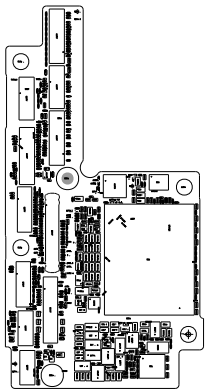


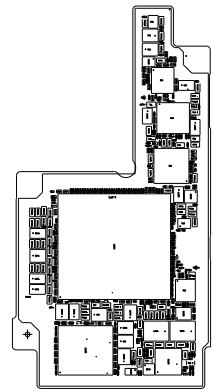
VIETMOBILE.VN

TOP SIDE ASSEMBLY

APPLE				TITLE: PCBF, X891 TOP MLB
THIS IS THE PROPERTY OF APPLE AND IT MUST BE RETURNED				
ORIG DIV	DESIGNER: KEN KIPLINGER	DATE: 03/31/17	SCALE: 1:1	DRAWING NUMBER: 820-00863-09

NOTES:
APTWOPL VIEWED FROM COMPONENT SIDE. PCB SHALL CONFORM TO STANDARDS AS DEFINED IN APPLE SPECIFICATION 080-2265 (FLEXIBLE PRINTED CIRCUIT BOARDS) OR 062-0073 (MULTI- LAYER BOARDS) AS APPLICABLE.

VIETMOBILE.VN



BOTTOM SIDE ASSEMBLY

APPLE			
THIS IS THE PROPERTY OF APPLE AND IT MUST BE RETURNED			
ORIG DIV	DESIGNER	DATE	SCALE
	KEN KIPLINGER	03\31\17	1:1
TITLE: PCBF, X891 TOP MLB			
DRAWING NUMBER: 820-00863-09			

NOTES:
ARTWORK VIEWED FROM COMPONENT SIDE. PCB SHALL CONFORM TO STANDARDS AS DEFINED IN APPLE SPECIFICATION 080-2265 (FLEXIBLE PRINTED CIRCUIT BOARDS) OR 062-0073 (MULTI- LAYER BOARDS) AS APPLICABLE.

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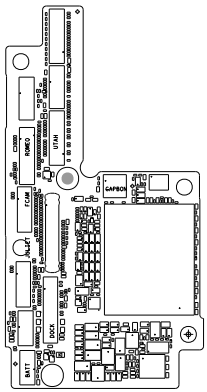
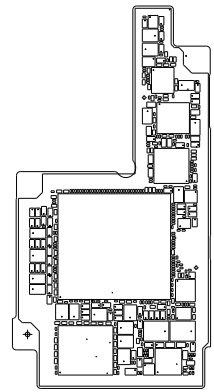


VIETMOBILE.VN

TOP SIDE ASSEMBLY

APPLE			TITLE: PCBF, X891 TOP MLB
THIS IS THE PROPERTY OF APPLE AND IT MUST BE RETURNED			
ORIG DIV	DESIGNER: KEN KIPLINGER	DATE: 03/31/17	SCALE: 1:1
			DRAWING NUMBER: 820-00863-09

NOTES:
APTWOPL VIEWED FROM COMPONENT SIDE. PCB SHALL CONFORM TO STANDARDS AS DEFINED IN APPLE SPECIFICATION 080-2265 (FLEXIBLE PRINTED CIRCUIT BOARDS) OR 062-0073 (MULTI- LAYER BOARDS) AS APPLICABLE.

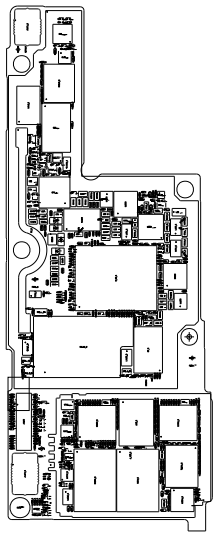


VIETMOBILE.VN

BOTTOM SIDE ASSEMBLY

APPLE			
THIS IS THE PROPERTY OF APPLE AND IT MUST BE RETURNED			
ORIG DIV	DESIGNER	DATE	SCALE
	KEN KIPLINGER	03\31\17	1:1
TITLE: PCBF, X891 TOP MLB			
DRAWING NUMBER: 820-00663-09			

NOTES:
ARTWORK VIEWED FROM COMPONENT SIDE. PCB SHALL CONFORM TO STANDARDS AS DEFINED IN APPLE SPECIFICATION 080-2265 (FLEXIBLE PRINTED CIRCUIT BOARDS) OR 062-0073 (MULTI-LAYER BOARDS) AS APPLICABLE.

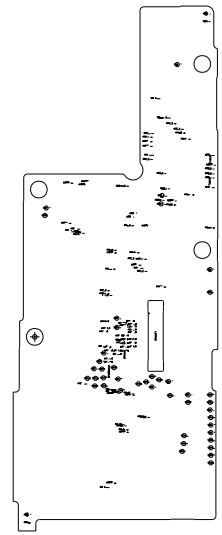


TOP SIDE ASSEMBLY

APPLE				TITLE: PCBF, X893 MLB BOT
THIS IS THE PROPERTY OF APPLE AND IT MUST BE RETURNED				
ORIG DIV	DESIGNER: TIM REID	DATE: 04/06/17	SCALE: 1:1	DRAWING NUMBER: 820-00869-06

NOTES.
ARTWORK VIEWED FROM COMPONENT SIDE. PCB SHALL CONFORM TO STANDARDS AS DEFINED IN APPLE SPECIFICATION 080-2265 (FLEXIBLE PRINTED CIRCUIT BOARDS) OR 062-0073 (MULTI- LAYER BOARDS) AS APPLICABLE.

VIETMOBILE.VN



BOTTOM SIDE ASSEMBLY

APPLE			
THIS IS THE PROPERTY OF APPLE AND IT MUST BE RETURNED			
ORIG DIV	DESIGNER	DATE	SCALE
	TIM REID	04/06/17	1:1
TITLE: PCBF, X893 MLB BOT			
DRAWING NUMBER: 820-00869-06			

NOTES:
ARTWORK VIEWED FROM COMPONENT SIDE. PCB SHALL CONFORM TO STANDARDS AS DEFINED IN APPLE SPECIFICATION 080-2265 (FLEXIBLE PRINTED CIRCUIT BOARDS) OR 062-0073 (MULTI- LAYER BOARDS) AS APPLICABLE.

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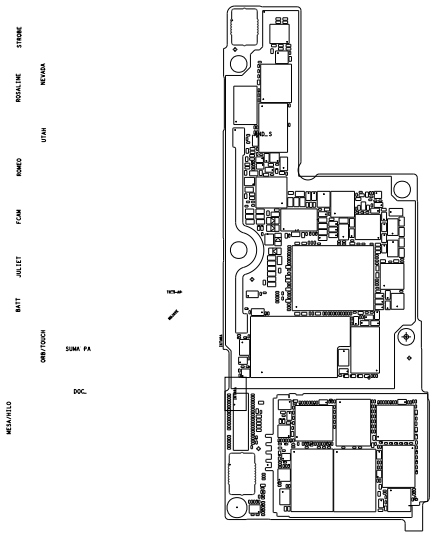

TOP SIDE ASSEMBLY

APPLE				TITLE PCBF, X893 MLB BOT
THIS IS THE PROPERTY OF APPLE AND IT MUST BE RETURNED				
ORIG DIV	DESIGNER TIM REID	DATE 04/06/17	SCALE 1:1	DRAWING NUMBER 820-00869-06

NOTES.
ARTWORK VIEWED FROM COMPONENT SIDE. PCB SHALL CONFORM TO STANDARDS AS DEFINED IN APPLE SPECIFICATION 080-2265 (FLEXIBLE PRINTED CIRCUIT BOARDS) OR 062-0073 (MULTI- LAYER BOARDS) AS APPLICABLE.

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
9	0008409760	ENGINEERING RELEASED	2017-04-05

X891/X893 MLB Top: EVT

LAST_MODIFICATION=Mon Apr 3 13:03:06 2017

BOM:639-04583 (Ultimate)
BOM:639-03409 (Extreme)
MCO:056-04077

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
051-02221	1	SCH,MLB_TOP,X891	SCH	NO	COMMON
820-00863	1	PCB,MLB_TOP,X891	PCB	NO	COMMON

TABLE OF CONTENTS

DRAWING TITLE: SCH,MLB,TOP,X891

Apple Inc.

DRAWING NUMBER: 051-02221 SIZE: D
REVISION: 9.0.0
BRANCH: evt-1
PAGE: 1 OF 80
SHEET: 1 OF 51

EEEE Codes

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
825-7691	1	EEEE FOR (MLB_TOP,639-04583,ULTIMATE)	EEEE_J2WJ	NO	ULTIMATE
825-7691	1	EEEE FOR (MLB_TOP,639-03409,EXTREME)	EEEE_HP26	NO	EXTREME

SOC

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
339S00358	1	SKYE+3GB, B0, M, DEV	U1000	CRITICAL	COMMON

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
339S00359	339S00358	BOM_TABLE_ALTS	U1000	DDR-H,3G, B0
339S00360	339S00358	BOM_TABLE_ALTS	U1000	DDR-S-20,3G, B0
339S00361	339S00358	BOM_TABLE_ALTS	U1000	DDR-S-18,3G, B0

NAND

Ultimate

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
335S00287	1	HYNIX, 3DV3, ULTIMATE	U2600	CRITICAL	ULTIMATE

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
335S00284	335S00287	BOM_TABLE_ALTS	U2600	TOSHIBA, 1Z, ULTIMATE
335S00285	335S00287	BOM_TABLE_ALTS	U2600	TOSHIBA, BICS3, ULTIMATE
335S00286	335S00287	BOM_TABLE_ALTS	U2600	SANDISK, BICS3, ULTIMATE
335S00288	335S00287	BOM_TABLE_ALTS	U2600	SAMSUNG, 3DV4, ULTIMATE

Extreme

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
335S00240	1	HYNIX, 3DV3, EXTREME	U2600	CRITICAL	EXTREME

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
335S00228	335S00240	BOM_TABLE_ALTS	U2600	TOSHIBA, BICS3, EXTREME
335S00247	335S00240	BOM_TABLE_ALTS	U2600	SANDISK, BICS3, EXTREME
335S00276	335S00240	BOM_TABLE_ALTS	U2600	SAMSUNG, 3DV4, EXTREME

Global Capacitors

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
138S00148	138S00149	BOM_TABLE_ALTS	ALL	0402-3T,10.5uF@1V, Kyocera
138S00150	138S00149	BOM_TABLE_ALTS	ALL	0402-3T,10.5uF@1V, SEMCO
138S00151	138S00149	BOM_TABLE_ALTS	ALL	0402-3T,10.5uF@1V, TY

CRITICAL PART#	COMMENT
138S00149	0402-3T,10.5uF@1V

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
138S00143	138S00144	BOM_TABLE_ALTS	ALL	0402,16uF@1V, Kyocera
138S00163	138S00144	BOM_TABLE_ALTS	ALL	0402,16uF@1V, Taiyo

CRITICAL PART#	COMMENT
138S00144	0402,16uF@1V

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
138S00138	138S00139	BOM_TABLE_ALTS	ALL	0201,3uF@1V, Kyocera
138S00164	138S00139	BOM_TABLE_ALTS	ALL	0201,3uF@1V, Taiyo

CRITICAL PART#	COMMENT
138S00139	0201,3uF@1V

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
138S00145	138S00146	BOM_TABLE_ALTS	ALL	0402,5.1uF@3V, Kyocera
138S00165	138S00146	BOM_TABLE_ALTS	ALL	0402,5.1uF@3V, Taiyo

CRITICAL PART#	COMMENT
138S00146	0402,5.1uF@3V

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
138S00140	138S00141	BOM_TABLE_ALTS	ALL	0201,1.1uF@3V, Kyocera
138S00142	138S00141	BOM_TABLE_ALTS	ALL	0201,1.1uF@3V, SEMCO
138S00166	138S00141	BOM_TABLE_ALTS	ALL	0201,1.1uF@3V, Taiyo

CRITICAL PART#	COMMENT
138S00141	0201,1.1uF@3V

Global Ferrites

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
155S00194	155S0610	BOM_TABLE_ALTS	ALL	FERR BD, 1500HM, TDK
155S00200	155S0610	BOM_TABLE_ALTS	ALL	FERR BD, 1500HM, TY

CRITICAL PART#	COMMENT
155S0610	FERR BD, 1500HM, 01005

Global R/C Alternates

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
118S0764	118S0717	BOM_TABLE_ALTS	ALL	RES, 3.92K, 0.1%, 0201
138S0648	138S0652	BOM_TABLE_ALTS	ALL	CAP,X5R,4.7UF,6.3V,0.65MM,0402,TAIYO
138S0739	138S0706	BOM_TABLE_ALTS	ALL	CAP,CER,X5R,0.22UF,20%,6.3V,20%
132S0436	132S0400	BOM_TABLE_ALTS	ALL	CAP,CER,X5R,0.22UF,20%,6.3V,01005
138S00049	138S0831	BOM_TABLE_ALTS	ALL	CAP,CER,X5R,2.2UF,20%,6.3V,0201

CRITICAL PART#	COMMENT
118S0717	RES, 3.92K, 0.1%, 0201
138S0652	CAP,X5R,4.7UF,6.3V,0.65MM,0402
138S0706	CAP,CER,X5R,0.22UF,20%,6.3V,20%
132S0400	CAP,CER,X5R,0.22UF,20%,6.3V,01005
138S0831	CAP,CER,X5R,2.2UF,20%,6.3V,0201

Global Inductors

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
152S00710	152S00617	BOM_TABLE_ALTS	ALL	IND,MLD,0.1UH,20%,6.1A,29MOHM,H=.65,1608
152S00712	152S00620	BOM_TABLE_ALTS	ALL	IND,MLD,0.1UH,20%,7.2A,17MOHM,H=0.8,2012
152S00713	152S00621	BOM_TABLE_ALTS	ALL	IND,MLD,0.47UH,20%,3.5A,53MO,H=.65,2012
152S00714	152S00622	BOM_TABLE_ALTS	ALL	IND,MLD,1.0UH,20%,2.1A,160MO,H=.65,2012
152S00716	152S00626	BOM_TABLE_ALTS	ALL	IND,MLD,1.5UH,20%,1.1A,160MO,H=.65,2012
152S00717	152S00631	BOM_TABLE_ALTS	ALL	IND,MLD,1.0UH,20%,2.5A,78MO,H=0.8,2012
152S00718	152S00632	BOM_TABLE_ALTS	ALL	IND,MLD,1.0UH,20%,3.2A,60MO,H=0.8,2016
152S00720	152S00640	BOM_TABLE_ALTS	ALL	IND,MLD,0.47UH,3.8A,55MO,H=0.65MM,2012
152S00721	152S00641	BOM_TABLE_ALTS	ALL	IND,MLD,0.47UH,4A,48MO,H=0.8MM,2012
152S00715	152S00623	BOM_TABLE_ALTS	ALL	IND,MLD,1UH,3.6A,60MO,H=0.8MM,2016
152S00653	152S00651	BOM_TABLE_ALTS	ALL	IND,1.2UH,3A,2016,0.65Z
152S00649	152S00650	BOM_TABLE_ALTS	L3340,L3341	IND,0.47UH,6.6A,3225,0.8Z

CRITICAL PART#	COMMENT
152S00617	IND,MLD,0.1UH,20%,6.1A,29MOHM,H=.65,1608
152S00620	IND,MLD,0.1UH,20%,7.2A,17MOHM,H=0.8,2012
152S00621	IND,MLD,0.47UH,20%,3.5A,53MO,H=.65,2012
152S00622	IND,MLD,1.0UH,20%,2.1A,160MO,H=.65,2012
152S00626	IND,MLD,1.5UH,20%,1.1A,160MO,H=.65,2012
152S00631	IND,MLD,1.0UH,20%,2.5A,78MO,H=0.8,2012
152S00632	IND,MLD,1.0UH,20%,3.2A,60MO,H=0.8,2016
152S00640	IND,MLD,0.47UH,3.8A,55MO,H=0.65MM,2012
152S00641	IND,MLD,0.47UH,4A,48MO,H=0.8MM,2012
152S00623	IND,MLD,1UH,3.6A,60MO,H=0.8MM,2016
152S00651	IND,1.2UH, 3A, 2016, 0.65Z
152S00650	IND,0.47UH,6.6A,3225,0.8Z

XTAL Alternate

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
197S0612	197S0446	BOM_TABLE_ALTS	Y1000	XTAL, 24M, 1612

CRITICAL PART#	COMMENT
197S0446	XTAL, 24M, 1612

Multi-Vendor Criticals

CRITICAL PART#	COMMENT
377S0106	SUPPR,TRANS,VARISTOR,12V,33PF,01005
197S0446	XTAL,24MHZ,30PPM,9.5PF,60 OHM MAX,1612
155S0576	FERR BD,10 OHM,50%,750MA,0.07 DCR,01005
155S00168	FLTR,NOISE,65 OHMZ,3.4OHM,0.7-2GHZ,0605
138S0979	CAP,CER,X5R,10UF,20%,10V,0402,H=0.65MM
138S0692	CAP,CER,X5R,1UF,20%,6.3V,0201
138S0683	CAP,CER,X5R,1UF,10%,25V,0402
138S0652	CAP,CER,X5R,4.7UF,20%,6.3V,H=0.65MM,0402
138S00070	CAP,X5R,4.7UF,20%,25V,0402
138S00014	CAP,CER,1UF,20%,16V,X5R,0201,H=0.39MM
132S0664	CAP,CER,0.047UF,10%,25V,X5R,0201
132S0663	CAP,CER,X5R,1UF,10%,25V,0402
132S0534	CAP,CER,X5R,0.1UF,10%,25V,0201
132S0436	CAP,CER,X5R,0.22UF,20%,6.3V,01005
132S0396	CAP,CER,X5R,1000PF,10%,10V,01005
132S0316	CAP,CER,X5R,0.1UF,20%,6.3V,01005
132S0304	CAP,CER,X5R,0.22UF,20%,6.3V,0201
132S0296	CAP,CER,X5R,1000PF,10%,6.3V,01005
132S0318	CAP,CER,X5R,820PF,10%,10V,01005

CRITICAL PART#	COMMENT
132S0288	CAP,CER,X5R,0.1UF,10%,16V,0201
132S0275	CAP,CER,X5R,470PF,10%,10V,01005
132S0249	CAP,CER,X7R,220PF,10%,10V,01005
132S0245	CAP,CER,X5R,0.01UF,10%,6.3V,01005
132S00093	CAP,X5R,0.022UF,20%,6.3V,01005
132S00025	CAP,CER,X5R,0.047UF,20%,6.3V,01005
132S00008	CAP,CER,0.1UF,10%,50V,X7R,0402
131S0883	CAP,CER,NP0/C0G,220PF,2%,50V,0201
131S0804	CAP,CER,27PF,5%,C0G,25V,0201
131S0307	CAP,CER,NP0/C0G,100PF,5%,16V,01005
131S0225	CAP,CER,NP0/C0G,15PF,5%,16V,01005
131S0223	CAP,CER,NP0/C0G,27PF,5%,16V,01005
131S0220	CAP,CER,NP0/C0G,12PF,5%,16V,01005
131S0216	CAP,CER,NP0/C0G,47PF,5%,16V,01005
131S00053	CAP,CER,C0G,220PF,5%,10V,01005
118S00068	RES,MF,1.3 MOHM,1%,200PPM,1/20W,0201
117S0055	RES,MF,1/20W,2M OHM,5,0201,SMD
107S0257	THERMISTOR,NTC,10K OHM,1%,B=3435,01005

Soft-Term Cap Sub BOMs

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
685-00155	1	SUBBOM,MLB,TOP,CAP,TYPICAL,X891	SUBBOM_CAP	CRITICAL	COMMON

Agnes Input

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
138S00159	4	CAP,SOFT-TERM,2.2UF,6.3V,0201,KYOCERA	C2970,C2971,C2980,C2981	CRITICAL	SOFT_CAP
138S0831	4	CAP,TYPICAL,2.2UF,6.3V,0201,MURATA	C2970,C2971,C2980,C2981	CRITICAL	TYPICAL_CAP

Agnes Output

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
138S00159	9	CAP,SOFT-TERM,2.2UF,6.3V,0201,KYOCERA	C2966,C2967,C2968,C2987,C2910,C2911,C2913,C2914	CRITICAL	SOFT_CAP
138S0831	9	CAP,TYPICAL,2.2UF,6.3V,0201,MURATA	C2966,C2967,C2968,C2987,C2910,C2911,C2913,C2914	CRITICAL	TYPICAL_CAP

Sensors

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
138S00159	2	CAP,SOFT-TERM,2.2UF,6.3V,0201,KYOCERA	C3602,C3622	CRITICAL	SOFT_CAP
138S0831	2	CAP,TYPICAL,2.2UF,6.3V,0201,MURATA	C3602,C3622	CRITICAL	TYPICAL_CAP

RCAM B2Bs

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
138S00159	3	CAP,SOFT-TERM,2.2UF,6.3V,0201,KYOCERA	C3909,C3925,C4025	CRITICAL	SOFT_CAP
138S0831	3	CAP,TYPICAL,2.2UF,6.3V,0201,MURATA	C3909,C3925,C4025	CRITICAL	TYPICAL_CAP

Strobe B2B

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
138S00159	1	CAP,SOFT-TERM,2.2UF,6.3V,0201,KYOCERA	C4303	CRITICAL	SOFT_CAP
138S0831	1	CAP,TYPICAL,2.2UF,6.3V,0201,MURATA	C4303	CRITICAL	TYPICAL_CAP

Audio

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
138S00159	2	CAP,SOFT-TERM,2.2UF,6.3V,0201,KYOCERA	C4809,C4805	CRITICAL	SOFT_CAP
138S0831	2	CAP,TYPICAL,2.2UF,6.3V,0201,MURATA	C4809,C4805	CRITICAL	TYPICAL_CAP

Pearl B2B

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
138S00159	1	CAP,SOFT-TERM,2.2UF,6.3V,0201,KYOCERA	C4613	CRITICAL	SOFT_CAP
138S0831	1	CAP,TYPICAL,2.2UF,6.3V,0201,MURATA	C4613	CRITICAL	TYPICAL_CAP

Acorn

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
138S00160	2	CAP,SOFT-TERM,10UF,10V,0402,MURATA	C5641,C5653	CRITICAL	SOFT_CAP
138S0979	2	CAP,TYPICAL,10UF,10V,0402,MUR/KYO	C5641,C5653	CRITICAL	TYPICAL_CAP

CODEC

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
138S00160	2	CAP,SOFT-TERM,10UF,10V,0402,MURATA	C4811,C4808	CRITICAL	SOFT_CAP
138S0979	2	CAP,TYPICAL,10UF,10V,0402,MUR/KYO	C4811,C4808	CRITICAL	TYPICAL_CAP

Ansel

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
138S00160	1	CAP,SOFT-TERM,10UF,10V,0402,MURATA	C3710	CRITICAL	SOFT_CAP
138S0979	1	CAP,TYPICAL,10UF,10V,0402,MUR/KYO	C3710	CRITICAL	TYPICAL_CAP

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
685-00156	685-00155	BOM_TABLE_ALTS	SUBBOM_CAP	SUBBOM,MLB,TOP,CAP,SOFT,X891

PAGE TITLE
SYSTEM:BOM Tables

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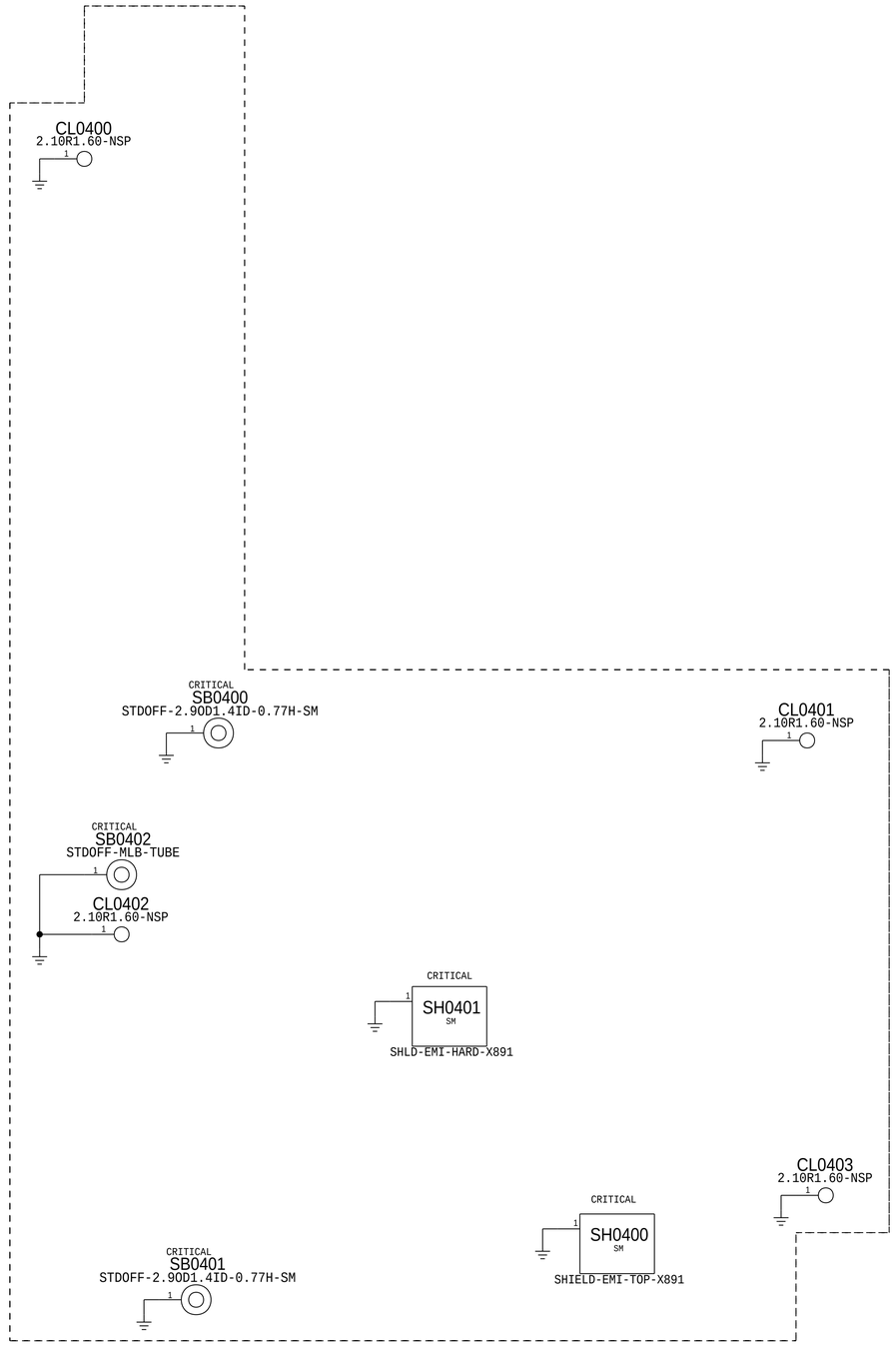

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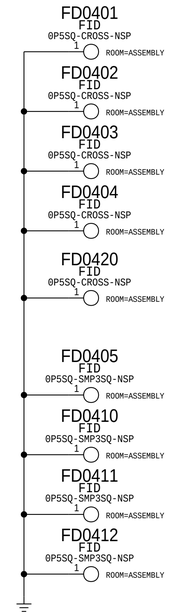

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SYSTEM: Mechanical Components

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Test Points

POWER

TP0540
P2MM-NSM
SM
1
PP
ROOM=TEST

35 34 PP_ROMEO_DENSE_ANODE

TP0543
P2MM-NSM
SM
1
PP
ROOM=TEST

35 34 PP_ROMEO_CATHODE

SOC Debug

PP0500
P2MM-NSM
SM
1
PP
ROOM=TEST

20 6 IN AP_TO_PMU_TEST_CLKOUT

PP0501
P2MM-NSM
SM
1
PP
ROOM=TEST

11 5 IN BOARD_ID0

PP0502
P2MM-NSM
SM
1
PP
ROOM=TEST

32 8 IN AP_TO_FCAM_SHUTDOWN_L

PP0503
P2MM-NSM
SM
1
PP
ROOM=TEST

8 IN AP_DEBUG3

PP0504
P2MM-NSM
SM
1
PP
ROOM=TEST

11 IN DFU_STATUS

PP0505
P2MM-NSM
SM
1
PP
ROOM=TEST

20 11 6 IN PMU_TO_AP_PRE_UVLO_L

PP0506
P2MM-NSM
SM
1
PP
ROOM=TEST

20 6 IN AP_TO_PMU_SOCHOT_L

SOC CPU/GPU

XW0510
SHORT-10L-0.05MM-SM
1
2

17 13 PP_GPU

PP_GPU_LVCC 50

XW0511
SHORT-10L-0.05MM-SM
1
2

17 13 PP_CPU_PCORE

PP_CPU_PCORE_LVCC 50

PP0512
P2MM-NSM
SM
1
PP
ROOM=TEST

20 13 IN AP_CPU_PCORE_SENSE

PP0513
P2MM-NSM
SM
1
PP
ROOM=TEST

20 13 IN AP_VDD_GPU_SENSE

PP0514
P2MM-NSM
SM
1
PP
ROOM=TEST

13 IN TP_SOC_SENSE

PP0515
P2MM-NSM
SM
1
PP
ROOM=TEST

15 IN TP_VSS_CPU_SENSE

PP0516
P2MM-NSM
SM
1
PP
ROOM=TEST

15 IN TP_VSS_SENSE

PMU

PP0520
P2MM-NSM
SM
1
PP
ROOM=TEST

14 12 IN AOP_TO_DDR_SLEEP1_READY

PP0521
P2MM-NSM
SM
1
PP
ROOM=TEST

20 10 IN SPMI_PMU_BI_PMGR_SDATA

PP0522
P2MM-NSM
SM
1
PP
ROOM=TEST

48 20 6 IN PMU_TO_AP_HYDRA_ACTIVE_READY

PCIE Refclk

PP0530
P2MM-NSM
SM
1
PP
ROOM=TEST

16 7 IN 90_PCIE_AP_TO_NAND_REFCLK_P

PP0531
P2MM-NSM
SM
1
PP
ROOM=TEST

16 7 IN 90_PCIE_AP_TO_NAND_REFCLK_N

Probe Points

Sensors

PP0540
P2MM-NSM
SM
1
PP
ROOM=TEST

26 12 IN SPI_AOP_TO_IMU_SCLK

PP0541
P2MM-NSM
SM
1
PP
ROOM=TEST

26 12 IN SPI_AOP_TO_IMU_MOSI

PP0542
P2MM-NSM
SM
1
PP
ROOM=TEST

26 12 IN SPI_IMU_TO_AOP_MISO

PP0544
P2MM-NSM
SM
1
PP
ROOM=TEST

26 12 IN ACCEL_GYRO_TO_AOP_DATARDY

PP0545
P2MM-NSM
SM
1
PP
ROOM=TEST

26 12 IN ACCEL_GYRO_TO_AOP_INT

PP0546
P2MM-NSM
SM
1
PP
ROOM=TEST

49 25 12 IN COMPASS_TO_AOP_INT

PP0547
P2MM-NSM
SM
1
PP
ROOM=TEST

26 12 IN PHOSPHORUS_TO_AOP_INT

Hydra VBUS

PP0550
P2MM-NSM
SM
1
PP
ROOM=TEST

48 23 IN HYDRA_TO_TIGRIS_VBUS1_VALID_L

NAND

PP0560
P2MM-NSM
SM
1
PP
ROOM=TEST

16 12 IN SWD_AP_BI_NAND_SWDIO

PP0561
P2MM-NSM
SM
1
PP
ROOM=TEST

50 16 12 IN SWD_AOP_TO_MANY_SWCLK

PP0562
P2MM-NSM
SM
1
PP
ROOM=TEST

16 10 5 IN SPI_S4E_TO_AP_MISO_BOOT_CONFIG2

PP0563
P2MM-NSM
SM
1
PP
ROOM=TEST

16 IN NAND_ANI1_VREF

PP0564
P2MM-NSM
SM
1
PP
ROOM=TEST

16 IN NAND_ANI0_VREF

Rigel

PP0570
P2MM-NSM
SM
1
PP
ROOM=TEST

34 28 IN CAMPMU_TO_RIGEL_ENABLE

PP0571
P2MM-NSM
SM
1
PP
ROOM=TEST

34 20 8 IN RIGEL_TO_ISP_INT

PP0582
P2MM-NSM
SM
1
PP
ROOM=TEST

41 37 IN PDM_CODEC_TO_ARC_CLK

PP0583
P2MM-NSM
SM
1
PP
ROOM=TEST

41 37 IN PDM_CODEC_TO_ARC_DATA

PP0586
P2MM-NSM
SM
1
PP
ROOM=TEST

47 10 IN AP_BI_CCG2_SWDIO

PP0587
P2MM-NSM
SM
1
PP
ROOM=TEST

47 10 IN AP_TO_CCG2_SWCLK

SOC I2C1_AOP

PP0590
P2MM-NSM
SM
1
PP
ROOM=TEST

50 49 41 25 12 IN I2C1_AOP_SCL

PP0591
P2MM-NSM
SM
1
PP
ROOM=TEST

50 49 41 25 12 IN I2C1_AOP_SDA

CCG2

PP0592
P2MM-NSM
SM
1
PP
ROOM=TEST

47 10 IN CCG2_TO_SMC_INT_L

PAGE TITLE
SYSTEM: Testpoints (Top)

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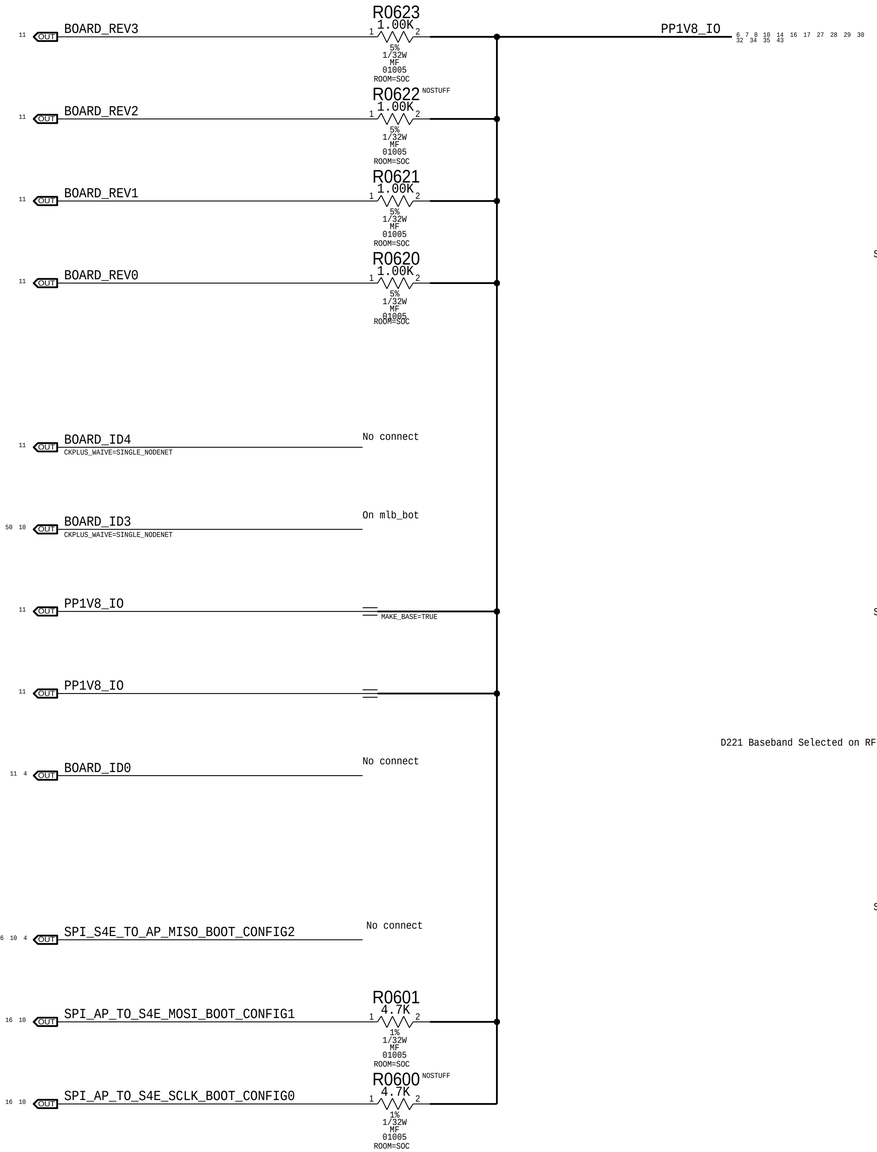
BOOTSTRAPPING:BOARD REV
BOARD ID
BOOT CONFIG



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D221 Baseband Selected on RF Board

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BOOTSTRAPPING

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SOC - USB, JTAG, XTAL

VDD11_XTAL:1.06-1.17V @ 2mA MAX
VDD18_USB: 1.62V - 1.98V @ 20mA MAX

PP1V8_IO
C1090 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=SOC
FL1092 240-OHM-25%-0.20A-0.9DCR 01005 ROOM=SOC
PP1V8_XTAL
C1092 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=SOC
C1093 4UF 20% 6.3V CER-X5R 0201 ROOM=SOC
3.14-3.46V @ 12mA MAX
PP3V3_USB
C1095 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=SOC
(Analog)
0.765V - 0.84V @ 5mA MAX
PP0V8_SOC_FIXED_S1

U1000 TMIT78B0-C4 WLCSP
OMIT_TABLE
SYM 1 OF 16
ROOM=SOC
CRITICAL

AT7	VDD12_UH1_HSIC0		
AP14	VDD18_USB		
AU28	VDD18_XTAL		
AN14	VDD33_USB		
AN15	VDD_FIXED_USB		
BA4	UH1_HSIC0_DATA	NC	
AY4	UH1_HSIC0_STB	NC	
AT27	ANALOGMUX_OUT		AP_TO_PMU_AMUX_OUT (OUT 20)
AY6	USB_DP		90_USB_AP_DATA_P (BI 48)
BA6	USB_DM		90_USB_AP_DATA_N (BI 48)
AV7	USB_VBUS		USB_VBUS_DETECT (IN 23)
AW6	USB_ID	NC	
AU8	USB_REXT		AP_USB_REXT (6)
AT22	CPU_TRIGGER0		PMU_TO_AP_THROTTLE_PCORE_L (IN 20)
AW21	CPU_TRIGGER1		PMU_TO_AP_THROTTLE_ECORE_L (IN 20)
AD2	GPU_TRIGGER0		PMU_TO_AP_THROTTLE_GPU0_L (IN 20)
AD3	GPU_TRIGGER1		PMU_TO_AP_THROTTLE_GPU1_L (IN 20)
A30	SOCHOT1		AP_TO_PMU_SOCHOT_L (OUT 4 20)
B31	DROOP		PMU_TO_AP_PRE_UVLO_L (IN 4 11 20)
AW5	WDOG		AP_TO_PMU_WDOG_RESET (OUT 20)
BA28	XI0		XTAL_AP_24M_IN
BA27	XO0		XTAL_AP_24M_OUT
AT8	JTAG_SEL	MAKE_BASE=TRUE	GND
AV6	JTAG_TRST*	NC	
AT9	JTAG_TDO	NC	
AT12	JTAG_TDI	NC	
AT10	JTAG_TMS		SWD_DOCK_BI_AP_SWDIO (48 BI)
AT13	JTAG_TCK		SWD_DOCK_TO_AP_SWCLK (48 IN)
AU7	COLD_RESET*		PMU_TO_SYSTEM_COLD_RESET_R_L
AT34	CFSB		PMU_TO_AP_HYDRA_ACTIVE_READY (48 20 4 IN)
AV5	CFSB_AON		
V2	TST_CLKOUT		AP_TO_PMU_TEST_CLKOUT (20 4 OUT)
AF34	SSD_RESET*		AP_TO_NAND_RESET_L (16 OUT)
AG38	SSD_BFH		AP_TO_NAND_FW_STRAP (16 OUT)
W5	HOLD_RESET	MAKE_BASE=TRUE	GND
W4	TESTMODE		GND

R1020 10K 5% 1/32W MF 01005
20 IN PMU_TO_SYSTEM_COLD_RESET_L

USB Reference
AP_USB_REXT (6)
R1000 200 1% 1/32W MF 01005 ROOM=SOC

NOSTUFF
R1010 511K 1% 1/32W MF 01005 ROOM=SOC
R1011 1.00K 1% 1/32W MF 01005 ROOM=SOC
SOC_24M_O
ROOM=SOC
Y1000 1.60X1.20MM-SM 24.000MHZ-30PPM-9.5PF-60OHM
C1010 12PF 5% 16V C0G 01005 ROOM=SOC
C1011 12PF 5% 16V C0G 01005 ROOM=SOC

PAGE TITLE
SOC: JTAG,USB,XTAL

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SOC - PCIE INTERFACES

PCIe BB CLKREQ PU on BB domain

PCIe Clock Request Pull-Ups

PP1V8_IO

R1100 100K 5% 1/32W MF 01005 ROOM=SOC

R1130 100K 5% 1/32W MF 01005 ROOM=SOC

PCIE_NAND_BI_AP_CLKREQ_L

PCIE_WLAN_BI_AP_CLKREQ_L

PCIe Reset Pull-Downs

PCIE_AP_TO_WLAN_RESET_L

PCIE_AP_TO_BB_RESET_L

PCIE_AP_TO_NAND_RESET_L

R1101 100K 5% 1/32W MF 01005 ROOM=SOC

R1121 100K 5% 1/32W MF 01005 ROOM=SOC

R1131 100K 5% 1/32W MF 01005 ROOM=SOC

PP1V2_SOC

R1198 0.00 5% 1/32W MF 01005 ROOM=SOC

(Analog)
VDD12_PCIE_REFBUF:1.08V - 1.26V @ 30mA MAX

PP1V2_SOC_PCIE_REFBUF

C1198 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=SOC

C1199 4UF 20% 6.3V CER-X5R 0201 ROOM=SOC

1.62V - 1.98V @ 81mA MAX

PP1V8_IO

(Analog)
VDD_FIXED_PCIE_REFBUF:0.765V - 0.84V @ 9mA MAX
VDD_FIXED_PCIE_ANA:0.765V - 0.84V @ 131mA MAX

PP0V8_SOC_FIXED_S1

PP0V8_SOC_FIXED_PCIE_REFBUF

R1194 0.00 5% 1/32W MF 01005 ROOM=SOC

C1194 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=SOC

C1193 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=SOC

C1192 1.0UF 20% 6.3V X5R 0201-1 ROOM=SOC

C1191 4UF 20% 6.3V CER-X5R 0201 ROOM=SOC

VDD12_PCIE_REFBUF AN26 AP26

VDD18_PCIE AM29 AM31

VDD_FIXED_PCIE_ANA AN30 AP29 AP31

VDD_FIXED_PCIE_REFBUF AM27 AP27

U1000
TMIT78B0-C4
WLCSP
SYM 2 OF 16

PCIE_CLKREQ0* AL38 ← PCIE_NAND_BI_AP_CLKREQ_L

PCIE_REF_CLK0_P AW27 ← 90_PCIE_AP_TO_NAND_REFCLK_P

PCIE_REF_CLK0_N AV27 ← 90_PCIE_AP_TO_NAND_REFCLK_N

PCIE_CLKREQ3* AJ36 → PCIE_WLAN_BI_AP_CLKREQ_L

PCIE_REF_CLK3_P AY24 → 90_PCIE_AP_TO_WLAN_REFCLK_P

PCIE_REF_CLK3_N BA24 → 90_PCIE_AP_TO_WLAN_REFCLK_N

PCIE LINK 0

90_PCIE_NAND_TO_AP_RXD_P / 90_PCIE_NAND_TO_AP_RXD_N

C1100 0.22UF 10% 6.3V X5R 01005 GND_VOID ROOM=SOC

C1101 0.22UF 10% 6.3V X5R 01005 GND_VOID ROOM=SOC

90_PCIE_NAND_TO_AP_RXD_C_P / 90_PCIE_NAND_TO_AP_RXD_C_N

PCIE_RX0_P AV29

PCIE_RX0_N AW29

90_PCIE_NAND_TO_AP_TXD_P / 90_PCIE_NAND_TO_AP_TXD_N

C1102 0.22UF 10% 6.3V X5R 01005 GND_VOID ROOM=SOC

C1103 0.22UF 10% 6.3V X5R 01005 GND_VOID ROOM=SOC

90_PCIE_NAND_TO_AP_TXD_C_P / 90_PCIE_NAND_TO_AP_TXD_C_N

PCIE_TX0_P AY30

PCIE_TX0_N BA30

PCIE_AP_TO_NAND_RESET_L → PCIE_PERST0* AJ37

LINK0 LINK3

NC PCIE_CLKREQ1* AL37

NC PCIE_REF_CLK1_P AW26

NC PCIE_REF_CLK1_N AY26

NC PCIE_RX1_P AV31

NC PCIE_RX1_N AV31

NC PCIE_TX1_P AV32

NC PCIE_TX1_N BA32

NC PCIE_PERST1* AJ38

LINK1 LINK2

AU30 PCIE_EXT_REF_CLK_P

AT30 PCIE_EXT_REF_CLK_N

PCIE_RX3_P BA36 ← 90_PCIE_WLAN_TO_AP_RXD_C_P

PCIE_RX3_N AY36 ← 90_PCIE_WLAN_TO_AP_RXD_C_N

C1130 0.1UF 20% 6.3V X5R-CERM 01005 GND_VOID ROOM=SOC

C1131 0.1UF 20% 6.3V X5R-CERM 01005 GND_VOID ROOM=SOC

90_PCIE_WLAN_TO_AP_RXD_P / 90_PCIE_WLAN_TO_AP_RXD_N

PCIE_TX3_P AV35 → 90_PCIE_AP_TO_WLAN_TXD_C_P

PCIE_TX3_N AW35 → 90_PCIE_AP_TO_WLAN_TXD_C_N

C1132 0.1UF 20% 6.3V X5R-CERM 01005 GND_VOID ROOM=SOC

C1133 0.1UF 20% 6.3V X5R-CERM 01005 GND_VOID ROOM=SOC

90_PCIE_AP_TO_WLAN_TXD_P / 90_PCIE_AP_TO_WLAN_TXD_N

PCIE_PERST3* AH36 ← PCIE_AP_TO_WLAN_RESET_L

90_PCIE_AP_TO_BB_REFCLK_P / 90_PCIE_AP_TO_BB_REFCLK_N

C1124 4.7PF ±/-0.1PF 16V NP0-C0G 01005 ROOM=SOC

C1125 4.7PF ±/-0.1PF 16V NP0-C0G 01005 ROOM=SOC

PCIE_CLKREQ2* AK37 ← PCIE_BB_BI_AP_CLKREQ_L

PCIE_REF_CLK2_P AV25

PCIE_REF_CLK2_N AW25

PCIE_RX2_P BA34 ← 90_PCIE_BB_TO_AP_RXD_C_P

PCIE_RX2_N AY34 ← 90_PCIE_BB_TO_AP_RXD_C_N

C1120 0.1UF 20% 6.3V X5R-CERM 01005 GND_VOID ROOM=SOC

C1121 0.1UF 20% 6.3V X5R-CERM 01005 GND_VOID ROOM=SOC

90_PCIE_BB_TO_AP_RXD_P / 90_PCIE_BB_TO_AP_RXD_N

PCIE_TX2_P AV33 → 90_PCIE_AP_TO_BB_TXD_C_P

PCIE_TX2_N AW33 → 90_PCIE_AP_TO_BB_TXD_C_N

C1122 0.1UF 20% 6.3V X5R-CERM 01005 GND_VOID ROOM=SOC

C1123 0.1UF 20% 6.3V X5R-CERM 01005 GND_VOID ROOM=SOC

90_PCIE_AP_TO_BB_TXD_P / 90_PCIE_AP_TO_BB_TXD_N

PCIE_PERST2* AJ38 ← PCIE_AP_TO_BB_RESET_L

PCIE_REXT AU32 — AP_PCIE_RCAL

R1150 200 1% 1/32W MF 01005 ROOM=SOC

PCIE LINK 3

PCIE LINK 2

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SOC - MIPI & ISP INTERFACES

MIPI Lane & Polarity Swapping

(Analog)
0.765V - 0.84V @ 40mA MAX
PP0V8_SOC_FIXED_S1
C1290 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=SOC
C1291 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=SOC
VDD_FIXED_MIPI G12 G14

1.62V - 1.98V @ 10mA MAX
PP1V8_IO
C1295 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=SOC
C1296 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=SOC
VDD18_MIPI F11 F13

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TMIT78B0-C4
WLCSP
SYM 3 OF 16
ROOM=SOC

Juliet MIPI

90_MIPI_JULIET_TO_AP_DATA0_P	MAKE_BASE	90_MIPI_JULIET_TO_AP_DATA0_P	B12	MIPI0C_DPDATA0
90_MIPI_JULIET_TO_AP_DATA0_N	MAKE_BASE	90_MIPI_JULIET_TO_AP_DATA0_N	A12	MIPI0C_DNDATA0
90_MIPI_JULIET_TO_AP_DATA1_P	MAKE_BASE	90_MIPI_JULIET_TO_AP_DATA1_P	B14	MIPI0C_DPDATA1
90_MIPI_JULIET_TO_AP_DATA1_N	MAKE_BASE	90_MIPI_JULIET_TO_AP_DATA1_N	A14	MIPI0C_DNDATA1
90_MIPI_JULIET_TO_AP_CLK_N	MAKE_BASE	90_MIPI_JULIET_TO_AP_CLK_N	A13	MIPI0C_DPCLK
90_MIPI_JULIET_TO_AP_CLK_P	MAKE_BASE	90_MIPI_JULIET_TO_AP_CLK_P	B13	MIPI0C_DNCLK
MIPI0C_REXT			D12	MIPI0C_REXT
MIPI1C_REXT			D13	MIPI1C_REXT

FCAM MIPI

90_MIPI_FCAM_TO_AP_DATA0_N	MAKE_BASE	90_MIPI_FCAM_TO_AP_DATA0_N	B17	MIPI1C_DPDATA0
90_MIPI_FCAM_TO_AP_DATA0_P	MAKE_BASE	90_MIPI_FCAM_TO_AP_DATA0_P	A17	MIPI1C_DNDATA0
90_MIPI_FCAM_TO_AP_DATA1_N	MAKE_BASE	90_MIPI_FCAM_TO_AP_DATA1_N	B15	MIPI1C_DPDATA1
90_MIPI_FCAM_TO_AP_DATA1_P	MAKE_BASE	90_MIPI_FCAM_TO_AP_DATA1_P	A15	MIPI1C_DNDATA1
90_MIPI_FCAM_TO_AP_CLK_P	MAKE_BASE	90_MIPI_FCAM_TO_AP_CLK_P	A16	MIPI1C_DPCLK
90_MIPI_FCAM_TO_AP_CLK_N	MAKE_BASE	90_MIPI_FCAM_TO_AP_CLK_N	B16	MIPI1C_DNCLK

Display MIPI

90_MIPI_AP_TO_DISPLAY_DATA0_P			A10	MIPID_DPDATA0
90_MIPI_AP_TO_DISPLAY_DATA0_N			B10	MIPID_DNDATA0
90_MIPI_AP_TO_DISPLAY_DATA1_P	MAKE_BASE	90_MIPI_AP_TO_DISPLAY_DATA1_P	B9	MIPID_DPDATA1
90_MIPI_AP_TO_DISPLAY_DATA1_N	MAKE_BASE	90_MIPI_AP_TO_DISPLAY_DATA1_N	A9	MIPID_DNDATA1
90_MIPI_AP_TO_DISPLAY_DATA3_P	MAKE_BASE	90_MIPI_AP_TO_DISPLAY_DATA3_P	A7	MIPID_DPDATA2
90_MIPI_AP_TO_DISPLAY_DATA3_N	MAKE_BASE	90_MIPI_AP_TO_DISPLAY_DATA3_N	B7	MIPID_DNDATA2
90_MIPI_AP_TO_DISPLAY_DATA2_N	MAKE_BASE	90_MIPI_AP_TO_DISPLAY_DATA2_N	A6	MIPID_DPDATA3
90_MIPI_AP_TO_DISPLAY_DATA2_P	MAKE_BASE	90_MIPI_AP_TO_DISPLAY_DATA2_P	B6	MIPID_DNDATA3
90_MIPI_AP_TO_DISPLAY_CLK_N	MAKE_BASE	90_MIPI_AP_TO_DISPLAY_CLK_N	A8	MIPID_DPCLK
90_MIPI_AP_TO_DISPLAY_CLK_P	MAKE_BASE	90_MIPI_AP_TO_DISPLAY_CLK_P	B8	MIPID_DNCLK
AP_TO_MANY_BSYNC			AA3	DISP_TOUCH_BSYNC0
DISPLAY_TO_AP_ALIVE			AB4	DISP_TOUCH_BSYNC1
NC			AB6	DISP_TOUCH_EB
MIPID_REXT			D11	MIPID_REXT
NC			AA4	DISP_I2C_SCL
NC			AA5	DISP_I2C_SDA
NC			Y4	DISP_POL

ISP_I2C0_SCL	W35	I2C0_ISP_SCL	OUT
ISP_I2C0_SDA	V38	I2C0_ISP_SDA	BI
ISP_I2C1_SCL	W36	I2C1_ISP_SCL	OUT
ISP_I2C1_SDA	Y36	I2C1_ISP_SDA	BI
ISP_I2C2_SCL	Y34	I2C2_ISP_SCL	OUT
ISP_I2C2_SDA	Y38	I2C2_ISP_SDA	BI
ISP_I2C3_SCL	AA37	I2C3_ISP_SCL	OUT
ISP_I2C3_SDA	AB38	I2C3_ISP_SDA	BI
SENSOR_INT	AB36	RIGEL_TO_ISP_INT	IN
SENSOR0_CLK	U38	AP_TO_WIDE_CLK_R	
SENSOR1_CLK	R38	AP_TO_TELE_CLK_R	
SENSOR2_CLK	R37	AP_TO_FCAM_JULIET_RIGEL_CLK_R	
SENSOR0_RST	V34	AP_TO_JULIET_SHUTDOWN_L	OUT
SENSOR1_RST	U35	AP_TO_TELE_SHUTDOWN_L	OUT
SENSOR2_RST	AB34	AP_TO_WIDE_SHUTDOWN_L	OUT
SENSOR3_RST	AC37	NC	
SENSOR4_RST	AA35	AP_TO_FCAM_SHUTDOWN_L	OUT
SENSOR0_ISTRB	V36	AP_DEBUG3	OUT
SENSOR1_ISTRB	U36	NC	
SENSOR0_XSHUTDOWN	U37	NC	
SENSOR1_XSHUTDOWN	T37	ISP_TO_DISPLAY_FLASH_INT	OUT

R1240 33.2 1% 1/32W MF 01005 ROOM=SOC — AP_TO_WIDE_CLK OUT
R1241 33.2 1% 1/32W MF 01005 ROOM=SOC — AP_TO_TELE_CLK OUT
R1242 33.2 1% 1/32W MF 01005 ROOM=SOC — AP_TO_FCAM_JULIET_CLK OUT
R1243 33.2 1% 1/32W MF 01005 ROOM=SOC — AP_TO_RIGEL_CLK OUT

ISP I2C0

PP1V8_IO
R1201 1.00K 5% 1/32W MF 01005 ROOM=SOC — I2C0_ISP_SCL
R1202 1.00K 5% 1/32W MF 01005 ROOM=SOC — I2C0_ISP_SDA

ISP I2C1

PP1V8_IO
R1211 1.00K 5% 1/32W MF 01005 ROOM=SOC — I2C1_ISP_SCL
R1212 1.00K 5% 1/32W MF 01005 ROOM=SOC — I2C1_ISP_SDA

ISP I2C2

PP1V8_IO
R1221 1.00K 5% 1/32W MF 01005 ROOM=SOC — I2C2_ISP_SCL
R1222 1.00K 5% 1/32W MF 01005 ROOM=SOC — I2C2_ISP_SDA

ISP I2C3

PP1V8_IO
R1231 1.00K 5% 1/32W MF 01005 ROOM=SOC — I2C3_ISP_SCL
R1232 1.00K 5% 1/32W MF 01005 ROOM=SOC — I2C3_ISP_SDA

MIPI Reference

MIPI0C_REXT
MIPI1C_REXT
MIPID_REXT
R1250 200 1% 1/32W MF 01005 ROOM=SOC
R1251 200 1% 1/32W MF 01005 ROOM=SOC
R1252 200 1% 1/32W MF 01005 ROOM=SOC

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SOC: MIPI & ISP

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SOC - LPDP

VDD12_PLL_LPDP 1.14V - 1.26V @ 10mA MAX
VDD12_LPDP 1.14V - 1.26V @ 72mA MAX
PP1V2_SOC

C1390 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=SOC
C1391 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=SOC
C1392 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=SOC
C1393 0.01UF 10% 6.3V X5R 01005 ROOM=SOC
C1394 15PF 5% 16V NP0-C0G-CERM 01005 ROOM=SOC
Desense for Wifi frequencies

(Analog)
VDD_FIXED_PLL_LPDP 0.765V - 0.84V @ 3mA MAX
VDD_FIXED_LPDP_TX 0.765V - 0.84V @ 16mA MAX
VDD_FIXED_LPDP_RX 0.765V - 0.84V @ 30mA MAX
PP0V8_SOC_FIXED_S1

C1395 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=SOC
C1396 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=SOC

M9 VDD12_LPDP_TX
F15 F17 F16 VDD12_LPDP_RX
T9 VDD12_PLL_LPDP
R9 VDD_FIXED_PLL_LPDP
P9 VDD_FIXED_LPDP_TX
G16 G18 VDD_FIXED_LPDP_RX

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90_LPDP_WIDE_TO_AP_D0_P	A26	LPDPRX_RX_D0_P	LPDP_TX0P	M3	NC
90_LPDP_WIDE_TO_AP_D0_N	B26	LPDPRX_RX_D0_N	LPDP_TX0N	M4	NC
90_LPDP_WIDE_TO_AP_D1_P	A25	LPDPRX_RX_D1_P	LPDP_TX1P	L4	NC
90_LPDP_WIDE_TO_AP_D1_N	B25	LPDPRX_RX_D1_N	LPDP_TX1N	L5	NC
90_LPDP_WIDE_TO_AP_D2_P	A24	LPDPRX_RX_D2_P	LPDP_TX2P	K3	NC
90_LPDP_WIDE_TO_AP_D2_N	B24	LPDPRX_RX_D2_N	LPDP_TX2N	K4	NC
90_LPDP_TELE_TO_AP_D0_P	A21	LPDPRX_RX_D3_P	LPDP_TX3P	J4	NC
90_LPDP_TELE_TO_AP_D0_N	B21	LPDPRX_RX_D3_N	LPDP_TX3N	J5	NC
90_LPDP_TELE_TO_AP_D1_P	A20	LPDPRX_RX_D4_P			
90_LPDP_TELE_TO_AP_D1_N	B20	LPDPRX_RX_D4_N			
90_LPDP_TELE_TO_AP_D2_P	A19	LPDPRX_RX_D5_P	LPDP_AUX_P	G4	NC
90_LPDP_TELE_TO_AP_D2_N	B19	LPDPRX_RX_D5_N	LPDP_AUX_N	G5	NC
			LPDP_CAL_DRV_OUT	H3	NC
			LPDP_CAL_VSS_EXT	H6	NC
LPDP_WIDE_BI_AP_AUX	D21	LPDPRX_AUX_D0_P	EDP_HPD	Y6	NC
	NC D20	LPDPRX_AUX_D1_P	DP_WAKEUP	Y2	NC
LPDP_TELE_BI_AP_AUX	NC D19	LPDPRX_AUX_D2_P			
	D17	LPDPRX_AUX_D3_P			
	NC D16	LPDPRX_AUX_D4_P			
	NC D15	LPDPRX_AUX_D5_P			
GND	A22	LPDPRX_BYP_CLK_P			
GND	B22	LPDPRX_BYP_CLK_N			
PP0V8_SOC_FIXED_S1	B23	LPDPRX_RCAL_P			
AP_LPDPRX_RCAL_NEG	A23	LPDPRX_RCAL_N			
	NC D18	LPDPRX_EXT_C			

MAKE_BASE=TRUE

R1300 300 1% 1/32W MF 01005-1 ROOM=SOC
C1301 100PF 5% 16V NP0-C0G 01005 ROOM=SOC

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SOC: LPDP

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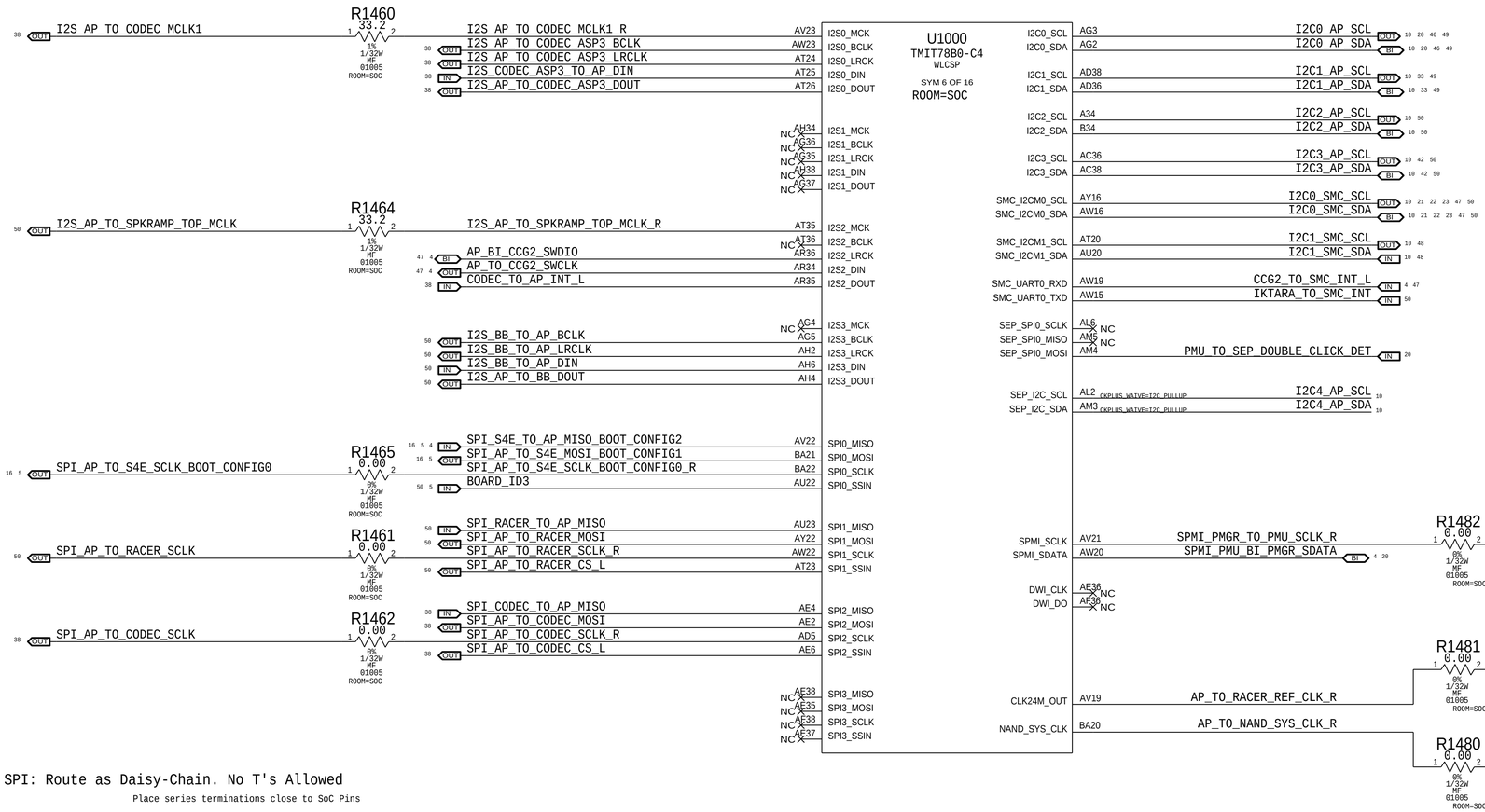
SOC - SERIAL INTERFACES



SPI: Route as Daisy-Chain. No T's Allowed

Place series terminations close to SoC Pins

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
335S00234	1	WLCSP	U1490	CRITICAL	COMMON

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
335S00233	335S00234	BOM_TABLE_ALTS	U1490	U1490

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SOC: Serial

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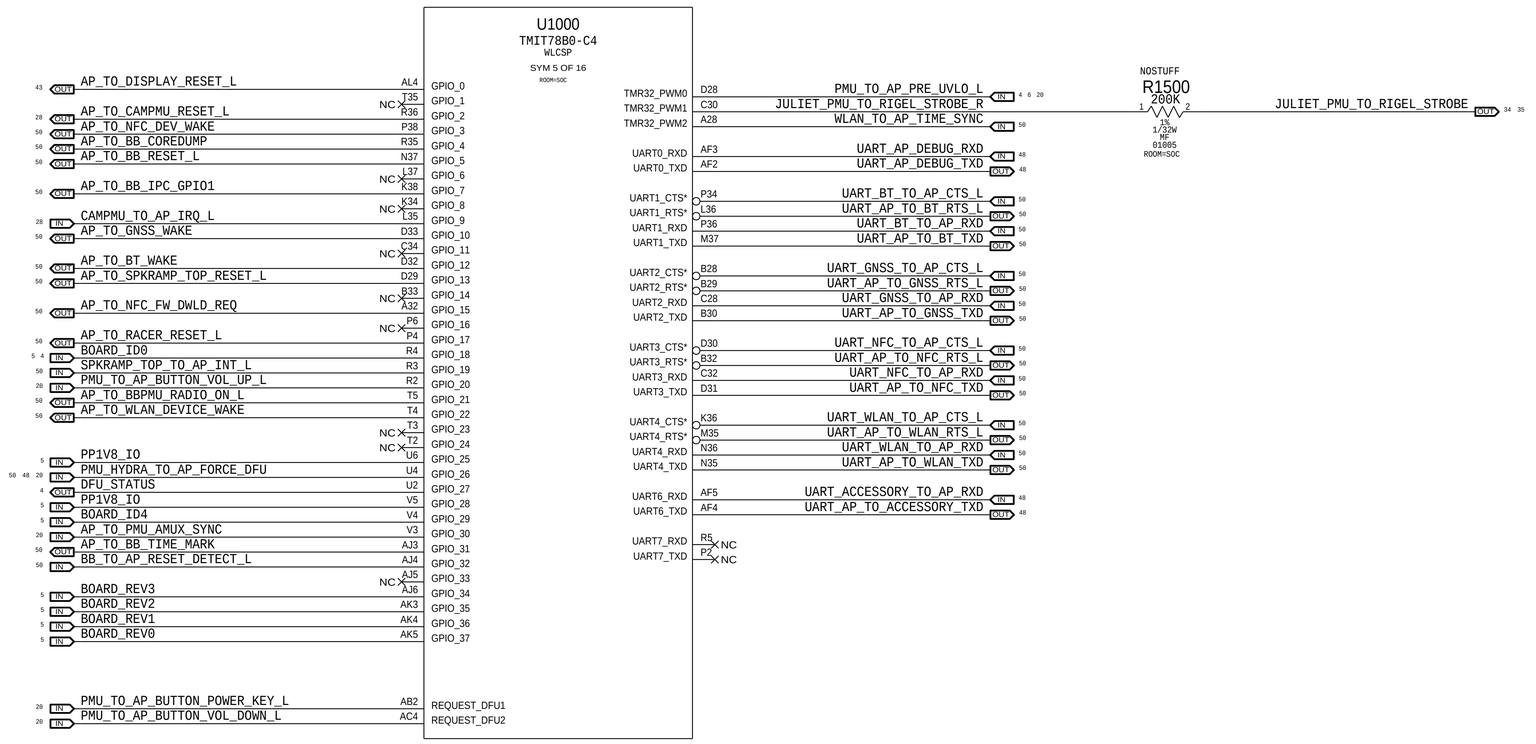
SOC - GPIO INTERFACES



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SOC: GPIO & UART

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SOC - AOP

AOP I2C Pull-Ups

PP1V8_S2

R1620 1.00K 5% 1/32W MF 01005 ROOM=SOC
R1621 1.00K 5% 1/32W MF 01005 ROOM=SOC
R1622 1.00K 5% 1/32W MF 01005 ROOM=SOC
R1623 1.00K 5% 1/32W MF 01005 ROOM=SOC

I2C1_AOP_SCL
I2C1_AOP_SDA
I2C0_AOP_SCL
I2C0_AOP_SDA

1.8V @ 15mA MAX
PP1V8_S2

C1690 4UF 20% 6.3V X6S-X5R 0201 ROOM=SOC
C1691 0.1UF 20% 6.3V X6S-CERM 01005 ROOM=SOC

AP13 VDDIO18_AOP
AP15 VDDIO18_AOP
AP17 VDDIO18_AOP
AP19 VDDIO18_AOP

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TMIT78B0-C4
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ROOM=SOC

AOP_TO_DDR_SLEEP1_READY	AT11	AON_DDR_RESET*	
	AU14	AOP_FUNC_0	
	AU13	AOP_FUNC_1	
ACCEL_GYRO_TO_AOP_DATARDY	AW10	AOP_FUNC_2	
SPI_AOP_TO_ACCEL_GYRO_CS_L	AW11	AOP_FUNC_3	
ACCEL_GYRO_TO_AOP_INT	AT16	AOP_FUNC_4	SPI SCM
SPI_AOP_TO_PHOSPHORUS_CS_L	AV11	AOP_FUNC_5	
PHOSPHORUS_TO_AOP_INT	AY10	AOP_FUNC_6	
ROMEO_TO_AOP_B2B_DETECT	AV12	AOP_FUNC_7	
RACER_TO_AOP_INT_L	AY11	AOP_FUNC_8	
AOP_TO_CODEC_RESET_L	AU16	AOP_FUNC_9	
AP_TO_MANY_BSYNC	AV16	AOP_FUNC_10	
	AT17	AOP_FUNC_11	
PMU_TO_AOP_IRQ_L	AV13	AOP_FUNC_12	
AOP_TO_SPKRAMP_BOT_ARC_RESET_L	AW12	AOP_FUNC_13	
SPKRAMP_BOT_ARC_TO_AOP_INT_L	AV14	AOP_FUNC_14	
AOP_TO_CODEC_CLP_EN	AW13	AOP_FUNC_15	AOP_PDM_CLK4
I2S_AOP_AMPS_TO_CODEC_ASP1_DOUT	AU17	AOP_FUNC_16	
PROX_BI_AP_AOP_INT_L	AV15	AOP_FUNC_17	
	AY13	AOP_FUNC_18	I2C0 SCM
HALL3_TO_AOP_IRQ_L	BA11	AOP_FUNC_19	
ALS_TO_AOP_INT_L	AV17	AOP_FUNC_20	
	BA10	AOP_FUNC_21	
COMPASS_TO_AOP_INT	AT18	AOP_FUNC_22	I2C1 SCM
HALL2_TO_AOP_IRQ_L	AW14	AOP_FUNC_23	
I2S_CODEC_ASP1_TO_AOP_AMPS_BCLK_R	AV18	AOP_FUNC_24	
I2S_CODEC_ASP1_TO_AOP_AMPS_LRCLK_R	BA12	AOP_FUNC_25	
I2S_CODEC_ASP1_TO_AOP_AMPS_DIN	AY14	AOP_FUNC_26	
SPI_IMU_TO_AOP_MISO	AW7	AOP_SPI_MISO	
SPI_AOP_TO_IMU_MOSI	AU10	AOP_SPI_MOSI	
SPI_AOP_TO_IMU_SCLK_R	AV8	AOP_SPI_SCLK	
UART_BB_TO_AOP_RXD	AT14	AOP_UART0_RXD	
UART_AOP_TO_BB_TXD	AY8	AOP_UART0_TXD	
AOP_TO_WLAN_CONTEXT_A	BA8	AOP_UART1_RXD	
AOP_TO_WLAN_CONTEXT_B	AW8	AOP_UART1_TXD	
UART_RACER_TO_AOP_RXD	AU11	AOP_UART2_RXD	
UART_AOP_TO_RACER_TXD	AT15	AOP_UART2_TXD	
I2S_AOP_TO_CODEC_ASP2_BCLK	BA14	AOP_I2S0_BCLK	
I2S_CODEC_ASP2_TO_AOP_DIN	AT19	AOP_I2S0_DIN	
I2S_AOP_TO_CODEC_MCLK2_R	AU19	AOP_I2S0_MCK	
I2S_AOP_TO_CODEC_ASP2_LRCLK	BA15	AOP_I2S0_LRCK	
I2S_AOP_TO_CODEC_ASP2_DOUT	BA13	AOP_I2S0_DOUT	
	BA16	AOP_PDM_CLK0	
	AW18	AOP_PDM_DATA0	
	AW17	AOP_PDM_DATA1	
	BA18	RT_CLK32768	
	AV20	AOP_SWD_TCK_OUT	
	AY17	AOP_SWD_TMS0	
	AT21	AOP_SWD_TMS1	
	AC5	SWD_TMS2	
	AC2	SWD_TMS3	
	BA9	AOP_I2CM0_SCL	
	AV9	AOP_I2CM0_SDA	
	AV10	AOP_I2CM1_SCL	
	AW9	AOP_I2CM1_SDA	
	BA17	DOCK_ATTENTION	
	AY19	DOCK_CONNECT	

I2S_CODEC_ASP1_TO_AOP_AMPS_BCLK → R1603 49.9 1% 1/32W MF 01005 ROOM=SOC → I2S_CODEC_ASP1_TO_AOP_AMPS_BCLK_R
I2S_CODEC_ASP1_TO_AOP_AMPS_LRCLK → R1604 49.9 1% 1/32W MF 01005 ROOM=SOC → I2S_CODEC_ASP1_TO_AOP_AMPS_DIN
SPI_AOP_TO_IMU_SCLK → R1601 49.9 1% 1/32W MF 01005 ROOM=SOC → SPI_AOP_TO_IMU_SCLK_R
I2S_AOP_TO_CODEC_MCLK2 → R1602 33.2 1% 1/32W MF 01005 ROOM=SOC → I2S_AOP_TO_CODEC_MCLK2_R

CODEC_TO_AOP_GPIO1
CODEC_TO_AOP_GPIO2
PMU_TO_AOP_CLK32K
SWD_AOP_TO_MANY_SWCLK
SWD_AOP_BI_RACER_SWDIO
SWD_AOP_BI_BB_SWDIO
SWD_AP_BI_NAND_SWDIO
I2C0_AOP_SCL
I2C0_AOP_SDA
I2C1_AOP_SCL
I2C1_AOP_SDA
HYDRA_TO_NUB_INT
HYDRA_TO_NUB_DOCK_CONNECT

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SOC - CPU, GPU & SOC RAILS

1.06V @ 11.0A MAX
0.8V @ 6A MAX
0.575V @ 2.7A MAX

PP_CPU_PCORE

C1702 4UF 20% 4V X5R 0201 ROOM=SOC
C1703 4UF 20% 4V X5R 0201 ROOM=SOC

OMIT XW1701 SHORT-20L-0.05MM-SM ROOM=SOC

BUCK0_FB OUT

C1704 14UF 20% 4V X5R 0402-D2X-1
C1705 14UF 20% 4V X5R 0402-D2X-1
C1706 14UF 20% 4V X5R 0402-D2X-1
C1707 14UF 20% 4V X5R 0402-D2X-1
C1708 14UF 20% 4V X5R 0402-D2X-1
C1709 14UF 20% 4V X5R 0402-D2X-1
C1710 14UF 20% 4V X5R 0402-D2X-1
C1711 14UF 20% 4V X5R 0402-D2X-1
C1712 14UF 20% 4V X5R 0402-D2X-1
C1713 14UF 20% 4V X5R 0402-D2X-1

U1000 TMIT78B0-C4 WLCSP SYM 8 OF 16 ROOM=SOC

AA14 AA16 AB11 AB13 AB15 AB17 AB19 AC20 AD15 AE14 AF20 AG9 AG15 AH10 AH12 AH14 AH16 AH18 AH20 — VDD_CPU

F25 J16 F31 G20 G22 G24 G26 J28 H11 H15 H19 H23 H31 J12 J18 J22 J24 J26 J30 L16 K17 K29 L12 L18 L22 L28 M23 L24 N22 N24 N28 — VDD_GPU

0.7V @ 75mA MAX
PP0V7_VDD_LOW_S2

C1750 4UF 20% 6.3V CER-X5R 0201 ROOM=SOC

AM15 AM17 AM19 AM21 AN16 AN18 AN20 — VDD_LOW

1.01V @ 2.1A MAX
0.735V @ 0.6A MAX
PP_CPU_SRAM

C1772 14UF 20% 4V X5R 0402-D2X-1
C1773 14UF 20% 4V X5R 0402-D2X-1

AA12 AB18 AC9 AC14 AE20 AF14 U14 — VDD_CPU_SRAM

1.06V @ 1.1A MAX
0.80V @ 0.63A MAX
0.675V @ 0.19A MAX
PP_GPU_SRAM

C1781 14UF 20% 4V X5R 0402-D2X-1
C1782 14UF 20% 4V X5R 0402-D2X-1

N26 H13 H17 H21 H25 K11 K19 K23 G30 M29 — VDD_GPU_SRAM

AP_CPU_PCORE_SENSE OUT → AH21 VDD_CPU_SENSE
AP_VDD_GPU_SENSE OUT → N23 VDD_GPU_SENSE

C1730 4UF 20% 4V X5R 0201 ROOM=SOC
C1731 4UF 20% 4V X5R 0201 ROOM=SOC

1.06V @ 18.3A MAX
0.8V @ 10.6A MAX
0.575V @ 3.4A MAX
PP_GPU

OMIT XW1731 SHORT-20L-0.05MM-SM ROOM=SOC
NO_XNET_CONNECTION
BUCK1_FB OUT

C1732 14UF 20% 4V X5R 0402-D2X-1
C1733 14UF 20% 4V X5R 0402-D2X-1
C1734 14UF 20% 4V X5R 0402-D2X-1
C1735 14UF 20% 4V X5R 0402-D2X-1
C1736 14UF 20% 4V X5R 0402-D2X-1
C1737 14UF 20% 4V X5R 0402-D2X-1
C1738 14UF 20% 4V X5R 0402-D2X-1
C1739 14UF 20% 4V X5R 0402-D2X-1

OMIT XW1790 SHORT-20L-0.05MM-SM ROOM=SOC
BUCK11_FB OUT

1.06V @ 4.3A MAX
0.8V @ 2.8A MAX
0.575V @ 1.4A MAX
PP_CPU_ECORE

C1791 14UF 20% 4V X5R 0402-D2X-1
C1792 14UF 20% 4V X5R 0402-D2X-1
C1793 14UF 20% 4V X5R 0402-D2X-1
C1794 4UF 20% 4V X5R 0201 ROOM=SOC

AA10 U10 U12 V13 V15 Y13 Y15 — VDD_ECPU

(Analog)
0.8V @ 6mA MAX
0.8V @ 6mA MAX
0.8V @ 10mA MAX
PP0V8_SOC_FIXED_S1

W14 — VDD_FIXED_CPU
K21 — VDD_FIXED_PLL_GPU
L20 — VDD_FIXED_PLL_SOC

(Analog)
1.2V @ 7mA MAX (CPU)
1.2V @ 7mA MAX (GPU)
1.2V @ 20mA MAX (SOC)
PP1V2_SOC

W16 — VDD12_PLL_CPU
L21 — VDD12_PLL_GPU
M20 — VDD12_PLL_SOC

C1720 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=SOC
C1721 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=SOC
C1722 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=SOC
C1723 4UF 20% 6.3V CER-X5R 0201 ROOM=SOC

0.765V @ 4.9A MAX
0.635V @ 2.6A MAX
PP_SOC_S1

C1760 4UF 20% 4V X5R 0201 ROOM=SOC
C1761 4UF 20% 4V X5R 0201 ROOM=SOC

OMIT XW1760 SHORT-20L-0.05MM-SM ROOM=SOC
NO_XNET_CONNECTION
BUCK2_FB OUT

C1762 14UF 20% 4V X5R 0402-D2X-1
C1763 14UF 20% 4V X5R 0402-D2X-1
C1764 14UF 20% 4V X5R 0402-D2X-1

U1000 TMIT78B0-C4 WLCSP SYM 9 OF 16 ROOM=SOC

AA9 AA18 AA22 AA24 AA28 AA30 AB21 AB25 AB27 AC22 AC24 AC28 AC30 AD9 AD21 AD25 AD27 AD29 AE22 AE24 AE28 AF25 AF27 AG22 AG24 AG28 AH25 AH27 AJ16 AJ18 AJ22 AJ24 AJ28 AK13 AK15 AK19 AK21 AK25 AK27 AL12 AL16 AL18 AL22 AL24 AL28 AL30 AM13 AM25 AN12 AN22 AN24 F22 — VDD_SOC

G13 J20 L19 M13 M15 M21 N10 N12 N16 N18 N29 P13 P15 P19 P21 P25 P27 R10 R12 R16 R18 R22 R24 R28 T13 T15 T19 T21 T25 T27 U16 U18 U22 U24 U28 U30 V19 V21 V25 V27 W18 W22 W24 W28 W30 Y19 Y25 Y21 Y27 P23 — VDD_SOC_SENSE

TP_SOC_SENSE OUT

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SOC: Power (1/3)

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SOC - POWER SUPPLIES

0.8V @ 0.9A MAX
PP0V8_SOC_FIXED_S1

C1801 14UF 20% 4V X5R 0402-D2X-1 ROOM=SOC

C1802 4UF 20% 4V X5R 0201 ROOM=SOC
C1803 4UF 20% 4V X5R 0201 ROOM=SOC
C1804 4UF 20% 4V X5R 0201 ROOM=SOC
C1805 4UF 20% 4V X5R 0201 ROOM=SOC

U1000
TMIT78B0-C4
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ROOM=SOC

AA20 AA26 AB9 AB23 AB29 AC26 AD23 AD31 AE26 AF23 AF29 AG26 AH23 AH29 AJ14 AJ20 AJ26 AK17 AK23 AL14 AL20 AL26 AM11 AM23 AP11 AP21 AP24 F19 F23 M11 M17 N14 N20 P11 P17 P29 R14 R20 R26 T11 T17 T23 T31 U20 U26
VDD_FIXED

0.6V @ 262mA MAX
PP0V6_VDDQL_S1

C1830 4UF 20% 4V X5R 0201 ROOM=SOC
C1831 4UF 20% 4V X5R 0201 ROOM=SOC
C1832 4UF 20% 4V X5R 0201 ROOM=SOC
C1833 4UF 20% 4V X5R 0201 ROOM=SOC

Place caps on SoC Corners

PP1V2_LPADC

C1870 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=SOC

OMIT
XW1870 SHORT-20L-0.05MM-SM ROOM=SOC

LPADC_REF_P BA19
LPADC_REF_M AY20
LPADC_GND

(Analog)
0.8V @ 8mA MAX
PP0V8_SOC_FIXED_S1

VDD_FIXED_PLL_DDR0 AK11
VDD_FIXED_PLL_DDR1 AJ29
VDD_FIXED_PLL_DDR2 D8
VDD_FIXED_PLL_DDR3 R29

V17 V23 V29 W20 W26 Y9 Y17 Y23 Y29

VDDQL Voltage Sense ->

1.06V - 1.17V @ (Inc in VDD2)
PP1V1_S2

(Analog)
1.2V @ 16mA MAX
PP1V2_SOC

0.875V @ 0.8A MAX
0.730V @ 0.51A MAX
0.600V @ 0.35A MAX
PP_DCS_S1

C1860 4UF 20% 4V X5R 0201 ROOM=SOC
C1861 4UF 20% 4V X5R 0201 ROOM=SOC
C1862 4UF 20% 4V X5R 0201 ROOM=SOC
C1863 4UF 20% 4V X5R 0201 ROOM=SOC

Place caps on SoC Corners

DCS Voltage Sense ->

U1000
TMIT78B0-C4
WLCSP
SYM 11 OF 16
ROOM=SOC

AD1 AF1 AH1 AK9 AP9 AT1 AV1 — VDDQL_DDR0
AD39 AF31 AF39 AK31 AP39 AT39 AV39 — VDDQL_DDR1
D1 F1 F9 H1 K9 T1 V1 C4 — VDDQL_DDR2
D39 F39 K31 P31 P39 T39 V39 — VDDQL_DDR3

AR6 AN34 E6 G34 — VDDIO11_RET_DDR0 VDDIO11_RET_DDR1 VDDIO11_RET_DDR2 VDDIO11_RET_DDR3
AJ11 AK29 D9 T29 — VDDIO12_PLL_DDR0 VDDIO12_PLL_DDR1 VDDIO12_PLL_DDR2 VDDIO12_PLL_DDR3
AJ10 AP10 — VDD_DCS_DDR0
AE30 AK30 — VDD_DCS_DDR1
F10 L10 — VDD_DCS_DDR2
A4 K30 R30 — VDD_DCS_DDR3

DDR IMPEDANCE CONTROL
PP0V6_VDDQL_S1

R1860 240 1% 1/32W MF 01005 ROOM=SOC
R1861 240 1% 1/32W MF 01005 ROOM=SOC
R1862 240 1% 1/32W MF 01005 ROOM=SOC
R1863 240 1% 1/32W MF 01005 ROOM=SOC
R1870 240 1% 1/32W MF 01005 ROOM=SOC
R1871 240 1% 1/32W MF 01005 ROOM=SOC

DDR0_RREF AP5 DDR0_RREF
DDR1_RREF AN35 DDR1_RREF
DDR2_RREF E5 DDR2_RREF
DDR3_RREF H35 DDR3_RREF

DDR0_RET* AR5
DDR1_RET* AM35
DDR2_RET* E3
DDR3_RET* G35
AOP_TO_DDR_SLEEP1_READY IN

DDR0_ZQ AJ2 DDR0_ZQ
DDR3_ZQ N38 DDR3_ZQ

DDR0_SYS_ALIVE AP6
DDR1_SYS_ALIVE AM34
DDR2_SYS_ALIVE E4
DDR3_SYS_ALIVE H34
SYSTEM_ALIVE IN

1.8V @ 200mA MAX
PP1V8_S2

AB3 AB37 AW3 AW37 B3 B37 Y3 Y37 — VDD1

C1840 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=SOC
C1841 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=SOC
C1842 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=SOC
C1843 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=SOC

AA2 AA38 AC39 AH39 AJ1 AK39 AM1 AN39 AP1 AV2 AV37 AW2 AW38 C2 C3 C38 D38 H39 J1 K39 M1 N39 P1 W1 — VDD2

1.06V - 1.17V @2.2A MAX
PP1V1_S2

C1850 4UF 20% 4V X5R 0201 ROOM=SOC
C1851 4UF 20% 4V X5R 0201 ROOM=SOC
C1852 4UF 20% 4V X5R 0201 ROOM=SOC
C1853 4UF 20% 4V X5R 0201 ROOM=SOC

1.8V @ 60mA MAX
PP1V8_IO

C1810 26UF 20% 4V X5R 0402-0.1MM ROOM=SOC
C1811 4UF 20% 6.3V CER-X5R 0201 ROOM=SOC
C1812 4UF 20% 6.3V CER-X5R 0201 ROOM=SOC
C1813 4UF 20% 6.3V CER-X5R 0201 ROOM=SOC

U1000
TMIT78B0-C4
WLCSP
SYM 12 OF 16
ROOM=SOC

AP23 AP25 — VDDIO18_GRP1
AB31 V31 Y31 — VDDIO18_GRP2
F21 D23 — VDDIO18_GRP3
AF9 V9 — VDDIO18_GRP4

VDD18_TSADC_CPU0 T12
VDD18_TSADC_CPU1 AF21
VDD18_TSADC_CPU2 AJ9
VDD18_TSADC_CPU3 Y16
VDD18_TSADC_GPU0 G21
VDD18_TSADC_SOC0 AJ12
VDD18_TSADC_SOC1 AD30
VDD18_TSADC_SOC2 J31
VDD18_EFUSE1 H12
VDD18_EFUSE2 AT6
VDD18_FMON AN13
VDD18_LPOSC AN19

1.8V @ 5.3mA MAX (CPU)
1.8V @ 1.1mA MAX (GPU)
1.8V @ 3.3mA MAX (SOC)
PP1V8_IO

1.8V @ 1mA MAX
PP1V8_IO
PP1V8_LPOSC_S2

C1880 56PF 5% 25V NP0-C0G-CERM 01005 ROOM=SOC
C1881 0.47UF 20% 6.3V X5R 01005 ROOM=SOC

R1880 300 5% 1/32W MF 01005 ROOM=SOC
1.8V @ 1mA MAX
PP1V8_S2

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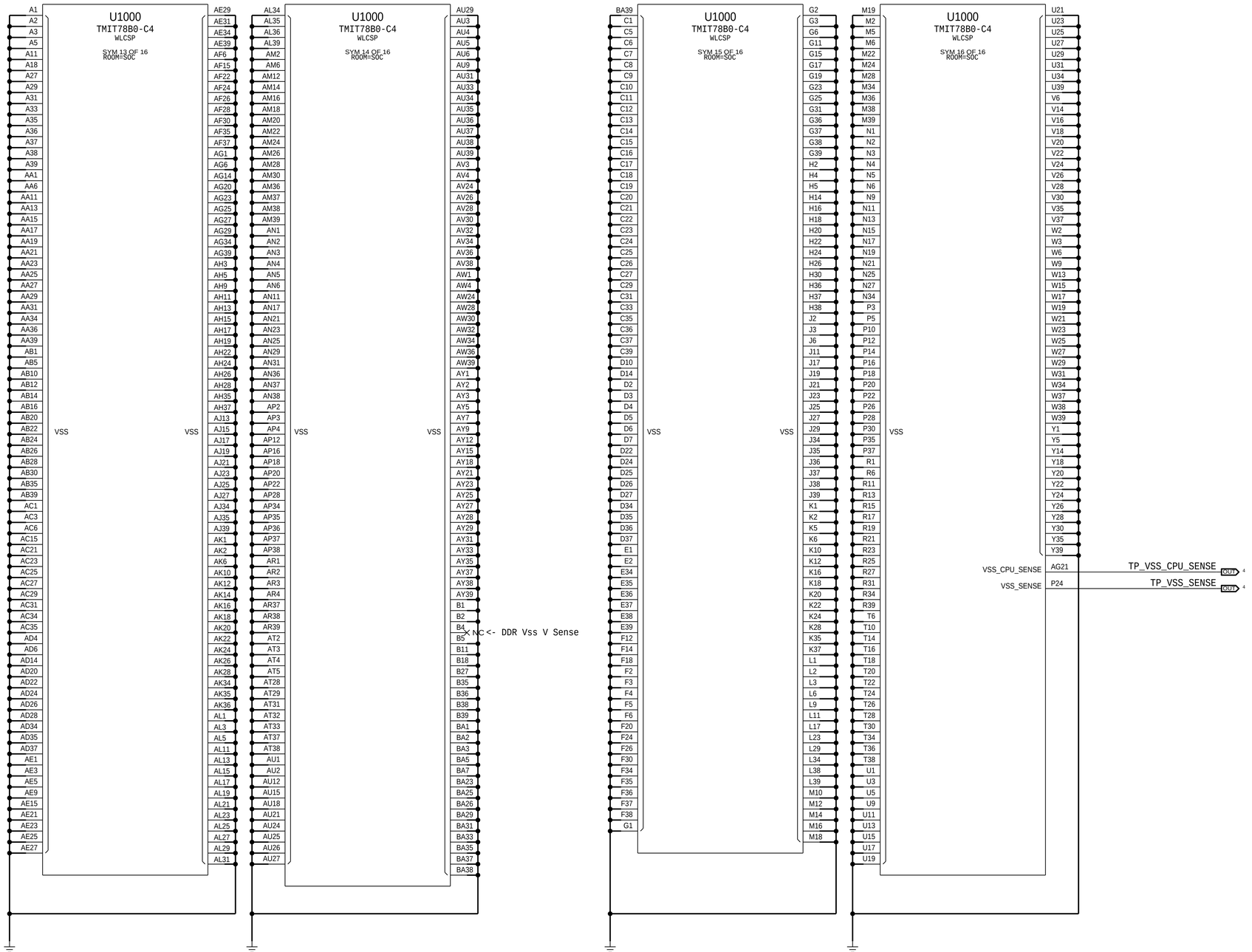
SOC - POWER SUPPLIES



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S4E NAND

391mA MAX
PP1V8_IO
28 27 17 16 14 10 8 7 6 5 43 35 34 32 30 29

C2626 4UF 20% 4V X5R 0201 ROOM=NAND
C2610 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=NAND
C2629 18UF 20% 6.3V CER-X5R 0402-0.1MM ROOM=NAND
C2630 18UF 20% 6.3V CER-X5R 0402-0.1MM ROOM=NAND
C2624 4UF 20% 4V X5R 0201 ROOM=NAND
C2641 4UF 20% 4V X5R 0201 ROOM=NAND
C2643 4UF 20% 4V X5R 0201 ROOM=NAND
C2645 4UF 20% 4V X5R 0201 ROOM=NAND
C2647 4UF 20% 4V X5R 0201 ROOM=NAND
C2611 220PF 5% 10V C0G-CERM 01005 ROOM=NAND
C2617 100PF 5% 16V NP0-C0G 01005 ROOM=NAND
C2623 68PF 5% 6.3V NP0-C0G 01005 ROOM=NAND
C2612 47PF 5% 16V CERM 01005 ROOM=NAND

932mA MAX
19 PP0V9_NAND
C2602 26UF 20% 4V X5R 0402-0.1MM ROOM=NAND
C2605 26UF 20% 4V X5R 0402-0.1MM ROOM=NAND
C2600 4UF 20% 4V X5R 0201 ROOM=NAND
C2601 4UF 20% 4V X5R 0201 ROOM=NAND
C2622 4UF 20% 4V X5R 0201 ROOM=NAND
C2627 4UF 20% 4V X5R 0201 ROOM=NAND
C2640 4UF 20% 4V X5R 0201 ROOM=NAND
C2642 4UF 20% 4V X5R 0201 ROOM=NAND
C2644 4UF 20% 4V X5R 0201 ROOM=NAND
C2646 4UF 20% 4V X5R 0201 ROOM=NAND
C2603 220PF 5% 10V C0G-CERM 01005 ROOM=NAND
C2606 220PF 5% 10V C0G-CERM 01005 ROOM=NAND
C2609 100PF 5% 16V NP0-C0G 01005 ROOM=NAND
C2614 68PF 5% 6.3V NP0-C0G 01005 ROOM=NAND
C2620 47PF 5% 16V CERM 01005 ROOM=NAND
C2628 22PF 5% 16V CERM 01005 ROOM=NAND

1100mA MAX (1us peak power)
PP3V0_NAND 19
C2613 18UF 20% 6.3V CER-X5R 0402-0.1MM ROOM=NAND
C2616 18UF 20% 6.3V CER-X5R 0402-0.1MM ROOM=NAND
C2619 18UF 20% 6.3V CER-X5R 0402-0.1MM ROOM=NAND
C2621 18UF 20% 6.3V CER-X5R 0402-0.1MM ROOM=NAND
C2649 4UF 20% 6.3V CERM-X5R 0201 ROOM=NAND
C2650 4UF 20% 6.3V CERM-X5R 0201 ROOM=NAND
C2651 4UF 20% 6.3V CERM-X5R 0201 ROOM=NAND
C2652 4UF 20% 6.3V CERM-X5R 0201 ROOM=NAND
C2615 22PF 5% 16V CERM 01005 ROOM=NAND
C2618 47PF 5% 16V CERM 01005 ROOM=NAND
C2631 68PF 5% 6.3V NP0-C0G 01005 ROOM=NAND
C2632 100PF 5% 16V NP0-C0G 01005 ROOM=NAND
C2634 220PF 5% 10V C0G-CERM 01005 ROOM=NAND
C2635 220PF 5% 10V C0G-CERM 01005 ROOM=NAND
C2636 220PF 5% 10V C0G-CERM 01005 ROOM=NAND
C2637 100PF 5% 16V NP0-C0G 01005 ROOM=NAND

4 OUT NAND_ANI1_VREF
4 OUT NAND_ANI0_VREF

U2600
THGBX7G8D2LLFXG
WFLGA
ROOM=NAND
BOMOPTION=OMIT_TABLE
CRITICAL

N6	PCI_AVDD_CLK_1	
M9	PCI_AVDD_CLK_2	
J6	PCI_AVDD_H	
N8	PCI_VDD_1	
J8	PCI_VDD_2	
L2	AVDD18_PLL	
G12	ANI0_VREF	
J4	ANI1_VREF	
G6, G8, L6, L8, R6, R8	VDD	
E2, E10, J2, K9, N2, T5, P9	VDDIO	
D3, E12, G4, L12, R2	VCC	
R4	VDD_PLL	
F3	VPP	NC

10 IN AP_TO_NAND_SYS_CLK — M3 CLK_IN
7 4 IN 90_PCIE_AP_TO_NAND_REFCLK_P — K11 PCIE_REFCLK_P
7 4 IN 90_PCIE_AP_TO_NAND_REFCLK_N — J12 PCIE_REFCLK_M
7 BI PCIE_NAND_BI_AP_CLKREQ_L — P5 PCIE_CLKREQ_N
PCIE_NAND_RESREF — H7 PCI_RESREF
7 IN 90_PCIE_AP_TO_NAND_TXD_P — M11 PCIE_RX0_P
7 IN 90_PCIE_AP_TO_NAND_TXD_N — N12 PCIE_RX0_M
7 OUT 90_PCIE_NAND_TO_AP_RXD_P — R12 PCIE_TX0_P
7 OUT 90_PCIE_NAND_TO_AP_RXD_N — T11 PCIE_TX0_M
6 IN AP_TO_NAND_RESET_L — L4 RESET*
G10 TRST*
K3 ZQ_C
C10 ZQ_N

R2604 3.01K 1% 1/32W MF 01005 ROOM=NAND

Board trace <= 0.2Ohm
NAND_ZQ_C
NAND_ZQ_N
EXPLUS_WAIVE=MISS_P_DIFFPAIR
R2600 100 0.1% 1/32W MF 01005 *ROOM=NAND
R2601 300 0.1% 1/32 MF 01005 *ROOM=NAND

B3	EXT_D0/BOOT0	PMU_TO_NAND_LOW_BATT_BOOT_L IN 20
C4	EXT_D1/BOOT1	AP_TO_NAND_FW_STRAP IN 6
B5	EXT_D2/BOOT2/SPINAND_SCLK	SPI_AP_TO_S4E_SCLK_BOOT_CONFIG0 IN 5 10
C6	EXT_D3/SWD_UID0/SPINAND_MISO	SPI_S4E_TO_AP_MISO_BOOT_CONFIG2 OUT 4 5 10
B7	EXT_D4/UART_RX	NC
C8	EXT_D5/SWD_UID1/SPINAND_MOSI	SPI_AP_TO_S4E_MOSI_BOOT_CONFIG1 IN 5 10
B9	EXT_D6/UART_TX	NC
B11	EXT_D7/SPI	SYSTEM_ALIVE IN 14 20 23
E8	EXT_NCE/PERST*	PCIE_AP_TO_NAND_RESET_L IN 7
D7	EXT_NRE/JTAG_TMS	SWD_AP_BI_NAND_SWDIO BI 4 12
E6	EXT_NWE/JTAG_TCK	SWD_AOP_TO_MANY_SWCLK IN 4 12 50
E4	EXT_RNB/JTAG_TDO	
D5	EXT_CLE/JTAG_TDI	NC
D9	EXT_ALE/JTAG_SEL	
T3	DROOP_N	
G2	WP_N	PP1V8_IO 5 6 7 8 10 14 16 17 27 28 29 30 32 34 35 43

VSS
A2 A4 A6 A8 A10 A12 B1 B13 C2 C12 D1 D11 D13 F1 F5 F7 F9 F11 F13 H1 H3 H5 H9 H11 H13 J10 K1 K5 K7 K13 L10 M1 M5 M7 M13 N4 N10 P1 P3 P7 P11 P13 R10 T1 T7 T9 T13 U2 U4 U6 U8 U10 U12

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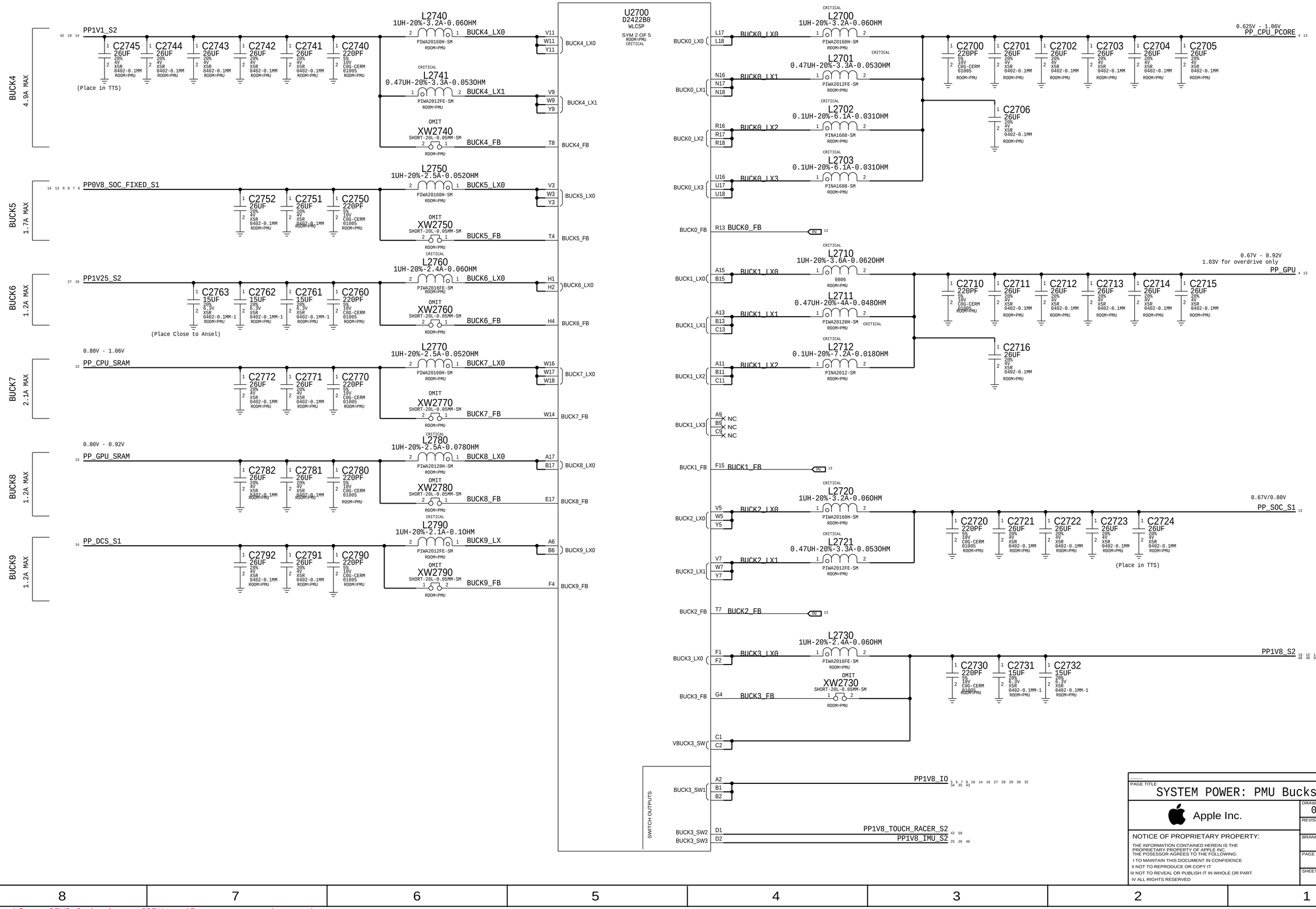

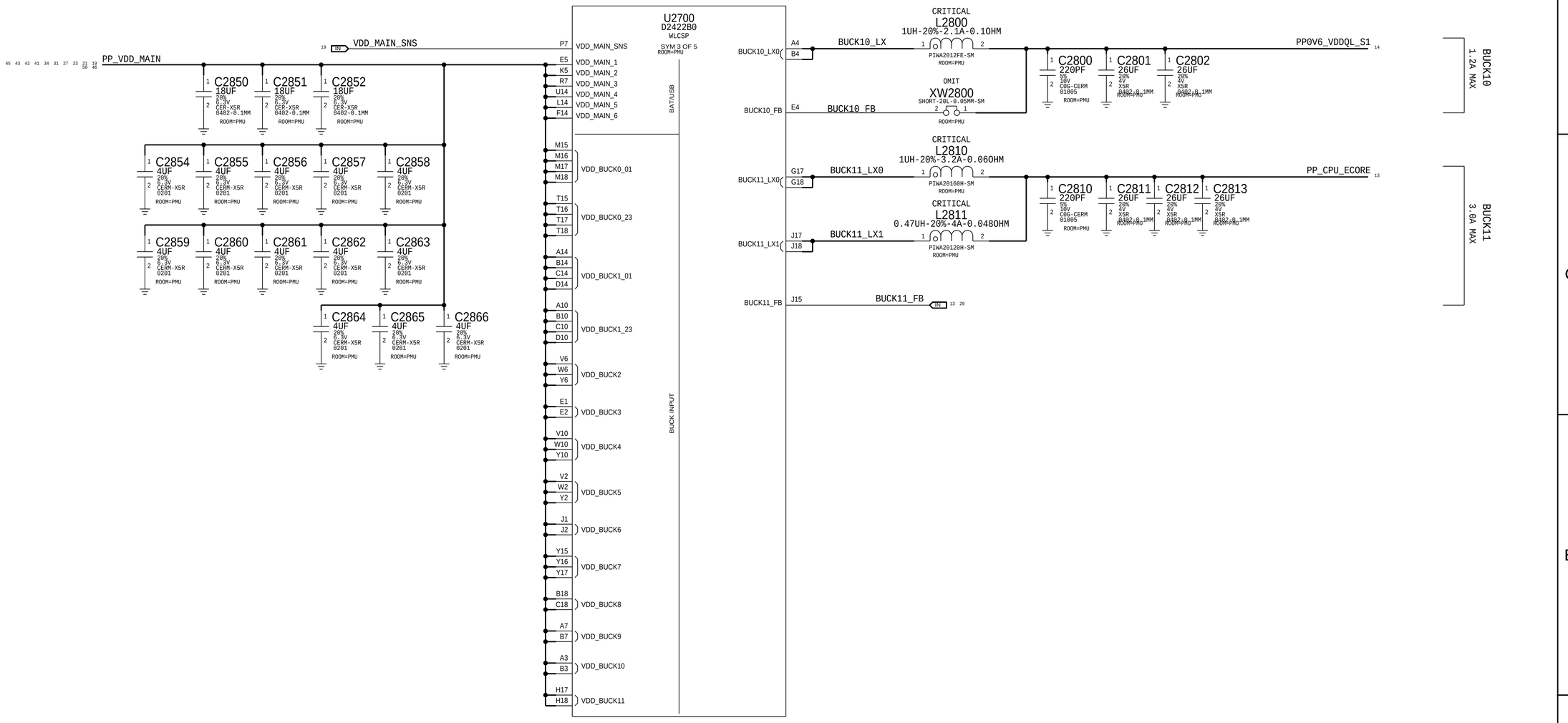

PAGE TITLE
SYSTEM POWER: PMU Bucks (2/4)

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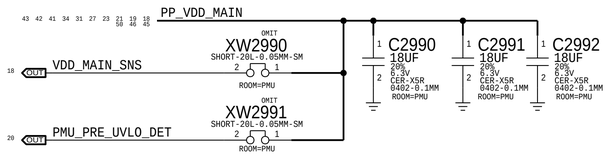

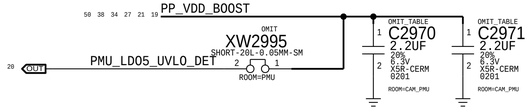

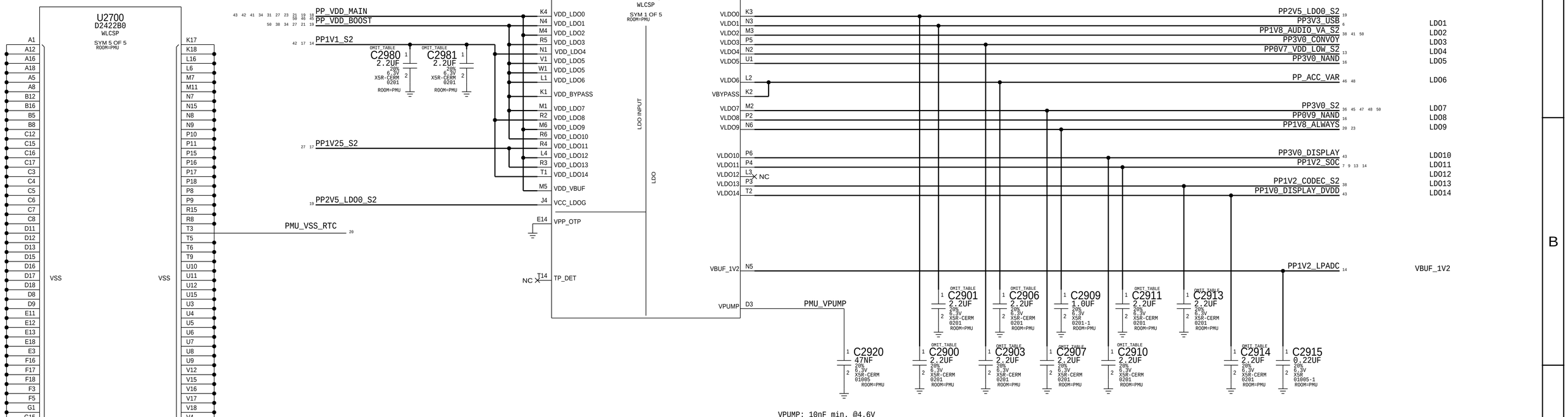

VPUMP: 10nF min. @4.6V

PAGE TITLE
SYSTEM POWER: PMU LDOs (3/4)

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Ansel AMUX

CAMPMU_TO_PMU_AMUX 20 28

C3071 1000PF 10% 16V X5R 01005 ROOM=PMU

COLD_RESET & SYSTEM_ALIVE

PP1V8_S2 10 12 14 17 22 38 46 47 48 49 50

R3061 100K 5% 1/32W MF 01005 ROOM=PMU

R3062 100K 5% 1/32W MF 01005 ROOM=PMU

SYSTEM_ALIVE 14 16 20 23

PMU_TO_SYSTEM_COLD_RESET_L 6 20

23 20 16 14 OUT SYSTEM_ALIVE

R3000 100 1% 1/32W MF 01005 ROOM=PMU

NTCs

FOREHEAD NTC

C3041 100PF 5% 16V NP0-C0G 01005 ROOM=PMU

R3041 10KOHM-1% 01005 ROOM=PMU

FOREHEAD_NTC

FOREHEAD_NTC_RETURN

OMIT XW3041 SHORT-20L-0.05MM-SM ROOM=PMU

REAR CAMERA NTC

C3042 100PF 5% 16V NP0-C0G 01005 ROOM=PMU

R3042 10KOHM-1% 01005 ROOM=PMU

REAR_CAMERA_NTC

RCAM_NTC_RETURN

OMIT XW3042 SHORT-20L-0.05MM-SM ROOM=PMU

RADIO PA NTC on MLB Bottom

C3020 100PF 5% 16V NP0-C0G 01005 ROOM=PMU

R3020 3.92K 0.1% 1/20W MF 0201 ROOM=PMU

AP NTC

C3044 100PF 5% 16V NP0-C0G 01005 ROOM=PMU

R3044 10KOHM-1% 01005 ROOM=PMU

AP_NTC

AP_NTC_RETURN

OMIT XW3044 SHORT-20L-0.05MM-SM ROOM=PMU

CHARGER NTC

C3045 100PF 5% 16V NP0-C0G 01005 ROOM=PMU

R3045 10KOHM-1% 01005 ROOM=PMU

I609

CHARGER_NTC

CHARGER_NTC_RETURN

OMIT XW3045 SHORT-20L-0.05MM-SM ROOM=PMU

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

R3001 0.00 5% 1/32W MF 01005 ROOM=PMU

23 20 19 PP1V8_ALWAYS

PP1V8_ALWAYS_XO

C3002 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=PMU

Y3000 32.768KHZ-10PPM CSP

NC CRITICAL CLKOUT GND

20 19 PMU_VSS_RTC

1 ROOM=PMU SHORT-20L-0.05MM-SM XW3000 2 OMIT

50 OUT

R3011 200K 1% 1/32W MF 01005 ROOM=PMU

C3030 0.22UF 20% 6.3V X5R 0201 ROOM=PMU

C3031 1UF 20% 6.3V X5R 0201 ROOM=PMU

CRITICAL U2700 D2422B0 WLCSP SYM 4 OF 5 ROOM=PMU

6 IN	AP_TO_PMU_WDOG_RESET	P13	RESET_IN1
48 IN	HYDRA_TO_PMU_HOST_RESET	P12	RESET_IN2
6 4 IN	AP_TO_PMU_SOCHOT_L	N13	RESET_IN3
20 6 OUT	PMU_TO_SYSTEM_COLD_RESET_L	R12	RESET*
NC		H15	SHDN
48 6 4 OUT	PMU_TO_AP_HYDRA_ACTIVE_READY	M12	ACTIVE_RDY
12 OUT	PMU_TO_AOP_CLK32K	G6	SLEEP_32K
50 OUT	PMU_TO_TOUCH_CLK32K_RESET_L	H6	OUT_32K
	SYSTEM_ALIVE_R	K13	SYS_ALIVE
50 28 21 12 8 IN	AP_TO_MANY_BSYNC	M13	FORCE_SYNC
10 OUT	PMU_TO_SEP_DOUBLE_CLICK_DET	L12	DBL_CLICK_DET
12 OUT	PMU_TO_AOP_IRQ_L	N14	IRQ*
49 46 10 IN	I2C0_AP_SCL	M8	SCL
49 46 10 BI	I2C0_AP_SDA	L8	SDA
10 IN	SPMI_PMGR_TO_PMU_SCLK	K7	SCLK
10 4 OUT	SPMI_PMU_BI_PMGR_SDATA	L7	SDATA
6 IN	AP_TO_PMU_AMUX_OUT	D4	AMUX_A0
		D5	AMUX_A1
28 20 IN	CAMPMU_TO_PMU_AMUX	D6	AMUX_A2
		D7	AMUX_A3
		F9	AMUX_A4
48 20 IN	HYDRA_TO_PMU_USB_BRICK_ID	F10	AMUX_A5
		E6	AMUX_A6
46 IN	ACC_BUCK_TO_PMU_AMUX	E7	AMUX_A7
	PMU_AMUX_AY	E8	AMUX_AY
42 26	ACORN_TO_PMU_ADC	F6	AMUX_B0
11 IN	AP_TO_PMU_AMUX_SYNC	G7	AMUX_B1
43 IN	DISPLAY_TO_PMU_AMUX	G8	AMUX_B2
50 IN	TOUCH_TO_AMUX_PP1V8	F7	AMUX_B3
50 26 IN	PMU_TO_WLAN_CLK32K	E9	AMUX_B4
34 8 4 IN	RIGEL_TO_ISP_INT	E10	AMUX_B5
6 4 IN	AP_TO_PMU_TEST_CLKOUT	F8	AMUX_B6
		H7	AMUX_B7
50 OUT	PMU_AMUX_BY	H8	AMUX_BY
20	FOREHEAD_NTC	T12	TDEV1
20	REAR_CAMERA_NTC	T13	TDEV2
50 20	RADIO_PA_NTC	U13	TDEV3
20	AP_NTC	V13	TDEV4
20	CHARGER_NTC	W13	TDEV5
20	PMU_TCAL	V14	TCAL
20 19	PMU_VSS_RTC	R1	XTAL1
	TCXO_PMU_32K	P1	XTAL2
	PMU_VDD_RTC	L5	VDD_RTC
	PMU_VDD_REF	J3	VDD_REF

RESETS REFS COMPARATOR ADC AMUX BUTTONS NTC GPIO XTAL

R3010 200K 1% 1/20W MF 0201 ROOM=PMU

C3010 0.22UF 20% 6.3V X5R 0201 ROOM=PMU

IREF	R10	PMU_IREF	
VREF	R9	PMU_VREF	
PRE_UVLO	M14	PMU_TO_AP_PRE_UVLO_L	OUT 4 6 11
VDROOP0	P14	PMU_TO_AP_THROTTLE_PCORE_L	OUT 6
VDROOP1	E16	PMU_TO_AP_THROTTLE_GPU0_L	OUT 6
VDROOP11	L15	PMU_TO_AP_THROTTLE_ECORE_L	OUT 6
VDROOP0_DET	R14	AP_CPU_PCORE_SENSE	IN 4 13
VDROOP1_DET	E15	AP_VDD_GPU_SENSE	IN 4 13
VDROOP11_DET	K15	BUCK11_FB	IN 13 18
PRE_UVLO_DET	L13	PMU_PRE_UVLO_DET	IN 19
LDO5_UVLO_DET	U2	PMU_LDO5_UVLO_DET	IN 19
IBAT	T11	NC	
VBAT	T10	NC	
BRICK_ID1	N11	HYDRA_TO_PMU_USB_BRICK_ID	IN 20 48
BRICK_ID2	N10	NC	
ADC_IN	R11	ACORN_TO_PMU_ADC	IN 20 42
BUTTON1	G14	BUTTON_VOL_DOWN_L	IN 25
BUTTON2	H14	BUTTON_POWER_KEY_L	IN 25
BUTTON3	F13	BUTTON_VOL_UP_L	IN 25
BUTTON4	G13	BUTTON_RINGER_A	IN 25
BUTTON01	K6	PMU_TO_AP_BUTTON_VOL_DOWN_L	OUT 11
BUTTON02	J7	PMU_TO_AP_BUTTON_POWER_KEY_L	OUT 11
BUTTON03	J6	PMU_TO_AP_BUTTON_VOL_UP_L	OUT 11
GPIO1	F11	PMU_TO_NFC_EN_R	
GPIO2	F12	PMU_TO_AP_THROTTLE_GPU1_L	OUT 6
GPIO3	G9	TIGRIS_TO_PMU_INT_L	IN 23
GPIO4	G10	WLAN_TO_PMU_HOST_WAKE	IN 50
GPIO5	G11	NFC_TO_PMU_HOST_WAKE	IN 50
GPIO6	G12	NC	
GPIO7	H9	PMU_TO_GNSS_EN_R	
GPIO8	H10	PMU_TO_WLAN_CLK32K	OUT 20 50
GPIO9	H11	PMU_TO_BT_REG_ON	OUT 50
GPIO10	H12	BT_TO_PMU_HOST_WAKE	IN 50
GPIO11	J8	CODEC_TO_PMU_WAKE	IN 38
GPIO12	J9	NC	
GPIO13	J10	NC	
GPIO14	J11	PMU_TO_WLAN_REG_ON	OUT 50
GPIO15	J12	PMU_TO_BB_USB_VBUS_DETECT	OUT 50
GPIO16	K8	NC	
GPIO17	K9	PMU_TO_AP_FORCE_DFU_R	
GPIO18	K10	PMU_TO_CCG2_RESET_L	OUT 47
GPIO19	K11	PMU_TO_BBPMU_RESET_R_L	
GPIO20	K12	PMU_TO_NAND_LOW_BATT_BOOT_L	OUT 16
GPIO21	L9	BB_TO_PMU_PCIE_HOST_WAKE_L	IN 50
GPIO22	L10	PMU_TO_IKTARA_EN_EXT_1P8V	OUT 50
GPIO23	L11	PMU_TO_BOOST_EN	OUT 21
GPIO24	M9	PMU_TO_DISPLAY_PANICB	OUT 43
GPIO25	M10	NC	
FAULT_OUT*	H13	PMU_TO_IKTARA_RESET_L	OUT 50

PP1V8_ALWAYS 19 20 23

R3074 NOSTUFF 31.6K 1% 1/32W MF 01005 ROOM=PMU

IN 33

R3073 100 5% 1/32W MF 01005 ROOM=PMU

PMU_TO_NFC_EN OUT 50

R3072 100 5% 1/32W MF 01005 ROOM=PMU

PMU_TO_GNSS_EN OUT 50

R3071 20.0K 5% 1/32W MF 01005 ROOM=PMU

PMU_HYDRA_TO_AP_FORCE_DFU BI 11 48

R3070 1.00K 5% 1/32W MF 01005 ROOM=PMU

PMU_TO_BBPMU_RESET_L OUT 50

PAGE TITLE

SYSTEM POWER: PMU (4/4)

Apple Inc.

DRAWING NUMBER 051-02221 SIZE D

REVISION 9.0.0

BRANCH evt-1

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Boost Enable Pull

21 20 PMU_TO_BOOST_EN

R3100
511K
1%
1/32W
MF
01005
ROOM=BOOST

BOOST

353S01124

45 43 42 41 34 31 27 23 19 18 10 8 PP_VDD_MAIN

C3190
18UF
20%
6.3V
CER-X5R
0402-0.1MM
ROOM=BOOST

ROOM=BOOST

L3100
0.47UH-20%-4A-0.048OHM
PIWA20120H-SM

SYS_BOOST_LX

21 20 IN PMU_TO_BOOST_EN

50 47 23 22 18 IN I2C0_SMC_SCL

50 47 23 22 10 IN I2C0_SMC_SDA

R3110
39.2
1%
1/32W
MF
01005
ROOM=BOOST

I2C0_SMC_SDA_BOOST

50 28 20 12 8 IN AP_TO_MANY_BSYNC

U3100
SN61280E
CSP
ROOM=BOOST
CRITICAL

A3	VIN	VOUT B3
A4	VIN	VOUT B4
C3	SW	
C4	SW	
A1	EN	
B2	SCL	
C2	SDA	
B1	VSEL	
C1	BYP*	
A2	GPIO	
	PGND	AGND
D2	D3	D4 D1

C3110 18UF 20% 6.3V CER-X5R 0402-0.1MM ROOM=BOOST

C3111 18UF 20% 6.3V CER-X5R 0402-0.1MM ROOM=BOOST

C3112 18UF 20% 6.3V CER-X5R 0402-0.1MM ROOM=BOOST

C3113 18UF 20% 6.3V CER-X5R 0402-0.1MM ROOM=BOOST

C3114 18UF 20% 6.3V CER-X5R 0402-0.1MM ROOM=BOOST

When VDD_MAIN < 3.4, boosts to 3.4
Otherwise tracks VDD_MAIN

PP_VDD_BOOST 19 27 34 38 50

C3115
220PF
5%
10V
C0G-CERM
01005
ROOM=BOOST

PAGE TITLE
SYSTEM POWER: Boost

Apple Inc.

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BRANCH evt-1
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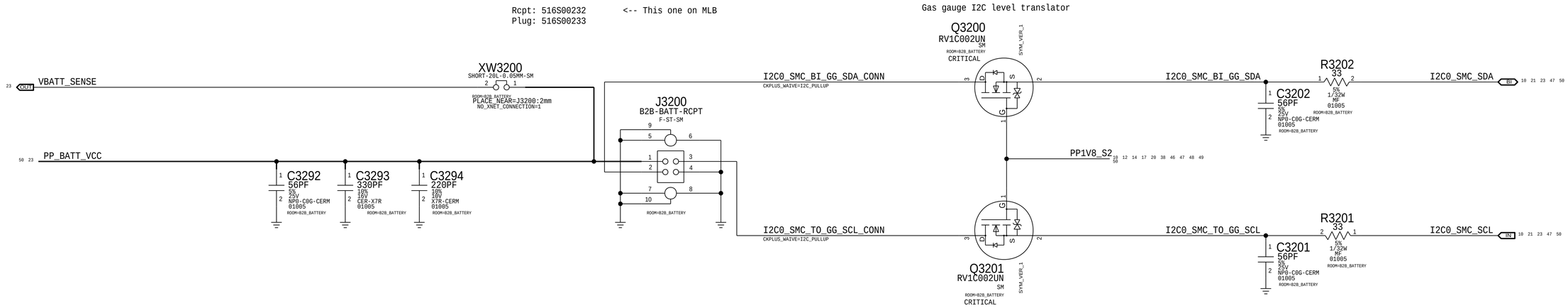
BATTERY CONNECTOR

Rcpt: 516S00232
Plug: 516S00233

<-- This one on MLB



PAGE TITLE	SYSTEM POWER: B2B Battery
Apple Inc.	DRAWING NUMBER 051-02221 · SIZE D
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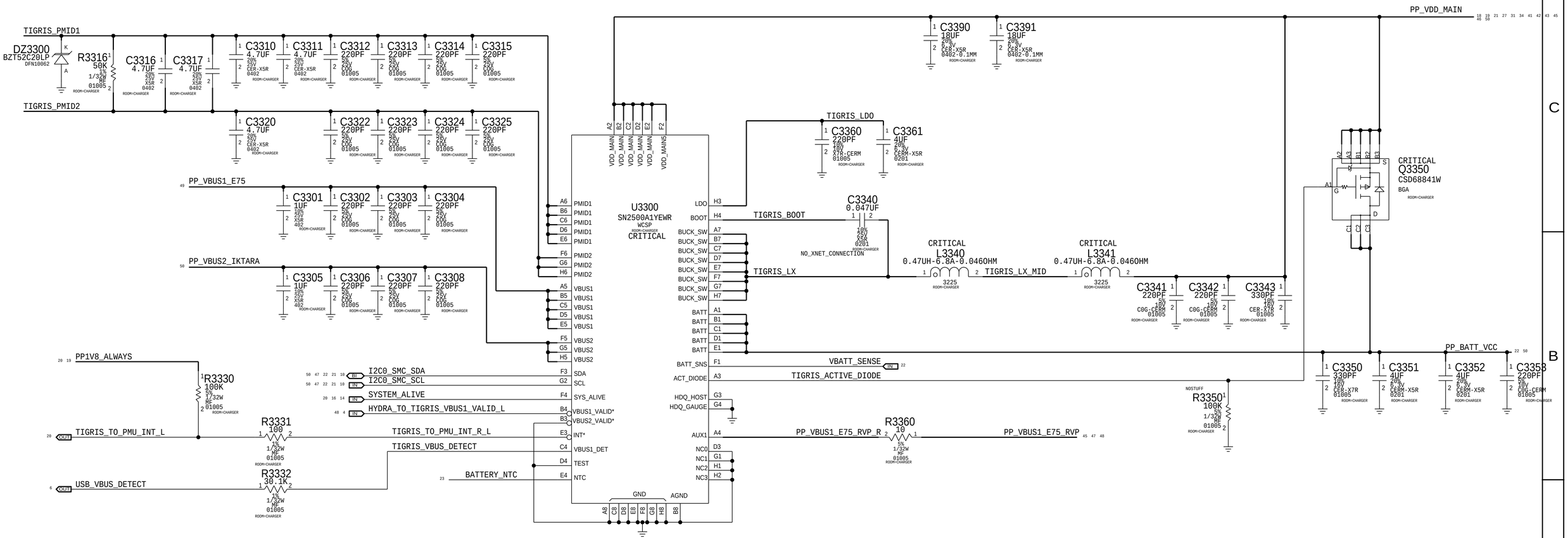
	BRANCH evt-1
	PAGE 32 OF 80
	SHEET 22 OF 51

TIGRIS2 CHARGER



PAGE TITLE

SYSTEM POWER: Charger

Apple Inc.

DRAWING NUMBER 051-02221 | SIZE D

REVISION 9.0.0

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Iktara Components on MLB Bottom

PAGE TITLE
SYSTEM POWER: Iktara

Apple Inc.

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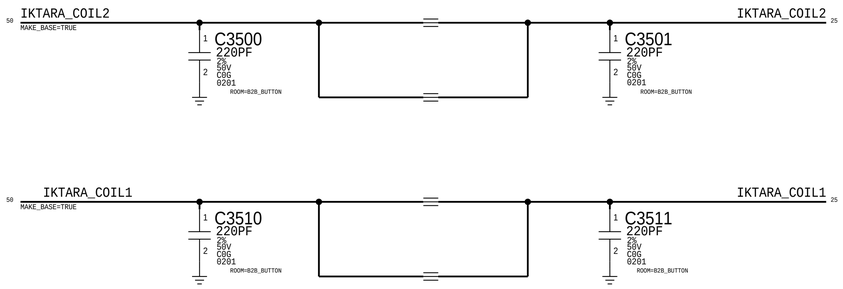
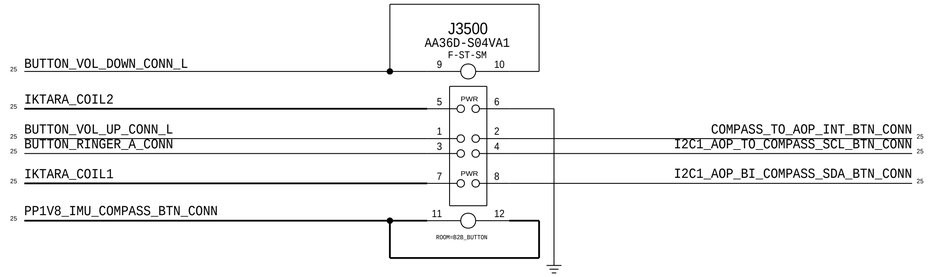
Cyclone Filtering

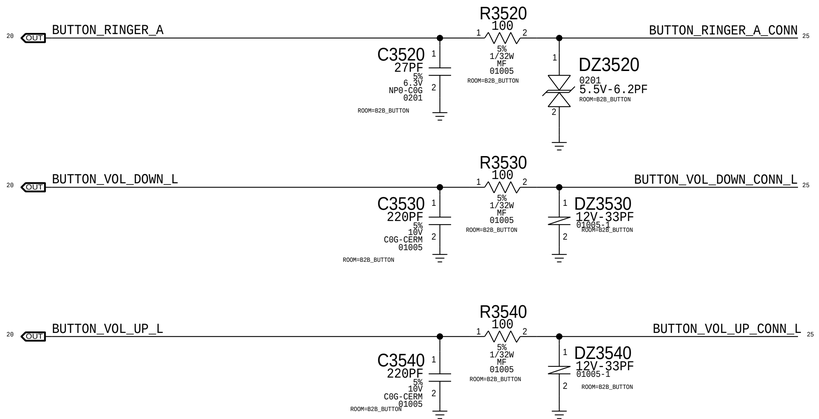


Cyclone + Button Connnector

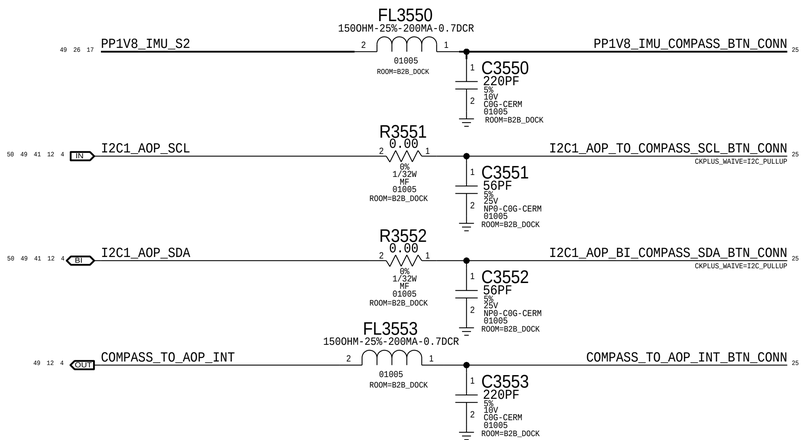
Rcpt: 516S00289 <-- This one on MLB
Plug: 516S00290



BUTTONS



Compass (Button Flex Location)



PAGE TITLE
SYSTEM POWER: B2B Cyclone + Button

Apple Inc.

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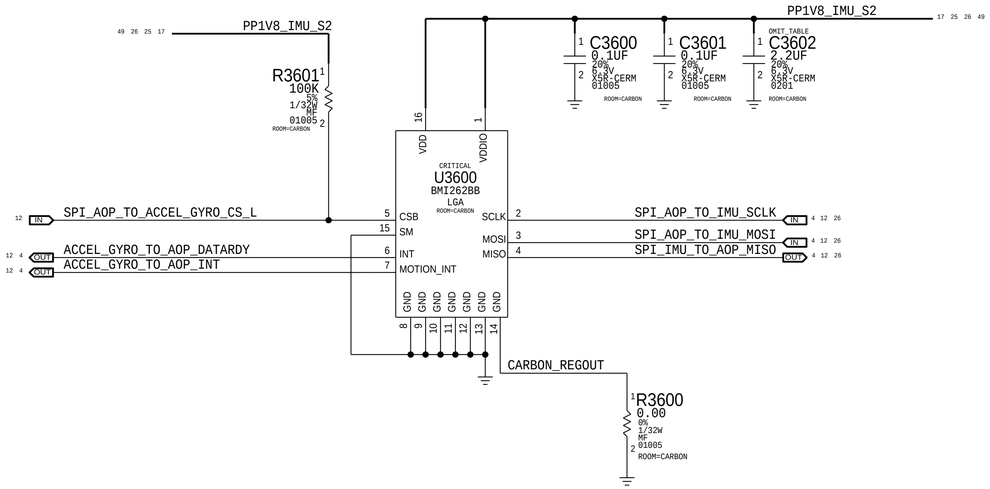
Graphite - Accel & Gyro

APN: 338S00304

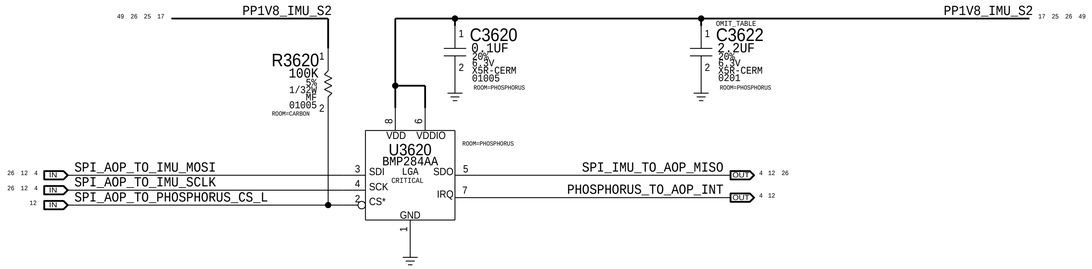


Magnesium - Compass

(On Dock or Button Flex)

Phosphorus

BOSCH (APN:338S00188)
ST (APN:338S00230)



PAGE TITLE

SENSORS

Apple Inc.

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Camera PMU

PP_VDD_MAIN

C3790 18UF 20% 6.3V CER-X5R 0402-0.1MM ROOM=CAM_PMU

See 2831115 for C3791 removal

U3700 D2462 WLCSP SYM 1 OF 4 ROOM=CAM_PMU

CRITICAL

VDD_BUCK9 J7, J8

VDD_MAIN C5, E2, G4

VCC MAIN | BUCKS

BUCK9_LX0 H7, H8

BUCK9_FB H5

CAMPMU_BUCK_LX0

CRITICAL L3700 1UH-20%-2.5A-0.078OHM PIWA20120H-SM ROOM=CAM_PMU

PP2V85_VAR_CAM_VCM_PVDD

C3700 18UF 20% 6.3V CER-X5R 0402-0.1MM ROOM=CAM_PMU

C3701 18UF 20% 6.3V CER-X5R 0402-0.1MM ROOM=CAM_PMU

C3702 330PF 10% 16V CER-X7R 01005 ROOM=CAM_PMU

CAMPMU_BUCK_FB

XW3700 SHORT-20L-0.05MM-SM ROOM=CAM_PMU OMIT

PP_VDD_BOOST

C3795 4UF 20% 6.3V CERM-X5R 0201 ROOM=CAM_PMU

C3796 4UF 20% 6.3V CERM-X5R 0201 ROOM=CAM_PMU

PP1V25_S2

C3797 4UF 20% 4V X5R 0201 ROOM=CAM_PMU

C3798 4UF 20% 4V X5R 0201 ROOM=CAM_PMU

U3700 D2462 WLCSP SYM 2 OF 4

VDD_LDO4_17 A1, A2

VDD_LDO9 H2

VDD_LDO10 B6

VDD_LDO15 B5

VDD_LDO18 B4

VDD_LDO19 B3

VDD_LDO20_21 A7

VDD_LDO22 H1

LDO INPUT | LDO OUTPUT

VLDO4 B2 — PP2V85_FCAM_AVDD

VLDO9 J2 — PP_CAM_WIDE_ADC

C3704 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=CAM_PMU

C3709 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=CAM_PMU

VLDO10 A6 — PP1V1_FCAM_DVDD

VLDO15 A5

C3710 10UF 20% 10V X5R-CERM 0402-0.1MM ROOM=CAM_PMU OMIT_TABLE

C3715 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=CAM_PMU

VLDO17 B1 — PP2V85_CAM_TELE_AVDD

VLDO18 A4 — PP1V1_CAM_WIDE_DVDD

C3717 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=CAM_PMU

C3718 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=CAM_PMU

VLDO19 A3 — PP1V8_HAWKING

VLDO20 B8 — PP2V85_CAM_WIDE_AVDD

C3719 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=CAM_PMU

C3720 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=CAM_PMU

VLDO21 B7 — PP3V3_SVDD

VLDO22 G1 — PP_CAM_TELE_ADC

C3721 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=CAM_PMU

C3722 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=CAM_PMU

Q3700 DMN1017UCP3 X3-DSN1010-3 ROOM=CAM_PMU CRITICAL

PP1V1_CAM_TELE_JULIET_DVDD

PP1V1_CAM_TELE_DVDD

CAMPMU_TELE_DVDD_DISABLE_L IN

For GPIO pullups only

PP1V8_IO

VBUCK3 H3

VPUMP J4 — NC

SW INPUT | SW OUTPUT

BUCK3_SW1 J3 — NC

ON_BUF F2 — CAMPMU_ON_BUF

C3750 0.22UF 20% 6.3V X5R 01005 ROOM=CAM_PMU

PAGE TITLE	CAMERA: PMU (1/2)
Apple Inc.	
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Pull Downs

AP_TO_CAMPMU_RESET_L 11 28

R3801 100K 5% 1/32W MF 01005 ROOM=CAM_PMU

I2C3_ISP_SDA 35 34 31 8 BI

R3802 33.2 1% 1/32W MF 01005

I2C3_ISP_SCL 35 34 31 8 IN

I2C3_ISP_SDA_U3700

CAMPMU_TO_AP_IRQ_L 11 OUT

R3803 49.9 1% 1/32W MF 01005

CAMPMU_TO_AP_IRQ_R_L

AP_TO_CAMPMU_RESET_L 28 11 IN

CAMPMU_VREF

CAMPMU_IREF

CAMPMU_VRTC

C3800 0.22UF 20% 6.3V X5R 01005 ROOM=CAM_PMU

R3800 200K 1% 1/32W MF 01005 ROOM=CAM_PMU

C3810 0.1UF 20% 6.3V X5R 01005 ROOM=CAM_PMU

U3700 D2462 WLCSP SYM 3 OF 4

I2C: SCL E8, SDA F8

RESET: IRQ* D8, CRASH* D6 (NC), RESET_IN F5

REFERENCE: VREF C1, IREF D1, VRTC E1

TEMPERATURE: TDEV1 J5 (NC), TDEV2 G5 (NC), TCAL C6 (NC)

GPIO: GPIO1 F6, GPIO2 E6 (NC), GPIO3 D7 (NC), GPIO4 E4 (NC), GPIO5 D4 (NC), GPIO6 D3, GPIO9 F7, GPIO10 F3, GPIO11 G3, GPIO12 G2, GPIO15 E3

AMUX_AY C8

ATM E7

PP3V3_SVDD 27 29 30 35

R3820 100K 5% 1/32W MF 01005 ROOM=CAM_PMU

CAMPMU_TO_STROBE_DRIVER_HWEN OUT 31

CAMPMU_TO_RIGEL_ENABLE OUT 4 34

PP1V8_IO MAKE_BASE=TRUE

PP1V8_IO 5 6 7 8 10 14 16 17 27 29 30 32 34 35 43

AP_TO_MANY_BSYNC IN 8 12 20 21 50

YOGI_TO_RIGEL_STATUS_R

CAMPMU_TELE_DVDD_DISABLE_L OUT 27

MAMA_BEAR_BI_RIGEL_STATUS_R

R3811 10K 5% 1/32W MF 01005 ROOM=CAM_PMU

YOGI_TO_RIGEL_STATUS IN 34 36

R3810 10K 5% 1/32W MF 01005 ROOM=CAM_PMU

MAMA_BEAR_BI_RIGEL_STATUS IN 34 35

CAMPMU_TO_PMU_AMUX OUT 20

U3700 D2462 WLCSP SYM 4 OF 4

VSS: C2, C3, C4, C7, D2, D5, E5, F1, G6, G7, G8, H4, H6, J1, J6, F4

PAGE TITLE

CAMERA: PMU (2/2)

Apple Inc.

DRAWING NUMBER 051-02221

SIZE D

REVISION 9.0.0

BRANCH evt-1

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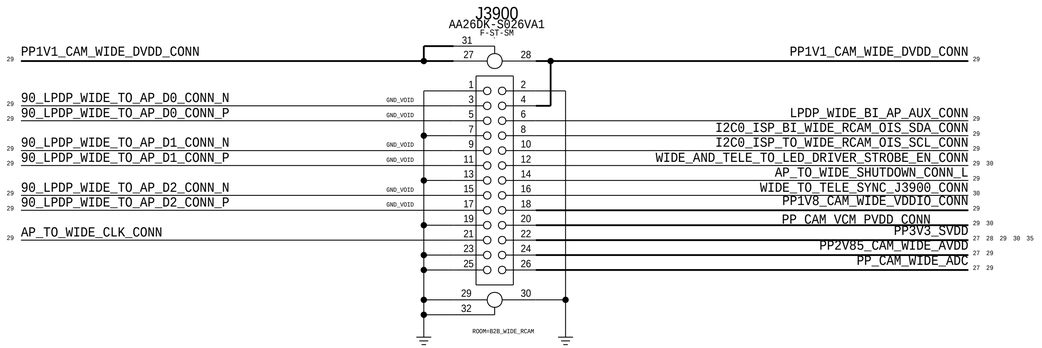
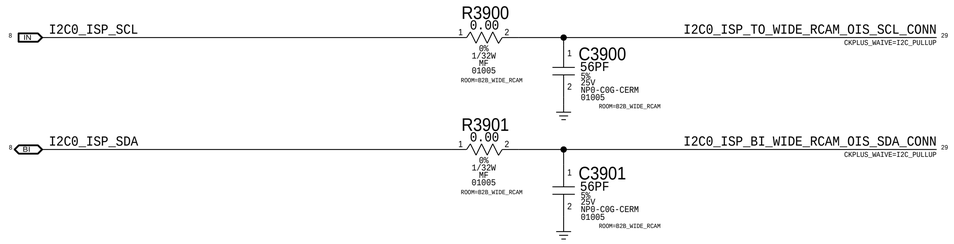
Wide Camera Connector

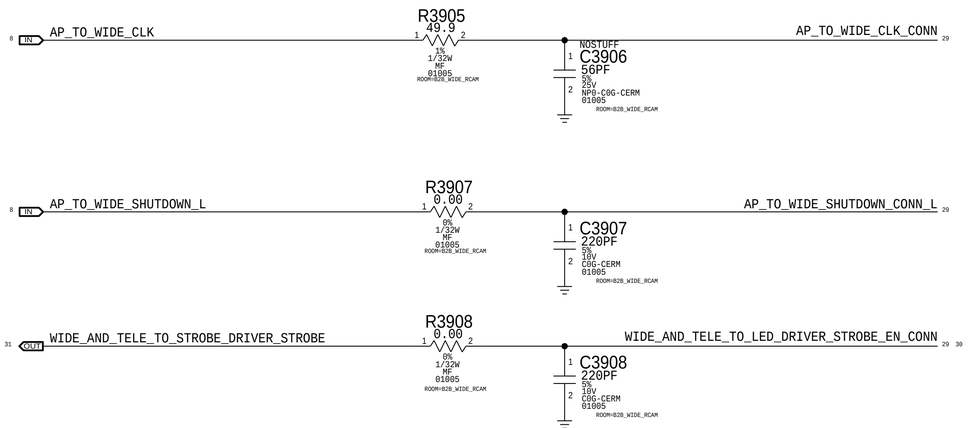
Rcpt: 516S00313 <-- This one on MLB
Plug: 516S00314



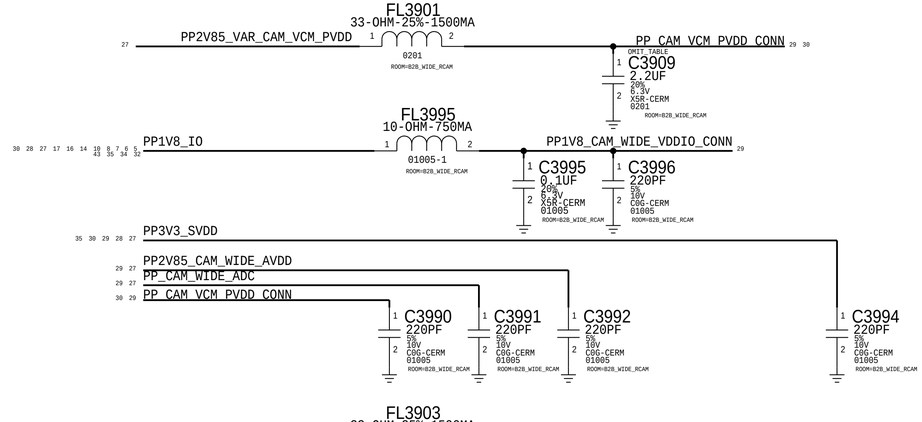
ISP I2C



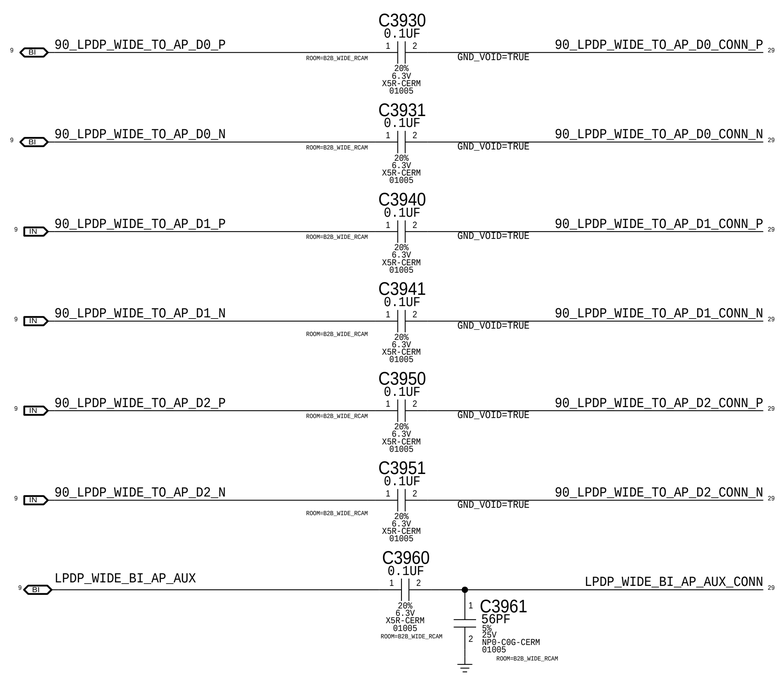
IO Filters



Power Filtering



LPDP Filters



PAGE TITLE
CAMERA: B2B Wide (WY)

Apple Inc.

DRAWING NUMBER 051-02221
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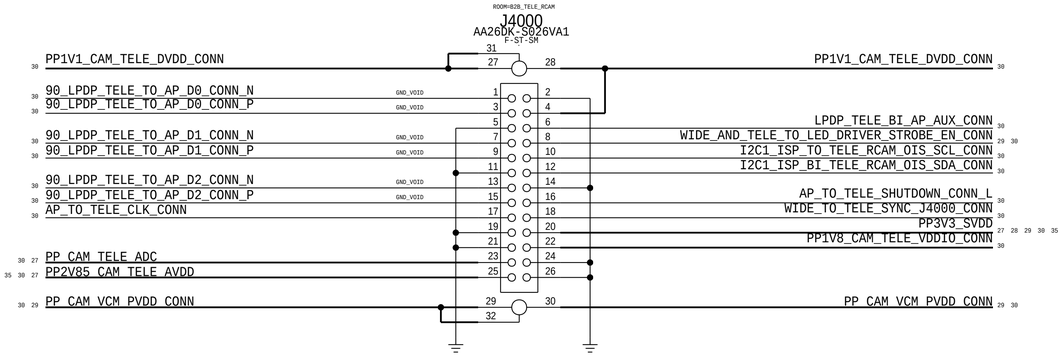
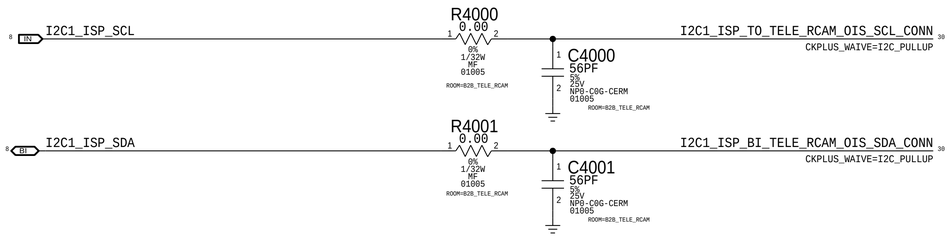
Tele Camera Connector

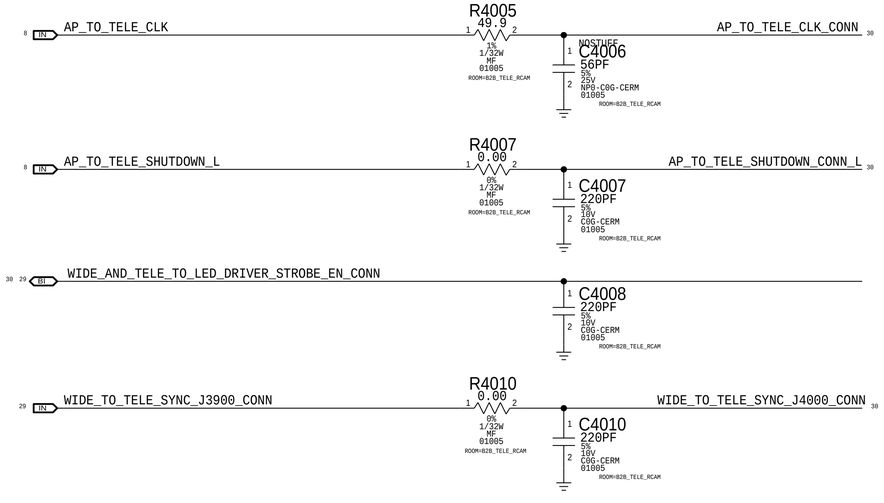
Rcpt: 516S00313 <-- This one on MLB
Plug: 516S00314



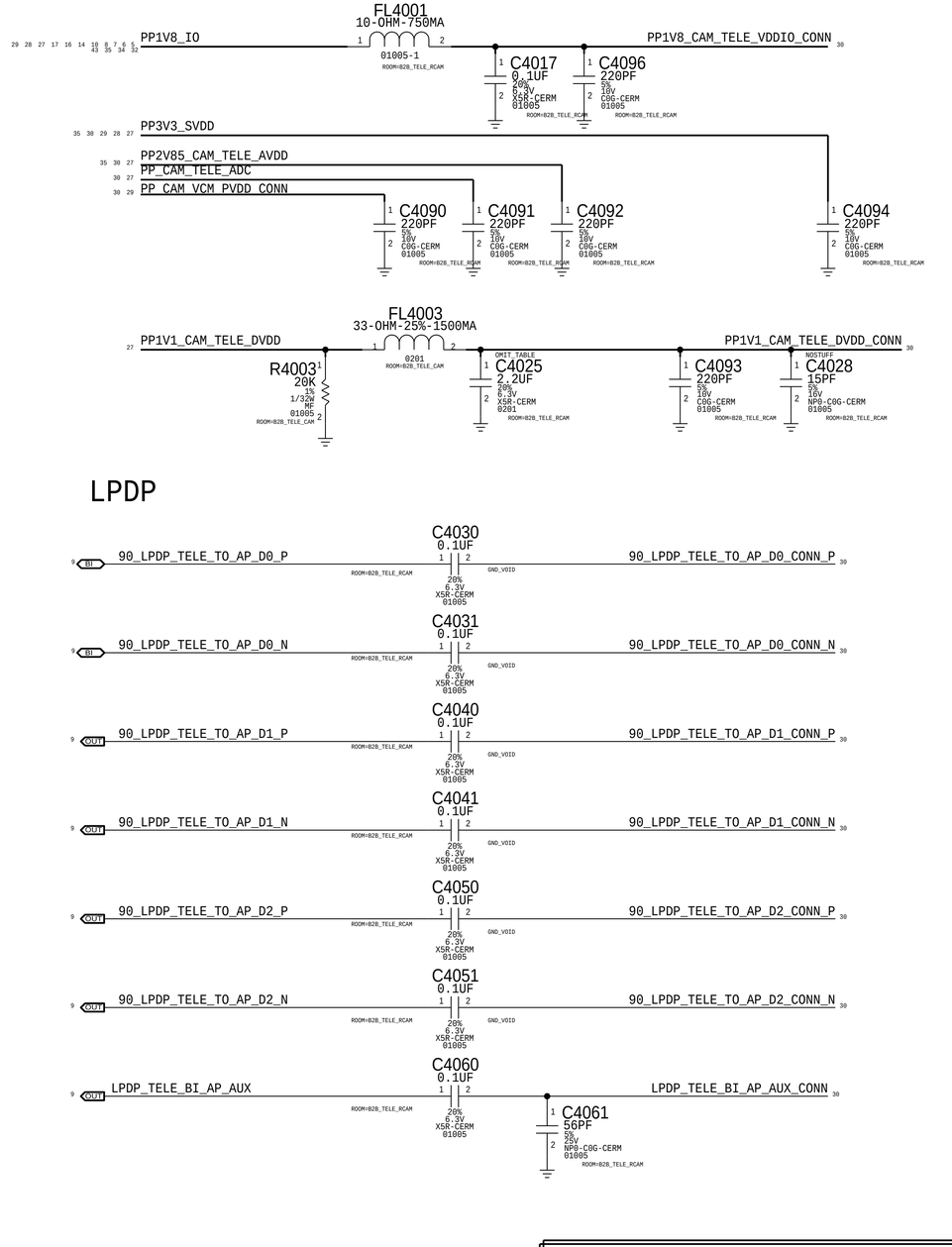
ISP I2C



IO Filters



Power Filtering



LPDP

PAGE TITLE
CAMERA: B2B Tele (MT)

Apple Inc.

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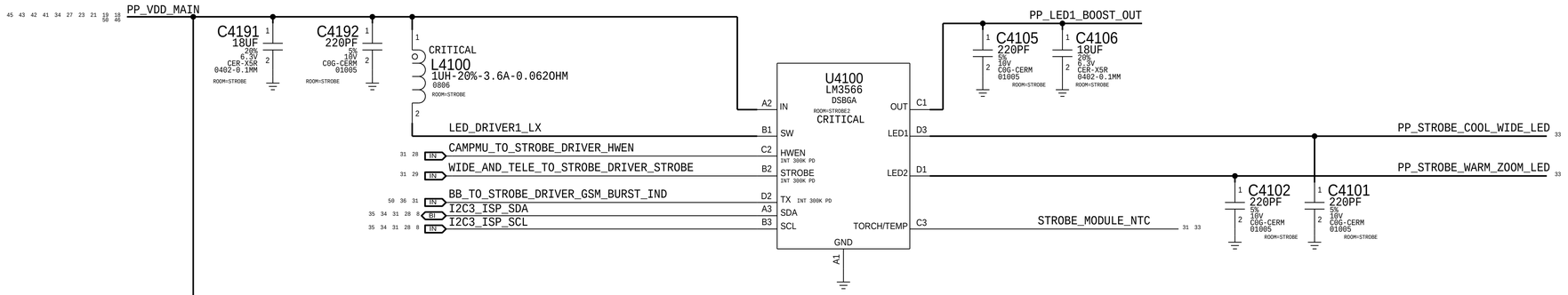
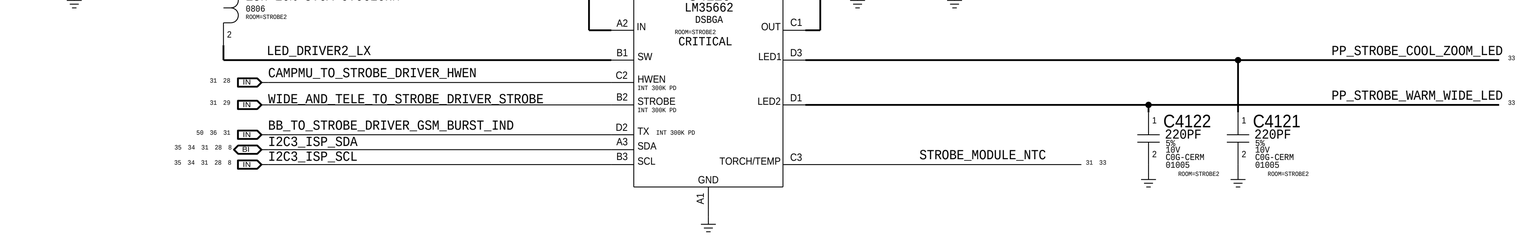
LED STROBE DRIVERS (NEON)

APN:353S00558
I2C Address (7-bit): 0x63



APN:353S00868
I2C Address (7-bit): 0x67



PAGE TITLE
CAMERA: Strobe Drivers

Apple Inc.

DRAWING NUMBER 051-02221
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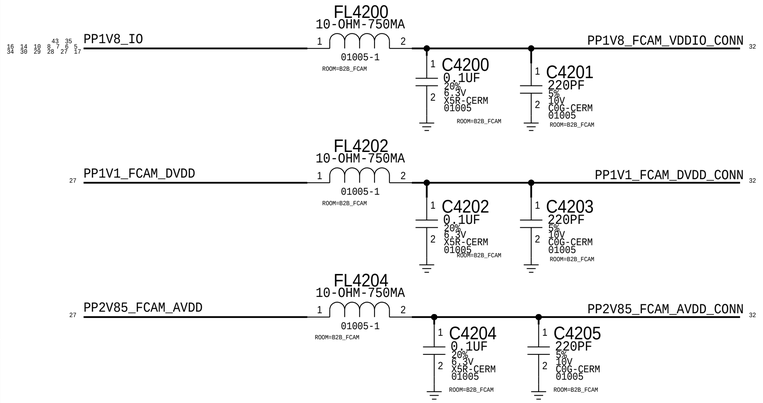
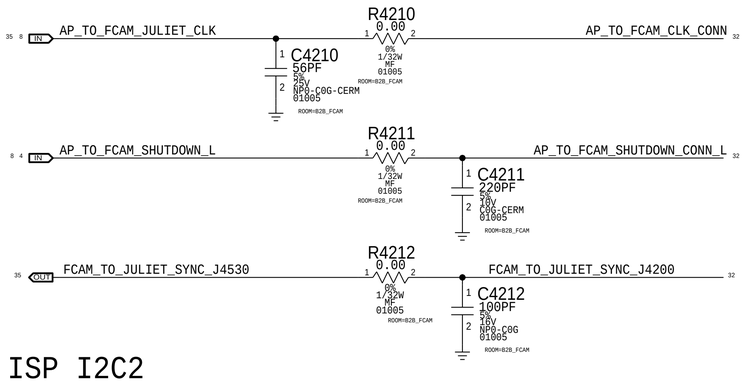
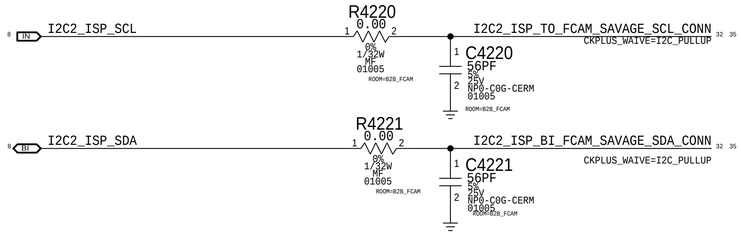
NEW HAMPSHIRE POWER



FCAM I/O

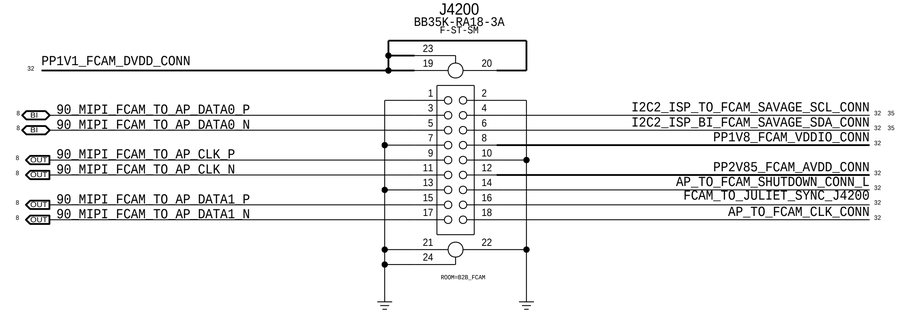


ISP I2C2



FCAM Connector

Rcpt: 516S00244 <-- This one on MLB
Plug: 516S00245



PAGE TITLE
CAMERA: B2B FCAM

Apple Inc.

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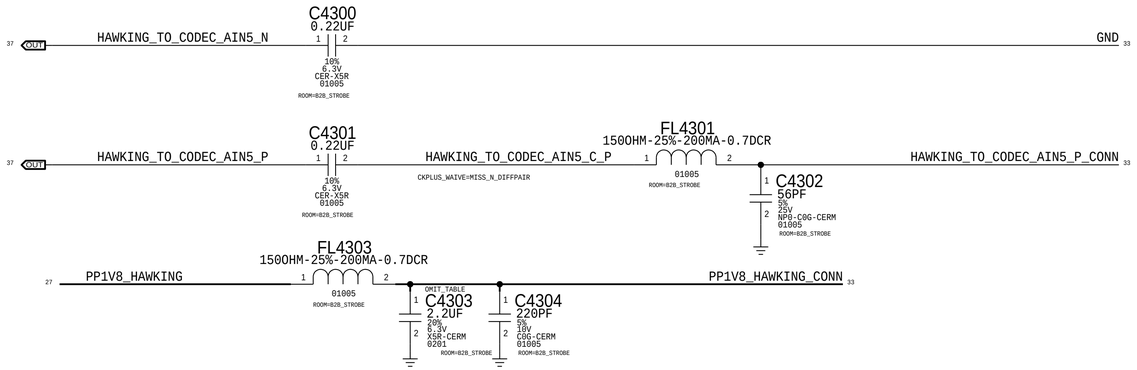
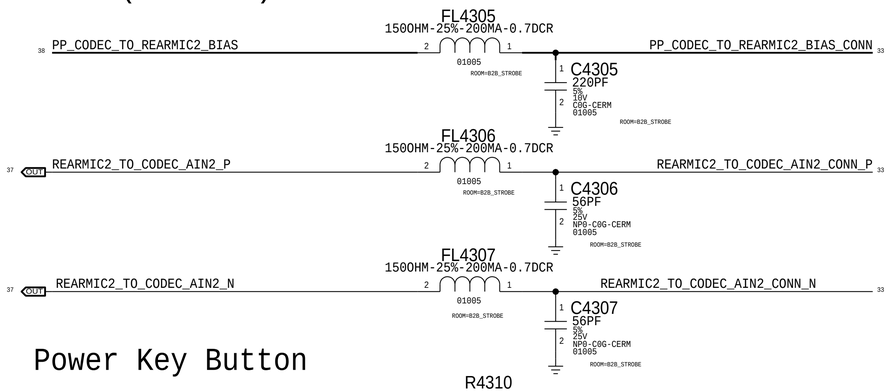
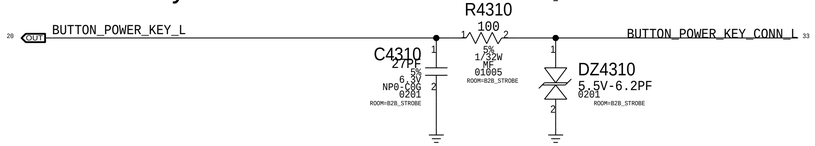
HAWKING



MIC2 (ANC REF)

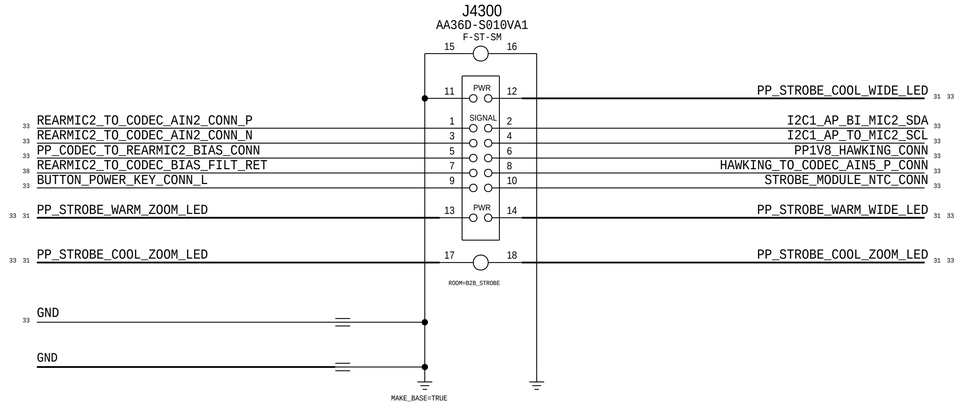


Power Key Button

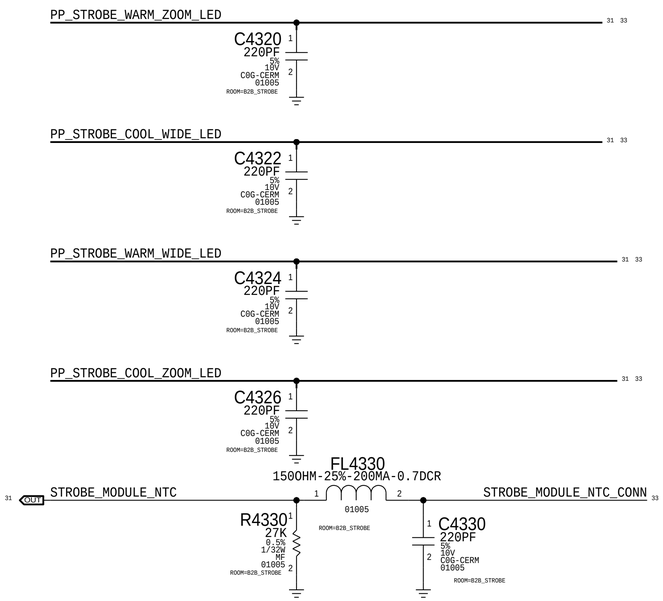


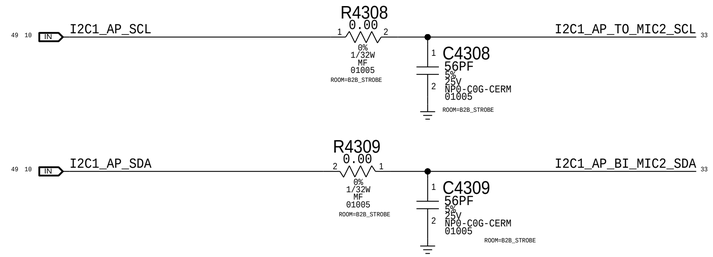
Strobe Connector

Rcpt: 516S00267 <-- This one on MLB
Plug: 516S00268



Strobe Filtering





PAGE TITLE
CAMERA: B2B Strobe + Hold Button

Apple Inc.

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Rigel Driver

PP_VDD_MAIN
C4497 18UF 20% 6.3V CER-X5R 0402-0.1MM ROOM=RIGEL
C4494 4UF 20% 6.3V CERM-X5R 0201 ROOM=RIGEL
C4493 4UF 20% 6.3V CERM-X5R 0201 ROOM=RIGEL
C4492 4UF 20% 6.3V CERM-X5R 0201 ROOM=RIGEL
C4491 4UF 20% 6.3V CERM-X5R 0201 ROOM=RIGEL
Terminate @ Cap via on VDD_MAIN plane.
OMIT
XW4400 SHORT-20L-0.05MM-SM ROOM=RIGEL
PP_RIGEL_VINCORE
C4490 1.0UF 20% 10V X5R-CERM 0201-1 ROOM=RIGEL
PP1V8_IO
PP_VANA
PP_VDD_BOOST
C4495 1.0UF 20% 10V X5R-CERM 0201-1 ROOM=RIGEL
C4496 1.0UF 20% 10V X5R-CERM 0201-1 ROOM=RIGEL
C4498 4UF 20% 6.3V CERM-X5R 0201 ROOM=RIGEL
PP_ROMEO_CATHODE
ROMEO_TO_RIGEL_VCSEL_NTC
CAMPMU_TO_RIGEL_ENABLE
YOGI_TO_RIGEL_STATUS
MAMA_BEAR_BI_RIGEL_STATUS
JULIET_PMU_TO_RIGEL_STROBE
AP_TO_RIGEL_CLK
RIGEL_TO_ISP_INT
I2C3_ISP_SCL
I2C3_ISP_SDA_U4400
I2C3_ISP_SDA
R4400 33.2 1% 1/32W MF 01005
RIGEL_LSCP
C4422 0.01UF 10% 10V X5R 01005 ROOM=RIGEL

CRITICAL
U4400 STB600B0 WLCSP ROOM=RIGEL

VK	K4	
VK	K5	
VK	K6	
VK	K7	
VK	K8	
NTC	G4	
OTPHV	C4	
TAMP	D4	
ENA	B3	
XEF1	C8	
XEF0	C7	
THROT	B8	
STROBE	A4	
TESTMODE	B7	
TESTMODE2	B5	
TEST	B6	
MCLK	A7	
INT	B4	
SCL	A5	
SDA	A6	
PD0	G5	
PD1	G6	
LSCP	H7	
VCC4	G3	
VCC3	G2	
VIN_LVT	H8	
VDDIO	C5	
VANA	H4	
VINVCORE2	H5	
VINCORE	F5	
VINSDB	F2	
VINSDB	F1	
VINSDB	E2	
VINSUB_A3	A3	
VINSUB_A2	A2	
VINSUB_A1	A1	
VINSUA_A9	A9	
VINSUA_A8	A8	
VINSUA_A10	A10	
VINSDA	F9	
VINSDA	F10	
VINSDA	E9	
PGNDK	J8	
PGNDK	J7	
PGNDK	J6	
PGNDK	J5	
PGNDK	J4	
GNDCORE4	G8	
GNDCORE3	G3	
GNDCORE2	H6	
GNDCORE	F6	
GNDD	C6	
GNDS	G7	
GNDS	E6	
GNDS	F8	
GNDS	E5	
GNDS	F3	
GNDS	D7	
GNDS	D6	
GNDS	D5	
GNDS	C3	
GNDS	C2	
PGNDB	C1	
PGNDB	C9	
PGNDA	G9	
PGNDA	G10	
VBBOUTA	H10	
VBBOUTA	J10	
VBBOUTA	K10	
VLXA	D10	RIGEL_VLXA
VLXA	D9	
VLXA	E10	
VCXA	B10	
VCXA	B9	RIGEL_VCXA
BOOSTSDA	E8	RIGEL_BOOSTSDA
BULKSDA	D8	RIGEL_BULKSDA
BULKSDB	D3	RIGEL_BULKSDB
BOOSTSDB	E3	RIGEL_BOOSTSDB
VCXB	B1	RIGEL_VCXB
VCXB	B2	
VLXB	D1	
VLXB	D2	
VLXB	E1	RIGEL_VLXB
VBBOUTB	J1	
VBBOUTB	J2	
VBBOUTB	J3	PP_RIGEL_BUCK_BOOST_B
IOUT0	H9	
IOUT0	K9	
IOUT0	J9	PP_ROMEO_DENSE_ANODE
IOUT1	H1	
IOUT1	H2	
IOUT1	H3	PP_ROMEO_SPARSE_ANODE
IOUT2	K1	
IOUT2	K2	
IOUT2	K3	PP_ROSALINE_ANODE
IOUT3	G1	PP_ROMEO_A_ANODE
IOUT4	G10	PP_ROMEO_B_ANODE

PP_RIGEL_BUCK_BOOST_A
L4400 0.47UH-20%-4A-0.0480HM PIWA20120H-SM ROOM=RIGEL
C4400 4.7UF 20% 16V X5R 0402 ROOM=RIGEL
C4401 220PF 5% 16V C0G-CERM 01005 ROOM=RIGEL
C4405 4.7UF 20% 16V X5R 0402 ROOM=RIGEL
C4420 0.01UF 10% 6.3V X5R 01005 ROOM=RIGEL
C4421 0.01UF 10% 6.3V X5R 01005 ROOM=RIGEL
C4410 4.7UF 20% 16V X5R 0402 ROOM=RIGEL
L4401 0.47UH-20%-4A-0.0480HM PIWA20120H-SM ROOM=RIGEL
C4411 4.7UF 20% 16V X5R 0402 ROOM=RIGEL
C4412 220PF 5% 16V C0G-CERM 01005 ROOM=RIGEL

PAGE TITLE
PEARL: Power

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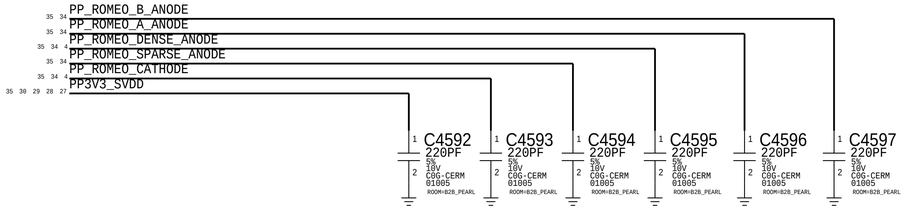
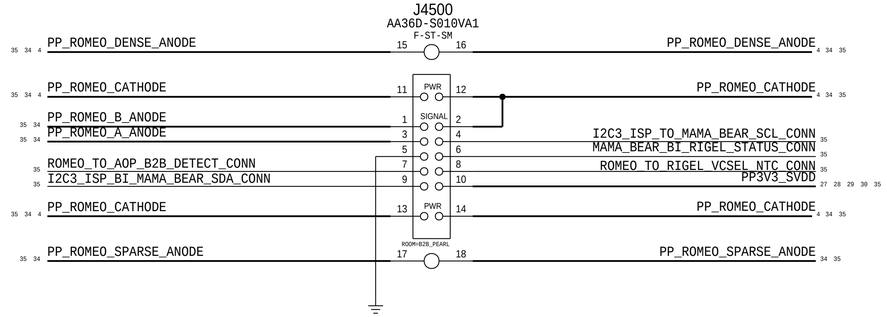
Romeo Power Filtering

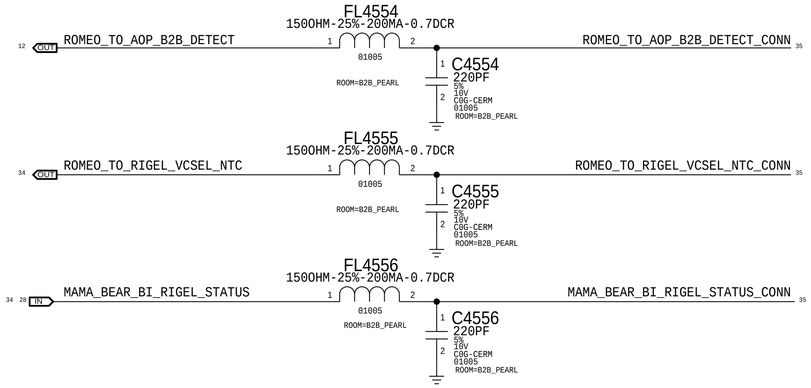


Romeo Connector

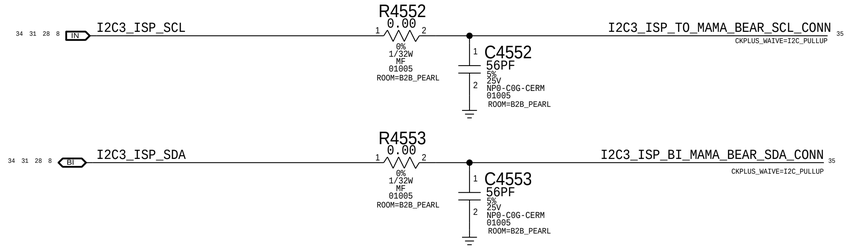
Rcpt: 516S00267 <-- This one on MLB
Plug: 516S00268



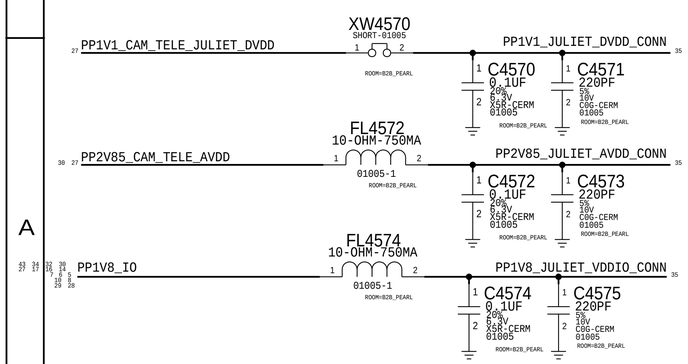
Romeo I/O

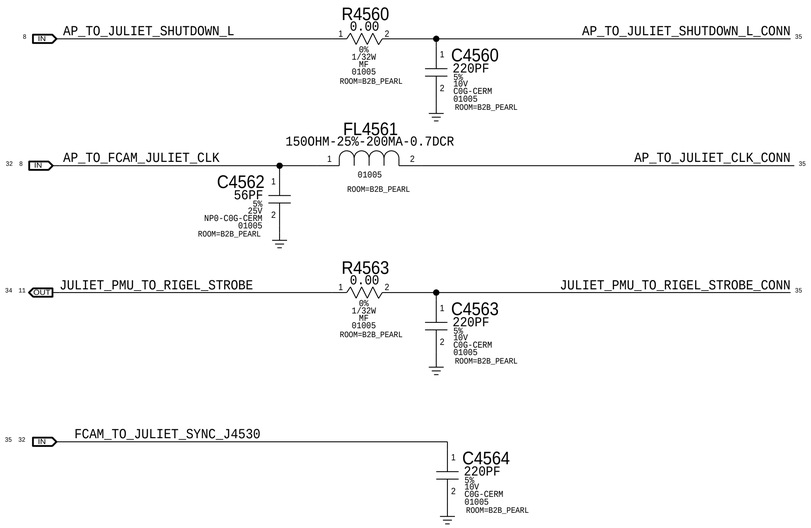


ISP I2C3



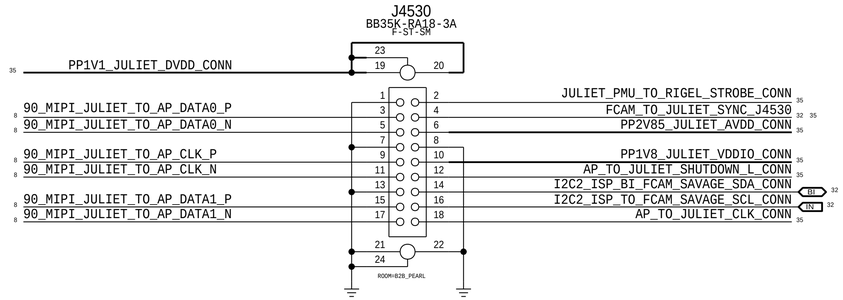
Juliet Power and I/O





Juliet Connector

Rcpt: 516S00244 <-- This one on MLB
Plug: 516S00245



PAGE TITLE

PEARL: B2B Romeo + Juliet

Apple Inc.

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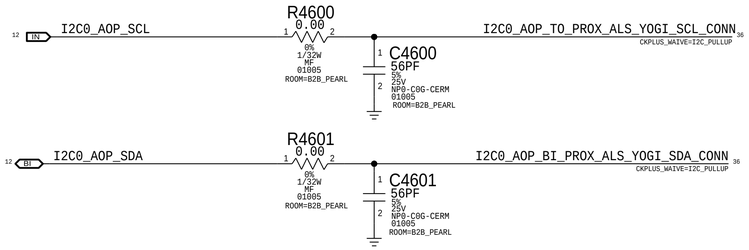
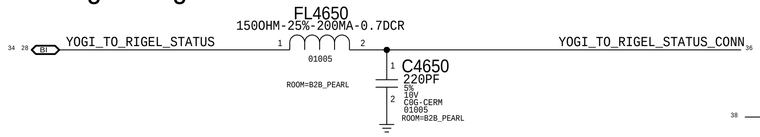
AOP I2C

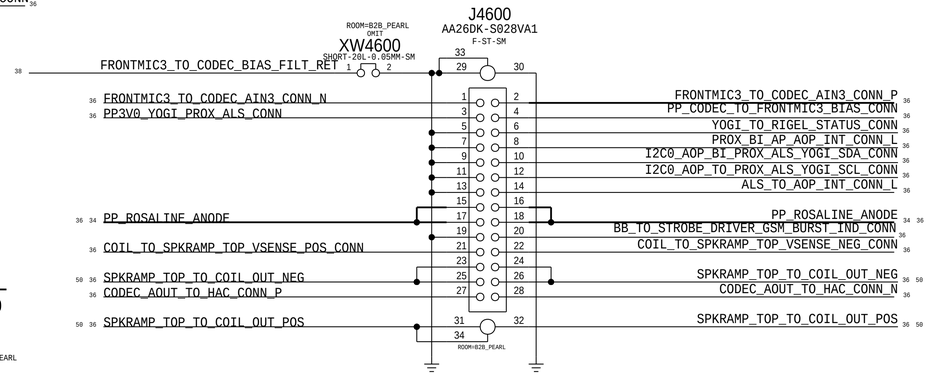


Yogi Signals

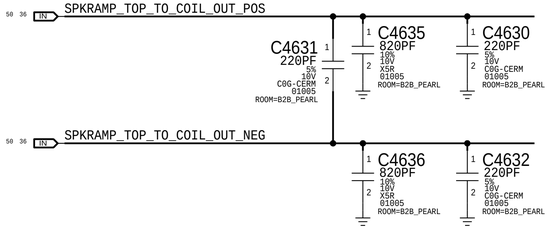


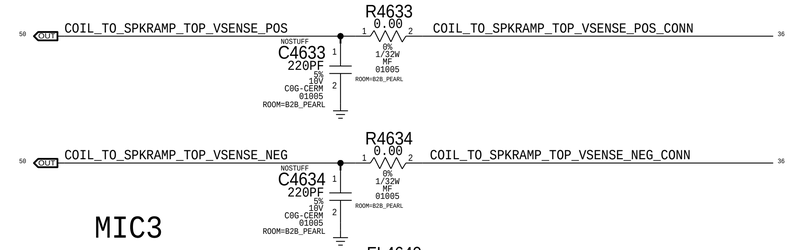
Rosaline + Misc Connector

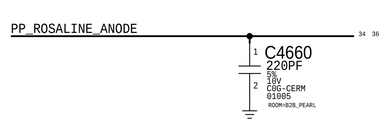
Rcpt: 516S00325 <-- This one on MLB
Plug: 516S00326



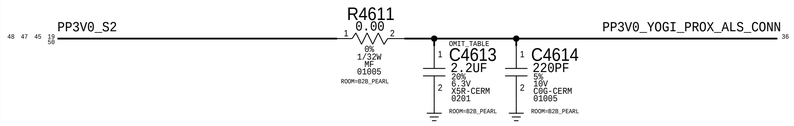
SPEAKER2



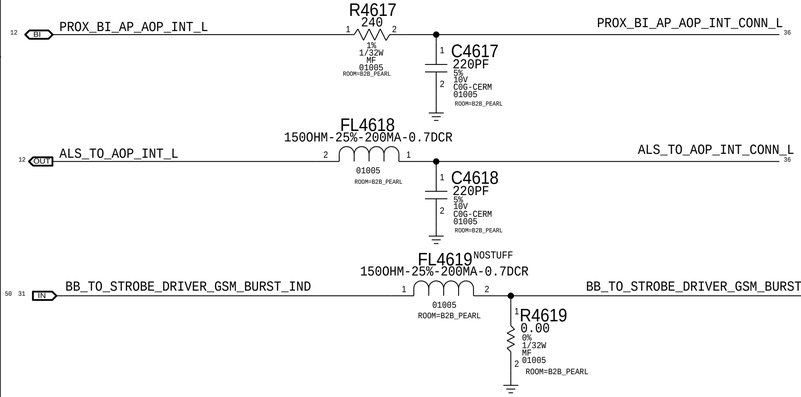




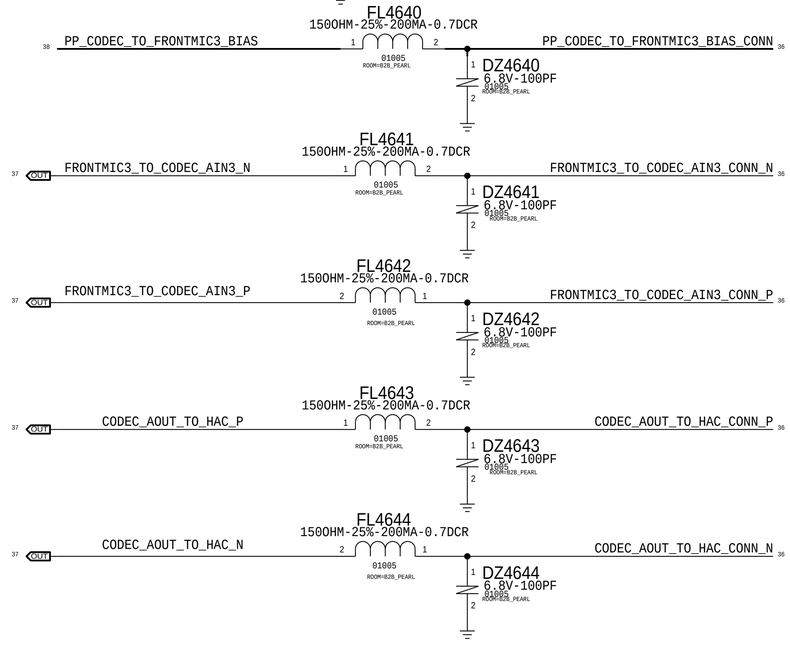
PROX & ALS POWER



PROX/ALS I/O



MIC3



PAGE TITLE	PEARL: B2B Rosaline + Misc
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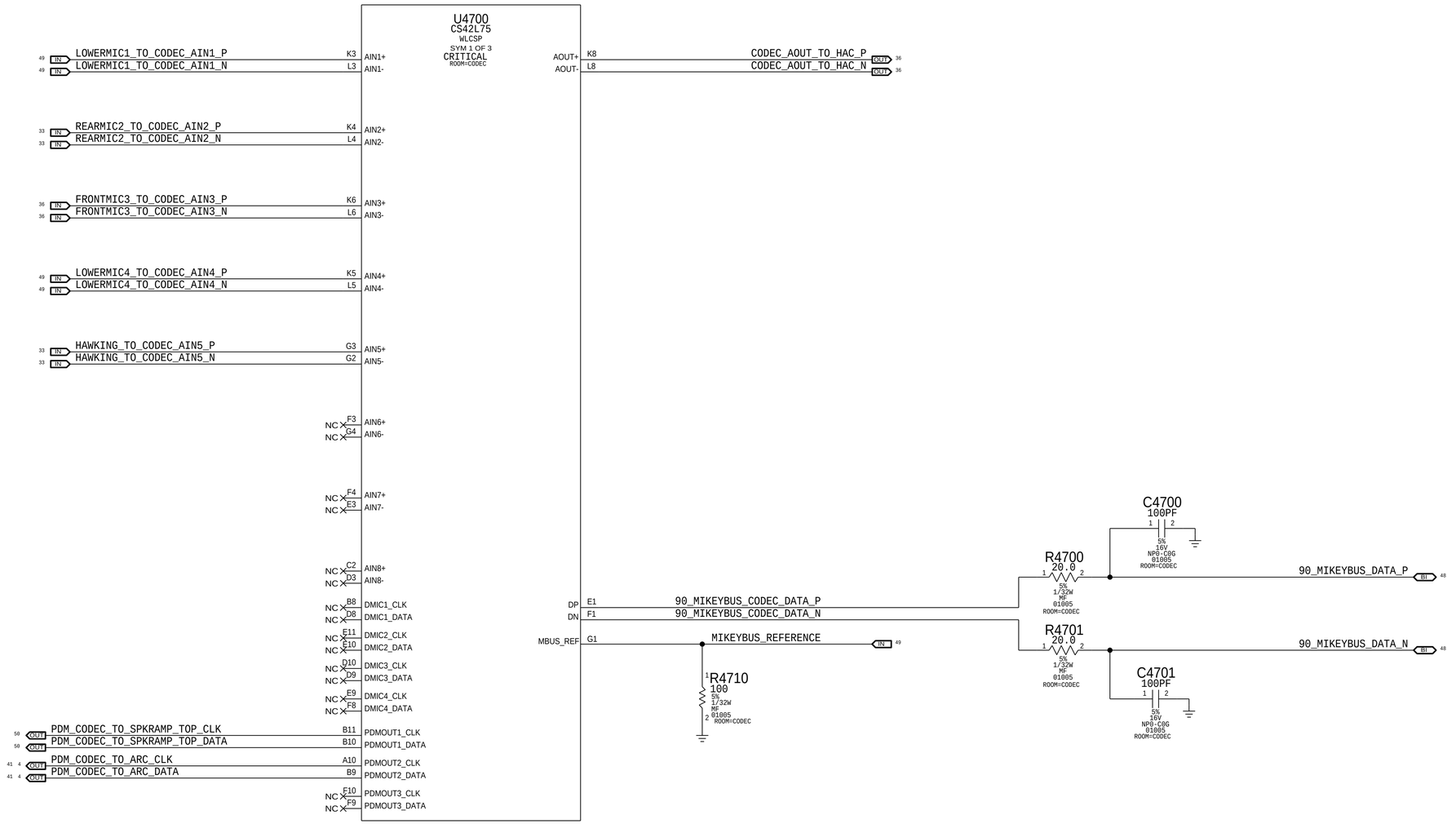
CALLAN AUDIO CODEC (ANALOG INPUTS & OUTPUTS)



PAGE TITLE

AUDIO: CODEC (1/2)

Apple Inc.

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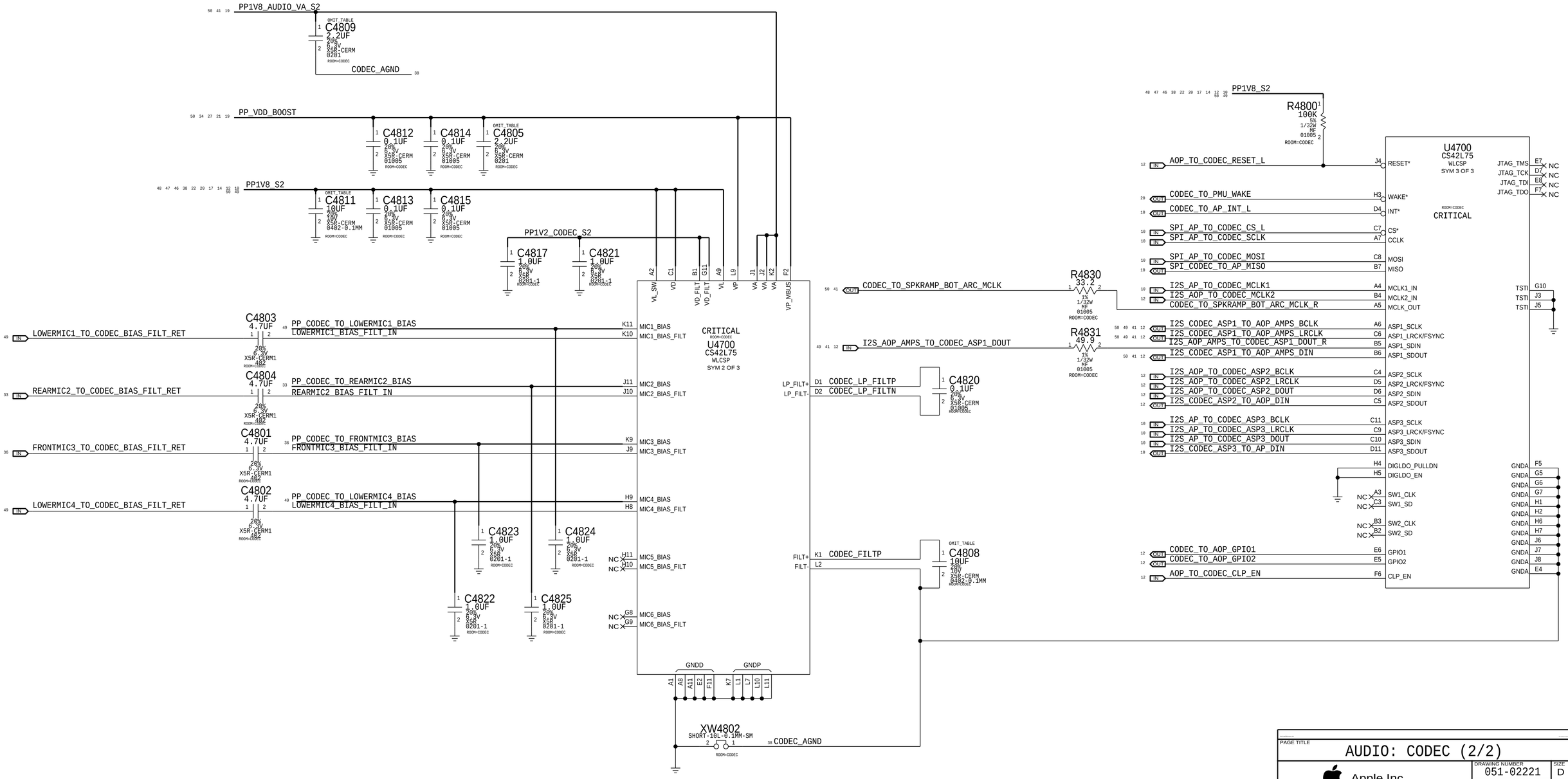
CALLAN AUDIO CODEC (POWER & I/O)



PAGE TITLE

AUDIO: CODEC (2/2)

Apple Inc.

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South Speaker Amplifier on MLB Bottom

SYNC_DATE=08/25/2015

PAGE TITLE

AUDIO: Speaker Amp Bottom

Apple Inc.

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North Speaker Amplifier on MLB Bottom

SYNC_DATE=08/25/2015

PAGE TITLE

AUDIO: Speaker Amp Top

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ARC DRIVER

APN: 338S00296
I2C ADDRESS: 1000 001x
0x82

Pull Downs

AOP_TO_SPKRAMP_BOT_ARC_RESET_L
12 41 50

R5108
100K
5%
1/32W
MF
01005
ROOM=ARC_CTRL

PP_VDD_MAIN
45 43 42 34 31 27 23 21 19 18 50 46

C5130 18UF 20% 6.3V CER-X5R 0402-0.1MM ROOM=ARC_CTRL
C5131 18UF 20% 6.3V CER-X5R 0402-0.1MM ROOM=ARC_CTRL
C5125 4UF 20% 6.3V CERM-X5R 0201 ROOM=ARC_CTRL

PP1V8_AUDIO_VA_S2
19 38 41 50

C5127 0.1UF 20% 6.3V X6R-CERM 01005 ROOM=ARC_CTRL
C5134 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=ARC_CTRL

CRITICAL
L5100
1.2UH-20%-3A-0.11OHM
MEFE2016T-SM
ROOM=ARC_CTRL

ARC1_LX

U5100
CS35L26C-A1
WLCSP
ROOM=ARC_CTRL
CRITICAL

A2	SW		
B2	SW		
D6	SDA	50 49 25 12 4 BI	I2C1_AOP_SDA
E6	SCL	50 49 25 12 4 IN	I2C1_AOP_SCL
A7	INT*	50 12 BI	SPKRAMP_BOT_ARC_TO_AOP_INT_L
A6	RESET*	50 41 12 IN	AOP_TO_SPKRAMP_BOT_ARC_RESET_L
F6	ALIVE/SYNC	NC	
E5	AD0/PDM_CLK1	50 41 38 19	PP1V8_AUDIO_VA_S2 (MAKE_BASE=TRUE)
B7	MCLK	50 38 IN	CODEC_TO_SPKRAMP_BOT_ARC_MCLK
C7	SCLK	50 49 38 12 IN	I2S_CODEC_ASP1_TO_AOP_AMPS_BCLK
C6	LRCK/FSYNC	50 49 38 12 IN	I2S_CODEC_ASP1_TO_AOP_AMPS_LRCLK
D7	SDIN	50 38 12 IN	I2S_CODEC_ASP1_TO_AOP_AMPS_DIN
B6	SDOUT	49 38 12 OUT	I2S_AOP_AMPS_TO_CODEC_ASP1_DOUT
F7	PDM_CLK0	37 4 IN	PDM_CODEC_TO_ARC_CLK
E7	PDM_DATA0	37 4 IN	PDM_CODEC_TO_ARC_DATA
D5	PDM_DATA1		

A5 VP
F5 VA
GNDP A3 A4 B3 B4 C3 C4 C5 D3 D4
GNDA D5 E4 E5 F2

A1	VBST_B		
B1	VBST_B		
C1	VBST_A		
D1	VBST_A		
F1	ISNS+		ARC1_ISENSE_POS
E1	ISNS-		ARC1_ISENSE_NEG
E2	VSNS+	IN 49	SOLENOID1_TO_ARC1_VSENSE_POS
E3	VSNS-	IN 49	SOLENOID1_TO_ARC1_VSENSE_NEG
D2	OUT+		ARC1_TO_SOLENOID1_OUT_POS 49
C2	OUT-		ARC1_TO_SOLENOID1_OUT_NEG 49
F4	FILT+		ARC1_FILT
F3	AD1		

PP_ARC1_VBOOST

C5126 220PF 5% 16V C0G-CERM 01005 ROOM=ARC_CTRL
C5135 0.1UF 10% 16V X5R-CERM 0201 ROOM=ARC_CTRL
C5137 10UF 20% 16V X5R-CERM 0402-0.1MM ROOM=ARC_CTRL
C5124 10UF 20% 16V X5R-CERM 0402-0.1MM ROOM=ARC_CTRL
C5138 10UF 20% 16V X5R-CERM 0402-0.1MM ROOM=ARC_CTRL
C5139 10UF 20% 16V X5R-CERM 0402-0.1MM ROOM=ARC_CTRL

C5128 0.01UF 10% 6.3V X5R 01005 ROOM=ARC_CTRL

C5129 470PF 10% 10V X5R 01005 ROOM=ARC_CTRL
C5142 470PF 10% 10V X5R 01005 ROOM=ARC_CTRL

C5136 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=ARC_CTRL

PAGE TITLE
ARC: Driver

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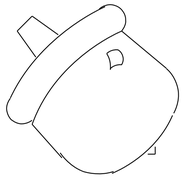
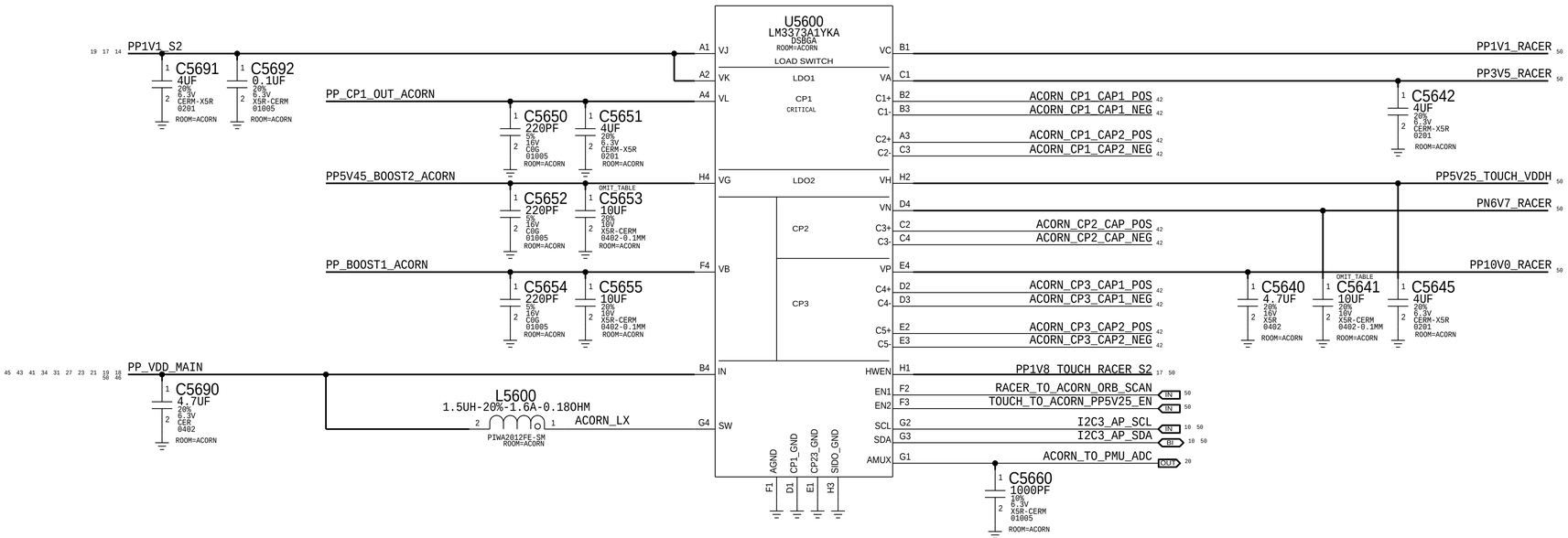
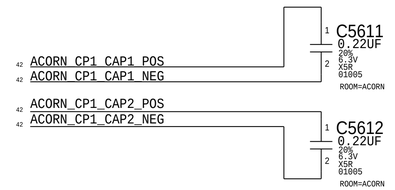
Acorn PMU

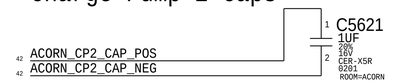




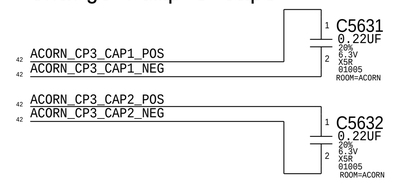
Charge Pump 1 Caps



Charge Pump 2 Caps



Charge Pump 3 Caps



PAGE TITLE

CG: Power Supplies - Touch & Display

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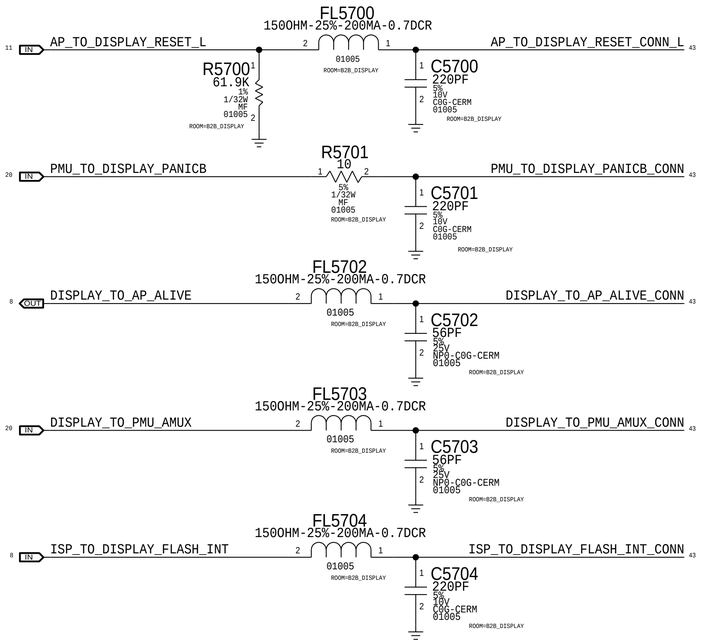
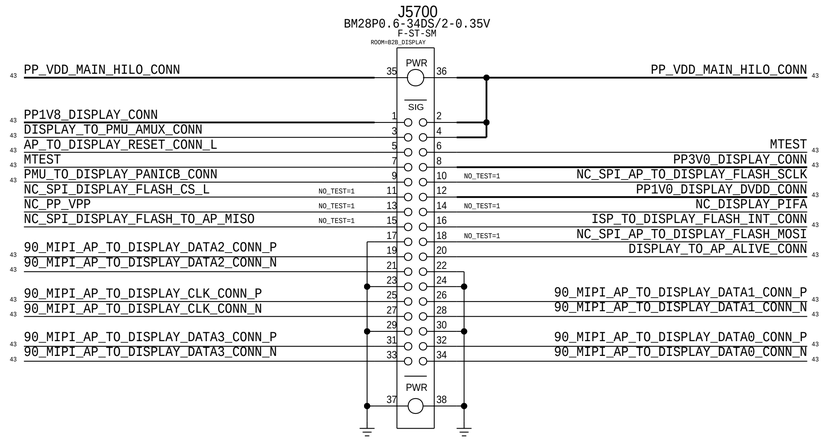
Display Control Signals

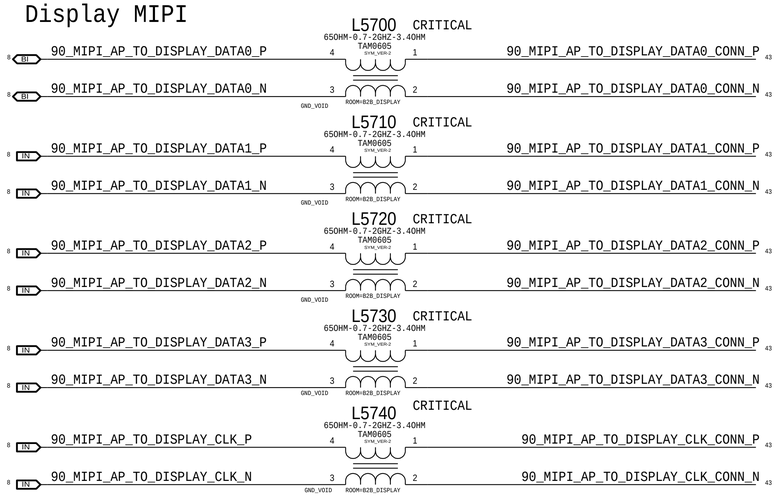


Display Flex Connector

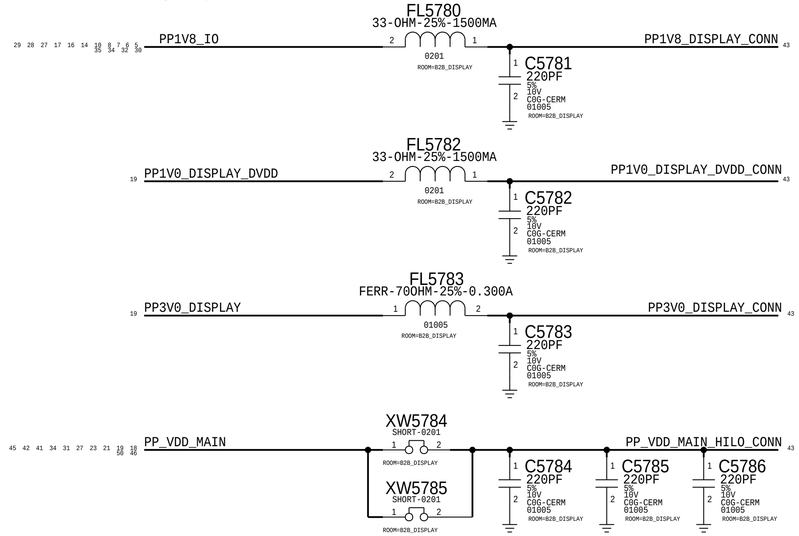
Rcpt: 516S00210 <-- This one on MLB
Plug: 516S00211



Display MIPI



Display Power



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Orb + Touch Connector on MLB Bottom

SYNC_DATE=08/25/2015

PAGE TITLE

CG: B2B Orb & Touch

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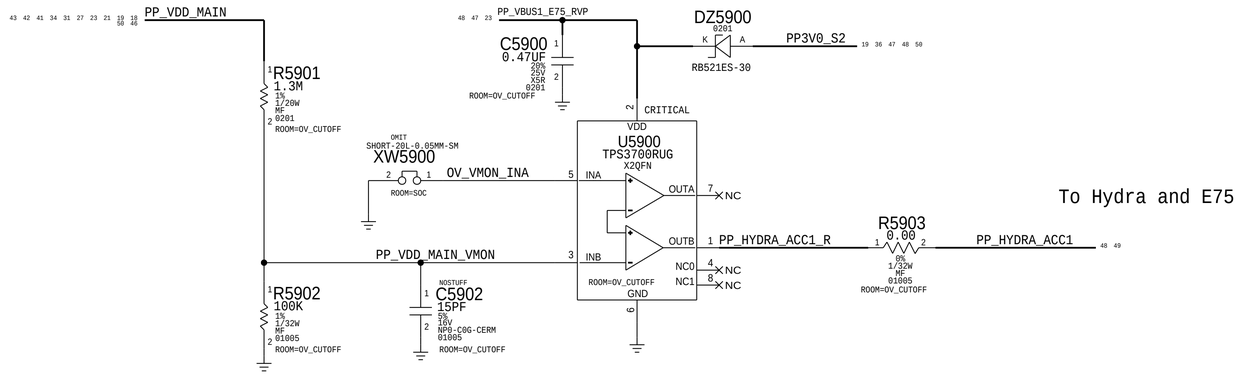
VDD_MAIN OV CUT-OFF CIRCUIT



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I/O: Overvoltage Cut-Off Circuit

Apple Inc.

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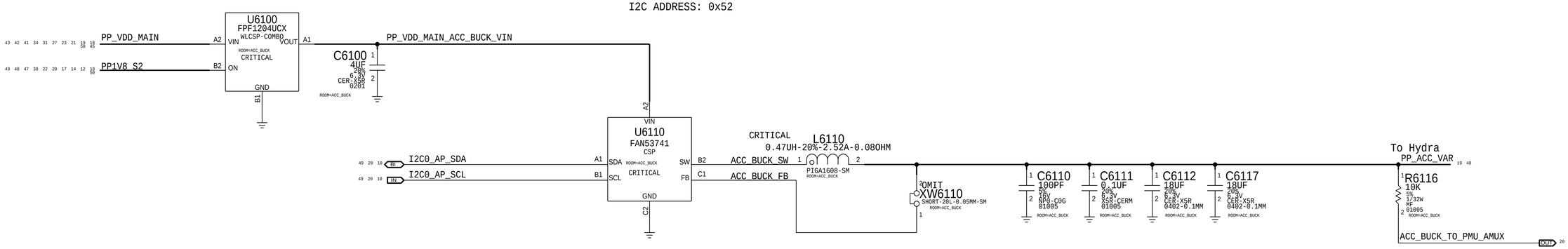
ACCESSORY BUCK

I2C ADDRESS: 0x52



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I/O: Accessory Buck

Apple Inc.

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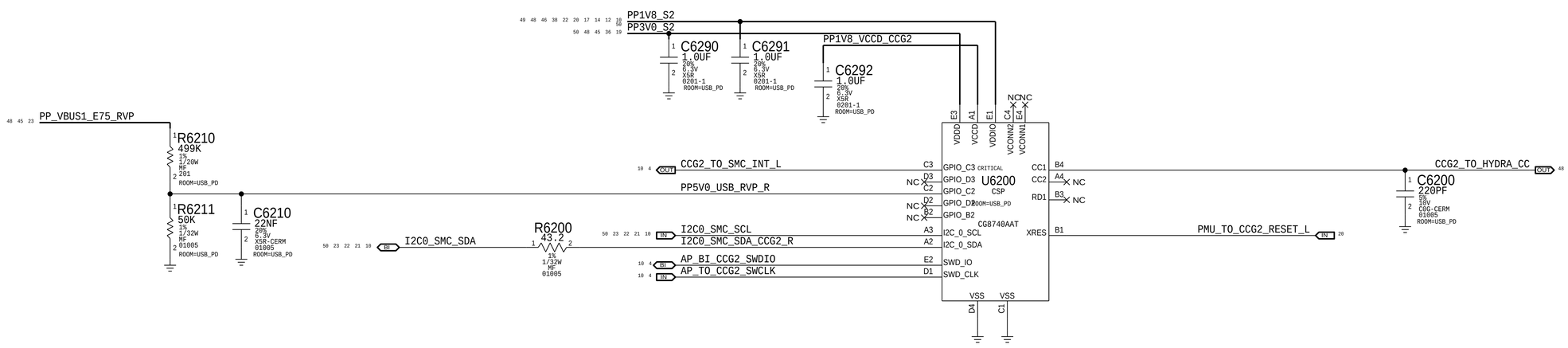
USB-PD



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I/O: USB PD

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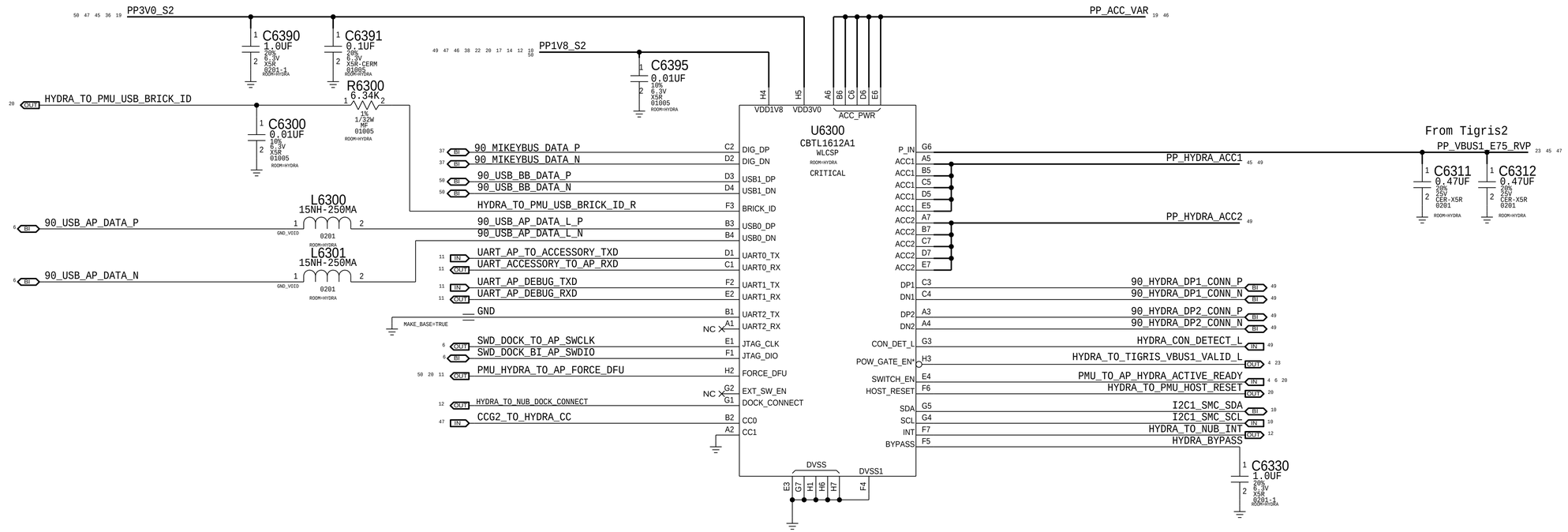
Hydra

I2C Address: 0011010X



PAGE TITLE

I/O: Hydra

Apple Inc.

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ARC

FL6400
1500HM-25%-200MA-0.7DCR
01005
ROOM=B2B_DOCK

PP1V8_S2 → PP1V8_SAKONNET_CONN

C6400 220PF 5% 10V C0G-CERM 01005 ROOM=B2B_DOCK

R6416 0.00 5% 1/32W MF 01005 ROOM=B2B_DOCK
I2C0_AP_SCL (IN) → I2C0_AP_TO_SAKONNET_SCL_CONN (CKPLUS_WAIVE=I2C_PULLUP)
C6416 56PF 5% 25V NP0-C0G-CERM 01005 ROOM=B2B_DOCK

R6418 0.00 5% 1/32W MF 01005 ROOM=B2B_DOCK
I2C0_AP_SDA (BI) → I2C0_AP_BI_SAKONNET_SDA_CONN (CKPLUS_WAIVE=I2C_PULLUP)
C6418 56PF 5% 25V NP0-C0G-CERM 01005 ROOM=B2B_DOCK

R6419 49.9 1% 1/32W MF 01005 ROOM=B2B_DOCK
I2S_CODEC_ASP1_TO_AOP_AMPS_BCLK (IN) → I2S_CODEC_ASP1_TO_AOP_AMPS_BCLK_CONN
C6419 68PF 5% 25V NP0-C0G-CERM 01005 ROOM=B2B_DOCK

R6420 49.9 1% 1/32W MF 01005 ROOM=B2B_DOCK
I2S_CODEC_ASP1_TO_AOP_AMPS_LRCLK (IN) → I2S_CODEC_ASP1_TO_AOP_AMPS_LRCLK_CONN
C6420 68PF 5% 25V NP0-C0G-CERM 01005 ROOM=B2B_DOCK

R6421 49.9 1% 1/32W MF 01005 ROOM=B2B_DOCK
I2S_AOP_AMPS_TO_CODEC_ASP1_DOUT (BI) → I2S_AOP_AMPS_TO_CODEC_ASP1_DOUT_CONN
C6421 68PF 5% 25V NP0-C0G-CERM 01005 ROOM=B2B_DOCK

ARC1_TO_SOLENOID1_OUT_POS
ARC1_TO_SOLENOID1_OUT_NEG

C6472 820PF 10% 10V X5R 01005 ROOM=B2B_DOCK
C6471 220PF 5% 10V C0G-CERM 01005 ROOM=B2B_DOCK
C6470 220PF 5% 10V C0G-CERM 01005 ROOM=B2B_DOCK
C6473 820PF 10% 10V X5R 01005 ROOM=B2B_DOCK

Compass (Dock Flex Location)

FL6430
NOSTUFF
150OHM-25%-200MA-0.7DCR
01005
ROOM=B2B_DOCK

PP1V8_IMU_S2 → PP1V8_IMU_COMPASS_DOCK_CONN

C6430 NOSTUFF 220PF 5% 10V C0G-CERM 01005 ROOM=B2B_DOCK

R6431 NOSTUFF 0.00 0% 1/32W MF 01005 ROOM=B2B_DOCK
I2C1_AOP_SCL (IN) → I2C1_AOP_TO_COMPASS_SCL_DOCK_CONN (CKPLUS_WAIVE=I2C_PULLUP)
C6431 NOSTUFF 56PF 5% 25V NP0-C0G-CERM 01005 ROOM=B2B_DOCK

R6432 NOSTUFF 0.00 0% 1/32W MF 01005 ROOM=B2B_DOCK
I2C1_AOP_SDA (BI) → I2C1_AOP_BI_COMPASS_SDA_DOCK_CONN (CKPLUS_WAIVE=I2C_PULLUP)
C6432 NOSTUFF 56PF 5% 25V NP0-C0G-CERM 01005 ROOM=B2B_DOCK

FL6433 NOSTUFF 1500HM-25%-200MA-0.7DCR 01005 ROOM=B2B_DOCK
COMPASS_TO_AOP_INT (OUT) → COMPASS_TO_AOP_INT_DOCK_CONN
C6433 NOSTUFF 220PF 5% 10V C0G-CERM 01005 ROOM=B2B_DOCK

Hydra

R6410 100 5% 1/32W MF 01005 ROOM=B2B_DOCK
HYDRA_CON_DETECT_L (OUT) → HYDRA_CON_DETECT_CONN_L
C6410 27PF 5% 16V NP0-C0G 01005 ROOM=B2B_DOCK

FL6411 10-OHM-1.1A 01005 ROOM=B2B_DOCK
PP_HYDRA_ACC1 → PP_HYDRA_ACC1_CONN
C6411 220PF 5% 10V C0G-CERM 01005 ROOM=B2B_DOCK

FL6413 22-OHM-25%-1800MA 0201 ROOM=B2B_DOCK
PP_HYDRA_ACC2 → PP_HYDRA_ACC2_CONN
C6413 220PF 5% 10V C0G-CERM 01005 ROOM=B2B_DOCK

LOWER MIC1 + LOWER MIC4

FL6450 150OHM-25%-200MA-0.7DCR 01005 ROOM=B2B_DOCK
LOWERMIC1_TO_CODEC_AIN1_P (OUT) → LOWERMIC1_TO_CODEC_AIN1_CONN_P
C6450 56PF 5% 25V NP0-C0G-CERM 01005 ROOM=B2B_DOCK

FL6452 150OHM-25%-200MA-0.7DCR 01005 ROOM=B2B_DOCK
LOWERMIC1_TO_CODEC_AIN1_N (OUT) → LOWERMIC1_TO_CODEC_AIN1_CONN_N
C6452 56PF 5% 25V NP0-C0G-CERM 01005 ROOM=B2B_DOCK

FL6454 150OHM-25%-200MA-0.7DCR 01005 ROOM=B2B_DOCK
PP_CODEC_TO_LOWERMIC1_BIAS → PP_CODEC_TO_LOWERMIC1_BIAS_CONN
C6454 220PF 5% 10V C0G-CERM 01005 ROOM=B2B_DOCK

FL6460 150OHM-25%-200MA-0.7DCR 01005 ROOM=B2B_DOCK
LOWERMIC4_TO_CODEC_AIN4_P (OUT) → LOWERMIC4_TO_CODEC_AIN4_CONN_P
C6460 56PF 5% 25V NP0-C0G-CERM 01005 ROOM=B2B_DOCK

FL6462 1500HM-25%-200MA-0.7DCR 01005 ROOM=B2B_DOCK
LOWERMIC4_TO_CODEC_AIN4_N (OUT) → LOWERMIC4_TO_CODEC_AIN4_CONN_N
C6462 56PF 5% 25V NP0-C0G-CERM 01005 ROOM=B2B_DOCK

FL6464 1500HM-25%-200MA-0.7DCR 01005 ROOM=B2B_DOCK
PP_CODEC_TO_LOWERMIC4_BIAS → PP_CODEC_TO_LOWERMIC4_BIAS_CONN
C6464 220PF 5% 10V C0G-CERM 01005 ROOM=B2B_DOCK

R6465 0.00 0% 1/32W MF 01005 ROOM=B2B_DOCK
I2C1_AP_SCL (IN) → I2C1_AP_TO_MIC1_SCL_CONN (CKPLUS_WAIVE=I2C_PULLUP)
C6465 56PF 5% 25V NP0-C0G-CERM 01005 ROOM=B2B_DOCK

R6466 0.00 0% 1/32W MF 01005 ROOM=B2B_DOCK
I2C1_AP_SDA (BI) → I2C1_AP_BI_MIC1_SDA_CONN (CKPLUS_WAIVE=I2C_PULLUP)
C6466 56PF 5% 25V NP0-C0G-CERM 01005 ROOM=B2B_DOCK

DOCK FLEX CONNECTOR

Rcpt: 516S00038 <-- This one on MLB
Plug: 516S00037

J6400
BM28P0.6-44DS-0.35V
F-ST-SM

SPKRAMP_BOT_TO_COIL_OUT_NEG
SPKRAMP_BOT_TO_COIL_OUT_POS
COIL_TO_SPKRAMP_BOT_VSENSE_POS_CONN
COIL_TO_SPKRAMP_BOT_VSENSE_NEG_CONN
90_HYDRA_DP1_CONN_P
90_HYDRA_DP1_CONN_N
PP_CODEC_TO_LOWERMIC4_BIAS_CONN
LOWERMIC4_TO_CODEC_BIAS_FILT_RET
LOWERMIC4_TO_CODEC_AIN4_CONN_N
LOWERMIC4_TO_CODEC_AIN4_CONN_P
90_HYDRA_DP2_CONN_N
90_HYDRA_DP2_CONN_P
PP1V8_IMU_COMPASS_DOCK_CONN
I2C1_AOP_BI_COMPASS_SDA_DOCK_CONN
I2C1_AOP_TO_COMPASS_SCL_DOCK_CONN
COMPASS_TO_AOP_INT_DOCK_CONN
PP_HYDRA_ACC1_CONN
MIKEYBUS_REFERENCE
HYDRA_CON_DETECT_CONN_L
PP1V8_SAKONNET_CONN
I2S_CODEC_ASP1_TO_AOP_AMPS_LRCLK_CONN
I2C0_AP_BI_SAKONNET_SDA_CONN
I2C0_AP_TO_SAKONNET_SCL_CONN
LOWERMIC1_TO_CODEC_AIN1_CONN_P
LOWERMIC1_TO_CODEC_AIN1_CONN_N
LOWERMIC1_TO_CODEC_BIAS_FILT_RET
I2S_CODEC_ASP1_TO_AOP_AMPS_BCLK_CONN
I2S_AOP_AMPS_TO_CODEC_ASP1_DOUT_CONN
PP_CODEC_TO_LOWERMIC1_BIAS_CONN
I2C1_AP_BI_MIC1_SDA_CONN
I2C1_AP_TO_MIC1_SCL_CONN
PP_HYDRA_ACC2_CONN
ARC1_TO_SOLENOID1_OUT_NEG
SOLENOID1_TO_ARC1_VSENSE_NEG
SOLENOID1_TO_ARC1_VSENSE_POS
ARC1_TO_SOLENOID1_OUT_POS
PP_VBUS1_E75

C6490 0.1UF 10% 25V X5R 0201 ROOM=B2B_DOCK
C6491 0.1UF 10% 25V X5R 0201 ROOM=B2B_DOCK
C6492 0.1UF 10% 25V X5R 0201 ROOM=B2B_DOCK
C6493 220PF 5% 25V C0G 01005 ROOM=B2B_DOCK
C6494 220PF 5% 25V C0G 01005 ROOM=B2B_DOCK
C6495 0.1UF 10% 25V X5R 0201 ROOM=B2B_DOCK
C6496 0.1UF 10% 25V X5R 0201 ROOM=B2B_DOCK
C6497 0.1UF 10% 25V X5R 0201 ROOM=B2B_DOCK

SOUTH SPEAKER

FL6480 1500HM-25%-200MA-0.7DCR 01005 ROOM=B2B_DOCK
COIL_TO_SPKRAMP_BOT_VSENSE_POS → COIL_TO_SPKRAMP_BOT_VSENSE_POS_CONN
C6480 NOSTUFF 220PF 5% 10V C0G-CERM 01005 ROOM=B2B_DOCK

FL6482 1500HM-25%-200MA-0.7DCR 01005 ROOM=B2B_DOCK
COIL_TO_SPKRAMP_BOT_VSENSE_NEG → COIL_TO_SPKRAMP_BOT_VSENSE_NEG_CONN
C6482 NOSTUFF 220PF 5% 10V C0G-CERM 01005 ROOM=B2B_DOCK

SPKRAMP_BOT_TO_COIL_OUT_POS (IN)
C6484 820PF 10% 10V X5R 01005 ROOM=B2B_DOCK
C6483 220PF 5% 10V C0G-CERM 01005 ROOM=B2B_DOCK

SPKRAMP_BOT_TO_COIL_OUT_NEG (IN)
C6486 820PF 10% 10V X5R 01005 ROOM=B2B_DOCK
C6485 220PF 5% 10V C0G-CERM 01005 ROOM=B2B_DOCK

PAGE TITLE: I/O: B2B Dock

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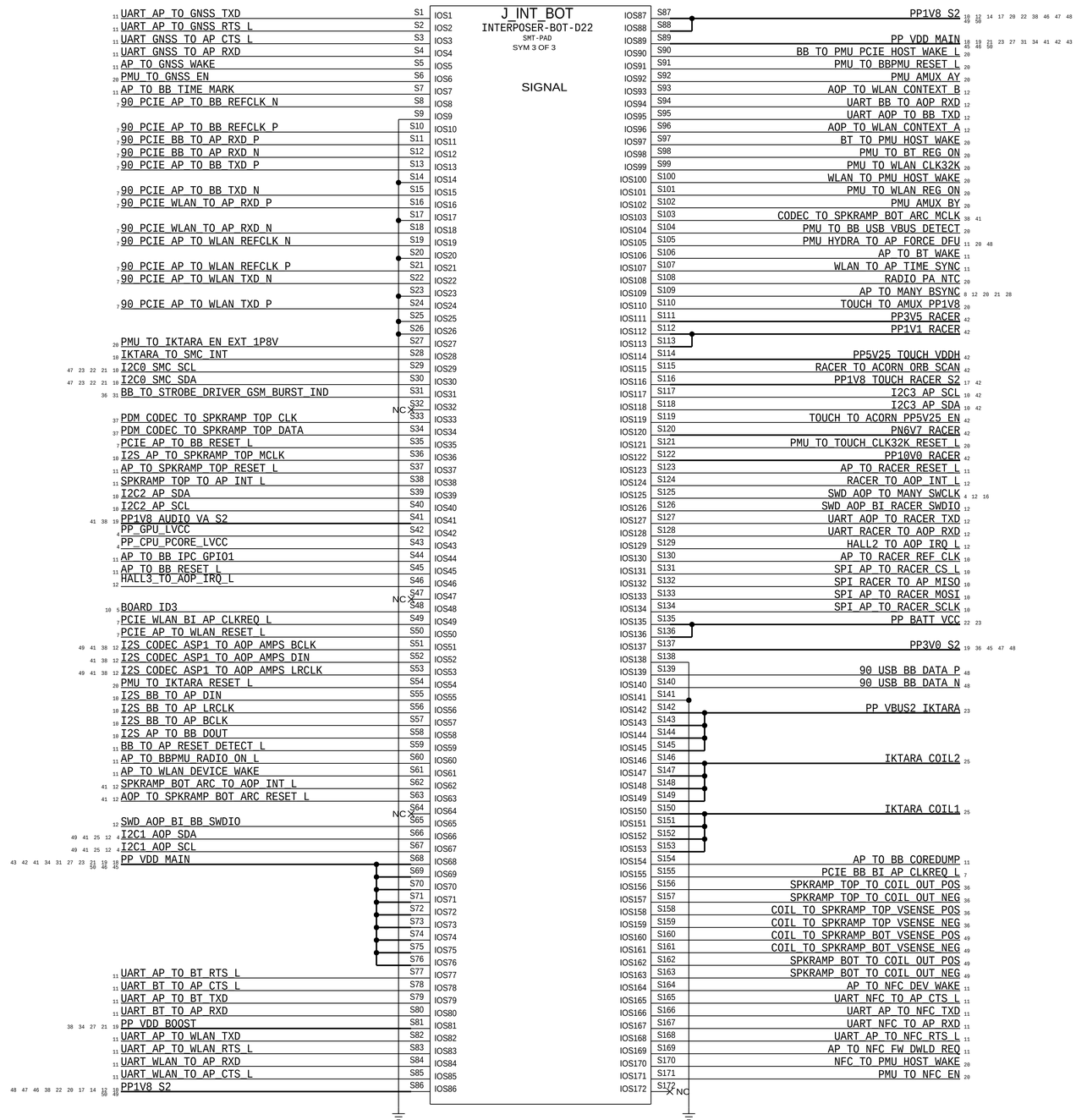

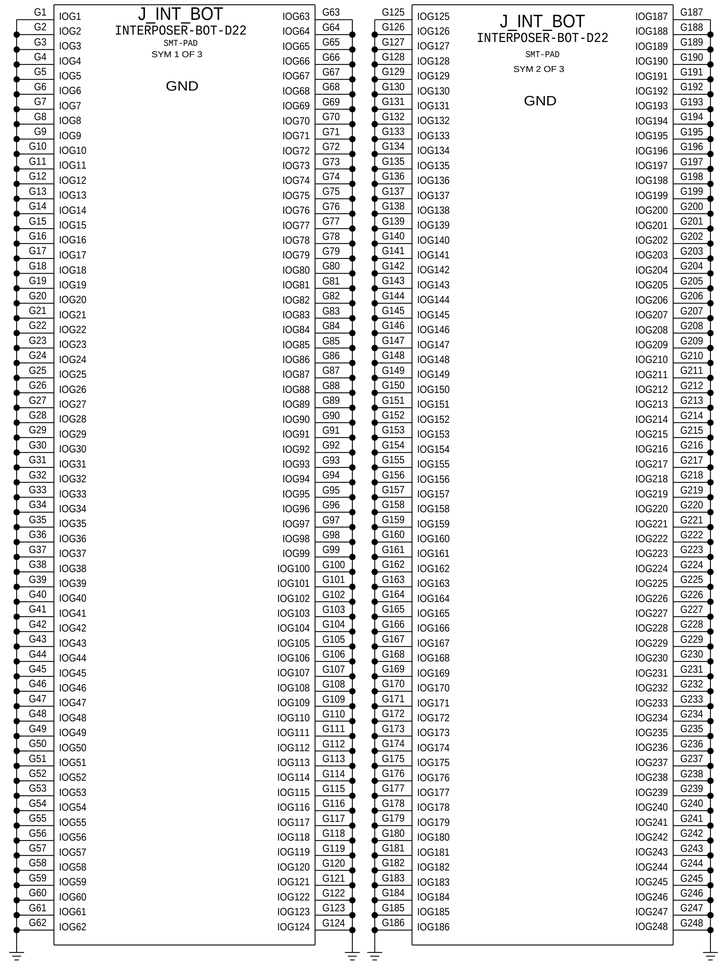

PAGE TITLE

I/O: Interposer (Bottom)

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Radios on MLB Bottom

SYNC_DATE=06/04/2015

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RADIOS

Apple Inc.

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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
7	0008448938	ENGINEERING RELEASED	2017-04-11

X893 MLB Bottom: EVT

LAST_MODIFICATION=Tue Apr 11 16:10:11 2017

BOM:639-03229
MCO:056-04080

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
051-02247	1	SCH,MLB_BOT,X893	SCH	NO	COMMON
820-00869	1	PCB,MLB_BOT,X893	PCB	NO	COMMON

Sub Designs

SOURCE PROJECT	SUB-DESIGN NAME	VERSION	HARD/SOFT	SYNC_DATE/TIME
D221	RADIO_MLB	0.115.0	S	2017_04_05_18:48:43
D22	NFC_MLB	0.22.0	S	2017_03_22_22:11:23
D22	WIFI_MLB	0.20.0	S	2017_04_04_09:54:33

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Apple Inc.

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EEEE Codes

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
825-7691	1	EEEE FOR (MLB_BOT, 639-03229)	EEEE_HM07	NO	COMMON

Global Capacitors

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
138S00148	138S00149	BOM_TABLE_ALTS	ALL	0402-3T,10.5UF@1V, Kyocera
138S00150	138S00149	BOM_TABLE_ALTS	ALL	0402-3T,10.5UF@1V, SEMCO
138S00151	138S00149	BOM_TABLE_ALTS	ALL	0402-3T,10.5UF@1V, TY

CRITICAL PART#	COMMENT
138S00149	0402-3T,10.5UF@1V

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
138S00143	138S00144	BOM_TABLE_ALTS	ALL	0402,16UF@1V, Kyocera
138S00163	138S00144	BOM_TABLE_ALTS	ALL	0402,16UF@1V, Taiyo

CRITICAL PART#	COMMENT
138S00144	0402,16UF@1V

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
138S00138	138S00139	BOM_TABLE_ALTS	ALL	0201,3UF@1V, Kyocera
138S00164	138S00139	BOM_TABLE_ALTS	ALL	0201,3UF@1V, Taiyo

CRITICAL PART#	COMMENT
138S00139	0201,3UF@1V

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
138S00145	138S00146	BOM_TABLE_ALTS	ALL	0402,5.1UF@3V, Kyocera
138S00165	138S00146	BOM_TABLE_ALTS	ALL	0402,5.1UF@3V, Taiyo

CRITICAL PART#	COMMENT
138S00146	0402,5.1UF@3V

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
138S00140	138S00141	BOM_TABLE_ALTS	ALL	0201,1.1UF@3V, Kyocera
138S00142	138S00141	BOM_TABLE_ALTS	ALL	0201,1.1UF@3V, SEMCO
138S00166	138S00141	BOM_TABLE_ALTS	ALL	0201,1.1UF@3V, Taiyo

CRITICAL PART#	COMMENT
138S00141	0201,1.1UF@3V

Global Ferrites

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
152S00558	152S00557	BOM_TABLE_ALTS	ALL	IND,MLD,0.47UH,20%,2.5A,80MΩ,1608
155S00194	155S0610	BOM_TABLE_ALTS	ALL	FERR BD,150 OHM,25%,200MA,0.7 DCR,01005
155S00200	155S0610	BOM_TABLE_ALTS	ALL	FERR BD,150 OHM,25%,200MA,0.7 DCR,01005

CRITICAL PART#	COMMENT
152S00557	IND,MLD,0.47UH,20%,2.5A,80MΩ,1608
155S0610	FERR BD,150 OHM,25%,200MA,0.7 DCR,01005

Global R/C Alternates

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
138S0648	138S0652	BOM_TABLE_ALTS	ALL	CAP,X5R,4.7UF,6.3V,0.65MM,0402,TAIYO
138S00024	138S0986	BOM_TABLE_ALTS	ALL	CAP,CER,3-TERM,7.5UF,20%,4V,0402,TAIYO/TDK
138S0706	138S0739	BOM_TABLE_ALTS	ALL	CAP,CER,1UF,20%,10V,X5R,0201,MURATA
138S0945	138S0739	BOM_TABLE_ALTS	ALL	CAP,CER,1UF,20%,10V,X5R,0201,KYOCERA
138S0739	138S0706	BOM_TABLE_ALTS	ALL	CAP,CER,X5R,0.22UF,20%,6.3V,20%
132S0436	132S0400	BOM_TABLE_ALTS	ALL	CAP,CER,X5R,0.22UF,20%,6.3V,01005
138S00049	138S0831	BOM_TABLE_ALTS	ALL	CAP,CER,X5R,2.2UF,20%,6.3V,0201

CRITICAL PART#	COMMENT
138S0652	CAP,X5R,4.7UF,6.3V,0.65MM,0402,TAIYO
138S0986	CAP,CER,3-TERM,7.5UF,20%,4V,0402,TAIYO/TDK
138S0739	CAP,CER,1UF,20%,10V,X5R,0201,MURATA
138S0706	CAP,CER,X5R,0.22UF,20%,6.3V,20%
132S0400	CAP,CER,X5R,0.22UF,20%,6.3V,01005
138S0831	CAP,CER,X5R,2.2UF,20%,6.3V,0201

Global Inductors

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
152S00653	152S00651	BOM_TABLE_ALTS	ALL	IND,1.2UH,3A,2016,0.65Z
152S00654	152S00652	BOM_TABLE_ALTS	ALL	IND,1.2UH,3A,2016,0.8Z

CRITICAL PART#	COMMENT
152S00651	IND,1.2UH,3A,2016,0.65Z
152S00652	IND,1.2UH,3A,2016,0.8Z

Multi-Vendor Criticals

CRITICAL PART#	COMMENT
138S0979	CAP,CER,X5R,10UF,20%,10V,0402,H=0.65MM
138S0683	CAP,CER,X5R,1UF,10%,25V,0402
132S0663	CAP,CER,X5R,1UF,10%,25V,0402
132S0288	CAP,CER,X5R,0.1UF,10%,16V,0201
132S0275	CAP,CER,X5R,470PF,10%,10V,01005
132S0245	CAP,CER,X5R,0.01UF,10%,6.3V,01005

CRITICAL PART#	COMMENT
132S00008	CAP,CER,0.1UF,10%,50V,X7R,0402
131S0804	CAP,CER,27PF,5%,C0G,25V,0201
131S0307	CAP,CER,NP0/C0G,100PF,5%,16V,01005
131S00053	CAP,CER,C0G,220PF,5%,10V,01005
117S0055	RES,MF,1/20W,2M OHM,5,0201,SMD
107S0257	THERMISTOR,NTC,10K OHM,1%,B=3435,01005

Iktara

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
132S00021	8	CAP,CER,0.082UF,10%,50V,X7R,0402	C3452,C3453,C3454,C3455,C3461,C3462,C3463,C3464	NO	COMMON
132S0423	2	CAP,CER,0.022UF,50V,X7R,10%,0402	C3451,C3465	CRITICAL	COMMON
132S0423	2	CAP,CER,0.022UF,50V,X7R,10%,0402	C3455,C3466	CRITICAL	NOSTUFF

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
685-00185	685-00184	BOM_TABLE_ALTS	SUBBOM_DS	SUBBOM,MLB,BOT,DIODES,ONSEMI,X893

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
685-00184	1	SUBBOM,MLB,BOT,DIODES,DIODES,X893	SUBBOM_DS	CRITICAL	COMMON
371S00133	4	DIODES,SHOTTKY DIODE,30V,2A,0603	D3400,D3401,D3402,D3403	CRITICAL	DIODES_DS
371S00132	4	ONSEMI,SHOTTKY DIODE,30V,2A,0603	D3400,D3401,D3402,D3403	CRITICAL	ONSEMI_DS

Soft-Term Cap Sub BOMs

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
685-00159	1	SUBBOM,MLB,BOT,CAP,TYPICAL,X893	SUBBOM_CAP	CRITICAL	COMMON

Touch/Luna B2B

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
138S00159	1	CAP,SOFT-TERM,2.2UF,6.3V,0201,KYOCERA	C5890	CRITICAL	SOFT_CAP
138S0831	1	CAP,TYPICAL,2.2UF,6.3V,0201,MURATA	C5890	CRITICAL	TYPICAL_CAP

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
685-00160	685-00159	BOM_TABLE_ALTS	SUBBOM_CAP	SUBBOM,MLB,BOT,CAP,SOFT,X893

SYNC_MASTER=

SYNC_DATE=03/08/2017

PAGE TITLE

SYSTEM:BOM Tables

Apple Inc.

DRAWING NUMBER 051-02247

SIZE D

REVISION 7.0.0

BRANCH evt-1

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FIDUCIALS

FD0401
FID
0P5SQ-CROSS-NSP
1
ROOM=ASSEMBLY

FD0402
FID
0P5SQ-CROSS-NSP
1
ROOM=ASSEMBLY

FD0403
FID
0P5SQ-CROSS-NSP
1
ROOM=ASSEMBLY

FD0404
FID
0P5SQ-CROSS-NSP
1
ROOM=ASSEMBLY

FD0405
FID
0P5SQ-CROSS-NSP
1
ROOM=ASSEMBLY

FD0406
FID
0P5SQ-CROSS-NSP
1
ROOM=ASSEMBLY

FD0410
FID
0P5SQ-SMP3SQ-NSP
1
ROOM=ASSEMBLY

FD0411
FID
0P5SQ-SMP3SQ-NSP
1
ROOM=ASSEMBLY

FD0412
FID
0P5SQ-SMP3SQ-NSP
1
ROOM=ASSEMBLY

FD0413
FID
0P5SQ-SMP3SQ-NSP
1
ROOM=ASSEMBLY

FD0414
FID
0P5SQ-SMP3SQ-NSP
1
ROOM=ASSEMBLY

FD0415
FID
0P5SQ-SMP3SQ-NSP
1
ROOM=ASSEMBLY

CRITICAL
SB0400
STDOFF-SUBMERGED-X891
1
ROOM=ASSEMBLY

SYNC_DATE=12/01/2016

PAGE TITLE

SYSTEM: Mechanical Components

Apple Inc.

DRAWING NUMBER 051-02247

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BRANCH evt-1

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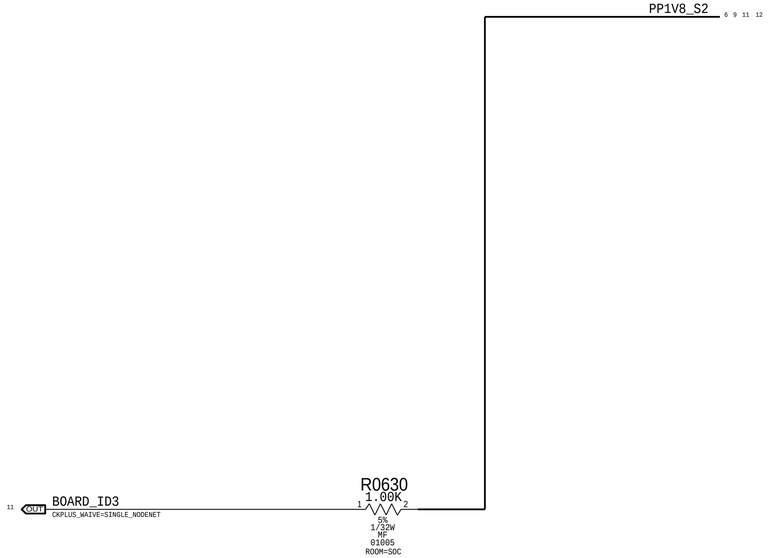
BOOTSTRAPPING:BOARD ID[3]



D221 Selected (BOARD_ID3) ->

SYNC_DATE=11/03/2016

PAGE TITLE

BOOTSTRAPPING

Apple Inc.

DRAWING NUMBER 051-02247

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Test Points

PP_VDD_MAIN → TP0700 (VDD_MAIN), TP0701, TP0702, TP0703 — TP-P55, ROOM=TEST

PP_BATT_VCC → TP0515 (VBATT), TP0522 — TP-P55, ROOM=TEST

TP0705, TP0707, TP0709, TP0706, TP0708, TP0710 — TP-P55, ROOM=TEST

AMUX

PMU_AMUX_AY → TP0713 — ANALOG MUX A OUTPUT

PMU_AMUX_BY → TP0715 — ANALOG MUX B OUTPUT

DFU

PMU_HYDRA_TO_AP_FORCE_DFU → TP0714 — FORCE DFU

LVCC

PP_GPU_LVCC → TP0720

PP_CPU_PCORE_LVCC → TP0721

COIL

IKTARA_COIL1 → TP0730

IKTARA_COIL2 → TP0731

GND → TP0750

PP5V25_TOUCH_VDDH → TP0751

PP3V5_RACER → TP0752

PN6V7_RACER → TP0753

PP10V0_RACER → TP0754

PP1V1_RACER → TP0755

TOUCH_TO_ACORN_PP5V25_EN → TP0756

TOUCH_TO_AMUX_PP1V8 → TP0757

PMU_TO_TOUCH_CLK32K_RESET_L → TP0758

AP_TO_MANY_BSYNC → TP0759

HALL2_TO_AOP_IRQ_L → TP0760

AP_TO_RACER_RESET_L → TP0761

UART_RACER_TO_AOP_RXD → TP0762

RACER_TO_AOP_INT_L → TP0763

UART_AOP_TO_RACER_TXD → TP0764

RACER_TO_ACORN_ORB_SCAN → TP0766

SPI_AP_TO_RACER_CS_L → TP0767

SPI_AP_TO_RACER_MOSI → TP0768

I2C3_AP_SDA → TP0771

I2C3_AP_SCL → TP0772

PP1V8_TOUCH_RACER_S2 → TP0780

GND → TP0790 — Stockholm GND TP

Probe Points

Iktara Debug

PMU_TO_IKTARA_EN_EXT_1P8V → PP0700

IKTARA_ANA1 → PP0701

IKTARA_GPIO3 → PP0702

IKTARA_GPIO4 → PP0703

IKTARA_TO_SMC_INT → PP0704

P2MM-NSM, IN, PP, ROOM=TEST

SYNC_MASTER=test_mlb	SYNC_DATE=01/17/2017
PAGE TITLE	SYSTEM: Testpoints (Bottom)
Apple Inc.	DRAWING NUMBER 051-02247 · SIZE D
	REVISION 7.0.0
	BRANCH evt-1
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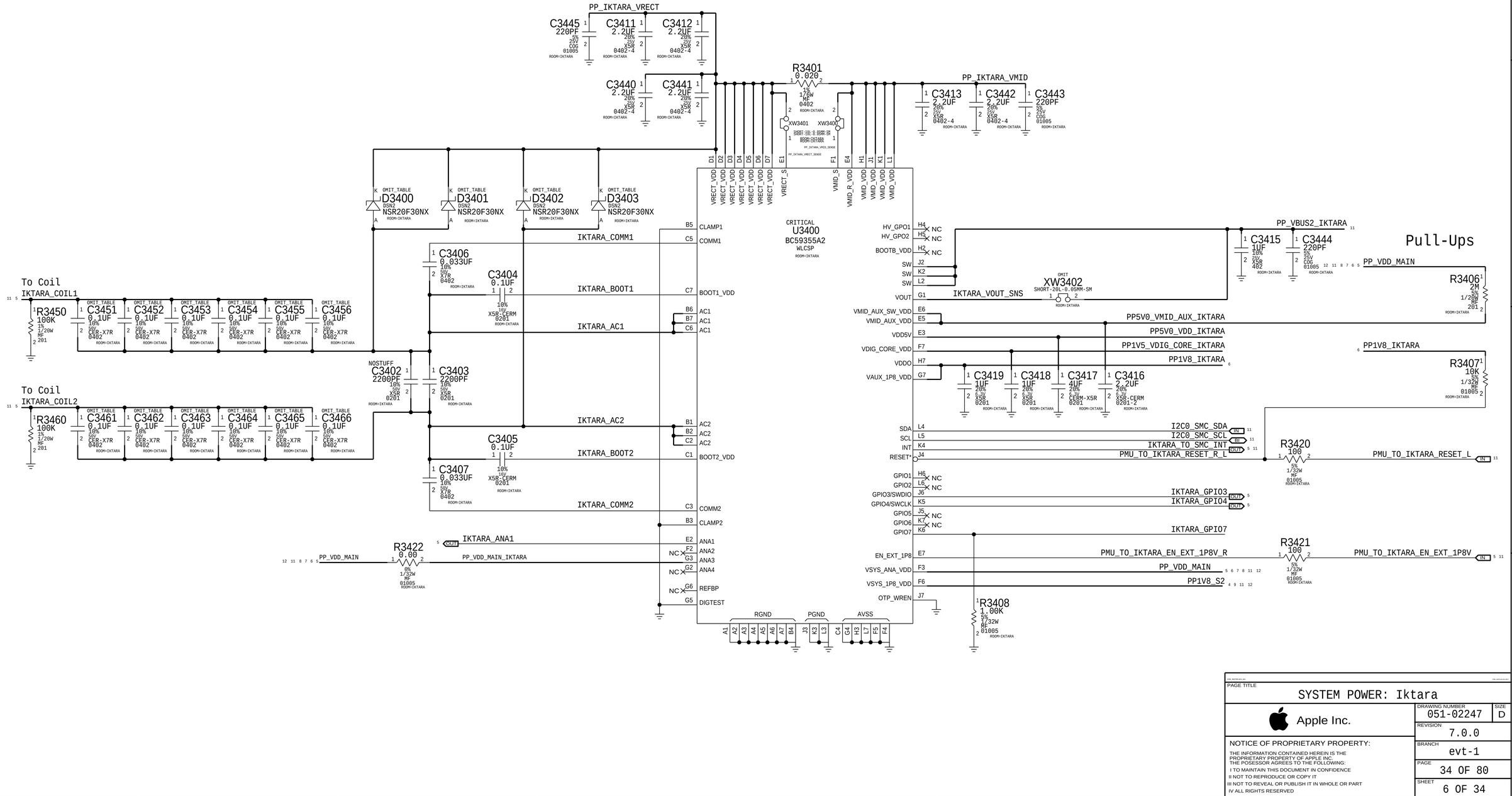
Iktara



PAGE TITLE

SYSTEM POWER: Iktara

Apple Inc.

DRAWING NUMBER 051-02247

SIZE D

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BRANCH evt-1

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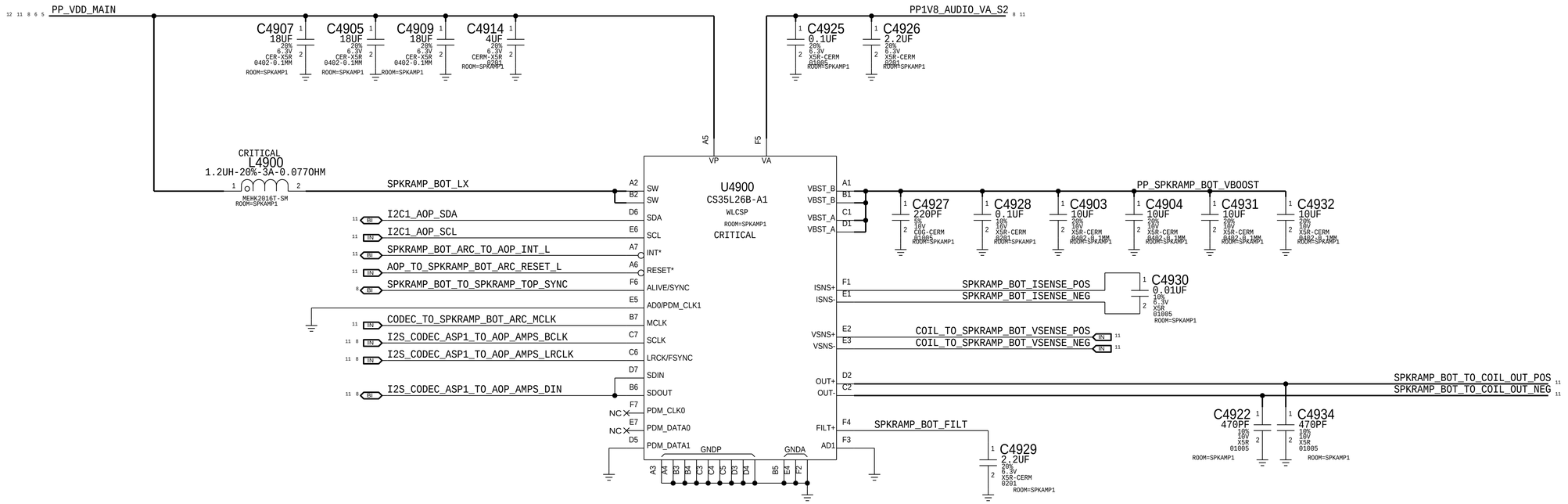
South Speaker Amplifier

APN: 338S00295

I2C ADDRESS: 1000 000x
0x80



PAGE TITLE	AUDIO: Speaker Amp Bottom
	Apple Inc.
DRAWING NUMBER	051-02247
SIZE	D
REVISION	7.0.0
BRANCH	evt-1
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Pull Downs

AP_TO_SPKRAMP_TOP_RESET_L

R5001 100K 5% 1/32W MF 01005 ROOM=SPKAMP2

North Speaker Amplifier

APN: 338S00295

I2C ADDRESS: 1000 000x

0x80

PP_VDD_MAIN

C5027 18UF 20% 6.3V CER-X5R 0402-0.1MM ROOM=SPKAMP2

C5026 18UF 20% 6.3V CER-X5R 0402-0.1MM ROOM=SPKAMP2

C5028 18UF 20% 6.3V CER-X5R 0402-0.1MM ROOM=SPKAMP2

C5029 4UF 20% 6.3V CERM-X5R 0201 ROOM=SPKAMP2

PP1V8_AUDIO_VA_S2

C5015 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=SPKAMP2

C5016 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=SPKAMP2

CRITICAL

L5000 1.2UH-20%-3A-0.11OHM MEFE2016T-SM ROOM=SPKAMP2

SPKRAMP_TOP_LX

U5000 CS35L26B-A1 WLCSP ROOM=SPKAMP2 CRITICAL

		A5	VP
		F5	VA
SPKRAMP_TOP_LX		A2	SW
		B2	SW
I2C2_AP_SDA	BI	D6	SDA
I2C2_AP_SCL	IN	E6	SCL
SPKRAMP_TOP_TO_AP_INT_L	BI	A7	INT*
AP_TO_SPKRAMP_TOP_RESET_L	IN	A6	RESET*
SPKRAMP_BOT_TO_SPKRAMP_TOP_SYNC	BI	F6	ALIVE/SYNC
		E5	AD0/PDM_CLK1
I2S_AP_TO_SPKRAMP_TOP_MCLK	IN	B7	MCLK
I2S_CODEC_ASP1_TO_AOP_AMPS_BCLK	IN	C7	SCLK
I2S_CODEC_ASP1_TO_AOP_AMPS_LRCLK	IN	C6	LRCK/FSYNC
		D7	SDIN
I2S_CODEC_ASP1_TO_AOP_AMPS_DIN	BI	B6	SDOUT
PDM_CODEC_TO_SPKRAMP_TOP_CLK	IN	E7	PDM_CLK0
PDM_CODEC_TO_SPKRAMP_TOP_DATA	IN	E7	PDM_DATA0
		D5	PDM_DATA1
		A3	GNDP
		A4	GNDP
		B3	GNDP
		B4	GNDP
		C3	GNDP
		C4	GNDP
		C5	GNDP
		D3	GNDP
		D4	GNDP
		B5	GNDA
		E4	GNDA
		F2	GNDA
		A1	VBST_B
		B1	VBST_B
		C1	VBST_A
		D1	VBST_A
SPKRAMP_TOP_ISENSE_POS		F1	ISNS+
SPKRAMP_TOP_ISENSE_NEG		F1	ISNS-
COIL_TO_SPKRAMP_TOP_VSENSE_POS	IN	E2	VSNS+
COIL_TO_SPKRAMP_TOP_VSENSE_NEG	IN	E3	VSNS-
SPKRAMP_TOP_TO_COIL_OUT_POS		D2	OUT+
SPKRAMP_TOP_TO_COIL_OUT_NEG		C2	OUT-
SPKRAMP_TOP_FILT		F4	FILT+
		F3	AD1

PP_SPKRAMP_TOP_VBOOST

C5012 220PF 5% 16V C0G-CERM 01005 ROOM=SPKAMP2

C5011 0.1UF 10% 16V X5R-CERM 0201 ROOM=SPKAMP2

C5024 10UF 20% 10V X5R-CERM 0402-0.1MM ROOM=SPKAMP2

C5025 10UF 20% 10V X5R-CERM 0402-0.1MM ROOM=SPKAMP2

C5006 10UF 20% 10V X5R-CERM 0402-0.1MM ROOM=SPKAMP2

C5008 10UF 20% 10V X5R-CERM 0402-0.1MM ROOM=SPKAMP2

C5019 0.01UF 10% 6.3V X5R 01005 ROOM=SPKAMP2

C5000 470PF 10% 10V X5R 01005 ROOM=SPKAMP2

C5001 470PF 10% 10V X5R 01005 ROOM=SPKAMP2

C5018 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=SPKAMP2

PAGE TITLE

AUDIO: Speaker Amp Top

Apple Inc.

DRAWING NUMBER 051-02247

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BRANCH evt-1

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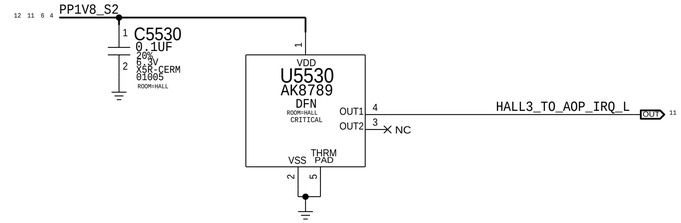
Hall Effect

APN:353S3697



PAGE TITLE

HALL EFFECT

Apple Inc.

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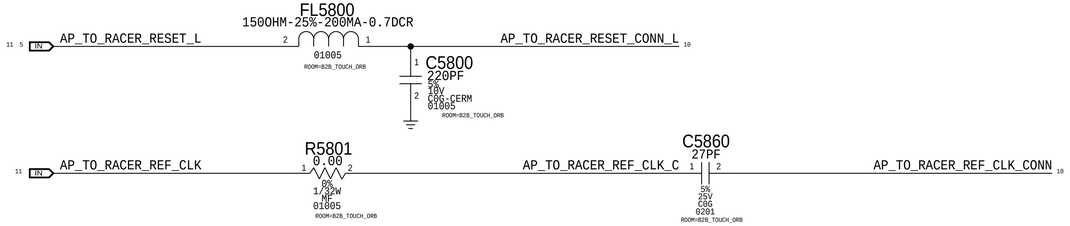
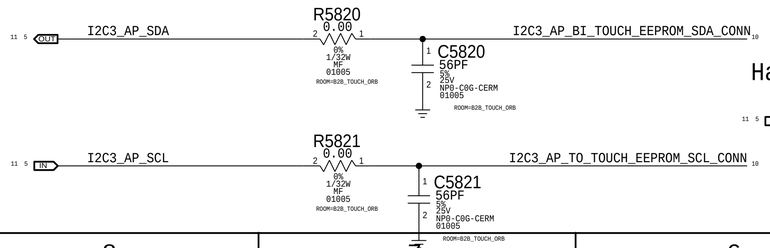
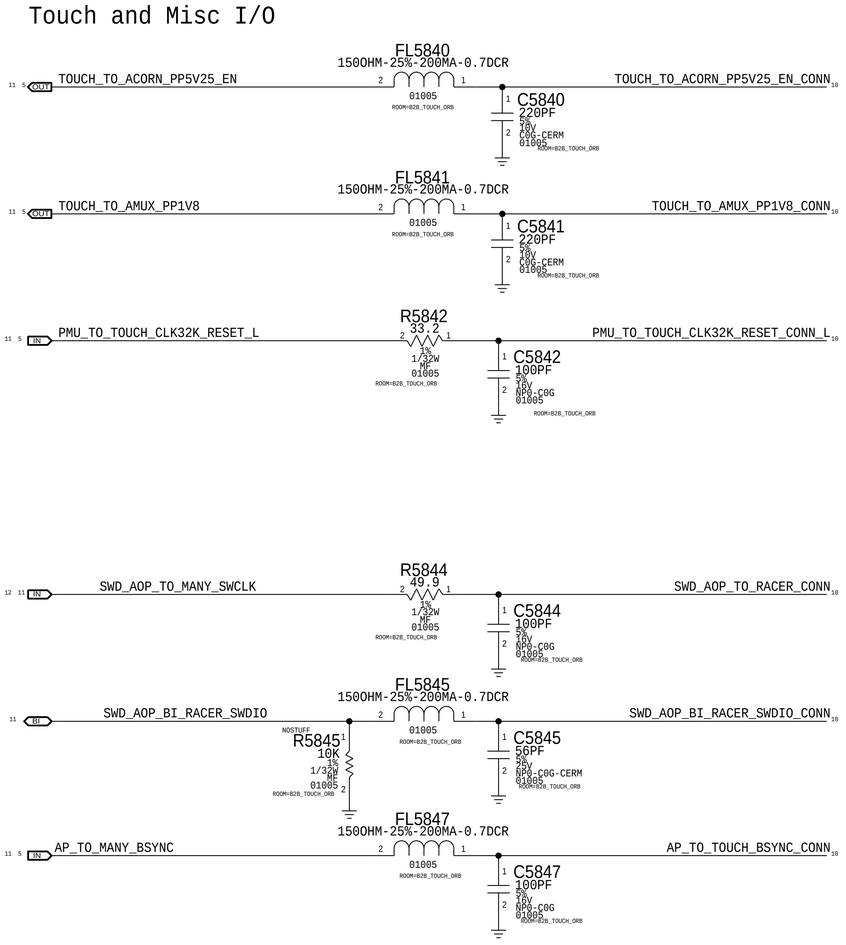
Racer I/O



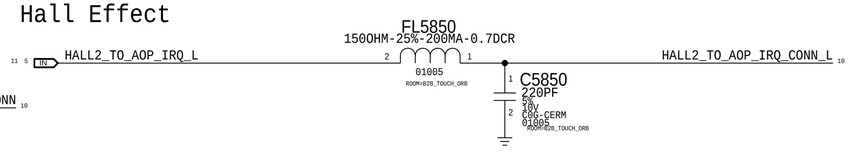
AP I2C Filters



Touch and Misc I/O

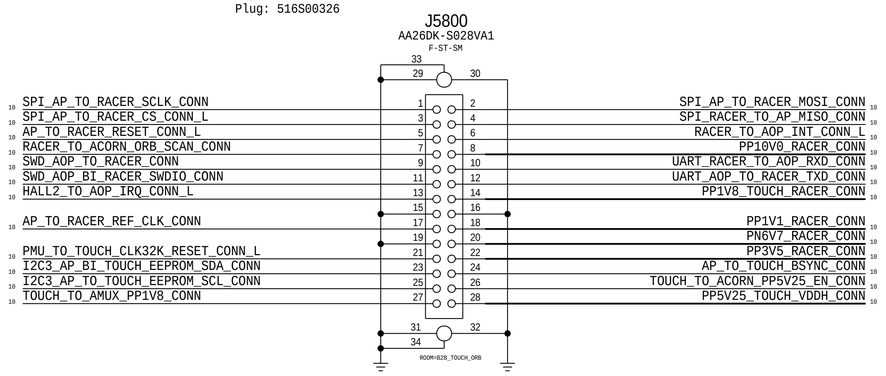


Hall Effect

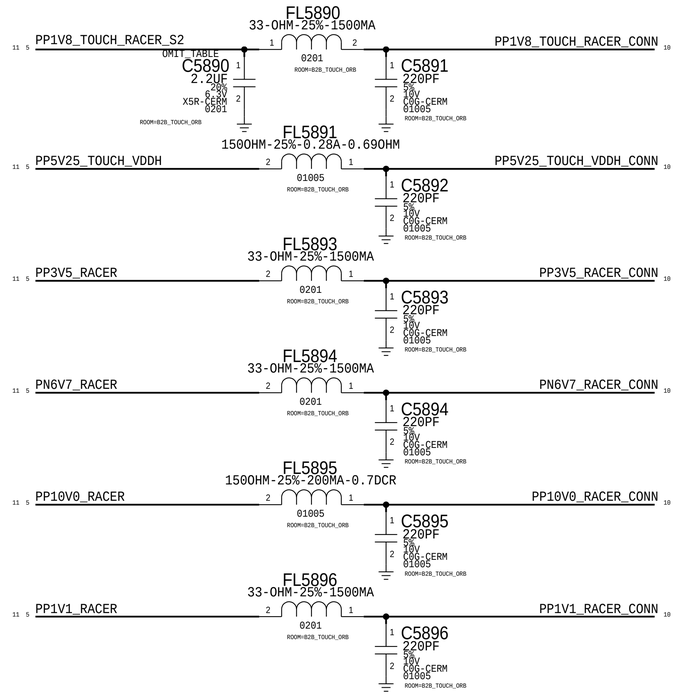


Luna + Touch Connector

Rcpt: 516S00325 <-- This one on MLB
Plug: 516S00326



Touch And Racer Power



SYNC_MASTER=K13_3in1 SYNC_DATE=04/19/2017

PAGE TITLE

CG: B2B Luna & Touch

Apple Inc.

DRAWING NUMBER 051-02247 SIZE D

REVISION 7.0.0

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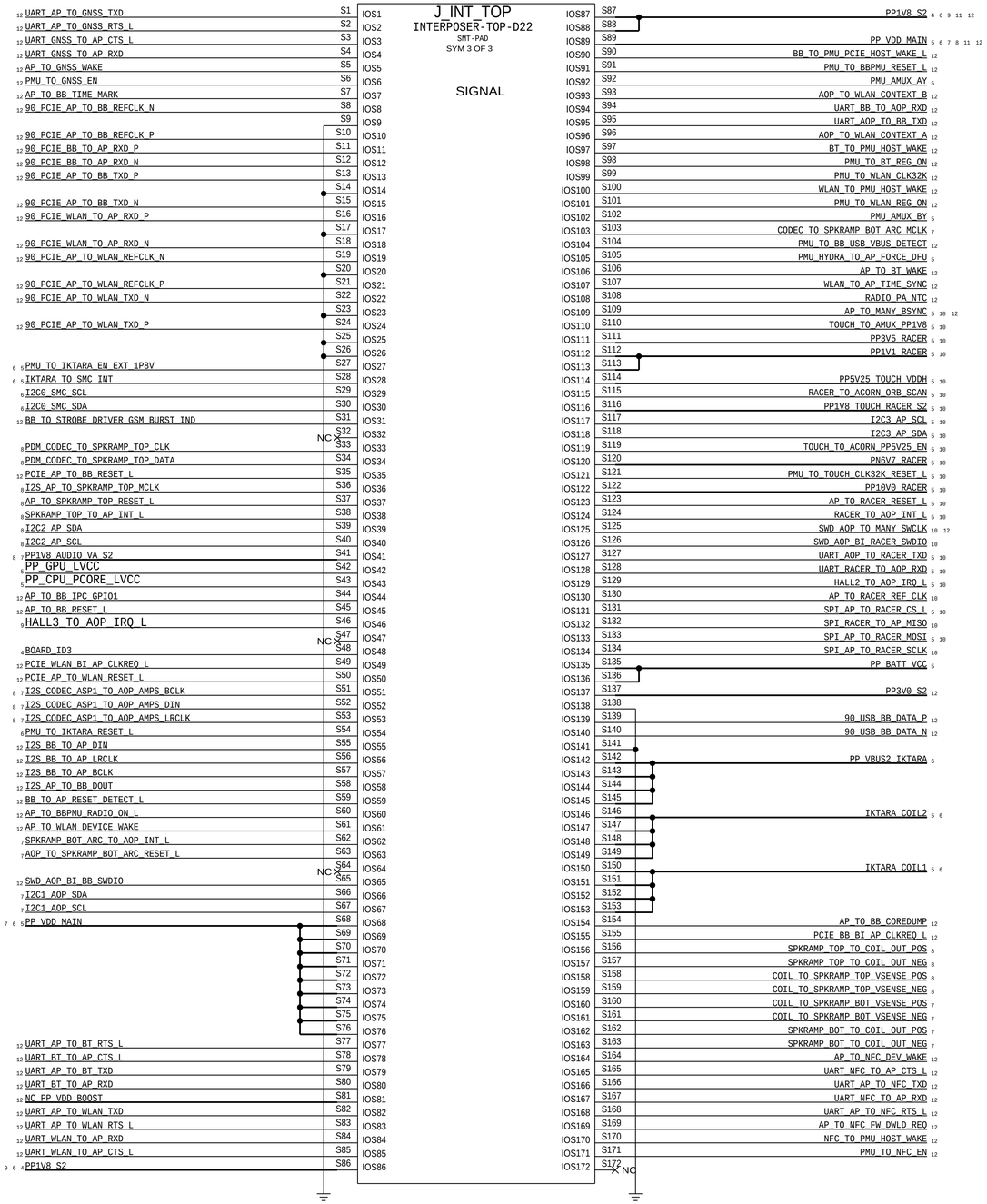

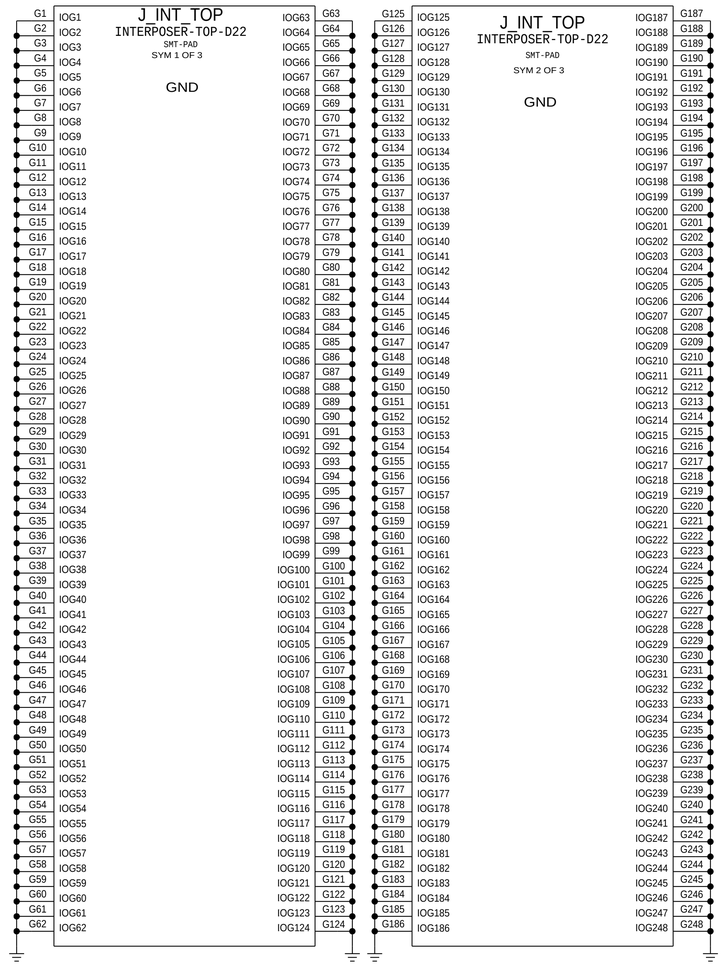

SYNC_MASTER=mlb_bot SYNC_DATE=04/04/2017

PAGE TITLE

I/O: Interposer (Top)

Apple Inc.

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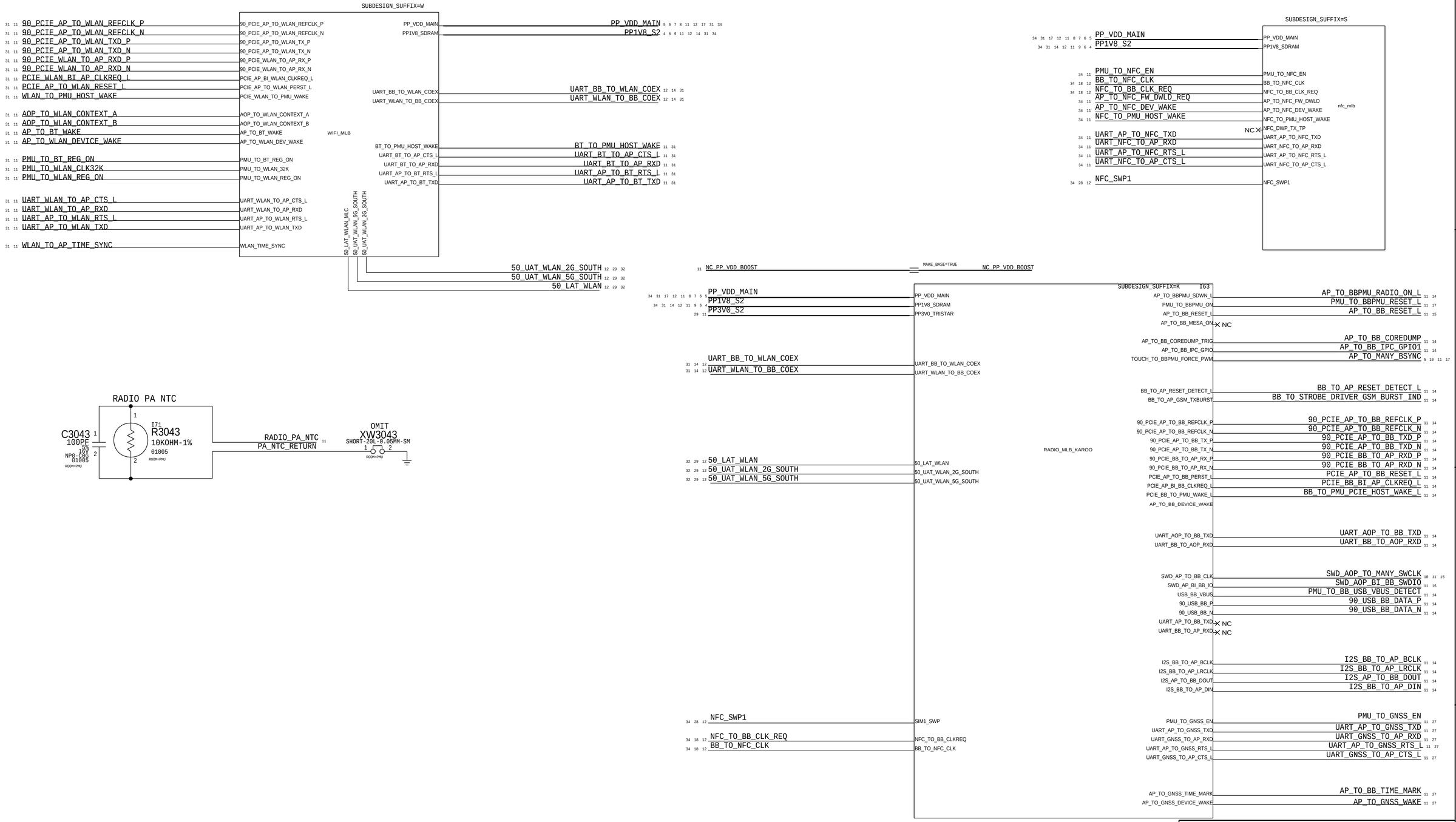

1. ALL RESISTANCE VALUES ARE IN OHMS, 0.1 WATT +/- 5%.
2. ALL CAPACITANCE VALUES ARE IN MICROFARADS.
3. ALL CRYSTALS & OSCILLATOR VALUES ARE IN HERTZ.

REV	ECN	DESCRIPTION OF REVISION	CK APPD / DATE
7	0008448938	ENGINEERING RELEASED	2017-04-11

ICE17.2 RADIO_MLB

Tue Apr 11 16:10:08 2017

ALTERNATES

PART NUMBER	ALTERNATE FOR PART NUMBER	REFERENCE DESIGNATOR(S)	DESCRIPTION	BOM OPTION
197S00040	197S00044	VTCXO_K	AVX VC-TCXO	?
197S00042	197S00044	VTCXO_K	NDK VC-TCXO	?
335S00013	335S0894	EPROM_K	ON SEMI EEPROM	?
138S0719	138S1103	C522_K	MURATA	?
138S00133	138S00128	C509_K, C523_K, C605_K, C624_K, C626_K, C1114_K, C1116_K	MURATA	?
138S00049	138S00032	C402_K, C433_K, C437_K, C510_K, C720_K	MURATA	?
138S0831	138S00032	C402_K, C433_K, C437_K, C510_K, C720_K	MURATA	?
138S00086	138S0884	C500_K, C501_K, C502_K, C514_K, C515_K	MURATA	?
339S00363	339S00353	GNSS_K	PILSNER STATS	?

BOM OPTIONS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
998-05780	1	BASEBAND, UNFUSED	U_BB_K	CRITICAL	BB_UNFUSED
998-05781	1	BASEBAND, LOCAL FUSED	U_BB_K	CRITICAL	BB_LOCAL_FUSED
998-05782	1	BASEBAND, DEV FUSED	U_BB_K	CRITICAL	BB_DEV_FUSED
337S00244	1	BASEBAND, PRODUCTION FUSED	U_BB_K	CRITICAL	BB_PROD_FUSED
138S00159	7	CAP,SOFT-TERM,2.2UF,6.3V,0201,KYOCERA	C402_K,C437_K,C438_K,C433_K,C510_K,C720_K,C1001_K		SOFT_CAP
138S0831	7	CAP,TYPICAL,2.2UF,6.3V,0201,MURATA	C402_K,C437_K,C438_K,C433_K,C510_K,C720_K,C1001_K		TYPICAL_CAP

RADIO_MLB PORTS

POWER

- PP_VDD_MAIN
- PP1V8_S2
- PP3V0_S2

CLOCKS

PMU_TO_BB_GNSS_32K

BB CONTROL

- AP_TO_BBPMU_RADIO_ON_L
- PMU_TO_BBPMU_RESET_L
- AP_TO_BB_RESET_L
- BB_TO_AP_RESET_DETECT_L
- BB_TO_STROBE_DRIVER_GSM_BURST_IND
- AP_TO_BB_MESA_ON_K
- AP_TO_BB_COREDUMP
- AP_TO_MANY_BSYNC
- AP_TO_BB_IPC_GPIO1

PCIE

- 90_PCIE_AP_TO_BB_REFCLK_P
- 90_PCIE_AP_TO_BB_REFCLK_N
- 90_PCIE_AP_TO_BB_TXD_P
- 90_PCIE_AP_TO_BB_TXD_N
- 90_PCIE_BB_TO_AP_RXD_P
- 90_PCIE_BB_TO_AP_RXD_N
- PCIE_AP_TO_BB_RESET_L
- PCIE_BB_BI_AP_CLKREQ_L
- BB_TO_PMU_PCIE_HOST_WAKE_L
- AP_TO_BB_DEVICE_WAKE

UART

- UART_AP_TO_BB_TXD_K
- UART_BB_TO_AP_RXD_K

AOP

- UART_AOP_TO_BB_TXD
- UART_BB_TO_AOP_RXD

AUDIO

- I2S_BB_TO_AP_BCLK
- I2S_BB_TO_AP_LRCLK
- I2S_AP_TO_BB_DOUT
- I2S_BB_TO_AP_DIN

WLAN

- UART_BB_TO_WLAN_COEX
- UART_WLAN_TO_BB_COEX

NFC

- NFC_SWP1
- NFC_TO_BB_CLK_REQ
- BB_TO_NFC_CLK

GNSS

- PMU_TO_GNSS_EN
- UART_AP_TO_GNSS_TXD
- UART_GNSS_TO_AP_RXD
- UART_AP_TO_GNSS_RTS_L
- UART_GNSS_TO_AP_CTS_L
- AP_TO_BB_TIME_MARK
- AP_TO_GNSS_WAKE

DEBUG

- SWD_AOP_TO_MANY_SWCLK
- SWD_AOP_BI_BB_SWDIO
- PMU_TO_BB_USB_VBUS_DETECT
- 90_USB_BB_DATA_P
- 90_USB_BB_DATA_N

ANTENNA FEEDS

- 50_LAT_WLAN
- 50_UAT_WLAN_2G_SOUTH
- 50_UAT_WLAN_5G_SOUTH

RADIO_MLB

DRAWING TITLE	SCH,MLB,BOT,X893
Apple Inc.	DRAWING NUMBER 051-02247 · SIZE D
	REVISION 7.0.0
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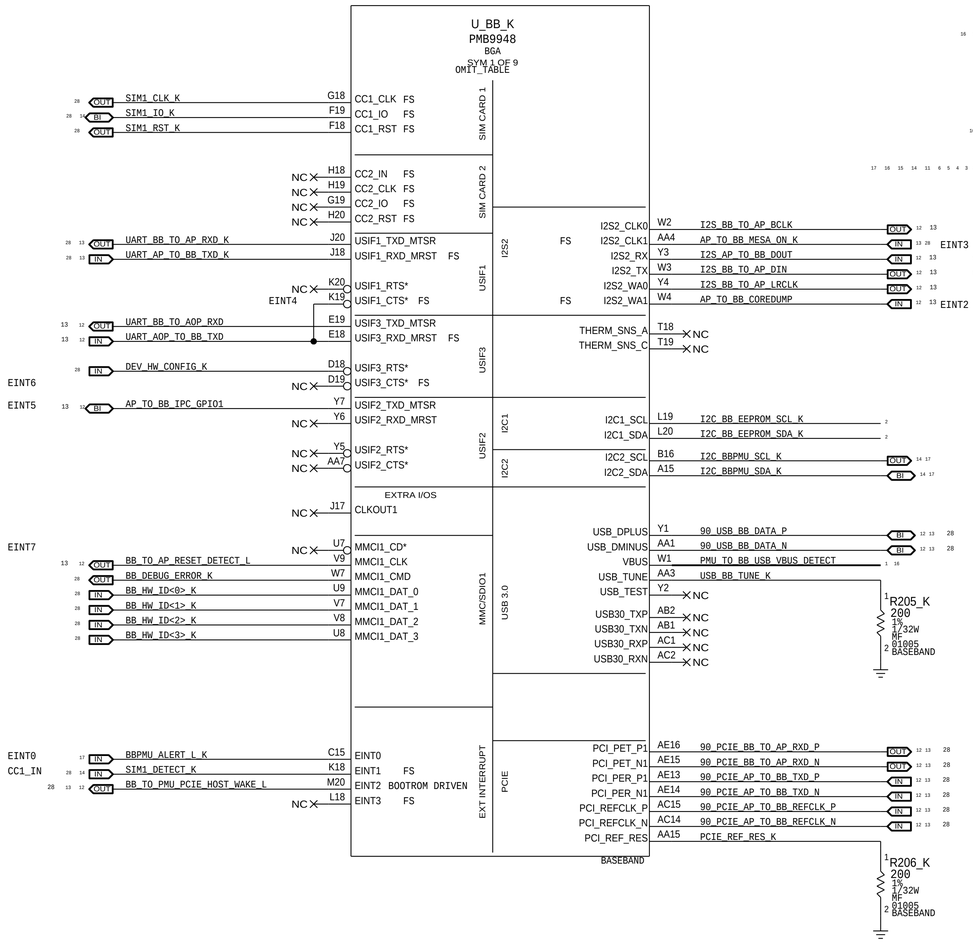
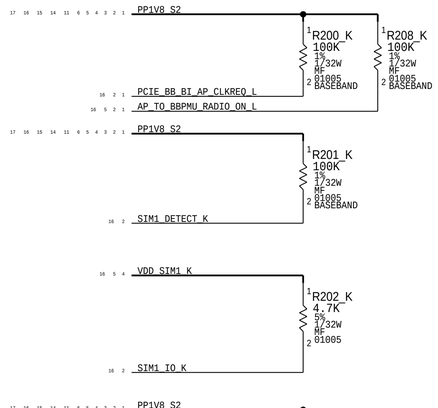
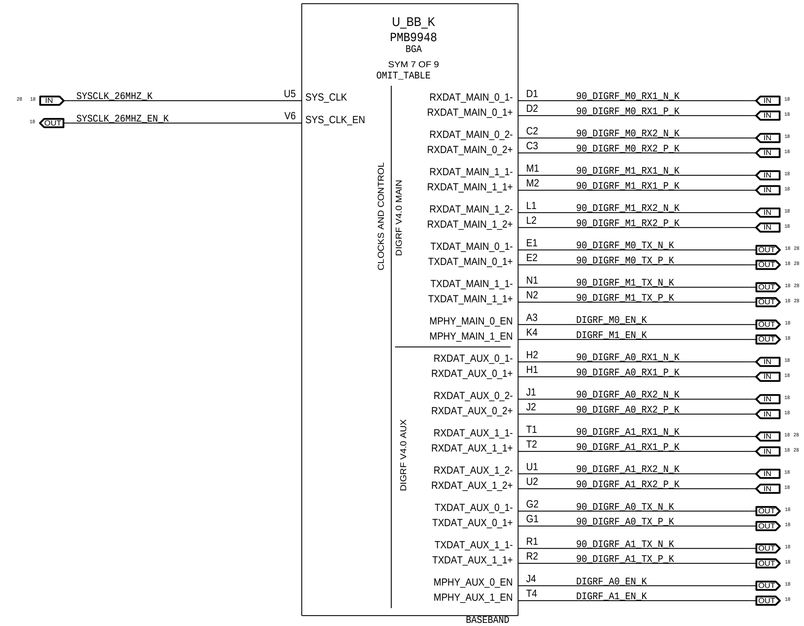
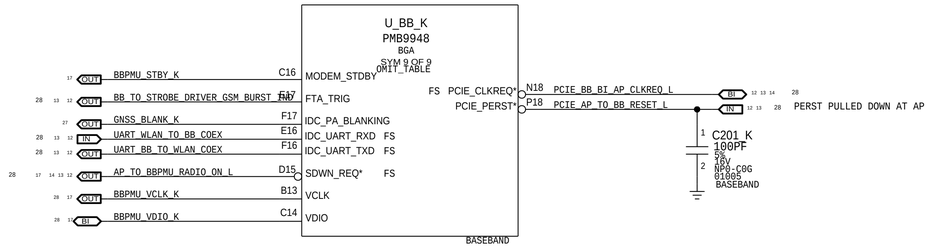
	SHEET 13 OF 34

BASEBAND

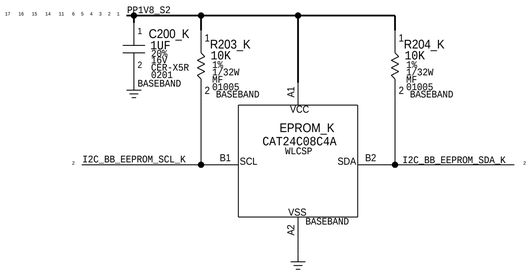








BB EEPROM



CONFIDENTIAL AND PROPRIETARY APPLE SYSTEM DESIGN. FOR REFERENCE PURPOSE ONLY - NOT A CHANGE REQUEST

PAGE TITLE: BASEBAND

Apple Inc.

DRAWING NUMBER: 051-02247 | SIZE: D
REVISION: 7.0.0
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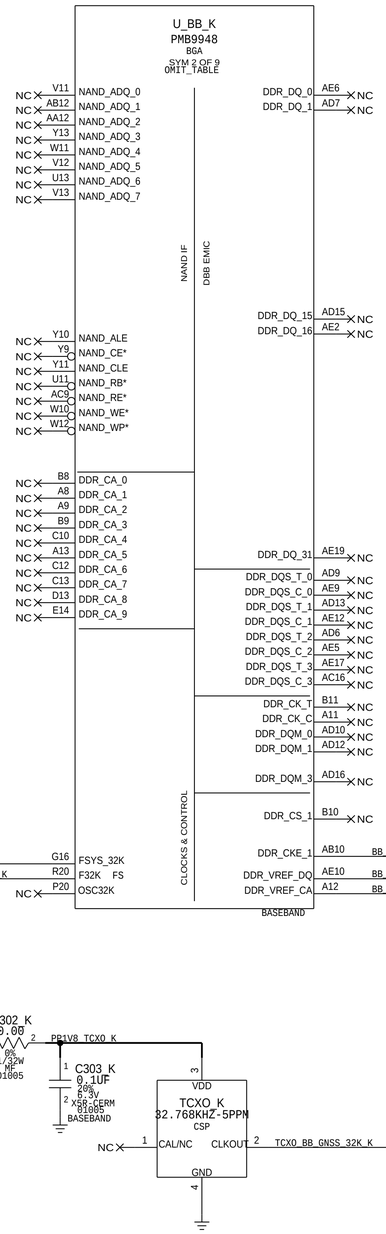
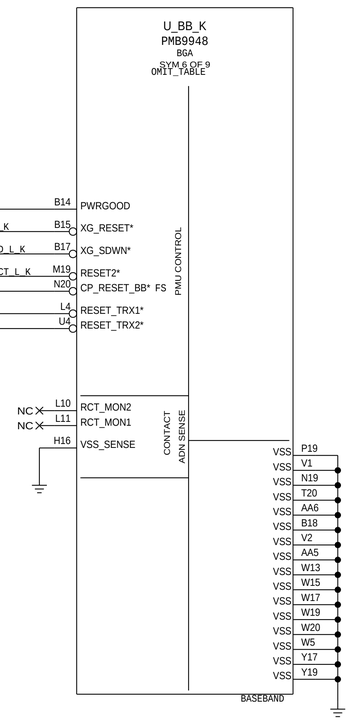
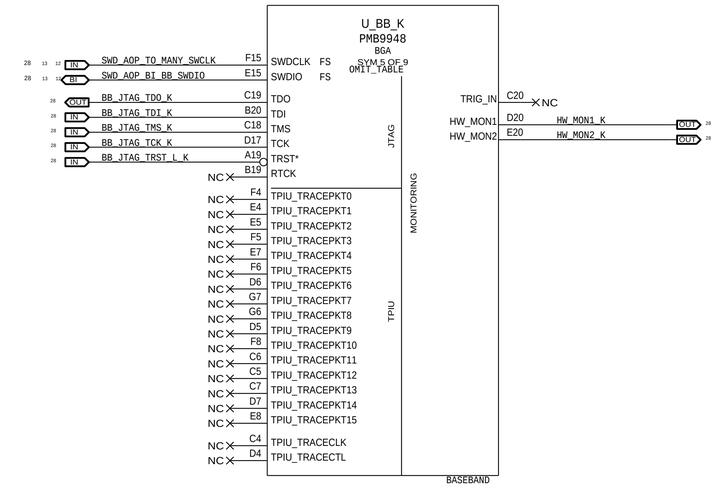
BASEBAND MEMORY/DEBUG







CONFIDENTIAL AND PROPRIETARY APPLE SYSTEM DESIGN. FOR REFERENCE PURPOSE ONLY - NOT A CHANGE REQUEST

PAGE TITLE	BASEBAND MEMORY/DEBUG
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	REVISION 7.0.0
	BRANCH evt-1
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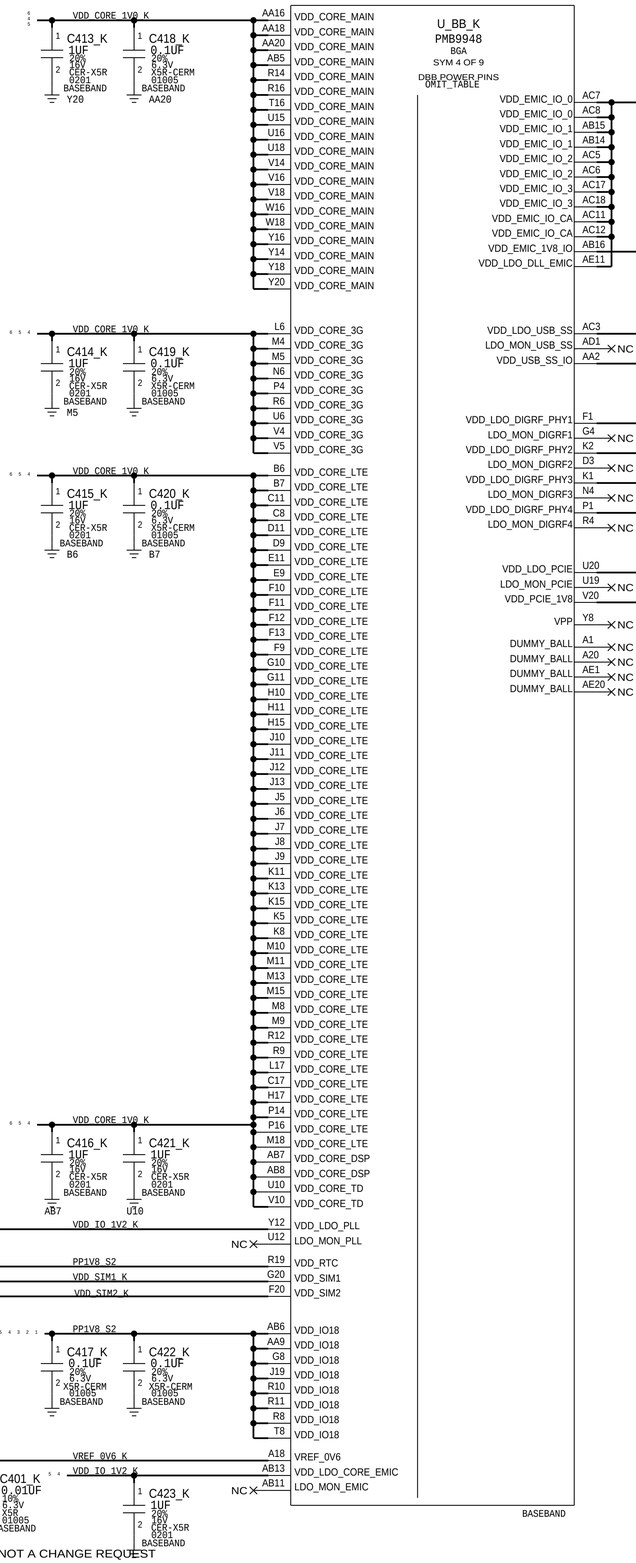
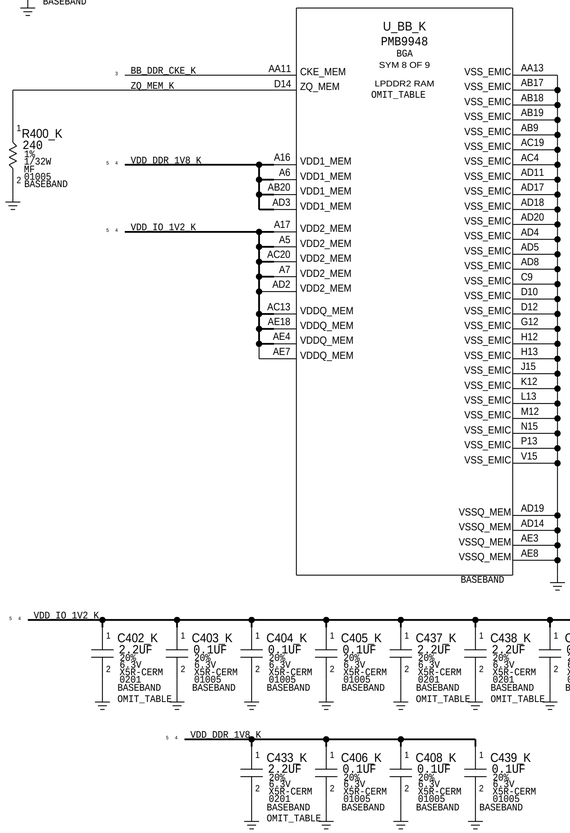
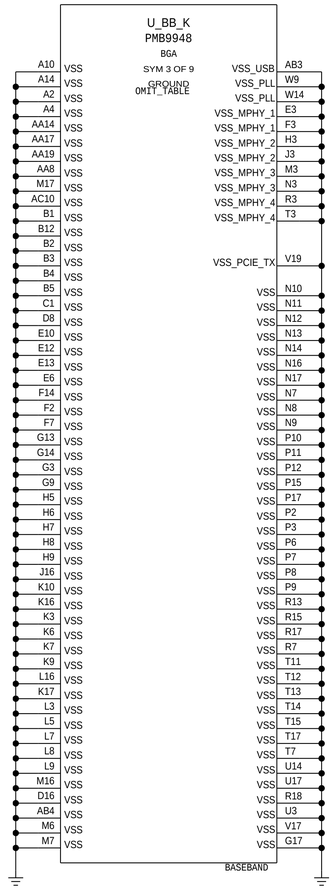
BASEBAND POWER







PAGE TITLE	BASEBAND POWER
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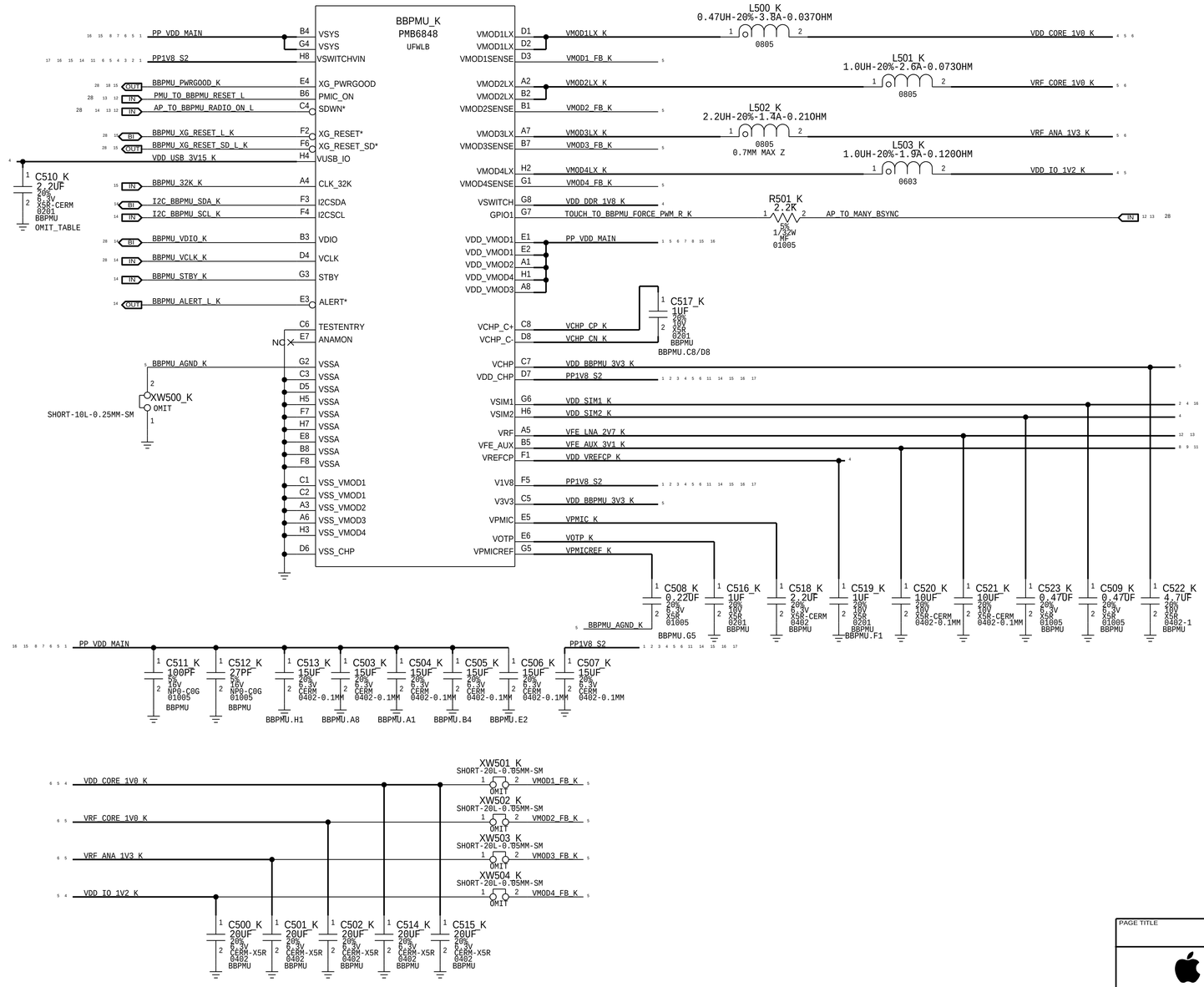
Apple Inc.

BASEBAND PMIC



CONFIDENTIAL AND PROPRIETARY APPLE SYSTEM DESIGN. FOR REFERENCE PURPOSE ONLY - NOT A CHANGE REQUEST

PAGE TITLE: BASEBAND PMIC

Apple Inc.

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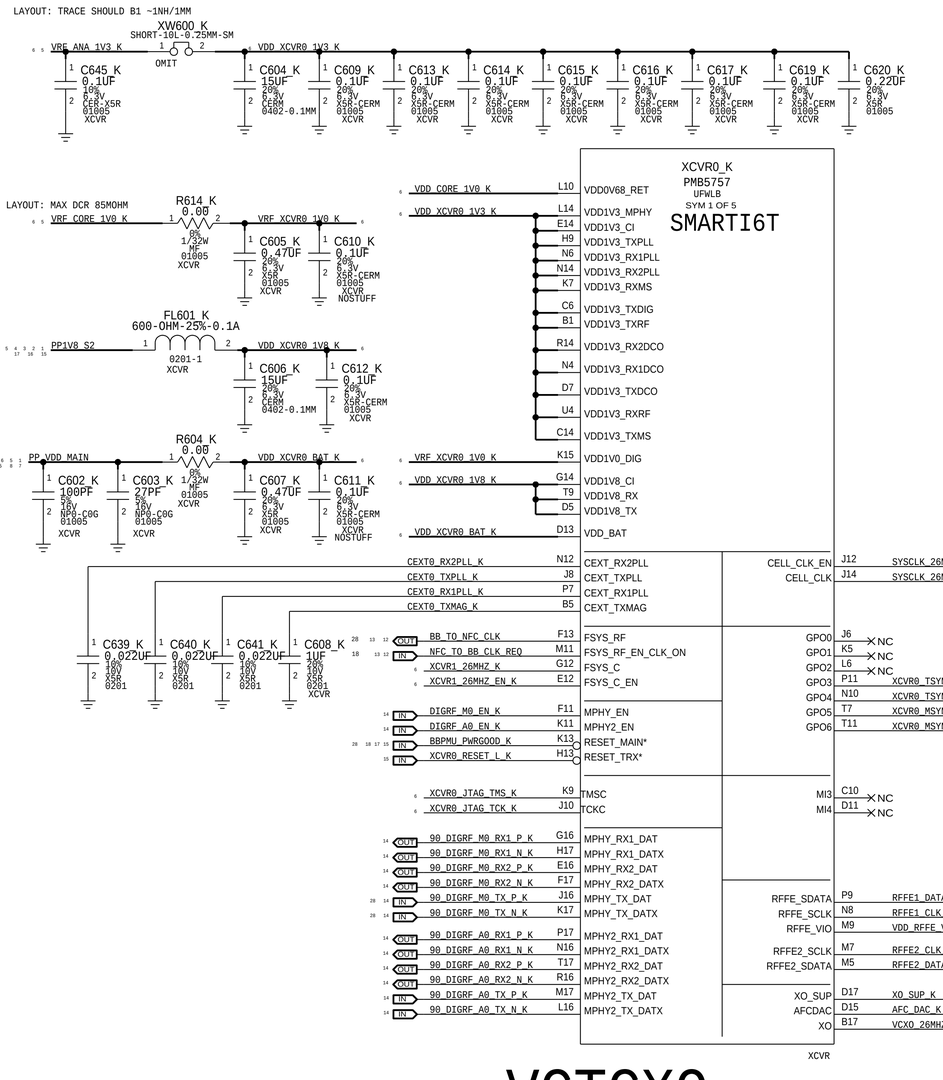
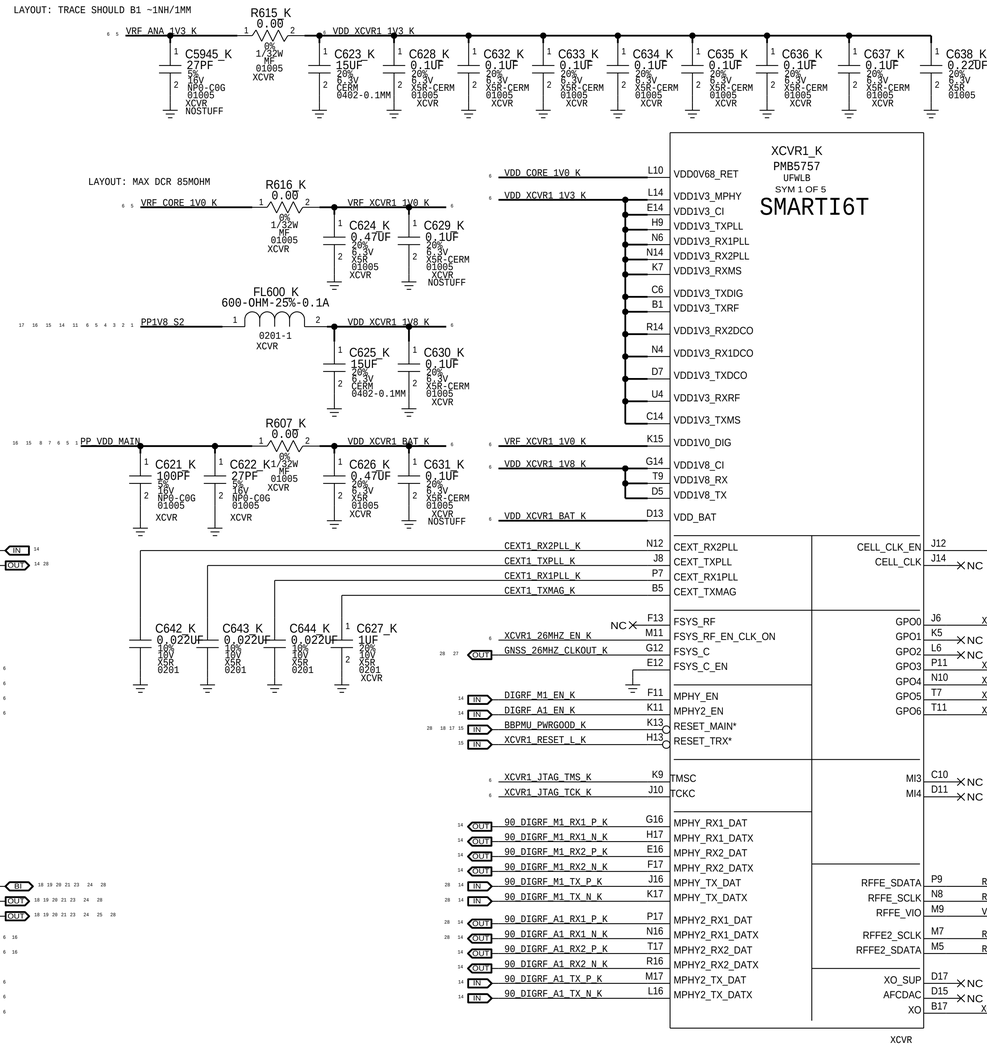
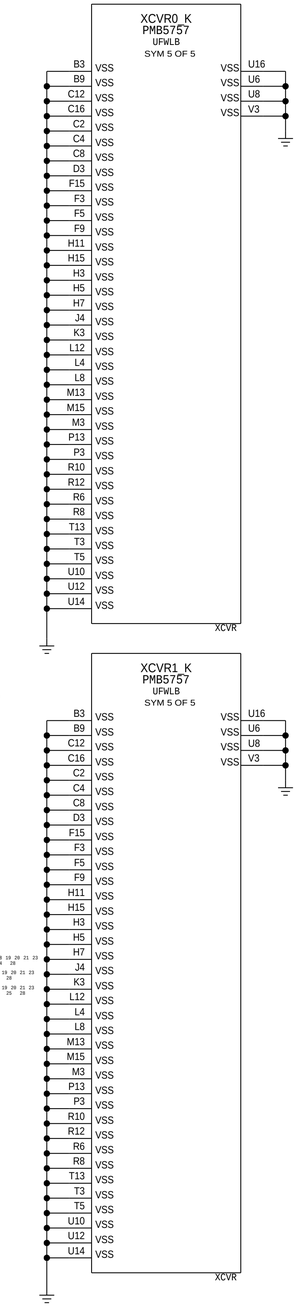
TRANSCEIVERS







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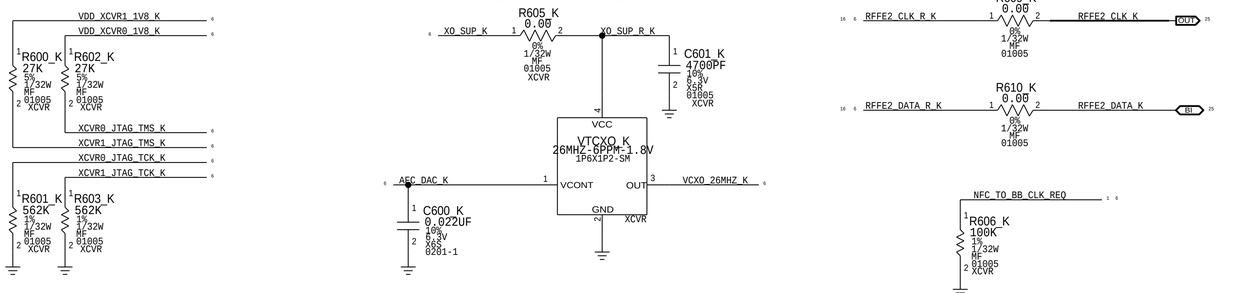

NOTE: GNSS_CLK REQUESTED WITH AT@CMD

PAGE TITLE: TRANSCEIVERS

Apple Inc.

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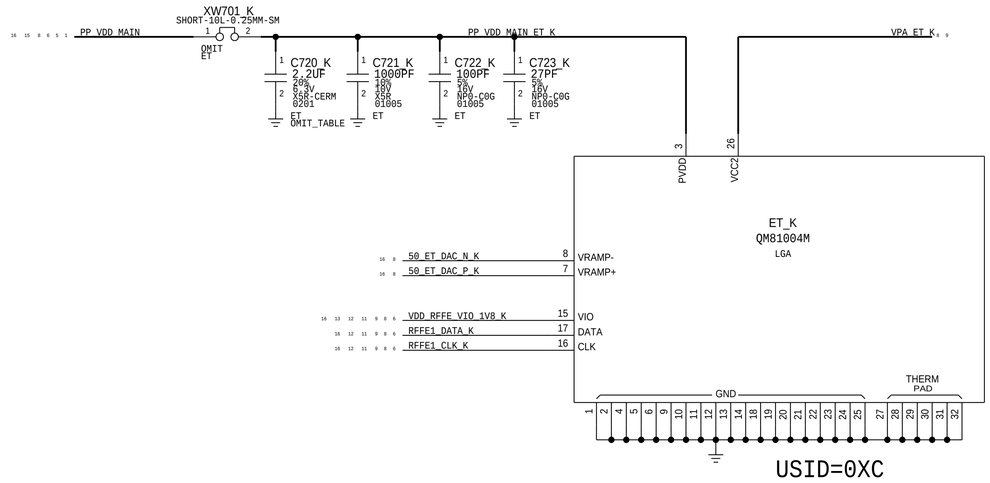
ET MODULATOR

ALPES II MODULE



PAGE TITLE: ET MODULATOR

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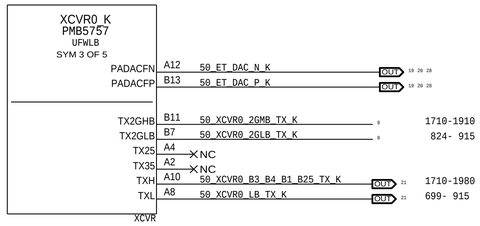
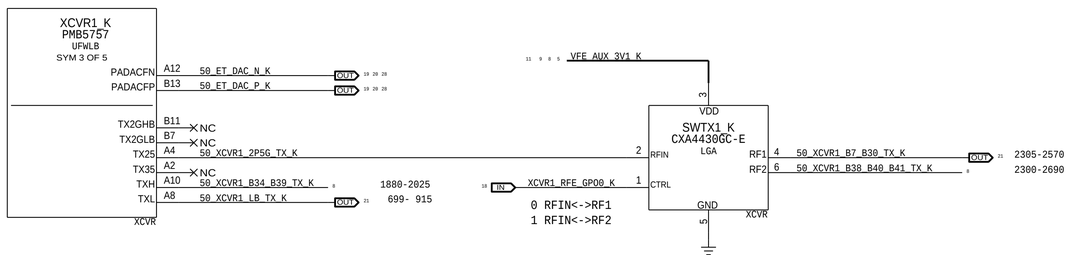
TDD TRANSMIT

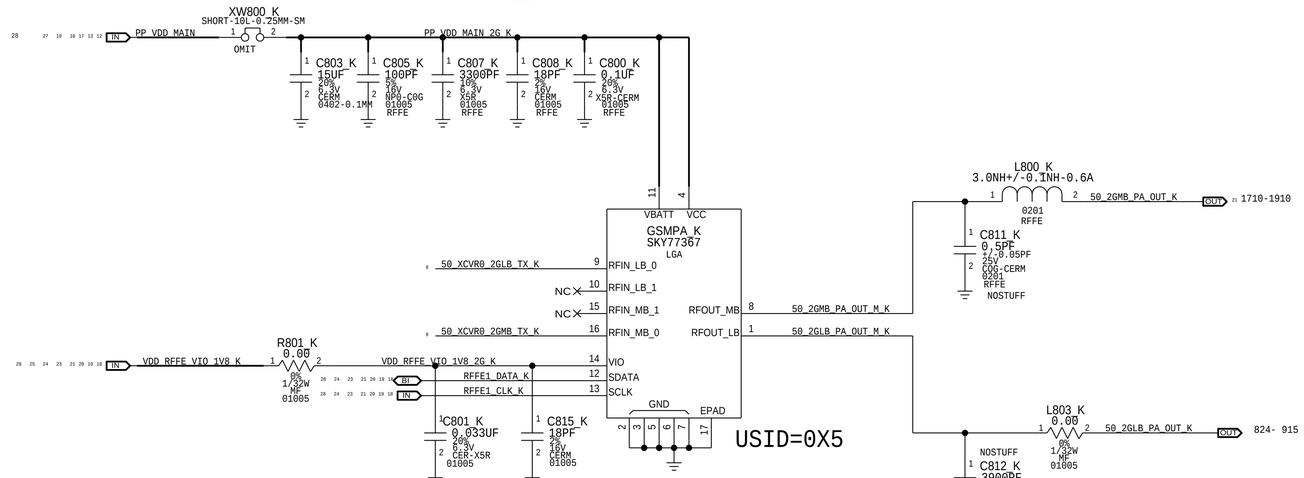
XCVR0 TX



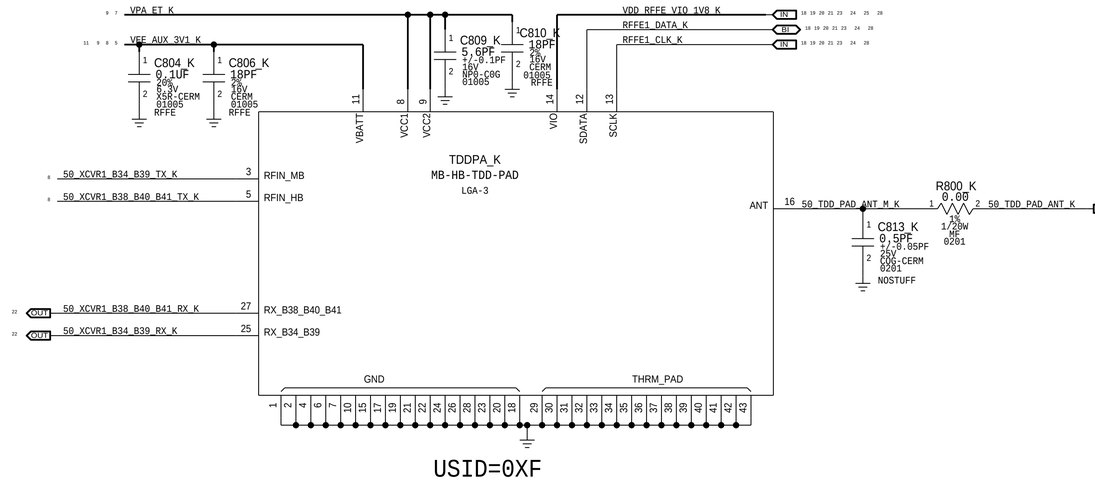
XCVR1 TX



2G PA



MB HB TDD S-PAD



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PAGE TITLE: TDD TRANSMIT

Apple Inc.

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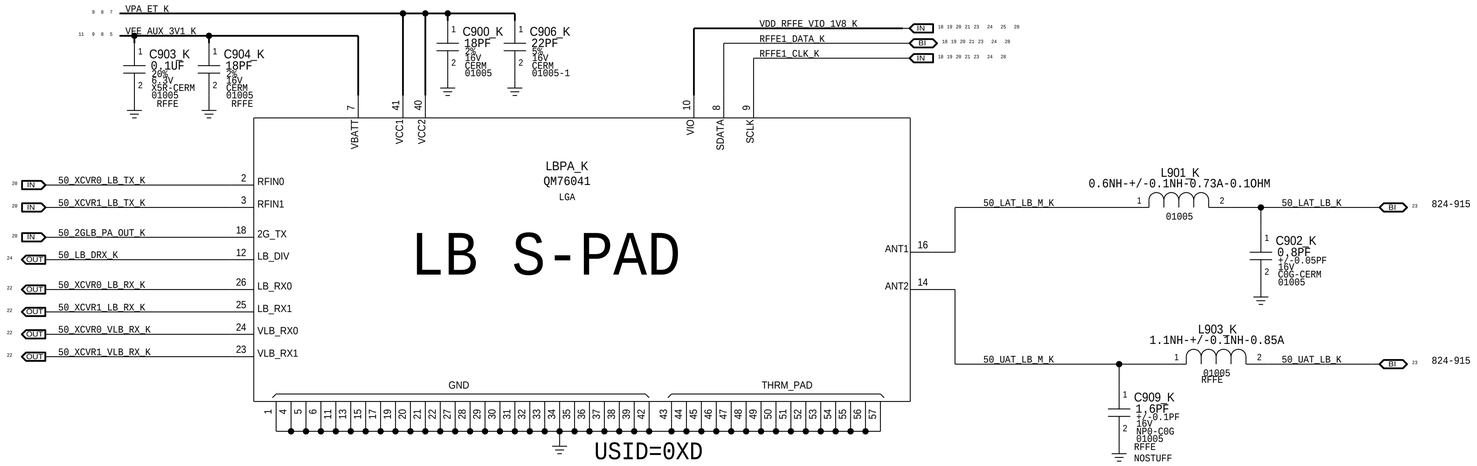
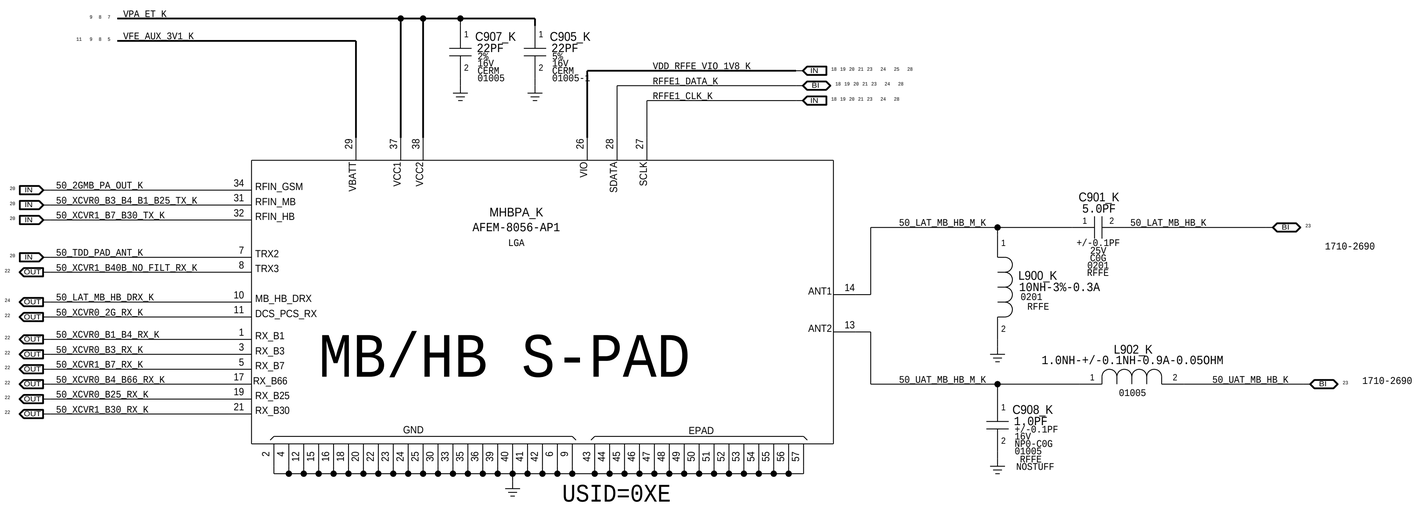
FDD TRANSMIT





PAGE TITLE: FDD TRANSMIT

Apple Inc.

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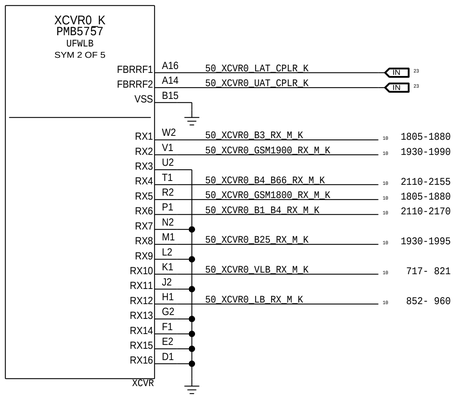
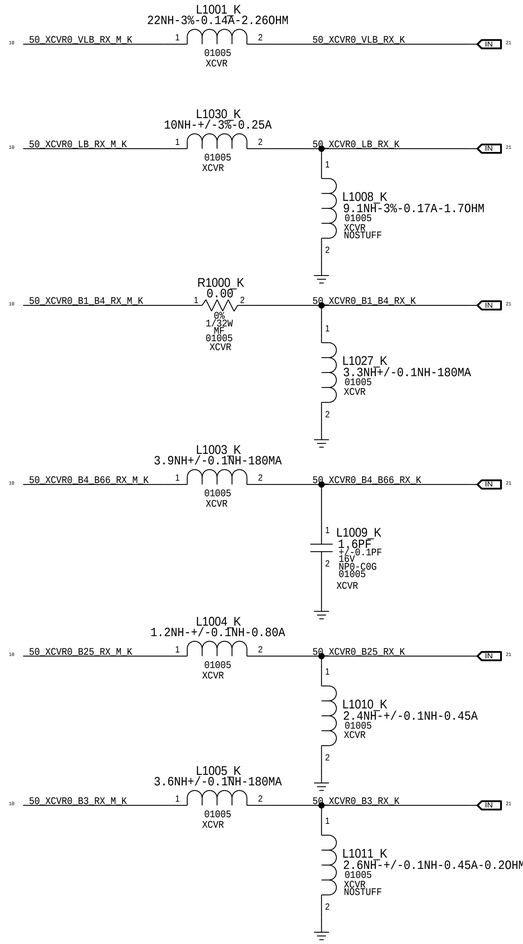
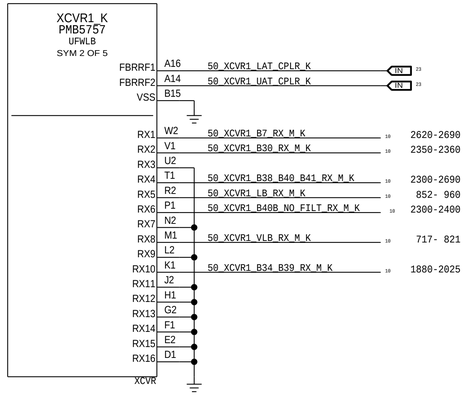
PRIMARY RECIEVE

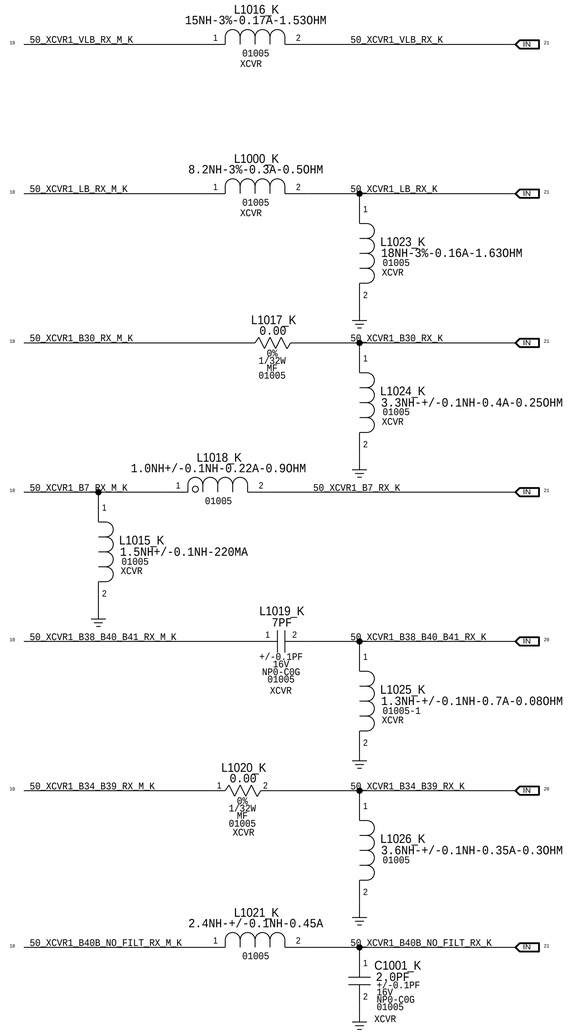
XCVR0 PRX

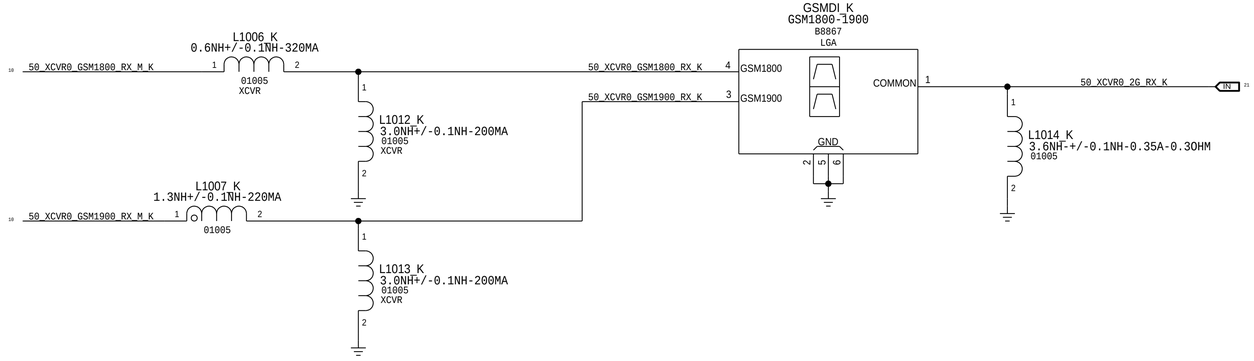




XCVR1 PRX







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PAGE TITLE: PRIMARY RECEIVE

Apple Inc.

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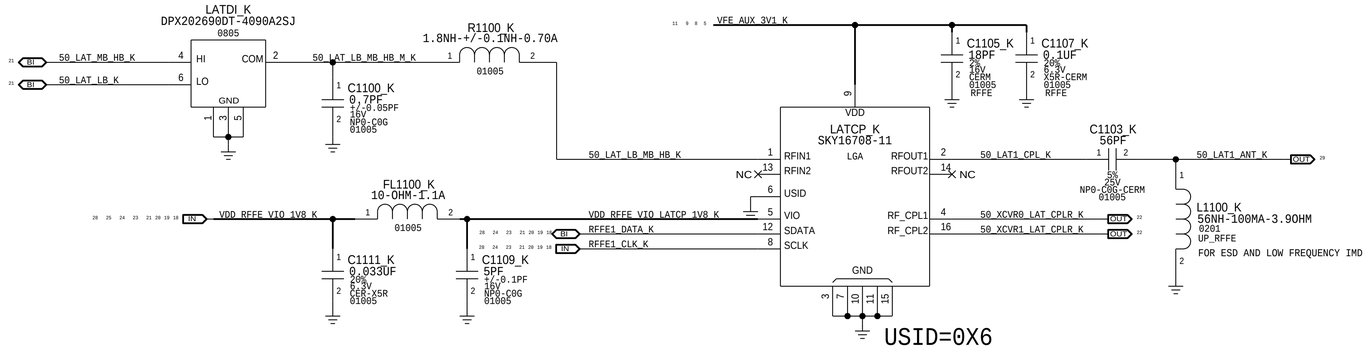
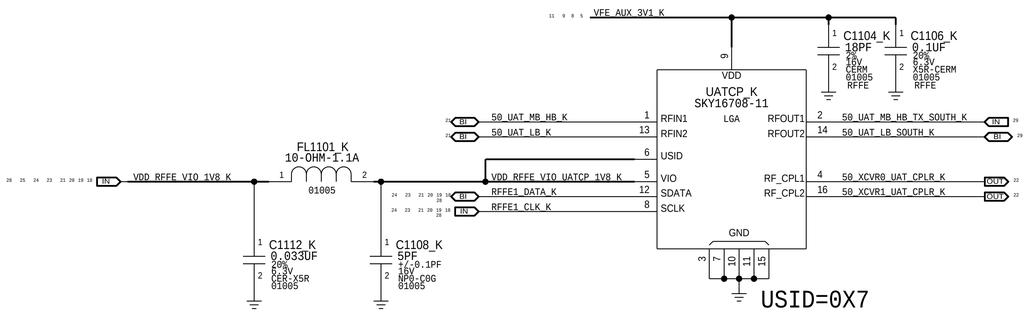
LOWER ANTENNA AND COUPLER

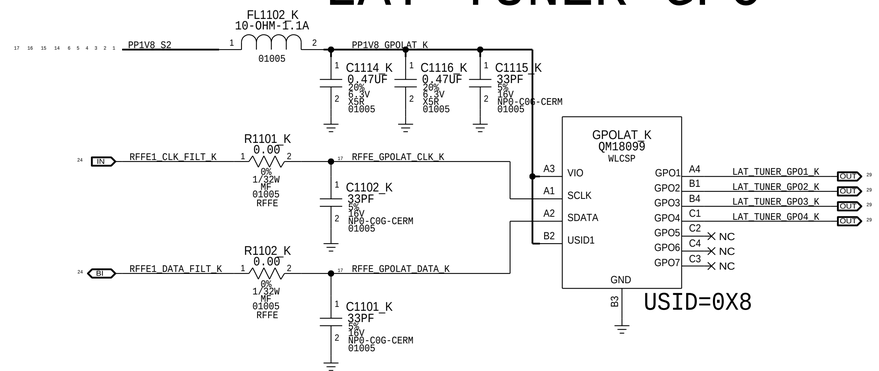
LOWER ANTENNA COUPLER



UPPER ANTENNA COUPLER



LAT TUNER GPO



PAGE TITLE: LOWER ANTENNA & COUPLERS

Apple Inc.

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BRANCH: evt-1
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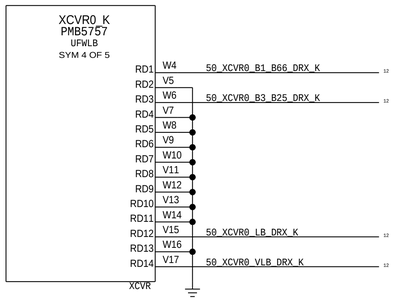
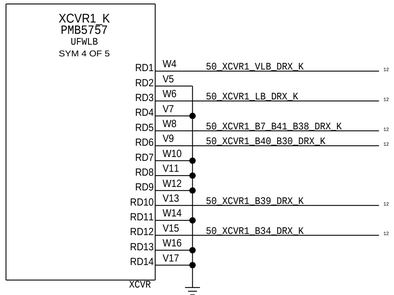
DIVERSITY RECEIVE ASM'S

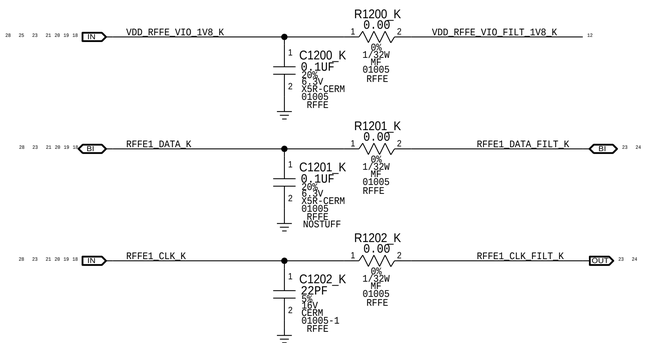
XCVR0 DRX



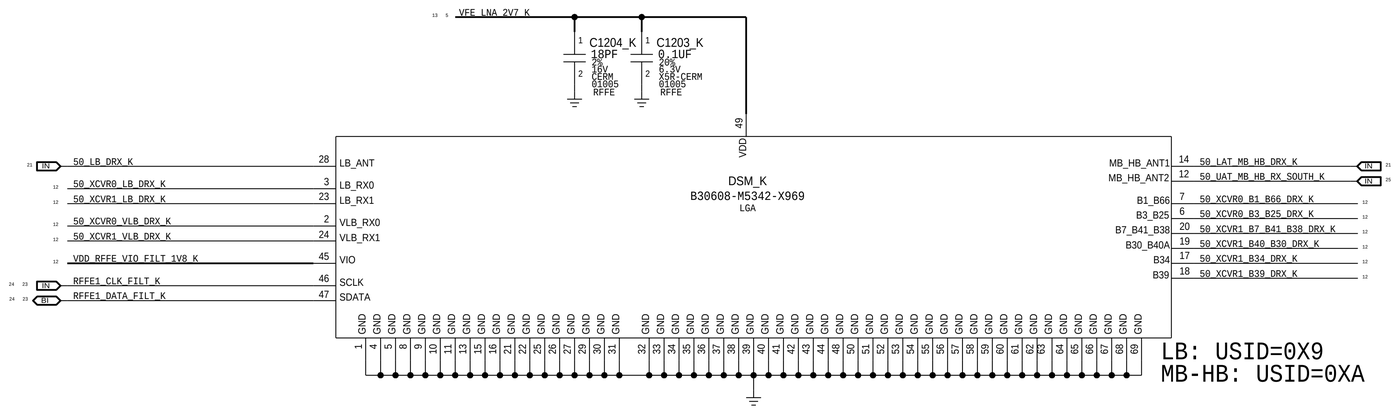
XCVR1 DRX



RFFE FILTERING



DRX DSM



LB: USID=0X9
MB-HB: USID=0XA

PAGE TITLE: DIVERSITY RECEIVE ASM'S

Apple Inc.

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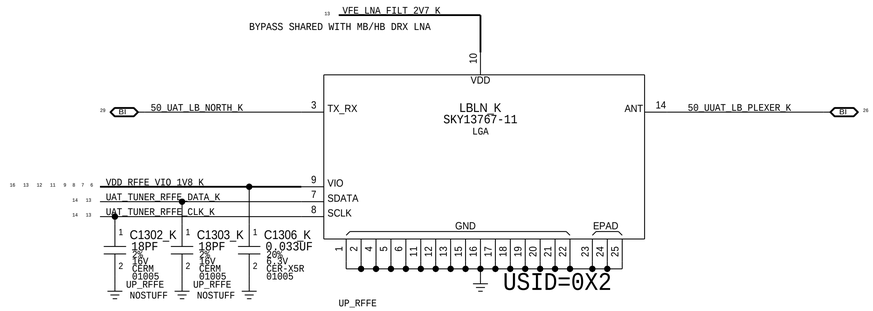
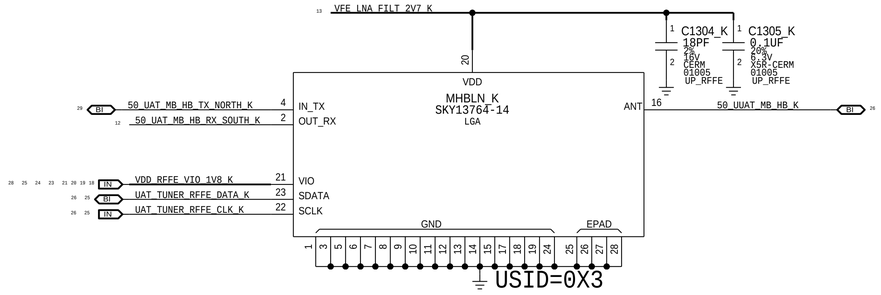
DIVERSITY RECEIVE LNAS

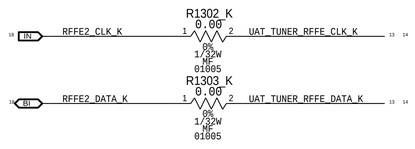
LB DRX LNA



MB/HB DRX LNA



RFFE2 IMPEDANCE MATCHING



PAGE TITLE: DIVERSITY RECEIVE LNA'S

Apple Inc.

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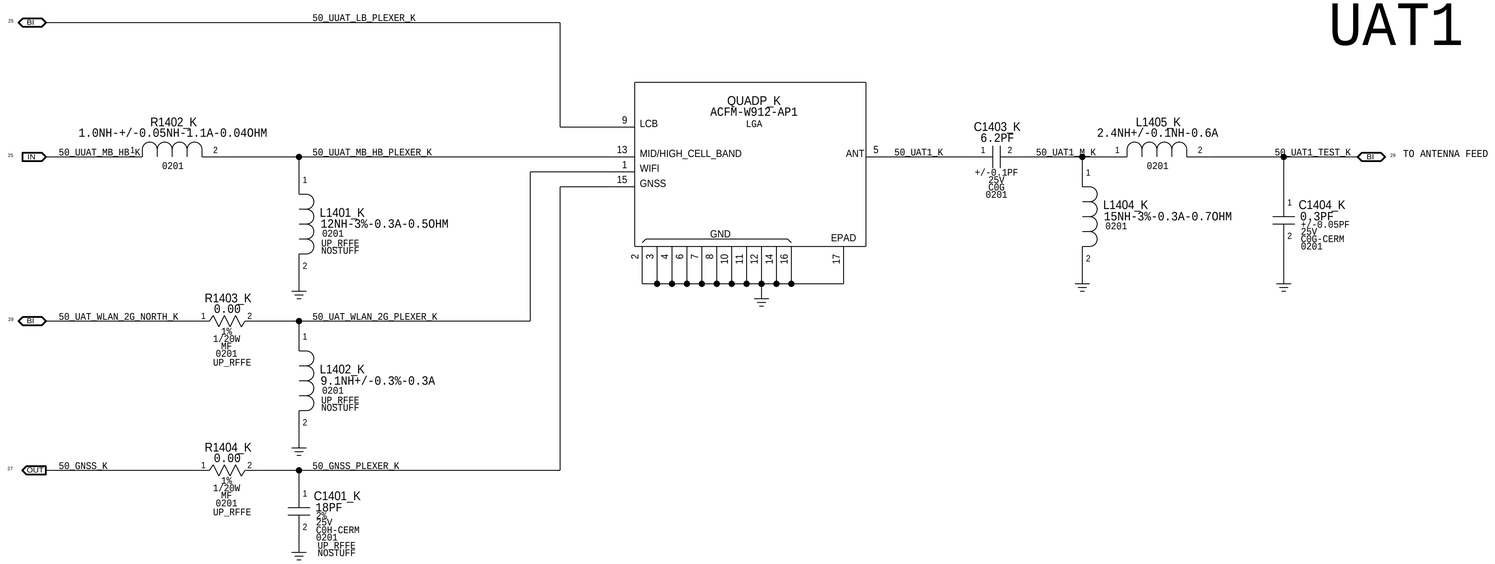
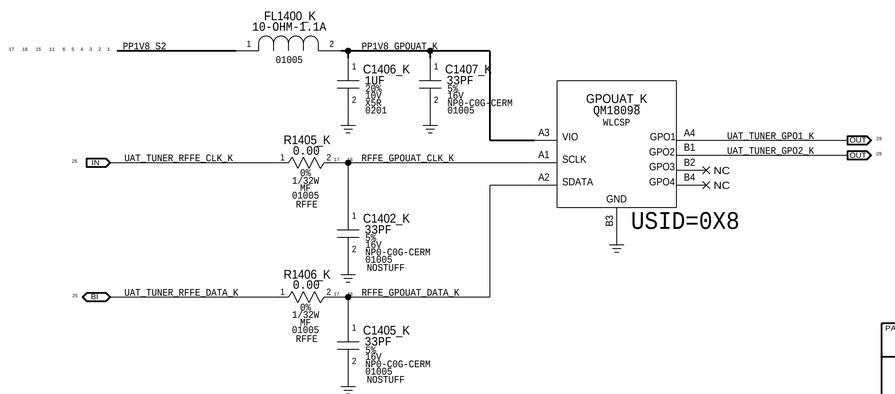
UPPER ANTENNA FEEDS

UAT1



UAT TUNER GPO



PAGE TITLE: UPPER ANTENNA FEEDS

Apple Inc.

DRAWING NUMBER: 051-02247 | SIZE: D

REVISION: 7.0.0

BRANCH: evt-1

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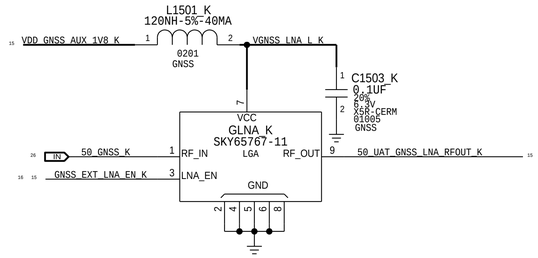
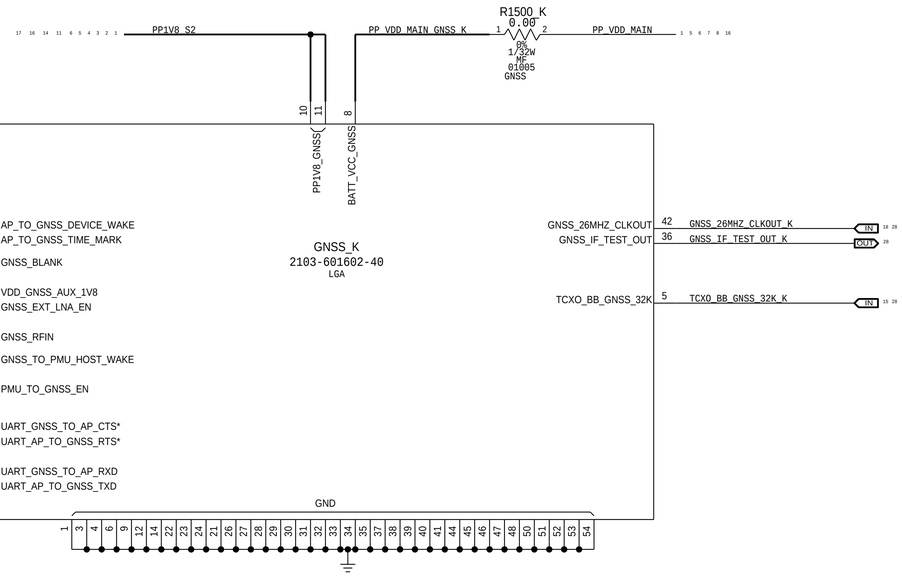
GNSS LNA + RECEIVER





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PAGE TITLE: GNSS

Apple Inc.

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MLB TEST POINTS

BASEBAND

PP1600_K P2MM-NSM SM 1 AP_TO_BBPMU_RADIO_ON_L OMIT
PP1601_K P2MM-NSM SM 1 BBPMU_PWRGOOD_K OMIT
PP1602_K P2MM-NSM SM 1 BBPMU_XG_RESET_L_K OMIT
PP1603_K P2MM-NSM SM 1 BBPMU_XG_RESET_SD_L_K OMIT
PP1604_K P2MM-NSM SM 1 TCXO_BB_GNSS_32K_K OMIT
PP1605_K P2MM-NSM SM 1 BB_DEBUG_ERROR_K OMIT
PP1606_K P2MM-NSM SM 1 AP_TO_BB_MESA_ON_K OMIT
PP1607_K P2MM-NSM SM 1 BB_TO_STROBE_DRIVER_GSM_BURST_IND OMIT
PP1640_K P2MM-NSM SM 1 BB_TO_AP_RESET_ACT_L_K OMIT

RFFE

PP1648_K P2MM-NSM SM 1 VDD_RFFE_VIO_1V8_K OMIT
PP1649_K P2MM-NSM SM 1 RFFE1_CLK_K OMIT
PP1650_K P2MM-NSM SM 1 RFFE1_DATA_K OMIT
PLACE NEAR LBPA/MHBPA
PP1653_K P2MM-NSM SM 1 RFFE1_CLK_K OMIT
PP1654_K P2MM-NSM SM 1 RFFE1_DATA_K OMIT
PLACE NEAR XCVR0
PP1651_K P2MM-NSM SM 1 RFFE2_CLK_R_K OMIT
PP1652_K P2MM-NSM SM 1 RFFE2_DATA_R_K OMIT
PLACE NEAR XCVR1
PP1655_K P2MM-NSM SM 1 RFFE_GPOUAT_CLK_K OMIT
PP1656_K P2MM-NSM SM 1 RFFE_GPOUAT_DATA_K OMIT

XCVR

PP1615_K P2MM-NSM SM 1 SYSCLK_26MHZ_K OMIT
PP1657_K P2MM-NSM SM 1 BB_TO_NFC_CLK OMIT
PP1658_K P2MM-NSM SM 1 GNSS_26MHZ_CLKOUT_K OMIT

ETIC

PP1616_K P2MM-NSM SM 1 50_ET_DAC_P_K OMIT
PP1617_K P2MM-NSM SM 1 50_ET_DAC_N_K OMIT

BBPMU

PP1627_K P2MM-NSM SM 1 BBPMU_VCLK_K OMIT
PP1628_K P2MM-NSM SM 1 BBPMU_VDIO_K OMIT
PP1608_K P2MM-NSM SM 1 AP_TO_MANY_BSYNC OMIT

PCIE

PP1641_K P2MM-NSM SM 1 90_PCIE_AP_TO_BB_REFCLK_P OMIT
PP1642_K P2MM-NSM SM 1 90_PCIE_AP_TO_BB_REFCLK_N OMIT
PP1609_K P2MM-NSM SM 1 90_PCIE_AP_TO_BB_TXD_P OMIT
PP1610_K P2MM-NSM SM 1 90_PCIE_AP_TO_BB_TXD_N OMIT
PP1635_K P2MM-NSM SM 1 90_PCIE_BB_TO_AP_RXD_P OMIT
PP1611_K P2MM-NSM SM 1 90_PCIE_BB_TO_AP_RXD_N OMIT
PP1612_K P2MM-NSM SM 1 PCIE_AP_TO_BB_RESET_L OMIT
PP1613_K P2MM-NSM SM 1 PCIE_BB_BI_AP_CLKREQ_L OMIT
PP1614_K P2MM-NSM SM 1 BB_TO_PMU_PCIE_HOST_WAKE_L OMIT

GNSS

PP1618_K P2MM-NSM SM 1 GNSS_EXT_LNA_EN_K OMIT
PP1619_K P2MM-NSM SM 1 PMU_TO_GNSS_EN OMIT
PP1620_K P2MM-NSM SM 1 UART_GNSS_TO_AP_RXD OMIT
PP1621_K P2MM-NSM SM 1 UART_AP_TO_GNSS_TXD OMIT
PP1622_K P2MM-NSM SM 1 UART_GNSS_TO_AP_CTS_L OMIT
PP1623_K P2MM-NSM SM 1 UART_AP_TO_GNSS_RTS_L OMIT
PP1624_K P2MM-NSM SM 1 AP_TO_BB_TIME_MARK OMIT
PP1625_K P2MM-NSM SM 1 GNSS_IF_TEST_OUT_K OMIT

DIGRF

PP1629_K P2MM-NSM SM 1 90_DIGRF_M1_TX_P_K OMIT
PP1630_K P2MM-NSM SM 1 90_DIGRF_M1_TX_N_K OMIT
PP1631_K P2MM-NSM SM 1 90_DIGRF_A1_RX1_P_K OMIT
PP1632_K P2MM-NSM SM 1 90_DIGRF_A1_RX1_N_K OMIT
PP1646_K P2MM-NSM SM 1 90_DIGRF_M0_TX_P_K OMIT
PP1647_K P2MM-NSM SM 1 90_DIGRF_M0_TX_N_K OMIT

BB UART

PP1643_K P2MM-NSM SM 1 UART_BB_TO_AP_RXD_K OMIT

PP1660_K P2MM-NSM SM 1 SWD_AOP_TO_MANY_SWCLK OMIT
PP1661_K P2MM-NSM SM 1 SWD_AOP_BI_BB_SWDIO OMIT

PCIE GND

PP1633_K P2MM-NSM SM 1 OMIT
PP1634_K P2MM-NSM SM 1 OMIT

SIM CARD CONNECTOR

J_SIM_K SIMCARD-BEACH-D22 F-RT-SM
SIM_DETECT_SPG, CLK, RESET, VCC, SIM_DETECT, IO, SWP, GND
SIM1_CLK_R_K, SIM1_RST_R_K, VDD_SIM1_K
C1601_K 2.2UF 20% 6.3V X5R-CERM 0201 SIM OMIT_TABLE
DZ1605_K 12V-33PF 01005-1 SIM
DZ1600_K 5.5V-6.2PF 0201 SIM
C1600_K 100PF 5% 16V NP0-C0G 01005 BASEBAND
SIM1_IO_R_K, SIM1_CLK_R_K, SIM1_RST_R_K, SIM1_SWP_R_K
DZ1606_K SG-WLL-2-2 ESD202-B1-CSP01005
DZ1608_K SG-WLL-2-2 ESD202-B1-CSP01005
DZ1607_K SG-WLL-2-2 ESD202-B1-CSP01005
DZ1609_K SG-WLL-2-2 ESD202-B1-CSP01005
R1613_K 10 5% 1/32W MF 01005 SIM1_IO_R_K
R1614_K 10 5% 1/32W MF 01005 SIM1_CLK_R_K
R1615_K 10 5% 1/32W MF 01005 SIM1_RST_R_K
R1616_K 10 5% 1/32W MF 01005 NFC_SWP1 SIM1_SWP_R_K
R1617_K 10 5% 1/32W MF 01005 SIM1_DETECT_K SIM1_DETECT_R_K

HARDWARE ID

PP1V8_S2
R1611_K 1.00K 1% 1/32W MF 01005 BASEBAND OMIT
R1600_K 1.00K 1% 1/32W MF 01005 BASEBAND OMIT
R1602_K 1.00K 1% 1/32W MF 01005 BASEBAND
R1605_K 1.00K 1% 1/32W MF 01005 BASEBAND
R1612_K 1.00K 1% 1/32W MF 01005 BASEBAND
R1601_K 1.00K 1% 1/32W MF 01005 BASEBAND
R1603_K 1.00K 1% 1/32W MF 01005 BASEBAND OMIT
R1606_K 1.00K 1% 1/32W MF 01005 BASEBAND OMIT
BB_HW_ID<0>_K, BB_HW_ID<1>_K, BB_HW_ID<2>_K, BB_HW_ID<3>_K

HARDWARE	HW_ID<3:0>
ICE17.2 RF DEV1	0 0 0 Z
ICE17.2 RF DEV2	0 0 Z 0
RESERVED	0 0 Z Z
RESERVED	0 Z 0 0
RESERVED	0 Z 0 Z
ICE17.2 PROTO1	0 0 0 0
ICE17.2 PROTO2	0 0 0 1
ICE17.2 PROTO3	0 0 1 0
ICE17.2 EVT	0 0 1 1
RESERVED	0 1 0 0

DEV CONFIG

PP1V8_S2
R1608_K 1.00K 1% 1/32W MF 01005 BASEBAND NOSTUFF
R1609_K 1.00K 1% 1/32W MF 01005 BASEBAND NOSTUFF
DEV_HW_CONFIG_K

HW_CONFIG	DEV_HW_CONFIG
RESERVED	Z
RESERVED	0
RESERVED	1

BOOTCFG

PP1V8_S2
R1604_K 1.00K 1% 1/32W MF 01005 BASEBAND
R1607_K 1.00K 1% 1/32W MF 01005 BASEBAND
HW_MON1_K, HW_MON2_K

	HW_MON1	HW_MON2	TRIG_IN
NAND	0	0	1
FLASHLESS	1	0	1
FLASHLESS WDOG DIS	1	1	0
NAND	1	1	1

BOOTSTRAPS ARE INTERNALLY PULLED DOWN

PP1V8_S2
R1610_K 1.00K 1% 1/32W MF 01005 BASEBAND NOSTUFF
PCIE_AP_TO_BB_RESET_L
STUFF FOR VENDOR CONFIG ONLY

DEBUG CONNECTOR

MLB 516S1185
FLEX 516S1184

J_DEBUG_K 20-5857-036-001-829 F-ST-SM

PP_VDD_MAIN	37	38	
PMU_TO_BB_USB_VBUS_DETECT	1	2	90_USB_BB_DATA_P
NC	3	4	90_USB_BB_DATA_N
NC	5	6	VDD_SIM1_K
PMU_TO_BBPMU_RESET_L	7	8	SIM1_RST_R_K
PP1V8_S2	9	10	SIM1_CLK_R_K
BB_JTAG_TDO_K	11	12	SIM1_IO_R_K
BB_JTAG_TDI_K	13	14	SIM1_SWP_R_K
BB_JTAG_TRST_L_K	15	16	SIM1_DETECT_R_K
AP_TO_BB_RESET_L	17	18	NC
BB_JTAG_TCK_K	19	20	NC
BB_JTAG_TMS_K	21	22	NC
SELECT	23	24	NC
NC	25	26	NC
UART_BB_TO_AP_RXD_K	27	28	NC
UART_AP_TO_BB_TXD_K	29	30	NC BB_JTAG_RESET_L
PP_VDD_BOOST	31	32	UART_BB_TO_WLAN_COEX
NC	33	34	UART_WLAN_TO_BB_COEX
NC	35	36	NC
	39	40	
	42		NOSTUFF

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PAGE TITLE: TEST POINTS & SIM

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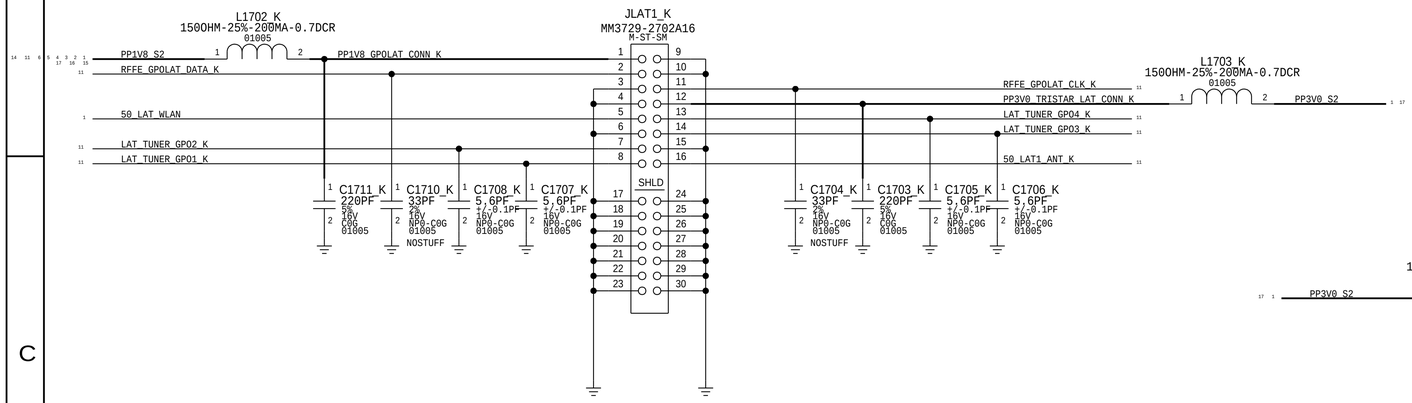
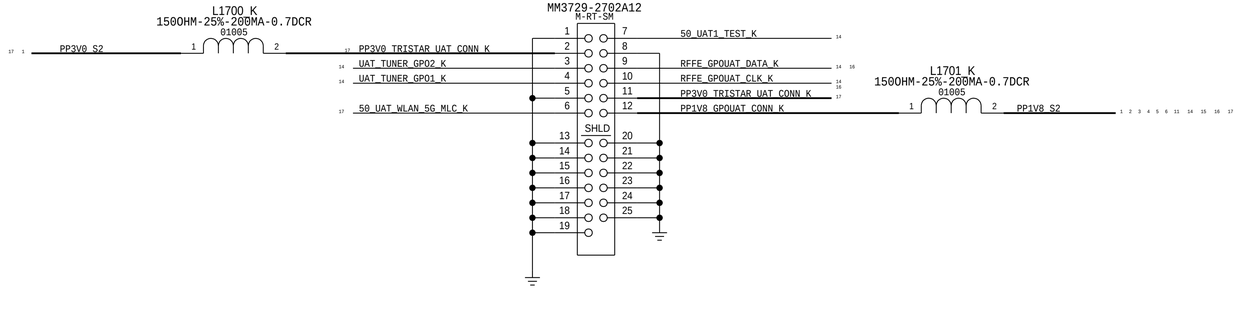
RF CONNECTORS AND METROCIRC

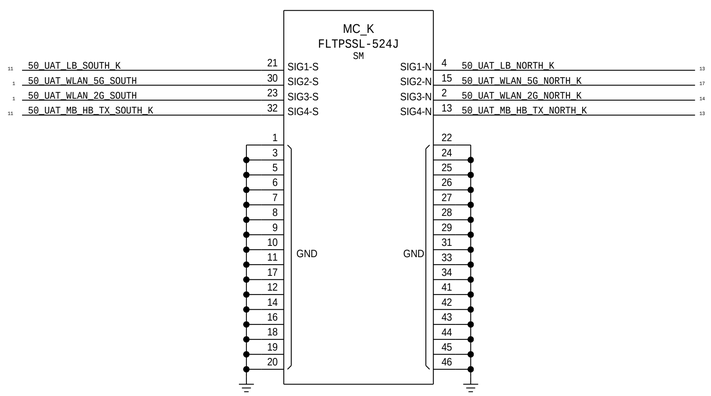
LAT MLC

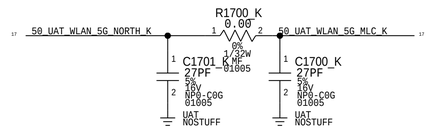


UAT1 MLC



4-IN-1 METROCIRC CABLE





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
7	0008448938	ENGINEERING RELEASED	2017-04-11

D22/D221 WIFI_MLB (GUINNESS)
APR 03, 2017

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2	76	GUINNESS
3	77	WIFI FRONT-END

POWER
PP_VDD_MAIN
PP1V8_S2

CLOCKS
PMU_TO_WLAN_CLK32K
WLAN_TO_AP_TIME_SYNC

CONTROL
PMU_TO_WLAN_REG_ON
PMU_TO_BT_REG_ON
BT_TO_PMU_HOST_WAKE
AP_TO_BT_WAKE

WLAN PCIE
90_PCIE_AP_TO_WLAN_REFCLK_P
90_PCIE_AP_TO_WLAN_REFCLK_N
90_PCIE_AP_TO_WLAN_TXD_P
90_PCIE_AP_TO_WLAN_TXD_N
90_PCIE_WLAN_TO_AP_RXD_P
90_PCIE_WLAN_TO_AP_RXD_N
PCIE_AP_TO_WLAN_RESET_L
PCIE_WLAN_BI_AP_CLKREQ_L
WLAN_TO_PMU_HOST_WAKE
AP_TO_WLAN_DEVICE_WAKE

WLAN UART
UART_WLAN_TO_AP_RXD
UART_AP_TO_WLAN_TXD
UART_WLAN_TO_AP_CTS_L
UART_AP_TO_WLAN_RTS_L

BLUETOOTH UART
UART_AP_TO_BT_TXD
UART_BT_TO_AP_RXD
UART_AP_TO_BT_RTS_L
UART_BT_TO_AP_CTS_L

AOP
AOP_TO_WLAN_CONTEXT_A
AOP_TO_WLAN_CONTEXT_B

COEX
UART_BB_TO_WLAN_COEX
UART_WLAN_TO_BB_COEX

ANTENNA
50_UAT_WLAN_2G_SOUTH
50_UAT_WLAN_5G_SOUTH
50_LAT_WLAN

SymbolPorts

DRAWING TITLE: SCH,MLB,BOT,X893

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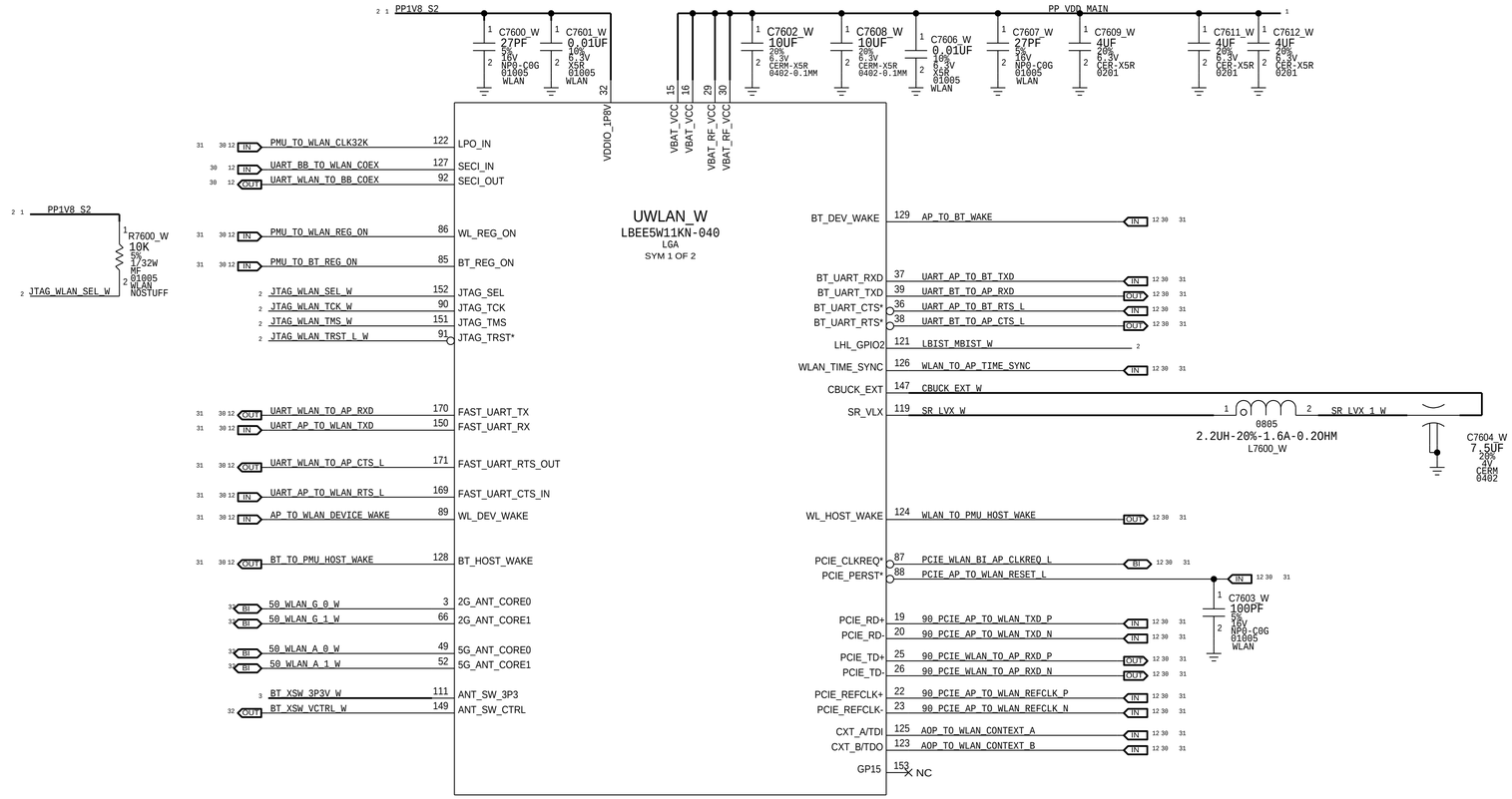
WIFI/BT



PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
998-10376	998-10147	BOM_TABLE_ALTS	UWLAN_W	USI ES6.1 WIFI MODULE

SYNC_MASTER=WIFI SYNC_DATE=01/30/2014

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Guinness

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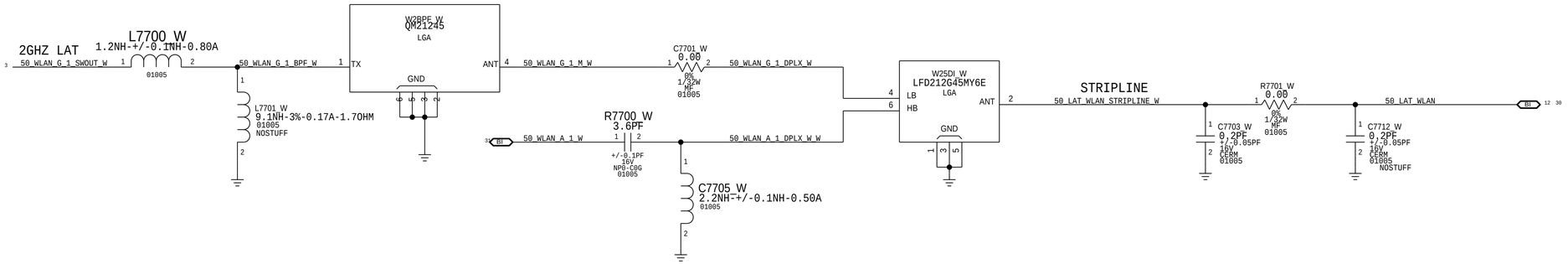
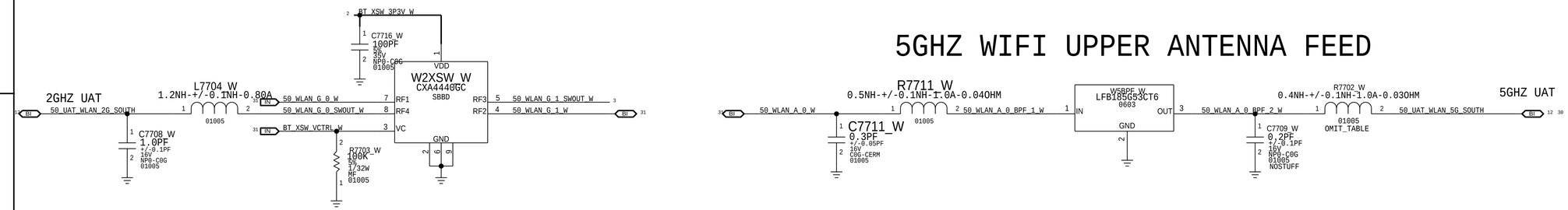
WIFI LOWER ANTENNA FEED



5GHZ WIFI UPPER ANTENNA FEED



PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
117S0161	1	5GHZ C0 BPF OUTPUT MATCH	R7702_W	CRITICAL	D221
152S00498	1	5GHZ C0 BPF OUTPUT MATCH	R7702_W	CRITICAL	ROW
152S00498	1	5GHZ C0 BPF OUTPUT MATCH	R7702_W	CRITICAL	JPN

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1. ALL RESISTANCE VALUES ARE IN OHMS, 0.1 WATT +/- 5%.
2. ALL CAPACITANCE VALUES ARE IN MICROFARADS.
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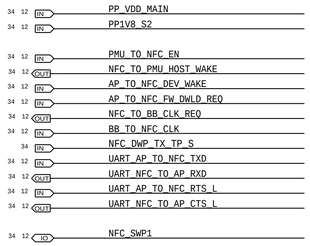
REV	ECN	DESCRIPTION OF REVISION	CK APPD / DATE
7	0008448938	ENGINEERING RELEASED	2017-04-11

D22 NFC_MLB
MARCH 22, 2017



PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
138S00159	3	CAP,SOFT-TERM,2.2UF,6.3V,0201	C7500_S,C7502_S,C7505_S	CRITICAL	SOFT_CAP
138S0831	3	CAP,TYPICAL,2.2UF,6.3V,0201	C7500_S,C7502_S,C7505_S	CRITICAL	TYPICAL_CAP

page1

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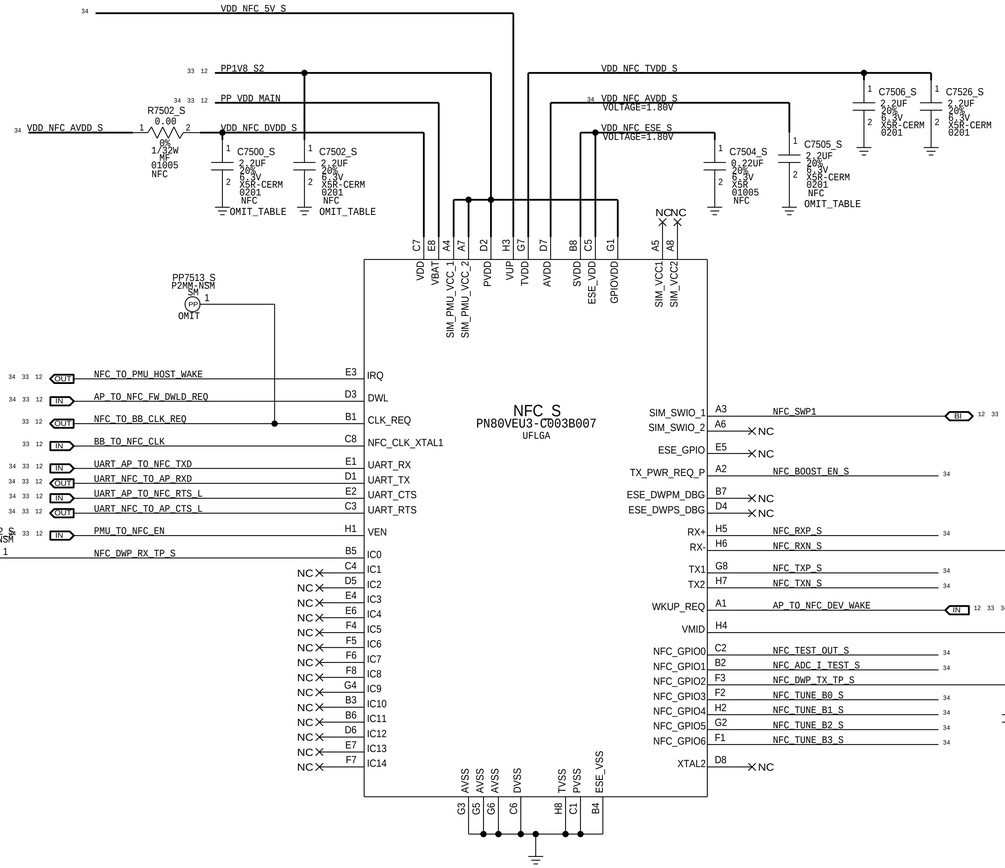
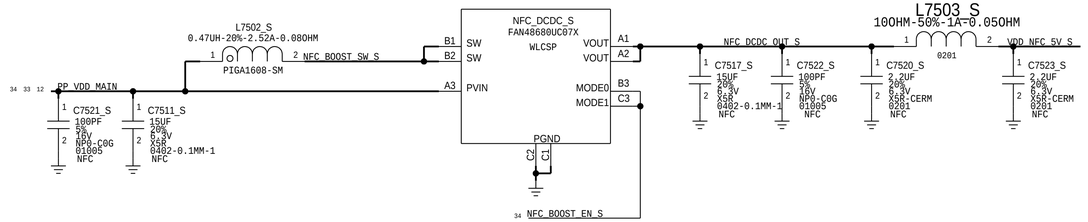
STOCKHOLM

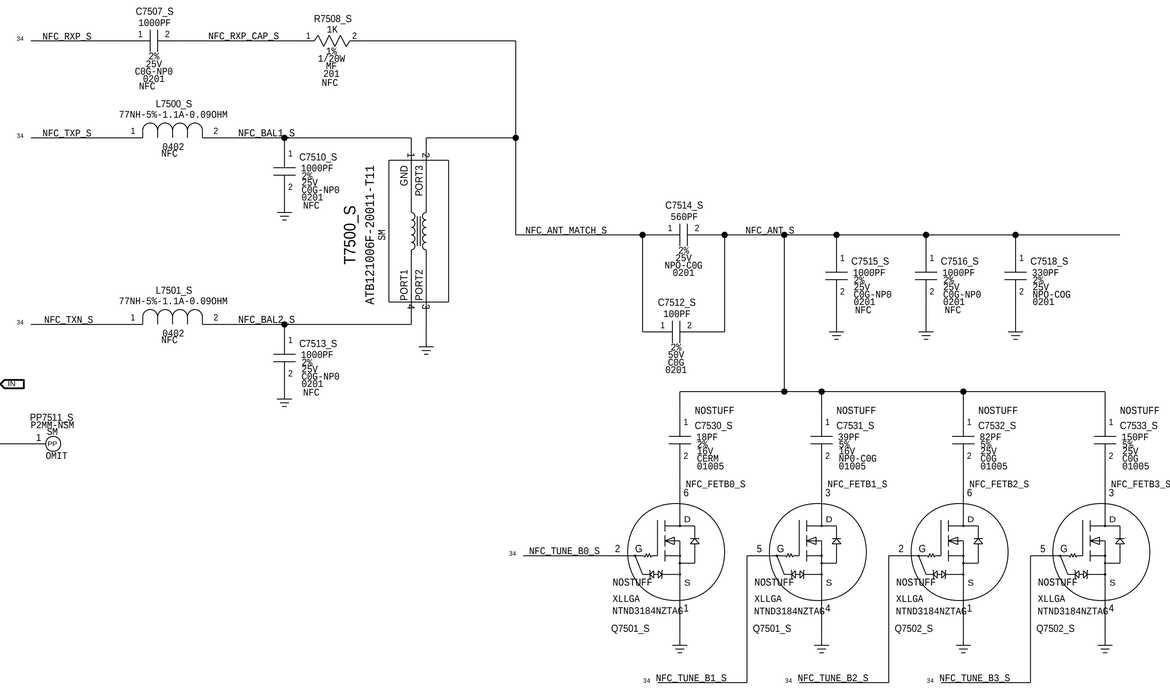
NFC CONTROLLER

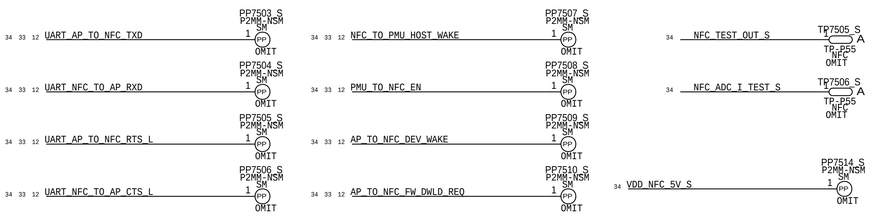


5V BOOSTER



NFC FRONT END





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