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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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.
138S00049	138S0831	ALTERNATE	C0610	KYOCERA,2.2UF,0201	USED ~116 TIMES IN DESIGN.
155S0660	155S0513	ALTERNATE	FL3100	MURATA,FERR,22-OHM	USED ~116 TIMES IN DESIGN.
138S00005	138S00003	ALTERNATE	C2000	TY,15UF,0402	USED ~7 TIMES IN DESIGN.
138S00048	138S00003	ALTERNATE	C2000	KYOCERA,15UF,0402	USED ~63 TIMES IN DESIGN.
138S0702	138S0657	ALTERNATE	C2111	MURATA,4.3UF,0610	USED ~63 TIMES IN DESIGN.
118S0764	118S0717	ALTERNATE	R2250	PANASONIC,3.92K-OHM,0201	USED ~3 TIMES IN DESIGN.
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	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-2L,WLCSP380	U2000	MALTA
118S00009	1	RES,MF,3.01KOHM,1%,1/32W,01005	R0730	MALTA
131S0307	1	CAP,CER,NP0/C0G,100PF,5%,16V,01005	C0730	NOSTUFF
339S00124	1	M DEV FUSED, M DRAM	U0600	MALTA
118S00025	1	RES,MF,330 OHM,1%,1/32W,01005	R0651	MALTA

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

SOC ALTERNATES

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

339S00125	339S00124	MALTA	U0600	M PROD FUSED, H DRAM, ATK
339S00126	339S00124	MALTA	U0600	M PROD FUSED, S DRAM, ATK
339S00127	339S00124	MALTA	U0600	M PROD FUSED, M 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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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 1 SM PP — ROOM=TEST

33 8 DFU_STATUS — PP08 P4MM-NSM 1 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 OUT 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 OUT BOARD_REV2 — NOSTUFF R0401 ROOM=SOC 1.00K 01005 MF 5% 1/32W

8 OUT BOARD_REV1 — NOSTUFF R0402 ROOM=SOC 1.00K 01005 MF 5% 1/32W

8 OUT BOARD_REV0 — R0403 ROOM=SOC 1.00K 01005 MF 5% 1/32W

8 OUT BOARD_ID4 — NOSTUFF R0404 ROOM=SOC 1.00K 01005 MF 5% 1/32W

8 OUT BOARD_ID3 — NOSTUFF R0405 ROOM=SOC 1.00K 01005 MF 5% 1/32W

8 OUT BOARD_ID2 — R0406 ROOM=SOC 1.00K 01005 MF 5% 1/32W

8 OUT BOARD_ID1 — NOSTUFF R0407 ROOM=SOC 1.00K 01005 MF 5% 1/32W

8 OUT BOARD_ID0 — NOSTUFF R0408 ROOM=SOC 1.00K 01005 MF 5% 1/32W

8 OUT BOOT_CONFIG2 — NOSTUFF R0409 ROOM=SOC 1.00K 01005 MF 5% 1/32W

8 OUT BOOT_CONFIG1 — R0410 ROOM=SOC 1.00K 01005 MF 5% 1/32W

8 OUT BOOT_CONFIG0 — NOSTUFF R0411 ROOM=SOC 1.00K 01005 MF 5% 1/32W

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

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TOP-SIDE

BOTTOM-SIDE

PENINSULA STANDOFFS

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

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

860-8396
50_AP_UAT_FEED 33

860-7846
50_AP_WIFI_5G_CONN_ANT 33

NORTH_AC_GND_SCREW 4
806-02971

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

SHIM WASHER

STOCKHOLM FEED

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

860-00109
33 AP_TO_STOCKHOLM_ANT

BS0503
STDOFF-2.60D0.81H-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 4 32

C0540 220PF 10% 16V 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 4

C0550 220PF 10% 16V X7R-CERM 01005 ROOM=ASSEMBLY
C0551 100PF 5% 16V NP0-C0G 01005 ROOM=ASSEMBLY
C0552 220PF 10% 16V 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
32 4 SOUTH_AC_GND_SCREW

PAGE TITLE: SYSTEM:MECHANICAL

Apple Inc.

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MAUI - USB, JTAG, XTAL

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

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

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

NOTE:LPDP RECEIVES UNFILTERED 1.2V AS IT IS UNUSED

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

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

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

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

PP3V3_USB

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

CKPLUS_WAIVE=PWRTERMIGND

VDD12_UH1_HSIC0 AP21
VDD12_UH2_HSIC1 C15
VDD12_PLL_LPDP F22
VDD12_PLL_SOC U20, T19, W19
VDD12_PLL_CPU AF13
VDD18_USB AL21
VDD33_USB AN20
VDD18_XTAL AL34

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

NC AN22	UH1_HSIC0_DATA	ANALOGMUX_OUT AP24	AP_TO_PMU_AMUX_OUT (OUT 16)
NC AN21	UH1_HSIC0_STB		
NC C16	UH2_HSIC1_DATA		
NC D15	UH2_HSIC1_STB		
	Y32 JTAG_SEL		
NC AC32	JTAG_TRST*		
NC AB31	JTAG_TDO		
NC AA32	JTAG_TDI		
	AB32 JTAG_TMS		
	AA31 JTAG_TCK		
	AC31 COLD_RESET*		
	H33 CFSB		
	AR23 TST_CLKOUT		
	AN23 S3E_RESET*		
WDOG	H32 HOLD_RESET		
	AF6 TESTMODE		
	AL22 FUSE1_FSRC		
	AG25 FUSE2_FSRC		
		USB_D_P AT20	USB_AP_DATA_P (BI 30)
		USB_D_N AT19	USB_AP_DATA_N (BI 30)
		USB_VBUS AP19	USB_VBUS_DETECT (IN 17)
		USB_ID AR19	NC
		USB_REXT AP18	USB_REXT
			Y33 AP_TO_PMU_WDOG_RESET (OUT 16)
		XI0 AK35	XTAL_AP_24M_IN
		XO0 AL35	XTAL_AP_24M_OUT

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

SWD_DOCK_BI_AP_SWDIO (BI 30)
SWD_DOCK_TO_AP_SWCLK (IN 30)
PMU_TO_SYSTEM_COLD_RESET_L (IN 33 16 9 3)
PMU_TO_OWL_ACTIVE_READY (IN 30 27 16 9)
AP_TO_PMU_TEST_CLKOUT (OUT 16) — P3MM-NSM SM PP0610 ROOM=SOC
AP_TO_NAND_RESET_L (OUT 13)

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

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

SYNC_MASTER=N/A SYNC_DATE=N/A
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SOC:JTAG,USB,XTAL
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MAUI - PCIE INTERFACES

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

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

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

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

VDD085_PCIE:0.802-TBDV @TBDmA MAX

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

VDD12_PCIE: AK28, AK25, AL24, AL27
VDD12_PCIE_TXPLL: AL26
VDD12_PCIE_REFBUF: AJ26
VDD085_PCIE: AH28, AJ25, AL23, AJ29, AL29, AJ24, AK27, AJ27

PCIE EXT C AP29 → PCIE_EXT_C

OMIT_TABLE
CRITICAL
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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	AM31	NC

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

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

NOTE:CLKREQ_L PULL-UP FOR BB IN RADIO_MLB_MIMO SECTION

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

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

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

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MAUI - CAMERA & DISPLAY INTERFACES

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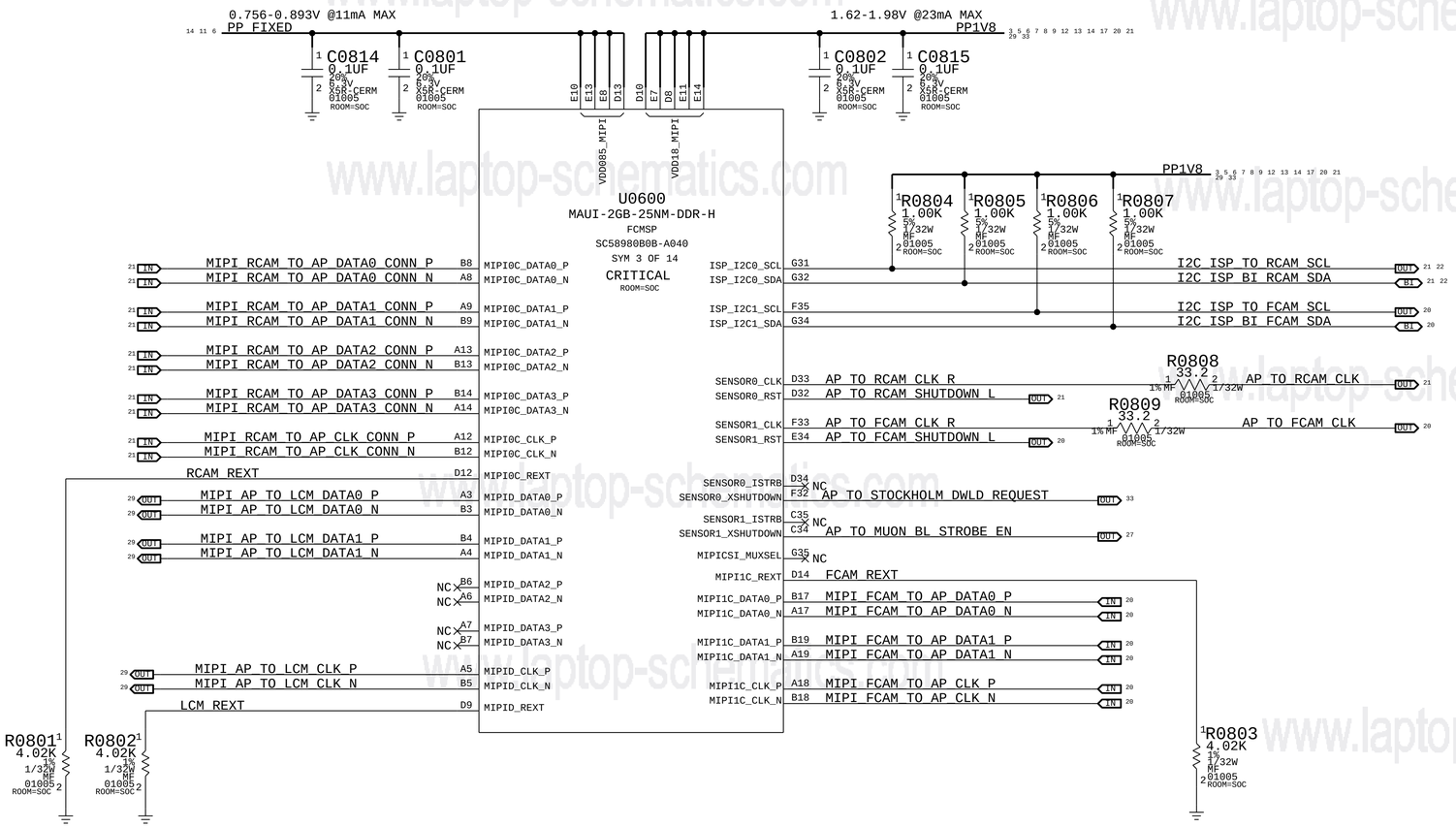
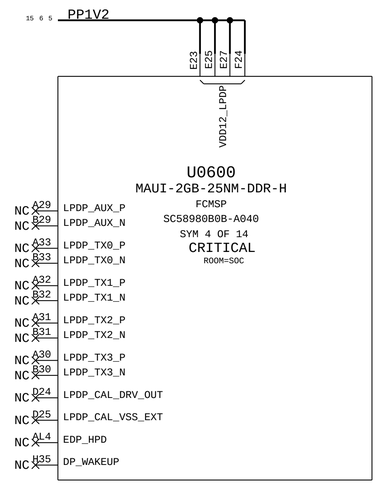


NOTE:VDD12_LPDP SHOULD BE POWERED
EVEN WHEN LPDP IS NOT USED



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SYNC_MASTER=N/A SYNC_DATE=N/A

PAGE TITLE: SOC:CAMERA & DISPLAY

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MAUI - GPIO & SERIAL INTERFACES

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

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SC58980B0B-A040
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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
UART0_TXD	AE4	UART_AP_DEBUG_TXD
UART1_CTS*	K31	UART_BT_TO_AP_CTS_L
UART1_RTS*	K32	UART_AP_TO_BT_RTS_L
UART1_RXD	L33	UART_BT_TO_AP_RXD
UART1_TXD	L32	UART_AP_TO_BT_TXD
UART2_CTS*	AT23	NC
UART2_RTS*	AR20	CAM_EXT_LDO_EN
UART2_RXD	AP23	NC
UART2_TXD	AR22	NC
UART3_CTS*	N4	UART_STOCKHOLM_TO_AP_CTS_L
UART3_RTS*	P3	UART_AP_TO_STOCKHOLM_RTS_L
UART3_RXD	R3	UART_STOCKHOLM_TO_AP_RXD
UART3_TXD	R2	UART_AP_TO_STOCKHOLM_TXD
UART4_CTS*	J33	UART_WLAN_TO_AP_CTS_L
UART4_RTS*	J34	UART_AP_TO_WLAN_RTS_L
UART4_RXD	J35	UART_WLAN_TO_AP_RXD
UART4_TXD	K33	UART_AP_TO_WLAN_TXD
UART5_RTXD	T32	SWI_AP_BI_TIGRIS
UART6_RXD	AF1	UART_ACCESSORY_TO_AP_RXD
UART6_TXD	AE2	UART_AP_TO_ACCESSORY_TXD
UART7_RXD	J31	
UART7_TXD	J32	NC

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

PROX_SELECT

ANALOG_PROX
R0911 1.00K 5% 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

SEP_SPI0_SCLK W3 NC
SEP_SPI0_MISO AA4 NC
SEP_SPI0_MOSI U2 NC
SEP_I2C_SCL V3 I2C_SEP_TO_EEPROM_SCL
SEP_I2C_SDA Y4 I2C_SEP_BI_EEPROM_SDA
SEP_GPIO0 Y3 NC
SEP_GPIO1 AR4 NC

R0900 1.00K 5% 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

I2C0_SCL	E31	I2C0_AP_SCL
I2C0_SDA	D35	I2C0_AP_SDA
I2C1_SCL	AH1	I2C1_AP_SCL
I2C1_SDA	AG4	I2C1_AP_SDA
I2C2_SCL	L31	I2C2_AP_SCL
I2C2_SDA	M32	I2C2_AP_SDA

PP1V8 ALWAYS

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

SOCHOT0 AM1 PMU_TO_AP_SOCHOT0_R_L
PMU_TO_AP_SOCHOT0_L
SOCHOT1 AM2 AP_TO_PMU_SOCHOT1_L
CPU_ACTIVE_STATUS H31 NC
CLK32K_OUT H34 AP_TO_TOUCH_CLK32K_RESET_L
NAND_SYS_CLK AM24 AP_TO_NAND_SYS_CLK_R

R0945 0.00 0% 1/32W MF 01005 ROOM=SOC

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

FCMSP
SC58980B0B-A040
SYM 6 OF 14
CRITICAL
ROOM=SOC

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

R0920 33.2 1% 1/32W MF 01005 ROOM=SOC
R0921 33.2 1% 1/32W MF 01005 ROOM=SOC
R0922 33.2 1% 1/32W MF 01005 ROOM=SOC

I2S_AP_TO_CODEC_MCLK
I2S_AP_TO_ARC_MCLK
I2S_AP_TO_SPEAKERAMP_MCLK

PP0906 P2MM-NSM SM ROOM=SOC
R0960 0.00 0% 1/32W MF 01005 ROOM=SOC
SPI_AP_TO_TOUCH_SCLK

R0930 0.00 0% 1/32W MF 01005 ROOM=SOC
SPI_AP_TO_MESA_SCLK

ANTI-ROLLBACK EEPROM

128kbit
APN:335S0946

PP1V8
C0900 1.0UF 20% 6.3V X5R 0201-1 ROOM=SOC
U0900 M34128-FCS6_P/T
CRITICAL ROOM=SOC
SCL WLCSP SDA VCC VSS
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
BUTTON_MENU_KEY_L
BUTTON_RINGER_A

PP1V8_ALWAYS
R0952 220K 5% 1/32W MF 01005 ROOM=SOC
BUTTON_HOLD_KEY_L

I2C PROBE POINTS

P2MM-NSM SM ROOM=SOC
I2C0_AP_SCL PP0900
I2C0_AP_SDA PP0901
I2C1_AP_SCL PP0902
I2C1_AP_SDA PP0903
I2C2_AP_SCL PP0904
I2C2_AP_SDA PP0905

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

Apple Inc.

DRAWING NUMBER 051-1902 SIZE D
REVISION A.0.0
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POWER STATE CONTROL PROBE POINTS

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

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

U0600

MAUI-2GB-25NM-DDR-H
FCMSP
SC58980B0B-A040
SYM 7 OF 14
OMIT_TABLE
CRITICAL
ROOM=SOC

16 OUT	OWL_TO_PMU_SLEEP1_REQUEST	AD30	OWL_DDR_REQ
16 11 9 IN	PMU_TO_OWL_SLEEP1_READY	AB33	OWL_DDR_RESET*
19 OUT	SPI_OWL_TO_COMPASS_CS_L	AF35	OWL_FUNC_0
19 IN	COMPASS_TO_OWL_INT	AH32	OWL_FUNC_1
19 OUT	DISCRETE_ACCEL_TO_OWL_INT2	AG32	OWL_FUNC_2
19 IN	ACCEL_GYRO_TO_OWL_INT1	AG31	OWL_FUNC_3
19 OUT	SPI_OWL_TO_ACCEL_GYRO_CS_L	AG30	OWL_FUNC_4
19 IN	ACCEL_GYRO_TO_OWL_INT2	AF33	OWL_FUNC_5
19 OUT	SPI_OWL_TO_PHOSPHOROUS_CS_L	AE34	OWL_FUNC_6
33 29 8 IN	LCM_TO_OWL_BSYNC	AF34	OWL_FUNC_7
9	OWL_TO_PMU_SHDN_BI_TIGRIS_SWI	AF31	OWL_FUNC_8
19 IN	PHOSPHORUS_TO_OWL_IRQ	AF32	OWL_FUNC_9
19 IN	SPI_OWL_TO_DISCRETE_ACCEL_CS_L	AH31	OWL_I2CM_SCL
19 OUT	DISCRETE_ACCEL_TO_OWL_INT1	AH33	OWL_I2CM_SDA
19 IN	SPI_IMU_TO_OWL_MISO	AK31	OWL_SPI_MISO
19 OUT	SPI_OWL_TO_IMU_MOSI	AK32	OWL_SPI_MOSI
19 OUT	SPI_OWL_TO_IMU_SCLK	AL33	OWL_SPI_SCLK
33 IN	UART_BB_TO_OWL_RXD	AJ32	OWL_UART0_RXD
33 OUT	UART_OWL_TO_BB_TXD	AK33	OWL_UART0_TXD
33 OUT	OWL_TO_WLAN_CONTEXT_B	AH30	OWL_UART1_RXD
33 OUT	OWL_TO_WLAN_CONTEXT_A	AJ31	OWL_UART1_TXD
29 IN	TOUCH_TO_OWL_ACCEL_DATA_REQUEST	AJ34	OWL_UART2_RXD
29 OUT	UART_OWL_TO_TOUCH_TXD	AJ33	OWL_UART2_TXD
24 8 OUT	I2S_AP_OWL_TO_CODEC_XSP_BCLK	AD34	OWL_I2S_BCLK
24 8 IN	I2S_CODEC_TO_AP_OWL_XSP_DIN	AA34	OWL_I2S_DIN
	NC	AE32	OWL_I2S_MCK
OWL_I2S_LRCLK 24 8 OUT	I2S_AP_OWL_TO_CODEC_XSP_LRCLK	AE31	

CFSB_AOP	W33	PMU_TO_SYSTEM_COLD_RESET_L	3 5 16 33 IN
AWAKE_REQ	AA33	OWL_TO_PMU_ACTIVE_REQUEST	16 OUT
AWAKE_RESET*	AD32	PMU_TO_OWL_ACTIVE_READY	5 9 16 27 30 IN
PMGR_MISO	AL2	DWI_PMU_TO_PMGR_MISO	16 IN
PMGR_MOSI	AL1	DWI_PMGR_TO_PMU_BACKLIGHT_MOSI	16 27 OUT
PMGR_SCLK0	AK4	DWI_PMGR_TO_PMU_SCLK	16 OUT
PMGR_SSCLK1	AL3	DWI_PMGR_TO_BACKLIGHT_SCLK	27 OUT
RT_CLK32768	AD31	PMU_TO_OWL_CLK32K	16 IN
OWL_SWD_TCK_OUT	AE33	SWD_AP_PERIPHERAL_SWCLK	13 33 OUT
OWL_SWD_TMS0	AD35	NC	
OWL_SWD_TMS1	AC33	SWD_AP_BI_BB_SWDIO	33 BI
SWD_TMS2	U31	SWD_AP_BI_NAND_SWDIO	13 BI
SWD_TMS3	T31	NC	
HOLD_KEY*	U3	BUTTON_HOLD_KEY_L	8 16 32 33 IN
SKEY*	W4	NC	
MENU_KEY*	V4	BUTTON_MENU_KEY_L	8 16 28 33 IN

PP1002 — P2MM-NSM — SM, PP — 1 — 16 27 OUT

PP1V8 — 3 5 6 7 8 12 13 14 17 20 21 29 33

R1002 — NOSTUFF — 1.00K — 5% 1/32W MF 01005 — ROOM=SOC — 1 2 — 13 BI

OWL SYSTEM SHUTDOWN OPTION

9 OWL_TO_PMU_SHDN_BI_TIGRIS_SWI

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

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

SYNC_MASTER=N/A SYNC_DATE=N/A

PAGE TITLE: SOC:OWL

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MAUI - CPU, GPU & SOC RAILS

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PP_GPU
0.8V @10.5A MAX

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

XW1110 SHORT-10L-0.1MM-SM ROOM=SOC
BUCK1_PP_GPU_FB (OUT 14)

TP1120 0.50MM SM
PP_GPU

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

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

PP_CPU
0.625V @TBDA MAX
0.9V @10.5A MAX
1.0V @12.5A MAX

C1120 10UF 20% 6.3V CERM-X5R 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 0.50MM SM
PP_CPU

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

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

C1138 0.47UF 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 ROOM=SOC
BUCK0_PP_CPU_FB (OUT 14)

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

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

G15 W13 T12 M6 U9 V12 W9 M12 M18 N15 N21 N9 F10 H14 H16 H20 H22 H6 H8 J11 J13 J17 J19 J23 J7 K10 K14 K16 K20 K22 K6 K8 L11 L13 L15 L17 L19 L21 M24 L7 L9 F8 M8 N11 N13 N17 N19 P10 G11 — VDD_GPU

P14 P16 P20 R15 R19 G13 R9 T10 T14 T16 U11 V14 V16 G7 R23 G9 H10 T24 P22 W17 N23 G17 G21 T18 T20 — N7

VDD_CPU_SENSE Y6
VSS_CPU_SENSE Y7
VDD_GPU_SENSE G20
VSS_GPU_SENSE H19

P2MM-NSM PP1100 AP_CPU_SENSE_P
P2MM-NSM PP1101 AP_CPU_SENSE_N
P2MM-NSM PP1102 AP_GPU_SENSE_N
AP_GPU_SENSE_P (IN 16)

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

AA17 AA19 AA23 AB14 AB16 AB20 AB22 AB24 AB26 AC17 AC19 AC23 AD16 AD20 AD22 AD24 AD26 AE5 AE15 AE17 AE19 AE23 AF14 AF16 AF20 AF22 AF24 AF26 AG17 AG19 AG23 AH16 AH20 AH22 AH24 AH26 AJ15 AJ17 AJ19 AJ23 AK14 J29 G23 AK22 F6 F14 AL15 AM5 G25 G27 H24 H26 H28 J27 K24 K26 K28 L27 L23 M26 M28 AL19 — VDD_SOC

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

N27 P24 P26 P28 R17 R27 R29 T22 T26 T7 T28 U17 V8 V20 V22 V24 V26 W7 W11 Y28 — VDD_SOC_SENSE

AJ20 VDD_SOC_SENSE
AK21 VSS_SOC_SENSE

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

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

XW1120 SHORT-10L-0.1MM-SM ROOM=SOC
BUCK2_PP_SOC_FB (OUT 14)

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

P2MM-NSM PP1104 AP_SOC_SENSE_N
P2MM-NSM PP1105 AP_SOC_SENSE_P

SYNC_MASTER=N/A SYNC_DATE=N/A
PAGE TITLE: SOC:POWER (1/3)
Apple Inc.
DRAWING NUMBER: 051-1902
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MAUI - POWER SUPPLIES

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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
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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
VOLTAGE=1.1V
VDDIO11_PLL_DDR: AK18 W26 P8
F19 PP1V1_DDR_PLL
C1280 0.22UF 20% 6.3V X5R 01005-1 ROOM=SOC
FL1280 100OHM-25%-0.12A 01005 ROOM=SOC
PP1V1 (11 14)

VDDIO11_RET_DDR: AN17 W31 T4
D19 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
PAGE TITLE	SOC:POWER (2/3)
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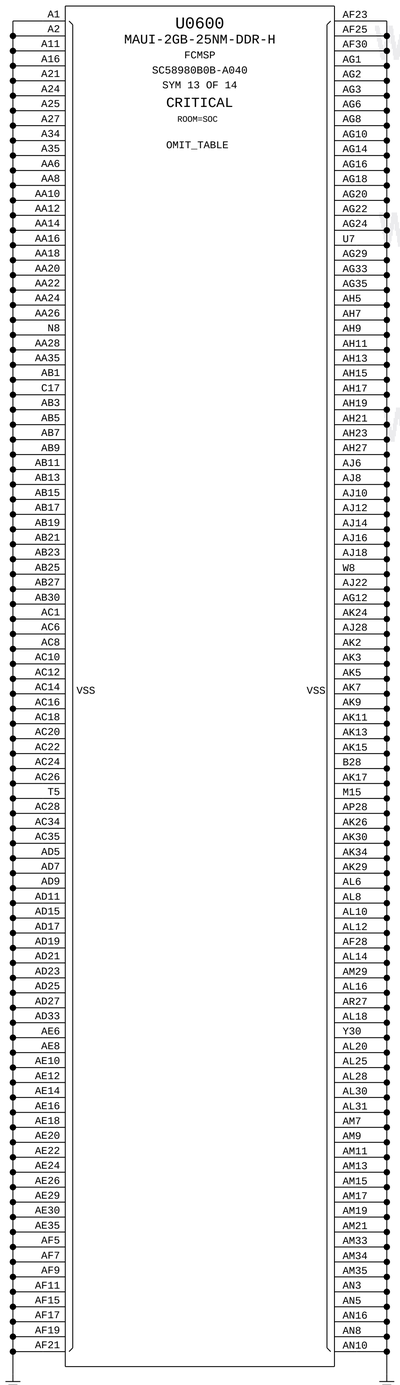
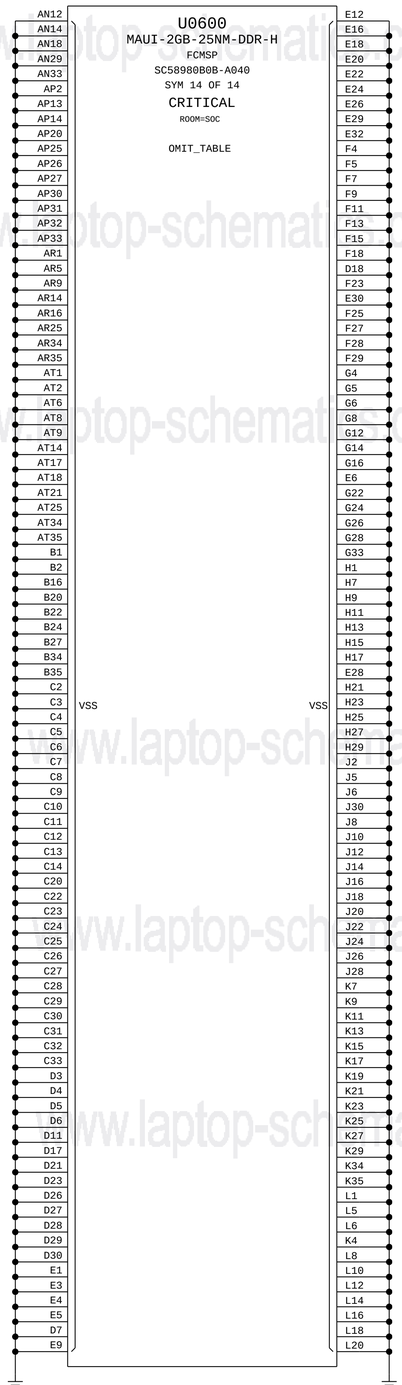
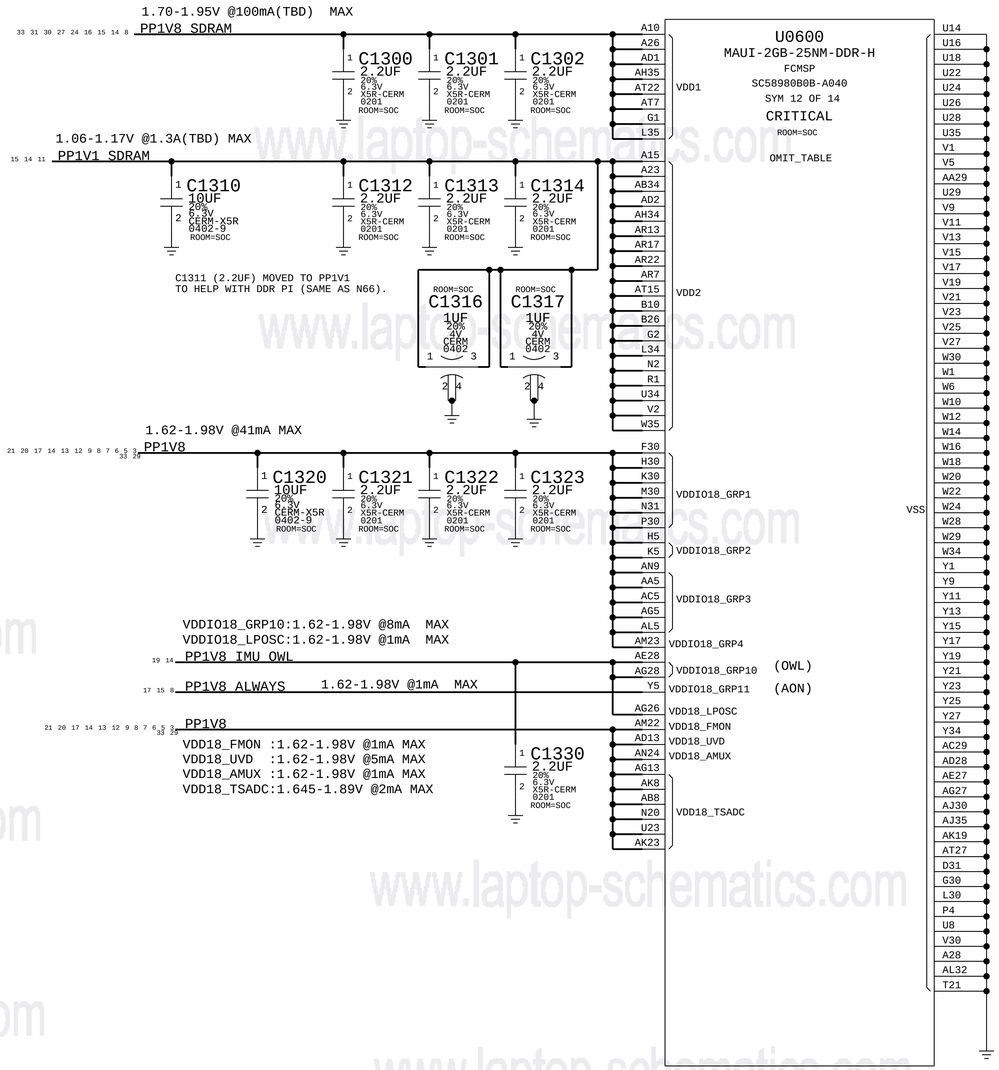
MAUI - POWER SUPPLIES







SYNC_MASTER=N/A SYNC_DATE=N/A

PAGE TITLE: SOC:POWER (3/3)

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PP1V8
R1530 24.9 1% 1/32W MF 01005 ROOM=NAND
PP1V8_NAND_AVDD VOLTAGE=1.8V
C1530 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=NAND
C1531 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=NAND
NAND_AGND VOLTAGE=0V
C1534 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=NAND
C1520 15UF 20% 6.3V X5R 0402-1 ROOM=NAND
C1521 15UF 20% 6.3V X5R 0402-1 ROOM=NAND
C1522 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=NAND
C1524 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=NAND
C1525 100PF 5% 16V NP0-C0G 01005 ROOM=NAND
C1523 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=NAND
C1532 1.0UF 20% 6.3V X6S 0201-1 ROOM=NAND
C1526 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=NAND
C1527 1.0UF 20% 6.3V X6S 0201-1 ROOM=NAND
C1528 220PF 10% 16V X7R-CERM 01005 ROOM=NAND
C1529 33PF 5% 16V NP0-C0G-CERM 01005 ROOM=NAND
C1533 8.2PF +/-0.5PF 16V NP0-C0G-CERM 01005 ROOM=NAND
EXTRA CAPS ADDED FOR UF BLOCKING AND DESENSE MITIGATION.
PP0V9_NAND
C1548 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=NAND
C1540 15UF 20% 6.3V X6S 0402-1 ROOM=NAND
C1541 15UF 20% 6.3V X6S 0402-1 ROOM=NAND
C1542 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=NAND
C1543 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=NAND
C1546 1.0UF 20% 6.3V X6S 0201-1 ROOM=NAND
C1547 1.0UF 20% 6.3V X6S 0201-1 ROOM=NAND
C1550 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=NAND
C1551 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=NAND
C1554 1000PF 10% 6.3V X5R-CERM 01005 ROOM=NAND
PP1V8
C1560 0.01UF 10% 6.3V X5R 01005 ROOM=NAND
NOSTUFF R1560 10K 1% 1/32W MF 01005 ROOM=NAND
NAND_VREF
C1561 0.01UF 10% 6.3V X5R 01005 ROOM=NAND
NOSTUFF R1561 10K 1% 1/32W MF 01005 ROOM=NAND
R1501 3.01K 1% 1/20W MF 201 ROOM=NAND

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

M4	PCI_AVDD_CLK1		
J5	PCI_AVDD_CLK2		
J7	PCI_AVDD_H		
K4	PCI_VDD1		
K6	PCI_VDD2		
C3	AVDD1		
E5	VREF		
A3	VDD	D2	CLK_IN
A7	VDD	H8	PCIE_REFCLK_P
F2	VDD	H6	PCIE_REFCLK_M
J1	VDD	G9	PCIE_CLKREQ*
J9	VDD	M6	PCI_RESREF
R3	VDD	M8	PCIE_RX0_P
R7	VDD	K8	PCIE_RX0_M
A5	VDDIO	N5	PCIE_RX1_P
B0	VDDIO	N3	PCIE_RX1_M
B10	VDDIO	P8	PCIE_TX0_P
F0	VDDIO	N7	PCIE_TX0_M
F10	VDDIO	M2	PCIE_TX1_P
R5	VDDIO	K2	PCIE_TX1_M
	VDDIO	F8	RESET*
	VCC	D8	TRST*
A0	VCC	D6	ZQ
A10	VCC	B2	VSSA
D0	VCC	B4	VSS
D10	VCC	B6	VSS
G0	VCC	E10	VSS
G10	VCC	G7	VSS
		L3	VSS
		L5	VSS
		L7	VSS
		P2	VSS
		P4	VSS
		P6	VSS
		C0	VSS
		C10	VSS
		E0	VSS

AP_TO_NAND_SYS_CLK
PCIE_AP_TO_NAND_REFCLK_P
PCIE_AP_TO_NAND_REFCLK_N
PCIE_NAND_TO_AP_CLKREQ_L
PCIE_NAND_RESREF
PCIE_AP_TO_NAND_TXD0_P
PCIE_AP_TO_NAND_TXD0_N
PCIE_AP_TO_NAND_TXD1_P
PCIE_AP_TO_NAND_TXD1_N
PCIE_NAND_TO_AP_RXD0_P
PCIE_NAND_TO_AP_RXD0_N
PCIE_NAND_TO_AP_RXD1_P
PCIE_NAND_TO_AP_RXD1_N
AP_TO_NAND_RESET_L
NAND_ZQ
R1500 34.8 0.5% 1/32W MF 01005 ROOM=NAND
NAND_AGND

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

G3	EXT_D0	PMU_TO_NAND_LOW_BATT_BOOT_L	IN 16
J3	EXT_D1	AP_TO_NAND_FW_STRAP	IN 8
H2	EXT_D2	NC	
E3	EXT_D3	NC	
E1	EXT_D4	NC	
F6	EXT_D5	NC	
C1	EXT_D6	NC	
B8	EXT_D7	SYSTEM_ALIVE	IN 11 16 17
G1	EXT_NCE	PCIE_AP_TO_NAND_RESET_L	IN 6
F4	EXT_NRE	SWD_AP_BI_NAND_SWDIO_R	
C5	EXT_NWE	SWD_AP_NAND_SWCLK_R	
G5	EXT_RNB	NC	
H4	EXT_CLE	NC	
D4	EXT_ALE		

ROOM=NAND P3MM-NSM PP1520
R1520 0.00 0% MF 01005 1/32W ROOM=NAND SWD_AP_BI_NAND_SWDIO BI 9
R1521 0.00 0% MF 01005 1/32W ROOM=NAND SWD_AP_PERIPHERAL_SWCLK IN 9 33
PP1521 P3MM-NSM ROOM=NAND

PCIE RECEIVE-SIDE PROBE POINTS

ROOM=NAND P3MM-NSM
PCIE_AP_TO_NAND_REFCLK_P PP1500
PCIE_AP_TO_NAND_REFCLK_N PP1501
P3MM-NSM ROOM=NAND

ROOM=NAND P3MM-NSM
PCIE_AP_TO_NAND_TXD0_P PP1502
PCIE_AP_TO_NAND_TXD0_N PP1503
P3MM-NSM ROOM=NAND

ROOM=NAND P3MM-NSM
PCIE_AP_TO_NAND_TXD1_P PP1504
PCIE_AP_TO_NAND_TXD1_N PP1505
P3MM-NSM ROOM=NAND

SYNC_MASTER=N/A SYNC DATE=N/A
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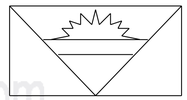
ANTIGUA PMU - Buck Supplies



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U2000 — D2255A080UXUVAI2 (CSP, SYM 2 OF 5, ROOM=PMU)

CRITICAL — OMIT_TABLE

VDD_MAIN_SNS ← VCC_MAIN_SNS (IN 15) ← PP_VCC_MAIN (33 28 27 26 25 24 22 21 17 15)

VDD_MAIN: R6, F10, L13, L5, R8, L4 — BAT/USB

VDD_BUCK0_01: A4, B4, C4

VDD_BUCK0_23: A8, B8, C8

VDD_BUCK1_01: A16, B16, C16

VDD_BUCK1_23: A12, B12, C12

VDD_BUCK2: J17, J18, J19

VDD_BUCK3: T18, T19

VDD_BUCK4: V12, Y12, Z12

VDD_BUCK5: N17, N18, N19

VDD_BUCK6: J1, J2

VDD_BUCK7: E1, E2

VDD_BUCK8: E17, E18, E19

BUCK_INPUT

PP1V8 (29 21 20 17 13 12 9 8 7 6 5 3 34) → U18, V18, Y18, Z18 — BUCK3_SW1

PP1V8_TOUCH (29 28 20) VOLTAGE=1.8V → U16 BUCK3_SW2

PP1V8_TMU_OWL (19 12) VOLTAGE=1.8V → U15 BUCK3_SW3

PP1V1 (11) VOLTAGE=1.1V → V16, Y16, Z16 — BUCK4_SW1

BUCK0 — 12.5A MAX

L2000 1.0UH-20%-3.6A-0.060OHM — BUCK0_LX0: A3, B3, C3

L2001 0.47UH-20%-3.8A-0.048OHM — BUCK0_LX1: A5, B5, C5

L2002 1.0UH-20%-3.6A-0.060OHM — BUCK0_LX2: A7, B7, C7

L2003 0.47UH-20%-3.8A-0.048OHM — BUCK0_LX3: A9, B9, C9

PIQA20161T-SM / PIQA20121T-SM, CRITICAL, OMIT_TABLE, ROOM=PMU

BUCK0_FB: F8 ← BUCK0_PP_CPU_FB (IN 10)

C2000–C2005 15UF 20% 6.3V X5R 0402-1 ROOM=PMU

C2006–C2010 15UF 20% 6.3V X5R 0402-1 ROOM=PMU

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

BUCK1 — 10.5A MAX

L2010 1.0UH-20%-3.6A-0.060OHM — BUCK1_LX0: A17, B17, C17

L2011 0.47UH-20%-3.8A-0.048OHM — BUCK1_LX1: A15, B15, C15

L2012 1.0UH-20%-3.6A-0.060OHM — BUCK1_LX2: A13, B13, C13

L2013 0.47UH-20%-3.8A-0.048OHM — BUCK1_LX3: A11, B11, C11

PIQA20161T-SM / PIQA20121T-SM, CRITICAL, OMIT_TABLE, ROOM=PMU

BUCK1_FB: F12 ← BUCK1_PP_GPU_FB (IN 10)

C2012–C2016 15UF 20% 6.3V X5R 0402-1 ROOM=PMU

C2017–C2021, C2011 15UF 20% 6.3V X5R 0402-1 ROOM=PMU

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

BUCK2 — 4.7A MAX

L2020 1.0UH-20%-3.6A-0.060OHM — BUCK2_LX0: H17, H18, H19

L2021 0.47UH-20%-3.8A-0.048OHM — BUCK2_LX1: K17, K18, K19

PIQA20161T-SM / PIQA20121T-SM, CRITICAL, OMIT_TABLE, ROOM=PMU

BUCK2_FB: J14 ← BUCK2_PP_SOC_FB (IN 10)

C2022–C2026 15UF 20% 6.3V X5R 0402-1 ROOM=PMU

PP_SOC (10) VOLTAGE=0.825V 0.725V/0.825V

BUCK3 — 1.5A MAX

L2030 1.0UH-20%-3.6A-0.060OHM — BUCK3_LX0: R18, R19

PIQA20161T-SM, CRITICAL, OMIT_TABLE, ROOM=PMU

XW2030 SHORT-10L-0.1MM-SM, ROOM=PMU

BUCK3_FB: V19 ← VBUCK3_SW: U17, V17, Y17, Z17

C2030 15UF 20% 6.3V X5R 0402-1 ROOM=PMU

C2031 15UF 20% 6.3V X5R 0402-1 ROOM=PMU

C2032 100PF 5% 16V NP0-C0G 01005 ROOM=PMU

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

BUCK4 — 4.7A MAX

L2040 1.0UH-20%-3.6A-0.060OHM — BUCK4_LX0: V11, Y11, Z11

L2041 0.47UH-20%-3.8A-0.048OHM — BUCK4_LX1: V13, Y13, Z13

PIQA20161T-SM / PIQA20121T-SM, CRITICAL, OMIT_TABLE, ROOM=PMU

XW2040 SHORT-10L-0.1MM-SM, ROOM=PMU

BUCK4_FB: T9 ← VBUCK4_SW: V15, Y15, Z15

C2040–C2044 15UF 20% 6.3V X5R 0402-1 ROOM=PMU

C2044 100PF 5% 16V NP0-C0G 01005 ROOM=PMU

PP1V1_SDRAM (11 12 15) VOLTAGE=1.1V

BUCK5 — 1.1A MAX

PP_FIXED (11 7 6) VOLTAGE=0.85V

L2050 1.0UH-20%-3.6A-0.060OHM — PIQA20161T-SM, CRITICAL, OMIT_TABLE, ROOM=PMU

BUCK5_LX0: M17, M18, M19

XW2050 SHORT-10L-0.1MM-SM, ROOM=PMU

BUCK5_FB: M13

C2050, C2051 15UF 20% 6.3V X5R 0402-1 ROOM=PMU

BUCK6 — 400mA MAX

PP1V2_CAMERA (21 20) VOLTAGE=1.2V

L2060 1UH-20%-1.2A-0.320OHM — 0603, ROOM=PMU

BUCK6_LX0: H1, H2

BUCK6_FB: J5 (IN 21)

C2060, C2061 15UF 20% 6.3V X5R 0402-1 ROOM=PMU

C2062 100PF 5% 16V NP0-C0G 01005 ROOM=PMU

BUCK7 — 1.1A MAX

PP_CPU_SRAM (11) VOLTAGE=1.0V 0.80V/0.90V/1.0V

L2070 1.0UH-20%-2.25A-0.150HM — PIXB2016FE-SM, ROOM=PMU

BUCK7_LX0: F1, F2

XW2070 SHORT-10L-0.1MM-SM, ROOM=PMU

BUCK7_FB: C1

C2070, C2071 15UF 20% 6.3V X5R 0402-1 ROOM=PMU

BUCK8 — 1.1A MAX

PP_GPU_SRAM (11) VOLTAGE=1.0V 0.80V/0.90V/1.0V

L2080 1.0UH-20%-2.25A-0.150HM — PIXB2016FE-SM, CRITICAL, ROOM=PMU

BUCK8_LX0: F17, F18, F19

XW2080 SHORT-10L-0.1MM-SM, ROOM=PMU

BUCK8_FB: C19

C2080, C2081 15UF 20% 6.3V X5R 0402-1 ROOM=PMU

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SYNC_MASTER=N/A SYNC_DATE=N/A

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

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DRAWING NUMBER: 051-1902 SIZE: D

REVISION: A.0.0

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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
VLDO2 V1
VLDO3 L1
VLDO4 N1
T1
VLDO5 T2
VLDO6 K1
VBYPASS K2
VLDO7 Z6
VLDO8 Z4
VLDO9 Z3
VLDO9_FB Y2 — CAM AVDD FB — PLACE_NEAR=U2000.Y2:2mm — XW2100 ROOM=PMU SHORT-10L-0.1MM-SM
Y8
VLDO10 Z8
VLDO11 R2
VLDO12 K6
VLDO13 Z5
VLDO14 Z7
VLDO15 P2
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 ROOM=PMU
C2107 4.3UF 20% 4V X5R-CERM 0610 ROOM=PMU
NOSTUFF C2108 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
C2109 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
C2110 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
C2111 4.3UF 20% 4V X5R-CERM 0610 ROOM=PMU
C2112 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
C2113 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
C2114 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
C2115 4.3UF 20% 4V X5R-CERM 0610 ROOM=PMU

VPUMP:10nF min. @ 4.6V

VOLTAGE=3.3V PP3V3_USB 5 LDO1
VOLTAGE=1.8V PP1V8_VA 24 25 26 LDO2
PP3V0_TRISTAR 19 27 30 31 33 LDO3
VOLTAGE=0.8V PP0V8_OWL 11 LDO4
VOLTAGE=3.0V PP3V0_NAND 13 LDO5
VOLTAGE=3.3V PP3V3_ACC 30 LDO6
VOLTAGE=3.0V PP3V0_PROX_ALS 20 LDO7
VOLTAGE=2.775V PMU_LDO8 LDO8
VOLTAGE=2.85V PP2V85_CAM_AVDD_PMU 20 LDO9
VOLTAGE=0.9V PP0V9_NAND 13 LDO10
VOLTAGE=3.0V PP3V0_PROX_IRLED 20 LDO11
VOLTAGE=1.8V PP1V8_ALWAYS 8 12 17 LDO12
VOLTAGE=3.0V PP3V0_MESA 28 LDO13
VOLTAGE=1.2V PP1V2 5 6 7 LDO14
VOLTAGE=1.8V PP1V8_MESA 28 LDO15

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 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

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 16
NOTE: T3 IS XTAL REF GND

SYNC_MASTER=N/A SYNC_DATE=N/A

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

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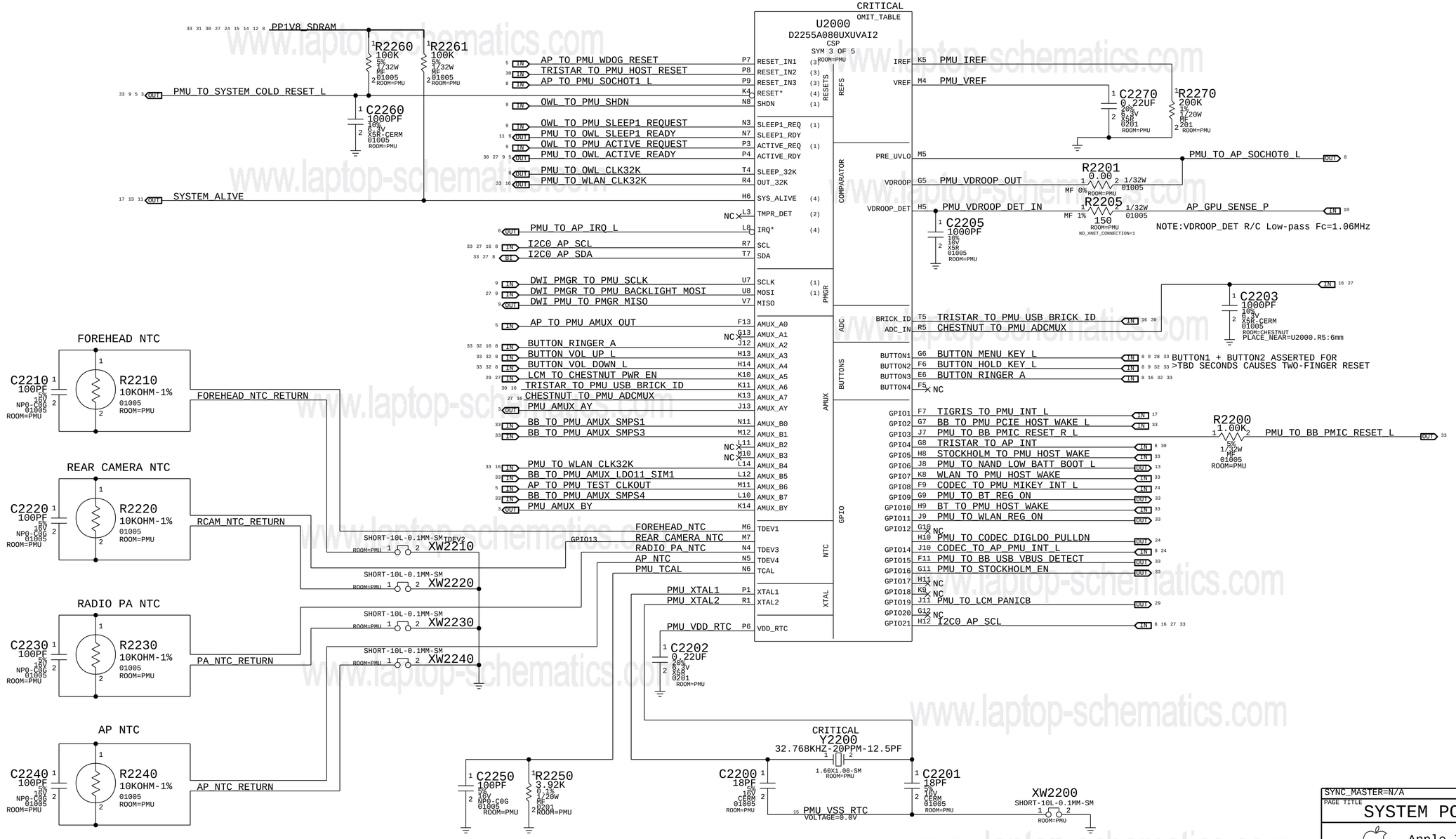
ANTIGUA PMU - GPIOs, NTCs

CONTROL PIN NOTES:

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



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

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

PP_VCC_MAIN VOLTAGE=4.3V
C2333 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=CHARGER

U2300 SN2400AB0 WCSP ROOM=CHARGER CRITICAL

A2 B2 D2 C2	VDD_MAIN	
F5	PMID	
LDO G4		
BOOT G5	TIGRIS BOOT	C2300 0.047UF 10% 16V X5R 0201 ROOM=CHARGER; OMIT TABLE CRITICAL L2300 1.0UH-20%-3.6A-0.060OHM PIQA20161T-SM ROOM=CHARGER
A4 B4 D4 C4	BUCK_SW	TIGRIS BUCK LX
A5 B5 D5 C5 E5	VBUS	PP5V0_USB
G3	SDA	I2C1_AP_SDA
E4	SCL	I2C1_AP_SCL
E3	SYS_ALIVE	SYSTEM_ALIVE
F4	VBUS_OVP_OFF	TRISTAR_TO_TIGRIS_VBUS_OFF
G2	INT	TIGRIS_TO_PMU_INT_R_L
F1	VBUS_DET	TIGRIS_VBUS_DETECT
F3	TEST	
A1 B1 D1 C1	BAT	PP_BATT_VCC
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	3

C2310 4.2UF 10% 16V X5R-CERM 0402-1 ROOM=CHARGER
C2311 100PF 5% 35V NP0-C0G 01005 ROOM=CHARGER

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

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

CRITICAL Q2300 CSD68827W BGA ROOM=CHARGER
C1 C2 C3

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

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

CRITICAL Q2301 DMN2990UFA DFN0806 ROOM=CHARGER
NOSTUFF R2301 0.00 0% 1/32W MF 01005 ROOM=CHARGER

PP1V8
DEFAULT_RESISTOR_402000HM_2_1
R2302 40.2K 1% 1/32W MF 01005 ROOM=CHARGER

SYNC_MASTER=N/A SYNC_DATE=N/A

PAGE TITLE: SYSTEM POWER:CHARGER

Apple Inc.

DRAWING NUMBER 051-1902 SIZE D
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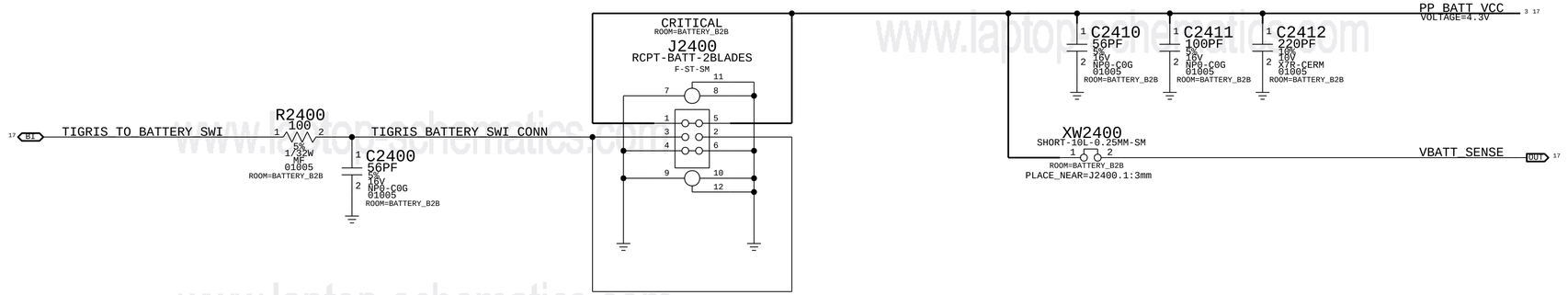
BATTERY CONNECTOR

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



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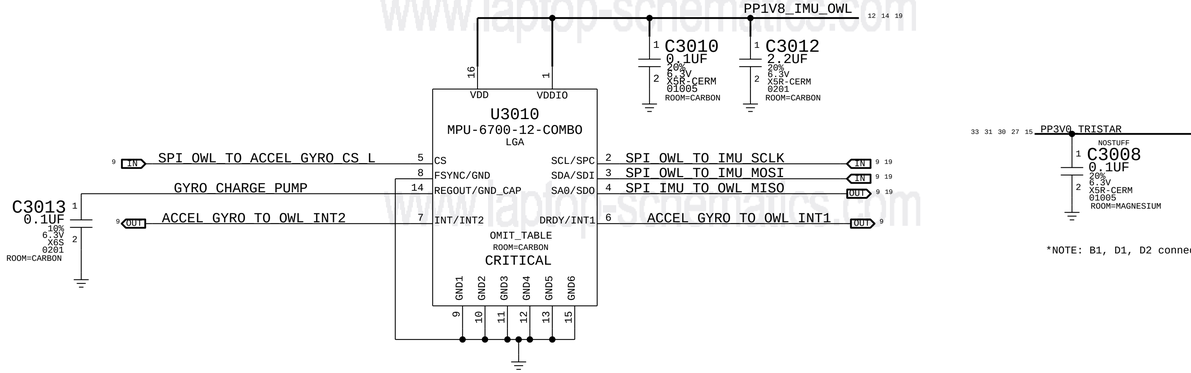
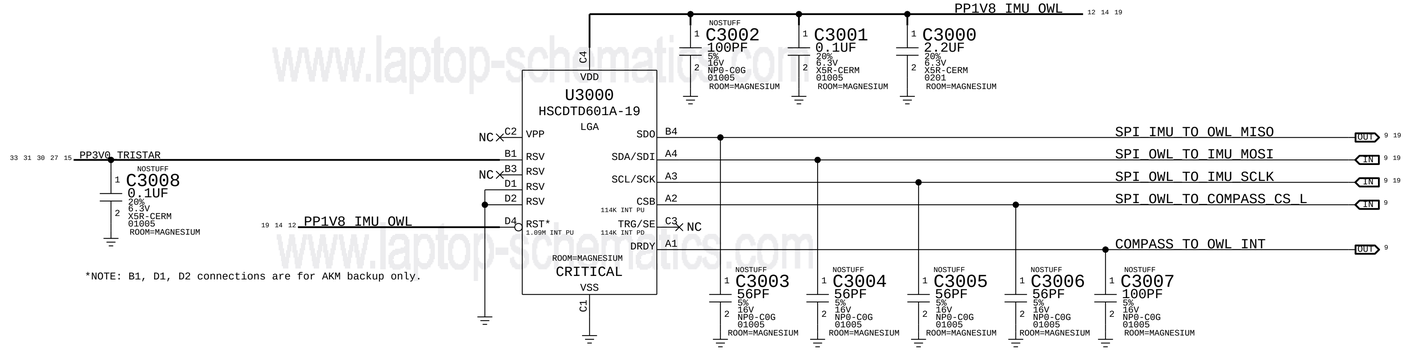
CARBON - ACCEL & GYRO

INVENSENSE (APN: 338S00017, 338S00087)



MAGNESIUM - COMPASS

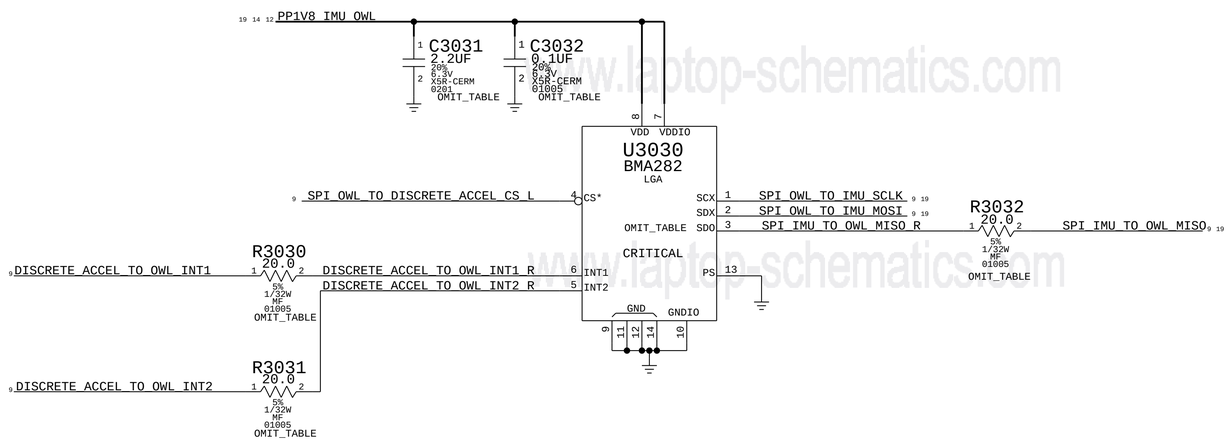
ALPS (APN:338S00084)



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

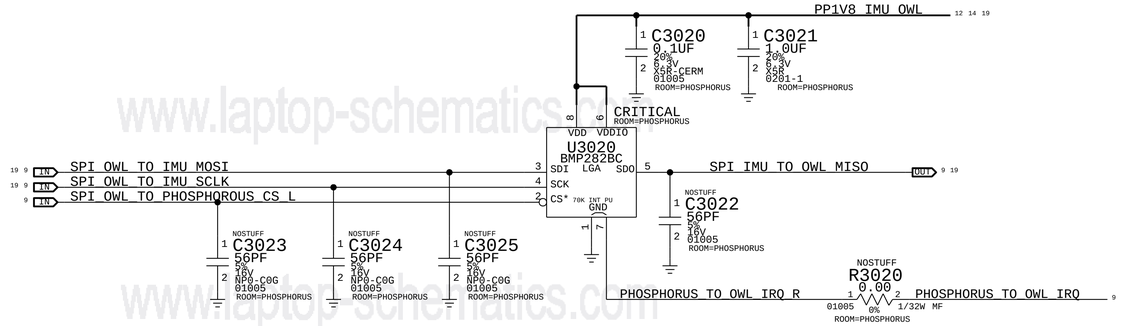
DISCRETE ACCEL

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.

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PAGE TITLE: SENSORS:MOTION SENSORS

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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
PP3V0_ALS_CONN
VOLTAGE=3.0V
120-OHM-210MA 01005 ROOM=CG_B2B
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 5% 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 5% 1/32W MF 01005 ROOM=CG_B2B
I2C_TOUCH_BI_MAMBA_PROX_SDA

ANALOG_PROX
R3143 0.00 5% 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
CRITICAL
ROOM=CG_B2B

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_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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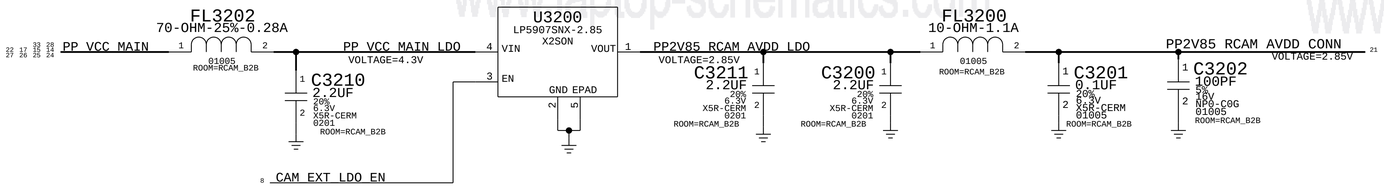
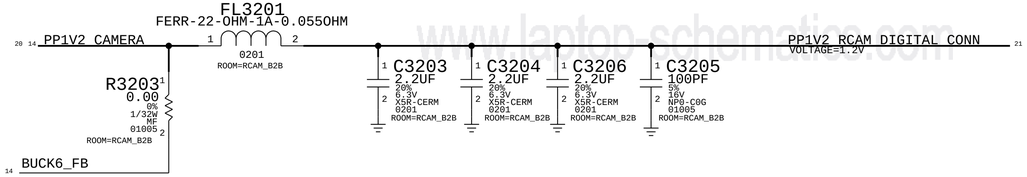
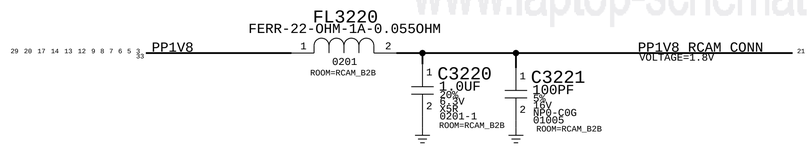
REAR CAMERA FLEX

CAMERA POWER

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

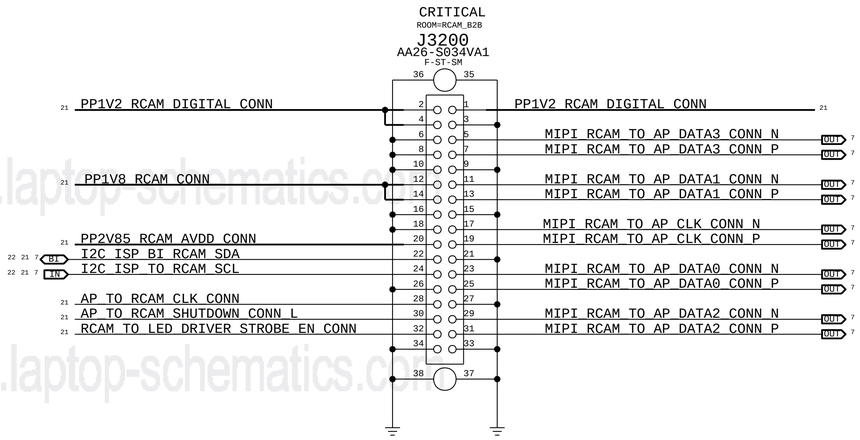




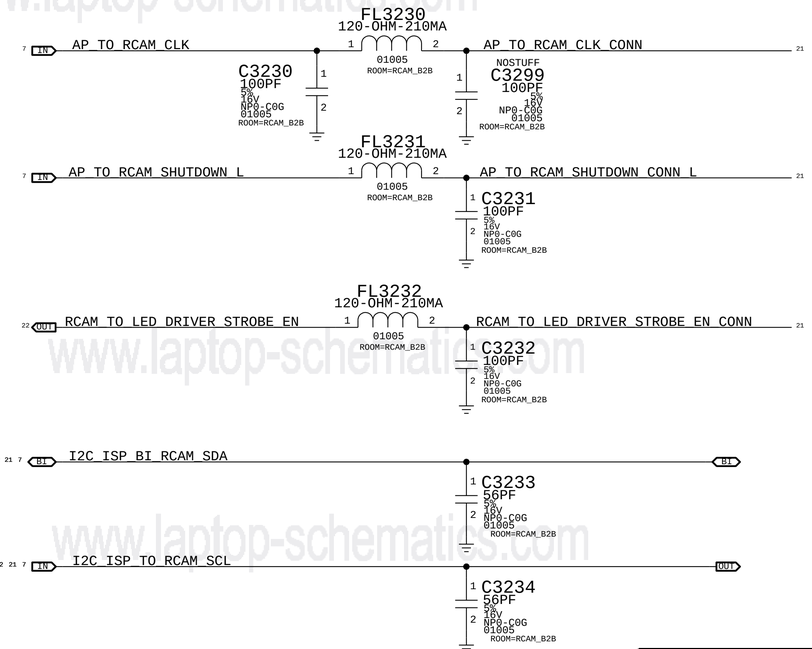


RCAM CONNECTOR

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



DIGITAL I/O



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PAGE TITLE: CAMERA:REAR CAMERA B2B

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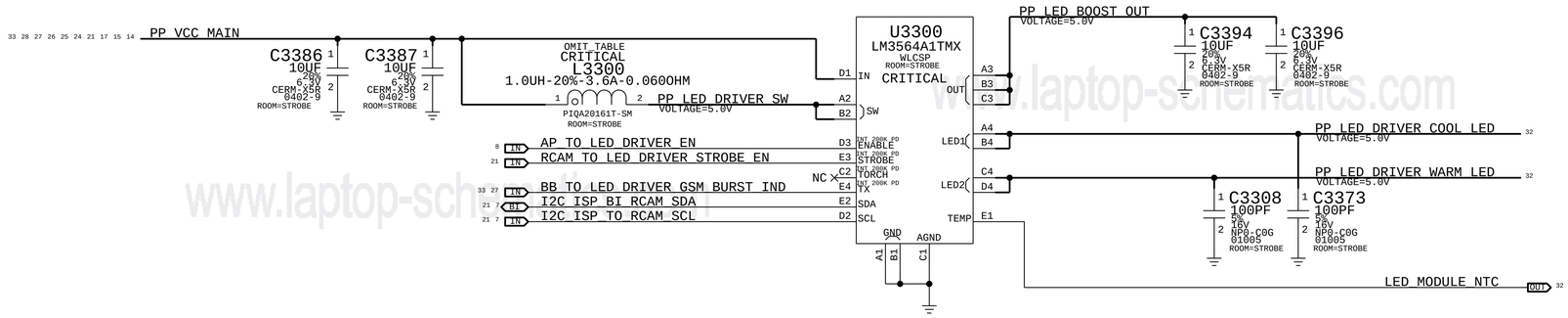
DUAL LED STROBE DRIVER

APN:353S3899



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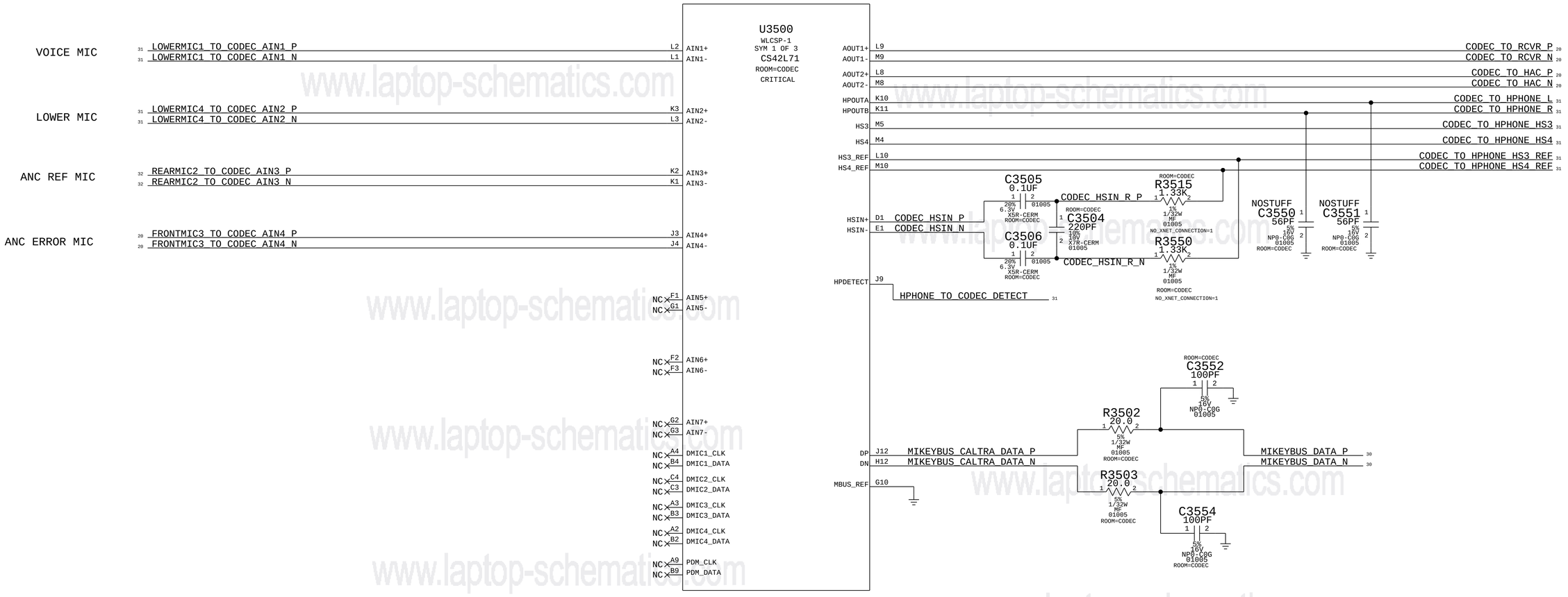
CALTRA AUDIO CODEC (ANALOG INPUTS & OUTPUTS)



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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)

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PP1V8_VA
C3640 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=CODEC PLACE_NEAR=U3500.J2:2mm
CODEC_AGND

PP_VCC_MAIN
C3600 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=CODEC
C3601 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=CODEC
C3602 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=CODEC
C3603 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=CODEC

PP1V8_SDRAM
C3610 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=CODEC
C3611 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=CODEC
C3612 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=CODEC

PP1V2_VD_FILT
VOLTAGE=1.2V
C3670 1.0UF 20% 6.3V X5R 0201-1 ROOM=CODEC

VCP J11 | VD D12 | VD G12 | VD_FILT C1 | VD_FILT E12 | VL A5 | VP M7 | VPROG_CP H11 | VA J1 | VP_MBUS H10

U3500 WLCSP-1 SYM 2 OF 3 CS42L71 ROOM=CODEC CRITICAL

LOWERMIC1_BIAS_FILT_RET
C3650 4.7UF 20% 6.3V X5R-CERM1 402 ROOM=CODEC
VOLTAGE=2.86V
PP_CODEC_TO_LOWERMIC1_BIAS
LOWERMIC1_BIAS_FILT_IN
MIC1_BIAS M6 | MIC1_BIAS_FILT K7

LOWERMIC4_BIAS_FILT_RET
C3651 4.7UF 20% 6.3V X5R-CERM1 402 ROOM=CODEC
VOLTAGE=2.86V
PP_CODEC_TO_LOWERMIC4_BIAS
LOWERMIC4_BIAS_FILT_IN
MIC2_BIAS L6 | MIC2_BIAS_FILT J7

XW3620 SHORT-10L-0.1MM-SM ROOM=CODEC PLACE_NEAR=J4700.1:2mm
REARMIC2_BIAS_FILT_RET
C3652 4.7UF 20% 6.3V X5R-CERM1 402 ROOM=CODEC
VOLTAGE=2.86V
PP_CODEC_TO_REARMIC2_BIAS
REARMIC2_BIAS_FILT_IN
MIC3_BIAS K6 | MIC3_BIAS_FILT L5

XW3630 SHORT-10L-0.1MM-SM ROOM=CODEC PLACE_NEAR=J3100.40:2mm
FRONTMIC3_BIAS_FILT_RET
C3653 4.7UF 20% 6.3V X5R-CERM1 402 ROOM=CODEC
VOLTAGE=2.86V
PP_CODEC_TO_FRONTMIC3_BIAS
FRONTMIC3_BIAS_FILT_IN
MIC4_BIAS J6 | MIC4_BIAS_FILT K5

C3663

CALTRA_HS_BIAS_FILT
C3654 4.7UF 20% 6.3V X5R-CERM1 402 ROOM=CODEC
CALTRA_HS_BIAS_FILT_IN
HS_BIAS_FILT M3 | HS_BIAS_FILT_REF M2

GND A6 | GND B1 | GND E11 | GND F11 | GNDHS L4 | GNDP L7 | GNDA J2

XW3600 SHORT-10L-0.1MM-SM ROOM=CODEC

FLYP K12 CALTRA_FLYP → C3660 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=CODEC
FLYC L12 CALTRA_FLYC → C3661 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=CODEC
FLYN M12 CALTRA_FLYN
+VCP_FILT J10 CALTRA_VCP_FILTP → C3662 4.7UF 20% 6.3V X5R-CERM1 402 ROOM=CODEC
GNDCP L11 CALTRA_GNDCP → XW3660 SM ROOM=CODEC
C4.7UF 20% 6.3V X5R-CERM1 402 ROOM=CODEC
-VCP_FILT M11 CALTRA_VCP_FILTN
LP_FILT+ F12 CALTRA_LP_FILTP → C3665 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=CODEC
FILT+ H1 CALTRA_FILTP → C3664 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=CODEC
FILT- H2
CODEC_AGND VOLTAGE=0

PP1V8_SDRAM
R3650 1.00K 5% 1/32W MF 01005 ROOM=CODEC

CODEC_RESET_L → H3 RESET*
CODEC_TO_PMU_MIKEY_INT_L → K8 WAKE*
CODEC_TO_AP_PMU_INT_L → K9 INT*
SPI_AP_TO_CODEC_CS_L → C9 CS*
SPI_AP_TO_CODEC_SCLK → C8 CCLK
SPI_AP_TO_CODEC_MOSI → B8 MOSI
SPI_CODEC_TO_AP_MISO ← A8 MISO
I2S_AP_TO_CODEC_MCLK → C12 MCLK
I2S_AP_TO_CODEC_ASP_BCLK → C6 ASP_SCLK
I2S_AP_TO_CODEC_ASP_LRCLK → C5 ASP_LRCK/FSYNC
I2S_AP_TO_CODEC_ASP_DOUT → B5 ASP_SDIN
I2S_CODEC_TO_AP_ASP_DIN ← B6 ASP_SDOUT
I2S_AP_OWL_TO_CODEC_XSP_BCLK → B11 XSP_SCLK
I2S_AP_OWL_TO_CODEC_XSP_LRCLK → C11 XSP_LRCK/FSYNC
I2S_AP_TO_CODEC_XSP_DOUT → A11 XSP_SDIN/DAC2B_MUTE
I2S_CODEC_TO_AP_OWL_XSP_DIN ← A10 XSP_SDOUT
I2S_AP_TO_CODEC_MSP_BCLK → B7 MSP_SCLK
I2S_AP_TO_CODEC_MSP_LRCLK → C7 MSP_LRCK/FSYNC
I2S_AP_TO_CODEC_MSP_DOUT → D8 MSP_SDIN
I2S_CODEC_TO_AP_MSP_DIN ← A7 MSP_SDOUT
PMU_TO_CODEC_DIGLDO_PULLDN → H5 DIGLDO_PULLDN
DIGLDO_PDN ← J5

U3500 WLCSP-1 SYM 3 OF 3 CS42L71 ROOM=CODEC CRITICAL

JTAG_TMS D3 NC | JTAG_TCK D4 NC | JTAG_TDI D2 NC | JTAG_TDO C2 NC
TSTO D11 NC | TSTO B10 NC | TSTO D5 NC | TSTO D6 NC | TSTO E5 NC | TSTO E6 NC | TSTO E7 NC | TSTO K4 NC
TSTI C10 | TSTI D10 | TSTI D7 | TSTI D9 | TSTI E8 | TSTI E9 | TSTI G11 | TSTI H4 | TSTI M1
GND A1 | GND A12 | GND B12 | GND E2 | GND E3 | GND E4 | GND E10 | GND F4 | GND F5 | GND F6 | GND F7 | GND F8 | GND F9 | GND F10 | GND G4 | GND G5 | GND G6 | GND G7 | GND G8 | GND G9 | GND H6 | GND H7 | GND H8 | GND H9 | GND J8

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
ROOM=SPKR_AMP
U3700
CS35L21-XWZR
WLCSP
VER1
ROOM=SPKR_AMP
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
GNDP
GNDA

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
PIQA20161T-SM
U3800
CS35L21-XWZR
WLCSP
VER1
CRITICAL
VBST
VP
VA
SW
SDA
SCL
INT*
RESET*
ALIVE
ADO
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

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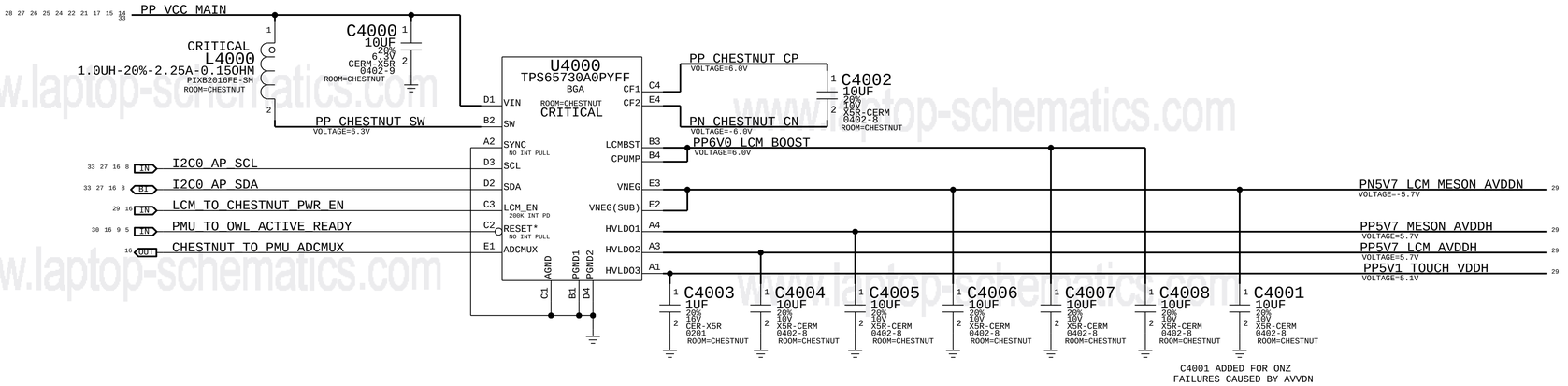
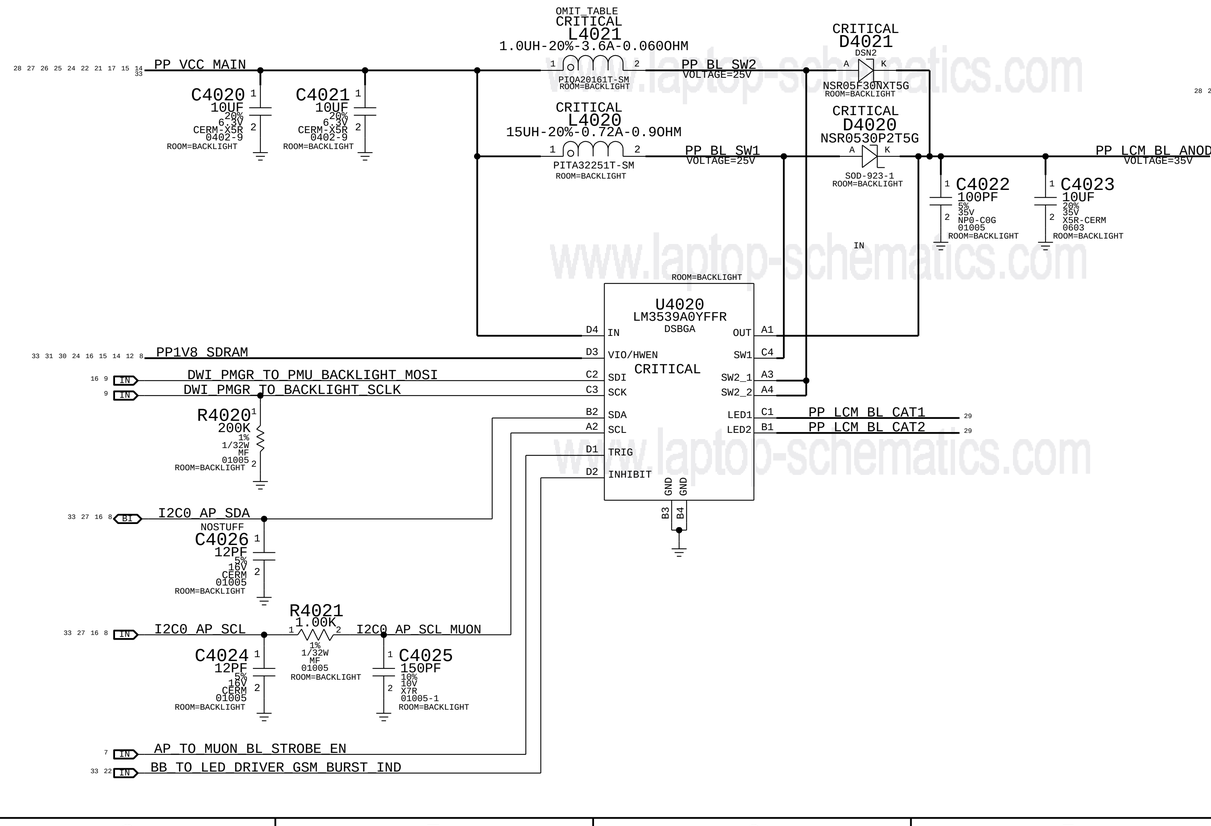
CHESTNUT DISPLAY PMU

APN:338S1172



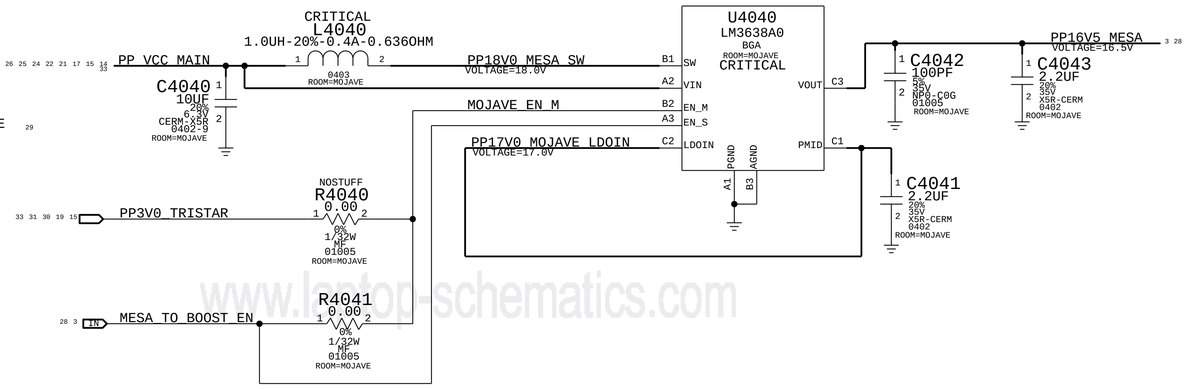
LED BACKLIGHT DRIVER

APN:353S00407



MOJAVE MESA BOOST

APN:353S00671



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DISPLAY:POWER

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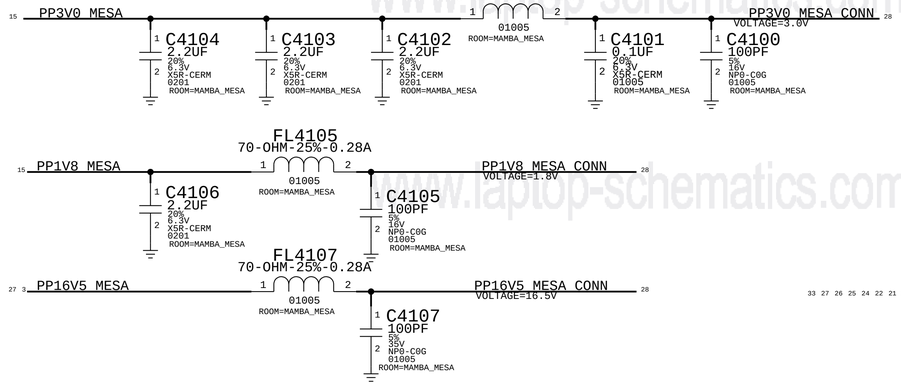
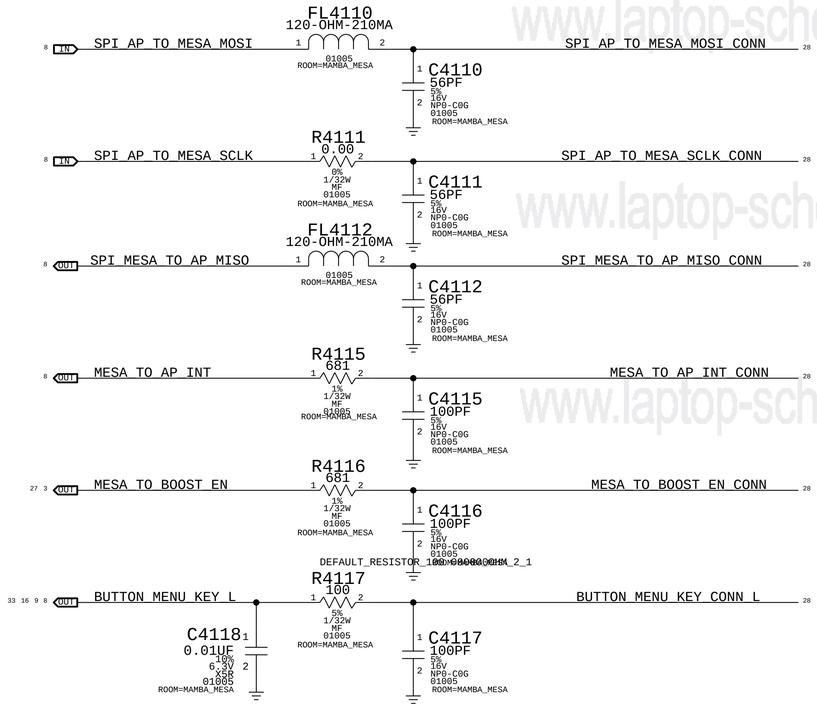
MAMBA & MESA (M&M) FLEX

MESA POWER

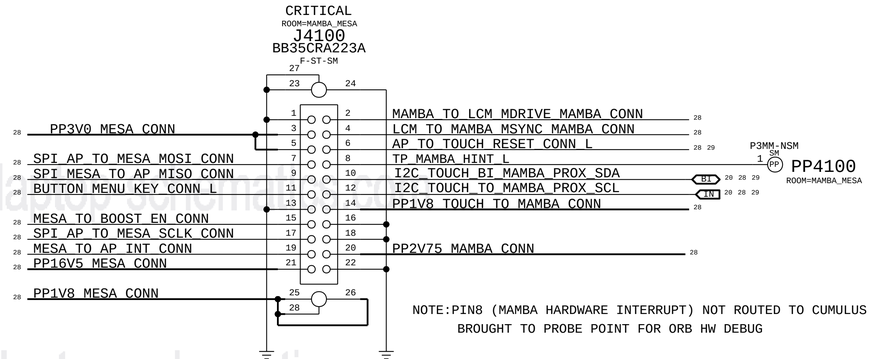


MESA DIGITAL I/O



MAMBA & MESA CONNECTOR

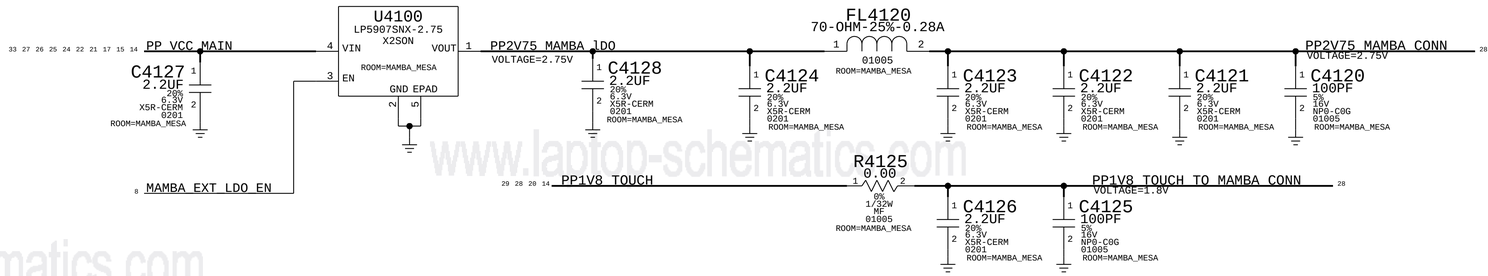
THIS ONE ON MLB ---> 516S00056 (RCPT)
516S00057 (PLUG)



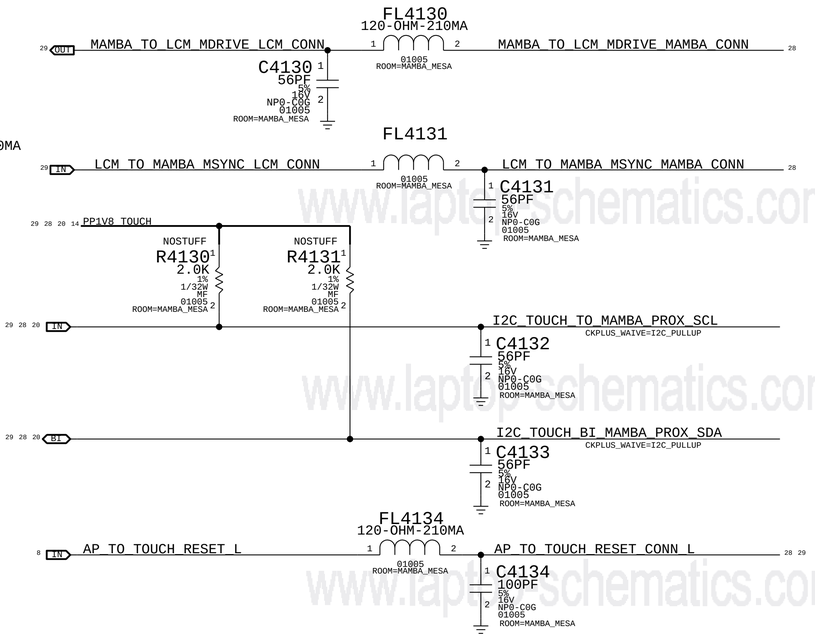
NOTE:PIN8 (MAMBA HARDWARE INTERRUPT) NOT ROUTED TO CUMULUS
BROUGHT TO PROBE POINT FOR ORB HW DEBUG

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 (0201, ROOM=KEPLER_B2B) → 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 (0201, ROOM=KEPLER_B2B) → 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 (01005, ROOM=KEPLER_B2B) → PN5V7_LCM_MESON_AVDDN_CONN (VOLTAGE=-5.7V)
- C4207 100PF 5% 16V NP0-C0G 01005 ROOM=KEPLER_B2B

PP5V7_MESON_AVDDH → FL4208 240OHM-350MA (0201, ROOM=KEPLER_B2B) → PP5V7_MESON_AVDDH_CONN (VOLTAGE=5.7V)
- C4208 100PF 5% 16V NP0-C0G 01005 ROOM=KEPLER_B2B

PP1V8_TOUCH → FL4209 240OHM-350MA (0201, ROOM=KEPLER_B2B) → 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 (0201, ROOM=KEPLER_B2B) → 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 (0201, ROOM=KEPLER_B2B) → PP_LCM_BL_ANODE_CONN (VOLTAGE=25V)
- C4211 100PF 5% 35V NP0-C0G 01005 ROOM=KEPLER_B2B

PP_LCM_BL_CAT1 → FL4212 240OHM-350MA (0201, ROOM=KEPLER_B2B) → PP_LCM_BL_CAT1_CONN (VOLTAGE=25V)
- C4212 100PF 5% 35V NP0-C0G 01005 ROOM=KEPLER_B2B

PP_LCM_BL_CAT2 → FL4213 240OHM-350MA (0201, ROOM=KEPLER_B2B) → 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 SYM_VER-2 (ROOM=KEPLER_B2B): MIPI_AP_TO_LCM_CLK_P → MIPI_AP_TO_LCM_CLK_CONN_P; MIPI_AP_TO_LCM_CLK_N → MIPI_AP_TO_LCM_CLK_CONN_N
- CRITICAL L4201 65-OHM-0.1A-0.7-2GHZ TAM0605 SYM_VER-2 (ROOM=KEPLER_B2B): MIPI_AP_TO_LCM_DATA0_P → MIPI_AP_TO_LCM_DATA0_CONN_P; MIPI_AP_TO_LCM_DATA0_N → MIPI_AP_TO_LCM_DATA0_CONN_N
- CRITICAL L4202 65-OHM-0.1A-0.7-2GHZ TAM0605 SYM_VER-2 (ROOM=KEPLER_B2B): 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 (OUT) → FL4220 120-OHM-210MA (01005, ROOM=KEPLER_B2B) → LCM_TO_CHESTNUT_PWR_EN_CONN
  - C4220 100PF 5% 16V NP0-C0G 01005 ROOM=KEPLER_B2B
- AP_TO_LCM_RESET_L (IN) → FL4221 120-OHM-210MA (01005, ROOM=KEPLER_B2B) → 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 (IN) → R4222 10 MF 5% 1/32W 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 (OUT) → FL4230 120-OHM-210MA (01005, ROOM=KEPLER_B2B) → LCM_TO_OWL_BSYNC_CONN
  - C4230 56PF 5% 16V NP0-C0G 01005 ROOM=KEPLER_B2B
- UART_OWL_TO_TOUCH_TXD (IN) → FL4231 120-OHM-210MA (01005) → UART_OWL_TO_TOUCH_TXD_CONN
  - C4231 56PF 5% 16V NP0-C0G 01005 ROOM=KEPLER_B2B
- TOUCH_TO_OWL_ACCEL_DATA_REQUEST (OUT) → FL4232 120-OHM-210MA (01005, ROOM=KEPLER_B2B) → 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

TOUCH_TO_PROX_TX_EN_CONN_L → U4240 74AUP1G04GX SOT1226 (ROOM=KEPLER_B2B, CRITICAL) → TOUCH_TO_PROX_TX_EN_BUFF (OUT)

- TOUCH_TO_PROX_RX_EN_FCAM_CONN (OUT) → FL4241 120-OHM-210MA (01005, ROOM=KEPLER_B2B) → 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)

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

AP TO TOUCH INTERFACE

- SPI_AP_TO_TOUCH_CS_L (IN) → FL4250 120-OHM-210MA (01005, ROOM=KEPLER_B2B) → SPI_AP_TO_TOUCH_CS_CONN_L
  - C4250 56PF 5% 16V NP0-C0G 01005 ROOM=KEPLER_B2B
- SPI_AP_TO_TOUCH_SCLK (IN) → FL4251 120-OHM-210MA (01005, ROOM=KEPLER_B2B) → SPI_AP_TO_TOUCH_SCLK_CONN
  - C4251 56PF 5% 16V NP0-C0G 01005 ROOM=KEPLER_B2B
- SPI_AP_TO_TOUCH_MOSI (IN) → FL4252 120-OHM-210MA (01005, ROOM=KEPLER_B2B) → SPI_AP_TO_TOUCH_MOSI_CONN
  - C4252 56PF 5% 16V NP0-C0G 01005 ROOM=KEPLER_B2B
- SPI_TOUCH_TO_AP_MISO (OUT) → FL4253 120-OHM-210MA (01005, ROOM=KEPLER_B2B) → SPI_TOUCH_TO_AP_MISO_CONN
  - C4253 56PF 5% 16V NP0-C0G 01005 ROOM=KEPLER_B2B
- TOUCH_TO_AP_INT_L (OUT) → FL4254 120-OHM-210MA (01005, ROOM=KEPLER_B2B) → TOUCH_TO_AP_INT_L_CONN
  - C4254 100PF 5% 16V NP0-C0G 01005 ROOM=KEPLER_B2B
- AP_TO_TOUCH_CLK32K_RESET_L (IN) → FL4255 120-OHM-210MA (01005, ROOM=KEPLER_B2B) → 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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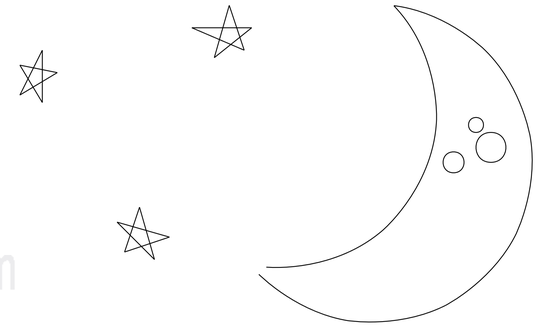
TRISTAR 2 (A3)

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
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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

CODEC_TO_HPHONE_HS3 (23 BI) → FL4600 FERR-33-OHM-0.8A-0.09-OHM 0201 ROOM=DOCK_B2B → 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

CODEC_TO_HPHONE_HS4 (23 BI) → FL4601 FERR-33-OHM-0.8A-0.09-OHM 0201 ROOM=DOCK_B2B → 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

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

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

CODEC_TO_HPHONE_L (23 IN) → FL4604 FERR-33-OHM-0.8A-0.09-OHM 0201 ROOM=DOCK_B2B → 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

CODEC_TO_HPHONE_R (23 IN) → FL4605 FERR-33-OHM-0.8A-0.09-OHM 0201 ROOM=DOCK_B2B → 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

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

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

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

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

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

PP_CODEC_TO_LOWERMIC4_BIAS (24) → FL4615 120-OHM-210MA 01005 ROOM=DOCK_B2B → 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 1/32W 01005 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 1/32W 01005 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

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

41 42 45 43 44 46

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
NOSTUFF
C4654 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
DEFAULT_CAPACITOR_220.000000pF_2_1
C4656 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
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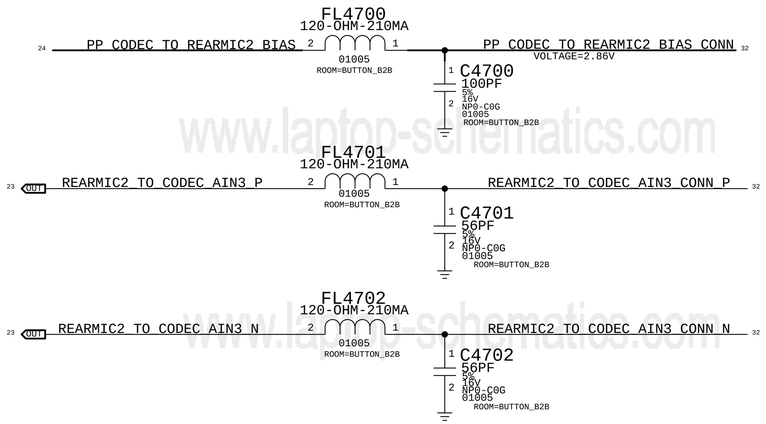
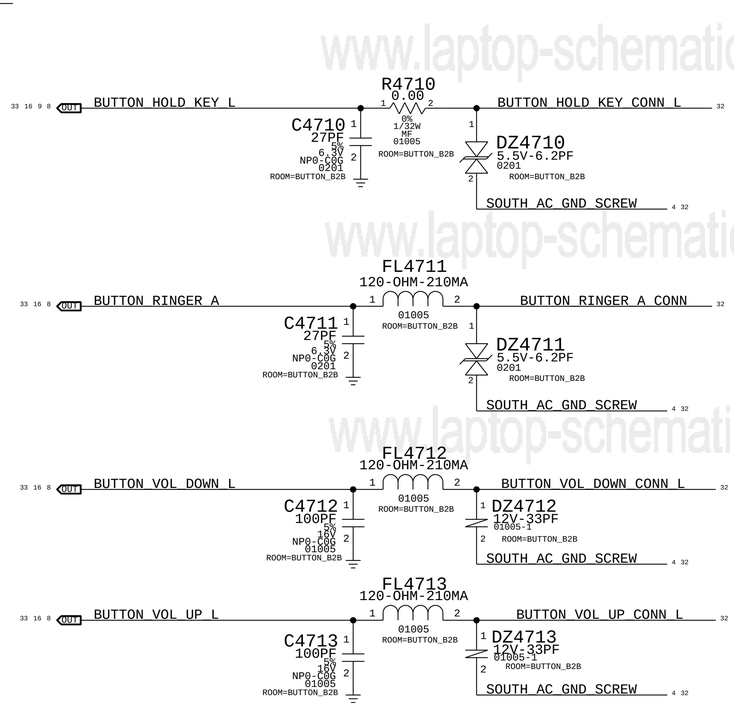
BUTTON FLEX

MIC2
ANC REF MIC

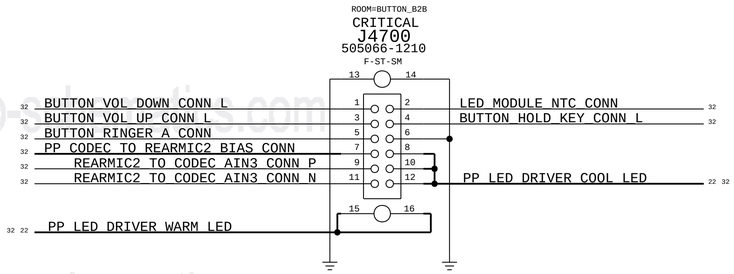


BUTTONS:
HOLD
RINGER
VOL UP/DOWN

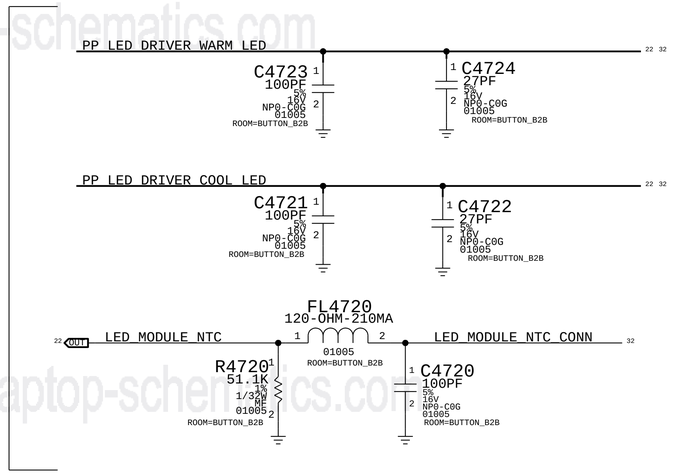


BUTTON FLEX CONNECTOR

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



STROBE:
WARM LED
COOL LED
MODULE NTC



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I456

RADIO_MLB_MIMO

SHARED POWER

PP_VCC_MAIN
PP3V0_TRISTAR
PP1V8_SDRAM

SUBDESIGN_SUFFIX=RF

BASEBAND

28 27 26 25 24 22 21 17 15 14	PP_VCC_MAIN	
31 30 27 19 15	PP3V0_TRISTAR	
31 30 27 24 16 15 14 12 8	PP1V8_SDRAM	
6 IN	PCIE_AP_TO_BB_TXD_P	PCIE0_AP_TO_BB_TX_P
6 IN	PCIE_AP_TO_BB_TXD_N	PCIE0_AP_TO_BB_TX_N
6 OUT	PCIE_BB_TO_AP_RXD_P	PCIE0_BB_TO_AP_TX_P
6 OUT	PCIE_BB_TO_AP_RXD_N	PCIE0_BB_TO_AP_TX_N
6 IN	PCIE_AP_TO_BB_REFCLK_P	PCIE0_AP_TO_BB_REFCLK_P
6 IN	PCIE_AP_TO_BB_REFCLK_N	PCIE0_AP_TO_BB_REFCLK_N
6 IN	PCIE_AP_TO_BB_RESET_L	PCIE0_AP_TO_BB_PERST_L
6 BI	PCIE_BB_BI_AP_CLKREQ_L	PCIE0_AP_TO_BB_CLKREQ_L
16 OUT	BB_TO_PMU_PCIE_HOST_WAKE_L	PCIE0_BB_TO_PMU_HOST_WAKE_L
6 IN	AP_TO_BB_PCIE_DEV_WAKE	PCIE0_AP_TO_BB_DEV_WAKE
8 IN	I2S_AP_TO_BB_LRCLK	I2S_AP_TO_BB_WS
8 IN	I2S_AP_TO_BB_BCLK	I2S_AP_TO_BB_CLK
8 IN	I2S_AP_TO_BB_DOUT	I2S_AP_TO_BB_TX
8 OUT	I2S_BB_TO_AP_DIN	I2S_BB_TO_AP_TX
8 IN	AP_TO_BB_RADIO_ON_L	AP_TO_BBPMU_RADIO_ON_L
16 IN	PMU_TO_BB_PMIC_RESET_L	PMU_TO_BBPMU_RESET_L
8 IN	AP_TO_BB_RESET_L	AP_TO_BB_RST_L
8 OUT	BB_TO_AP_RESET_DETECT_L	BB_TO_AP_RESET_DET_L
27 22 OUT	BB_TO_LED_DRIVER_GSM_BURST_IND	BB_TO_AP_GSM_TXBURST_IND
8 IN	AP_TO_BB_MESA_UP_L	AP_TO_BB_MESA_ON_L
8 IN	BB_TO_AP_GPS_TIME_MARK	BB_TO_AP_GPS_TIME_MARK
8 IN	AP_TO_BB_COREDUMP	AP_TO_BB_COREDUMP_TRIG
8 IN	BB_IPC_GPIO	AP_TO_BB_IPC_GPIO
29 9 8 IN	LCM_TO_OWL_BSYNC	TOUCH_TO_BBPMU_FORCE_PWM
9 IN	UART_OWL_TO_BB_TXD	UART0_OWL_TO_BB_TX
9 OUT	UART_BB_TO_OWL_RXD	UART0_BB_TO_OWL_TX
30 BI	USB_BB_DATA_P	USB_BB_P
30 BI	USB_BB_DATA_N	USB_BB_N
16 IN	PMU_TO_BB_USB_VBUS_DETECT	USB_BB_VBUS_DETECT
13 9 IN	SWD_AP_PERIPHERAL_SWCLK	SWD_CLK_BB_JTAG_TCK
9 BI	SWD_AP_BI_BB_SWDIO	SWD_IO_BB_JTAG_TMS
31 OUT	RFFE5_BB_TO_ANT_SCLK	75_RFFE5_SCLK_BB
31 BI	RFFE5_BB_TO_ANT_DATA	75_RFFE5_SDATA_BB
31 OUT	BB_LAT_GPIO1	RFFE_BUFFER_LAT_GPIO1
16 OUT	BB_TO_PMU_AMUX_LDO11_SIM1	BB_TO_PMU_AMUX_LDO11_SIM1
16 OUT	BB_TO_PMU_AMUX_SMPS1	BB_TO_PMU_AMUX_SMPS1
16 OUT	BB_TO_PMU_AMUX_SMPS3	BB_TO_PMU_AMUX_SMPS3
16 OUT	BB_TO_PMU_AMUX_SMPS4	BB_TO_PMU_AMUX_SMPS4

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

ANT

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

AP DEBUG

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

WLAN

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

BLUETOOTH

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

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

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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

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

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

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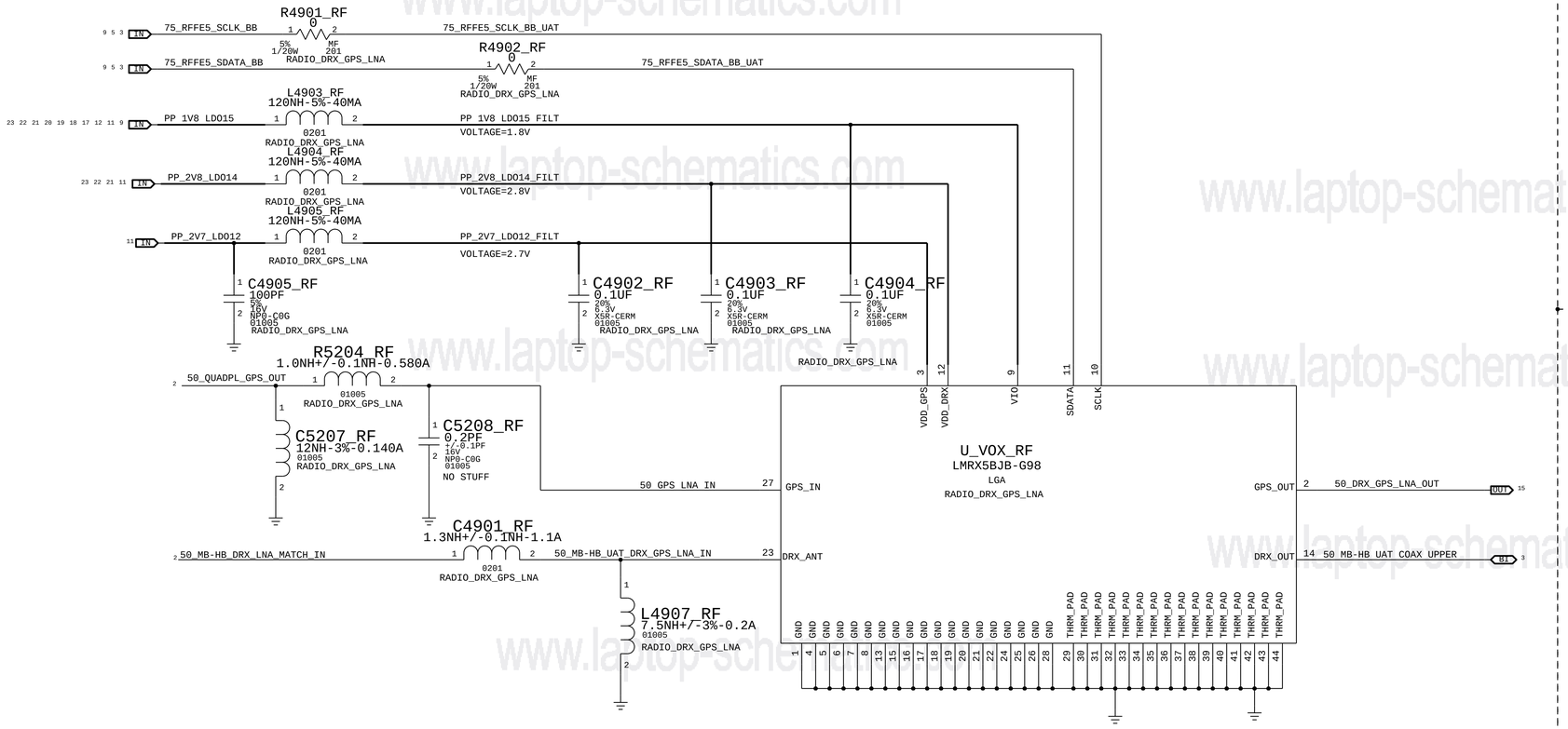
N71-SPECIFIC RADIO PAGE 2

DIVERSITY LNA



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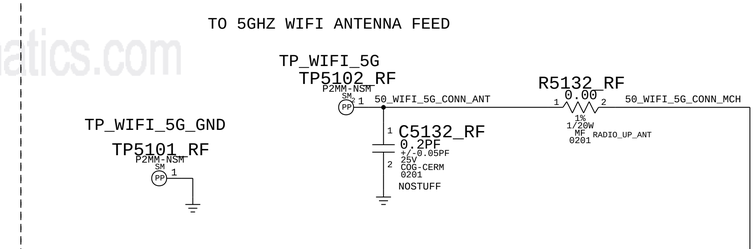

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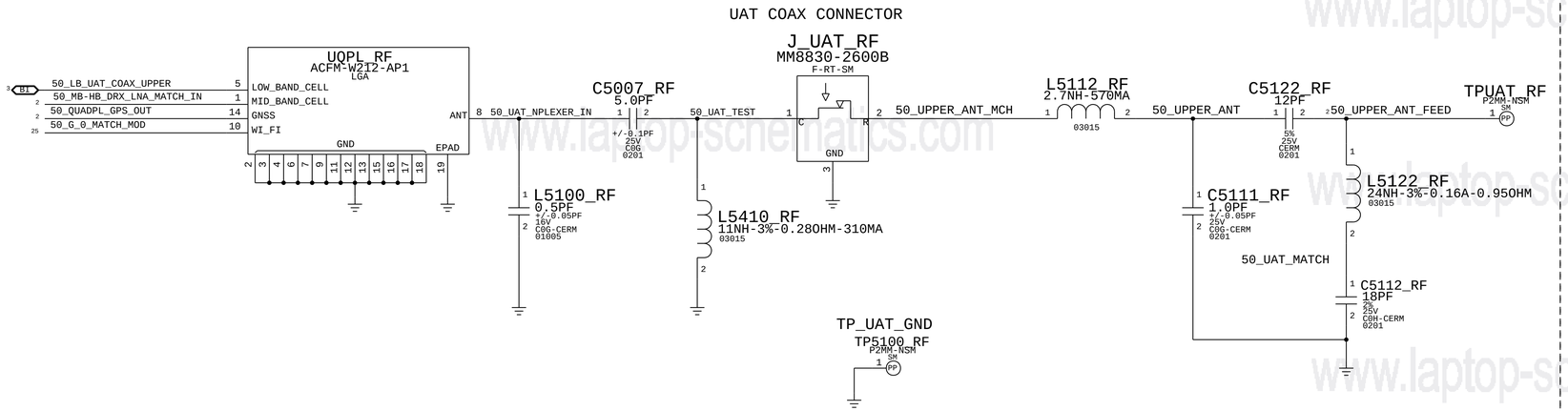

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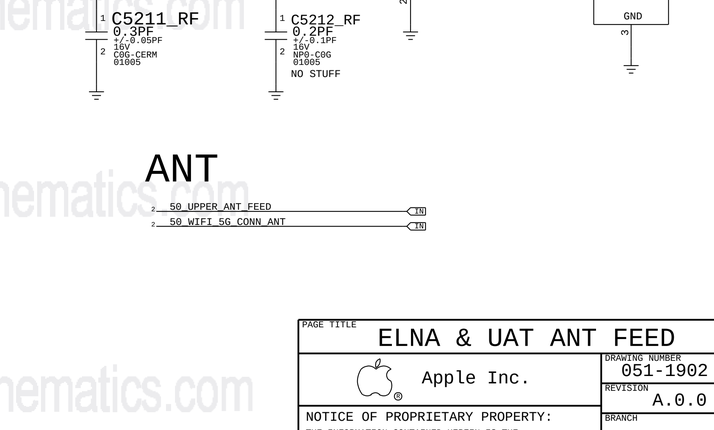

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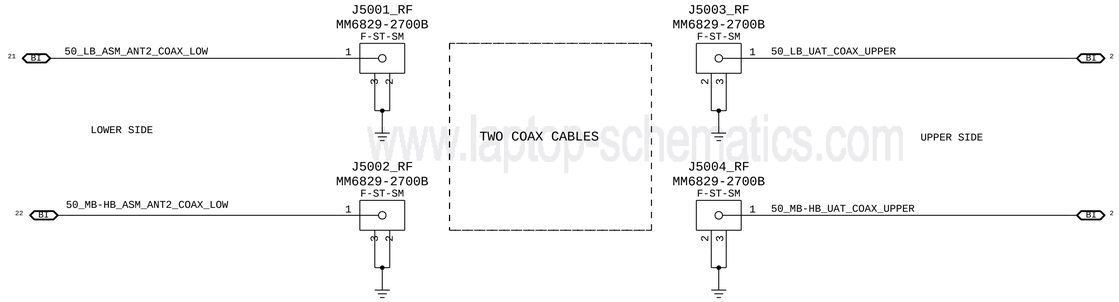
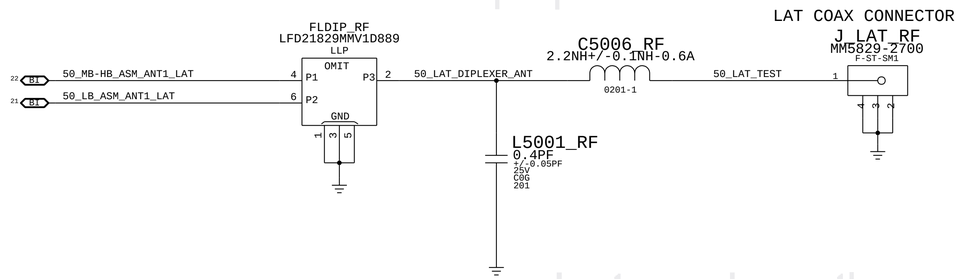
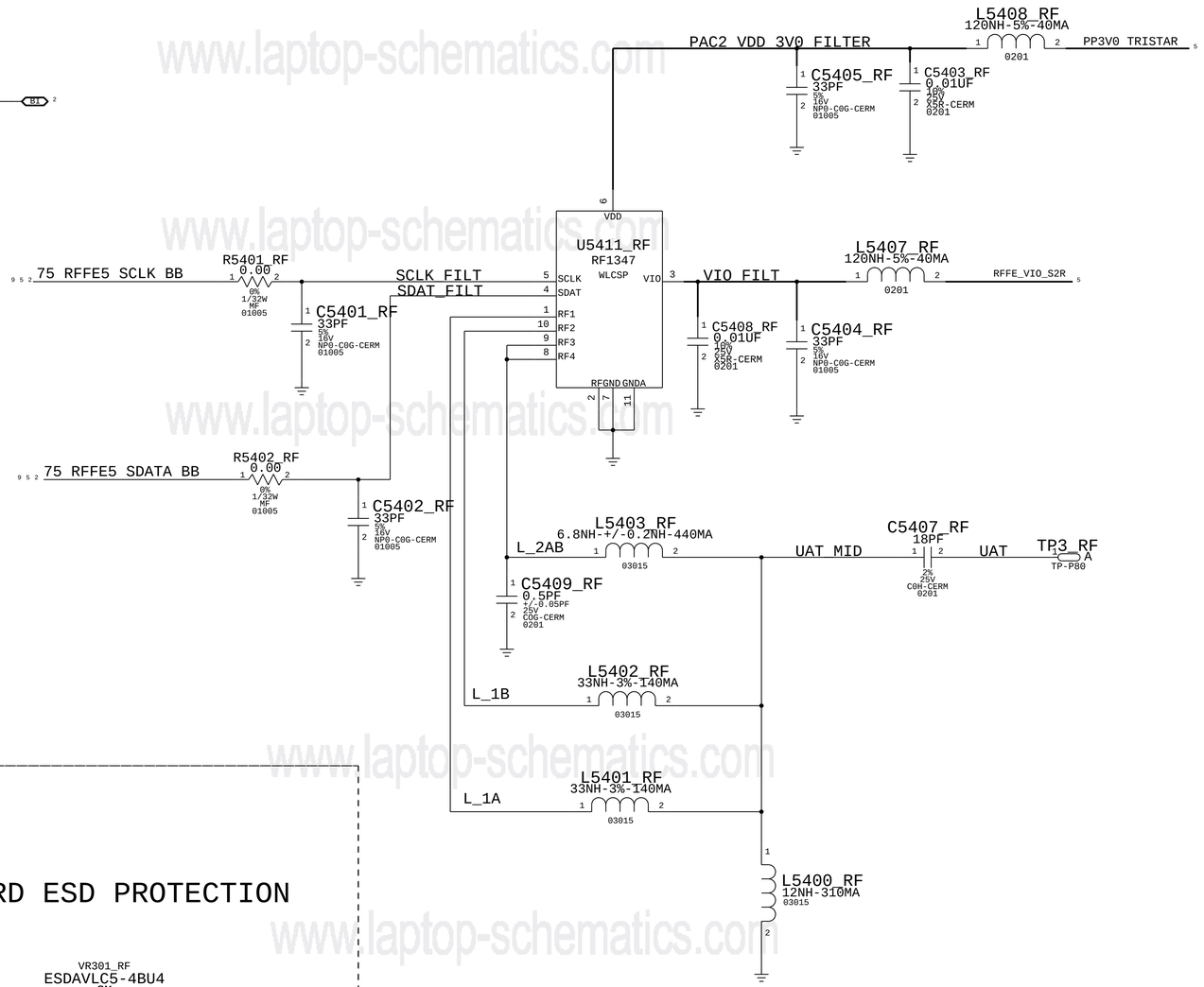
ANTENNA FEEDS AND CONNECTORS

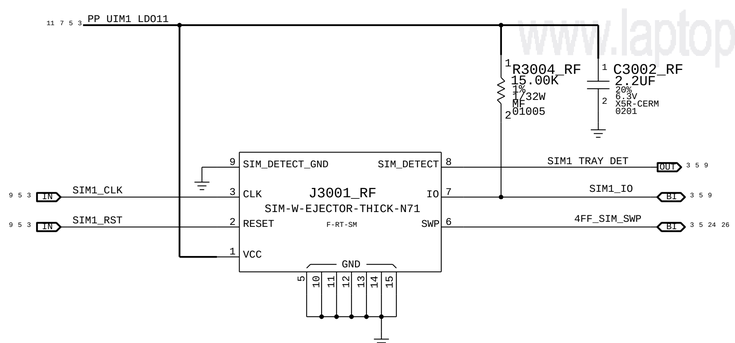




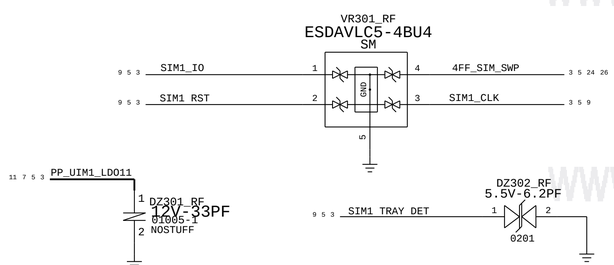
UAT TUNER



SIM CARD CONNECTOR



SIM CARD ESD PROTECTION



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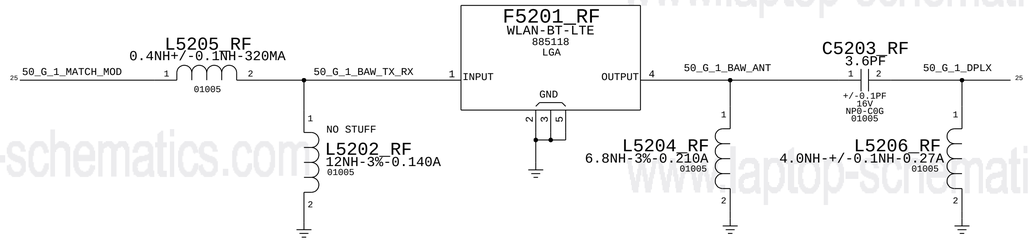
N71-SPECIFIC RADIO PAGE 4

WLAN LAT 2.4GHZ BAW BPF



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PAGE TITLE	WLAN LAT 2.4GHZ BAW BPF
	Apple Inc.
DRAWING NUMBER	051-1902
SIZE	D
REVISION	A.0.0
BRANCH	
PAGE	4 OF 51
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AP TO BB/WLAN/BT/SH CONNECTIONS

BASEBAND

- PP_VCC_MAIN — IO
- AP_TO_BBPMU_RADIO_ON_L — IN
- PMU_TO_BBPMU_RESET_L — IN
- AP_TO_BB_RST_L — IN
- BB_TO_AP_RESET_DET_L — OUT (SINGLE_NODENET)
- BB_TO_AP_GSM_TXBURST_IND — OUT
- AP_TO_BB_MESA_ON_L — IN
- BB_TO_AP_GPS_TIME_MARK — OUT
- AP_TO_BB_COREDUMP_TRIG — IN
- AP_TO_BB_IPC_GPIO — IN
- TOUCH_TO_BBPMU_FORCE_PWM — IN
- UART0_BB_TO_OWL_TX — OUT
- UART0_OWL_TO_BB_TX — IN
- PCIE0_AP_TO_BB_REFCLK_P — IN
- PCIE0_AP_TO_BB_REFCLK_N — IN
- PCIE0_AP_TO_BB_TX_P — IN
- PCIE0_AP_TO_BB_TX_N — IN
- PCIE0_BB_TO_AP_TX_P — OUT
- PCIE0_BB_TO_AP_TX_N — OUT
- PCIE0_AP_TO_BB_PERST_L — IN
- PCIE0_AP_TO_BB_CLKREQ_L — IN
- PCIE0_BB_TO_PMU_HOST_WAKE_L — OUT
- PCIE0_AP_TO_BB_DEV_WAKE — IN
- I2S_AP_TO_BB_WS — IN
- I2S_AP_TO_BB_CLK — IN
- I2S_AP_TO_BB_TX — IN
- I2S_BB_TO_AP_TX — OUT
- USB_BB_P — OUT
- USB_BB_N — OUT
- USB_BB_VBUS_DETECT — IN
- SWD_CLK_BB_JTAG_TCK — IN
- SWD_IO_BB_JTAG_TMS — IN
- RFFE_BUFFER_LAT_GPIO1 — OUT
- 75_RFFE5_SDATA_BB — OUT
- 75_RFFE5_SCLK_BB — OUT
- PP3V0_TRISTAR — IN
- BB_TO_PMU_AMUX_SMPS1 — OUT
- BB_TO_PMU_AMUX_SMPS3 — OUT
- BB_TO_PMU_AMUX_SMPS4 — OUT
- BB_TO_PMU_AMUX_LDO11_SIM1 — OUT

WLAN/BT

- PMU_TO_WLAN_32K_CLK — IN
- PMU_TO_WLAN_REG_ON — IN
- PMU_TO_BT_REG_ON — IN
- WLAN_TO_PMU_HOST_WAKE — OUT
- BT_TO_PMU_HOST_WAKE — OUT
- AP_TO_BT_WAKE — IN
- UART1_AP_TO_BT_TX — IN
- UART1_BT_TO_AP_TX — OUT
- UART1_AP_TO_BT_RTS_L — IN
- UART1_BT_TO_AP_RTS_L — OUT
- I2S_AP_TO_BT_BCLK — IN
- I2S_AP_TO_BT_LRCK — IN
- I2S_BT_TO_AP_DOUT — OUT
- I2S_AP_TO_BT_DOUT — IN
- UART4_AP_TO_WLAN_TX — IN
- UART4_WLAN_TO_AP_TX — OUT
- UART4_WLAN_TO_AP_RTS_L — OUT
- UART4_AP_TO_WLAN_RTS_L — IN
- PCIE_WLAN_TO_AP_CLKREQ_L — OUT
- PCIE_AP_TO_WLAN_PERST_L — IN
- PCIE_AP_TO_WLAN_DEV_WAKE — IN
- PCIE_AP_TO_WLAN_TX_P — IN
- PCIE_AP_TO_WLAN_TX_N — IN
- PCIE_AP_TO_WLAN_REFCLK_P — IN
- PCIE_AP_TO_WLAN_REFCLK_N — IN
- PCIE_WLAN_TO_AP_TX_P — OUT
- PCIE_WLAN_TO_AP_TX_N — OUT
- OWL_TO_WLAN_CONTEXT_A — IN
- OWL_TO_WLAN_CONTEXT_B — IN

AP DEBUG

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

STOCKHOLM

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

ANT

- STOCKHOLM_ANT — IN

POWER

- PP1V8_SDRAM (VOLTAGE=1.8V) — MAKE_BASE=TRUE
- PP_1V8_S2R_VDDIO_WLAN_BT (VOLTAGE=1.8V)
- PP_STOCKHOLM_1V8_S2R (VOLTAGE=1.8V)
- RFFE_VIO_S2R (VOLTAGE=1.8V)

MLB PROBE POINTS

PCIE

- PP3073_RF — PCIE0_AP_TO_BB_PERST_L
- PP3074_RF — PCIE0_BB_TO_PMU_HOST_WAKE_L
- PP3075_RF — PCIE0_AP_TO_BB_CLKREQ_L
- PP3076_RF — PCIE0_AP_TO_BB_DEV_WAKE
- PP3080_RF — PCIE0_AP_TO_BB_REFCLK_P
- PP3081_RF — PCIE0_AP_TO_BB_REFCLK_N
- PP3084_RF — PCIE0_AP_TO_BB_TX_P
- PP3085_RF — PCIE0_AP_TO_BB_TX_N
- PP3090_RF — BB_JTAG_SRST_L
- PP3091_RF — SWD_IO_BB_JTAG_TMS

PMU

- PP3032_RF — PMIC_RESOUT_L
- PP3033_RF — 50_SLEEP_CLK_32K
- PP3034_RF — XO_OUT_D0_EN
- PP3036_RF — SPMI_CLK
- PP3037_RF — SPMI_DATA

BASEBAND

- PP3017_RF — BB_DEBUG_ERROR
- PP3018_RF — 50_MDM_PCIE_CLK
- PP3019_RF — 50_BBPMU_TO_STOCKHOLM_19P2M_CLK
- PP3006_RF — STOCKHOLM_TO_BBPMU_CLK_REQ

ESD CAPS

PMU_TO_BBPMU_RESET_L → SIM2_RESET

- C5101_RF 100PF 6.3V X6S 01005
- C3503_RF 100PF 6.3V X6S 01005

DEBUG CONNECTOR

NOSTUFF
J3000_RF
AXE550124
F-ST-SM

		SIM1_CLK	3 9
		SIM1_RST	3 9
UART_WLAN_TO_BB_COEX_TX	25 9	SIM1_IO	3 9
I2C0_AP_SDA	5	PP_UIM1_LDO11	9 7 11
I2C0_AP_SCL	5	SIM1_TRAY_DET	3 9
BUTTON_VOL_DOWN_L	5	4FF_SIM_SWP	3 24 26
BUTTON_VOL_UP_L	5	I2C1_AP_SDA	5
BUTTON_RINGER_A	5	I2C1_AP_SCL	5
SIM2_RESET	24 9 5	BUTTON_HOLD_KEY_L	5
SIM2_DATA	24 9	BUTTON_MENU_KEY_L	5
UART_BB_TO_WLAN_COEX_TX	25 9	PP1V8	5
SIM2_DETECT	9	FORCE_DFU	5
SIM2_DATA_R	24	SIM2_CLK	9 24
		PP_UIM2_LDO13	7 11 24

PMU

- PP3008_RF — I2S_AP_TO_BB_WS
- PP3009_RF — I2S_AP_TO_BB_CLK
- PP3010_RF — I2S_AP_TO_BB_TX
- PP3011_RF — I2S_BB_TO_AP_TX
- PP3012_RF — AP_TO_BB_MESA_ON_L
- PP3013_RF — BB_TO_AP_GSM_TXBURST_IND
- PP3014_RF — BB_TO_AP_GPS_TIME_MARK

BASEBAND

- PP3016_RF — UART0_BB_TO_OWL_TX
- PP3020_RF — UART0_OWL_TO_BB_TX

ANT TUNER

- PP3001_RF — 75_RFFE5_SDATA_BB
- PP3002_RF — 75_RFFE5_SCLK_BB

RFFE

- PP3056_RF — 75_RFFE1_SDATA_BB
- PP3077_RF — 75_RFFE4_SDATA_BB
- PP3051_RF — 75_RFFE5_SCLK_BB_BUFFER
- PP3052_RF — 75_RFFE5_SDATA_BB_BUFFER
- PP3053_RF — 75_RFFE2_SDATA_BB
- PP3054_RF — 75_RFFE3_SDATA_BB

STOCKHOLM

- PP3062_RF — STOCKHOLM_DWPM_DBG
- PP3063_RF — STOCKHOLM_DWPS_DBG
- PP3064_RF — UART3_AP_TO_STOCKHOLM_TXD
- PP3065_RF — UART3_STOCKHOLM_TO_AP_TXD
- PP3066_RF — UART3_AP_TO_STOCKHOLM_RTS_L
- PP3067_RF — UART3_STOCKHOLM_TO_AP_RTS_L

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PAGE TITLE: DEBUG CONN & TEST POINTS

Apple Inc.

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SIZE: D
REVISION: A.0.0
BRANCH:
PAGE: 30 OF 51
SHEET: 38 OF 59

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BASEBAND: POWER 1

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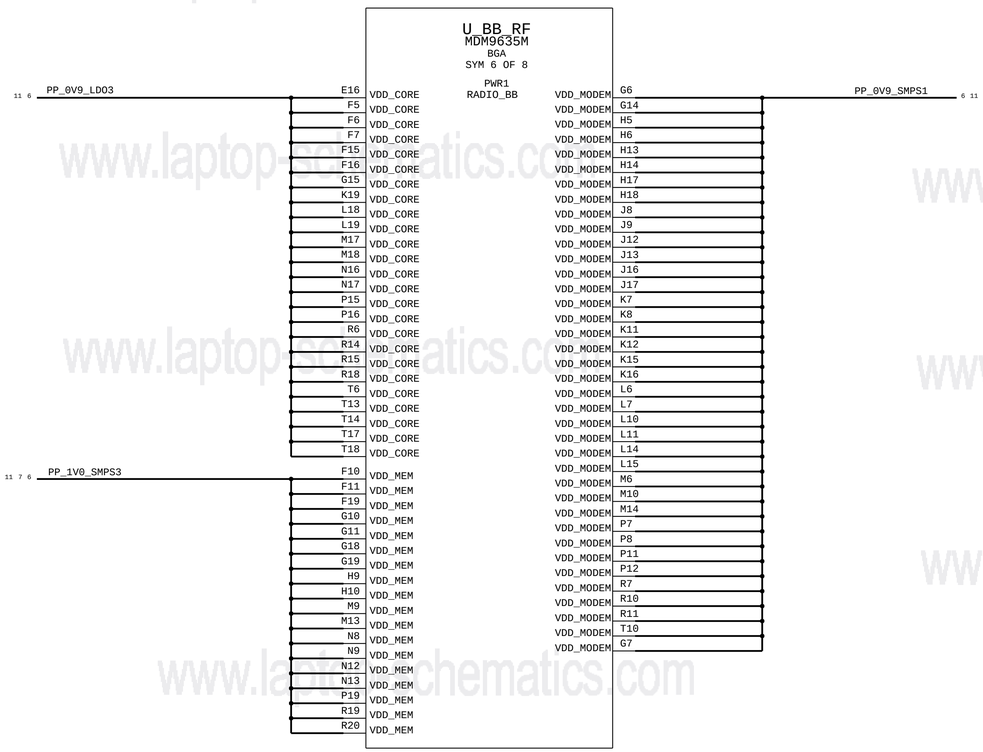

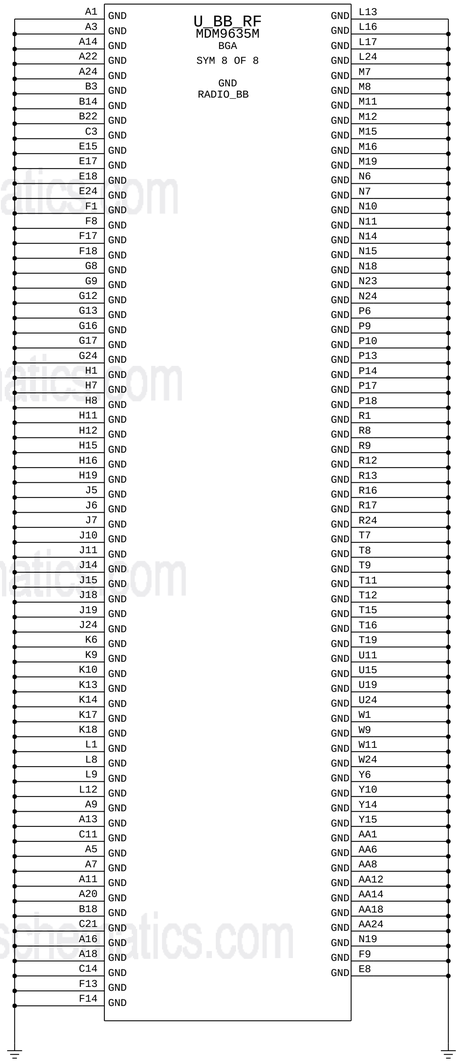

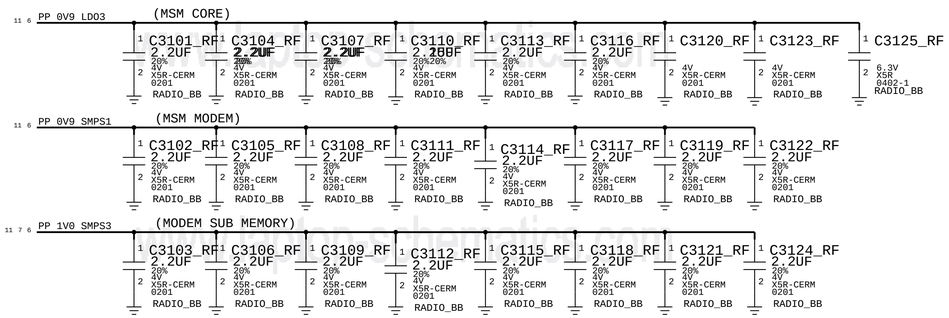

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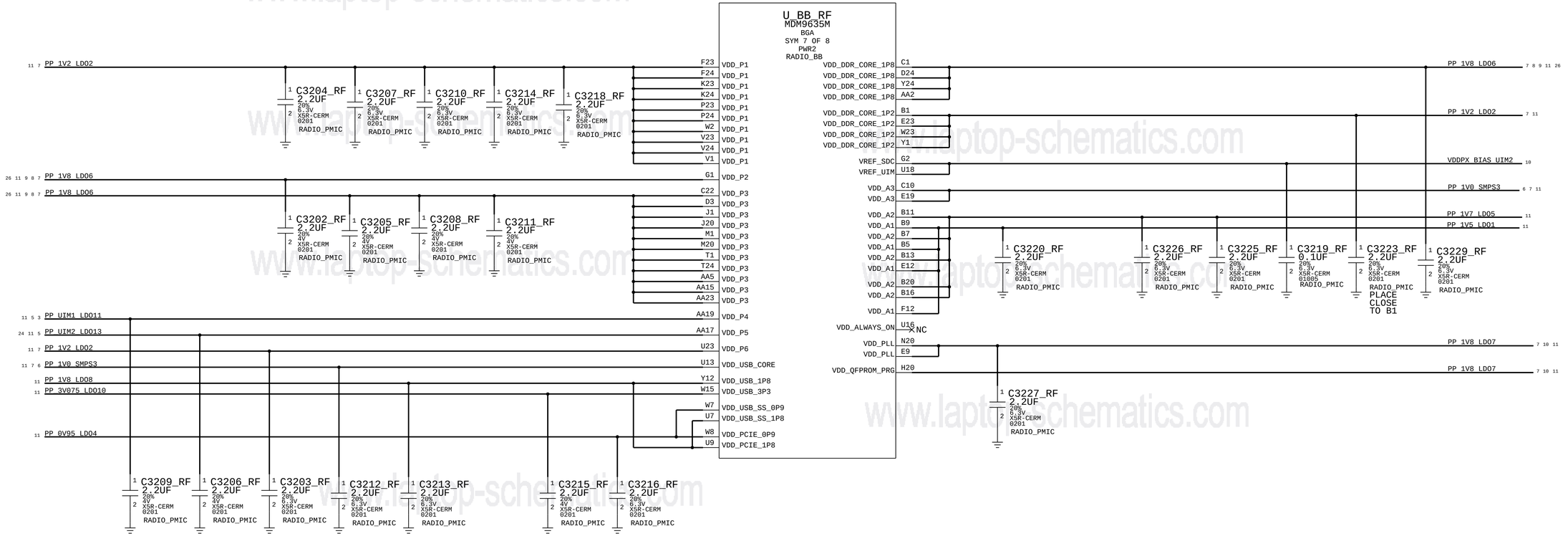
BASEBAND: POWER 2



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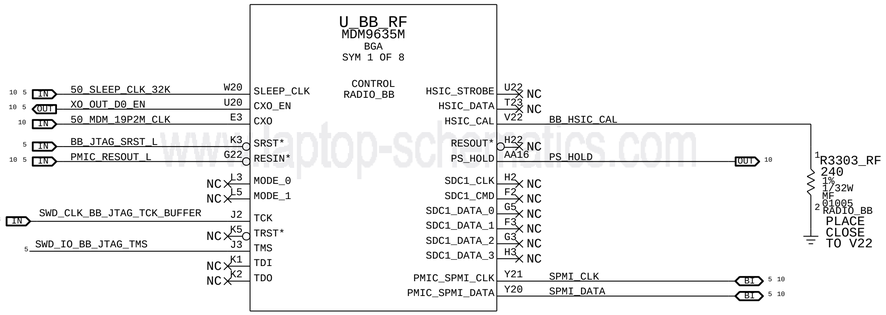
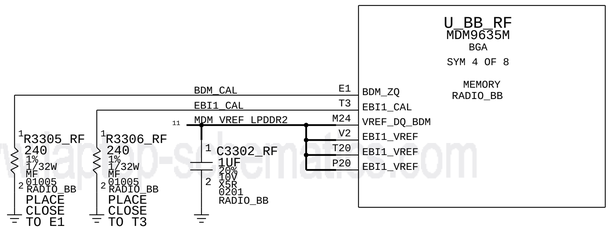
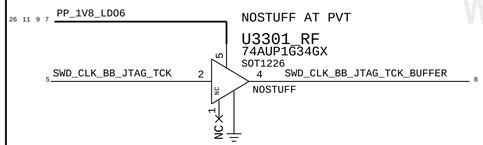
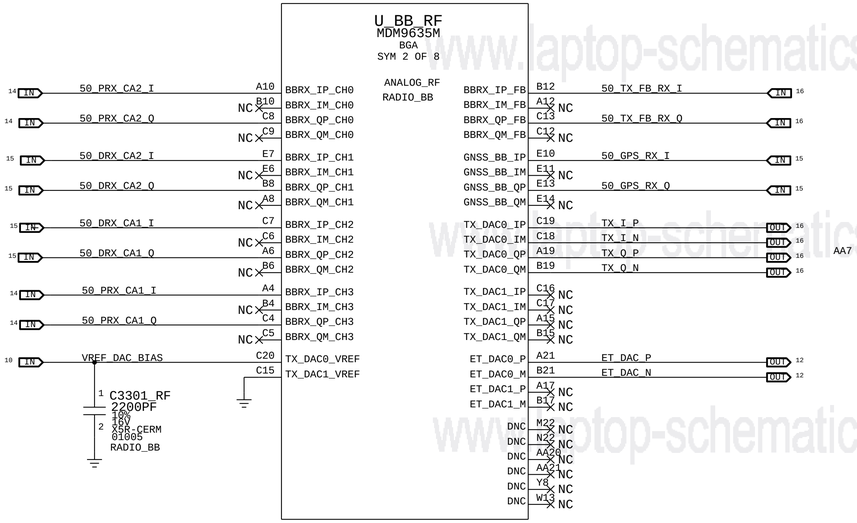
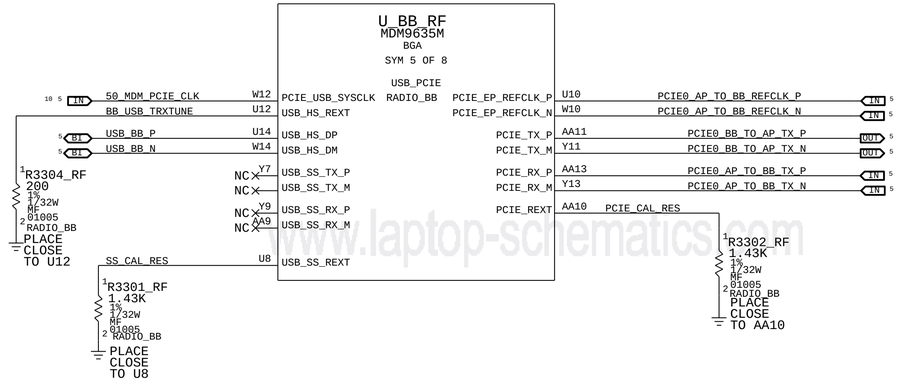
BASEBAND: CONTROL AND INTERFACES











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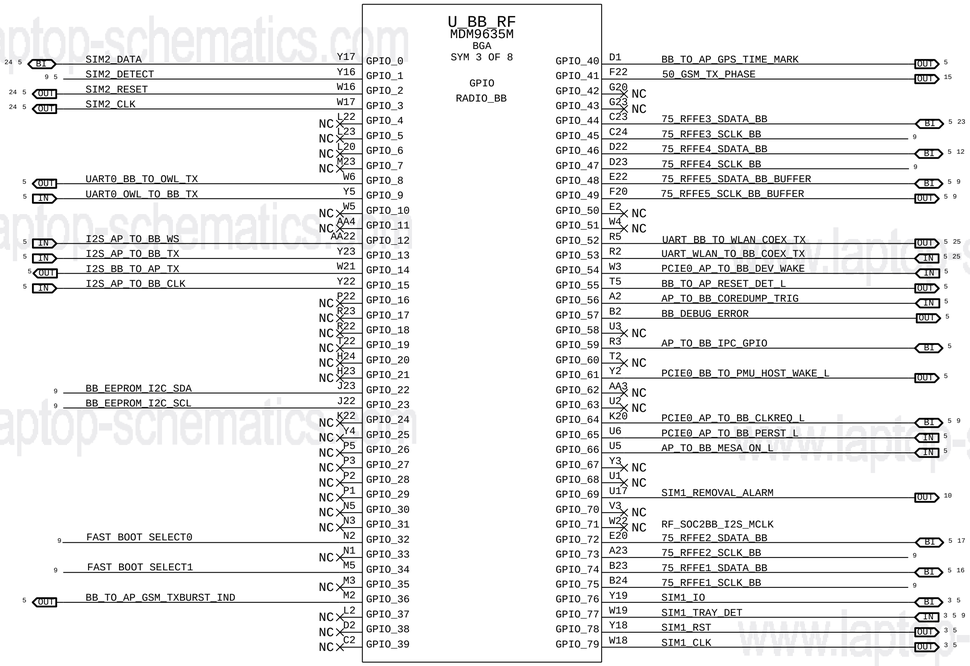
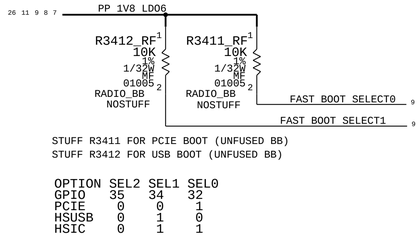
BASEBAND: GPIOS

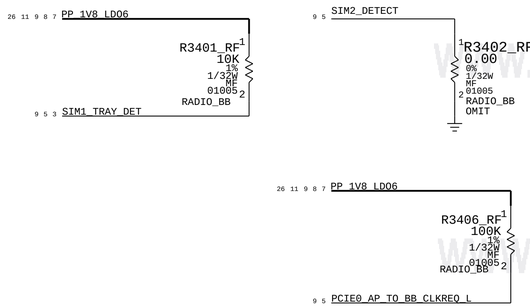




STUFF R3411 FOR PCIE BOOT (UNFUSED BB)
STUFF R3412 FOR USB BOOT (UNFUSED BB)

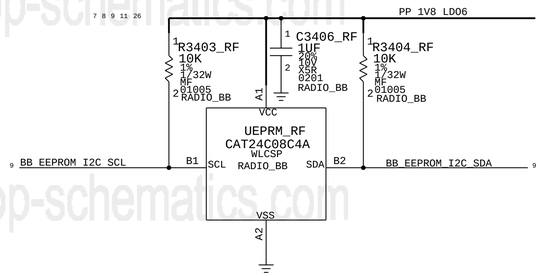
OPTION	SEL2	SEL1	SEL0
GPIO	35	34	32
PCIE	0	0	1
HSUSB	0	1	0
HSIC	0	1	1

NOSTUFF R3402 WHEN VINYL PRESENT
STUFF R3402 WHEN VINYL NOT PRESENT

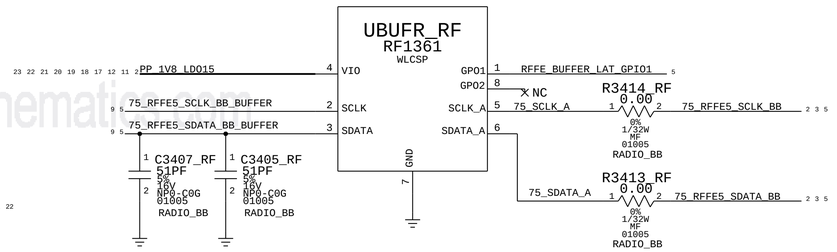


PCIE PULL-UPS TO BB RAIL

BB EEPROM

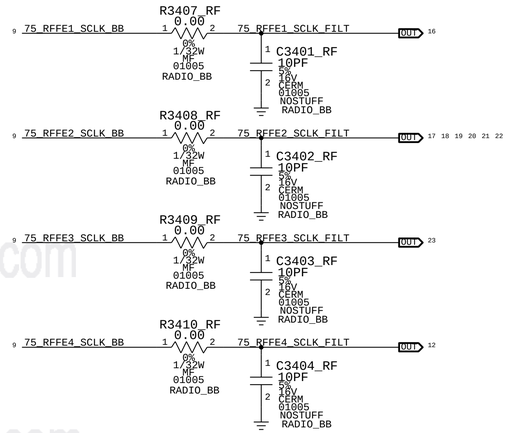


BUFFER ON RFFE5
SCLK/SDATA_A IS OUTPUT



PLACE C3405_RF CLOSE TO BUFFER
PLACE C3407_RF CLOSE TO MDM

RFFE CLOCK FILTERS



RFFE USAGE TABLE

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

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PMU: CONTROL AND CLOCKS

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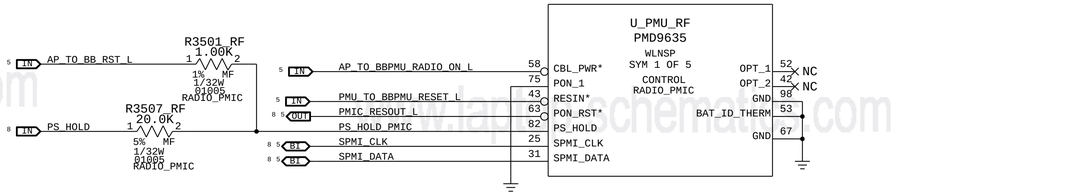
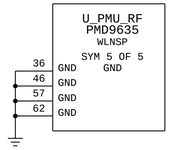
HW_REV2_ID	R3502	R3503	CONFIG
1.80V	698K	-	MLB
0.12V	698K	51.1K	SELF GEN

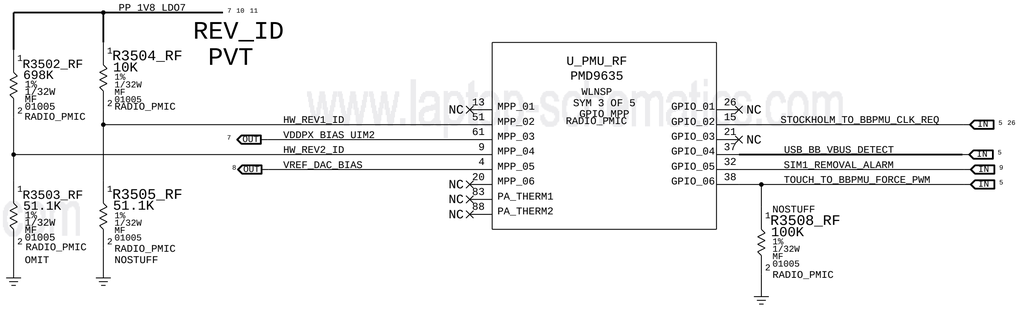
HW_REV_ID	R3504	R3505	REVISION
0.10V	887K	51.1K	DEV1
0.30V	255K	51.1K	DEV2
0.50V	124K	51.1K	DEV3
0.70V	82.5K	51.1K	DEV4/PROTOMLB1
0.90V	51.1K	51.1K	PROTOMLB2
1.10V	31.6K	51.1K	DEV5/PROTO1
1.20V	50K	100K	PROTO2
1.31V	39K	105K	EVT
1.43V	13.3K	51.1K	EVT ALT
1.55V	8.25K	51.1K	CARRIER BUILD
1.67V	3.92K	51.1K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

RESET AND CONTROL: PMU

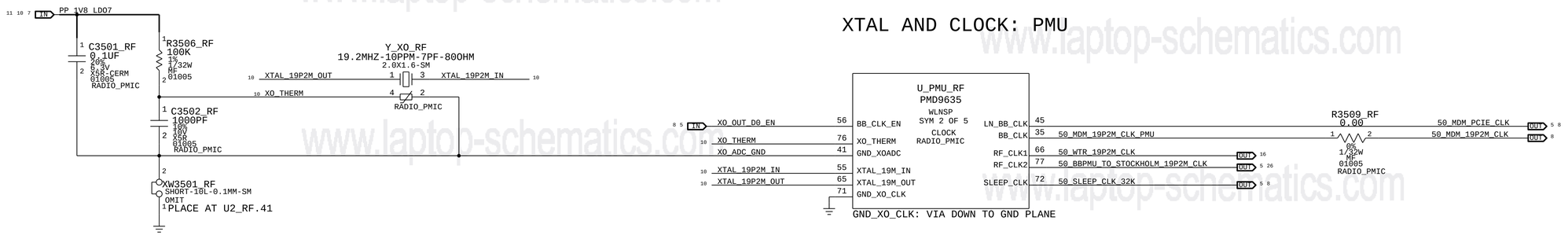




MPPS AND GPIOS: PMU



XTAL AND CLOCK: PMU



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PAGE TITLE
CELLULAR PMU: CONTROL AND CLOCKS

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SHEET 43 OF 59

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PMU: SWITCHERS AND LDOS

SWITCHERS BULK CAPS

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

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

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

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

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

U_PMU_RF
PMD9635
WLNSP
SYM 4 OF 5
POWER

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

VREG_S1	10	VREG_S1	
VSW_S1	11	VSW_S1	
VSW_S1	22	VSW_S1	
VSW_S1	27	VSW_S1	
VREG_S2	91	VREG_S2	
VSW_S2	97	VSW_S2	
VREG_S3	69	VREG_S3	
VSW_S3	59	VSW_S3	
VSW_S3	64	VSW_S3	
VREG_S4	12	VREG_S4	
VSW_S4	2	VSW_S4	
VREG_S5	87	VREG_S5	
VSW_S5	99	VSW_S5	
VREG_L1	80	VREG_L1	VOLTAGE=1.5V — MDM LOW VOLTAGE ANALOG — TCXO SHUTDOWN: ON — PP_1V7_LDO5
VREG_L2	81	VREG_L2	VOLTAGE=1.2V — MDM EBI1, DDR CORE — TCXO SHUTDOWN: ON — PP_1V2_LDO2
VREG_L3	39	VREG_L3	VOLTAGE=0.9V — MDM CORE — TCXO SHUTDOWN: ON — PP_0V9_LDO3
VREG_L4_16	48	VREG_L4_16	VOLTAGE=0.95V — MDM PCIE — TCXO SHUTDOWN: OFF — PP_0V95_LDO4
VREG_L5	19	VREG_L5	VOLTAGE=1.7V — MDM HIGH VOLTAGE ANALOG — TCXO SHUTDOWN: ON — PP_1V7_LDO5
VREG_L6	3	VREG_L6	VOLTAGE=1.8V — MDM 1.8V I/O, DDR, SHARED 1.8V VOLTAGE RAIL — TCXO SHUTDOWN: ON — PP_1V8_LDO6
VREG_L7	18	VREG_L7	VOLTAGE=1.8V — MDM PLL — TCXO SHUTDOWN: OFF — PP_1V8_LDO7
VREG_L8	29	VREG_L8	VOLTAGE=1.8V — MDM LOW VOLTAGE USB — TCXO SHUTDOWN: ON — PP_1V8_LDO8
VREG_L9	100	VREG_L9	VOLTAGE=1.0V — WTR — TCXO SHUTDOWN: OFF — PP_1V0_LDO9
VREG_L10	84	VREG_L10	VOLTAGE=3.075V — MDM HIGH VOLTAGE USB — TCXO SHUTDOWN: ON — PP_3V075_LDO10
VREG_L11	95	VREG_L11	VOLTAGE=1.8V — UIM1 — TCXO SHUTDOWN: ON — PP_UIM1_LDO11
VREG_L12	85	VREG_L12	VOLTAGE=2.7V — GPS LNA — TCXO SHUTDOWN: OFF — PP_2V7_LDO12
VREG_L13	96	VREG_L13	VOLTAGE=1.8V — UIM2 — TCXO SHUTDOWN: ON — PP_UIM2_LDO13
VREG_L14	101	VREG_L14	VOLTAGE=2.8V — FRONT END SUPPLY — TCXO SHUTDOWN: OFF — PP_2V8_LDO14
VREG_L15	30	VREG_L15	VOLTAGE=1.8V — RFFE VIO — TCXO SHUTDOWN: OFF — PP_1V8_LDO15
VREG_XO	34	VREG_XO	
GND_XO	40	VREG_XO_GND	
VREG_RF	60	VREG_RF_CLK	
GND_RF_CLK	70	VREG_RF_CLK_GND	

L3601_RF 1UH-20%-0.054OHM-3.4A 2520 RADIO_PMIC
PP_VSW_S1 → VOLTAGE=0.9V
C3609_RF 43UF 20% 4V X5R 0603 S1_GND
C3614_RF 43UF 20% 4V X5R 0603 NOSTUFF
MDM MODEM — TCXO SHUTDOWN: ON — 3400MA — VOLTAGE=0.9V — PP_0V9_SMPS1

L3602_RF 2.2UH-20%-0.140HM-1.6A 0806 RADIO_PMIC
PP_VSW_S2 → VOLTAGE=1.225V
C3610_RF 43UF 20% 4V X5R 0603 S2_GND
LOW VOLTAGE LDOS — TCXO SHUTDOWN: ON — 587MA — VOLTAGE=1.225V — PP_1V225_SMPS2

L3603_RF 1.0UH-20%-2.7A-0.056OHM 0806 RADIO_PMIC
PP_VSW_S3 → VOLTAGE=1.0V
C3611_RF 43UF 20% 4V X5R 0603 S3_GND
MDM MEMORY, MDM USB — TCXO SHUTDOWN: ON — 2234MA — VOLTAGE=1.0V — PP_1V0_SMPS3

L3604_RF 2.2UH-20%-0.140HM-1.6A 0806 RADIO_PMIC
PP_VSW_S4 → VOLTAGE=1.85V
C3612_RF 43UF 20% 4V X5R 0603 S4_GND
HIGH VOLTAGE LDOS — TCXO SHUTDOWN: ON — 653MA — VOLTAGE=1.85V — PP_1V85_SMPS4

L3605_RF 2.2UH-20%-0.140HM-1.6A 0806 RADIO_PMIC
PP_VSW_S5 → VOLTAGE=1.0V
C3613_RF 43UF 20% 4V X5R 0603 S5_GND
LDO9->WTR — TCXO SHUTDOWN: OFF — 700MA — VOLTAGE=1.0V — PP_1V0_SMPS5

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

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

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

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

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

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

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PMU: ET MODULATOR

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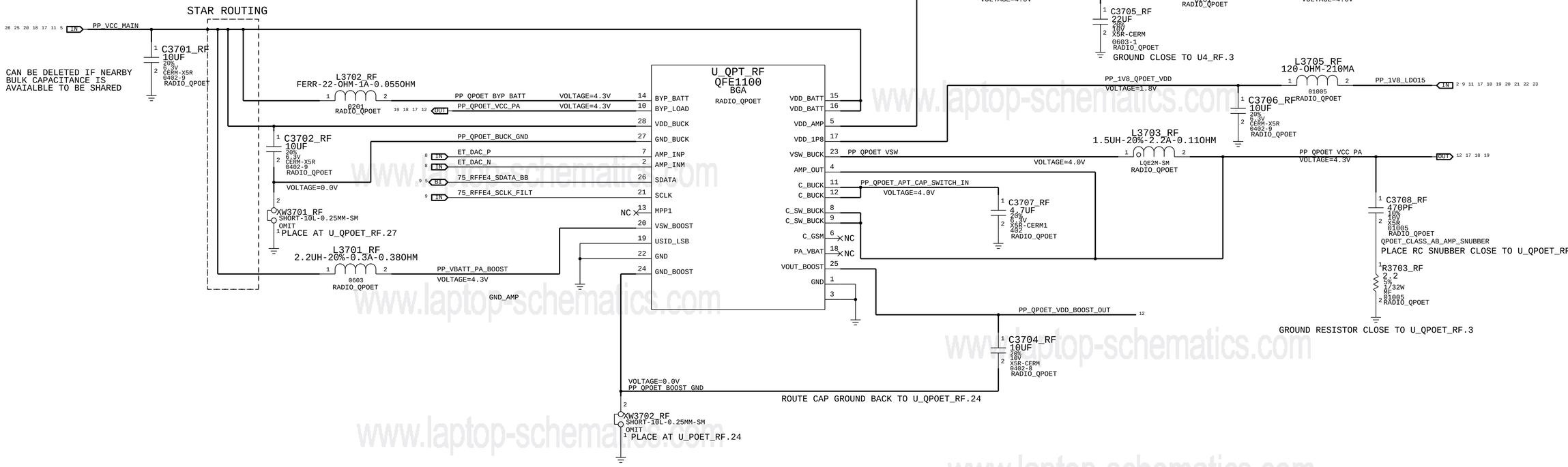

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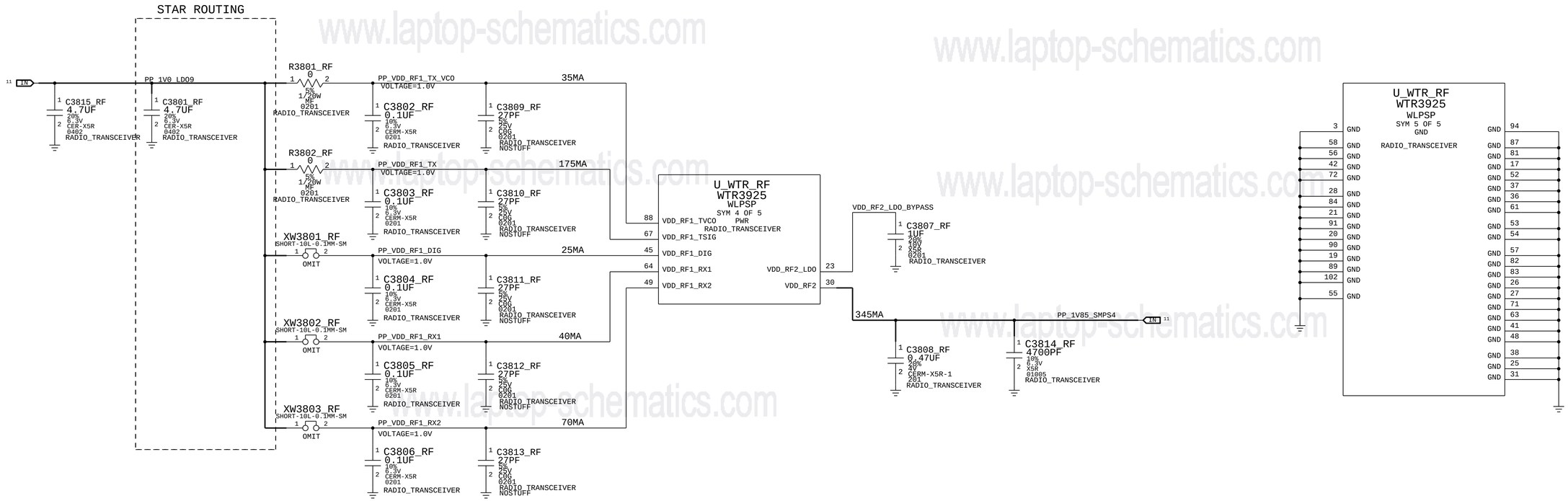
TRANSCEIVER: POWER



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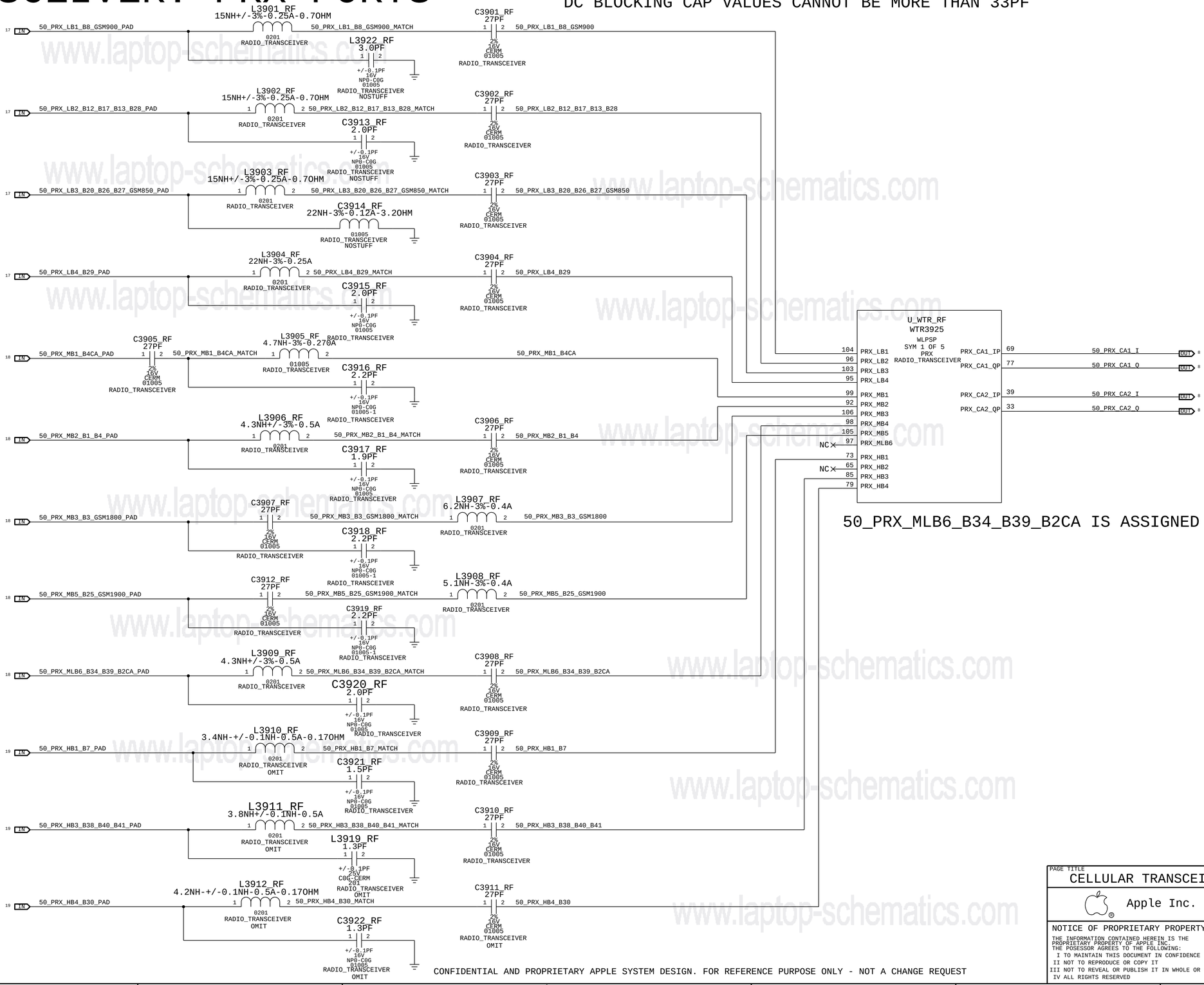
TRANSCEIVER: PRX PORTS

DC BLOCKING CAP VALUES CANNOT BE MORE THAN 33PF



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TRANSCEIVER: DRX/GPS PORTS

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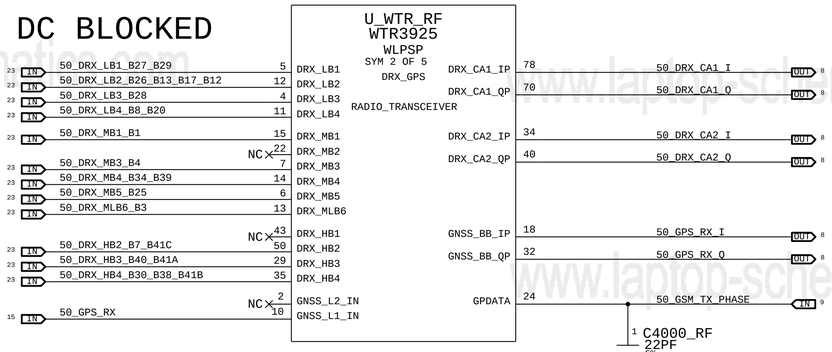
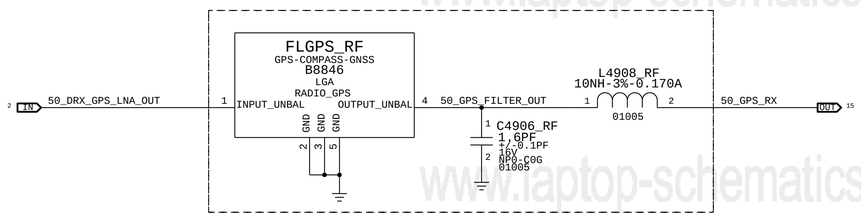
DRX MODULE PORTS ARE DC BLOCKED



PLACE CAP CLOSE TO MDM GPIO14
IMPROVES RXBN BY 4DB

GPS FILTER

PLACE NEAR U_WTR



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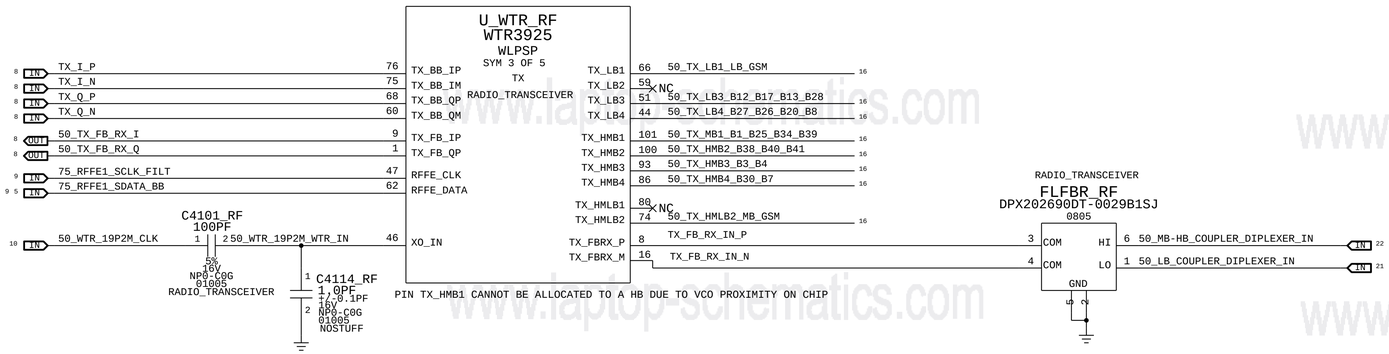
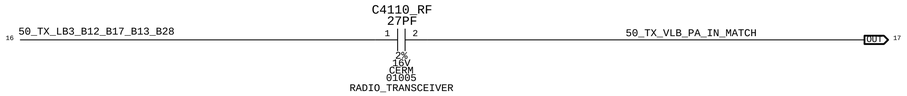
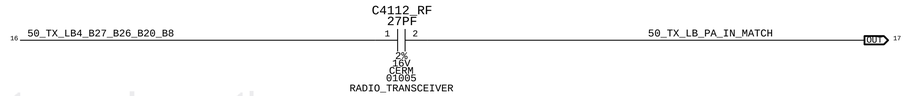
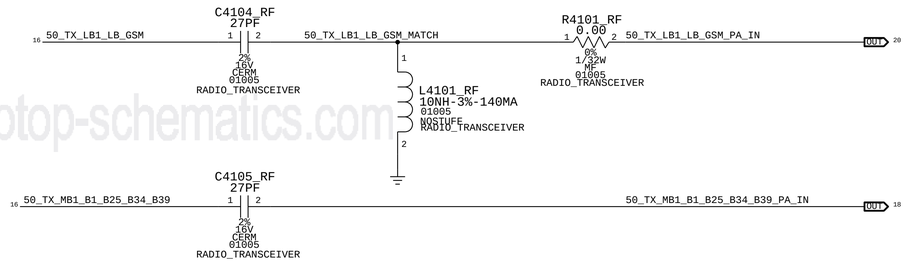
TRANSCEIVER: TX PORTS

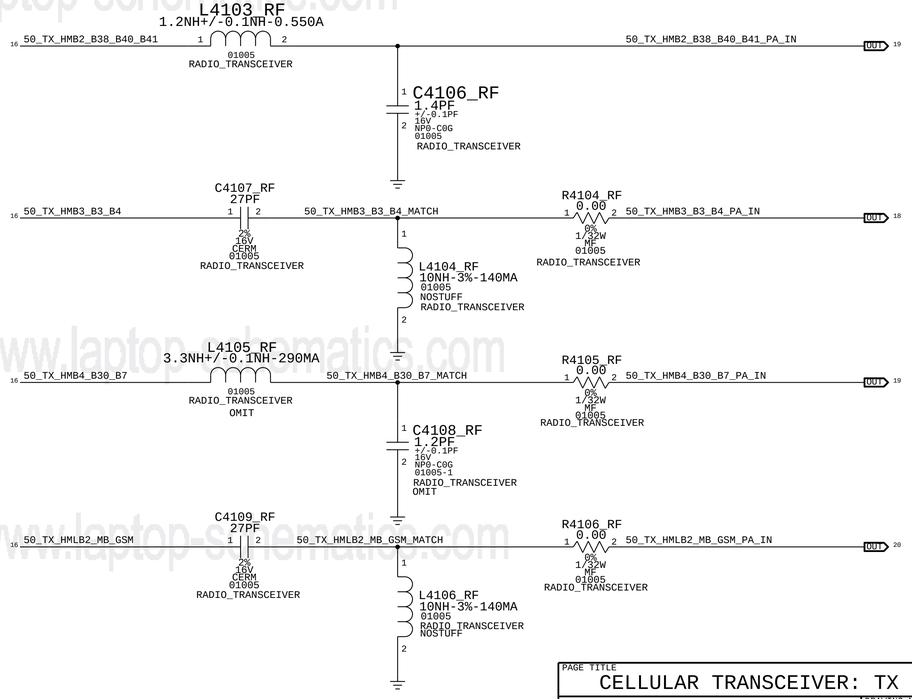
B12/13 TX INTERSTAGE FILTER REMOVED











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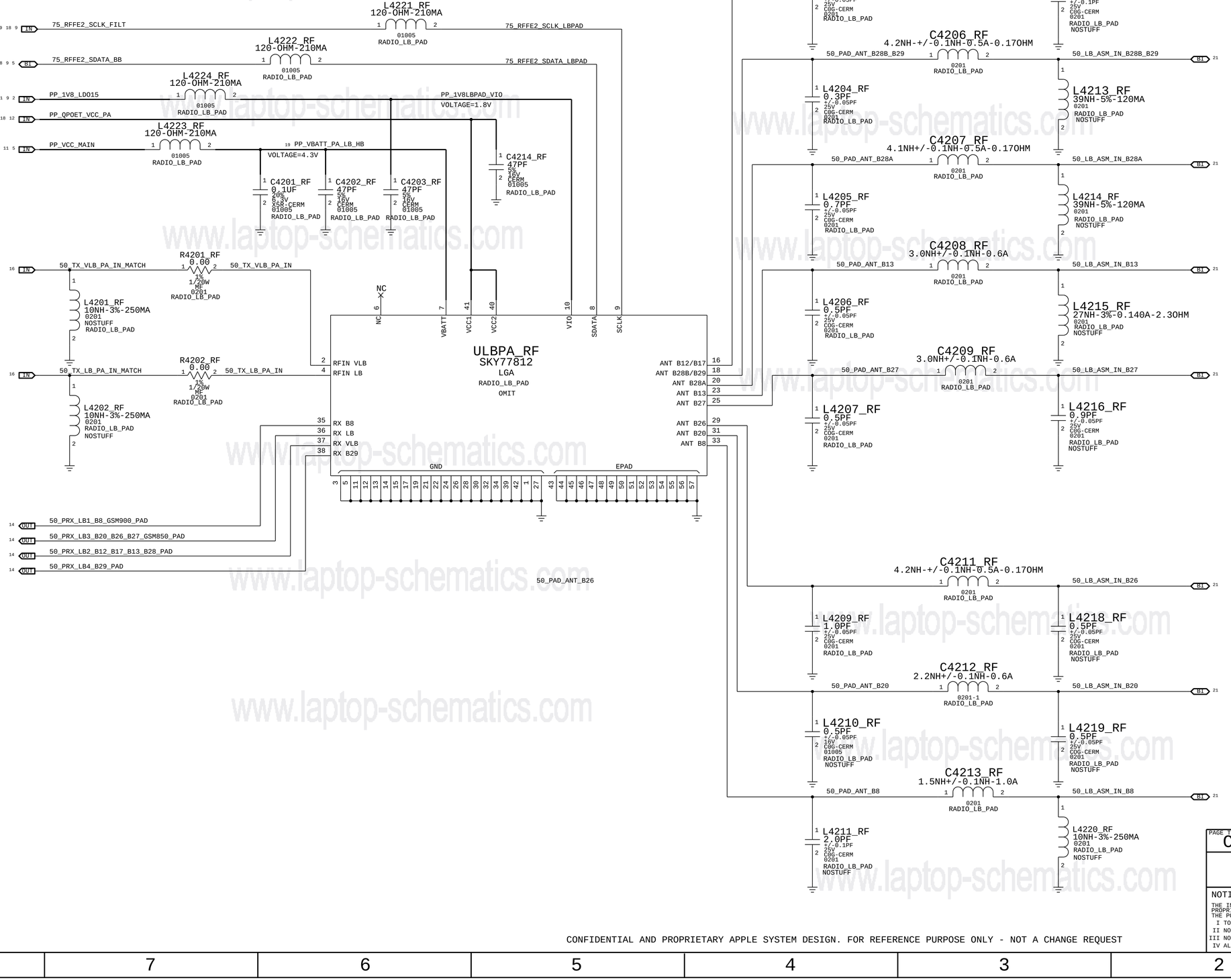

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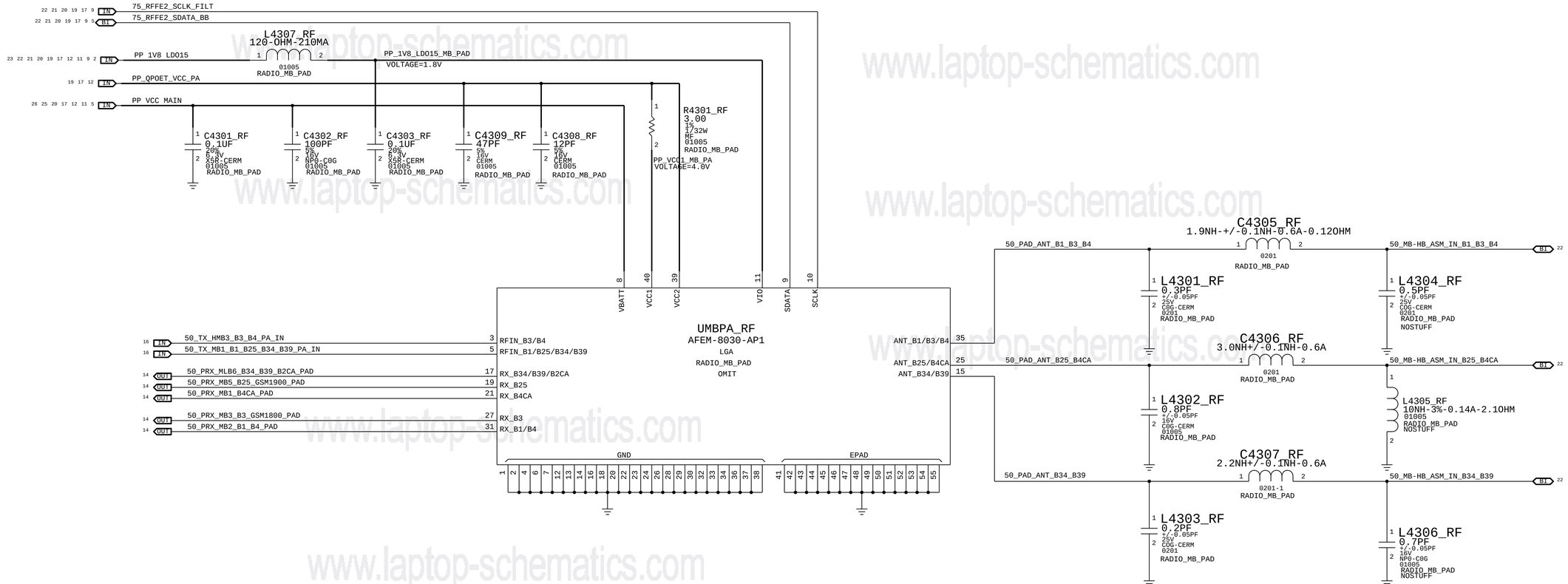

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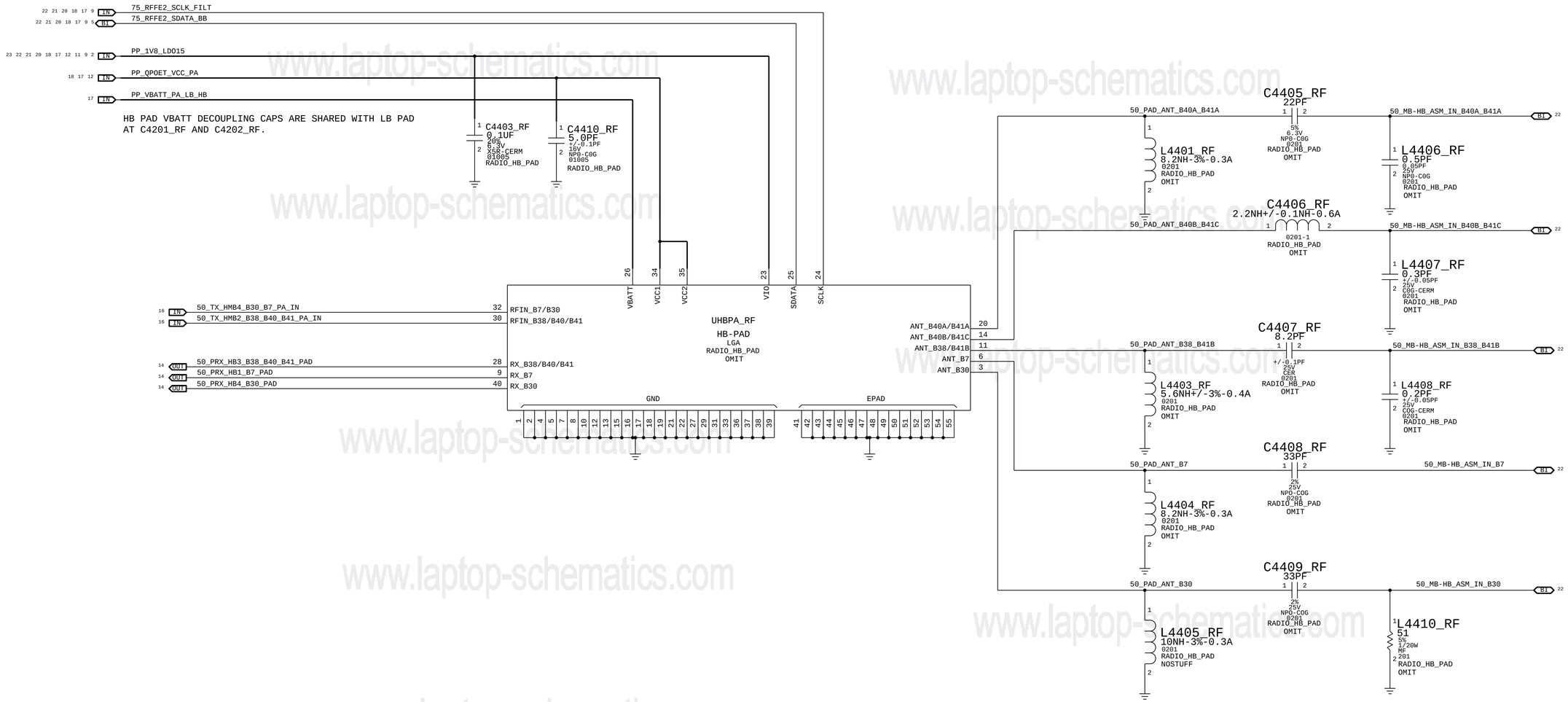

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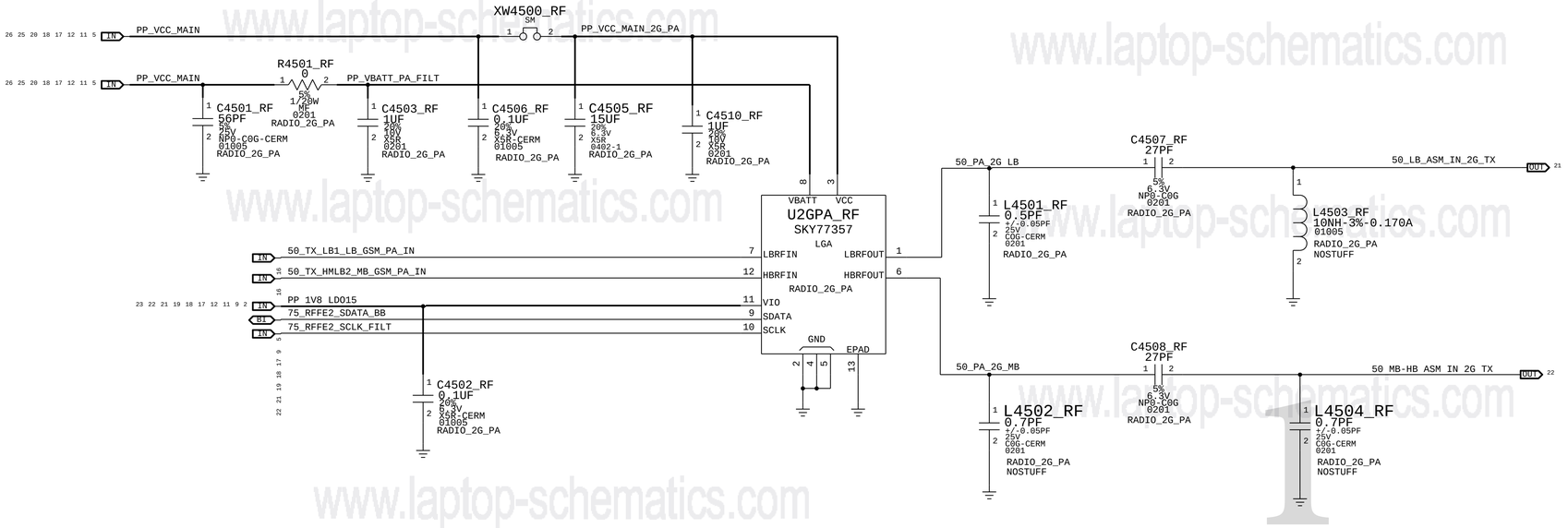
2G PA



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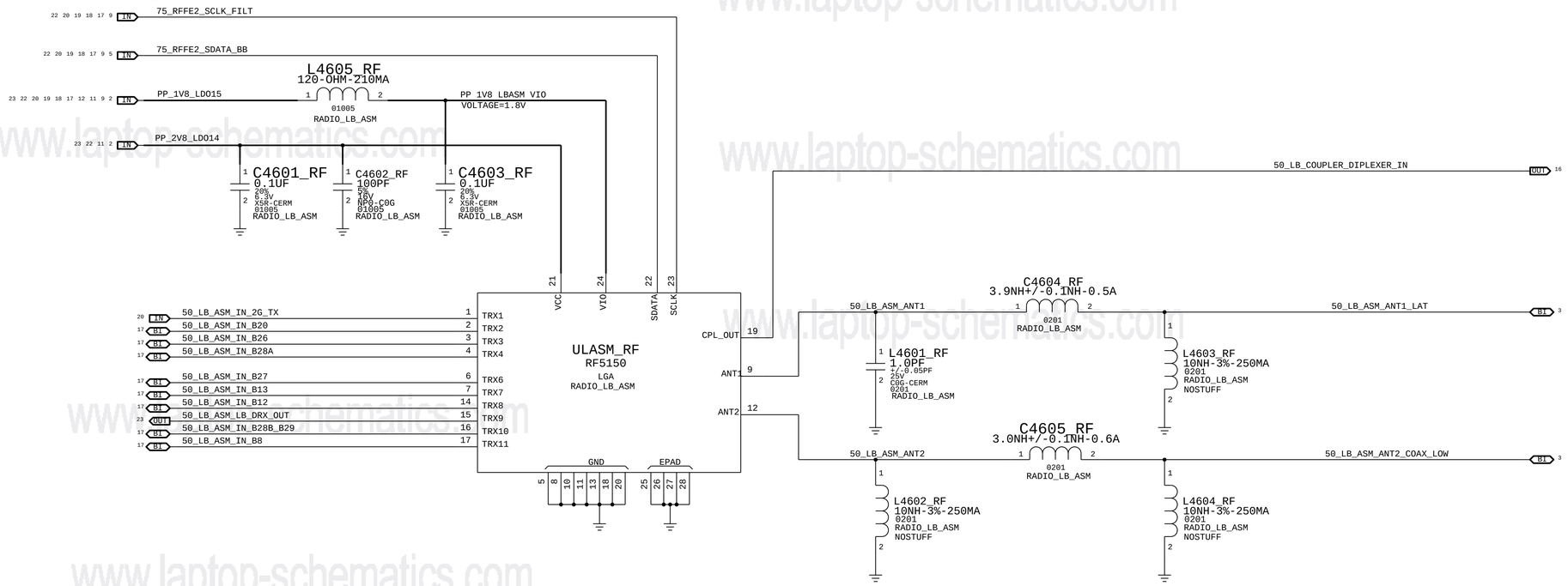

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MID-HIGH BAND ANTENNA SWITCH MODULE

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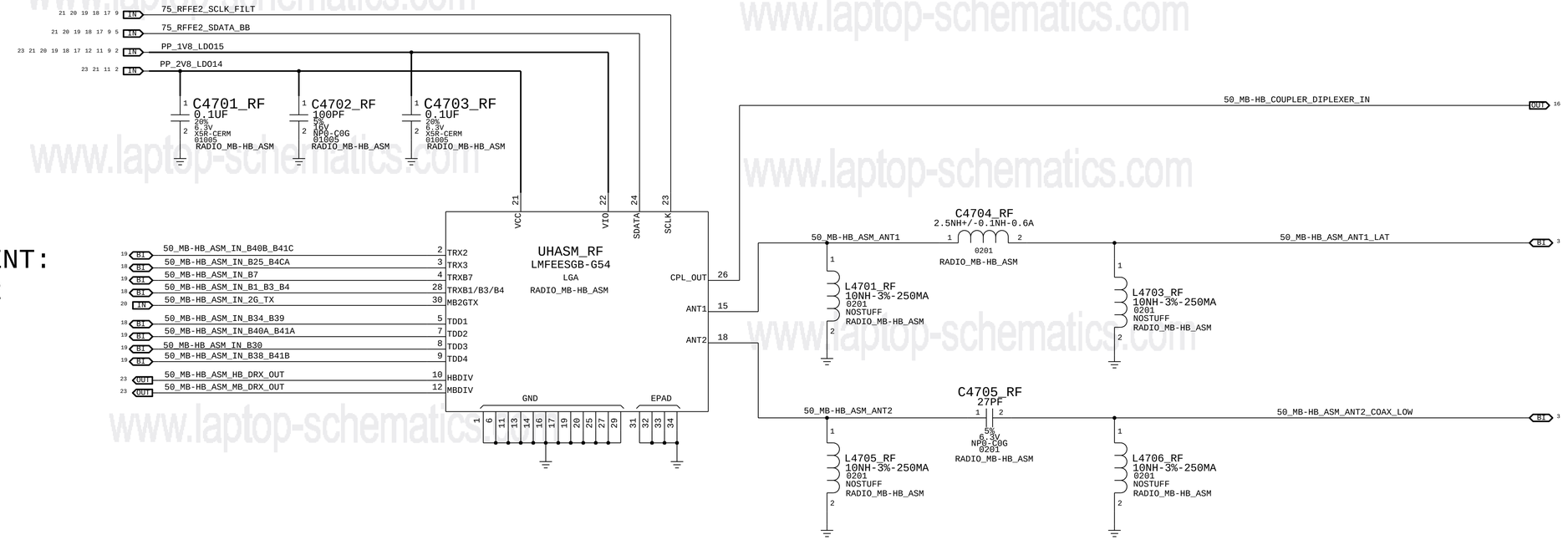
EVT ASM ASSIGNMENT:
B40B/B41C - TRX2
B30 - TDD3



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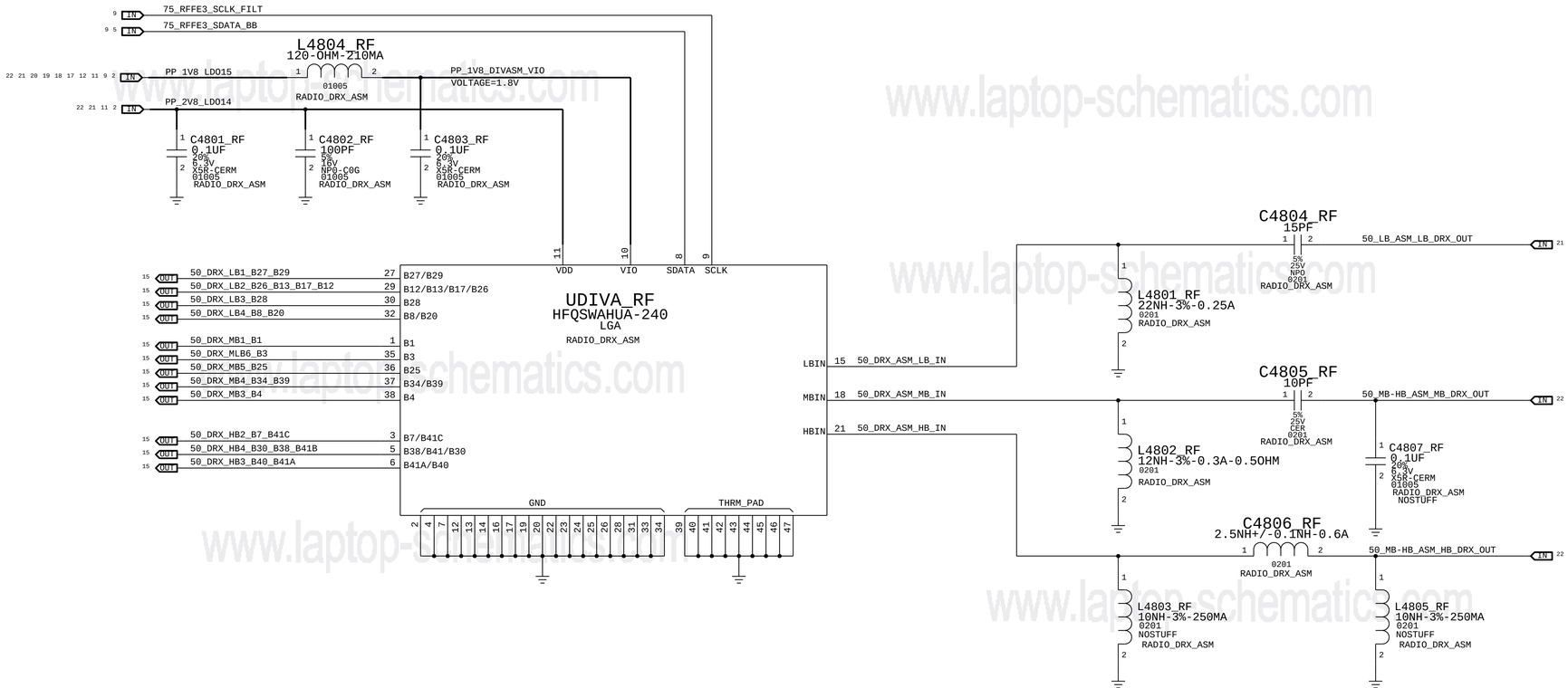
DIVERSITY MODULE



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SIM

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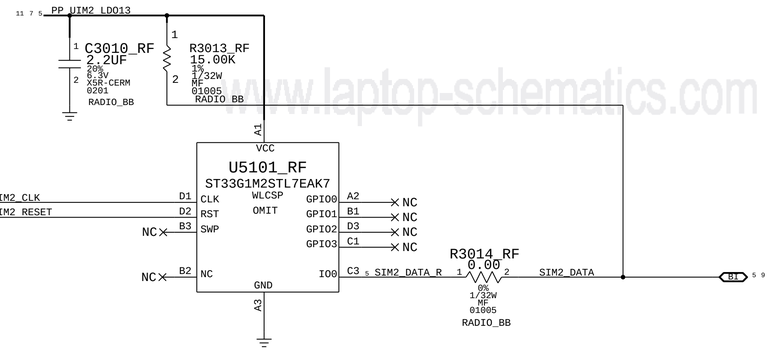

PP5100_RF
P2MM-NSM
SM
PP
ONLT
4FF_SIM_SWP

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WIFI/BT

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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
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63	GND	THRM_PAD	121
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102	THRM_PAD	THRM_PAD	157
103	THRM_PAD	THRM_PAD	158
104	THRM_PAD	THRM_PAD	159
105	THRM_PAD	THRM_PAD	160
		THRM_PAD	161
		THRM_PAD	162

5 PP 1V8 S2R VDDIO WLAN BT → R5213_RF 0.00 (0% 1/32W MF 01005) → 25 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) 5 11 12 17 18 20 26

C5283_RF 4.7UF (20% 6.3V X5R-CERM1 402)

C5284_RF 4.7UF (20% 6.3V X5R-CERM1 402)

30 VDDIO_1P8V · 35 BATT_VCC · 36 BATT_VCC

25 5 IN	PMU_TO_WLAN_32K_CLK	41	CLK32K_AP
5 IN	UART4_AP_TO_WLAN_TX	14	GPIO_11_FAST_UART_RX
5 OUT	UART4_WLAN_TO_AP_TX	13	GPIO_12_FAST_UART_TX
5 OUT	UART4_WLAN_TO_AP_RTS_L	15	GPIO_7_FAST_RTS_OUT
25 5 IN	PMU_TO_WLAN_REG_ON	29	WL_REG_ON
25 5 IN	PMU_TO_BT_REG_ON	28	BT_REG_ON
JTAG_WLAN_SEL		37	JTAG_SEL
NC		17	ANT_SWITCH_CORE1
NC		16	ANT_SWITCH_CORE0
25 5 IN	PCIE_AP_TO_WLAN_DEV_WAKE		
XW1_RF SM 1 2		39	GPIO_1_HSIC_HOST_READY
5 IN UART4_AP_TO_WLAN_RTS_L	25 GPIO_2_JTAG_TCK	22	GPIO_2_HSIC_RESUME/JTAG_TCK
XW2_RF SM 1 2	25 GPIO_3_JTAG_TMS	23	GPIO_3_JTAG_TMS
9 5 IN UART_BB_TO_WLAN_COEX_TX	25 GPIO_6_JTAG_TRST	21	GPIO_6_SEC_IN/JTAG_TRST
	25 GPIO_4_JTAG_TDI	18	GPIO_4_JTAG_TDI
XW3_RF SM 1 2	25 GPIO_5_JTAG_TDO	19	GPIO_5_SEC_OUT/JTAG_TDO
9 5 OUT UART_WLAN_TO_BB_COEX_TX			
25 5 OUT	BT_TO_PMU_HOST_WAKE	5	HOST_WAKE_BT
2 50_G_0_MATCH_MOD		57	2G_ANT_CORE0
4 50_G_1_MATCH_MOD		69	2G_ANT_CORE1
2 50_A_0_MATCH_MOD		62	5G_ANT_CORE0
25 50_A_1_MATCH_MOD		26	5G_ANT_CORE1
NC		3	BT_GPIO_3
NC		2	BT_GPIO_5

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

U5200_RF
LBEE5UM1EE-775
LGA
SYM 1 OF 2

BT_GPIO_4	10	NC	
BT_WAKE	4	AP_TO_BT_WAKE	IN 5
BT_UART_RXD	8	UART1_AP_TO_BT_TX	IN 5 25
BT_UART_TXD	9	UART1_BT_TO_AP_TX	OUT 5 25
BT_UART_CTS*	7	UART1_AP_TO_BT_RTS_L	IN 5 25
BT_UART_RTS*	6	UART1_BT_TO_AP_RTS_L	OUT 5 25
BT_PCM_CLK	60	I2S_AP_TO_BT_BCLK	IN 5
BT_PCM_SYNC	64	I2S_AP_TO_BT_LRCK	IN 5
BT_PCM_OUT	65	I2S_BT_TO_AP_DOUT	OUT 5
BT_PCM_IN	59	I2S_AP_TO_BT_DOUT	IN 5
GPIO_13_WLAN_THROTTLE	24	GPIO_13_WLAN_THROTTLE	25
GPIO_0_WL_HOST_WAKE	38	WLAN_TO_PMU_HOST_WAKE	OUT 5 25
PCI_PME	52	PCIE_PME	25
PCIE_CLKREQ	53	PCIE_WLAN_TO_AP_CLKREQ_L	BI 5
PERST	54	PCIE_AP_TO_WLAN_PERST_L	IN 5 25
PCIE_RDP0	50	PCIE_AP_TO_WLAN_TX_P	IN 5 25
PCIE_RDN0	49	PCIE_AP_TO_WLAN_TX_N	IN 5 25
PCIE_TDP0	47	PCIE_WLAN_TO_AP_TX_P	OUT 5
PCIE_TDN0	46	PCIE_WLAN_TO_AP_TX_N	OUT 5
PCIE_REFCLKP	44	PCIE_AP_TO_WLAN_REFCLK_P	IN 5 25
PCIE_REFCLKN	43	PCIE_AP_TO_WLAN_REFCLK_N	IN 5 25
GPIO_14_WL_UART_RX	11	OWL_TO_WLAN_CONTEXT_A	5 25
GPIO_15_WL_UART_TX	12	OWL_TO_WLAN_CONTEXT_B	5 25
		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

PART NUMBER

R5202_RF 0.7NH+/-0.1NH-0.63A (01005)

25 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)

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 10V NP0-C0G 01005) NO STUFF

WIFI LAT COAX CONNECTOR

JWLAT_RF MM5829-2700 F-ST-SM1

4 50_G_1_DPLX

WLAN LAT 2.4GHZ BAW BPF ON CSA 4

PP5290_RF 25 OWL_TO_WLAN_CONTEXT_A
PP5291_RF 25 OWL_TO_WLAN_CONTEXT_B
PP5292_RF 25 GPIO_13_WLAN_THROTTLE
PP5293_RF 25 GPIO_2_JTAG_TCK
PP5294_RF 25 PCIE_PME
PP5295_RF 25 GPIO_3_JTAG_TMS
PP5296_RF 25 GPIO_6_JTAG_TRST
PP5297_RF 25 GPIO_4_JTAG_TDI
PP5298_RF 25 GPIO_5_JTAG_TDO

PP5288_RF 25 5 PMU_TO_WLAN_32K_CLK
PP5285_RF 25 5 WLAN_TO_PMU_HOST_WAKE
PP5289_RF 25 5 PCIE_AP_TO_WLAN_REFCLK_P
PP5299_RF 25 5 PCIE_AP_TO_WLAN_REFCLK_N
PP5300_RF 25 5 PCIE_AP_TO_WLAN_TX_P
PP5301_RF 25 5 PCIE_AP_TO_WLAN_TX_N
PP5287_RF 25 5 PMU_TO_WLAN_REG_ON
PP5286_RF 25 5 PMU_TO_BT_REG_ON

PP5200_RF 25 5 UART1_AP_TO_BT_TX
PP5201_RF 25 5 UART1_BT_TO_AP_TX
PP5202_RF 25 5 UART1_AP_TO_BT_RTS_L
PP5203_RF 25 5 UART1_BT_TO_AP_RTS_L
PP5302_RF 25 5 PCIE_AP_TO_WLAN_DEV_WAKE
PP5303_RF 25 5 BT_TO_PMU_HOST_WAKE
PP5305_RF 25 5 PCIE_AP_TO_WLAN_PERST_L

LAST UPDATED: 4/30/2014

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STOCKHOLM

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