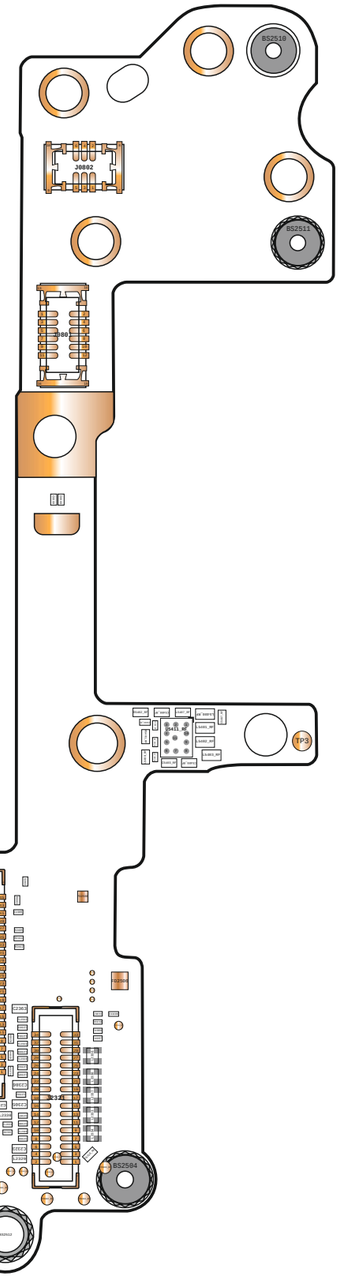
Mobile Files

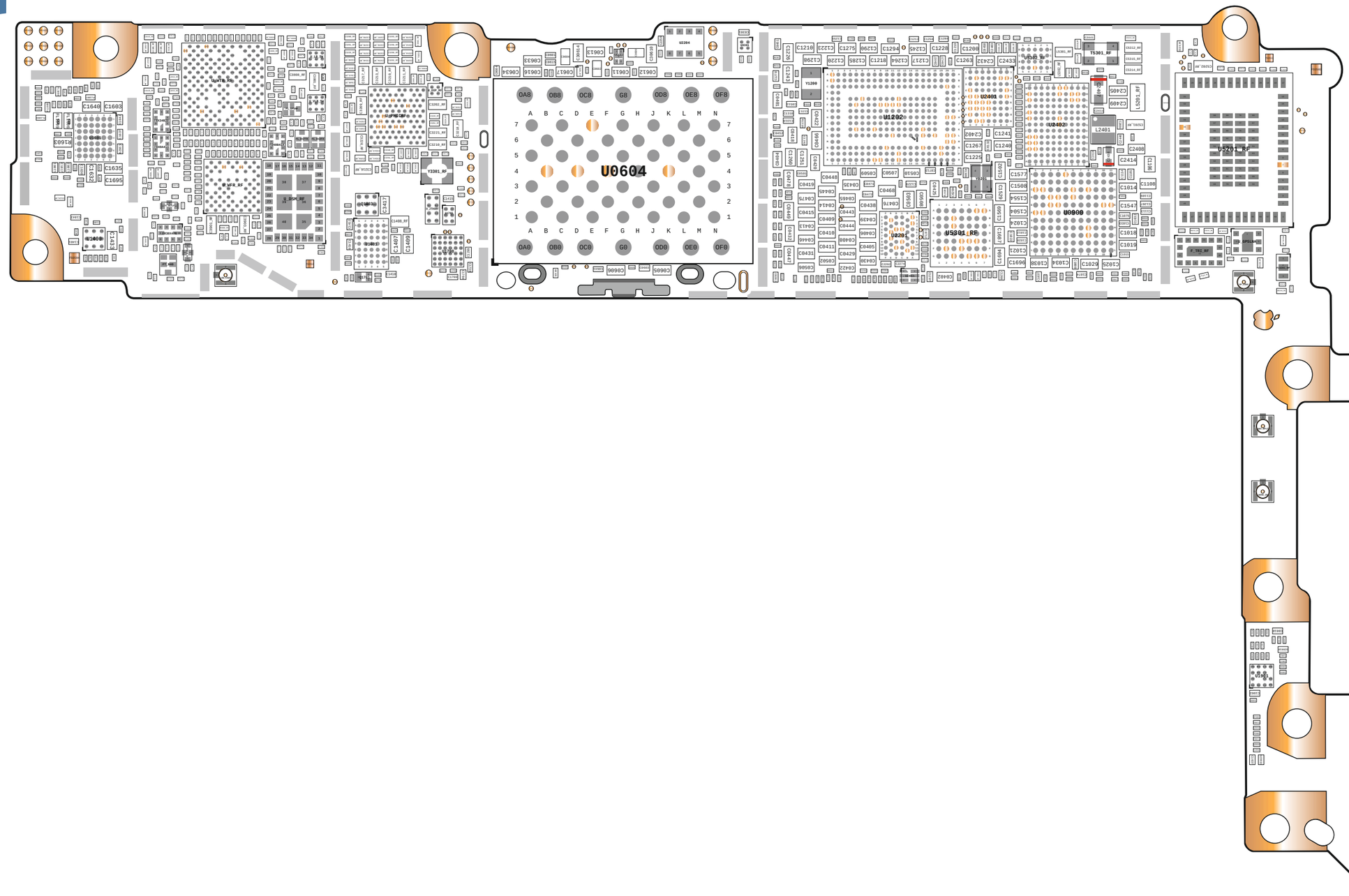
iPhone 6



REMAKE IN UZBEKISTAN BY Muzaffar Madumarov KNOWN AS **maxluq**

Mobile Files

iPhone 6



REMAKE IN UZBEKISTAN BY Muzaffar Madumarov KNOWN AS **maxluq**

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
7.0.0	0704727241	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 BD,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)

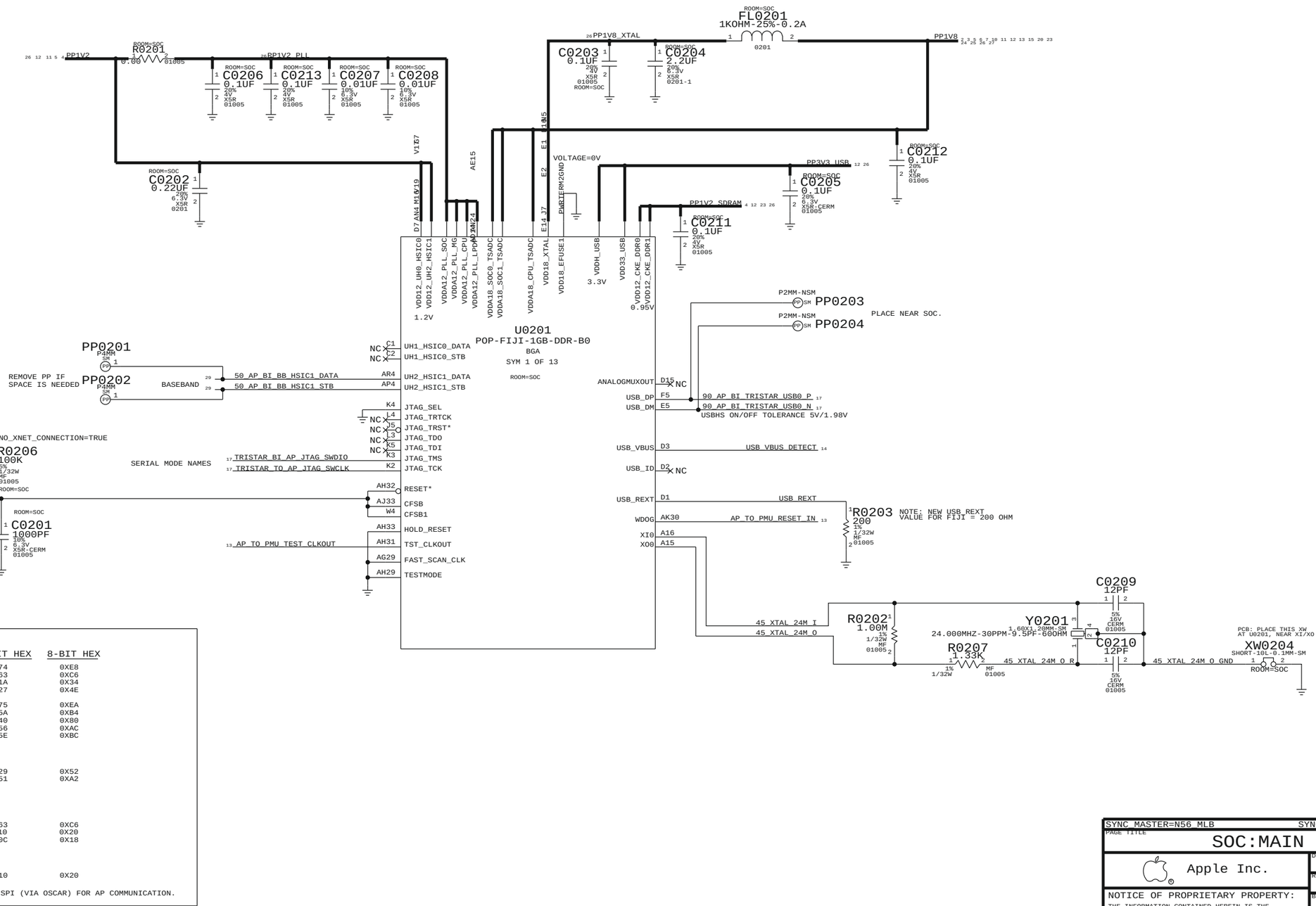
BOM 639-00025(128GB,SUPREME,TLC)
BOM 639-00212(128GB,SUPREME,TLC,DTD)

DRAWING TITLE: SCHEM,MLB,N61

Apple Inc.

DRAWING NUMBER: 051-9903 | SIZE: D
REVISION: 7.0.0
BRANCH:
PAGE: 1 OF 55
SHEET: 1 OF 54

FIJI: JTAG,USB,HSIC,XTAL



I2C ADDRESS MAP

I2C0

DEVICE	BINARY	7-BIT HEX	8-BIT HEX
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.

DRAWING NUMBER: 051-9903 SIZE: D

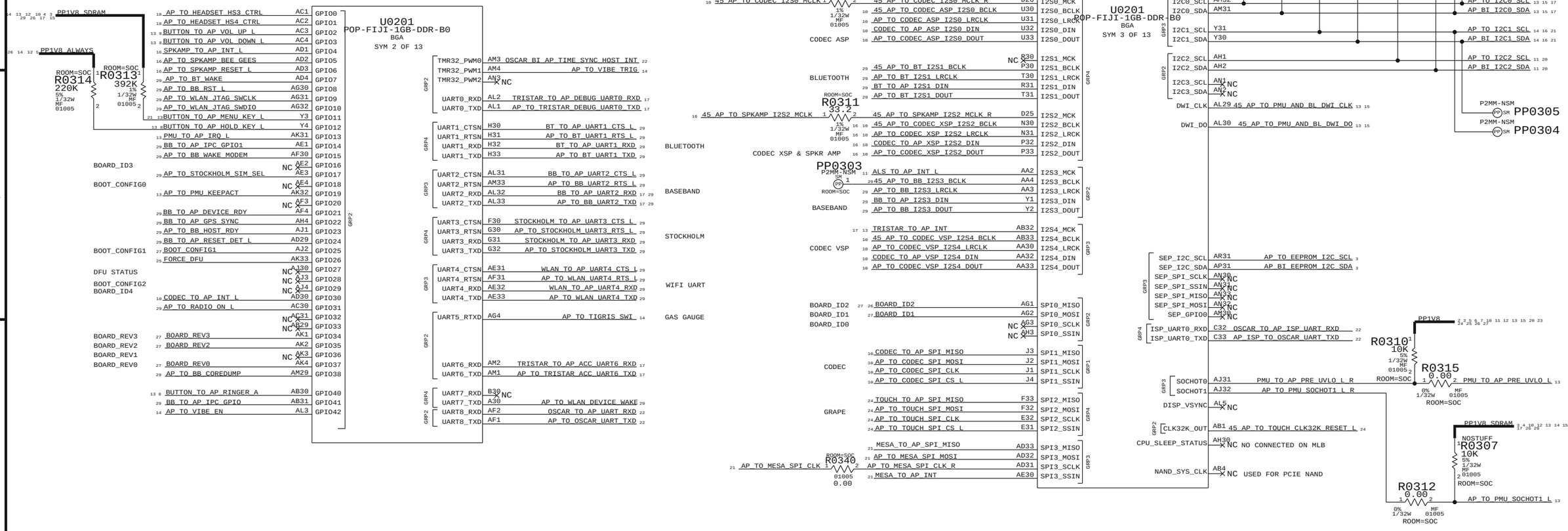
REVISION: 7.0.0

BRANCH:

PAGE: 2 OF 55

SHEET: 2 OF 54

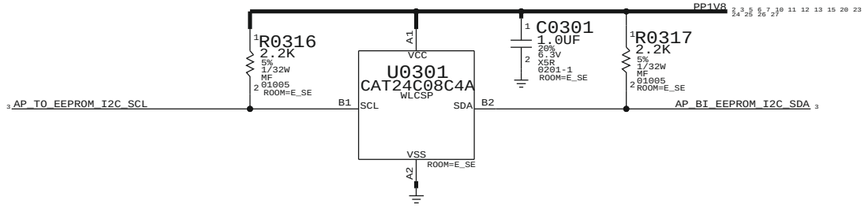
FIJI: DIGITAL I/O,BOOTSTRAPPING



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

Apple Inc.

DRAWING NUMBER 051-9903 SIZE D

REVISION 7.0.0

BRANCH

PAGE 3 OF 55

SHEET 3 OF 54

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
VDDQ
C0426 15PF 5% 16V NP0-C0G-CERM 01005 ROOM=SOC
C0425 0.47UF 20% 6.3V CERM 0402
C0430 0.47UF 20% 6.3V 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
SM
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
VDD_CPU_SENSE
45_BUCK0_FB
PP0401
P2MM-NSM
SM
ROOM=SOC
C0447 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=SOC
C0415 4.3UF 20% 4V CERM 0402
C0465 1UF 20% 4V CERM 0402
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
SM
ROOM=SOC

VDDQ

PP1V2_SDRAM
C0423 0.01UF 10% 6.3V X5R 01005 ROOM=SOC
R0403 10K 1% 1/32W MF 01005 ROOM=SOC
45_DDR0_VREF_CA
C0424 0.01UF 10% 6.3V X5R 01005 ROOM=SOC
R0404 10K 1% 1/32W MF 01005 ROOM=SOC
C0433 0.01UF 10% 6.3V X5R 01005 ROOM=SOC
R0405 10K 1% 1/32W MF 01005 ROOM=SOC
45_DDR1_VREF_CA
C0434 0.01UF 10% 6.3V X5R 01005 ROOM=SOC
R0406 10K 1% 1/32W MF 01005 ROOM=SOC
NOTE: SOME VENDORS HAVE INTERNAL DIVIDER CIRCUITS
PP1V2
C0436 0.01UF 10% 6.3V X5R 01005 ROOM=SOC
R0407 4.7K 1% 1/32W MF 01005 ROOM=SOC
45_DDR0_VREF_DQ
C0437 0.01UF 10% 6.3V X5R 01005 ROOM=SOC
R0408 4.7K 1% 1/32W MF 01005 ROOM=SOC
C0440 0.01UF 10% 6.3V X5R 01005 ROOM=SOC
R0409 4.7K 1% 1/32W MF 01005 ROOM=SOC
45_DDR1_VREF_DQ
C0441 0.01UF 10% 6.3V X5R 01005 ROOM=SOC
R0410 4.7K 1% 1/32W MF 01005 ROOM=SOC

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
SIZE D
REVISION 7.0.0
BRANCH
PAGE 4 OF 55
SHEET 4 OF 54

FIJI: VDDIOD,VDDIO18,VDD_VAR_SOC

JUST A FEW GNDS

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

VSS

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

VSS

VSS

VDD_SRAM, VDD_SOC

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

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

VSS

VSS_SENSE

45_BUCK2_FB

VDD_VAR_SOC_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

PP1V8

C0511 1.0UF 20% 6.3V X5R 0201-1 ROOM=SOC

C0506 0.47UF 20% 6.3V CERM 0402 ROOM=SOC

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

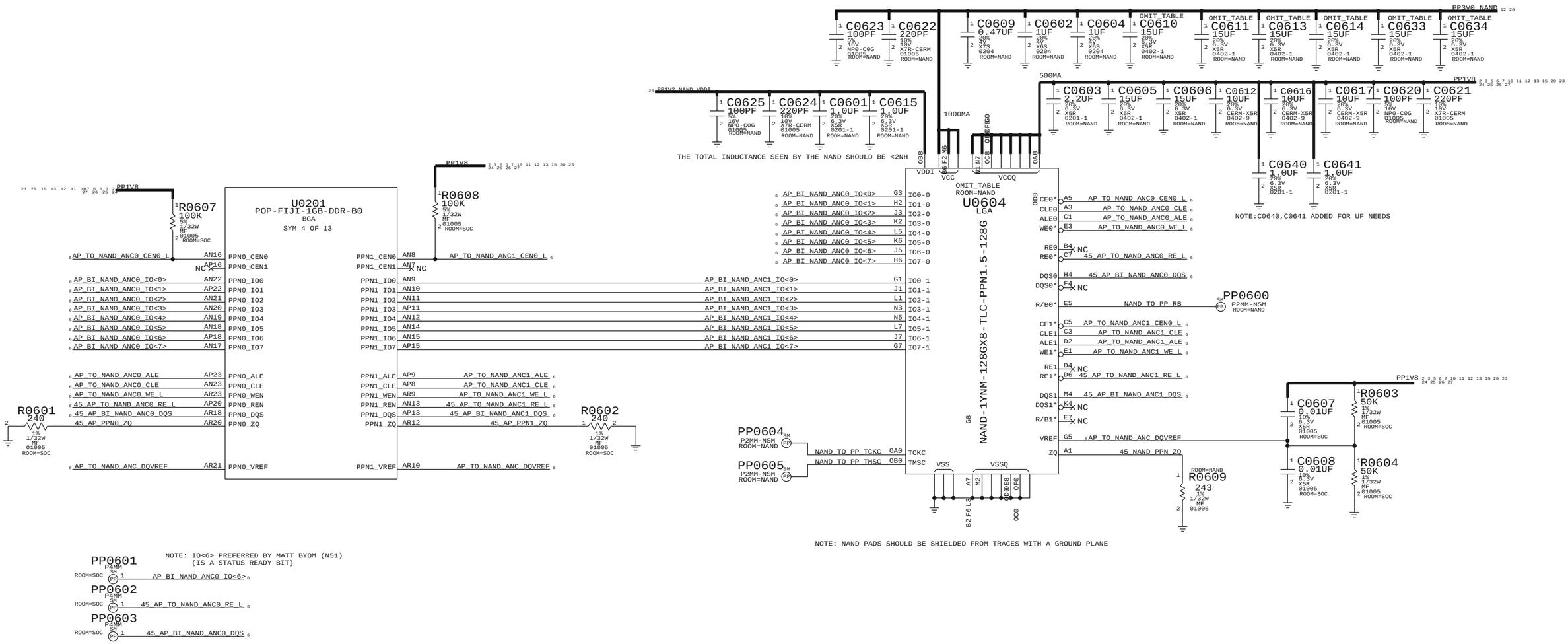
PAGE TITLE
SOC:GND,VDDIO18,VDDIOD,VDD_VAR_SOC

Apple Inc.

DRAWING NUMBER 051-9903
SIZE D
REVISION 7.0.0
BRANCH
PAGE 5 OF 55
SHEET 5 OF 54

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.	DRAWING NUMBER 051-9903
	SIZE D
	REVISION 7.0.0
	BRANCH
	PAGE 6 OF 55
	SHEET 6 OF 54

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

SYM 6 OF 13

SHUTDOWN IS ALSO RESET FCAM

SYNC_MASTER=N56_MLB	SYNC_DATE=08/29/2013	
PAGE TITLE: SOC:CAM,LCD,LPDP,PCIE		
Apple Inc.	DRAWING NUMBER: 051-9903	SIZE: D
	REVISION: 7.0.0	
	BRANCH:	
	PAGE: 7 OF 55	
	SHEET: 7 OF 54	

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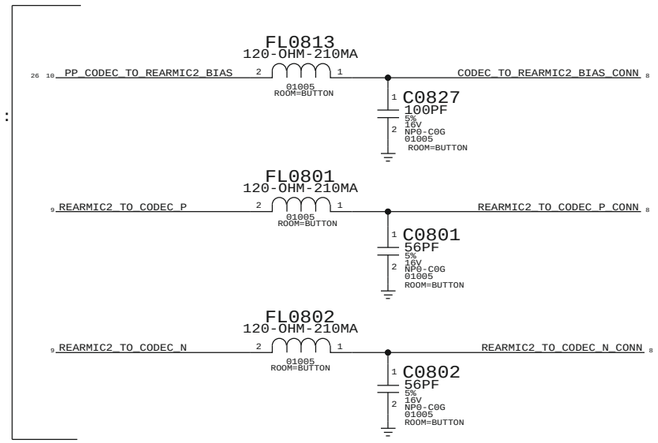
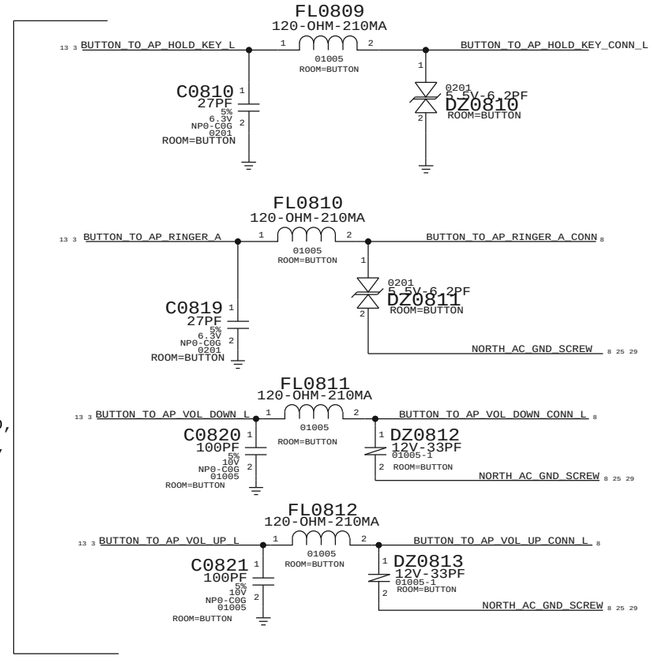
BUTTON FLEX (BUTTONS, ANC REF MIC, STROBE, STROBE_NTC, WIFI FLEX PAC)

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

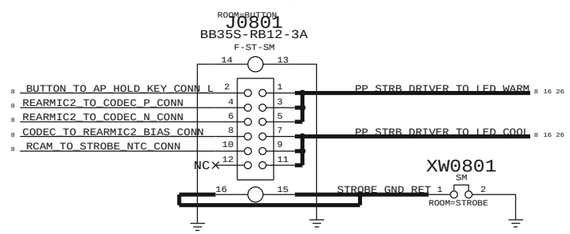


BUTTONS:
RINGER, HOLD,
VOL_UP/DOWN,



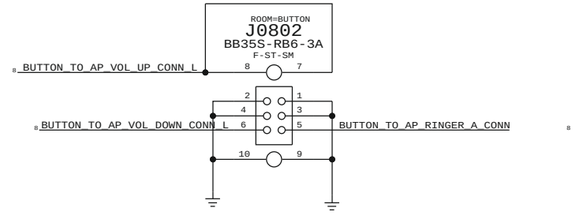
RIGHT BUTTON B2B

MLB: 516S1312

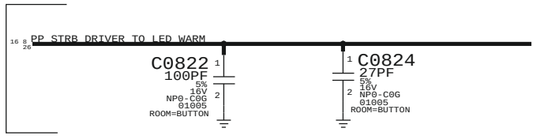


LEFT BUTTON B2B

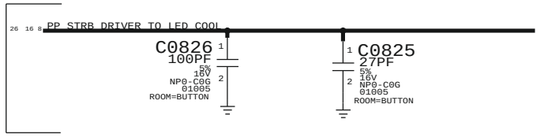
MLB: 516S1315



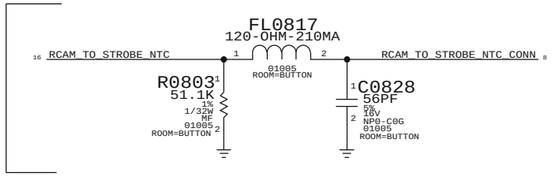
STROBE:
LED WARM



STROBE:
LED COOL



STROBE:
NTC



SYNC_MASTER=N61_MLB SYNC_DATE=08/26/2013

PAGE TITLE: IO:BUTTON FLEX CONN

Apple Inc.

DRAWING NUMBER: 051-9903 SIZE: D

REVISION: 7.0.0

BRANCH:

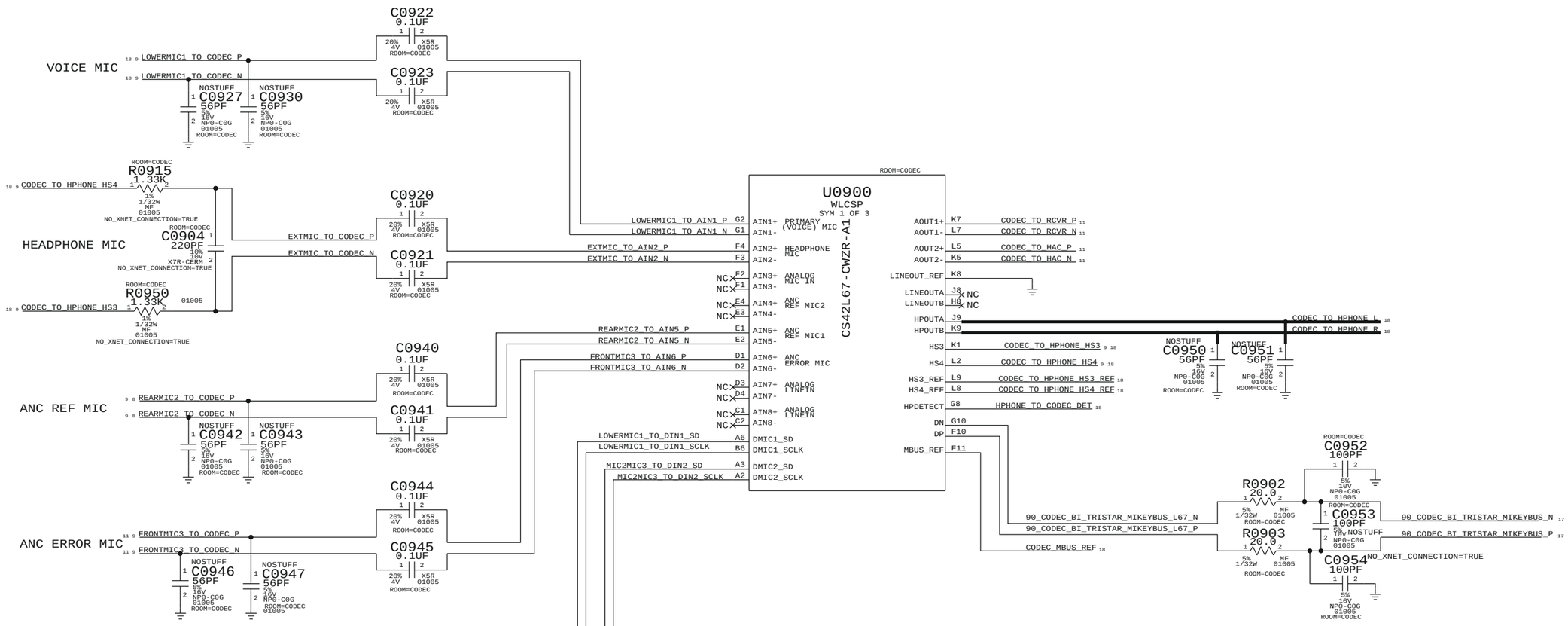
PAGE: 8 OF 55

SHEET: 8 OF 54

L67 AUDIO CODEC

AUDIO I/O

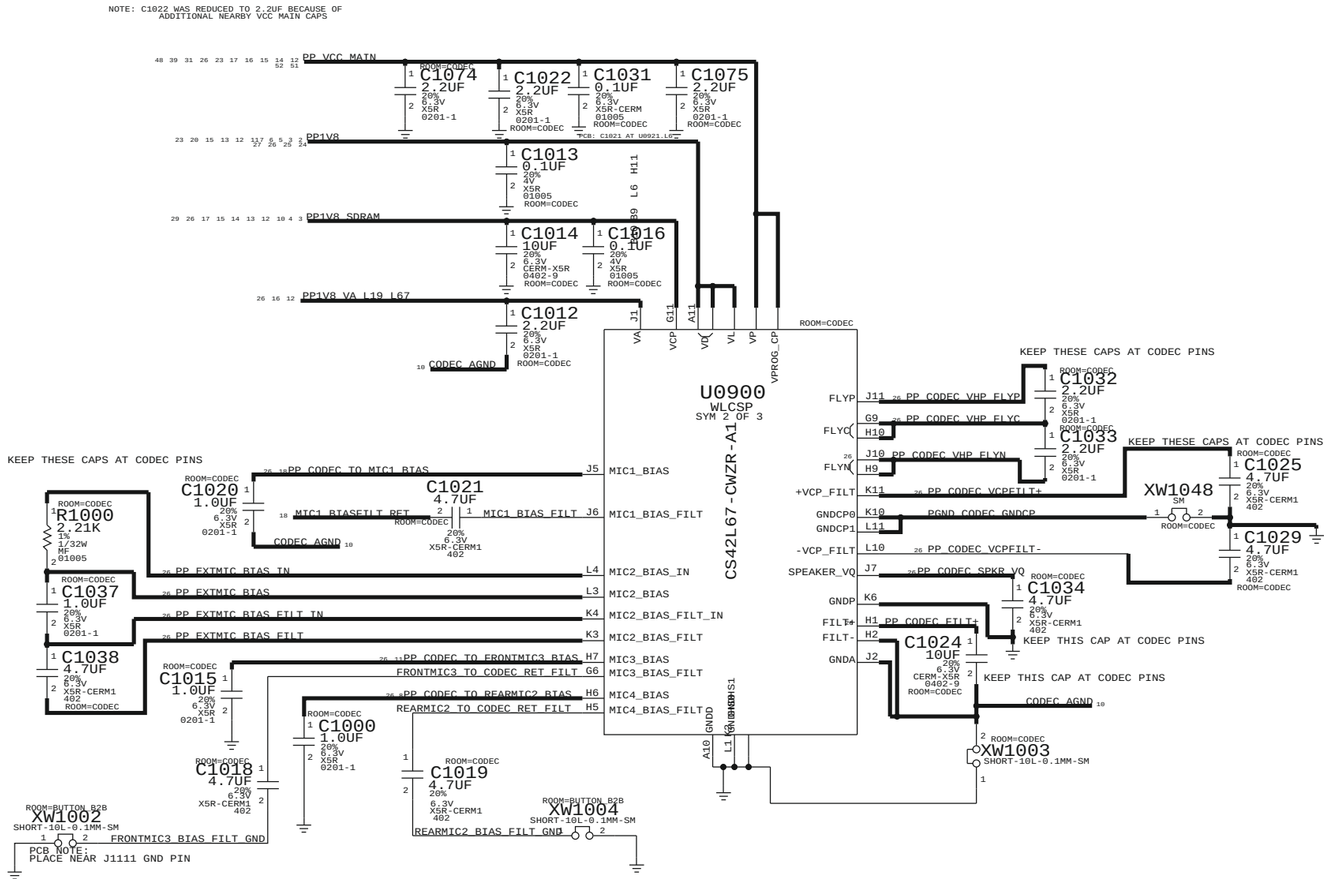
(ANALOG MIC IN, DIG MIC IN, HPOUT, LINEOUT, RECEIVER OUT, MIKEYBUS)



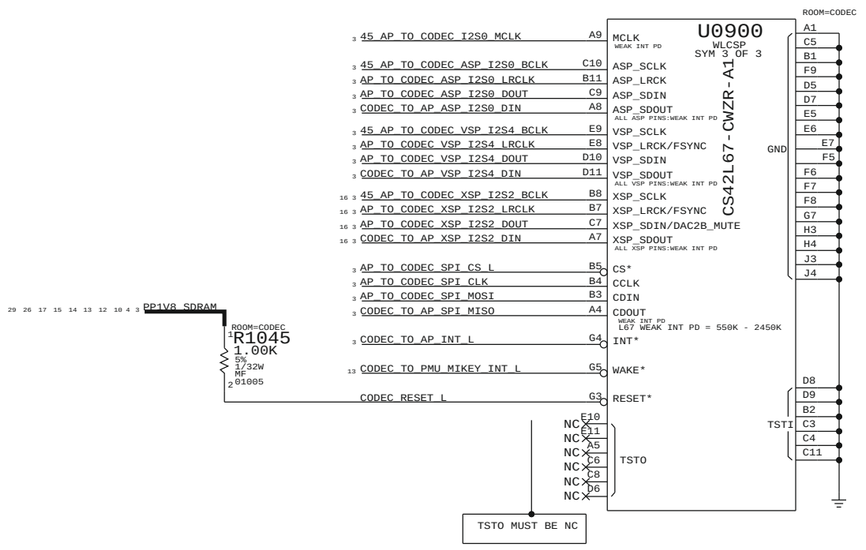
SYNC_MASTER=N61_MLB	SYNC_DATE=08/26/2013
PAGE TITLE	AUDIO:L67 CODEC (1/2)
Apple Inc.	DRAWING NUMBER 051-9903 SIZE D
	REVISION 7.0.0
	BRANCH
	PAGE 9 OF 55
	SHEET 9 OF 54

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

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BRANCH:

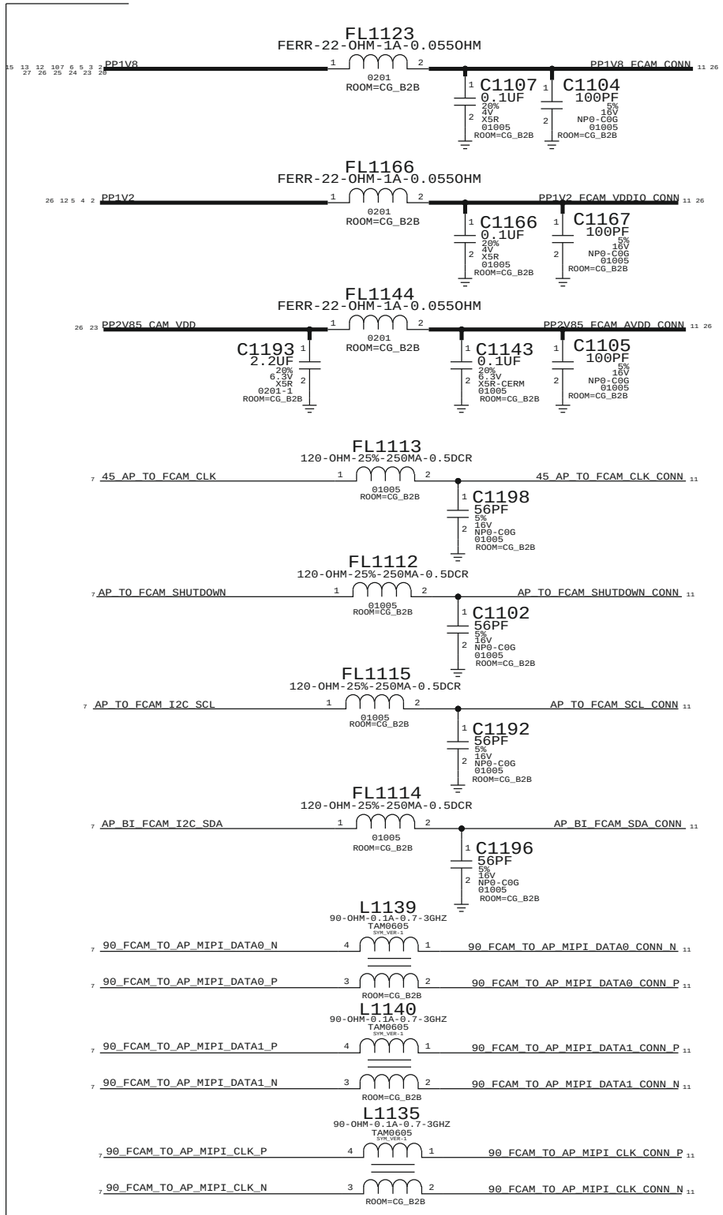
PAGE: 10 OF 55

SHEET: 10 OF 54

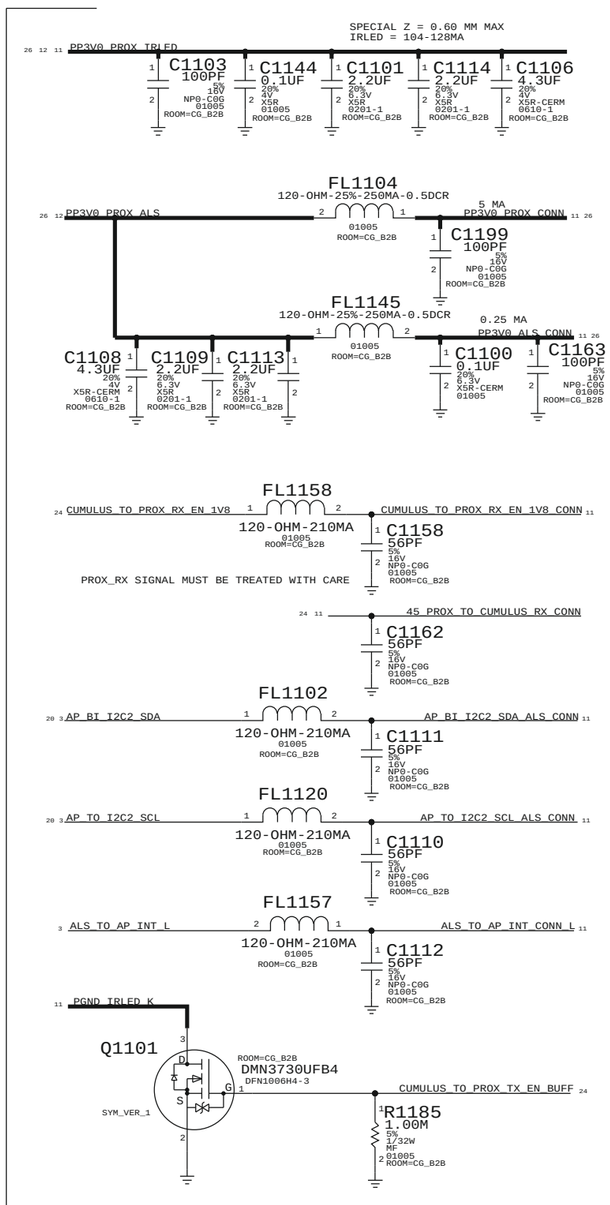
FRONT CAM FLEX B2B

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

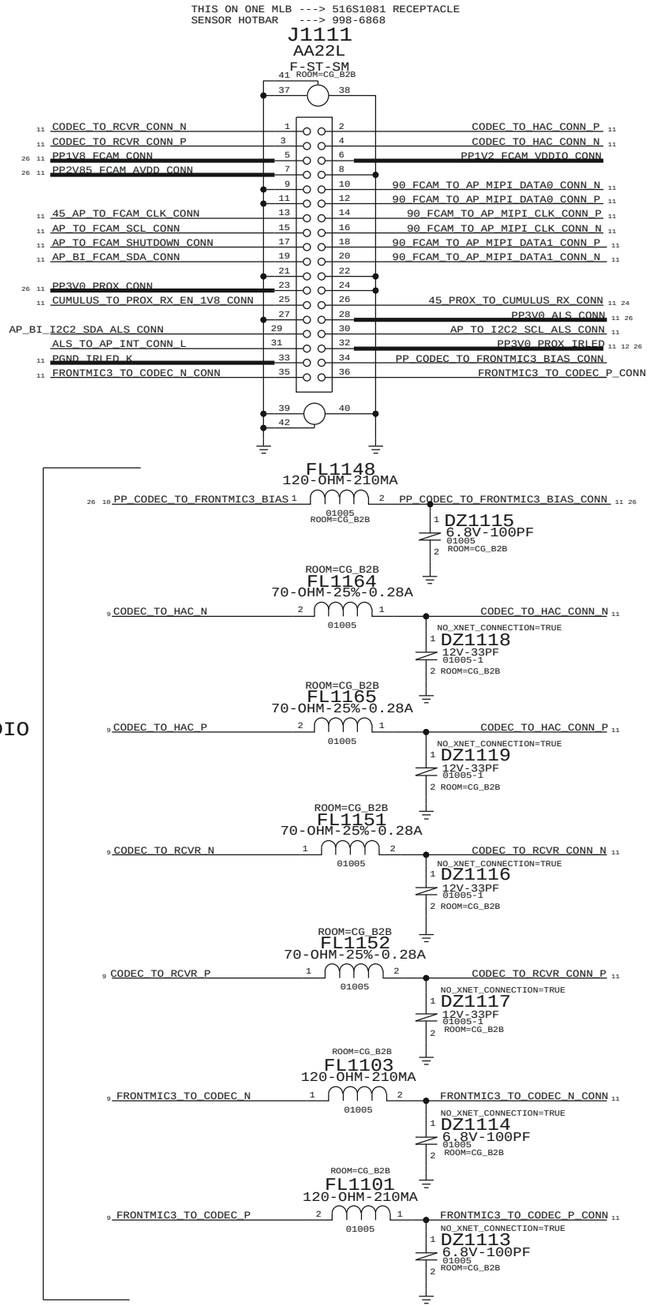
CAMERA



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

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BRANCH

PAGE 11 OF 55

SHEET 11 OF 54

ADI PMU

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

NOTE: L1210, L1212 BOMOPTIONS CONTROLLED ON PAGE1

APN: 338S1251 (ADI AZ)

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

NOSTUFF
R1201 470 5% 1/32W MF-LF 01005 ROOM=PMU
PP5V0_USB → PP5V0_USB_TO_PMU

CHARGER_VBATT_SNS

BAT/USB: VBUS_OVP_OFF, VCENTER, VBUS, IBAT, VBAT, ACT_DIO, CHG_LX

PP_VCC_MAIN
C1220 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=PMU
C1200 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=PMU
C1217 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=PMU
C1218 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=PMU
C1250 2.2UF 20% 6.3V X5R 0201-1 ROOM=PMU

BUCK INPUT: VCC_MAIN, VCC_MAIN_S

C1251 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=PMU
C1225 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=PMU
C1260 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=PMU
C1263 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=PMU
C1267 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=PMU

BUCK: VDD_BUCK1, VDD_BUCK2, VDD_BUCK3, VDD_BUCK4, VDD_BUCK5, VDD_BUCK6, VDD_BYP_BUCK6, VDD_BUCK001, VDD_BUCK023

C1285 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=PMU
C1298 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=PMU
C1264 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=PMU
C1266 1.0UF 20% 6.3V X5R 0201-1 ROOM=PMU

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

C1271 100PF 5% 16V NP0-C0G 01005 ROOM=WIFI
C1272 100PF 5% 16V NP0-C0G 01005 ROOM=PMU

LDO INPUT: VDD_LDO6, VDD_LDO2, VDD_LDO1_3, VDD_LDO4_13, VDD_LDO5, VDD_LDO7_8, VDD_LDO10, VDD_LDO9_11

PP1V2_SDRAM
C1278 2.2UF 20% 6.3V X5R 0201-1 ROOM=PMU

VIBE: VDD_VIB, VIB, VIB_PWM_EN

XTAL: XTAL1, XTAL2, VSS_RTC

45_PMU_TO_XTAL_OSC32
45_XTAL_TO_PMU_OSC32
ROOM=PMU Y1200 32.768K-20PPM-12.5PF 2.0X1.2X0.60-SM1
C1276 18PF 5% 16V CERM 01005 ROOM=PMU
C1283 18PF 5% 16V CERM 01005 ROOM=PMU

SAME POLARITY
L1209 1UH-3.0A-0.059OHM PIFA20161B ROOM=PMU
L1210 0.47UH-20%-3.3A-0.065OHM MCMK2012TR47M-SM ROOM=PMU
L1211 1UH-3.0A-0.059OHM PIFA20161B ROOM=PMU
L1212 0.47UH-20%-3.3A-0.065OHM MCMK2012TR47M-SM ROOM=PMU

BUCK0_LX0 → PP_BUCK0_LX0 DIDT=TRUE
BUCK0_LX1 → PP_BUCK0_LX1 DIDT=TRUE
BUCK0_LX2 → PP_BUCK0_LX2 DIDT=TRUE
BUCK0_LX3 → PP_BUCK0_LX3 DIDT=TRUE
BUCK0_FB → 45_BUCK0_FB

0V775/0V95/1V0 → PP_CPU
C1290 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C1292 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C1294 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C1235 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C1222 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C1245 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C1262 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C1228 15UF 20% 6.3V X5R 0402-1 ROOM=PMU

H7 VDD_CPU 7.6A MAX

SAME POLARITY
L1213 1UH-3.0A-0.059OHM PIFA20161B ROOM=PMU
L1214 0.47UH-20%-3.3A-0.065OHM MCMK2012TR47M-SM ROOM=PMU

BUCK1_LX0 → PP_BUCK1_LX0 DIDT=TRUE
BUCK1_LX1 → PP_BUCK1_LX1 DIDT=TRUE
BUCK1_FB → 45_BUCK1_FB

0V9/0V95 → PP_GPU
C1203 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C1227 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C1210 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C1226 15UF 20% 6.3V X5R 0402-1 ROOM=PMU

H7 VDD_GPU 3.45A MAX

L1215 1.0UH-20%-2.4A-0.075HM PIFE20161T-SM ROOM=PMU

BUCK2_LX → PP_BUCK2_LX DIDT=TRUE
BUCK2_FB → 45_BUCK2_FB

0V9/0V95 → PP_VAR_SOC
C1223 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C1275 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C1289 15UF 20% 6.3V X5R 0402-1 ROOM=PMU

H7 VAR 1.8A MAX

BUCK3_LX → PP_BUCK3_LX DIDT=TRUE
BUCK3_FB → 45_BUCK3_FB
BUCK3_SW1 → PP1V8
BUCK3_SW2 → PP1V8_GRAPE
BUCK3_SW3 → PP1V8_OSCAR
VBUCK3_SW

BUCK4_LX → PP_BUCK4_LX DIDT=TRUE
BUCK4_FB → 45_BUCK4_FB
VBUCK4_SW
BUCK4_SW1 → PP1V2
BUCK4_SW2 → PP1V2_OSCAR

BUCK5_LX0 → PP_BUCK5_LX0 DIDT=TRUE
BUCK5_LX1 → PP_BUCK5_LX1 DIDT=TRUE
BUCK5_FB → 45_BUCK5_FB

BUCK6_LX → NC
BUCK6_FB → NC
BUCK6_BYP → NC

LDO:
(50MA) VLDO1 F18 2.5-3.3V +/-77.5MV
(50MA) VLDO2 R14 1.2-1.9V +/-42.5MV
(50MA) VLDO3 G18 2.5-3.3V +/-75MV
(50MA) VLDO4 H18 2.5-3.6V +/-75MV
(1000MA) VLDO5 R15 2.5-3.6V +/-75MV
(150MA) VLDO6 R13 1.2-3.6V +/-82.5MV
(250MA) VLDO7 K18 2.5-3.6V +/-75MV
(250MA) VLDO8 L18 NC
(250MA) VLDO9 R10 2.5-3.6V +/-71.25MV
VLDO9_FB P10 PP2V9_LDO9
(100MA) VLDO10 L1 0.6-1.4V +/-25MV
(250MA) VLDO11 R11 2.5-3.6V +/-82.5MV
(5MA) VLDO12 L6 FIXED 1.8V, +/-5%
(250MA) VLDO13 J18 2.5-3.6V +/-71.25MV
VPUMP R5 45_PMU_VPUMP

PP3V3_USB
PP1V8_VA_L19_L67
PP3V0_TRISTAR
PP3V0_IMU
PP3V0_NAND
PP3V3_ACC
PP3V0_PROX_ALS
PP1V0
PP3V0_PROX_IRLED
PP1V8_ALWAYS
PP3V0_MESA

SPEC REQUIRES 10NF, VPUMP RUNS AT 4.6V
VPUMP CAP: 30% DERATED.
C1208 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=PMU
C1270 2.2UF 20% 6.3V X5R 0201-1 ROOM=PMU
C1229 2.2UF 20% 6.3V X5R 0201-1 ROOM=PMU
C1212 1.0UF 20% 6.3V X5R 0201-1 ROOM=PMU
C1284 1.0UF 20% 6.3V X5R 0201-1 ROOM=PMU
C1299 2.2UF 20% 6.3V X5R 0201-1 ROOM=PMU
C1207 2.2UF 20% 6.3V X5R 0201-1 ROOM=PMU
C1242 1.0UF 20% 6.3V X5R 0201-1 ROOM=PMU
C1232 2.2UF 20% 6.3V X5R 0201-1 ROOM=PMU
C1291 0.1UF 20% 4V X5R 01005 ROOM=PMU
C1219 2.2UF 20% 6.3V X5R 0201-1 ROOM=PMU

L1216 1.0UH-20%-2.4A-0.075HM PIFE20161T-SM ROOM=PMU
XW1218 SHORT-10L-0.1MM-SM ROOM=PMU
PCB:PLACE C1297 NEAR C1263
C1297 100PF 5% 16V NP0-C0G 01005 ROOM=PMU
C1296 100PF 5% 16V NP0-C0G 01005 ROOM=PMU
C1293 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C1243 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
PCB:PLACE C1296 NEAR L1216
PP1V8_SDRAM

H7 VDD1(BUCK3)=0.945A MAX
BUCK3_SW1=0.945A MAX
BUCK3_SW2=0.0A MAX
BUCK3_SW3=0.0A MAX
TOTAL=0.945A MAX

L1217 1.0UH-20%-2.4A-0.075HM PIFE20161T-SM ROOM=PMU
XW1220 SHORT-10L-0.1MM-SM ROOM=PMU
PCB:PLACE C1270 NEAR L1217
C1214 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C1216 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C1288 100PF 5% 16V NP0-C0G 01005 ROOM=PMU
PP1V2_SDRAM

H7 VDDCA,VDD2 (BUCK4)=0.500A MAX
BUCK4_SW1=1.000A MAX
BUCK4_SW2=0.500A MAX
TOTAL=1.500A MAX

L1218 1.0UH-20%-2.4A-0.075HM PIFE20161T-SM ROOM=PMU
L1219 0.47UH-30%-2.7A-0.065OHM MCKK2012-SM ROOM=PMU
C1240 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C1202 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C1209 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C1241 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
PP0V95_FIXED_SOC

H7 VDD_SRAM, VDD_SRAM_SOC 3.3A MAX

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

SOC USB PHY (25 MA)
SPEAKER AMP, CODEC VA (2.5 MA L1419, 3MA L67)
TRISTAR VDH, WIFI_FLEX PAC (? MA)
GYRO, ACCEL, COMPASS (? MA)
NAND (? MA)
ACCESSORY POWER (? MA)
PROX/ALS VDD (PROX: 0.75/1.2 MA ALS: 0.175/0.25 MA [TYP/MAX])

NOTE: 3V +/- 5% PER EUGENE

REAR CAM AUTO FOCUS (120MA PEAK, PROBABLY CAP AT 80MA)
REAR/FRONT CAM AVDD (? MA)
SOC 1V0 MIPI, USB_DVDD, DP (71 MA TOTAL)
PROX LED (102 MA TYP)
ALWAYS ON 1V8 (? MA)

SYNC_MASTER=N56_MLB SYNC_DATE=08/29/2013

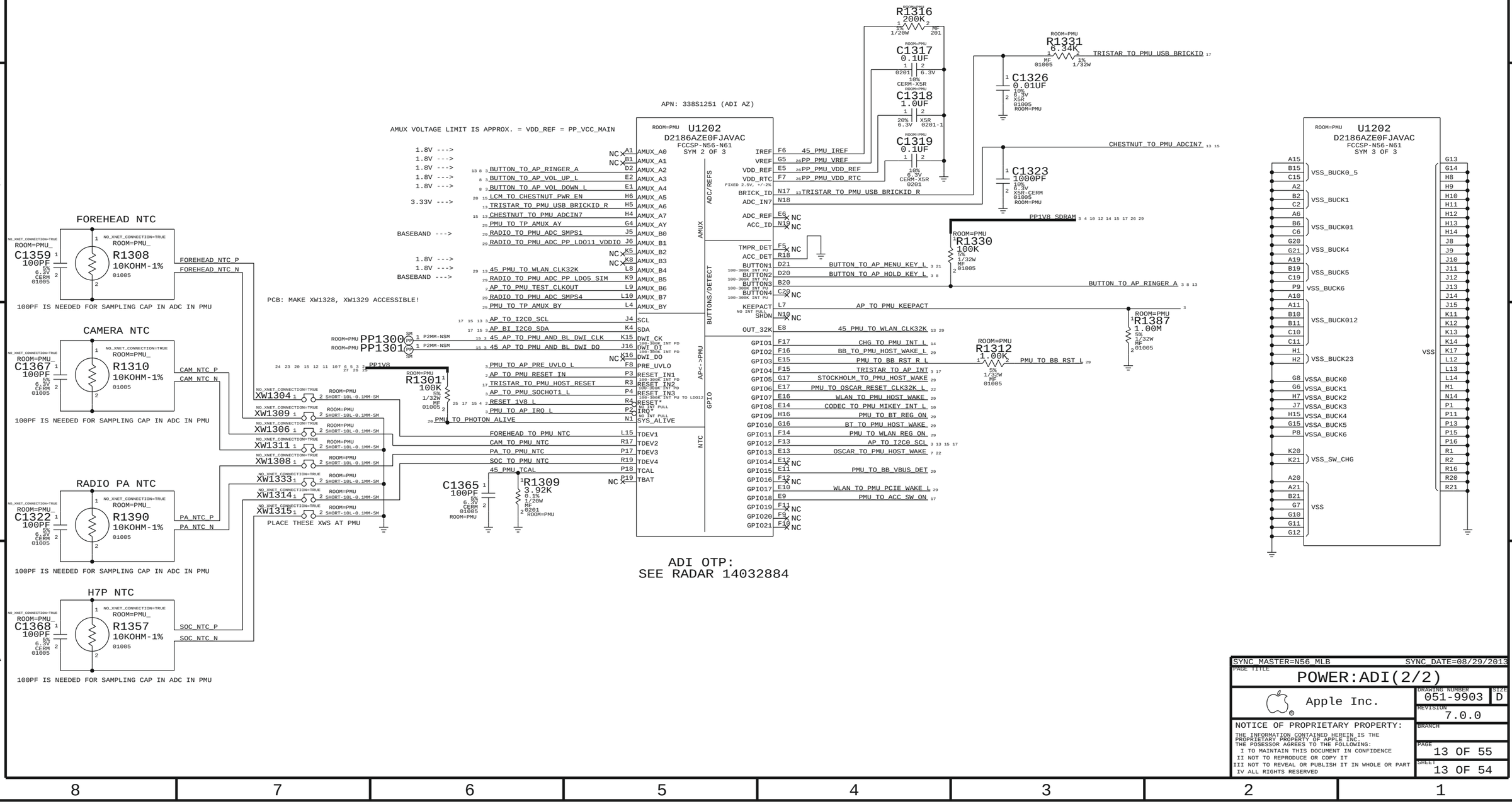
PAGE TITLE: POWER:ADI(1/2)

Apple Inc.

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

ADI PMU

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



SYNC_MASTER=N56_MLB SYNC_DATE=08/29/2013

PAGE TITLE: POWER:ADI(2/2)

Apple Inc.

DRAWING NUMBER: 051-9903 SIZE: D

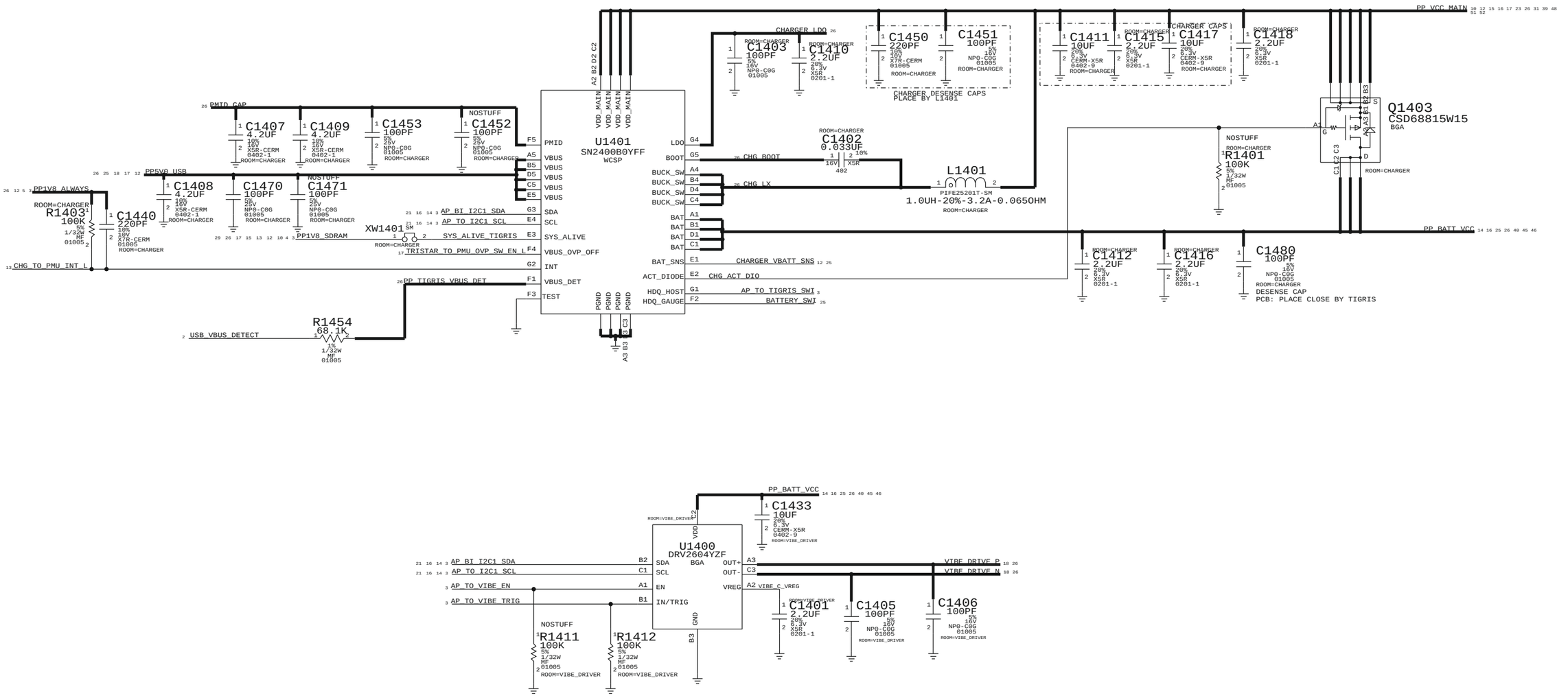
REVISION: 7.0.0

BRANCH:

PAGE: 13 OF 55

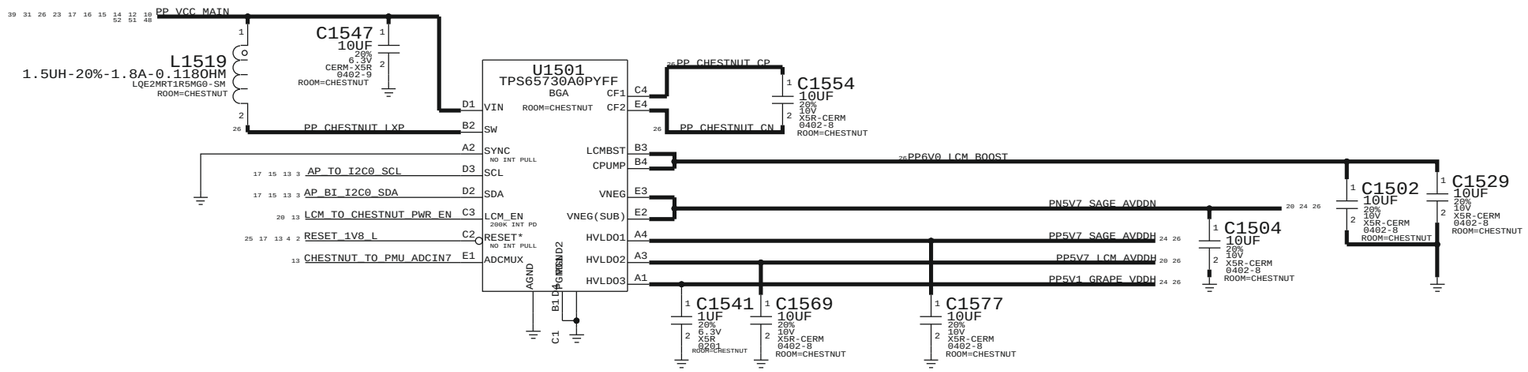
SHEET: 13 OF 54

TIGRIS CHARGER & VIBE DRIVER

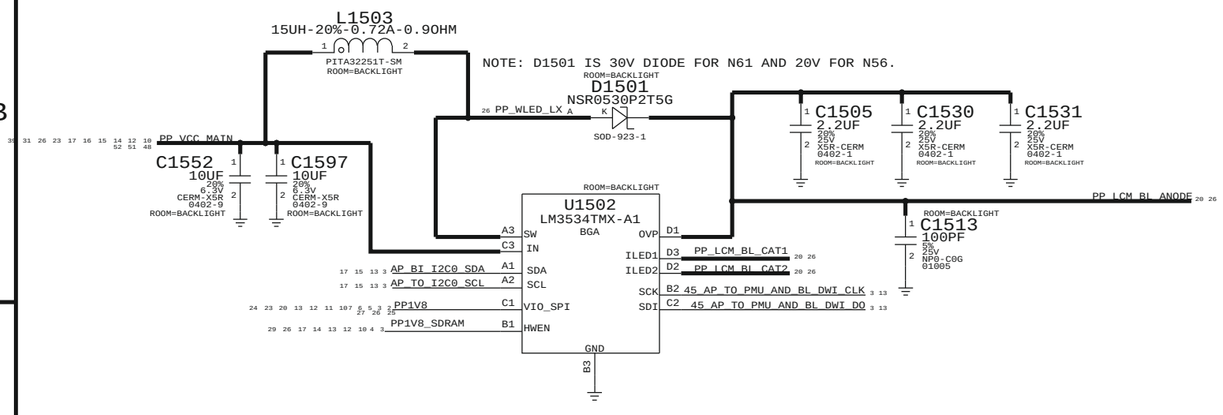


CHESTNUT, BACKLIGHT DRIVER, MESA BOOST

D500 DISPLAY PMU (TI CHESTNUT, 338S1149)

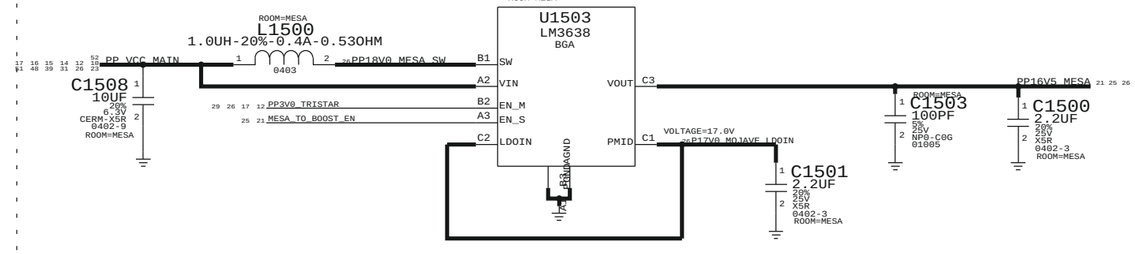


D500 BACKLIGHT DRIVER



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
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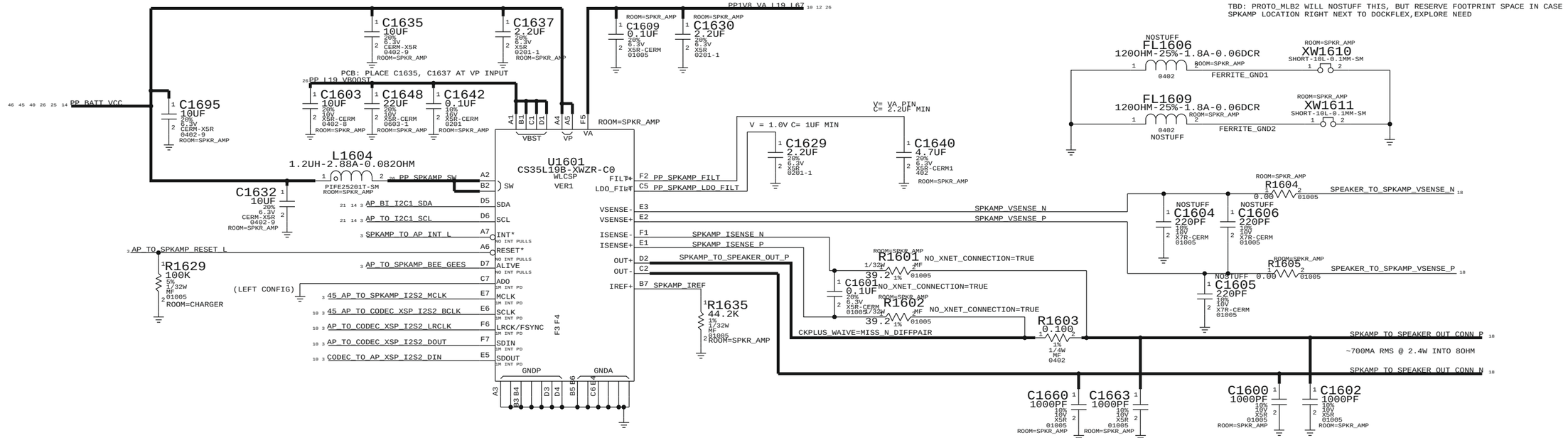
	SHEET: 15 OF 54

SPEAKER AMP, LED DRIVER

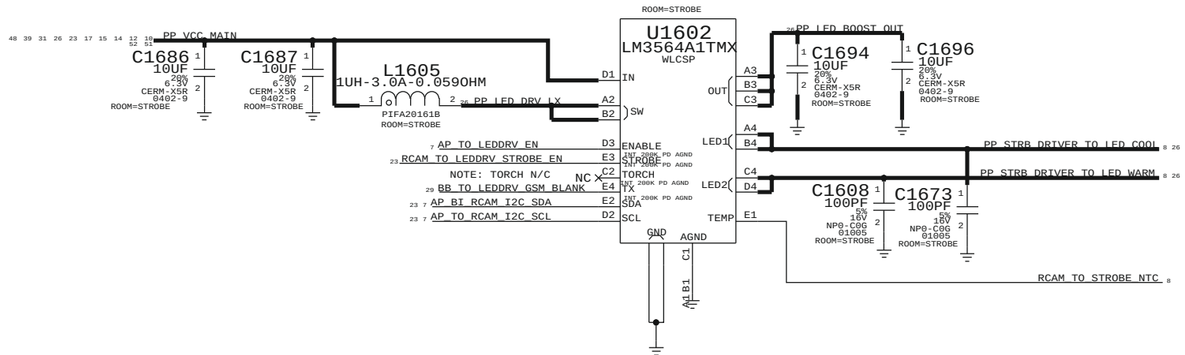
SPEAKER AMP

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
	BRANCH
	PAGE 16 OF 55
	SHEET 16 OF 54

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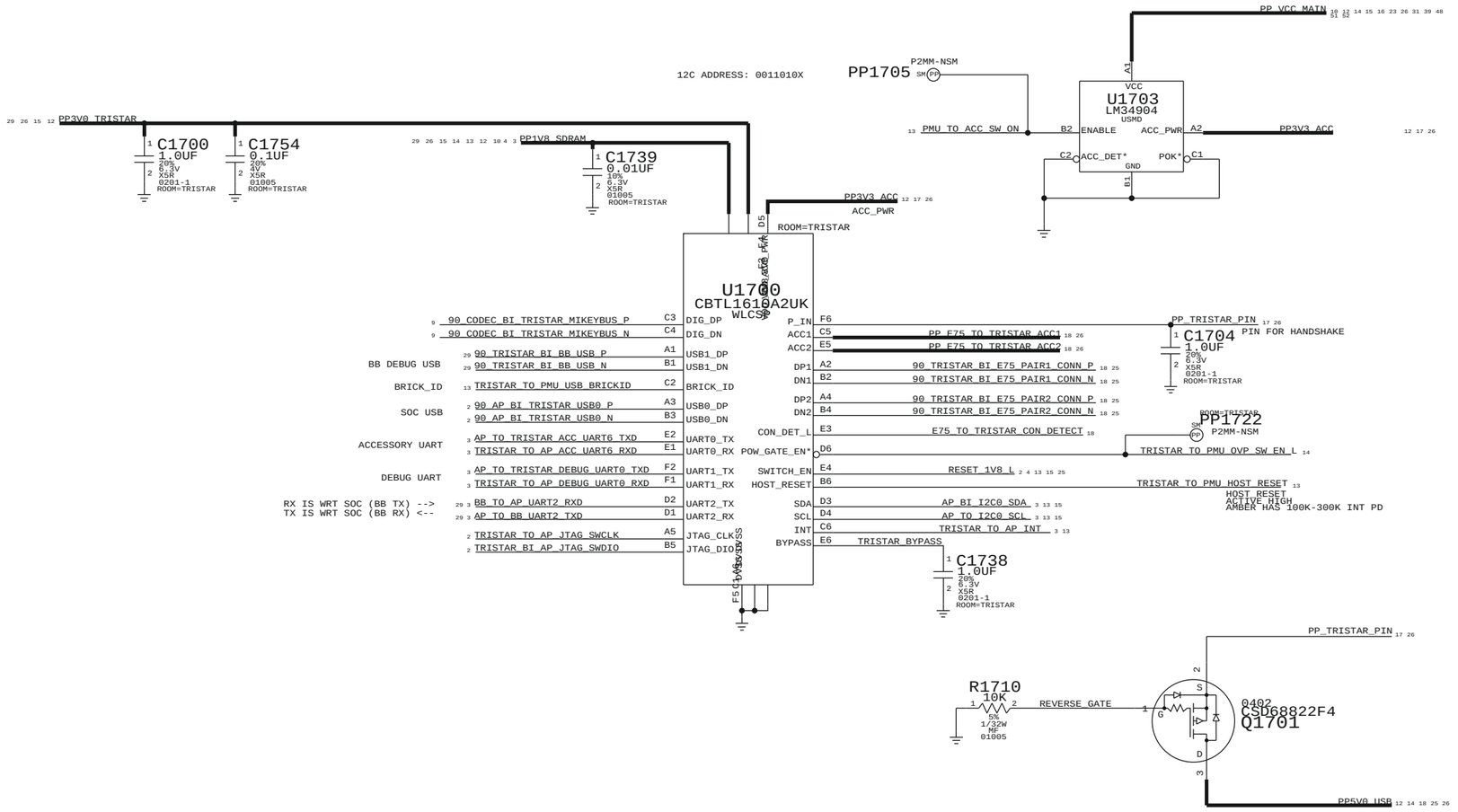
TRISTAR2



SYNC_MASTER=N61_MLB	SYNC_DATE=08/26/2013
PAGE TITLE	IO:TRISTAR2
Apple Inc.	DRAWING NUMBER 051-9903 · SIZE D
	REVISION 7.0.0
	BRANCH
	PAGE 17 OF 55
	SHEET 17 OF 54

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

LOWER MIC1 (PRIMARY VOICE MIC)

FL1881 120-OHM-210MA — LOWERMIC1_TO_CODEC_N → LOWERMIC1_TO_CODEC_N_CONN
C1889 56PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B

FL1882 120-OHM-210MA — LOWERMIC1_TO_CODEC_P → LOWERMIC1_TO_CODEC_P_CONN
C1890 56PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B

FL1855 120-OHM-210MA — PP_CODEC_TO_MIC1_BIAS → PP_CODEC_TO_MIC1_BIAS_CONN
C1855 56PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B

HEADPHONE

R1801 3.3K 5% 1/32W MF 01005 ROOM=DOCK_B2B — HPHONE_TO_CODEC_DET → HPHONE_TO_CODEC_DET_CONN
C1816 56PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B

FL1805 600-OHM-25%-0.28A-0.75OHM 0201 ROOM=DOCK_B2B — CODEC_TO_HPHONE_HS3 → CODEC_TO_HPHONE_HS3_CONN
DZ1803 6.8V-100PF 01005 ROOM=DOCK_B2B NO_XNET_CONNECTION=TRUE

FL1804 600-OHM-25%-0.28A-0.75OHM — CODEC_TO_HPHONE_HS4 → CODEC_TO_HPHONE_HS4_CONN
DZ1804 6.8V-100PF 01005 ROOM=DOCK_B2B NO_XNET_CONNECTION=TRUE

FL1807 600-OHM-25%-0.28A-0.75OHM — CODEC_TO_HPHONE_HS4_REF → CODEC_TO_HPHONE_HS4_REF_CONN
DZ1809 6.8V-100PF 01005 ROOM=DOCK_B2B NO_XNET_CONNECTION=TRUE

FL1806 600-OHM-25%-0.28A-0.75OHM — CODEC_TO_HPHONE_HS3_REF → CODEC_TO_HPHONE_HS3_REF_CONN
DZ1807 6.8V-100PF 01005 ROOM=DOCK_B2B NO_XNET_CONNECTION=TRUE

FL1803 01005 1500OHM-25%-200MA-0.7DCR — AP_TO_HEADSET_HS3_CTRL → AP_TO_HEADSET_HS3_CTRL_CONN
C1808 100PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B

FL1802 01005 1500OHM-25%-200MA-0.7DCR — AP_TO_HEADSET_HS4_CTRL → AP_TO_HEADSET_HS4_CTRL_CONN
C1805 100PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B

CODEC TO HEADPHONE

L1801 FERR-33-OHM-0.8A-0.09-OHM 0201 ROOM=DOCK_B2B — CODEC_TO_HPHONE_L → CODEC_TO_HPHONE_L_CONN
DZ1811 6.8V-100PF 01005 ROOM=DOCK_B2B NO_XNET_CONNECTION=TRUE

L1802 FERR-33-OHM-0.8A-0.09-OHM — CODEC_TO_HPHONE_R → CODEC_TO_HPHONE_R_CONN
DZ1810 6.8V-100PF 01005 ROOM=DOCK_B2B NO_XNET_CONNECTION=TRUE

XW1813 SM — CODEC_MBUS_REF

ACCESSORY: VIBE DRIVE

FL1819 120-OHM-210MA — VIBE_DRIVE_P → VIBE_DRIVE_P_CONN
C1875 100PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B

FL1820 120-OHM-210MA — VIBE_DRIVE_N → VIBE_DRIVE_N_CONN
C1876 100PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B

USB VBUS

PP5V0_USB
C1834 220PF 10% 25V X7R-CERM 0201 ROOM=DOCK_B2B
C1833 56PF 5% 25V NP0-C0G-CERM 01005 ROOM=DOCK_B2B
C1812 100PF 5% 25V NP0-C0G 01005 ROOM=DOCK_B2B
C1817 0.1UF 10% 10V X5R 0201 ROOM=DOCK_B2B

SPEAKER: LEADS, VSENSE

FL1895 120-OHM-210MA — SPEAKER_TO_SPKAMP_VSENSE_P → SPEAKER_TO_SPKAMP_VSENSE_P_CONN
C1849 56PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B

FL1866 120-OHM-210MA — SPEAKER_TO_SPKAMP_VSENSE_N → SPEAKER_TO_SPKAMP_VSENSE_N_CONN
C1850 56PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B

SPKAMP_TO_SPEAKER_OUT_CONN_P
C1899 100PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B
DZ1814 12V-33PF 01005-1 NO_XNET_CONNECTION=TRUE ROOM=DOCK_B2B

SPKAMP_TO_SPEAKER_OUT_CONN_N
C1802 100PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B
DZ1813 12V-33PF 01005-1 NO_XNET_CONNECTION=TRUE ROOM=DOCK_B2B

TRISTAR

R1830 1.00K 5% 1/32W MF 01005 ROOM=DOCK_B2B — E75_TO_TRISTAR_CON_DETECT → E75_TO_TRISTAR_CON_DETECT_CONN
C1870 27PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B

FL1854 10-OHM-1.1A — PP_E75_TO_TRISTAR_ACC1 → PP_E75_TO_TRISTAR_ACC1_CONN
C1871 100PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B

FL1853 10-OHM-1.1A — PP_E75_TO_TRISTAR_ACC2 → PP_E75_TO_TRISTAR_ACC2_CONN
C1872 100PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B

MLB: 516S1281 (RCPT)

ROOM=DOCK_B2B J1817
24-5859-036-201-829
F-ST-SM

SPKAMP_TO_SPEAKER_OUT_CONN_P	1	2	SPKAMP_TO_SPEAKER_OUT_CONN_N
SPEAKER_TO_SPKAMP_VSENSE_P_CONN	3	4	SPEAKER_TO_SPKAMP_VSENSE_N_CONN
VIBE_DRIVE_N_CONN	5	6	VIBE_DRIVE_P_CONN
AP_TO_HEADSET_HS4_CTRL_CONN	7	8	CODEC_TO_HPHONE_L_CONN
AP_TO_HEADSET_HS3_CTRL_CONN	9	10	
HPHONE_TO_CODEC_DET_CONN	11	12	CODEC_TO_HPHONE_R_CONN
CODEC_TO_HPHONE_HS4_REF_CONN	13	14	CODEC_TO_HPHONE_HS3_REF_CONN
CODEC_TO_HPHONE_HS4_CONN	15	16	CODEC_TO_HPHONE_HS3_CONN
LOWERMIC1_TO_CODEC_N_CONN	17	18	LOWERMIC1_TO_CODEC_P_CONN
MIC1_BIASFILT_RET	19	20	PP_E75_TO_TRISTAR_ACC1_CONN
PP_CODEC_TO_MIC1_BIAS_CONN	21	22	
BB_GPIO3_CONN	23	24	90 TRISTAR_BI_E75_PAIR1_CONN_P
BB_GPIO2_CONN	25	26	90 TRISTAR_BI_E75_PAIR1_CONN_N
PP_BB_VDD_2V7_CONN	27	28	
BB_GPIO4_CONN	29	30	90 TRISTAR_BI_E75_PAIR2_CONN_N
E75_TO_TRISTAR_CON_DETECT_CONN	31	32	90 TRISTAR_BI_E75_PAIR2_CONN_P
BB_GPIO0_CONN	33	34	PP_E75_TO_TRISTAR_ACC2_CONN
	35	36	
PP5V0_USB	39	40	PP5V0_USB
	42		

ANTENNA

FL1880 120-OHM-210MA — PP_BB_VDD_2V7 → PP_BB_VDD_2V7_CONN
C1886 100PF 5% 16V NP0-C0G 01005 ROOM=BUTTON

FL1879 120-OHM-210MA — BB_GPIO0 → BB_GPIO0_CONN
C1885 56PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B

FL1875 120-OHM-210MA — BB_GPIO2 → BB_GPIO2_CONN
C1888 56PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B

FL1876 120-OHM-210MA — BB_GPIO3 → BB_GPIO3_CONN
C1806 56PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B

FL1877 120-OHM-210MA — BB_GPIO4 → BB_GPIO4_CONN
C1814 56PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B

SYNC_MASTER=N61_MLB SYNC_DATE=08/26/2013

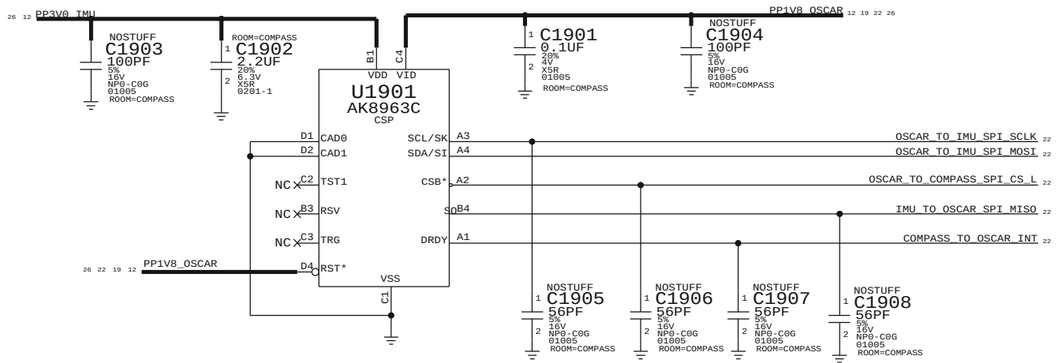
PAGE TITLE: IO:DOCK FLEX CONN

Apple Inc.

DRAWING NUMBER: 051-9903 SIZE: D
REVISION: 7.0.0
BRANCH:
PAGE: 18 OF 55
SHEET: 18 OF 54

COMPASS - AKM COMPASS IN POR LOCATION

COMPASS CSP: 338S1014



SYNC_MASTER=N61_MLB SYNC_DATE=08/26/2013

PAGE TITLE
SENSORS:COMPASS

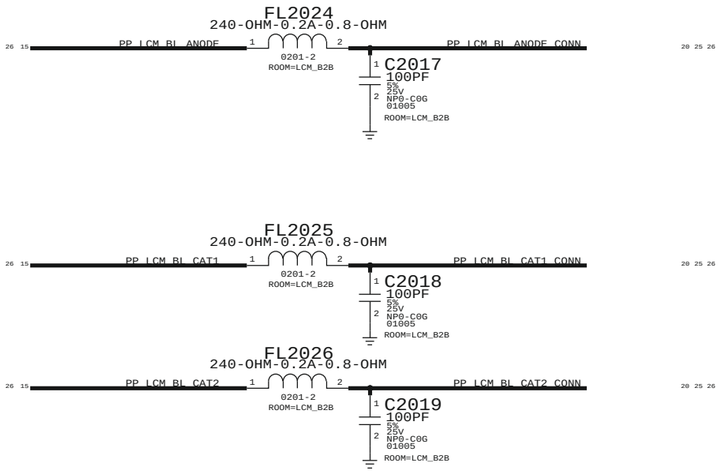
Apple Inc.

DRAWING NUMBER 051-9903 SIZE D
REVISION 7.0.0
BRANCH
PAGE 19 OF 55
SHEET 19 OF 54

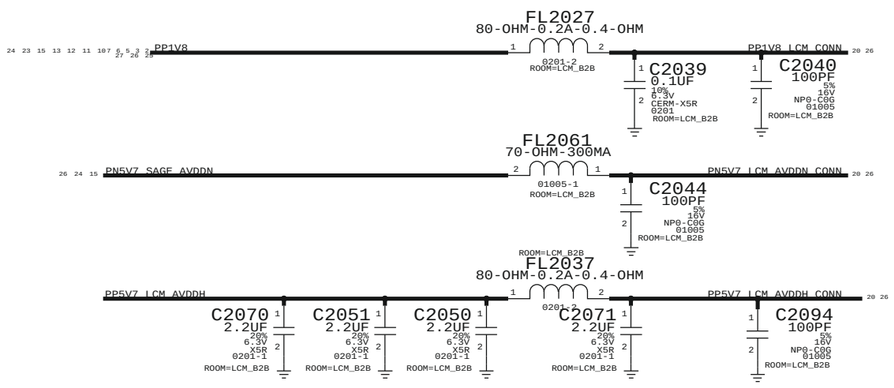
LCD B2B

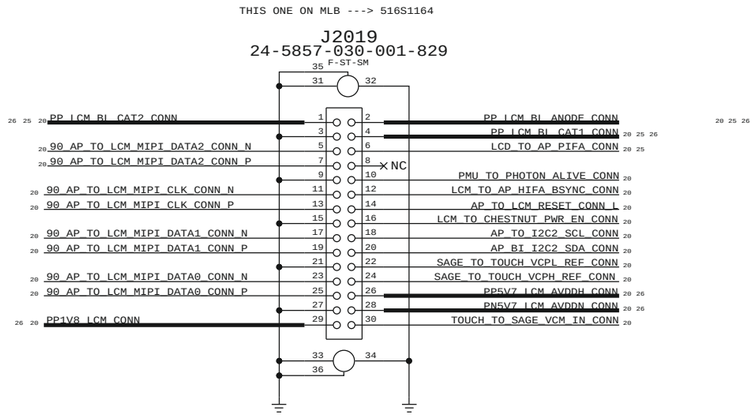
THIS ONE ON MLB ---> 516S1164

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

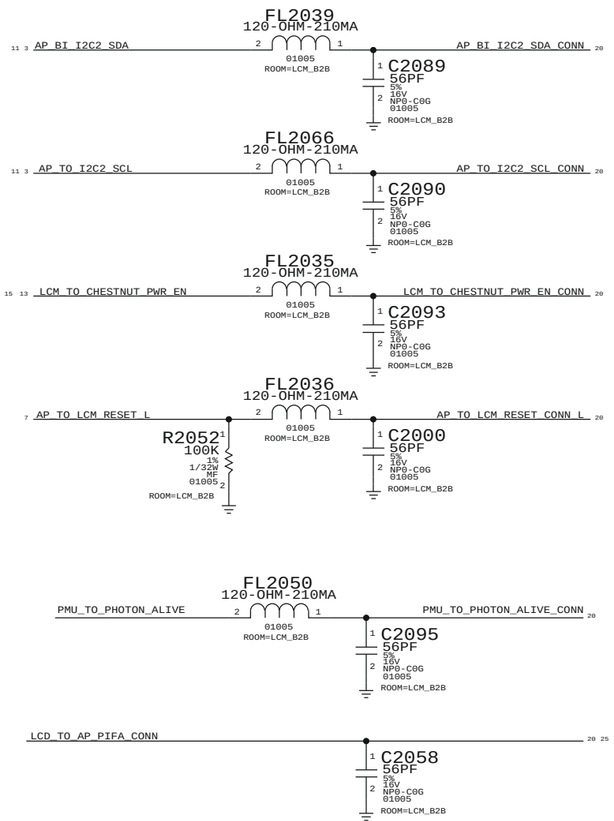


LCM Supplies

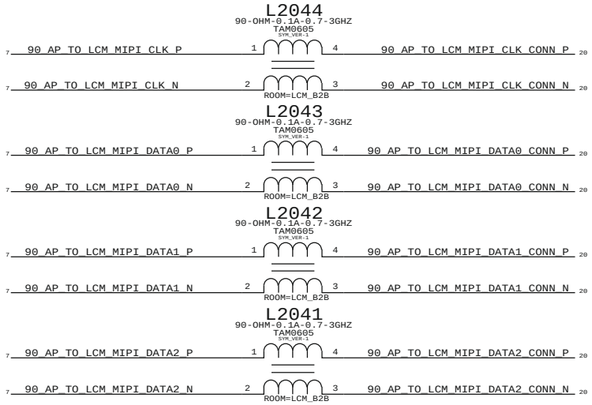




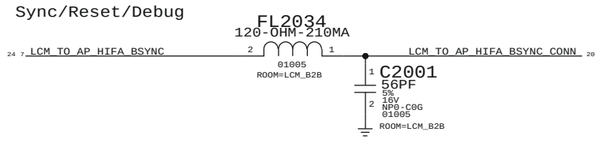
Digital Interfaces



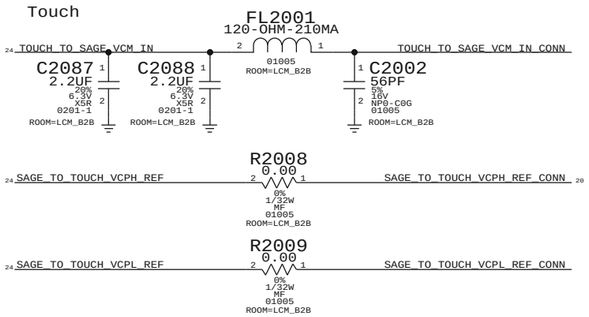
MIPI Common Mode Chokes
(N56 HAS A 4TH MIPI LANE ON P. 19).



Sync/Reset/Debug



Touch



SYNC_MASTER=N61_MLB SYNC_DATE=08/26/2013

PAGE TITLE

DISPLAY:FLEX CONN

Apple Inc.

DRAWING NUMBER 051-9903 SIZE D

REVISION 7.0.0

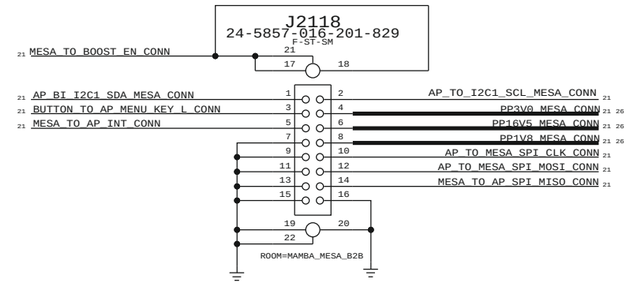
BRANCH

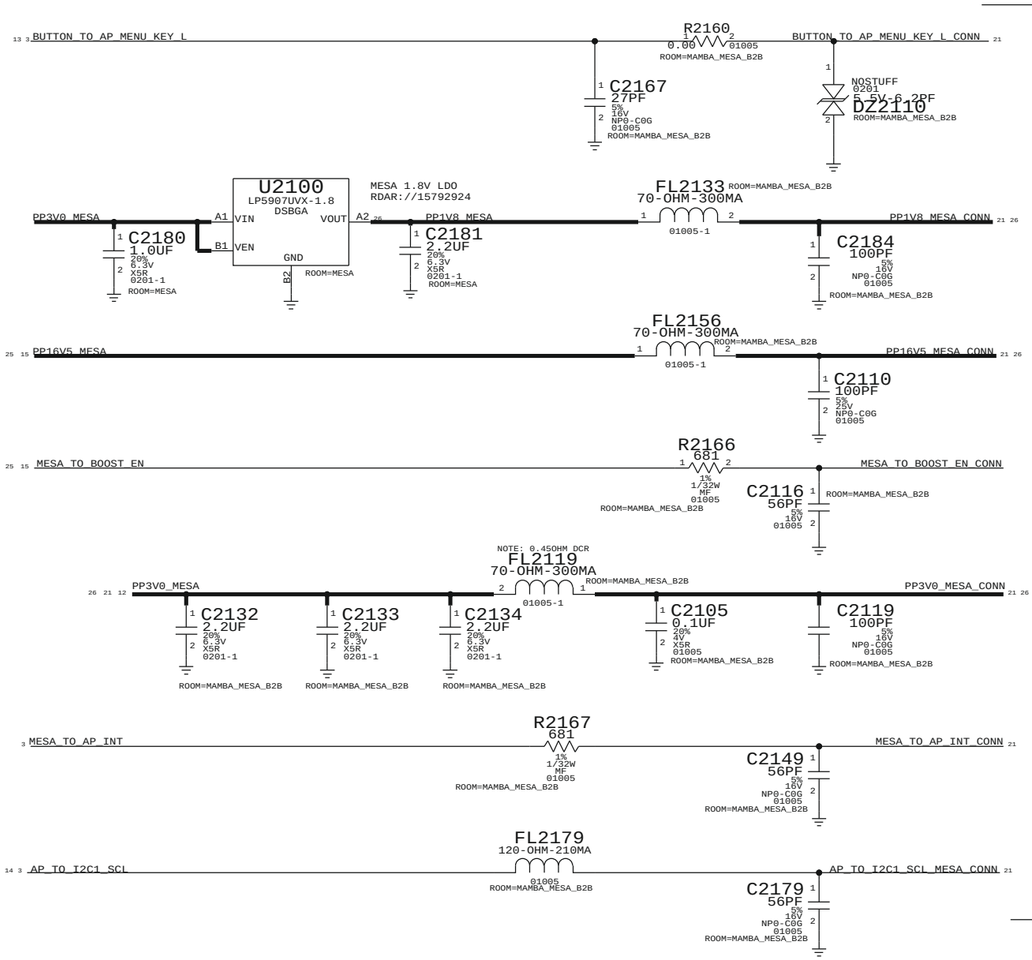
PAGE 20 OF 55

SHEET 20 OF 54

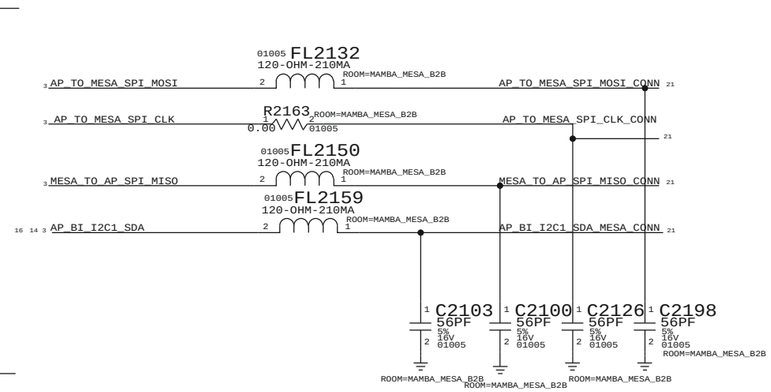
MESA CONNECTOR

MLB: 516S1278





MESA SENSOR:



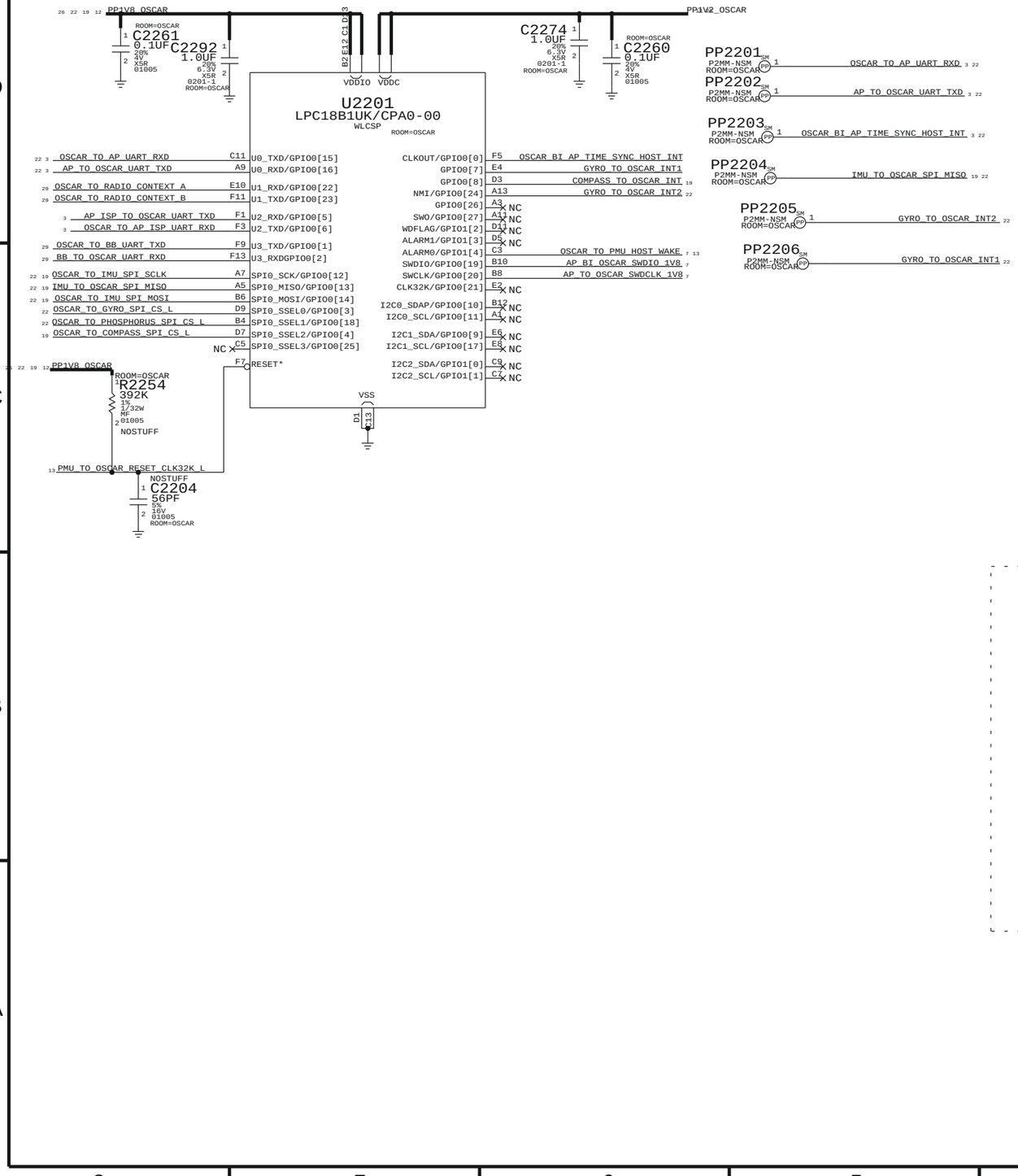
PAGE TITLE
SENSORS:MESA FLEX CONN

Apple Inc.

DRAWING NUMBER 051-9903 | SIZE D
REVISION 7.0.0
BRANCH
PAGE 21 OF 55
SHEET 21 OF 54

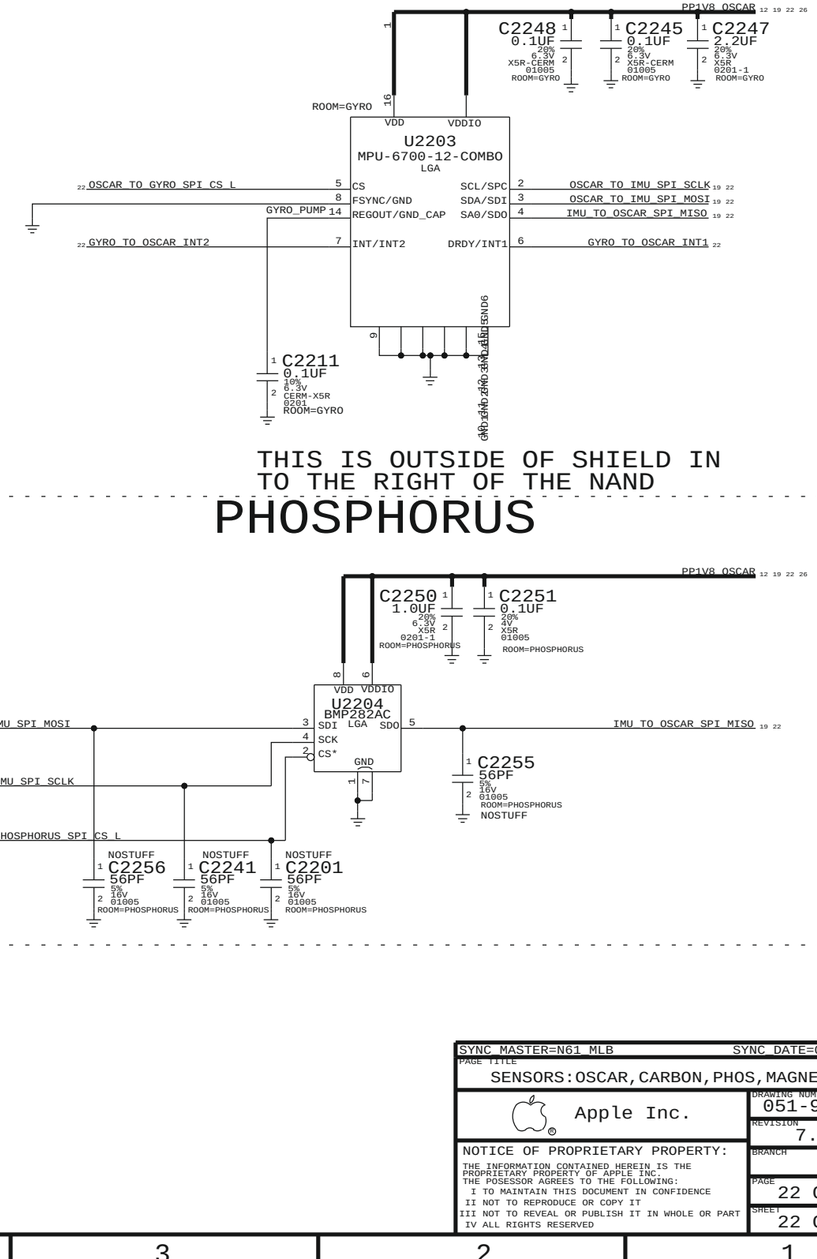
OSCAR + SENSORS

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

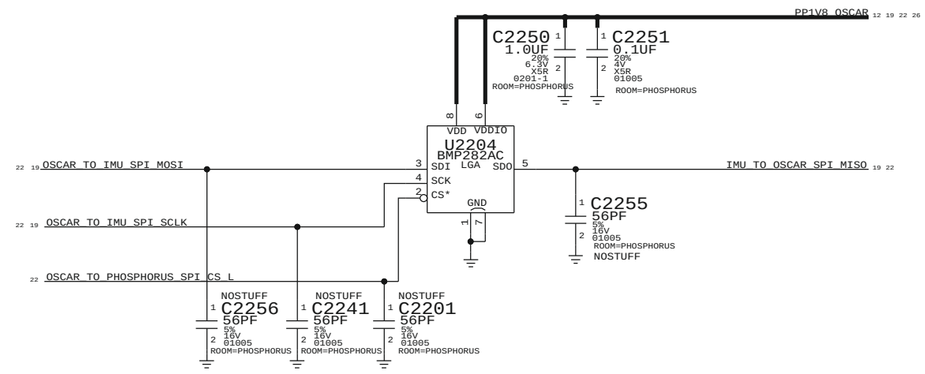


CARBON (ACCEL GYRO COMBO)

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



PHOSPHORUS



SYNC_MASTER=N61_MLB SYNC_DATE=08/26/2013

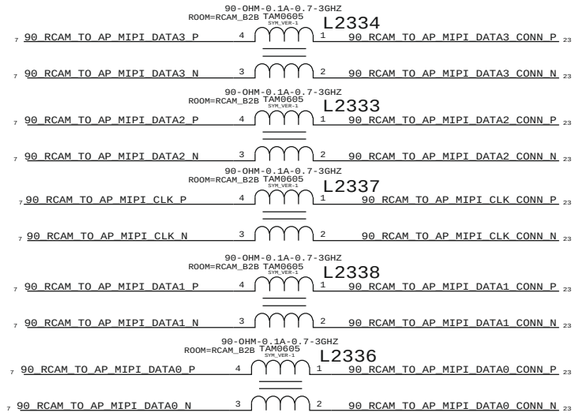
PAGE TITLE
SENSORS:OSCAR,CARBON,PHOS,MAGNESIUM

Apple Inc.

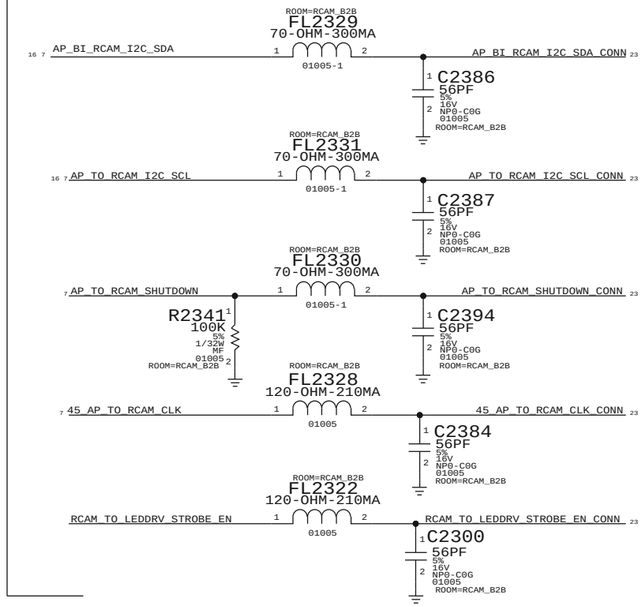
DRAWING NUMBER 051-9903 SIZE D
REVISION 7.0.0
BRANCH
PAGE 22 OF 55
SHEET 22 OF 54

RCAM B2B (REAR CAMERA CONNECTOR)

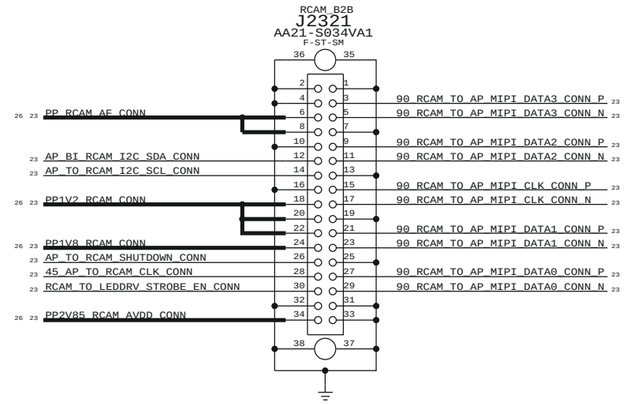
RCAM:
4-LANE MIPI



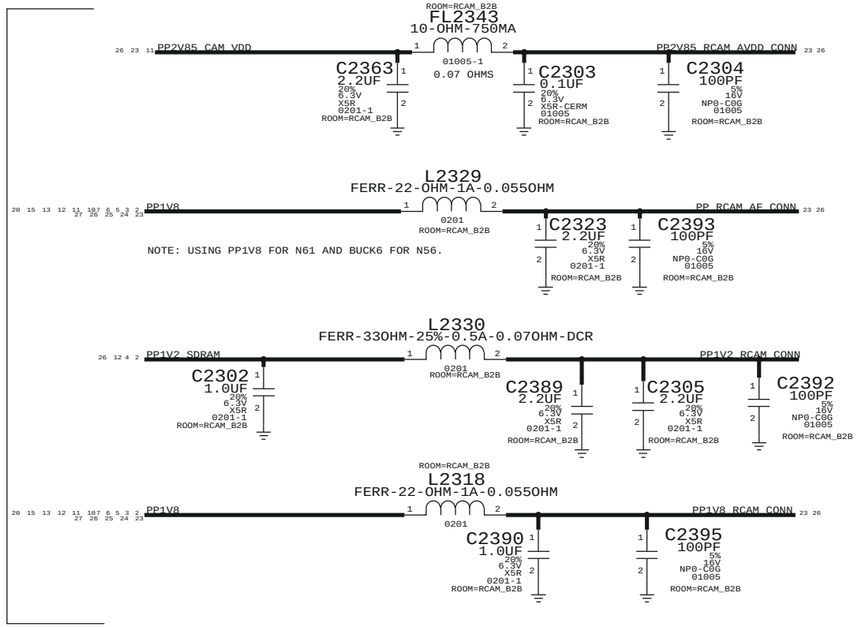
RCAM:
DIGITAL I/F
(I2C,CTRL,CLK)



THIS ONE ON MLB ---> 516S1174 PLUG

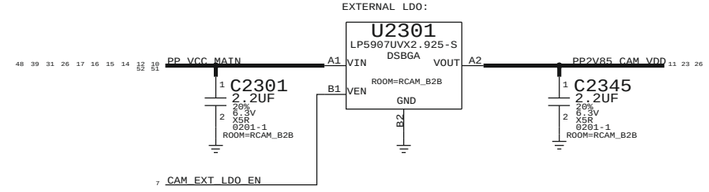


RCAM:
POWER:
(1.8V DVDD)
(2.8V AVDD)
(1.2V VCC)
(1.8V/2V AF)



RCAM/FCAM AVDD RAIL EXT. LDO:

EXTERNAL LDO:



SYNC_MASTER=N61_MLB SYNC_DATE=08/26/2013

PAGE TITLE
CAMERA:REAR FLEX CONN

Apple Inc.

DRAWING NUMBER 051-9903 SIZE D
REVISION 7.0.0
BRANCH
PAGE 23 OF 55
SHEET 23 OF 54

Touch (B2B, Driver ICs)

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

C2402 10UF 20% 10V X5R-CERM 0402-8
C2432 4.7UF 20% 6.3V X5R-CERM1 402
C2433 4.7UF 20% 6.3V X5R-CERM1 402
C2403 1.0UF 20% 6.3V X5R 0201-1

C2417 220PF 10V X7R-CERM 10% 01005
C2425 220PF 10V X7R-CERM 10% 01005
C2418 220PF 10V X7R-CERM 10% 01005
C2426 220PF 10V X7R-CERM 10% 01005
C2419 220PF 10V X7R-CERM 10% 01005
C2427 220PF 10V X7R-CERM 10% 01005
C2420 220PF 10V X7R-CERM 10% 01005
C2428 220PF 10V X7R-CERM 10% 01005
C2421 220PF 10V X7R-CERM 10% 01005
C2429 220PF 10V X7R-CERM 10% 01005
C2422 220PF 10V X7R-CERM 10% 01005
C2430 220PF 10V X7R-CERM 10% 01005

R2403 10.2 1% 1/32W MF 01005
R2405 100K 5% 1/32W MF 01005
R2407 100K 5% 1/32W MF 01005
R2488 255K 1% 1/32W MF 01005
R2495 255K 1% 1/32W MF 01005
R2406 100K 5% 1/32W MF 01005
R2412 0.00 5% 1/32W MF 01005
R2411 0.00 5% 1/32W MF 01005
R2433 0.00 1% 1/20W MF 0201

U2403 74AUP2G34GN SOT1115

J2401 AA21-S046VA1 F-ST-SM

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

No decoupling on previous designs

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

Optical prox filter

I2C pull-ups

R2420 1.8K 5% 1/32W MF 01005
R2421 1.8K 5% 1/32W MF 01005

C2401 1000PF 10% 6.3V X5R-CERM 01005
R2402 22.1K 1% 1/32W MF 01005
C2416 27PF 5% 16V NP0-C0G 01005

Touch probe points

PP2402 CUMULUS_TO_SAGE_BOOST_CLK_EN
PP2403 AP_TO_TOUCH_SPI_CS_L
PP2404 AP_TO_TOUCH_SPI_CLK
PP2405 LCM_TO_AP_HIFA_BSYNC
PP2408 TP_CUMULUS_GPIO
PP2410 CUMULUS_TO_MESON_VSTM_OUT_N
PP2411 CUMULUS_TO_MESON_VSTM_OUT_P
PP2412 45_AP_TO_TOUCH_CLK32K_RESET_L

MESON A1

APN: 343S0694

U2402 MESON-A1 CSP

C2414 10UF 20% 10V X5R-CERM 0402-8
C2409 10UF 20% 10V X5R-CERM 0402-8
C2415 0.1UF 20% 6.3V X5R-CERM 01005

C2439 0.1UF 20% 4V X5R 01005

R2410 220K 5% 1/32W MF 01005
R2434 0.00 0% 1/32W MF 01005
R2435 0.00 0% 1/32W MF 01005

Meson decoupling

C2438 0.33UF 20% 20V TANT 0402
C2410 1000PF 10% 25V X7R-CERM 0201
C2407 1UF-100HM 20% 25V TANT 0603-LLP2
C2411 1000PF 10% 25V X7R-CERM 0201
C2436 0.01UF 10% 6.3V X5R 01005
C2437 0.01UF 10% 6.3V X5R 01005
C2404 0.01UF 10% 25V X5R-CERM 0201
C2440 1.0UF 20% 10V X5R-CERM 0201

FL2486 10-OHM-750MA 0105-1

C2490 100PF 5% 25V NP0-C0G 01005
C2405 2.2UF 20% 25V X5R 0402-3
C2408 1UF 10% 16V X6S-CERM 0402
C2441 0.1UF 10% 16V X5R-CERM 0201

L2401 10UH-20%-0.23A-1.560HM PSB1614FE

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

Touch B2B

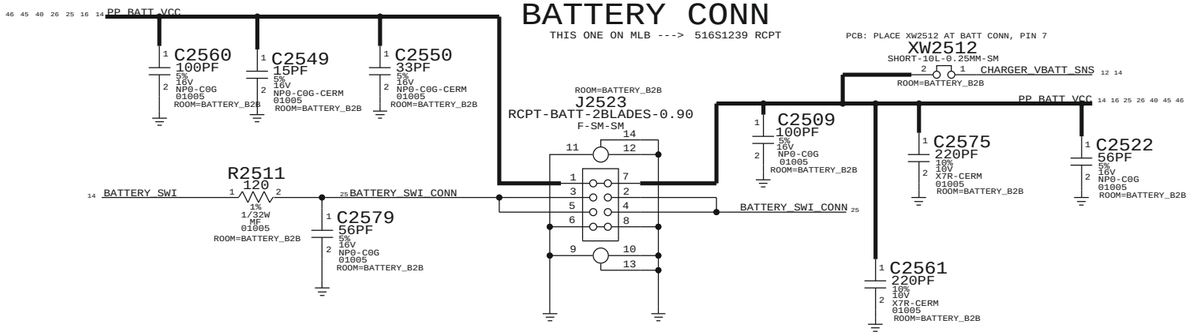
MLB APN : 516S1086 (Receptacle)
Flex APN: 516S1087 (Plug)

SYNC_MASTER=N/A	SYNC_DATE=N/A
PAGE TITLE	TOUCH:CUMULUS,MESON
Apple Inc.	DRAWING NUMBER 051-9903 SIZE D
	REVISION 7.0.0
	BRANCH
	PAGE 24 OF 55
	SHEET 24 OF 54

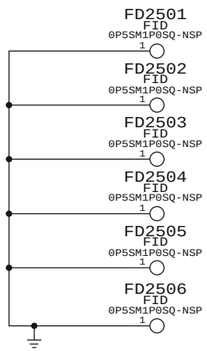
BATT CONN, TPS, STANDOFFS/SHIELDS/FIDUCIALS

BATTERY CONN

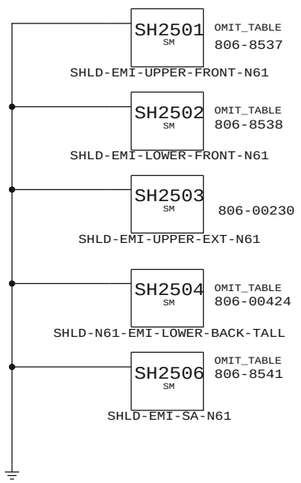
THIS ONE ON MLB ---> 516S1239 RCPT



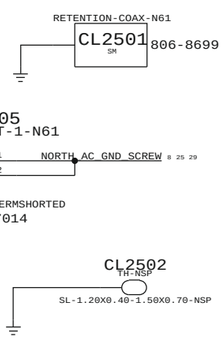
FIDUCIALS



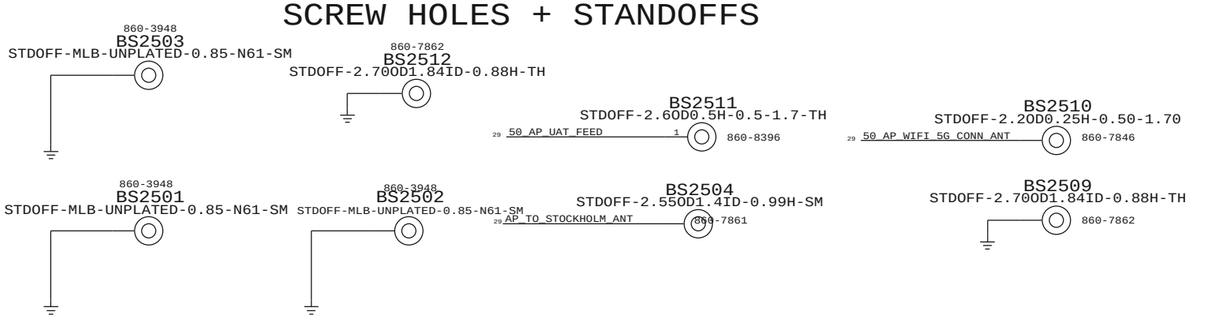
SHIELDS



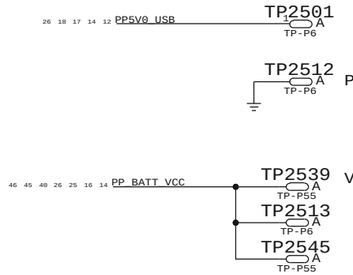
COWLING



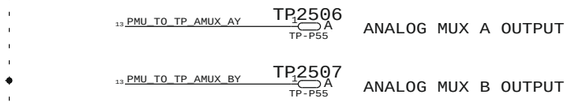
SCREW HOLES + STANDOFFS



POWER TP



SUPER TP

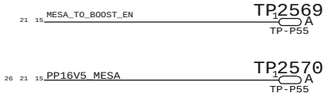


RESET

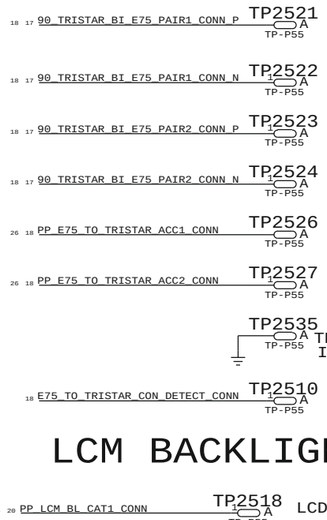
DFU

TESTPOINTS

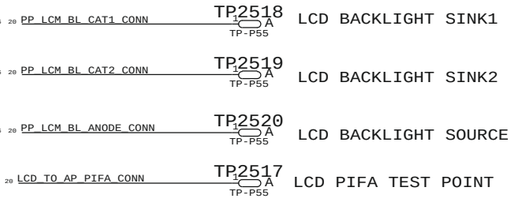
MOJAVE TP

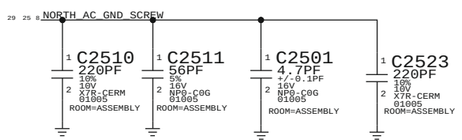


E75 - USB/UART/ID/POWER



LCM BACKLIGHT





SYNC_MASTER=N61_MLB SYNC_DATE=08/26/2013

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

Apple Inc.

DRAWING NUMBER: 051-9903 SIZE: D

REVISION: 7.0.0

BRANCH:

PAGE: 25 OF 55

SHEET: 25 OF 54

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_FCAM_CONN	11
I110	VOLTAGE=3.0V	PP2V85_FCAM_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_FCAM_VDDIO_CONN	11
I115	VOLTAGE=5.0V	PP5V0_USB	12 14 17 18 25
I114	VOLTAGE=5.0V	PP5V0_USB_TO_PMU	12
I116	VOLTAGE=4.6V	PP_BUCK5_LX0	12
I118	VOLTAGE=4.6V	PP_BUCK3_LX	12
I117	VOLTAGE=4.6V	PP_BUCK4_LX	12
I119	VOLTAGE=4.6V	PP_BUCK2_LX	12
I120	VOLTAGE=4.6V	PP_BUCK1_LX1	12
I121	VOLTAGE=4.6V	PP_BUCK1_LX0	12
I122	VOLTAGE=4.6V	PP_BUCK0_LX3	12
I123	VOLTAGE=4.6V	PP_BUCK0_LX2	12
I127	VOLTAGE=4.6V	PP_BUCK0_LX1	12
I124	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
I122	VOLTAGE=5.7V	PP5V7_SAGE_AVDDH	15 24
I120	VOLTAGE=5.7V	PP5V7_LCM_AVDDH	15 20
I129	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
I1	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
I143	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
I46	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
I30	VOLTAGE=13.5V	PP_SAGE_TO_TOUCH_VCPH	24
I29	VOLTAGE=-12V	PN_SAGE_TO_TOUCH_VCPL	24
I33	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
I142	VOLTAGE=5.0V	PMID_CAP	14
I141	VOLTAGE=5.0V	CHARGER_LDO	14
I140	VOLTAGE=4.6V	CHG_BOOT	14
I139	VOLTAGE=4.6V	CHG_LX	14
I106	VOLTAGE=3.0V	VIBE_DRIVE_P	14 18
I105	VOLTAGE=3.0V	VIBE_DRIVE_N	14 18
I102	VOLTAGE=1.8V	PP_RCAM_AF_CONN	23
I104	VOLTAGE=-14.0V	PN_SAGE_VRST_OUTL	24
I103	VOLTAGE=-12.0V	PN_SAGE_TO_TOUCH_VCPL_FILT	24
I101	VOLTAGE=2.7V	PP_BB_VDD_2V7_CONN	18

PAGE TITLE
SYSTEM:VOLTAGE PROPERTIES

Apple Inc.

DRAWING NUMBER 051-9903 | SIZE D
REVISION 7.0.0
BRANCH
PAGE 26 OF 55
SHEET 26 OF 54

N61 SPECIFIC

BOOTSTRAPPING (BOARD_REV, BOARD_ID, BOOT_CFG)

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

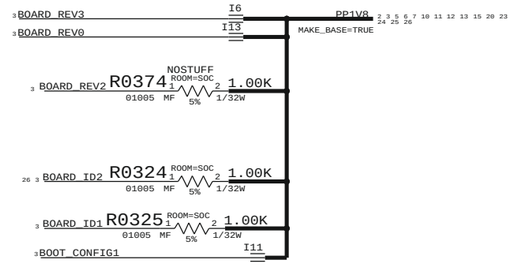
1111	PROTOMLB1
1110	PROTOMLB2
1101	PROTO1
1100	PROTO2
1011	EVT
1010	EVT SPLIT CARBON DOE
1001	CARRIER BUILD <--- SELECTED
1000	DVT

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

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

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

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



PAGE TITLE: SYSTEM:N61 SPECIFIC

Apple Inc.

DRAWING NUMBER: 051-9903 | SIZE: D

REVISION: 7.0.0

BRANCH:

PAGE: 27 OF 55

SHEET: 27 OF 54

8 7 6 5 4 3 2 1

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PAGE TITLE
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Apple Inc.

DRAWING NUMBER 051-9903
SIZE D
REVISION 7.0.0
BRANCH
PAGE 28 OF 55
SHEET 28 OF 54

8 7 6 5 4 3 2 1

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
3	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

PAGE TITLE
CELL:ALIASES

Apple Inc.

DRAWING NUMBER 051-9903 | SIZE D
REVISION 7.0.0
BRANCH
PAGE 30 OF 55
SHEET 29 OF 54

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
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

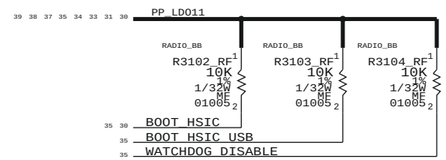
PP3141_RF — P4MM SM 1 — BB_UART_TXD — SIM_DEBUG — 29 35
PP3142_RF — P4MM SM 1 — BB_UART_RXD — SIM_DEBUG — 34 29 35
PP3143_RF — P4MM SM 1 — BB_UART_RTS_L — SIM_DEBUG — 29 35
PP3144_RF — P4MM SM 1 — BB_UART_CTS_L — SIM_DEBUG — 29 35
PP3145_RF — P4MM SM 1 — BB_HOST_RDY — SIM_DEBUG — 29 35
PP3146_RF — P4MM 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

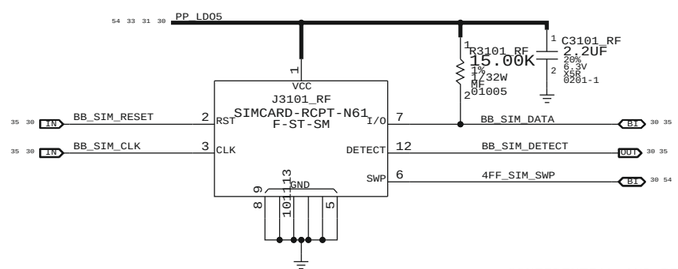
PP3166_RF — P4MM SM 1 — 90_WLAN_PCIE_RDN — WIFI_BT — 29 51
PP3167_RF — P4MM SM 1 — 90_WLAN_PCIE_RDP — WIFI_BT — 29 51
PP3168_RF — P4MM-NSM SM 1 — 90_WLAN_PCIE_TDN — WIFI_BT — 29 51
PP3169_RF — P4MM-NSM SM 1 — 90_WLAN_PCIE_TDP — WIFI_BT — 29 51

DIFF-PAIR PROBE POINTS LOCATED OPPOSITE DC-BLOCKS

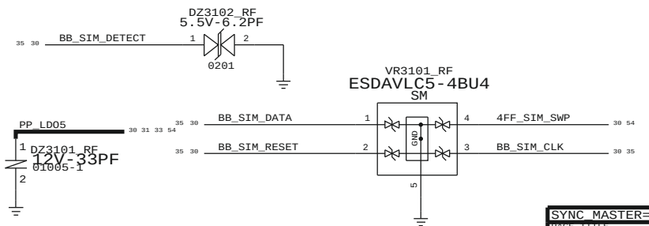
PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
197S0565	197S0593	ALTERNATE	Y3301_RF	KDS 19.2MHZ XTAL
197S0598	197S0593	ALTERNATE	Y3301_RF	AVX 19.2MHZ XTAL
138S00005	138S00003	ALTERNATE	C3216_RF	15UF CAPACITOR
138S0739	138S0706	ALTERNATE	C4207_RF	1.0UF CAPACITOR
138S0945	138S0706	ALTERNATE	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



SIM CARD CONNECTOR



SIM CARD ESD PROTECTION



XW3101_RF / XW3102_RF / XW3103_RF / XW3104_RF

SHORT-10L-0.1MM-SM

33 31 VREG_SMPS1_0V90 — 1 2 — ADC_SMPS1 OUT 29
38 37 35 34 33 31 30 39 PP_LDO11 — 1 2 — ADC_PP_LDO11 OUT 29
54 33 31 30 PP_LDO5 — 1 2 — ADC_PP_LDO5 OUT 29
31 VREG_SMPS4_2V075 — 1 2 — ADC_SMPS4 OUT 29

SYNC_MASTER=N/A SYNC_DATE=N/A
PAGE TITLE: AP INTERFACE & DEBUG CONNECTORS
Apple Inc.
DRAWING NUMBER: 051-9903 SIZE: D
REVISION: 7.0.0
BRANCH:
PAGE: 31 OF 55
SHEET: 30 OF 54

BASEBAND PMU (1 OF 2)

SWITCHERS OUTPUT CAPS

PP_VCC_MAIN

RADIO_PMIC C3270_RF 100PF 5% 16V NP0-C0G 01005
RADIO_PMIC C3224_RF 2.2UF 20% 6.3V X5R 0201-1
RADIO_PMIC C3223_RF 2.2UF 20% 6.3V X5R 0201-1
RADIO_PMIC C3222_RF 2.2UF 20% 6.3V X5R 0201-1
RADIO_PMIC C3216_RF 15UF 20% 6.3V X5R 0402-1
RADIO_PMIC C3251_RF 15UF 20% 6.3V X5R 0402-1

VREG_SMPS1_0V90

RADIO_PMIC C3229_RF 20UF 20% 6.3V CERM-X5R 0402
RADIO_PMIC C3231_RF 2.2UF 20% 6.3V X5R 0201-1
RADIO_PMIC C3233_RF 2.2UF 20% 6.3V X5R 0201-1
RADIO_PMIC C3235_RF 2.2UF 20% 6.3V X5R 0201-1
RADIO_PMIC C3249_RF 2.2UF 20% 6.3V X5R 0201-1
RADIO_PMIC C3251_RF 2.2UF 20% 6.3V X5R 0201-1
RADIO_PMIC C3259_RF 2.2UF 20% 6.3V X5R 0201-1
RADIO_PMIC C3268_RF 2.2UF 20% 6.3V X5R 0201-1

VREG_SMPS2_1V25

RADIO_PMIC C3237_RF 20UF 20% 6.3V CERM-X5R 0402
RADIO_PMIC C3238_RF 2.2UF 20% 6.3V X5R 0201-1
RADIO_PMIC C3242_RF 2.2UF 20% 6.3V X5R 0201-1
RADIO_PMIC C3244_RF 2.2UF 20% 6.3V X5R 0201-1
RADIO_PMIC C3253_RF 2.2UF 20% 6.3V X5R 0201-1
RADIO_PMIC C3255_RF 2.2UF 20% 6.3V X5R 0201-1
RADIO_PMIC C3258_RF 2.2UF 20% 6.3V X5R 0201-1
RADIO_PMIC C3261_RF 2.2UF 20% 6.3V X5R 0201-1
RADIO_PMIC C3262_RF 2.2UF 20% 6.3V X5R 0201-1

VREG_SMPS3_0V95

RADIO_PMIC C3236_RF 20UF 20% 6.3V CERM-X5R 0402
RADIO_PMIC C3232_RF 2.2UF 20% 6.3V X5R 0201-1
RADIO_PMIC C3234_RF 2.2UF 20% 6.3V X5R 0201-1
RADIO_PMIC C3236_RF 2.2UF 20% 6.3V X5R 0201-1
RADIO_PMIC C3250_RF 2.2UF 20% 6.3V X5R 0201-1
RADIO_PMIC C3252_RF 2.2UF 20% 6.3V X5R 0201-1
RADIO_PMIC C3257_RF 2.2UF 20% 6.3V X5R 0201-1

VREG_SMPS4_2V075

RADIO_PMIC C3238_RF 20UF 20% 6.3V CERM-X5R 0402
RADIO_PMIC C3240_RF 2.2UF 20% 6.3V X5R 0201-1
RADIO_PMIC C3241_RF 2.2UF 20% 6.3V X5R 0201-1
RADIO_PMIC C3243_RF 2.2UF 20% 6.3V X5R 0201-1
RADIO_PMIC C3254_RF 2.2UF 20% 6.3V X5R 0201-1
RADIO_PMIC C3256_RF 2.2UF 20% 6.3V X5R 0201-1

SWITCHERS BULK CAPS

PP_VCC_MAIN — VBATT_S1
RADIO_PMIC C3217_RF 15UF 20% 6.3V X5R 0402-1

PP_VCC_MAIN — VBATT_S2
RADIO_PMIC C3218_RF 15UF 20% 6.3V X5R 0402-1

PP_VCC_MAIN — VBATT_S3
RADIO_PMIC C3219_RF 15UF 20% 6.3V X5R 0402-1

PP_VCC_MAIN — VBATT_S4
RADIO_PMIC C3220_RF 15UF 20% 6.3V X5R 0402-1

AVDD_BYP
RADIO_PMIC C3226_RF 1.0UF 20% 10V X5R-CERM 0201-1

REF_BYP
RADIO_PMIC C3227_RF 0.1UF 20% 4V X5R 01005

VREG_RF_CLK_BYP
RADIO_PMIC C3228_RF 1.0UF 20% 10V X5R-CERM 0201-1

U_PMICRF PM8019 BGA SYM 5 OF 5 REG

VDD_INT_BYP	26
REF_BYP	21
GND_REF	15
VBATT_S1	22
VBATT_S2	88
VDD_S2	94
VBATT_S3	47
VBATT_S4	1
VREG_SMPS2_1V25	92
VREG_SMPS4_2V075	2
VREG_SMPS4_2V075	4
VDD_L9	77
VDD_L10	72
VREG_SMPS3_0V95	38
VREG_SMPS4_2V075	85
GND	49
MDM_VREF_LPDDR2	52
PP_VCC_MAIN	43
VDD_L12	54
VREG_RFCLK	91
VREG_XO	74
VREG_S1	27
VSW_S1_1	11
VSW_S1_2	16
VREG_S2	82
VSW_S2	93
VREG_S3	62
VSW_S3_1	53
VSW_S3_2	58
VREG_S4	23
VSW_S4_1	6
VSW_S4_2	12
VREG_L1	86
VREG_L2	7
VREG_L3	8
VREG_L4	68
VREG_L5	59
VREG_L6	48
VREG_L7	10
VREG_L8	3
VREG_L9	71
VREG_L10	83
VREG_L11	9
VREG_L12	33
VREG_L13	34
VREG_L14	28

VREG_XO_PMIC

PP_VSW_S1 — L3201_RF 2.2UH-20%-1.5A-0.160OHM MAKK2010-SM — VOLTAGE=4.50V — 1235MA — VREG_SMPS1_0V90
PP_VSW_S2 — L3203_RF 2.2UH-20%-1.5A-0.160OHM MAKK2010-SM — VOLTAGE=4.50V — 1100MA — VREG_SMPS2_1V25
PP_VSW_S3 — L3204_RF 2.2UH-20%-1.5A-0.160OHM MAKK2010-SM — VOLTAGE=4.50V — 1350MA — VREG_SMPS3_0V95
PP_VSW_S4 — L3202_RF 2.2UH-20%-1.2A-0.150HM 0806 — VOLTAGE=4.50V — 550MA — VREG_SMPS4_2V075

VREG_RX	VOLTAGE=1.225V	PP_LDO1
	VOLTAGE=1.80V	PP_LDO2
	VOLTAGE=1.80V	PP_LDO3
	VOLTAGE=3.075V	PP_LDO4
VREG_SIM	VOLTAGE=1.80V	PP_LDO5
	VOLTAGE=1.80V	PP_LDO6
	VOLTAGE=1.90V	PP_LDO7
VREG_TX	VOLTAGE=2.05V	PP_LDO8
	VOLTAGE=1.20V	PP_LDO9
	VOLTAGE=0.90V	PP_LDO10
VREG_IO	VOLTAGE=1.80V	PP_LDO11
	VOLTAGE=0.95V	PP_LDO12
	VOLTAGE=2.95V	PP_LDO13
	VOLTAGE=5.0V	PP_LDO14_RFSW

RADIO_PMIC C3201_RF 1.0UF 20% 10V X5R-CERM 0201-1
RADIO_PMIC C3202_RF 10UF 20% 6.3V CERM-X5R 0402-9
RADIO_PMIC C3203_RF 1.0UF 20% 10V X5R-CERM 0201-1
RADIO_PMIC C3204_RF 1.0UF 20% 10V X5R-CERM 0201-1
RADIO_PMIC C3205_RF 1.0UF 20% 10V X5R-CERM 0201-1
RADIO_PMIC C3206_RF 1.0UF 20% 10V X5R-CERM 0201-1
RADIO_PMIC C3207_RF 1.0UF 20% 10V X5R-CERM 0201-1
RADIO_PMIC C3208_RF 1.0UF 20% 10V X5R-CERM 0201-1
RADIO_PMIC C3209_RF 10UF 20% 6.3V CERM-X5R 0402-9
RADIO_PMIC C3210_RF 10UF 20% 6.3V CERM-X5R 0402-9
RADIO_PMIC C3211_RF 10UF 20% 6.3V CERM-X5R 0402-9
RADIO_PMIC C3212_RF 1.0UF 20% 10V X5R-CERM 0201-1
RADIO_PMIC C3213_RF 10UF 20% 6.3V CERM-X5R 0402-9
RADIO_PMIC C3214_RF 1.0UF 20% 10V X5R-CERM 0201-1
RADIO_PMIC C3215_RF 1.0UF 20% 10V X5R-CERM 0201-1

PAGE TITLE: BASEBAND PMU (1 OF 2)

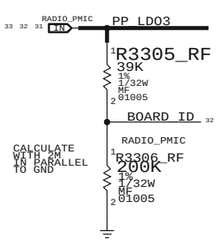
Apple Inc.

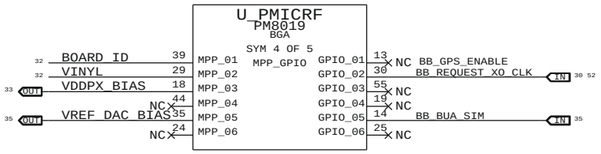
DRAWING NUMBER 051-9903 SIZE D
REVISION 7.0.0
BRANCH
PAGE 32 OF 55
SHEET 31 OF 54

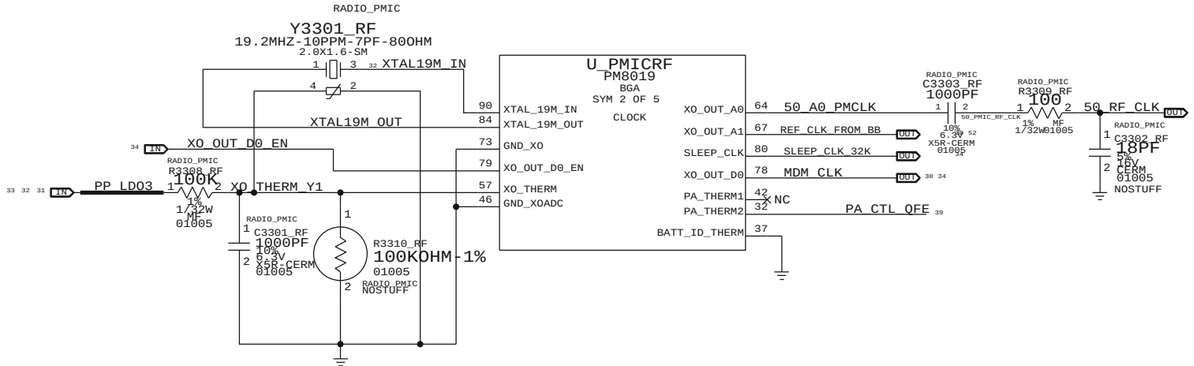
BASEBAND PMU (2 OF 2)

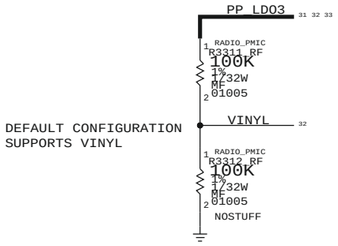
C401
R411
L400
U404

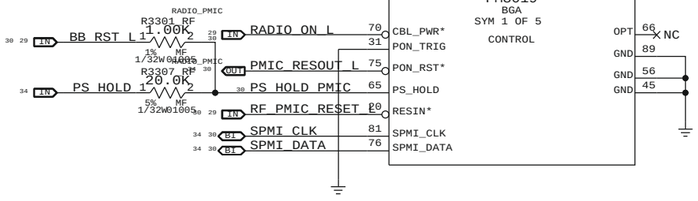
BOARD_ID	REVISION
0.00V	N61 PROTO_MLB1
0.50V	N61 DEV3
0.70V	N61 DEV4
0.90V	N61 PROTO_MLB2
1.10V	N61/N56 PROTO1
1.30V	N61/N56 PROTO2
1.40V	N61/N56 EVT1
1.50V	N61/N56 EVT2 (CARRIER)
1.60V	N61/N56 DVT
1.70V	N61/N56 PVT

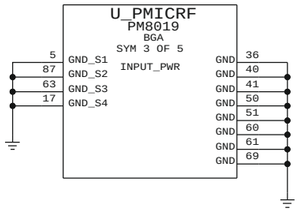












PAGE TITLE	BASEBAND PMU (2 OF 2)
Apple Inc.	DRAWING NUMBER 051-9903 SIZE D
	REVISION 7.0.0
	BRANCH
	PAGE 33 OF 55
	SHEET 32 OF 54

BASEBAND (1 OF 3)

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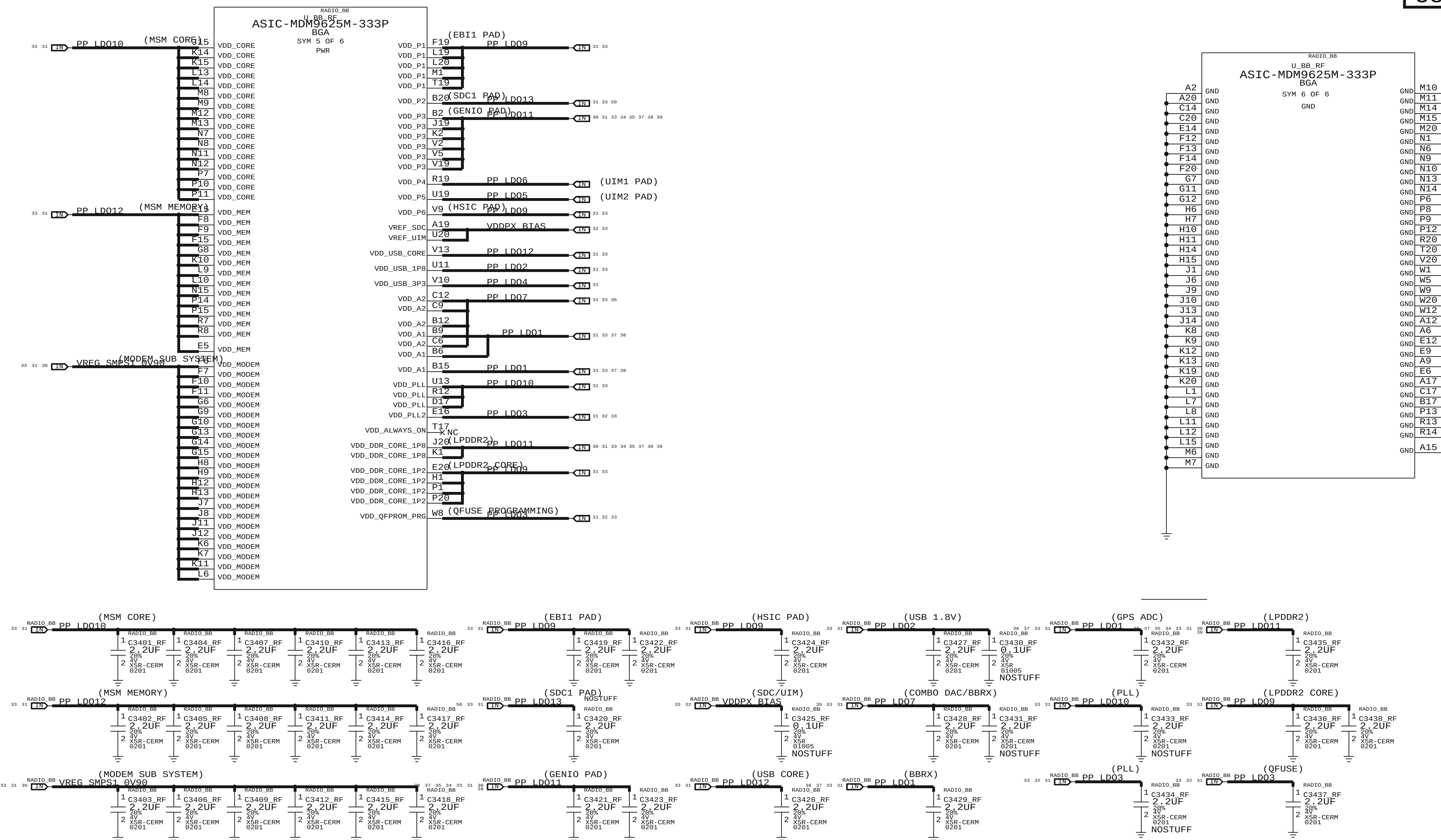
C538
R500
L500
U502



BASEBAND (1 OF 2)

Apple Inc.

DRAWING NUMBER 051-9903 SIZE D

REVISION 7.0.0

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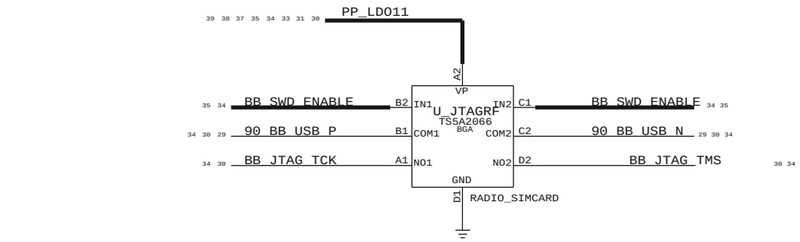
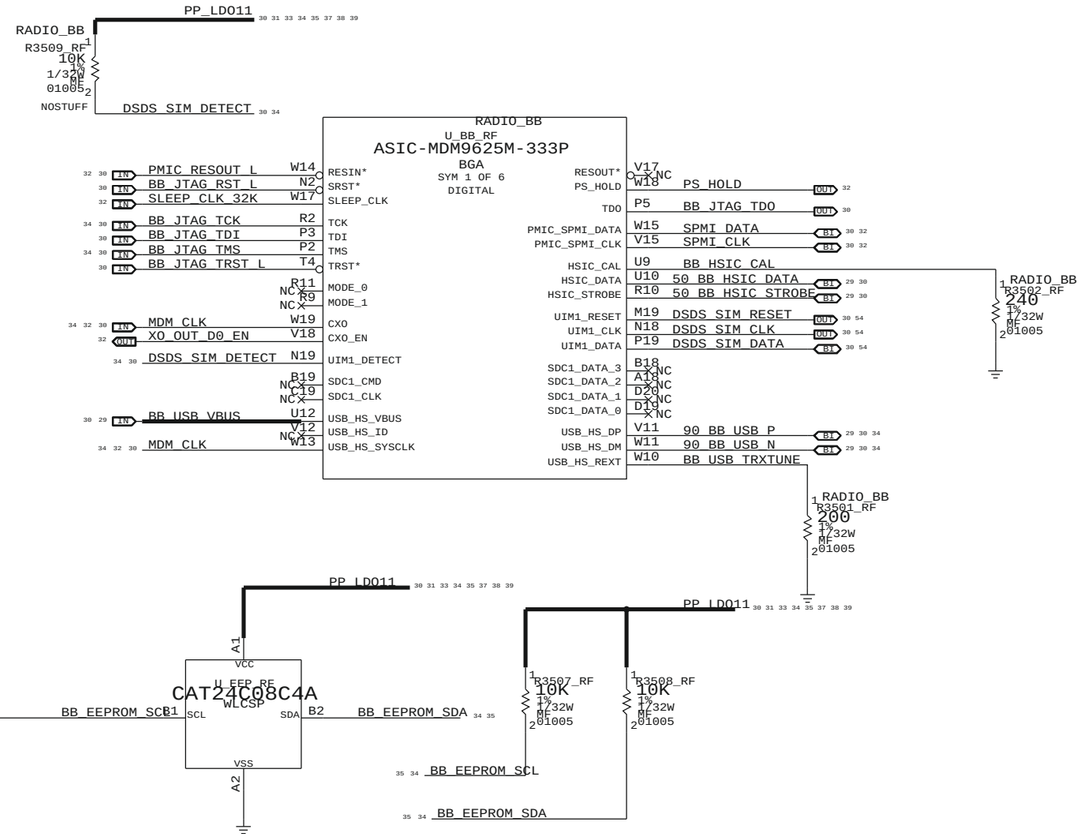
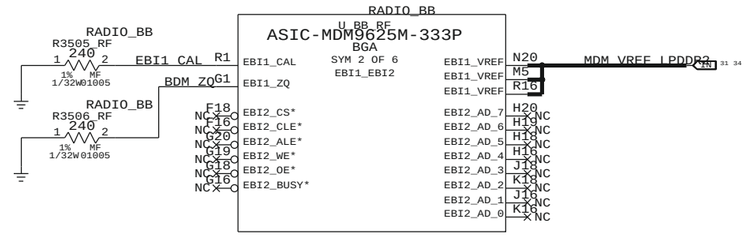
BASEBAND (2 OF 3)

C600
R606
L600
U602



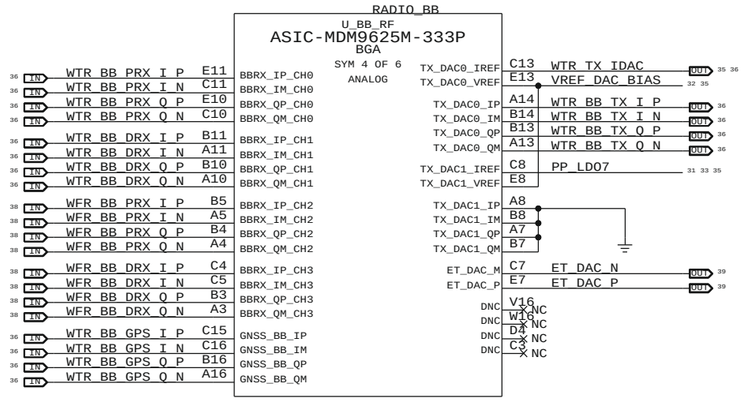


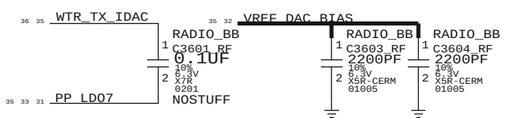


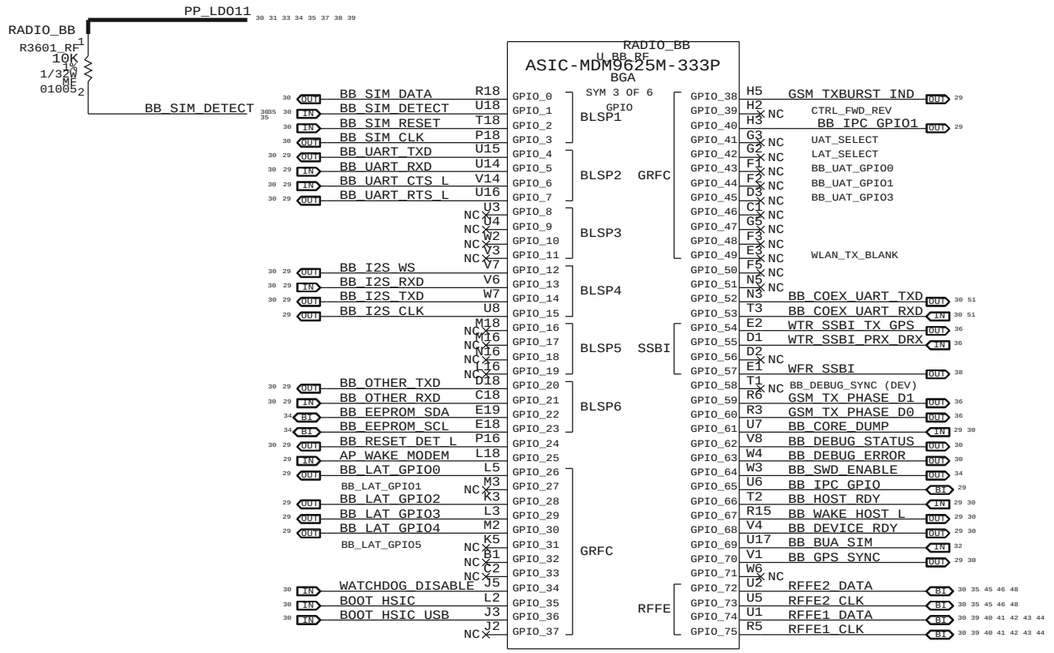
PAGE TITLE	BASEBAND (1 OF 2)
Apple Inc.	DRAWING NUMBER 051-9903 SIZE D
	REVISION 7.0.0
	BRANCH
	PAGE 35 OF 55
	SHEET 34 OF 54

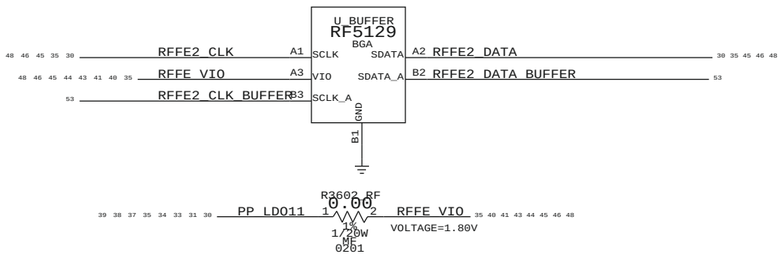
BASEBAND (3 OF 3)

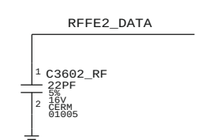
C704
R700
L700
U702











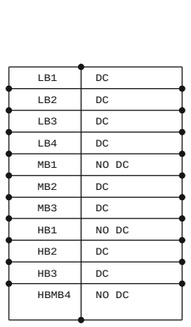
PAGE TITLE
MOBILE DATA MODEM (2 OF 2)

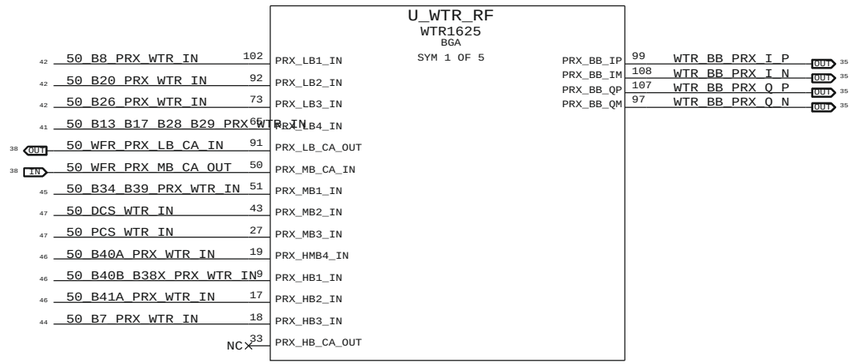
Apple Inc.

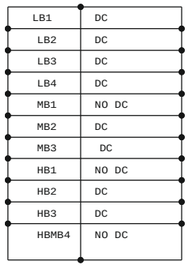
DRAWING NUMBER 051-9903 SIZE D
REVISION 7.0.0
BRANCH
PAGE 36 OF 55
SHEET 35 OF 54

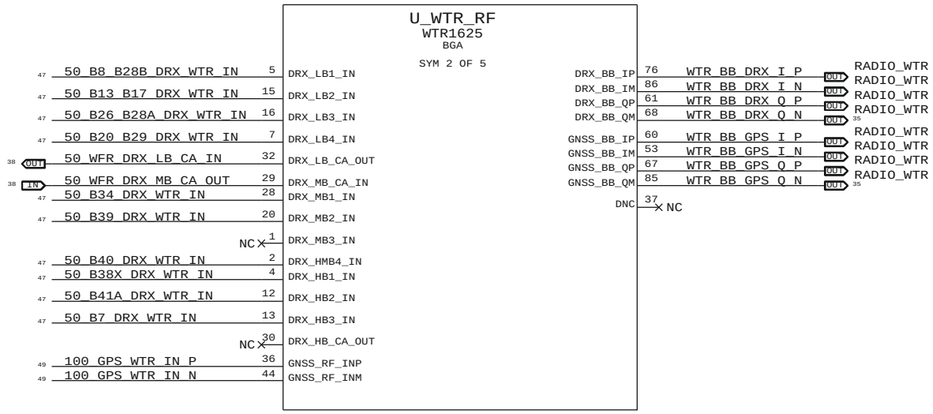
WTR TRANSCEIVER (1 OF 2)

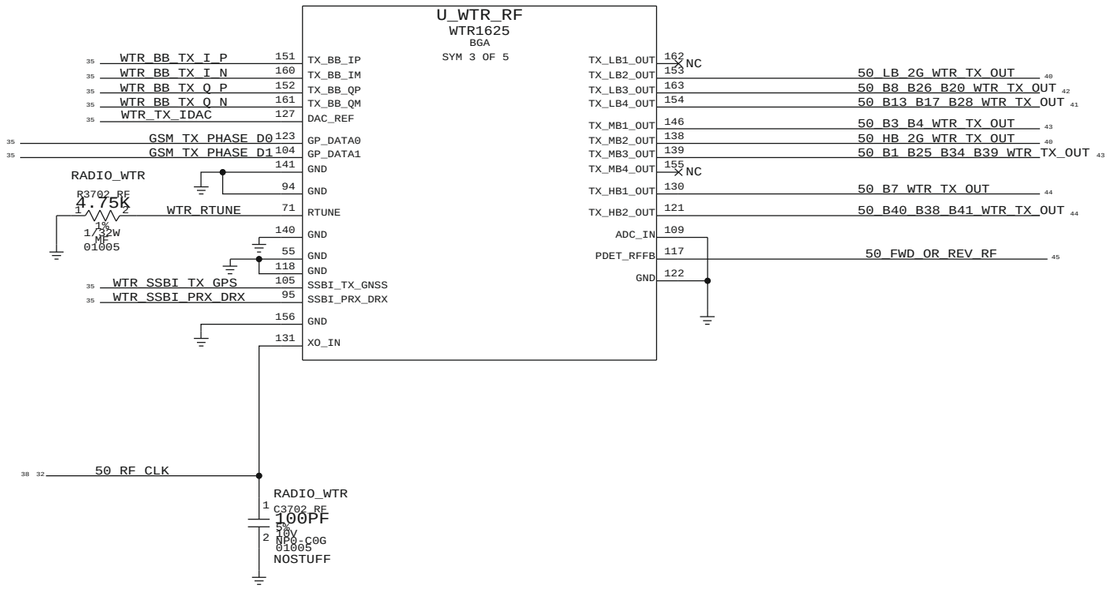
C802
R802
L800
U803











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

DRAWING TITLE
RF TRANSCEIVER (1 0F 3)

Apple Inc.

DRAWING NUMBER 051-9903
SIZE D
REVISION 7.0.0
BRANCH
PAGE 37 OF 55
SHEET 36 OF 54

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 → RADIO_WTR C3801_RF 10UF 20% 6.3V CERM-X5R 0402
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_TX_BBF_2V → C3814_RF 100PF 5% 16V NP0-C0G 01005 NOSTUFF
VDD_PRX_BB_2V
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
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

VREG_1P3V (MAKE_BASE=TRUE) → RADIO_WTR C3808_RF 10UF 20% 6.3V CERM-X5R 0402
VDD_PRX_LO_HB_1P3V → C3830_RF 0.1UF 20% 4V X5R 01005
VDD_DRX_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 (MAKE_BASE=TRUE) → 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	GND	145
58 GND	GND	144
35 GND	GND	143
8 GND	GND	128
26 GND	GND	120
64 GND	GND	119
42 GND	GND	106
41 GND	GND	150
81 GND	GND	134
21 GND	GND	159
6 GND	GND	142
24 GND	GND	125
39 GND	GND	124
10 GND	GND	148
3 GND	GND	158
23 GND	GND	133
46 GND	GND	112
49 GND	GND	132
69 GND	GND	45
88 GND	GND	66
70 GND	GND	84
63 GND	GND	75
40 GND	GND	164
47 GND		
87 GND		
77 GND		
96 GND		

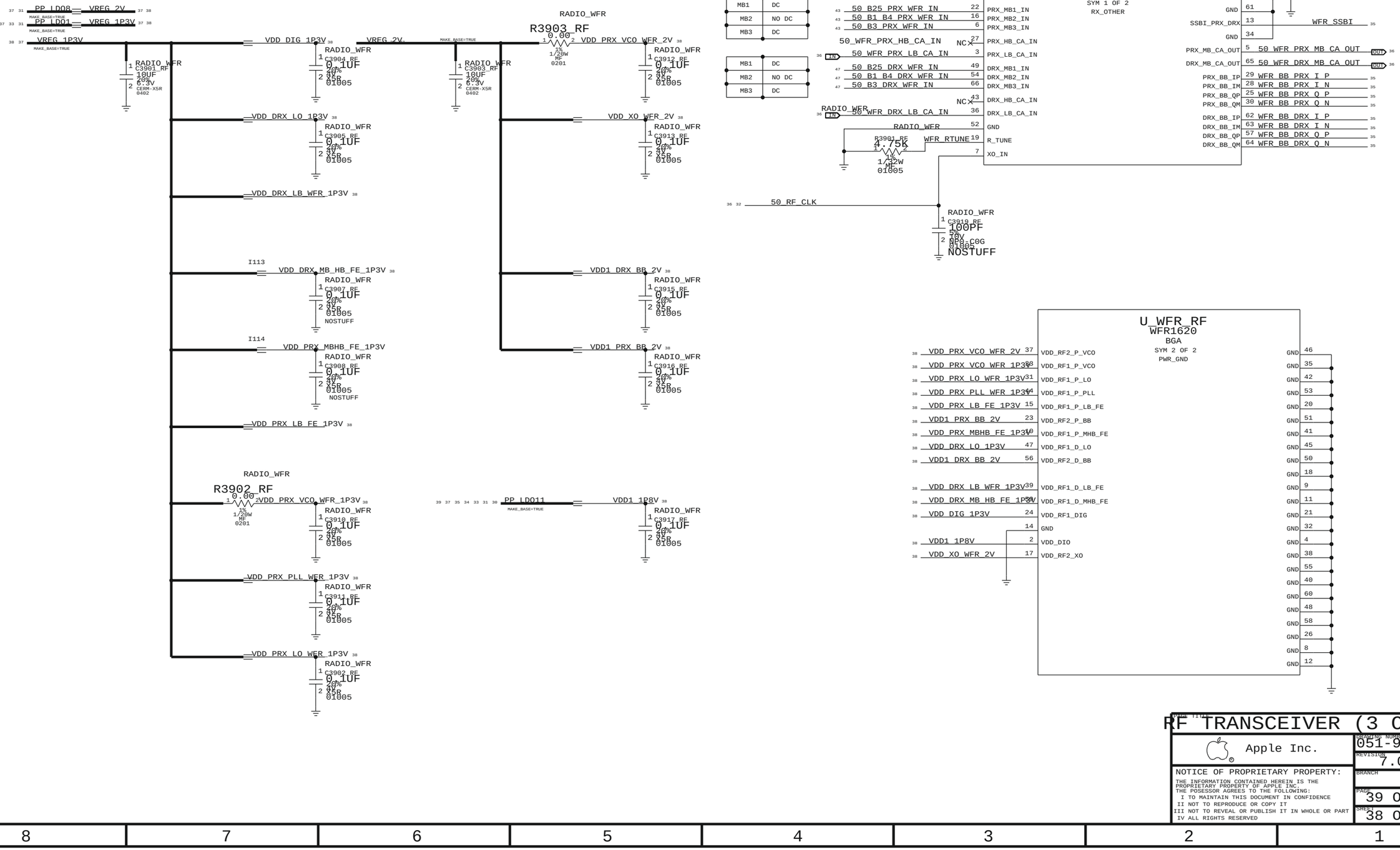
PAGE TITLE
RF TRANSCEIVER (2 OF 3)

Apple Inc.

DRAWING NUMBER 051-9903 SIZE D
REVISION 7.0.0
BRANCH
PAGE 38 OF 55
SHEET 37 OF 54

WFR TRANSCEIVER

C1019
R1016
L1000
U1002



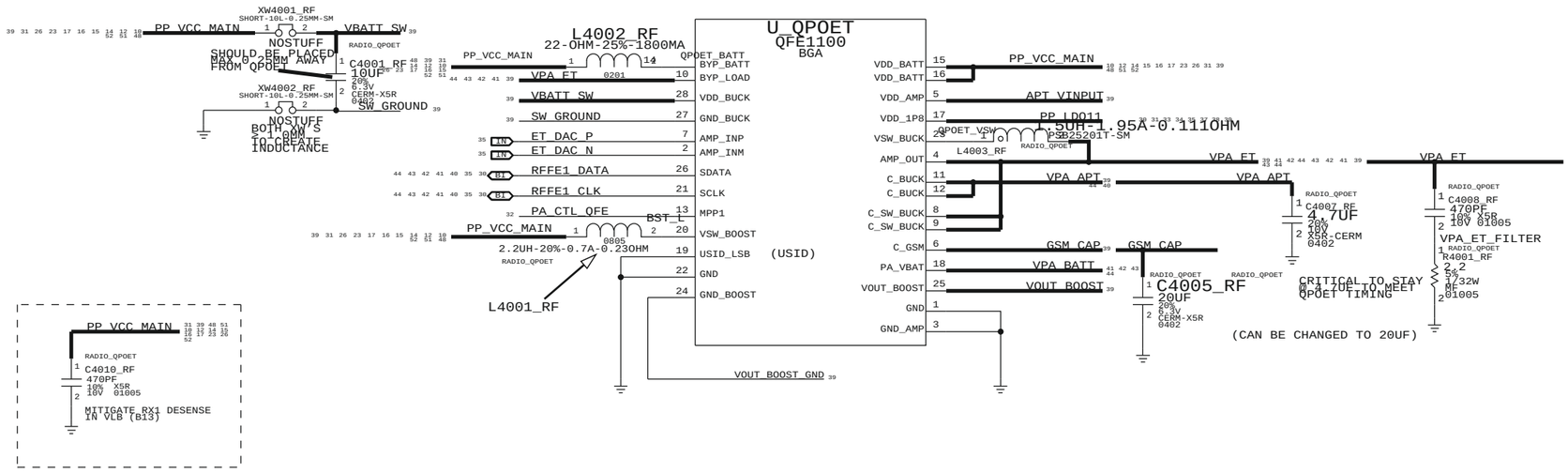
PAGE TITLE
RF TRANSCEIVER (3 OF 3)

Apple Inc.

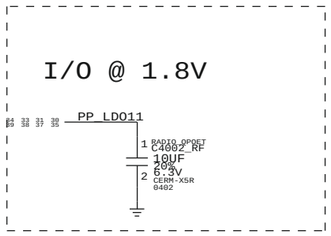
DRAWING NUMBER 051-9903 SIZE D
REVISION 7.0.0
BRANCH
PAGE 39 OF 55
SHEET 38 OF 54

QFE DCDC

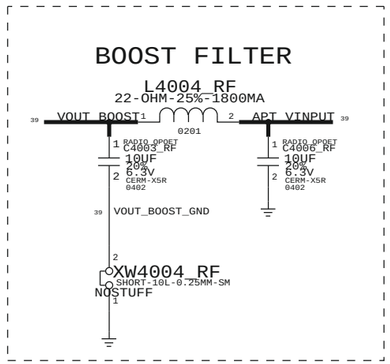
C1110
R1102
L1104
U1101



I/O @ 1.8V



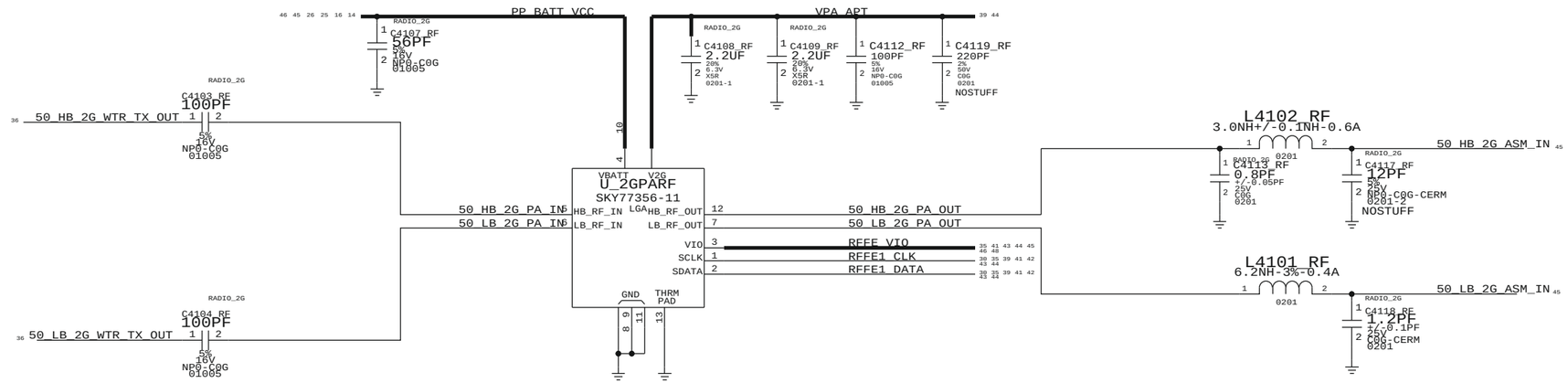
BOOST FILTER



PAGE TITLE	QFE DCDC
	Apple Inc.
DRAWING NUMBER	051-9903
SIZE	D
REVISION	7.0.0
BRANCH	
PAGE	40 OF 55
SHEET	39 OF 54

2G PA

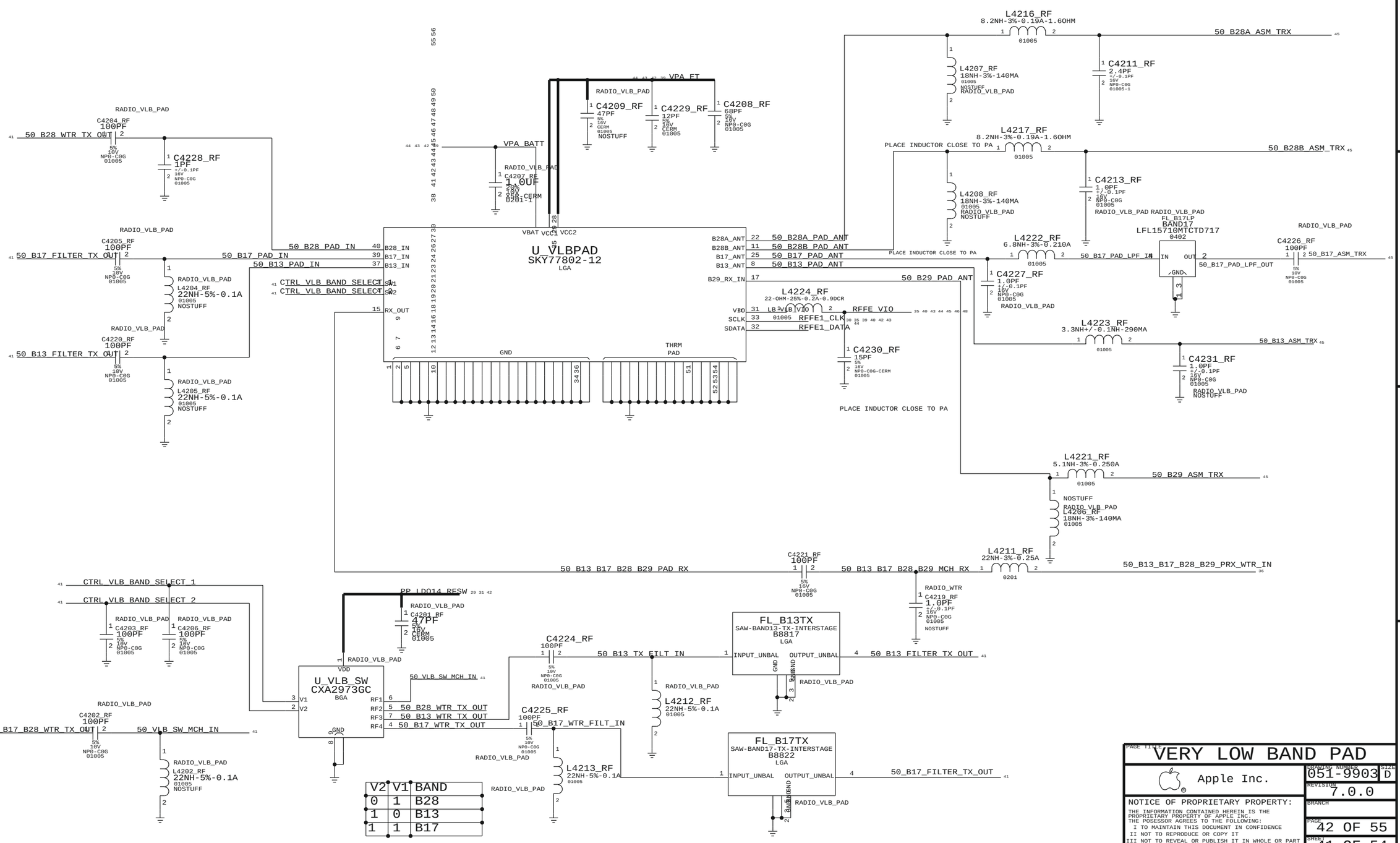
C1208
R1200
L1204
U1201



PAGE TITLE	2G PA
	Apple Inc.
DRAWING NUMBER	051-9903
SIZE	D
REVISION	7.0.0
BRANCH	
PAGE	41 OF 55
SHEET	40 OF 54

VERY LOW BAND PAD (B13, B17, B28)

C1332
R1300
L4215_RF
U1304



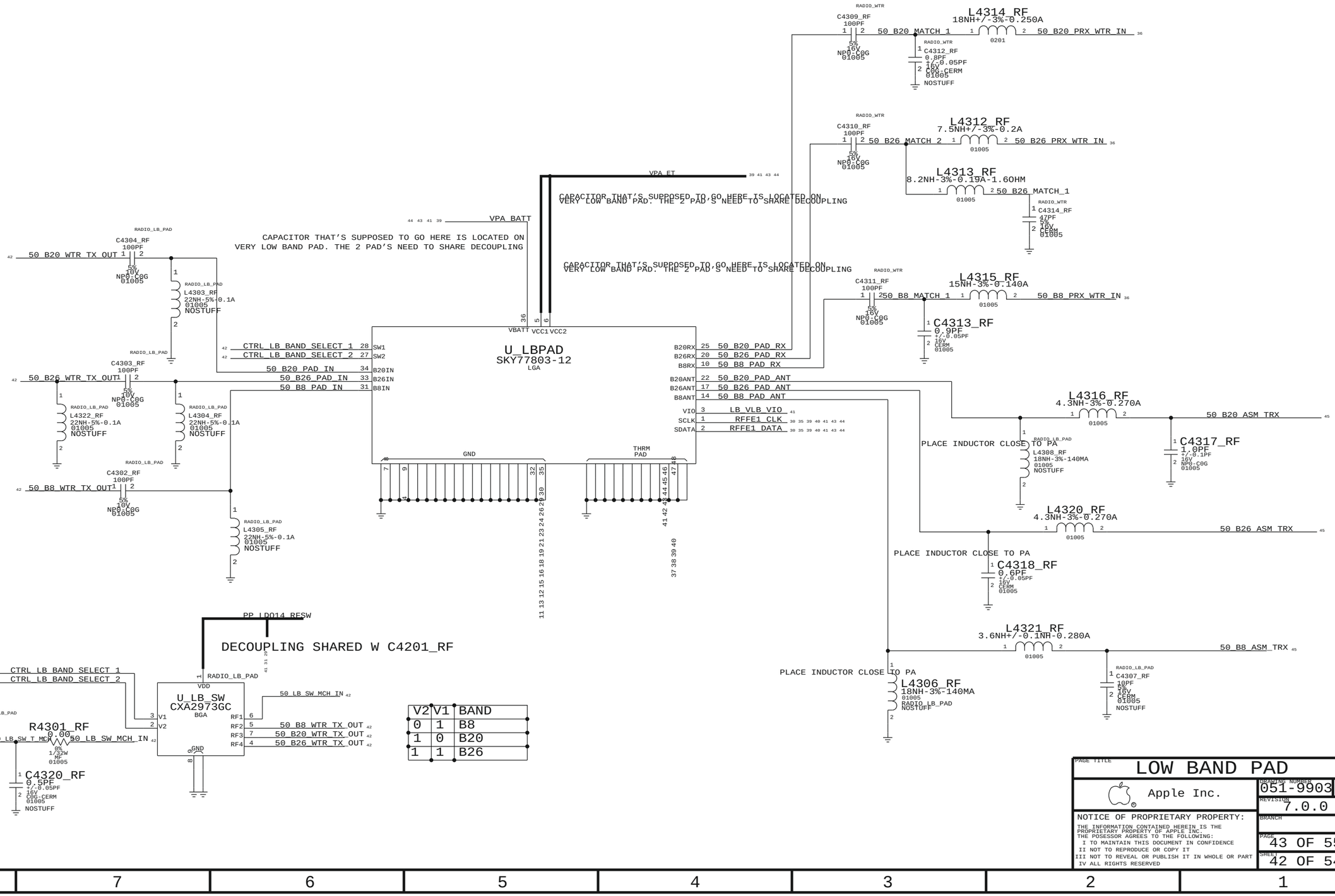
PAGE TITLE: VERY LOW BAND PAD

Apple Inc.

DRAWING NUMBER: 051-9903 SIZE: D
REVISION: 7.0.0
BRANCH:
PAGE: 42 OF 55
SHEET: 41 OF 54

LOW BAND PAD (B8, B26, B20)

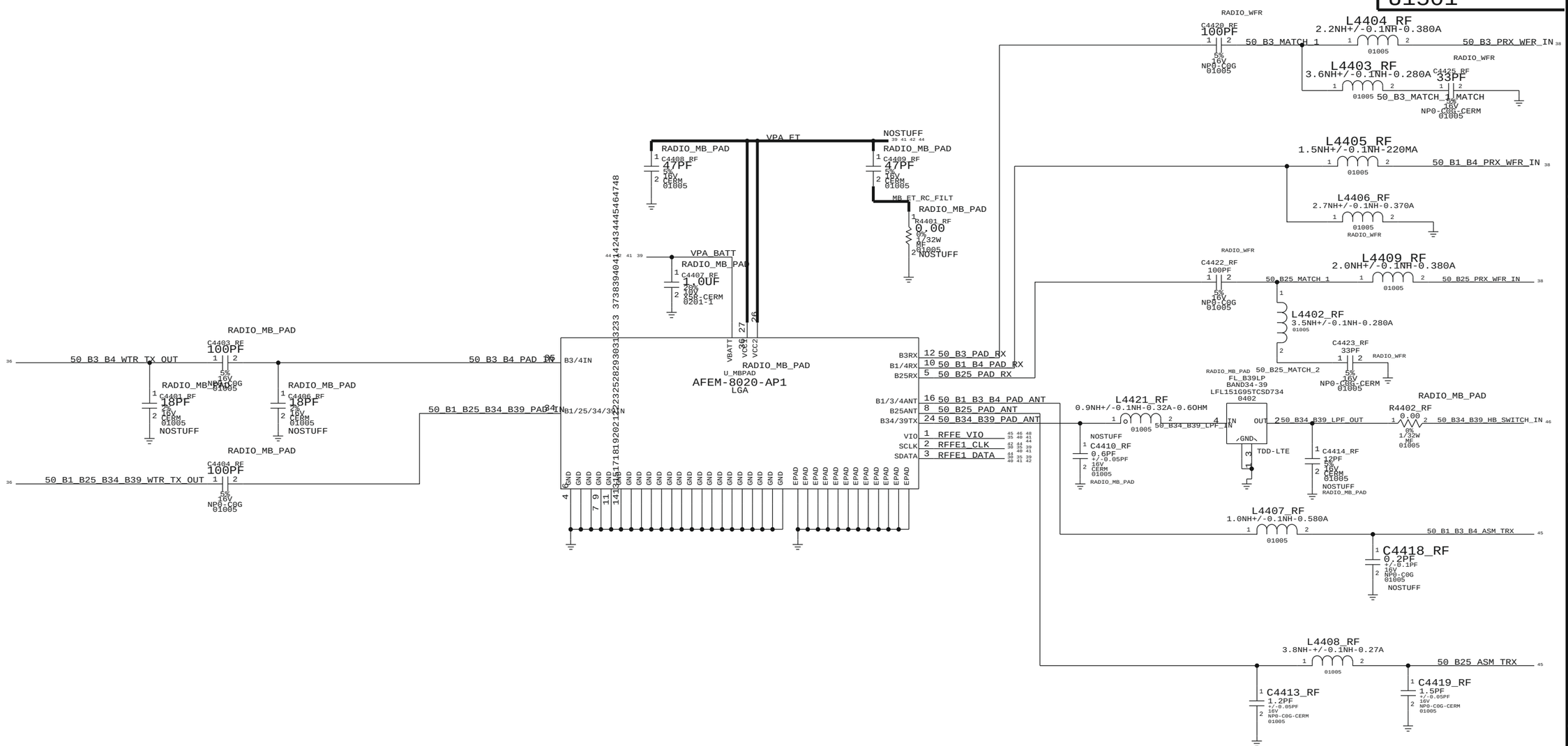
C4318_RF
R1400
L4322_RF
U1402



PAGE TITLE	LOW BAND PAD	
Apple Inc.	DRAWING NUMBER 051-9903	SIZE D
	REVISION 7.0.0	
	BRANCH	
	PAGE 43 OF 55	
	SHEET 42 OF 54	

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

C4426_RF
R1500
L4409_RF
U1501



8	7	6	5	4	3	2	1

PAGE TITLE: MID BAND PAD

Apple Inc.

DRAWING NUMBER: 051-9903 | SIZE: D

REVISION: 7.0.0

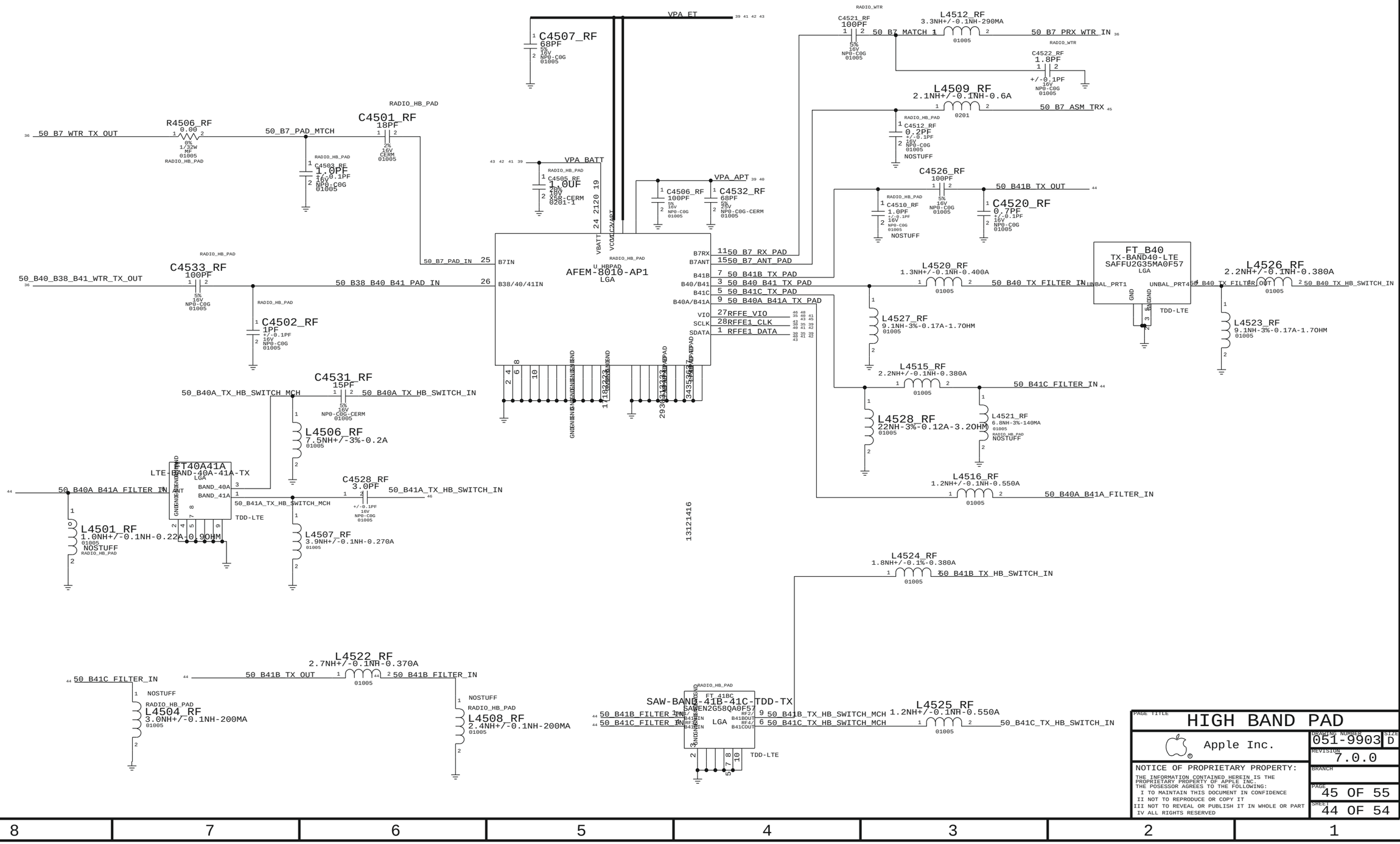
BRANCH:

PAGE: 44 OF 55

SHEET: 43 OF 54

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

C4533_RF
R1600
L1616
U1601



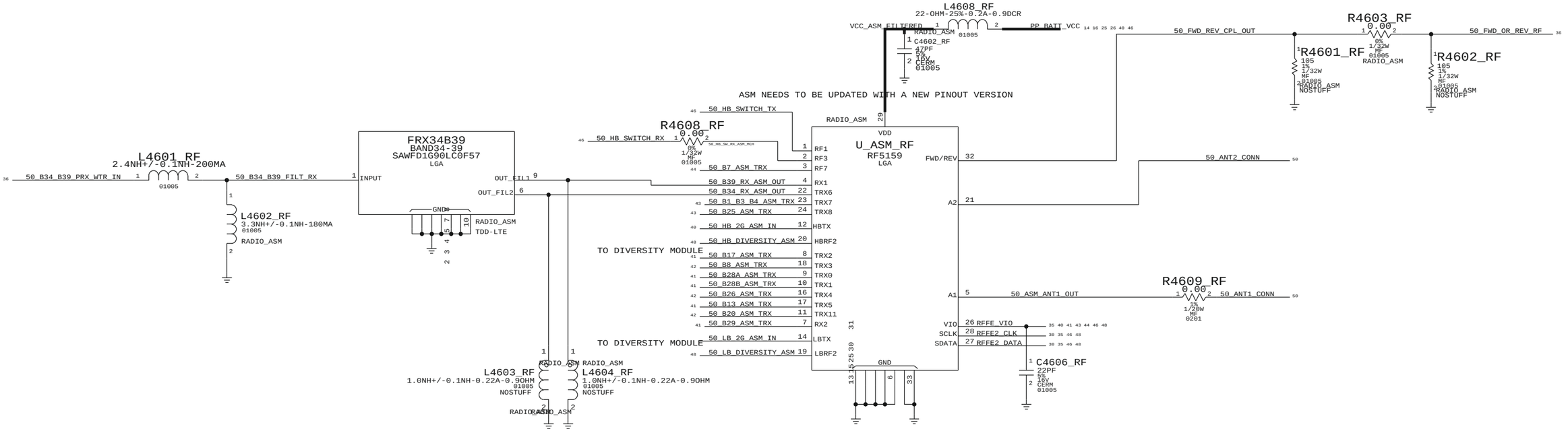
PAGE TITLE: HIGH BAND PAD

Apple Inc.

DRAWING NUMBER: 051-9903 SIZE: D
REVISION: 7.0.0
BRANCH:
PAGE: 45 OF 55
SHEET: 44 OF 54

ANTENNA SWITCH

C1702
R1700
L4608_RF
U1702

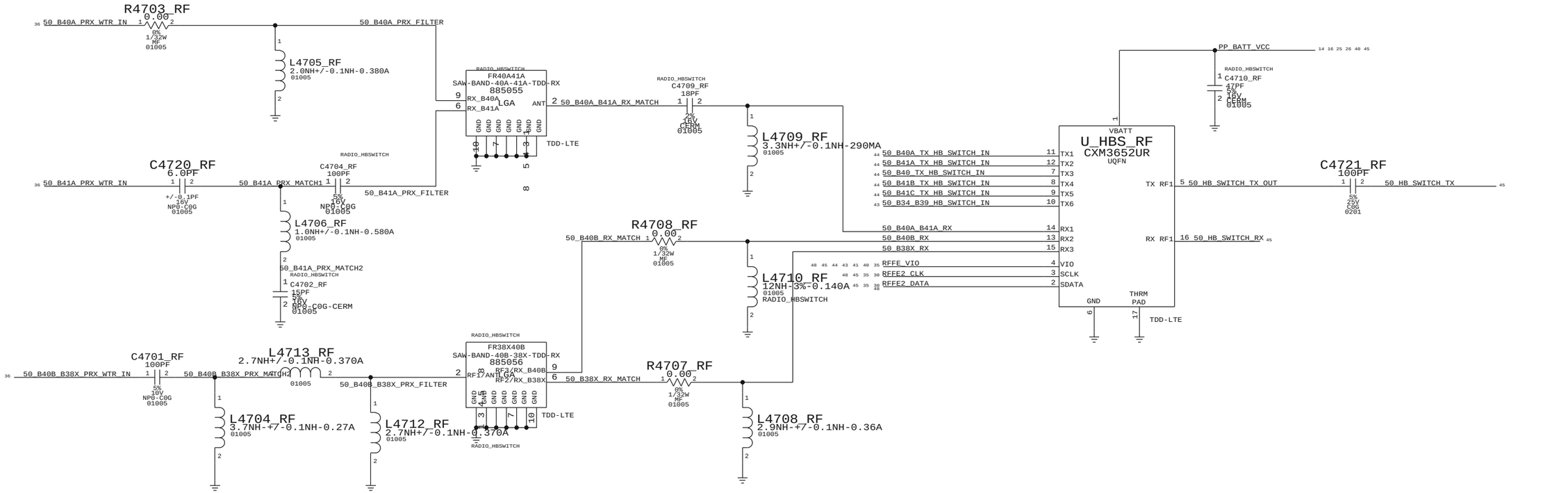


PAGE TITLE: ANTENNA SWITCH

Apple Inc.

DRAWING NUMBER: 051-9903 SIZE: D
REVISION: 7.0.0
BRANCH:
PAGE: 46 OF 55
SHEET: 45 OF 54

HIGH BAND SWITCH

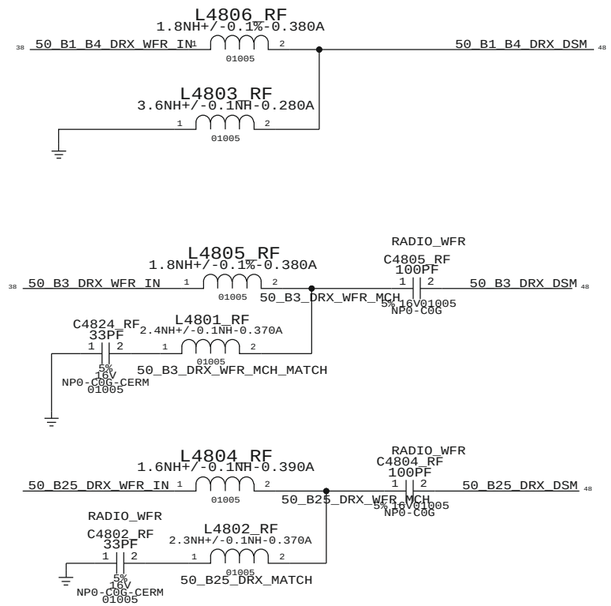


PAGE TITLE	HIGH BAND SWITCH
	Apple Inc.
DRAWING NUMBER	051-9903
SIZE	D
REVISION	7.0.0
BRANCH	
PAGE	47 OF 55
SHEET	46 OF 54

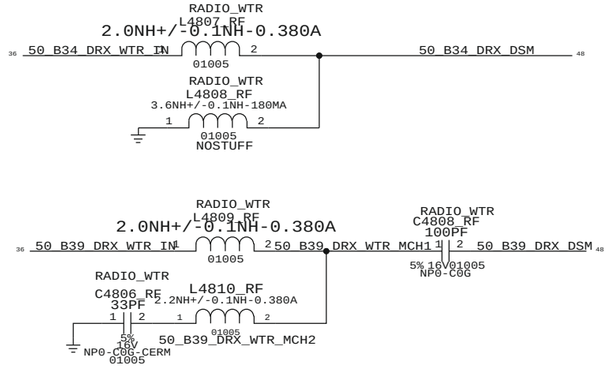
RX DIVERSITY (1)

C4826_RF
R1800
L1829
U1801

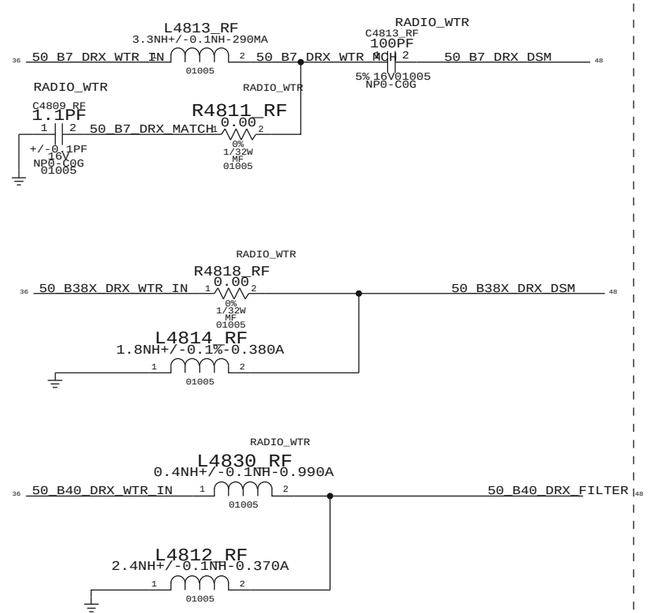
MIDBAND DIVERSITY - WFR

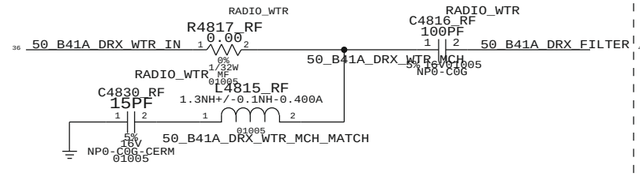


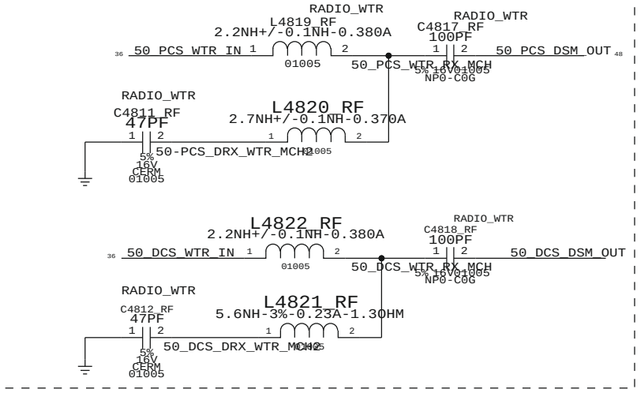
MIDBAND DIVERSITY - WTR



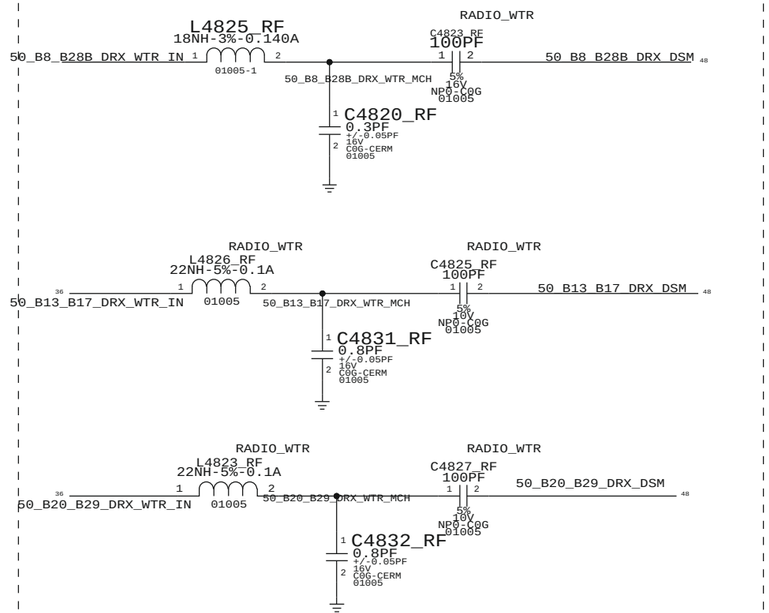
HIGHBAND DIVERSITY - WTR

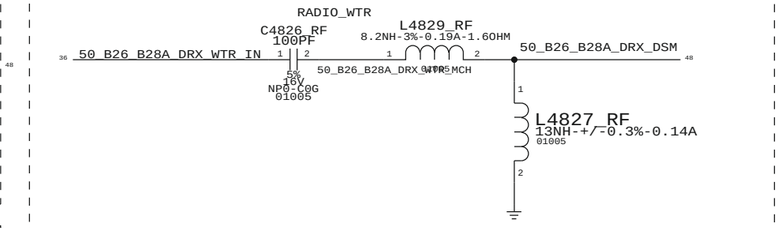






LOWBAND DIVERSITY - WTR





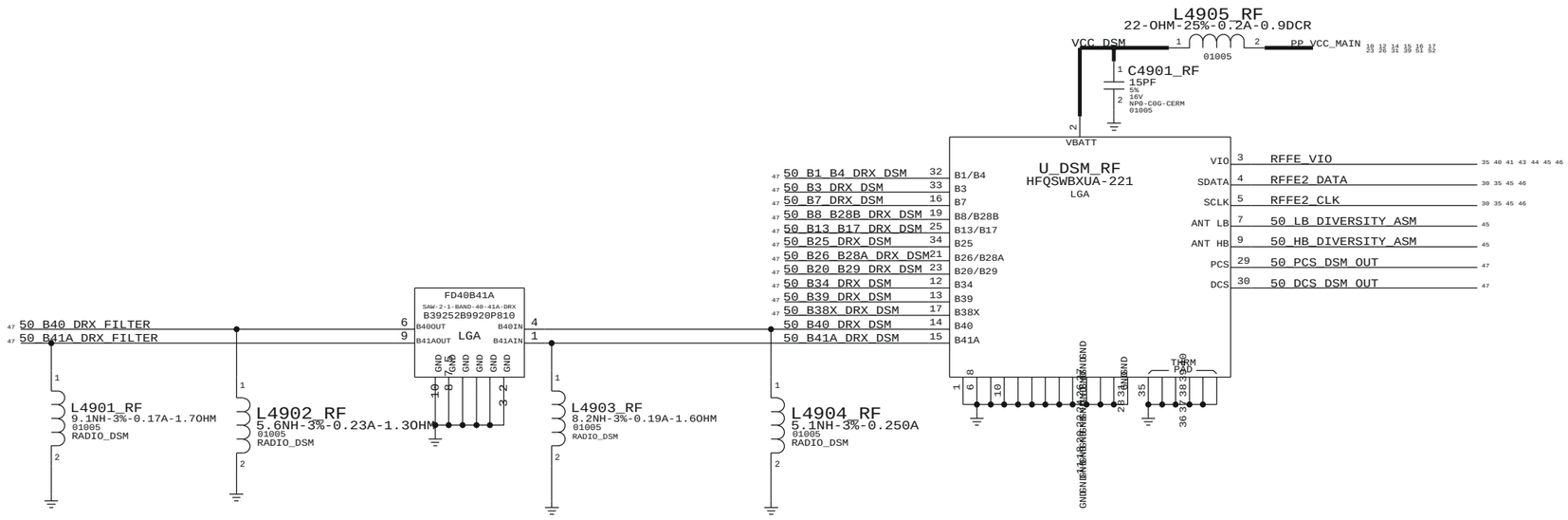
PAGE TITLE: RX DIVERSITY

Apple Inc.

DRAWING NUMBER: 051-9903 | SIZE: D
REVISION: 7.0.0
BRANCH:
PAGE: 48 OF 55
SHEET: 47 OF 54

RX DIVERSITY (2)

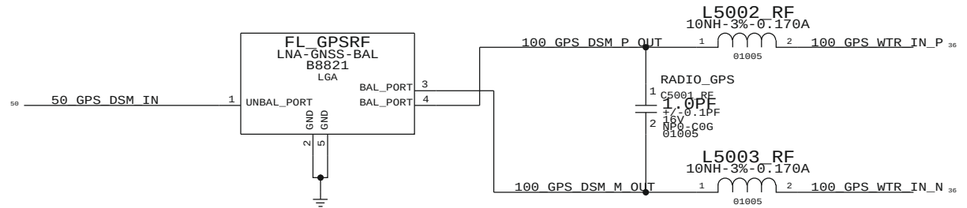
C1900
R1900
L1900
U1901



PAGE TITLE	GPS
	Apple Inc.
DRAWING NUMBER	051-9903
SIZE	D
REVISION	7.0.0
BRANCH	
PAGE	49 OF 55
SHEET	48 OF 54

GPS

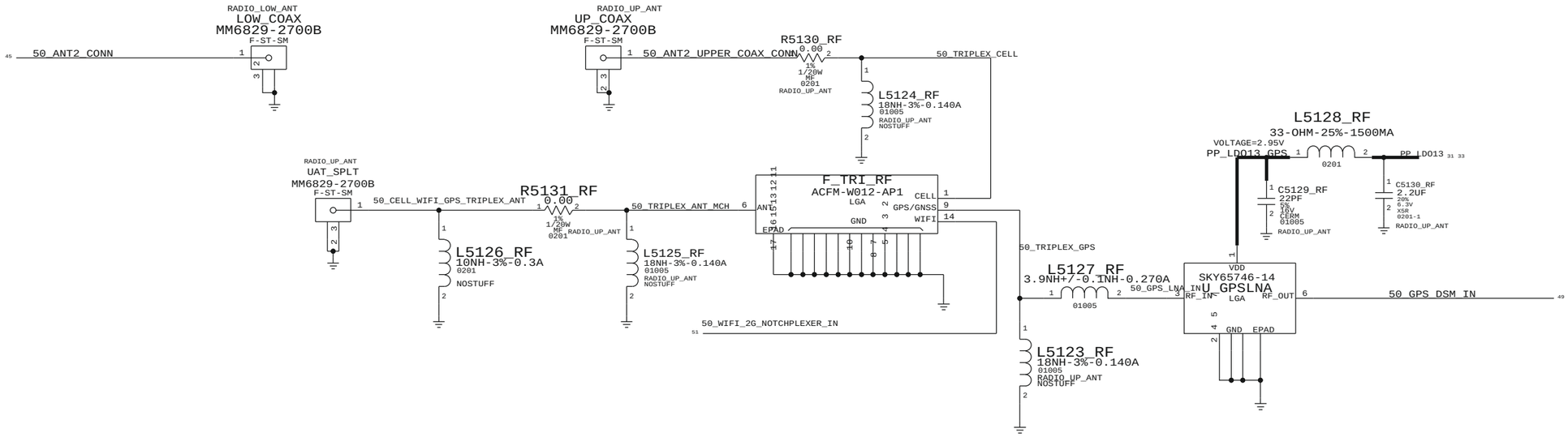
C1900
R1900
L1900
U1901

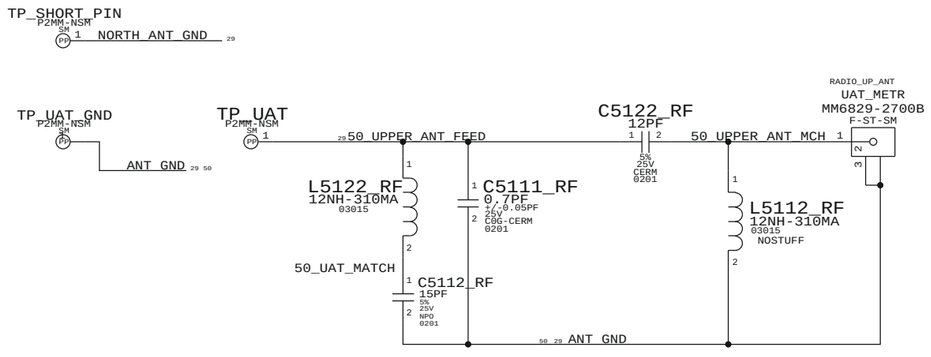


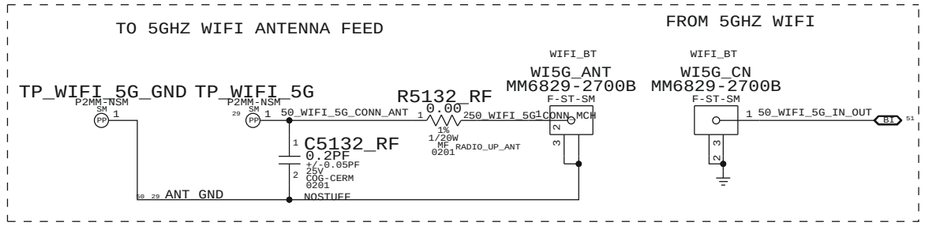
PAGE TITLE	GPS
Apple Inc.	DRAWING NUMBER: 051-9903 SIZE: D
	REVISION: 7.0.0
	BRANCH:
	PAGE: 50 OF 55
	SHEET: 49 OF 54

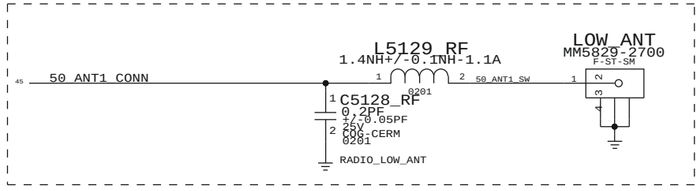
ANTENNA FEED'S

TEST & COAX CONNECTOR FOR LOWER SECTION OF MLB



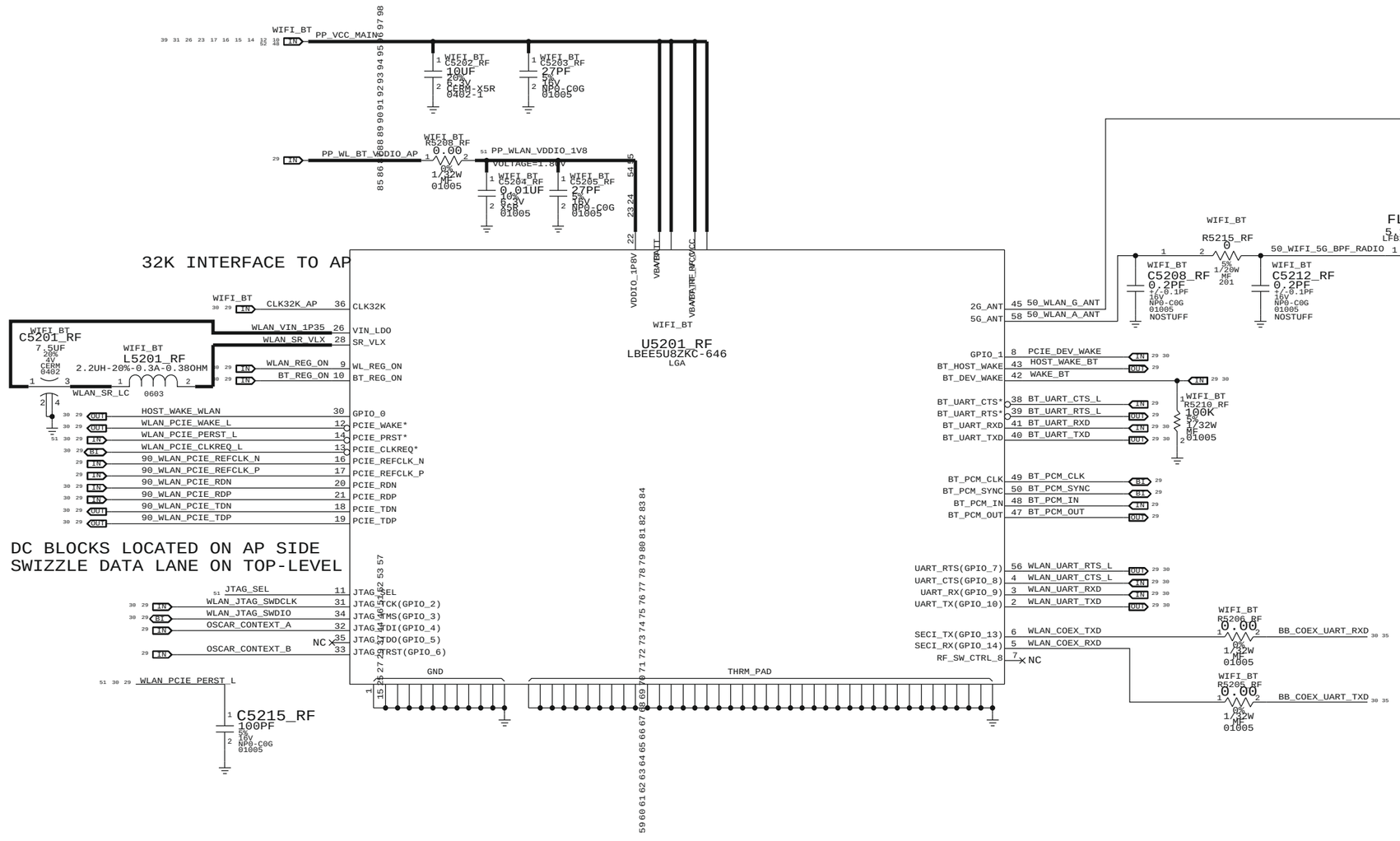






PAGE TITLE	ANTENNA FEEDS
	Apple Inc.
DRAWING NUMBER	051-9903
SIZE	D
REVISION	7.0.0
BRANCH	
PAGE	51 OF 55
SHEET	50 OF 54

WLAN/BT



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WIFI/BT: MODULE AND FRONT END

Apple Inc.

DRAWING NUMBER 051-9903 SIZE D
REVISION 7.0.0
BRANCH
PAGE 52 OF 55
SHEET 51 OF 54

STOCKHOLM

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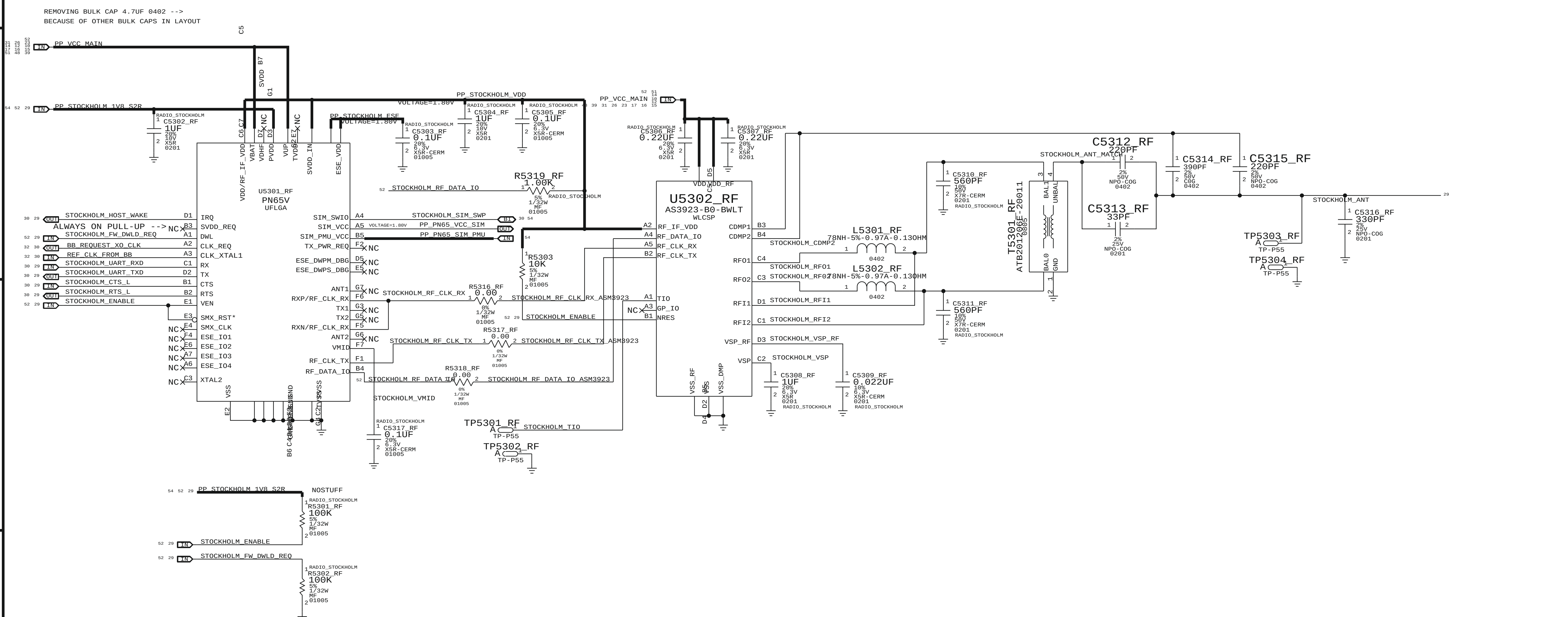
C2101
R2100
L2102
U2100



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
U5301_RF
PN65V
UFLGA
C5302_RF
1UF
C5303_RF
0.1UF
C5304_RF
1UF
C5305_RF
0.1UF
C5306_RF
0.22UF
C5307_RF
0.22UF
R5319_RF
1.00K
STOCKHOLM_RF_DATA_IO
STOCKHOLM_HOST_WAKE
ALWAYS ON PULL-UP --> NC
STOCKHOLM_FW_DWLD_REQ
BB_REQUEST_XO_CLK
REF_CLK_FROM_BB
STOCKHOLM_UART_RXD
STOCKHOLM_UART_TXD
STOCKHOLM_CTS_L
STOCKHOLM_RTS_L
STOCKHOLM_ENABLE
STOCKHOLM_SIM_SWP
PP_PN65_VCC_SIM
PP_PN65_SIM_PMU
R5303
10K
R5316_RF
0.00
STOCKHOLM_RF_CLK_RX
STOCKHOLM_RF_CLK_RX_ASM3923
R5317_RF
0.00
STOCKHOLM_RF_CLK_TX
STOCKHOLM_RF_CLK_TX_ASM3923
R5318_RF
0.00
STOCKHOLM_RF_DATA_IO_ASM3923
STOCKHOLM_VMID
C5317_RF
0.1UF
TP5301_RF
STOCKHOLM_TIO
TP5302_RF
U5302_RF
AS3923-B0-BWLT
WLCSP
STOCKHOLM_CDMP2
STOCKHOLM_RFO1
STOCKHOLM_RFO2
STOCKHOLM_RFI1
STOCKHOLM_RFI2
STOCKHOLM_VSP_RF
STOCKHOLM_VSP
C5308_RF
1UF
C5309_RF
0.022UF
L5301_RF
78NH-5%-0.97A-0.13OHM
L5302_RF
78NH-5%-0.97A-0.13OHM
C5310_RF
560PF
C5311_RF
560PF
T5301_RF
ATB201206E-20011
STOCKHOLM_ANT_MATCH
C5312_RF
220PF
C5313_RF
33PF
C5314_RF
390PF
C5315_RF
220PF
STOCKHOLM_ANT
C5316_RF
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TP5303_RF
TP5304_RF
NOSTUFF
R5301_RF
100K
R5302_RF
100K

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PAGE TITLE

Apple Inc.

DRAWING NUMBER 051-9903 SIZE D

REVISION 7.0.0

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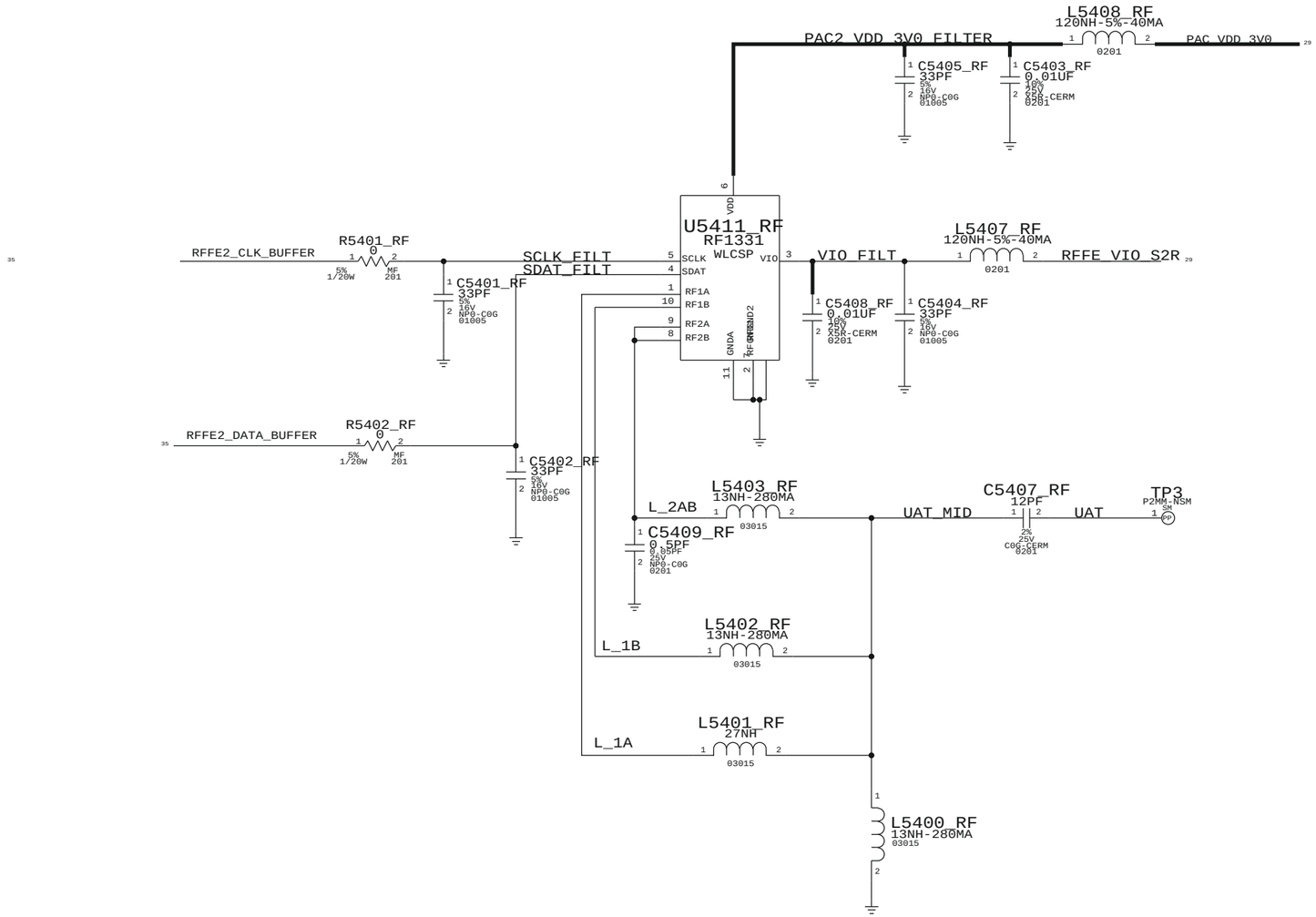
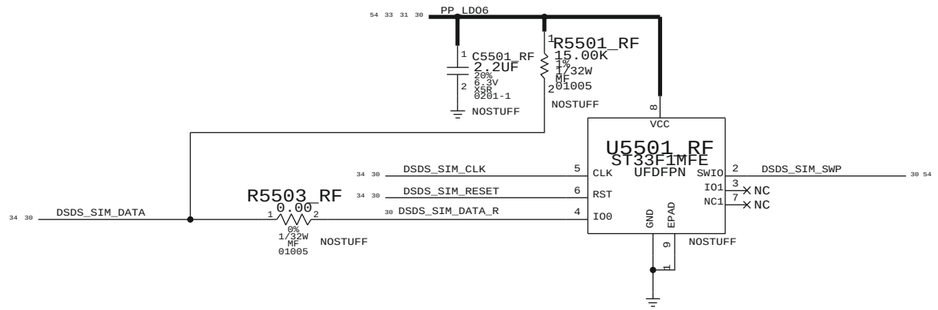
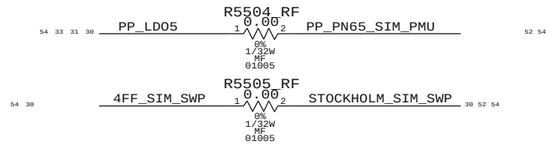
UAT JUMPER

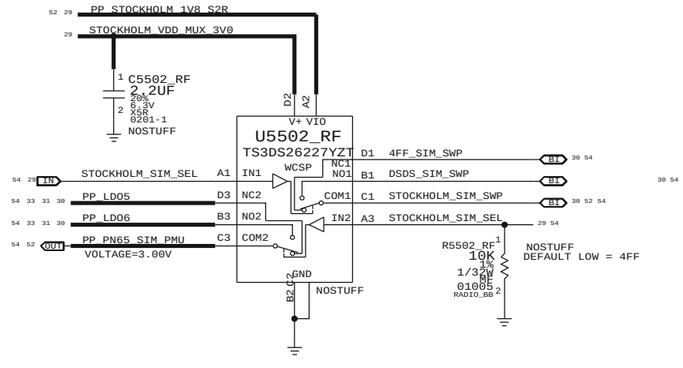


PAGE TITLE	JUMPER
	Apple Inc.
DRAWING NUMBER	051-9903
SIZE	D
REVISION	7.0.0
BRANCH	
PAGE	54 OF 55
SHEET	53 OF 54

DSDS







PAGE TITLE: JUMPER

Apple Inc.

DRAWING NUMBER: 051-9903 SIZE: D

REVISION: 7.0.0

BRANCH:

PAGE: 55 OF 55

SHEET: 54 OF 54