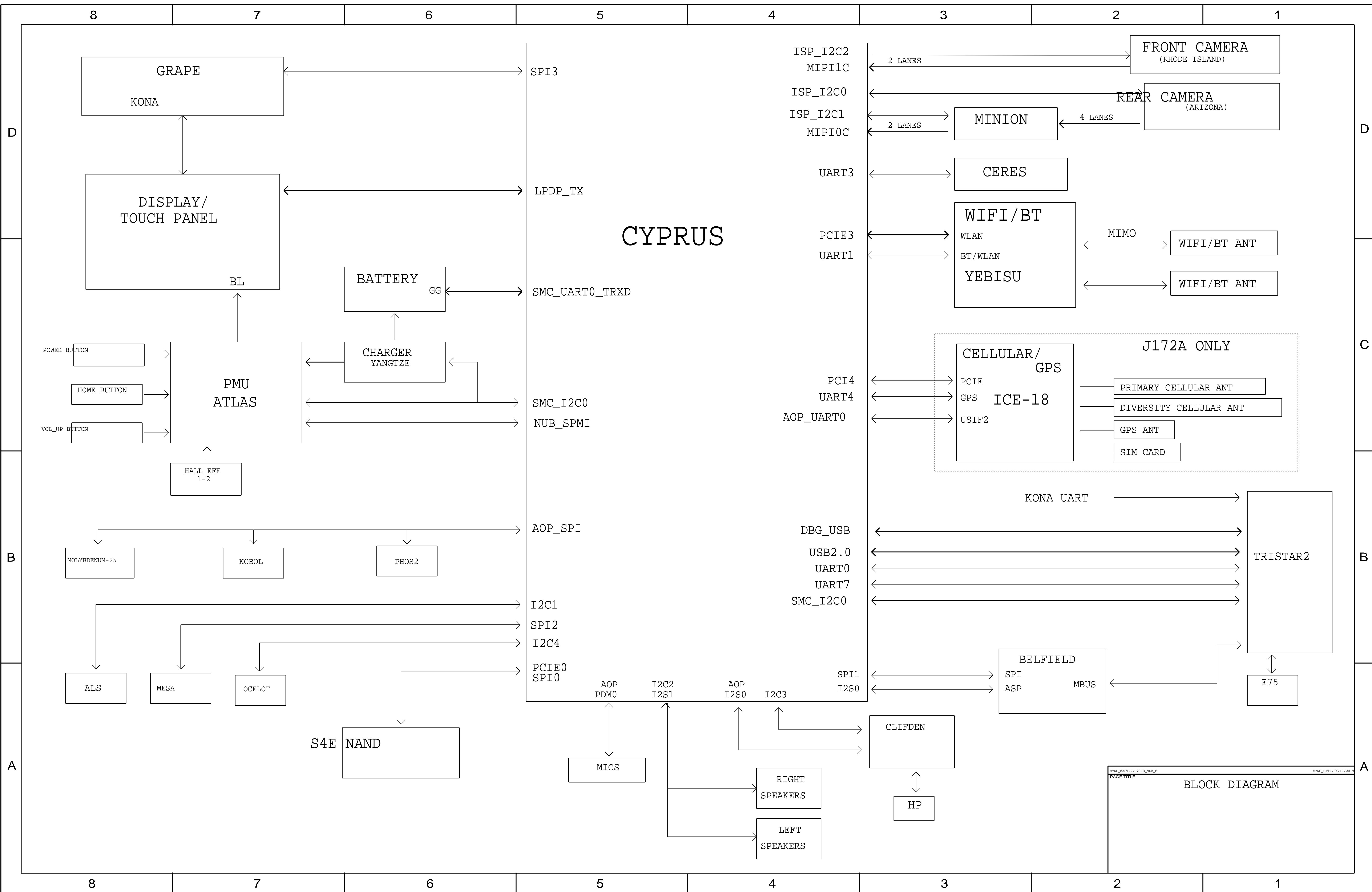


8		7		6		5		4		3		2		1											
1. ALL RESISTANCE VALUES ARE IN OHMS, 0.1 WATT +/- 5%. 2. ALL CAPACITANCE VALUES ARE IN MICROFARADS. 3. ALL CRYSTALS & OSCILLATOR VALUES ARE IN HERTZ.												REV	ECN	DESCRIPTION OF REVISION	CK APPD DATE										
												6	0022839785	ENGINEERING RELEASED	2020-04-06										
J172A MLB_B																									
PART#		QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)		CRITICAL	BOM OPTION																		
1051-082424		MLB-B		SCH1		CRITICAL																			
820-01931		1	PCBF,MLB-B	PCB1		CRITICAL																			
LAST_MODIFICATION=Mon Apr 6 08:56:41 2020																									
PAGE CSA CONTENTS				SYNC		DATE		PAGE CSA CONTENTS				SYNC		DATE											
1	TABLE OF CONTENTS							46	XCVR: PRX DRX																
2	BLOCK DIAGRAM			J207B_MLB_B		04/17/2019		47	HW6@CONFIG OPTIONS																
3	4	BOM TABLES		J71B_MLB_B1		03/27/2019		48	61	ET															
4	5	SOC: MISC & ALIASES		J71B_MLB_B1		03/27/2019		49	62	LB SPAD		01/02/2018													
5	6	SOC: JTAG,USB,XTAL		J211_MLB_B		03/27/2019		50	63	HB SPAD		01/02/2018													
6	7	SOC: PCIE		J211_MLB_B		03/27/2019		51	64	UHB LMB SPAD		01/02/2018													
7	8	SOC: MIPI		J211/MLB_B_6.14.003		03/27/2019		52	LB6@DIVERSITY RECEIVE LNA			01/02/2018													
8	SOC: LPDP			J211_MLB_B		03/27/2019		53	66	HB DIVERSITY RECEIVE LNA															
9	SOC SERIAL			J211_MLB_B		03/27/2019		54	LOWER ANTENNA & COUPLER			01/02/2018													
10	11	SOC: GPIO & UART		J211_MLB_B		03/27/2019		55	68	UPPER ANTENNA FEEDS		01/02/2018													
11	12	SOC: AOP		J211_MLB_B		03/27/2019		56	69	TEST POINTS		10/11/2018													
12	13	SOC: POWER (1/3)		J211_MLB_B		03/27/2019		57	70	NFC: CERES		10/11/2018													
13	14	SOC: POWER (2/3)		J211_MLB_B		03/27/2019		58	71	SIM: ESIM															
14	15	SOC: POWER (3/3)		J211_MLB_B		03/27/2019		59	72	ANT RFFE		10/11/2018													
15	SOC BOTTOM SIDE DECAPS			MLB_B_DOE_1.1.0		08/22/2018		60	CE13: SIM FLEX CONN			J71B_MLB_B1		07/23/2018											
16	17	ORION		J171_DEV		05/31/2019		61	75	WIFI/BT: MODULE		N/A		03/27/2019											
17	18	AUDIO: HP/DMIC FLEX CONNS		J71B_MLB_B1		07/23/2018		62	77	WIFI/BT: J171B FRONT END		N/A		03/27/2019											
18	19	AUDIO: CLIFDEN & BELFIELD		J71B_MLB_B1		03/27/2019		63	81	POWER: ATLAS (1/3)		MLB_B_5.1.0		03/27/2019											
19	20	AUDIO: SPEAKER AMPS LEFT		J71B_MLB_B1		03/27/2019		64	82	POWER: ATLAS (2/3)		J211_MLB_B		03/27/2019											
20	21	AUDIO: SPEAKER AMPS RIGHT		J71B_MLB_B1		03/27/2019		65	83	POWER: ATLAS (3/3)		J211_MLB_B		03/27/2019											
21	SENSOR: MESA SUPPORT			J71B_MLB_B1		07/23/2018		66	POWER: CHARGER			D3X_YANGTZE		08/06/2019											
22	SENSOR: MESA BOOST			J71B_MLB_B1		07/23/2018		67	POWER: EXTERNAL SWITCHES			J211_MLB_B		03/27/2019											
23	24	NAND: S4E NAND		J211_MLB_B		03/27/2019		68	89	POWER: BATTERY CONNECTOR		J71B_MLB_B1		07/23/2018											
24	25	SENSOR: KOBOL, PHOS2		J71B_MLB_B1		03/27/2019		69	90	SOC: DEBUG		J211_MLB_B		03/27/2019											
25	26	IO: BUTTON FLEX CONN / HES		J71B_MLB_B1		07/23/2018		70	93	TEST: TP/HOLES/FIDUCIALS		J71B_MLB_B1		03/27/2019											
26	27	CAMERA: FF AND ALS CONN		J71B_MLB_B1		03/27/2019		71	94	TEST: EE TP/PP		J71B_MLB_B1		03/27/2019											
27	28	CAMERA: MIPI BRIDGE		J211_MLB_B_9.2.0		03/27/2019		72	121	POWER: ALIASES		J71B_MLB_B1		03/27/2019											
28	CAMERA: REAR CONN & FILTERS			J71B_MLB_B1		03/27/2019																			
29	TOUCH: KONA			J71B_MLB_B		03/27/2019																			
30	31	TOUCH: PBR SUPPORT		J71B_MLB_B1		03/27/2019																			
31	32	TOUCH: CONNS		J71B_MLB_B1		07/23/2018																			
32	35	TRISTAR		J171_DEV		05/31/2019																			
33	37	IO: FLEX HOTBAR & FILTERS		J71B_MLB_B1		07/23/2018																			
34	38	BTN: HOME & MESA		J71B_MLB_B1		07/23/2018																			
35	DISPLAY: EDP CONN			J71B_MLB_B1		07/23/2018																			
36	49	RADIOS: ALIASES		J71B_MLB_B1		07/23/2018																			
37	50	ANTENNA DIAGRAM				10/11/2018																			
38	51	BOM TABLES				01/02/2018																			
39	52	BBPMU: CONTROL				01/02/2018																			
40	53	BBPMU: RAILS																							
41	BB34INTERFACE																								
42	BB35DDR PWR & JTAG																								
43	56	BB: DIGITAL PWR																							
44	57	XCVR: TX & GNSS																							
45	58	XCVR: INTERFACE & PWR																							
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												DRAWING TITLE													
												SCHEM,MLB-B,NY,J172A													



## Page Notes

Power aliases required by this page:  
(NONE)

Signal aliases required by this page:  
(NONE)

BOM options provided by this page:

BOM NUMBER	BOM NAME	BOM OPTIONS
639-10541	PCBA,MLB-B,BETTER,NY,J172A	COMMON,ALTERNATE,BOM_TABLE_ALTS,CELL,MLB_B,NA,BETTER,BSCAPS
639-10542	PCBA,MLB-B,BEST,NY,J172A	COMMON,ALTERNATE,BOM_TABLE_ALTS,CELL,MLB_B,NA,BEST,BSCAPS
639-10543	PCBA,MLB-B,ULTIMATE,NY,J172A	COMMON,ALTERNATE,BOM_TABLE_ALTS,CELL,MLB_B,NA,ULTIMATE,BSCAPS
639-10975	PCBA,MLB-B,SUPREME,NY,J172A	COMMON,ALTERNATE,BOM_TABLE_ALTS,CELL,MLB_B,NA,SUPREME,BSCAPS
639-10976	PCBA,MLB-B,BETTER,NY,ROW,J172A	COMMON,ALTERNATE,BOM_TABLE_ALTS,CELL,MLB_B,ROW,BETTER,BSCAPS
639-10977	PCBA,MLB-B,BEST,NY,ROW,J172A	COMMON,ALTERNATE,BOM_TABLE_ALTS,CELL,MLB_B,ROW,BEST,BSCAPS
639-10978	PCBA,MLB-B,ULTIMATE,NY,ROW,J172A	COMMON,ALTERNATE,BOM_TABLE_ALTS,CELL,MLB_B,ROW,ULTIMATE,BSCAPS
639-10979	PCBA,MLB-B,SUPREME,NY,ROW,J172A	COMMON,ALTERNATE,BOM_TABLE_ALTS,CELL,MLB_B,ROW,SUPREME,BSCAPS
639-10980	PCBA,MLB-B,BETTER,NY,CH,J172A	COMMON,ALTERNATE,BOM_TABLE_ALTS,CELL,MLB_B,CHINA,BETTER,BSCAPS
639-10981	PCBA,MLB-B,BEST,NY,CH,J172A	COMMON,ALTERNATE,BOM_TABLE_ALTS,CELL,MLB_B,CHINA,BEST,BSCAPS
639-10982	PCBA,MLB-B,ULTIMATE,NY,CH,J172A	COMMON,ALTERNATE,BOM_TABLE_ALTS,CELL,MLB_B,CHINA,ULTIMATE,BSCAPS
639-10983	PCBA,MLB-B,SUPREME,NY,CH,J172A	COMMON,ALTERNATE,BOM_TABLE_ALTS,CELL,MLB_B,CHINA,SUPREME,BSCAPS

BOM GROUP	BOM OPTIONS
BSCAPS	BS_PCPU,BS_FIXED,BS_CPUSRAM,BS_QL,BS_SOC,BS_ECPU,BS_PGPU,BS_GPUSRAM

NAND

## BETTER FLASH CONFIGURATIONS (32GB)

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
335S00431	1	8000, 1074, 1200P, 800, 648, 25460, N, 81004110	U2400	CRITICAL	BETTER
ALTERNATE FOR	BOM OPTION PART NUMBER	COMMENTS:			
335S00501	335S00431		U2400	WD BIC84 256GBIT	

## BEST FLASH CONFIGURATIONS (64GB)

Part#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
335000393	1	80M, 30V, 4GBIT, 21.1, 54K, 256G, 7, H2AL10	U2400	CRITICAL	

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	COMMENTS
335000377	335000393		U2400 HYNIX 30V 4GBIT 256GBIT

## ULTIMATE FLASH CONFIGURATIONS (128GB)

PART#		QTY	DESCRIPTION		REFERENCE DESIGNATOR(S)		CRITICAL		BOM OPTION	
335800357		1	SN65LDT1120GRT.048.256GB.T.050A110		U2400		CRITICAL		ULTIMATE	
PART NUMBER			ALTERNATE FOR PART NUMBER	BOM OPTION	COUNTERMEASURE					
335800378		335800357	HYNIX 256GBIT	256GBIT						

## SUPREME FLASH CONFIGURATIONS (256GB)

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
335S00396	1	8080, 32V4, 256GBT, 048, 2540, 8, SJDA1110	U2400	CRITICAL	SUPREME
PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:	
335S00379	335S00396		U2400	HYNIX 3DV4 256GBIT	

## MECHANICAL PARTS

COMPART		DESCRIPTION	REFERENCE DESIGNATOR(S)	COMPARISON	
1B06-20242		FENCE,AP,NY,,J171	PD_FENCE_AP	CRITICAL	
806-20169	1	CAN,TINY,J71B	PD_TINY_CAN	CRITICAL	
806-20171	1	SHIELD,RADIO,NY,,J171	PD_SHIELD_RF	CRITICAL	

BARCODE LABEL/EEEE CODES

BOMOPTION	TABLE TBD
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## SOC

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
339800565	1	RES,10K,1/4W,5%,0805	U0600	CRITICAL	
PART NUMBER FOR IDENTIFICATION		PART NUMBER	BOM QTY	REF DES	COMMENTS:
339800565		339800564		U0600	SAMSUNG

ATLAS

PART DESCRIPTION	UNIT	REFERENCE DESIGNATOR	QTY	BOM OPTION
343S00208, ATLAS, D452A0, OTP-CE, CSP400		U8100 CRITICAL		

YANGTZE

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
353S02318	1	IC,YANGTSE_A0_CPG B_OTP30,1CELL,CSP71	U3300	CRITICAL	

## SPEAKER AMPS

PART#	DESCR	PICK	REFERENCE	DESIGN	PROCESS	BOM OPTION
				NO	NO	
353S01608	1	IC,MUX39357B,PWR AMP,NTD10,CLASS D,WSP9		U2020,U2040,U2120,U2140	CRITICAL	

138S00116	138S00143	138S00144	ALL	2TOP	138S00143
	138S00163	138S00144	ALL	2TOP	138S00163
	138S00279	138S00144	ALL	2TOP 5.45MM Z-HEIGHT	138S00279
	138S00884	138S00144	ALL	2TOP 5.7MM Z-HEIGHT	138S00884
138S00150	138S00139	ALL			138S00139
	138S00280	138S00139	ALL		138S00280
	138S00071	138S00139	ALL		138S00071
	138S00138	138S00139	ALL		138S00138
	138S00164	138S00139	ALL		138S00164
	138S00148	138S00149	ALL		138S00148
	138S00149	ALL			138S00149
152S01070	138S00151	138S00149	ALL		138S00151
	138S00084	138S00060	ALL		138S00084
	132S00232	132S00014	ALL		132S00232
	132S00233	132S00014	ALL		132S00233
	152S01037	152S00887	ALL		152S01037
	152S00887	ALL			152S00887
	155S00897	ALL			155S00897
376S11245	155S00664	155S00018	ALL		155S00664
	377S00031	377S0184	ALL		377S00031
	132S00229	132S00010	ALL		132S00229
	138S00291	138S0835	ALL		138S00291
	152S00963	152S00885	ALL		152S00963
	152S00964	152S00888	ALL		152S00964
	376S11202	ALL			376S11202
	376S00314	376S00125	ALL		376S00314

138S00116	138S00071	ALL	
138S00117	138S00071	ALL	
138S00071	138S00141	ALL	
	138S00141	ALL	376S1245
138S00117	138S00141	ALL	

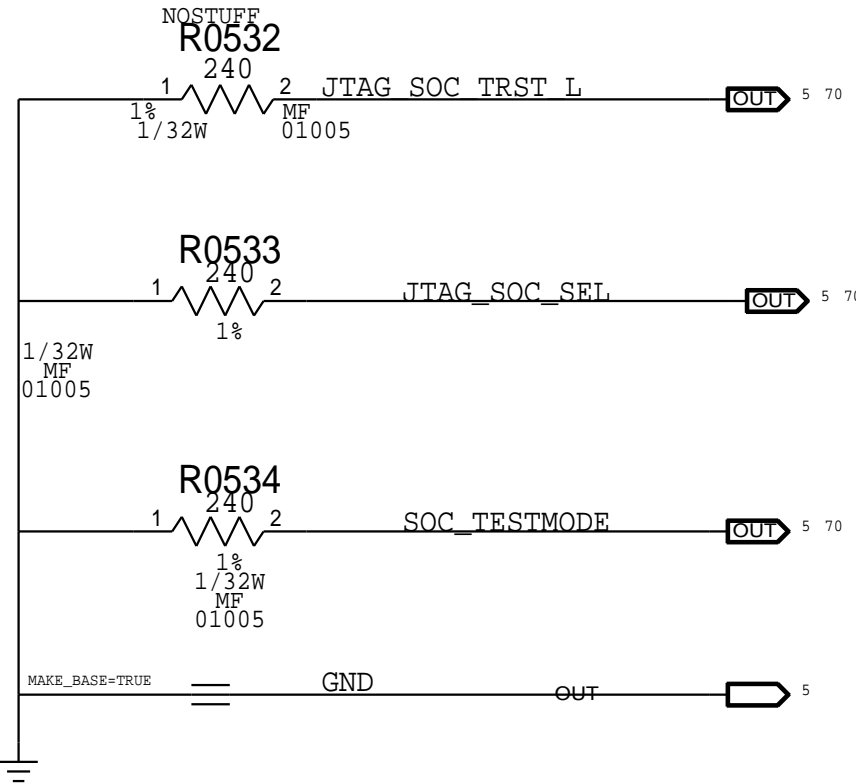
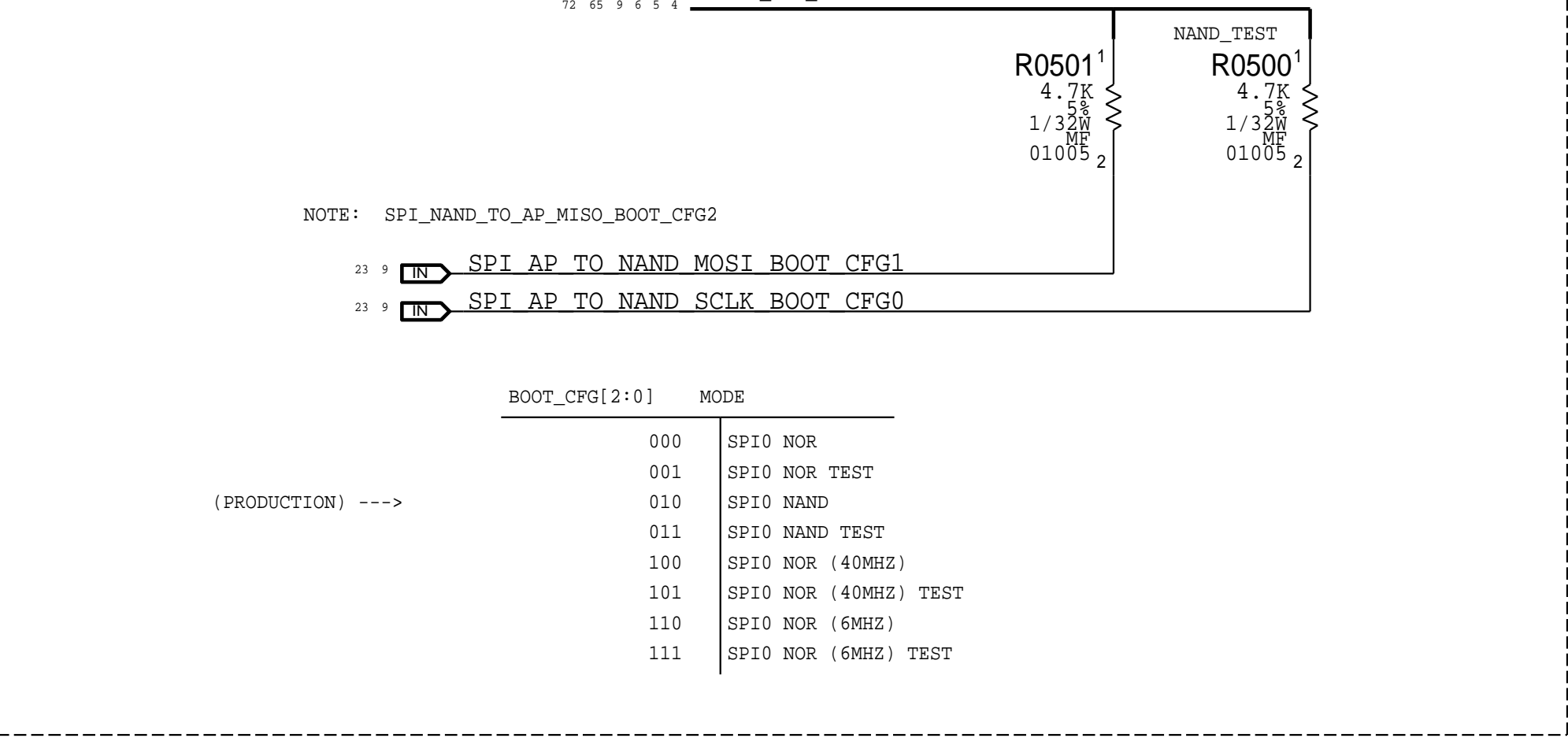
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155S00007	155S00667			
		L2710,L2711,L2910,L2911,L2912,L913,L2920		
138S00049	138S0831		Q5415,CH820....	2.20V 0201
138S00048	138S00003		Q5400,Q5414....	
138S0945	138S0739		Q2P45....	
138S0706	138S0739		U1760....	110P
376S00071	376S00070		Q4504	
376S00159	376S1211		Q4500	
376S0948	376S00076		Q4500	
197S0369	197S0392		Y4300	32.768K XTAL
155S00097	155S0664		U15705(L2910)....	
155S00593	155S0755		FEED(P5)P5(B2A)	

155S00194	155S00400	PL590,...	FILTER_2F
138S0786	138S0847	C5905	120F
138S0864	138S0709	C_70P.C8547,...	
138S0875	138S0678	120F.C81AD,...	
335S00013	335S0894	H5403	EEPROM
335S00066	335S0946	U1103	EEPROM
131S00150	131S0890	C2285.C2302	
132S00088	132S0639	C3023.C3032	
138S00086	138S0884	C8204	
138S00024	138S0986		
371S00118	371S00117	D3001	
376S00030	376S1131	Q1770	
377S0116	377S00132	D83700	
128S00067	128S00094	CB100.CB1C1.CB1C2	
132S00154	132S0683		
155S00402	155S0511		
155S00232	155S0665		
197S00120	197S0612	V0750	
197S00118	197S0612	V0750	
131S00172	131S00164	C8820.C8821	2200F
131S00173	131S00164	C8820.C8821	2200F
371S00173	371S0644	D8500	
371S00172	371S0490	D8801.C8802	
138S00117	138S00071	C1450	
376S00181	376S1211	Q8550	
376S00311	376S1211	Q8550	
131S00172	131S00164	ALL	
131S00173	131S00164	ALL	
131S00366	131S00229	ALL	
372S0194	372S0187	Q1706	
377S00049	377S00048	D81713	
155S0660	155S0513	PL37051.F.37052	
155S00095	155S00068	PL1501	
371S00167	371S0686	D1702.D1703	
131S00299	131S00118	ALL	
377S0155	377S0184	D3700.D3701.D3702.D3703	
152S01296	152S00883	LA100.LA101.LA120.LA141.LA150.LA160.LA170.LA180	
152S01003	152S00888	LA131.LA141	
152S00964	152S00888	LA131.LA141	
311S00196	311S00195	ALL	
376S00319	376S00104	ALL	
376S00182	376S00126	ALL	
376S00181	376S00159	ALL	
155S00374	155S0676	ALL	

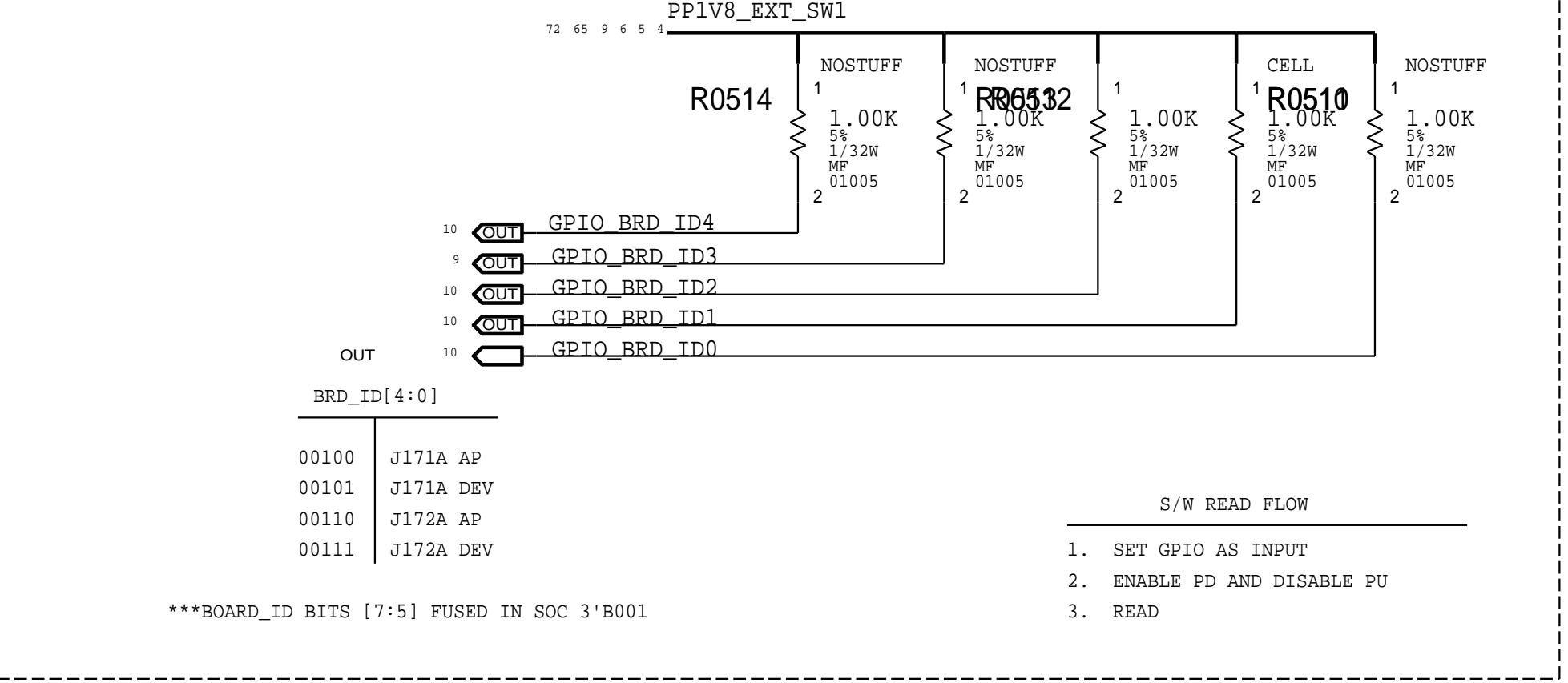
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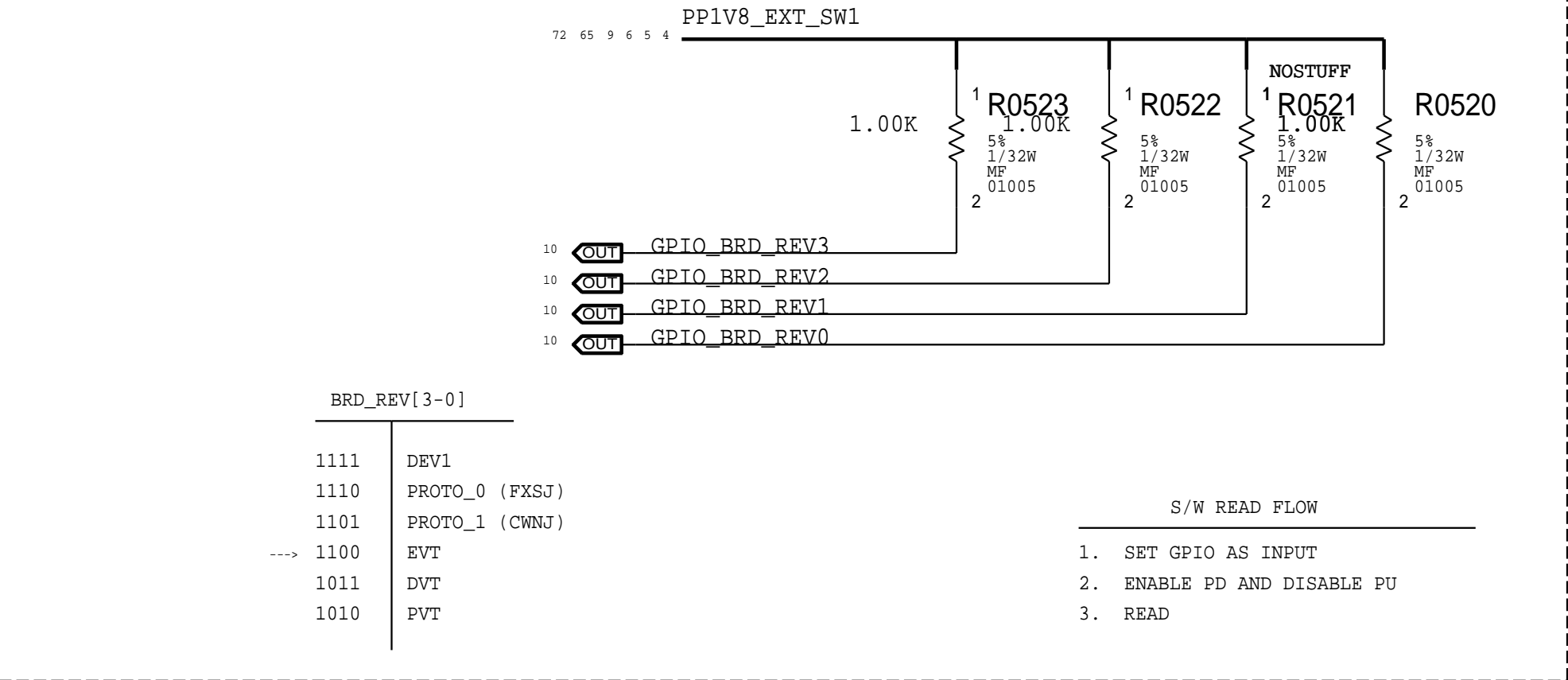
BOOT CONFIG ID



BOARD ID



BOARD REVISION



DC RESISTANCE FAI REQUIRED MEASUREMENTS			
FROM PIN (REFDES.PN)	TO PIN (REFDES.PN)	VALUE (MILLIOHM) (OPTIONAL)	TOLERANCE (+/-) (OPTIONAL)
U8100.W19	J8900.4	3.75	10%
U8100.H16	L2700.1	187.0	10%

I2C0	NOT USED				
I2C1	DEVICE ALS	8-BIT 0X72	7-BIT 0X39	<div><div>IN</div>I2C1_SCL_1V8</div> <div>MAKE_BASE=TRUE</div> <div>OUT</div>	
I2C2	DEVICE BELLATRIX	8-BIT 0X26	7-BIT 0X13	<div><div>IN</div>I2C2_SCL_1V8</div> <div>MAKE_BASE=TRUE</div> <div>OUT</div>	
I2C3	DEVICE CODEC TRISTAR	8-BIT 0X90 0X34	7-BIT 0X48 0X1A	<div><div>IN</div>I2C3_SCL_1V8</div> <div>MAKE_BASE=TRUE</div> <div>OUT</div>	
I2C4	DEVICE OCELOT	8-BIT 0XXX	7-BIT 0XXX	<div><div>IN</div>I2C4_SCL_1V8</div> <div>MAKE_BASE=TRUE</div> <div>OUT</div>	
AOP I2C M0	NOT USED				
AOP I2C M1	NOT USED				
ISP I2C0	DEVICE RCAM	8-BIT 0X20	7-BIT 0X10	<div><div>IN</div>ISP_I2C0_SCL_1V8</div> <div>MAKE_BASE=TRUE</div> <div>OUT</div>	
ISP I2C1	DEVICE MINION	8-BIT 0X??	7-BIT 0X??	<div><div>IN</div>ISP_I2C1_SCL_1V8</div> <div>MAKE_BASE=TRUE</div> <div>OUT</div>	
ISP I2C2	DEVICE FCAM	8-BIT 0X20	7-BIT 0X10	<div><div>IN</div>ISP_I2C2_SCL_1V8</div> <div>MAKE_BASE=TRUE</div> <div>OUT</div>	
ISP I2C3	NOT USED				
SMC I2C0	DEVICE ATLAS YANGTZE	8-BIT 0X78 0XE2	7-BIT 0X3C 0X71	<div><div>IN</div>I2C_SMC_I2CM0_SCL_1V8</div> <div>MAKE_BASE=TRUE</div> <div>OUT</div>	
SMC I2C1	NOT USED				

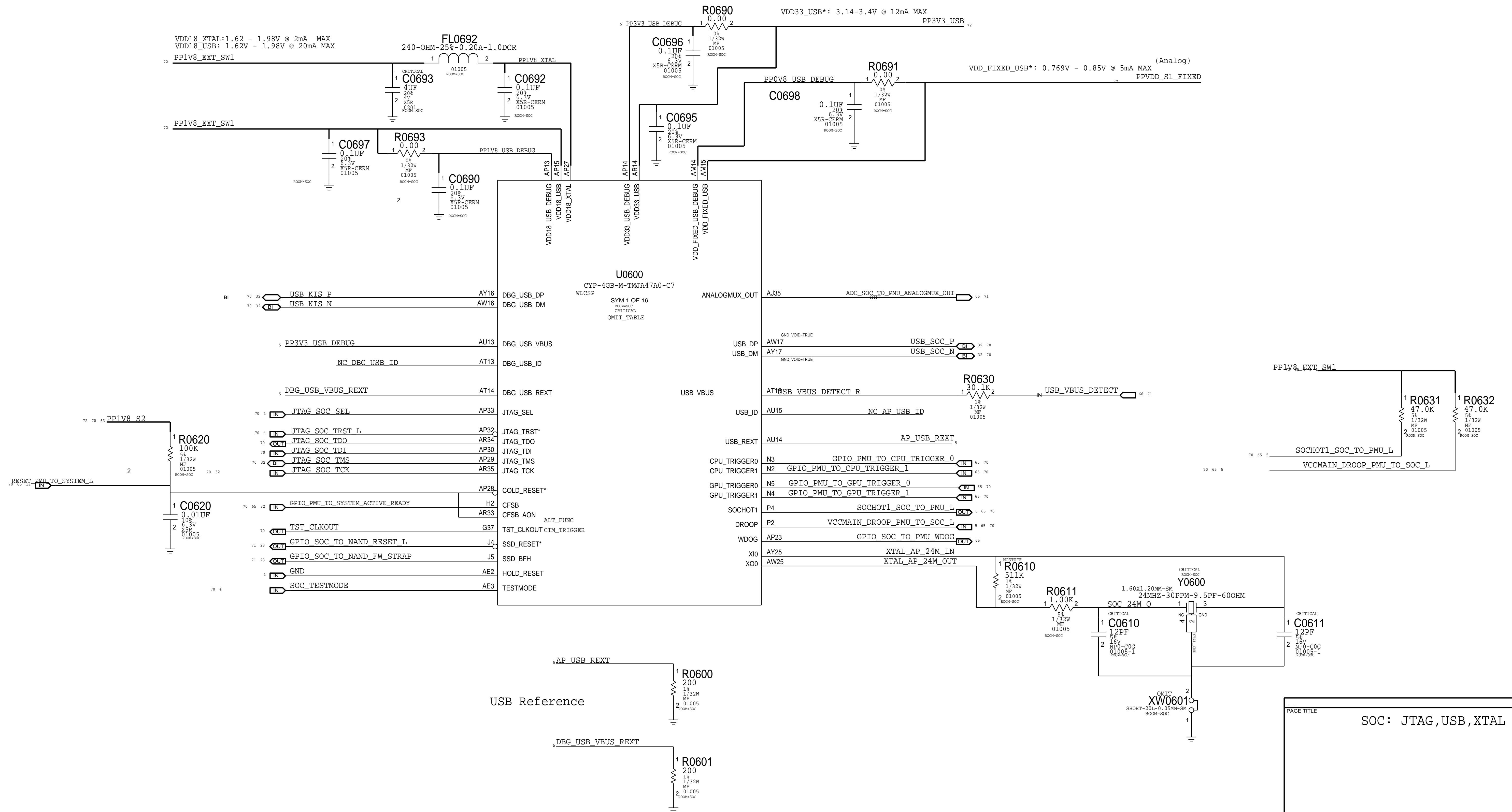
BI

I2C1\_SDA\_1V8

MAKE\_BASE=TRUE

BI

SOC - USB, JTAG, XTAL



SOC - PCIE

VDD12\_PCIE:1.14V - 1.26V @ 60mA MAX  
VDD12\_PCIE\_REFBUF:1.08V - 1.26V @ 20mA MAX

VDD\_FIXED\_PCIE:0.769V - 0.85V @ 60mA MAX  
VDD\_FIXED\_PCIE\_REFBUF:0.769V - 0.85V @ 50mA MAX

PPVDD\_S1\_FIXED

D

D

C

B

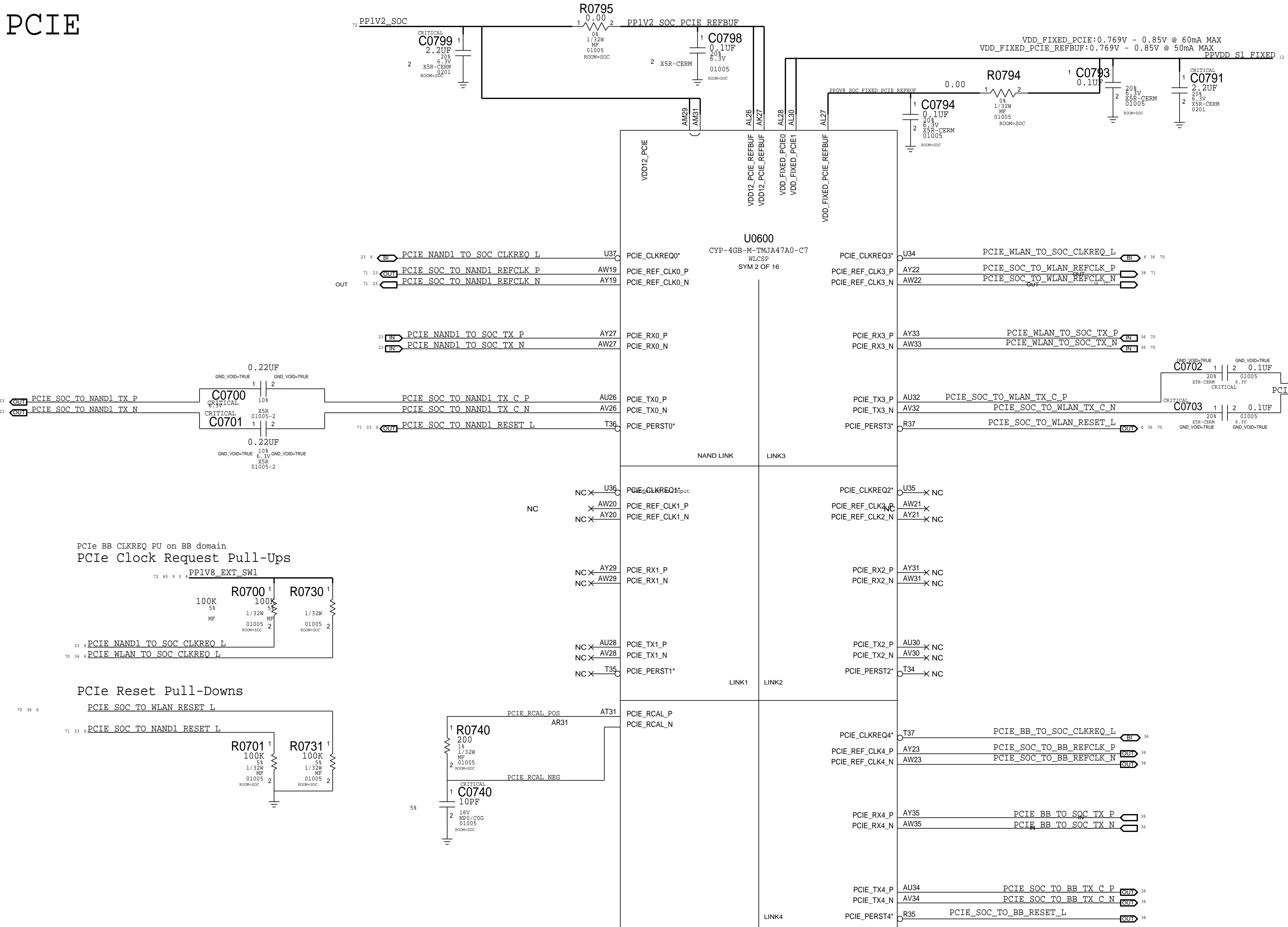
A

A

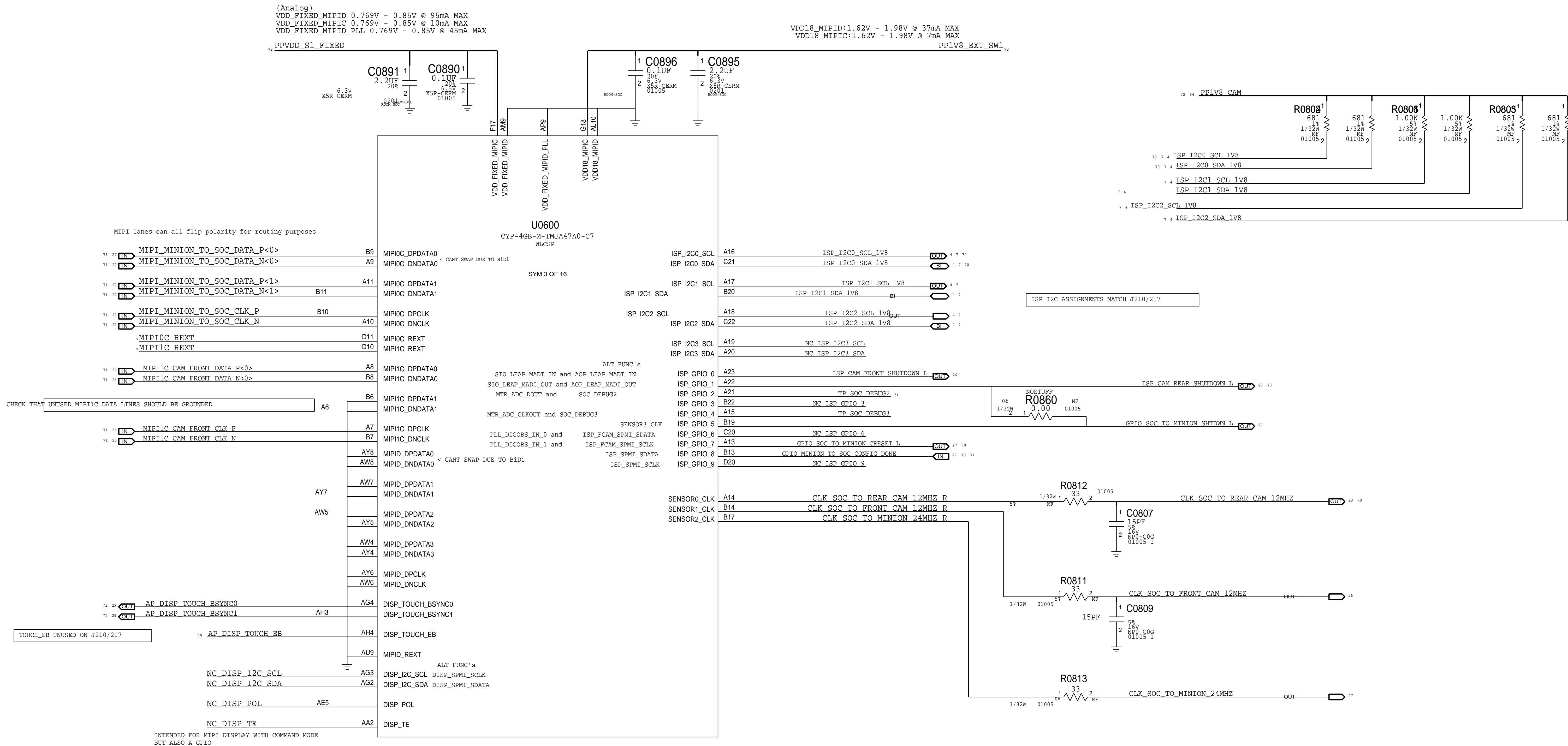
PCIE LINK 0

PCIE LINK 3

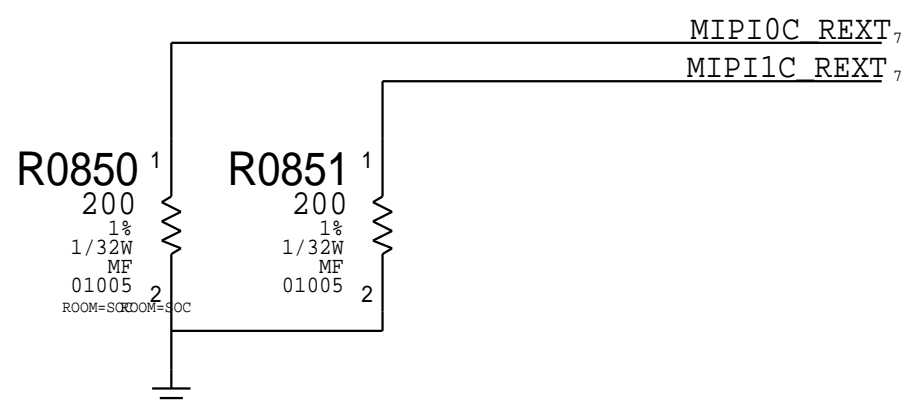
PCIE LINK 4



## SOC – MIPI



MIPI Reference



SOC: MIPI



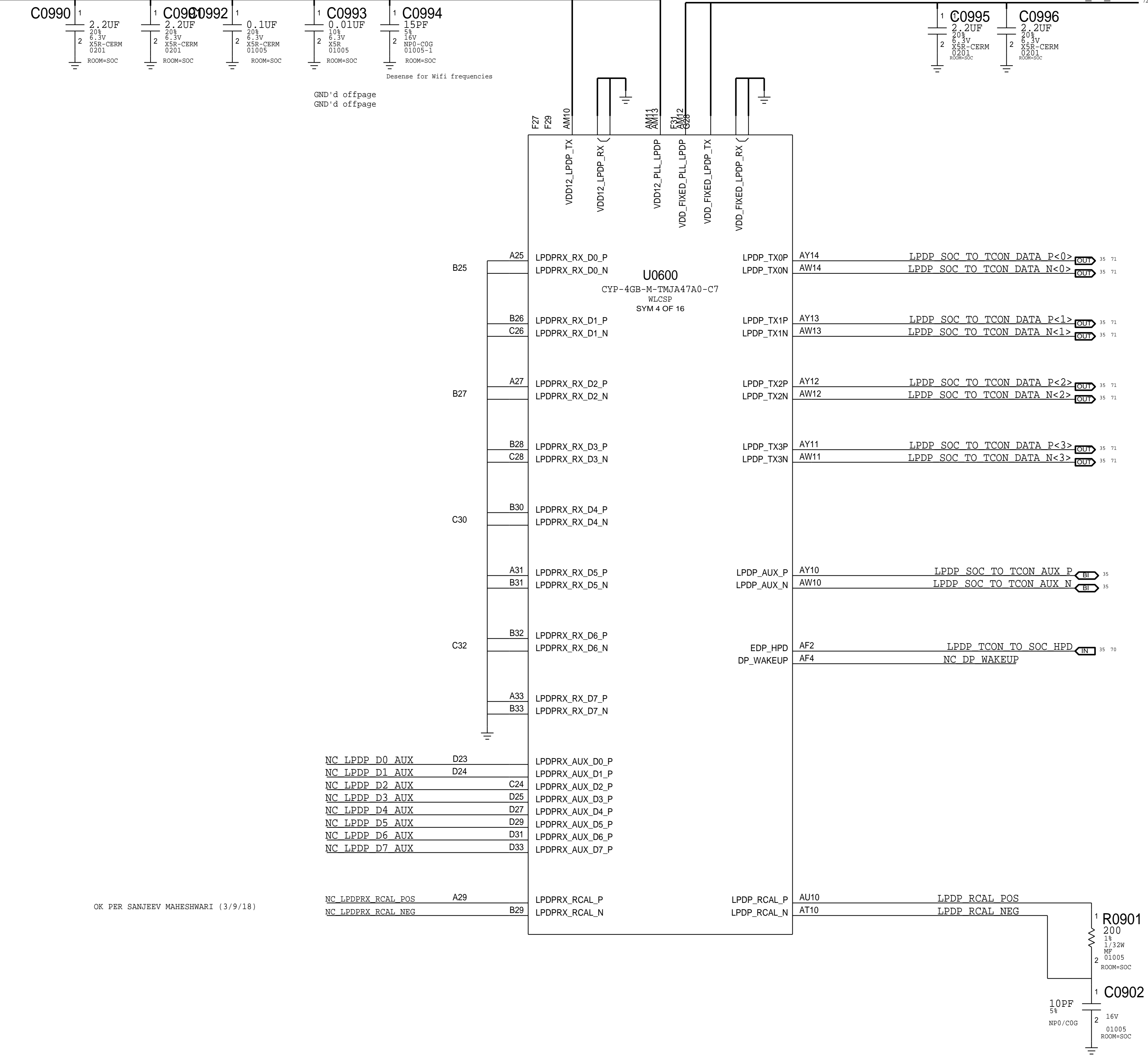
SOC - LPDP

VDD12\_PLL\_LPDP 1.14V - 1.26V @ 9mA MAX  
VDD12\_LPDP\_RX 1.14V - 1.26V @ 115mA MAX

(Analog)  
VDD\_FIXED\_PLL\_LPDP 0.769V - 0.85V @ 3mA MAX  
VDD\_FIXED\_LPDP\_RX 0.769V - 0.85V @ 30mA MAX

PP1V2\_SOC

PPVDD\_S1\_FIXED



SOC: LPDP



# SOC - SERIAL INTERFACES

D

B

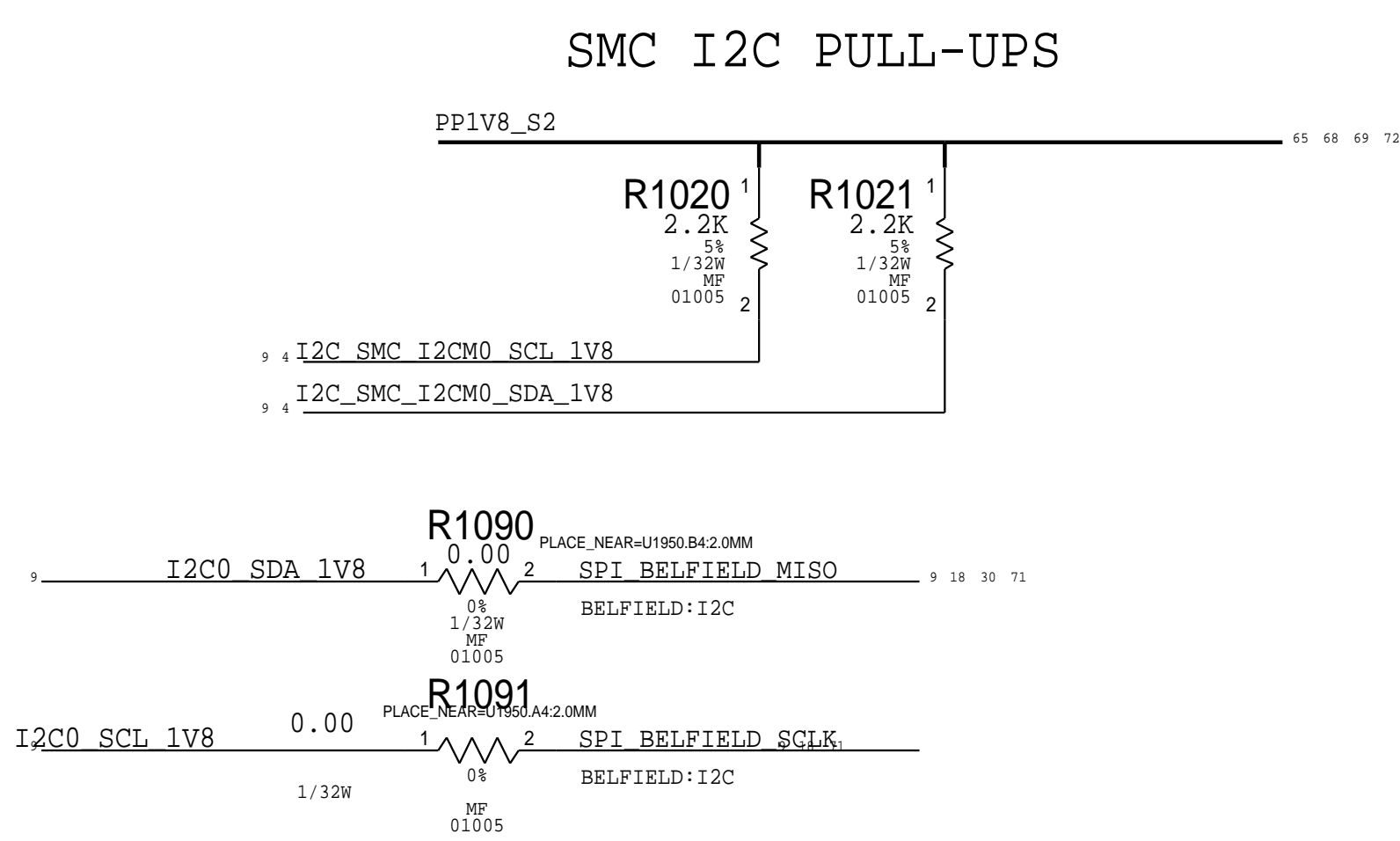
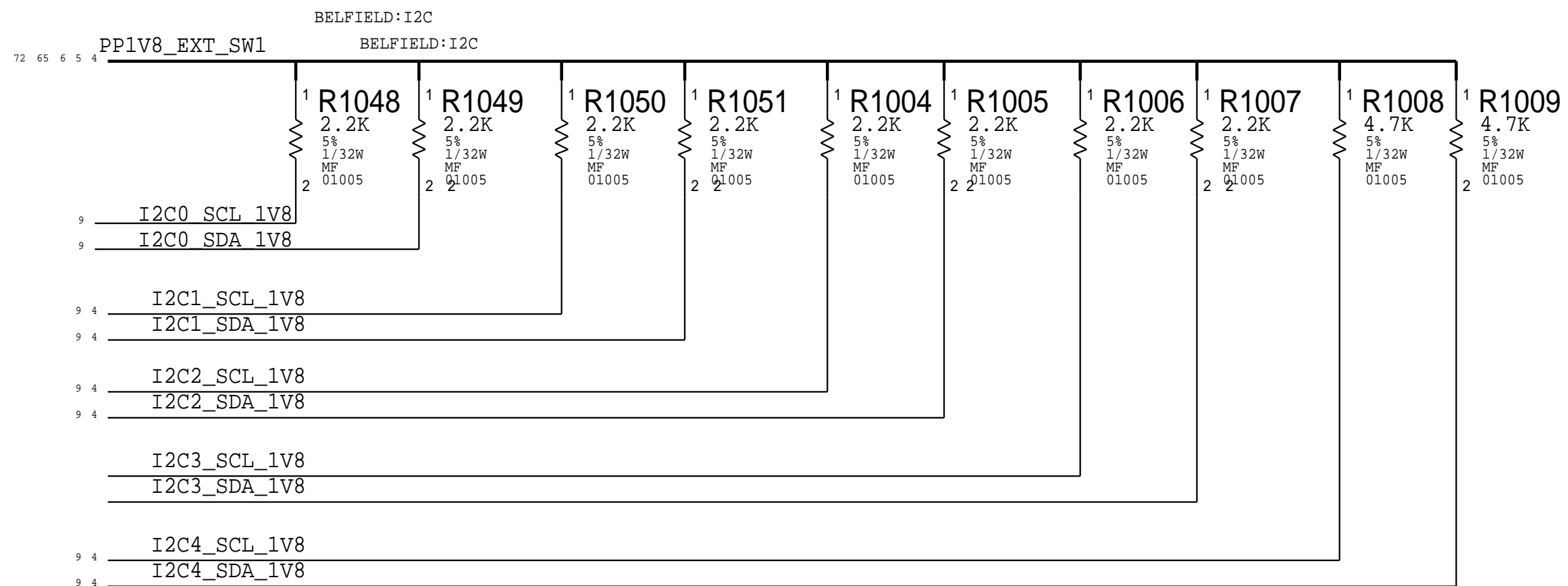
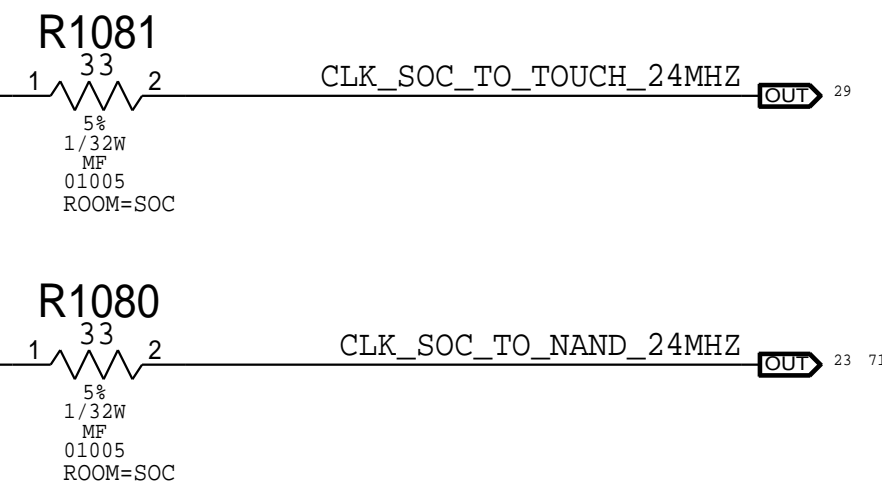
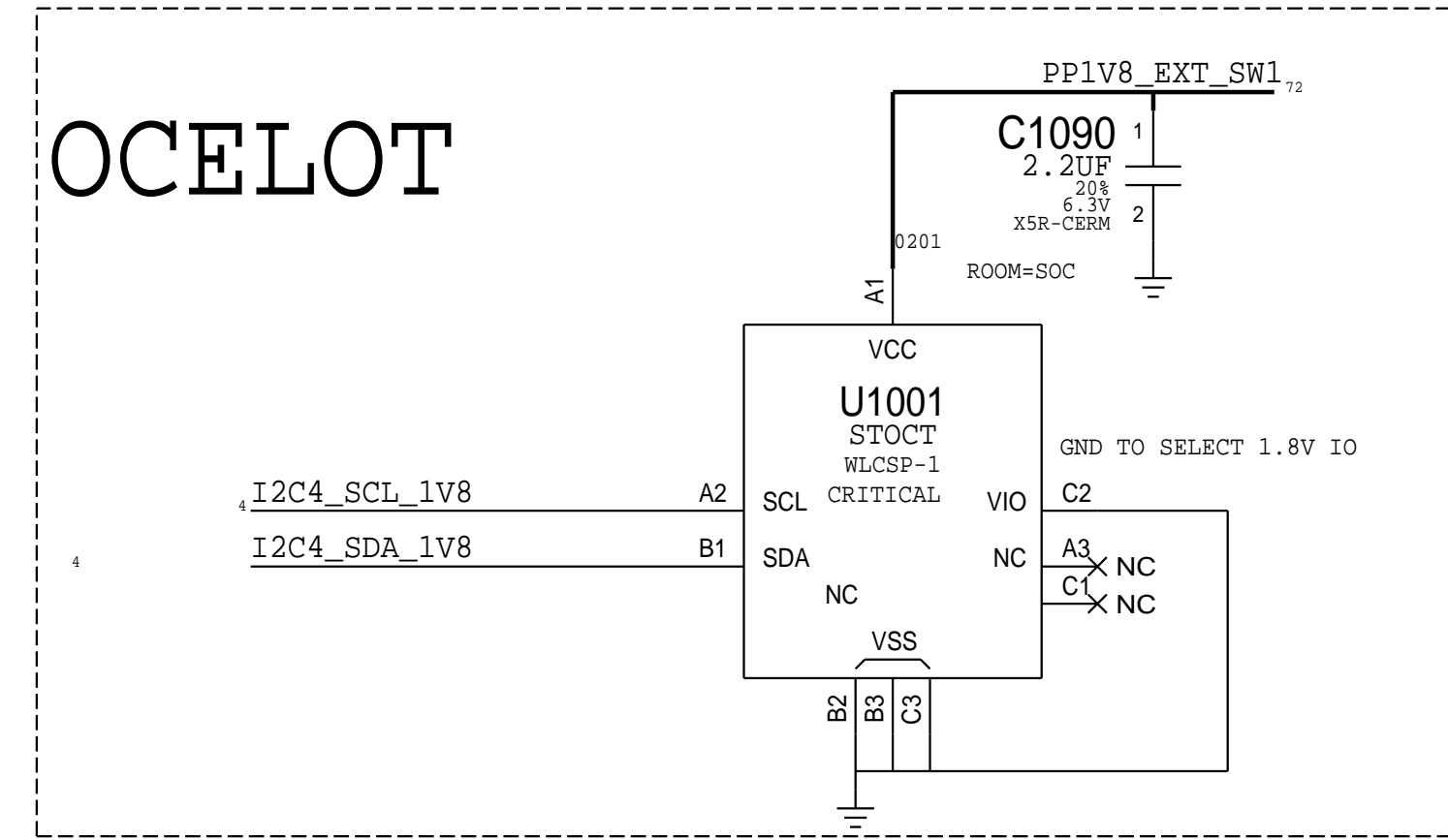
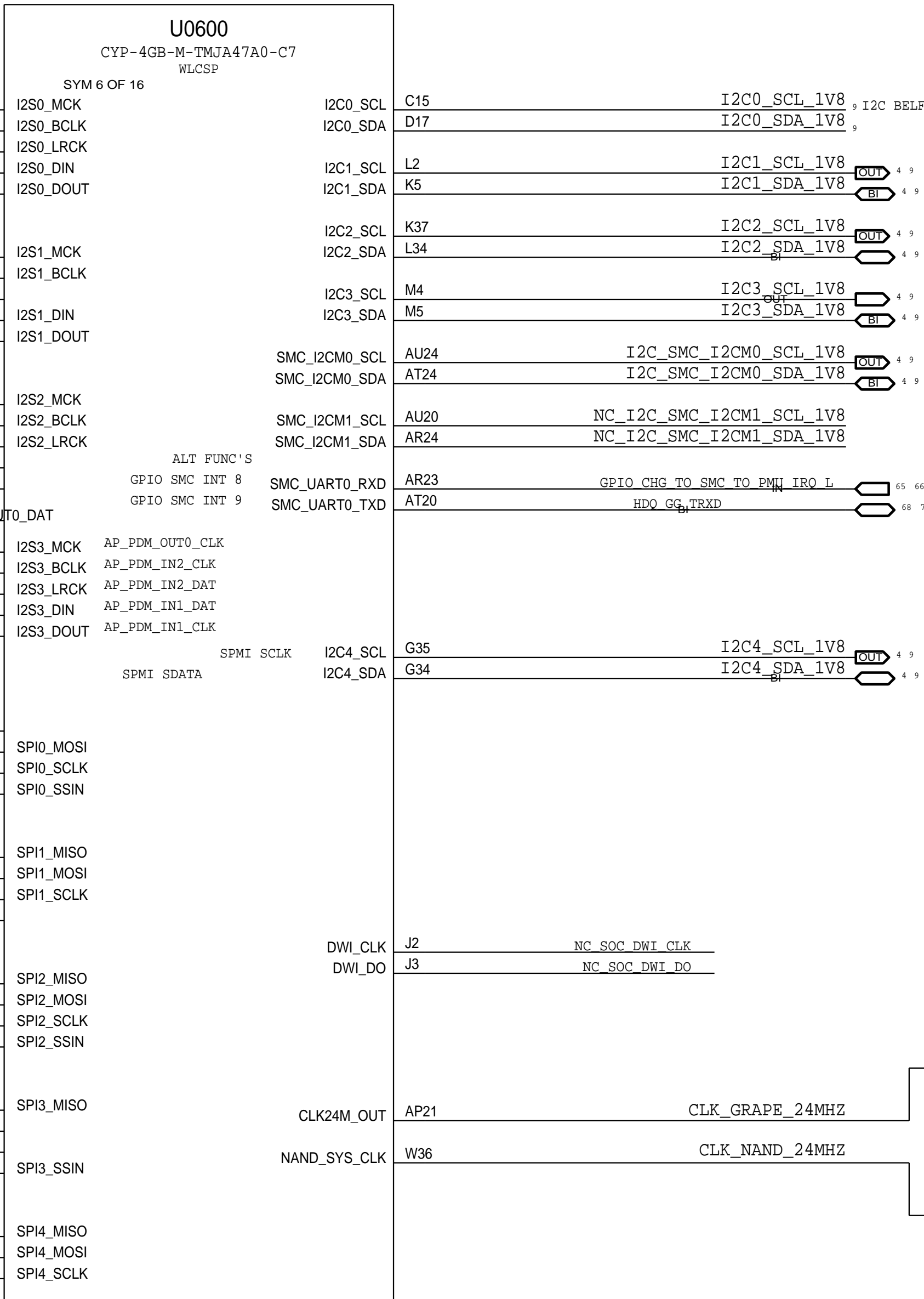
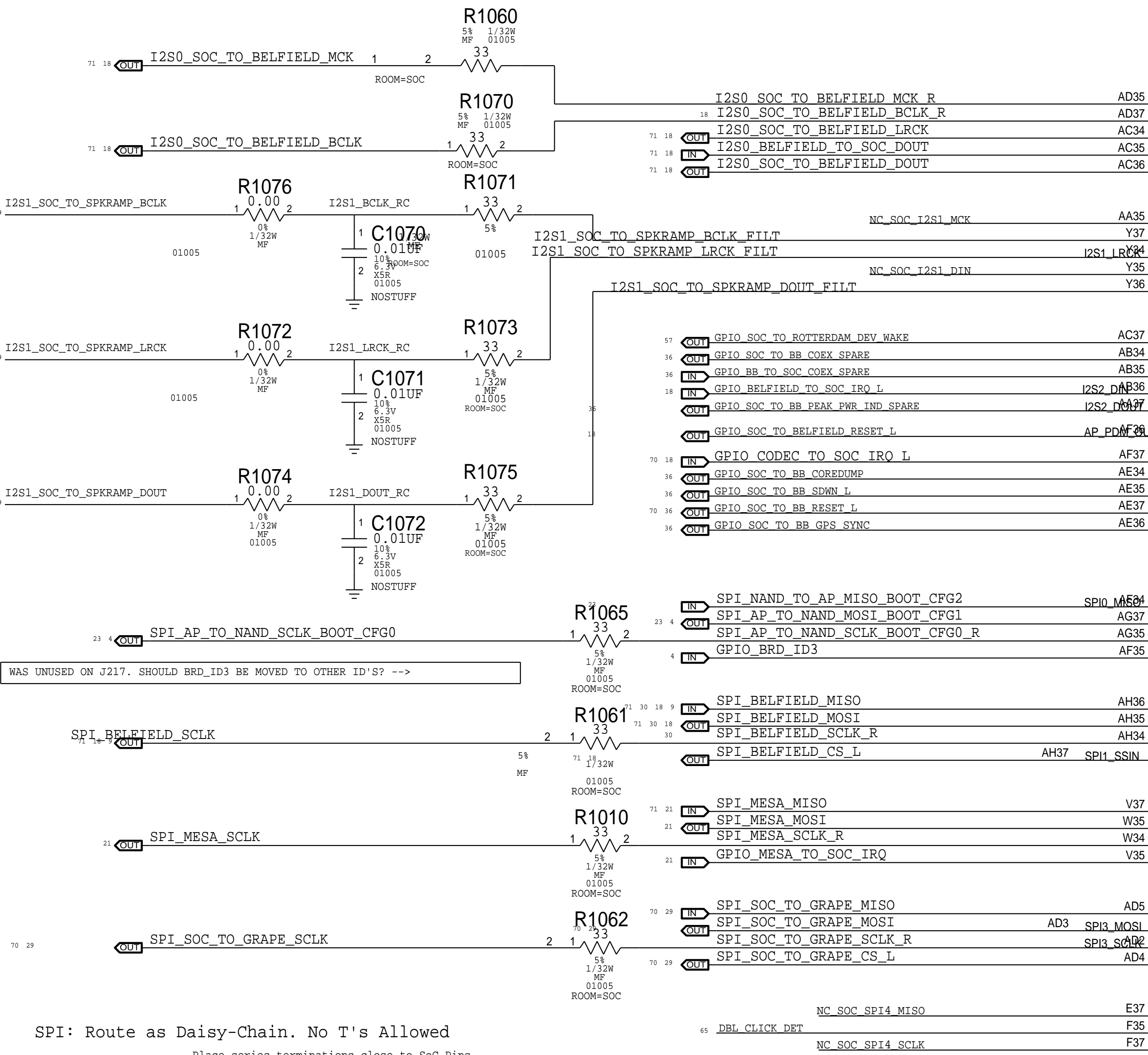
A

D

C

B

A



## D



B

B

A

A

SOC - AOP

D

B

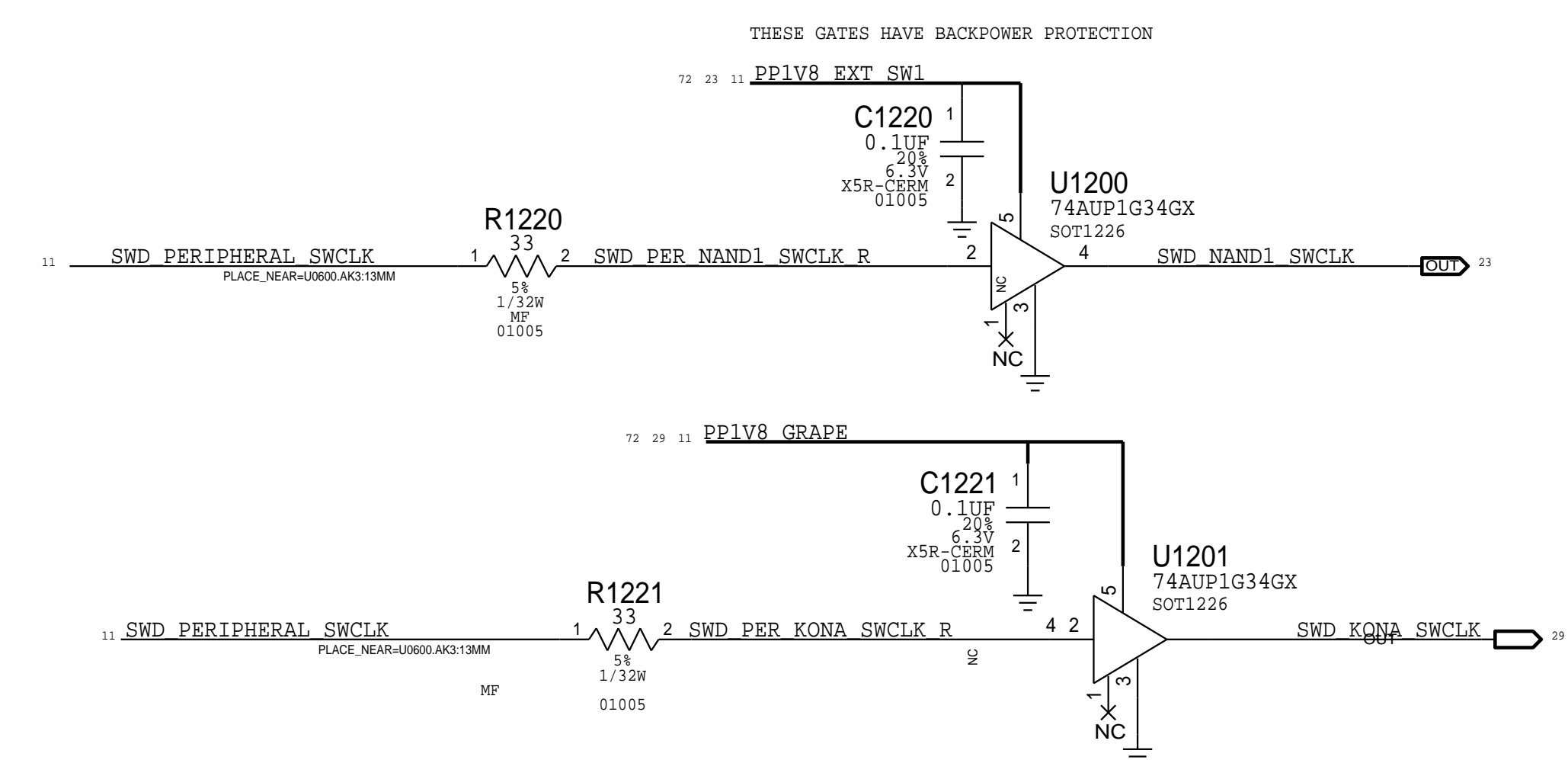
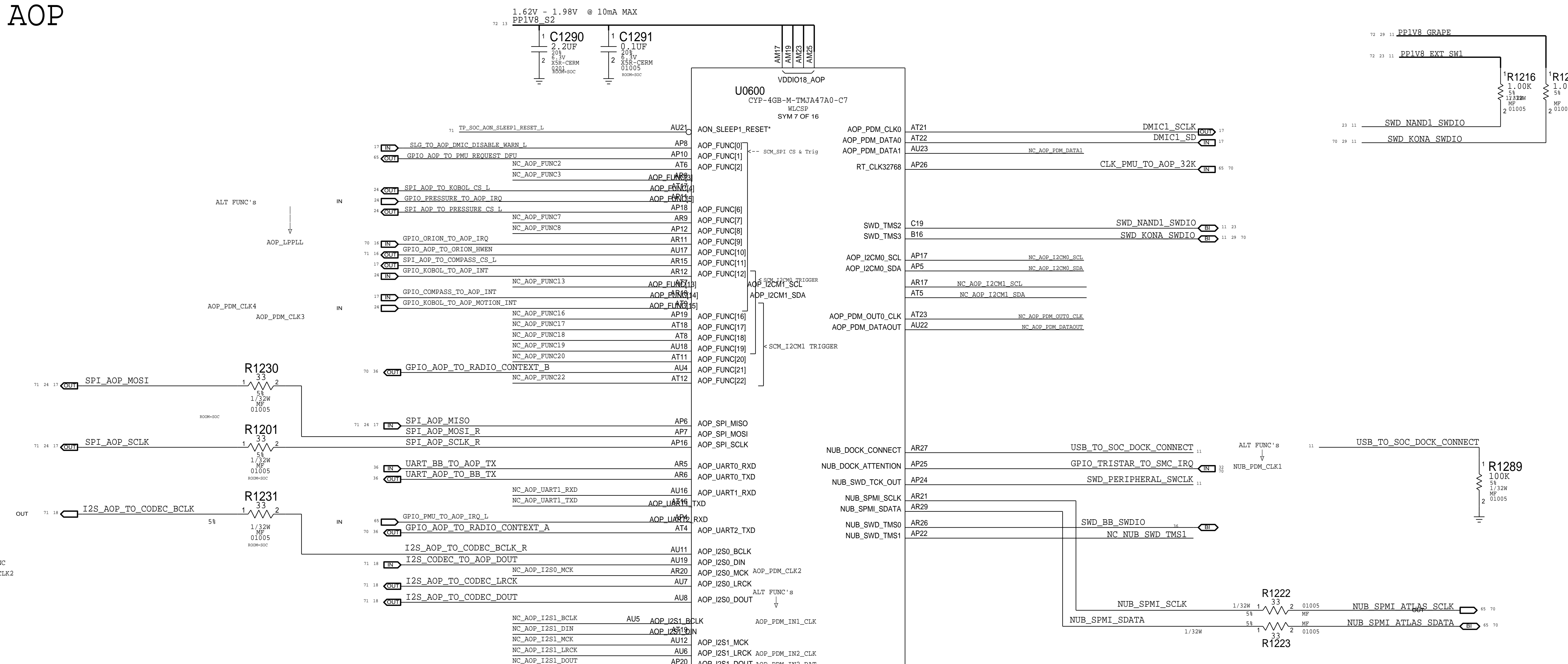
A

D

C

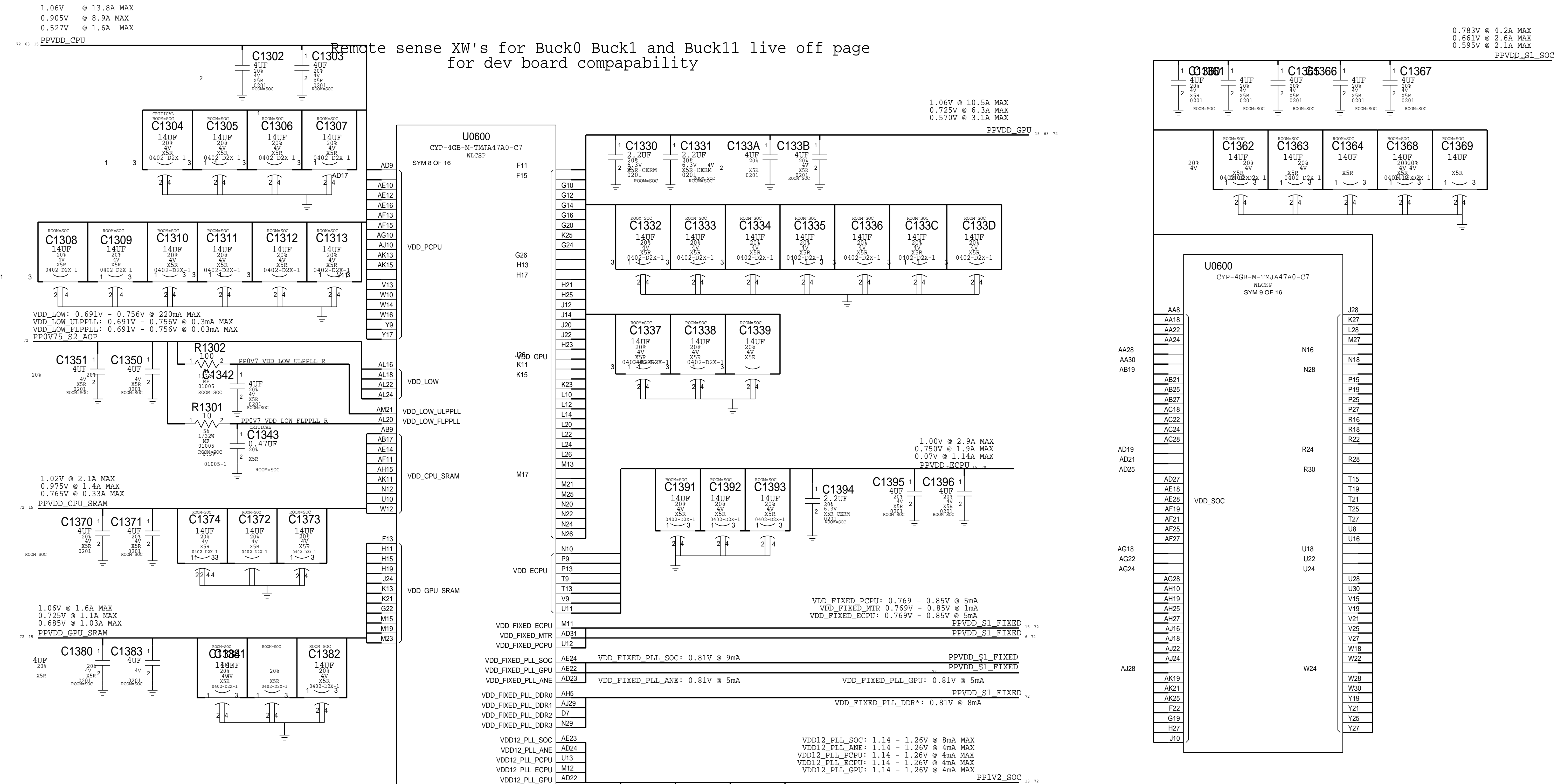
B

A



SYRC: MASTER+1211\_A0A\_0  
PAGE TITLE  
SOC: AOP  
SYRC: DATE+03/27/2019

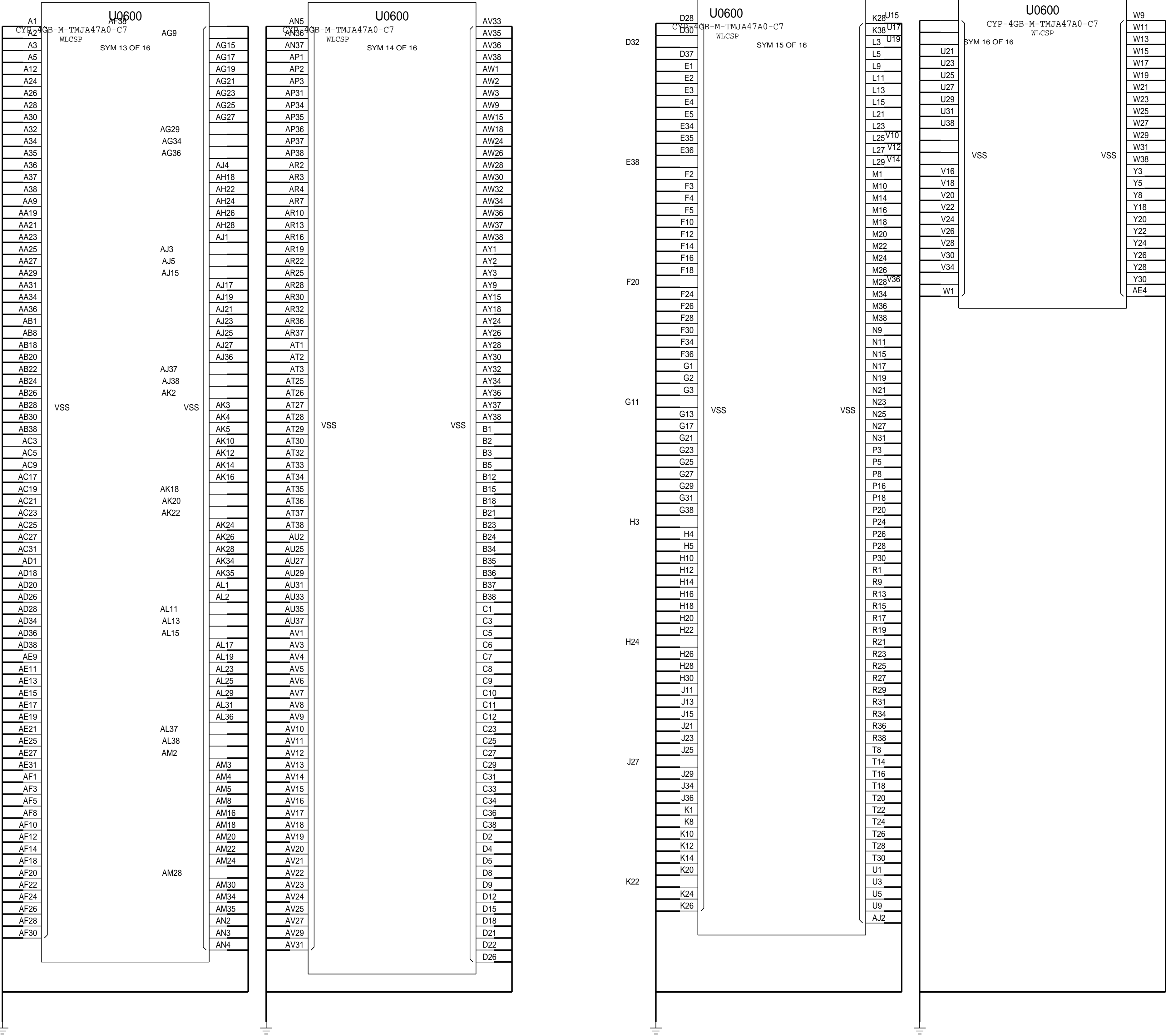
## SOC - CPU, GPU & SOC RAILS



## D



SOC - POWER SUPPLIES





8 7 6 5 4 3 2 1

BOTTOM SIDE SOC CAPS

PPVDD\_S1\_QL

PPVDD\_S1\_FIXED

PPVDD\_S1\_SOC

PPVDD\_CPU\_SRAM

BS\_CPUSRAM

BS\_GPU\_SRAM

PPVDD\_GPU

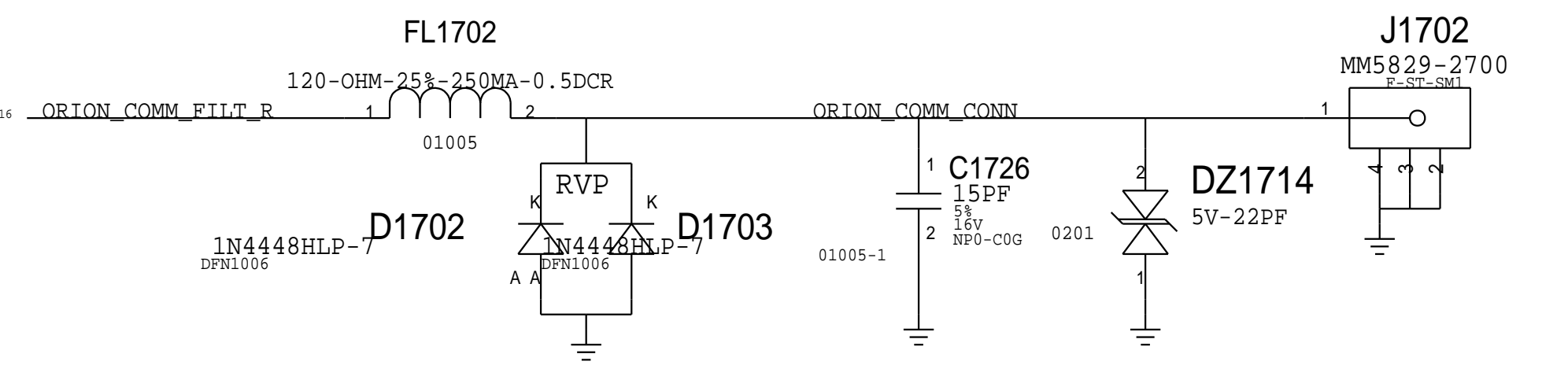
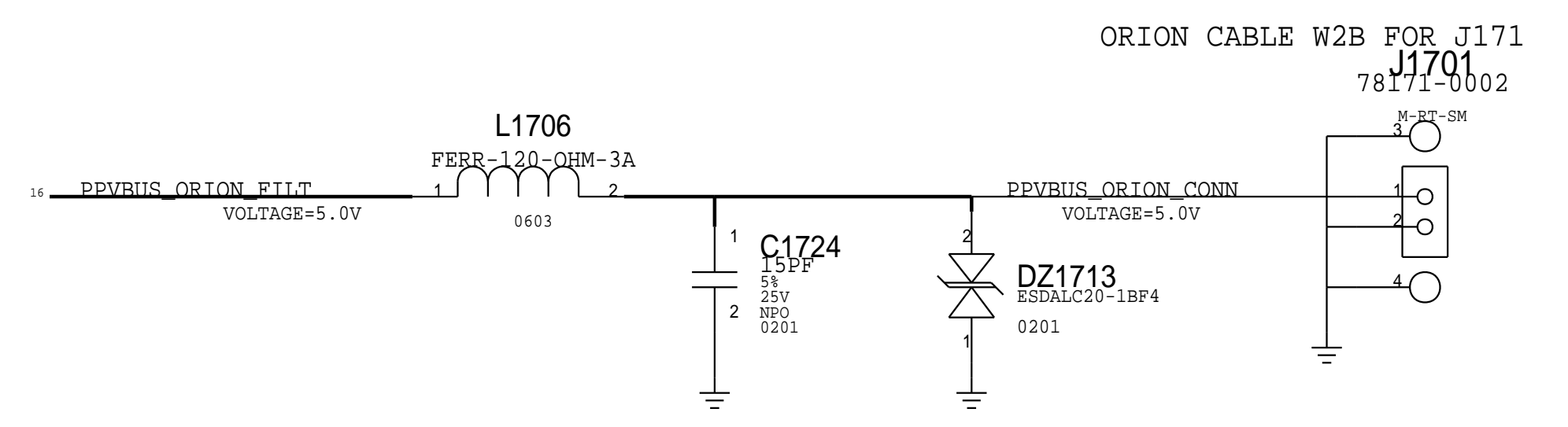
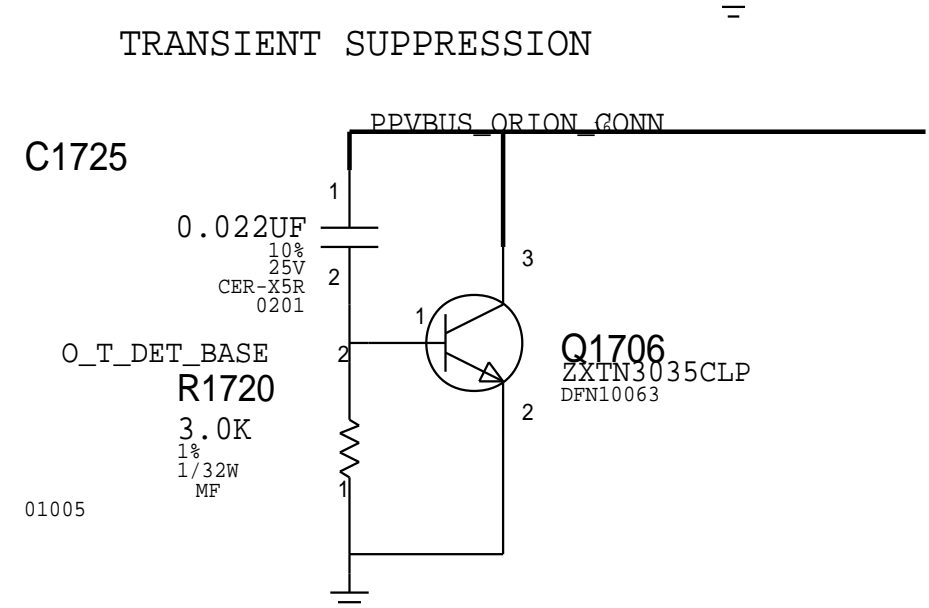
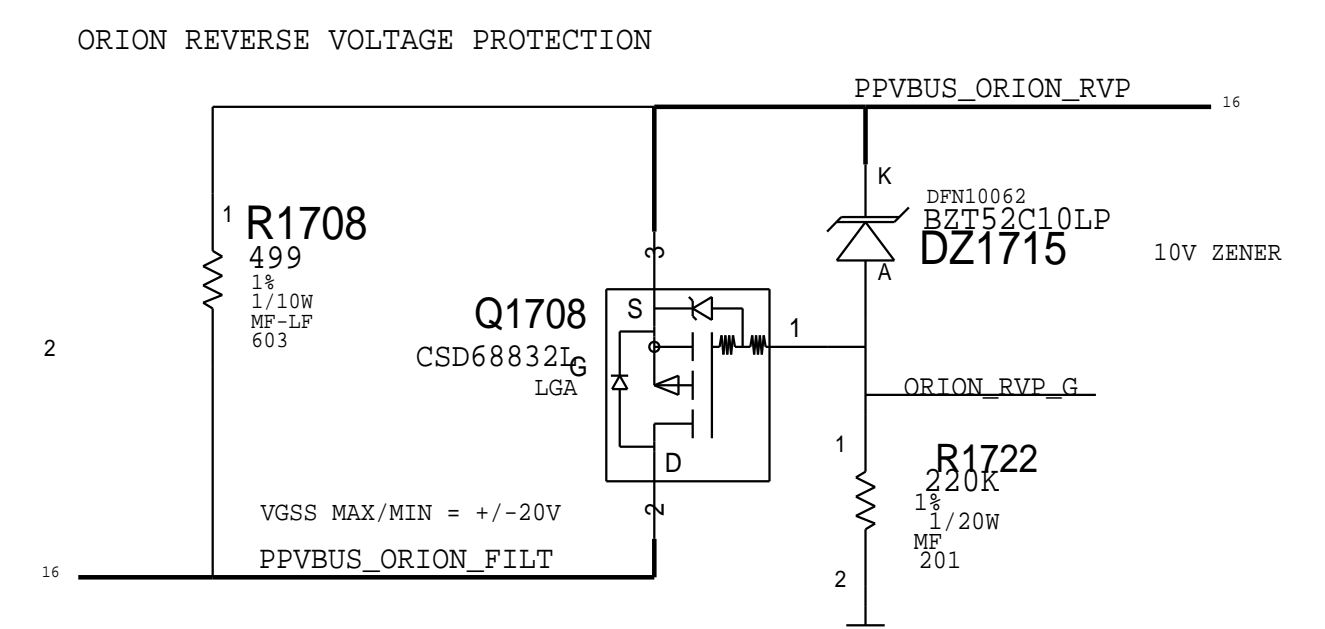
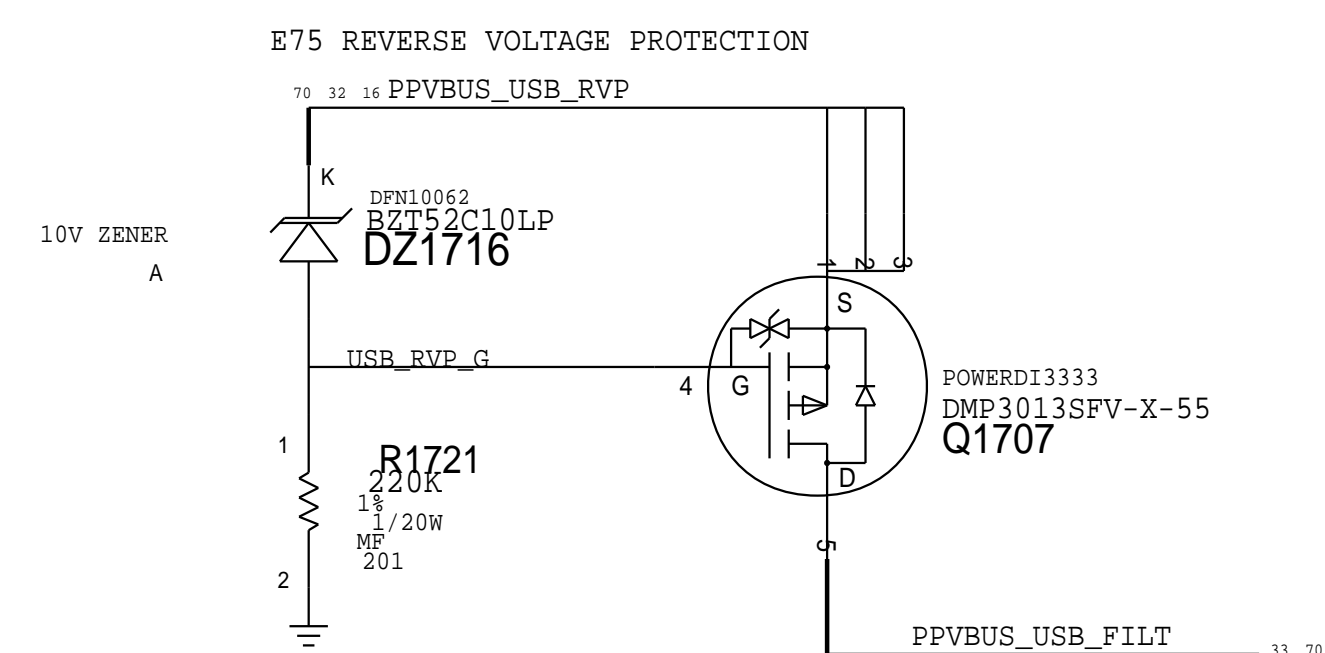
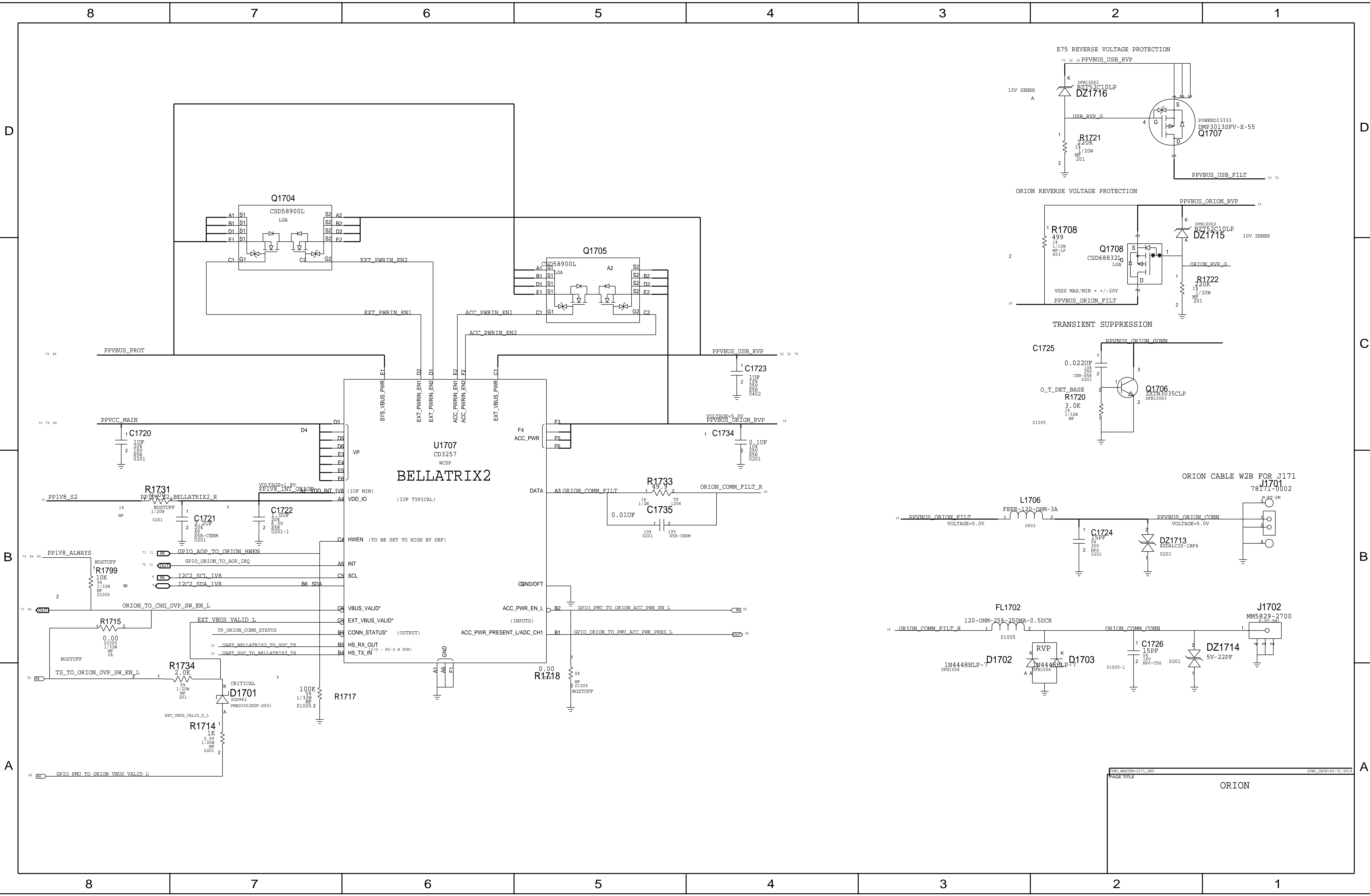
PPVDD\_ECPU

SOC: BOTTOM SIDE DECAPS

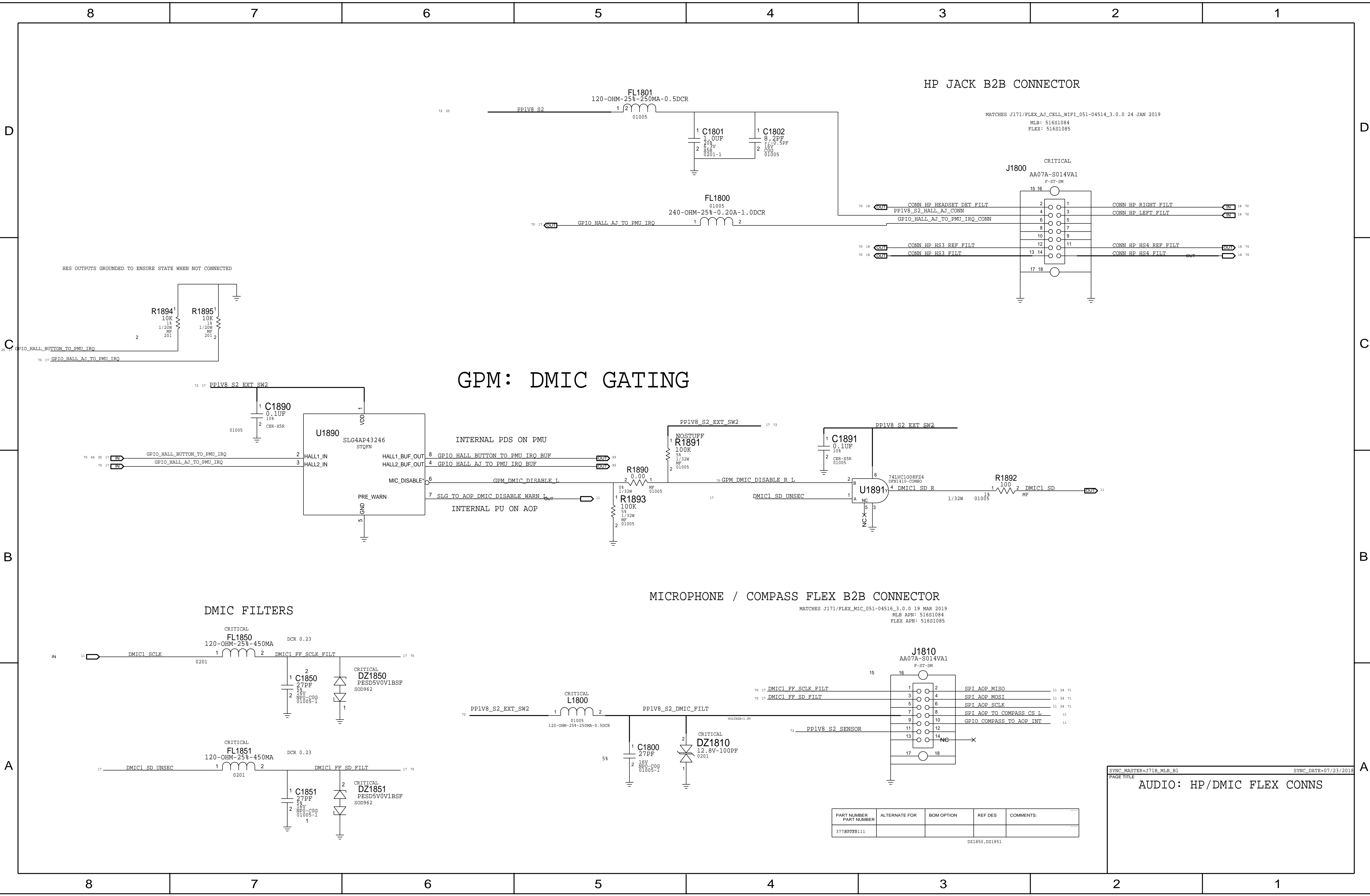
8 7 6 5 4 3 2 1

8 7 6 5 4 3 2 1





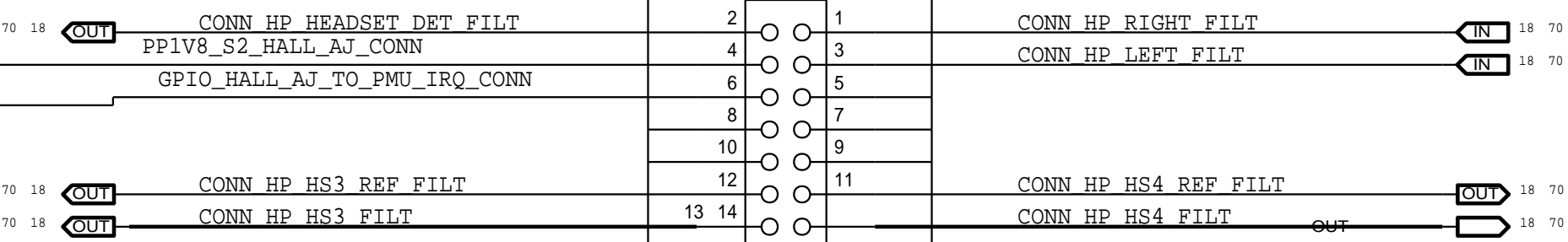
ORION



HP JACK B2B CONNECTOR

MATCHES J171/FLEX\_AJ\_CELL\_WIFI\_051-04514\_3.0.0 24 JAN 2019  
MLB: 516S1084  
FLEX: 516S1085

CRITICAL  
J1800  
AA07A-S014VA1  
F-ST-SM



GPM: DMIC GATING

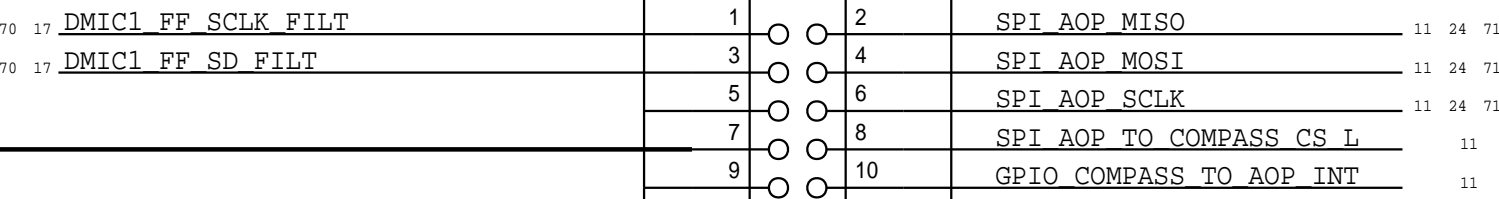
INTERNAL PDS ON PMU

INTERNAL PU ON AOP

MICROPHONE / COMPASS FLEX B2B CONNECTOR

MATCHES J171/FLEX\_MIC\_051-04516\_3.0.0 19 MAR 2019  
MLB APN: 516S1084  
FLEX APN: 516S1085

CRITICAL  
J1810  
AA07A-S014VA1  
F-ST-SM

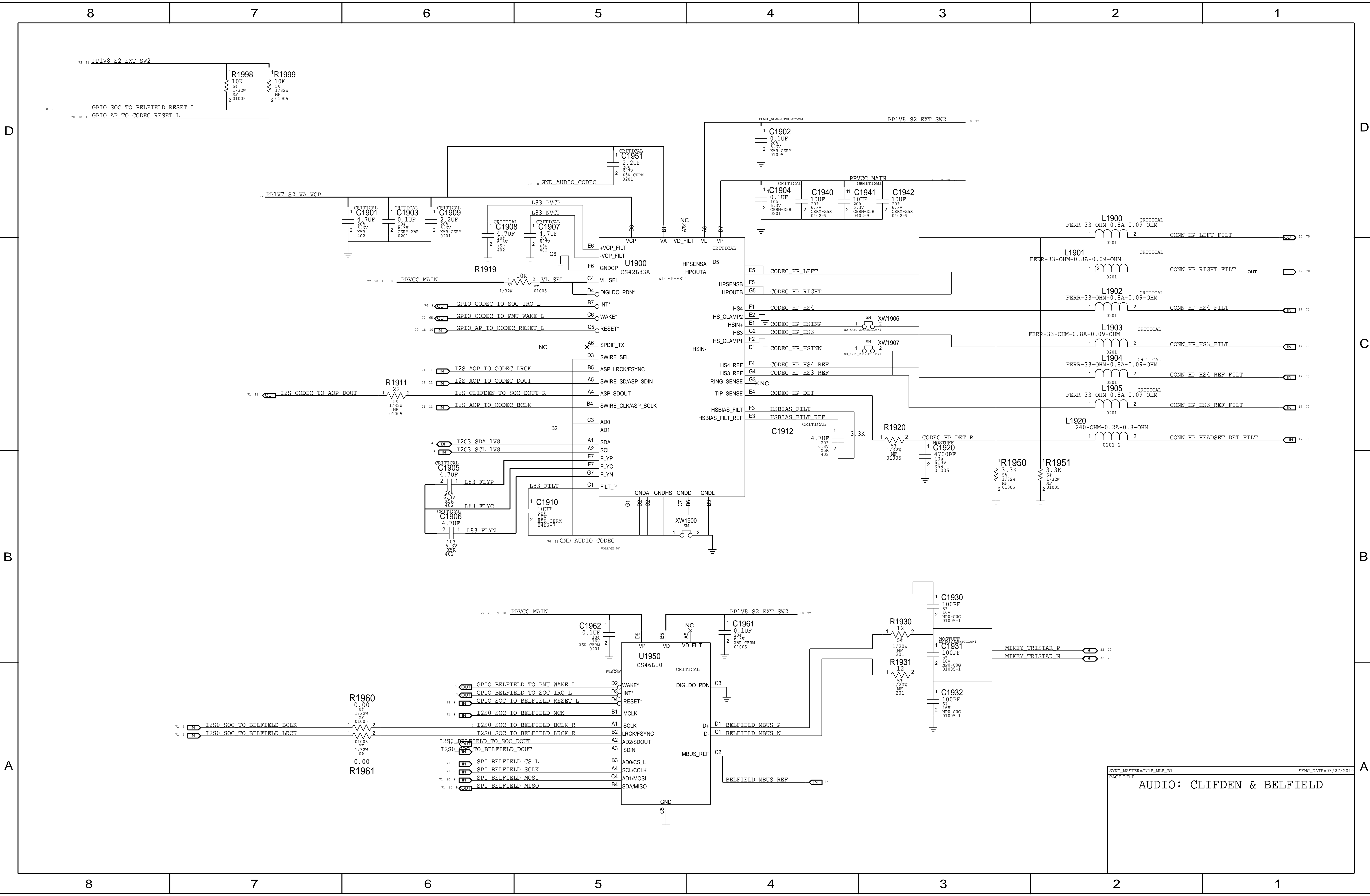


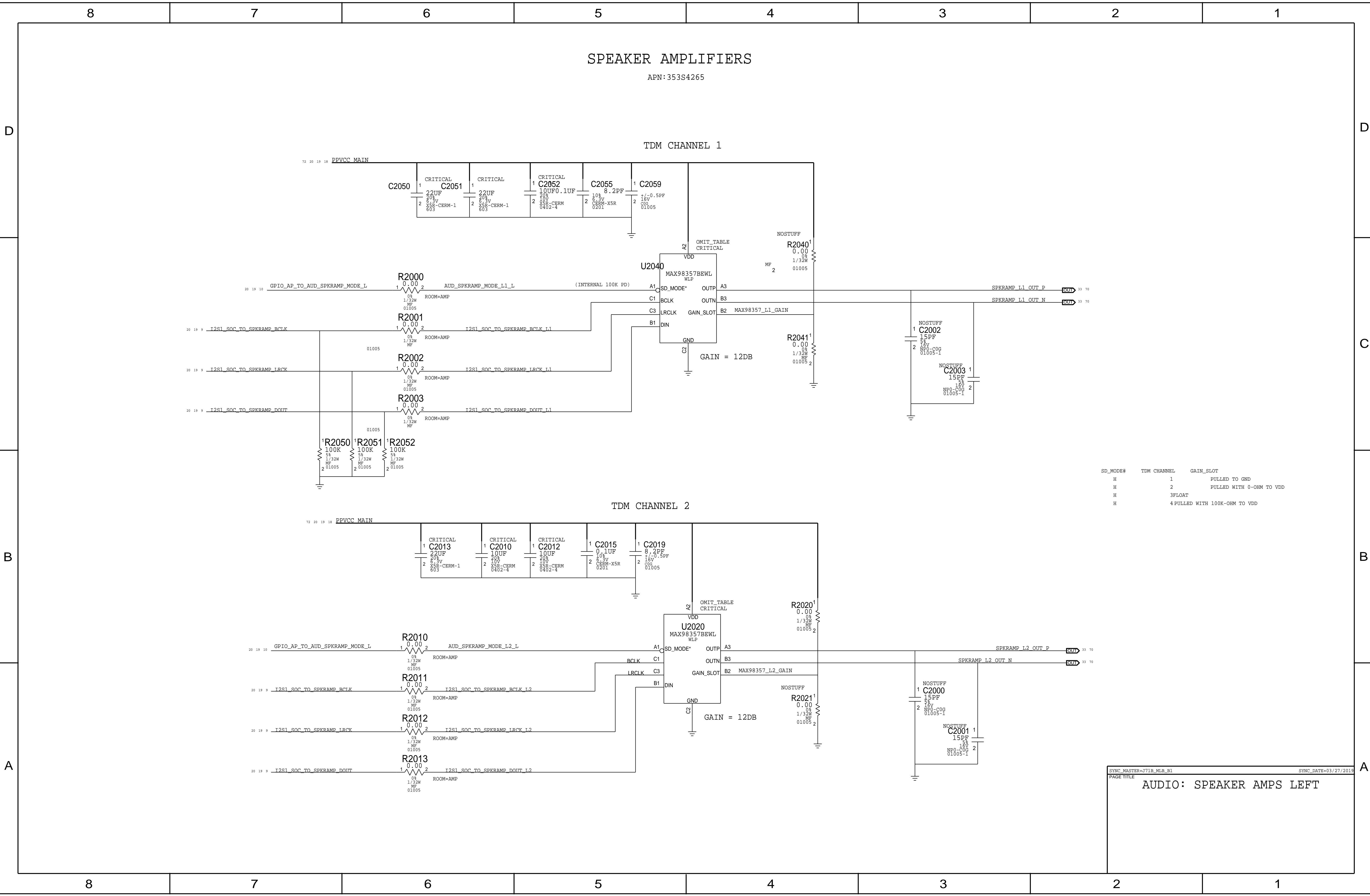
SYNC\_MASTER=J71B\_MLB\_B1  
PAGE TITLE  
SYNC\_DATE=07/23/2018

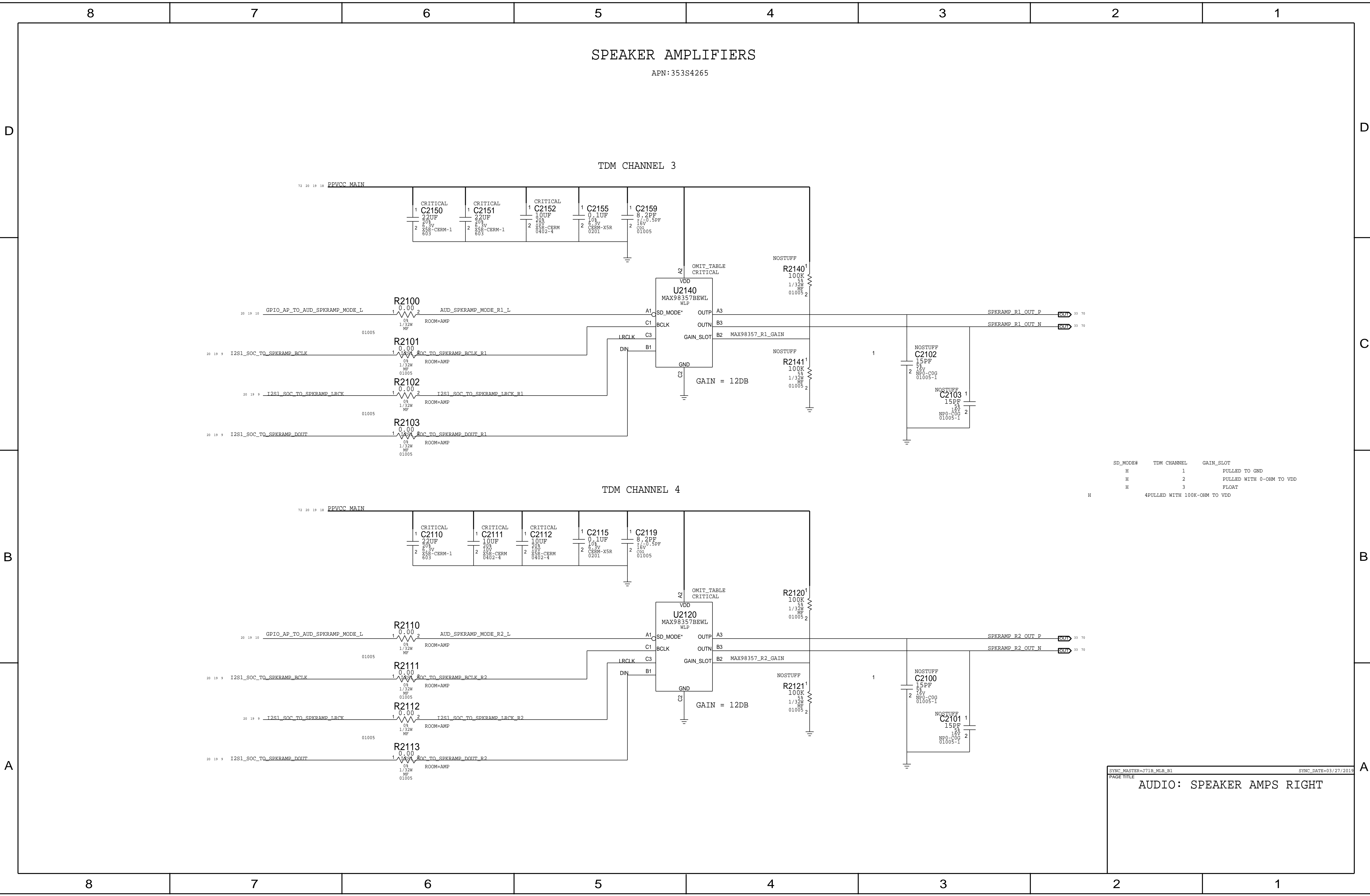
AUDIO: HP/DMIC FLEX CONNS

PART NUMBER	ALTERNATE FOR	BOM OPTION	REF DES	COMMENTS:
3773070B111				

DZ1850, DZ1851







8

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1

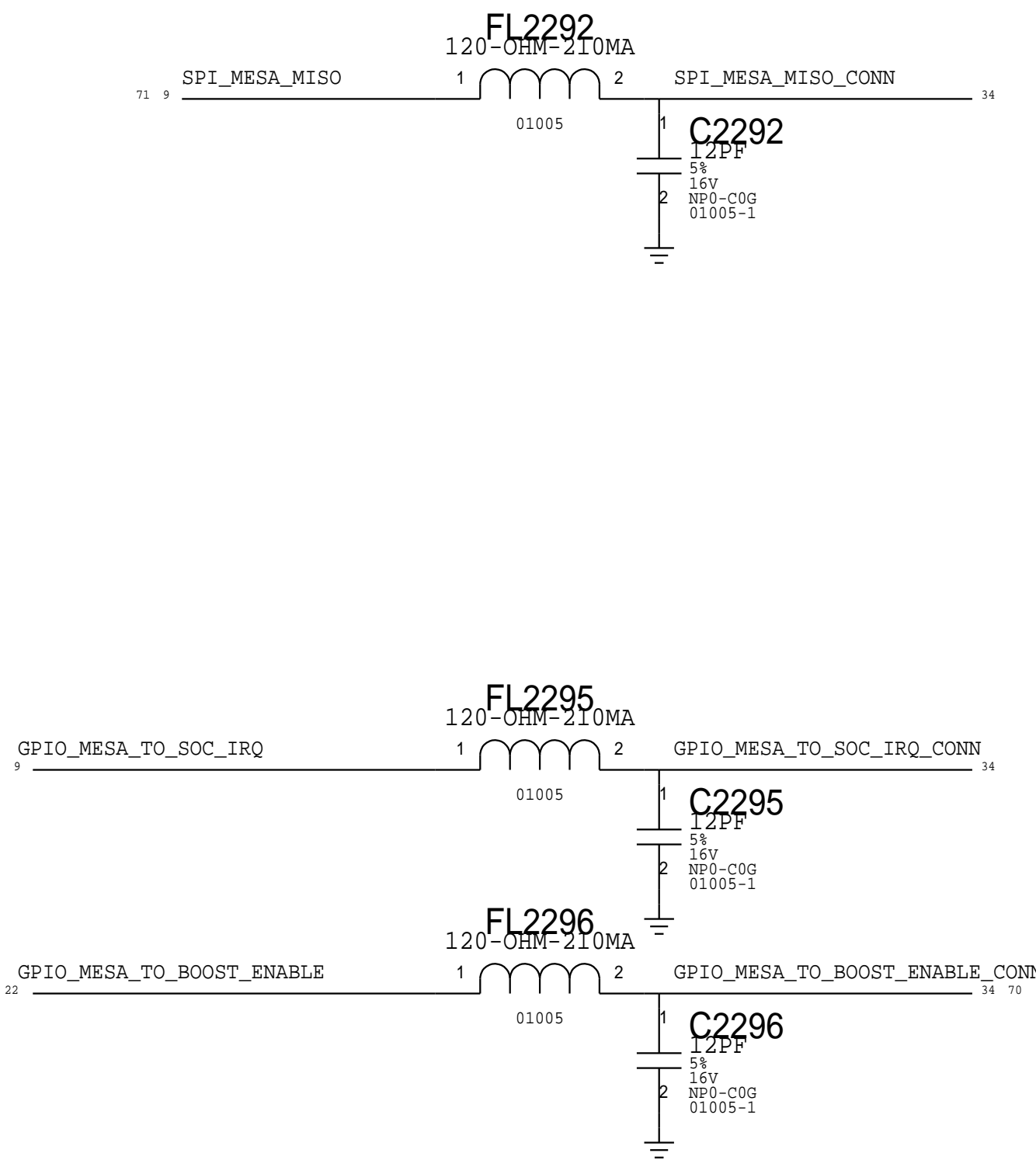
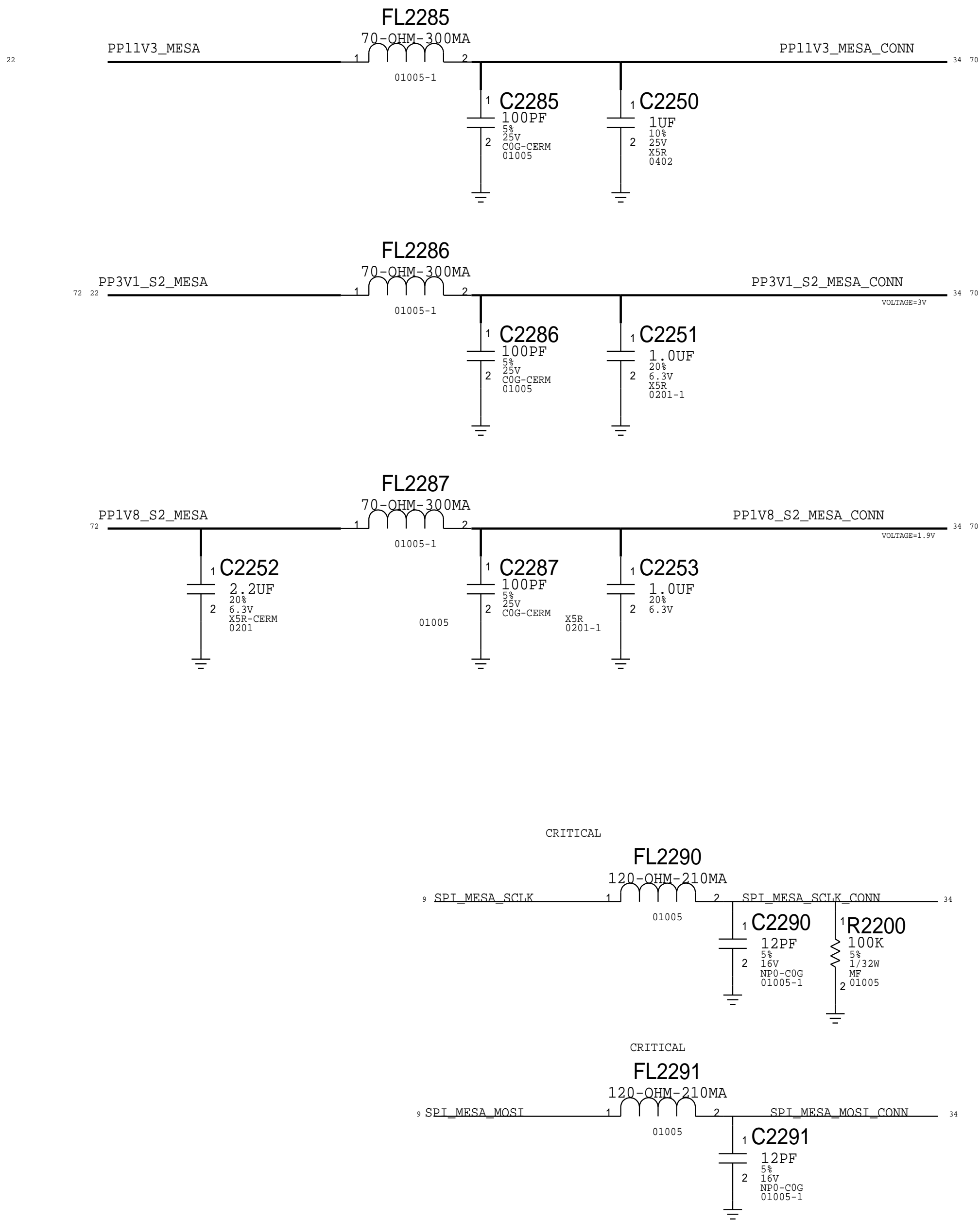
A

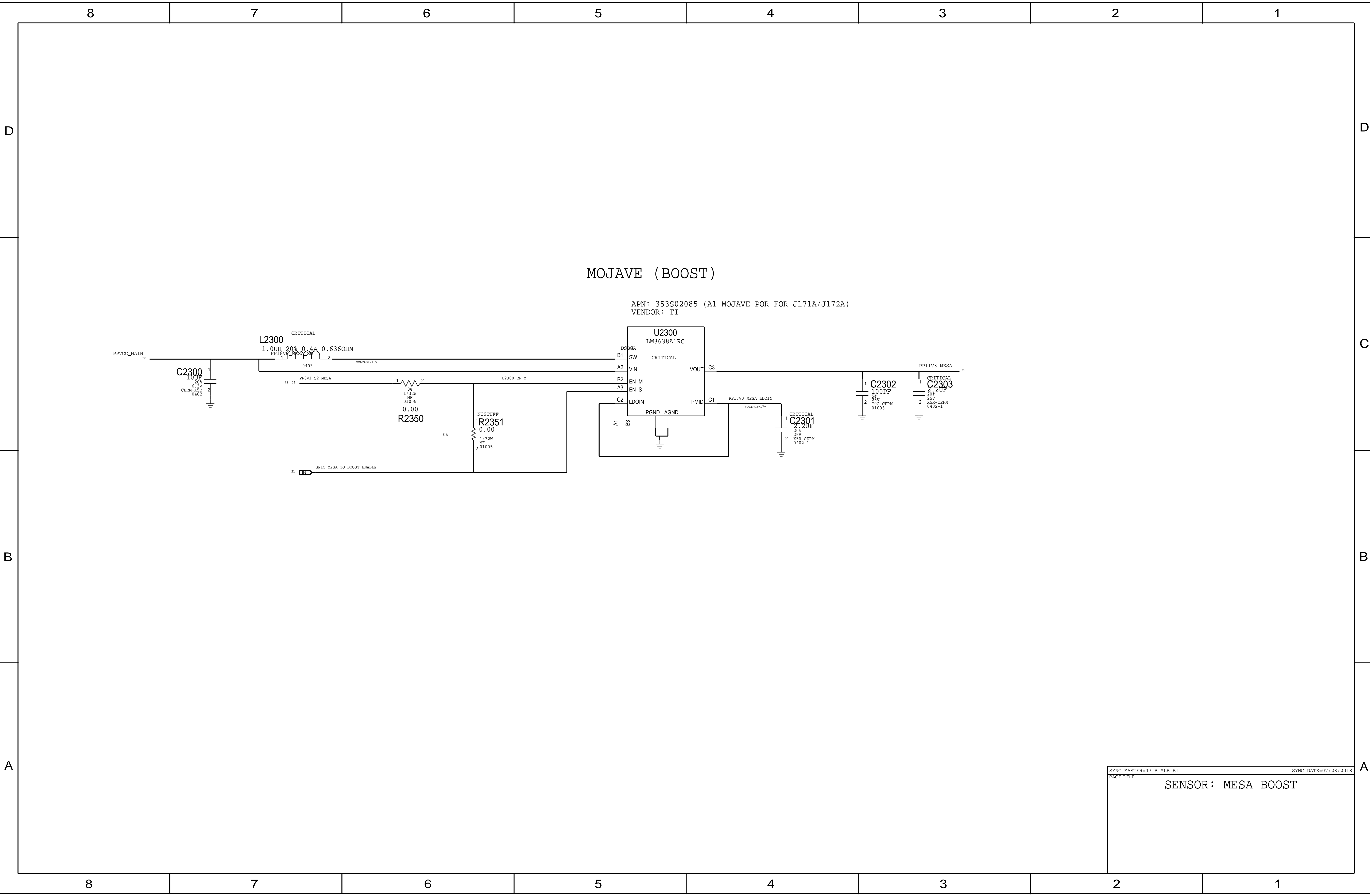
B

C

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MESA SUPPORT





SENSOR: MESA BOOST



S4E NAND

D

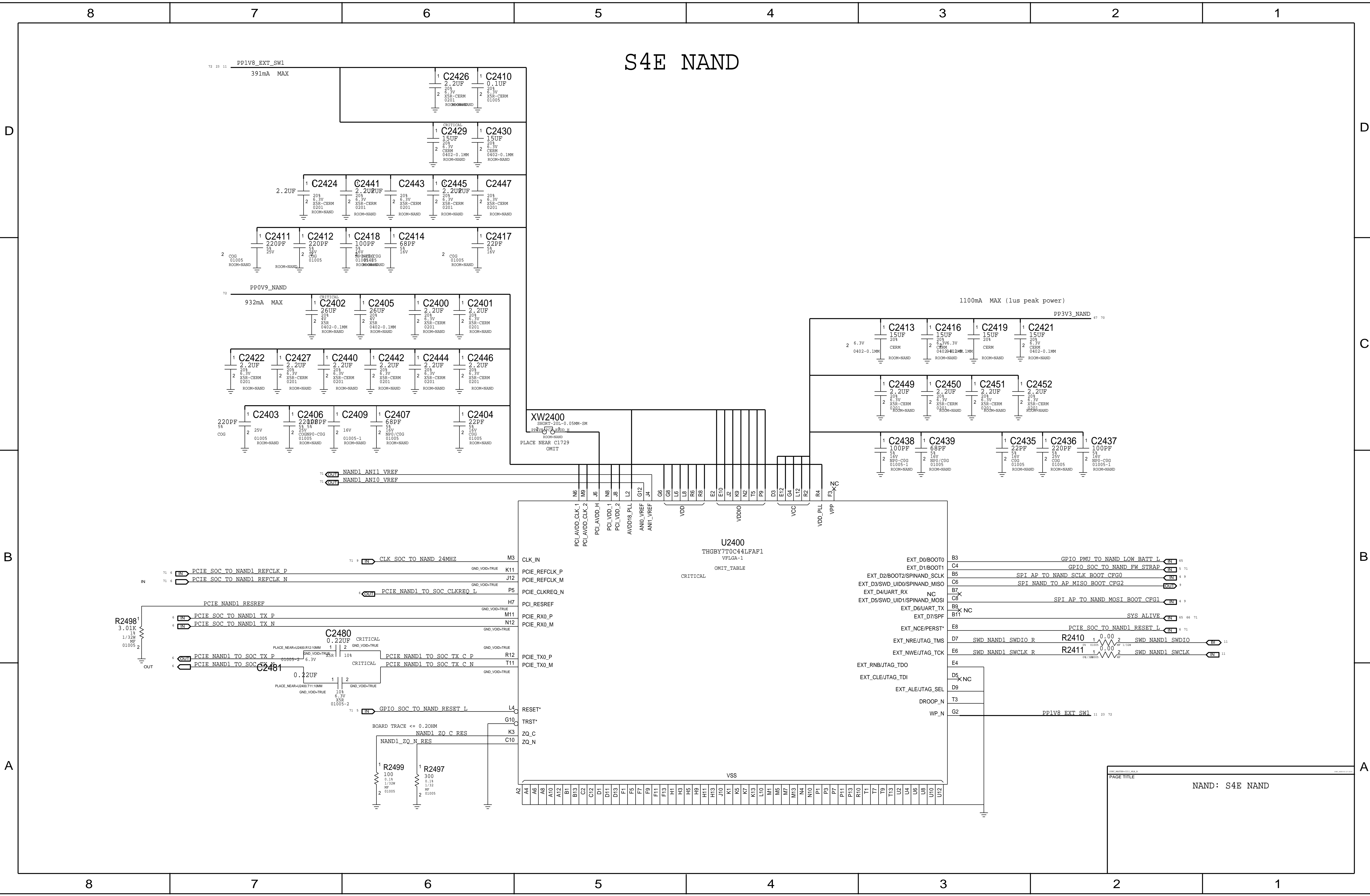
D

B

B

A

A



## D

D



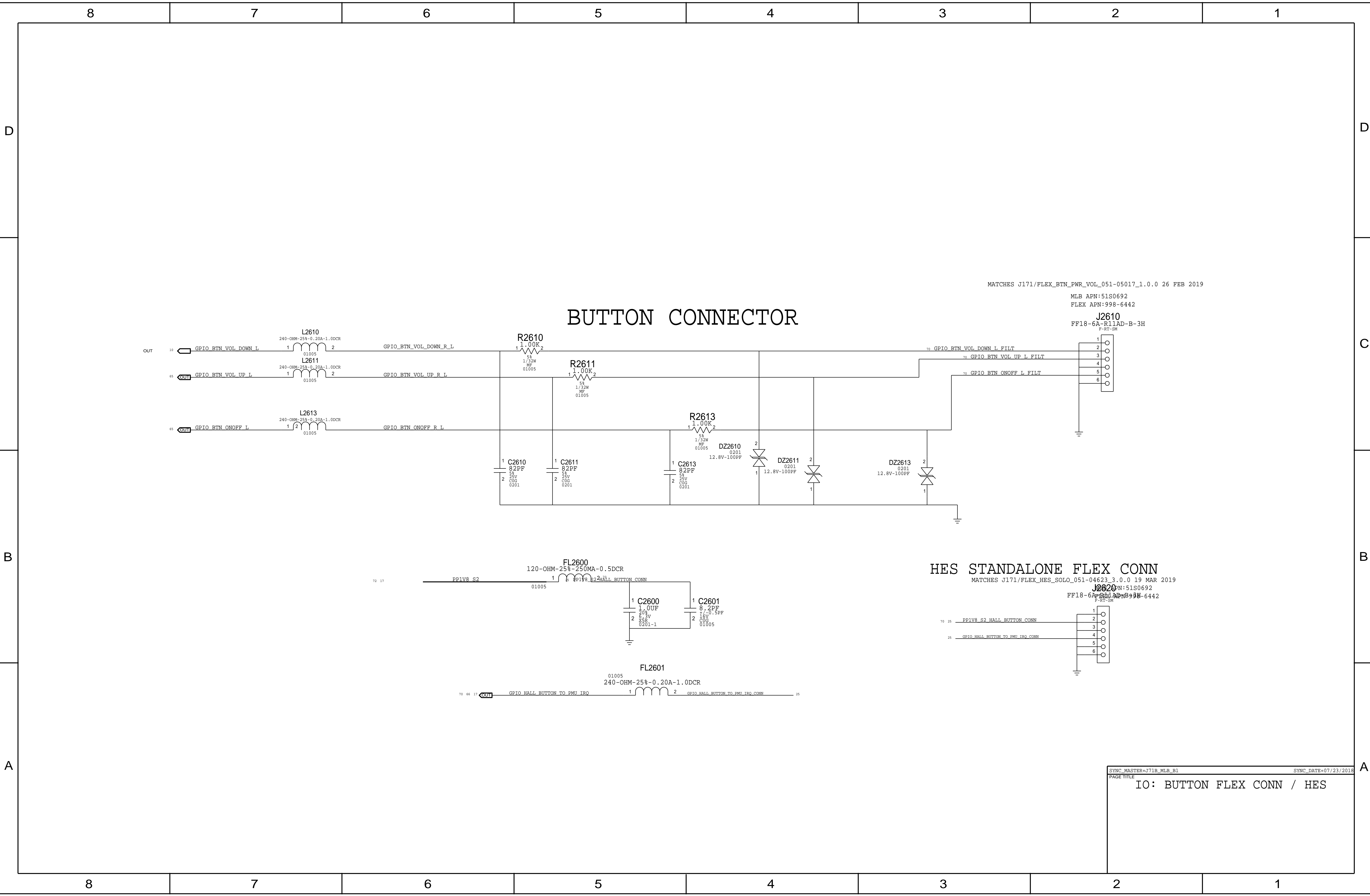
## B

B



A

A



BUTTON CONNECTOR

HES STANDALONE FLEX CONN

IO: BUTTON FLEX CONN / HES

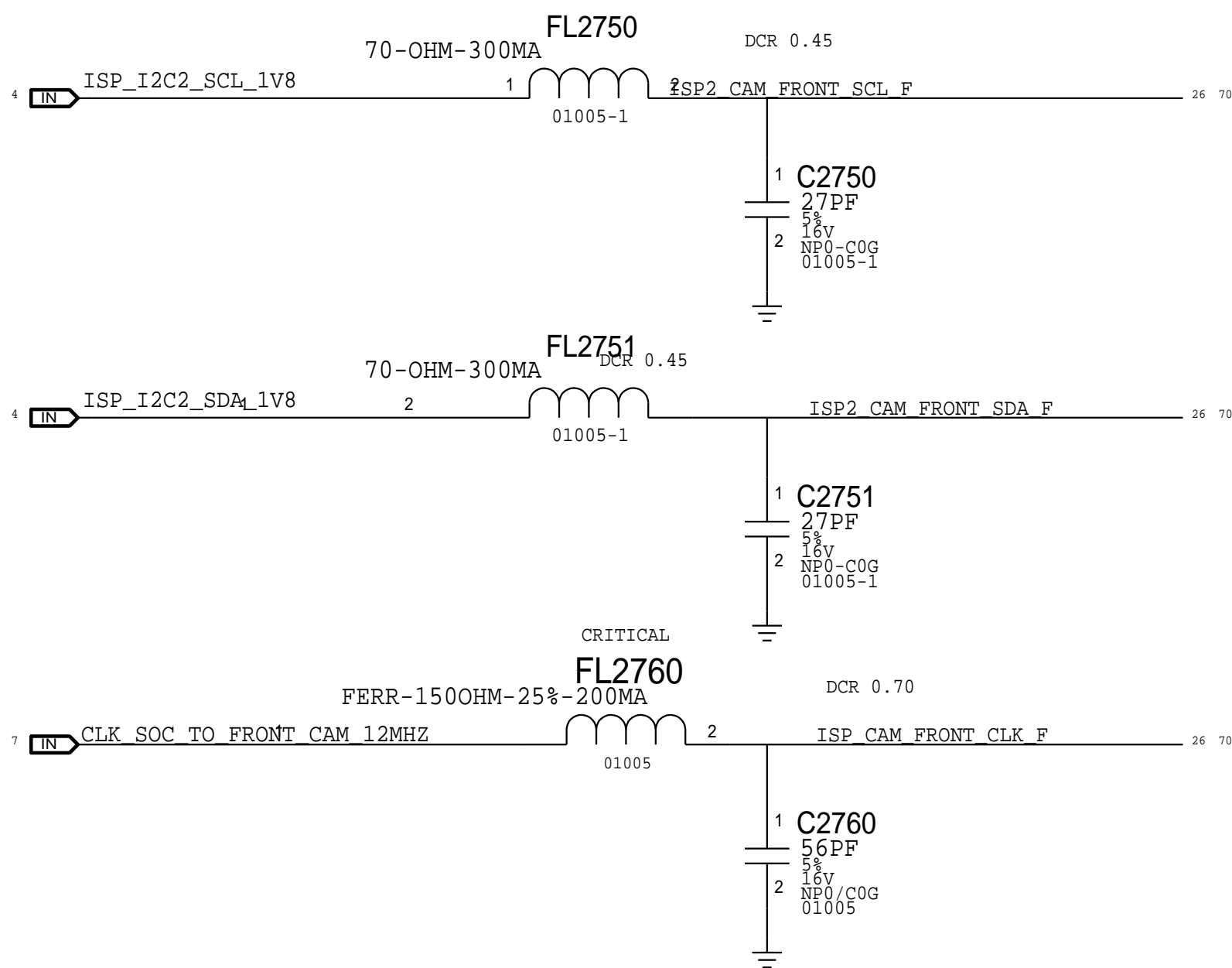
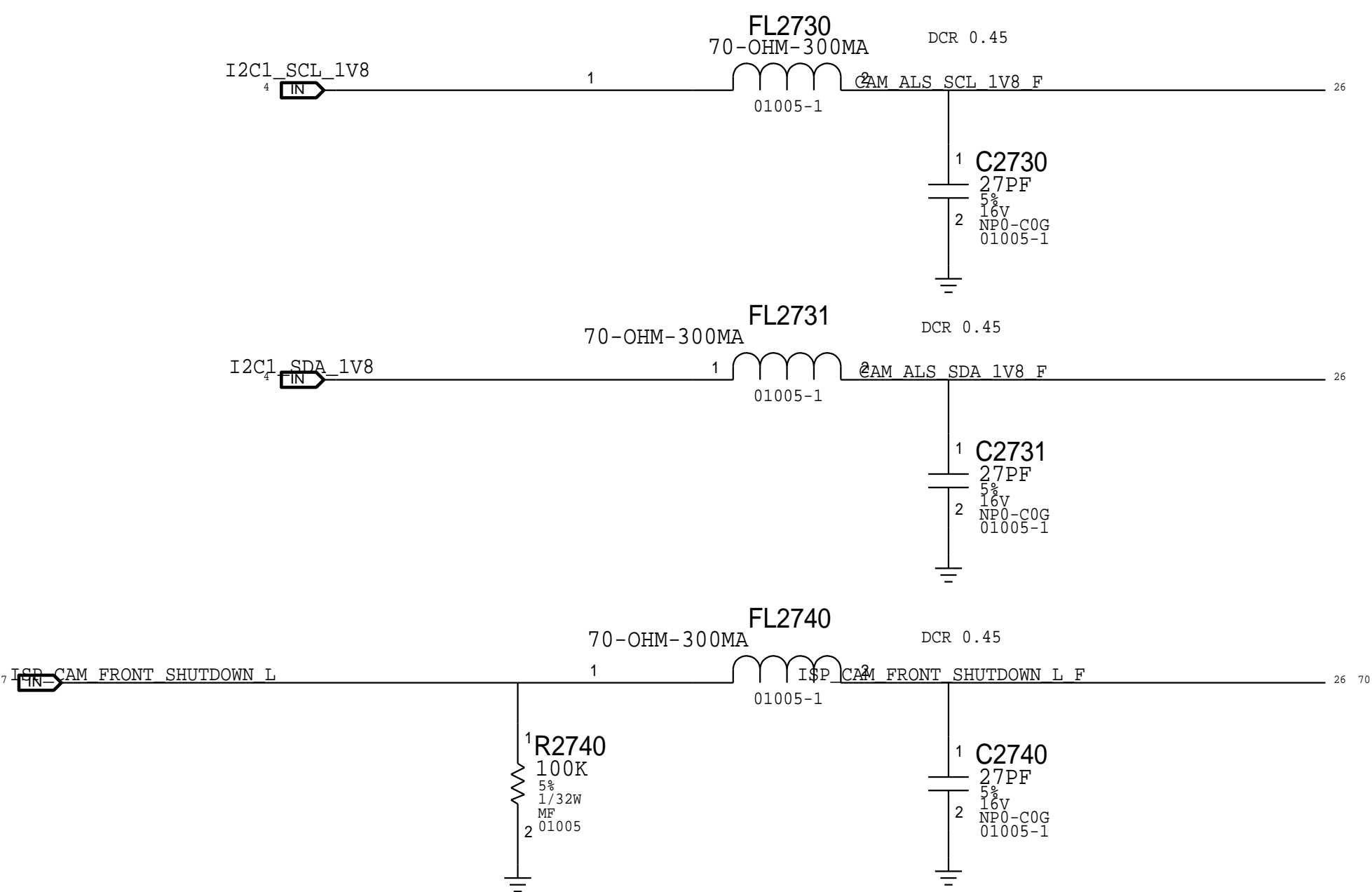
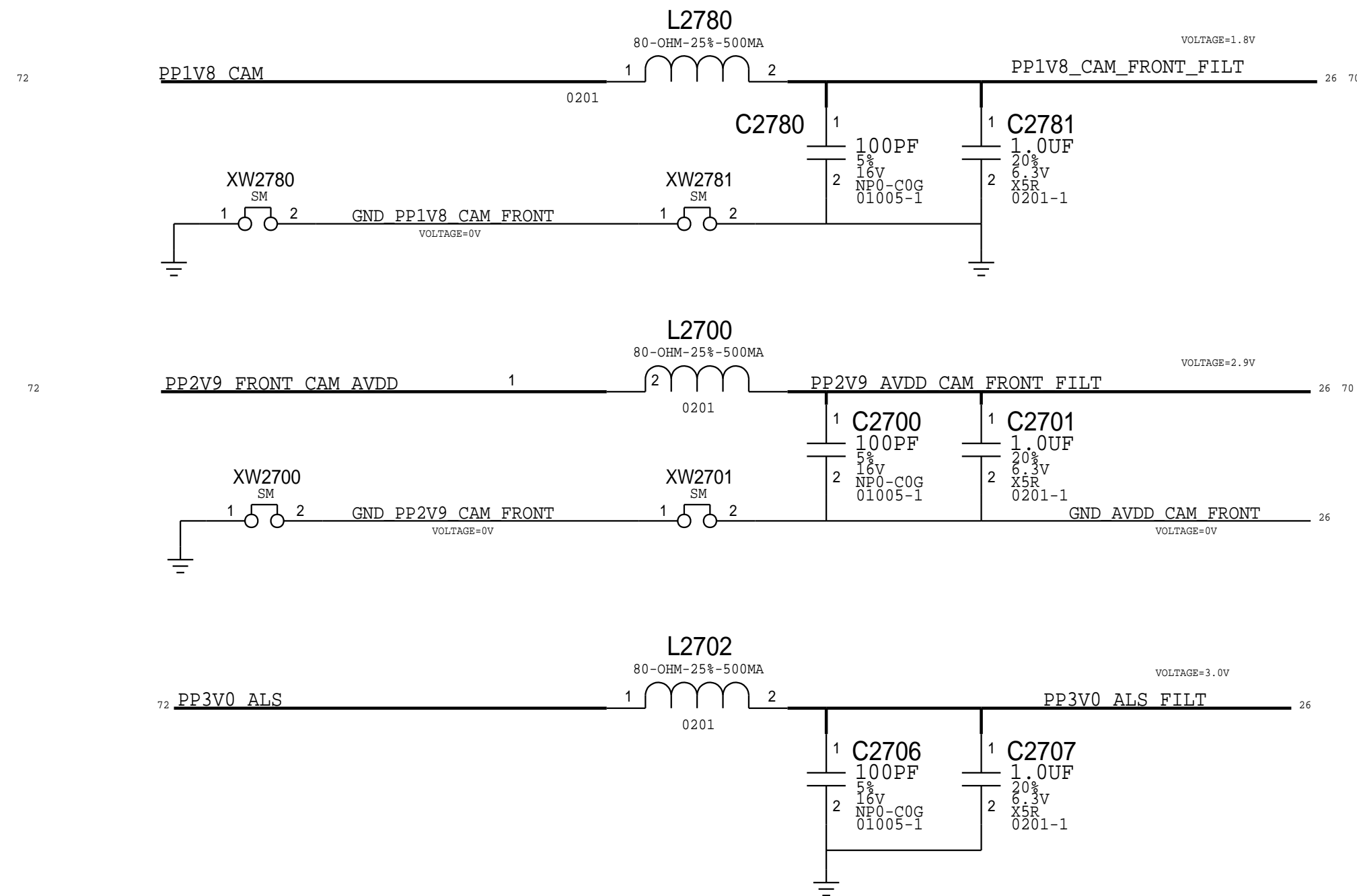
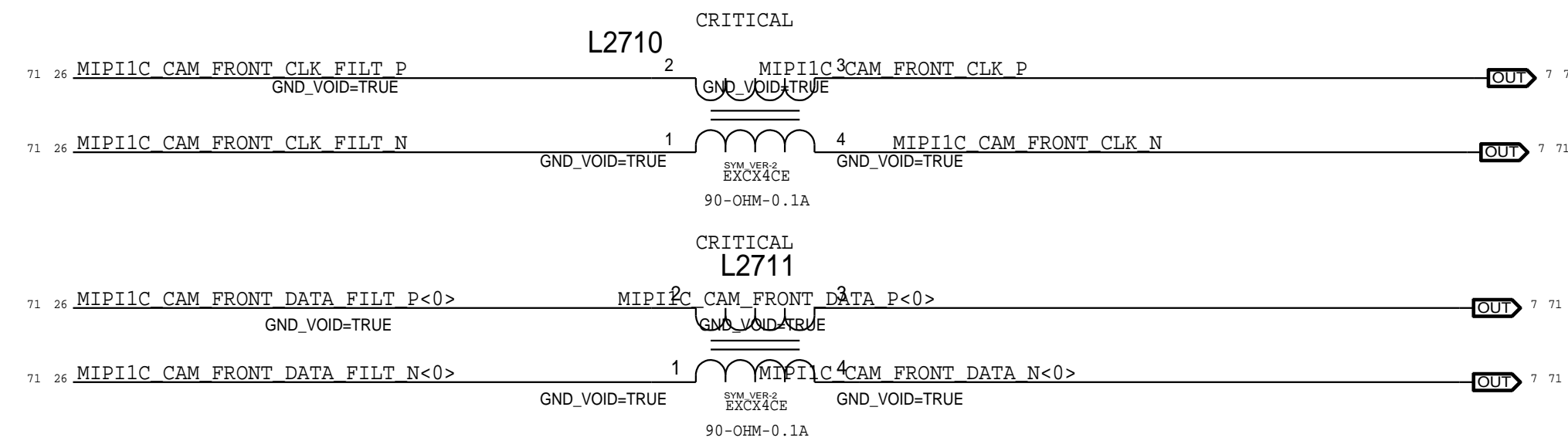
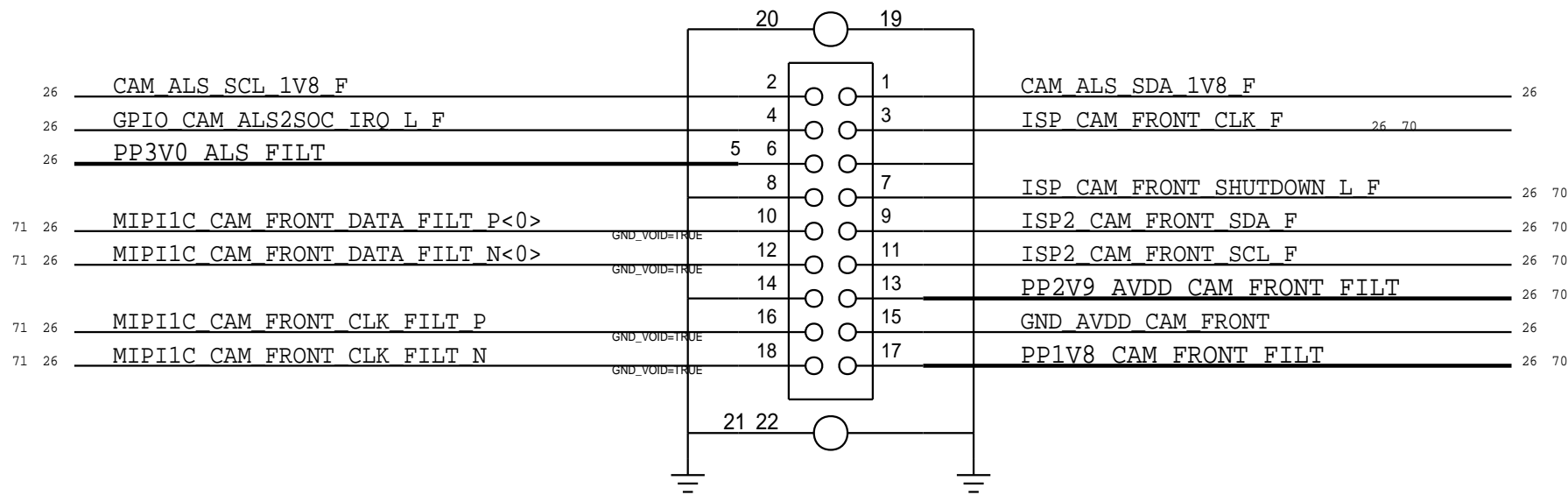
FRONT CAMERA CONNECTOR

J65 CAMERA CONNECTOR

APN:MLB 516S0876  
APN:FLEX 516S0869

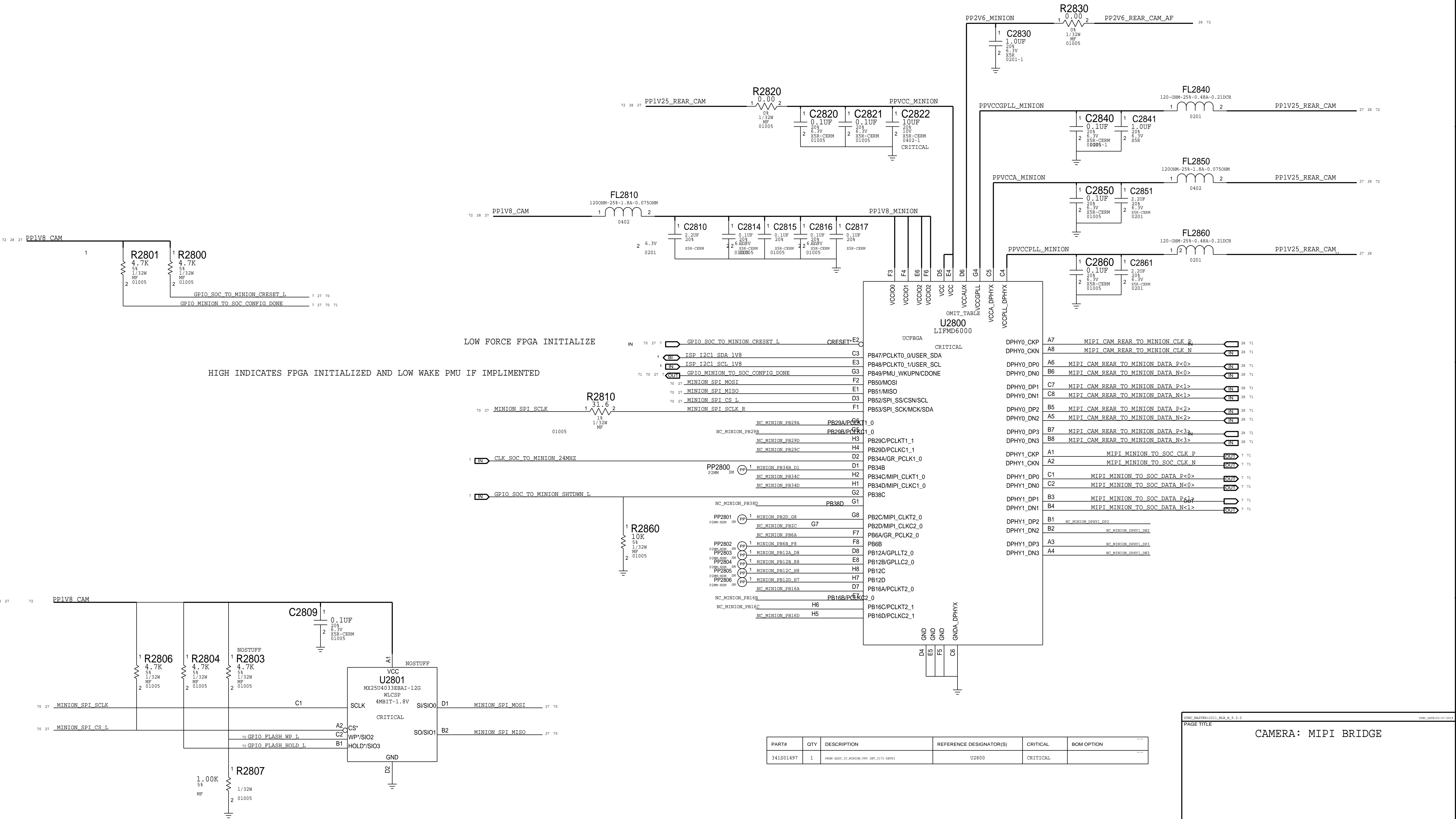
CRITICAL  
J2700

503548-1820  
P-ST-SM

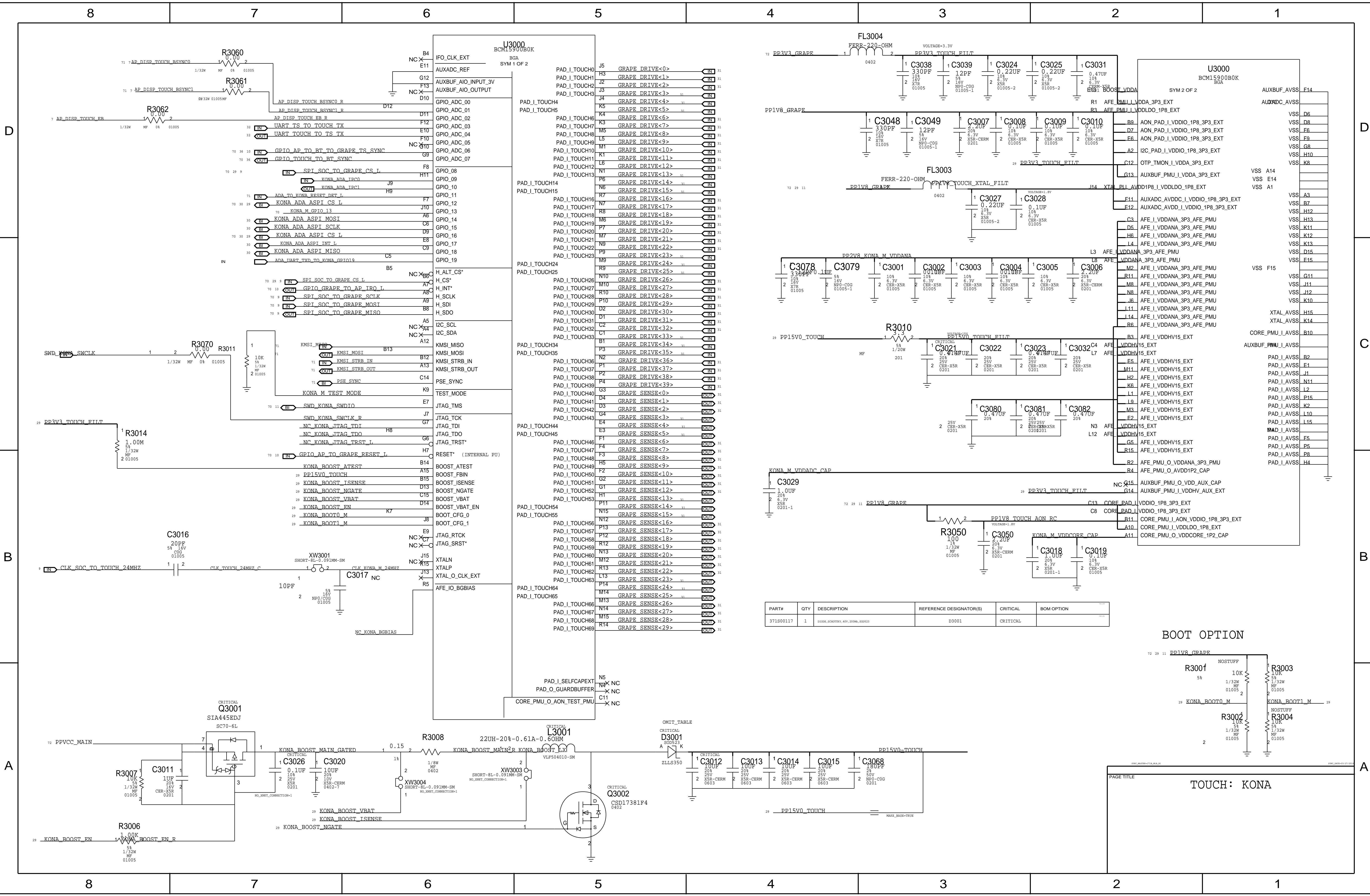


MINION

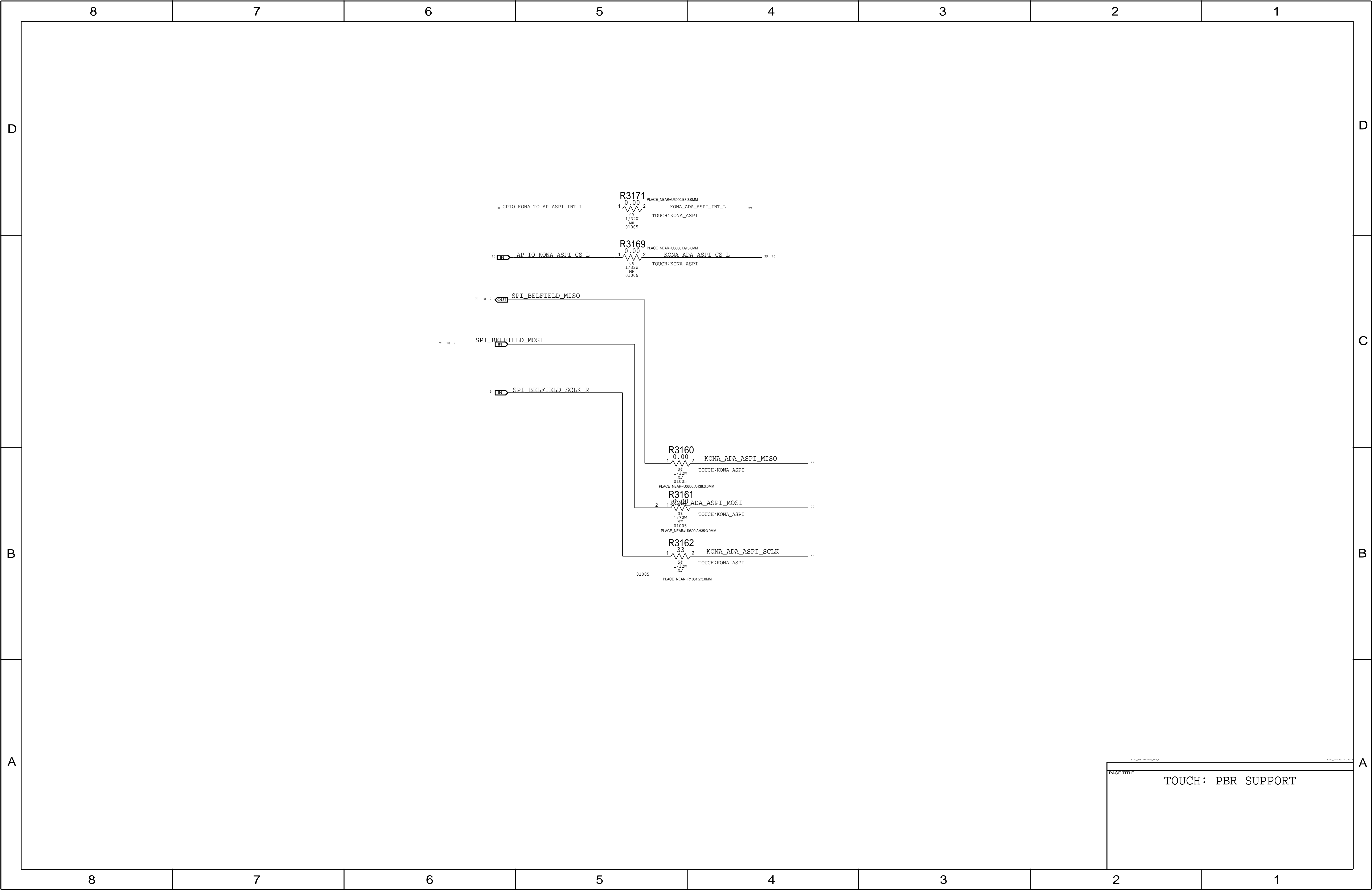
VCCIO: NOM 1.8V  
VCC: NOM 1.2V (1.25V CAMERA RAIL IS ACCEPTABLE)  
VCCAUX: NOM 2.5V (2.6V CAMERA RAIL IS ACCEPTABLE)

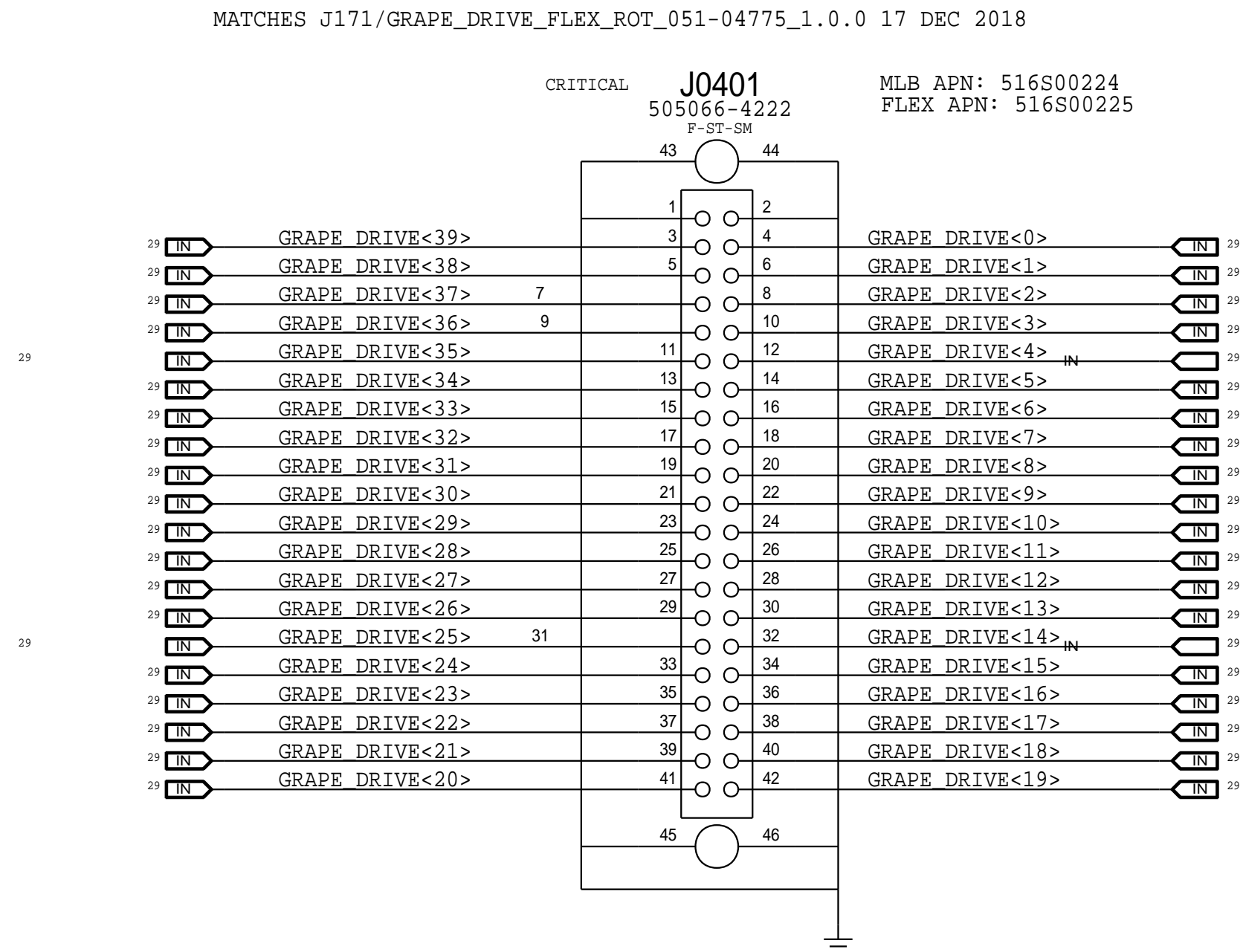
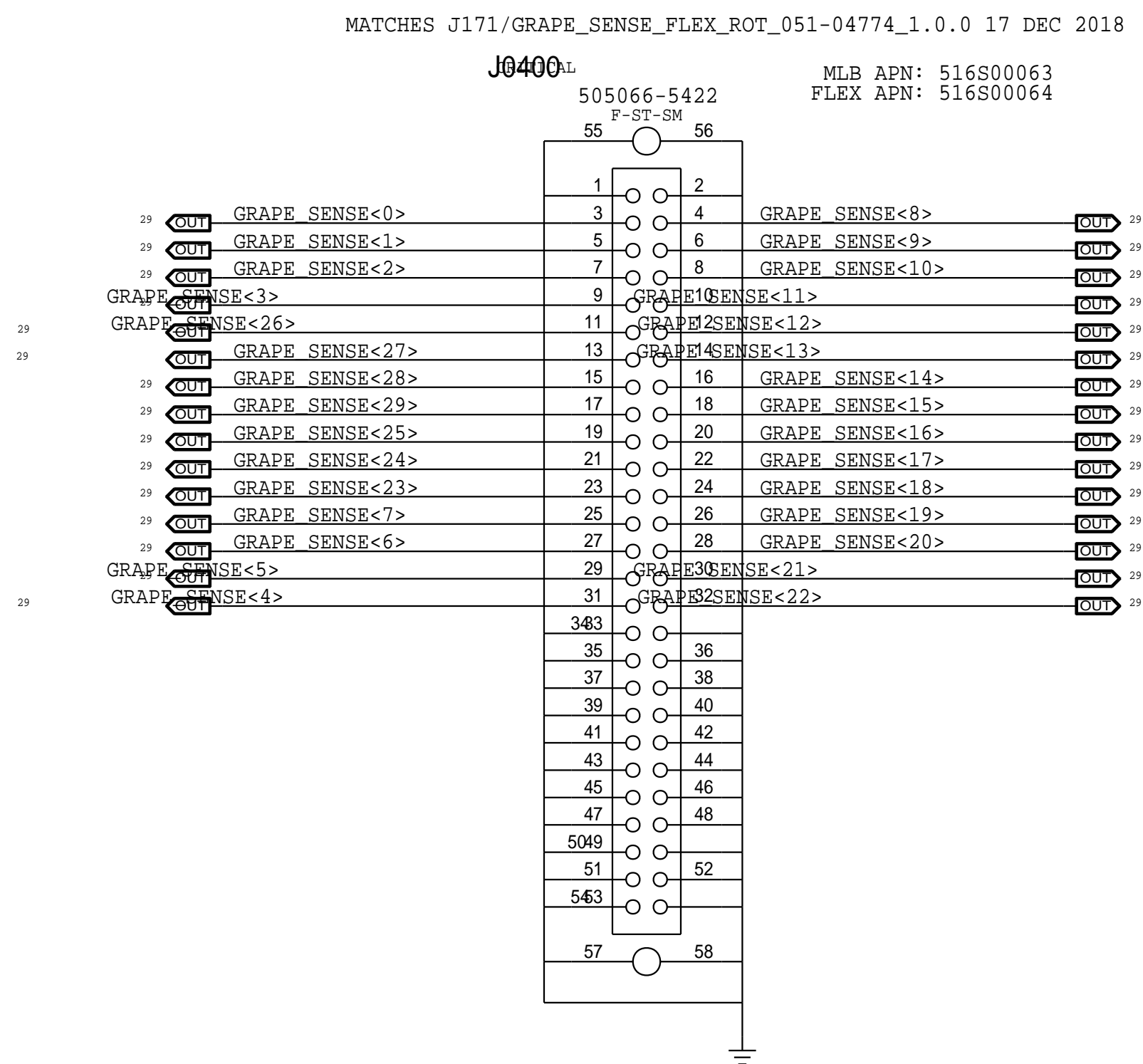


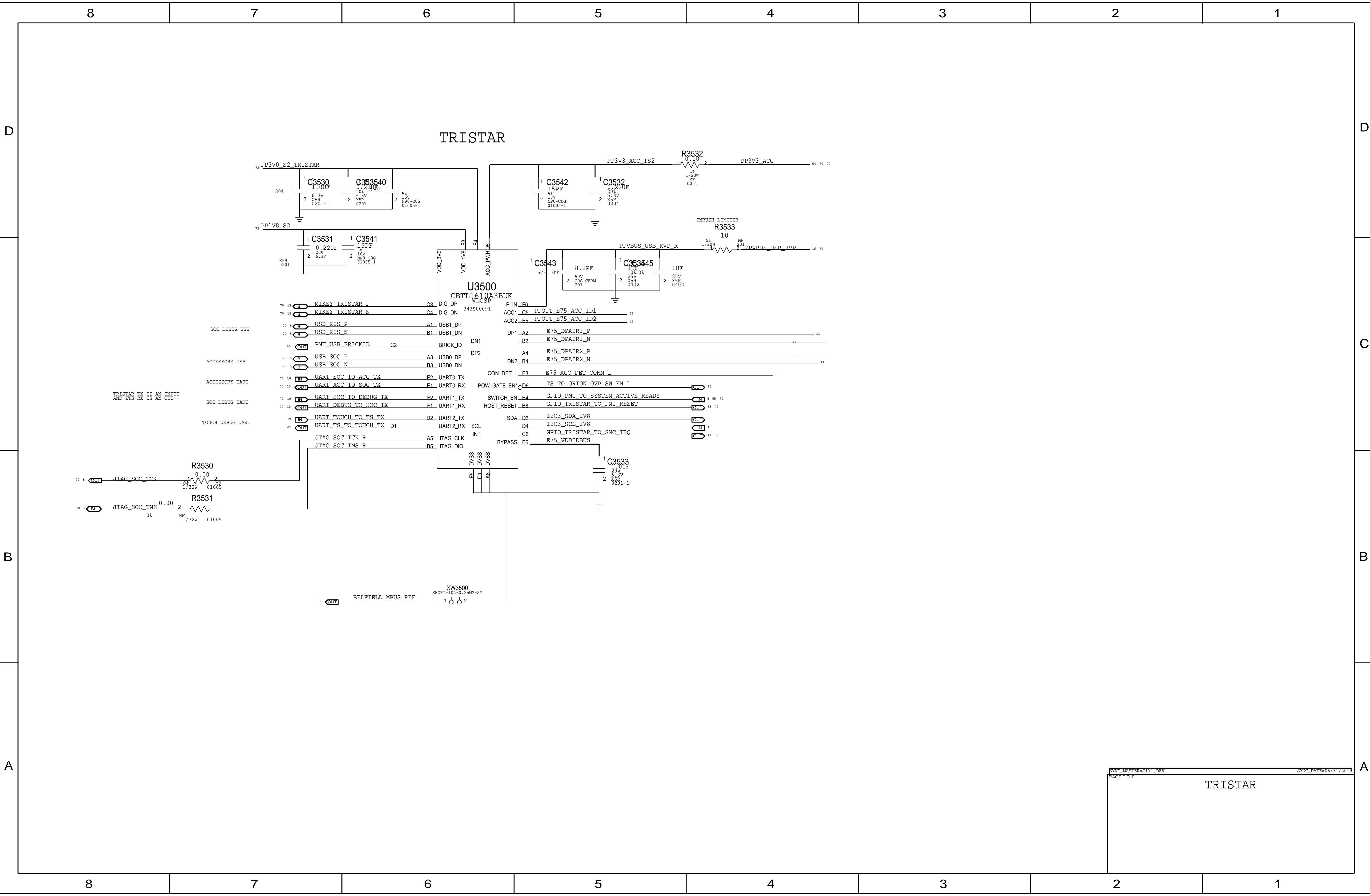








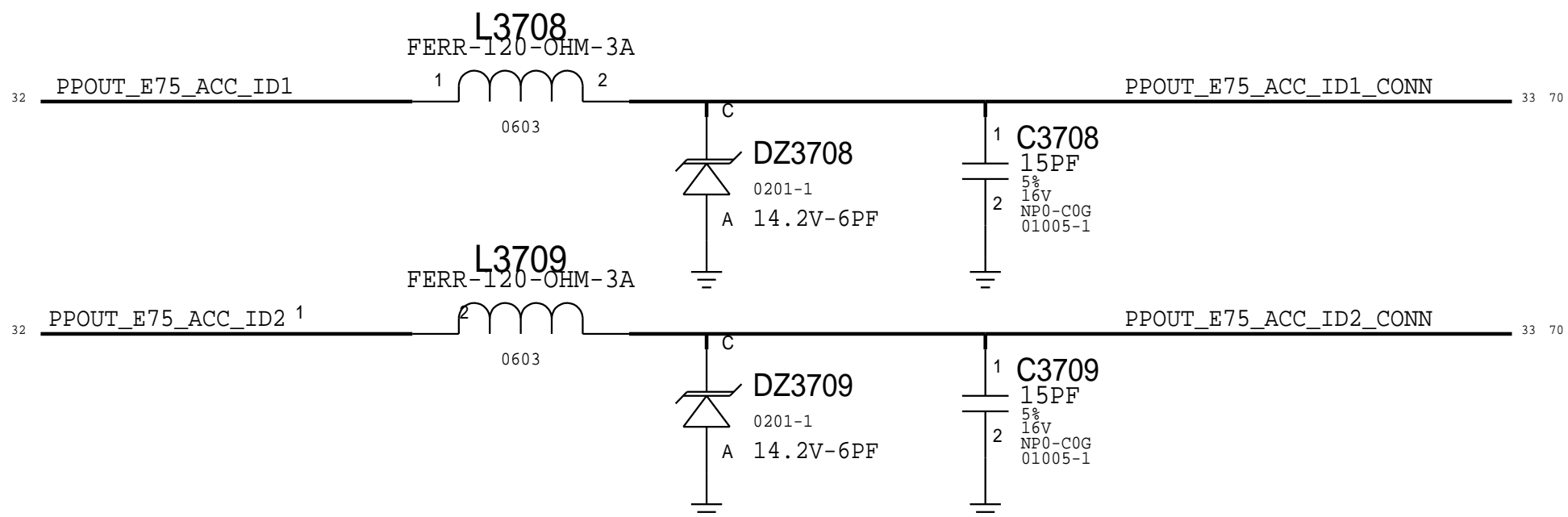
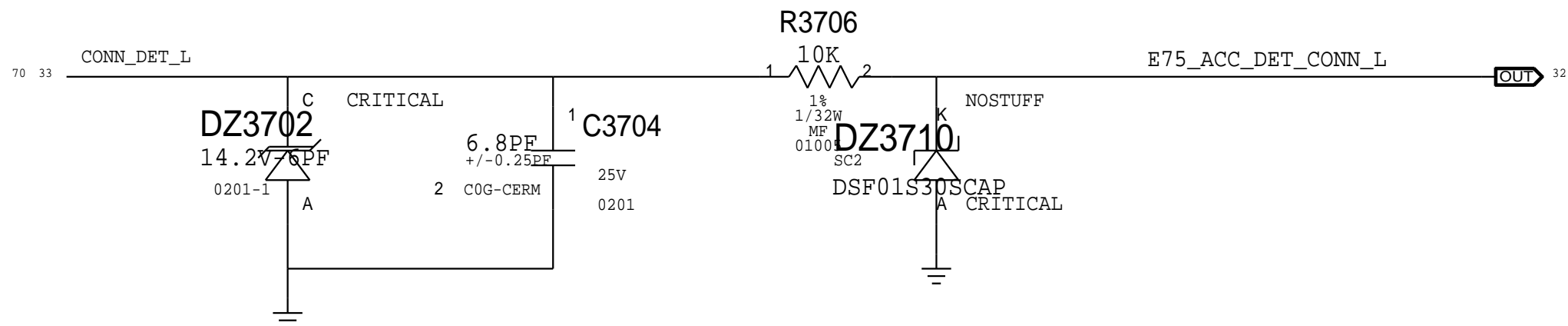
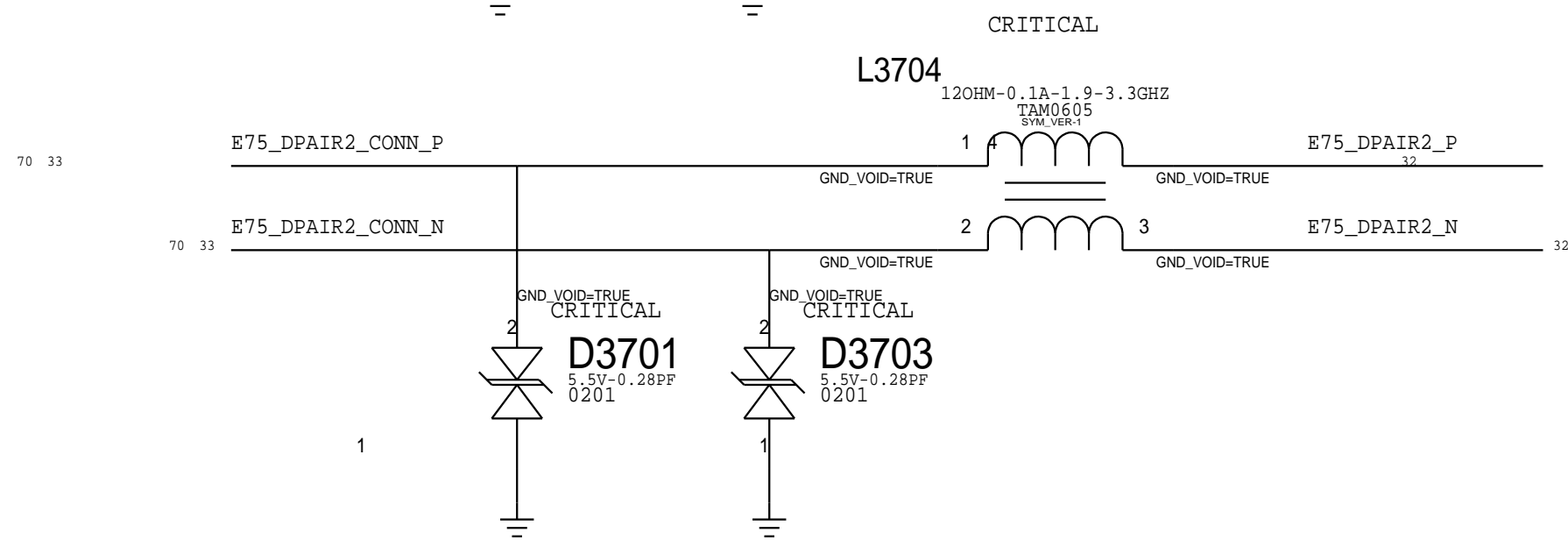
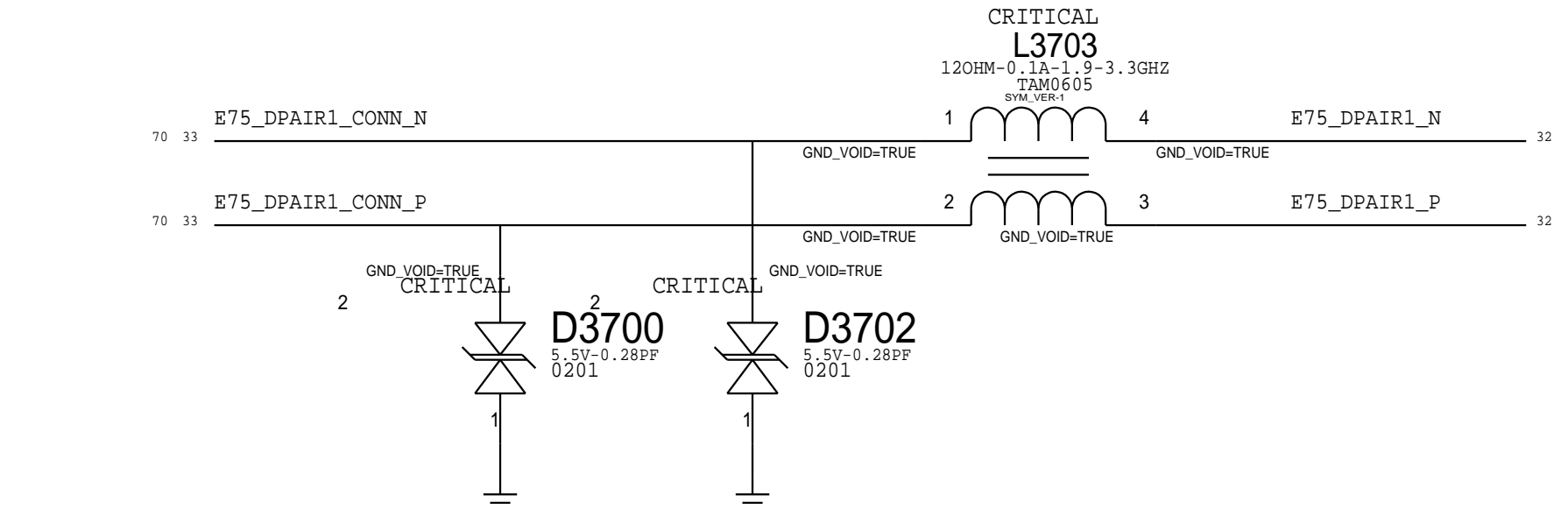
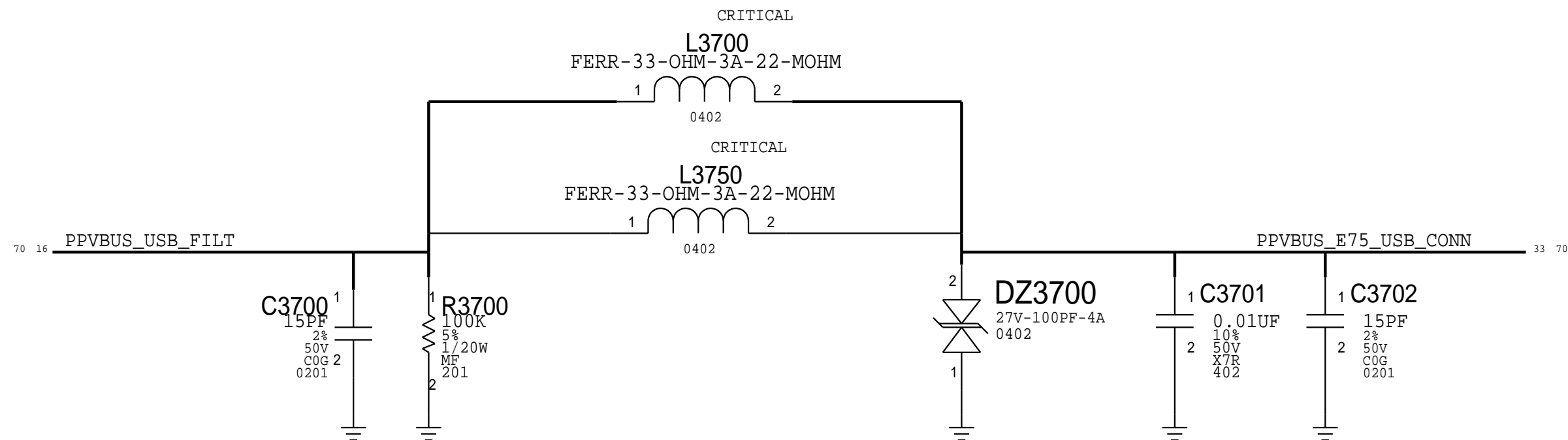
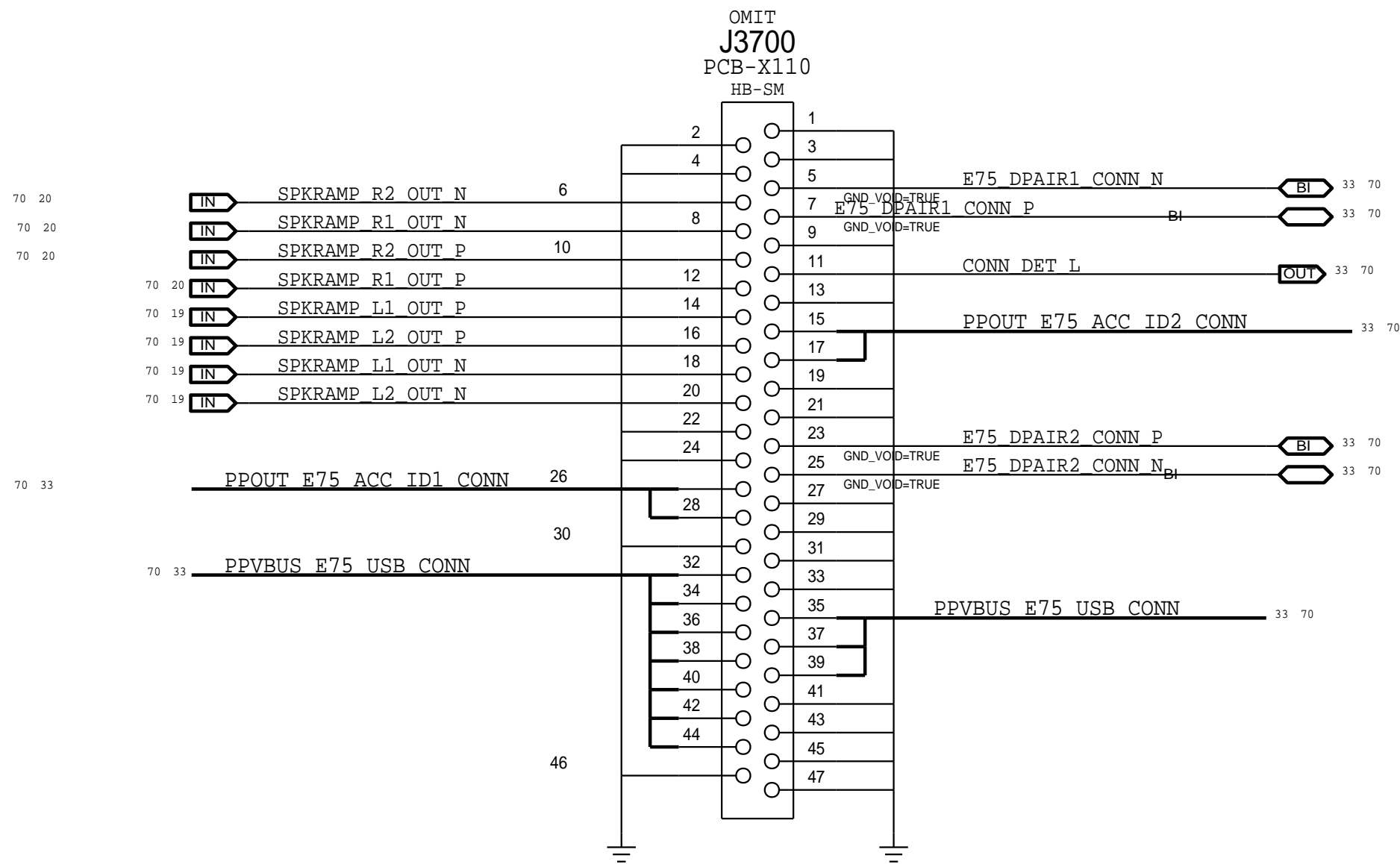


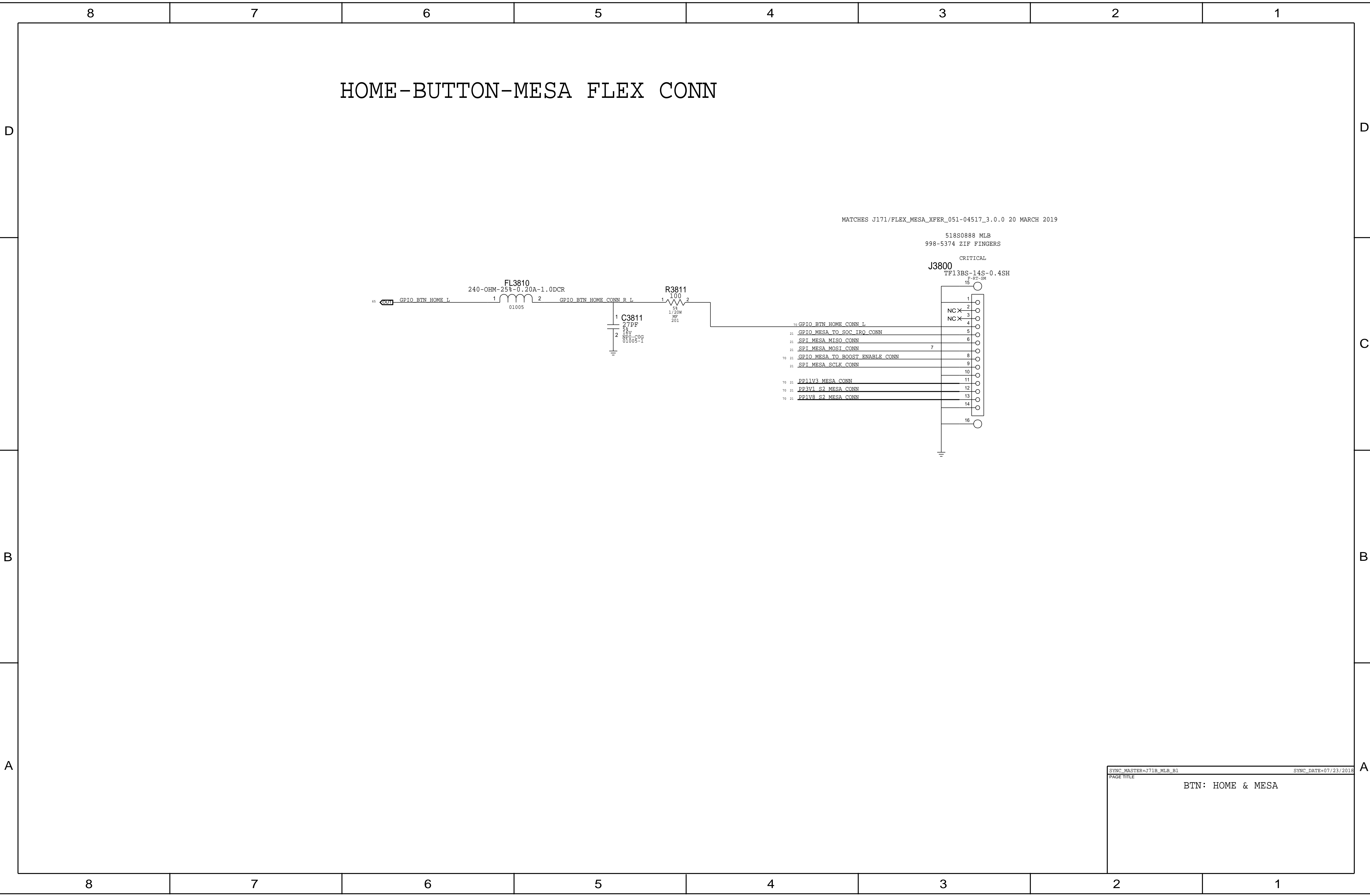


IO FLEX HOTBAR PADS

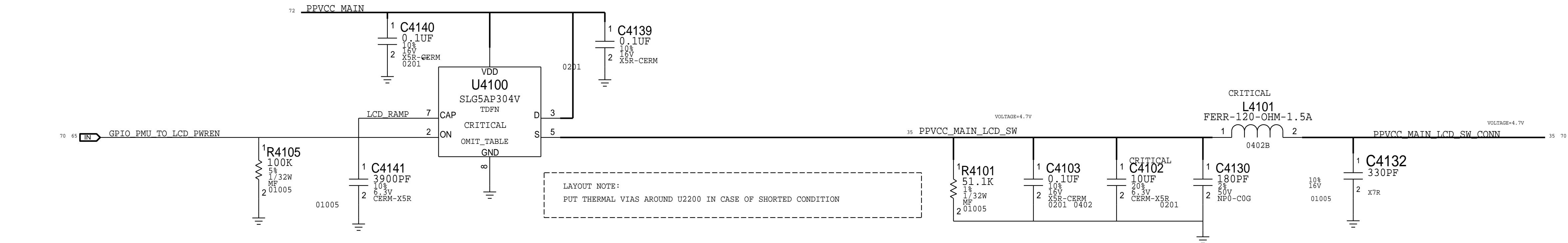
MLB 998-5877  
FLEX 998-5876

MATCHES J171/FLEX\_IO\_051-04515\_3.0.0 26 FEB 2019

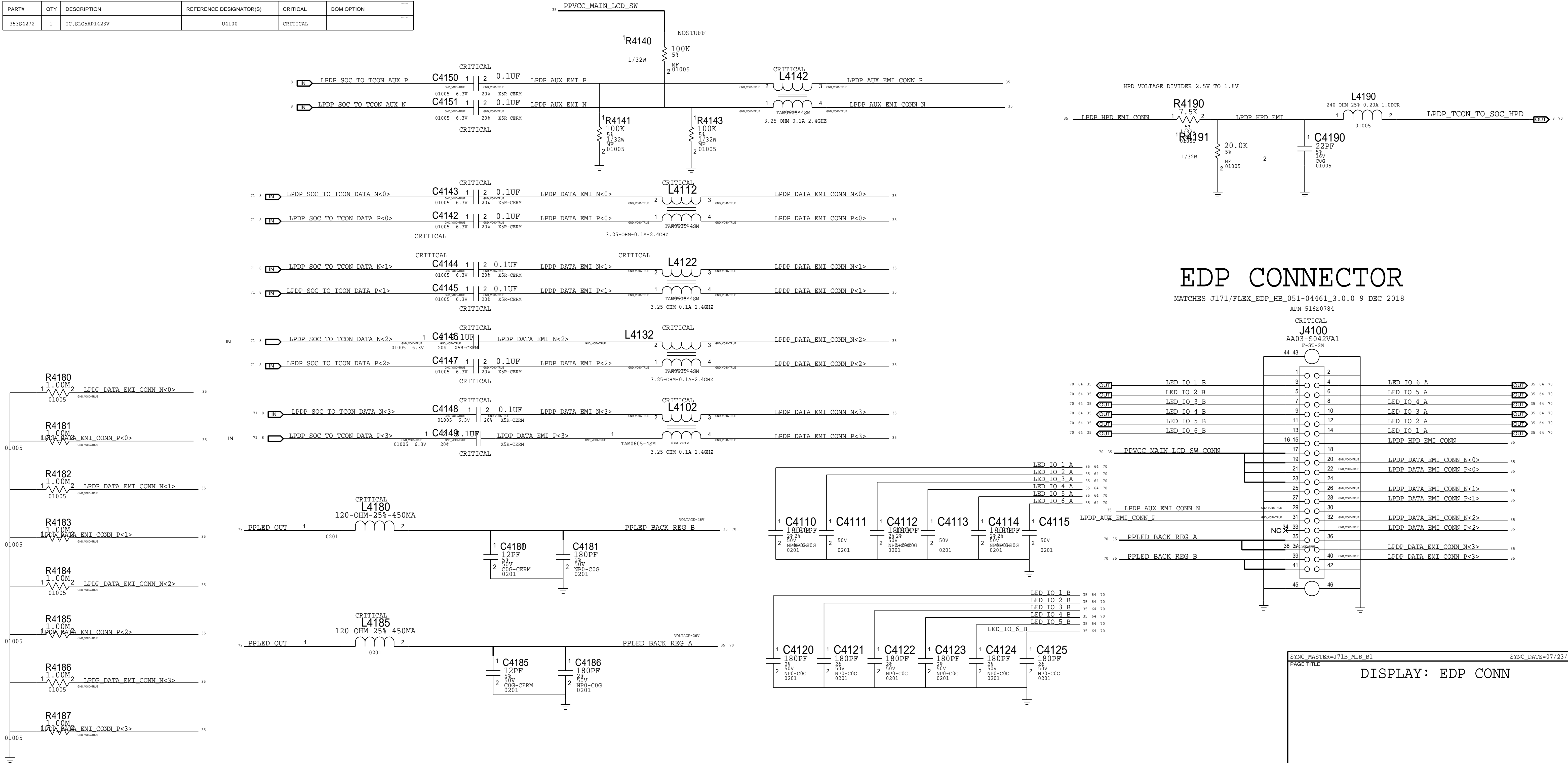




EDP CONNECTOR SUPPORT



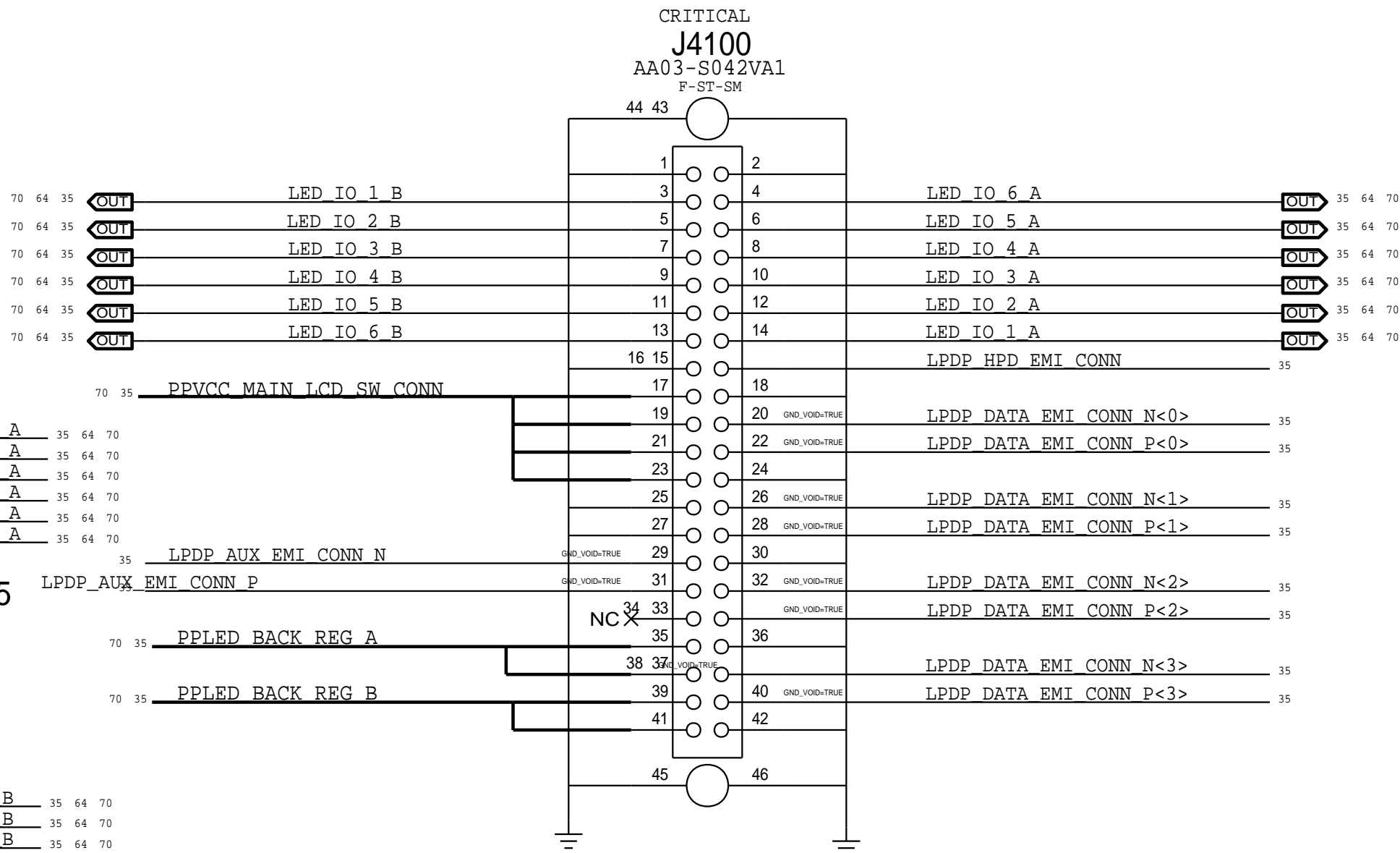
PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
35384272	1	IC,SLG5AP1423V	U4100	CRITICAL	



EDP CONNECTOR

MATCHES J171/FLEX\_EDP\_HB\_051-04461\_3.0.0 9 DEC 2018

APN 516S0784



SYNC\_MASTER=J71B\_MLB\_B1

SYNC\_DATE=07/23/2018

DISPLAY: EDP CONN

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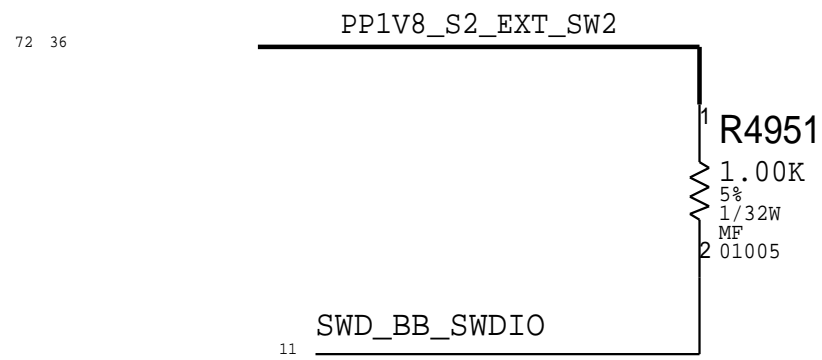
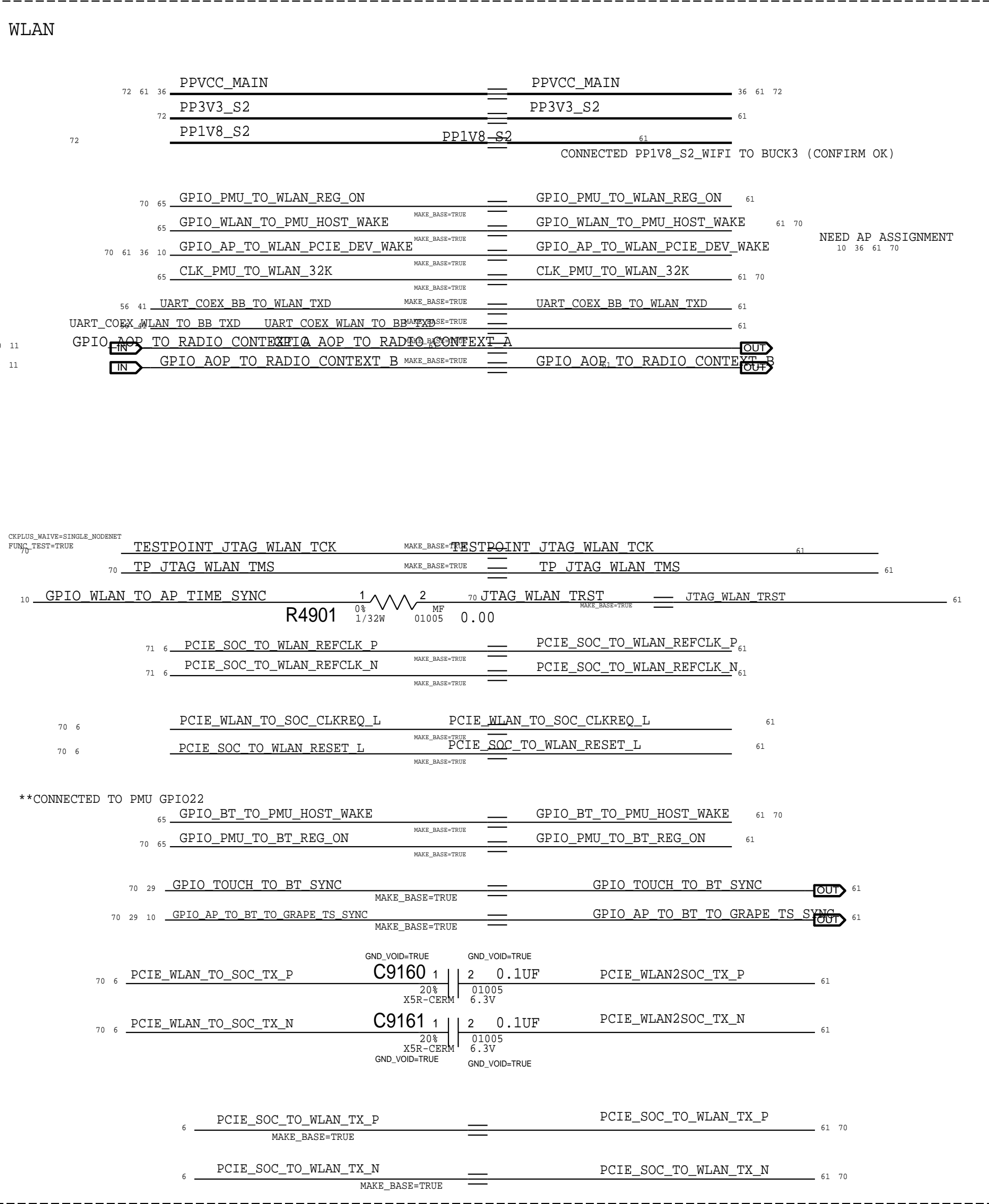
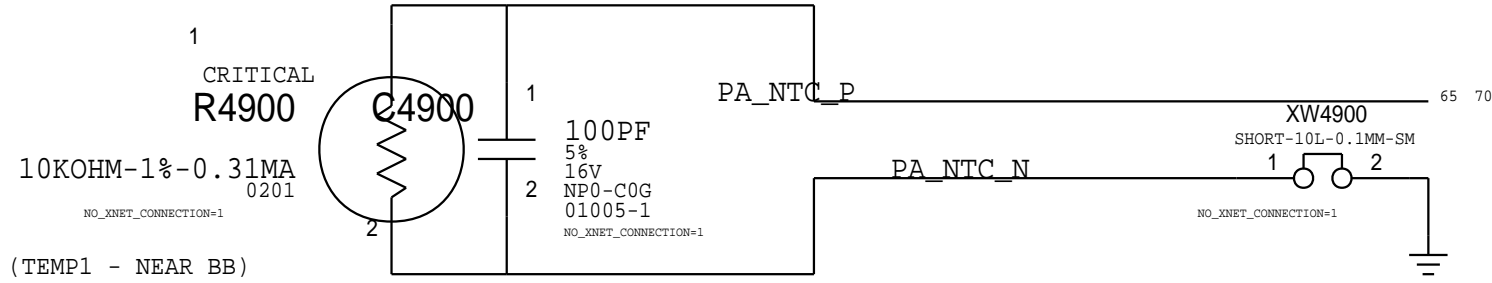
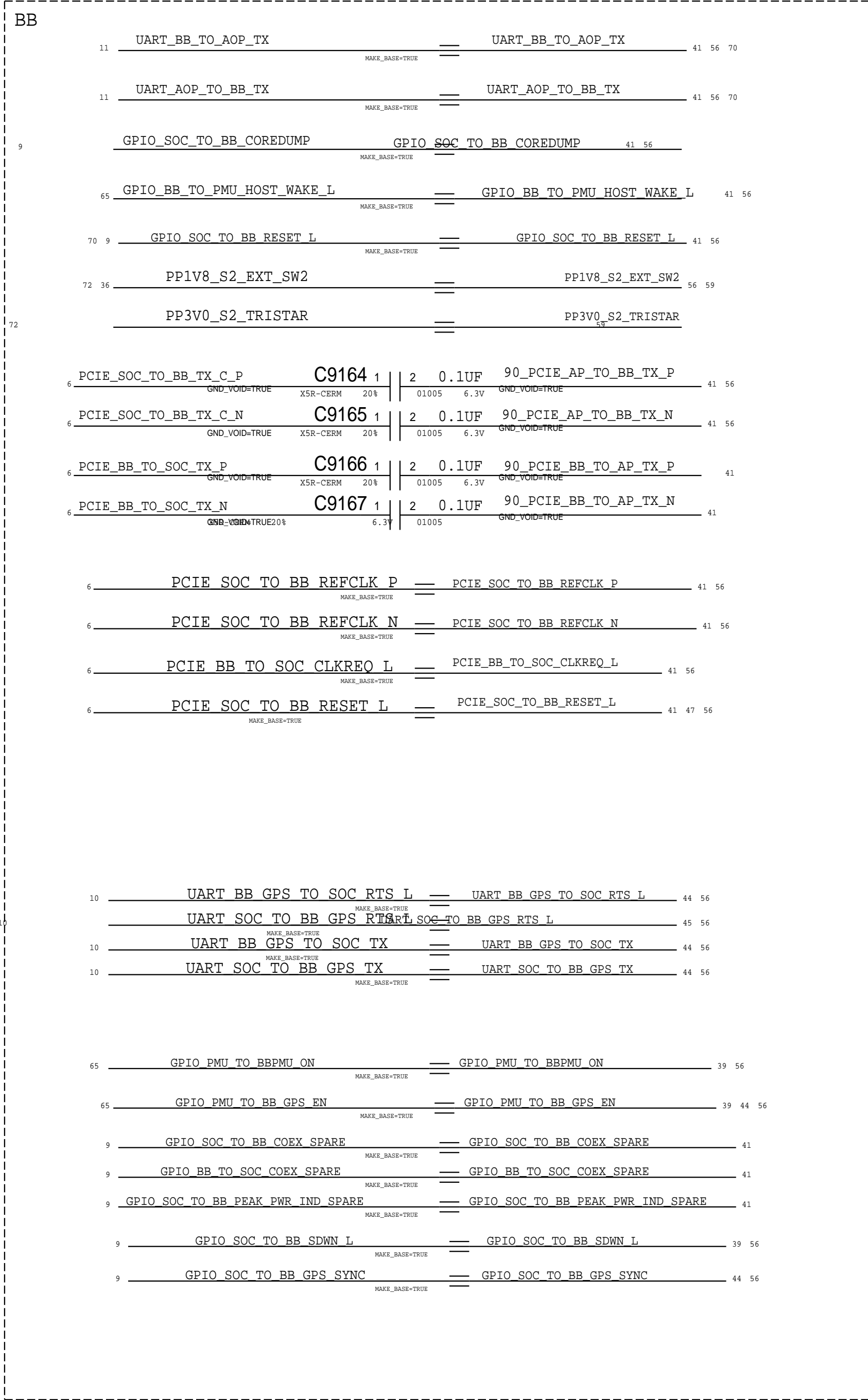
A

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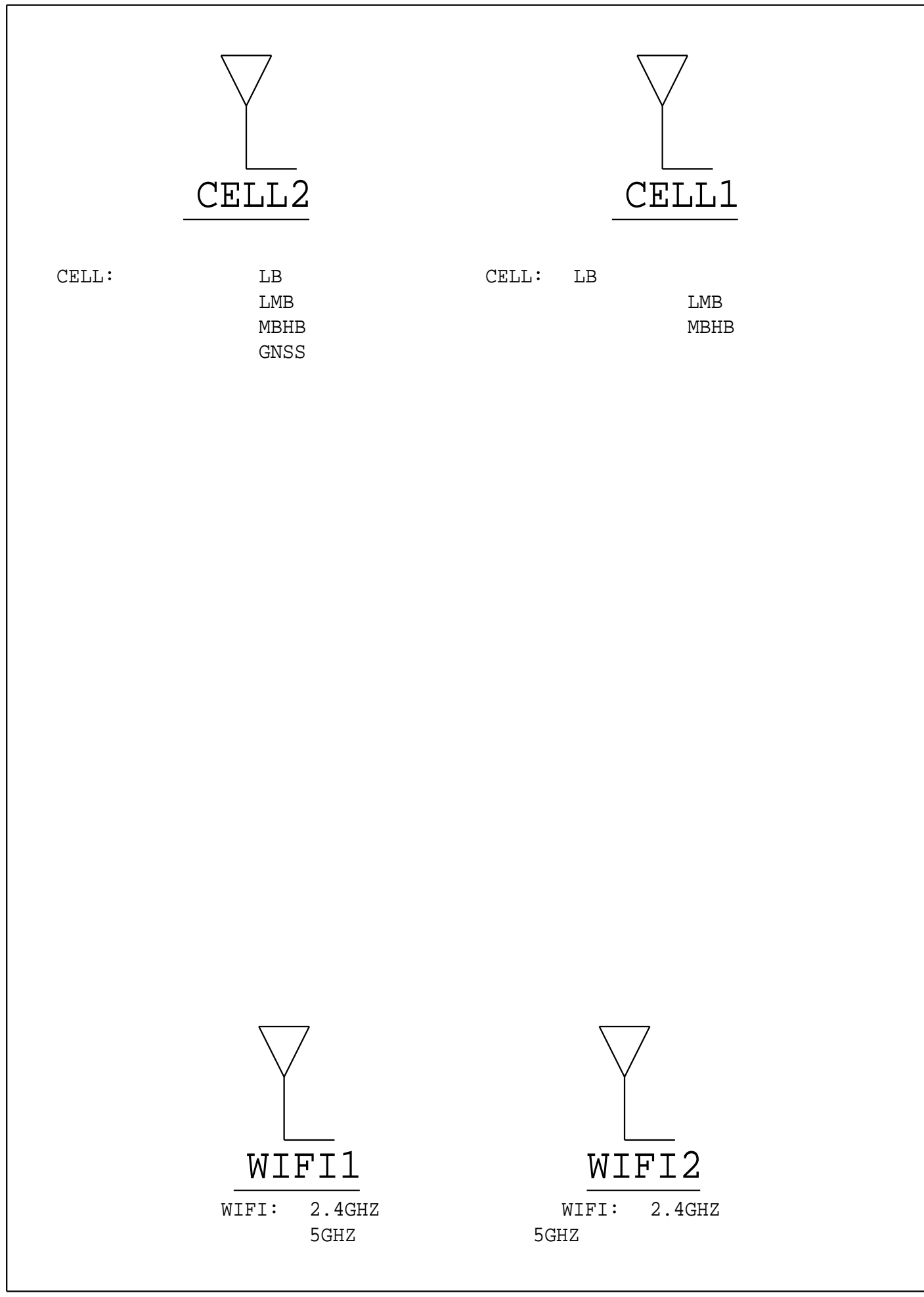
A





# ICE18.9 RADIO

## ANTENNA BLOCK DIAGRAM



D

D

# BOM TABLES

## FERRITE ALTERNATES

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
155S00131	155S00593	BOM_TABLE_ALTS	FL900_K	FERR BD, 2400HM
155S00414	155S0876	BOM_TABLE_ALTS	ALL	FERR BD, 100HM
155S00194	155S00400	BOM_TABLE_ALTS	ALL	FERR BD, 1500HM
155S00394	155S00400	BOM_TABLE_ALTS	ALL	FERR BD, 1500HM

## ETIC CAP ALTERNATES

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
138S00237	138S00167	BOM_TABLE_ALTS	C1204_K	CAP,2.2UF
138S00207	138S00167	BOM_TABLE_ALTS	C1205_K	CAP,2.2UF
138S00880	138S00167	BOM_TABLE_ALTS	C1206_K	CAP,2.2UF

## CAP ALTERNATES

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
138S00086	138S0884	BOM_TABLE_ALTS	ALL	CAP,20UF
138S00891	138S08103	BOM_TABLE_ALTS	ALL	CAP,4.7UF
138S00890	138S08133	BOM_TABLE_ALTS	ALL	CAP,0.47UF
138S00141	138S00140	BOM_TABLE_ALTS	ALL	CAP,40UF,6.3V,0201
138S00141	138S00268	BOM_TABLE_ALTS	ALL	CAP,40UF,6.3V,0201

## EEPROM ALTERNATES

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
335S00013	335S0894	BOM_TABLE_ALTS	EEPROM_K	EEPROM,8KBIT,12C

## XTAL ALTERNATES

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
197S00915	197S009155	BOM_TABLE_ALTS	Y301_K	XTAL,38.4MHZ,NEX
197S00156	197S00155	BOM_TABLE_ALTS	Y301_K	XTAL,38.4MHZ,TXC

## ROW SKU

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
118S00073	1	RES,1%,56K OHM,1/32W,01005	R311_KROW	
118S0730	1	RES,1%,12K OHM,1/32W,01005	R312_K	ROW
353S01345	1	IC,1B PAD,B28,SKY78170,DSBGA112	PA_LB_K	ROW
353S01301	1	IC,SKY13765,1B DSM,DSBGA20,B28	DSM_LB_K	ROW
152S00021	1	IND,6.8MH,0HQ,0201	R2016_K	ROW
998-17944	1	IC,HALLLEY,HT3127M0,P/W=7C5,DEV,WLCSP11	U_SIM	ROW
117S0158	1	RES,MP,100K,5%,1/32W,01005	R10_SIMROW	

PVT (AND DVT) ROW/CH, HWID 1497

## NA SKU

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
118S00073	1	RES,1%,56K OHM,1/32W,01005	R311_K	NA
118S00074	1	RES,1%,22K OHM,1/32W,01005	R312_K	NA
353S01577	1	IC,1B PAD,B71,SKY78203,DSBGA112	PA_LB_K	NA
353S01472	1	IC,SKY13785,1B DSM,DSBGA20,B71	DSM_LB_K	NA
152S2022	1	IND,4.8MH,0HQ,0201	R2016_NA	
998-17944	1	IC,HALLLEY,HT3127M0,P/W=7C5,DEV,WLCSP11	U_SIM	NA
117S0158	1	RES,MP,100K,5%,1/32W,01005	R10_SIM	NA

PVT (AND DVT) NA, HWID 1496

## CHINA SKU

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
118S00073	1	RES,1%,56K OHM,1/32W,01005	R311_K	CHINA
118S0730	1	RES,1%,12K OHM,1/32W,01005	R312_K	CHINA
353S01345	1	IC,1B PAD,B28,SKY78170,DSBGA112	PA_LB_K	CHINA
353S01301	1	IC,SKY13765,1B DSM,DSBGA20,B28	DSM_LB_K	CHINA
152S00021	1	IND,6.8MH,0HQ,0201	R2016_CHINA	
		IC,HALLLEY		CHINA
117S0158	1	RES,MP,100K,5%,1/32W,01005	R11_SIM	CHINA

PVT (AND DVT) ROW/CH, HWID 1497

B

B

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A

## D

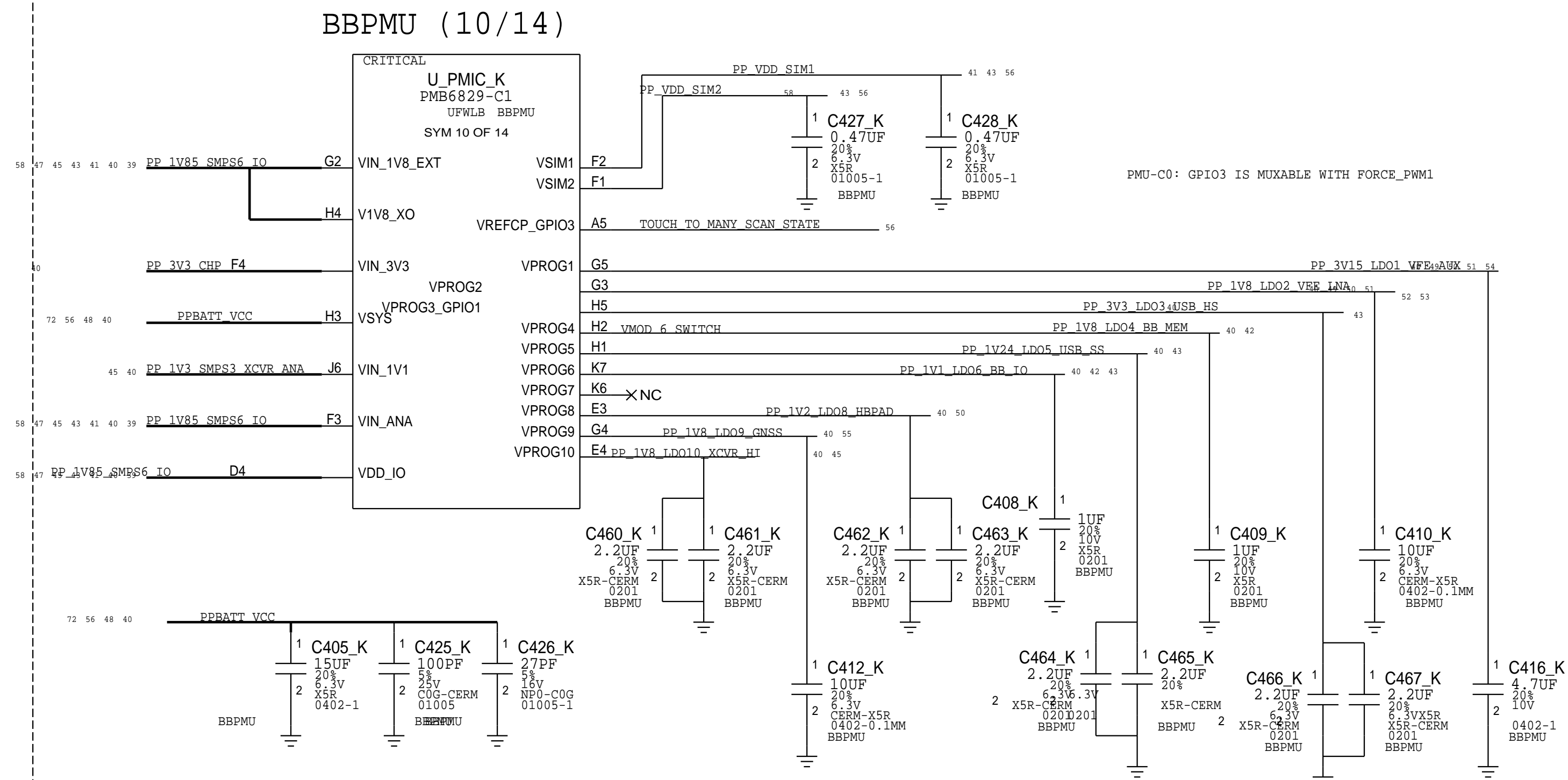
B $\Delta$ 

HWID TABLE RDAR://32880011  
ADC TABLE RDAR://27081897

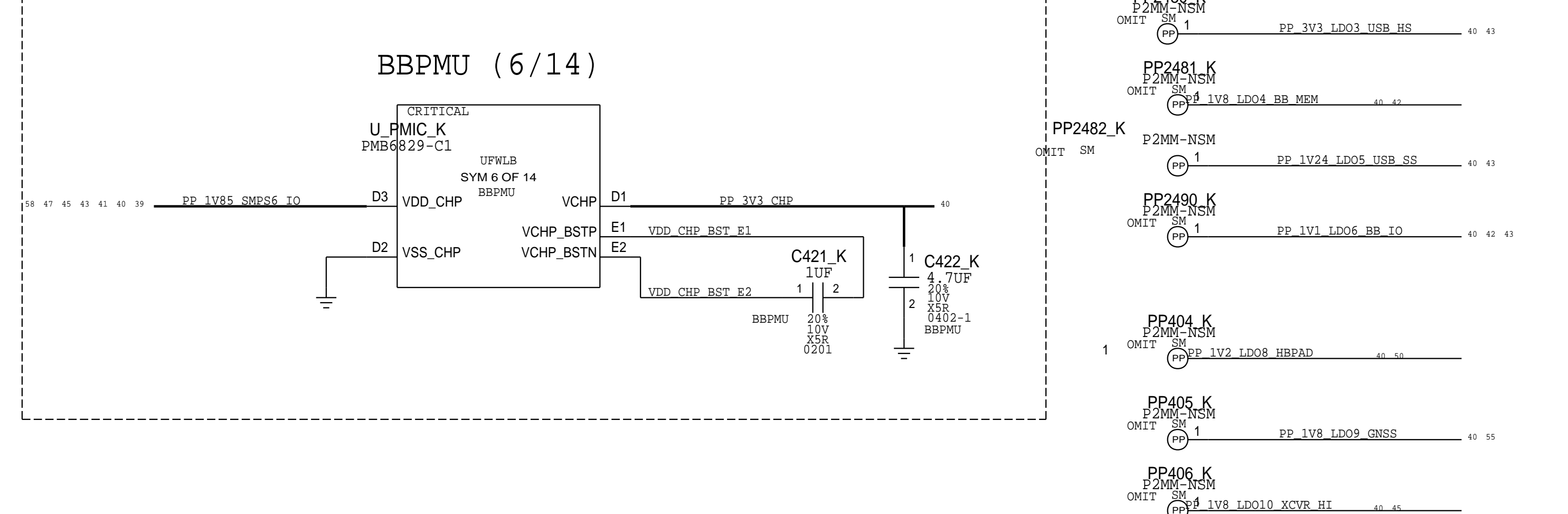
SYNC\_DATE=01/02/2018

## BBPMU: RAILS

## PROGRAMMABLE LDOS

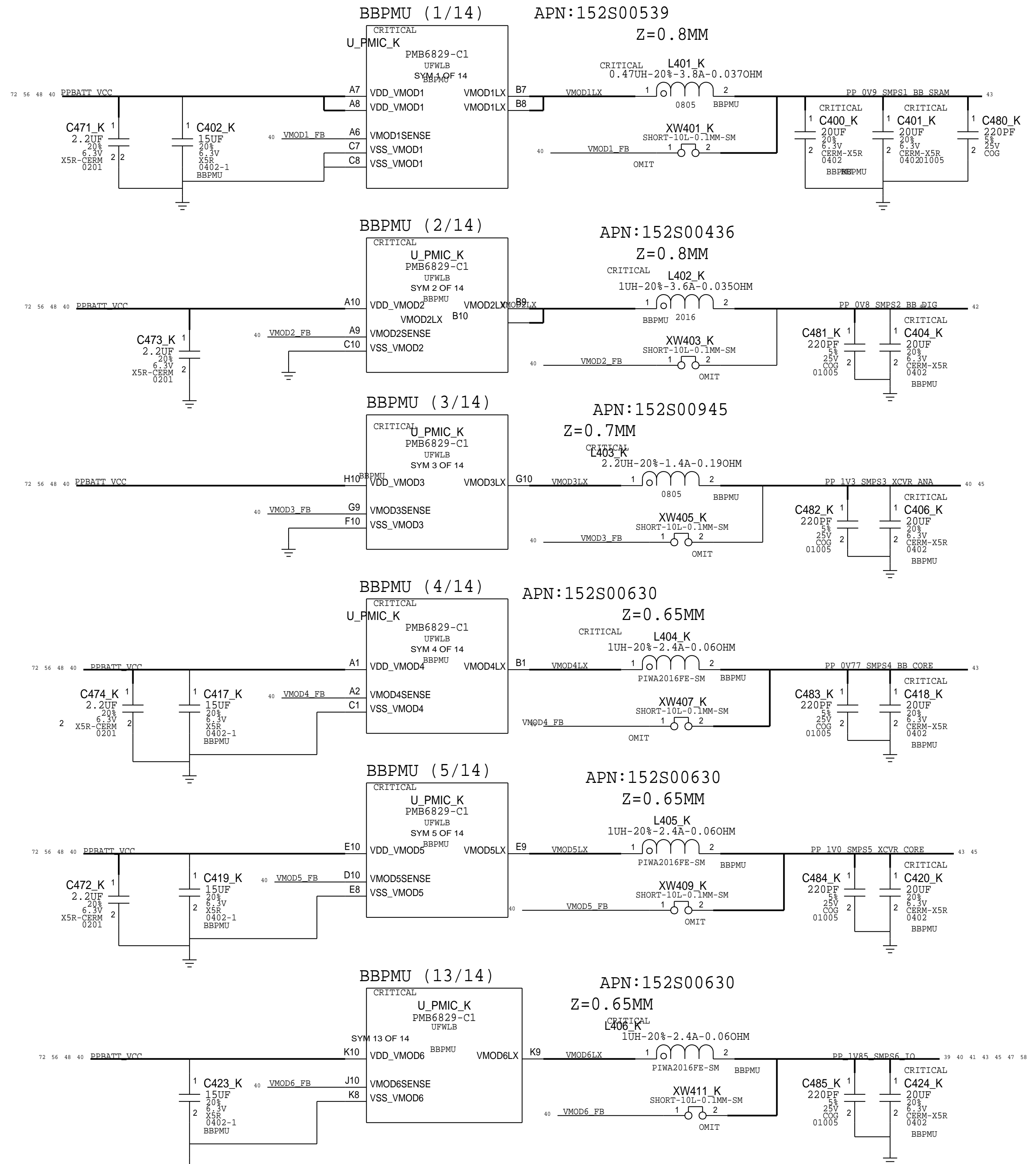


CHARGE PUMP



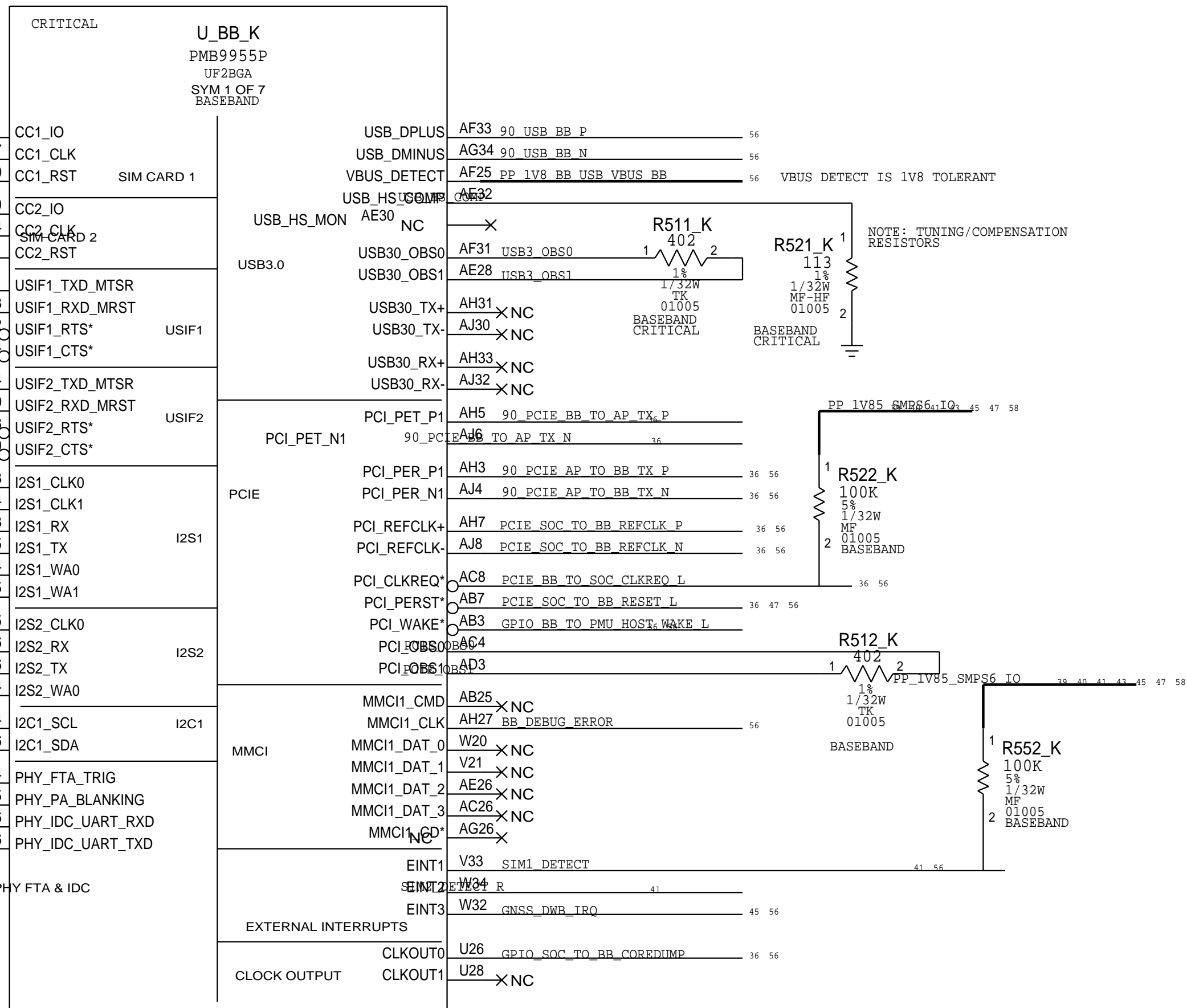
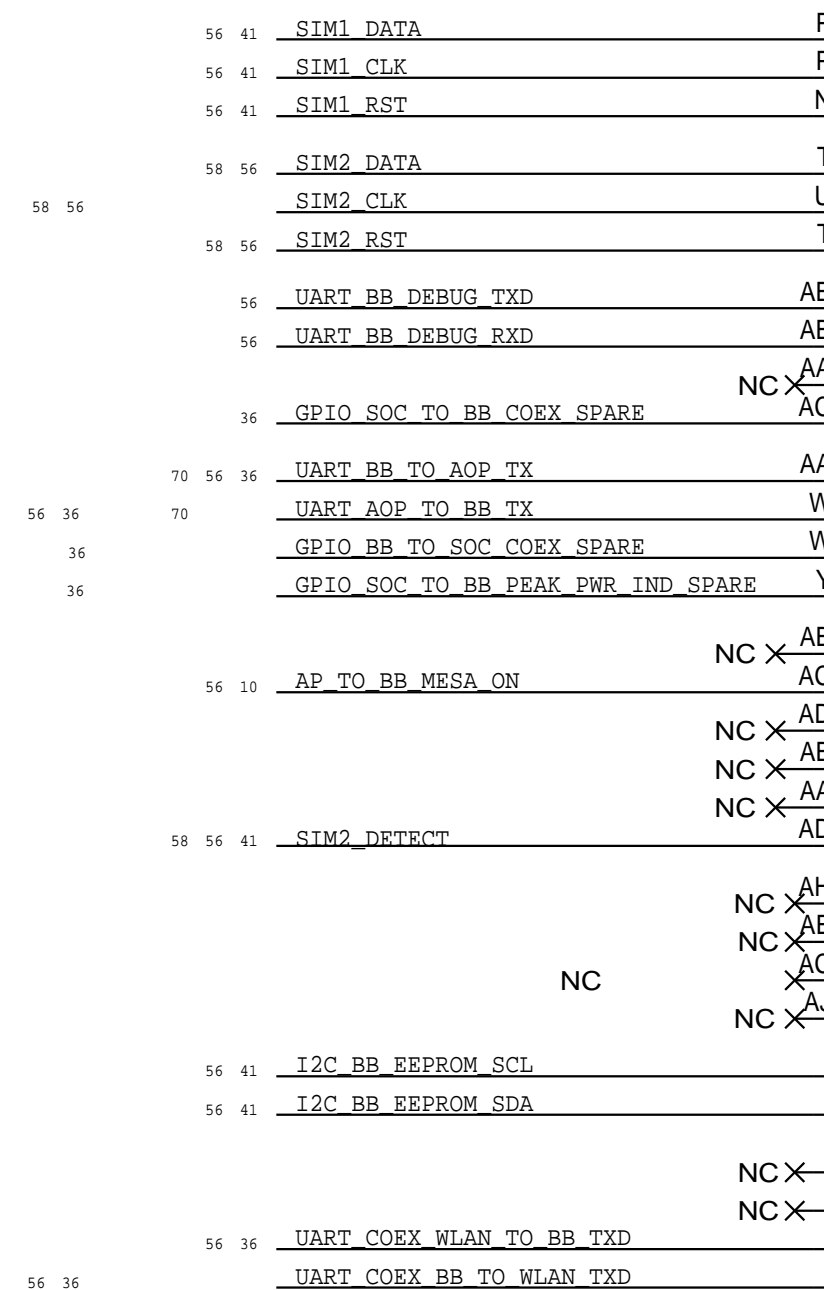
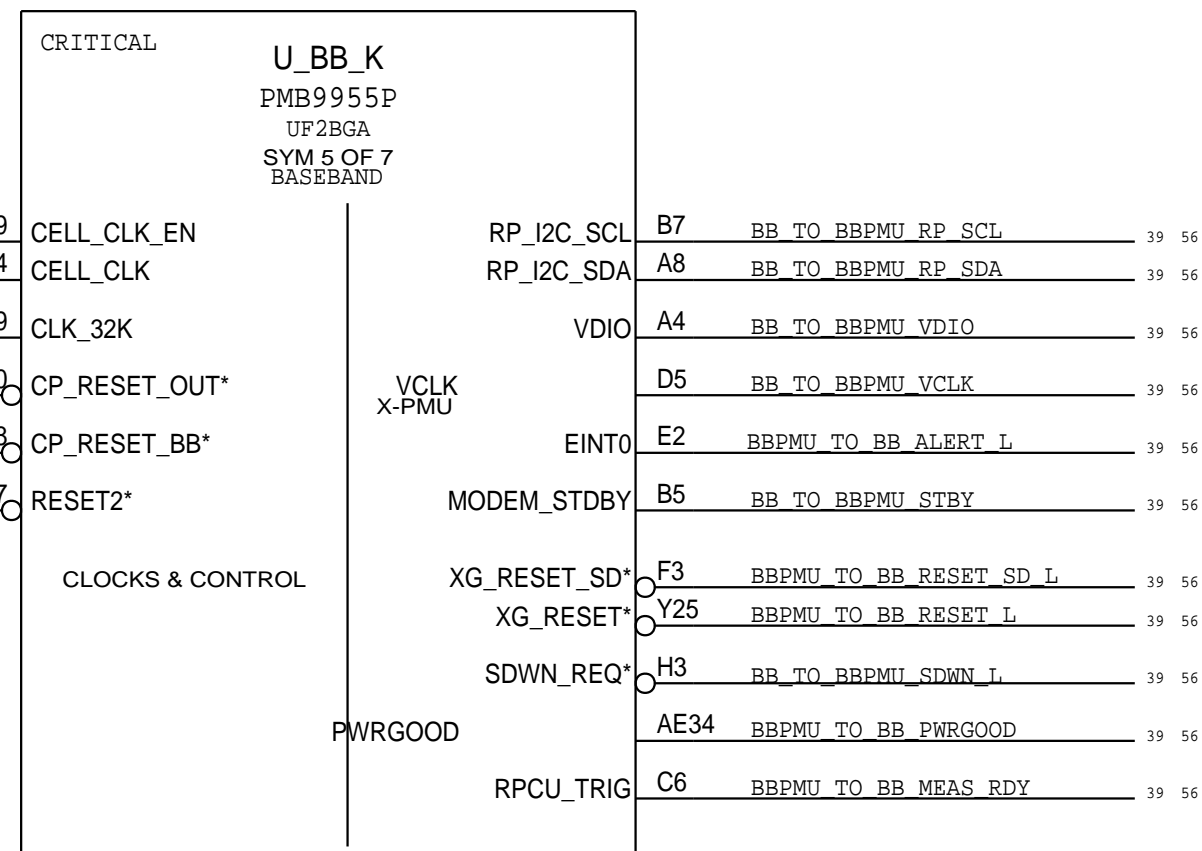
## SWITCHERS

```
SMPS1/2/4 SHARED VDD_MAIN INTERNALLY
SMPS3/5/6 SHARED VDD_MAIN INTERNALLY
```

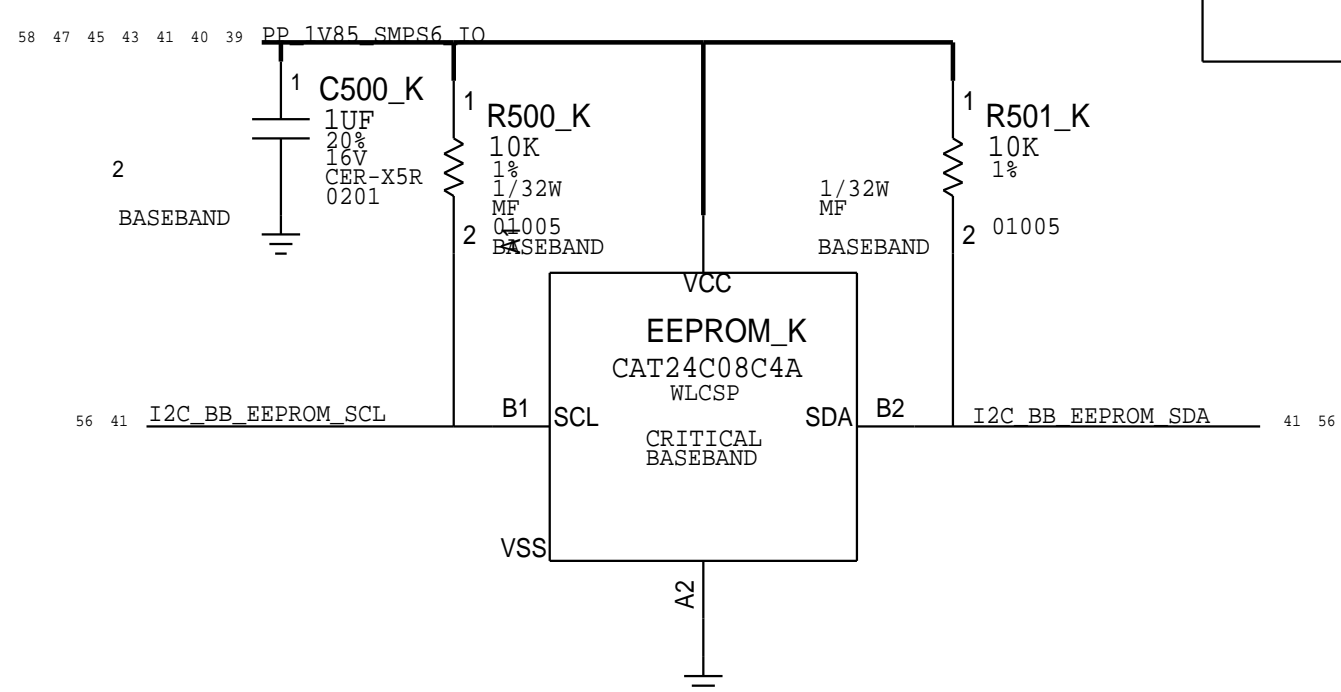


BBPMU: RAILS

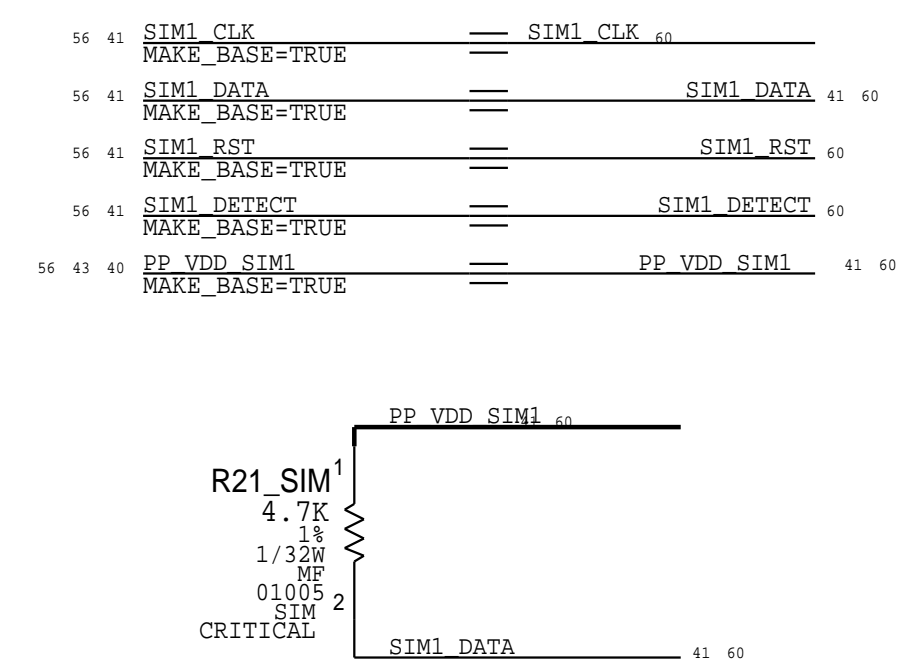
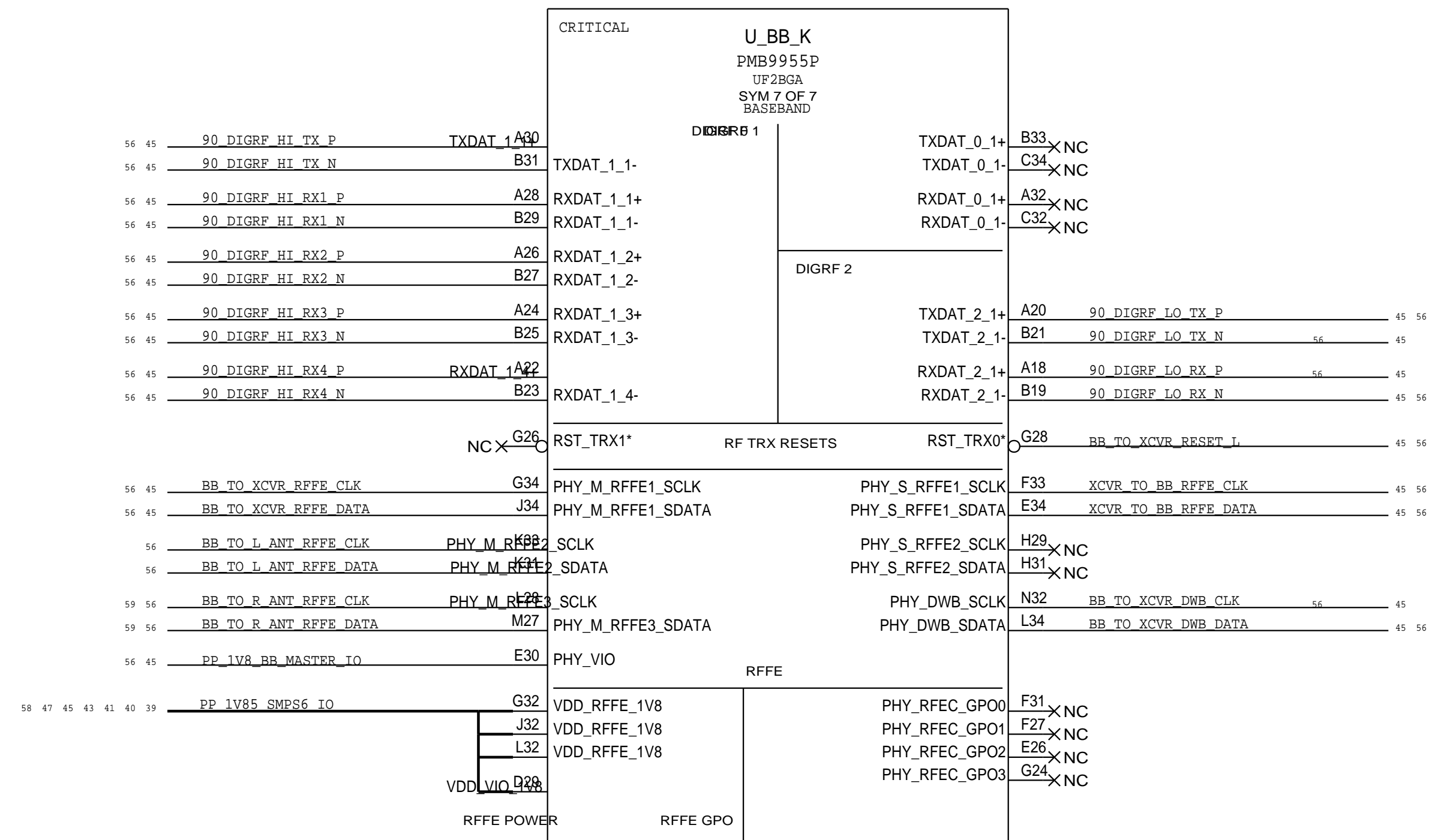
## D



## B

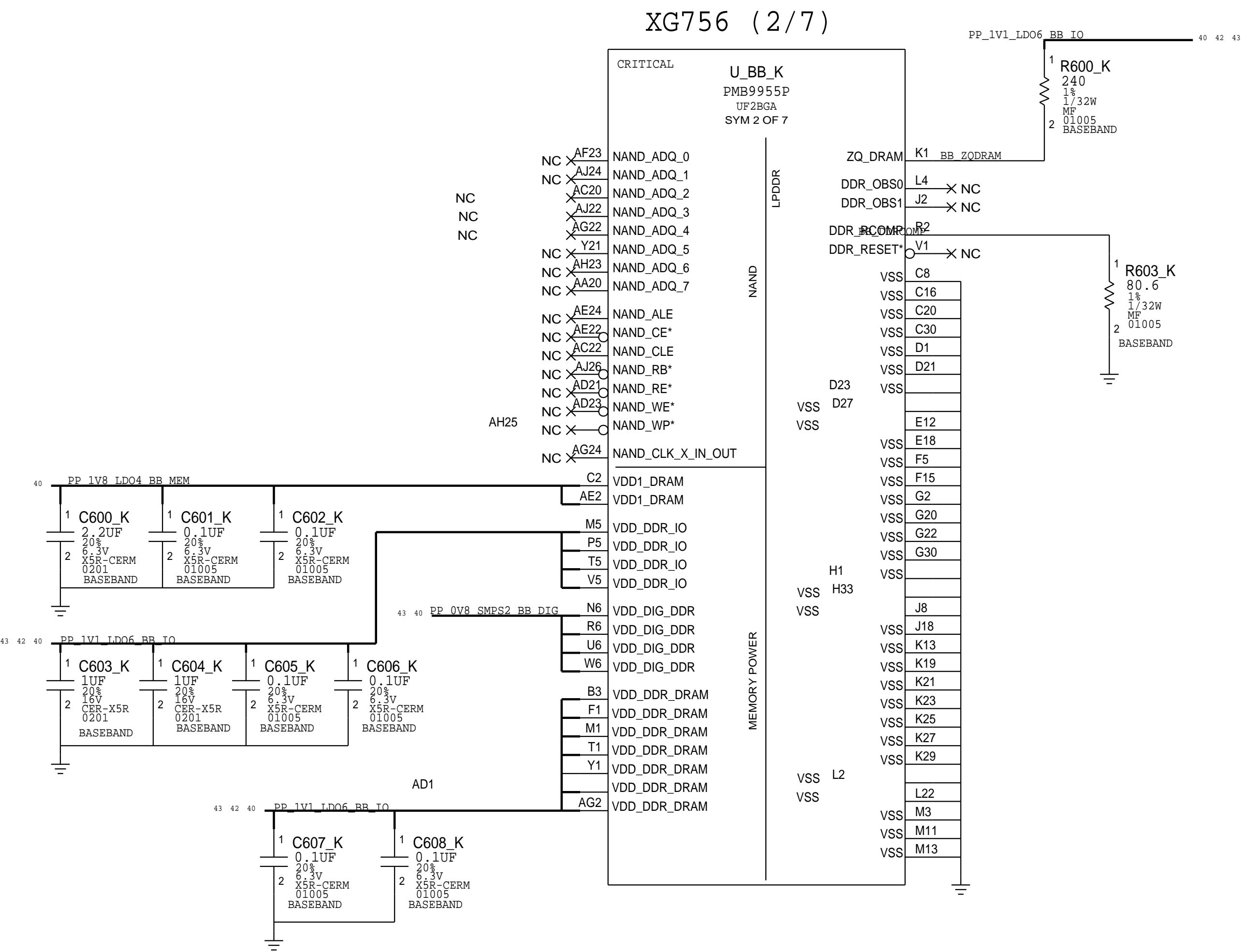


## D

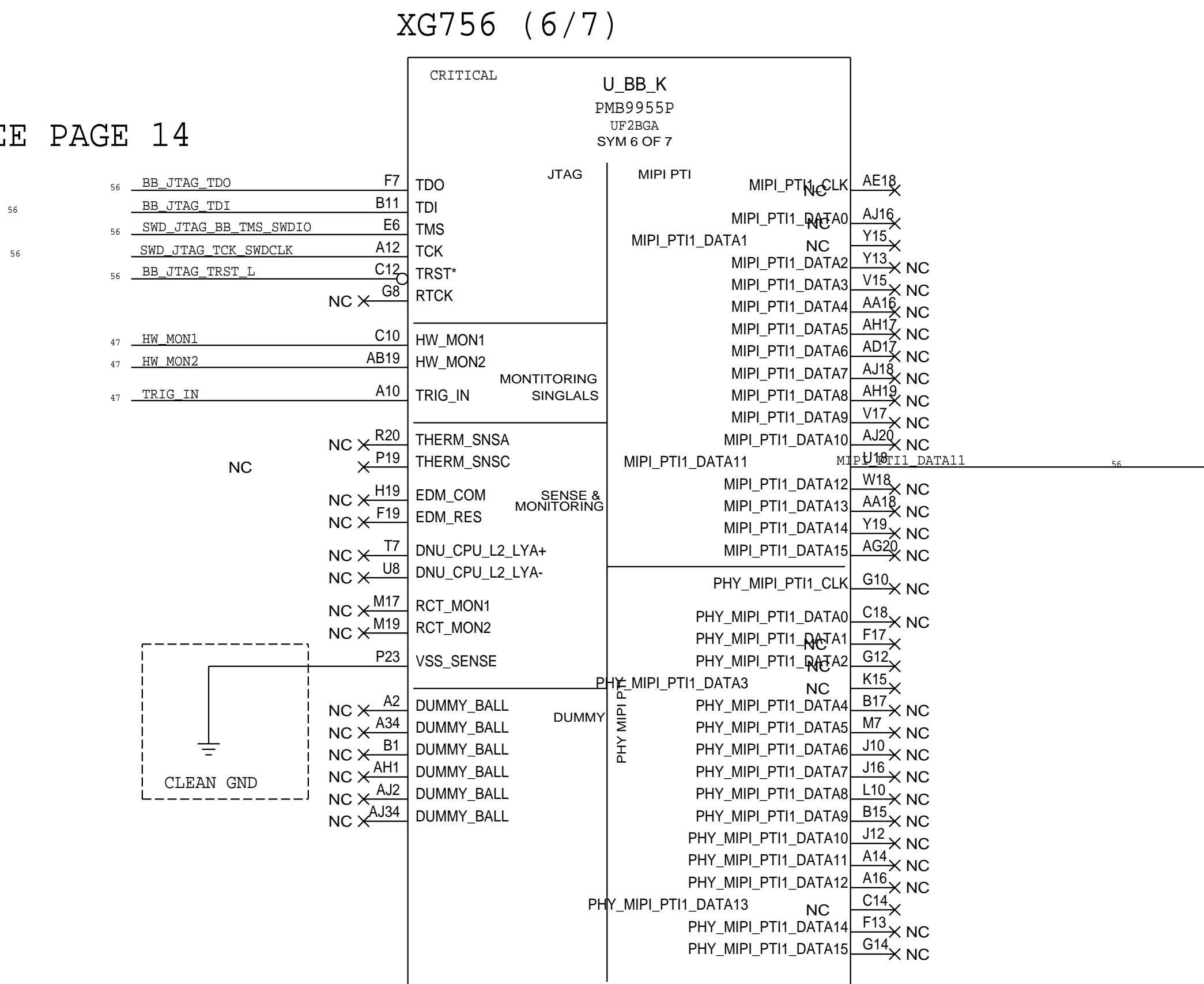


## B

BB: DDR PWR & JTAG



SWD, SEE PAGE 14



## D

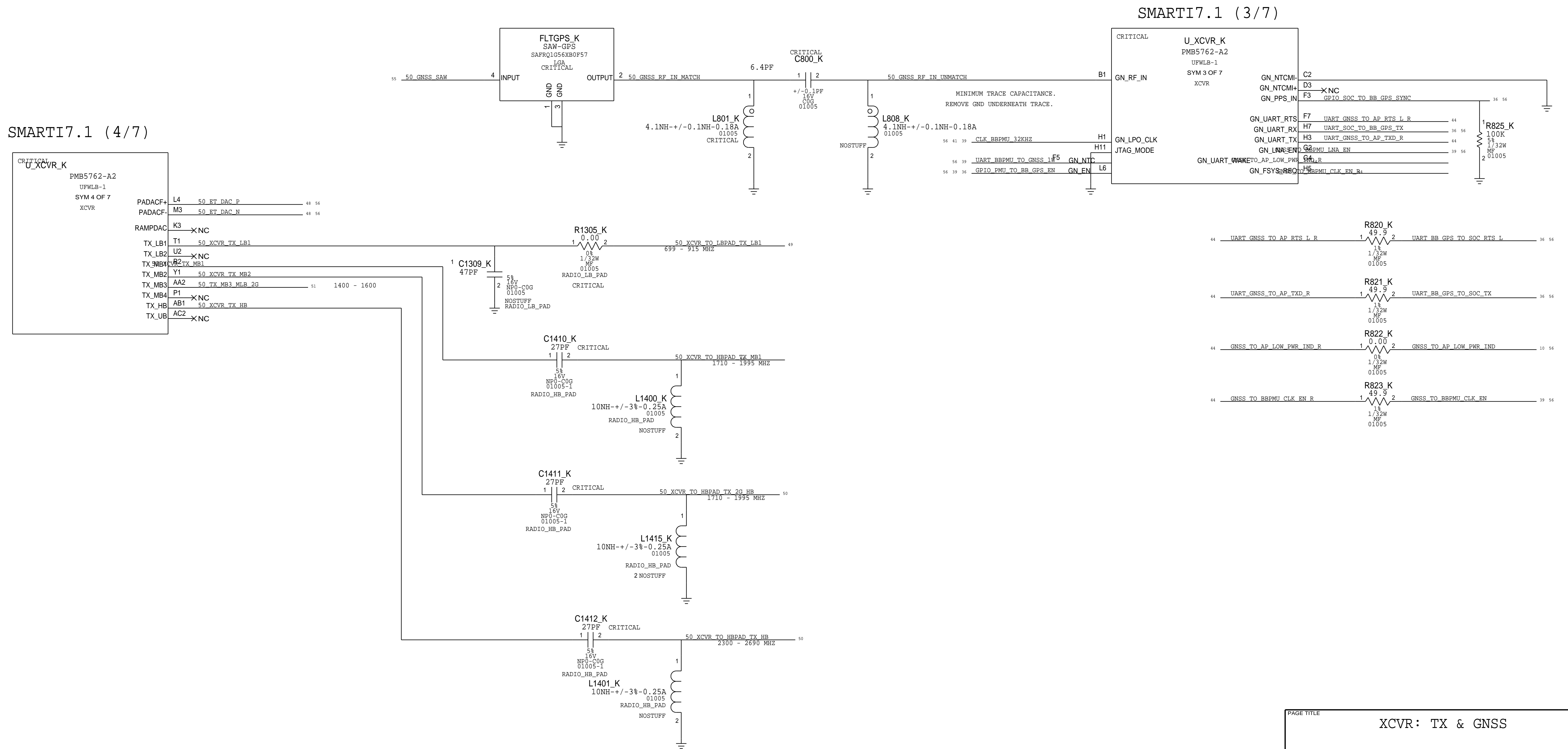


B

A

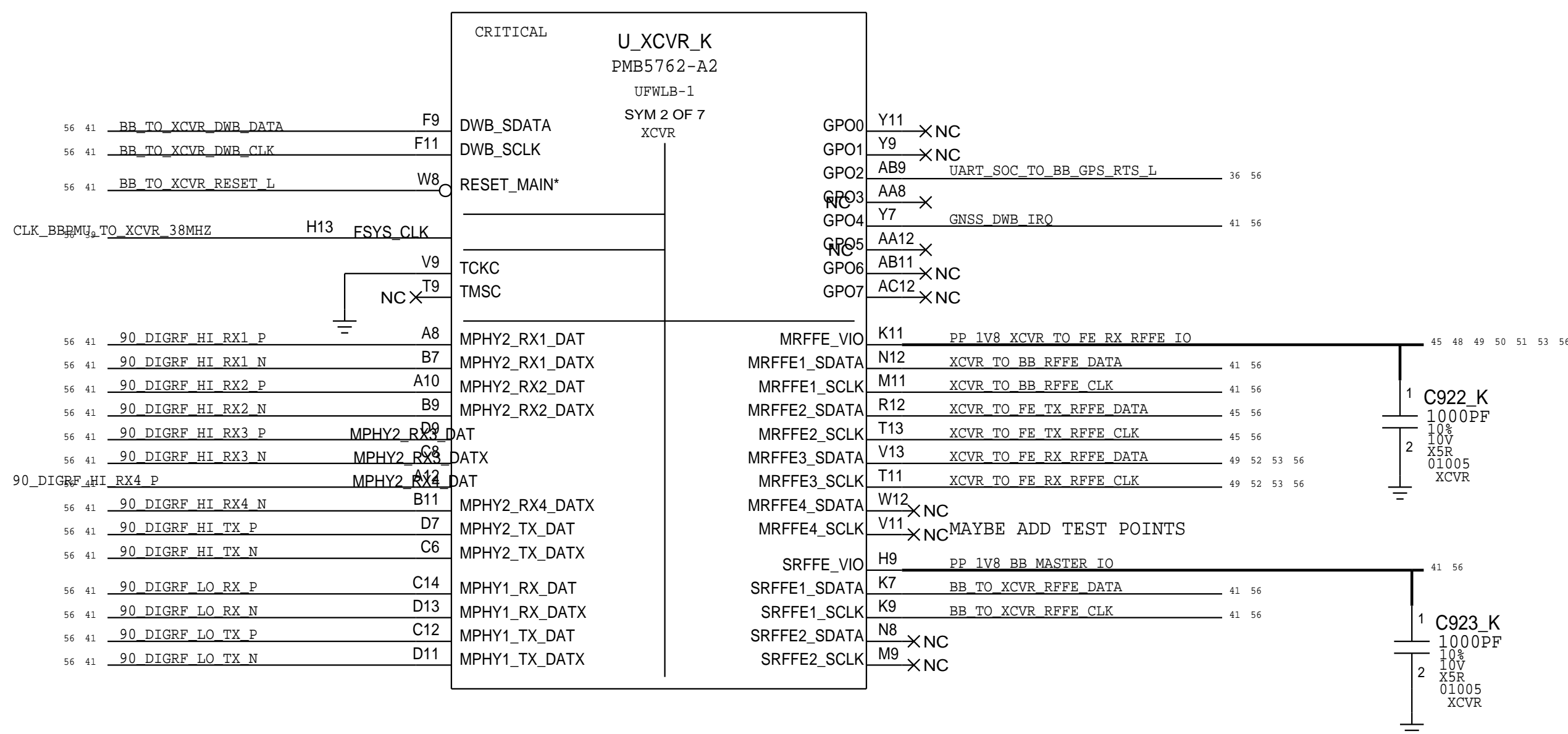
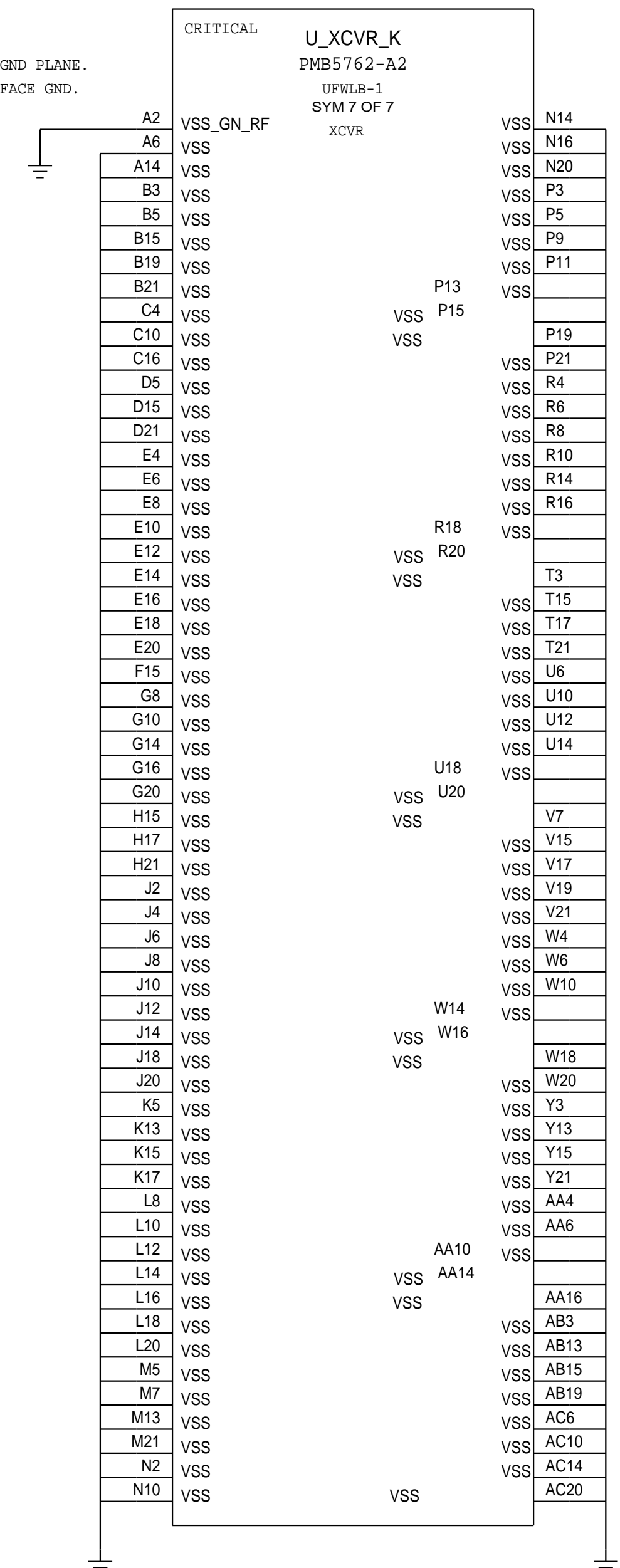
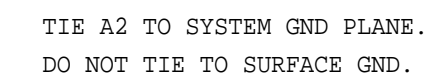
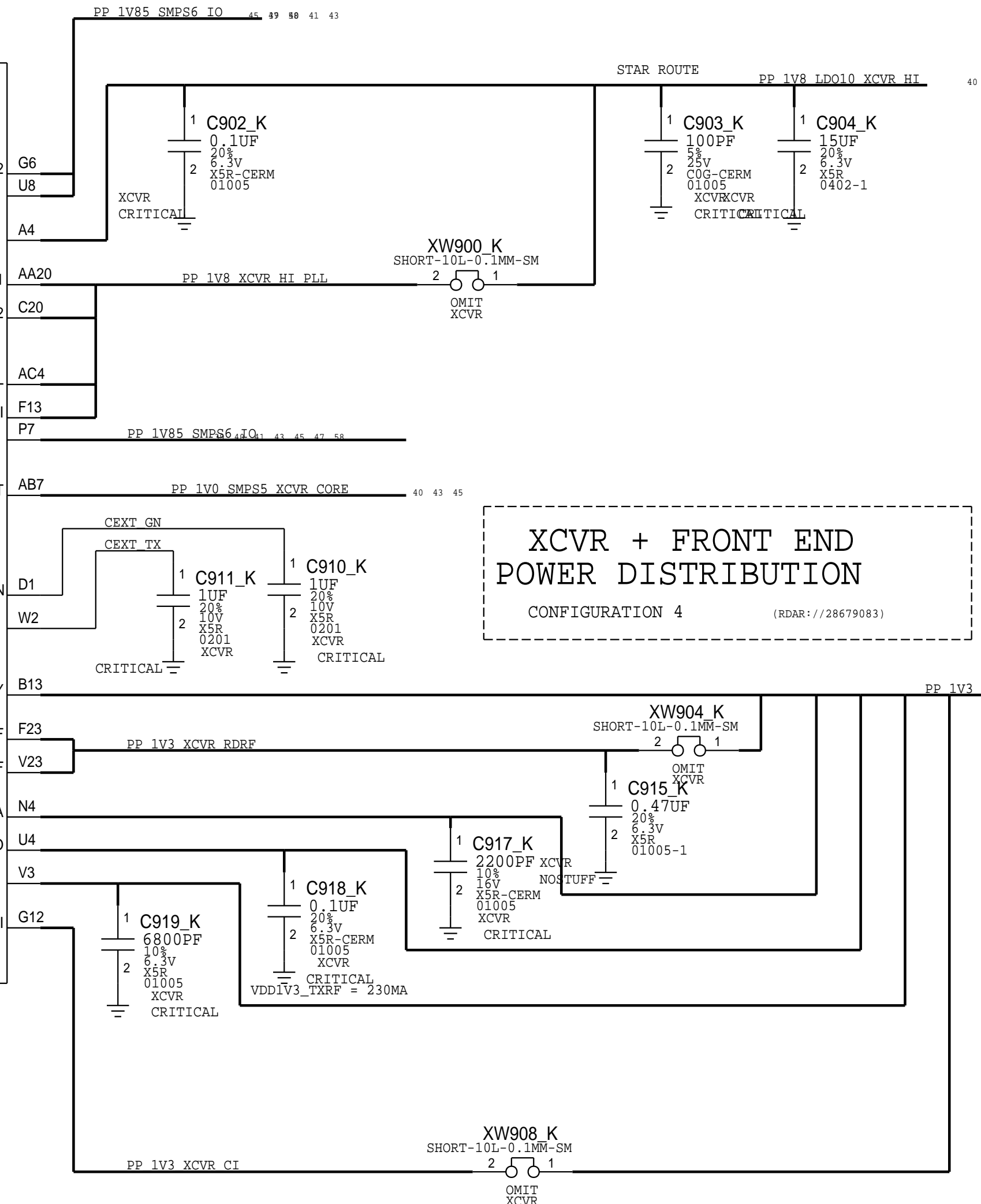
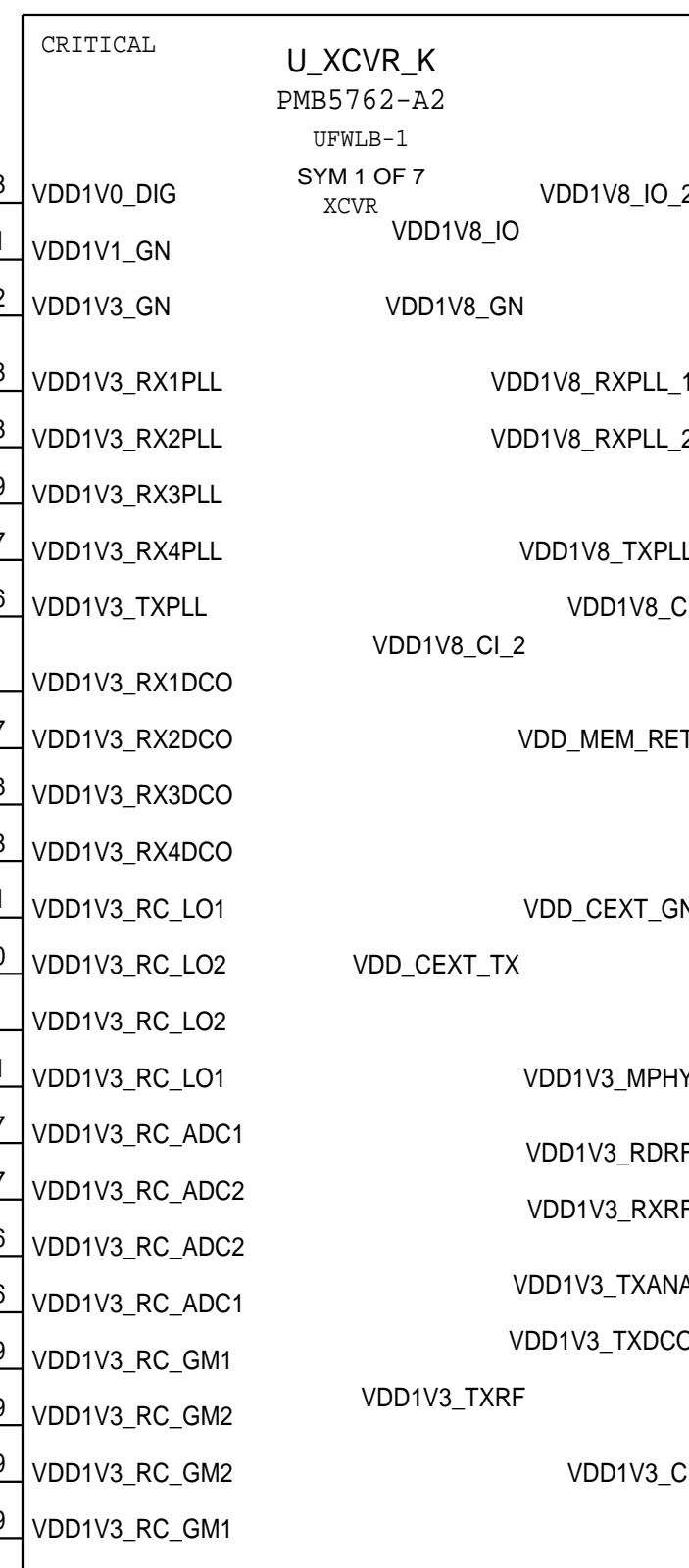
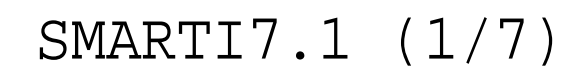
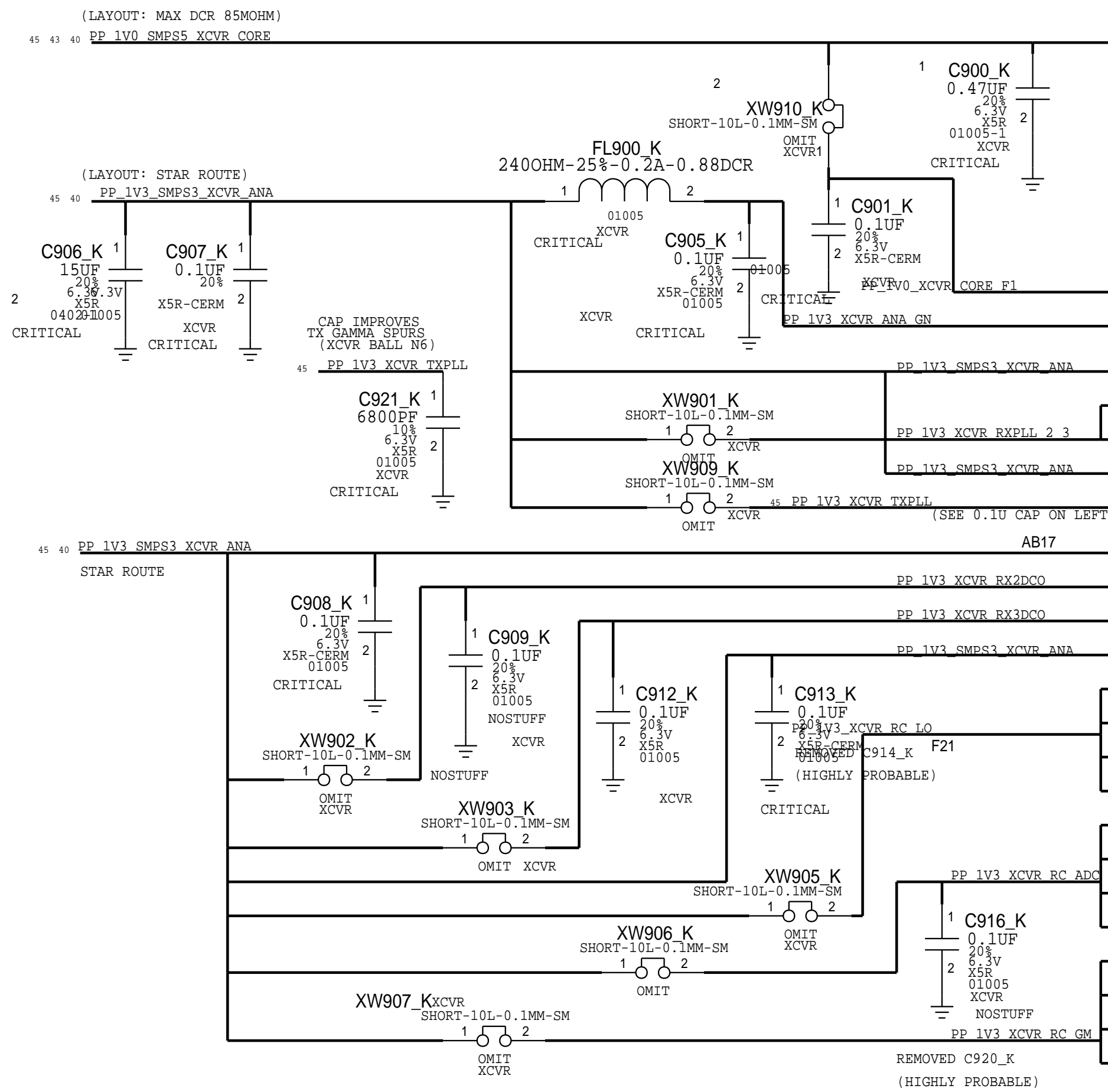


## XCVR : TRANSMIT &amp; GNSS

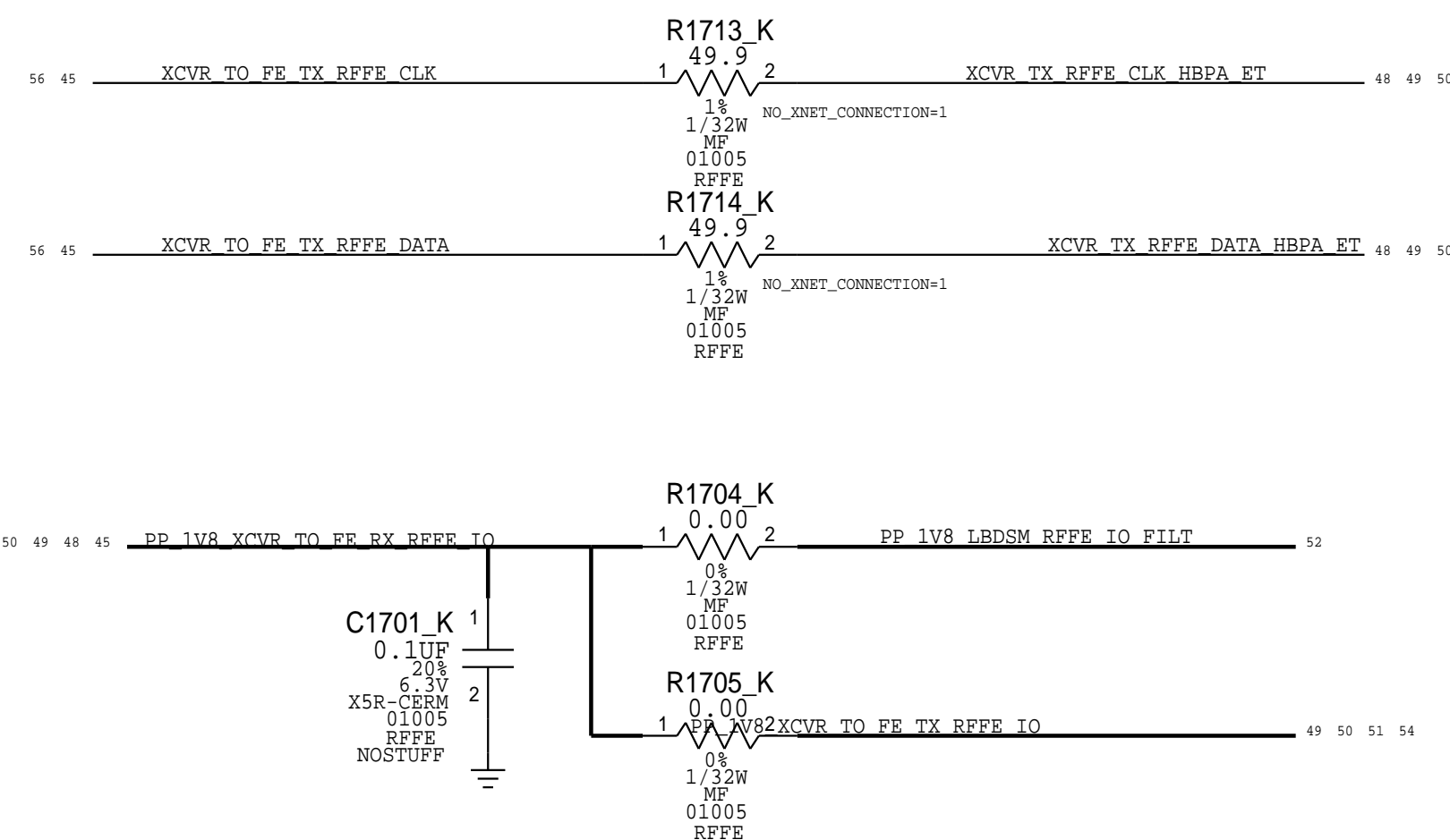


## XCVR: INTERFACE & PWR

SMARTI7.1 (7/7)



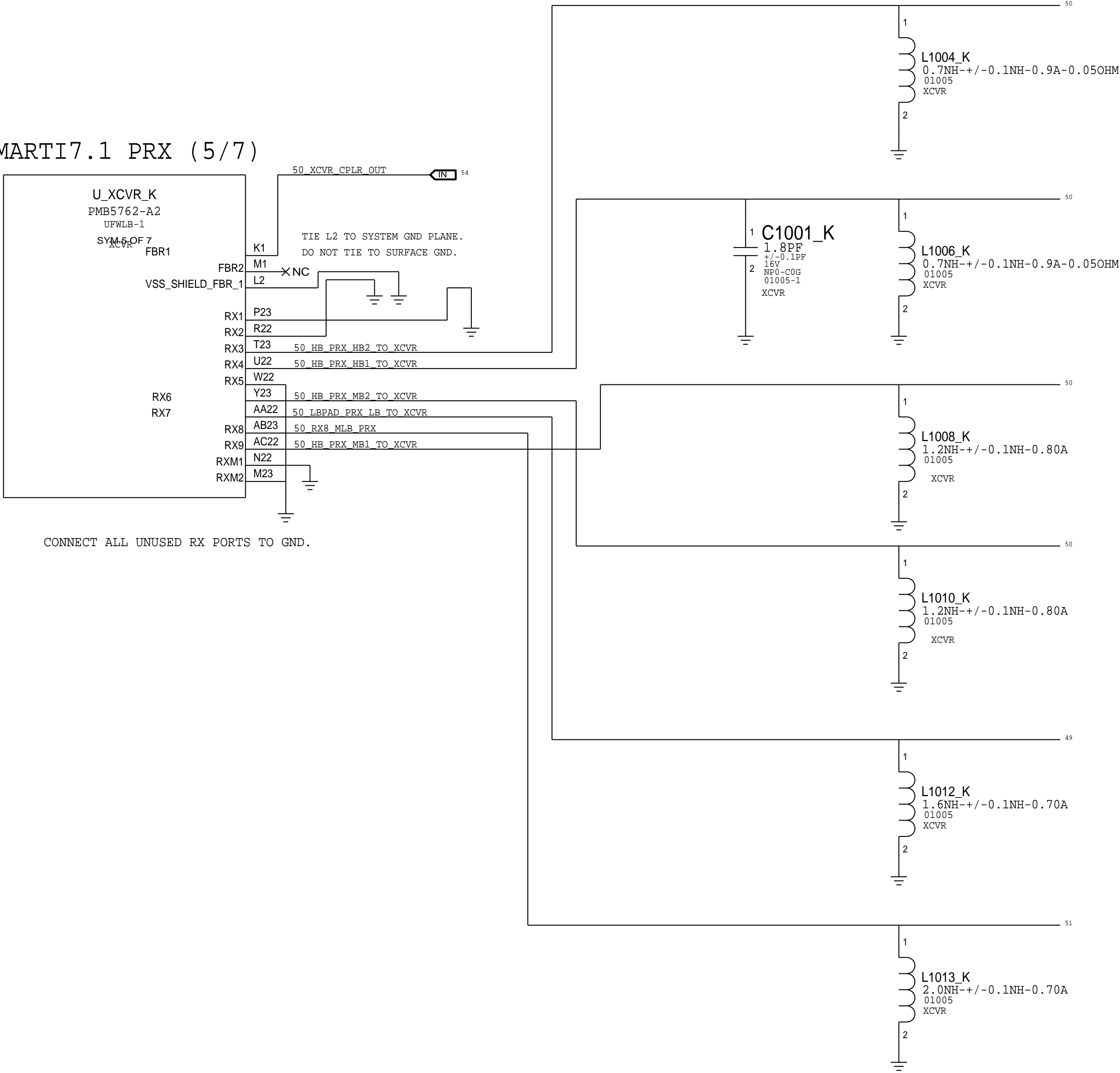
## RFFE XCVR DAMPING RESISTORS



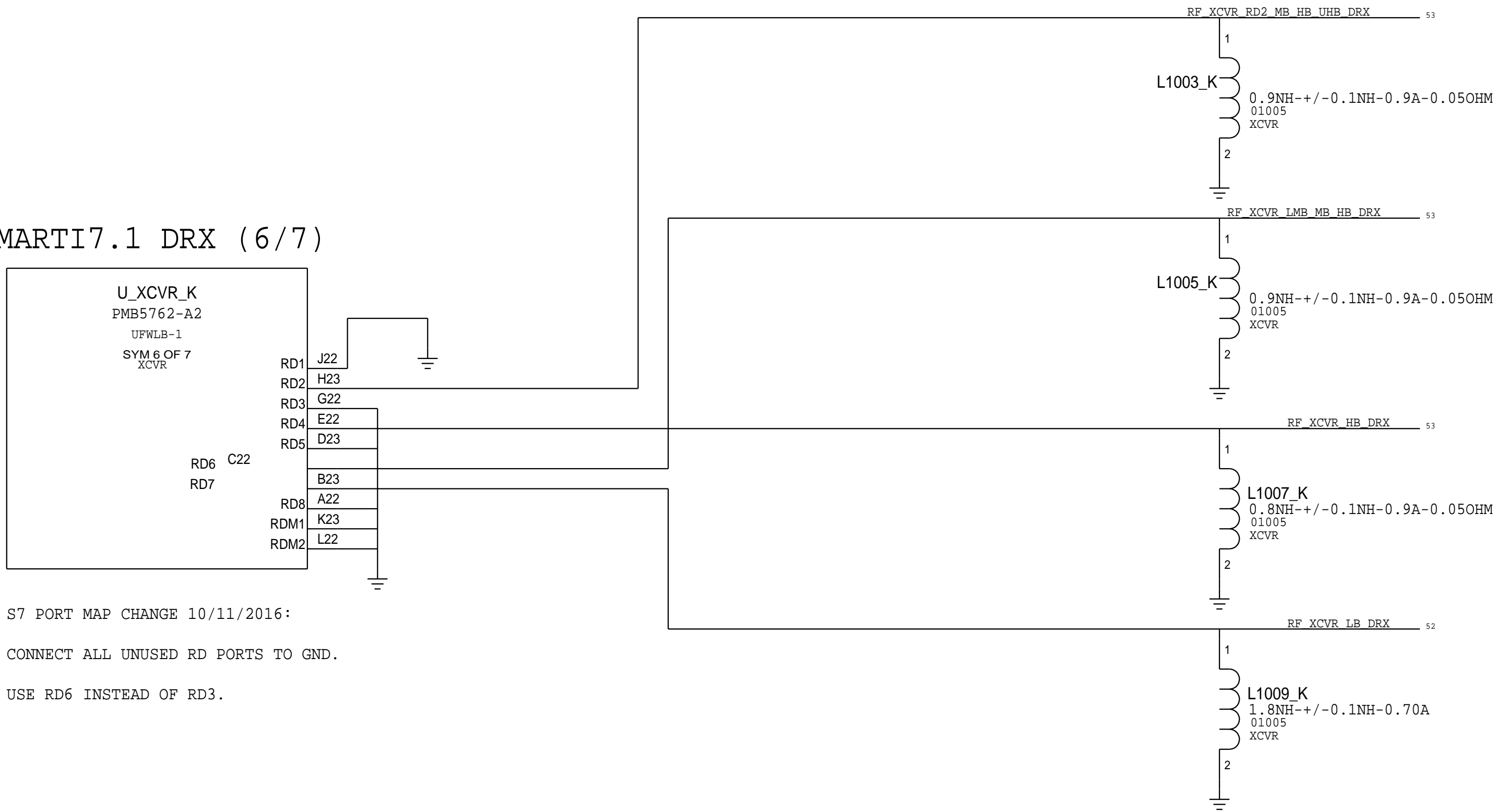
XCVR: INTERFACE &amp; PWR

XCVR: PRIMARY/DIVERSITY RX

SMARTI7.1 PRX (5/7)



SMARTI7.1 DRX (6/7)

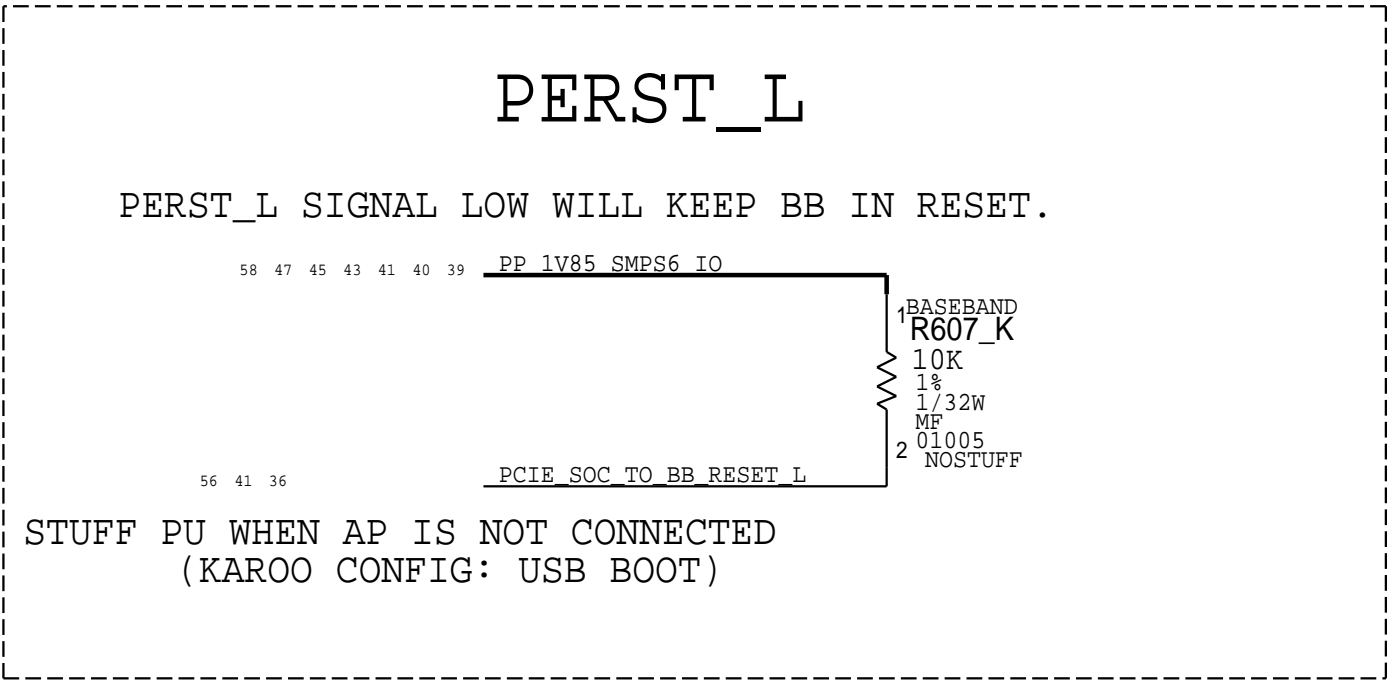
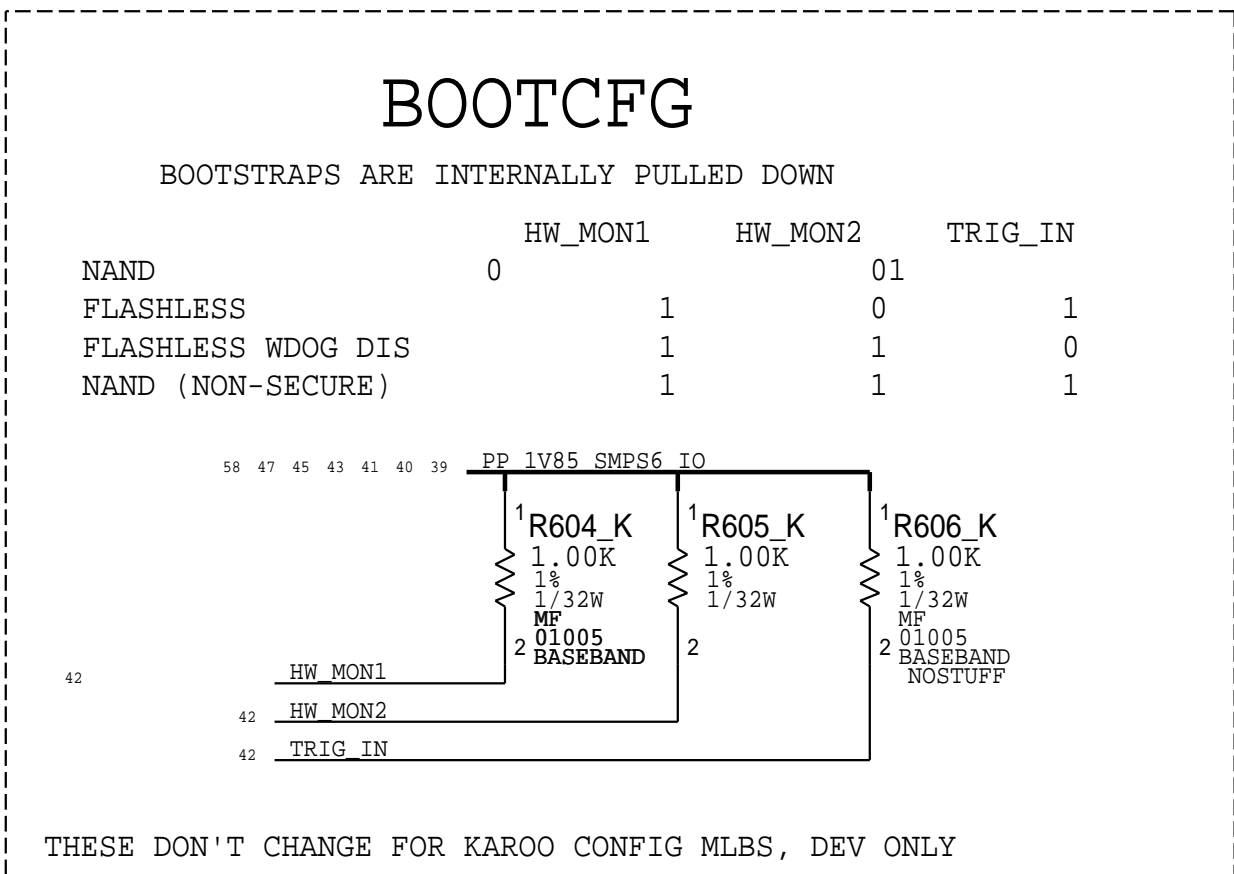


# HW CONFIG OPTIONS

D

D

# BOOT



C

B

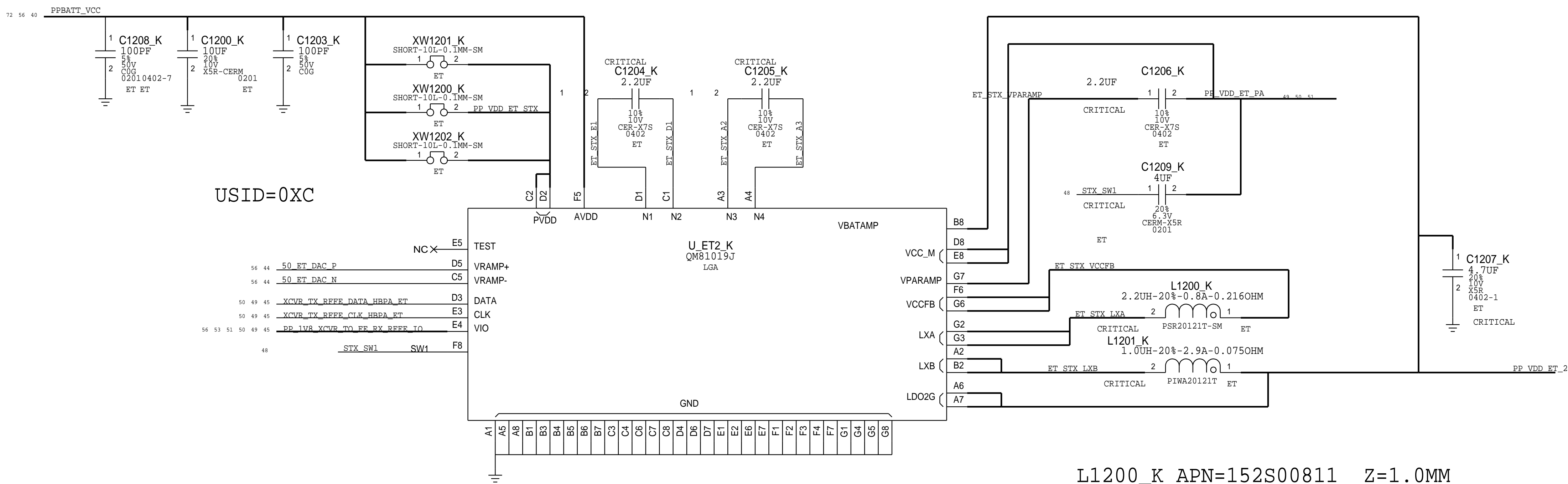
B

A

A

ET MODULATOR

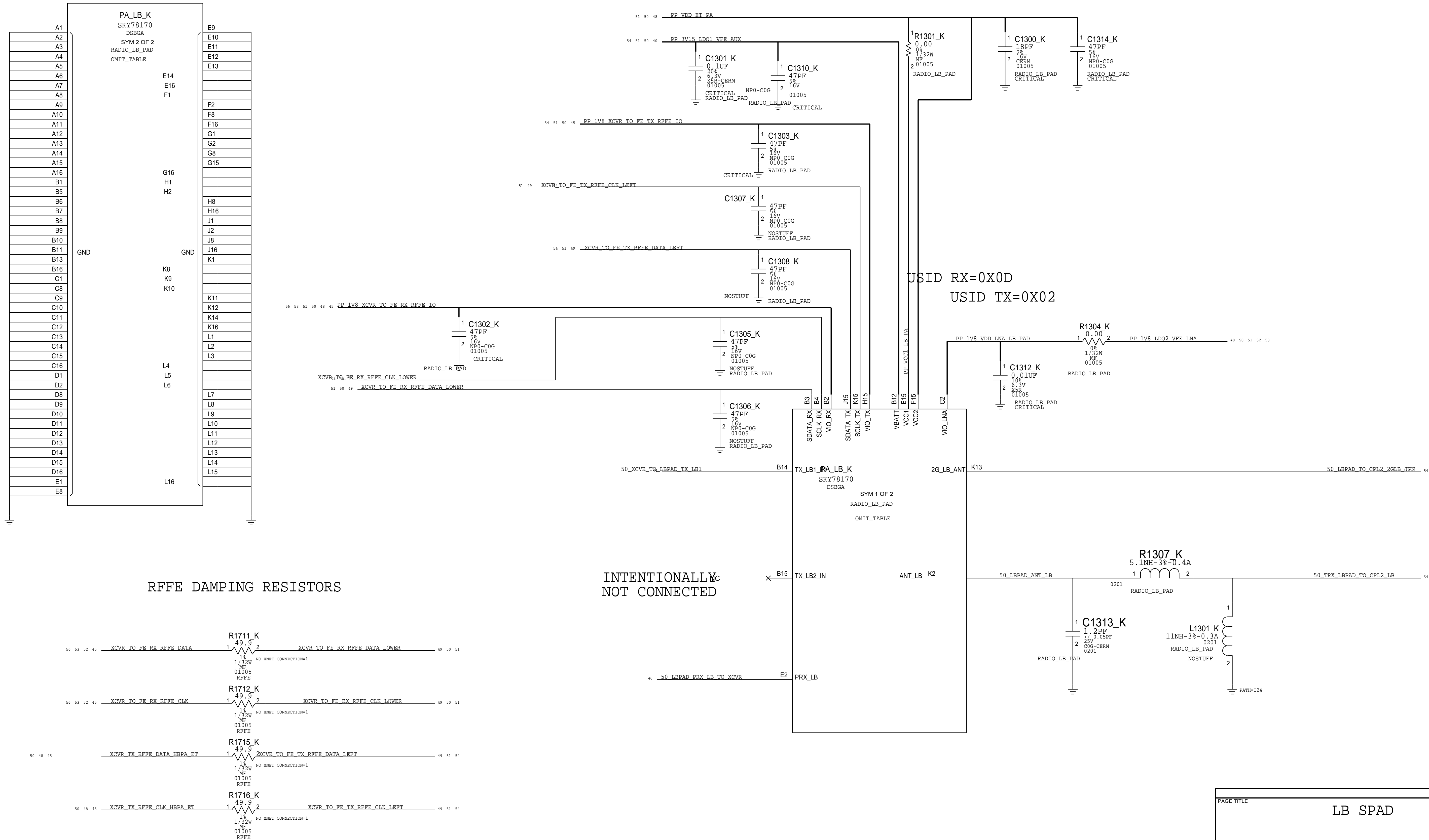
ALPES STX E1.0.1 MODULE



L1200\_K APN=152S00811 Z=1.0MM  
L1201\_K APN=152S00814 Z=1.0MM

C1204\_K, C1205\_K, C1206\_K: KYOCERA APN=138S00167  
C1204\_K, C1205\_K, C1206\_K ALTERNATE: MURATA APN=138S00237

8  
LB SPAD



# HB SPAD

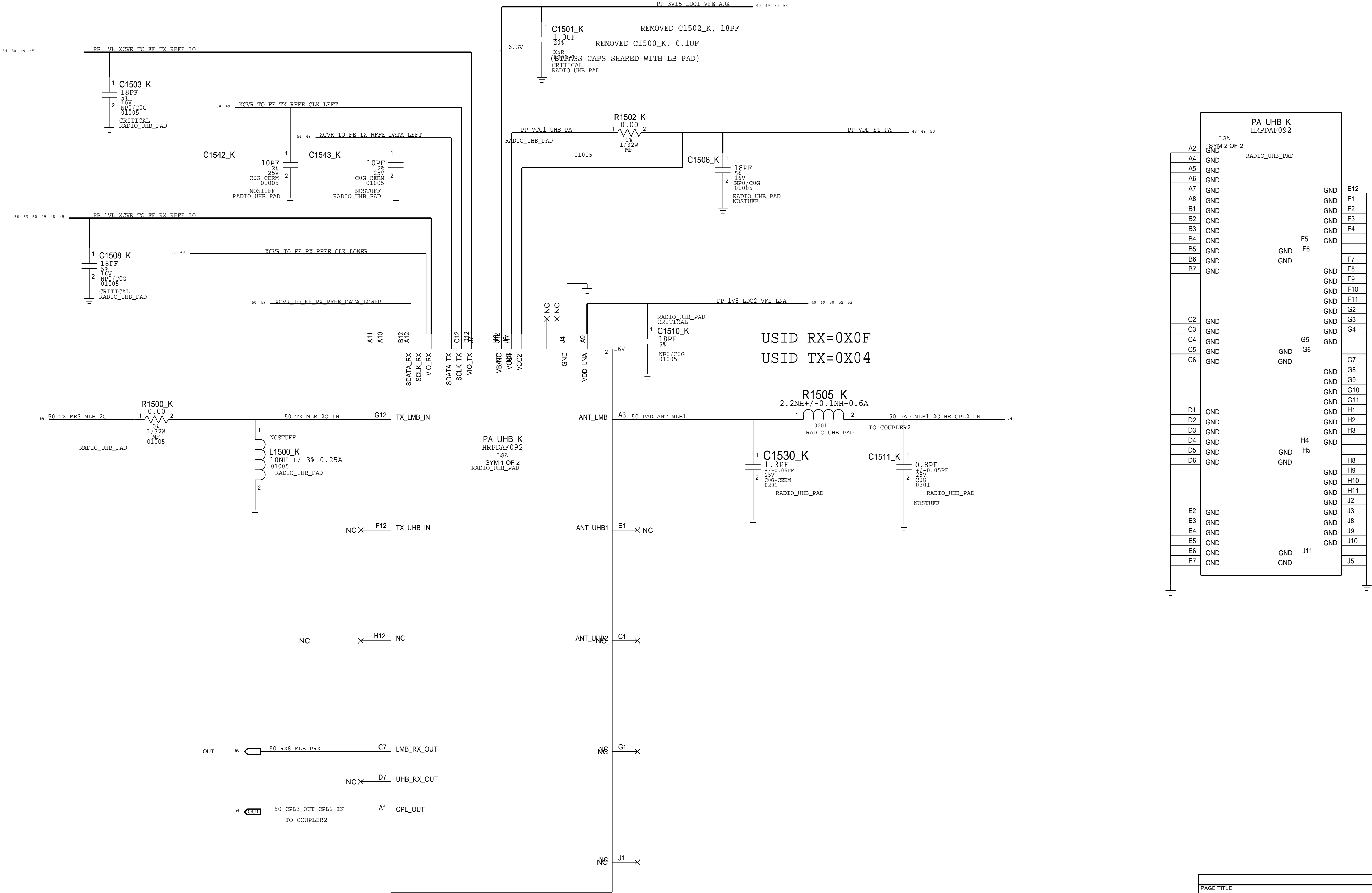
## HB PA RFFE DAMPING

USID RX=0X0E  
USID TX=0X03

HB SPAD

SYNC\_DATE=01/02/2018

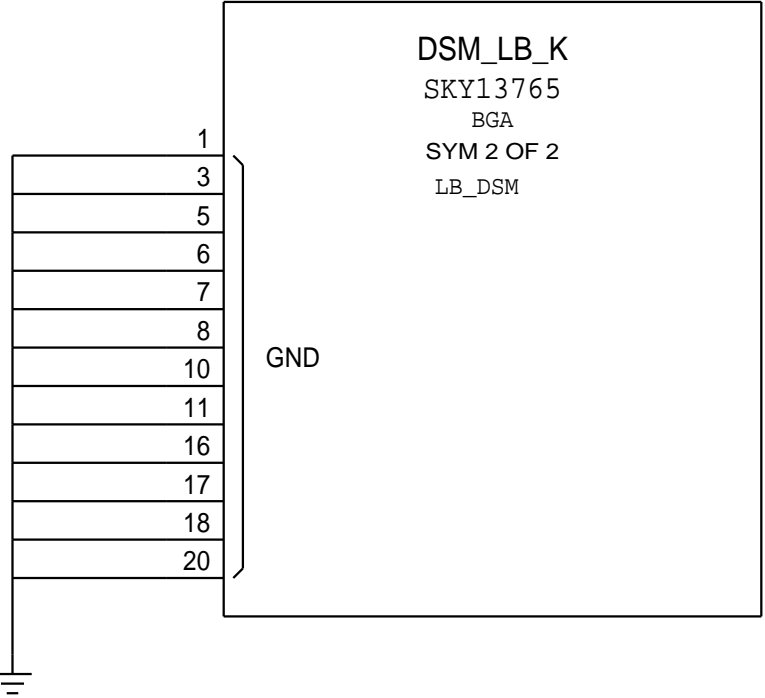
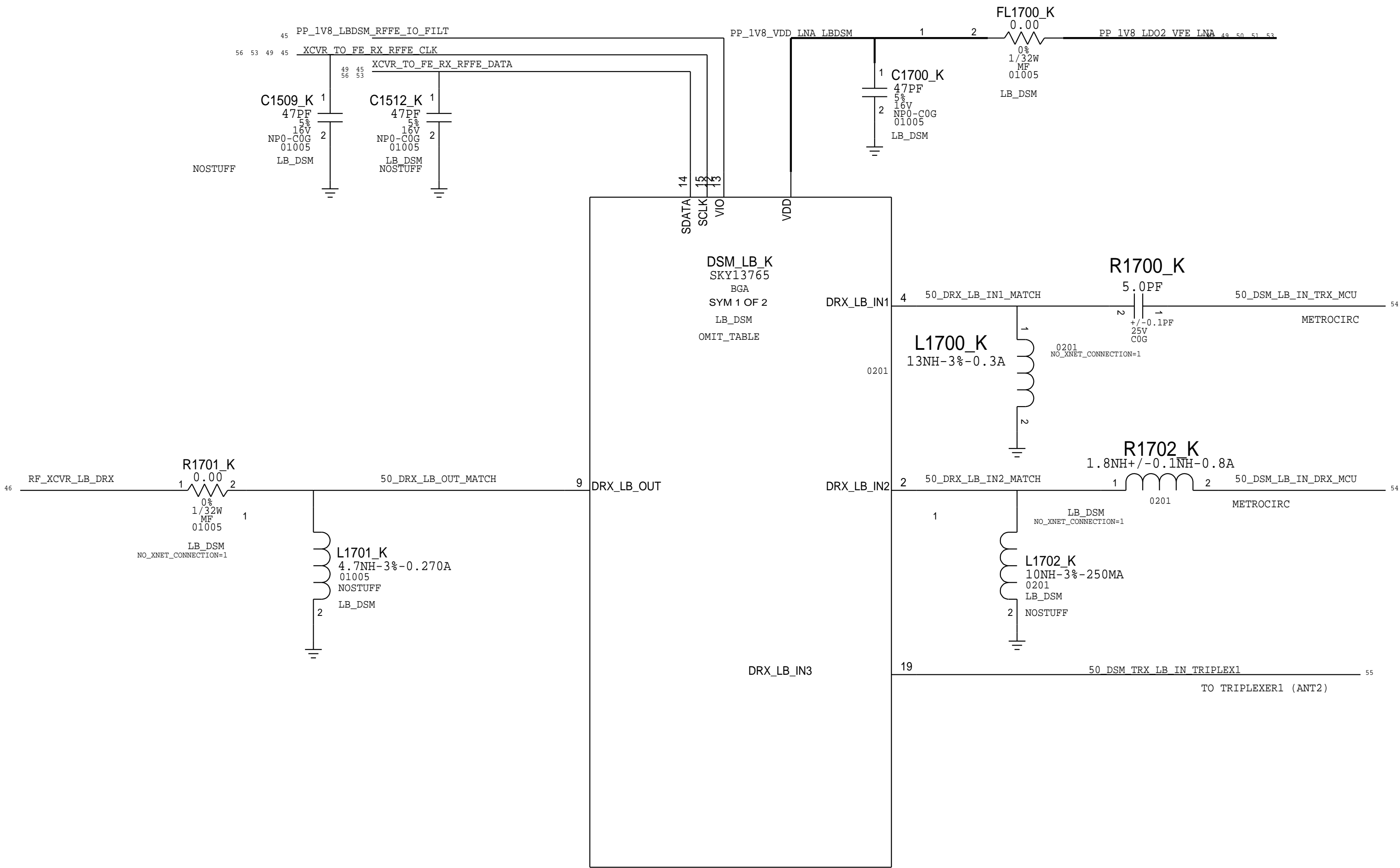
UHB LMB SPAD





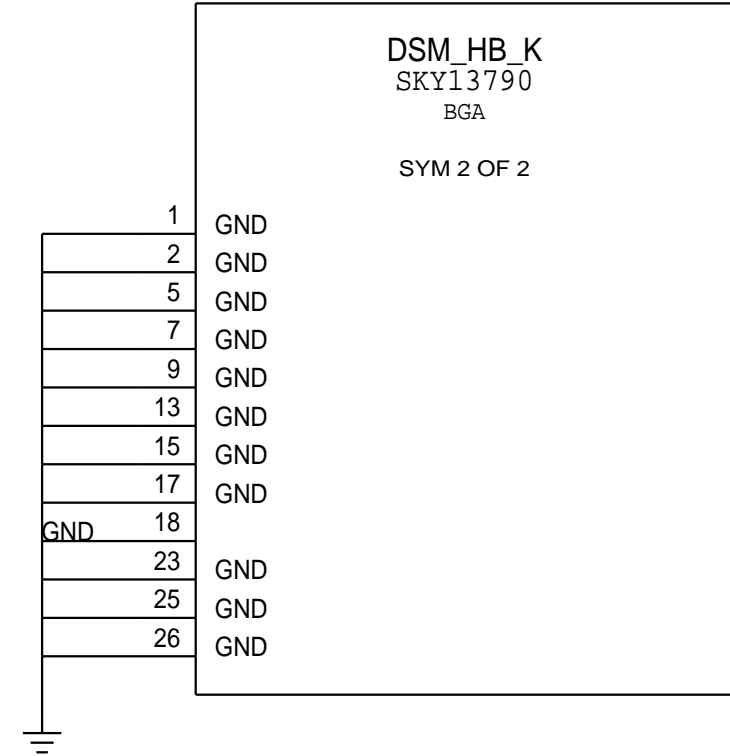
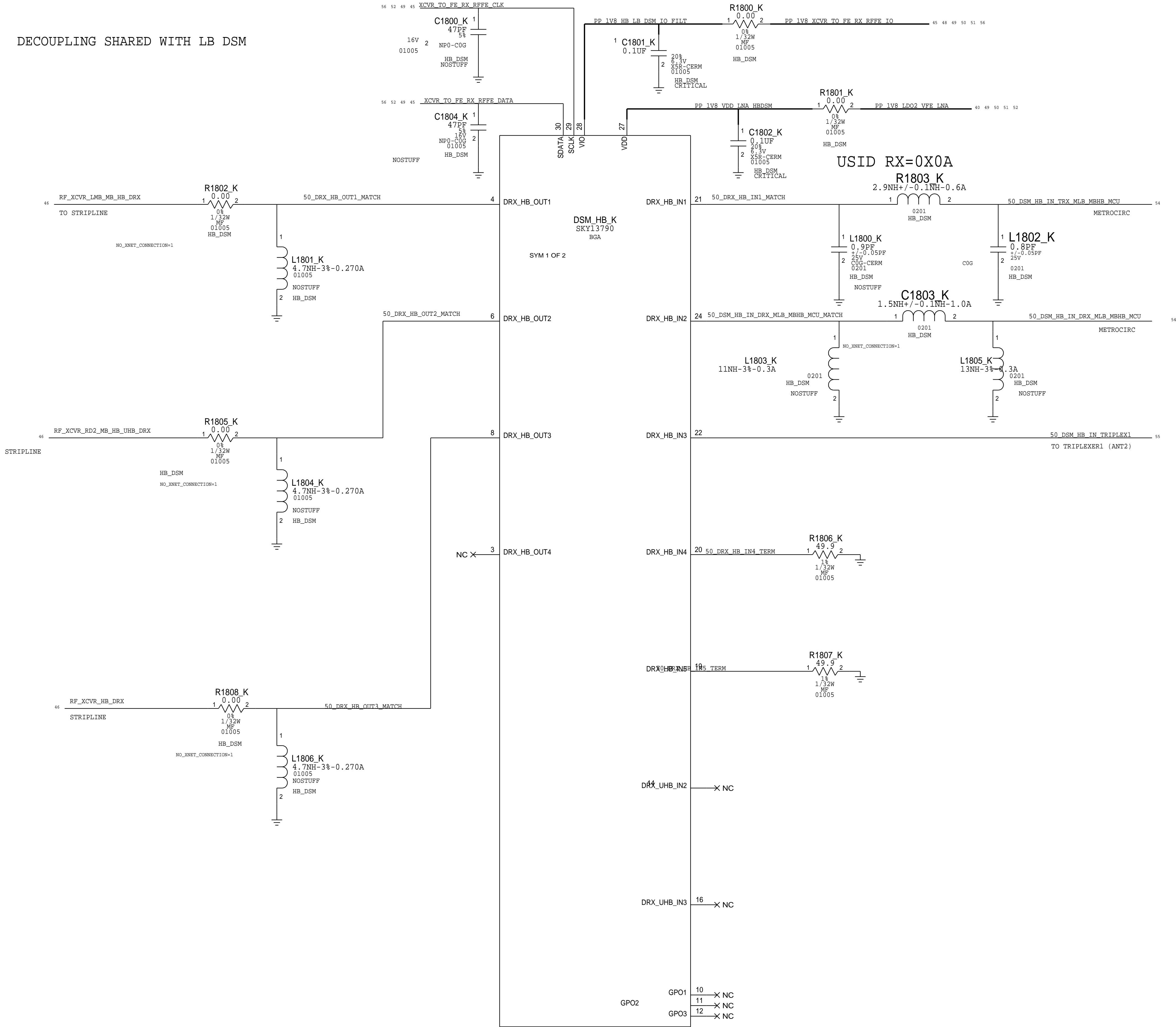
LB DIVERSITY RECEIVE LNA

USID RX=0X09



# HB DIVERSITY RECEIVE LNA

DECOUPLING SHARED WITH LB DSM



LOWER ANTENNA AND COUPLER

D

D

B

B

A

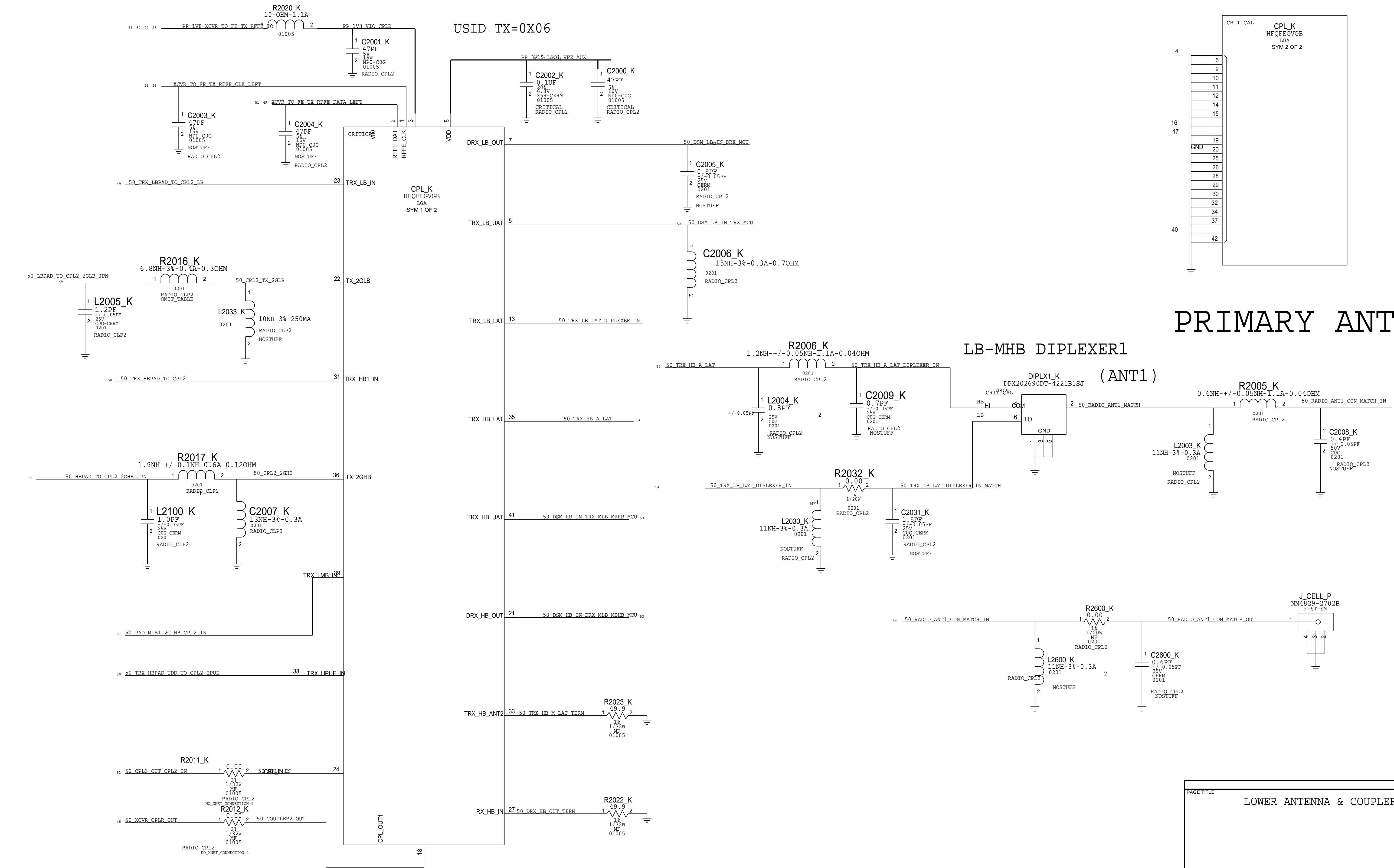
A

USID TX=0X06

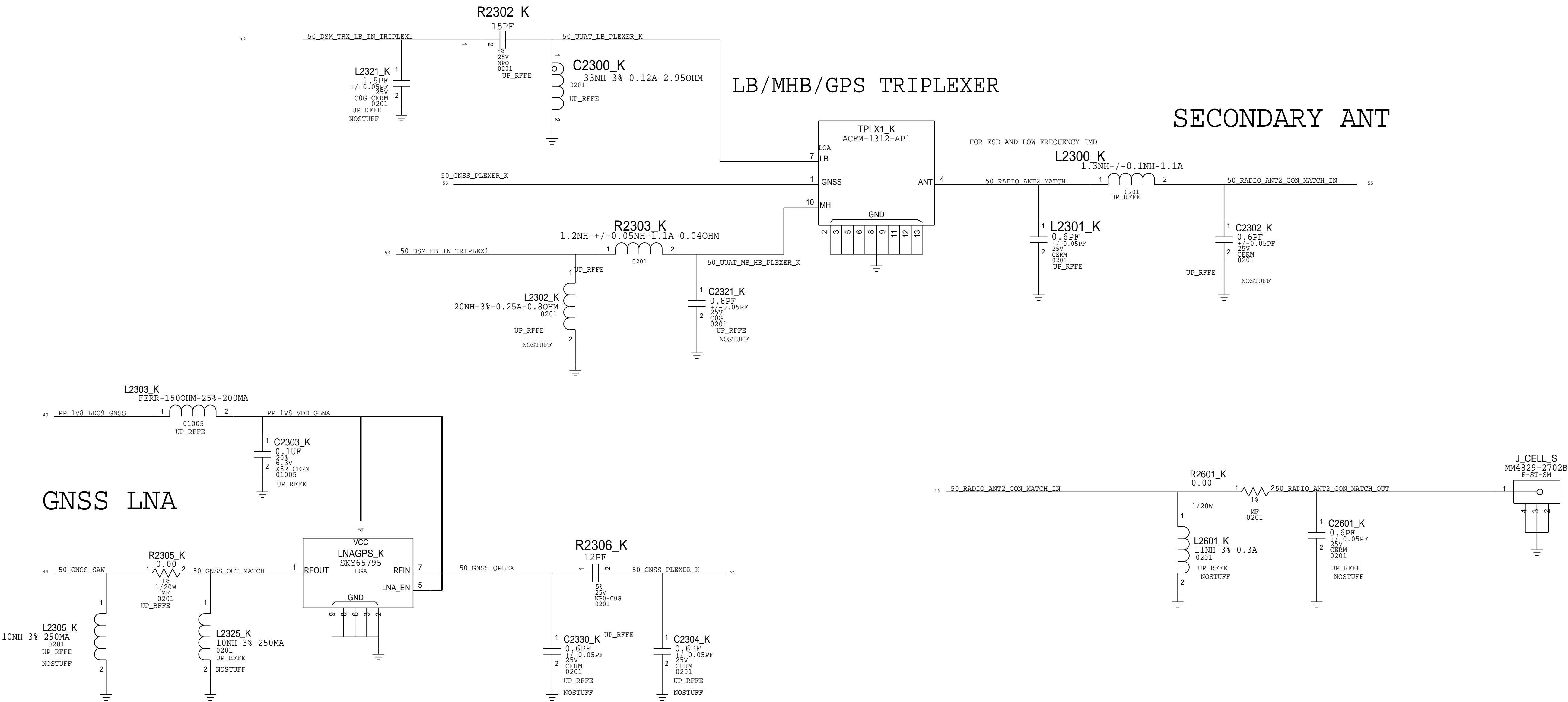
PRIMARY ANT

LB-MHB DIPLEXER1

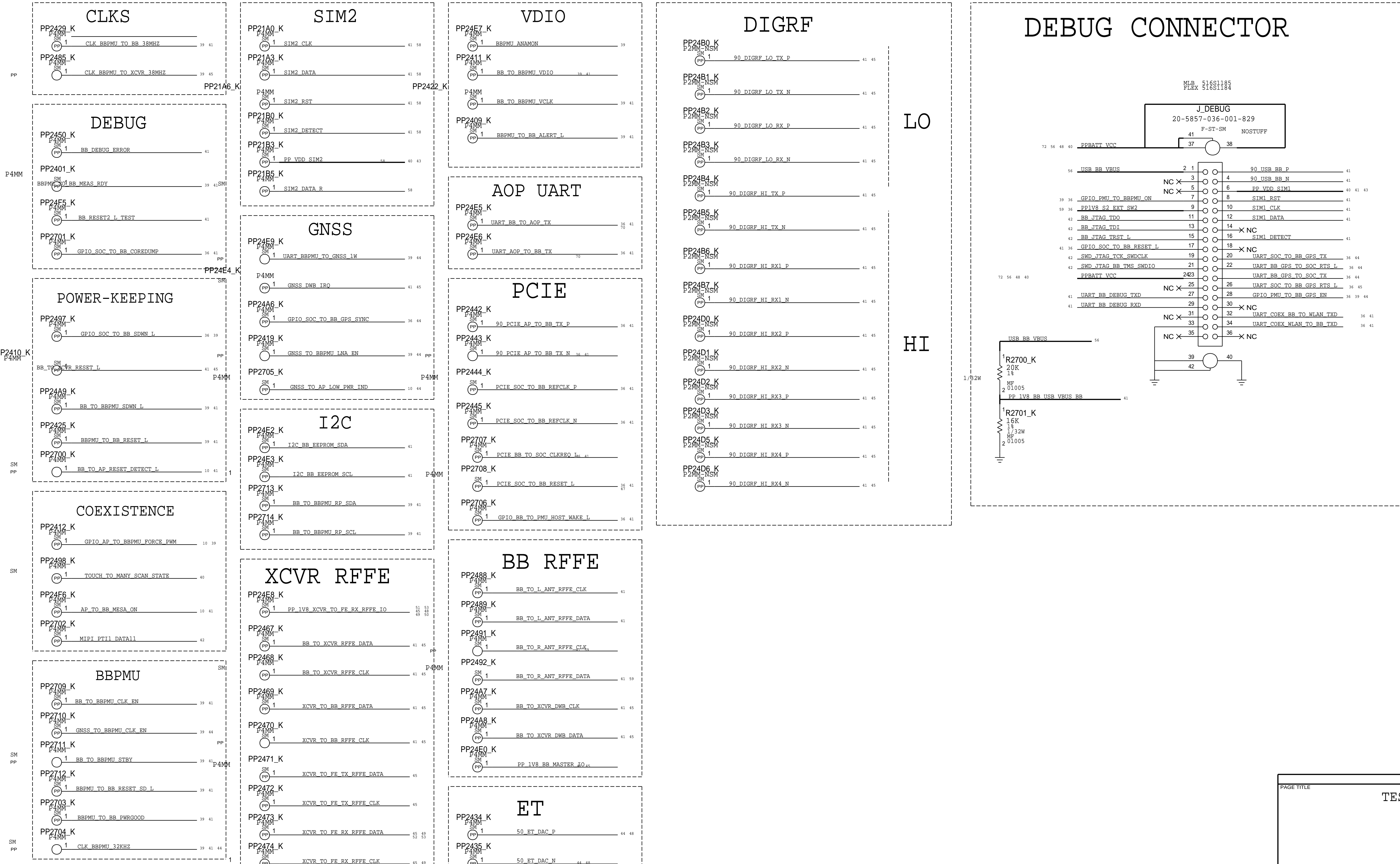
(ANT1)



UPPER ANTENNA FEEDS



# DEBUG: TEST POINTS



## D

## D

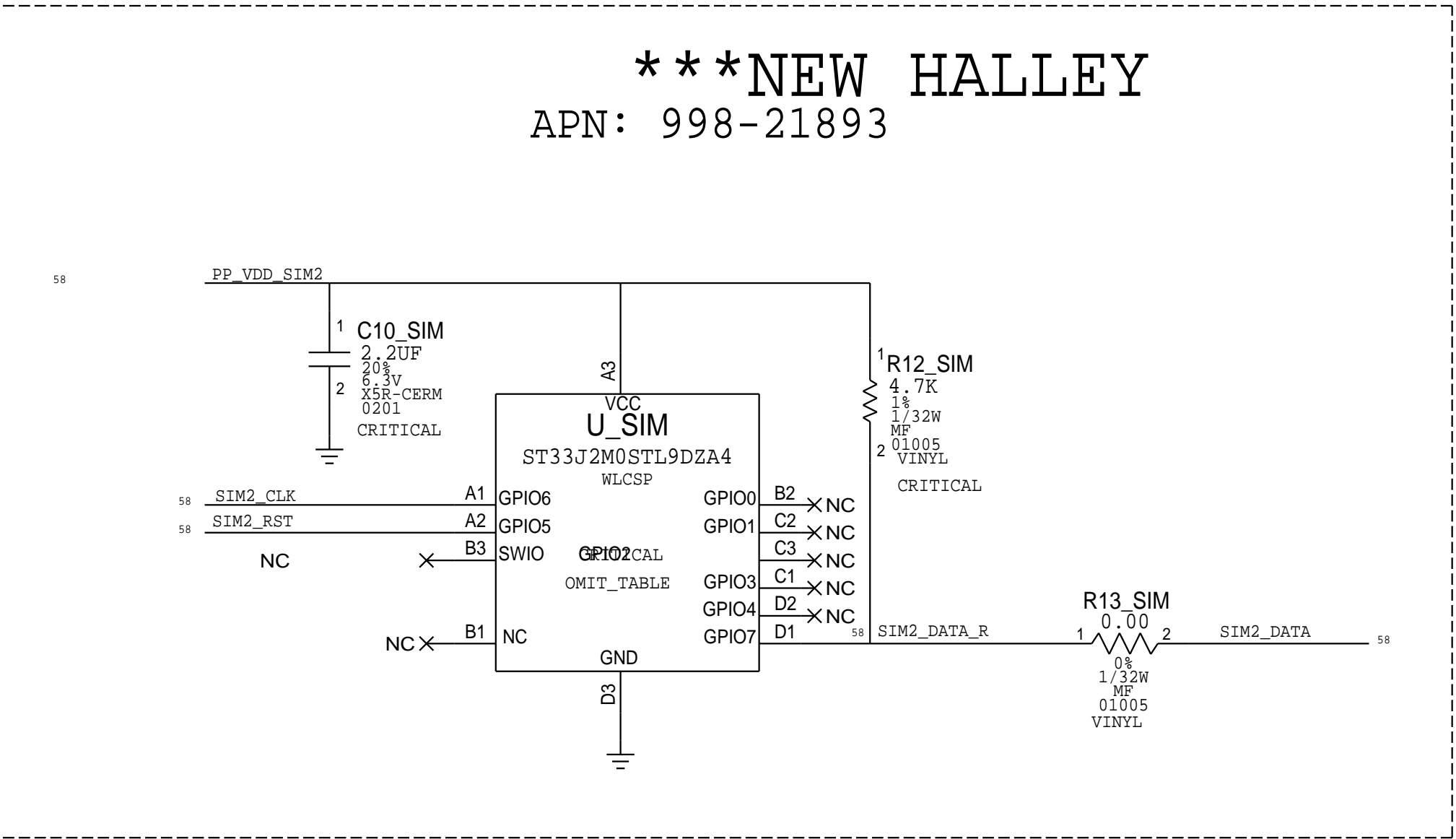


# B

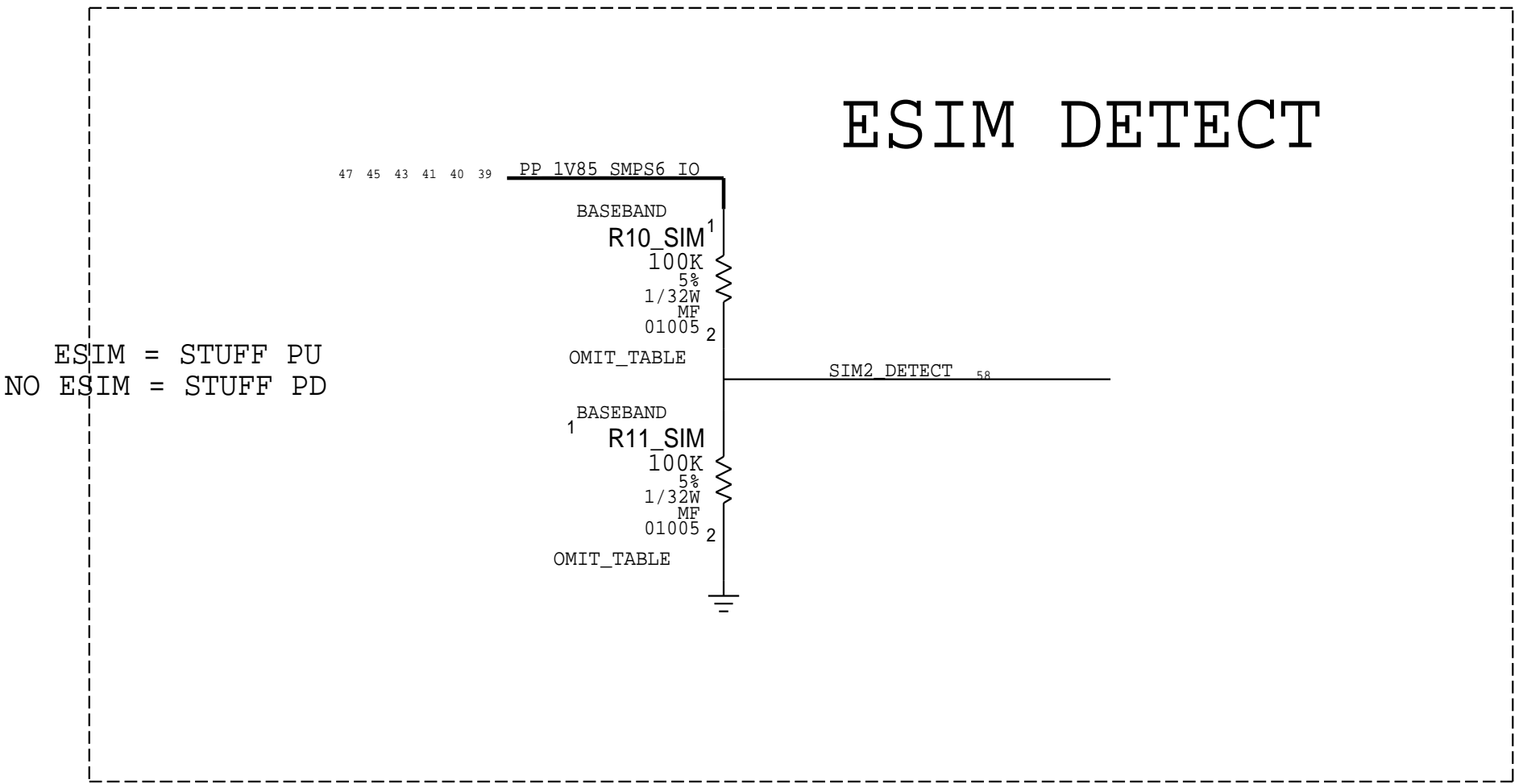


ESIM

\*\*\*NEW HALLEY  
APN: 998-21893

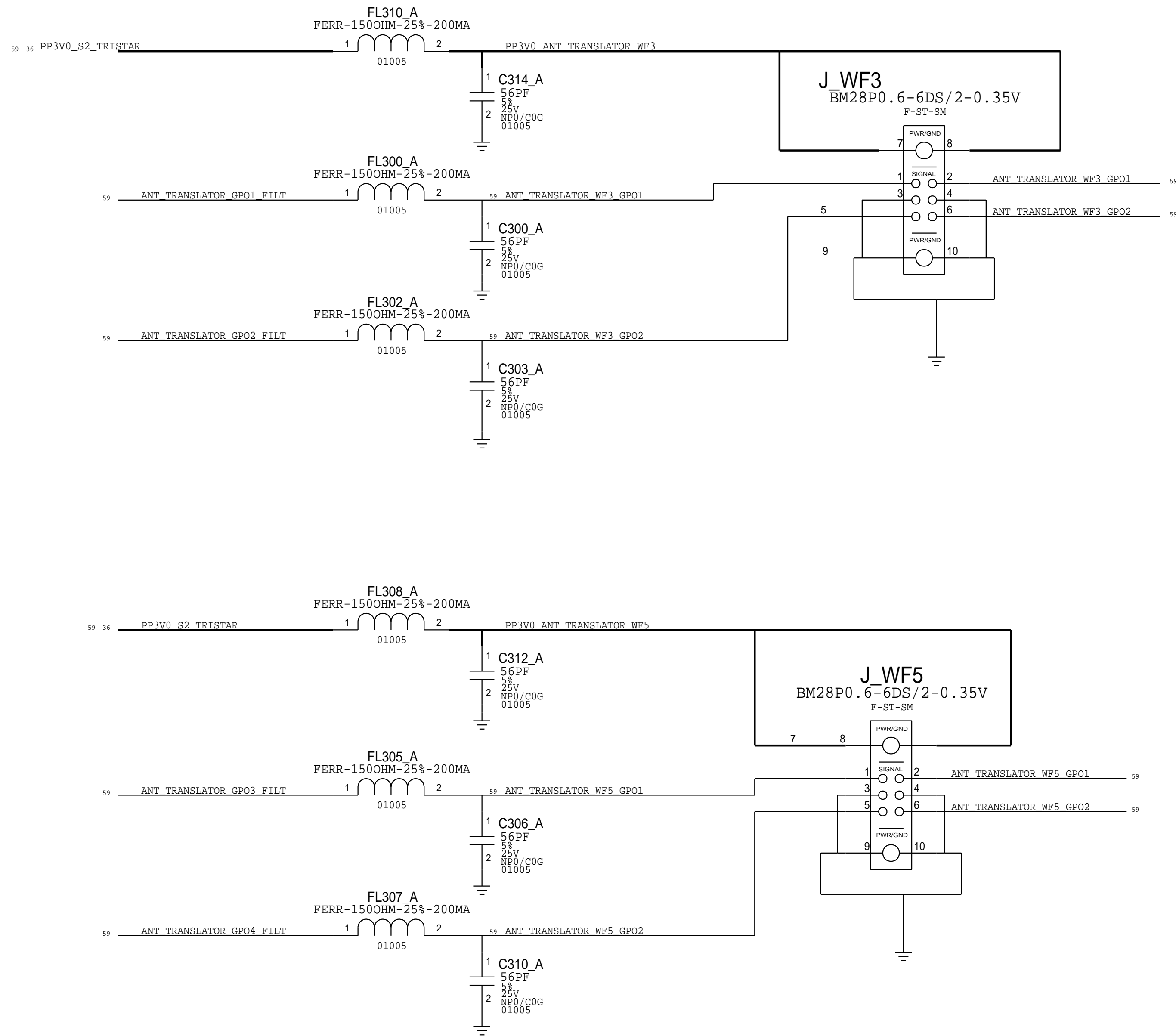
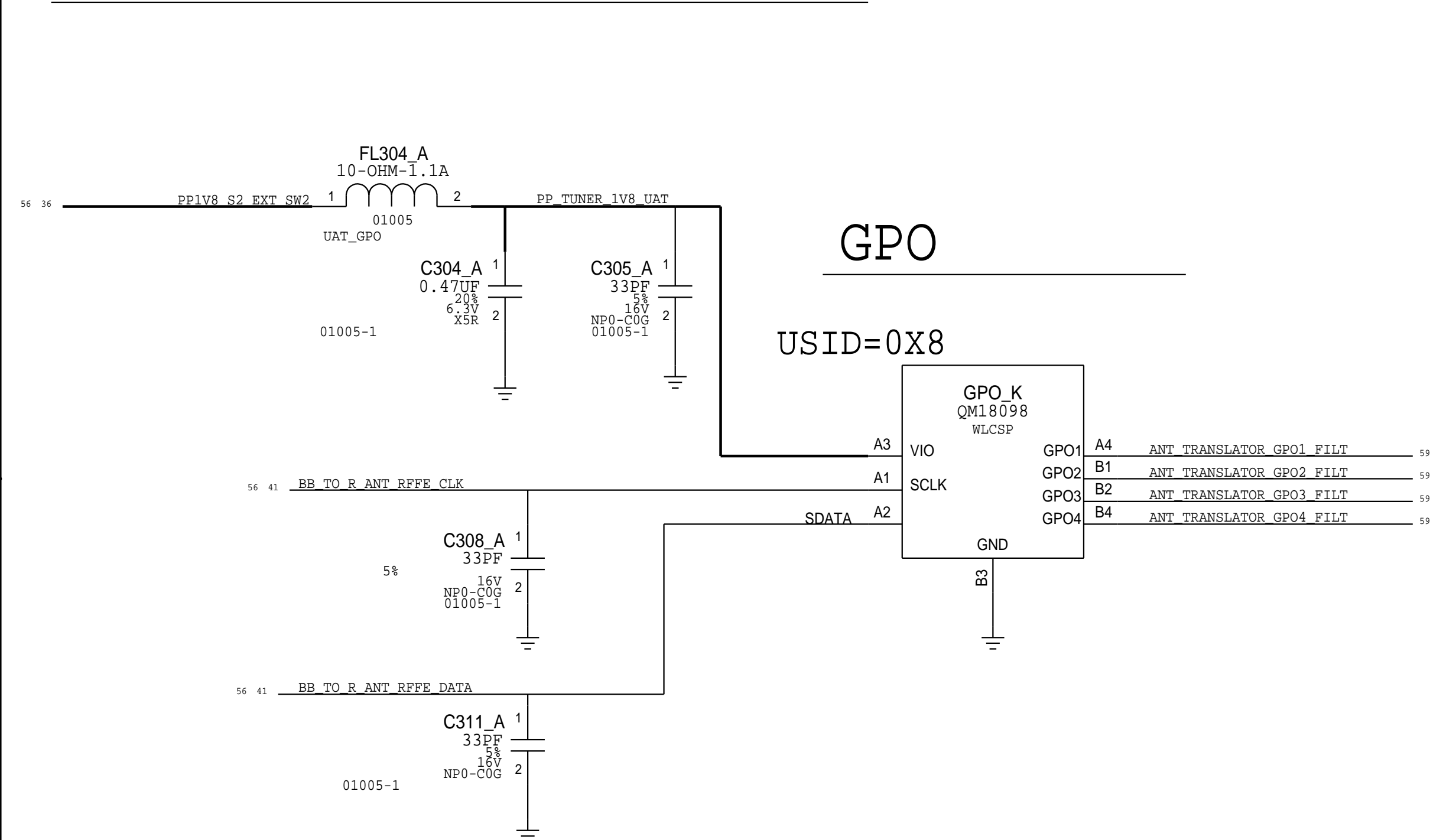


ESIM DETECT



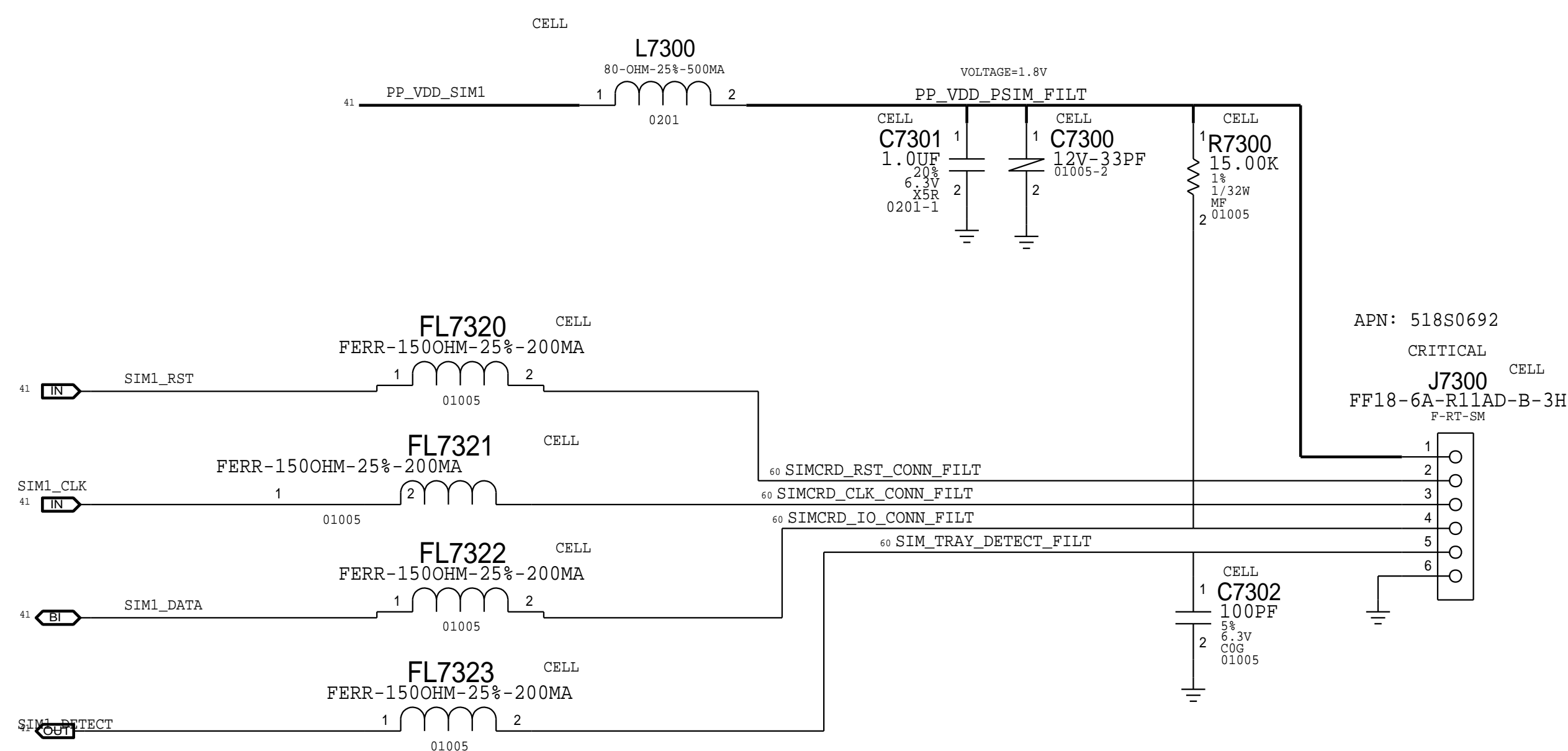
56	41	SIM2_CLK	==	SIM2_CLK	58
56	41	MAKE_BASE=TRUE	==		
56	41	SIM2_DATA	==	SIM2_DATA	58
56	41	MAKE_BASE=TRUE	==		
56	41	SIM2_RST	==	SIM2_RST	48
56	41	MAKE_BASE=TRUE	==		
56	41	SIM2_DETECT	==	5SIM2_DETECT	
56	41	MAKE_BASE=TRUE	==		
56	43	40		PP_VDD_SIM2	
56	41	PP_VDD_SIM2	==	PP_VDD_SIM2	
56	41	MAKE_BASE=TRUE	==		
56	41	SIM2_DATA_R	==	SIM2_DATA_R	58
56	41	MAKE_BASE=TRUE	==		

## ANT RFFE

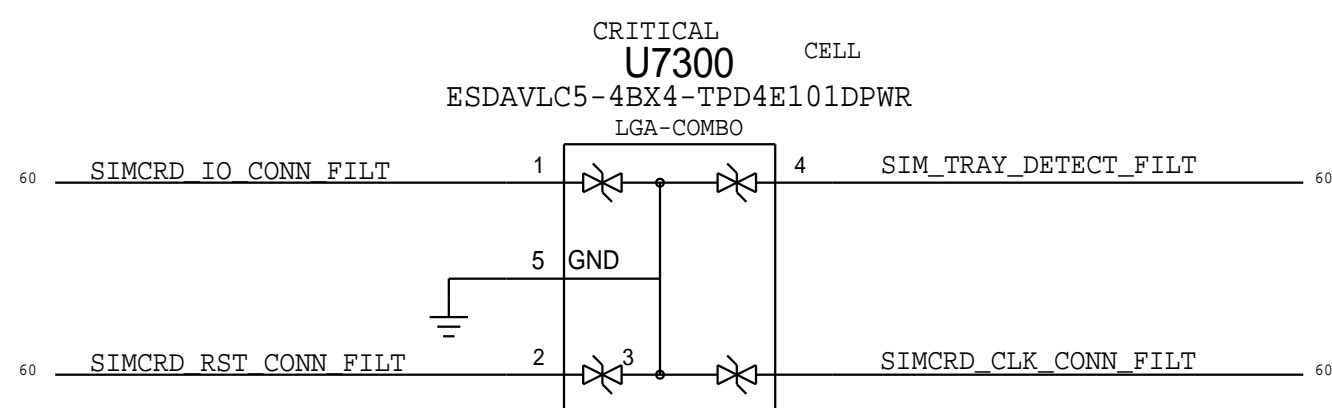




## SIM CARD FLEX CONN



## SIM CARD ESD PROTECTION



PART NUMBER	ALTERNATE FOR PART NUMBER	BOM <del>SECTION</del>	COMMENTS:
377S0130	377S0159	07300	RDAR #12840016

## D



## A

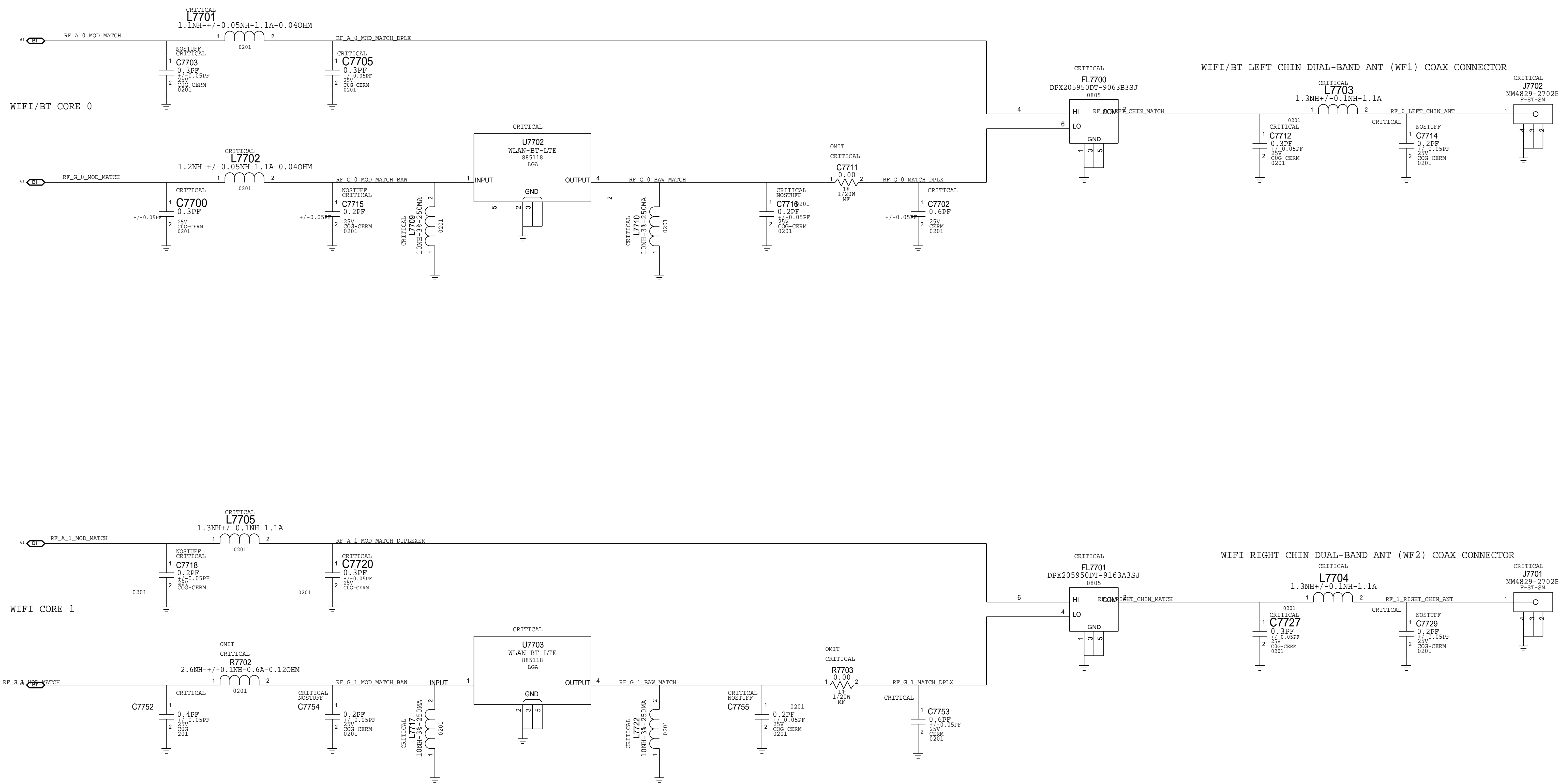
A

LAST UPDATED: 06/15/2017

SYNC_MASTER=N/A		SYNC_DATE=03/27/2019	
PAGE TITLE		WIFI/BT: MODULE	

WIFI/BT: MODULE

WIFI/BT: J171B (WIFI/BT + CELL) RF FRONT END

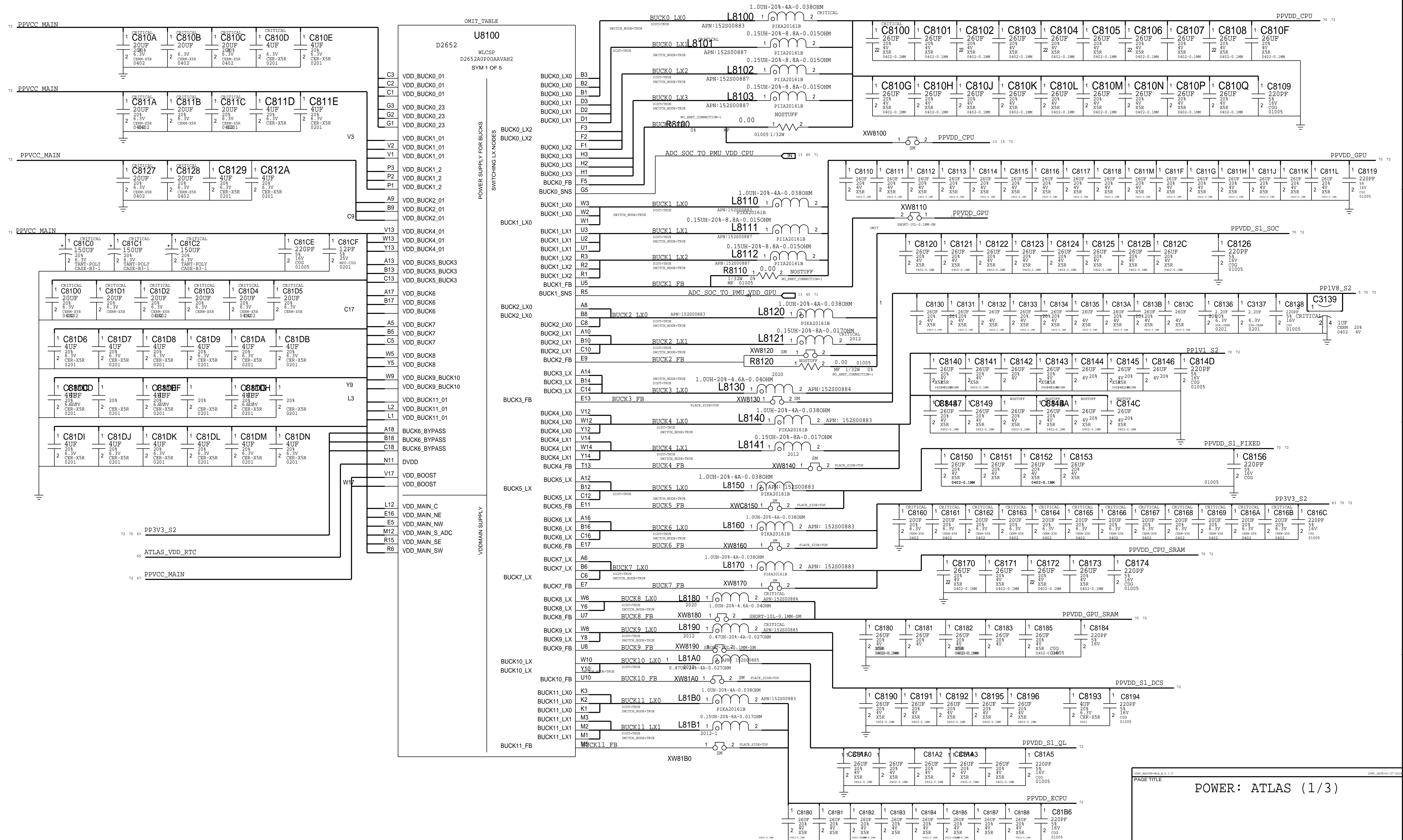


PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
152S2002	1	IND, P11M, 2.75H, +/-0.18M, 600MA, 0H-Q, 0201	R7703	CRITICAL	
152S2000	1	IND, P11M, 2.08H, +/-0.18M, 600MA, 0H-Q, 0201	C7711	CRITICAL	
152S00059	1	IND, P11M, 1.48H, +/-0.18M, 1000MA, 0H-Q, 0201	R7702	CRITICAL	

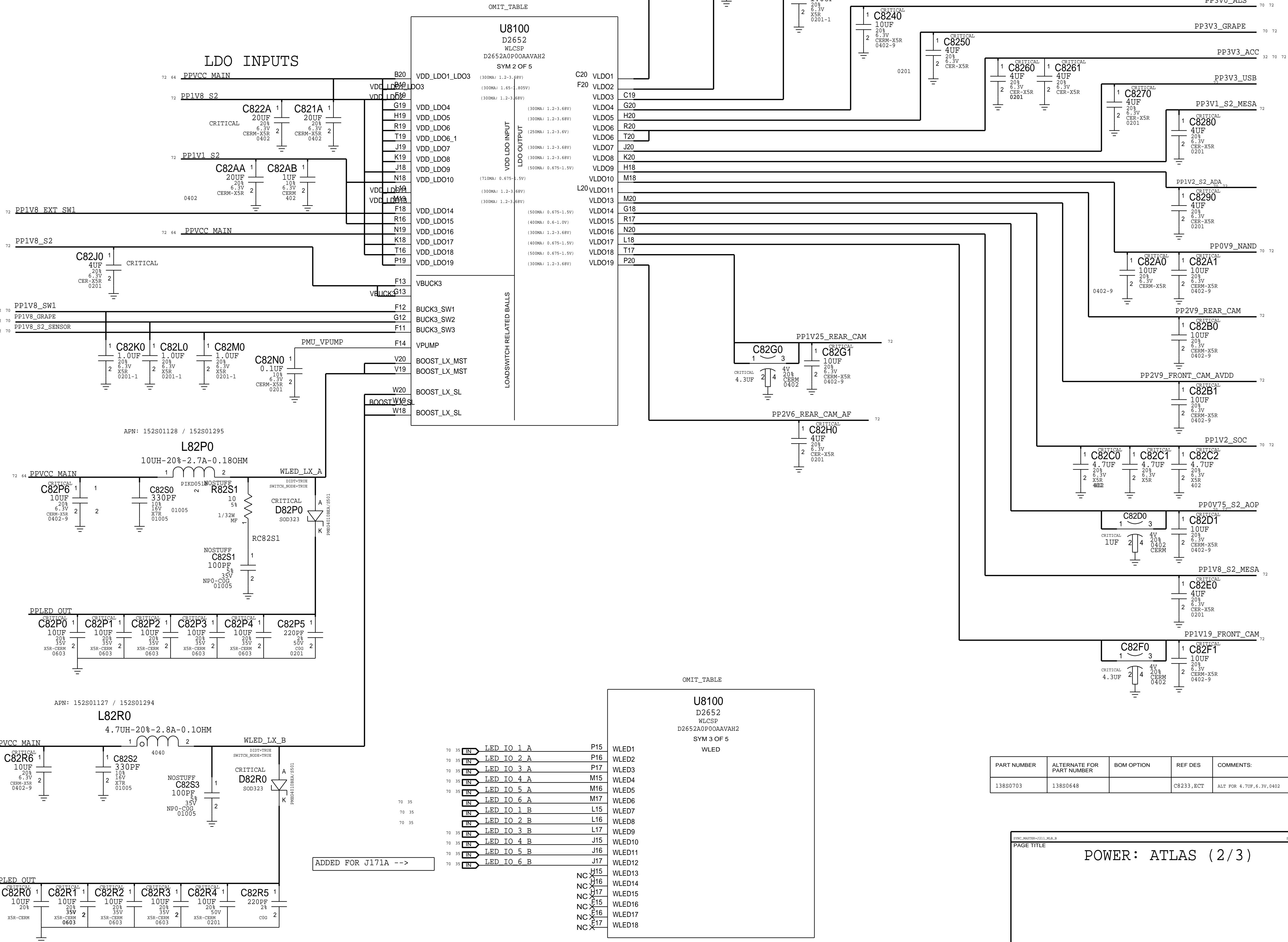
LAST UPDATED: 08/27/2018

WIFI/BT: J171B FRONT END

# ATLAS BUCKS



## ATLAS LDOS ( 2 / 3 )



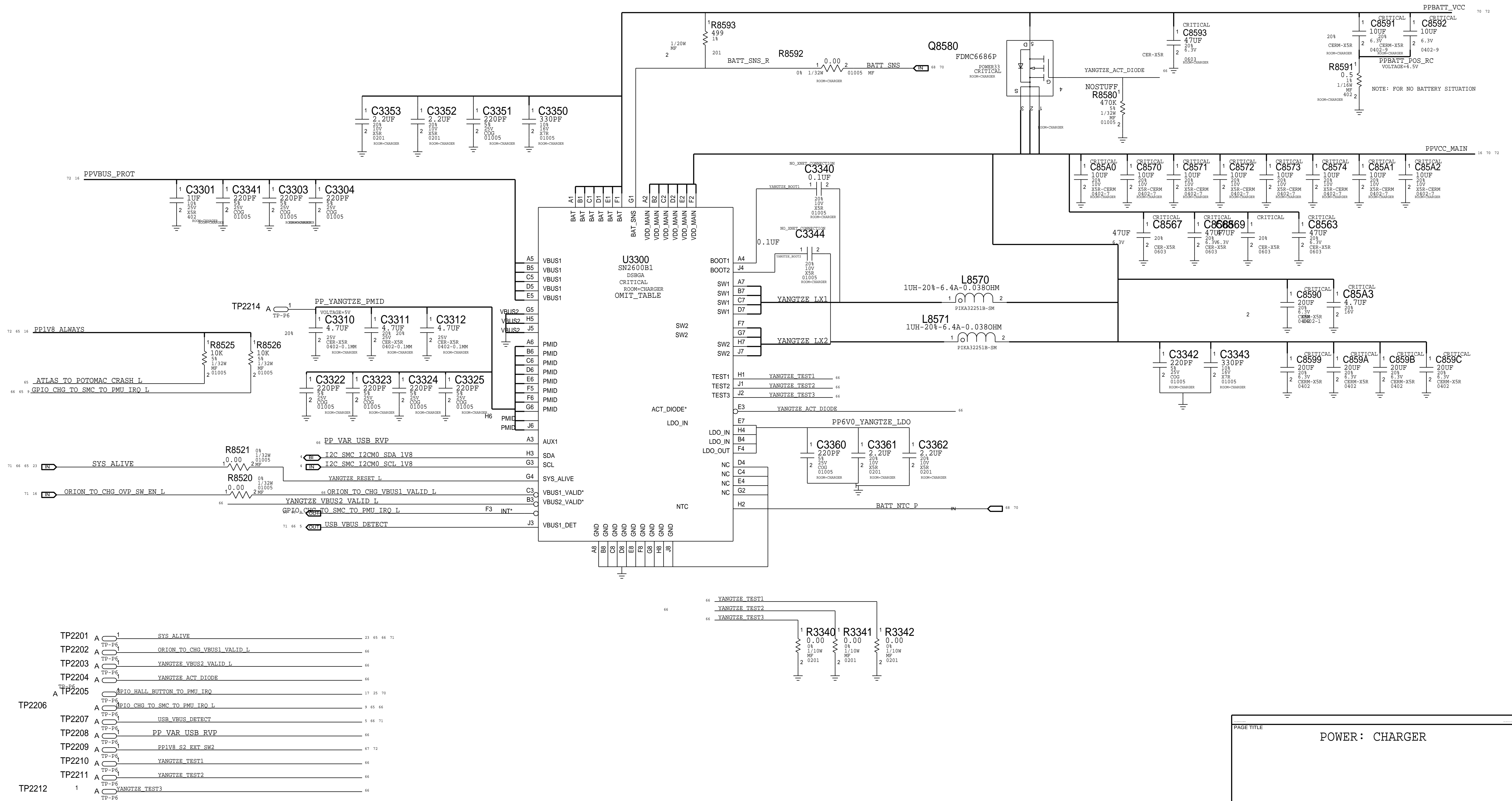
PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
152S01294	152S01127		1&2R0	
152S01295	152S01128		1&2R0	

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
138S0703	138S0648		C8233,ECT	ALT FOR 4.7UF,6.3V,0402

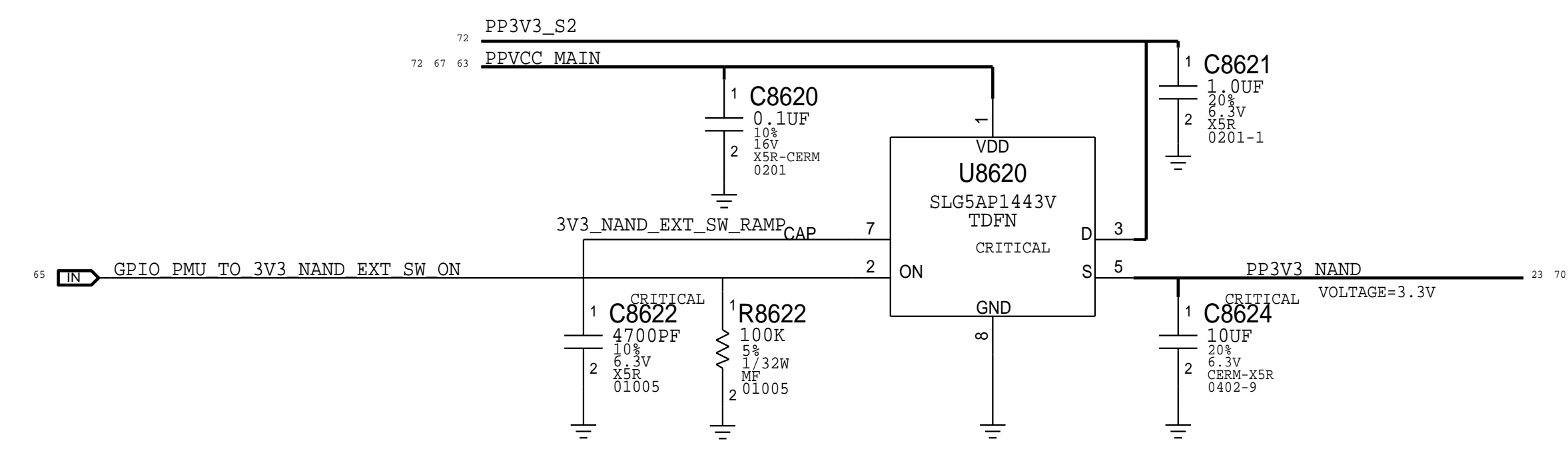
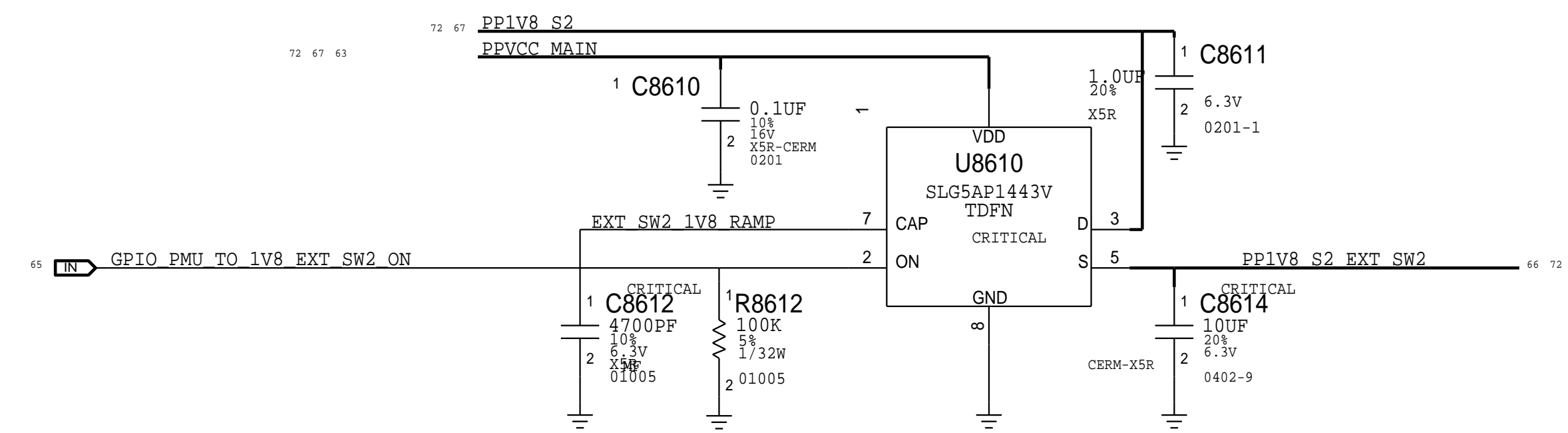
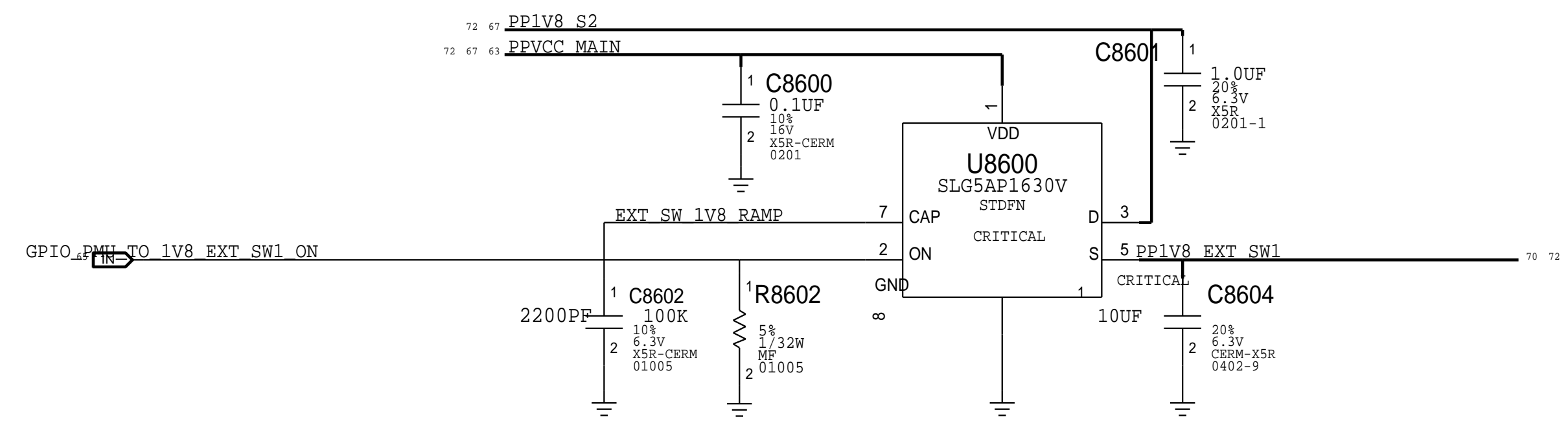




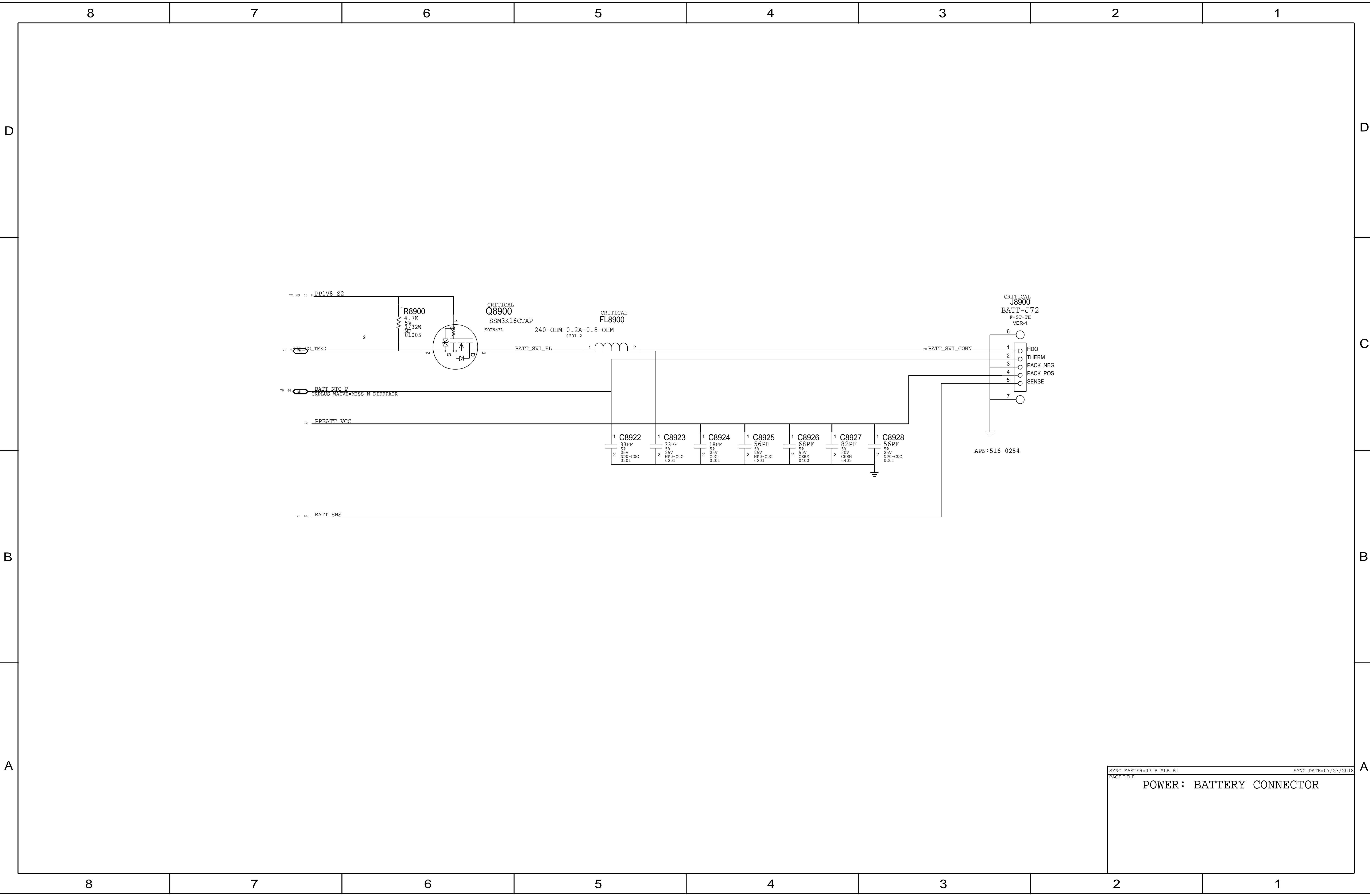
YANGTZE CHARGER



EXTERNAL POWER SWITCHES







D

D

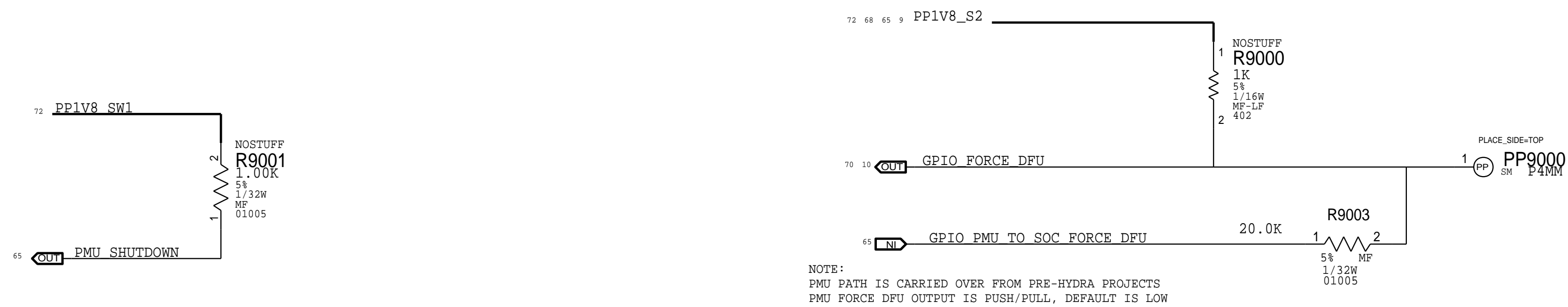
B

B

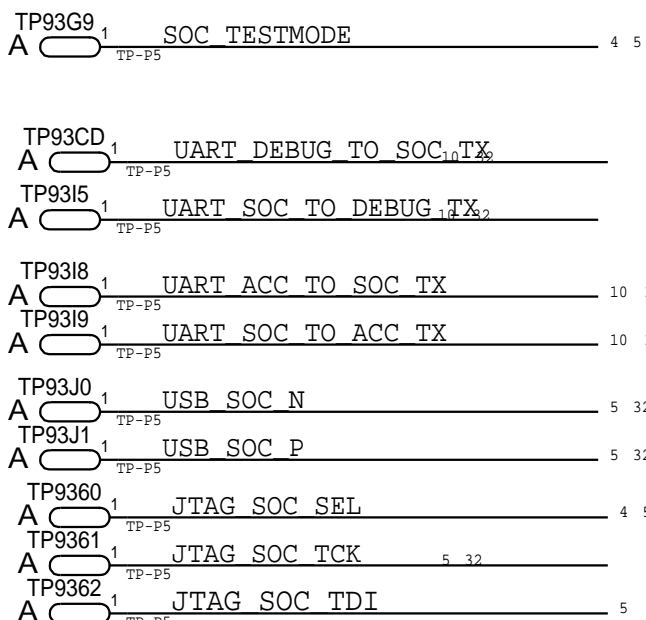
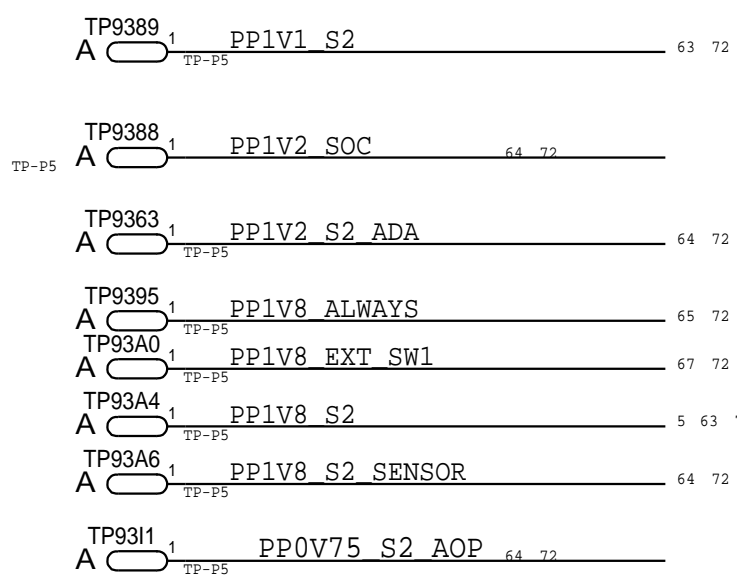
A

A

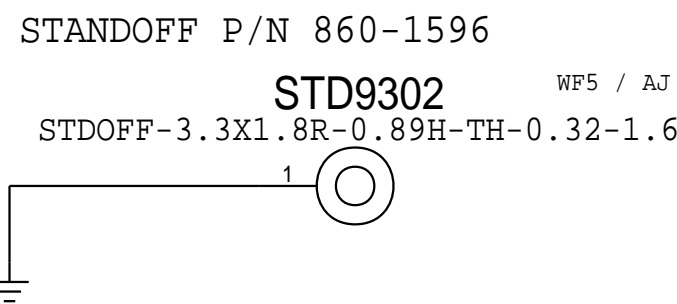
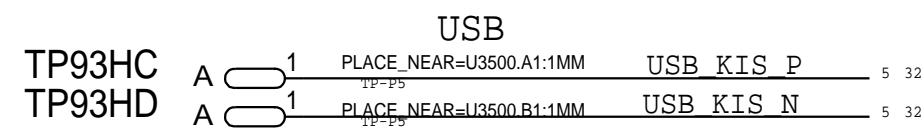
# DEBUG RESET ACCESS



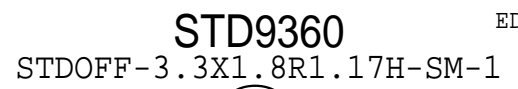
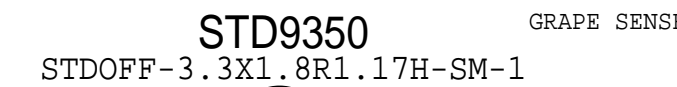
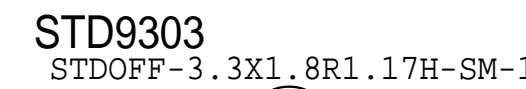
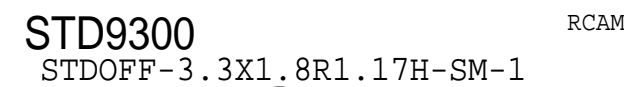
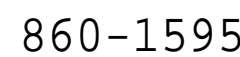
<u>GPIO CODEC TO SOC IRQ L</u>	9	18
<u>GPIO AP TO CODEC RESET L</u>	10	18



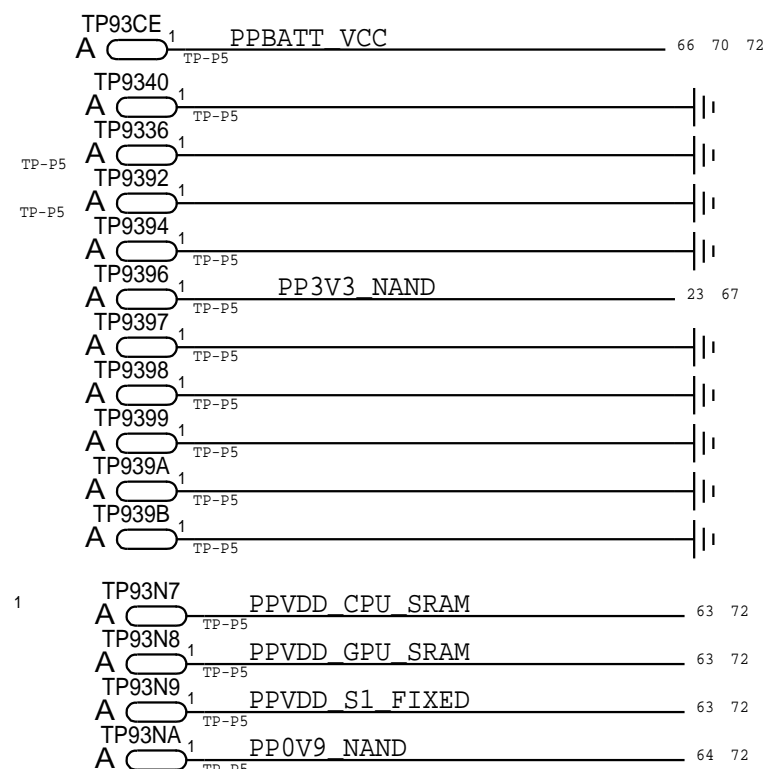
TP93B9	A	1	GPIO PMU to CPU TRIGGER 0	5	65
TP93B9	A	1	GPIO PMU to CPU TRIGGER 1	5	65
TP93B9	A	1	GPIO PMU to GPU TRIGGER 0	5	65
TP93B9	A	1	GPIO PMU to GPU TRIGGER 1	5	65
TP93B9	A	1	SOCHOTI SOC to FMU L	11	65
TP93B9	A	1	NUB SPMI ATLAS SCLK	11	65
TP93B8	A	1	NUB SPMI ATLAS SDATA	11	65
TP93EA	A	1	GPIO ORION to AOP IRQ	11	16



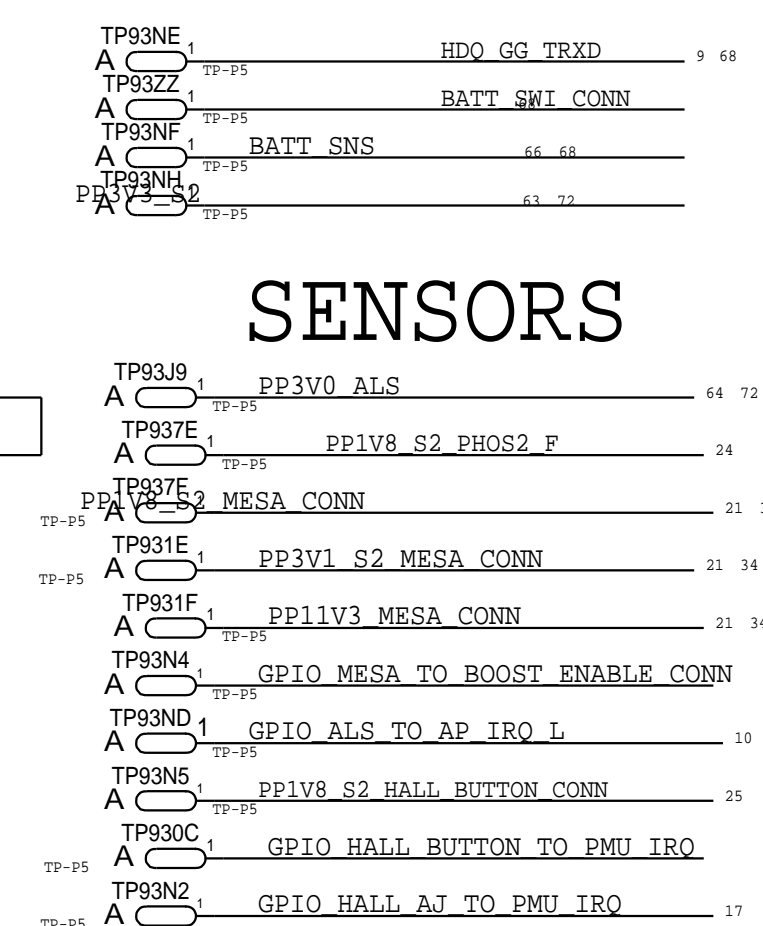
TP93FB PA\_NTC\_P 36 65  
A TP-P5  
TP93FA UART BB TO AOP TX 36 41 56  
A TP-P5  
TP93F9 UART AOP TO BB TX 36 41 56  
A TP-P5



TP9338	GPIO BTN HOME CONN L	34
A	TP-P5	
TP9339	GPIO BTN ONOFF L FILT	25
A	TP-P5	
TP9341	GPIO BTN VOL DOWN L FILT	25
A		
TP9342	GPIO BTN VOL UP L FILT	25
A	TP-P5	



	TP930A	PP2V9 AVDD CAM FRONT FILT	26
	A		
	TP931J	PP2V9 AVDD CAM REAR FILT	28
	A		
TP-95	TP981	PP2V6 CAM REAR AF FILT	28
	A		
TP-95	TP934T	PP1V8 SW1	64
	A		
	TP9301	PP1V8 CAM FRONT FILT	26
	A		
	TP98NB	PP1V8 CAM REAR FILT	28
	A		
	TP93JC	PP1V25 CAM REAR FILT	28
	A		
	TP9800	CLK SOC TO REAR CAM 12MHZ	7
	A		
	TP9353	ISP I2C0 SCL 1V8	4
	A		
	TP9354	ISP I2C0 SCL 1V8	4
	A		
TP-95	TP9355	REAR SHUTDOWN L	7
	A		
	TP931B	ISP CAM FRONT CLK F	26
	A		
	TP931E	ISP2 CAM FRONT SCL F	26
	A		
	TP931F	ISP2 CAM FRONT SDA F	26
	A		
	TP93HC	ISP CAM FRONT SHUTDOWN L F	26
	A		

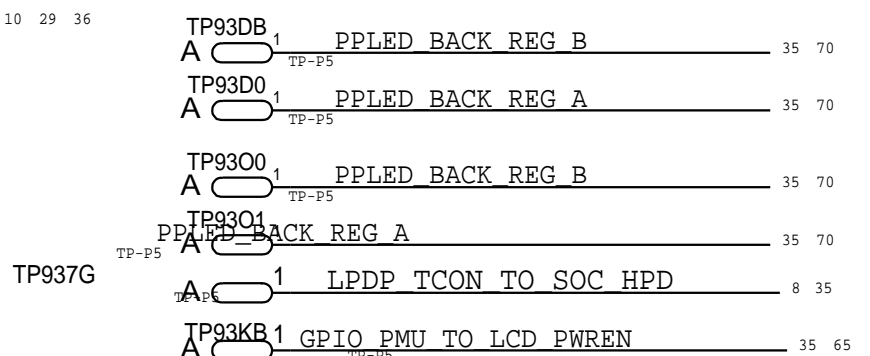
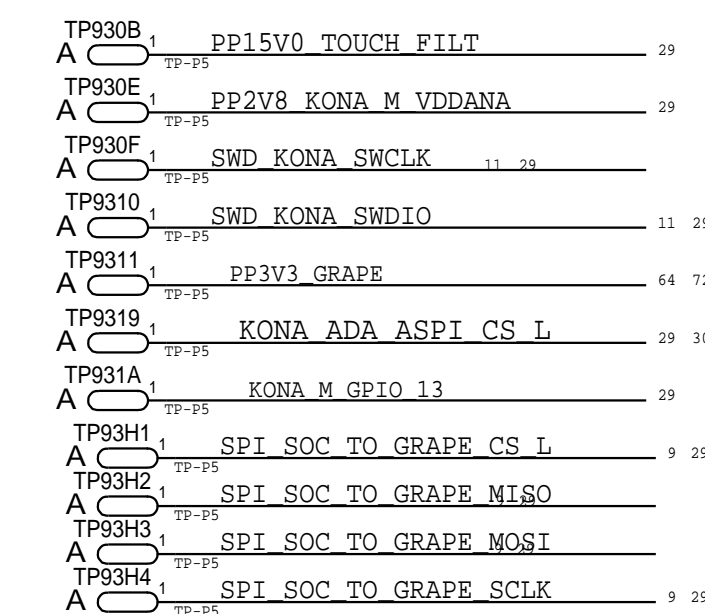


	TP93J9	PP3V0 ALS	64	72
	A	TP-75		
	TP937E	PP1V8 S2 PHOS2_F	24	
	A	TP-25		
TP-75	TP937E	MESA_CONN		21
	A	TP-25		
TP-75	TP931E	PP3V1 S2 MESA_CONN	21	34
	A	TP-25		
	TP931F	PP1V3 MESA_CONN	21	34
	A	TP-75		
	TP93N4	GPIO MESA TO BOOST ENABLE_CONN		
	A	TP-25		
	TP93ND1	GPIO ALS TO AP IRQ_L		10
	A	TP-25		
	TP93N5	GPIO P18 S2 HALL BUTTON_CONN		25
	A	TP-75		
TP-75	TP93OC	GPIO HALL BUTTON TO PMU_IRQ		
	A	TP-25		
TP-75	TP93N2	GPIO HALL_AJ TO PMU_IRQ		17

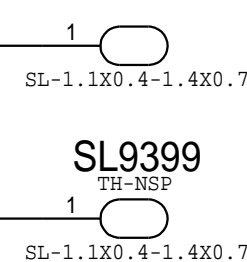
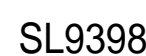
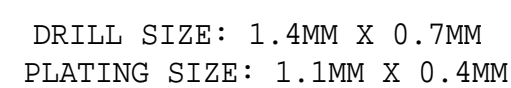
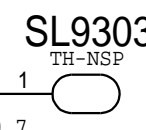
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TP9328_1  PP1V8 GRAPE 64 72
A TP9344_1  GPIO GRAPE TO AP IRQ L
TP9346_1  GPIO TOUCH TO BT SYNC 29 36
A TP9345_1  GPIO AP TO GRAPE RESET L 10 29
A TP9370_1  GPIO AP TO BT TO GRAPE TS SYNC 10 29
A TP9307_1  CLK KONA M 24MHZ 29

```



TP93K4 1 CLK PMU TO WLAN 32K 36 61 7



TEST: TP/HOLES/FIDUCIALS

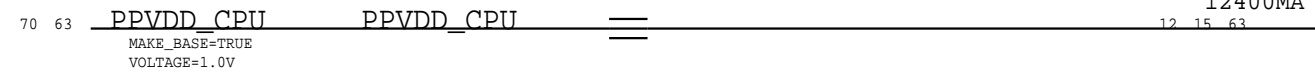
SYNC MASTER=J71B MLB B1 SYNC DATE=03/27/2015

PAGE TITLE

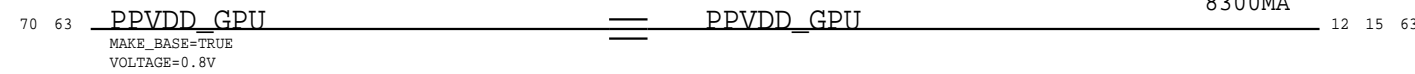


POWER CONNECTIONS

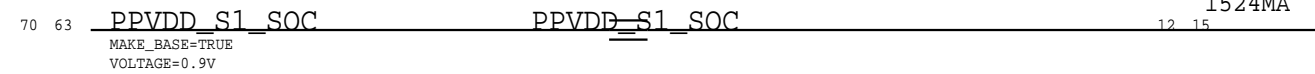
BUCK0 (ACTIVE)



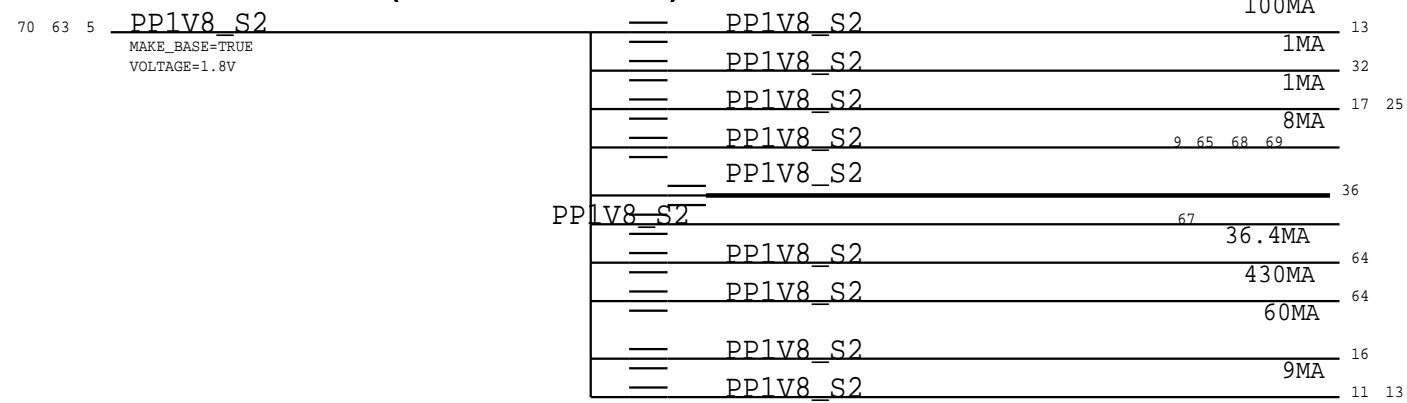
BUCK1 (SW CONTROL)



BUCK2 (SLEEP1)

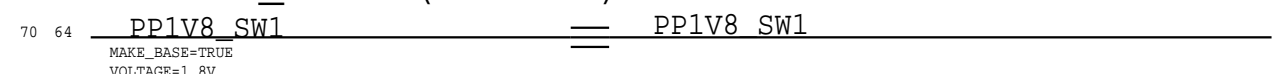


BUCK3 (SLEEP2)

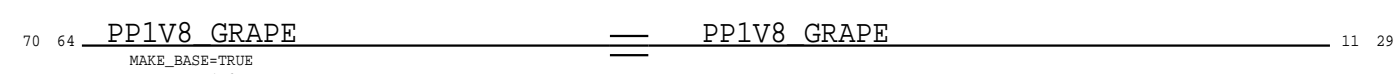


BUCK3 INTERNAL SWITCHES

BUCK3\_SW1 (ACTIVE)

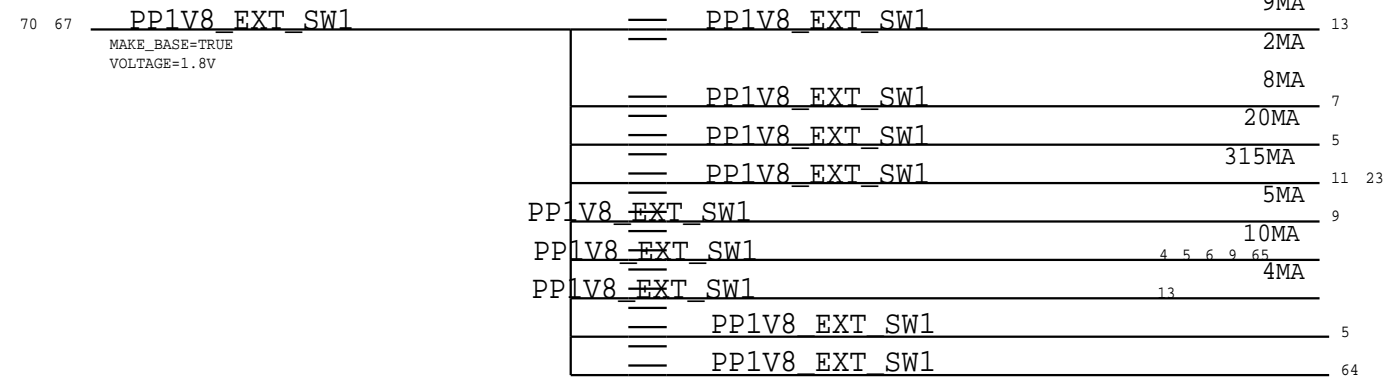


BUCK3\_SW2 (SW CONTROL)

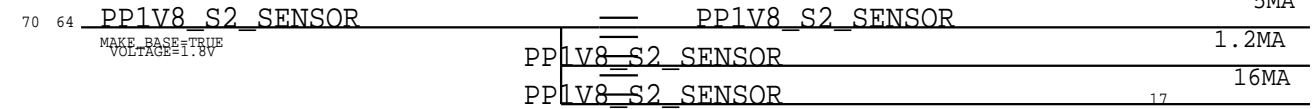


BUCK3 EXTERNAL SWITCHES

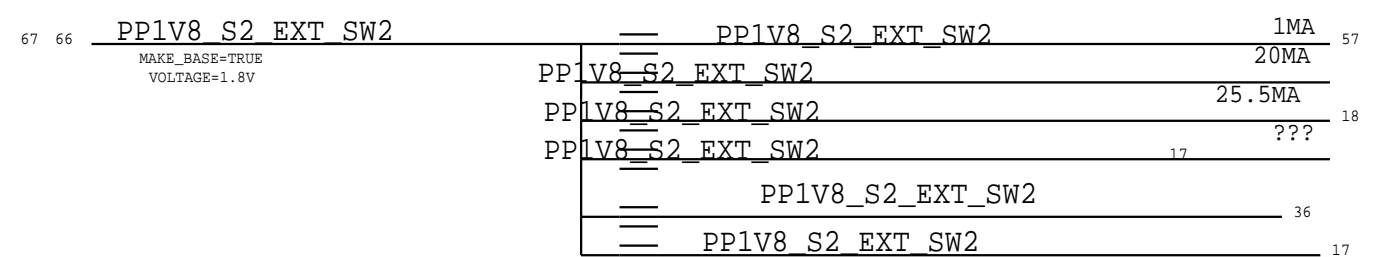
BUCK3\_EXT\_SW1 (ACTIVE)



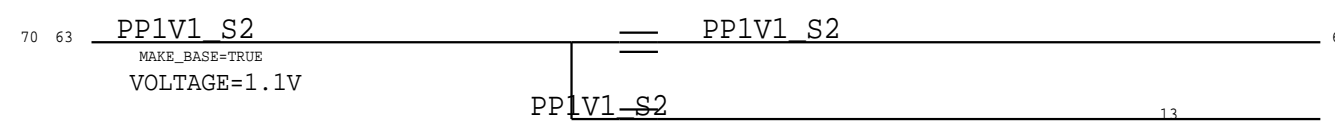
BUCK3\_SW3 (SLEEP2)



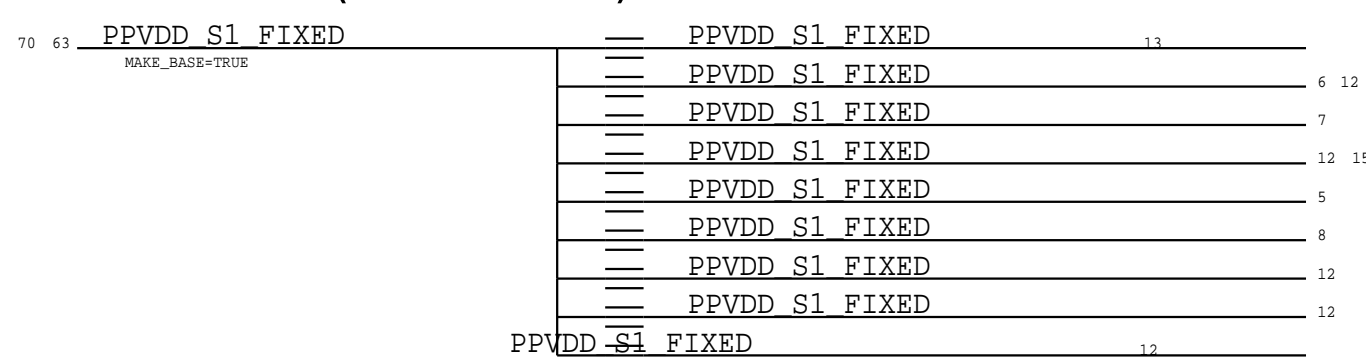
BUCK3\_S2\_EXT\_SW2 (SLEEP2)



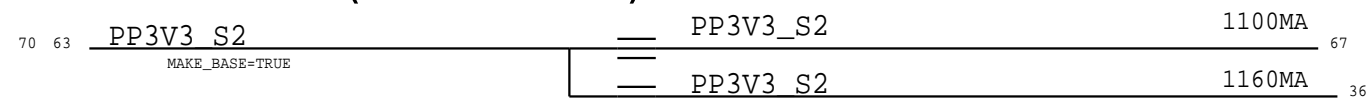
BUCK4 (SLEEP2)



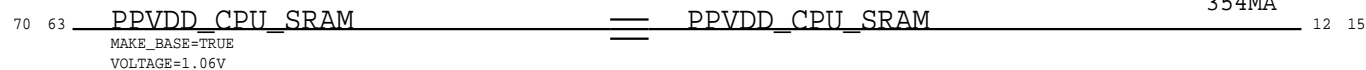
BUCK5 (SLEEP1)



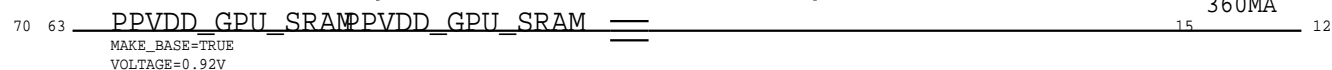
BUCK6 (SLEEP2)



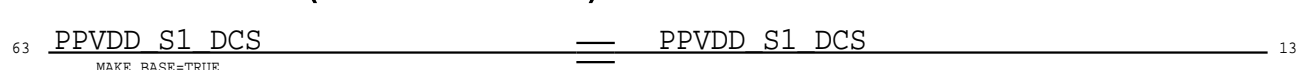
BUCK7 (ACTIVE)



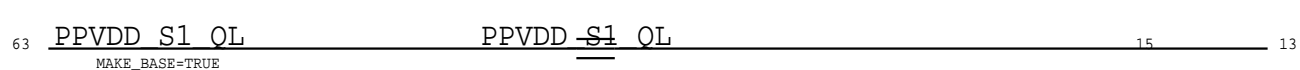
BUCK8 (SW CONTROL)



BUCK9 (SLEEP1)



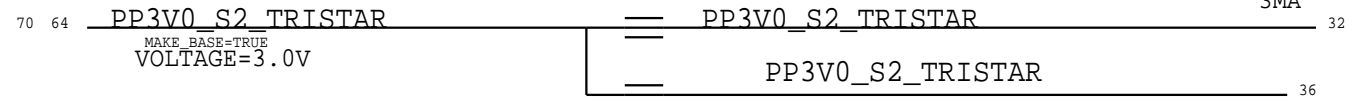
BUCK10 (SLEEP1)



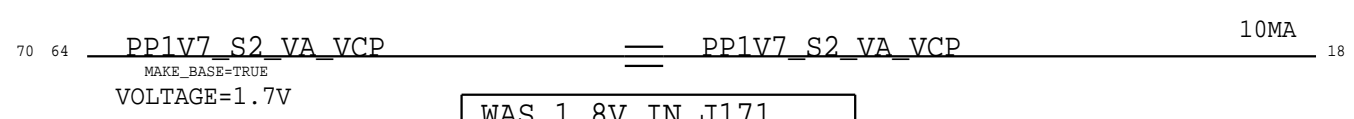
BUCK11 (ACTIVE)



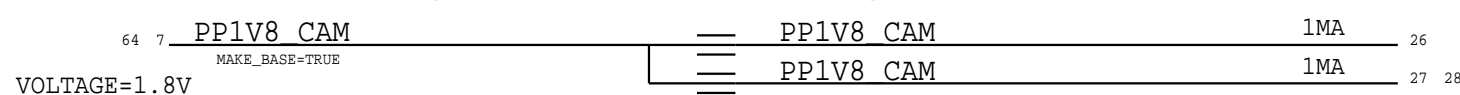
LDO1 (SLEEP2)



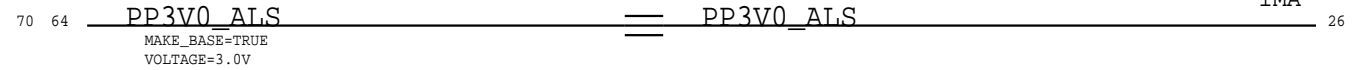
LDO2 (S2 - LDO MODE)



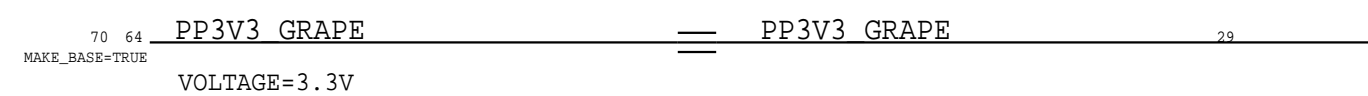
LDO3 (SW CONTROL)



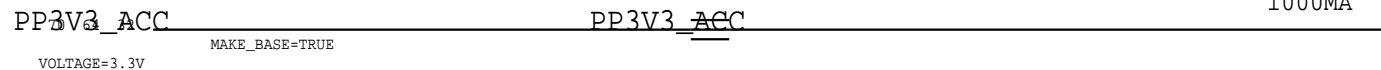
LDO4 (SW CONTROL)



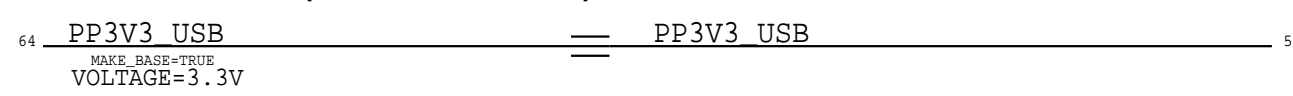
LDO5 (ACTIVE)



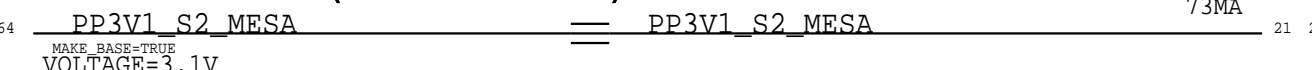
LDO6 (SW CONTROL)



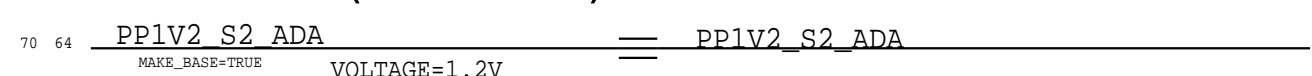
LDO7 (ACTIVE)



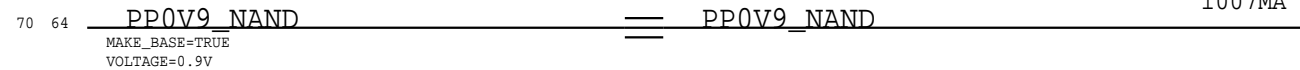
LDO8 (SLEEP2)



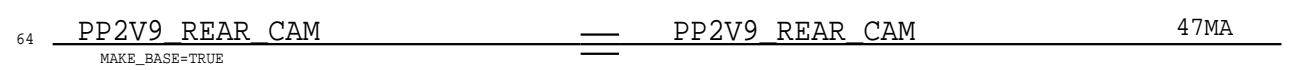
LDO9 (SPARE)



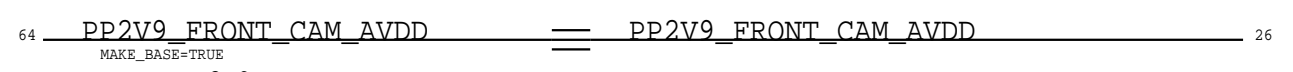
LDO10 (ACTIVE)



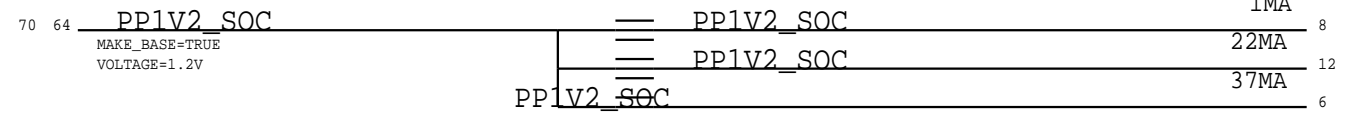
LDO11 (SW CONTROL)



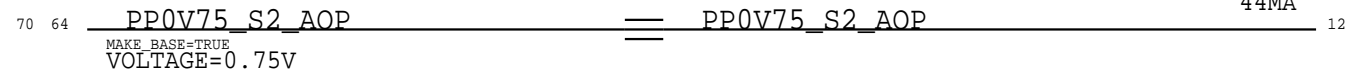
LDO13 (SW CONTROL)



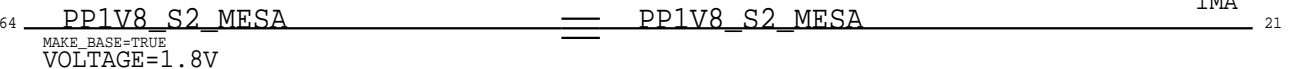
LDO14 (ACTIVE)



LDO15 (SLEEP2)



LDO16 (SLEEP2)



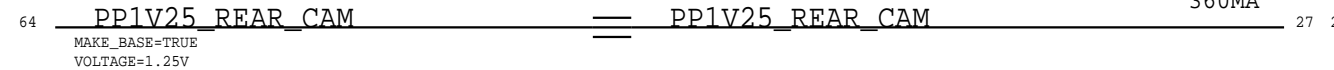
WAS LABELED 1V825 IN J171

LDO17 (UNUSED)

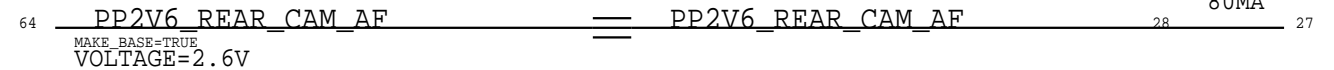


CONFIRM

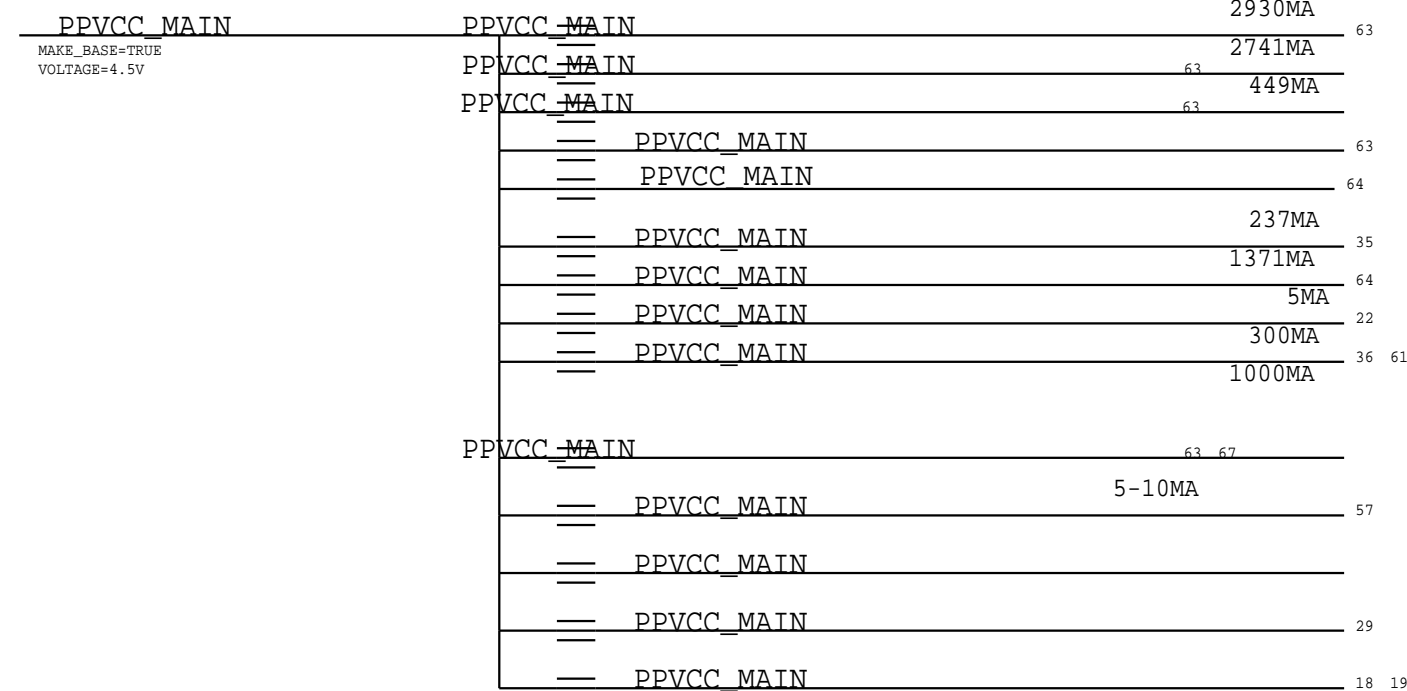
LDO18 (SW CONTROL)



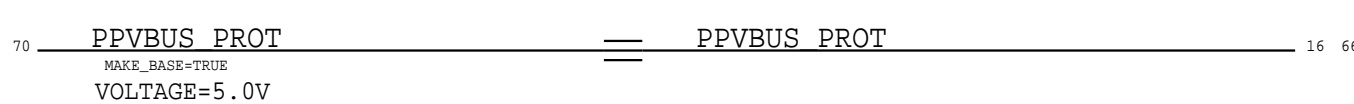
LDO19 (SW CONTROL)



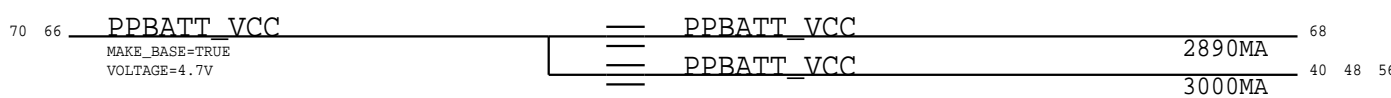
CHARGER MAIN



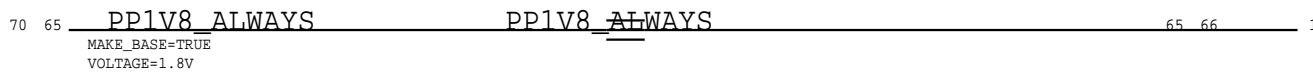
USB POWER INPUT



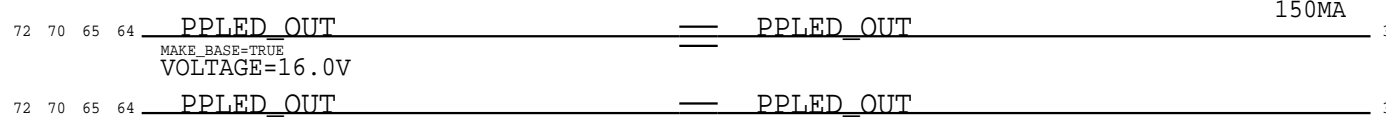
BATTERY



ON BUF



BACKLIGHT BOOST



LED SUPPLY NOW SHARED FROM A DUAL-PHASE BOOST  
CONVERTER CONTROLLED BY ATLAS