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 "DARWIN"

LAST_MODIFICATION=Tue Aug 28 14:17:32 2015

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50		CELLULAR FRONT END: LB PAD		
51		CELLULAR FRONT END: MB PAD		
52		CELLULAR FRONT END: HB PAD		
53		CELLULAR FRONT END: 2G PA		
54		CELLULAR FRONT END: LB ASM		
55		CELLULAR FRONT END: MB-HB ASM		
56		CELLULAR FRONT END: DIVERSITY		
57		SIM		
58		WIFI/BT: WIFI/BT MODULE		
59				

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

REFERENCE DESIGNATOR(S)	BOM OPTION	PART#	QTY	DESCRIPTION		
		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-ZL,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	L2000,L2002,L2010,L2012,L2020,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	L2000,L2002,L2010,L2012,L2020,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 — TP-P6 — ROOM=TEST — POWER GROUND

TP01 — 31 30 17 PP5V0_USB — TP-P6 — ROOM=TEST — VBUS

TP02 — 18 17 PP_BATT_VCC — TP-P6 — ROOM=TEST
TP03 — TP-P6 — ROOM=TEST — VBATT

TP05 — TP-P55 — ROOM=TEST

RESET

33 16 9 5 PMU_TO_SYSTEM_COLD_RESET_L — TP06 — TP-P55 — ROOM=TEST — SOC & BB RESET

DFU

33 8 FORCE_DFU — TP07 — TP-P55 — ROOM=TEST

21 20 17 14 13 12 9 8 7 6 5 3 33 29 PP1V8 — PP07 P4MM-NSM SM PP — ROOM=TEST

33 8 DFU_STATUS — PP08 P4MM-NSM SM PP — ROOM=TEST

FORCE DFU PROCEDURE:

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

E75

31 30 TRISTAR_DP1_CONN_P — TP08 — TP-P55 — ROOM=TEST
31 30 TRISTAR_DP1_CONN_N — TP09 — TP-P55 — ROOM=TEST — TRISTAR USB

31 30 TRISTAR_DP2_CONN_P — TP10 — TP-P55 — ROOM=TEST
31 30 TRISTAR_DP2_CONN_N — TP11 — TP-P55 — ROOM=TEST — TRISTAR DEBUG UART

31 30 PP_TRISTAR_ACC1 — TP12 — TP-P55 — ROOM=TEST
31 30 PP_TRISTAR_ACC2 — TP13 — TP-P55 — ROOM=TEST — TRISTAR ACCESSORY ID
ACCESSORY POWER

TP14 — TP-P55 — ROOM=TEST

31 30 TRISTAR_CON_DETECT_L — TP15 — TP-P55 — ROOM=TEST

AMUX

16 PMU_AMUX_AY — TP16 — TP-P55 — ROOM=TEST

16 PMU_AMUX_BY — TP17 — TP-P55 — ROOM=TEST

MOJAVE

28 27 MESA_TO_BOOST_EN — TP18 — TP-P55 — ROOM=TEST

28 27 PP16V5_MESA — TP19 — TP-P55 — ROOM=TEST

LCM

29 PP_LCM_BL_CAT1_CONN — TP20 — TP-P55 — ROOM=TEST

29 PP_LCM_BL_CAT2_CONN — TP21 — TP-P55 — ROOM=TEST

29 PP_LCM_BL_ANODE_CONN — TP22 — TP-P55 — ROOM=TEST

SUPER SCREW

TP23 — TP-P80 — ROOM=TEST

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

8 BOARD_REV3 — R0400 ROOM=SOC 1.00K 01005 MF 5% 1/32W — PP1V8 3 5 6 7 8 9 12 13 14 17 20 21 29 33
8 BOARD_REV2 — NOSTUFF R0401 1.00K
8 BOARD_REV1 — NOSTUFF R0402 1.00K
8 BOARD_REV0 — R0403 1.00K
8 BOARD_ID4 — NOSTUFF R0404 1.00K
8 BOARD_ID3 — NOSTUFF R0405 1.00K
8 BOARD_ID2 — R0406 1.00K
8 BOARD_ID1 — NOSTUFF R0407 1.00K
8 BOARD_ID0 — NOSTUFF R0408 1.00K
8 BOOT_CONFIG2 — NOSTUFF R0409 1.00K
8 BOOT_CONFIG1 — R0410 1.00K
8 BOOT_CONFIG0 — NOSTUFF R0411 1.00K

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

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

PAGE TITLE: SYSTEM:N71 SPECIFIC

Apple Inc.

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TOP-SIDE
BOTTOM-SIDE
PENINSULA STANDOFFS
BS0506
STDOFF-2.20D0.25H-0.50-1.70
ROOM=ASSEMBLY
860-7846
BS0507
STDOFF-2.6OD0.5H-0.5-1.7-TH
ROOM=ASSEMBLY
860-8396
50_AP_UAT_FEED
50_AP_WIFI_5G_CONN_ANT
NORTH_AC_GND_SCREW
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
AP_TO_STOCKHOLM_ANT
BS0503
STDOFF-2.6OD0.81H-TH
ROOM=ASSEMBLY
860-00096
BS0501
STDOFF-2.85OD1.4ID-0.84H
ROOM=ASSEMBLY
860-00111
BS0502
STDOFF-2.85OD1.4ID-0.84H
ROOM=ASSEMBLY
860-00111
PLATED SLOTTED THRU-HOLE
CL0502
TH-NSP
SL-1.20X0.40-1.50X0.70-NSP
SOUTH DC CURRENT BLOCKING CAPS
SOUTH_AC_GND_SCREW
C0540 220PF 10% 10V X7R-CERM 01005 ROOM=ASSEMBLY
C0541 100PF 5% 16V NP0-C0G 01005 ROOM=ASSEMBLY
C0542 56PF 5% 16V NP0-C0G 01005 ROOM=ASSEMBLY
C0543 4.7PF +/-0.1PF 16V NP0-C0G 01005 ROOM=ASSEMBLY
NORTH DC CURRENT BLOCKING CAPS
NORTH_AC_GND_SCREW
C0550 220PF 10% 10V X7R-CERM 01005 ROOM=ASSEMBLY
C0551 100PF 5% 16V NP0-C0G 01005 ROOM=ASSEMBLY
C0552 220PF 10% 10V X7R-CERM 01005 ROOM=ASSEMBLY
C0553 100PF 5% 16V NP0-C0G 01005 ROOM=ASSEMBLY
UPPER SHIELD
OMIT_TABLE
SH0500
SM
SHLD-EMI-UPPER-FRONT-N61
ROOM=ASSEMBLY
LOWER SHIELD
OMIT_TABLE
SH0501
SM
SHLD-EMI-LOWER-FRONT-N61
ROOM=ASSEMBLY
SA SHIELD
OMIT TABLE
SH0502
SM
SHLD-EMI-SA-N71
ROOM=ASSEMBLY
SOUTH TUBE STANDOFF
BS0500
STDOFF-2.70OD1.84ID-0.88H-TH
860-7862
ROOM=ASSEMBLY
TODO:UPDATE REF DES
UPPER SHIELD
OMIT_TABLE
SH0503
SM
SHLD-EMI-UPPER-BACK-N61
ROOM=ASSEMBLY
DUAL RF COAX CLIP
CLIP-RETENTION-COAX-DOUBLE
CL0501
SM
ROOM=ASSEMBLY
806-01802
LOWER SHIELD
OMIT_TABLE
SH0504
SM
SHLD-EMI-LOWER-BACK-N61
ROOM=ASSEMBLY
FIDUCIALS
FD0501 FID 0P5SM1P0SQ-NSP ROOM=ASSEMBLY
FD0502 FID 0P5SM1P0SQ-NSP ROOM=ASSEMBLY
FD0503 FID 0P5SM1P0SQ-NSP ROOM=ASSEMBLY
FD0505 FID 0P5SM1P0SQ-NSP ROOM=ASSEMBLY
FD0510 FID 0P5SQ-SMP3SQ-NSP ROOM=ASSEMBLY
FD0511 FID 0P5SQ-SMP3SQ-NSP ROOM=ASSEMBLY
FD0512 FID 0P5SQ-SMP3SQ-NSP ROOM=ASSEMBLY
FD0514 FID 0P5SQ-SMP3SQ-NSP ROOM=ASSEMBLY
FD0515 FID 0P5SQ-SMP3SQ-NSP ROOM=ASSEMBLY
FD0504 FID 0P5SM1P0SQ-NSP ROOM=ASSEMBLY
FD0513 FID 0P5SQ-SMP3SQ-NSP ROOM=ASSEMBLY
SOUTH_AC_GND_SCREW

PAGE TITLE
SYSTEM:MECHANICAL

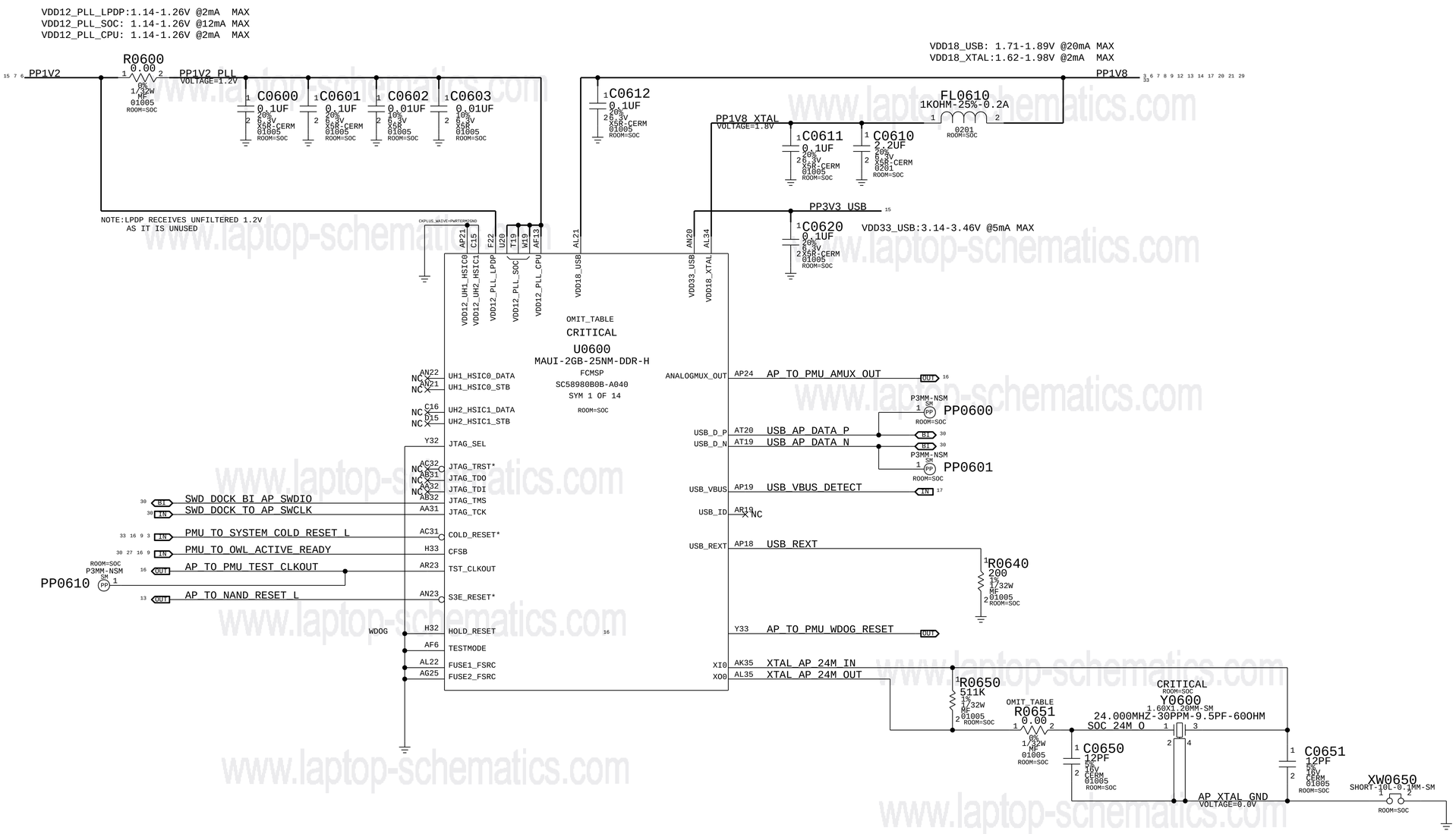
Apple Inc.

DRAWING NUMBER	SIZE
051-1902	D

REVISION A.0.0

BRANCH

MAUI - USB, JTAG, XTAL



SYNC_MASTER=N/A SYNC_DATE=N/A

PAGE TITLE

SOC:JTAG,USB,XTAL

Apple Inc.

DRAWING NUMBER 051-1902 SIZE D

REVISION A.0.0

BRANCH

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SHEET 5 OF 59

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 XW TO ISOLATE C0442,3 FROM C0740,1.

PP1V2 → C0740 2.2UF, C0741 1.0UF, C0742 0.1UF → XW0740 → PP1V2_XW VOLTAGE=1.2V → C0743 0.1UF

VDD085_PCIE:0.802-TBDV @TBDmA MAX
PP_FIXED → C0752 0.1UF, C0751 1.0UF, C0750 2.2UF

C0731 0.1UF

VDD12_PCIE: AK28, AK25, AL24, AL27
VDD12_PCIE_TXPLL: AL26
VDD12_PCIE_REFBUF: AJ26
VDD085_PCIE: AH28, 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	PCIE NAND TO AP RXD0 C P	AM30 PCIE_RX0_P
PCIE NAND TO AP RXD0 N	C0702 0.1UF	PCIE NAND TO AP RXD0 C N	AN30 PCIE_RX0_N
PCIE AP TO NAND TXD0 P	C0703 0.1UF	PCIE AP TO NAND TXD0 C P	AT32 PCIE_TX0_P
PCIE AP TO NAND TXD0 N	C0704 0.1UF	PCIE AP TO NAND TXD0 C N	AR32 PCIE_TX0_N
PCIE NAND TO AP RXD1 P	C0705 0.1UF	PCIE NAND TO AP RXD1 C P	AM28 PCIE_RX1_P
PCIE NAND TO AP RXD1 N	C0706 0.1UF	PCIE NAND TO AP RXD1 C N	AN28 PCIE_RX1_N
PCIE AP TO NAND TXD1 P	C0707 0.1UF	PCIE AP TO NAND TXD1 C P	AT31 PCIE_TX1_P
PCIE AP TO NAND TXD1 N	C0708 0.1UF	PCIE AP TO NAND TXD1 C N	AR31 PCIE_TX1_N

PCIE LINK 1

PCIE WLAN TO AP RXD P	C0709 0.1UF	PCIE WLAN TO AP RXD C P	AM27 PCIE_RX2_P
PCIE WLAN TO AP RXD N	C0710 0.1UF	PCIE WLAN TO AP RXD C N	AN27 PCIE_RX2_N
PCIE AP TO WLAN TXD P	C0711 0.1UF	PCIE AP TO WLAN TXD C P	AT28 PCIE_TX2_P
PCIE AP TO WLAN TXD N	C0712 0.1UF	PCIE AP TO WLAN TXD C N	AR28 PCIE_TX2_N

PCIE LINK 2

PCIE BB TO AP RXD P	C0715 0.1UF	PCIE BB TO AP RXD C P	AM26 PCIE_RX3_P
PCIE BB TO AP RXD N	C0716 0.1UF	PCIE BB TO AP RXD C N	AN26 PCIE_RX3_N
PCIE AP TO BB TXD P	C0717 0.1UF	PCIE AP TO BB TXD C P	AT26 PCIE_TX3_P
PCIE AP TO BB TXD N	C0718 0.1UF	PCIE AP TO BB TXD C N	AR26 PCIE_TX3_N

PCIE_RX_TX_BYPASS_CLK_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, R0721 100K, NOSTUFF R0722 100K

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, R0701 100K, R0702 100K

PCIE_EXT_REF_CLK_P AR33
PCIE_EXT_REF_CLK_N AT33
PCIE_RX_TX_BYPASS_CLK_P AT29
AR29

PCIE RCAL P
PCIE_RCAL_P AT30
PCIE_RCAL_N AR30
PCIE RCAL N
OMIT_TABLE R0730 100 1% 1/32W MF 01005 ROOM=SOC
OMIT_TABLE C0730 100PF 5% 16V NP0-C0G 01005 ROOM=SOC

SYNC_MASTER=N/A	SYNC_DATE=N/A
PAGE TITLE	SOC:PCIE
Apple Inc.	DRAWING NUMBER 051-1902 SIZE D
	REVISION A.0.0
	BRANCH
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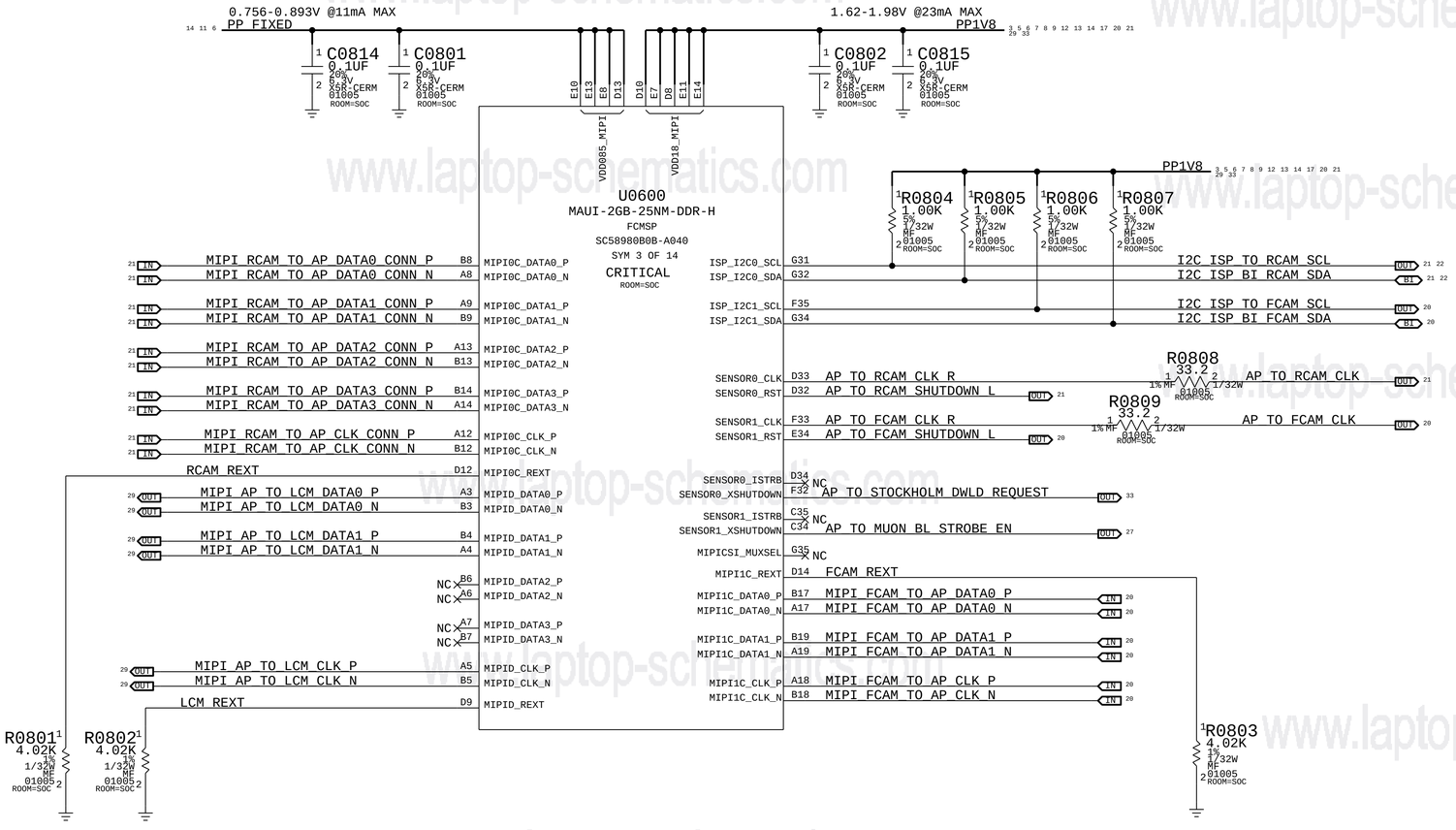
MAUI - CAMERA & DISPLAY INTERFACES



SYNC_MASTER=N/A SYNC_DATE=N/A

PAGE TITLE: SOC:CAMERA & DISPLAY

Apple Inc.

DRAWING NUMBER: 051-1902 SIZE: D

REVISION: A.0.0

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SHEET: 7 OF 59

MAUI - GPIO & SERIAL INTERFACES

U0600 MAUI-2GB-25NM-DDR-H

FCMSP
SC58980B0B-A040
SYM 5 OF 14
CRITICAL
ROOM=SOC
OMIT_TABLE

AP_TO_HP_HS3_CTRL	C1	GPIO_0	
AP_TO_HP_HS4_CTRL	D2	GPIO_1	
BUTTON_VOL_UP_L	D1	GPIO_2	
BUTTON_VOL_DOWN_L	F1	GPIO_3	
SPEAKERAMP_TO_AP_INT_L	E2	GPIO_4	
AP_TO_SPEAKERAMP_STAYIN_ALIVE	F3	GPIO_5	
AP_TO_SPEAKERAMP_RESET_L	F2	GPIO_6	
AP_TO_BT_WAKE	H3	GPIO_7	
AP_TO_BB_RESET_L	G3	GPIO_8	
PCIE_AP_TO_WLAN_DEV_WAKE	J1	GPIO_9	
AP_TO_LED_DRIVER_EN	H4	GPIO_10	
AP_TO_TOUCH_RESET_L	K1	GPIO_11	
AP_TO_LCM_RESET_L	J3	GPIO_12	
PMU_TO_AP_IRQ_L	K2	GPIO_13	
AP_TO_BB_PCIE_DEV_WAKE	J4	GPIO_14	
AP_TO_STOCKHOLM_DEV_WAKE	L2	GPIO_15	
BOARD_ID3	K3	GPIO_16	
NC_AP_TO_STOCKHOLM_SIM_SEL	L3	GPIO_17	
BOOT_CONFIG0	N1	GPIO_18	
AP_TO_ARC_RESET_L	AH2	GPIO_19	
LCM_TO_OWL_BSYNC	AH3	GPIO_20	
ARC_TO_AP_INT_L	AH4	GPIO_21	
BB_TO_AP_GPS_TIME_MARK (AP TO BB)	AJ1	GPIO_22	
AP_TO_ARC_STAYIN_ALIVE	AJ2	GPIO_23	
BB_TO_AP_RESET_DETECT_L	AJ3	GPIO_24	
BOOT_CONFIG1	AJ4	GPIO_25	
FORCE_DFU	AK1	GPIO_26	
DFU_STATUS	AP3	GPIO_27	
BOOT_CONFIG2	AN4	GPIO_28	
BOARD_ID4	AP4	GPIO_29	
CODEC_TO_AP_PMU_INT_L	AP5	GPIO_30	
AP_TO_BB_RADIO_ON_L	AR2	GPIO_31	
AP_TO_NAND_FW_STRAP	AR3	GPIO_32	
TOUCH_TO_AP_INT_L	AR4	GPIO_33	
BOARD_REV3	AP6	GPIO_34	
BOARD_REV2	AT3	GPIO_35	
BOARD_REV1	AT4	GPIO_36	
BOARD_REV0	AR6	GPIO_37	
AP_TO_BB_COREDUMP	AP7	GPIO_38	
BB_IPC_GPIO	AT5	GPIO_39	
BUTTON_RINGER_A	AP8	GPIO_40	
AP_TO_BB_MESA_UP_L	AP9	GPIO_41	
MAMBA_EXT_LDO_EN	AP10	GPIO_42	

TMR32_PWM0	AE1	NC	
TMR32_PWM1	AF2	NC	
TMR32_PWM2	AF3	NC	
UART0_RXD	AE3	UART_AP_DEBUG_RXD	IN
UART0_TXD	AE4	UART_AP_DEBUG_TXD	OUT
UART1_CTS*	K31	UART_BT_TO_AP_CTS_L	IN
UART1_RTS*	K32	UART_AP_TO_BT_RTS_L	OUT
UART1_RXD	L33	UART_BT_TO_AP_RXD	IN
UART1_TXD	L32	UART_AP_TO_BT_TXD	OUT
UART2_CTS*	AT23	NC	
UART2_RTS*	AR20	CAM_EXT_LDO_EN	OUT
UART2_RXD	AP23	NC	
UART2_TXD	AR22	NC	
UART3_CTS*	N4	UART_STOCKHOLM_TO_AP_CTS_L	IN
UART3_RTS*	P3	UART_AP_TO_STOCKHOLM_RTS_L	OUT
UART3_RXD	R3	UART_STOCKHOLM_TO_AP_RXD	IN
UART3_TXD	R2	UART_AP_TO_STOCKHOLM_TXD	OUT
UART4_CTS*	J33	UART_WLAN_TO_AP_CTS_L	IN
UART4_RTS*	J34	UART_AP_TO_WLAN_RTS_L	OUT
UART4_RXD	J35	UART_WLAN_TO_AP_RXD	IN
UART4_TXD	K33	UART_AP_TO_WLAN_TXD	OUT
UART5_RTXD	T32	SWI_AP_BI_TIGRIS	BI
UART6_RXD	AF1	UART_ACCESSORY_TO_AP_RXD	IN
UART6_TXD	AE2	UART_AP_TO_ACCESSORY_TXD	OUT
UART7_RXD	J31		
UART7_TXD	J32	NC	

PROX_SELECT

PP1V8
ANALOG_PROX
R0911 1.00K 5% 1/32W MF 01005 ROOM=SOC

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

I2S_AP_TO_CODEC_MCLK	R0920 33.2	I2S_AP_TO_CODEC_MCLK_R	P34 I2S0_MCK
I2S_AP_TO_ARC_MCLK	R0921 33.2	I2S_AP_TO_ARC_MCLK_R	M4 I2S1_MCK
I2S_AP_TO_SPEAKERAMP_MCLK	R0922 33.2	I2S_AP_TO_SPEAKERAMP_MCLK_R	U32 I2S2_MCK
		I2S_AP_OWL_TO_CODEC_XSP_BCLK	R34 I2S0_BCLK
		I2S_AP_OWL_TO_CODEC_XSP_LRCLK	N34 I2S0_LRCK
		I2S_CODEC_TO_AP_OWL_XSP_DIN	N35 I2S0_DIN
		I2S_AP_TO_CODEC_XSP_DOUT	M33 I2S0_DOUT
		I2S_AP_TO_BT_BCLK	M3 I2S1_BCLK
		I2S_AP_TO_BT_LRCLK	P1 I2S1_LRCK
		I2S_BT_TO_AP_DIN	N3 I2S1_DIN
		I2S_AP_TO_BT_DOUT	L4 I2S1_DOUT
		I2S_AP_TO_CODEC_ASP_BCLK	V33 I2S2_BCLK
		I2S_AP_TO_CODEC_ASP_LRCLK	U33 I2S2_LRCK
		I2S_CODEC_TO_AP_ASP_DIN	T33 I2S2_DIN
		I2S_AP_TO_CODEC_ASP_DOUT	V34 I2S2_DOUT
ALS_TO_AP_INT_L			AM3 I2S3_MCK
		I2S_AP_TO_BB_BCLK	AM4 I2S3_BCLK
		I2S_AP_TO_BB_LRCLK	AN2 I2S3_LRCK
		I2S_BB_TO_AP_DIN	AP1 I2S3_DIN
		I2S_AP_TO_BB_DOUT	AN1 I2S3_DOUT
TRISTAR_TO_AP_INT			R32 I2S4_MCK
		I2S_AP_TO_CODEC_MSP_BCLK	R31 I2S4_BCLK
		I2S_AP_TO_CODEC_MSP_LRCLK	V32 I2S4_LRCK
		I2S_CODEC_TO_AP_MSP_DIN	P31 I2S4_DIN
		I2S_AP_TO_CODEC_MSP_DOUT	P32 I2S4_DOUT
BOARD_ID2			AD4 SPI0_MISO
BOARD_ID1			AC3 SPI0_MOSI
BOARD_ID0			AB2 SPI0_SCLK
			AD3 SPI0_SSIN
SPI_CODEC_TO_AP_MISO			P33 SPI1_MISO
SPI_AP_TO_CODEC_MOSI			V35 SPI1_MOSI
SPI_AP_TO_CODEC_SCLK			N32 SPI1_SCLK
SPI_AP_TO_CODEC_CS_L			M31 SPI1_SSIN
		SPI_TOUCH_TO_AP_MISO	E33 SPI2_MISO
		SPI_AP_TO_TOUCH_MOSI	E35 SPI2_MOSI
		SPI_AP_TO_TOUCH_SCLK_R	F34 SPI2_SCLK
		SPI_AP_TO_TOUCH_CS_L	F31 SPI2_SSIN
		SPI_MESA_TO_AP_MISO	AA2 SPI3_MISO
		SPI_AP_TO_MESA_MOSI	Y2 SPI3_MOSI
		SPI_AP_TO_MESA_SCLK_R	AA3 SPI3_SCLK
		MESA_TO_AP_INT	AC4 SPI3_SSIN

SPI_AP_TO_TOUCH_SCLK — R0960 0.00 1/32W MF 01005 ROOM=SOC
SPI_AP_TO_MESA_SCLK — R0930 0.00 1/32W MF 01005 ROOM=SOC
PP0906 P2MM-NSM SM ROOM=SOC

U0600 FCMSP SC58980B0B-A040

SYM 6 OF 14
MAUI-2GB-25NM-DDR-H
CRITICAL
ROOM=SOC

I2C0_SCL	E31	I2C0_AP_SCL	OUT
I2C0_SDA	D35	I2C0_AP_SDA	BI
I2C1_SCL	AH1	I2C1_AP_SCL	OUT
I2C1_SDA	AG4	I2C1_AP_SDA	BI
I2C2_SCL	L31	I2C2_AP_SCL	OUT
I2C2_SDA	M32	I2C2_AP_SDA	BI
SEP_SPI0_SCLK	W3	NC	
SEP_SPI0_MISO	AA4	NC	
SEP_SPI0_MOSI	U2	NC	
SEP_I2C_SCL	V3	I2C_SEP_TO_EEPROM_SCL	OUT
SEP_I2C_SDA	Y4	I2C_SEP_BI_EEPROM_SDA	BI
SEP_GPIO0	Y3	NC	
SEP_GPIO1	AR4	NC	
SOCHOT0	AM1	PMU_TO_AP_SOCHOT0_R_L	
SOCHOT1	AM2	AP_TO_PMU_SOCHOT1_L	OUT
CPU_ACTIVE_STATUS	H31	NC	
CLK32K_OUT	H34	AP_TO_TOUCH_CLK32K_RESET_L	OUT
NAND_SYS_CLK	AM24	AP_TO_NAND_SYS_CLK_R	

PP1V8
R0900 1.00K 1% 1/32W MF 01005 ROOM=SOC
R0901 2.2K 5% 1/32W MF 01005 ROOM=SOC
R0902 2.2K 5% 1/32W MF 01005 ROOM=SOC
R0903 2.2K 5% 1/32W MF 01005 ROOM=SOC
R0904 1.33K 1% 1/32W MF 01005 ROOM=SOC
R0905 1.33K 1% 1/32W MF 01005 ROOM=SOC

PP1V8
R0906 2.2K 5% 1/32W MF 01005 ROOM=SOC
R0907 2.2K 5% 1/32W MF 01005 ROOM=SOC

PP1V8_ALWAYS
PP1V8
R0941 10K 5% 1/32W MF 01005 ROOM=SOC
NOSTUFF R0910 10K 5% 1/32W MF 01005 ROOM=SOC
R0909 10K 5% 1/32W MF 01005 ROOM=SOC
R0940 0.00 0% 1/32W MF 01005 ROOM=SOC
R0945 0.00 0% 1/32W MF 01005 ROOM=SOC

ANTI-ROLLBACK EEPROM

128kbit
APN:335S0946

PP1V8
C0900 1.0UF 20% 6.3V X5R 0201-1 ROOM=SOC
U0900 M34128-FCS6_P/T
B1 SCL WLCSP SDA A2
VCC A1
VSS B2
CRITICAL ROOM=SOC
I2C_SEP_BI_EEPROM_SDA
I2C_SEP_TO_EEPROM_SCL

BUTTON PULL-UP RESISTORS

PP1V8_SDRAM
DEFAULT_RESISTOR_191000HM_1_1
R0950 191K 1% 1/32W MF 01005 ROOM=SOC
R0951 100K 5% 1/32W MF 01005 ROOM=SOC
R0952 220K 5% 1/32W MF 01005 ROOM=SOC
PP1V8_ALWAYS
BUTTON_MENU_KEY_L
BUTTON_RINGER_A
BUTTON_HOLD_KEY_L

I2C PROBE POINTS

I2C0_AP_SCL	PP0900
I2C0_AP_SDA	PP0901
I2C1_AP_SCL	PP0902
I2C1_AP_SDA	PP0903
I2C2_AP_SCL	PP0904
I2C2_AP_SDA	PP0905

ROOM=SOC P3MM-NSM SM

SYNC_MASTER=N/A SYNC_DATE=N/A
PAGE TITLE: SOC:SERIAL & GPIO

Apple Inc.

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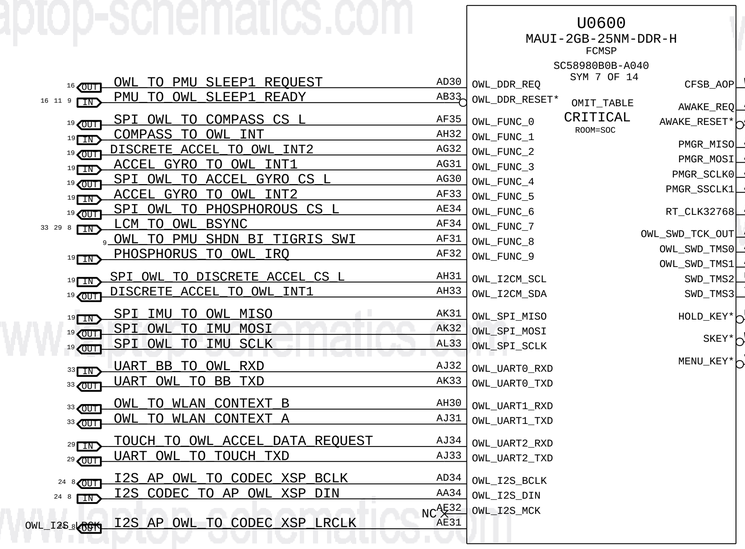
MAUI - OWL

POWER STATE CONTROL PROBE POINTS

30 27 16 9 5 PMU_TO_OWL_ACTIVE_READY — 1 SM PP — ROOM=SOC P3MM-NSM — PP1021

16 11 9 PMU_TO_OWL_SLEEP1_READY — 1 SM PP — ROOM=SOC P3MM-NSM — PP1023



1 SM PP — PP1002 P2MM-NSM — OUT 16 27

PP1V8 3 5 6 7 8 12 13 14 17 20 21 29 33
NOSTUFF R1002 1.00K 5% 1/32W MF 01005 ROOM=SOC — BI 13

OWL SYSTEM SHUTDOWN OPTION

9 OWL_TO_PMU_SHDN_BI_TIGRIS_SWI

NOSTUFF R1020 10 MF 5% 1/32W 01005 ROOM=SOC — SWI_AP_BI_TIGRIS — BI 8 17

NOSTUFF R1021 10 MF 5% 1/32W 01005 ROOM=SOC — OWL_TO_PMU_SHDN — OUT 16

SYNC_MASTER=N/A SYNC_DATE=N/A

PAGE TITLE: SOC:OWL

Apple Inc.

DRAWING NUMBER 051-1902 SIZE D

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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

TP1120 0.5MM SM 1 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

XW1110 SHORT-10L-0.1MM-SM
BUCK1_PP_GPU_FB

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

C1120 10UF 20% 6.3V CERM-X5R 0402-9 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 0.5MM SM 1 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 20% 6.3V CERM 0402
C1139 0.47UF 20% 6.3V CERM 0402
C1140 0.47UF 20% 6.3V CERM 0402
C1141 0.47UF 20% 6.3V CERM 0402

XW1100 SHORT-10L-0.1MM-SM
BUCK0_PP_CPU_FB

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

VDD_CPU
VDD_GPU
N7
P12

PP1100 P2MM-NSM AP_CPU_SENSE_P Y6 VDD_CPU_SENSE
PP1101 P2MM-NSM AP_CPU_SENSE_N Y7 VSS_CPU_SENSE
VDD_GPU_SENSE G20
VSS_GPU_SENSE H19
PP1102 P2MM-NSM 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
VSS

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
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 20% 6.3V CERM 0402
C1157 0.47UF 20% 6.3V CERM 0402

VDD_SOC_SENSE
VSS_SOC_SENSE
AP_SOC_SENSE_N PP1104
AP_SOC_SENSE_P PP1105

SYNC_MASTER=N/A SYNC_DATE=N/A
PAGE TITLE
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MAUI - POWER SUPPLIES

1.06 - 1.17V @635mA MAX
INTERNALLY SUPPLIES VDDQ

PP1V1 (14 11)

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% 4V CERM 0402 ROOM=SOC
C1247 0.47UF 20% 6.3V CERM 0402 ROOM=SOC

0.802-TBDV @1.1A MAX
PP_FIXED (14 7 6)

C1200 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=SOC
C1201 4.3UF 20% 4V CERM 0402 ROOM=SOC
C1202 1UF 20% 4V 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

VDD_CPU_SRAM: AC11 AC7 AC9 AA13 AG11 AG7 AG9 AK12

0.8V @TBDA MAX
0.9V @TBDA MAX
1.0V @1.0A MAX
PP_CPU_SRAM (14)

C1220 0.47UF 20% 6.3V CERM 0402
C1221 1UF 20% 4V CERM 0402
C1222 4.3UF 20% 4V CERM 0402
C1223 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=SOC

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

0.8V @0.5A MAX
PP_GPU_SRAM (14)

C1224 4.3UF 20% 4V CERM 0402
C1225 1UF 20% 4V CERM 0402
C1226 4.3UF 20% 4V CERM 0402
C1227 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=SOC

W2

0.756-TBDV @44mA MAX
PP0V8_OWL (10)

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 H2 M2 U5 P6 T6 U1 N5 R5 W5

DDR IMPEDANCE CONTROL

PP1V1 (14 11)

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 (IN 9 16)
DDR1_RET*: AP15
DDR2_RET*: Y31
DDR3_RET*: U4

1.1V @7mA MAX
PP1V1_DDR_PLL
VOLTAGE=1.1V
VDDIO11_PLL_DDR: AK18 W26 P8

FL1280 100OHM-25%-0.12A 01005 ROOM=SOC
PP1V1 (11 14)

C1280 0.22UF 20% 6.3V X5R 01005-1 ROOM=SOC

VDDIO11_RET_DDR: D19 AN17 W31 T4
PP1V1_SDRAM (12 14 15)
1.06 - 1.17V

DDR0_SYS_ALIVE: C19 SYSTEM_ALIVE (IN 13 16 17)
DDR1_SYS_ALIVE: AP16
DDR2_SYS_ALIVE: W32
DDR3_SYS_ALIVE: T3

SYNC MASTER=N/A	SYNC DATE=N/A
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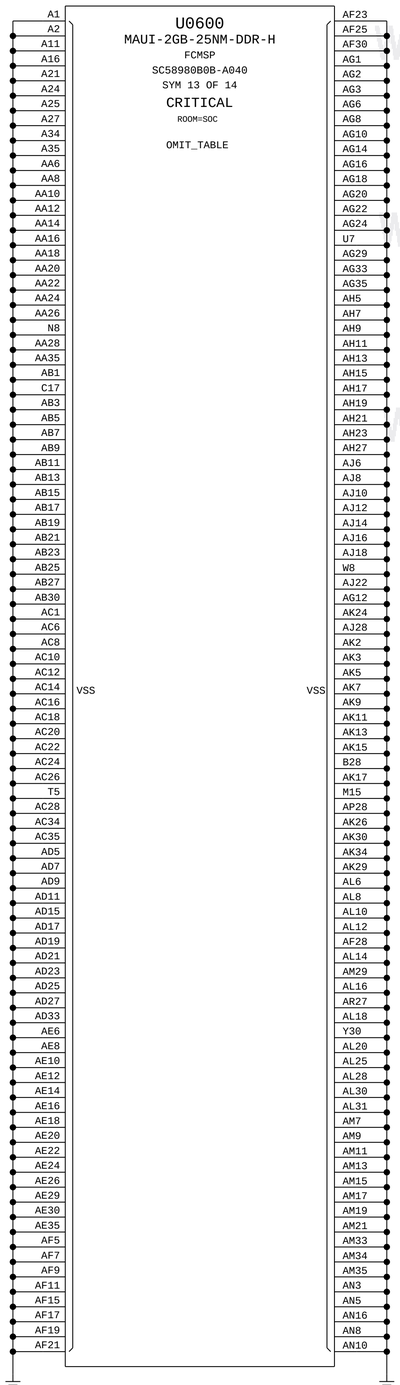
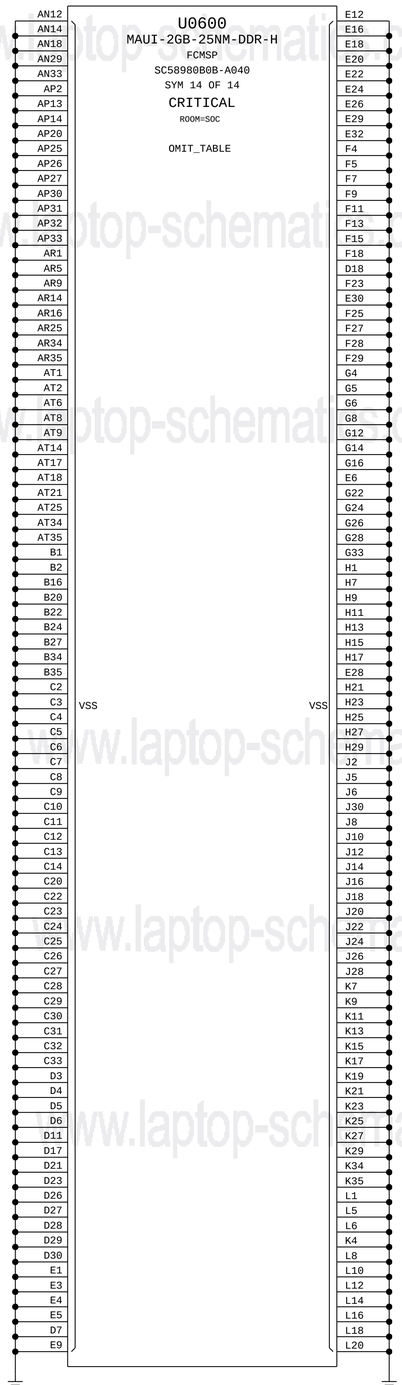
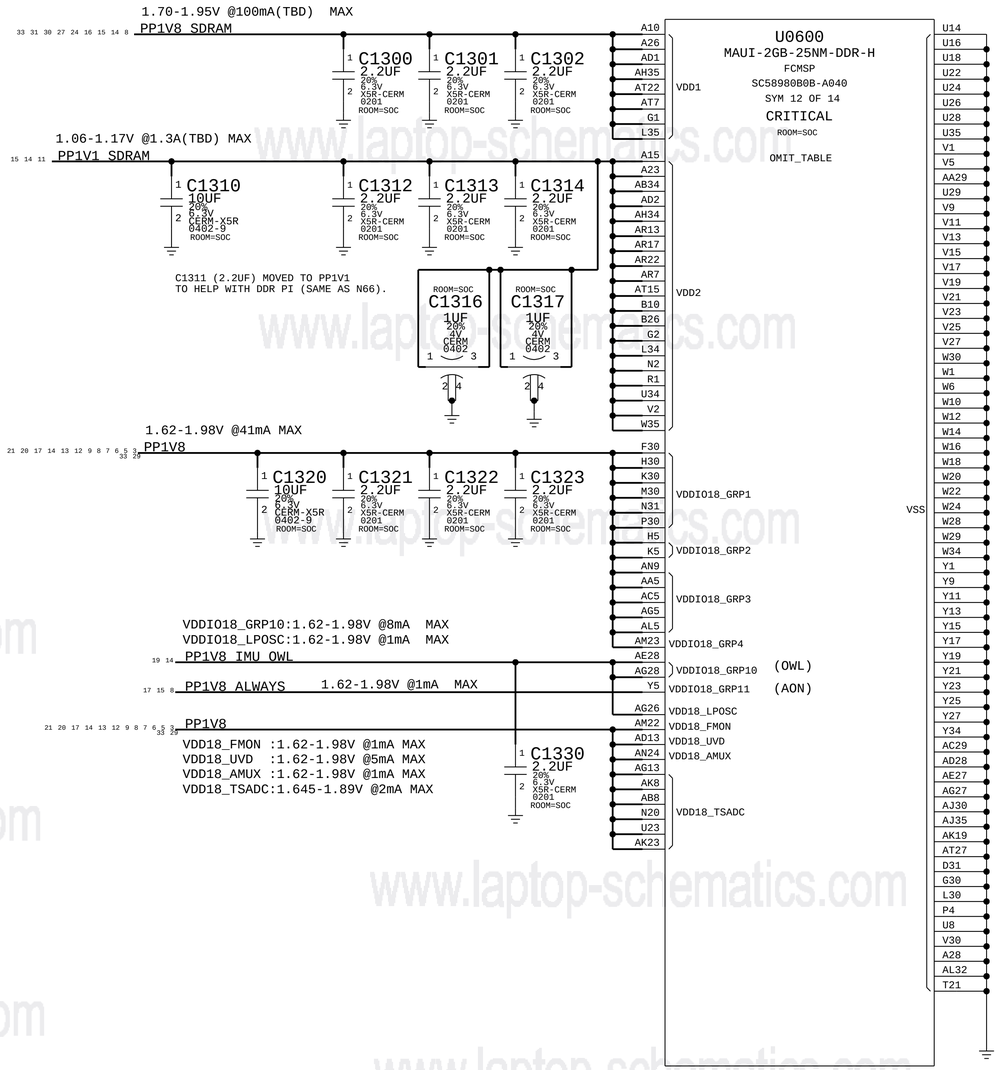
MAUI - POWER SUPPLIES







SYNC_MASTER=N/A SYNC_DATE=N/A

PAGE TITLE
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S3E NAND

SYNC_MASTER=N/A SYNC DATE=N/A

PAGE TITLE: NAND

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ANTIGUA PMU - Buck Supplies

SYNC_MASTER=N/A SYNC_DATE=N/A

PAGE TITLE: SYSTEM POWER:PMU (1/3)

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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: M3 VDD_LDO1_3, V2 VDD_LDO2, M2 VDD_LDO4, U1/U2 VDD_LDO5, L2 VDD_LDO6, Y6 VDD_LDO7, Y4 VDD_LDO8, Y3 VDD_LDO9, Y9/Z9 VDD_LDO10, R3 VDD_LDO11, Y5 VDD_LDO13, Y7 VDD_LDO14, N2 VDD_LDO15, K3 VDD_BYPASS

LDO: P12 VPP_OTP

VLDO1 M1 — VOLTAGE=3.3V PP3V3_USB — LDO1
VLDO2 V1 — VOLTAGE=1.8V PP1V8_VA — LDO2
VLDO3 L1 — PP3V0_TRISTAR — LDO3
VLDO4 N1 — VOLTAGE=0.8V PP0V8_OWL — LDO4
T1 — VOLTAGE=3.0V PP3V0_NAND — LDO5
VLDO5 T2
VLDO6 K1 — VOLTAGE=3.3V PP3V3_ACC — LDO6
VBYPASS K2
VLDO7 Z6 — VOLTAGE=3.0V PP3V0_PROX_ALS — LDO7
VLDO8 Z4 — VOLTAGE=2.775V PMU_LDO8 — LDO8
VLDO9 Z3 — VOLTAGE=2.85V PP2V85_CAM_AVDD_PMU — LDO9
VLDO9_FB Y2 — CAM_AVDD_FB — PLACE_NEAR=U2000.Y2:2mm — XW2100 ROOM=PMU SHORT-10L-0.1MM-SM
Y8
VLDO10 Z8 — VOLTAGE=0.9V PP0V9_NAND — LDO10
VLDO11 R2 — VOLTAGE=3.0V PP3V0_PROX_IRLED — LDO11
VLDO12 K6 — VOLTAGE=1.8V PP1V8_ALWAYS — LDO12
VLDO13 Z5 — VOLTAGE=3.0V PP3V0_MESA — LDO13
VLDO14 Z7 — VOLTAGE=1.2V PP1V2 — LDO14
VLDO15 P2 — VOLTAGE=1.8V PP1V8_MESA — LDO15
VPUMP U19 — 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
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

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

D10 D11 D12 D13 D14 D15 D16 D17 D18 D2 D5 D6 D7 D8 D9 D3 E10 E11 E12 E13 D4 E15 E16 E3 E4 E5 E7 E8 E9 F14 F15 F16 F3 F4 G14 G15 G16 G3 G4 H15 H16 H3 H4 — NC

J15 J16 J3 J4 K15 K16 L15 L16 M14 M15 M16 N14 N15 N16 P13 P14 P15 P16 P17 R13 R14 R15 R16 R17 T10 T11 T12 T13 T14 T15 T17 U10 U11 U12 U13 U14 U4 U5 U6 V4 V5 V6 — NC

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

A1 A10 A14 A18 A19 A2 A6 B1 B10 B14 B18 B19 B2 B6 C10 C14 C18 C2 C6 D1 D19 E14 G1 G17 G18 G19 G2 H7 J6 K12 K7 L17 L18 L19 L6 L7 — VSS

L9 M8 M9 N10 N12 N13 N9 P10 P11 P18 P19 P5 R10 R11 R12 R9 T16 T3 T6 T8 U3 U9 V10 V14 V8 V9 Y1 Y10 Y14 Y19 Z1 Z10 Z14 Z19 Z2

PMU_VSS_RTC
NOTE: T3 IS XTAL REF GND

SYNC_MASTER=N/A SYNC_DATE=N/A

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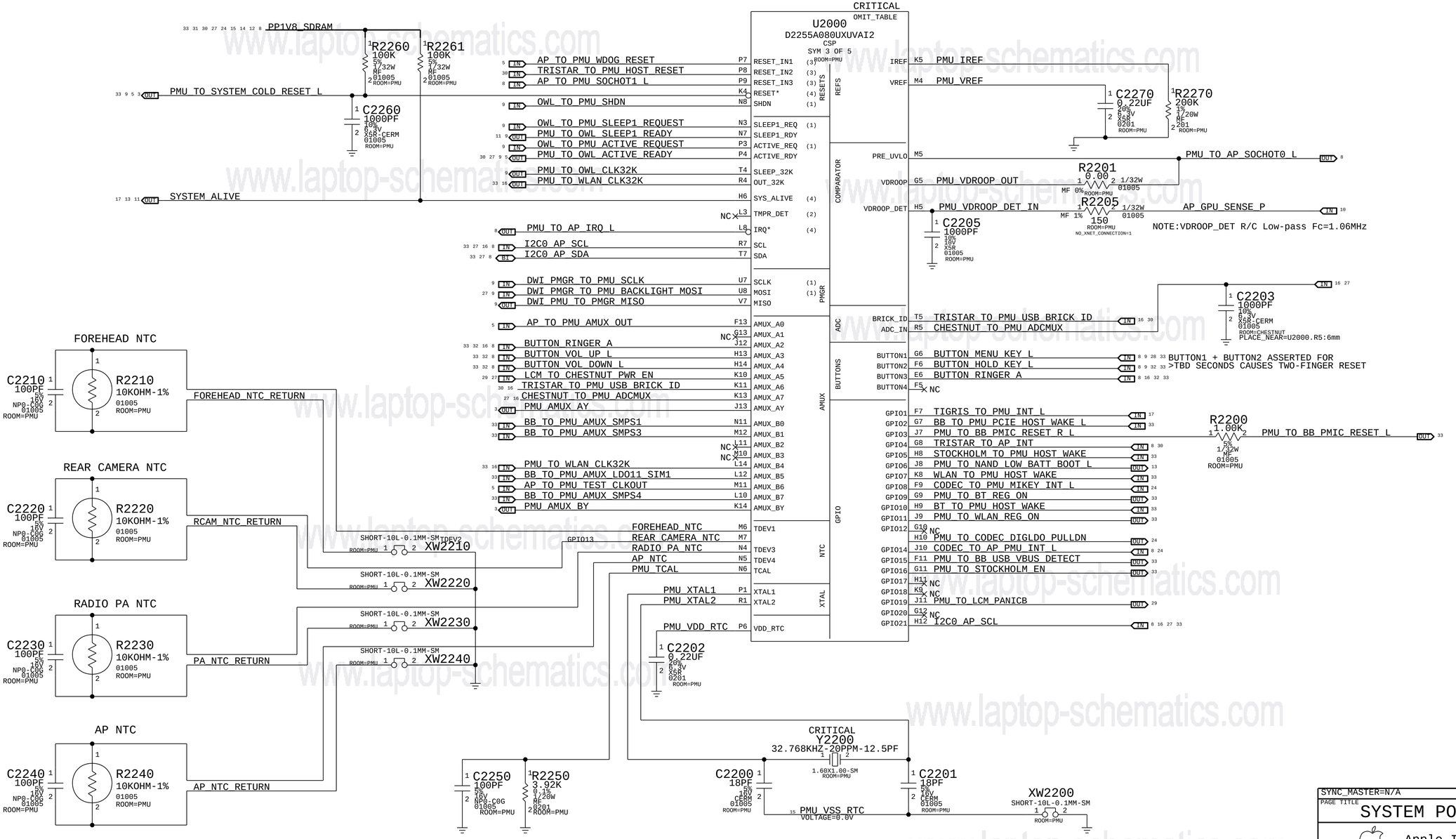
ANTIGUA PMU - GPIOs, NTCs

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

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TIGRIS CHARGER

APN:343S00033

C2320 4.2UF 10% 16V X5R-CERM 0402-1 ROOM=CHARGER
C2321 4.2UF 10% 16V X5R-CERM 0402-1 ROOM=CHARGER
C2322 100PF 5% 35V NP0-C0G 01005 ROOM=CHARGER
C2323 100PF 5% 35V NP0-C0G 01005 ROOM=CHARGER
TIGRIS PMID

C2330 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=CHARGER
C2331 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=CHARGER
C2332 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=CHARGER
TIGRIS LDO

C2307 100PF 5% 16V NP0-C0G 01005 ROOM=CHARGER
C2305 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=CHARGER

C2333 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=CHARGER
PP VCC MAIN
VOLTAGE=4.3V
14 15 21 22 24 25 26 27 28 33

U2300
SN2400AB0
WCSP
ROOM=CHARGER
CRITICAL

A2 B2 D2 C2	VDD_MAIN	
F5	PMID	
A5 B5 D5 C5 E5	VBUS	
G3	SDA	
E4	SCL	
E3	SYS_ALIVE	
F4	VBUS_OVP_OFF	
G2	INT	
F1	VBUS_DET	
F3	TEST	
G4	LDO	
G5	BOOT	TIGRIS BOOT
A4 B4 D4 C4	BUCK_SW	TIGRIS BUCK LX
A1 B1 D1 C1	BAT	
E1	BAT_SNS	VBATT SENSE
E2	ACT_DIODE	TIGRIS ACTIVE DIODE
G1	HDQ_HOST	SWI_AP_BI_TIGRIS_FET
F2	HDQ_GAUGE	TIGRIS TO BATTERY SWI
A3 B3 D3 C3	PGND	

C2300 0.047UF 10% 16V X5R 0201 ROOM=CHARGER
OMIT TABLE
CRITICAL
L2300 1.0UH-20%-3.6A-0.060OHM
PIOA20161T-SM ROOM=CHARGER

C2301 100PF 5% 16V NP0-C0G 01005 ROOM=CHARGER
C2302 100PF 5% 16V NP0-C0G 01005 ROOM=CHARGER

CRITICAL
Q2300
CSD68827W
BGA
ROOM=CHARGER

C2306 100PF 5% 16V NP0-C0G 01005 ROOM=CHARGER
C2303 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=CHARGER
C2304 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=CHARGER
PP BATT VCC
3 18

NOSTUFF
R2300 100K 5% 1/32W MF 01005 ROOM=CHARGER

C2310 4.2UF 10% 16V X5R-CERM 0402-1 ROOM=CHARGER
C2311 100PF 5% 35V NP0-C0G 01005 ROOM=CHARGER
PP5V0 USB
31 30 3
PP1V8 ALWAYS
15 12 8

R2310 100K 5% 1/32W MF 01005 ROOM=CHARGER
R2311 100 1% 1/32W MF 01005 ROOM=CHARGER
R2320 30.1K 1% 1/32W MF 01005 ROOM=CHARGER

TIGRIS TO PMU INT L (OUT 16)
USB VBUS DETECT (OUT 5)
I2C1 AP SDA (BI 33 30 26 25 8)
I2C1 AP SCL (IN 33 30 26 25 8)
SYSTEM ALIVE (16 13 11)
TRISTAR TO TIGRIS VBUS OFF (IN 30)
TIGRIS TO PMU INT R L
TIGRIS VBUS DETECT

NOSTUFF
R2301 0.00 0% 1/32W MF 01005 ROOM=CHARGER
CRITICAL
Q2301 DMN2990UFA DFN0806 ROOM=CHARGER
PP1V8 (21 20 17 14 13 12 9 8 7 6 5 3 34)

PP1V8 (3 5 6 7 8 9 12 13 14 17 20 21 29 33)
DEFAULT_RESISTOR_402000HM_2_1
R2302 40.2K 1% 1/32W MF 01005 ROOM=CHARGER
SWI_AP_BI_TIGRIS (BI 8 9)

SYNC_MASTER=N/A
SYNC DATE=N/A
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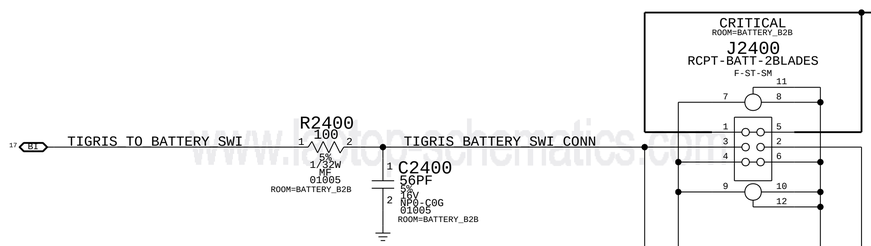
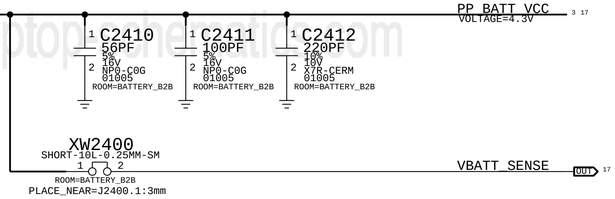
BATTERY CONNECTOR

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





SYNC_MASTER=N/A SYNC DATE=N/A

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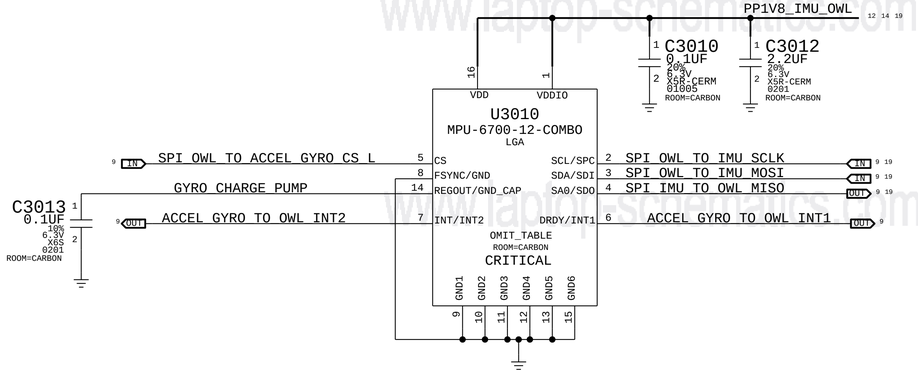
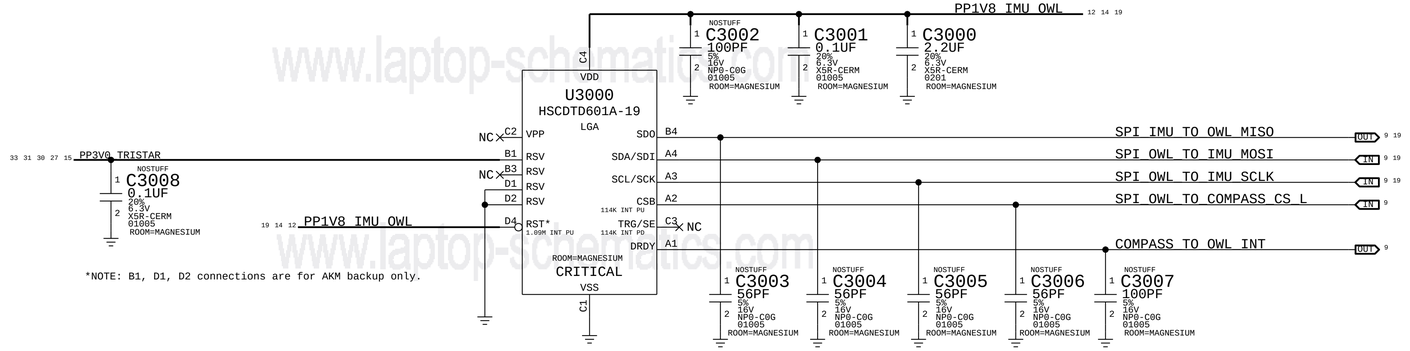
CARBON - ACCEL & GYRO

INVENSENSE (APN: 338S00017, 338S00087)



MAGNESIUM - COMPASS

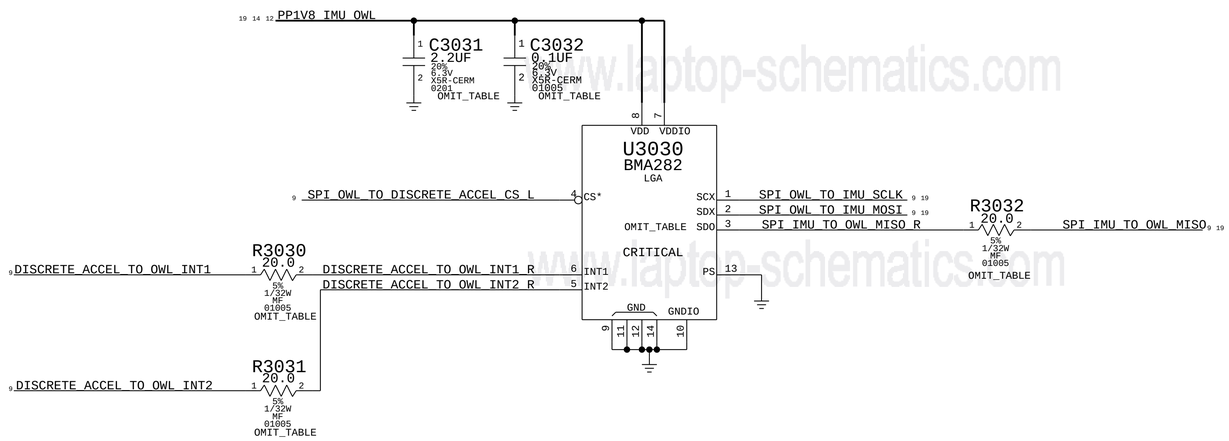
ALPS (APN:338S00084)



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

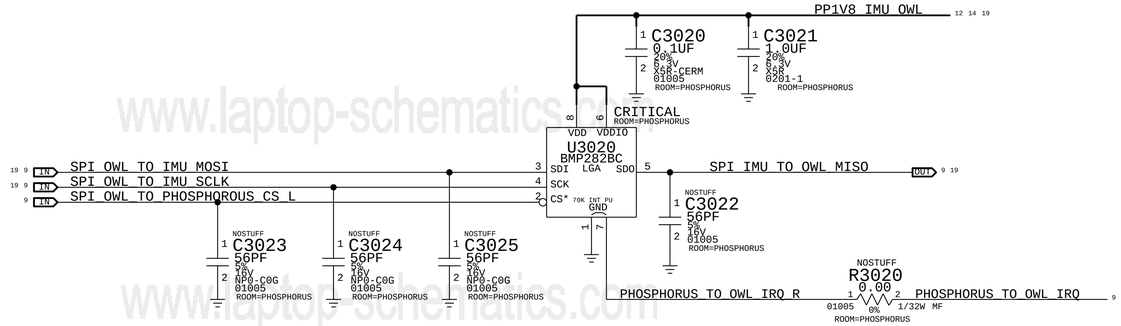
DISCRETE ACCEL

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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FOREHEAD FLEX (FCAM)

CAMERA POWER

FL3100
FERR-22-OHM-1A-0.055OHM
PP1V8 → PP1V8_FCAM_CONN (VOLTAGE=1.8V)
C3101 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=CG_B2B
C3100 100PF 5% 16V NP0-C0G 01005 ROOM=CG_B2B

FL3102
FERR-22-OHM-1A-0.055OHM
PP1V2_CAMERA → PP1V2_FCAM_VCORE_CONN (VOLTAGE=1.2V)
C3103 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=CG_B2B
C3102 100PF 5% 16V NP0-C0G 01005 ROOM=CG_B2B

FL3104
FERR-22-OHM-1A-0.055OHM
PP2V85_CAM_AVDD_PMU → PP2V85_FCAM_AVDD_CONN (VOLTAGE=2.85V)
C3106 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=CG_B2B
C3105 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=CG_B2B
C3104 100PF 5% 16V NP0-C0G 01005 ROOM=CG_B2B

CAMERA I/O

FL3110
AP_TO_FCAM_CLK → AP_TO_FCAM_CLK_CONN
120-OHM-210MA 01005 ROOM=CG_B2B
C3110 100PF 5% 16V NP0-C0G 01005 ROOM=CG_B2B

FL3111
AP_TO_FCAM_SHUTDOWN_L → AP_TO_FCAM_SHUTDOWN_CONN_L
120-OHM-210MA 01005 ROOM=CG_B2B
C3111 100PF 5% 16V NP0-C0G 01005 ROOM=CG_B2B

I2C_ISP_TO_FCAM_SCL
C3112 56PF 5% 16V NP0-C0G 01005 ROOM=CG_B2B

I2C_ISP_BI_FCAM_SDA
C3113 56PF 5% 16V NP0-C0G 01005 ROOM=CG_B2B

CAMERA MIPI

CRITICAL L3100 65-OHM-0.1A-0.7-2GHZ TAM0605 SYM_VER-2 ROOM=CG_B2B
MIPI_FCAM_TO_AP_DATA0_P → MIPI_FCAM_TO_AP_DATA0_CONN_P
MIPI_FCAM_TO_AP_DATA0_N → MIPI_FCAM_TO_AP_DATA0_CONN_N

CRITICAL L3101 65-OHM-0.1A-0.7-2GHZ TAM0605 SYM_VER-2 ROOM=CG_B2B
MIPI_FCAM_TO_AP_DATA1_P → MIPI_FCAM_TO_AP_DATA1_CONN_P
MIPI_FCAM_TO_AP_DATA1_N → MIPI_FCAM_TO_AP_DATA1_CONN_N

CRITICAL L3102 65-OHM-0.1A-0.7-2GHZ TAM0605 SYM_VER-2 ROOM=CG_B2B
MIPI_FCAM_TO_AP_CLK_P → MIPI_FCAM_TO_AP_CLK_CONN_P
MIPI_FCAM_TO_AP_CLK_N → MIPI_FCAM_TO_AP_CLK_CONN_N

PROX & ALS POWER

PP3V0_PROX_IRLED
C3120 100PF 5% 16V NP0-C0G 01005 ROOM=CG_B2B
C3121 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=CG_B2B
C3122 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=CG_B2B
C3123 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=CG_B2B
C3124 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=CG_B2B

FL3125
PP3V0_PROX_ALS → PP3V0_PROX_CONN (VOLTAGE=3.0V)
120-OHM-210MA 01005 ROOM=CG_B2B
C3125 100PF 5% 16V NP0-C0G 01005 ROOM=CG_B2B

FL3126
120-OHM-210MA 01005 ROOM=CG_B2B
PP3V0_ALS_CONN (VOLTAGE=3.0V)
C3130 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=CG_B2B
C3129 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=CG_B2B
C3128 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=CG_B2B
C3127 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=CG_B2B
C3126 100PF 5% 16V NP0-C0G 01005 ROOM=CG_B2B

PROX & ALS INTERFACE

DOPPLER_PROX
R3142 0.00 1/32W MF 01005 ROOM=CG_B2B
I2C_TOUCH_TO_MAMBA_PROX_SCL → PGND_IRLED_K
C3140 56PF 5% 16V NP0-C0G 01005 ROOM=CG_B2B NOSTUFF
CRITICAL ANALOG_PROX Q3140 DMN3730UFB4 DFN1006H4-3 SYM_VER_1 ROOM=CG_B2B
TOUCH_TO_PROX_TX_EN_BUFF
R3140 1.00M 5% 1/32W MF 01005 ROOM=CG_B2B

PP1V8_TOUCH
R3141 100K 5% 1/32W MF 01005 ROOM=CG_B2B
NOTE:INTERRUPT FOR DOPPLER PROX
TOUCH_TO_PROX_RX_EN_FCAM_CONN

DOPPLER_PROX
R3144 0.00 1/32W MF 01005 ROOM=CG_B2B
I2C_TOUCH_BI_MAMBA_PROX_SDA

ANALOG_PROX
R3143 0.00 1/32W MF 01005 ROOM=CG_B2B
PROX_TO_TOUCH_RX_LCM_CONN → PROX_TO_TOUCH_RX_FCAM_CONN
C3143 56PF 5% 16V NP0-C0G 01005 ROOM=CG_B2B NOSTUFF

I2C2_AP_SDA (MAKE_BASE=TRUE) → I2C2_AP_BI_ALS_SDA_CONN
C3144 56PF 5% 16V NP0-C0G 01005 ROOM=CG_B2B

I2C2_AP_SCL (MAKE_BASE=TRUE) → I2C2_AP_TO_ALS_SCL_CONN
C3145 56PF 5% 16V NP0-C0G 01005 ROOM=CG_B2B

FL3146
ALS_TO_AP_INT_L → ALS_TO_AP_INT_CONN_L
120-OHM-210MA 01005 ROOM=CG_B2B
C3146 100PF 5% 16V NP0-C0G 01005 ROOM=CG_B2B

FOREHEAD CONNECTOR

THIS ONE ON MLB ---> 516S00048 (RCPT)
516S00049 (PLUG)

J3100
AA20L-S036VA1
F-ST-SM
ROOM=CG_B2B
CRITICAL

CODEC_TO_RCVR_CONN_N	1	2	CODEC_TO_HAC_CONN_P
CODEC_TO_RCVR_CONN_P	3	4	CODEC_TO_HAC_CONN_N
PP1V8_FCAM_CONN	5	6	PP1V2_FCAM_VCORE_CONN
PP2V85_FCAM_AVDD_CONN	7	8	
	9	10	MIPI_FCAM_TO_AP_DATA0_CONN_N
	11	12	MIPI_FCAM_TO_AP_DATA0_CONN_P
AP_TO_FCAM_CLK_CONN	13	14	MIPI_FCAM_TO_AP_CLK_CONN_P
I2C_ISP_TO_FCAM_SCL	15	16	MIPI_FCAM_TO_AP_CLK_CONN_N
AP_TO_FCAM_SHUTDOWN_CONN_L	17	18	MIPI_FCAM_TO_AP_DATA1_CONN_P
I2C_ISP_BI_FCAM_SDA	19	20	MIPI_FCAM_TO_AP_DATA1_CONN_N
	21	22	
PP3V0_PROX_CONN	23	24	
TOUCH_TO_PROX_RX_EN_FCAM_CONN	25	26	PROX_TO_TOUCH_RX_FCAM_CONN
	27	28	PP3V0_ALS_CONN
I2C2_AP_BI_ALS_SDA_CONN	29	30	I2C2_AP_TO_ALS_SCL_CONN
ALS_TO_AP_INT_CONN_L	31	32	PP3V0_PROX_IRLED
PGND_IRLED_K	33	34	PP_CODEC_TO_FRONTMIC3_BIAS_CONN
FRONTMIC3_TO_CODEC_AIN4_CONN_N	35	36	FRONTMIC3_TO_CODEC_AIN4_CONN_P
	39	40	
	42		

FL3150
120-OHM-210MA 01005 ROOM=CG_B2B
PP_CODEC_TO_FRONTMIC3_BIAS → PP_CODEC_TO_FRONTMIC3_BIAS_CONN (VOLTAGE=2.86V)
DZ3150 6.8V-100PF 01005 ROOM=CG_B2B

FL3151
70-OHM-25%-0.28A 01005 ROOM=CG_B2B
CODEC_TO_HAC_N → CODEC_TO_HAC_CONN_N
DZ3151 12V-33PF 01005-1 NO_XNET_CONNECTION=1 ROOM=CG_B2B

FL3152
70-OHM-25%-0.28A 01005 ROOM=CG_B2B
CODEC_TO_HAC_P → CODEC_TO_HAC_CONN_P
DZ3152 12V-33PF 01005-1 NO_XNET_CONNECTION=1 ROOM=CG_B2B

FL3153
70-OHM-25%-0.28A 01005 ROOM=CG_B2B
CODEC_TO_RCVR_N → CODEC_TO_RCVR_CONN_N
DZ3153 12V-33PF 01005-1 NO_XNET_CONNECTION=1 ROOM=CG_B2B

FL3154
70-OHM-25%-0.28A 01005 ROOM=CG_B2B
CODEC_TO_RCVR_P → CODEC_TO_RCVR_CONN_P
DZ3154 12V-33PF 01005-1 NO_XNET_CONNECTION=1 ROOM=CG_B2B

FL3155
120-OHM-210MA 01005 ROOM=CG_B2B
FRONTMIC3_TO_CODEC_AIN4_CONN_N → FRONTMIC3_TO_CODEC_AIN4_CONN_N
DZ3155 6.8V-100PF 01005 NO_XNET_CONNECTION=1 ROOM=CG_B2B

FL3156
120-OHM-210MA 01005 ROOM=CG_B2B
FRONTMIC3_TO_CODEC_AIN4_P → FRONTMIC3_TO_CODEC_AIN4_CONN_P
DZ3156 6.8V-100PF 01005 NO_XNET_CONNECTION=1 ROOM=CG_B2B

SYNC_MASTER=N/A SYNC_DATE=N/A

PAGE TITLE
CAMERA:FOREHEAD FLEX B2B

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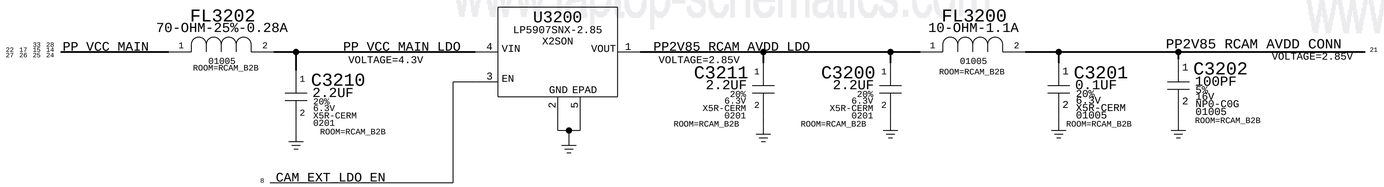
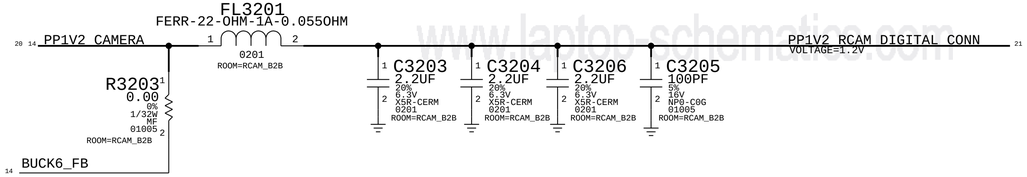
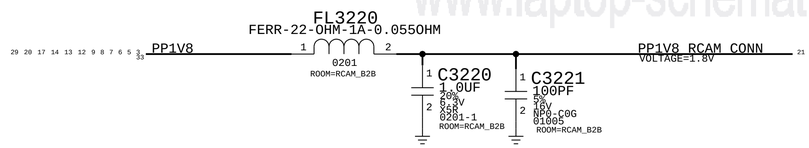
REAR CAMERA FLEX

CAMERA POWER

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

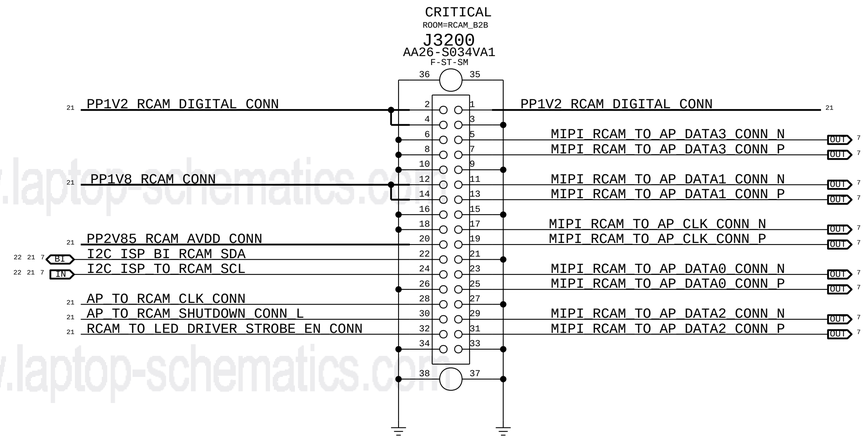




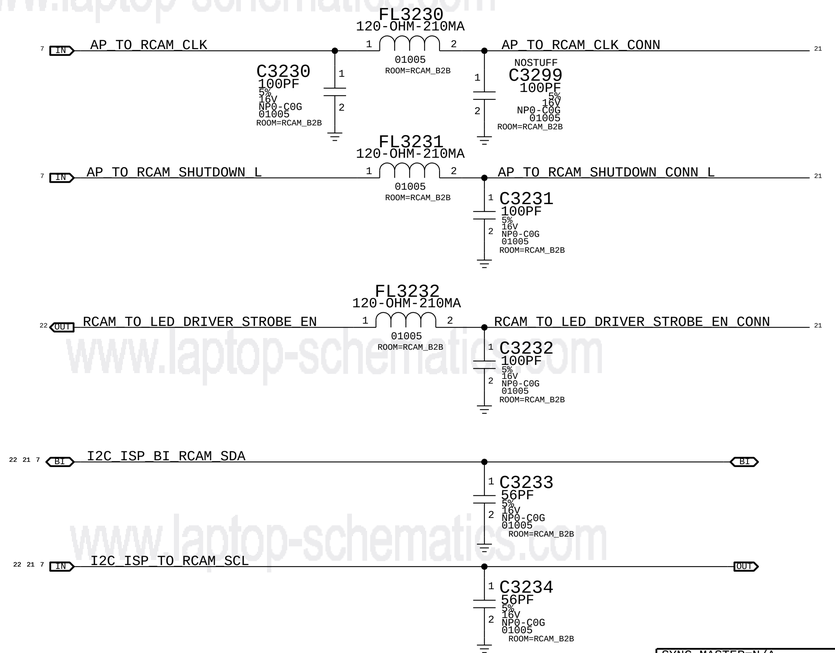


RCAM CONNECTOR

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

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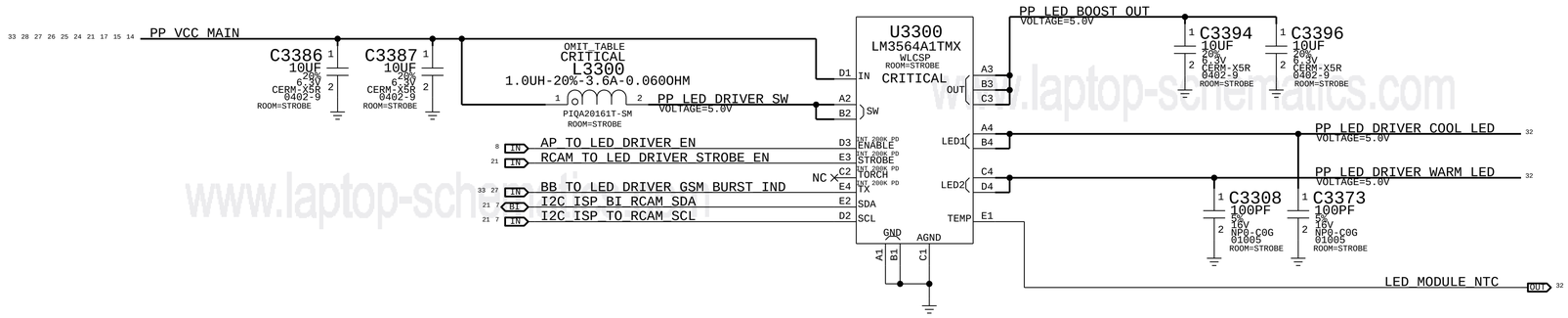
DUAL LED STROBE DRIVER

APN:353S3899



SYNC_MASTER=N/A	SYNC_DATE=N/A
PAGE TITLE	CAMERA:STROBE DRIVER
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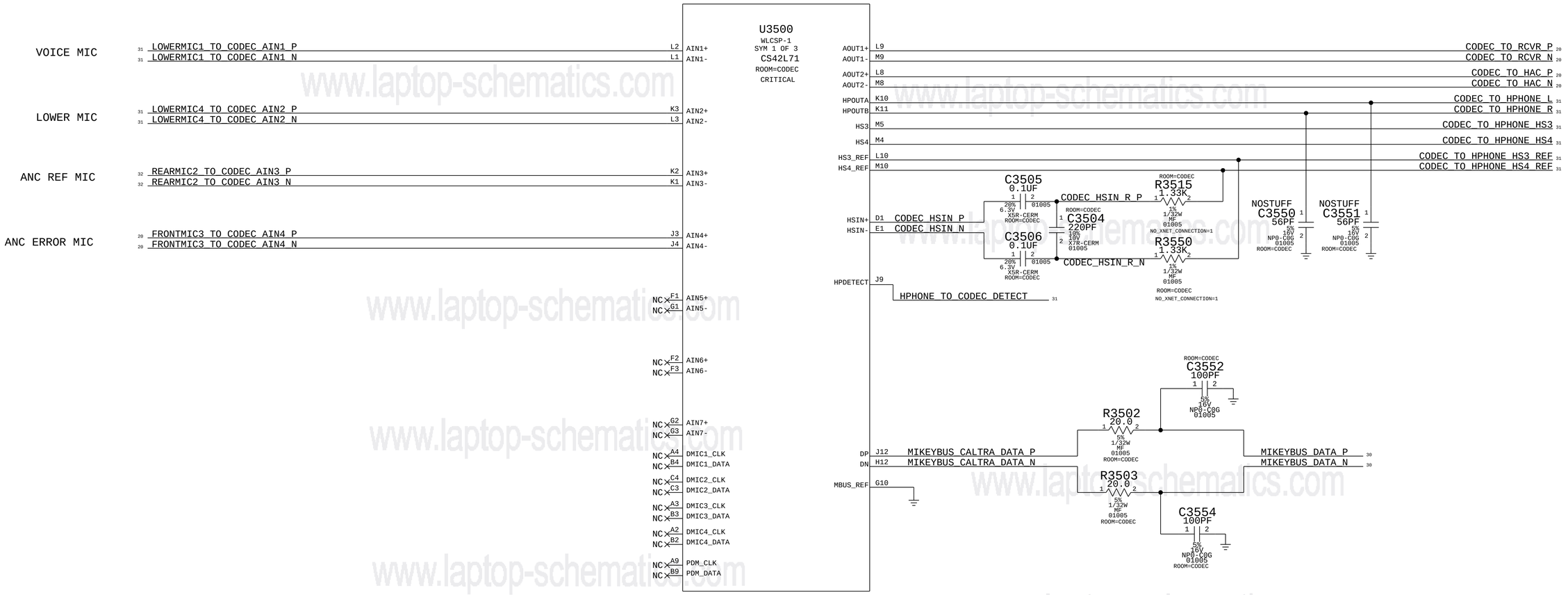
CALTRA AUDIO CODEC (ANALOG INPUTS & OUTPUTS)



SYNC_MASTER=N71_SINGLE_BRD
SYNC DATE=05/29/2014

PAGE TITLE
AUDIO:CALTRA CODEC (1/2)

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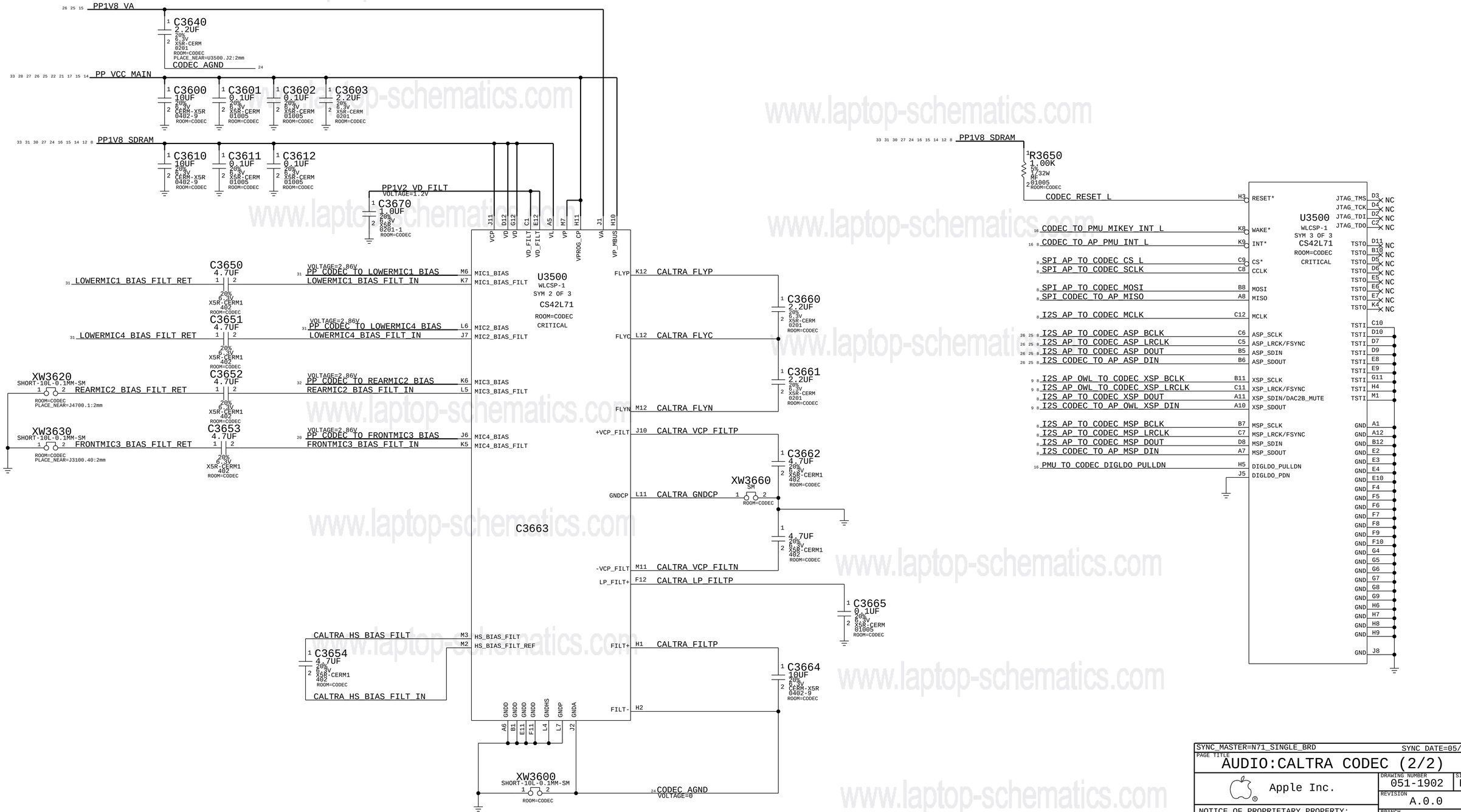
CALTRA AUDIO CODEC (POWER & I/O)



SYNC_MASTER=N71_SINGLE_BRD
SYNC DATE=05/29/2014

PAGE TITLE
AUDIO:CALTRA CODEC (2/2)

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SPEAKER AMPLIFIER

APN: 338S1285

PP VCC MAIN
PP1V8 VA
PP SPKR VBOOST
VOLTAGE=8.0V
PP SPEAKERAMP SW
VOLTAGE=8.0V
CRITICAL
L3700
1.2UH-20%-3.0A-0.080OHM
PIOA20161T-SM
U3700
CS35L21-XWZR
WLCSP
VER1
CRITICAL
I2C1 AP SDA
I2C1 AP SCL
SPEAKERAMP TO AP INT L
AP TO SPEAKERAMP RESET L
AP TO SPEAKERAMP STAYIN ALIVE
I2S AP TO SPEAKERAMP MCLK
I2S AP TO CODEC ASP BCLK
I2S AP TO CODEC ASP LRCLK
I2S AP TO CODEC ASP DOUT
I2S CODEC TO AP ASP DIN
SPEAKERAMP FILT
SPEAKERAMP LDO FILT
SPEAKER TO SPEAKERAMP VSENSE N
SPEAKER TO SPEAKERAMP VSENSE P
SPEAKERAMP ISENSE N
SPEAKERAMP ISENSE P
SPEAKERAMP OUT POS
SPEAKERAMP IREF
SPEAKERAMP_ISENSE_R_P
SPEAKERAMP_ISENSE_R_N
SPEAKERAMP TO SPEAKER OUT POS
SPEAKERAMP TO SPEAKER OUT NEG

SYNC_MASTER=N/A	SYNC_DATE=N/A
PAGE TITLE	AUDIO:SPEAKER DRIVER
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ARC DRIVER

APN: 338S1285

PP VCC MAIN
PP1V8 VA
PP ARC VBOOST
VOLTAGE=8.0V
PP ARC SW
VOLTAGE=8.0V
CRITICAL
L3800
1.2UH-20%-3.0A-0.080OHM
PIQA2016T-SM
ROOM=ARC
U3800
CS35L21-XWZR
WLCSP
VER1
ROOM=ARC
CRITICAL
VBST
VP
VA
SW
SDA
SCL
INT*
RESET*
ALIVE
ADO
1M INT PD
MCLK
SCLK
LRCK/FSYNC
SDIN
SDOUT
GNDP
GNDA
FILT+
LDO_FILT
VSENSE-
VSENSE+
ISENSE-
ISENSE+
OUT+
OUT-
IREF+
I2C1_AP_SDA
I2C1_AP_SCL
ARC_TO_AP_INT_L
AP_TO_ARC_RESET_L
AP_TO_ARC_STAYIN_ALIVE
PP1V8_VA
I2S_AP_TO_ARC_MCLK
I2S_AP_TO_CODEC_ASP_BCLK
I2S_AP_TO_CODEC_ASP_LRCLK
I2S_AP_TO_CODEC_ASP_DOUT
I2S_CODEC_TO_AP_ASP_DIN
ARC_DRIVER_FILT
ARC_DRIVER_LDO_FILT
SOLENOID_TO_ARC_DRIVER_VSENSE_R_N
SOLENOID_TO_ARC_DRIVER_VSENSE_R_P
ARC_ISENSE_N
ARC_ISENSE_P
ARC_DRIVER_OUT_POS
ARC_IREF
ARC_ISENSE_R_P
ARC_ISENSE_R_N
ARC_DRIVER_OUT_FILT_POS
ARC_DRIVER_OUT_FILT_NEG
SOLENOID_TO_ARC_DRIVER_VSENSE_N
SOLENOID_TO_ARC_DRIVER_VSENSE_P
ARC_DRIVER_TO_SOLENOID_OUT_POS
ARC_DRIVER_TO_SOLENOID_OUT_NEG

NOTE:FERRITES SHORTED OUT BY XW-LINKS BETWEEN PADS
CUT LINK BEFORE POPULATING FERRITES

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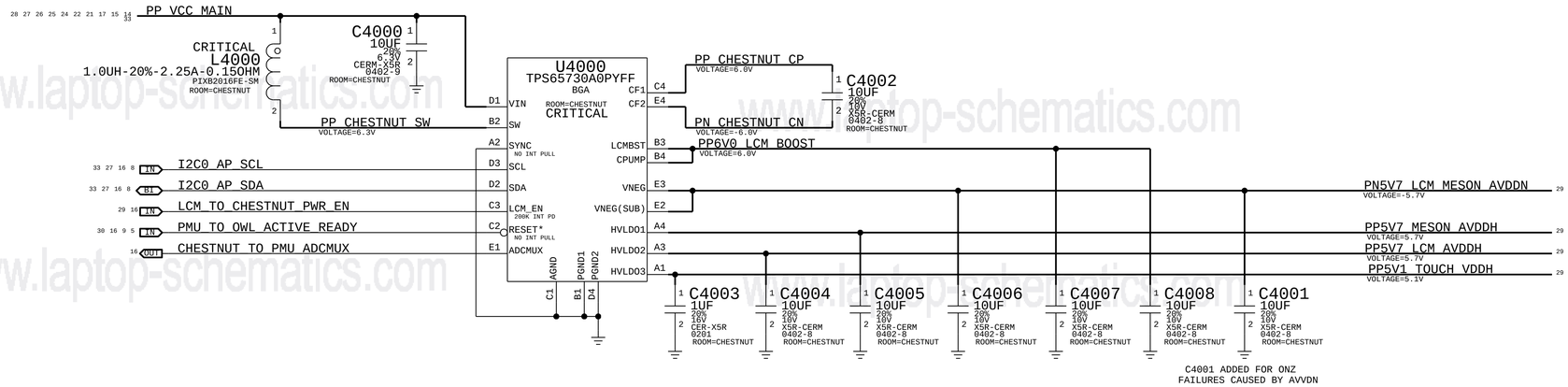
DISPLAY & TOUCH - POWER SUPPLIES

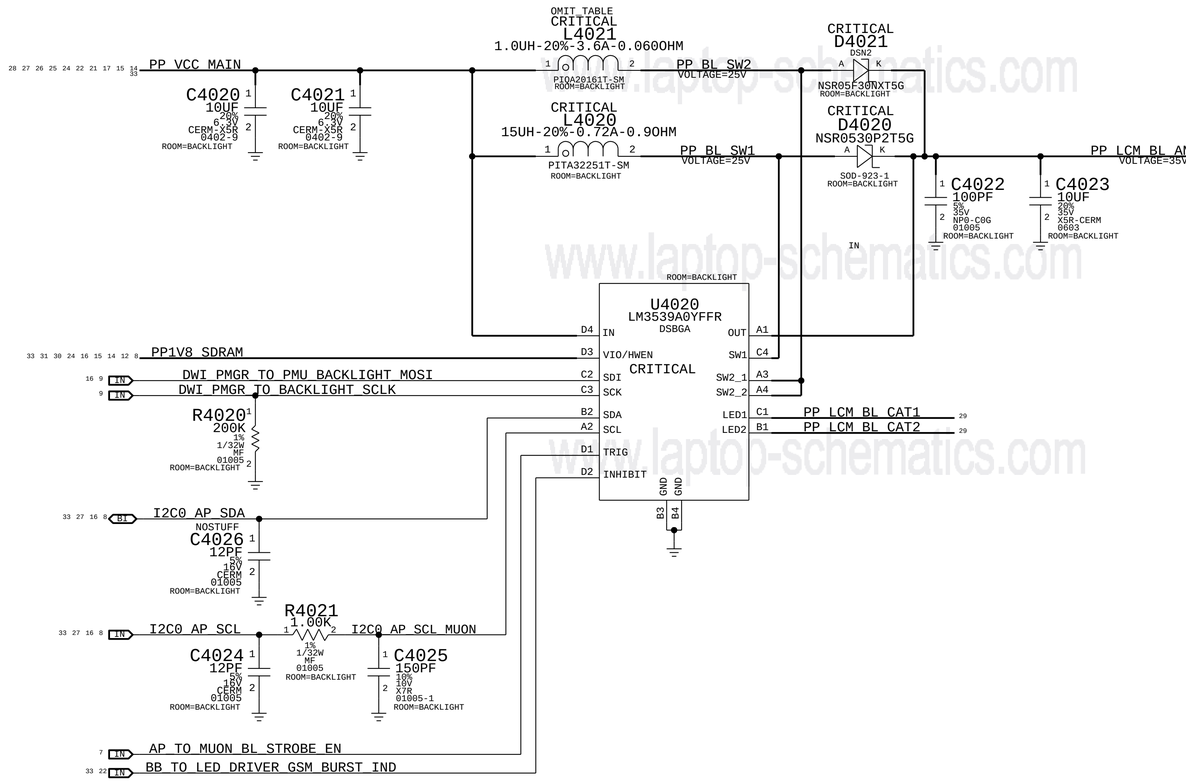
CHESTNUT DISPLAY PMU

APN:338S1172



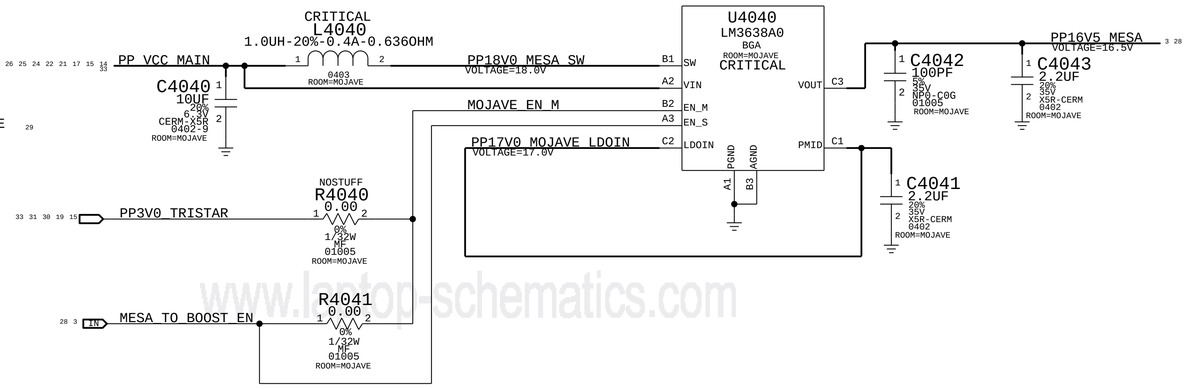
LED BACKLIGHT DRIVER

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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REVISION A.0.0

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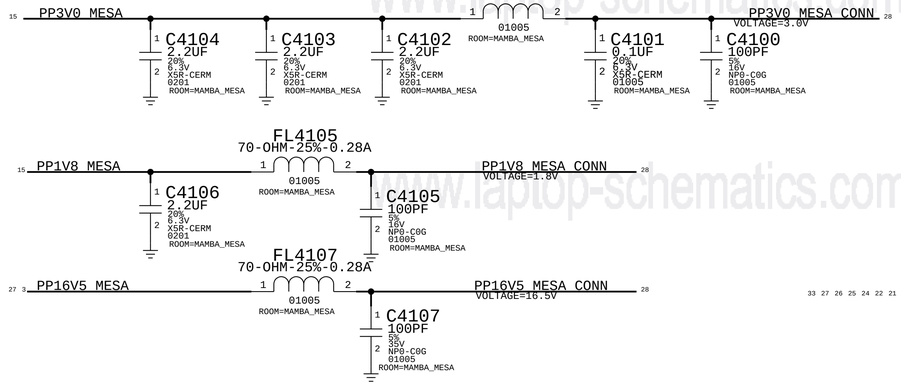
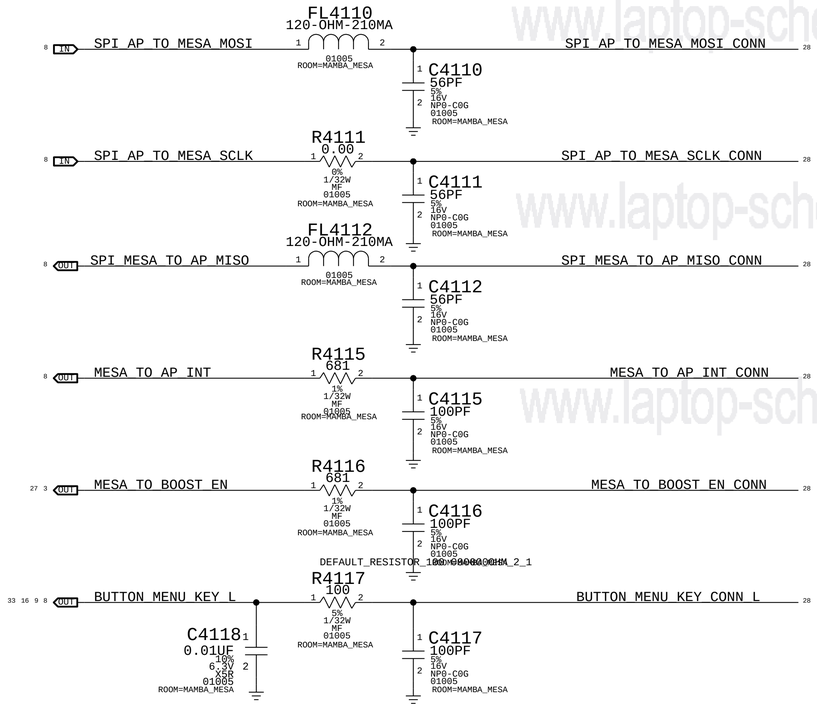
MAMBA & MESA (M&M) FLEX

MESA POWER

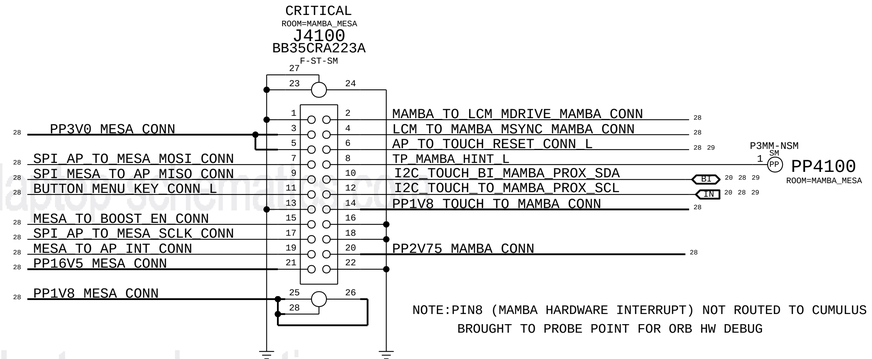


MESA DIGITAL I/O



MAMBA & MESA CONNECTOR

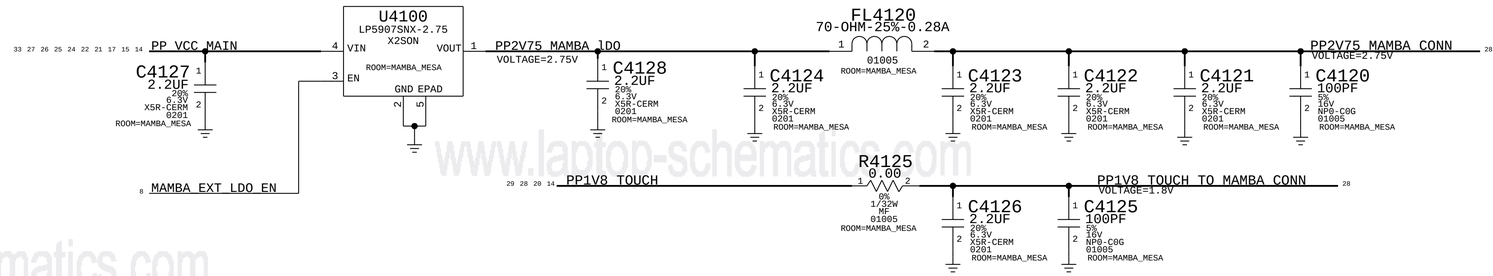
THIS ONE ON MLB ---> 516S00056 (RCPT)
516S00057 (PLUG)



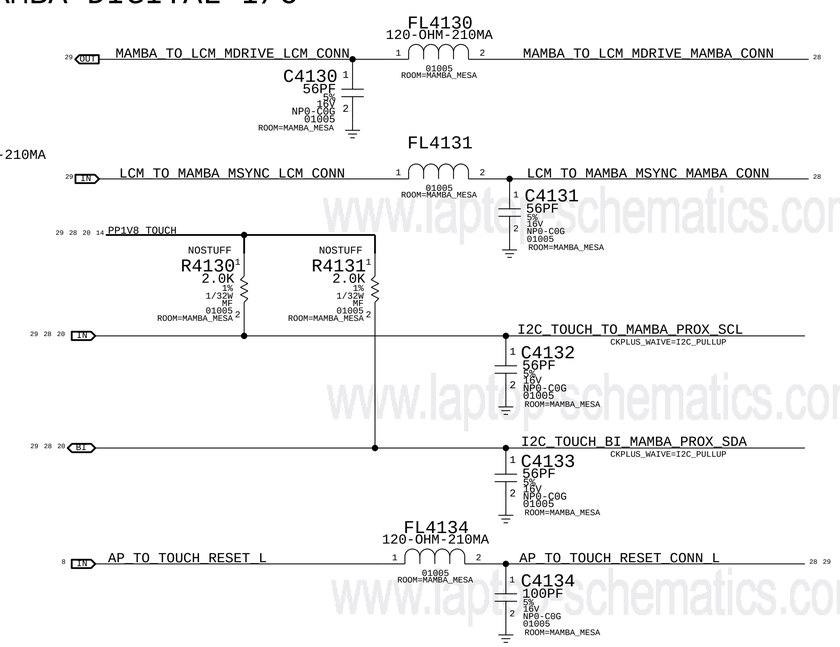
NOTE:PIN8 (MAMBA HARDWARE INTERRUPT) NOT ROUTED TO CUMULUS
BROUGHT TO PROBE POINT FOR ORB HW DEBUG

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 ROOM=KEPLER_B2B
C4201 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=KEPLER_B2B
C4202 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=KEPLER_B2B
C4203 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=KEPLER_B2B
C4204 100PF 5% 16V NP0-C0G 01005 ROOM=KEPLER_B2B

PP1V8 → FL4205 240OHM-350MA → PP1V8_LCM_CONN (VOLTAGE=1.8V)
C4205 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=KEPLER_B2B
C4206 100PF 5% 16V NP0-C0G 01005 ROOM=KEPLER_B2B

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 ROOM=KEPLER_B2B

PP5V7_MESON_AVDDH → FL4208 240OHM-350MA → PP5V7_MESON_AVDDH_CONN (VOLTAGE=5.7V)
C4208 100PF 5% 16V NP0-C0G 01005 ROOM=KEPLER_B2B

PP1V8_TOUCH → FL4209 240OHM-350MA → PP1V8_TOUCH_CONN (VOLTAGE=1.8V)
C4215 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=KEPLER_B2B
C4209 100PF 5% 16V NP0-C0G 01005 ROOM=KEPLER_B2B

PP5V1_TOUCH_VDDH → FL4210 240OHM-350MA → PP5V1_TOUCH_VDDH_CONN (VOLTAGE=5.1V)
C4210 100PF 5% 16V NP0-C0G 01005 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 ROOM=KEPLER_B2B

PP_LCM_BL_CAT1 → FL4212 240OHM-350MA → PP_LCM_BL_CAT1_CONN (VOLTAGE=25V)
C4212 100PF 5% 35V NP0-C0G 01005 ROOM=KEPLER_B2B

PP_LCM_BL_CAT2 → FL4213 240OHM-350MA → PP_LCM_BL_CAT2_CONN (VOLTAGE=25V)
C4213 100PF 5% 35V NP0-C0G 01005 ROOM=KEPLER_B2B

DISPLAY MIPI

CRITICAL L4200 65-OHM-0.1A-0.7-2GHZ TAM0605
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
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
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

DISPLAY EEPROM I2C

I2C2_AP_SDA → NOSTUFF C4223 56PF 5% 16V NP0-C0G 01005 ROOM=KEPLER_B2B
I2C2_AP_SCL → NOSTUFF C4224 56PF 5% 16V NP0-C0G 01005 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 ROOM=KEPLER_B2B

AP_TO_LCM_RESET_L → FL4221 120-OHM-210MA → AP_TO_LCM_RESET_CONN_L
R4220 100K 1% 1/32W MF 01005 ROOM=KEPLER_B2B
C4221 100PF 5% 16V NP0-C0G 01005 ROOM=KEPLER_B2B

PMU_TO_LCM_PANICB → R4222 10 1 1/32W MF 5% 01005 ROOM=KEPLER_B2B → PMU_TO_LCM_PANICB_CONN
C4222 100PF 5% 16V NP0-C0G 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 ROOM=KEPLER_B2B

UART_OWL_TO_TOUCH_TXD → FL4231 120-OHM-210MA → UART_OWL_TO_TOUCH_TXD_CONN
C4231 56PF 5% 16V NP0-C0G 01005 ROOM=KEPLER_B2B

TOUCH_TO_OWL_ACCEL_DATA_REQUEST → FL4232 120-OHM-210MA → TOUCH_TO_OWL_ACCEL_DATA_REQUEST_CONN
C4232 56PF 5% 16V NP0-C0G 01005 ROOM=KEPLER_B2B

PROX TO TOUCH INTERFACE

PP1V8_TOUCH
R4240 100K 1% 1/32W MF 01005 ROOM=KEPLER_B2B
C4240 0.22UF 20% 6.3V X5R 01005-1
U4240 74AUP1G04GX SOT1226 ROOM=KEPLER_B2B CRITICAL
TOUCH_TO_PROX_TX_EN_CONN_L → TOUCH_TO_PROX_TX_EN_BUFF
NC

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 ROOM=KEPLER_B2B

DISPLAY CONNECTOR

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

CRITICAL
J4200 BM28P0.6-44DS-0.35V F-ST-SM ROOM=KEPLER_B2B

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

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 ROOM=KEPLER_B2B

SPI_AP_TO_TOUCH_SCLK → FL4251 120-OHM-210MA → SPI_AP_TO_TOUCH_SCLK_CONN
C4251 56PF 5% 16V NP0-C0G 01005 ROOM=KEPLER_B2B

SPI_AP_TO_TOUCH_MOSI → FL4252 120-OHM-210MA → SPI_AP_TO_TOUCH_MOSI_CONN
C4252 56PF 5% 16V NP0-C0G 01005 ROOM=KEPLER_B2B

SPI_TOUCH_TO_AP_MISO → FL4253 120-OHM-210MA → SPI_TOUCH_TO_AP_MISO_CONN
C4253 56PF 5% 16V NP0-C0G 01005 ROOM=KEPLER_B2B

TOUCH_TO_AP_INT_L → FL4254 120-OHM-210MA → TOUCH_TO_AP_INT_L_CONN
C4254 100PF 5% 16V NP0-C0G 01005 ROOM=KEPLER_B2B

AP_TO_TOUCH_CLK32K_RESET_L → FL4255 120-OHM-210MA → AP_TO_TOUCH_CLK32K_RESET_CONN_L
C4255 100PF 5% 16V NP0-C0G 01005 ROOM=KEPLER_B2B

SYNC_MASTER=N/A SYNC_DATE=N/A
PAGE TITLE: DISPLAY:KEPLER B2B

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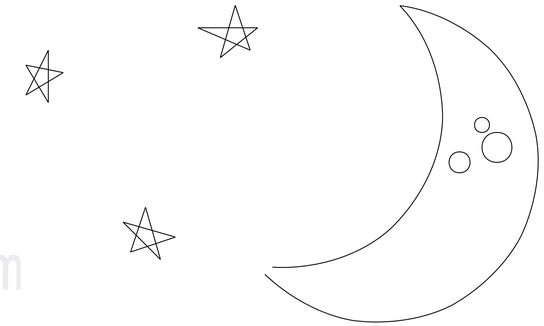
TRISTAR 2 (A3)

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
C4503 1UF 20% 16V CER-X5R 0201 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
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
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
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
PAGE TITLE	I/O:TRISTAR 2
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DOCK FLEX CONNECTOR

AUDIO JACK

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

FL4600 FERR-33-OHM-0.8A-0.09-OHM 0201 ROOM=DOCK_B2B
CODEC_TO_HPHONE_HS3 (23, BI) → CODEC_TO_HPHONE_HS3_CONN (31)
- 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 0201 ROOM=DOCK_B2B
CODEC_TO_HPHONE_HS4 (23, BI) → CODEC_TO_HPHONE_HS4_CONN (31)
- 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 0201 ROOM=DOCK_B2B
CODEC_TO_HPHONE_HS4_REF (23, OUT) → CODEC_TO_HPHONE_HS4_REF_CONN (31)
- DZ4602 6.8V-100PF 01005 ROOM=DOCK_B2B NO_XNET_CONNECTION=1

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

FL4604 FERR-33-OHM-0.8A-0.09-OHM 0201 ROOM=DOCK_B2B
CODEC_TO_HPHONE_L (23, IN) → CODEC_TO_HPHONE_L_CONN (31)
- 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 0201 ROOM=DOCK_B2B
CODEC_TO_HPHONE_R (23, IN) → CODEC_TO_HPHONE_R_CONN (31)
- 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 01005 ROOM=DOCK_B2B
LOWERMIC1_TO_CODEC_AIN1_P (23, OUT) → LOWERMIC1_TO_CODEC_AIN1_CONN_P (31)
- C4610 56PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B

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

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

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

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

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

ANTENNA

PP3V0_TRISTAR (33 30 27 19 15) → FL4620 120-OHM-210MA 01005 ROOM=DOCK_B2B → PP3V0_LAT_CONN (31) VOLTAGE=3.0V
- C4620 100PF 5% 16V NP0-C0G 01005 ROOM=DOCK_B2B

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

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

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

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

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

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

SPEAKER/ARC

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

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

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

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

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

SPEAKERAMP_TO_SPEAKER_OUT_NEG (31 25)
- 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

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

PP5V0_USB (30 17 7) 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
- C4654 NOSTUFF 100PF 5% 35V NP0-C0G 01005 ROOM=DOCK_B2B
- C4653 56PF 5% 25V NP0-C0G-CERM 01005 ROOM=DOCK_B2B
- C4655 220PF 10% 25V X7R-CERM 0201 ROOM=DOCK_B2B
- C4656 DEFAULT_CAPACITOR_220.000000pF_2_1 100PF 5% 25V NP0-C0G 01005 ROOM=DOCK_B2B

TRISTAR

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

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

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

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

ARC_DRIVER_TO_SOLENOID_OUT_NEG (31 26)
- 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

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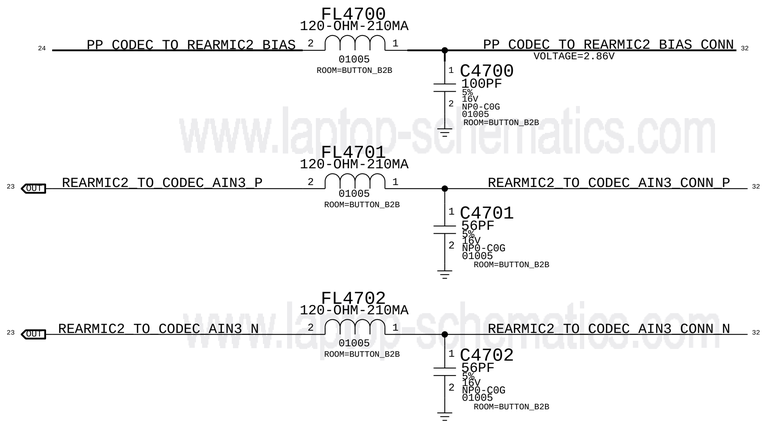
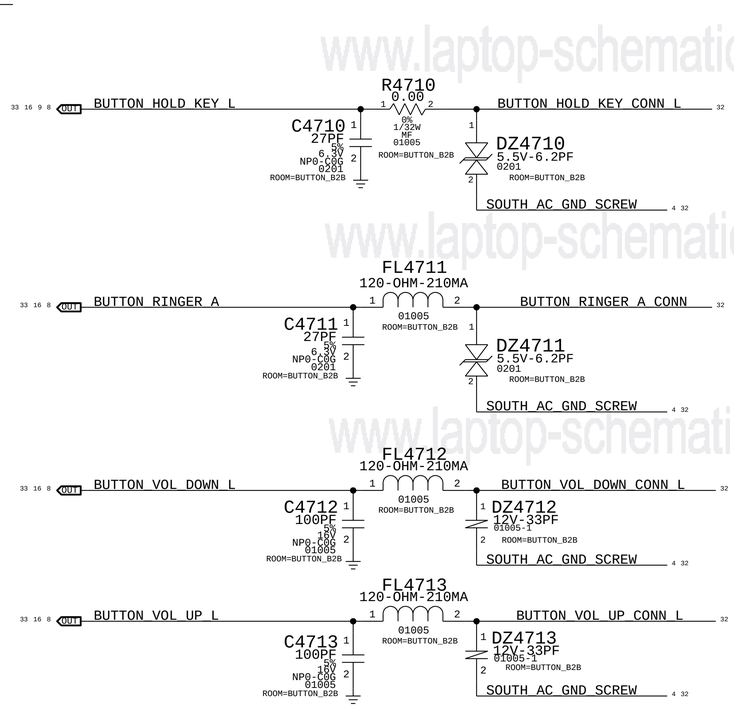
BUTTON FLEX

MIC2
ANC REF MIC

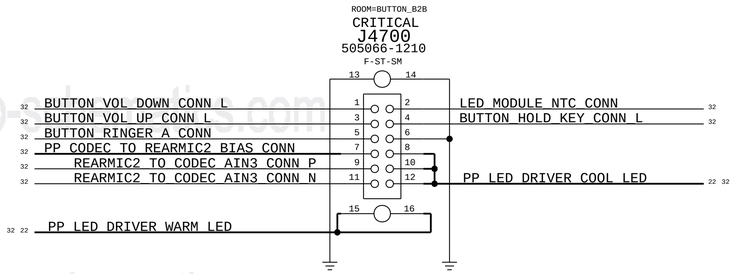


BUTTONS:
HOLD
RINGER
VOL UP/DOWN

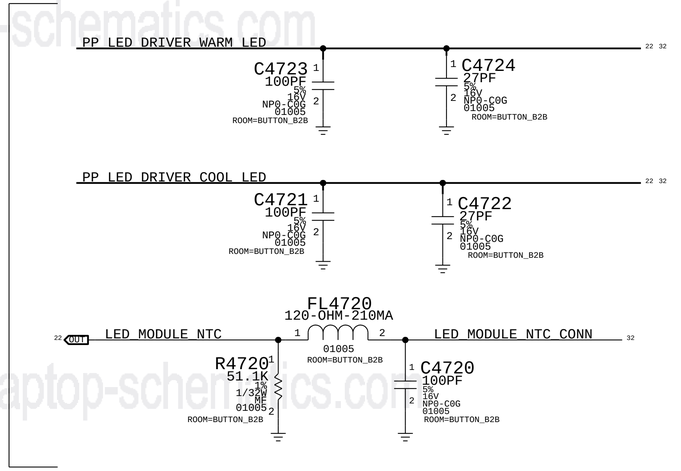


BUTTON FLEX CONNECTOR

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

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BASEBAND, WLAN, BT & STOCKHOLM

I456

RADIO_MLB_MIMO

SHARED POWER

PP_VCC_MAIN
PP3V0_TRISTAR
PP1V8_SDRAM

SUBDESIGN_SUFFIX=RF

BASEBAND

6	IN	PCIE_AP_TO_BB_TXD_P
6	IN	PCIE_AP_TO_BB_TXD_N
6	OUT	PCIE_BB_TO_AP_RXD_P
6	OUT	PCIE_BB_TO_AP_RXD_N
6	IN	PCIE_AP_TO_BB_REFCLK_P
6	IN	PCIE_AP_TO_BB_REFCLK_N
6	IN	PCIE_AP_TO_BB_RESET_L
6	BI	PCIE_BB_BI_AP_CLKREQ_L
16	OUT	BB_TO_PMU_PCIE_HOST_WAKE_L
8	IN	AP_TO_BB_PCIE_DEV_WAKE
8	IN	I2S_AP_TO_BB_LRCLK
8	IN	I2S_AP_TO_BB_BCLK
8	IN	I2S_AP_TO_BB_DOUT
8	OUT	I2S_BB_TO_AP_DIN
8	IN	AP_TO_BB_RADIO_ON_L
16	IN	PMU_TO_BB_PMIC_RESET_L
8	IN	AP_TO_BB_RESET_L
8	OUT	BB_TO_AP_RESET_DETECT_L
27 22	OUT	BB_TO_LED_DRIVER_GSM_BURST_IND
8	IN	AP_TO_BB_MESA_UP_L
8	IN	BB_TO_AP_GPS_TIME_MARK
8	IN	AP_TO_BB_COREDUMP
8	IN	BB_IPC_GPIO
29 9 8	IN	LCM_TO_OWL_BSYNC
9	IN	UART_OWL_TO_BB_TXD
9	OUT	UART_BB_TO_OWL_RXD
30	BI	USB_BB_DATA_P
30	BI	USB_BB_DATA_N
16	IN	PMU_TO_BB_USB_VBUS_DETECT
13 9	IN	SWD_AP_PERIPHERAL_SWCLK
9	BI	SWD_AP_BI_BB_SWDIO
31	OUT	RFFE5_BB_TO_ANT_SCLK
31	BI	RFFE5_BB_TO_ANT_DATA
31	OUT	BB_LAT_GPIO1
16	OUT	BB_TO_PMU_AMUX_LDO11_SIM1
16	OUT	BB_TO_PMU_AMUX_SMPS1
16	OUT	BB_TO_PMU_AMUX_SMPS3
16	OUT	BB_TO_PMU_AMUX_SMPS4
4	OUT	50_AP_UAT_FEED
4	OUT	50_AP_WIFI_5G_CONN_ANT
4	OUT	AP_TO_STOCKHOLM_ANT
21 20 17 14 13 12 9 8 7 6 5 3 29	IN	PP1V8
8 3	IN	DFU_STATUS
8 3	OUT	FORCE_DFU
		NC_PMU_AMUX_AY
		NC_PMU_AMUX_BY
16 9 5 3	OUT	PMU_TO_SYSTEM_COLD_RESET_L
27 16 9	BI	I2C0_AP_SCL
27 16 9	BI	I2C0_AP_SDA
30 26 25 17 9	BI	I2C1_AP_SCL
30 26 25 17 9	BI	I2C1_AP_SDA
32 16 9 8	OUT	BUTTON_HOLD_KEY_L
28 16 9 8	OUT	BUTTON_MENU_KEY_L
32 16 8	OUT	BUTTON_RINGER_A
32 16 8	OUT	BUTTON_VOL_DOWN_L
32 16 8	OUT	BUTTON_VOL_UP_L
		NC_PMU_GPIO20
		NC_PMU_GPIO21
30 8	IN	UART_AP_DEBUG_TXD
30 8	OUT	UART_AP_DEBUG_RXD
		NC_AP_RESERVED2

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

PCIE0_AP_TO_BB_TX_P	
PCIE0_AP_TO_BB_TX_N	
PCIE0_BB_TO_AP_TX_P	
PCIE0_BB_TO_AP_TX_N	
PCIE0_AP_TO_BB_REFCLK_P	
PCIE0_AP_TO_BB_REFCLK_N	
PCIE0_AP_TO_BB_PERST_L	
PCIE0_AP_TO_BB_CLKREQ_L	
PCIE0_BB_TO_PMU_HOST_WAKE_L	
PCIE0_AP_TO_BB_DEV_WAKE	
I2S_AP_TO_BB_WS	
I2S_AP_TO_BB_CLK	
I2S_AP_TO_BB_TX	
I2S_BB_TO_AP_TX	
AP_TO_BBPMU_RADIO_ON_L	
PMU_TO_BBPMU_RESET_L	
AP_TO_BB_RST_L	
BB_TO_AP_RESET_DET_L	
BB_TO_AP_GSM_TXBURST_IND	
AP_TO_BB_MESA_ON_L	
BB_TO_AP_GPS_TIME_MARK	
AP_TO_BB_COREDUMP_TRIG	
AP_TO_BB_IPC_GPIO	
TOUCH_TO_BBPMU_FORCE_PWM	
UART0_OWL_TO_BB_TX	
UART0_BB_TO_OWL_TX	
USB_BB_P	
USB_BB_N	
USB_BB_VBUS_DETECT	
SWD_CLK_BB_JTAG_TCK	
SWD_IO_BB_JTAG_TMS	
75_RFFE5_SCLK_BB	
75_RFFE5_SDATA_BB	
RFFE_BUFFER_LAT_GPIO1	
BB_TO_PMU_AMUX_LDO11_SIM1	
BB_TO_PMU_AMUX_SMPS1	
BB_TO_PMU_AMUX_SMPS3	
BB_TO_PMU_AMUX_SMPS4	

ANT

50_UPPER_ANT_FEED	
50_WIFI_5G_CONN_ANT	
STOCKHOLM_ANT	

AP DEBUG

PP1V8	
DFU_STATUS	
FORCE_DFU	
PMU_AMUX_AY	
PMU_AMUX_BY	
PMU_TO_SYSTEM_COLD_RESET_L	
I2C0_AP_SCL	
I2C0_AP_SDA	
I2C1_AP_SCL	
I2C1_AP_SDA	
BUTTON_HOLD_KEY_L	
BUTTON_MENU_KEY_L	
BUTTON_RINGER_A	
BUTTON_VOL_DOWN_L	
BUTTON_VOL_UP_L	
PMU_GPIO20	
PMU_GPIO21	
AP_RESERVED0	
AP_RESERVED1	
AP_RESERVED2	

WLAN

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

BLUETOOTH

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

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

PAGE TITLE: BASEBAND:RADIO SYMBOL

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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.

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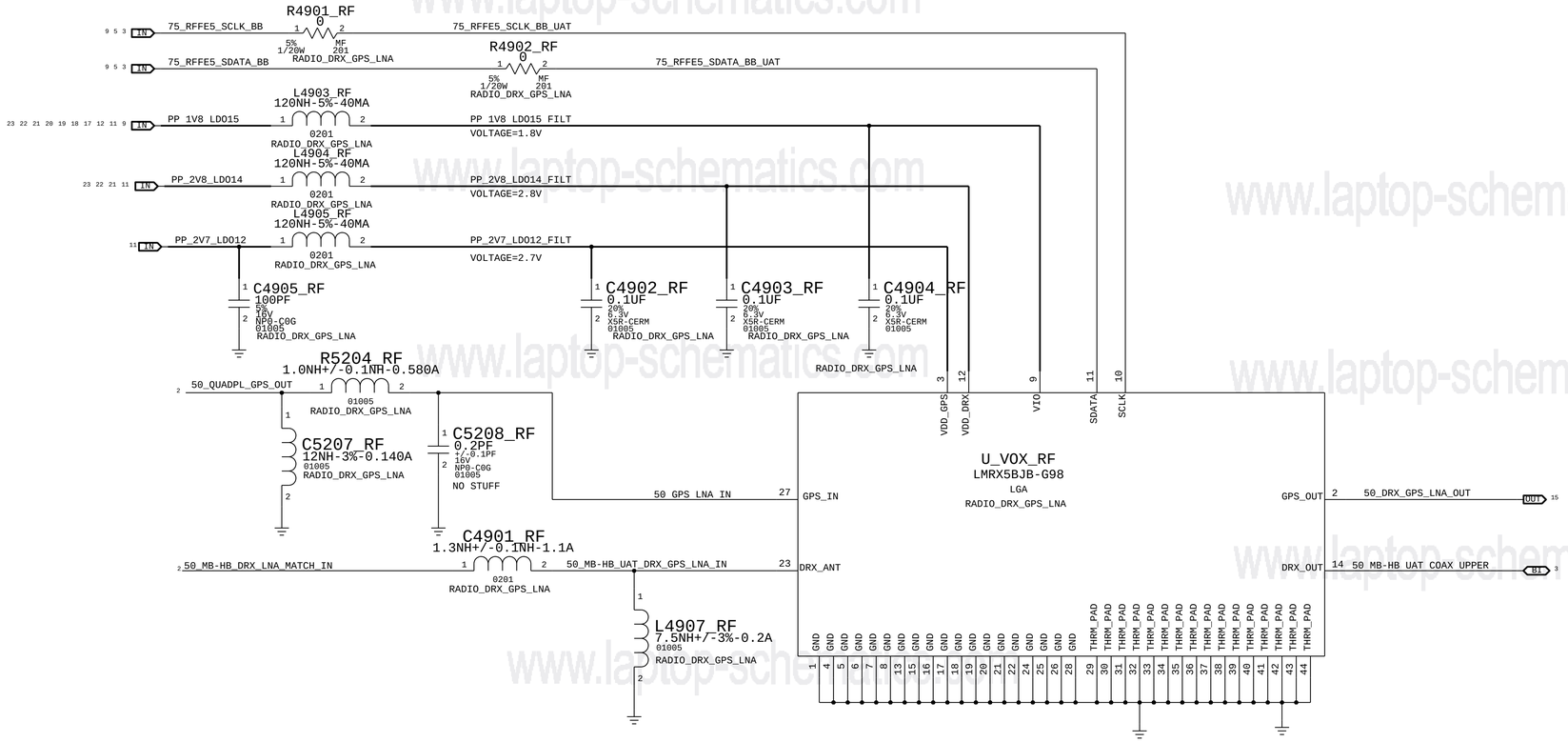
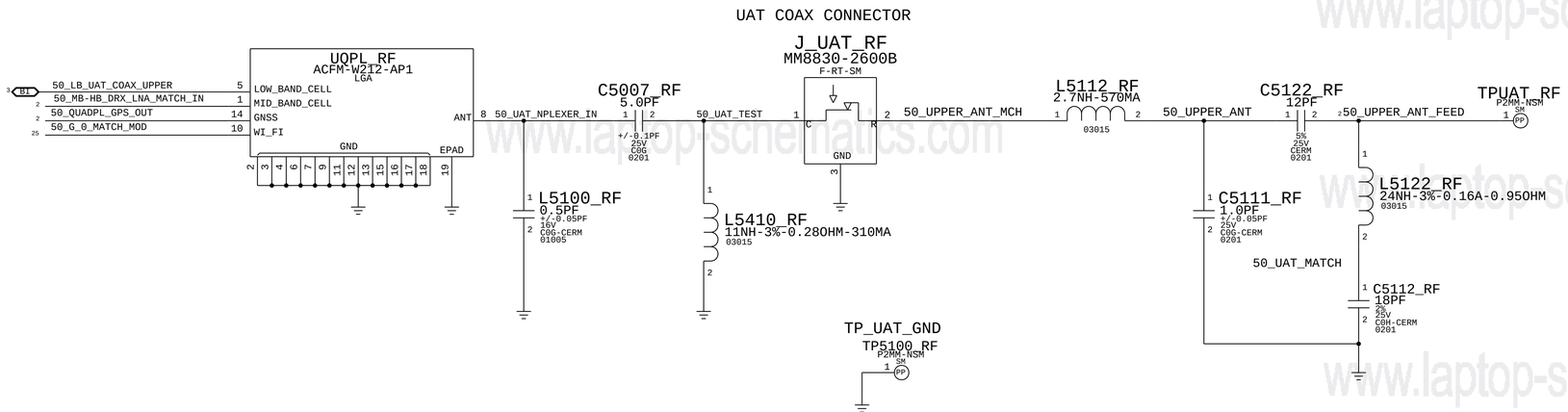
N71-SPECIFIC RADIO PAGE 2

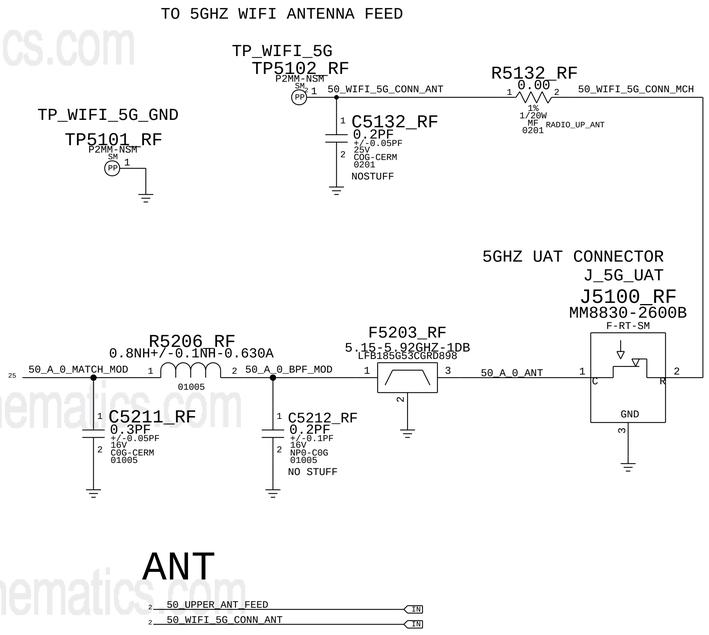
DIVERSITY LNA



UAT ANT FEED



WIFI ANT FEED



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PAGE TITLE: ELNA & UAT ANT FEED

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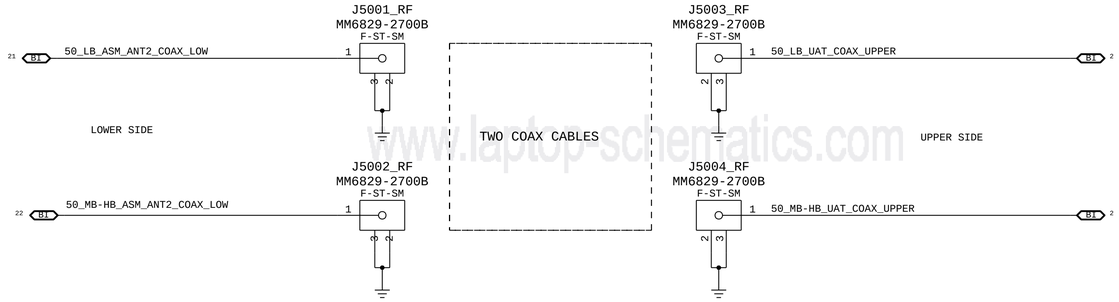
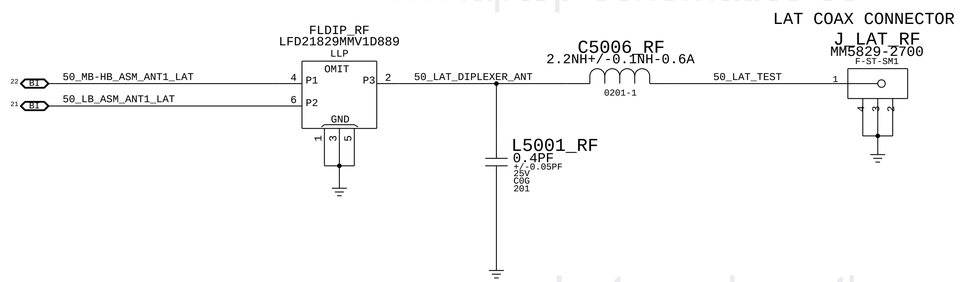
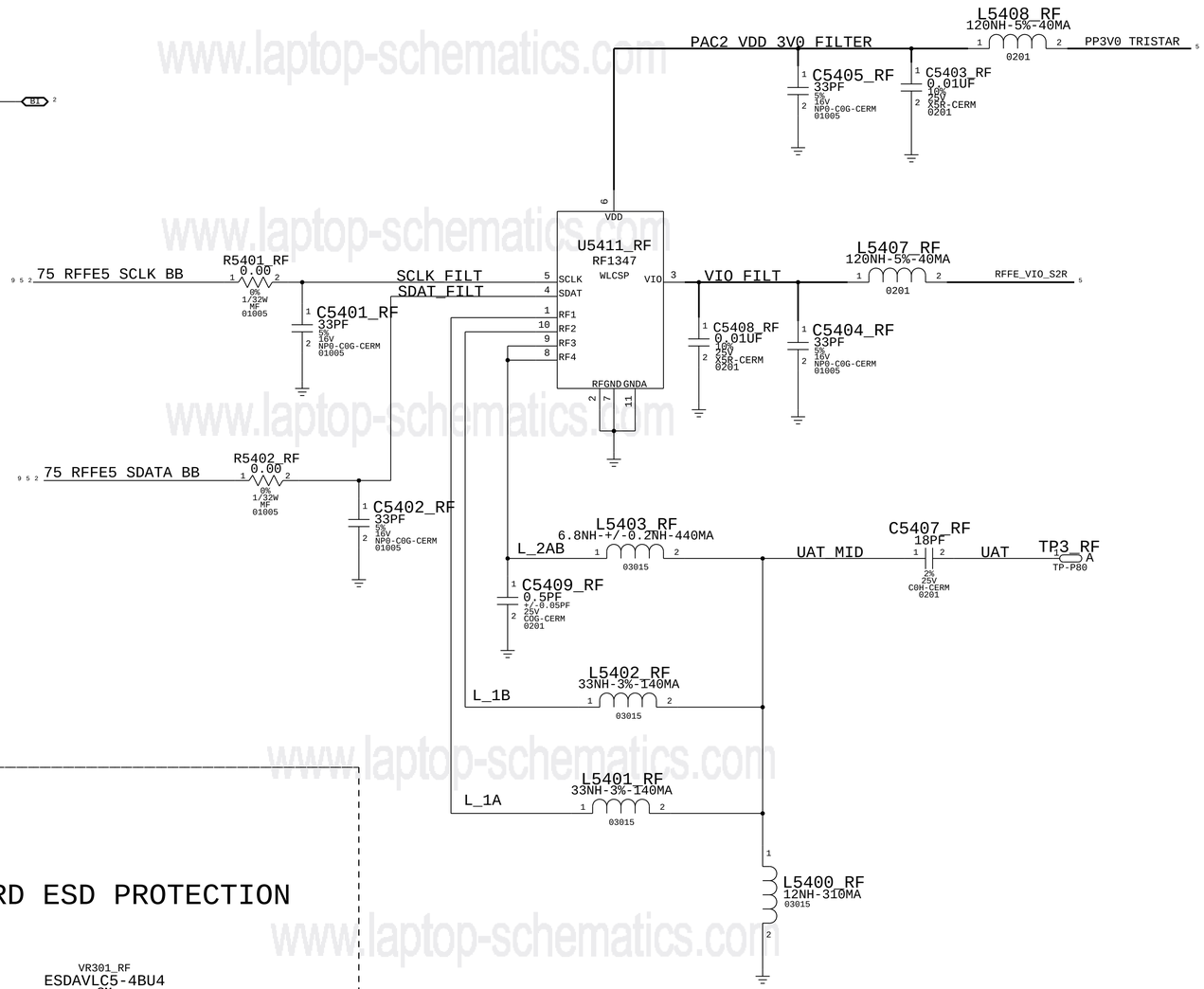
ANTENNA FEEDS AND CONNECTORS

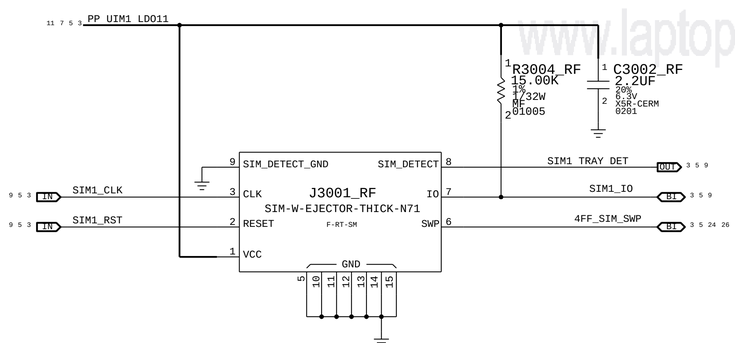




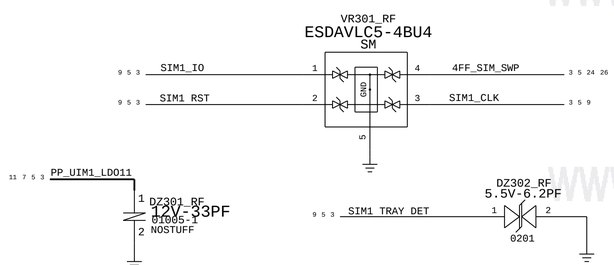
UAT TUNER



SIM CARD CONNECTOR



SIM CARD ESD PROTECTION



PAGE TITLE
FE: ANT CONNECTORS AND UAT TUNER

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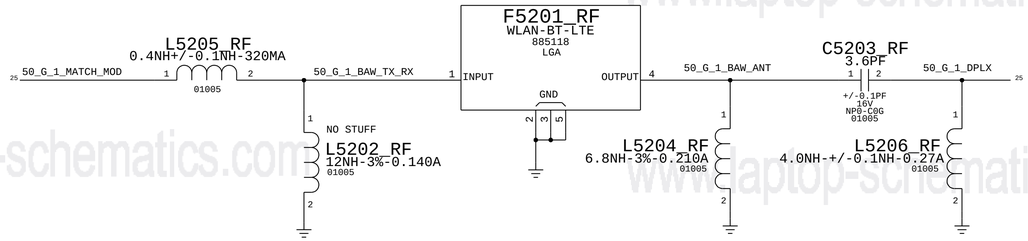
N71-SPECIFIC RADIO PAGE 4

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 — OUT (SINGLE_NODENET)
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

24 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) — OMIT
PCIE0_AP_TO_BB_PERST_L — 5 9

PP3074_RF (P2MM-NSM SM 1, PP) — OMIT RADIO_DEBUG
PCIE0_BB_TO_PMU_HOST_WAKE_L — 5 9

PP3075_RF (P2MM-NSM SM 1, PP) — OMIT
PCIE0_AP_TO_BB_CLKREQ_L — 5 9

PP3076_RF (P2MM-NSM SM 1, PP) — OMIT RADIO_DEBUG
PCIE0_AP_TO_BB_DEV_WAKE — 5 9

PP3080_RF (P2MM-NSM SM 1, PP) — OMIT RADIO_DEBUG
PCIE0_AP_TO_BB_REFCLK_P — 5 8

PP3081_RF (P2MM-NSM SM 1, PP) — OMIT RADIO_DEBUG
PCIE0_AP_TO_BB_REFCLK_N — 5 8

PP3084_RF (P2MM-NSM SM 1, PP) — OMIT RADIO_DEBUG
PCIE0_AP_TO_BB_TX_P — 5 8

PP3085_RF (P2MM-NSM SM 1, PP) — OMIT RADIO_DEBUG
PCIE0_AP_TO_BB_TX_N — 5 8

PP3090_RF (P2MM-NSM SM 1, PP) — OMIT RADIO_DEBUG
BB_JTAG_SRST_L — 8

PP3091_RF (P2MM-NSM SM 1, PP) — OMIT RADIO_DEBUG
SWD_IO_BB_JTAG_TMS — 5 8

PMU

PP3032_RF (P2MM-NSM SM 1, PP) — OMIT
PMIC_RESOUT_L — 8 10

PP3033_RF (P2MM-NSM SM 1, PP) — OMIT
50_SLEEP_CLK_32K — 8 10

PP3034_RF (P2MM-NSM SM 1, PP) — OMIT
XO_OUT_D0_EN — 8 10

PP3036_RF (P2MM-NSM SM 1, PP) — OMIT RADIO_DEBUG
SPMI_CLK — 8 10

PP3037_RF (P2MM-NSM SM 1, PP) — OMIT RADIO_DEBUG
SPMI_DATA — 8 10

BASEBAND

PP3017_RF (P2MM-NSM SM 1, PP) — OMIT
BB_DEBUG_ERROR — 9

PP3018_RF (P2MM-NSM SM 1, PP) — OMIT
50_MDM_PCIE_CLK — 8 10

PP3019_RF (P2MM-NSM SM 1, PP) — OMIT
50_BBPMU_TO_STOCKHOLM_19P2M_CLK — 10 26

PP3006_RF (P2MM-NSM SM 1, PP) — OMIT
STOCKHOLM_TO_BBPMU_CLK_REQ — 10 26

PP3008_RF (P2MM-NSM SM 1, PP) — OMIT RADIO_DEBUG
I2S_AP_TO_BB_WS — 5 9

PP3009_RF (P2MM-NSM SM 1, PP) — OMIT RADIO_DEBUG
I2S_AP_TO_BB_CLK — 5 9

PP3010_RF (P2MM-NSM SM 1, PP) — OMIT RADIO_DEBUG
I2S_AP_TO_BB_TX — 5 9

PP3011_RF (P2MM-NSM SM 1, PP) — OMIT RADIO_DEBUG
I2S_BB_TO_AP_TX — 5 9

PP3012_RF (P2MM-NSM SM 1, PP) — OMIT RADIO_DEBUG
AP_TO_BB_MESA_ON_L — 5 9

PP3013_RF (P2MM-NSM SM 1, PP) — OMIT
BB_TO_AP_GSM_TXBURST_IND — 5 9
RADIO_DEBUG

PP3014_RF (P2MM-NSM SM 1, PP) — OMIT RADIO_DEBUG
BB_TO_AP_GPS_TIME_MARK — 5 9

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

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

ANT TUNER

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

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

RFFE

PP3056_RF (P2MM-NSM SM 1, PP) — OMIT RADIO_DEBUG
75_RFFE1_SDATA_BB — 9 16

PP3077_RF (P2MM-NSM SM 1, PP) — OMIT RADIO_DEBUG
75_RFFE4_SDATA_BB — 9 12

PP3051_RF (P2MM-NSM SM 1, PP) — OMIT RADIO_DEBUG
75_RFFE5_SCLK_BB_BUFFER — 9

PP3052_RF (P2MM-NSM SM 1, PP) — OMIT
75_RFFE5_SDATA_BB_BUFFER — 9

PP3053_RF (P2MM-NSM SM 1, PP) — OMIT RADIO_DEBUG
75_RFFE2_SDATA_BB — 9 17 18 19 20 21 22

PP3054_RF (P2MM-NSM SM 1, PP) — OMIT
75_RFFE3_SDATA_BB — 9 23

STOCKHOLM

PP3062_RF (P2MM-NSM SM 1, PP) — OMIT
STOCKHOLM_DWPM_DBG — 26

PP3063_RF (P2MM-NSM SM 1, PP) — OMIT
STOCKHOLM_DWPS_DBG — 26

PP3064_RF (P2MM-NSM SM 1, PP) — OMIT
UART3_AP_TO_STOCKHOLM_TXD — 5 26

PP3065_RF (P2MM-NSM SM 1, PP) — OMIT
UART3_STOCKHOLM_TO_AP_TXD — 5 26

PP3066_RF (P2MM-NSM SM 1, PP) — OMIT
UART3_AP_TO_STOCKHOLM_RTS_L — 5 26

PP3067_RF (P2MM-NSM SM 1, PP) — OMIT
UART3_STOCKHOLM_TO_AP_RTS_L — 5 26

ESD CAPS

10 5 PMU_TO_BBPMU_RESET_L
SIM2_RESET
C5101_RF 100PF 20% 16V NP0-C0G 01005 (1, 2)
C3503_RF 100PF 20% 16V NP0-C0G 01005 (1, 2)

DEBUG CONNECTOR

NOSTUFF
J3000_RF
AXE550124
F-ST-SM

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

SIM1_CLK — 3 9
SIM1_RST — 3 9

PAGE TITLE: DEBUG CONN & TEST POINTS

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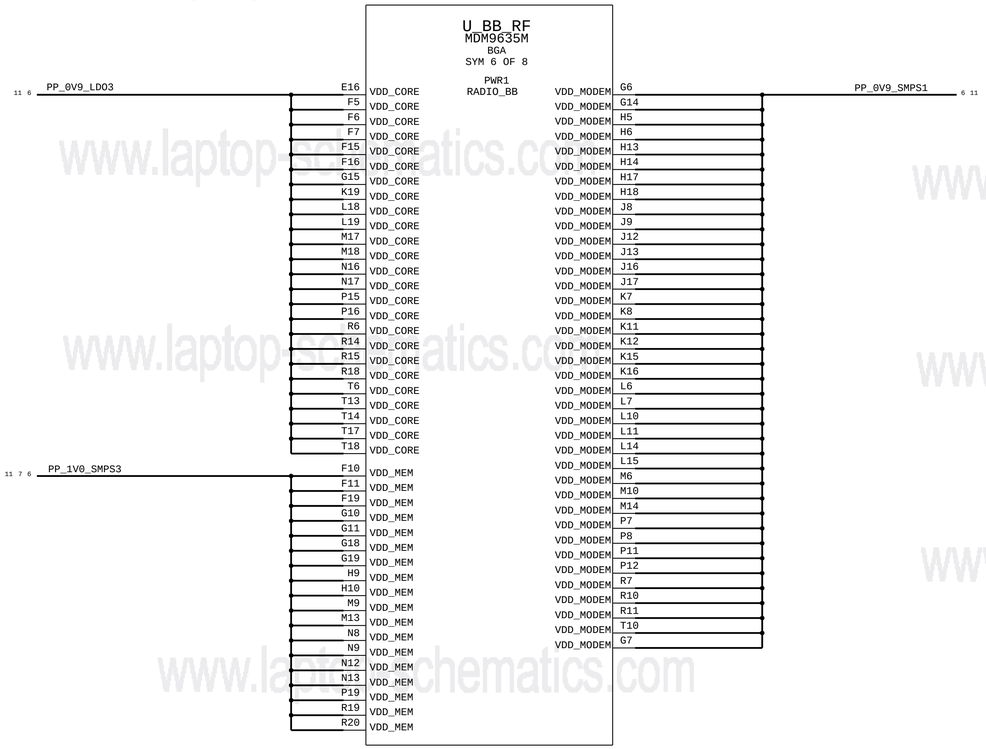
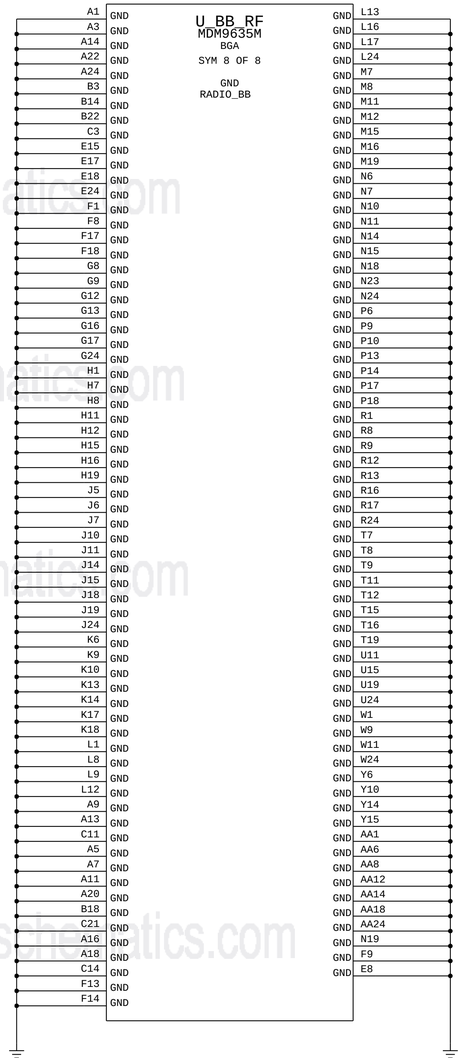
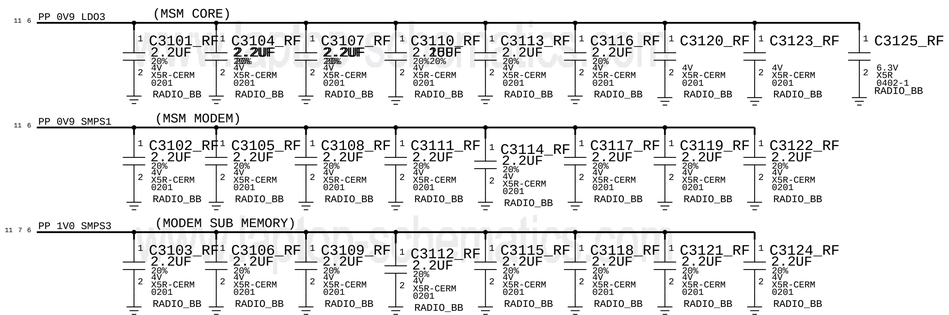
BASEBAND: POWER 1







PAGE TITLE
CELLULAR BASEBAND: POWER1

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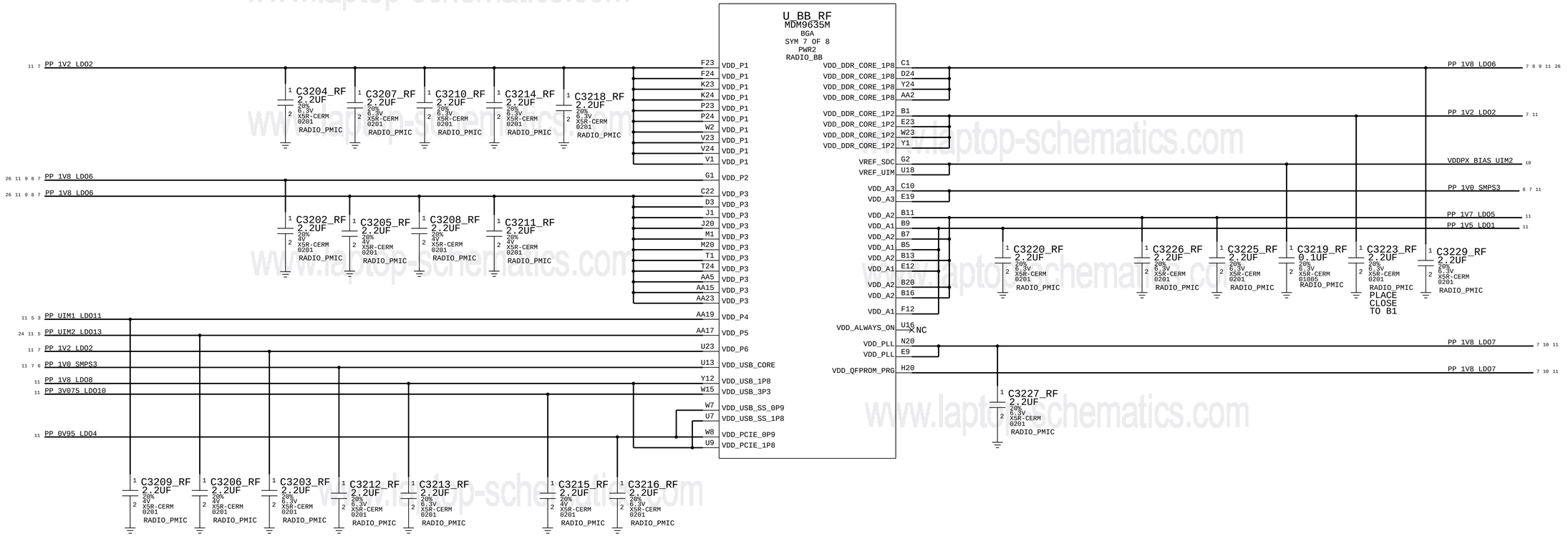
BASEBAND: POWER 2



PAGE TITLE: CELLULAR BASEBAND: POWER2

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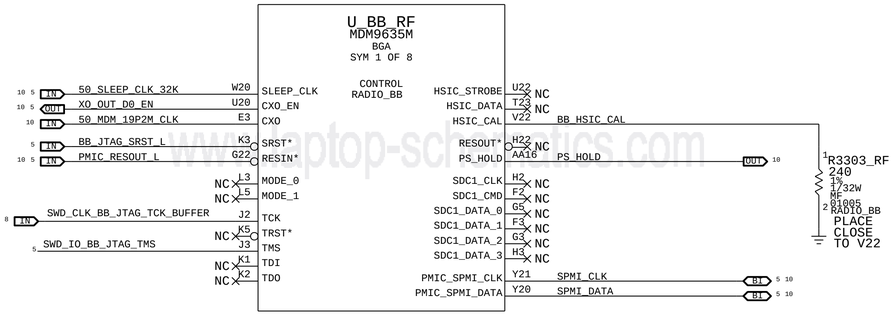
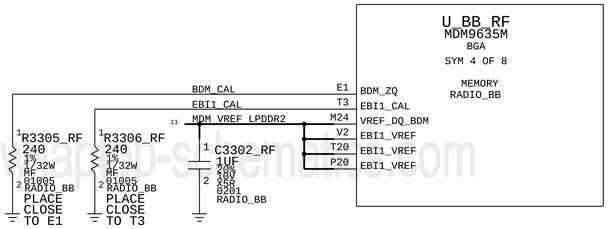
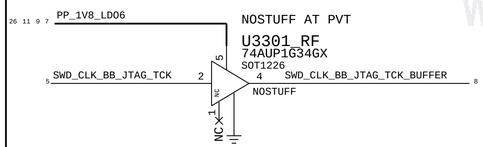
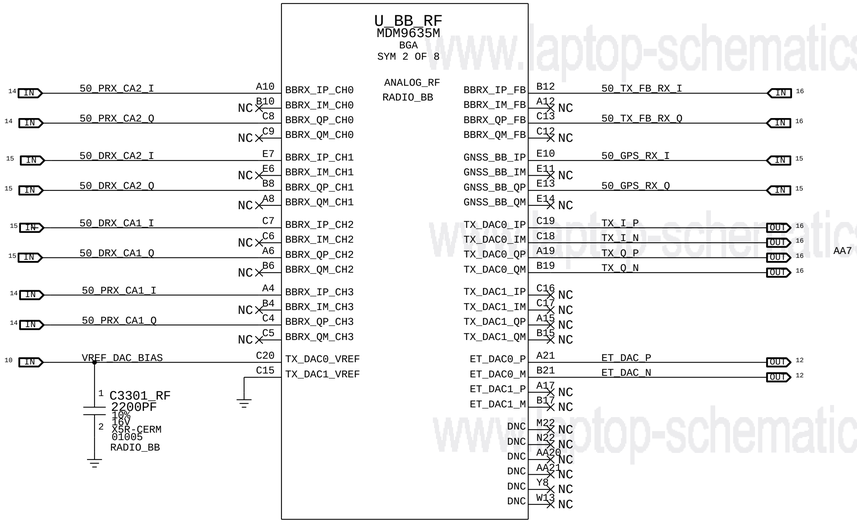
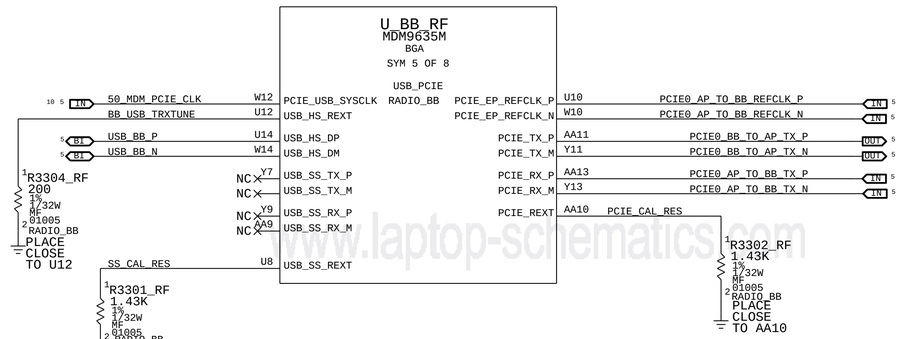
BASEBAND: CONTROL AND INTERFACES











PAGE TITLE
CELLULAR BASEBAND: CONTROL AND INTERFACES

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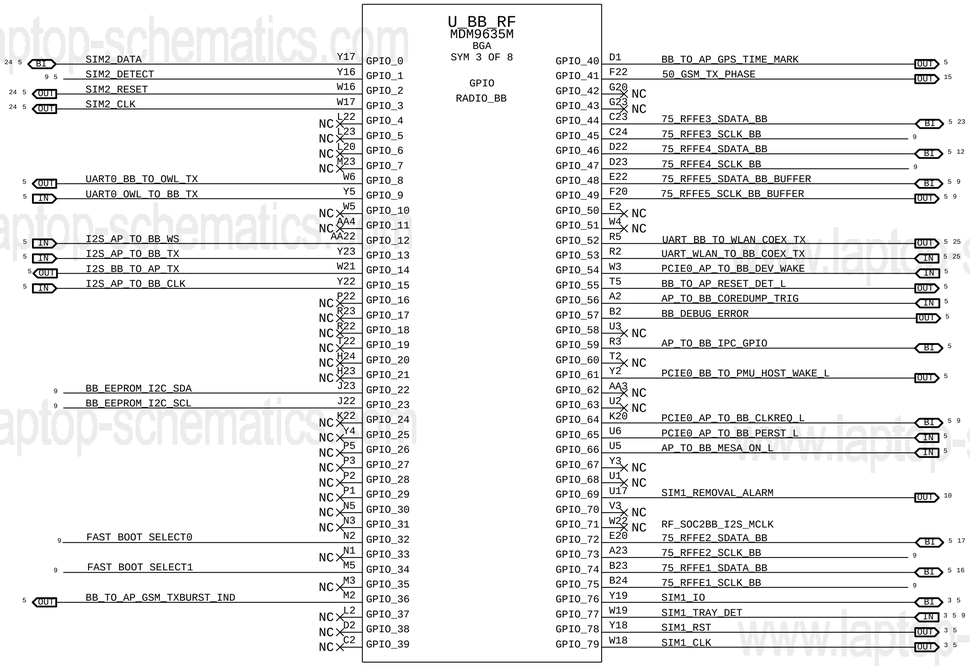
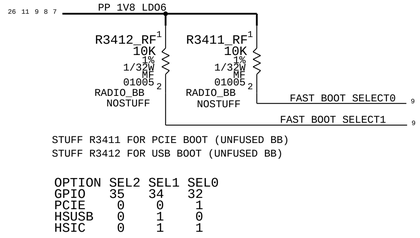
BASEBAND: GPIOS

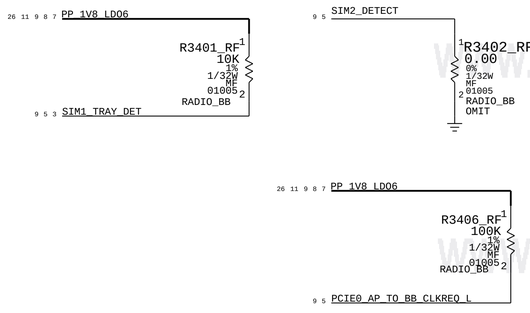




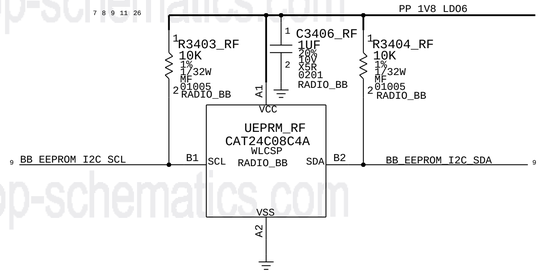
STUFF R3411 FOR PCIE BOOT (UNFUSED BB)
STUFF R3412 FOR USB BOOT (UNFUSED BB)

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

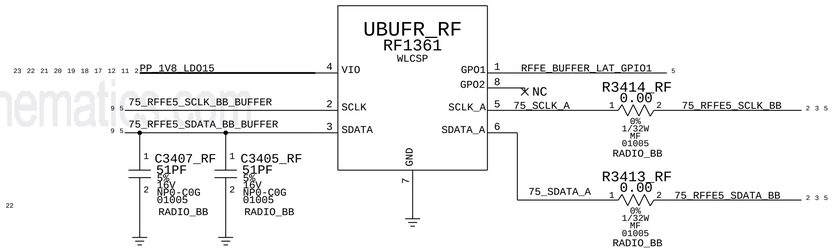


BB EEPROM



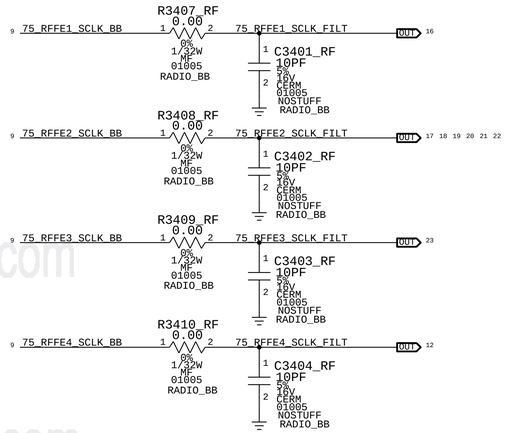
PCIE PULL-UPS TO BB RAIL

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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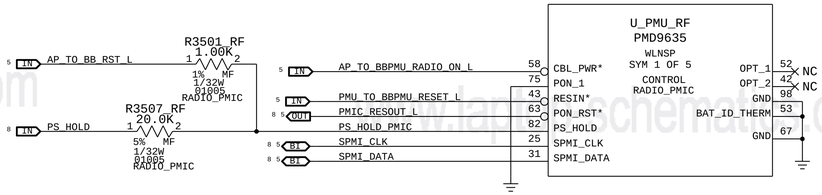
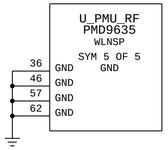
PMU: CONTROL AND CLOCKS

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

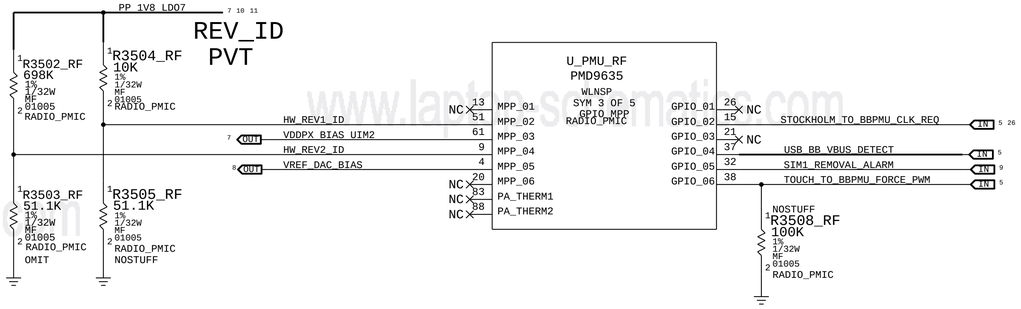
HW_REV_ID	R3504	R3505	REVISION
0.10V	887K	51.1K	DEV1
0.30V	255K	51.1K	DEV2
0.50V	124K	51.1K	DEV3
0.70V	82.5K	51.1K	DEV4/PROTOMLB1
0.90V	51.1K	51.1K	PROTOMLB2
1.10V	31.6K	51.1K	DEV5/PROTO1
1.20V	50K	100K	PROTO2
1.31V	39K	105K	EVT
1.43V	13.3K	51.1K	EVT ALT
1.55V	8.25K	51.1K	CARRIER BUILD
1.67V	3.92K	51.1K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

RESET AND CONTROL: PMU

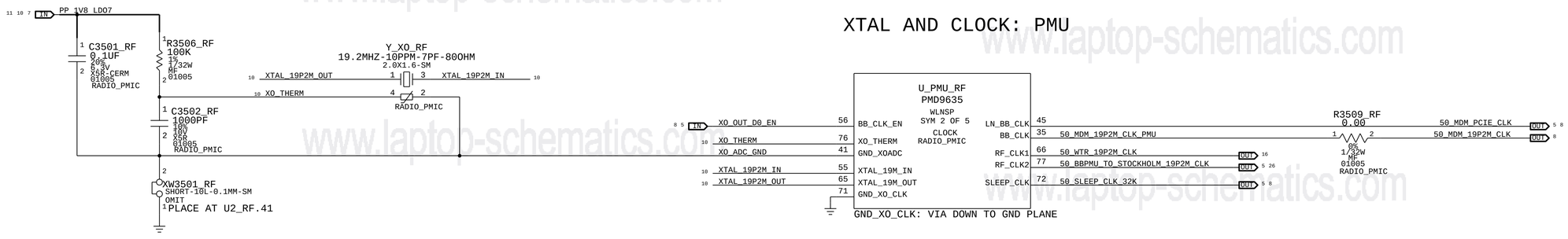




MPPS AND GPIOS: PMU



XTAL AND CLOCK: PMU



PAGE TITLE
CELLULAR PMU: CONTROL AND CLOCKS

Apple Inc.

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PMU: SWITCHERS AND LDOS

SWITCHERS BULK CAPS

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PAGE TITLE
CELLULAR PMU: SWITCHERS AND LDOS

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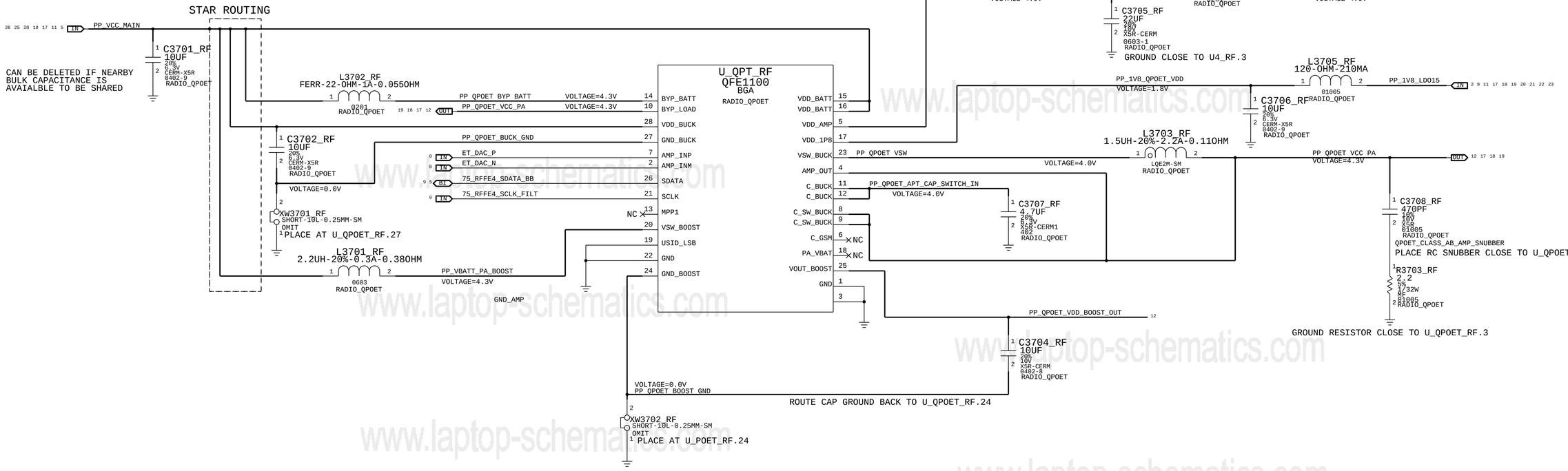
BRANCH

PMU: ET MODULATOR



PAGE TITLE
CELLULAR PMU: ET MODULATOR

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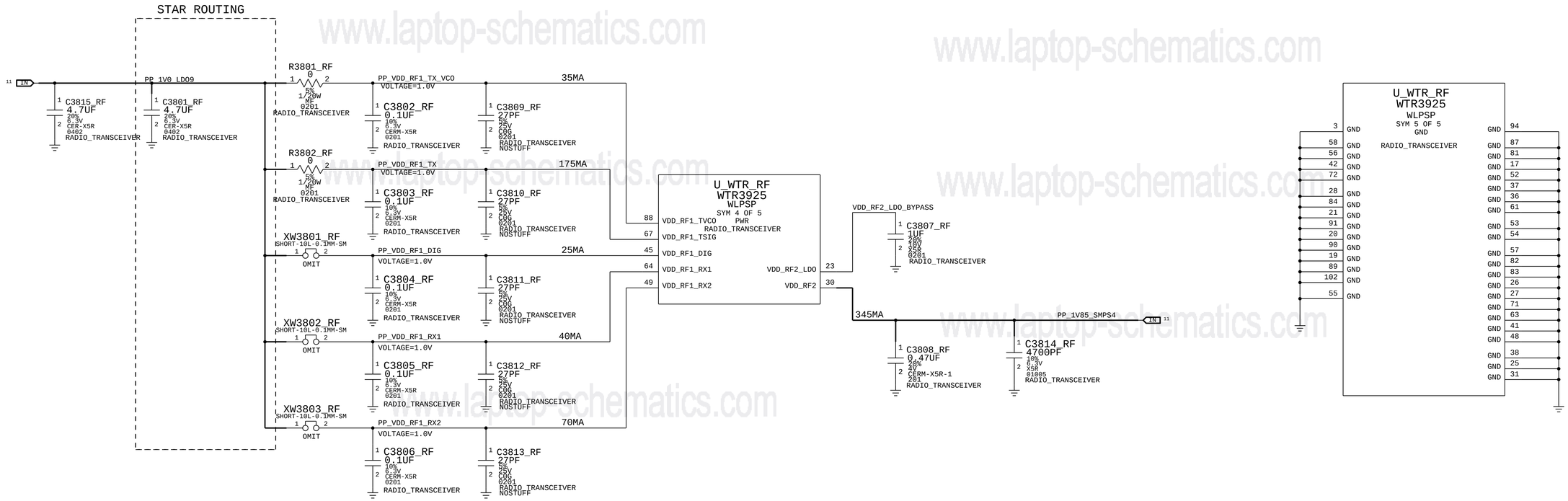
TRANSCEIVER: POWER



PAGE TITLE: CELLULAR TRANSCEIVER: POWER

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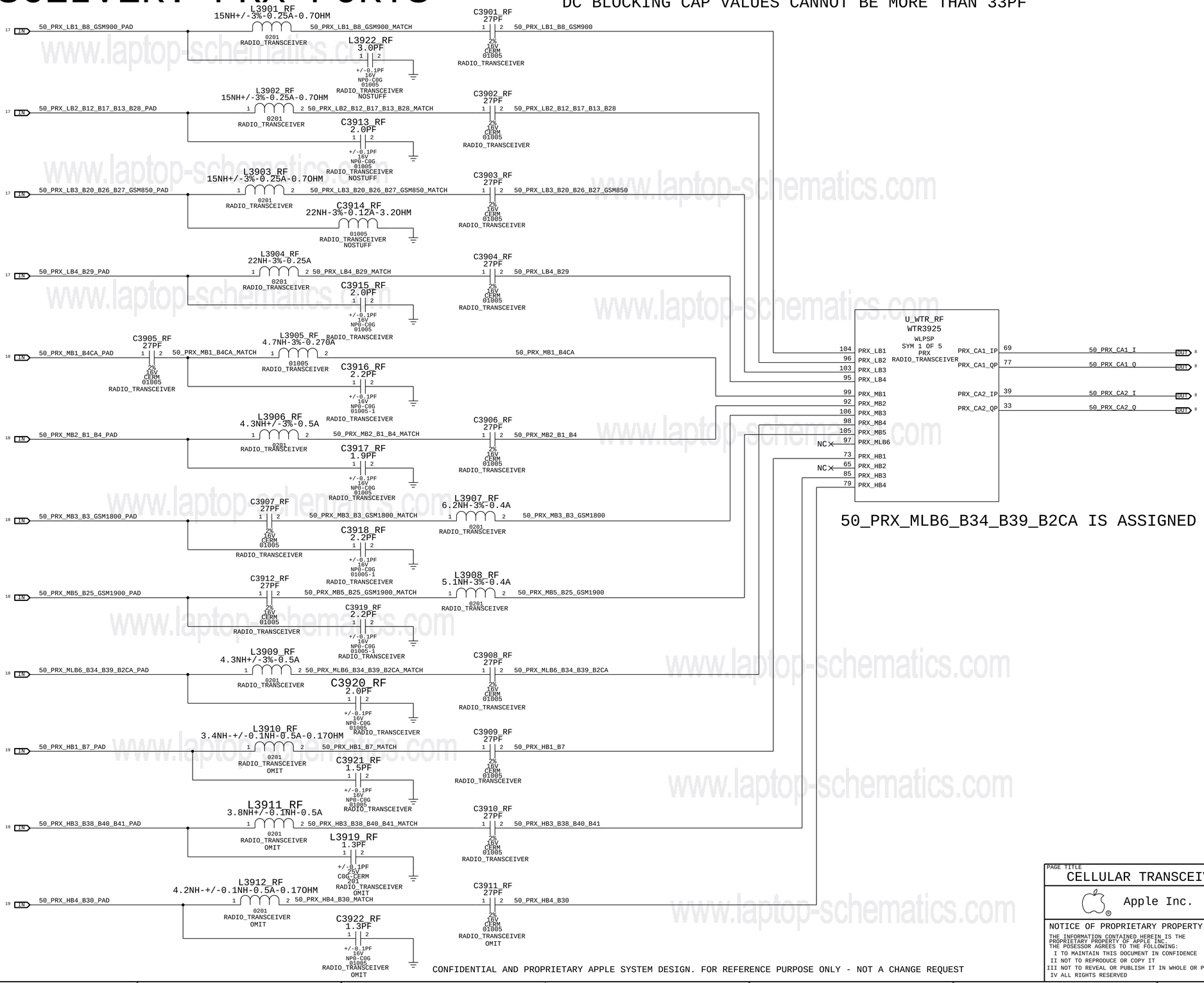
TRANSCEIVER: PRX PORTS

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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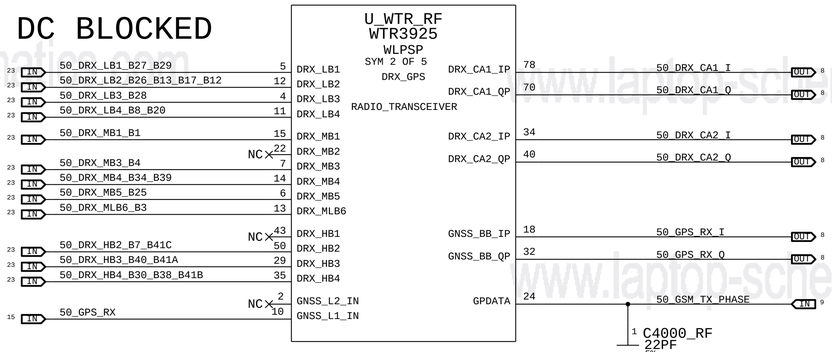
TRANSCEIVER: DRX/GPS PORTS

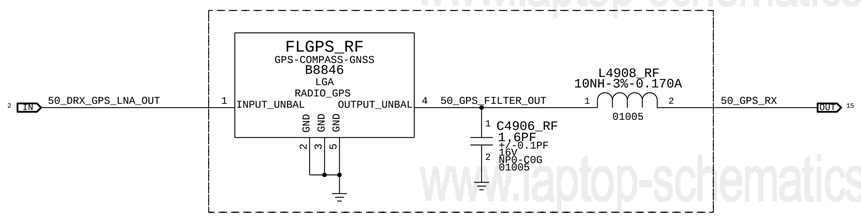
DRX MODULE PORTS ARE DC BLOCKED



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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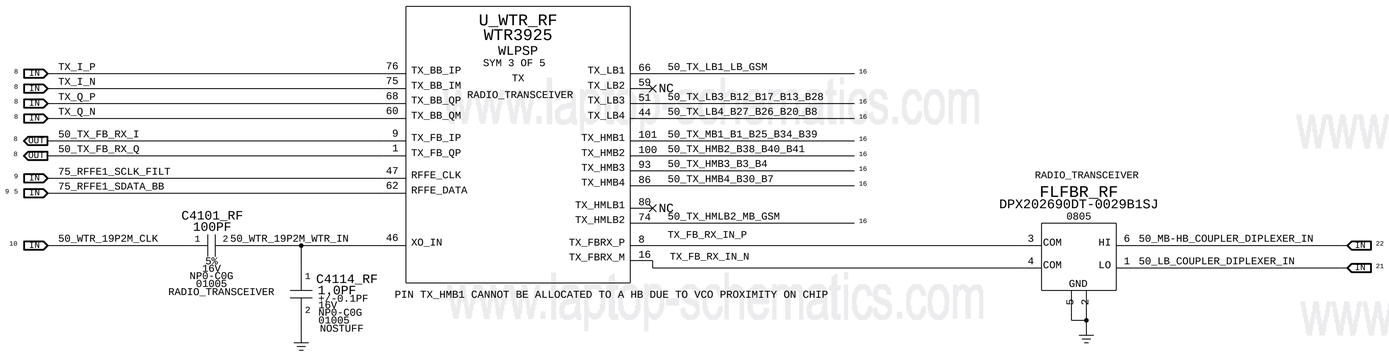
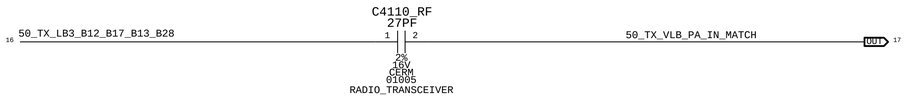
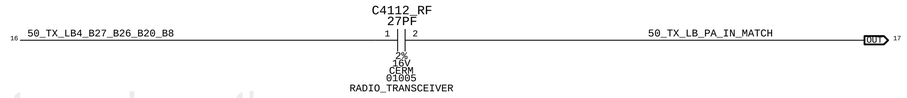
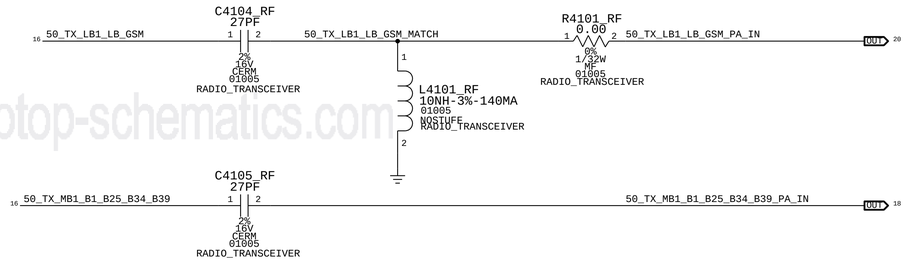
TRANSCEIVER: TX PORTS

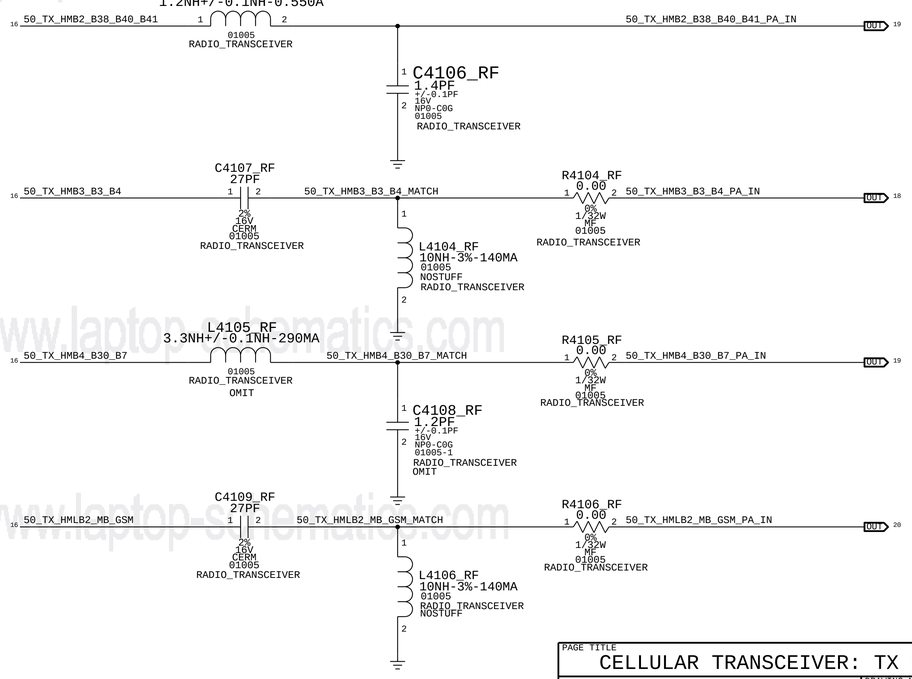
B12/13 TX INTERSTAGE FILTER REMOVED











PAGE TITLE	CELLULAR TRANSCEIVER: TX PORTS
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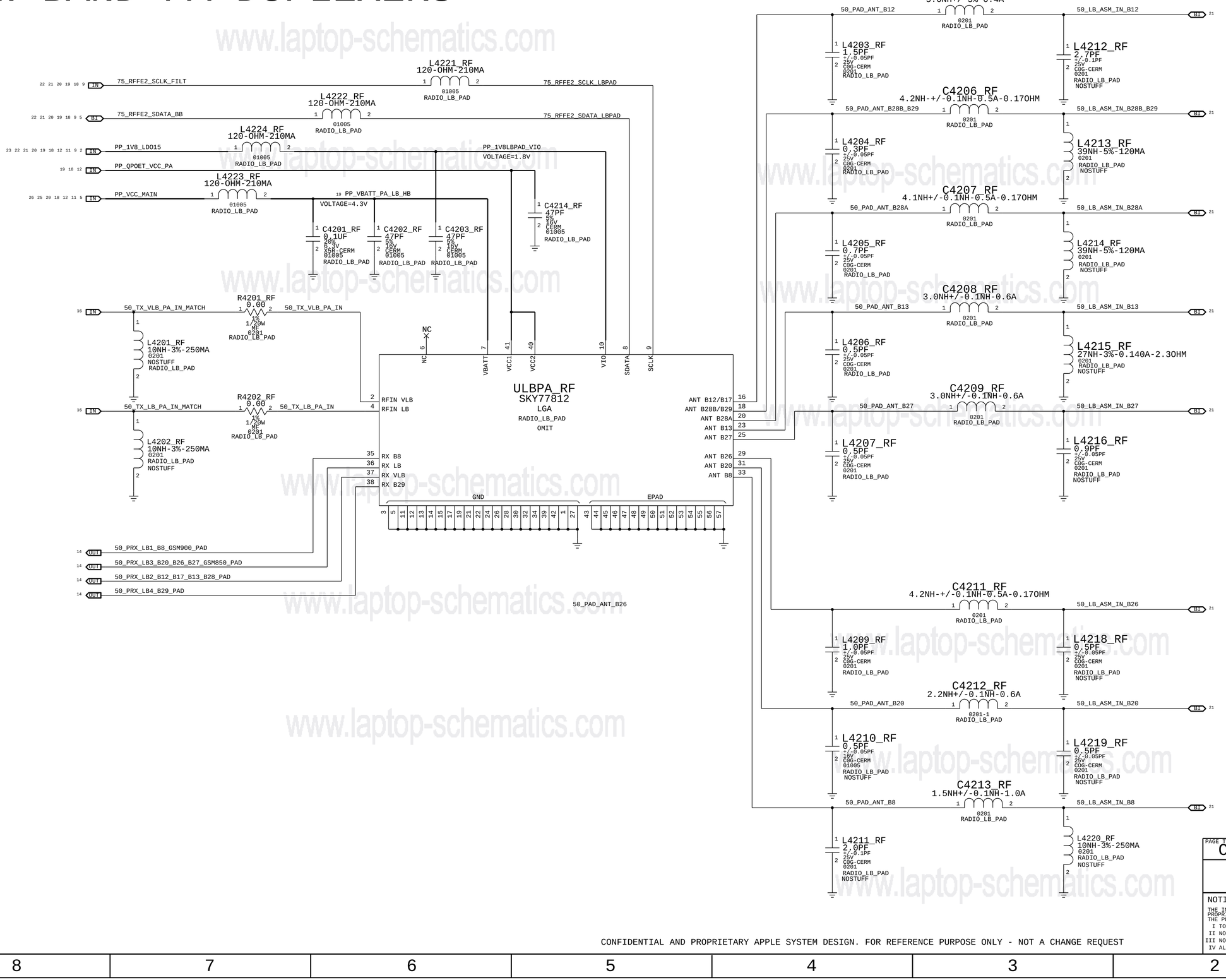
LOW BAND PA+DUPLEXERS



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PAGE TITLE
CELLULAR FRONT END: LB PAD

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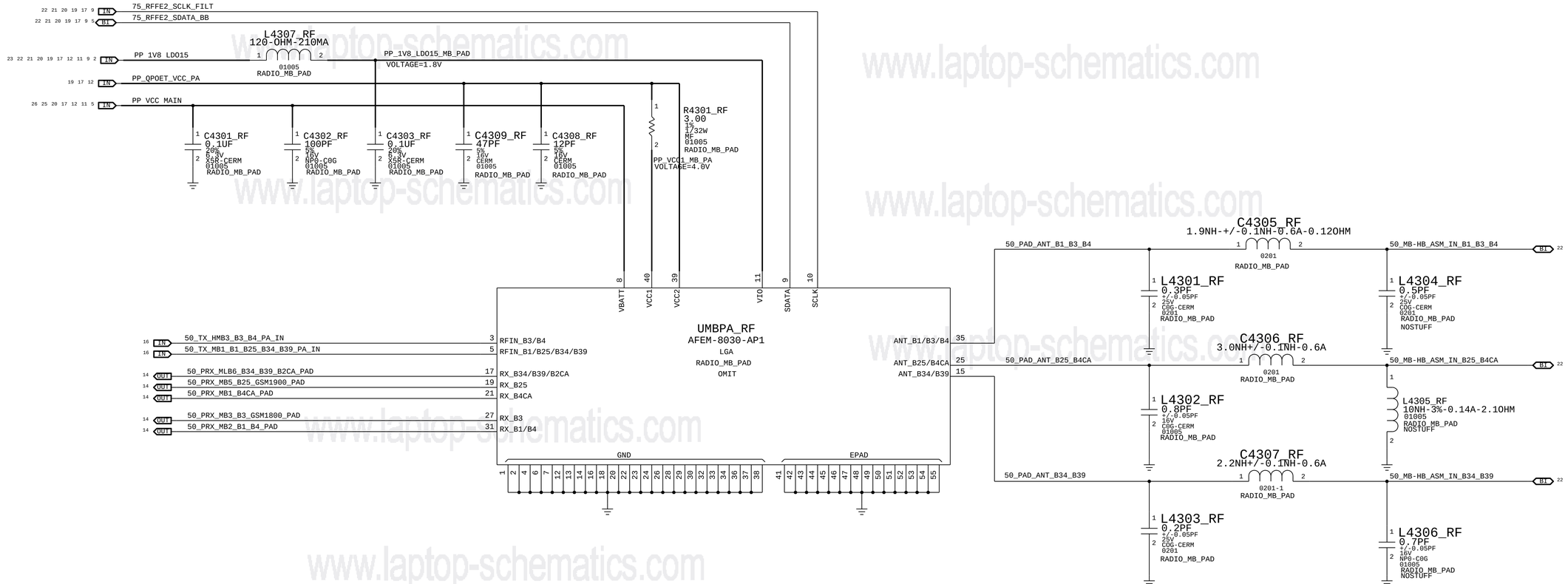
MID BAND PA+DUPLEXERS



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CELLULAR FRONT END: MB PAD

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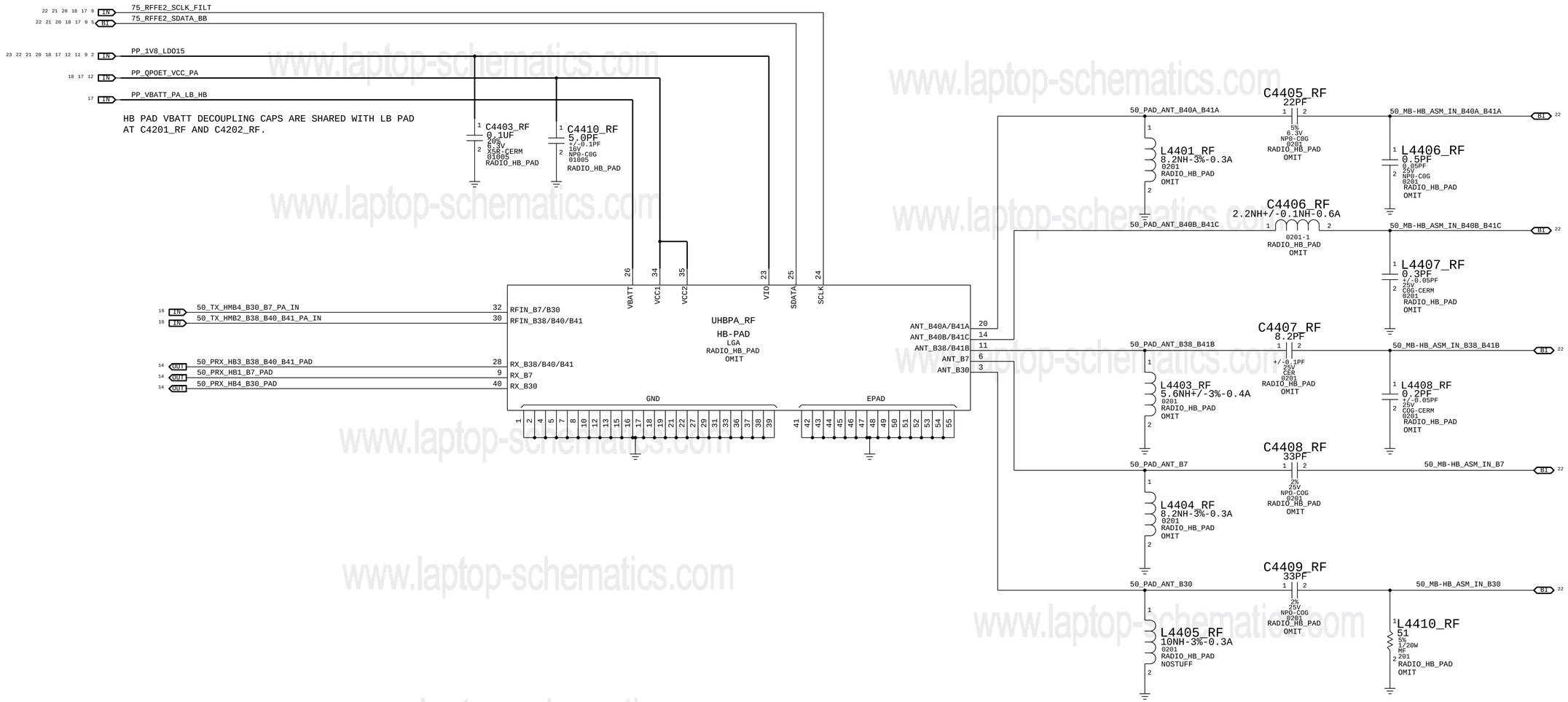
HIGH BAND PA+DUPLEXERS



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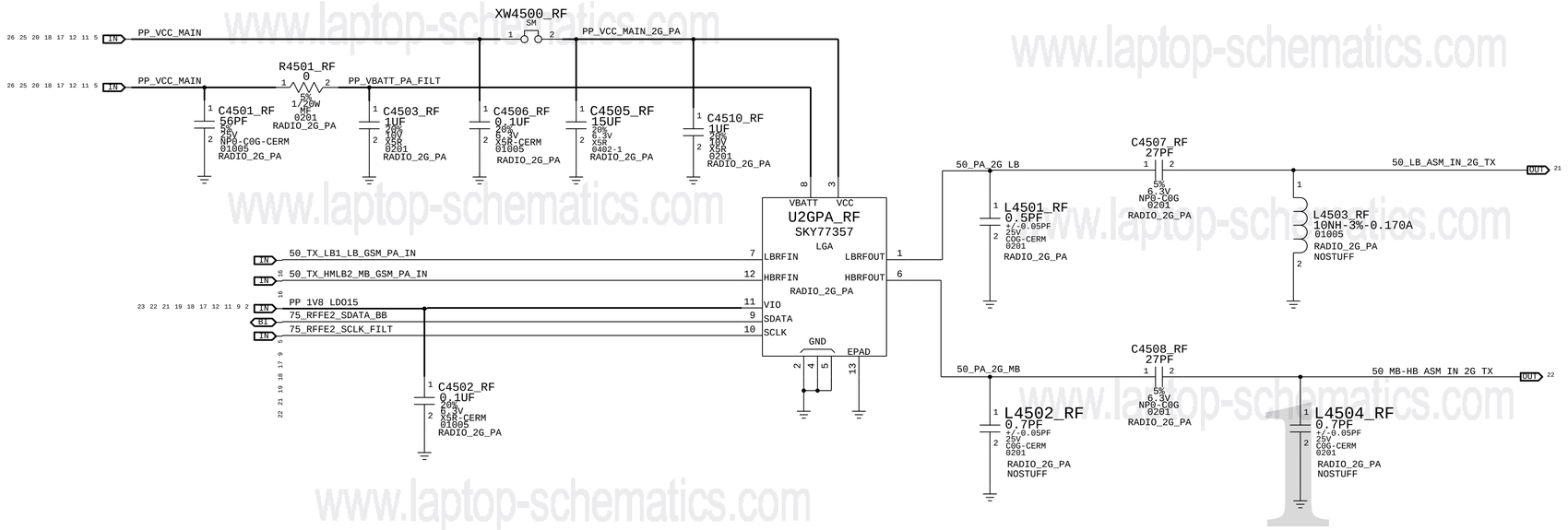
2G PA



PAGE TITLE
CELLULAR FRONT END: 2G PA

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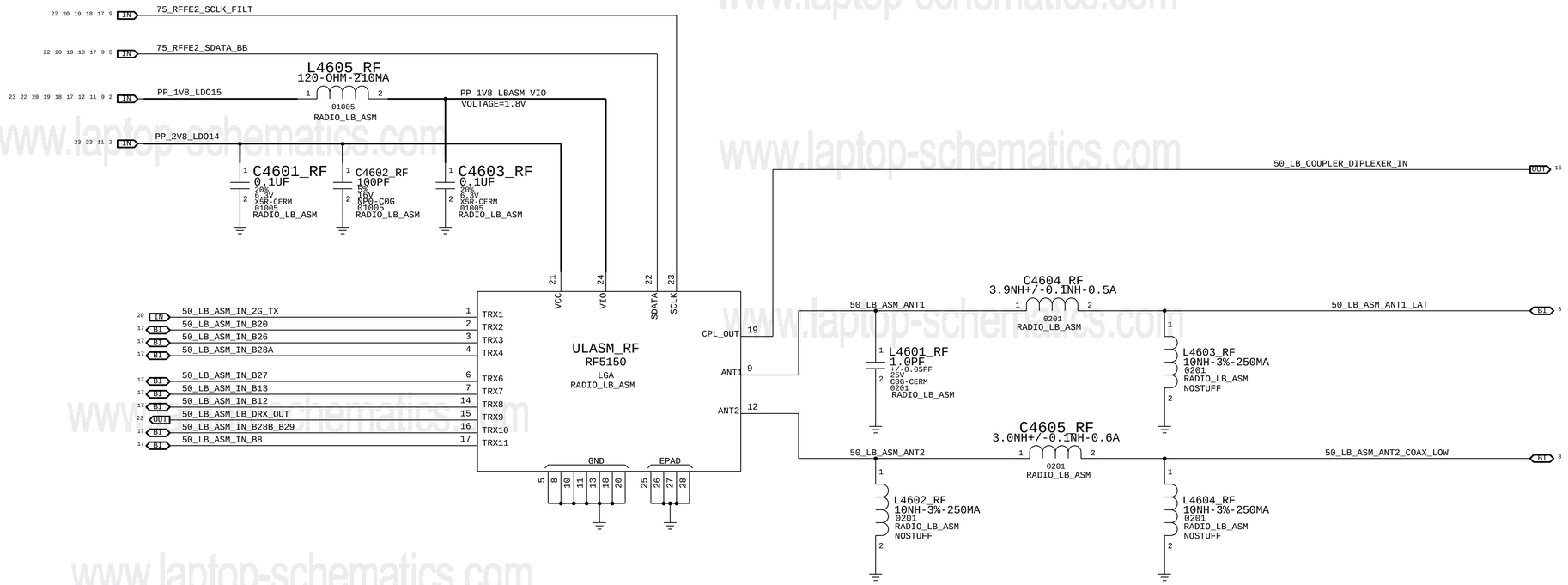
LOW BAND ANTENNA SWITCH MODULE



PAGE TITLE
CELLULAR FRONT END: LB ASM

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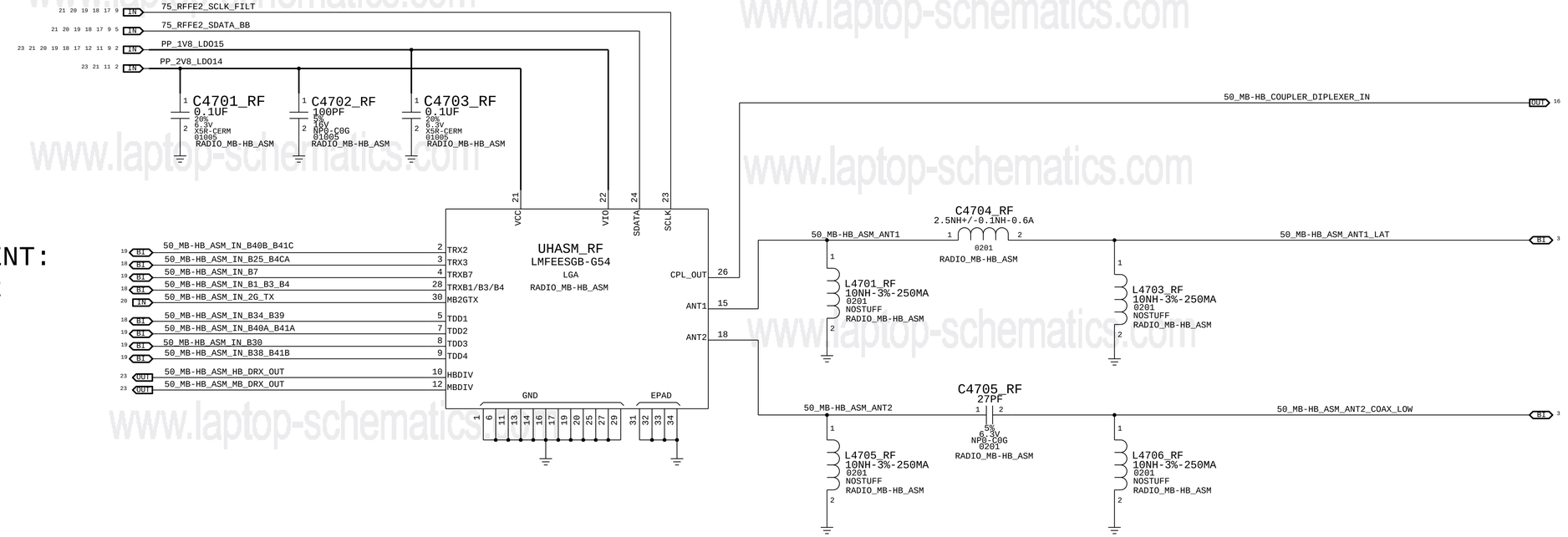
MID-HIGH BAND ANTENNA SWITCH MODULE

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



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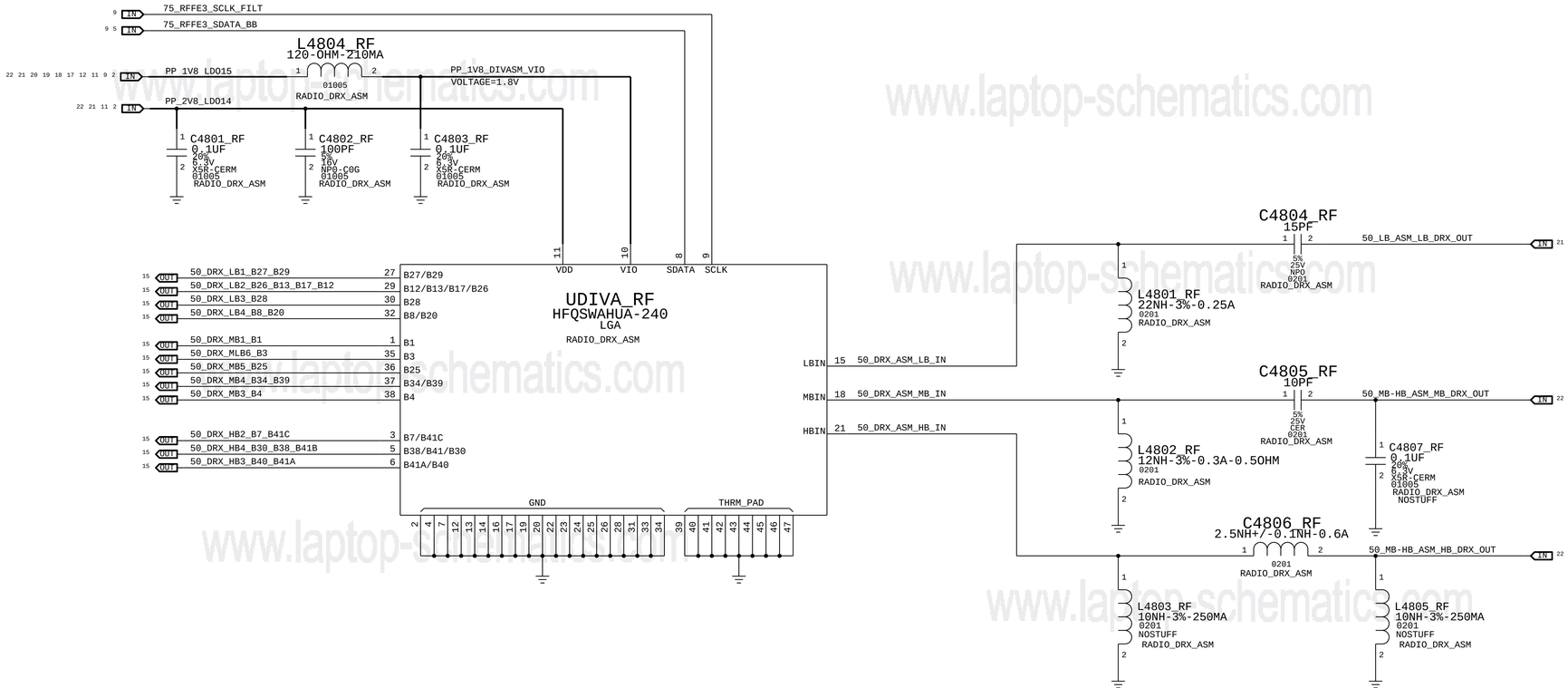
DIVERSITY MODULE



PAGE TITLE
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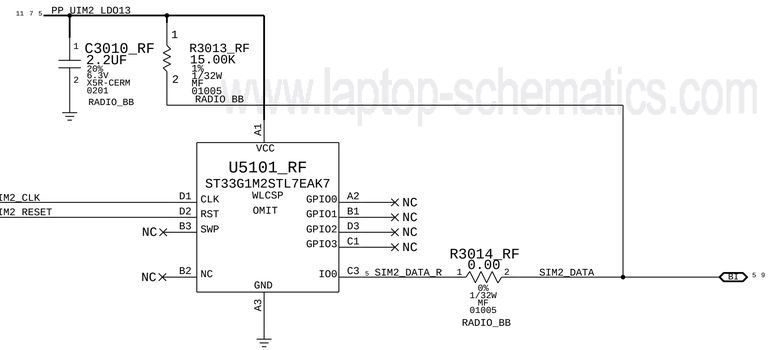
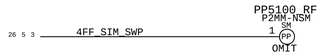
SIM





PAGE TITLE: SIM

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WIFI/BT

R5213_RF 0.00 5% 1/32W MF 01005
PP_1V8_S2R_VDDIO_WLAN_BT → PP_WL_VDDIO VOLTAGE=1.8V
C5201_RF 27PF 5% 16V NP0-C0G 01005
C2500_RF 0.01UF 10% 6.3V X5R 01005

PP_VCC_MAIN VOLTAGE=4.3V
C5283_RF 4.7UF 20% 6.3V X5R-CERM1 402
C5284_RF 4.7UF 20% 6.3V X5R-CERM1 402

U5200_RF
LBEE5UM1EE-775
LGA
SYM 2 OF 2

1	GND	THRM_PAD	106
20	GND	THRM_PAD	107
25	GND	THRM_PAD	108
27	GND	THRM_PAD	109
32	GND	THRM_PAD	110
34	GND	THRM_PAD	111
40	GND	THRM_PAD	112
42	GND	THRM_PAD	113
45	GND	THRM_PAD	114
48	GND	THRM_PAD	115
51	GND	THRM_PAD	116
55	GND	THRM_PAD	117
56	GND	THRM_PAD	118
58	GND	THRM_PAD	119
61	GND	THRM_PAD	120
63	GND	THRM_PAD	121
66	GND	THRM_PAD	122
67	GND	THRM_PAD	123
68	GND	THRM_PAD	124
70	GND	THRM_PAD	125
71	GND	THRM_PAD	126
72	GND	THRM_PAD	127
		THRM_PAD	128
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99	THRM_PAD	THRM_PAD	158
100	THRM_PAD	THRM_PAD	159
101	THRM_PAD	THRM_PAD	160
102	THRM_PAD	THRM_PAD	161
103	THRM_PAD	THRM_PAD	162
104	THRM_PAD		
105	THRM_PAD		

PP_WL_VDDIO → R5200_RF 10K 5% 1/32W MF 01005 (NO STUFF) → JTAG_WLAN_SEL

	PMU_TO_WLAN_32K_CLK (IN)	41	CLK32K_AP
	UART4_AP_TO_WLAN_TX (IN)	14	GPIO_11_FAST_UART_RX
	UART4_WLAN_TO_AP_TX (OUT)	13	GPIO_12_FAST_UART_TX
	UART4_WLAN_TO_AP_RTS_L (OUT)	15	GPIO_7_FAST_RTS_OUT
	PMU_TO_WLAN_REG_ON (IN)	29	WL_REG_ON
	PMU_TO_BT_REG_ON (IN)	28	BT_REG_ON
	JTAG_WLAN_SEL	37	JTAG_SEL
		NC	ANT_SWITCH_CORE1
		NC	ANT_SWITCH_CORE0
	PCIE_AP_TO_WLAN_DEV_WAKE (IN)		
	XW1_RF SM: UART4_AP_TO_WLAN_RTS_L (IN) ↔ GPIO_2_JTAG_TCK	39	GPIO_1_HSIC_HOST_READY
		22	GPIO_2_HSIC_RESUME/JTAG_TCK
	XW2_RF SM: UART_BB_TO_WLAN_COEX_TX (IN) ↔ GPIO_3_JTAG_TMS	23	GPIO_3_JTAG_TMS
		21	GPIO_6_SEC_IN/JTAG_TRST
	GPIO_4_JTAG_TDI	18	GPIO_4_JTAG_TDI
	XW3_RF SM: UART_WLAN_TO_BB_COEX_TX (OUT) ↔ GPIO_5_JTAG_TDO	19	GPIO_5_SEC_OUT/JTAG_TDO
	BT_TO_PMU_HOST_WAKE (OUT)	5	HOST_WAKE_BT
	50_G_0_MATCH_MOD	57	2G_ANT_CORE0
	50_G_1_MATCH_MOD	69	2G_ANT_CORE1
	50_A_0_MATCH_MOD	62	5G_ANT_CORE0
	50_A_1_MATCH_MOD	26	5G_ANT_CORE1
		NC	BT_GPIO_3
		NC	BT_GPIO_5

VDDIO_1P8V (30), BATT_VCC (35), BATT_VCC (36)

U5200_RF
LBEE5UM1EE-775
LGA
SYM 1 OF 2

BT_GPIO_4	10	NC	
BT_WAKE	4	AP_TO_BT_WAKE	IN
BT_UART_RXD	8	UART1_AP_TO_BT_TX	IN
BT_UART_TXD	9	UART1_BT_TO_AP_TX	OUT
BT_UART_CTS*	7	UART1_AP_TO_BT_RTS_L	IN
BT_UART_RTS*	6	UART1_BT_TO_AP_RTS_L	OUT
BT_PCM_CLK	60	I2S_AP_TO_BT_BCLK	IN
BT_PCM_SYNC	64	I2S_AP_TO_BT_LRCK	IN
BT_PCM_OUT	65	I2S_BT_TO_AP_DOUT	OUT
BT_PCM_IN	59	I2S_AP_TO_BT_DOUT	IN
GPIO_13_WLAN_THROTTLE	24	GPIO_13_WLAN_THROTTLE	
GPIO_0_WL_HOST_WAKE	38	WLAN_TO_PMU_HOST_WAKE	OUT
PCI_PME	52	PCIE_PME	
PCIE_CLKREQ	53	PCIE_WLAN_TO_AP_CLKREQ_L	BI
PERST	54	PCIE_AP_TO_WLAN_PERST_L	IN
PCIE_RDP0	50	PCIE_AP_TO_WLAN_TX_P	IN
PCIE_RDN0	49	PCIE_AP_TO_WLAN_TX_N	IN
PCIE_TDP0	47	PCIE_WLAN_TO_AP_TX_P	OUT
PCIE_TDN0	46	PCIE_WLAN_TO_AP_TX_N	OUT
PCIE_REFCLKP	44	PCIE_AP_TO_WLAN_REFCLK_P	IN
PCIE_REFCLKN	43	PCIE_AP_TO_WLAN_REFCLK_N	IN
GPIO_14_WL_UART_RX	11	OWL_TO_WLAN_CONTEXT_A	
GPIO_15_WL_UART_TX	12	OWL_TO_WLAN_CONTEXT_B	
SRVTX			
SR_VLX	33		
VIN_LDO	31		

L5201_RF 2.2UH-20%-0.28A-0.250HM 0805
VIN_LDO → C5200_RF 4.7UF 20% 6.3V X5R-CERM1 402

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

R5202_RF 0.7NH+/-0.1NH-0.63A 01005
50_A_1_MATCH_MOD → 50_A_1_DPLX
C5215_RF 0.2PF +/-0.1PF 16V NP0-C0G 01005 NO STUFF
C5205_RF 0.2PF +/-0.05PF 16V CERM 01005
50_G_1_MATCH_MOD → 50_G_1_DPLX

F5202_RF DPX205950DT-9163A1SJ 0805
HI, LO, COM, GND

R5205_RF 0.8NH+/-0.1NH-0.630A 01005
50_AG_1_DPLX → 50_AG_1_LAT_COAX
C5209_RF 0.2PF +/-0.05PF 16V CERM 01005
C5210_RF 0.2PF +/-0.1PF 16V NP0-C0G 01005 NO STUFF

WIFI LAT COAX CONNECTOR
JWLAT_RF MM5829-2700 F-ST-SM1

WLAN LAT 2.4GHZ BAW BPF ON CSA 4

PART NUMBER

PP5290_RF	OWL_TO_WLAN_CONTEXT_A	PP5288_RF	PMU_TO_WLAN_32K_CLK	PP5200_RF	UART1_AP_TO_BT_TX
PP5291_RF	OWL_TO_WLAN_CONTEXT_B	PP5285_RF	WLAN_TO_PMU_HOST_WAKE	PP5201_RF	UART1_BT_TO_AP_TX
PP5292_RF	GPIO_13_WLAN_THROTTLE	PP5289_RF	PCIE_AP_TO_WLAN_REFCLK_P	PP5202_RF	UART1_AP_TO_BT_RTS_L
PP5293_RF	GPIO_2_JTAG_TCK	PP5299_RF	PCIE_AP_TO_WLAN_REFCLK_N	PP5203_RF	UART1_BT_TO_AP_RTS_L
PP5294_RF	PCIE_PME	PP5300_RF	PCIE_AP_TO_WLAN_TX_P	PP5302_RF	PCIE_AP_TO_WLAN_DEV_WAKE
PP5295_RF	GPIO_3_JTAG_TMS	PP5301_RF	PCIE_AP_TO_WLAN_TX_N	PP5303_RF	BT_TO_PMU_HOST_WAKE
PP5296_RF	GPIO_6_JTAG_TRST	PP5287_RF	PMU_TO_WLAN_REG_ON		
PP5297_RF	GPIO_4_JTAG_TDI	PP5286_RF	PMU_TO_BT_REG_ON	PP5305_RF	PCIE_AP_TO_WLAN_PERST_L
PP5298_RF	GPIO_5_JTAG_TDO				

All: P2MM-NSM OMIT SM PP

LAST UPDATED: 4/30/2014

SYNC_MASTER=WIFI SYNC_DATE=01/30/2014
PAGE TITLE: WIFI/BT: WIFI/BT MODULE
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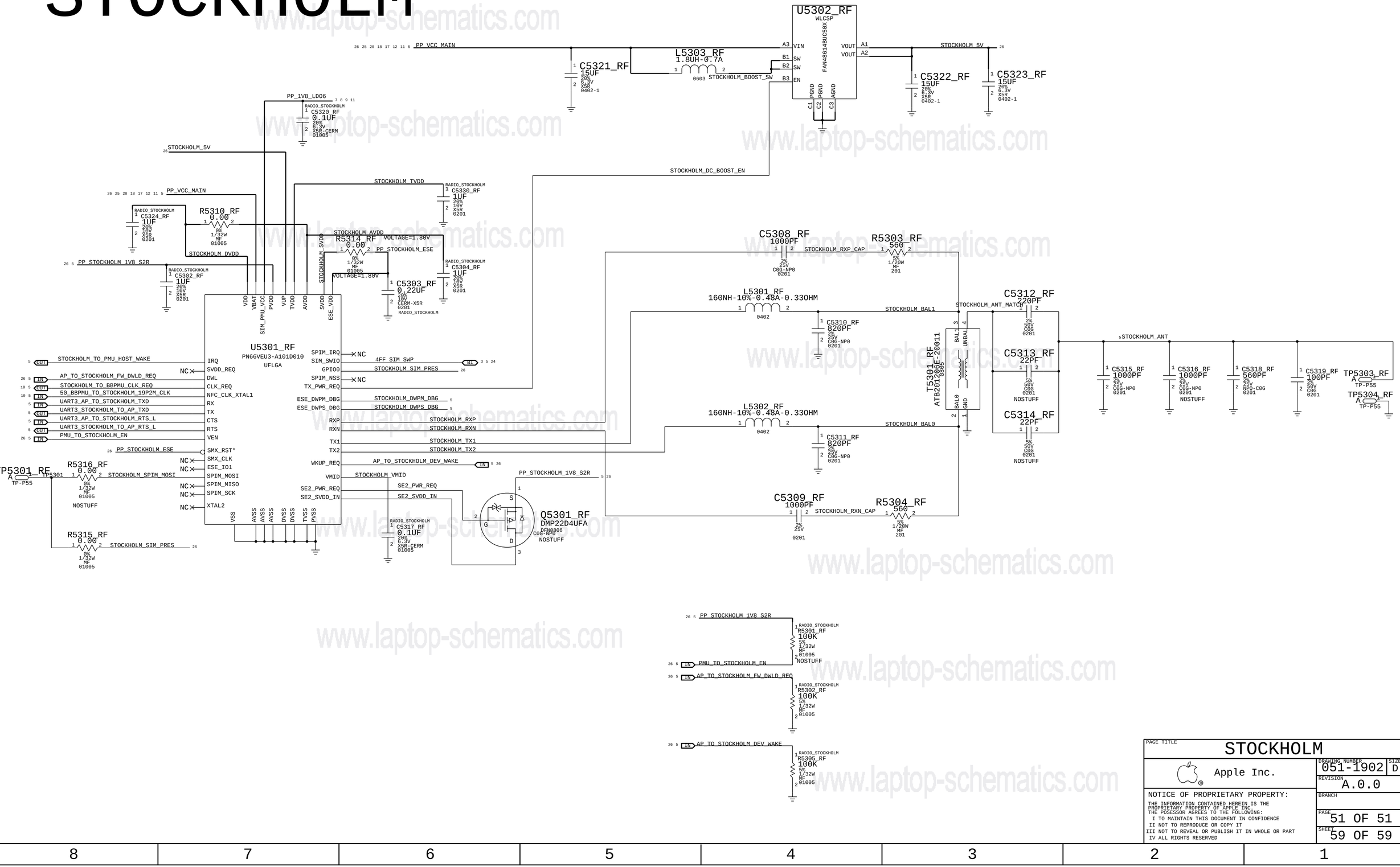
STOCKHOLM

ALL NETNAMES NEED TO BE CHECKED



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