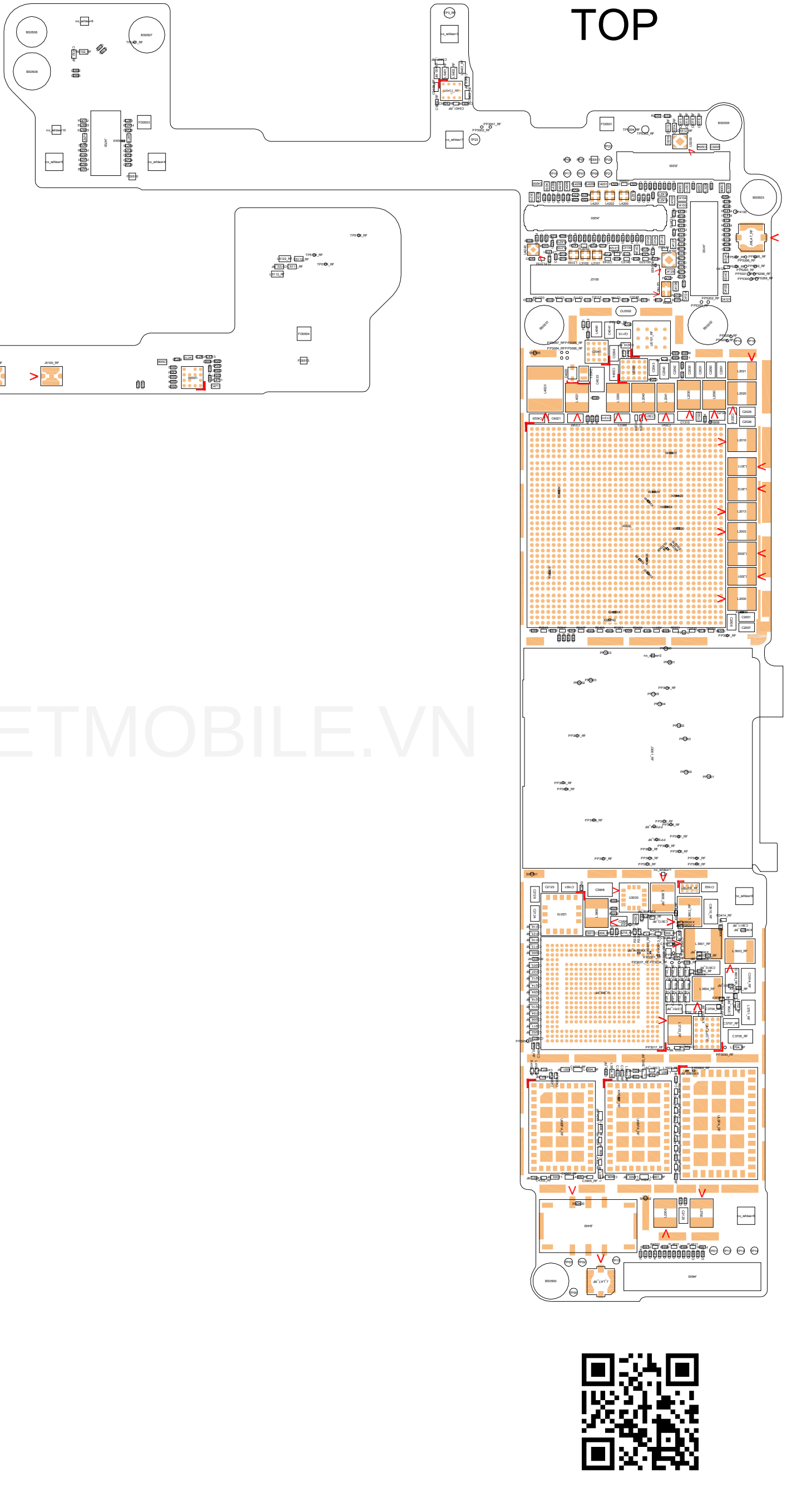
820-5507-A

N71位置图



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

REV	ECN	DESCRIPTION OF REVISION	CK APPD / DATE
A	0004536627	PRODUCTION RELEASED	2015-07-21

N71 MLB - PVT OK2FAB

LAST_MODIFICATION=Tue Jul 21 11:39:02 2015

SCH 051-1902
BRD 820-5507
MCO 056-01060

BOM 639-00263 (BETTER,DB30)
BOM 639-00265 (ULTRA,DB30)
BOM 639-00266 (SUPREME,DB30)
BOM 639-01056 (BETTER,B30)
BOM 639-01057 (ULTRA,B30)
BOM 639-01058 (SUPREME,B30)
BOM 639-01098 (BETTER,DB30C)
BOM 639-01100 (ULTRA,DB30C)
BOM 639-01099 (SUPREME,DB30C)
BOM 939-01627 (BETTER,DARWIN)

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DRAWING TITLE: SCHEM,SINGLE,BRD,N71

Apple Inc.

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SCHEMATIC & PCB BOM CALLOUTS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
051-1902	1	SCH,SINGLE_BRD,N71	SCH	CRITICAL	?
820-5507	1	PCBF,SINGLE_BRD,N71	PCB	CRITICAL	?
825-6838	1	EEEE CODE FOR 639-00263	EEEE_G2KM	CRITICAL	EEEE_16G_DB30
825-6838	1	EEEE CODE FOR 639-00265	EEEE_G2KN	CRITICAL	EEEE_64G_DB30
825-6838	1	EEEE CODE FOR 639-00266	EEEE_G2KL	CRITICAL	EEEE_128G_DB30
825-6838	1	EEEE CODE FOR 639-01056	EEEE_GKF9	CRITICAL	EEEE_16G_B30
825-6838	1	EEEE CODE FOR 639-01057	EEEE_GKFC	CRITICAL	EEEE_64G_B30
825-6838	1	EEEE CODE FOR 639-01058	EEEE_GKF8	CRITICAL	EEEE_128G_B30
825-6838	1	EEEE CODE FOR 639-01098	EEEE_GLHL	CRITICAL	EEEE_16G_DB30C
825-6838	1	EEEE CODE FOR 639-01100	EEEE_GLHR	CRITICAL	EEEE_64G_DB30C
825-6838	1	EEEE CODE FOR 639-01099	EEEE_GLHM	CRITICAL	EEEE_128G_DB30C
825-6838	1	EEEE CODE FOR 939-01627	EEEE_GR09	CRITICAL	EEEE_16G_DARWIN

S3E NAND BOM OPTIONS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
335S00039	1	NAND,1YNM,16GX8,S3E,64G,T,SLGA70	U1500	CRITICAL	NAND_16G
335S00075	1	NAND,1YNM,64GX8,S3E,MLB,64G,H,SLGA70	U1500	CRITICAL	NAND_64G
335S00079	1	NAND,1YNM,128GX8,S3E,TLC,128G,H,SLGA70	U1500	CRITICAL	NAND_128G

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
335S00074	335S00039	NAND_16G	U1500	HYNIX 16G SLGA70 C DIE
335S00078	335S00075	NAND_64G	U1500	HYNIX 64G SLGA70
335S00064	335S00075	NAND_64G	U1500	SANDISK 64G SLGA70 1Z
335S00065	335S00079	NAND_128G	U1500	SANDISK 128G SLGA70

CARBON/ACCEL BOM OPTIONS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
338S1163	1	IC,ACCEL,3-AXIS,DIG,BMA282,LGA14	U3030	NOSTUFF
117S0202	1	RES,MF,20 OHM,5%,1/32W,01005	R3030	NOSTUFF
117S0202	1	RES,MF,20 OHM,5%,1/32W,01005	R3031	NOSTUFF
117S0202	1	RES,MF,20 OHM,5%,1/32W,01005	R3032	NOSTUFF
138S0831	1	CAP,CER,X5R,2.2UF,20%,6.3V,0201	C3031	NOSTUFF
132S0316	1	CAP,CER,X5R,0.1UF,20%,6.3V,01005	C3032	NOSTUFF
338S00017	1	IC,CARBON,MPU-6700-12,LGA16	U3010	INVENSENSE_CARBON
338S1163	1	IC,ACCEL,3-AXIS,DIG,BMA282,LGA14	U3030	INVENSENSE_CARBON
117S0202	1	RES,MF,20 OHM,5%,1/32W,01005	R3030	INVENSENSE_CARBON
117S0202	1	RES,MF,20 OHM,5%,1/32W,01005	R3031	INVENSENSE_CARBON
117S0202	1	RES,MF,20 OHM,5%,1/32W,01005	R3032	INVENSENSE_CARBON
138S0831	1	CAP,CER,X5R,2.2UF,20%,6.3V,0201	C3031	INVENSENSE_CARBON
132S0316	1	CAP,CER,X5R,0.1UF,20%,6.3V,01005	C3032	INVENSENSE_CARBON
338S00087	1	IC,CARBON 1.1,MPU-6800-00,LGA16	U3010	INVENSENSE_STANDALONE_CARBON

ALTERNATE BOM OPTIONS

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:	
138S00032	138S0831	ALTERNATE	C0610	TY,2.2UF,0201	NOT ALL REFERENCE DESIGNATORS LISTED. USED ~116 TIMES IN DESIGN.
138S00049	138S0831	ALTERNATE	C0610	KYOCERA,2.2UF,0201	USED ~116 TIMES IN DESIGN.
155S0660	155S0513	ALTERNATE	FL3100	MURATA,FERR,22-OHM	USED ~7 TIMES IN DESIGN.
138S00005	138S00003	ALTERNATE	C2000	TY,15UF,0402	USED ~63 TIMES IN DESIGN.
138S00048	138S00003	ALTERNATE	C2000	KYOCERA,15UF,0402	USED ~63 TIMES IN DESIGN.
138S0702	138S0657	ALTERNATE	C2111	MURATA,4.3UF,0610	USED ~3 TIMES IN DESIGN.
118S0764	118S0717	ALTERNATE	R2250	PANASONIC,3.92K-OHM,0201	
138S00006	138S0835	ALTERNATE	C1106	TY,4.3UF,0402	USED ~19 TIMES IN DESIGN.
152S2052	152S1929	ALTERNATE	L2060	CYNTEC,1UH,1608	
155S0773	155S0453	ALTERNATE	FL3110	TY,FERR,120-OHM,01005	USED ~61 TIMES IN DESIGN.
377S0168	377S0140	ALTERNATE	DZ3150	TDK,VARISTOR,6.8V,100PF,01005	USED ~9 TIMES IN DESIGN.
155S00067	155S0581	ALTERNATE	FL4200	TDK,FERR,240-OHM,0201	USED ~8 TIMES IN DESIGN.
155S00012	155S00009	ALTERNATE	L3100	MURATA,CHOKE,65-OHM,0605	USED ~11 TIMES IN DESIGN.
138S0706	138S0739	ALTERNATE	C3302_RF	MURATA,CAP,CER,1UF,20%,10V,X5R,0201	USED ~17 TIMES IN DESIGN.
138S0945	138S0739	ALTERNATE	C3302_RF	KYOCERA,CAP,CER,1UF,20%,10V,X5R,0201	USED ~17 TIMES IN DESIGN.
155S00095	155S00068	ALTERNATE	FL1280	FERR BD,100 OHM,25%,100MA,2 OHM,01005	
138S0648	138S0652	ALTERNATE	C3650	TY,4.7UF,0402	USED ~12 TIMES IN DESIGN.
132S0400	132S0436	ALTERNATE	C1280	CAP,CER,X5R,0.22UF,20%,6.3V,01005	USED ~2 TIMES IN DESIGN.
155S0960	155S0941	ALTERNATE	FL3151	FERR BD,70 OHM,25%,300MA,0.4 DCR,01005	USED ~9 TIMES IN DESIGN.
138S00024	138S0986	ALTERNATE	C1107	CAP,CER,3-TERM,7.5UF,20%,4V,0402	USED ~7 TIMES IN DESIGN.
335S00066	335S0946	ALTERNATE	U0900	IC,EEPROM,16KX8,1.8V,I2C,WLCSP4	
155S0653	155S0511	ALTERNATE	FL4600	FERR BD,33 OHM,25%,750MA,0.09OCR,0201	USED ~4 TIMES IN DESIGN.

POWER INDUCTOR ALTERNATES

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
152S00120	152S00077	ALTERNATE	L2070	TAIYO 2016 1.0UH 0.65MM
152S00118	152S00075	ALTERNATE	L3700	TAIYO 2016 1.2UH

ACTIVE DIODE ALTERNATE

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
376S00106	376S00047	ALTERNATE	Q2300	DIODES INC. ACT DIODE

SHIELD PART NUMBERS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
806-02895	1	SHIELD,EMI,UPPER FRONT,WTOP,N71	SH0500	COMMON
806-04588	1	SHIELD,EMI,LOWER FRONT,CLOSED,NOMU,N71	SH0501	COMMON
806-03994	1	SHIELD,EMI,SA,OPEN,N71	SH0502	COMMON
806-02897	1	SHIELD,EMI,UPPER BACK,WTOP,N71	SH0503	COMMON
806-02898	1	SHIELD,EMI,LOWER BACK,WTOP,N71	SH0504	COMMON

SOC/PMU SUB BOMS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
685-00069	1	SUBBOM,SINGLE,BRD,MAUI,N71	SUBBOM_SOC	COMMON
338S00120	1	IC,PMU,ANTIGUA,A0,D2255A1,OTP-AL,WLCSP380	U2000	MAUI
118S0631	1	RES,MF,100 OHM,1%,1/32W,01005	R0730	MAUI
131S0307	1	CAP,CER,NP0/C0G,100PF,5%,16V,01005	C0730	MAUI
339S00112	1	PROD FUSED, H DRAM	U0600	MAUI
117S0161	1	RES,MF,0 OHM,1/32W,01005	R0651	MAUI

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
338S00122	1	IC,PMU,ANTIGUA,D2255A1,OTP-2L,WLCSP380	U2000	MALTA
118S00009	1	RES,MF,3.01KOHM,1%,1/32W,01005	R0730	MALTA
131S0307	1	CAP,CER,NP0/C0G,100PF,5%,16V,01005	C0730	NOSTUFF
339S00124	1	M DEV FUSED, M DRAM	U0600	MALTA
118S00025	1	RES,MF,330 OHM,1%,1/32W,01005	R0651	MALTA

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
685-00070	685-00069	ALTERNATE	SUBBOM_SOC	SUBBOM,SINGLE,BRD,MALTA,N71

SOC ALTERNATES

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
339S00113	339S00112	MAUI	U0600	PROD FUSED, M DRAM
339S00114	339S00112	MAUI	U0600	PROD FUSED, S DRAM

339S00125	339S00124	MALTA	U0600	M PROD FUSED, H DRAM, ATK
339S00126	339S00124	MALTA	U0600	M PROD FUSED, S DRAM, ATK
339S00127	339S00124	MALTA	U0600	M PROD FUSED, H DRAM, SCK
339S00128	339S00124	MALTA	U0600	M PROD FUSED, H DRAM, SCK
339S00129	339S00124	MALTA	U0600	M PROD FUSED, S DRAM, SCK

INDUCTOR SUB BOMS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
685-00081	1	SUBBOM,SINGLE,BRD,CYNTEC,N71	SUBBOM_IND	COMMON
152S00074	6	IND,PWR,SHLD,1.0UH,3.6A,0.060 OHM,2016	L2009,L2002,L2010,L2012,L2029,L2030	CYNTEC
152S00074	5	IND,PWR,SHLD,1.0UH,3.6A,0.060 OHM,2016	L2040,L2050,L2300,L3300,L4021	CYNTEC
152S00081	6	IND,PWR,SHLD,0.47UH,3.8A,0.048 OHM,2012	L2001,L2003,L2011,L2013,L2021,L2041	CYNTEC

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
152S00117	6	IND,PWR,SHLD,1.0UH,3.6A,0.060 OHM,2016	L2009,L2002,L2010,L2012,L2029,L2030	TAIYO
152S00117	5	IND,PWR,SHLD,1.0UH,3.6A,0.060 OHM,2016	L2040,L2050,L2300,L3300,L4021	TAIYO
152S00121	6	IND,PWR,SHLD,0.47UH,3.8A,0.048 OHM,2012	L2001,L2003,L2011,L2013,L2021,L2041	TAIYO

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
685-00080	685-00081	ALTERNATE	SUBBOM_IND	SUBBOM,SINGLE,BRD,TAIYO,N71

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SYSTEM:BOM TABLES

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TESTPOINTS

POWER

TP00 — VOLTAGE=0V — POWER GROUND

TP01 — PP5V0_USB — VBUS

TP02 — PP_BATT_VCC — VBATT

TP03 — VBATT

TP05

RESET

PMU_TO_SYSTEM_COLD_RESET_L — TP06 — SOC & BB RESET

DFU

FORCE_DFU — TP07

PP07 — PP1V8

PP08 — DFU_STATUS

FORCE DFU PROCEDURE:

1. FROM OFF MODE SHORT TP07 TO PP07
2. PLUG IN E75 CABLE TO FORCE DFU

E75

TRISTAR_DP1_CONN_P — TP08

TRISTAR_DP1_CONN_N — TP09 — TRISTAR USB

TRISTAR_DP2_CONN_P — TP10

TRISTAR_DP2_CONN_N — TP11 — TRISTAR DEBUG UART

PP_TRISTAR_ACC1 — TP12

PP_TRISTAR_ACC2 — TP13 — TRISTAR ACCESSORY ID

TP14 — ACCESSORY POWER

TRISTAR_CON_DETECT_L — TP15

AMUX

PMU_AMUX_AY — TP16

PMU_AMUX_BY — TP17

MOJAVE

MESA_TO_BOOST_EN — TP18

PP16V5_MESA — TP19

LCM

PP_LCM_BL_CAT1_CONN — TP20

PP_LCM_BL_CAT2_CONN — TP21

PP_LCM_BL_ANODE_CONN — TP22

SUPER SCREW

TP23

N71 I2C DEVICE MAP

I2C BUS	DEVICE	BINARY	7-BIT HEX	8-BIT HEX
I2C0	ANTIGUA PMU	1110100X	0X74	0XE8
	CHESTNUT	0100111X	0X27	0X4E
	MUON	1100010X	0X62	0XC4
I2C1	TIGRIS	1110101X	0X75	0XEA
	ARC DRIVER	1000001X	0X41	0X82
	SPEAKER AMP	1000000X	0X40	0X80
	TRISTAR	0011010X	0X1A	0X34
I2C2	ALS	0101001X	0X29	0X52
	DISP EEPROM	1010001X	0X51	0XA2
OWL	UNUSED	N/A	N/A	N/A
ISP I2C0	REAR CAM	TBD	TBD	TBD
	LED DRIVER	1100011X	0X63	0XC6
ISP I2C1	FRONT CAM	0010000X	0X10	0X20
TOUCH I2C	MESON	1000000X	0x40	0x80
	MAMBA	1100000X	0x60	0xC0
	DOPPLER	1011000X	0x58	0xB0
SEP I2C	SEP EEPROM	1010001X	0x51	0xA2

BOOTSTRAPPING: BOARD REV
BOARD ID
BOOT CONFIG

BOARD_REV3 — R0400 — 1.00K
BOARD_REV2 — R0401 — 1.00K
BOARD_REV1 — R0402 — 1.00K
BOARD_REV0 — R0403 — 1.00K
BOARD_ID4 — R0404 — 1.00K
BOARD_ID3 — R0405 — 1.00K
BOARD_ID2 — R0406 — 1.00K
BOARD_ID1 — R0407 — 1.00K
BOARD_ID0 — R0408 — 1.00K
BOOT_CONFIG2 — R0409 — 1.00K
BOOT_CONFIG1 — R0410 — 1.00K
BOOT_CONFIG0 — R0411 — 1.00K

(R0400–R0403, R0405–R0411: NOSTUFF; ROOM=SOC; 01005 MF 5% 1/32W)

PP1V8

BOARD_REV[3:0]
FLOAT=LOW, PULLUP=HIGH

	1111	PROTO1
	1110	PROTO2
	1101	EVT
	1100	EVT DOE 3 (MAMBA LDO)
	1011	CARRIER
	1010	CARRIER 2 (I2C0 SCL)
SELECTED -->	1001	DVT

BOARD_ID[4:0]
FLOAT=LOW, PULLUP=HIGH

SELECTED -->	00100	N71 MLB
	00101	N71 DEV
	00110	N66 MLB

BOOT_CONFIG[2:0]
FLOAT=LOW, PULLUP=HIGH

	000	SPI0
	001	SPI0 TEST MODE
SELECTED -->	010	NVME0 x2 MODE
	011	NVME0 x2 TEST MODE
	100	NVME0 x1 MODE
	101	NVME0 x1 TEST MODE
	110	SLOW SPI0 TEST MODE
	111	FAST SPI0 TEST MODE

RESISTOR STUFF = HIGH '1'
RESISTOR NOSTUFF = LOW '0'

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TOP-SIDE

BOTTOM-SIDE

PENINSULA STANDOFFS

BS0506
STDOFF-2.20D0.25H-0.50-1.70
ROOM=ASSEMBLY

BS0507
STDOFF-2.60D0.5H-0.5-1.7-TH
ROOM=ASSEMBLY

860-8396
1 — 50 AP UAT FEED — 33

860-7846
1 — 50 AP WIFI 5G CONN ANT — 33

1 — NORTH AC GND SCREW — 4
806-02971

BS0508
2.7X1.94X0.25
RING-TH1
ROOM=ASSEMBLY

SHIM WASHER

STOCKHOLM FEED

BS0505
STDOFF-2.56OD1.4ID.99H-SM
ROOM=ASSEMBLY

860-00109
1 — 33 AP TO STOCKHOLM ANT

1 — BS0503
STDOFF-2.60D0.81H-TH
ROOM=ASSEMBLY
860-00096

BS0501
STDOFF-2.85OD1.4ID-0.84H
ROOM=ASSEMBLY

1 — 860-00111

1 — 860-00111

BS0502
STDOFF-2.85OD1.4ID-0.84H
ROOM=ASSEMBLY

PLATED SLOTTED THRU-HOLE
CL0502
TH-NSP
1 — SL-1.20X0.40-1.50X0.70-NSP

SOUTH DC CURRENT BLOCKING CAPS

SOUTH AC GND SCREW — 4 32

C0540	220PF	10%	16V	X7R-CERM
C0541	100PF	5%	16V	NP0-C0G
C0542	56PF	5%	16V	NP0-C0G
C0543	4.7PF	+/-0.1PF	16V	NP0-C0G

01005 ROOM=ASSEMBLY

NORTH DC CURRENT BLOCKING CAPS

NORTH AC GND SCREW — 4

C0550	220PF	10%	16V	X7R-CERM
C0551	100PF	5%	16V	NP0-C0G
C0552	220PF	10%	16V	X7R-CERM
C0553	100PF	5%	16V	NP0-C0G

01005 ROOM=ASSEMBLY

UPPER SHIELD

OMIT_TABLE
1 — SH0500 SM
SHLD-EMI-UPPER-FRONT-N61
ROOM=ASSEMBLY

LOWER SHIELD

OMIT_TABLE
1 — SH0501 SM
SHLD-EMI-LOWER-FRONT-N61
ROOM=ASSEMBLY

SA SHIELD

OMIT_TABLE
1 — SH0502 SM
SHLD-EMI-SA-N71
ROOM=ASSEMBLY

SOUTH TUBE STANDOFF

BS0500
STDOFF-2.70OD1.84ID-0.88H-TH
860-7862 — 1
ROOM=ASSEMBLY

TODO:UPDATE REF DES

DUAL RF COAX CLIP

CLIP-RETENTION-COAX-DOUBLE
1 — CL0501 SM
ROOM=ASSEMBLY
806-01802

UPPER SHIELD

OMIT_TABLE
1 — SH0503 SM
SHLD-EMI-UPPER-BACK-N61
ROOM=ASSEMBLY

LOWER SHIELD

OMIT_TABLE
1 — SH0504 SM
SHLD-EMI-LOWER-BACK-N61
ROOM=ASSEMBLY

FIDUCIALS

FD0501 FID 0P5SM1P0SQ-NSP 1 ROOM=ASSEMBLY
FD0502 FID 0P5SM1P0SQ-NSP 1 ROOM=ASSEMBLY
FD0503 FID 0P5SM1P0SQ-NSP 1 ROOM=ASSEMBLY
FD0505 FID 0P5SM1P0SQ-NSP 1 ROOM=ASSEMBLY
FD0510 FID 0P5SQ-SMP3SQ-NSP 1 ROOM=ASSEMBLY
FD0511 FID 0P5SQ-SMP3SQ-NSP 1 ROOM=ASSEMBLY
FD0512 FID 0P5SQ-SMP3SQ-NSP 1 ROOM=ASSEMBLY
FD0514 FID 0P5SQ-SMP3SQ-NSP 1 ROOM=ASSEMBLY
FD0515 FID 0P5SQ-SMP3SQ-NSP 1 ROOM=ASSEMBLY
FD0504 FID 0P5SM1P0SQ-NSP 1 ROOM=ASSEMBLY
FD0513 FID 0P5SQ-SMP3SQ-NSP 1 ROOM=ASSEMBLY

32 4 — SOUTH AC GND SCREW

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MAUI - USB, JTAG, XTAL

VDD12_PLL_LPDP:1.14-1.26V @2mA MAX
VDD12_PLL_SOC: 1.14-1.26V @12mA MAX
VDD12_PLL_CPU: 1.14-1.26V @2mA MAX

PP1V2 — R0600 0.00 0% 1/32W MF 01005 ROOM=SOC — PP1V2_PLL VOLTAGE=1.2V

C0600 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=SOC
C0601 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=SOC
C0602 0.01UF 10% 6.3V X5R 01005 ROOM=SOC
C0603 0.01UF 10% 6.3V X5R 01005 ROOM=SOC

NOTE:LPDP RECEIVES UNFILTERED 1.2V AS IT IS UNUSED

C0612 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=SOC

VDD18_USB: 1.71-1.89V @20mA MAX
VDD18_XTAL:1.62-1.98V @2mA MAX

PP1V8 — FL0610 1KOHM-25%-0.2A 0201 ROOM=SOC — PP1V8_XTAL VOLTAGE=1.8V

C0611 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=SOC
C0610 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=SOC

PP3V3_USB

C0620 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=SOC
VDD33_USB:3.14-3.46V @5mA MAX

CKPLUS_WAIVE=PWRTERMIGND

OMIT_TABLE
CRITICAL
U0600
MAUI-2GB-25NM-DDR-H
FCMSP
SC58980B0B-A040
SYM 1 OF 14
ROOM=SOC

AP21	VDD12_UH1_HSIC0		
C15	VDD12_UH2_HSIC1		
F22	VDD12_PLL_LPDP		
U20	VDD12_PLL_SOC		
T19	VDD12_PLL_CPU		
W19			
AF13			
AL21	VDD18_USB		
AN20	VDD33_USB		
AL34	VDD18_XTAL		
AN22	UH1_HSIC0_DATA	ANALOGMUX_OUT	AP24 AP_TO_PMU_AMUX_OUT OUT 16
AN21	UH1_HSIC0_STB		
C16	UH2_HSIC1_DATA		
D15	UH2_HSIC1_STB		
Y32	JTAG_SEL	USB_D_P	AT20 USB_AP_DATA_P BI 30
AC32	JTAG_TRST*	USB_D_N	AT19 USB_AP_DATA_N BI 30
AB31	JTAG_TDO		
AA32	JTAG_TDI	USB_VBUS	AP19 USB_VBUS_DETECT IN 17
AB32	JTAG_TMS	USB_ID	AR19 NC
AA31	JTAG_TCK	USB_REXT	AP18 USB_REXT
AC31	COLD_RESET*		
H33	CFSB		
AR23	TST_CLKOUT		
AN23	S3E_RESET*		
H32	HOLD_RESET	WDOG	Y33 AP_TO_PMU_WDOG_RESET OUT 16
AF6	TESTMODE		
AL22	FUSE1_FSRC	XI0	AK35 XTAL_AP_24M_IN
AG25	FUSE2_FSRC	XO0	AL35 XTAL_AP_24M_OUT

SWD_DOCK_BI AP_SWDIO (30 BI)
SWD_DOCK_TO AP_SWCLK (30 IN)
PMU_TO_SYSTEM_COLD_RESET_L (33 16 9 3 IN)
PMU_TO_OWL_ACTIVE_READY (30 27 16 9 IN)
AP_TO_PMU_TEST_CLKOUT (ROOM=SOC P3MM-NSM 16 OUT) — PP0610 SM 1 PP
AP_TO_NAND_RESET_L (13 OUT)

P3MM-NSM 1 SM PP0600 ROOM=SOC
P3MM-NSM 1 SM PP0601 ROOM=SOC

R0640 200 1% 1/32W MF 01005 ROOM=SOC

R0650 511K 1% 1/32W MF 01005 ROOM=SOC
OMIT_TABLE R0651 0.00 0% 1/32W MF 01005 ROOM=SOC
CRITICAL ROOM=SOC Y0600 1.60X1.20MM-SM 24.000MHZ-30PPM-9.5PF-60OHM SOC_24M_O
C0650 12PF 5% 16V C0G CERM 01005 ROOM=SOC
C0651 12PF 5% 16V C0G CERM 01005 ROOM=SOC
XW0650 SHORT-10L-0.1MM-SM ROOM=SOC
AP_XTAL_GND VOLTAGE=0.0V

SYNC_MASTER=N/A SYNC_DATE=N/A
PAGE TITLE: SOC:JTAG,USB,XTAL

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MAUI - PCIE INTERFACES

VDD12_PCIE_REFBUF:1.08-1.26V @50mA MAX
VDD12_PCIE_TXPLL: 1.08-1.32V @10mA MAX
VDD12_PCIE: 1.14-1.26V @115mA MAX

XW0740 SHORT-10L-0.1MM-SM ROOM=SOC — XW TO ISOLATE C0442,3 FROM C0740,1.

PP1V2 → C0740 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=SOC; C0741 1.0UF 20% 6.3V X5R 0201-1 ROOM=SOC; C0742 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=SOC

PP1V2_XW VOLTAGE=1.2V → C0743 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=SOC; C0731 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=SOC

VDD085_PCIE:0.802-TBDV @TBDmA MAX

PP_FIXED → C0752 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=SOC; C0751 1.0UF 20% 6.3V X5R 0201-1 ROOM=SOC; C0750 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=SOC

VDD12_PCIE: AK28, AK25, AL24, AL27
VDD12_PCIE_TXPLL: AL26
VDD12_PCIE_REFBUF: AJ26
VDD085_PCIE: AM28, AJ25, AL23, AJ29, AL29, AJ24, AK27, AJ27

PCIE EXT C → AP29 PCIE_EXT_C

OMIT_TABLE
CRITICAL
U0600
MAUI-2GB-25NM-DDR-H
FCMSP
SC58980B0B-A040
SYM 2 OF 14
ROOM=SOC

PCIE LINK 0

PCIE NAND TO AP RXD0 P	C0701 0.1UF X5R-CERM 01005	PCIE NAND TO AP RXD0 C P	AM30 PCIE_RX0_P
PCIE NAND TO AP RXD0 N	C0702 0.1UF X5R-CERM 01005	PCIE NAND TO AP RXD0 C N	AN30 PCIE_RX0_N
PCIE AP TO NAND TXD0 P	C0703 0.1UF X5R-CERM 01005	PCIE AP TO NAND TXD0 C P	AT32 PCIE_TX0_P
PCIE AP TO NAND TXD0 N	C0704 0.1UF X5R-CERM 01005	PCIE AP TO NAND TXD0 C N	AR32 PCIE_TX0_N
PCIE NAND TO AP RXD1 P	C0705 0.1UF X5R-CERM 01005	PCIE NAND TO AP RXD1 C P	AM28 PCIE_RX1_P
PCIE NAND TO AP RXD1 N	C0706 0.1UF X5R-CERM 01005	PCIE NAND TO AP RXD1 C N	AN28 PCIE_RX1_N
PCIE AP TO NAND TXD1 P	C0707 0.1UF X5R-CERM 01005	PCIE AP TO NAND TXD1 C P	AT31 PCIE_TX1_P
PCIE AP TO NAND TXD1 N	C0708 0.1UF X5R-CERM 01005	PCIE AP TO NAND TXD1 C N	AR31 PCIE_TX1_N

PCIE LINK 1

PCIE WLAN TO AP RXD P	C0709 0.1UF X5R-CERM 01005	PCIE_WLAN_TO_AP_RXD_C_P	AM27 PCIE_RX2_P
PCIE WLAN TO AP RXD N	C0710 0.1UF X5R-CERM 01005	PCIE_WLAN_TO_AP_RXD_C_N	AN27 PCIE_RX2_N
PCIE AP TO WLAN TXD P	C0711 0.1UF X5R-CERM 01005	PCIE_AP_TO_WLAN_TXD_C_P	AT28 PCIE_TX2_P
PCIE AP TO WLAN TXD N	C0712 0.1UF X5R-CERM 01005	PCIE_AP_TO_WLAN_TXD_C_N	AR28 PCIE_TX2_N

PCIE LINK 2

PCIE BB TO AP RXD P	C0715 0.1UF X5R-CERM 01005	PCIE_BB_TO_AP_RXD_C_P	AM26 PCIE_RX3_P
PCIE BB TO AP RXD N	C0716 0.1UF X5R-CERM 01005	PCIE_BB_TO_AP_RXD_C_N	AN26 PCIE_RX3_N
PCIE_AP_TO_BB_TXD_P	C0717 0.1UF X5R-CERM 01005	PCIE_AP_TO_BB_TXD_C_P	AT26 PCIE_TX3_P
PCIE_AP_TO_BB_TXD_N	C0718 0.1UF X5R-CERM 01005	PCIE_AP_TO_BB_TXD_C_N	AR26 PCIE_TX3_N

NC AM25 PCIE_RX4_P
NC AN25 PCIE_RX4_N
NC AR24 PCIE_TX4_P
NC AT24 PCIE_TX4_N

PCIE_REF_CLK0_P	AN35	PCIE_AP_TO_NAND_REFCLK_P
PCIE_REF_CLK0_N	AP35	PCIE_AP_TO_NAND_REFCLK_N
PCIE_REF_CLK1_P	AN34	PCIE_AP_TO_WLAN_REFCLK_P
PCIE_REF_CLK1_N	AP34	PCIE_AP_TO_WLAN_REFCLK_N
PCIE_REF_CLK2_P	AM32	PCIE_AP_TO_BB_REFCLK_P
PCIE_REF_CLK2_N	AN32	PCIE_AP_TO_BB_REFCLK_N
PCIE_REF_CLK3_P	AM31	NC
PCIE_REF_CLK3_N	AN31	NC

PP1V8 → R0720 100K 5% 1/32W MF 01005; R0721 100K 5% 1/32W MF 01005; NOSTUFF R0722 100K 5% 1/32W MF 01005

PCIE_CLKREQ0*	AT11	PCIE NAND TO AP CLKREQ L
PCIE_CLKREQ1*	AP12	PCIE WLAN TO AP CLKREQ L
PCIE_CLKREQ2*	AR12	PCIE BB BI AP CLKREQ L
PCIE_CLKREQ3*	AT12	NC

NOTE:CLKREQ_L PULL-UP FOR BB IN RADIO_MLB_MIMO SECTION

PCIE_PERST0*	AR10	PCIE AP TO NAND RESET L
PCIE_PERST1*	AT10	PCIE AP TO WLAN RESET L
PCIE_PERST2*	AP11	PCIE AP TO BB RESET L
PCIE_PERST3*	AR11	NC

R0700 100K 5% 1/32W MF 01005; R0701 100K 5% 1/32W MF 01005; R0702 100K 5% 1/32W MF 01005

PCIE_EXT_REF_CLK_P	AR33	
PCIE_EXT_REF_CLK_N	AT33	
PCIE_RX_TX_BYPASS_CLK_P	AT29	
PCIE_RX_TX_BYPASS_CLK_N	AR29	

PCIE_RCAL_P AT30 → PCIE RCAL P
PCIE_RCAL_N AR30 → PCIE RCAL N

OMIT_TABLE R0730 100 1% 1/32W MF 01005
OMIT_TABLE C0730 100PF 5% 16V NP0-C0G 01005

PAGE TITLE: SOC:PCIE

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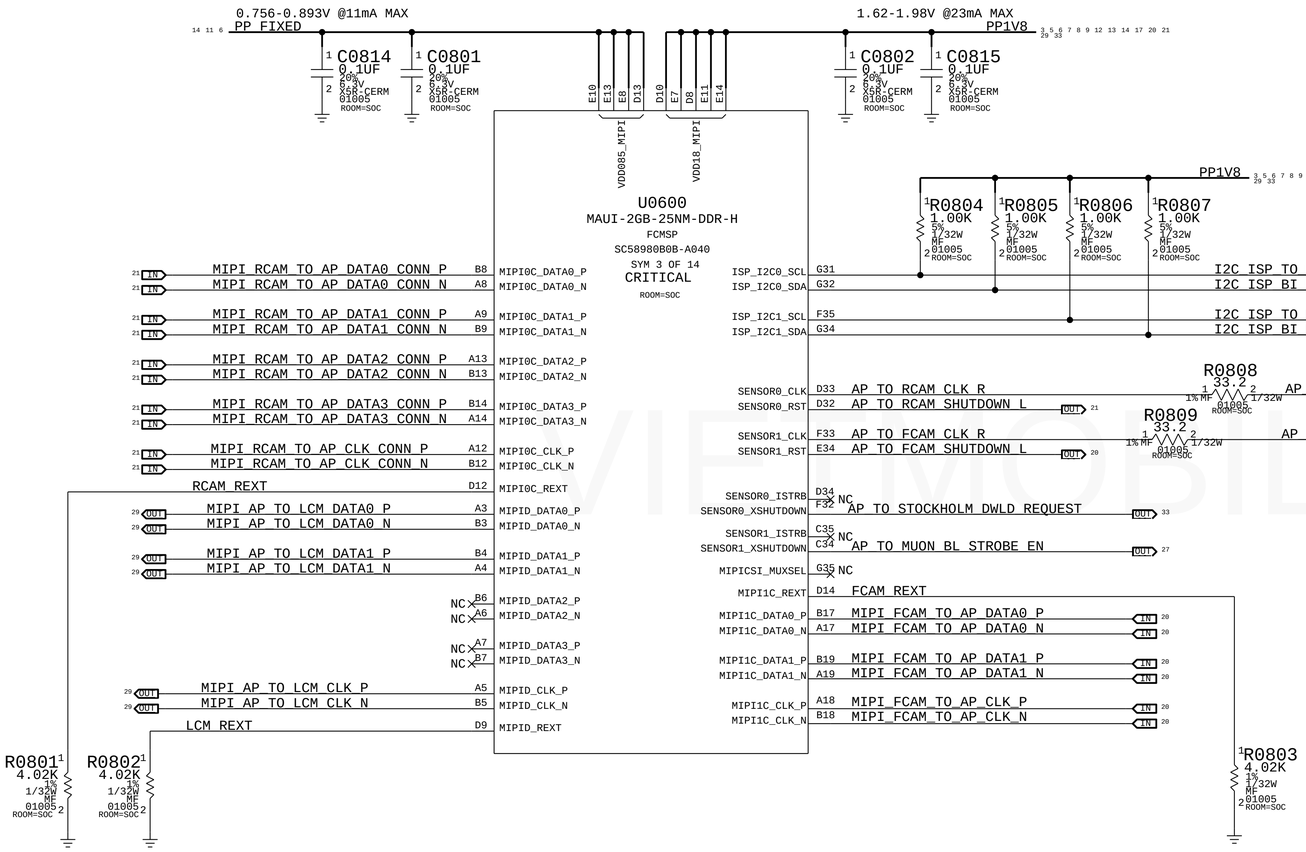
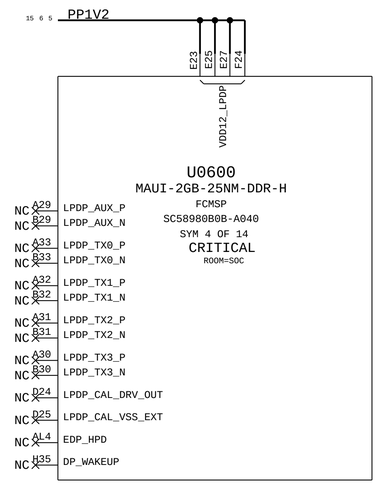
MAUI - CAMERA & DISPLAY INTERFACES



NOTE:VDD12_LPDP SHOULD BE POWERED EVEN WHEN LPDP IS NOT USED



SYNC_MASTER=N/A SYNC_DATE=N/A

PAGE TITLE: SOC:CAMERA & DISPLAY

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REVISION: A.0.0

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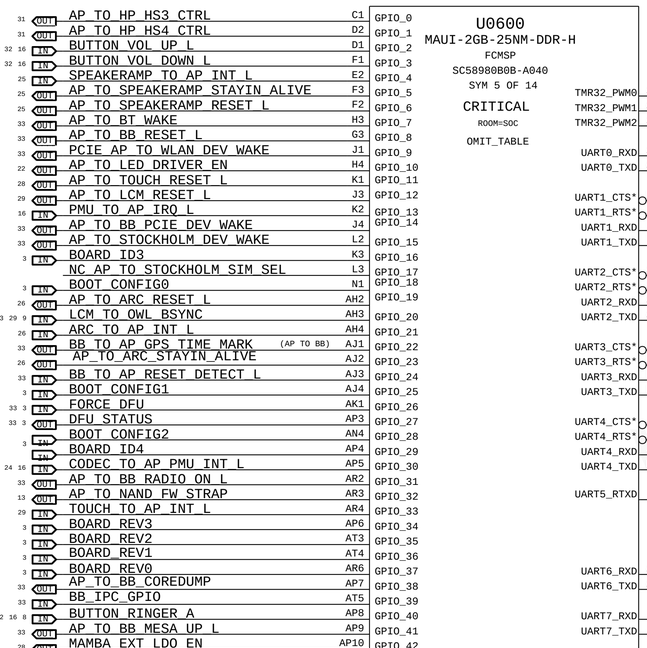
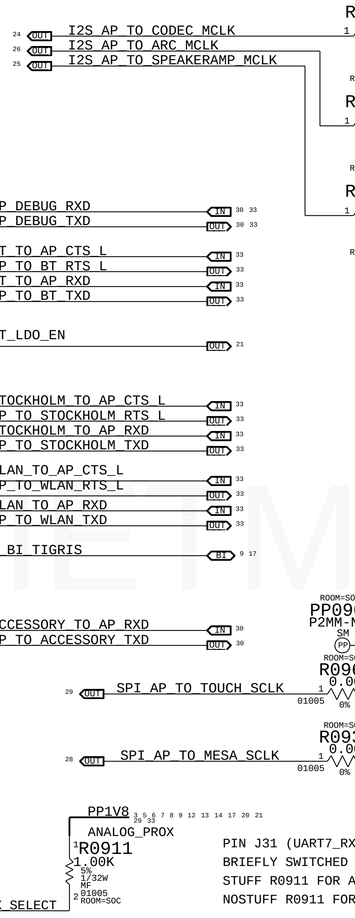
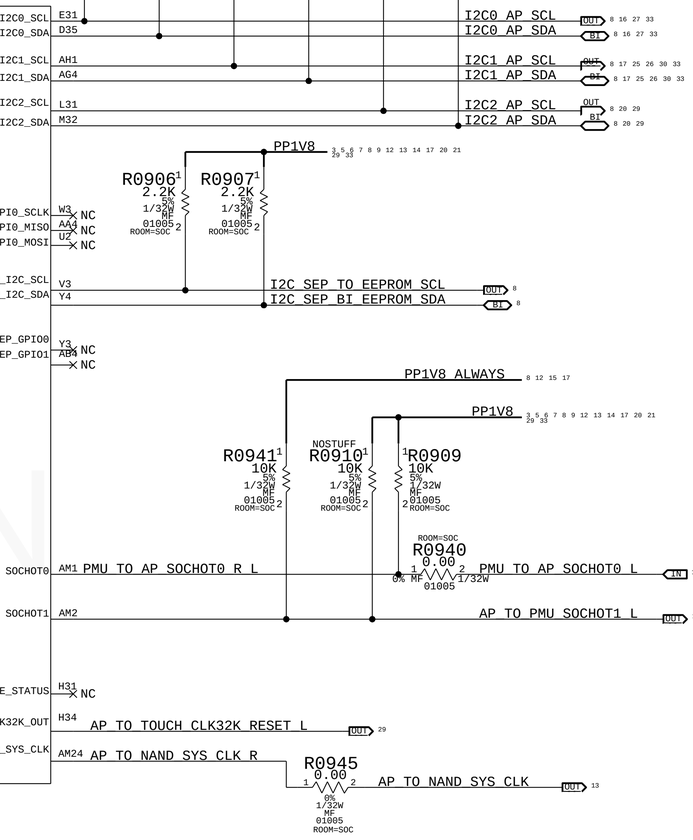
MAUI - GPIO & SERIAL INTERFACES



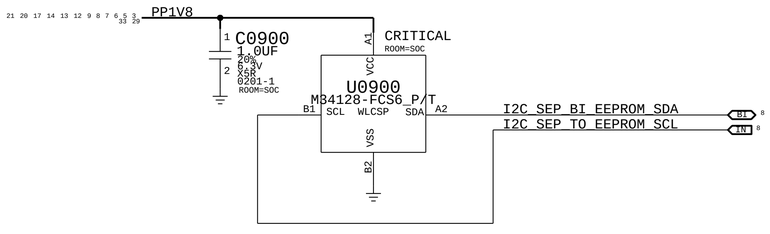




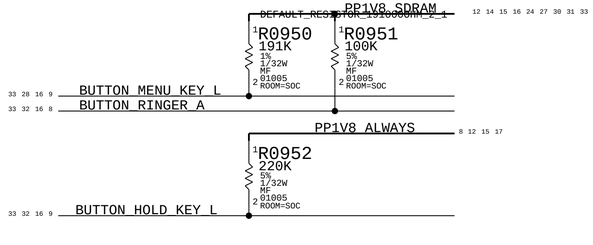
PIN J31 (UART7_RXD) SHOULD BE
BRIEFLY SWITCHED TO PD TO CHECK STATE.
STUFF R0911 FOR ANALOG PROX.
NOSTUFF R0911 FOR DOPPLER PROX.

ANTI-ROLLBACK EEPROM

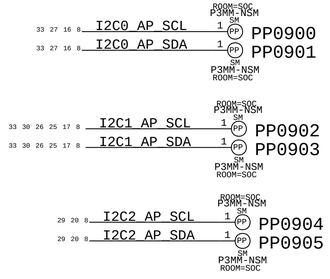
128kbit
APN:335S0946



BUTTON PULL-UP RESISTORS



I2C PROBE POINTS



SYNC_MASTER=N/A SYNC_DATE=N/A

PAGE TITLE: SOC:SERIAL & GPIO

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MAUI - OWL

POWER STATE CONTROL PROBE POINTS

PMU_TO_OWL_ACTIVE_READY — ROOM=SOC P3MM-NSM SM PP1021
PMU_TO_OWL_SLEEP1_READY — ROOM=SOC P3MM-NSM SM PP1023

U0600
MAUI-2GB-25NM-DDR-H
FCMSP
SC58980B0B-A040
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OMIT_TABLE
CRITICAL
ROOM=SOC

OUT	OWL_TO_PMU_SLEEP1_REQUEST	AD30	OWL_DDR_REQ
IN	PMU_TO_OWL_SLEEP1_READY	AB33	OWL_DDR_RESET*
OUT	SPI_OWL_TO_COMPASS_CS_L	AF35	OWL_FUNC_0
IN	COMPASS_TO_OWL_INT	AH32	OWL_FUNC_1
OUT	DISCRETE_ACCEL_TO_OWL_INT2	AG32	OWL_FUNC_2
IN	ACCEL_GYRO_TO_OWL_INT1	AG31	OWL_FUNC_3
OUT	SPI_OWL_TO_ACCEL_GYRO_CS_L	AG30	OWL_FUNC_4
IN	ACCEL_GYRO_TO_OWL_INT2	AF33	OWL_FUNC_5
OUT	SPI_OWL_TO_PHOSPHOROUS_CS_L	AE34	OWL_FUNC_6
IN	LCM_TO_OWL_BSYNC	AF34	OWL_FUNC_7
	OWL_TO_PMU_SHDN_BI_TIGRIS_SWI	AF31	OWL_FUNC_8
IN	PHOSPHORUS_TO_OWL_IRQ	AF32	OWL_FUNC_9
IN	SPI_OWL_TO_DISCRETE_ACCEL_CS_L	AH31	OWL_I2CM_SCL
OUT	DISCRETE_ACCEL_TO_OWL_INT1	AH33	OWL_I2CM_SDA
IN	SPI_IMU_TO_OWL_MISO	AK31	OWL_SPI_MISO
OUT	SPI_OWL_TO_IMU_MOSI	AK32	OWL_SPI_MOSI
OUT	SPI_OWL_TO_IMU_SCLK	AL33	OWL_SPI_SCLK
IN	UART_BB_TO_OWL_RXD	AJ32	OWL_UART0_RXD
OUT	UART_OWL_TO_BB_TXD	AK33	OWL_UART0_TXD
OUT	OWL_TO_WLAN_CONTEXT_B	AH30	OWL_UART1_RXD
OUT	OWL_TO_WLAN_CONTEXT_A	AJ31	OWL_UART1_TXD
IN	TOUCH_TO_OWL_ACCEL_DATA_REQUEST	AJ34	OWL_UART2_RXD
OUT	UART_OWL_TO_TOUCH_TXD	AJ33	OWL_UART2_TXD
OUT	I2S_AP_OWL_TO_CODEC_XSP_BCLK	AD34	OWL_I2S_BCLK
IN	I2S_CODEC_TO_AP_OWL_XSP_DIN	AA34	OWL_I2S_DIN
	NC	AE32	OWL_I2S_MCK
OUT	I2S_AP_OWL_TO_CODEC_XSP_LRCLK	AE31	OWL_I2S_LRCK

CFSB_AOP	W33	PMU_TO_SYSTEM_COLD_RESET_L	IN
AWAKE_REQ	AA33	OWL_TO_PMU_ACTIVE_REQUEST	OUT
AWAKE_RESET*	AD32	PMU_TO_OWL_ACTIVE_READY	IN
PMGR_MISO	AL2	DWI_PMU_TO_PMGR_MISO	IN
PMGR_MOSI	AL1	DWI_PMGR_TO_PMU_BACKLIGHT_MOSI	
PMGR_SCLK0	AK4	DWI_PMGR_TO_PMU_SCLK	OUT
PMGR_SSCLK1	AL3	DWI_PMGR_TO_BACKLIGHT_SCLK	OUT
RT_CLK32768	AD31	PMU_TO_OWL_CLK32K	IN
OWL_SWD_TCK_OUT	AE33	SWD_AP_PERIPHERAL_SWCLK	OUT
OWL_SWD_TMS0	AD35	NC	
OWL_SWD_TMS1	AC33	SWD_AP_BI_BB_SWDIO	BI
SWD_TMS2	U31	SWD_AP_BI_NAND_SWDIO	BI
SWD_TMS3	T31	NC	
HOLD_KEY*	U3	BUTTON_HOLD_KEY_L	IN
SKEY*	W4	NC	
MENU_KEY*	V4	BUTTON_MENU_KEY_L	IN

PP1002 P2MM-NSM

PP1V8
NOSTUFF
R1002 1.00K 5% 1/32W MF 01005 ROOM=SOC

OWL SYSTEM SHUTDOWN OPTION

OWL_TO_PMU_SHDN_BI_TIGRIS_SWI

NOSTUFF R1020 10 1/32W MF 5% 01005 ROOM=SOC — SWI_AP_BI_TIGRIS (BI)

NOSTUFF R1021 10 1/32W MF 5% 01005 ROOM=SOC — OWL_TO_PMU_SHDN (OUT)

SYNC_MASTER=N/A	SYNC_DATE=N/A
PAGE TITLE	SOC:OWL
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MAUI - CPU, GPU & SOC RAILS

PP GPU
0.8V @10.5A MAX

C1100 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=SOC
C1101 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=SOC
C1103 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=SOC
C1104 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=SOC
C1105 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=SOC

XW1110 SHORT-10L-0.1MM-SM ROOM=SOC
BUCK1_PP_GPU_FB

TP1120 0.50MM SM
PP_GPU

C1106 4.3UF 20% 4V CERM 0402
C1107 7.5UF 20% 4V CERM 0402
C1108 4.3UF 20% 4V CERM 0402
C1109 7.5UF 20% 4V CERM 0402
C1110 4.3UF 20% 4V CERM 0402
C1111 7.5UF 20% 4V CERM 0402

C1112 1UF 20% 4V CERM 0402
C1113 1UF 20% 4V CERM 0402
C1114 1UF 20% 4V CERM 0402
C1115 1UF 20% 4V CERM 0402
C1116 0.47UF 20% 6.3V CERM 0402
C1117 0.47UF 20% 6.3V CERM 0402

PP CPU
0.625V @TBDA MAX
0.9V @10.5A MAX
1.0V @12.5A MAX

C1120 10UF 20% 6.3V CERM-X5R ROOM=SOC
C1121 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=SOC
C1122 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=SOC
C1123 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=SOC
C1124 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=SOC
C1125 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=SOC

TP1100 0.50MM SM
PP_CPU

C1126 7.5UF 20% 4V CERM 0402
C1127 7.5UF 20% 4V CERM 0402
C1128 4.3UF 20% 4V CERM 0402
C1129 7.5UF 20% 4V CERM 0402
C1130 4.3UF 20% 4V CERM 0402
C1131 4.3UF 20% 4V CERM 0402

C1132 4.3UF 20% 4V CERM 0402
C1133 7.5UF 20% 4V CERM 0402
C1134 1UF 20% 4V CERM 0402
C1135 1UF 20% 4V CERM 0402
C1136 1UF 20% 4V CERM 0402
C1137 1UF 20% 4V CERM 0402

C1138 0.47UF 6.3V CERM 0402
C1139 0.47UF 6.3V CERM 0402
C1140 0.47UF 6.3V CERM 0402
C1141 0.47UF 6.3V CERM 0402

XW1100 SHORT-10L-0.1MM-SM ROOM=SOC
BUCK0_PP_CPU_FB

U0600
MAUI-2GB-25NM-DDR-H
FCMSP
SC58980B0B-A040
SYM 8 OF 14
CRITICAL
ROOM=SOC
OMIT_TABLE

VDD_CPU: AA7 AA9 AA11 AB6 AB10 AB12 AC13 AD6 AD8 AD10 AD12 AE7 AE9 AE11 AE13 AF8 AF10 AF12 AH6 AH8 AH10 AH12 AJ5 AJ7 AJ9 AJ11 AJ13 AK6 AK10 AL7 AL9 AL11 AM6 AM8 AM10 AN7 AN11 AL13 Y8 Y10 Y12 AM12

VDD_GPU: G15 W13 T12 M6 U9 V12 W9 M12 M18 N15 N21 N9 F10 H14 H16 H20 H22 H6 H8 J11 J13 J17 J19 J23 J7 K10 K14 K16 K20 K22 K6 K8 L11 L13 L15 L17 L19 L21 M24 L7 L9 F8 M8 N11 N13 N17 N19 P10 G11 P12 P14 P16 P20 R15 R19 G13 R9 T10 T14 T16 U11 V14 V16 G7 R23 H10 T24 P22 W17 N23 G17 G21 T18 T20

VDD_CPU_SENSE Y6
VSS_CPU_SENSE Y7
VDD_GPU_SENSE G20
VSS_GPU_SENSE H19

P2MM-NSM PP1100 AP_CPU_SENSE_P
P2MM-NSM PP1101 AP_CPU_SENSE_N
P2MM-NSM PP1102 AP_GPU_SENSE_N
AP_GPU_SENSE_P

NOTE:AP_GPU_SENSE_P PROBE LOCATION @ R2205.2

U0600
MAUI-2GB-25NM-DDR-H
FCMSP
SC58980B0B-A040
SYM 9 OF 14
CRITICAL
ROOM=SOC
OMIT_TABLE

VDD_SOC: AA17 AA19 AA23 AB14 AB16 AB20 AB22 AB24 AB26 AC17 AC19 AC23 AD16 AD20 AD22 AD24 AD26 AE5 AE15 AE17 AE19 AE23 AF14 AF16 AF20 AF22 AF24 AF26 AG17 AG19 AG23 AH16 AH20 AH22 AH24 AH26 AJ15 AJ17 AJ19 AJ23 AK14 J29 G23 AK22 F6 F14 AL15 AM5 G25 G27 H24 H26 H28 J27 K24 K26 K28 L27 L23 M26 M28 AL19 N7 N27 P24 P26 P28 R17 R27 R29 T22 T26 T7 T28 U17 V8 V20 V22 V24 V26 W7 W11 Y28

VSS: W23 Y14 Y16 Y20 Y22 Y24 Y26 G29 AA27 F17 F20 L29 N29 V28 L22 L24 L26 L28 M1 M5 M7 M9 M11 M13 M17 M21 M23 M25 M27 M29 M35 N6 N10 N12 N14 N16 N18 G19 N22 N24 N26 N28 N30 N33 P9 P11 P13 P15 P17 P19 P21 P23 P25 P27 P29 P35 R4 R6 R8 R10 R12 R14 M19 R18 R20 R22 R24 R26 R28 R30 T1 T2 R33 T9 T11 T13 T15 T17 P7 T23 T25 T27 T30 T35 U6 U10 U12

VDD_SOC_SENSE AJ20
VSS_SOC_SENSE AK21

AP_SOC_SENSE_N P2MM-NSM PP1104
AP_SOC_SENSE_P P2MM-NSM PP1105

C1150 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=SOC
C1151 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=SOC

PP_SOC
0.825V @4.7A MAX
0.725V @TBDA MAX

XW1120 SHORT-10L-0.1MM-SM ROOM=SOC
BUCK2_PP_SOC_FB

C1153 4.3UF 20% 4V CERM 0402
C1154 1UF 20% 4V CERM 0402
C1155 1UF 20% 4V CERM 0402
C1156 0.47UF 6.3V CERM 0402
C1157 0.47UF 6.3V CERM 0402

SYNC_MASTER=N/A SYNC_DATE=N/A
PAGE TITLE: SOC:POWER (1/3)

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MAUI - POWER SUPPLIES

1.06 - 1.17V @635mA MAX
INTERNALLY SUPPLIES VDDQ
PP1V1
C1240 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=SOC
C1241 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=SOC
C1242 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=SOC
C1243 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=SOC
C1244 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=SOC
C1248 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=SOC
C1245 4.3UF 20% 4V CERM 0402 ROOM=SOC
C1246 1UF 20% 6.3V CERM 0402 ROOM=SOC
C1247 0.47UF 20% 6.3V CERM 0402 ROOM=SOC

0.802-TBDV @1.1A MAX
PP_FIXED
C1200 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=SOC
C1201 4.3UF 20% 4V CERM 0402 ROOM=SOC
C1202 1UF 20% 6.3V CERM 0402 ROOM=SOC
C1203 0.47UF 20% 6.3V CERM 0402 ROOM=SOC

U0600
MAUI-2GB-25NM-DDR-H
FCMSP
SC58980B0B-A040
SYM 10 OF 14
CRITICAL
ROOM=SOC
OMIT_TABLE

VDD_FIXED: AA15 AA21 AA25 AB18 AC15 AC21 AC25 AD14 AD18 AE21 AE25 AF18 AG15 AG21 AH25 AH14 AH18 AJ21 AK16 F12 G10 V18 AL17 J25 L25 N25 R25 R7 AN6 U25 W15 W21 W25 Y18 F21 F26 AB28 AC27 G18 AK20 F16 R16 T8 V7 U19 W27 U27 AF4 AF27 U21

0.8V @TBDA MAX
0.9V @TBDA MAX
1.0V @1.0A MAX
PP_CPU_SRAM
C1223 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=SOC
C1220 0.47UF 20% 6.3V CERM 0402
C1221 1UF 20% 6.3V CERM 0402
C1222 4.3UF 20% 4V CERM 0402

VDD_CPU_SRAM: AC11 AC7 AC9 AA13 AG11 AG7 AG9 AK12

0.8V @0.5A MAX
PP_GPU_SRAM
C1227 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=SOC
C1224 4.3UF 20% 4V CERM 0402
C1225 1UF 20% 6.3V CERM 0402
C1226 4.3UF 20% 4V CERM 0402

VDD_GPU_SRAM: H12 H18 R21 U15 J15 J21 J9 K12 K18 M10 M14 M16 M20 P18 R11 R13 U13 V10 M22

0.756-TBDV @44mA MAX
PP0V8_OWL
C1250 1.0UF 20% 6.3V X5R 0201-1 ROOM=SOC

VDD_LOW: AH29 AD29 AF29

U0600
MAUI-2GB-25NM-DDR-H
FCMSP
SC58980B0B-A040
SYM 11 OF 14
CRITICAL
ROOM=SOC
OMIT_TABLE

VDDIO11_DDR0: A20 A22 B11 B15 B23 B25 D16 D20 D22 E15 E17 E19 E21
VDDIO11_DDR1: AN19 AR18 AR21 AR8 AT13 AT16 AM14 AM16 AM18 AM20 AR15 AN13 AN15
VDDIO11_DDR2: AB29 V29 Y29 Y35 AB35 AG34 M34 R35 T29 T34 AA30 U30 AC30
VDDIO11_DDR3: AA1 AC2 V6 W2 H2 M2 U5 P6 T6 U1 N5 R5 W5

DDR IMPEDANCE CONTROL
PP1V1
R1200 240 1% 1/32W MF 01005 ROOM=SOC
R1201 240 1% 1/32W MF 01005 ROOM=SOC
R1202 240 1% 1/32W MF 01005 ROOM=SOC
R1203 240 1% 1/32W MF 01005 ROOM=SOC
R1204 240 1% 1/32W MF 01005 ROOM=SOC
R1205 240 1% 1/32W MF 01005 ROOM=SOC

DDR0_RREF: C21 DDR0_RREF
DDR1_RREF: AP17 DDR1_RREF
DDR2_RREF: V31 DDR2_RREF
DDR3_RREF: P5 DDR3_RREF
DDR0_ZQ: B21 DDR0_ZQ
DDR3_ZQ: P2 DDR3_ZQ
DDR0_RET*: C18 PMU_TO_OWL_SLEEP1_READY
DDR1_RET*: AP15
DDR2_RET*: Y31
DDR3_RET*: U4

1.1V @7mA MAX
PP1V1_DDR_PLL
VOLTAGE=1.1V
FL1280 100OHM-25%-0.12A 0201 ROOM=SOC
VDDIO11_PLL_DDR: AK18 W26 P8
C1280 0.22UF 20% 6.3V X5R 01005-1 ROOM=SOC

VDDIO11_RET_DDR: AN17 W31 T4
PP1V1_SDRAM
1.06 - 1.17V

DDR0_SYS_ALIVE: C19
DDR1_SYS_ALIVE: AP16
DDR2_SYS_ALIVE: W32
DDR3_SYS_ALIVE: T3
SYSTEM_ALIVE

SYNC_MASTER=N/A SYNC_DATE=N/A
PAGE TITLE: SOC:POWER (2/3)
Apple Inc.
DRAWING NUMBER: 051-1902
SIZE: D
REVISION: A.0.0
BRANCH:
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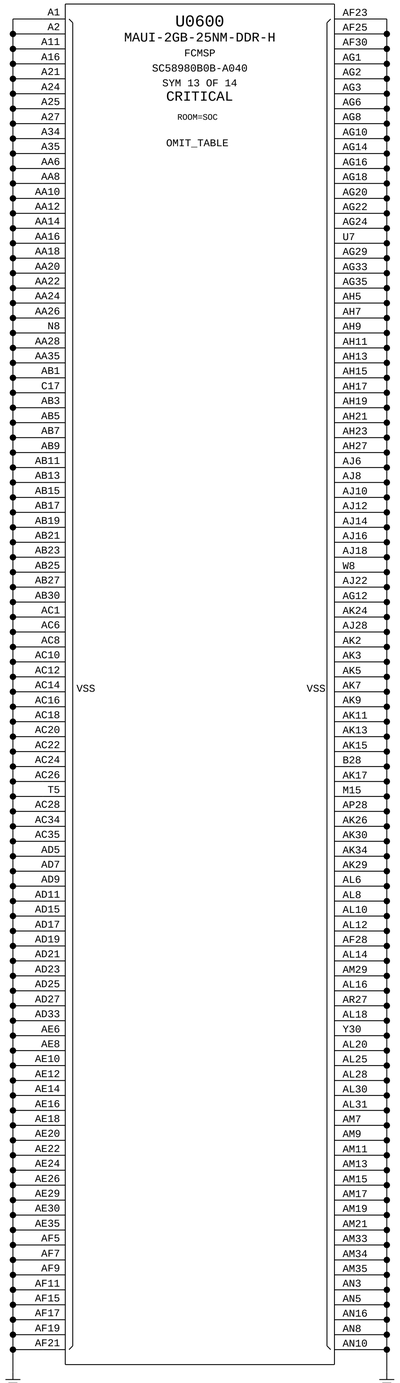
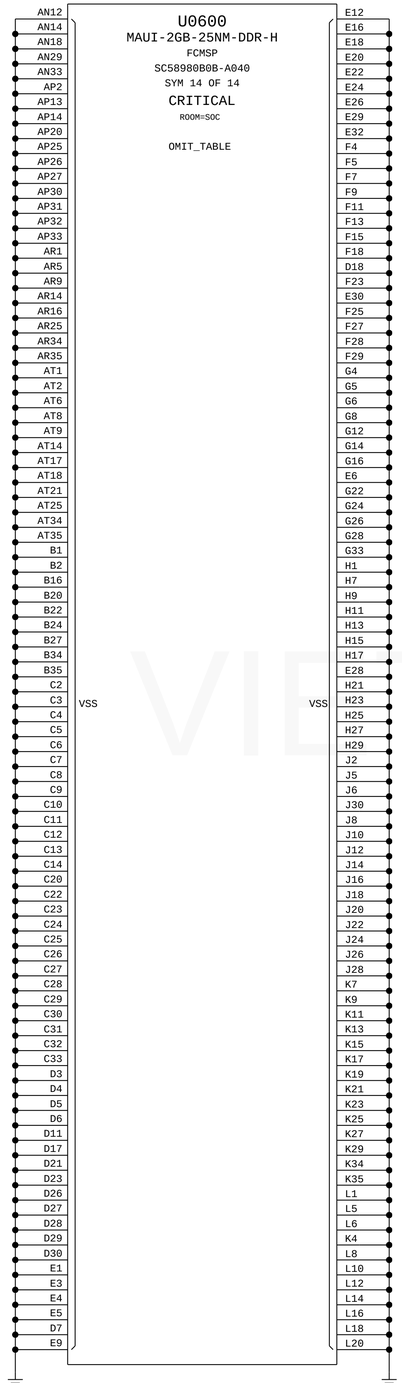
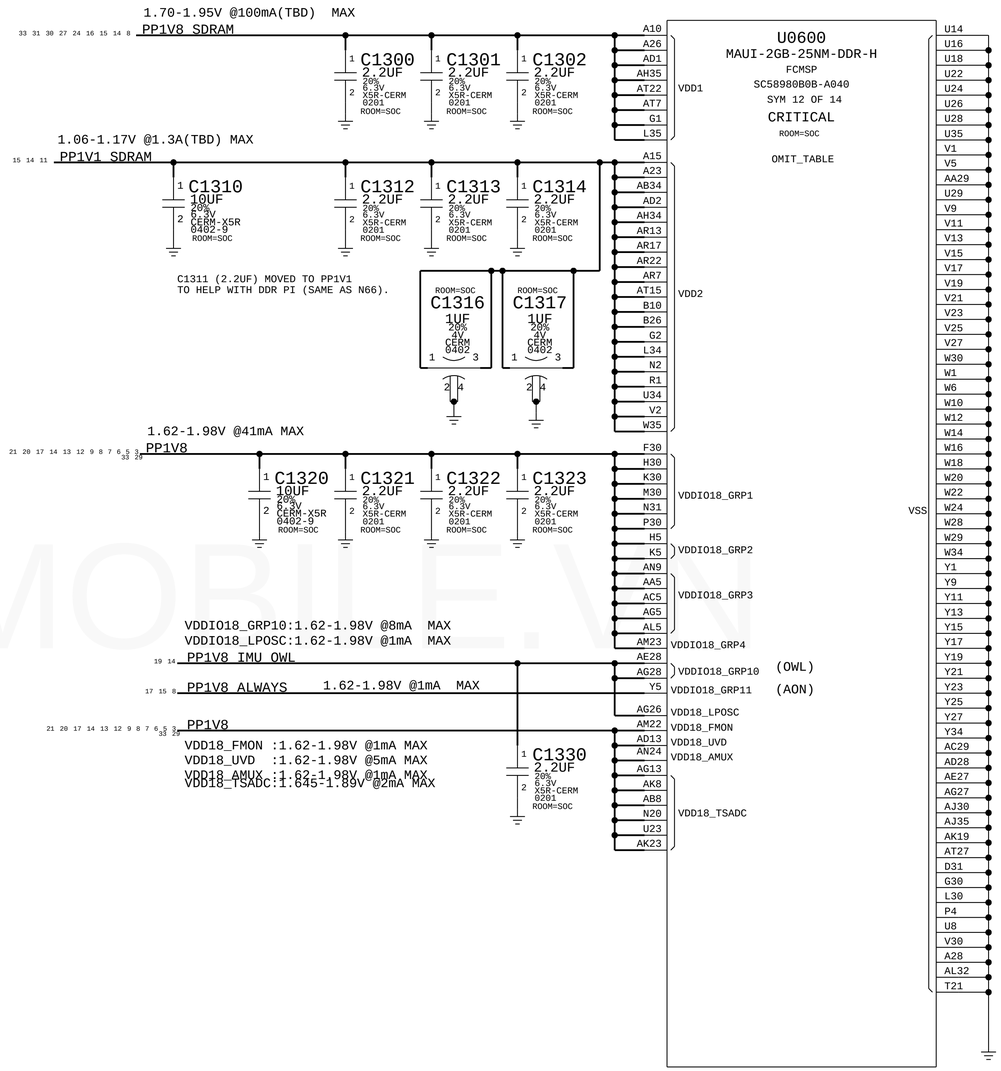
MAUI - POWER SUPPLIES







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PAGE TITLE
SOC:POWER (3/3)

Apple Inc.

DRAWING NUMBER 051-1902 SIZE D

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S3E NAND

PP1V8
R1530 24.9 1% 1/32W MF 01005 ROOM=NAND
PP1V8_NAND_AVDD VOLTAGE=1.8V
C1530 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=NAND
C1531 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=NAND
NAND_AGND VOLTAGE=0V
C1534 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=NAND
C1520 15UF 20% 6.3V X5R 0402-1 ROOM=NAND
C1521 15UF 20% 6.3V X5R 0402-1 ROOM=NAND
C1522 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=NAND
C1524 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=NAND
C1525 100PF 5% 16V NP0-C0G 01005 ROOM=NAND
C1523 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=NAND
C1532 1.0UF 20% 6.3V X6S 0201-1 ROOM=NAND
C1526 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=NAND
C1527 1.0UF 20% 6.3V X6S 0201-1 ROOM=NAND
C1528 220PF 10% 16V X7R-CERM 01005 ROOM=NAND
C1529 33PF 5% 16V NP0-C0G-CERM 01005 ROOM=NAND
C1533 8.2PF +/-0.5PF 16V NP0-C0G-CERM 01005 ROOM=NAND
EXTRA CAPS ADDED FOR UF BLOCKING AND DESENSE MITIGATION.

PP0V9_NAND
C1548 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=NAND
C1540 15UF 20% 6.3V X6S 0402-1 ROOM=NAND
C1541 15UF 20% 6.3V X6S 0402-1 ROOM=NAND
C1542 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=NAND
C1543 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=NAND
C1546 1.0UF 20% 6.3V X6S 0201-1 ROOM=NAND
C1547 1.0UF 20% 6.3V X6S 0201-1 ROOM=NAND
C1550 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=NAND
C1551 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=NAND
C1554 1000PF 10% 6.3V X5R-CERM 01005 ROOM=NAND

PP3V0_NAND
C1500 15UF 20% 6.3V X5R 0402-1 ROOM=NAND
C1501 15UF 20% 6.3V X5R 0402-1 ROOM=NAND
C1502 15UF 20% 6.3V X5R 0402-1 ROOM=NAND
C1503 15UF 20% 6.3V X5R 0402-1 ROOM=NAND
C1504 1.0UF 20% 6.3V X6S 0201-1 ROOM=NAND
C1506 1.0UF 20% 6.3V X6S 0201-1 ROOM=NAND
C1510 220PF 10% 16V X7R-CERM 01005 ROOM=NAND
C1511 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=NAND
C1512 33PF 5% 16V NP0-C0G-CERM 01005 ROOM=NAND
C1513 8.2PF +/-0.5PF 16V NP0-C0G-CERM 01005 ROOM=NAND
C1516 100PF 5% 16V NP0-C0G 01005 ROOM=NAND
C1514 56PF 2% 50V NP0-C0G 0201 ROOM=NAND
C1515 1UF 20% 6.3V X5R 0201 ROOM=NAND
EXTRA CAPS ADDED FOR UF BLOCKING AND DESENSE MITIGATION.
DEFAULT_CAPACITOR_56.000000pF_2_1
C1517 1.0UF 20% 6.3V X6S 0201-1 ROOM=NAND
C1507 100PF 5% 16V NP0-C0G 01005 ROOM=NAND
C1508 100PF 5% 16V NP0-C0G 01005 ROOM=NAND
C1505 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=NAND

PP1V8
C1560 0.01UF 10% 6.3V X5R 01005 ROOM=NAND
R1560 10K 1% 1/32W MF 01005 ROOM=NAND NOSTUFF
C1561 0.01UF 10% 6.3V X5R 01005 ROOM=NAND
R1561 10K 1% 1/32W MF 01005 ROOM=NAND NOSTUFF
R1501 3.01K 1% 1/20W MF 0201 ROOM=NAND
R1500 34.8 0.5% 1/32W MF 01005 ROOM=NAND

U1500
VLGA
VER-1
BOMOPTION=OMIT_TABLE
ROOM=NAND
CRITICAL

PCI_AVDD_CLK1	M4		
PCI_AVDD_CLK2	J5		
PCI_AVDD_H	J7		
PCI_VDD1	K4		
PCI_VDD2	K6		
AVDD1	C3		
VREF	E5		
NAND_VREF			
AP_TO_NAND_SYS_CLK	D2	CLK_IN	
PCIE_AP_TO_NAND_REFCLK_P	H8	PINUSE=BI PCIE_REFCLK_P	
PCIE_AP_TO_NAND_REFCLK_N	H6	PINUSE=BI PCIE_REFCLK_M	
PCIE_NAND_TO_AP_CLKREQ_L	G9	PCIE_CLKREQ*	
PCIE_NAND_RESREF	M6	PCI_RESREF	
PCIE_AP_TO_NAND_TXD0_P	M8	PINUSE=BI PCIE_RX0_P	
PCIE_AP_TO_NAND_TXD0_N	K8	PINUSE=BI PCIE_RX0_M	
PCIE_AP_TO_NAND_TXD1_P	N5	PINUSE=BI PCIE_RX1_P	
PCIE_AP_TO_NAND_TXD1_N	N3	PINUSE=BI PCIE_RX1_M	
PCIE_NAND_TO_AP_RXD0_P	P8	PINUSE=BI PCIE_TX0_P	
PCIE_NAND_TO_AP_RXD0_N	N7	PINUSE=BI PCIE_TX0_M	
PCIE_NAND_TO_AP_RXD1_P	M2	PINUSE=BI PCIE_TX1_P	
PCIE_NAND_TO_AP_RXD1_N	K2	PINUSE=BI PCIE_TX1_M	
AP_TO_NAND_RESET_L	F8	RESET*	
NC	D8	TRST*	
NAND_ZQ	D6	ZQ	
NAND_AGND	B2	VSSA	
	B4	VSS	
	B6	VSS	
	OE10	VSS	
	G7	VSS	
	L3	VSS	
	L5	VSS	
	L7	VSS	
	P2	VSS	
	P4	VSS	
	P6	VSS	
	OC0	VSS	
	OC10	VSS	
	OE0	VSS	
	A5	VDDIO	
	OB0	VDDIO	
	OB10	VDDIO	
	OF0	VDDIO	
	OF10	VDDIO	
	R5	VDDIO	
	OA0	VCC	
	OA10	VCC	
	OD0	VCC	
	OD10	VCC	
	OG0	VCC	
	OG10	VCC	
	A3	VDD	
	A7	VDD	
	F2	VDD	
	J1	VDD	
	J9	VDD	
	R3	VDD	
	R7	VDD	
	VDD		

EXT_D0	G3	PMU_TO_NAND_LOW_BATT_BOOT_L
EXT_D1	J3	AP_TO_NAND_FW_STRAP
EXT_D2	H2	NC
EXT_D3	E3	NC
EXT_D4	E1	NC
EXT_D5	F6	NC
EXT_D6	C1	NC
EXT_D7	B8	SYSTEM_ALIVE
EXT_NCE	G1	PCIE_AP_TO_NAND_RESET_L
EXT_NRE	F4	SWD_AP_BI_NAND_SWDIO_R
EXT_NWE	C5	SWD_AP_NAND_SWCLK_R
EXT_RNB	G5	NC
EXT_CLE	H4	NC
EXT_ALE	D4	

PP1520 ROOM=NAND P3MM-NSM
R1520 0.00 0% MF 1/32W 01005 ROOM=NAND SWD_AP_BI_NAND_SWDIO
R1521 0.00 0% MF 1/32W 01005 ROOM=NAND SWD_AP_PERIPHERAL_SWCLK
PP1521 P3MM-NSM ROOM=NAND

PCIE RECEIVE-SIDE PROBE POINTS

PCIE_AP_TO_NAND_REFCLK_P → PP1500
PCIE_AP_TO_NAND_REFCLK_N → PP1501
PCIE_AP_TO_NAND_TXD0_P → PP1502
PCIE_AP_TO_NAND_TXD0_N → PP1503
PCIE_AP_TO_NAND_TXD1_P → PP1504
PCIE_AP_TO_NAND_TXD1_N → PP1505
ROOM=NAND P3MM-NSM

SYNC_MASTER=N/A SYNC_DATE=N/A
PAGE TITLE: NAND
Apple Inc.
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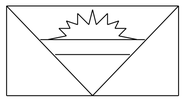
ANTIGUA PMU - Buck Supplies



CRITICAL
OMIT_TABLE

U2000
D2255A080UXUVAI2
CSP
SYM 2 OF 5
ROOM=PMU

VDD_MAIN_SNS V3
VDD_MAIN R6 F10 L13 L5 R8 L4
BAT/USB
VDD_BUCK0_01 A4 B4 C4
VDD_BUCK0_23 A8 B8 C8
VDD_BUCK1_01 A16 B16 C16
VDD_BUCK1_23 A12 B12 C12
BUCK INPUT
VDD_BUCK2 J17 J18 J19
VDD_BUCK3 T18 T19
VDD_BUCK4 V12 Y12 Z12
VDD_BUCK5 N17 N18 N19
VDD_BUCK6 J1 J2
VDD_BUCK7 E1 E2
VDD_BUCK8 E17 E18 E19
BUCK3_SW1 U18 V18 Y18 Z18
BUCK3_SW2 U16
BUCK3_SW3 U15
BUCK4_SW1 V16 Y16 Z16
BUCK5_LX0 M17 M18 M19
BUCK5_FB M13
BUCK6_LX0 H1 H2
BUCK6_FB J5
BUCK7_LX0 F1 F2
BUCK7_FB C1
BUCK8_LX0 F17 F18 F19
BUCK8_FB C19

PP_VCC_MAIN
33 28 27 26 25 24 22 21 17 15
15 IN VCC_MAIN_SNS

C2085 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=PMU
C2086 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=PMU
C2087 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=PMU
C2088 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=PMU
C2089 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
C2090 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
C2091 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
C2092 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
C2093 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
C2094 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
C2095 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
C2096 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
C2097 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
C2098 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
C2099 100PF 5% 16V NP0-C0G 01005 ROOM=PMU

29 21 20 17 13 12 9 8 7 6 5 3 32 PP1V8
29 28 20 PP1V8_TOUCH VOLTAGE=1.8V
19 12 PP1V8_IMU_OWL VOLTAGE=1.8V
11 PP1V1 VOLTAGE=1.1V

BUCK5 1.1A MAX
11 7 6 PP_FIXED VOLTAGE=0.85V
C2050 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C2051 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
L2050 1.0UH-20%-3.6A-0.060OHM PIQA20161T-SM CRITICAL OMIT_TABLE ROOM=PMU
XW2050 SHORT-10L-0.1MM-SM ROOM=PMU

BUCK6 400mA MAX
21 20 PP1V2_CAMERA VOLTAGE=1.2V
C2060 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C2061 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C2062 100PF 5% 16V NP0-C0G 01005 ROOM=PMU
L2060 1UH-20%-1.2A-0.320OHM 0603 ROOM=PMU
21 IN BUCK6_FB CRITICAL

BUCK7 1.1A MAX
11 PP_CPU_SRAM VOLTAGE=1.0V 0.80V/0.90V/1.0V
C2070 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C2071 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
L2070 1.0UH-20%-2.25A-0.150HM PIXB2016FE-SM ROOM=PMU
XW2070 SHORT-10L-0.1MM-SM ROOM=PMU

BUCK8 1.1A MAX
11 PP_GPU_SRAM VOLTAGE=1.0V 0.80V/0.90V/1.0V
C2080 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C2081 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
L2080 1.0UH-20%-2.25A-0.150HM PIXB2016FE-SM ROOM=PMU CRITICAL
XW2080 SHORT-10L-0.1MM-SM ROOM=PMU

BUCK0_LX0 A3 B3 C3
BUCK0_LX1 A5 B5 C5
BUCK0_LX2 A7 B7 C7
BUCK0_LX3 A9 B9 C9
BUCK0_FB F8

L2000 1.0UH-20%-3.6A-0.060OHM BUCK0 LX0 PIQA20161T-SM CRITICAL OMIT_TABLE ROOM=PMU
L2001 0.47UH-20%-3.8A-0.048OHM BUCK0 LX1 PIQA20121T-SM CRITICAL OMIT_TABLE ROOM=PMU
L2002 1.0UH-20%-3.6A-0.060OHM BUCK0 LX2 PIQA20161T-SM CRITICAL OMIT_TABLE ROOM=PMU
L2003 0.47UH-20%-3.8A-0.048OHM BUCK0 LX3 PIQA20121T-SM CRITICAL OMIT_TABLE ROOM=PMU
BUCK0 PP_CPU_FB IN 10

C2000 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C2001 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C2002 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C2003 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C2004 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C2005 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C2006 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C2007 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C2008 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C2009 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C2010 15UF 20% 6.3V X5R 0402-1 ROOM=PMU

PP_CPU 10
VOLTAGE=1.03V
0.625V/0.9V/1.03V

BUCK0 12.5A MAX

BUCK1_LX0 A17 B17 C17
BUCK1_LX1 A15 B15 C15
BUCK1_LX2 A13 B13 C13
BUCK1_LX3 A11 B11 C11
BUCK1_FB F12

L2010 1.0UH-20%-3.6A-0.060OHM BUCK1 LX0 PIQA20161T-SM CRITICAL OMIT_TABLE ROOM=PMU
L2011 0.47UH-20%-3.8A-0.048OHM BUCK1 LX1 PIQA20121T-SM CRITICAL OMIT_TABLE ROOM=PMU
L2012 1.0UH-20%-3.6A-0.060OHM BUCK1 LX2 PIQA20161T-SM CRITICAL OMIT_TABLE ROOM=PMU
L2013 0.47UH-20%-3.8A-0.048OHM BUCK1 LX3 PIQA20121T-SM CRITICAL OMIT_TABLE ROOM=PMU
BUCK1 PP_GPU_FB IN 10

C2012 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C2013 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C2014 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C2015 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C2016 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C2017 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C2018 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C2019 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C2020 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C2021 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C2011 15UF 20% 6.3V X5R 0402-1 ROOM=PMU

PP_GPU 10
VOLTAGE=0.9V
0.70V/0.80V/0.9V

BUCK1 10.5A MAX

BUCK2_LX0 H17 H18 H19
BUCK2_LX1 K17 K18 K19
BUCK2_FB J14

L2020 1.0UH-20%-3.6A-0.060OHM BUCK2 LX0 PIQA20161T-SM CRITICAL OMIT_TABLE ROOM=PMU
L2021 0.47UH-20%-3.8A-0.048OHM BUCK2 LX1 PIQA20121T-SM CRITICAL OMIT_TABLE ROOM=PMU
BUCK2 PP_SOC_FB IN 10

C2022 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C2023 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C2024 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C2025 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C2026 15UF 20% 6.3V X5R 0402-1 ROOM=PMU

PP_SOC 10
VOLTAGE=0.825V
0.725V/0.825V

BUCK2 4.7A MAX

BUCK3_LX0 R18 R19
BUCK3_FB V19
VBUCK3_SW U17 V17 Y17 Z17

L2030 1.0UH-20%-3.6A-0.060OHM BUCK3 LX0 PIQA20161T-SM CRITICAL OMIT_TABLE ROOM=PMU
XW2030 SHORT-10L-0.1MM-SM ROOM=PMU
BUCK3 FB

C2030 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C2031 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C2032 100PF 5% 16V NP0-C0G 01005 ROOM=PMU

PP1V8_SDRAM 8 12 15 16 24 27 30 31 33
VOLTAGE=1.8V

BUCK3 1.5A MAX

BUCK4_LX0 V11 Y11 Z11
BUCK4_LX1 V13 Y13 Z13
BUCK4_FB T9
VBUCK4_SW V15 Y15 Z15

L2040 1.0UH-20%-3.6A-0.060OHM BUCK4 LX0 PIQA20161T-SM CRITICAL OMIT_TABLE ROOM=PMU
L2041 0.47UH-20%-3.8A-0.048OHM BUCK4 LX1 PIQA20121T-SM CRITICAL OMIT_TABLE ROOM=PMU
XW2040 SHORT-10L-0.1MM-SM ROOM=PMU
BUCK4 FB

C2040 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C2041 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C2042 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C2043 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
C2044 100PF 5% 16V NP0-C0G 01005 ROOM=PMU

PP1V1_SDRAM 11 12 15
VOLTAGE=1.1V

BUCK4 4.7A MAX

SYNC_MASTER=N/A SYNC_DATE=N/A
PAGE TITLE
SYSTEM POWER:PMU (1/3)

Apple Inc.

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ANTIGUA PMU - LDOs

ANTIGUA LDO SPECS

LDO#	ADJ.RANGE	ACCURACY	MAX.CURRENT
LDO1 (A)	2.5-3.3V	+/-1.4%	50mA
LDO2 (B)	1.2-2.0V	+/-2.5%	50mA
LDO3 (A)	2.5-3.3V	+/-1.4%	50mA
LDO4 (D)	0.7-1.2V	+/-2.5%	100mA
LDO5 (F)	2.5-3.3V	+/-2.5%	1000mA
LDO6 (C1)	1.2-3.6V	+/-2.5%	150mA
LDO7 (C)	2.5-3.3V	+/-25mV	250mA
LDO8 (C)	2.5-3.3V	+/-25mV	250mA
LDO9 (C)	2.5-3.3V	+/-25mV	250mA
LDO10 (G)	0.7-1.2V	+/-5.5%	1335mA
LDO11 (C)	2.5-3.3V	+/-25mV	250mA
LDO12 (E)	1.8V	+/-5%	10mA
LDO13 (C)	2.5-3.3V	+/-25mV	250mA
LDO14 (H)	0.8-1.5V	+/-2.5%	250mA
LDO15 (B)	1.2-2.0V	+/-2.5%	50mA

PP VCC MAIN

C2120 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=PMU
C2121 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=PMU
C2122 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=PMU

XW2105 SHORT-10L-0.1MM-SM ROOM=PMU PLACE_NEAR=U2000.U1:2mm

VCC MAIN SNS

C2123 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=PMU
C2124 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=PMU
C2125 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=PMU
C2126 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=PMU
C2127 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=PMU

PP1V1 SDRAM

C2130 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
C2131 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU

PP1V8 SDRAM

C2132 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU

U2000 D2255A080UXUVAI2 CSP SYM 1 OF 5 ROOM=PMU CRITICAL OMIT_TABLE

LDO INPUT: VDD_LDO1_3, VDD_LDO2, VDD_LDO4, VDD_LDO5, VDD_LDO6, VDD_LDO7, VDD_LDO8, VDD_LDO9, VDD_LDO10, VDD_LDO11, VDD_LDO13, VDD_LDO14, VDD_LDO15, VDD_BYPASS

LDO: VLDO1, VLDO2, VLDO3, VLDO4, VLDO5, VLDO6, VBYPASS, VLDO7, VLDO8, VLDO9, VLDO9_FB, VLDO10, VLDO11, VLDO12, VLDO13, VLDO14, VLDO15, VPUMP

VPP_OTP

CAM_AVDD_FB — XW2100 SHORT-10L-0.1MM-SM ROOM=PMU PLACE_NEAR=U2000.Y2:2mm

PMU_VPUMP

C2100 47NF 20% 6.3V X5R-CERM 01005 ROOM=PMU
C2101 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
C2102 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
C2103 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
C2104 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
C2105 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
C2106 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
C2107 4.3UF 20% 4V X5R-CERM 0610 ROOM=PMU
NOSTUFF C2108 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
C2109 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
C2110 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
C2111 4.3UF 20% 4V X5R-CERM 0610 ROOM=PMU
C2112 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
C2113 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
C2114 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
C2115 4.3UF 20% 4V X5R-CERM 0610 ROOM=PMU

VPUMP:10nF min. @ 4.6V

VOLTAGE=3.3V	PP3V3_USB	LDO1
VOLTAGE=1.8V	PP1V8_VA	LDO2
	PP3V0_TRISTAR	LDO3
VOLTAGE=0.8V	PP0V8_OWL	LDO4
VOLTAGE=3.0V	PP3V0_NAND	LDO5
VOLTAGE=3.3V	PP3V3_ACC	LDO6
VOLTAGE=3.0V	PP3V0_PROX_ALS	LDO7
VOLTAGE=2.775V	PMU_LDO8	LDO8
VOLTAGE=2.85V	PP2V85_CAM_AVDD_PMU	LDO9
VOLTAGE=0.9V	PP0V9_NAND	LDO10
VOLTAGE=3.0V	PP3V0_PROX_IRLED	LDO11
VOLTAGE=1.8V	PP1V8_ALWAYS	LDO12
VOLTAGE=3.0V	PP3V0_MESA	LDO13
VOLTAGE=1.2V	PP1V2	LDO14
VOLTAGE=1.8V	PP1V8_MESA	LDO15

U2000 D2255A080UXUVAI2 CSP SYM 5 OF 5 ROOM=PMU CRITICAL OMIT_TABLE

NC, NC

U2000 D2255A080UXUVAI2 CSP SYM 4 OF 5 ROOM=PMU CRITICAL OMIT_TABLE

VSS

PMU_VSS_RTC
NOTE: T3 IS XTAL REF GND

SYNC_MASTER=N/A SYNC_DATE=N/A

PAGE TITLE: SYSTEM POWER:PMU (2/3)

Apple Inc.

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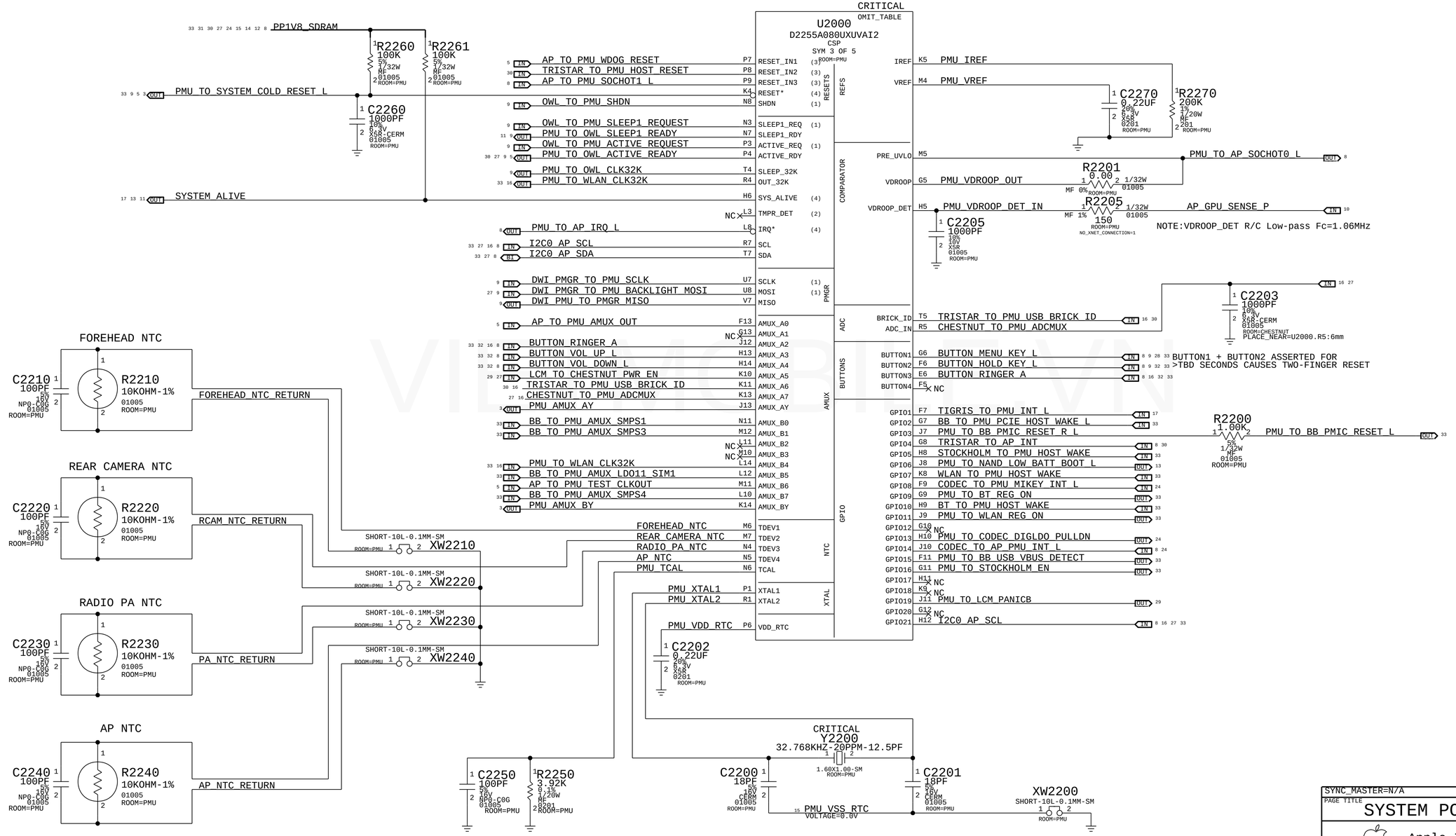
ANTIGUA PMU - GPIOs, NTCs

CONTROL PIN NOTES:

NOTE (1):INPUT PULL-DOWN 100-300k
NOTE (2):INPUT PULL-DOWN 1M
NOTE (3):INPUT PULL-UP OR DOWN 100k-300k
NOTE (4):OUTPUT OPEN-DRAIN, REQUIRES PULL-UP



NOTE:100PF CAPS ARE THE SAMPLING CAPS FOR PMU ADC

SYNC_MASTER=N/A	SYNC_DATE=N/A
PAGE TITLE	SYSTEM POWER:PMU (3/3)
Apple Inc.	DRAWING NUMBER 051-1902 SIZE D
	REVISION A.0.0
	BRANCH
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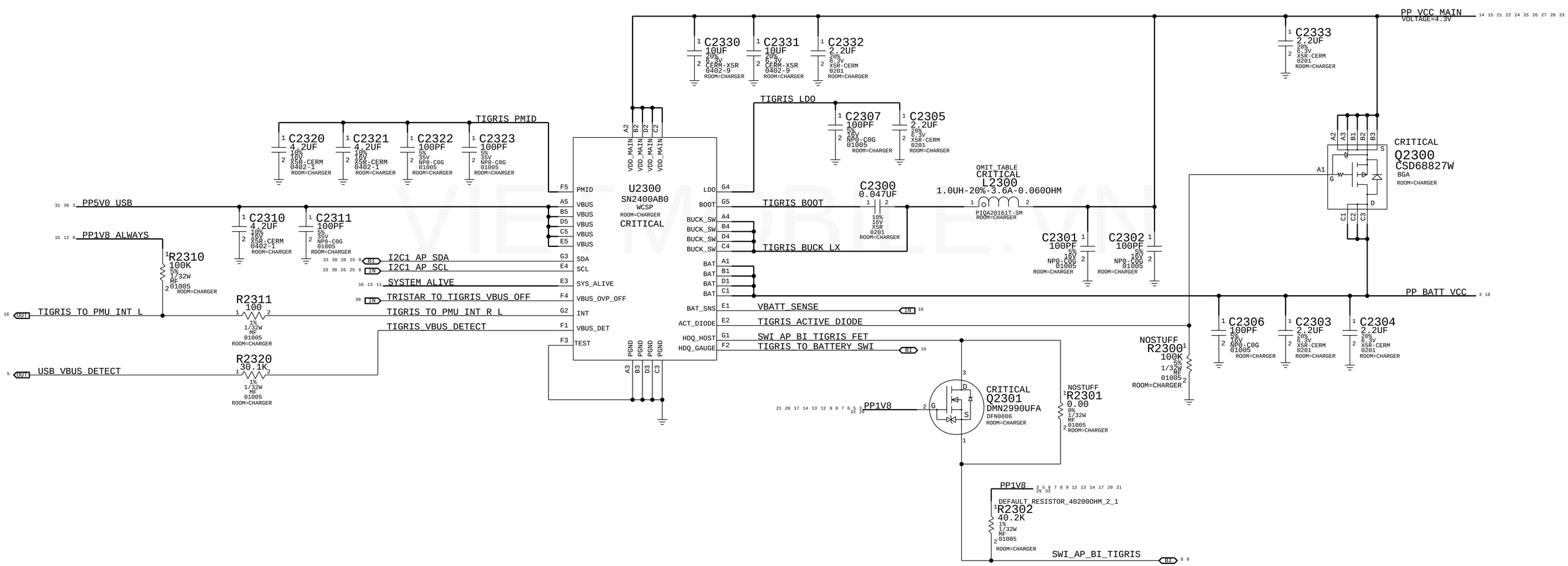
TIGRIS CHARGER

APN:343S00033



SYNC_MASTER=N/A SYNC_DATE=N/A

PAGE TITLE

SYSTEM POWER:CHARGER

Apple Inc.

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BRANCH

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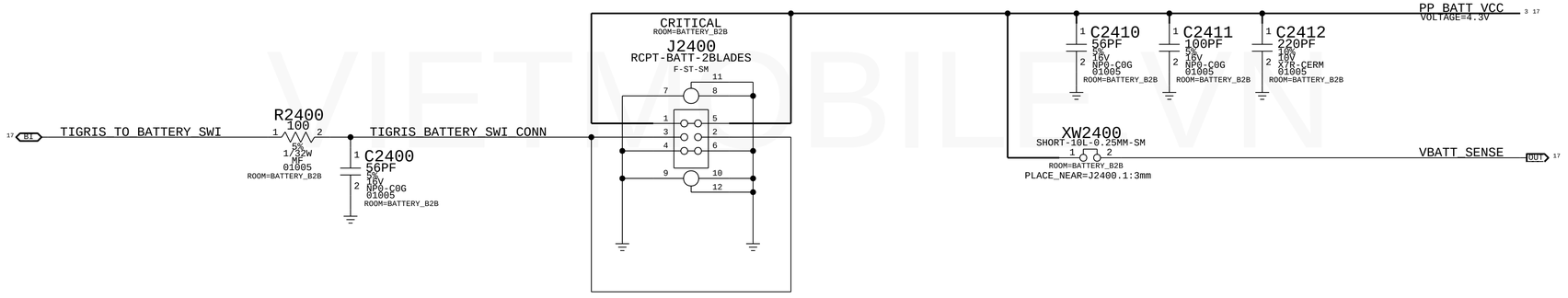
BATTERY CONNECTOR

THIS ONE ON MLB ---> 516S00104 (RCPT)
516S00105 (PLUG)



SYNC_MASTER=N/A SYNC_DATE=N/A

PAGE TITLE
SYSTEM POWER:BATTERY CONN

Apple Inc.

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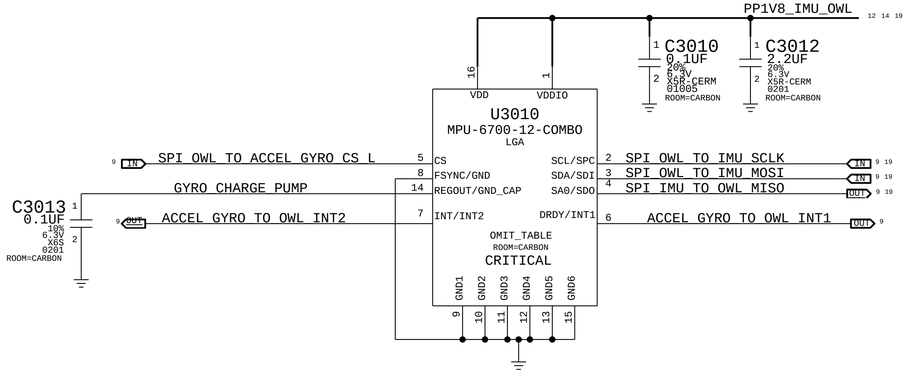
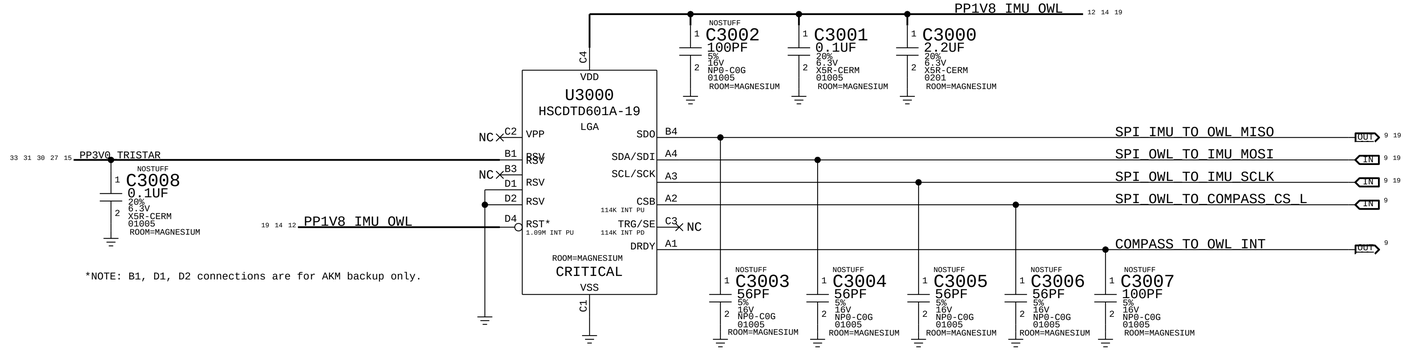
CARBON - ACCEL & GYRO

INVENSENSE (APN: 338S00017, 338S00087)



MAGNESIUM - COMPASS

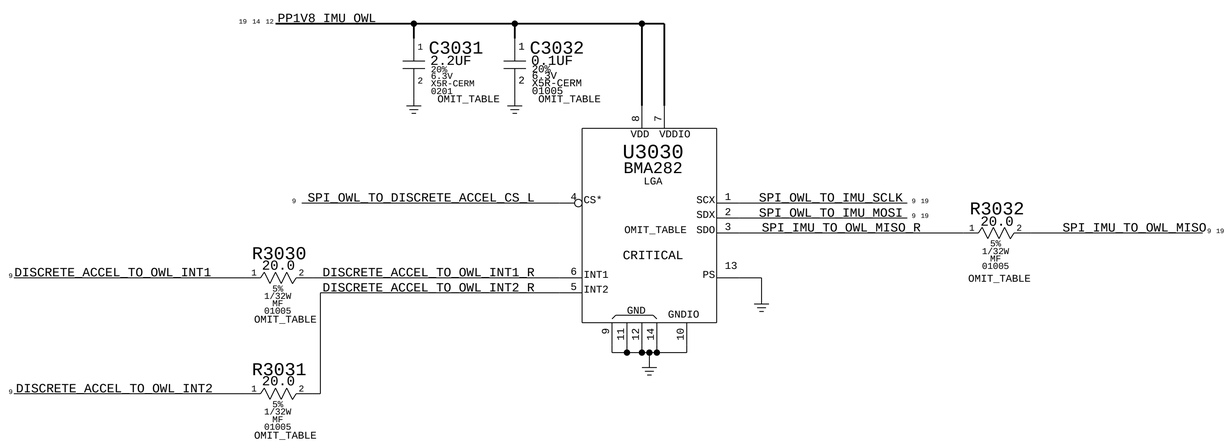
ALPS (APN:338S00084)



*NOTE: B1, D1, D2 connections are for AKM backup only.

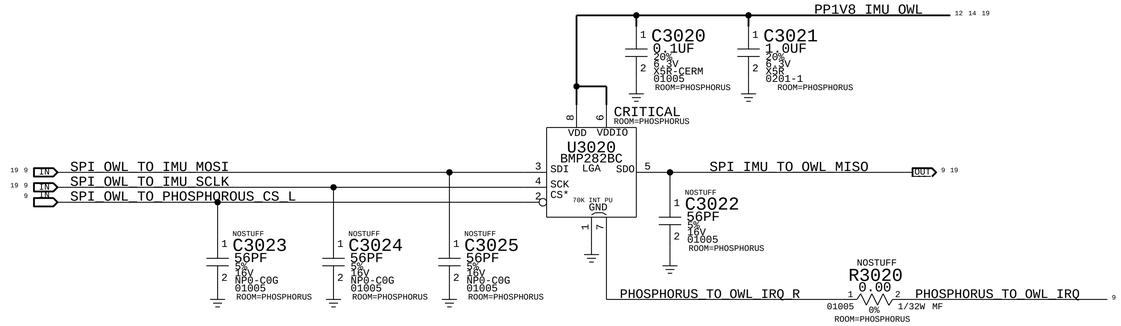
DISCRETE ACCEL

BOSCH (APN: 338S1163)



PHOSPHOROUS

BOSCH (APN:338S00044)



R3020 SHOULD BE STUFFED FOR ST PHOSPHORUS ONLY.
FOR BOSCH PHOSPHORUS, PINS 1 AND 7 ARE SHORTED INTERNALLY,
SO NO NEED FOR 0-OHM TO GROUND OPTION ON PIN 7.

SYNC_MASTER=N/A SYNC_DATE=N/A

PAGE TITLE: SENSORS:MOTION SENSORS

Apple Inc.

DRAWING NUMBER: 051-1902 SIZE: D

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BRANCH:

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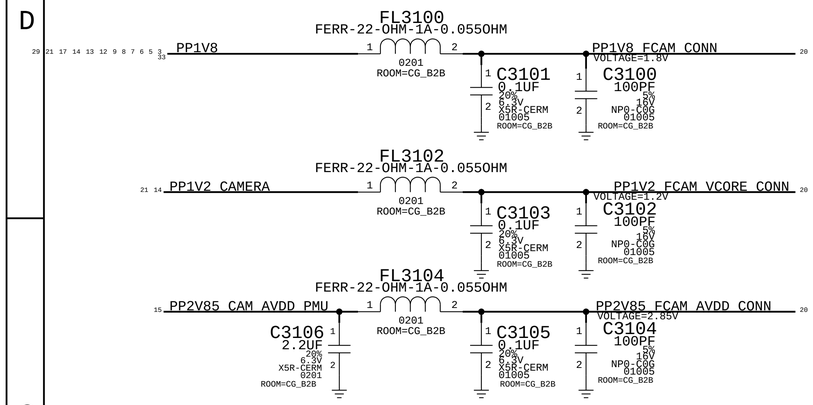
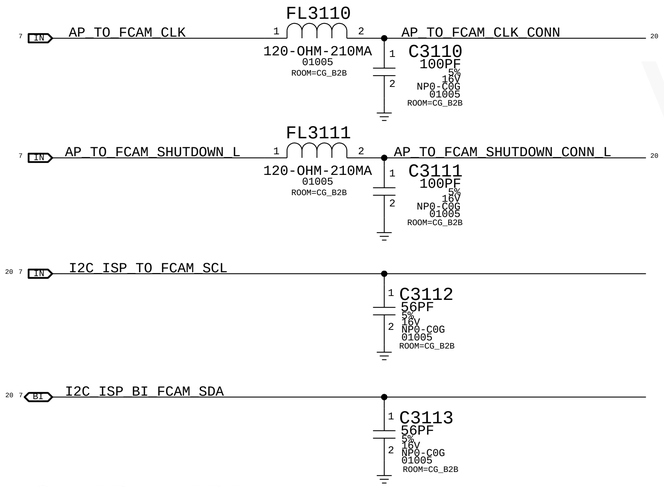
FOREHEAD FLEX (FCAM)

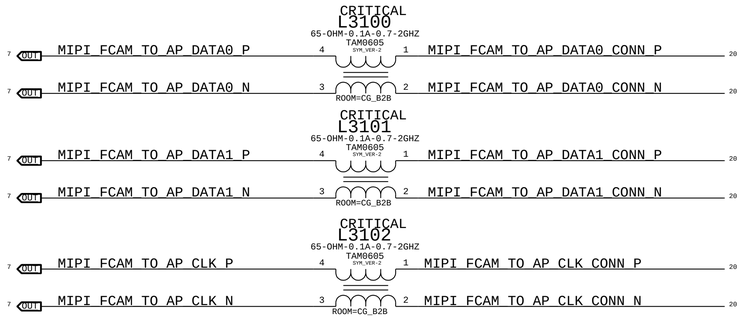
CAMERA POWER



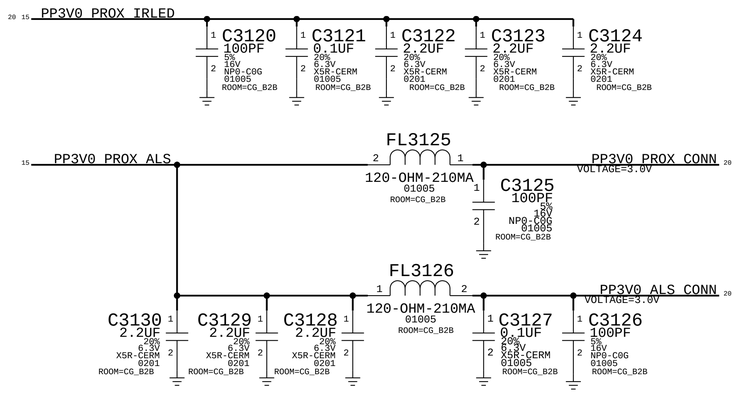
CAMERA I/O



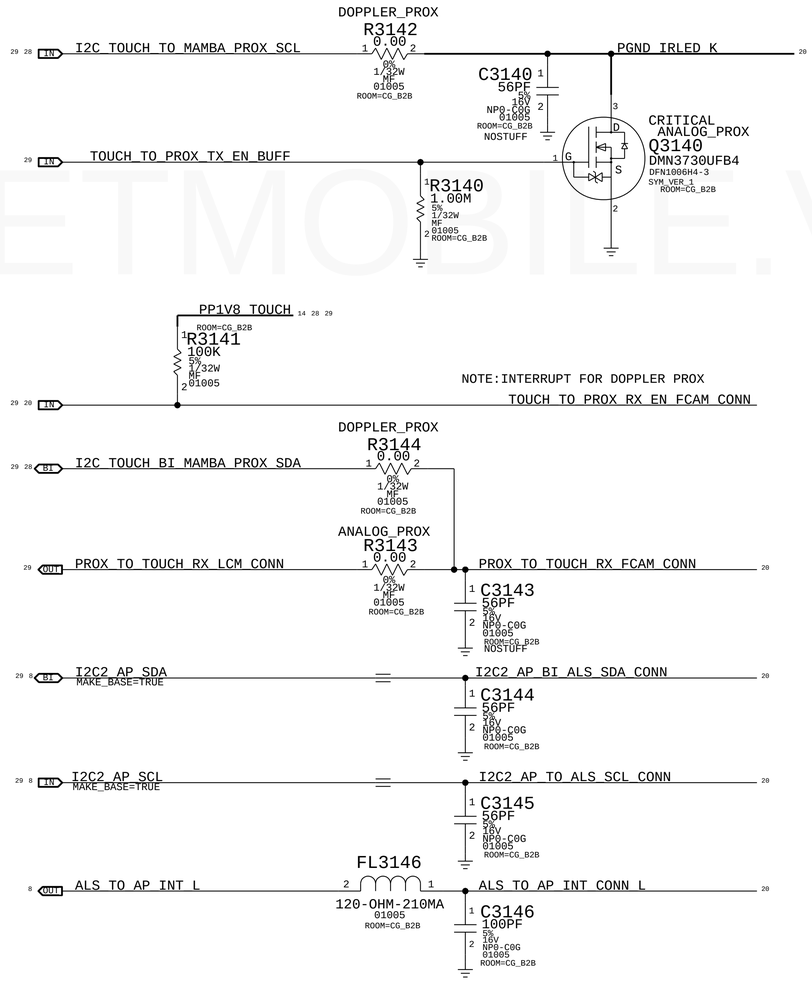
CAMERA MIPI



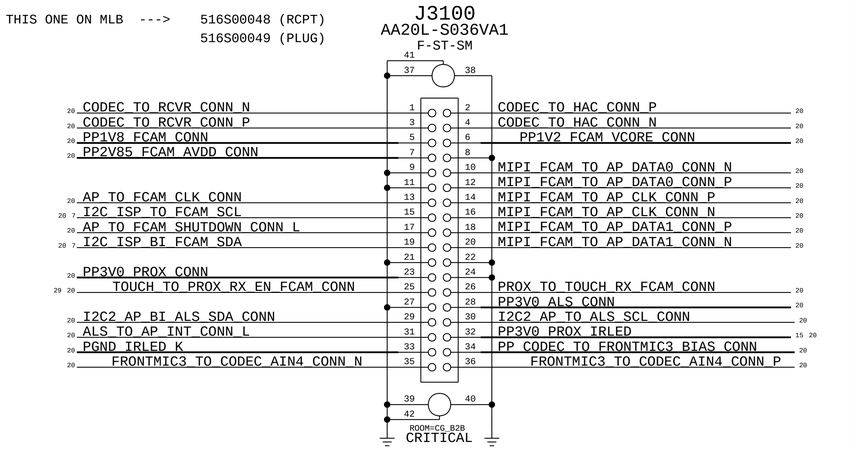
PROX & ALS POWER

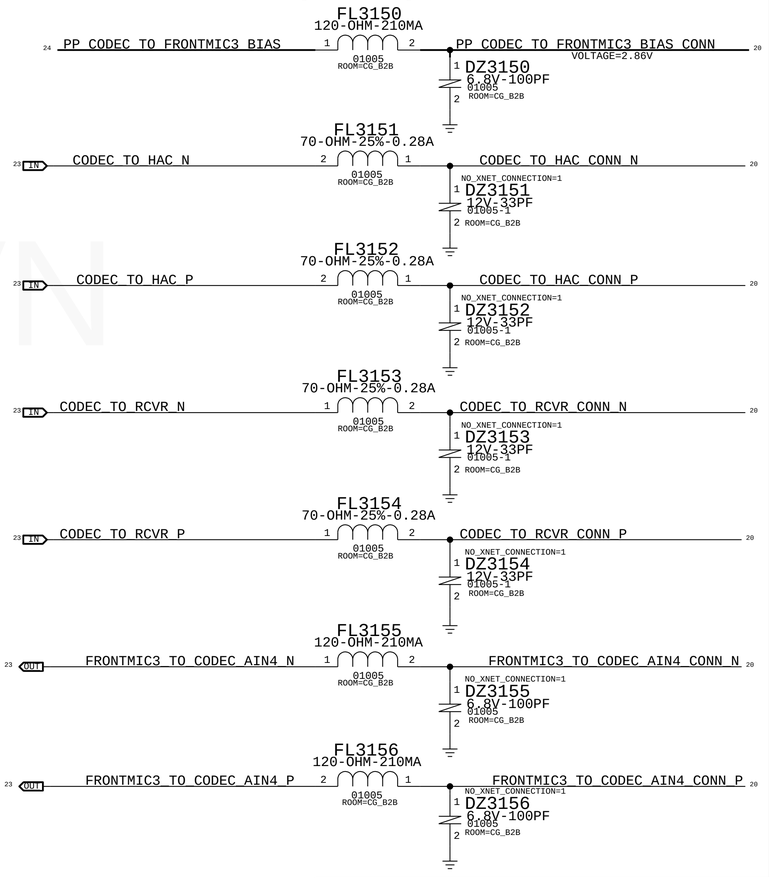


PROX & ALS INTERFACE



FOREHEAD CONNECTOR





SYNC_MASTER=N/A SYNC_DATE=N/A

PAGE TITLE
CAMERA:FOREHEAD FLEX B2B

Apple Inc.

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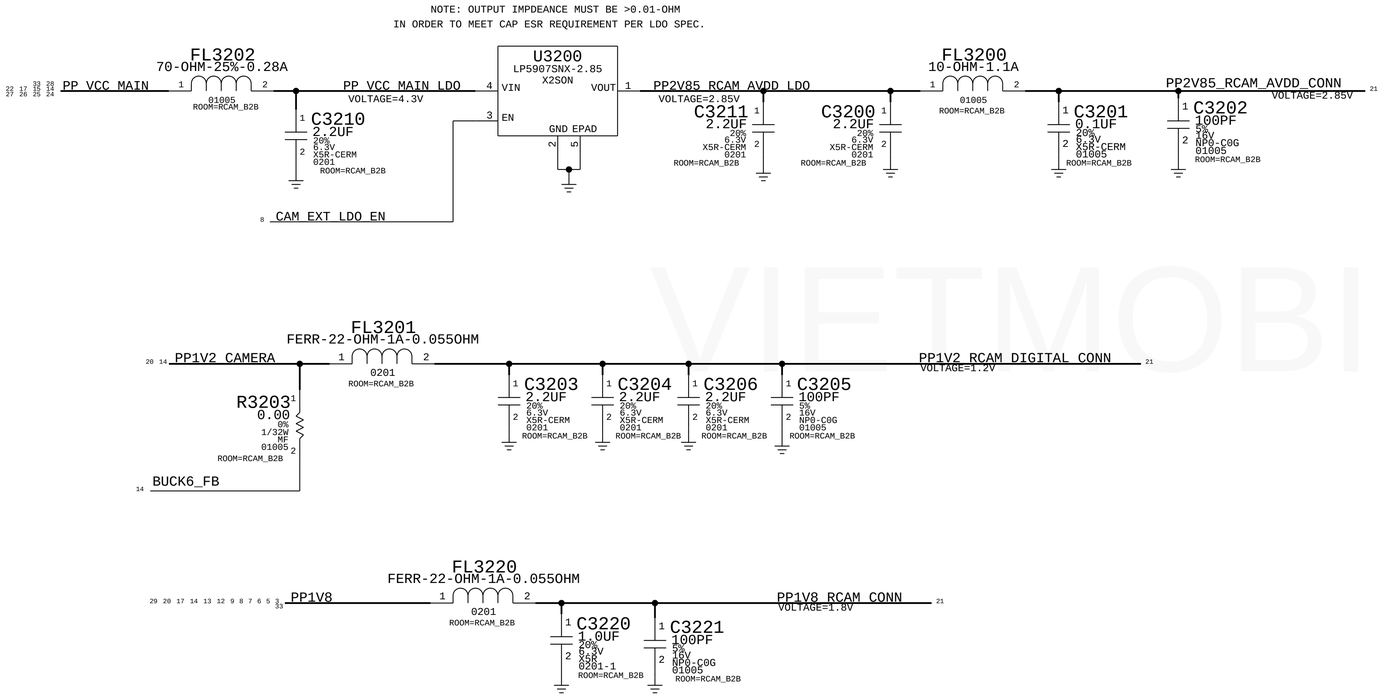
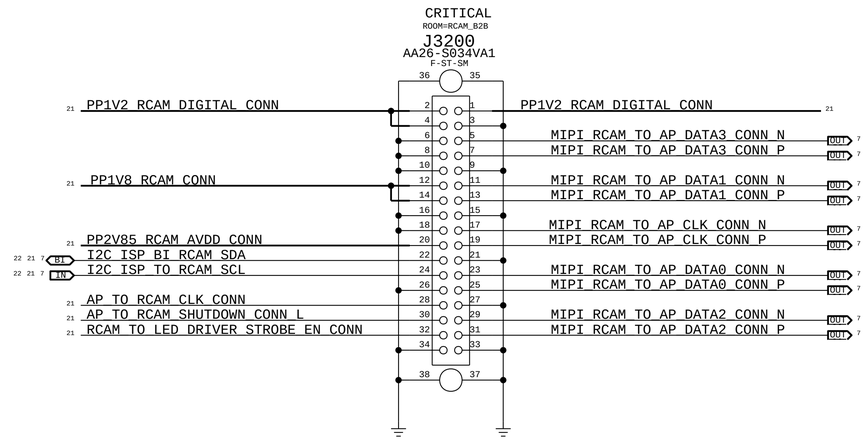
REAR CAMERA FLEX

CAMERA POWER

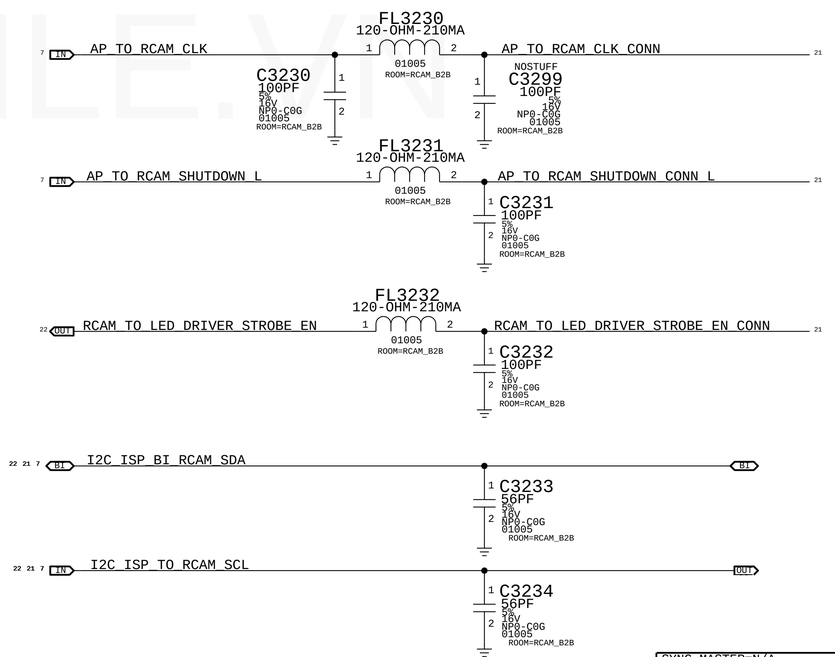


RCAM CONNECTOR

THIS ONE ON MLB ---> 516S00043 (RCPT)
516S00042 (PLUG)



DIGITAL I/O



SYNC_MASTER=N/A SYNC_DATE=N/A

PAGE TITLE
CAMERA:REAR CAMERA B2B

Apple Inc.

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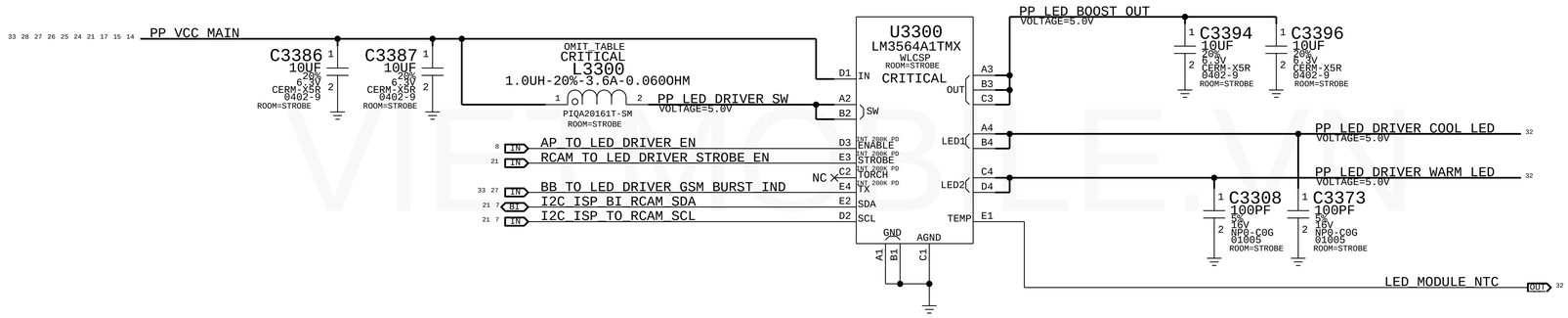
DUAL LED STROBE DRIVER

APN:353S3899



SYNC_MASTER=N/A SYNC_DATE=N/A

PAGE TITLE

CAMERA:STROBE DRIVER

Apple Inc.

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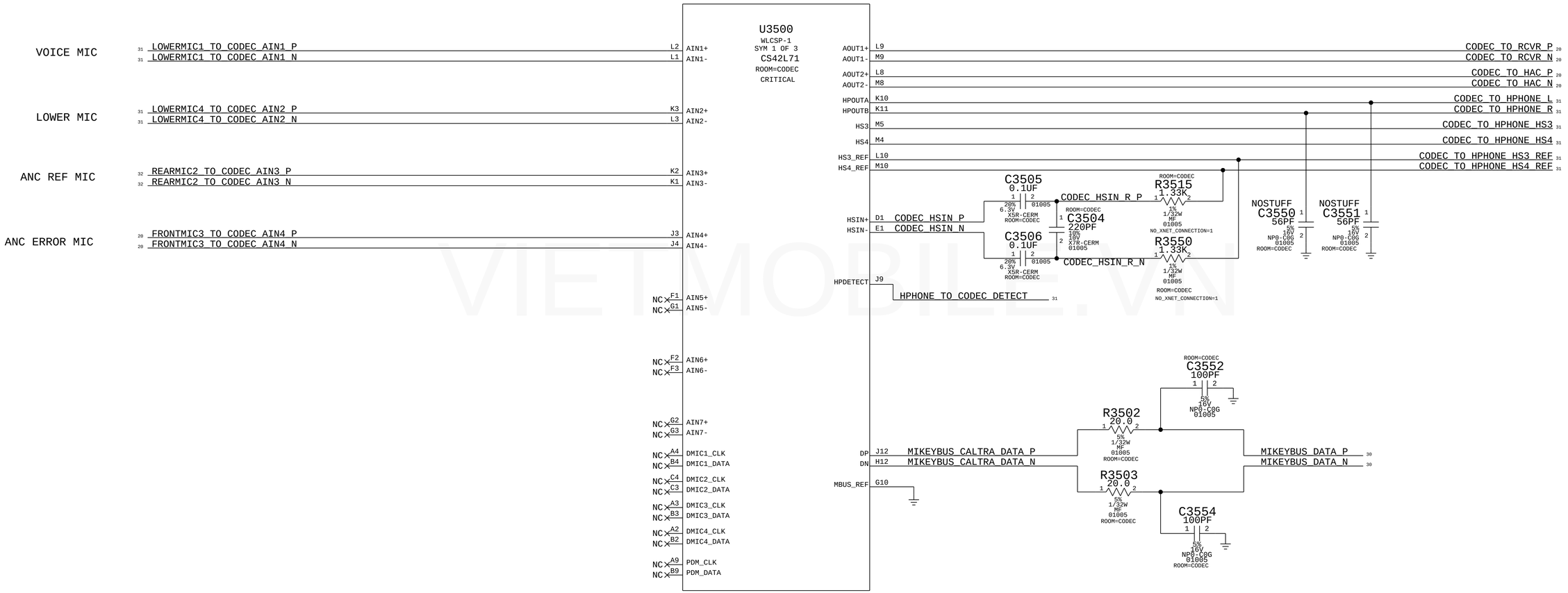
CALTRA AUDIO CODEC (ANALOG INPUTS & OUTPUTS)



SYNC_MASTER=N71_SINGLE_BRD
SYNC_DATE=05/29/2014

PAGE TITLE
AUDIO:CALTRA CODEC (1/2)

Apple Inc.

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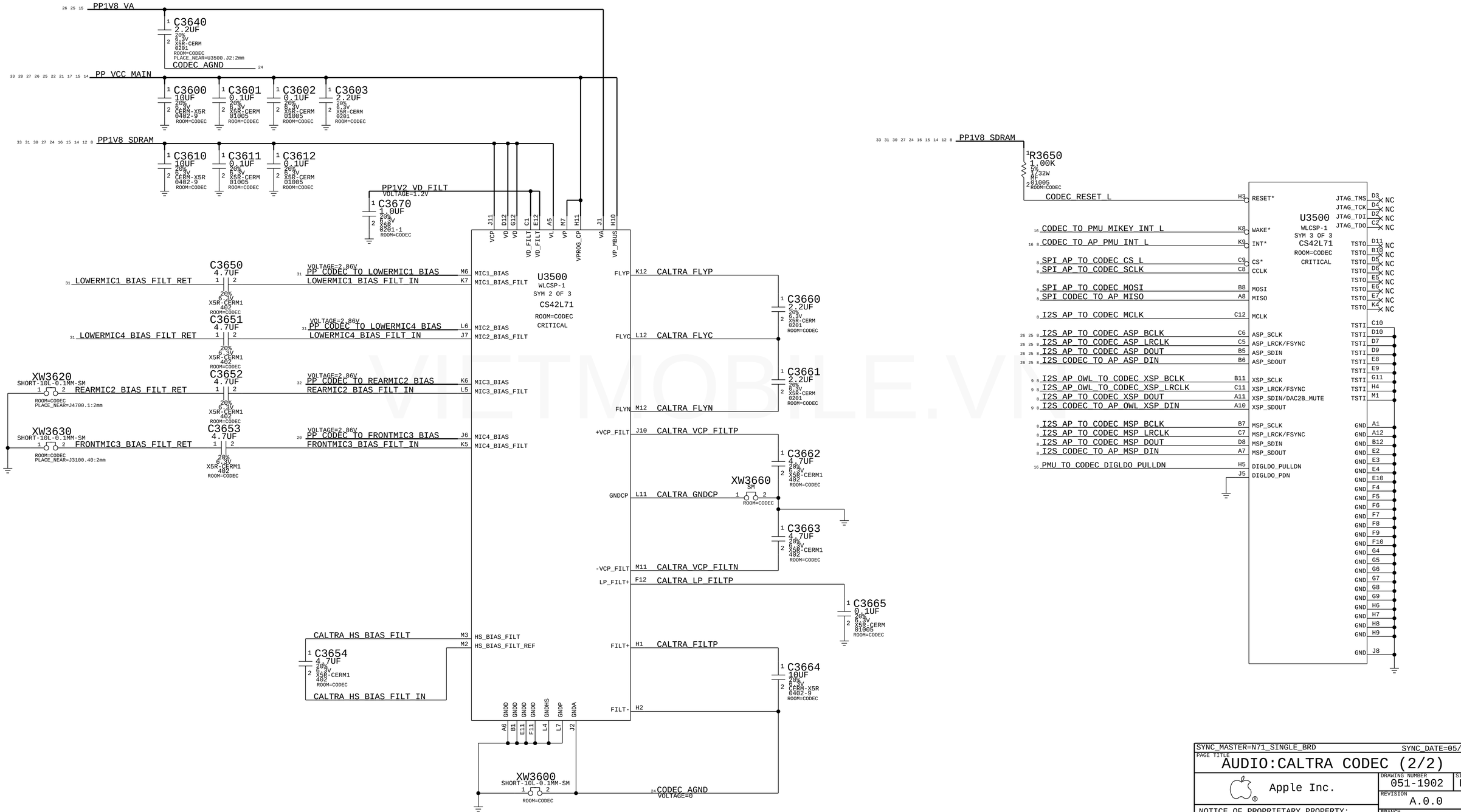
CALTRA AUDIO CODEC (POWER & I/O)



SYNC_MASTER=N71_SINGLE_BRD SYNC_DATE=05/29/2014

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

Apple Inc.

DRAWING NUMBER: 051-1902 SIZE: D

REVISION: A.0.0

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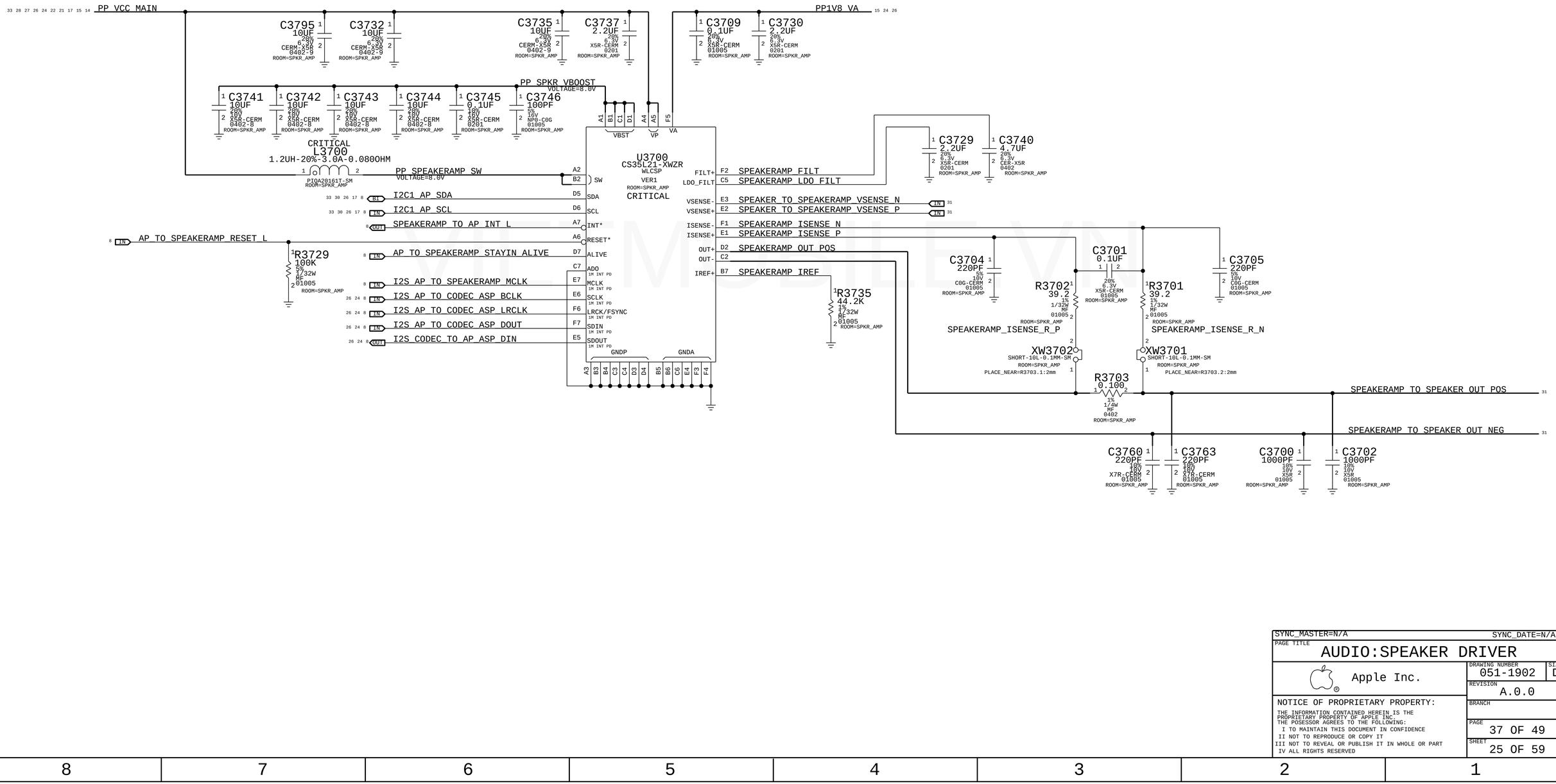
SPEAKER AMPLIFIER

APN: 338S1285



SYNC_MASTER=N/A SYNC_DATE=N/A

PAGE TITLE: AUDIO:SPEAKER DRIVER

Apple Inc.

DRAWING NUMBER: 051-1902 SIZE: D

REVISION: A.0.0

BRANCH:

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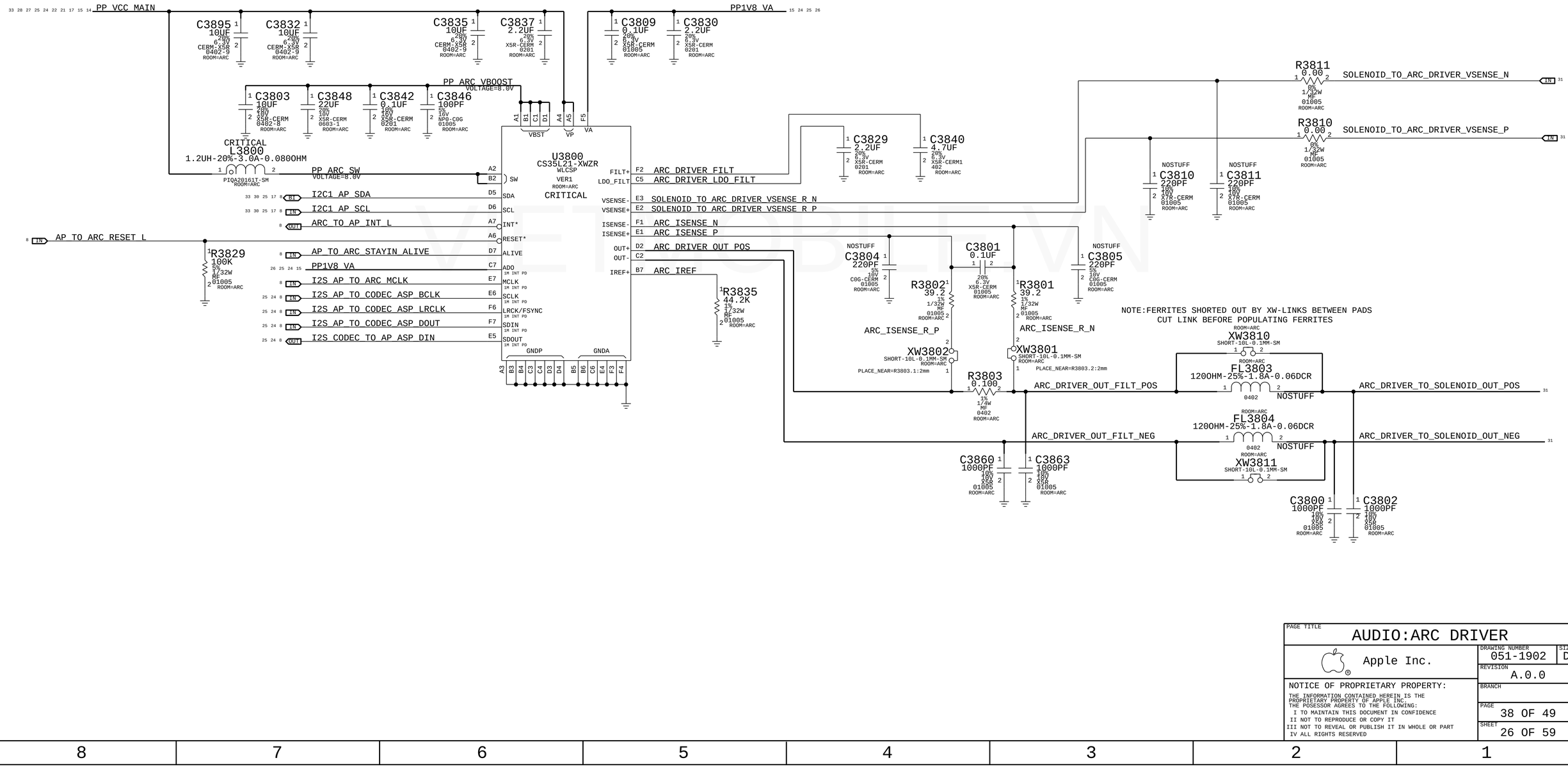
ARC DRIVER

APN: 338S1285



PAGE TITLE
AUDIO:ARC DRIVER

Apple Inc.

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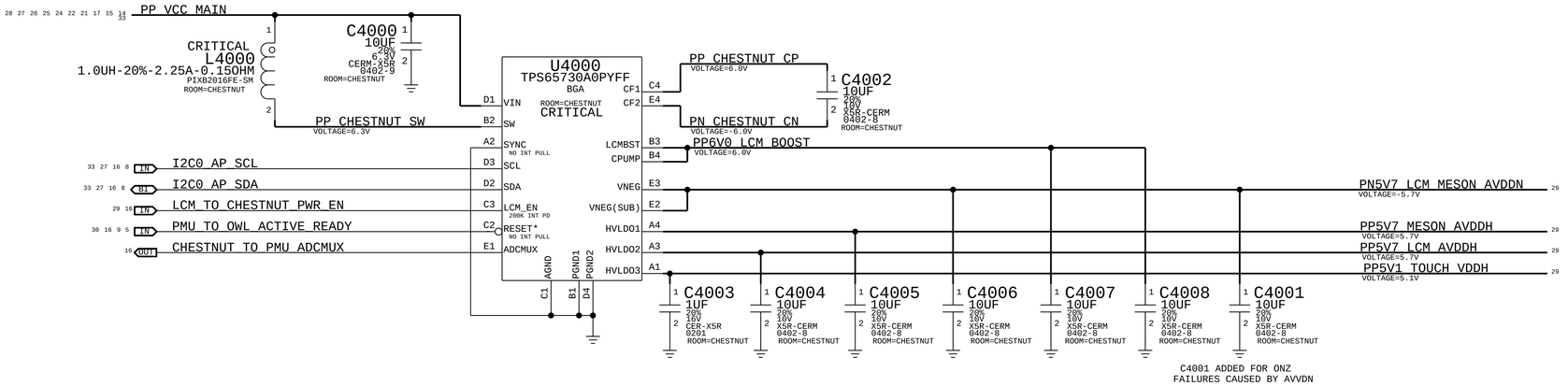
DISPLAY & TOUCH - POWER SUPPLIES

CHESTNUT DISPLAY PMU

APN:338S1172



LED BACKLIGHT DRIVER

APN:353S00407

MOJAVE MESA BOOST

APN:353S00671

SYNC_MASTER=N/A SYNC_DATE=N/A

PAGE TITLE

DISPLAY:POWER

Apple Inc.

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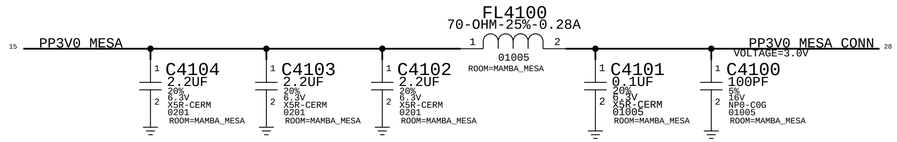
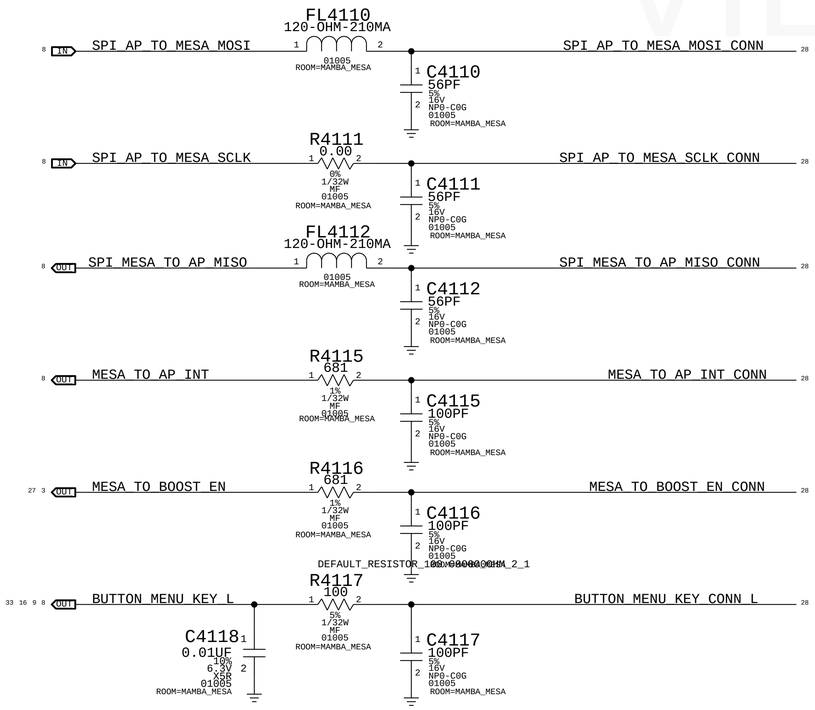
MAMBA & MESA (M&M) FLEX

MESA POWER

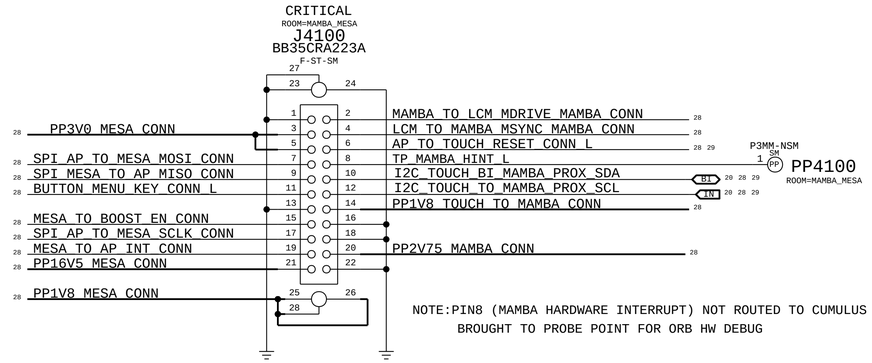


MESA DIGITAL I/O



MAMBA & MESA CONNECTOR

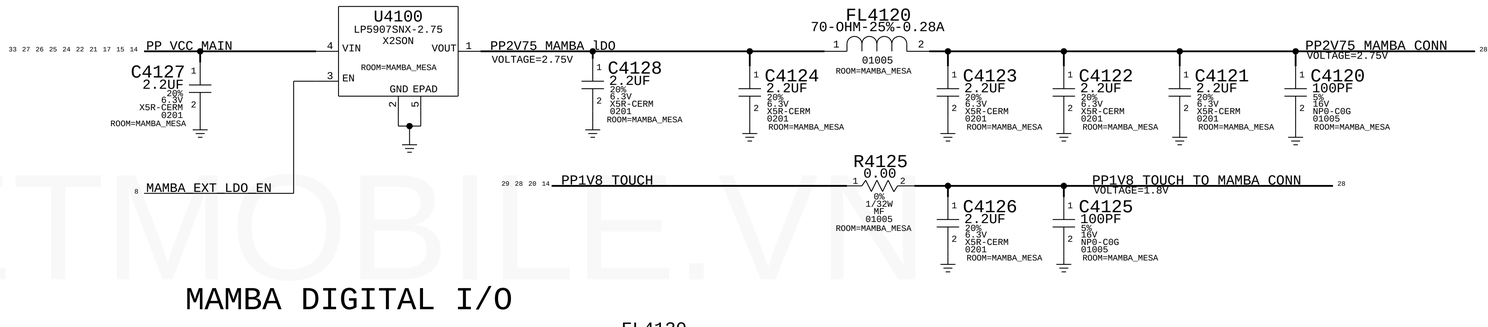
THIS ONE ON MLB ---> 516S00056 (RCPT)
516S00057 (PLUG)



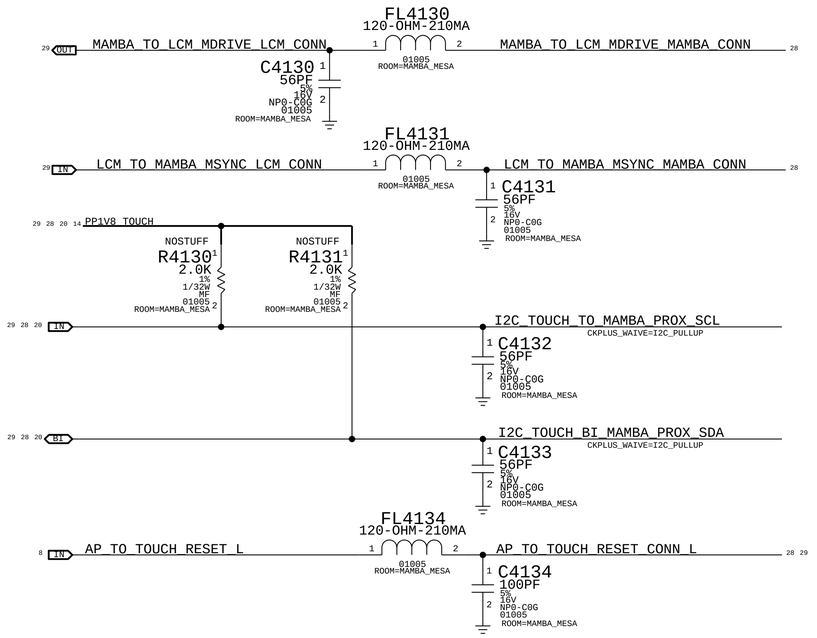
NOTE:PIN8 (MAMBA HARDWARE INTERRUPT) NOT ROUTED TO CUMULUS
BROUGHT TO PROBE POINT FOR ORB HW DEBUG

MAMBA POWER

NOTE: OUTPUT IMPDEANCE MUST BE >0.01-OHM
IN ORDER TO MEET CAP ESR REQUIREMENT PER LDO SPEC.



MAMBA DIGITAL I/O



NOTE:TOUCH I2C PULL-UPS TO PP1V8_TOUCH INSIDE KEPLER
ADDING R4130, R4131 AS OPTION FOR TWEAKING VALUES.

SYNC_MASTER=N/A SYNC_DATE=N/A

PAGE TITLE
TOUCH:ORB & MESA B2B

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DISPLAY & TOUCH FLEX

DISPLAY POWER

PP5V7_LCM_AVDDH → FL4200 240OHM-350MA → PP5V7_LCM_AVDDH_CONN (VOLTAGE=5.7V)
- C4200 2.2UF 20% 6.3V X5R-CERM 0201
- C4201 2.2UF 20% 6.3V X5R-CERM 0201
- C4202 2.2UF 20% 6.3V X5R-CERM 0201
- C4203 2.2UF 20% 6.3V X5R-CERM 0201
- C4204 100PF 5% 16V NP0-C0G 01005

PP1V8 → FL4205 240OHM-350MA → PP1V8_LCM_CONN (VOLTAGE=1.8V)
- C4205 2.2UF 20% 6.3V X5R-CERM 0201
- C4206 100PF 5% 16V NP0-C0G 01005

PN5V7_LCM_MESON_AVDDN → FL4207 70-OHM-25%-0.28A → PN5V7_LCM_MESON_AVDDN_CONN (VOLTAGE=-5.7V)
- C4207 100PF 5% 16V NP0-C0G 01005

PP5V7_MESON_AVDDH → FL4208 240OHM-350MA → PP5V7_MESON_AVDDH_CONN (VOLTAGE=5.7V)
- C4208 100PF 5% 16V NP0-C0G 01005

PP1V8_TOUCH → FL4209 240OHM-350MA → PP1V8_TOUCH_CONN (VOLTAGE=1.8V)
- C4215 2.2UF 20% 6.3V X5R-CERM 0201
- C4209 100PF 5% 16V NP0-C0G 01005

PP5V1_TOUCH_VDDH → FL4210 240OHM-350MA → PP5V1_TOUCH_VDDH_CONN (VOLTAGE=5.1V)
- C4210 100PF 5% 16V NP0-C0G 01005

All: 0201, ROOM=KEPLER_B2B

BACKLIGHT

PP_LCM_BL_ANODE → FL4211 240OHM-350MA → PP_LCM_BL_ANODE_CONN (VOLTAGE=25V)
- C4211 100PF 5% 35V NP0-C0G 01005

PP_LCM_BL_CAT1 → FL4212 240OHM-350MA → PP_LCM_BL_CAT1_CONN (VOLTAGE=25V)
- C4212 100PF 5% 35V NP0-C0G 01005

PP_LCM_BL_CAT2 → FL4213 240OHM-350MA → PP_LCM_BL_CAT2_CONN (VOLTAGE=25V)
- C4213 100PF 5% 35V NP0-C0G 01005

0201, ROOM=KEPLER_B2B

DISPLAY MIPI

CRITICAL L4200 65-OHM-0.1A-0.7-2GHZ TAM0605 SYM_VER-2
- MIPI_AP_TO_LCM_CLK_P → MIPI_AP_TO_LCM_CLK_CONN_P
- MIPI_AP_TO_LCM_CLK_N → MIPI_AP_TO_LCM_CLK_CONN_N

CRITICAL L4201 65-OHM-0.1A-0.7-2GHZ TAM0605 SYM_VER-2
- MIPI_AP_TO_LCM_DATA0_P → MIPI_AP_TO_LCM_DATA0_CONN_P
- MIPI_AP_TO_LCM_DATA0_N → MIPI_AP_TO_LCM_DATA0_CONN_N

CRITICAL L4202 65-OHM-0.1A-0.7-2GHZ TAM0605 SYM_VER-2
- MIPI_AP_TO_LCM_DATA1_P → MIPI_AP_TO_LCM_DATA1_CONN_P
- MIPI_AP_TO_LCM_DATA1_N → MIPI_AP_TO_LCM_DATA1_CONN_N

ROOM=KEPLER_B2B

DISPLAY EEPROM I2C

- I2C2_AP_SDA → C4223 56PF 5% 16V NP0-C0G 01005
- I2C2_AP_SCL → C4224 56PF 5% 16V NP0-C0G 01005

NOSTUFF, ROOM=KEPLER_B2B

DISPLAY CONTROL SIGNALS

- LCM_TO_CHESTNUT_PWR_EN → FL4220 120-OHM-210MA → LCM_TO_CHESTNUT_PWR_EN_CONN: C4220 100PF 5% 16V NP0-C0G 01005
- AP_TO_LCM_RESET_L → FL4221 120-OHM-210MA → AP_TO_LCM_RESET_CONN_L: C4221 100PF 5% 16V NP0-C0G 01005; R4220 100K 1% 1/32W MF 01005
- PMU_TO_LCM_PANICB → R4222 10 5% MF 1/32W 01005 → PMU_TO_LCM_PANICB_CONN: C4222 100PF 5% 16V NP0-C0G 01005

01005, ROOM=KEPLER_B2B

OWL TO TOUCH INTERFACE

- LCM_TO_OWL_BSYNC → FL4230 120-OHM-210MA → LCM_TO_OWL_BSYNC_CONN: C4230 56PF 5% 16V NP0-C0G 01005
- UART_OWL_TO_TOUCH_TXD → FL4231 120-OHM-210MA → UART_OWL_TO_TOUCH_TXD_CONN: C4231 56PF 5% 16V NP0-C0G 01005
- TOUCH_TO_OWL_ACCEL_DATA_REQUEST → FL4232 120-OHM-210MA → TOUCH_TO_OWL_ACCEL_DATA_REQUEST_CONN: C4232 56PF 5% 16V NP0-C0G 01005

01005, ROOM=KEPLER_B2B

PROX TO TOUCH INTERFACE

PP1V8_TOUCH → R4240 100K 1% 1/32W MF 01005; C4240 0.22UF 20% 6.3V X5R 01005-1

TOUCH_TO_PROX_TX_EN_CONN_L → U4240 74AUP1G04GX SOT1226 → TOUCH_TO_PROX_TX_EN_BUFF

ROOM=KEPLER_B2B, CRITICAL

- TOUCH_TO_PROX_RX_EN_FCAM_CONN → FL4241 120-OHM-210MA → TOUCH_TO_PROX_RX_EN_LCM_CONN: C4241 100PF 5% 16V NP0-C0G 01005

01005, ROOM=KEPLER_B2B

DISPLAY CONNECTOR

THIS ONE ON MLB ---> 516S00038 (RCPT) 516S00037 (PLUG)

CRITICAL
J4200
BM28P0.6-44DS-0.35V
F-ST-SM

	1	2	MAMBA_TO_LCM_MDRIVE_LCM_CONN	IN 28
PP_LCM_BL_CAT1_CONN 29 3	3	4	NC_KEPLER_MESON_TEST_MUX2_CONN	
PP_LCM_BL_ANODE_CONN 29 3	5	6	NC_KEPLER_MESON_TEST_MUX0_CONN	
PP_LCM_BL_CAT2_CONN 29 3	7	8	SPI_AP_TO_TOUCH_SCLK_CONN	29
MIPI_AP_TO_LCM_CLK_CONN_N 29	9	10	TOUCH_TO_PROX_RX_EN_LCM_CONN	29
MIPI_AP_TO_LCM_CLK_CONN_P 29	11	12	PROX_TO_TOUCH_RX_LCM_CONN	IN 20
	13	14	SPI_AP_TO_TOUCH_CS_CONN_L	29
MIPI_AP_TO_LCM_DATA1_CONN_N 29	15	16	TOUCH_TO_OWL_ACCEL_DATA_REQUEST_CONN	29
MIPI_AP_TO_LCM_DATA1_CONN_P 29	17	18	I2C2_AP_SDA	8 20 29
	19	20	I2C_TOUCH_BI_MAMBA_PROX_SDA	BI 20 28
MIPI_AP_TO_LCM_DATA0_CONN_N 29	21	22	SPI_TOUCH_TO_AP_MISO_CONN	29
MIPI_AP_TO_LCM_DATA0_CONN_P 29	23	24	SPI_AP_TO_TOUCH_MOSI_CONN	29
	25	26	LCM_TO_OWL_BSYNC_CONN	29
NC_KEPLER_PHOTON_PIFA_CONN	27	28	LCM_TO_CHESTNUT_PWR_EN_CONN	29
OUT 28 LCM_TO_MAMBA_MSYNC_LCM_CONN	29	30	PP5V1_TOUCH_VDDH_CONN	29
PMU_TO_LCM_PANICB_CONN 29	31	32	AP_TO_TOUCH_RESET_CONN_L	IN 28
AP_TO_LCM_RESET_CONN_L 29	33	34	TOUCH_TO_PROX_TX_EN_CONN_L	29
PP5V7_MESON_AVDDH_CONN 29	35	36	I2C2_AP_SCL	8 20 29
PP1V8_LCM_CONN 29	37	38	I2C_TOUCH_TO_MAMBA_PROX_SCL	OUT 20 28
PN5V7_LCM_MESON_AVDDN_CONN 29	39	40	UART_OWL_TO_TOUCH_TXD_CONN	29
PP5V7_LCM_AVDDH_CONN 29	41	42	TOUCH_TO_AP_INT_L_CONN	29
PP1V8_TOUCH_CONN 29	43	44	AP_TO_TOUCH_CLK32K_RESET_CONN_L	29
	45	46		
	47	48		

ROOM=KEPLER_B2B

AP TO TOUCH INTERFACE

- SPI_AP_TO_TOUCH_CS_L → FL4250 120-OHM-210MA → SPI_AP_TO_TOUCH_CS_CONN_L: C4250 56PF 5% 16V NP0-C0G 01005
- SPI_AP_TO_TOUCH_SCLK → FL4251 120-OHM-210MA → SPI_AP_TO_TOUCH_SCLK_CONN: C4251 56PF 5% 16V NP0-C0G 01005
- SPI_AP_TO_TOUCH_MOSI → FL4252 120-OHM-210MA → SPI_AP_TO_TOUCH_MOSI_CONN: C4252 56PF 5% 16V NP0-C0G 01005
- SPI_TOUCH_TO_AP_MISO → FL4253 120-OHM-210MA → SPI_TOUCH_TO_AP_MISO_CONN: C4253 56PF 5% 16V NP0-C0G 01005
- TOUCH_TO_AP_INT_L → FL4254 120-OHM-210MA → TOUCH_TO_AP_INT_L_CONN: C4254 100PF 5% 16V NP0-C0G 01005
- AP_TO_TOUCH_CLK32K_RESET_L → FL4255 120-OHM-210MA → AP_TO_TOUCH_CLK32K_RESET_CONN_L: C4255 100PF 5% 16V NP0-C0G 01005

01005, ROOM=KEPLER_B2B

SYNC_MASTER=N/A SYNC_DATE=N/A

PAGE TITLE: DISPLAY:KEPLER B2B

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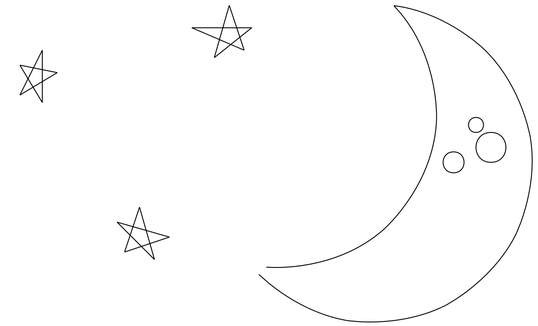
TRISTAR 2 (A3)

APN:343S0695



PP3V0_TRISTAR
C4500 1.0UF 20% 6.3V X5R 0201-1 ROOM=TRISTAR
C4501 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=TRISTAR
PP1V8_SDRAM
C4502 0.01UF 10% 6.3V X5R 01005 ROOM=TRISTAR
PP3V3_ACC
CRITICAL ROOM=TRISTAR
PP5V0_USB
Q4500 CSD68822F4 0402 ROOM=TRISTAR CRITICAL
REVERSE_GATE
R4500 10K 5% 1/32W MF 01005 ROOM=TRISTAR
PLACE_NEAR=U2000.T5:8mm
R4510 6.34K 1% 1/32W MF 01005 ROOM=PMU
TRISTAR_TO_PMU_USB_BRICK_ID
C4510 0.01UF 10% 6.3V X5R 01005 ROOM=PMU PLACE_NEAR=U2000.T5:8mm
L4521 15NH-250MA 0201 ROOM=TRISTAR
L4522 15NH-250MA 0201 ROOM=TRISTAR
USB_AP_DATA_P
USB_AP_DATA_N
U4500 CBTL1610A3UK WLCSP
VDD_1V8 VDD_3V0 ACC_PWR
DVSS DVSS DVSS
MIKEYBUS_DATA_P
MIKEYBUS_DATA_N
USB_BB_DATA_P
USB_BB_DATA_N
TRISTAR_USB_BRICK_ID_R
USB_AP_TRISTAR_DATA_P
USB_AP_TRISTAR_DATA_N
UART_AP_TO_ACCESSORY_TXD
UART_ACCESSORY_TO_AP_RXD
UART_AP_DEBUG_TXD
UART_AP_DEBUG_RXD
SWD_DOCK_TO_AP_SWCLK
SWD_DOCK_BI_AP_SWDIO
DIG_DP DIG_DN USB1_DP USB1_DN BRICK_ID USB0_DP USB0_DN UART0_TX UART0_RX UART1_TX UART1_RX UART2_TX UART2_RX JTAG_CLK JTAG_DIO
P_IN ACC1 ACC2 DP1 DN1 DP2 DN2 CON_DET_L POW_GATE_EN* SWITCH_EN HOST_RESET SDA SCL INT BYPASS
PP_TRISTAR_PIN VOLTAGE=5.0V
PP_TRISTAR_ACC1 VOLTAGE=4.3V
PP_TRISTAR_ACC2 VOLTAGE=4.3V
TRISTAR_DP1_CONN_P
TRISTAR_DP1_CONN_N
TRISTAR_DP2_CONN_P
TRISTAR_DP2_CONN_N
TRISTAR_CON_DETECT_L
TRISTAR_TO_TIGRIS_VBUS_OFF
PMU_TO_OWL_ACTIVE_READY
TRISTAR_TO_PMU_HOST_RESET
I2C1_AP_SDA
I2C1_AP_SCL
TRISTAR_TO_AP_INT
TRISTAR_BYPASS
C4503 1UF 20% 16V CER-X5R 0201 ROOM=TRISTAR
C4504 1.0UF 20% 6.3V X5R 0201-1 ROOM=TRISTAR
TRISTAR_TO_TIGRIS_VBUS_OFF
PP4500 ROOM=TRISTAR P3MM-NSM SM

SYNC_MASTER=N/A	SYNC_DATE=N/A
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DOCK FLEX CONNECTOR

AUDIO JACK

23 OUT HPHONE_TO_CODEC_DETECT → HPHONE_TO_CODEC_DETECT_CONN 31
R4600 3.3K 5% 1/32W MF 01005 ROOM=DOCK_B2B
C4600 56PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B

FL4600 FERR-33-OHM-0.8A-0.09-OHM
23 BI CODEC_TO_HPHONE_HS3 → CODEC_TO_HPHONE_HS3_CONN 31
0201 ROOM=DOCK_B2B
DZ4600 6.8V-100PF 01005 ROOM=DOCK_B2B NO_XNET_CONNECTION=1
C4699 220PF 10% 16V X7R-CERM 01005 ROOM=DOCK_B2B

FL4601 FERR-33-OHM-0.8A-0.09-OHM
23 BI CODEC_TO_HPHONE_HS4 → CODEC_TO_HPHONE_HS4_CONN 31
0201 ROOM=DOCK_B2B
DZ4601 6.8V-100PF 01005 ROOM=DOCK_B2B NO_XNET_CONNECTION=1
C4698 220PF 10% 16V X7R-CERM 01005 ROOM=DOCK_B2B

FL4602 600-OHM-25%-0.28A-0.750HM
23 OUT CODEC_TO_HPHONE_HS4_REF → CODEC_TO_HPHONE_HS4_REF_CONN 31
0201 ROOM=DOCK_B2B
DZ4602 6.8V-100PF 01005 ROOM=DOCK_B2B NO_XNET_CONNECTION=1

FL4603 600-OHM-25%-0.28A-0.750HM
23 OUT CODEC_TO_HPHONE_HS3_REF → CODEC_TO_HPHONE_HS3_REF_CONN 31
0201 ROOM=DOCK_B2B
DZ4603 6.8V-100PF 01005 ROOM=DOCK_B2B NO_XNET_CONNECTION=1

FL4604 FERR-33-OHM-0.8A-0.09-OHM
23 IN CODEC_TO_HPHONE_L → CODEC_TO_HPHONE_L_CONN 31
0201 ROOM=DOCK_B2B
DZ4604 6.8V-100PF 01005 ROOM=DOCK_B2B NO_XNET_CONNECTION=1
C4697 220PF 10% 16V X7R-CERM 01005 ROOM=DOCK_B2B

FL4605 FERR-33-OHM-0.8A-0.09-OHM
23 IN CODEC_TO_HPHONE_R → CODEC_TO_HPHONE_R_CONN 31
0201 ROOM=DOCK_B2B
DZ4610 6.8V-100PF 01005 ROOM=DOCK_B2B NO_XNET_CONNECTION=1
C4696 220PF 10% 16V X7R-CERM 01005 ROOM=DOCK_B2B

LOWER MIC1/4

FL4610 120-OHM-210MA
23 OUT LOWERMIC1_TO_CODEC_AIN1_P → LOWERMIC1_TO_CODEC_AIN1_CONN_P 31
01005 ROOM=DOCK_B2B
C4610 56PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B

FL4611 120-OHM-210MA
23 OUT LOWERMIC1_TO_CODEC_AIN1_N → LOWERMIC1_TO_CODEC_AIN1_CONN_N 31
01005 ROOM=DOCK_B2B
C4611 56PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B

FL4612 120-OHM-210MA
24 PP_CODEC_TO_LOWERMIC1_BIAS → PP_CODEC_TO_LOWERMIC1_BIAS_CONN 31 VOLTAGE=2.86V
01005 ROOM=DOCK_B2B
C4612 100PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B

FL4613 120-OHM-210MA
23 OUT LOWERMIC4_TO_CODEC_AIN2_P → LOWERMIC4_TO_CODEC_AIN2_CONN_P 31
01005 ROOM=DOCK_B2B
C4613 56PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B

FL4614 120-OHM-210MA
23 OUT LOWERMIC4_TO_CODEC_AIN2_N → LOWERMIC4_TO_CODEC_AIN2_CONN_N 31
01005 ROOM=DOCK_B2B
C4614 56PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B

FL4615 120-OHM-210MA
24 PP_CODEC_TO_LOWERMIC4_BIAS → PP_CODEC_TO_LOWERMIC4_BIAS_CONN 31 VOLTAGE=2.86V
01005 ROOM=DOCK_B2B
C4615 100PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B

ANTENNA

FL4620 120-OHM-210MA
33 30 27 19 16 PP3V0_TRISTAR → PP3V0_LAT_CONN 31 VOLTAGE=3.0V
01005 ROOM=DOCK_B2B
C4620 100PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B

FL4621 120-OHM-210MA
33 30 27 24 16 15 14 12 8 PP1V8_SDRAM VOLTAGE=1.8V → PP1V8_LAT_CONN 31 VOLTAGE=1.8V
01005 ROOM=DOCK_B2B
C4621 100PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B

R4622 0.00 0% MF 1/32W 01005 ROOM=DOCK_B2B
33 IN RFFE5_BB_TO_ANT_SCLK → RFFE5_BB_TO_ANT_SCLK_CONN 31
C4622 56PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B

R4623 0.00 0% MF 1/32W 01005 ROOM=DOCK_B2B
33 BI RFFE5_BB_TO_ANT_DATA → RFFE5_BB_TO_ANT_DATA_CONN 31
C4623 56PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B

FL4624 120-OHM-210MA
33 IN BB_LAT_GPIO1 → BB_LAT_GPIO1_CONN 31
01005 ROOM=DOCK_B2B
C4624 56PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B

FL4606 120-OHM-210MA
8 BI AP_TO_HP_HS3_CTRL → AP_TO_HP_HS3_CTRL_CONN 31
01005 ROOM=DOCK_B2B
C4606 100PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B

FL4607 120-OHM-210MA
8 IN AP_TO_HP_HS4_CTRL → AP_TO_HP_HS4_CTRL_CONN 31
01005 ROOM=DOCK_B2B
C4607 100PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B

SPEAKER/ARC

FL4630 120-OHM-210MA
25 OUT SPEAKER_TO_SPEAKERAMP_VSENSE_P → SPEAKER_TO_SPEAKERAMP_VSENSE_CONN_P 31
01005 ROOM=DOCK_B2B
C4630 100PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B

FL4631 120-OHM-210MA
25 OUT SPEAKER_TO_SPEAKERAMP_VSENSE_N → SPEAKER_TO_SPEAKERAMP_VSENSE_CONN_N 31
01005 ROOM=DOCK_B2B
C4631 100PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B

FL4632 120-OHM-210MA
26 OUT SOLENOID_TO_ARC_DRIVER_VSENSE_P → SOLENOID_TO_ARC_DRIVER_VSENSE_CONN_P 31
01005 ROOM=DOCK_B2B
C4632 100PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B

FL4633 120-OHM-210MA
26 OUT SOLENOID_TO_ARC_DRIVER_VSENSE_N → SOLENOID_TO_ARC_DRIVER_VSENSE_CONN_N 31
01005 ROOM=DOCK_B2B
C4633 100PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B

31 25 SPEAKERAMP_TO_SPEAKER_OUT_POS
C4634 220PF 10% 16V X7R-CERM 01005 ROOM=DOCK_B2B

31 25 SPEAKERAMP_TO_SPEAKER_OUT_NEG
C4635 220PF 10% 16V X7R-CERM 01005 ROOM=DOCK_B2B

DOCK FLEX CONNECTOR

THIS ONE ON MLB ---> 516S00033 (RCPT)
516S00034 (PLUG)

CRITICAL
ROOM=DOCK_B2B
J4600
24-5859-040-XXX-829
F-ST-SM

31 25	SPEAKERAMP_TO_SPEAKER_OUT_POS	1	2	SPEAKERAMP_TO_SPEAKER_OUT_NEG	25 31
31	SPEAKER_TO_SPEAKERAMP_VSENSE_CONN_P	3	4	SPEAKER_TO_SPEAKERAMP_VSENSE_CONN_N	31
31 26	ARC_DRIVER_TO_SOLENOID_OUT_POS	5	6	ARC_DRIVER_TO_SOLENOID_OUT_NEG	26 31
31	SOLENOID_TO_ARC_DRIVER_VSENSE_CONN_P	7	8	SOLENOID_TO_ARC_DRIVER_VSENSE_CONN_N	31
31	AP_TO_HP_HS4_CTRL_CONN	9	10	CODEC_TO_HPHONE_L_CONN	31
31	HPHONE_TO_CODEC_DETECT_CONN	11	12	CODEC_TO_HPHONE_R_CONN	31
31	CODEC_TO_HPHONE_HS4_REF_CONN	13	14	CODEC_TO_HPHONE_HS4_CONN	31
31	AP_TO_HP_HS3_CTRL_CONN	15	16		
31	CODEC_TO_HPHONE_HS3_REF_CONN	17	18	CODEC_TO_HPHONE_HS3_CONN	31
31	LOWERMIC1_TO_CODEC_AIN1_CONN_N	19	20	LOWERMIC1_TO_CODEC_AIN1_CONN_P	31
31	PP_CODEC_TO_LOWERMIC1_BIAS_CONN	21	22	PP_TRISTAR_ACC1_CONN	31
24 OUT	LOWERMIC1_BIAS_FILT_RET	23	24		
31	RFFE5_BB_TO_ANT_DATA_CONN	25	26	TRISTAR_DP1_CONN_P	BI 3 30
31	PP1V8_LAT_CONN	27	28	TRISTAR_DP1_CONN_N	BI 3 30
31	TRISTAR_CON_DETECT_CONN_L	29	30		
31	RFFE5_BB_TO_ANT_SCLK_CONN	31	32	TRISTAR_DP2_CONN_N	BI 3 30
31	BB_LAT_GPIO1_CONN	33	34	TRISTAR_DP2_CONN_P	BI 3 30
31	PP3V0_LAT_CONN	35	36	PP_TRISTAR_ACC2_CONN	31
24 OUT	LOWERMIC4_BIAS_FILT_RET	37	38	PP_CODEC_TO_LOWERMIC4_BIAS_CONN	31
31	LOWERMIC4_TO_CODEC_AIN2_CONN_N	39	40	LOWERMIC4_TO_CODEC_AIN2_CONN_P	31

45 41 42 43 44 46

30 17 7 PP5V0_USB VOLTAGE=5.0V
C4650 0.1UF 10% 25V X5R 0201 ROOM=DOCK_B2B
C4651 0.1UF 10% 25V X5R 0201 ROOM=DOCK_B2B
C4652 0.1UF 10% 25V X5R 0201 ROOM=DOCK_B2B
NOSTUFF
C4654 100PF 5% 35V NP0-C0G 01005 ROOM=DOCK_B2B
C4653 56PF 5% 25V NP0-C0G-CERM 01005 ROOM=DOCK_B2B
DEFAULT_CAPACITOR_220.000000pF_2_1
C4655 220PF 10% 25V X7R-CERM 0201 ROOM=DOCK_B2B
C4656 100PF 5% 25V NP0-C0G 01005 ROOM=DOCK_B2B

TRISTAR

30 3 OUT TRISTAR_CON_DETECT_L → TRISTAR_CON_DETECT_CONN_L 31
R4640 1.00K 5% 1/32W MF 01005 ROOM=DOCK_B2B
C4640 27PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B

30 3 PP_TRISTAR_ACC1 → PP_TRISTAR_ACC1_CONN 31 VOLTAGE=4.3V
FL4641 10-OHM-1.1A 01005 ROOM=DOCK_B2B
C4641 100PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B

30 3 PP_TRISTAR_ACC2 → PP_TRISTAR_ACC2_CONN 31 VOLTAGE=4.3V
FL4642 10-OHM-1.1A 01005 ROOM=DOCK_B2B
C4642 100PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B

31 26 ARC_DRIVER_TO_SOLENOID_OUT_POS
C4636 100PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B

31 26 ARC_DRIVER_TO_SOLENOID_OUT_NEG
C4637 100PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B

SYNC_MASTER=N/A SYNC_DATE=N/A
PAGE TITLE
I/O:DOCK FLEX B2B
Apple Inc.
DRAWING NUMBER 051-1902 SIZE D
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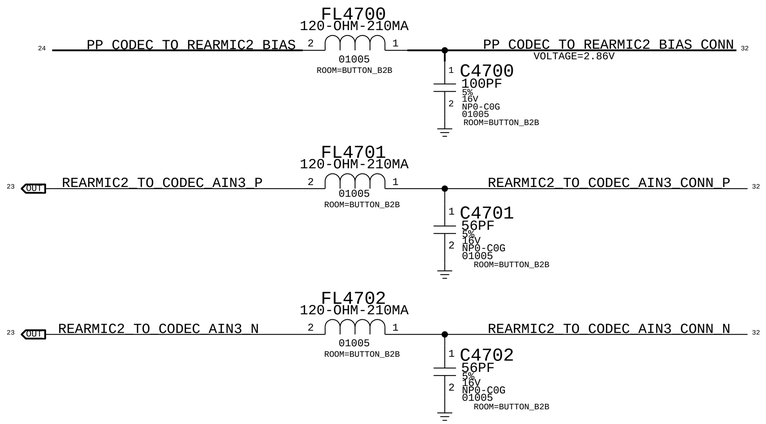
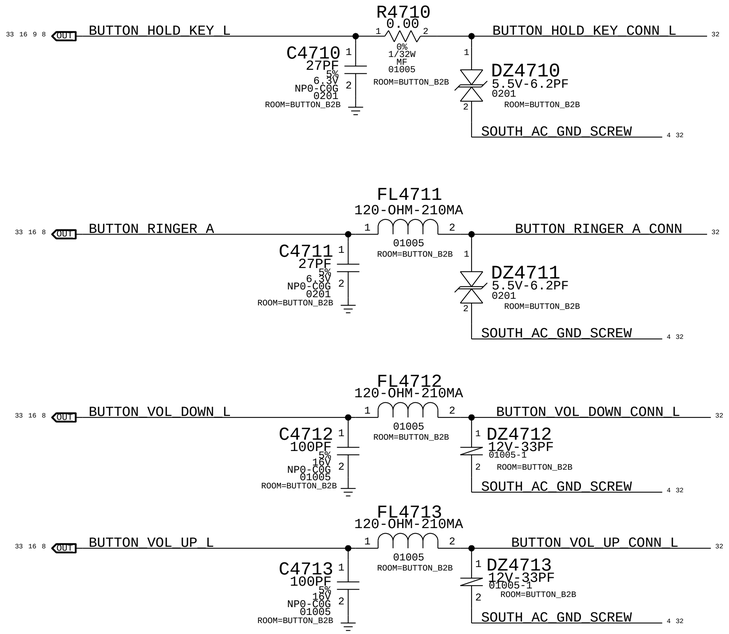
BUTTON FLEX

MIC2
ANC REF MIC

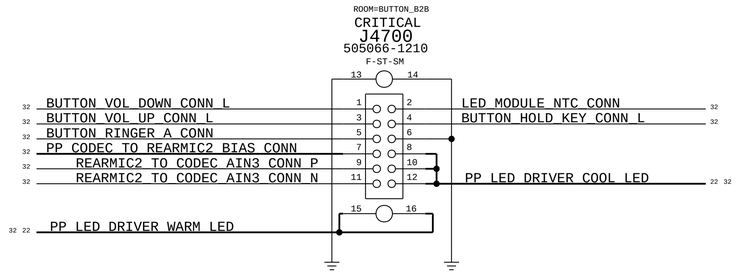


BUTTONS:
HOLD
RINGER
VOL UP/DOWN

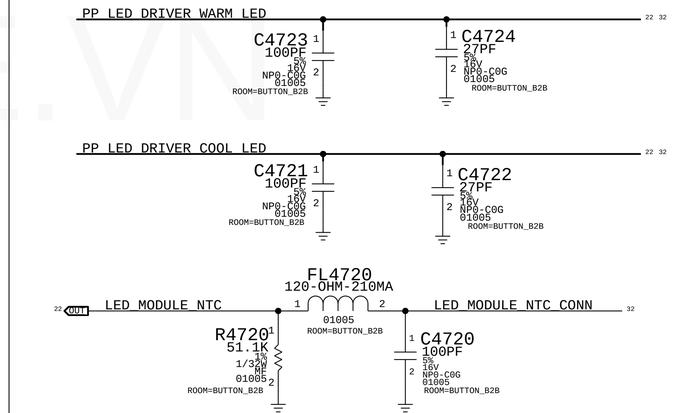


BUTTON FLEX CONNECTOR

THIS ONE ON MLB ---> 516S00058 (RCPT)
516S00059 (PLUG)



STROBE:
WARM LED
COOL LED
MODULE NTC



SYNC_MASTER=N/A SYNC_DATE=N/A

PAGE TITLE
I/O:BUTTON FLEX B2B

Apple Inc.

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BASEBAND, WLAN, BT & STOCKHOLM

I456

RADIO_MLB_MIMO

SHARED POWER

PP_VCC_MAIN
PP3V0_TRISTAR
PP1V8_SDRAM

SUBDESIGN_SUFFIX=RF

28 27 26 25 24 22 21 17 15 14 — PP_VCC_MAIN
31 30 27 19 15 — PP3V0_TRISTAR
31 30 27 24 16 15 14 12 8 — PP1V8_SDRAM

BASEBAND

6 IN	PCIE_AP_TO_BB_TXD_P	PCIE0_AP_TO_BB_TX_P
6 IN	PCIE_AP_TO_BB_TXD_N	PCIE0_AP_TO_BB_TX_N
6 OUT	PCIE_BB_TO_AP_RXD_P	PCIE0_BB_TO_AP_TX_P
6 OUT	PCIE_BB_TO_AP_RXD_N	PCIE0_BB_TO_AP_TX_N
6 IN	PCIE_AP_TO_BB_REFCLK_P	PCIE0_AP_TO_BB_REFCLK_P
6 IN	PCIE_AP_TO_BB_REFCLK_N	PCIE0_AP_TO_BB_REFCLK_N
6 IN	PCIE_AP_TO_BB_RESET_L	PCIE0_AP_TO_BB_PERST_L
6 BI	PCIE_BB_BI_AP_CLKREQ_L	PCIE0_AP_TO_BB_CLKREQ_L
16 OUT	BB_TO_PMU_PCIE_HOST_WAKE_L	PCIE0_BB_TO_PMU_HOST_WAKE_L
9 IN	AP_TO_BB_PCIE_DEV_WAKE	PCIE0_AP_TO_BB_DEV_WAKE
8 IN	I2S_AP_TO_BB_LRCLK	I2S_AP_TO_BB_WS
8 IN	I2S_AP_TO_BB_BCLK	I2S_AP_TO_BB_CLK
8 IN	I2S_AP_TO_BB_DOUT	I2S_AP_TO_BB_TX
8 OUT	I2S_BB_TO_AP_DIN	I2S_BB_TO_AP_TX
8 IN	AP_TO_BB_RADIO_ON_L	AP_TO_BBPMU_RADIO_ON_L
16 IN	PMU_TO_BB_PMIC_RESET_L	PMU_TO_BBPMU_RESET_L
8 IN	AP_TO_BB_RESET_L	AP_TO_BB_RST_L
8 OUT	BB_TO_AP_RESET_DETECT_L	BB_TO_AP_RESET_DET_L
27 22 OUT	BB_TO_LED_DRIVER_GSM_BURST_IND	BB_TO_AP_GSM_TXBURST_IND
8 IN	AP_TO_BB_MESA_UP_L	AP_TO_BB_MESA_ON_L
8 IN	BB_TO_AP_GPS_TIME_MARK	BB_TO_AP_GPS_TIME_MARK
8 IN	AP_TO_BB_COREDUMP	AP_TO_BB_COREDUMP_TRIG
8 IN	BB_IPC_GPIO	AP_TO_BB_IPC_GPIO
29 9 8 IN	LCM_TO_OWL_BSYNC	TOUCH_TO_BBPMU_FORCE_PWM
9 IN	UART_OWL_TO_BB_TXD	UART0_OWL_TO_BB_TX
9 OUT	UART_BB_TO_OWL_RXD	UART0_BB_TO_OWL_TX
30 BI	USB_BB_DATA_P	USB_BB_P
30 BI	USB_BB_DATA_N	USB_BB_N
16 IN	PMU_TO_BB_USB_VBUS_DETECT	USB_BB_VBUS_DETECT
13 9 IN	SWD_AP_PERIPHERAL_SWCLK	SWD_CLK_BB_JTAG_TCK
9 BI	SWD_AP_BI_BB_SWDIO	SWD_IO_BB_JTAG_TMS
31 OUT	RFFE5_BB_TO_ANT_SCLK	75_RFFE5_SCLK_BB
31 BI	RFFE5_BB_TO_ANT_DATA	75_RFFE5_SDATA_BB
31 OUT	BB_LAT_GPIO1	RFFE_BUFFER_LAT_GPIO1
16 OUT	BB_TO_PMU_AMUX_LDO11_SIM1	BB_TO_PMU_AMUX_LDO11_SIM1
16 OUT	BB_TO_PMU_AMUX_SMPS1	BB_TO_PMU_AMUX_SMPS1
16 OUT	BB_TO_PMU_AMUX_SMPS3	BB_TO_PMU_AMUX_SMPS3
16 OUT	BB_TO_PMU_AMUX_SMPS4	BB_TO_PMU_AMUX_SMPS4

ANT

4 OUT	50_AP_UAT_FEED	50_UPPER_ANT_FEED
4 OUT	50_AP_WIFI_5G_CONN_ANT	50_WIFI_5G_CONN_ANT
4 OUT	AP_TO_STOCKHOLM_ANT	STOCKHOLM_ANT

AP DEBUG

21 20 17 14 13 12 9 8 7 6 5 3 29 IN	PP1V8	PP1V8
8 3 IN	DFU_STATUS	DFU_STATUS
8 3 OUT	FORCE_DFU	FORCE_DFU
	NC_PMU_AMUX_AY	PMU_AMUX_AY
	NC_PMU_AMUX_BY	PMU_AMUX_BY
16 9 5 3 OUT	PMU_TO_SYSTEM_COLD_RESET_L	PMU_TO_SYSTEM_COLD_RESET_L
27 16 8 BI	I2C0_AP_SCL	I2C0_AP_SCL
27 16 8 BI	I2C0_AP_SDA	I2C0_AP_SDA
30 26 25 17 8 BI	I2C1_AP_SCL	I2C1_AP_SCL
30 26 25 17 8 BI	I2C1_AP_SDA	I2C1_AP_SDA
32 16 9 8 OUT	BUTTON_HOLD_KEY_L	BUTTON_HOLD_KEY_L
28 16 9 8 OUT	BUTTON_MENU_KEY_L	BUTTON_MENU_KEY_L
32 16 8 OUT	BUTTON_RINGER_A	BUTTON_RINGER_A
32 16 8 OUT	BUTTON_VOL_DOWN_L	BUTTON_VOL_DOWN_L
32 16 8 OUT	BUTTON_VOL_UP_L	BUTTON_VOL_UP_L
	NC_PMU_GPIO20	PMU_GPIO20
	NC_PMU_GPIO21	PMU_GPIO21
30 8 IN	UART_AP_DEBUG_TXD	AP_RESERVED0
30 8 OUT	UART_AP_DEBUG_RXD	AP_RESERVED1
	NC_AP_RESERVED2	AP_RESERVED2

WLAN

PCIE_AP_TO_WLAN_TX_P	PCIE_AP_TO_WLAN_TXD_P	IN 6
PCIE_AP_TO_WLAN_TX_N	PCIE_AP_TO_WLAN_TXD_N	IN 6
PCIE_WLAN_TO_AP_TX_P	PCIE_WLAN_TO_AP_RXD_P	OUT 6
PCIE_WLAN_TO_AP_TX_N	PCIE_WLAN_TO_AP_RXD_N	OUT 6
PCIE_AP_TO_WLAN_REFCLK_P	PCIE_AP_TO_WLAN_REFCLK_P	IN 6
PCIE_AP_TO_WLAN_REFCLK_N	PCIE_AP_TO_WLAN_REFCLK_N	IN 6
PCIE_AP_TO_WLAN_PERST_L	PCIE_AP_TO_WLAN_RESET_L	IN 6
PCIE_AP_TO_WLAN_DEV_WAKE	PCIE_AP_TO_WLAN_DEV_WAKE	IN 8
PCIE_WLAN_TO_AP_CLKREQ_L	PCIE_WLAN_TO_AP_CLKREQ_L	BI 6
UART4_AP_TO_WLAN_TX	UART_AP_TO_WLAN_TXD	IN 8
UART4_AP_TO_WLAN_RTS_L	UART_AP_TO_WLAN_RTS_L	IN 8
UART4_WLAN_TO_AP_TX	UART_WLAN_TO_AP_RXD	OUT 8
UART4_WLAN_TO_AP_RTS_L	UART_WLAN_TO_AP_CTS_L	OUT 8
PMU_TO_WLAN_32K_CLK	PMU_TO_WLAN_CLK32K	IN 16
PMU_TO_WLAN_REG_ON	PMU_TO_WLAN_REG_ON	IN 16
WLAN_TO_PMU_HOST_WAKE	WLAN_TO_PMU_HOST_WAKE	OUT 16
OWL_TO_WLAN_CONTEXT_A	OWL_TO_WLAN_CONTEXT_A	IN 9
OWL_TO_WLAN_CONTEXT_B	OWL_TO_WLAN_CONTEXT_B	IN 9

BLUETOOTH

I2S_AP_TO_BT_LRCK	I2S_AP_TO_BT_LRCLK	IN 8
I2S_AP_TO_BT_BCLK	I2S_AP_TO_BT_BCLK	IN 8
I2S_AP_TO_BT_DOUT	I2S_AP_TO_BT_DOUT	IN 8
I2S_BT_TO_AP_DOUT	I2S_BT_TO_AP_DIN	OUT 8
UART1_AP_TO_BT_TX	UART_AP_TO_BT_TXD	IN 8
UART1_AP_TO_BT_RTS_L	UART_AP_TO_BT_RTS_L	IN 8
UART1_BT_TO_AP_TX	UART_BT_TO_AP_RXD	OUT 8
UART1_BT_TO_AP_RTS_L	UART_BT_TO_AP_CTS_L	OUT 8
PMU_TO_BT_REG_ON	PMU_TO_BT_REG_ON	IN 16
BT_TO_PMU_HOST_WAKE	BT_TO_PMU_HOST_WAKE	OUT 16
AP_TO_BT_WAKE	AP_TO_BT_WAKE	IN 8

STOCKHOLM

UART3_AP_TO_STOCKHOLM_TXD	UART_AP_TO_STOCKHOLM_TXD	IN 8
UART3_AP_TO_STOCKHOLM_RTS_L	UART_AP_TO_STOCKHOLM_RTS_L	IN 8
UART3_STOCKHOLM_TO_AP_TXD	UART_STOCKHOLM_TO_AP_RXD	OUT 8
UART3_STOCKHOLM_TO_AP_RTS_L	UART_STOCKHOLM_TO_AP_CTS_L	OUT 8
PMU_TO_STOCKHOLM_EN	PMU_TO_STOCKHOLM_EN	IN 16
STOCKHOLM_TO_PMU_HOST_WAKE	STOCKHOLM_TO_PMU_HOST_WAKE	OUT 16
AP_TO_STOCKHOLM_DEV_WAKE	AP_TO_STOCKHOLM_DEV_WAKE	IN 8
AP_TO_STOCKHOLM_FW_DWLD_REQ	AP_TO_STOCKHOLM_DWLD_REQUEST	IN 7

MIS-NAMED NET. GPS_TIME_MARK ACTUALLY GOES FROM AP TO BB.

PAGE TITLE	BASEBAND:RADIO SYMBOL
	Apple Inc.
DRAWING NUMBER	051-1902
SIZE	D
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BRANCH	
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1. ALL RESISTANCE VALUES ARE IN OHMS, 0.1 WATT +/- 5%.
2. ALL CAPACITANCE VALUES ARE IN MICROFARADS.
3. ALL CRYSTALS & OSCILLATOR VALUES ARE IN HERTZ.

REV	ECN	DESCRIPTION OF REVISION	CK APPD / DATE
A	0004536627	PRODUCTION RELEASED	2015-07-21

N71 RADIO_MLB_MIMO - PVT
JULY 07, 2015

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23	49	SIM
24	50	WIFI/BT: WIFI/BT MODULE
25	51	STOCKHOLM

ROW/RF2 HB PAD MATCHING BOM OPTIONS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
152S1907	1	3.3NH, INDUCTOR	L4105_RF	ROW
152S1990	1	3.0NH, INDUCTOR	L4105_RF	RF2
131S0377	1	1.2PF, CAPACITOR	C4108_RF	RF2
152S2007	1	8.2NH, INDUCTOR	L4401_RF	ROW
131S0426	1	22PF, CAPACITOR	C4405_RF	ROW
152S2001	1	2.4NH, INDUCTOR	C4405_RF	RF2
131S0631	1	0.3PF, CAPACITOR	L4406_RF	RF2
152S2044	1	2.2NH, INDUCTOR	C4406_RF	ROW
152S2021	1	1.5NH, INDUCTOR	C4406_RF	RF2
131S0631	1	0.3PF, CAPACITOR	L4407_RF	ROW
152S2056	1	5.6NH, INDUCTOR	L4403_RF	ROW
131S0429	1	8.2PF, CAPACITOR	C4407_RF	ROW
152S2036	1	2.5NH, INDUCTOR	C4407_RF	RF2
131S0631	1	0.3PF, CAPACITOR	L4408_RF	RF2
152S00143	1	15NH, INDUCTOR	L4404_RF	ROW
131S0823	1	33PF, CAPACITOR	C4408_RF	ROW
152S2051	1	1.3NH, INDUCTOR	C4408_RF	RF2
152S2042	1	1.8NH, INDUCTOR	C4409_RF	RF2
117S0108	1	51 OHM, RESISTOR	L4410_RF	ROW
131S0363	1	0.6PF, CAPACITOR	L4410_RF	RF2
152S00052	1	3.4NH, INDUCTOR	L3910_RF	ROW
152S00026	1	3.5NH, INDUCTOR	L3910_RF	RF2
152S2039	1	3.8NH, INDUCTOR	L3911_RF	ROW
117S0201	1	0 OHM, RESISTOR	L3911_RF	RF2
131S0279	1	1.3PF, CAPACITOR	L3919_RF	ROW
152S2045	1	3.0NH, INDUCTOR	L3919_RF	RF2
152S00052	1	3.4NH, INDUCTOR	L3912_RF	RF2
131S0599	1	1.5PF, CAPACITOR	C3922_RF	RF2
131S0630	1	27PF, CAPACITOR	C3911_RF	RF2

LB PAD

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
353S00461	1	IC,PWR AMP,LB_PAD,SKWS	ULBPA_RF	ROW
353S00461	1	IC,PWR AMP,LB_PAD,SKWS	ULBPA_RF	RF2
353S00461	1	IC,PWR AMP,LB_PAD,SKWS	ULBPA_RF	RFC
353S00541	1	IC,PWR AMP,LB_PAD,PT	ULBPA_RF	DARWIN

MB PAD

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
353S4495	1	IC,PWR AMP,MB_PAD	UMBPA_RF	ROW
353S4495	1	IC,PWR AMP,MB_PAD	UMBPA_RF	RF2
353S4495	1	IC,PWR AMP,MB_PAD	UMBPA_RF	RFC
353S00477	1	IC,PWR AMP,MB_PAD, PT	UMBPA_RF	DARWIN

RFC HB PAD MATCHING BOM OPTIONS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
152S1907	1	3.3NH, INDUCTOR	L4105_RF	RFC
152S2007	1	8.2NH, INDUCTOR	L4401_RF	RFC
131S0426	1	22PF, CAPACITOR	C4405_RF	RFC
152S2044	1	2.2NH, INDUCTOR	C4406_RF	RFC
131S0631	1	0.3PF, CAPACITOR	L4407_RF	RFC
152S2056	1	5.6NH, INDUCTOR	L4403_RF	RFC
131S0429	1	8.2PF, CAPACITOR	C4407_RF	RFC
152S00143	1	15NH, INDUCTOR	L4404_RF	RFC
131S0823	1	33PF, CAPACITOR	C4408_RF	RFC
117S0108	1	51 OHM, RESISTOR	L4410_RF	RFC
152S00052	1	3.4NH, INDUCTOR	L3910_RF	RFC
152S2039	1	3.8NH, INDUCTOR	L3911_RF	RFC
131S0279	1	1.3PF, CAPACITOR	L3919_RF	RFC

DARWIN HB PAD MATCHING BOM OPTIONS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
152S1907	1	3.3NH, INDUCTOR	L4105_RF	DARWIN
152S2007	1	8.2NH, INDUCTOR	L4401_RF	DARWIN
131S0426	1	22PF, CAPACITOR	C4405_RF	DARWIN
152S2044	1	2.2NH, INDUCTOR	C4406_RF	DARWIN
131S0631	1	0.3PF, CAPACITOR	L4407_RF	DARWIN
152S2056	1	5.6NH, INDUCTOR	L4403_RF	DARWIN
131S0429	1	8.2PF, CAPACITOR	C4407_RF	DARWIN
152S00143	1	15NH, INDUCTOR	L4404_RF	DARWIN
131S0823	1	33PF, CAPACITOR	C4408_RF	DARWIN
117S0108	1	51 OHM, RESISTOR	L4410_RF	DARWIN
152S00052	1	3.4NH, INDUCTOR	L3910_RF	DARWIN
152S2039	1	3.8NH, INDUCTOR	L3911_RF	DARWIN
131S0279	1	1.3PF, CAPACITOR	L3919_RF	DARWIN

LAT DIPLEXER1

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
155S0971	1	LAT CELL DIPLEXER1,TDK	FLDIP_RF	ROW
155S0971	1	LAT CELL DIPLEXER1,TDK	FLDIP_RF	RF2
155S0971	1	LAT CELL DIPLEXER1,TDK	FLDIP_RF	RFC
155S0971	1	LAT CELL DIPLEXER1,TDK	FLDIP_RF	DARWIN

HB PAD

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
353S00376	1	IC,PWR AMP,HB_PAD,TQS	UHBPA_RF	ROW
353S4494	1	IC,PWR AMP,HB_PAD,AVAGO	UHBPA_RF	RF2
353S00376	1	IC,PWR AMP,HB_PAD,TQS	UHBPA_RF	RFC
353S00478	1	IC,PWR AMP,HB_PAD,PT	UHBPA_RF	DARWIN

19.2MHZ XTAL ALTERNATE

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
197S0565	197S0593	ALTERNATE	Y_XO_RF	XTAL, 19.2MHZ
197S0598	197S0593	ALTERNATE	Y_XO_RF	XTAL, 19.2MHZ

VINYL

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
337S00176	1	IC, VINYL	U5101_RF	ROW
337S00176	1	IC, VINYL	U5101_RF	RF2

VINYL RESISTOR

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
117S0161	1	0 OHM, RESISTOR	R3402_RF	RFC
117S0161	1	0 OHM, RESISTOR	R3402_RF	DARWIN

HW_REV1_ID RESISTOR

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
118S0646	1	51.1 KOHM, RESISTOR	R3503_RF	DARWIN

SIM ESD DIODE ALTERNATE

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
377S00042	377S0163	ALTERNATE	VR301_RF	ON SEMI ESD DIODE

?

DRAWING TITLE: SCHEM,SINGLE,BRD,N71

Apple Inc.

DRAWING NUMBER: 051-1902 | SIZE: D

REVISION: A.0.0

BRANCH:

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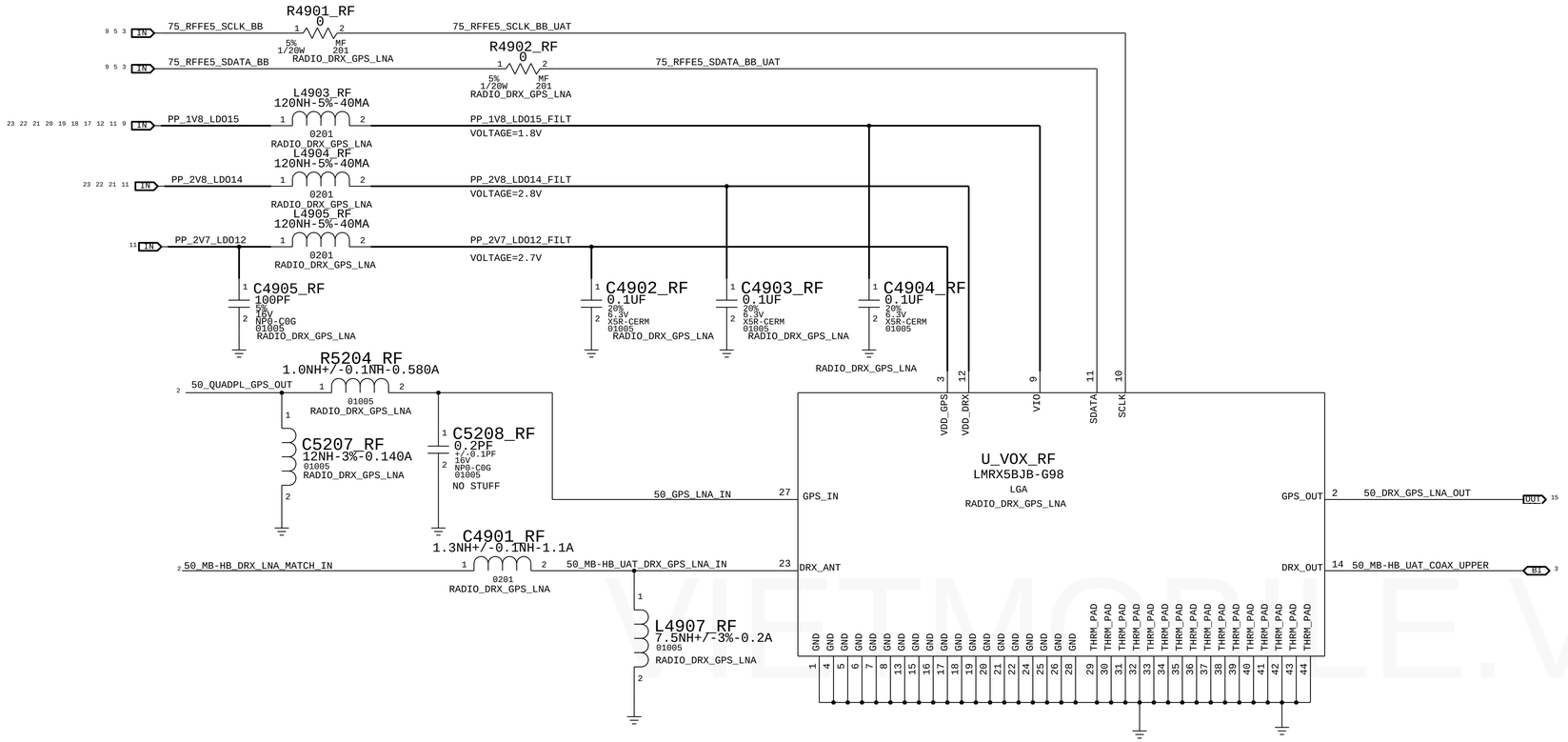
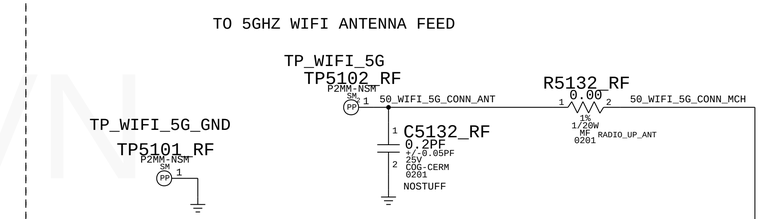
N71-SPECIFIC RADIO PAGE 2

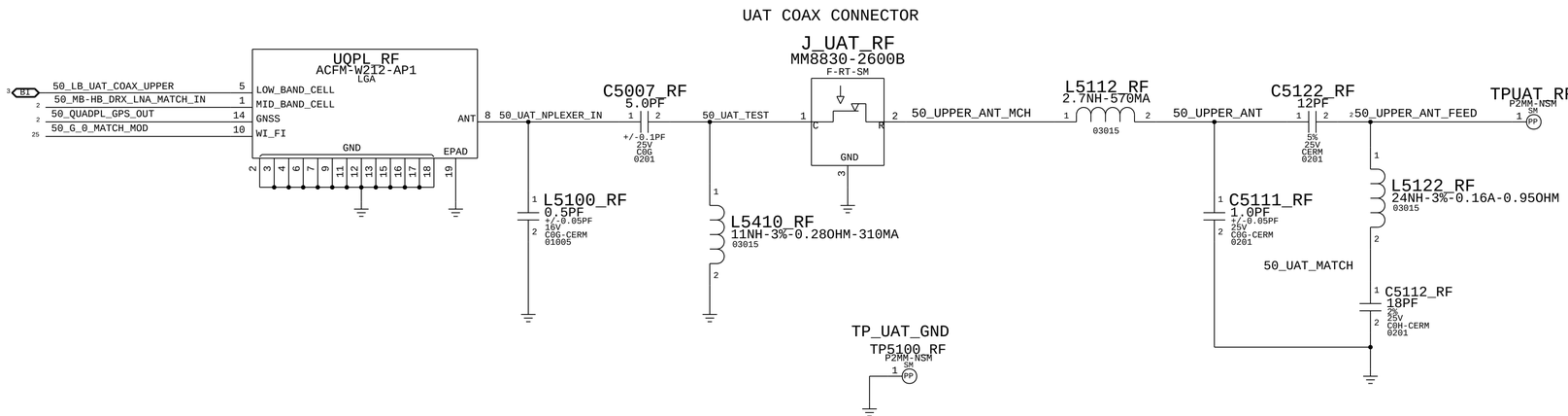
DIVERSITY LNA



WIFI ANT FEED



UAT ANT FEED



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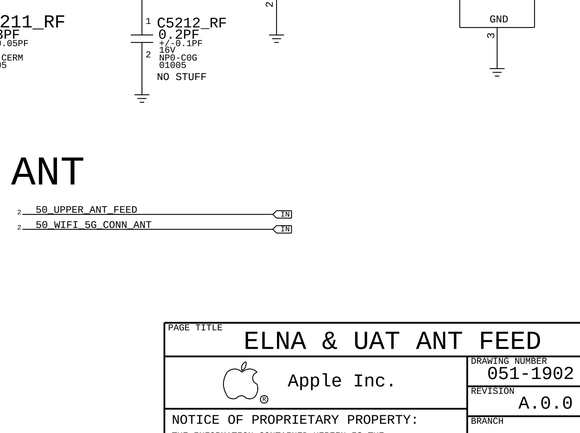

PAGE TITLE: ELNA & UAT ANT FEED

Apple Inc.

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REVISION: A.0.0

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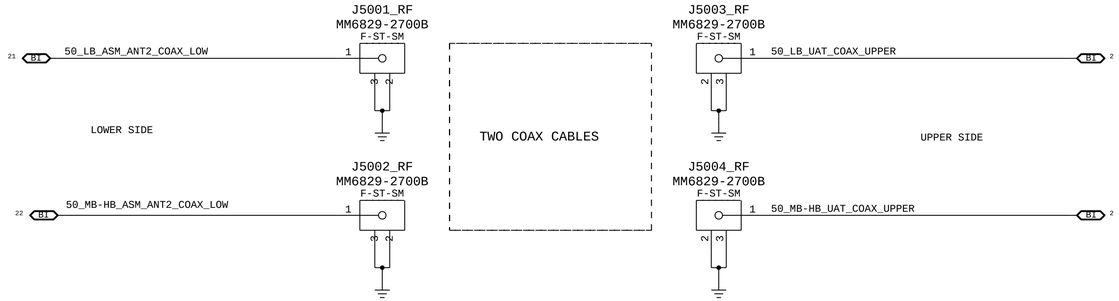
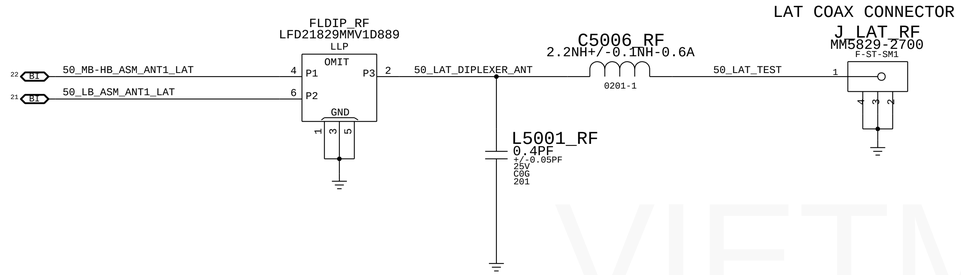
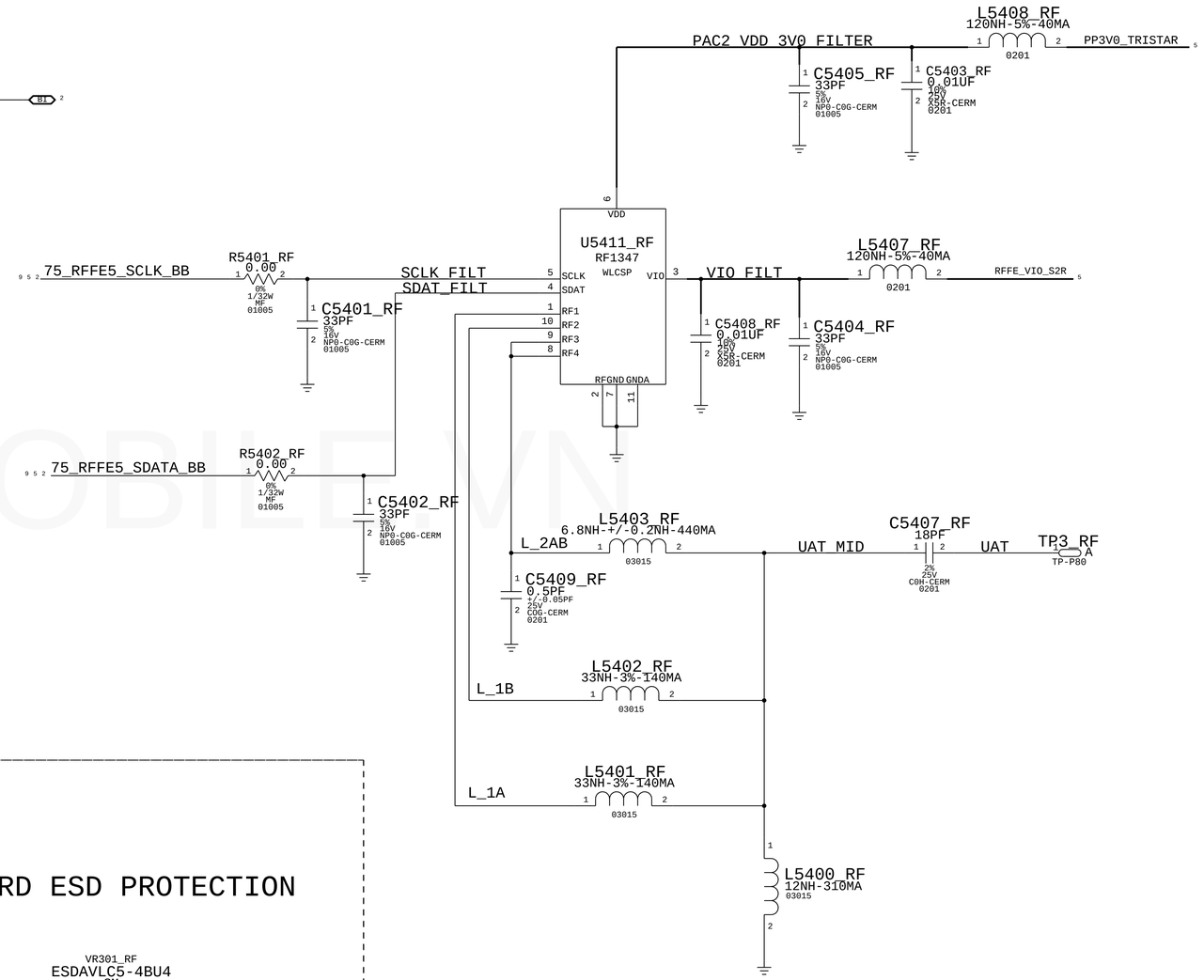
N71-SPECIFIC RADIO PAGE 3

ANTENNA FEEDS AND CONNECTORS

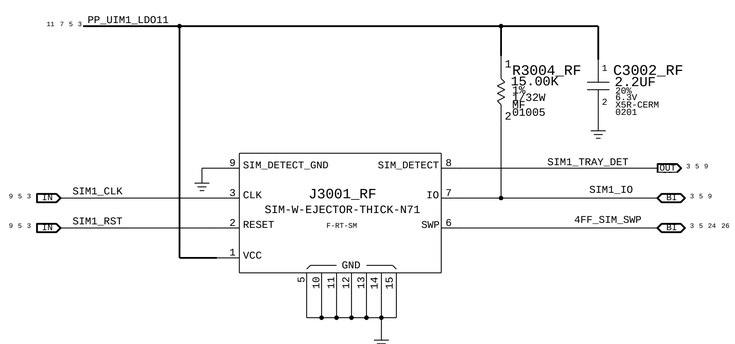




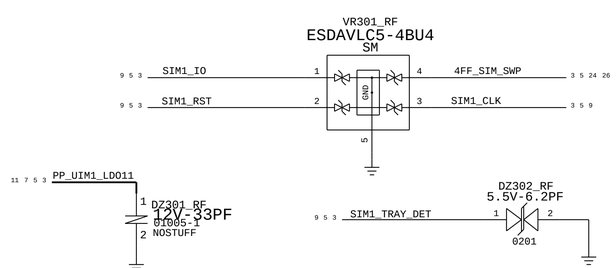
UAT TUNER



SIM CARD CONNECTOR



SIM CARD ESD PROTECTION



PAGE TITLE
FE: ANT CONNECTORS AND UAT TUNER

Apple Inc.

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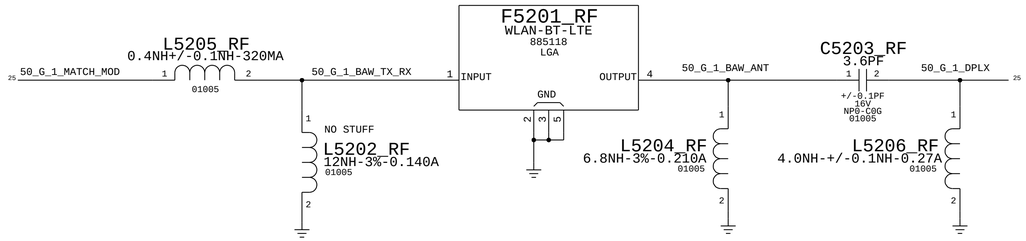
N71-SPECIFIC RADIO PAGE 4

WLAN LAT 2.4GHZ BAW BPF



PAGE TITLE: WLAN LAT 2.4GHZ BAW BPF

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AP TO BB/WLAN/BT/SH CONNECTIONS

BASEBAND

26 25 20 18 17 12 11 PP_VCC_MAIN — IO
10 AP_TO_BBPMU_RADIO_ON_L — IN
10 5 PMU_TO_BBPMU_RESET_L — IN
10 AP_TO_BB_RST_L — IN
9 BB_TO_AP_RESET_DET_L — SINGLE_NODENET — OUT
9 5 BB_TO_AP_GSM_TXBURST_IND — OUT
9 5 AP_TO_BB_MESA_ON_L — IN
9 5 BB_TO_AP_GPS_TIME_MARK — OUT
9 AP_TO_BB_COREDUMP_TRIG — IN
9 AP_TO_BB_IPC_GPIO — IN
10 TOUCH_TO_BBPMU_FORCE_PWM — IN

9 5 UART0_BB_TO_OWL_TX — OUT
9 5 UART0_OWL_TO_BB_TX — IN

8 5 PCIE0_AP_TO_BB_REFCLK_P — IN
8 5 PCIE0_AP_TO_BB_REFCLK_N — IN

8 5 PCIE0_AP_TO_BB_TX_P — IN
8 5 PCIE0_AP_TO_BB_TX_N — IN

8 PCIE0_BB_TO_AP_TX_P — OUT
8 PCIE0_BB_TO_AP_TX_N — OUT

9 5 PCIE0_AP_TO_BB_PERST_L — IN
9 5 PCIE0_AP_TO_BB_CLKREQ_L — IN
9 5 PCIE0_BB_TO_PMU_HOST_WAKE_L — OUT
9 5 PCIE0_AP_TO_BB_DEV_WAKE — IN

9 5 I2S_AP_TO_BB_WS — IN
9 5 I2S_AP_TO_BB_CLK — IN
9 5 I2S_AP_TO_BB_TX — IN
9 5 I2S_BB_TO_AP_TX — OUT

8 USB_BB_P — OUT
8 USB_BB_N — OUT
10 USB_BB_VBUS_DETECT — IN

8 SWD_CLK_BB_JTAG_TCK — IN
8 5 SWD_IO_BB_JTAG_TMS — IN

9 RFFE_BUFFER_LAT_GPIO1 — OUT
9 5 3 2 75_RFFE5_SDATA_BB — OUT
9 5 3 2 75_RFFE5_SCLK_BB — OUT
3 PP3V0_TRISTAR — IN

11 BB_TO_PMU_AMUX_SMPS1 — OUT
11 BB_TO_PMU_AMUX_SMPS3 — OUT
11 BB_TO_PMU_AMUX_SMPS4 — OUT
11 BB_TO_PMU_AMUX_LDO11_SIM1 — OUT

AP DEBUG

5 PP1V8 — IN
5 FORCE_DFU — OUT
DFU_STATUS — IN
PMU_AMUX_AY — IN
PMU_AMUX_BY — IN
PMU_TO_SYSTEM_COLD_RESET_L — IN
5 I2C0_AP_SDA — IO
5 I2C0_AP_SCL — IO
5 I2C1_AP_SDA — IO
5 I2C1_AP_SCL — IO
5 BUTTON_HOLD_KEY_L — OUT
5 BUTTON_MENU_KEY_L — OUT
5 BUTTON_VOL_DOWN_L — OUT
5 BUTTON_VOL_UP_L — OUT
5 BUTTON_RINGER_A — OUT
PMU_GPIO20 — IO
PMU_GPIO21 — IO

AP_RESERVED0 — IN
AP_RESERVED1 — IN
AP_RESERVED2 — IN

POWER

5 PP1V8_SDRAM — VOLTAGE=1.8V — MAKE_BASE=TRUE
→ PP_1V8_S2R_VDDIO_WLAN_BT — VOLTAGE=1.8V — 25
→ PP_STOCKHOLM_1V8_S2R — VOLTAGE=1.8V — 26
→ RFFE_VIO_S2R — VOLTAGE=1.8V — 3

WLAN/BT

25 PMU_TO_WLAN_32K_CLK — IN
25 PMU_TO_WLAN_REG_ON — IN
25 PMU_TO_BT_REG_ON — IN
25 WLAN_TO_PMU_HOST_WAKE — OUT
25 BT_TO_PMU_HOST_WAKE — OUT
25 AP_TO_BT_WAKE — IN

25 UART1_AP_TO_BT_TX — IN
25 UART1_BT_TO_AP_TX — OUT
25 UART1_AP_TO_BT_RTS_L — IN
25 UART1_BT_TO_AP_RTS_L — OUT

25 I2S_AP_TO_BT_BCLK — IN
25 I2S_AP_TO_BT_LRCK — IN
25 I2S_BT_TO_AP_DOUT — OUT
25 I2S_AP_TO_BT_DOUT — IN

25 UART4_AP_TO_WLAN_TX — IN
25 UART4_WLAN_TO_AP_TX — OUT
25 UART4_WLAN_TO_AP_RTS_L — OUT
25 UART4_AP_TO_WLAN_RTS_L — IN

25 PCIE_WLAN_TO_AP_CLKREQ_L — OUT
25 PCIE_AP_TO_WLAN_PERST_L — IN
25 PCIE_AP_TO_WLAN_DEV_WAKE — IN
25 PCIE_AP_TO_WLAN_TX_P — IN
25 PCIE_AP_TO_WLAN_TX_N — IN
25 PCIE_AP_TO_WLAN_REFCLK_P — IN
25 PCIE_AP_TO_WLAN_REFCLK_N — IN
25 PCIE_WLAN_TO_AP_TX_P — OUT
25 PCIE_WLAN_TO_AP_TX_N — OUT

25 OWL_TO_WLAN_CONTEXT_A — IN
25 OWL_TO_WLAN_CONTEXT_B — IN

STOCKHOLM

5 PP1V8_SDRAM — IN
AP_TO_STOCKHOLM_SIM_SEL
STOCKHOLM_TO_PMU_HOST_WAKE
26 AP_TO_STOCKHOLM_FW_DWLD_REQ — OUT
26 PMU_TO_STOCKHOLM_EN — IN
26 AP_TO_STOCKHOLM_DEV_WAKE — IN
26 5 UART3_AP_TO_STOCKHOLM_TXD — IN
26 5 UART3_STOCKHOLM_TO_AP_TXD — OUT
26 5 UART3_AP_TO_STOCKHOLM_RTS_L — IN
26 5 UART3_STOCKHOLM_TO_AP_RTS_L — OUT

ANT

26 STOCKHOLM_ANT — IN

MLB PROBE POINTS

PCIE

PP3073_RF (P2MM-NSM SM 1, PP) — PCIE0_AP_TO_BB_PERST_L — 5 9 — OMIT
PP3074_RF (P2MM-NSM SM 1, PP) — PCIE0_BB_TO_PMU_HOST_WAKE_L — 5 9 — OMIT RADIO_DEBUG
PP3075_RF (P2MM-NSM SM 1, PP) — PCIE0_AP_TO_BB_CLKREQ_L — 5 9 — OMIT
PP3076_RF (P2MM-NSM SM 1, PP) — PCIE0_AP_TO_BB_DEV_WAKE — 5 9 — OMIT RADIO_DEBUG
PP3080_RF (P2MM-NSM SM 1, PP) — PCIE0_AP_TO_BB_REFCLK_P — 5 8 — OMIT RADIO_DEBUG
PP3081_RF (P2MM-NSM SM 1, PP) — PCIE0_AP_TO_BB_REFCLK_N — 5 8 — OMIT RADIO_DEBUG
PP3084_RF (P2MM-NSM SM 1, PP) — PCIE0_AP_TO_BB_TX_P — 5 8 — OMIT RADIO_DEBUG
PP3085_RF (P2MM-NSM SM 1, PP) — PCIE0_AP_TO_BB_TX_N — 5 8 — OMIT RADIO_DEBUG
PP3090_RF (P2MM-NSM SM 1, PP) — BB_JTAG_SRST_L — 8 — OMIT RADIO_DEBUG
PP3091_RF (P2MM-NSM SM 1, PP) — SWD_IO_BB_JTAG_TMS — 5 8 — OMIT RADIO_DEBUG

PMU

PP3032_RF (P2MM-NSM SM 1, PP) — PMIC_RESOUT_L — 8 10 — OMIT
PP3033_RF (P2MM-NSM SM 1, PP) — 50_SLEEP_CLK_32K — 8 10 — OMIT
PP3034_RF (P2MM-NSM SM 1, PP) — XO_OUT_D0_EN — 8 10 — OMIT
PP3036_RF (P2MM-NSM SM 1, PP) — SPMI_CLK — 8 10 — OMIT RADIO_DEBUG
PP3037_RF (P2MM-NSM SM 1, PP) — SPMI_DATA — 8 10 — OMIT RADIO_DEBUG

BASEBAND

PP3017_RF (P2MM-NSM SM 1, PP) — BB_DEBUG_ERROR — 9 — OMIT
PP3018_RF (P2MM-NSM SM 1, PP) — 50_MDM_PCIE_CLK — 8 10 — OMIT
PP3019_RF (P2MM-NSM SM 1, PP) — 50_BBPMU_TO_STOCKHOLM_19P2M_CLK — 10 26 — OMIT
PP3006_RF (P2MM-NSM SM 1, PP) — STOCKHOLM_TO_BBPMU_CLK_REQ — 10 26 — OMIT

PP3008_RF (P2MM-NSM SM 1, PP) — I2S_AP_TO_BB_WS — 5 9 — OMIT RADIO_DEBUG
PP3009_RF (P2MM-NSM SM 1, PP) — I2S_AP_TO_BB_CLK — 5 9 — OMIT RADIO_DEBUG
PP3010_RF (P2MM-NSM SM 1, PP) — I2S_AP_TO_BB_TX — 5 9 — OMIT RADIO_DEBUG
PP3011_RF (P2MM-NSM SM 1, PP) — I2S_BB_TO_AP_TX — 5 9 — OMIT RADIO_DEBUG
PP3012_RF (P2MM-NSM SM 1, PP) — AP_TO_BB_MESA_ON_L — 5 9 — OMIT RADIO_DEBUG
PP3013_RF (P2MM-NSM SM 1, PP) — BB_TO_AP_GSM_TXBURST_IND — 5 9 — OMIT RADIO_DEBUG
PP3014_RF (P2MM-NSM SM 1, PP) — BB_TO_AP_GPS_TIME_MARK — 5 9 — OMIT RADIO_DEBUG

PP3016_RF (P2MM-NSM SM 1, PP) — UART0_BB_TO_OWL_TX — 5 9 — OMIT RADIO_DEBUG
PP3020_RF (P2MM-NSM SM 1, PP) — UART0_OWL_TO_BB_TX — 5 9 — OMIT RADIO_DEBUG

ANT TUNER

PP3001_RF (P2MM-NSM SM 1, PP) — 75_RFFE5_SDATA_BB — 2 3 5 9 — OMIT RADIO_DEBUG
PP3002_RF (P2MM-NSM SM 1, PP) — 75_RFFE5_SCLK_BB — 2 3 5 9 — OMIT RADIO_DEBUG

RFFE

PP3056_RF (P2MM-NSM SM 1, PP) — 75_RFFE1_SDATA_BB — 9 16 — OMIT RADIO_DEBUG
PP3077_RF (P2MM-NSM SM 1, PP) — 75_RFFE4_SDATA_BB — 9 12 — OMIT RADIO_DEBUG
PP3051_RF (P2MM-NSM SM 1, PP) — 75_RFFE5_SCLK_BB_BUFFER — 9 — OMIT RADIO_DEBUG
PP3052_RF (P2MM-NSM SM 1, PP) — 75_RFFE5_SDATA_BB_BUFFER — 9 — OMIT
PP3053_RF (P2MM-NSM SM 1, PP) — 75_RFFE2_SDATA_BB — 9 17 18 19 20 21 22 — OMIT RADIO_DEBUG
PP3054_RF (P2MM-NSM SM 1, PP) — 75_RFFE3_SDATA_BB — 9 23 — OMIT

STOCKHOLM

PP3062_RF (P2MM-NSM SM 1, PP) — STOCKHOLM_DWPM_DBG — 26 — OMIT
PP3063_RF (P2MM-NSM SM 1, PP) — STOCKHOLM_DWPS_DBG — 26 — OMIT
PP3064_RF (P2MM-NSM SM 1, PP) — UART3_AP_TO_STOCKHOLM_TXD — 5 26 — OMIT
PP3065_RF (P2MM-NSM SM 1, PP) — UART3_STOCKHOLM_TO_AP_TXD — 5 26 — OMIT
PP3066_RF (P2MM-NSM SM 1, PP) — UART3_AP_TO_STOCKHOLM_RTS_L — 5 26 — OMIT
PP3067_RF (P2MM-NSM SM 1, PP) — UART3_STOCKHOLM_TO_AP_RTS_L — 5 26 — OMIT

DEBUG CONNECTOR

NOSTUFF
J3000_RF
AXE550124
F-ST-SM

	51	53	
	1	2	
	3	4	
	5	6	
	7	8	
	9	10	
	11	12	SIM1_CLK — 3 9
	13	14	SIM1_RST — 3 9
25 9 UART_WLAN_TO_BB_COEX_TX	15	16	SIM1_IO — 3 9
5 I2C0_AP_SDA	17	18	PP_UIM1_LDO11 — 3 7 11
5 I2C0_AP_SCL	19	20	SIM1_TRAY_DET — 3 9
5 BUTTON_VOL_DOWN_L	21	22	4FF_SIM_SWP — 3 24 26
5 BUTTON_VOL_UP_L	23	24	I2C1_AP_SDA — 5
5 BUTTON_RINGER_A	25	26	I2C1_AP_SCL — 5
24 9 5 SIM2_RESET	27	28	BUTTON_HOLD_KEY_L — 5
24 9 SIM2_DATA	29	30	BUTTON_MENU_KEY_L — 5
25 9 UART_BB_TO_WLAN_COEX_TX	31	32	PP1V8 — 5
9 SIM2_DETECT	33	34	FORCE_DFU — 5
24 SIM2_DATA_R	35	36	SIM2_CLK — 9 24
	37	38	PP_UIM2_LDO13 — 7 11 24
	39	40	
	41	42	
	43	44	
	45	46	
	47	48	
	49	50	
	52	54	

ESD CAPS

10 5 PMU_TO_BBPMU_RESET_L
24 9 5 SIM2_RESET
C5101_RF 100PF 20% 16V X5R-CERN-01005 (1, 2)
C3503_RF 100PF 20% 16V X5R-CERN-01005 (1, 2)

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PAGE TITLE: DEBUG CONN & TEST POINTS

Apple Inc.

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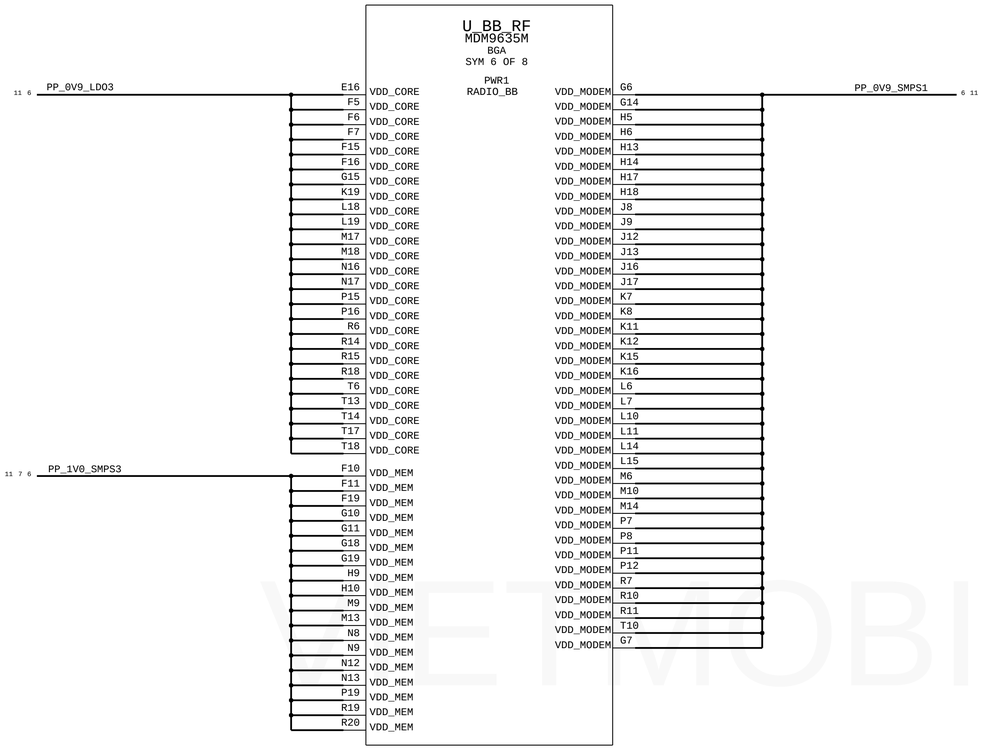
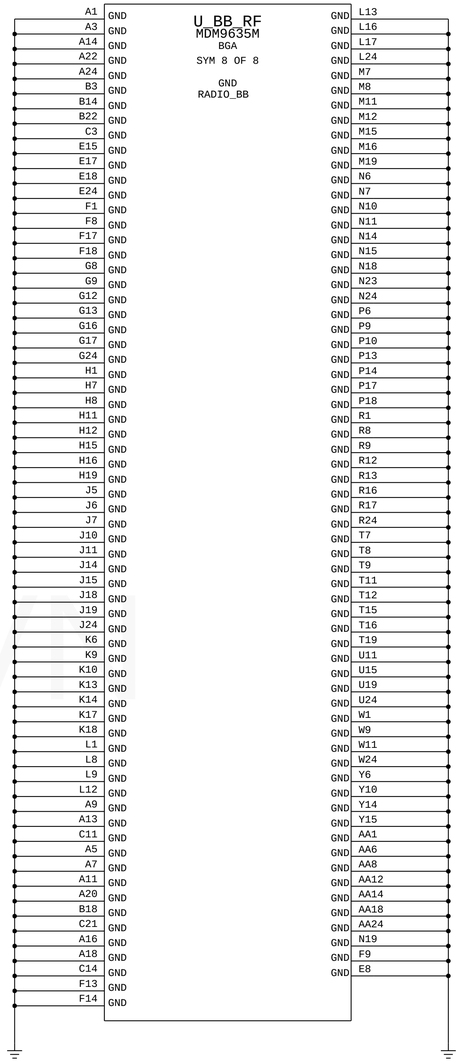
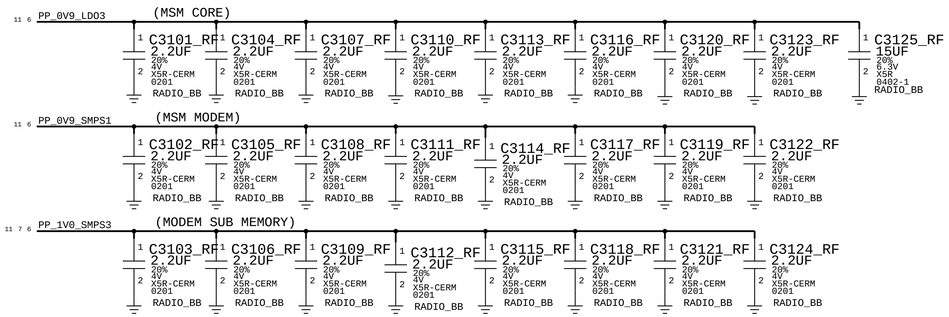
BASEBAND: POWER 1







PAGE TITLE
CELLULAR BASEBAND: POWER1

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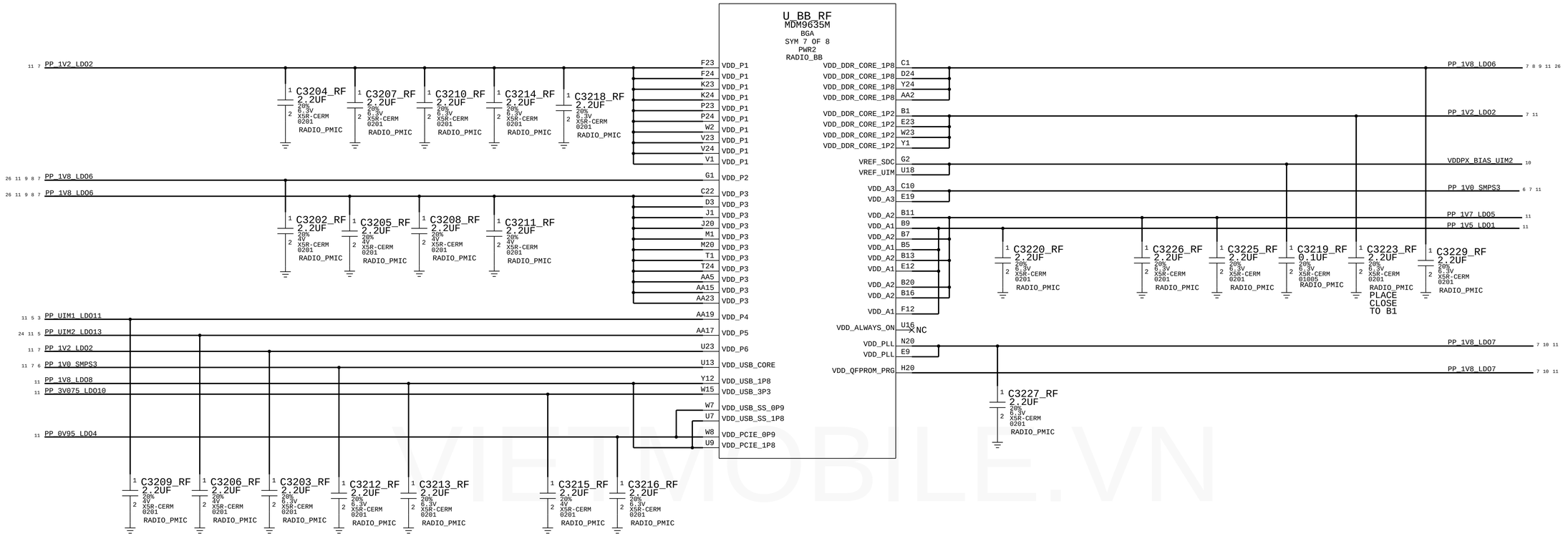
BASEBAND: POWER 2



PAGE TITLE
CELLULAR BASEBAND: POWER2

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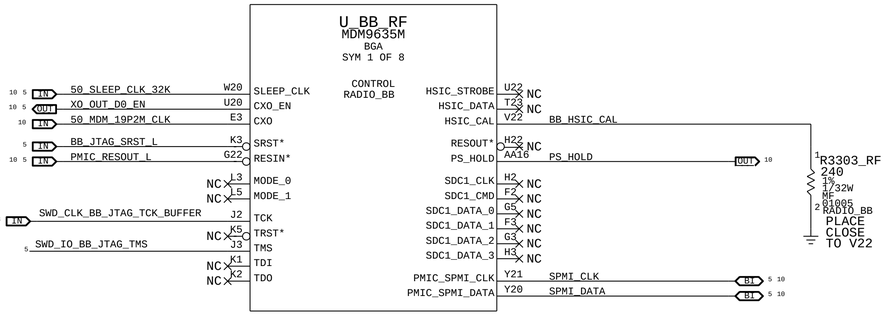
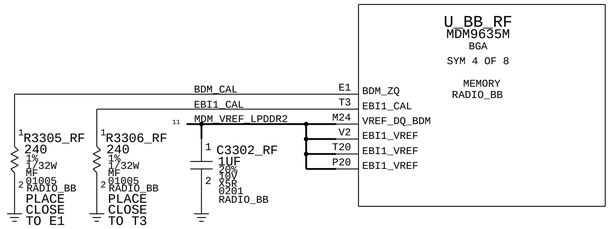
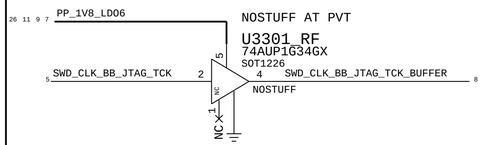
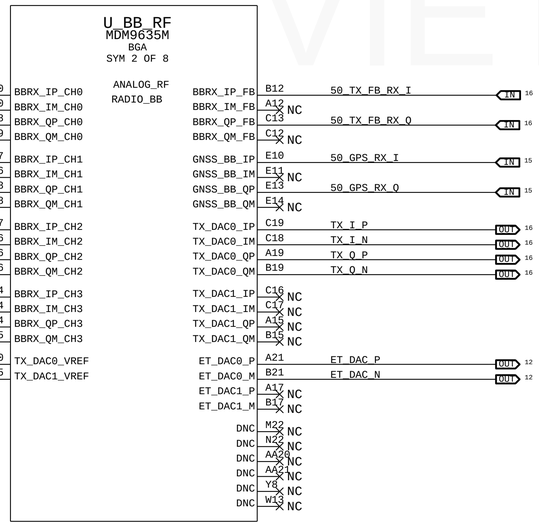
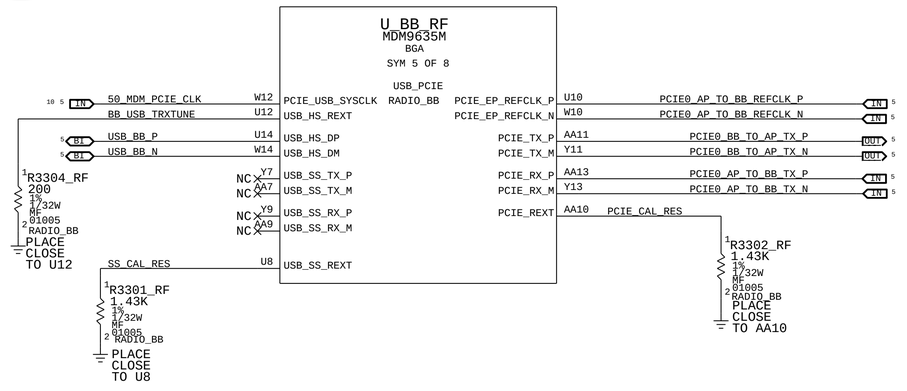
BASEBAND: CONTROL AND INTERFACES











PAGE TITLE
CELLULAR BASEBAND: CONTROL AND INTERFACES

Apple Inc.

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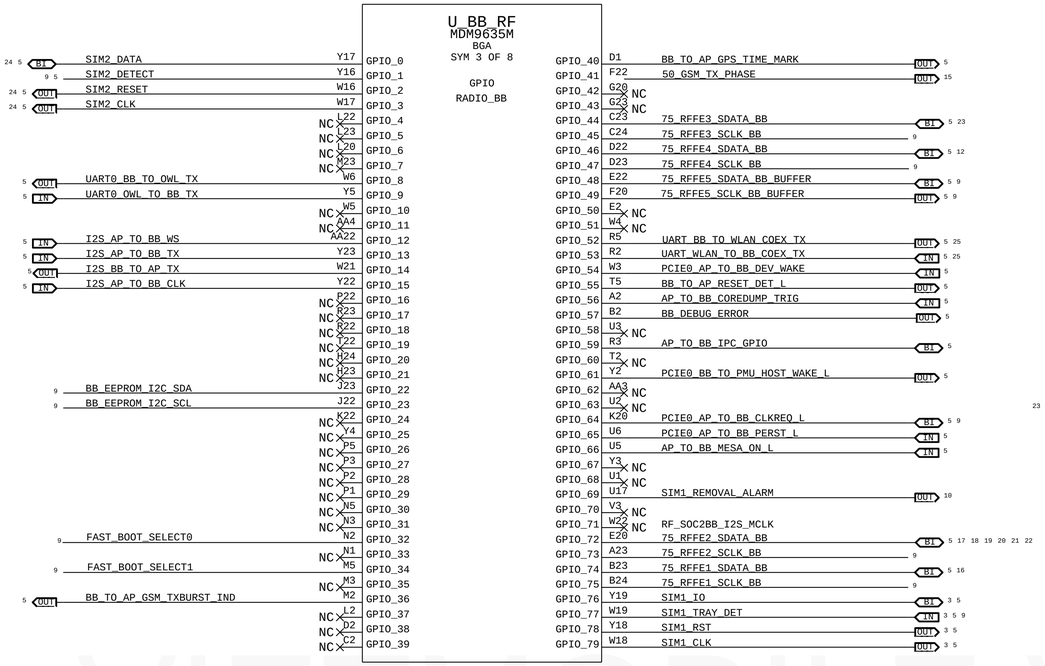
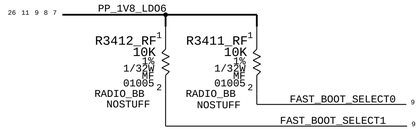
BASEBAND: GPIOS

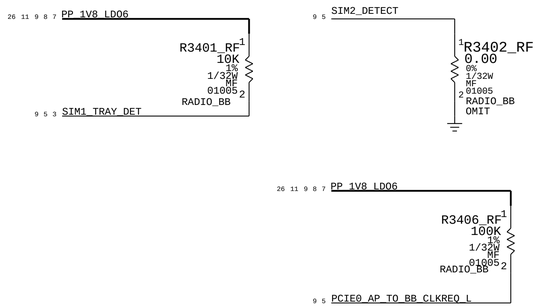




STUFF R3411 FOR PCIE BOOT (UNFUSED BB)
STUFF R3412 FOR USB BOOT (UNFUSED BB)

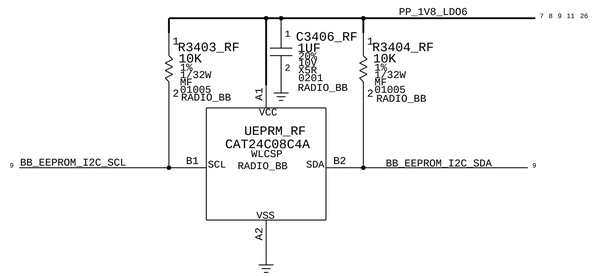
OPTION	SEL2	SEL1	SEL0
GPIO	35	34	32
PCIE	0	0	1
HSUSB	0	1	0
HSIC	0	1	1

NOSTUFF R3402 WHEN VINYL PRESENT
STUFF R3402 WHEN VINYL NOT PRESENT

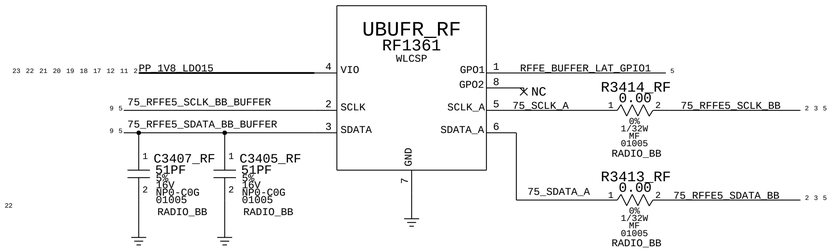


PCIE PULL-UPS TO BB RAIL

BB EEPROM

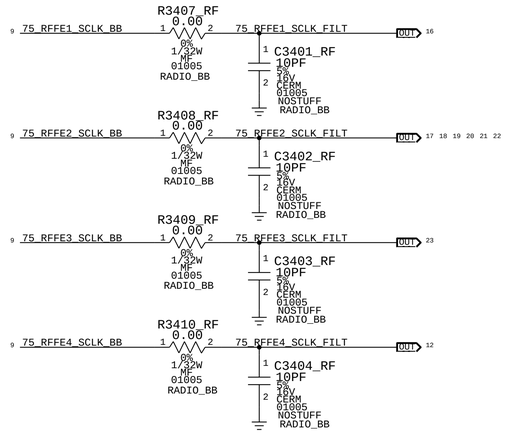


BUFFER ON RFFE5
SCLK/SDATA_A IS OUTPUT



PLACE C3405_RF CLOSE TO BUFFER
PLACE C3407_RF CLOSE TO MDM

RFFE CLOCK FILTERS



RFFE USAGE TABLE

RFFE1 WTR
RFFE2 LB/MB/HB PAD, 2G PA, LB/MB/HB ASM
RFFE3 DIV ASM
RFFE4 QPOET
RFFE5 DIV LNA, ANT TUNERS

PAGE TITLE: CELLULAR BASEBAND: GPIOS
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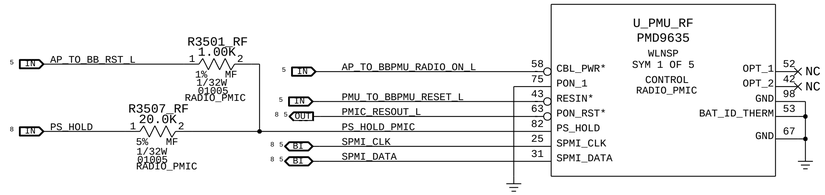
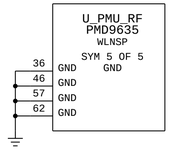
PMU: CONTROL AND CLOCKS

HW_REV2_ID	R3502	R3503	CONFIG
1.80V	698K	-	MLB
0.12V	698K	51.1K	SELF GEN

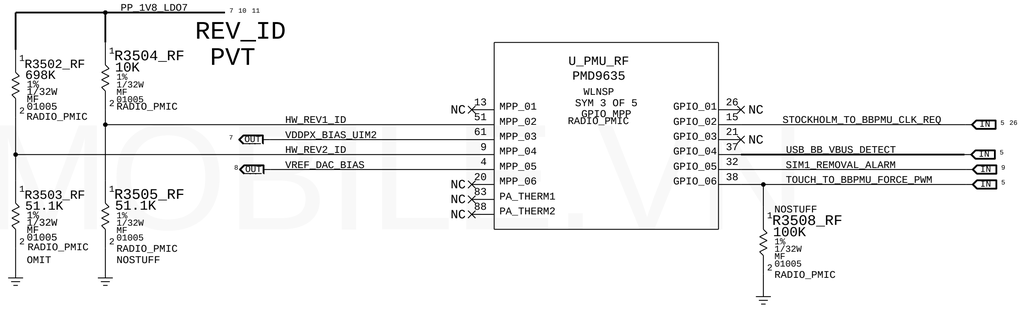
HW_REV_ID	R3504	R3505	REVISION
0.10V	887K	51.1K	DEV1
0.30V	255K	51.1K	DEV2
0.50V	124K	51.1K	DEV3
0.70V	82.5K	51.1K	DEV4/PROTOMLB1
0.90V	51.1K	51.1K	PROTOMLB2
1.10V	31.6K	51.1K	DEV5/PROTO1
1.20V	50K	100K	PROTO2
1.31V	39K	105K	EVT
1.43V	13.3K	51.1K	EVT_ALT
1.55V	8.25K	51.1K	CARRIER BUILD
1.67V	3.92K	51.1K	DVT
1.80V	10K	-	PVT

RESET AND CONTROL: PMU

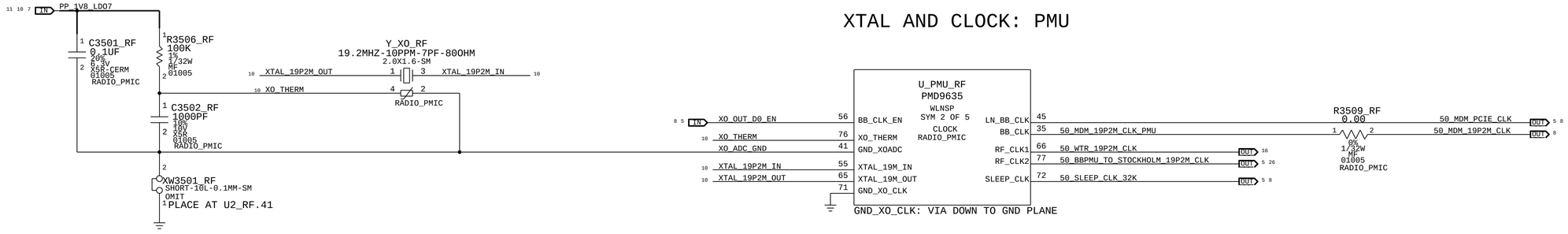




MPPS AND GPIOS: PMU



XTAL AND CLOCK: PMU



PAGE TITLE
CELLULAR PMU: CONTROL AND CLOCKS

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PMU: SWITCHERS AND LDOS

SWITCHERS BULK CAPS

I296
PP_VCC_MAIN
VBATT_S1
C3640_RF 15UF 20% 6.3V X5R 0402-1 RADIO_PMIC
C3616_RF 15UF 20% 6.3V X5R 0402-1 RADIO_PMIC
XW3601_RF SHORT-10L-0.25MM-SM OMIT
XW3602_RF SHORT-10L-0.25MM-SM OMIT
XW3603_RF SHORT-10L-0.25MM-SM OMIT
S1_GND

I295
PP_VCC_MAIN
VBATT_S2
C3615_RF 15UF 20% 6.3V X5R 0402-1 RADIO_PMIC
C3617_RF 15UF 20% 6.3V X5R 0402-1 RADIO_PMIC
XW3604_RF SHORT-10L-0.25MM-SM OMIT
XW3605_RF SHORT-10L-0.25MM-SM OMIT
S2_GND

I279
PP_VCC_MAIN
VBATT_S3
C3634_RF 4.7UF 20% 6.3V CER-X5R 0402 RADIO_PMIC
C3618_RF 15UF 20% 6.3V X5R 0402-1 RADIO_PMIC
XW3606_RF SHORT-10L-0.25MM-SM OMIT
XW3607_RF SHORT-10L-0.25MM-SM OMIT
XW3608_RF SHORT-10L-0.25MM-SM OMIT
S3_GND

I275
PP_VCC_MAIN
VBATT_S4
C3619_RF 15UF 20% 6.3V X5R 0402-1 RADIO_PMIC
XW3609_RF SHORT-10L-0.25MM-SM OMIT
XW3610_RF SHORT-10L-0.25MM-SM OMIT
S4_GND

I274
PP_VCC_MAIN
VBATT_S5
C3620_RF 15UF 20% 6.3V X5R 0402-1 RADIO_PMIC
XW3611_RF SHORT-10L-0.25MM-SM OMIT
XW3612_RF SHORT-10L-0.25MM-SM OMIT
S5_GND

U_PMU_RF
PMD9635
WLNSP
SYM 4 OF 5
POWER

VBATT_S1	5	VDD_S1	
	16	VDD_S1	
	6	GND_S1	
	17	GND_S1	
	28	GND_S1	
	33	GND_S1	
VBATT_S2	92	VDD_S2	
	103	VDD_S2	
S2_GND	102	GND_S2	
VBATT_S3	70	VDD_S3	
S3_GND	49	GND_S3	
	54	GND_S3	
VBATT_S4	8	VDD_S4	
	1	GND_S4	
	7	GND_S4	
VBATT_S5	94	VDD_S5	
S5_GND	93	GND_S5	
PP_1V225_SMPS2	86	VDD_L1_2_16	
PP_1V0_SMPS3	44	VDD_L3_4	
PP_1V85_SMPS4	14	VDD_L5_6_15	
	23	VDD_L7_8	
PP_1V0_SMPS5	89	VDD_L9	
PP_VCC_MAIN	90	VIN_VPH1	
	47	VIN_VPH2	
	73	VDD_OTP	
MDM_VREF_LPDDR2	78	VREF_DDR	
AVDD_BYP	74	AVDD_BYP	
REF_BYP	79	REF_BYP	
	68	GND_REF	
	24	VDD_XO_RF	

VREG_S1	10	VSW_S1	
	11	VSW_S1	
	22	VSW_S1	
	27	VSW_S1	
VREG_S2	91	VSW_S2	
	97	VSW_S2	
VREG_S3	69	VSW_S3	
	59	VSW_S3	
	64	VSW_S3	
VREG_S4	12	VSW_S4	
	2	VSW_S4	
VREG_S5	87	VSW_S5	
	99	VSW_S5	
VREG_L1	80	VOLTAGE=1.5V	MDM LOW VOLTAGE ANALOG
VREG_L2	81	VOLTAGE=1.2V	MDM EBI1, DDR CORE
VREG_L3	39	VOLTAGE=0.9V	MDM CORE
VREG_L4_16	48	VOLTAGE=0.95V	MDM PCIE
VREG_L5	19	VOLTAGE=1.7V	MDM HIGH VOLTAGE ANALOG
VREG_L6	3	VOLTAGE=1.8V	MDM 1.8V I/O, DDR, SHARED 1.8V VOLTAGE RAIL
VREG_L7	18	VOLTAGE=1.8V	MDM PLL
VREG_L8	29	VOLTAGE=1.8V	MDM LOW VOLTAGE USB
VREG_L9	100	VOLTAGE=1.0V	WTR
VREG_L10	84	VOLTAGE=3.075V	MDM HIGH VOLTAGE USB
VREG_L11	95	VOLTAGE=1.8V	UIM1
VREG_L12	85	VOLTAGE=2.7V	GPS LNA
VREG_L13	96	VOLTAGE=1.8V	UIM2
VREG_L14	101	VOLTAGE=2.8V	FRONT END SUPPLY
VREG_L15	30	VOLTAGE=1.8V	RFFE VIO
VREG_XO	34	VREG_XO	
GND_XO	40	VREG_XO_GND	
VREG_RF	60	VREG_RF_CLK	
GND_RF_CLK	50	VREG_RF_CLK_GND	

L3601_RF 1UH-20%-0.054OHM-3.4A 2520 RADIO_PMIC	PP_VSW_S1	VOLTAGE=0.9V	C3609_RF 43UF 20% 4V X5R 0603 S1_GND; C3614_RF 43UF 20% 4V X5R 0603 NOSTUFF	MDM MODEM TCXO SHUTDOWN: ON	3400MA	VOLTAGE=0.9V PP_0V9_SMPS1
L3602_RF 2.2UH-20%-0.140HM-1.6A 0806 RADIO_PMIC	PP_VSW_S2	VOLTAGE=1.225V	C3610_RF 43UF 20% 4V X5R 0603 S2_GND	LOW VOLTAGE LDOS TCXO SHUTDOWN: ON	587MA	PP_1V225_SMPS2 VOLTAGE=1.225V
L3603_RF 1.0UH-20%-2.7A-0.056OHM 0806 RADIO_PMIC	PP_VSW_S3	VOLTAGE=1.0V	C3611_RF 43UF 20% 4V X5R 0603 S3_GND	MDM MEMORY, MDM USB TCXO SHUTDOWN: ON	2234MA	PP_1V0_SMPS3 VOLTAGE=1.0V
L3604_RF 2.2UH-20%-0.140HM-1.6A 0806 RADIO_PMIC	PP_VSW_S4	VOLTAGE=1.85V	C3612_RF 43UF 20% 4V X5R 0603 S4_GND	HIGH VOLTAGE LDOS TCXO SHUTDOWN: ON	653MA	PP_1V85_SMPS4 VOLTAGE=1.85V
L3605_RF 2.2UH-20%-0.140HM-1.6A 0806 RADIO_PMIC	PP_VSW_S5	VOLTAGE=1.0V	C3613_RF 43UF 20% 4V X5R 0603 S5_GND	LDO9->WTR TCXO SHUTDOWN: OFF	700MA	PP_1V0_SMPS5 VOLTAGE=1.0V

PP_1V5_LDO1	VOLTAGE=1.5V	MDM LOW VOLTAGE ANALOG	TCXO SHUTDOWN: ON
PP_1V2_LDO2	VOLTAGE=1.2V	MDM EBI1, DDR CORE	TCXO SHUTDOWN: ON
PP_0V9_LDO3	VOLTAGE=0.9V	MDM CORE	TCXO SHUTDOWN: ON
PP_0V95_LDO4	VOLTAGE=0.95V	MDM PCIE	TCXO SHUTDOWN: OFF
PP_1V7_LDO5	VOLTAGE=1.7V	MDM HIGH VOLTAGE ANALOG	TCXO SHUTDOWN: ON
PP_1V8_LDO6	VOLTAGE=1.8V	MDM 1.8V I/O, DDR, SHARED 1.8V VOLTAGE RAIL	TCXO SHUTDOWN: ON
PP_1V8_LDO7	VOLTAGE=1.8V	MDM PLL	TCXO SHUTDOWN: OFF
PP_1V8_LDO8	VOLTAGE=1.8V	MDM LOW VOLTAGE USB	TCXO SHUTDOWN: ON
PP_1V0_LDO9	VOLTAGE=1.0V	WTR	TCXO SHUTDOWN: OFF
PP_3V075_LDO10	VOLTAGE=3.075V	MDM HIGH VOLTAGE USB	TCXO SHUTDOWN: ON
PP_UIM1_LDO11	VOLTAGE=1.8V	UIM1	TCXO SHUTDOWN: ON
PP_2V7_LDO12	VOLTAGE=2.7V	GPS LNA	TCXO SHUTDOWN: OFF
PP_UIM2_LDO13	VOLTAGE=1.8V	UIM2	TCXO SHUTDOWN: ON
PP_2V8_LDO14	VOLTAGE=2.8V	FRONT END SUPPLY	TCXO SHUTDOWN: OFF
PP_1V8_LDO15	VOLTAGE=1.8V	RFFE VIO	TCXO SHUTDOWN: OFF

C3621_RF 1UF 20% 10V X5R 0201 RADIO_PMIC
C3622_RF 0.1UF 20% 6.3V X5R-CERM 01005 RADIO_PMIC
R3603_RF 0.00 0% 1/32W MF 01005
REF_BYP_GND
XW3613_RF SHORT-10L-0.1MM-SM OMIT

VREG_XO
C3630_RF 1UF 20% 10V X5R 0201 RADIO_PMIC
VREG_XO_GND
XW3614_RF SHORT-10L-0.1MM-SM OMIT
XO_GND

VREG_RF_CLK
C3631_RF 1UF 20% 10V X5R 0201 RADIO_PMIC
VREG_RF_CLK_GND
XW3615_RF SHORT-10L-0.1MM-SM OMIT
RF_CLK_GND

PLACE XW CLOSE TO PMU
VIA XW DOWN TO THE GND PLANE

C3624_RF 1UF 20% 10V X5R 0201 RADIO_PMIC NOSTUFF
C3625_RF 10UF 20% 6.3V CERM-X5R 0402-9 RADIO_PMIC
C3632_RF 15UF 20% 6.3V X5R 0402-1 RADIO_PMIC
C3635_RF 4.7UF 20% 6.3V CER-X5R 0402 RADIO_PMIC NOSTUFF
C3633_RF 15UF 20% 6.3V X5R 0402-1 RADIO_PMIC
C3636_RF 4.7UF 20% 6.3V CER-X5R 0402 RADIO_PMIC NOSTUFF
C3603_RF 1UF 20% 10V X5R 0201 RADIO_PMIC
C3626_RF 4.7UF 20% 6.3V CER-X5R 0402 RADIO_PMIC
C3627_RF 10UF 20% 6.3V CERM-X5R 0402-9 RADIO_PMIC
C3605_RF 1UF 20% 10V X5R 0201 RADIO_PMIC
C3606_RF 1UF 20% 10V X5R 0201 RADIO_PMIC
C3629_RF 1UF 20% 10V X5R 0201 RADIO_PMIC
C3608_RF 1UF 20% 10V X5R 0201 RADIO_PMIC
C3607_RF 1UF 20% 10V X5R 0201 RADIO_PMIC

PP_0V9_SMPS1	XW3616_RF OMIT SHORT-10L-0.25MM-SM	BB_TO_PMU_AMUX_SMPS1	OUT
PP_1V0_SMPS3	XW3617_RF OMIT SHORT-10L-0.25MM-SM	BB_TO_PMU_AMUX_SMPS3	OUT
PP_1V85_SMPS4	XW3618_RF OMIT SHORT-10L-0.25MM-SM	BB_TO_PMU_AMUX_SMPS4	OUT
PP_UIM1_LDO11	XW3619_RF OMIT SHORT-10L-0.25MM-SM	BB_TO_PMU_AMUX_LDO11_SIM1	OUT

PAGE TITLE: CELLULAR PMU: SWITCHERS AND LDOS

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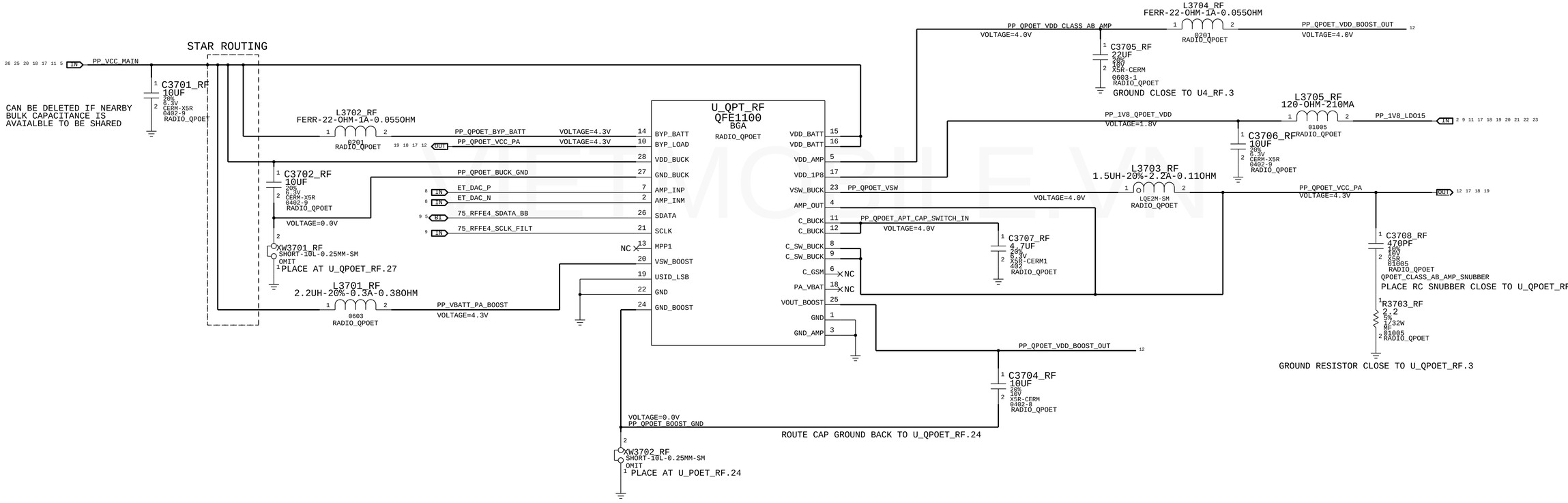
PMU: ET MODULATOR



PAGE TITLE
CELLULAR PMU: ET MODULATOR

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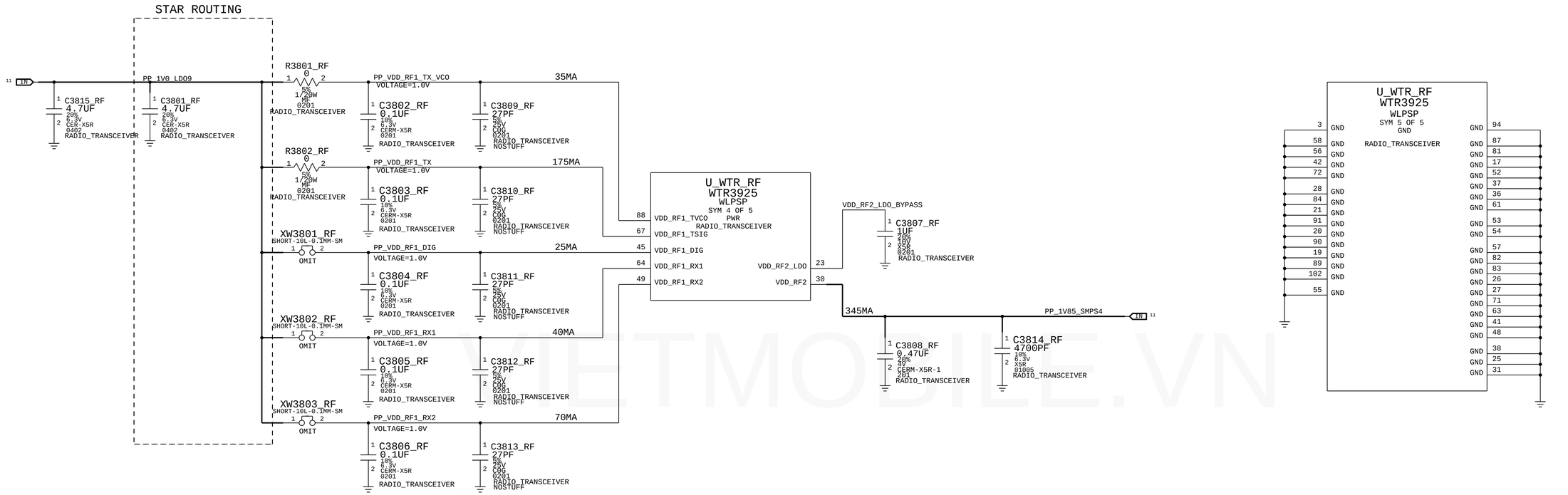
TRANSCEIVER: POWER



PAGE TITLE
CELLULAR TRANSCEIVER: POWER

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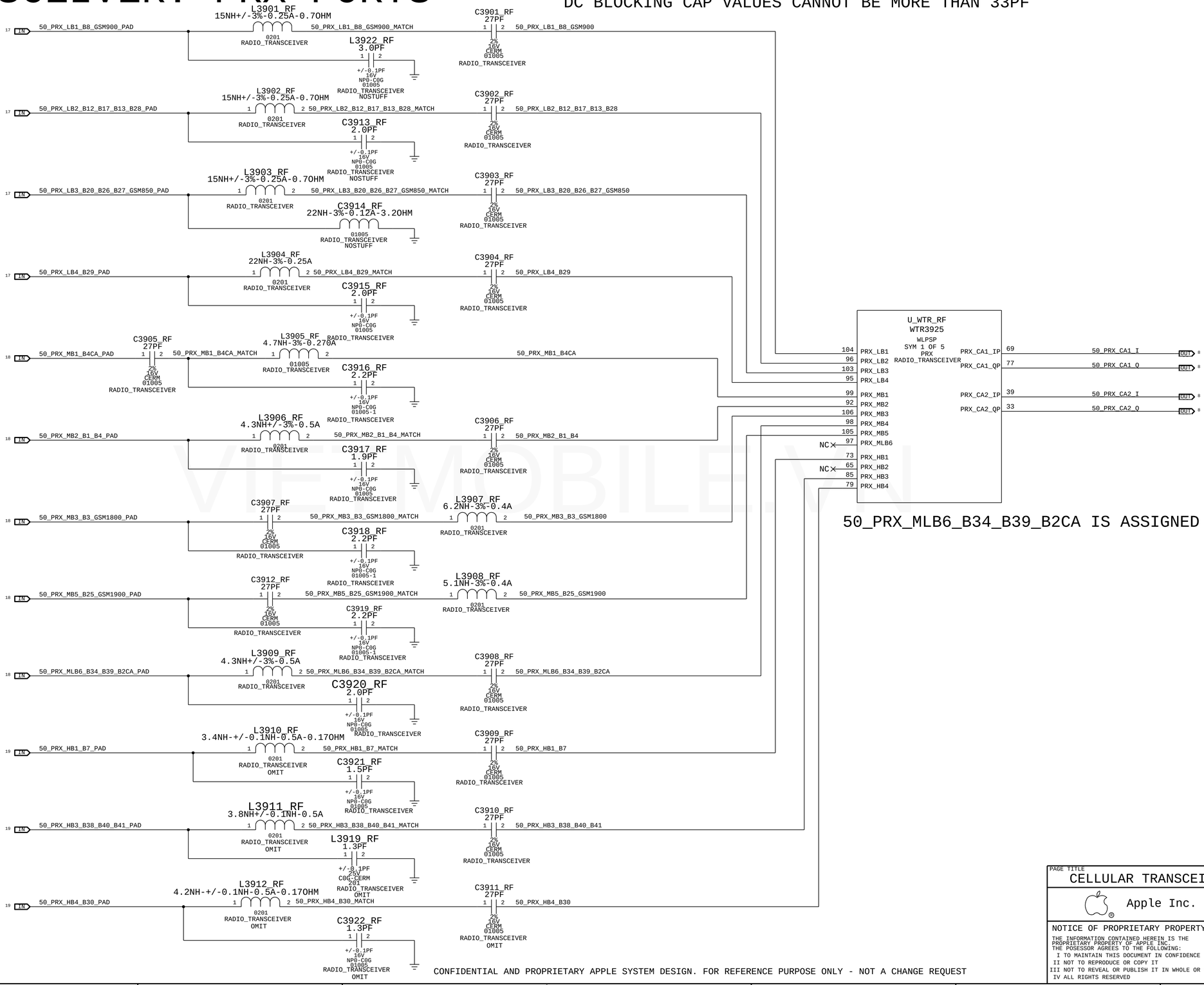
TRANSCEIVER: PRX PORTS

DC BLOCKING CAP VALUES CANNOT BE MORE THAN 33PF



50_PRX_MLB6_B34_B39_B2CA IS ASSIGNED TO MB4

PAGE TITLE
CELLULAR TRANSCEIVER: PRX PORTS

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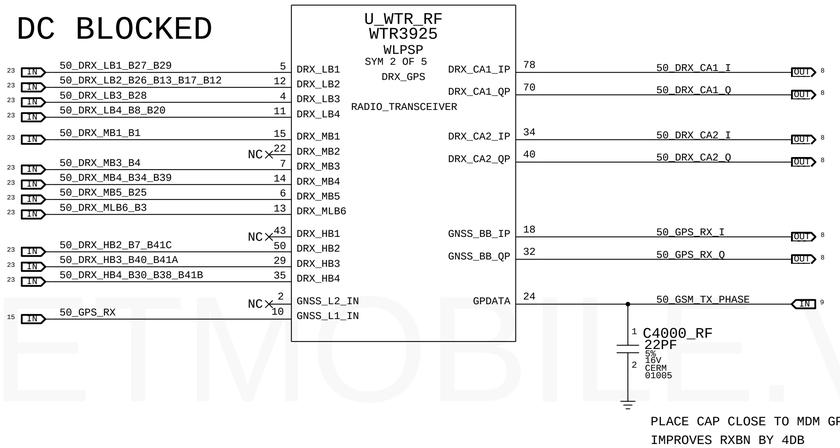
TRANSCEIVER: DRX/GPS PORTS

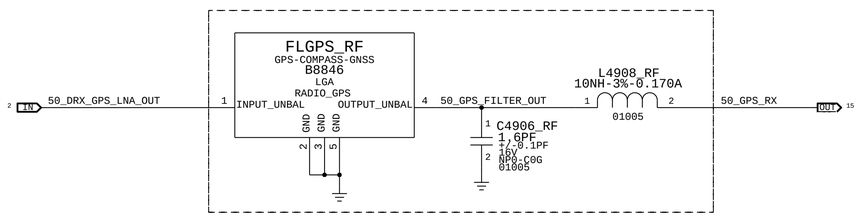
DRX MODULE PORTS ARE DC BLOCKED



PLACE CAP CLOSE TO MDM GPIO14
IMPROVES RXBN BY 4DB

GPS FILTER

PLACE NEAR U_WTR



PAGE TITLE: CELLULAR TRANSCEIVER: DRX/GPS PORTS

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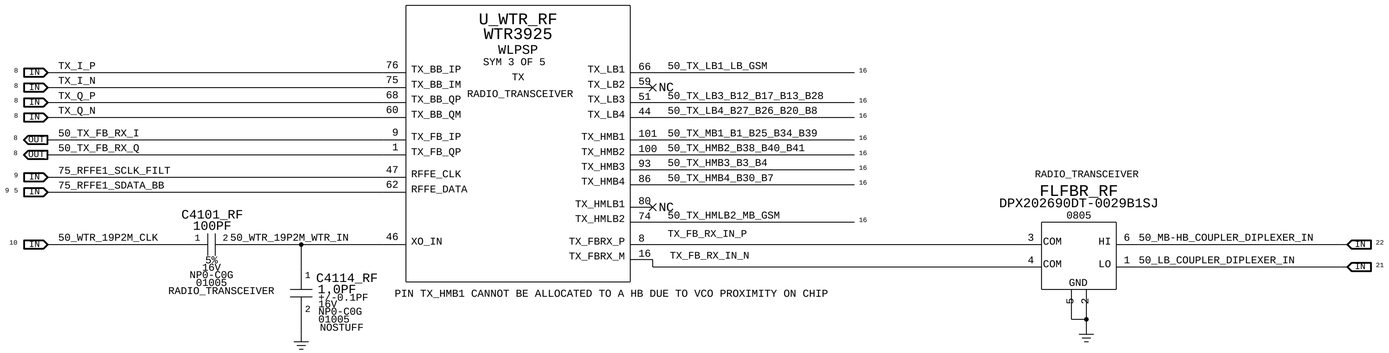
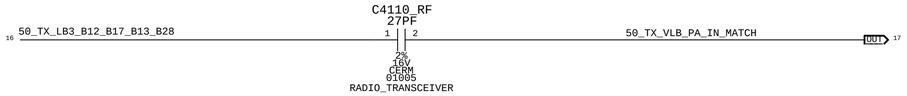
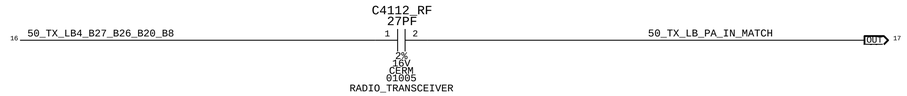
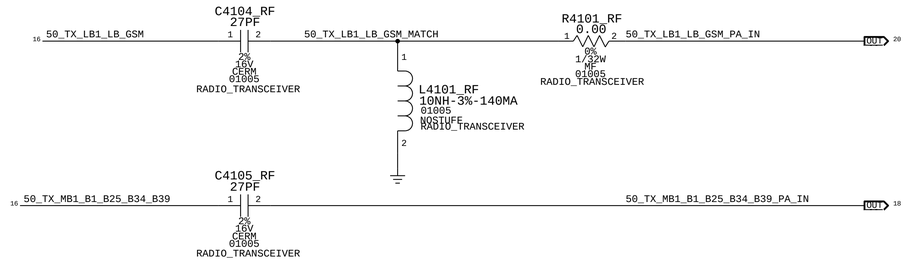
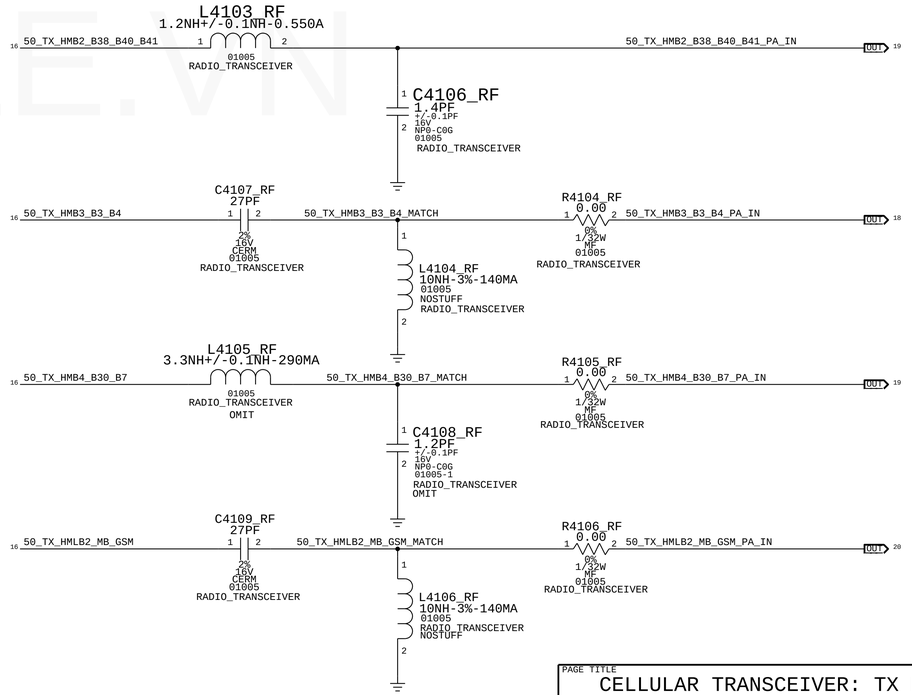
TRANSCEIVER: TX PORTS











B12/13 TX INTERSTAGE FILTER REMOVED

PAGE TITLE: CELLULAR TRANSCEIVER: TX PORTS

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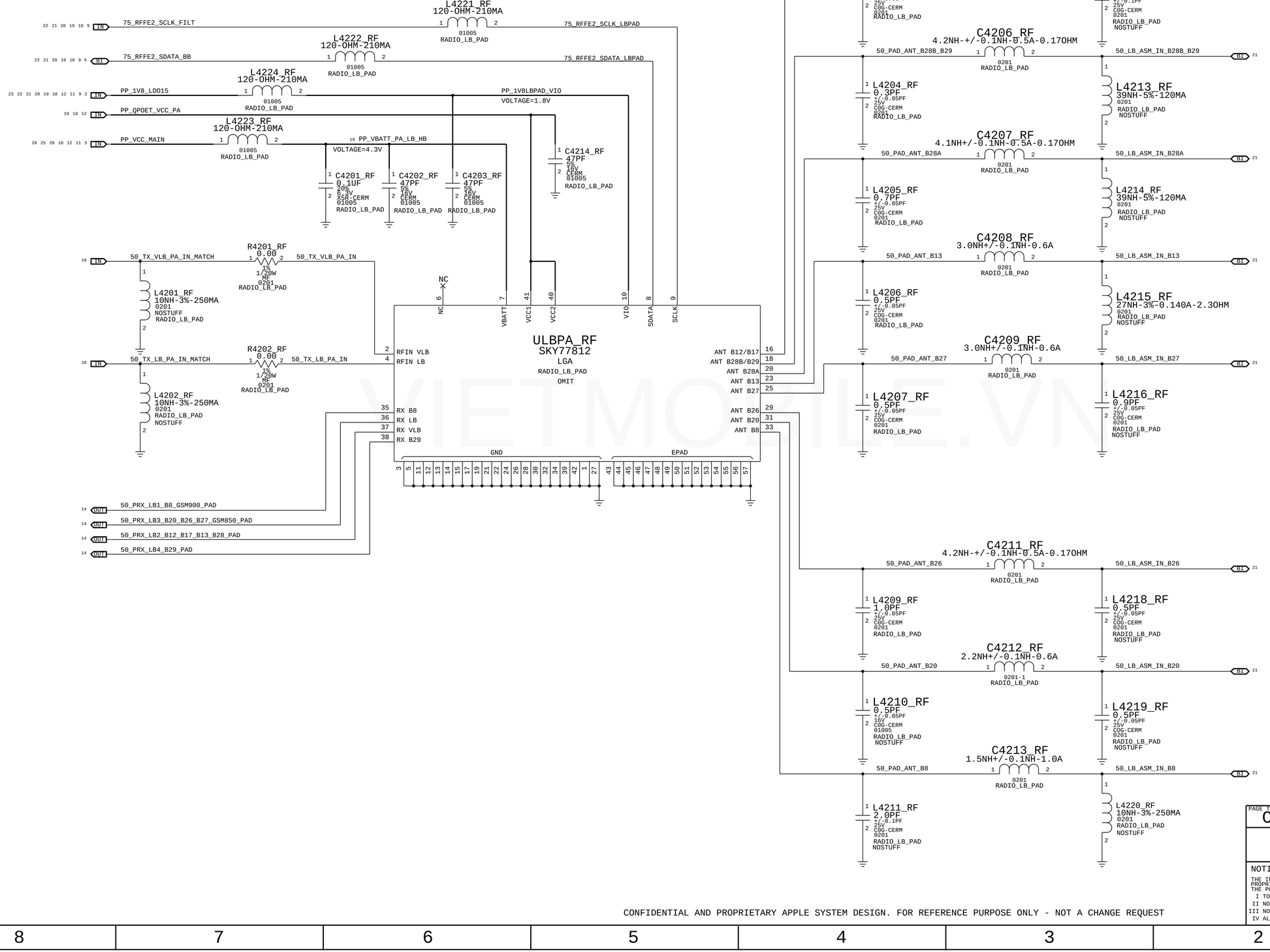
LOW BAND PA+DUPLEXERS



PAGE TITLE
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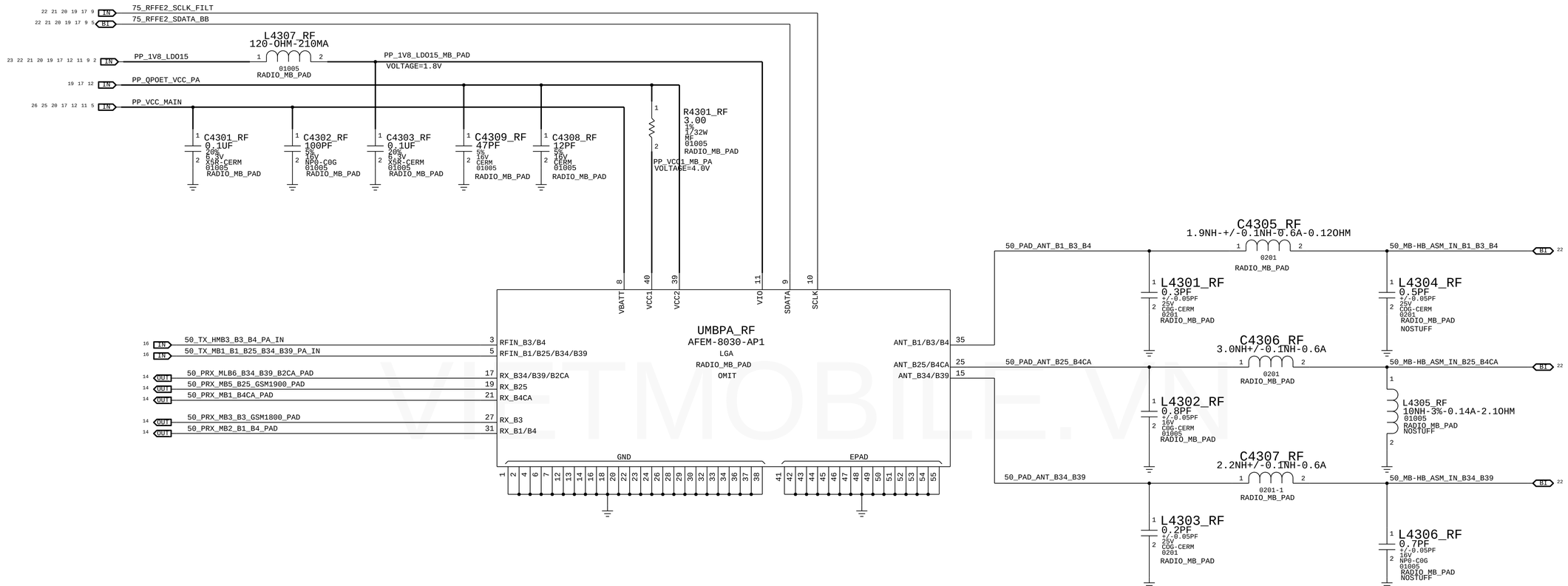
MID BAND PA+DUPLEXERS



PAGE TITLE
CELLULAR FRONT END: MB PAD

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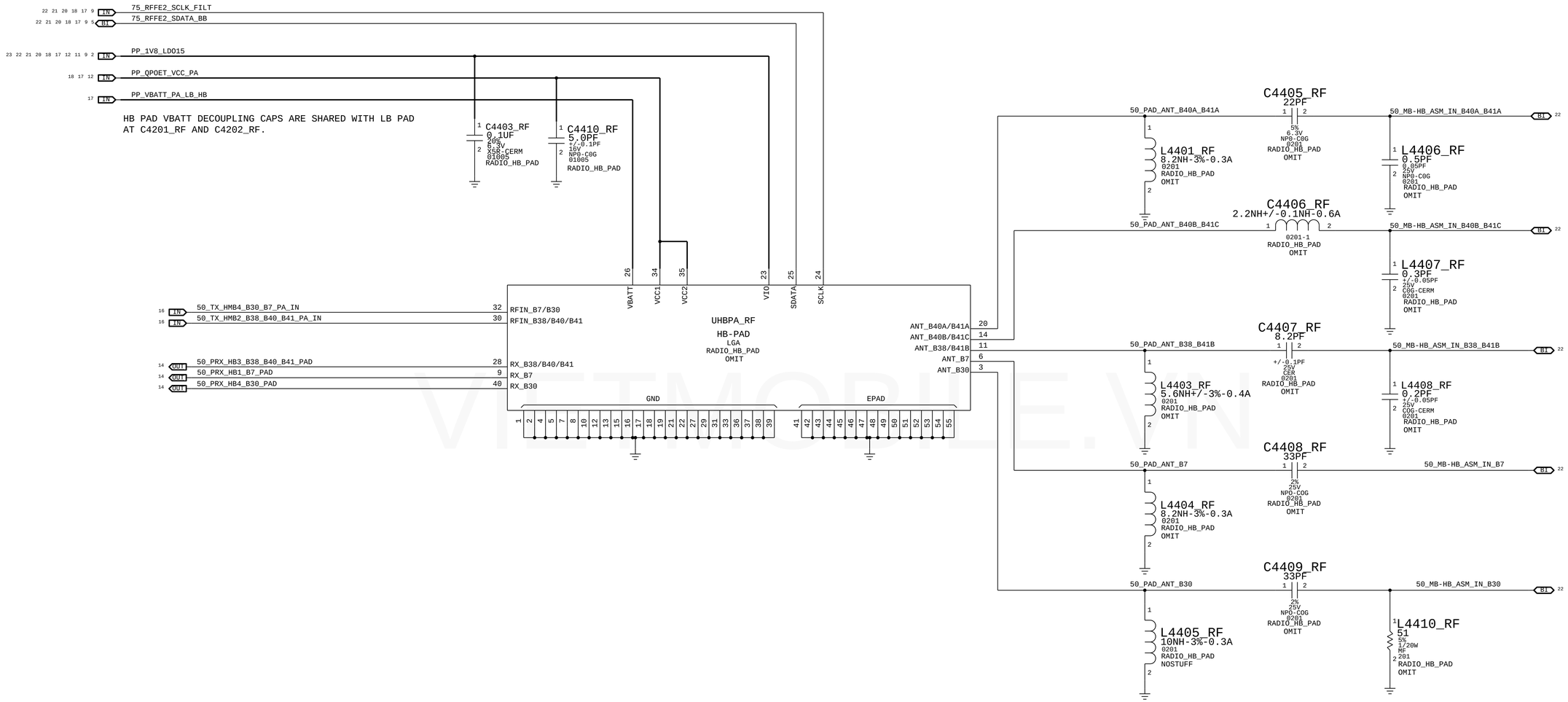
HIGH BAND PA+DUPLEXERS



PAGE TITLE
CELLULAR FRONT END: HB PAD

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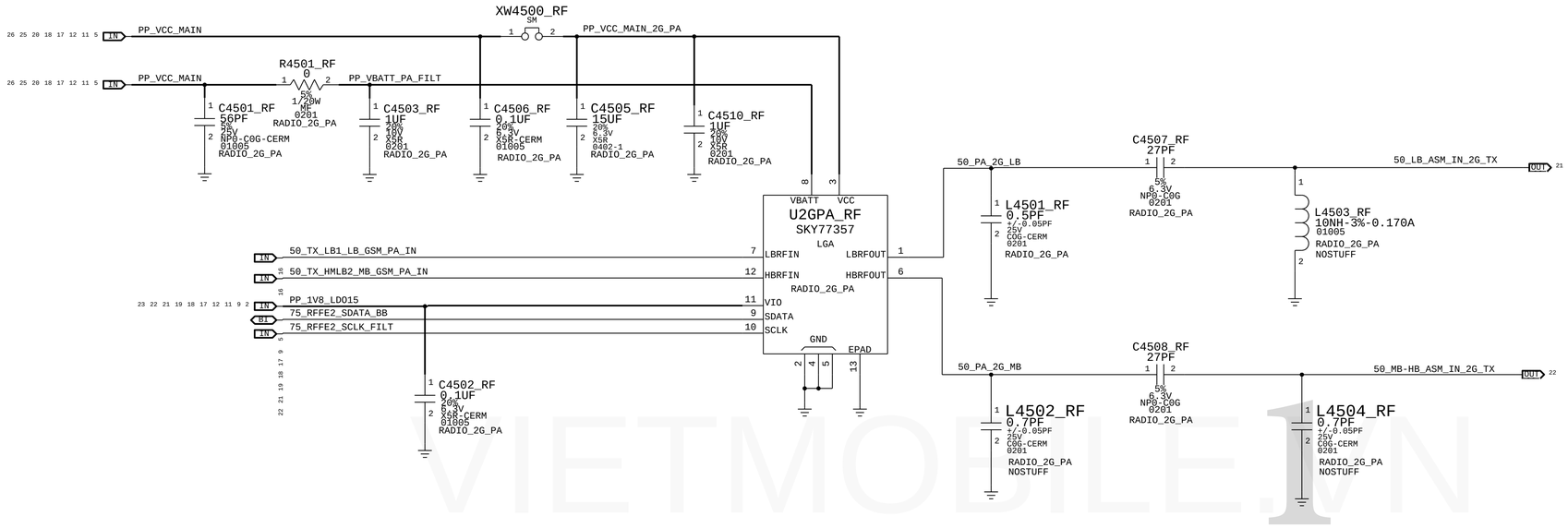
2G PA



PAGE TITLE
CELLULAR FRONT END: 2G PA

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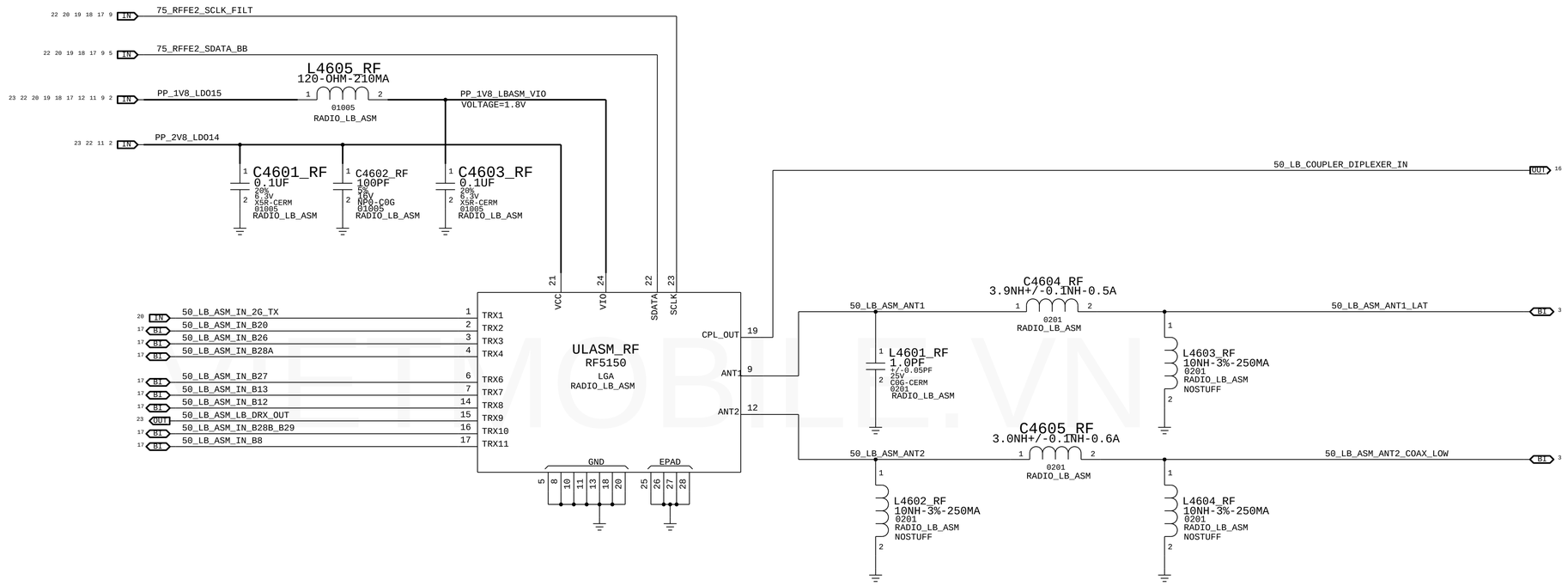
LOW BAND ANTENNA SWITCH MODULE



PAGE TITLE
CELLULAR FRONT END: LB ASM

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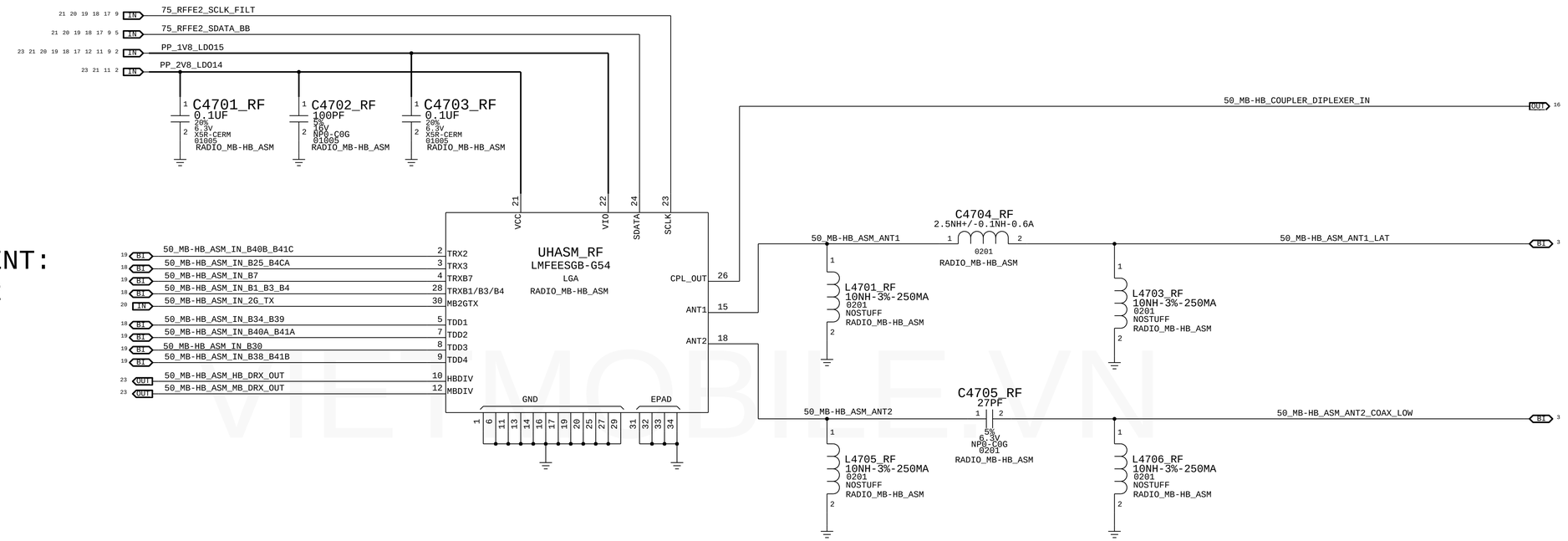
MID-HIGH BAND ANTENNA SWITCH MODULE

EVT ASM ASSIGNMENT:
B40B/B41C - TRX2
B30 - TDD3



PAGE TITLE
CELLULAR FRONT END: MB-HB ASM

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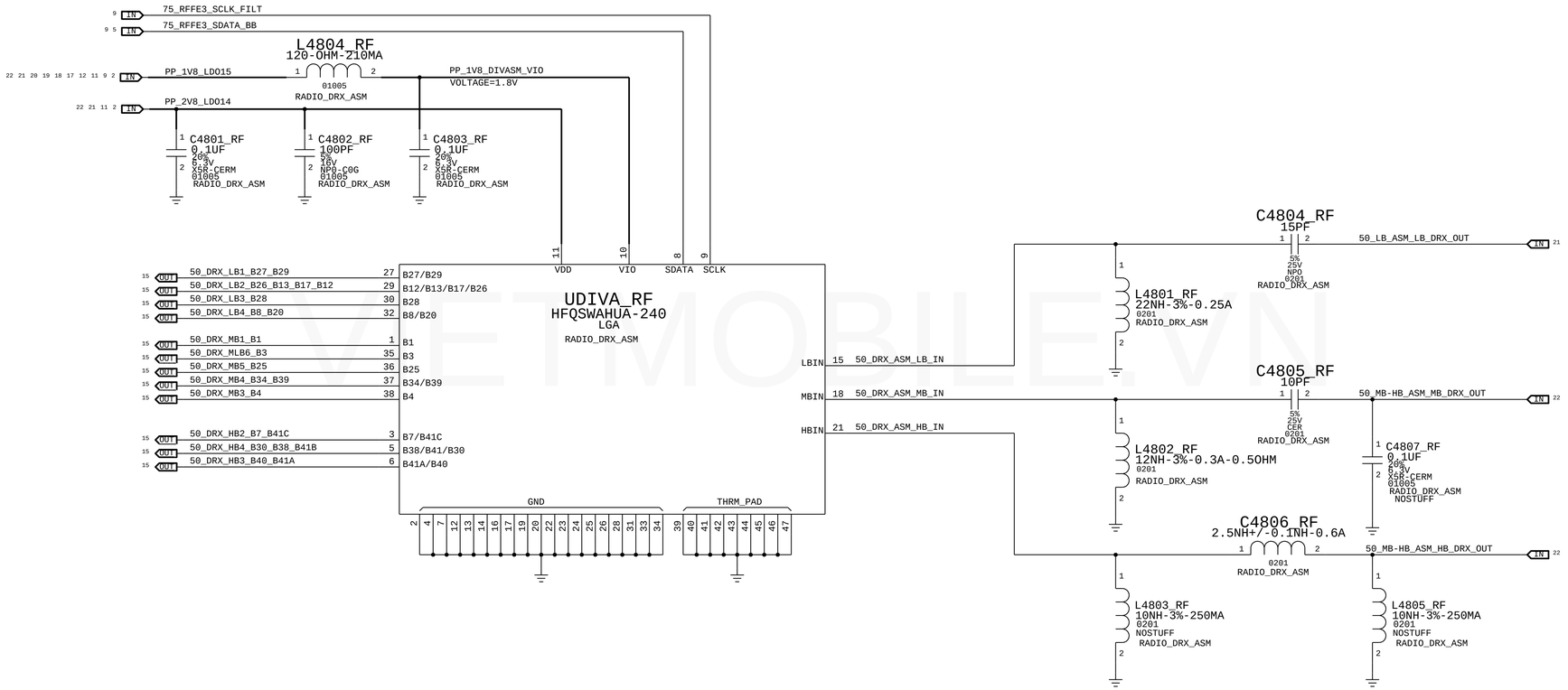
DIVERSITY MODULE



PAGE TITLE
CELLULAR FRONT END: DIVERSITY

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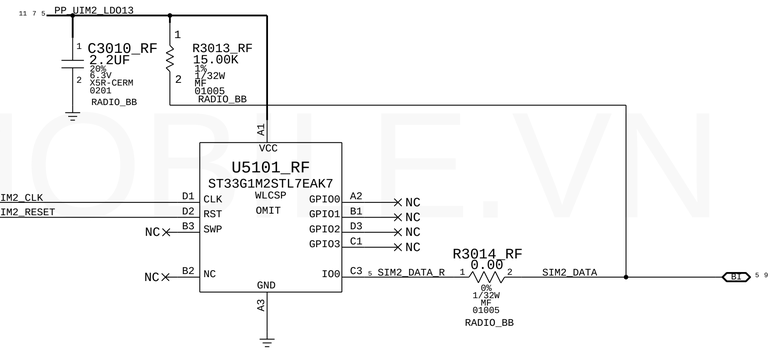
SIM



PAGE TITLE: SIM

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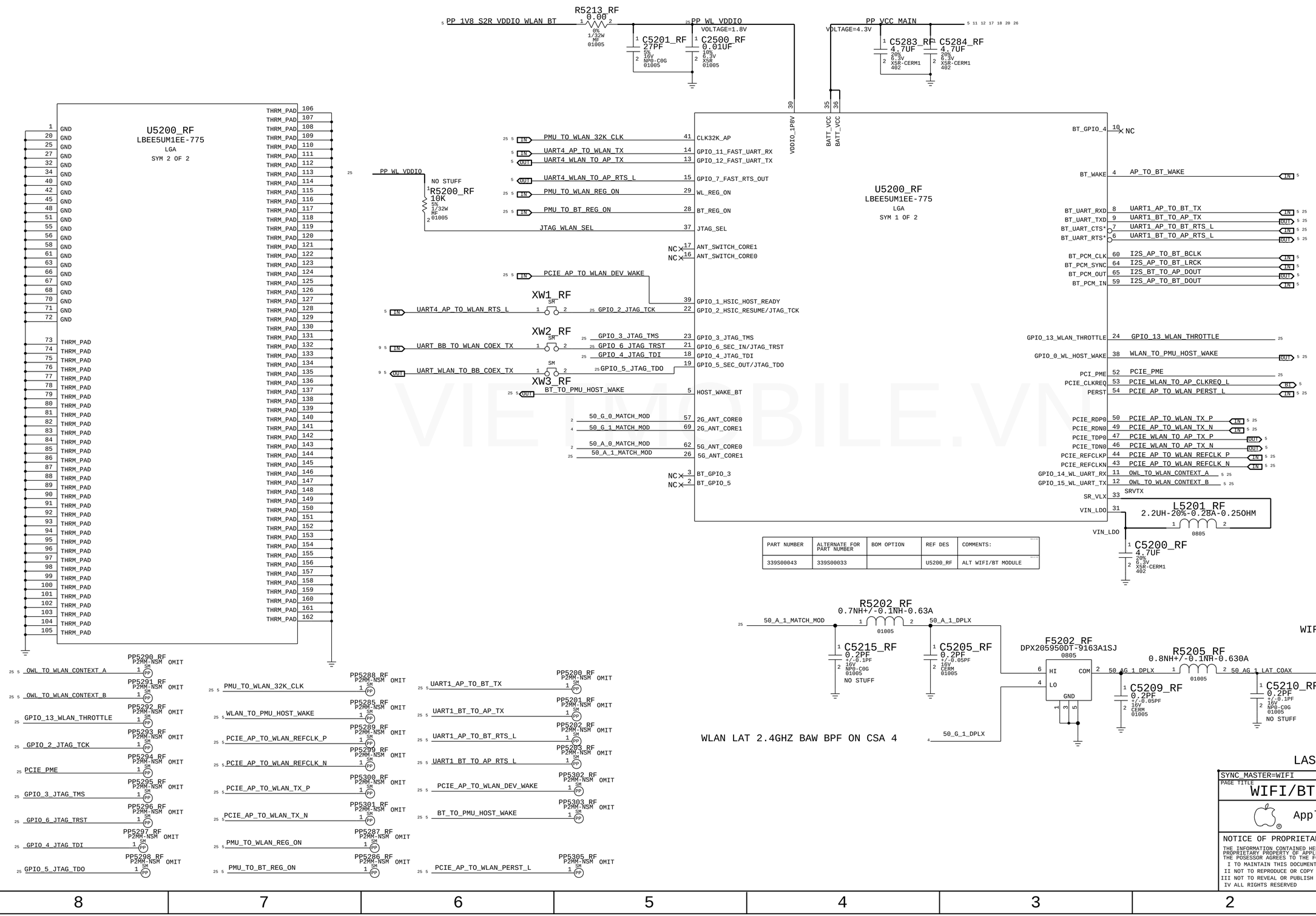
WIFI/BT



PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
339S00043	339S00033		U5200_RF	ALT WIFI/BT MODULE

LAST UPDATED: 4/30/2014

SYNC_MASTER=WIFI	SYNC_DATE=01/30/2014
PAGE TITLE: WIFI/BT: WIFI/BT MODULE	
Apple Inc.	DRAWING NUMBER: 051-1902 SIZE: D
	REVISION: A.0.0
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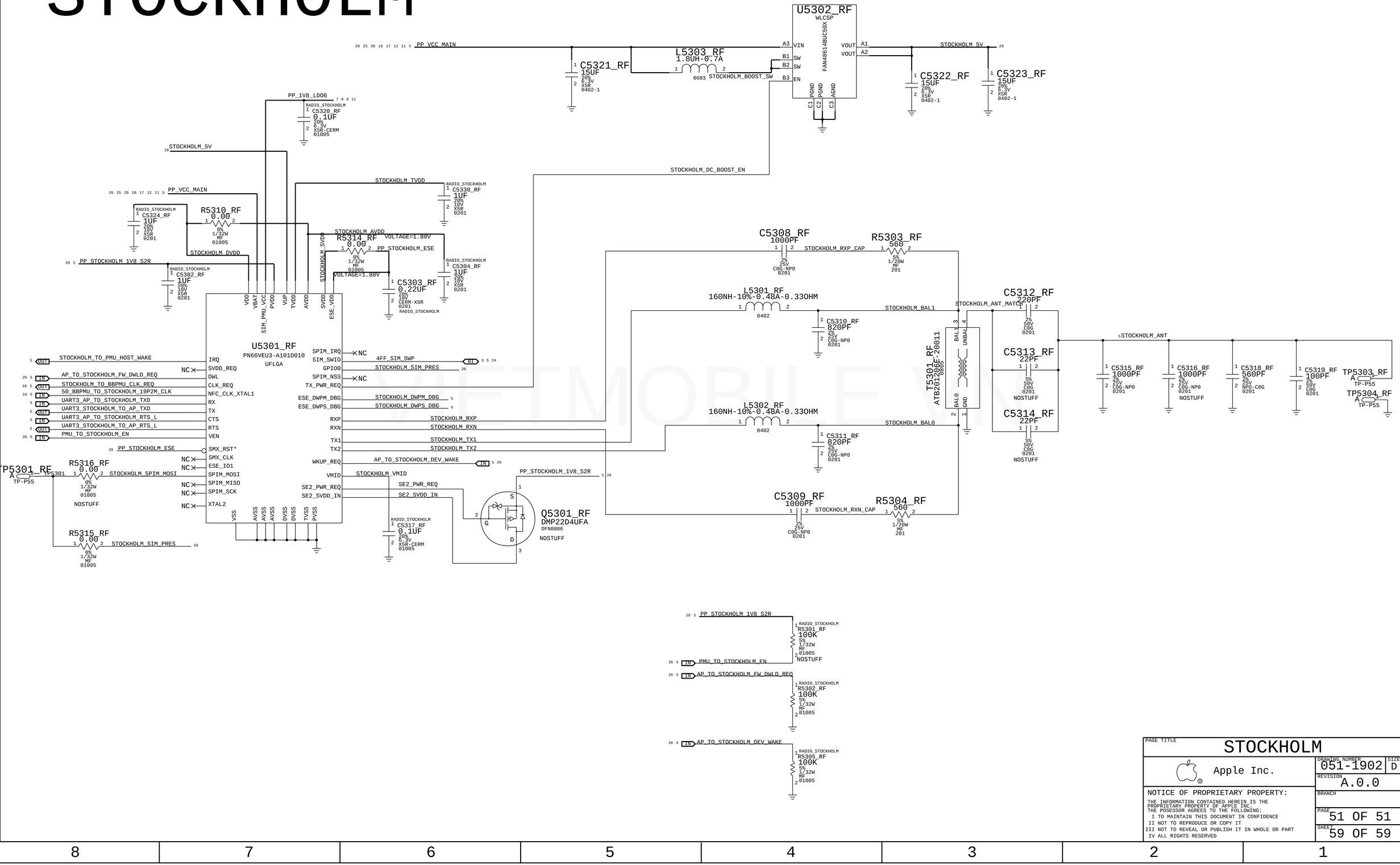
STOCKHOLM

ALL NETNAMES NEED TO BE CHECKED



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