

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.

J418 EVT CHINA: MLB-B

LAST_MODIFICATION=Thu Sep 5 11:05:20 2019

J417_RADIO_MLB SYNC VER 0.64.0
 J417_WIFI_MLB SYNC VER 0.42.0

REV	ECN	DESCRIPTION OF REVISION	CK APPD DATE
6	0019561624	ENGINEERING RELEASED	2019-09-05

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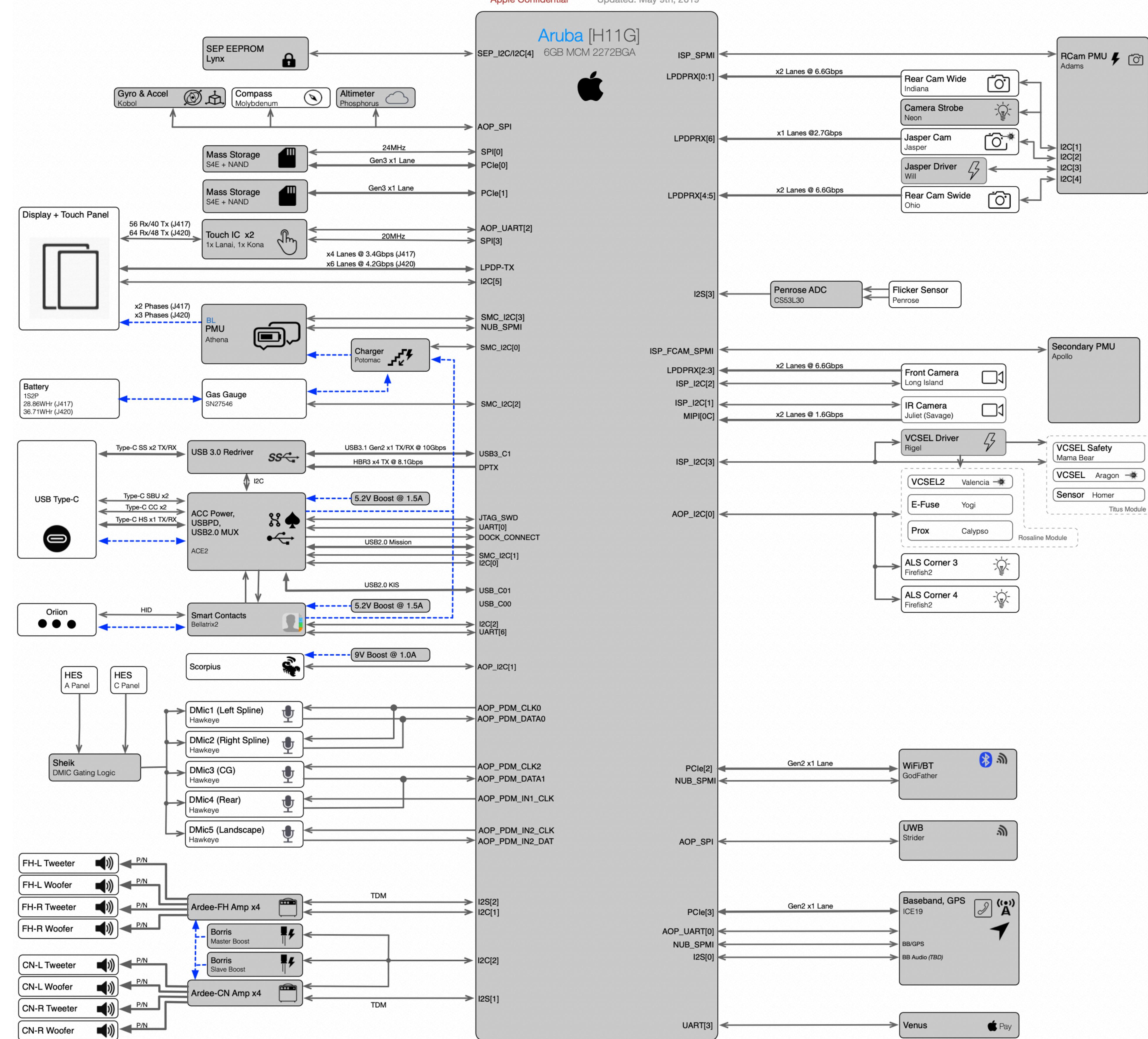
A SCH AND BOARD P/N

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
051-04885	1	SCHEM,MLB-B,(NY),J418	SCH1	CRITICAL	—
820-01838	1	PCBF,MLB-B,(NY),J418	PCB1	CRITICAL	—

DRAWING TITLE		SYNC_DATE=07/17/2017
SCHEM,MLB-B,NY,J418		

J4xx System Block Diagram

Apple Confidential Updated: May 9th, 2019



SYNC_MASTER=j317_MLB_B
PAGE_TITLE
BLOCK DIAGRAM

SYNC_DATE=11/16/2018

CKPLUS WAIVE TABLE

CKPLUS RULE EXCEPTIONS		REQUIRED
SCHEMATIC DEFINED CONSTRAINTS (YES/NO)		NO

MECHANICAL PARTS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
806-16652	1	FENCE_TOUCH_MLB	TOUCH_FENCE	CRITICAL	
806-20903	1	CAN_CELL_RIGEL_LH_MLB_B	CELL_FENCE	CRITICAL	MLB_B
806-20920	1	FENCE_AP_MLB	AP_FENCE	CRITICAL	
806-20849	1	CAN_PH_REMOTE_FEM_MLB_B	RFEM_FENCE	CRITICAL	MLB_B
806-14412	1	CAN_RFEM_RIGEL_LH_MLB_A	WIFI_FENCE	CRITICAL	MLB_A
806-20860	1	CAN_ADAMS_MLB	ADAMS_FENCE	CRITICAL	
806-20859	1	CAN_PENINSULA_MLB	PENINSULA_FENCE	CRITICAL	

BARCODE LABEL/EEEE CODES

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
825-7691	1	EEEE FOR 639-07761 (MLB_B BEST)	EEEEE_M07L	CRITICAL	EEEEE_MLB_B_BEST
825-7691	1	EEEE FOR 639-10271 (MLB_B ULTIMATE)	EEEEE_P798	CRITICAL	EEEEE_MLB_B_ULTIMATE
825-7691	1	EEEE FOR 639-07760 (MLB_B SUPREME)	EEEEE_M077	CRITICAL	EEEEE_MLB_B_SUPREME
825-7691	1	EEEE FOR 639-07762 (MLB_B EXTREME_TB)	EEEEE_M07Y	CRITICAL	EEEEE_MLB_B_EXTREME_TB
825-7691	1	EEEE FOR 639-08567 (MLB_B EXTREME_WD)	EEEEE_MPV4	CRITICAL	EEEEE_MLB_B_EXTREME_WD
825-7691	1	EEEE FOR 639-07765 (MLB_B PRIME)	EEEEE_M089	CRITICAL	EEEEE_MLB_B_PRIME
825-7691	1	EEEE FOR 639-07764 (MLB_B BEST ROW/JP)	EEEEE_M08N	CRITICAL	EEEEE_MLB_B_JP_BEST
825-7691	1	EEEE FOR 639-10273 (MLB_B ULTIMATE ROW/JP)	EEEEE_P79M	CRITICAL	EEEEE_MLB_B_JP_ULTIMATE
825-7691	1	EEEE FOR 639-07765 (MLB_B SUPREME ROW/JP)	EEEEE_M091	CRITICAL	EEEEE_MLB_B_JP_SUPREME
825-7691	1	EEEE FOR 639-07766 (MLB_B EXTREME_TB ROW/JP)	EEEEE_M09D	CRITICAL	EEEEE_MLB_B_JP_EXTREME_TB
825-7691	1	EEEE FOR 639-08568 (MLB_B EXTREME_WD ROW/JP)	EEEEE_MPVJ	CRITICAL	EEEEE_MLB_B_JP_EXTREME_WD
825-7691	1	EEEE FOR 639-07767 (MLB_B PRIME ROW/JP)	EEEEE_M09Q	CRITICAL	EEEEE_MLB_B_JP_PRIME
825-7691	1	EEEE FOR 639-07768 (MLB_B BEST CH)	EEEEE_M0D3	CRITICAL	EEEEE_MLB_B_CH_BEST
825-7691	1	EEEE FOR 639-10273 (MLB_B ULTIMATE CH)	EEEEE_P7C0	CRITICAL	EEEEE_MLB_B_CH_ULTIMATE
825-7691	1	EEEE FOR 639-07769 (MLB_B SUPREME CH)	EEEEE_M0D6	CRITICAL	EEEEE_MLB_B_CH_SUPREME
825-7691	1	EEEE FOR 639-07770 (MLB_B EXTREME_TB CH)	EEEEE_M0DT	CRITICAL	EEEEE_MLB_B_CH_EXTREME_TB
825-7691	1	EEEE FOR 639-08569 (MLB_B EXTREME_WD CH)	EEEEE_MPW1	CRITICAL	EEEEE_MLB_B_CH_EXTREME_WD
825-7691	1	EEEE FOR 639-07771 (MLB_B PRIME CH)	EEEEE_M0G5	CRITICAL	EEEEE_MLB_B_CH_PRIME
825-7691	1	EEEE FOR 639-07772 (MLB_A BEST)	EEEEE_M0GJ	CRITICAL	EEEEE_MLB_A_BEST
825-7691	1	EEEE FOR 639-07773 (MLB_A SUPREME)	EEEEE_M0GW	CRITICAL	EEEEE_MLB_A_SUPREME
825-7691	1	EEEE FOR 639-07774 (MLB_A EXTREME_TB)	EEEEE_M0H8	CRITICAL	EEEEE_MLB_A_EXTREME_TB
825-7691	1	EEEE FOR 639-08636 (MLB_A EXTREME_WD)	EEEEE_MTL2	CRITICAL	EEEEE_MLB_A_EXTREME_WD
825-7691	1	EEEE FOR 639-07775 (MLB_A PRIME)	EEEEE_M0HM	CRITICAL	EEEEE_MLB_A_PRIME

INDUCTORS

PART NUMBER	ALTERNATE FOR PART NUMBER	REFERENCE DESIGNATOR(S)	DESCRIPTION	BOM OPTION
152S00963	152S00885	L77A0, L8490	0.47UH TAIYO YUDEN	
152S00964	152S00888	L7741, ETC	0.15UH TAIYO YUDEN	
152S01003	152S00888	L7741, ETC	0.15UH SUNLORD	

FERRITE BEADS

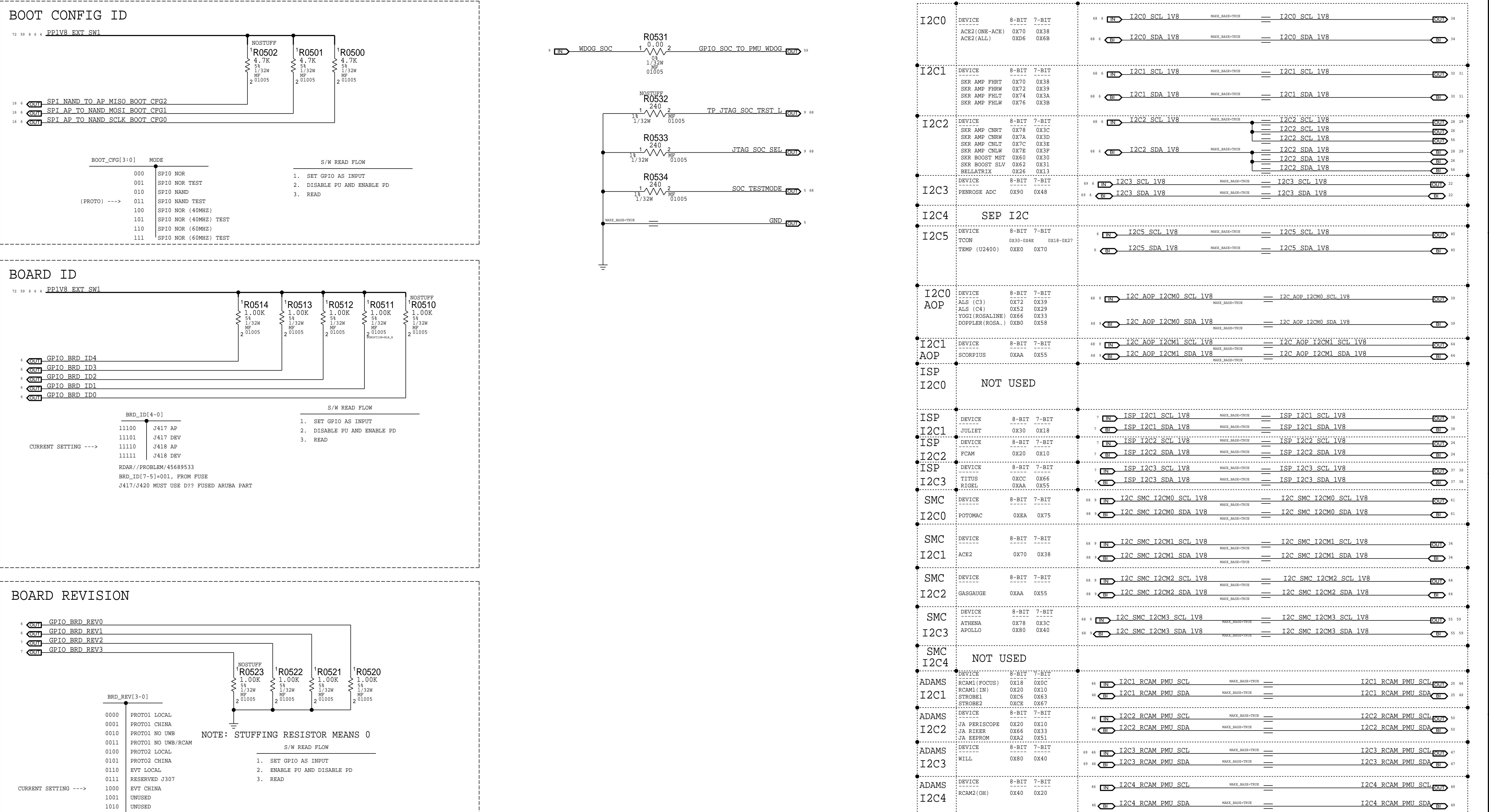
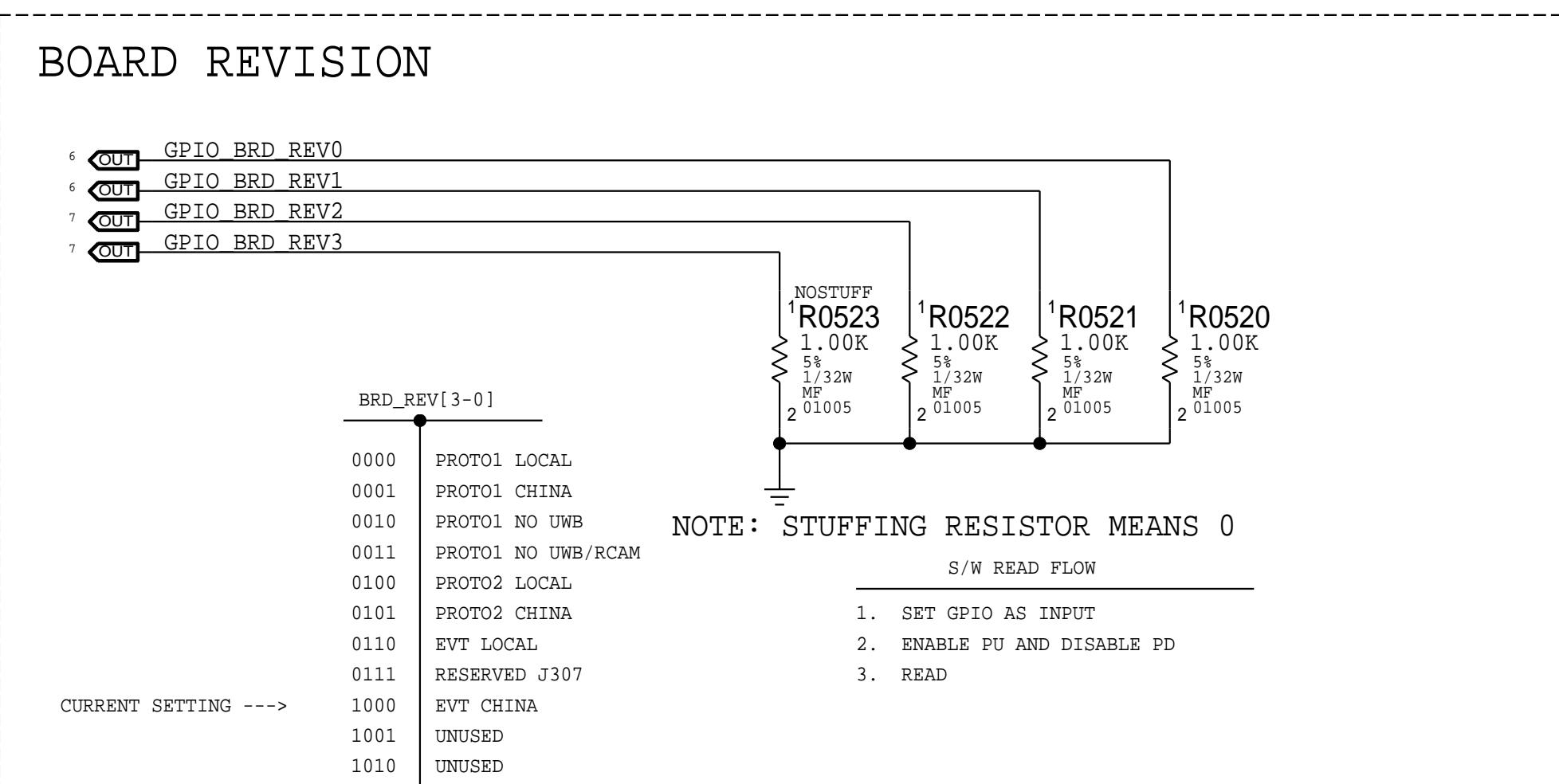
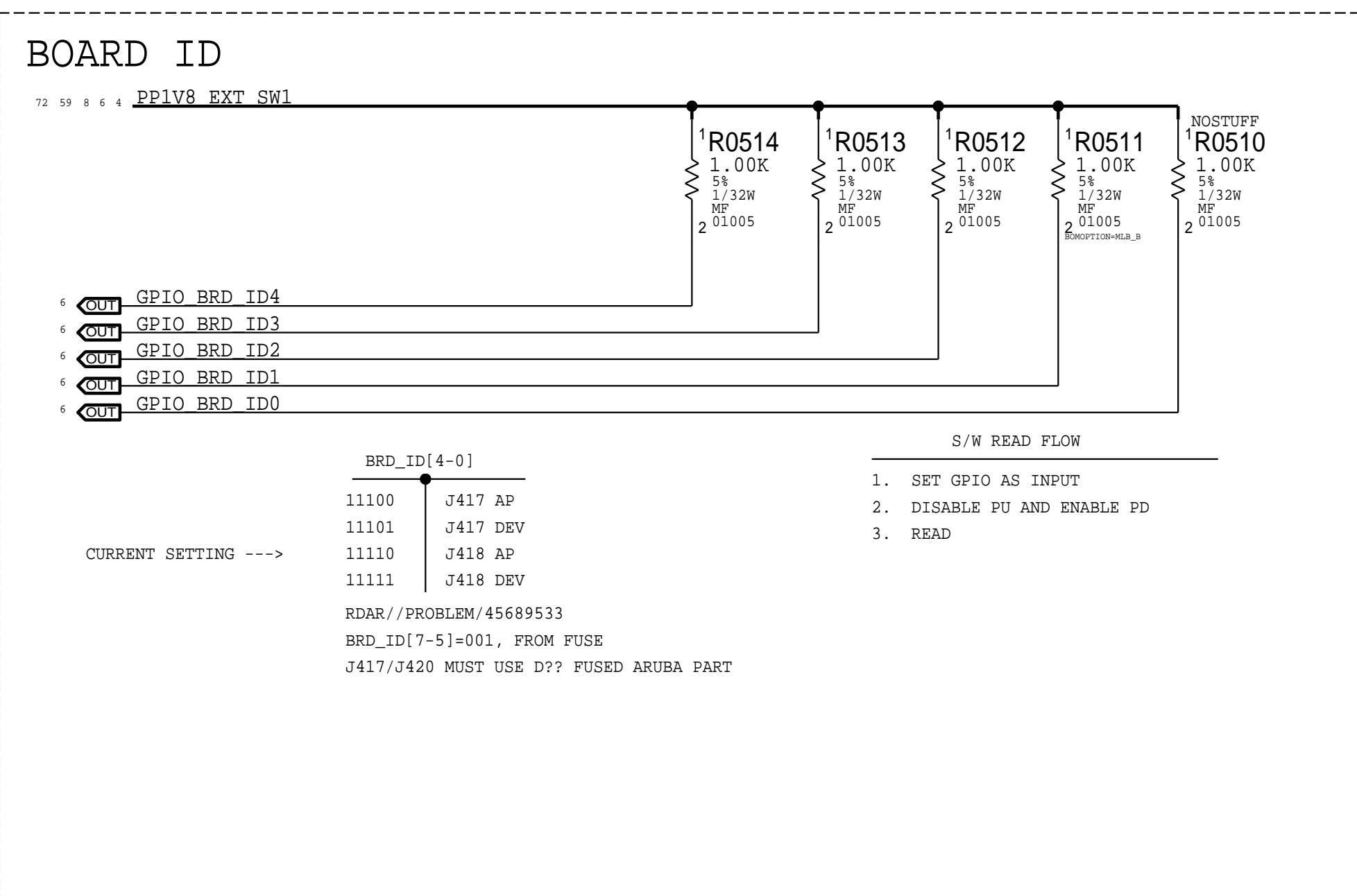
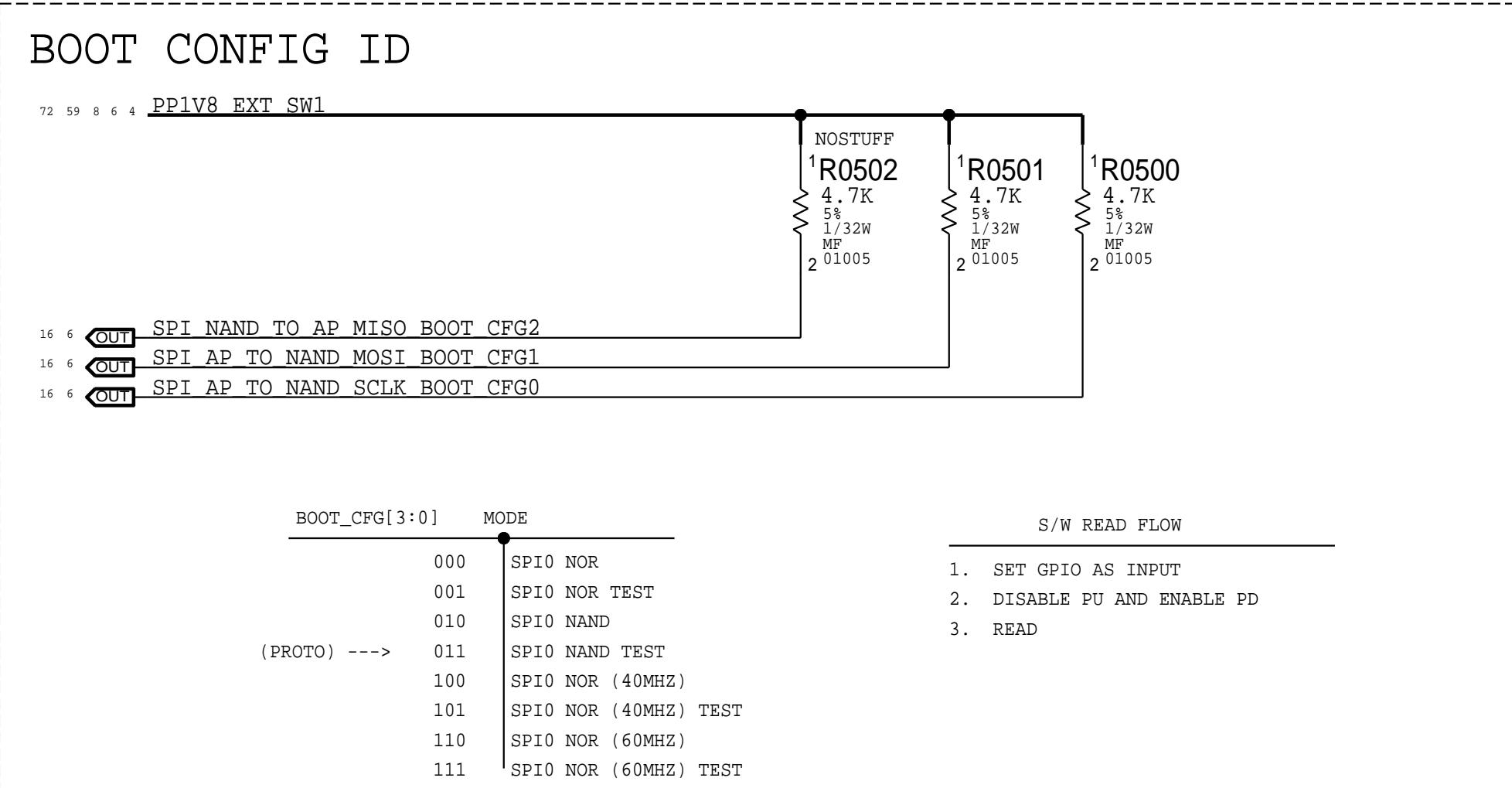
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155S0664	155S00018	FL2748, ETC	0.18 DCR MURATA	
155S00097	155S00018	FL2748, ETC	0.17 DCR TDK	
155S0660	155S0513	FL2761, ETC	0.04 DCR MURATA	
155S00512	155S0897	L4602, ETC	200HM 0603 0.1A MURATA	
155S00114	155S00115	PL8950, ETC	10HM 0603 8A LAIRD	

MOSFETS

PART NUMBER	ALTERNATE FOR PART NUMBER	REFERENCE DESIGNATOR(S)	DESCRIPTION	BOM OPTION
376S00319	376S00104	Q2201	DIODES	
376S00182	376S00126	Q8580	DIODES	
376S00071	376S00126	Q8580	DIODES	
376S00314	376S00125	Q8051	DIODES	
376S00182	376S00070	Q8581	DIODES	
376S1245	376S1102	DQ2280, ETC.	20V 229MA XL LG A3 DIODES	
376S1102	376S1245	Q8900, ETC.	20V 229MA XL LG A3 DIODES	

CAPS

PART NUMBER	ALTERNATE FOR PART NUMBER	REFERENCE DESIGNATOR(S)	DESCRIPTION	BOM OPTION
138S00143	138S00144	C7740, ETC	22UF 4V KYOCERA	
138S00163	138S00144	C7740, ETC	22UF 4V TAIYO YUDEN	
138S00117	138S00071	C7993, ETC	4UF 6.3V KYOCERA	
132S00211	132S00092	C3204, ETC	270PF 16V KYOCERA	
132S00212	132S00092	C3204, ETC	270PF 16V TAIYO YUDEN	
132S0436	132S00014	C0820, ETC	0.22UF 6.3V	
138S00148	138S00149	C1220, ETC	15UF 4V KYOCERA	
138S00150	138S00149	C1220, ETC	15UF 4V SAMSUNG	
138S00151	138S00149	C1220, ETC	15UF 4V TAIYO YUDEN	
138S0614	138S0732	C2218, ETC	1UF 10V 0402	
132S00088	132S0639	C2221, ETC	0.47UF 25V TAIYO YUDEN	
138S0706	138S0739	C1215, ETC	1UF 10V 0201 MURATA	
138S0945	138S0739	C1215, ETC	1UF 10V 0201 KYOCERA	
131S00299	131S00118	C3334, ETC	180PF 50V TAIYO YUDEN	
128S00094	128S0067	C77DF, ETC	150UF 6.3V TOKIN	
128S00065	128S0067	C77DF, ETC	150UF 6.3V KEMET	
128S00069	128S0067	C77DF, ETC	150UF 6.3V KYOCERA	
138S00215	138S1068	C2350, ETC	4.7UF 16V TAIYO YUDEN	
131S00172	131S00164	C1232, ETC	220PF 16V KYOCERA	
131S00173	131S00164	C1232, ETC	220PF 16V TAIYO YUDEN	
131S00142	131S00019	C3236, ETC	150PF 50V 0201	
131S0730	131S0831	C40A7	15PF 50V 0201	
138S00139	138S00138	C12D1, C12F0	4UF 4V MURATA	
138S00164	138S00138	C12D1, C12F0	4UF 4V TAIYO YUDEN	
138S00084	138S0060	C8563, ETC	47UF 6.3V TAIYO YUDEN	
131S00313	131S0824	C4632	330PF 25V TAIYO YUDEN	
132S00175	132S00202	C4000, ETC	0.22UF KYOCERA ONLY	
132S00154	132S0683	C6352, ETC	0.1UF 01005 TAIYO	
138S0641	138S0700	C2206, ETC	2.2UF 10V 0402 TAIYO	
132S0316	132S00107	C3828, C3829	.1UF 6.3V 01005 TAIYO	
131S00164	131S0172	C2711, C2713	220PF	



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SOC: MAIN

D

D

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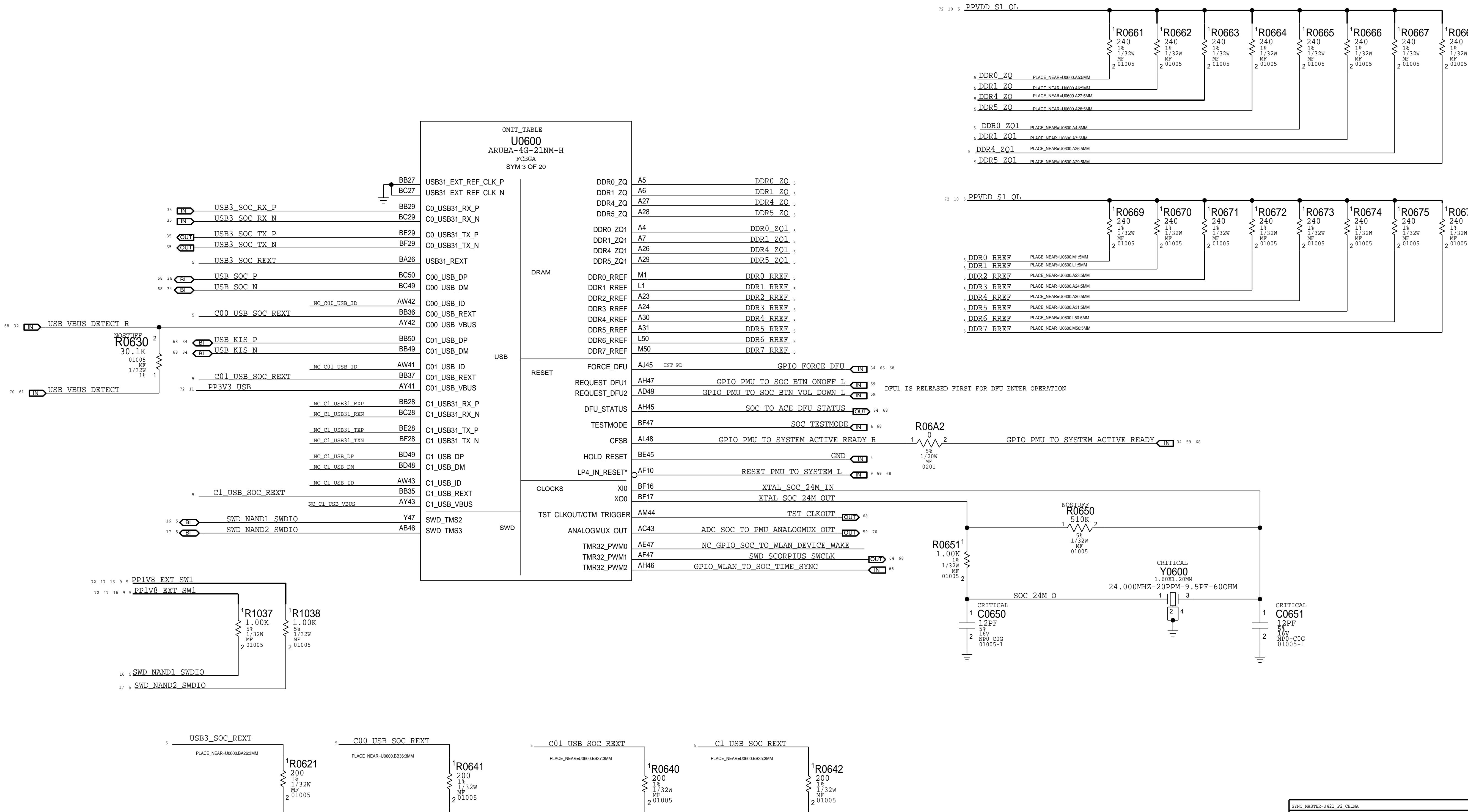
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197S0588	197S0591		Y0600	TXC, 24MHZ, XTAL

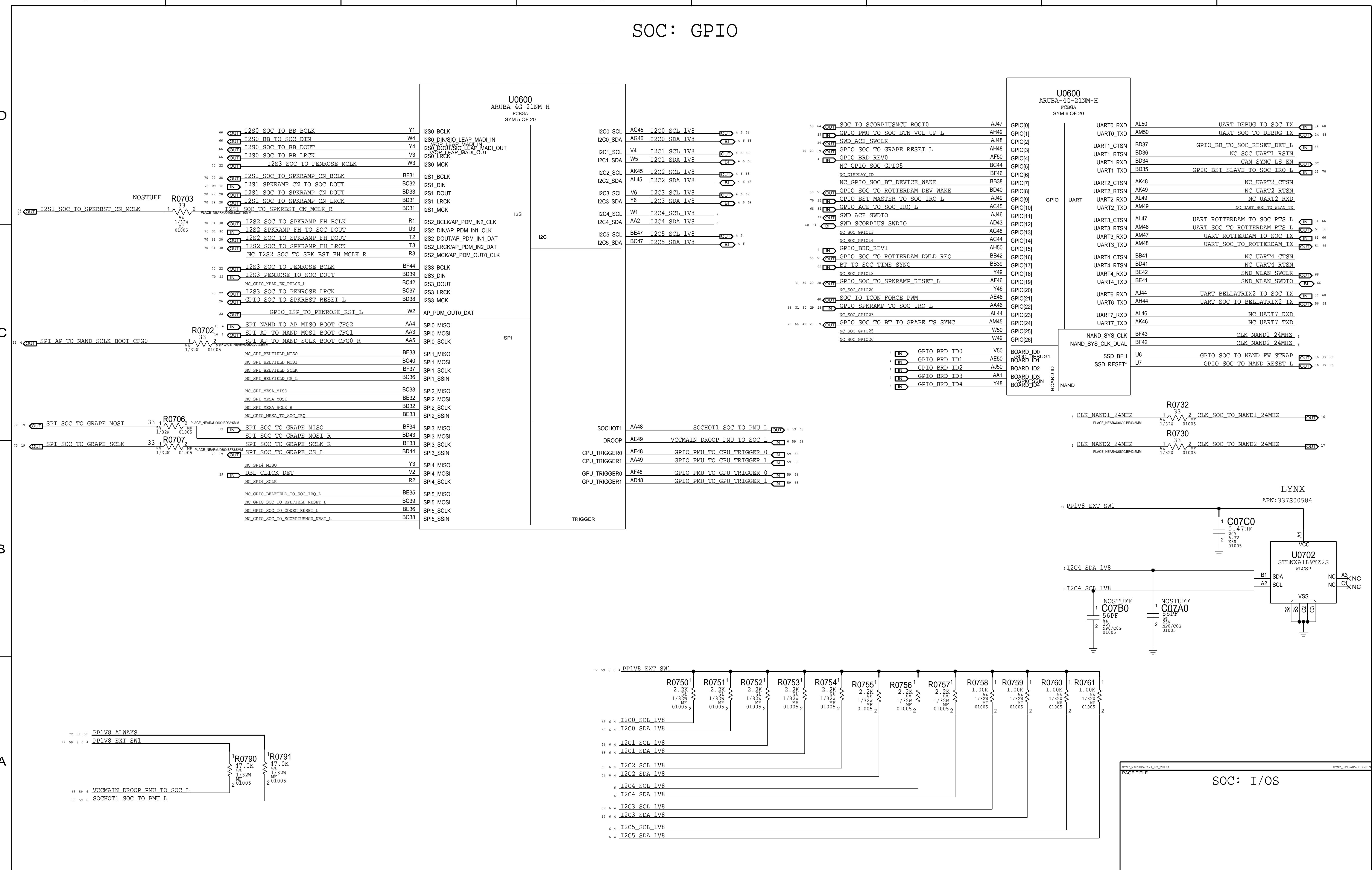
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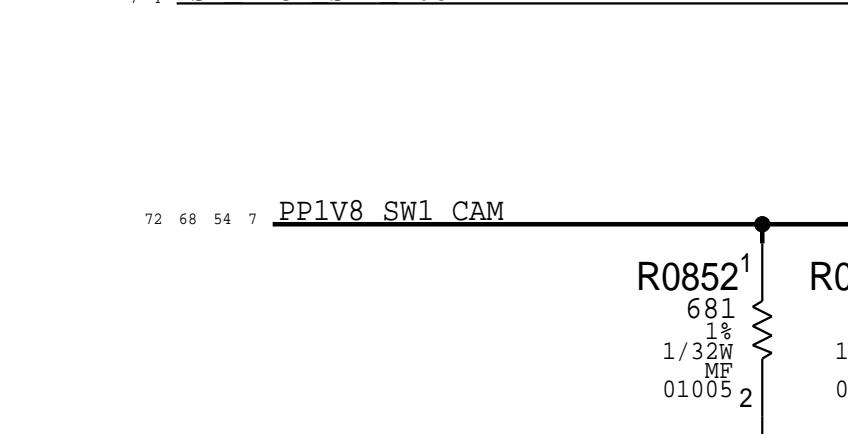
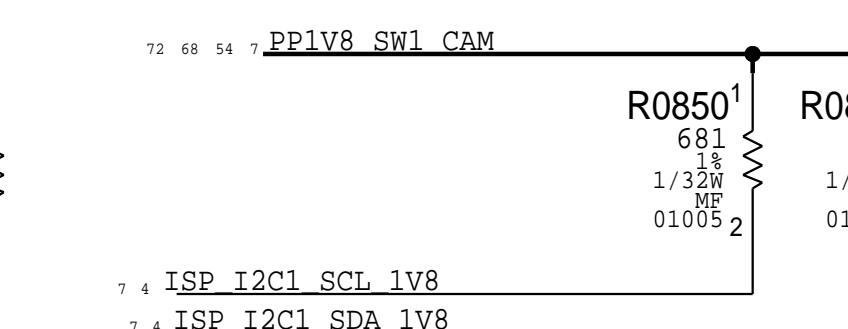
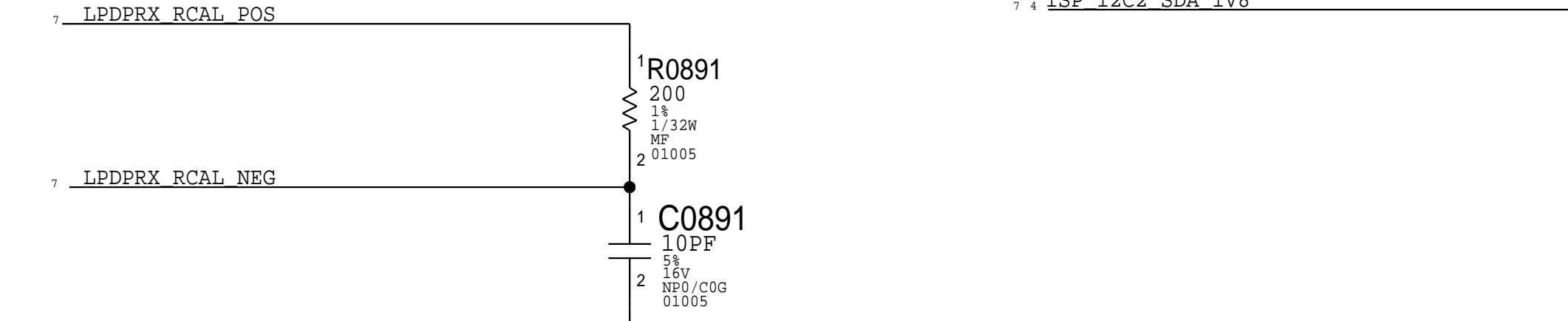
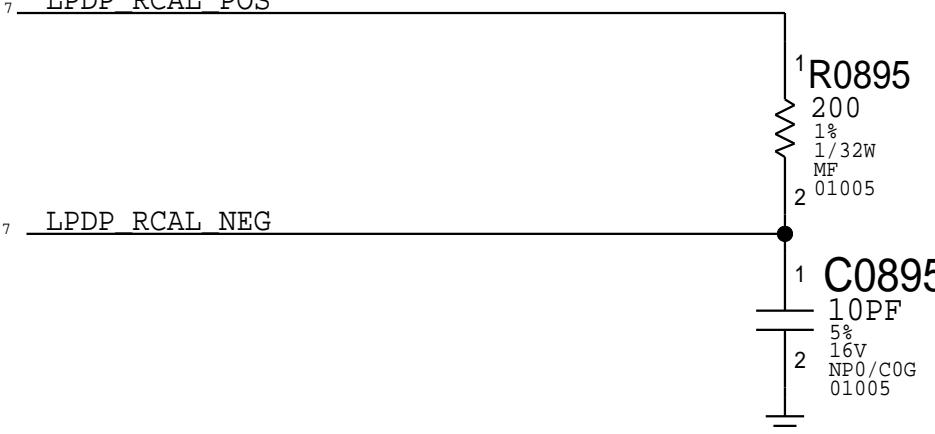
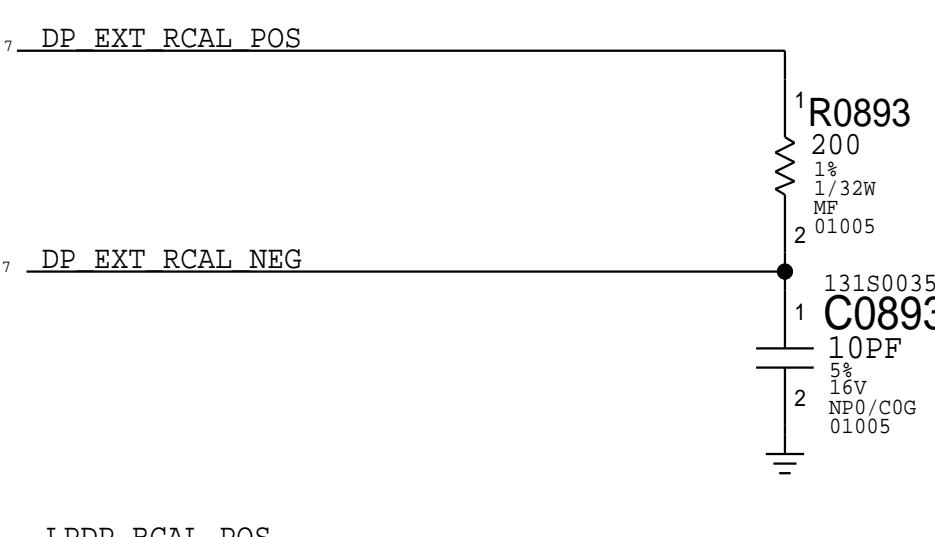
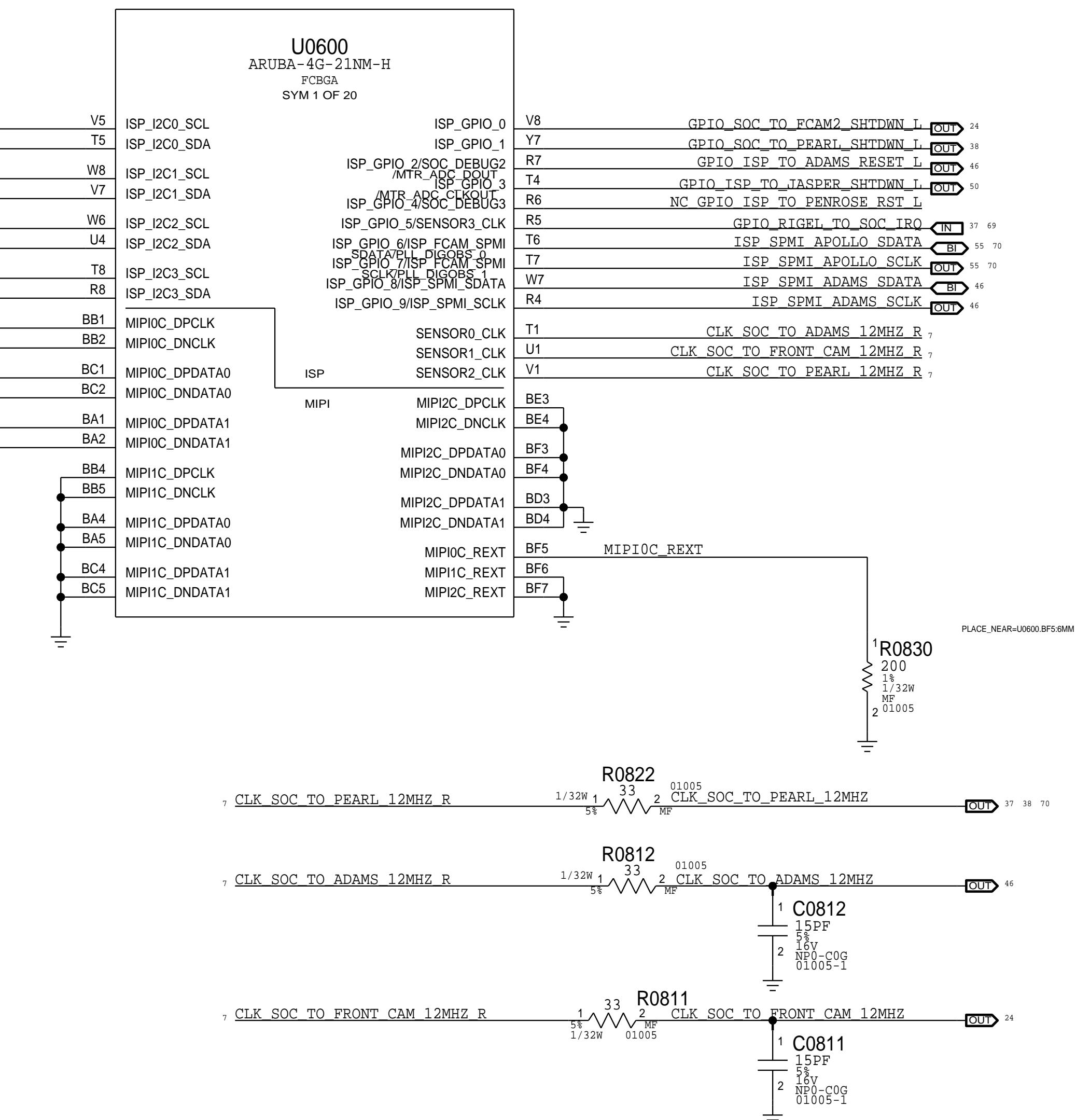
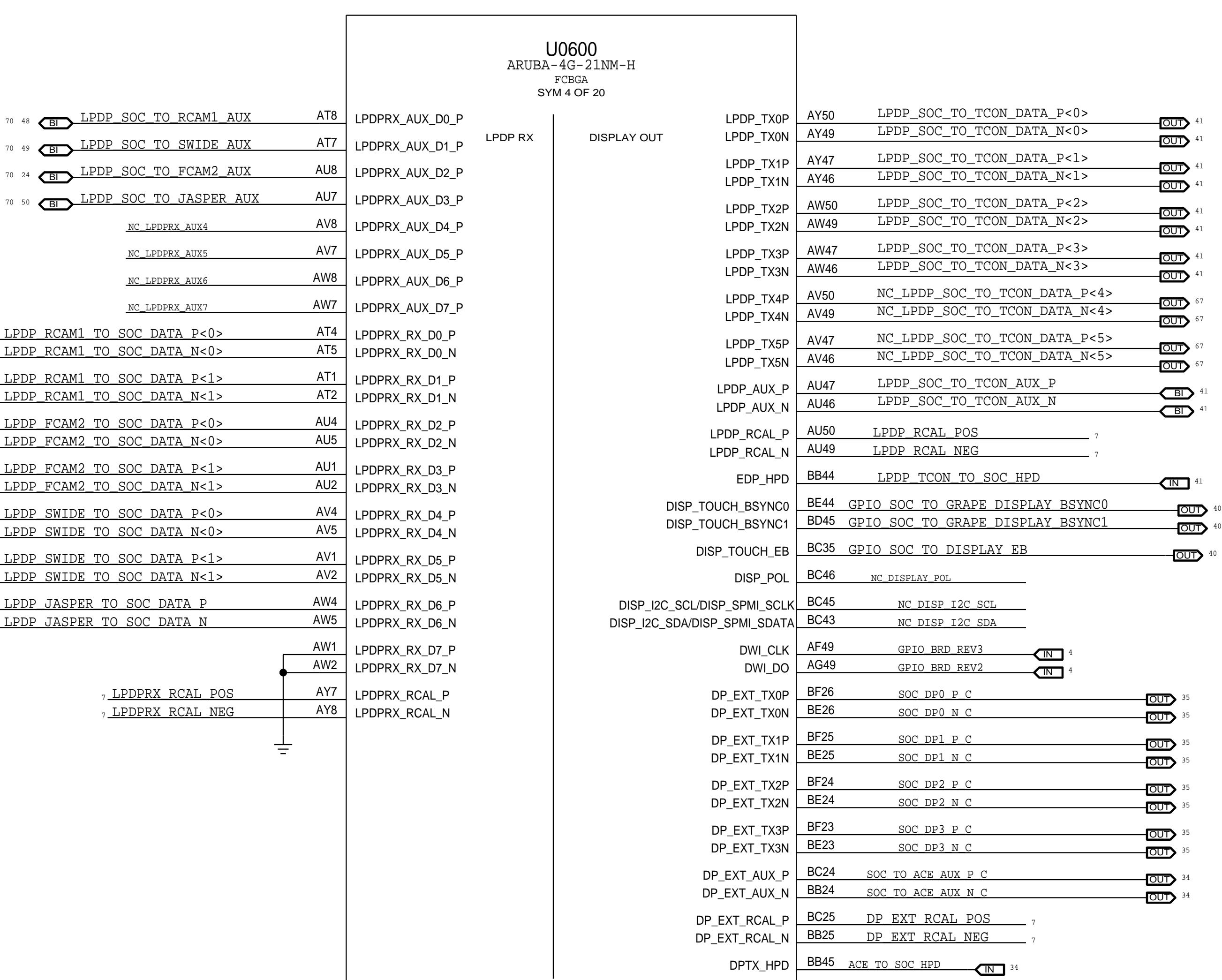
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SOC: LPDP & MIPI



P2_CHINA

SOC: PCIE

D

D

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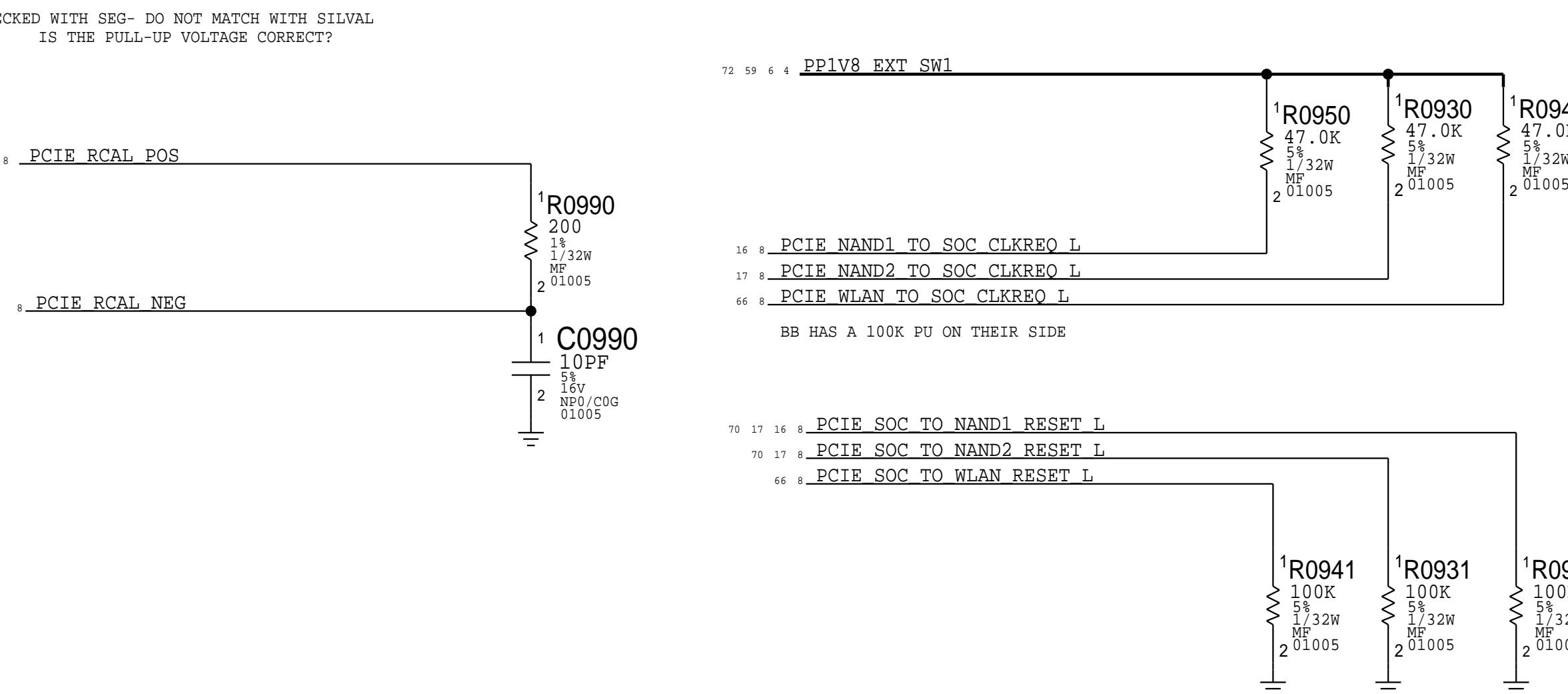
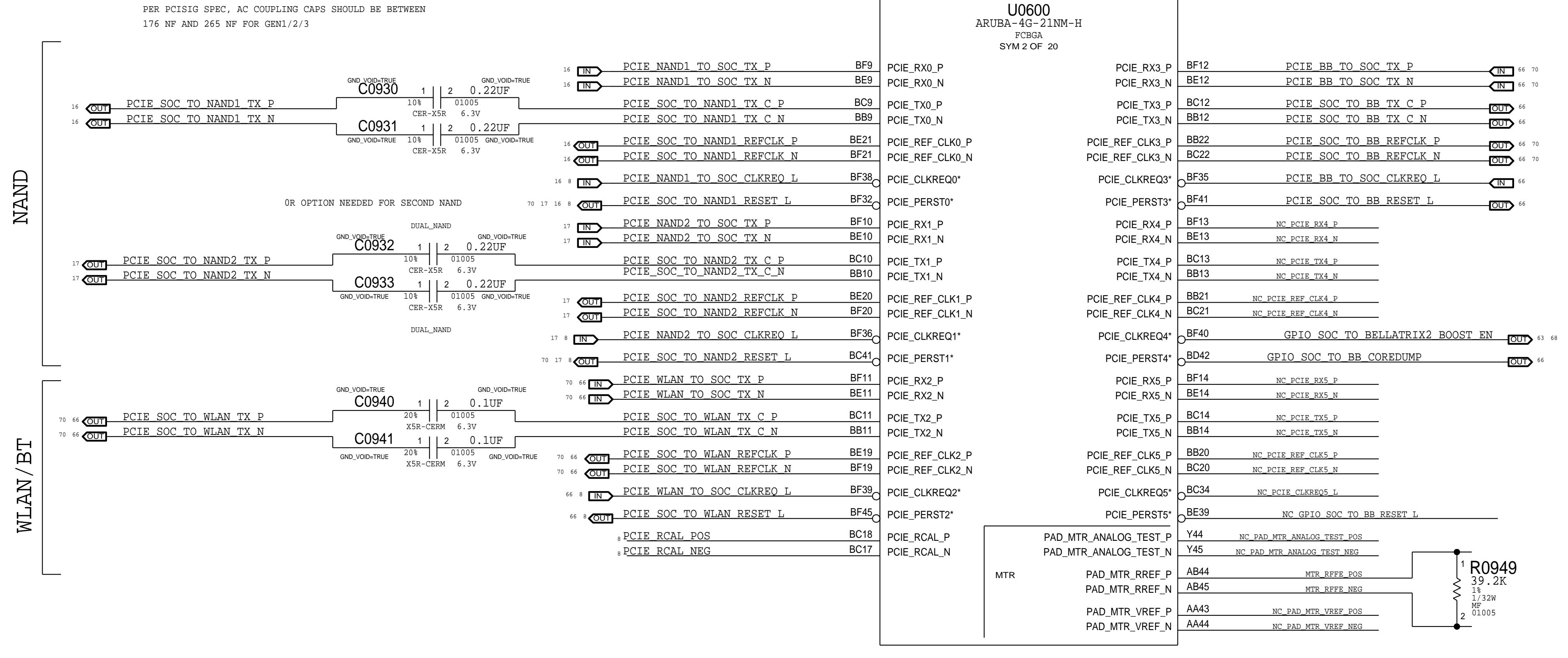
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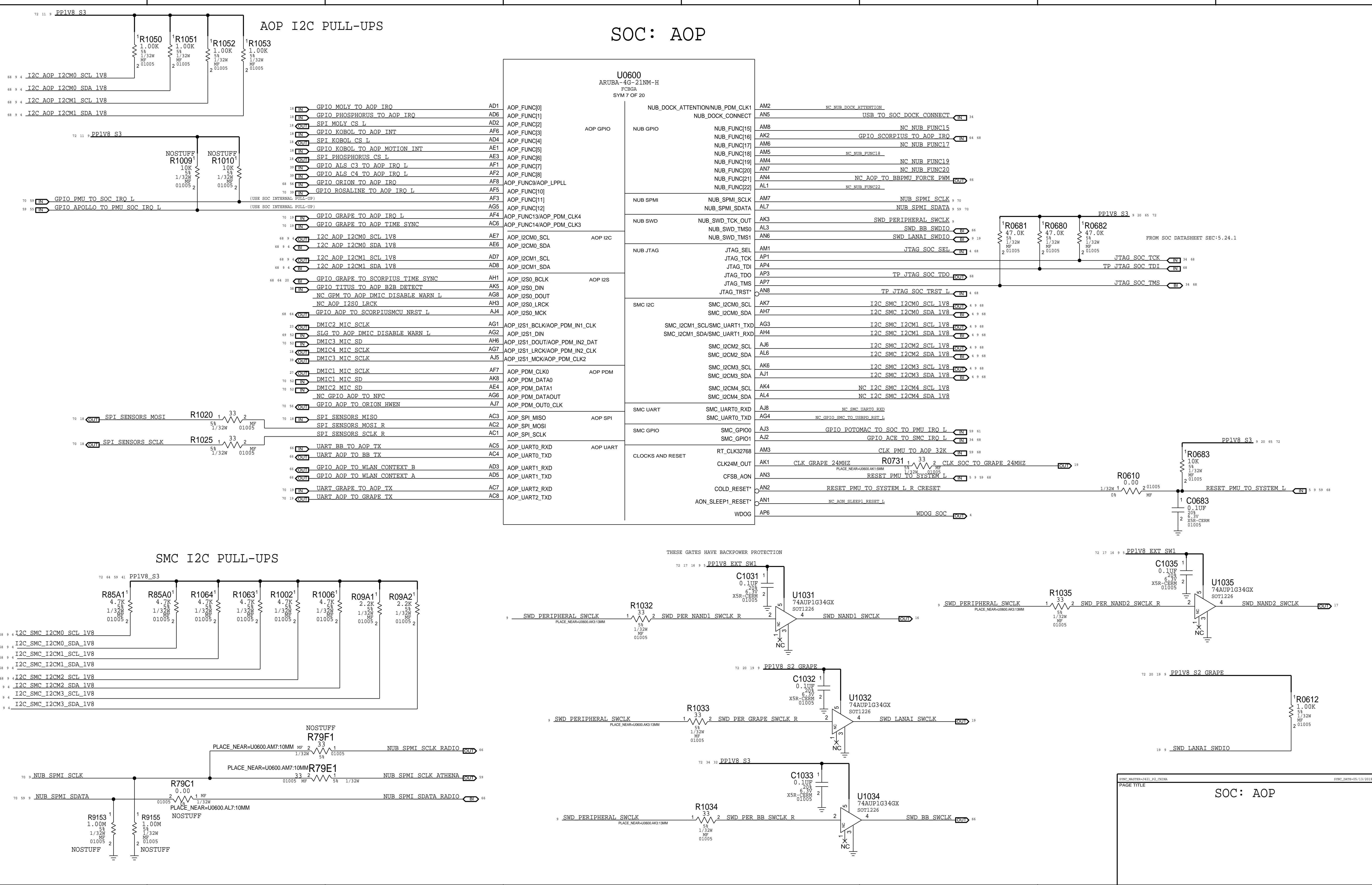
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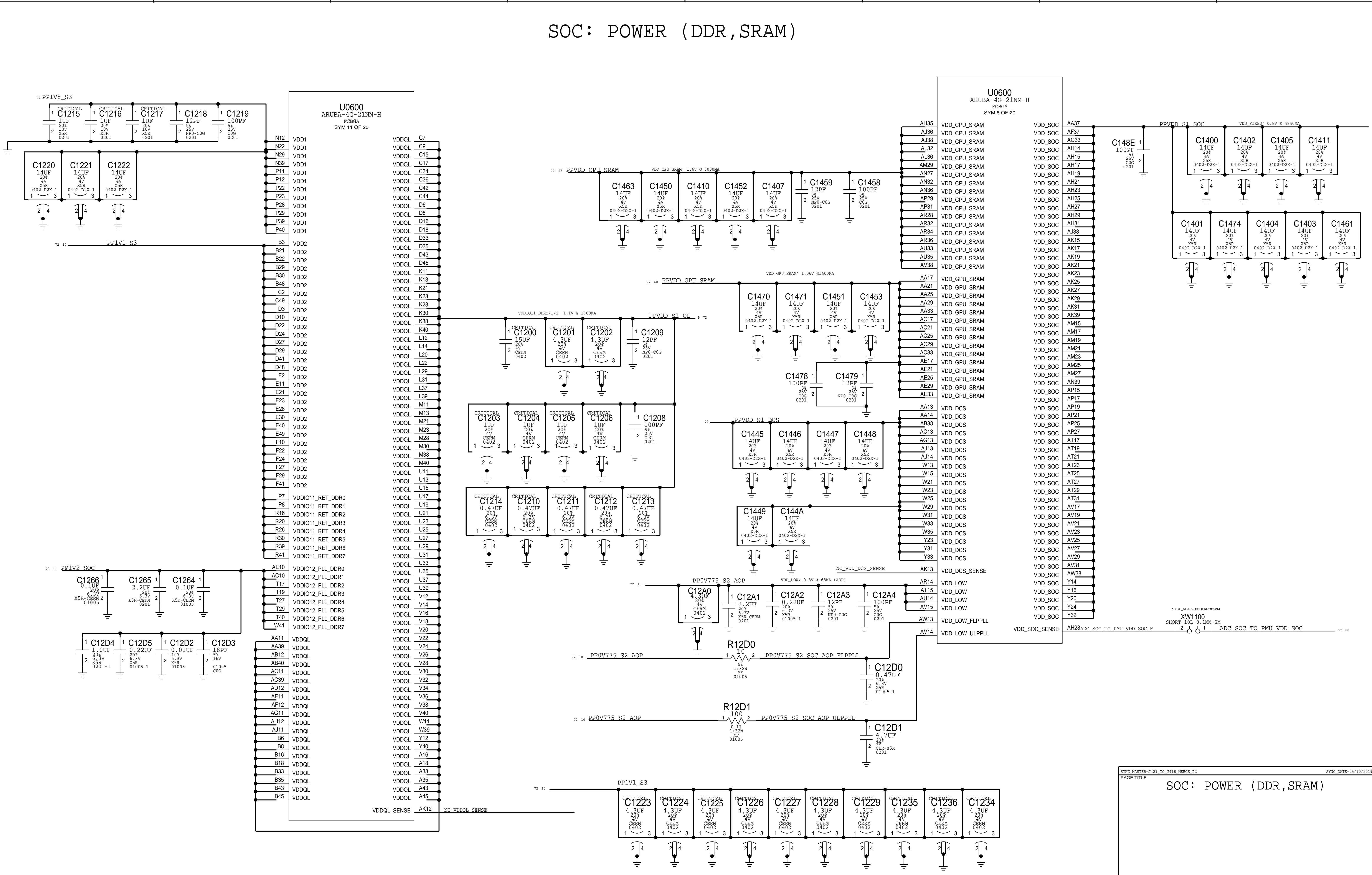
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SOC: PCIE
SYNC_DATE=05/13/2019



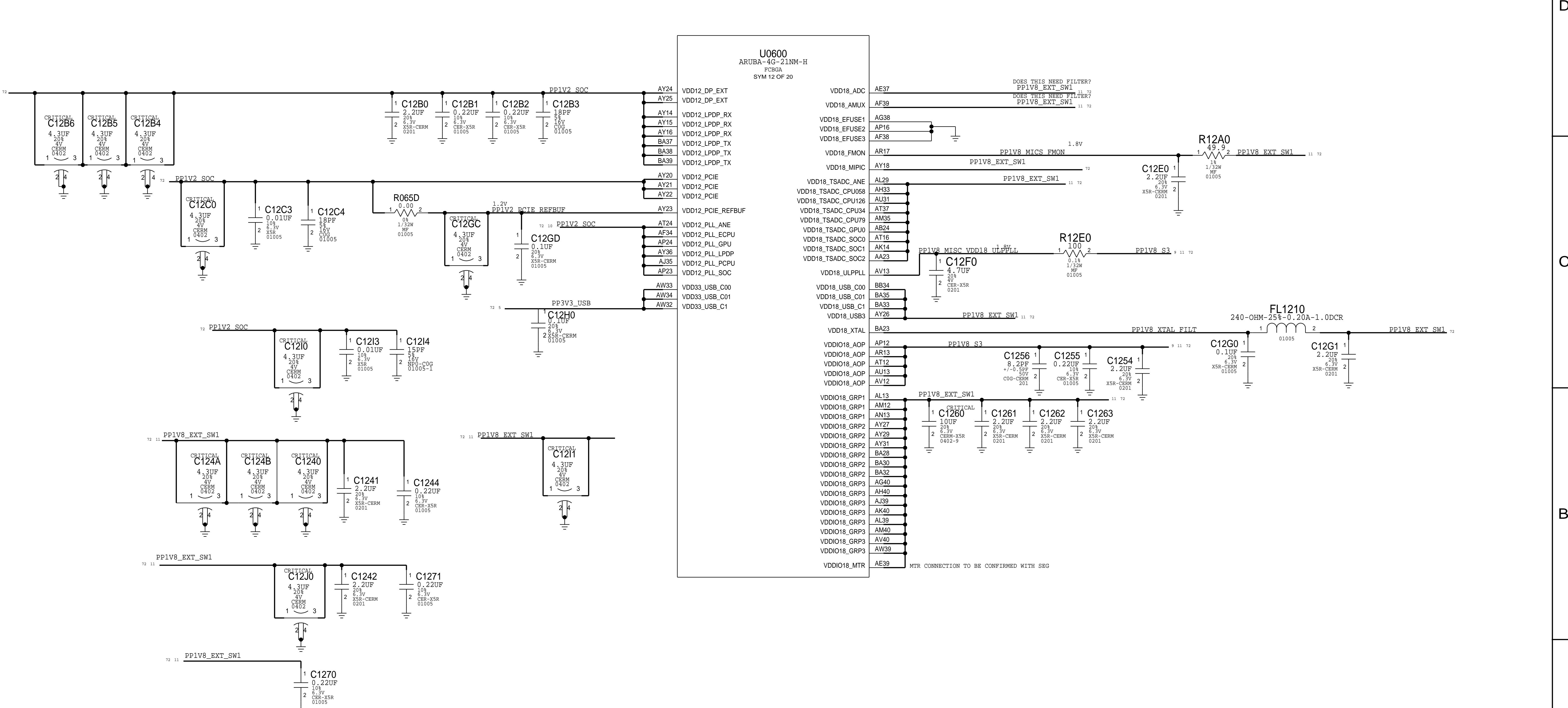
SOC: POWER (DDR, SRAM)



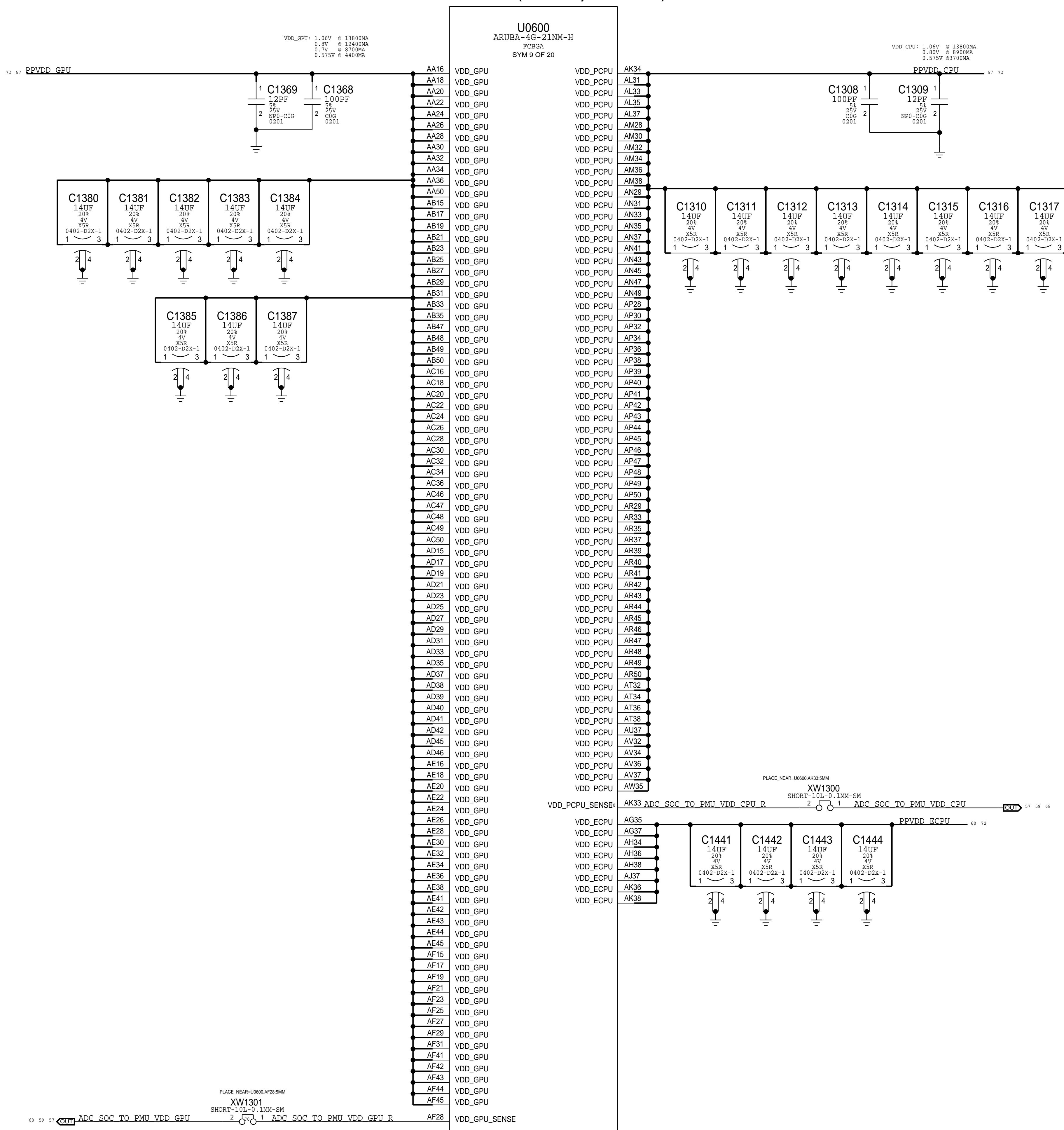
SOC: POWER (IO)

VDD12_PLL_CPU: 1.2V @ 7mA
 VDD12_TSADC: 1.2V @ 4mA
 VDD12_PLL_GPU: 1.2V @ 7mA
 VDD12_PLL_REFBUF: 1.2V @ 9mA
 VDD12_PCFI_REFBUF: 1.2V @ 45mA
 VDD12_LPDP_RX: 1.2V @ 48mA
 VDD12_LPDP_RX: 1.2V @ 25mA
 VDD12_LPSC: 1.2V @ 1mA
 VDD12_USB3: 1.2V @ 25mA
 VDD12_PCIE: 1.2V @ 81.7mA
 VDD33_USB: 3.3V @ 5mA

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
138S00049	138S0831		C121 & MORE	R048 // PROBLEM/19974564

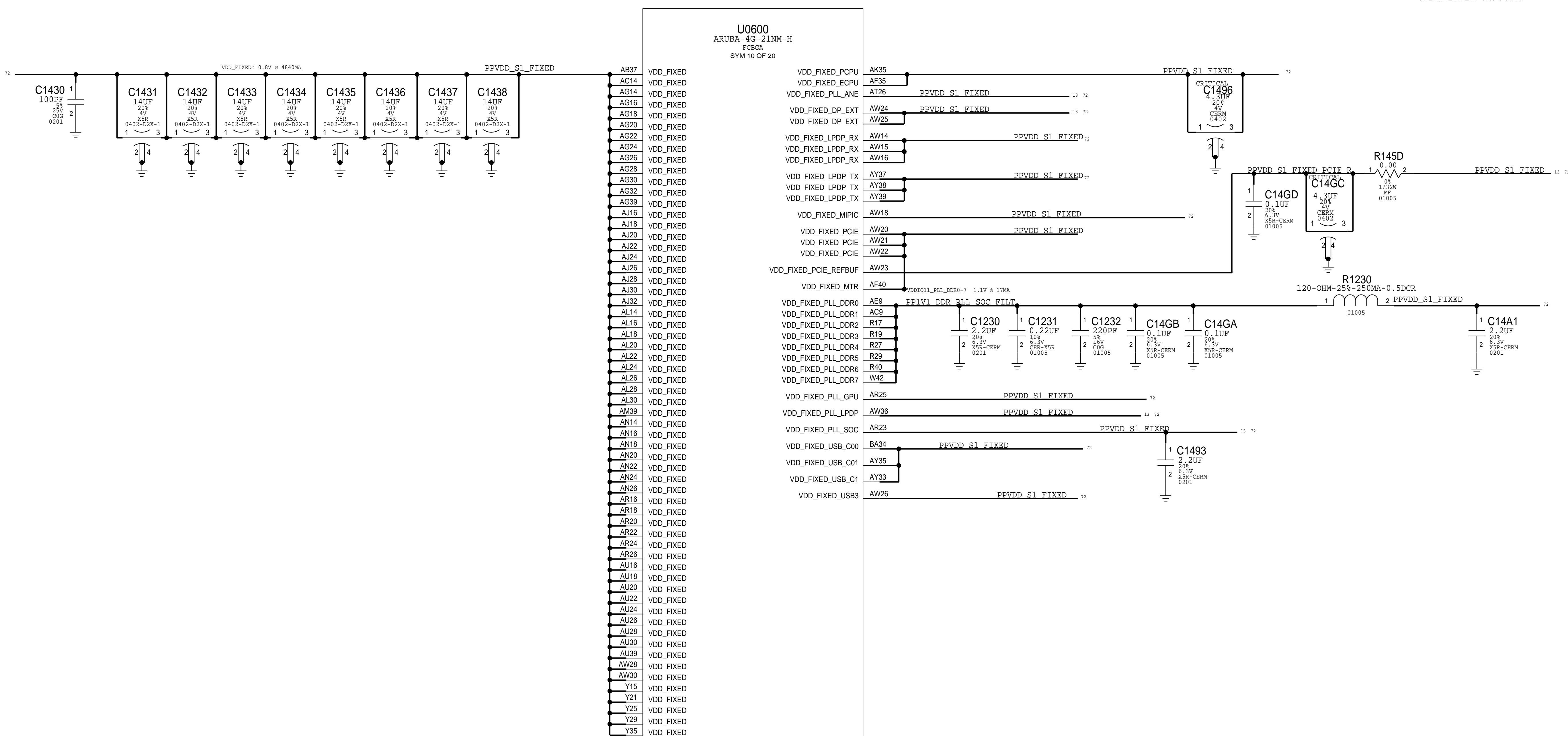


SOC: POWER (CPU, GPU)

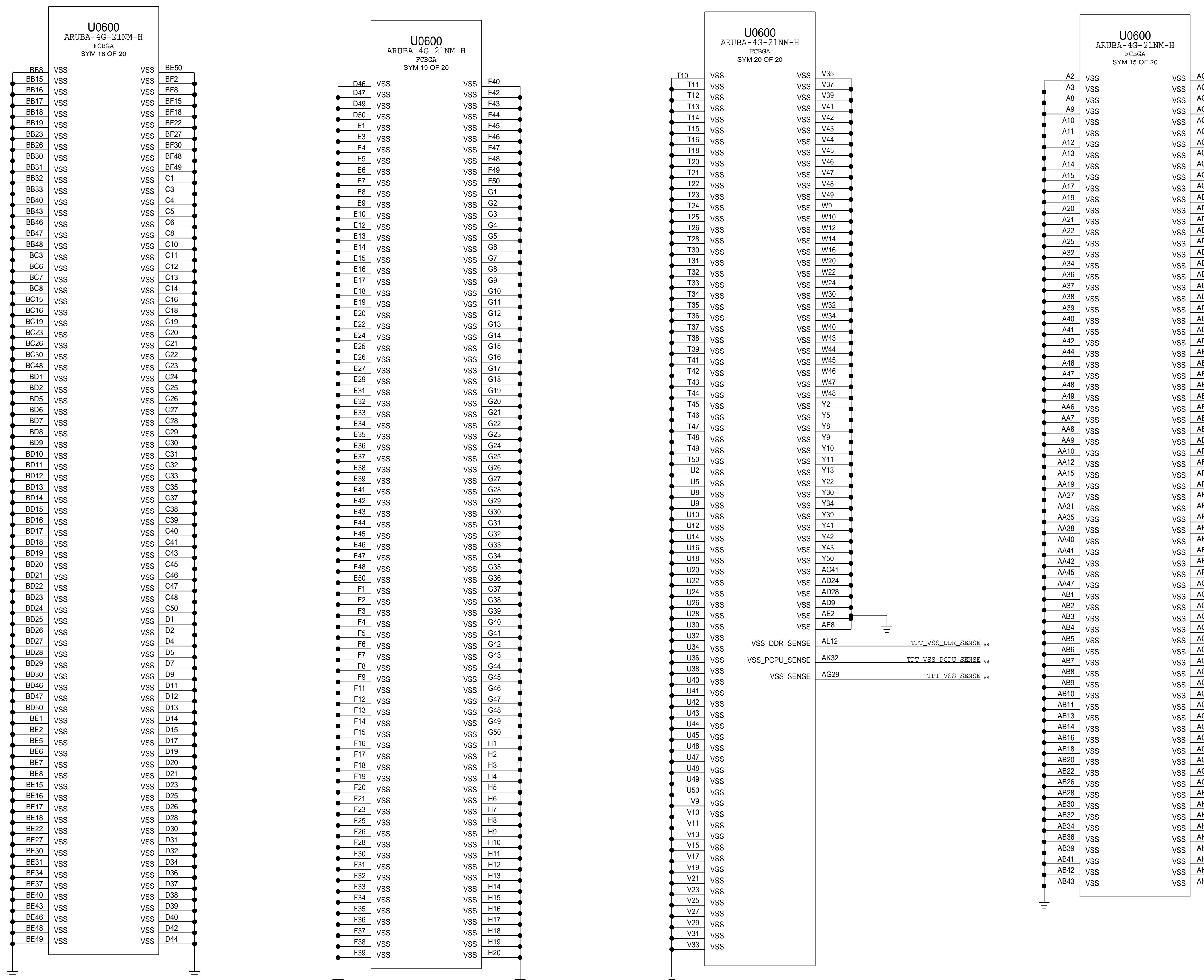


SYNC_MASTER=J421_P2_CHINA SYNC_DA
PAGE TITLE SOC: POWER (CPTI GPTI)

SOC: POWER (SRAM , SOC)



SOC: GND (1)



SOC: GND (2)

D

C

B

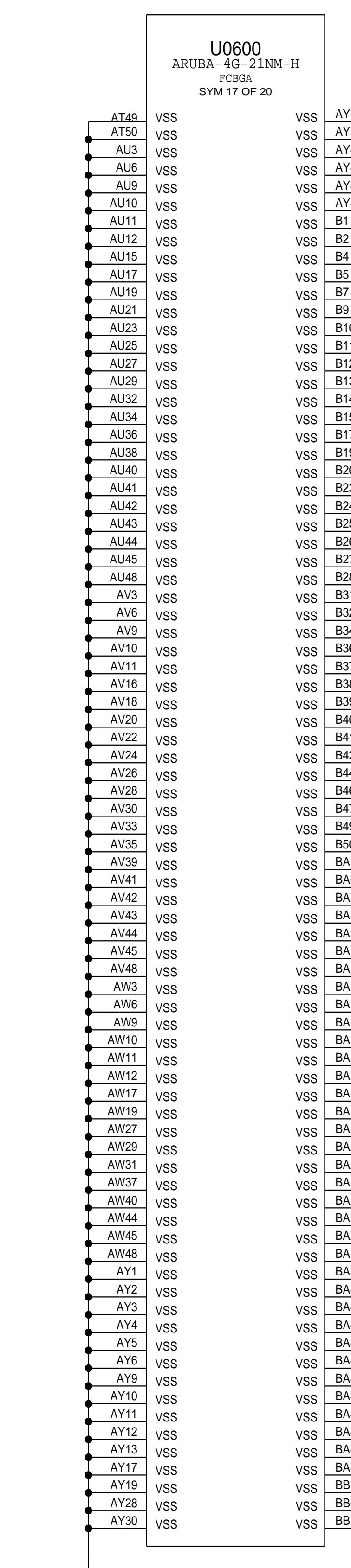
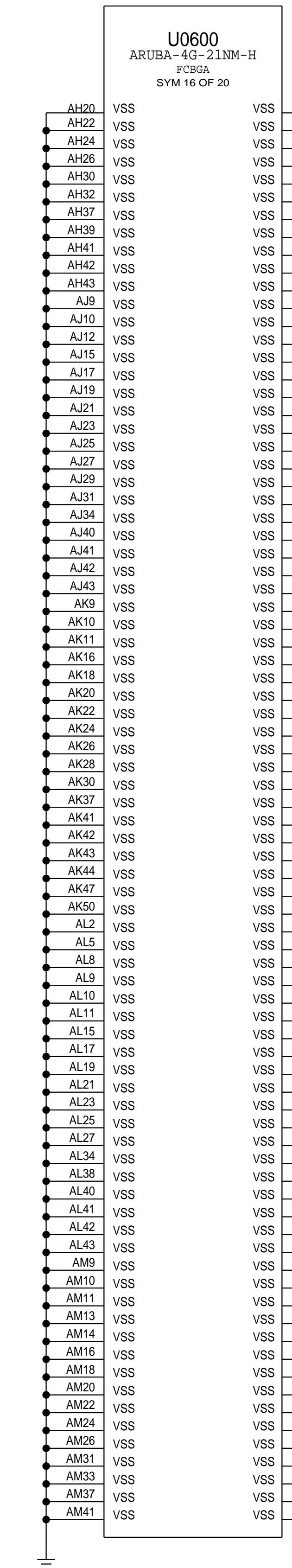
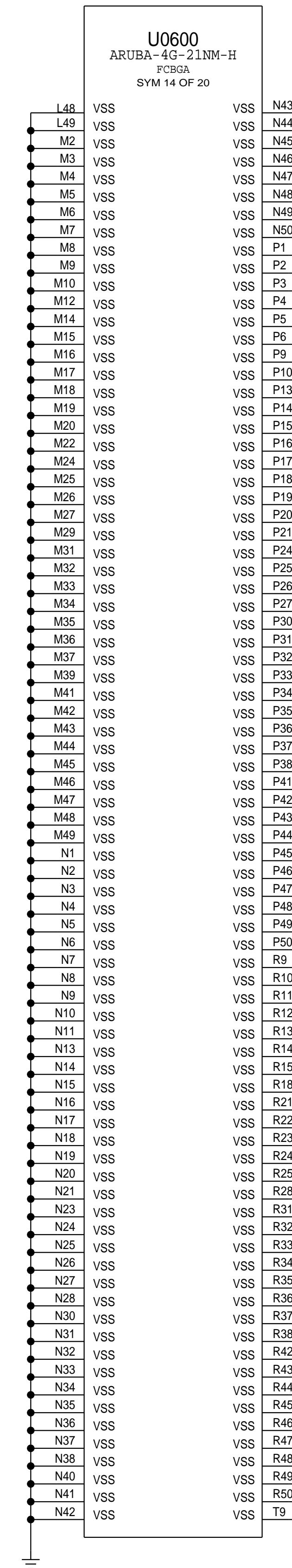
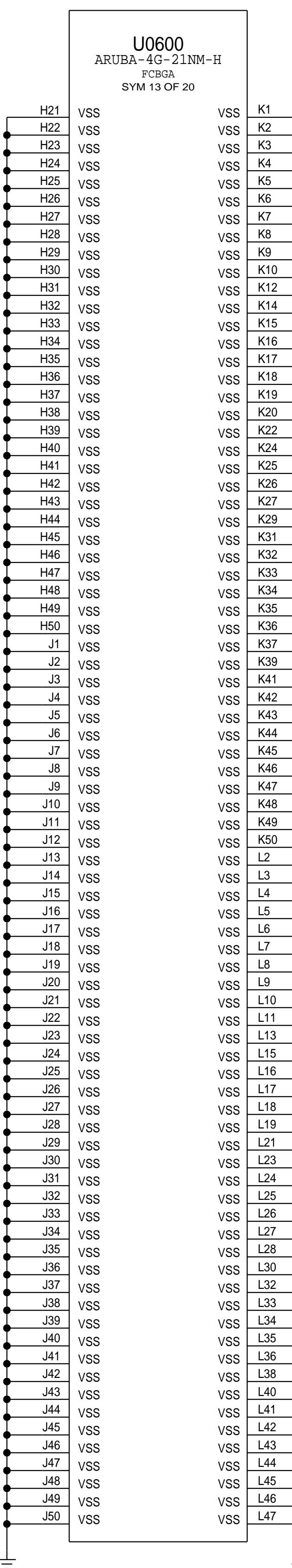
A

D

C

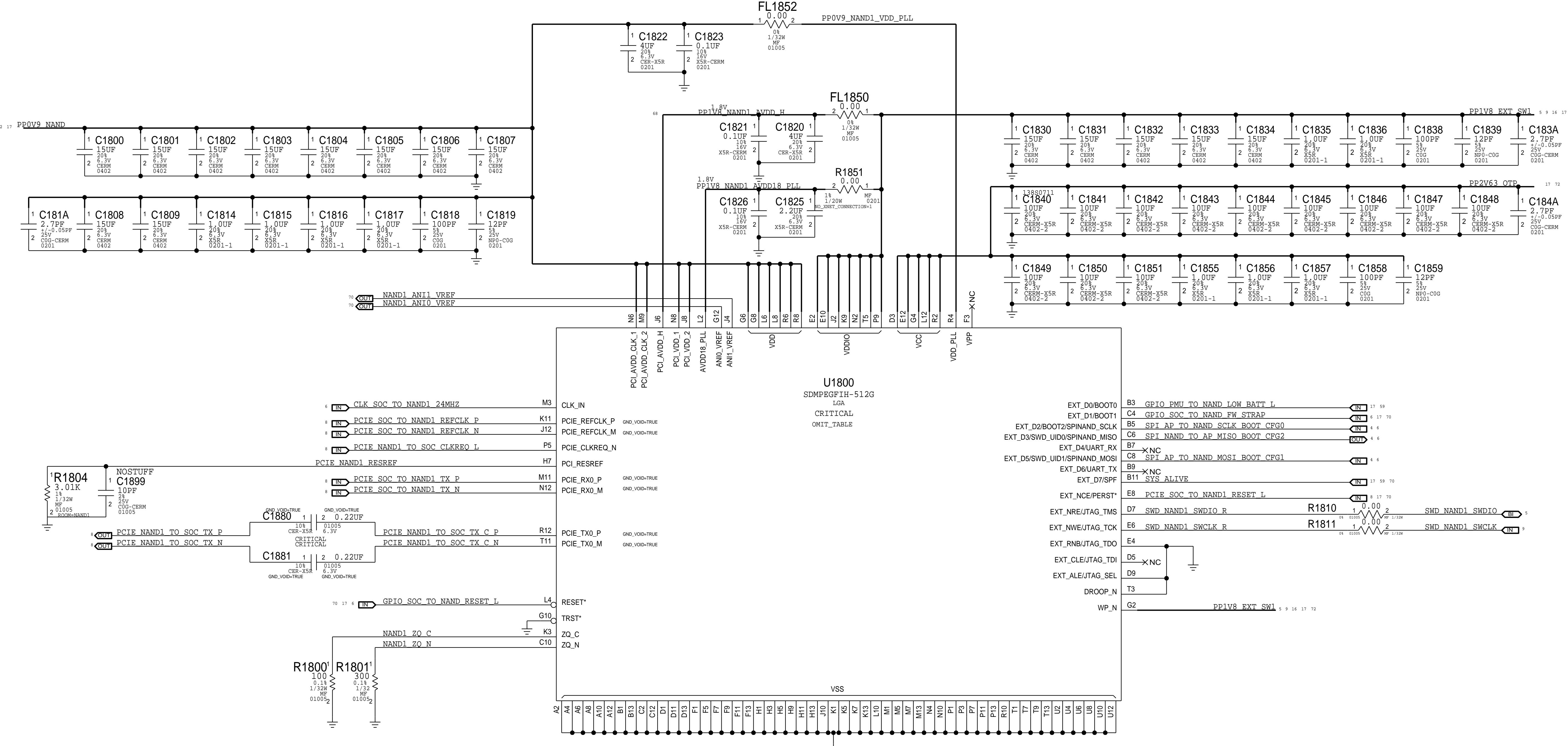
B

A



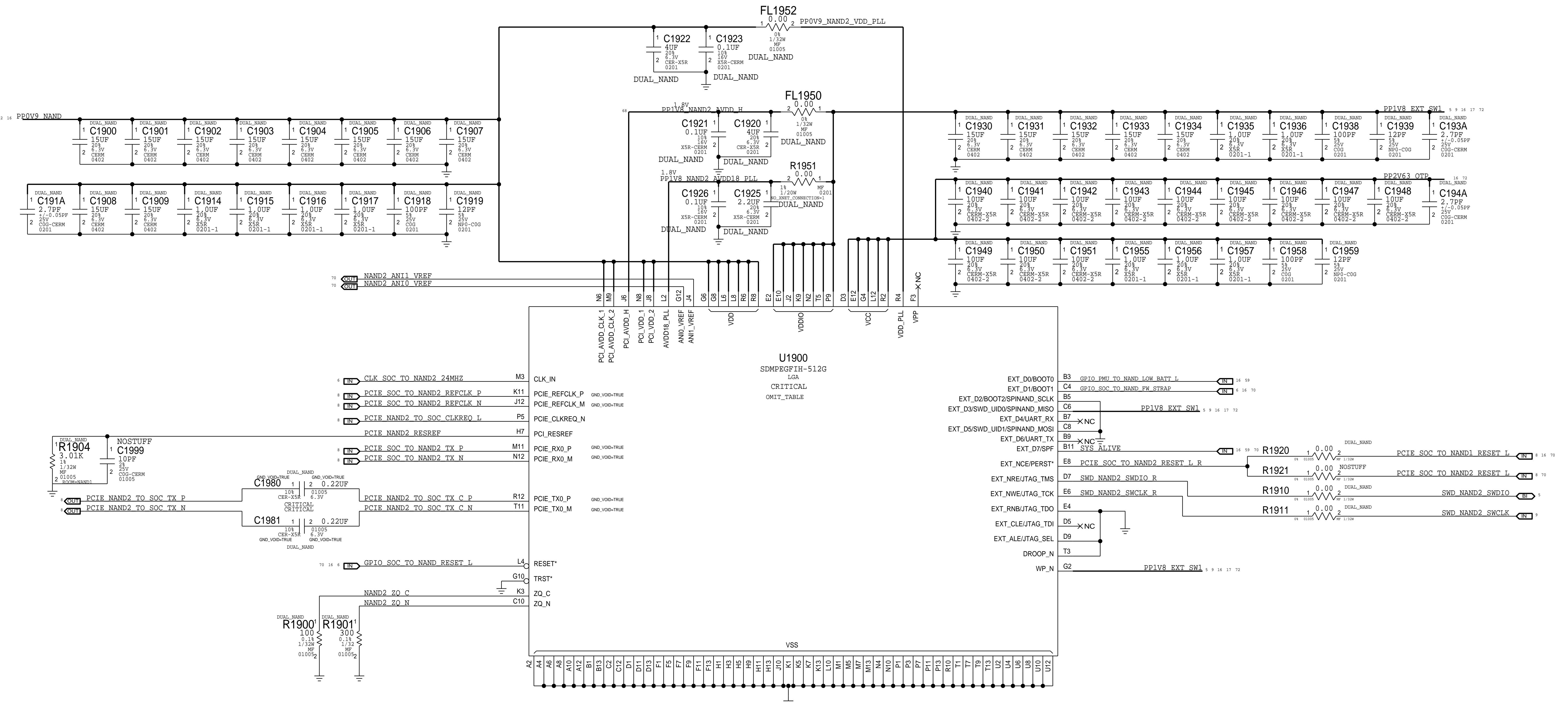
SYNC_MASTER=j421_P2_CHINA
PAGE_TITLE
SOC: GND-2
SYNC_DATE=05/13/2019

S4E NAND1



SYNC_MASTER=J421_P2_CHINA SYNC_DATE=05/13/2019
PAGE TITLE NAND : NAND1

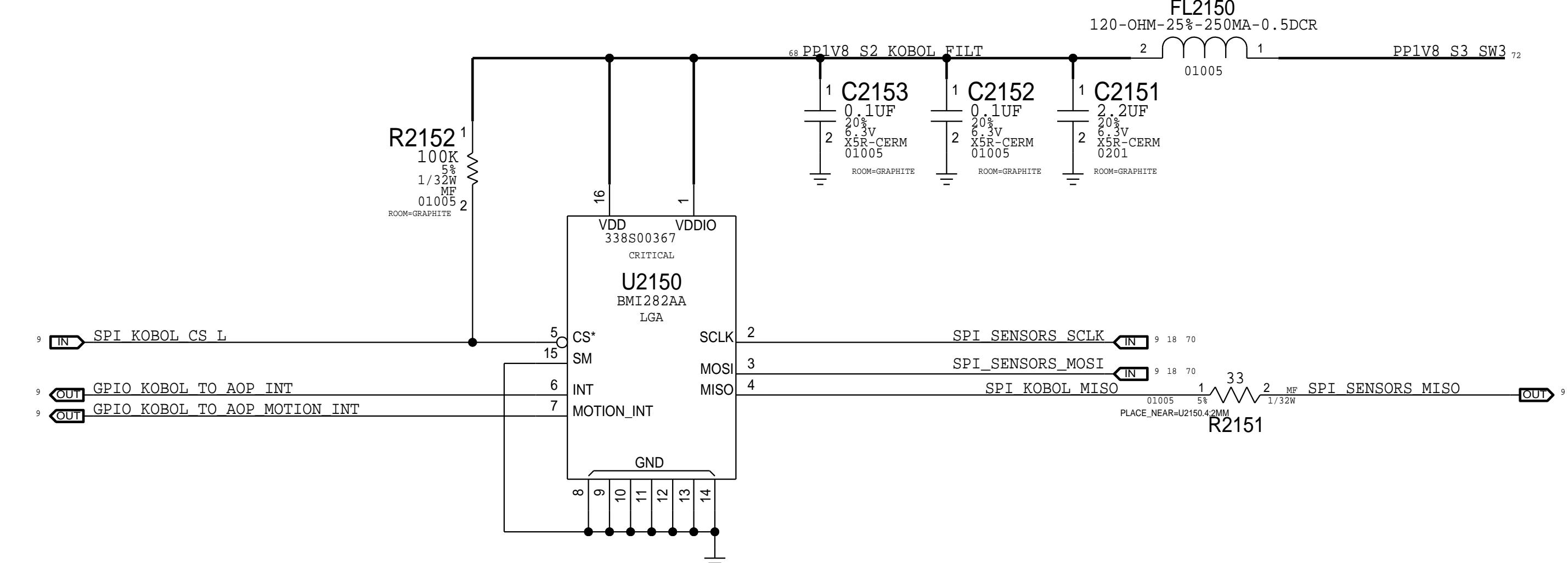
S4E NAND2



PAGE TITLE

SENSORS

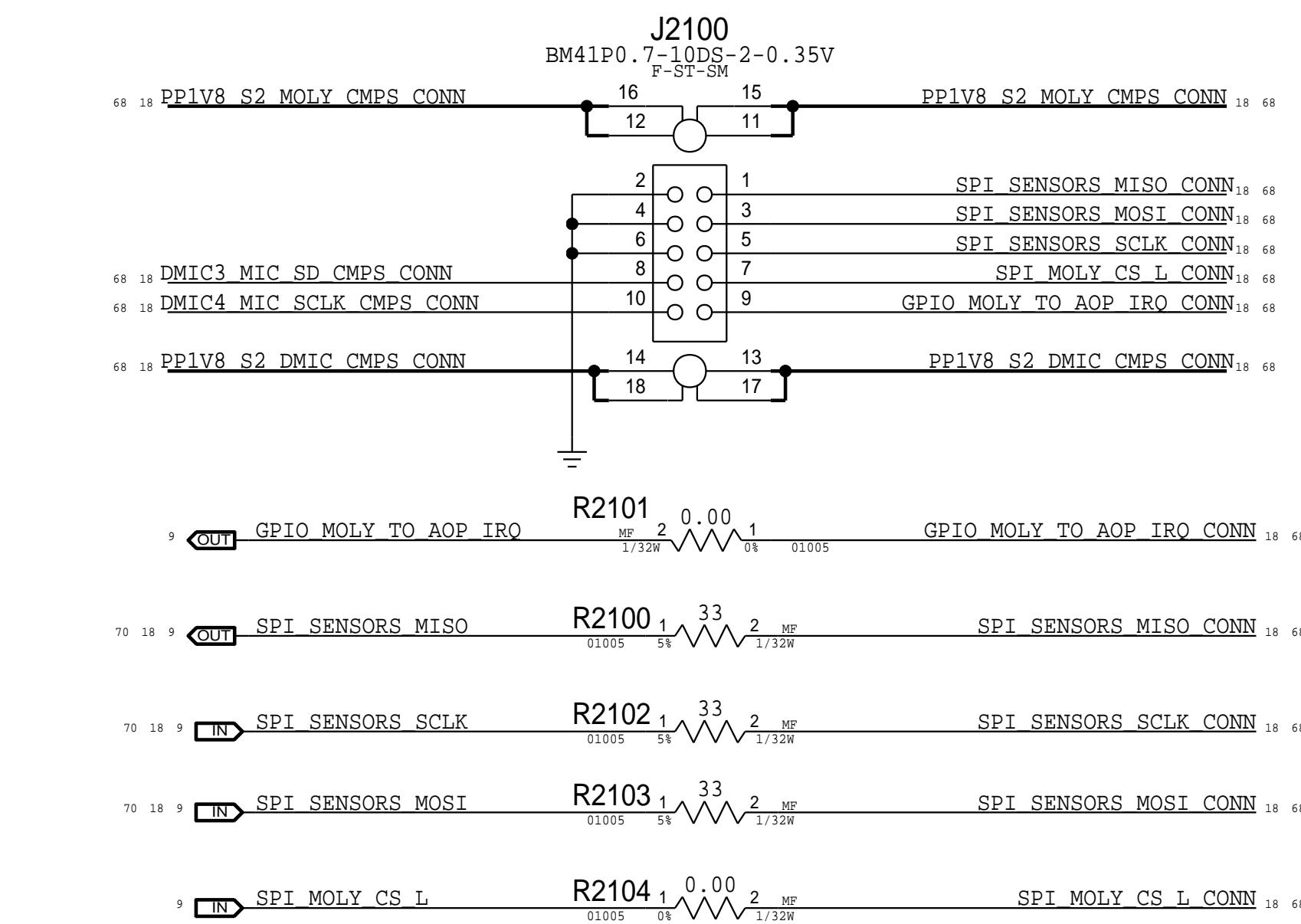
PRIMARY KOBOL - ACCEL & GYRO



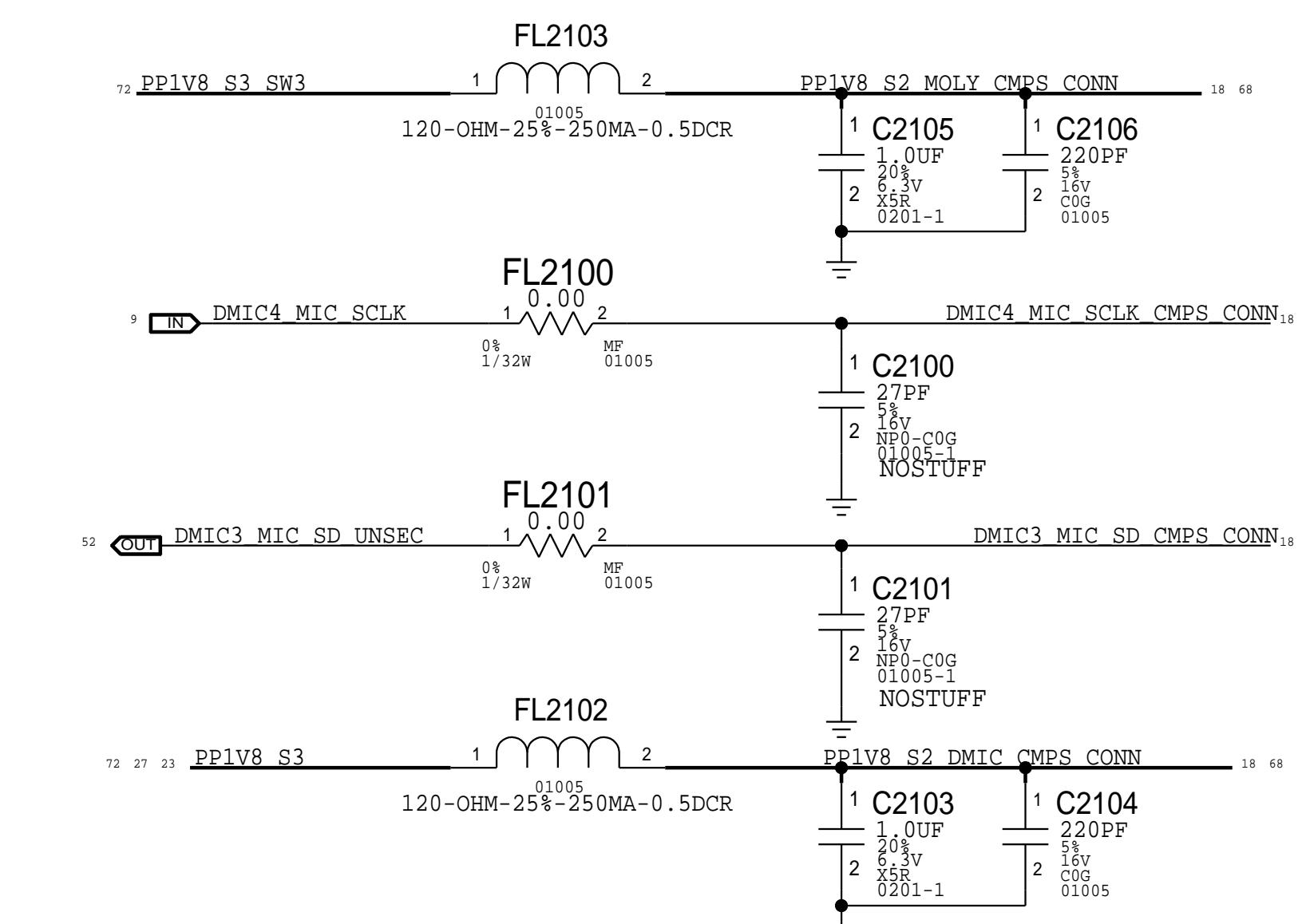
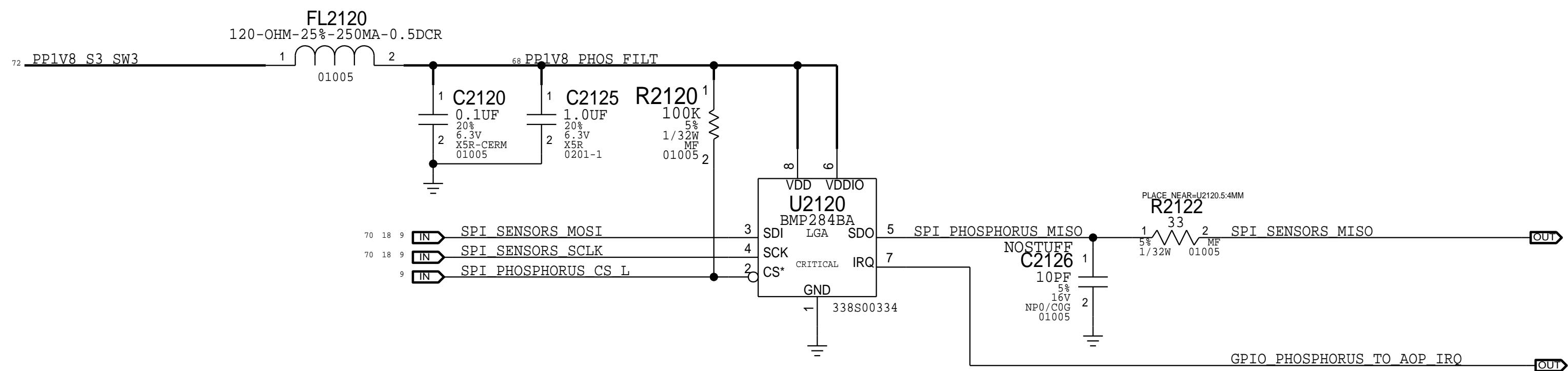
COMPASS/DMIC FLEX B2B

MATCH J417_COMPASS_FLEX 4.0.0

MLB SIDE: 516S00176
FLEX SIDE: 516S00175

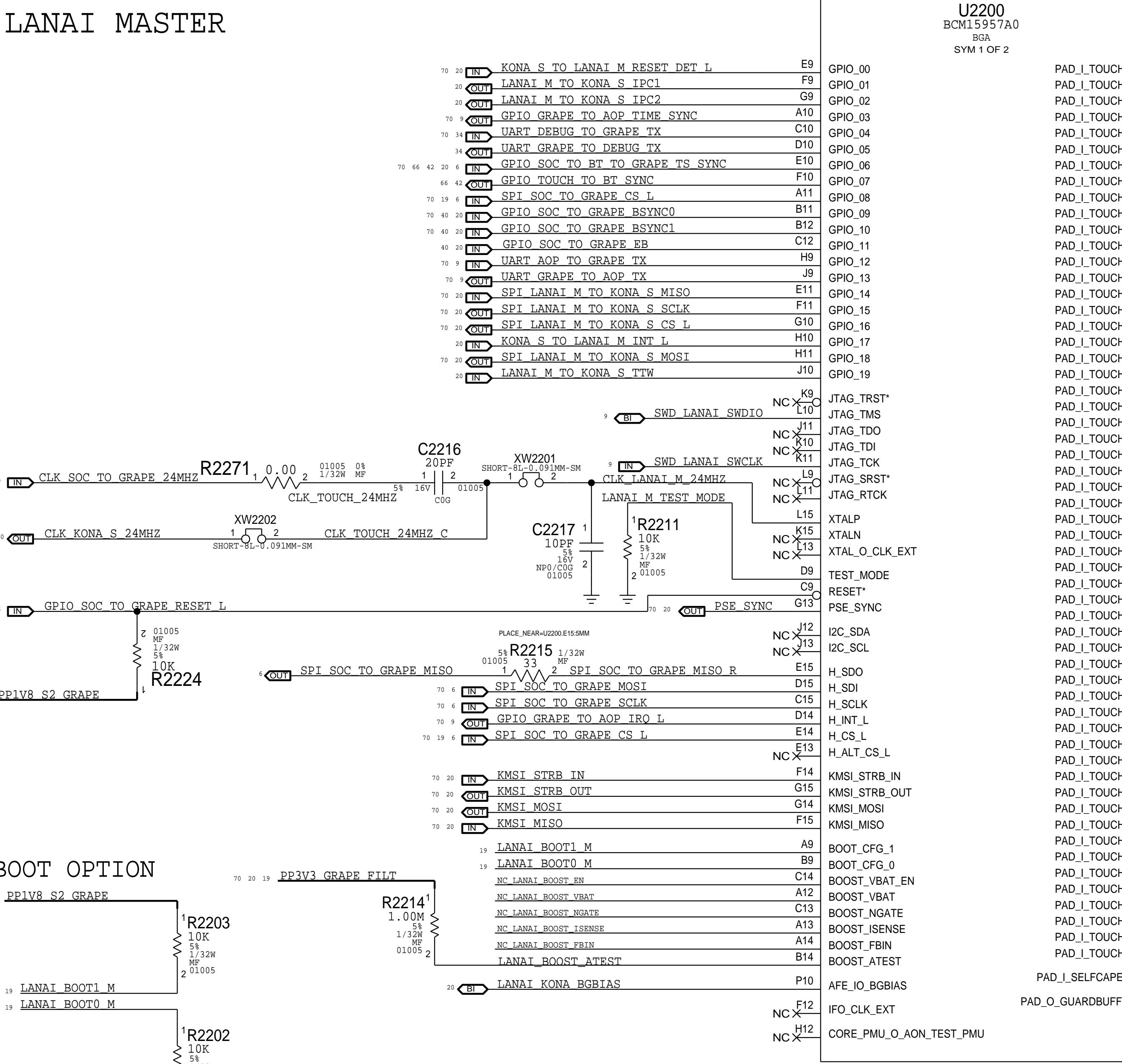


PHOSPHORUS2

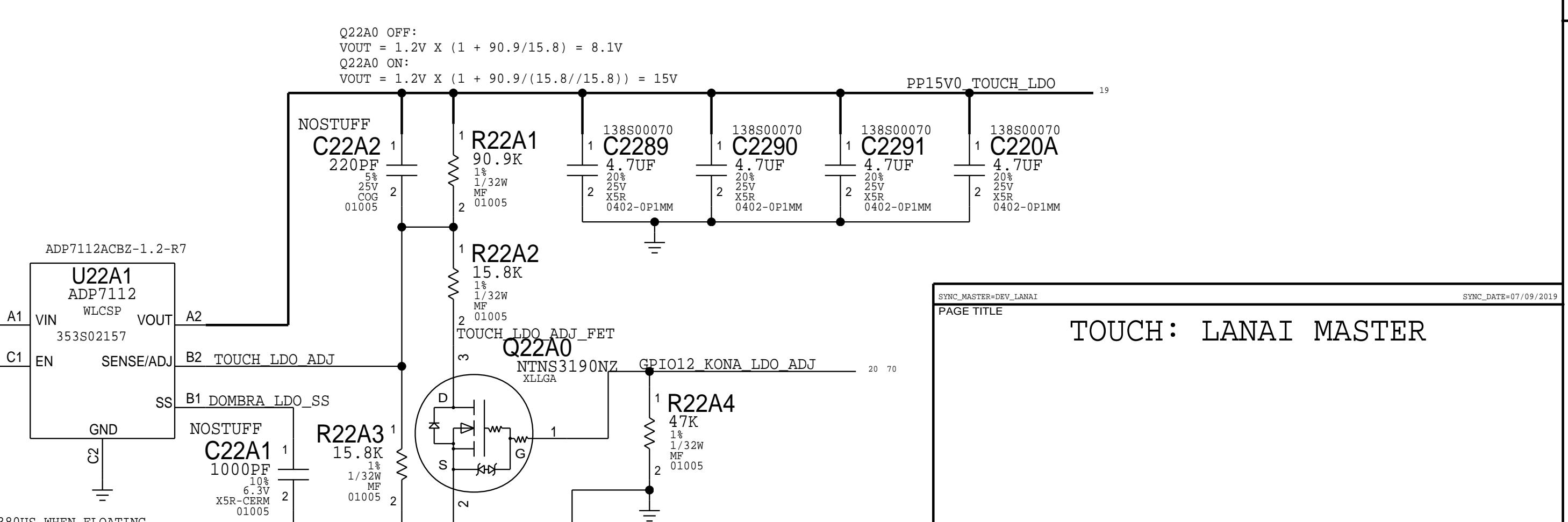
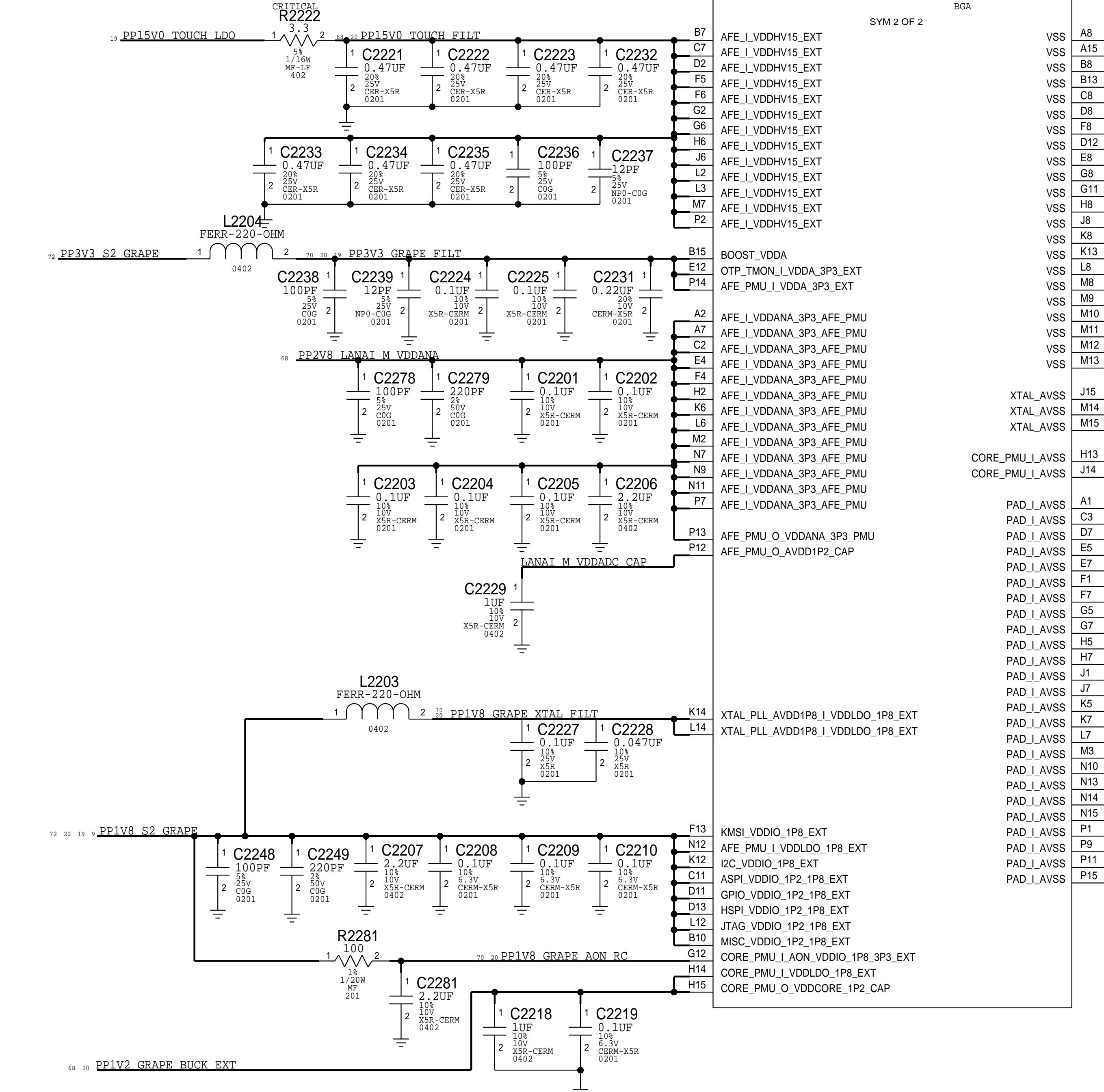
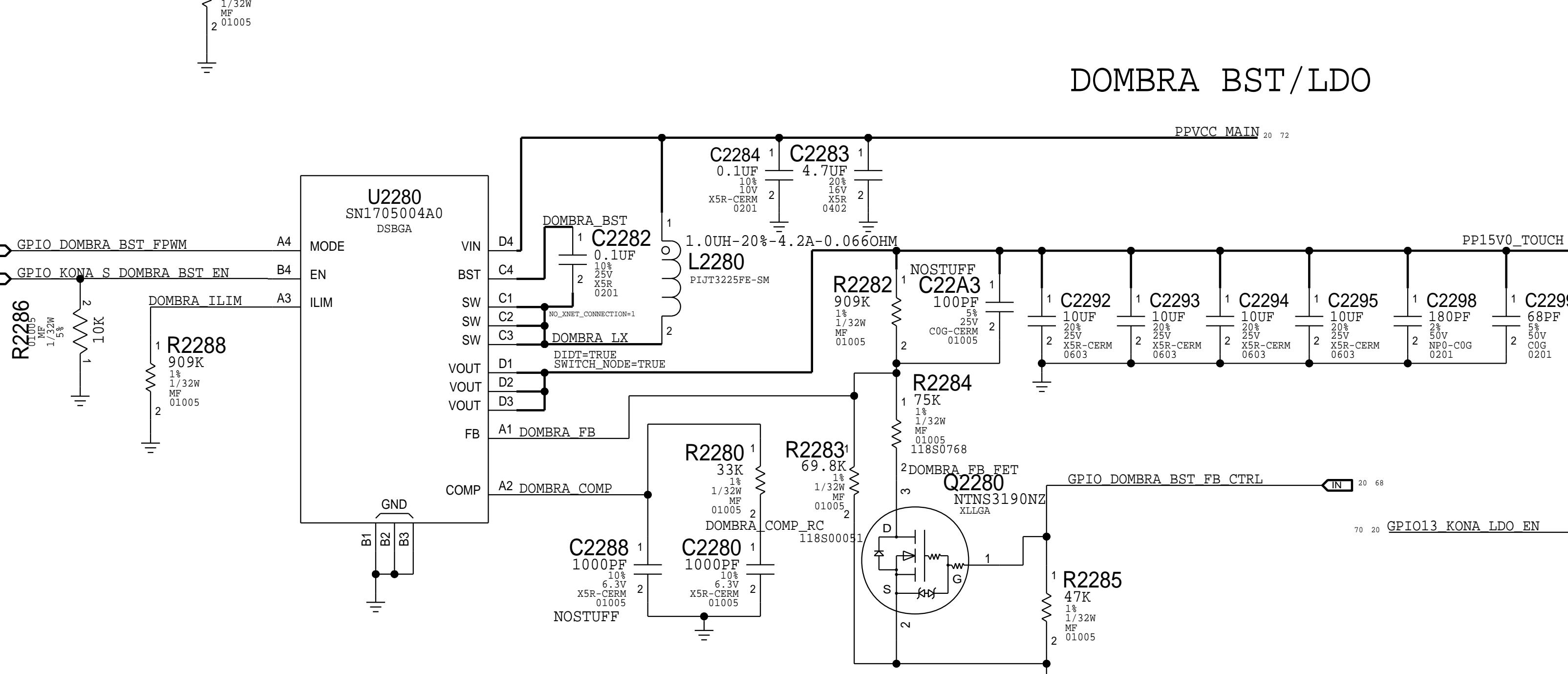


PAGE TITLE: SENSOR: KOBOL, PHOS2, MOLY

LANAI MASTER



BOOT OPTION



KONA: SLAVE

D

C

B

A

D

C

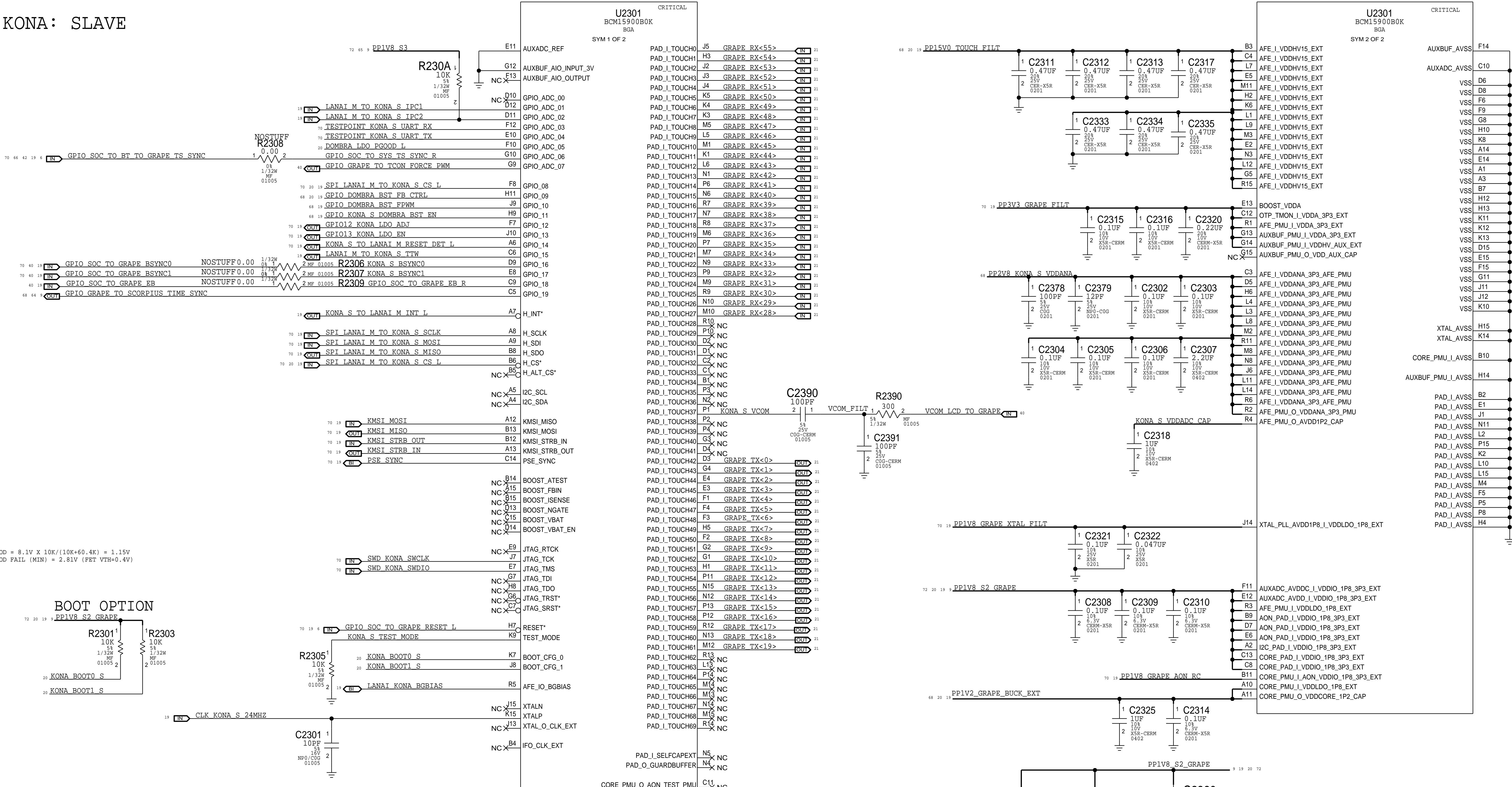
B

A

PGOOD = 8.1V X 10K/(10K+60.4K) = 1.15V
 PGOOD FAIL (MIN) = 2.81V (FET VTH=0.4V)

BOOT OPTION

1.2V EXT BUCK



D

D

C

C

B

B

A

A

TOUCH FLEX CONNECTOR (SENSE)

MATCHES J317_GRAPE_FLEX_LS_MAIN_V2 2.0.0

MLB: 516S00419

FLEX: 516S00420

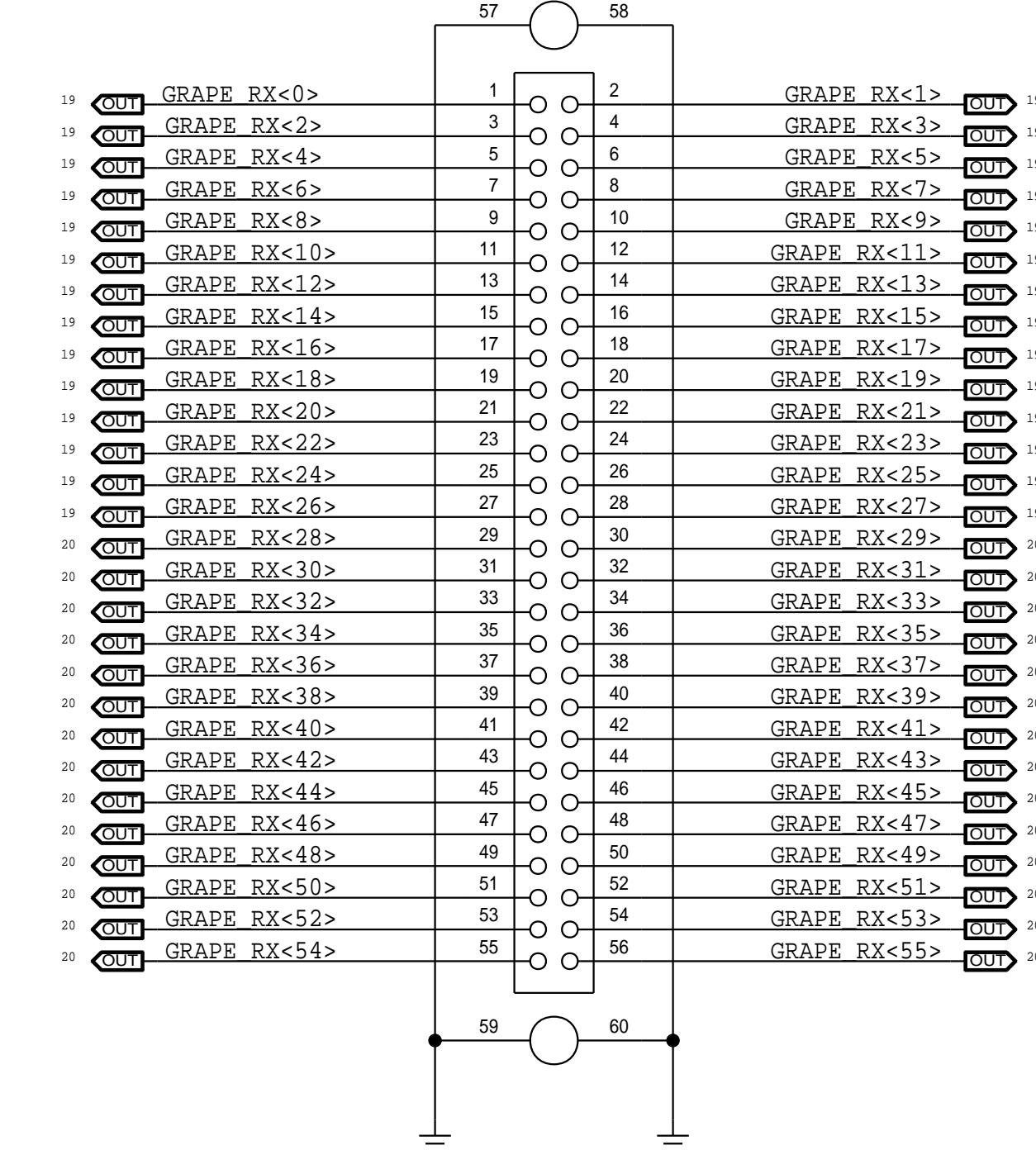
MOUNTING PINS CAN BE USED FOR ELECTRICAL CONNECTIONS

CRITICAL

J2400

BM28P0.6-56DS-2-0.35V

F-ST-SM



TOUCH FLEX CONNECTOR (DRIVE)

MATCHES J317_GRAPE_FLEX_LS_MAIN_V2 2.0.0

MLB: 516S00099

FLEX: 516S00098

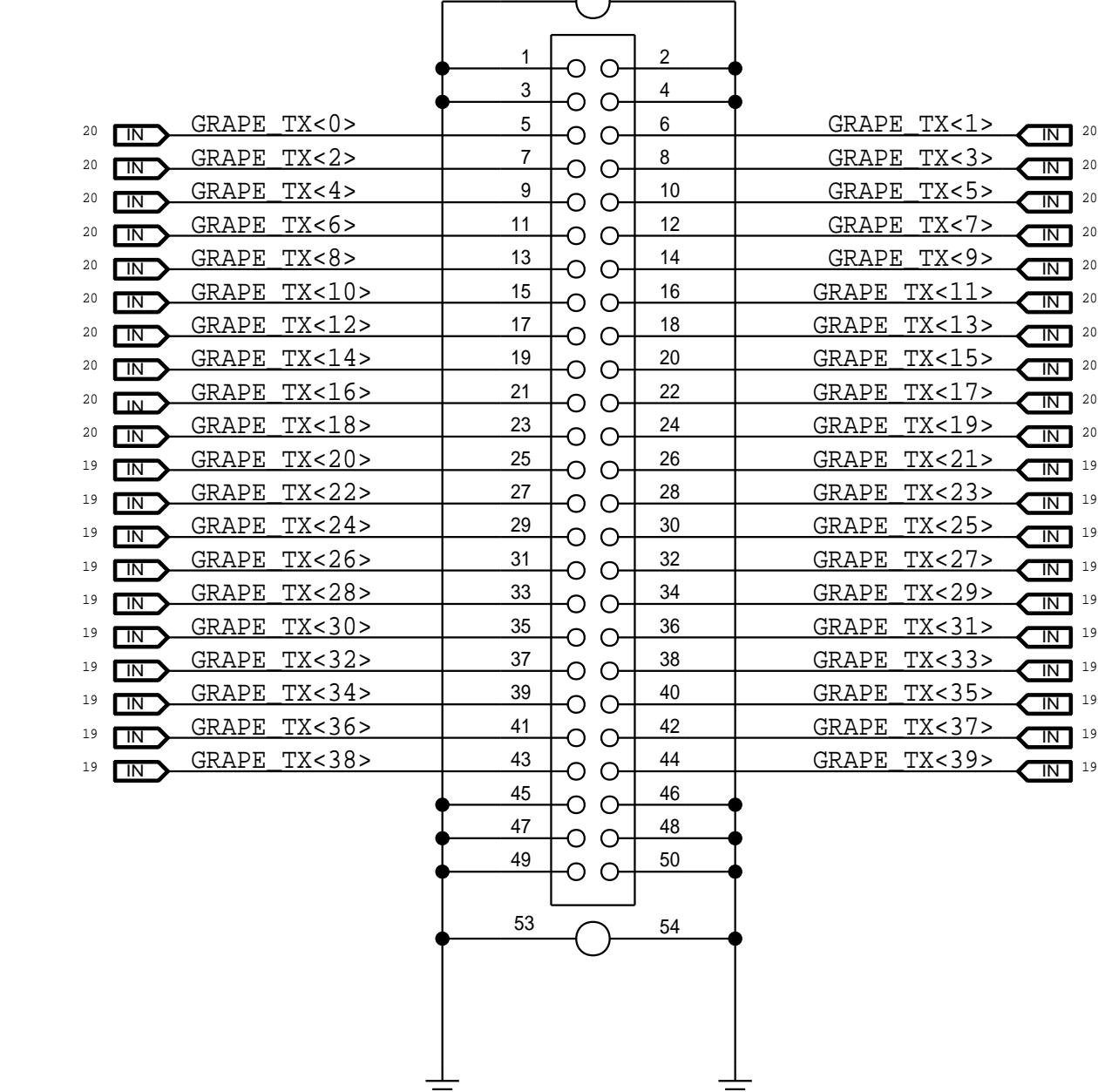
MOUNTING PINS CAN BE USED FOR ELECTRICAL CONNECTIONS

CRITICAL

J2401

505066-5022

F-ST-SM



DRAFT: J317_MLB_B

PAGE TITLE

TOUCH: GRAPE CONN

D

D

C

C

B

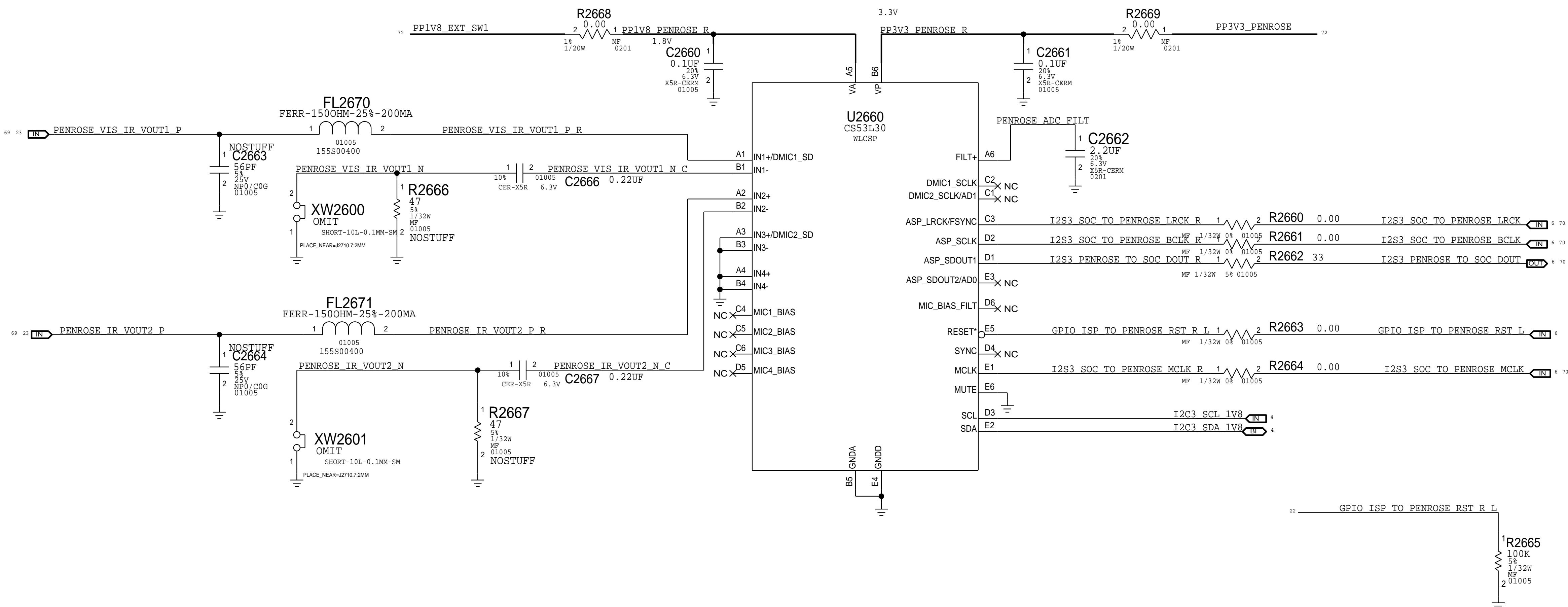
B

A

A

PENROSE ADC

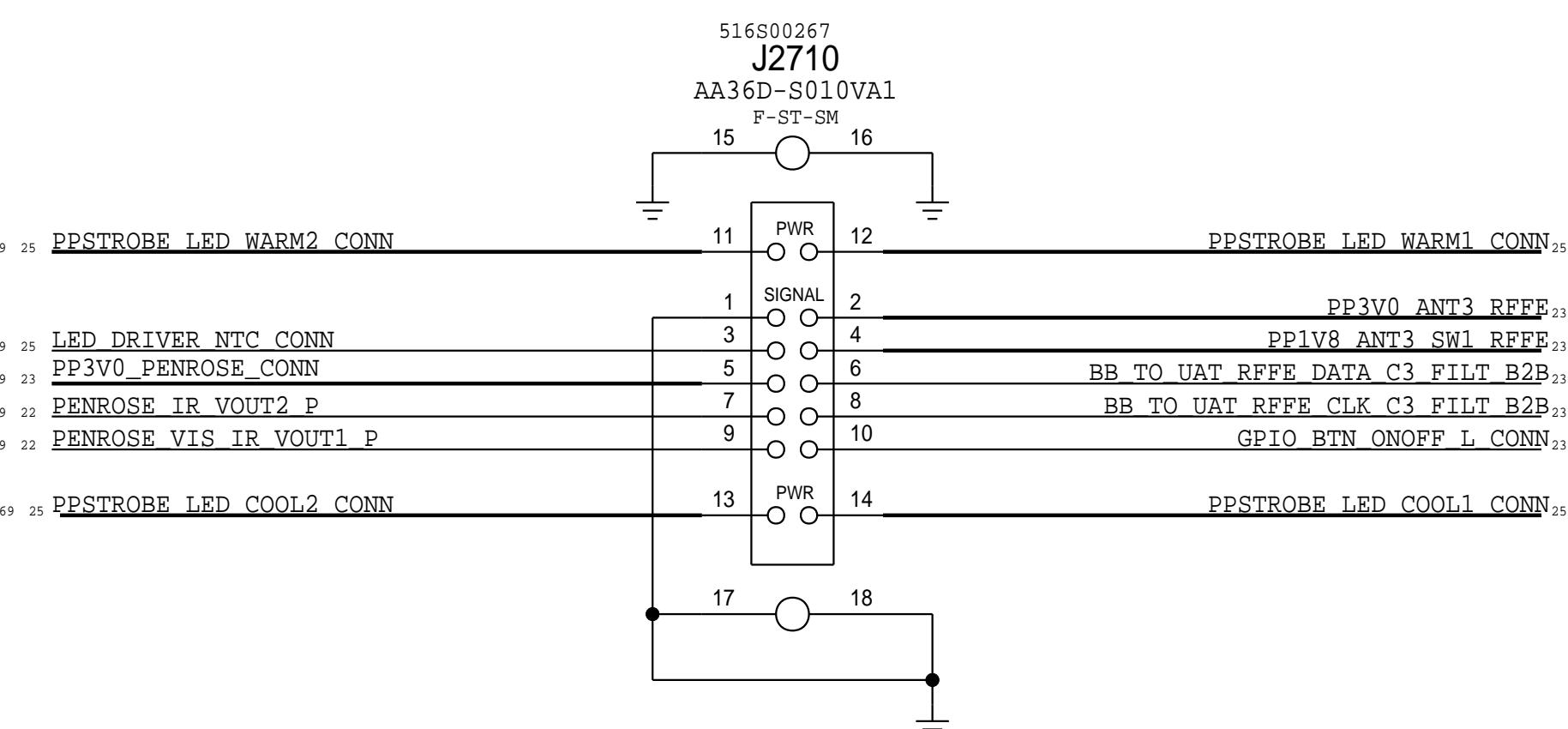
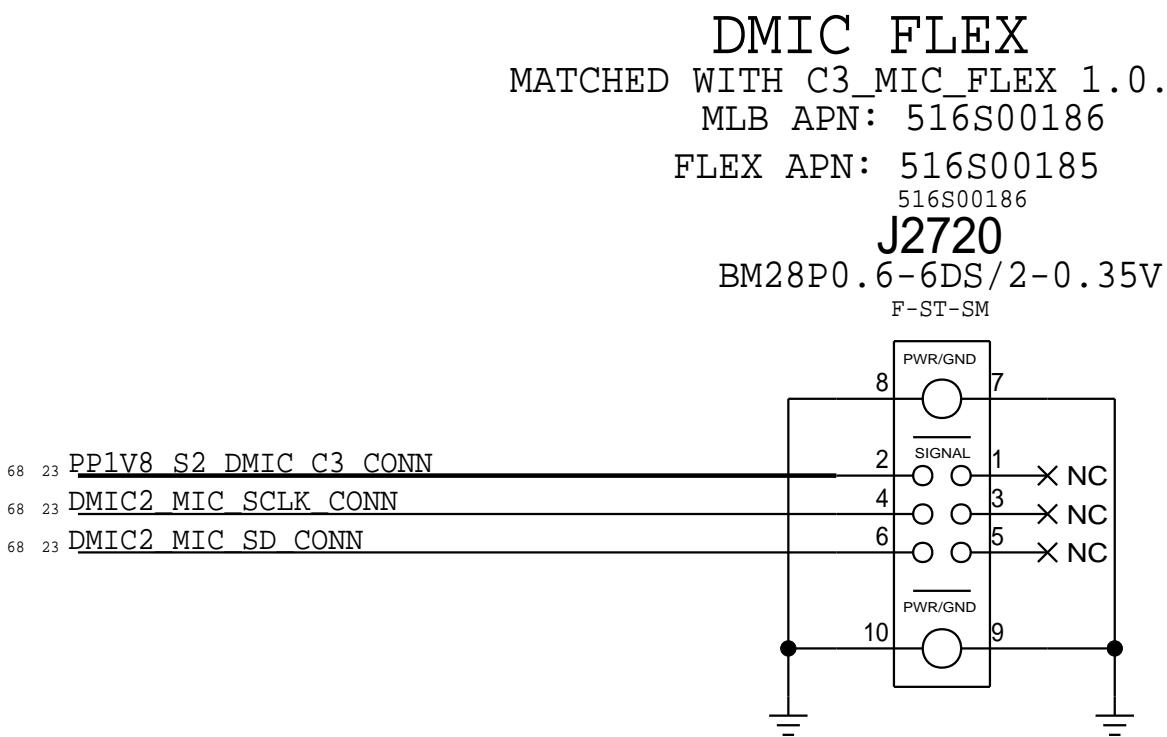
7-BIT I2C ADD: 0X48



CORE_MASTER=1421_P2_C010A
PAGE TITLE
CAMERA: PENROSE ADC

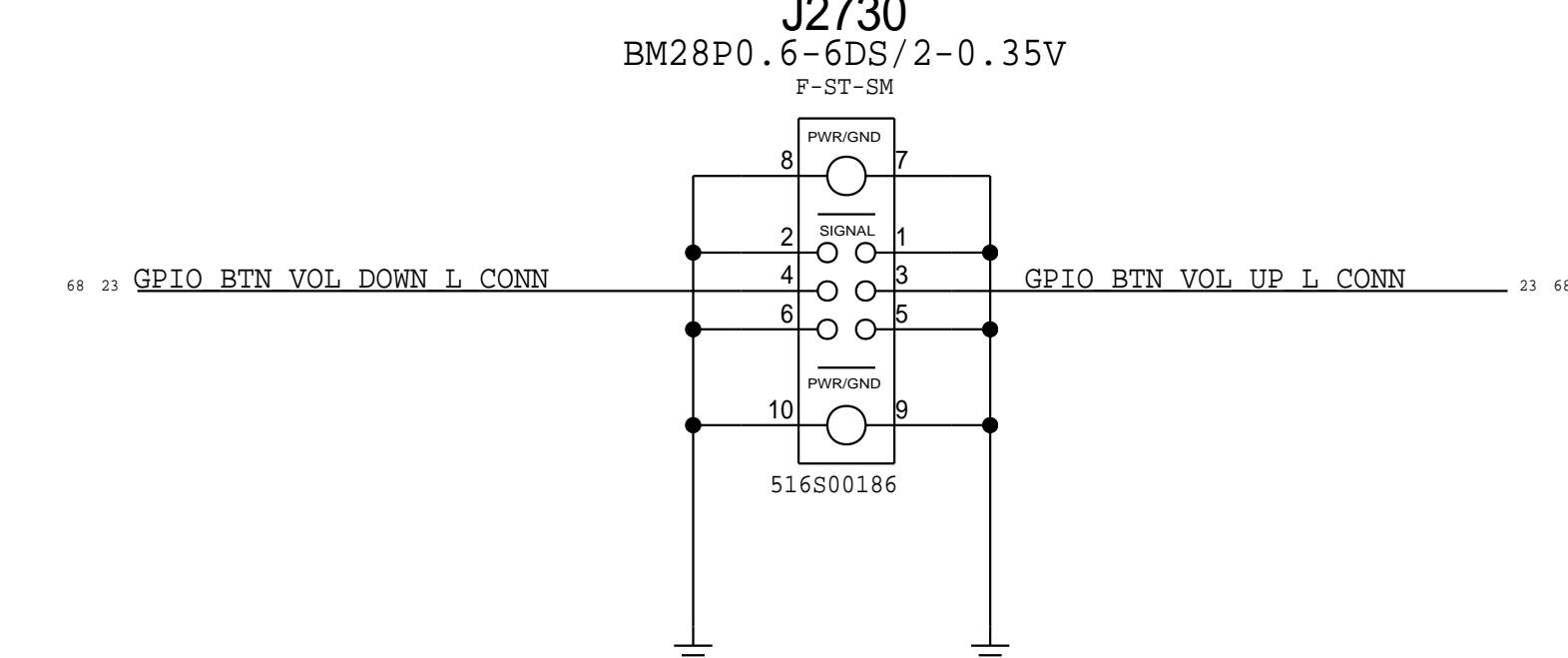
PB MANGO TREE FLEX B2B

MATCH J417_PB_MANGO_TREE_FLEX 1.0.0
 MLB APN: 516S00267
 FLEX APN: 516S00268



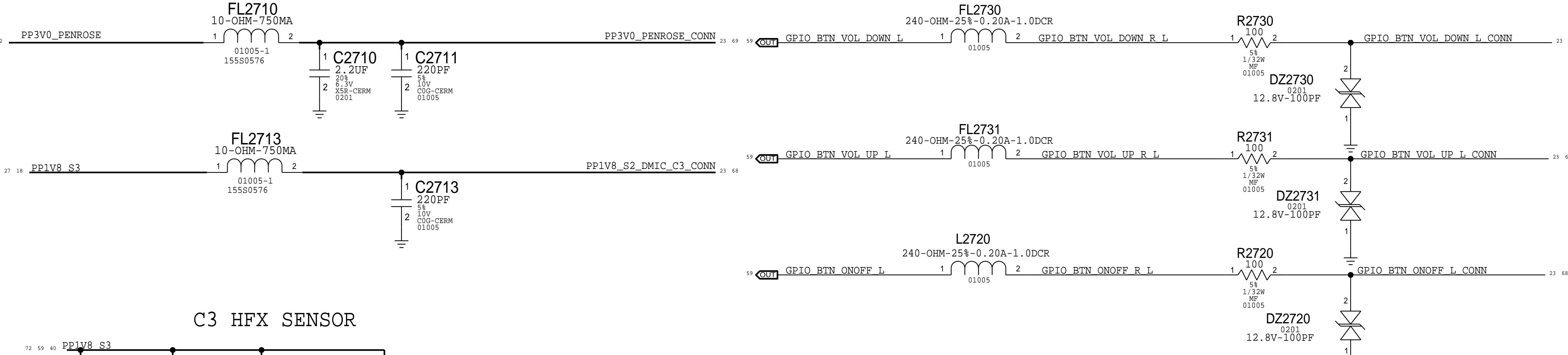
VB FLEX B2B

MATCH J420_VOLLEY FLEX 1.0.0
 MLB APN: 516S00186
 FLEX APN: 516S00185

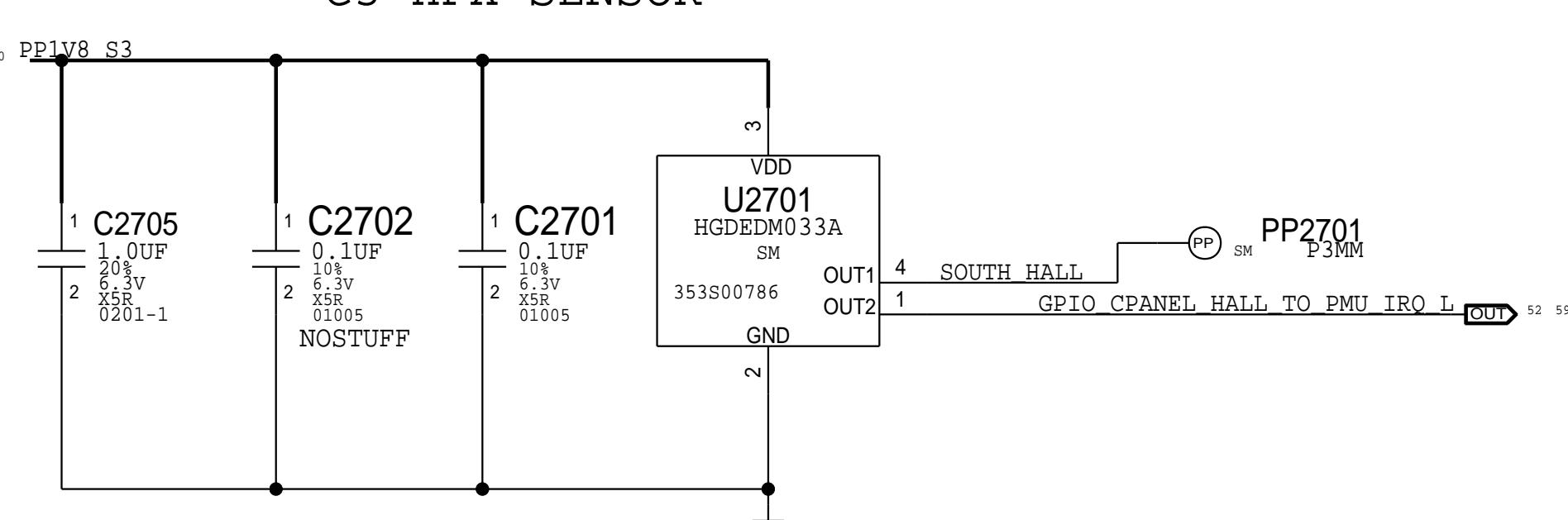


RFFE FILTERS (MORE AT PAGE 121)

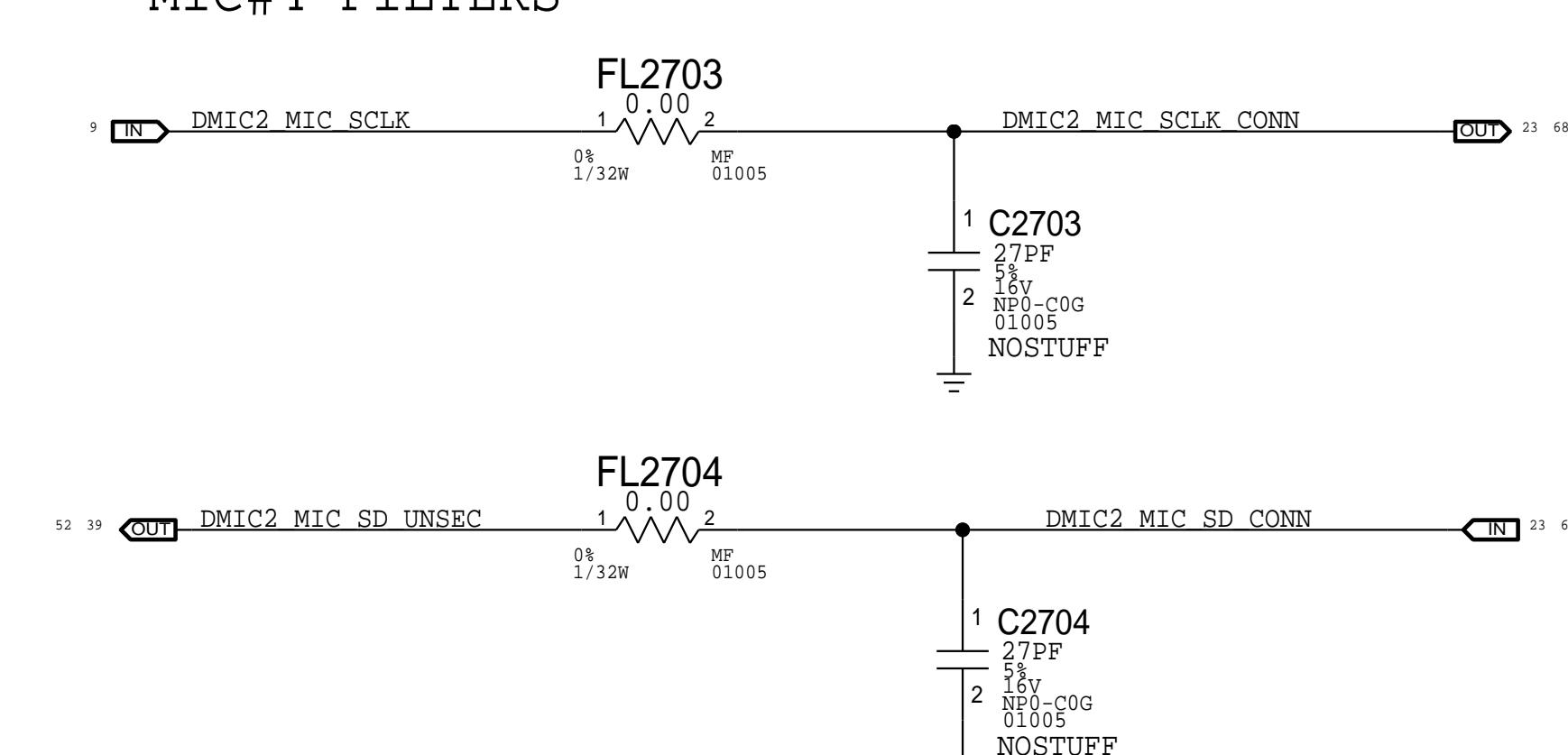
BUTTON FILTERS/ESD



C3 HFX SENSOR



MIC#4 FILTERS



PART NUMBER	ALTERNATE FOR PART NUMBER	REFERENCE DESIGNATOR(S)	DESCRIPTION	BOM OPTION
155S00097	155S00018	FL2723, FL2725	FERR 800HM 500mA 0.18DCR 0201	
155S0664	155S00018	FL2723, FL2725	FERR 800HM 500mA 0.18DCR 0201	

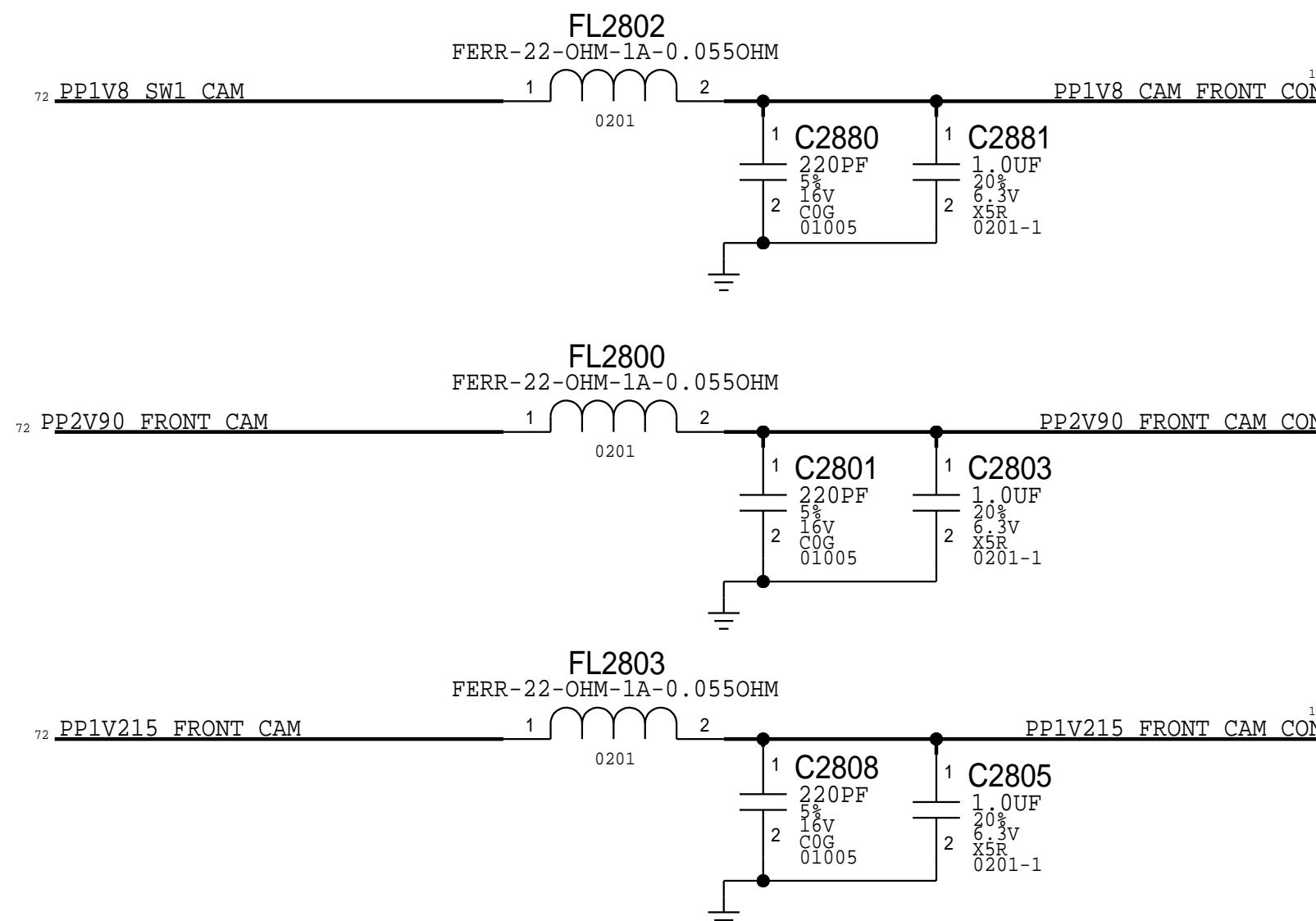
PAGE TITLE
 CAMERA: B2B STROBE & MISC

FRONT CAMERA (LI)

D

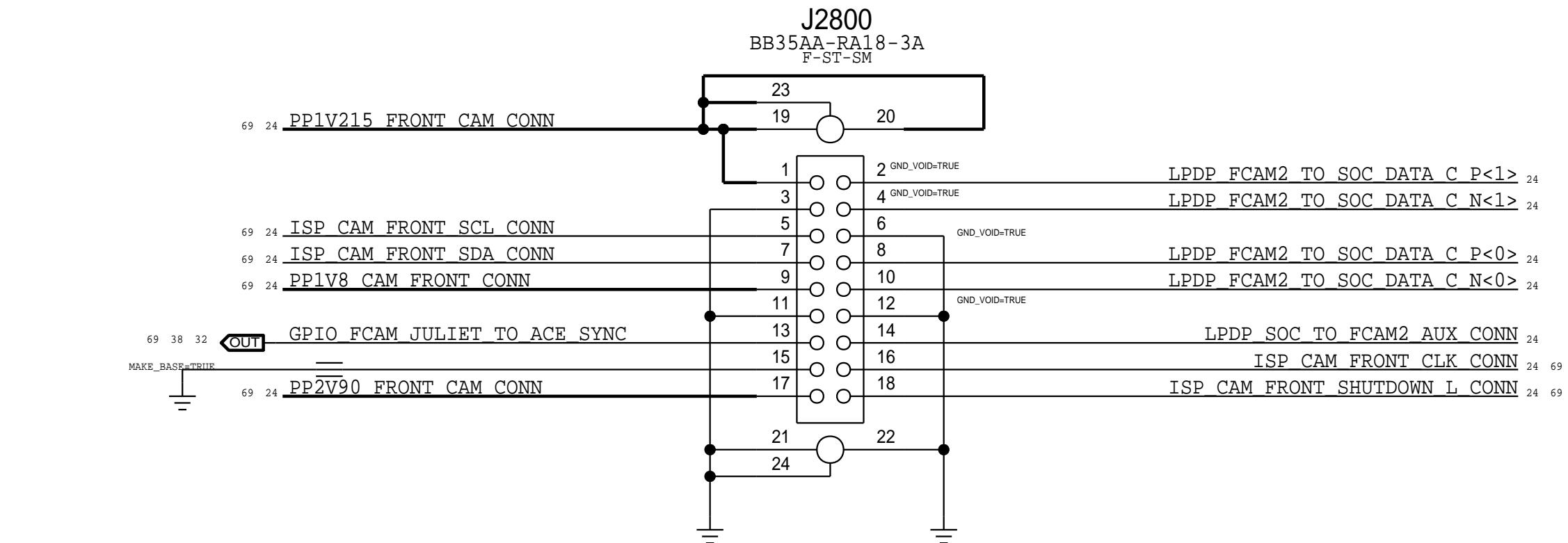
D

POWER FILTERS

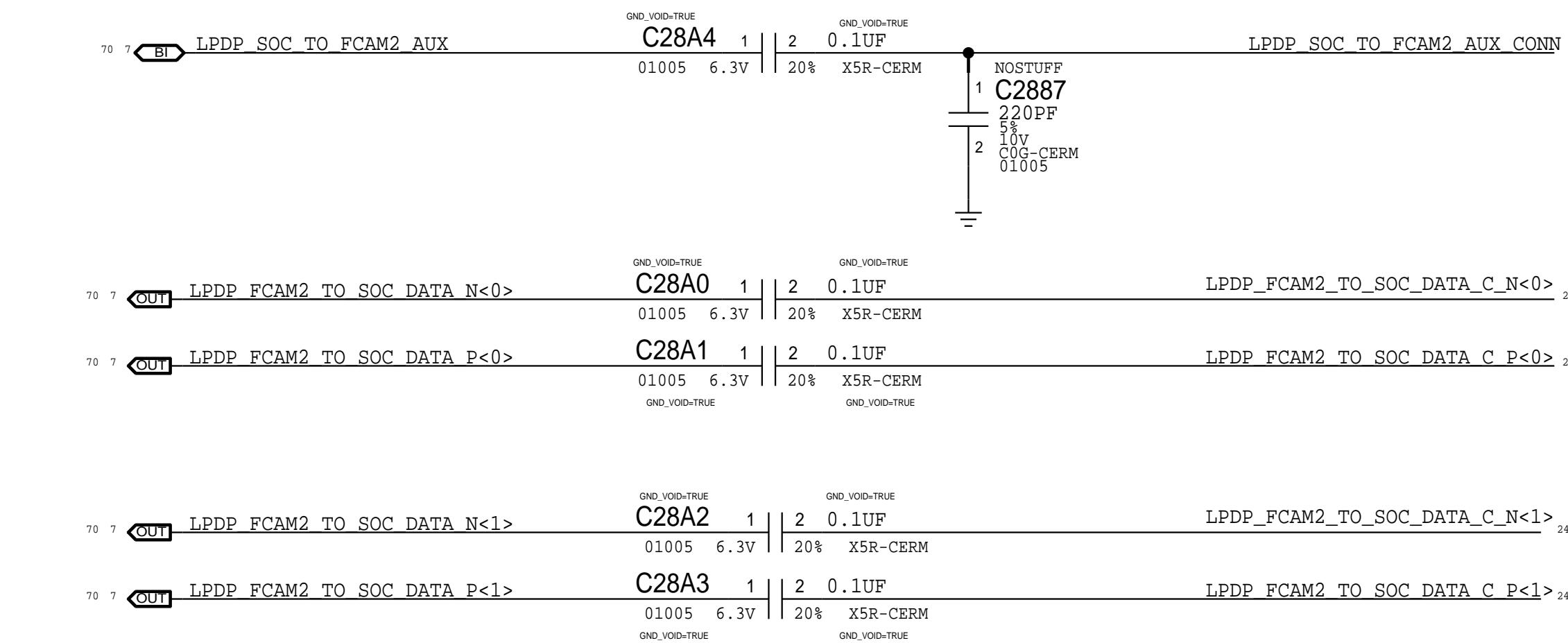


FRONT CAMERA CONNECTOR

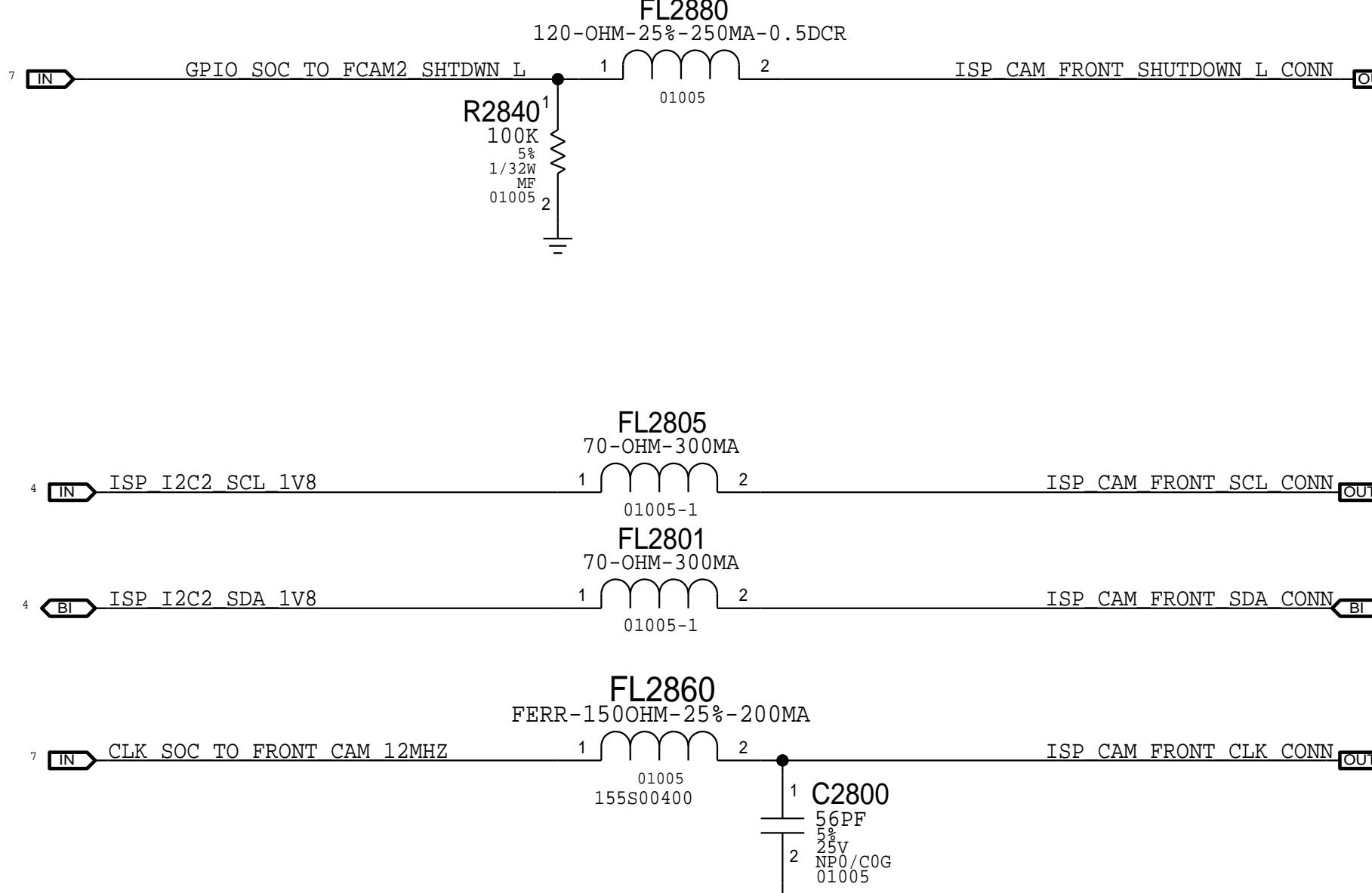
FLEX SIDE: 516S00396
MLB SIDE: 516S00395
MATCH J317_FRONT_CAM_ISLAND_FLEX A.0.0



LPDP AC COUPLING CAPS



IO FILTERS



ZINC_MATTER=1421_P2_CHINA
PAGE TITLE
CAMERA: B2B FRONT

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
138S0875	138S0678		C2902, ETC	RDAR://PROBLEM/26929420
152S00121	152S00081		L2900, ETC	0.47UH 3.8A 2012 TAIYO

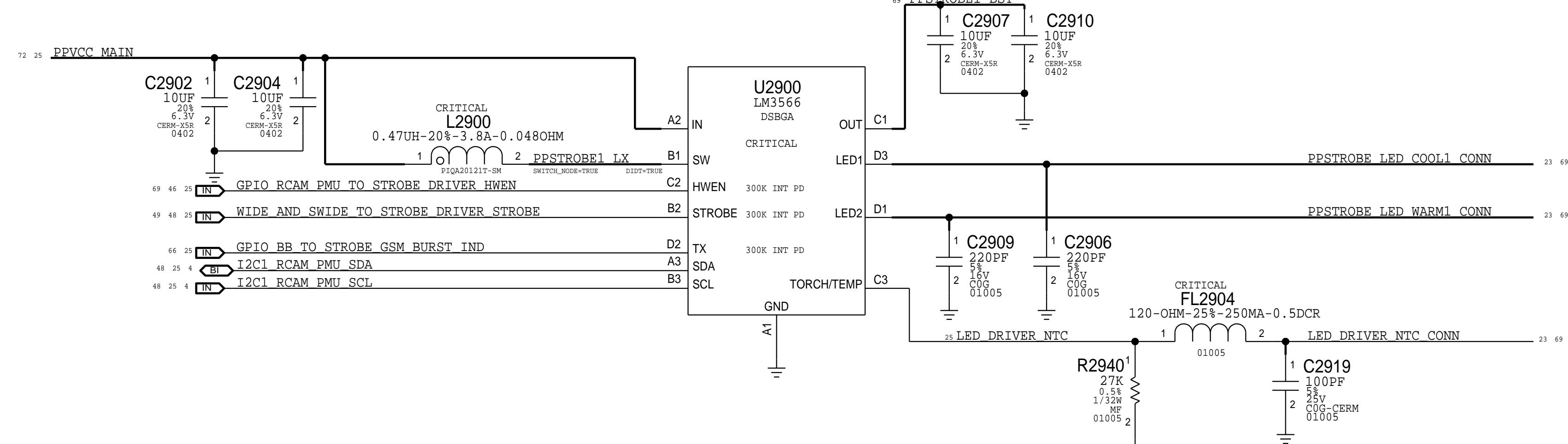
D

D

STROBE CIRCUITRY

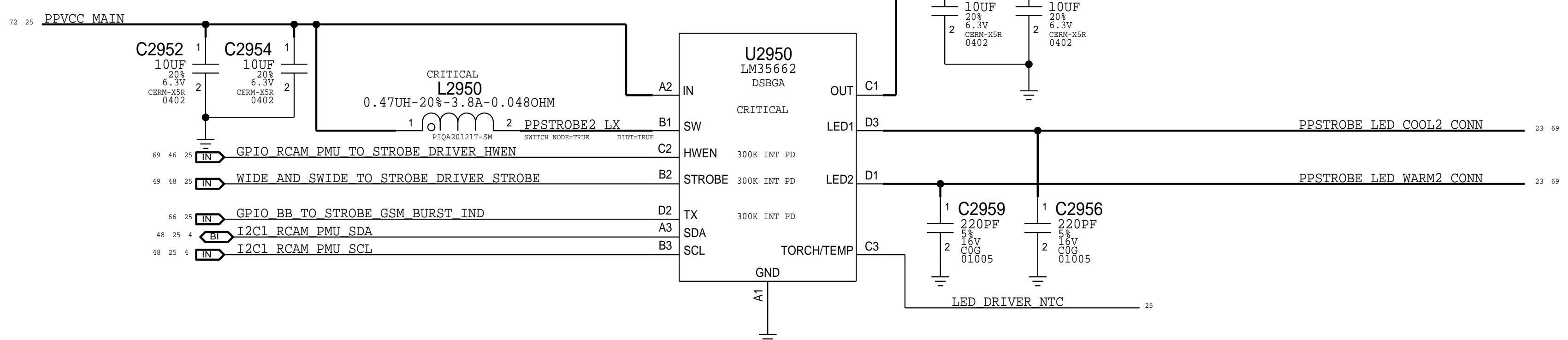
LED DRIVER 1

APN: 353S00558



LED DRIVER 2

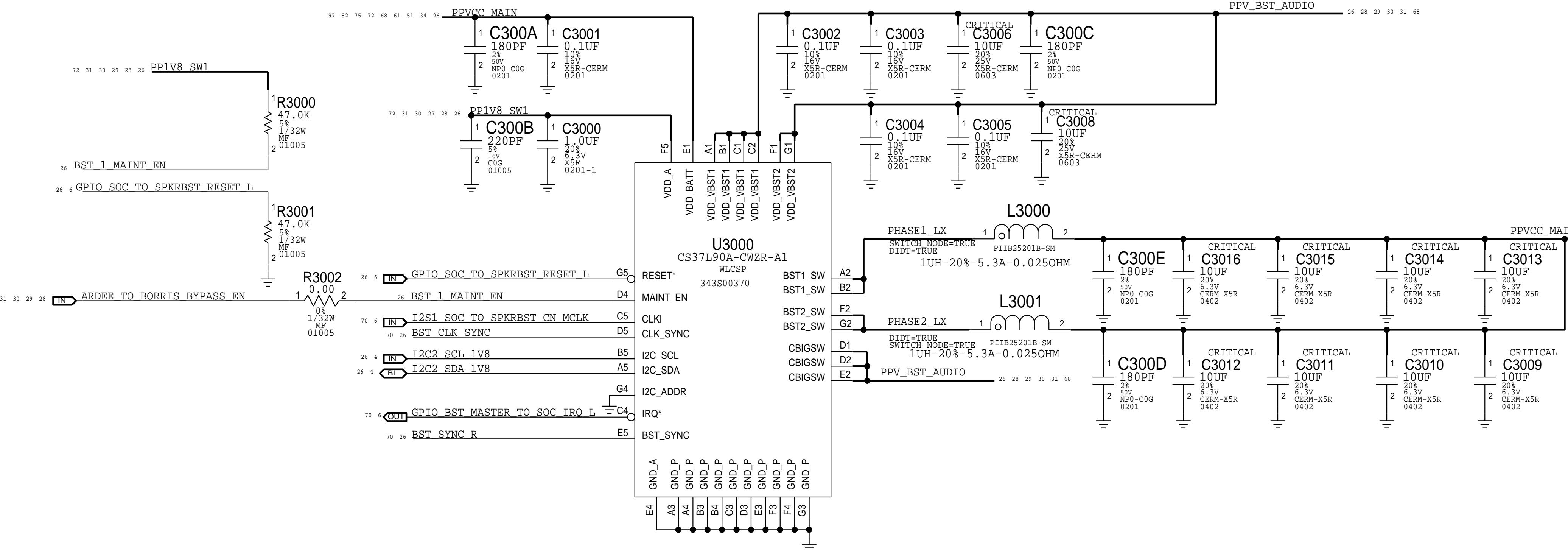
APN: 353S00868



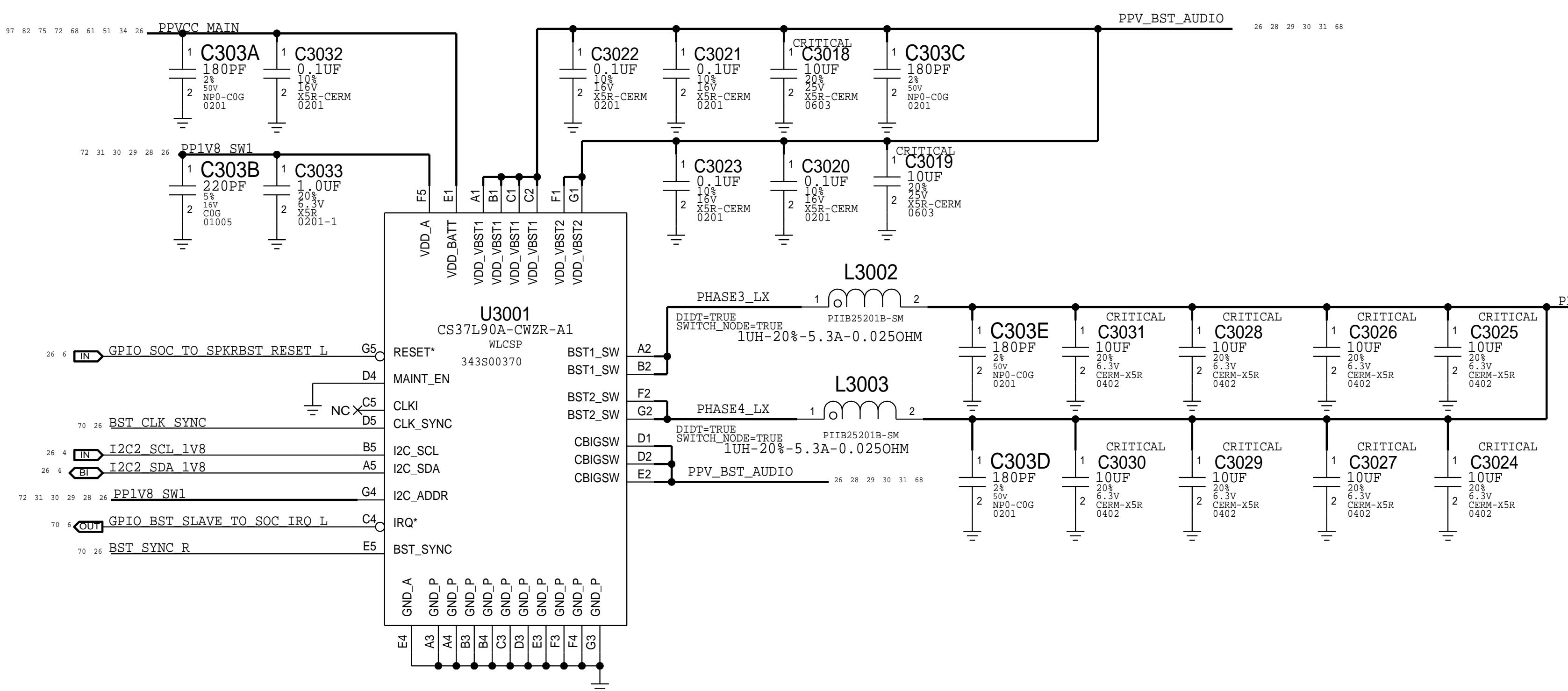
SYNC_MASTER=J317_MLB_B	SYNC_DATE=11/16/2018
PAGE TITLE	
CAMERA: STROBE	

BORRIS BOOST

BOOST MASTER



BOOST SLAVE



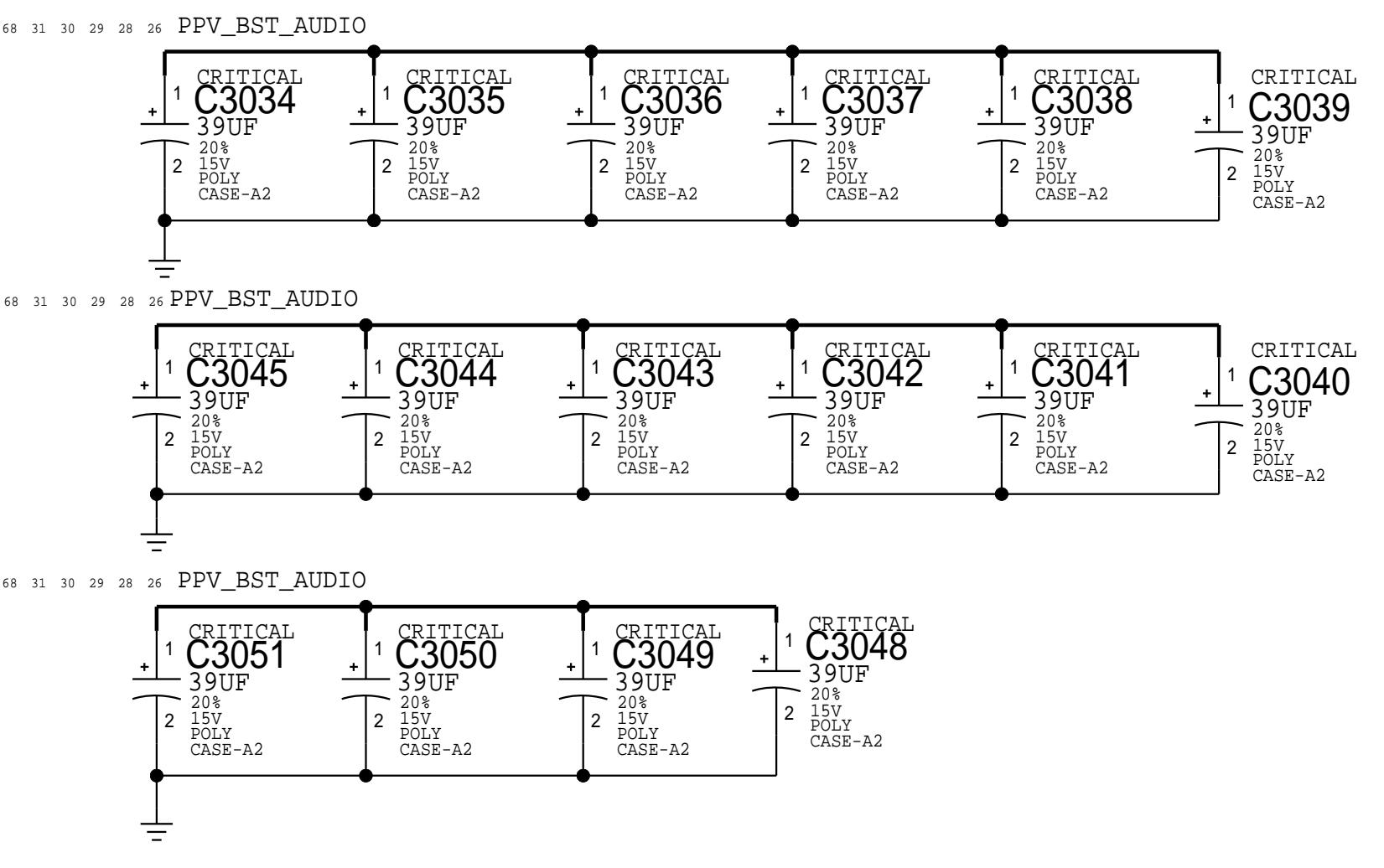
CS35L91 (ARDEE)

ADDR	PIN	PULL	RESISTOR	I2C ADDRESS
GND	VDD	0K	0K	0X70 AMP1 FHRT
GND	VDD	4.99K	4.99K	0X72 AMP2 FHRW
GND	VDD	4.99K	4.99K	0X74 AMP3 FHLT
GND	VDD	20K	20K	0X76 AMP4 FHLW
GND	VDD	20K	20K	0X78 AMP5 CNRT
GND	VDD	100K	100K	0X7A AMP6 CNRW
GND	VDD	100K	100K	0X7C AMP7 CNLT
GND	VDD	100K	100K	0X7E AMP8 CNLW

CS37L90 (BORRIS)

ADDR	PIN	PULL	RESISTOR	I2C ADDRESS
GND	DVDD	0K	0K	0X60 MASTER
DVDD	DVDD	0K	0K	0X62 SLAVE

CAP RESERVOIR



SYNC_MASTER-J417_P2_CHINA
PAGE TITLE: AUDIO: BORRIS BOOST
SYNC_DATE=06/04/2019

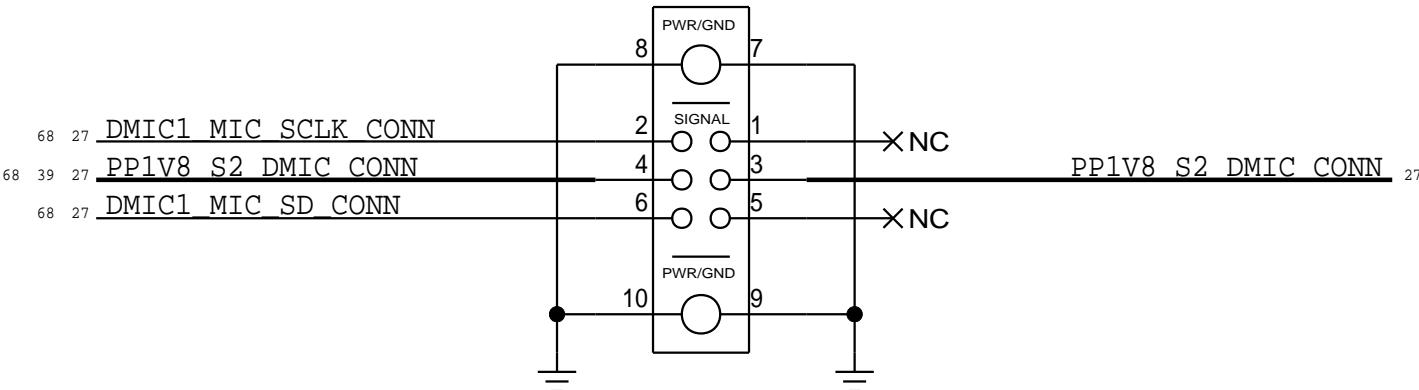
DMIC CONN AND FILTERS

MIC FLEX B2B
MATCH J317_MIC_FLEX 5.2.0
MLB APN: 516S00186
FLEX APN: 516S00185

J3100

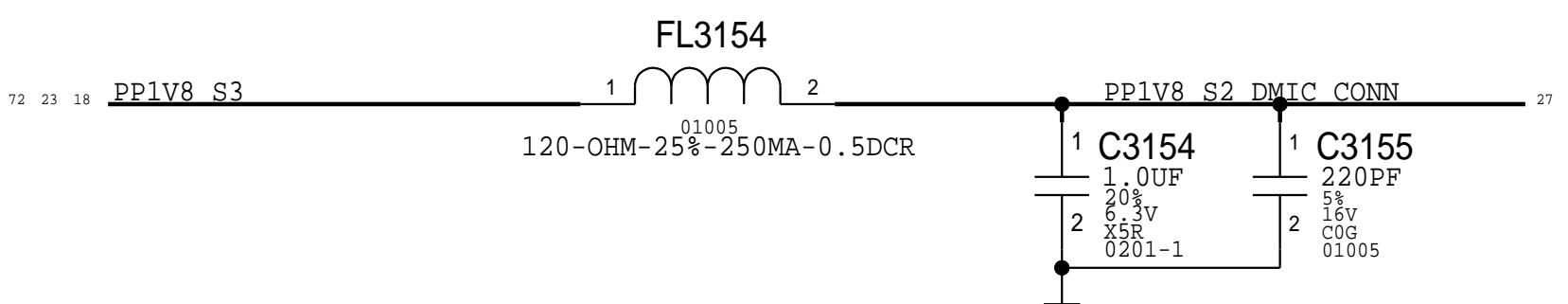
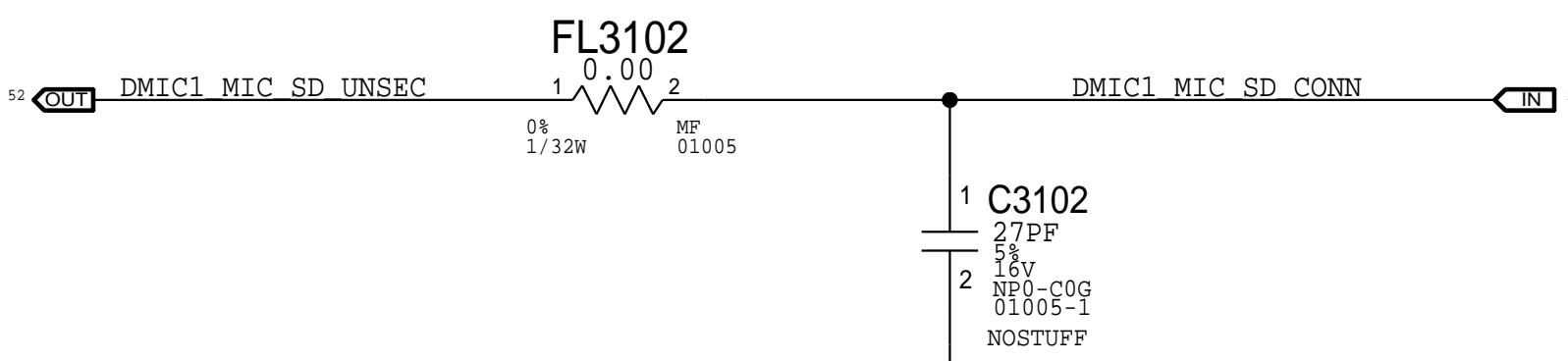
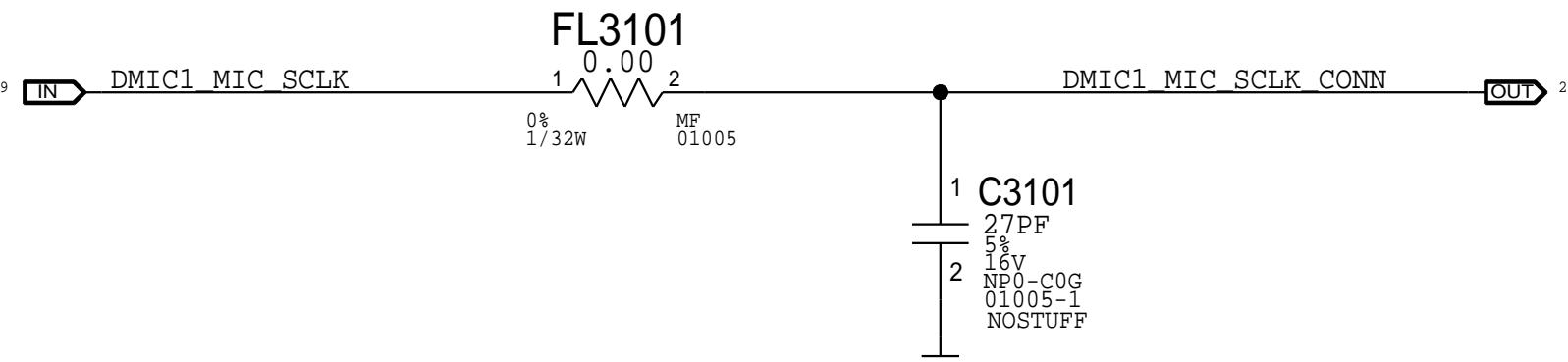
BM28P0.6-6DS/2-0.35V

F-ST-SM



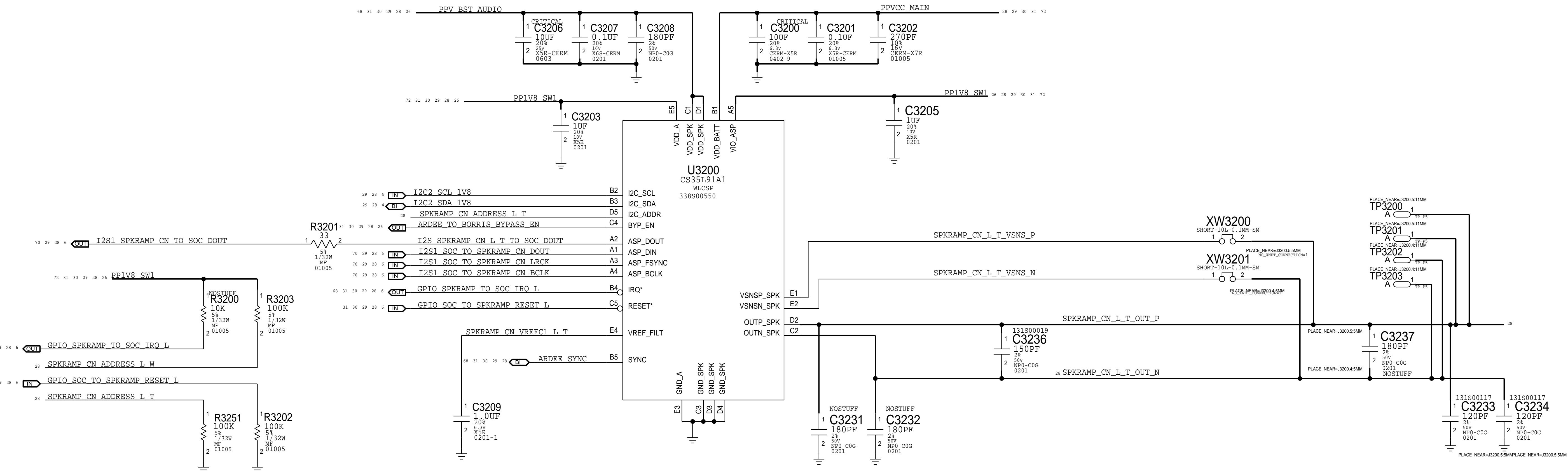
ROUTING	BUS	SELECT	LOCATION	DATA ASSERTS ON	DATA LATCHED ON
MIC#1	PDM0	HIGH	LEFT	CLK RISING EDGE	CLK FALLING EDGE
MIC#2	PDM0	LOW	RIGHT	CLK FALLING EDGE	CLK RISING EDGE
MIC#3	PDM1	HIGH	FRONT(ON TM)	CLK RISING EDGE	CLK FALLING EDGE
MIC#4	PDM1	LOW	REAR(C3)	CLK FALLING EDGE	CLK RISING EDGE
MIC#5	PDM2	HIGH	LANDSCAPE	CLK RISING EDGE	CLK FALLING EDGE

DMIC2 FILTERS

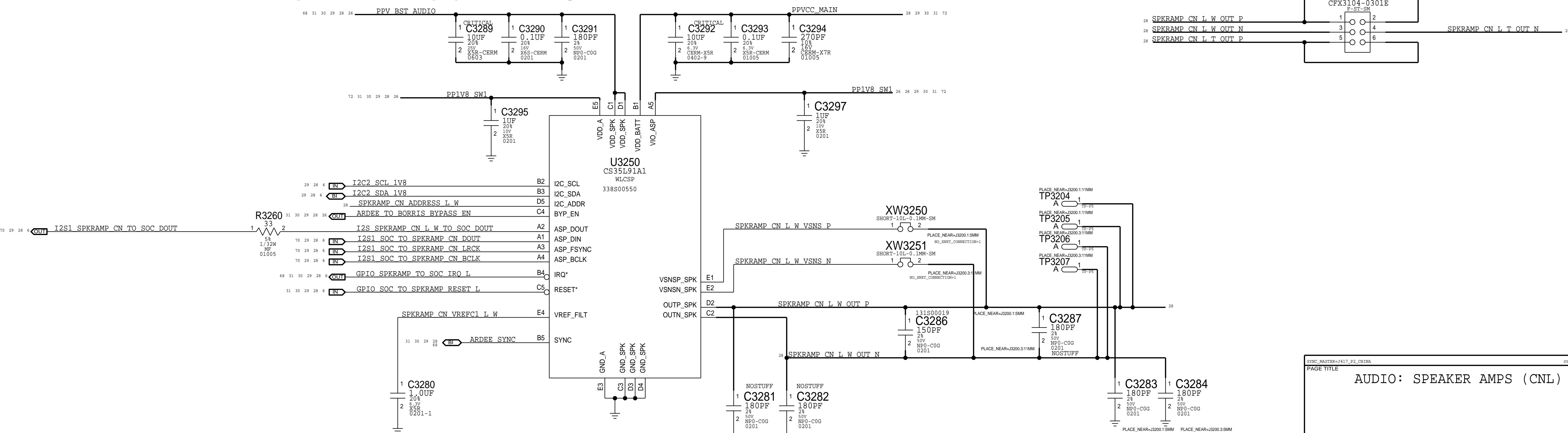


SYNC_MASTER=J421_P2_CHINA
PAGE TITLE: AUDIO: DMIC B2B & FILTERS
SYNC_DATE=05/13/2019

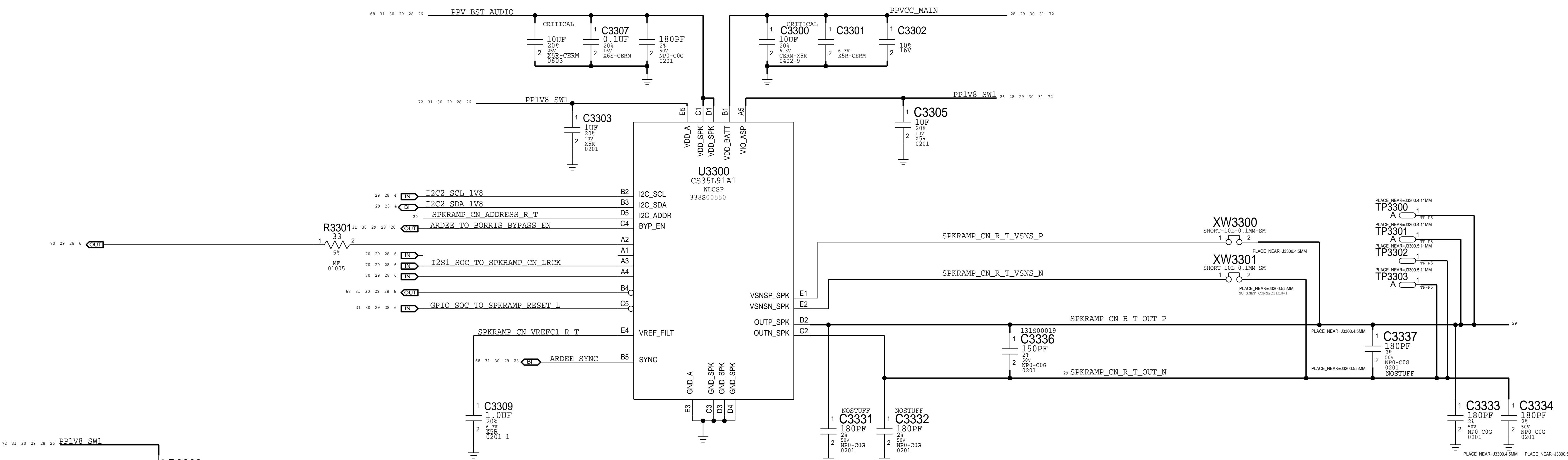
CN L TWEETER SPEAKER AMP



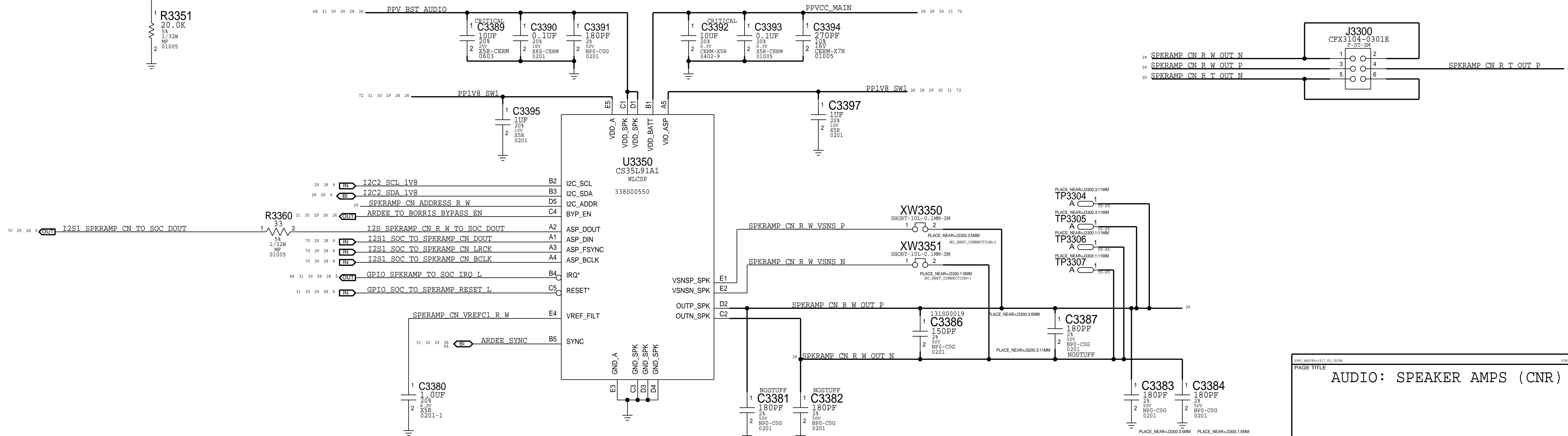
CN L WOOFER SPEAKER AMP



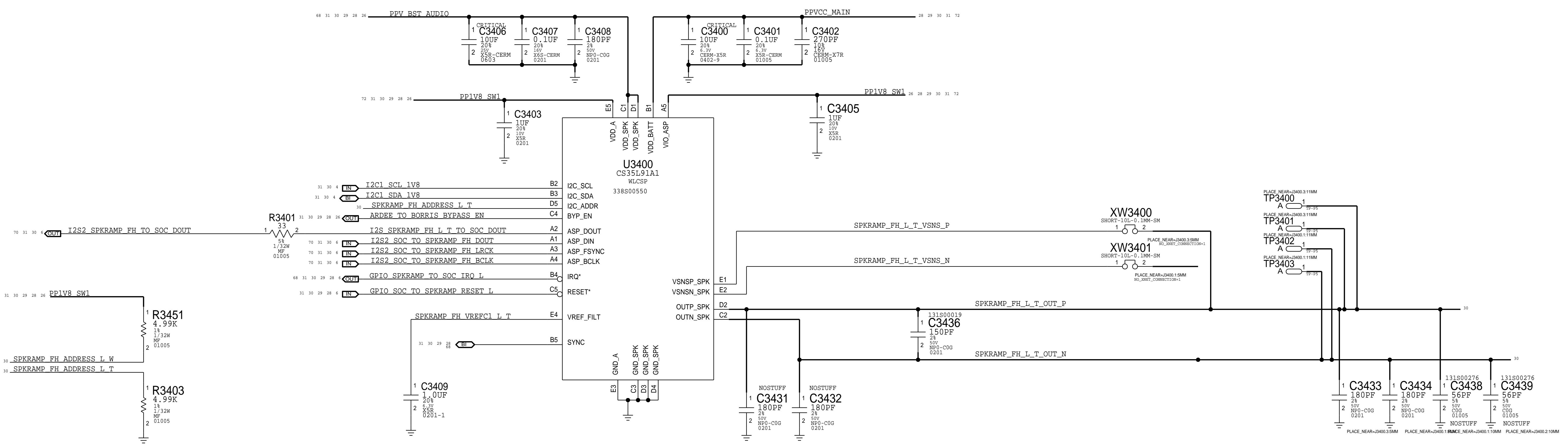
CNR TWEETER SPEAKER AMP



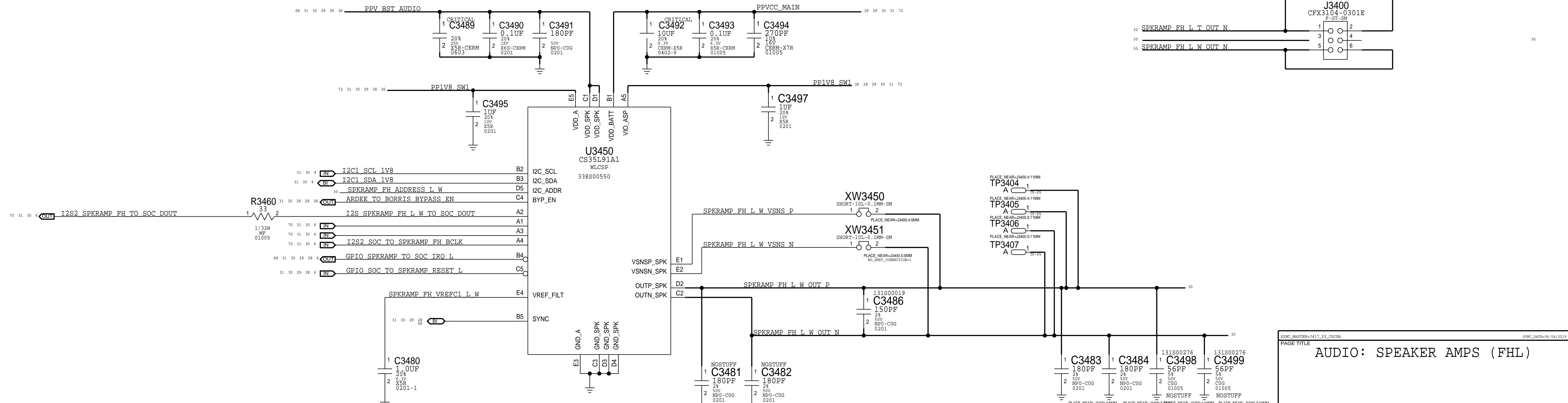
CNR WOOFER SPEAKER AMP



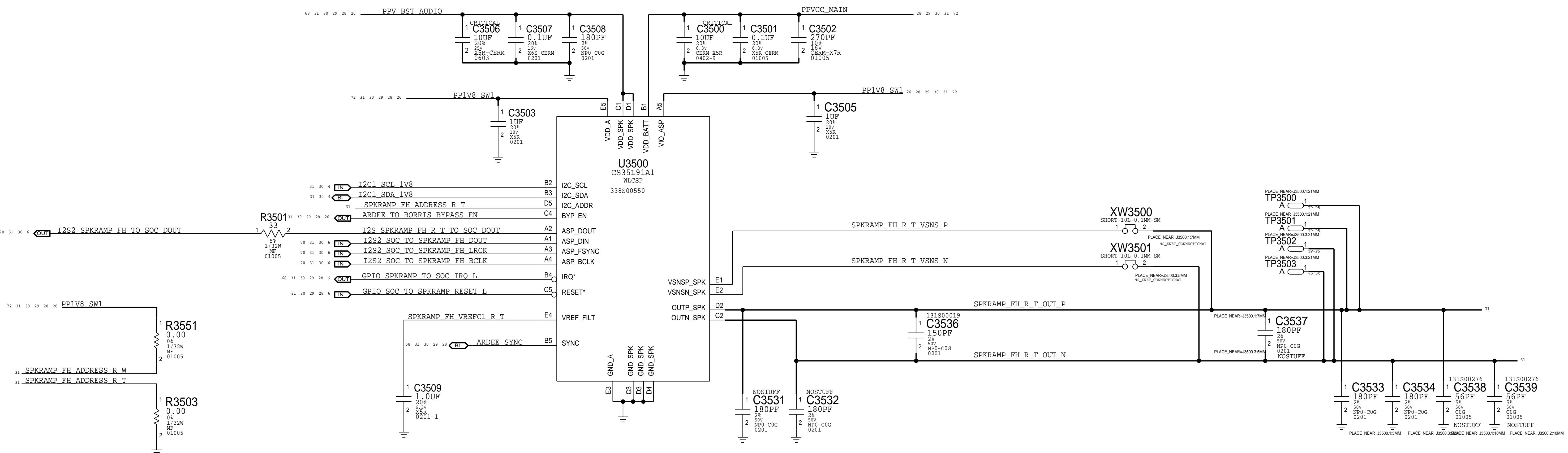
FH L TWEETER SPEAKER AMP



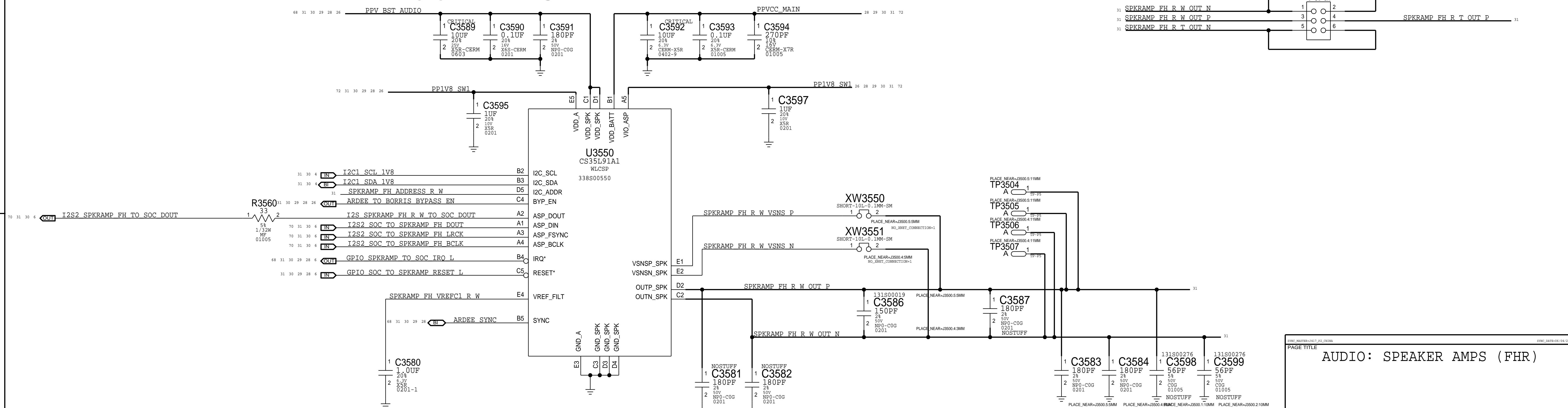
FH L WOOFER SPEAKER AMP



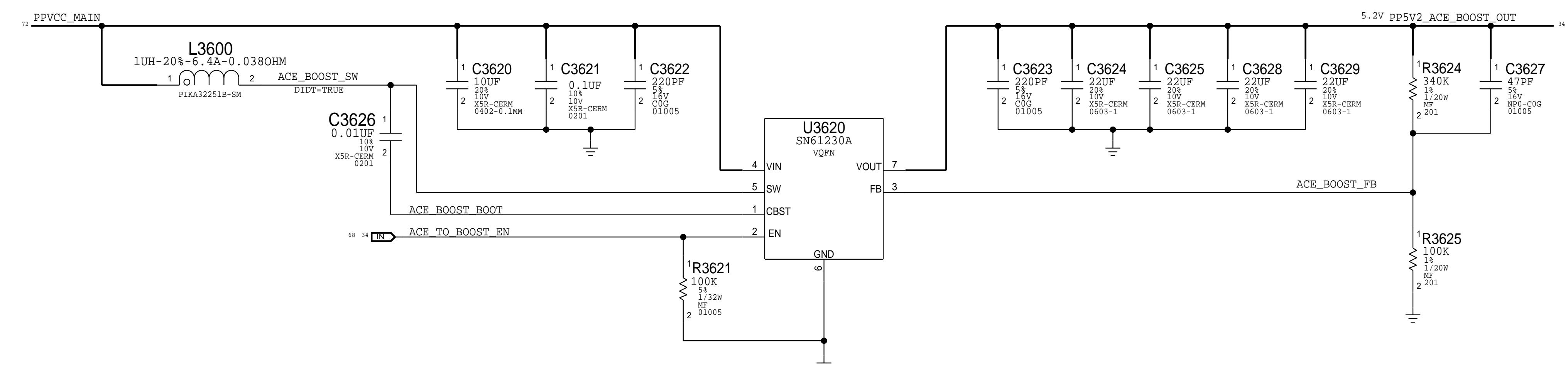
FH R TWEETER SPEAKER AMP



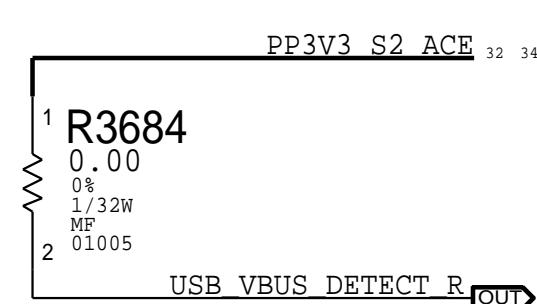
FH R WOOFER SPEAKER AMP



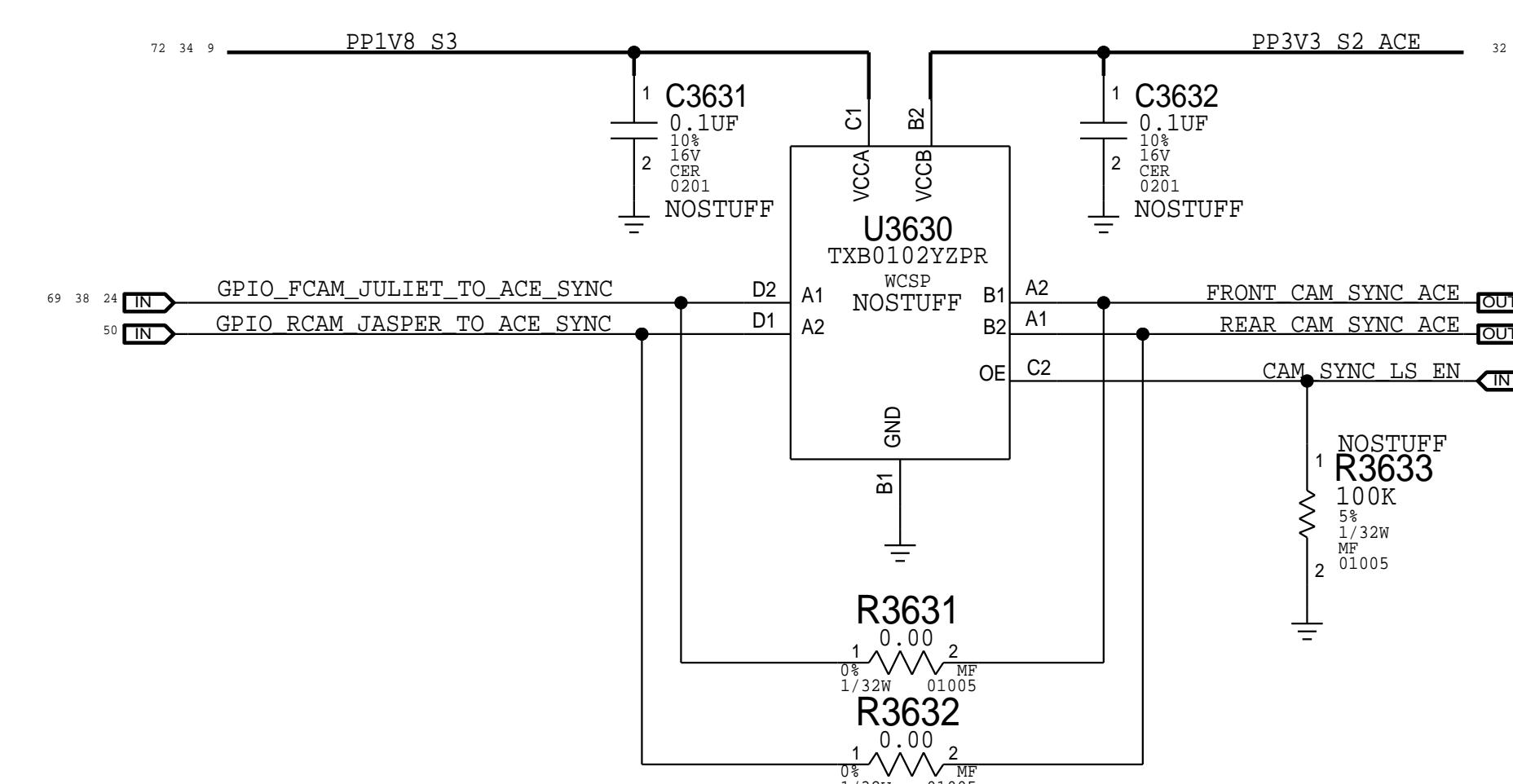
ACE BOOST



VBUS DETECT



EXT CAM SYNC



SYNC_MASTER=j421_P2_CHINA	SYNC_DATE=05/13/2019
PAGE_TITLE	IO: ACE PERIPHERALS

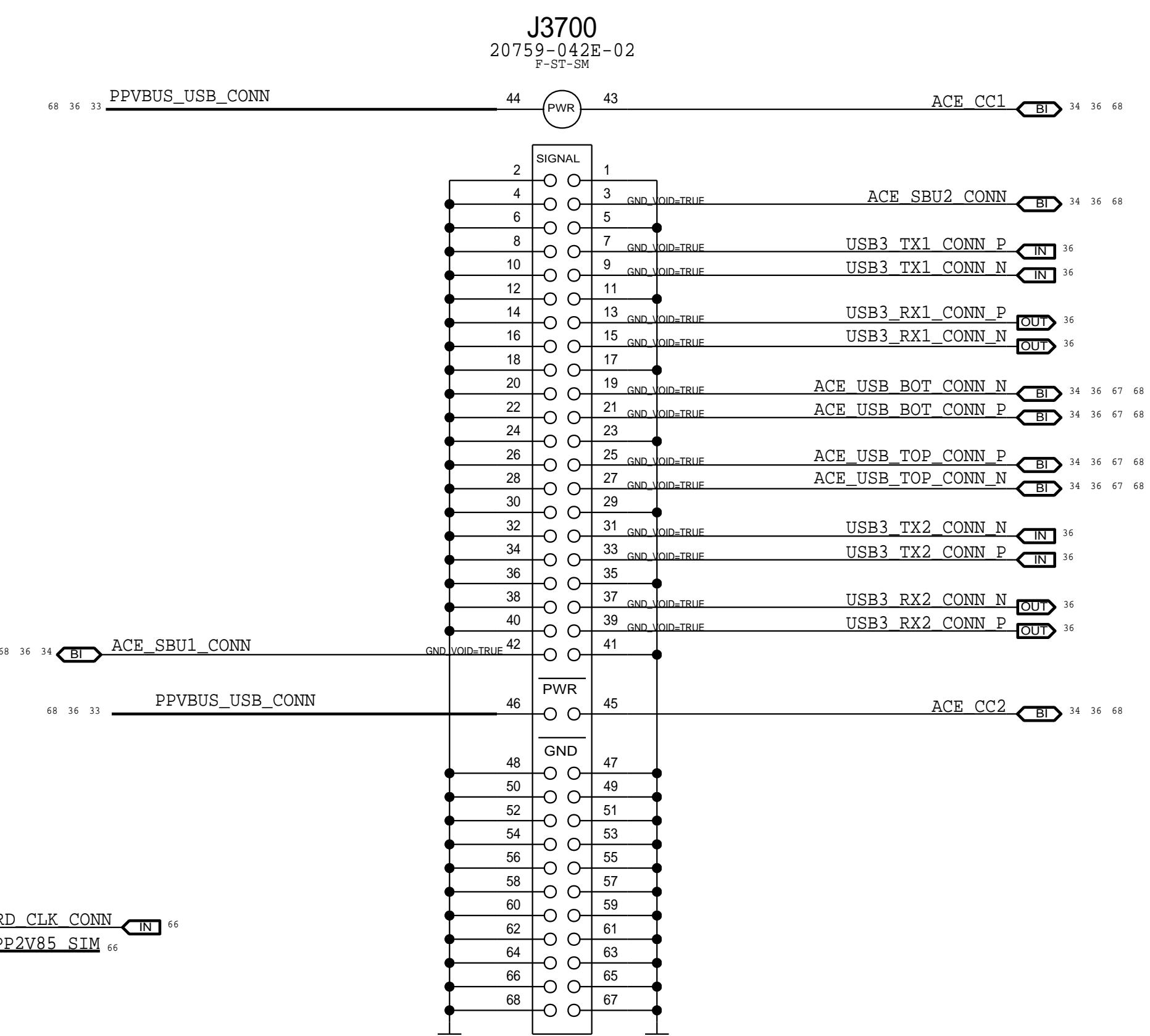
PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
372S0194	372S0187		Q3790,Q8990	XSTR,N-CHN,34V,500mA

D

D

B2B CONNECTOR TO I/O FLEX

MATCH J317_IO_FLEX A.0.0

MLB 516S00266
FLEX 516S00265

C

C

B2B CONN TO SIM FLEX

FLEX 516S00185

MLB 516S00186

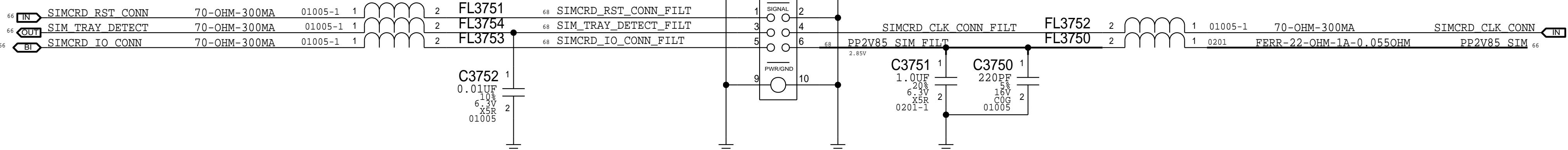
MATCH J317_SIM_FLEX A.0.0

CRITICAL

J3750

BM28P0.6-6DS/2-0.35V

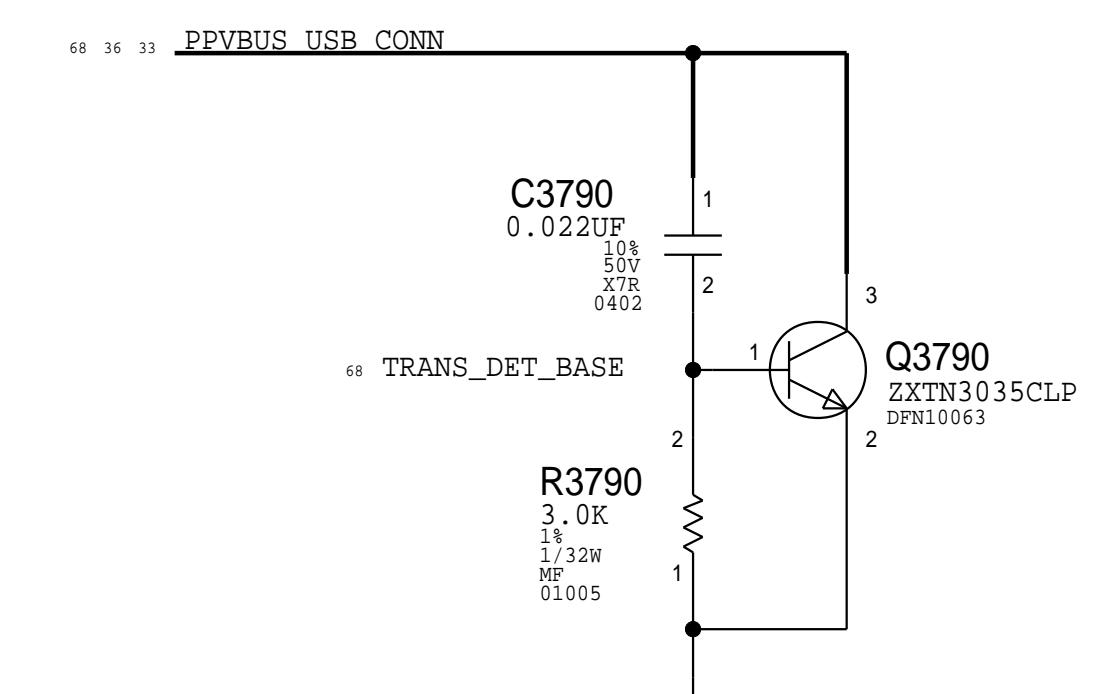
F-ST-SM



B

B

TRANSIENT SUPPRESSION

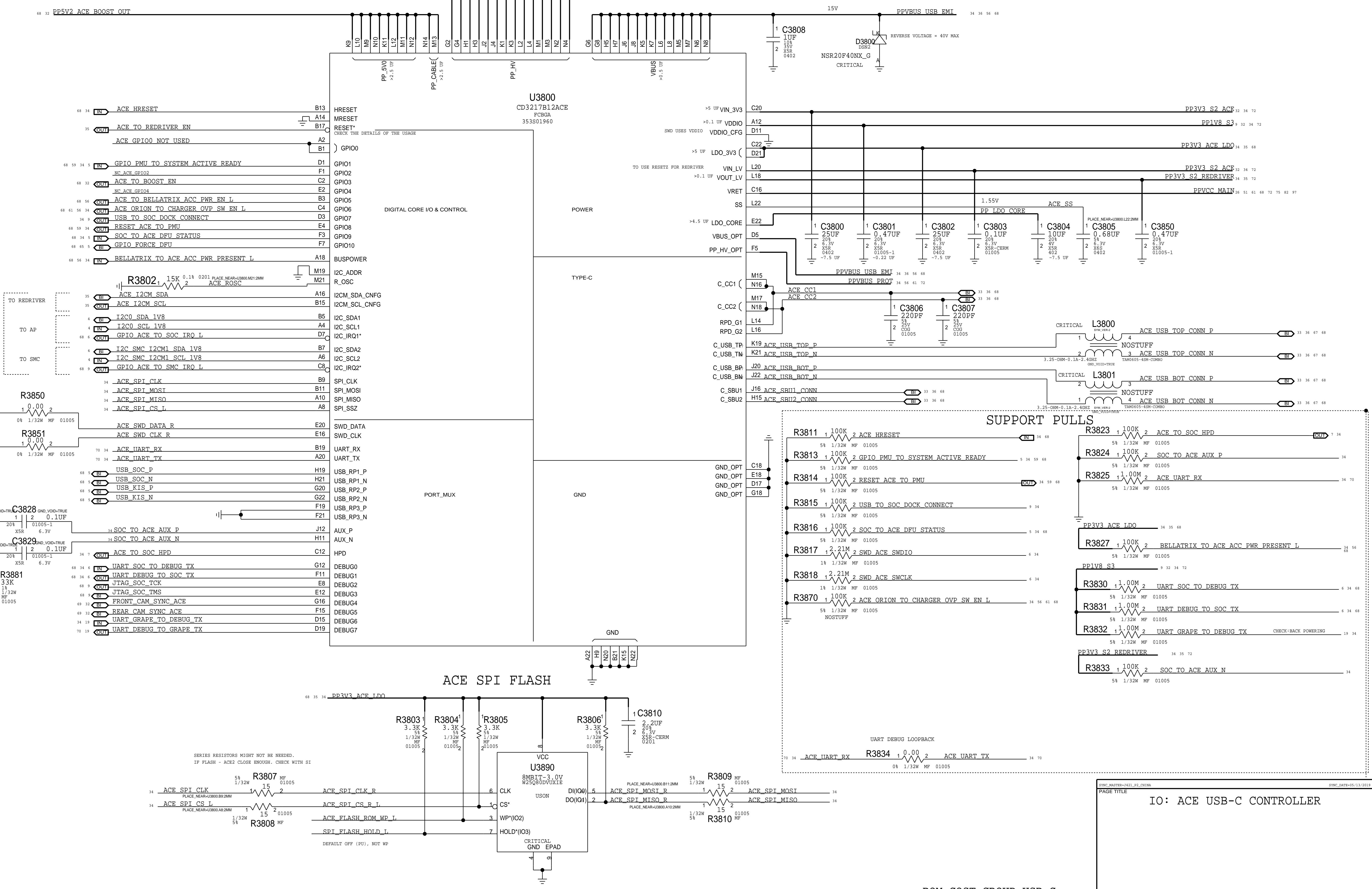


A

A

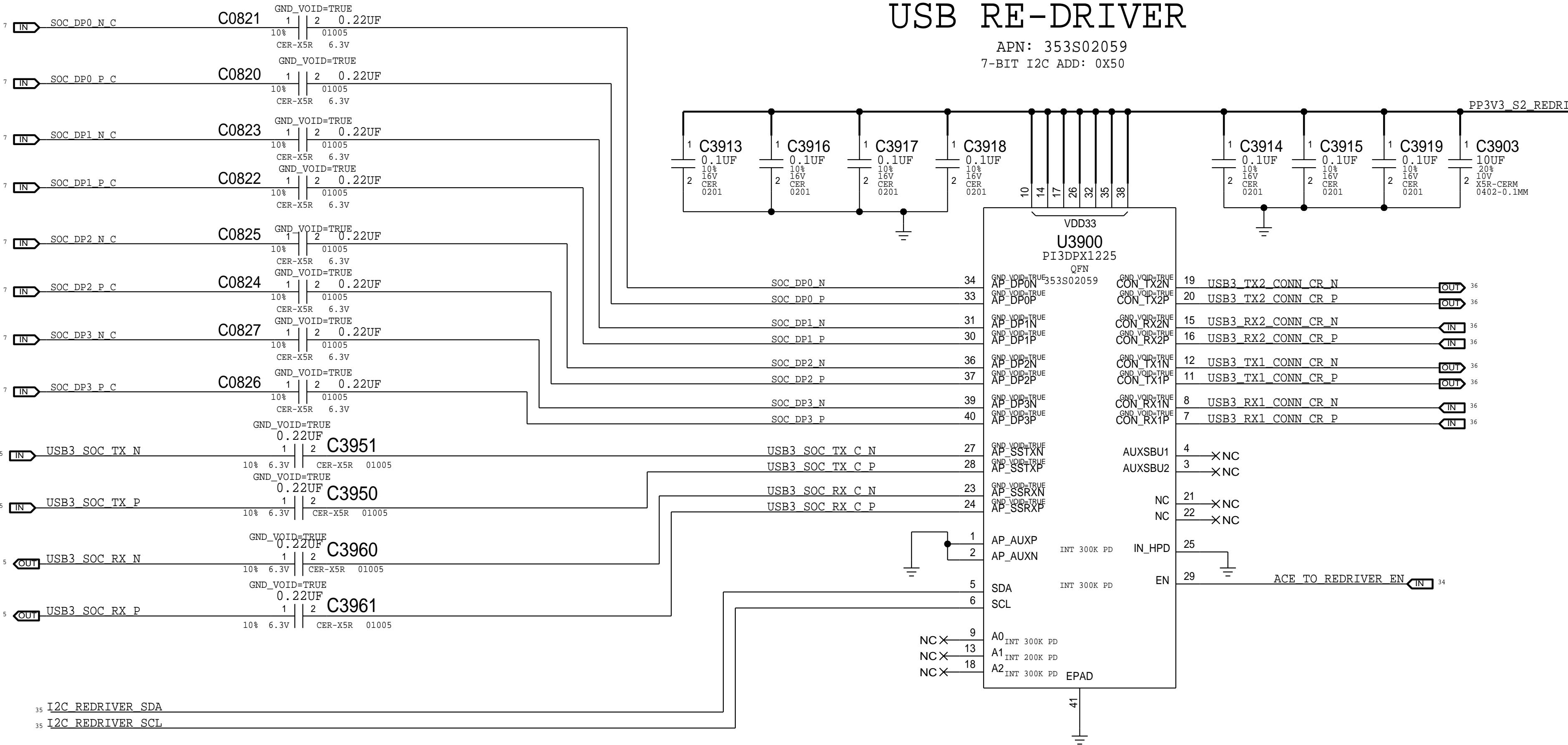
SYNC_MASTER=J421_P2_CHINA	SYNC_DATE=05/13/2019
PAGE TITLE IO: IOFLEX B2B & SIM B2B	

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS
353S02158	353S01960		U3800	ACR2 USBC CONTROLLER

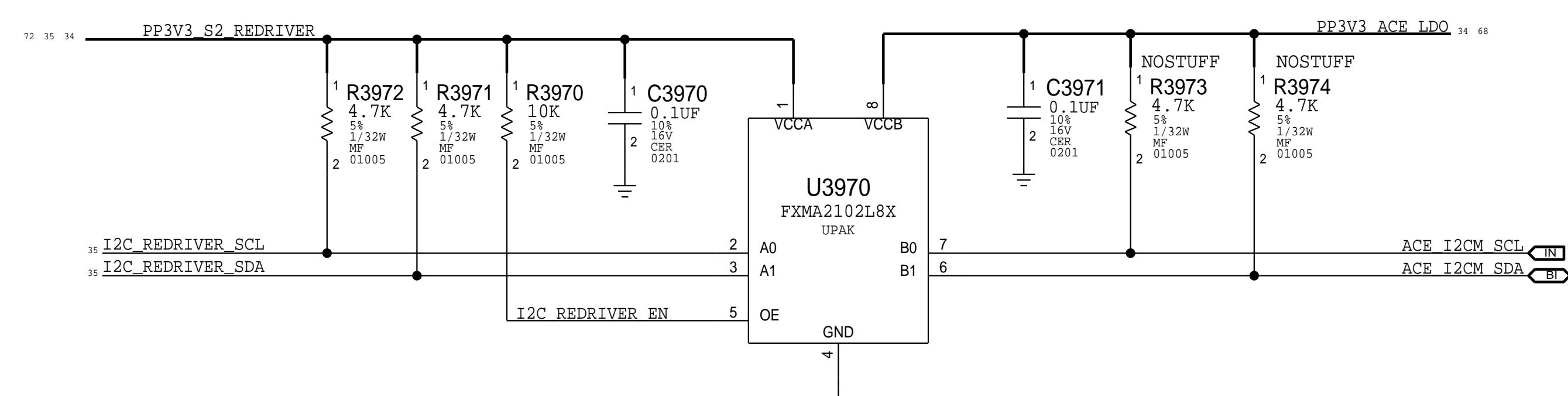


USB RE-DRIVER

APN: 353S02059
7-BIT I2C ADD: 0X50

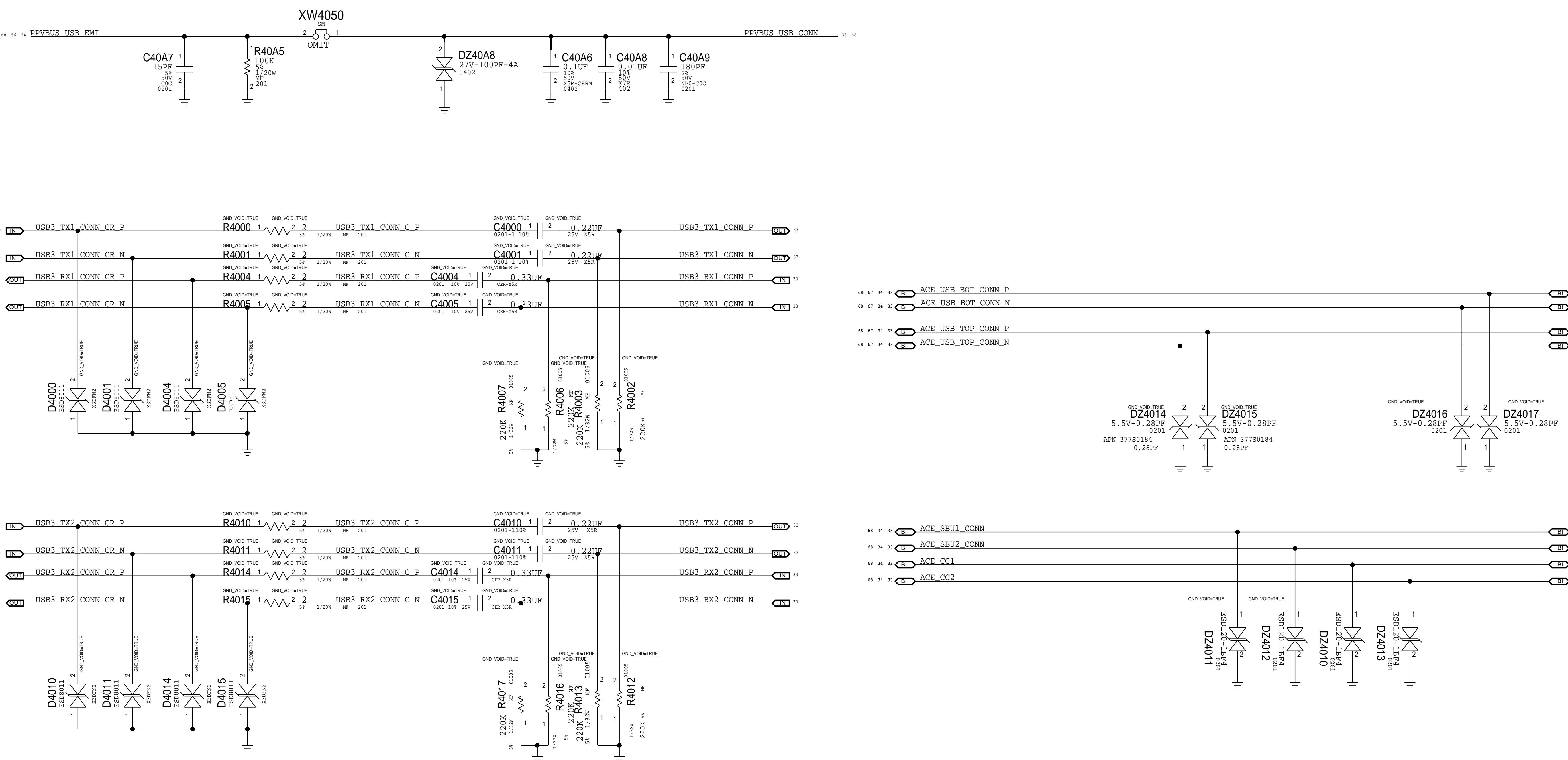


I2C ISOLATION CIRCUIT



IO: ACE REDRIVER

USB CONN FILTERS

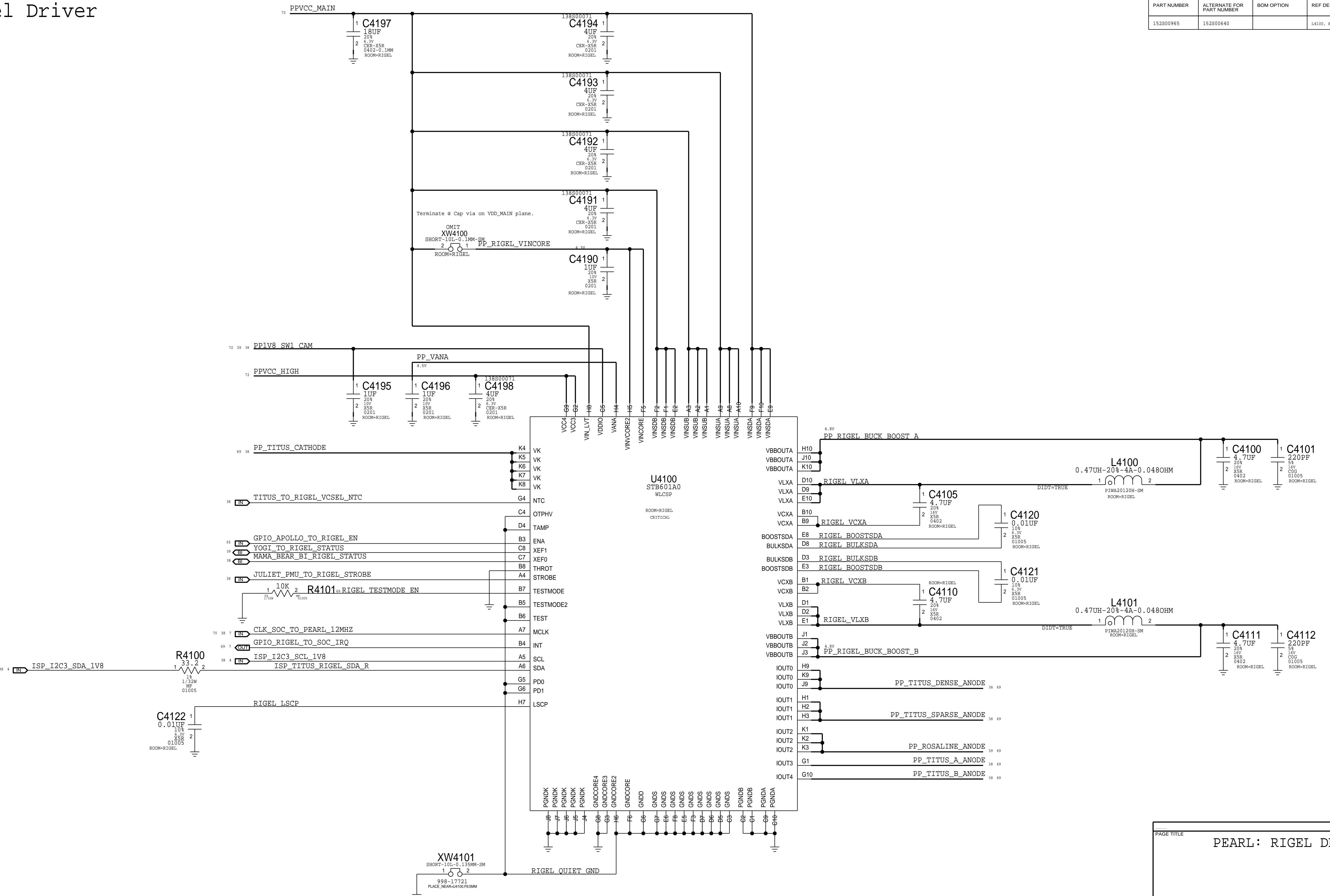


SYNC_MASTER=j317_MLB_B
PAGE_TITLE
IO: ACE FILTERS

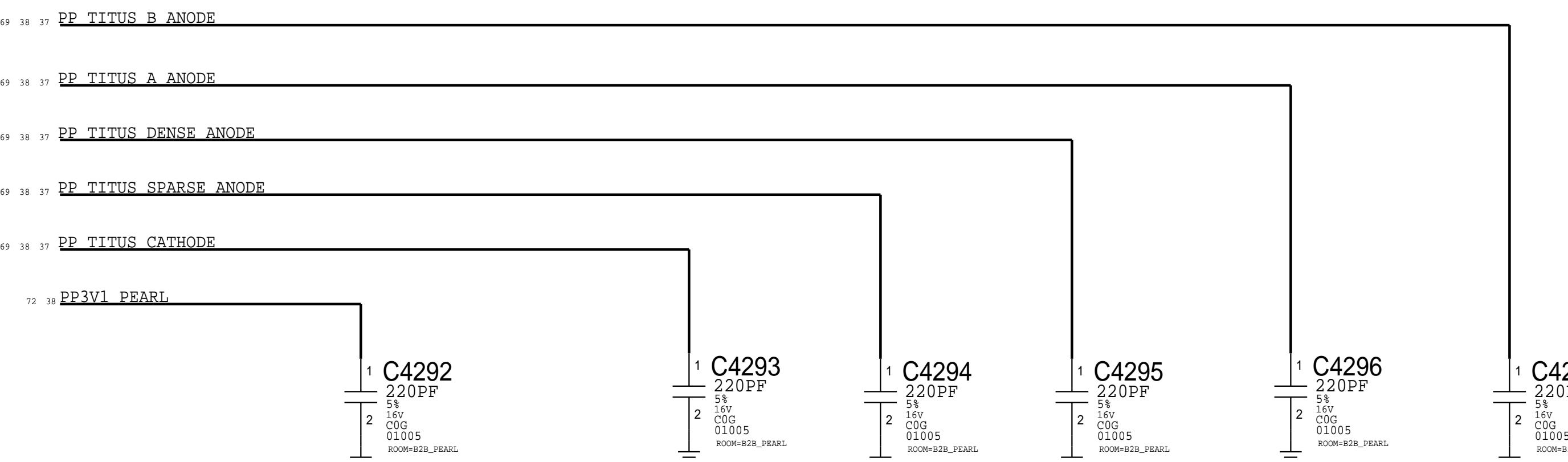
SYNC_DATE=11/16/2018

Rigel Driver

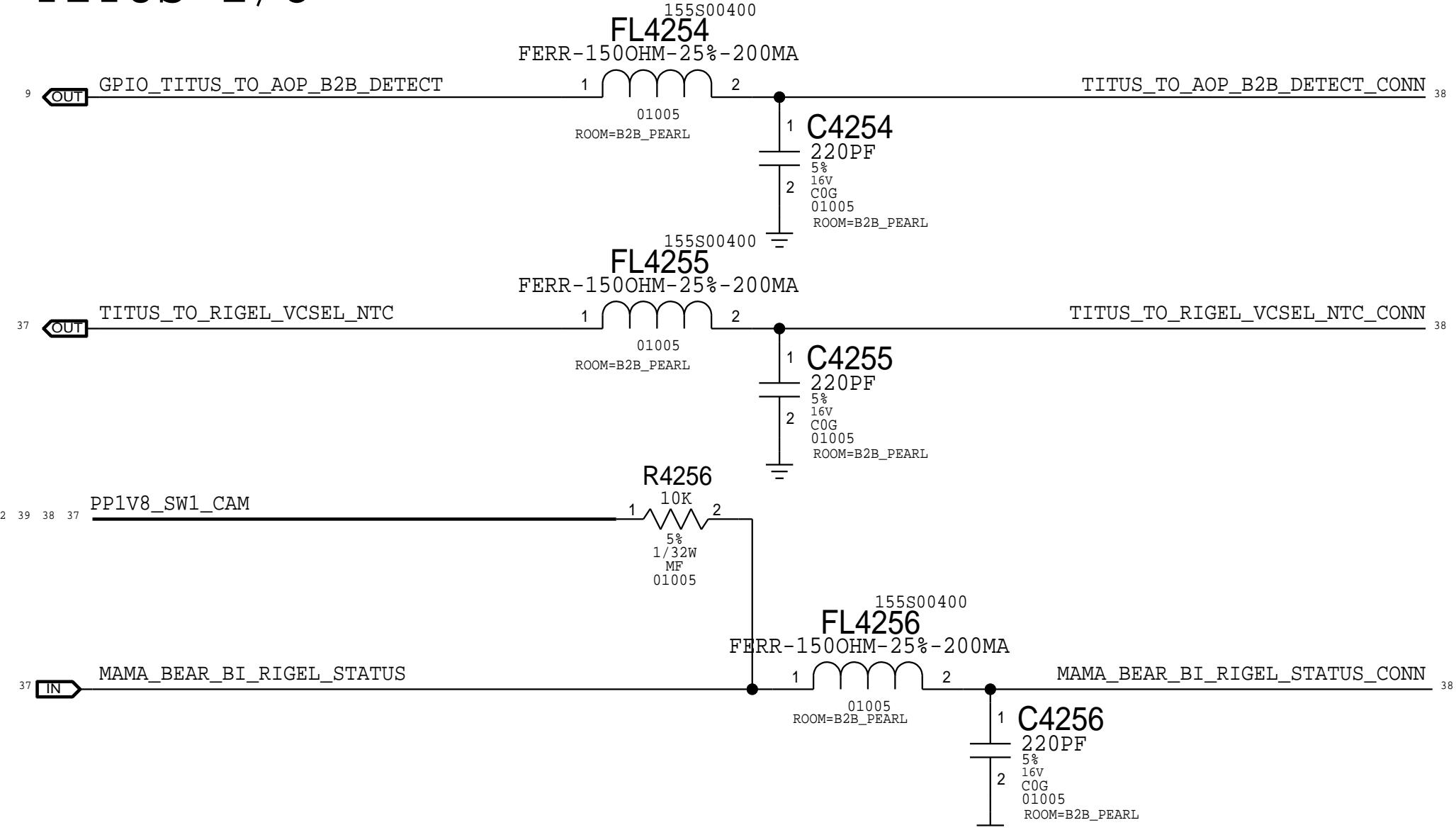
PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
152S00965	152S00640		L4100, ETC	0.47UH 4A 2012 TAIYO



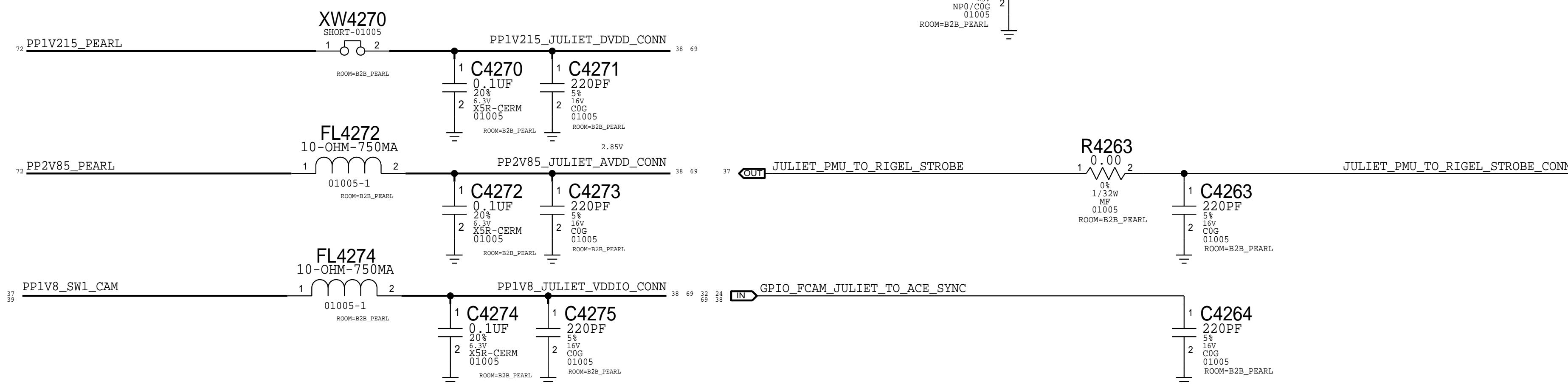
TITUS POWER FILTERING



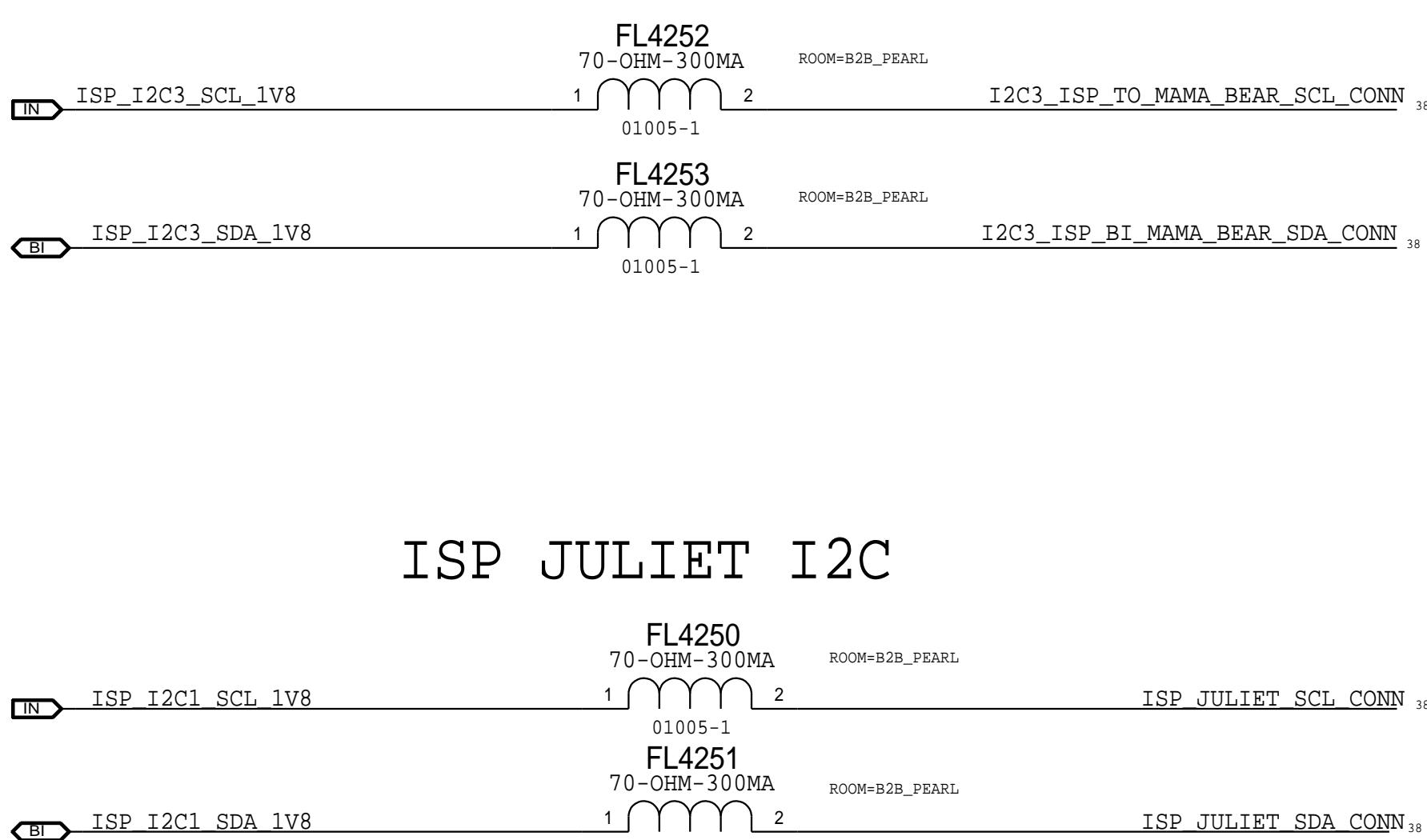
TITUS I/O



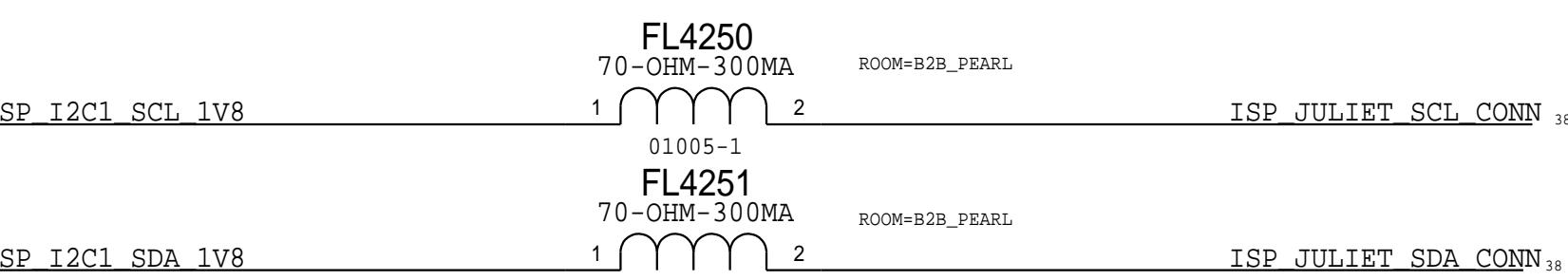
Juliet Power and I/O



TSP TITUS RIGEL I20

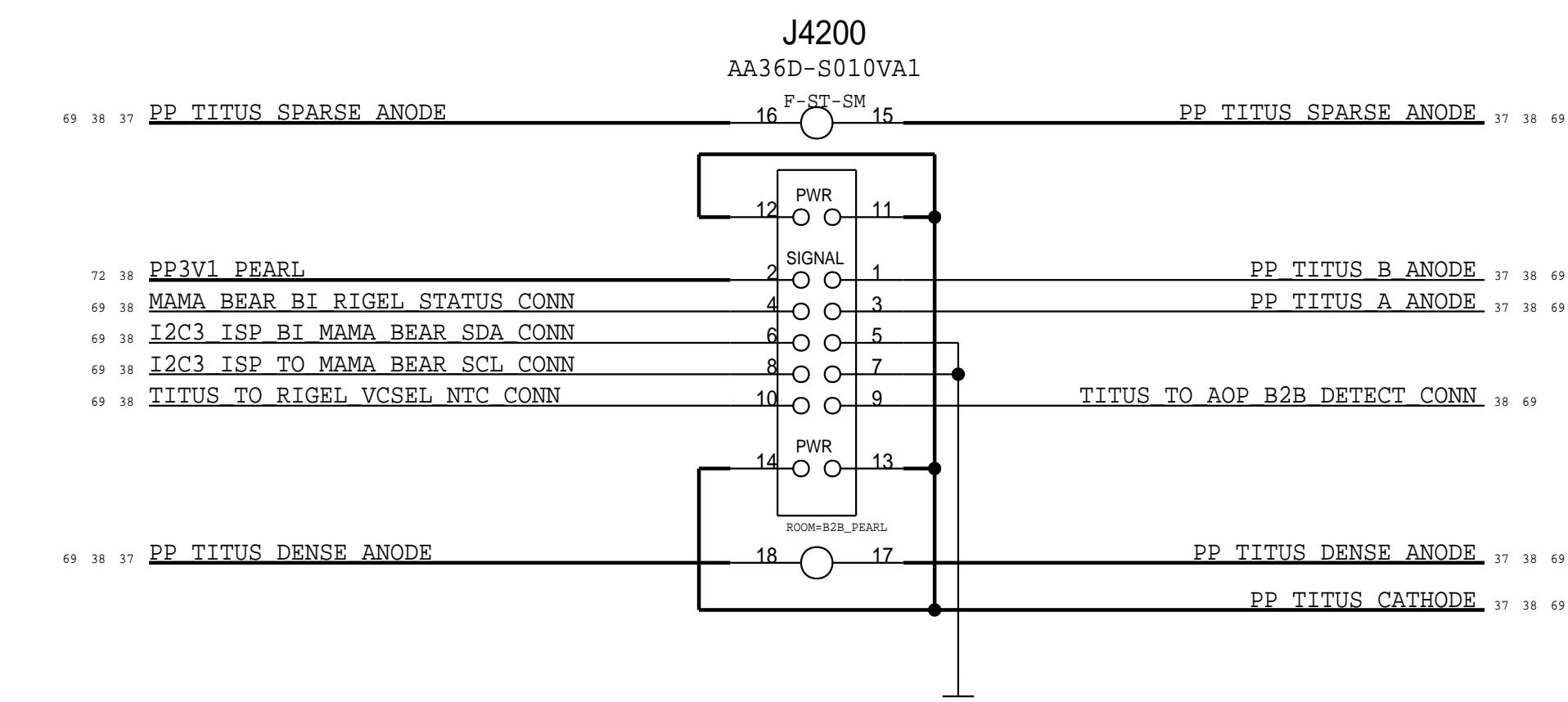


ISP JULIET I20



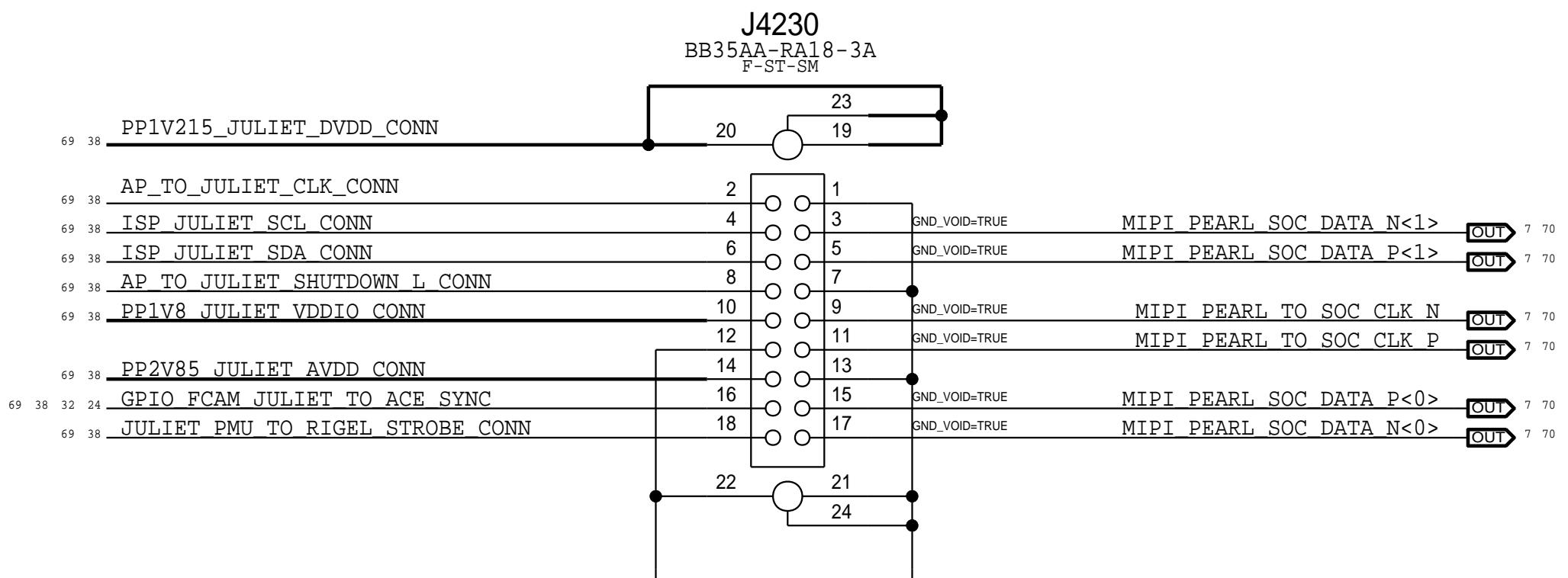
JEWEL CONNECTOR

MLB: 516S00267
FLEX: 516S00268



JULIET CONNECTOR

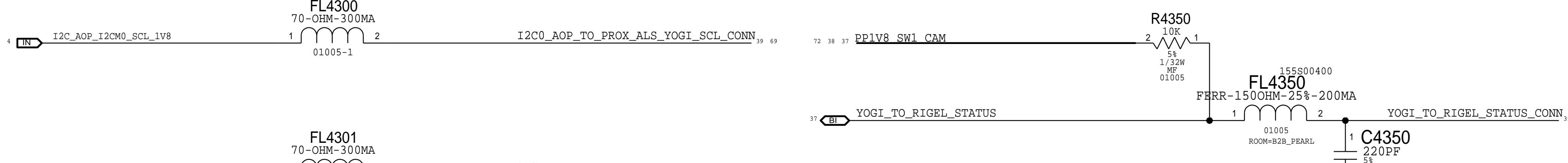
FLEX SIDE: 516S00396
MLB SIDE: 516S00395
MATCH T217 TULLET FLEX A 0 0



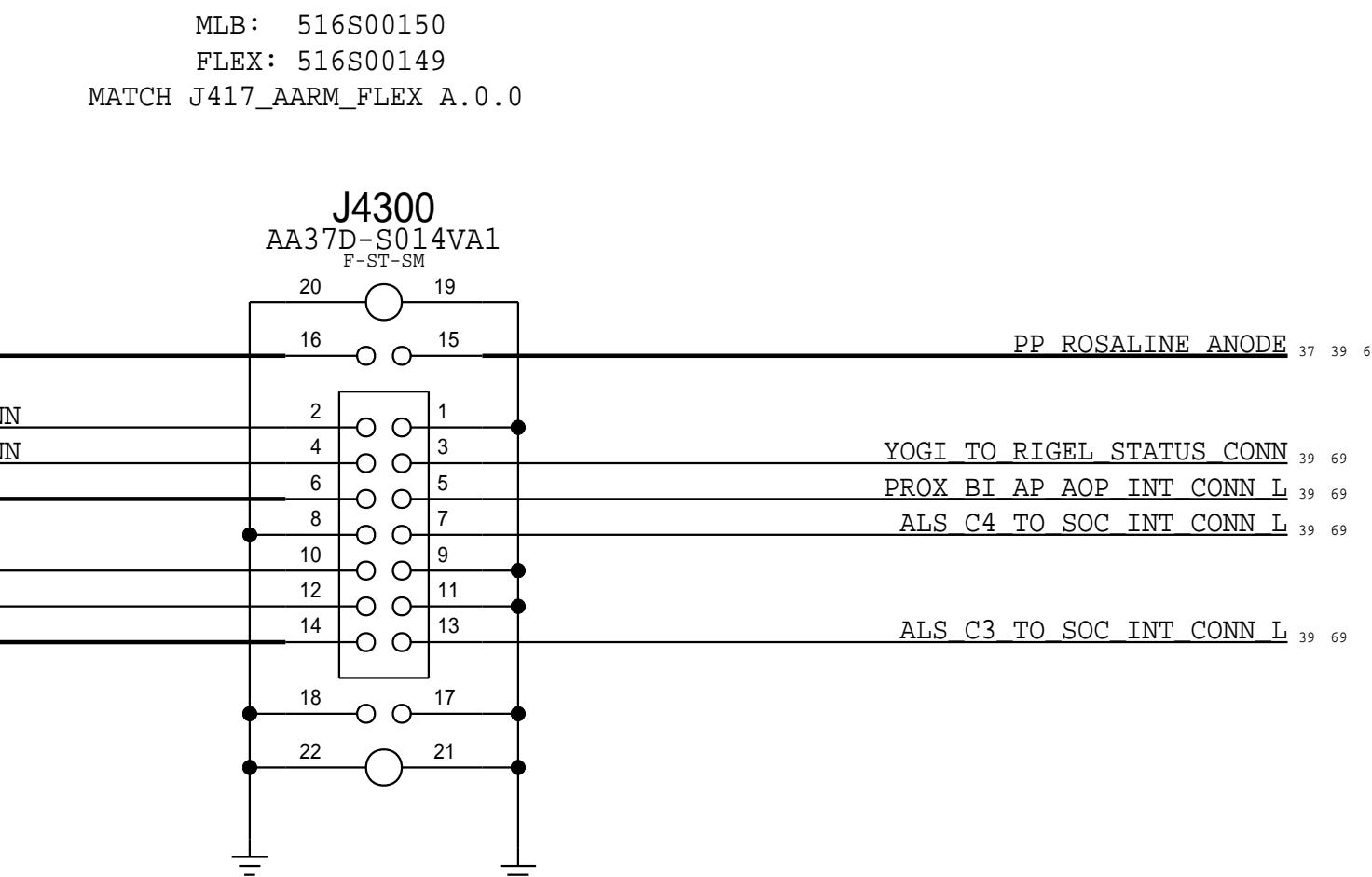
PEARL: B2B TITUS + JULIET

ISP FCAM1 JULIET ROSALINE I2C

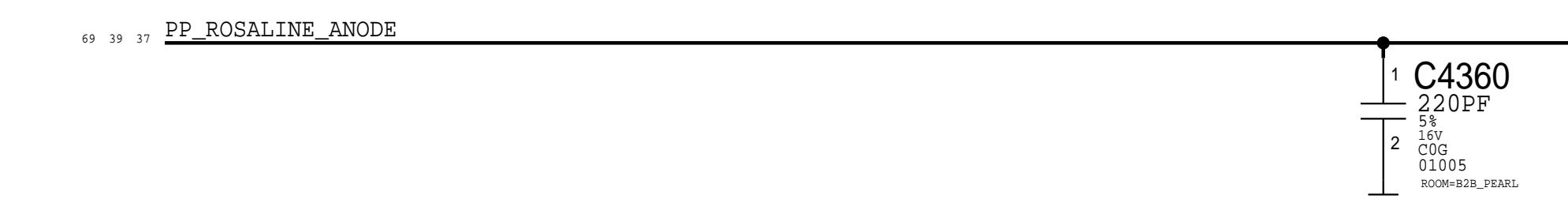
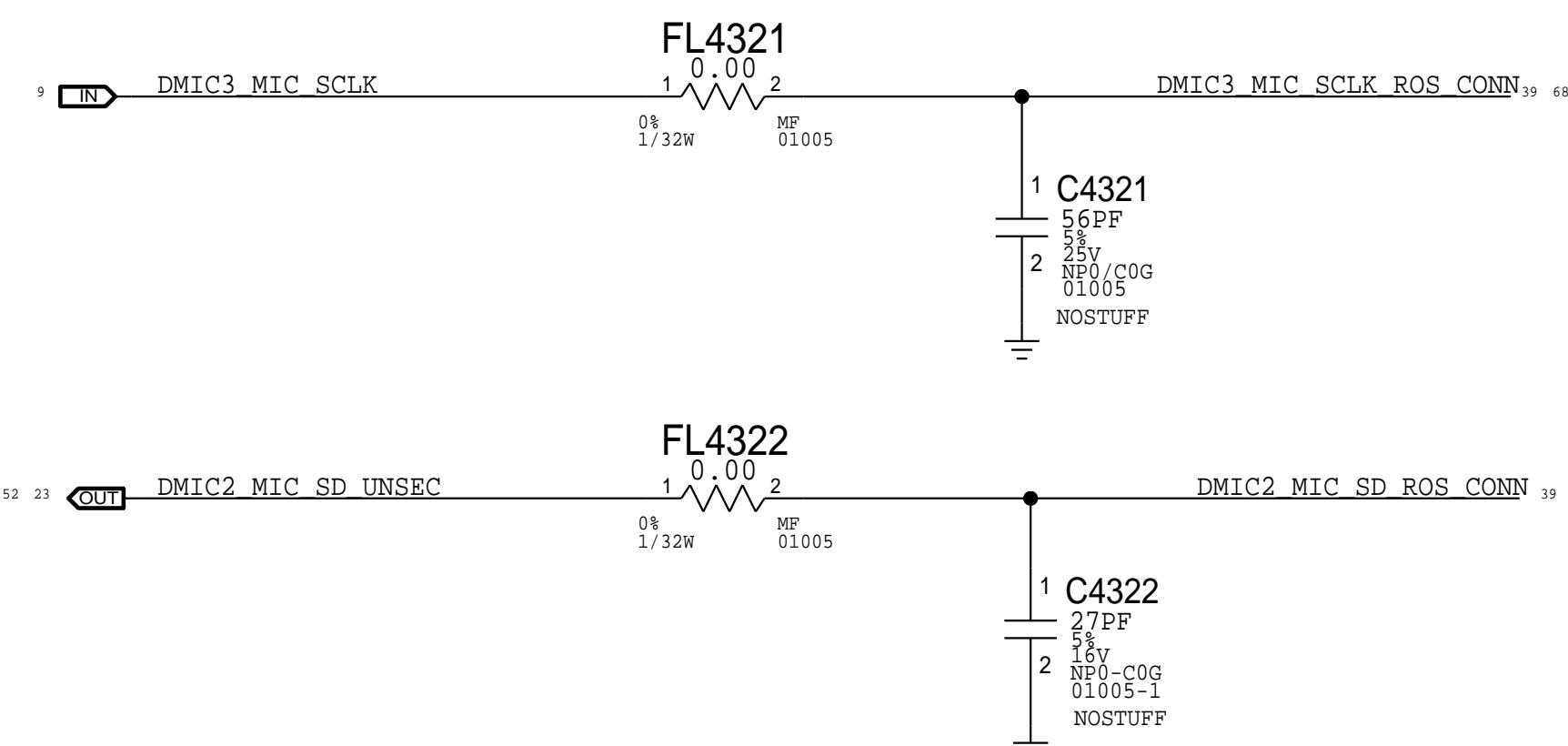
Yogi Signals



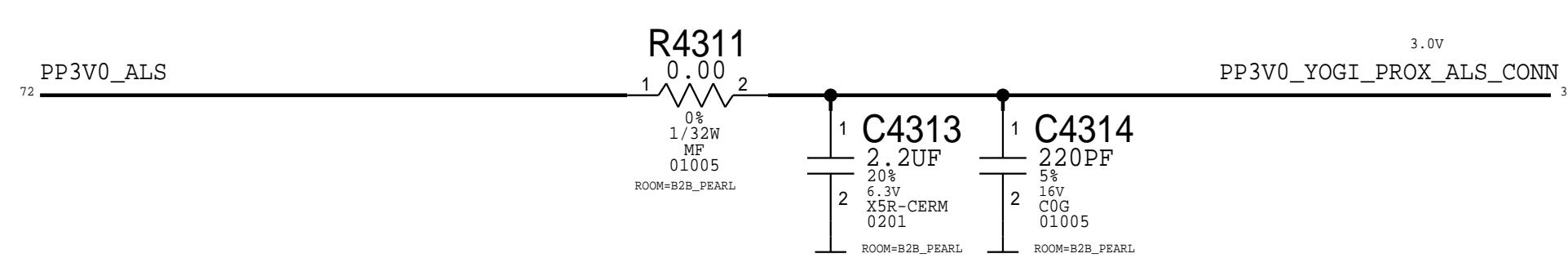
ROSALINE (AARM) CONNECTOR



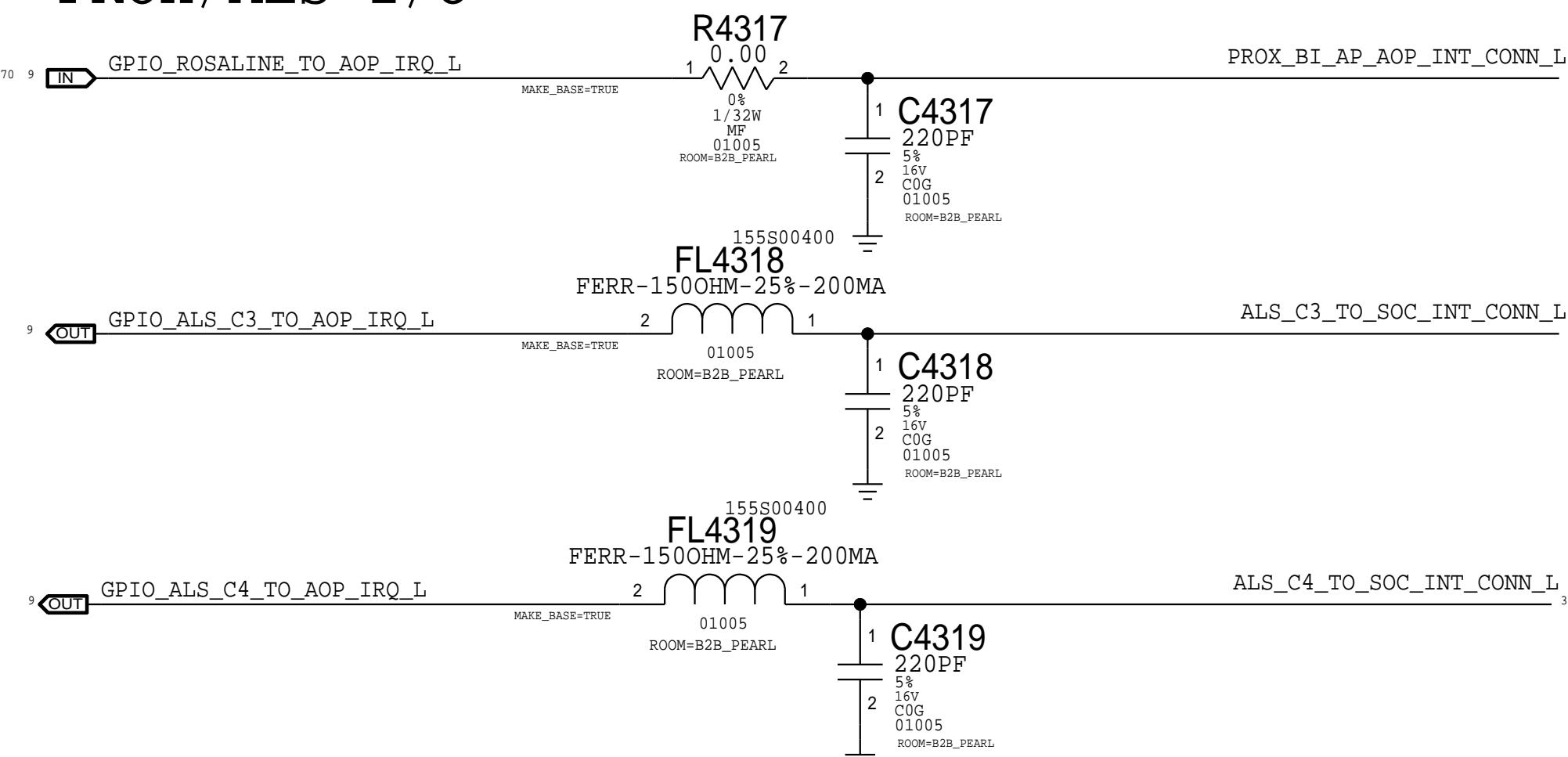
DMIC1 FILTERS ROSALINE CONN



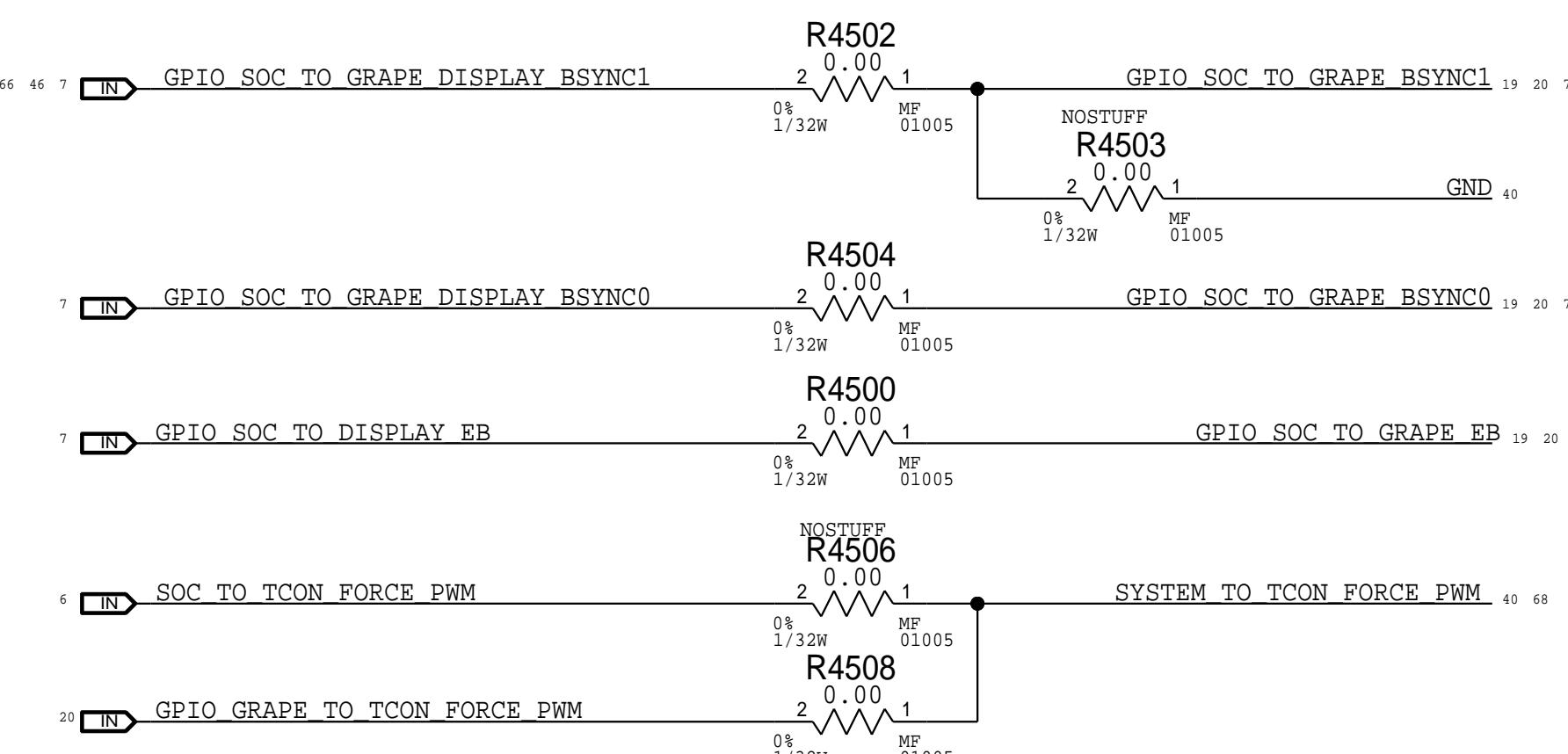
PROX & ALS POWER



PROX/ALS I/O

PAGE TITLE
PEARL: B2B ROSALINE + MISC

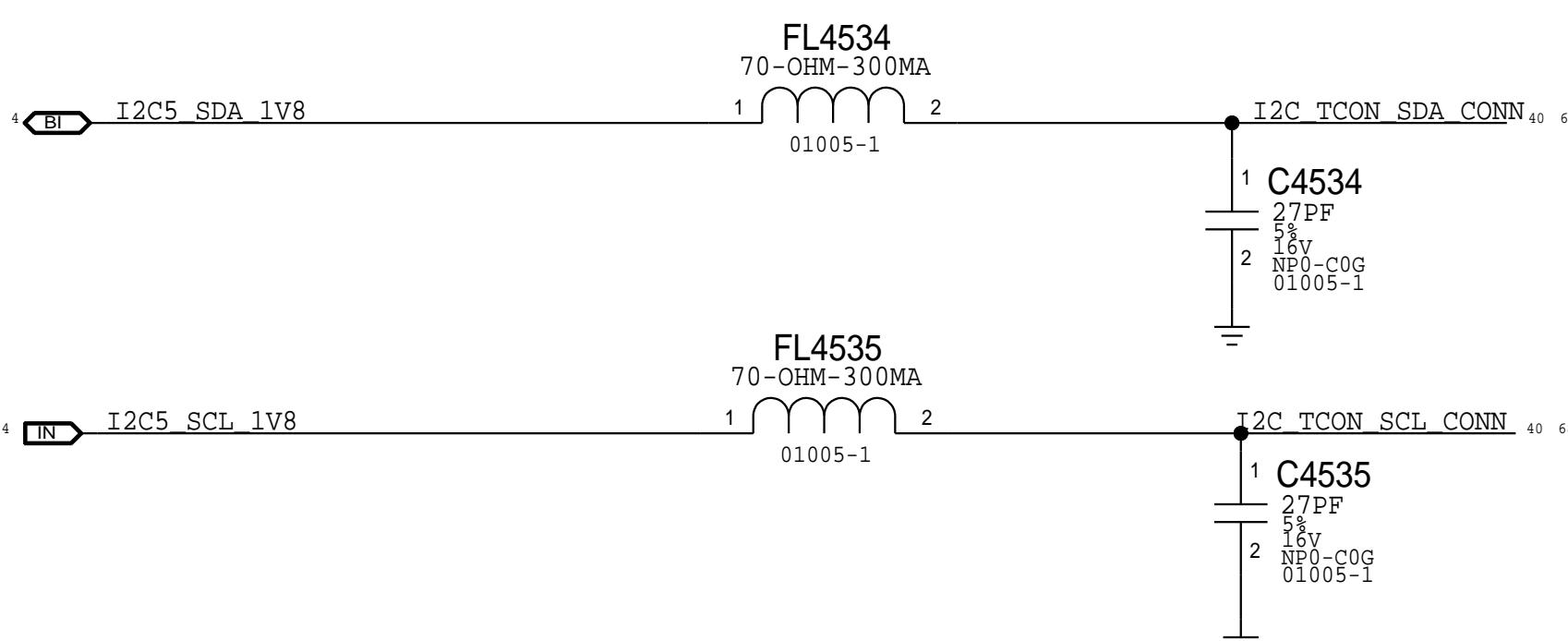
EDP FLEX FILTERS AND CONNECTORS



BL CONN MLB SIDE 18+2 PIN B2B

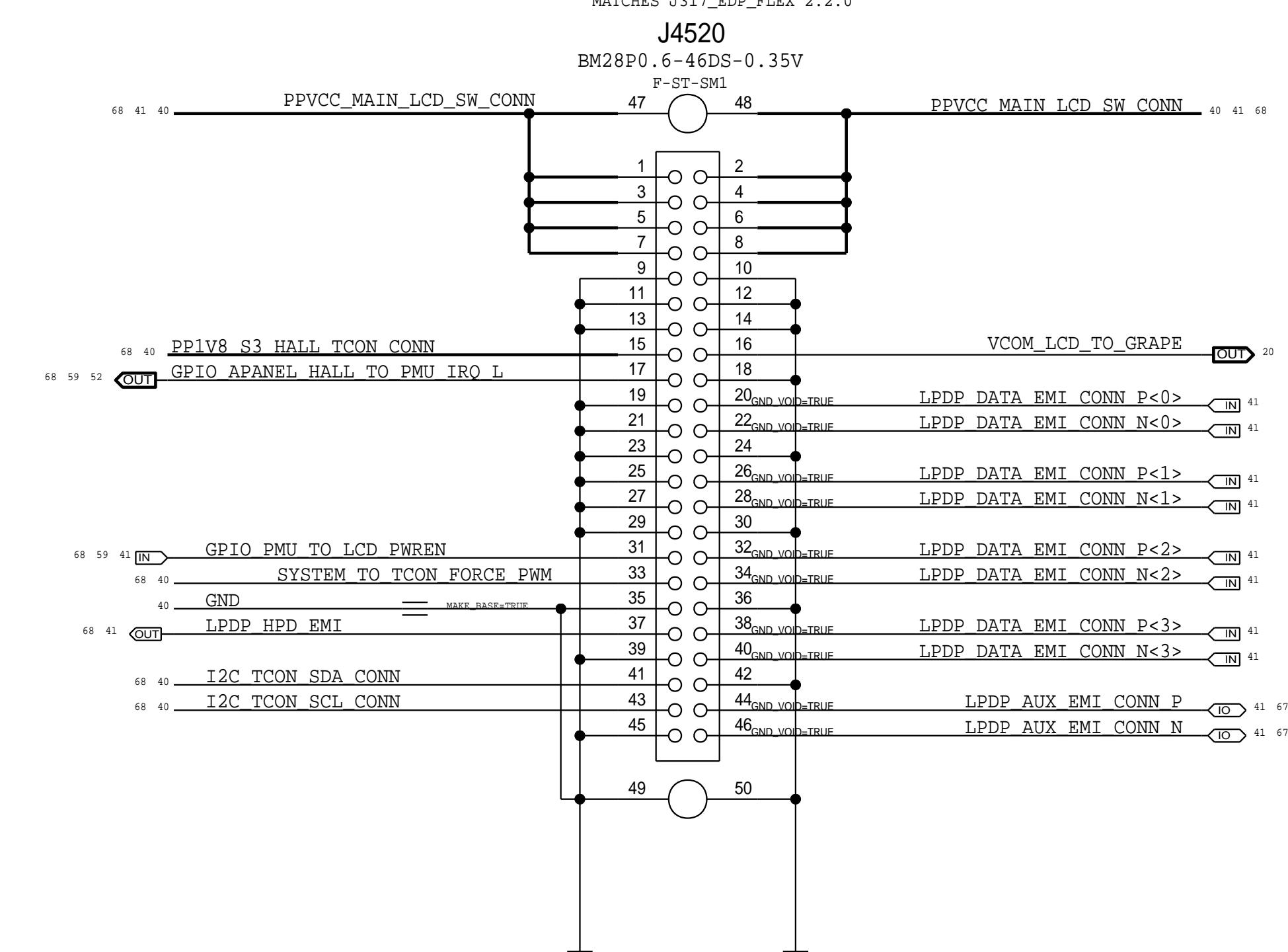
FLEX APN: 516800363
MLB APN: 516800362
MATCHES J317_BACKLIGHT_FLEX 3.2.0

TCON I2C FILTERS

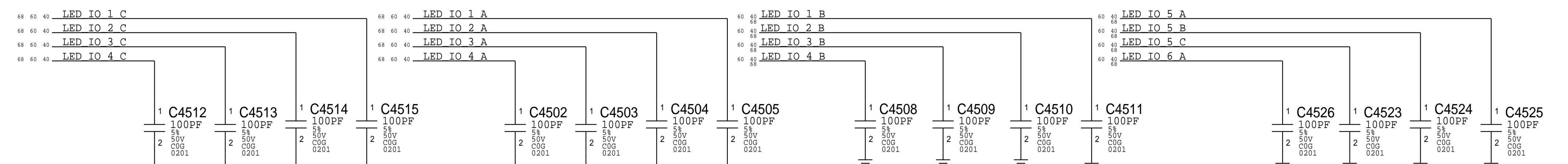


EDP CONN MLB SIDE 46+2 PIN B2B

FLEX APN: 516800365
MLB APN: 516800364
MATCHES J317_EDP_FLEX 2.2.0

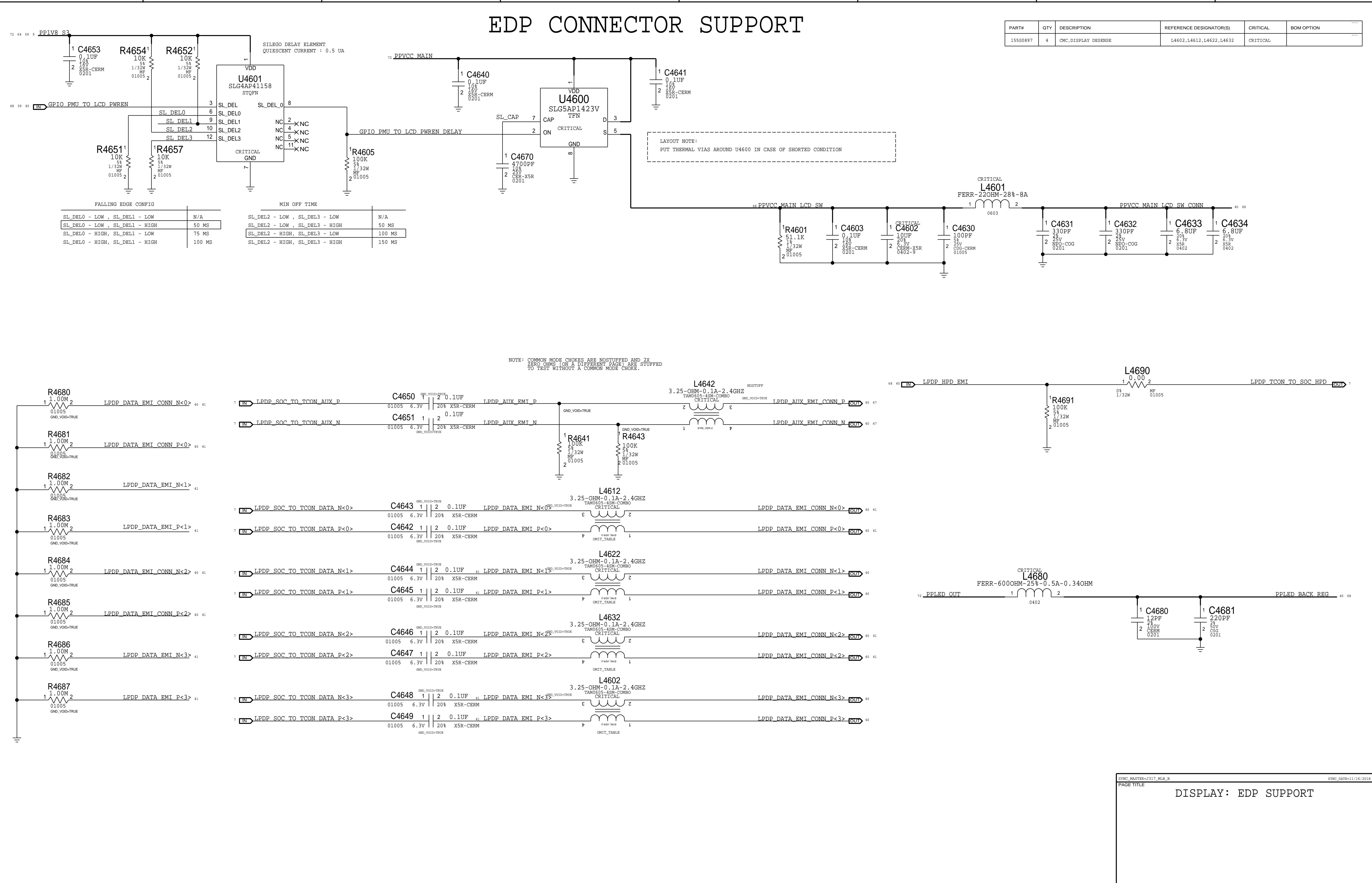


LED DRIVER FILTERS

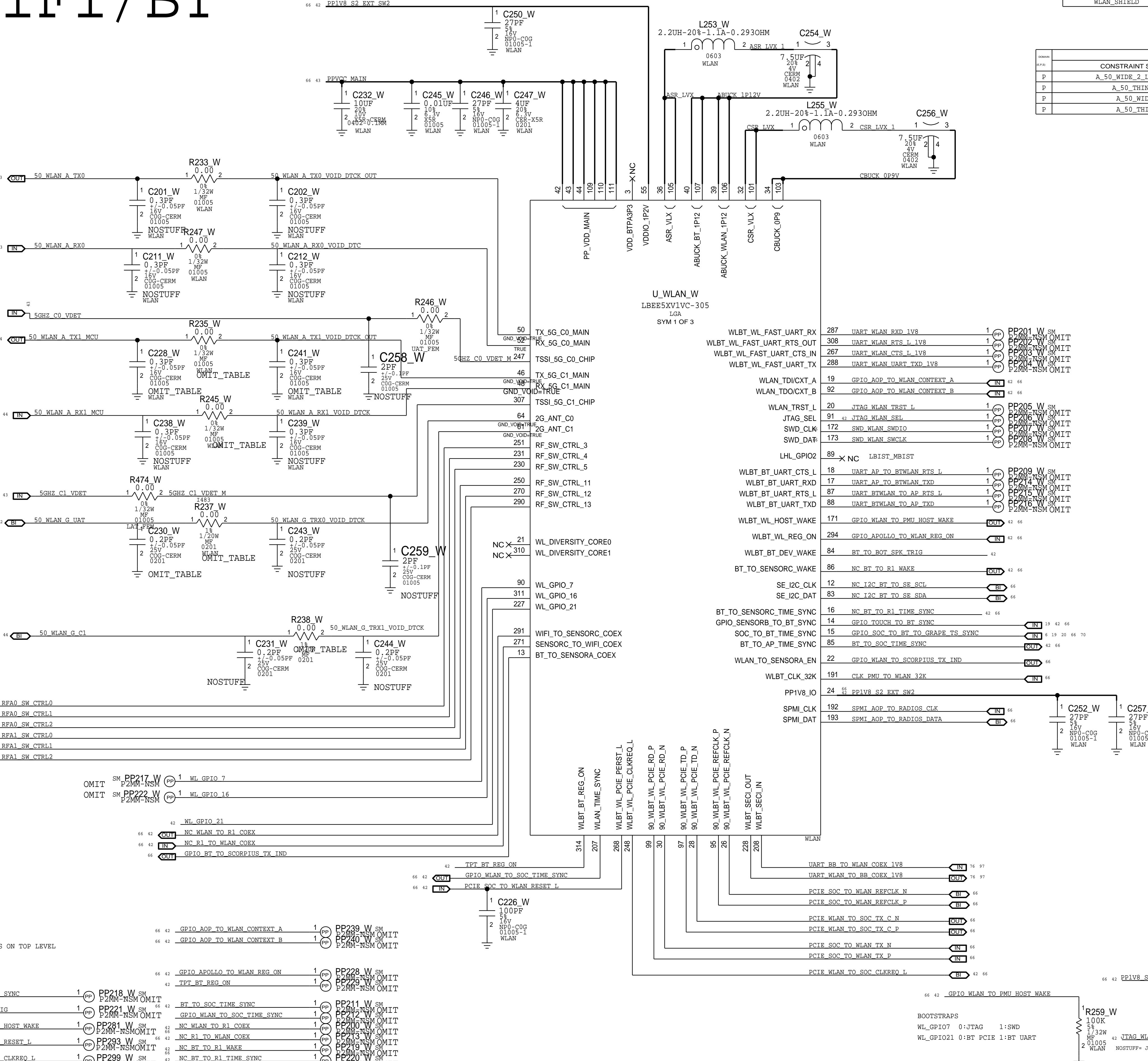


DISPLAY: B2B CONN
PAGE TITLE
SYNC_MASTER=J317_MLB_B
SYNC_DATE=11/16/2018

EDP CONNECTOR SUPPORT

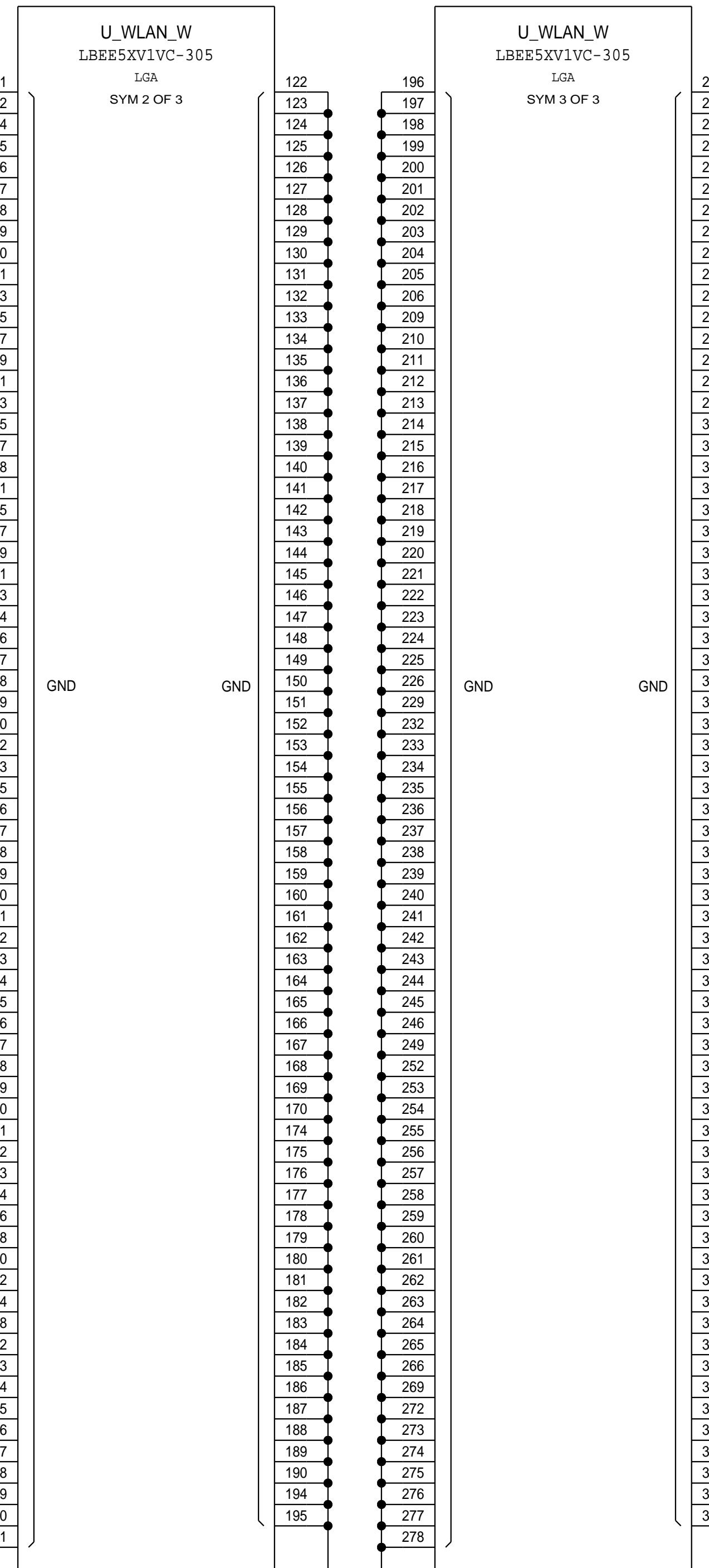


WIFI / BT

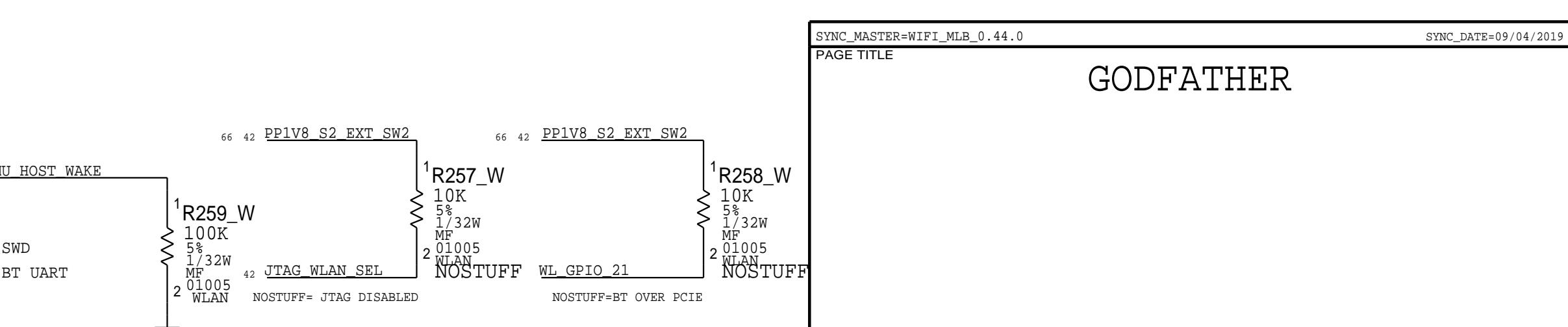


CLASS TO CLASS SPACING		
CLASS NAME	CLASS NAME	CONSTRAINT SET
WLAN_SHIELD	WLAN_SHIELD	DEFAULT
WLAN_SHIELD	GND	DEFAULT

DOMAIN (E,P,S)	NET RULE ASSIGNMENT	
	CONSTRAINT SET	COMMA SEPARATED NET NAMES (WILDCARD SUPPORT EX: DDR*)
P	A_50_WIDE_2_L1_THIN_SE	
P	A_50_THIN_2_SE	
P	A_50_WIDE_SE	
P	A_50_THIN_SE	



GODFATHER

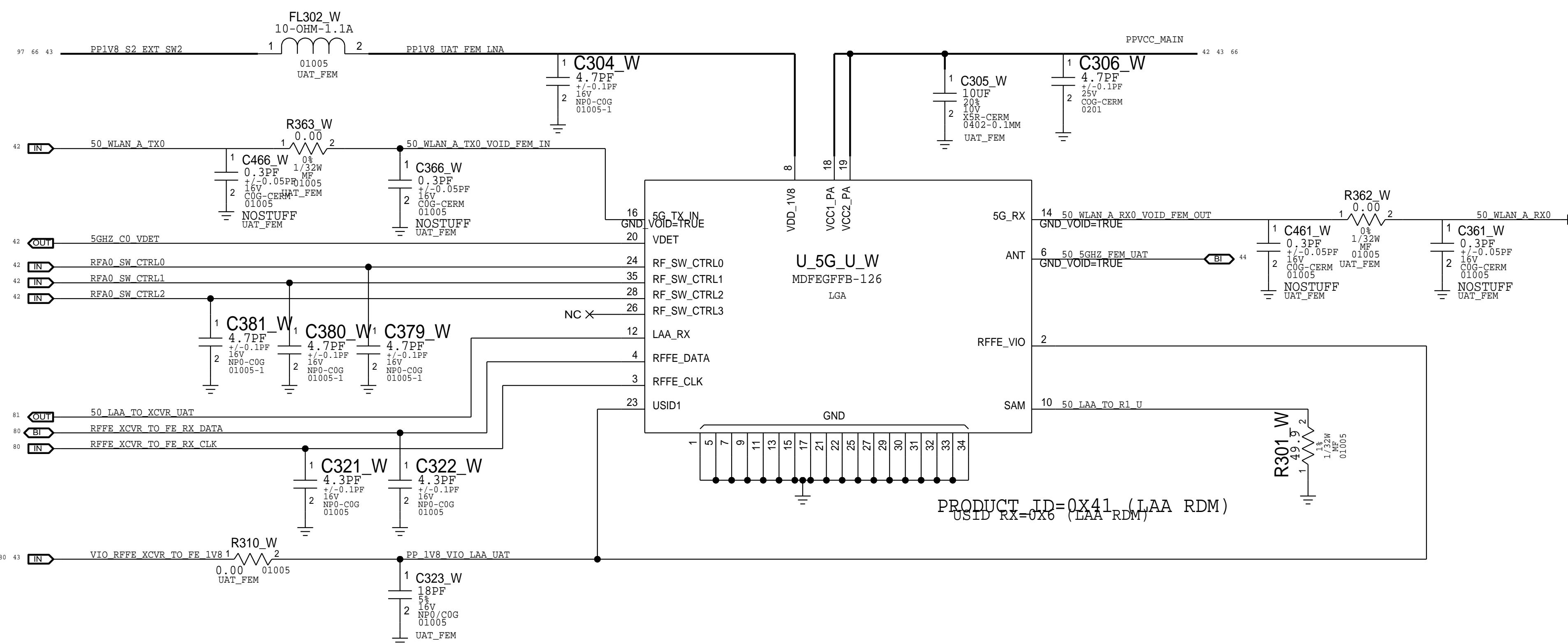


FEM MODULES

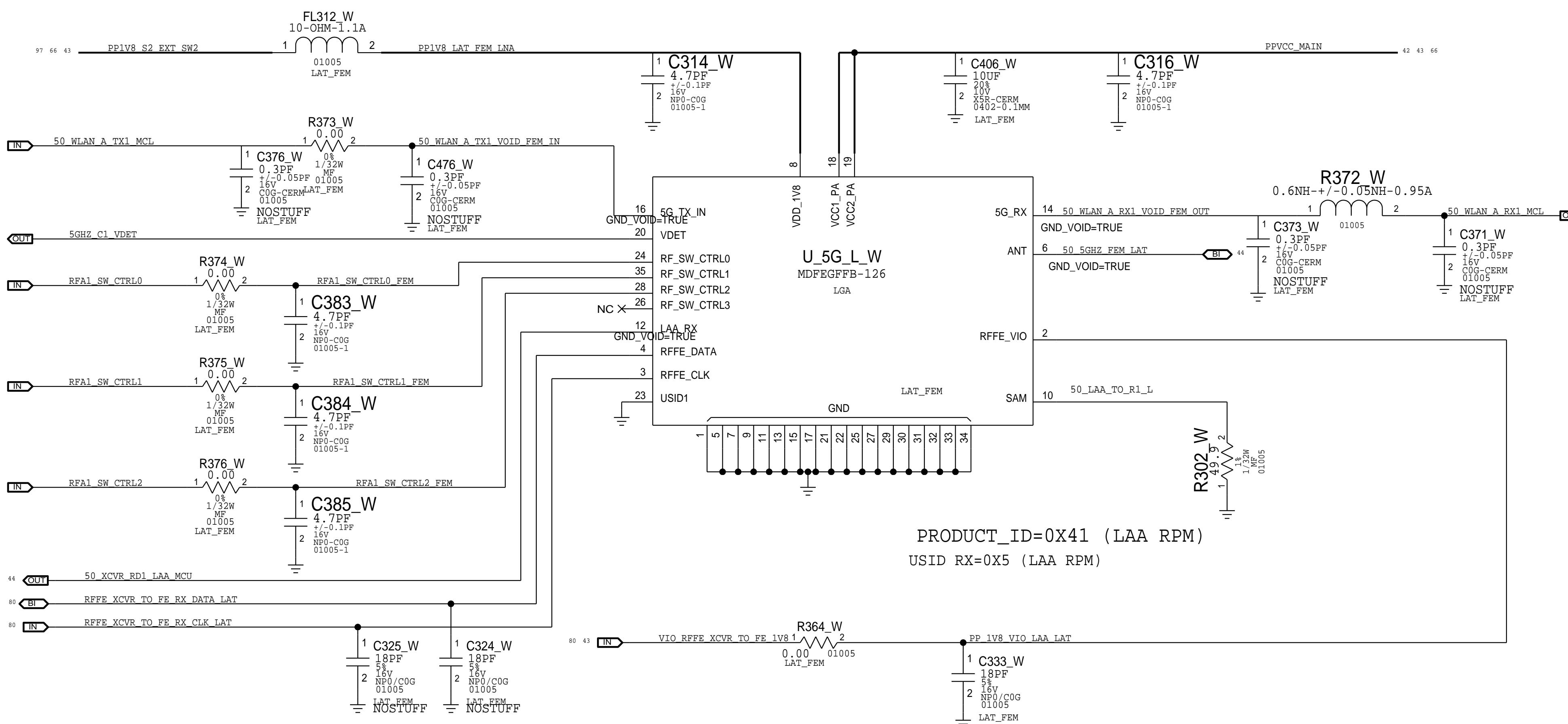
STUFF ONLY FOR VENDOR CONFIG

DOMAIN (E.P.S)	NET RULE ASSIGNMENT	
	CONSTRAINT SET	COMMA SEPARATED NET NAMES (WILDCARD SUPPORT EX: DDR*)
P	PWR_100UM	PP1V8_UAT_FEM_LNA, PP1V8_LAT_FEM_LNA, RFFE_*VIO, PP_1V8_VIO_LAA*
P	A_50_WIDE_2_SE	
P	A_50_THIN_SE	
P	A_50_THIN_2_SE	

5GHZ UAT FEED

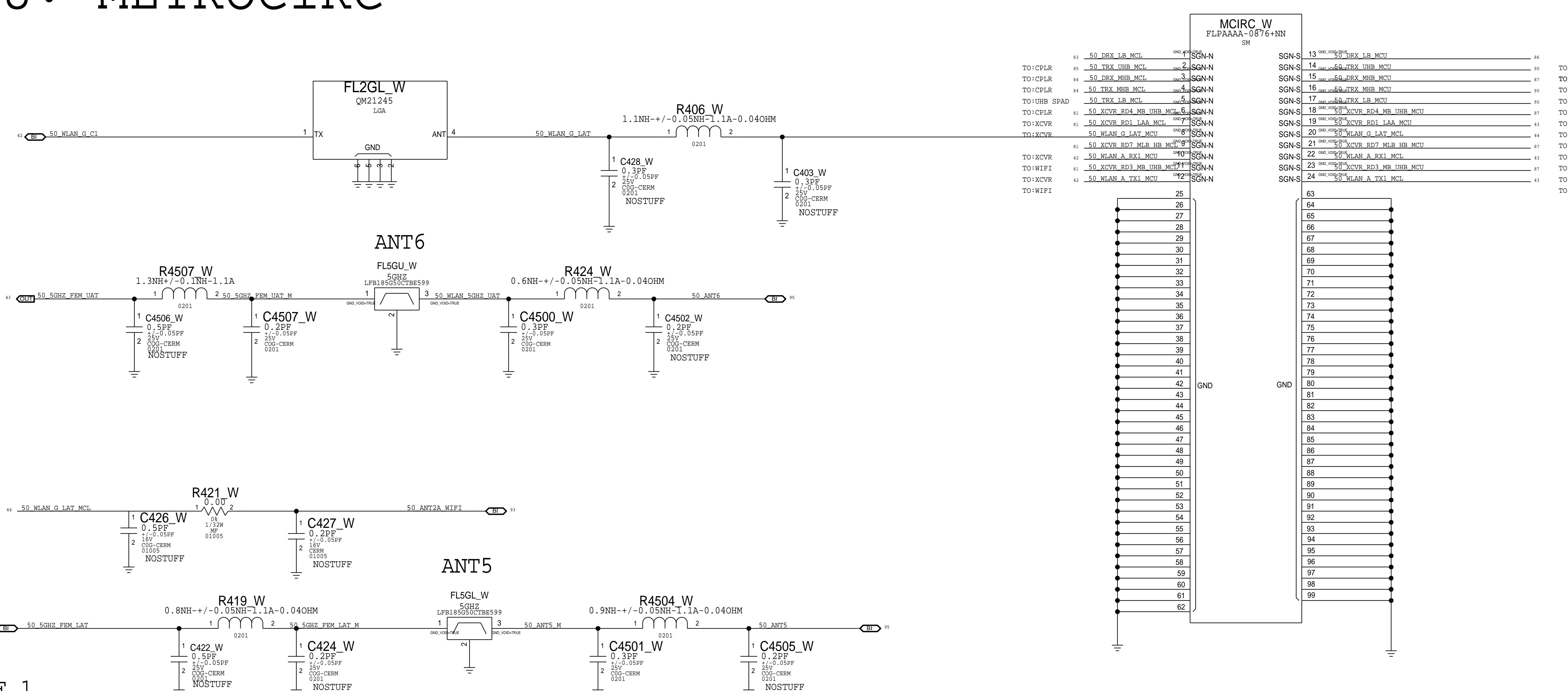


5GHZ LAT FEEI



T418: Remote FEM

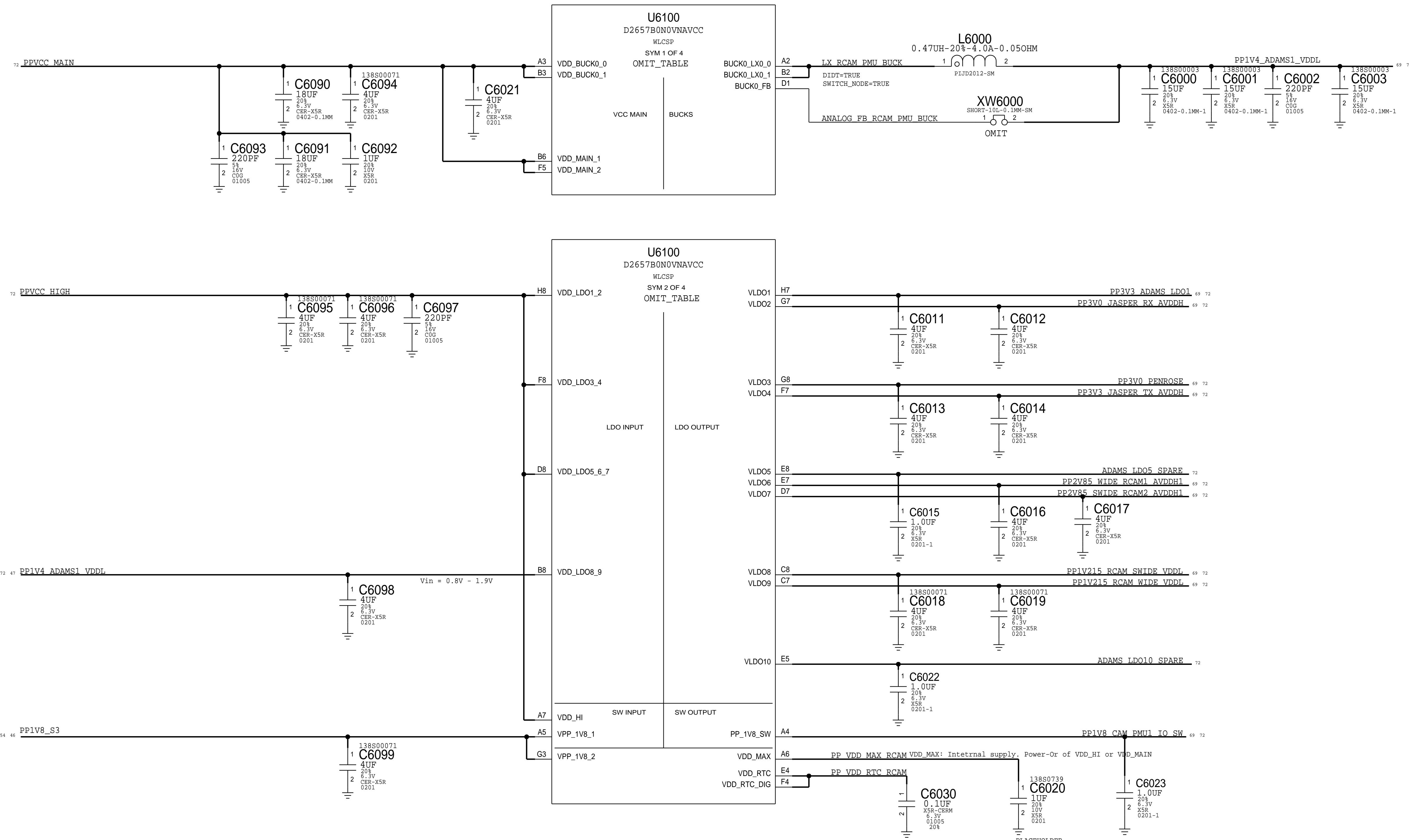
J418: METROCIRC



PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
152S00153	1	IND.,1.ONH,UH-Q,0201	R237_W	---
131S0431	1	CAP,CER,COG,0.2P,0201,H-Q	C230_W	---
152S00059	1	IND,FILM,1.GNH,,UH-Q,0201	R238_W	---
152S00494	1	IND,FILM,0.NHH,,01005	R235_W	---
131S0893	1	CAPCAP,CER,COG,0.2PF,,01005,HQ	C241_W	---
131S0893	1	CAP,CER,COG,0.2PF,,01005,HQ	C228_W	---
152S01109	1	IND,FILM,0.NHH,,01005	R245_W	---
131S0431	1	CAP, 0.2PF	C243_W	NOSTUFF
131S0431	1	CAP, 0.2PF	C231_W	NOSTUFF

PART NUMBER	ALTERNATE FOR PART NUMBER	REFERENCE DESIGNATOR(S)	DESCRIPTION	BOM OPTION
152S00992	152S00985	L6000	0.47UH 4A 2012 TAIYO	

RCAM ADAMS PMU

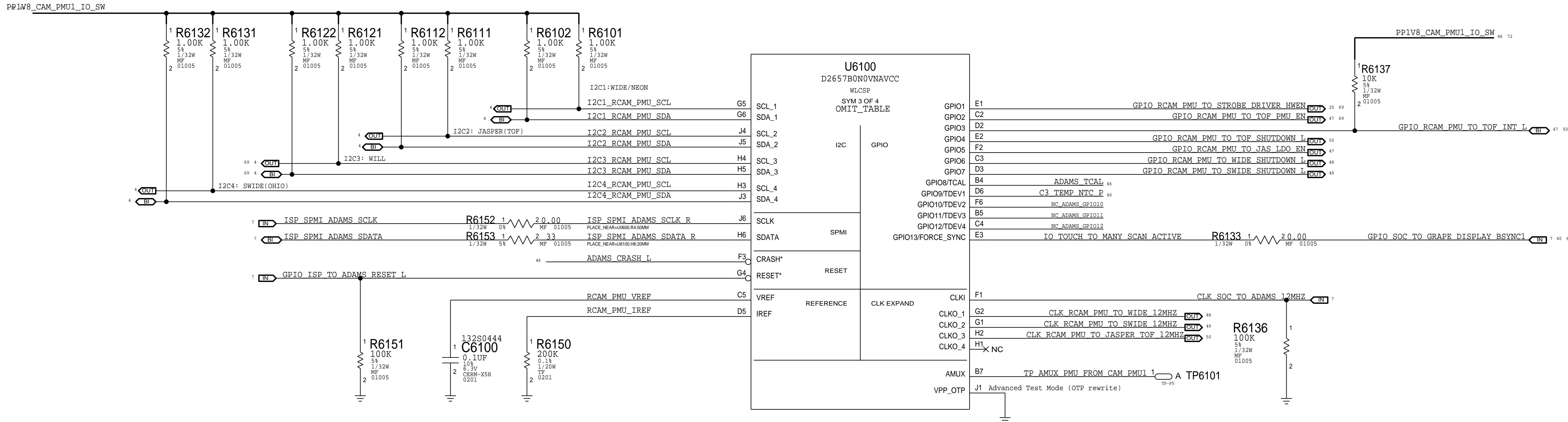


SYNC_MASTER=DEV_PANORAMA_0_3.0
PAGE TITLE: CAMERA: ADAMS POWER (1/2)
SYNC_DATE=11/28/2018

D

D

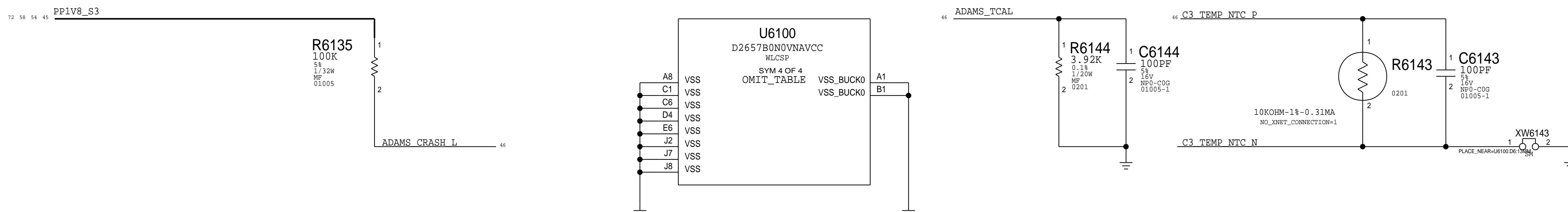
RCAM ADAMS PMU IO



B

B

PRIVACY MODE - CRASH



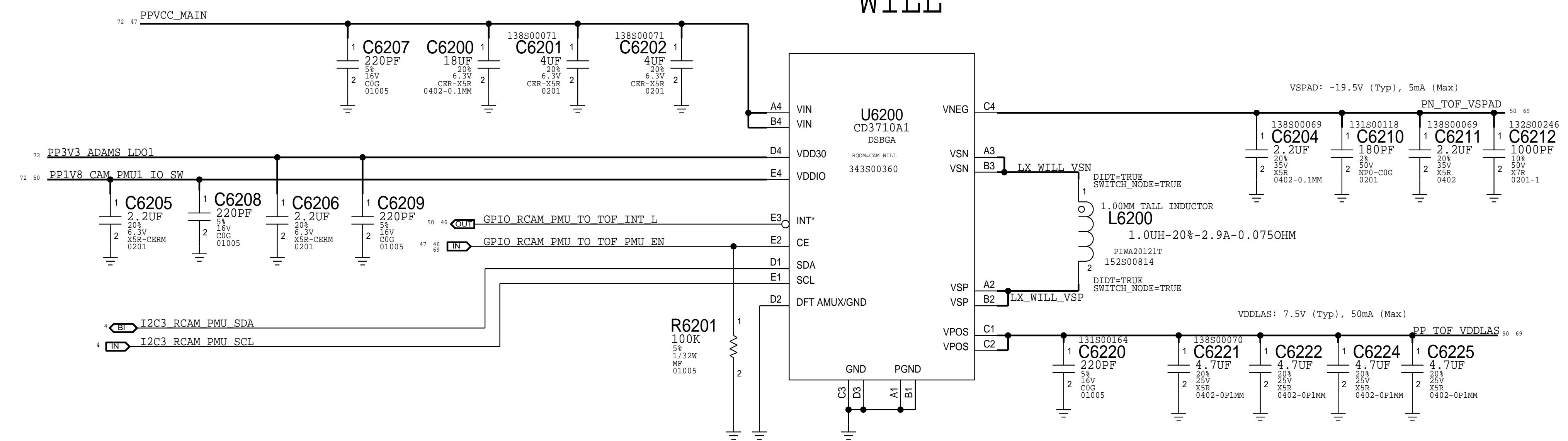
A

A

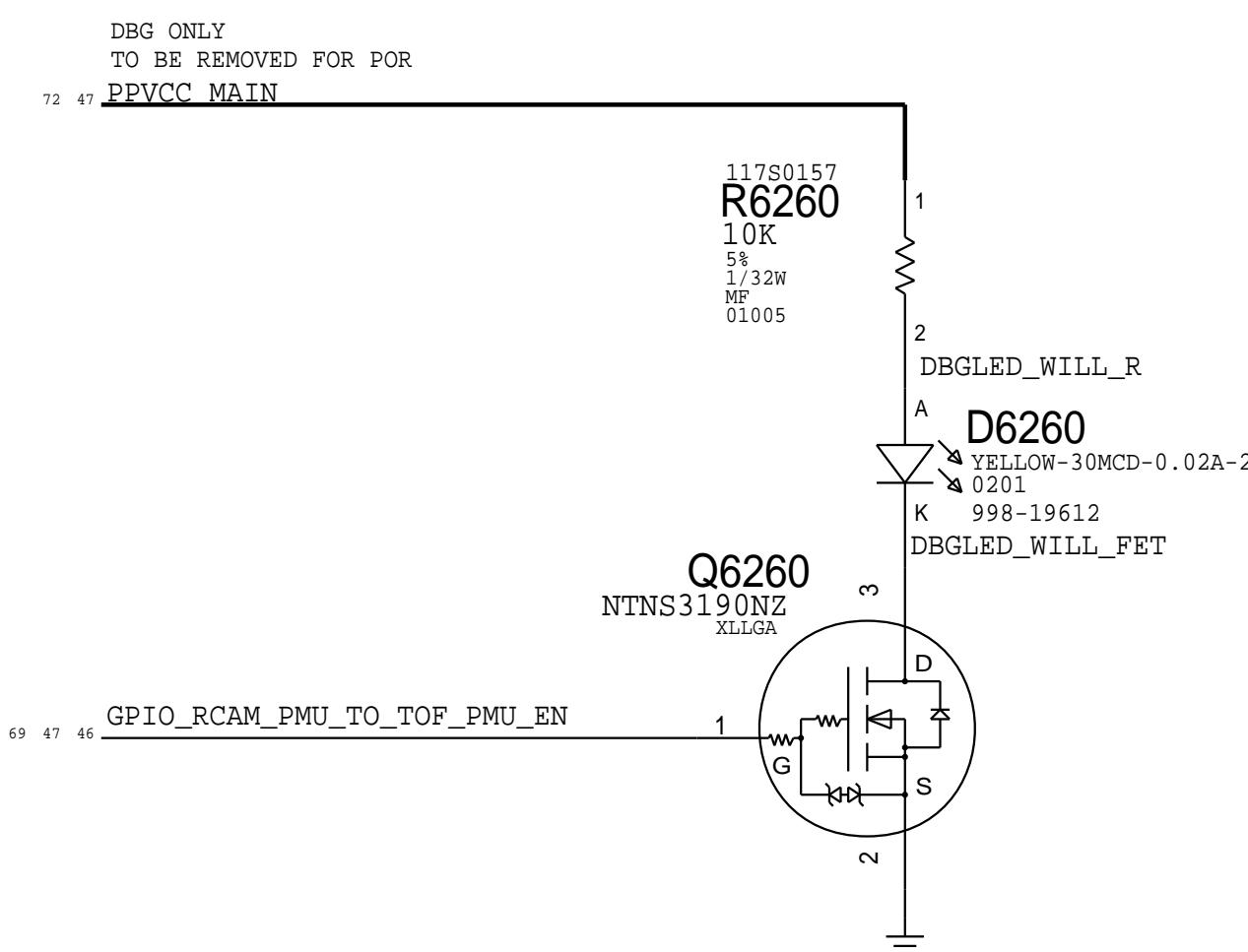
SYNC_MASTER=DEV_PANORAMA_0_3.0
PAGE TITLE: CAMERA: ADAMS IO (2 / 2)

D

WILL

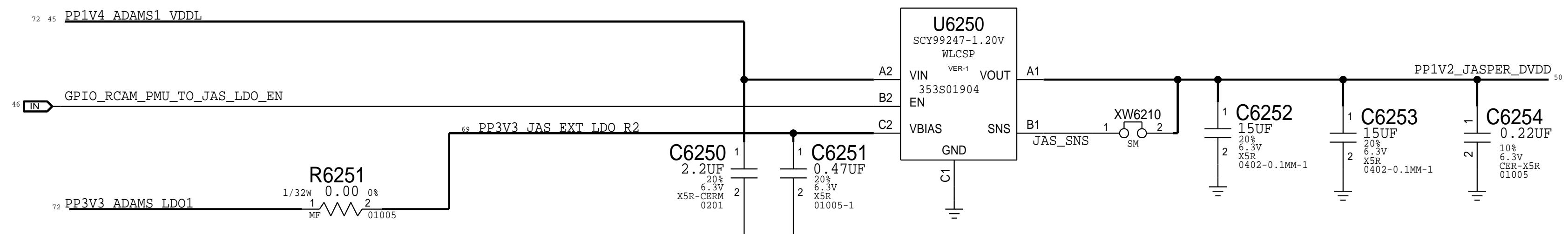


C



B

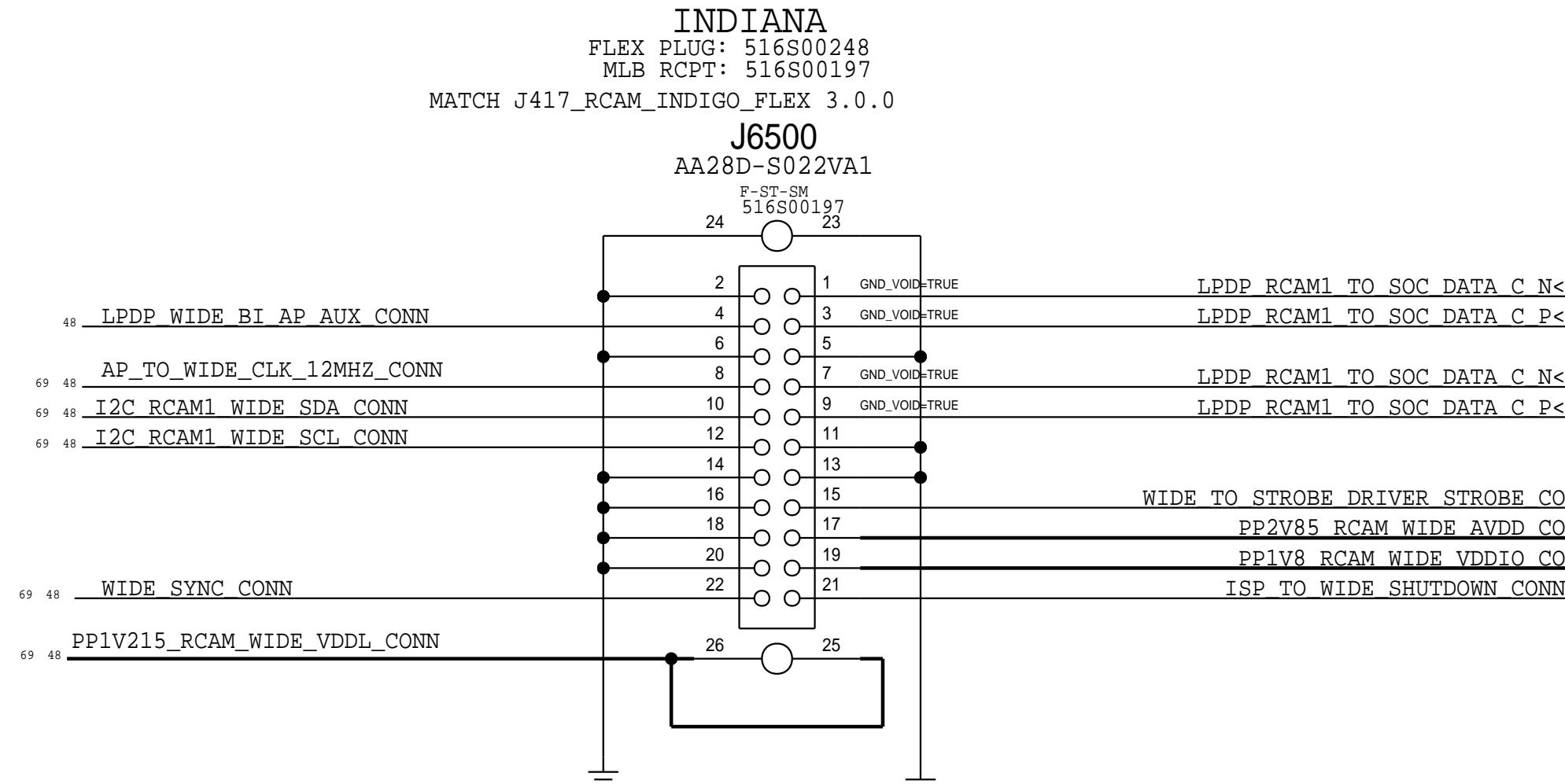
JASPER VDDL LDO



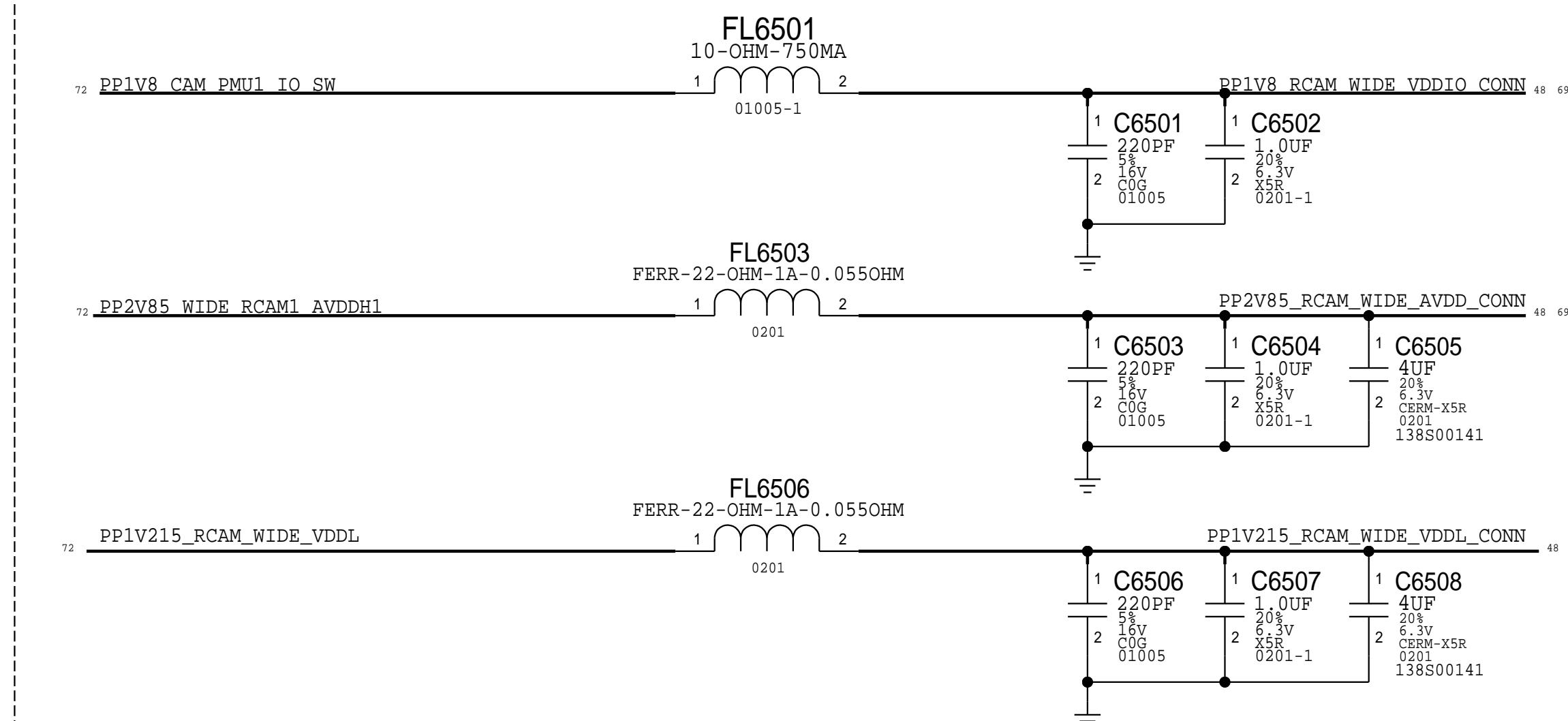
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SYNC_MASTER=7431_P2_CHINA
PAGE TITLE
CAMERA: JASPER POWER

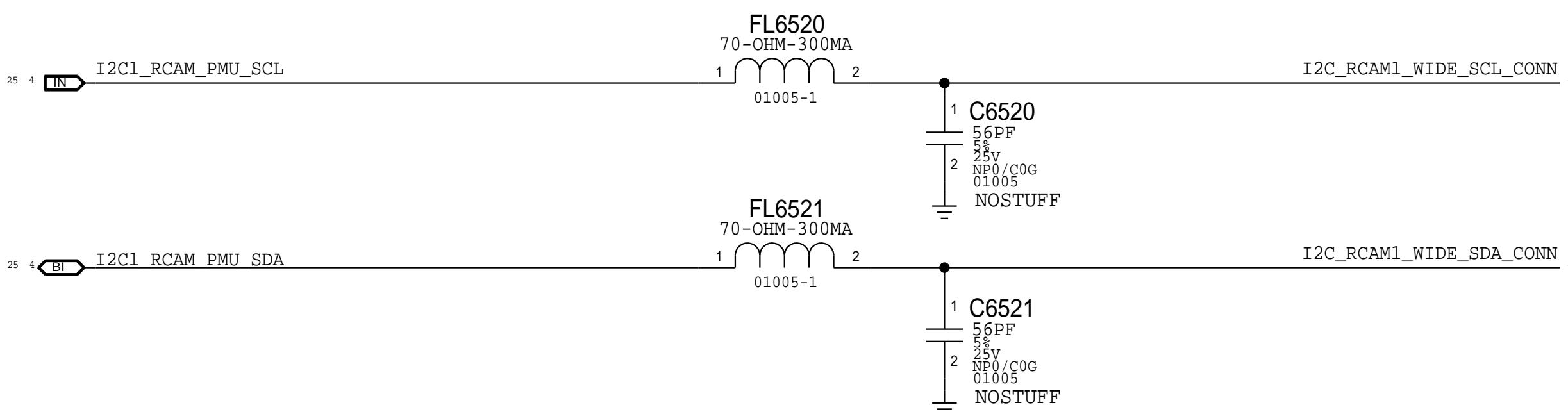
WIDE RCAM1 B2B



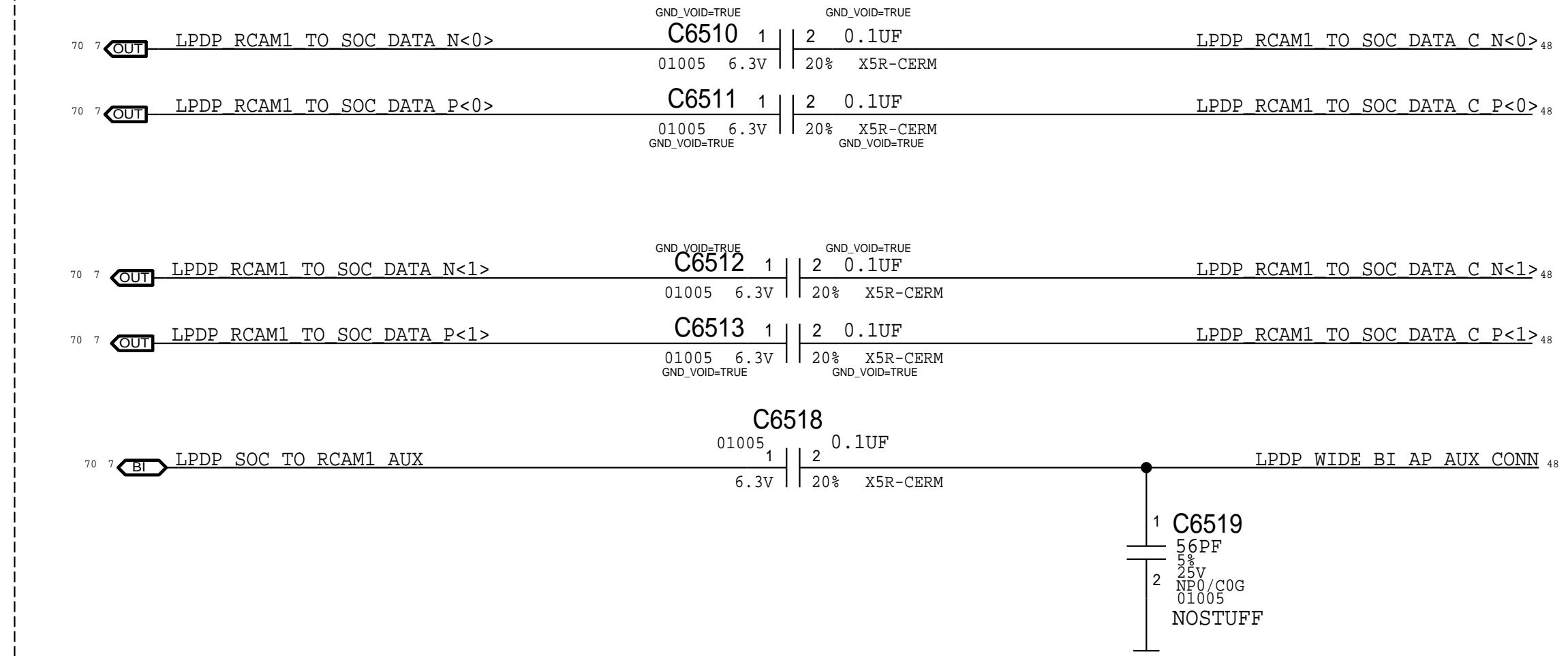
POWER FILTERING



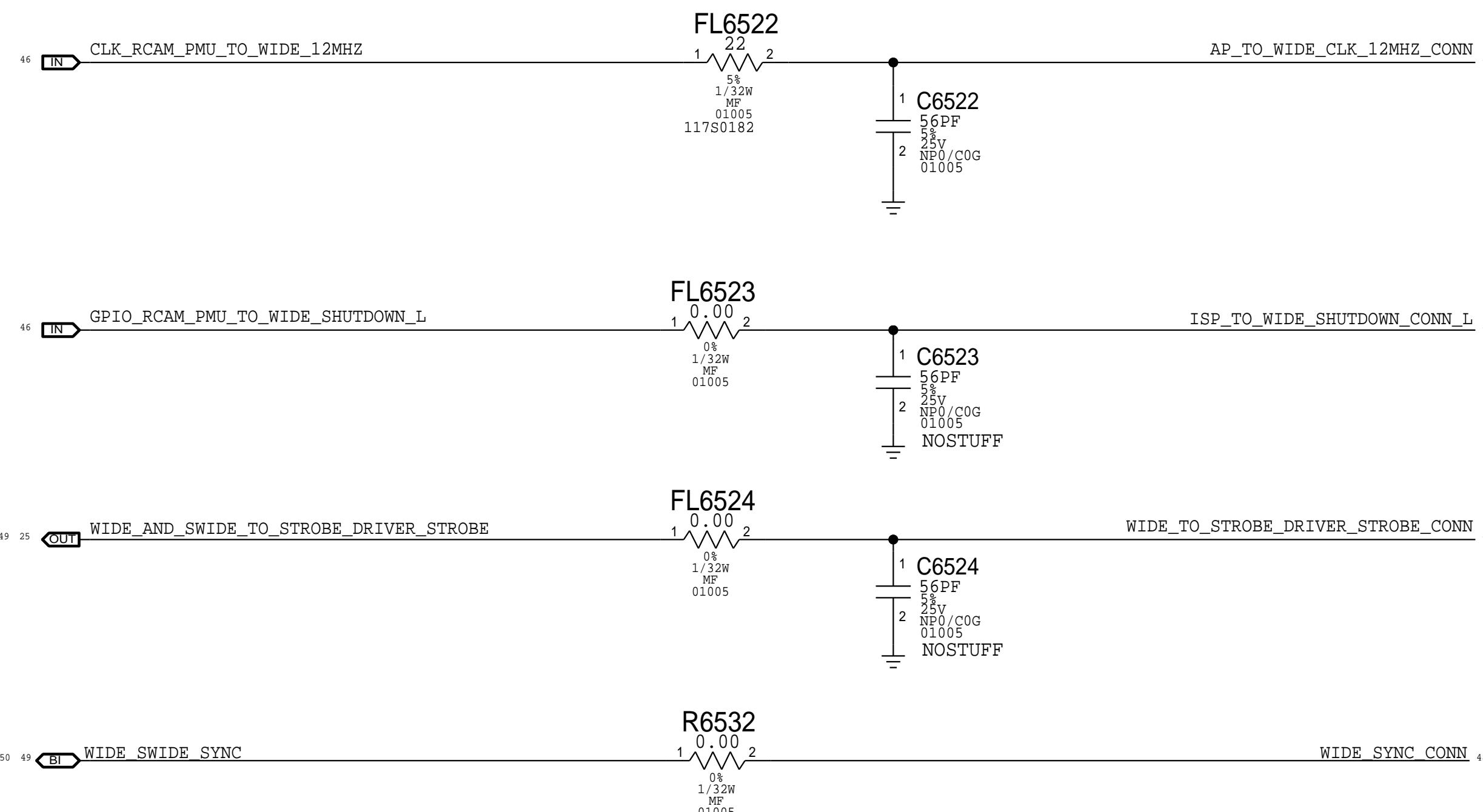
ISP I2C



LPDP FILTERS



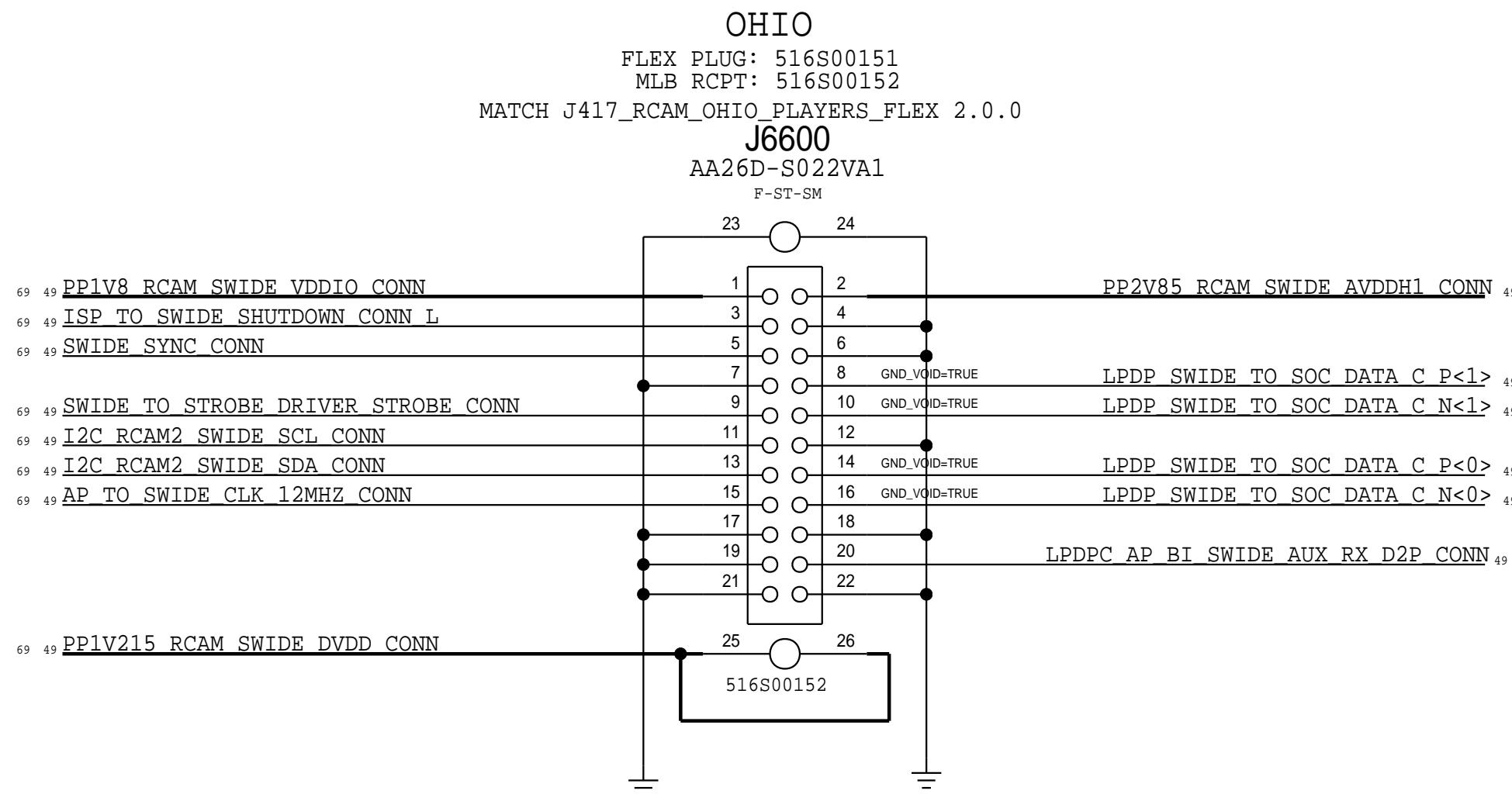
IO FILTERS



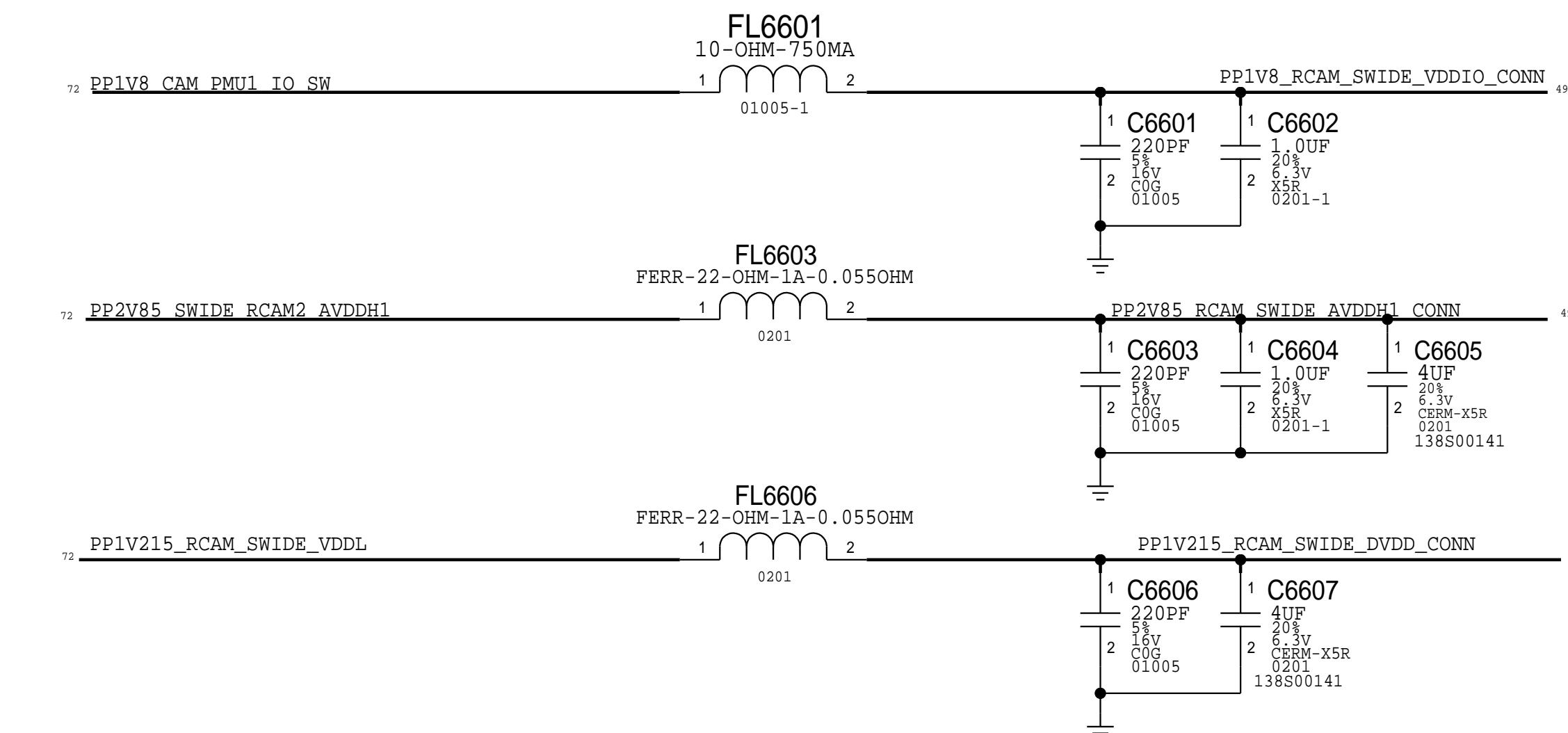
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PAGE TITLE
CAMERA: B2B RCAM1 WIDE

SYNC_DATE=05/13/2019

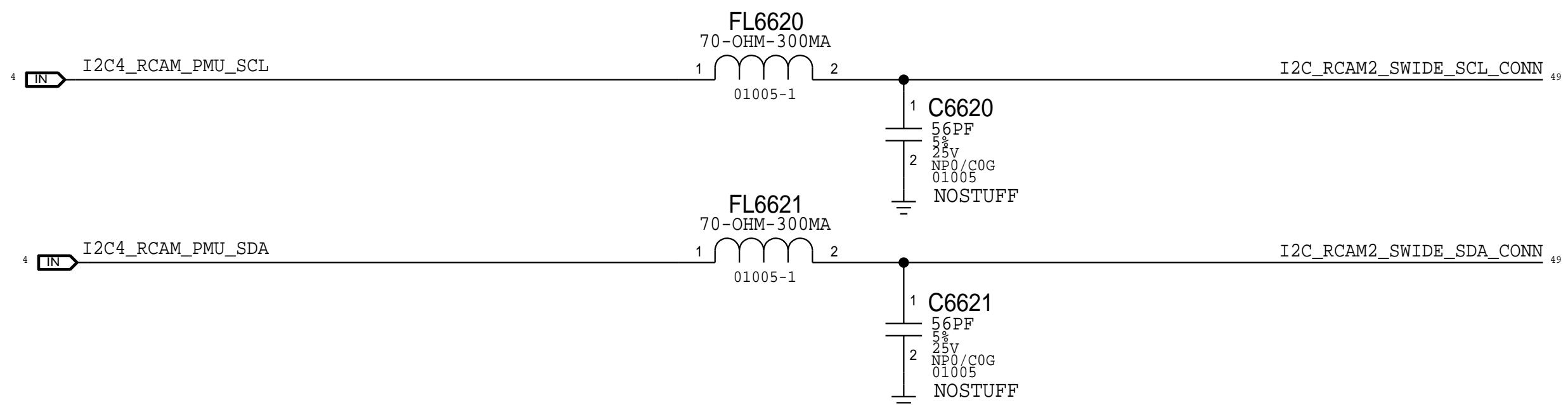
SWIDE RCAM2 B2B



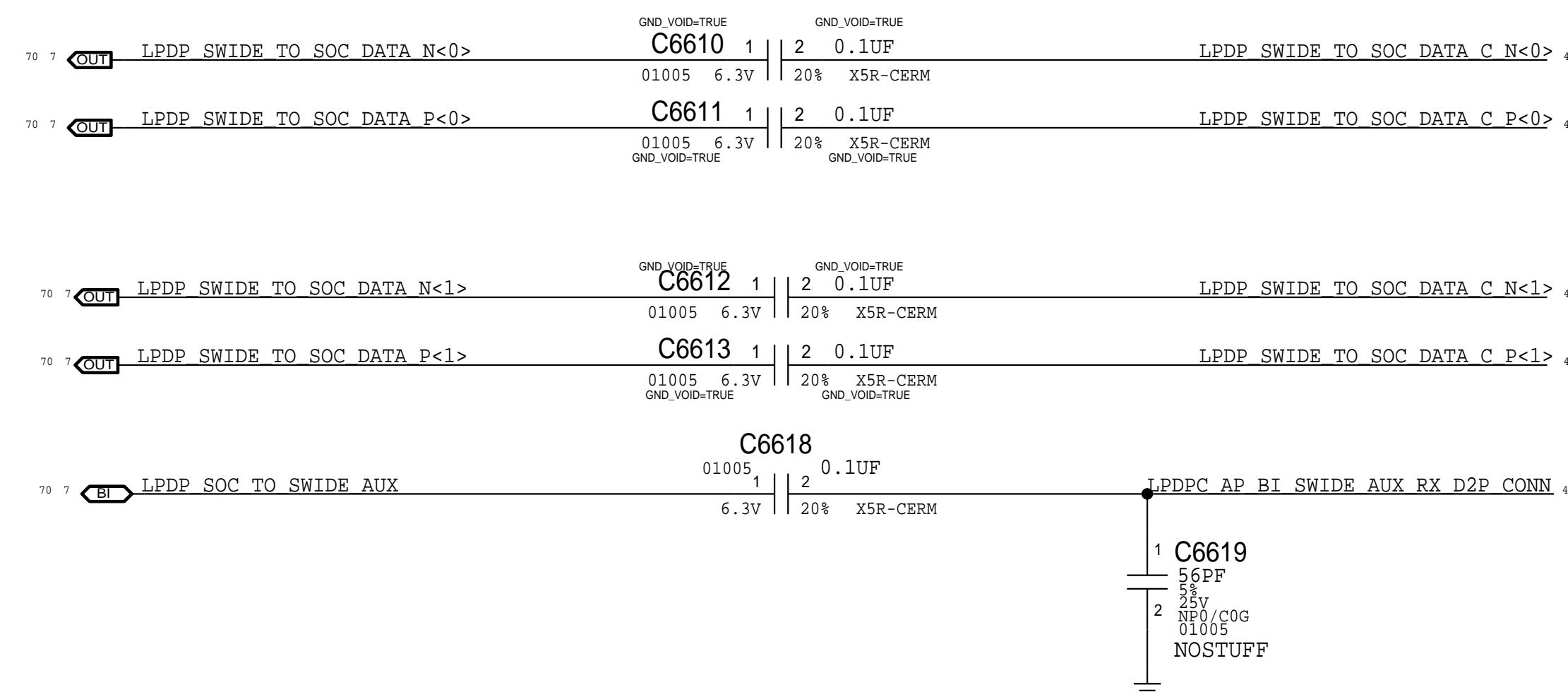
POWER FILTERING



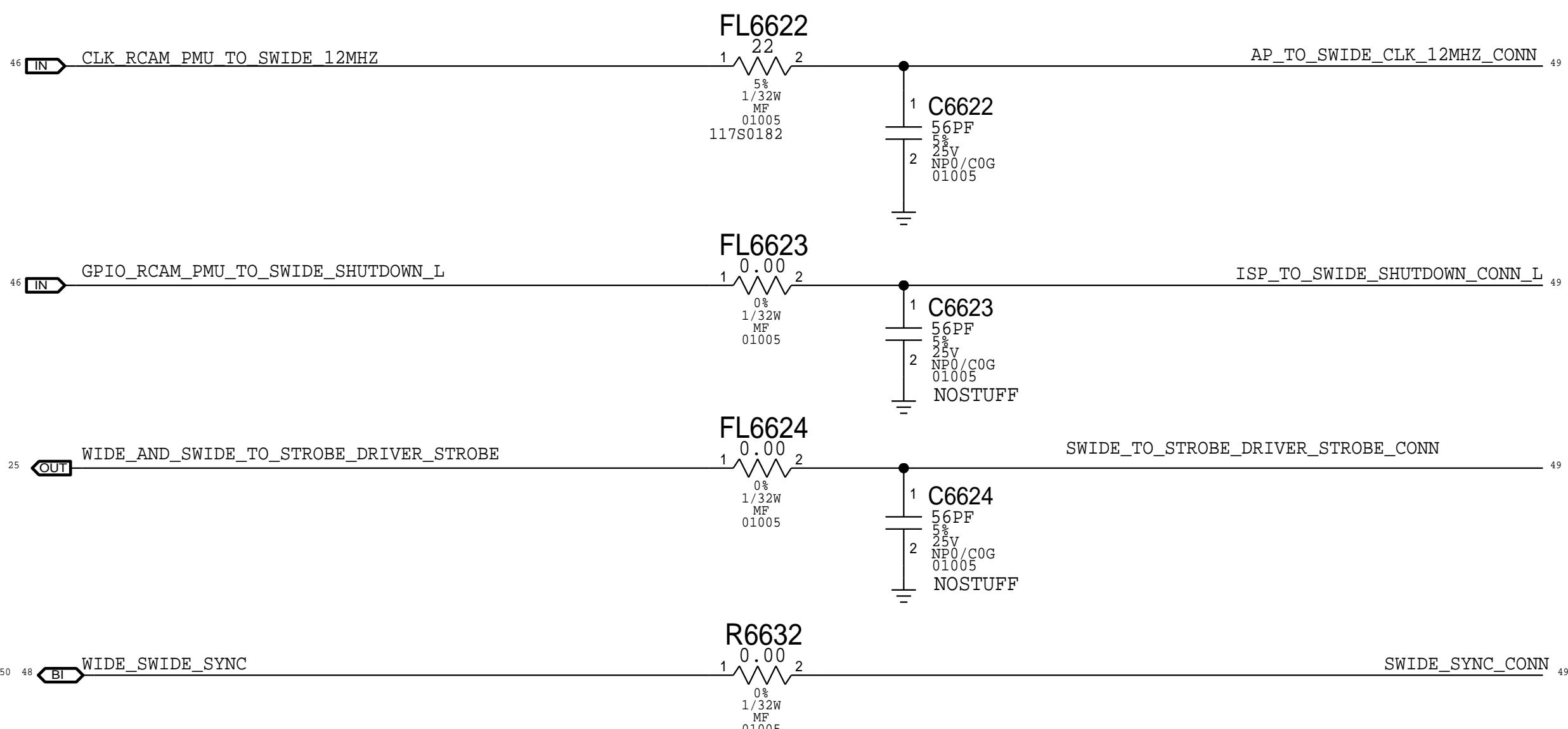
ISP I2C



LPDP FILTERS



IO FILTERS



8

7

6

5

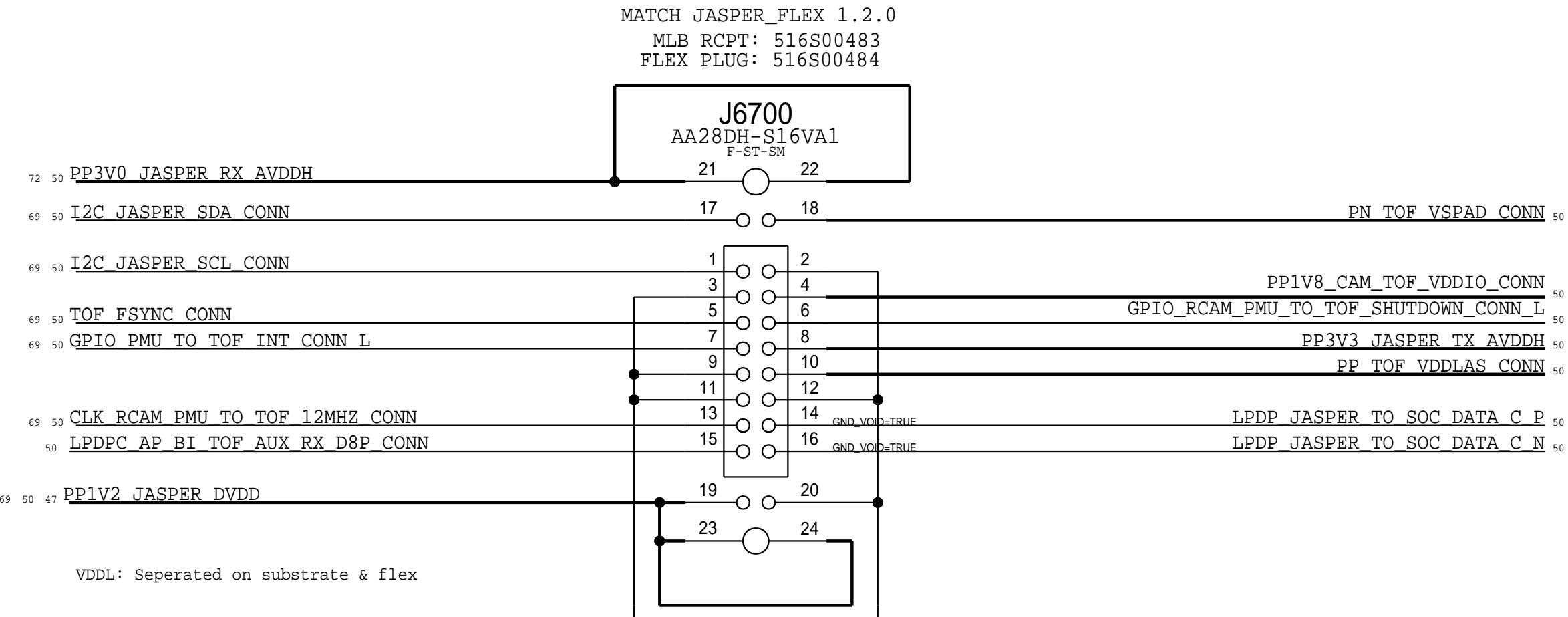
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3

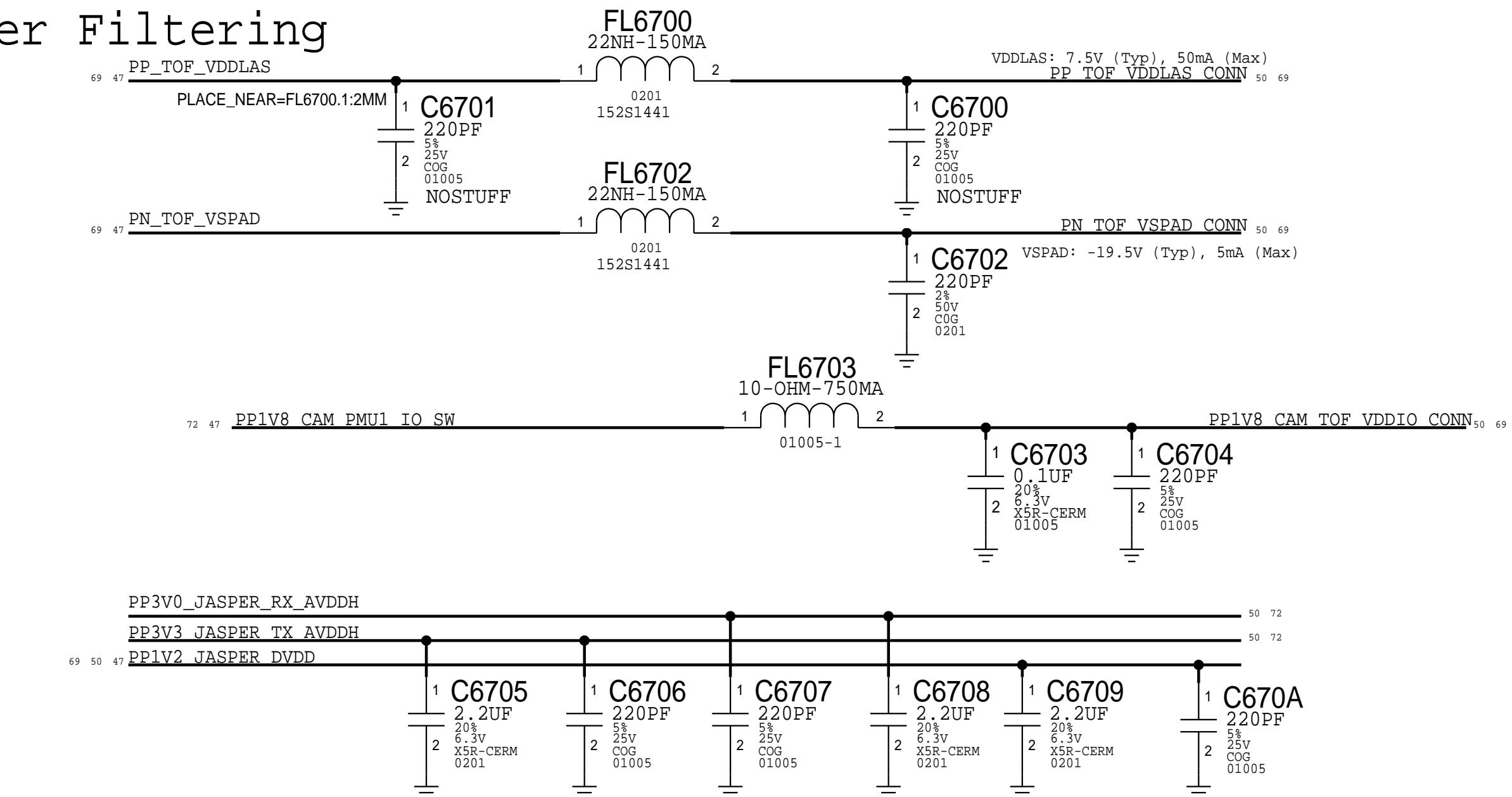
2

1

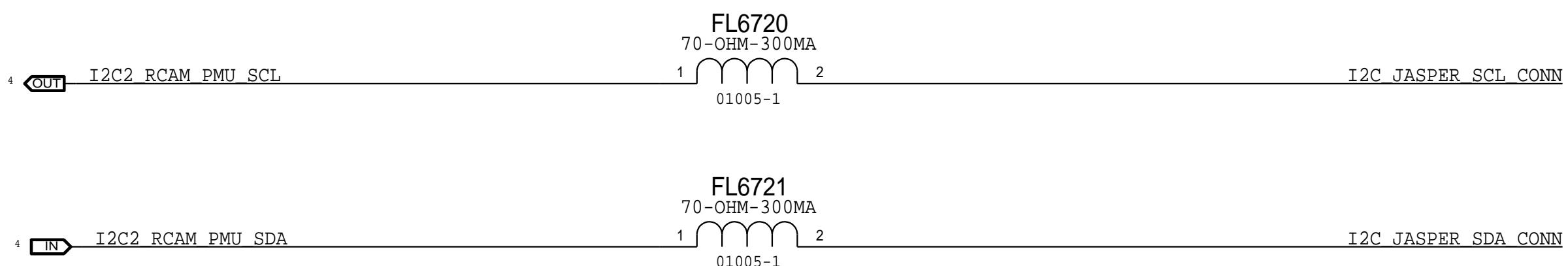
JASPER B2B



Power Filtering



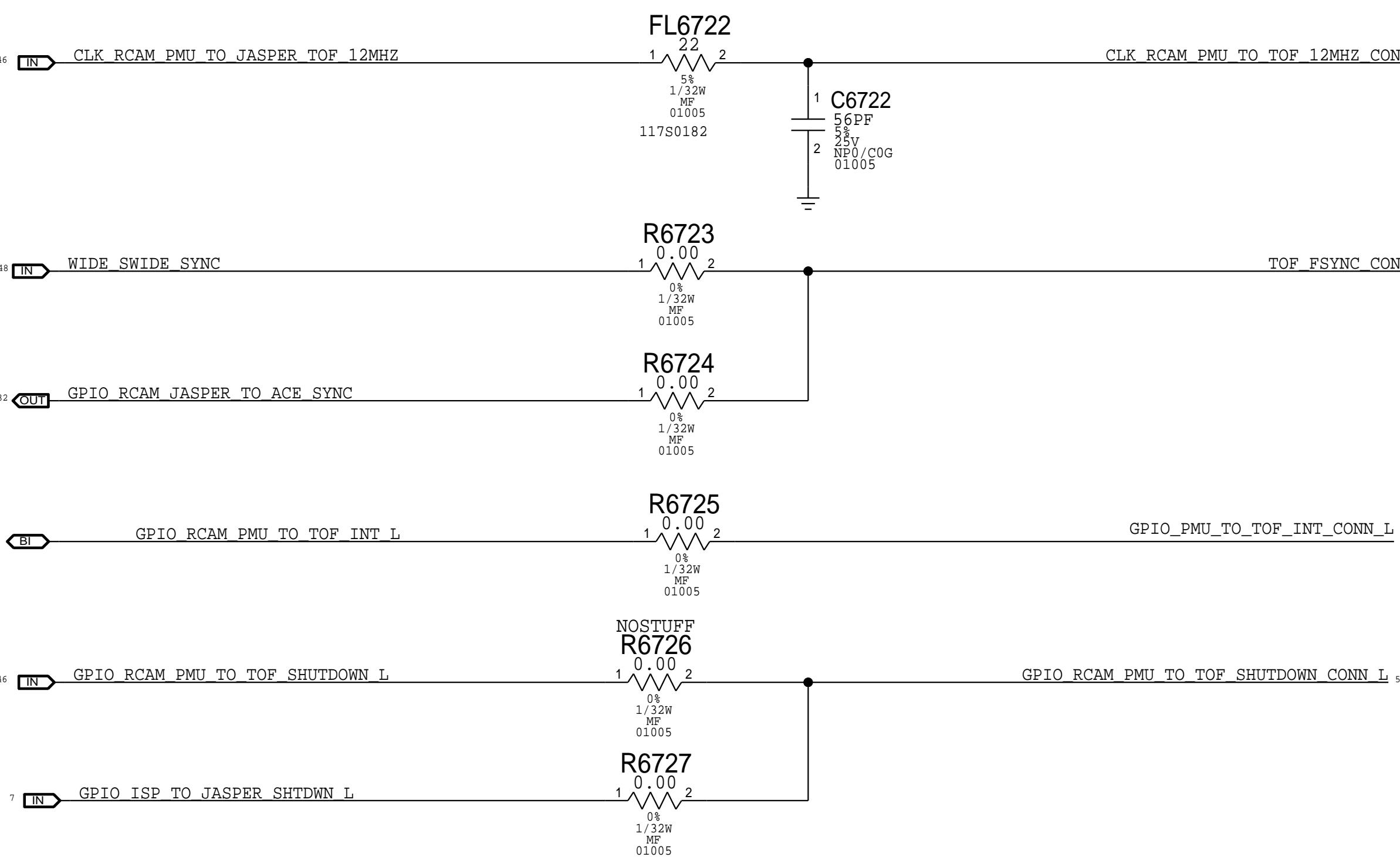
JASPER I2C



LPDP Filters



IO Filters



SYNC_MASTER=7418_SYNC_P2
PAGE TITLE
CAMERA: B2B JASPER

8

7

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5

4

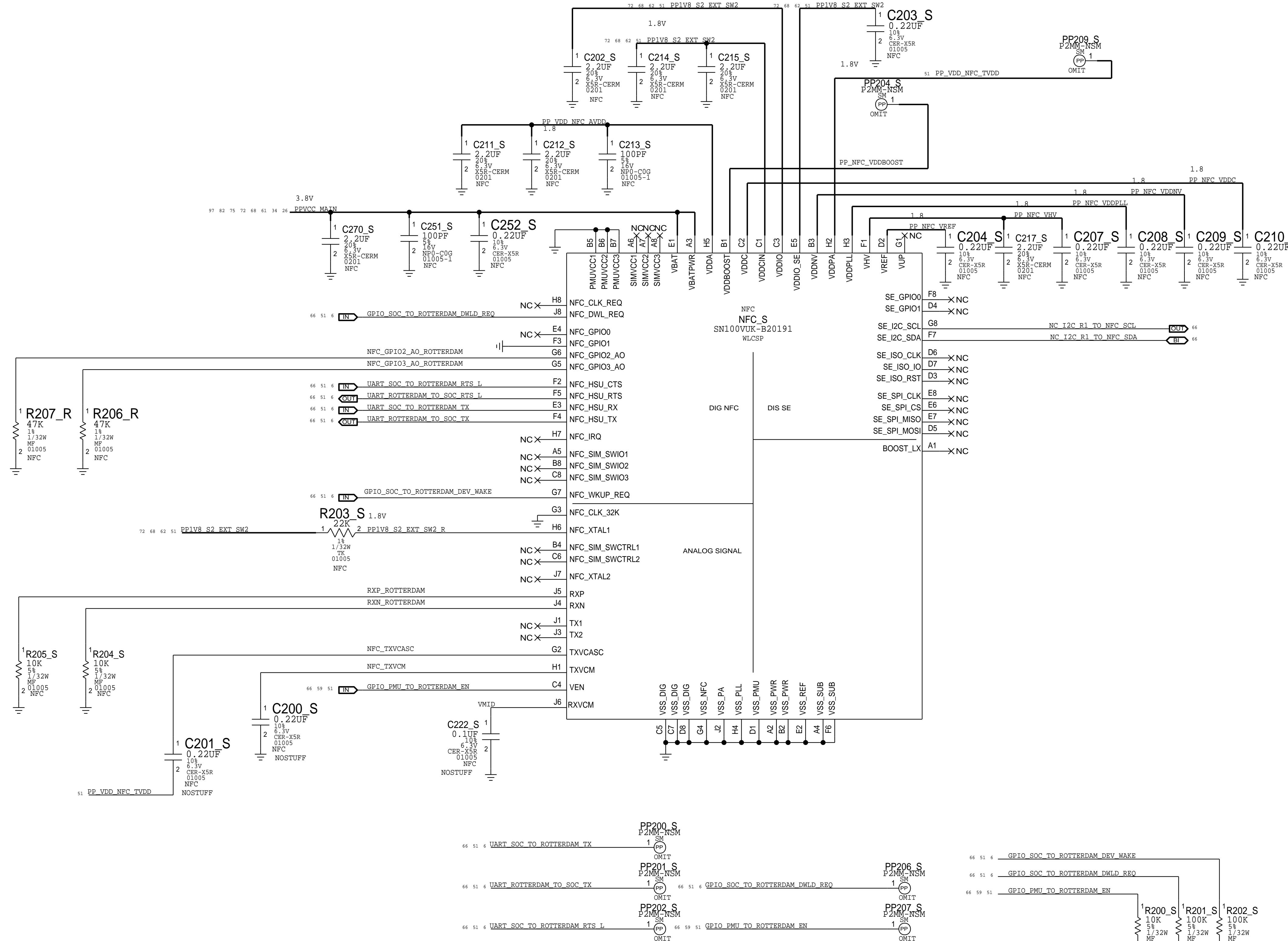
3

2

1

STOCKHOLM

NFC CONTROLLER



SYNC_MASTER=j421_P2_CHINA
PAGE_TITLE=NFC_CONTROLLER
SYNC_DATE=05/13/2019

GPM: DMIC GATING

D

D

C

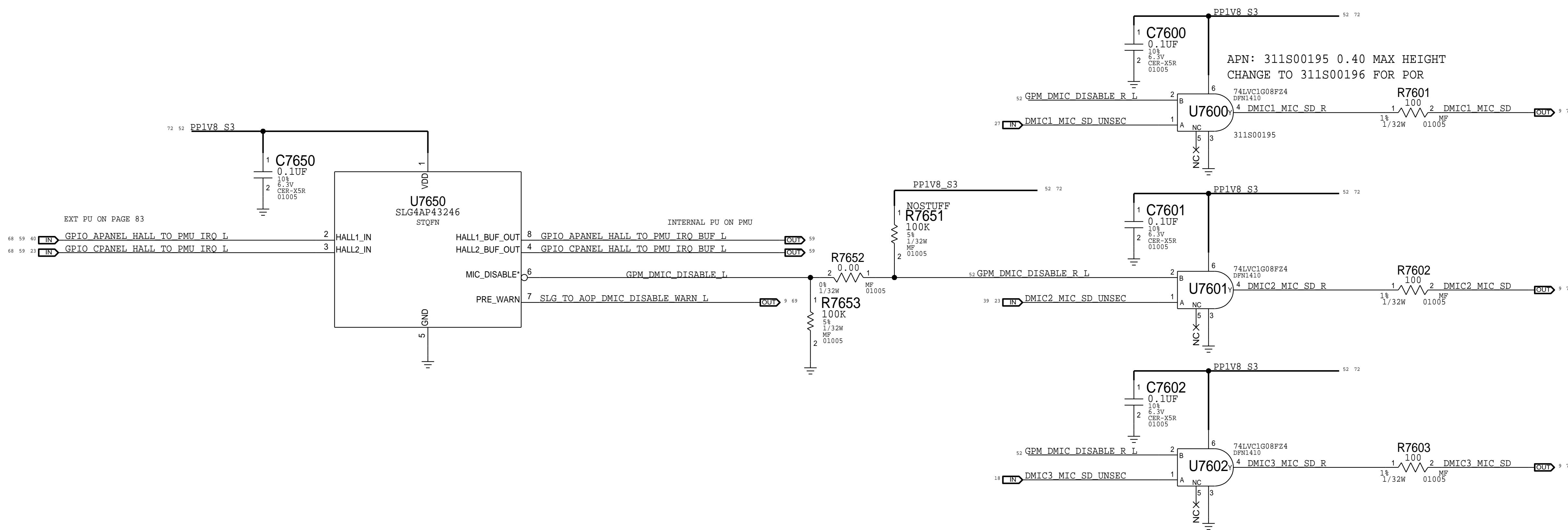
C

B

B

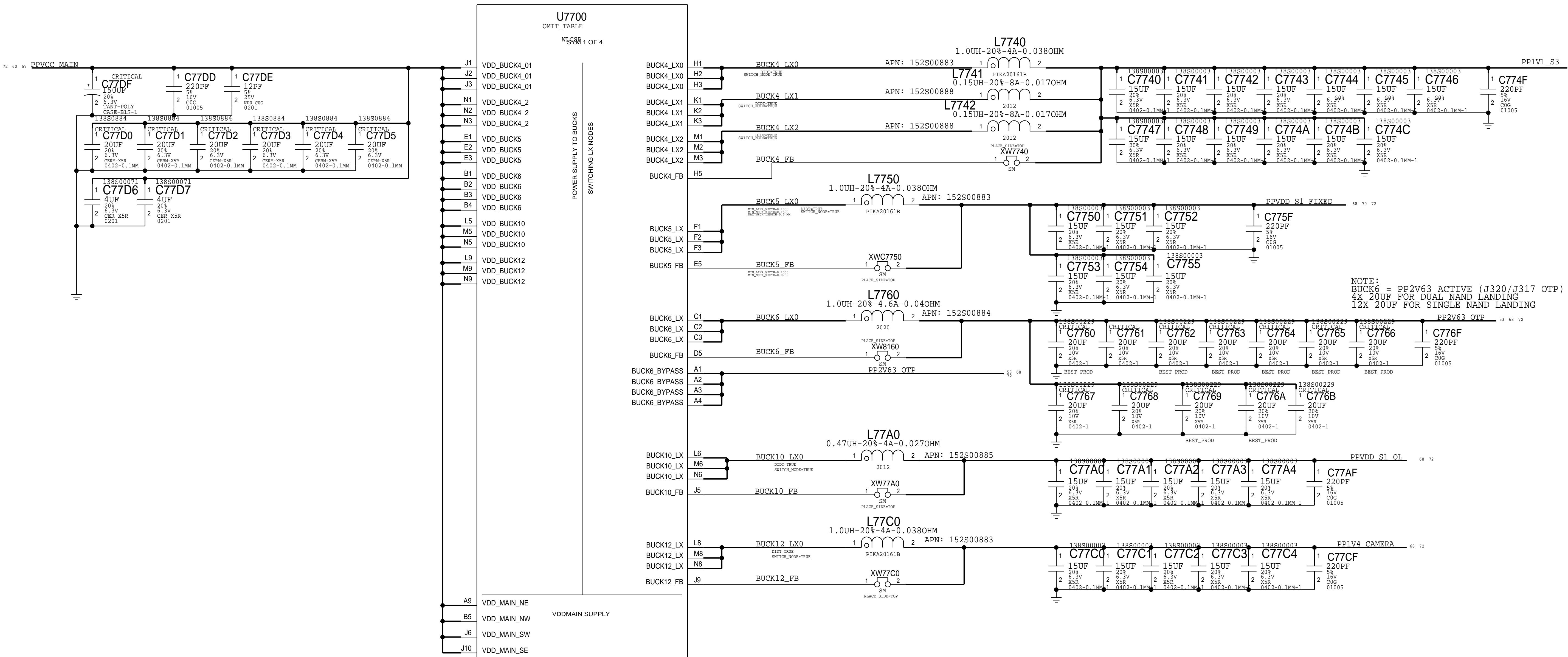
A

A



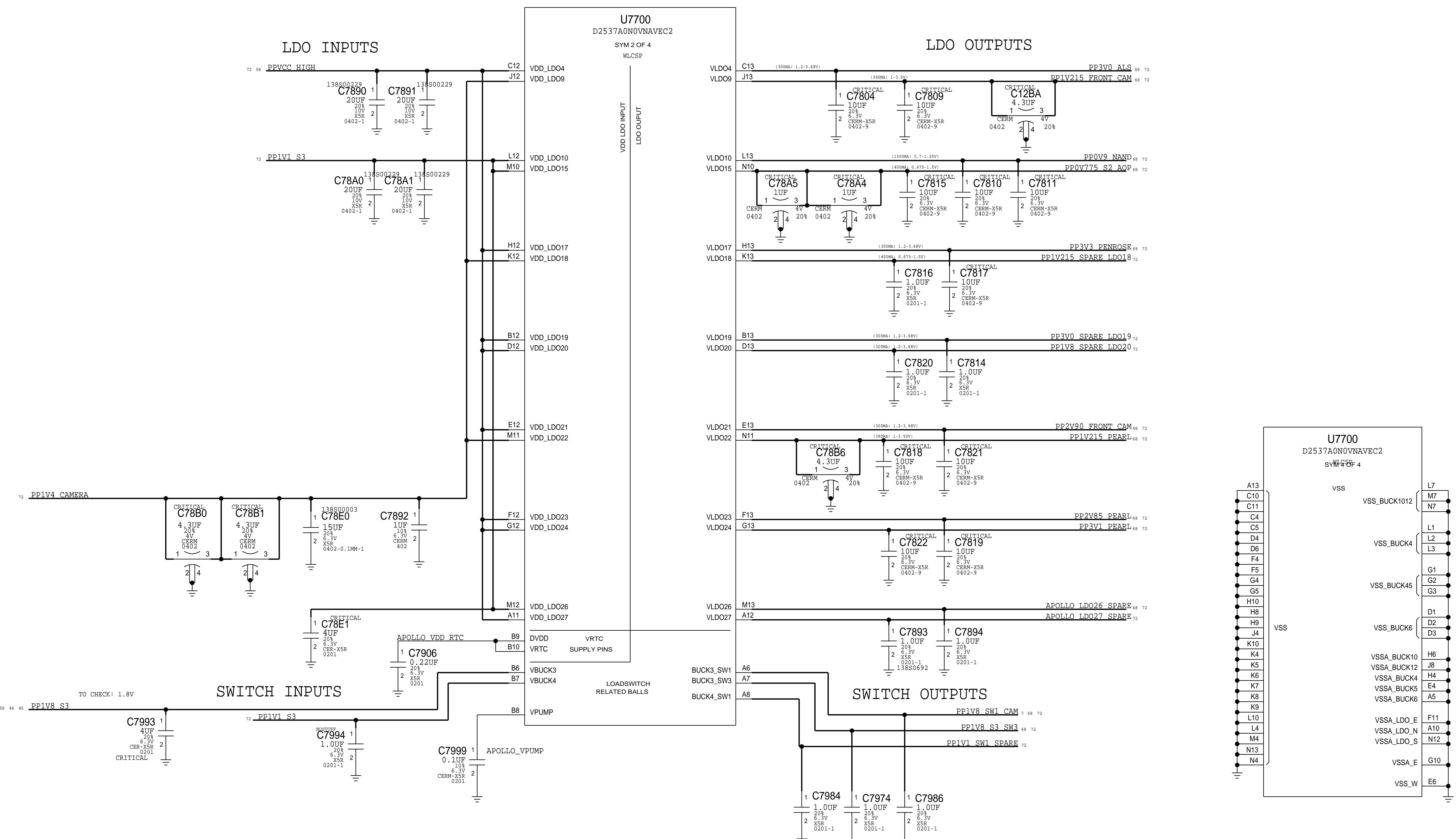
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PAGE TITLE	
GPM	

APOLLO PMU (1/3)

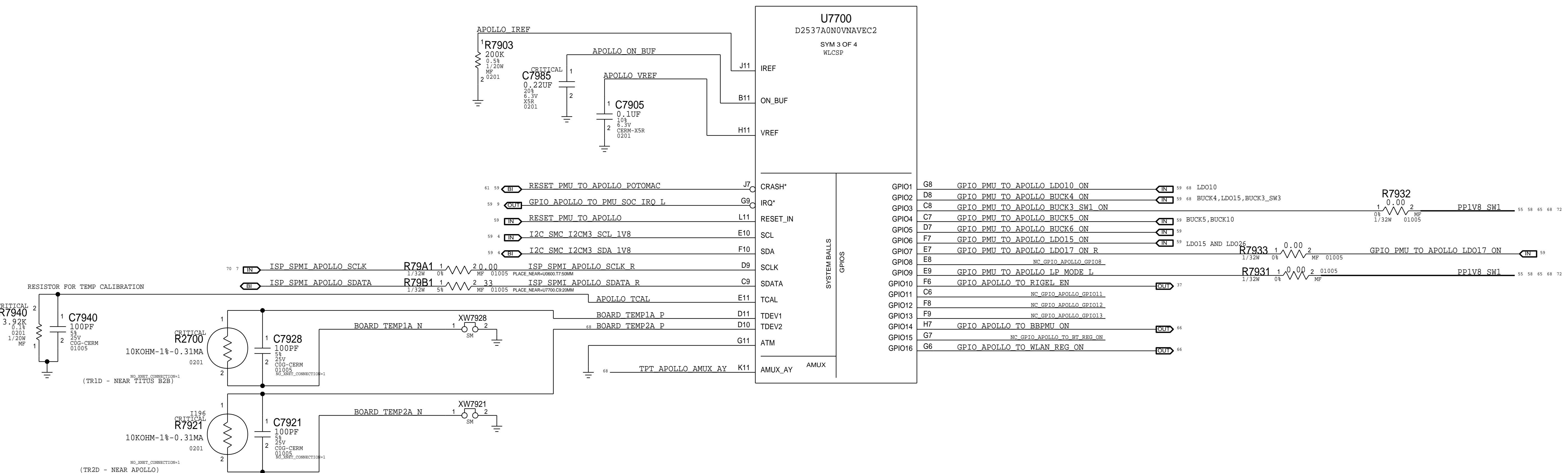


SYNC_MASTER=J317_MLB_B
SYNC_DATE=11/16/2018
PAGE_TITLE
POWER: APOLLO (1/3)

APOLLO PMU (2 / 3)



APOLLO PMU (3 / 3)



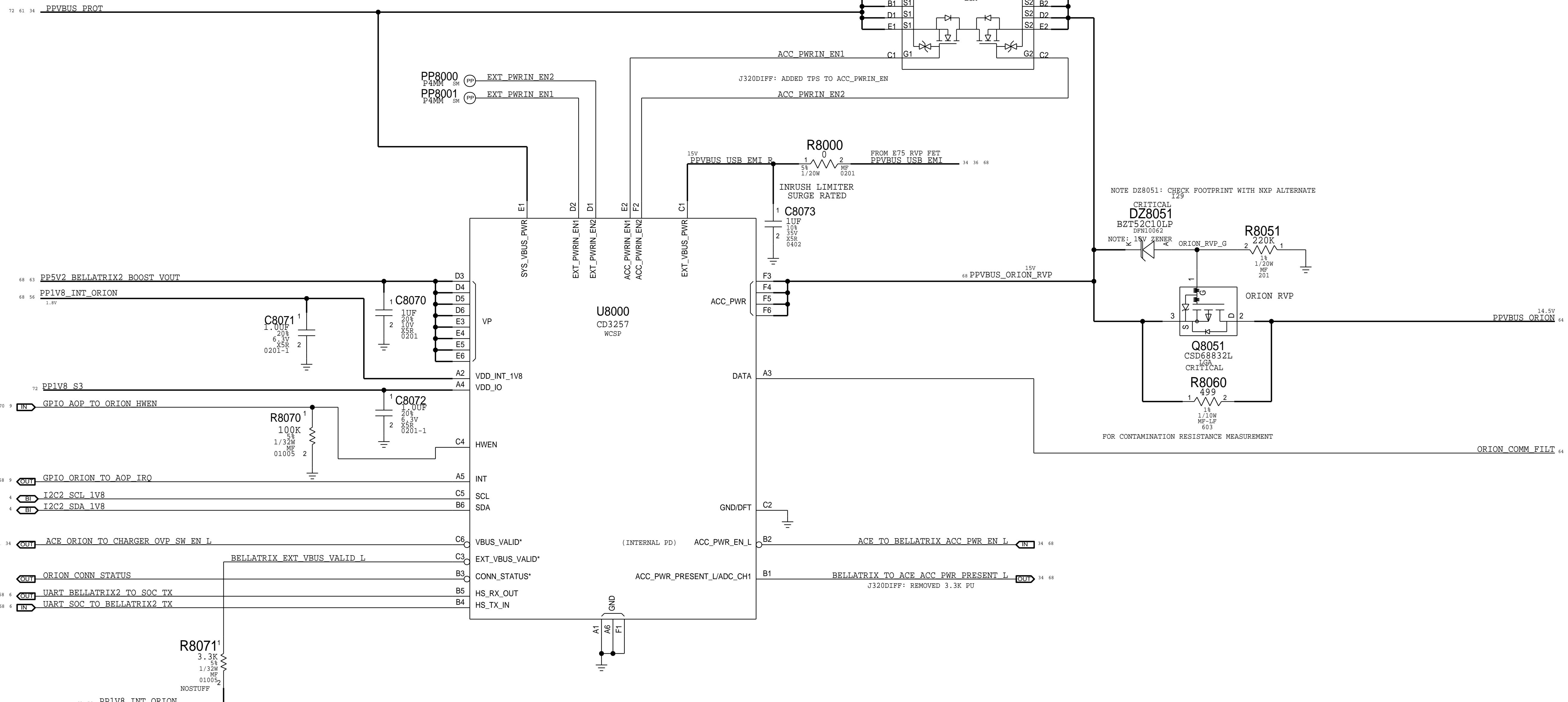
SYNC_MASTER=j317_MLB_B	SYNC_DATE=11/16/2018
PAGE TITLE	
POWER: APOLLO (3 / 3)	

D

1

ORION INPUT POWER PATH SWITCH & RVI

Q8000



SYNC_MASTER=J421_P2_CHINA SYNC_DATE=05/13/2019
PAGE TITLE

PART NUMBER	ALTERNATE FOR PART NUMBER	REFERENCE DESIGNATOR(S)	DESCRIPTION	BOM OPTION
152S01037	152S00887	L8101, ETC.	0.15UH 8.8A TAIYO	
152S01070	152S00887	L8101, ETC.	0.15UH 9.5A SUNLORD	

ATHENA BUCKS

D

D

C

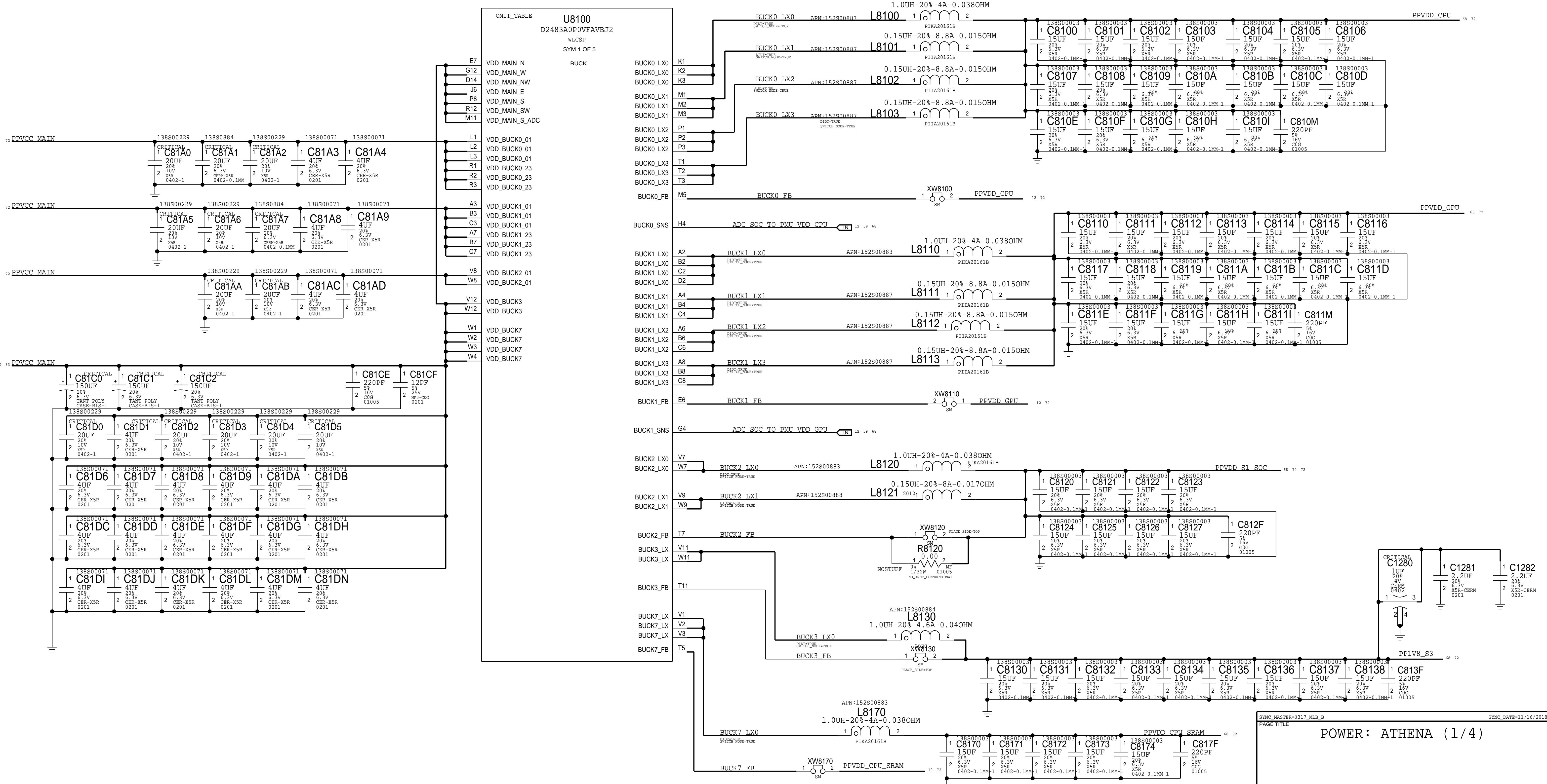
C

B

B

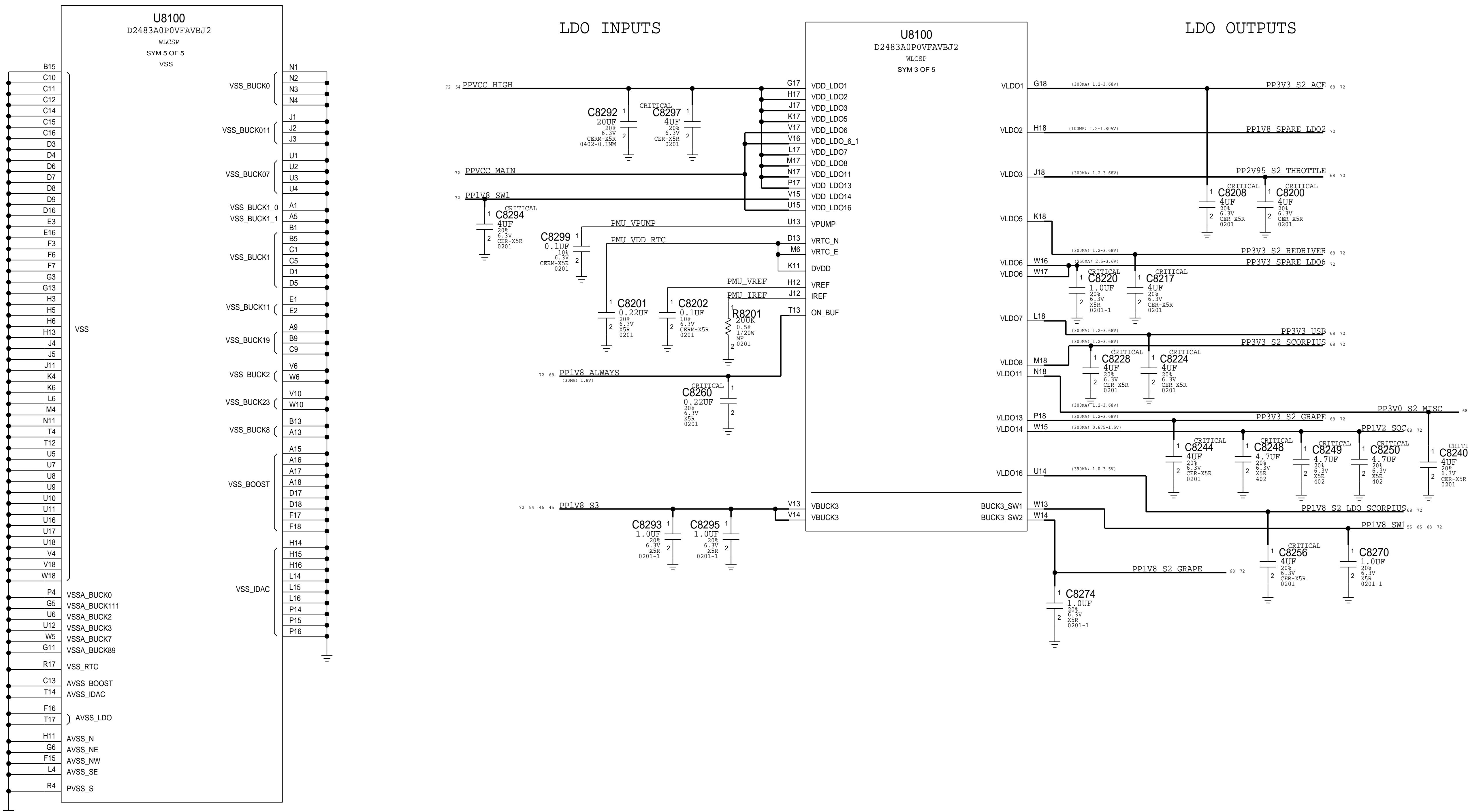
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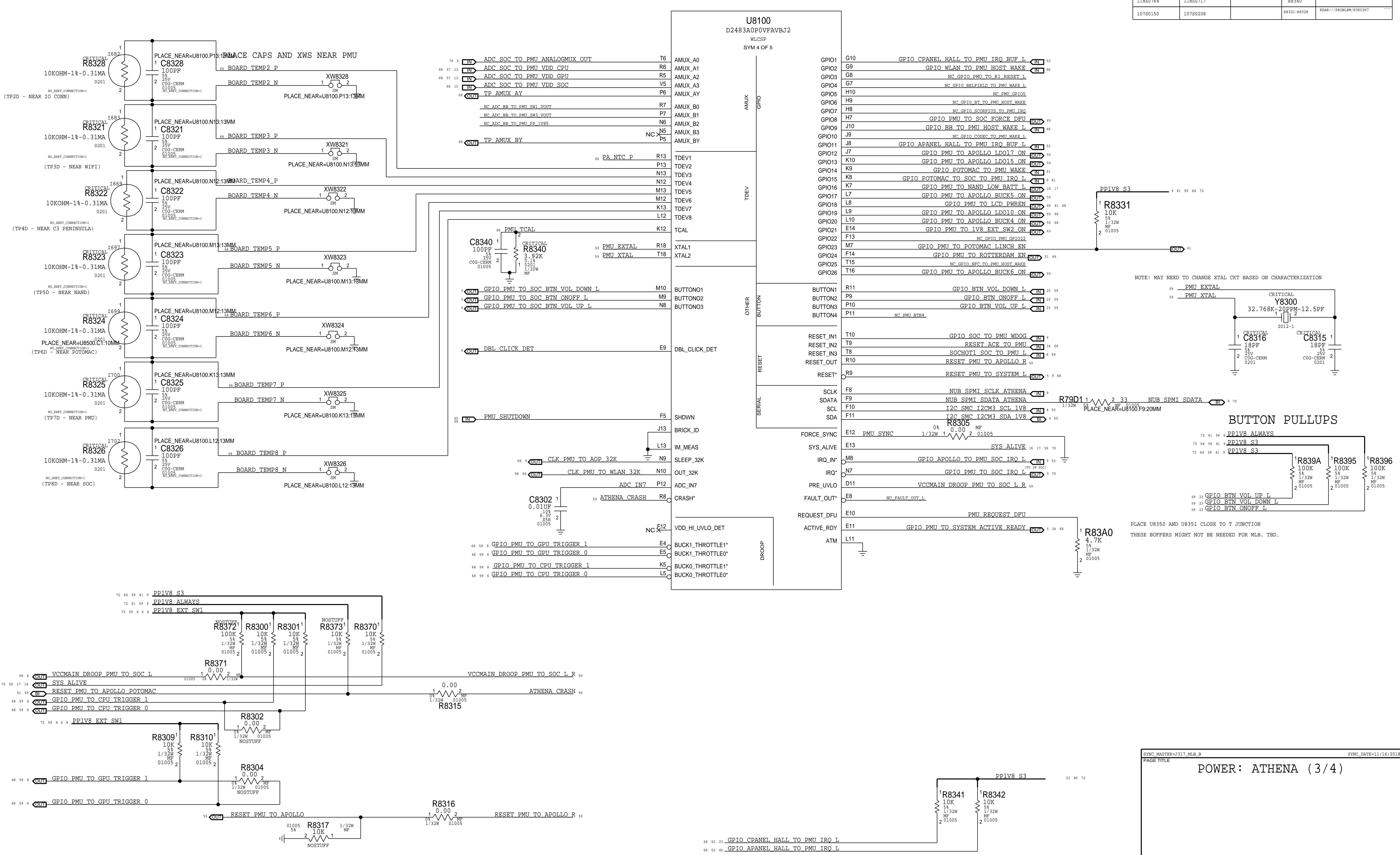
ATHENA PMU (2/4)

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
197S0399	197S0392		Y8300	RDAR://PROBLEM/9936684
138S0703	138S0648		C8250, ECT	ALT FOR 4.7UF, 6.3V, 0402

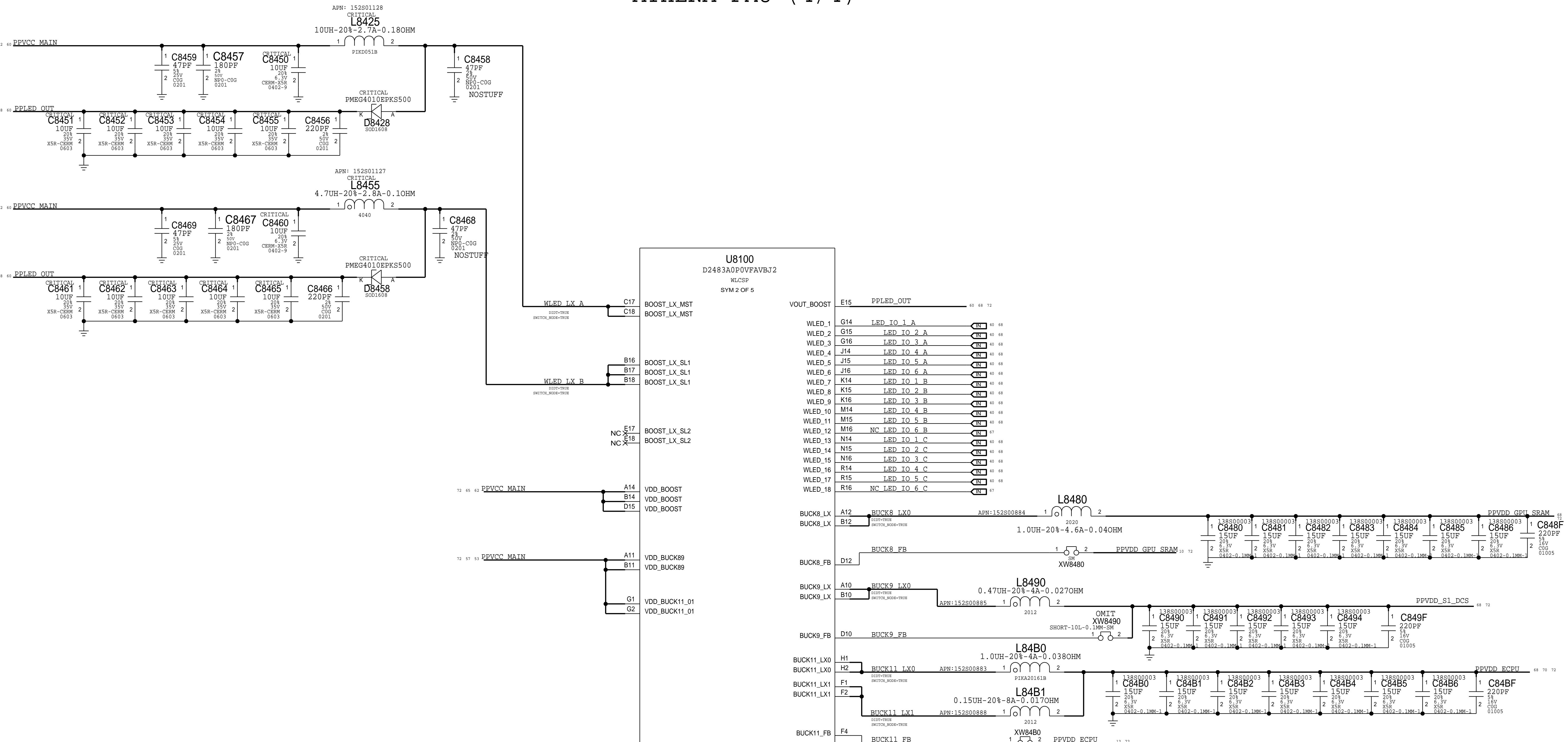


SYNC_MASTER=j317_MUB_B
PAGE_TITLE
POWER: ATHENA (2/4)
SYNC_DATE=11/16/2018

ATHENA PMU (3 / 4)

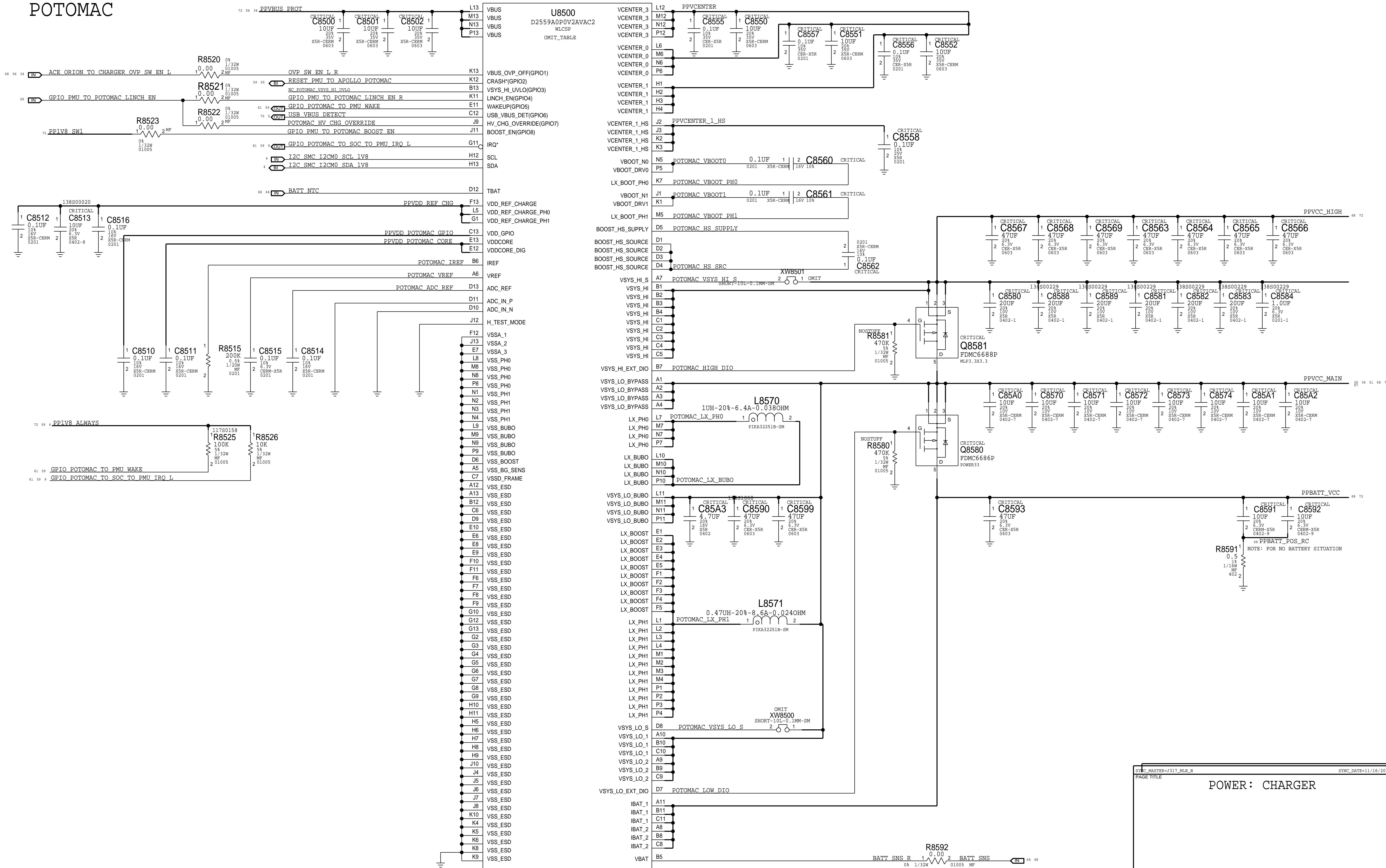


ATHENA PMU (4 / 4)



SYNC_MASTER=J317_MLB_B SYNC_DATE=11/16/2018
PAGE TITLE
POWER: ATHENA (4 / 4)

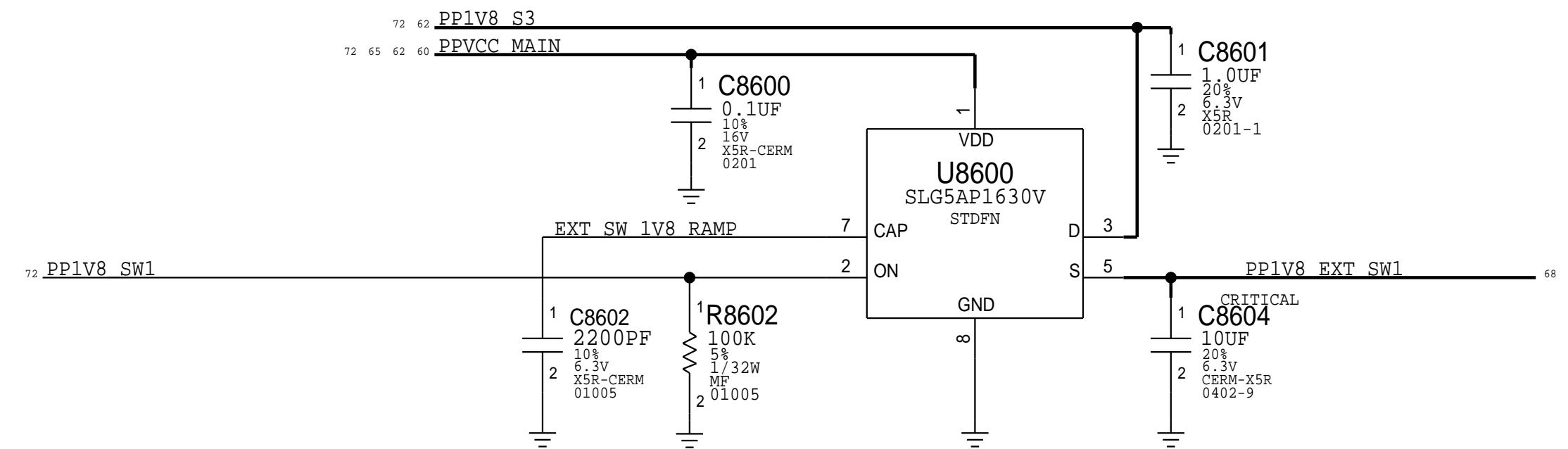
POTOMAC



EXTERNAL POWER SWITCHES

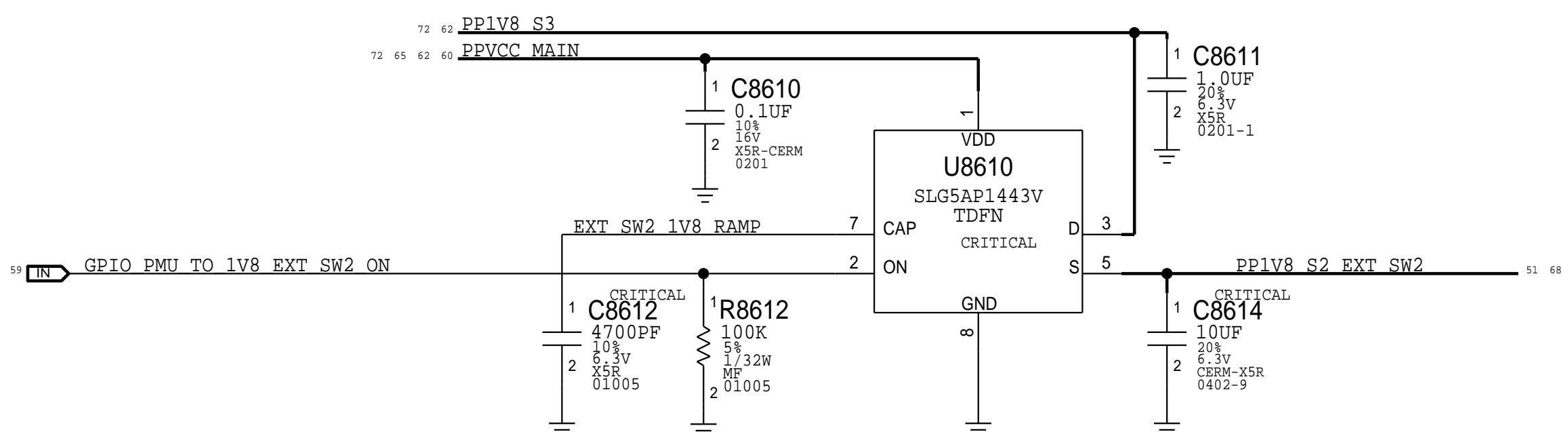
D

D



C

C



B

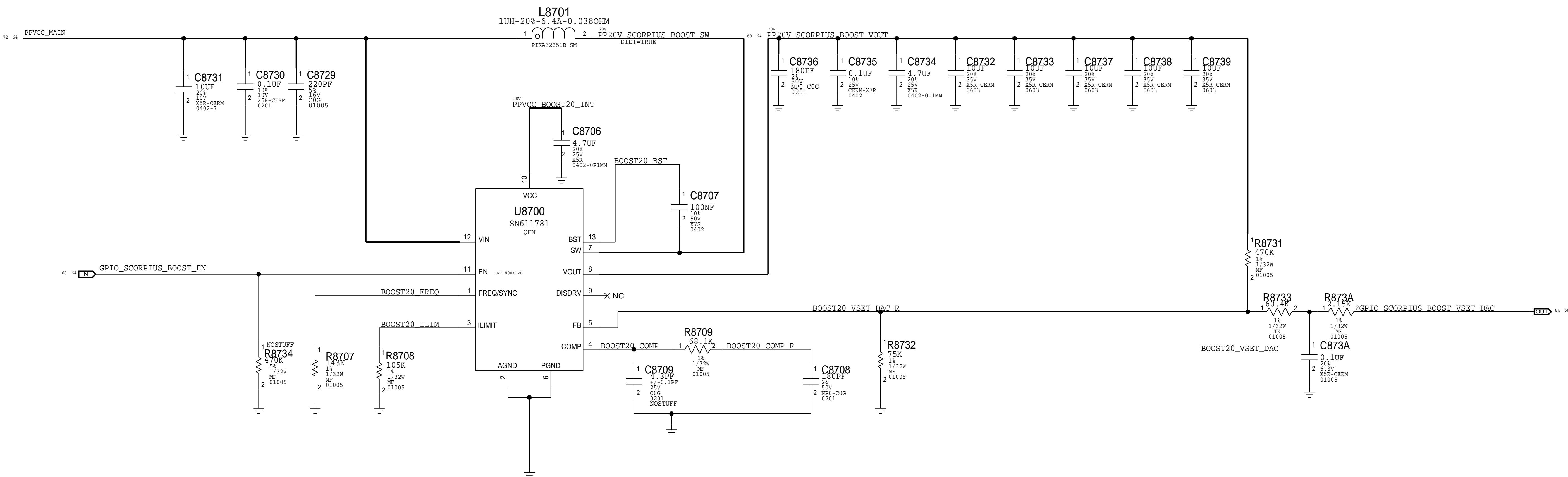
B

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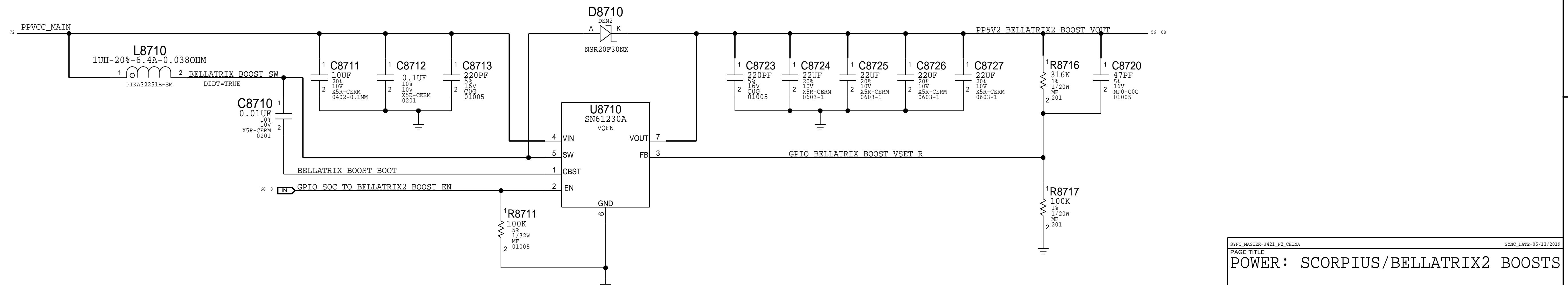
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SYNC_MASTER=J421_P2_CHINA	SYNC_DATE=05/13/2019
PAGE TITLE	
POWER: EXTERNAL SWITCHES	

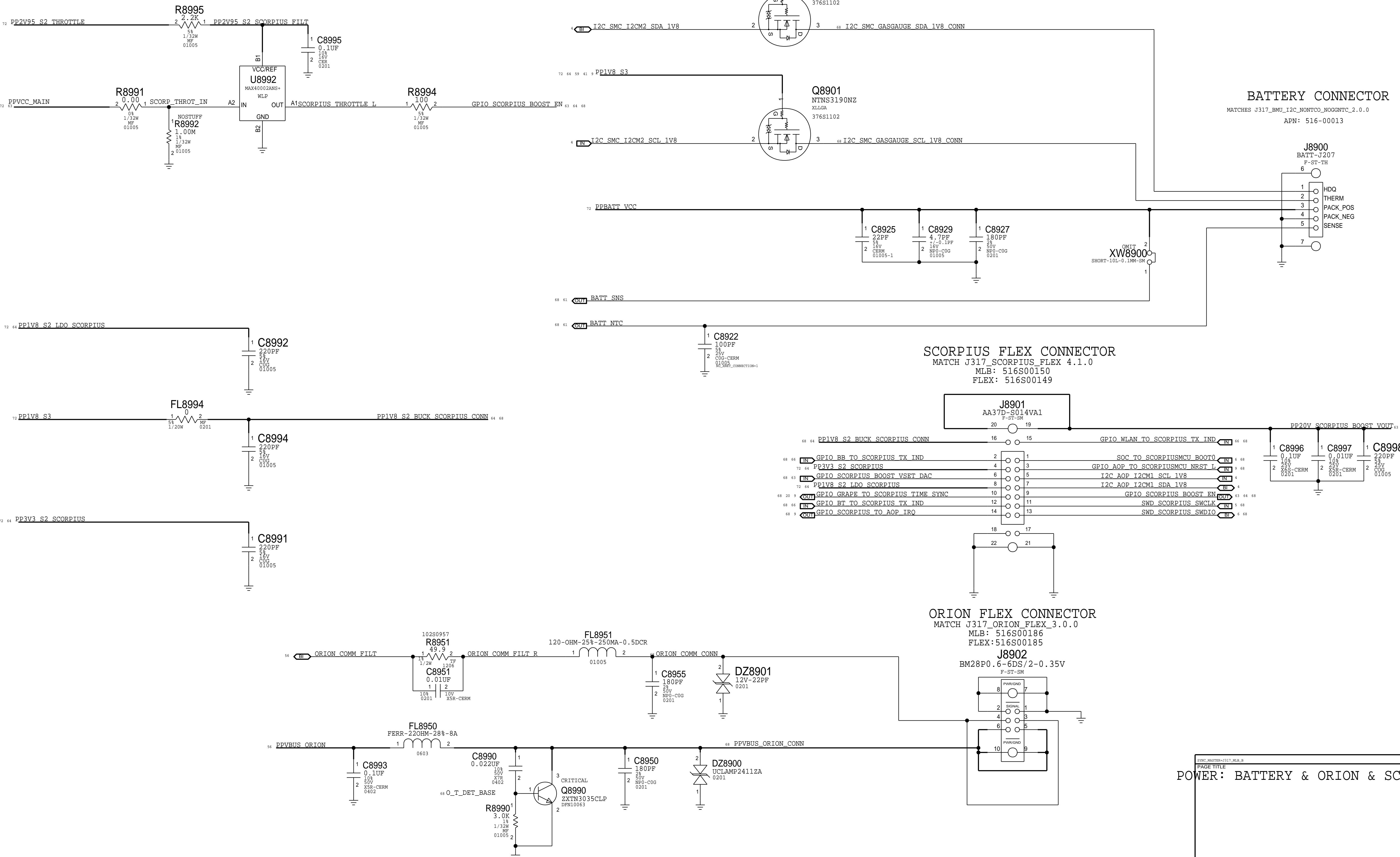
SCORPIUS BOOST



BELLATRIX BOOST



SCORPIUS THROTTLE



D

D

C

C

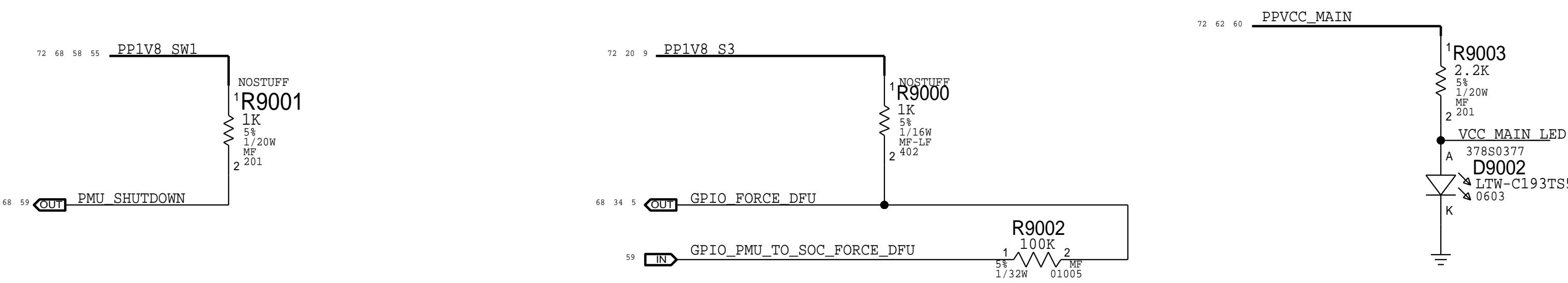
B

B

A

A

DEBUG RESET ACCESS

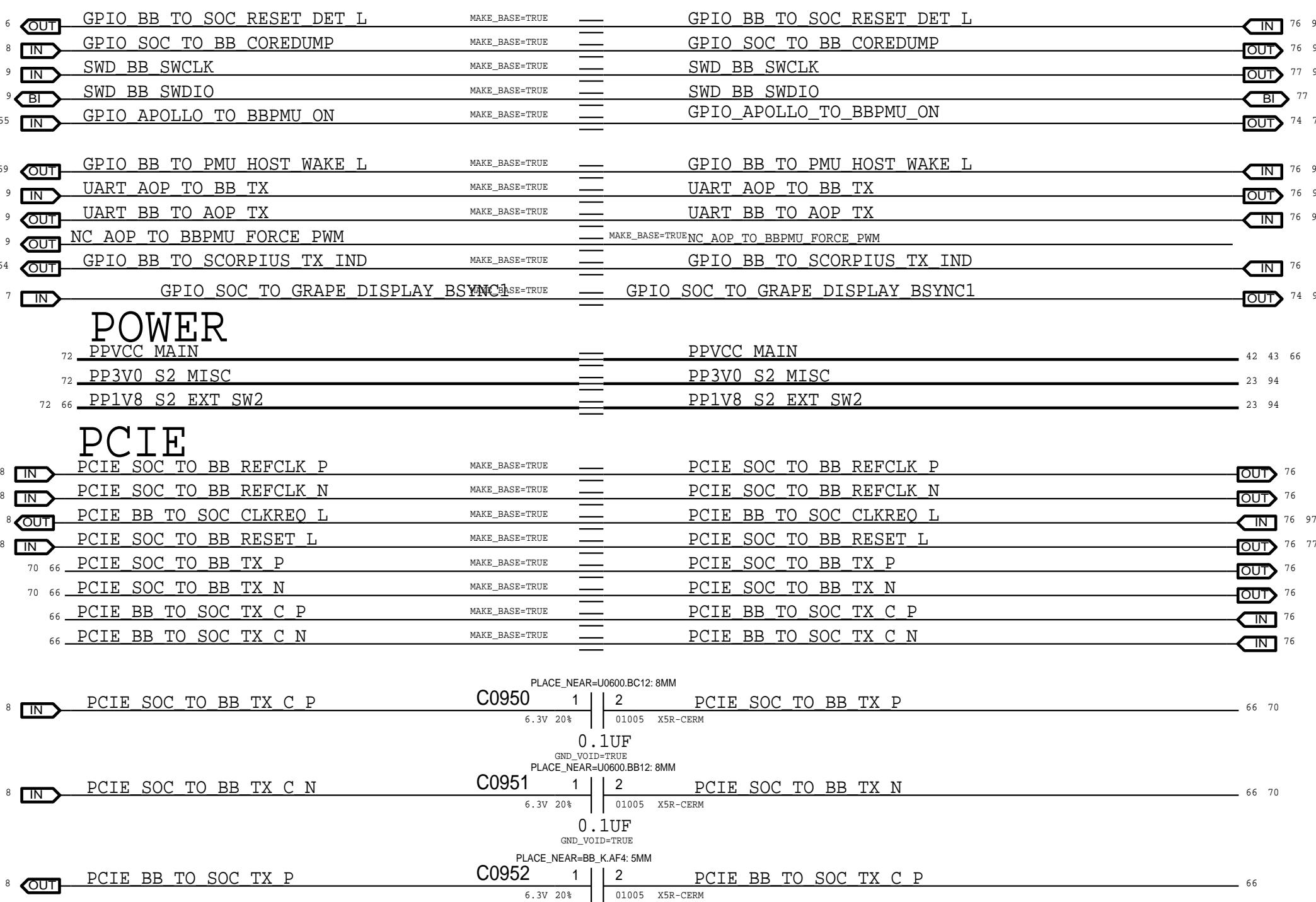


SYNC_MASTER=J421_P2_CHINA	SYNC_DATE=05/13/2019
PAGE TITLE	
SOC: DEBUG	

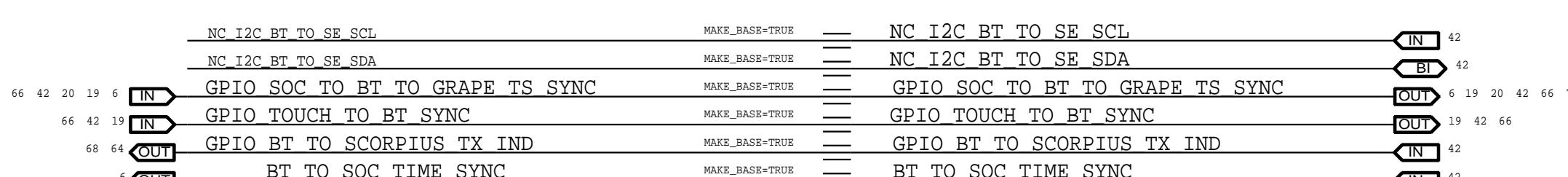
CELLULAR AND WLAN/BT ALIASES

BASEBAND

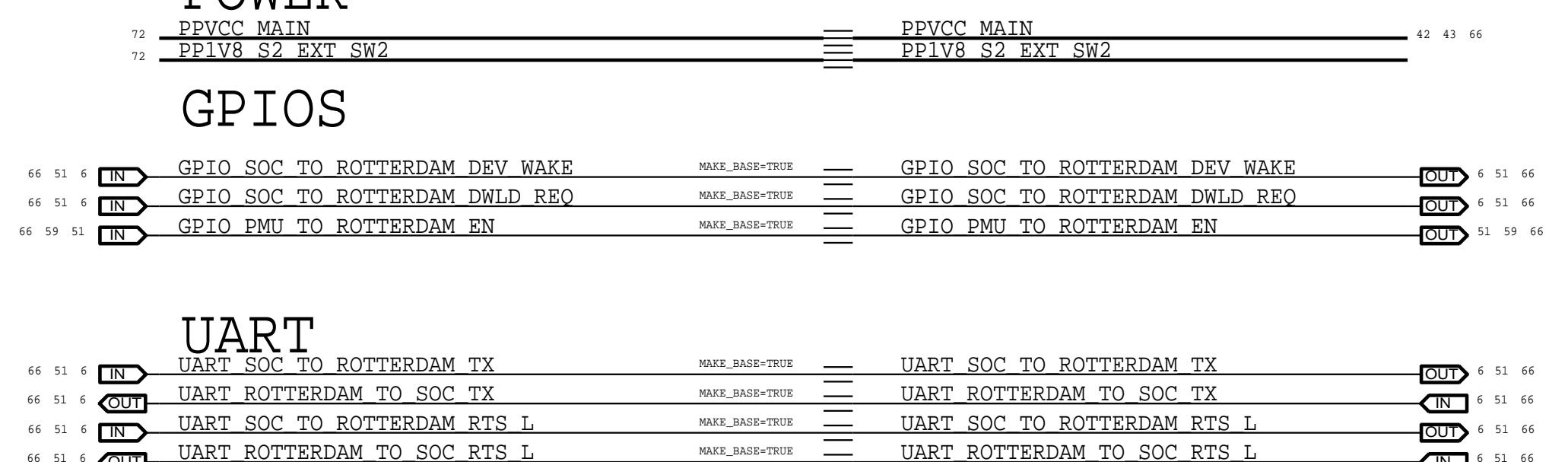
SOC/AOP/PMU GPIOs



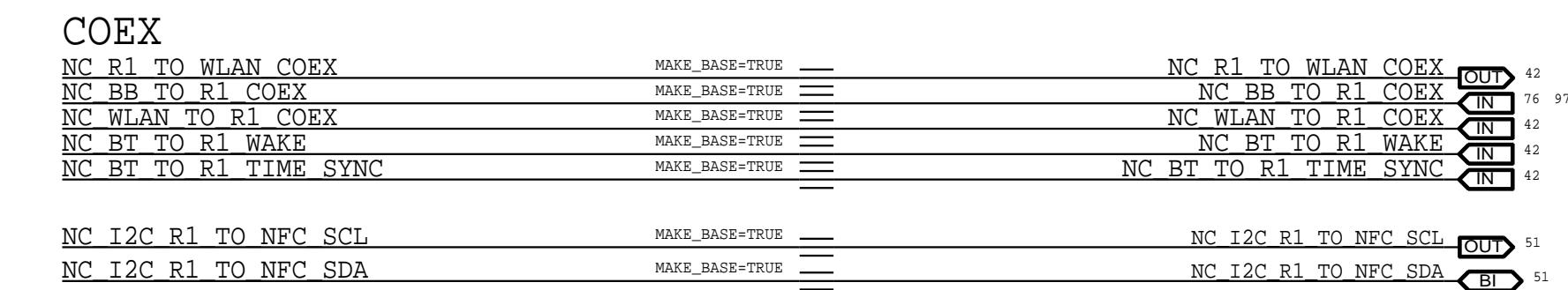
BLUETOOTH SOC GPIOs



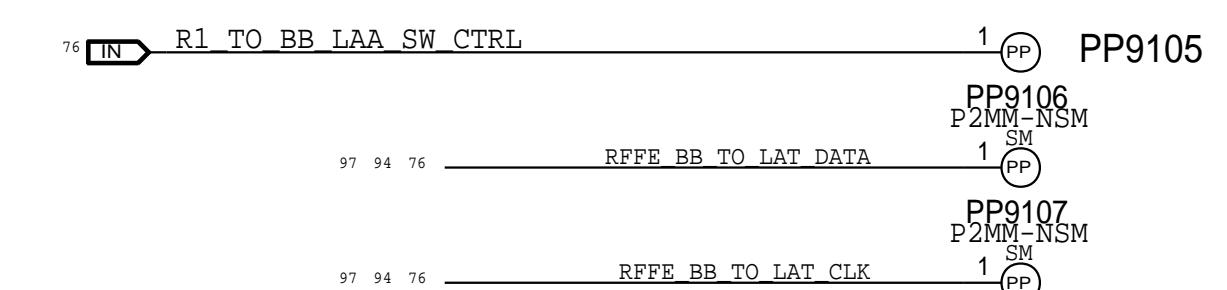
ROTTERDAM (VENUS) POWER



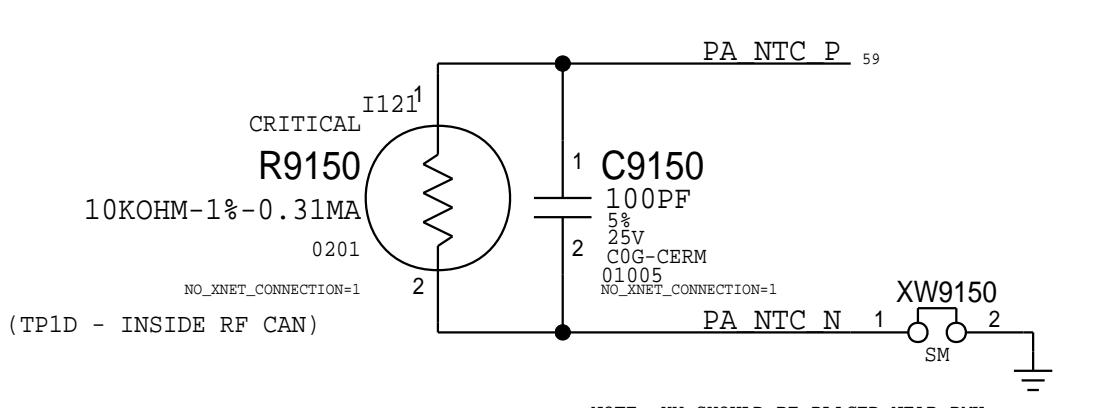
UWB - NC



CELL_PP:



RF NTC

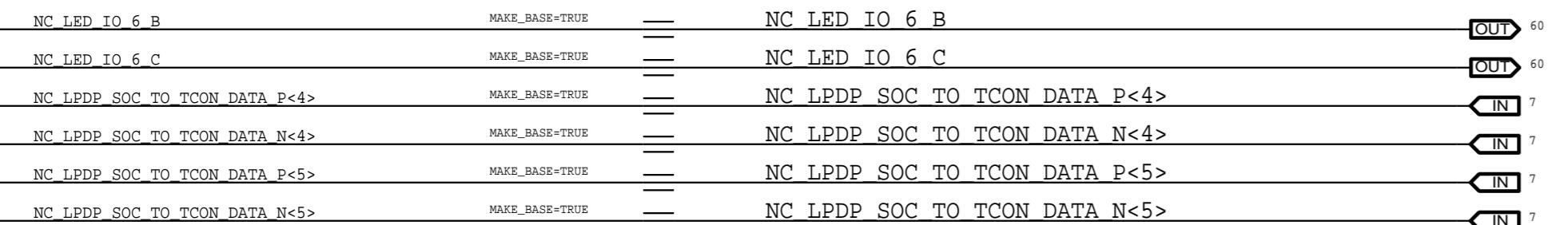


SYNC_MASTER=J317_MLB_B
PAGE_TITLE
ALIASES: BB/WLAN/BT

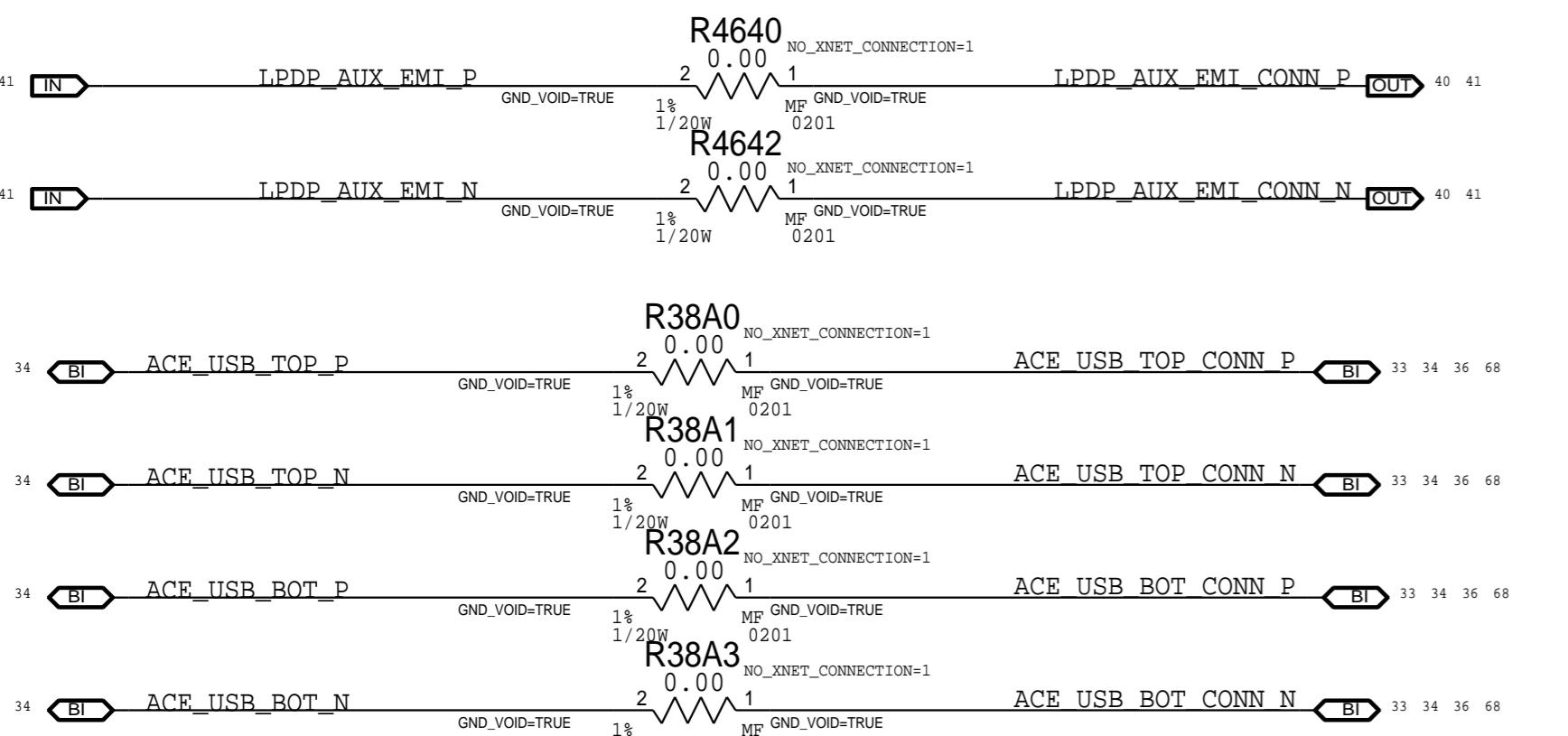
J417/J420 DIFF NET ALIASES

TODO LIST

LPDP_TX/BACKLIGHT



LPDP/USB2 CMC REPLACEMENT



SYNC_MASTER=J317_MLB_B
PAGE_TITLE
ALIASES: J417/J420 DIFF
SYNC_DATE=11/16/2018

SMT TEST FIXTURE TP

D

C

B

A

POWER - BUCKS/SWITCHES

- TP9301 A 1 PPVDD CPU 57 72
- TP9302 A 1 PPVDD GPU 57 72
- TP9303 A 1 PPVDD S1 SOC 57 72
- TP9304 A 1 PPV8 S3 57 72
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- TP9306 A 1 PPV8 S2 GRAPE 58 65 72
- TP9307 A 1 PPV8 SW1 CAM 7 54 72
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- TP93C10 A 1 SOC TO ACE_DFU_STATUS 5 34
- TP93C11 A 1 TST_CLKOUT 5 5
- TP93C12 A 1 GPIO_PMU_TO_SYSTEM_ACTIVE_READY 5 34 59

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- TP93H0 A 1 BASEBAND - ANT SWCH PWR 1 9
- TP93H1 A 1 BB2V8_AN13_BBFF 23
- TP93H2 A 1 BB2V8_AN23_BBFF 94
- TP93H3 A 1 BB2V8_AN33_BBFF 94
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- TP93J5 A 1 GPIO_APANEL_HALL_TO_PMU_IRO_L 40 52 59
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- TP93KO A 1 GPIO_PU_TO_LCD_PREN 40
- TP93JA A 1 I2C_TCON_SCL_CONN 40
- TP93JB A 1 I2C_TCON_SDA_CONN 40
- TP93JC A 1 PP1V8_S3_HALL_TCON_CONN 40
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- TP93K2 A 1 DMIC1_MIC_SCLK_CONN 27
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- TP93K5 A 1 DMIC2_MIC_SD_CONN 23
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- TP93N3 A 1 PP2V8_KONA_S_VDDANA 19 20
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- TP93N5 A 1 GPIO_DOMBRA_BST_EN 19 20
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- TP93P3 A 1 SPI_SENSORS_SCLK_CONN 18
- TP93P4 A 1 SPI_MOLY_CS_L_CONN 18
- TP93P5 A 1 GPIO_MOLY_TO_AOP_IRO_CONN 18

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- TP93P6 A 1 TP-1P0-TOP 1
- TP93P7 A 1 TP-1P0-TOP 1
- TP93P8 A 1 TP-1P0-TOP 1

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- TP93K9 A 1 TP-1P0-TOP 1
- TP9390 A 1 PPVCC_HIGH 61 68 72

VBUS ORION

- TP939C A 1 TP-1P0-TOP 1
- TP939D A 1 PPVBUSS_ORION_CONN 64 68

VBUS USB

- TP939P A 1 PLACE_NEAR_J8800.3.15MM 1
- TP939Q A 1 PLACE_NEAR_J8800.3.15MM 1
- TP939R A 1 PLACE_NEAR_J8800.3.15MM 1
- TP939S A 1 PLACE_NEAR_J8800.3.15MM 1
- TP939T A 1 PLACE_NEAR_J8800.3.15MM 1
- TP939U A 1 PLACE_NEAR_J8800.3.15MM 1
- TP939V A 1 PLACE_NEAR_J8800.3.15MM 1
- TP939W A 1 PLACE_NEAR_J8800.3.15MM 1
- TP939X A 1 PLACE_NEAR_J8800.3.15MM 1
- TP939Y A 1 PLACE_NEAR_J8800.3.15MM 1
- TP939Z A 1 PLACE_NEAR_J8800.3.15MM 1
- TP939AA A 1 PPBATT_VCC 61 68 72

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- TP939G A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939H A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939I A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939J A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939K A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939L A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939M A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939N A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939O A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939P A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939Q A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939R A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939S A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939T A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939U A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939V A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939W A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939X A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939Y A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939Z A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939AA A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939BB A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939CC A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939DD A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939EE A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939FF A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939GG A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939HH A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939II A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939JJ A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939KK A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939LL A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939MM A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939NN A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939OO A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939PP A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939QQ A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939RR A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939SS A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939TT A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939UU A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939VV A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939WW A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939XX A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939YY A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939ZZ A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939AA A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939BB A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939CC A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939DD A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939EE A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939FF A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939GG A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939HH A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP939II A 1 PLACE_NEAR_C40A8.1.20MM 1
- TP9

SMT TEST FIXTURE TP

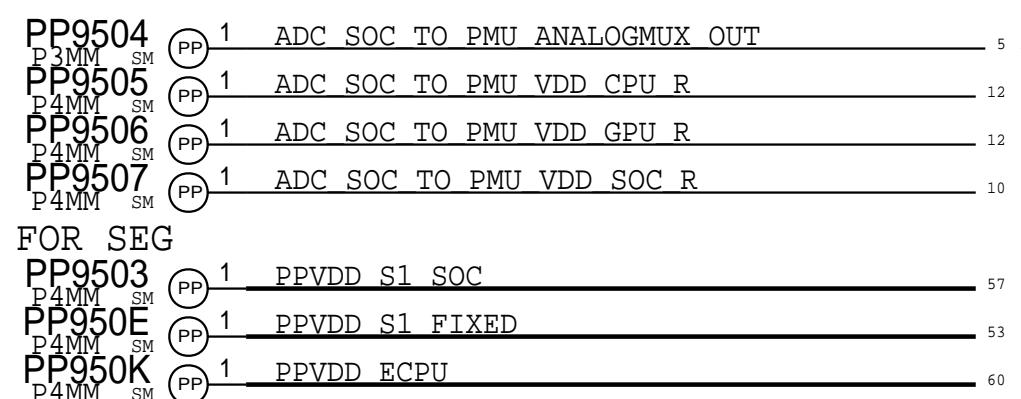
POWER - ADAMS	
TP9401 A	PP1V4 ADAMS1 VDDL PP3V3 ADAMS LDO1 45 72
TP9402 A	PP3V0 JASPER RX AVDDH 45 72
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TP9423 A	PSTROBE LED COOL2 CONN 5.00V
TP9424 A	PSTROBE LED WARM2 CONN 5.00V
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TP9436 A	PP TITUS B ANODE 37 38 69
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TP9453 A	GPIO RCAM PMU TO TOF PMU EN 46 47
TP9454 A	WIDE SYNC CONN 48
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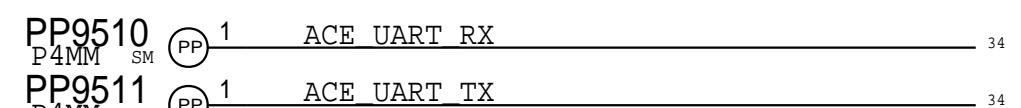
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EE CHARACTERIZATION PROBE POINT

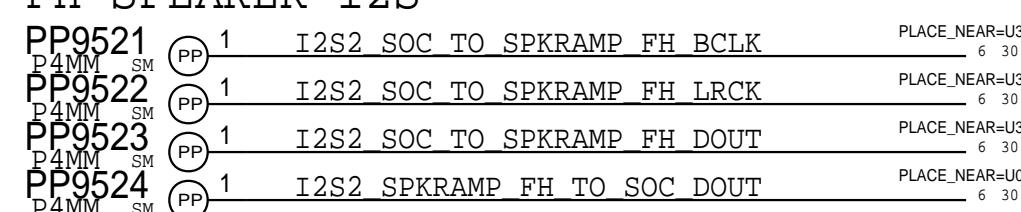
SOC



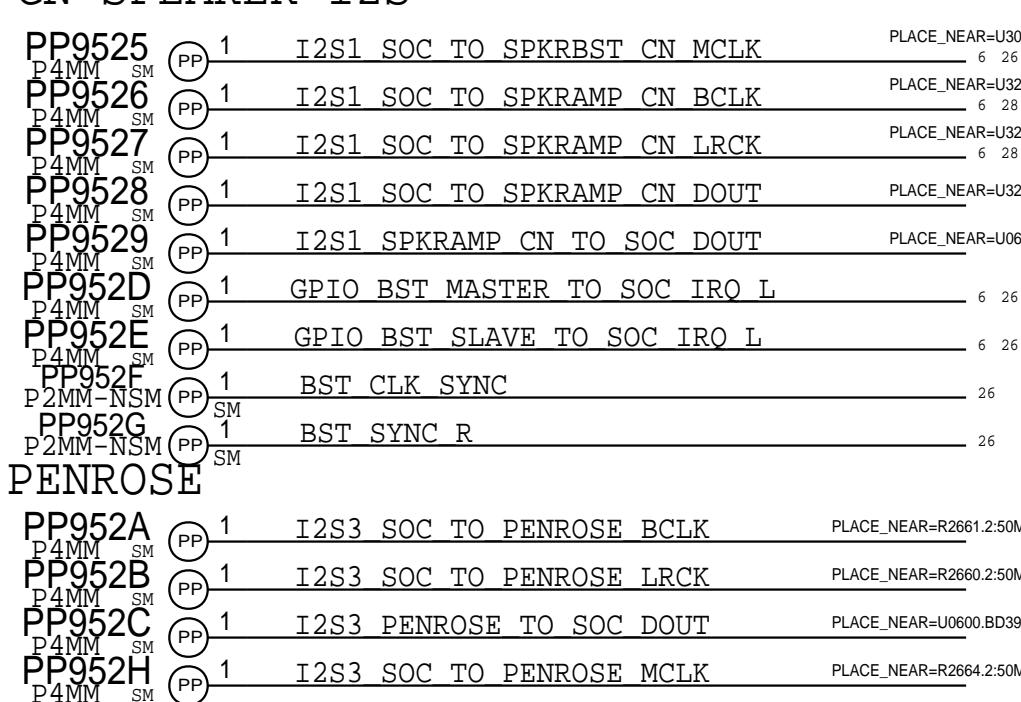
ACE/REDRIVER



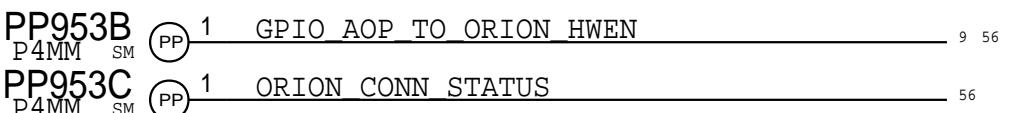
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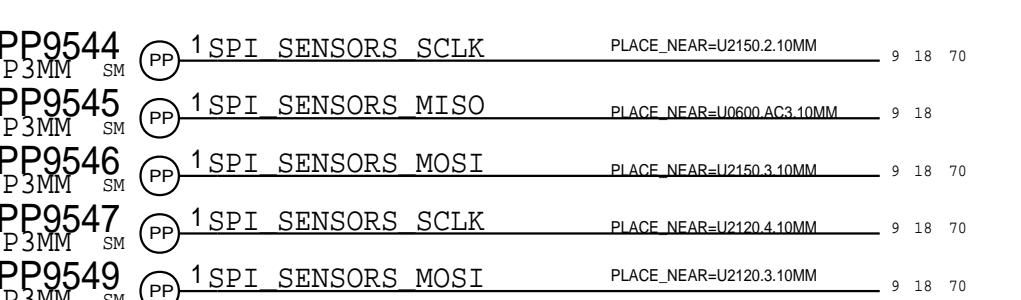
CN SPEAKER I2S



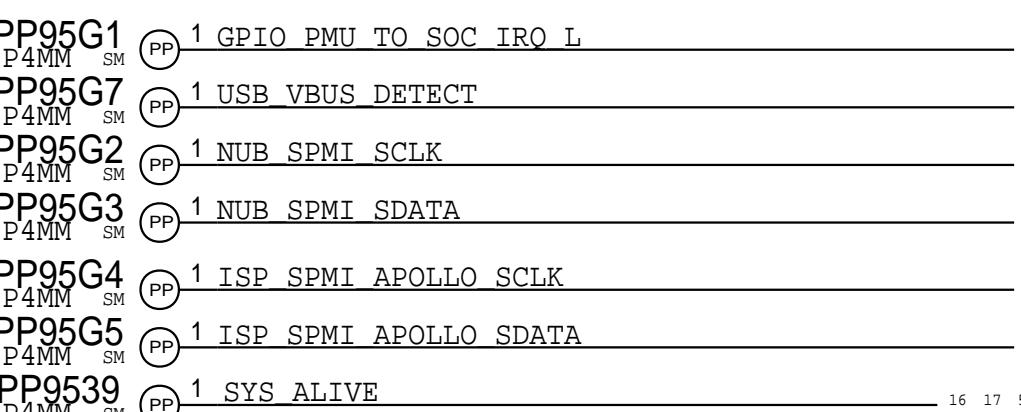
ORION



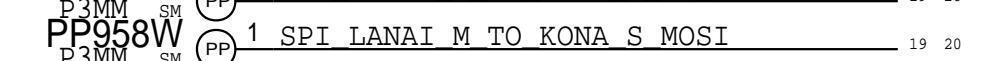
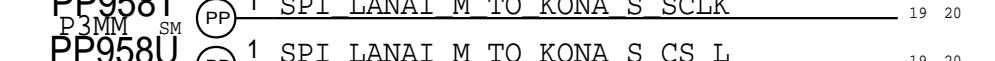
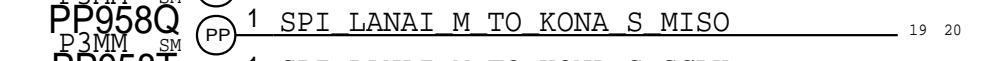
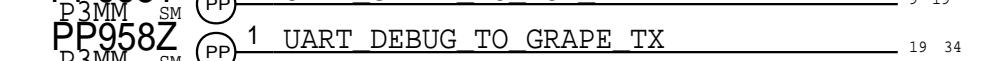
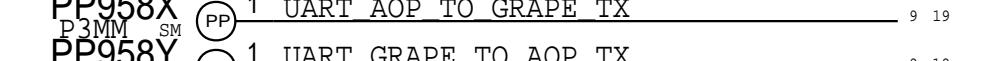
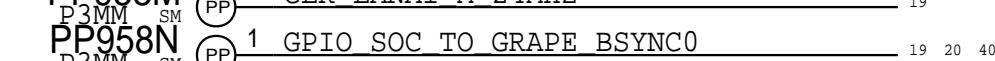
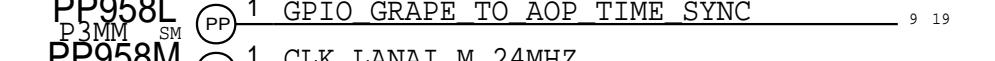
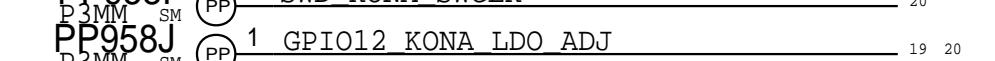
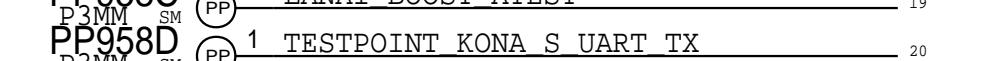
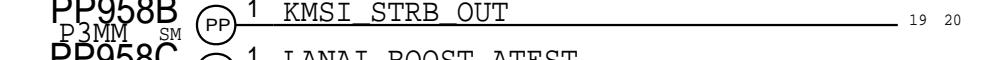
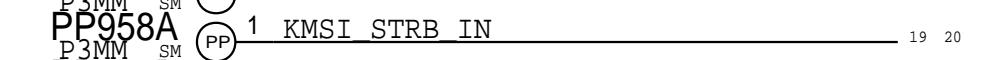
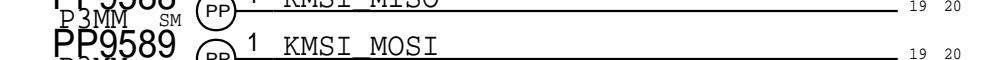
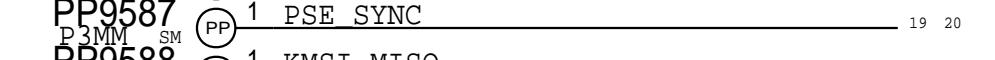
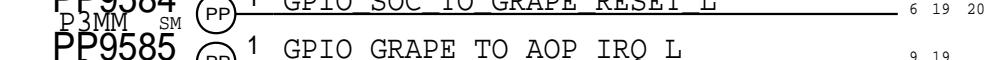
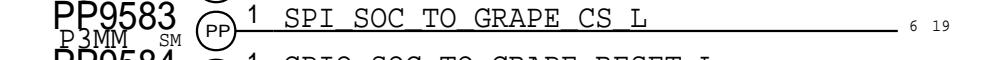
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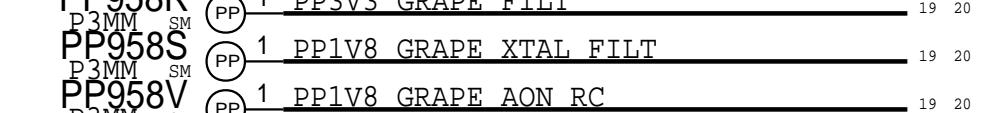
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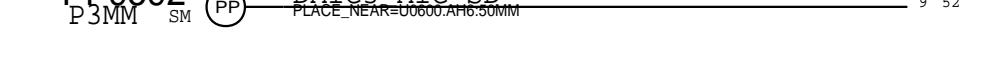
GRAPE



GRAPE POWER



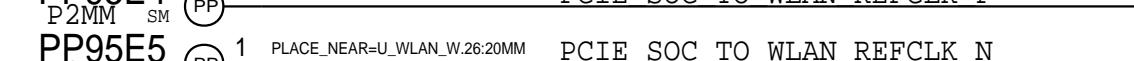
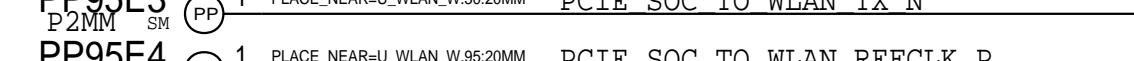
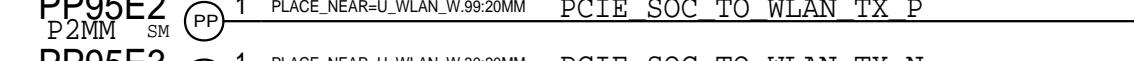
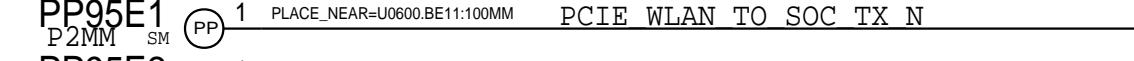
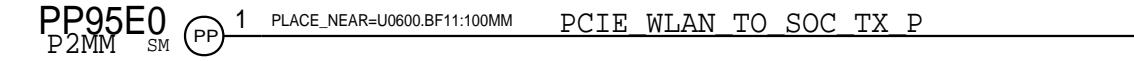
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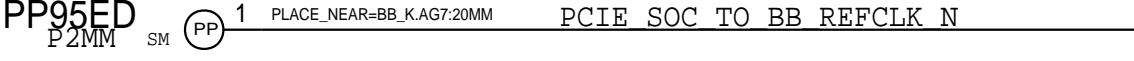
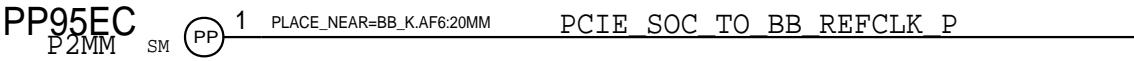
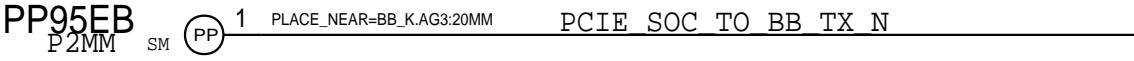
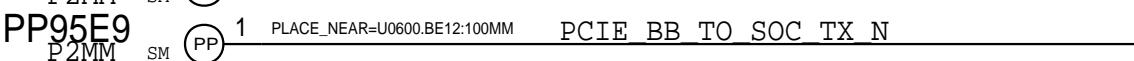
WIFI (SEE MORE ON PAGE 49)



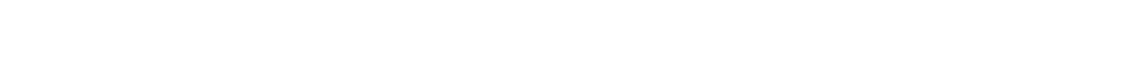
WLAN PCIE TPS



BB PCIE TPS

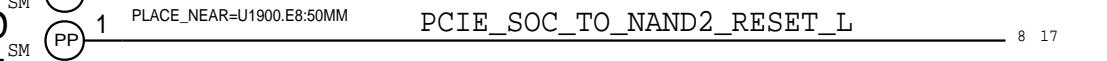
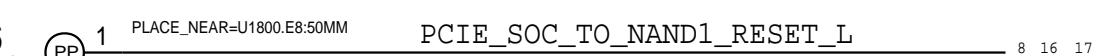


CAMERA - FRONT



TEST: EE TP/PP

NAND



EE DC RESISTANCE TABLE

DC RESISTANCE FAI REQUIRED MEASUREMENTS			
FROM PIN (REFDES.PN)	TO PIN (REFDES.PN)	VALUE (MILLIOHM) (OPTIONAL)	TOLERANCE (+/-) (OPTIONAL)
U8100.K3	L8100.1	?	?
U8100.M3	L8101.1	?	?
U8100.P3	L8102.1	?	?
U8100.T3	L8103.1	?	?
L8103..2	U0600.AM28	?	?
U8100.A2	L8110.1	?	?
U8100.C4	L8111.1	?	?
U8100.C6	L8112.1	?	?
U8100.A8	L8113.1	?	?
L8112..2	U0600.AP15	?	?
L8120..1	U8100.V7	?	?
L8121..1	U8100.V9	?	?
L8121..2	U0600.Y14	?	?
L8130..1	U8100.V11	?	?
L8130..2	U7600.6	?	?
L8130..2	U2701..3	?	?
L8130..2	U7700.B6	?	?
L8130..2	U7602..6	?	?
L8130..2	U8000.A4	?	?
L8130..2	U0600.N12	?	?
L8130..2	U8600..3	?	?
U8600..5	U0600.AE39	?	?
U8600..5	U0702..A1	?	?
U8600..5	U1800.E2	?	?
U8600..5	U1900.E2	?	?
U7700.H3	L7740..1	?	?
U7700.K3	L7741..1	?	?
U7700.M3	L7742..1	?	?
L7742..2	U7700.L12	?	?
L7742..2	U0600.C49	?	?
U7700..F3	L7750..1	?	?
L7750..2	U0600.AY39	?	?
U7700..C3	L7760..1	?	?
L7760..2	U1800.L12	?	?
L7760..2	U1900.G4	?	?
U8100.V3	L8170..1	?	?
U8100.B12	L8480..1	?	?
L8480..2	U0600.AE17	?	?
J8900..3	Q8580..5	?	?
Q8580..1	U2900..A2	?	?
Q8580..1	U2950..A2	?	?
Q8580..1	U4100..F1	?	?
Q8581..1	U7700.D12	?	?
Q8580..1	U8100.W1	?	?
Q8580..1	U4600..3	?	?
U4600..5	L4601..1	?	?
L4601..2	J4520..1	?	?
Q8580..1	U3200..B1	?	?
Q8580..1	L3000..2	?	?
L3000..1	U3000..A2	?	?
Q8580..1	U3300..B1	?	?
Q8580..1	L3001..2	?	?
L3001..1	U3000..F2	?	?
Q8580..1	U3400..B1	?	?
Q8580..1	L3002..2	?	?
L3002..1	U3001..A2	?	?
Q8580..1	U3500..B1	?	?
Q8580..1	L3003..2	?	?
L3003..1	U3001..F2	?	?
Q8580..1	L3600..1	?	?
L3600..2	U3620..5	?	?
Q8580..1	L8425..1	?	?
L8425..2	U8100.C17	?	?
Q8580..1	L8455..1	?	?
L8455..2	U8100.B17	?	?
Q8580..1	L8701..1	?	?
L8701..2	U8700..7	?	?
Q8580..1	U2350..A2	?	?
Q8580..1	L8710..1	?	?
L8710..2	U8710..5	?	?
Q8580..1	Q2201..7	?	?
Q2201..1	R2208..1	?	?
R2208..2	L2201..1	?	?
L2201..2	Q2202..3	?	?
U8500..L7	L8570..1	?	?
U8500..B5	L8571..1	?	?
L8570..2	U8500..L10	?	?
L8571..2	U8500..A10	?	?
R8000..1	U8000..C1	?	?
U3800..M3	U8500..L13	?	?
U3620..7	U3800..N14	?	?
U3800..M15	J3700..43	?	?
U3800..M17	J3700..45	?	?
U8710..7	U8000..E3	?	?
U8000..P6	Q8051..3	?	?
Q8051..2	FL8950..1	?	?
FL8950..2	J8902..10	?	?
U8100..J18	R8995..2	?	?
U7700..C13	R4311..1	?	?
R4311..2	J4300..6	?	?
U8100..L18	U0600.AW32	?	?
U8100..K18	U3900..10	?	?

DC RESISTANCE FAI REQUIRED MEASUREMENTS			
FROM PIN (REFDES.PN)	TO PIN (REFDES.PN)	VALUE (MILLIOHM) (OPTIONAL)	TOLERANCE (+/-) (OPTIONAL)
U8100..M18	J8901..4	?	?
U7700..J13	FL2803..1	?	?
FL2803..2	J2800..1	?	?
U7700..L13	U1900..R8	?	?
U7700..L13	U1800..G6	?	?
U8100..P18	L2204..1	?	?
L2204..2	U2200..E12	?	?
L2204..2	U2301..R1	?	?
U8100..W15	U0600.AC10	?	?
U7700..N10	U0600.AV15	?	?
U8100..U14	J8901..8	?	?
U6100..E7	FL6503..1	?	?
FL6503..2	J6500..17	?	?
U6100..C7	FL6506..1	?	?
FL6506..2	J6500..26	?	?
U6100..A4	U2610..D1	?	?
U6100..A4	U2600..C2	?	?
U6100..A4	U2650..C2	?	?
U7700..E13	FL2800..1	?	?
FL2800..2	J2800..17	?	?
U7700..N11	XW4270..1	?	?
XW4270..2	J4230..19	?	?
U7700..F13	FL4272..1	?	?
FL4272..2	J4230..14	?	?
U7700..G13	J4200..2	?	?
U3200..D2	J3200..5	?	?
U3200..C2	J3200..4	?	?
U3250..D2	J3200..1	?	?
U3250..C2	J3200..3	?	?
U3300..D2	J3300..4	?	?
U3300..C2	J3300..5	?	?
U3350..D2	J3300..3	?	?
U3350..C2	J3300..1	?	?
U3400..D2	J3400..3	?	?
U3400..C2	J3400..1	?	?
U3450..D2	J3400..4	?	?
U3450..C2	J3400..5	?	?
U3500..D2	J3500..4	?	?
U3500..C2	J3500..5	?	?
U3550..D2	J3500..3	?	?
U3550..C2	J3500..1	?	?

SYNC_MASTER=J3117_MLB_B
PAGE_TITLE=TEST: DCR TABLE
SYNC_DATE=11/16/2018

BOM TABLES

XTAL ALTS

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
197S00156	197S00155	ALT_PARTS	YA100	XTAL, 38.4MHZ, TXC
197S00179	197S00155	ALT_PARTS	YA100	XTAL, 38.4MHZ, NDK

BBPMU ALTS

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
152S01141	152S01045	ALT_PARTS	LA200, LA203	TAIYO
152S01142	152S01043	ALT_PARTS	LA204	TAIYO

EEPROM ALTS

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
335S00013	335S0894	ALT_PARTS	UA301	EEPROM, 8KBIT,I2C

CONSTRAINTS TABLE

DIELECTRIC BASED SPACING RULES

RULE DEFINITION	LIST OF VALUES
A.DIELECTRIC_INN	EXAMPLE: 1.5,2,2L,3 Calculated dielectric distance from stackup inner to outer layer.
A.DIELECTRIC_INNxD_XVXL	EXAMPLE: 2,2D,4D,4..64D, 4..8D,5,1D,6D,4V Calculated dielectric distance from Hatched Table and outer to inner layer.
A.DIELECTRIC_INN,X(N)IN,(N)OUT	EXAMPLE: 2,A,N,3L Calculated dielectric distance from stackup inner to outer layer where N is defined inner distance is used when N is defined

RADIOS

HYBRID IMPEDANCE RULE			
TRACE LAYER	REFERENCE LAYER(s)	REQUIRED IMPEDANCE	TRACE WIDTH (OPTIONAL)
RULE NAME= 50_THIN		ZONE NAME= PRIMARY	
TOP	ISL2	50	0.078
ISL3	TOP, ISL4	50	0.047
ISL6	ISL5, ISL8	50	0.070

HYBRID IMPEDANCE RULE			
TRACE LAYER	REFERENCE LAYER(s)	REQUIRED IMPEDANCE	TRACE WIDTH (OPTIONAL)
RULE NAME= 50_WIDE		ZONE NAME= PRIMARY	
TOP	ISL3	50	0.220
ISL3	ISL2, ISL5	50	0.052
ISL6	ISL5, ISL8	50	0.070

HYBRID IMPEDANCE RULE			
TRACE LAYER	REFERENCE LAYER(s)	REQUIRED IMPEDANCE	TRACE WIDTH (OPTIONAL)
RULE NAME= 50_WIDE_L1_THIN		ZONE NAME= PRIMARY	
TOP	ISL2	50	0.078
ISL3	ISL2, ISL5	50	0.052
ISL6	ISL5, ISL8	50	0.070

HYBRID IMPEDANCE RULE			
TRACE LAYER	REFERENCE LAYER(s)	REQUIRED IMPEDANCE	TRACE WIDTH (OPTIONAL)
RULE NAME= 50_THIN_2		ZONE NAME= PRIMARY	
TOP	ISL2	50	0.078
ISL3	ISL2, ISL5	50	0.052
ISL5	ISL4, ISL6	50	0.042

HYBRID IMPEDANCE RULE			
TRACE LAYER	REFERENCE LAYER(s)	REQUIRED IMPEDANCE	TRACE WIDTH (OPTIONAL)
RULE NAME= 50_WIDE_2		ZONE NAME= PRIMARY	
TOP	ISL3	50	0.220
ISL3	TOP, ISL5	50	0.095
ISL6	ISL5, ISL8	50	0.070

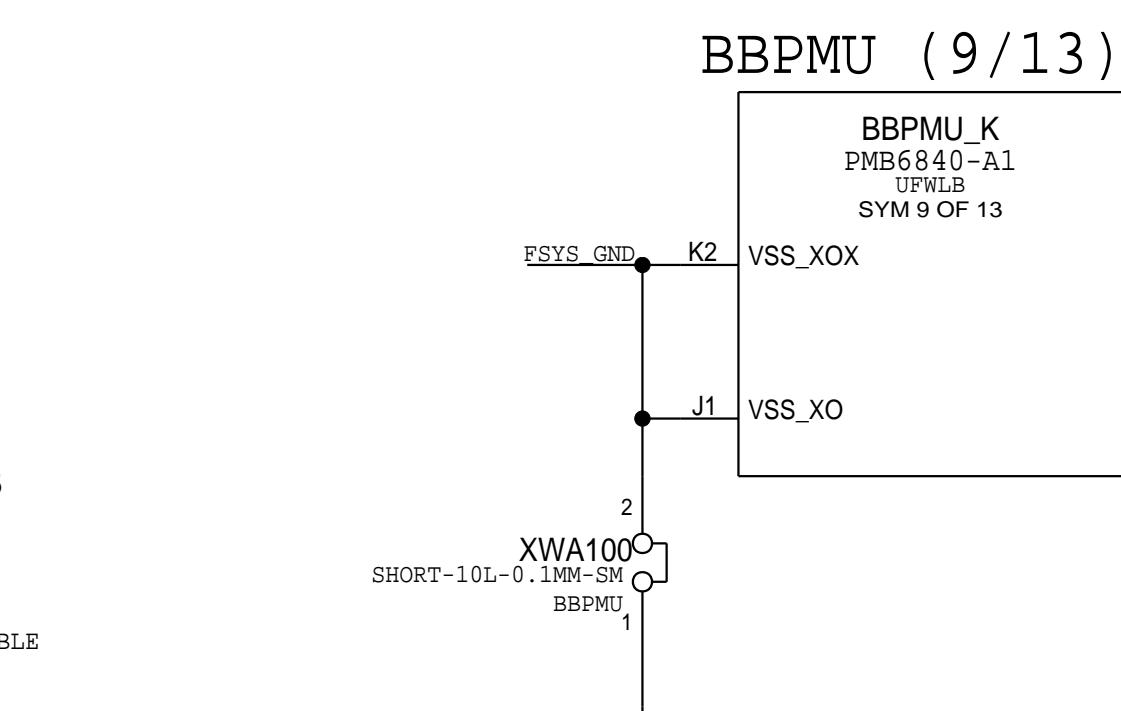
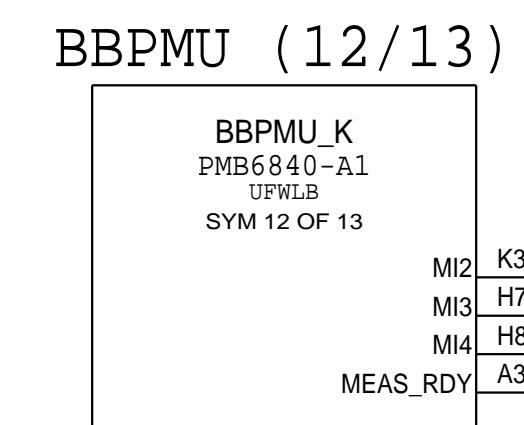
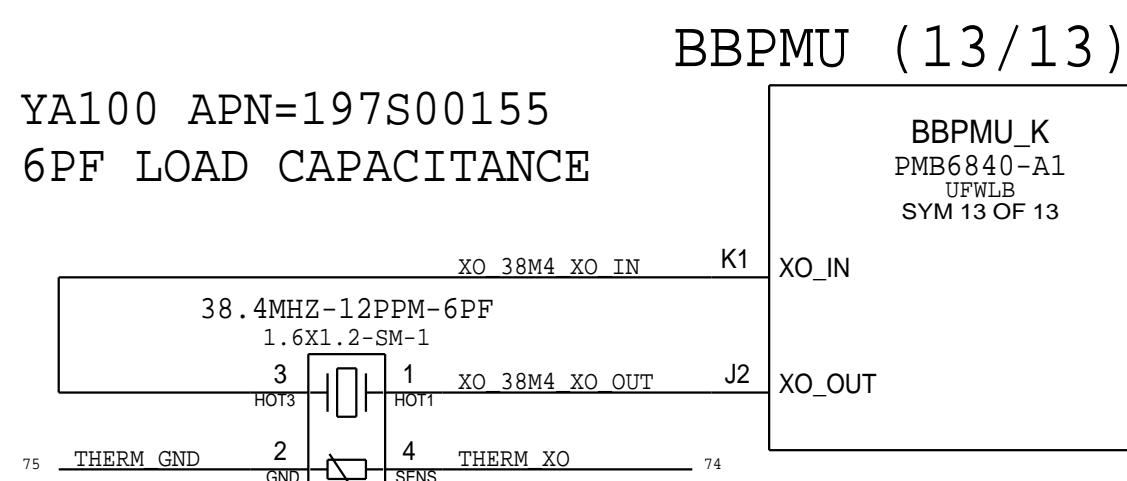
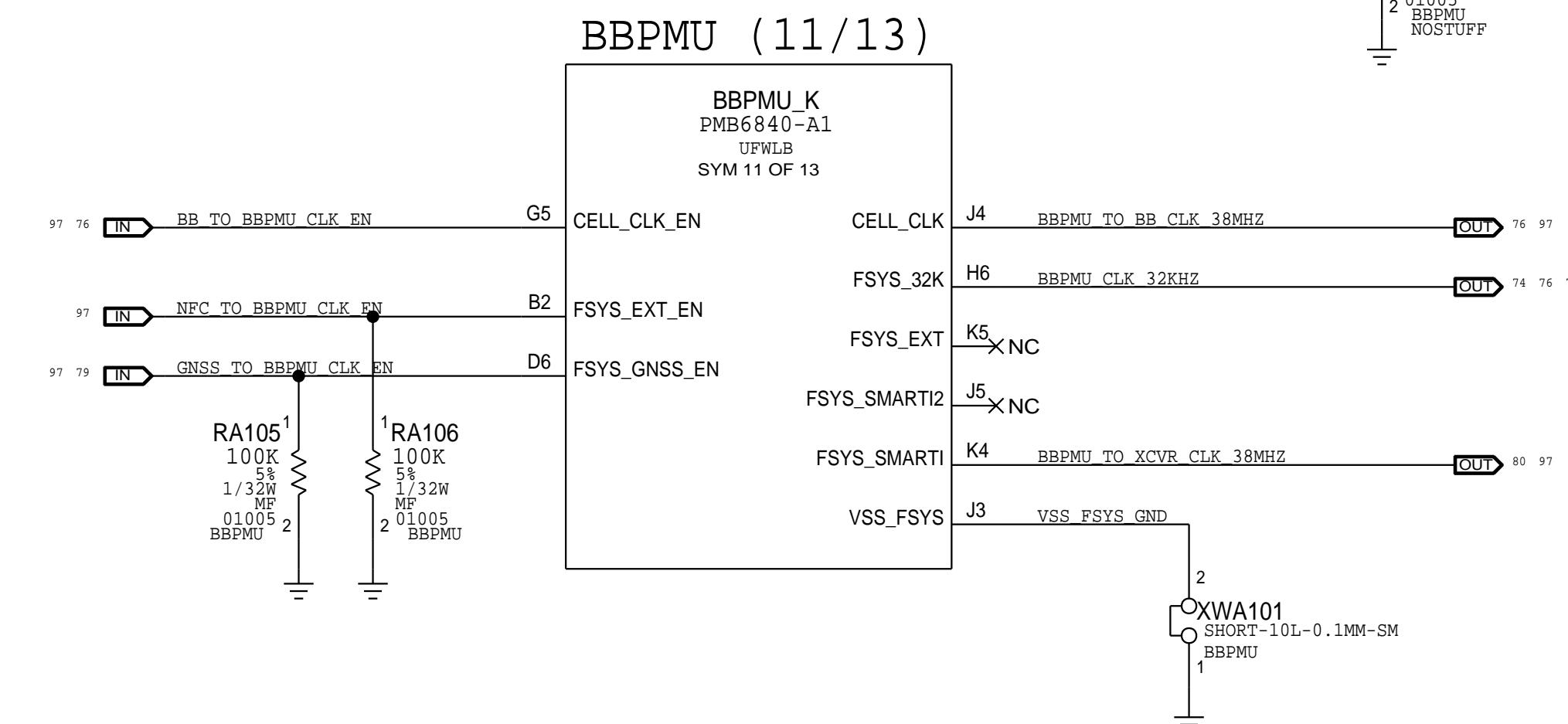
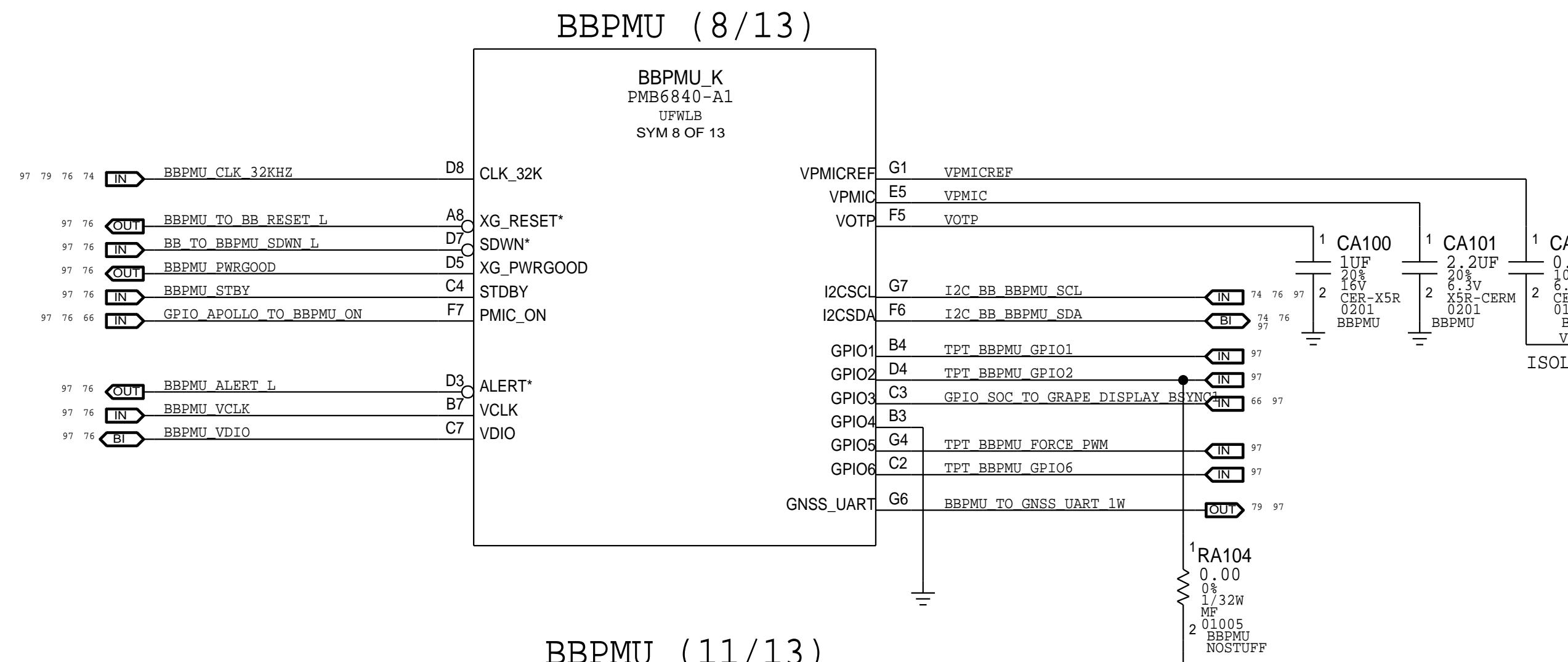
HYBRID IMPEDANCE RULE			
TRACE LAYER	REFERENCE LAYER(s)	REQUIRED IMPEDANCE	TRACE WIDTH (OPTIONAL)
RULE NAME= 50_WIDE_2_L1_THIN		ZONE NAME= PRIMARY	
TOP	ISL2	50	0.078
ISL3	TOP, ISL5	50	0.095
ISL6	ISL5, ISL8	50	0.070

CAPPED RULE	LAYER	VALUE (MM)	RULE NAME(S)
EXAMPLE: SMD2ALL_SMD TO SMD2VIA2ALL_SHAPE2ALL			
LINE2SMD	?	0.10	2,2D,4D,4V,4..64D,2L
MVIA2MVIA	?	0.10	2,2D,4D,4V,4..64D,2L
MVIA2SMD	?	0.10	2,2D,4D,4V,4..64D,2L
MVIA2SHAPE	?	0.10	2,2D,4D,4V,4..64D,2L
SMD2SMD	?	0.10	2,2D,4D,4V,4..64D,2L
SMD2SHAPE	?	0.10	2,2D,4D,4V,4..64D,2L
LINE2MVIA	?	0.10	2,2D,4D,4V,4..64D,2L

SYNC_MASTER=RADIO_MLB_0_67_0
PAGE TITLE

BOM TABLES

BBPMU: CONTROL (1/2)



BBPMU ADC TABLES

REVISION

RA102	MLB	RF DEV
0.0	PROTO1	0.1
1.2K	PROTO2	1.0
2.2K	EVT	2.0
3.3K		2.1
4.7K		3.0
6.8K		RESERVED
8.2K		4.0
10K		
12K		
15K		
18K		
22K		
27K		
33K		
39K		
47K		
56K		
82K		
100K		
120K		
150K		

HWID TABLE RDAR://36303220

RA103	PRODUCT ID	X-CODE
0.0	RFDEV 19.1/2	
1.2K	RFDEV 19.0	
2.2K	ICE19.0 MLB	X1403
3.3K	ICE19.1 MLB	X1368
4.7K	ICE19.2 MLB	X1369
6.8K	ICE19.5 MLB	X1639
8.2K	ICE19.6 MLB	X1638
10K		
12K		
15K		
18K		
22K		
27K		
33K		
39K		
47K		
56K		
82K		
100K		
120K		
150K		

SYNC_MASTER=RADIO_MLB_0_67_0	SYNC_DATE=08/20/2019
PAGE TITLE BBPMU: CONTROL (1/2)	

D

D

C

C

B

B

A

A

P

P

8

7

6

5

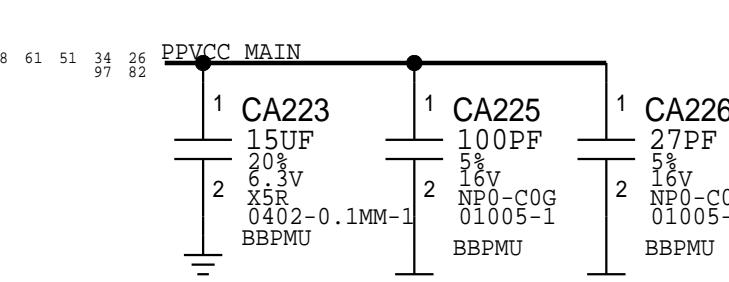
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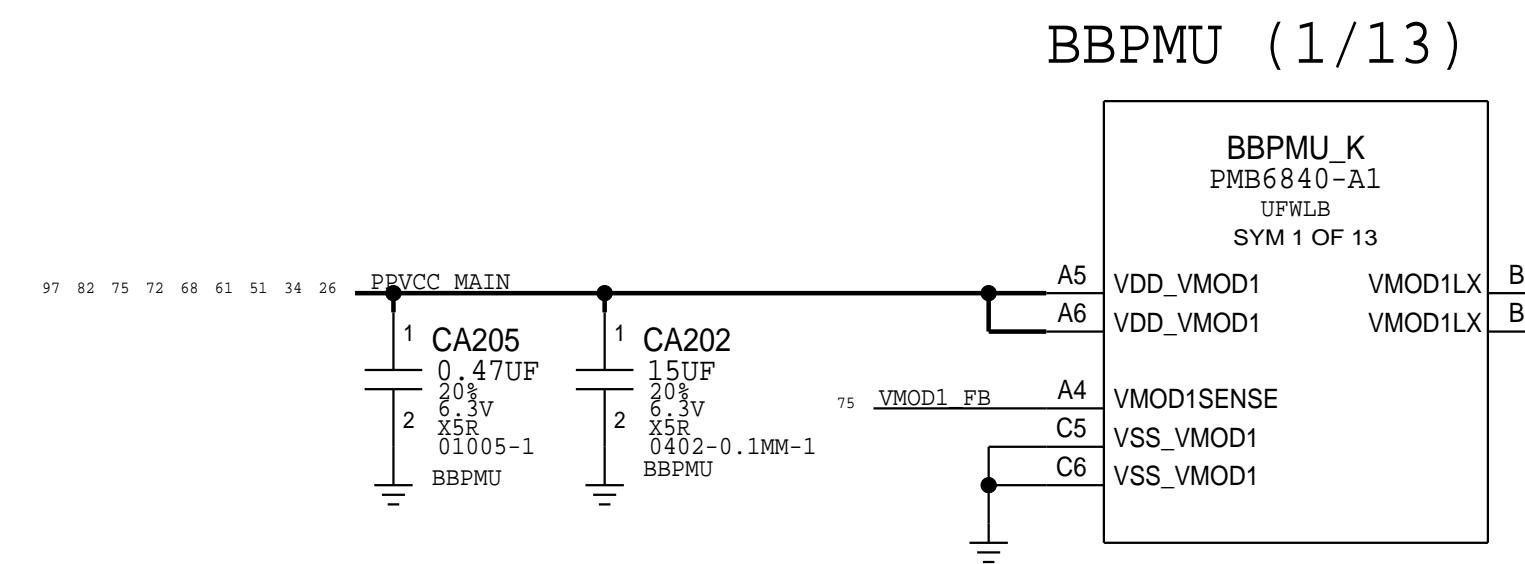
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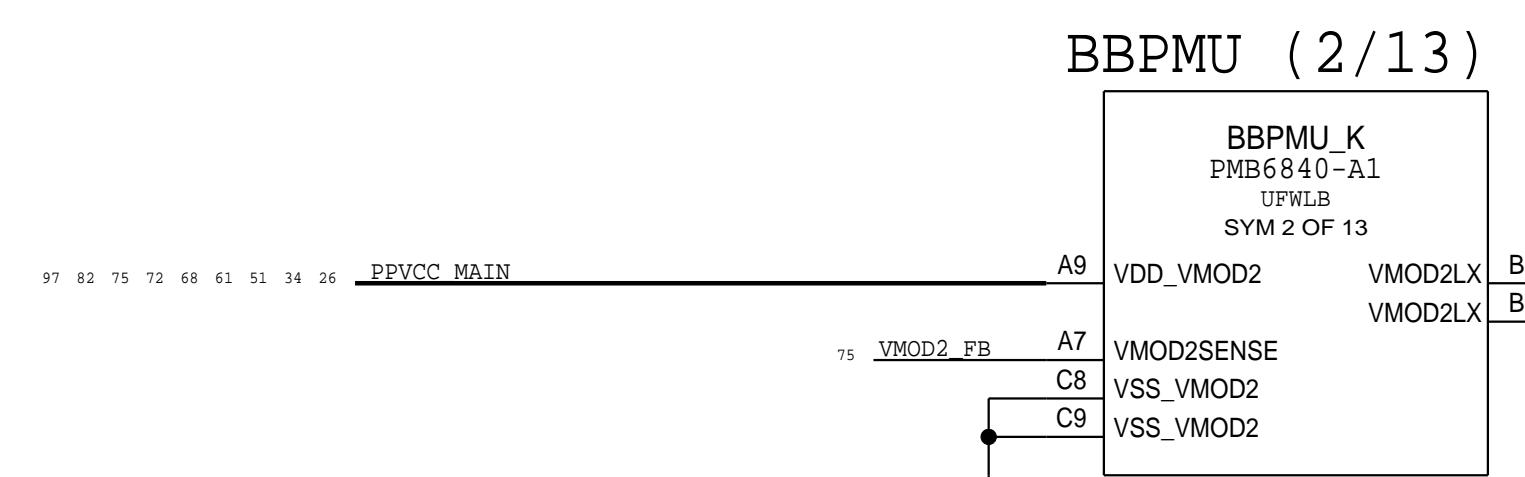
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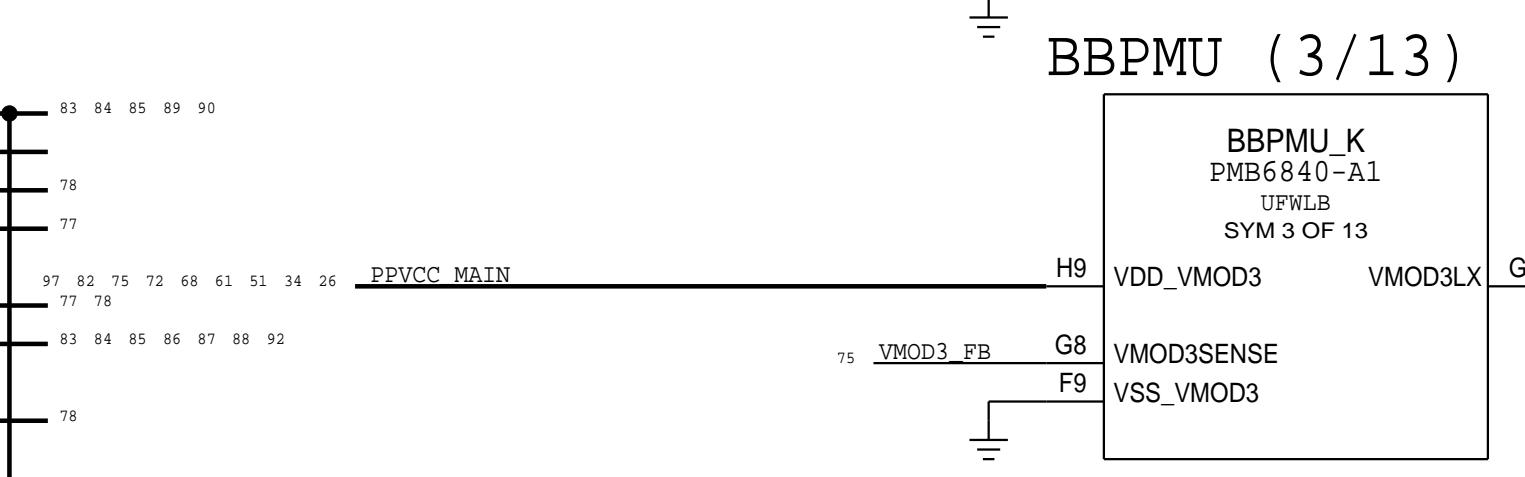
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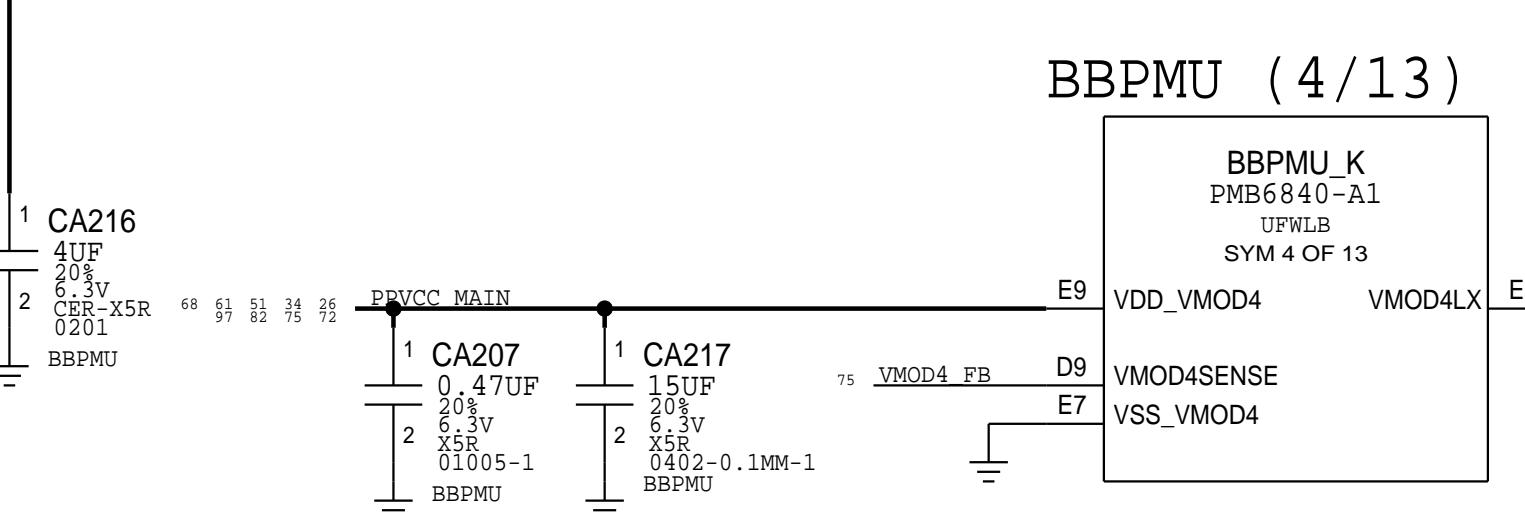
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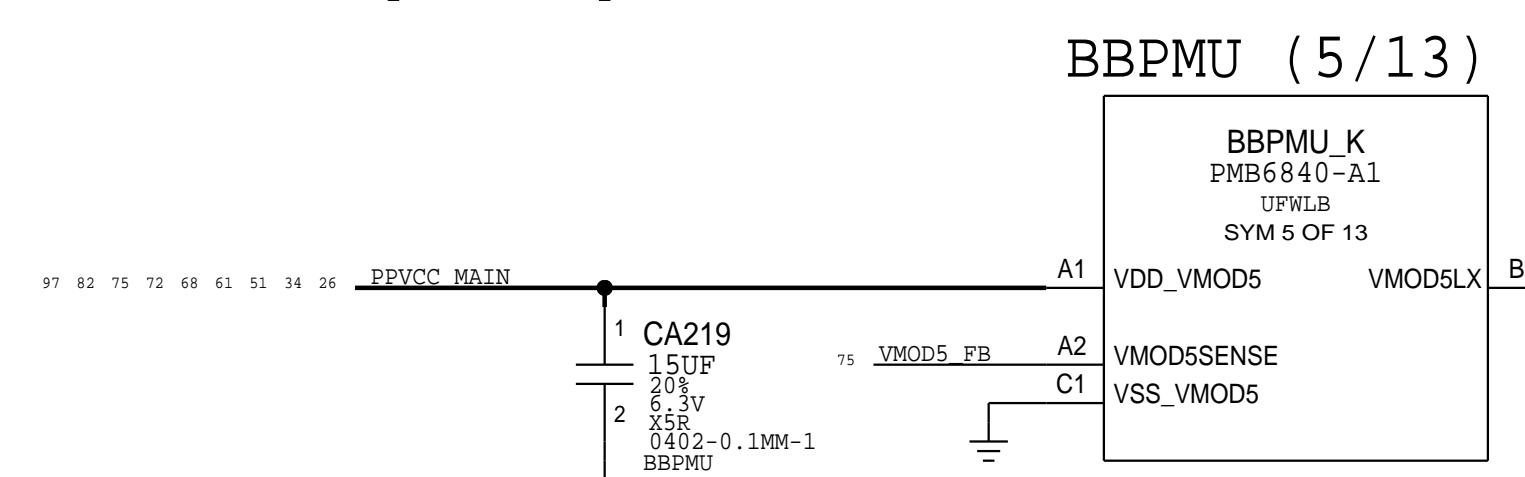
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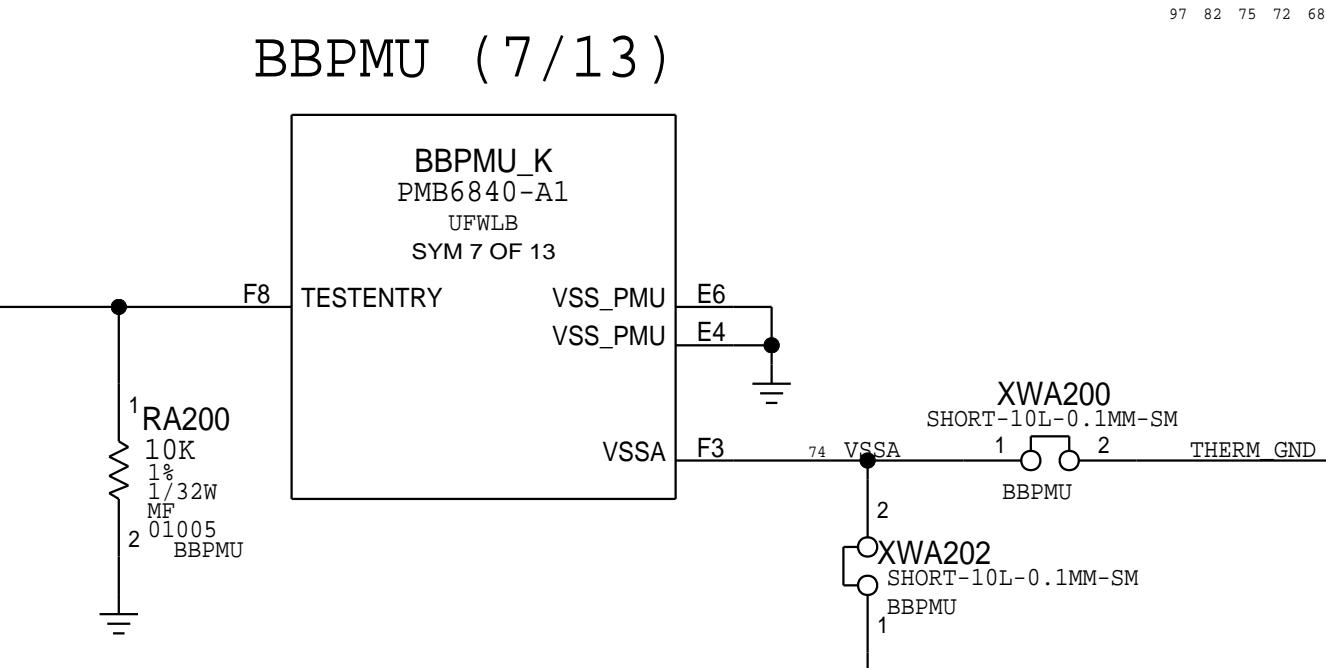
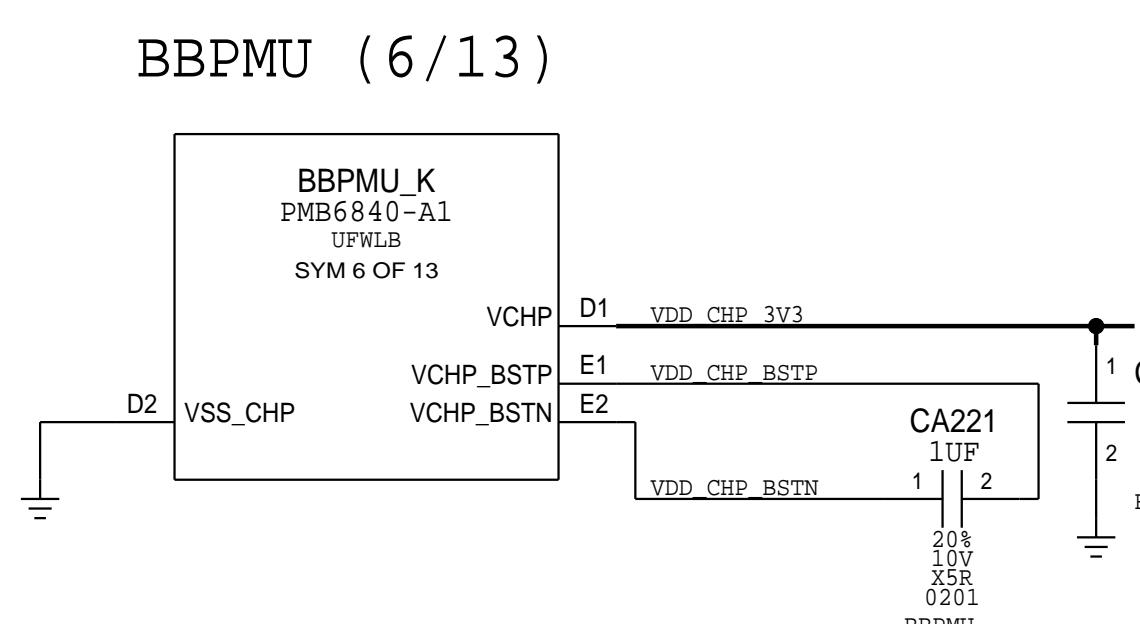
BBPMU (3/13)



BBPMU (4/13)



BBPMU (5/13)



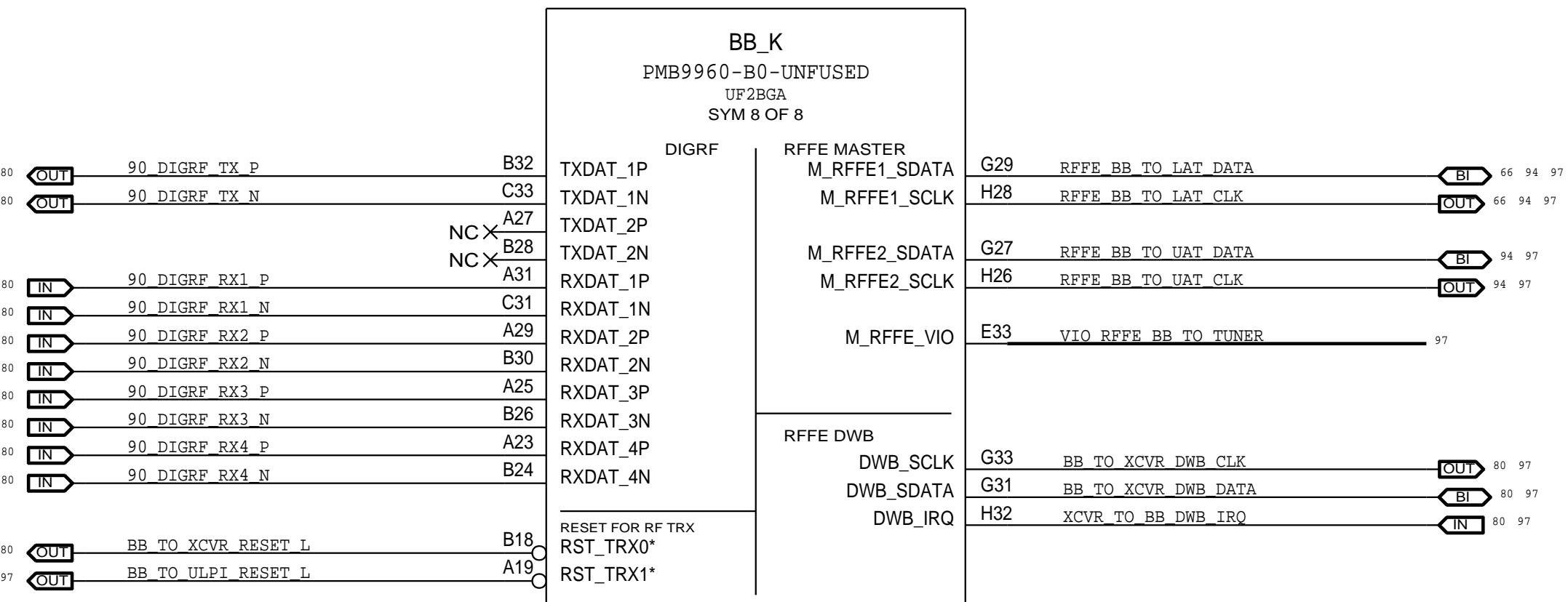
CLASS DEFINITIONS		COMMA SEPARATED WITH WILDCARD SUPPORT: NET NAMES EX: DDR*	
CLASS NAME	CONSTRAINT SET	COMMA SEPARATED NET NAMES (WILDCARD SUPPORT EX: DDR*)	DEFINITION
RF_SHIELD	S	DP NAMES EX: DP_DP_AA*, DP_BB* (LINE STARTS WITH FLAG DP_)	Y/N
<hr/>			
NET RULE ASSIGNMENT			
CONSTRAINT SET		COMMA SEPARATED NET NAMES (WILDCARD SUPPORT EX: DDR*)	
P	PWR_SHAPE	VMOD*LX, VDD_DIG_0V85, VRF_DIG_0V9	
P	PWR_SHAPE	VRF_MED_1V3, VRF_LO_1V15	
P	PWR_SHAPE	VDD_IO_1V8	
P	PWR_SHAPE	VDD_DRAM_1V8, VFE_DRAM_1V8, VFE_IO_1V2, VDD_IP_1V0, VDD_SRAM_0V9	
P	PWR_200UM	VDD_CHP*, VFE_HI_3V15, VFE_MED_1V8	
P	PWR_100UM	VDD_SIM1*, VDD_SIM2*	

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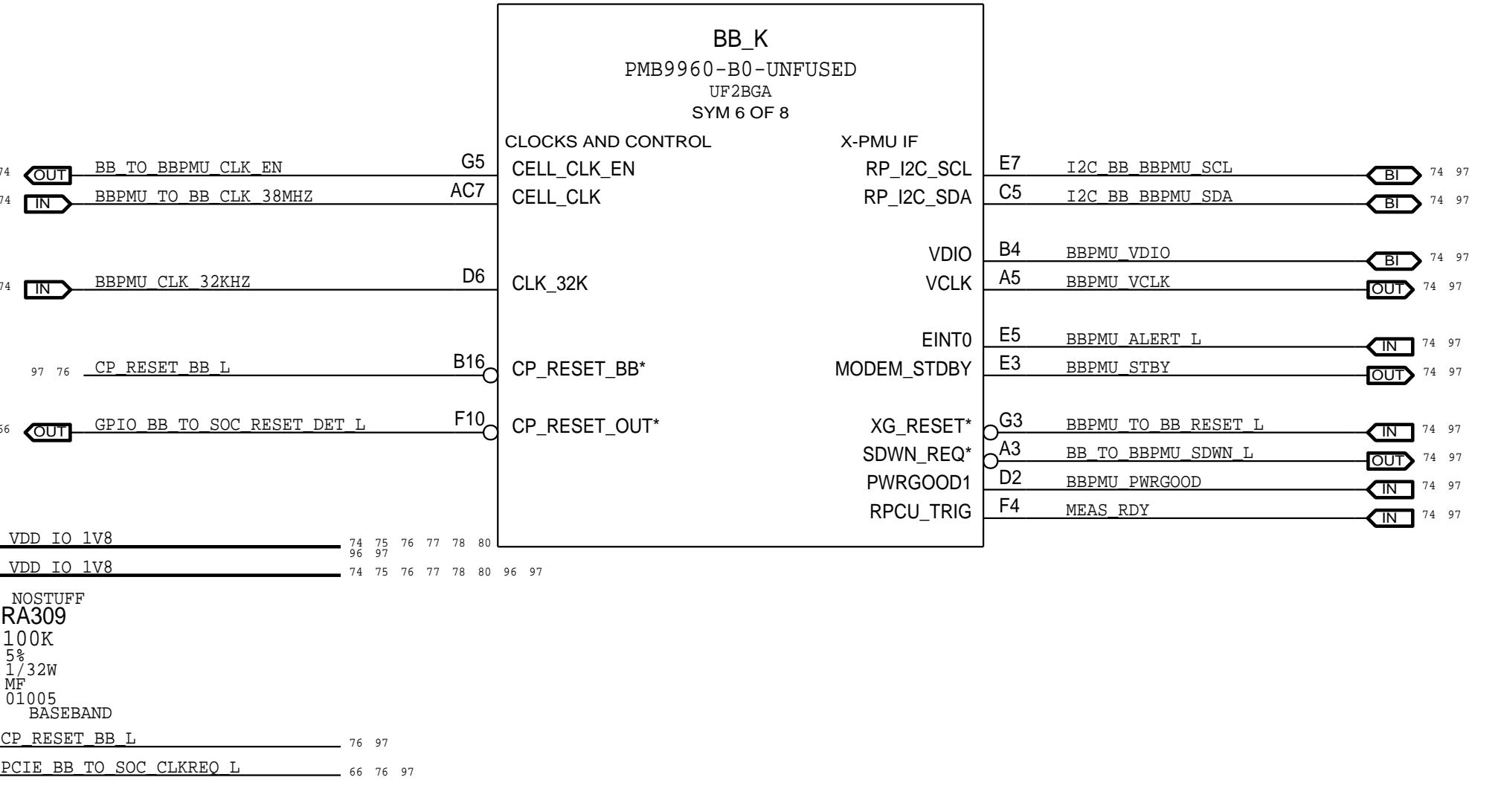
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PAGE TITLE: BBPMU: RAILS (2/2)	
A	

BB: INTERFACE (1/3)

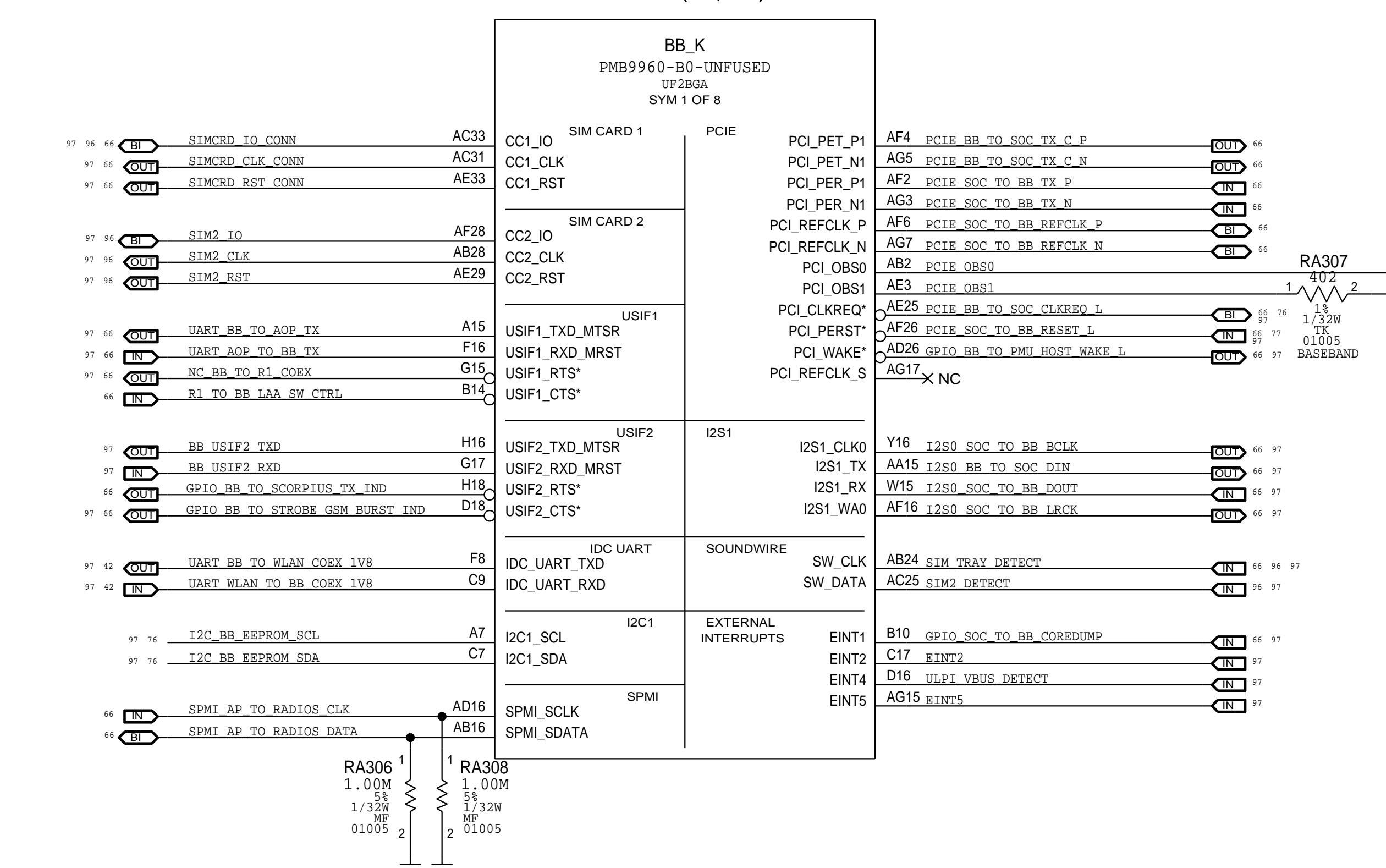
XG766 (8/8)



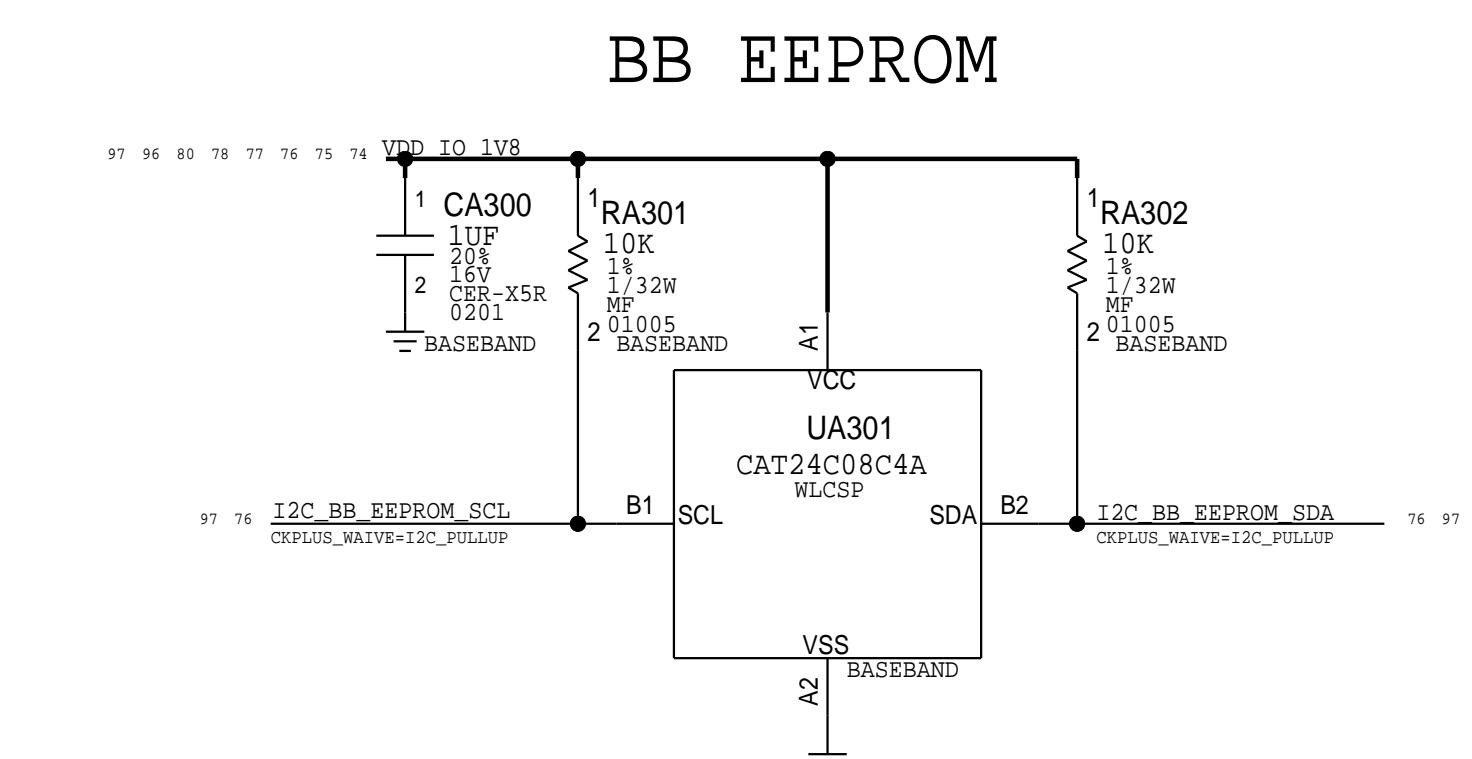
XG766 (6/8)



XG766 (1/8)



BB EEPROM



CLASS NAME	CONSTRAINT SET	COMMA SEPARATED WITH WILDCARD SUPPORT: NET NAMES EX: DDR*	CLEAR OVERRIDE
RF_SHIELD	S	A_DIELECTRIC_2X PCIE_OBS*, BBPMU_VDIO, BBPMU_VCLK	Y
RFFE_SHIELD	S	A_DIELECTRIC_2X *RFFE*, *SPMI*, BB_TO_XCVR_DWB*, XCVR_TO_BB_DWB*	Y

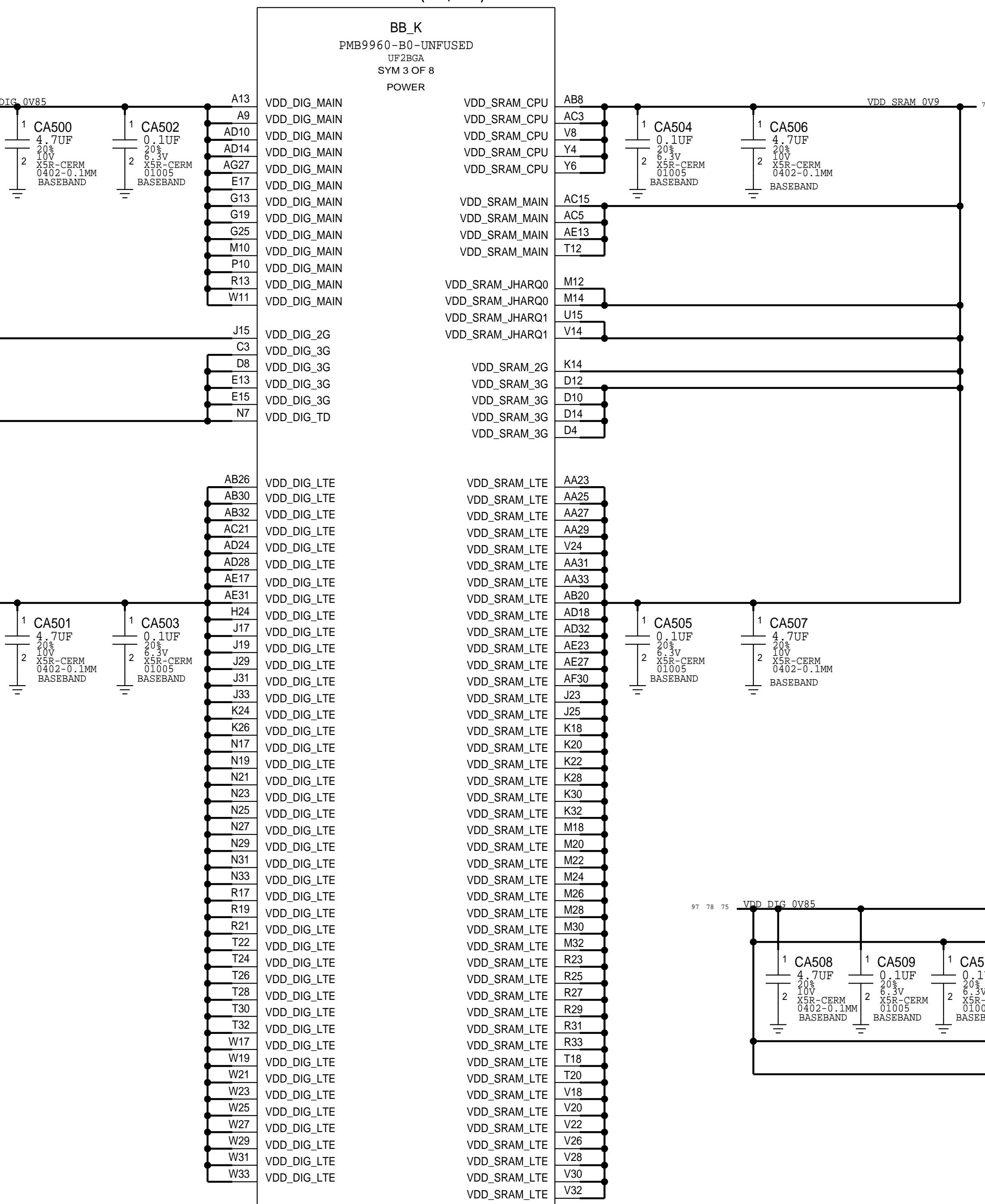
CLASS DEFINITIONS		
CLASS NAME	CONSTRAINT SET	COMMA SEPARATED WITH WILDCARD SUPPORT: NET NAMES EX: DDR*
DIGRF	S	A_DIELECTRIC_2X 90_DIGRF*
DIGRF	GND	DEFAULT

NET RULE ASSIGNMENT		
P	CONSTRAINT SET	COMMA SEPARATED NET NAMES (WILDCARD SUPPORT EX: DDR*)
P	A_90_OHM_DIFF	90_DIGRF*
E	DIGRF_DP	90_DIGRF*

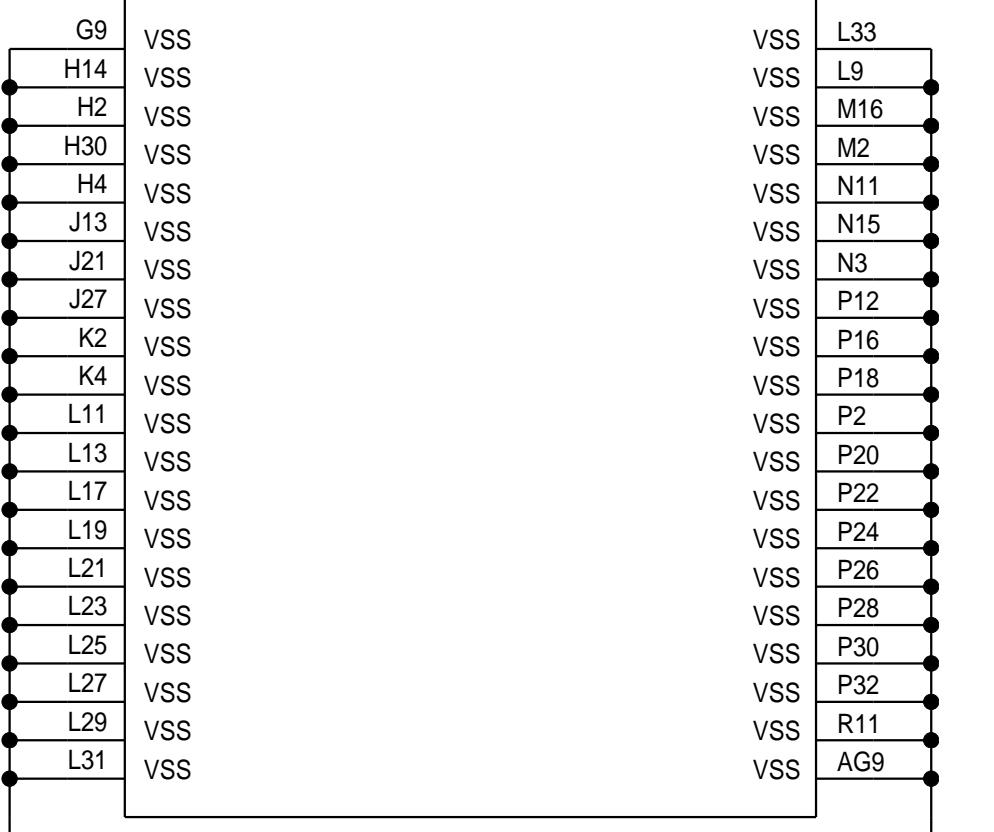
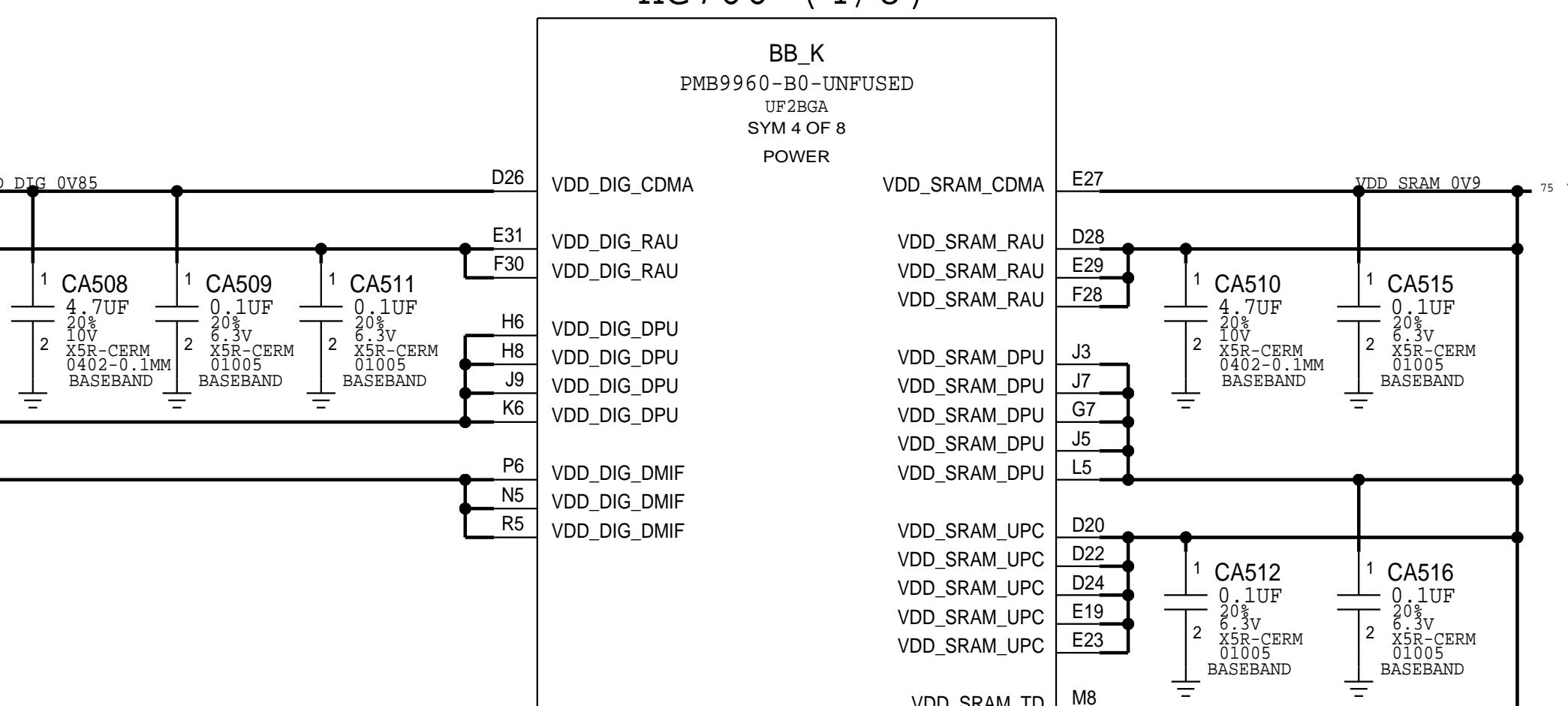
CONFIDENTIAL AND PROPRIETARY APPLE SYSTEM DESIGN. FOR REFERENCE PURPOSE ONLY - NOT A CHANGE REQUEST

BB : POWER (3 / 3)

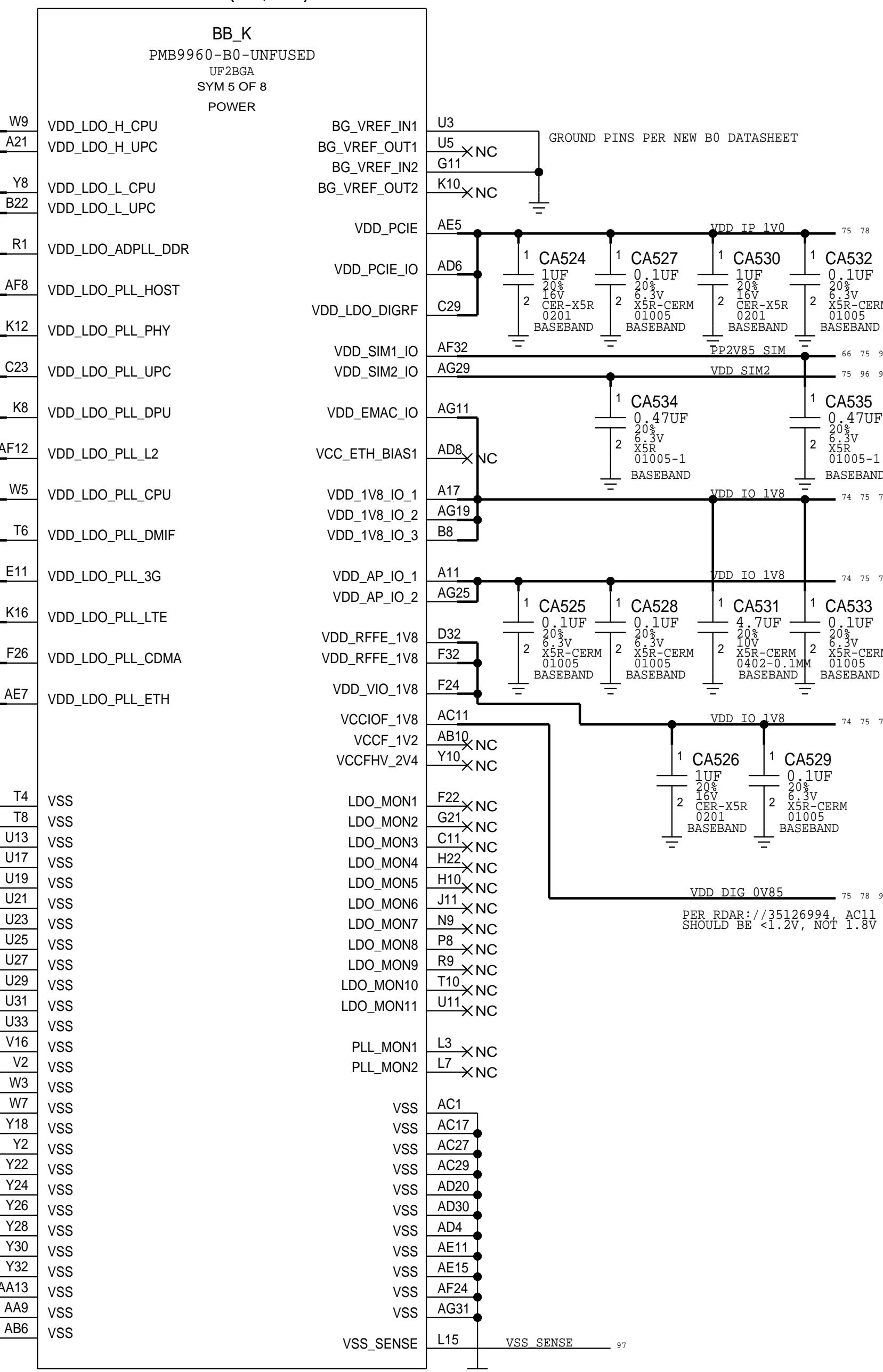
XG766 (3 / 8)



XG766 (4 / 8)

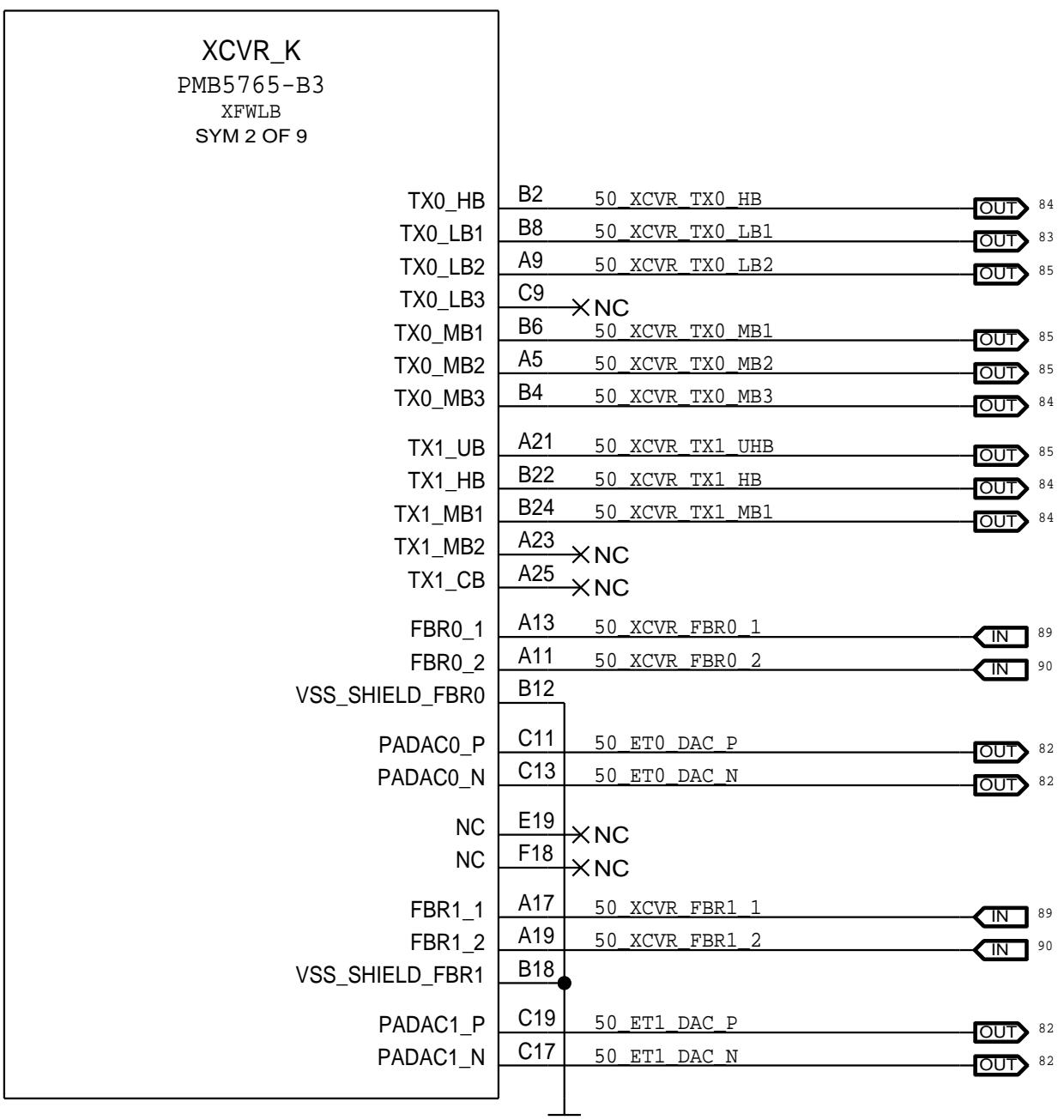


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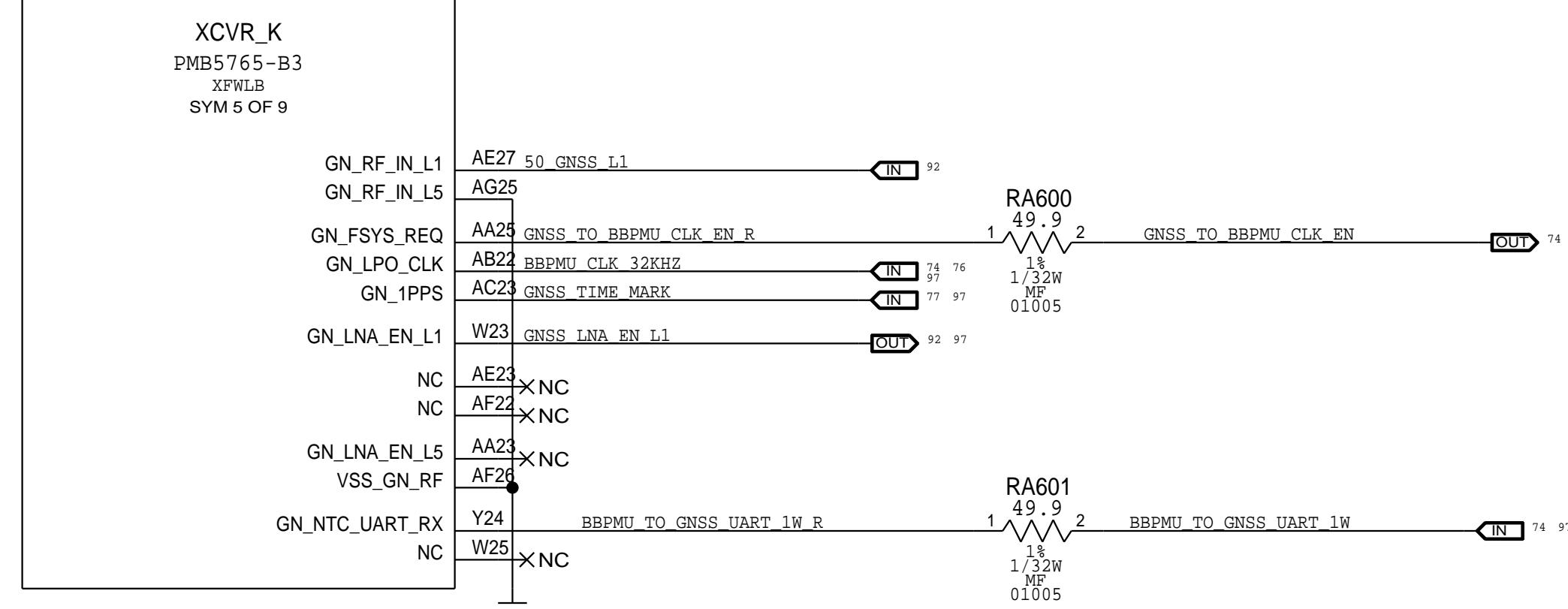


XCVR: TRANSMIT & GNSS (1/3)

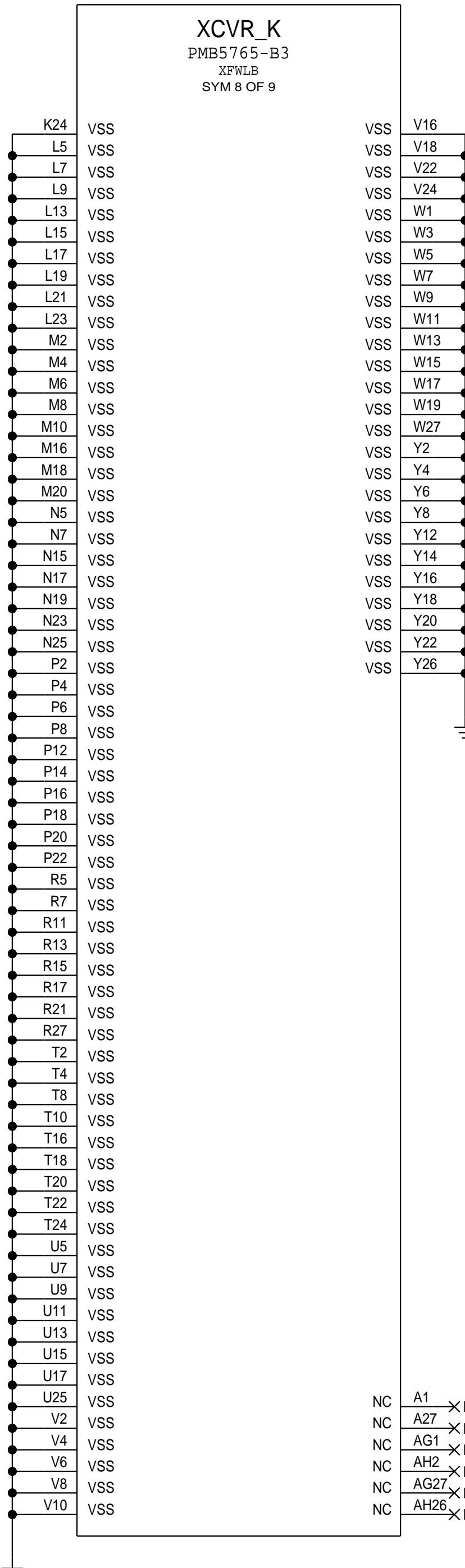
SMARTI8 (2/9)



SMARTI8 (5/9)



SMARTI8 (8/9)



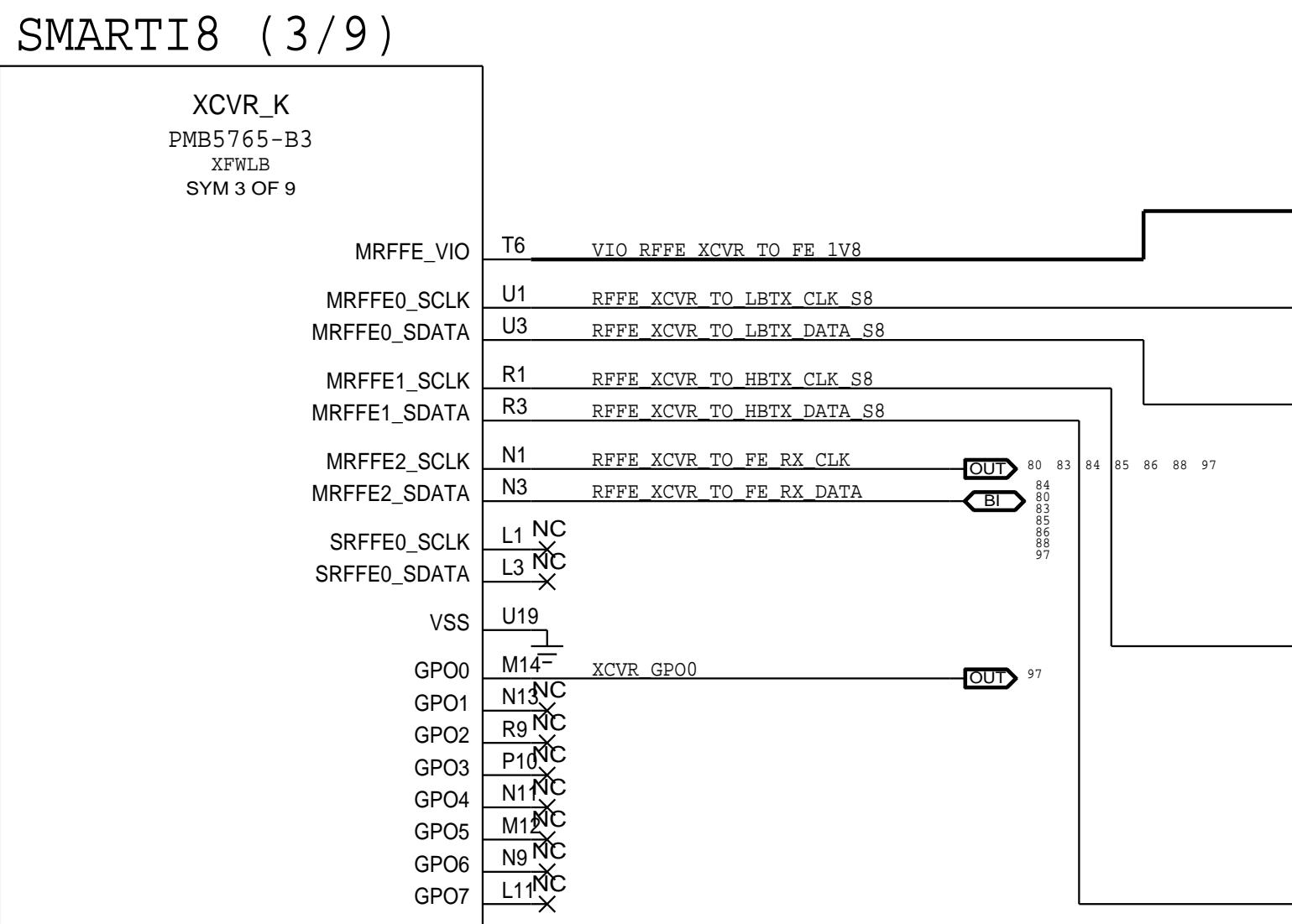
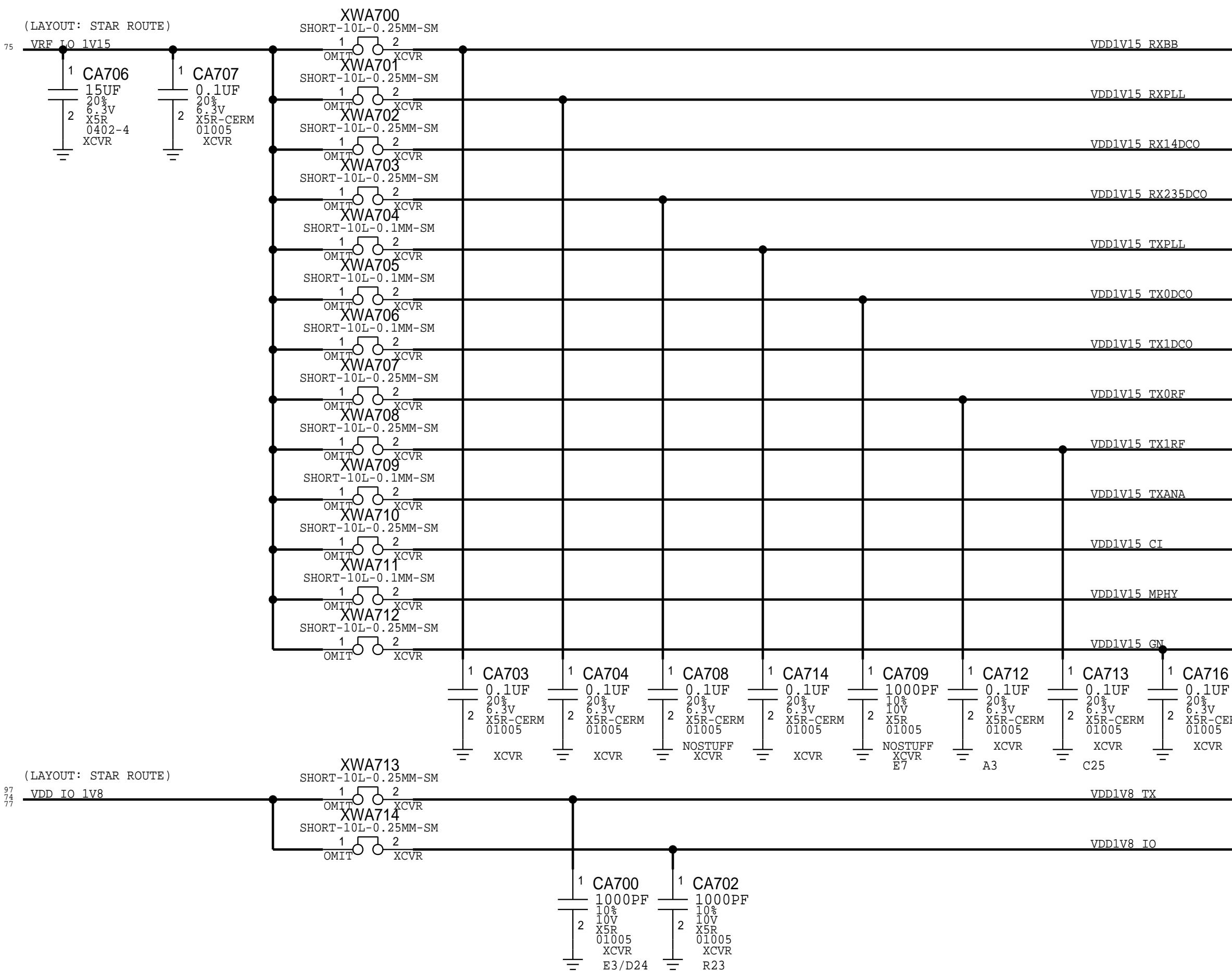
CLASS TO CLASS SPACING		
CLASS NAME	CLASS NAME	CONSTRAINT SET
50_WIDE	50_WIDE	A_DIELECTRIC_4.8XD_50_WIDE_SE
50_WIDE	50_THIN	A_DIELECTRIC_4.64XD_50_WIDE_SE
50_WIDE_L1_THIN	50_WIDE_L1_THIN	A_DIELECTRIC_4.64XD_50_WIDE_L1_THIN_SE
50_THIN	50_THIN	A_DIELECTRIC_4.64XD_50_WIDE_SE
50_WIDE_L1_THIN	50_WIDE_L1_UNSHIELDED	A_DIELECTRIC_4.64XD_50_WIDE_L1_THIN_SE
50_WIDE_L1_THIN_UNSHIELDED	50_WIDE_L1_THIN_UNSHIELDED	A_DIELECTRIC_2XL

NET RULE ASSIGNMENT		
DOMAIN	CONSTRAINT SET	COMMA SEPARATED NET NAMES (WILDCARD SUPPORT EX: DDR*)
P	A_50_WIDE_L1_THIN_SE	50_XCVR*
P	GENERIC_DP	50_ET*
E	GENERIC_DP	50_ET*

CLASS DEFINITIONS		CONSTRAINT SET	COMMA SEPARATED WITH WILDCARD SUPPORT: NET NAMES EX: DDR*	CLEAR OVERRIDE
CLASS NAME	...	DP NAMES EX: DP_DP_AA, DP_BB (LINE STARTS WITH FLAG DP:)		Y/N
50_WIDE_L1_THIN	S	A_DIELECTRIC_2X_50_WIDE_L1_THIN_SE	50_XCVR_TXO_LB2, 50_XCVR_TXO_MB2	Y
50_WIDE_L1_THIN	S	A_DIELECTRIC_2X_50_WIDE_L1_THIN_SE	50_XCVR_TXO_HB, 50_XCVR_TXO_LB1, 50_XCVR_TXO_MB1	Y
50_WIDE_L1_THIN	S	A_DIELECTRIC_2X_50_WIDE_L1_THIN_SE	50_XCVR_TXO_MB3	Y
50_WIDE_L1_THIN	S	A_DIELECTRIC_2X_50_WIDE_L1_THIN_SE	50_XCVR_TX1*, 50_XCVR_FBR*	Y
RF_SHIELD	S	A_DIELECTRIC_2X	50_FT*	Y
GENERIC_DP	P	GENERIC_DP	DP:DP_50_ET*	Y

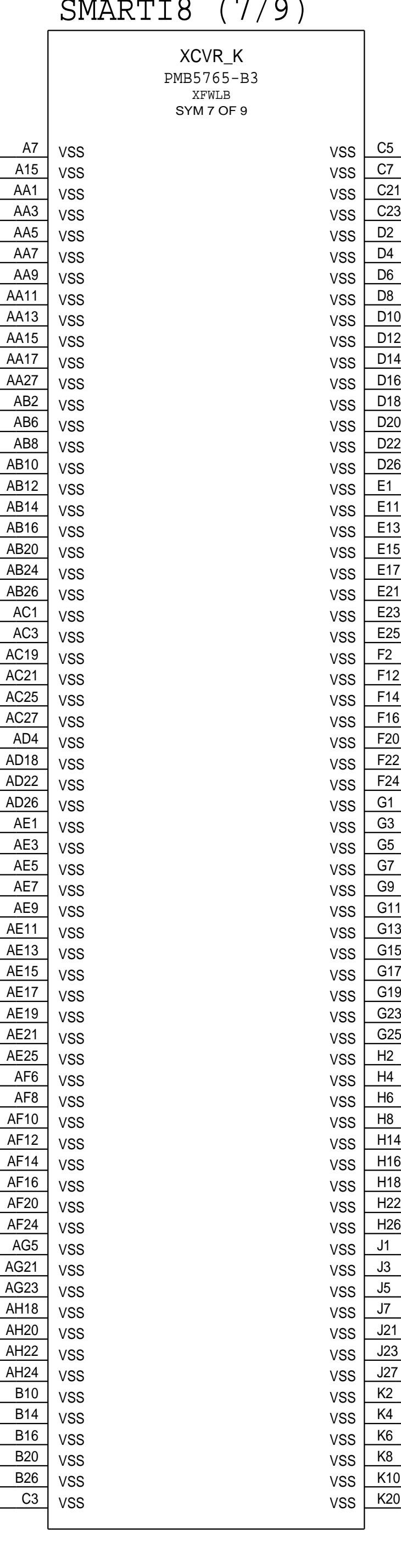
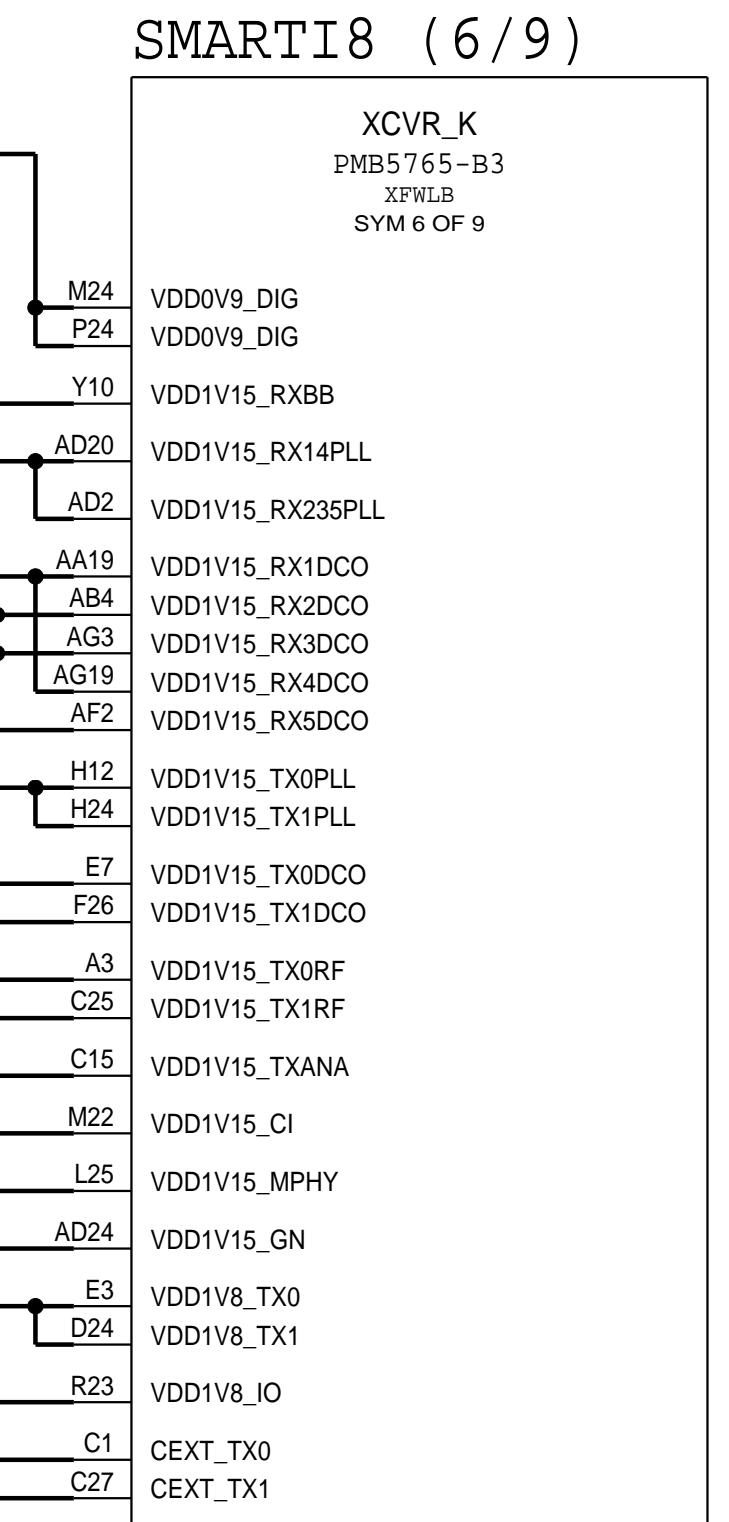
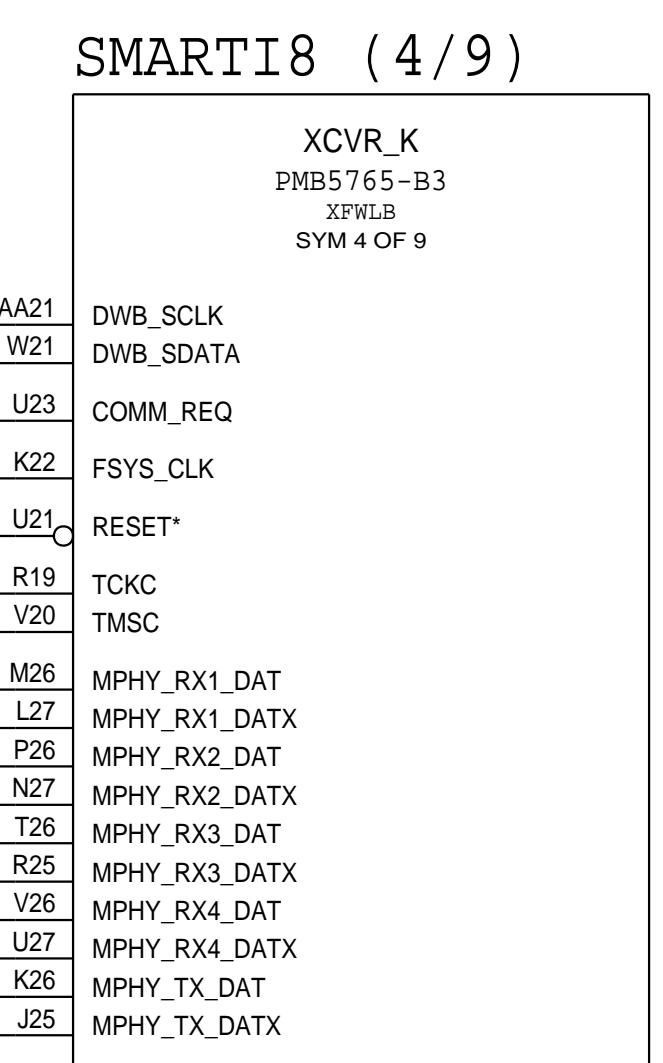
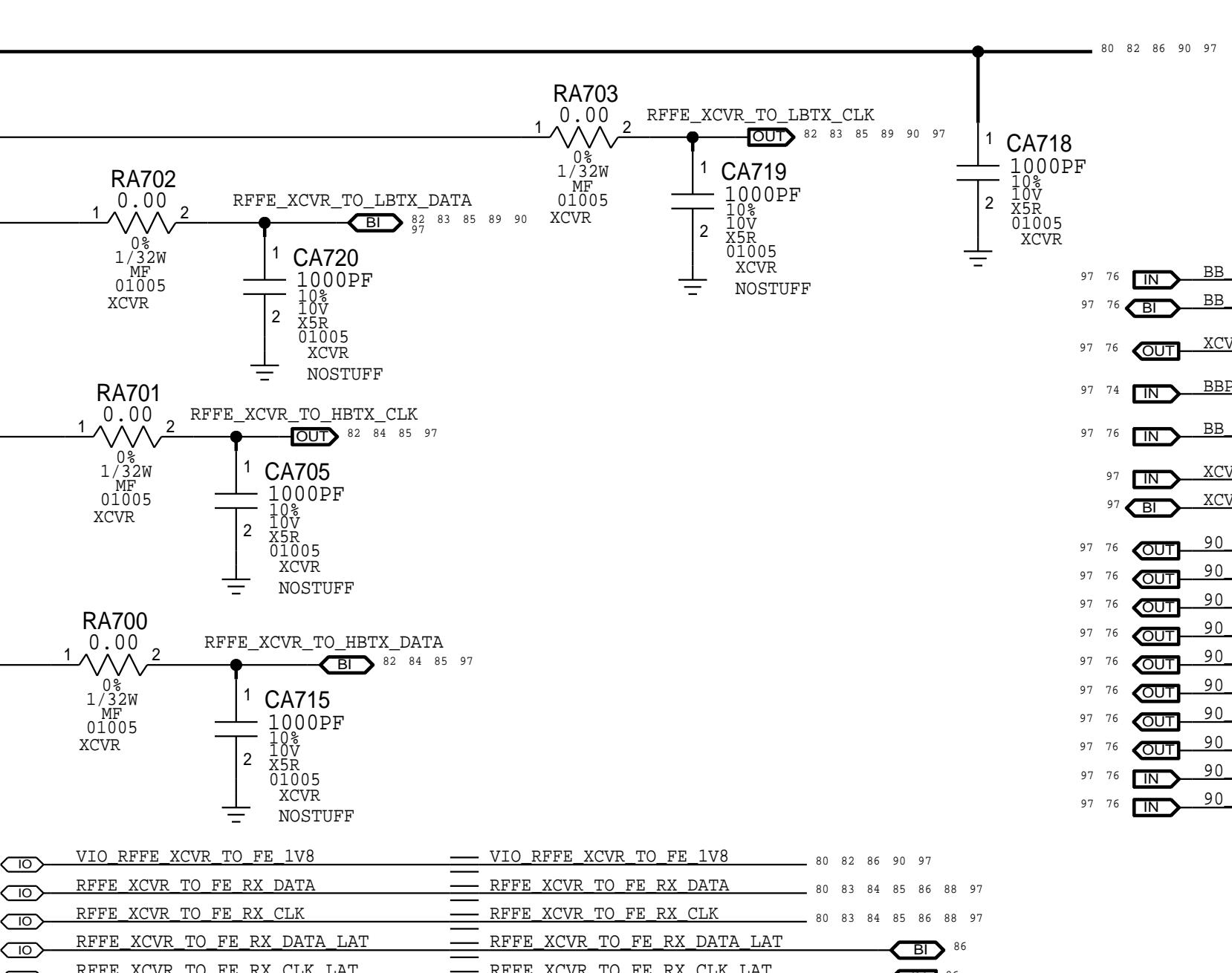
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XCVR : INTERFACE & PWR (2 / 3)



DOMAIN (E,P,S)	NET RULE ASSIGNMENT	
	CONSTRAINT SET	COMMA SEPARATED NET NAMES (WILDCARD SUPPORT EX: DDR*)
P	PWR_300UM	VDD1V15*, VDD1V8_TX, VDD1V8_IO
P	PWR_200UM	CEXT_RX*
P	PWR_100UM	VIO_RFFE*

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SYNC_MASTER=RADIO_MLB_0.67.0 SYNC_DATE=08/20/2019
PAGE TITLE XCVR: INTERFACE & PWR (2/3)

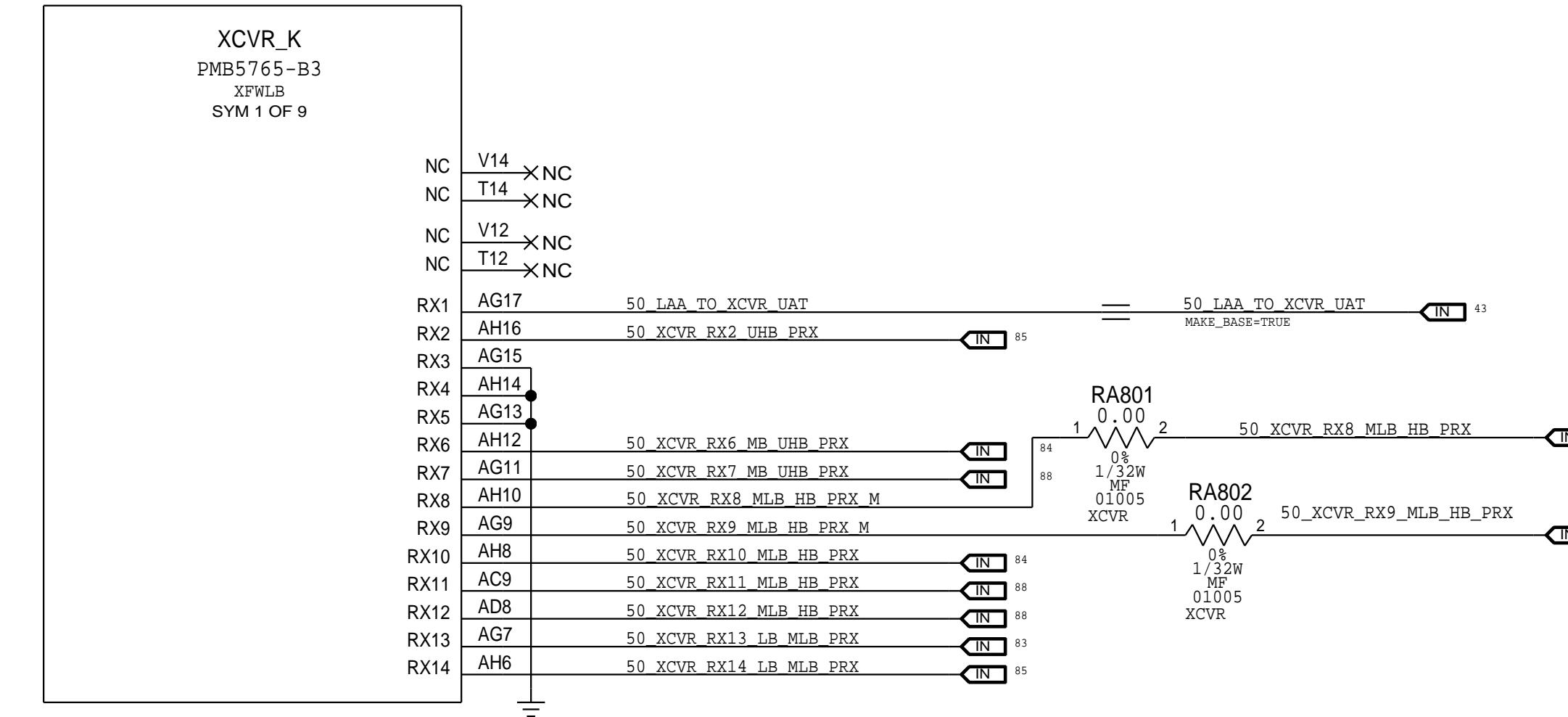
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PRIMARY

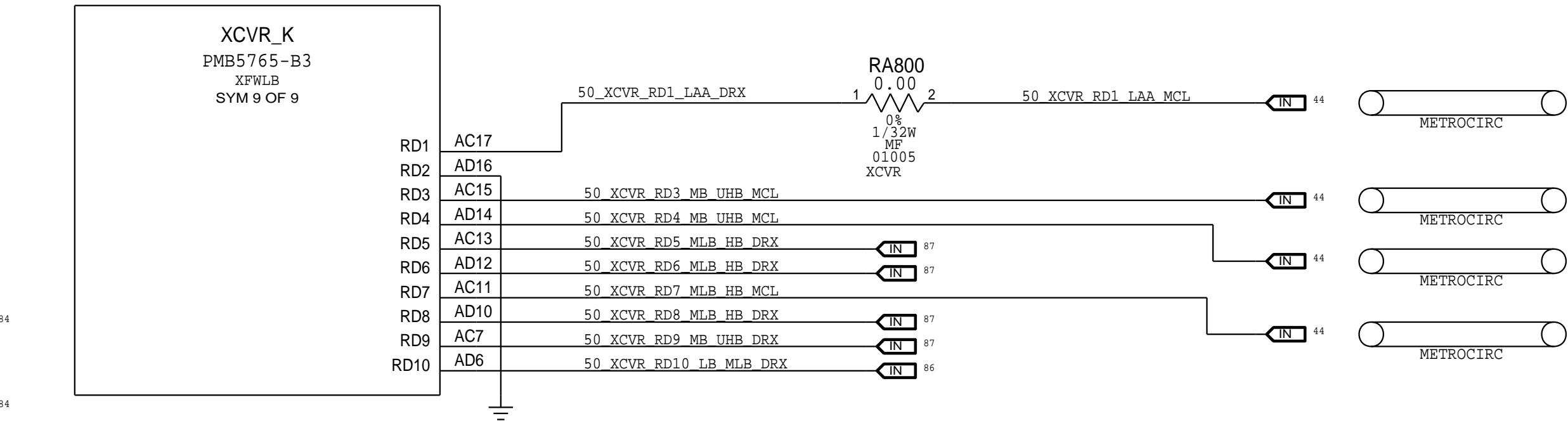
DIVERSITY

RX (3/3)

SMARTI8 PRX (1/9)



SMARTI8 DRX (9/9)



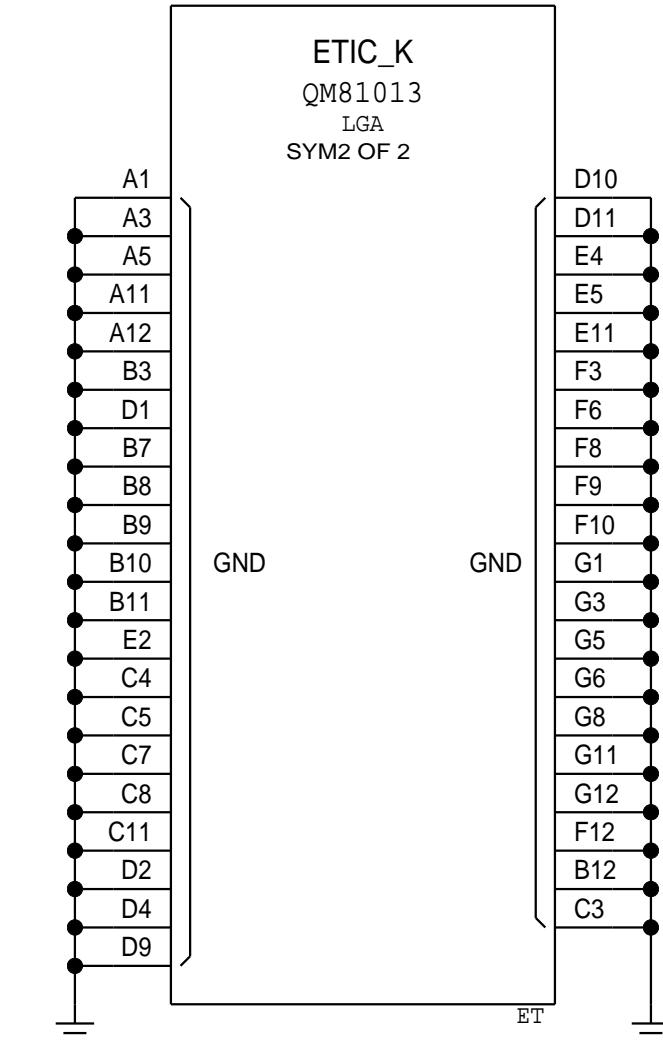
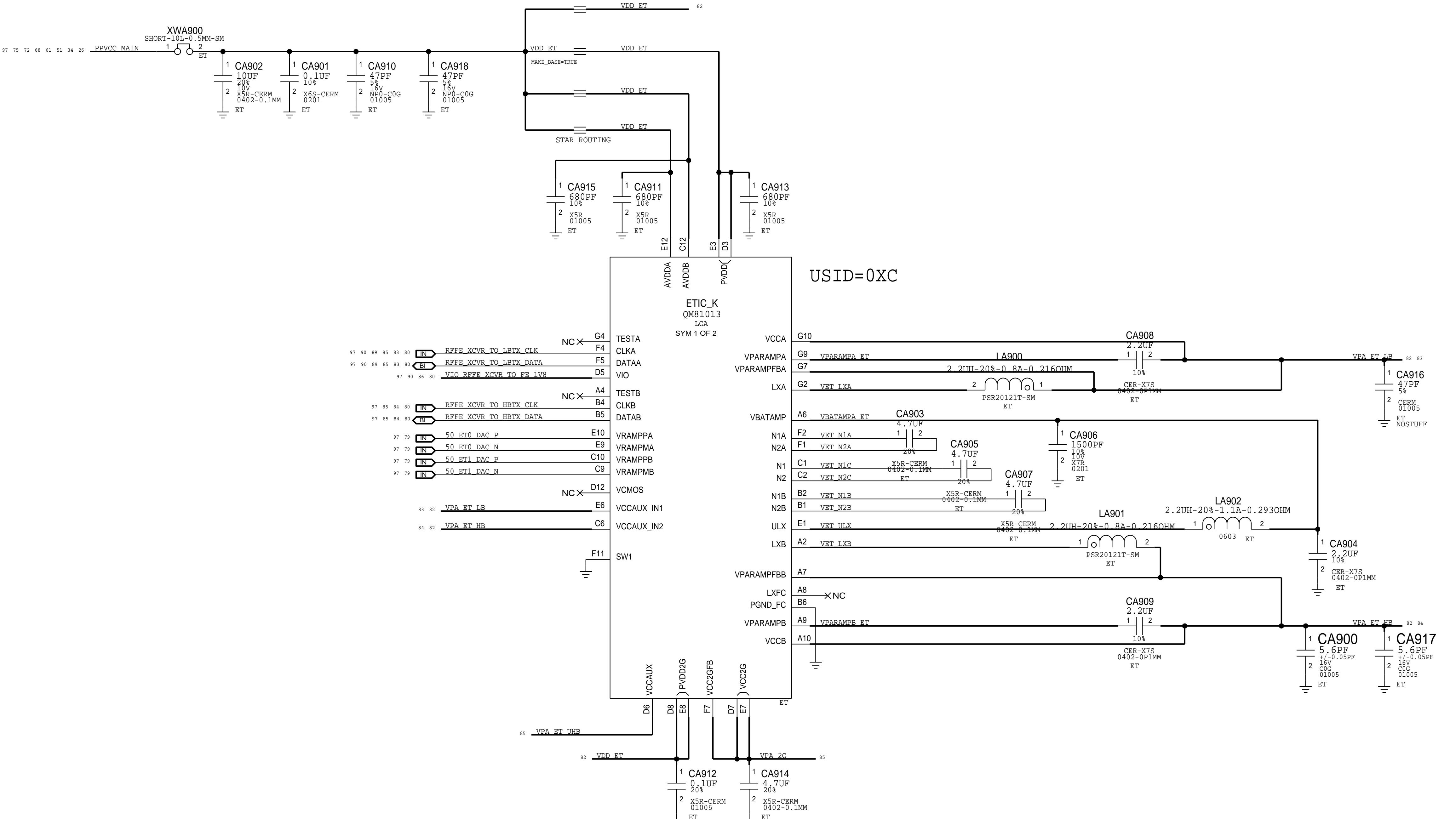
NET RULE ASSIGNMENT		
DOMAIN	CONSTRAINT SET	COMMA SEPARATED NET NAMES (WILDCARD SUPPORT EX: DDR*)
P	A_50_WIDE_L1_THIN_SE	50_LAA_TO_XCVR*

CLASS DEFINITIONS		COMMA SEPARATED WITH WILDCARD SUPPORT: NET NAMES EX: DDR*	CLEAR COVERAGE
CLASS NAME	CONSTRAINT SET	DP NAMES EX: DP_DP_AA*, DP_BB* (LINE STARTS WITH FLAG DP:)	Y/N
50_WIDE_L1_THIN_UNSHIELDED	S	A_DIELECTRIC_2XL 50_LAA_TO_XCVR*	Y
50_WIDE_L1_THIN	S	A_DIELECTRIC_2XL 50_XCVR_RX2*, 50_XCVR_RX10*	Y
50_WIDE_L1_THIN	S	A_DIELECTRIC_2XL 50_XCVR_RX13*, 50_XCVR_RX14*	Y
50_WIDE_L1_THIN	S	A_DIELECTRIC_2XL 50_XCVR_RX6*, 50_XCVR_RX7*, 50_XCVR_RX8*	Y
50_WIDE_L1_THIN	S	A_DIELECTRIC_2XL 50_XCVR_RX9*, 50_XCVR_RX11*, 50_XCVR_RX12*	Y
50_WIDE_L1_THIN_UNSHIELDED	S	A_DIELECTRIC_2XL 50_XCVR_RD10*	Y
50_WIDE_L1_THIN_UNSHIELDED	S	A_DIELECTRIC_2XL 50_XCVR_RD1*, 50_XCVR_RD3*, 50_XCVR_RD4*	Y
50_WIDE_L1_THIN_UNSHIELDED	S	A_DIELECTRIC_2XL 50_XCVR_RD6*, 50_XCVR_RD6*, 50_XCVR_RD7*	Y
50_WIDE_L1_THIN_UNSHIELDED	S	A_DIELECTRIC_2XL 50_XCVR_RD8*, 50_XCVR_RD9*	Y

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PAGE TITLE	XCVR: PRX DRX (3/3)

ET MODULATOR



C_MASTER=RADIO_MLB_0.67.0
E_TITLE

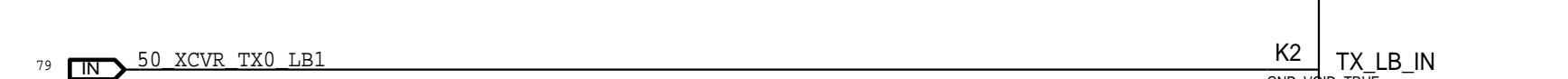
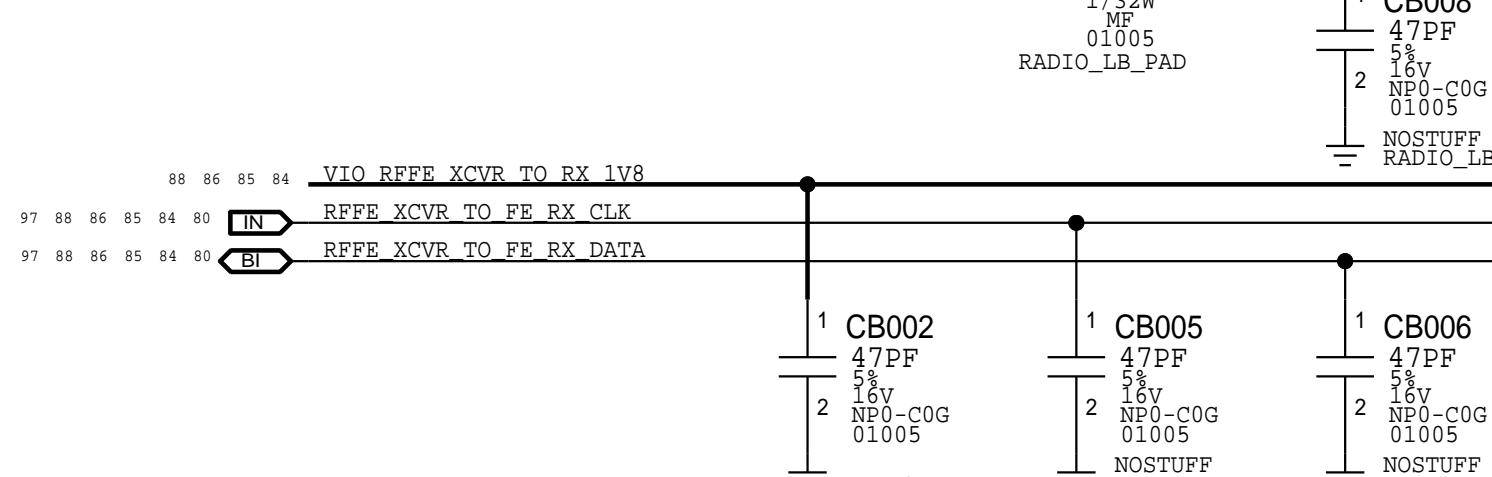
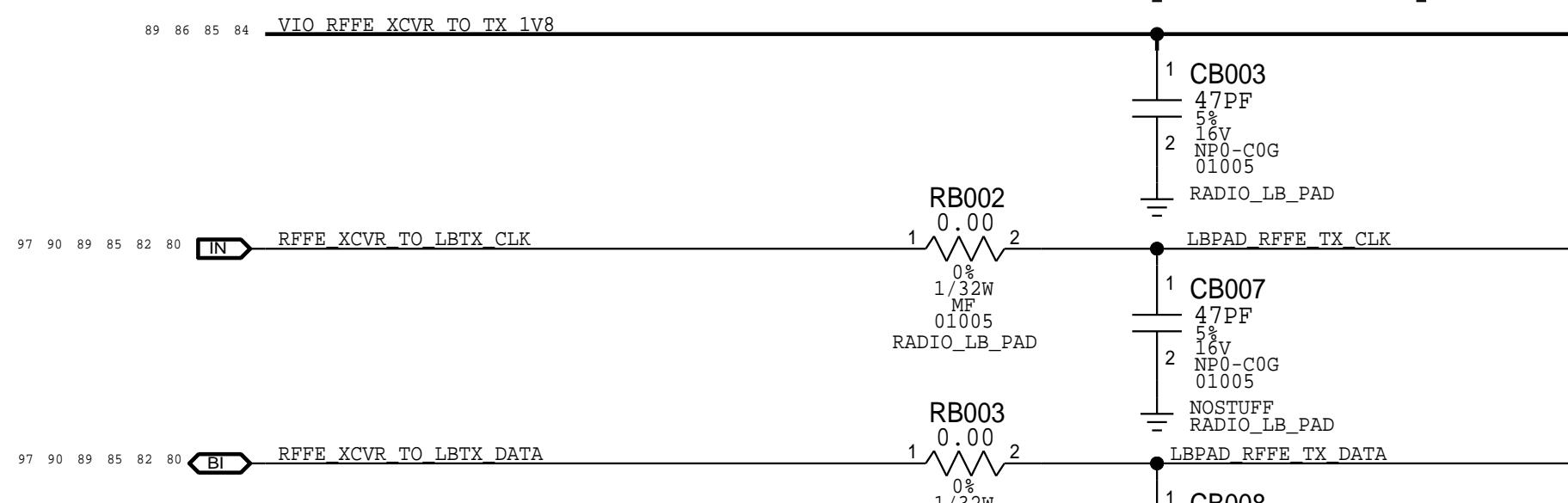
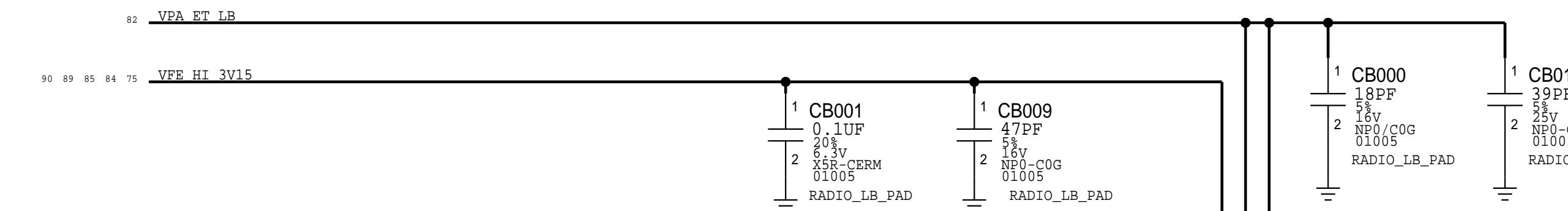
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DOMAIN (E,P,S)	NET RULE ASSIGNMENT	
	CONSTRAINT SET	COMMA SEPARATED NET NAMES (WILDCARD SUPPORT EX: DDR*)
P	PWR_SHAPE	VPA_ET_LB, VPA_ET_HB, VPA_ET_UHB, VPA_2G
P	PWR_SHAPE	VDD_ET*, V*_ET, VET_LX*, VET_ULX
P	PWR_SHAPE	VET_N*

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LB SPAD

D



NET RULE ASSIGNMENT	
DOMAIN	CONSTRAINT SET
P	A_50_WIDE_L1_THIN_SE
	50_LBPA_DRX_OUT, 50_UHBP2_2G_LB*
P	A_50_WIDE_L1_THIN_SE
	50_LBPA_ANT*, 50_LB_TX_ANT1*
P	A_50_WIDE_L1_THIN_SE
	50_TRX_LB_MCL, 50_DRX_LB_MCL

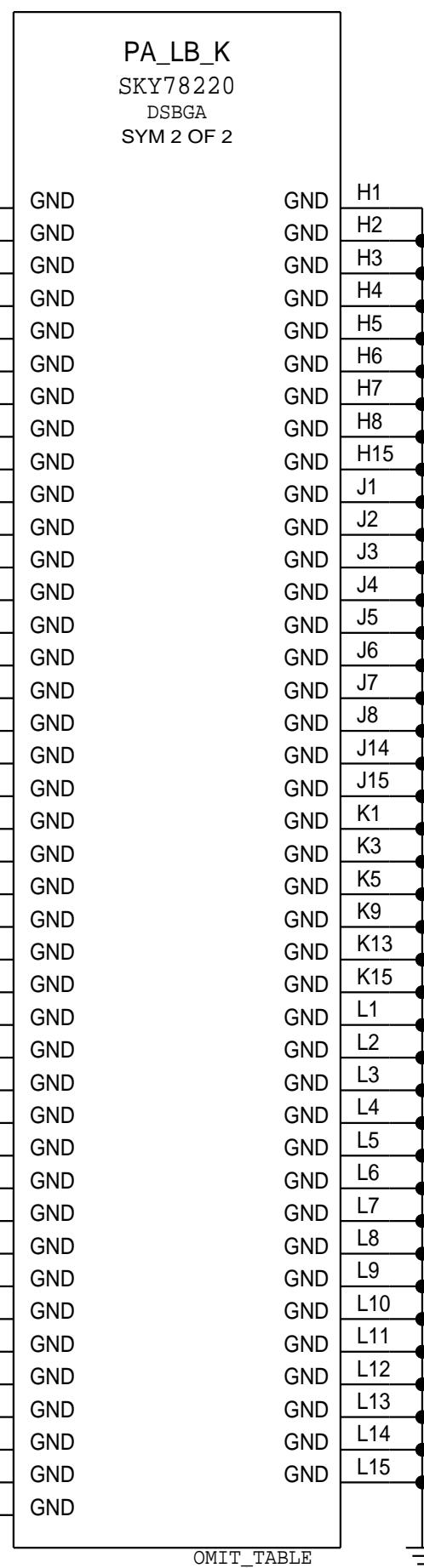
CLASS DEFINITIONS	
CLASS NAME	CONSTRAINT SET
50_WIDE_L1_THIN	S A_DIELECTRIC_2X50_WIDE_L1_THIN_SE
	50_LBPA_DRX_OUT, 50_UHBP2_2G_LB*
50_WIDE_L1_THIN	S A_DIELECTRIC_2X50_WIDE_L1_THIN_SE
	50_LBPA_ANT*, 50_LB_TX_ANT1*
50_WIDE_L1_THIN	S A_DIELECTRIC_2X50_WIDE_L1_THIN_SE
	50_TRX_LB_MCL, 50_DRX_LB_MCL

NET RULE ASSIGNMENT	
DOMAIN	CONSTRAINT SET
P	PWR_2000UM VDD_LNA_LB_PAD

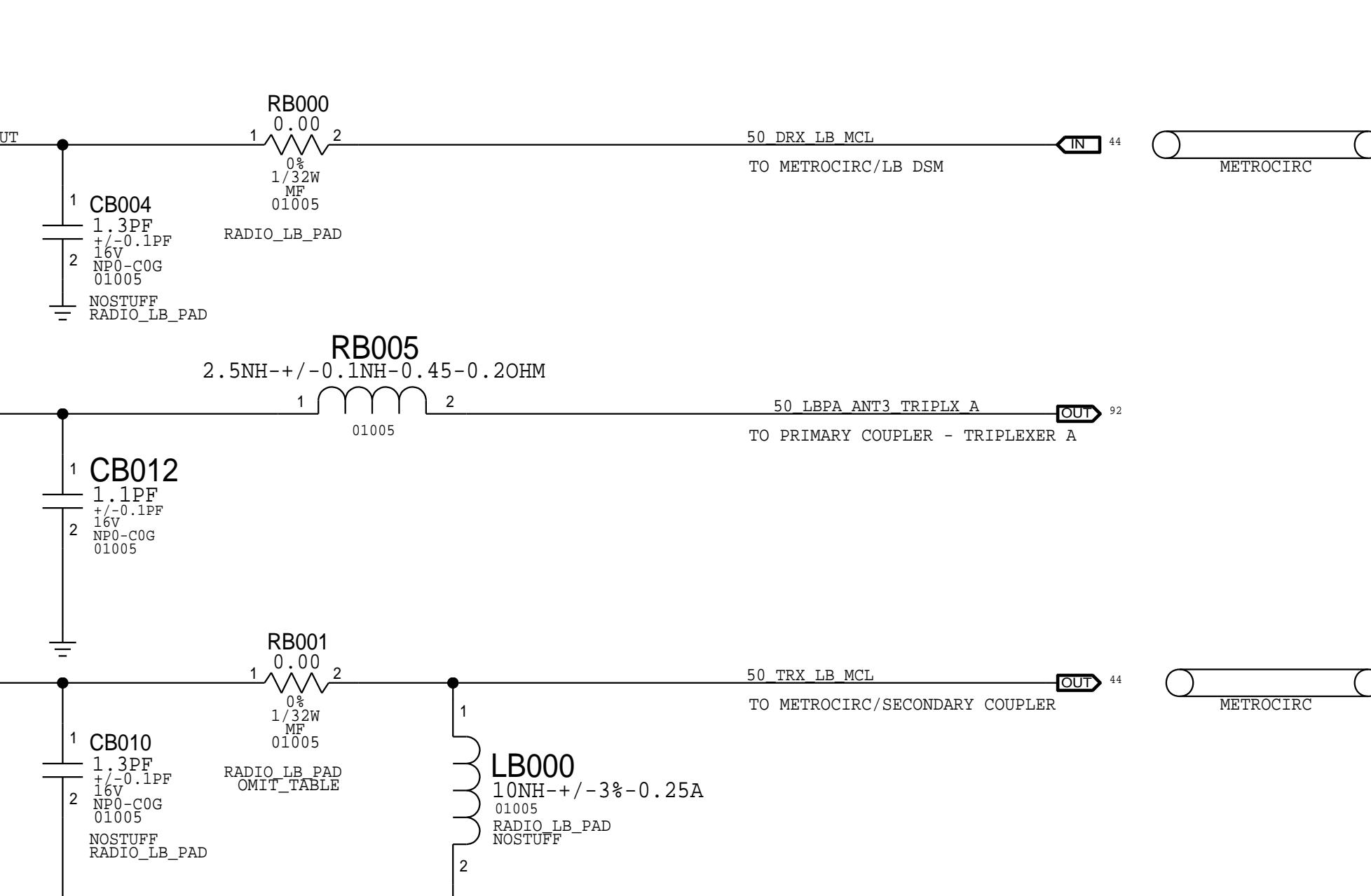
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ICE19.5 V ICE19.6 MATCHING

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
117S0161	1	0 OHM, 01005	RB001	ICE19.5
152S00492	1	1 NH, 01005	RB001	ICE19.6



LB SPAD	
SYNC_MASTER=RADIO_MLB_0_67.0	SYNC_DATE=08/20/2019



PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
353S01907	1	SKY78220-13	PA_LB_K	ROW
353S01908	1	SKY78223-13	PA_LB_K	US

HB SPAD

D

D

C

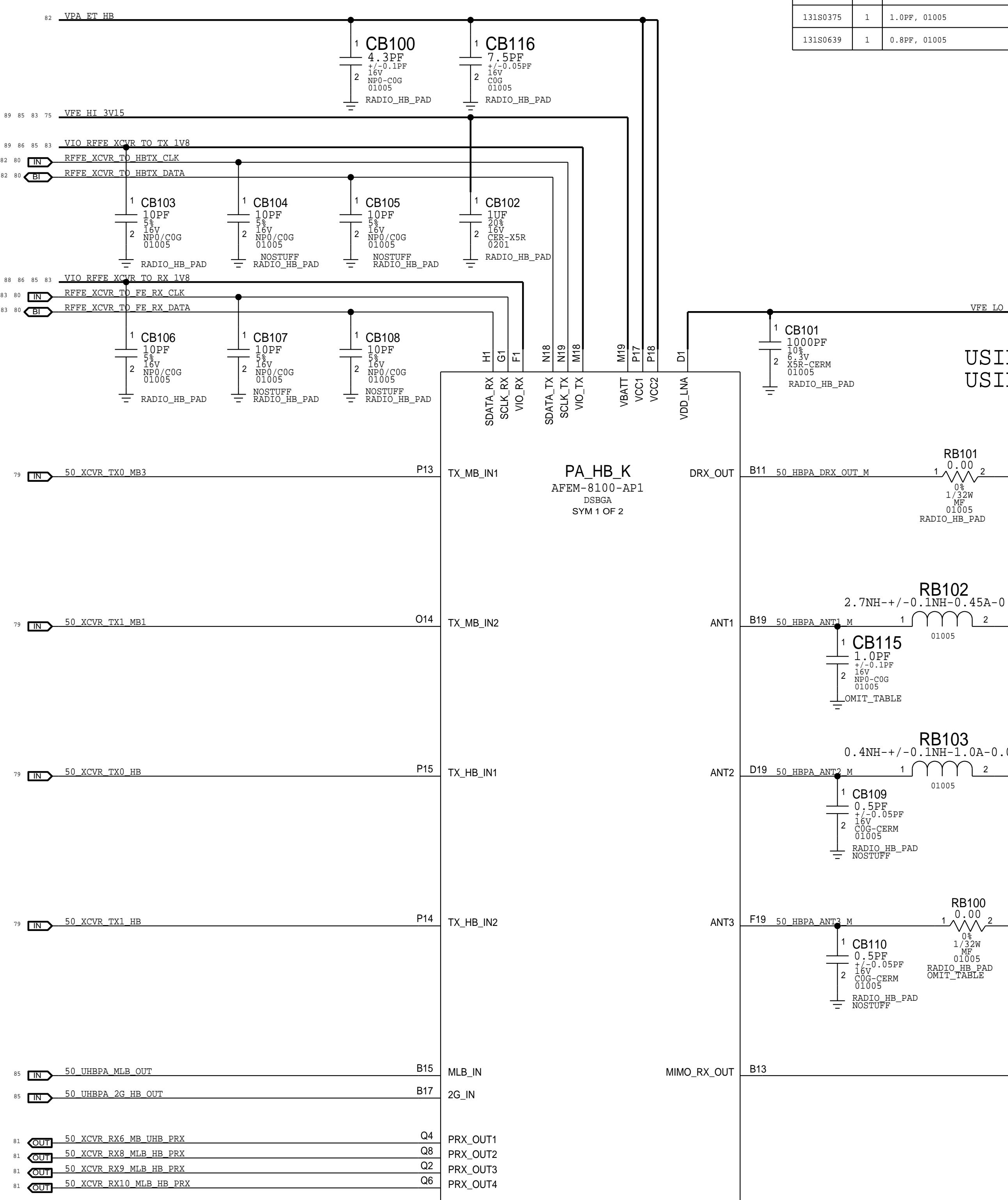
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B

B

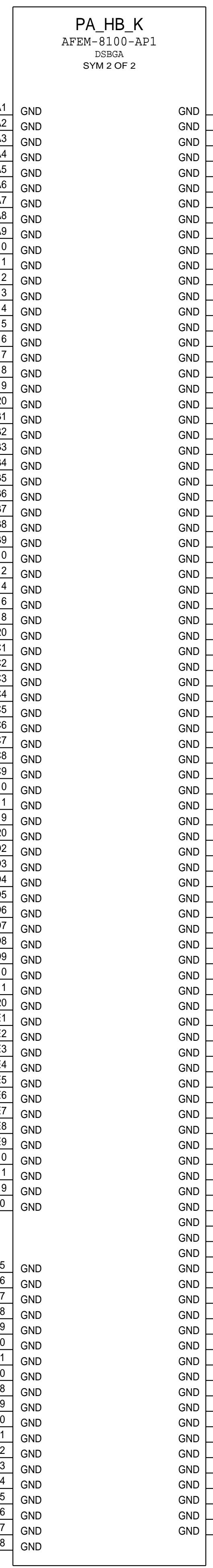
A

A



NET RULE ASSIGNMENT			
DOMAIN	CONSTRAINT SET	COMMA SEPARATED WITH WILDCARD SUPPORT: NET NAMES EX: DDR*	
CLASS NAME	CONSTRAIN SET	DP NAMES EX: DP:DP_AA*,DP_BB* (LINE STARTS WITH FLAG DP:)	
RFFE_SHIELD S A_DIELECTRIC_2X *RFFE*, VIO_RFFE*			
DOMAIN	CONSTRAINT SET	COMMA SEPARATED NET NAMES (WILDCARD SUPPORT EX: DDR*)	
P	PWR_200UM	VFE_HI_3V15, VFE_LO_1V2	
P	PWR_100UM	VIO_RFFE*	
P	PWR_SHAPE	VPA_ET_HB, VPA_ET_IHB, VPA_2G	

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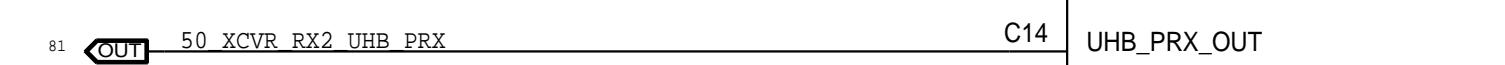
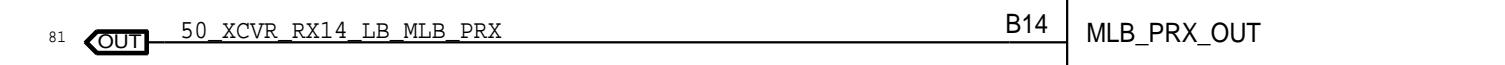
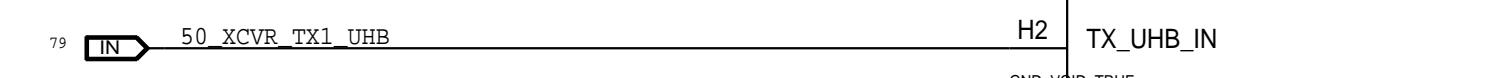
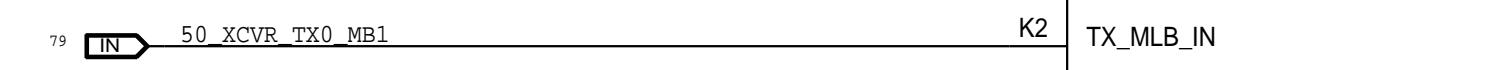
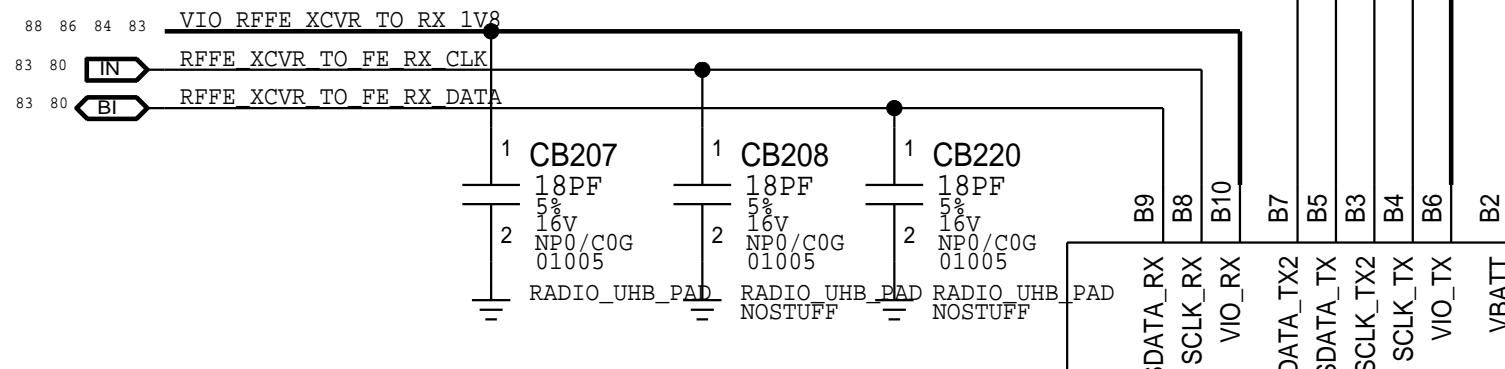
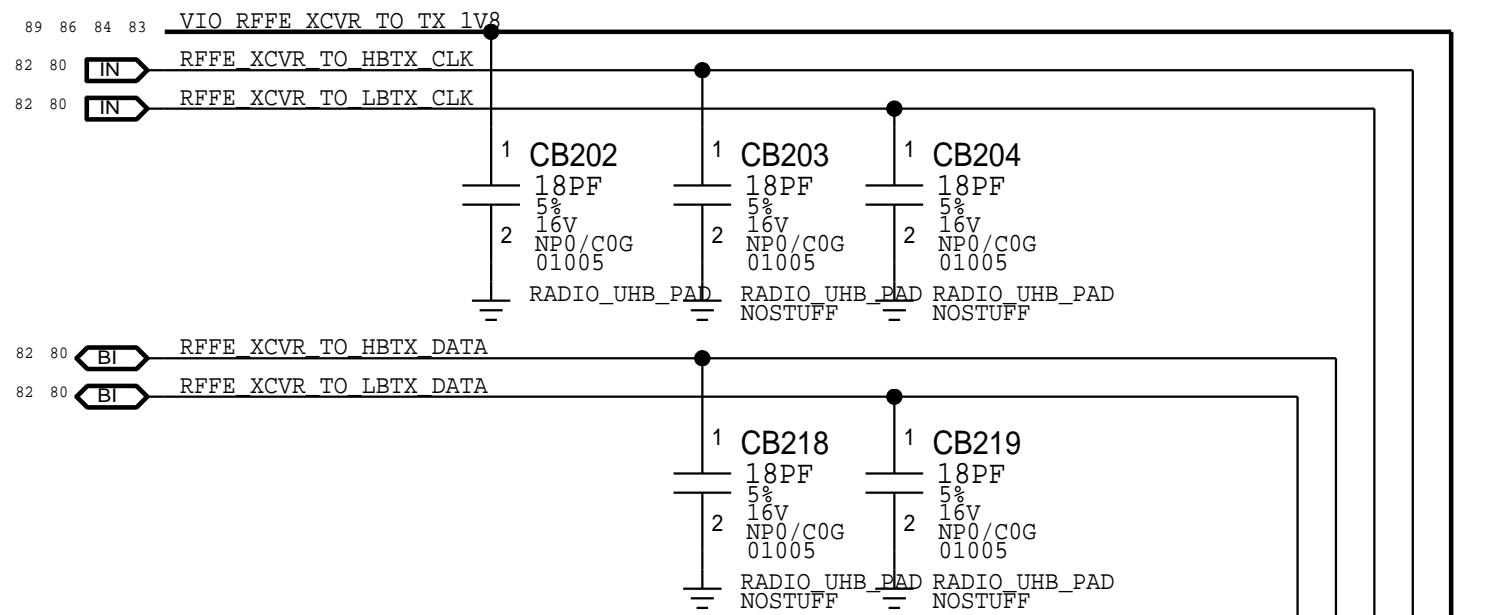
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PAGE TITLE
HB SPAD

SYNC_DATE=08/20/2019

UHB MLB SPAD

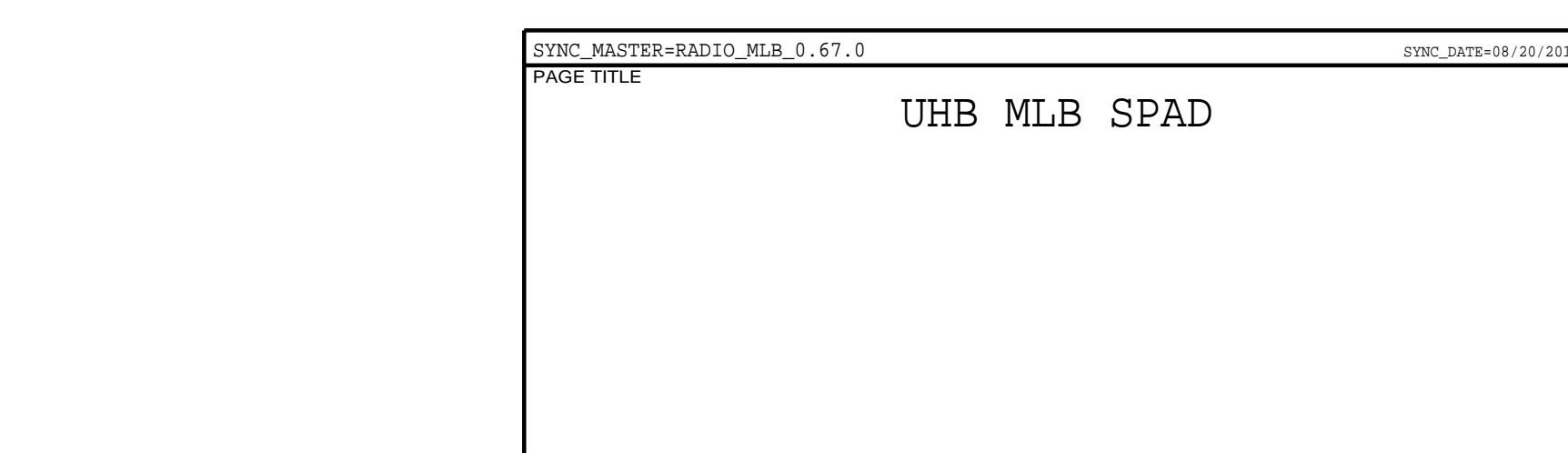
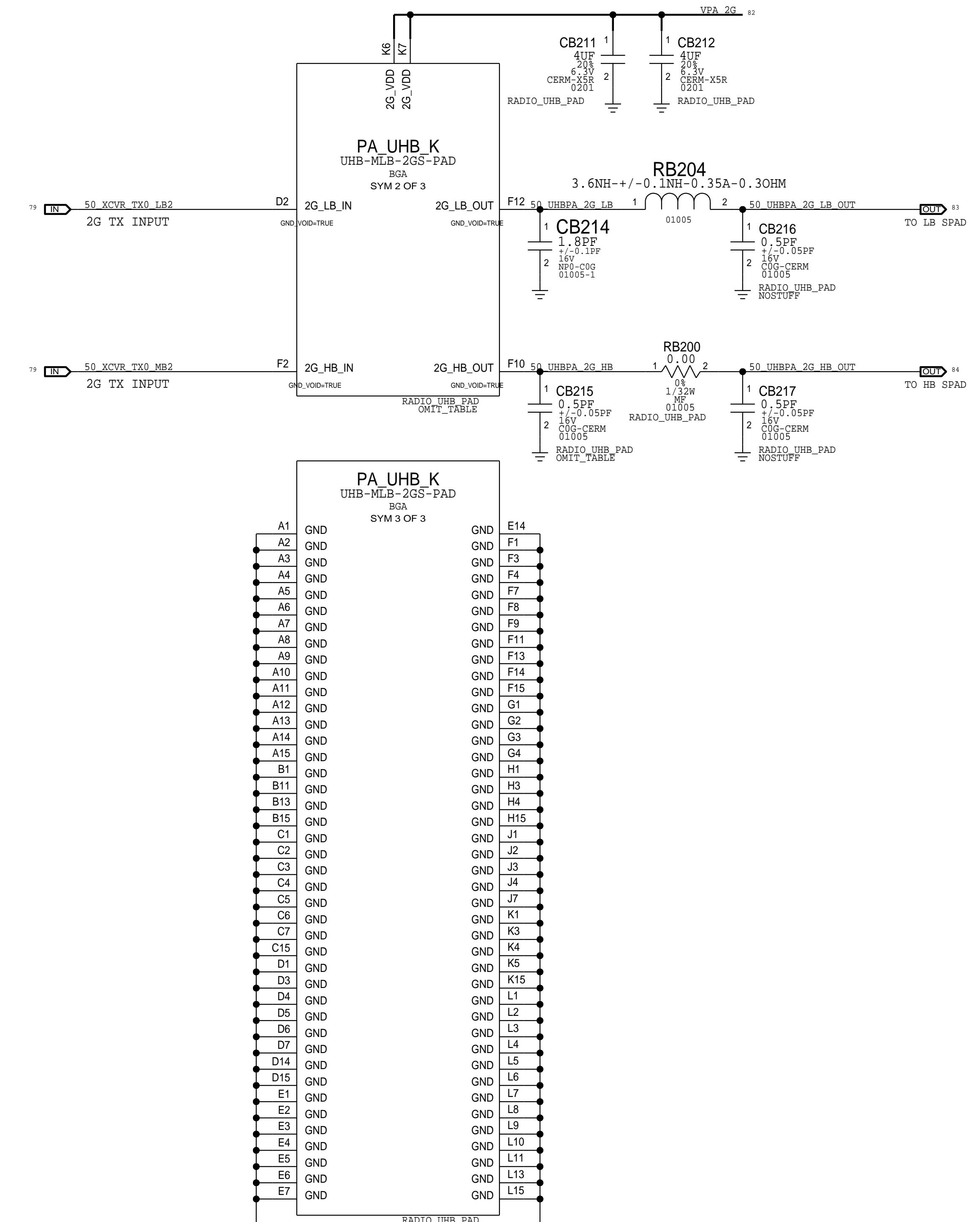
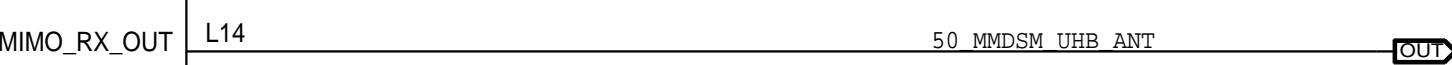
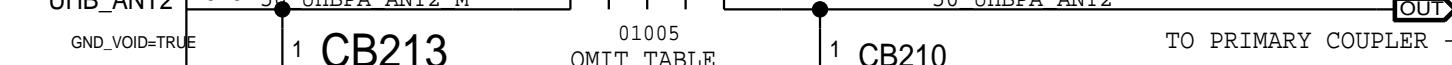
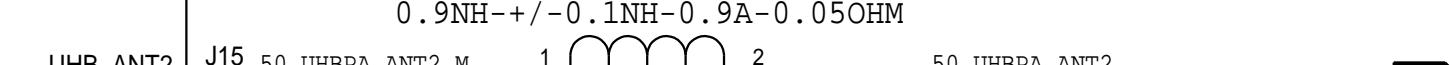
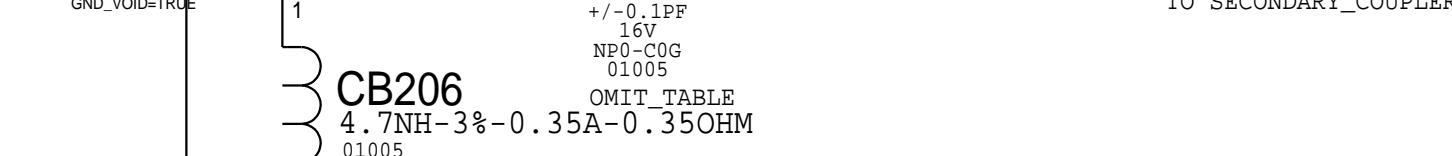
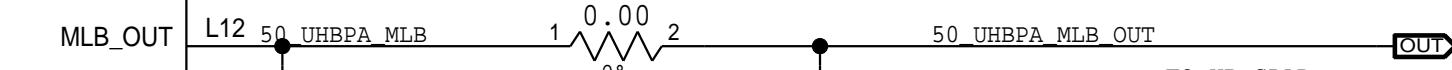
PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
353S01913	1	SKY78201-18	PA_UHB_K	ROW
353S01914	1	SKY78221-11	PA_UHB_K	US

ICE19.5 V ICE19.6 MATCHING				
PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
131S0648	1	0.3PF, 01005	CB215	ICE19.6
152S00520	1	4.7NH, 01005	CB206	ICE19.5
131S0395	1	3.0PF, 01005	RB203	ICE19.5
152S00497	1	0.5NH, 01005	RB203	ICE19.6
152S00493	1	0.9NH, 01005	RB202	ICE19.5
152S00494	1	0.8NH, 01005	RB202	ICE19.6



ICE19.5 V ICE19.6 MATCHING				
PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
131S0648	1	0.3PF, 01005	CB215	ICE19.6
152S00520	1	4.7NH, 01005	CB206	ICE19.5
131S0395	1	3.0PF, 01005	RB203	ICE19.5
152S00497	1	0.5NH, 01005	RB203	ICE19.6
152S00493	1	0.9NH, 01005	RB202	ICE19.5
152S00494	1	0.8NH, 01005	RB202	ICE19.6

USID RX=0X0F
USID TX=0X03



NET RULE ASSIGNMENT	
CONSTRAINT SET	COMMA SEPARATED NET NAMES (WILDCARD SUPPORT EX: DDR*)
P A_50_WIDE_L1_THIN_SE	50_UHBP_A_UHB_M, 50_UHBP_A_ANT2
P A_50_WIDE_L1_THIN_SE	50_UHBP_A_MLB, 50_UHBP_A_MLB_OUT, 50_UHBP_A_2G_LB*
P A_50_WIDE_L1_THIN_SE	50_UHBP_A_ANT2_M, 50_UHBP_A_2G_HB*, 50_TRX_UHB_MCL, 50_MMDSM*
P A_50_WIDE_L1_THIN_SE	50_UHBP_A_ANT1

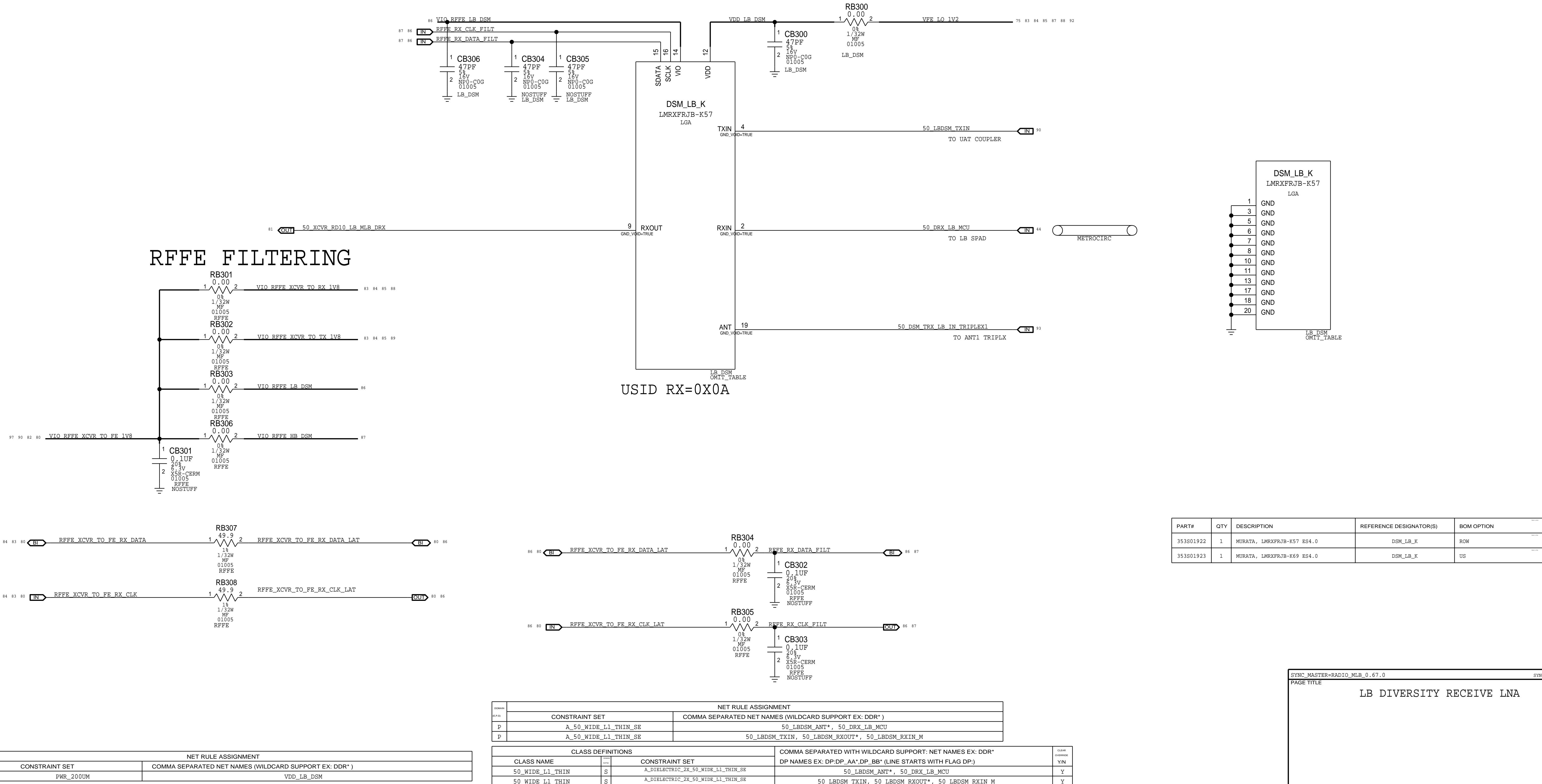
CLASS DEFINITIONS	
CLASS NAME	CONSTRAINT SET
50_WIDE_L1_THIN	A_DIELECTRIC_2X_50_WIDE_L1_THIN_SE

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LB DIVERSITY RECEIVE LNA

D

D



C

6

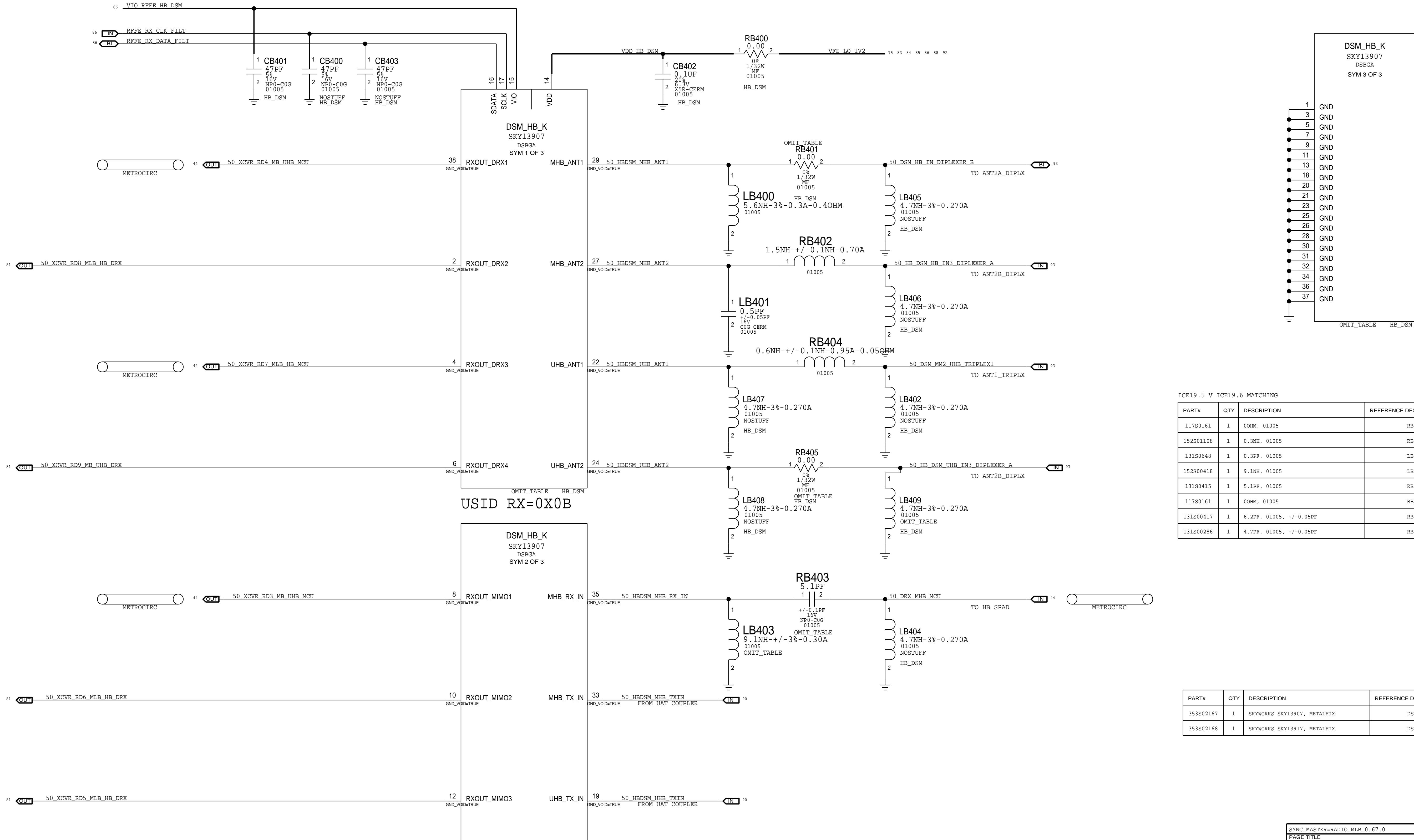
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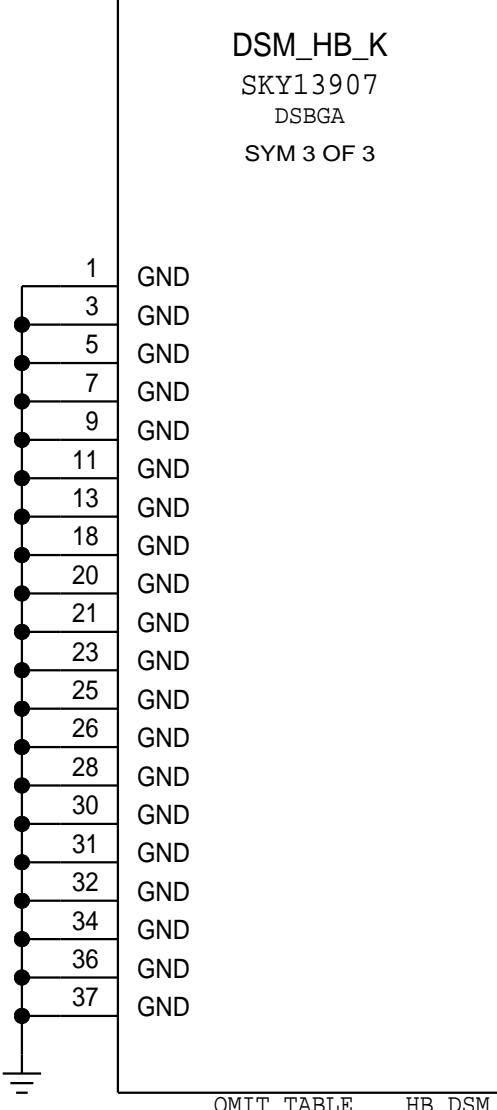
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HB DIVERSITY RECEIVE LNA



DSM_HB_K
SKY13907
DSBGA
SYM 3 OF 3



ICE19.5 V ICE19.6 MATCHING

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
117S0161	1	0OHM, 01005	RB405	ICE19.5
152S01108	1	0.3NH, 01005	RB405	ICE19.6
131S0648	1	0.3PF, 01005	LB409	ICE19.6
152S00418	1	9.1NH, 01005	LB403	ICE19.5
131S0415	1	5.1PF, 01005	RB403	ICE19.5
117S0161	1	0OHM, 01005	RB403	ICE19.6
131S00417	1	6.2PF, 01005, +/-0.05PF	RB401	ICE19.5
131S00286	1	4.7PF, 01005, +/-0.05PF	RB401	ICE19.6

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
353S02167	1	SKYWORKS SKY13907, METALFIX	DSM_HB_K	ROW
353S02168	1	SKYWORKS SKY13917, METALFIX	DSM_HB_K	US

NET RULE ASSIGNMENT			
DOMAIN	CONSTRAINT SET	COMMA SEPARATED NET NAMES (WILDCARD SUPPORT EX: DDR*)	
P	A_50_WIDE_L1_THIN_SE	50_HBDSM_RXOUT*, 50_HBDSM_MHB_TXIN, 50_HBDSM_UHB_TXIN, 50_XCVR*	
P	A_50_WIDE_L1_THIN_SE	50_HBDSM_MHB_ANT*, 50_HBDSM_UHB_ANT*, 50_ANT6_UHB	
P	A_50_WIDE_L1_THIN_SE	50_HBDSM_MHB_RX_IN, 50_HBPA_DRX_OUT*, 50_DRX_MHB MCU	

CLASS DEFINITIONS			
CLASS NAME	CONSTRAINT SET	COMMA SEPARATED WITH WILDCARD SUPPORT: NET NAMES EX: DDR*	
50_WIDE_L1_THIN	S	A_DIELECTRIC_2X50_WIDE_L1_THIN_SE	
50_WIDE_L1_THIN	S	50_HBDSM_RXOUT*, 50_HBDSM_MHB_TXIN, 50_HBDSM_UHB_TXIN	
50_WIDE_L1_THIN	S	50_HBDSM_MHB_ANT*, 50_HBDSM_UHB_ANT*, 50_ANT6_UHB	
50_WIDE_L1_THIN	S	50_HBDSM_MHB_RX_IN, 50_HBPA_DRX_OUT*, 50_DRX_MHB MCU	

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PAGE TITLE: HB DIVERSITY RECEIVE LNA
SYNC_DATE=08/20/2019

NET RULE ASSIGNMENT	
CONSTRAINT SET	COMMA SEPARATED NET NAMES (WILDCARD SUPPORT EX: DDR*)
PWR_200UM	VDD_HB_DSM

MIMO DSM

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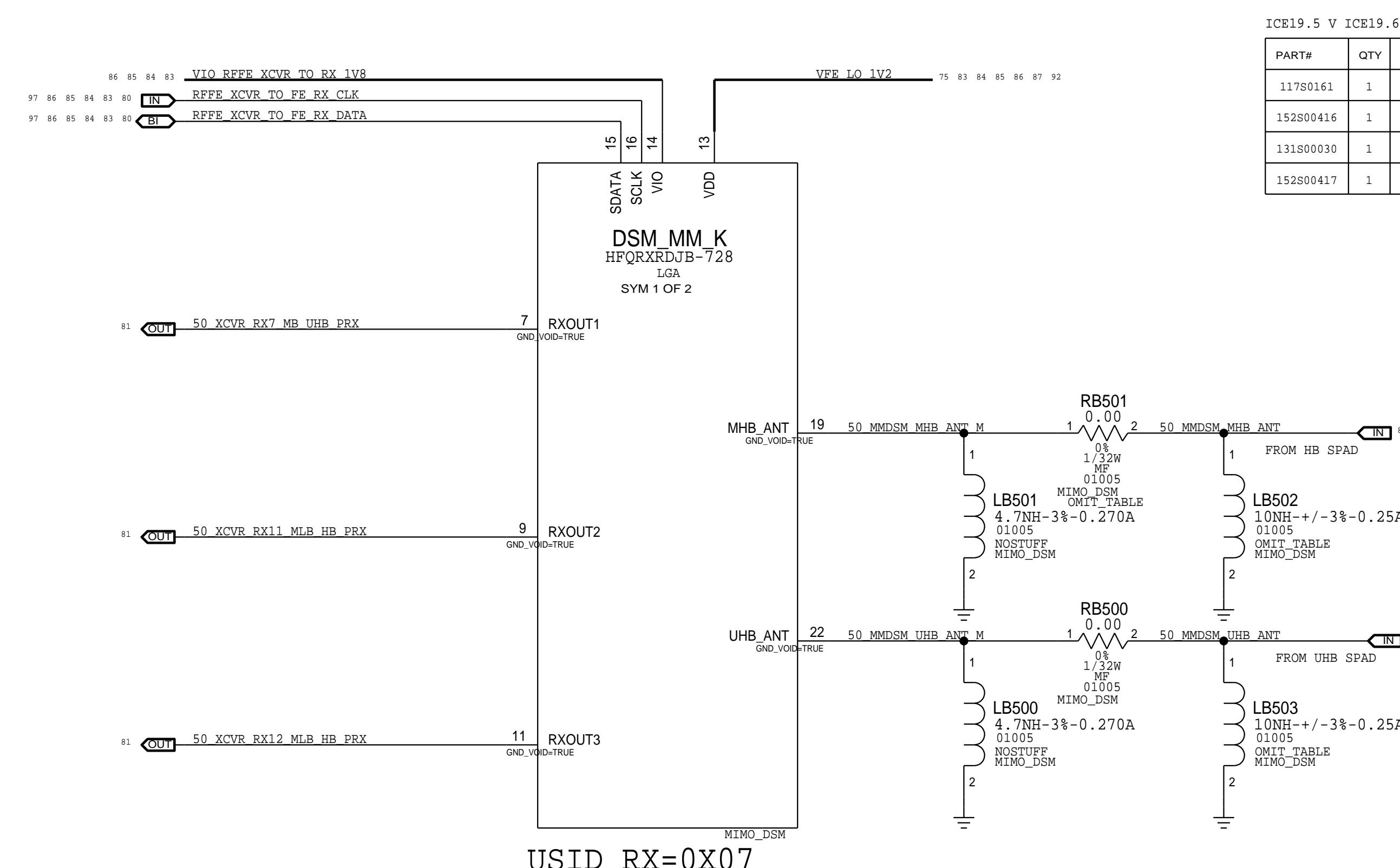
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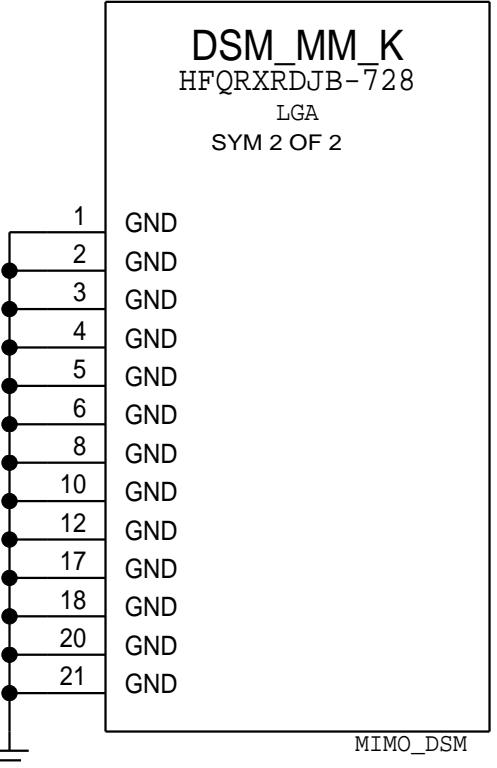
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ICE19.5 V ICE19.6 MATCHING				
PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
117S0161	1	0OHM, 01005	RB501	ICE19.5
152S00416	1	1.2NH, 01005	RB501	ICE19.6
131S00030	1	0.4PF, 01005	LB502	ICE19.6
152S00417	1	10NH, 01005	LB503	ICE19.6

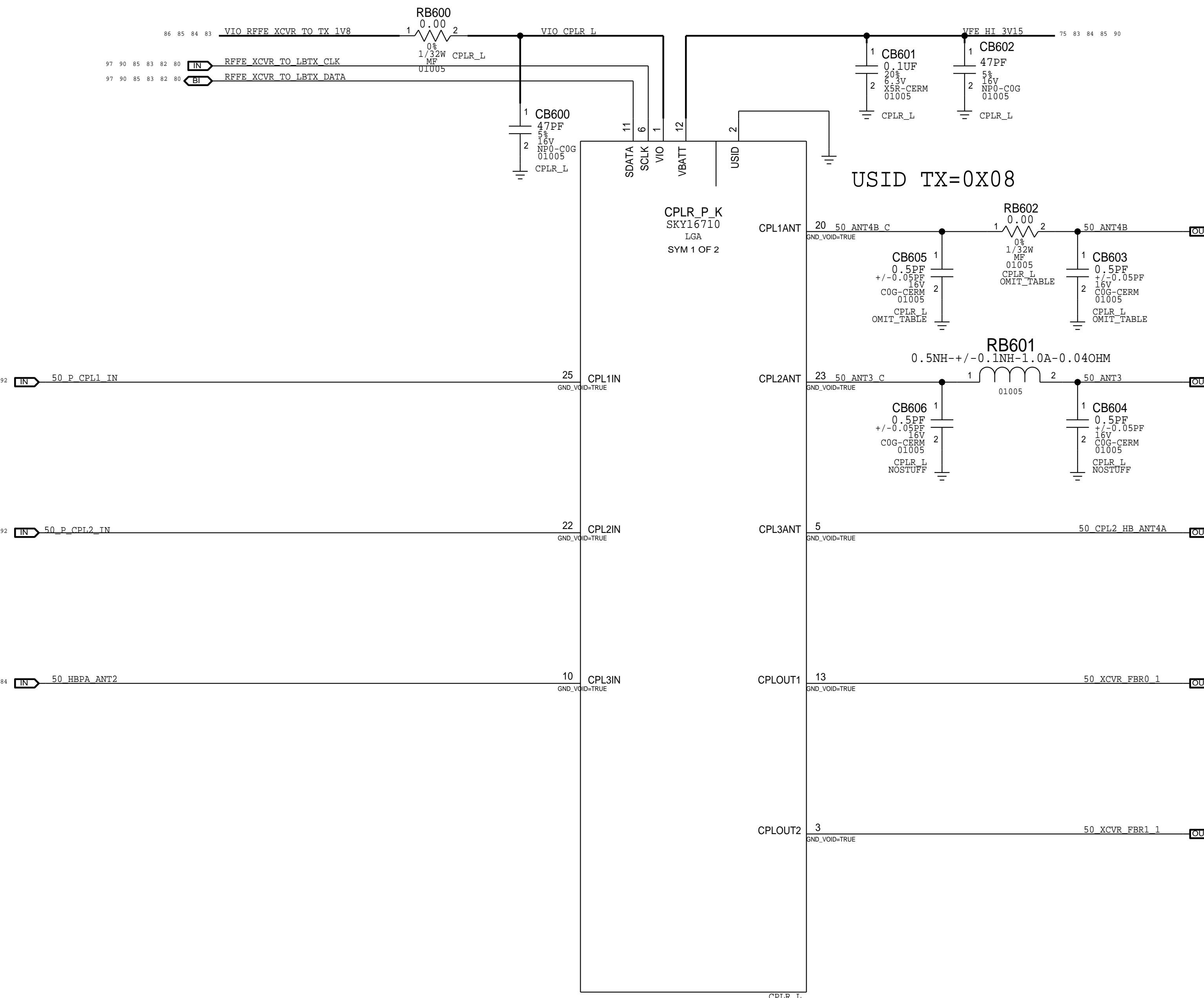


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MIMO RECIEVE LNA		

PRIMARY COUPLER

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ICE19.5 V ICE19.6 MATCHING

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
131S0369	1	0.5PF, 01005	CB603	ICE19.6
131S0369	1	0.5PF, 01005	CB605	ICE19.6
152S00423	1	1.6NH, 01005	RB602	ICE19.6
117S0161	1	0.0OHM, 01005	RB602	ICE19.5

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NET RULE ASSIGNMENT	
CONSTRAINT SET	COMMA SEPARATED NET NAMES (WILDCARD SUPPORT EX: DDR*)

PWR_100UM VIO_CPLR*

NET RULE ASSIGNMENT		
DOMAIN	CONSTRAINT SET	COMMA SEPARATED NET NAMES (WILDCARD SUPPORT EX: DDR*)
P	A_50_THIN_SE	50_XCVR_FBR*
P	A_50_WIDE_L1_THIN_SE	50_CPLR_ANT1
P	A_50_WIDE_L2_THIN_SE	50_ANT1, 50_ANT1_CPLR_OUT, 50_ANT3_C, 50_ANT4B_C
P	A_50_WIDE_2_SE	50_ANT3, 50_ANT4B

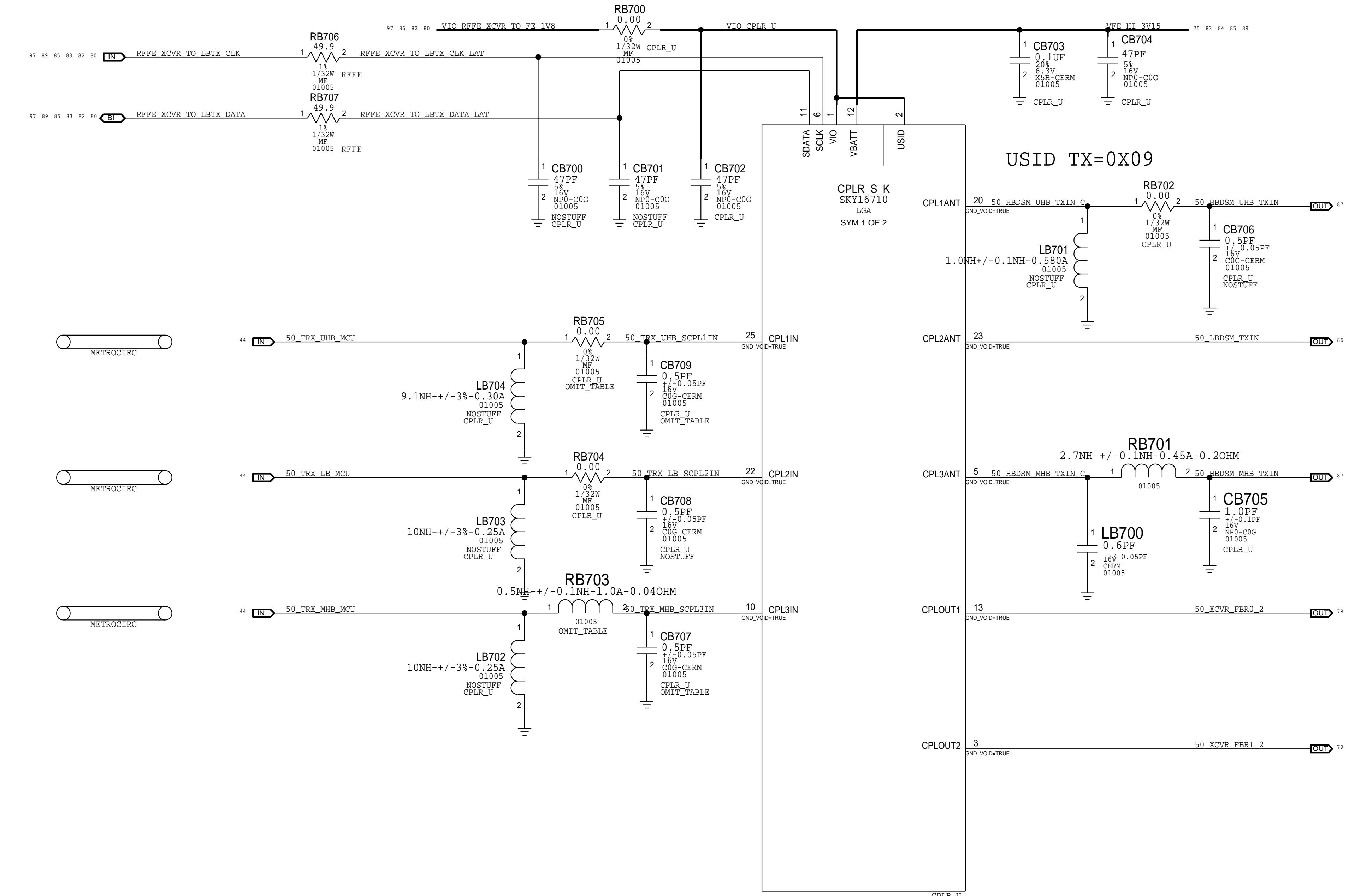
CLASS DEFINITIONS		
CLASS NAME	CONSTRAINT SET	COMMA SEPARATED WITH WILDCARD SUPPORT: NET NAMES EX: DDR* DP NAMES EX: DP.DP_AA*, DP_BB* (LINE STARTS WITH FLAG DP:)
50_THIN	S A_DIELECTRIC_2X_50_WIDE_L1_THIN_SE	50_XCVR_FBR*
50_WIDE_L1_THIN	S A_DIELECTRIC_2X_50_WIDE_L1_THIN_SE	50_CPLR_ANT1
50_WIDE_L2_THIN	S A_DIELECTRIC_2X_50_WIDE_L2_THIN_SE	50_ANT1, 50_ANT1_CPLR_OUT, 50_ANT3_C, 50_ANT4B_C
50_WIDE_2_SE	S A_DIELECTRIC_2X_50_WIDE_2_SE	50_ANT3, 50_ANT4B

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PAGE TITLE	
PRIMARY COUPLER	

SECONDARY COUPLER

ICE19.5 V ICE19.6 MATCHING

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
131S0648	1	0.3PF, 01005	CB709	ICE19.6
117S0161	1	0OHM, 01005	RB705	ICE19.5
152S00494	1	0.8NH, 01005	RB705	ICE19.6
152S00497	1	0.5NH, 01005	RB703	ICE19.5
152S00416	1	1.2NH, 01005	RB703	ICE19.6
131S0893	1	0.2PF, 01005	CB707	ICE19.6



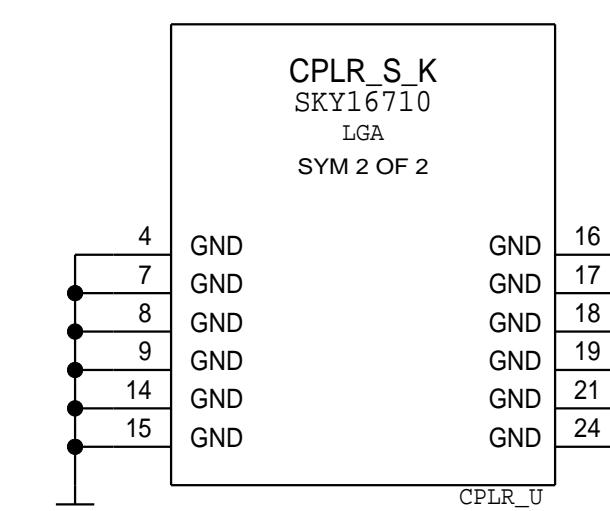
CLASS TO CLASS SPACING		
CLASS NAME	CLASS NAME	CONSTRAINT SET
50_WIDE_L1_THIN	50_WIDE	A_DIELECTRIC_4XV_50_WIDE_SE
50_WIDE_L1_THIN	50_THIN	A_DIELECTRIC_4XD_50_WIDE_L1_THIN_SE
50_WIDE_L1_THIN	50_THIN_UNSHIELDED	A_DIELECTRIC_4XD_50_WIDE_L1_THIN_SE

NET RULE ASSIGNMENT		
DOMAIN	CONSTRAINT SET	COMMA SEPARATED NET NAMES (WILDCARD SUPPORT EX: DDR*)
P	PWR_100UM	VIO_CPLR*

NET RULE ASSIGNMENT		
DOMAIN	CONSTRAINT SET	COMMA SEPARATED NET NAMES (WILDCARD SUPPORT EX: DDR*)
P	A_50_WIDE_L1_THIN	50_CPLU*
P	A_50_WIDE_L1_THIN	50_TRX*, 50_LBDSM_TXIN_C
P	A_50_WIDE_L1_THIN	50_HBDSM_MHB_TXIN_C, 50_HBDSM_UHB_TXIN_C
P	A_50_WIDE_2	50_TRX_UHB MCU

CLASS DEFINITIONS		
CLASS NAME	CONSTRAINT SET	COMMA SEPARATED WITH WILDCARD SUPPORT: NET NAMES EX: DDR* DP NAMES EX: DP:DP_AA,DP_BB* (LINE STARTS WITH FLAG DP:)
50_WIDE_L1_THIN	S	A_DIELECTRIC_2X_50_WIDE_L1_THIN_SE 50_CPLU*
50_WIDE_L1_THIN	S	A_DIELECTRIC_2X_50_WIDE_L1_THIN_SE 50_TRX*, 50_LBDSM_TXIN_C
50_WIDE_L1_THIN	S	A_DIELECTRIC_2X_50_WIDE_L1_THIN_SE 50_HBDSM_MHB_TXIN_C, 50_HBDSM_UHB_TXIN_C
50_WIDE_2	S	A_DIELECTRIC_2X_50_WIDE_2_SE 50_TRX_UHB MCU

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UAT / PRIMARY ANTENNA FEED

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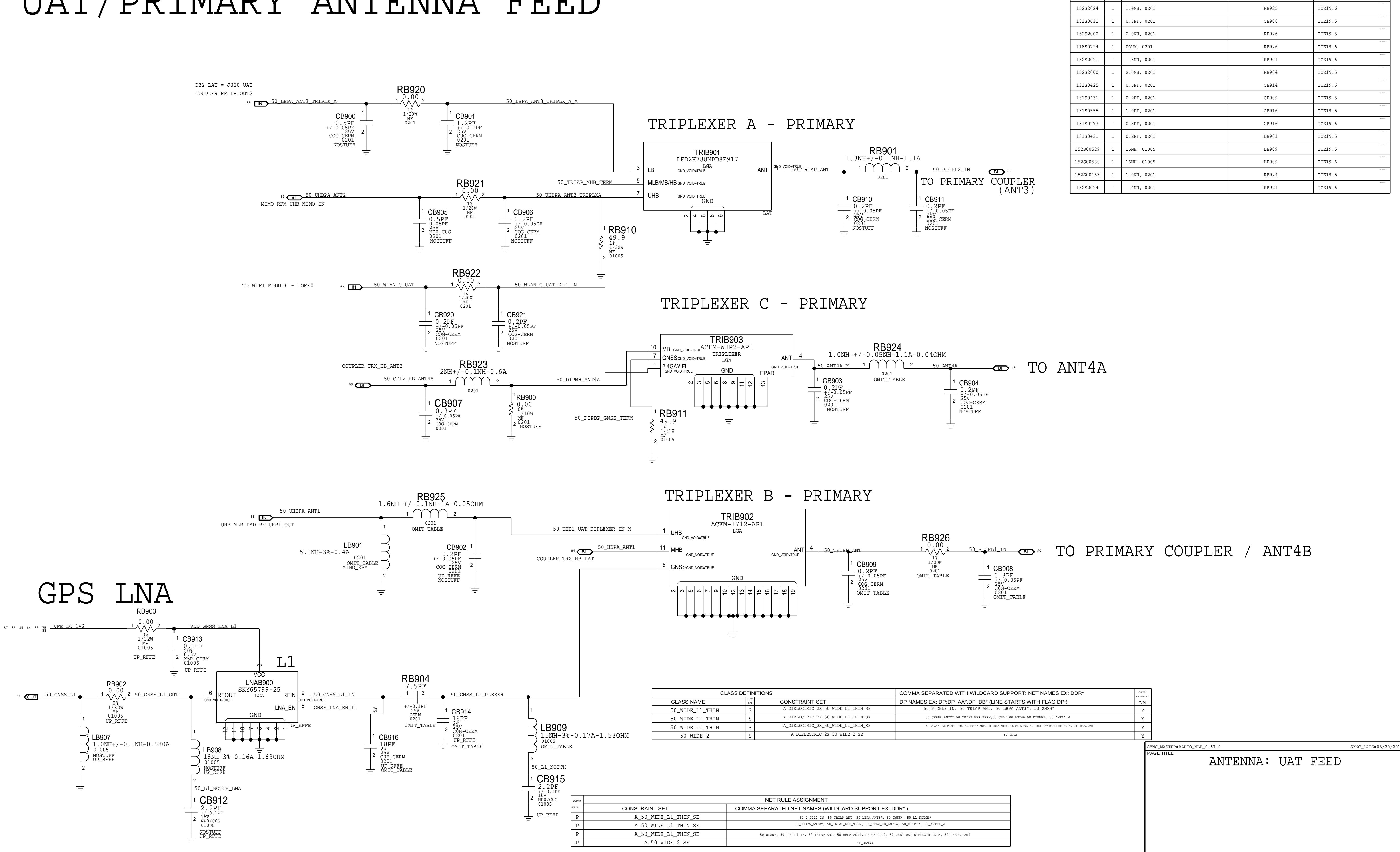
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ICE19.5 V ICE19.6 MATCHING

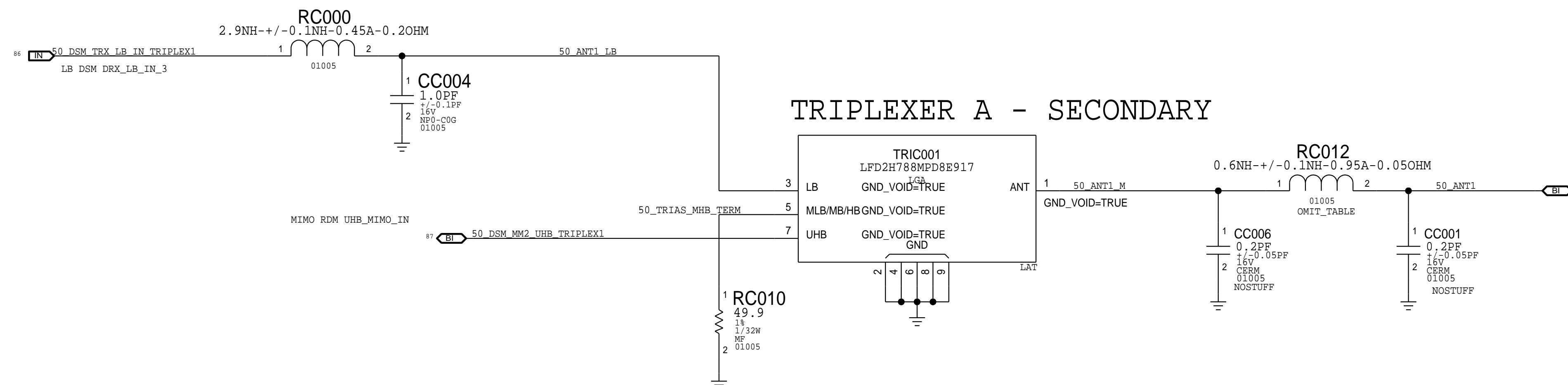
PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
152S2051	1	1.3NH, 0201	RB925	ICE19.5
152S2024	1	1.4NH, 0201	RB925	ICE19.6
131S0631	1	0.3PF, 0201	CB908	ICE19.5
152S2000	1	2.0NH, 0201	RB926	ICE19.5
118S0724	1	0.0MH, 0201	RB926	ICE19.6
152S2021	1	1.5NH, 0201	RB904	ICE19.6
152S2000	1	2.0NH, 0201	RB904	ICE19.5
131S0425	1	0.5PF, 0201	CB914	ICE19.6
131S0431	1	0.2PF, 0201	CB909	ICE19.5
131S0555	1	1.0PF, 0201	CB916	ICE19.5
131S0273	1	0.8PF, 0201	CB916	ICE19.6
131S0431	1	0.2PF, 0201	LB901	ICE19.5
152S00529	1	15NH, 01005	LB909	ICE19.5
152S00530	1	16NH, 01005	LB909	ICE19.6
152S00153	1	1.0NH, 0201	RB924	ICE19.5
152S2024	1	1.4NH, 0201	RB924	ICE19.6

CLASS DEFINITIONS		COMMA SEPARATED WITH WILDCARD SUPPORT: NET NAMES EX: DDR*
CLASS NAME	CONSTRAINT SET	COMMA SEPARATED NET NAMES (WILDCARD SUPPORT EX: DDR*)
50_WIDE_L1_THIN	S	A_DIELECTRIC_2X_50_WIDE_L1_THIN_SE 50_CPL2_IN, 50_TRIAP_ANT, 50_UHBA_ANT1*, 50_GNSS*
50_WIDE_L1_THIN	S	A_DIELECTRIC_2X_50_WIDE_L1_THIN_SE 50_UHBA_ANT2*, 50_TRIAP_MHB_TERM, 50_CPL2_HB_ANT4A, 50_DIMPH*, 50_ANT4A_M
50_WIDE_L1_THIN	S	A_DIELECTRIC_2X_50_WIDE_L1_THIN_SE 50_WAN*, 50_CPL1_IN, 50_TRIAP_ANT, 50_HBPA_ANT1, 50_HBPA_ANT2, 50_HBPA_ANT3, 50_HBPA_ANT4
50_WIDE_2	S	A_DIELECTRIC_2X_50_WIDE_2_SE 50_ANT4A

NET RULE ASSIGNMENT		COMMA SEPARATED NET NAMES (WILDCARD SUPPORT EX: DDR*)
CONSTRAINT SET	NET NAMES	COMMA SEPARATED NET NAMES (WILDCARD SUPPORT EX: DDR*)
P	A_50_WIDE_L1_THIN_SE	50_CPL2_IN, 50_TRIAP_ANT, 50_UHBA_ANT1*, 50_GNSS*, 50_L1_NOTCH*
P	A_50_WIDE_L1_THIN_SE	50_UHBA_ANT2*, 50_TRIAP_MHB_TERM, 50_CPL2_HB_ANT4A, 50_DIMPH*, 50_ANT4A_M
P	A_50_WIDE_L1_THIN_SE	50_WAN*, 50_CPL1_IN, 50_TRIAP_ANT, 50_HBPA_ANT1, 50_HBPA_ANT2, 50_HBPA_ANT3, 50_HBPA_ANT4
P	A_50_WIDE_2_SE	50_ANT4A

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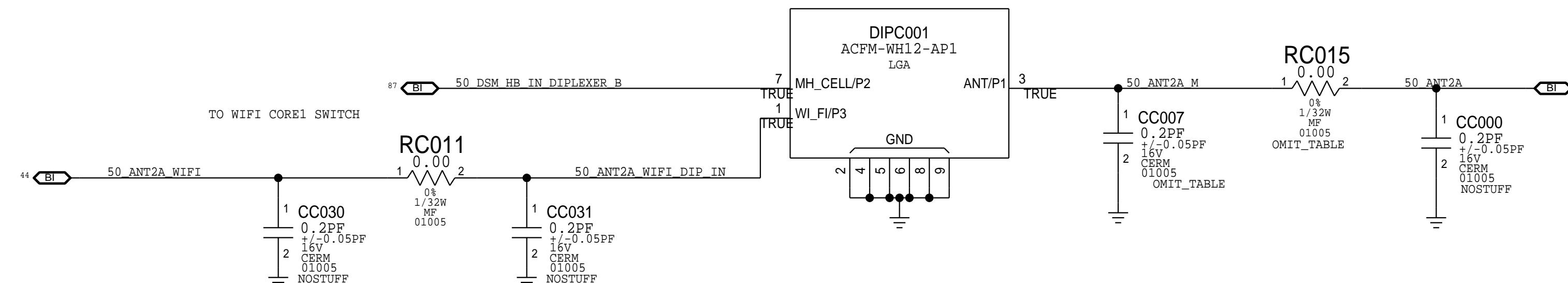


ICE19.5 V ICE19.6 MATCHING

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
131S0893	1	0.2PF, 01005	CC007	ICE19.5
131S0648	1	0.3PP, 01005	CC007	ICE19.6
152S00496	1	0.6NH, 01005	RC012	ICE19.5
152S00493	1	0.9NH, 01005	RC012	ICE19.6
117S0161	1	0.0MM, 01005	RC015	ICE19.5
152S00492	1	1.0NH, 01005	RC015	ICE19.6

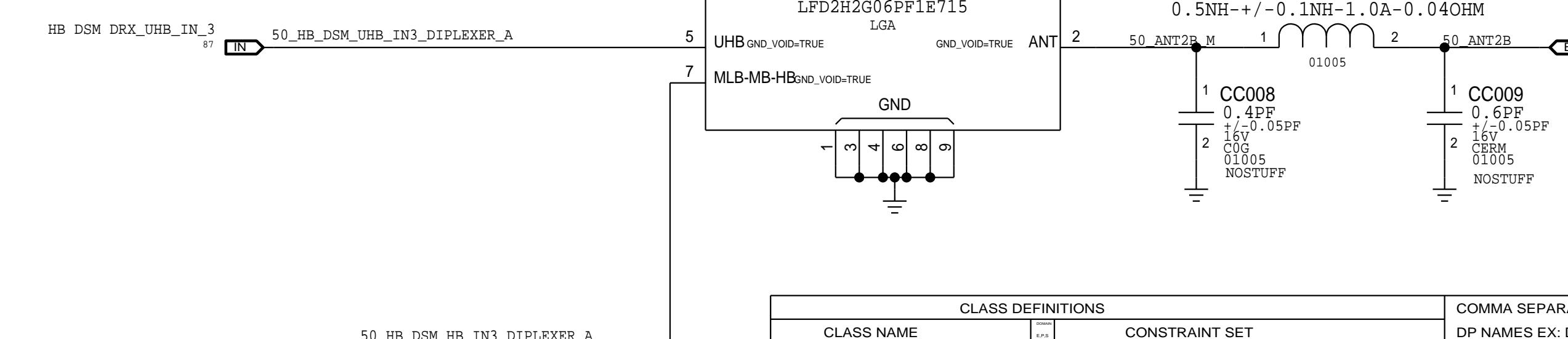
DIPLEXER B - SECONDARY

ANT2A



DIPLEXER A - SECONDARY

ANT2B



CLASS DEFINITIONS		COMMA SEPARATED WITH WILDCARD SUPPORT: NET NAMES EX: DDR*	CLEAR OVERRIDE Y/N
CLASS NAME	CONSTRAINT SET	DP NAMES EX: DP:DP_AA*DP_BB*(LINE STARTS WITH FLAG DP*)	
50_WIDE_L1_THIN	S A_DIELECTRIC_3X_50_WIDE_L1_THIN_SE	50_ANT1*, 50_DSM*, 50_TRIAP_MHB_TERM	Y
50_WIDE_L1_THIN	S A_DIELECTRIC_3X_50_WIDE_L1_THIN_SE	50_HB_DSM*	Y
50_WIDE_L1_THIN	S A_DIELECTRIC_3X_50_WIDE_L1_THIN_SE	50_ANT2B_M, 50_ANT2A_M	Y
50_WIDE_2	S A_DIELECTRIC_2X_50_WIDE_2_SE	50_ANT2B, 50_ANT2A	Y

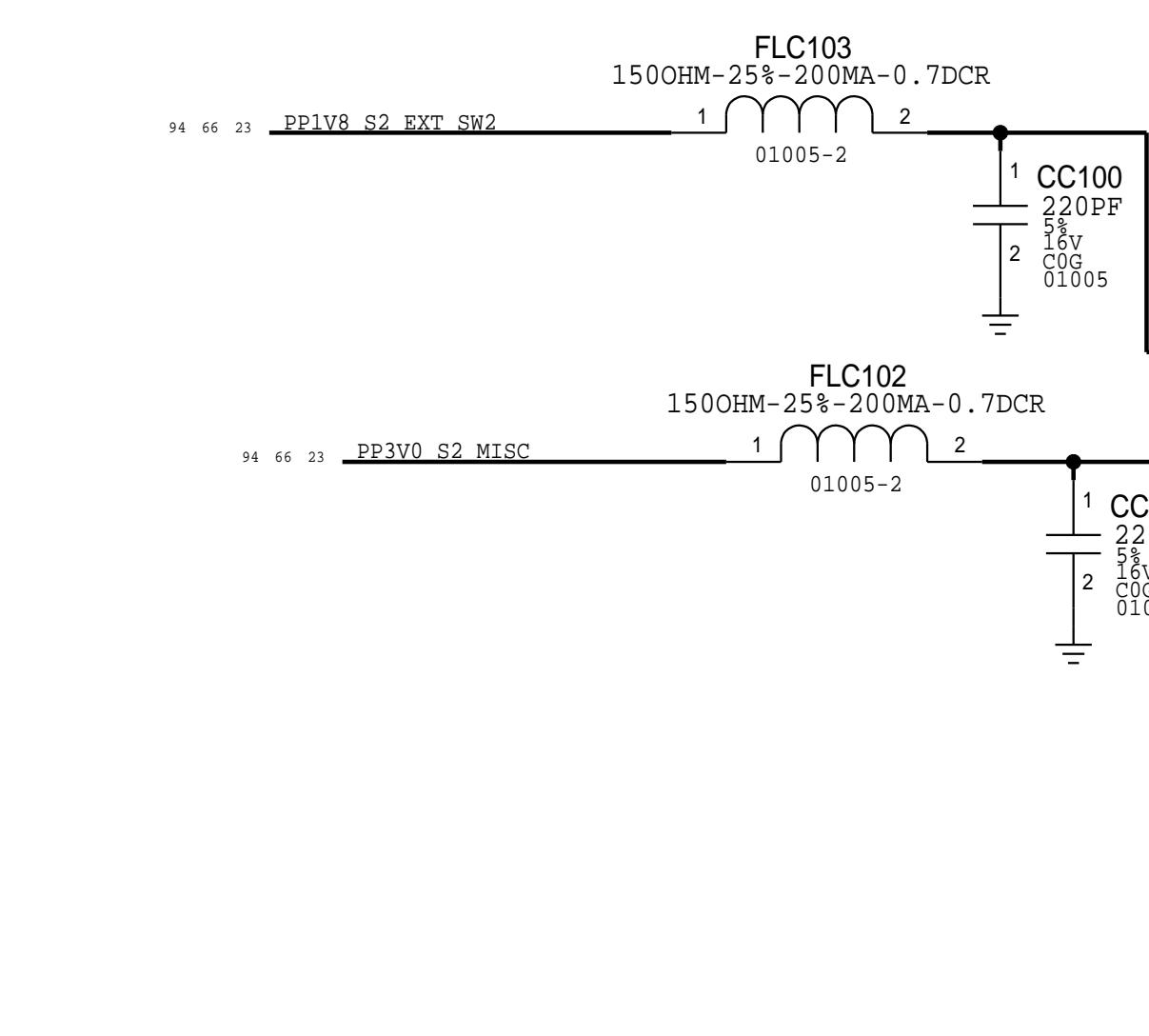
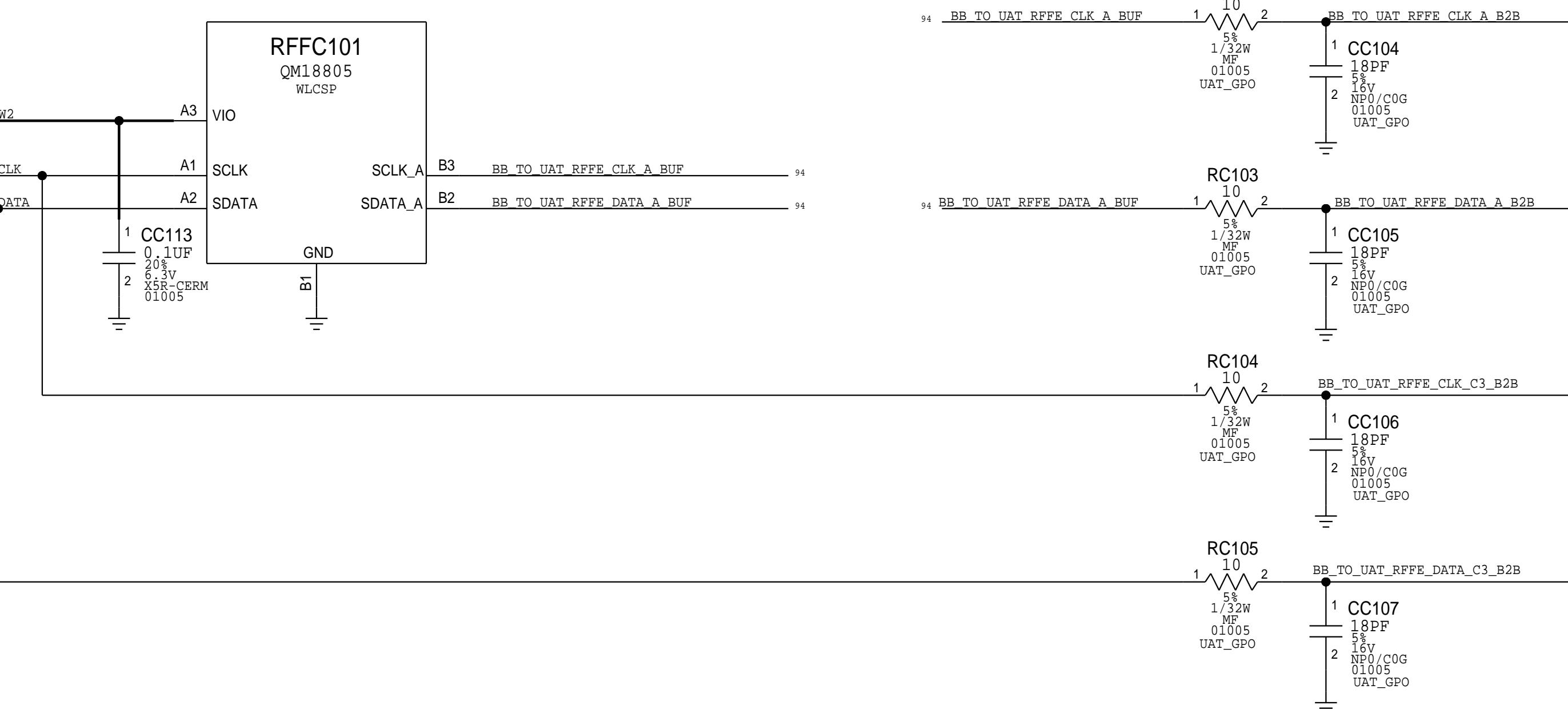
NET RULE ASSIGNMENT		
DOMAIN	CONSTRAINT SET	COMMA SEPARATED NET NAMES (WILDCARD SUPPORT EX: DDR*)
P	A_50_WIDE_L1_THIN_SE	50_ANT1*, 50_DSM*, 50_TRIAP_MHB_TERM, 50_ANT2A_M, 50_ANT2B_M
P	A_50_WIDE_L1_THIN_SE	50_HB_DSM*
P	A_50_WIDE_2_SE	50_ANT2B, 50_ANT2A

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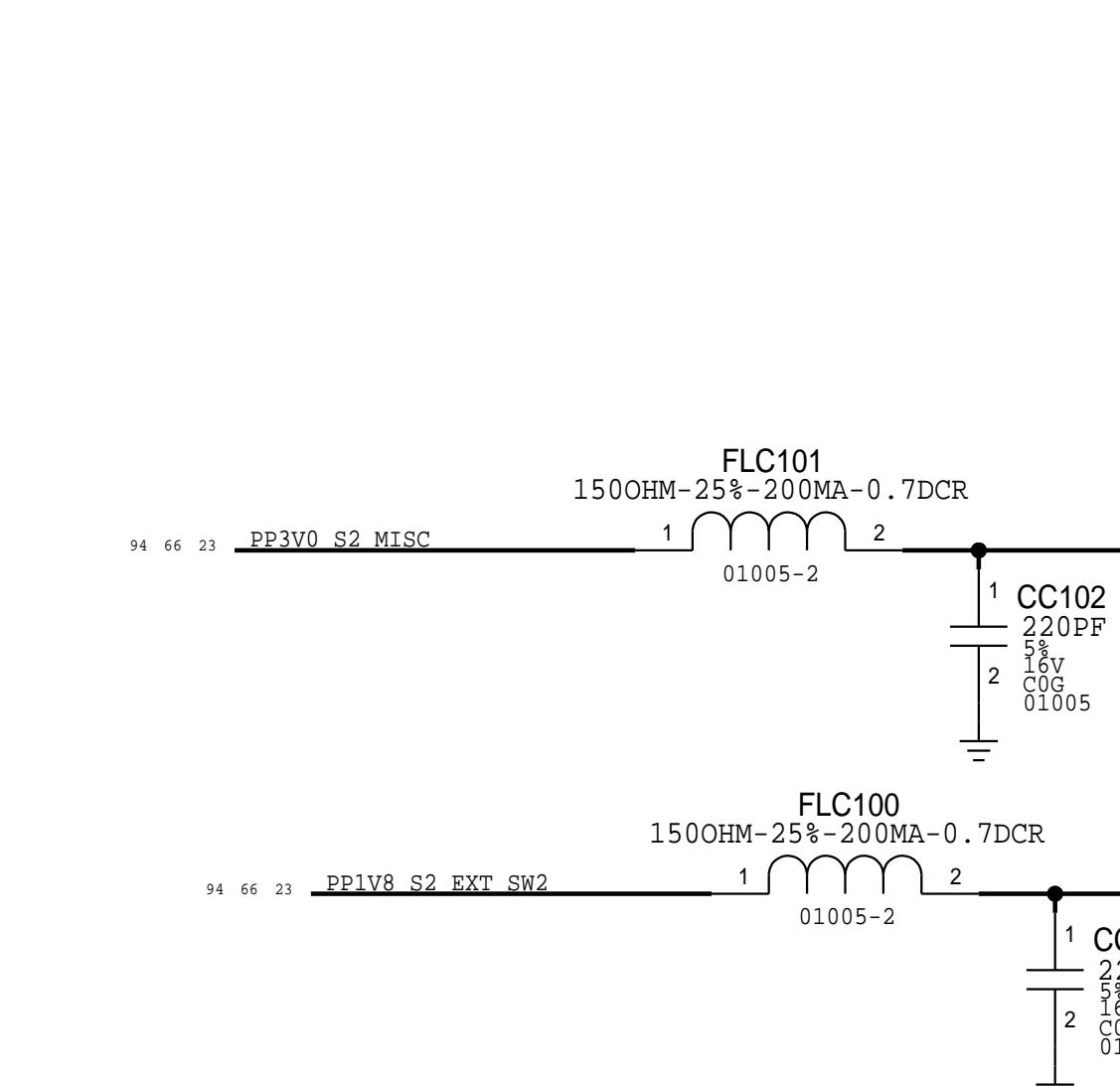
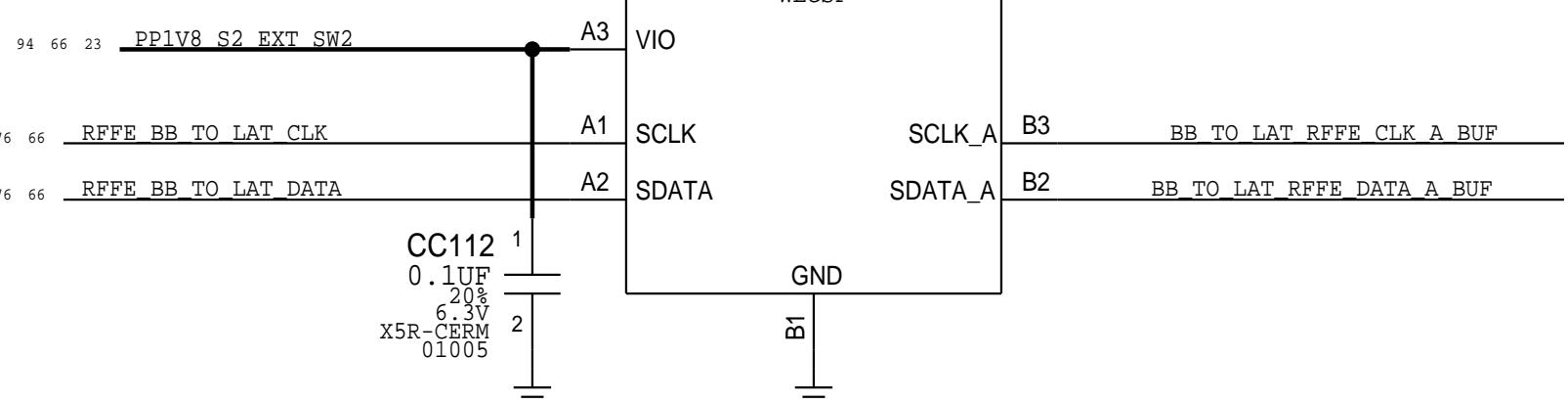
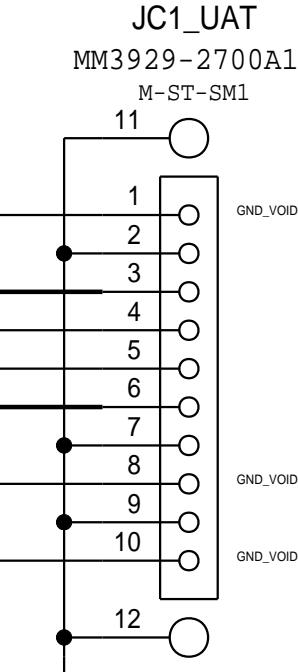
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ANTENNA CELLULAR CONNECTIONS

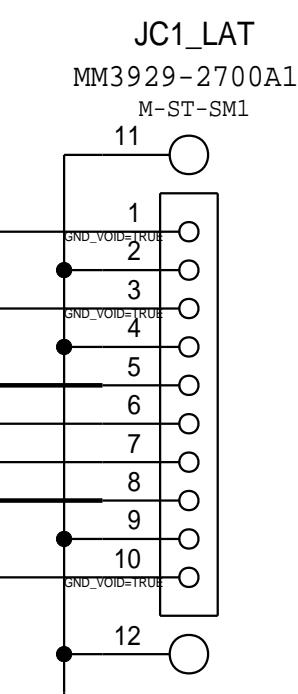
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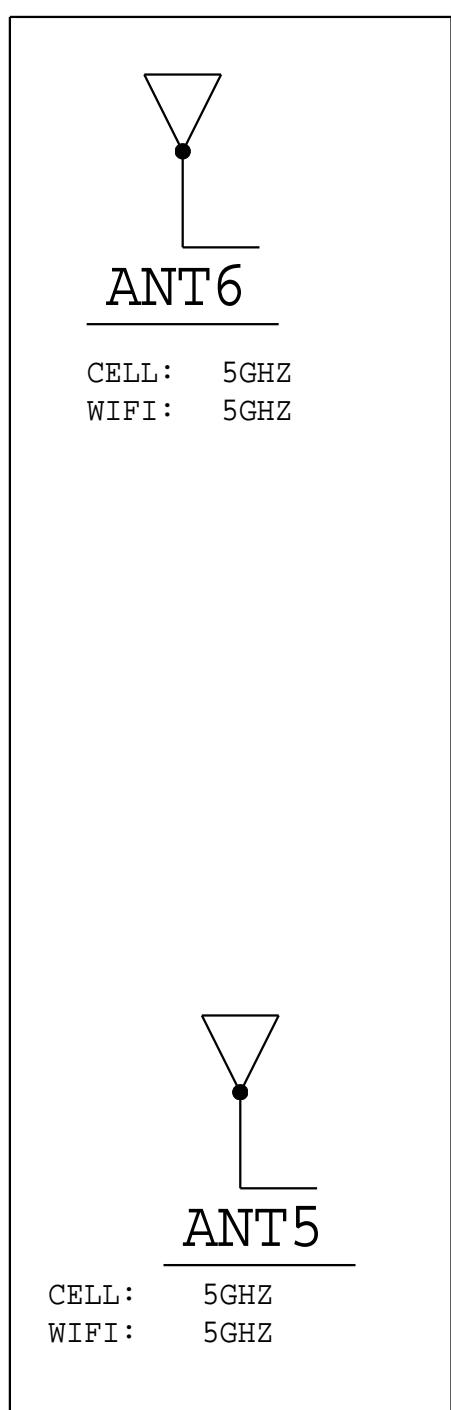
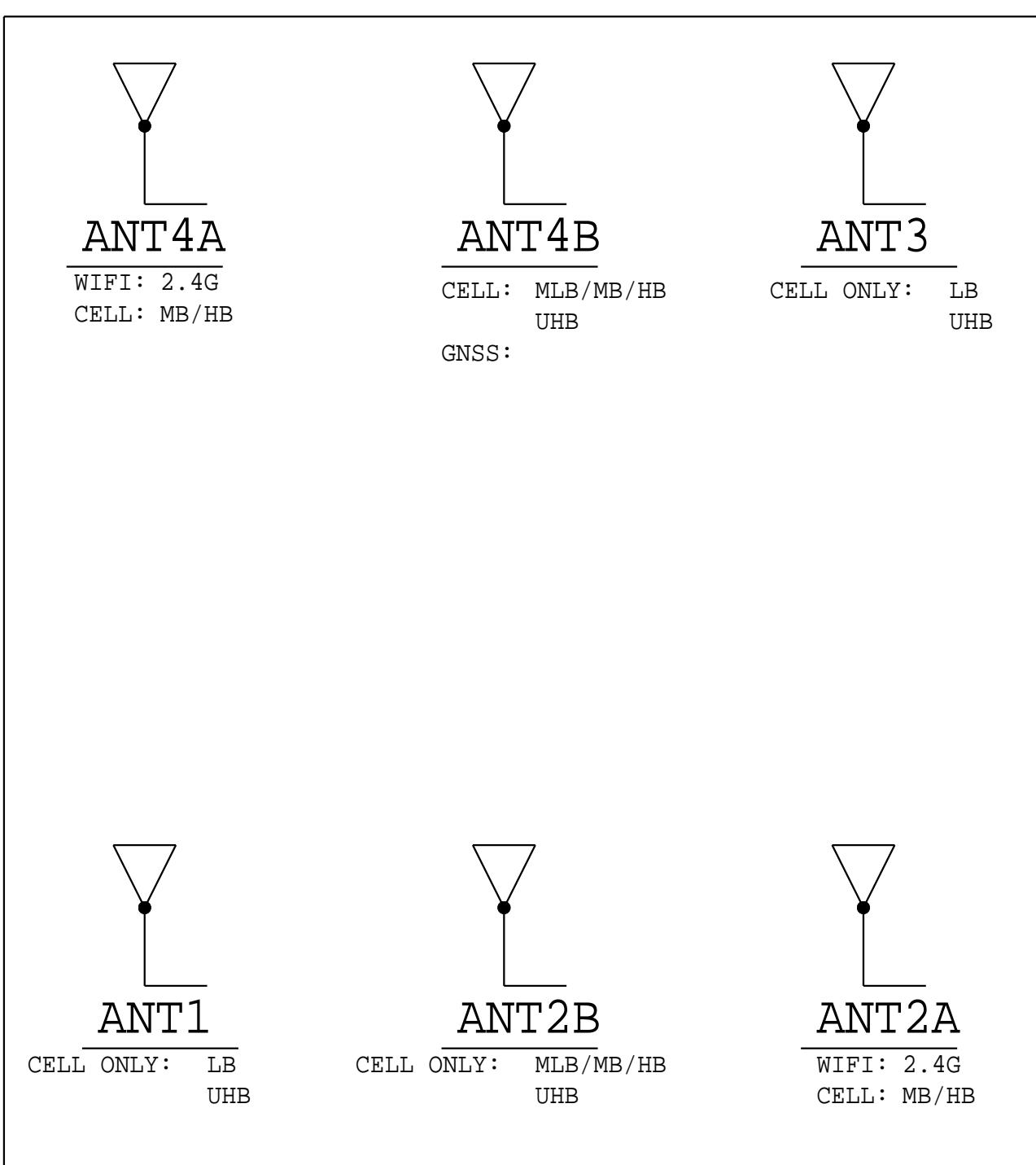
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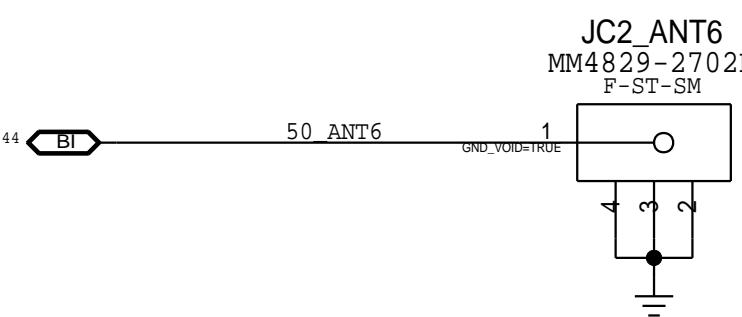
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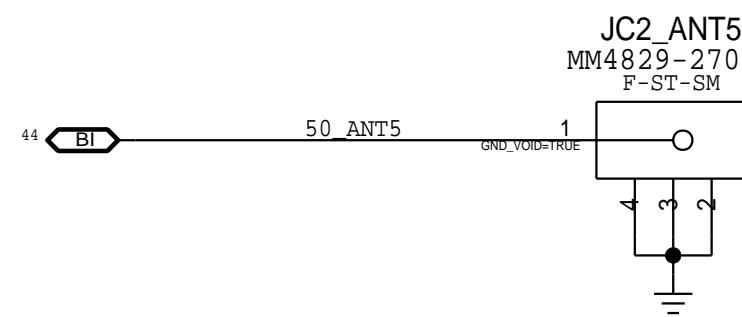
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ANTENNA: CELL CONNECTIONS



ANT6 (UPPER)



ANT5 (LOWER)



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PAGE_TITLE	ANTENNA: Diagram and LAA

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
337800742	1	VINYL, BIRCH 5.0	VINYL_K	ESIM
11750158	1	100K RES 5% 01005	RC305	ESIM
11750158	1	100K RES 5%, 01005	RC306	NO_ESIM

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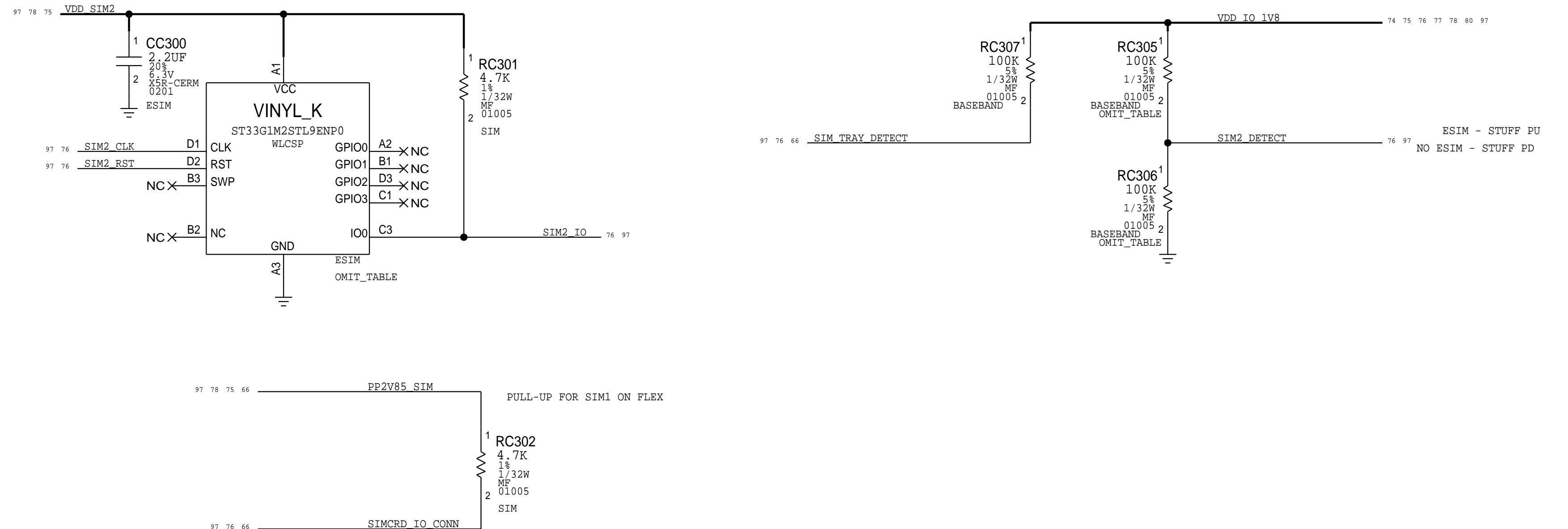
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E-SIM



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SIM

SYNC_DATE=08/20/2019

DEBUG: TEST POINTS

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PPC408 P2MM-NSM SM 1 GPIO SOC TO BB_COREDUMP 66 76

PPC423 P2MM-NSM SM 1 BB_TO_XCVR_RESET_L 76 80

PPC425 P2MM-NSM SM 1 GPIO SOC TO GRAPE DISPLAY_BSYN1 66 74

PPC408 P2MM-NSM SM 1 TPT_BBPMU_GPIO1 74

PPC409 P2MM-NSM SM 1 TPT_BBPMU_GPIO2 74

PPC410 P2MM-NSM SM 1 TPT_BBPMU_FORCE_PWM 74

PPC411 P2MM-NSM SM 1 TPT_BBPMU_GPIO6 74

PPC400 P2MM-NSM SM 1 BBPMU_CLK_32KHZ 74 76 79

PPC402 P2MM-NSM SM 1 BB_TO_BBPMU_SDWN_L 74 76

PPC403 P2MM-NSM SM 1 BBPMU_PWRGOOD 74 76

PPC404 P2MM-NSM SM 1 BBPMU_STBY 74 76

PPC405 P2MM-NSM SM 1 GPIO_APOLLO_TO_BBPMU_ON 66 74 76 97

PPC407 P2MM-NSM SM 1 BBPMU_ALERT_L 74 76

PPC424 P2MM-NSM SM 1 BBPMU_VDIO 74 76

PPC412 P2MM-NSM SM 1 UART_BB_TO_AOP_TX 66 76 97

PPC413 P2MM-NSM SM 1 UART_AOP_TO_BB_TX 66 76 97

PPC415 P2MM-NSM SM 1 BBPMU_VCLK 74 76

PPC416 P2MM-NSM SM 1 BBPMU_TO_BB_RESET_L 66 76 77

PPC418 P2MM-NSM SM 1 PCIE_BB_TO_SOC_CLKREQ_L 66 76

PPC419 P2MM-NSM SM 1 VDD_SIM2 75 78 96 97

PPC420 P2MM-NSM SM 1 PCIE_SOC_TO_BB_RESET_L 66 76 77

PPC421 P2MM-NSM SM 1 BBPMU_TO_XCVR_CLK_38MHZ 74 80

PPC422 P2MM-NSM SM 1 VSS_SENSE 78

PPC423 P2MM-NSM SM 1 GPIO_BB_TO_PMU_HOST_WAKE_L 66 76

PPC424 P2MM-NSM SM 1 I2S0_SOC_TO_BB_BCLK 66 76

PPC425 P2MM-NSM SM 1 I2S0_BB_TO_SOC_DIN 66 76

PPC426 P2MM-NSM SM 1 I2S0_SOC_TO_BB_DOUT 66 76

PPC427 P2MM-NSM SM 1 MEAS_RDY 74 76

AP TO BB I2S
PPC414 P2MM-NSM SM 1 I2S0_SOC_TO_BB_BCLK 66 76

PPC415 P2MM-NSM SM 1 I2S0_BB_TO_SOC_DIN 66 76

PPC416 P2MM-NSM SM 1 I2S0_SOC_TO_BB_DOUT 66 76

PPC417 P2MM-NSM SM 1 I2S0_SOC_TO_BB_LRCK 66 76

PPC418 P2MM-NSM SM 1 BB_USIF2_RXD 76

PPC419 P2MM-NSM SM 1 BB_USIF2_RXD 76

PPC420 P2MM-NSM SM 1 PRODUCT_ID 74

PPC421 P2MM-NSM SM 1 HW_REV_ID 74

PPC433 P2MM-NSM SM 1 BBPMU_TO_GNSS_UART_1W 74 79

PPC436 P2MM-NSM SM 1 GNSS_TIME_MARK 77 79

PPC439 P2MM-NSM SM 1 BB_TO_BBPMU_CLK_EN 74 76

PPC440 P2MM-NSM SM 1 NFC_TO_BBPMU_CLK_EN 74

PPC441 P2MM-NSM SM 1 GNSS_TO_BBPMU_CLK_EN 74 79

PPC442 P2MM-NSM SM 1 BBPMU_TO_BB_CLK_38MHZ 74 76

PPC446 P2MM-NSM SM 1 GPIO_BB_TO_STROBE_GSM_BURST_IND 66 76

PPC447 P2MM-NSM SM 1 I2C_BB_BBPMU_SCL 74 76

PPC448 P2MM-NSM SM 1 I2C_BB_BBPMU_SDA 74 76

PPC449 P2MM-NSM SM 1 GPIO_BB_TO_SOC_RESET_DET_L 66 76

PPC450 P2MM-NSM SM 1 NC_BB_TO_R1_COEX 66 76

PPC451 P2MM-NSM SM 1 SIMCRD_CLK_CONN 66 76 97

PPC452 P2MM-NSM SM 1 SIMCRD_RST_CONN 66 76 97

PPC453 P2MM-NSM SM 1 SIM_TRAY_DETECT 66 76 96 97

PPC454 P2MM-NSM SM 1 SIMCRD_IO_CONN 66 76 96 97

PPC455 P2MM-NSM SM 1 SIM2_CLK 76 96 97

PPC456 P2MM-NSM SM 1 SIM2_RST 76 96 97

PPC457 P2MM-NSM SM 1 SIM2_DETECT 76 96 97

PPC458 P2MM-NSM SM 1 SIM2_IO 76 96 97

PPC459 P2MM-NSM SM 1 PPV85_SIM 66 75 78 96 97

PPC460 P2MM-NSM SM 1 VDD_SIM2 75 78 96 97

PPC461 P2MM-NSM SM 1 PCIE_BB_TO_SOC_CLKREQ_L 66 76

PPC462 P2MM-NSM SM 1 SIM2_RST 76 96 97

PPC463 P2MM-NSM SM 1 SIM2_DETECT 66 76 96 97

PPC464 P2MM-NSM SM 1 SIM2_CLK 76 96 97

PPC465 P2MM-NSM SM 1 SIM2_RST 76 96 97

PPC466 P2MM-NSM SM 1 SIM2_CLK 76 96 97

PPC467 P2MM-NSM SM 1 SIM2_DETECT 76 96 97

PPC468 P2MM-NSM SM 1 SIM2_IO 76 96 97

PPC469 P2MM-NSM SM 1 PPV85_SIM 66 75 84 85 86

PPC470 P2MM-NSM SM 1 VDD_SIM2 75 78 96 97

PPC471 P2MM-NSM SM 1 PCIE_BB_TO_SOC_CLKREQ_L 66 76

PPC472 P2MM-NSM SM 1 SIMCRD_RST_CONN 66 76 94

PPC473 P2MM-NSM SM 1 RFFE_BB_TO_UAT_DATA 76 94

PPC474 P2MM-NSM SM 1 RFFE_BB_TO_UAT_CLK 76 94

PPC475 P2MM-NSM SM 1 RFFE_XCVR_TO_LBTX_DATA 80 82 83 85 89 90

PPC476 P2MM-NSM SM 1 RFFE_XCVR_TO_LBTX_CLK 80 82 83 85 89 90

PPC477 P2MM-NSM SM 1 RFFE_XCVR_TO_HBTX_DATA 80 82 84 85

PPC478 P2MM-NSM SM 1 RFFE_XCVR_TO_HBTX_CLK 80 82 84 85

PPC479 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_CLK 80 83 84 85 86

PPC480 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_DATA 80 83 84 85 86

PPC481 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_CLK 80 83 84 85 86

PPC482 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_DATA 80 83 84 85 86

PPC483 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_CLK 80 82 86 90

PPC484 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_DATA 80 82 86 90

PPC485 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_CLK 80 82 86 90

PPC486 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_DATA 80 82 86 90

PPC487 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_CLK 80 82 86 90

PPC488 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_DATA 80 82 86 90

PPC489 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_CLK 80 82 86 90

PPC490 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_DATA 80 82 86 90

PPC491 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_CLK 80 82 86 90

PPC492 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_DATA 80 82 86 90

PPC493 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_CLK 80 82 86 90

PPC494 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_DATA 80 82 86 90

PPC495 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_CLK 80 82 86 90

PPC496 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_DATA 80 82 86 90

PPC497 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_CLK 80 82 86 90

PPC498 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_DATA 80 82 86 90

PPC499 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_CLK 80 82 86 90

PPC500 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_DATA 80 82 86 90

PPC501 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_CLK 80 82 86 90

PPC502 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_DATA 80 82 86 90

PPC503 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_CLK 80 82 86 90

PPC504 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_DATA 80 82 86 90

PPC505 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_CLK 80 82 86 90

PPC506 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_DATA 80 82 86 90

PPC507 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_CLK 80 82 86 90

PPC508 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_DATA 80 82 86 90

PPC509 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_CLK 80 82 86 90

PPC510 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_DATA 80 82 86 90

PPC511 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_CLK 80 82 86 90

PPC512 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_DATA 80 82 86 90

PPC513 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_CLK 80 82 86 90

PPC514 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_DATA 80 82 86 90

PPC515 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_CLK 80 82 86 90

PPC516 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_DATA 80 82 86 90

PPC517 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_CLK 80 82 86 90

PPC518 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_DATA 80 82 86 90

PPC519 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_CLK 80 82 86 90

PPC520 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_DATA 80 82 86 90

PPC521 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_CLK 80 82 86 90

PPC522 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_DATA 80 82 86 90

PPC523 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_CLK 80 82 86 90

PPC524 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_DATA 80 82 86 90

PPC525 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_CLK 80 82 86 90

PPC526 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_DATA 80 82 86 90

PPC527 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_CLK 80 82 86 90

PPC528 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_DATA 80 82 86 90

PPC529 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_CLK 80 82 86 90

PPC530 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_DATA 80 82 86 90

PPC531 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_CLK 80 82 86 90

PPC532 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_DATA 80 82 86 90

PPC533 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_CLK 80 82 86 90

PPC534 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_DATA 80 82 86 90

PPC535 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_CLK 80 82 86 90

PPC536 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_DATA 80 82 86 90

PPC537 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_CLK 80 82 86 90

PPC538 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_DATA 80 82 86 90

PPC539 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_CLK 80 82 86 90

PPC540 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_DATA 80 82 86 90

PPC541 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_CLK 80 82 86 90

PPC542 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_DATA 80 82 86 90

PPC543 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_CLK 80 82 86 90

PPC544 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_DATA 80 82 86 90

PPC545 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_CLK 80 82 86 90

PPC546 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_DATA 80 82 86 90

PPC547 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_CLK 80 82 86 90

PPC548 P2MM-NSM SM 1 RFFE_XCVR_TO_FE_RX_DATA 80 82 86 90