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.

Thu Apr 17 17:11:44 2014

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

N61 CARRIER BUILD

CONTENTS

NAND BOM OPTIONS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
335S0998	1	NAND,19NM,16GX8,MLC,PPN1.5	U0604	CRITICAL	NAND_16G
335S0993	1	NAND,19NM,32GX8,MLC,PPN1.5	U0604	CRITICAL	NAND_32G
335S0994	1	NAND,19NM,64GX8,MLC,PPN1.5	U0604	CRITICAL	NAND_64G
335S00010	1	NAND,19NM,128GX8,TLC,PPN1.5	U0604	CRITICAL	NAND_128G
138S0867	1	CAP,X5R,10UF,20%,6.3V,0.65MM,HRTZ,0402	C0610,C0611,C0614,C0634	CRITICAL	NAND_16G
138S0867	1	CAP,X5R,10UF,20%,6.3V,0.65MM,HRTZ,0402	C0613,C0633,C0610,C0611,C0614,C0634	CRITICAL	NAND_32G & NAND_64G
138S00003	1	CAP,X5R,15UF,20%,6.3V,0.65MM,HRTZ,0402	C0613,C0633,C0610,C0611,C0614,C0634	CRITICAL	NAND_128G

ALTERNATE NAND BOM OPTIONS

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
335S0992	335S0998	ALTERNATE	U0604	TOSHIBA,NAND,16GB
335S1038	335S0998	ALTERNATE	U0604	HYNIX,NAND,16GB
335S1040	335S0994	ALTERNATE	U0604	HYNIX,NAND,64GB
335S00014	335S0994	ALTERNATE	U0604	TOSHIBA,NAND,64GB
335S00015	335S00010	ALTERNATE	U0604	TOSHIBA,NAND128GB
335S00009	335S0994	ALTERNATE	U0604	SANDISK,NAND,64GB,TLC

SHIELD BOM OPTIONS

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

N61 BOM CALLOUTS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
051-9903	1	SCH, MLB, N61	SCH	CRITICAL	?
820-3486	1	PCBF, MLB, N61	PCB	CRITICAL	?
825-6838	1	EEEE FOR 639-4237 16GB	EEEE_G16T	CRITICAL	EEEE_16G
825-6838	1	EEEE FOR 639-5838 32GB	EEEE_G16R	CRITICAL	EEEE_32G
825-6838	1	EEEE FOR 639-5839 64GB	EEEE_G16Q	CRITICAL	EEEE_64G
825-6838	1	EEEE FOR 639-00025 128GB	EEEE_G16N	CRITICAL	EEEE_128G
825-6838	1	EEEE FOR 639-00208 16GB	EEEE_F98F	CRITICAL	EEEE_16G_TDDLTE
825-6838	1	EEEE FOR 639-00209 32GB	EEEE_FQK0	CRITICAL	EEEE_32G_TDDLTE
825-6838	1	EEEE FOR 639-00210 64GB	EEEE_FQJY	CRITICAL	EEEE_64G_TDDLTE
825-6838	1	EEEE FOR 639-00212 128GB	EEEE_FY9W	CRITICAL	EEEE_128G_TLC_TDDLTE

ALTERNATE BOM OPTIONS

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
152S1844	152S1836	ALTERNATE	L1604	TY ALT INDUCTOR
152S1842	152S1849	ALTERNATE	L1519	TY ALT INDUCTOR
197S0392	197S0369	ALTERNATE	Y1200	ESPON ALT XTAL
197S0399	197S0369	ALTERNATE	Y1200	NDK ALT XTAL
338S1285	338S1202	ALTERNATE	U1601	L21 SPKAMP
152S2034	152S2033	ALTERNATE	L1209,L1211, L1213	1.2MM 1.0UH, CYNTEC
152S00004	152S2049	ALTERNATE	L1210,L1212, L1214	1.2MM 0.47UH, CYNTEC
339S00005	339S0246	ALTERNATE	U0201	FIJI, B0, SAMSUNG
339S0247	339S0246	ALTERNATE	U0201	FIJI, B0, HYNIX
339S00006	339S0246	ALTERNATE	U0201	FIJI, B1, E
339S00007	339S0246	ALTERNATE	U0201	FIJI, B1, H
339S00008	339S0246	ALTERNATE	U0201	FIJI, B1, S
155S0773	155S0453	ALTERNATE		TY 120OHM FERRITE
118S0764	118S0717	ALTERNATE	R1309	3.92KOHM, 01005
343S0688	343S0638	ALTERNATE	U2401	CUMULUS C1, FAB4
138S00005	138S00003	ALTERNATE	C1290	15UF,0402,HRTZL CAP
155S00011	155S00008	ALTERNATE	L1135	CMC,90OHM,MURATA
377S0168	377S0140	ALTERNATE	DZ1113	SUPPR,TRANS,VARISTOR,AMOTECH
155S0885	155S0610	ALTERNATE	FL1802,FL1803	FERR 8D,150OHM,200MA,0100S
138S0648	138S0652	ALTERNATE	C1018	CAP,4.7UF,20%,6.3V,0402,H=0.65MM
138S0657	138S0702	ALTERNATE	C1106	CAP,4.3UF,20%,4V,0610
338S00028	338S00017	ALTERNATE	U2203	CARBON, BOSCH, BMI162BC
338S00029	338S00017	ALTERNATE	U2203	CARBON, ST, AP6DS2AA
335S00013	335S0894	ALTERNATE	U0301	ST 8K EEPROM

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

BOM 639-4237 (16GB,BETTER)
BOM 639-5838 (32GB,BEST)
BOM 639-5839 (64GB,ULTRA)

BOM 639-00208 (16GB,BETTER,DTD)
BOM 639-00209 (32GB,BEST,DTD)
BOM 639-00210 (64GB,ULTRA,DTD)

BOM 639-00025(128GB,SUPREME,TLC)
BOM 639-00212(128GB,SUPREME,TLC,DTD)

DRAWING TITLE: SCHEM,MLB,N61

Apple Inc.

DRAWING NUMBER: 051-9903 | SIZE: D
REVISION: 7.0.0
BRANCH:
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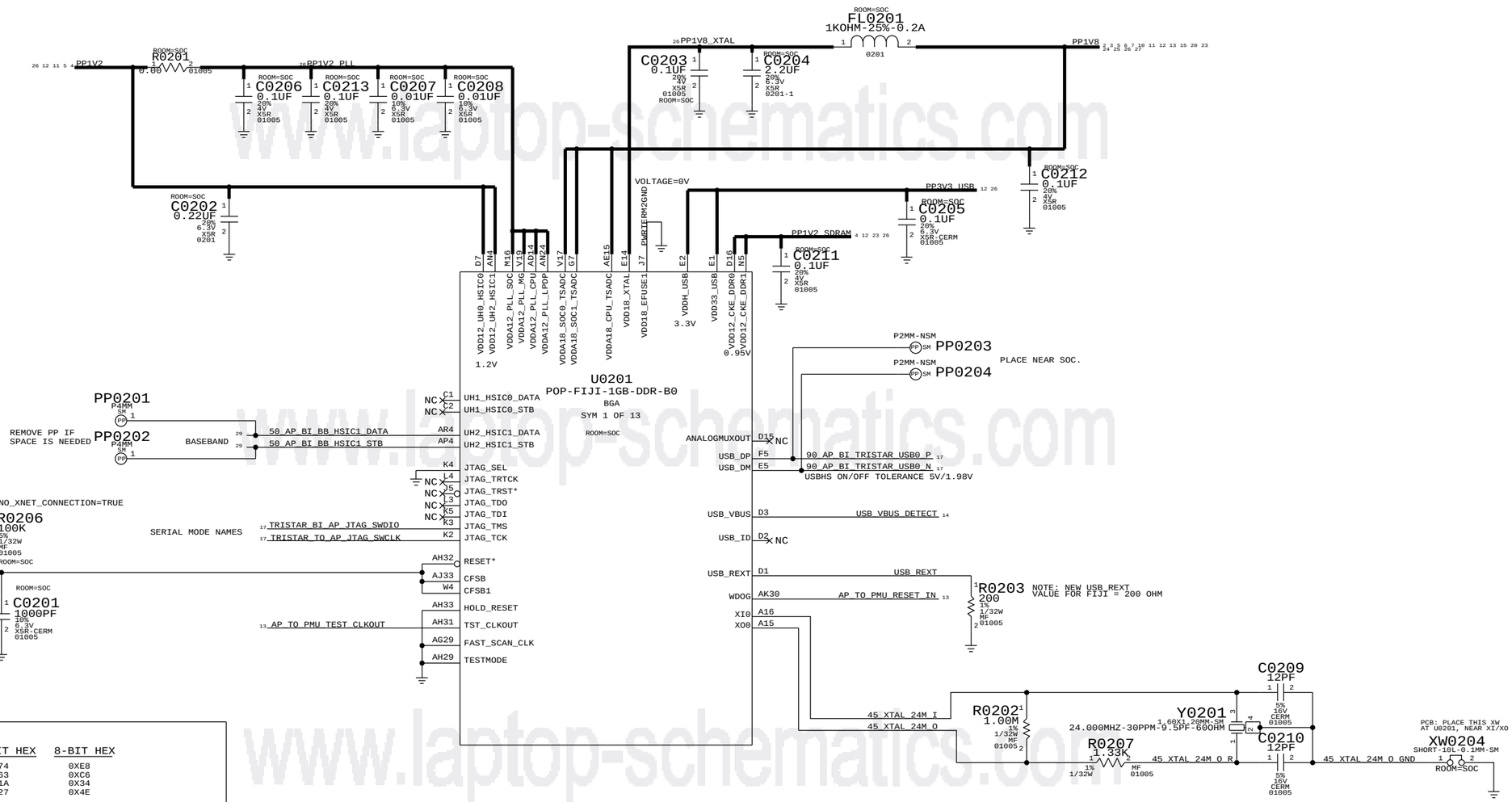
FIJI: JTAG,USB,HSIC,XTAL



I2C ADDRESS MAP

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

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

SYNC_MASTER=N56_MLB SYNC_DATE=08/29/2013

PAGE TITLE: SOC:MAIN

Apple Inc.

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BRANCH:

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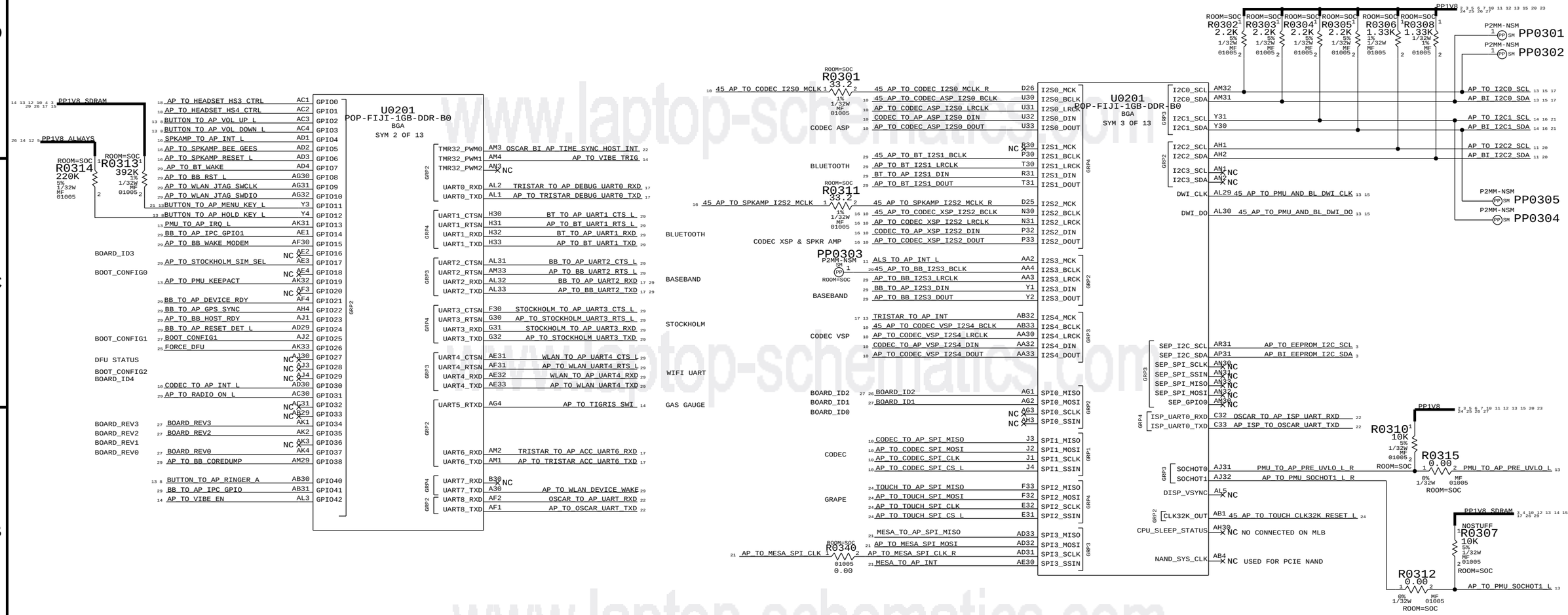
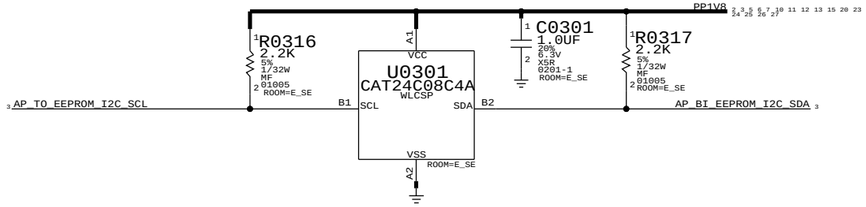
FIJI: DIGITAL I/O,BOOTSTRAPPING



ANTI-ROLLBACK EEPROM

ONSEMI EEPROM

APN:335S0894



REMOVED HOLD + MENU KEY
BUFFERS SINCE NOT NEEDED FOR FIJI

SYNC_MASTER=N56_MLB SYNC_DATE=08/29/2013

PAGE TITLE

SOC:I/OS

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FIJI: VDDCA,VDD1/2,VDDQ,VDD,VDD_FIXED,VDD_CPU,VDD_GPU

VDDCA, VDD1/2, VDDQ

RESET_1V8_L
NOTE: CKEIN CONFIRMED 1.8V TOLERANT
DDR0_CKEIN
DDR1_CKEIN
45_DDR0_ZQ_CA
45_DDR1_ZQ_CA
45_DDR0_ZQ_DQ
45_DDR1_ZQ_DQ
45_DDR0_VREF_CA
45_DDR1_VREF_CA
45_DDR0_VREF_DQ
45_DDR1_VREF_DQ
R0401 240 1% 1/32W MF 01005 ROOM=SOC
R0402 240 1% 1/32W MF 01005 ROOM=SOC
R0411 240 1% 1/32W MF 01005 ROOM=SOC
R0412 240 1% 1/32W MF 01005 ROOM=SOC
(DDR IMPEDANCE CONTROL)
U0201
POP-FIJI-1GB-DDR-B0
BGA
SYM 7 OF 13
VDDCA
PP1V2_SDRAM
VDD2
1.2V
VSS
PP1V8_SDRAM
C0450 2.2UF 20% 6.3V X5R 0201-1
C0451 2.2UF 20% 6.3V X5R 0201-1
C0452 2.2UF 20% 6.3V X5R 0201-1
VDD1
1.8V
PP1V2
C0431 4.3UF 20% 4V CERM 0402
C0467 1.0UF 20% 6.3V X5R 0201-1
C0427 1.0UF 20% 6.3V X5R 0201-1
C0432 1UF 20% 4V CERM 0402
C0426 15PF 5% 16V NP0-C0G-CERM 01005
C0425 0.47UF 20% 6.3V CERM 0402
C0430 0.47UF 20% 6.3V CERM 0402
VDDQ
C0402 1UF 20% 4V CERM 0402
C0422 1UF 20% 4V CERM 0402
C0401 1UF 20% 4V CERM 0402
C0429 4.3UF 20% 4V CERM 0402

VDD

PP8V95_FIXED_SOC
C0435 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=SOC
C0438 4.3UF 20% 4V CERM 0402
C0439 4.3UF 20% 4V CERM 0402
C0404 1UF 20% 4V CERM 0402
C0405 1UF 20% 4V CERM 0402
C0476 4.3UF 20% 4V CERM 0402
C0406 0.47UF 20% 6.3V CERM 0402
C0478 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=SOC
U0201
POP-FIJI-1GB-DDR-B0
BGA
SYM 10 OF 13
VDD_FIXED
0.95V
TBD: 3.3A? @ 105C
VDD_FIXED_SENSE
45_BUCK5_FB
PP0403
P2MM-NSM
ROOM=SOC

VDD_CPU, VDD_GPU

PP_GPU
C0442 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=SOC
C0466 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=SOC
C0445 4.3UF 20% 4V CERM 0402
C0448 4.3UF 20% 4V CERM 0402
C0418 1UF 20% 4V CERM 0402
C0419 1UF 20% 4V CERM 0402
C0420 0.47UF 20% 6.3V CERM 0402
C0475 4.3UF 20% 4V CERM 0402
PP_CPU
C0443 0.47UF 20% 6.3V CERM 0402
C0446 0.47UF 20% 6.3V CERM 0402
C0444 1UF 20% 4V CERM 0402
C0409 4.3UF 20% 4V CERM 0402
C0411 4.3UF 20% 4V CERM 0402
C0414 4.3UF 20% 4V CERM 0402
C0408 4.3UF 20% 4V CERM 0402
C0410 4.3UF 20% 4V CERM 0402
C0413 1UF 20% 4V CERM 0402
U0201
POP-FIJI-1GB-DDR-B0
BGA
SYM 13 OF 13
VDD_CPU
0.775V - 1.0V
TBD: 7.6A? @ 105C
VDD_GPU
0.8V - 0.95V
TBD: 3.45A? @ 105C
C0447 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=SOC
C0415 4.3UF 20% 4V CERM 0402
C0465 1UF 20% 4V CERM 0402
45_BUCK0_FB
PP0401
P2MM-NSM
ROOM=SOC
VDD_CPU_SENSE
C0449 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=SOC
C0472 2.2UF 20% 6.3V X5R 0201-1
C0471 2.2UF 20% 6.3V X5R 0201-1
C0468 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=SOC
VDD_GPU_SENSE
45_BUCK1_FB
PP0402
P2MM-NSM
ROOM=SOC

PP1V2_SDRAM

C0423 0.01UF 10% 6.3V X5R 01005 ROOM=SOC
C0424 0.01UF 10% 6.3V X5R 01005 ROOM=SOC
R0403 10K 1% 1/32W MF 01005 ROOM=SOC
R0404 10K 1% 1/32W MF 01005 ROOM=SOC
45_DDR0_VREF_CA
C0433 0.01UF 10% 6.3V X5R 01005 ROOM=SOC
C0434 0.01UF 10% 6.3V X5R 01005 ROOM=SOC
R0405 10K 1% 1/32W MF 01005 ROOM=SOC
R0406 10K 1% 1/32W MF 01005 ROOM=SOC
45_DDR1_VREF_CA

NOTE: SOME VENDORS HAVE INTERNAL DIVIDER CIRCUITS

PP1V2

C0436 0.01UF 10% 6.3V X5R 01005 ROOM=SOC
C0437 0.01UF 10% 6.3V X5R 01005 ROOM=SOC
R0407 4.7K 1% 1/32W MF 01005 ROOM=SOC
R0408 4.7K 1% 1/32W MF 01005 ROOM=SOC
45_DDR0_VREF_DQ
C0440 0.01UF 10% 6.3V X5R 01005 ROOM=SOC
C0441 0.01UF 10% 6.3V X5R 01005 ROOM=SOC
R0409 4.7K 1% 1/32W MF 01005 ROOM=SOC
R0410 4.7K 1% 1/32W MF 01005 ROOM=SOC
45_DDR1_VREF_DQ

SYNC_MASTER=N56_MLB
SYNC_DATE=08/29/2013
PAGE TITLE: SOC:VDDCA,VDD1/2,VDD,VDD_CPU,VDD_GPU
Apple Inc.
DRAWING NUMBER: 051-9903
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FIJI: VDDIOD,VDDIO18,VDD_VAR_SOC

JUST A FEW GNDS

U0201
POP-FIJI-1GB-DDR-B0
BGA
SYM 11 OF 13

U0201
POP-FIJI-1GB-DDR-B0
BGA
SYM 12 OF 13

U0201
POP-FIJI-1GB-DDR-B0
BGA
SYM 8 OF 13

VDD_SRAM, VDD_SOC

PP_VAR_SOC
C0508 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=SOC
C0503 4.3UF 20% 4V CERM 0402 ROOM=SOC
C0507 1UF 20% 4V CERM 0402 ROOM=SOC
C0509 1UF 20% 4V CERM 0402 ROOM=SOC
C0510 0.47UF 20% 6.3V CERM 0402 ROOM=SOC

VDD_VAR_SOC
0.90V - 0.95V
1.8A @ 105C

VDD_VAR_SOC_SENSE
45_BUCK2_FB

VSS_SENSE

PP0501
P2MM-NSM
CPU_VSS_SENSE
ROOM=SOC

VDDIOD, VDDIO18

CAPS FOR VDDIOD ARE SHARED WITH VDDQ

PP1V2

U0201
POP-FIJI-1GB-DDR-B0
BGA
SYM 9 OF 13

1.2V
1.8V

C0501 2.2UF 20% 6.3V X5R 0201-1 ROOM=SOC
C0502 1UF 20% 4V CERM 0402 ROOM=SOC
C0511 1.0UF 20% 6.3V X5R 0201-1 ROOM=SOC
C0506 0.47UF 20% 6.3V CERM 0402 ROOM=SOC

PP1V8

GRP7 POWERS GPIO11,12 (BUTTONS)
PP1V8_ALWAYS
C0520 0.1UF 20% 4V X5R 01005 ROOM=SOC

SYNC_MASTER=N56_MLB SYNC_DATE=08/29/2013

PAGE TITLE
SOC:GND,VDDIO18,VDDIOD,VDD_VAR_SOC

Apple Inc.

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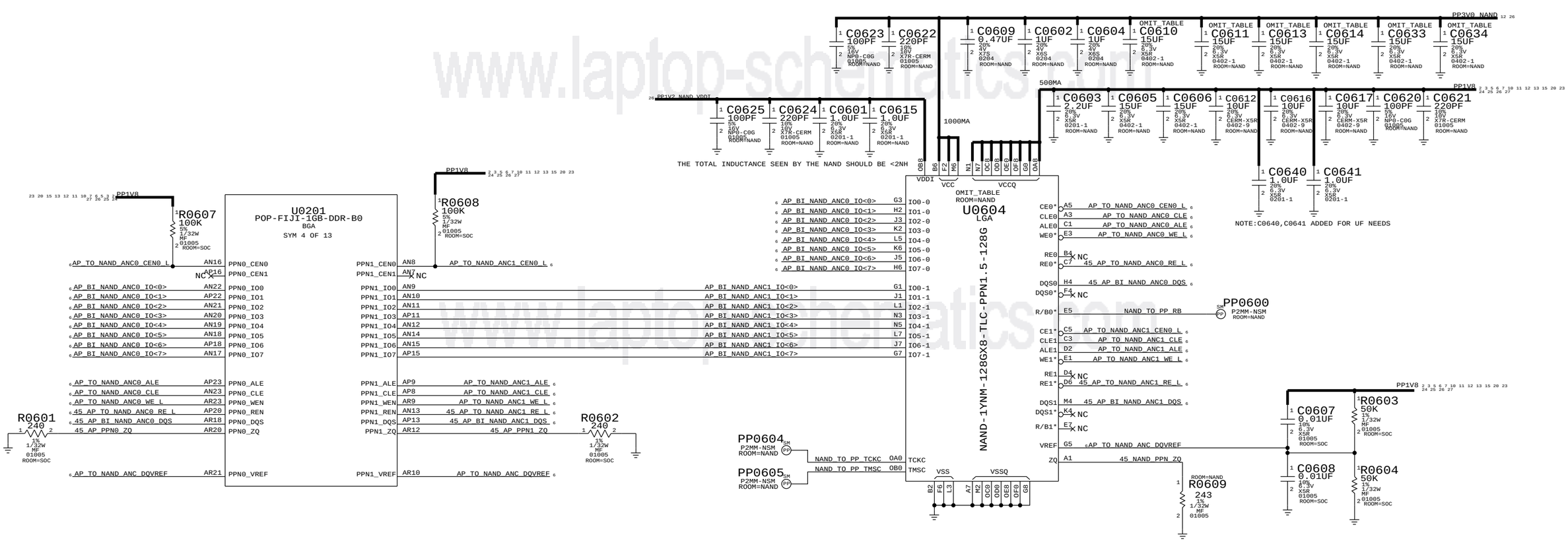
FIJI: NAND + 12X17 NAND PKG

SUPPORT FOR PPN1.5 (1.8V IO) ONLY



SYNC_MASTER=N56_MLB SYNC_DATE=08/29/2013

PAGE TITLE: SOC:NAND

Apple Inc.

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REVISION: 7.0.0

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

NOTE: NEED TO EVALUATE PI FOR PP1V0.
CONCERN OVER SHARING IT WITH MIPI AND
PCIE REFCLK WITHOUT A FILTER.

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

NOTE: PLACE NEAR THE PCIE PINS, NOT LPDP.

U0201
POP-FIJI-1GB-DDR-B0
BGA
SYM 5 OF 13

U0201
POP-FIJI-1GB-DDR-B0
BGA
SYM 6 OF 13

SYNC_MASTER=N56_MLB	SYNC_DATE=08/29/2013
PAGE TITLE	SOC:CAM,LCD,LPDP,PCIE
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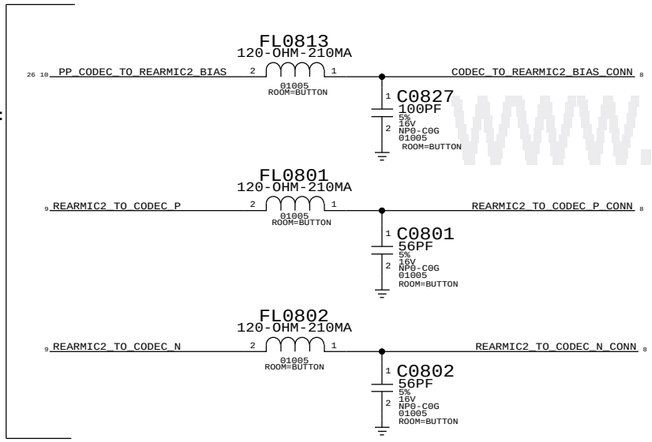
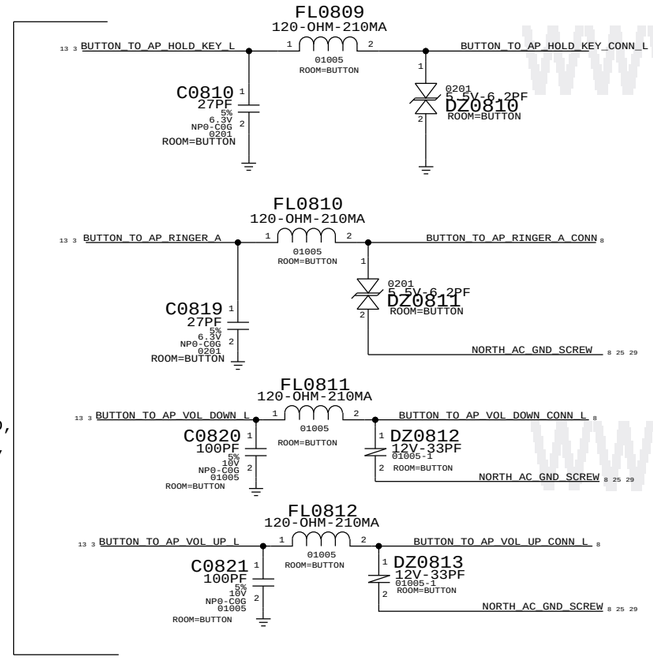
BUTTON FLEX (BUTTONS, ANC REF MIC, STROBE, STROBE_NTC, WIFI FLEX PAC)

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

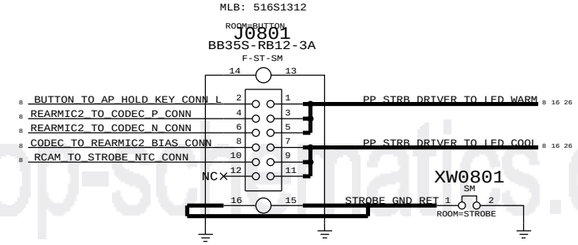


BUTTONS:
RINGER, HOLD,
VOL_UP/DOWN,



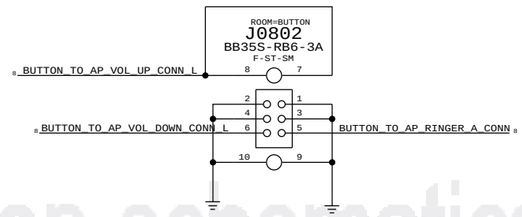
RIGHT BUTTON B2B

MLB: 516S1312

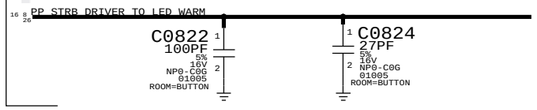


LEFT BUTTON B2B

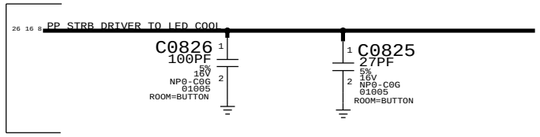
MLB: 516S1315



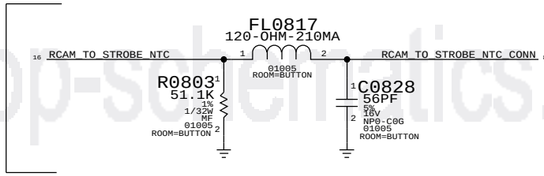
STROBE:
LED WARM



STROBE:
LED COOL



STROBE:
NTC



SYNC_MASTER=N61_MLB SYNC_DATE=08/26/2013

PAGE TITLE: IO:BUTTON FLEX CONN

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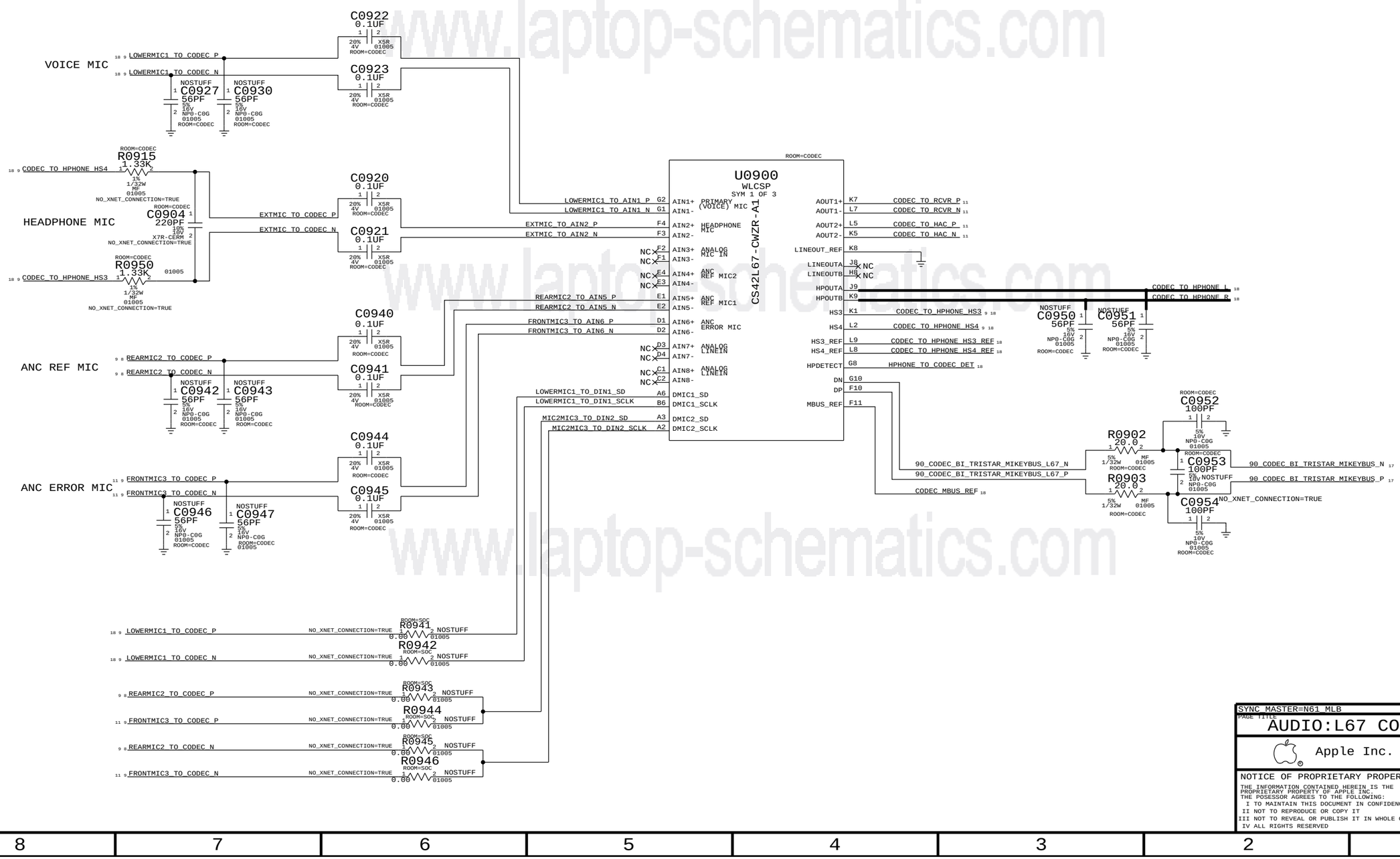
L67 AUDIO CODEC

AUDIO I/O

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



SYNC_MASTER=N61_MLB SYNC_DATE=08/26/2013

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

Apple Inc.

DRAWING NUMBER: 051-9903 SIZE: D

REVISION: 7.0.0

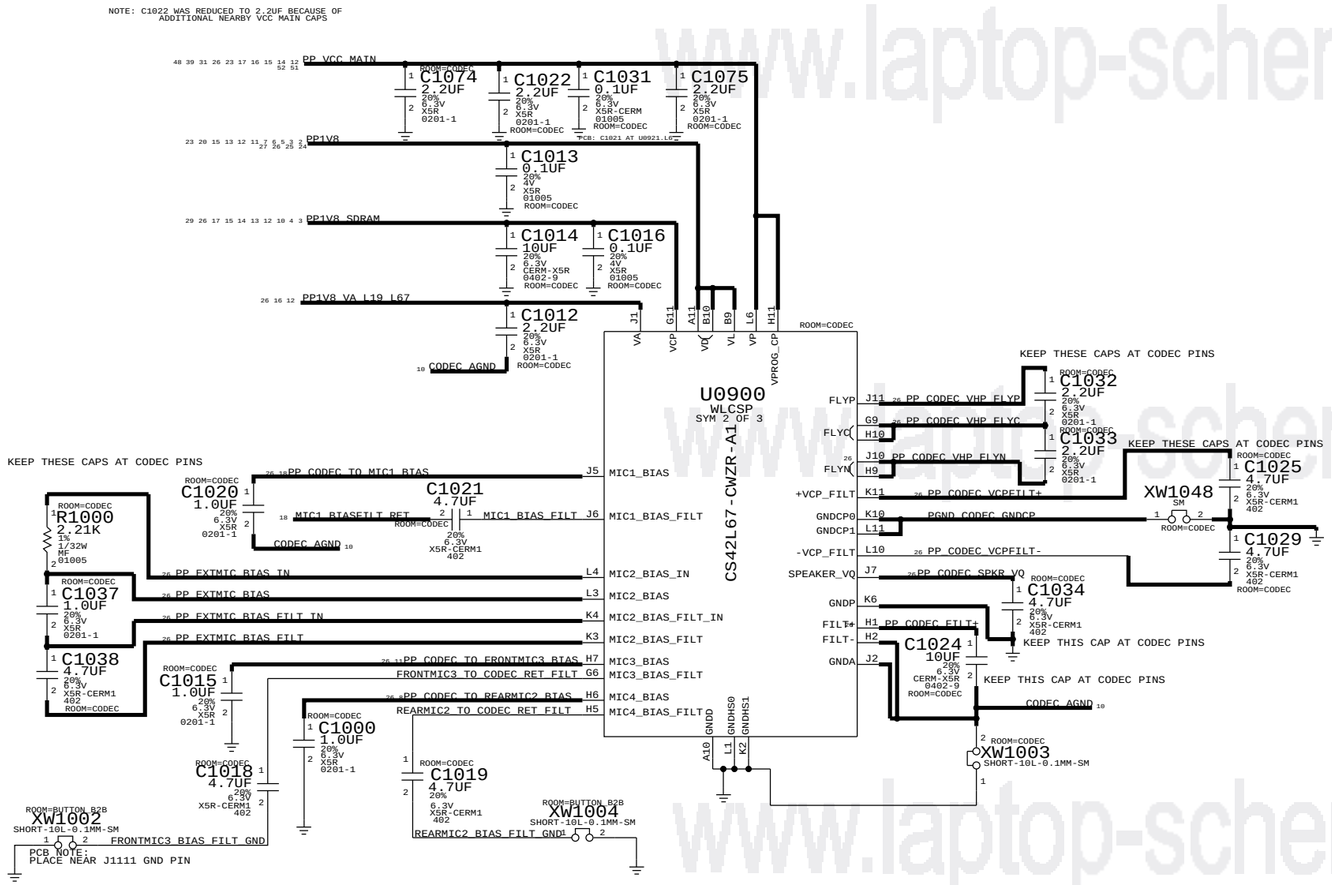
BRANCH:

PAGE: 9 OF 55

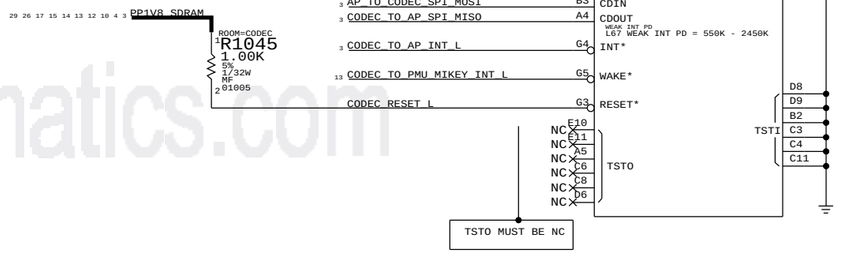
SHEET: 9 OF 54

L67 AUDIO CODEC

POWER, MICBIAS



DIGITAL SYSTEM I/O



SYNC_MASTER=N61_MLB SYNC_DATE=08/26/2013

PAGE TITLE: AUDIO:L67 CODEC (2/2)

Apple Inc.

DRAWING NUMBER: 051-9903 SIZE: D

REVISION: 7.0.0

BRANCH:

PAGE: 10 OF 55

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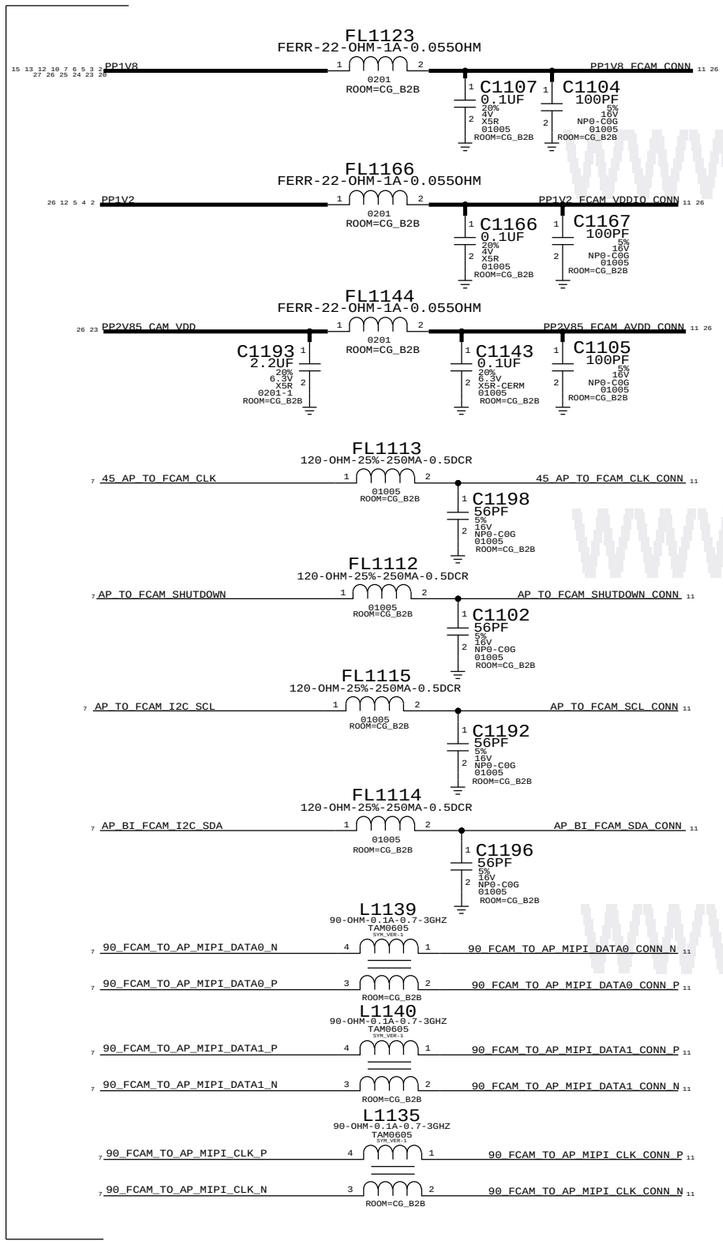
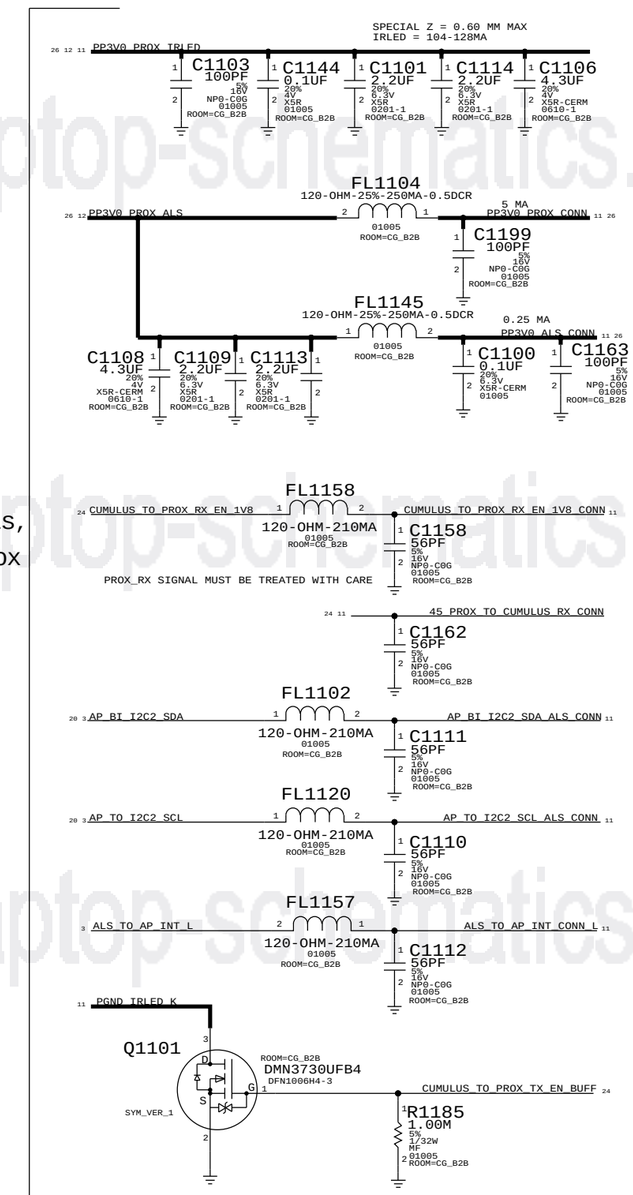
FRONT CAM FLEX B2B

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

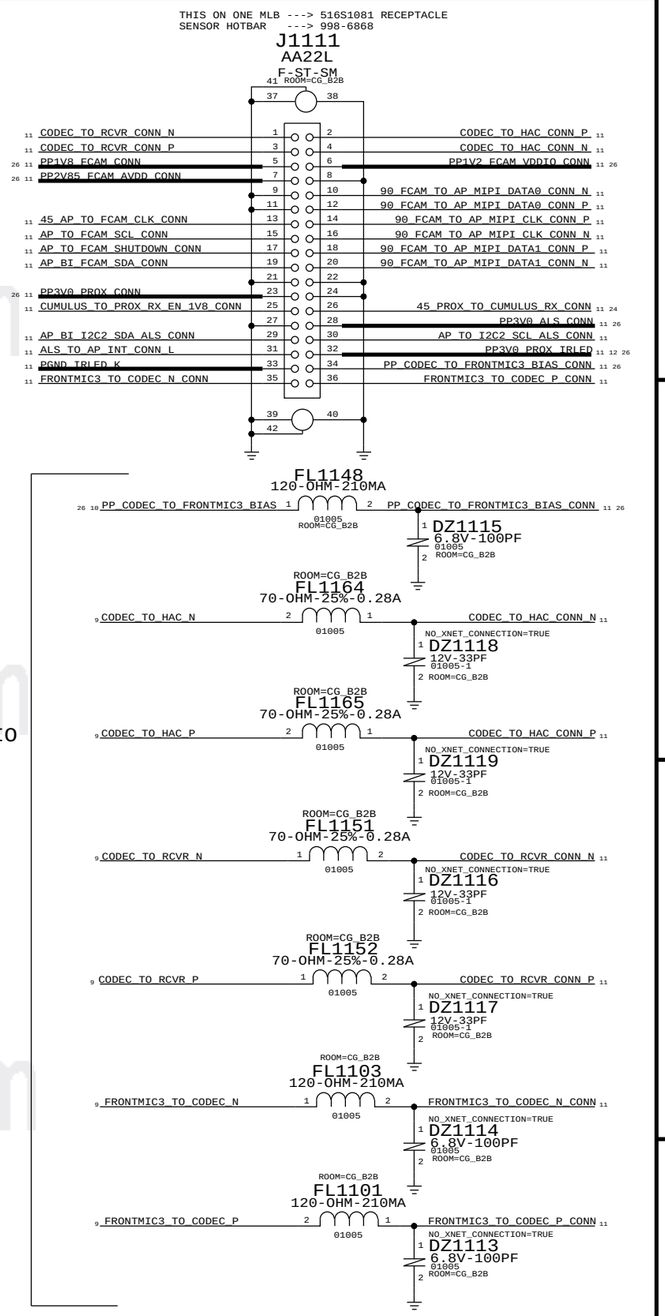
CAMERA



ALS, PROX



AUDIO



SYNC_MASTER=N61_MLB SYNC_DATE=08/26/2013

PAGE TITLE: CAMERA:FRONT FLEX CONN

Apple Inc.

DRAWING NUMBER: 051-9903 SIZE: D

REVISION: 7.0.0

BRANCH:

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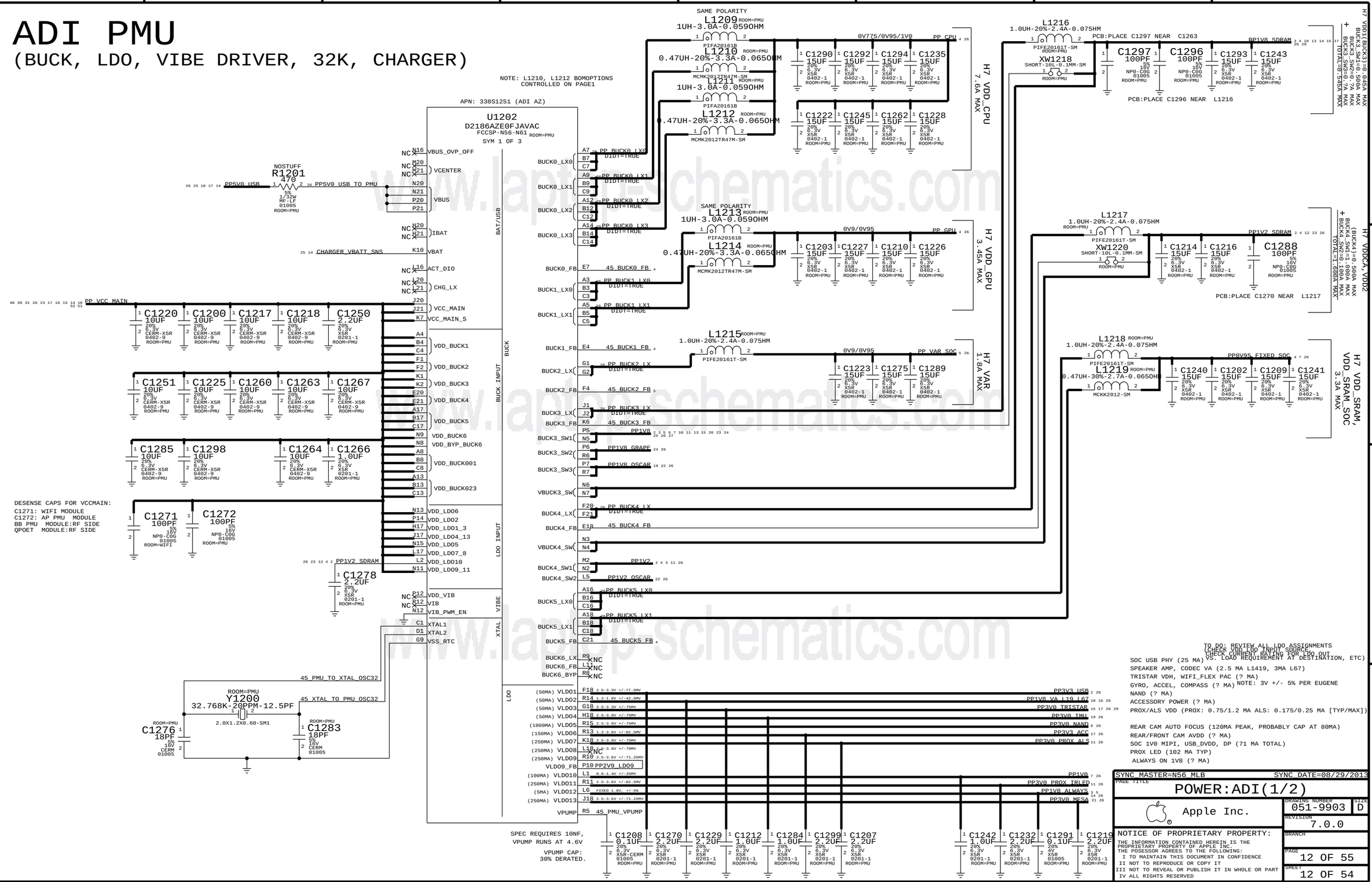
ADI PMU

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



ADI PMU

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

APN: 338S1251 (ADI AZ)

AMUX VOLTAGE LIMIT IS APPROX. = VDD_REF = PP_VCC_MAIN

U1202
D2186AZE0FJAVAC
FCCSP-N56-N61
SYM 2 OF 3

1.8V --->	AMUX_A0	A1	NC
1.8V --->	AMUX_A1	B1	NC
1.8V --->	AMUX_A2	D2	BUTTON_TO_AP_RINGER_A
1.8V --->	AMUX_A3	E2	BUTTON_TO_AP_VOL_UP_L
1.8V --->	AMUX_A4	E1	BUTTON_TO_AP_VOL_DOWN_L
3.33V --->	AMUX_A5	H6	LCM_TO_CHESTNUT_PWR_EN
	AMUX_A6	H5	TRISTAR_TO_PMU_USB_BRICKID_R
	AMUX_A7	H4	CHESTNUT_TO_PMU_ADCIN7
BASEBAND --->	AMUX_AY	G4	PMU_TO_TP_AMUX_AY
	AMUX_B0	J5	RADIO_TO_PMU_ADC_SMPS1
	AMUX_B1	J6	RADIO_TO_PMU_ADC_PP_LDO11_VDDIO
1.8V --->	AMUX_B2	K5	NC
1.8V --->	AMUX_B3	K8	NC
BASEBAND --->	AMUX_B4	L8	45_PMU_TO_WLAN_CLK32K
	AMUX_B5	K9	RADIO_TO_PMU_ADC_PP_LDO5_SIM
	AMUX_B6	L9	AP_TO_PMU_TEST_CLKOUT
	AMUX_B7	L10	RADIO_TO_PMU_ADC_SMPS4
	AMUX_BY	L4	PMU_TO_TP_AMUX_BY
	SCL	J4	AP_TO_I2C0_SCL
	SDA	K4	AP_BI_I2C0_SDA
	DWI_CK	K15	45_AP_TO_PMU_AND_BL_DWI_CLK
	DWI_DI	J16	45_AP_TO_PMU_AND_BL_DWI_DO
	DWI_DO	K16	NC
	PRE_UVLO	F8	PMU_TO_AP_PRE_UVLO_L
	RESET_IN1	P3	AP_TO_PMU_RESET_IN
	RESET_IN2	R3	TRISTAR_TO_PMU_HOST_RESET
	RESET_IN3	P4	AP_TO_PMU_SOCHOT1_L
	RESET*	R4	RESET_1V8_L
	IRQ*	P2	PMU_TO_AP_IRQ_L
	SYS_ALIVE	N1	PMU_TO_PHOTON_ALIVE
	TDEV1	L15	FOREHEAD_TO_PMU_NTC
	TDEV2	R17	CAM_TO_PMU_NTC
	TDEV3	P17	PA_TO_PMU_NTC
	TDEV4	R19	SOC_TO_PMU_NTC
	TCAL	P18	45_PMU_TCAL
	TBAT	P19	NC

	IREF	F6	45_PMU_IREF
	VREF	G5	PP_PMU_VREF
	VDD_REF	E5	PP_PMU_VDD_REF
	VDD_RTC (FIXED 2.5V, +/-2%)	F7	PP_PMU_VDD_RTC
	BRICK_ID	N17	TRISTAR_TO_PMU_USB_BRICKID_R
	ADC_IN7	N18	
	ADC_REF	E6	NC
	ACC_ID	N19	NC
	TMPR_DET	F5	NC
	ACC_DET	R18	
	BUTTON1 (100-300K INT PU)	D21	BUTTON_TO_AP_MENU_KEY_L
	BUTTON2 (100-300K INT PU)	D20	BUTTON_TO_AP_HOLD_KEY_L
	BUTTON3 (100-300K INT PU)	B20	
	BUTTON4 (100-300K INT PU)	C20	NC
	KEEPACT (NO INT PULL)	L7	AP_TO_PMU_KEEPACT
	SHDN	N10	NC
	OUT_32K	E8	45_PMU_TO_WLAN_CLK32K
	GPIO1	F17	CHG_TO_PMU_INT_L
	GPIO2	F16	BB_TO_PMU_HOST_WAKE_L
	GPIO3	E15	PMU_TO_BB_RST_R_L
	GPIO4	F15	TRISTAR_TO_AP_INT
	GPIO5	G17	STOCKHOLM_TO_PMU_HOST_WAKE
	GPIO6	E17	PMU_TO_OSCAR_RESET_CLK32K_L
	GPIO7	E16	WLAN_TO_PMU_HOST_WAKE
	GPIO8	E14	CODEC_TO_PMU_MIKEY_INT_L
	GPIO9	H16	PMU_TO_BT_REG_ON
	GPIO10	G16	BT_TO_PMU_HOST_WAKE
	GPIO11	F14	PMU_TO_WLAN_REG_ON
	GPIO12	F13	AP_TO_I2C0_SCL
	GPIO13	E13	OSCAR_TO_PMU_HOST_WAKE
	GPIO14	E12	NC
	GPIO15	E11	PMU_TO_BB_VBUS_DET
	GPIO16	F12	NC
	GPIO17	E10	WLAN_TO_PMU_PCIE_WAKE_L
	GPIO18	E9	PMU_TO_ACC_SW_ON
	GPIO19	F11	NC
	GPIO20	F9	NC
	GPIO21	F10	NC

ADC/REFS | AMUX | BUTTONS/DETECT | AP<->PMU | GPIO | NTC

R1316 200K 1% 1/20W MF 201 — ROOM=PMU
C1317 0.1UF 10% 6.3V CERM-X5R 0201 — ROOM=PMU
C1318 1.0UF 20% 6.3V X5R 0201-1 — ROOM=PMU
C1319 0.1UF 10% 6.3V CERM-X5R 0201 — ROOM=PMU
R1331 6.34K 1% 1/32W MF 01005 — ROOM=PMU — TRISTAR_TO_PMU_USB_BRICKID
C1326 0.01UF 10% 6.3V X5R 01005 — ROOM=PMU
C1323 1000PF 10% 6.3V X5R-CERM 01005 — ROOM=PMU — CHESTNUT_TO_PMU_ADCIN7
PP1V8_SDRAM
R1330 100K 5% 1/32W MF 01005 — ROOM=PMU — BUTTON_TO_AP_RINGER_A
R1387 1.00M 5% 1/32W MF 01005 — ROOM=PMU
R1312 1.00K 5% 1/32W MF 01005 — ROOM=PMU — PMU_TO_BB_RST_L

U1202
D2186AZE0FJAVAC
FCCSP-N56-N61
SYM 3 OF 3

A15	VSS_BUCK0_5	G13	
B15		G14	
C15		H8	
A2	VSS_BUCK1	H9	
B2		H10	
C2		H11	
A6	VSS_BUCK01	H12	
B6		H13	
C6		H14	
G20	VSS_BUCK4	J8	
G21		J9	
A19	VSS_BUCK5	J10	
B19		J11	
C19		J12	
P9	VSS_BUCK6	J13	
A10	VSS_BUCK012	J14	
A11		J15	
B10		K11	
B11		K12	
C10		K13	
C11		K14	
H1	VSS_BUCK23	K17	
H2		L12	
G8	VSSA_BUCK0	L13	
G6	VSSA_BUCK1	L14	
H7	VSSA_BUCK2	M1	
J7	VSSA_BUCK3	N14	
H15	VSSA_BUCK4	P1	
G15	VSSA_BUCK5	P11	
P8	VSSA_BUCK6	P13	
K20	VSS_SW_CHG	P15	
K21		P16	
A20	VSS	R1	
A21		R2	
B21		R16	
G7		R20	
G10		R21	
G11			
G12			

VSS

FOREHEAD NTC
ROOM=PMU_ C1359 100PF 5% 6.3V CERM 01005 — R1308 10KOHM-1% 01005 — ROOM=PMU_
FOREHEAD_NTC_P
FOREHEAD_NTC_N
100PF IS NEEDED FOR SAMPLING CAP IN ADC IN PMU

CAMERA NTC
ROOM=PMU_ C1367 100PF 5% 6.3V CERM 01005 — R1310 10KOHM-1% 01005 — ROOM=PMU_
CAM_NTC_P
CAM_NTC_N
100PF IS NEEDED FOR SAMPLING CAP IN ADC IN PMU

RADIO PA NTC
ROOM=PMU_ C1322 100PF 5% 6.3V CERM 01005 — R1390 10KOHM-1% 01005 — ROOM=PMU_
PA_NTC_P
PA_NTC_N
100PF IS NEEDED FOR SAMPLING CAP IN ADC IN PMU

H7P NTC
ROOM=PMU_ C1368 100PF 5% 6.3V CERM 01005 — R1357 10KOHM-1% 01005 — ROOM=PMU_
SOC_NTC_P
SOC_NTC_N
100PF IS NEEDED FOR SAMPLING CAP IN ADC IN PMU

PCB: MAKE XW1328, XW1329 ACCESSIBLE!

XW1304 XW1309 XW1306 XW1311 XW1308 XW1333 XW1314 XW1315 — SHORT-10L-0.1MM-SM — ROOM=PMU
PLACE THESE XWS AT PMU

ROOM=PMU PP1300 SM 1 P2MM-NSM
ROOM=PMU PP1301 SM 1 P2MM-NSM

PP1V8
R1301 100K 5% 1/32W MF 01005 — ROOM=PMU

C1365 100PF 5% 6.3V CERM 01005 — ROOM=PMU
R1309 3.92K 0.1% 1/20W MF 0201 — ROOM=PMU

ADI OTP:
SEE RADAR 14032884

SYNC_MASTER=N56_MLB SYNC_DATE=08/29/2013

PAGE TITLE: POWER:ADI(2/2)

Apple Inc.

DRAWING NUMBER: 051-9903 SIZE: D
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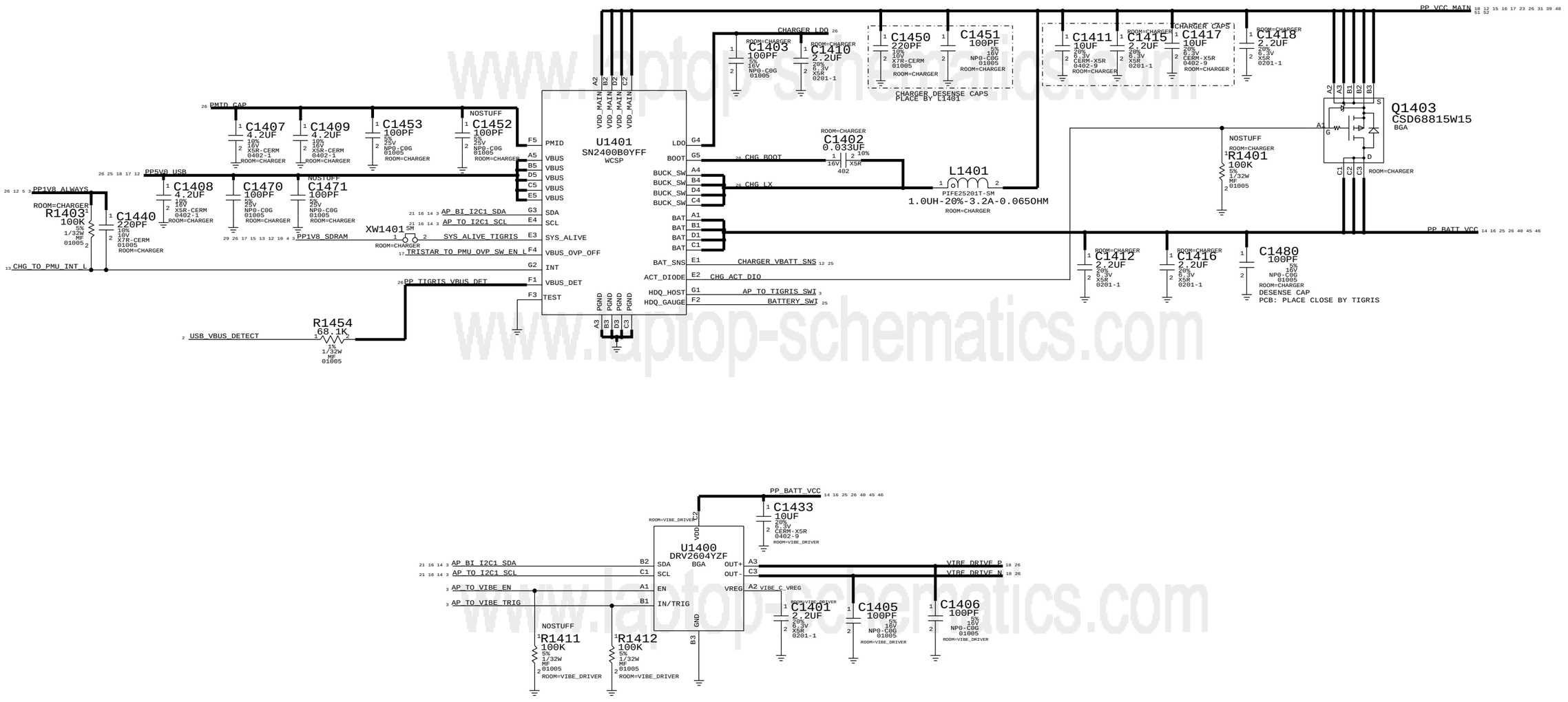
TIGRIS CHARGER & VIBE DRIVER



PAGE TITLE: POWER:TIGRISR,VIBE DRIVER

Apple Inc.

DRAWING NUMBER: 051-9903 | SIZE: D

REVISION: 7.0.0

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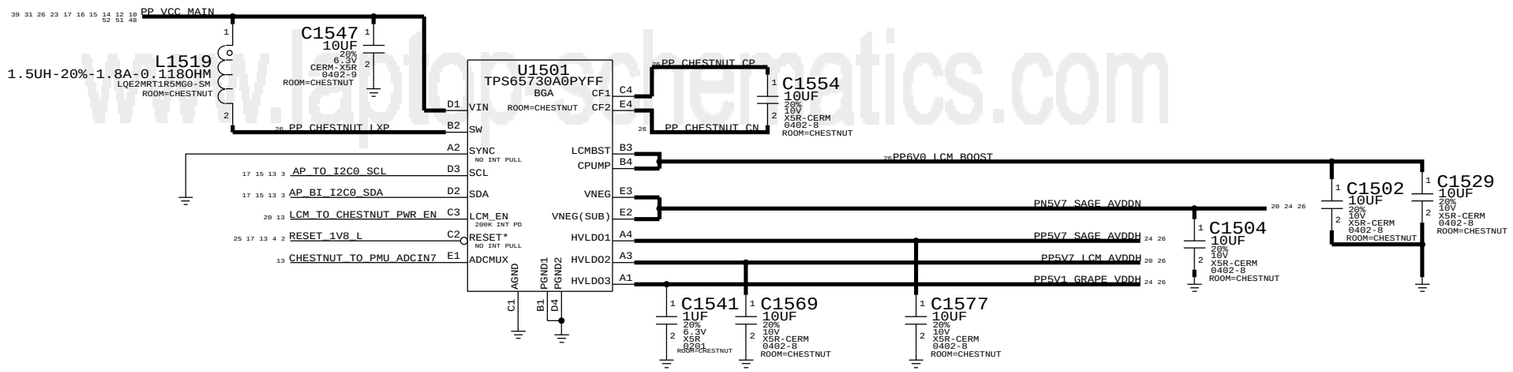
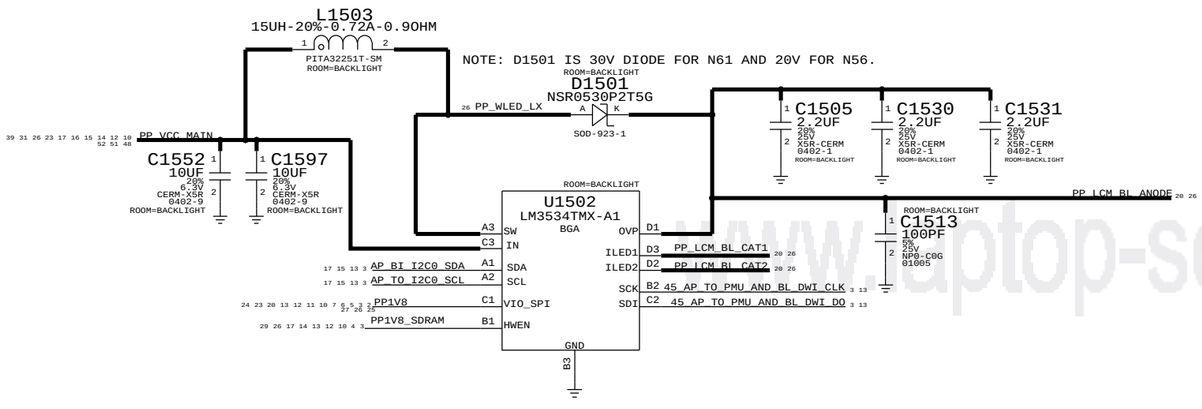
CHESTNUT, BACKLIGHT DRIVER, MESA BOOST

D500 DISPLAY PMU (TI CHESTNUT, 338S1149)

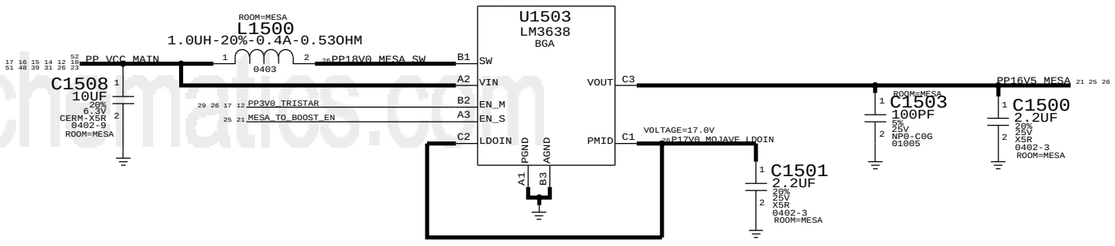


D500 BACKLIGHT DRIVER



MESA BOOST A0

APN: 353S3978



SYNC_MASTER=N61_MLB	SYNC_DATE=08/26/2013
PAGE TITLE: DISPLAY:CHESTNUT,BACKLIGHT DRIVER	
Apple Inc.	DRAWING NUMBER: 051-9903 · SIZE: D
	REVISION: 7.0.0
	BRANCH:
	PAGE: 15 OF 55
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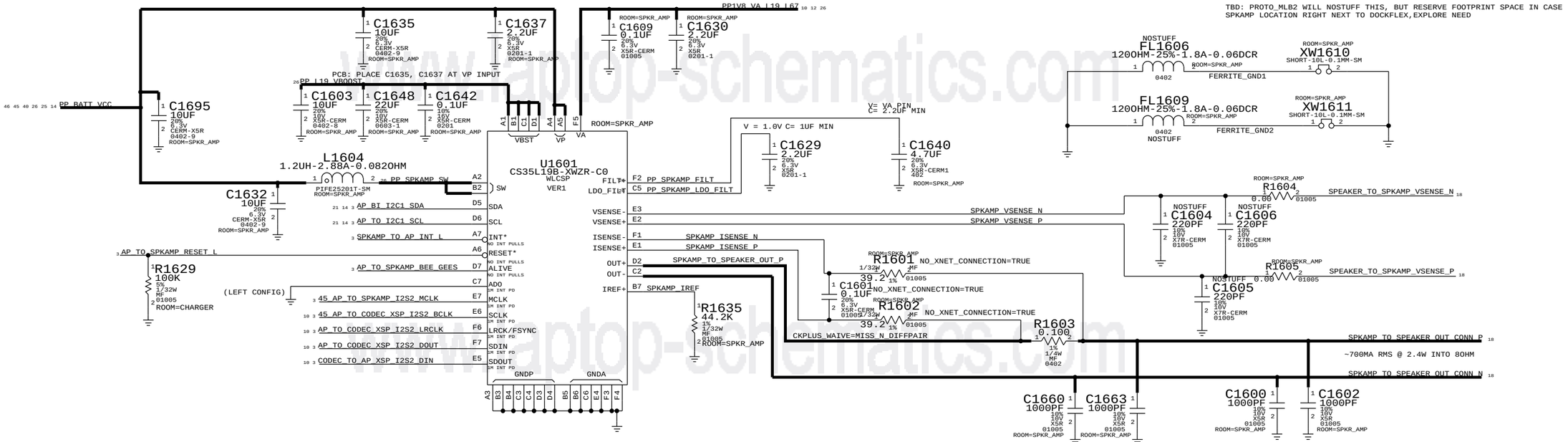
SPEAKER AMP, LED DRIVER

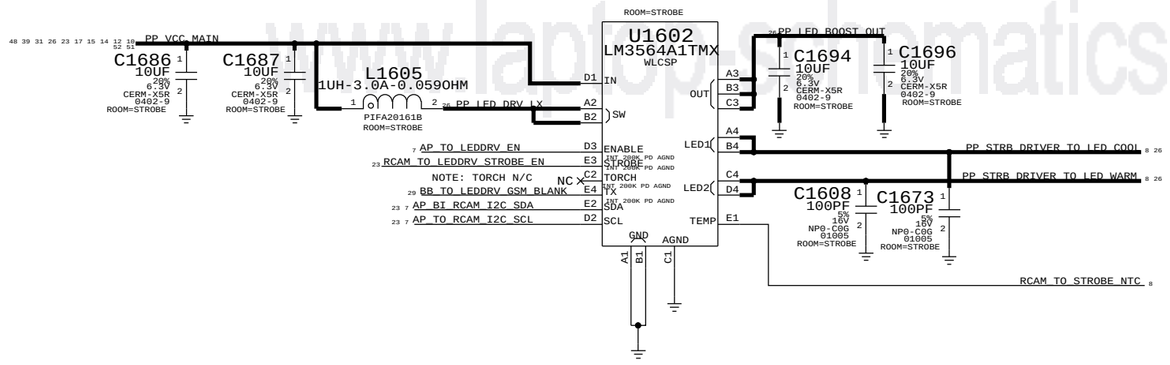
SPEAKER AMP

I2C ADDRESS: 1000000X



STROBE DRIVER

TI: APN 353S3899



SYNC_MASTER=N61_MLB SYNC_DATE=08/26/2013

PAGE TITLE: AUDIO:SPKR AMP,STROBE

Apple Inc.

DRAWING NUMBER: 051-9903 SIZE: D

REVISION: 7.0.0

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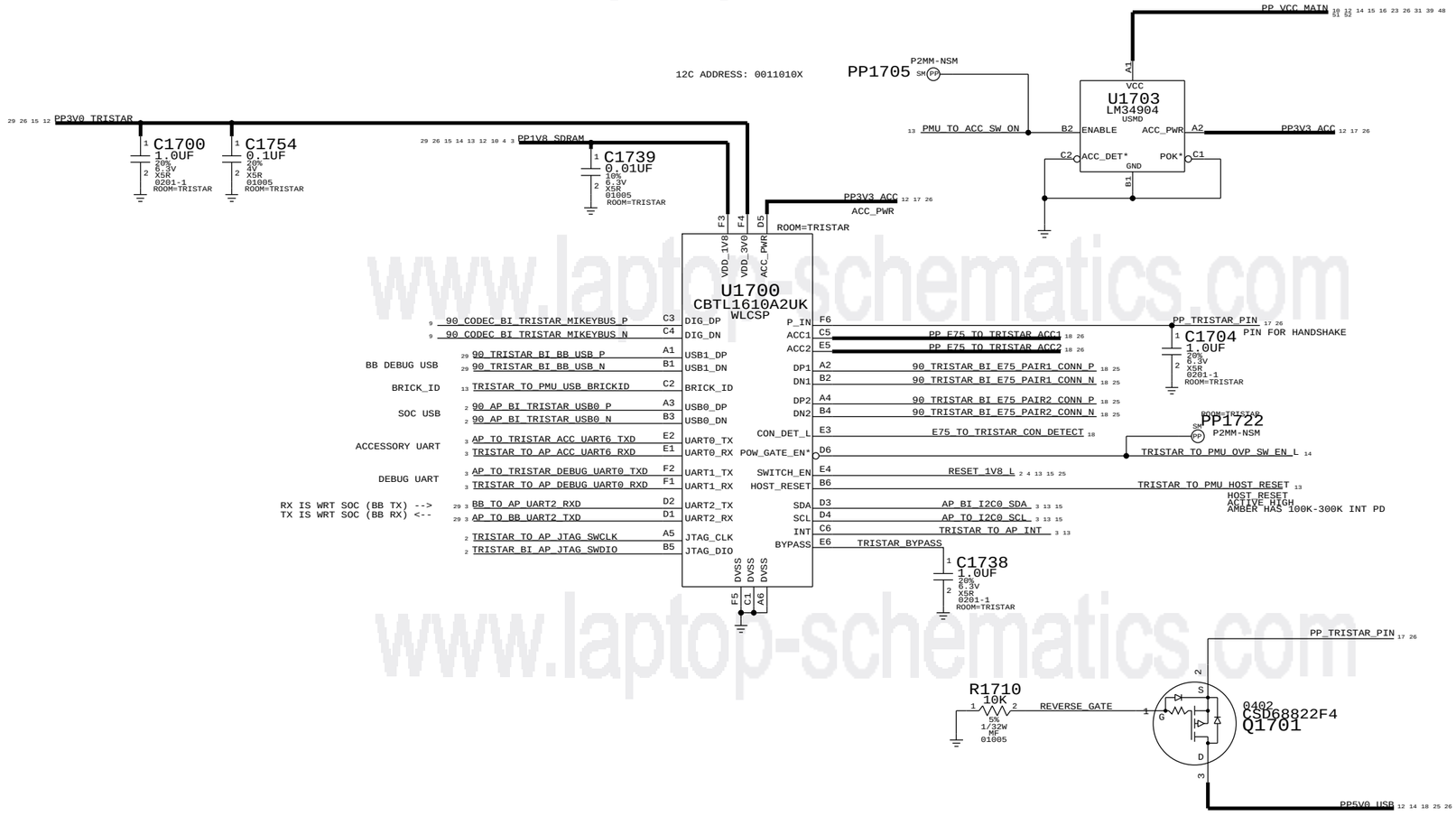
TRISTAR2



SYNC_MASTER=N61_MLB SYNC_DATE=08/26/2013

PAGE TITLE: IO:TRISTAR2

Apple Inc.

DRAWING NUMBER: 051-9903 SIZE: D

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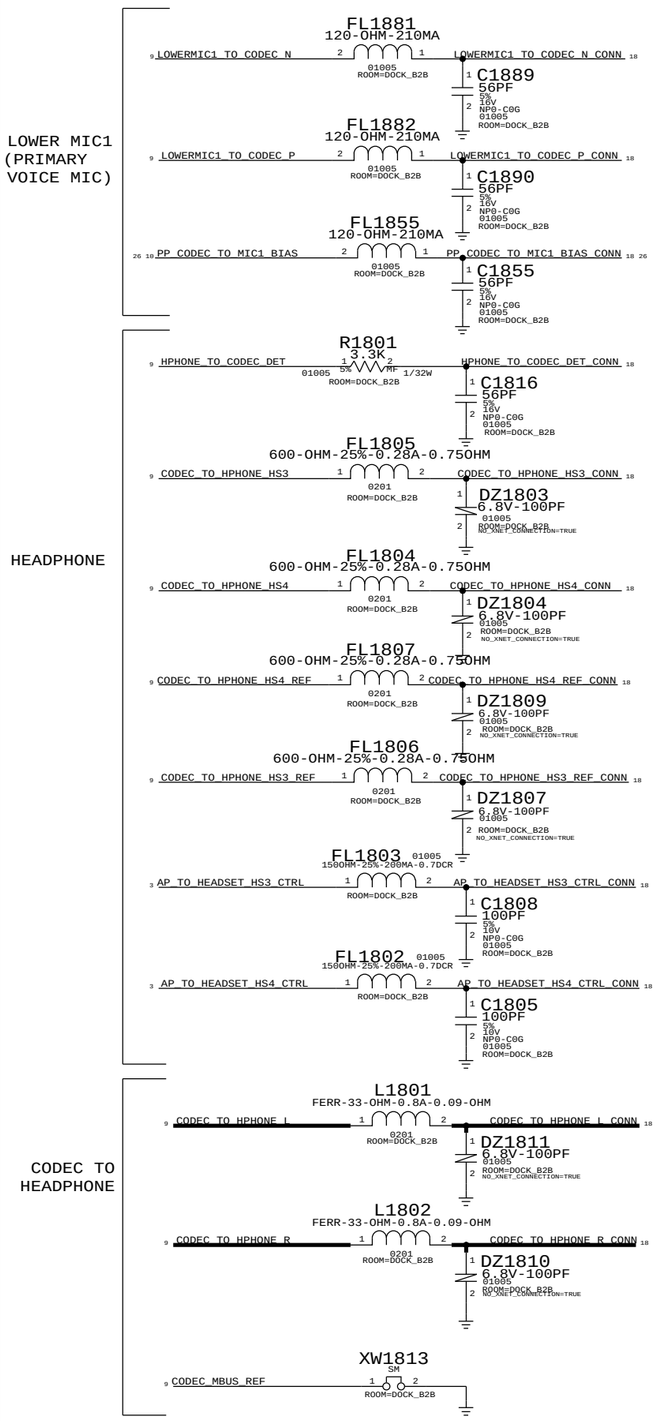
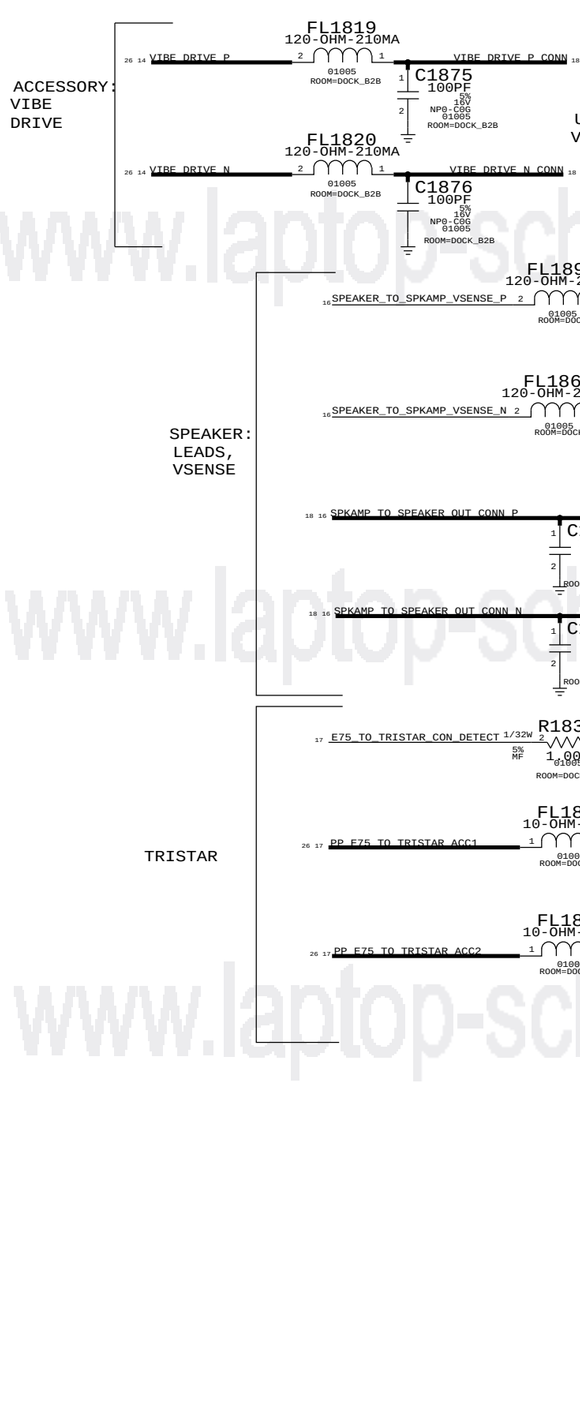
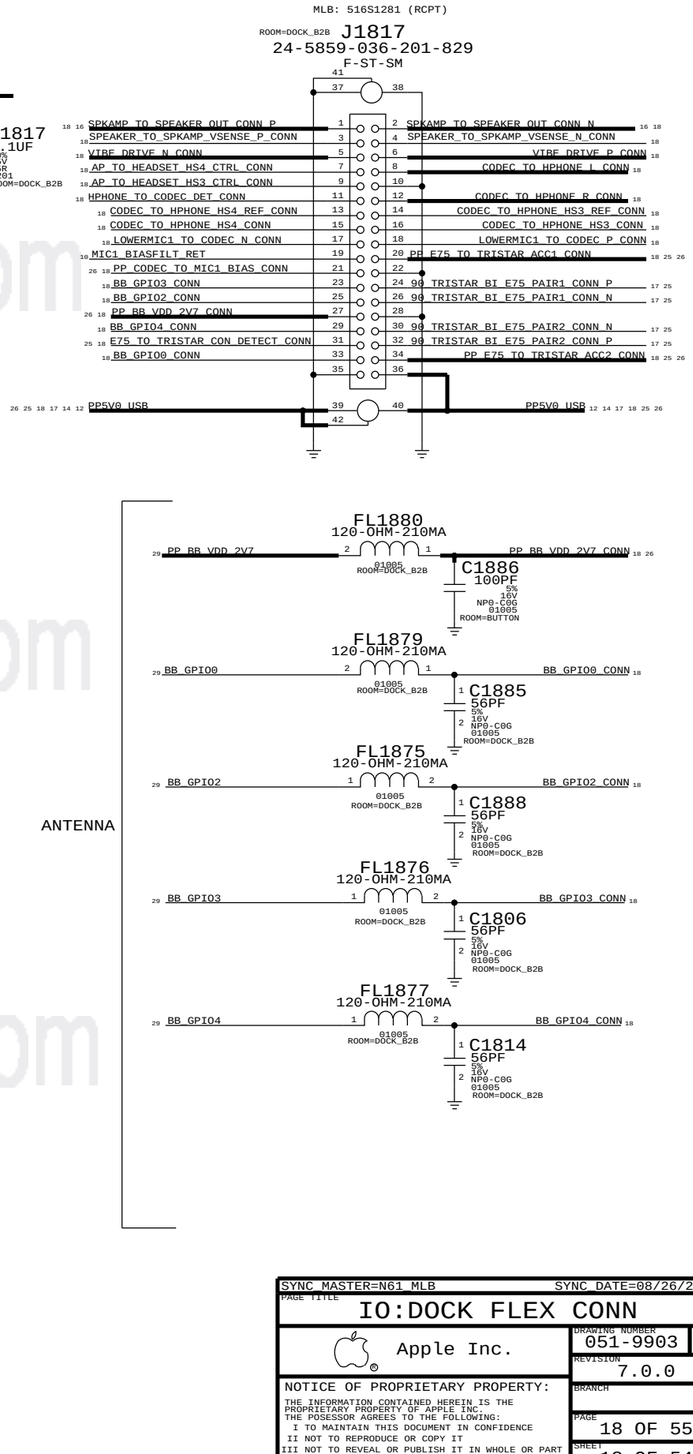
DOCKFLEX B2B (USB VBUS, SPEAKER,ANTENNA LAT SW CTRL, MIC1 (PRIMARY MIC), ACC DET/ID/PWR, E75 DIFFPAIRS)







SYNC_MASTER=N61_MLB SYNC_DATE=08/26/2013

PAGE TITLE: IO:DOCK FLEX CONN

Apple Inc.

DRAWING NUMBER: 051-9903 SIZE: D

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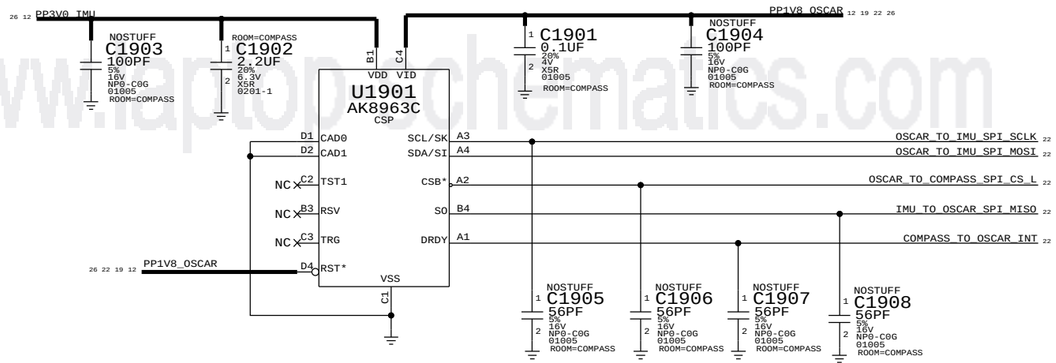
COMPASS - AKM COMPASS IN POR LOCATION

COMPASS CSP: 338S1014



SYNC_MASTER=N61_MLB SYNC_DATE=08/26/2013

PAGE TITLE: SENSORS:COMPASS

Apple Inc.

DRAWING NUMBER: 051-9903 SIZE: D

REVISION: 7.0.0

BRANCH:

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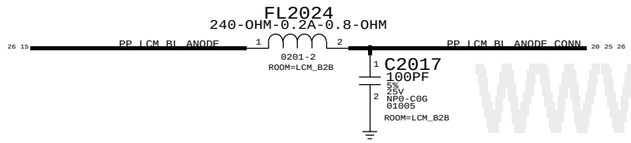
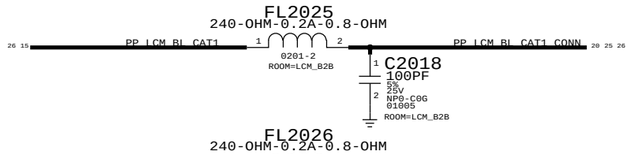
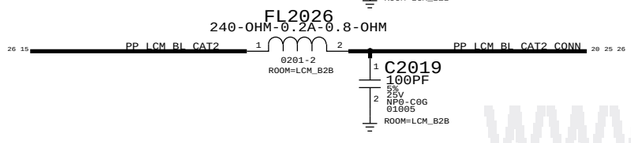
LCD B2B

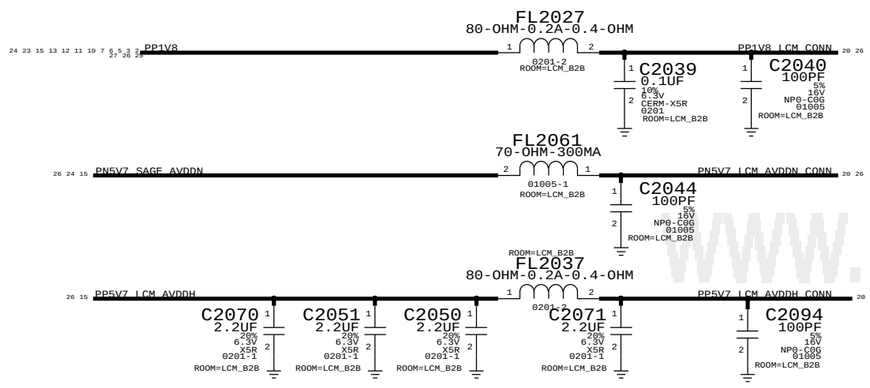
Backlight
(N56 HAS A 2ND SET OF BL SIGNALS ON P. 19).



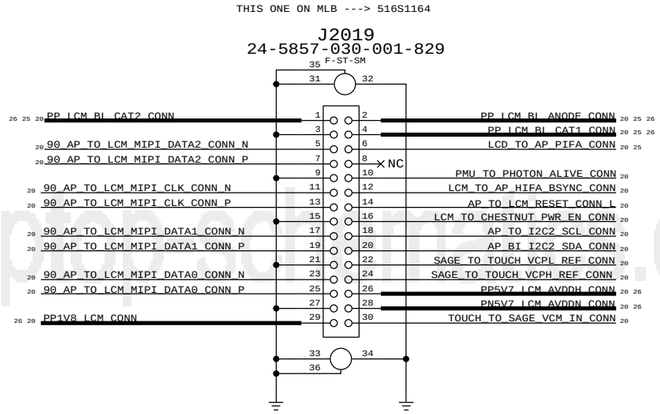




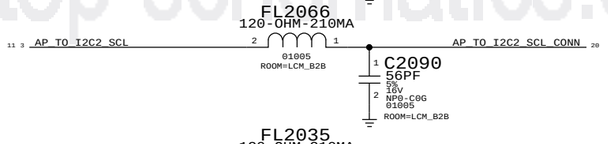
LCM Supplies

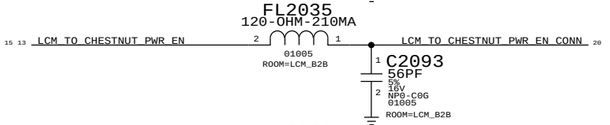


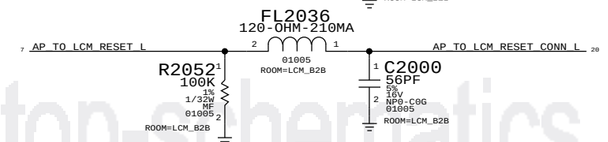
THIS ONE ON MLB ---> 516S1164

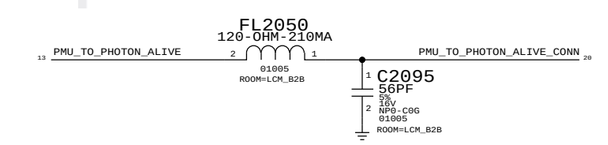


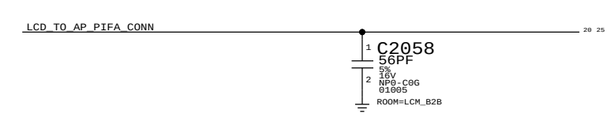
Digital Interfaces



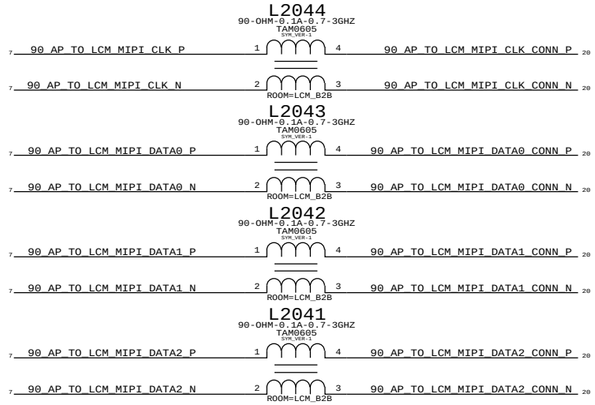




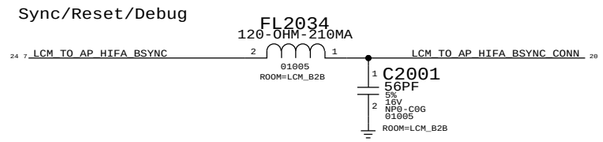




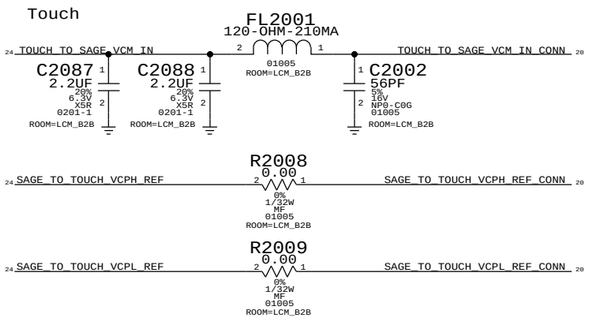
MIPI Common Mode Chokes
(N56 HAS A 4TH MIPI LANE ON P. 19).



Sync/Reset/Debug



Touch



SYNC_MASTER=N61_MLB SYNC_DATE=08/26/2013

PAGE TITLE
DISPLAY:FLEX CONN

Apple Inc.

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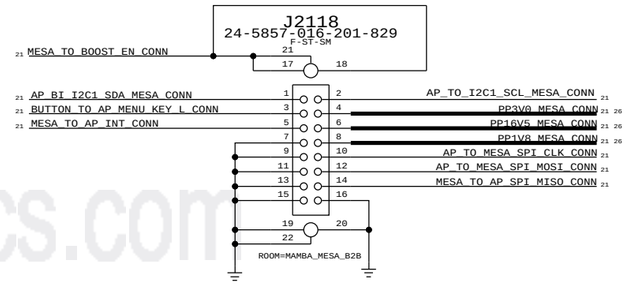
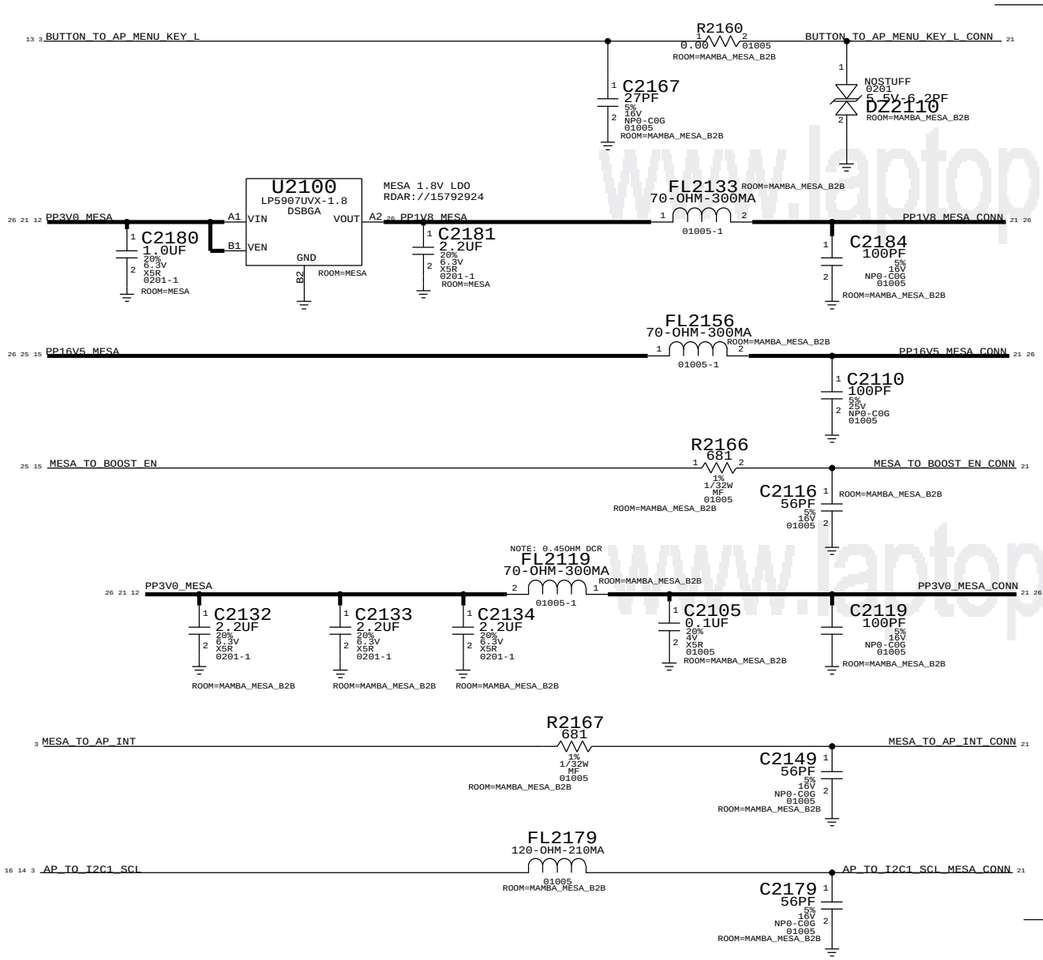
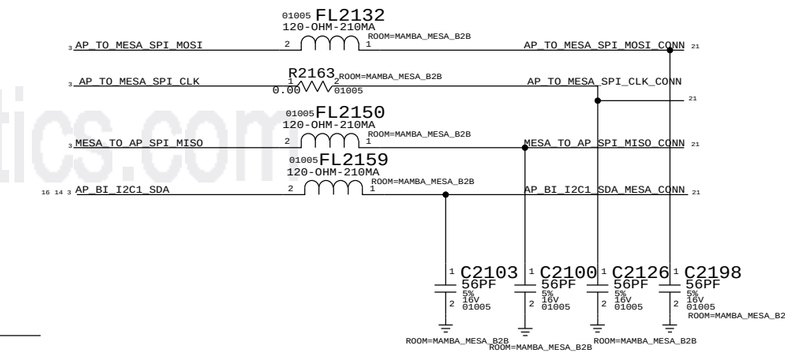
MESA CONNECTOR

MLB: 516S1278





MESA SENSOR:



PAGE TITLE: SENSORS:MESA FLEX CONN

Apple Inc.

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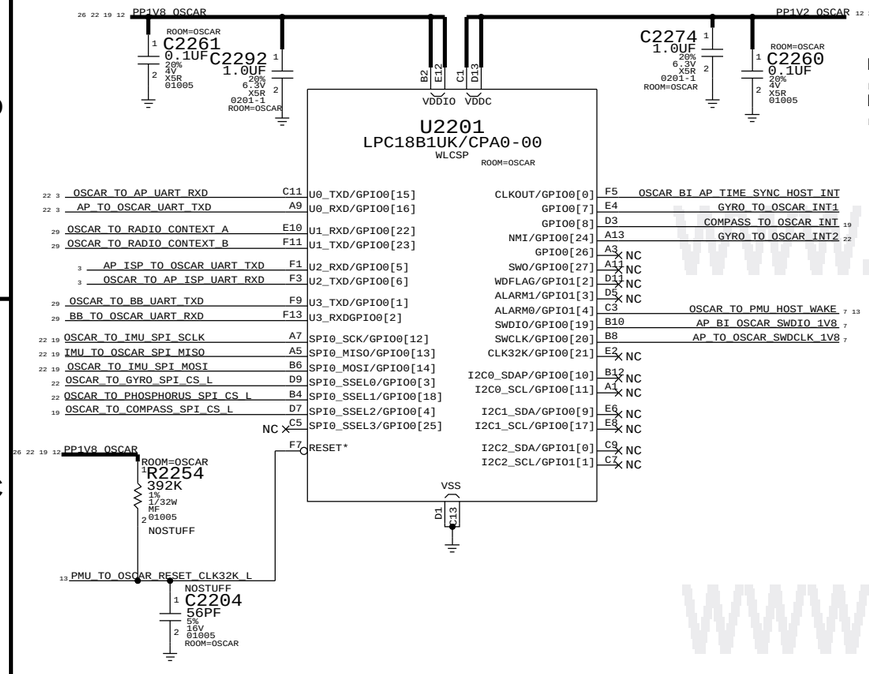
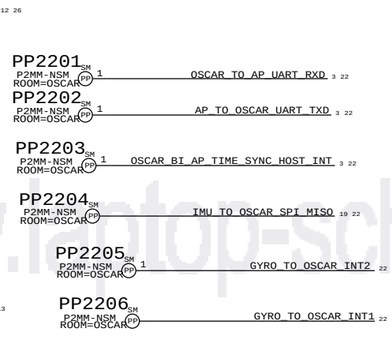
OSCAR + SENSORS

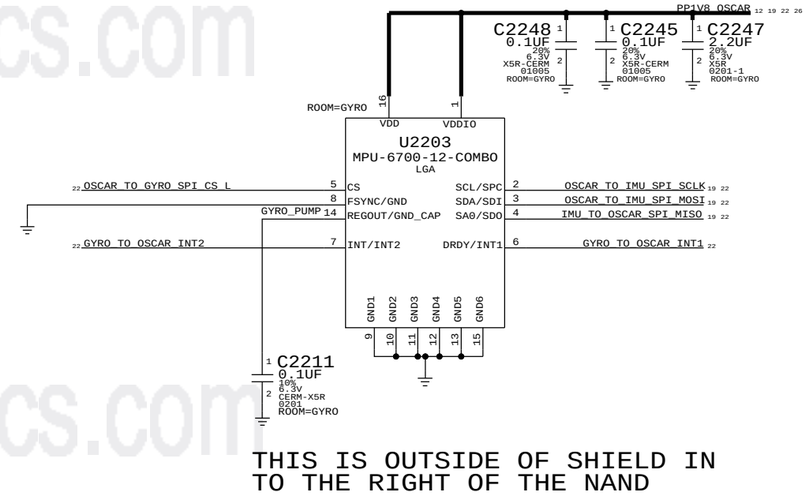
OSCAR VDDIO = 1.8V ALWAYS ON (NEED TO WAKE HOST & RUN PLL)
OSCAR CORE = 1.2V ALWAYS ON (NEED TO RUN IN S2RAM)





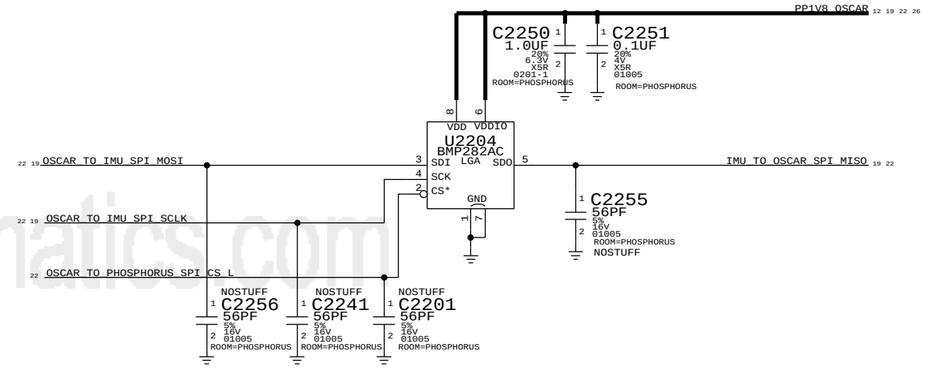
CARBON (ACCEL GYRO COMBO)

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



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

PHOSPHORUS



SYNC_MASTER=N61_MLB	SYNC_DATE=08/26/2013
PAGE TITLE: SENSORS:OSCAR,CARBON,PHOS,MAGNESIUM	
Apple Inc.	DRAWING NUMBER: 051-9903 SIZE: D
	REVISION: 7.0.0
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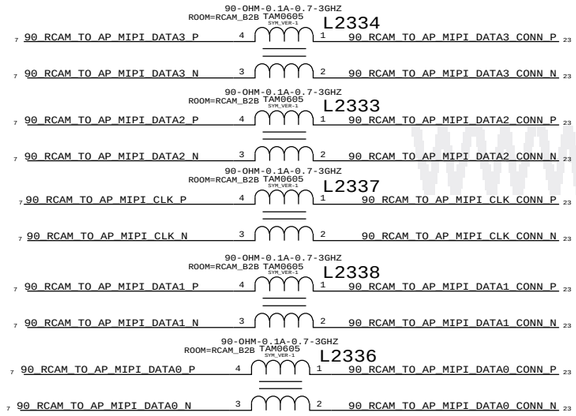
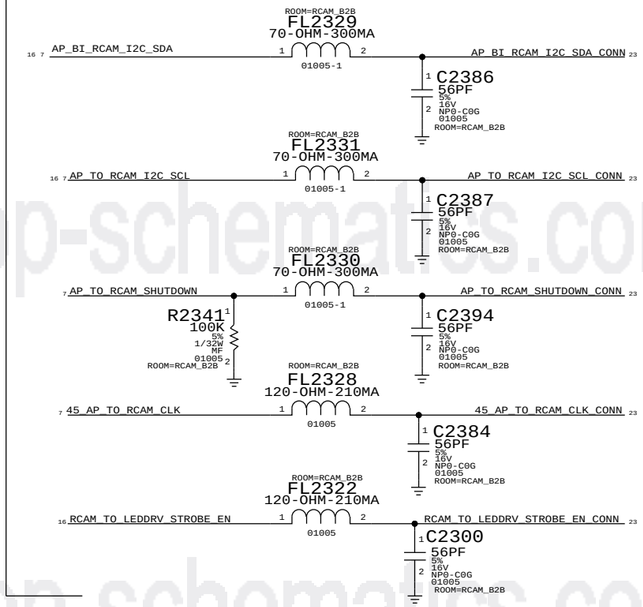
RCAM B2B (REAR CAMERA CONNECTOR)

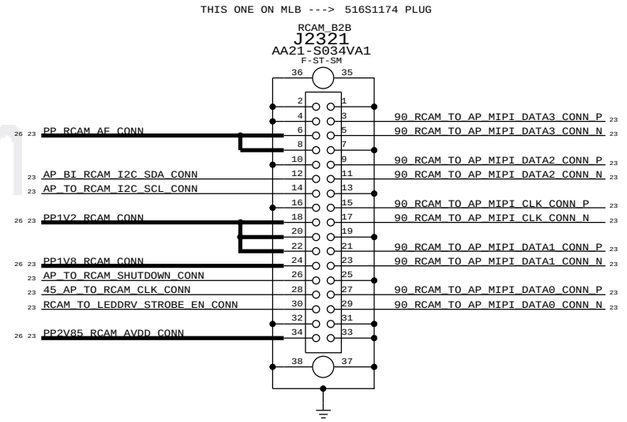
RCAM:
4-LANE MIPI



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

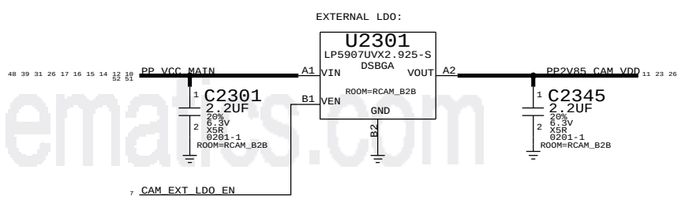


THIS ONE ON MLB ---> 516S1174 PLUG



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

RCAM/FCAM AVDD RAIL EXT. LDO:



SYNC_MASTER=N61_MLB SYNC_DATE=08/26/2013

PAGE TITLE: CAMERA:REAR FLEX CONN

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Touch (B2B, Driver ICs)

Touch B2B

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

J2401
AA21-S046VA1
F-ST-SM

Cumulus

APN: 343S0638

Turn on is later than PP1V8_GRAPE
Turn off is same time as PP1V8_GRAPE

Follow Touch routing guidelines
Cumulus sense nets are sensitive

U2401
CUMULUS-C1
WLBGA

Radars for XW
rdar://12773579
rdar://12611242

No decoupling on previous designs

Optical prox filter

Touch probe points

I2C pull-ups

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

Meson decoupling

MESON A1

APN: 343S0694

U2402
MESON-A1
CSP

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

SYNC_MASTER=N/A SYNC_DATE=N/A

PAGE TITLE: TOUCH:CUMULUS,MESON

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BATT CONN, TPS, STANDOFFS/SHIELDS/FIDUCIALS

BATTERY CONN

THIS ONE ON MLB ---> 516S1239 RCPT

PP_BATT_VCC

C2560 100PF 5% 16V NP0-C0G 01005 ROOM=BATTERY_B2B

C2549 15PF 5% 16V NP0-C0G-CERM 01005 ROOM=BATTERY_B2B

C2550 33PF 5% 16V NP0-C0G-CERM 01005 ROOM=BATTERY_B2B

FL2511 120-OHM-210MA 01005 ROOM=BATTERY_B2B

BATTERY_SWI

C2579 56PF 5% 16V NP0-C0G 01005 ROOM=BATTERY_B2B

BATTERY_SWI_CONN

J2523 RCPT-BATT-2BLADES-0.90 F-SM-SM ROOM=BATTERY_B2B

C2509 100PF 5% 16V NP0-C0G 01005 ROOM=BATTERY_B2B

C2561 220PF 10% 16V X7R-CERM 01005 ROOM=BATTERY_B2B

C2575 220PF 10% 16V X7R-CERM 01005 ROOM=BATTERY_B2B

C2522 56PF 5% 16V NP0-C0G 01005 ROOM=BATTERY_B2B

PCB: PLACE XW2512 AT BATT CONN, PIN 7

XW2512 SHORT-18L-0.25MM-SM ROOM=BATTERY_B2B

CHARGER_VBATT_SNS

PP_BATT_VCC

FIDUCIALS

FD2501 FID 0P5SM1P0SQ-NSP

FD2502 FID 0P5SM1P0SQ-NSP

FD2503 FID 0P5SM1P0SQ-NSP

FD2504 FID 0P5SM1P0SQ-NSP

FD2505 FID 0P5SM1P0SQ-NSP

FD2506 FID 0P5SM1P0SQ-NSP

SHIELDS

SH2501 SM OMIT_TABLE 806-8537 SHLD-EMI-UPPER-FRONT-N61

SH2502 SM OMIT_TABLE 806-8538 SHLD-EMI-LOWER-FRONT-N61

SH2503 SM 806-00230 SHLD-EMI-UPPER-EXT-N61

SH2504 SM OMIT_TABLE 806-00424 SHLD-N61-EMI-LOWER-BACK-TALL

SH2506 SM OMIT_TABLE 806-8541 SHLD-EMI-SA-N61

COWLING

RETENTION-COAX-N61

CL2501 SM 806-8699

SH2505 SHLD-SNOUT-1-N61 SM

NORTH_AC_GND_SCREW

CKPLUS_WAIVE=TERMSHORTED 806-7014

CL2502 TH-NSP SL-1.20X0.40-1.50X0.70-NSP

POWER TP

PP5V0_USB — TP2501 TP-P6 — VBUS

TP2512 TP-P6 — POWER GROUND

PP_BATT_VCC — TP2539 TP-P55 — VBAT

TP2513 TP-P6

TP2545 TP-P55

SUPER TP

PMU_TO_TP_AMUX_AY — TP2506 TP-P55 — ANALOG MUX A OUTPUT

PMU_TO_TP_AMUX_BY — TP2507 TP-P55 — ANALOG MUX B OUTPUT

RESET

RESET_1V8_L — TP2508 TP-P55 — H6P & BB RESET

DFU

FORCE_DFU — TP2509 TP-P55 — FORCE DFU

PP1V8 — PP2510 P4MM SM

TESTPOINTS

MOJAVE TP

MESA_TO_BOOST_EN — TP2569 TP-P55

PP1V65_MESA — TP2570 TP-P55

E75 - USB/UART/ID/POWER

90_TRISTAR_BI_E75_PAIR1_CONN_P — TP2521 TP-P55

90_TRISTAR_BI_E75_PAIR1_CONN_N — TP2522 TP-P55

90_TRISTAR_BI_E75_PAIR2_CONN_P — TP2523 TP-P55

90_TRISTAR_BI_E75_PAIR2_CONN_N — TP2524 TP-P55

PP_E75_TO_TRISTAR_ACC1_CONN — TP2526 TP-P55

PP_E75_TO_TRISTAR_ACC2_CONN — TP2527 TP-P55

TP2535 TP-P55 — TP IS TO HELP WITH USB SI IN THE FACTORY FIXTURE.

E75_TO_TRISTAR_CON_DETECT_CONN — TP2510 TP-P55 — FOR DIAGS

LCM BACKLIGHT

PP_LCM_BL_CAT1_CONN — TP2518 TP-P55 — LCD BACKLIGHT SINK1

PP_LCM_BL_CAT2_CONN — TP2519 TP-P55 — LCD BACKLIGHT SINK2

PP_LCM_BL_ANODE_CONN — TP2520 TP-P55 — LCD BACKLIGHT SOURCE

LCD_TO_AP_PIFA_CONN — TP2517 TP-P55 — LCD PIFA TEST POINT

SCREW HOLES + STANDOFFS

BS2503 860-3948 STDOFF-MLB-UNPLATED-0.85-N61-SM

BS2512 860-7862 STDOFF-2.70OD1.84ID-0.88H-TH

BS2511 STDOFF-2.60D0.5H-0.5-1.7-TH — 50_AP_UAT_FEED — 860-8396

BS2510 STDOFF-2.20D0.25H-0.50-1.70 — 50_AP_WIFI_5G_CONN_ANT — 860-7846

BS2501 860-3948 STDOFF-MLB-UNPLATED-0.85-N61-SM

BS2502 860-3948 STDOFF-MLB-UNPLATED-0.85-N61-SM

BS2504 STDOFF-2.55OD1.4ID-0.99H-SM — AP_TO_STOCKHOLM_ANT — 860-7861

BS2509 STDOFF-2.70OD1.84ID-0.88H-TH — 860-7862

NORTH_AC_GND_SCREW

C2510 220PF 10% 16V X7R-CERM 01005 ROOM=ASSEMBLY

C2511 56PF 5% 16V NP0-C0G 01005 ROOM=ASSEMBLY

C2501 4.7PF +/-0.1PF 16V NP0-C0G 01005 ROOM=ASSEMBLY

C2523 220PF 10% 16V X7R-CERM 01005 ROOM=ASSEMBLY

SYNC_MASTER=N61_MLB SYNC_DATE=08/26/2013

PAGE TITLE: POWER:BATT CONN,TPS,PD FEATURES

Apple Inc.

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VOLTAGE PROPERTIES

I65	VOLTAGE=3.3V	PP3V3_USB	2 12
I66	VOLTAGE=1.8V	PP1V8_VA_L19_L67	10 12 16
I67	VOLTAGE=3.0V	PP3V0_TRISTAR	12 15 17 29
I68	VOLTAGE=3.0V	PP3V0_IMU	12 19
I69	VOLTAGE=3.0V	PP3V0_NAND	6 12
I60	VOLTAGE=3.0V	PP3V3_ACC	12 17
I62	VOLTAGE=3.0V	PP3V0_PROX_ALS	11 12
I64	VOLTAGE=4.6V	PP_VCC_MAIN	10 12 14 15 16 17 23 31 39 40 51 52
I65	VOLTAGE=1.0V	PP1V0	7 12
I67	VOLTAGE=3.0V	PP3V0_PROX_TRLED	11 12
I66	VOLTAGE=1.8V	PP1V8_ALWAYS	3 5 12 14
I68	VOLTAGE=3.0V	PP3V0_MESA	12 21
I70	VOLTAGE=1.1V	PP_CPU	4 12
I69	VOLTAGE=1.1V	PP_GPU	4 12
I71	VOLTAGE=1.2V	PP1V2_SDRAM	2 4 12 23
I72	VOLTAGE=1.8V	PP1V8_SDRAM	3 4 10 12 13 14 15 17 29
I73	VOLTAGE=1.8V	PP1V8	2 3 5 6 7 10 11 12 13 15 20 23 24 26 27
I77	VOLTAGE=1.8V	PP1V8_GRAPE	12 24
I76	VOLTAGE=1.8V	PP1V8_OSCAR	12 19 22
I75	VOLTAGE=1.2V	PP1V2_NAND_VDDI	6
I74	VOLTAGE=1.8V	PP_EXTMIC_BIAS_FILT_IN	10
I78	VOLTAGE=1.8V	BOARD_ID2	3 27
I79	VOLTAGE=1.2V	PP1V2	2 4 5 11 12
I80	VOLTAGE=5.0V	PP_E75_TO_TRISTAR_ACC1_CONN	18 25
I81	VOLTAGE=5.0V	PP_E75_TO_TRISTAR_ACC1	17 18
I82	VOLTAGE=22.0V	PP_LCM_BL_ANODE	15 20
I83	VOLTAGE=0.2V	PP_LCM_BL_CAT2	15 20
I87	VOLTAGE=0.2V	PP_LCM_BL_CAT1	15 20
I86	VOLTAGE=0.2V	PP_LCM_BL_CAT2_CONN	20 25
I85	VOLTAGE=0.2V	PP_LCM_BL_CAT1_CONN	20 25
I88	VOLTAGE=-5.7V	PN5V7_SAGE_AVDDN	15 20 24
I89	VOLTAGE=1.2V	PP1V2_OSCAR	12 22
I90	VOLTAGE=3.0V	PP3V0_MESA_CONN	21
I91	VOLTAGE=6V	PP6V0_LCM_BOOST	15
I92	VOLTAGE=5.0V	PP_STRB_DRIVER_TO_LED_WARM	8 16
I96	VOLTAGE=5.0V	PP_STRB_DRIVER_TO_LED_COOL	8 16
I93	VOLTAGE=1.8V	PP_CODEC_TO_MIC1_BIAS	10 18
I97	VOLTAGE=1.8V	PP_EXTMIC_BIAS_IN	10
I98	VOLTAGE=1.8V	PP_EXTMIC_BIAS_FILT	10
I99	VOLTAGE=1.8V	PP_CODEC_TO_FRONTMIC3_BIAS	10 11
I100	VOLTAGE=1.8V	PP_CODEC_TO_REARMIC2_BIAS	8 10
I101	VOLTAGE=1.8V	PP_CODEC_FILT+	10
I102	VOLTAGE=2.2V	PP_CODEC_SPKR_VO	10
I104	VOLTAGE=2.5V	PP_CODEC_VCPFILT-	10
I105	VOLTAGE=2.5V	PP_CODEC_VCPFILT+	10
I106	VOLTAGE=2.5V	PP_CODEC_VHP_FLYN	10
I108	VOLTAGE=0.2V	PP_CODEC_VHP_FLYC	10
I107	VOLTAGE=2.5V	PP_CODEC_VHP_FLYP	10
I109	VOLTAGE=1.8V	PP1V8_ECAM_CONN	11
I110	VOLTAGE=3.0V	PP2V85_ECAM_AVDD_CONN	11
I111	VOLTAGE=1.8V	PP_CODEC_TO_FRONTMIC3_BIAS_CONN	11
I112	VOLTAGE=3.0V	PP3V0_ALS_CONN	11
I113	VOLTAGE=1.2V	PP1V2_ECAM_VDDIO_CONN	11
I117	VOLTAGE=5.0V	PP5V0_USB	12 14 17 18 25
I116	VOLTAGE=5.0V	PP5V0_USB_TO_PMU	12
I115	VOLTAGE=4.6V	PP_BUCK5_LX0	12
I11D	VOLTAGE=4.6V	PP_BUCK3_LX	12
I11C	VOLTAGE=4.6V	PP_BUCK4_LX	12
I11A	VOLTAGE=4.6V	PP_BUCK2_LX	12
I11B	VOLTAGE=4.6V	PP_BUCK1_LX1	12
I120	VOLTAGE=4.6V	PP_BUCK1_LX0	12
I11F	VOLTAGE=4.6V	PP_BUCK0_LX3	12
I122	VOLTAGE=4.6V	PP_BUCK0_LX2	12
I121	VOLTAGE=4.6V	PP_BUCK0_LX1	12
I123	VOLTAGE=4.6V	PP_BUCK0_LX0	12
I125	VOLTAGE=6.0V	PP_CHESTNUT_LXP	15
I126	VOLTAGE=6.0V	PP_CHESTNUT_CP	15
I127	VOLTAGE=6.0V	PP_CHESTNUT_CN	15
I12D	VOLTAGE=5.7V	PP5V7_SAGE_AVDDH	15 24
I12C	VOLTAGE=5.7V	PP5V7_LCM_AVDDH	15 20
I12D	VOLTAGE=5.1V	PP5V1_GRAPE_VDDH	15 24
I130	VOLTAGE=22.0V	PP_WLED_LX	15
I131	VOLTAGE=18.0V	PP18V0_MESA_SW	15
I132	VOLTAGE=17.0V	P17V0_MOJAVE_LDOIN	15
I133	VOLTAGE=16.5V	PP16V5_MESA	15 21 25
I134	VOLTAGE=8.0V	PP_SPKAMP_SW	16
I135	VOLTAGE=8.0V	PP_L19_VBOOST	16
I136	VOLTAGE=1.8V	PP_SPKAMP_FILT	16
I137	VOLTAGE=1.8V	PP_SPKAMP_LDO_FILT	16
I5	VOLTAGE=5.0V	PP_LED_DRV_LX	16
I2	VOLTAGE=5.0V	PP_LED_BOOST_OUT	16
I4	VOLTAGE=2.9V	PP2V9_LDO9	12
I5	VOLTAGE=1.8V	PP_CODEC_TO_MIC1_BIAS_CONN	18
I7	VOLTAGE=4.6V	PP_E75_TO_TRISTAR_ACC2	17 18
I8	VOLTAGE=4.6V	PP_E75_TO_TRISTAR_ACC2_CONN	18 25
I10	VOLTAGE=1.8V	PP1V8_LCM_CONN	20
I11	VOLTAGE=22.0V	PP_LCM_BL_ANODE_CONN	20 25
I12	VOLTAGE=-5.7V	PN5V7_LCM_AVDDN_CONN	20
I13	VOLTAGE=5.7V	PP5V7_LCM_AVDDH_CONN	20
I16	VOLTAGE=1.8V	PP1V8_MESA	21
I17	VOLTAGE=16.5V	PP16V5_MESA_CONN	21
I14A	VOLTAGE=5.0V	PP_TRISTAR_PIN	17
I20	VOLTAGE=1.2V	PP1V2_RCAM_CONN	23
I21	VOLTAGE=1.8V	PP1V8_RCAM_CONN	23
I23	VOLTAGE=3.0V	PP2V85_CAM_VDD	11 23
I24	VOLTAGE=1.8V	PP2V85_RCAM_AVDD_CONN	23
I25	VOLTAGE=1.8V	PP_CUMULUS_VDDCORE	24
I26	VOLTAGE=1.2V	PP_CUMULUS_VDDANA	24
I27	VOLTAGE=13.5V	PP_SAGE_TO_TOUCH_VCPH_CONN	24
I28	VOLTAGE=-12V	PN_SAGE_TO_TOUCH_VCPL_CONN	24
I2C	VOLTAGE=13.5V	PP_SAGE_TO_TOUCH_VCPH	24
I2D	VOLTAGE=-12V	PN_SAGE_TO_TOUCH_VCPL	24
I31	VOLTAGE=-12V	PN_SAGE_VCPL_F	24
I35	VOLTAGE=5.7V	PP_SAGE_LX	24
I34	VOLTAGE=17.0V	PP_SAGE_LY	24
I38	VOLTAGE=1.8V	PP_PMU_VREF	13
I37	VOLTAGE=14V	PP_SAGE_VBST_OUTH	24
I40	VOLTAGE=5.0V	PP_TIGRIS_VBUS_DET	14
		PP1V8_PLL	
		PP_MIPIOD_VREG	
		BOARD_ID0	
I41	VOLTAGE=2.5V	PP_PMU_VDD_REF	13
I42	VOLTAGE=1.8V	PP_EXTMIC_BIAS	10
I43	VOLTAGE=1.8V	PP1V8_XTAL	2
I44	VOLTAGE=1.8V	PP_PMU_VDD_RTC	13
I46	VOLTAGE=4.6V	PP_BATT_VCC	14 16 25 40 45 46
I48	VOLTAGE=1.8V	PP1V8_MESA_CONN	21
I47	VOLTAGE=3.0V	PP3V0_PROX_CONN	11
I50	VOLTAGE=1.0V	PP0V95_FIXED_SOC	4 7 12
I51	VOLTAGE=1.0V	PP0V95_FIXED_SOC_PCIE	7
I52	VOLTAGE=1.2V	PP1V2_PLL	2
I53	VOLTAGE=1.0V	PP_BUCK5_LX1	12
I54	VOLTAGE=1.0V	PP_VAR_SOC	5 12
I14D	VOLTAGE=5.0V	PMID_CAP	14
I147	VOLTAGE=5.0V	CHARGER_LDO	14
I14B	VOLTAGE=4.6V	CHG_BOOT	14
I14B	VOLTAGE=4.6V	CHG_LX	14
I140	VOLTAGE=3.0V	VIBE_DRIVE_P	14 18
I141	VOLTAGE=3.0V	VIBE_DRIVE_N	14 18
I142	VOLTAGE=1.8V	PP_RCAM_AF_CONN	23
I14C	VOLTAGE=-14.0V	PN_SAGE_VRST_OUTL	24
I14E	VOLTAGE=-12.0V	PN_SAGE_TO_TOUCH_VCPL_FILT	24
I145	VOLTAGE=2.7V	PP_BB_VDD_2V7_CONN	18

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N61 SPECIFIC

BOOTSTRAPPING (BOARD_REV, BOARD_ID, BOOT_CFG)

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

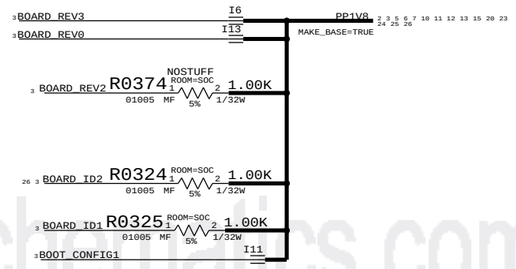
1111	PROTOMLB1
1110	PROTOMLB2
1101	PROTO1
1100	PROTO2
1011	EVT
1010	EVT SPLIT CARBON DOE
1001	CARRIER BUILD <--- SELECTED
1000	DVT

BOARD_ID[4:0]={GPIO29, GPIO16, SPI00_MISO, SPI0_MOSI, SPI0_SCLK}
FLOAT=LOW, PULLUP=HIGH

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

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

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



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RADIO_MLB HIERARCHICAL SYMBOL

POWER

VCC_MAIN, VBAT GOES TO RADIO_MLB DIRECTLY
CHECK ALL PAGES IN RF SIDE!

CELLULAR HOUSE KEEPING

3	AP_TO_RADIO_ON_L	MAKE_BASE=TRUE	I325	RADIO_ON_L	30 32
3	BB_TO_AP_RESET_DET_L	MAKE_BASE=TRUE	I324	BB_RESET_DET_L	30 35
13	PMU_TO_BB_RST_L	MAKE_BASE=TRUE	I326	RF_PMIC_RESET_L	30 32
3	AP_TO_BB_RST_L	MAKE_BASE=TRUE	I327	BB_RST_L	30 32
3	AP_TO_BB_WAKE_MODEM	MAKE_BASE=TRUE	I329	AP_WAKE_MODEM	35
13	BB_TO_PMU_HOST_WAKE_L	MAKE_BASE=TRUE	I328	BB_WAKE_HOST_L	30 35
3	BB_TO_AP_IPC_GPIO	MAKE_BASE=TRUE	I331	BB_IPC_GPIO	35
16	BB_TO_LEDDRV_GSM_BLANK	MAKE_BASE=TRUE	I330	GSM_TXBURST_IND	35
3	BB_TO_AP_GPS_SYNC	MAKE_BASE=TRUE	I332	BB_GPS_SYNC	30 35

HSIC IPC

2	50_AP_BI_BB_HSIC1_DATA	MAKE_BASE=TRUE	I368	50_BB_HSIC_DATA	30 34
2	50_AP_BI_BB_HSIC1_STB	MAKE_BASE=TRUE	I369	50_BB_HSIC_STROBE	30 34
3	AP_TO_BB_HOST_RDY	MAKE_BASE=TRUE	I371	BB_HOST_RDY	30 35
3	BB_TO_AP_DEVICE_RDY	MAKE_BASE=TRUE	I370	BB_DEVICE_RDY	30 35
3	BB_TO_AP_IPC_GPIO1	MAKE_BASE=TRUE	I372	BB_IPC_GPIO1	35

UART IPC

3	AP_TO_BB_UART2_RTS_L	MAKE_BASE=TRUE	I373	BB_UART_CTS_L	30 35
3	BB_TO_AP_UART2_CTS_L	MAKE_BASE=TRUE	I376	BB_UART_RTS_L	30 35
17 3	AP_TO_BB_UART2_TXD	MAKE_BASE=TRUE	I374	BB_UART_RXD	30 35
17 3	BB_TO_AP_UART2_RXD	MAKE_BASE=TRUE	I375	BB_UART_TXD	30 35

AUDIO I2S

3	45_AP_TO_BB_I2S3_BCLK	MAKE_BASE=TRUE	I377	BB_I2S_CLK	35
3	AP_TO_BB_I2S3_DOUT	MAKE_BASE=TRUE	I378	BB_I2S_RXD	30 35
3	BB_TO_AP_I2S3_DIN	MAKE_BASE=TRUE	I379	BB_I2S_TXD	30 35
3	AP_TO_BB_I2S3_LRCLK	MAKE_BASE=TRUE	I380	BB_I2S_WS	30 35

OSCAR UART

22	OSCAR_TO_BB_UART_TXD	MAKE_BASE=TRUE	I382	BB_OTHER_RXD	30 35
22	BB_TO_OSCAR_UART_RXD	MAKE_BASE=TRUE	I381	BB_OTHER_TXD	30 35

BB DEBUG INTERFACES

3	AP_TO_BB_COREDUMP	MAKE_BASE=TRUE	I384	BB_CORE_DUMP	30 35
13	PMU_TO_BB_VBUS_DET	MAKE_BASE=TRUE	I387	BB_USB_VBUS	30 34
17	90_TRISTAR_BI_BB_USB_N	MAKE_BASE=TRUE	I386	90_BB_USB_N	30 34
17	90_TRISTAR_BI_BB_USB_P	MAKE_BASE=TRUE	I388	90_BB_USB_P	30 34

RADIO ANTENNA CONTROL

18	PP_BB_VDD_2V7	MAKE_BASE=TRUE	I389	PP_LDO14_RFSW	31 41 42
18	BB_GPIO0	MAKE_BASE=TRUE	I390	BB_LAT_GPIO0	35
18	BB_GPIO2	MAKE_BASE=TRUE	I391	BB_LAT_GPIO2	35
18	BB_GPIO3	MAKE_BASE=TRUE	I392	BB_LAT_GPIO3	35
18	BB_GPIO4	MAKE_BASE=TRUE	I394	BB_LAT_GPIO4	35

FCT TESTING

13	RADIO_TO_PMU_ADC_SMPS1	MAKE_BASE=TRUE	I395	ADC_SMPS1	30
13	RADIO_TO_PMU_ADC_PP_LDO11_VDDIO	MAKE_BASE=TRUE	I396	ADC_PP_LDO11	30
13	RADIO_TO_PMU_ADC_PP_LDO5_SIM	MAKE_BASE=TRUE	I398	ADC_PP_LDO5	30
13	RADIO_TO_PMU_ADC_SMPS4	MAKE_BASE=TRUE	I397	ADC_SMPS4	30

UPPER RADIO ANTENNA CONTROL

25	50_AP_WIFI_5G_CONN_ANT	MAKE_BASE=TRUE	I410	50_WIFI_5G_CONN_ANT	50
29	50_AP_UAT_FEED	MAKE_BASE=TRUE	I409	50_UPPER_ANT_FEED	50
	UAT_ANT_GND	MAKE_BASE=TRUE	I411	ANT_GND	50
29 26 17 15 12	PP3V0_TRISTAR	MAKE_BASE=TRUE	I404	PAC_VDD_3V0	53
25 9	NORTH_AC_GND_SCREW	MAKE_BASE=TRUE	I412	NORTH_ANT_GND	50

POWER

26 17 15 14 13 12 10 4 3	PP1V8_SDRAM	MAKE_BASE=TRUE	I314	PP_WL_BT_VDDIO_AP	51
			I315	PP_STOCKHOLM_1V8_S2R	52 54
			I407	REFF_VIO_S2R	53

WLAN/BT HOUSE KEEPING

13	45_PMU_TO_WLAN_CLK32K	MAKE_BASE=TRUE	I316	CLK32K_AP	30 51
13	PMU_TO_WLAN_REG_ON	MAKE_BASE=TRUE	I317	WLAN_REG_ON	30 51
13	WLAN_TO_PMU_HOST_WAKE	MAKE_BASE=TRUE	I318	HOST_WAKE_WLAN	30 51
13	PMU_TO_BT_REG_ON	MAKE_BASE=TRUE	I319	BT_REG_ON	30 51
3	AP_TO_BT_WAKE	MAKE_BASE=TRUE	I320	WAKE_BT	30 51
13	BT_TO_PMU_HOST_WAKE	MAKE_BASE=TRUE	I321	HOST_WAKE_BT	51

3	AP_TO_WLAN_JTAG_SWCLK	MAKE_BASE=TRUE	I333	WLAN_JTAG_SWDCLK	30 51
3	AP_TO_WLAN_JTAG_SWDIO	MAKE_BASE=TRUE	I334	WLAN_JTAG_SWDIO	30 51
13	WLAN_TO_PMU_PCIE_WAKE_L	MAKE_BASE=TRUE	I335	WLAN_PCIE_WAKE_L	30 51
3	AP_TO_WLAN_DEVICE_WAKE	MAKE_BASE=TRUE	I336	PCIE_DEV_WAKE	30 51
7	90_WLAN_TO_AP_PCIE1_RXDP_P	MAKE_BASE=TRUE	I337	90_WLAN_PCIE_TDP	30 51
7	90_WLAN_TO_AP_PCIE1_RXDP_N	MAKE_BASE=TRUE	I340	90_WLAN_PCIE_TDN	30 51
7	90_AP_TO_WLAN_PCIE1_TXDP_P	MAKE_BASE=TRUE	I338	90_WLAN_PCIE_RDP	30 51
7	90_AP_TO_WLAN_PCIE1_TXDP_N	MAKE_BASE=TRUE	I339	90_WLAN_PCIE_RDN	30 51
7	90_AP_TO_WLAN_PCIE1_REFCLK1_P	MAKE_BASE=TRUE	I342	90_WLAN_PCIE_REFCLK_P	51
7	90_AP_TO_WLAN_PCIE1_REFCLK1_N	MAKE_BASE=TRUE	I341	90_WLAN_PCIE_REFCLK_N	51
7	WLAN_TO_AP_PCIE1_CLKREQ_L	MAKE_BASE=TRUE	I344	WLAN_PCIE_CLKREQ_L	30 51
7	AP_TO_WLAN_PCIE1_RST_L	MAKE_BASE=TRUE	I343	WLAN_PCIE_PERST_L	30 51

WLAN HSIC IPC

3	WLAN_TO_AP_UART4_RXD	MAKE_BASE=TRUE	I345	WLAN_UART_TXD	30 51
3	AP_TO_WLAN_UART4_TXD	MAKE_BASE=TRUE	I348	WLAN_UART_RXD	30 51
3	WLAN_TO_AP_UART4_CTS_L	MAKE_BASE=TRUE	I347	WLAN_UART_RTS_L	30 51
3	AP_TO_WLAN_UART4_RTS_L	MAKE_BASE=TRUE	I346	WLAN_UART_CTS_L	30 51

BT UART IPC

3	AP_TO_BT_UART1_RTS_L	MAKE_BASE=TRUE	I349	BT_UART_CTS_L	51
3	BT_TO_AP_UART1_CTS_L	MAKE_BASE=TRUE	I352	BT_UART_RTS_L	51
3	AP_TO_BT_UART1_TXD	MAKE_BASE=TRUE	I351	BT_UART_RXD	30 51
3	BT_TO_AP_UART1_RXD	MAKE_BASE=TRUE	I350	BT_UART_TXD	30 51

BT AUDIO PCM

3	45_AP_TO_BT_I2S1_BCLK	MAKE_BASE=TRUE	I354	BT_PCM_CLK	51
3	AP_TO_BT_I2S1_DOUT	MAKE_BASE=TRUE	I353	BT_PCM_IN	51
3	BT_TO_AP_I2S1_DIN	MAKE_BASE=TRUE	I355	BT_PCM_OUT	51
3	AP_TO_BT_I2S1_LRCLK	MAKE_BASE=TRUE	I356	BT_PCM_SYNC	51

OSCAR STATES

22	OSCAR_TO_RADIO_CONTEXT_A	MAKE_BASE=TRUE	I358	OSCAR_CONTEXT_A	51
22	OSCAR_TO_RADIO_CONTEXT_B	MAKE_BASE=TRUE	I357	OSCAR_CONTEXT_B	51

STOCKHOLM

3	STOCKHOLM_TO_AP_UART3_CTS_L	MAKE_BASE=TRUE	I359	STOCKHOLM_RTS_L	30 52
3	AP_TO_STOCKHOLM_UART3_RTS_L	MAKE_BASE=TRUE	I360	STOCKHOLM_CTS_L	30 52
3	STOCKHOLM_TO_AP_UART3_RXD	MAKE_BASE=TRUE	I361	STOCKHOLM_UART_TXD	30 52
3	AP_TO_STOCKHOLM_UART3_TXD	MAKE_BASE=TRUE	I363	STOCKHOLM_UART_RXD	30 52
7	AP_TO_STOCKHOLM_DWLD_REQ	MAKE_BASE=TRUE	I362	STOCKHOLM_FW_DWLD_REQ	52
13	STOCKHOLM_TO_PMU_HOST_WAKE	MAKE_BASE=TRUE	I364	STOCKHOLM_HOST_WAKE	30 52
7	AP_TO_STOCKHOLM_EN	MAKE_BASE=TRUE	I365	STOCKHOLM_ENABLE	52
29 26 17 15 12	PP3V0_TRISTAR	MAKE_BASE=TRUE	I366	STOCKHOLM_VDD_MUX_3V0	54
7	AP_TO_STOCKHOLM_SIM_SEL	MAKE_BASE=TRUE	I367	STOCKHOLM_SIM_SEL	54
25	AP_TO_STOCKHOLM_ANT	MAKE_BASE=TRUE	I406	STOCKHOLM_ANT	52

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AP INTERFACE & DEBUG CONNECTORS

PROBE POINTS

PP3105_RF — P2MM SM 1 — CLK32K_AP — WIFI_BT — 29 51
PP3113_RF — P2MM SM 1 — BB_COEX_UART_RXD — WIFI_BT — 35 51
PP3114_RF — P2MM SM 1 — BB_COEX_UART_TXD — WIFI_BT — 35 51
PP3119_RF — P2MM SM 1 — BT_UART_TXD — WIFI_BT — 29 51
PP3120_RF — P2MM-NSM 1 — BT_UART_RXD — WIFI_BT — 29 51
PP3152_RF — P2MM SM 1 — WAKE_BT — WIFI_BT — 29 51
PP3153_RF — P2MM SM 1 — WLAN_REG_ON — WIFI_BT — 29 51
PP3154_RF — P2MM SM 1 — BT_REG_ON — WIFI_BT — 29 51
PP3155_RF — P2MM SM 1 — HOST_WAKE_WLAN — WIFI_BT — 29 51
PP3156_RF — P2MM SM 1 — WLAN_PCIE_WAKE_L — WIFI_BT — 29 51
PP3157_RF — P2MM SM 1 — WLAN_PCIE_PERST_L — WIFI_BT — 29 51
PP3158_RF — P2MM SM 1 — WLAN_PCIE_CLKREQ_L — WIFI_BT — 29 51
PP3159_RF — P2MM SM 1 — PCIE_DEV_WAKE — WIFI_BT — 29 51
PP3160_RF — P2MM SM 1 — WLAN_UART_RTS_L — WIFI_BT — 29 51
PP3161_RF — P2MM SM 1 — WLAN_UART_CTS_L — WIFI_BT — 29 51
PP3162_RF — P2MM SM 1 — WLAN_UART_RXD — WIFI_BT — 29 51
PP3163_RF — P2MM SM 1 — WLAN_UART_TXD — WIFI_BT — 29 51
PP3190_RF — P2MM SM 1 — WLAN_JTAG_SWDCLK — WIFI_BT — 29 51
PP3191_RF — P2MM SM 1 — WLAN_JTAG_SWDIO — WIFI_BT — 29 51

PP3121_RF — P2MM-NSM SM 1 — STOCKHOLM_HOST_WAKE — RADIO_STOCKHOLM — 29 52
PP3122_RF — P2MM SM 1 — BB_REQUEST_XO_CLK — SIM_DEBUG — 32 52
PP3123_RF — P2MM-NSM SM 1 — STOCKHOLM_UART_RXD — RADIO_STOCKHOLM — 29 52
PP3124_RF — P2MM SM 1 — STOCKHOLM_UART_TXD — RADIO_STOCKHOLM — 29 52
PP3125_RF — P2MM-NSM SM 1 — STOCKHOLM_CTS_L — RADIO_STOCKHOLM — 29 52
PP3126_RF — P2MM-NSM SM 1 — STOCKHOLM_RTS_L — RADIO_STOCKHOLM — 29 52
PP3128_RF — P2MM SM 1 — PP_PN65_VCC_SIM — RADIO_STOCKHOLM — 52
PP3174_RF — P4MM SM 1 — STOCKHOLM_SIM_SWP — SIM_DEBUG — 52 54
PP3129_RF — P2MM SM 1 — REF_CLK_FROM_BB — SIM_DEBUG — 32 52
PP3165_RF — P4MM SM 1 — DSDS_SIM_CLK — SIM_DEBUG — 34 54
PP3183_RF — P4MM SM 1 — DSDS_SIM_RESET — SIM_DEBUG — 34 54
PP3184_RF — P4MM SM 1 — DSDS_SIM_DATA — SIM_DEBUG — 34 54
PP3186_RF — P4MM SM 1 — DSDS_SIM_DETECT — SIM_DEBUG — 34
PP3187_RF — P4MM SM 1 — PP_LDO6 — SIM_DEBUG — 31 33 54
PP3188_RF — P4MM SM 1 — DSDS_SIM_SWP — SIM_DEBUG — 54
PP3189_RF — P4MM SM 1 — DSDS_SIM_DATA_R — SIM_DEBUG — 54

PP 3178_RF — P2MM-NSM SM 1 — BB_SIM_RESET — 30 35
PP 3179_RF — P2MM-NSM SM 1 — BB_SIM_CLK — 30 35
PP 3180_RF — P2MM-NSM SM 1 — BB_SIM_DATA — 30 35
PP 3183_RF — P2MM-NSM SM 1 — BB_SIM_DETECT — 30 35
PP 3184_RF — P2MM-NSM SM 1 — PP_LDO5 — 30 31 33 54

PP3115_RF — P4MM-NSM SM 1 — 50_BB_HSIC_STROBE — SIM_DEBUG — 29 34
PP3116_RF — P4MM-NSM SM 1 — 50_BB_HSIC_DATA — SIM_DEBUG — 29 34
PP3101_RF — P4MM SM 1 — BB_DEBUG_ERROR — SIM_DEBUG — 35
PP3102_RF — P4MM SM 1 — RF_PMIC_RESET_L — SIM_DEBUG — 29 32
PP3103_RF — P4MM SM 1 — PS_HOLD_PMIC — SIM_DEBUG — 32
PP3127_RF — P4MM SM 1 — PMIC_RESOUT_L — SIM_DEBUG — 32 34
PP3104_RF — P4MM SM 1 — MDM_CLK — SIM_DEBUG — 32 34
PP3109_RF — P4MM SM 1 — PP_LDO11 — SIM_DEBUG — 30 31 33 34 35 37 38 39
PP3110_RF — P4MM SM 1 — RADIO_ON_L — SIM_DEBUG — 29 32
PP3111_RF — P4MM SM 1 — SPMI_DATA — SIM_DEBUG — 32 34
PP3112_RF — P4MM SM 1 — SPMI_CLK — SIM_DEBUG — 32 34

PP3130_RF — P4MM SM 1 — BB_JTAG_RST_L — SIM_DEBUG — 34
PP3131_RF — P4MM SM 1 — BB_JTAG_TCK — SIM_DEBUG — 34
PP3132_RF — P4MM SM 1 — BB_JTAG_TMS — SIM_DEBUG — 34
PP3133_RF — P4MM SM 1 — BB_JTAG_TDO — SIM_DEBUG — 34
PP3134_RF — P4MM SM 1 — BB_JTAG_TDI — SIM_DEBUG — 34
PP3135_RF — P4MM SM 1 — BB_JTAG_TRST_L — SIM_DEBUG — 34
PP3136_RF — P4MM SM 1 — BB_DEBUG_STATUS — SIM_DEBUG — 35
PP3137_RF — P4MM SM 1 — BB_CORE_DUMP — SIM_DEBUG — 29 35
PP3138_RF — P4MM SM 1 — BB_USB_VBUS — SIM_DEBUG — 29 34
PP3139_RF — P4MM SM 1 — 90_BB_USB_N — SIM_DEBUG — 29 34
PP3140_RF — P4MM SM 1 — 90_BB_USB_P — SIM_DEBUG — 29 34

PP3141_RF — P4MM SM 1 — BB_UART_TXD — SIM_DEBUG — 29 35
PP3142_RF — P4MM SM 1 — BB_UART_RXD — SIM_DEBUG — 29 35
PP3143_RF — P4MM SM 1 — BB_UART_RTS_L — SIM_DEBUG — 29 35
PP3144_RF — P4MM SM 1 — BB_UART_CTS_L — SIM_DEBUG — 29 35
PP3145_RF — P4MM SM 1 — BB_HOST_RDY — SIM_DEBUG — 29 35
PP3146_RF — P4MM SM 1 — BB_DEVICE_RDY — SIM_DEBUG — 29 35
PP3147_RF — P4MM SM 1 — BB_GPS_SYNC — SIM_DEBUG — 29 35
PP3148_RF — P4MM SM 1 — BB_WAKE_HOST_L — SIM_DEBUG — 29 35
PP3149_RF — P4MM SM 1 — BB_RESET_DET_L — SIM_DEBUG — 29 35
PP3150_RF — P4MM SM 1 — BB_RST_L — SIM_DEBUG — 29 32
PP3151_RF — P4MM SM 1 — BOOT_HSIC — SIM_DEBUG — 30 35

PP3170_RF — P4MM SM 1 — RFFE1_CLK — RF_DEBUG — 35 39 40 41 42 43 44
PP3171_RF — P4MM SM 1 — RFFE1_DATA — RF_DEBUG — 35 39 40 41 42 43 44
PP3172_RF — P4MM SM 1 — RFFE2_CLK — RF_DEBUG — 35 45 46 48
PP3173_RF — P4MM SM 1 — RFFE2_DATA — RF_DEBUG — 35 45 46 48
PP3175_RF — P4MM SM 1 — BB_I2S_WS — RF_DEBUG — 29 35
PP3176_RF — P4MM SM 1 — BB_I2S_RXD — RF_DEBUG — 29 35
PP3177_RF — P4MM SM 1 — BB_I2S_TXD — RF_DEBUG — 29 35
PP3178_RF — P4MM SM 1 — BB_OTHER_TXD — RF_DEBUG — 29 35
PP3179_RF — P4MM SM 1 — BB_OTHER_RXD — RF_DEBUG — 29 35

PP3166_RF — P4MM SM 1 — 90_WLAN_PCIE_RDN — WIFI_BT — 29 51
PP3167_RF — P4MM SM 1 — 90_WLAN_PCIE_RDP — WIFI_BT — 29 51
PP3168_RF — P4MM-NSM SM 1 — 90_WLAN_PCIE_TDN — WIFI_BT — 29 51
PP3169_RF — P4MM-NSM SM 1 — 90_WLAN_PCIE_TDP — WIFI_BT — 29 51

DIFF-PAIR PROBE POINTS LOCATED OPPOSITE DC-BLOCKS

XW3101_RF SHORT-10L-0.1MM-SM: VREG_SMPS1_0V90 (33 31) — 1 — 2 — ADC_SMPS1 (OUT 29)
XW3102_RF SHORT-10L-0.1MM-SM: PP_LDO11 (38 37 35 34 33 31 30 39) — 1 — 2 — ADC_PP_LDO11 (OUT 29)
XW3103_RF SHORT-10L-0.1MM-SM: PP_LDO5 (54 33 31 30) — 1 — 2 — ADC_PP_LDO5 (OUT 29)
XW3104_RF SHORT-10L-0.1MM-SM: VREG_SMPS4_2V075 (31) — 1 — 2 — ADC_SMPS4 (OUT 29)

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
197S0565	197S0593	ALTERNATE	Y3301_RF	KDS 19.2MHZ XTAL
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

PP_LDO11 (39 38 37 35 34 33 31 30)
R3102_RF 10K 1% 1/32W MF 01005 — RADIO_BB — BOOT_HSIC (35 30)
R3103_RF 10K 1% 1/32W MF 01005 — RADIO_BB — BOOT_HSIC_USB (35)
R3104_RF 10K 1% 1/32W MF 01005 — RADIO_BB — WATCHDOG_DISABLE (35)

SIM CARD CONNECTOR

PP_LDO5 (54 33 31 30)
R3101_RF 15.00K 1% 1/32W MF 01005
C3101_RF 2.2UF 20% 6.3V X5R 0201-1
J3101_RF SIMCARD-RCPT-N61 F-ST-SM
VCC (1) — RST (2) — CLK (3) — I/O (7) — DETECT (12) — SWP (6) — GND (8 9 10 11 13 5)
BB_SIM_RESET (35 30) IN — BB_SIM_CLK (35 30) IN — BB_SIM_DATA BI (30 35) — BB_SIM_DETECT OUT (30 35) — 4FF_SIM_SWP BI (30 54)

SIM CARD ESD PROTECTION

DZ3102_RF 5.5V-6.2PF 0201
DZ3101_RF 12V-33PF 01005-1
VR3101_RF ESDAVLC5-4BU4 SM
BB_SIM_DETECT (35 30) — PP_LDO5 (30 31 33 54)
BB_SIM_DATA (35 30) — 1 — 4FF_SIM_SWP (30 54)
BB_SIM_RESET (35 30) — 2 — BB_SIM_CLK (30 35)
3 — GND

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BASEBAND PMU (1 OF 2)

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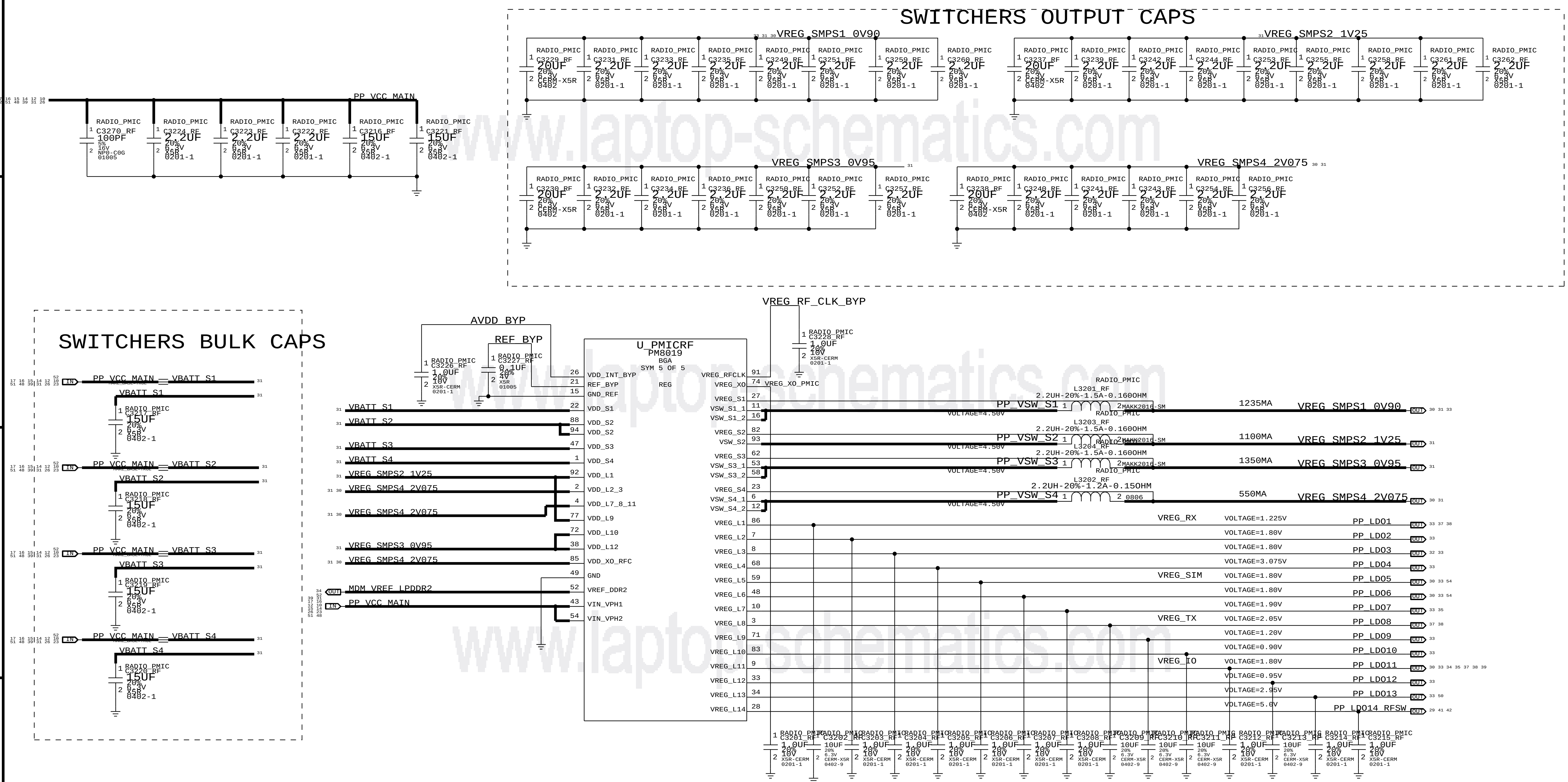

BASEBAND PMU (1 OF 2)

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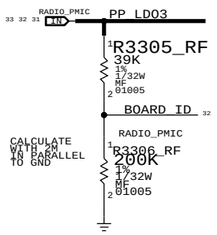
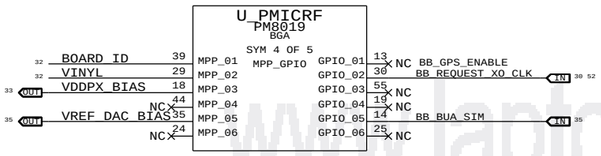
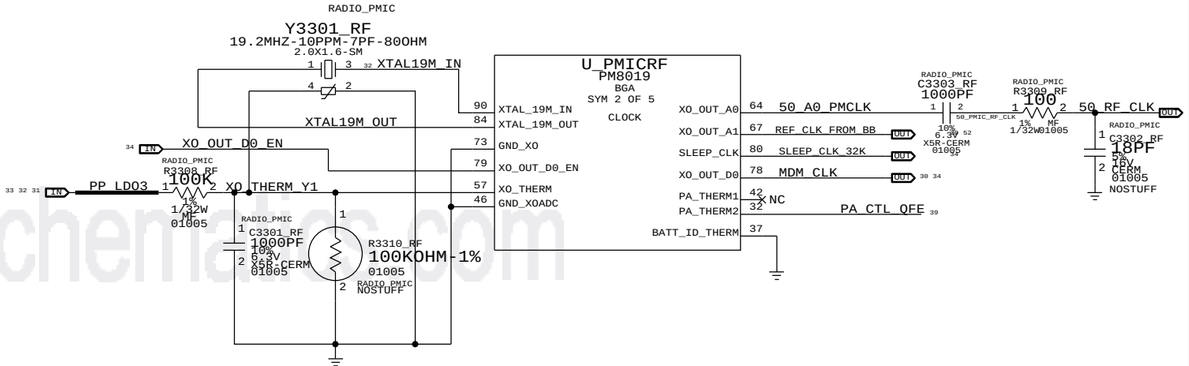
BASEBAND PMU (2 OF 2)

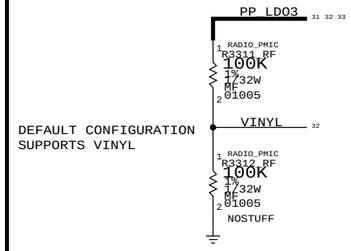
C401
R411
L400
U404

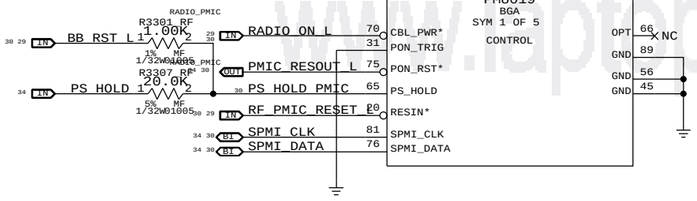
BOARD_ID	REVISION
0.00V	N61 PROTO_MLB1
0.50V	N61 DEV3
0.70V	N61 DEV4
0.90V	N61 PROTO_MLB2
1.10V	N61/N56 PROTO1
1.30V	N61/N56 PROTO2
1.40V	N61/N56 EVT1
1.50V	N61/N56 EVT2 (CARRIER)
1.60V	N61/N56 DVT
1.70V	N61/N56 PVT

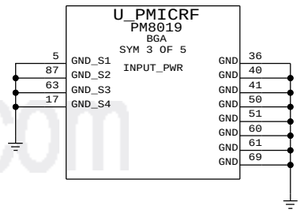












PAGE TITLE
BASEBAND PMU (2 OF 2)

Apple Inc.

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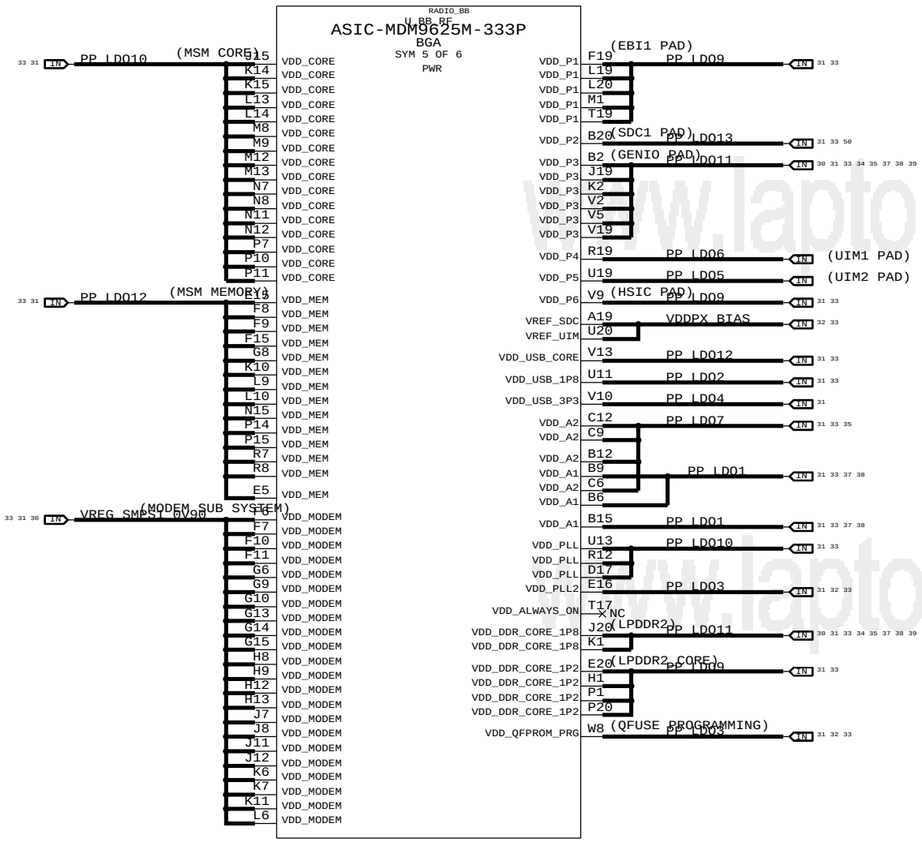
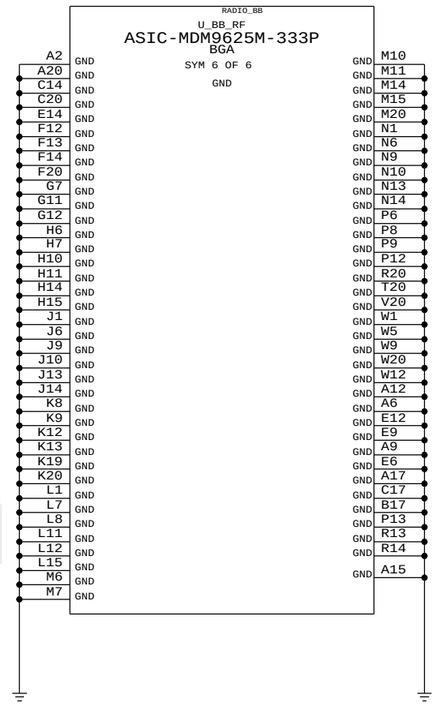
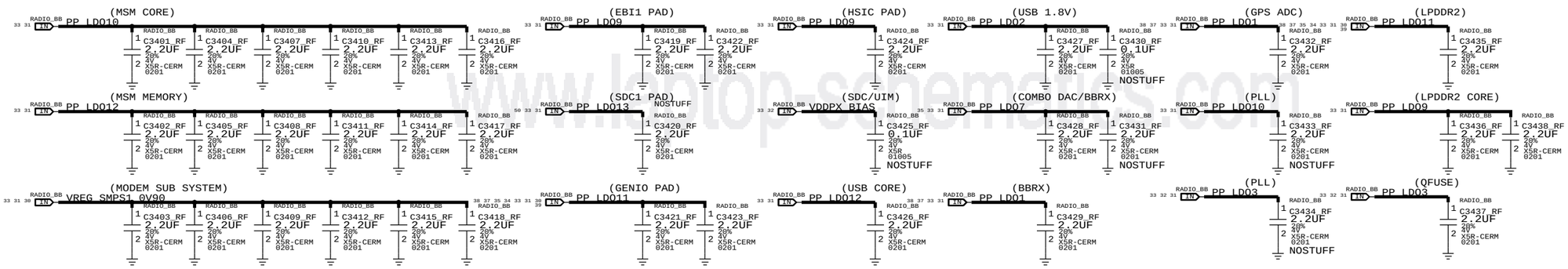
BASEBAND (1 OF 3)

C538
R500
L500
U502







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BASEBAND (2 OF 3)

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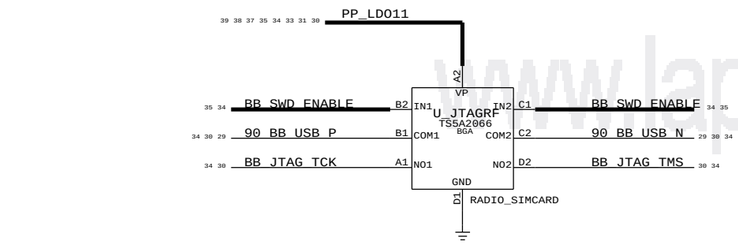
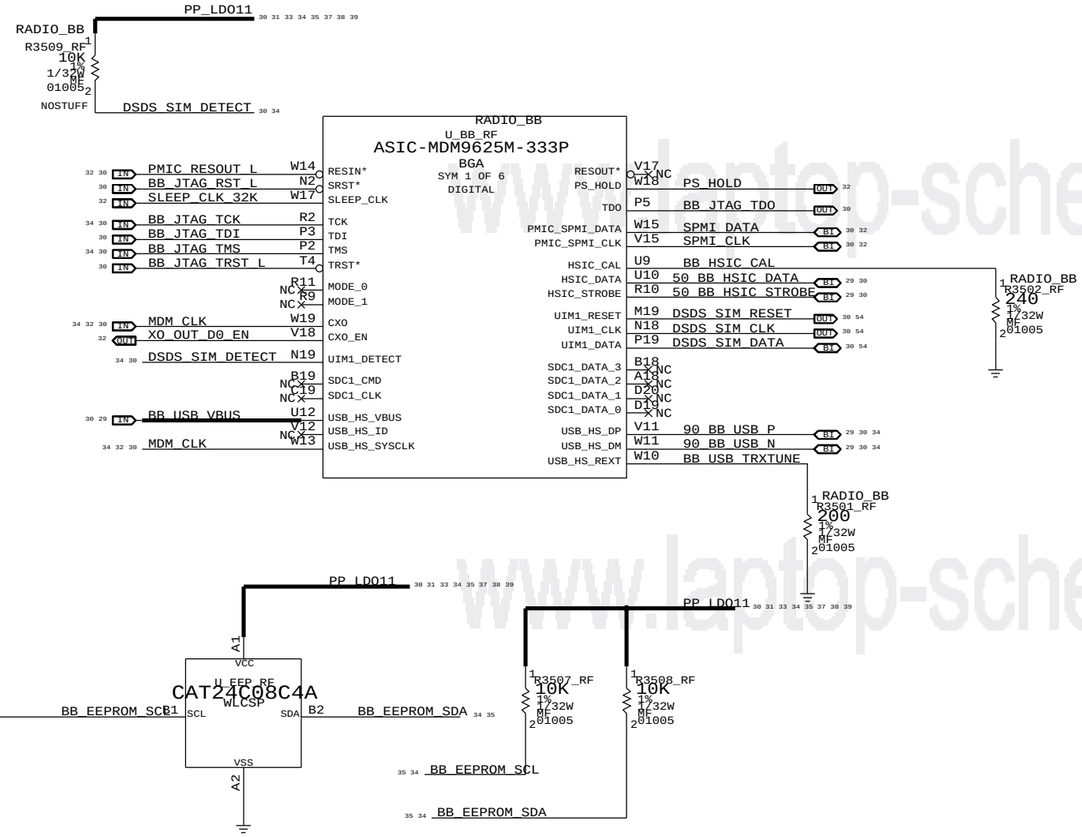
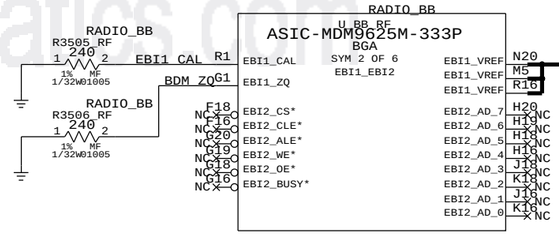
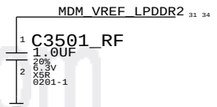
C600
R606
L600
U602









PAGE TITLE: BASEBAND (1 OF 2)

Apple Inc.

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BASEBAND (3 OF 3)

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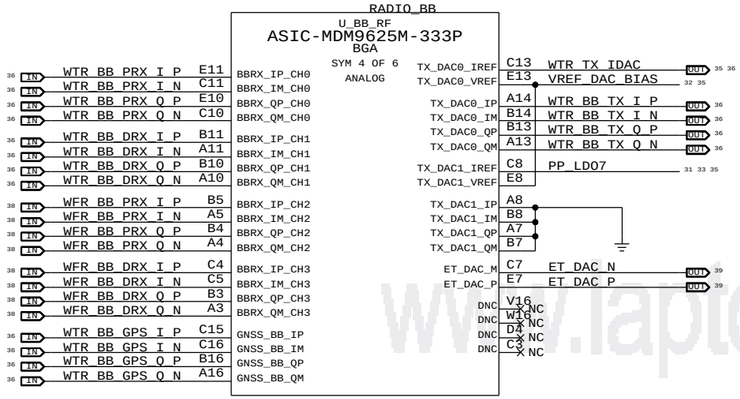
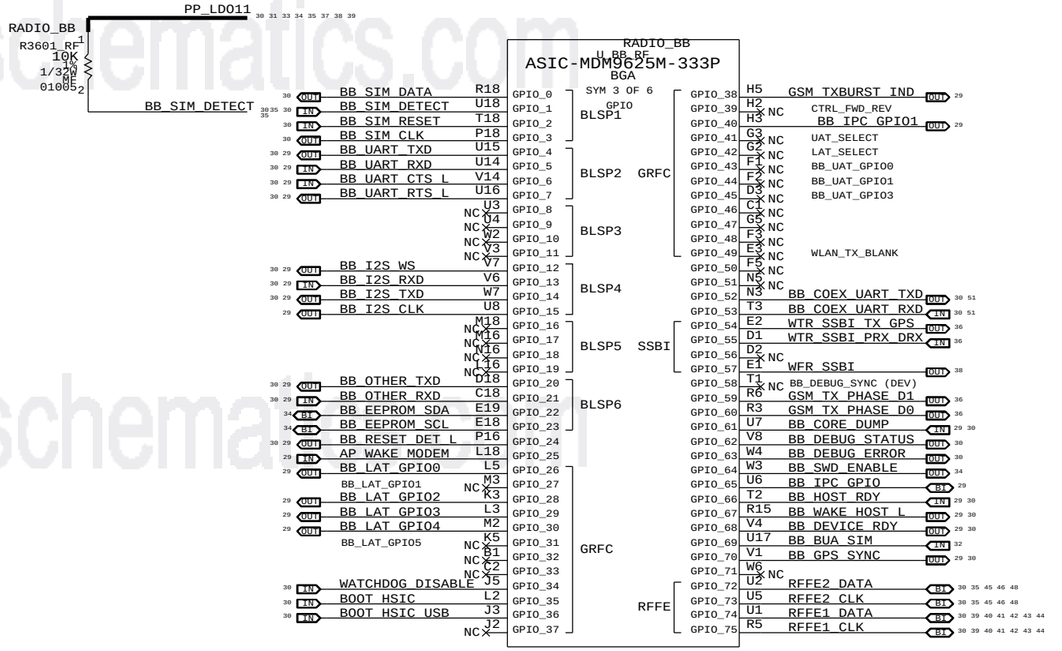
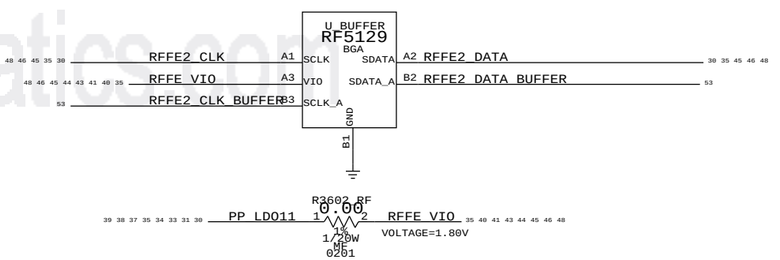
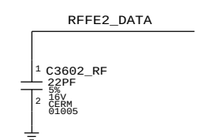
C704
R700
L700
U702









PAGE TITLE
MOBILE DATA MODEM (2 OF 2)

Apple Inc.

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WTR TRANSCEIVER (1 OF 2)

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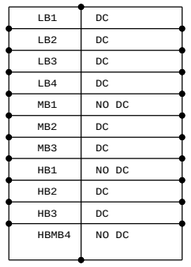
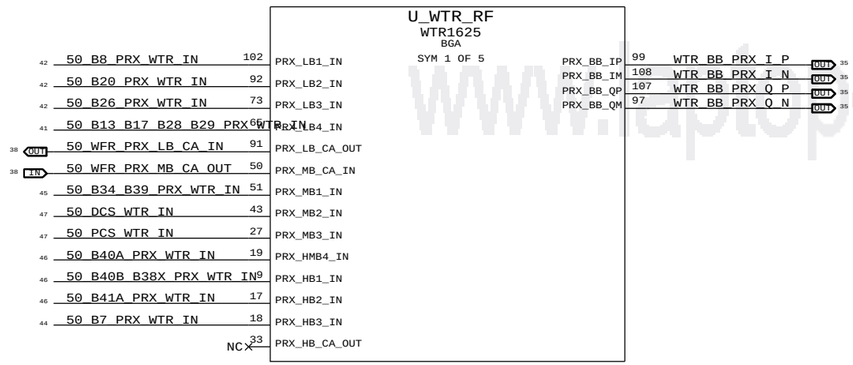
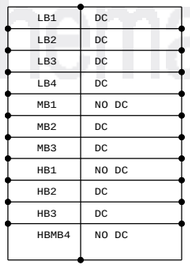
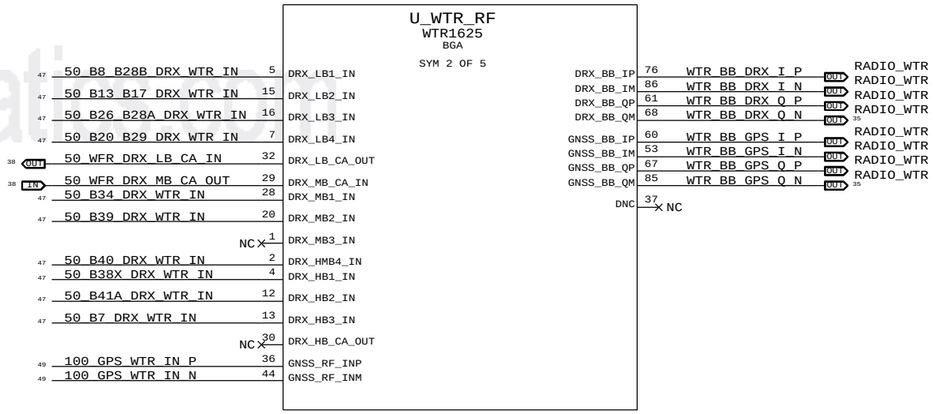
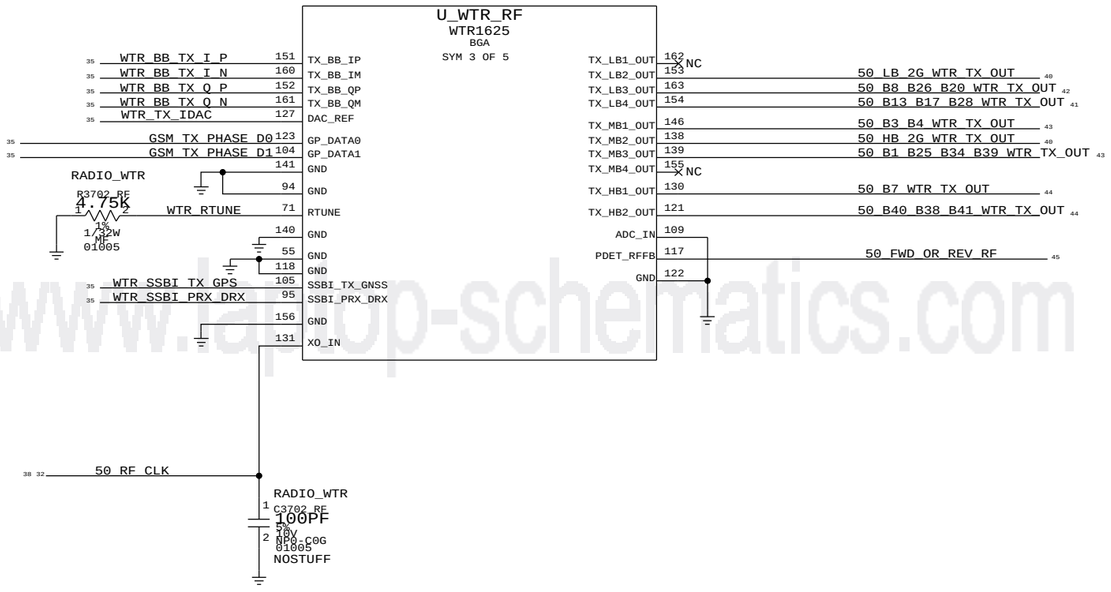
C802
R802
L800
U803











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

PAGE TITLE
RF TRANSCEIVER (1 0F 3)

Apple Inc.

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WTR TRANSCEIVER (2 OF 2)

C934
R926
L3802_RF
U902

WTR DECOUPLING CAPS

PP_LDO8 VREG_2V (MAKE_BASE=TRUE)
PP_LDO1 VREG_1P3V (MAKE_BASE=TRUE)

VREG_2V → C3801_RF 10UF 20% 6.3V CERM-X5R 0402 (RADIO_WTR)
VDD_DRX_BB_2V → C3812_RF 100PF 5% 16V NP0-C0G 01005 NOSTUFF
VDD_TX_DA_2V → C3813_RF 100PF 5% 16V NP0-C0G 01005
VDD_PRX_BB_2V, VDD_TX_BBF_2V → C3814_RF 100PF 5% 16V NP0-C0G 01005 NOSTUFF
R3801_RF 0.00 1% 1/20W MF 0201 → VDD_PRX_VCO_2V → C3815_RF 0.1UF 20% 4V X5R 01005
R3802_RF 0.00 1% 1/20W MF 0201 → VDD_SHDR_VCO_2V → C3816_RF 0.1UF 20% 4V X5R 01005
R3803_RF 0.00 1% 1/20W MF 0201 → VDD_TX_VCO_2V → C3817_RF 0.1UF 20% 4V X5R 01005
VDD_TX_PLL_2V → C3802_RF 0.1UF 20% 4V X5R 01005 NOSTUFF
R3808_RF 0.00 0% 1/32W MF 01005 → VDD_XO_2V → C3803_RF 0.1UF 10% 10V X5R-CERM 0201
VDD_FBRX_2V → C3818_RF 0.1UF 20% 4V X5R 01005
I175 VDD_PRX_2V
PP_LDO11 (MAKE_BASE=TRUE) → VDD_MSM_1P8V → C3814_RF 1.0UF 10% 6.3V X5R-CERM 0201-1; C3819_RF 0.1UF 20% 4V X5R 01005 NOSTUFF

L3801_RF 22NH-3%-0.25A 0201 (RADIO_WTR)
VREG_1P3V (MAKE_BASE=TRUE) → VDD_PRX_PLL_1P3V → C3820_RF 0.1UF 20% 4V X5R 01005 NOSTUFF
VREG_1P3V (MAKE_BASE=TRUE) → C3808_RF 10UF 20% 6.3V CERM-X5R 0402
WTR DECOUPLING SHARED WITH C3808_RF
VDD_SHDR_PLL_1P3V → C3821_RF 0.1UF 20% 4V X5R 01005
VDD_PRX_HBMB_1P3V
VDD_SHDR_VCO_1P3V → C3823_RF 0.1UF 20% 4V X5R 01005
VDD_PRX_VCO_1P3V
DELETED C3805 PR REVIEW FEEDBACK
VDD_PRX_LO_HBMB_1P3V → C3806_RF 0.1UF 20% 4V X5R 01005
VDD_TX_SYNTH_1P3V → C3824_RF 0.1UF 20% 4V X5R 01005
VDD_TX_LO_1P3V → C3825_RF 0.1UF 20% 4V X5R 01005
VDD_TX_UPC_1P3V → C3826_RF 100PF 5% 16V NP0-C0G 01005
R3806_RF 0.00 1% 1/20W MF 0201 → VDD_TX_VCO_1P3V → C3807_RF 0.1UF 20% 4V X5R 01005
L3802_RF 8.2NH-3%-0.19A-1.6OHM 01005 → VDD_TX_DA_1P3V → C3827_RF 100PF 5% 16V NP0-C0G 01005 NOSTUFF

VDD_PRX_LO_HB_1P3V → C3830_RF 0.1UF 20% 4V X5R 01005
VDD_PRX_LB_1P3V
VDD_PRX_LB_1P3V
VDD_DRX_LO2_1P3V → C3833_RF 0.1UF 20% 4V X5R 01005
VDD_DRX_LO1_1P3V → C3809_RF 0.1UF 20% 4V X5R 01005
VDD_DRX_MB_1P3V
VDD_DRX_HB_1P3V
R3807_RF 0.00 1% 1/20W MF 0201
VDD_GPS_LNA_1P3V → C3828_RF 0.1UF 20% 4V X5R 01005 (MAKE_BASE=TRUE)
VDD_GPS → VDD_GPS_BB_1P3V
VDD_GPS_PLL_1P3V → C3829_RF 0.1UF 20% 4V X5R 01005 (MAKE_BASE=TRUE)
VDD_GPS_VCO_1P3V

U_WTR_RF
WTR1625
BGA
SYM 4 OF 5

VDD_PRX_VCO_1P3V	90	VDD_RF1_P_VCO	VDD_RF2_T_DA	129	VDD_TX_DA_2V
VDD_PRX_VCO_2V	80	VDD_RF2_P_VCO	VDD_RF1_T_DA	137	VDD_TX_DA_1P3V
VDD_PRX_LO_HB_1P3V	25	VDD_RF1_P_HB_LO	VDD_RF1_T_UPC	136	VDD_TX_UPC_1P3V
VDD_PRX_LB_1P3V	72	VDD_RF1_P_LB	VDD_RF1_T_LO	135	VDD_TX_LO_1P3V
VDD_PRX_HBMB_1P3V	34	VDD_RF1_P_HMB	VDD_RF2_T_BB	126	VDD_TX_BBF_2V
VDD_PRX_LO_HBMB_1P3V	37	VDD_RF1_P_HMB_LO	VDD_RF2_FBRX	116	VDD_FBRX_2V
VDD_PRX_PLL_1P3V	79	VDD_RF1_P_PLL	VDD_RF2_T_VCO	157	VDD_TX_VCO_2V
VDD_PRX_BB_2V	98	VDD_RF2_P_BB	VDD_RF1_T_VCO	149	VDD_TX_VCO_1P3V
VDD_PRX_2V	100	VDD_RF2_P_RX	VDD_RF1_T_SYN	115	VDD_TX_SYNTH_1P3V
VDD_DRX_LO1_1P3V	14	VDD_RF1_D_LB_LO	VDD_RF2_T_PLL	114	VDD_TX_PLL_2V
VDD_DRX_LO2_1P3V	38	VDD_RF1_D_LOM	VDD_RF1_G_LNA	52	VDD_GPS_LNA_1P3V
VDD_DRX_LB_1P3V	31	VDD_RF1_D_LB	VDD_RF1_G_VCO	74	VDD_GPS_VCO_1P3V
VDD_DRX_HB_1P3V	22	VDD_RF1_D_HB	VDD_RF1_G_PLL	93	VDD_GPS_PLL_1P3V
VDD_DRX_MB_1P3V	11	VDD_RF1_D_MB	VDD_RF1_G_BB	59	VDD_GPS_BB_1P3V
VDD_DRX_BB_2V	54	VDD_RF2_D_BB	GND	113	
VDD_SHDR_VCO_1P3V	48	VDD_RF1_S_VCO	VDD_RF2_XO	147	VDD_XO_2V
VDD_SHDR_VCO_2V	62	VDD_RF2_S_VCO	VDD_DIO	103	VDD_MSM_1P8V
VDD_SHDR_PLL_1P3V	78	VDD_RF1_S_PLL			

U_WTR_RF
WTR1625
BGA
SYM 5 OF 5

	89	GND	GND	111	
	56	GND	GND	101	
	83	GND	GND	110	
	82	GND			
	58	GND	GND	145	
	35	GND	GND	144	
	8	GND	GND	143	
	26	GND	GND	128	
	64	GND	GND	120	
	42	GND	GND	119	
	41	GND	GND	106	
	81	GND	GND	150	
	21	GND	GND	134	
	6	GND			
	24	GND	GND	159	
	39	GND	GND	142	
	10	GND	GND	125	
	3	GND	GND	124	
	23	GND	GND	148	
	46	GND	GND	158	
	49	GND	GND	133	
	69	GND	GND	112	
	88	GND	GND	132	
	70	GND			
	63	GND	GND	45	
	40	GND	GND	66	
	47	GND	GND	84	
	87	GND	GND	75	
	77	GND			
	96	GND	GND	164	

SCHEM TITLE: RF TRANSCEIVER (2 OF 3)

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WFR TRANSCEIVER

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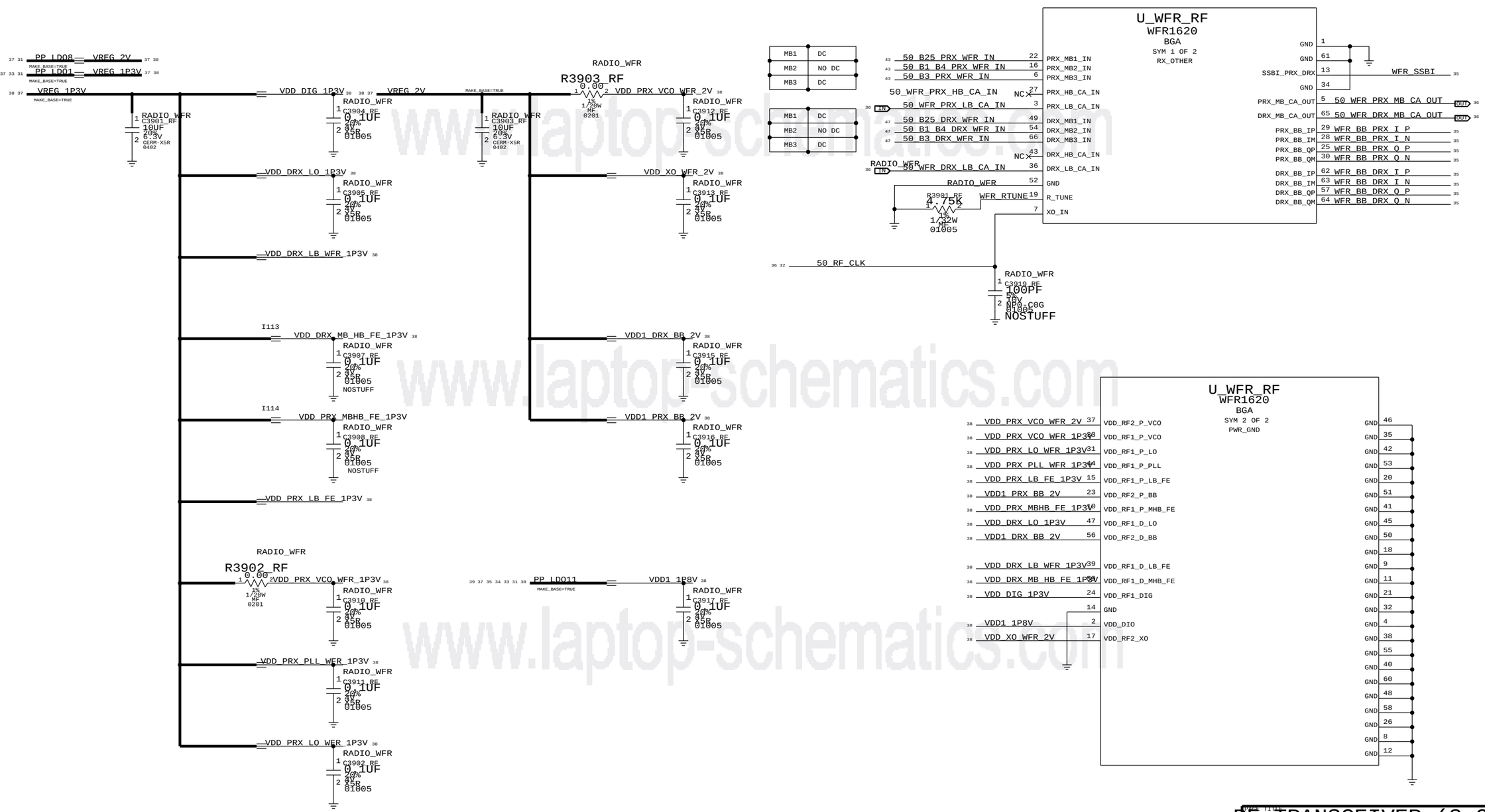
C1019
R1016
L1000
U1002



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RF TRANSCEIVER (3 OF 3)

Apple Inc.

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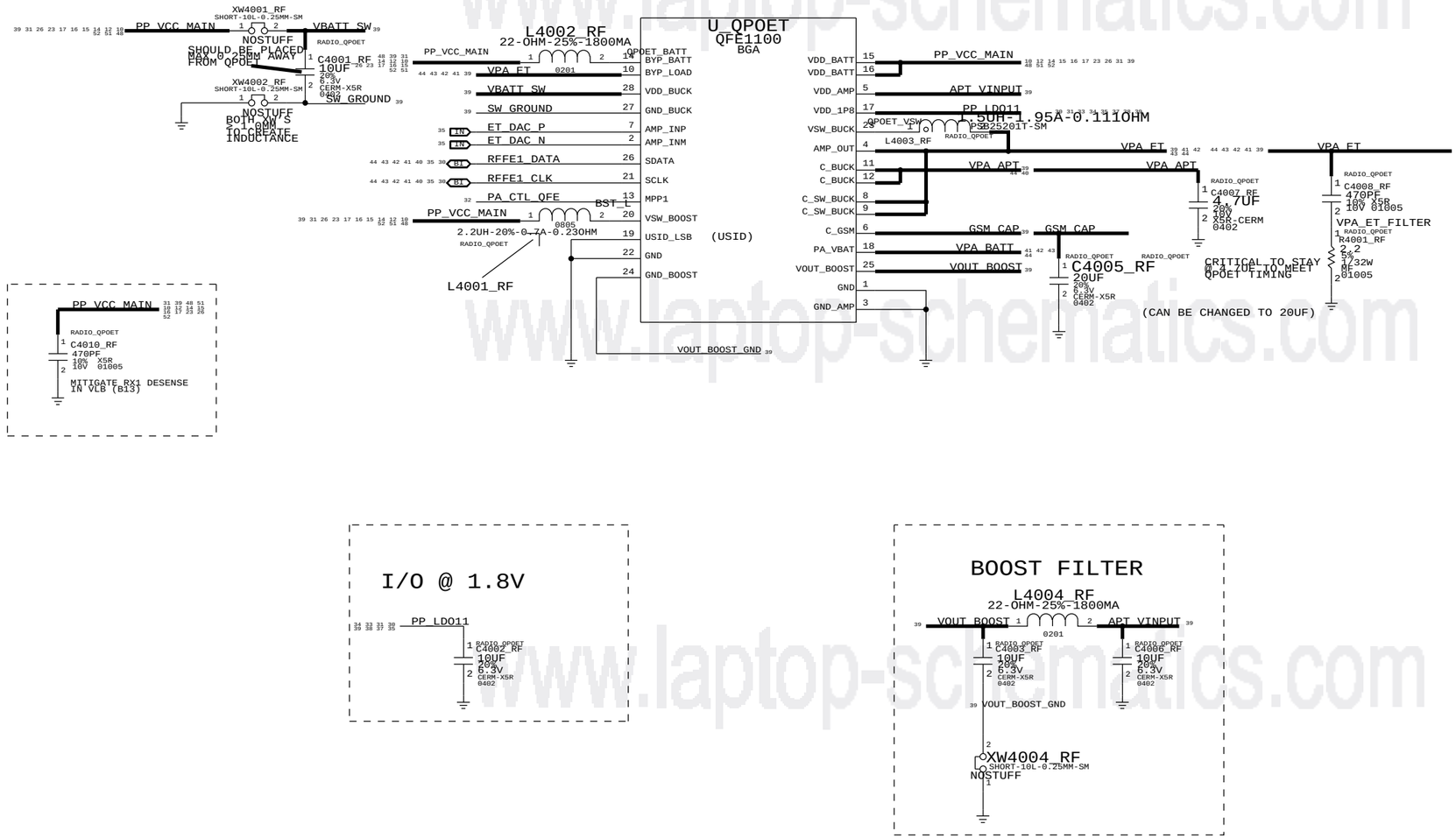
QFE DCDC

C1110
R1102
L1104
U1101



PAGE TITLE	QFE DCDC
	Apple Inc.
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2G PA

C1208
R1200
L1204
U1201

PAGE TITLE	2G PA
Apple Inc.	DRAWING NUMBER 051-9903 SIZE D
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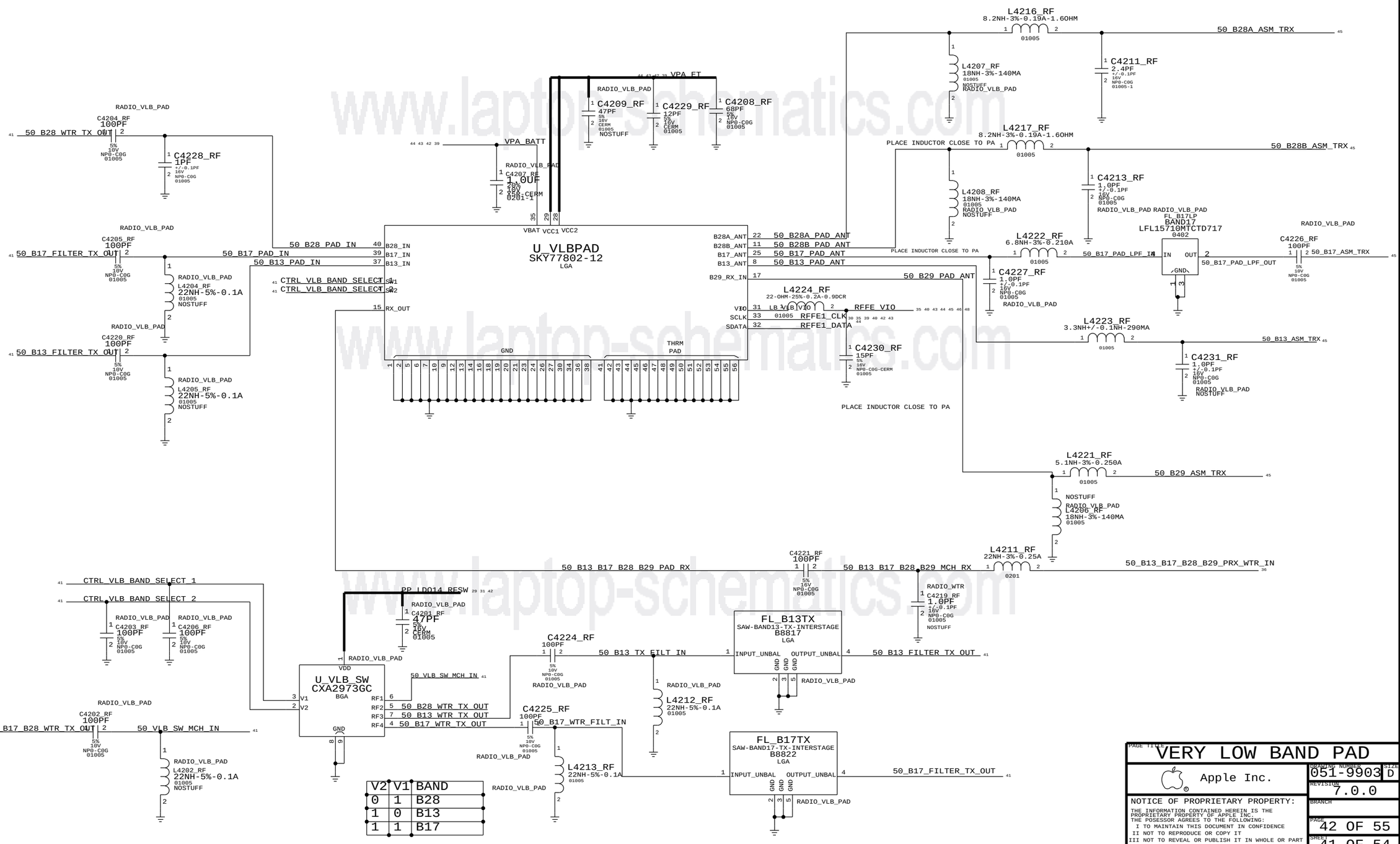
VERY LOW BAND PAD (B13, B17, B28)

C1332
R1300
L4215_RF
U1304



PAGE TITLE: VERY LOW BAND PAD

Apple Inc.

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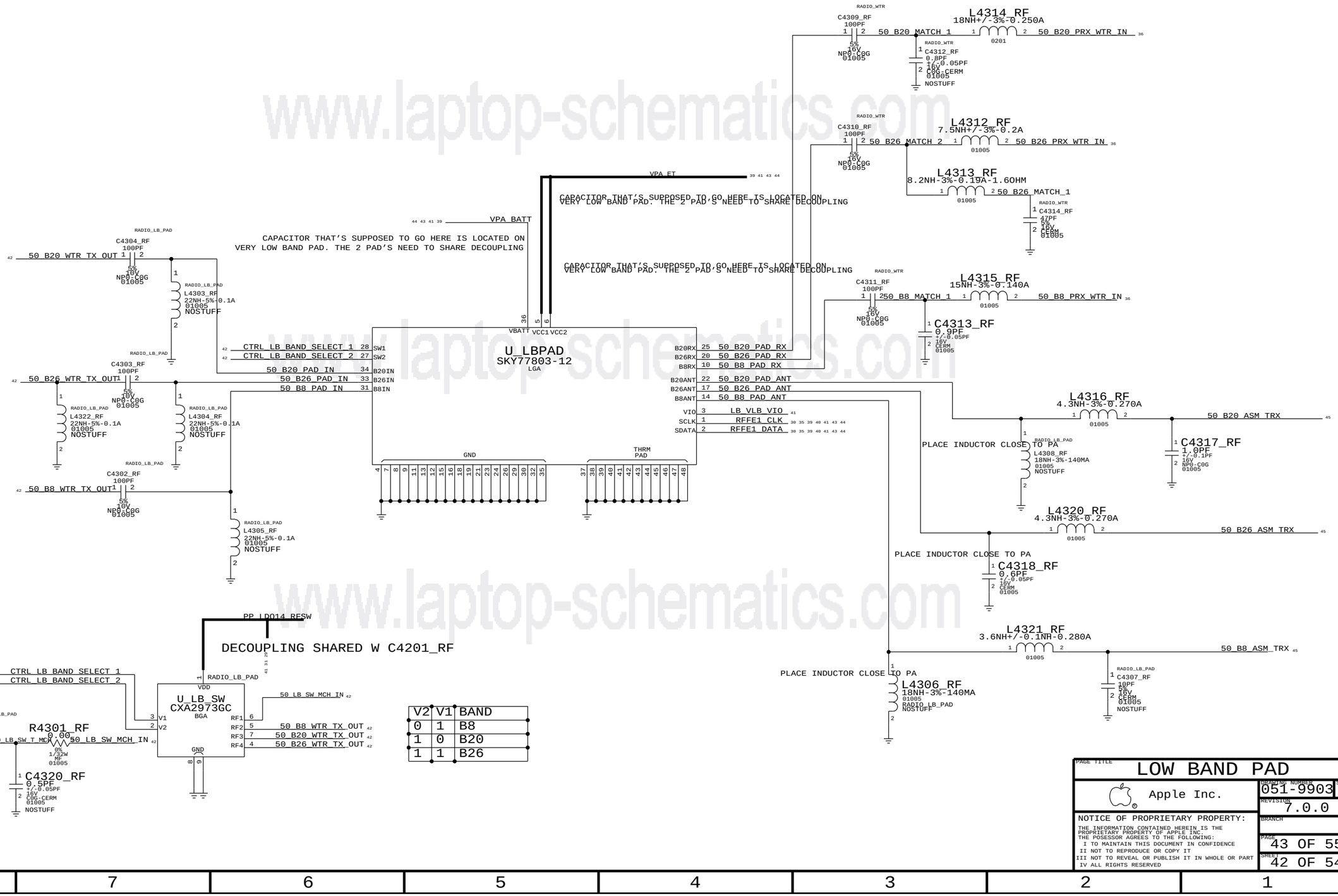
LOW BAND PAD (B8, B26, B20)

C4318_RF
R1400
L4322_RF
U1402



PAGE TITLE: LOW BAND PAD

Apple Inc.

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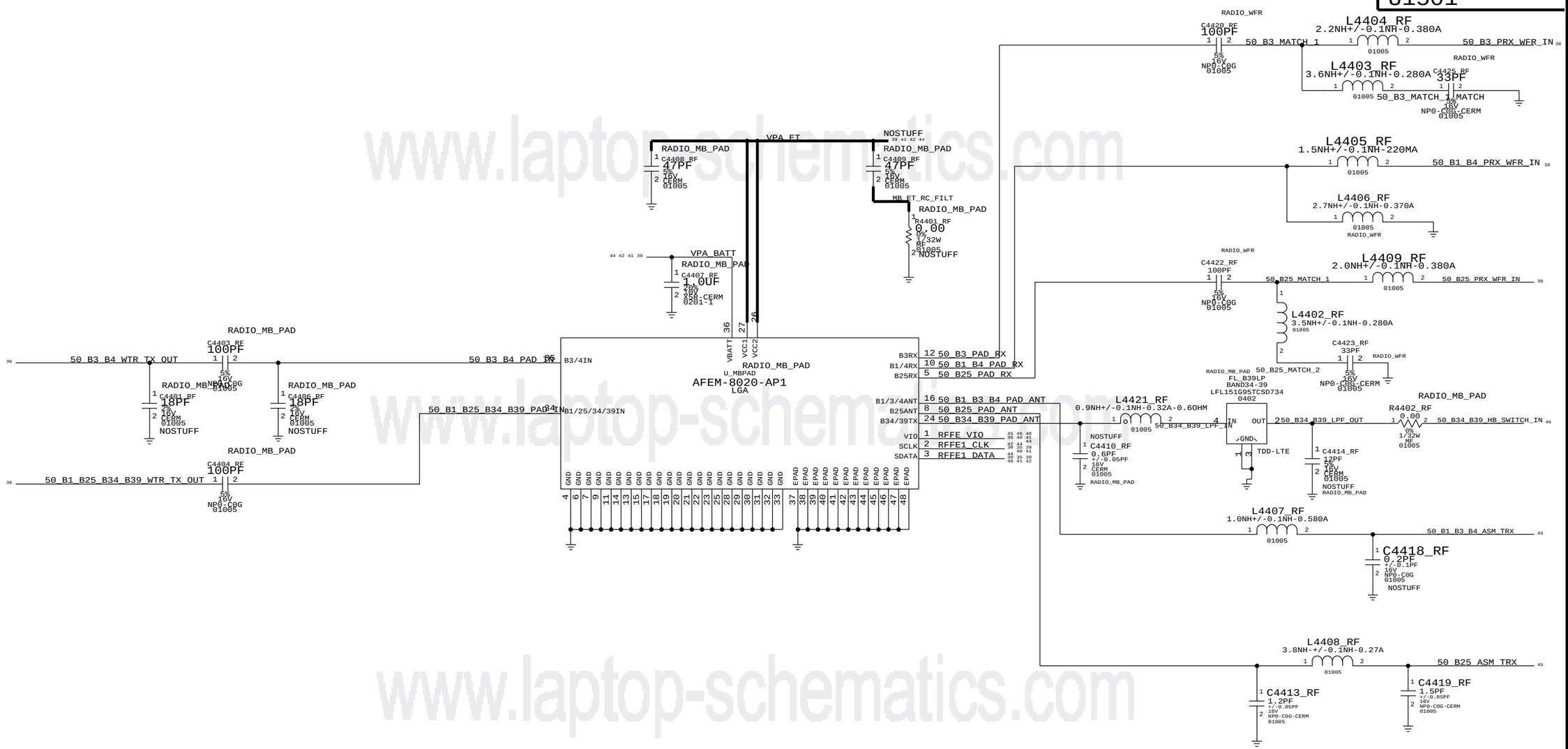
MID BAND PAD (B1, B25, B3, B4, B34, B39)

C4426_RF
R1500
L4409_RF
U1501



PAGE TITLE	MID BAND PAD
	Apple Inc.
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HIGH BAND PAD (B7, B38, B40, B41, XGP)

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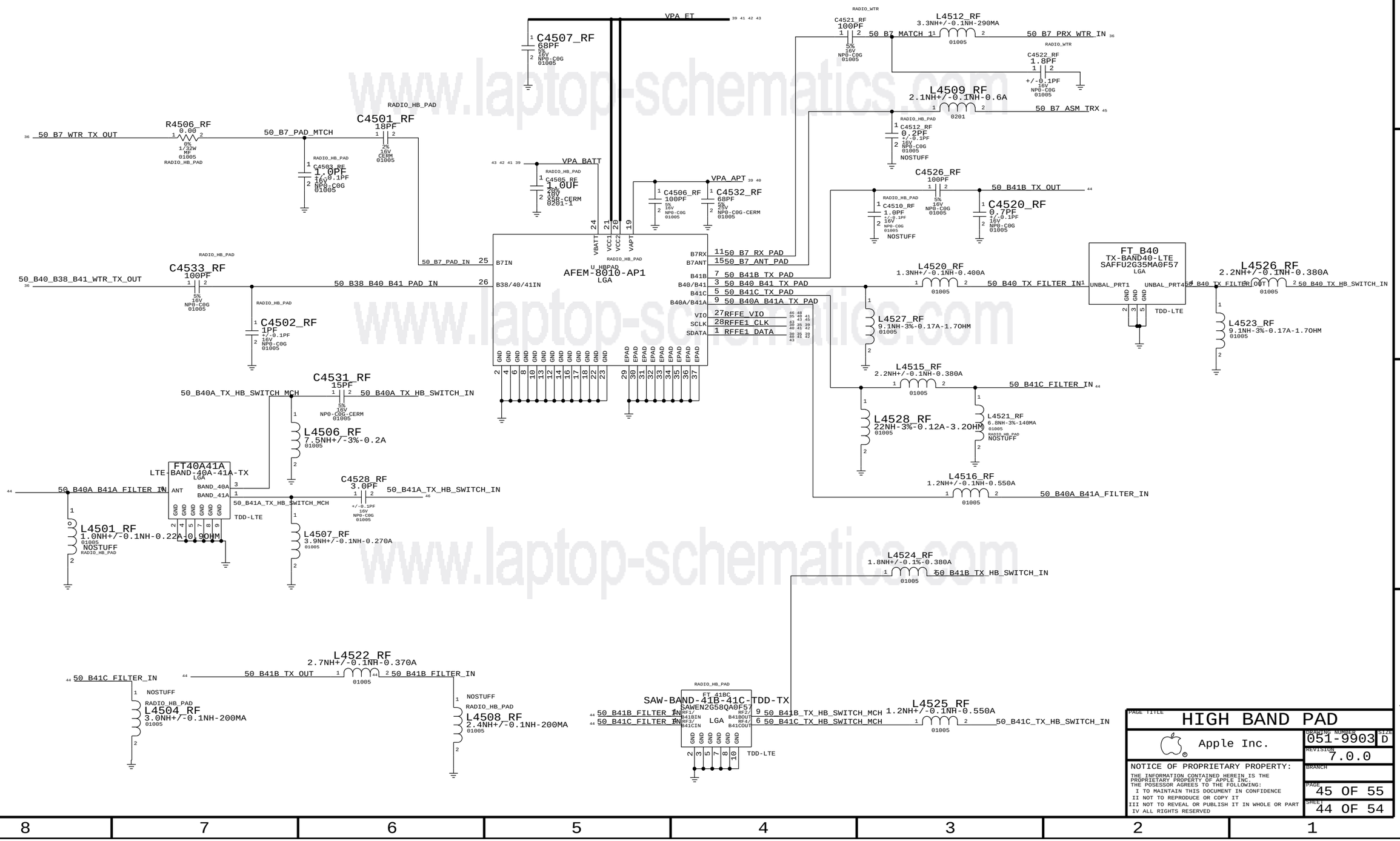
C4533_RF
R1600
L1616
U1601



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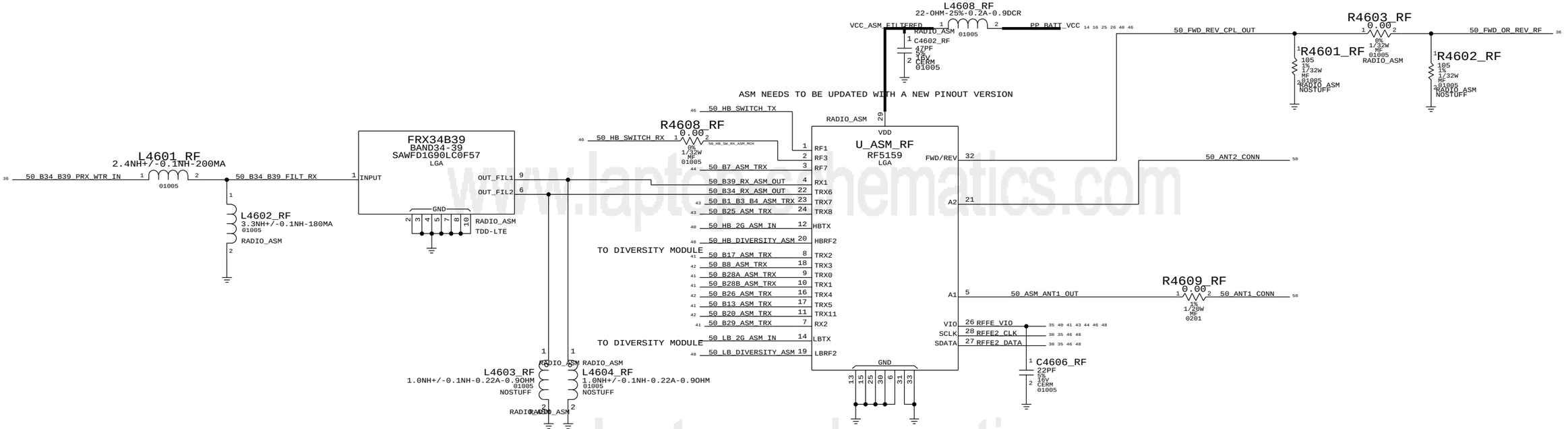
ANTENNA SWITCH

C1702
R1700
L4608_RF
U1702



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HIGH BAND SWITCH

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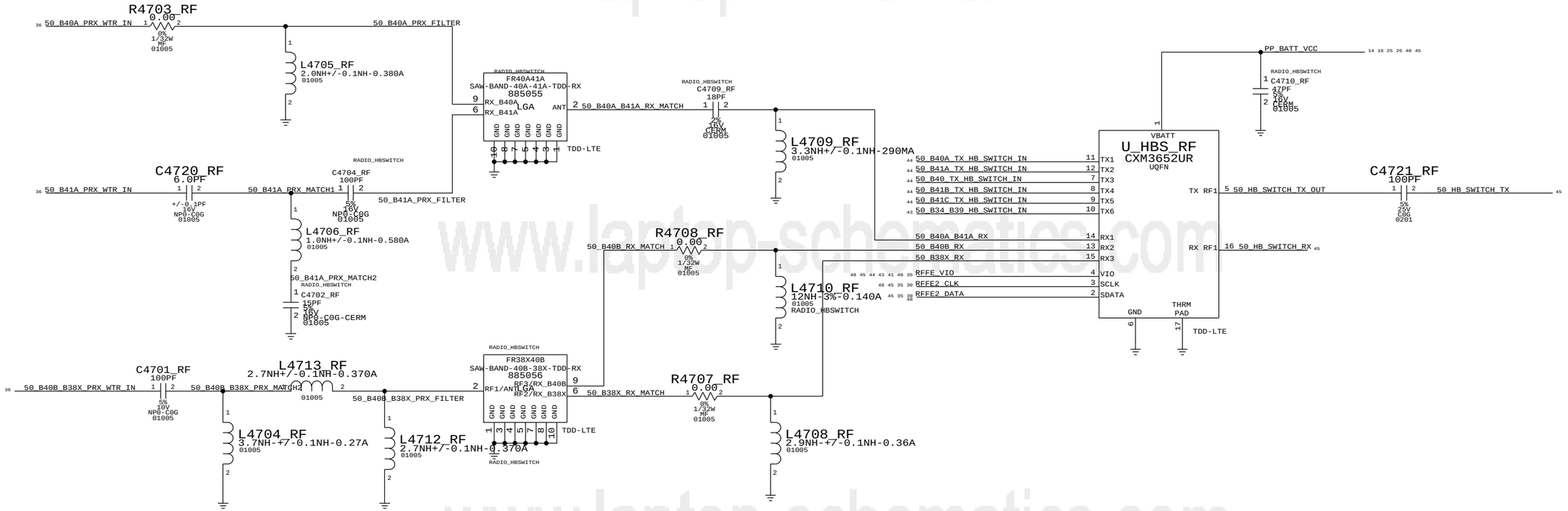

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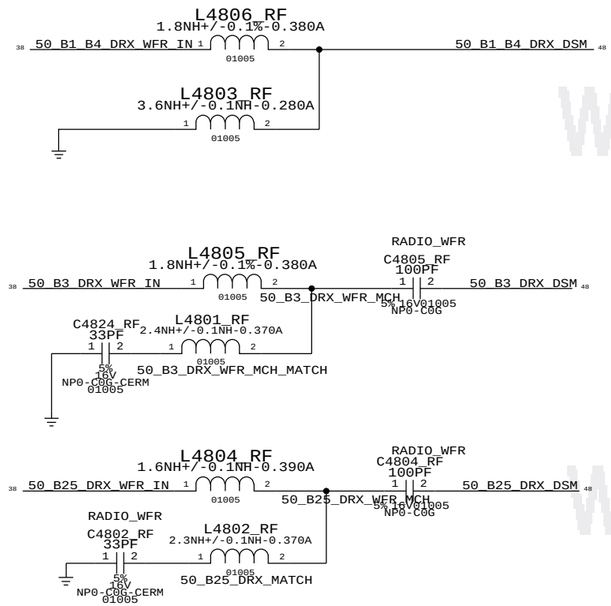
RX DIVERSITY (1)

C4826_RF
R1800
L1829
U1801

MIDBAND DIVERSITY - WFR



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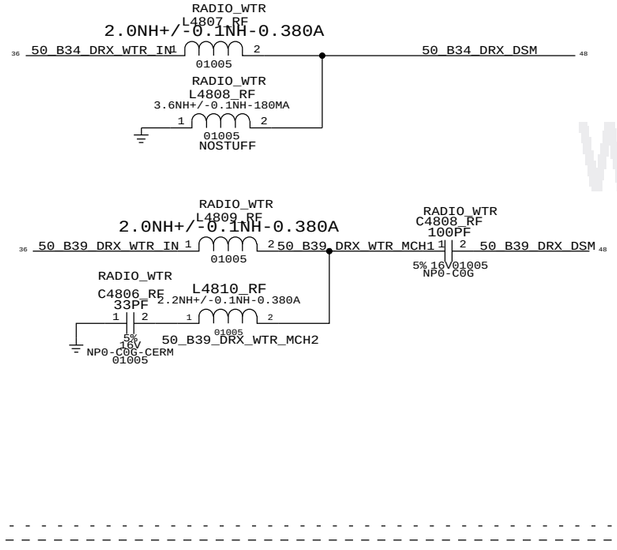

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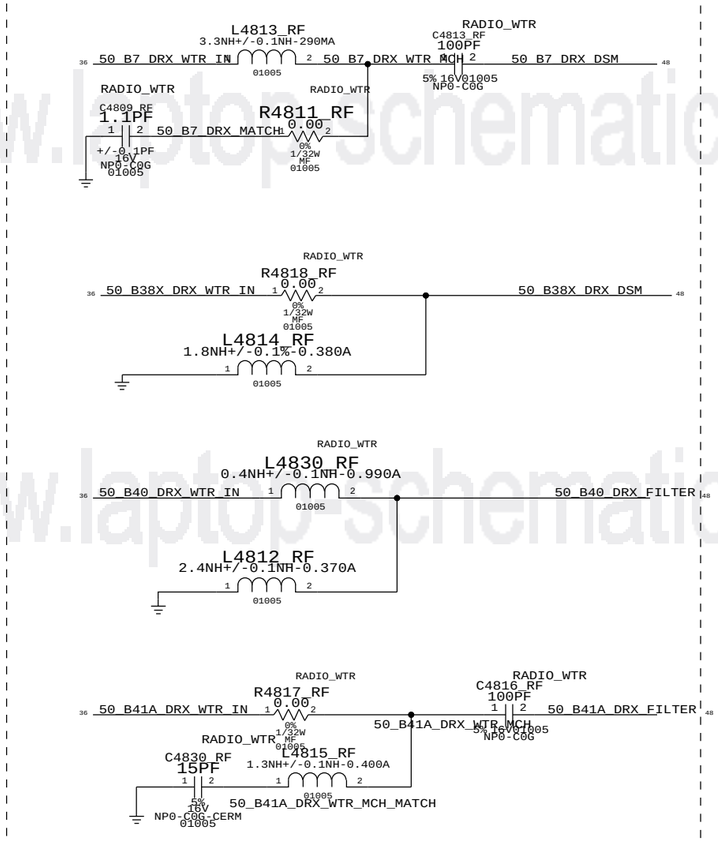
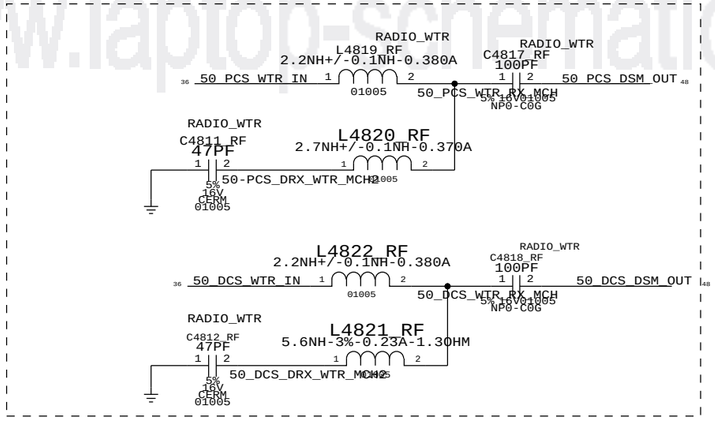
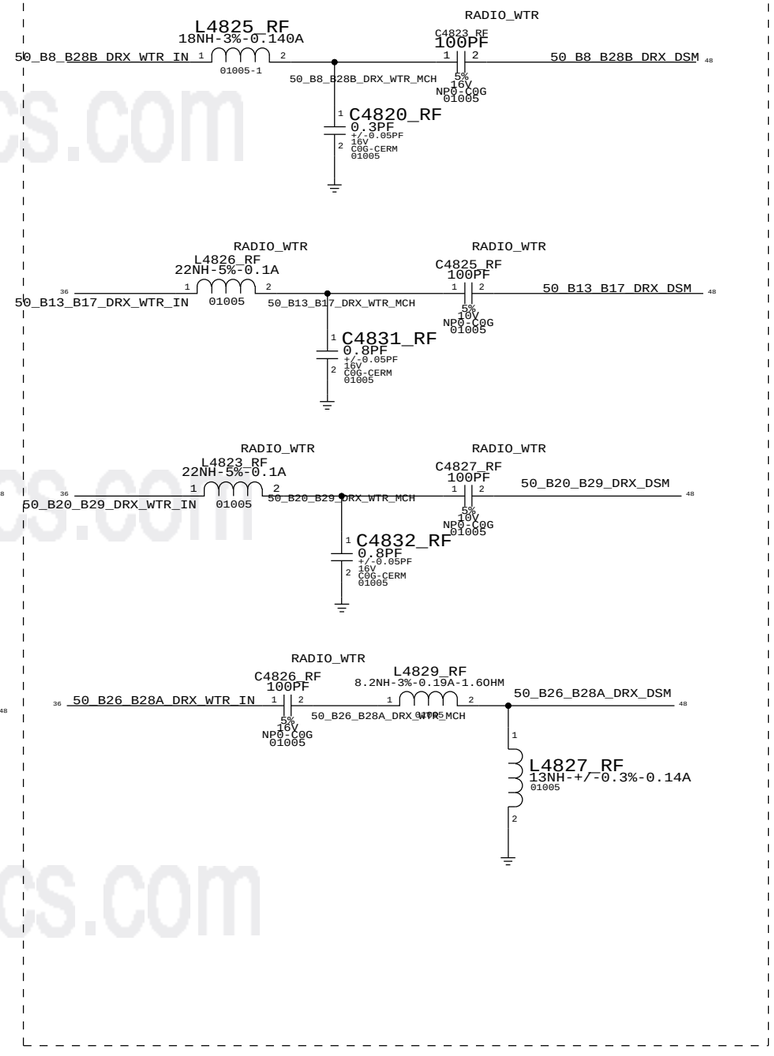




LOWBAND DIVERSITY - WTR



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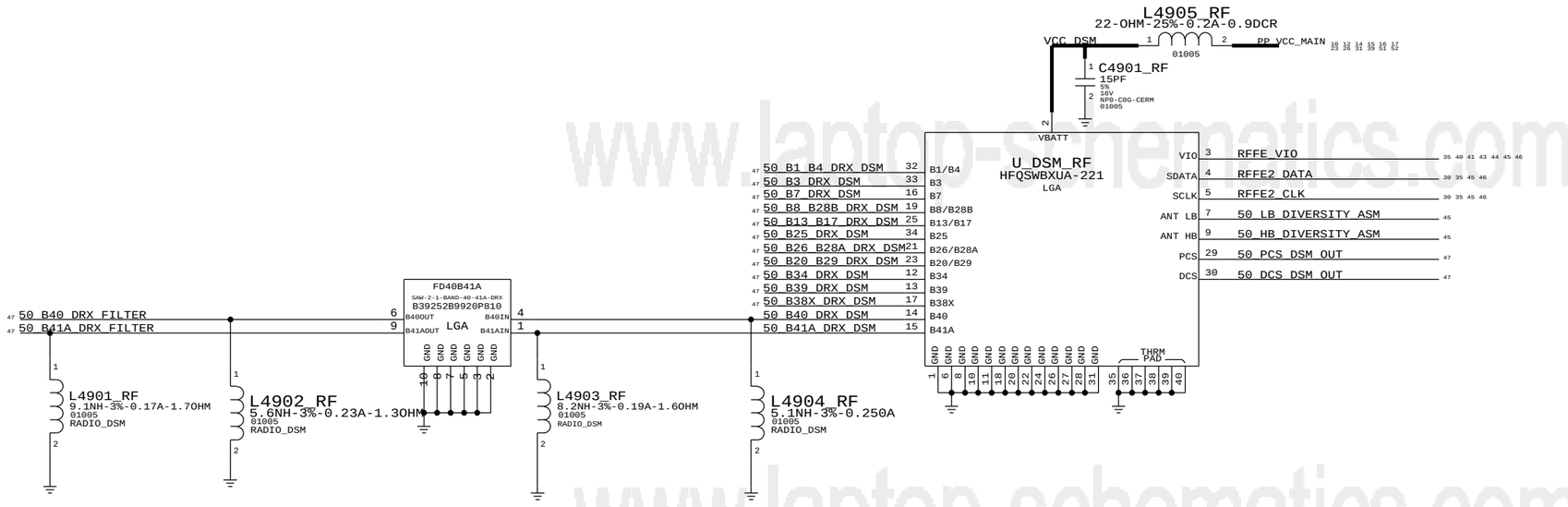
RX DIVERSITY (2)

C1900
R1900
L1900
U1901



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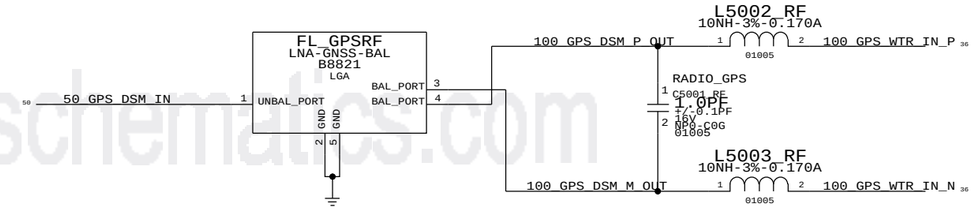
GPS

C1900
R1900
L1900
U1901



PAGE TITLE: GPS

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ANTENNA FEED'S

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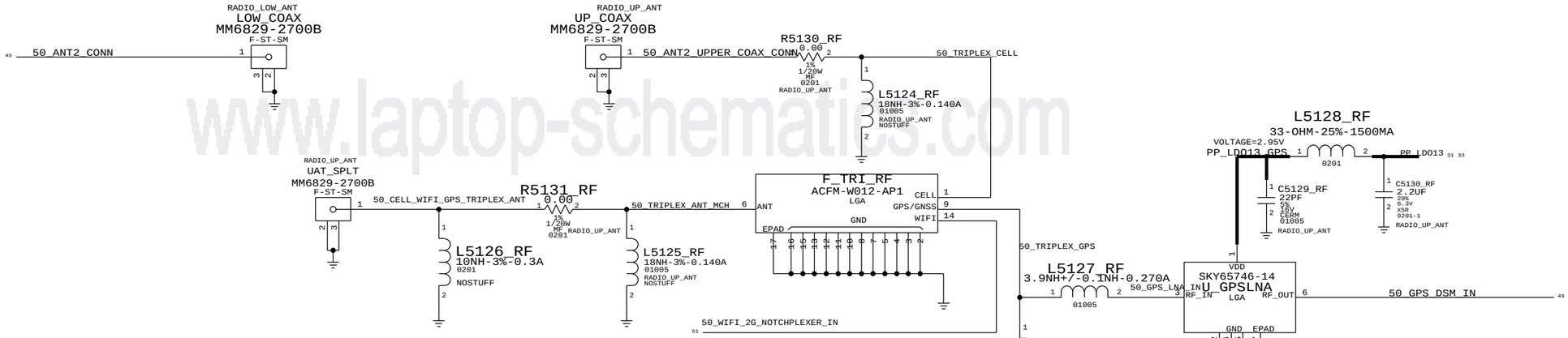
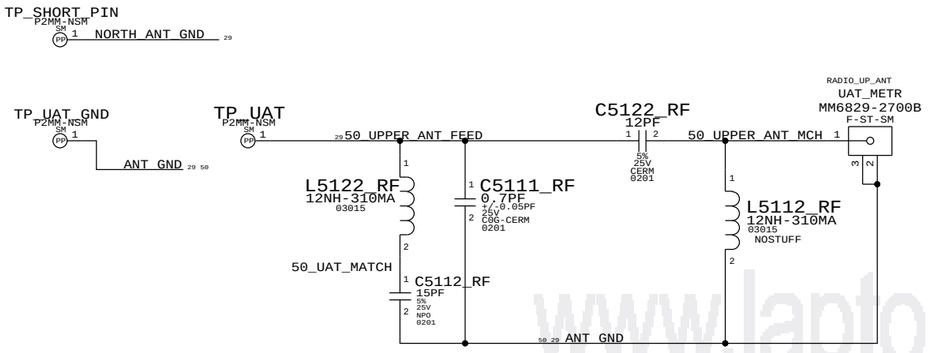
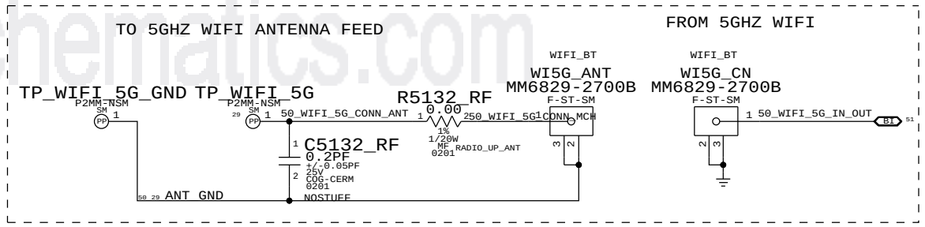
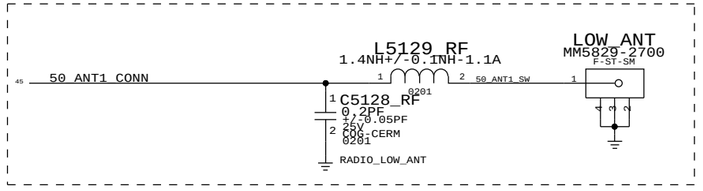
TEST & COAX CONNECTOR FOR LOWER SECTION OF MLB









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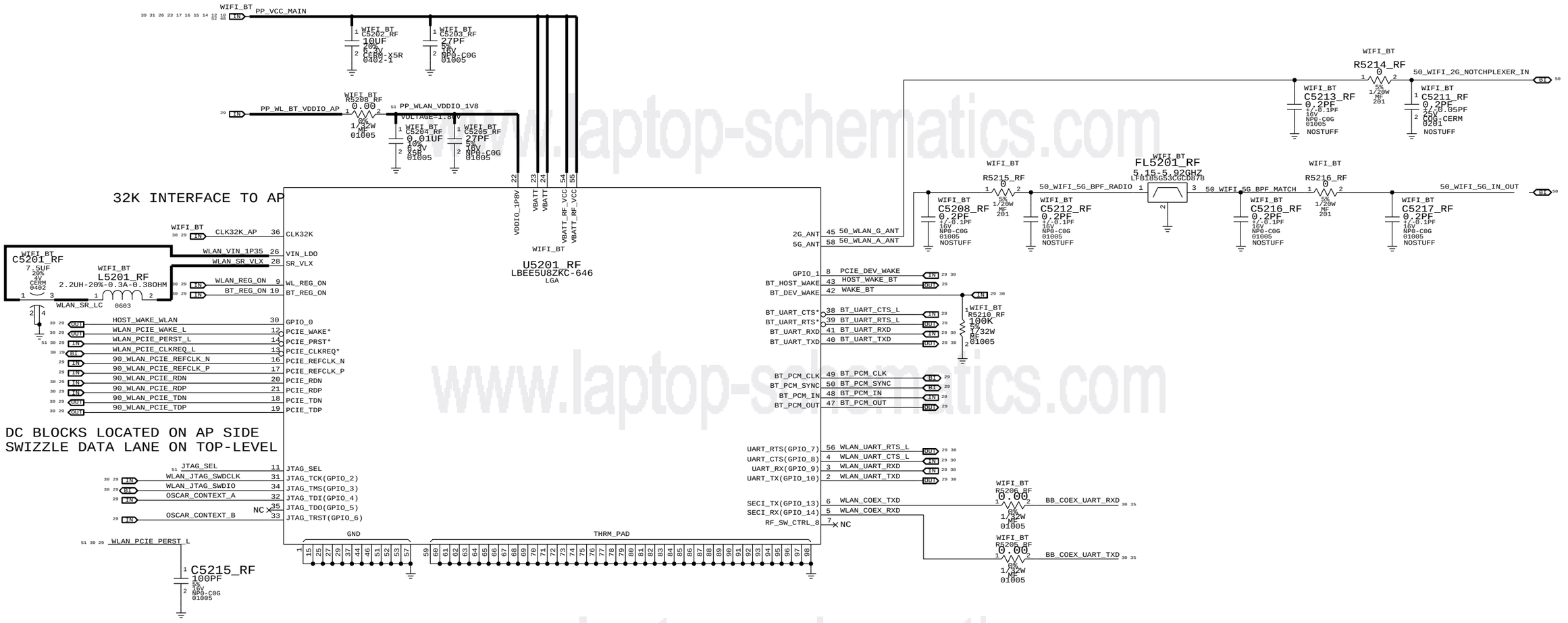
WLAN/BT



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PAGE TITLE
WIFI/BT: MODULE AND FRONT END

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STOCKHOLM

C2101
R2100
L2102
U2100

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

PP_VCC_MAIN
PP_STOCKHOLM_1V8_S2R
PP_STOCKHOLM_VDD
VOLTAGE=1.80V
PP_STOCKHOLM_ESE
VOLTAGE=1.80V

U5301_RF
PN65V
UFLGA

U5302_RF
AS3923-B0-BWLT
WLCSP

T5301_RF
ATB201208E-20011
0805

L5301_RF
78NH-5%-0.97A-0.130HM
0402

L5302_RF
78NH-5%-0.97A-0.130HM
0402

C5312_RF 220PF
C5313_RF 33PF
C5314_RF 390PF
C5315_RF 220PF
C5316_RF 330PF
STOCKHOLM_ANT_MATCH
STOCKHOLM_ANT

R5319_RF 1.00K
R5303 10K
R5316_RF 0.00
R5317_RF 0.00
R5318_RF 0.00

TP5301_RF
TP5302_RF
TP5303_RF
TP5304_RF
TP-P55

NOSTUFF
R5301_RF 100K
R5302_RF 100K

SYNC_MASTER=N/A	SYNC_DATE=N/A
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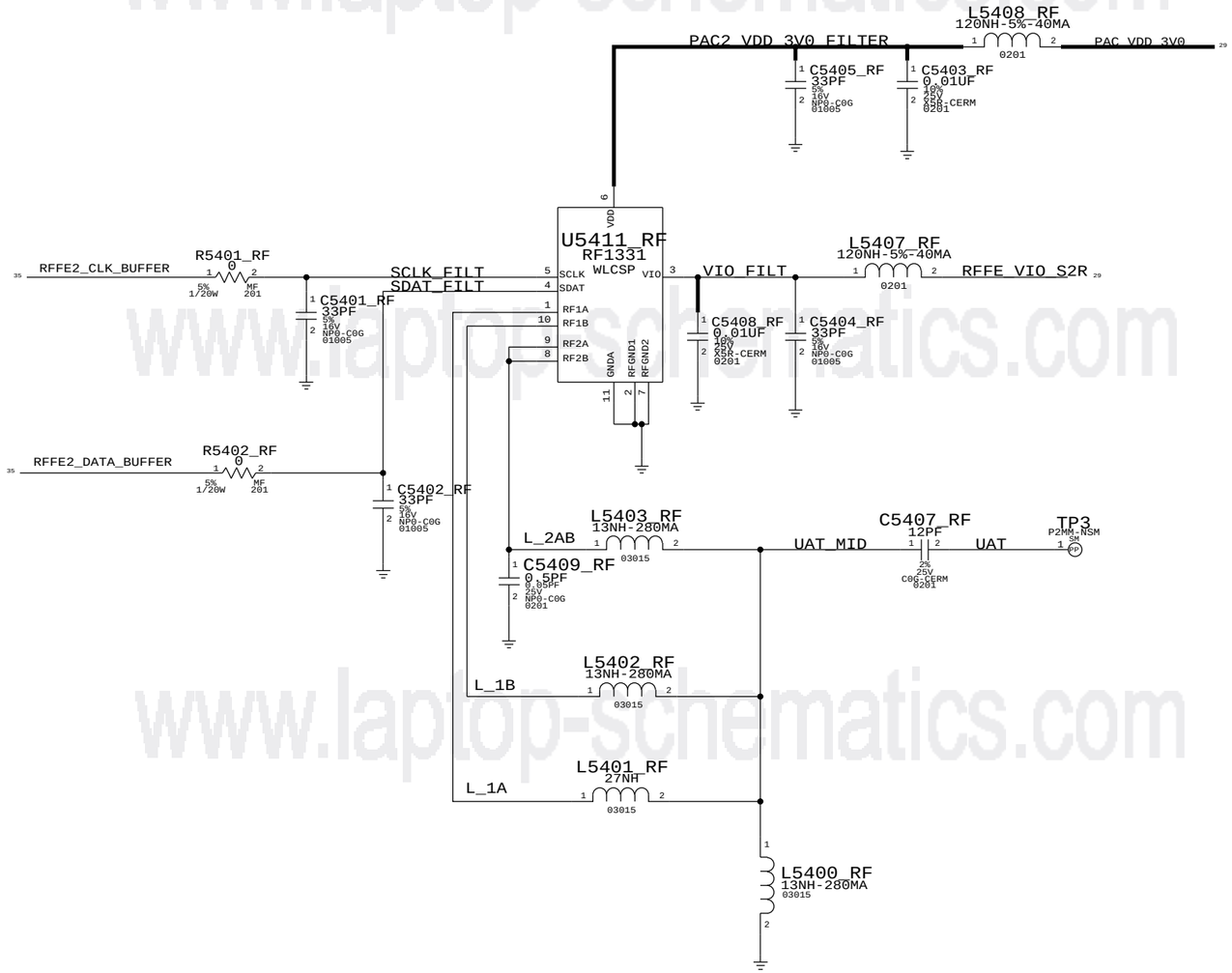
ON-BOARD JUMPER FLEX

UAT JUMPER



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DSDS

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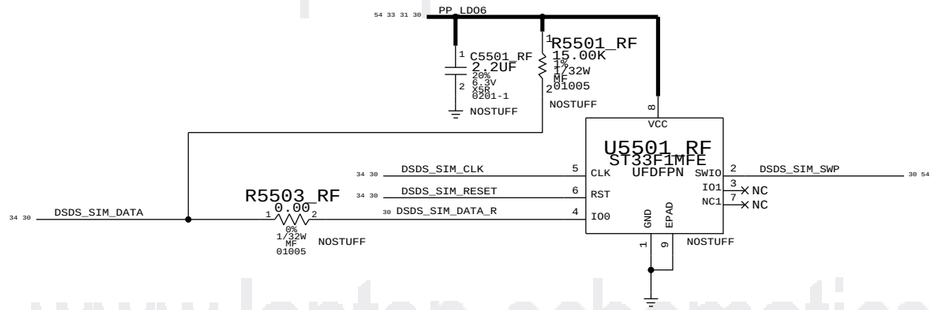

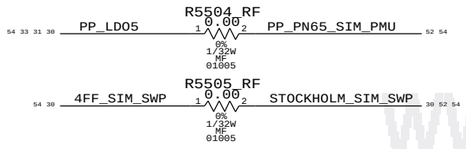

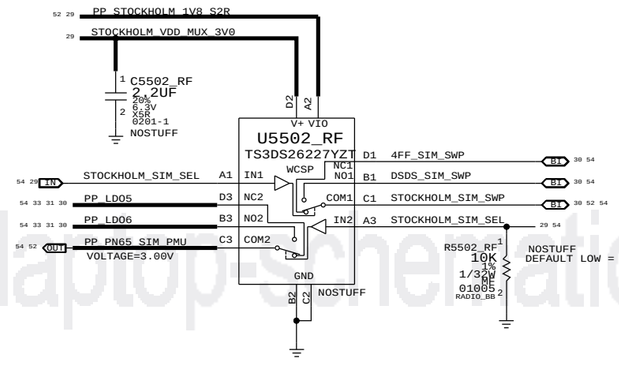

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