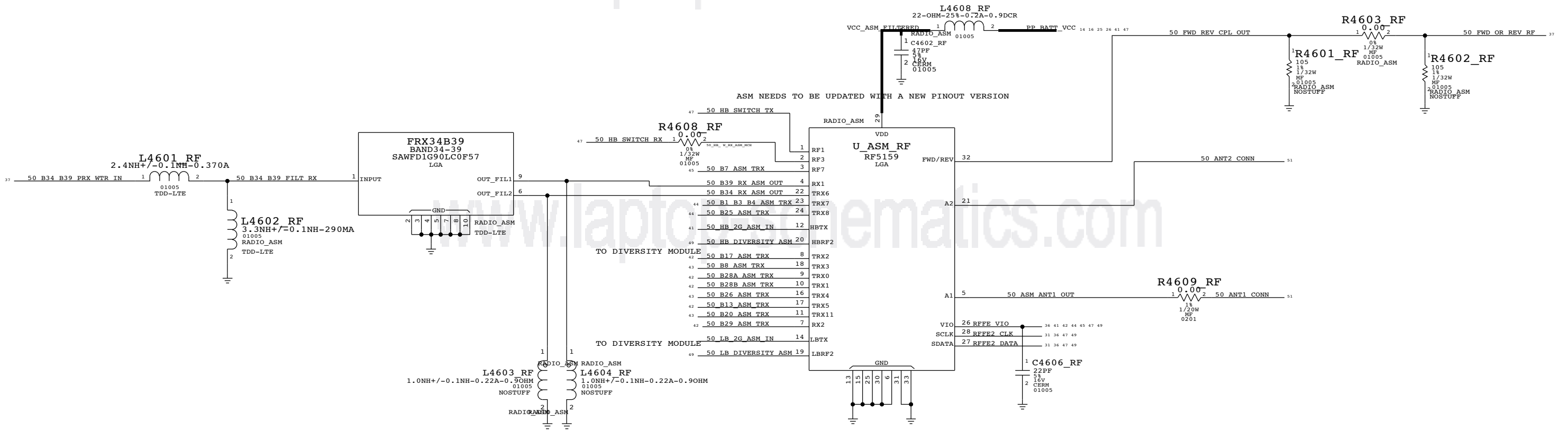
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# ANTENNA SWITCH

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C1702
R1700
L4608 RF
U1702

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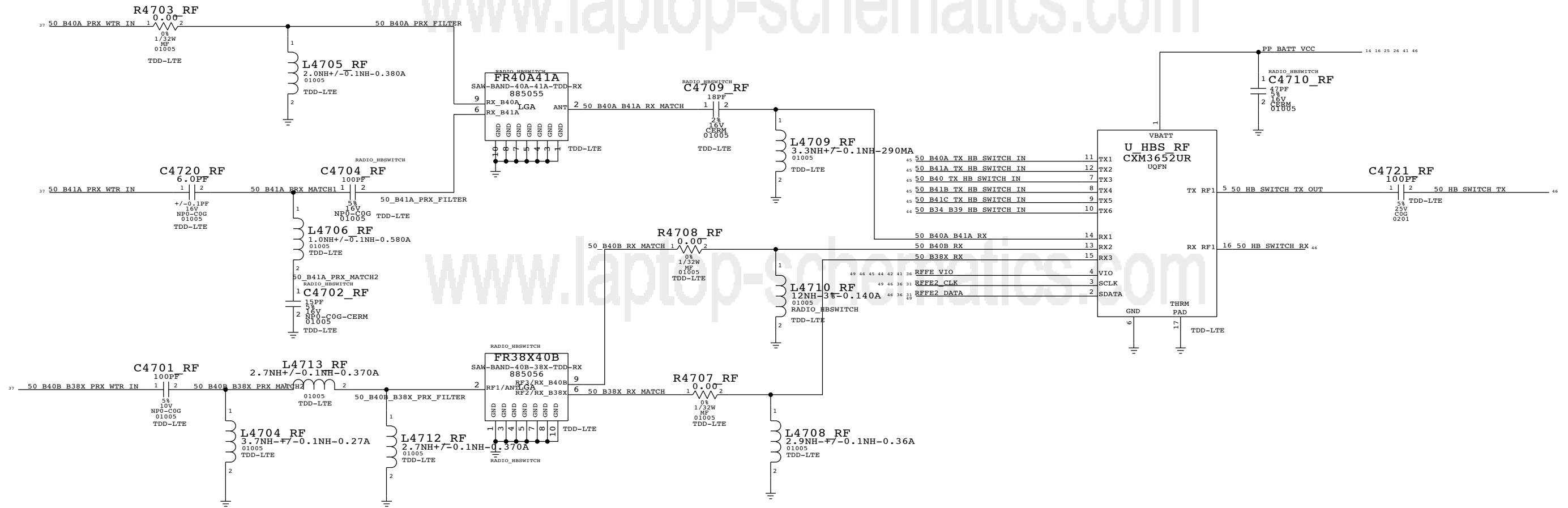


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# HIGH BAND SWITCH

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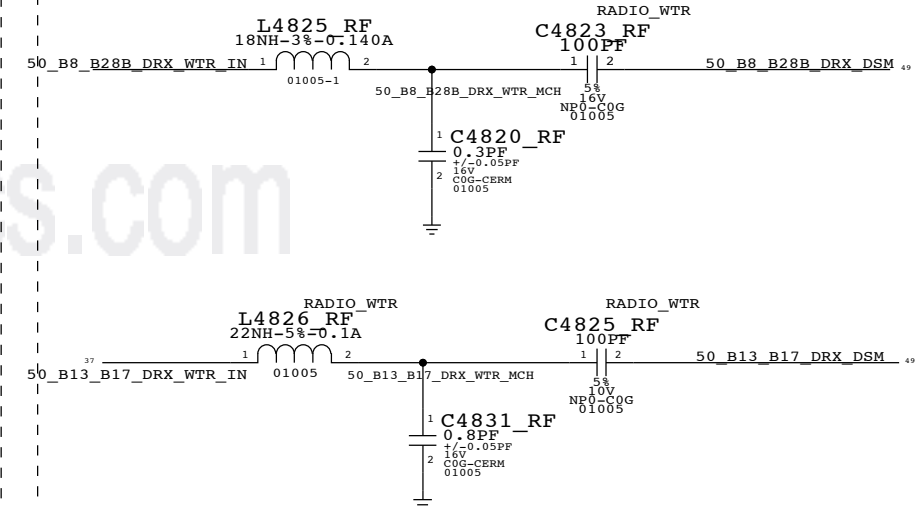
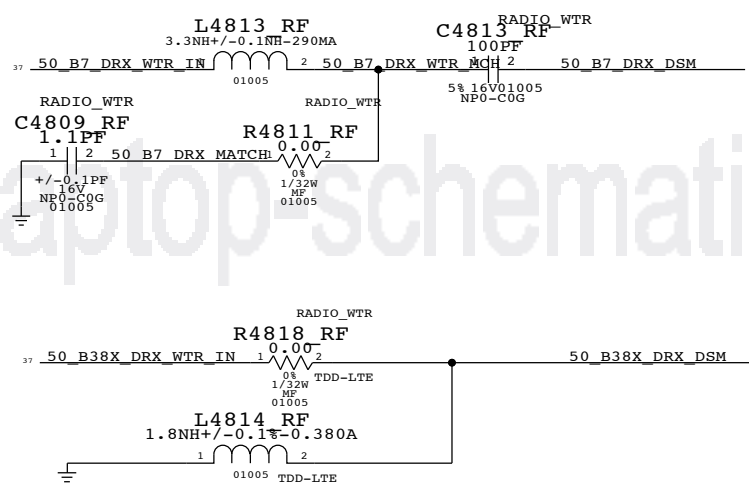
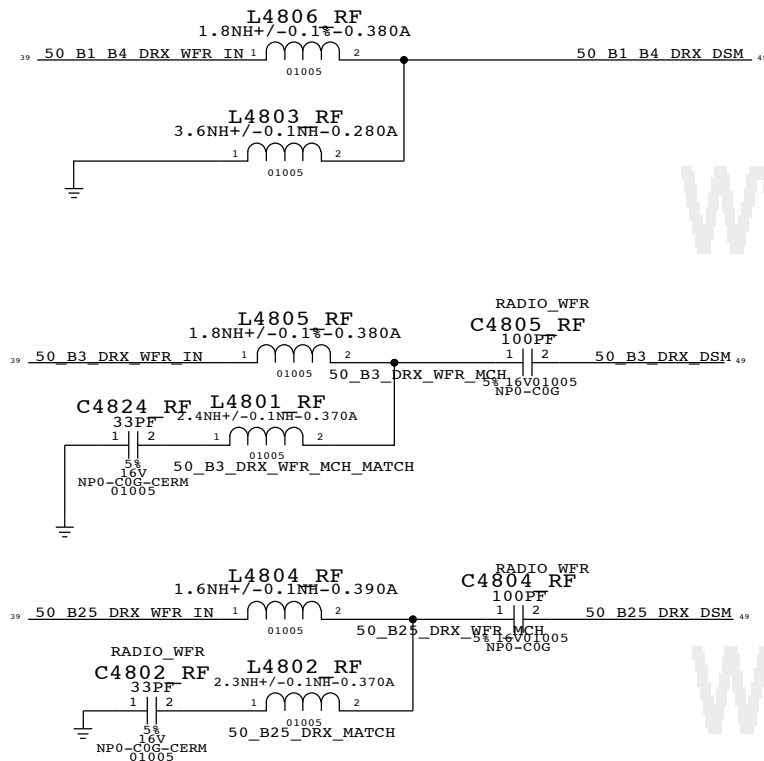
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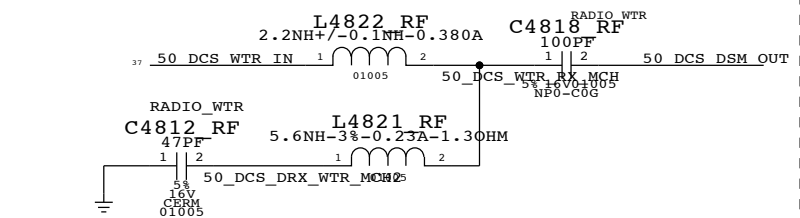
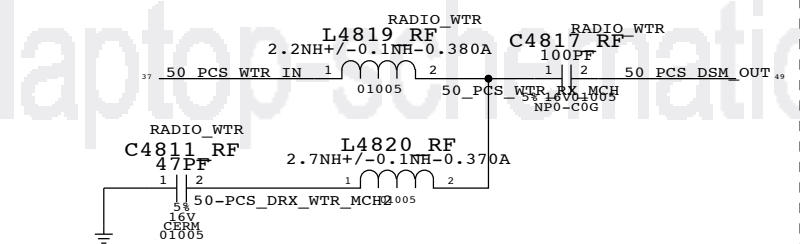
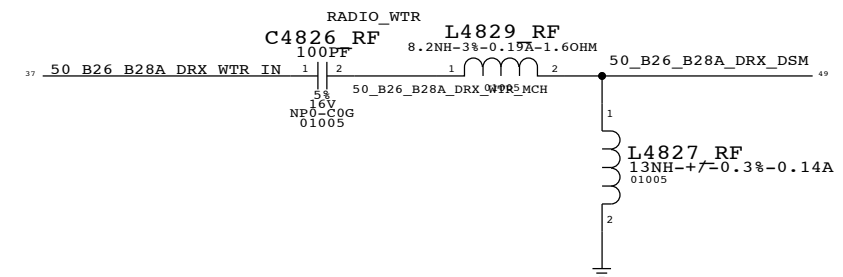
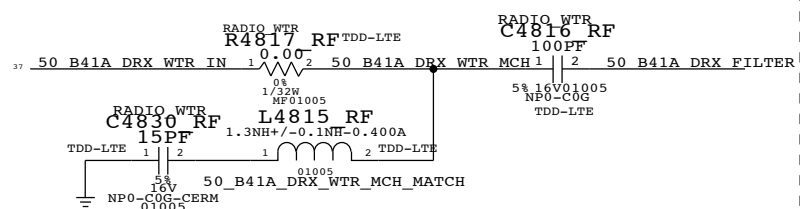
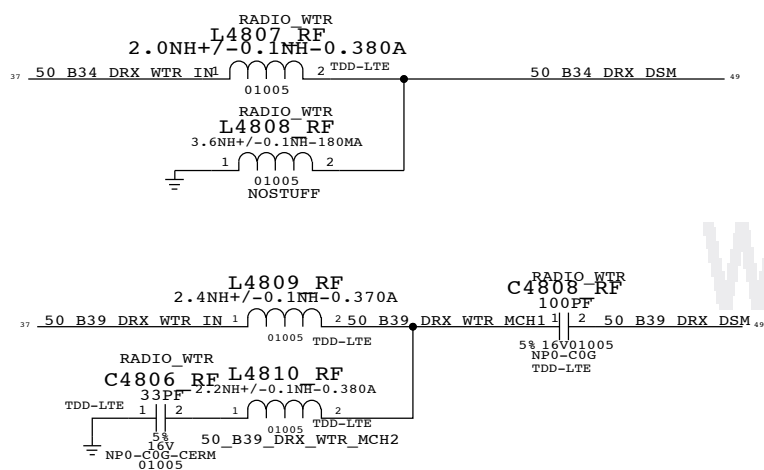
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## HIGHBAND DIVERSITY - WTR

## LOWBAND DIVERSITY - WTR



## MIDBAND DIVERSITY - WTR



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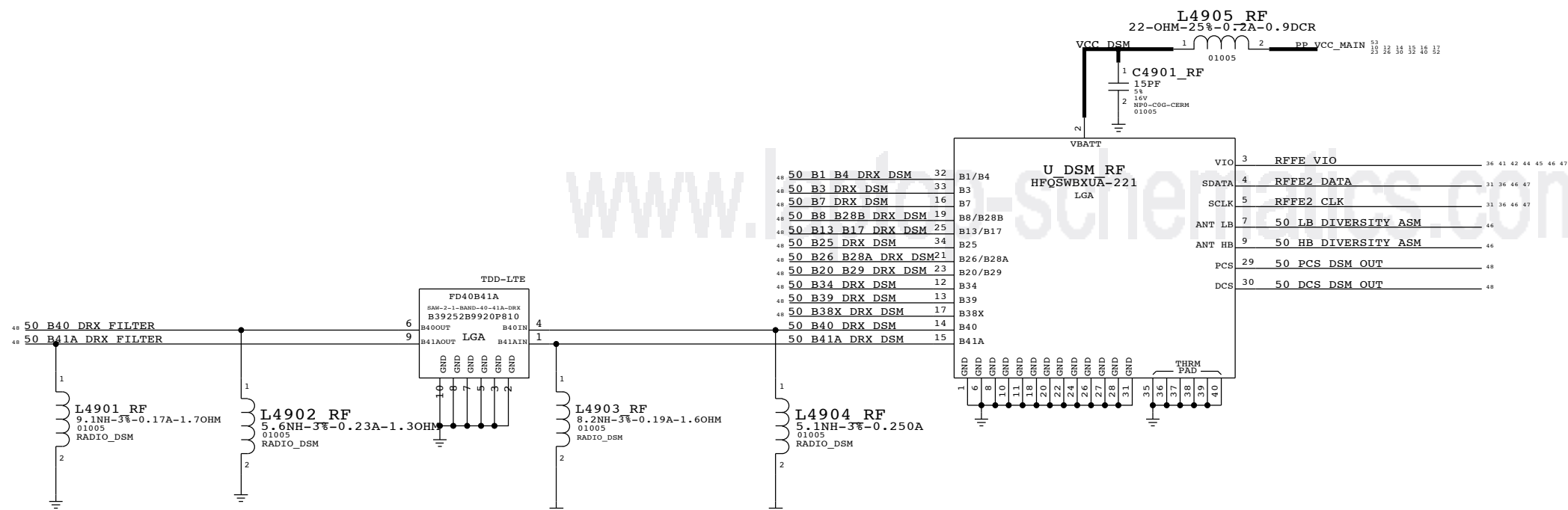
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C1900  
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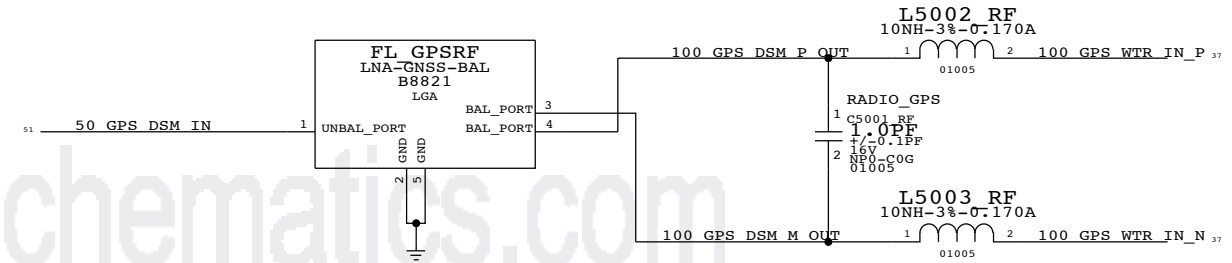
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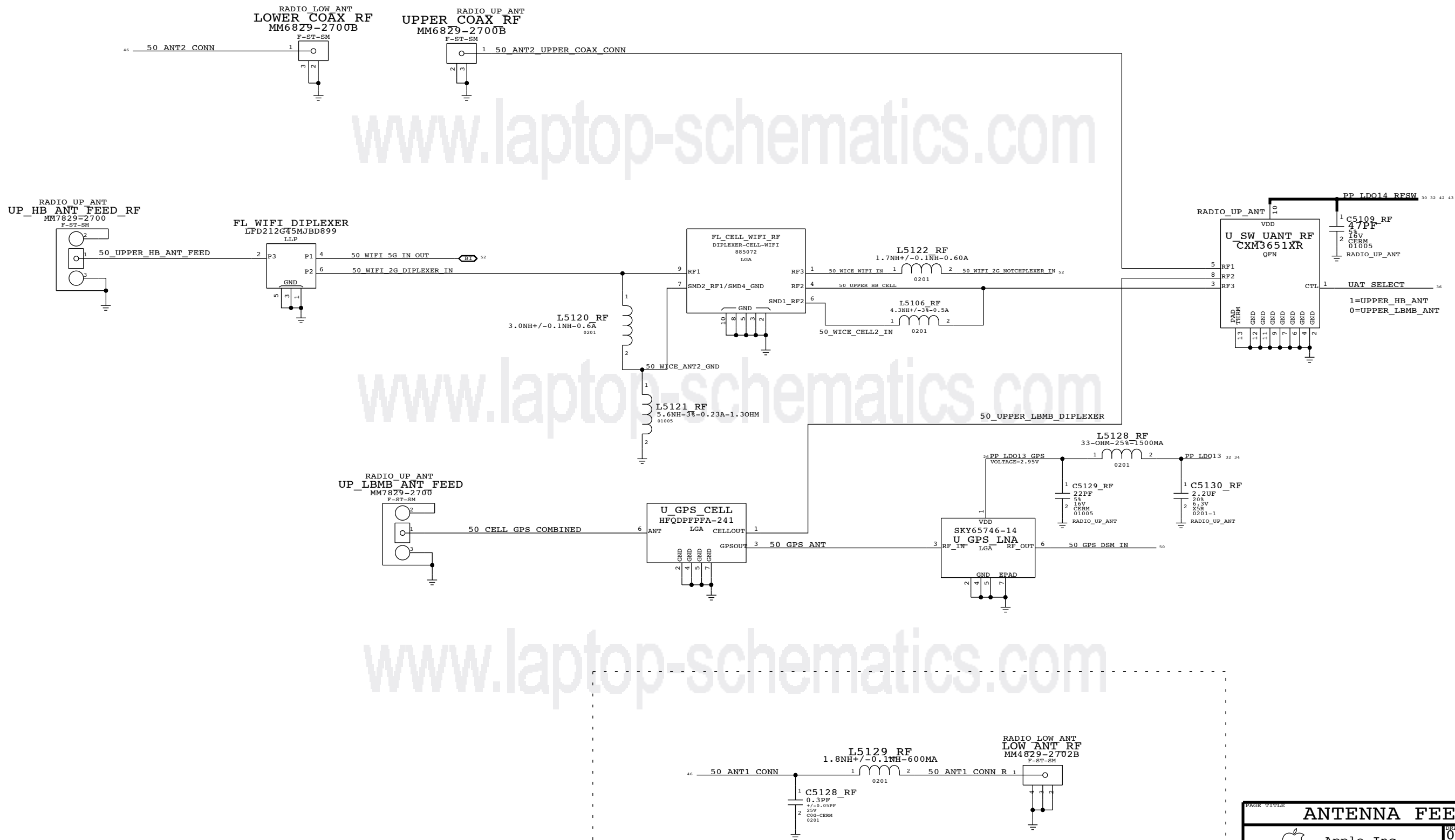


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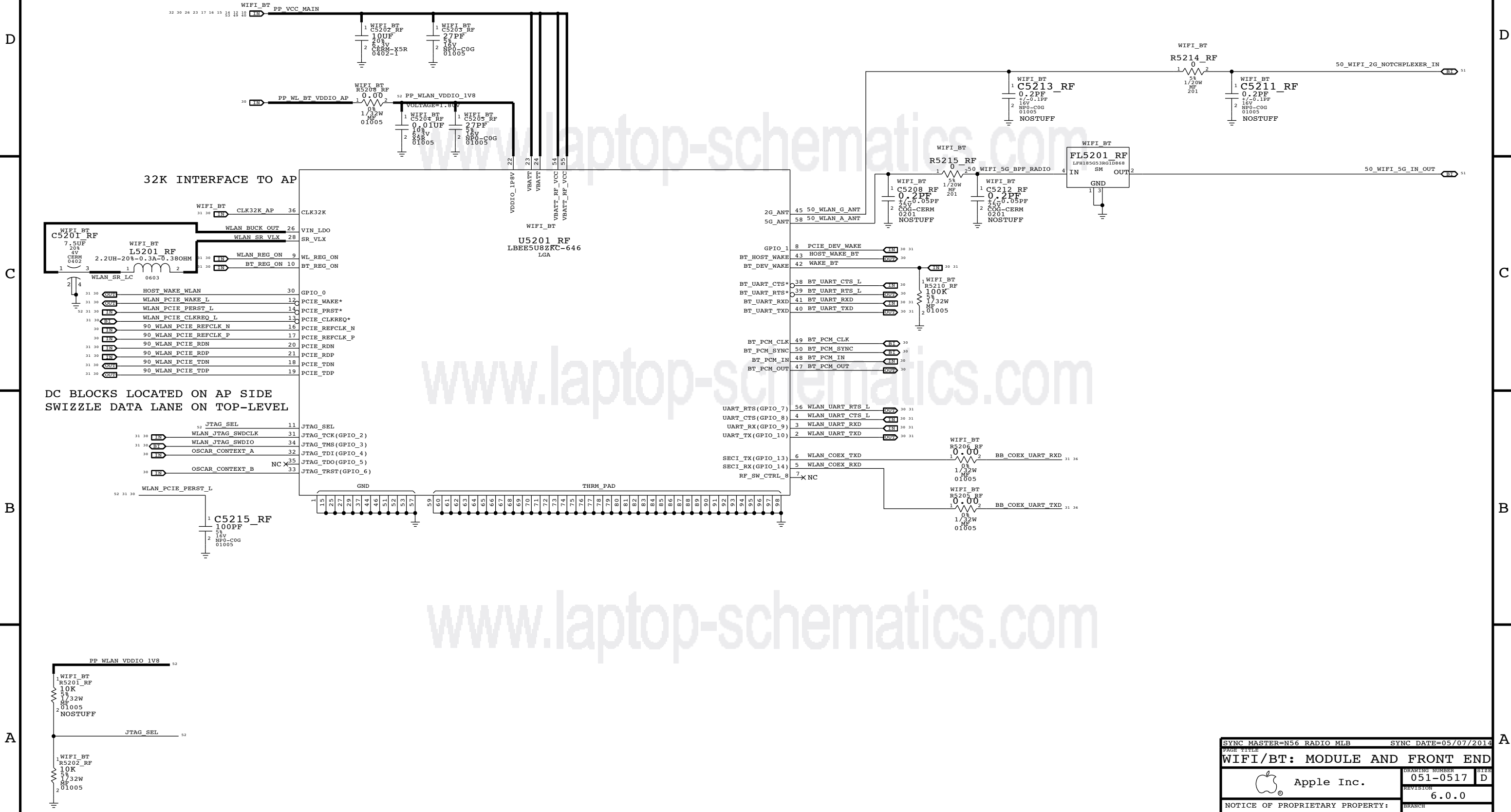
TEST & COAX CONNECTOR FOR LOWER SECTION OF MLB



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# WLAN/BT

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

MODULE BOOT-STRAPPED TO PCIe INTERNALLY

SYNC MASTER=N56 RADIO MLB		SYNC DATE=05/07/2014	
PAGE TITLE <b>WIFI/BT: MODULE AND FRONT END</b>			
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# STOCKHOLM

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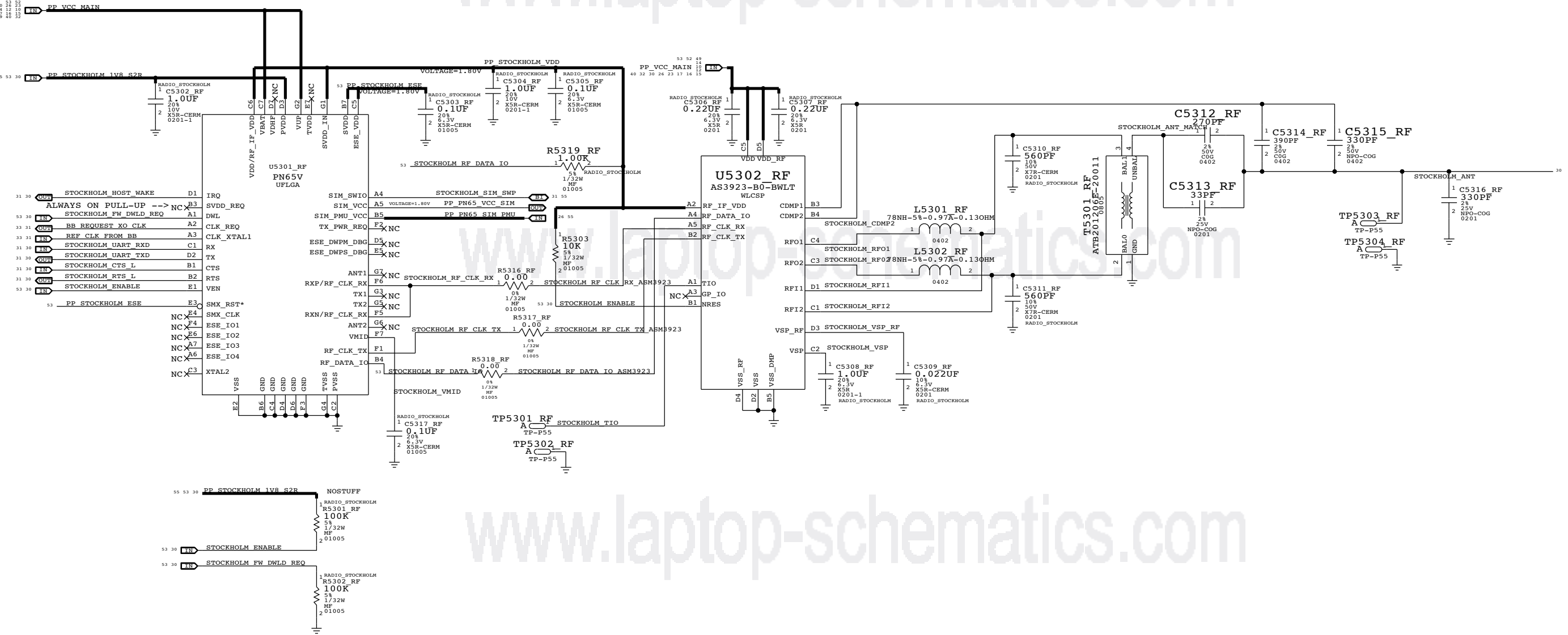
C2101  
R2100  
L2102  
U2100

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

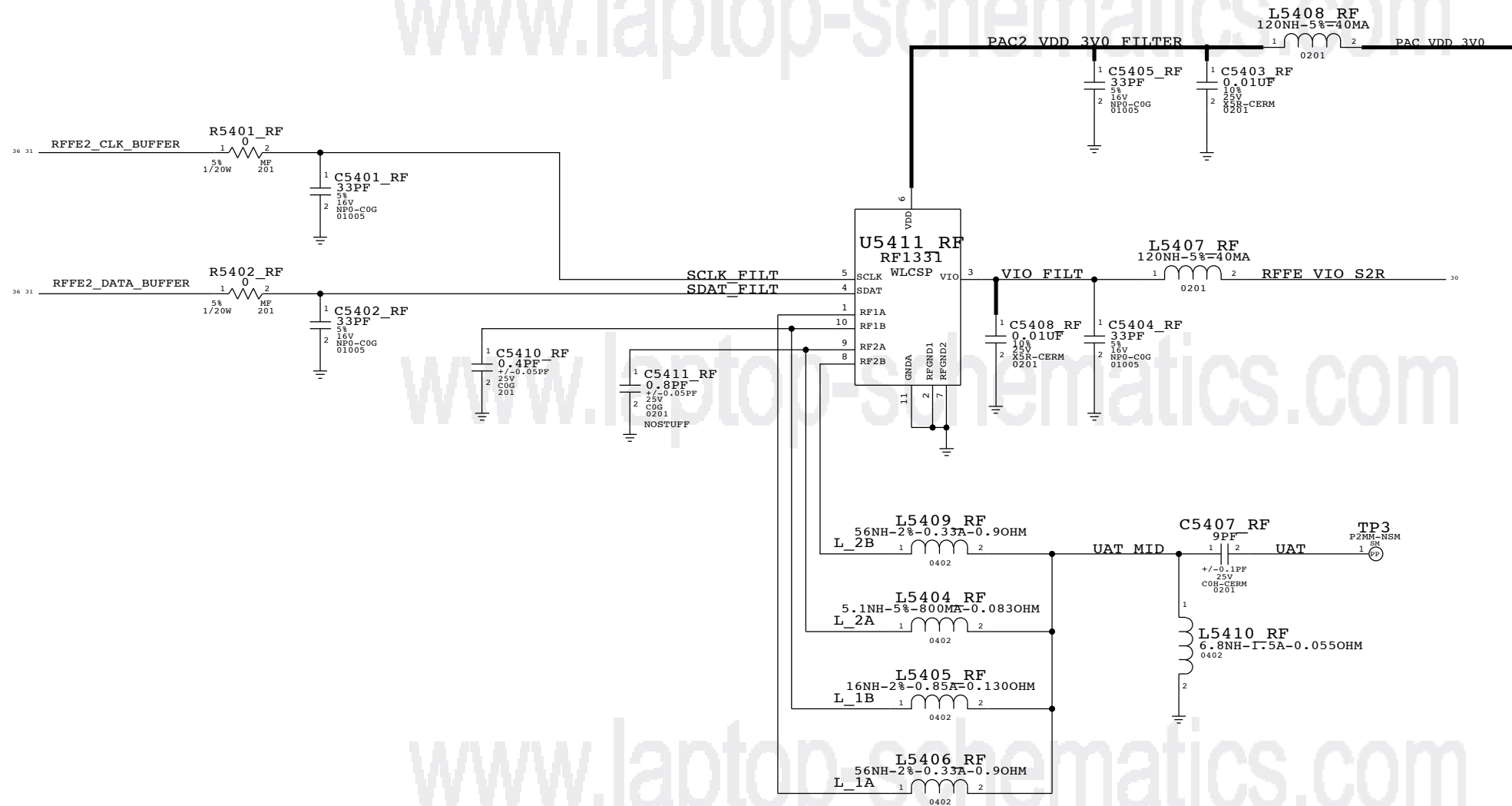



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# ON-BOARD JUMPER FLEX

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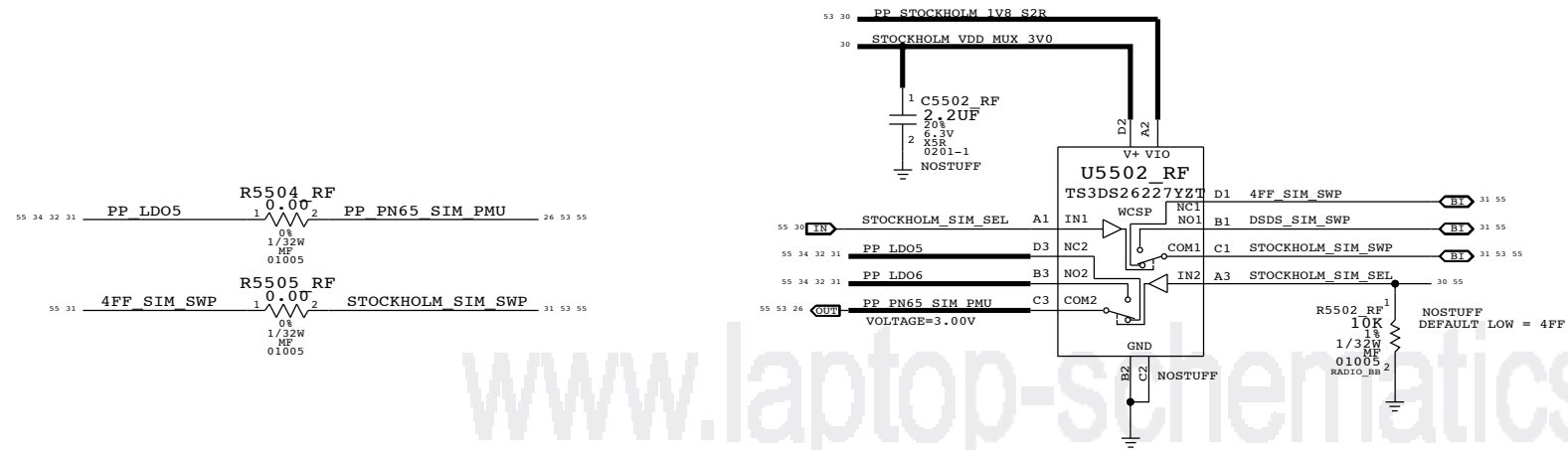
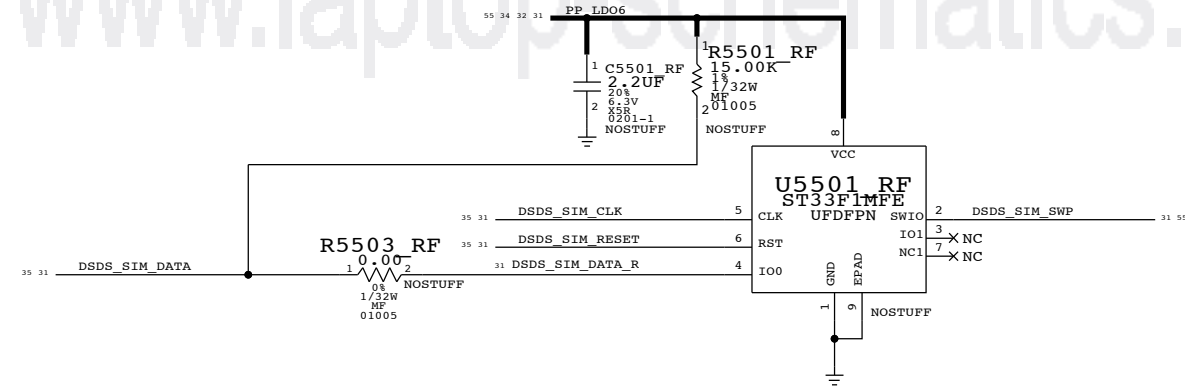
## UAT JUMPER




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# DSDS

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