


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		
												5	0033292277	ENGINEERING RELEASED	2022-01-20		
X2487 MLB																	
D	1	1	TABLE OF CONTENTS										101	271	DEBUG: MISC		
	2	2	REFERENCE DESIGN SYNC TABLES										102	272	DEBUG: SOC TEST POINTS		
	3	4	PD PARTS										103	278	DEBUG: LEDS		
	4	5	SOC: CONFIG STRAPS										104	300	DESENSE 1	KEI_X2487_MLB	05/25/2021
	5	6	SOC: CIO, MIPI										105	301	DESENSE 2	KEI_X2487_MLB	06/21/2021
	6	7	SOC: RESETS, DEBUG, MISC										106	302	DESENSE 3	KELVIN_X2487_MLB	09/27/2021
	7	8	SOC: GPIOs										107	310	DESENSE MECHANICAL PARTS		
	8	9	SOC: GPIOs										108	400	ALIASES POWER 1		
	9	10	SOC: LPDP, PCIE										109	401	ALIASES POWER 2		
	10	19	SOC: SPI NOR, SEP ROM										110	402	ALIASES POWER 3		
C	11	20	SOC: PROJECT SUPPORT (1/3)										111	403	ALIASES POWER 4		
	12	21	SOC: PROJECT SUPPORT (2/3)										112	404	ALIASES POWER 5		
	13	22	SOC: PROJECT SUPPORT (3/3)										113	410	ALIASES REF DESIGNS		
	14	23	SOC: POWER PCPU										114	420	ALIASES SOC GPIO		
	15	24	SOC: POWER ECPU										115	421	ALIASES SOC SPI, I2S		
	16	25	SOC: POWER SRAM										116	422	ALIASES SOC SPMI, I2C		
	17	26	SOC: POWER GRAPHICS										117	423	ALIASES SOC UART, DBG		
	18	27	SOC: POWER MEMORY										118	424	ALIASES SOC PCIE, LPDP TX		
	19	28	SOC: POWER FIXED										119	425	ALIASES SOC CAMERA, USB, MISC		
	20	29	SOC: POWER VDD12										120	426	ALIASES PROJECT SPECIFIC		
B	21	30	SOC: POWER VDDIO, VDD LOW, CIO										121	500	17.2 RULES		
	22	40	SOC: GND										122	600	BOM VARIANT TABLES		
	23	50	Secure Element										123	601	BOM OPTION TABLES		
	24	51	BATTERY CONNECTORS										124	602	BOM GROUPS		
	25	52	PBUS SUPPLY & BATTERY CHARGER										125	610	BOM ALTERNATES		
	26	53	BATTERY CHARGER SUPPORT										126	700	PACK OPTIONS		
	27	54	HV POWER SUPPORT										127	701	PIN DELAYS		
	28	57	POWER: 3V8 AON (1/2)										128	999	CHECKPLUS SUPPORT		
	29	58	POWER: 3V8 AON (2/2)														
	30	59	POWER: 3V8 AON SUPPORT														
A	31	77	SPMU: INPUT PWR, BULK, BSTLQ														
	32	78	SPMU: LDO, SW														
	33	79	SPMU: GPIO, VSS														
	34	80	SPMU: ALIASES, SUPPORT														
	35	81	MPMU: INPUT PWR, BUCK 0, 1, 2														
	36	82	MPMU: BUCK 3, 4, 7, 9, 11, 13, SW														
	37	83	MPMU: LDO														
	38	84	MPMU: MISC CKT, VSS														
	39	85	MPMU: GPIO														
	40	86	MPMU: ALIAS, PULLS														
		41	87	MPMU: SUPPORT													
		42	88	PMU: SUPPORT - FF													
		43	122	POWER: 5V S2 TPS62130													
		44	124	POWER: 3V3 S2, 5V S2 SUPPORT													
		45	127	POWER: 3V3 S2													
		46	128	POWER: EXTERNAL SWITCHES													
		47	130	SOC I2C: AP (1/2)													
		48	131	SOC I2C: AP (2/2)													
		49	132	SOC I2C: SMC (1/2)													
		50	133	SOC I2C: SMC (2/2)													
		BOM_COST_GROUP=NO CATEGORY															
		8	7		6		5		4		3		2		1		

TABLE OF CONTENTS

DRAWING TITLE

SCHEM,MLB,X2487

 Apple Inc.

NOTICE OF PROPRIETARY PROPERTY:  
THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC.  
THE POSSESSOR AGREES TO THE FOLLOWING:  
I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE  
II NOT TO REPRODUCE OR COPY IT  
III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART  
IV ALL RIGHTS RESERVED

DRAWING NUMBER

051-07793

REVISION

5.0.0

BRANCH

evt-1

PAGE

1 OF 999

SHEET

1 OF 128


SIZE  
D

## REF DESIGNS AND PROJECTS X2487 SYNCs FROM

SOURCE PROJECT	SUB-DESIGN NAME	SUB-DESIGN PAGES	VERSION	HARD/ SOFT	SYNC_DATE/TIME
T585	REF_SOC_H14G	6-10,23-30,40	0.53.0	S	2021_12_13_09:03:44
T585	REF_SE_CERES	50	0.15.0	S	2021_06_17_12:39:40
T585	REF_CHARGER_SUONA	52,53	0.60.0	S	2021_12_14_10:07:02
T585	REF_VR_ICEMAN	57,58	1.43.0	S	2021_12_09_09:49:40
T585	REF_PMU_STOWE_VALE_PORTABLES	77-79,81-85	0.106.1	S	2021_11_30_17:52:47
T585	REF_VR_5V_TPS62130	122	0.13.0	S	2021_07_28_16:47:50
T585	REF_VR_3V3_TPS62135	127	0.10.0	S	2021_09_14_19:38:04
T585	REF_IMU_SOVEREIGN	144	0.15.0	S	2021_09_08_08:59:21
T585	REF_USBC_LFKA_ACE2_PARROT	152,154,157	0.33.0	S	2021_12_10_08:05:03
T585	REF_USBC_VR_LT8642_1	158	0.8.0	S	2021_10_05_07:16:37
T585	REF_STORAGE_S5E	220-221	0.40.1	S	2021_07_01_16:27:55
T585	REF_BLC_BEN	238,239	0.27.0	S	2021_12_02_14:52:49
T585	REF_SECDIS_AMR_H14X	242	0.3.0	S	2021_07_26_17:11:12
T585	REF_SECDIS_H14X	243	0.6.0	S	2021_09_07_14:36:00
T585	REF_SPKRAMP_SN012776	246,247	3.7.0	S	2021_10_28_19:15:40
T585	REF_KBD_30PIN	251	0.9.0	S	2021_11_15_09:18:11
J493.KSAITO	MLB	87	3.11.1	H	2021_11_05_11:15:55

REF DESIGNS AND PROJECTS X2487 DOES NOT SYNC FROM

REF_SOC_H14G	19	UPDATED C1951 TO COMBO FOOTPRINT TO MATCH PMU REF DESIGN
REF_USBC_LFKA_ACE2_PARROT	150,151,153,155,156,159	UPDATE RT13 TO B1 APN. MOVED TO DUAL KIS. FOR CSA 159 ADDED OMIT_TABLE ON DISCHARGER FETS TO ALLOW DIFFERENT ALTERNATES
REF_WIRELESS_RASPUTIN	200,201	NEEDED TO ADD RF CONN BOM OPTION, CHANGE 100M CLK TPS TO PPS, ADD BOM TABLE CONTROL, AND FIX OVERLAPPING IPU TEXT NOTES
REF_PANELPWR_BNJ	237	RELAX PLACE NEAR FOR CP770 PER <RDAR://79585996>
REF_CODEC_CARLOW	245	RELAX PLACE NEARS FOR CR511, CR510, AND ALSO UPDATE 0402 FOOTPRINT <RDAR://82845344>
REF_MESA_SUPPORT	256	HIGH DCR TO THE MESA MODULE REQUIRES A HIGHER VOUT SET POINT ON IVS LDO THAN THE REF DESIGN HAS
REF_DFR_V3_SUPPORT	257,258	RELAX PLACE NEARS FOR CT703, CT706, CT421, CT821. ADD BOM_COST_GROUP=DFR TO CSA 248. REPLACE UT860 <RDAR://79479906>. UPDATE QT700 NET NAME

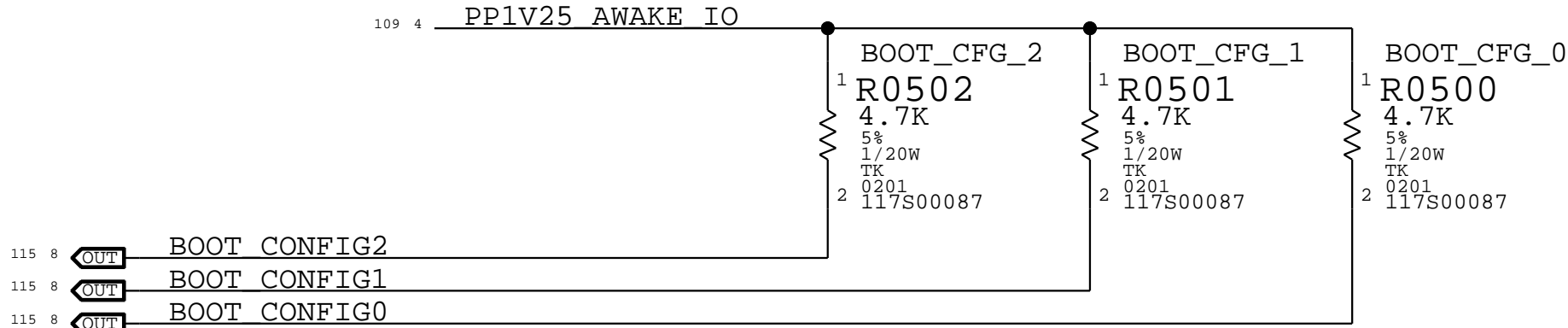
PAGE TITLE		
REFERENCE DESIGN SYNC TABLES		
 Apple Inc.	DRAWING NUMBER	
	051-07793	
	SIZE	
	D	
NOTICE OF PROPRIETARY PROPERTY:  THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING:  I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE  II NOT TO REPRODUCE OR COPY IT  III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	REVISION	
	5.0.0	
	BRANCH	
	evt-1	
	PAGE	
	2 OF 999	
	SHEET	
	2 OF 128	



D

D

## A BOOT CONFIG ID

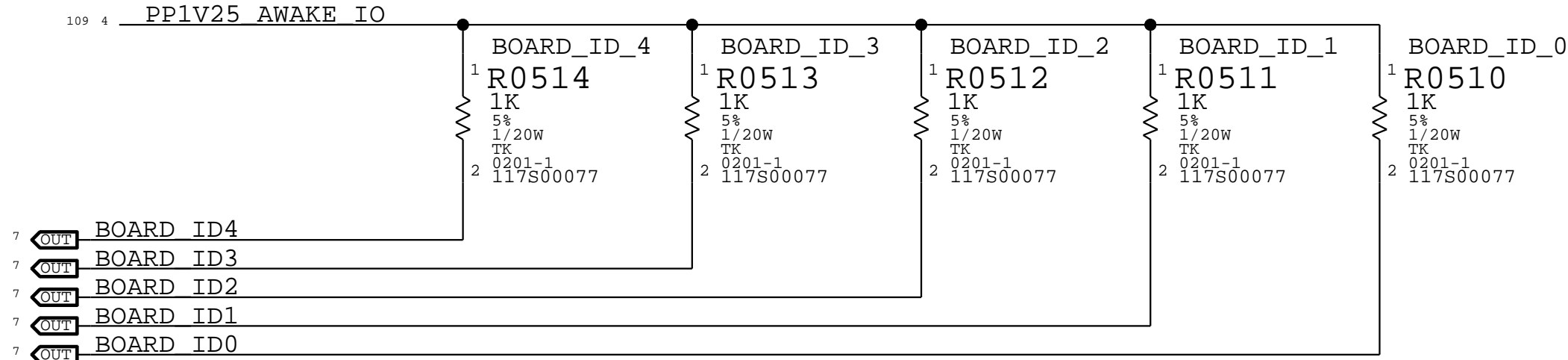


MLB BOOT\_CONFIG\_ID[2:0] = 0B001

BOOT_CFG[2:0]	MODE
000	NAND, 1.2V SPI0, 12MHZ, TESTMODE
001	NOR, 1.2V SPI1, 40MHZ
010	NAND, 1.2V SPI0, 12MHZ
011	NAND, 1.2V SPI0, 40MHZ
100	NOR, 1.2V SPI1, 12MHZ, TESTMODE
101	NOR, 1.2V SPI1, 40MHZ, TESTMODE
110	NOR, 1.2V SPI1, 6MHZ, TESTMODE
111	NOR, 1.2V SPI1, 12MHZ

BOOT AND POWER UARCH SPEC 2.1.5 (SECTION 2.2, TABLE 2.3):

## B BOARD ID



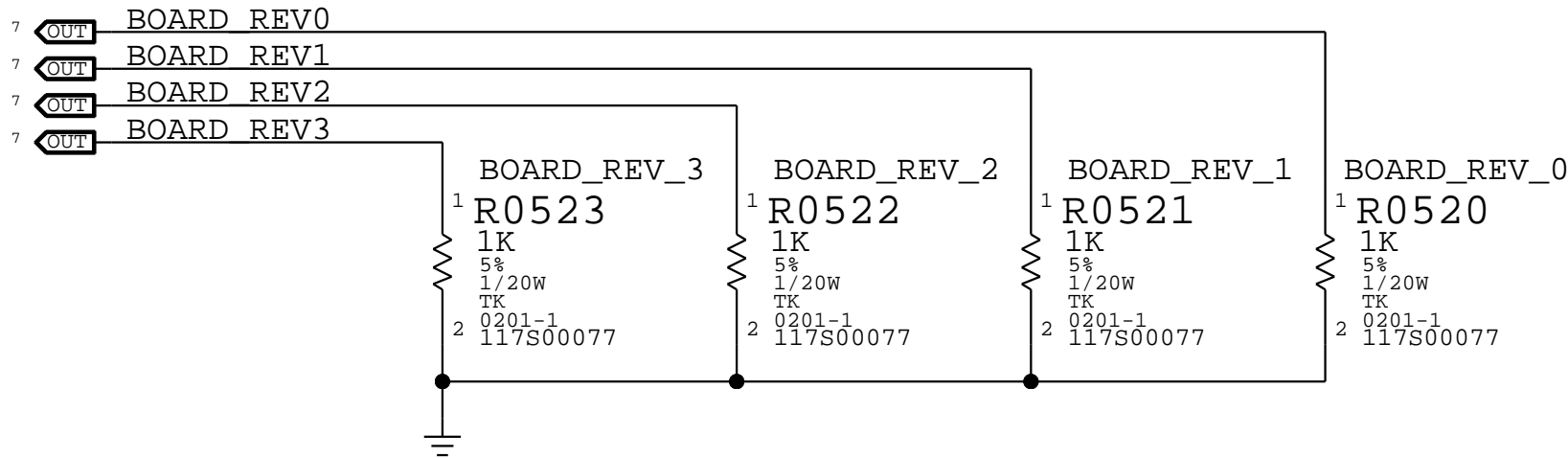
MLB BOARD\_ID[7:0] = 0B 0010 1010

<RDAR://77282291>

C

C

## C BOARD REV



STUFFING RESISTOR MEANS 0

BOARD\_REV[3:0] =  
0000 : FAB 1 : PROTO 0  
0001 : FAB 2 : PROTO 1  
0010 : FAB 3 : PROTO 1-1  
0011 : FAB 4 : PROTO 1-2  
0100 : FAB 5 : EVT  
0101 : FAB 6 : TBD  
0110 : FAB 7 : TBD

B

B

A

A

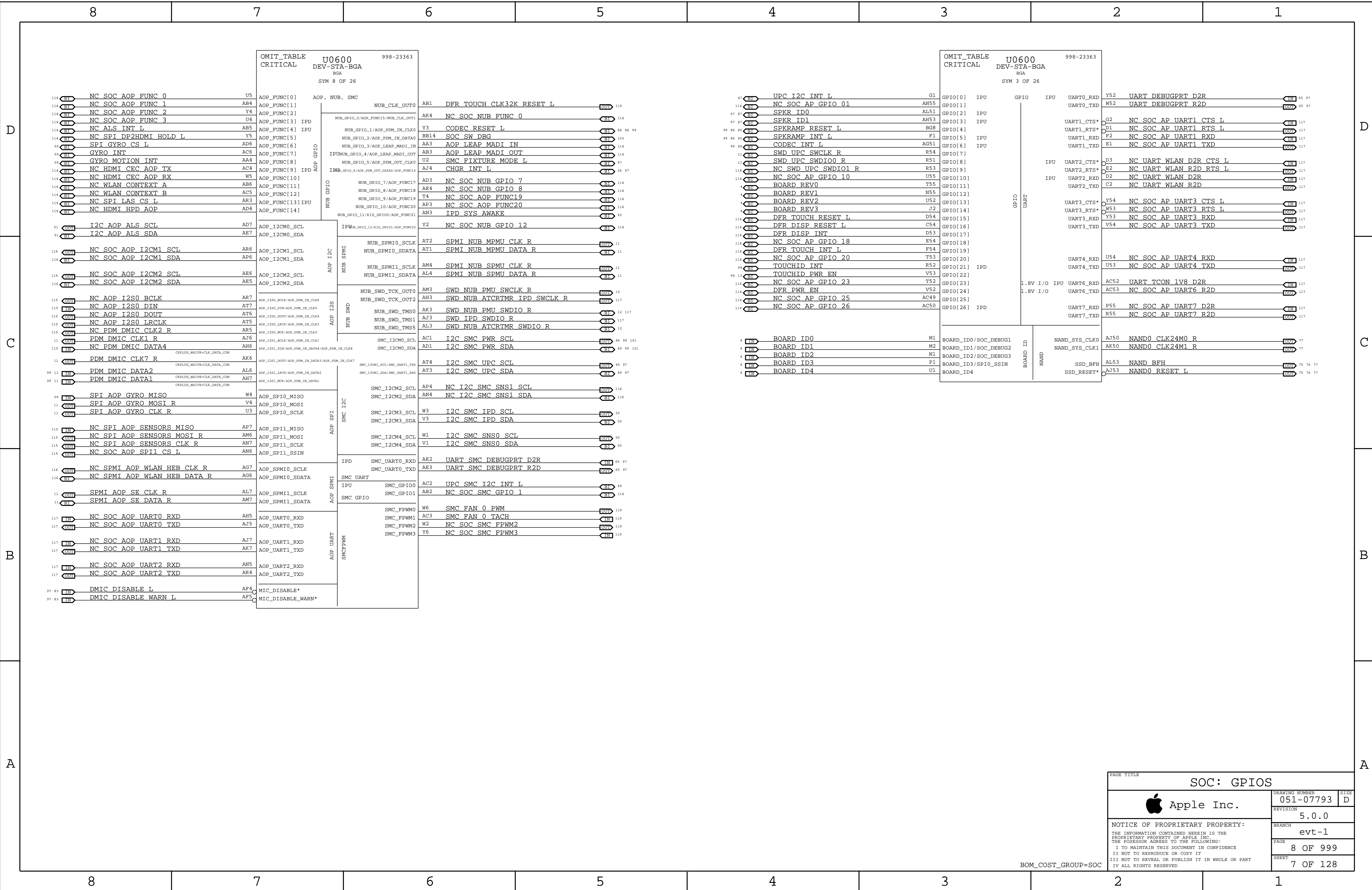
PAGE TITLE		
SOC: CONFIG STRAPS		
	DRAWING NUMBER	051-07793
	REVISION	5.0.0
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	BRANCH	evt-1
	PAGE	5 OF 999
	SHEET	4 OF 128

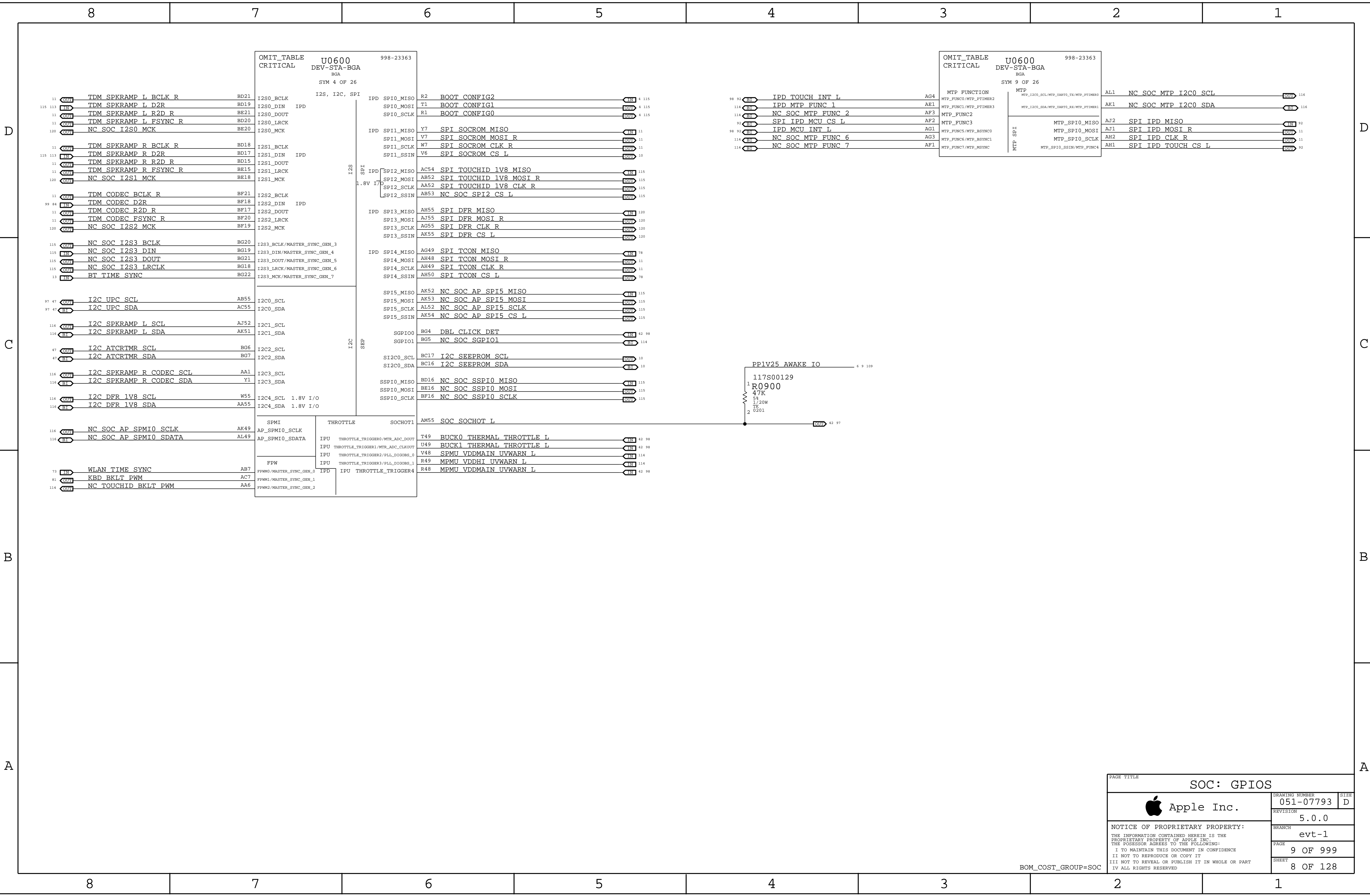
BOM\_COST\_GROUP=SOC








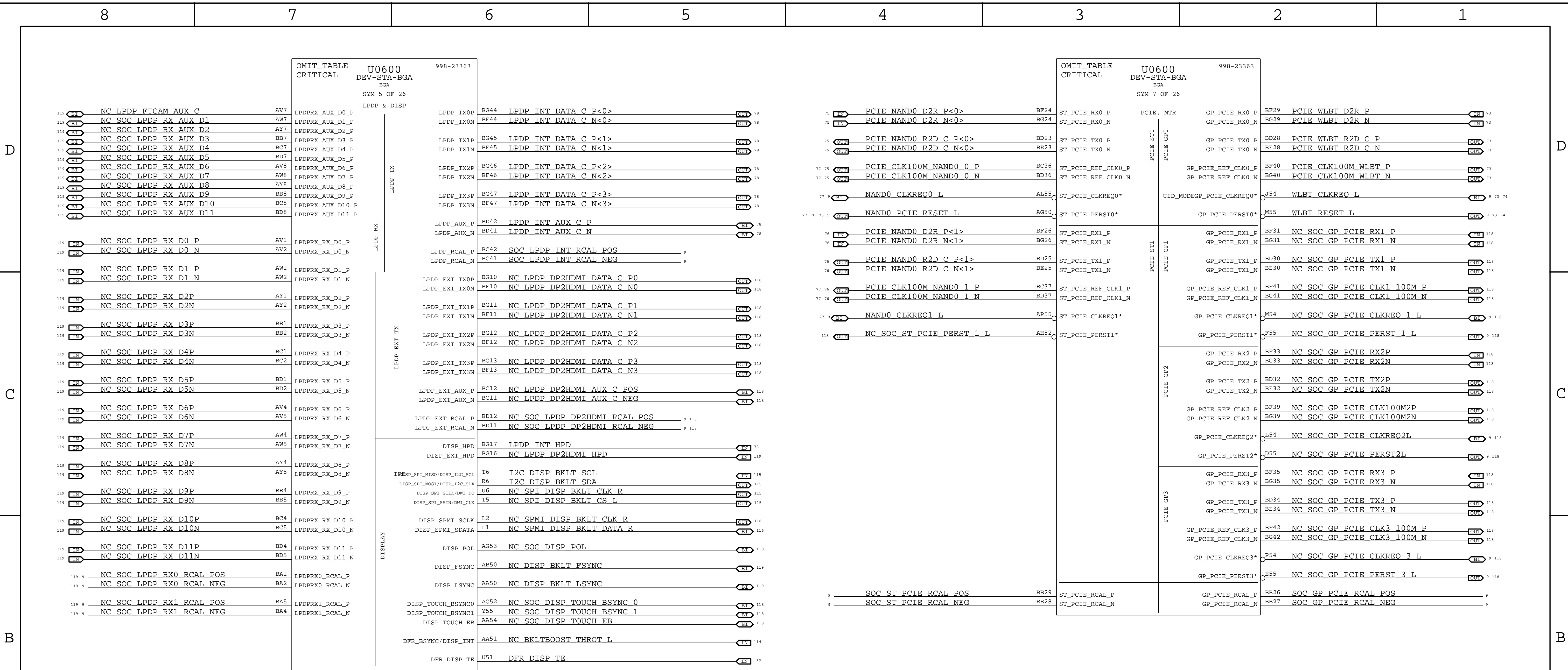




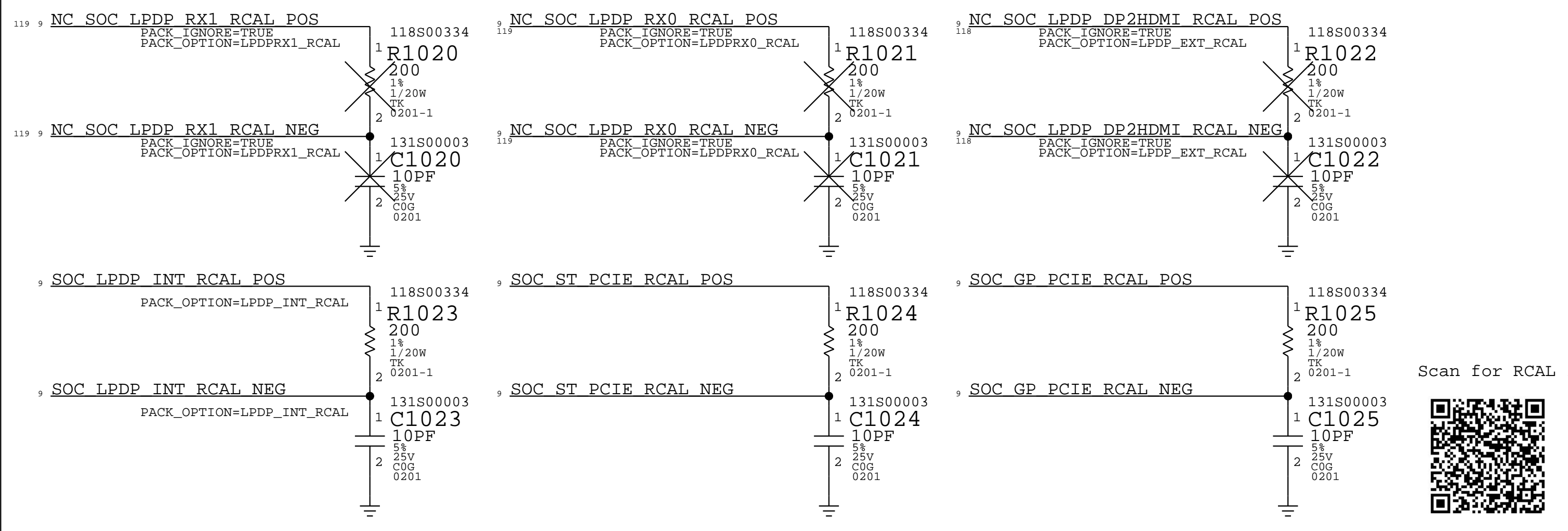
PAGE TITLE		
SOC: GPIOs		
 Apple Inc.	DRAWING NUMBER	051-07793
	REVISION	5.0.0
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	BRANCH	evt-1
	PAGE	9 OF 999
	SHEET	8 OF 128

BOM\_COST\_GROUP=SOC

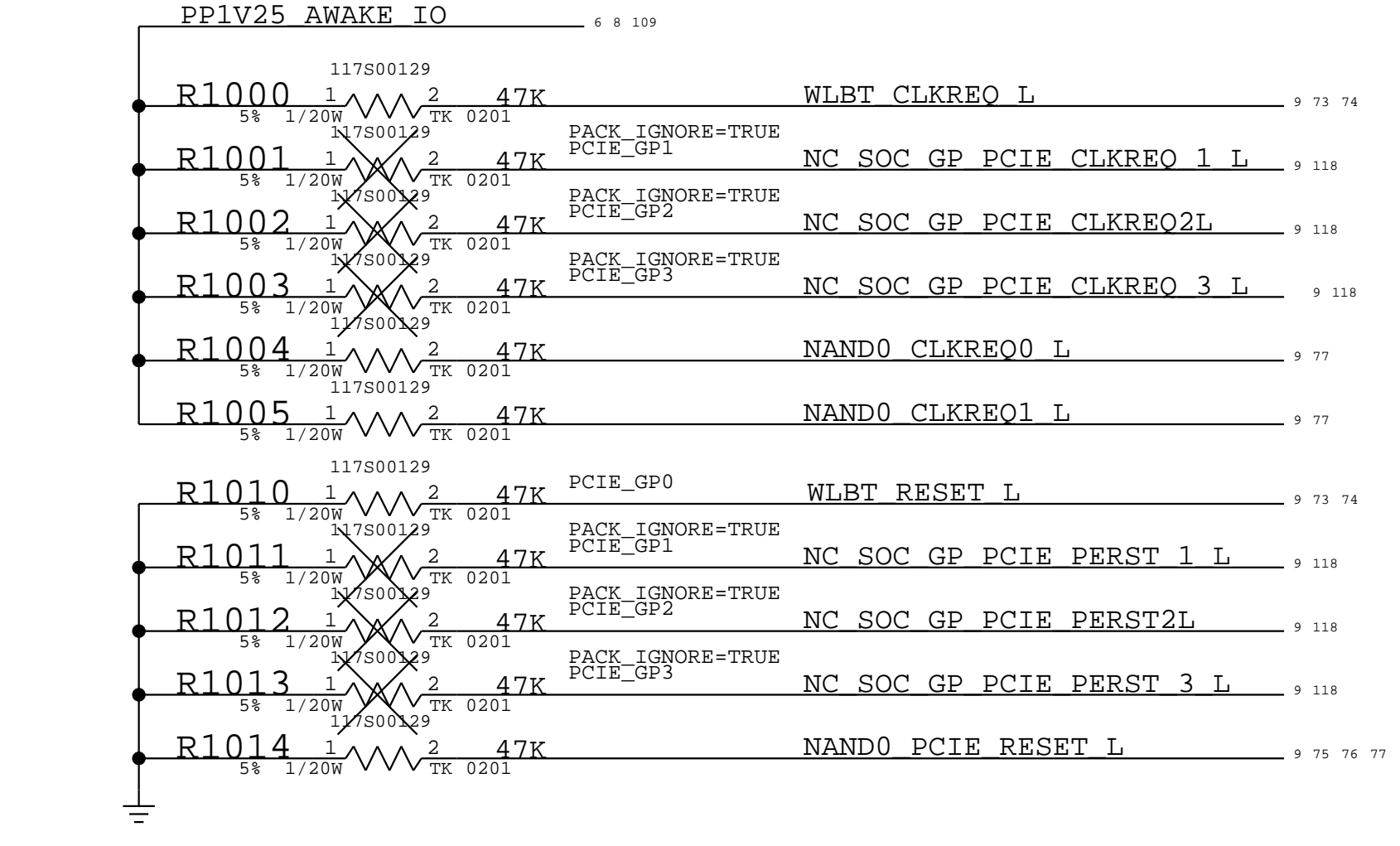




# A Termination Resistance Calibration (RCAL)



# B PCIE CLKREQ/PERST Pull-Ups/Downs



PAGE TITLE

SOC: LPDP, PCIE

Apple Inc.

NOTICE OF PROPRIETARY PROPERTY:  
THE INFORMATION CONTAINED HEREIN IS THE  
PROPRIETARY PROPERTY OF APPLE INC.  
THE POSSESSOR AGREES TO THE FOLLOWING:  
I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE  
I NOT TO REPRODUCE OR COPY IT  
I NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART  
IV ALL RIGHTS RESERVED

DRAWING NUMBER

051-07793

REVISION

5.0.0

BRANCH

evt-1

PAGE

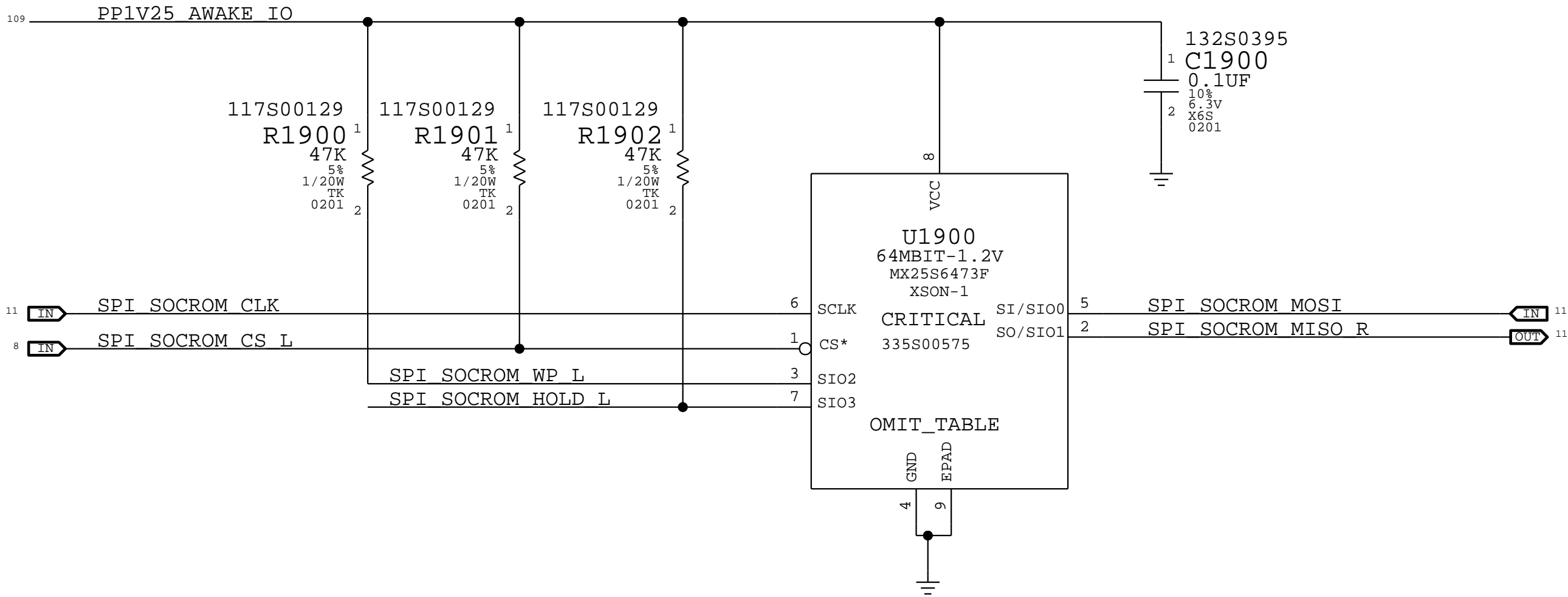
10 OF 999

SHEET

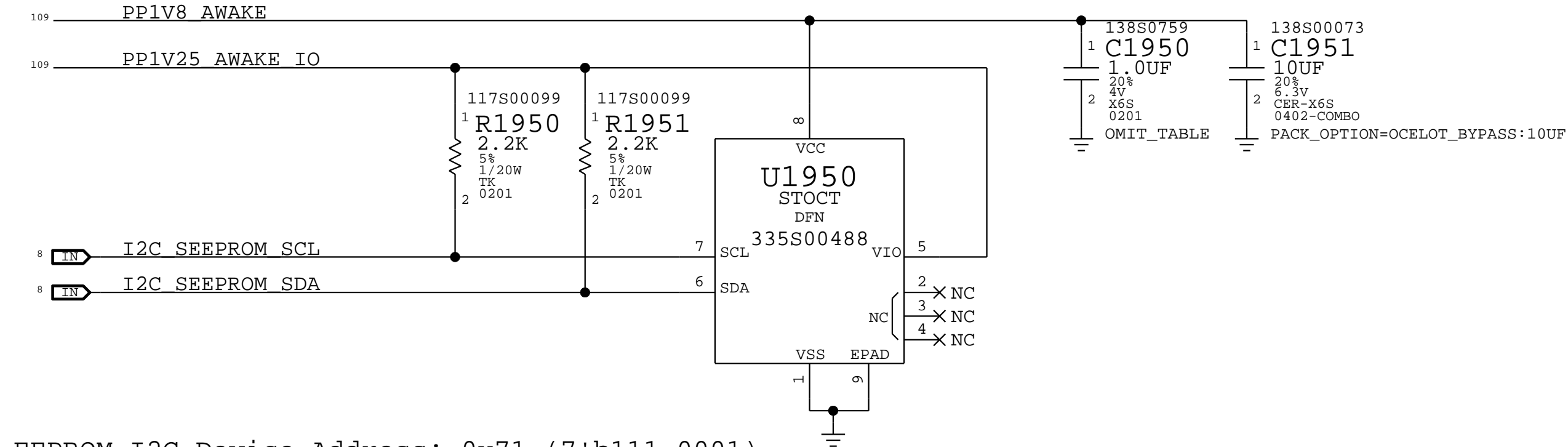
9 OF 128

BOM\_COST\_GROUP=SOC

A SPI ROM



B SEP EEPROM

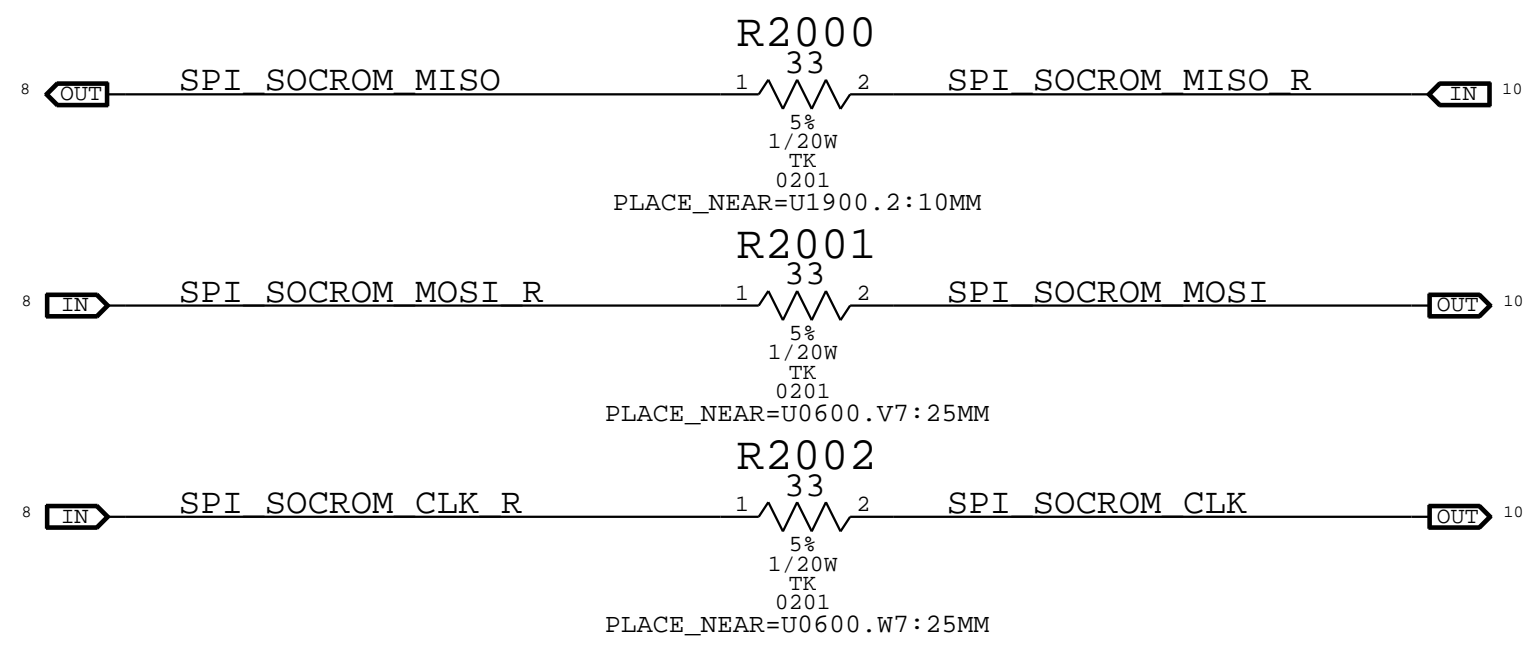


SEP EEPROM I2C Device Address: 0x71 (7'b111\_0001)

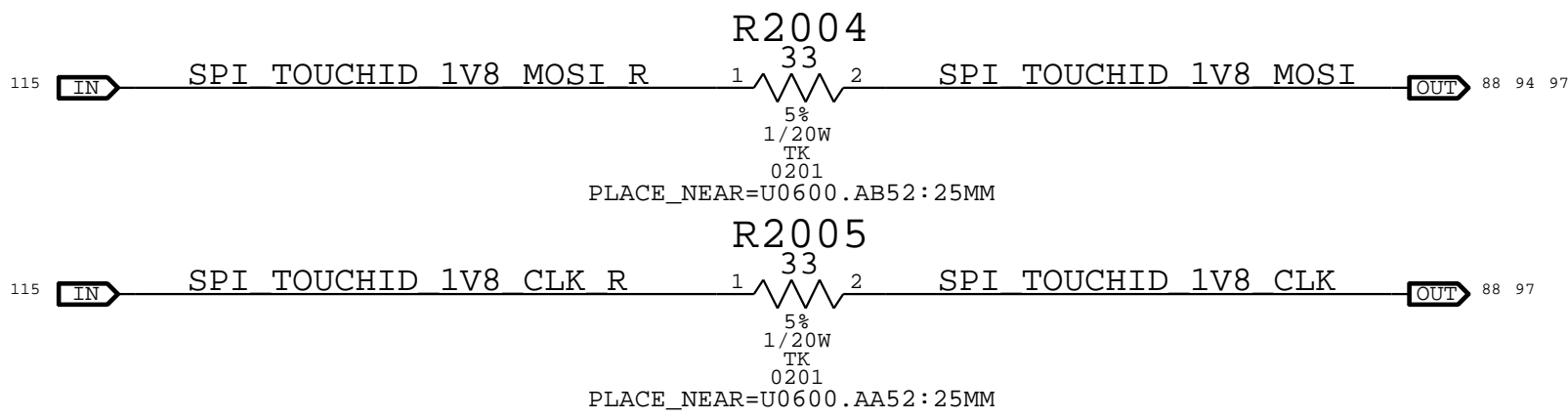
PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
138S0759	1	CAP,CER,1UF,20%,4V,X6S,0201	C1950		OCELOT_BYPASS:1UF
132S0395	1	CAP,CER,0.1UF,10%,6.3V,X6S,0201	C1950		OCELOT_BYPASS:100NF

PAGE TITLE		
SOC: SPI NOR, SEP ROM		
Apple Inc.	DRAWING NUMBER	051-07793
	REVISION	5.0.0
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	BRANCH	evt-1
	PAGE	19 OF 999
	SHEET	10 OF 128

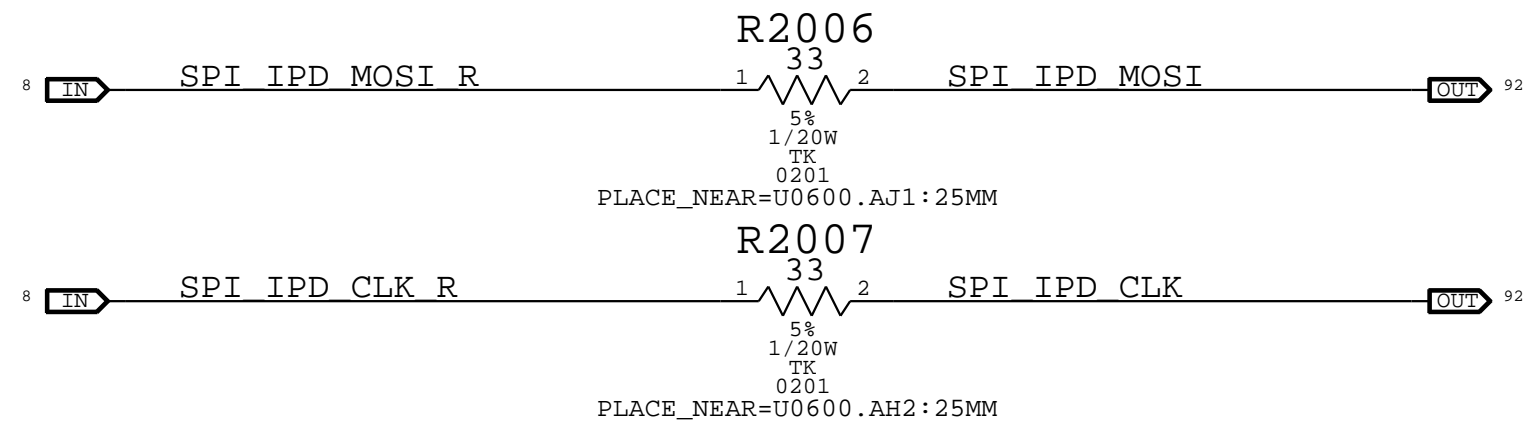
BOM\_COST\_GROUP=SOC



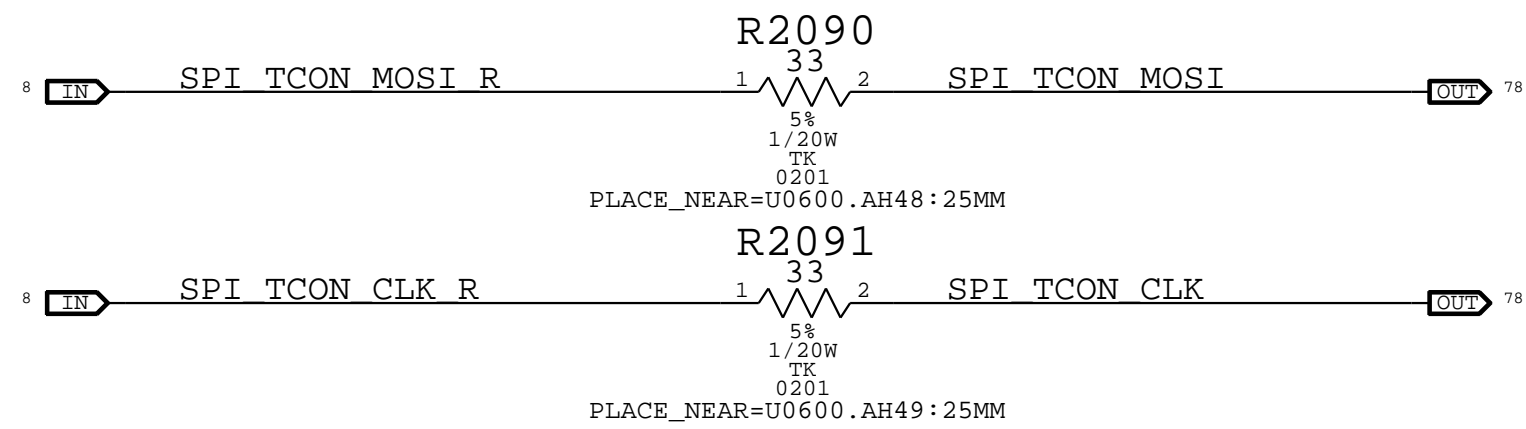
## TOUCHID SOURCE TERMINATIONS



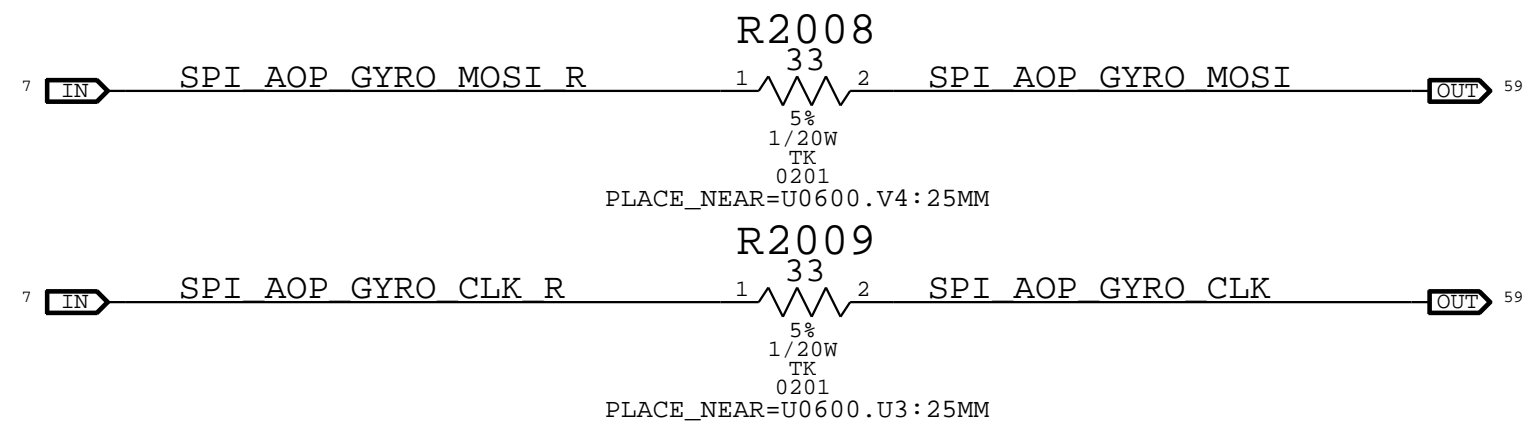
## IPD SOURCE TERMINATIONS



## TCON SOURCE TERMINATIONS

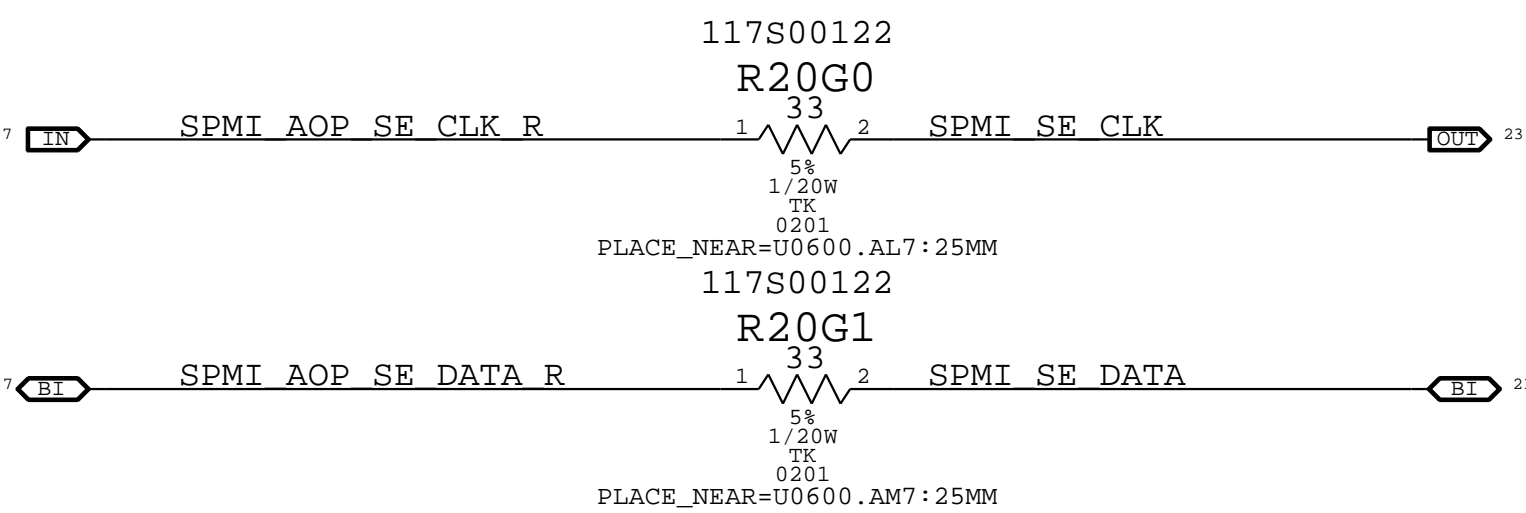


## IMU SOURCE TERMINATIONS



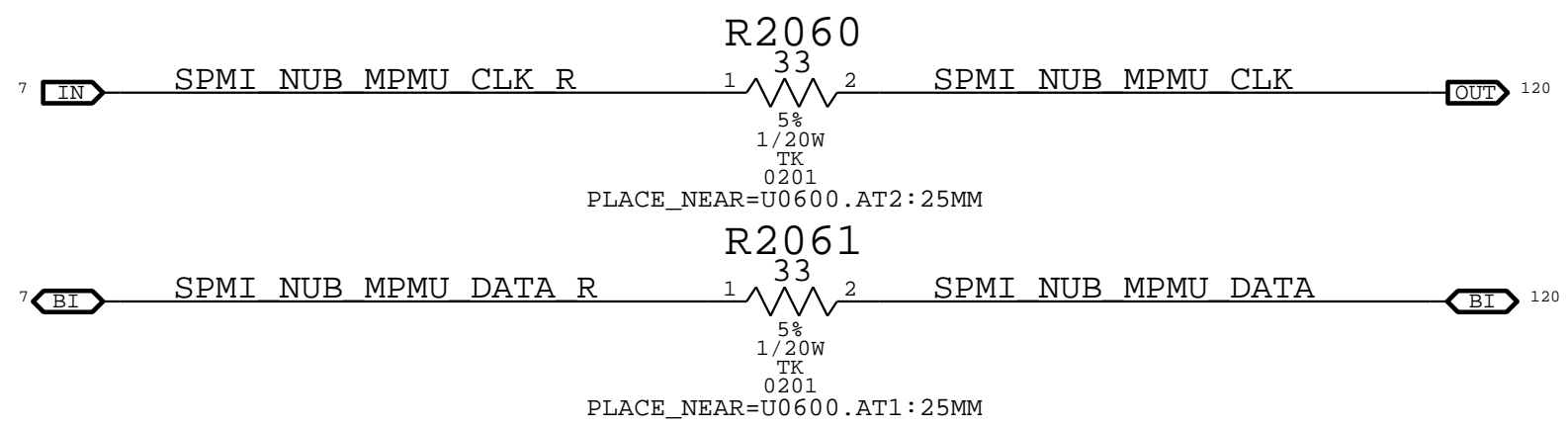
SECURE ELEMENT SPMI

SECURE\_ELEMENT\_SPMI\_DEVICE\_ADDRESS: 0X0C



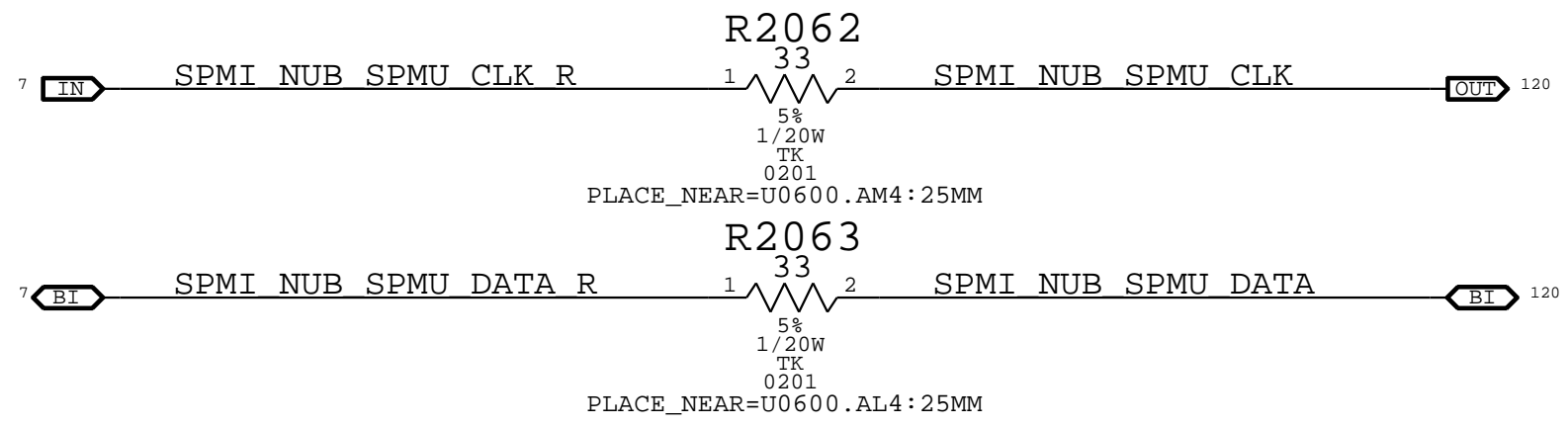
SOC   SPMI   MPMU

DEVICE ADDRESS: 0X0F (SET IN OTP)

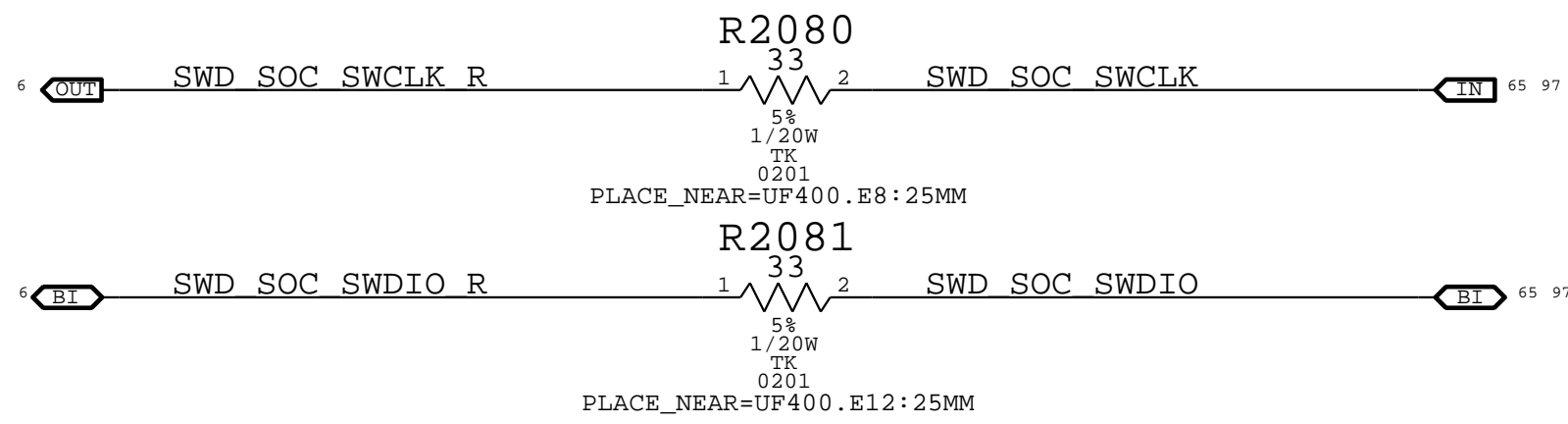


SOC   SPMI   SPMU

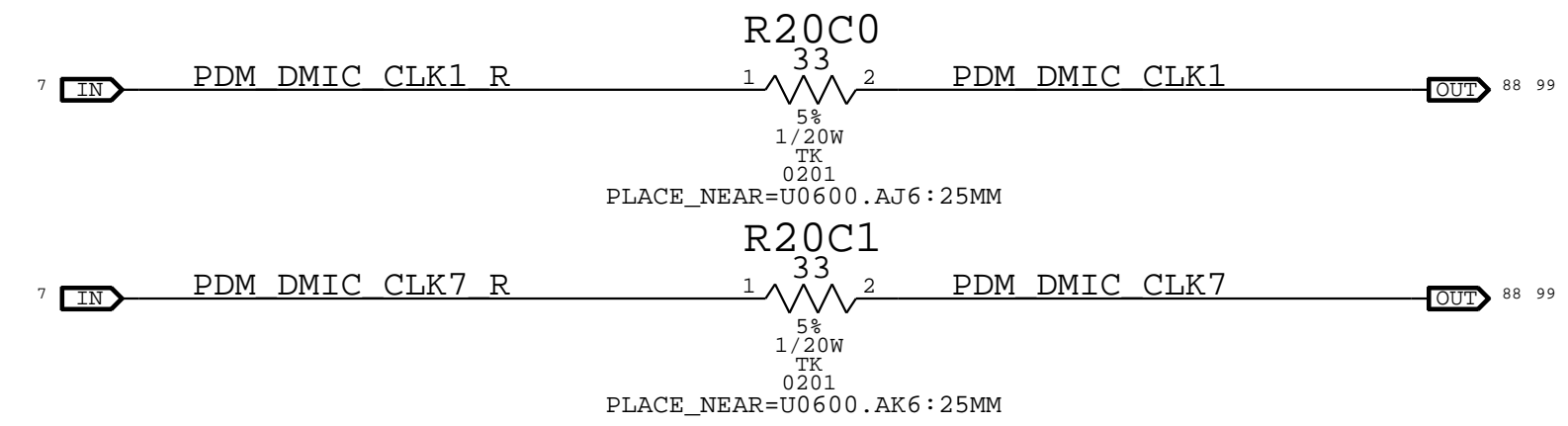
DEVICE ADDRESS: 0X0F (SET IN OTP)



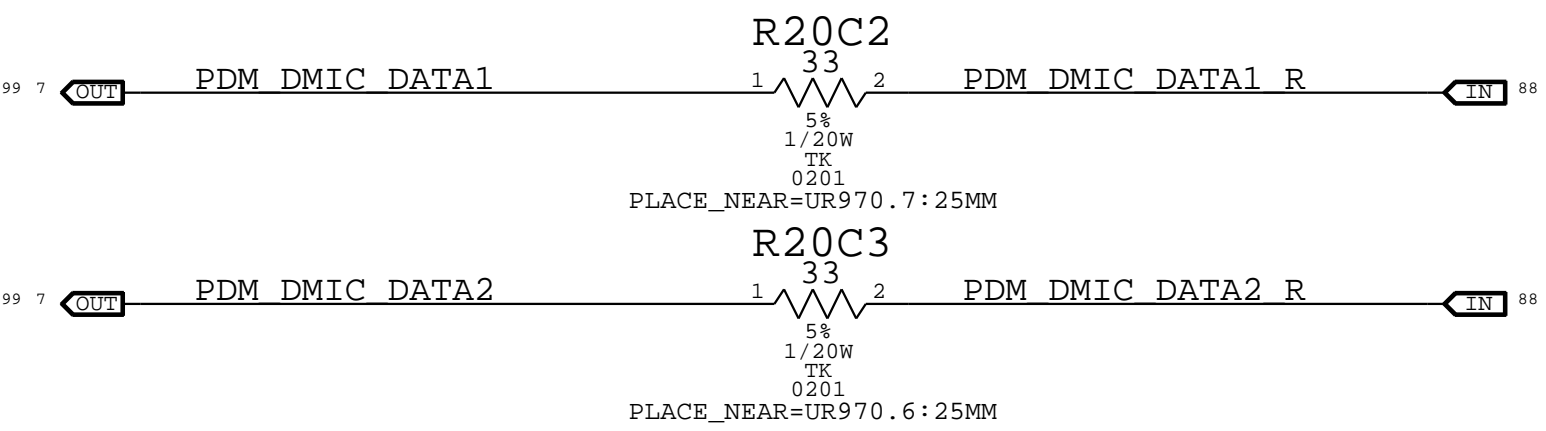
## SOC SWD SERIES R



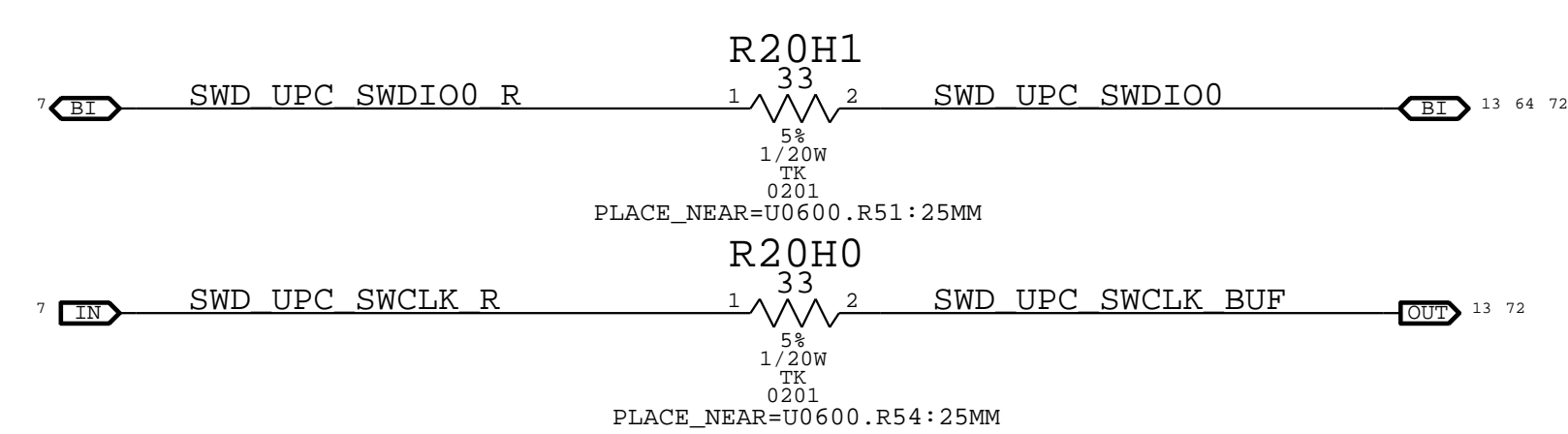
## DMIC SOURCE TERMINATIONS



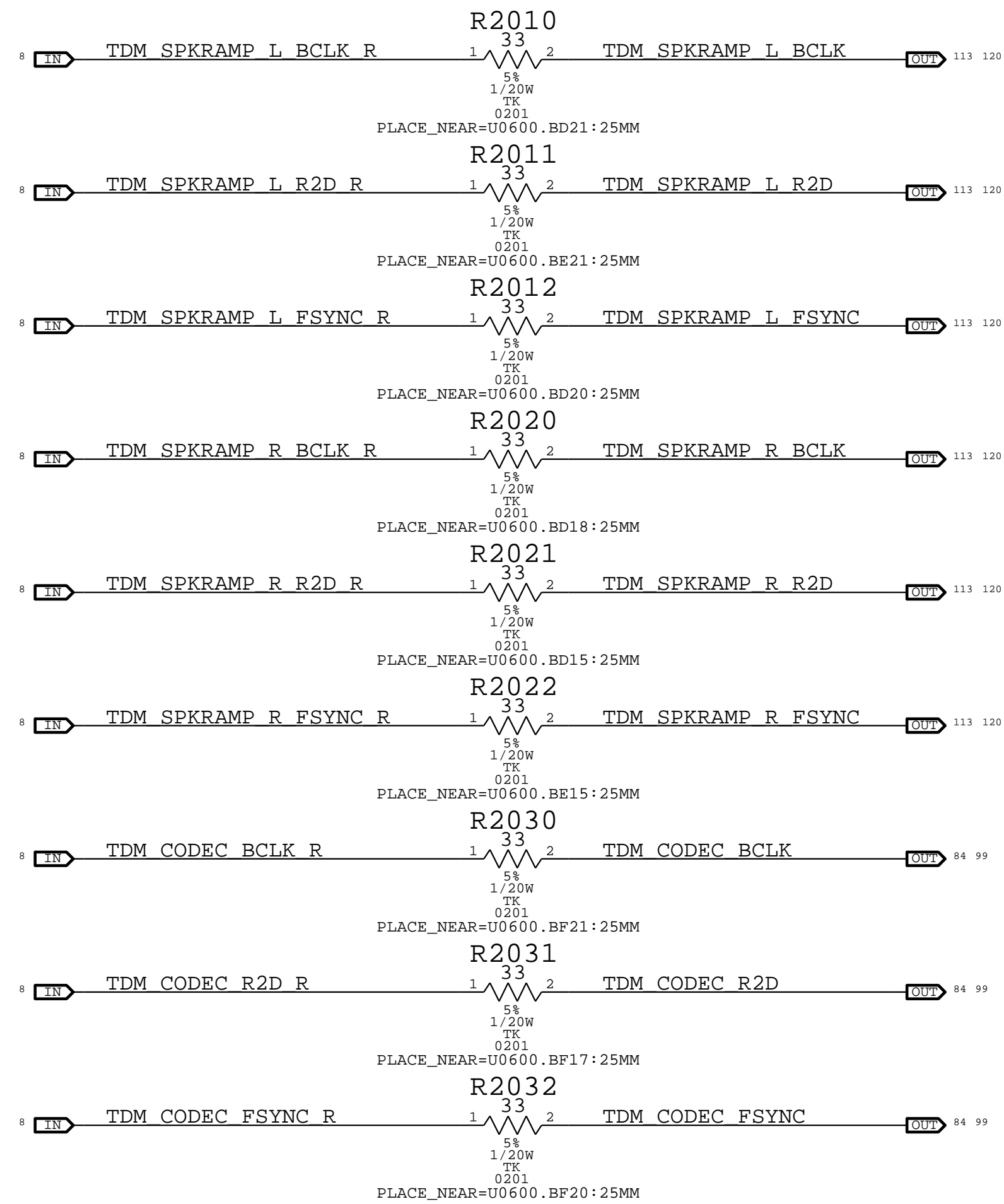
## DMIC SERIES R



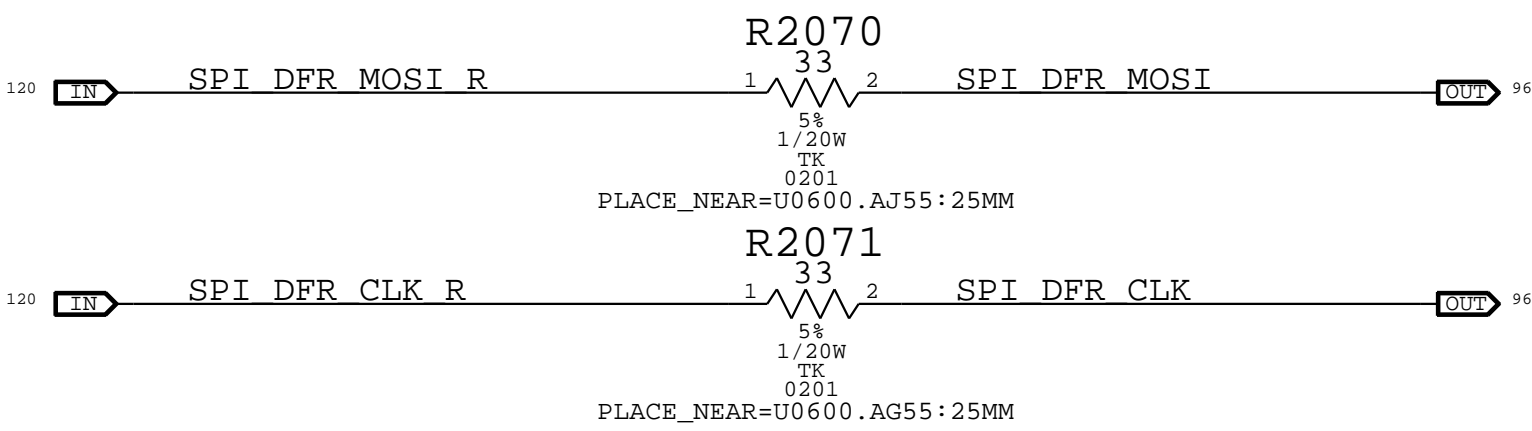
## UPC SWD




## TDM SOURCE TERMINATIONS

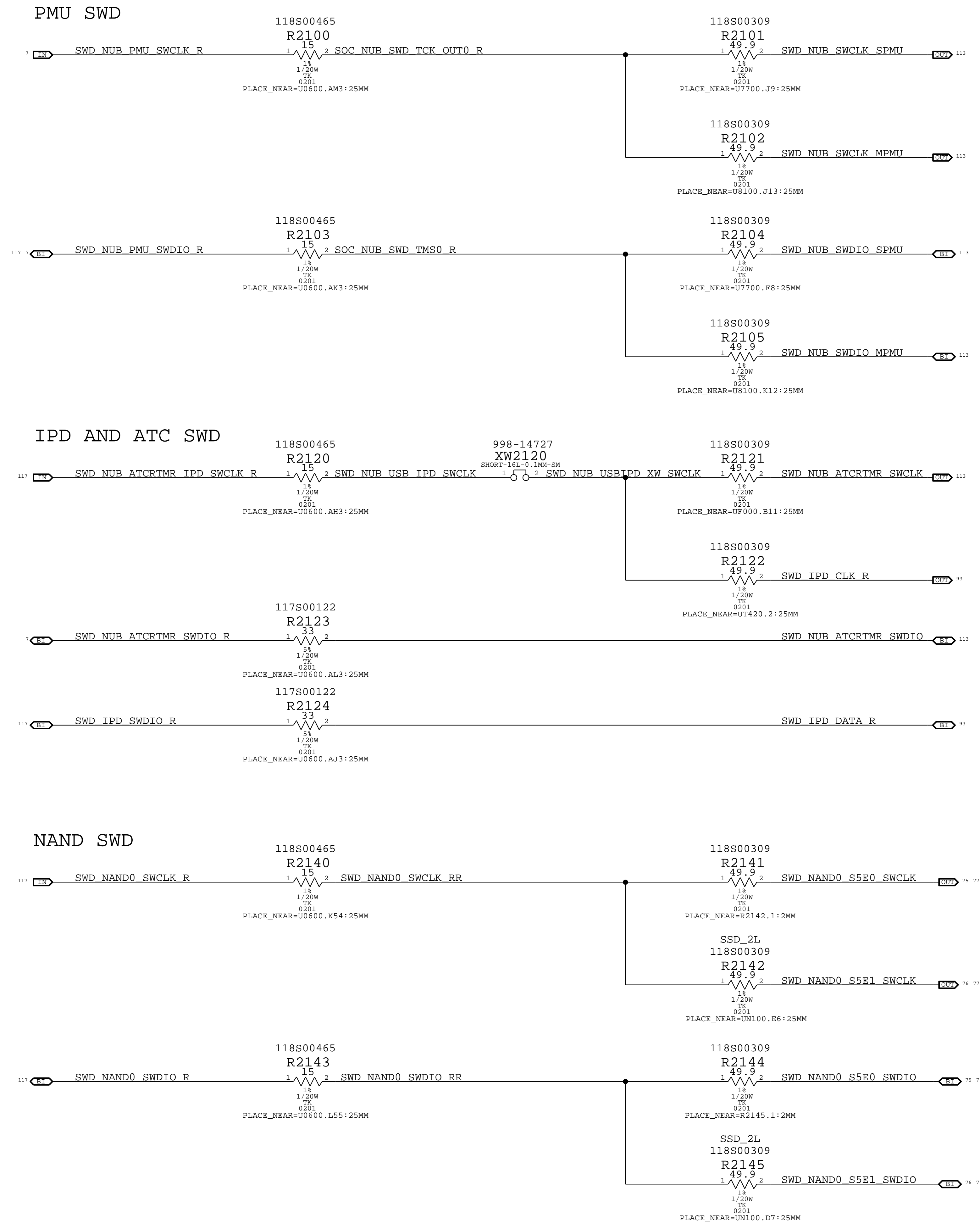


## DFR SOURCE TERMINATIONS




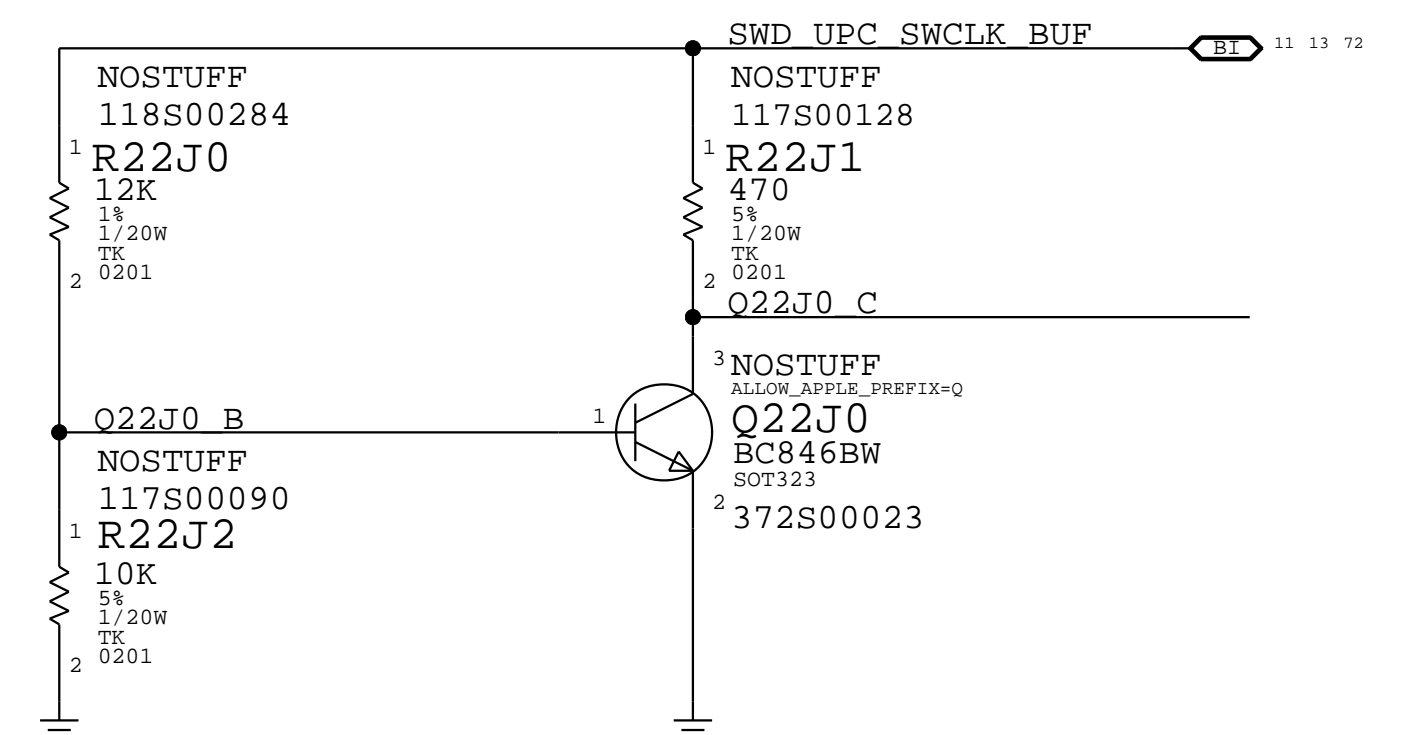
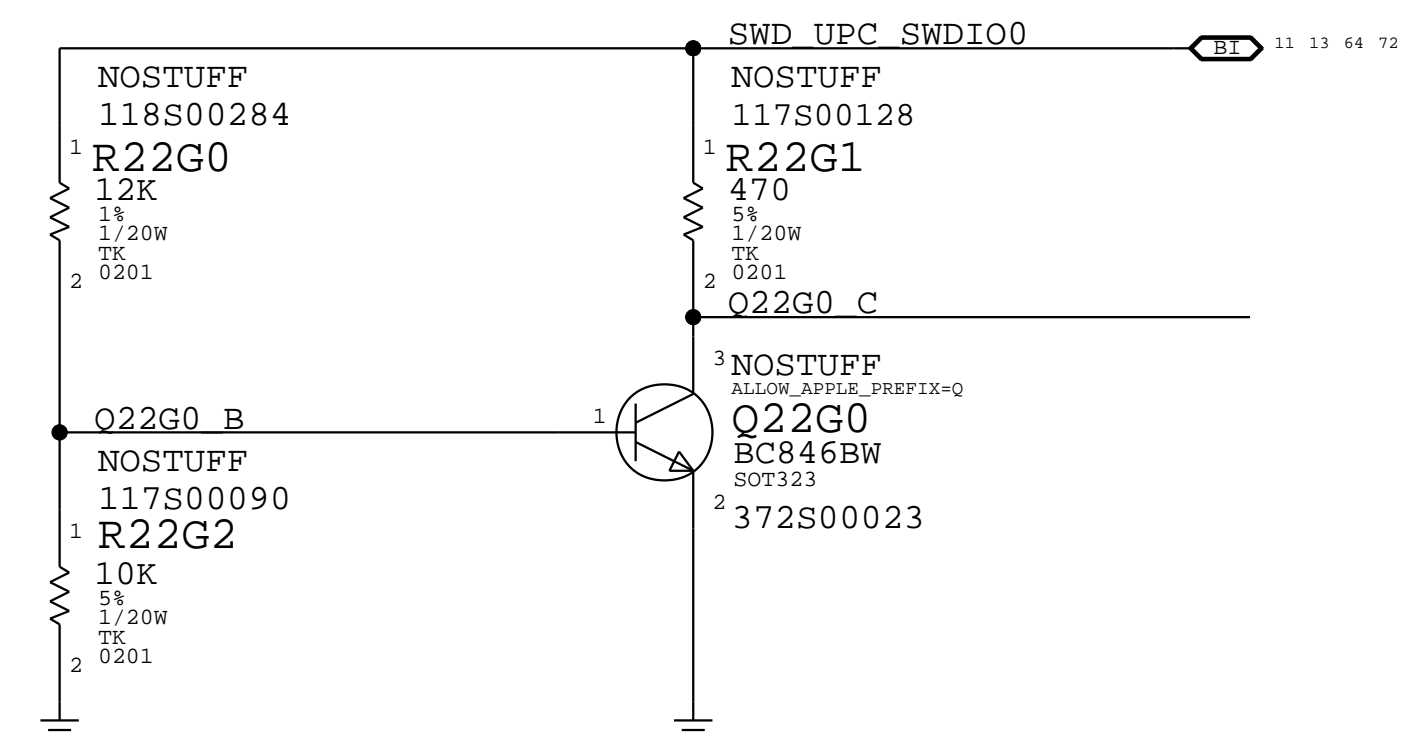
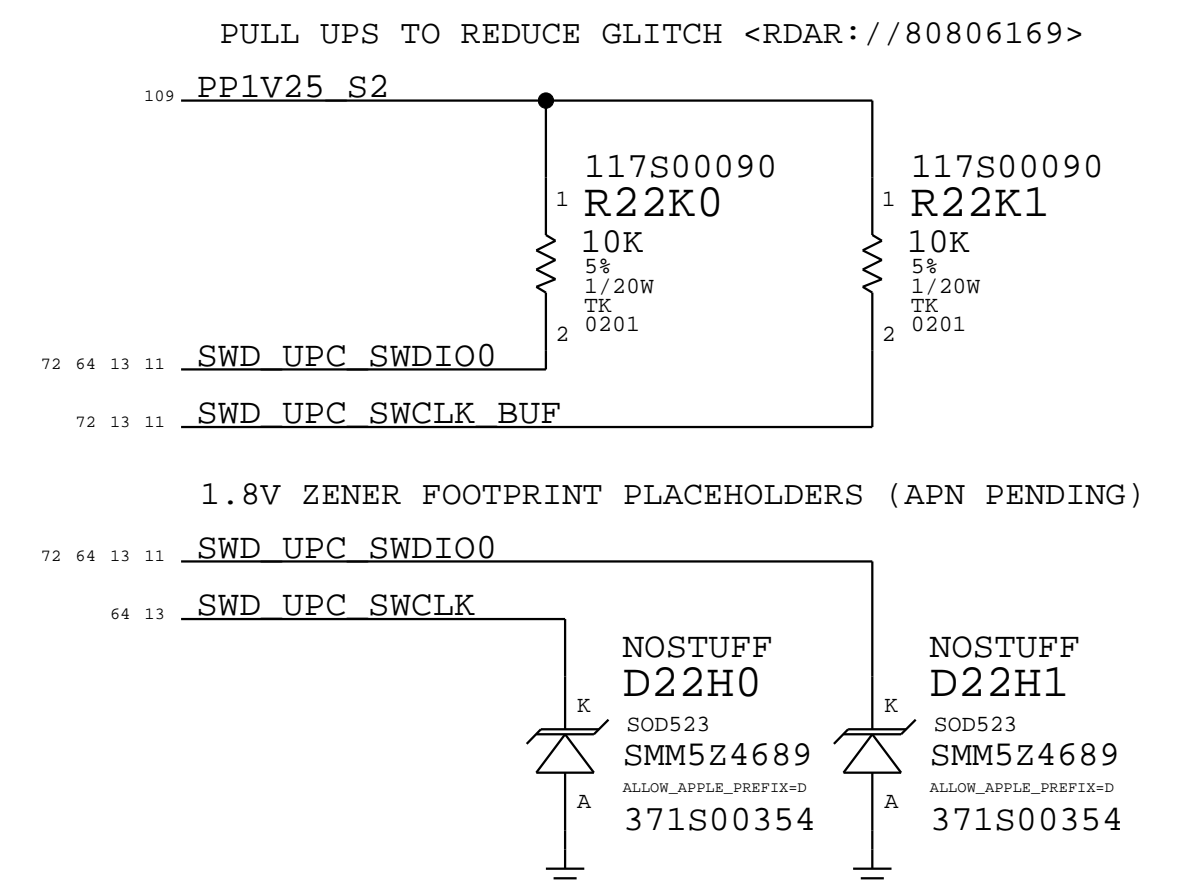
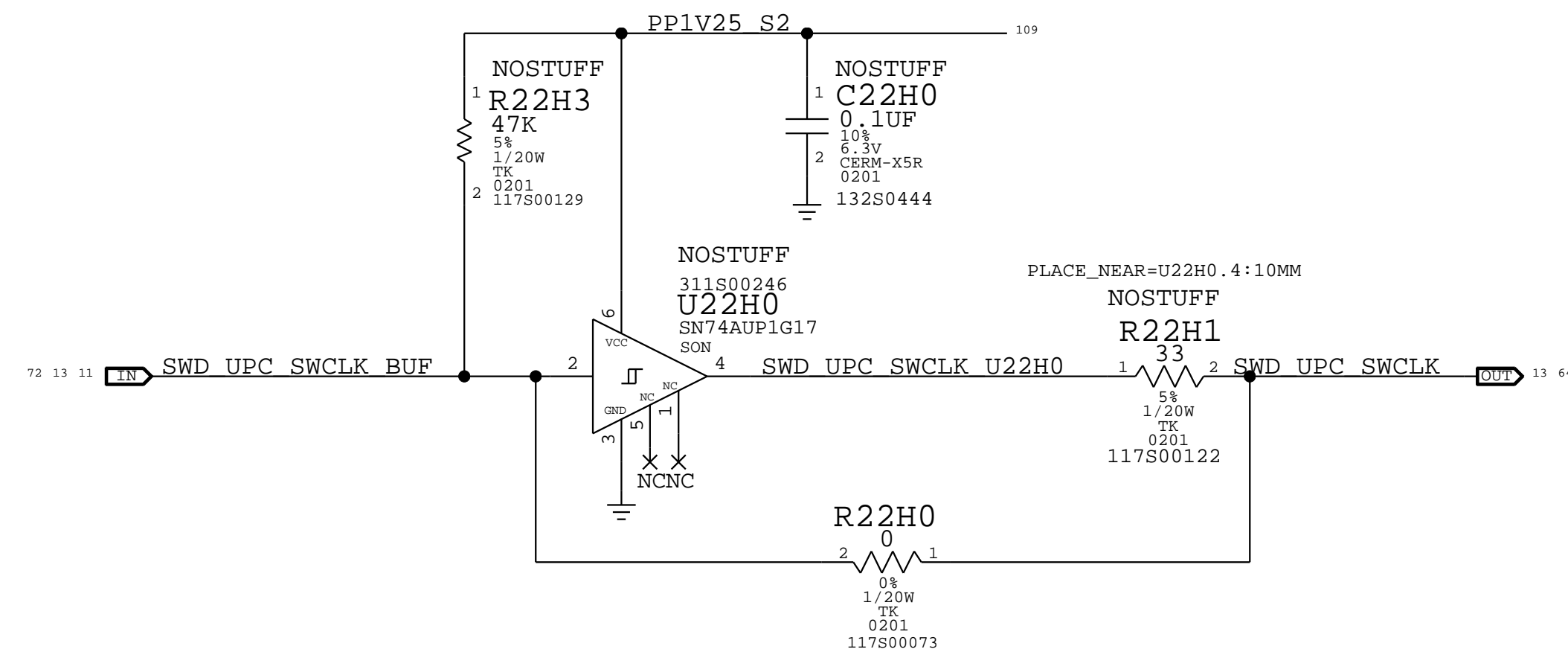
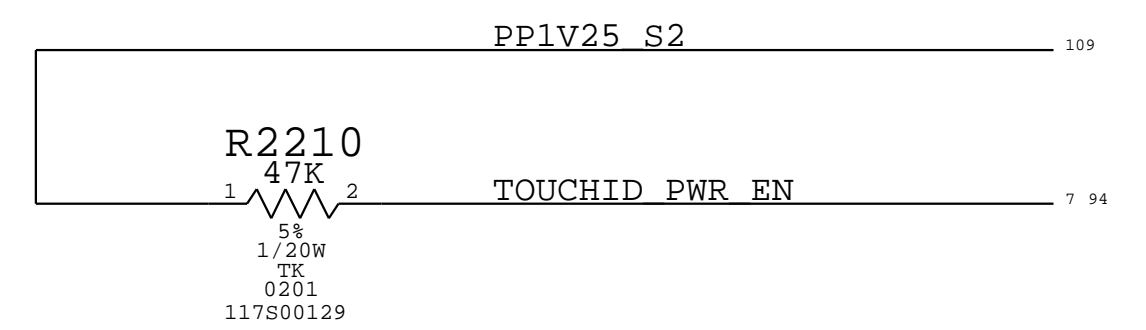
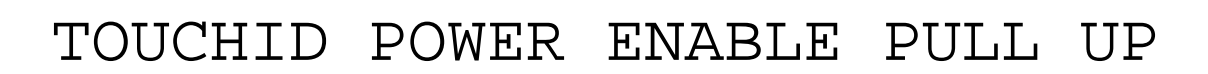
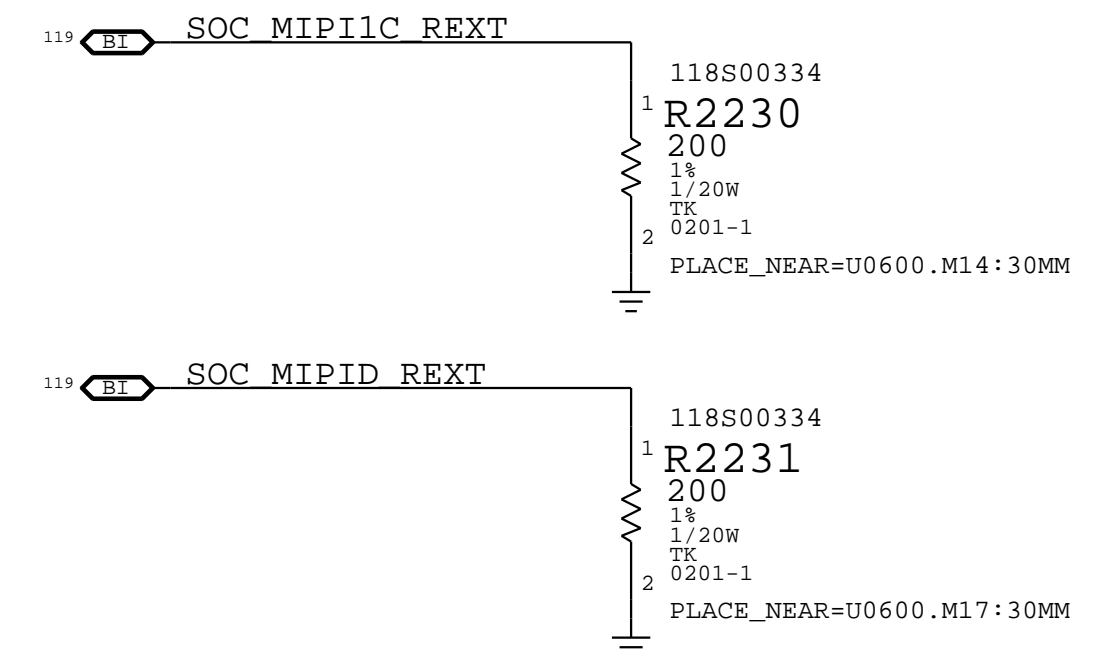
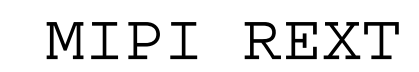
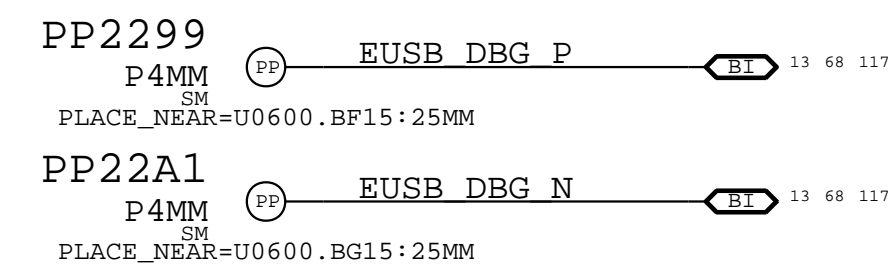
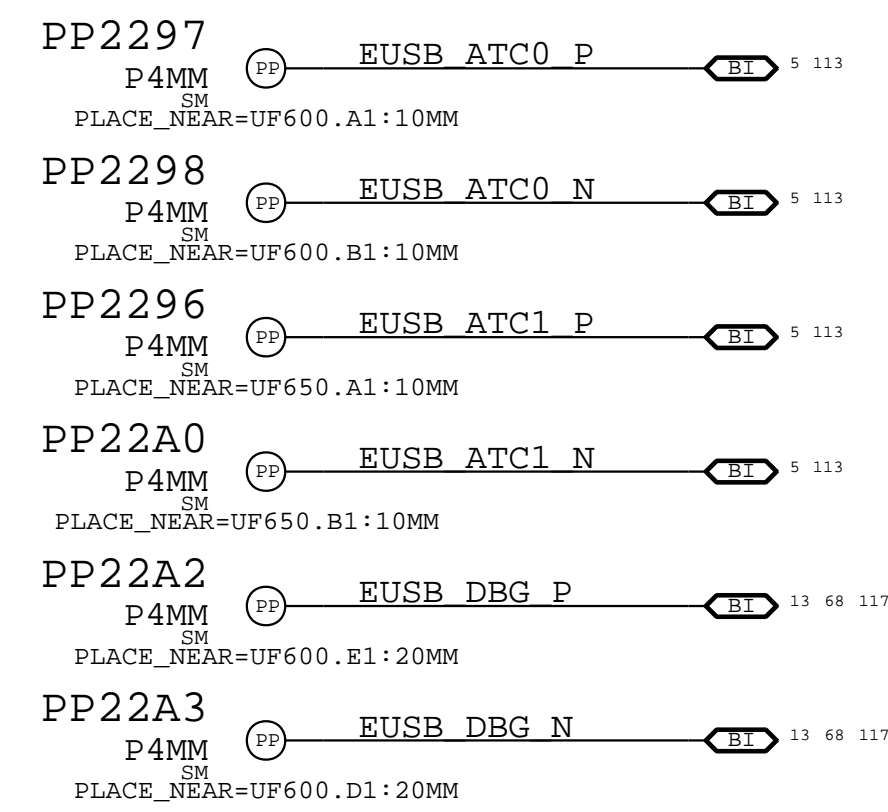
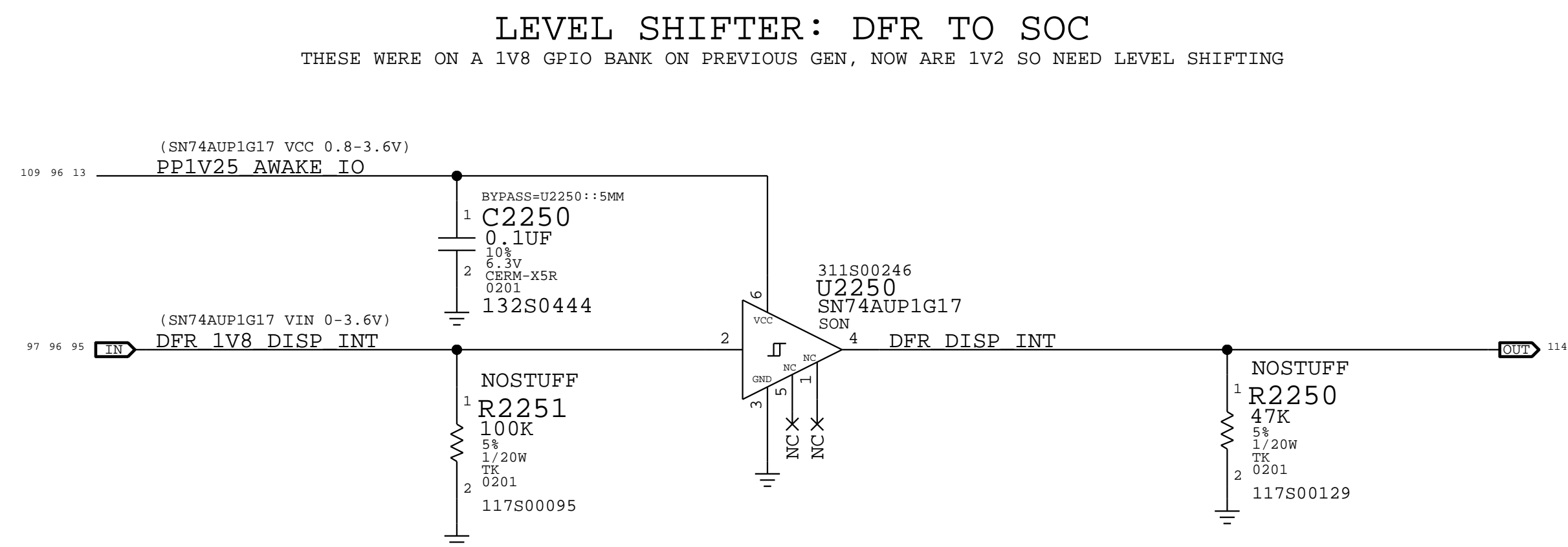
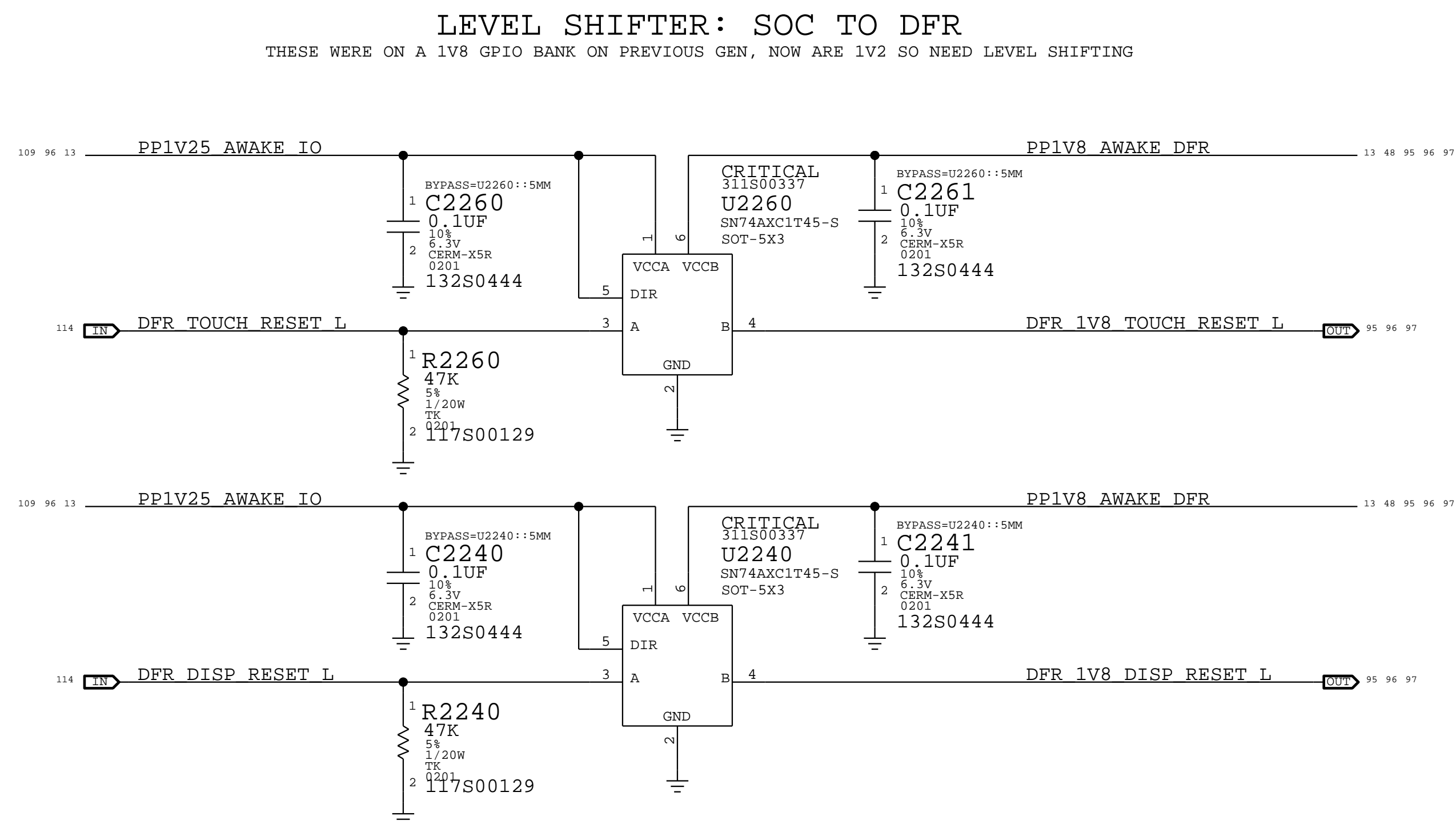
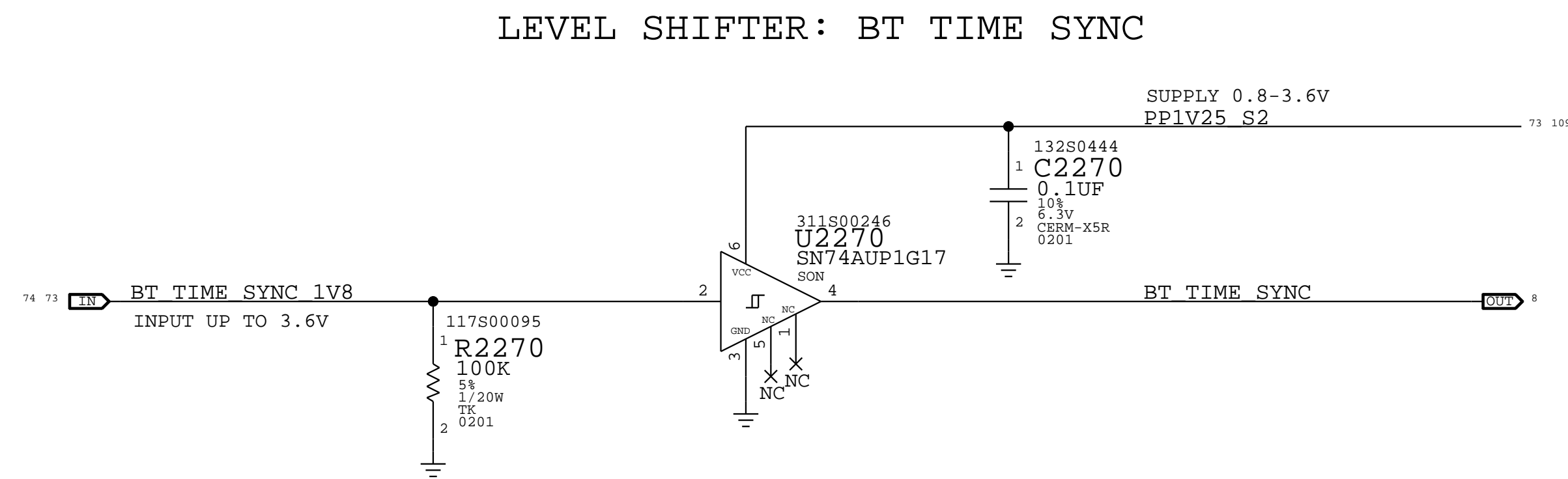
PAGE TITLE		
SOC: PROJECT SUPPORT (1/3)		
 Apple Inc.	DRAWING NUMBER	SIZE
	051-07793	D
	REVISION 5.0.0	
NOTICE OF PROPRIETARY PROPERTY:  THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE I I NOT TO REPRODUCE OR COPY IT I I I NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART I I I ALL RIGHTS RESERVED	BRANCH	
	evt-1	
	PAGE	20 OF 999
SHEET		11 OF 128


BOM\_COST\_GROUP=SOC



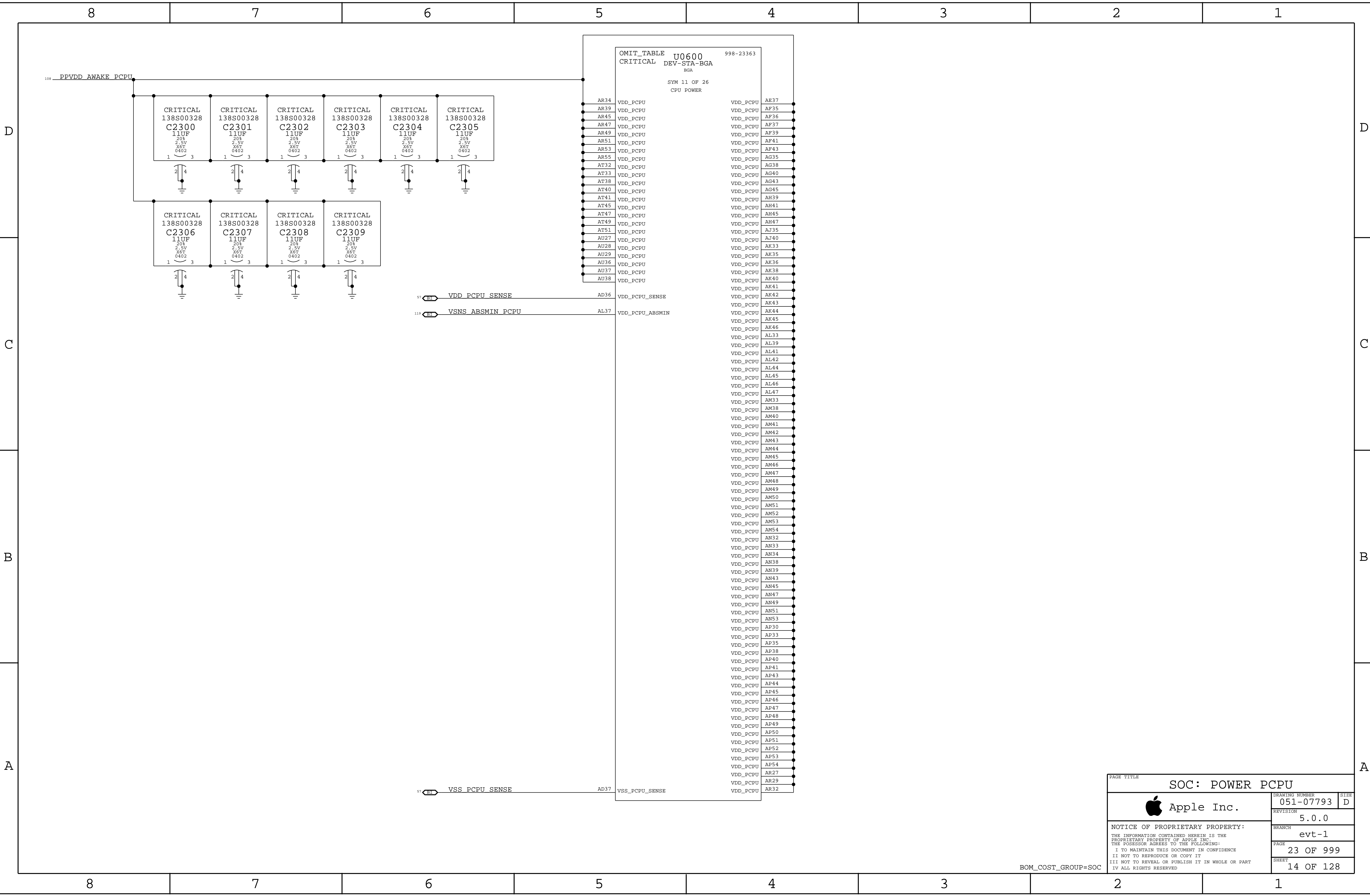
BOM\_COST\_GROUP=SOC


PAGE TITLE			
SOC: PROJECT SUPPORT (2/3)			
 Apple Inc.	DRAWING NUMBER		SIZE
	051-07793		D
	REVISION		
NOTICE OF PROPRIETARY PROPERTY:		5.0.0	
THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED		BRANCH	
		evt-1	
		PAGE	21 OF 999
		SHEET	12 OF 128



PAGE TITLE			
SOC: PROJECT SUPPORT (3/3)			
 Apple Inc.	DRAWING NUMBER		SIZE
	051-07793		D
	REVISION		
	5.0.0		
NOTICE OF PROPRIETARY PROPERTY:		BRANCH	
THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED		evt-1  PAGE 22 OF 999  SHEET 13 OF 128	

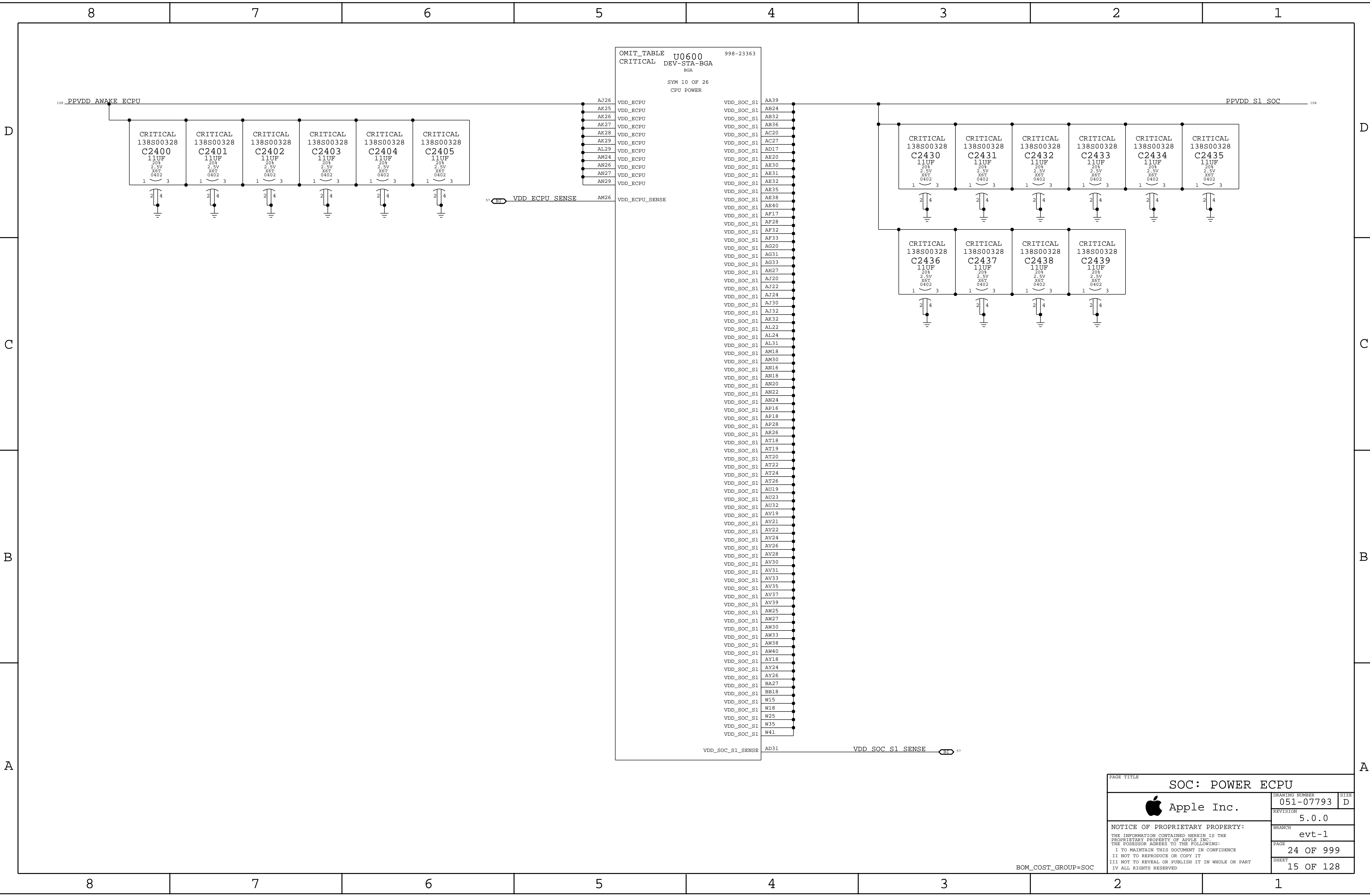
BOM\_COST\_GROUP=SOC




PAGE TITLE		
SOC: POWER PCPU		
 Apple Inc.	DRAWING NUMBER	051-07793
	REVISION	5.0.0
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	BRANCH	evt-1
	PAGE	23 OF 999
	SHEET	14 OF 128

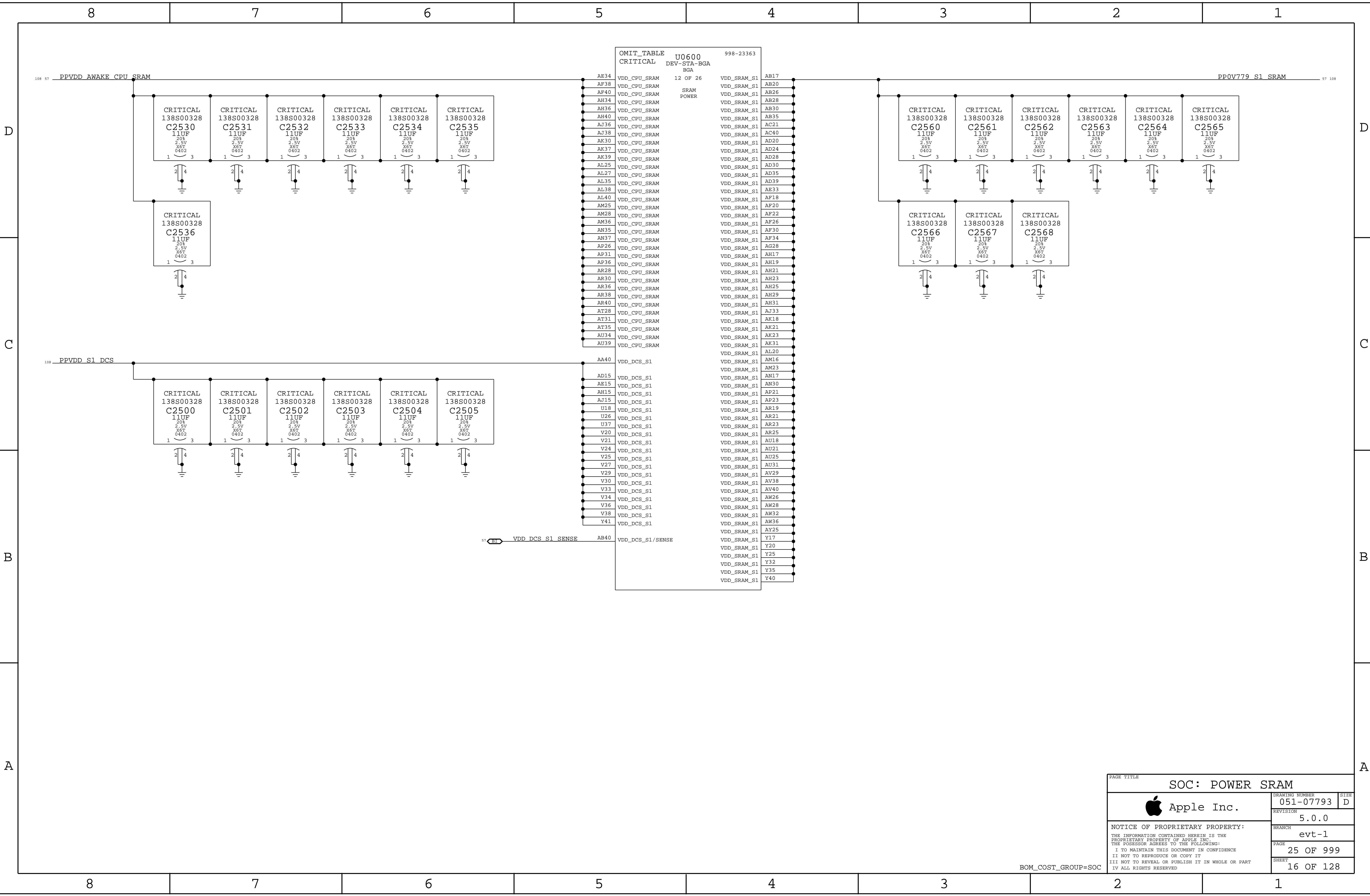
BOM\_COST\_GROUP=SOC

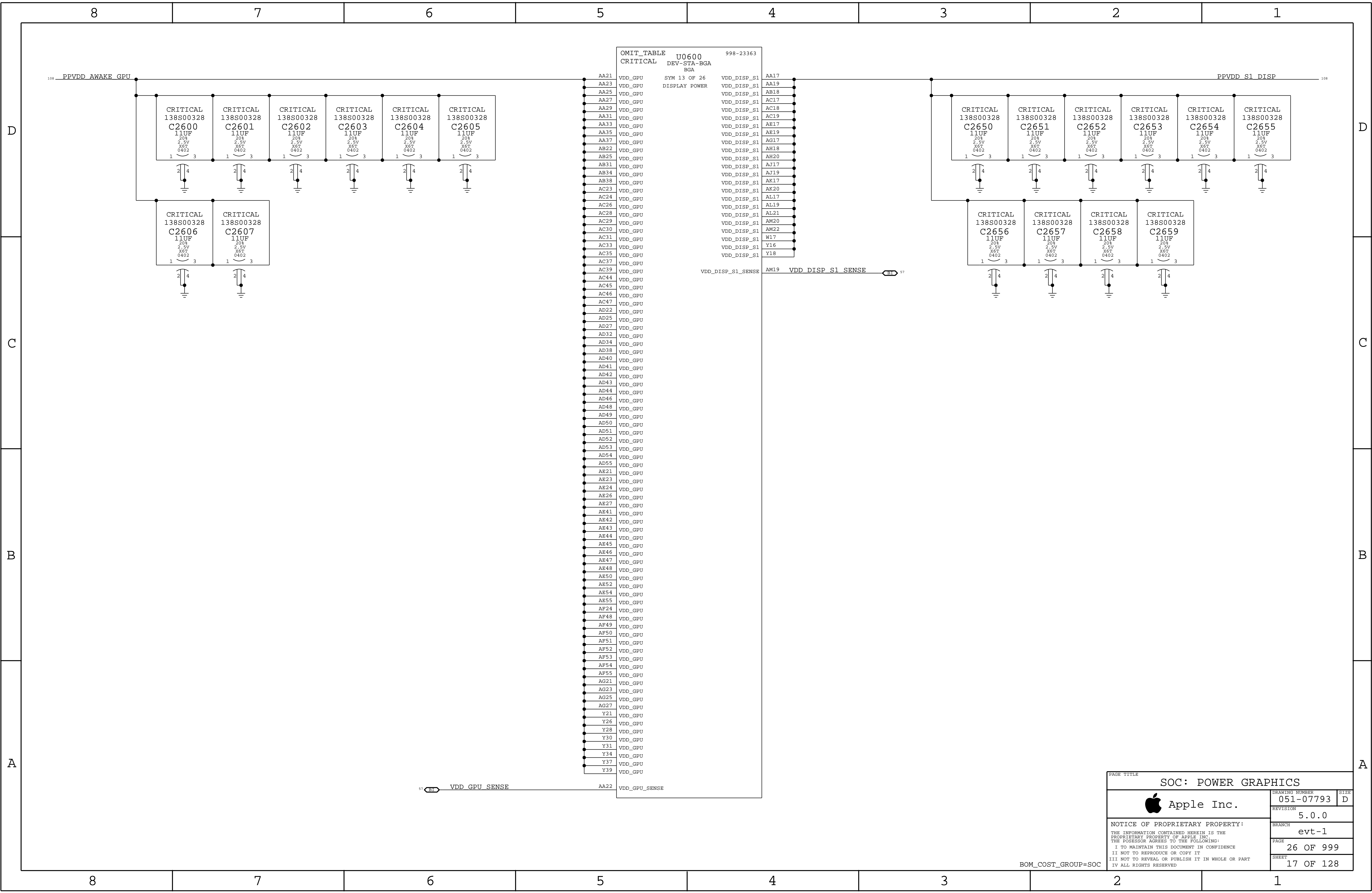





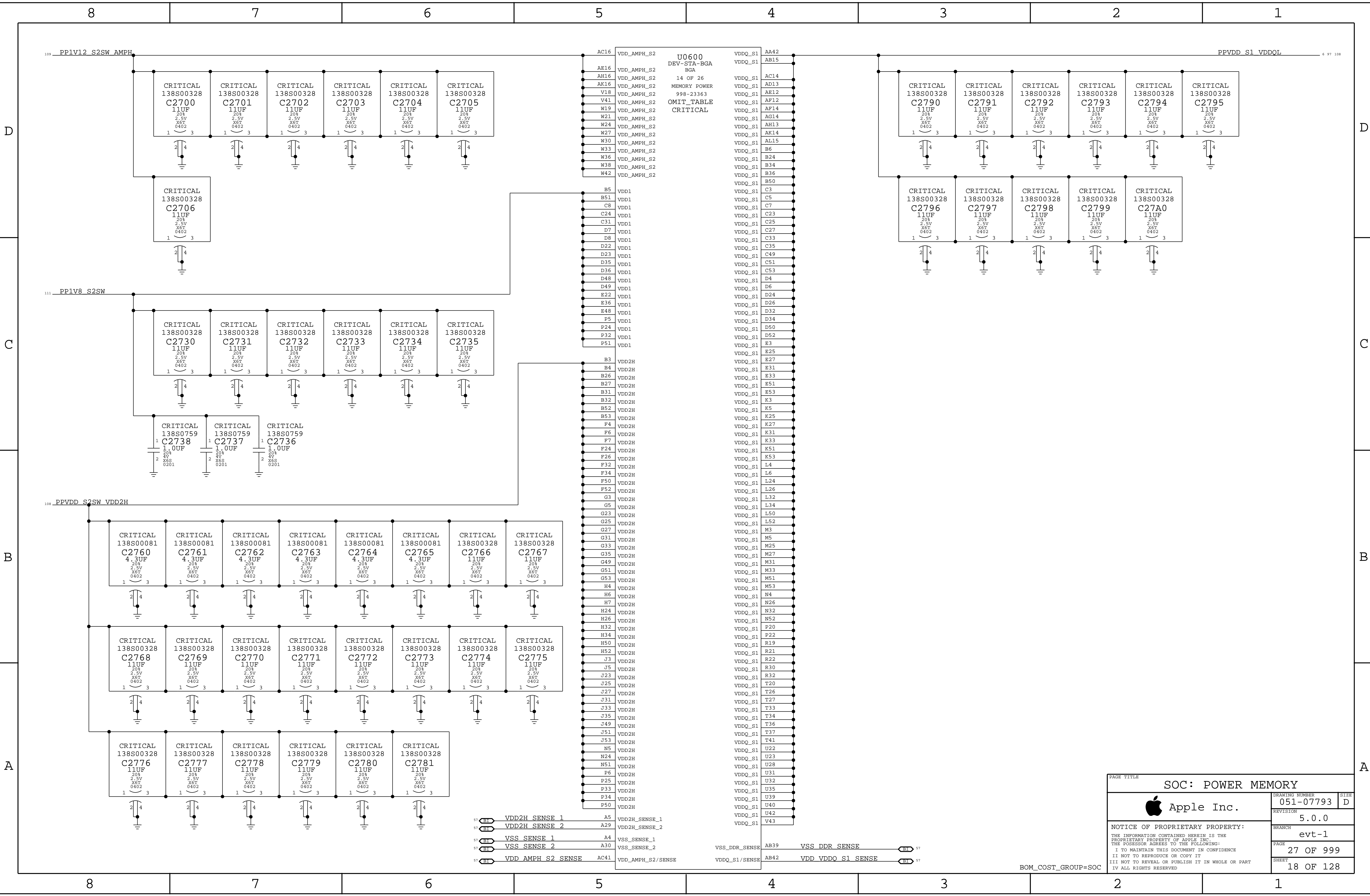
PAGE TITLE		
SOC: POWER ECPU		
 Apple Inc.	DRAWING NUMBER	051-07793
	REVISION	5.0.0
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	BRANCH	evt-1
	PAGE	24 OF 999
	SHEET	15 OF 128

BOM\_COST\_GROUP=SOC

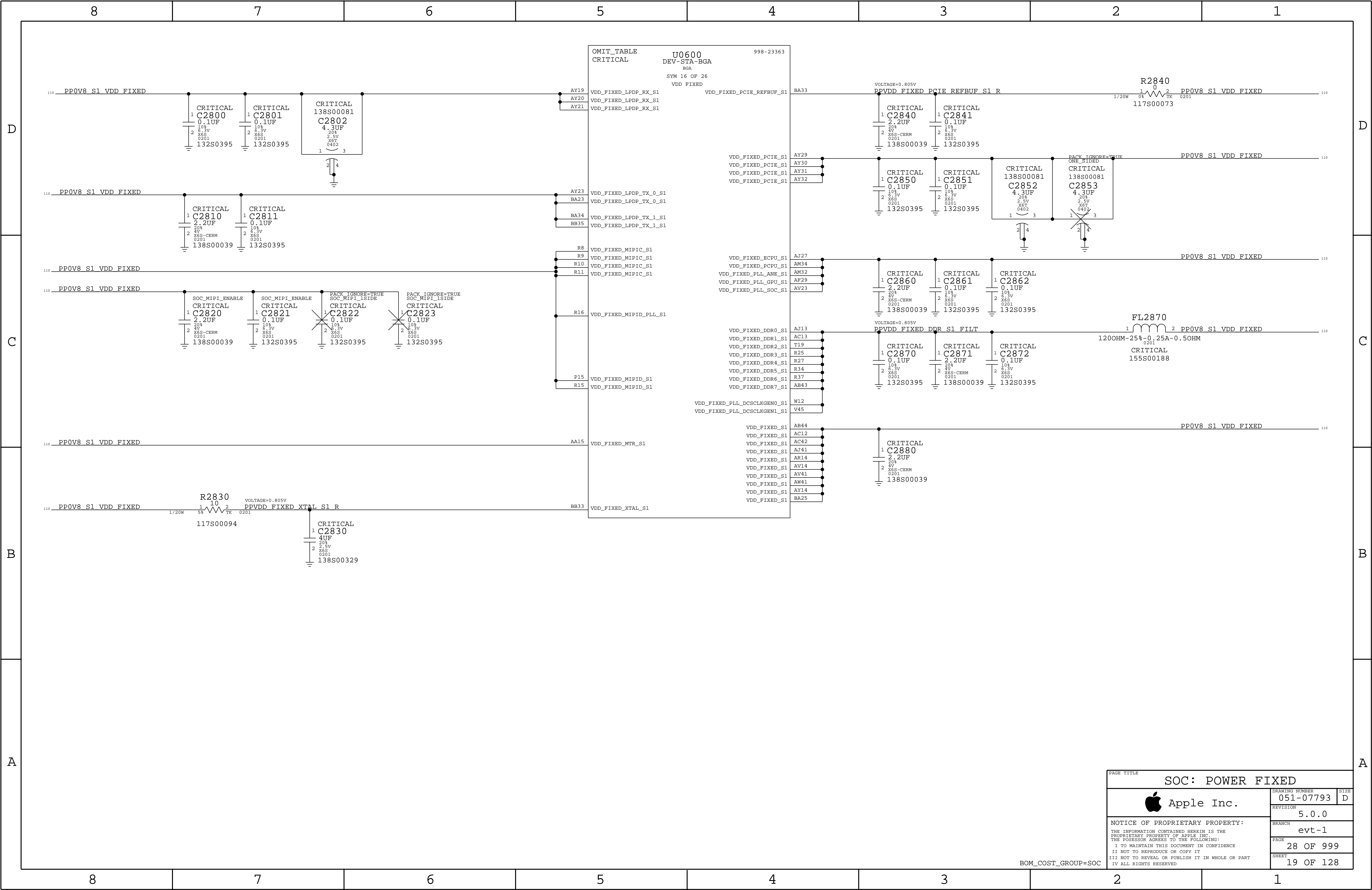





PAGE TITLE			
SOC: POWER GRAPHICS			
 Apple Inc.	DRAWING NUMBER	051-07793	
	REVISION	5.0.0	
	BRANCH	evt-1	
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	PAGE	26 OF 999	
	SHEET	17 OF 128	
	SIZE	D	



PAGE TITLE			
SOC: POWER MEMORY			
	DRAWING NUMBER	051-07793	SIZE
	REVISION	5.0.0	D
	BRANCH	evt-1	
PAGE		27 OF 999	
SHEET		18 OF 128	
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED			

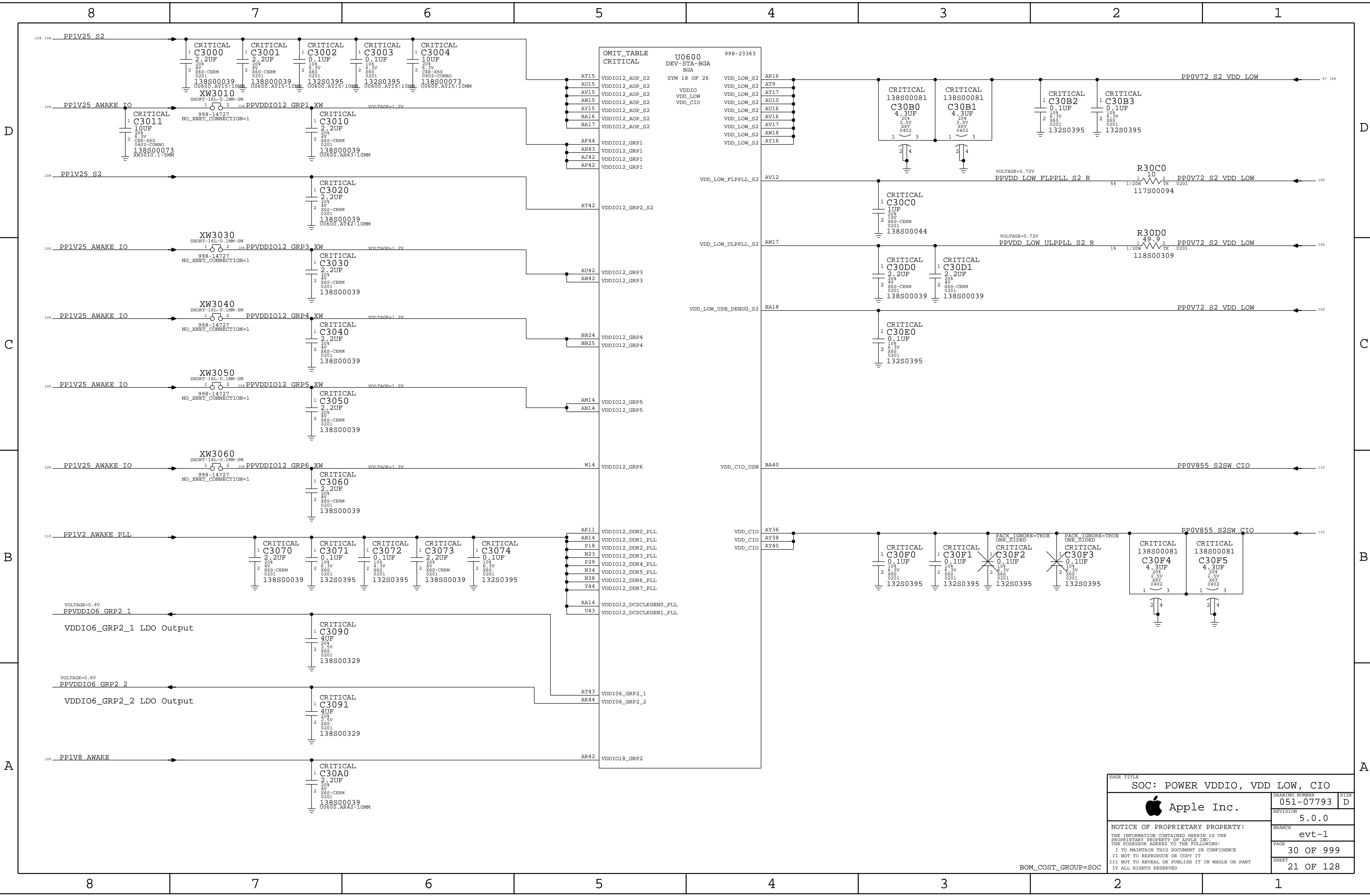



PAGE TITLE		
SOC: POWER FIXED		
 Apple Inc.	DRAWING NUMBER	051-07793
	REVISION	5.0.0
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	BRANCH	evt-1
	PAGE	28 OF 999
	SHEET	19 OF 128

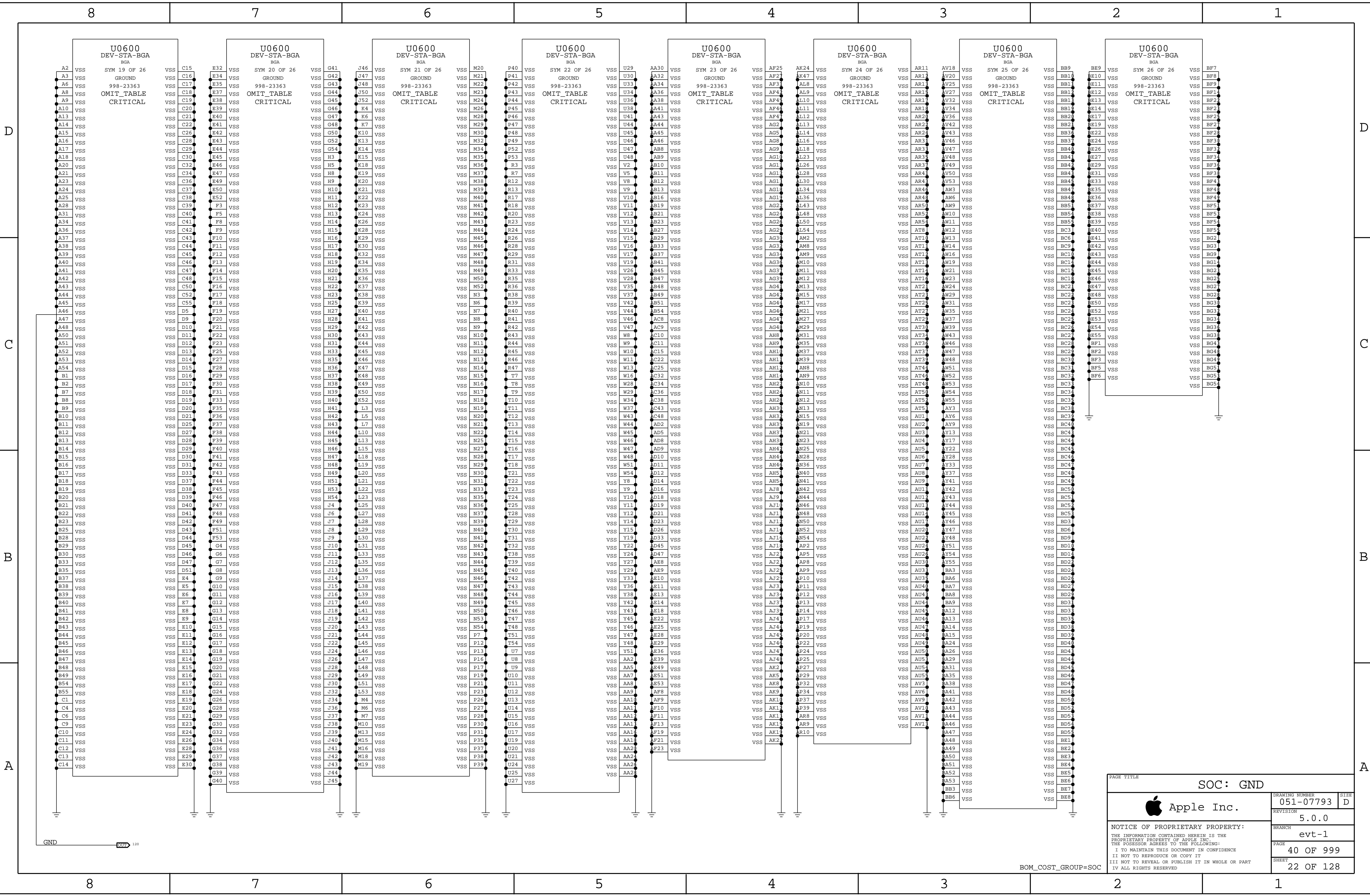
BOM\_COST\_GROUP=SOC







PAGE TITLE		
SOC: POWER VDDIO, VDD LOW, CIO		
 Apple Inc.	DRAWING NUMBER	051-07793
	REVISION	5.0.0
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	BRANCH	evt-1
	PAGE	30 OF 999
	SHEET	21 OF 128



SOC: GND

DRAWING NUMBER

051-07793

REVISION

5.0.0

BRANCH

evt-1


PAGE

40 OF 999

SHEET

22 OF 128

NOTICE OF PROPRIETARY PROPERTY:  
THE INFORMATION CONTAINED HEREIN IS THE  
PROPRIETARY PROPERTY OF APPLE INC.  
THE POSSESSOR AGREES TO THE FOLLOWING:  
I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE  
II NOT TO REPRODUCE OR COPY IT  
III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART  
IV ALL RIGHTS RESERVED

PAGE TITLE			
Secure Element			
 Apple Inc.	DRAWING NUMBER		SIZE
	051-07793		D
NOTICE OF PROPRIETARY PROPERTY:  THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	REVISION		
	5.0.0		
	BRANCH		
	evt-1		
	PAGE	50 OF 999	
	SHEET	23 OF 128	

## D



## D

C

A

BOM\_COST\_GROUP=BATTERY



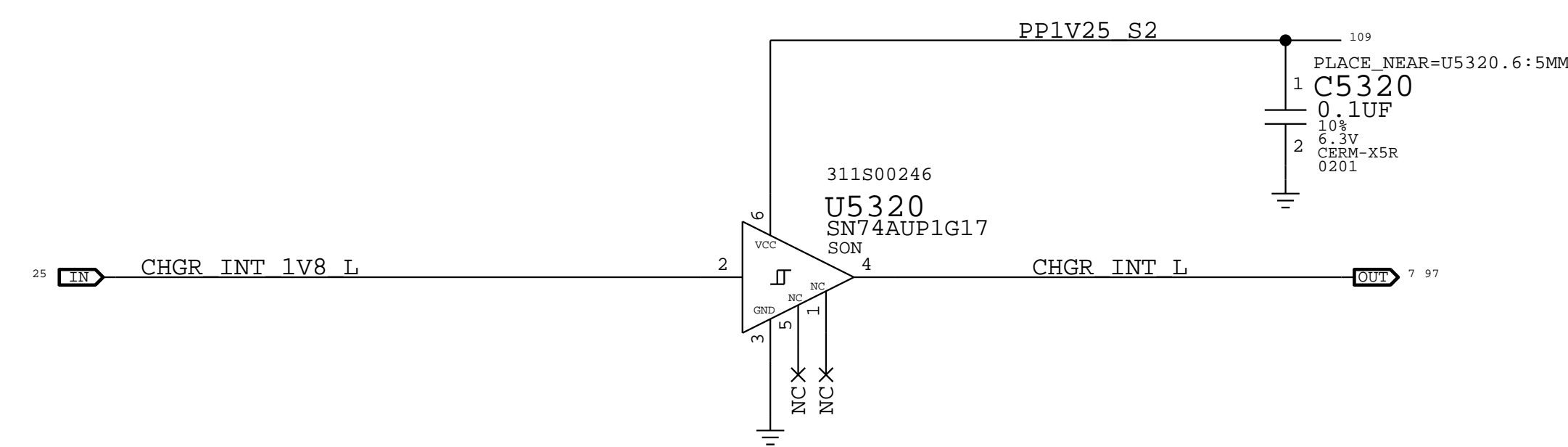


\*\*\* OK2INTEGRATE \*\*\*

## CHGR I2C Level Translation

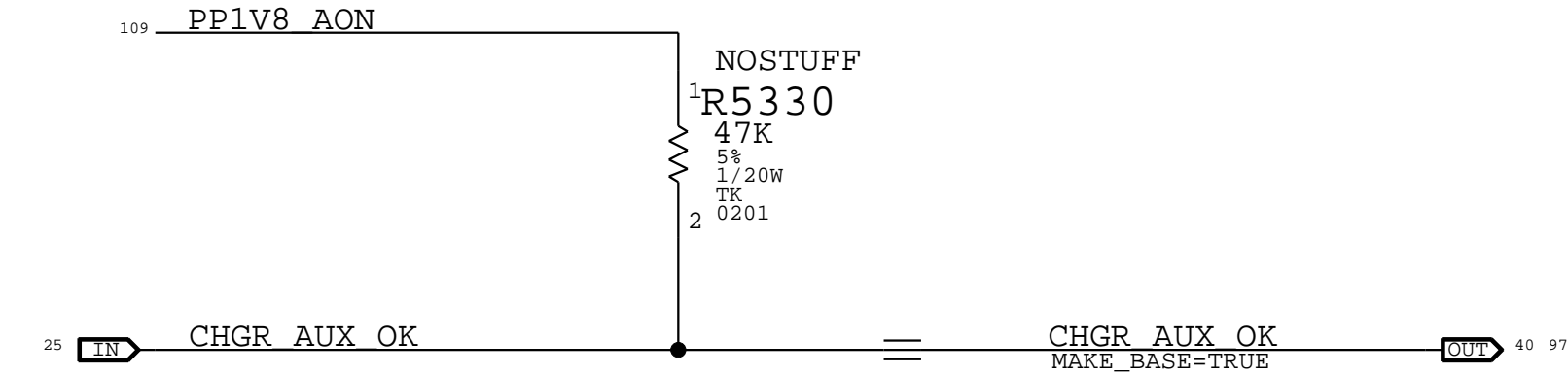
SMBUS\_CHGR\_LV8\_[SCL/SDA]: Level translation circuit to be placed in project specific I2C page.

## CHGR\_INT\_L Level Translation



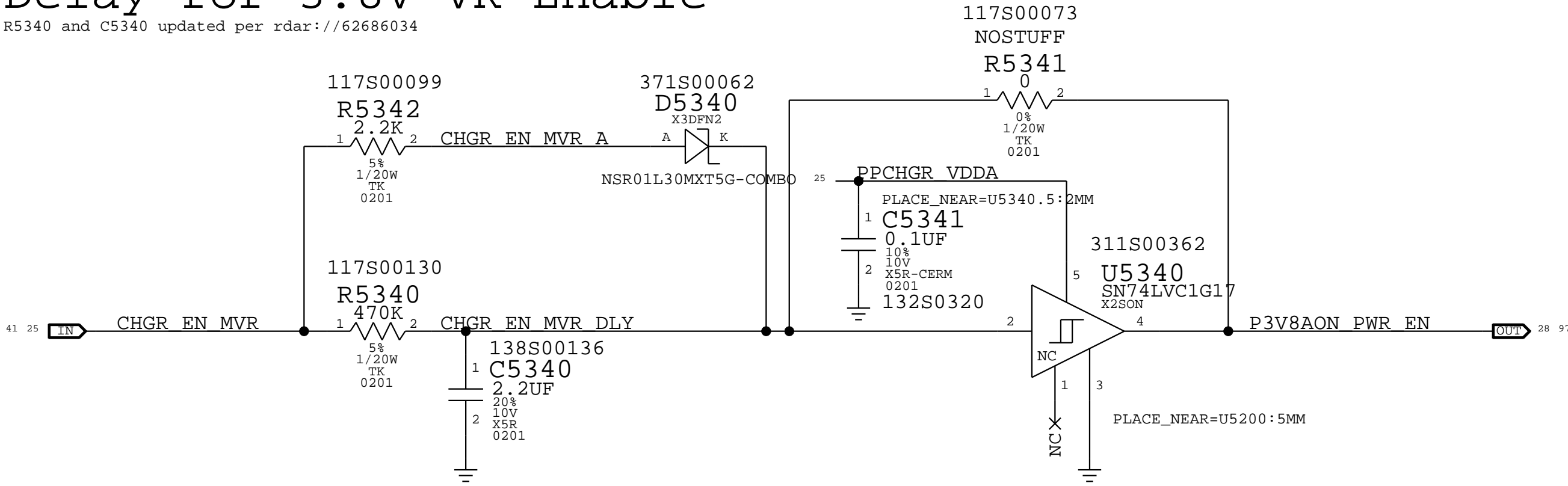
## CHGR\_AUX\_OK Pull Up

Pull up to MPMU LDO9, or rely on MPMU internal pull up.  
OK, to completely remove pull up , but consult PMU architecture and check OTP before that.



## Delay for 3.8V VR Enable

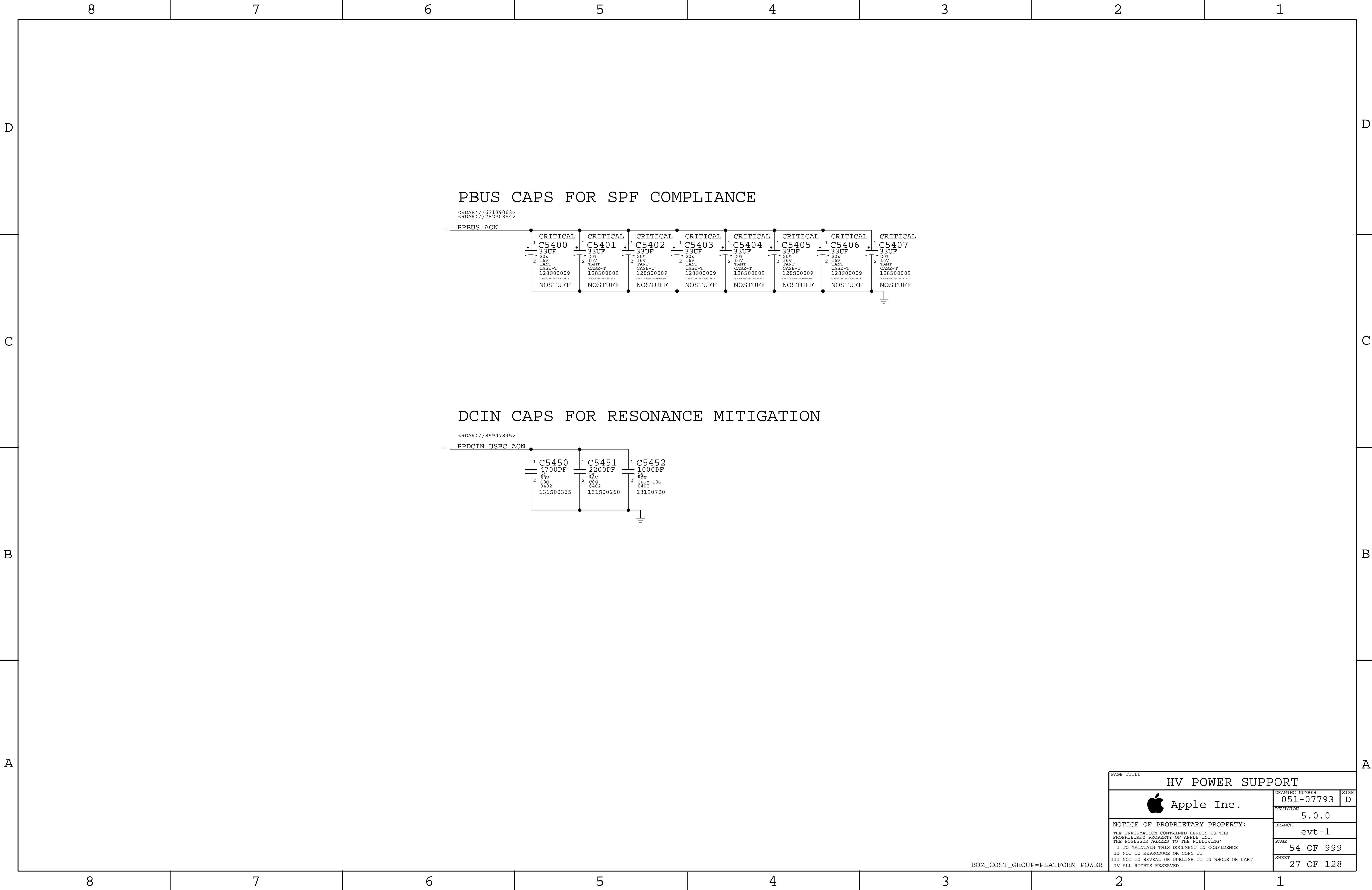
R5340 and C5340 updated per rdar://62686034



PAGE TITLE		
BATTERY CHARGER SUPPORT		
Apple Inc.	DRAWING NUMBER	051-07793
	REVISION	5.0.0
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	BRANCH	evt-1
	PAGE	53 OF 999
	SHEET	26 OF 128

BOM\_COST\_GROUP=BATTERY





D

C

B

A

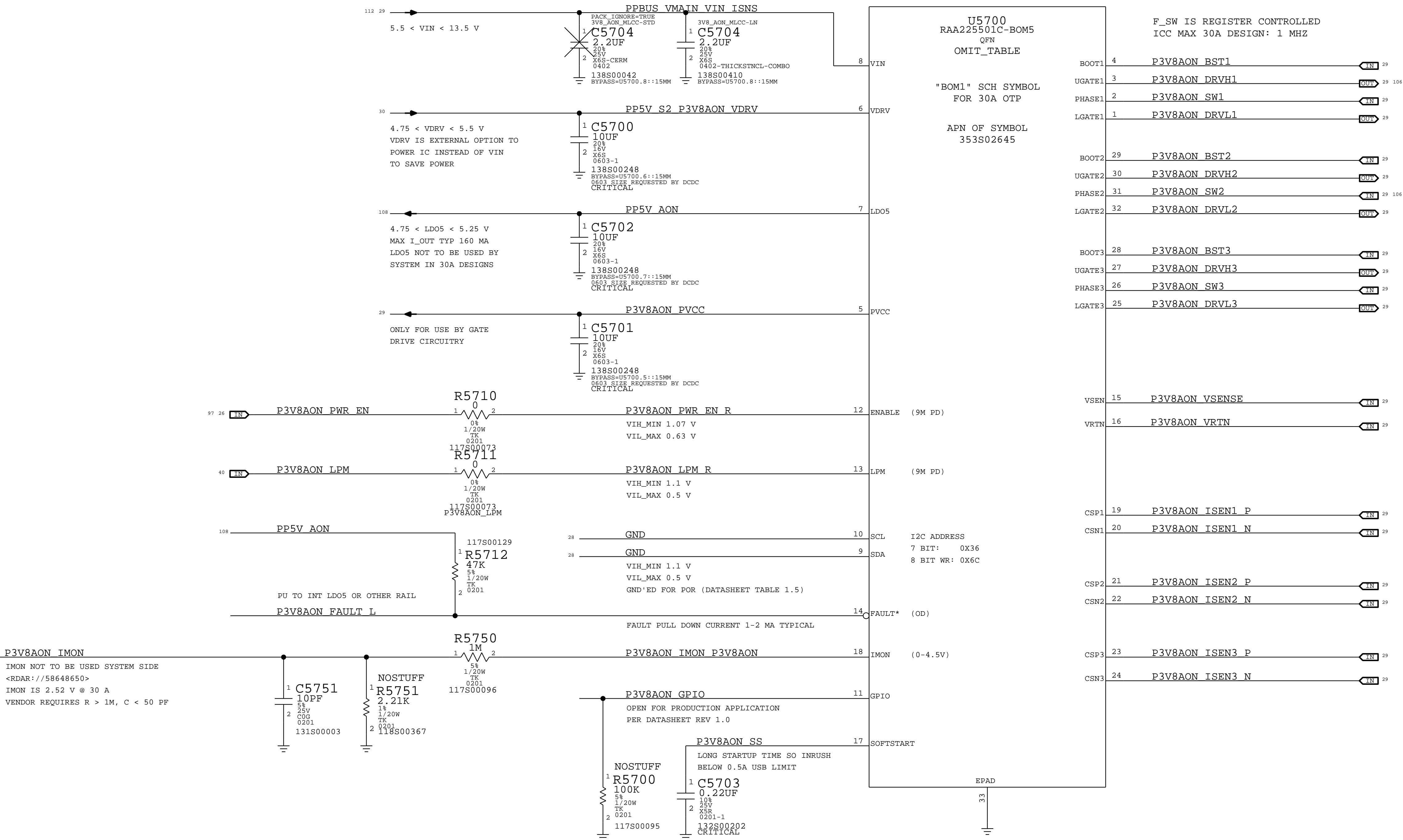
D

C

B

A

3V8 AON CONTROLLER  
30A ICC MAX



30A OTP CHANGES DOCUMENTED IN <RDAR:///61519509>

BOM5 IS A CONTINUATION OF BOM1 SINCE BOM1 IS FROZEN FOR TGA PROGRAMS

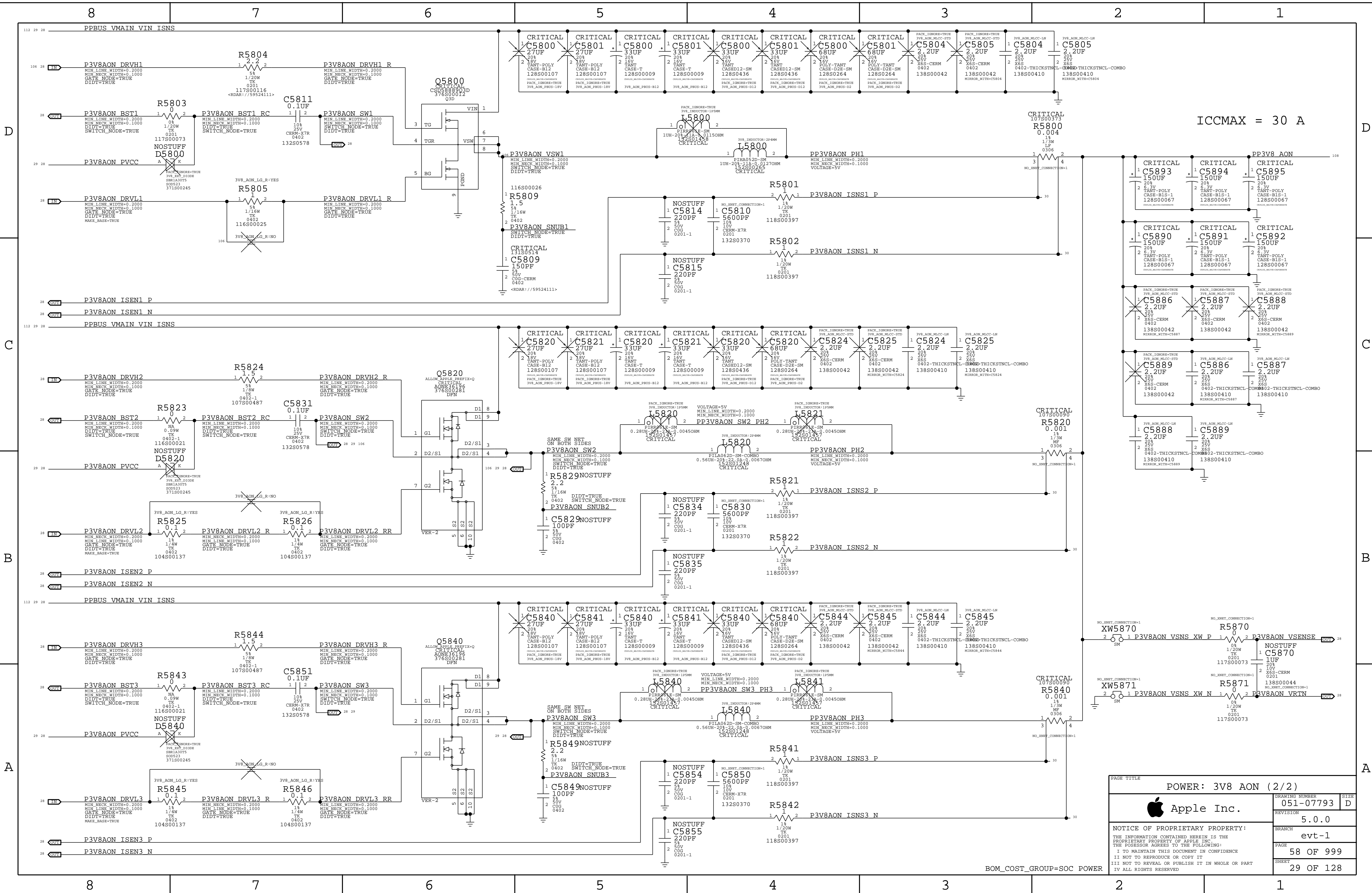
PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
353S02326	1	IC,RAA225501,3-PH VOLT REG,TQFN32	U5700	CRITICAL	P3V8AON_IC:A0
353S02472	1	IC,RAA225501B,ICE,BOM1,A1,OTP-R0B0,QFN32	U5700	CRITICAL	P3V8AON_IC:A1_R0B0
353S02544	1	IC,RAA225501B,ICE,BOM1,A1,OTP-R0B1,QFN32	U5700	CRITICAL	P3V8AON_IC:A1_R0B1
353S02560	1	IC,RAA225501B,ICE,BOM1,A1,OTP-R0B2,QFN32	U5700	CRITICAL	P3V8AON_IC:A1_R0B2
353S02576	1	IC,RAA225501B,ICE,BOM1,A1,OTP-R0B3,QFN32	U5700	CRITICAL	P3V8AON_IC:A1_R0B3
353S02592	1	IC,RAA225501B,ICE,BOM1,A2,OTP-R0B0,QFN32	U5700	CRITICAL	P3V8AON_IC:A2_R0B0
353S02645	1	IC,RAA225501C,ICE,BOM5,A2,OTP-R170,QFN32	U5700	CRITICAL	P3V8AON_IC:A2_R170

<- 30A BOM1 OTP TGA PROGRAMS ARE GOING TO RAMP WITH

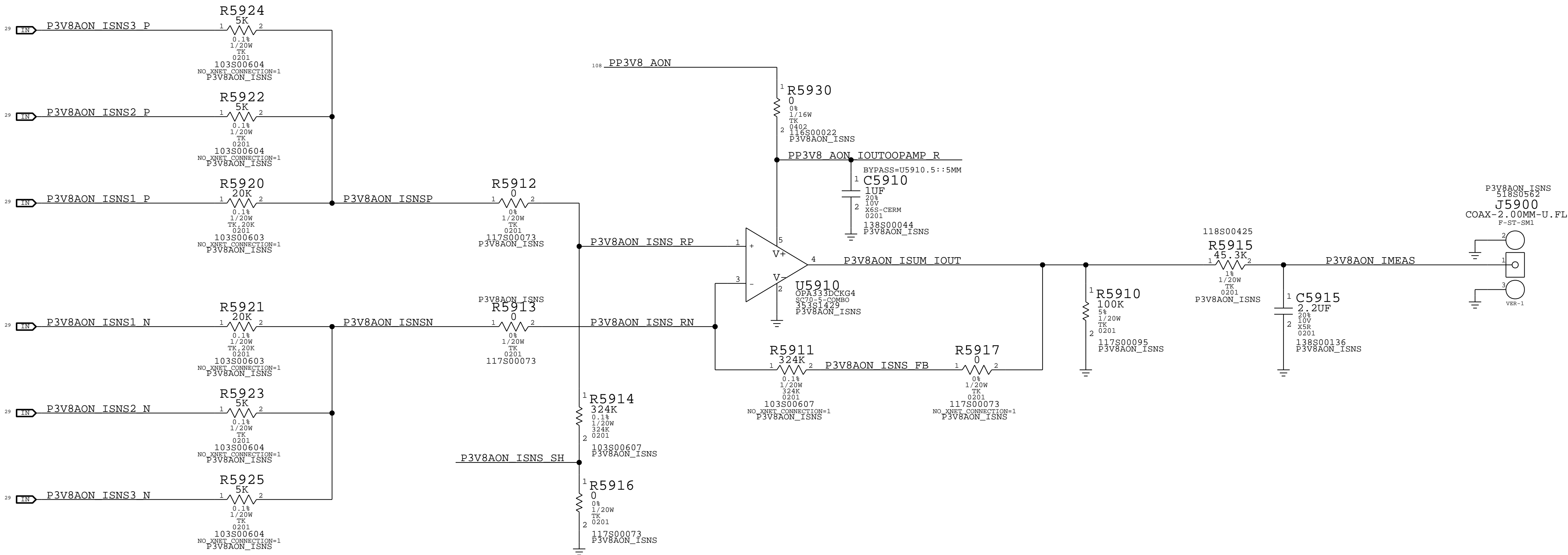
<- NEW BOM5 OTP FOR FUTURE PROGRAMS

BOM\_COST\_GROUP=SOC POWER

PAGE TITLE		
POWER: 3V8 AON (1/2)		
	DRAWING NUMBER	051-07793
	REVISION	5.0.0
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE I NOT TO REPRODUCE OR COPY IT I NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART I ALL RIGHTS RESERVED	BRANCH	evt-1
	PAGE	57 OF 999
	SHEET	28 OF 128




VMAIN CURRENT SENSE AMPLIFIER  
<RDAR://71648260>

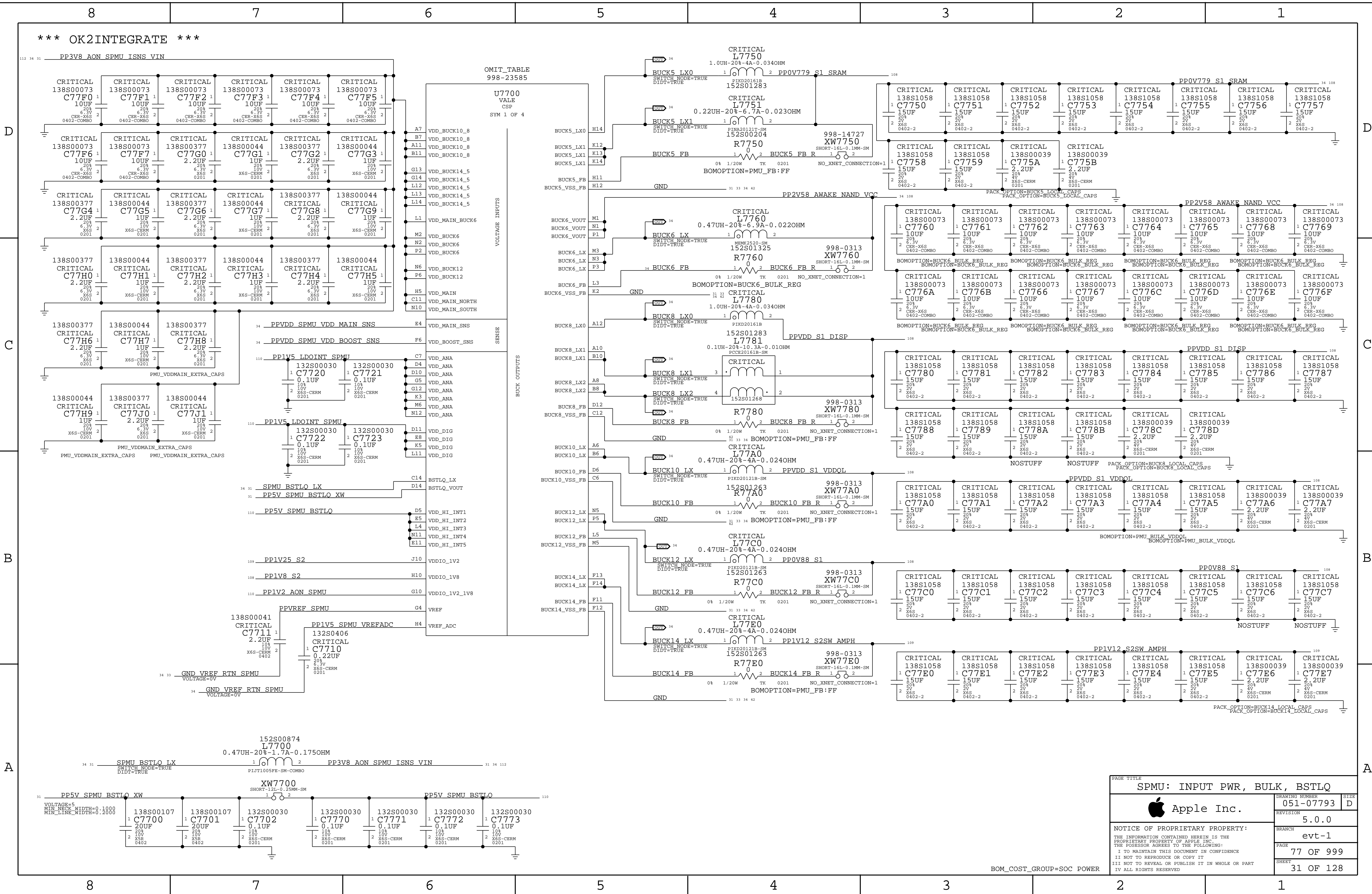


ZERO OHM RESISTOR TO ALLOW ACCESS TO VDRV

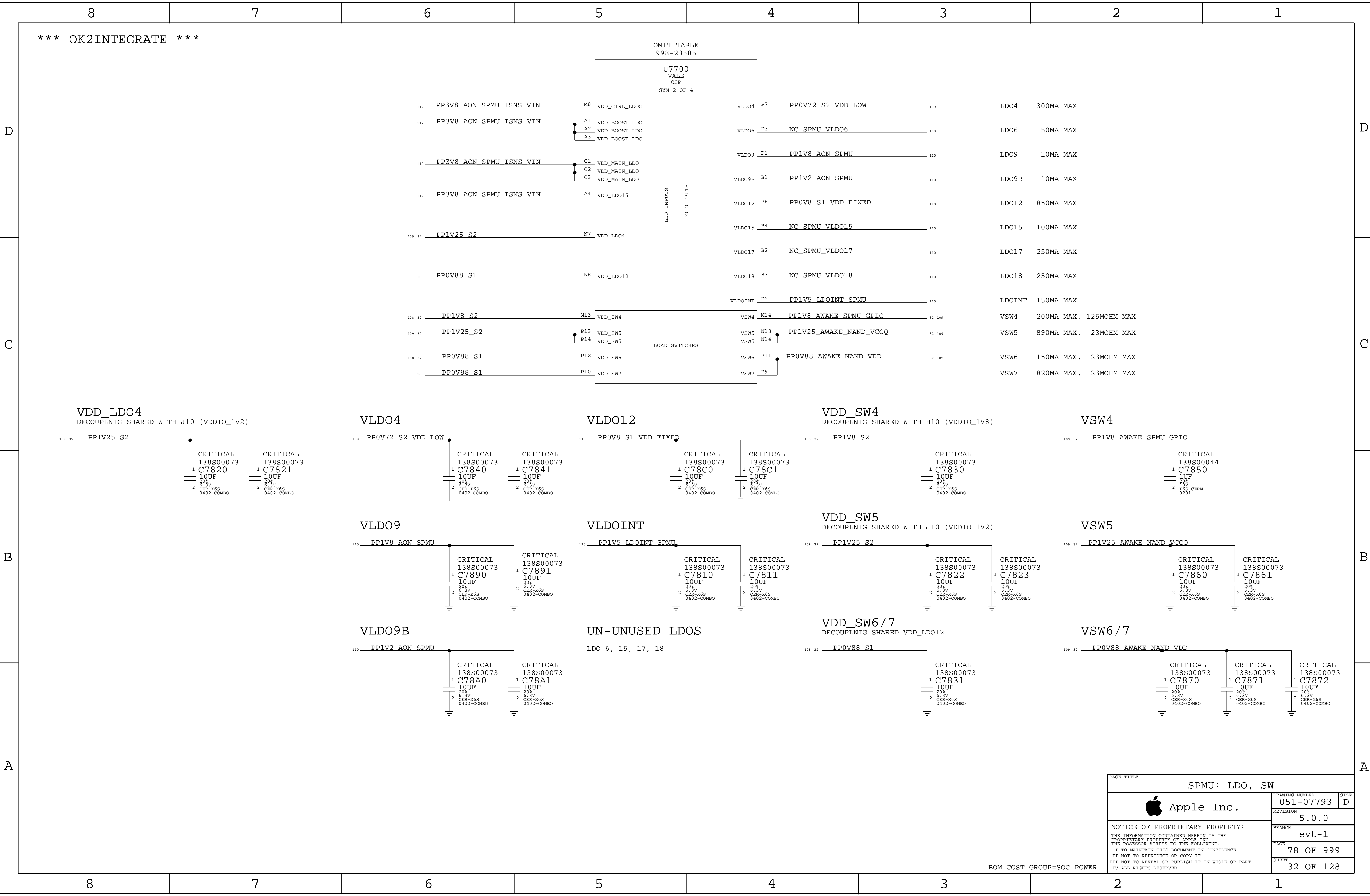


PAGE TITLE		
POWER: 3V8 AON SUPPORT		
 Apple Inc.	DRAWING NUMBER	051-07793
	REVISION	5.0.0
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	BRANCH	evt-1
	PAGE	59 OF 999
	SHEET	30 OF 128

BOM\_COST\_GROUP=PLATFORM POWER









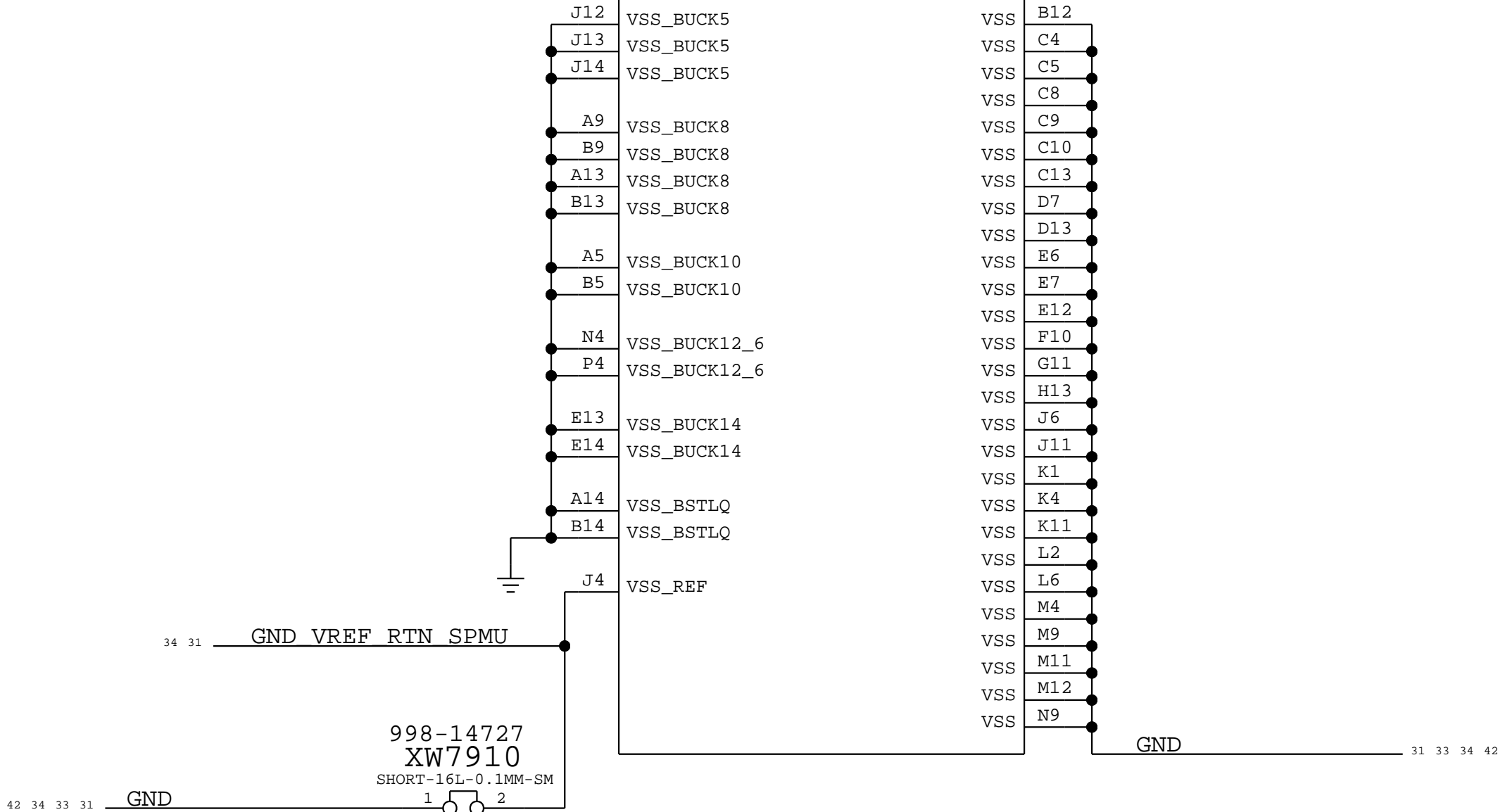
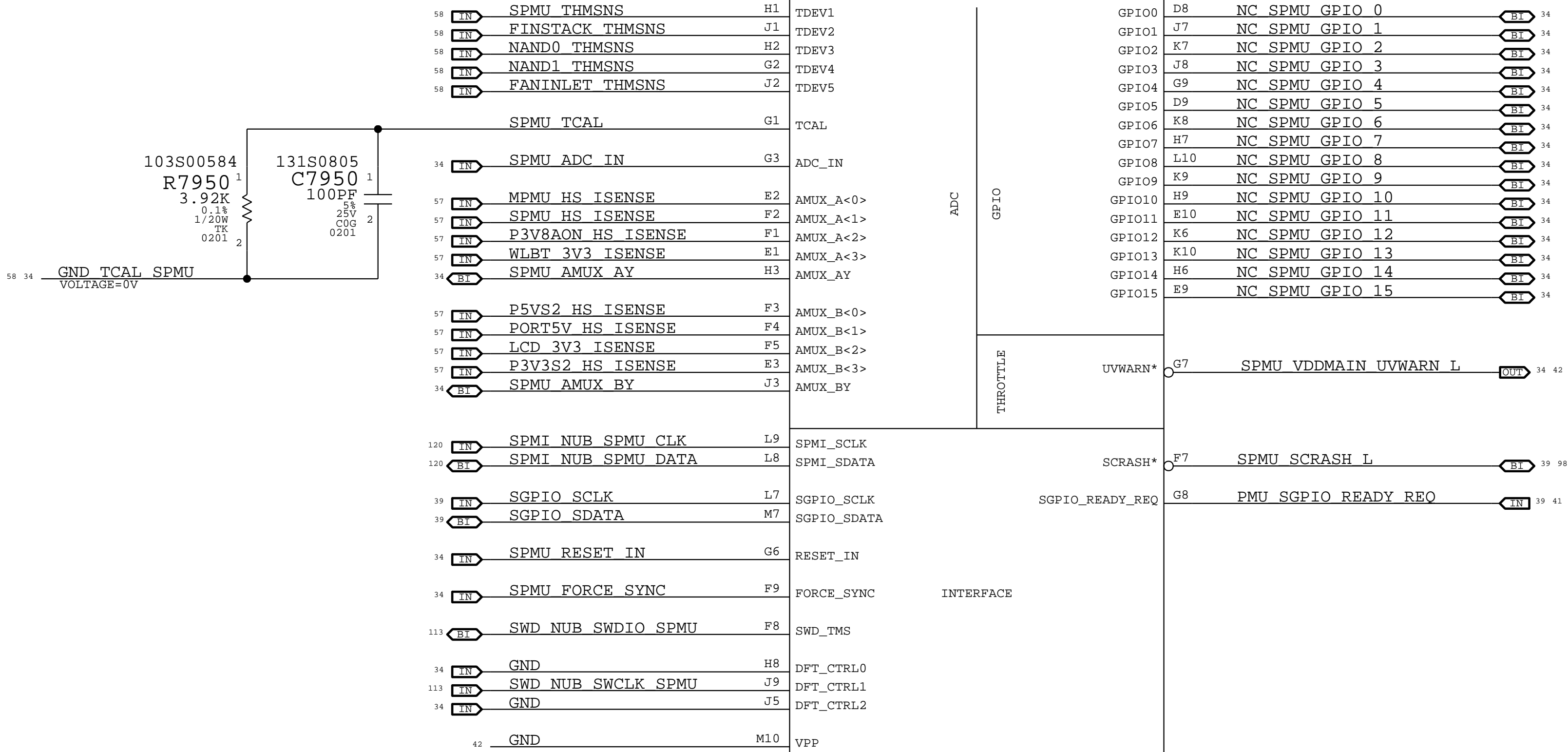
\*\*\* OK2INTEGRATE \*\*\*

OMIT\_TABLE  
998-23585

U7700  
VALE  
CSP  
SYM 3 OF 4


OMIT\_TABLE  
998-23585

U7700  
VALE  
CSP  
SYM 4 OF 4



#### PLACEMENT NOTES

CONNECT VSS\_REF THROUGH ALL GND LAYERS  
PLACE XW AT VSS\_REF PIN, ROUTE RTN SIGNAL BACK TO PASSIVES

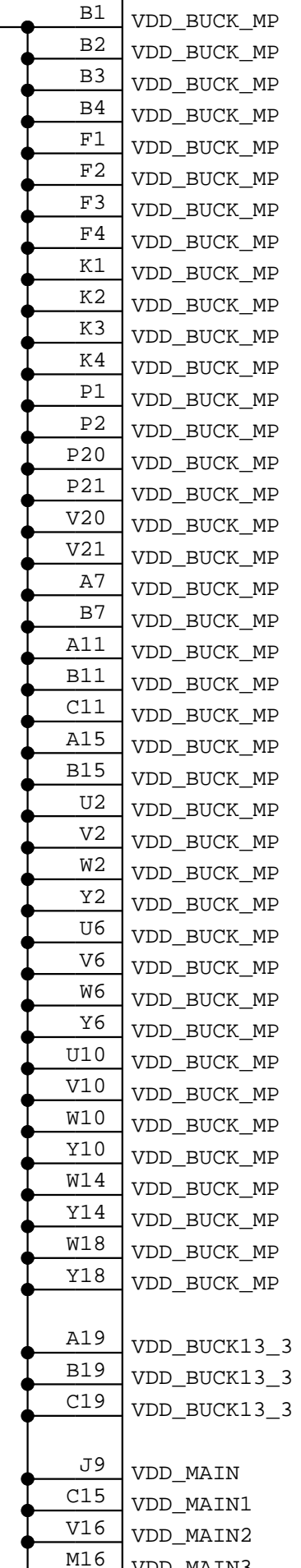
PAGE TITLE		
SPMU: GPIO, VSS		
 Apple Inc.	DRAWING NUMBER	051-07793
	REVISION	5.0.0
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	BRANCH	evt-1
	PAGE	79 OF 999
	SHEET	33 OF 128

BOM\_COST\_GROUP=SOC POWER



\*\*\* OK2INTEGRATE \*\*\*

PP3V8 AON MPMU ISNS VIN



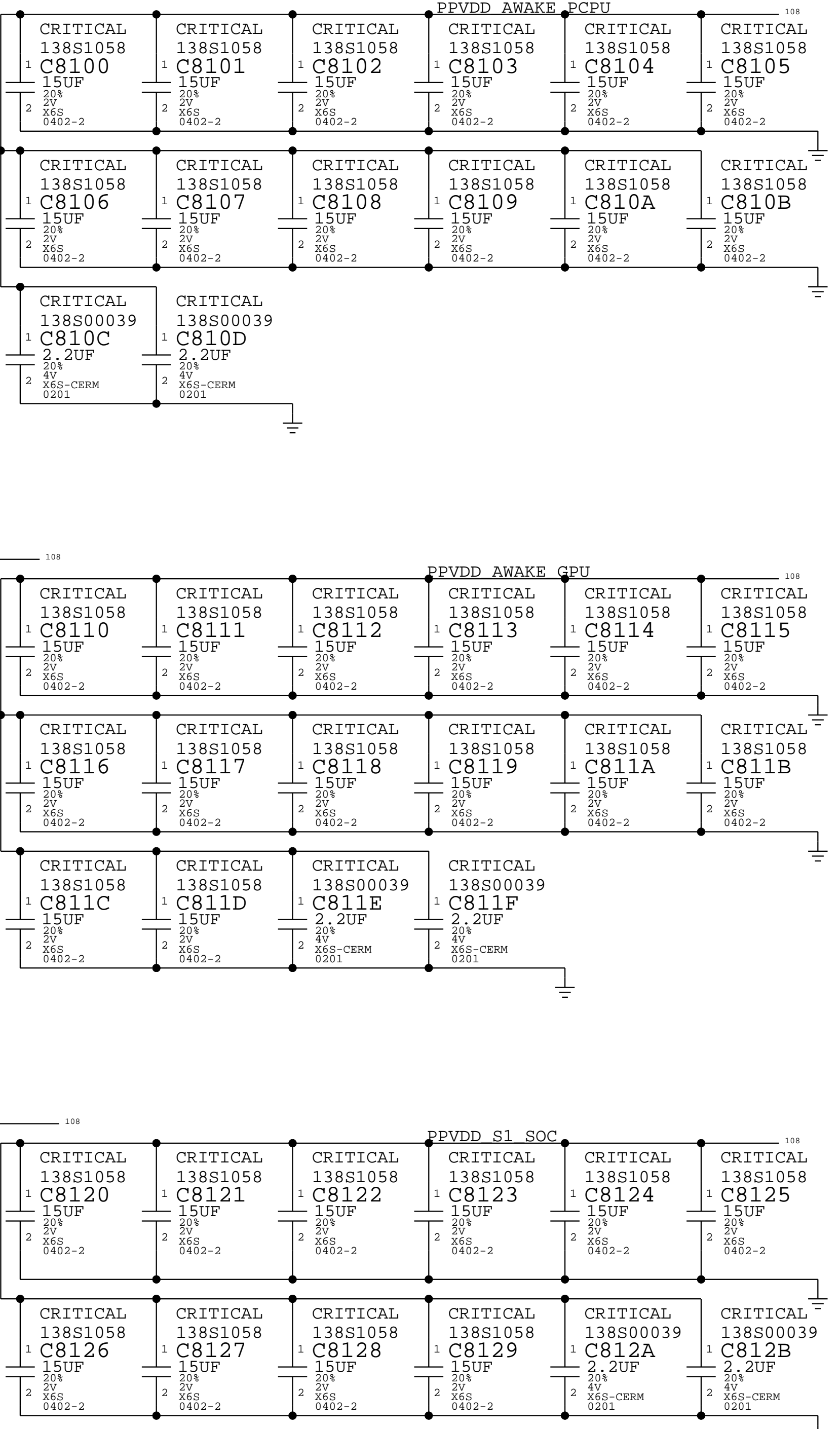
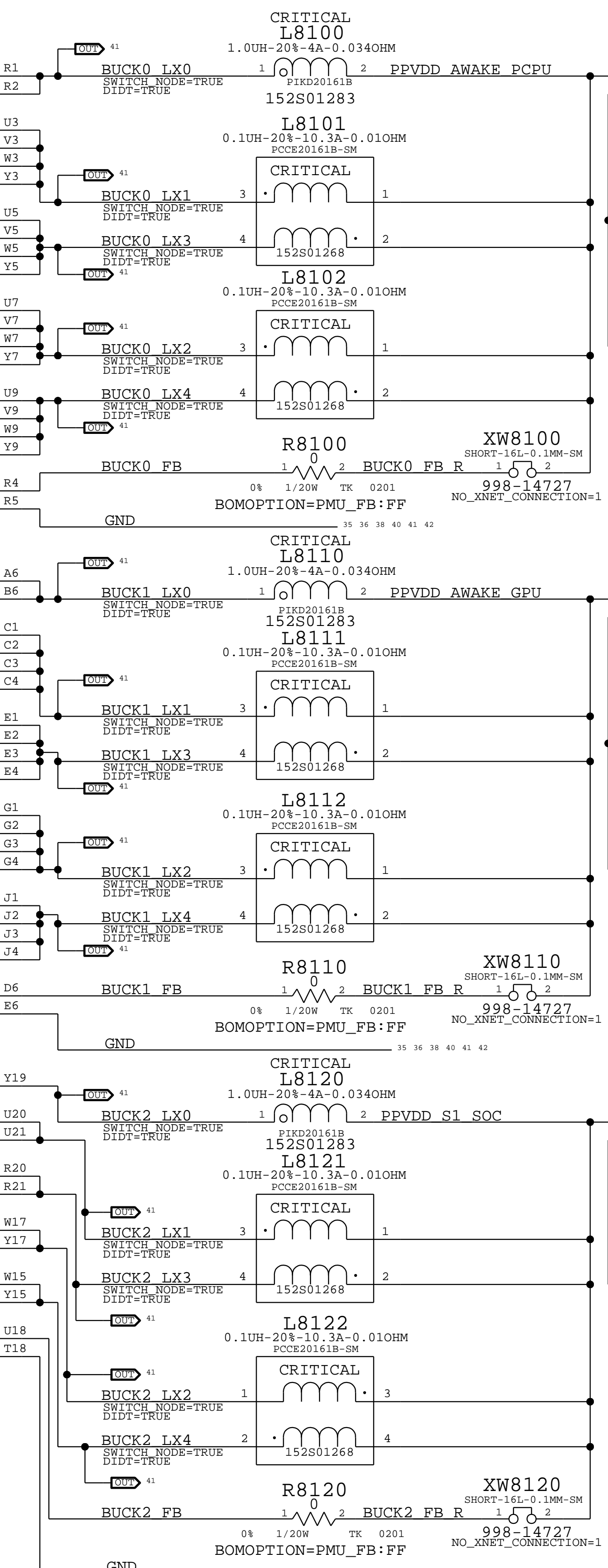
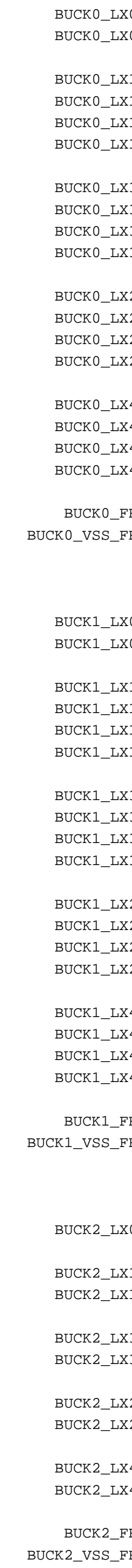
OMIT\_TABLE  
998-23524

U8100  
STOWE\_00  
CSP  
SYM 1 OF 5

VOLTAGE INPUTS

BUCK OUTPUTS

SENSE



PAGE TITLE		
MPMU: INPUT PWR, BUCK 0, 1, 2		
	DRAWING NUMBER	051-07793
	REVISION	5.0.0
NOTICE OF PROPRIETARY PROPERTY:		BRANCH
THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING:		evt-1
I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE		PAGE
II NOT TO REPRODUCE OR COPY IT		81 OF 999
III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART		SHEET
IV ALL RIGHTS RESERVED		35 OF 128

BOM\_COST\_GROUP=SOC POWER


\*\*\* OK2INTEGRATE \*\*\*

OMIT\_TABLE  
998-23524

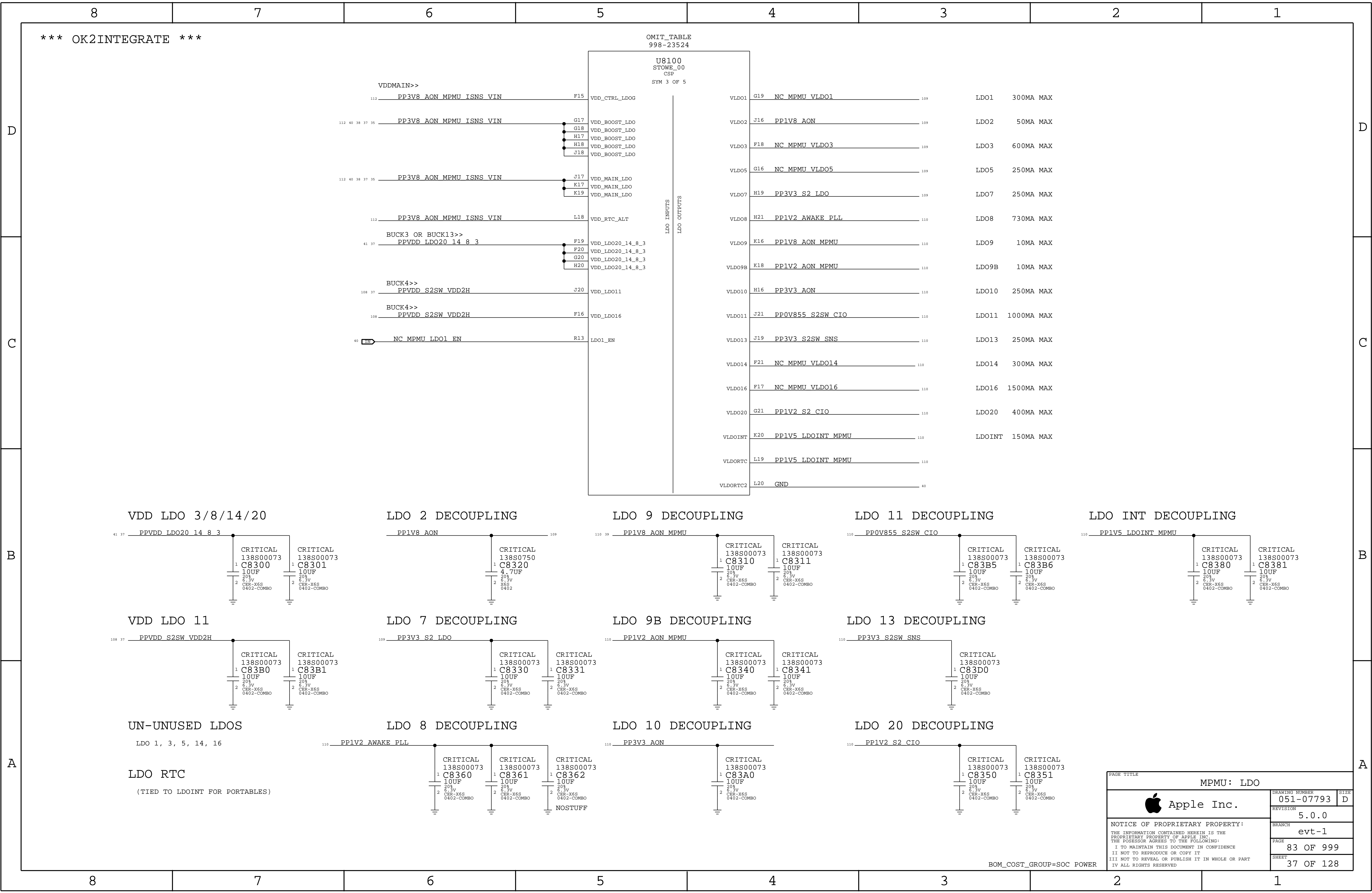
U8100  
STOWE\_00  
CSP  
SYM 2 OF 5

BUCK OUTPUTS  
CLOCK

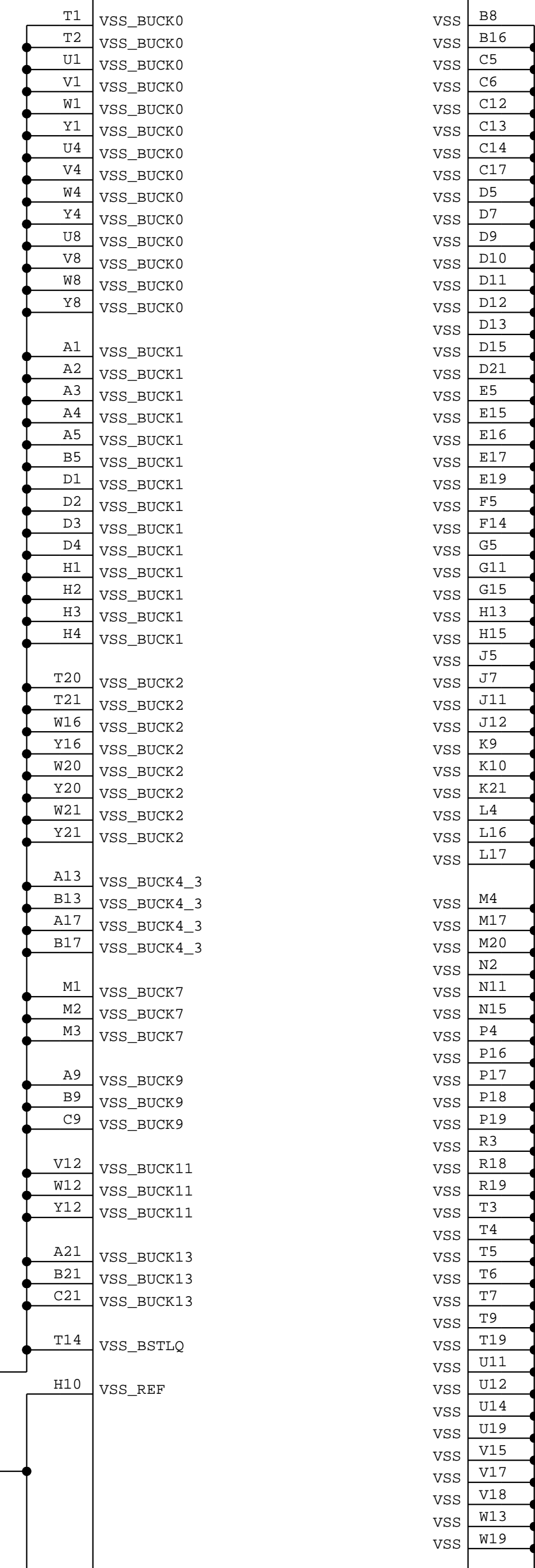
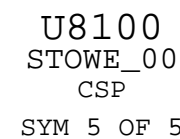
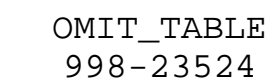
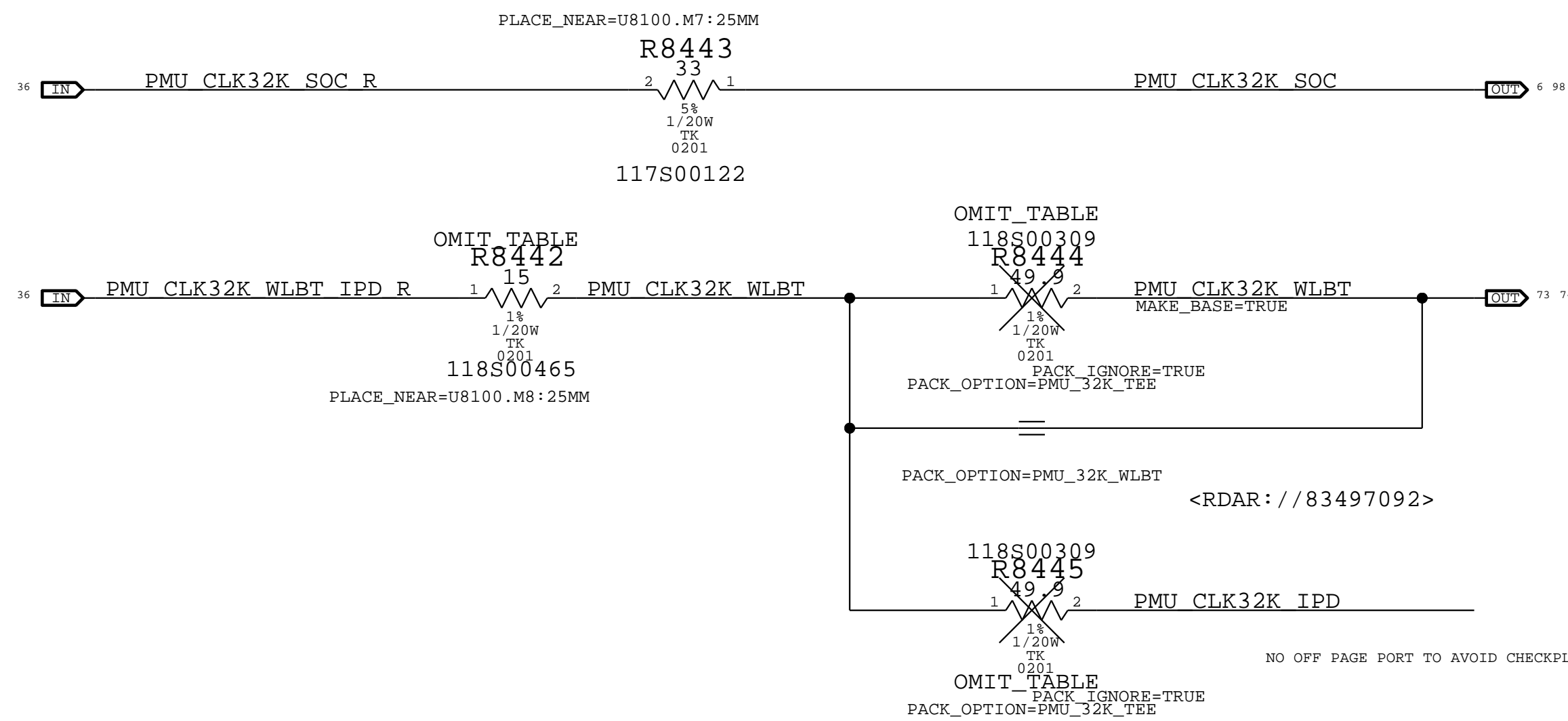
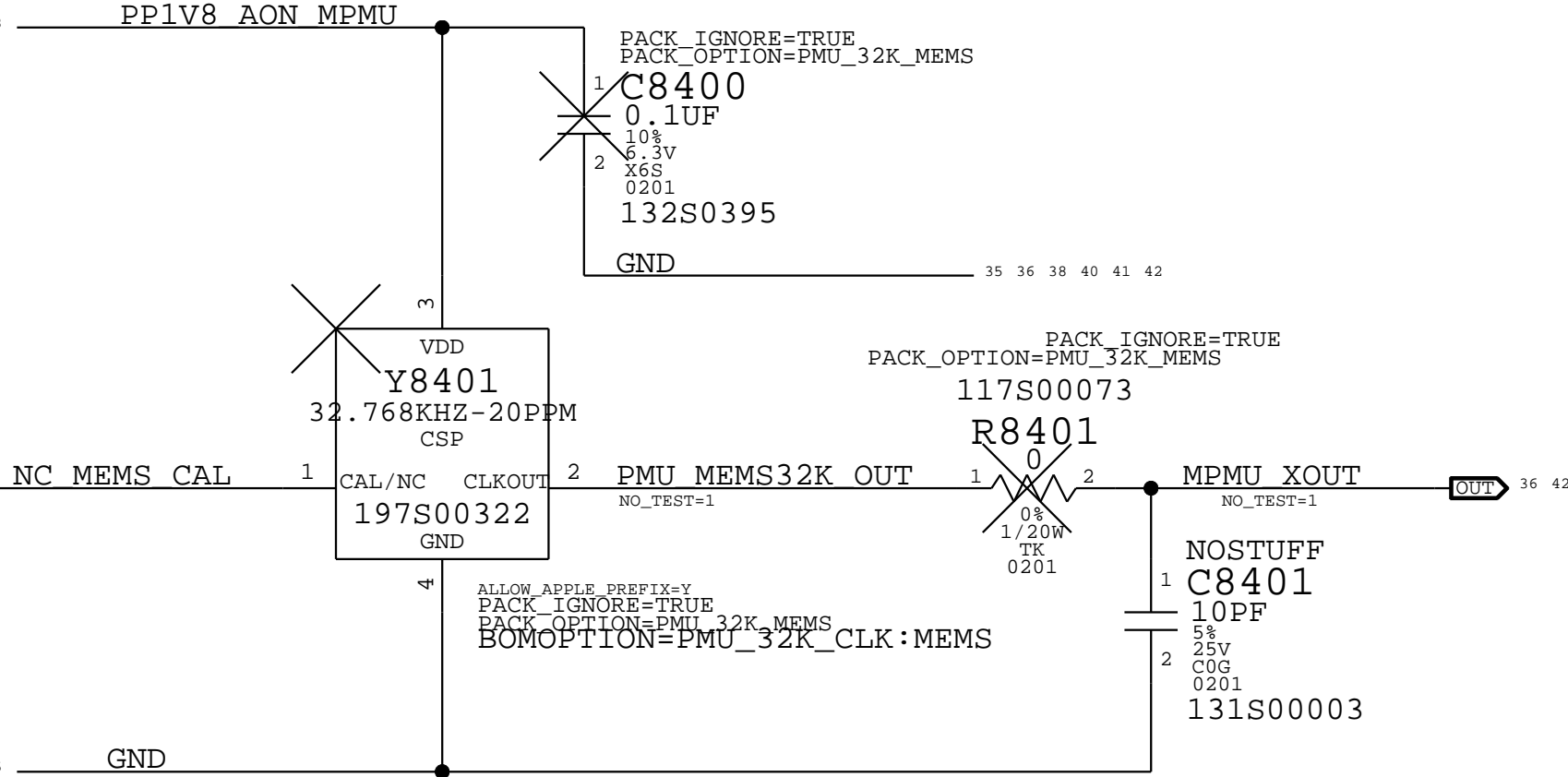
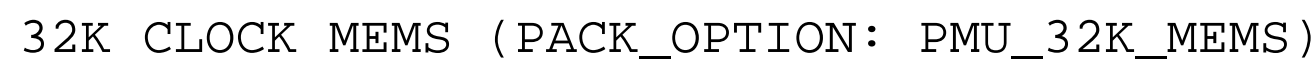
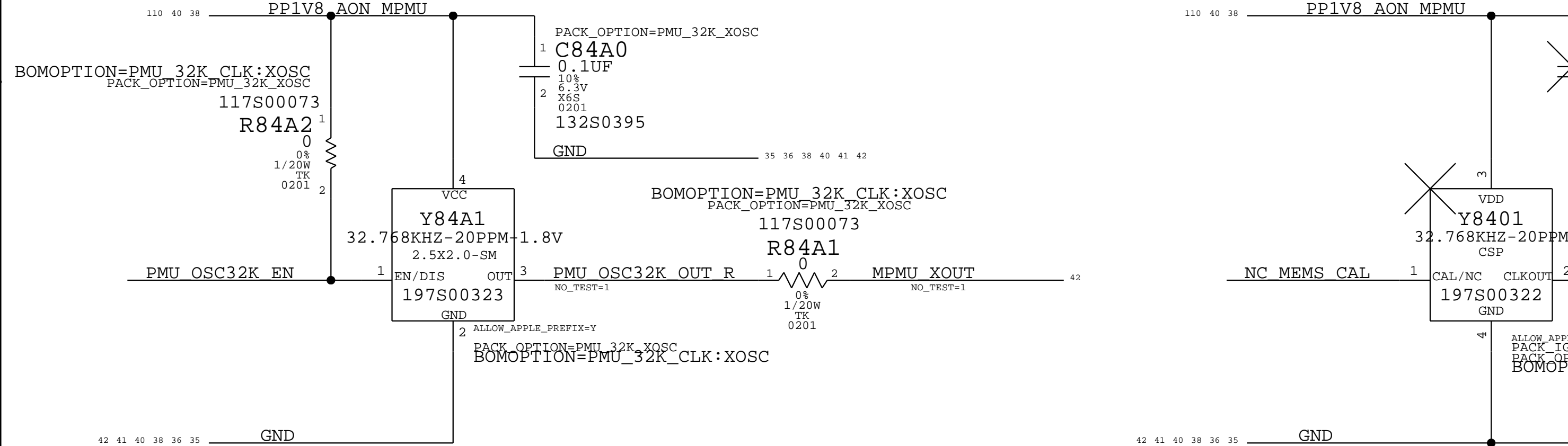
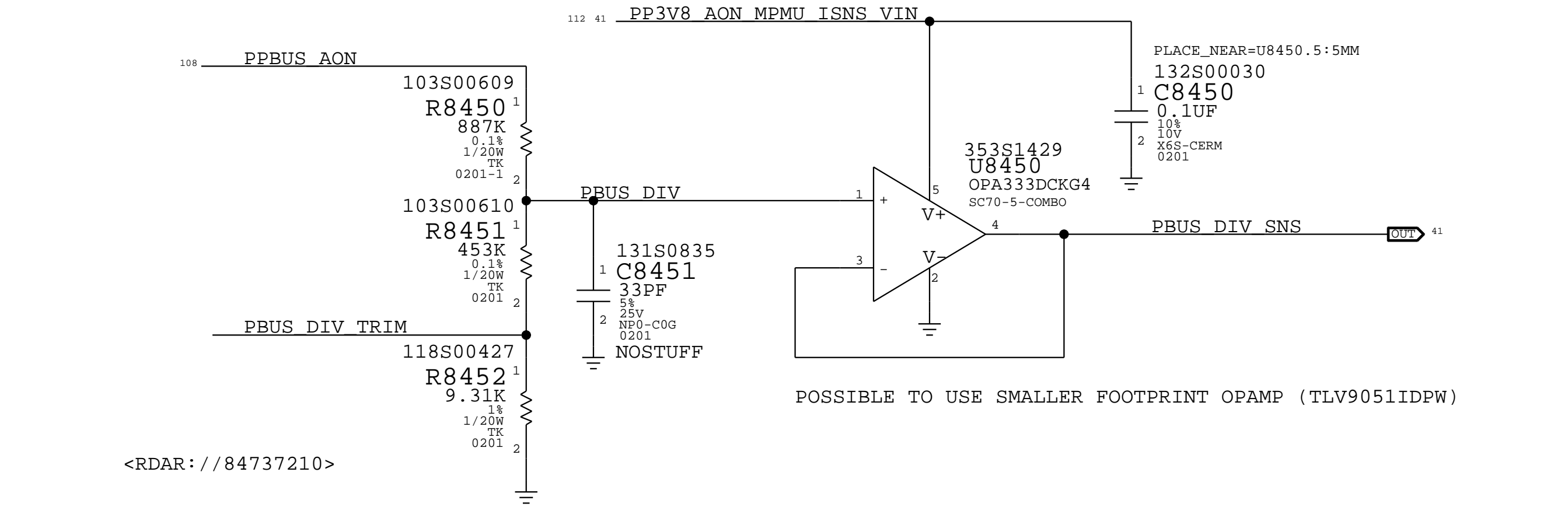
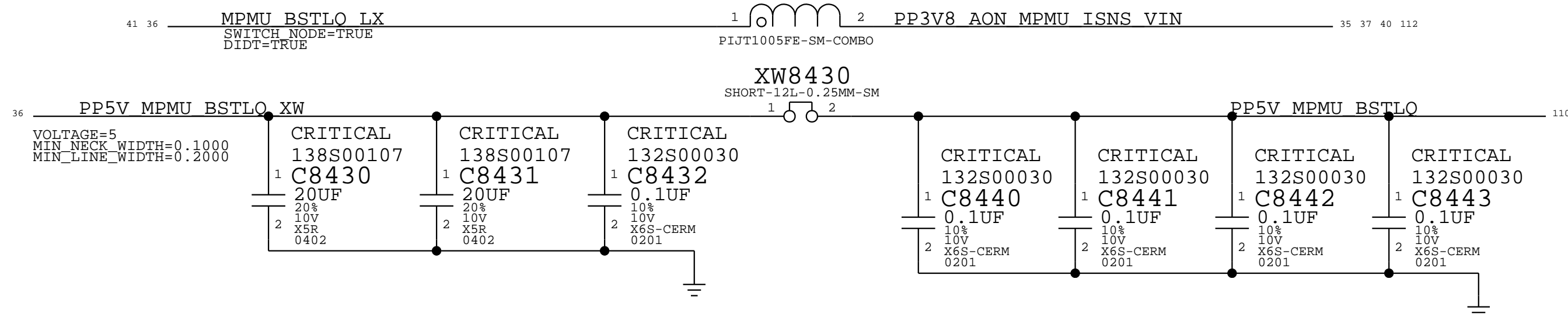
LOAD SWITCHES

PAGE TITLE MPMU: BUCK 3, 4, 7, 9, 11, 13, SW		
 Apple Inc.	DRAWING NUMBER 051-07793	SIZ D
	REVISION 5.0.0	
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	BRANCH evt-1	
	PAGE 82 OF 999	
	SHEET 36 OF 128	

BOM\_COST\_GROUP=SOC POWER








## PLACEMENT NOTES

CONNECT VSS\_REF THROUGH ALL GND LAYERS  
PLACE XW AT VSS\_REF PIN, ROUTE RTN SIGNAL BACK TO PASSIVES

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
118S00465	1	RES,TK,15 OHM,1%,1/20W,0201	R8442		PMU_OUT32K:TEE
117S00122	1	RES,TK,33 OHM,5%,1/20W,0201	R8442		PMU_OUT32K:WLBT
118S00309	2	RES,TK,49.9 OHM,1%,1/20W,0201	R8444,R8445		PMU_OUT32K:TEE

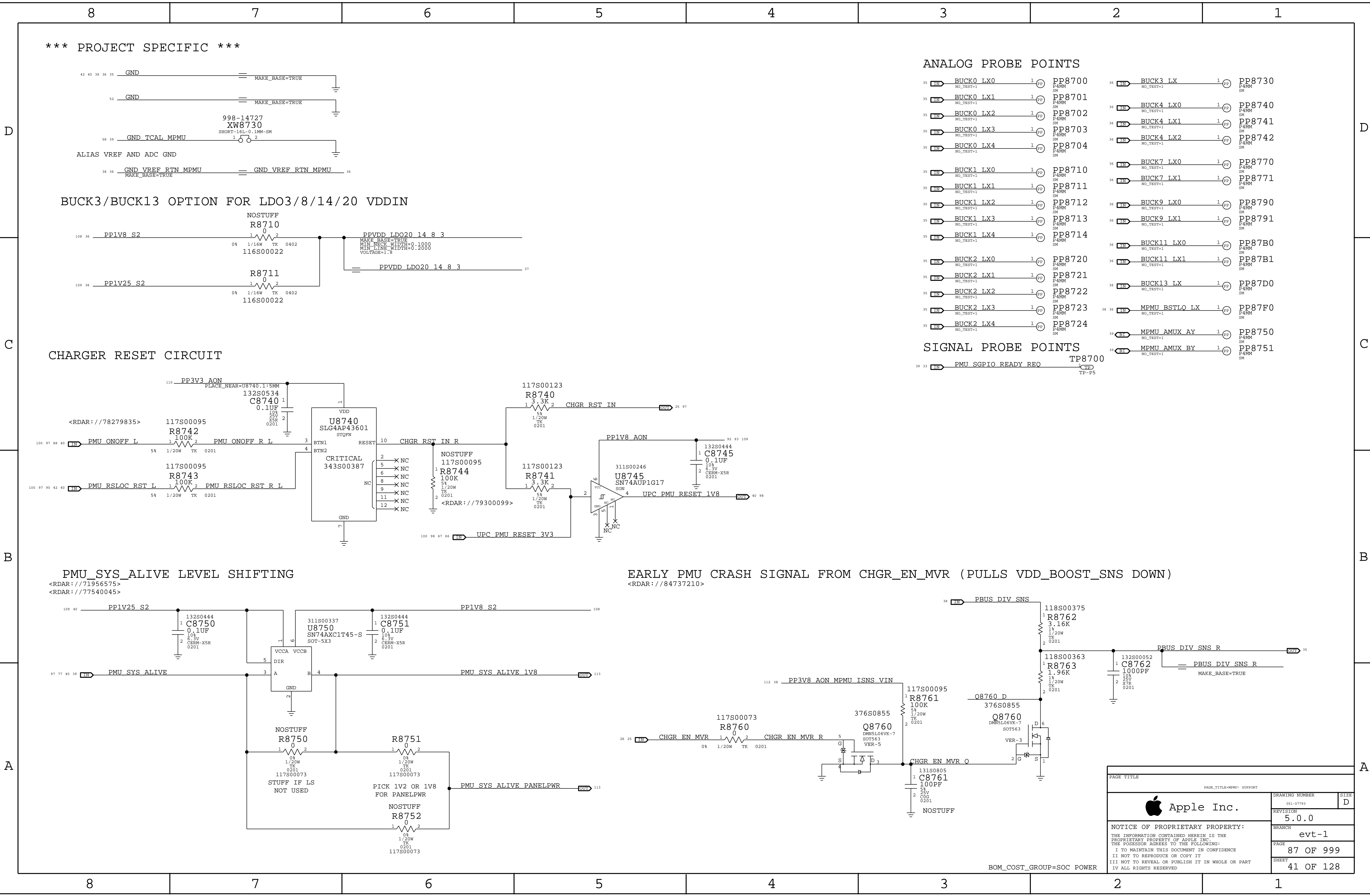
PAGE TITLE		MPMU: MISC CKT, VSS	
 Apple Inc.	DRAWING NUMBER	051-07793	STANDARD
	REVISION	5.0.0	
	BRANCH	evt-1	
NOTICE OF PROPRIETARY PROPERTY:		PAGE	84 OF 999
THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE III NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED		SHEET	38 OF 128

BOM\_COST\_GROUP=SOC POWER









D

C

B


A

D


C


B

A

PAGE TITLE		
PAGE_TITLE=MPMU: SUPPORT		
 Apple Inc.	DRAWING NUMBER	SIZE
	051-07793	D
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	REVISION	
	5.0.0	
	BRANCH	
	PAGE	87 OF 999
	SHEET	41 OF 128

	8	7	6	5	4	3	2	1																																																																																																																																																																																																																																																																																																																																																																																													
D	*** PROJECT SPECIFIC ***																																																																																																																																																																																																																																																																																																																																																																																																				
	ALIAS SPECIFIC TO FF (DIFFER FOR DEV)																																																																																																																																																																																																																																																																																																																																																																																																				
	<div>39 <u>PMU_RSLOC_RST_L</u> == <u>PMU_RSLOC_RST_L</u> 40 41 90 97 100</div> <div>36 <u>NC_MPMU_XIN</u> == <u>NC_MPMU_XIN</u> NO_TEST=1</div> <div>39 <u>SOC_WDOG</u> == <u>SOC_WDOG</u> 6 98</div> <div>39 <u>SOC_SOCHOT_L</u> == <u>SOC_SOCHOT_L</u> 8 97</div> <div>39 <u>PMU_RESET_L</u> == <u>PMU_RESET_L</u> 6 97</div> <div>39 <u>PMU_ACTIVE_READY</u> == <u>PMU_ACTIVE_READY</u> 6 64 97</div> <div>39 <u>DBL_CLICK_DET</u> == <u>DBL_CLICK_DET</u> 8 98</div> <div>39 <u>SOC_FORCE_DFU</u> == <u>SOC_FORCE_DFU</u> 6 40 65 97 100</div> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"><div>40 39 <u>BUCK0_THERMAL_THROTTLE_L</u> == <u>BUCK0_THERMAL_THROTTLE_L</u> 8 98</div><div>40 39 <u>BUCK1_THERMAL_THROTTLE_L</u> == <u>BUCK1_THERMAL_THROTTLE_L</u> 8 98</div><div>40 39 <u>TPT_MPMU_THROTTLE2_L</u> == <u>TPT_MPMU_THROTTLE2_L</u> NO_TEST=1</div><div>40 39 <u>MPMU_VDDHI_UVWARN_L</u> == <u>MPMU_VDDHI_UVWARN_L</u> 98 114</div><div>40 39 <u>MPMU_VDDMAIN_UVWARN_L</u> == <u>MPMU_VDDMAIN_UVWARN_L</u> 8 98</div><div>VBUS_DET SET AS IPU PER OTP (RDAR://71130901) ADD BACKUP FOR DEV BUT NC FOR FF.</div><div>39 <u>NC_MPMU_VBUS_DET</u> == <u>NC_MPMU_VBUS_DET</u> NO_TEST=1</div><div>39 <u>GND</u> == <u>GND</u> 35 36 38 40 41</div><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"><div>SPMU</div><div>34 33 <u>SPMU_VDDMAIN_UVWARN_L</u> == <u>SPMU_VDDMAIN_UVWARN_L</u> 98 114</div><div>33 <u>GND</u> == <u>GND</u> 31 33 34</div><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"><div>38 <u>MPMU_XOUT</u> == <u>MPMU_XOUT</u> 36 38</div></td><td></td></tr><tr><td rowspan="10">C</td><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td rowspan="10">B</td><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td rowspan="10">A</td><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="6"></td><td colspan="3">BOM_COST_GROUP=SOC POWER</td><td></td></tr><tr><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td></td></tr></td></tr></td></tr>																			<div>40 39 <u>BUCK0_THERMAL_THROTTLE_L</u> == <u>BUCK0_THERMAL_THROTTLE_L</u> 8 98</div> <div>40 39 <u>BUCK1_THERMAL_THROTTLE_L</u> == <u>BUCK1_THERMAL_THROTTLE_L</u> 8 98</div> <div>40 39 <u>TPT_MPMU_THROTTLE2_L</u> == <u>TPT_MPMU_THROTTLE2_L</u> NO_TEST=1</div> <div>40 39 <u>MPMU_VDDHI_UVWARN_L</u> == <u>MPMU_VDDHI_UVWARN_L</u> 98 114</div> <div>40 39 <u>MPMU_VDDMAIN_UVWARN_L</u> == <u>MPMU_VDDMAIN_UVWARN_L</u> 8 98</div> <div>VBUS_DET SET AS IPU PER OTP (RDAR://71130901) ADD BACKUP FOR DEV BUT NC FOR FF.</div> <div>39 <u>NC_MPMU_VBUS_DET</u> == <u>NC_MPMU_VBUS_DET</u> NO_TEST=1</div> <div>39 <u>GND</u> == <u>GND</u> 35 36 38 40 41</div> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"><div>SPMU</div><div>34 33 <u>SPMU_VDDMAIN_UVWARN_L</u> == <u>SPMU_VDDMAIN_UVWARN_L</u> 98 114</div><div>33 <u>GND</u> == <u>GND</u> 31 33 34</div><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"><div>38 <u>MPMU_XOUT</u> == <u>MPMU_XOUT</u> 36 38</div></td><td></td></tr><tr><td rowspan="10">C</td><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td rowspan="10">B</td><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td rowspan="10">A</td><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="6"></td><td colspan="3">BOM_COST_GROUP=SOC POWER</td><td></td></tr><tr><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td></td></tr></td></tr>																			<div>SPMU</div> <div>34 33 <u>SPMU_VDDMAIN_UVWARN_L</u> == <u>SPMU_VDDMAIN_UVWARN_L</u> 98 114</div> <div>33 <u>GND</u> == <u>GND</u> 31 33 34</div> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"><div>38 <u>MPMU_XOUT</u> == <u>MPMU_XOUT</u> 36 38</div></td><td></td></tr> <tr><td rowspan="10">C</td><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td rowspan="10">B</td><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td rowspan="10">A</td><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="6"></td><td colspan="3">BOM_COST_GROUP=SOC POWER</td><td></td></tr> <tr><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td></td></tr>																			<div>38 <u>MPMU_XOUT</u> == <u>MPMU_XOUT</u> 36 38</div>										C																																																																																																					B																																																																																																					A																																																																																																											BOM_COST_GROUP=SOC POWER				8	7	6	5	4	3	2	1	
	<div>40 39 <u>BUCK0_THERMAL_THROTTLE_L</u> == <u>BUCK0_THERMAL_THROTTLE_L</u> 8 98</div> <div>40 39 <u>BUCK1_THERMAL_THROTTLE_L</u> == <u>BUCK1_THERMAL_THROTTLE_L</u> 8 98</div> <div>40 39 <u>TPT_MPMU_THROTTLE2_L</u> == <u>TPT_MPMU_THROTTLE2_L</u> NO_TEST=1</div> <div>40 39 <u>MPMU_VDDHI_UVWARN_L</u> == <u>MPMU_VDDHI_UVWARN_L</u> 98 114</div> <div>40 39 <u>MPMU_VDDMAIN_UVWARN_L</u> == <u>MPMU_VDDMAIN_UVWARN_L</u> 8 98</div> <div>VBUS_DET SET AS IPU PER OTP (RDAR://71130901) ADD BACKUP FOR DEV BUT NC FOR FF.</div> <div>39 <u>NC_MPMU_VBUS_DET</u> == <u>NC_MPMU_VBUS_DET</u> NO_TEST=1</div> <div>39 <u>GND</u> == <u>GND</u> 35 36 38 40 41</div> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"><div>SPMU</div><div>34 33 <u>SPMU_VDDMAIN_UVWARN_L</u> == <u>SPMU_VDDMAIN_UVWARN_L</u> 98 114</div><div>33 <u>GND</u> == <u>GND</u> 31 33 34</div><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"><div>38 <u>MPMU_XOUT</u> == <u>MPMU_XOUT</u> 36 38</div></td><td></td></tr><tr><td rowspan="10">C</td><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td rowspan="10">B</td><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td rowspan="10">A</td><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="9"></td><td></td></tr><tr><td colspan="6"></td><td colspan="3">BOM_COST_GROUP=SOC POWER</td><td></td></tr><tr><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td></td></tr></td></tr>																			<div>SPMU</div> <div>34 33 <u>SPMU_VDDMAIN_UVWARN_L</u> == <u>SPMU_VDDMAIN_UVWARN_L</u> 98 114</div> <div>33 <u>GND</u> == <u>GND</u> 31 33 34</div> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"><div>38 <u>MPMU_XOUT</u> == <u>MPMU_XOUT</u> 36 38</div></td><td></td></tr> <tr><td rowspan="10">C</td><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td rowspan="10">B</td><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td rowspan="10">A</td><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="6"></td><td colspan="3">BOM_COST_GROUP=SOC POWER</td><td></td></tr> <tr><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td></td></tr>																			<div>38 <u>MPMU_XOUT</u> == <u>MPMU_XOUT</u> 36 38</div>										C																																																																																																					B																																																																																																					A																																																																																																											BOM_COST_GROUP=SOC POWER				8	7	6	5	4	3	2	1																				
	<div>SPMU</div> <div>34 33 <u>SPMU_VDDMAIN_UVWARN_L</u> == <u>SPMU_VDDMAIN_UVWARN_L</u> 98 114</div> <div>33 <u>GND</u> == <u>GND</u> 31 33 34</div> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"><div>38 <u>MPMU_XOUT</u> == <u>MPMU_XOUT</u> 36 38</div></td><td></td></tr> <tr><td rowspan="10">C</td><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td rowspan="10">B</td><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td rowspan="10">A</td><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="9"></td><td></td></tr> <tr><td colspan="6"></td><td colspan="3">BOM_COST_GROUP=SOC POWER</td><td></td></tr> <tr><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td></td></tr>																			<div>38 <u>MPMU_XOUT</u> == <u>MPMU_XOUT</u> 36 38</div>										C																																																																																																					B																																																																																																					A																																																																																																											BOM_COST_GROUP=SOC POWER				8	7	6	5	4	3	2	1																																							
	<div>38 <u>MPMU_XOUT</u> == <u>MPMU_XOUT</u> 36 38</div>																																																																																																																																																																																																																																																																																																																																																																																																				
	C																																																																																																																																																																																																																																																																																																																																																																																																				
B																																																																																																																																																																																																																																																																																																																																																																																																					
A																																																																																																																																																																																																																																																																																																																																																																																																					
						BOM_COST_GROUP=SOC POWER																																																																																																																																																																																																																																																																																																																																																																																															
8	7	6	5	4	3	2	1																																																																																																																																																																																																																																																																																																																																																																																														

PAGE TITLE		
PMU: SUPPORT - FF		
 Apple Inc.	DRAWING NUMBER	SIZE
	051-07793	D
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	REVISION	
	5.0.0	
	BRANCH	evt-1
	PAGE	88 OF 999
	SHEET	42 OF 128

PAGE TITLE		
PMU: SUPPORT - FF		
 Apple Inc.	DRAWING NUMBER	SIZE
	051-07793	D
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	REVISION	5.0.0
	BRANCH	evt-1
	PAGE	88 OF 999
	SHEET	42 OF 128

\* OK2INTEGRATE \*

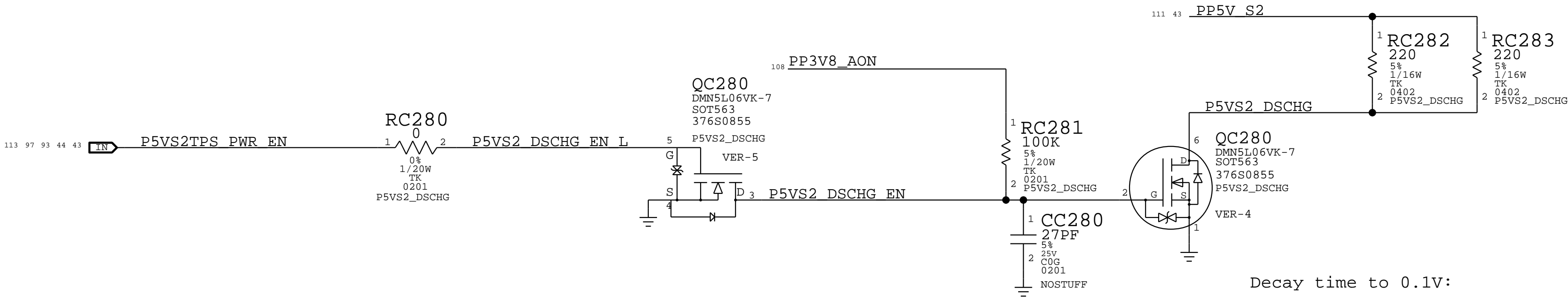
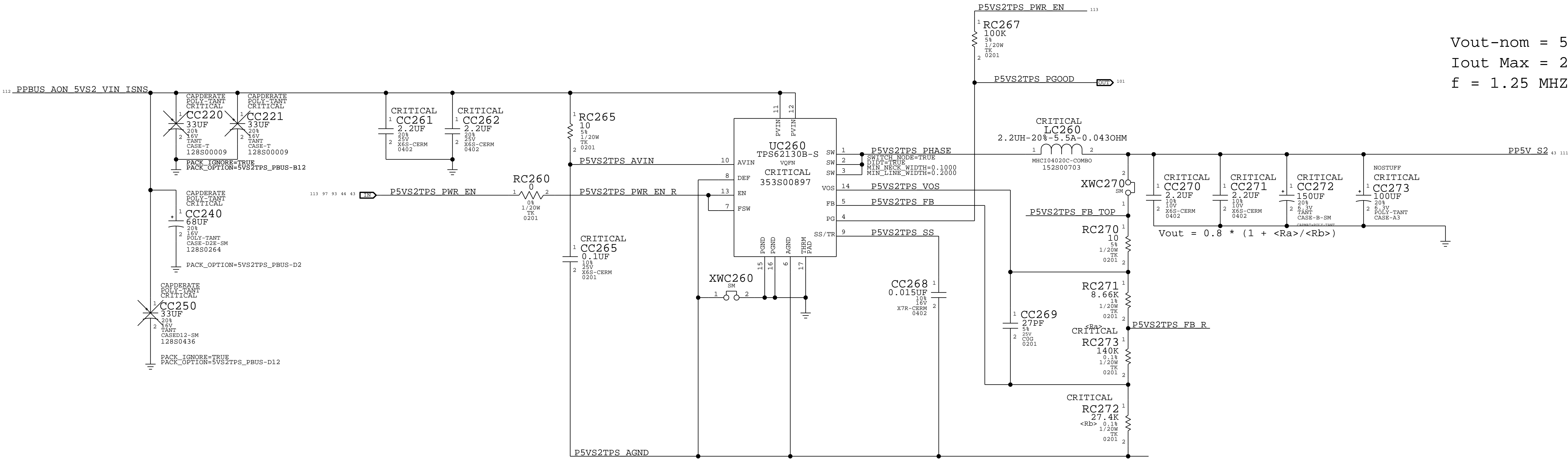
5V\_S2 Voltage Regulator (low power option)

SET ONE OPTION FOR PBUS CAPS

PACK\_OPTION=5VS2TPS\_PBUS-B12  
PACK\_OPTION=5VS2TPS\_PBUS-D2  
PACK\_OPTION=5VS2TPS\_PBUS-D12

START UP TIME = 4.7/7.5/10.5 MS  
(min/typ/max)

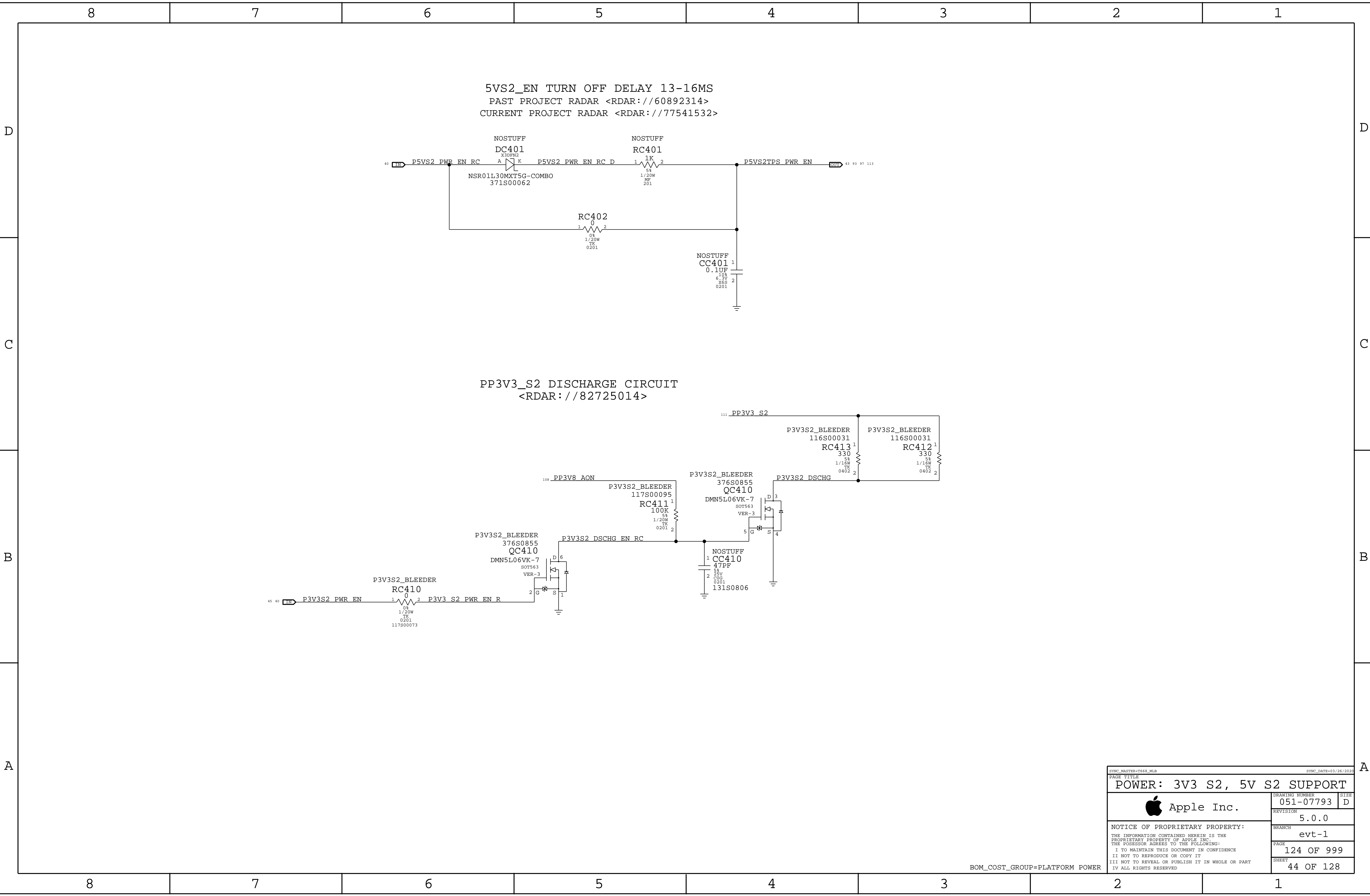
Vout-nom = 5.14V  
Iout Max = 2.1A  
f = 1.25 MHZ



Decay time to 0.1V:  
86ms-min / 114ms-typ / 148ms-max  
(Vout=5.14V5%, Cout=260uF20%, R=2x220R5%)

PAGE TITLE			
POWER: 5V S2 TPS62130			
Apple Inc.	DRAWING NUMBER	051-07793	
	REVISION	5.0.0	
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	BRANCH	evt-1	
	PAGE	122 OF 999	
	SHEET	43 OF 128	

BOM\_COST\_GROUP=PLATFORM POWER



PAGE TITLE		DRAWING NUMBER		REVISION	
POWER: 3V3 S2, 5V S2 SUPPORT		051-07793		5.0.0	
NOTICE OF PROPRIETARY PROPERTY:		PAGE		SHEET	
THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING:		124 OF 999		44 OF 128	
I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE					
II NOT TO REPRODUCE OR COPY IT					
III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART					
IV ALL RIGHTS RESERVED					

BOM\_COST\_GROUP=PLATFORM POWER



\* OK2INTEGRATE \*

# 3V3\_S2 VR

SET ONE OPTION FOR PBUS CAPS

PACK\_OPTION=3V3\_S2\_PBUS-B12

PACK\_OPTION=3V3\_S2\_PBUS-D2

PACK\_OPTION=3V3\_S2\_PBUS-D12

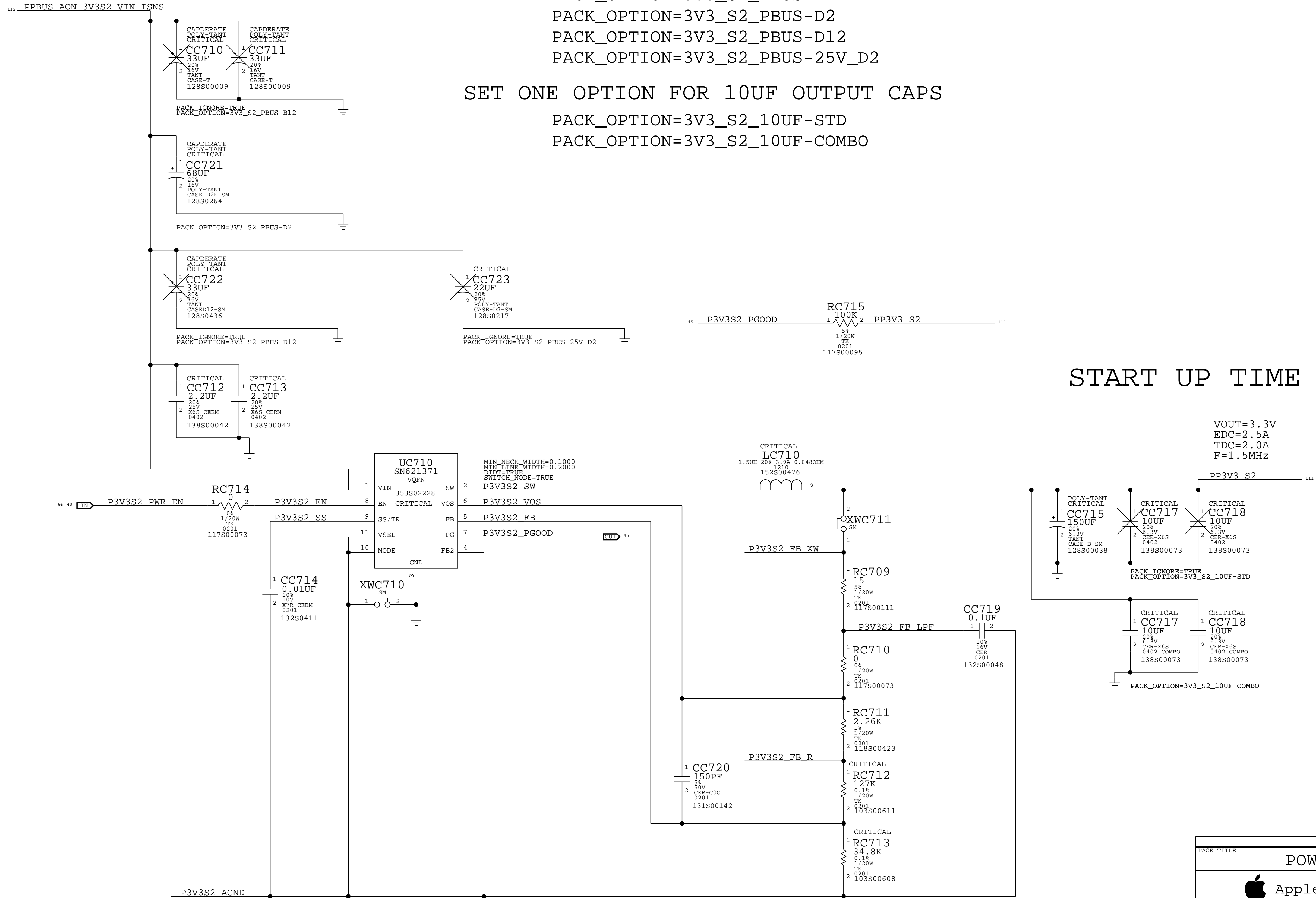
PACK\_OPTION=3V3\_S2\_PBUS-25V\_D2

SET ONE OPTION FOR 10UF OUTPUT CAPS

PACK\_OPTION=3V3\_S2\_10UF-STD

PACK\_OPTION=3V3\_S2\_10UF-COMBO

START UP TIME <5 MS

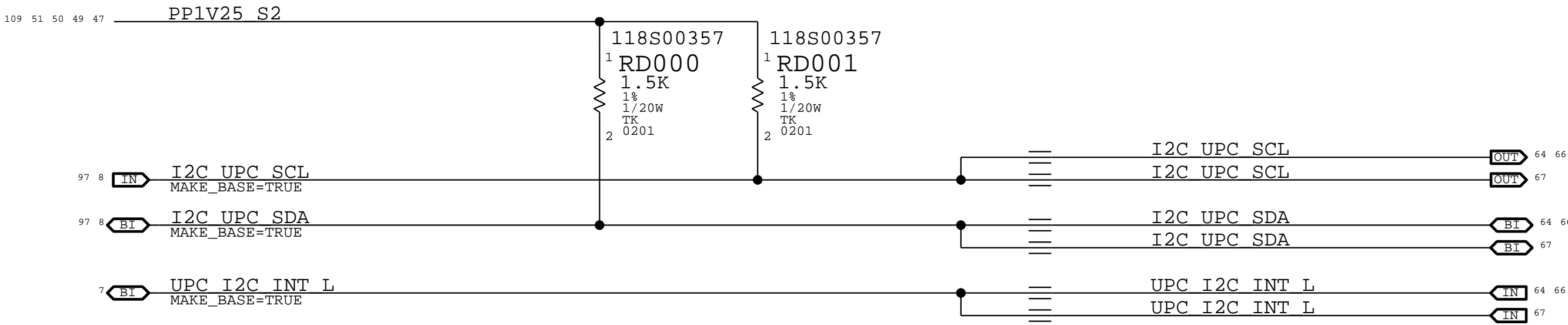


BOM\_COST\_GROUP=PLATFORM POWER

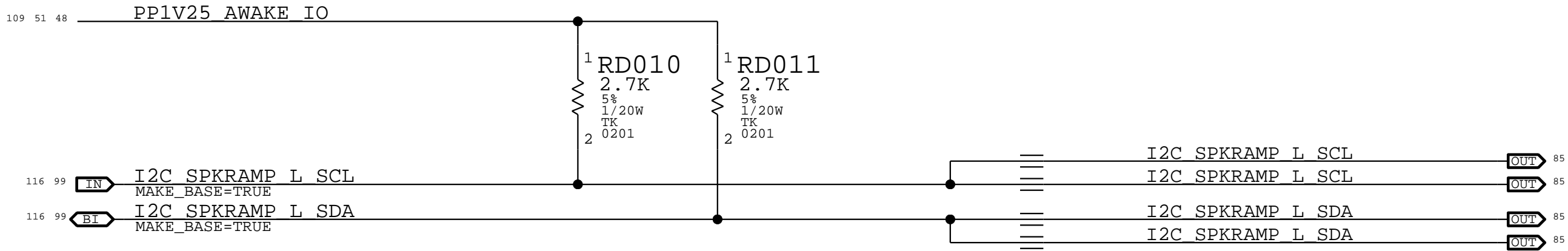
PAGE TITLE		
POWER: 3V3 S2		
	DRAWING NUMBER	051-07793
	REVISION	5.0.0
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	BRANCH	evt-1
	PAGE	127 OF 999
	SHEET	45 OF 128



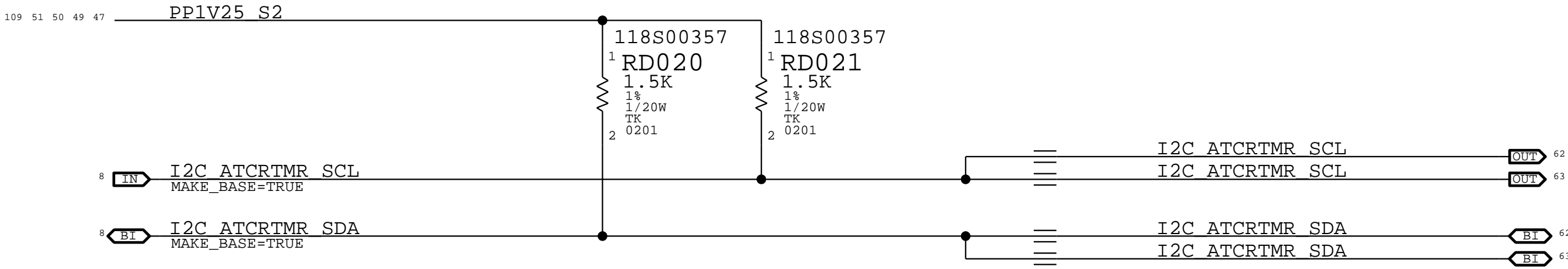
8	7	6	5	4	3	2	1
AP_I2C0							
DEVICE	DIAGS	BUS	7B	8B	WR		
UPC 0	0		0X38	0X70			
UPC 1			0X3F	0X7E			
ALL CALL			0X6B	0XD6			



8	7	6	5	4	3	2	1
AP_I2C1							
DEVICE	DIAGS	BUS	7B	8B	WR		
SPKRAMP A	1		0X38	0X70			
SPKRAMP B			0X39	0X72			



8	7	6	5	4	3	2	1
AP_I2C2							
DEVICE	DIAGS	BUS	7B	8B	WR		
RT13 0	2		0X18	0X30			
RT13 1			0X19	0X32			

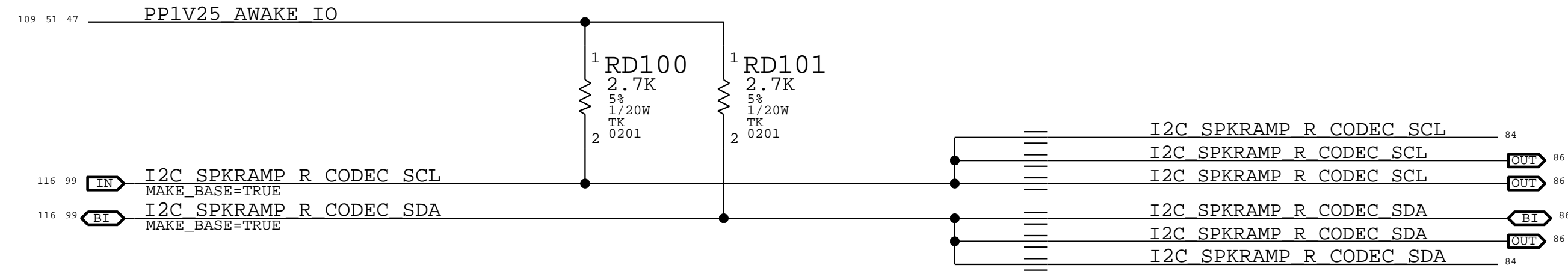


PAGE TITLE			SOC I2C: AP (1/2)		
		DRAWING NUMBER	051-07793	SIZE	D
		REVISION	5.0.0		
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED		BRANCH	evt-1		
		PAGE	130 OF 999		
		SHEET	47 OF 128		

BOM\_COST\_GROUP=SOC

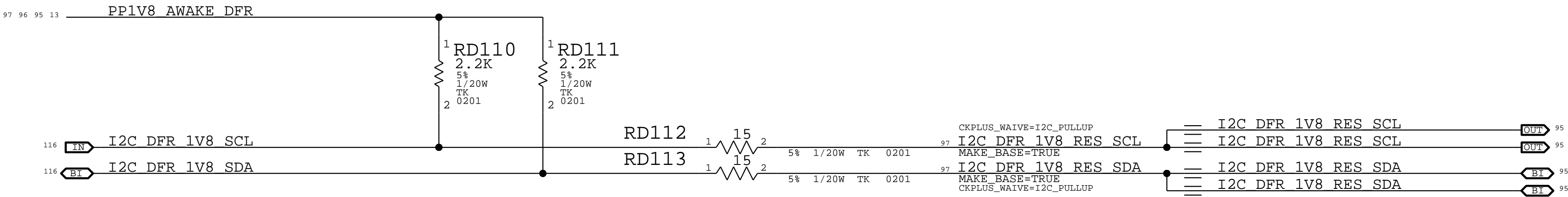
AP\_I2C3

DEVICE	DIAGS	BUS	7B	8B	WR
SPKRAMP D	3		0X3B	0X76	
SPKRAMP E			0X3C	0X78	
CODEC			0X4B	0X96	



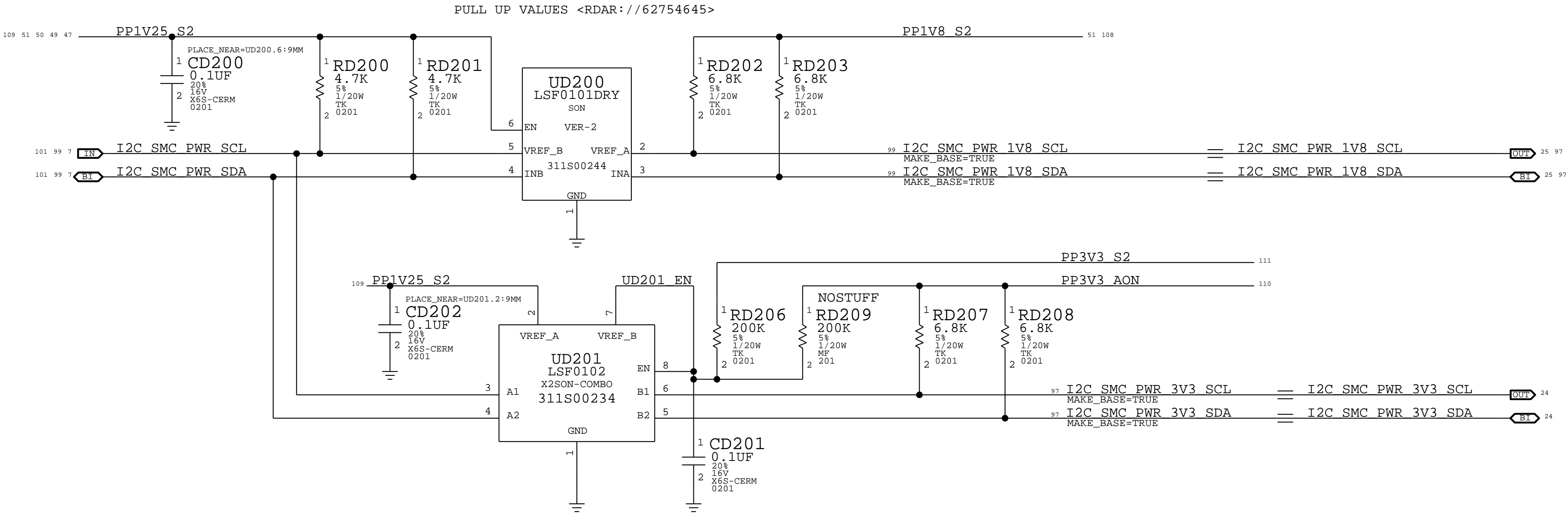
AP\_I2C4

DEVICE	DIAGS	BUS	7B	8B	WR
DFR DISP DRIVER	4		0X4C	0X98	
DFR TOUCH EEPROM			0X50	0XA0	
DFR DISP TEMP SENSE			0X??	0X??	



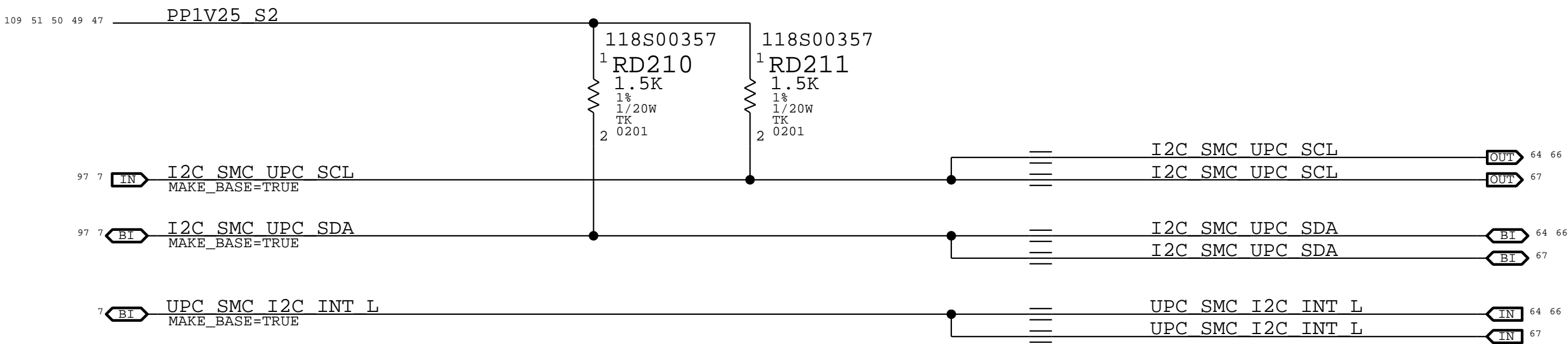
SMC\_I2C0

DEVICE	DIAGS	BUS	7B	8B	WR
CHARGER	8		0x09	0x12	
BMU			0x0B	0x16	



SMC\_I2C1

DEVICE	DIAGS	BUS	7B	8B	WR
UPC 0	9		0x38	0x70	
UPC 1			0x3F	0x7E	
ALL CALL			0X6B	0XD6	



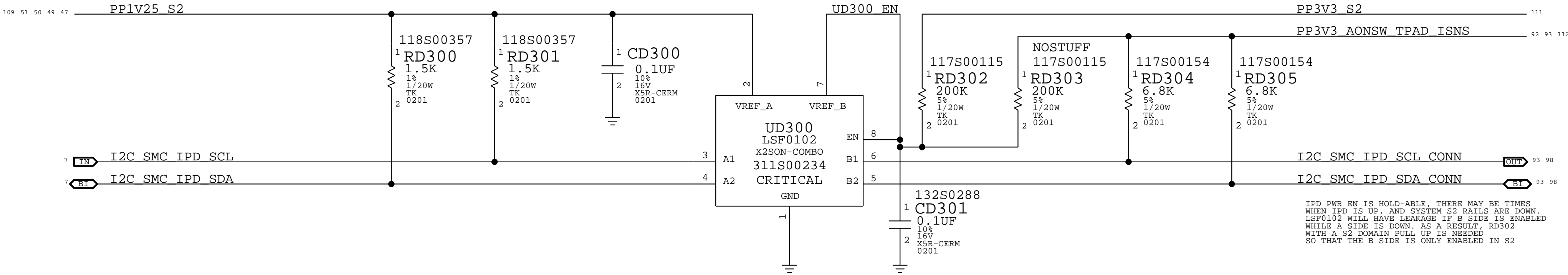
SMC\_I2C2

DEVICE	DIAGS	BUS	7B	8B	WR
NONE	N/A		N/A	N/A	

SMC I2C 2 NC PER SYS ARCH V09

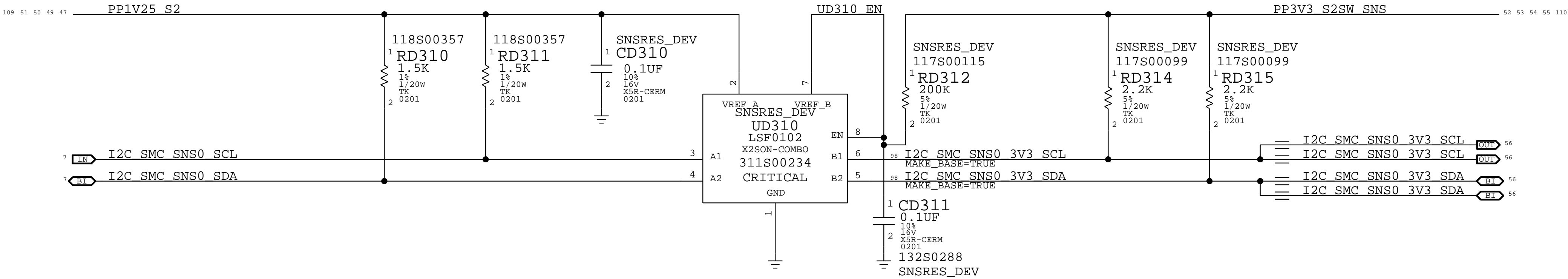
SMC\_I2C3

DEVICE	DIAGS	BUS	7B	8B	WR
PALM REST TEMP	11		0x4C	0x98	



SMC\_I2C4

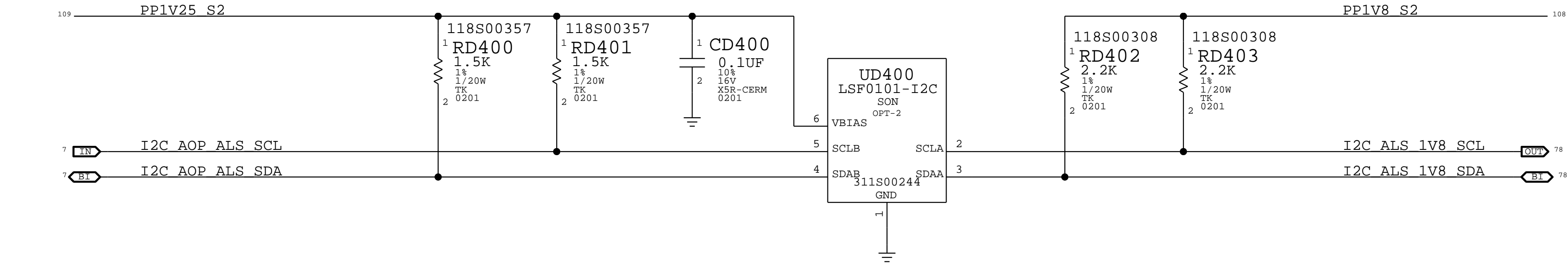
DEVICE	DIAGS	BUS	7B	8B	WR
DEV ADC 1	12		0x17	0x2E	
DEV ADC 2			0x10	0x20	





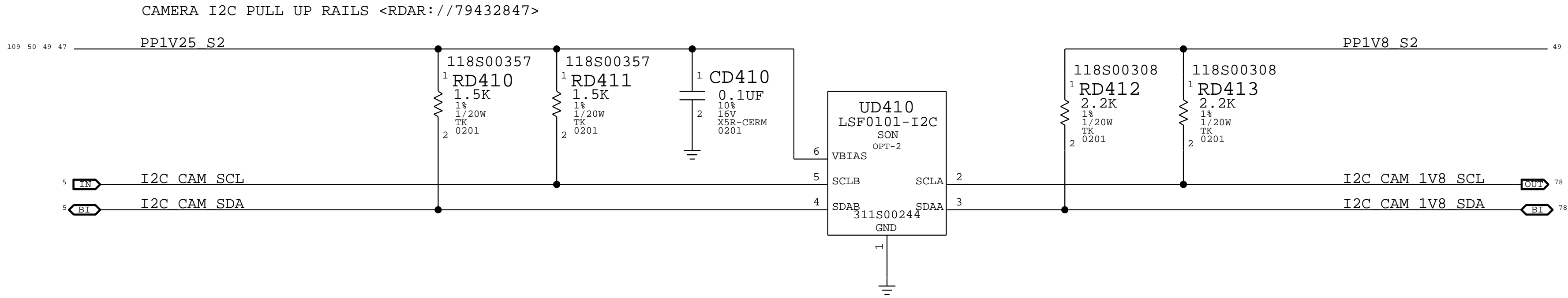
AOP\_I2C0

DEVICE	DIAGS	BUS	7B	8B	WR
ALS	5		0x29	0X52	



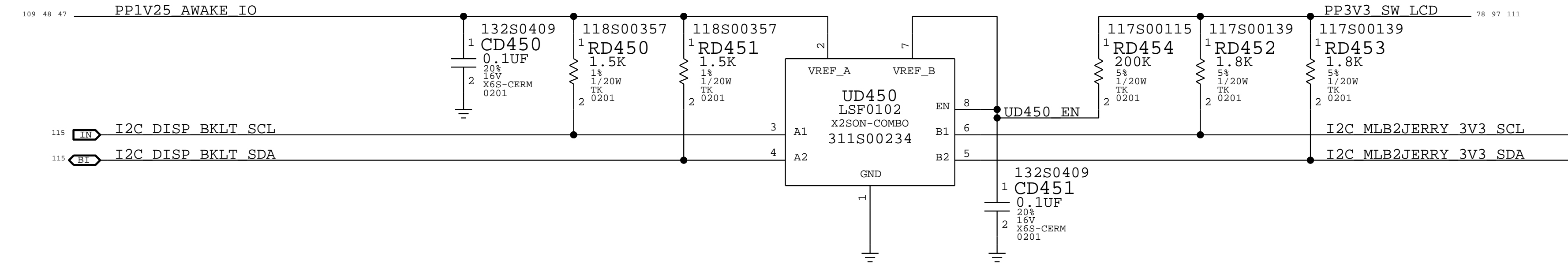
ISP\_I2C0

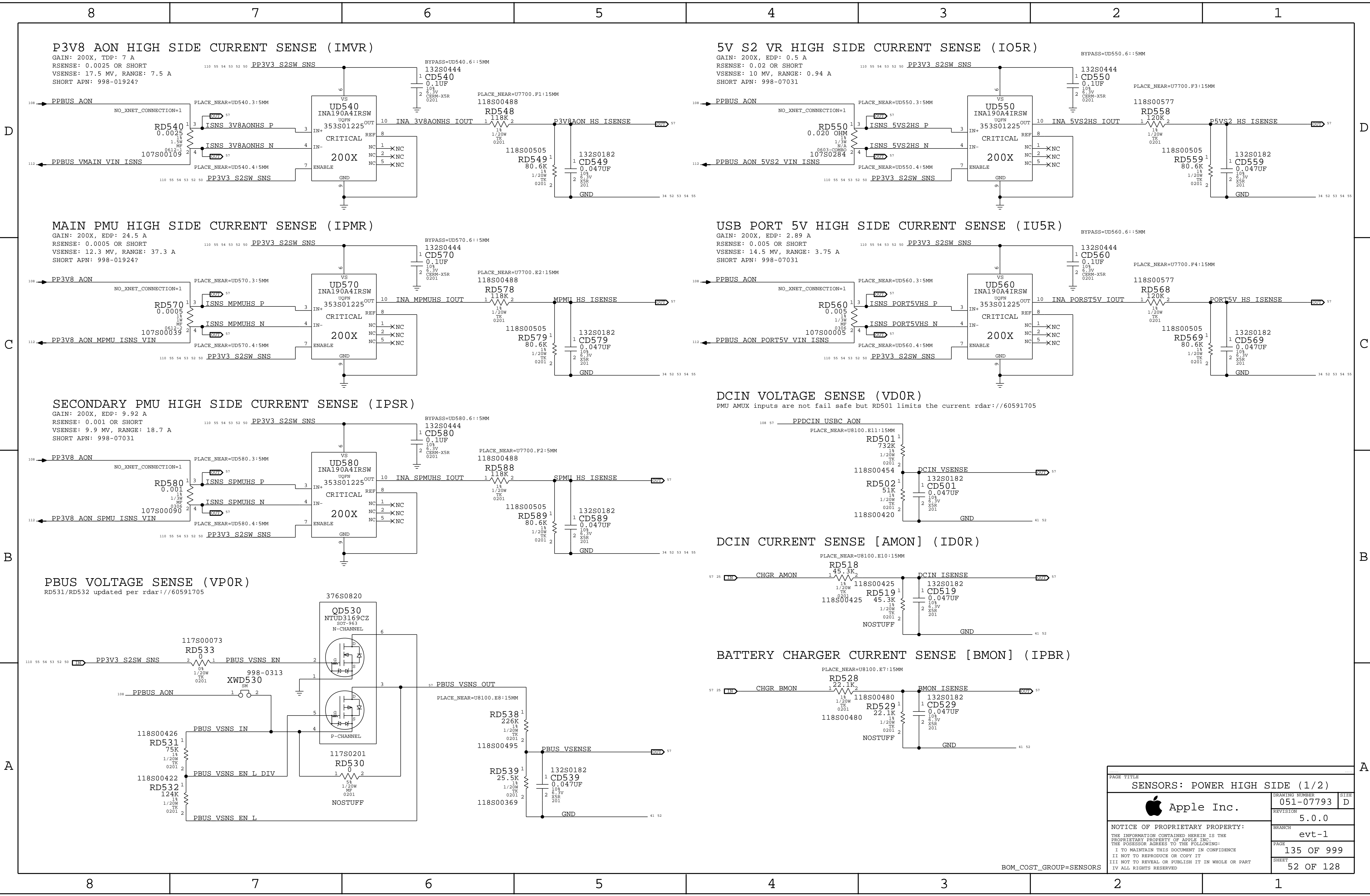
DEVICE	DIAGS	BUS	7B	8B	WR
CAMERA PMIC	?		0x10	0x20	
CAMERA SENSOR			0X36	0X6C	




DISP\_I2C

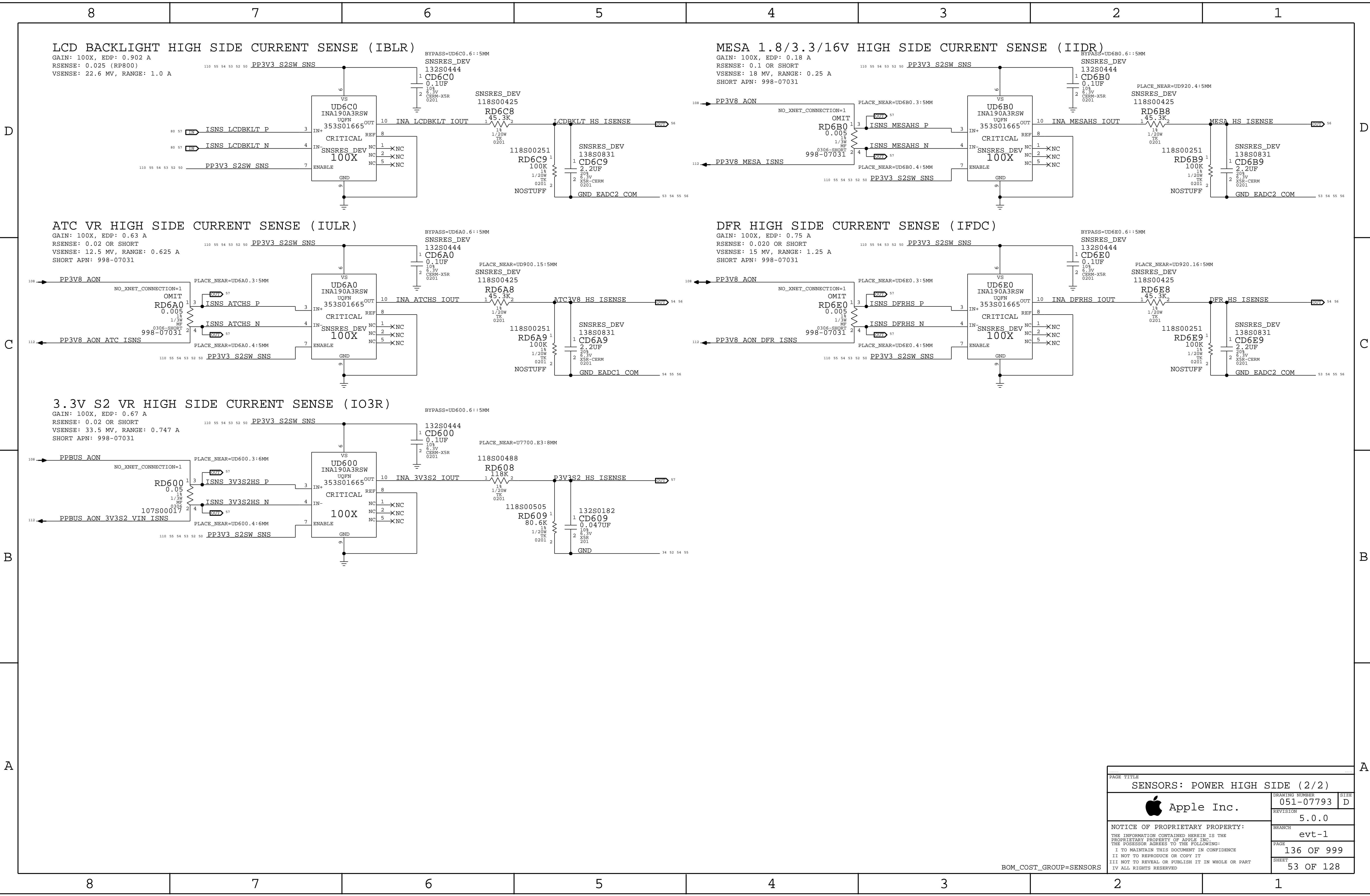
DEVICE	DIAGS	BUS	7B	8B	WR
JERRY	?		0X2C	0X58	




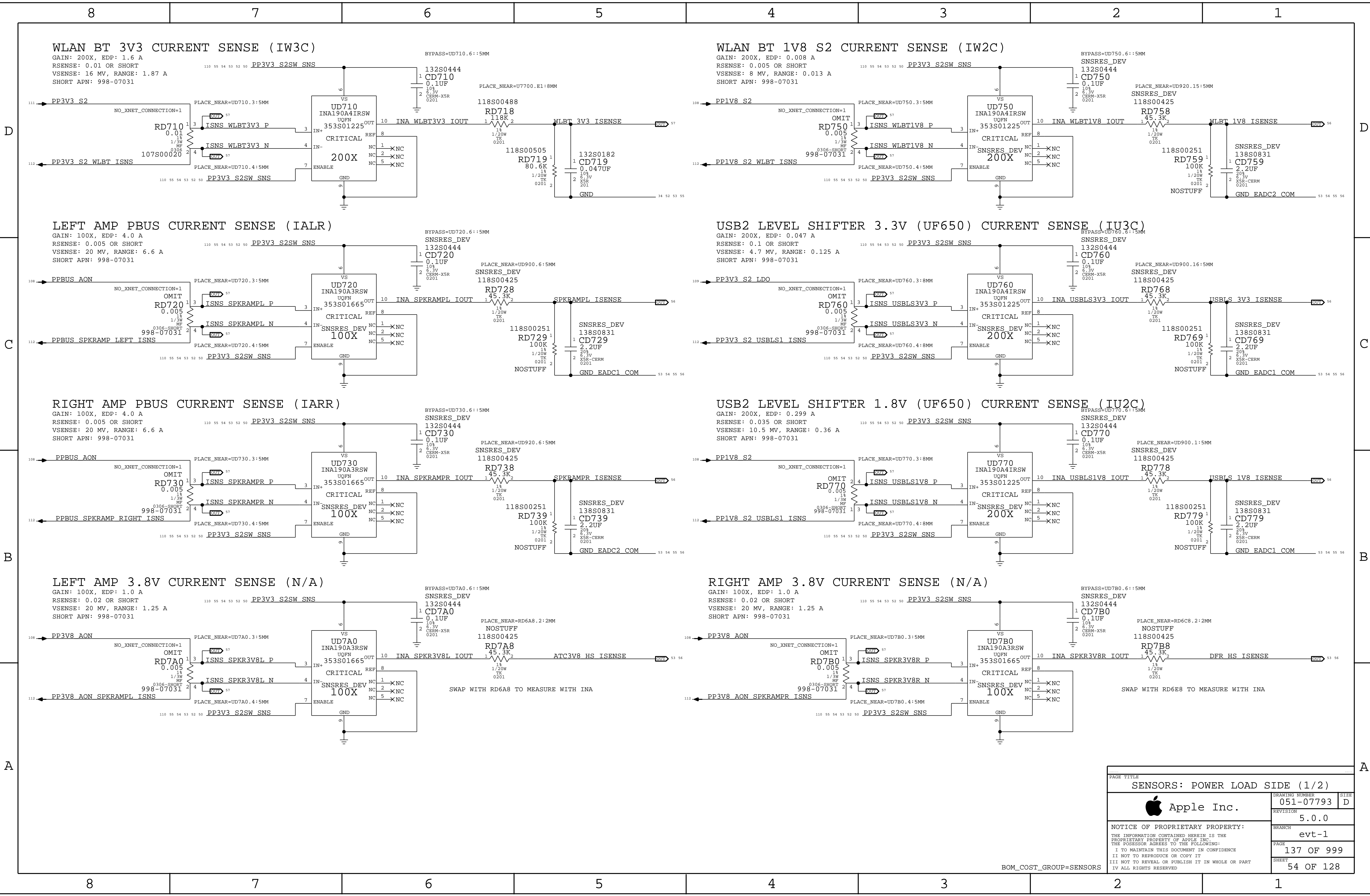



PAGE TITLE		
SENSORS: POWER HIGH SIDE (1/2)		
 Apple Inc.	DRAWING NUMBER	051-07793
	REVISION	5.0.0
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	BRANCH	evt-1
	PAGE	135 OF 999
	SHEET	52 OF 128

BOM\_COST\_GROUP=SENSORS



PAGE TITLE		
SENSORS: POWER HIGH SIDE (2/2)		
 Apple Inc.	DRAWING NUMBER	051-07793
	REVISION	5.0.0
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	BRANCH	evt-1
	PAGE	136 OF 999
	SHEET	53 OF 128

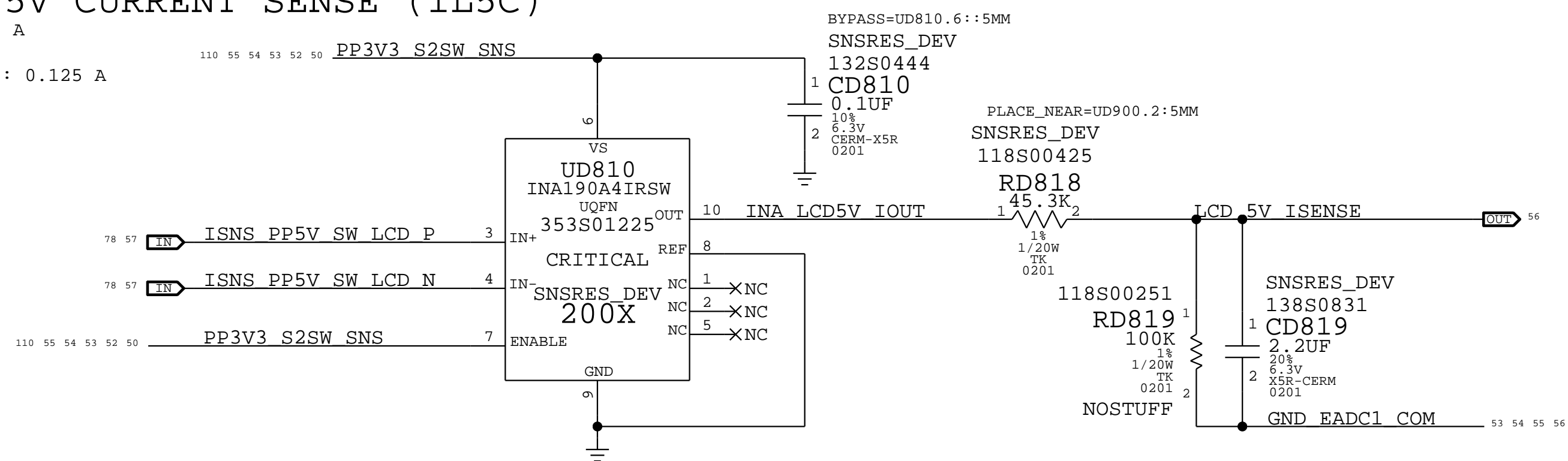


PAGE TITLE		
SENSORS: POWER LOAD SIDE (1/2)		
 Apple Inc.	DRAWING NUMBER	051-07793
	REVISION	5.0.0
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	BRANCH	evt-1
	PAGE	137 OF 999
	SHEET	54 OF 128



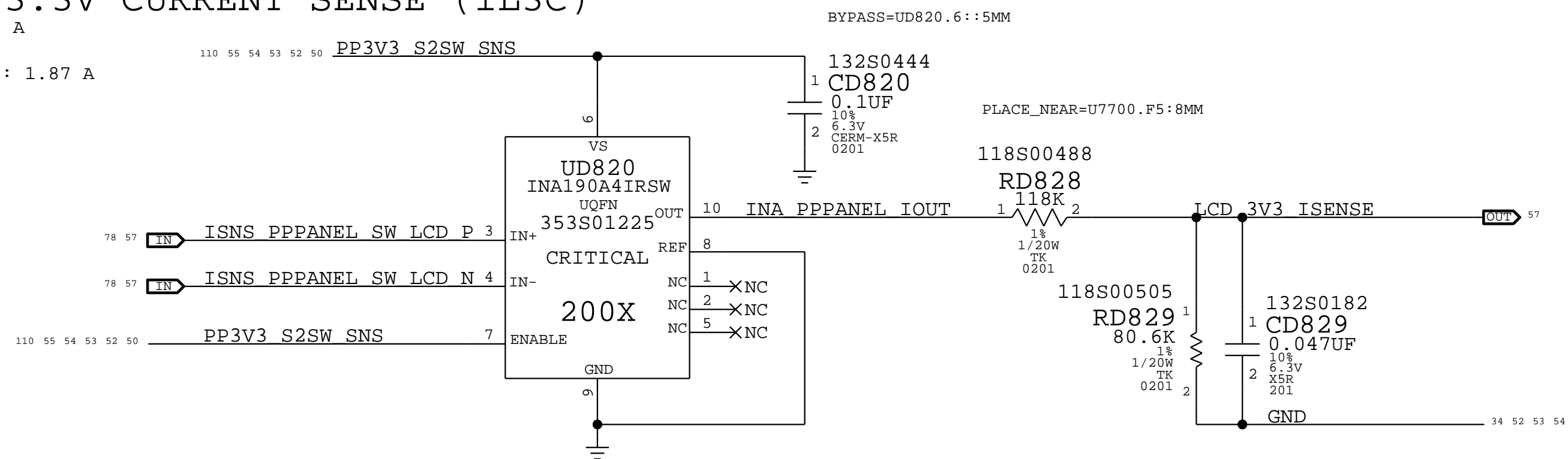


GAIN: 200X, EDP: 0.1 A  
RSENSE: 0.1 (RP621)  
VSENSE: 10 MV, RANGE: 0.125 A  
SHORT APN: 998-07031



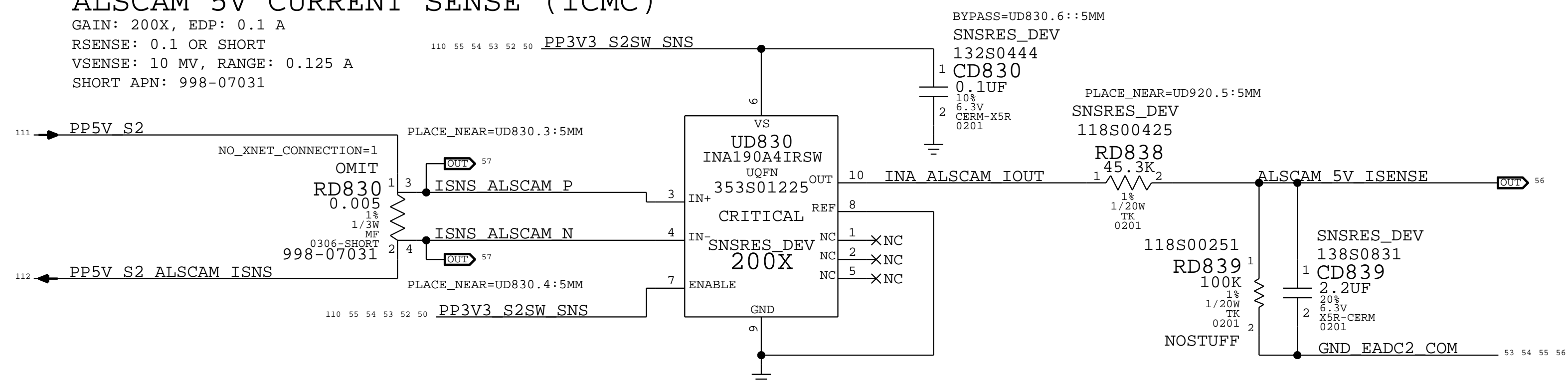
## LCD PANEL 3.3V CURRENT SENSE (IL3C)

GAIN: 200X, EDP: 1.0 A  
RSENSE: 0.01 (RP620)  
VSENSE: 10 MV, RANGE: 1.87 A  
SHORT APN: 998-07031



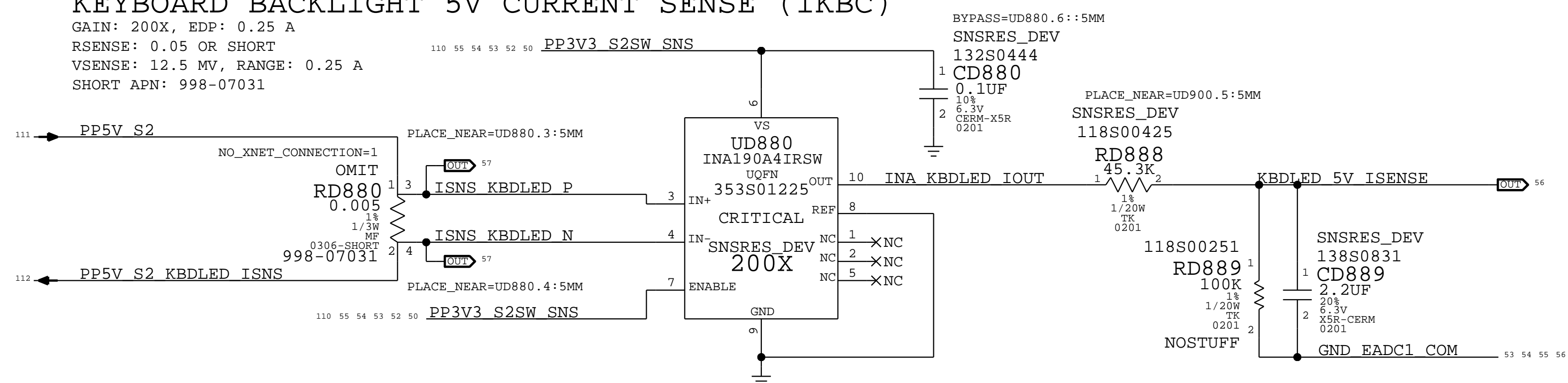
## ALSCAM 5V CURRENT SENSE (ICMC)

GAIN: 200X, EDP: 0.1 A  
RSENSE: 0.1 OR SHORT  
VSENSE: 10 MV, RANGE: 0.125 A  
SHORT APN: 998-07031



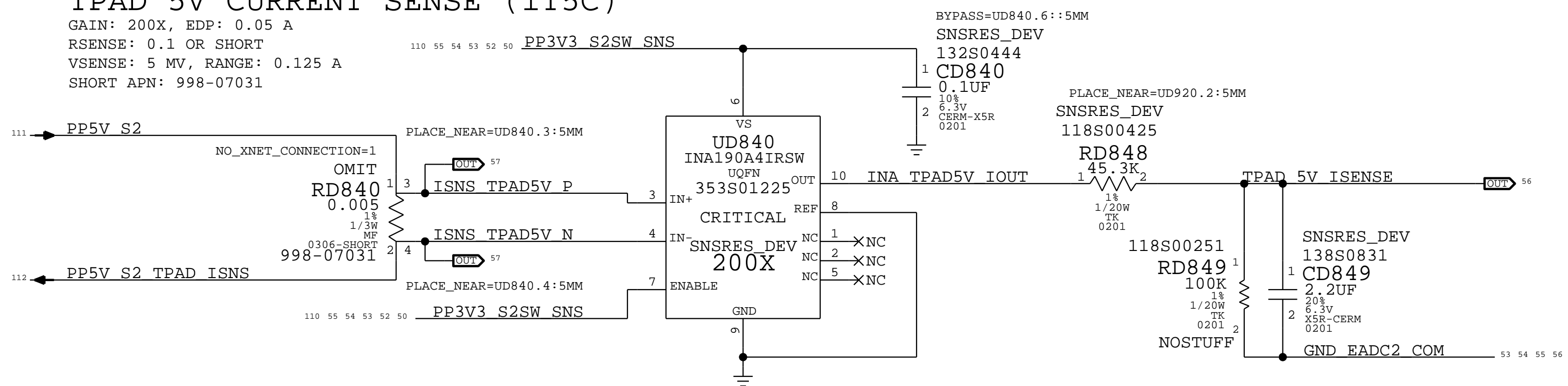
## KEYBOARD BACKLIGHT 5V CURRENT SENSE (IKBC)

GAIN: 200X, EDP: 0.25 A  
 RSENSE: 0.05 OR SHORT  
 VSENSE: 12.5 MV, RANGE: 0.25 A  
 SHORT APN: 998-07031



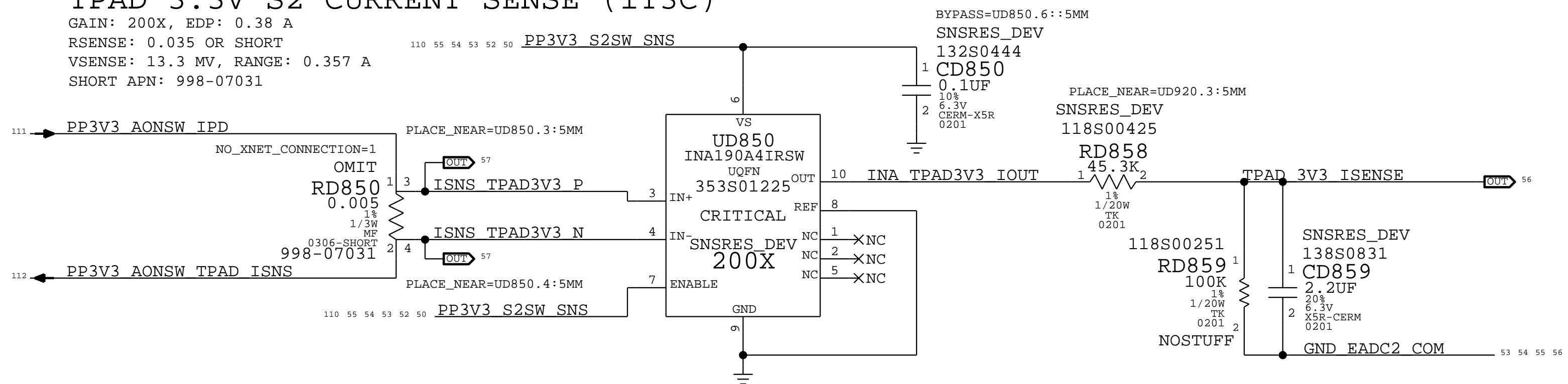
## TPAD 5V CURRENT SENSE (IT5C)

GAIN: 200X, EDP: 0.05 A  
RSENSE: 0.1 OR SHORT  
VSENSE: 5 MV, RANGE: 0.125 A  
SHORT APN: 998-07031



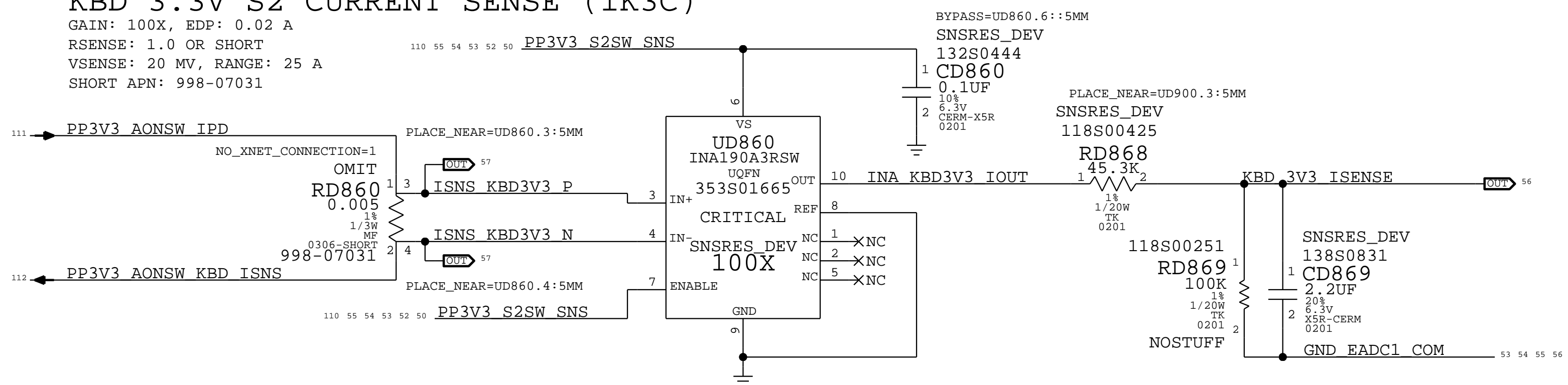
## TPAD 3.3V S2 CURRENT SENSE (IT3C)

GAIN: 200X, EDP: 0.38 A  
RSENSE: 0.035 OR SHORT  
VSENSE: 13.3 MV, RANGE: 0.357 A  
SHORT APN: 998-07031



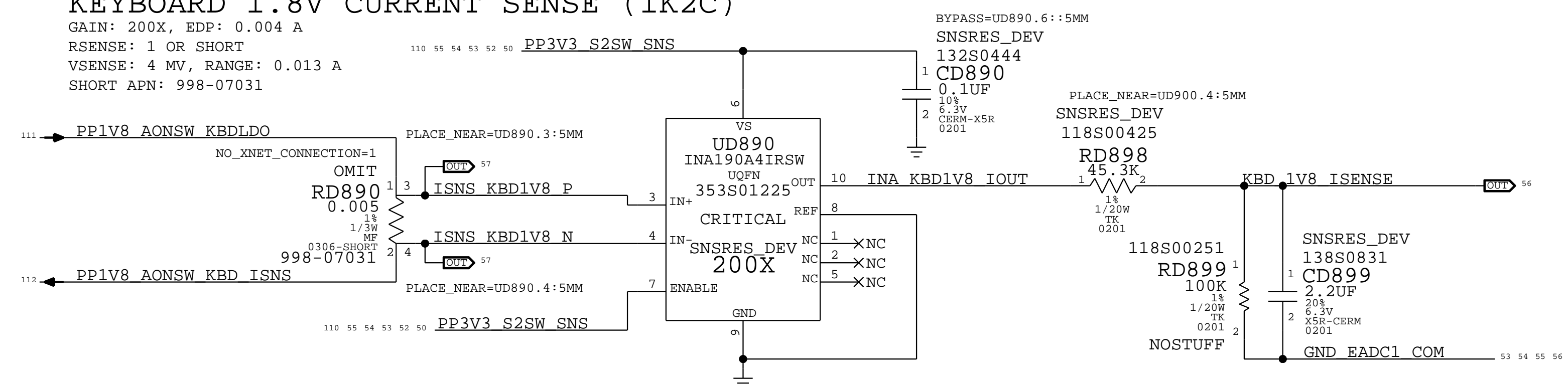
## KBD 3.3V S2 CURRENT SENSE (IK3C)


GAIN: 100X, EDP: 0.02 A  
RSENSE: 1.0 OR SHORT  
VSENSE: 20 MV, RANGE: 25 A  
SHORT APN: 998-07031



## KEYBOARD 1.8V CURRENT SENSE (IK2C)

GAIN: 200X, EDP: 0.004 A  
RSENSE: 1 OR SHORT  
VSENSE: 4 MV, RANGE: 0.013 A  
SHORT APN: 998-07031



PAGE TITLE		DRAWING NUMBER		ST
SENSORS: POWER LOAD SIDE (2/2)		051-07793		I
 Apple Inc.		REVISION		
		5.0.0		
NOTICE OF PROPRIETARY PROPERTY:		BRANCH		
THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING:		evt-1		
I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED		PAGE		
		138 OF 999		
		SHEET		
		55 OF 128		

BOM\_COST\_GROUP=SENSORS

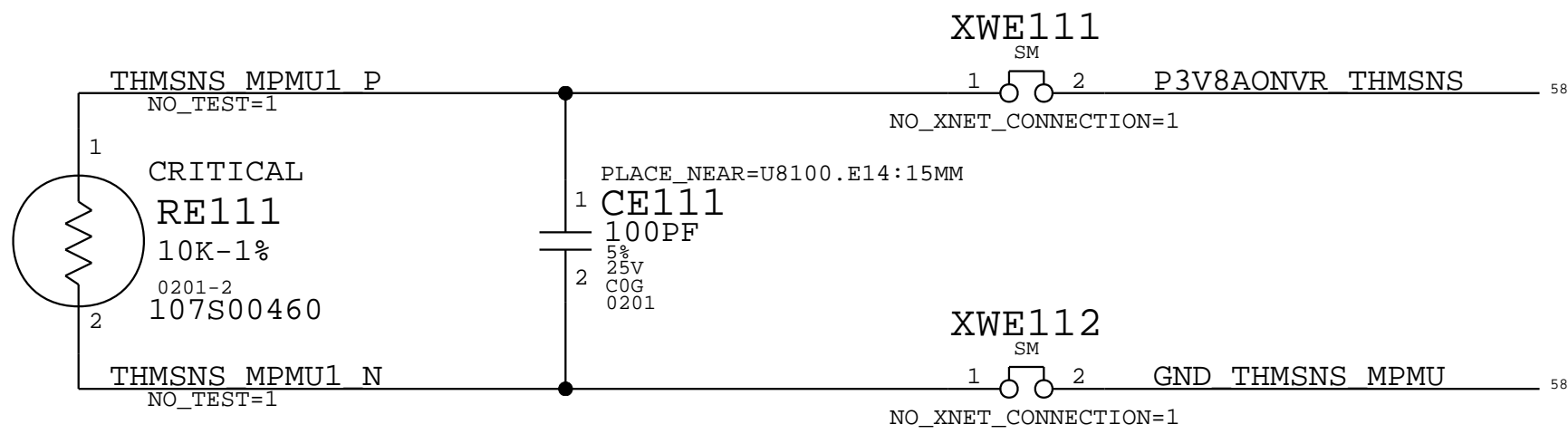






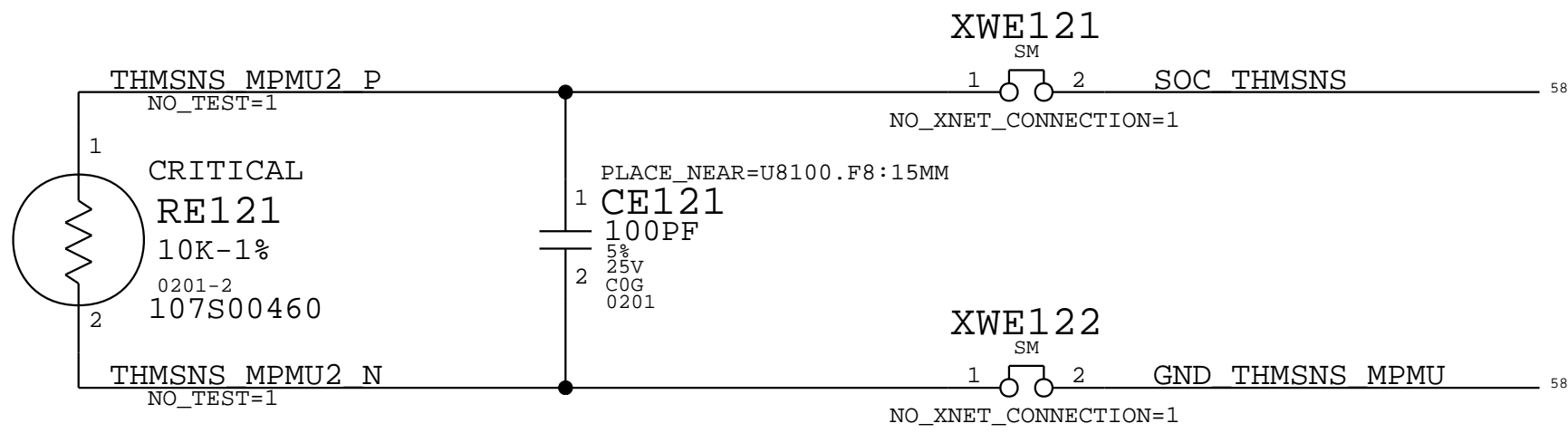
```
MAIN PMU TDEV1 [TMVR]
```

LOCATION: 3.8V AON VR BETWEEN PHASE 2 AND PHASE3 MOSFETS



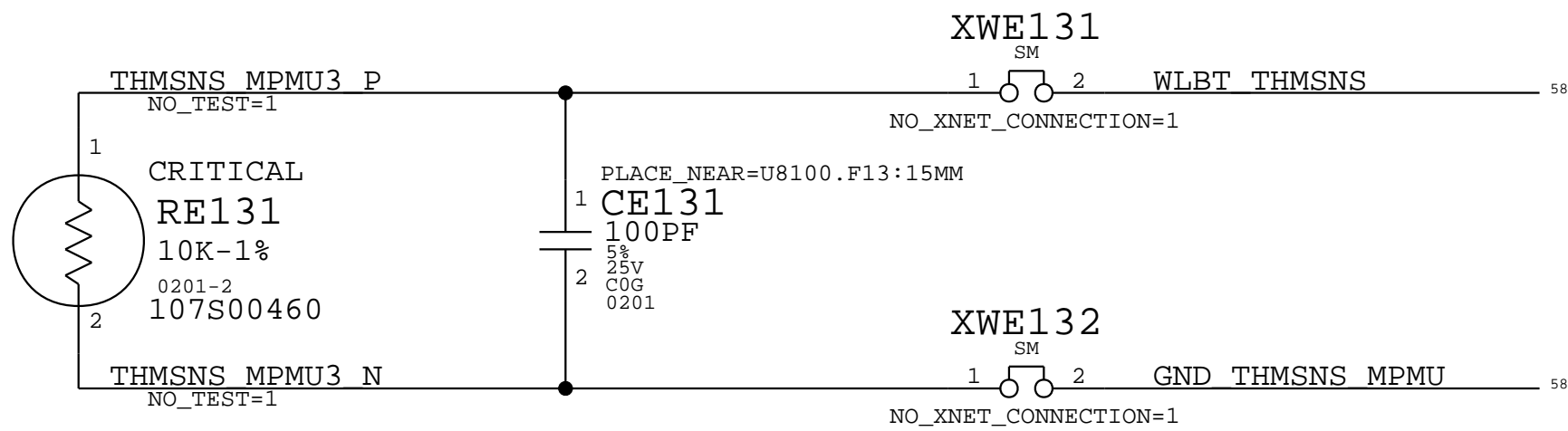
```
MAIN PMU TDEV2 [TSCD]
```

LOCATION: SOC CORE AREA, BACKSIDE (TOP)



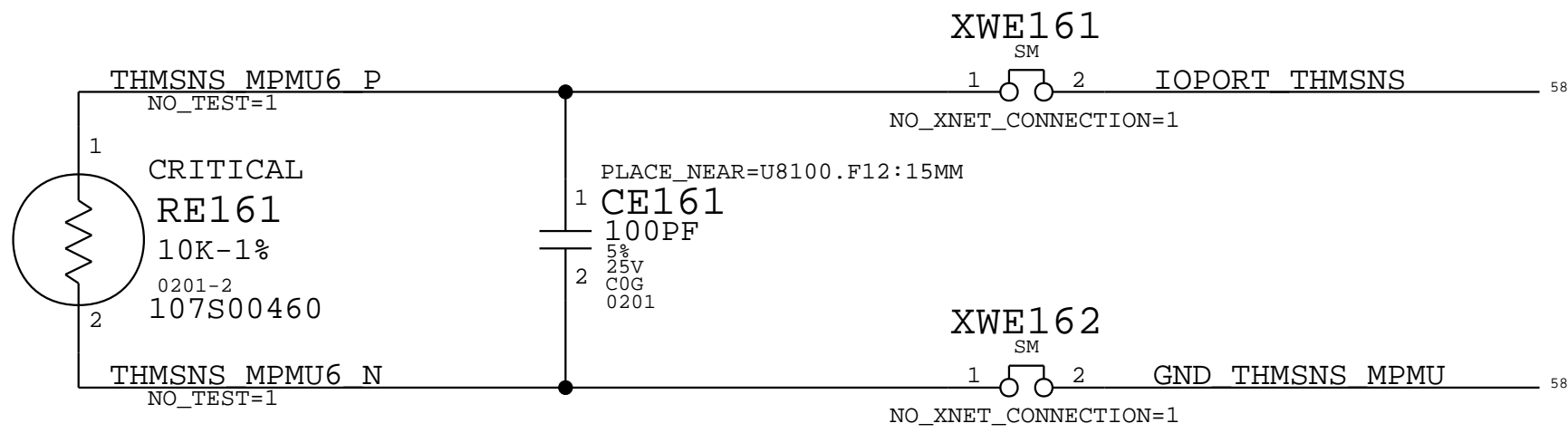
```
MAIN PMU TDEV3 [TW0P]
```

LOCATION: WLANBT, BACKSIDE



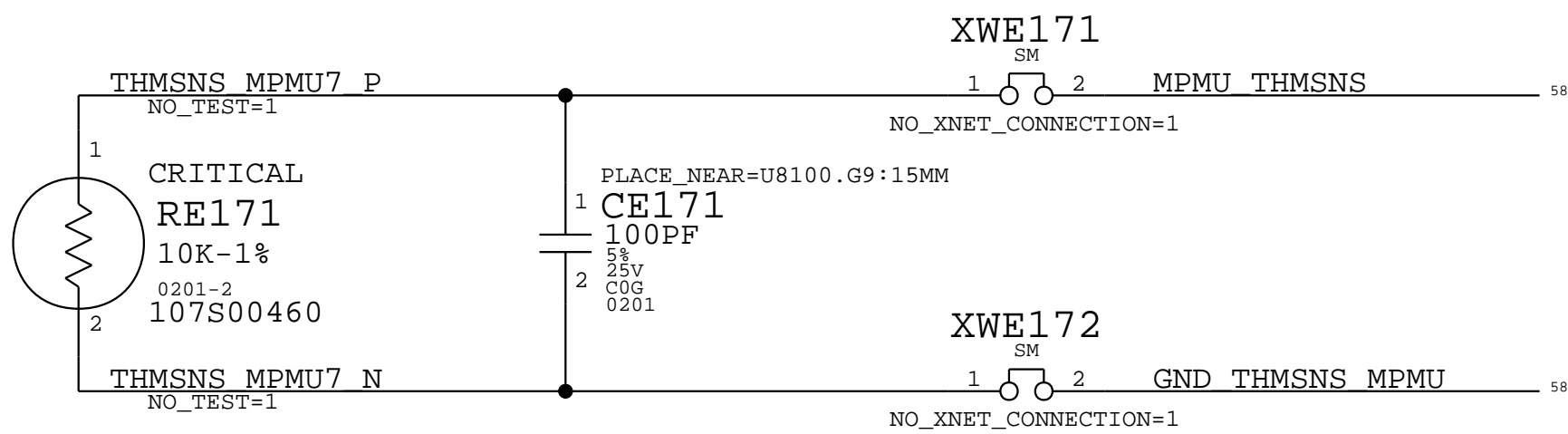
```
MAIN PMU TDEV6 [TIOP]
```

LOCATION: IO PORT PROXIMITY



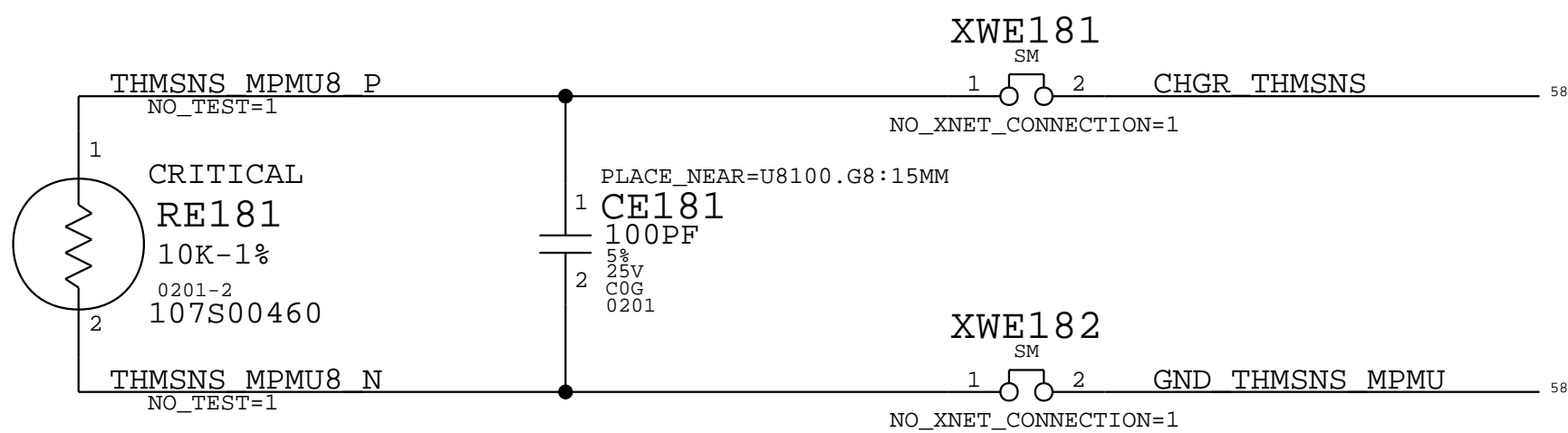
```
MAIN PMU TDEV7 [TPMP]
```

LOCATION: MAIN PMU, BETWEEN BUCK0 AND BUCK1 INDUCTORS



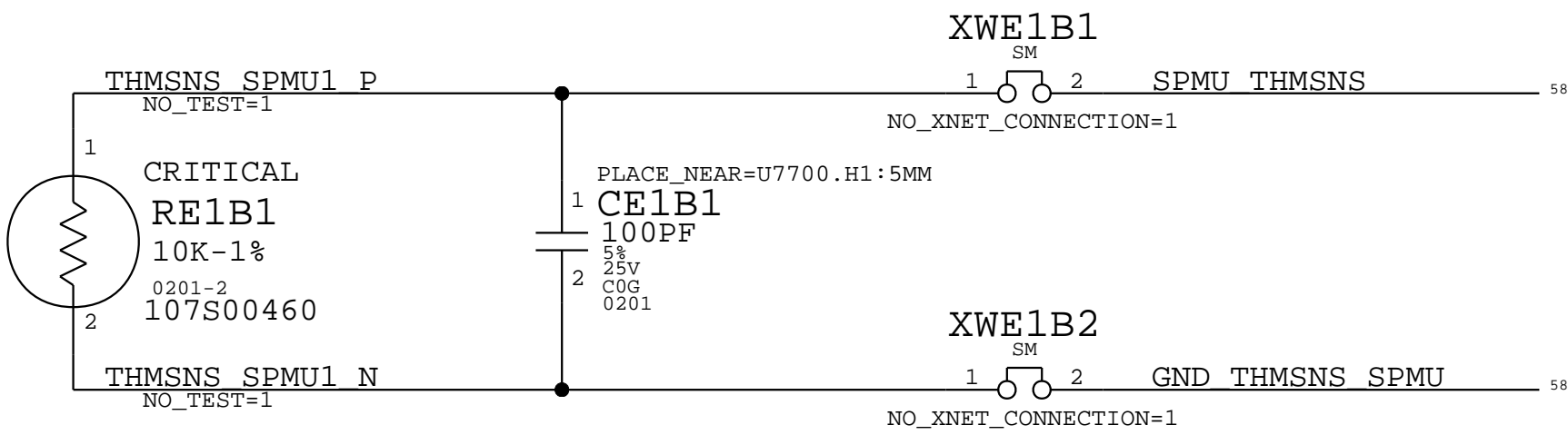
```
MAIN PMU TDEV8 [TCHP]
```

LOCATION: CHARGER, BETWEEN INDUCTOR AND MOSFETS



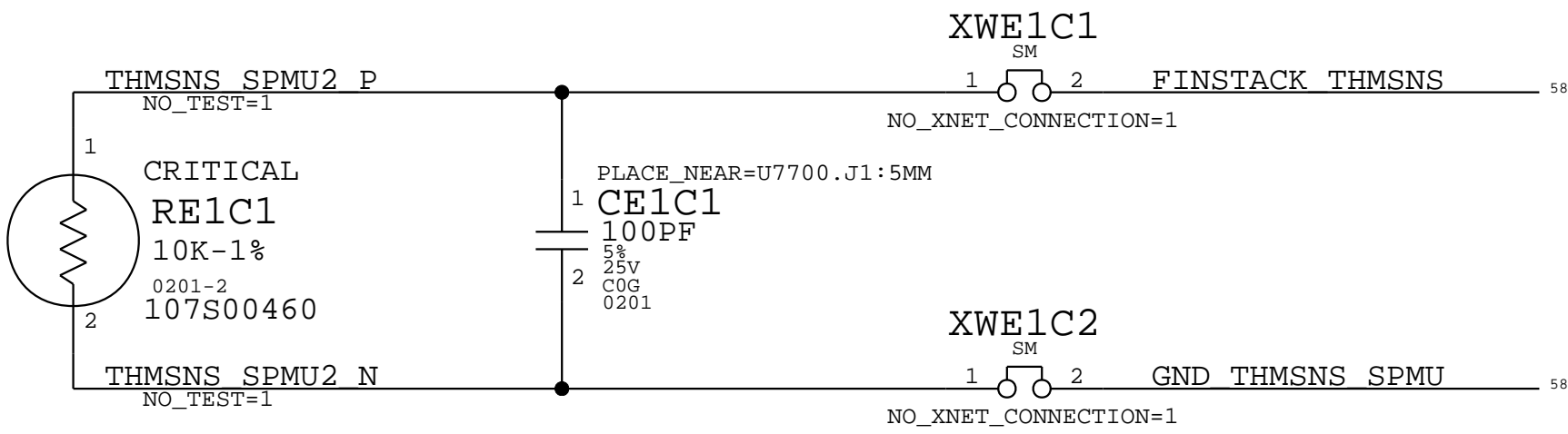
## SECONDARY PMU TDEV1 [TPSP]

LOCATION: SECONDARY PMU, BUCK10 INDUCTOR PROXIMITY



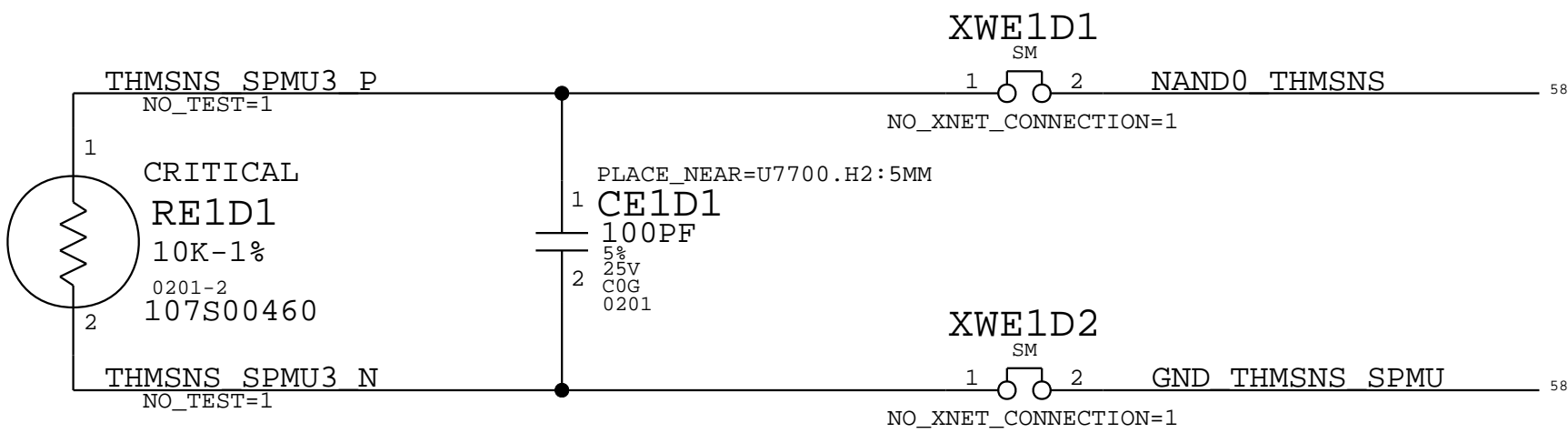
## SECONDARY PMU TDEV2 [TH1H]

LOCATION: FINSTACK PROXIMITY, TOP SIDE



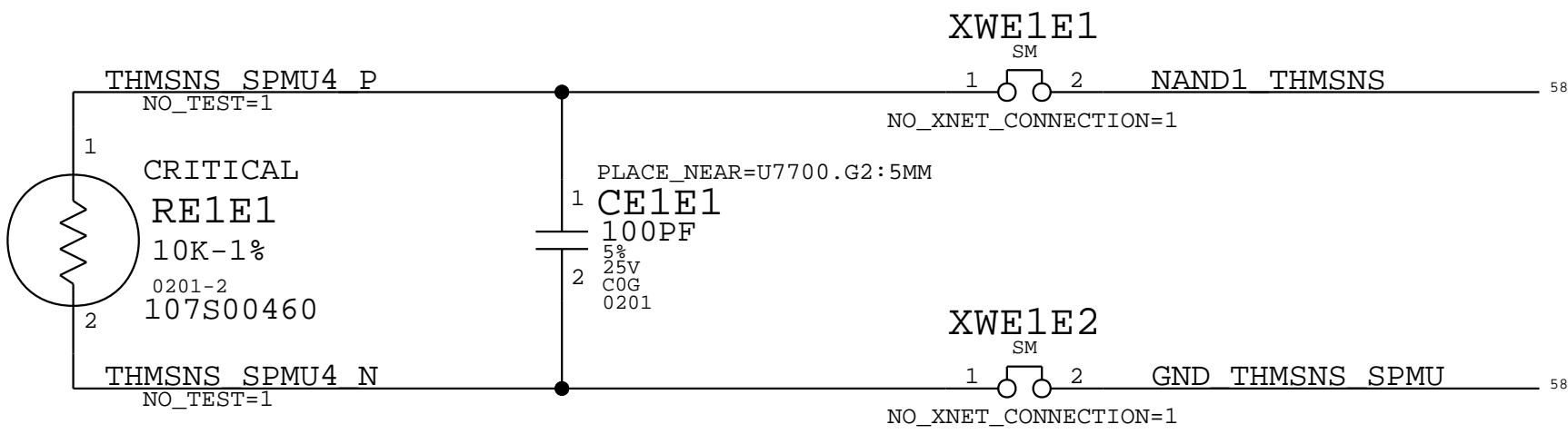
## SECONDARY PMU TDEV3 [TH0T]

LOCATION: LOWER LEFT CORNER OF NAND DEVICES



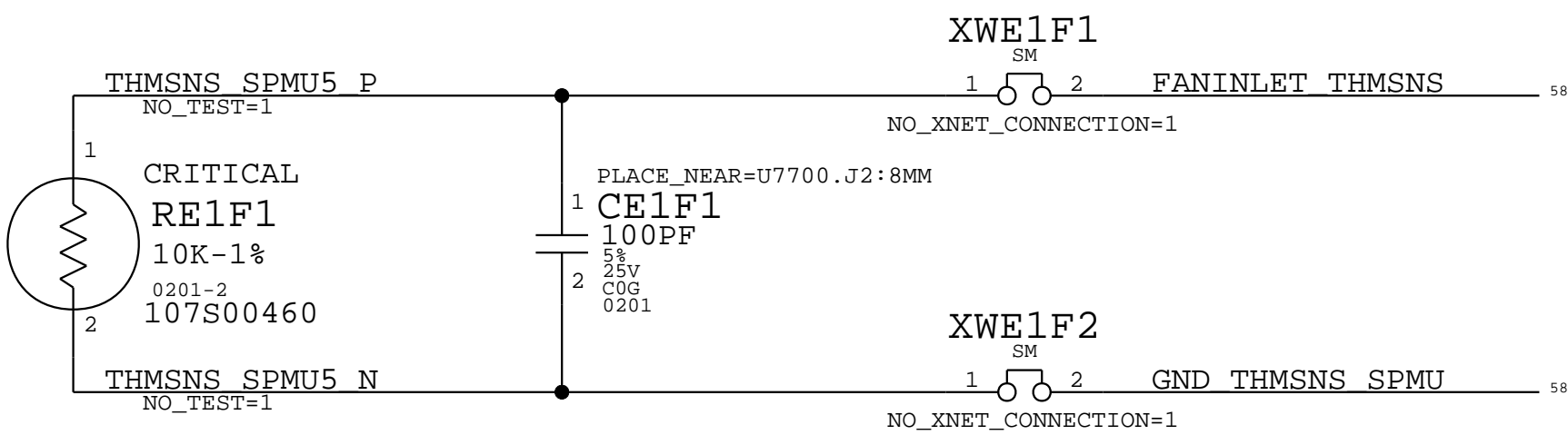
## SECONDARY PMU TDEV4 [TH0B]

LOCATION: UPPER RIGHT CORNER OF NAND DEVICES

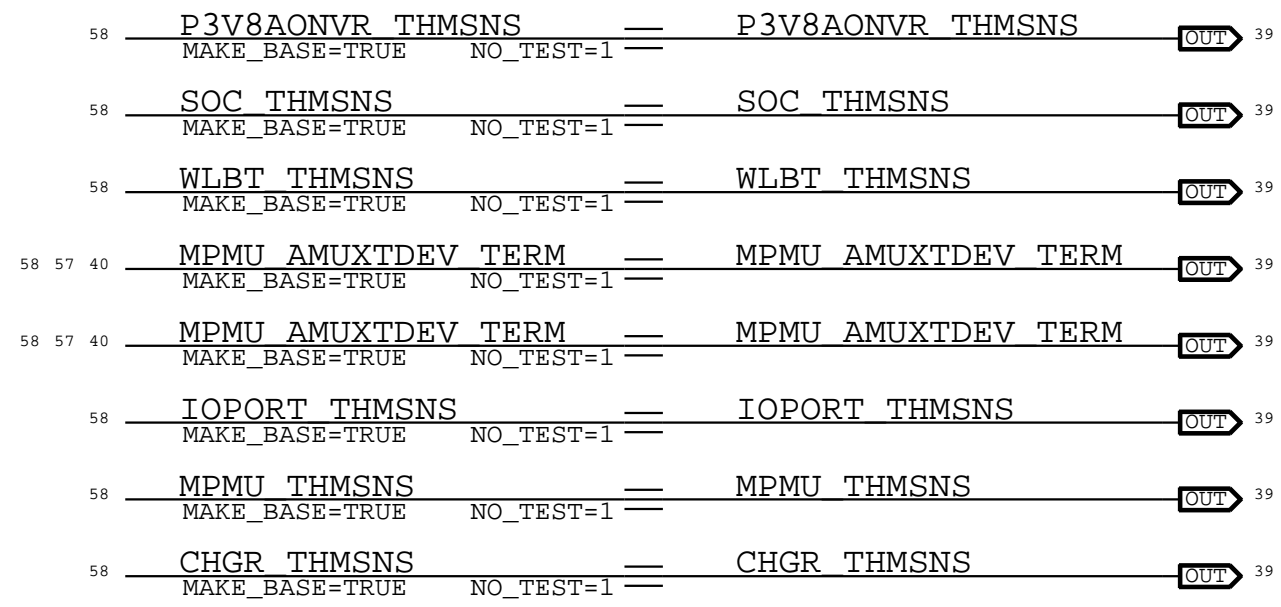


## SECONDARY PMU TDEV5 [TAMP]

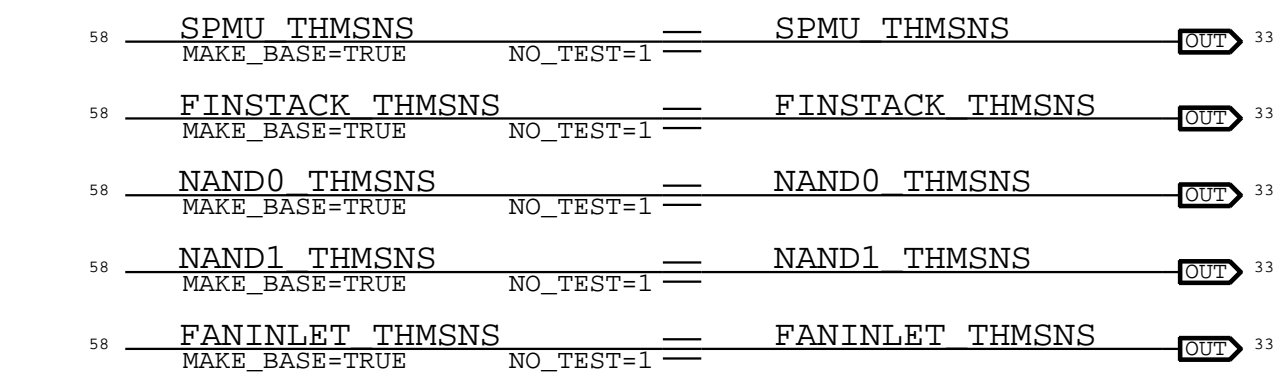
LOCATION: FAN INLET (AMBIENT), LOWER RIGHT, BOTTOM SIDE



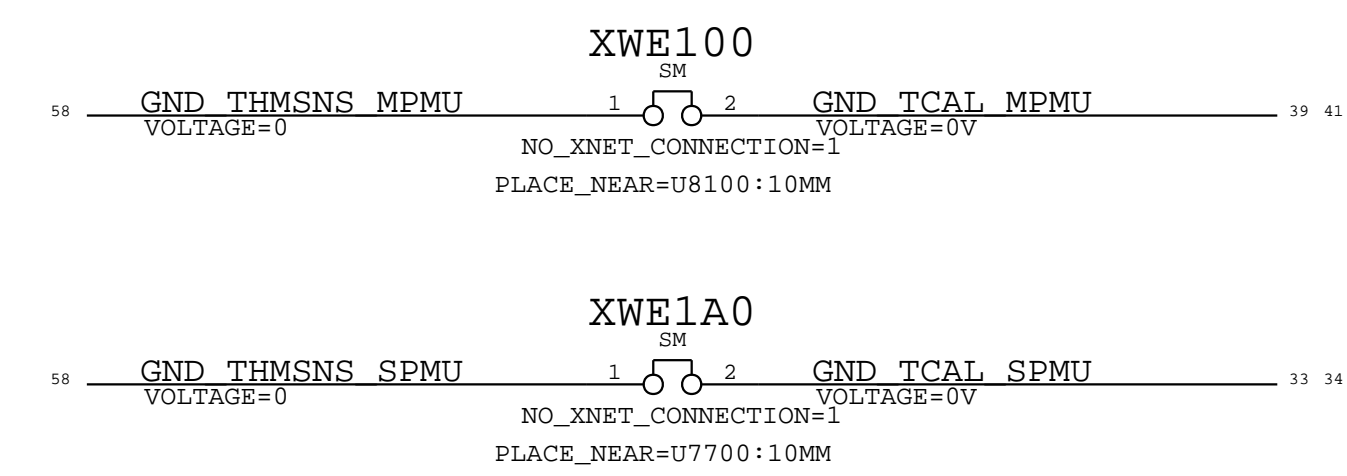
## MPMU TDEV MAPPING



## SPMU TDEV MAPPING

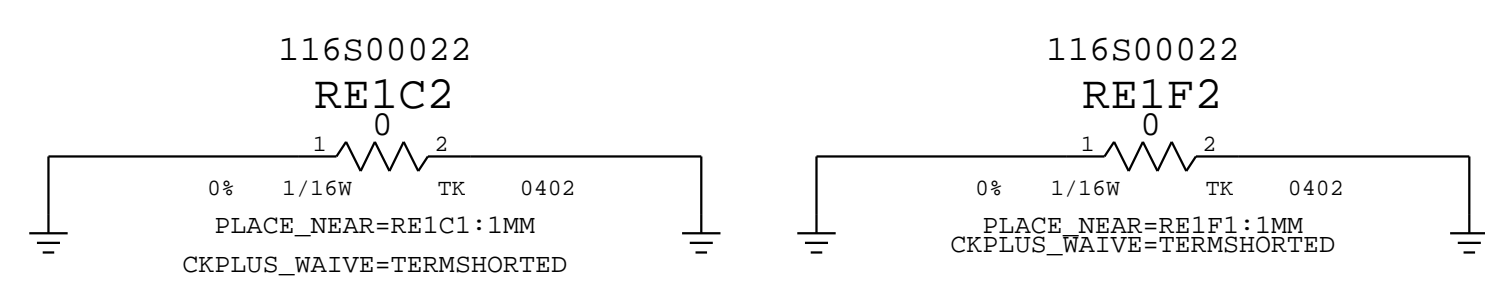



TAP NEGATIVE CLOSE TO VSS\_REF



```
MAIN  PMU  TDEV<4-5>:  UNUSED
```

## DUMMY COMPONENTS FOR DFM



PAGE TITLE		SENSORS: THERMAL	
 Apple Inc.	DRAWING NUMBER		SIZE
	051-07793		D
NOTICE OF PROPRIETARY PROPERTY:  THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	REVISION		
	5.0.0		
	BRANCH		
	evt-1		
	PAGE		
	141		OF 999
	SHEET		
	58		OF 128

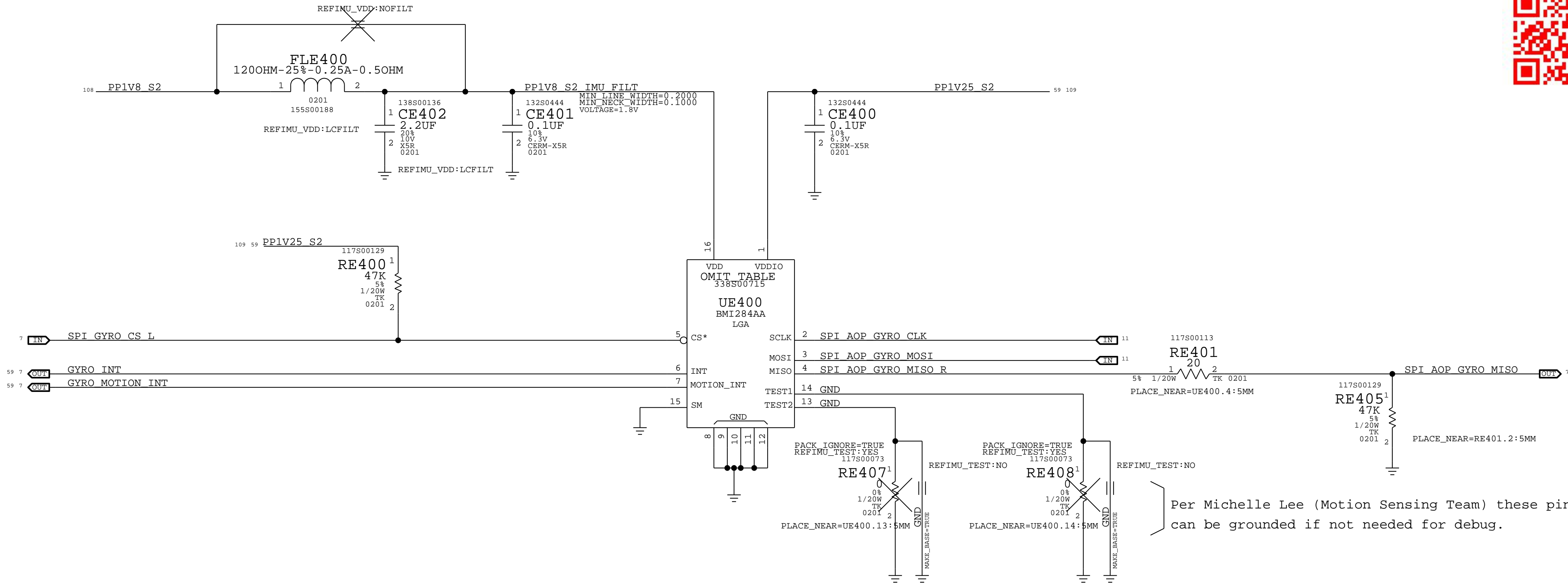
BOM\_COST\_GROUP=SENSORS

A Sovereign Accelerometer and Gyroscope

Datasheet Radar:

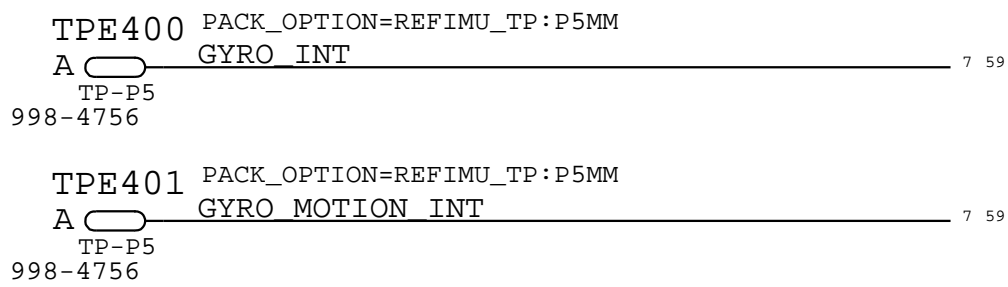


\*\*\* OK2INTEGRATE \*\*\*



MFG: Bosch  
MPN: BMI284AA  
APN: 338S00715  
URL: <https://www.bosch-sensortec.com/products/motion-sensors/imus/>  
Radar: [rdar://61521702](https://www.bosch-sensortec.com/products/motion-sensors/imus/) (Sovereign: Datasheet)

B Test Points



C Sovereign BOM Options

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
338S00715	1	IC, SOVEREIGN, BMI284, AA, LGA16	UE400	CRITICAL	REFIMU_IC: BMI284
338S00849	1	IC, SOVEREIGN2, BMI286, AA, LGA16	UE400	CRITICAL	REFIMU_IC: BMI286

PAGE TITLE		
SENSORS: MOTION		
	DRAWING NUMBER	051-07793
	REVISION	5.0.0
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	BRANCH	evt-1
	PAGE	144 OF 999
	SHEET	59 OF 128

BOM\_COST\_GROUP=SENSORS

## D

BA

BOM\_COST\_GROUP=FAN

D

C

B

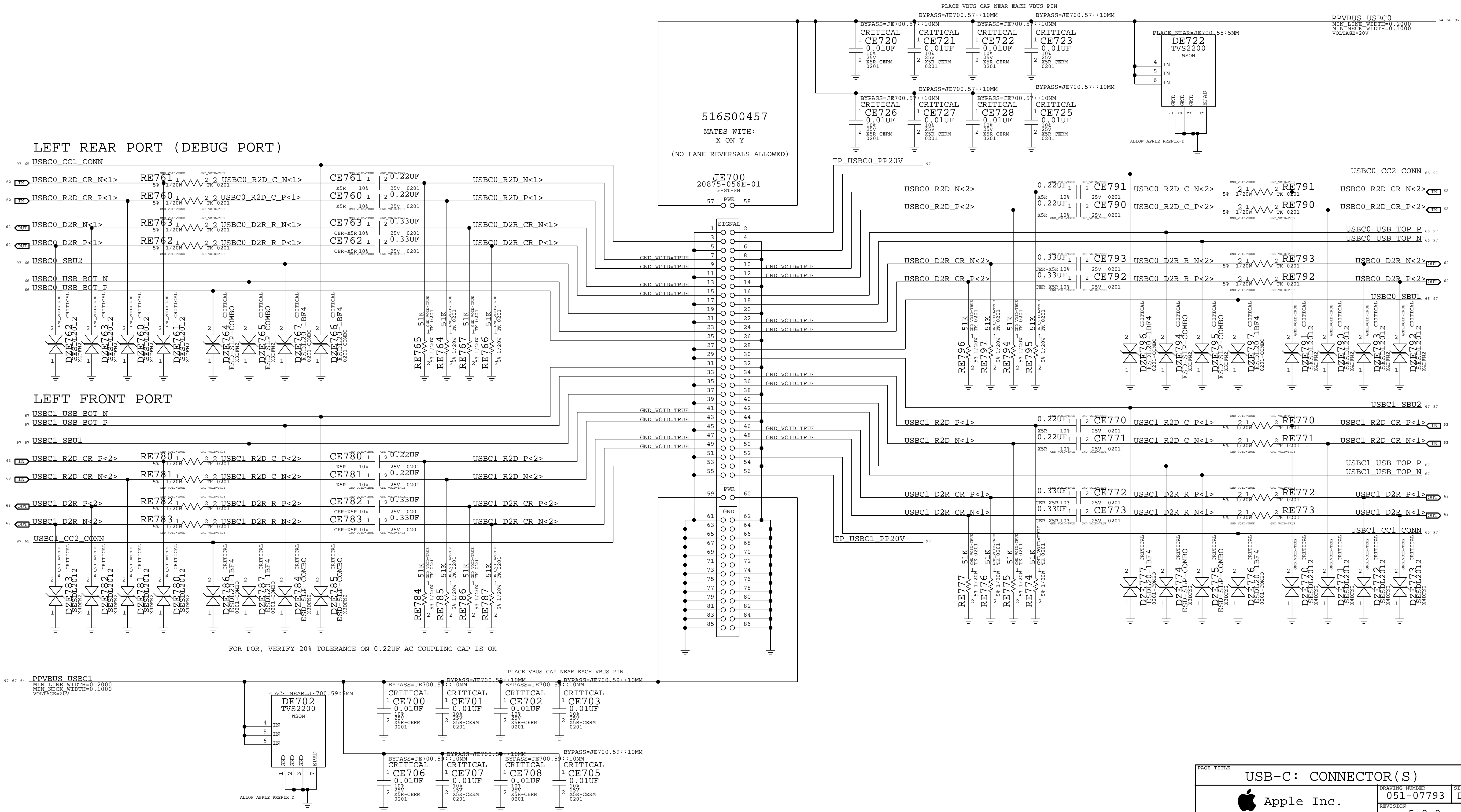
A

D

C

B

A

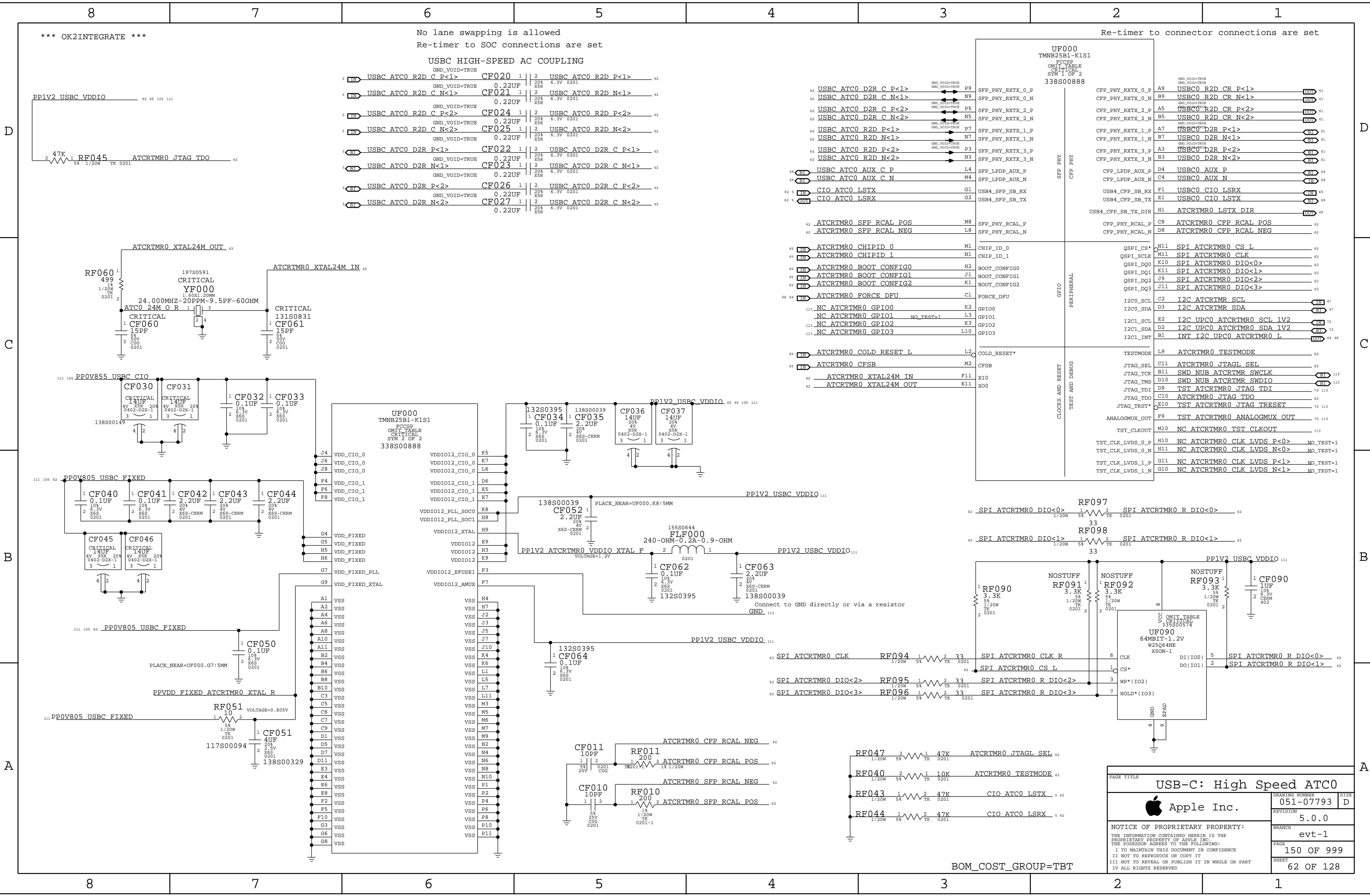



FOR POR, VERIFY 20% TOLERANCE ON 0.22UF AC COUPLING CAP IS OK

PAGE TITLE			
USB-C: CONNECTOR(S)			
	DRAWING NUMBER	051-07793	SIZE
	REVISION	5.0.0	D
	BRANCH	evt-1	
NOTICE OF PROPRIETARY PROPERTY:		PAGE	147 OF 999
THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING:		SHEET	61 OF 128
I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE			
II NOT TO REPRODUCE OR COPY IT			
III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART			
IV ALL RIGHTS RESERVED			

BOM\_COST\_GROUP=USB-C



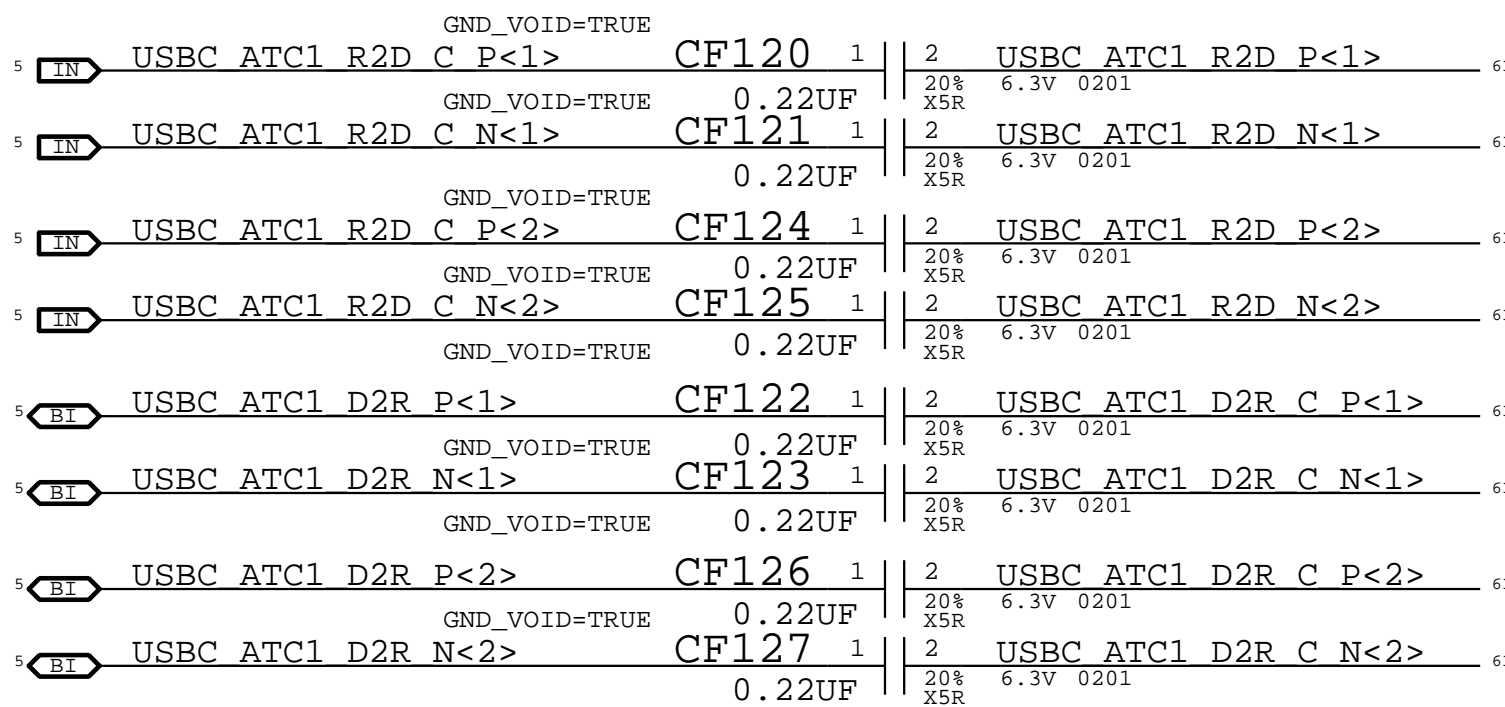


PAGE TITLE			USB-C: High Speed ATC0	
 Apple Inc.		DRAWING NUMBER	051-07793	SIZB
		REVISION	5.0.0	D
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED		BRANCH	evt-1	
		PAGE	150 OF 999	
		SHEET	62 OF 128	

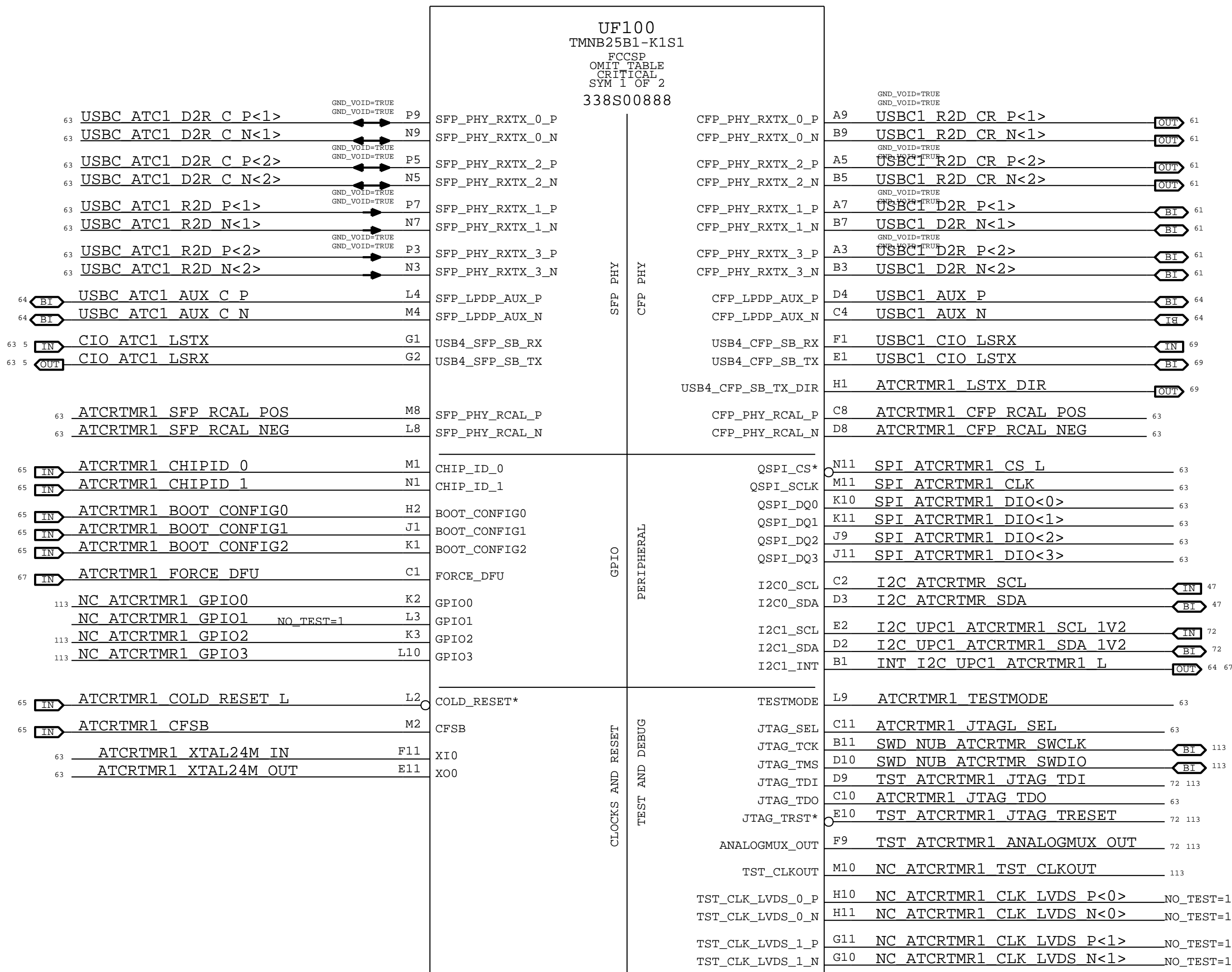


No lane swapping is allowed  
Re-timer to SOC connections are set

USBC HIGH-SPEED AC COUPLING



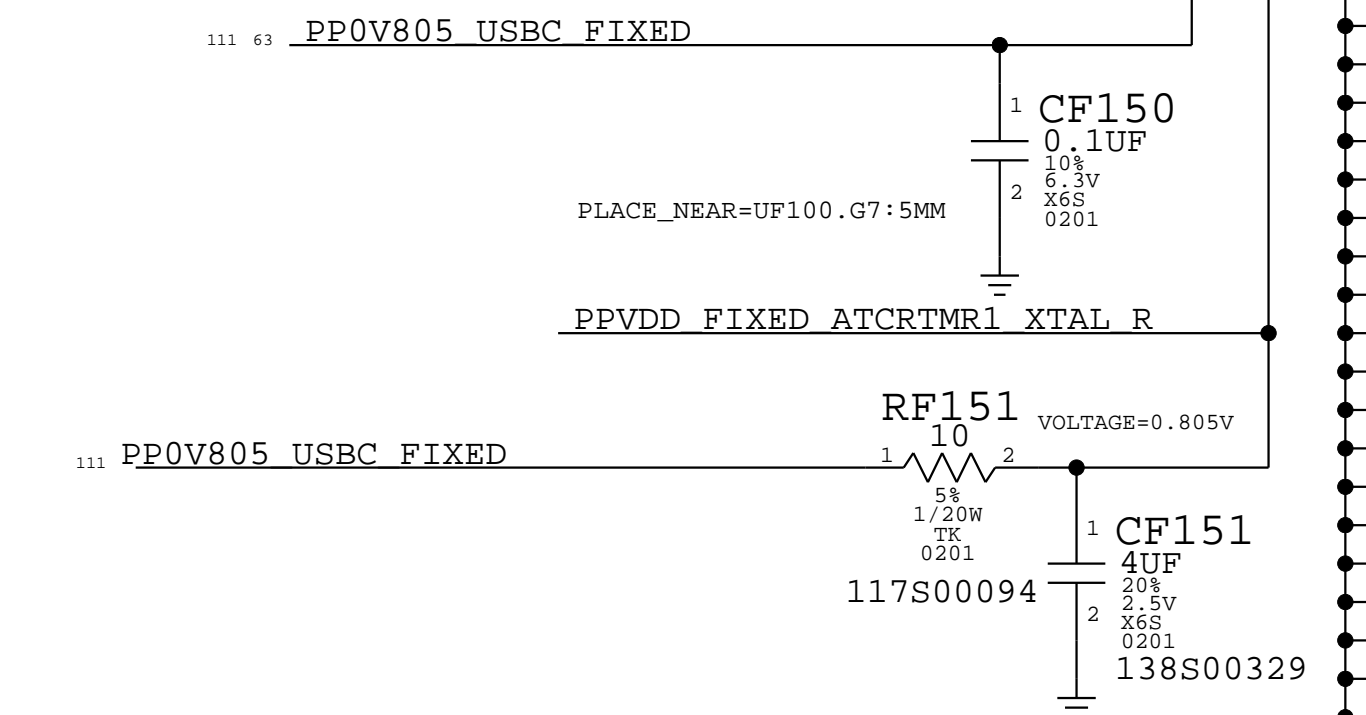
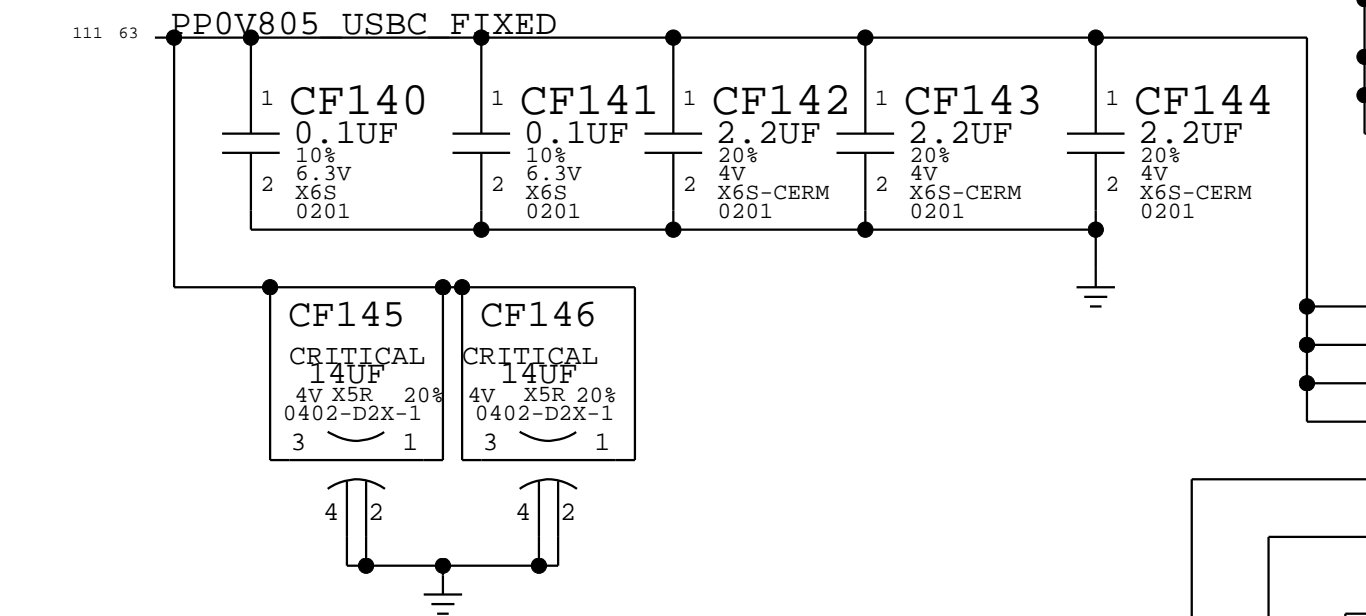
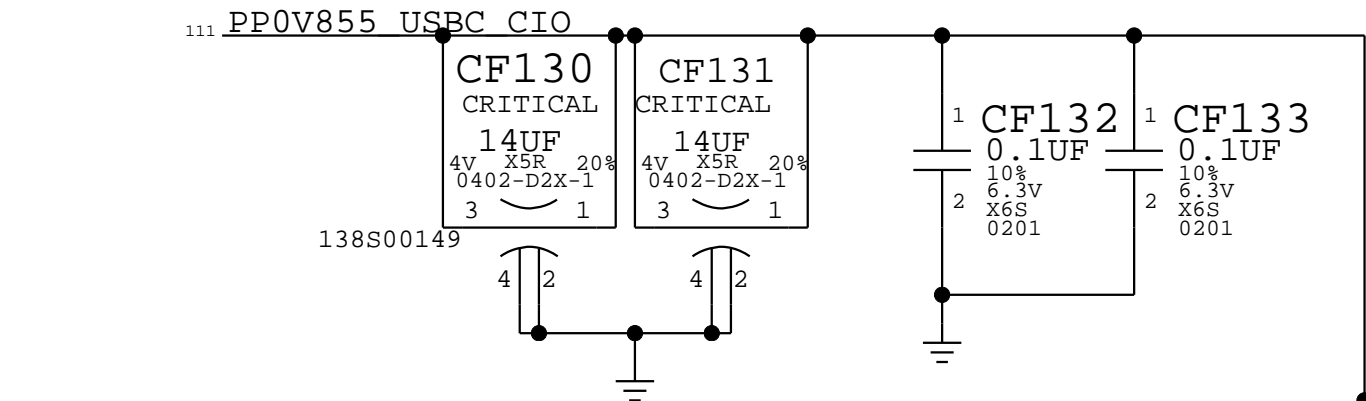
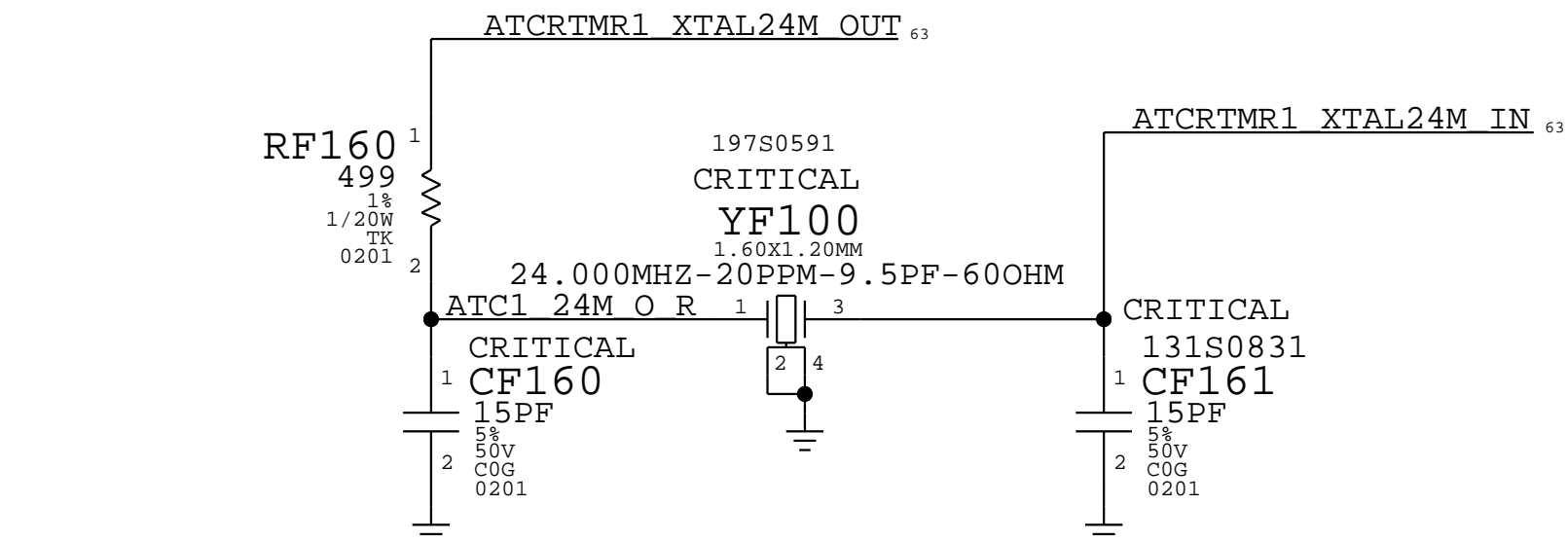
Re-timer to connector connections are set



\*\*\* OK2INTEGRATE \*\*\*

PPIV2 USBC VDDIO

ATCRTMR1 JTAG TDO



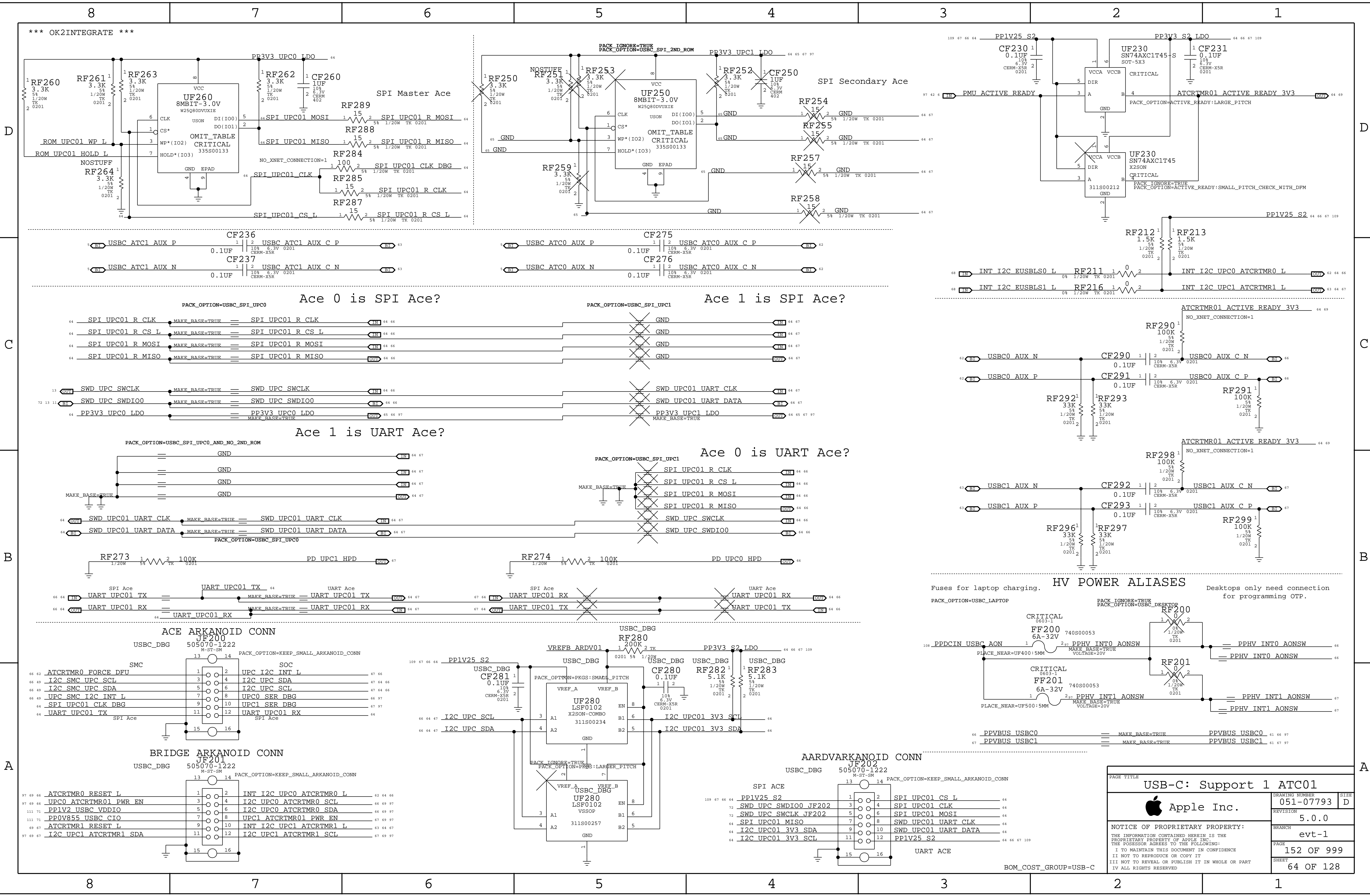
BOM\_COST\_GROUP=TBT


USB-C: High Speed ATC1

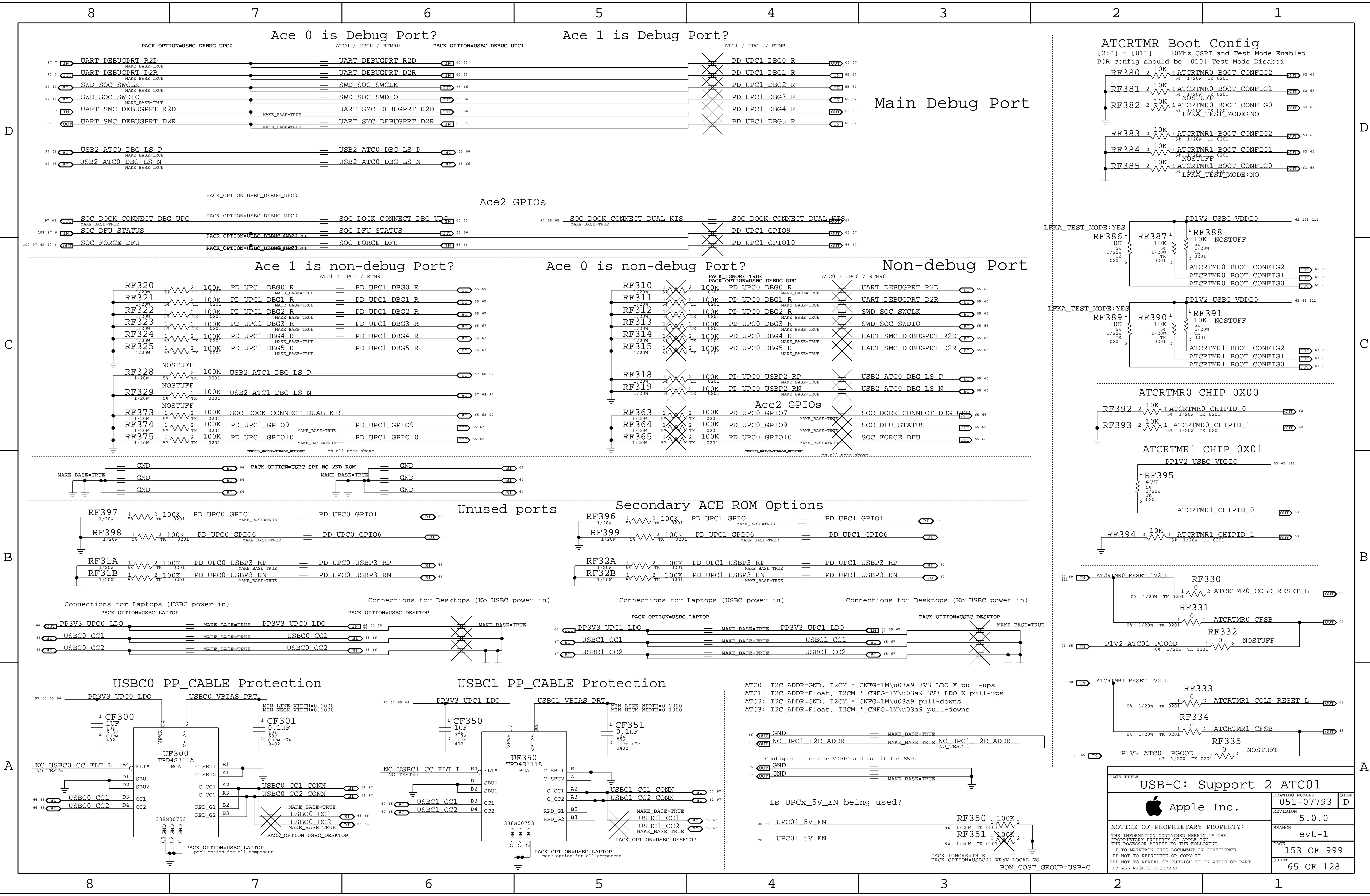
Apple Inc.

NOTICE OF PROPRIETARY PROPERTY:  
THE INFORMATION CONTAINED HEREIN IS THE  
PROPRIETARY PROPERTY OF APPLE INC.  
THE POSSESSOR AGREES TO THE FOLLOWING:  
I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE  
II NOT TO REPRODUCE OR COPY IT  
III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART  
IV ALL RIGHTS RESERVED

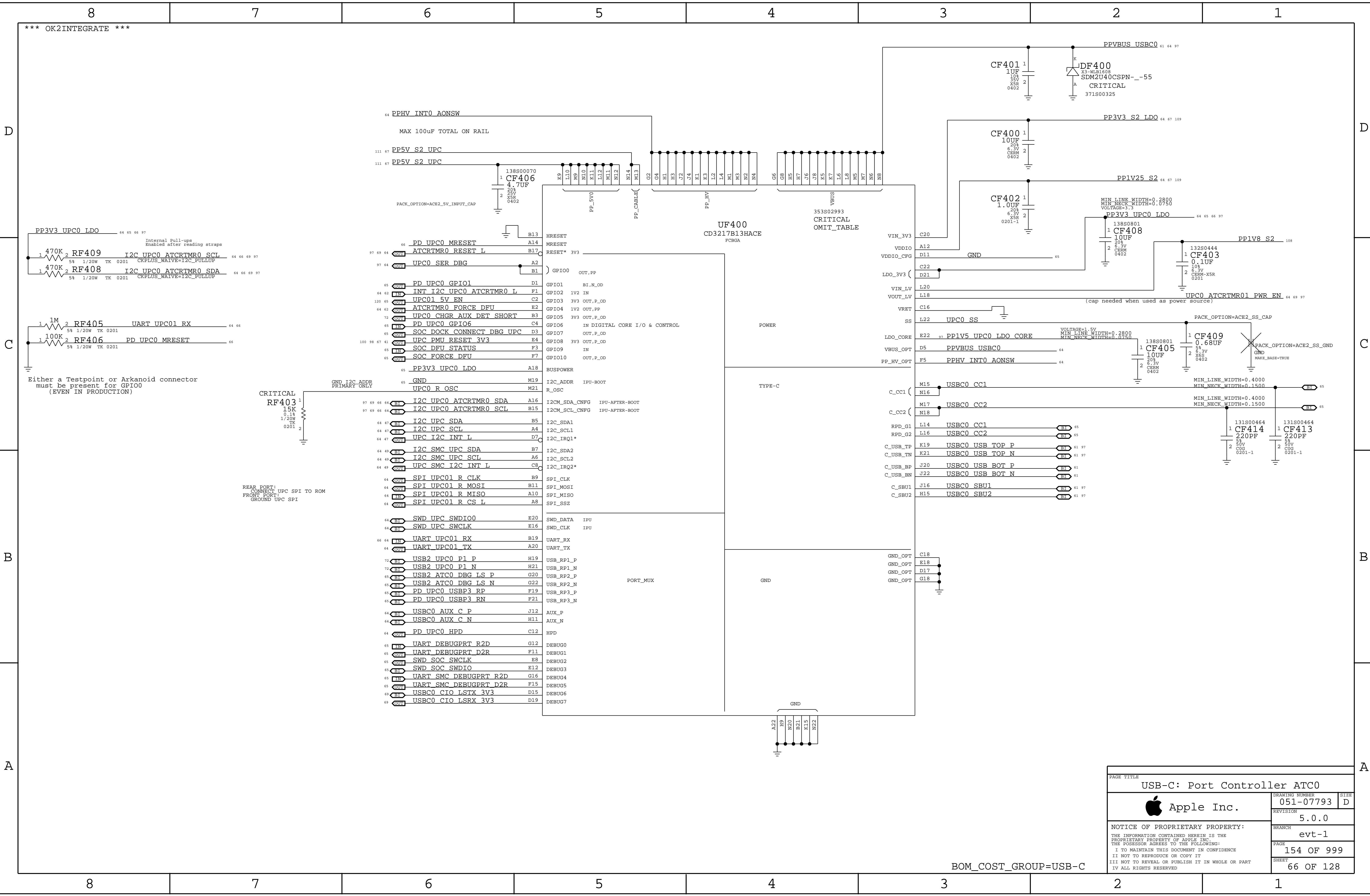
DRAWING NUMBER  
051-07793  
REVISION  
5.0.0  
BRANCH  
evt-1  
PAGE  
151 OF 999  
SHEET  
63 OF 128




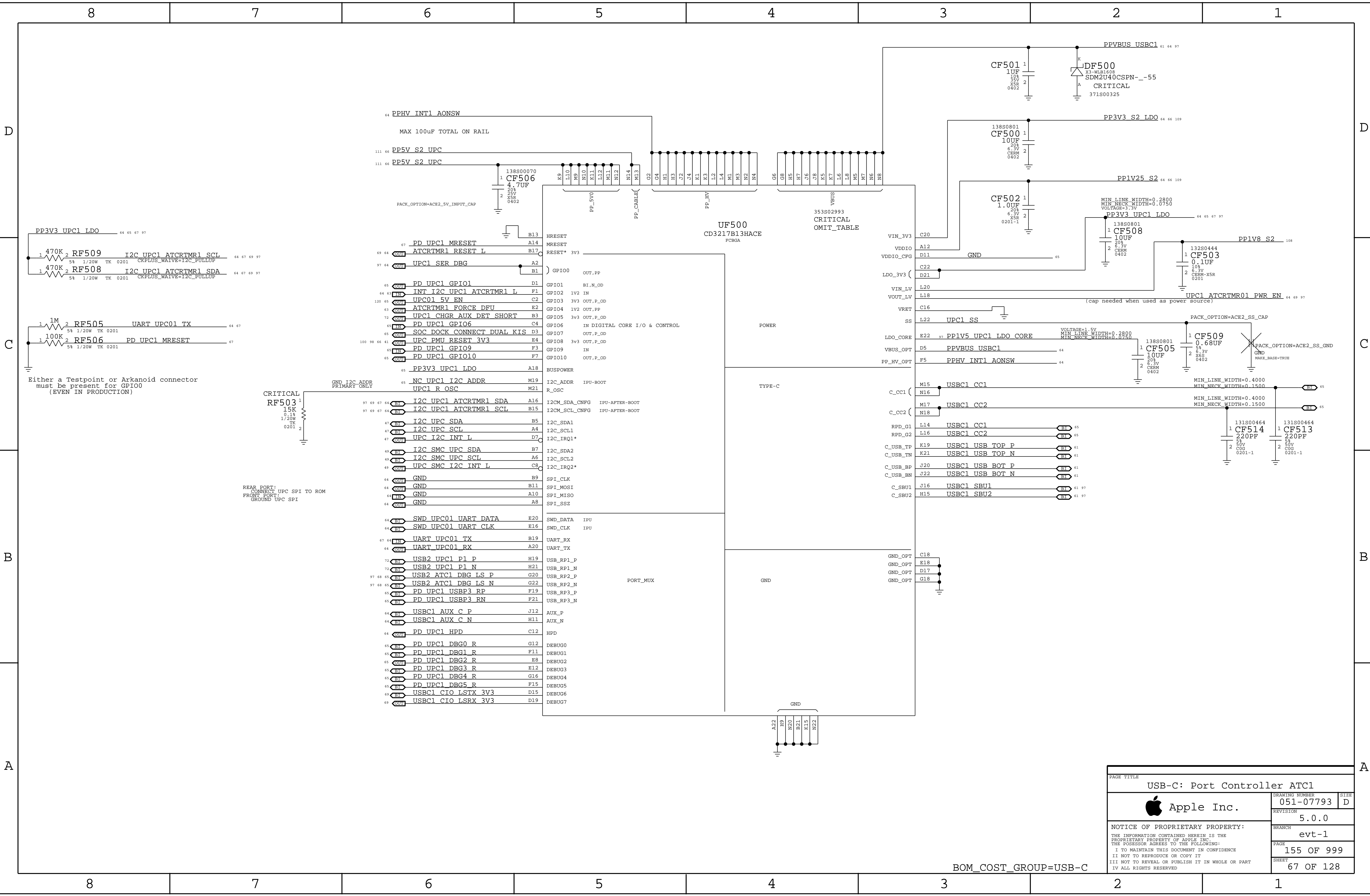
PAGE TITLE			
USB-C: Support 1 ATC01			
 Apple Inc.		DRAWING NUMBER	051-07793
		REVISION	5.0.0
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED		BRANCH	evt-1
		PAGE	152 OF 999
		SHEET	64 OF 128




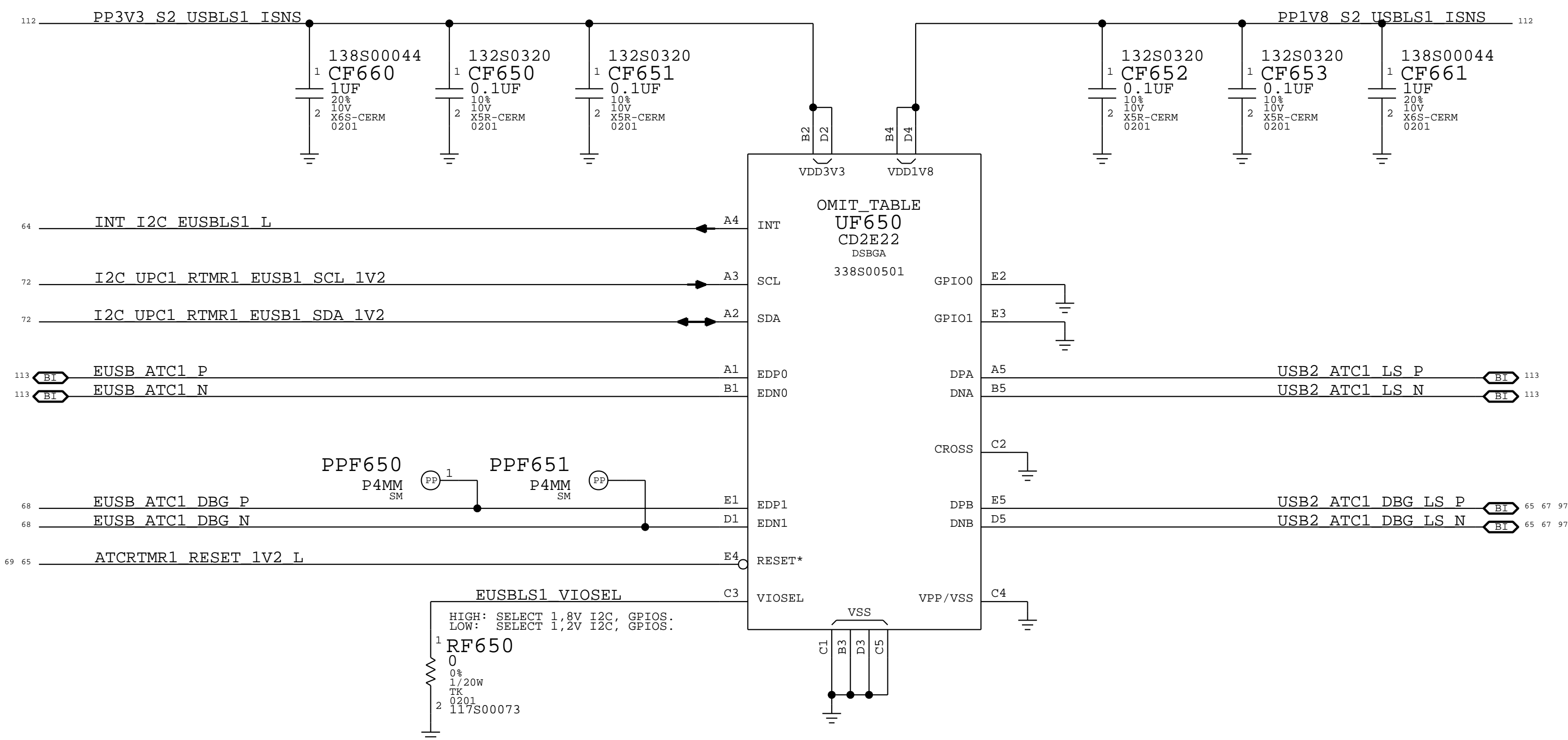
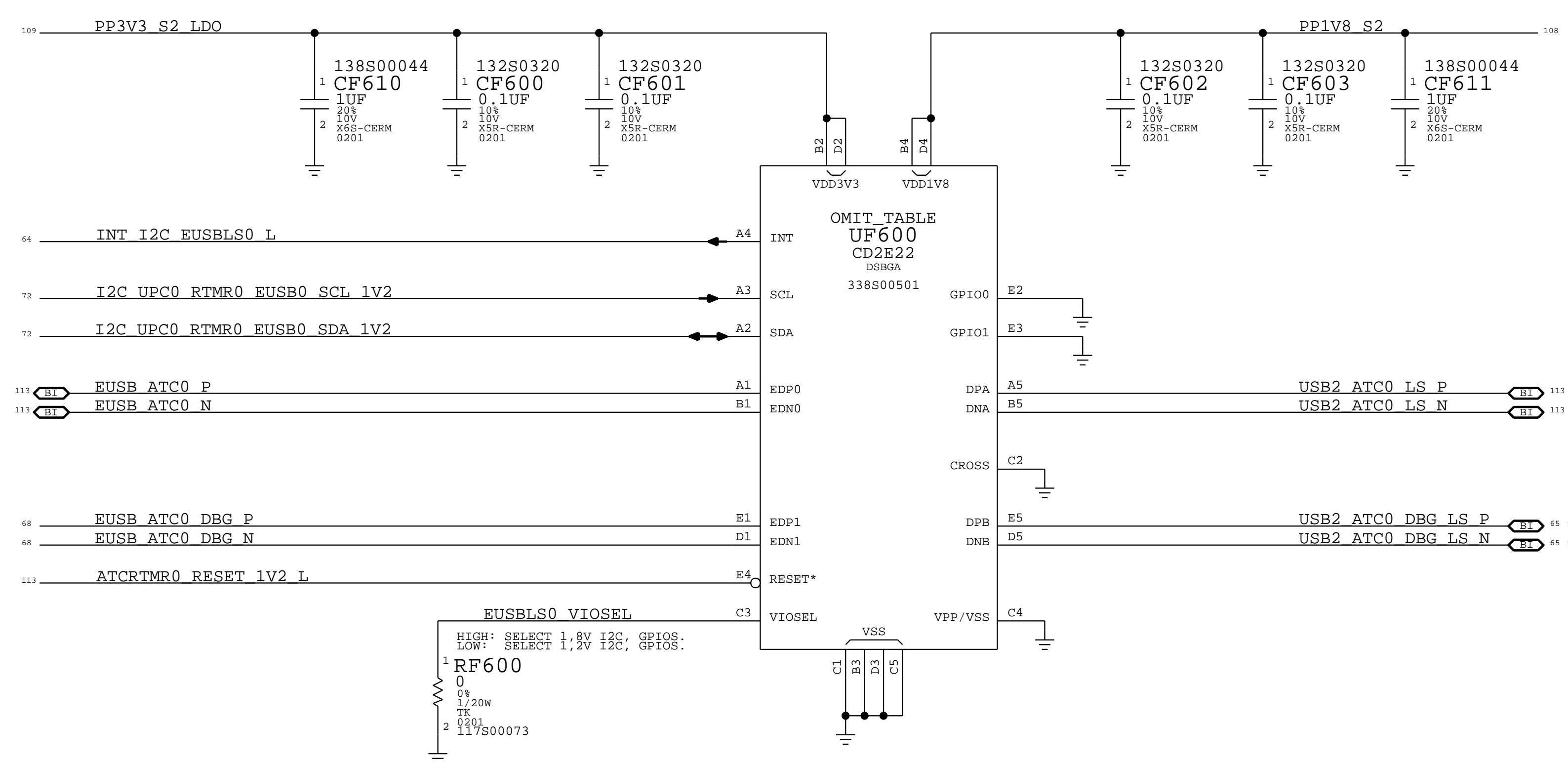
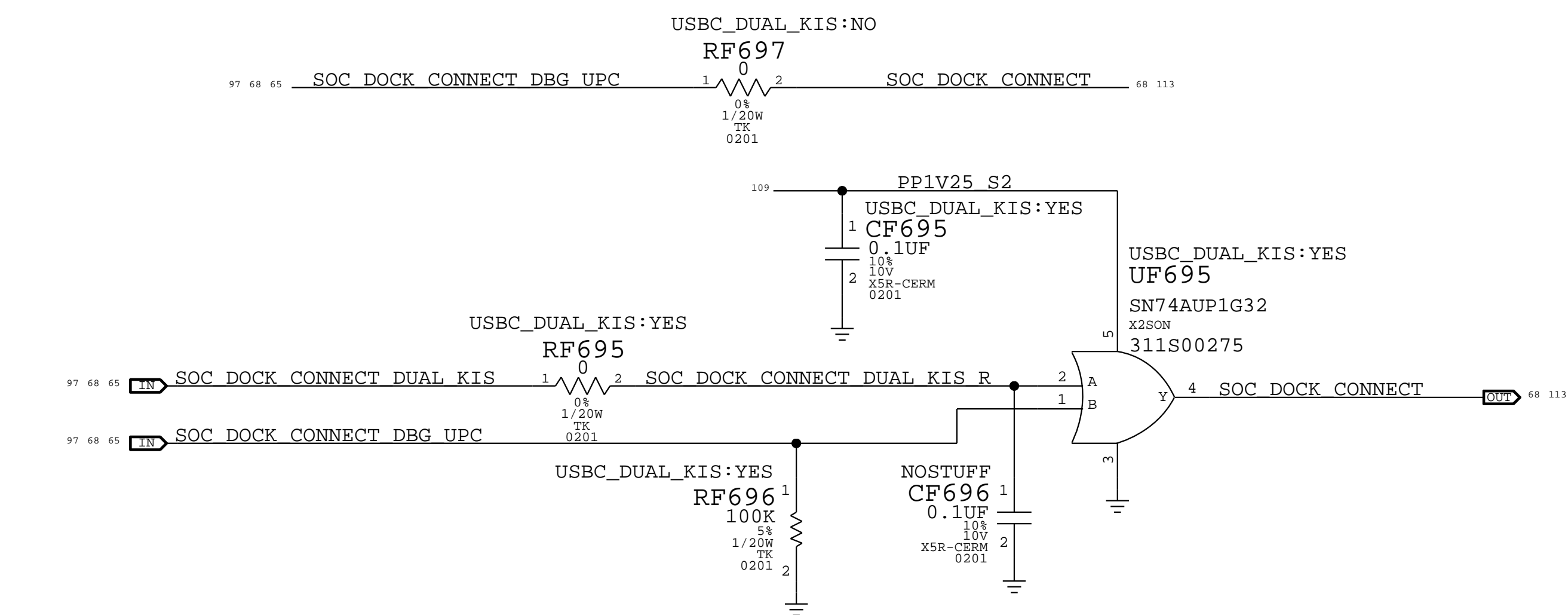
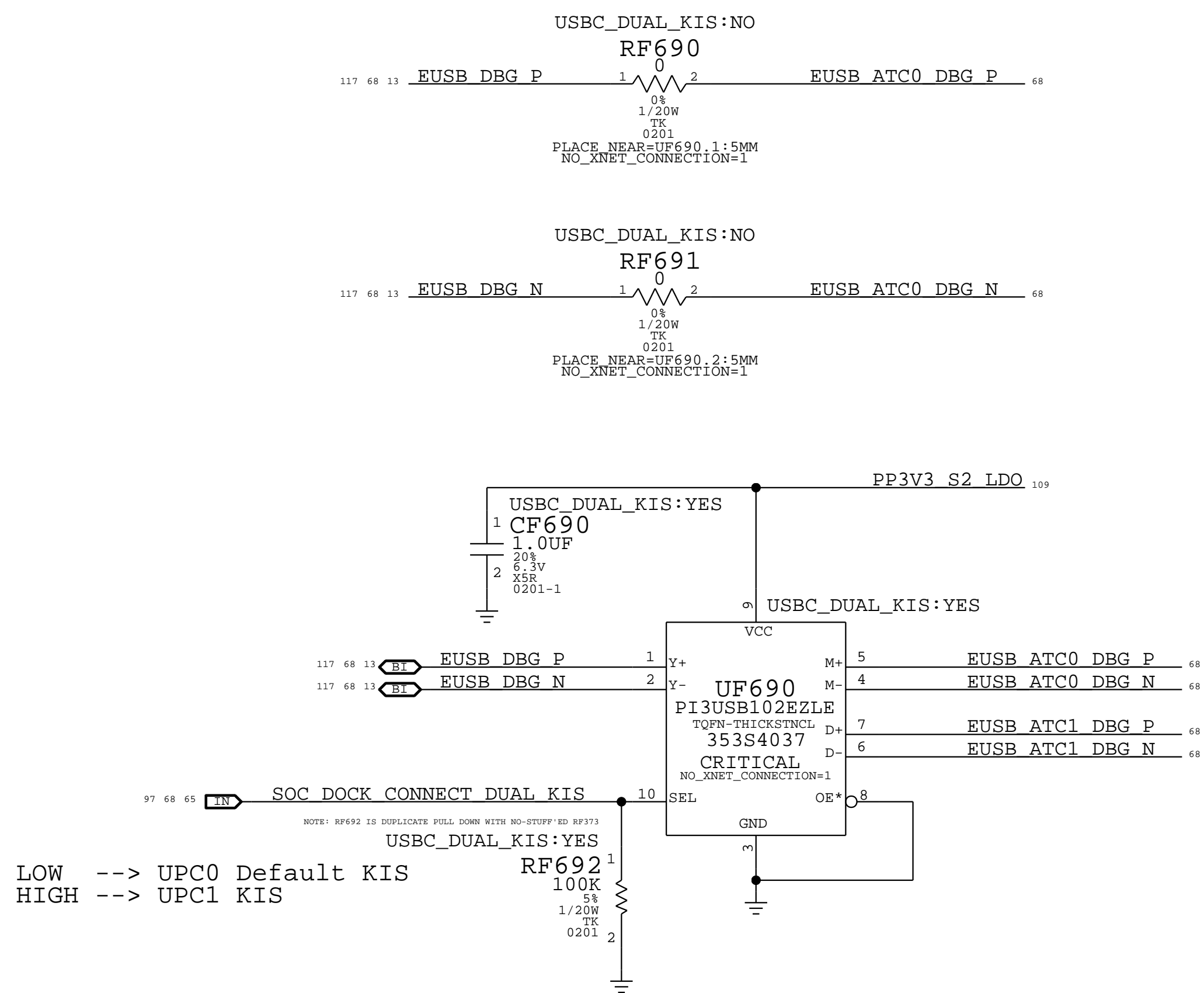





PAGE TITLE		
USB-C: Port Controller ATC0		
 Apple Inc.	DRAWING NUMBER	051-07793
	REVISION	5.0.0
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	BRANCH	evt-1
	PAGE	154 OF 999
	SHEET	66 OF 128



PAGE TITLE		
USB-C: Port Controller ATC1		
 Apple Inc.	DRAWING NUMBER	051-07793
	REVISION	5.0.0
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	BRANCH	evt-1
	PAGE	155 OF 999
	SHEET	67 OF 128

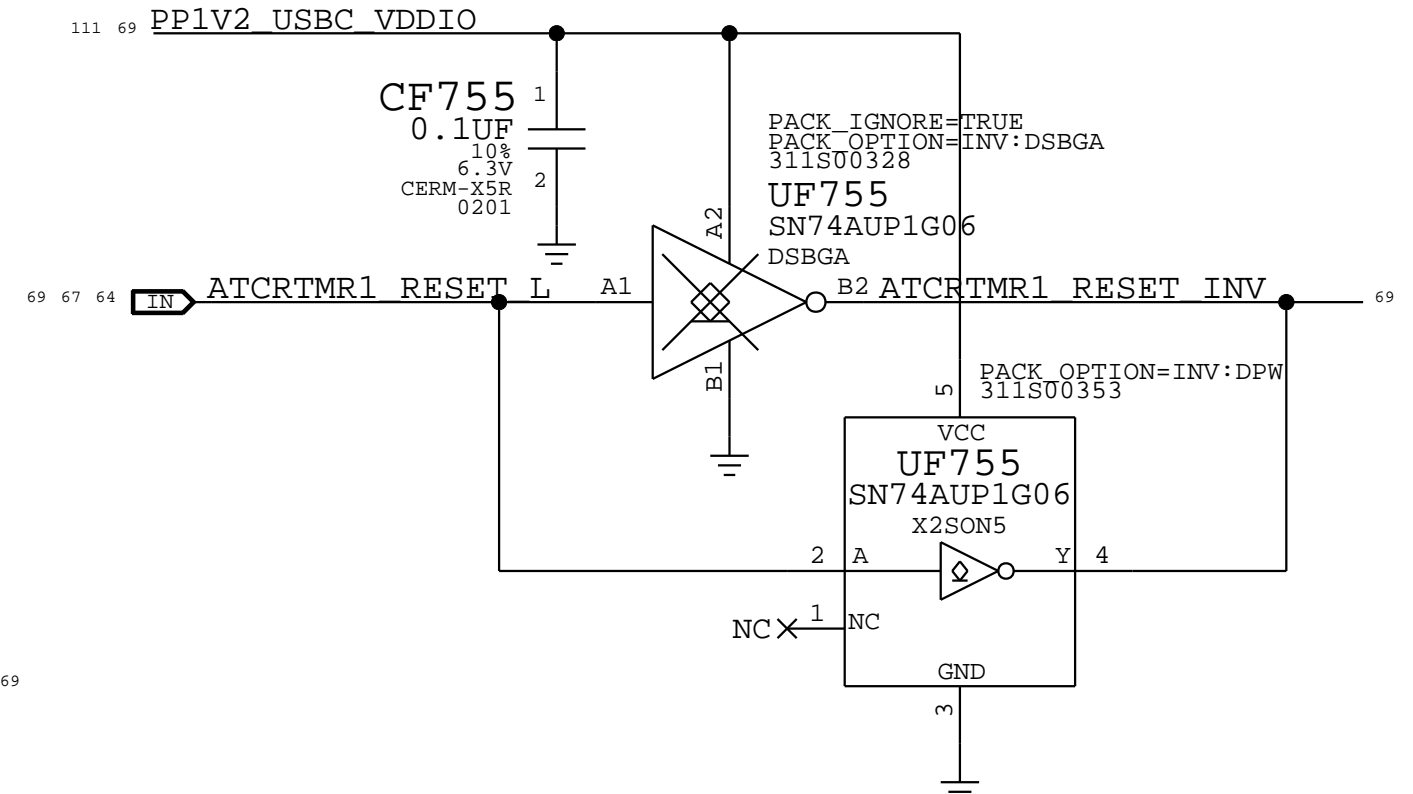


PAGE TITLE		
USB-C: USB2 RPT		
 Apple Inc.	DRAWING NUMBER	SIZE
	051-07793	D
NOTICE OF PROPRIETARY PROPERTY:  THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	REVISION	
	5.0.0	
	BRANCH	evt-1
	PAGE	
	156 OF 999	
	SHEET	
	68 OF 128	

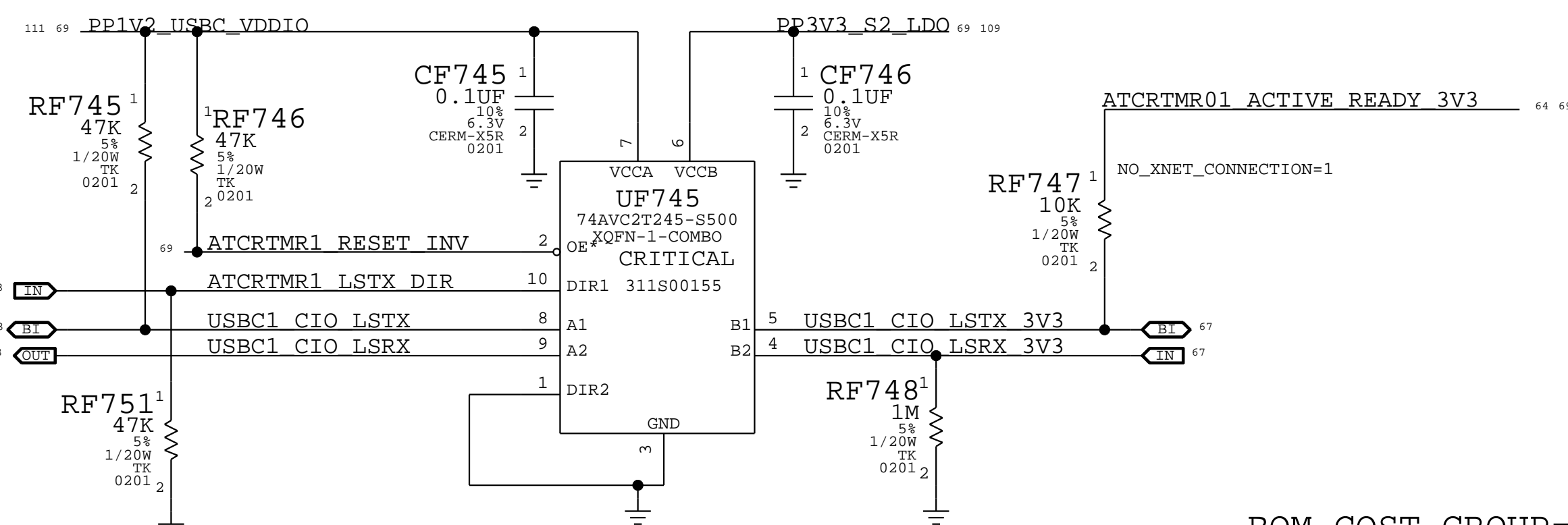
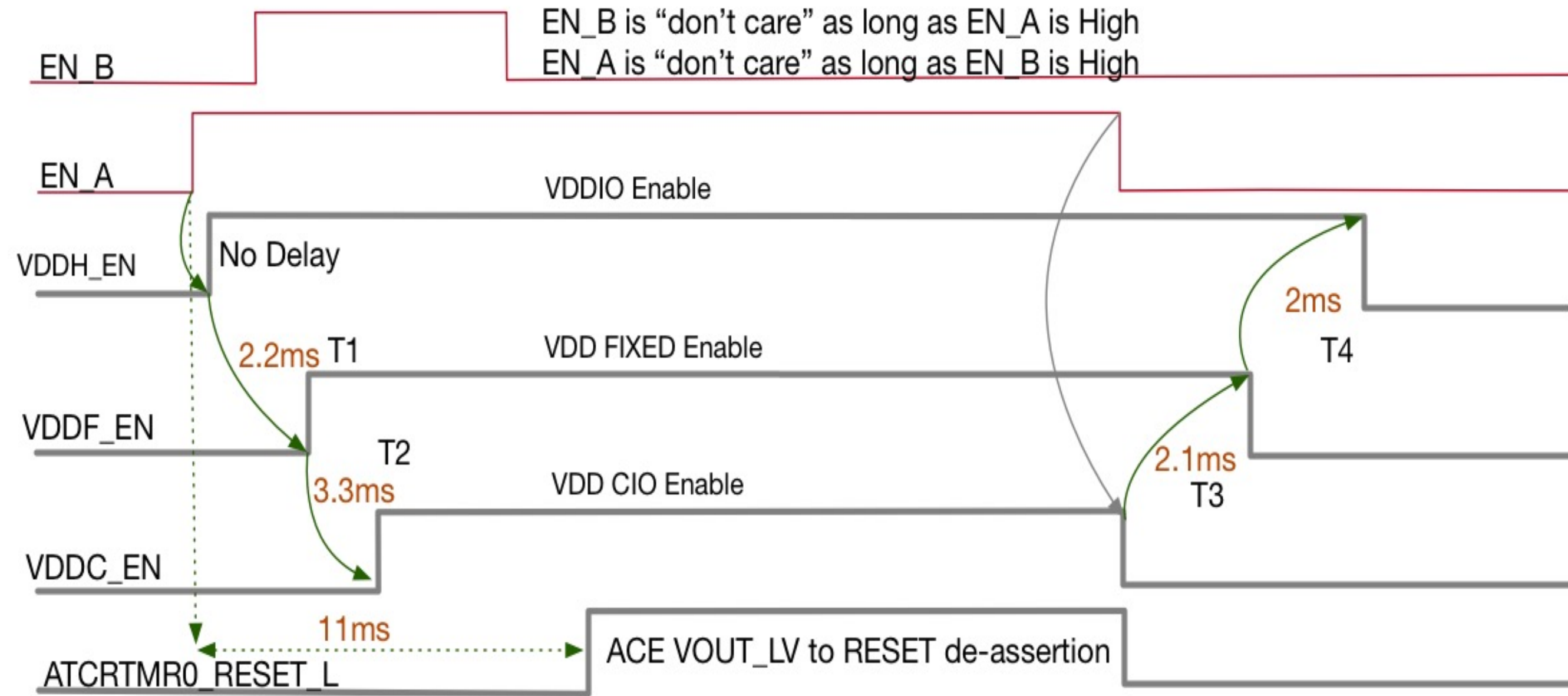
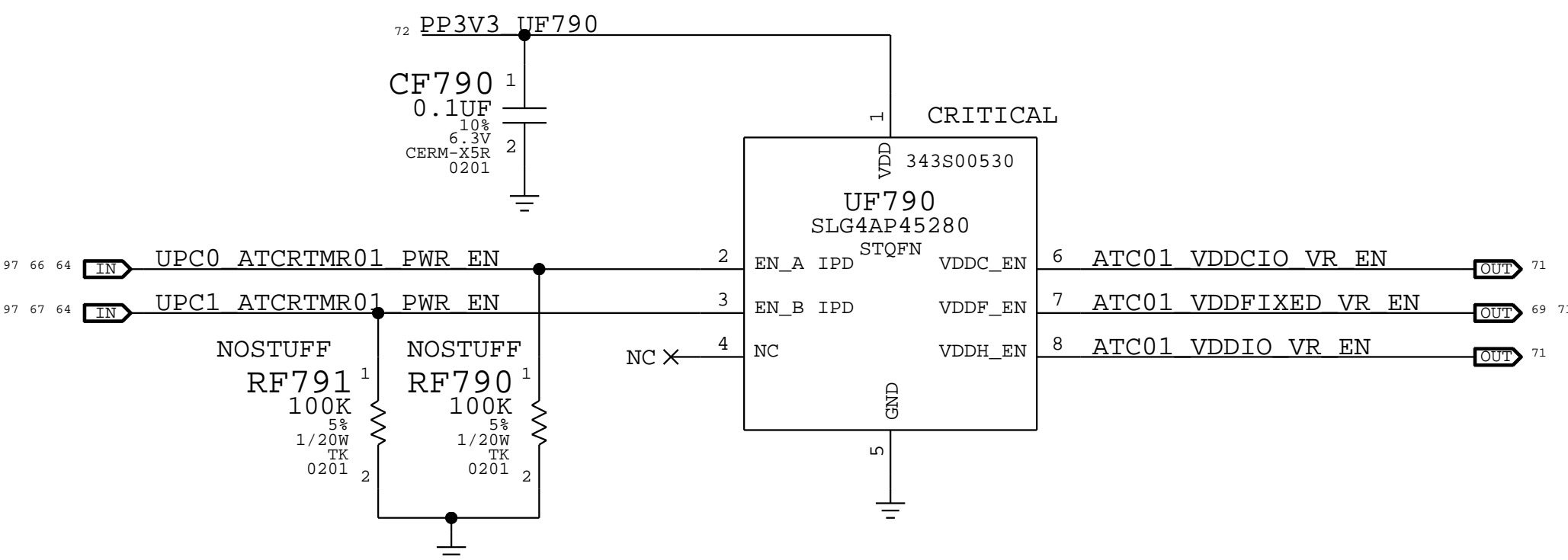
BOM\_COST\_GROUP=USB-C




Power-down Sequence Requirements: The 1.8V first or at the same time as 1V2 --> 3V3\_S2 needs to get disabled at minimum of 6ms from when 1V8 is discharged to below 300mV



Note2: Outputs are an ORed and delayed version of EN\_A or EN\_B



PAGE TITLE			
USB-C: HS Level Shifters			
 Apple Inc.	DRAWING NUMBER		SIZE
	051-07793		D
NOTICE OF PROPRIETARY PROPERTY:  THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE  II NOT TO REPRODUCE OR COPY IT  III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	REVISION		
	5.0.0		
	BRANCH		
	evt-1		
	PAGE	157 OF 999	
	SHEET	69 OF 128	

BOM\_COST\_GROUP=USB-C

\*\*\* OK2INTEGRATE \*\*\*

SET ONE OPTION FOR THE PBUS CAPS

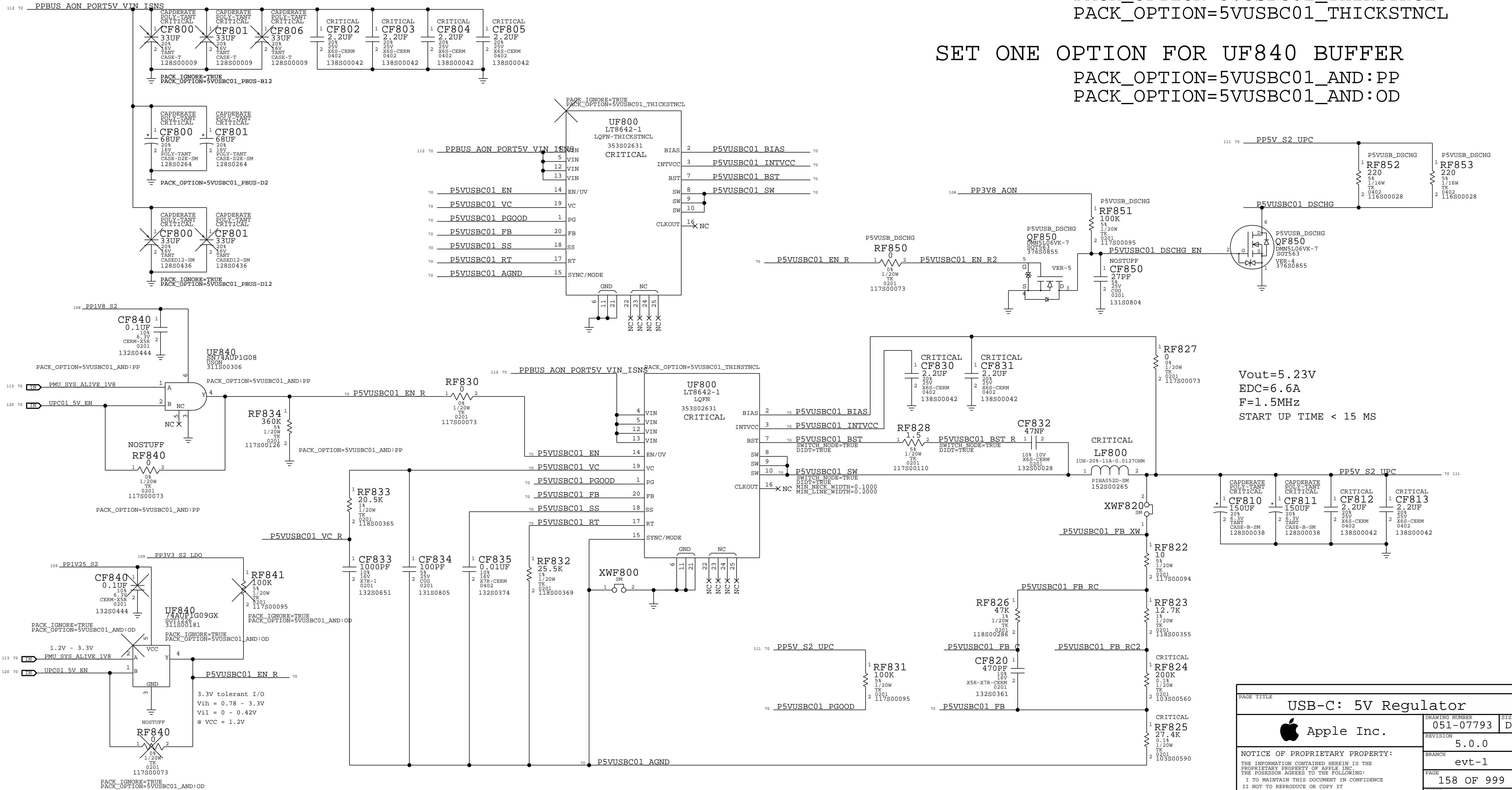
```
PACK_OPTION=5VUSBC01_PBUS-B12
PACK_OPTION=5VUSBC01_PBUS-D2
PACK_OPTION=5VUSBC01_PBUS-D12
```

SET ONE OPTION FOR UF800


```
PACK_OPTION=5VUSBC01_THINSTNCL
PACK_OPTION=5VUSBC01_THICKSTNCL
```

SET ONE OPTION FOR UF840 BUFFER

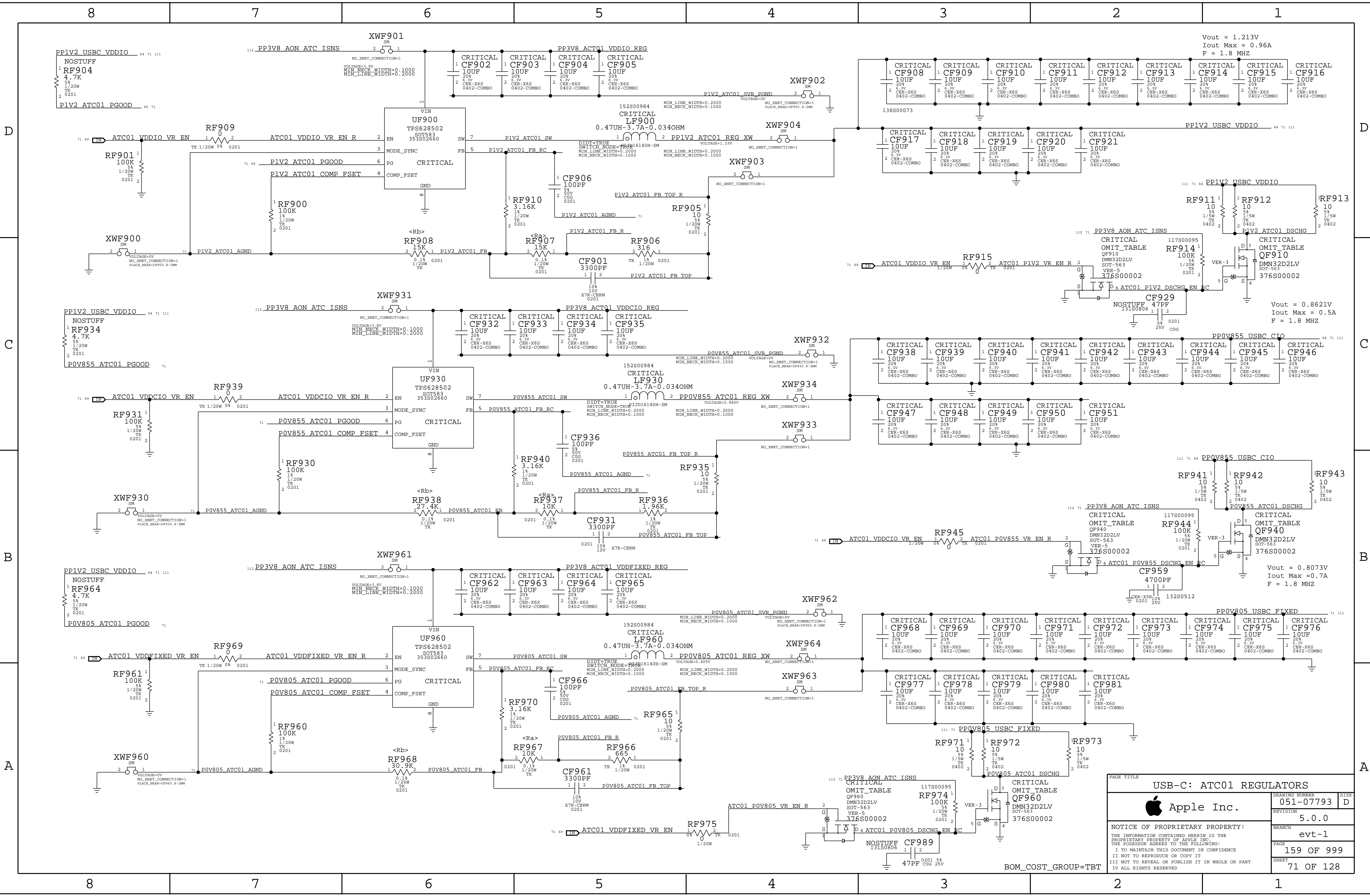
```
PACK_OPTION=5VUSBC01_AND:PP
PACK_OPTION=5VUSBC01_AND:OD
```




BOM\_COST\_GROUP=USB-C

PAGE TITLE			
USB-C: 5V Regulator			
	Apple Inc.	DRAWING NUMBER	051-07793
		SIZE	D
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED		REVISION	5.0.0
		BRANCH	evt-1
		PAGE	158 OF 999
		SHEET	70 OF 128





PAGE TITLE		
USB-C: ATC01 REGULATORS		
 Apple Inc.	DRAWING NUMBER	051-07793
	REVISION	5.0.0
	BRANCH	evt-1
	PAGE	159 OF 999
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED		SHEET 71 OF 128

D

C

B

A

D

C

B

A

PORT 0 ACE/RTMR I2C

DEVICE	7-BIT
RT13 0	0X18
USB2 RTMR 0	0X4F

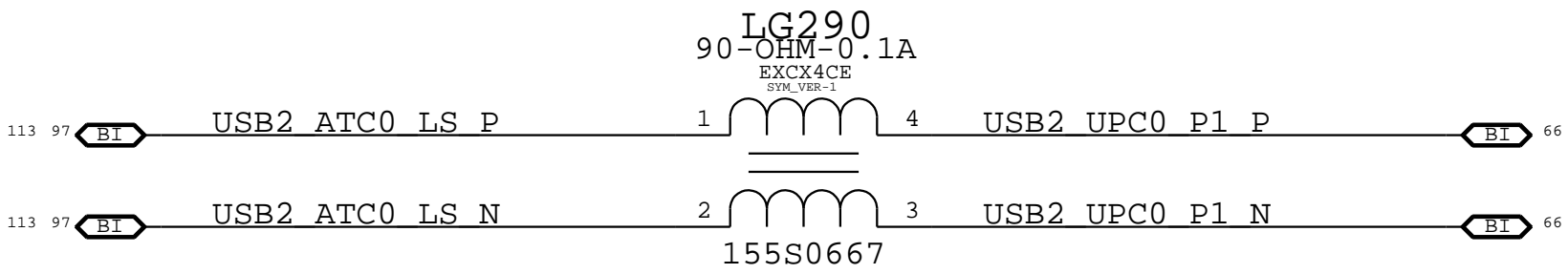
(UPC0 MASTER)  
(LEVEL SHIFTED FROM 3V3)

I2C UPC0 ATCRTMR0\_SCL\_1V2  
MAKE\_BASE=TRUE  
I2C UPC0 ATCRTMR0\_SDA\_1V2  
MAKE\_BASE=TRUE

(ATC RETIMER0 SLAVE)

I2C UPC0 ATCRTMR0\_SCL\_1V2  
I2C UPC0 ATCRTMR0\_SDA\_1V2

USB2 CMC <RDAR://83587742>



PORT 1 ACE/RTMR I2C

DEVICE	7-BIT
RT13 1	0X18
USB2 RTMR 1	0X4F

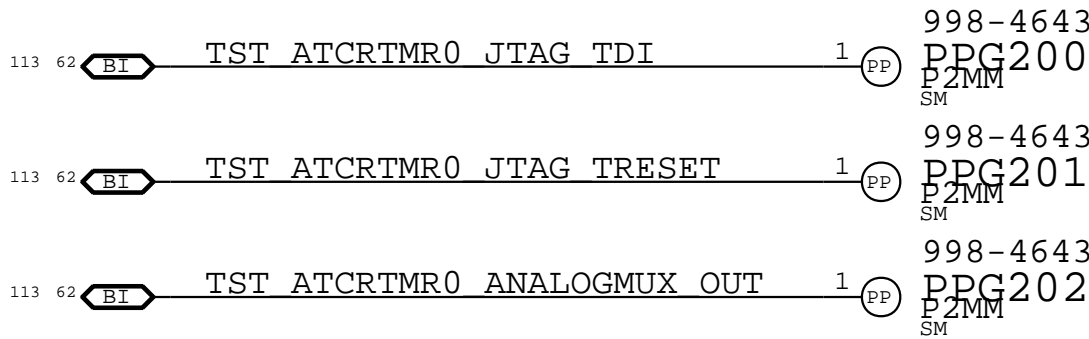
(UPC1 MASTER)  
(LEVEL SHIFTED FROM 3V3)

I2C UPC1 ATCRTMR1\_SCL\_1V2  
MAKE\_BASE=TRUE  
I2C UPC1 ATCRTMR1\_SDA\_1V2  
MAKE\_BASE=TRUE

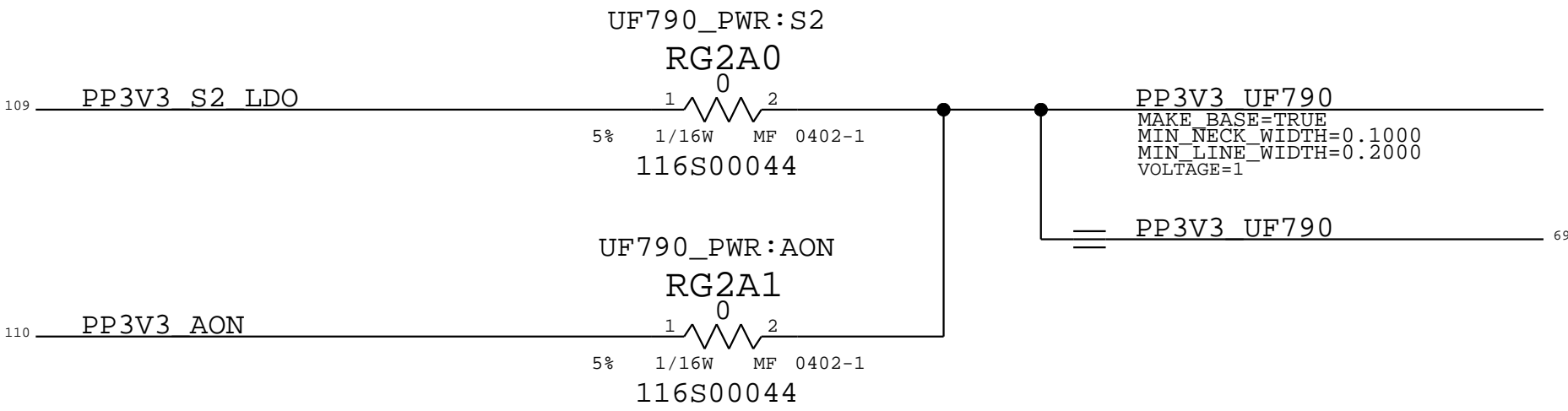
(ATC RETIMER1 SLAVE)

I2C UPC1 ATCRTMR1\_SCL\_1V2  
I2C UPC1 ATCRTMR1\_SDA\_1V2

PROBE POINTS FOR DEBUG ACCESS



POWER OPTIONS FOR UF790 <RDAR://84320820>

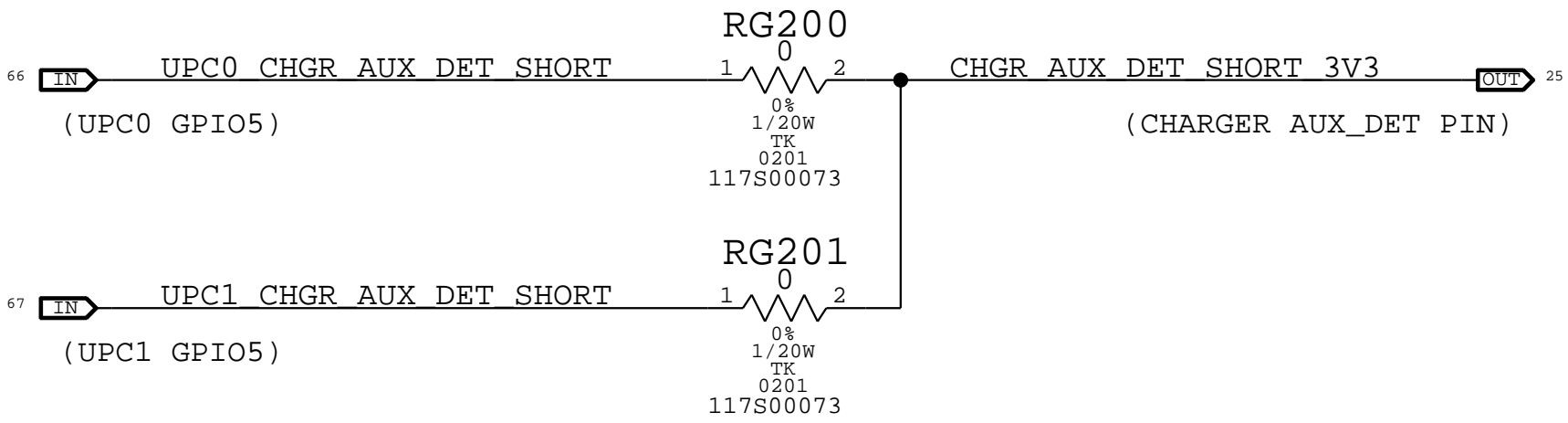
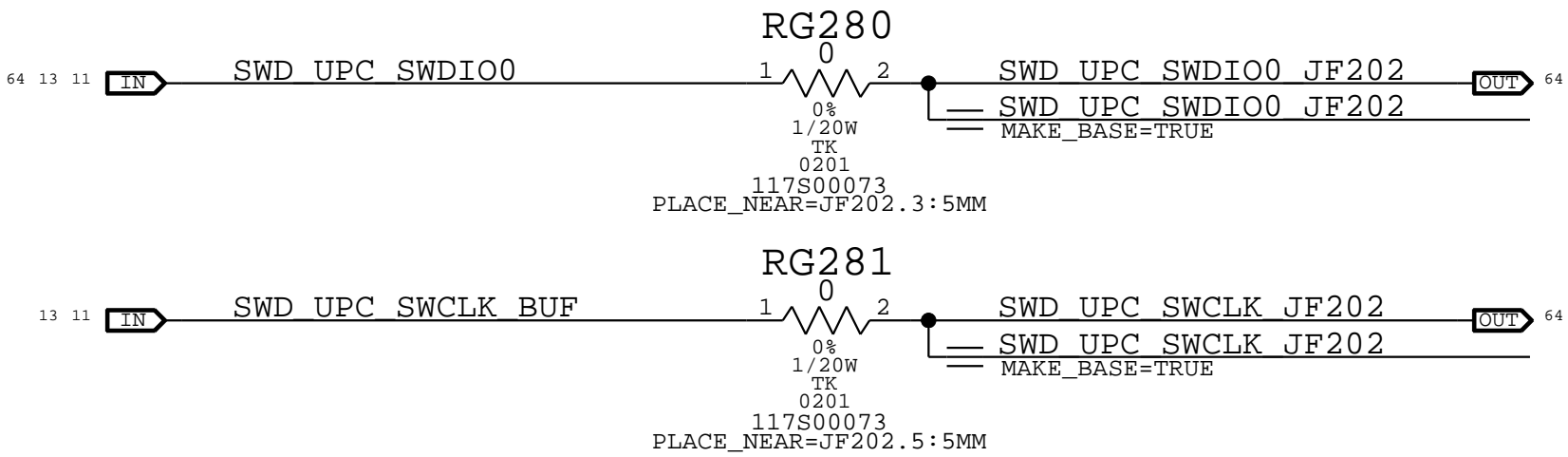


CHARGER AUX DET CONNECTIONS

<RDAR://70072178>

ALLOW ACE TO SEND A SIGNAL TO CHARGER

TO BLOCK SYSTEM CURRENT THROUGH ACE2 FETS DURING ACE2 SOFT START



BOM\_COST\_GROUP=USB-C

USB-C: PROJECT SUPPORT



Apple Inc.

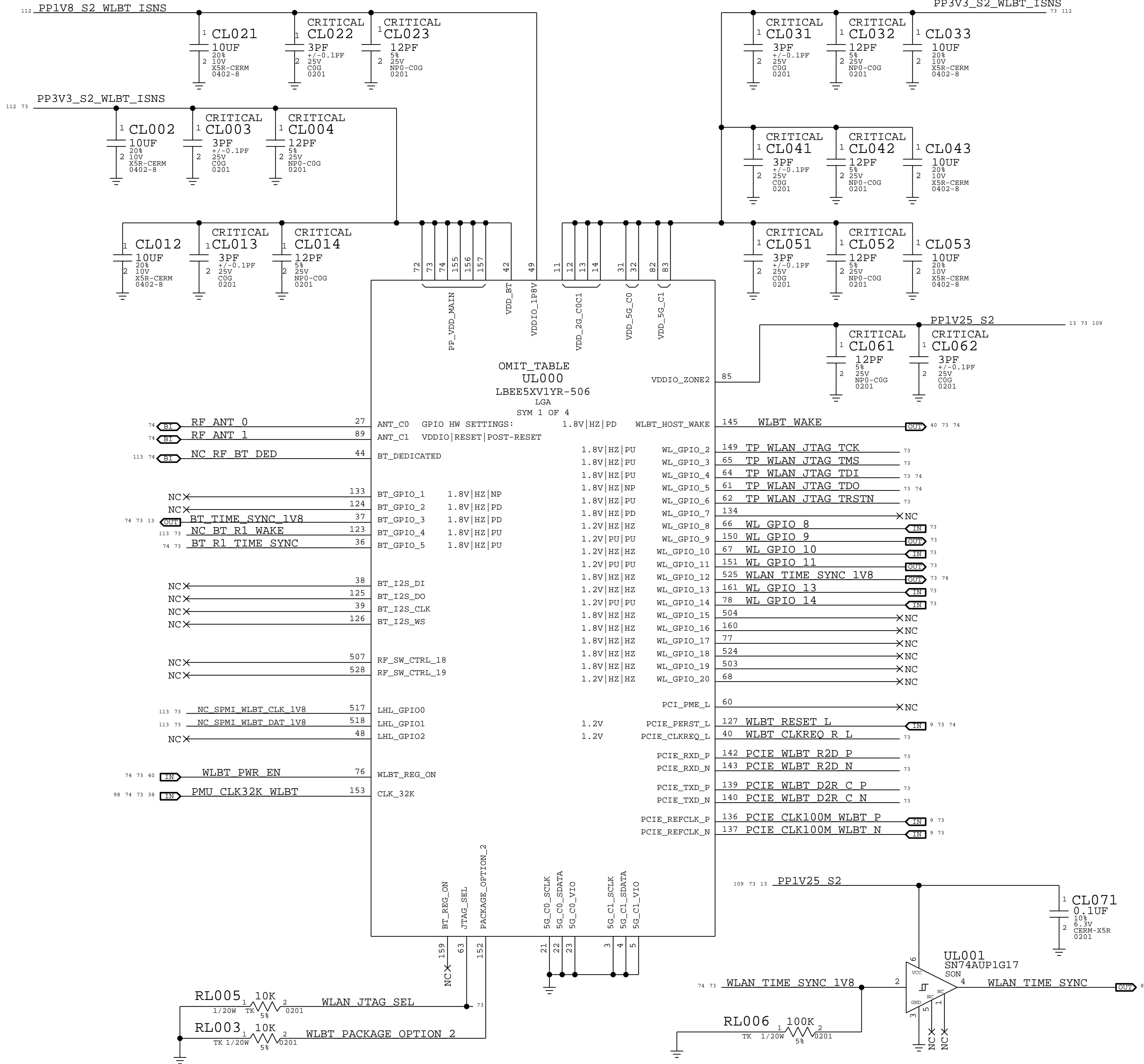
NOTICE OF PROPRIETARY PROPERTY:  
THE INFORMATION CONTAINED HEREIN IS THE  
PROPRIETARY PROPERTY OF APPLE INC.  
THE POSSESSOR AGREES TO THE FOLLOWING:  
I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE  
II NOT TO REPRODUCE OR COPY IT  
III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART  
IV ALL RIGHTS RESERVED

DRAWING NUMBER	051-07793	SIZE	D
REVISION	5.0.0	BRANCH	evt-1
PAGE	162 OF 999	SHEET	72 OF 128

\*\*\* OK2INTEGRATE \*\*\*

# RASPUTIN WIFI/BT MODULE

FOR HOSTINTERFACE TABLES REFER TO  
RDAR://PROBLEM/53187294



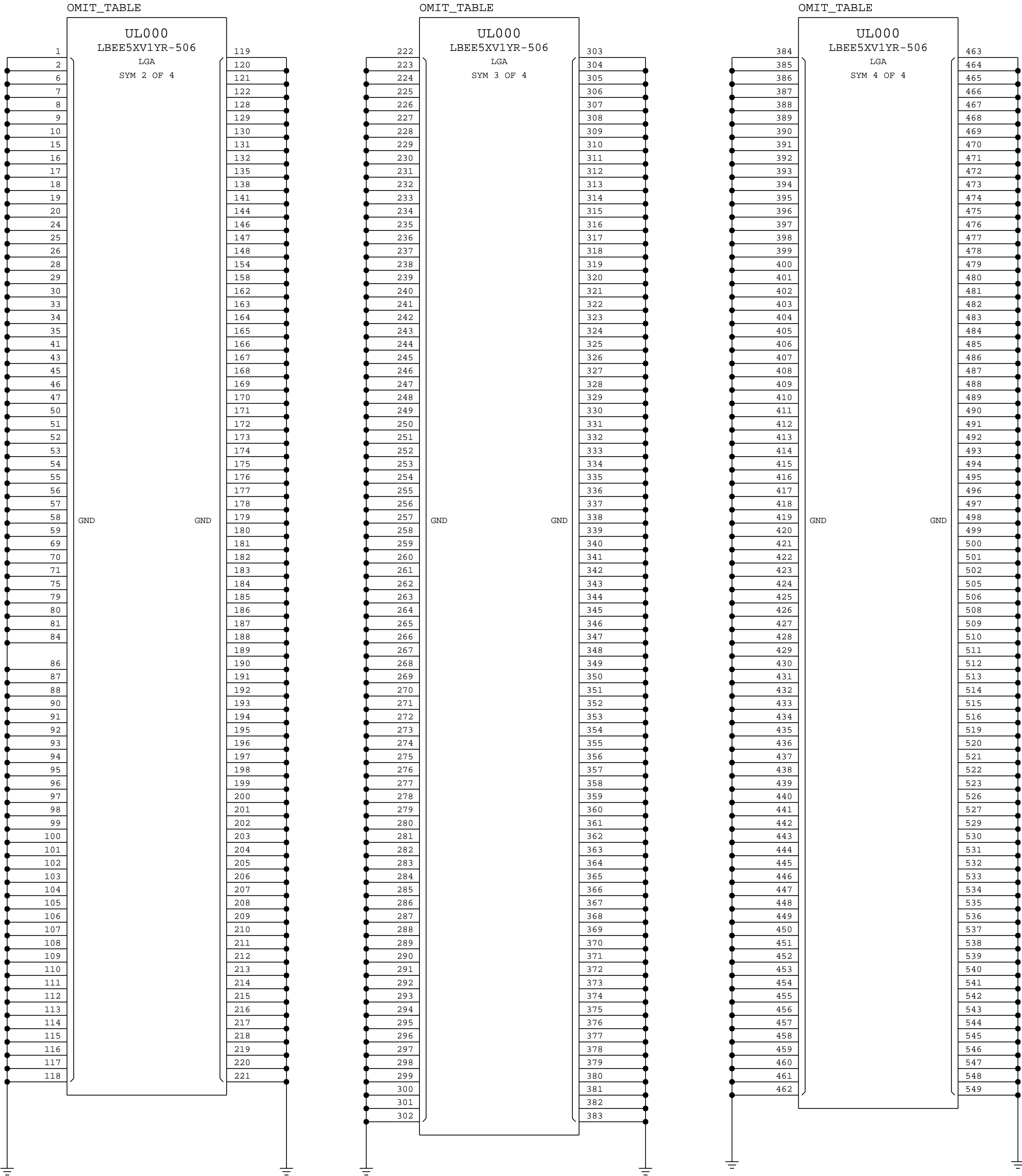
TPL001	TP-P55	PMU CLK32K WLBT	38 73 74 98
TPL002	TP-P55	WLBT PWR EN	40 73 74
TPL003	TP-P55	WLBT WAKE	40 73 74
TPL004	TP-P55	TP WLAN JTAG TCK	73
TPL005	TP-P55	TP WLAN JTAG TMS	73
TPL006	TP-P55	TP WLAN JTAG TDI	73 74
TPL007	TP-P55	TP WLAN JTAG TDO	73 74
TPL008	TP-P55	TP WLAN JTAG TRSTN	73
TPL009	TP-P55	WLAN JTAG SEL	73
TPL012	TP-P55	BT TIME SYNC 1V8	13 73 74
TPL013	TP-P55	NC BT R1 WAKE	73 113
TPL014	TP-P55	BT R1 TIME SYNC	73 74
TPL017	TP-P55	WL GPIO 8	73
TPL018	TP-P55	WL GPIO 9	73
TPL019	TP-P55	WL GPIO 10	73
TPL020	TP-P55	WL GPIO 11	73
TPL021	TP-P55	WLAN TIME SYNC 1V8	73 74
TPL022	TP-P55	WL GPIO 13	73
TPL023	TP-P55	WL GPIO 14	73
TPL024	TP-P55	NC SPMI WLBT CLK 1V8	73 113
TPL025	TP-P55	NC SPMI WLBT DAT 1V8	73 113
PPL030	SW P4MM	PCIE CLK100M WLBT P	9 73
PPL031	SW P4MM	PCIE CLK100M WLBT N	9 73
TPL032	TP-P55	WLBT RESET L	9 73 74
TPL033	TP-P55	WLBT CLKREQ L	9 73 74

PAGE TITLE WIFI/BT: MODULE			
	DRAWING NUMBER	051-07793	SIZE D
	REVISION	5.0.0	
	BRANCH	evt-1	
	PAGE	200 OF 999	
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED		SHEET	73 OF 128

BOM\_COST\_GROUP=WIRELESS

THIS PAGE IS NOT SYNCED TO THE REF DESIGN

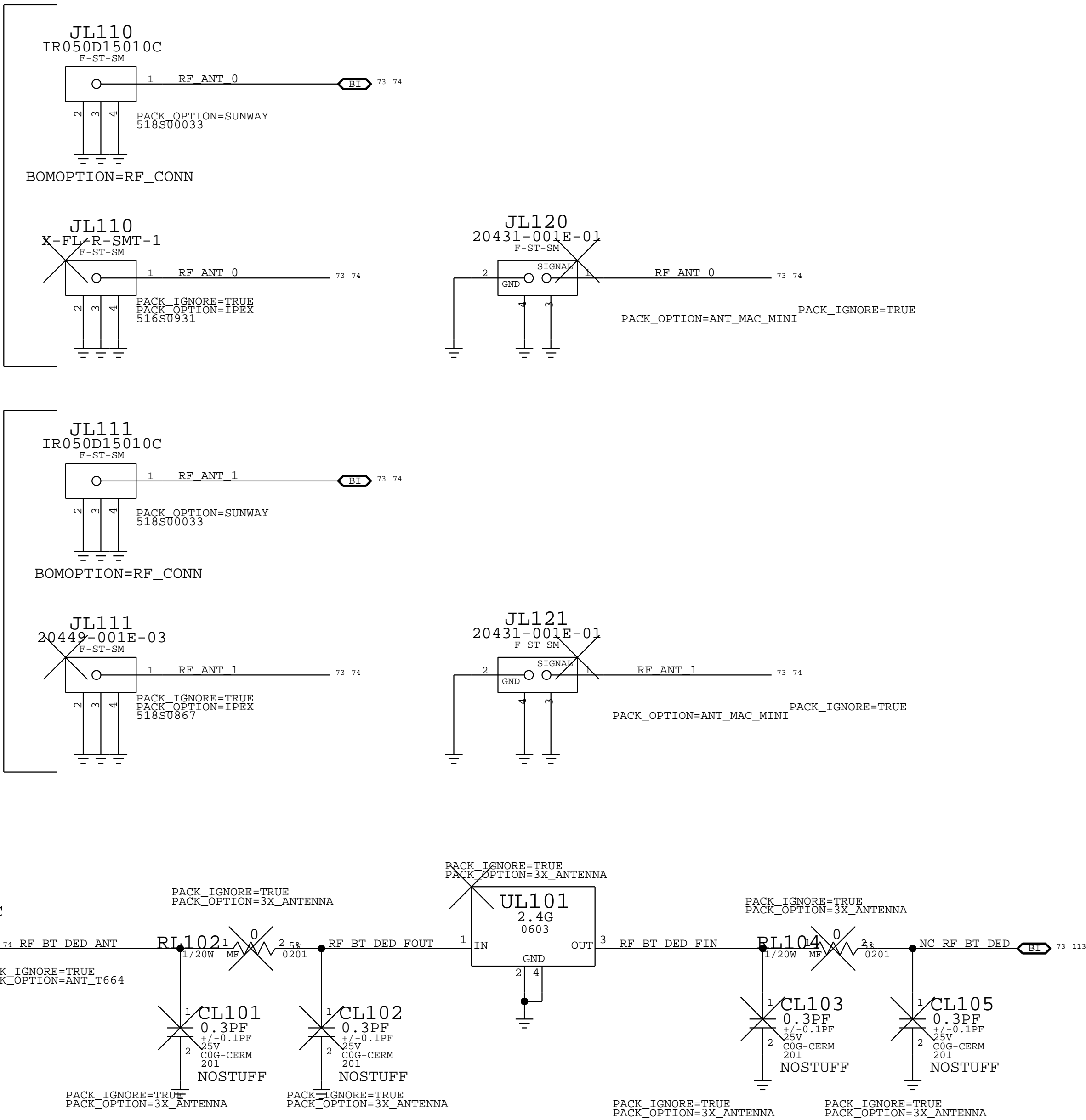
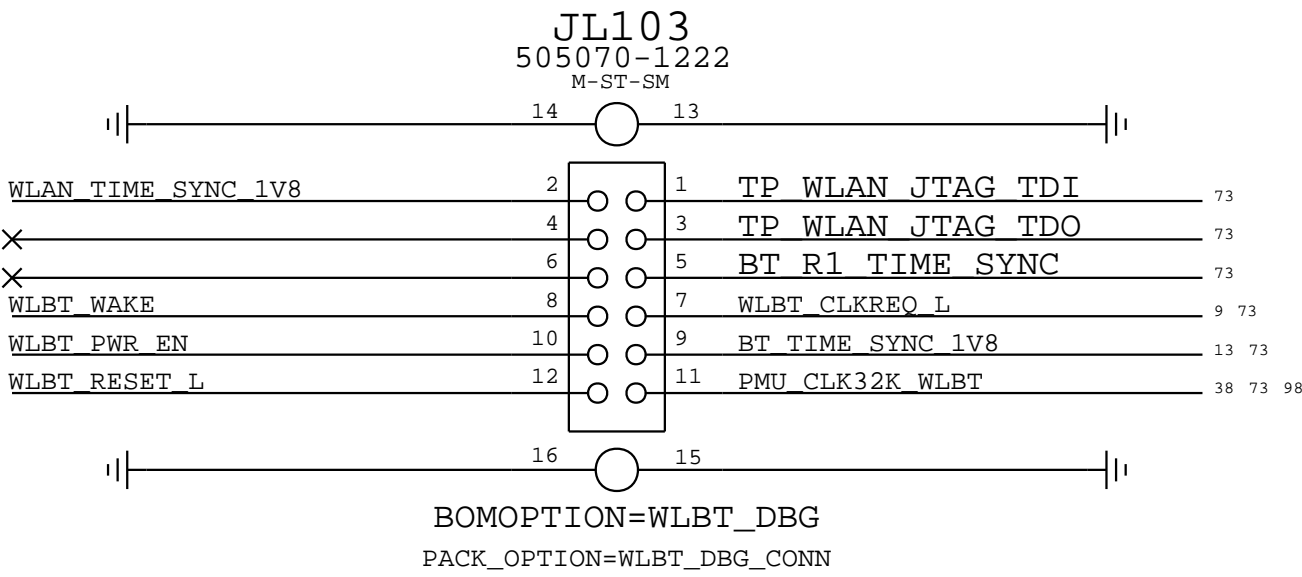
# ANTENNA CONNECTORS



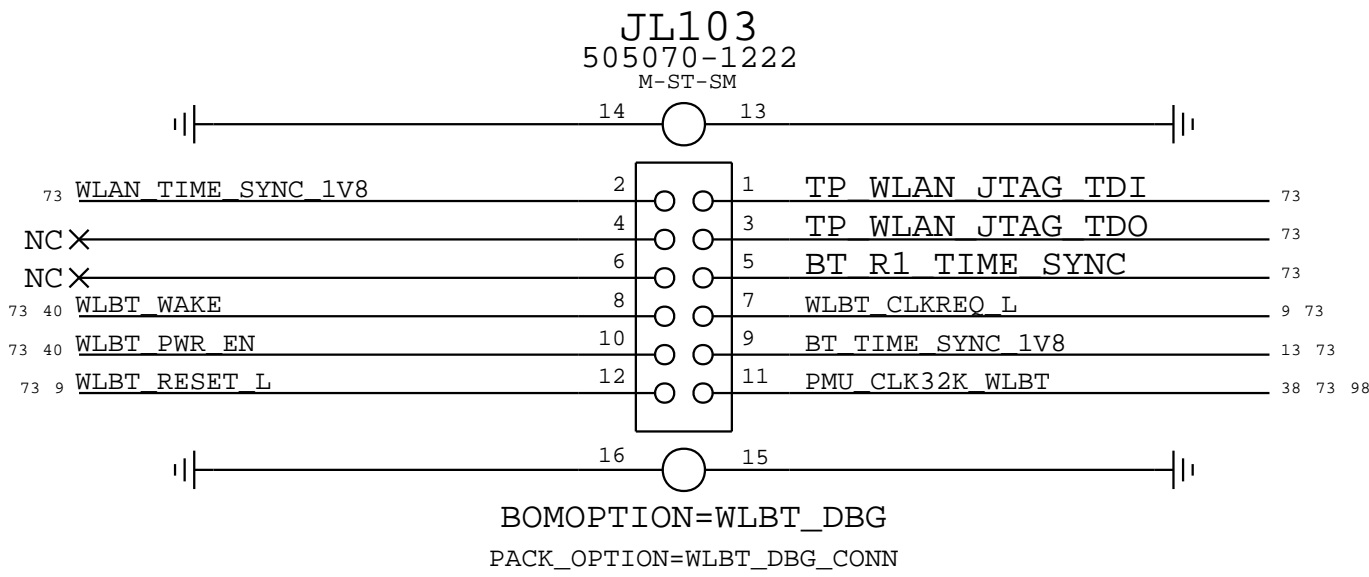
2G\_C1  
5G\_C0  
BT\_C0

2G\_C0  
5G\_C1  
BT\_C1

BT\_C0\_DED



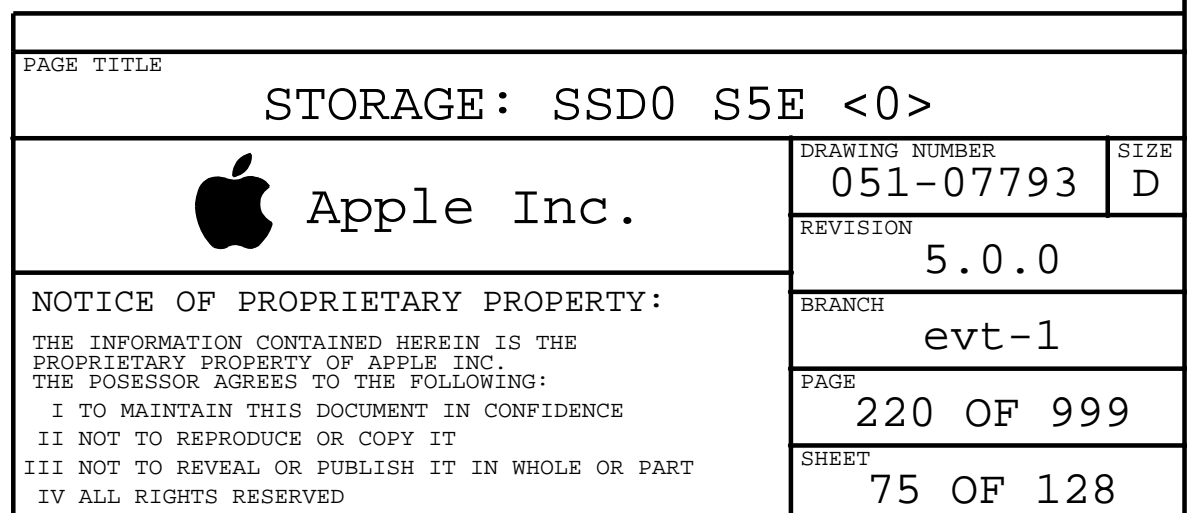
# WLBT DEBUG CONNECTOR



PAGE TITLE		
WIFI/BT: ANTENNA and GND		
Apple Inc.	DRAWING NUMBER	051-07793
	REVISION	5.0.0
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	BRANCH	evt-1
	PAGE	201 OF 999
	SHEET	74 OF 128

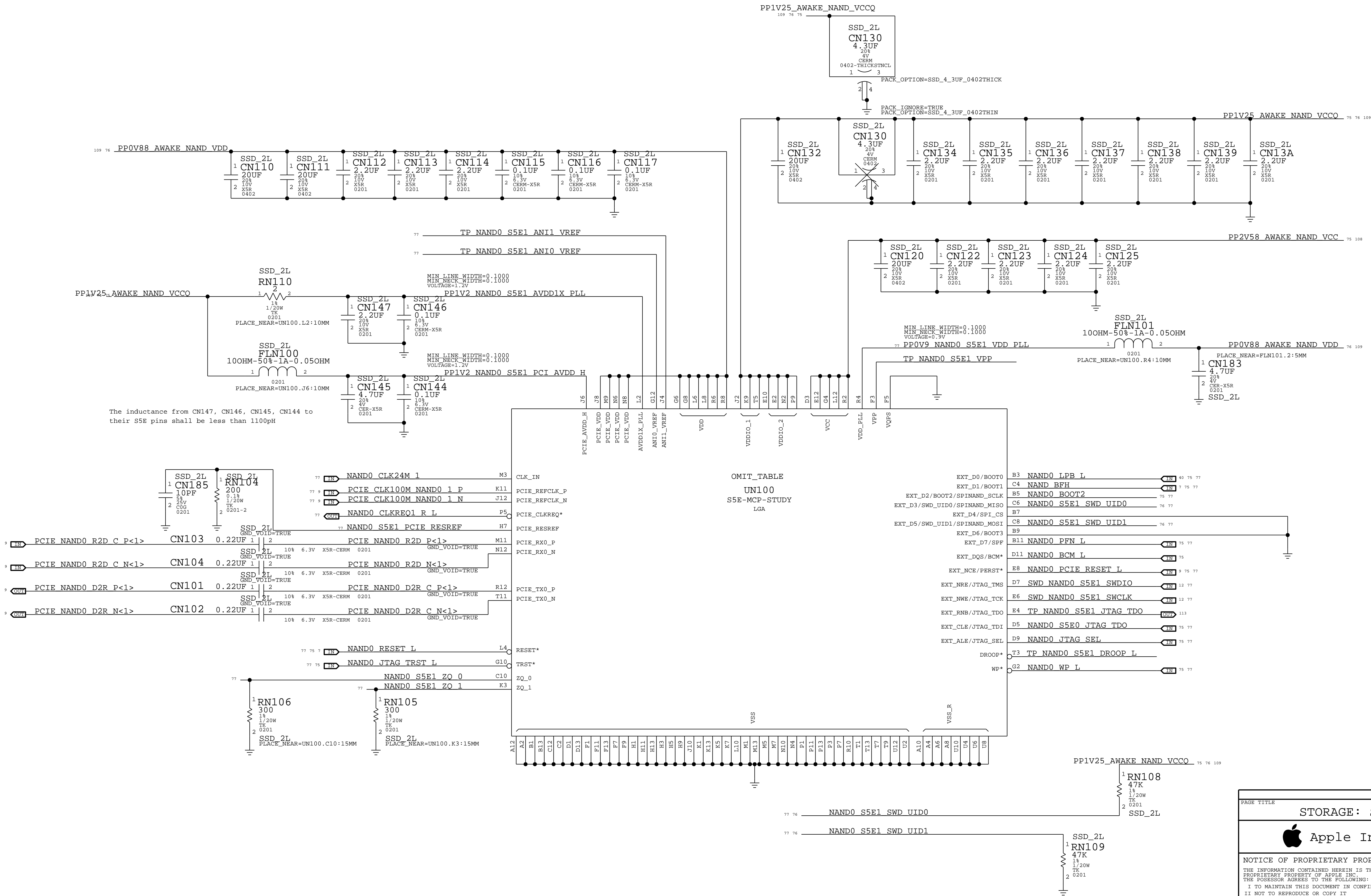


NAND0	S5E0
-------	------



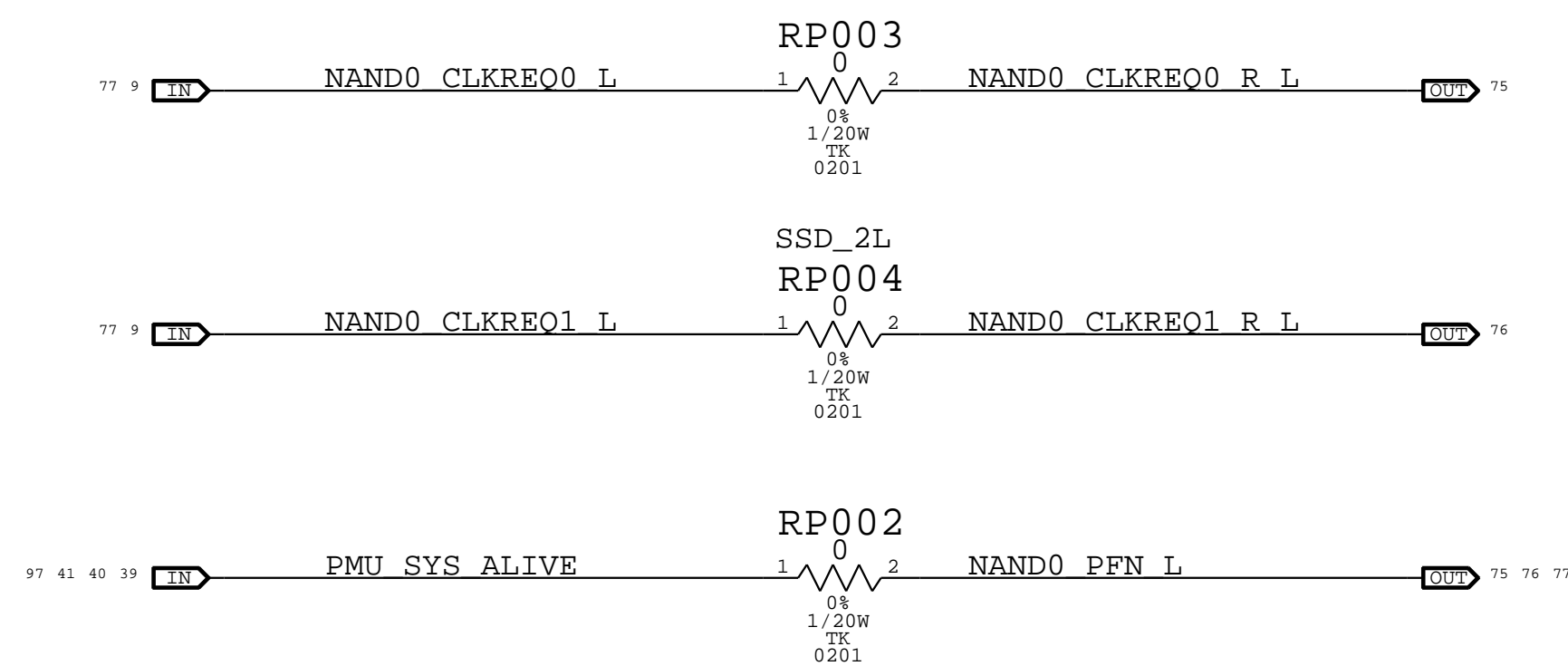
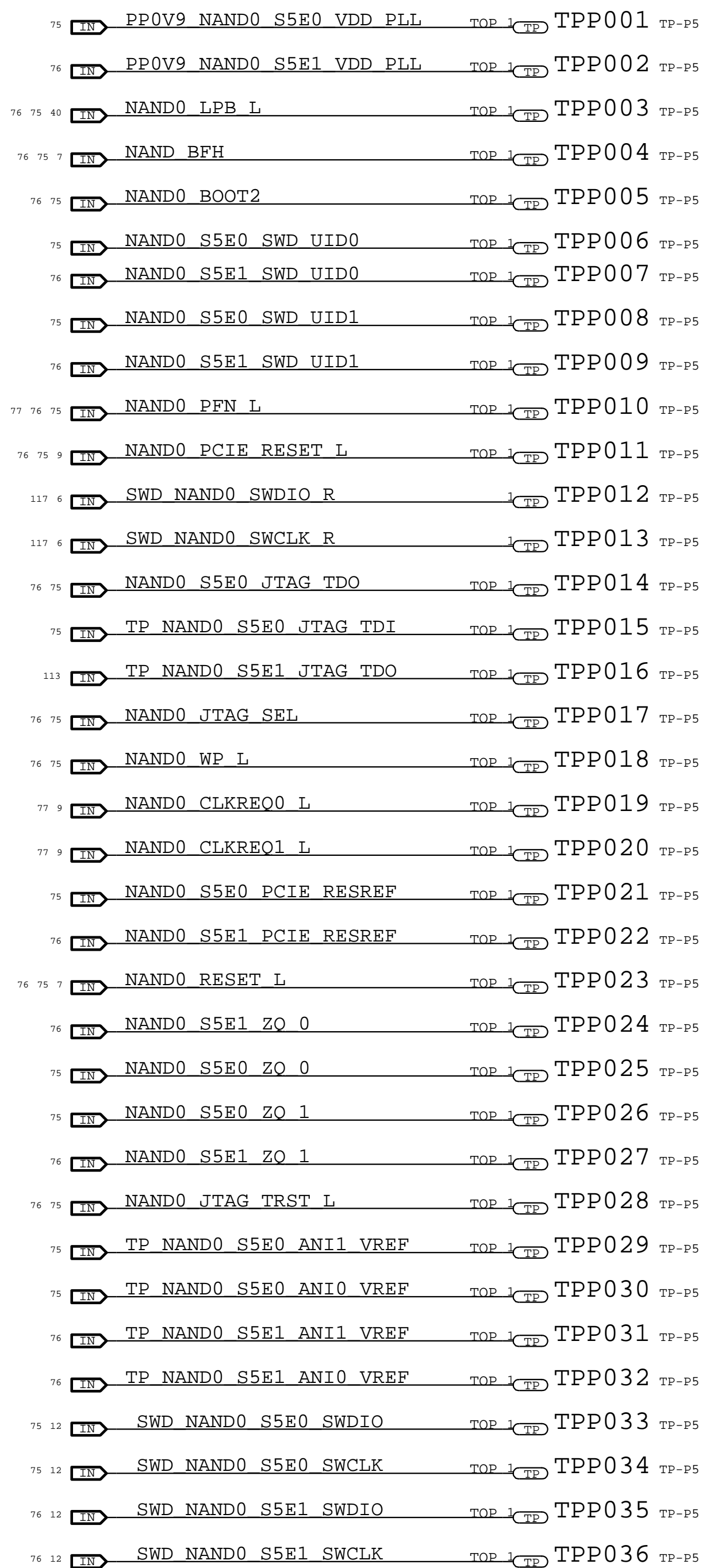
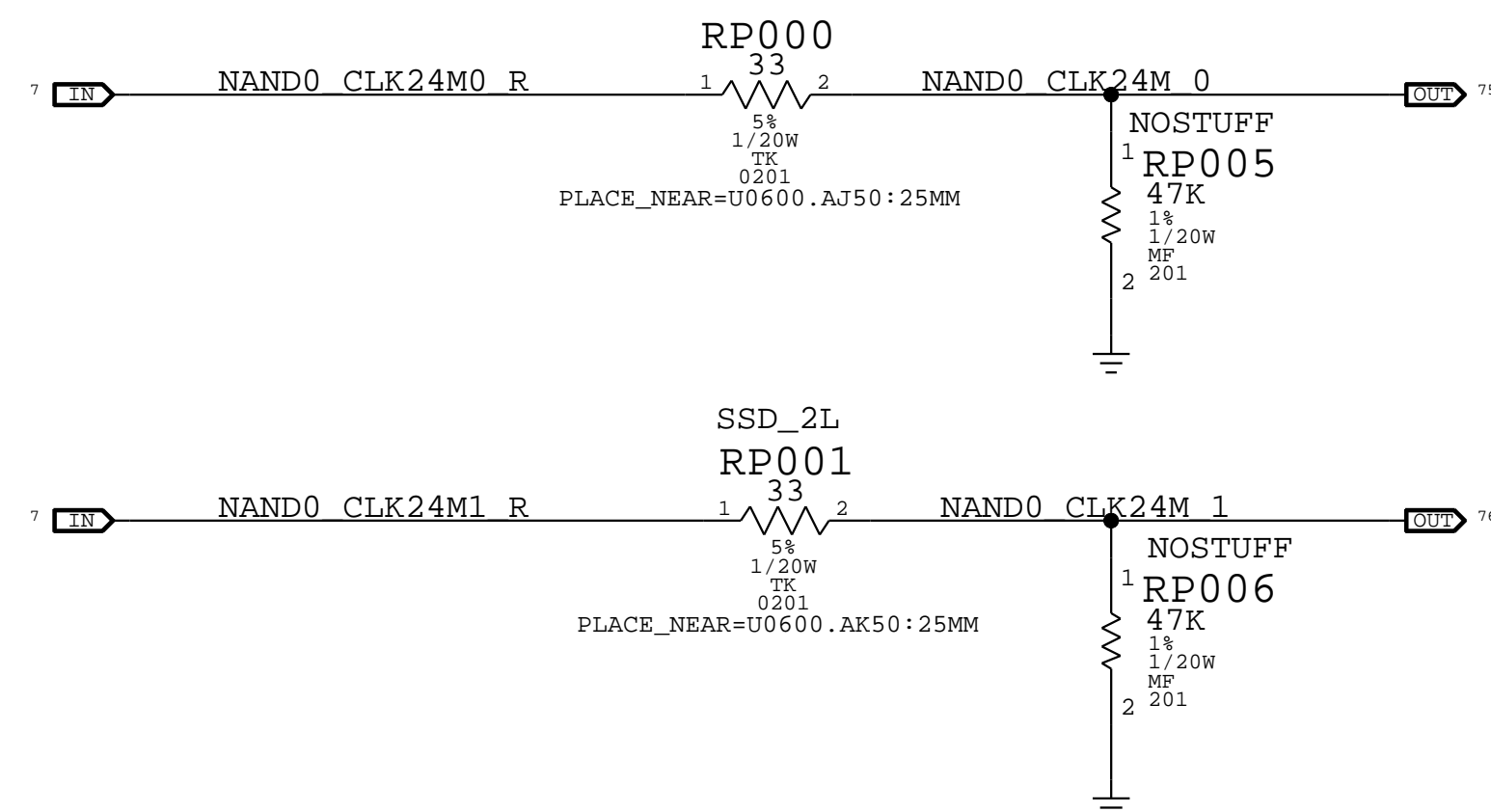
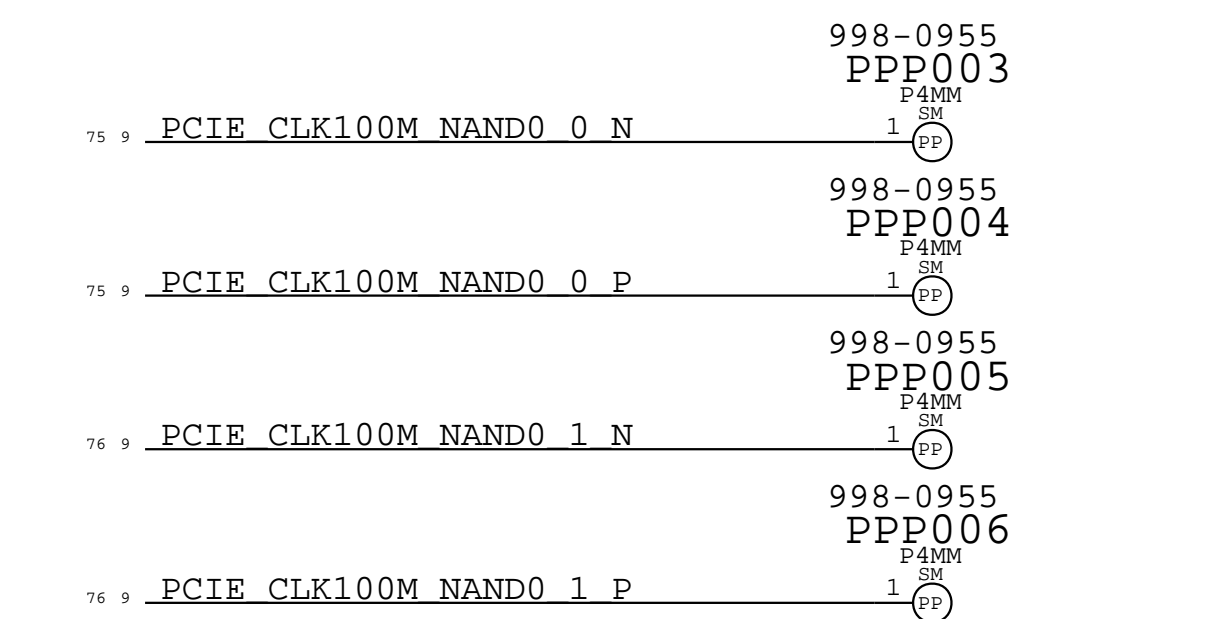
\*\*\* OK2INTEGRATE \*\*\*

# NAND0 S5E1



PAGE TITLE		
STORAGE: SSD0 S5E <1>		
	DRAWING NUMBER	051-07793
	REVISION	5.0.0
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	BRANCH	evt-1
	PAGE	221 OF 999
	SHEET	76 OF 128

## SSD 24M CLOCK TERMINATIONS



D

C

B

A

8

7

6

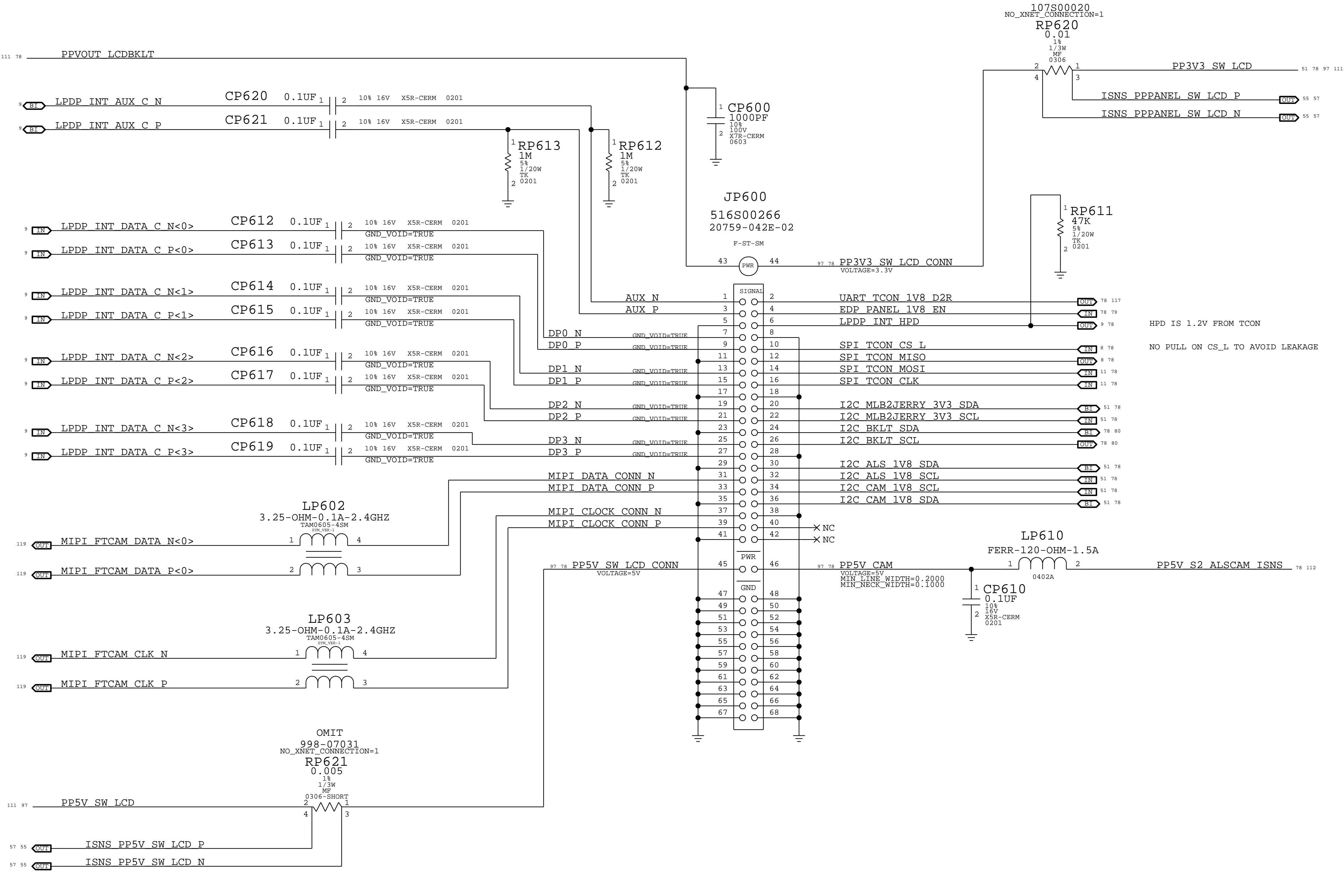
5

4

3

2

1



111 78	PPVOUT LCDBKLT	TPP600	BOTTOM
111 97 78 51	PP3V3 SW LCD	TPP601	BOTTOM
97 78	PP3V3 SW LCD CONN	TPP602	BOTTOM
117 78	UART TCON 1V8 D2R	TPP603	BOTTOM
78 78	EDP PANEL 1V8 EN	TPP604	BOTTOM
78 9	LPDP INT HPD	TPP605	BOTTOM
78 8	SPI TCON CS L	TPP606	BOTTOM
78 8	SPI TCON MISO	TPP607	BOTTOM
78 11	SPI TCON MOSI	TPP608	BOTTOM
78 11	SPI TCON CLK	TPP609	BOTTOM
78 51	I2C MLB2JERRY 3V3 SDA	TPP610	BOTTOM
78 51	I2C MLB2JERRY 3V3 SCL	TPP611	BOTTOM
80 78	I2C BKLT SDA	TPP612	BOTTOM
80 78	I2C BKLT SCL	TPP613	BOTTOM
78 51	I2C ALS 1V8 SDA	TPP614	BOTTOM
78 51	I2C ALS 1V8 SCL	TPP615	BOTTOM
78 51	I2C CAM 1V8 SCL	TPP616	BOTTOM
78 51	I2C CAM 1V8 SDA	TPP617	BOTTOM
97 78	PP5V CAM	TPP618	BOTTOM
112 78	PP5V S2 ALSCAM ISNS	TPP619	BOTTOM
97 78	PP5V SW LCD CONN	TPP620	BOTTOM

PAGE TITLE		
DISPLAY: CONNECTOR, PWR		
	DRAWING NUMBER	051-07793
	REVISION	5.0.0
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	BRANCH	evt-1
	PAGE	236 OF 999
	SHEET	78 OF 128

BOM\_COST\_GROUP=DISPLAY

8

7

6

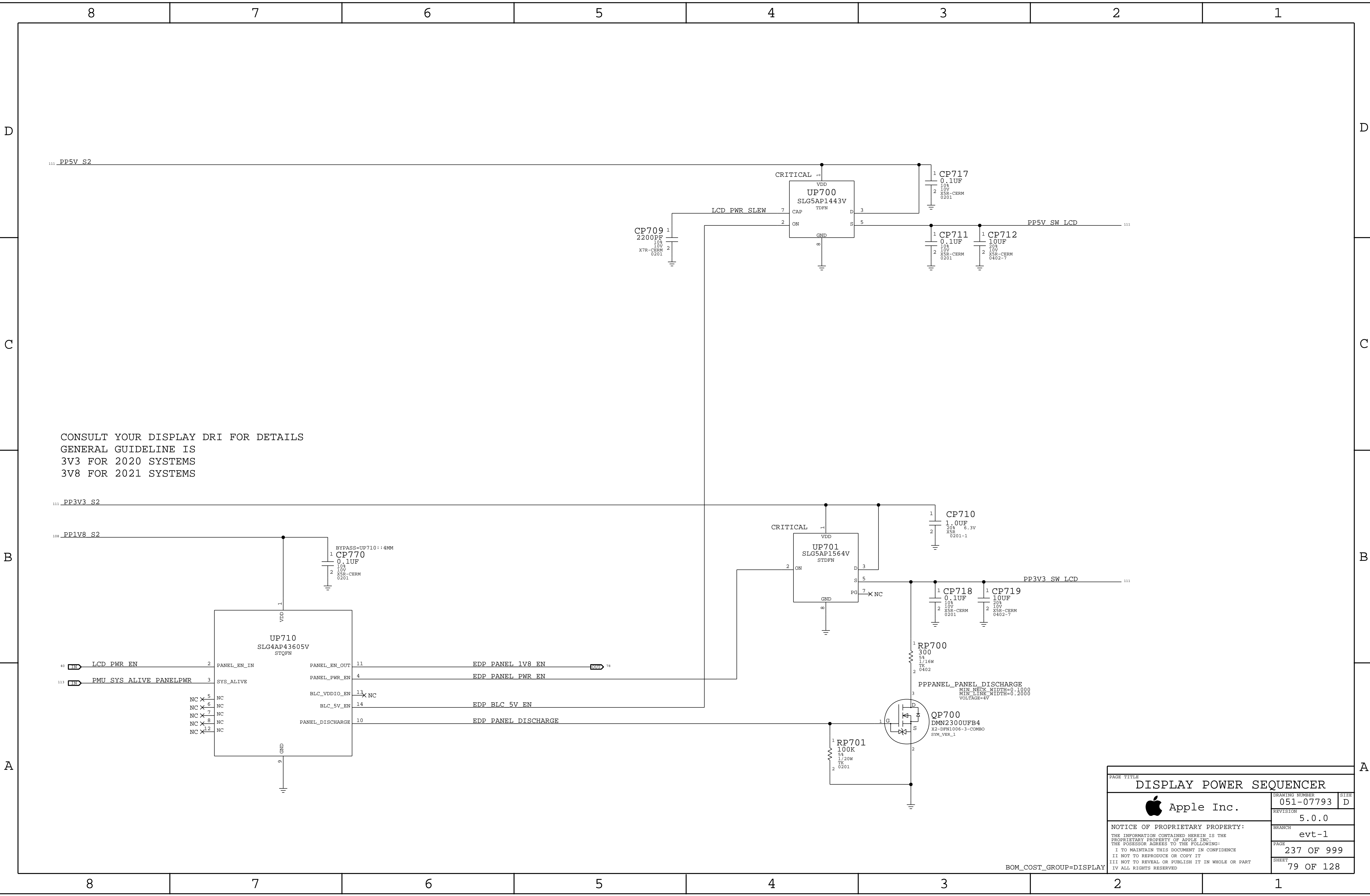
5

4

3

2

1



PAGE TITLE		
DISPLAY POWER SEQUENCER		
	DRAWING NUMBER	051-07793
	REVISION	5.0.0
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	BRANCH	evt-1
	PAGE	237 OF 999
	SHEET	79 OF 128

BOM\_COST\_GROUP=DISPLAY

BEN IC: DISPLAY/KBD BACKLIGHT BOOST CONVERTER

D

C

B

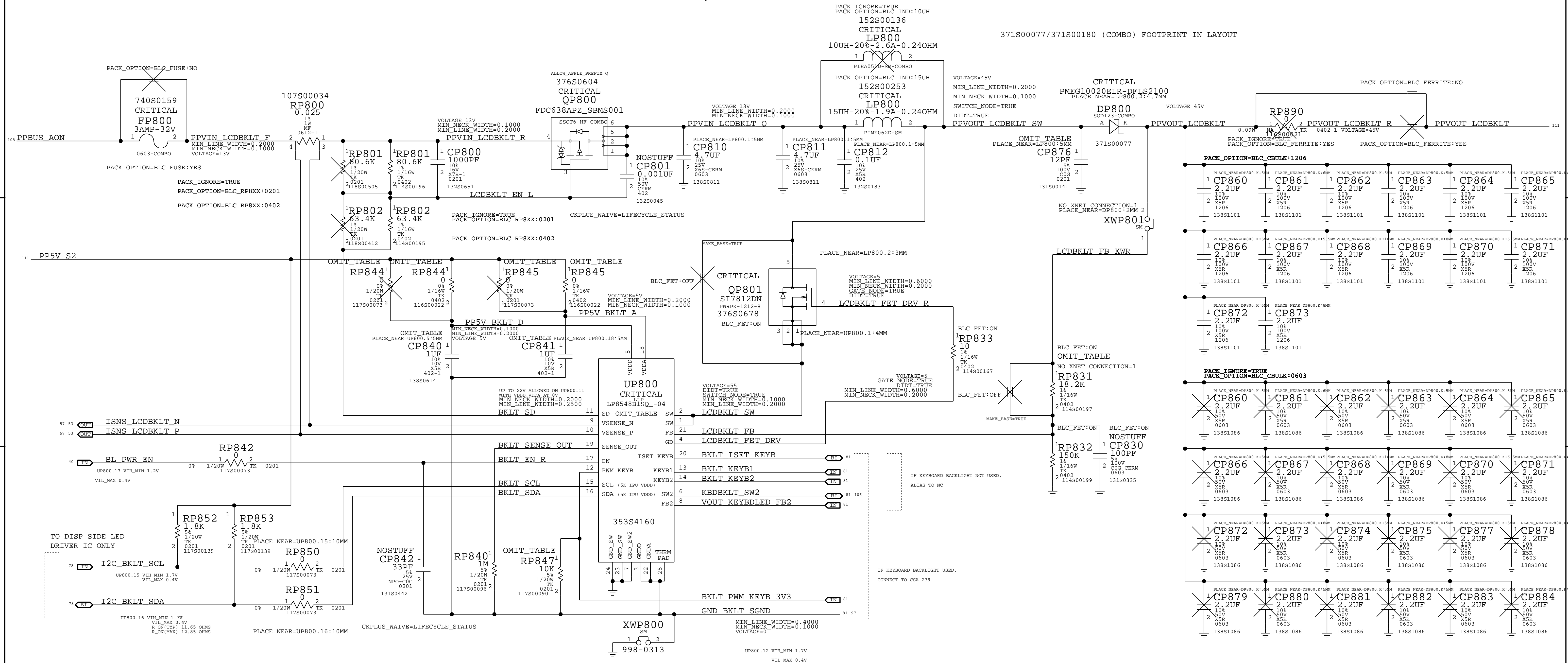
A

D

C

B

A



BEN IC VERSION TO MATCH VERSION OF JERRY/MINNIE IC IS ON THE PANEL				
PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
353S4160	1	IC,LP8548B1-04,DC/DC CVTR,BOOST,QFN24	UP800	BLC_BEN_IC:V4
353S02256	1	IC,LP8548B1A-07,DC/DC BOOST CVTR,QFN24	UP800	BLC_BEN_IC:V7
353S02616	1	IC,LP8548B1A-08,DC/DC BOOST CVTR,QFN24	UP800	BLC_BEN_IC:V8
BACKLIGHT SWITCH NODE DESENSE OPTION				
PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
131S00141	1	CAP,COG,12PF,5%,100V,0201	CP876	BLC_SW_NODE_DESENSE
10K IF KEYBOARD PWM INPUT IS NOT PRESENT (X941, X1536) 100K IF KEYBOARD PWM INPUT IS PRESENT (X1536)				
PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
117S00090	1	RES,TK,10K OHM,5%,1/20W,0201	RP847	BLC_KBD_BOOST_USED:NO
118S00251	1	RES,TK,100K OHM,1%,1/20W,0201	RP847	BLC_KBD_BOOST_USED:YES

BACKLIGHT BOOST VOLTAGE LEVEL BASED ON NUMBER OF LEDS PER STRING				
PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
114S00197	1	RES,TK,18.2KOHM,1%,1/16W,0402	RP831	BLC_LEDS_PER_STRING:16
114S00198	1	RES,TK,28.7KOHM,1%,1/16W,0402	RP831	BLC_LEDS_PER_STRING:18
BOM OPTION FOR BLC 5V RC FILTER, BASED ON PER PROJECT 5V RIPPLE CHARACTERIZATION AS COMPARED TO BLC TEAM'S 50 MV RIPPLE SPEC FOR VDD5 & VDDA, SEE <RDAR://50682542>				
PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
117S00073	2	RES,TK,0 OHM,1A MAX,1/20W,0201	RP844,RP845	BLC_5V_SERIES:0_OHM_0201
118S00311	2	RES,TK,10 OHM,1A,1/20W,0201	RP844,RP845	BLC_5V_SERIES:10_OHM_0201
116S00022	2	RES,TK,0 OHM,2A MAX,1/16W,0402	RP844,RP845	BLC_5V_SERIES:0_OHM
114S00167	2	RES,TK,10 OHM,1%,1/16W,0402	RP844,RP845	BLC_5V_SERIES:10_OHM
138S0614	2	CAP,CER,X5R,10F,10%,10V,0402	CP840,CP841	BLC_5V_CAP:1_UF
138S00070	2	CAP,CER,X5R,4.7UF,20%,25V,0402	CP840,CP841	BLC_5V_CAP:4P7_UF

BOM\_COST\_GROUP=DISPLAY

PAGE TITLE			
BEN: CONTROLLER			
Apple Inc.		DRAWING NUMBER	051-07793
		REVISION	5.0.0
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE I NOT TO REPRODUCE OR COPY IT I NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED		BRANCH	evt-1
		PAGE	238 OF 999
		SHEET	80 OF 128



\*\*\* OK2INTEGRATE \*\*\*

## BEN IC: KEYBOARD LED DRIVER

THIS PAGE IS ONLY TO BE INCLUDED IF THE KEYBOARD BACKLIGHT  
IS CONTROLLED BY THE BEN ON PAGE 238

KEYBOARD BACKLIGHT  
POWER & CONTROL  
SIGNALS FROM  
SYSTEM

KEYBOARD BACKLIGHT  
CONNECTOR SIGNALS


### KEYBOARD BKLT PWM LEVEL-SHIFTER

UP900.4: VOH\_MIN = 2.3V  
VOL\_MAX = 0.1V @ PWM\_KEYB I\_MAX OF 1UA

OFF=PAGE SIGNALS ON THIS VERTICAL LINE CONNECT TO BEN UP800  
ON PAGE 238

KEYBOARD SWITCH NODE DESENSE OPTION

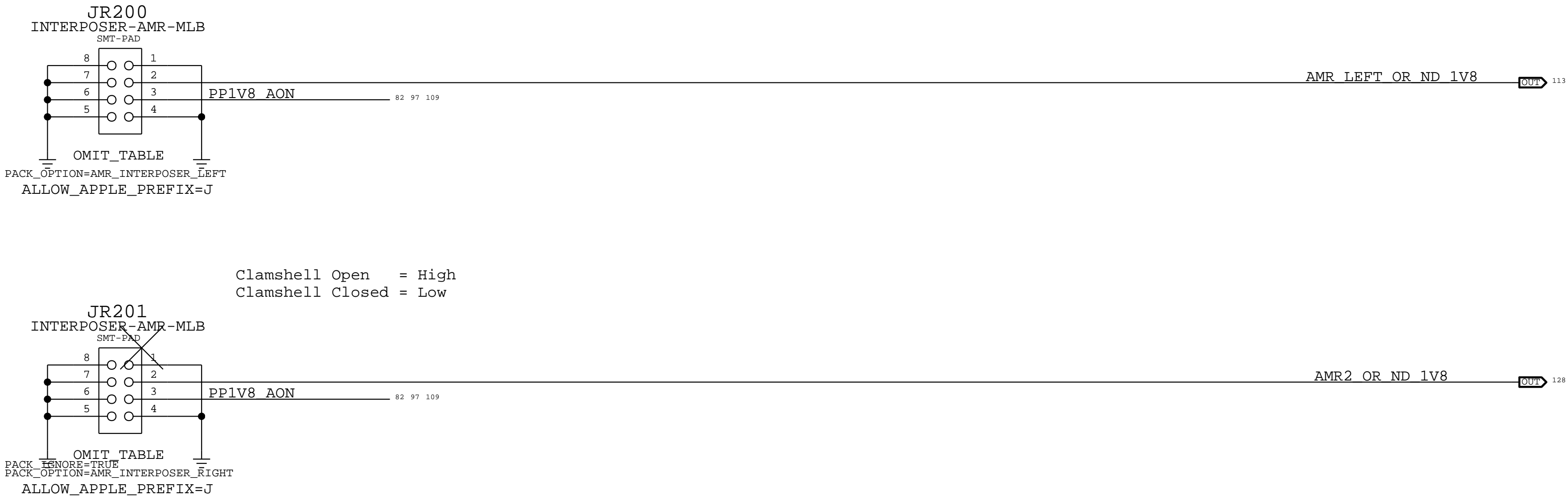
PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
131S00141	1	CAP,C0G,12PF,5%,100V,0201	CP976		BLC_KBD_SW_NODR_DESENSE


PAGE TITLE		
BEN: KEYBOARD		
 Apple Inc.	DRAWING NUMBER	051-07793
	REVISION	5.0.0
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	BRANCH	evt-1
	PAGE	239 OF 999
	SHEET	81 OF 128

BOM\_COST\_GROUP=DISPLAY

\*\*\* OK2INTEGRATE \*\*\*

# Lid Detect Sensors

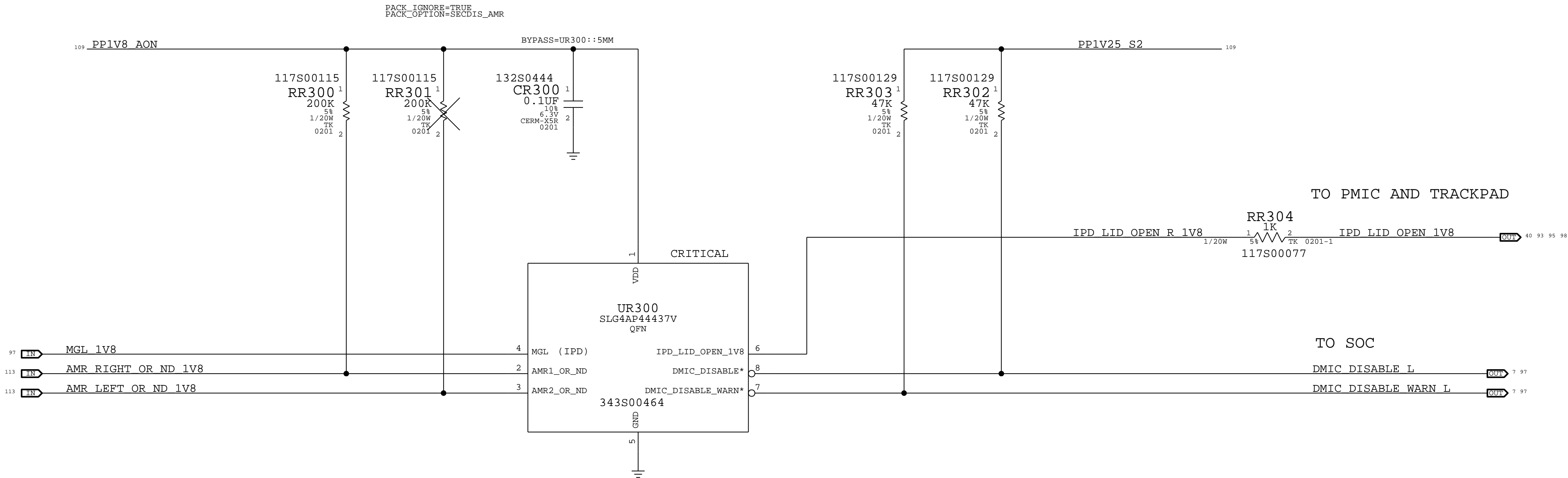



PAGE TITLE		
SECDIS: AMR		
 Apple Inc.	DRAWING NUMBER	051-07793
	REVISION	5.0.0
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	BRANCH	evt-1
	PAGE	242 OF 999
	SHEET	82 OF 128

BOM\_COST\_GROUP=SOC

\*\*\* OK2INTEGRATE \*\*\*

# LID SECDIS LOGIC



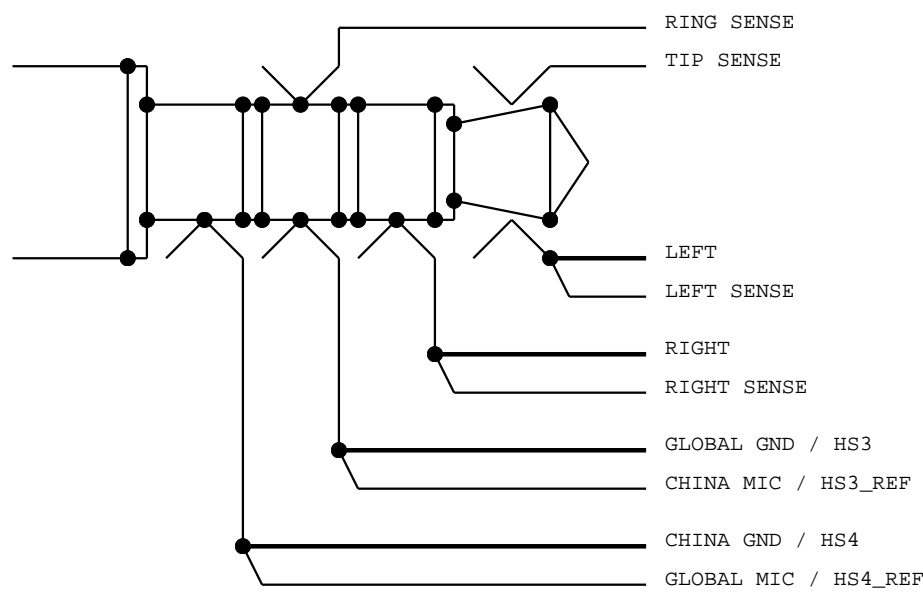
PAGE TITLE		
SECDIS: SAK		
 Apple Inc.	DRAWING NUMBER	051-07793
	REVISION	5.0.0
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	BRANCH	evt-1
	PAGE	243 OF 999
	SHEET	83 OF 128

BOM\_COST\_GROUP=SOC

\*\*\* OK2INTEGRATE \*\*\*

CARLOW CODEC I2C ADDRESS	
ADDR PIN	ADDRESS
0R TO GND	0X48
100K TO GND	0X49
100K TO VDDIO	0X4A
0R TO VDDIO	0X4B <--

#### AUDIO JACK PINOUT



88 AUDIO JACK LEFT OUT  
88 AUDIO JACK RIGHT OUT  
\* SEE NOTE

88 AUDIO JACK LEFT SNS  
88 AUDIO JACK RIGHT SNS  
88 AUDIO JACK CH GND  
88 AUDIO JACK GB GND  
\* SEE NOTE

88 AUDIO JACK GB MIC  
88 AUDIO JACK CH MIC  
\* SEE NOTE

88 AUDIO JACK RING SNS  
88 AUDIO JACK TIP SNS

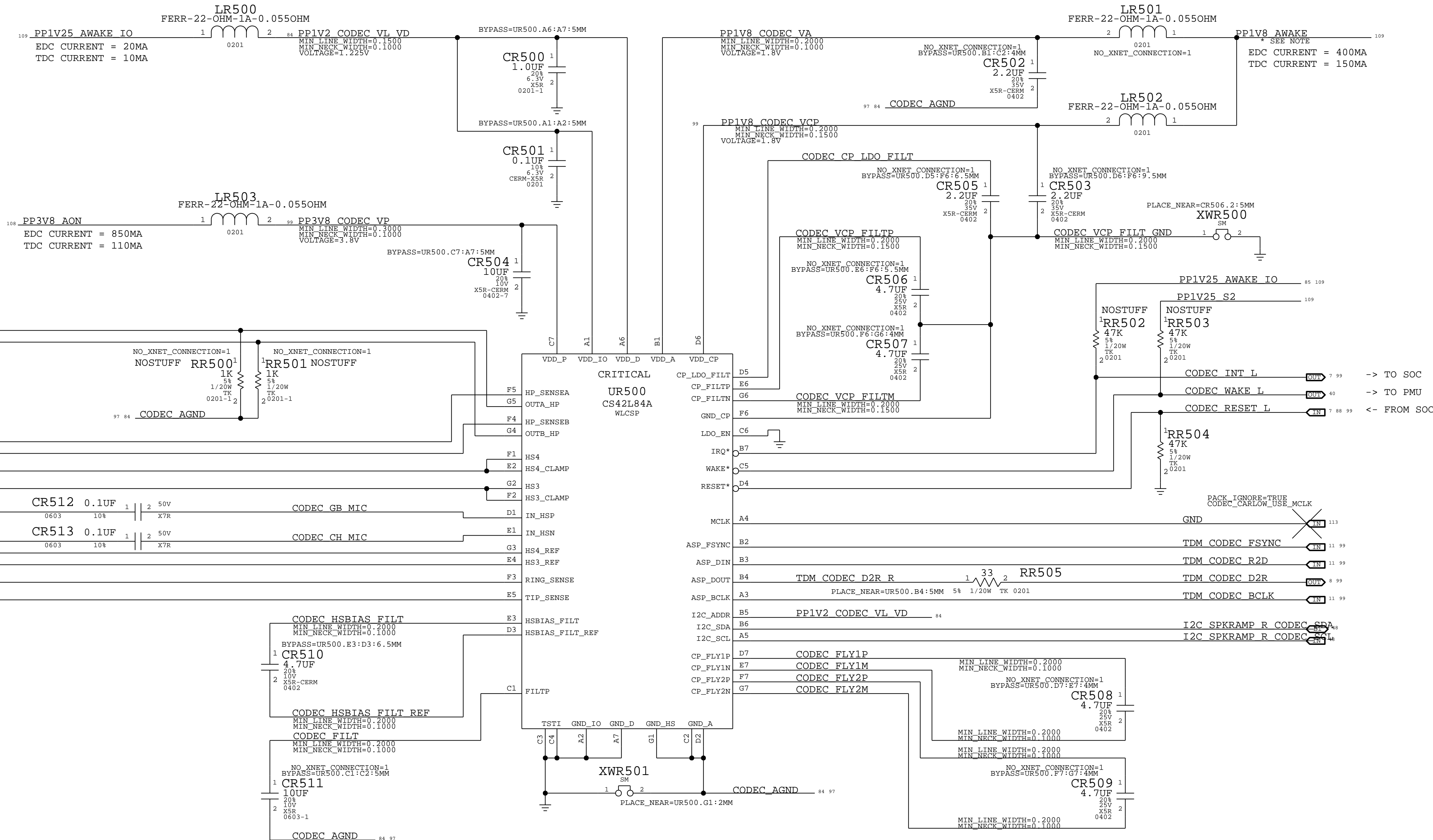
TO / FROM  
AUDIO JACK  
CONNECTOR

#### NOTES:

- SEE TEST POINT SIGNALS & LOCATIONS ON REF DESIGN PAGE 1
- THE FOLLOWING SIGNALS SHOULD HAVE A LOW DCR PATH:
  - VP SUPPLY
  - VCP SUPPLY
  - AUDIO\_JACK\_LEFT/RIGHT\_OUT
  - AUDIO\_JACK\_GB/CH\_GND

- GB\_MIC SIGNAL CONNECTS TO CH\_GND AT A/J CONNECTOR.  
CH\_MIC SIGNAL CONNECTS TO GB\_GND AT A/J CONNECTOR.

- VP SUPPLY RAIL ACCEPTS 3.0V TO 5.25V AND NEEDS TO COME UP FIRST AND TURN OFF LAST (NEED TO STAY UP WHEN THE OTHER RAILS GO DOWN)  
VP CURRENT CONSUMPTION WITH PART IN LOWEST POWER STATE:  
3.1UA (1V8 OFF, RST# LOW)  
TBD (1V8 ON, RST# LOW)  
37UA (1V8 OFF, RST# HIGH)



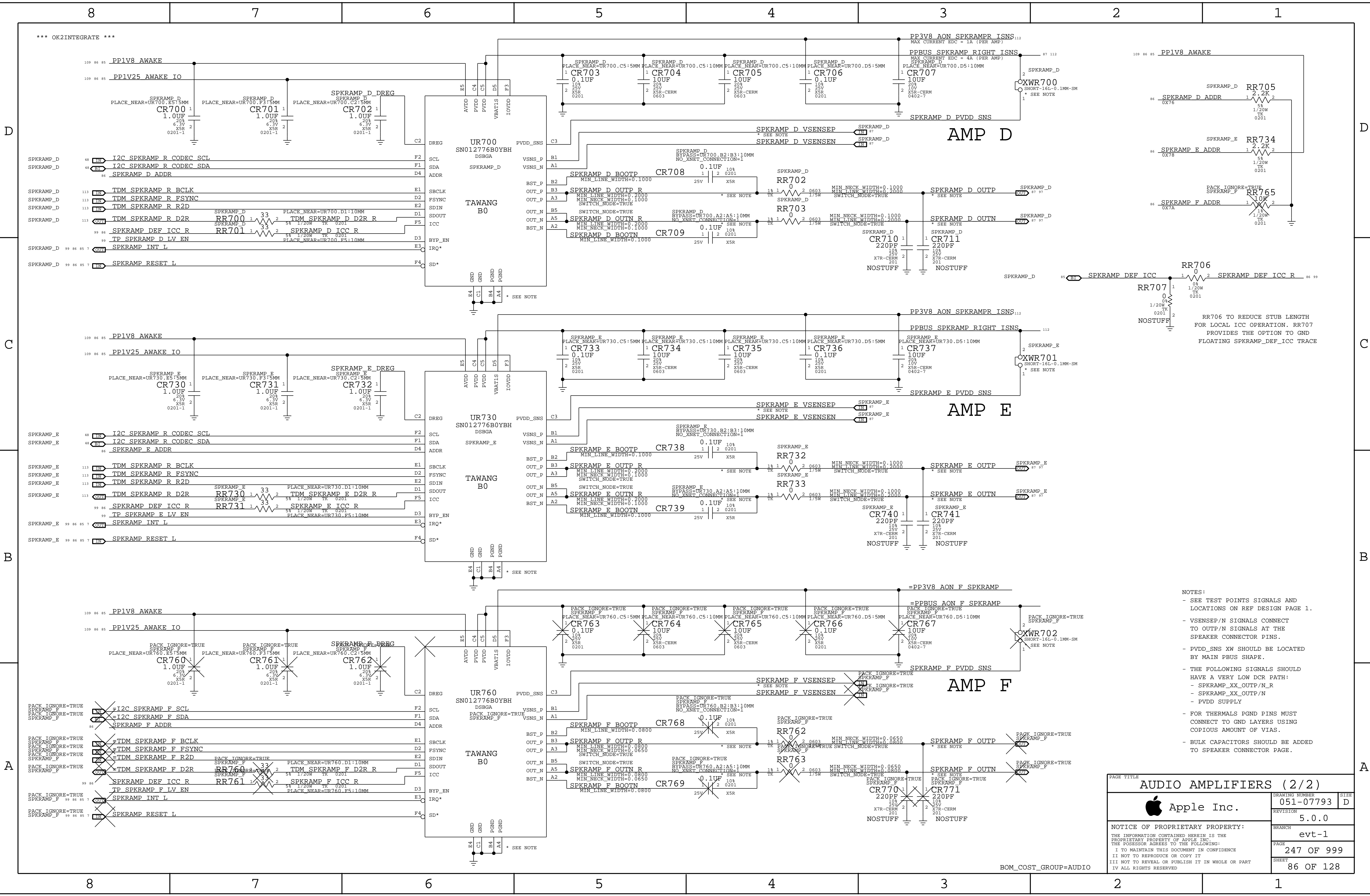
BOM\_COST\_GROUP=AUDIO

CARLOW B0 SILICON

PAGE TITLE		
AUDIO JACK CODEC		
	DRAWING NUMBER	051-07793
	REVISION	5.0.0
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	BRANCH	evt-1
	PAGE	245 OF 999
	SHEET	84 OF 128



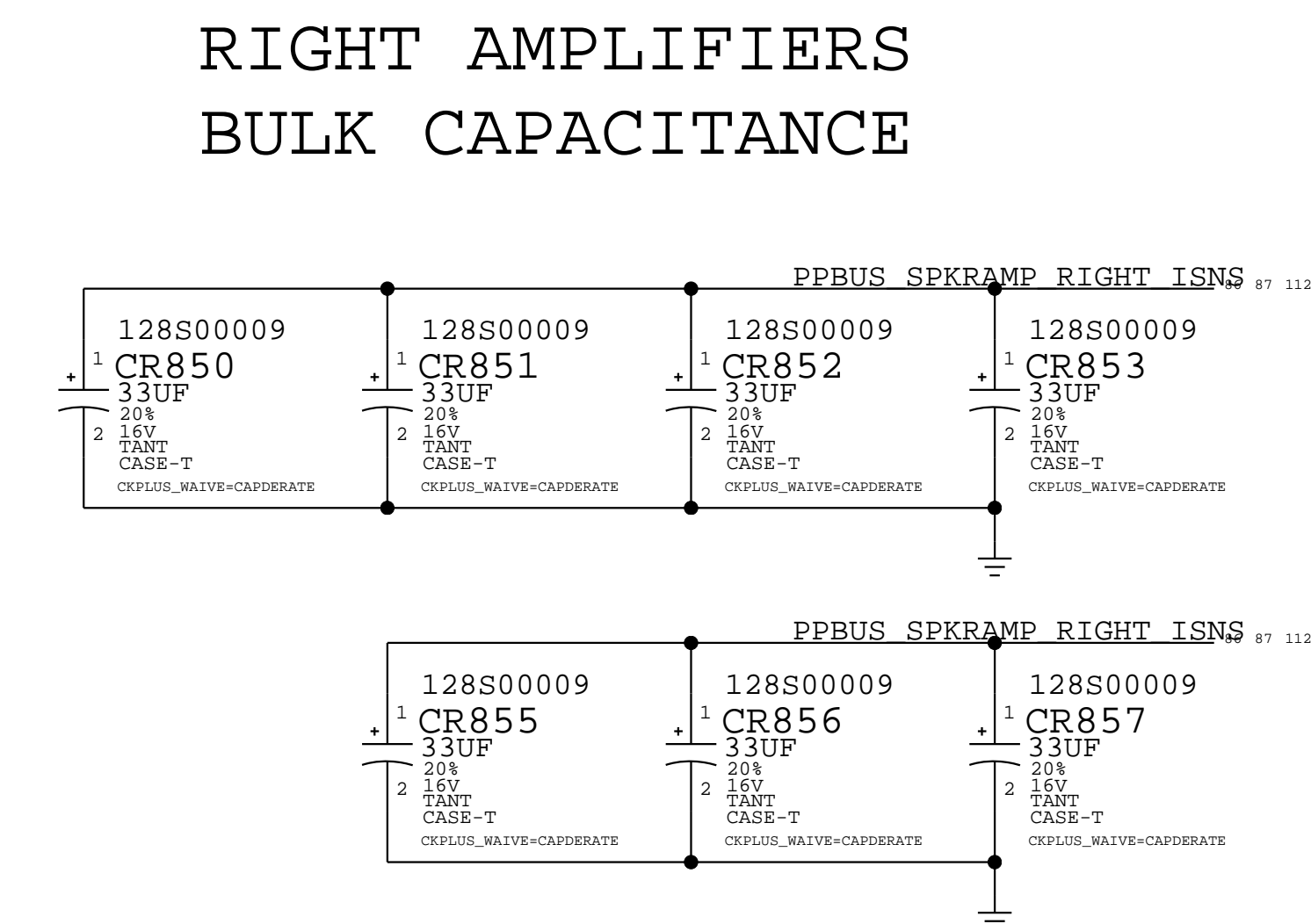
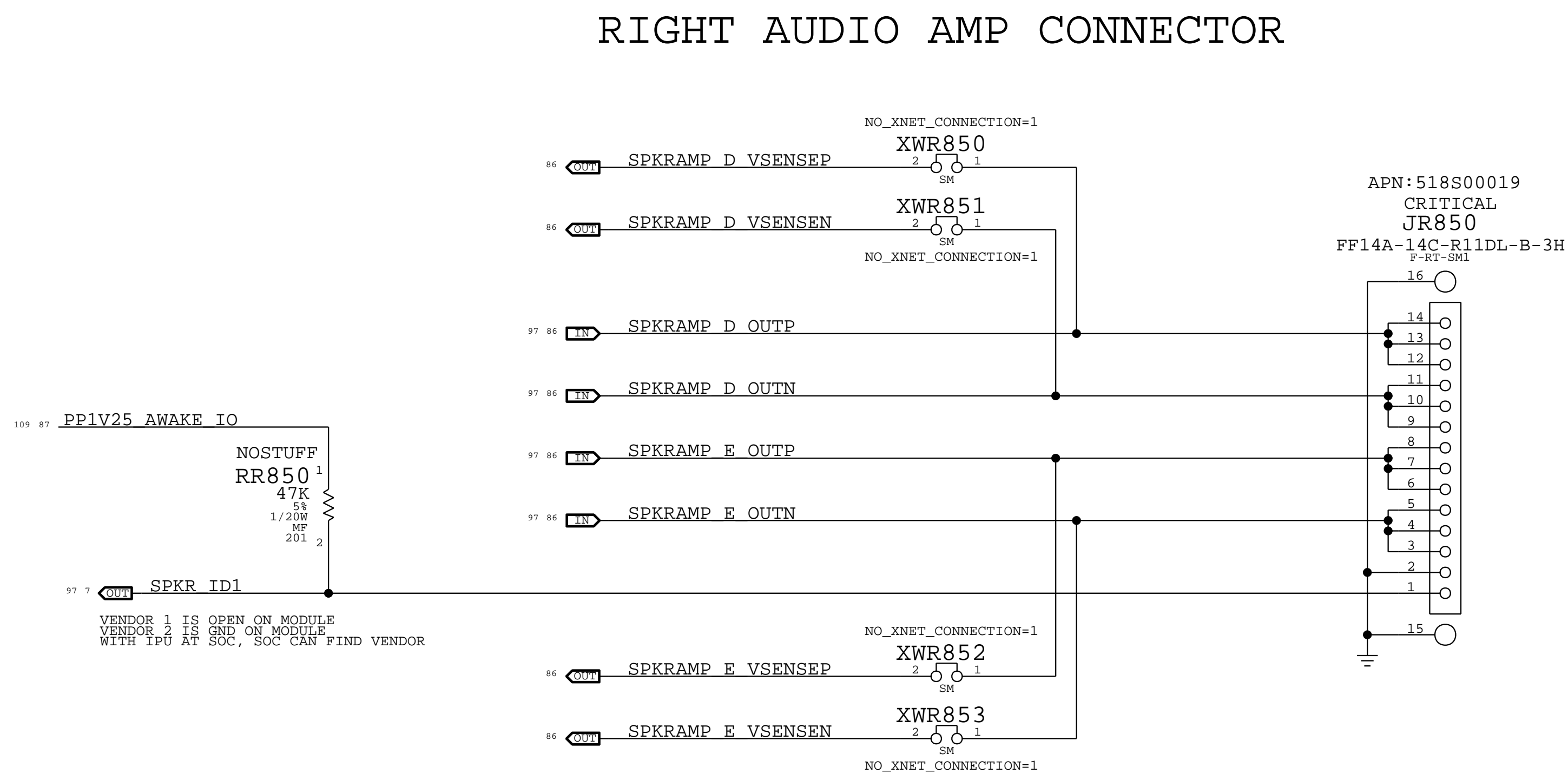
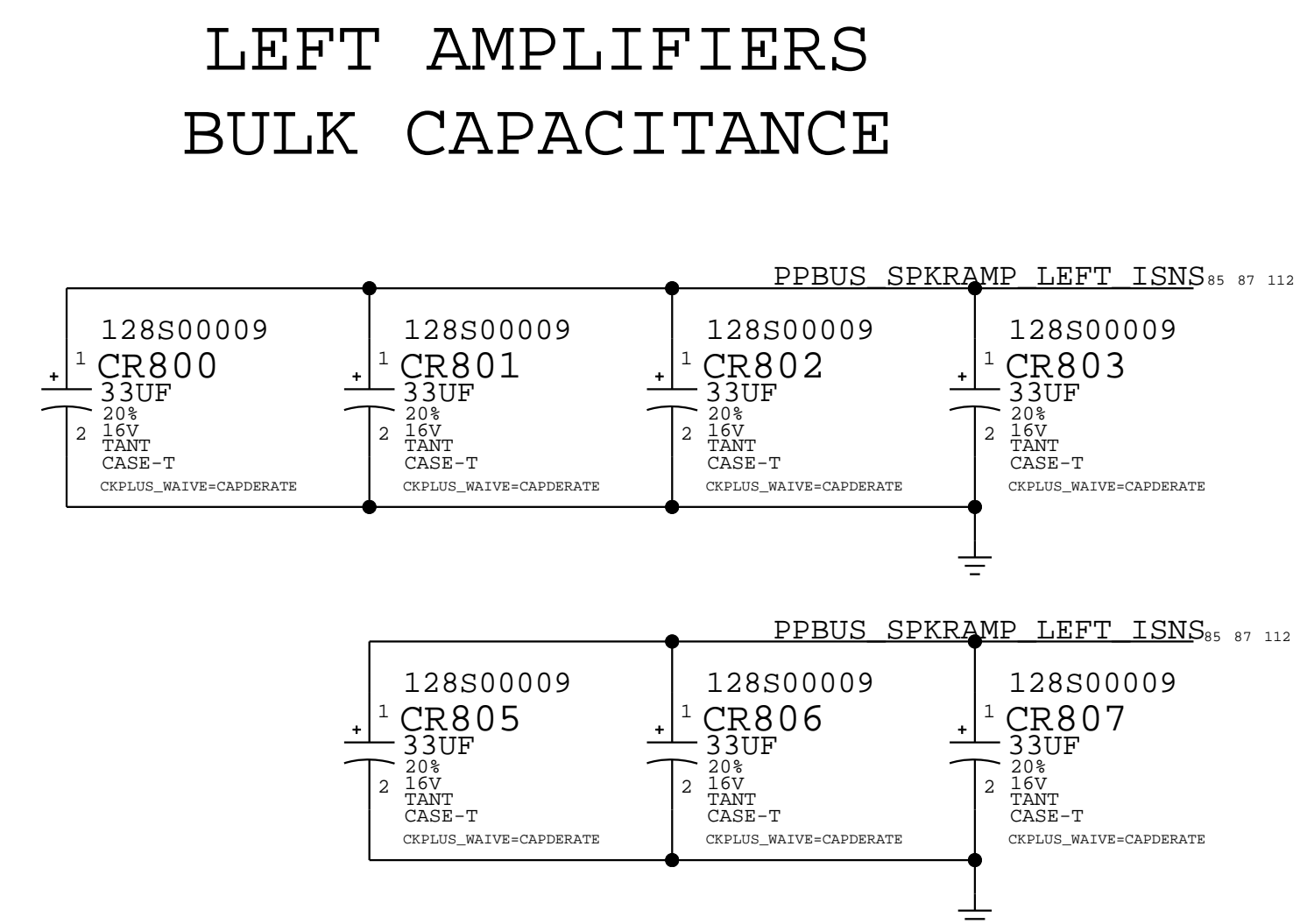
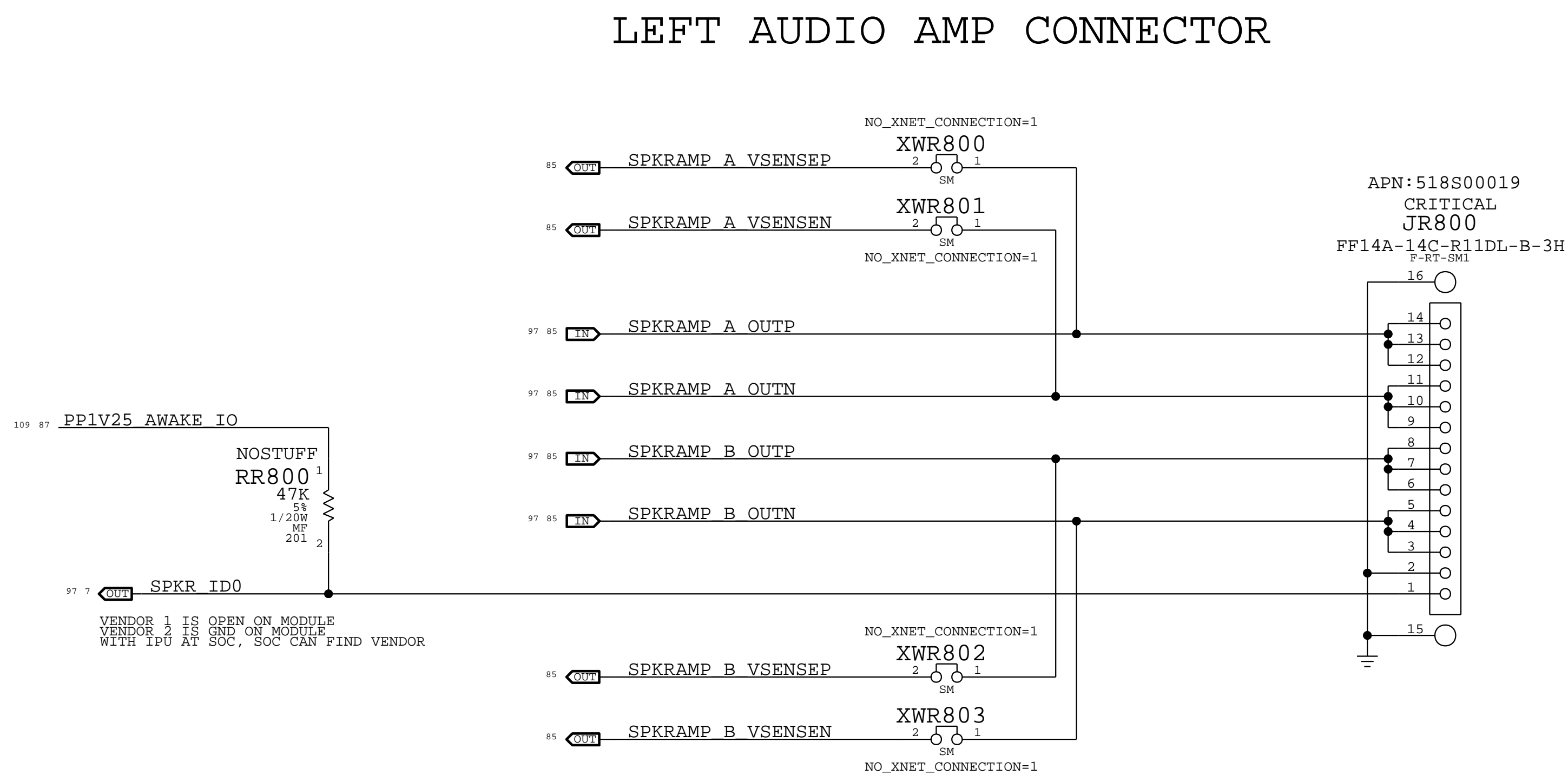





NOTES:

- SEE TEST POINTS SIGNALS AND LOCATIONS ON REF DESIGN PAGE 1.
- VSENSE/P/N SIGNALS CONNECT TO OUTP/N SIGNALS AT THE SPEAKER CONNECTOR PINS.
- PVDD\_SNS XW SHOULD BE LOCATED BY MAIN PBUS SHAPE.
- THE FOLLOWING SIGNALS SHOULD HAVE A VERY LOW DCR PATH:
  - SPCRAMP\_XX\_OUTP/N\_R
  - SPCRAMP\_XX\_OUTP/N
  - PVDD SUPPLY
- FOR THERMALS PGND PINS MUST CONNECT TO GND LAYERS USING COPIOUS AMOUNT OF VIAS.
- BULK CAPACITORS SHOULD BE ADDED TO SPEAKER CONNECTOR PAGE.

PAGE TITLE		
AUDIO AMPLIFIERS (2/2)		
	DRAWING NUMBER	051-07793
	REVISION	5.0.0
	BRANCH	evt-1
	PAGE	247 OF 999
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: <ul style="list-style-type: none"><li>I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE</li><li>II NOT TO REPRODUCE OR COPY IT</li><li>III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART</li><li>IV ALL RIGHTS RESERVED</li></ul>	SHEET	
		86 OF 128

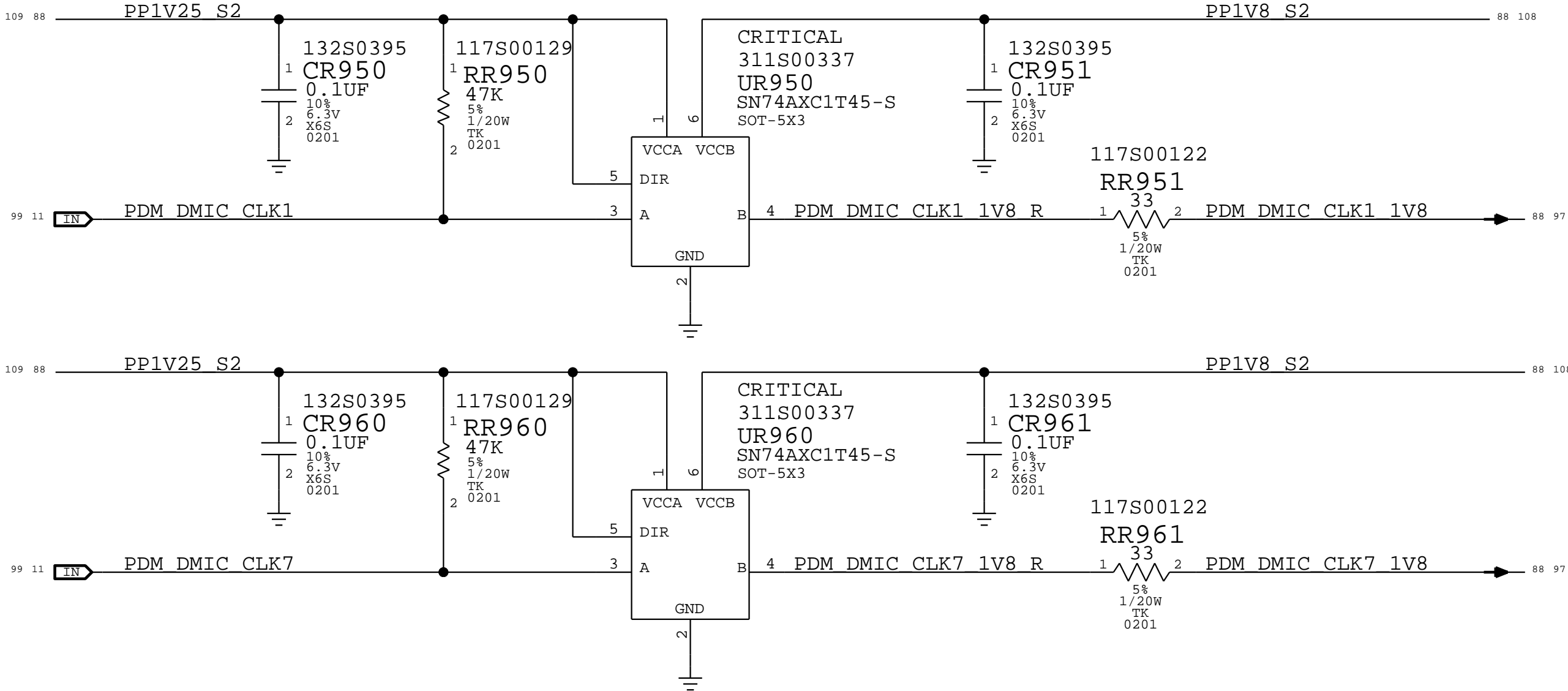


PAGE TITLE		
AUDIO CONNECTORS: AMPS		
 Apple Inc.	DRAWING NUMBER	SIZE
	051-07793	D
NOTICE OF PROPRIETARY PROPERTY:  THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	REVISION	
	5.0.0	
	BRANCH	evt-1
	PAGE	248 OF 999
	SHEET	87 OF 128

BOM\_COST\_GROUP=AUDIO

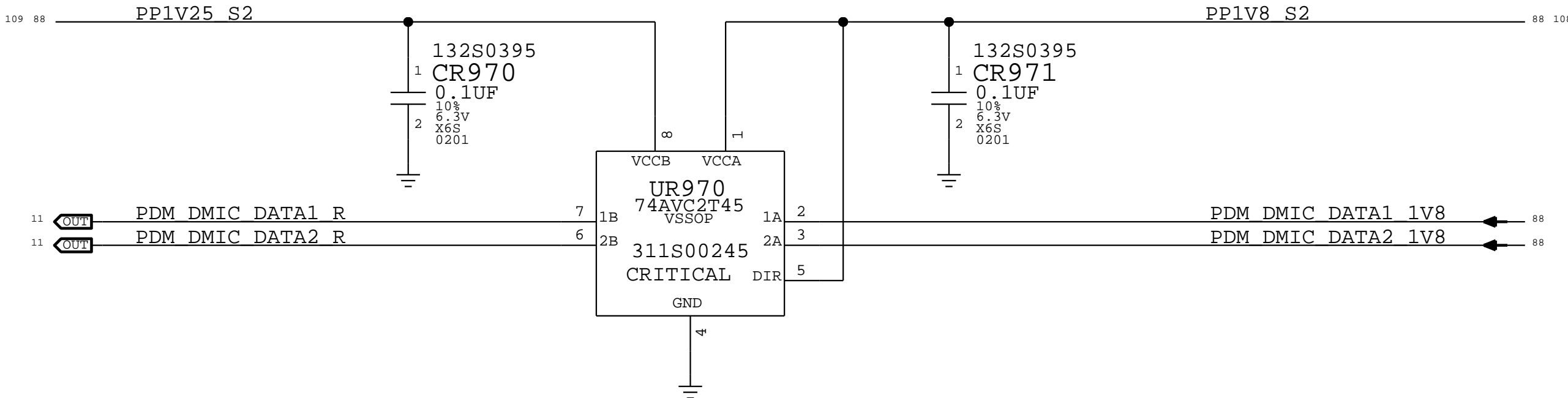
LEVEL SHIFTERS: DMIC CLOCK

TWO SEPARATE SINGLE BIT LS FOR XTALK CONCERNS <RDAR:///70058941>  
HIGH ON DIR IS A -> B  
BOTH A AND B SIDE CAN BE ANY VOLTAGE FROM 0.65 TO 3.6

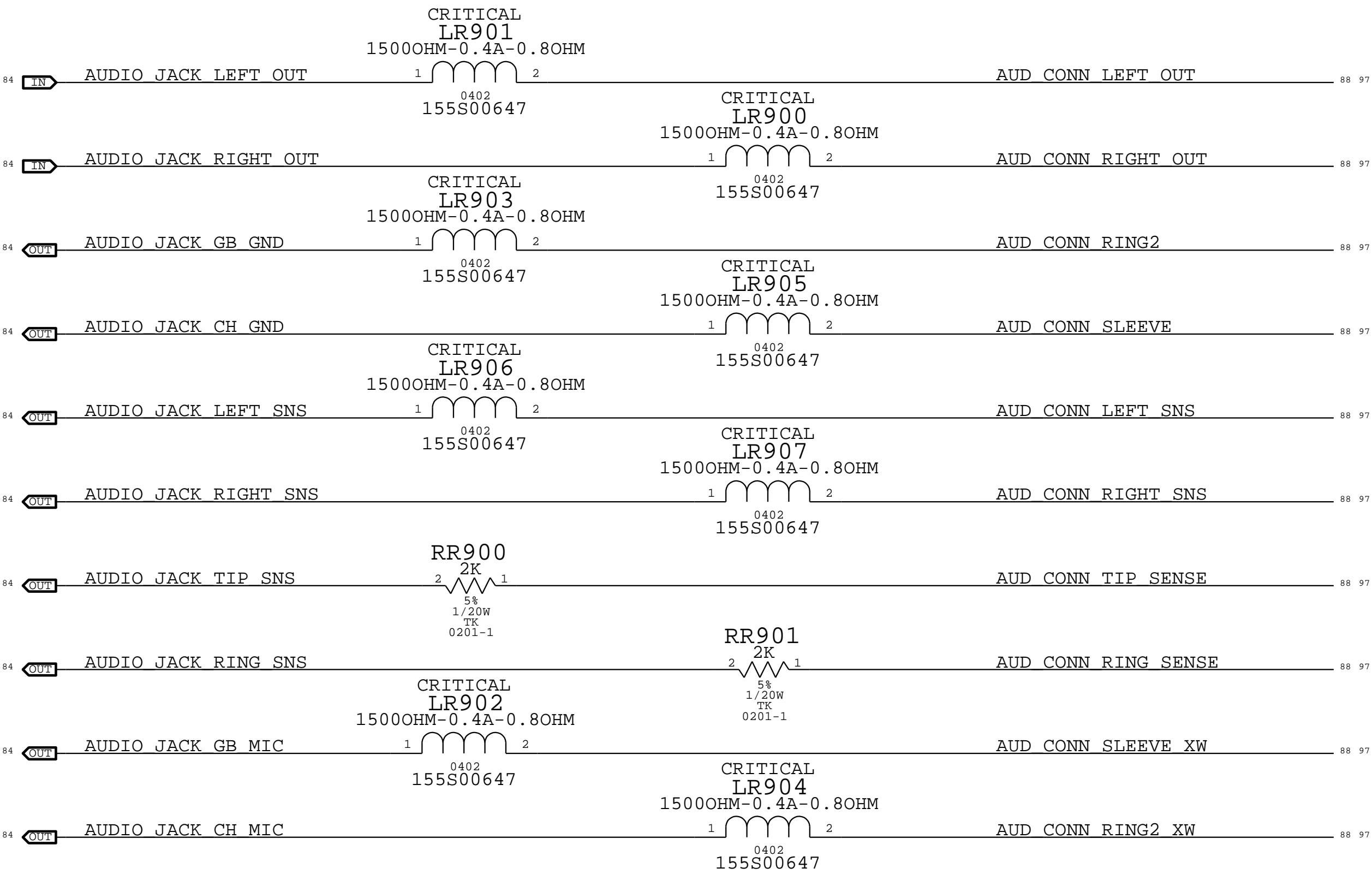


LEVEL SHIFTER: DMIC DATA

HIGH ON DIR IS A -> B  
BOTH A AND B SIDE CAN BE ANY VOLTAGE FROM 0.8 TO 3.6

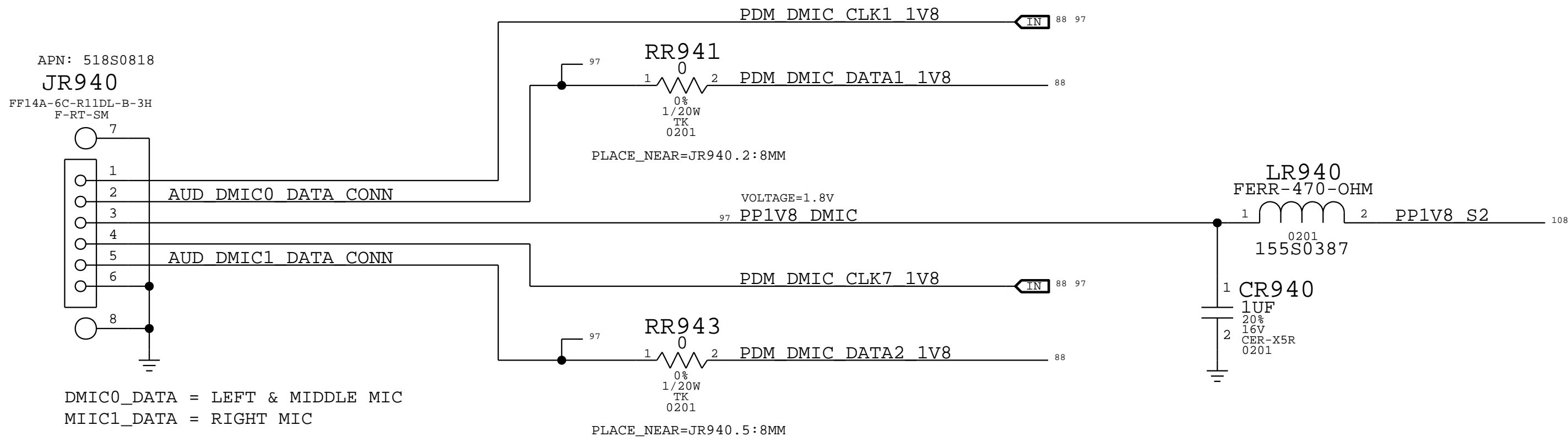


AJ FLEX FILTERS



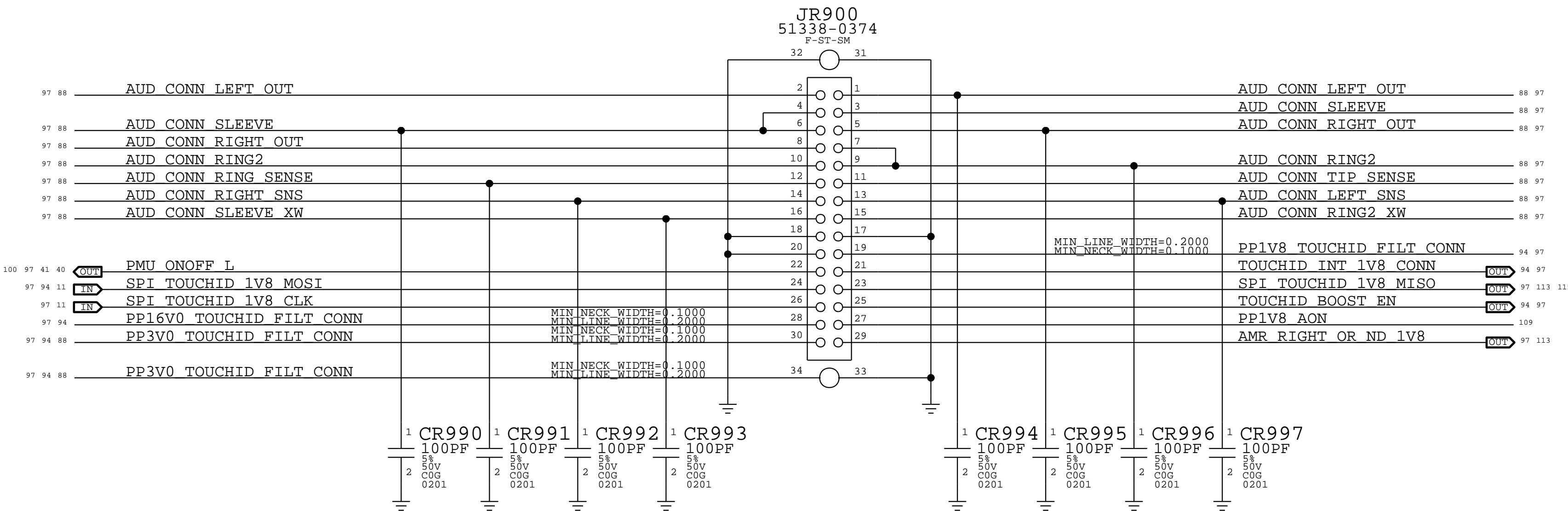
DIGITAL MIC FLEX CONNECTOR

DMIC FLEX RE-USED FROM X1799



AUDIO JACK FLEX CONNECTOR

APN: 516S1064  
MATES WITH APN: 516S0573 ON FLEX



ESD:PROJECT DEPENDENT



PAGE TITLE		
AUDIO CONNECTORS: DMIC, JACK		
	DRAWING NUMBER	051-07793
	REVISION	5.0.0
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	BRANCH	evt-1
	PAGE	249 OF 999
	SHEET	88 OF 128

BOM\_COST\_GROUP=AUDIO

Apple Inc.

NOTICE OF PROPRIETARY PROPERTY:  
THE INFORMATION CONTAINED HEREIN IS THE  
PROPRIETARY PROPERTY OF APPLE INC.  
THE POSSESSOR AGREES TO THE FOLLOWING:  
I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE  
II NOT TO REPRODUCE OR COPY IT  
III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART  
IV ALL RIGHTS RESERVED

DRAWING NUMBER  
051-07793

REVISION  
5.0.0

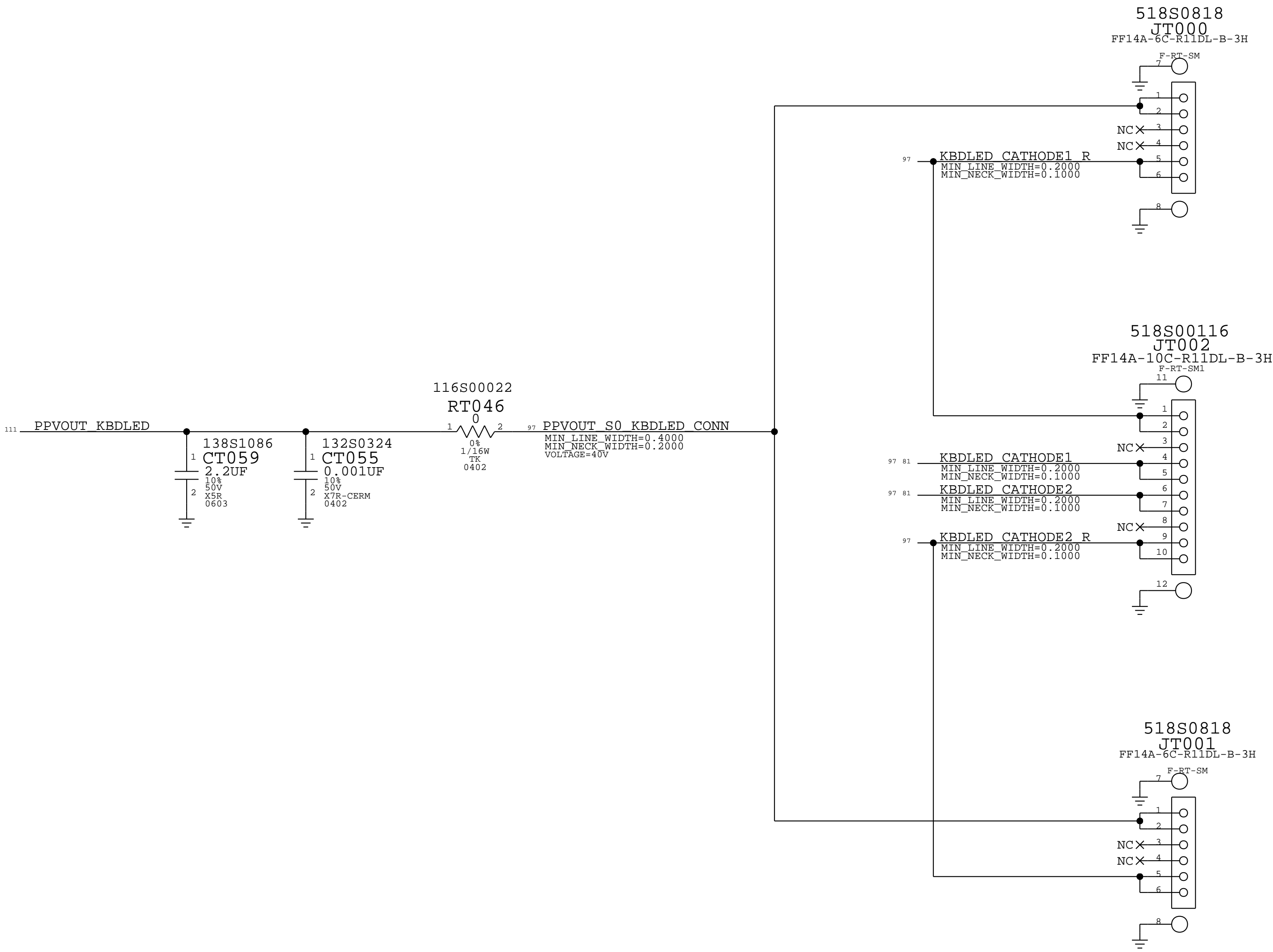
BRANCH  
evt-1

PAGE  
250 OF 999

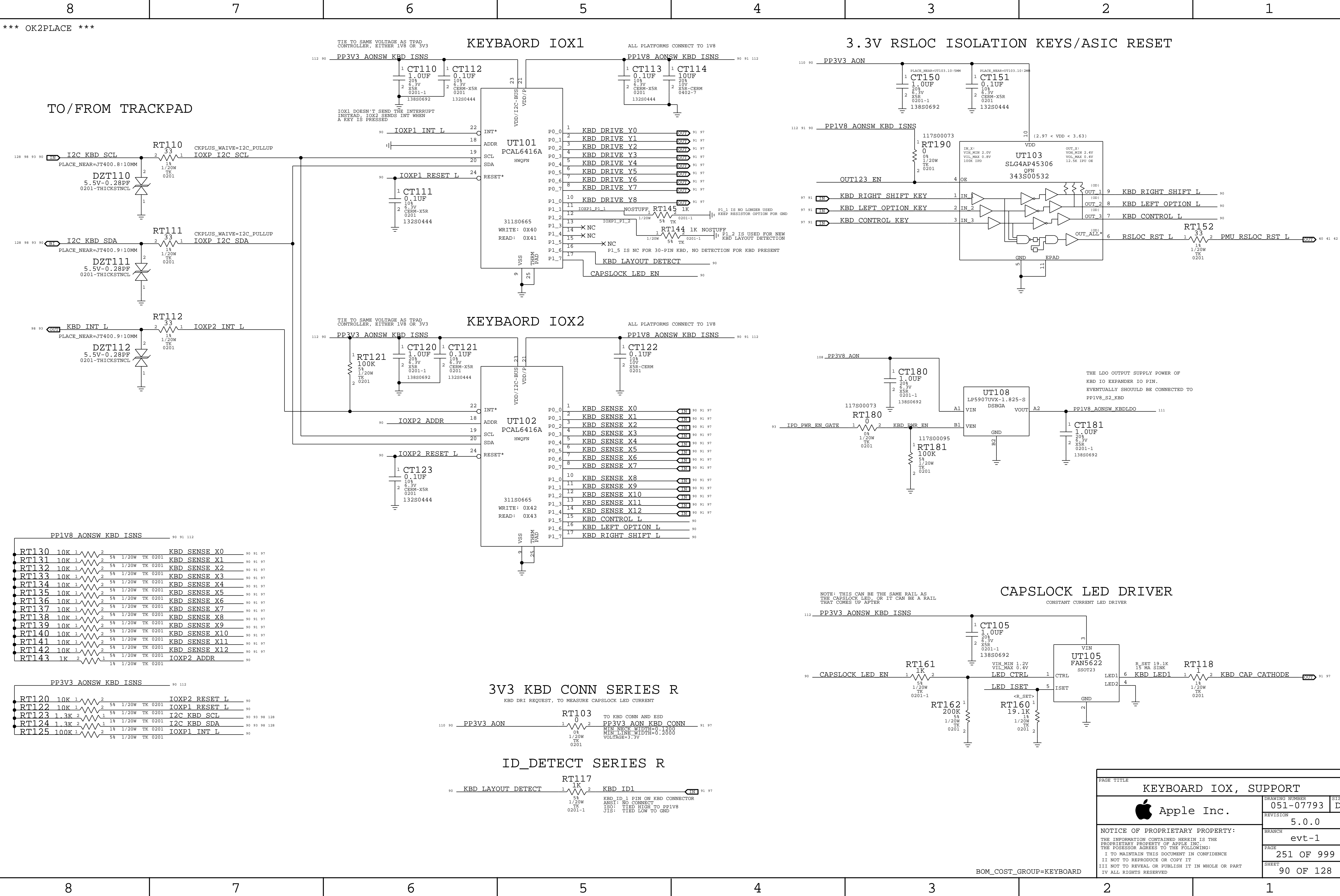
SHEET  
89 OF 128


PAGE TITLE  
KEYBOARD BLC CONNECTORS

SIZE  
D

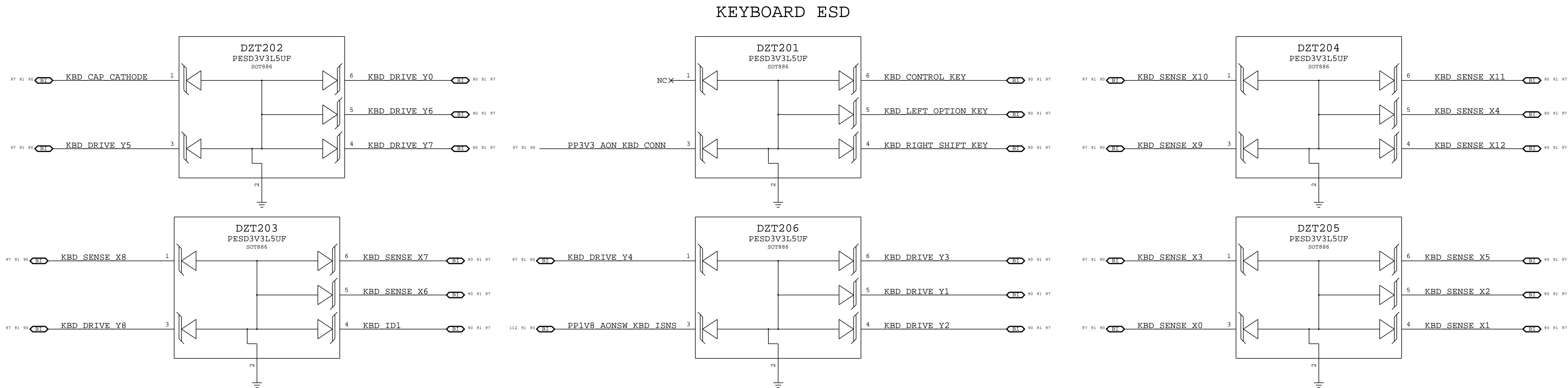


BOM\_COST\_GROUP=KEYBOARD

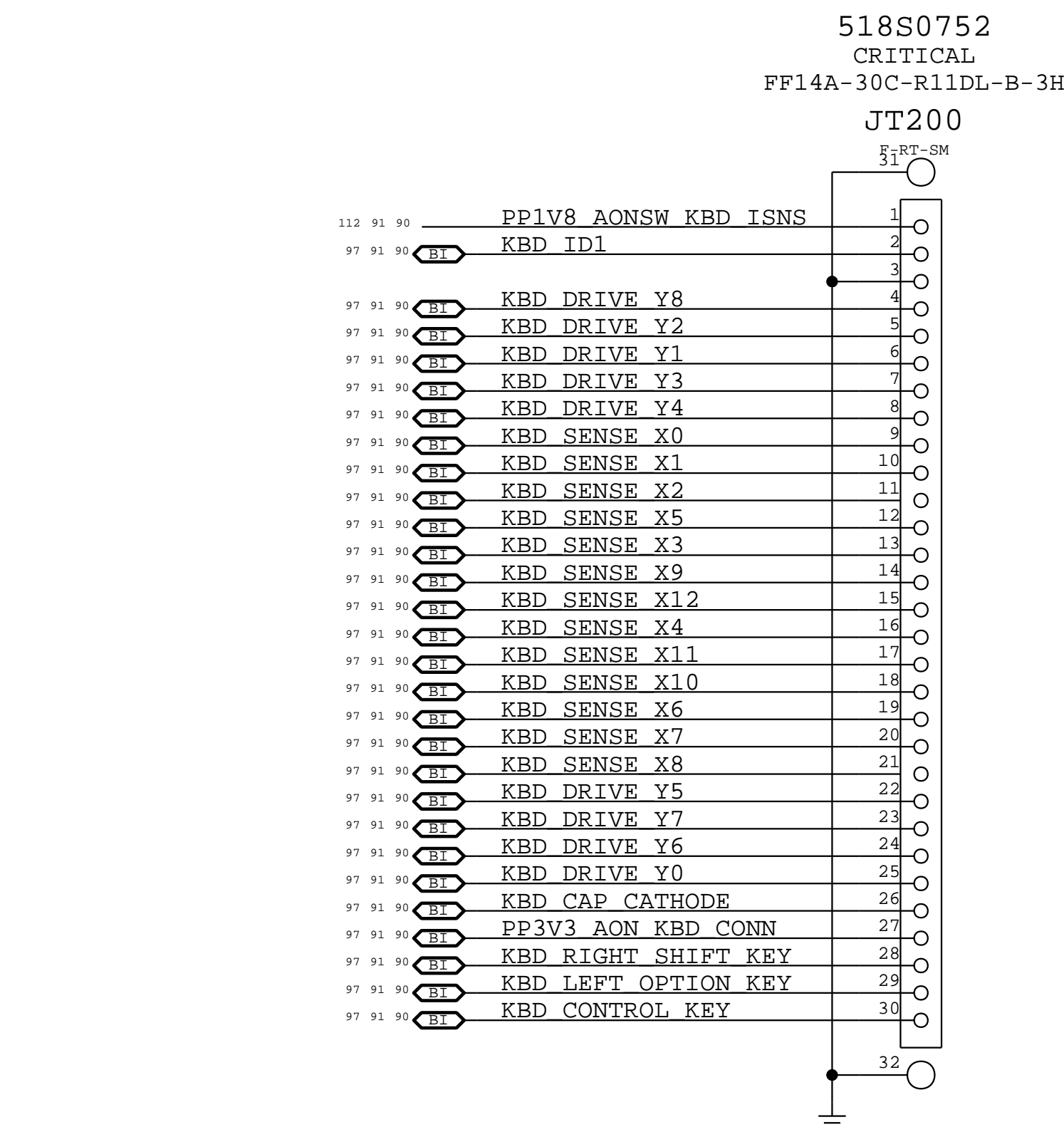



PAGE TITLE		
KEYBOARD IOX, SUPPORT		
 Apple Inc.	DRAWING NUMBER	051-07793
	REVISION	5.0.0
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	BRANCH	evt-1
	PAGE	251 OF 999
	SHEET	90 OF 128



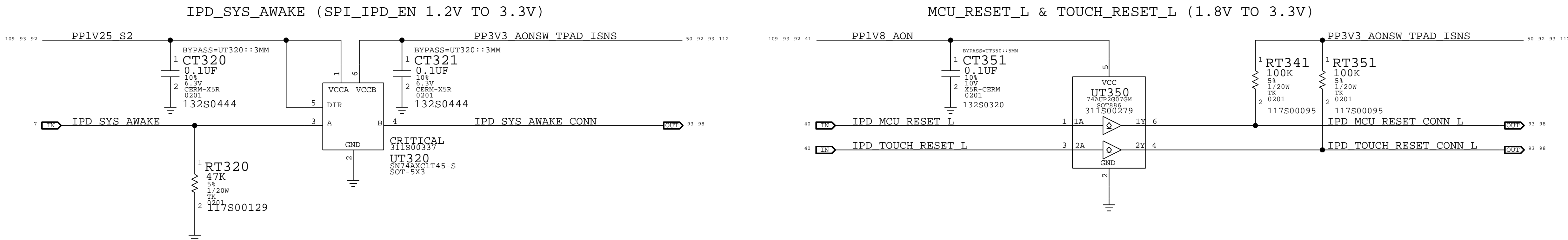
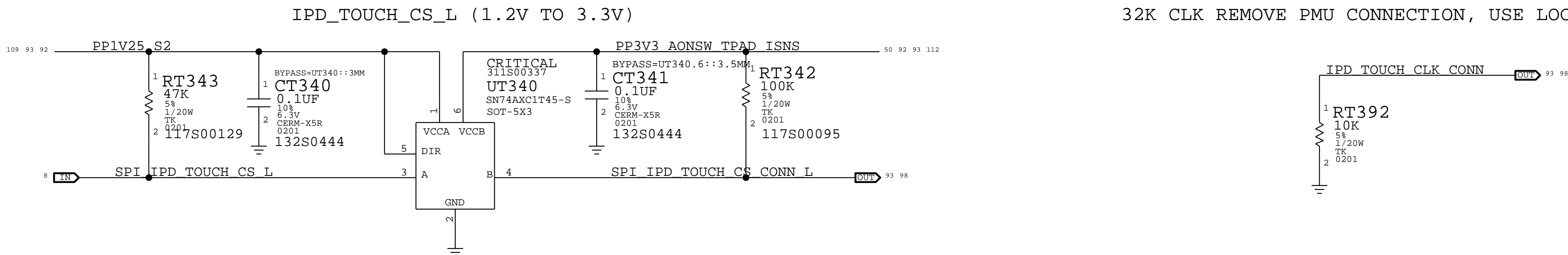
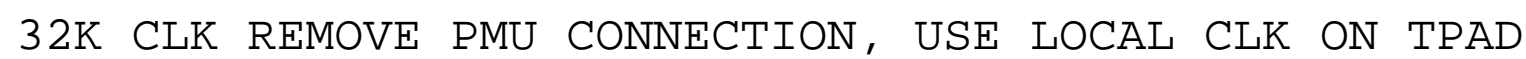
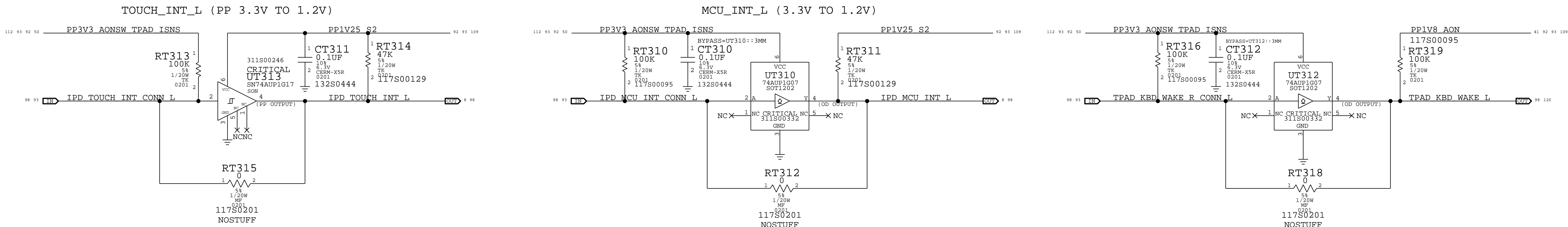
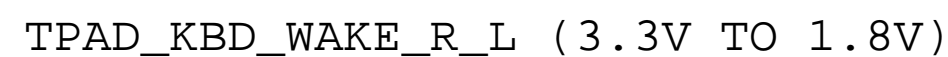
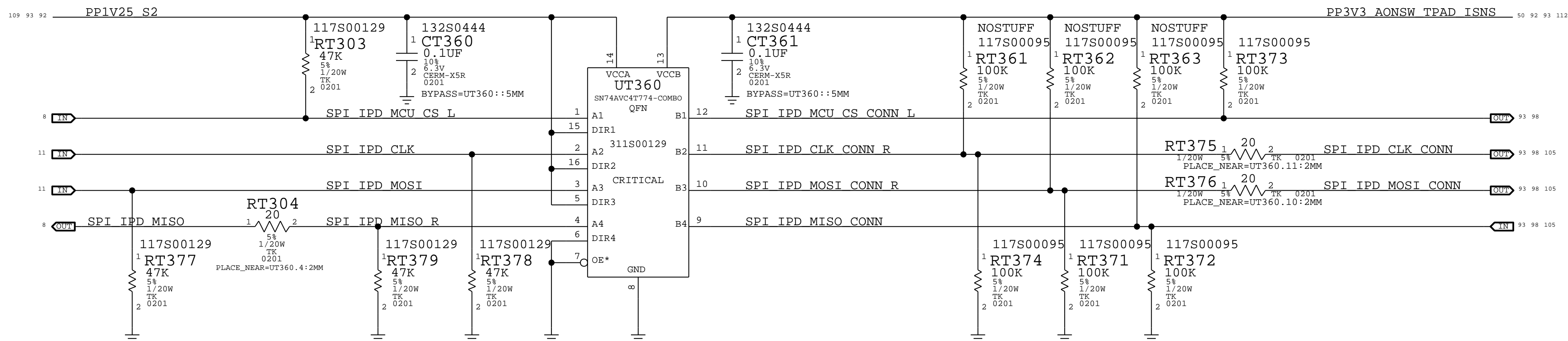


## MEMBRANE ZIF CONNECTOR

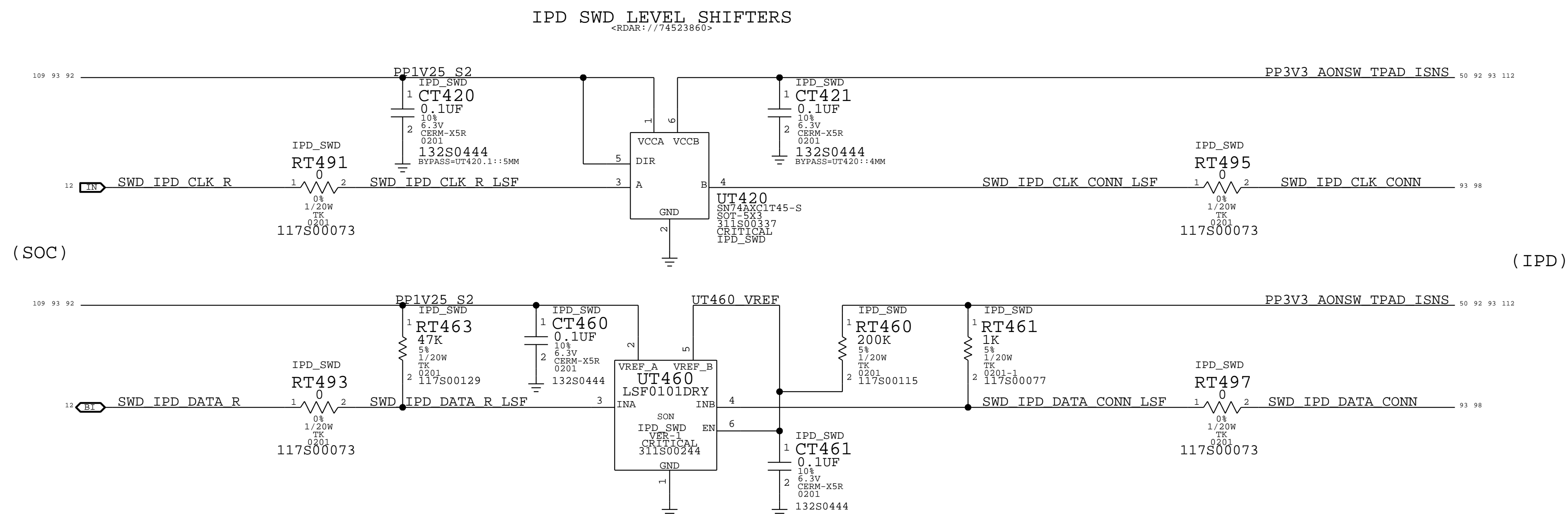
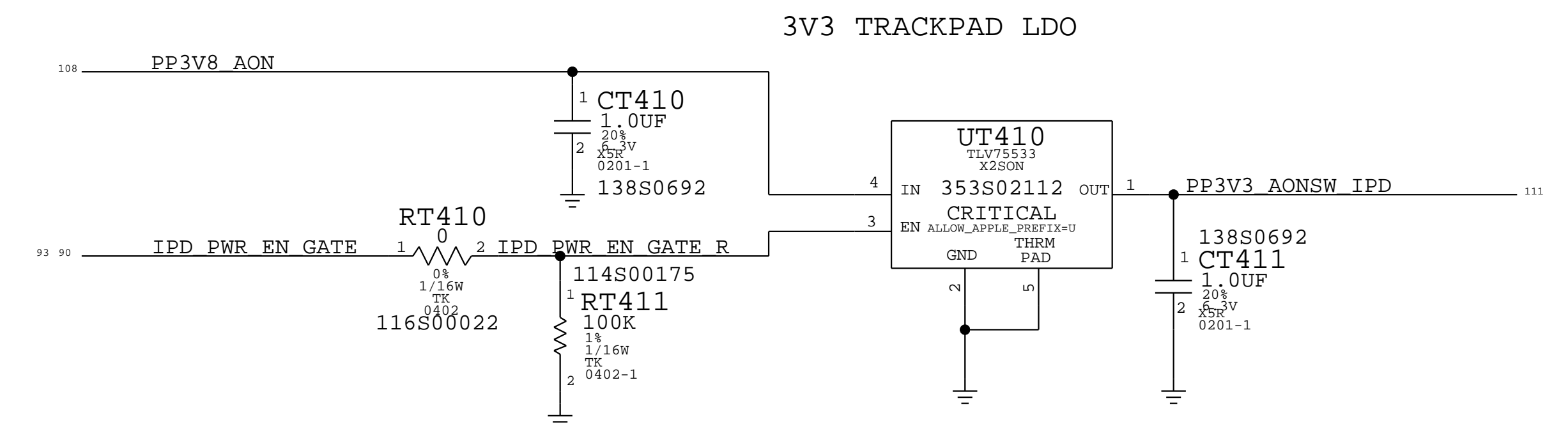
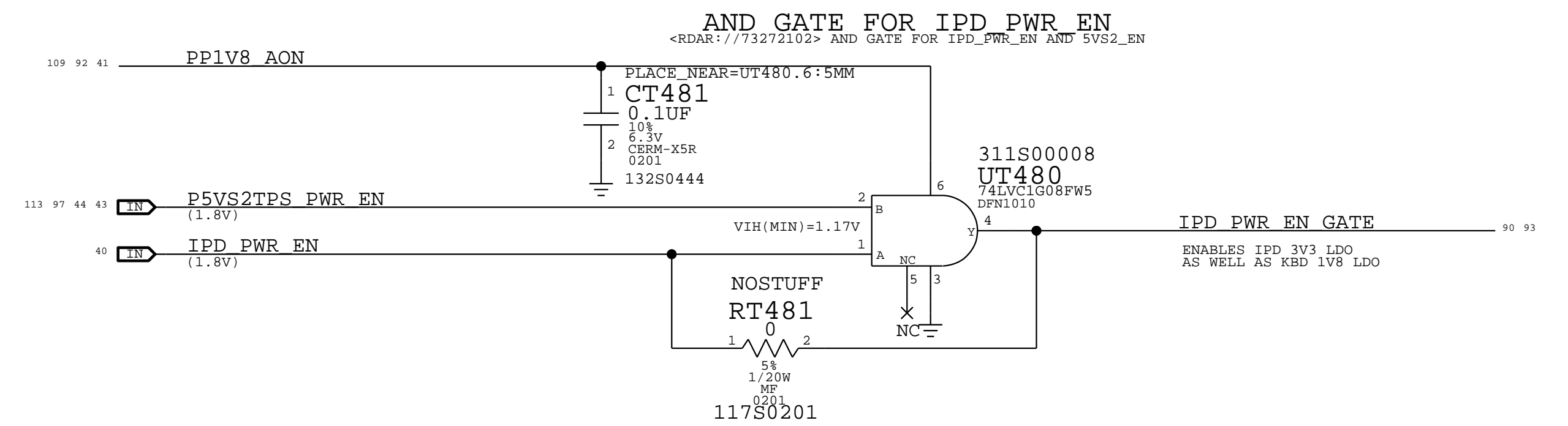
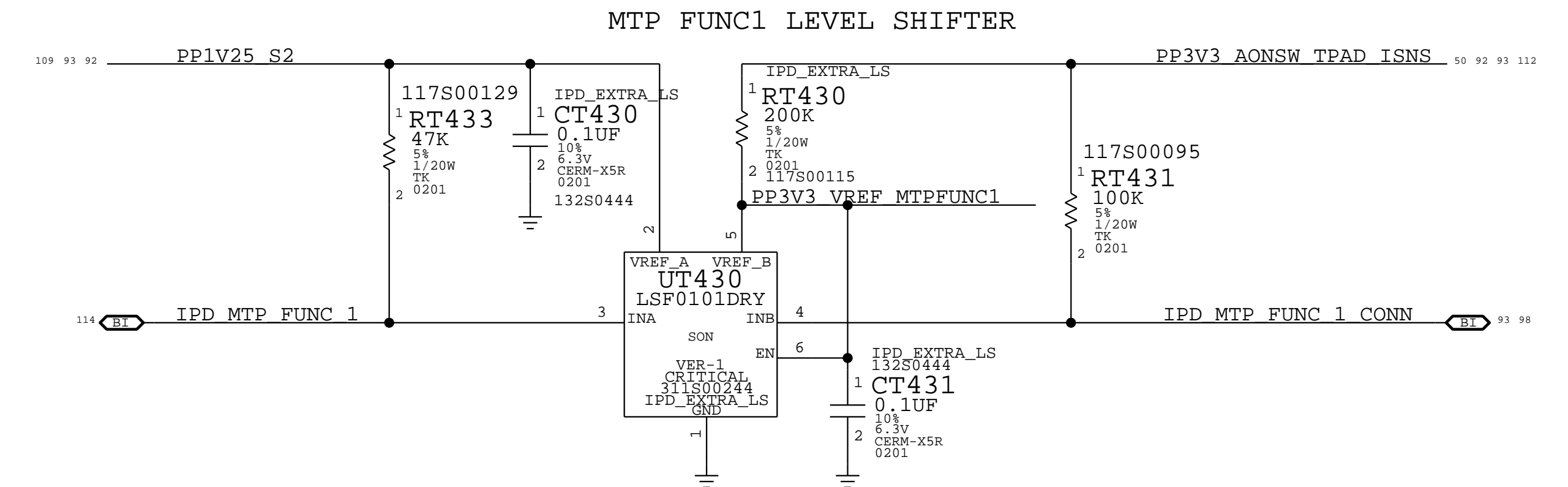
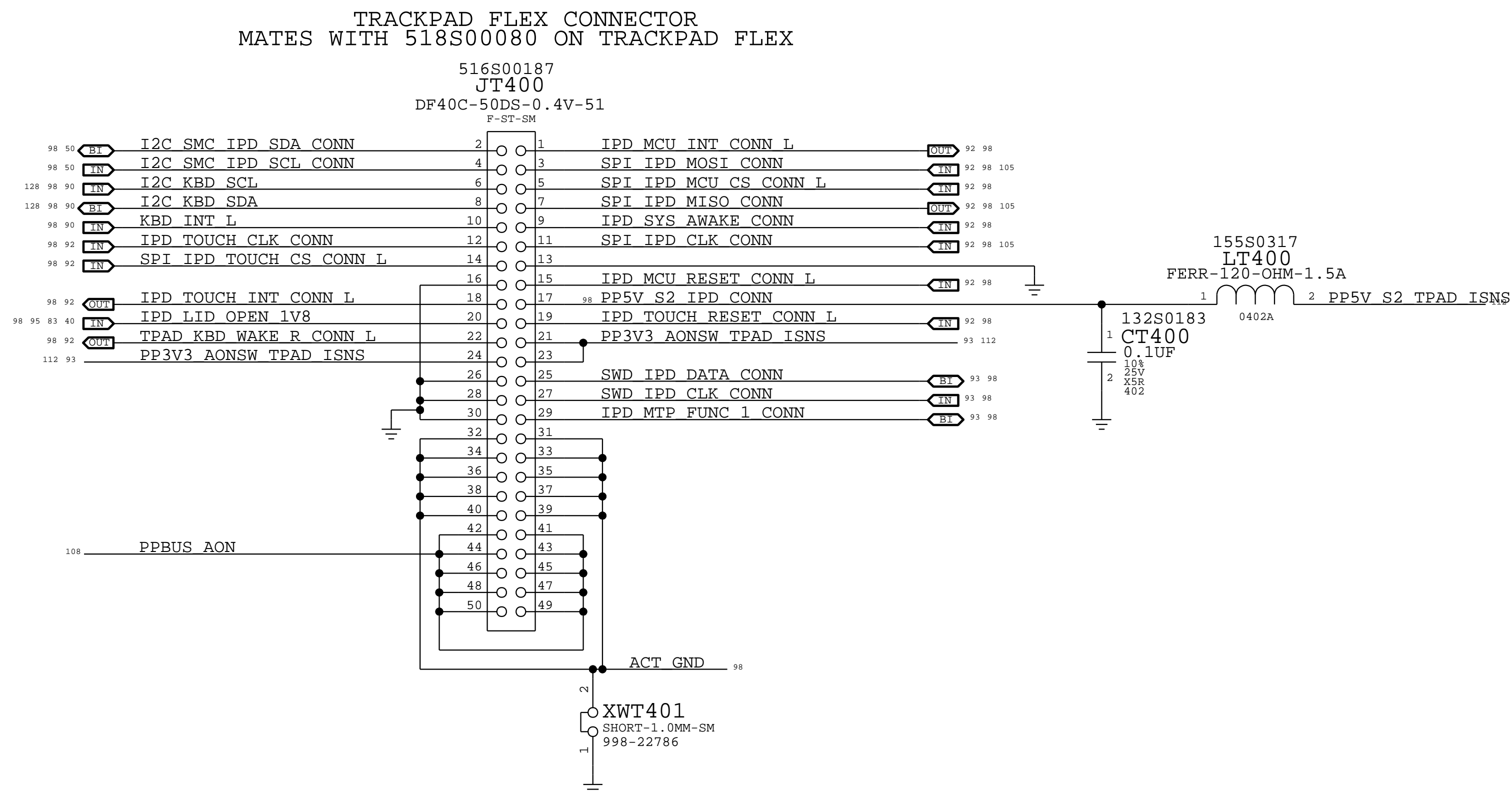



PAGE TITLE			
KEYBOARD SIGNAL CONNECTOR, ESD			
 Apple Inc.	DRAWING NUMBER		SIZE
	051-07793		D
NOTICE OF PROPRIETARY PROPERTY:  THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE I I NOT TO REPRODUCE OR COPY IT I I I NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART I I I ALL RIGHTS RESERVED	REVISION		
			5.0.0
	BRANCH		
			evt-1
	PAGE		
			252 OF 999
	SHEET		
			91 OF 128

BOM\_COST\_GROUP=KEYBOARD

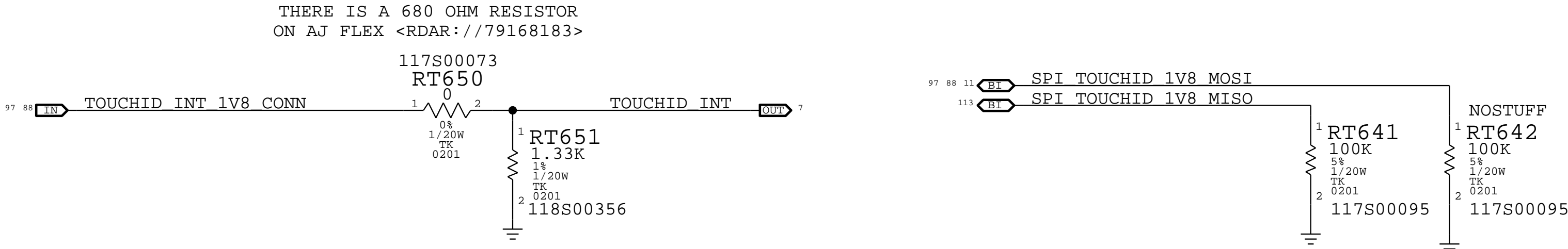
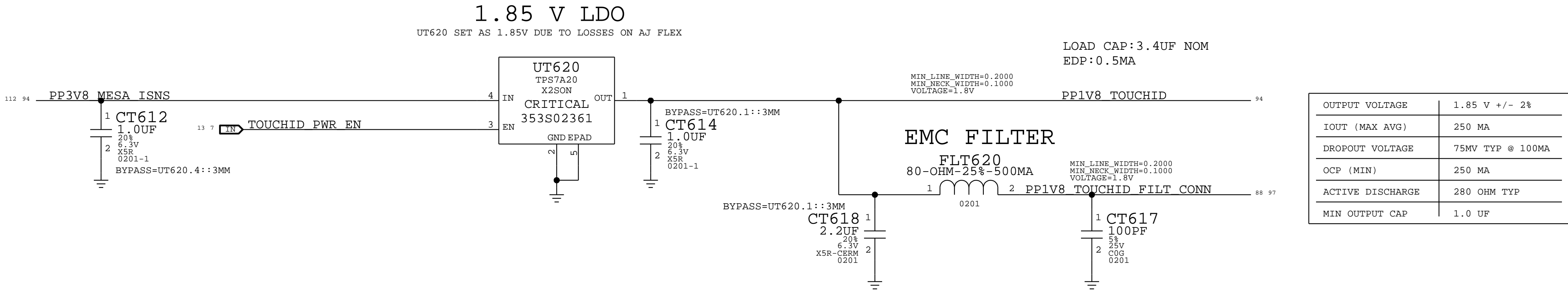
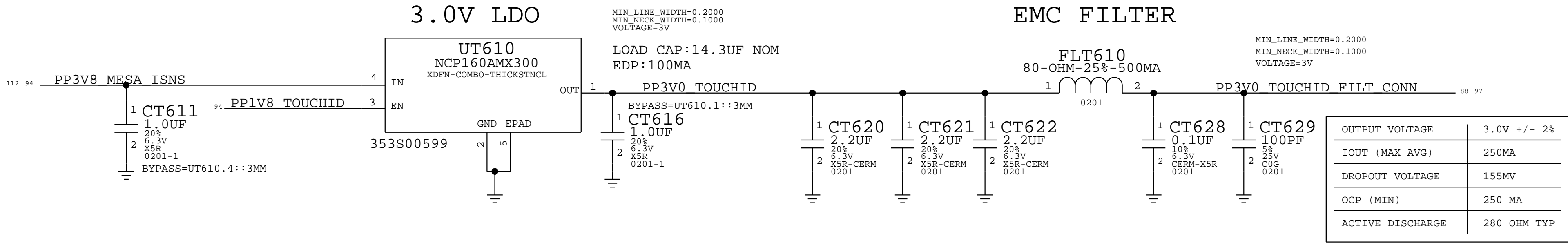
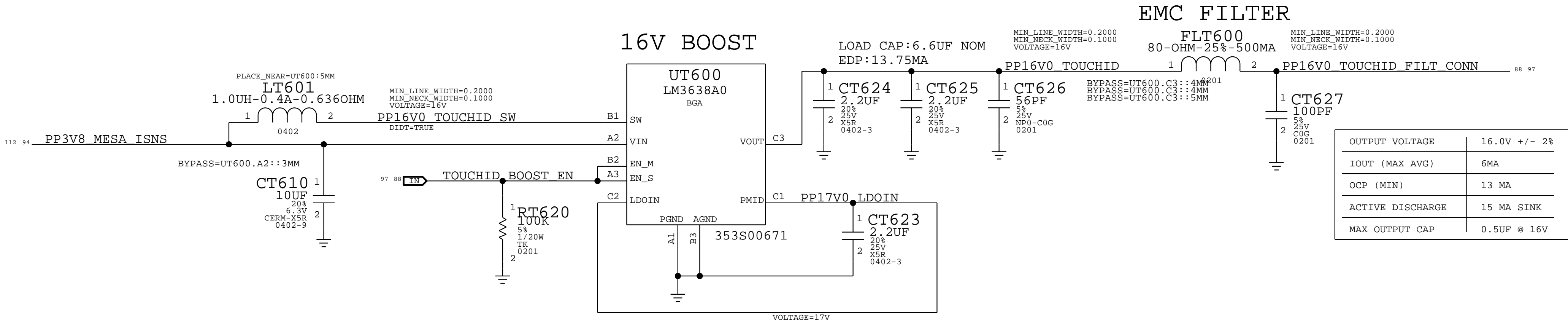



SYNC_MASTER_WDID: X2487_M18	SYNC_DATE: 11/30/2023
PAGE TITLE	
<h1 style="margin: 0;">TRACKPAD SUPPORT</h1> <div style="display: flex; justify-content: center; align-items: center; gap: 20px;"> <div> <h2 style="margin: 0;">Apple Inc.</h2> </div> </div>	
NOTICE OF PROPRIETARY PROPERTY:	
THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY INFORMATION OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING:	
I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE I/II NOT TO REPRODUCE OR COPY IT I/II NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART I/II ALL RIGHTS RESERVED	
DRAWING NUMBER	051-07793
REVISION	5.0.0
BRANCH	evt-1
PAGE	253 OF 999
SHEET	92 OF 128



PAGE TITLE			
TRACKPAD CONNECTOR			
 Apple Inc.	DRAWING NUMBER		SIZE
	051-07793		D
	REVISION		
NOTICE OF PROPRIETARY PROPERTY:  THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE FOSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE  I I NOT TO REPRODUCE OR COPY IT  I I I NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED		5.0.0	
		BRANCH	
		evt-1	
		PAGE	
		254 OF 999	
		SHEET	
		93 OF 128	

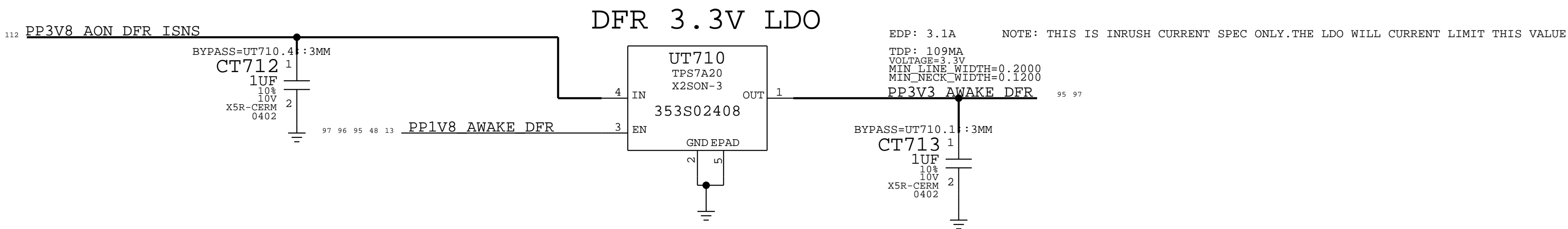
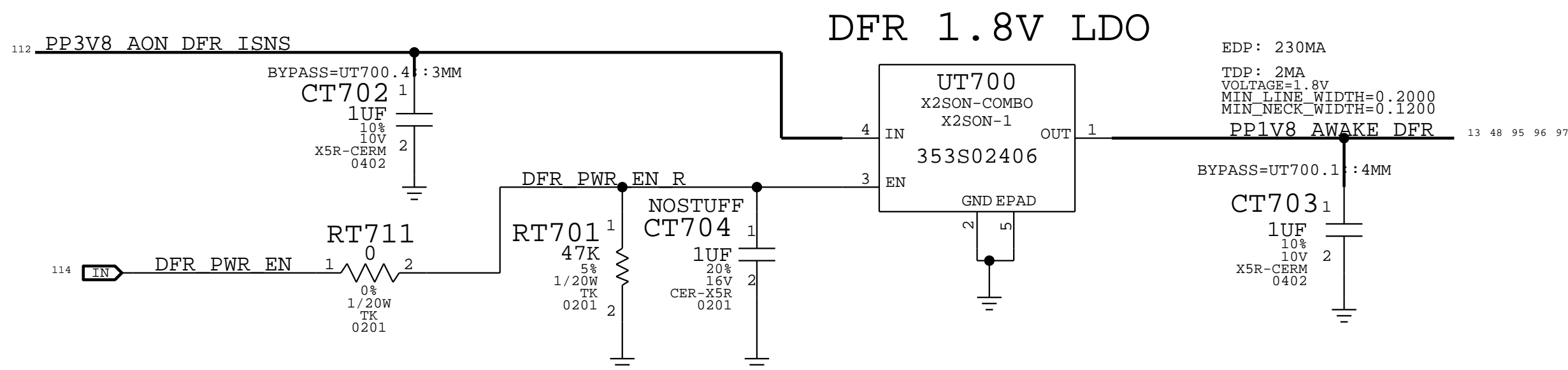
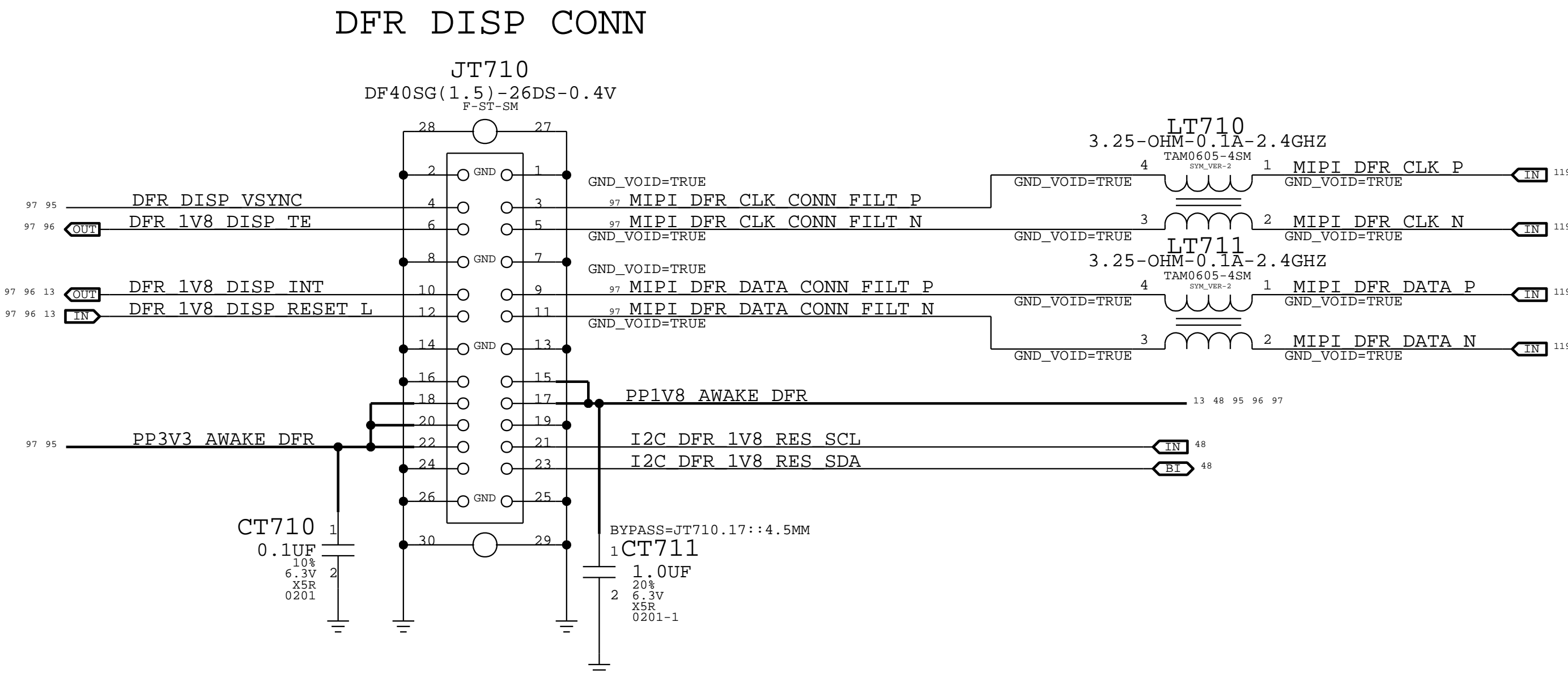
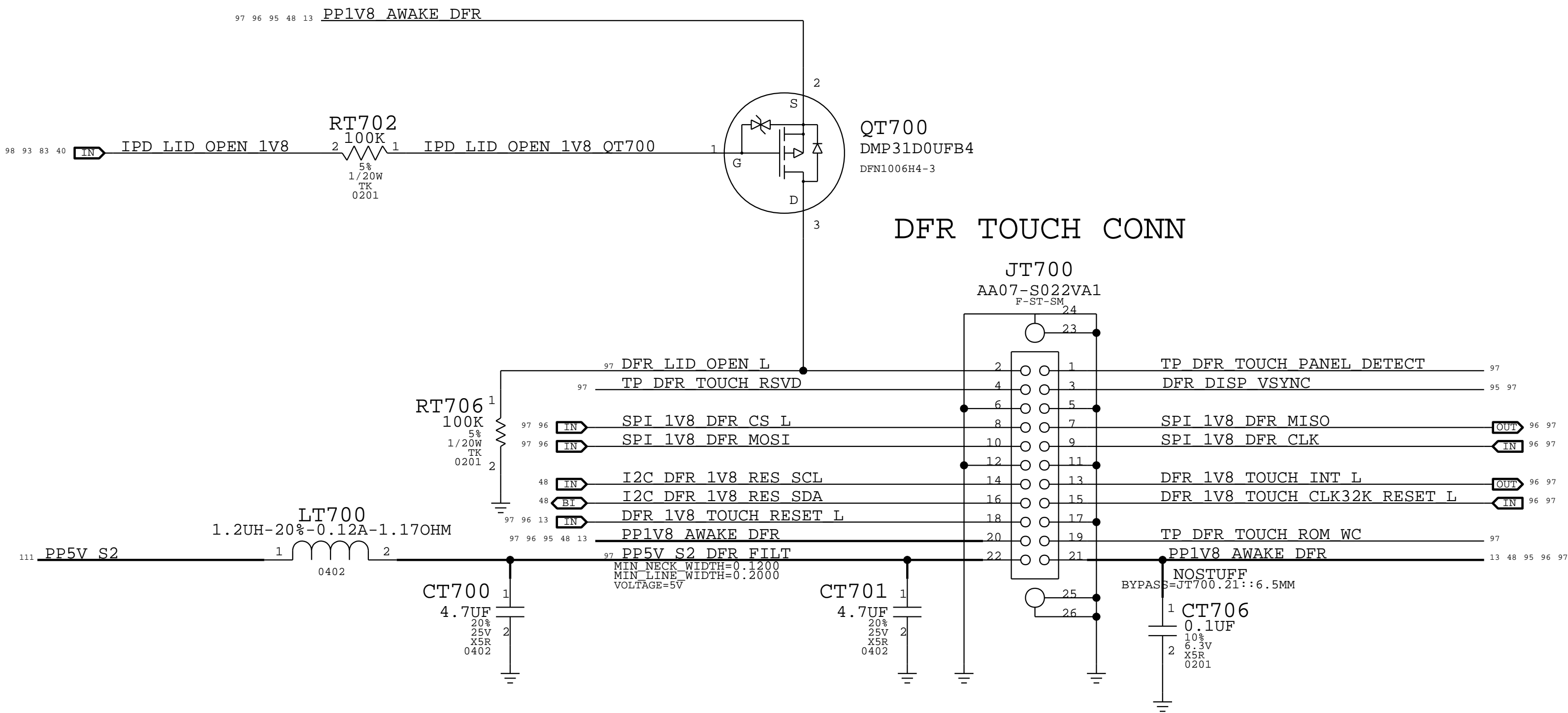
TOUCHID POWER SEQUENCING REQUIREMENTS  
POWER ON: 1V8 -> 3V3 -> 16V0



TOUCHID SUPPORT		
	DRAWING NUMBER	051-07793
	REVISION	5.0.0
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	BRANCH	evt-1
	PAGE	256 OF 999
	SHEET	94 OF 128


BOM\_COST\_GROUP=TOUCHID

DFR V3 SUPPORT



OUTPUT VOLTAGE	1.8V +/- 2%
IOUT (MAX AVG)	250MA
DROPOUT VOLTAGE	80MV TYP @ 250MA
OCF (MIN)	250 MA
ACTIVE DISCHARGE	280 OHM TYP
MAX OUTPUT CAP	

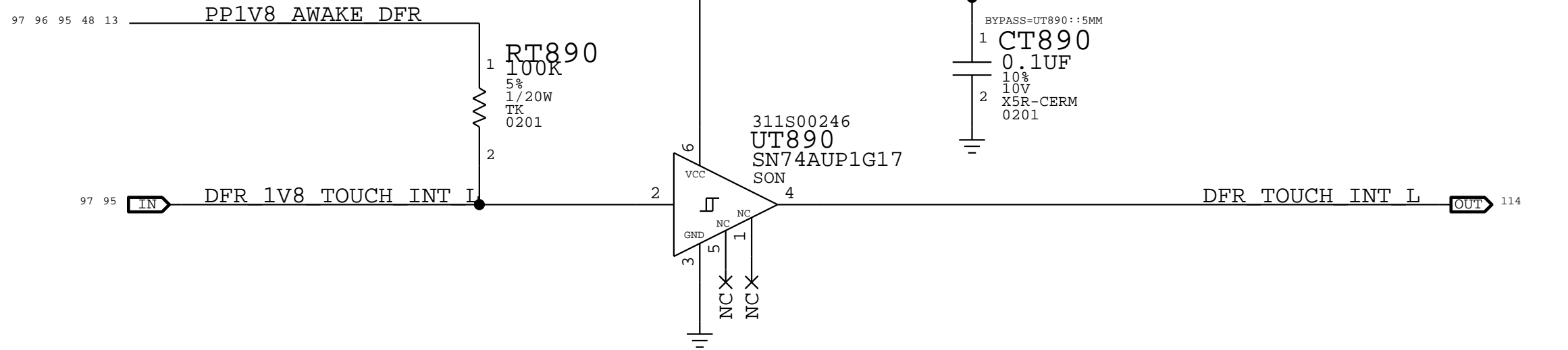
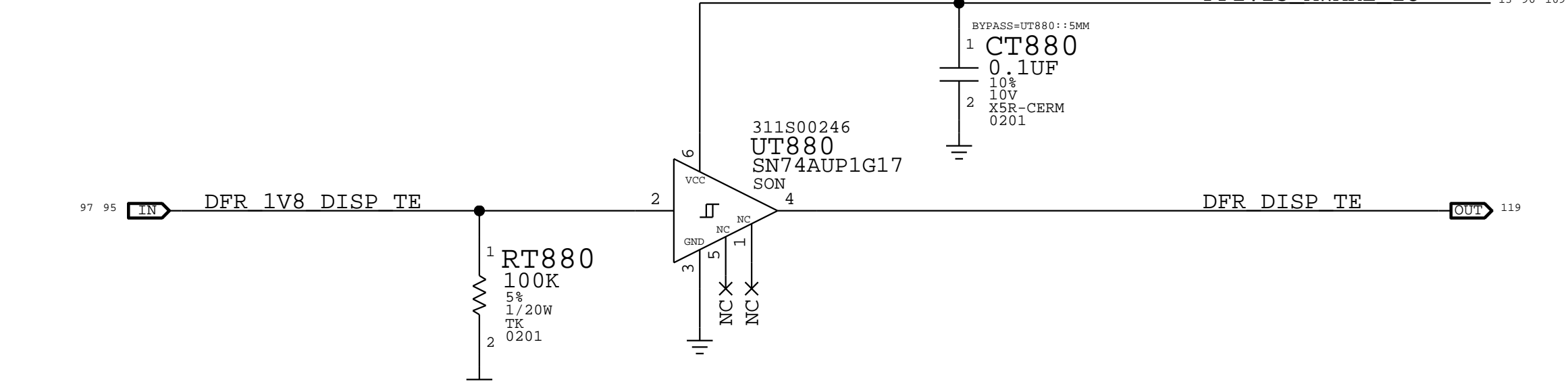
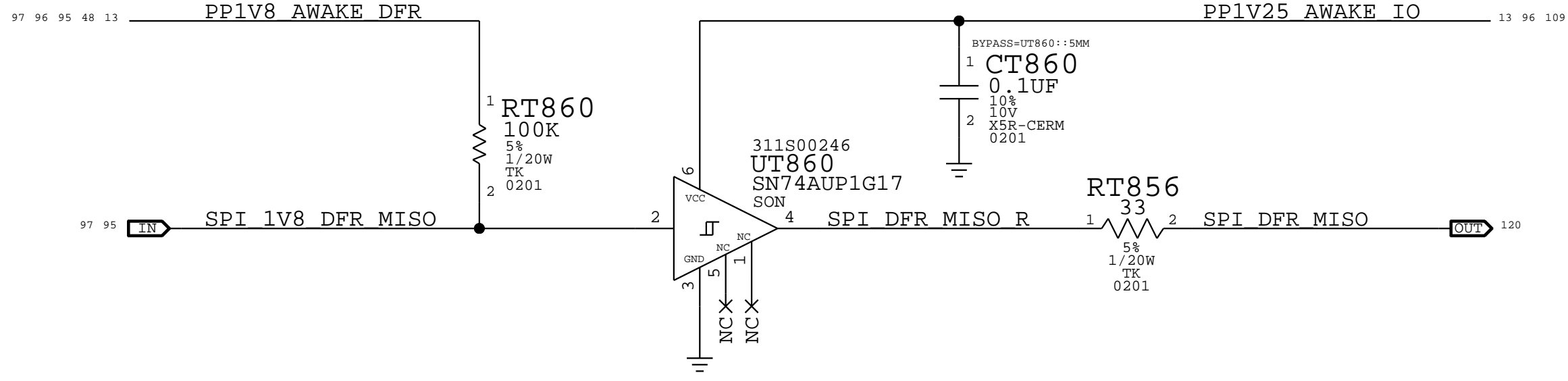
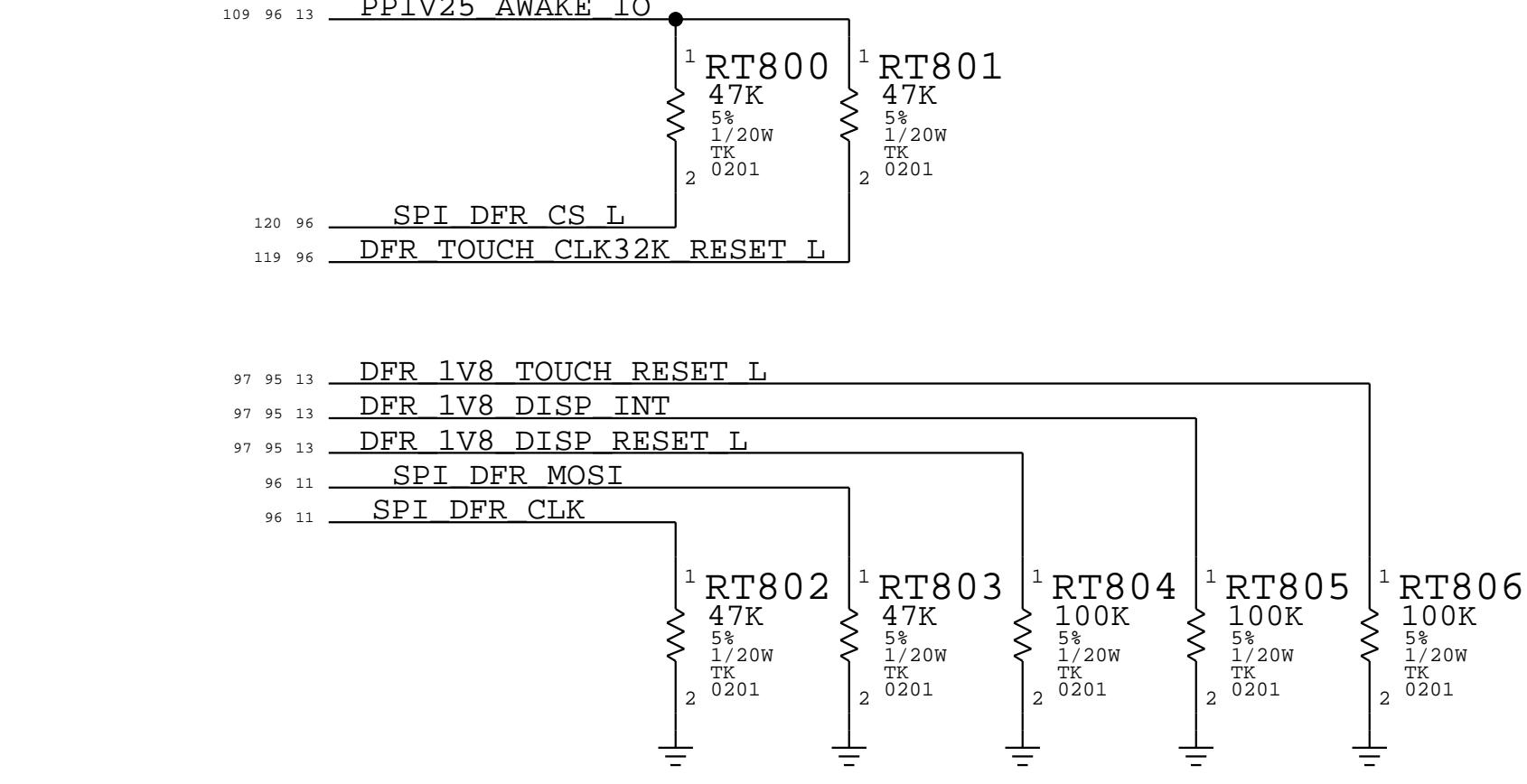
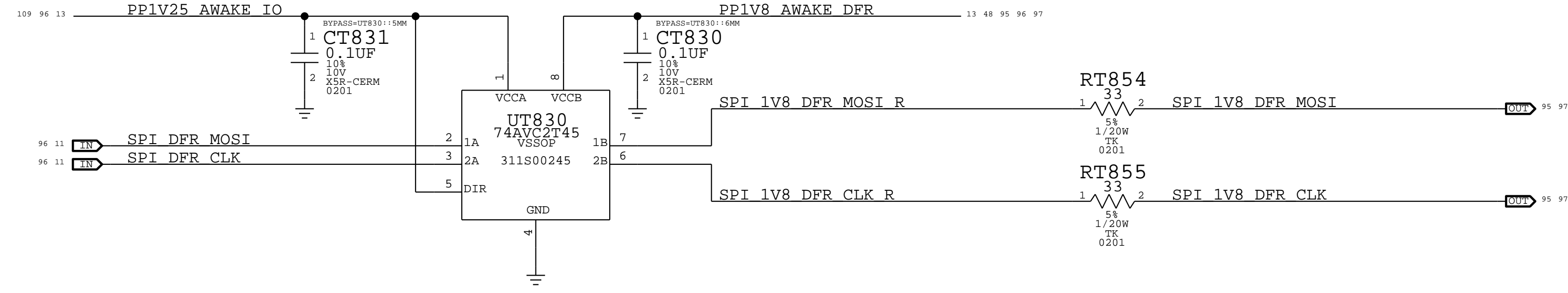
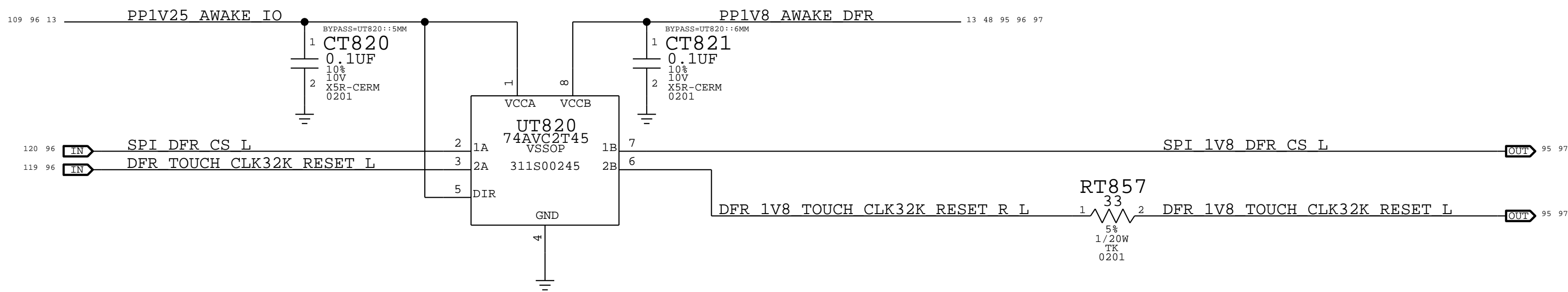
OUTPUT VOLTAGE	3.3V +/- 2%
IOUT (MAX AVG)	250MA
DROPOUT VOLTAGE	80MV TYP @ 250MA
OCF (MIN)	250 MA
ACTIVE DISCHARGE	280 OHM TYP
MAX OUTPUT CAP	

PAGE TITLE		
DFR SUPPORT 1		
 Apple Inc.	DRAWING NUMBER	051-07793
	REVISION	5.0.0
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	BRANCH	evt-1
	PAGE	257 OF 999
	SHEET	95 OF 128


BOM\_COST\_GROUP=DFR

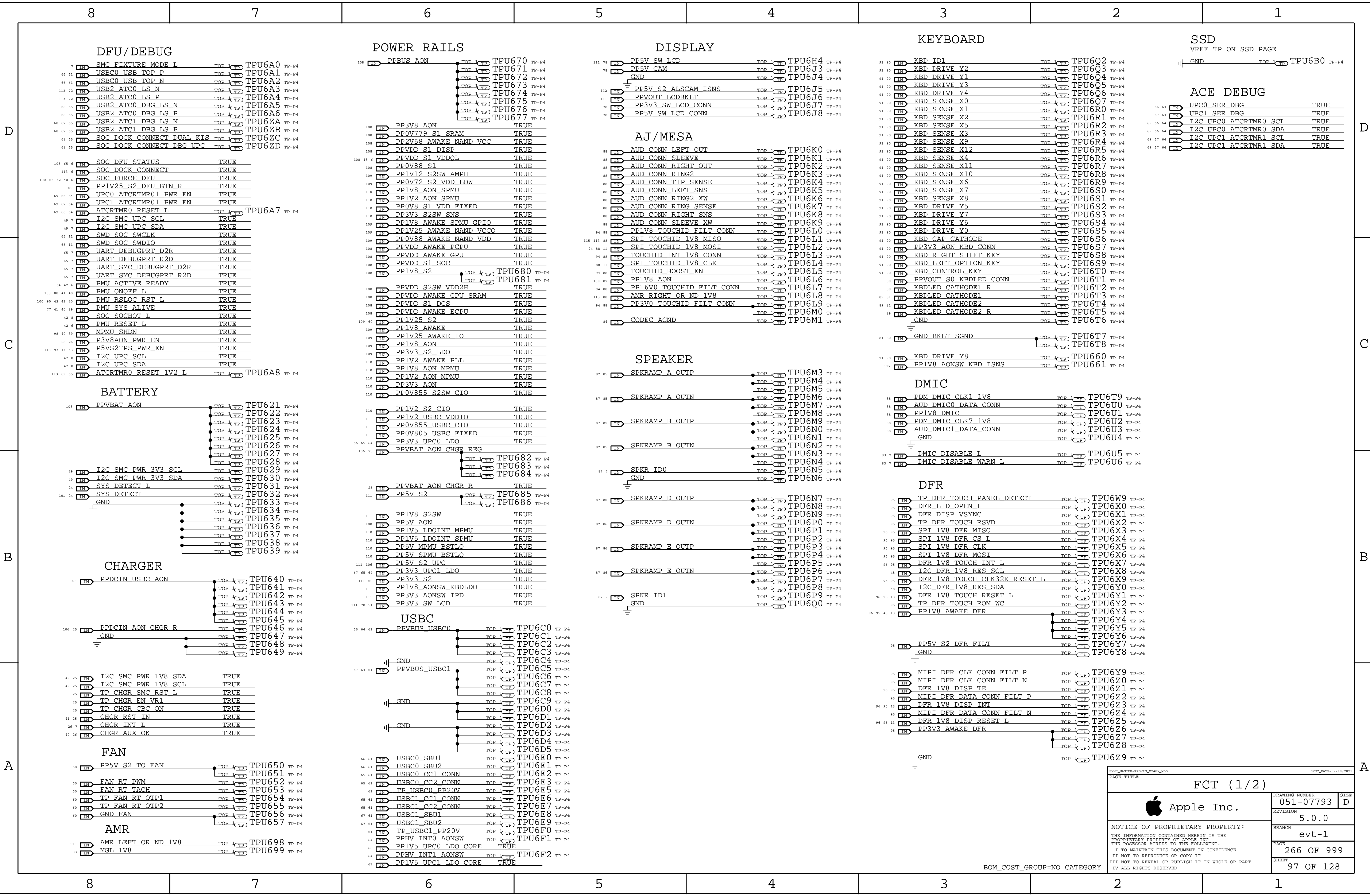


DFR V3 SUPPORT



BOM\_COST\_GROUP=DFR

SYNC_MASTER=PATRICK_X2487_MLB			SYNC_DATE=07/27/2021		
PAGE TITLE					
DFR SUPPORT			2		
 Apple Inc.			DRAWING NUMBER		SIZE
			051-07793		D
			REVISION		
			5.0.0		
NOTICE OF PROPRIETARY PROPERTY:			BRANCH		
THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED			evt-1		
			PAGE		
			258 OF 999		
			SHEET		
			96 OF 128		



	8	7	6	5	4	3	2	1																												
D	<div>TRACKPAD</div> <div><div><div><div>93</div><div>TPN</div><div>PP5V_S2_IPD_CONN</div><div></div></div><div><div>TPU7M0</div><div>TP-P4</div></div><div><div>TPU7M1</div><div>TP-P4</div></div><div><div>TOP</div><div>CTP</div></div><div><div>TOP</div><div>CTP</div></div></div><div><div>128</div><div>93</div><div>90</div><div>TPN</div><div>I2C_KBD_SCL</div><div>TRUE</div></div><div><div>128</div><div>93</div><div>90</div><div>TPN</div><div>I2C_KBD_SDA</div><div>TRUE</div></div><div><div>93</div><div>50</div><div>TPN</div><div>I2C_SMC_IPD_SCL_CONN</div><div>TRUE</div></div><div><div>93</div><div>50</div><div>TPN</div><div>I2C_SMC_IPD_SDA_CONN</div><div>TRUE</div></div><div><div>98</div><div>95</div><div>93</div><div>83</div><div>40</div><div>TPN</div><div>IPD_LID_OPEN_1V8</div><div>TRUE</div></div><div><div>92</div><div>8</div><div>TPN</div><div>IPD_MCU_INT_L</div><div>TRUE</div></div><div><div>93</div><div>92</div><div>TPN</div><div>IPD_MCU_RESET_CONN_L</div><div>TRUE</div></div><div><div>93</div><div>92</div><div>TPN</div><div>IPD_SYS_AWAKE_CONN</div><div>TRUE</div></div><div><div>93</div><div>92</div><div>TPN</div><div>IPD_TOUCH_CLK_CONN</div><div>TRUE</div></div><div><div>92</div><div>8</div><div>TPN</div><div>IPD_TOUCH_INT_L</div><div>TRUE</div></div><div><div>93</div><div>92</div><div>TPN</div><div>IPD_TOUCH_RESET_CONN_L</div><div>TRUE</div></div><div><div>93</div><div>90</div><div>TPN</div><div>KBD_INT_L</div><div>TRUE</div></div><div><div>105</div><div>93</div><div>92</div><div>TPN</div><div>SPI_IPD_CLK_CONN</div><div>TRUE</div></div><div><div>105</div><div>93</div><div>92</div><div>TPN</div><div>SPI_IPD_MISO_CONN</div><div>TRUE</div></div><div><div>105</div><div>93</div><div>92</div><div>TPN</div><div>SPI_IPD_MOSI_CONN</div><div>TRUE</div></div><div><div>120</div><div>40</div><div>TPN</div><div>TPAD_KBD_WAKE_L</div><div>TRUE</div></div><div><div>TPN</div><div>GND</div><div><div>TPU7M2</div><div>TP-P4</div></div><div><div>TPU7M3</div><div>TP-P4</div></div><div><div>TOP</div><div>CTP</div></div><div><div>TOP</div><div>CTP</div></div></div><div><div>93</div><div>92</div><div>TPN</div><div>IPD_MCU_INT_CONN_L</div><div>TRUE</div></div><div><div>93</div><div>92</div><div>TPN</div><div>SPI_IPD_TOUCH_CS_CONN_L</div><div>TRUE</div></div><div><div>93</div><div>92</div><div>TPN</div><div>SPI_IPD_MCU_CS_CONN_L</div><div>TRUE</div></div><div><div>93</div><div>92</div><div>TPN</div><div>IPD_MTP_FUNC_1_CONN</div><div>TRUE</div></div><div><div>98</div><div>95</div><div>93</div><div>83</div><div>40</div><div>TPN</div><div>IPD_LID_OPEN_1V8</div><div>TRUE</div></div><div><div>120</div><div>92</div><div>TPN</div><div>TPAD_KBD_WAKE_L</div><div>TRUE</div></div><div><div>93</div><div>92</div><div>TPN</div><div>SWD_IPD_DATA_CONN</div><div>TRUE</div></div><div><div>93</div><div>92</div><div>TPN</div><div>SWD_IPD_CLK_CONN</div><div>TRUE</div></div><div><div>93</div><div>92</div><div>TPN</div><div>ACT_GND</div><div>TRUE</div></div><div><div>93</div><div>92</div><div>TPN</div><div>TPAD_KBD_WAKE_R_CONN_L</div><div>TRUE</div></div><div><div>93</div><div>92</div><div>TPN</div><div>IPD_TOUCH_INT_CONN_L</div><div>TRUE</div></div><div><div>112</div><div>92</div><div>TPN</div><div>PP3V3_AONSW_TPAD_ISNS</div><div>TRUE</div></div></div> <div>WIFI / BT</div> <div><div>112</div><div>TPN</div><div>PP1V8_S2_WLBT_ISNS</div><div>TRUE</div></div> <div><div>112</div><div>TPN</div><div>PP3V3_S2_WLBT_ISNS</div><div>TRUE</div></div> <div>C</div>									<div>MISC</div> <div><div>50</div><div>TPN</div><div>I2C_SMC_SNS0_3V3_SCL</div><div>TRUE</div></div> <div><div>50</div><div>TPN</div><div>I2C_SMC_SNS0_3V3_SDA</div><div>TRUE</div></div> <div>B</div>									<div>THROTTLE / PMU</div> <div><div>40</div><div>39</div><div>TPN</div><div>PMU_CRASH_L</div><div>TRUE</div></div> <div><div>98</div><div>39</div><div>33</div><div>TPN</div><div>SPMU_SCRASH_L</div><div>TRUE</div></div> <div><div>42</div><div>8</div><div>TPN</div><div>BUCK0_THERMAL_THROTTLE_L</div><div>TRUE</div></div> <div><div>42</div><div>8</div><div>TPN</div><div>BUCK1_THERMAL_THROTTLE_L</div><div>TRUE</div></div> <div><div>114</div><div>42</div><div>TPN</div><div>SPMU_VDDMAIN_UVWARN_L</div><div>TRUE</div></div> <div><div>114</div><div>42</div><div>TPN</div><div>MPMU_VDDHI_UVWARN_L</div><div>TRUE</div></div> <div><div>42</div><div>8</div><div>TPN</div><div>MPMU_VDDMAIN_UVWARN_L</div><div>TRUE</div></div> <div><div>98</div><div>39</div><div>33</div><div>TPN</div><div>SPMU_SCRASH_L</div><div>TRUE</div></div> <div><div>38</div><div>6</div><div>TPN</div><div>PMU_CLK32K_SOC</div><div>TRUE</div></div> <div><div>74</div><div>73</div><div>38</div><div>TPN</div><div>PMU_CLK32K_WLBT</div><div>TRUE</div></div> <div><div>97</div><div>40</div><div>39</div><div>TPN</div><div>MPMU_SHDN</div><div>TRUE</div></div> <div><div>41</div><div>40</div><div>TPN</div><div>UPC_PMU_RESET_1V8</div><div>TRUE</div></div> <div><div>100</div><div>67</div><div>66</div><div>41</div><div>TPN</div><div>UPC_PMU_RESET_3V3</div><div>TRUE</div></div> <div><div>42</div><div>6</div><div>TPN</div><div>SOC_WDOG</div><div>TRUE</div></div> <div><div>42</div><div>8</div><div>TPN</div><div>DBL_CLICK_DET</div><div>TRUE</div></div> <div>A</div>									<div>RF SEQUENCE</div> <div><div>6</div><div>TPN</div><div>SOC_HOLD_RESET</div><div>TRUE</div></div>								

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

</

WIFI/BT

112

TPN

PP1V8\_S2\_WLBT\_ISNS

TRUE

112

TPN

PP3V3\_S2\_WLBT\_ISNS

TRUE

MISC

50

TPN

I2C\_SMC\_SNS0\_3V3\_SCL

TRUE

50

TPN

I2C\_SMC\_SNS0\_3V3\_SDA

TRUE

THROTTLE/PMU

40

39

TPN

PMU\_CRASH\_L

TRUE

98

39

33

TPN

SPMU\_SCRASH\_L

TRUE

42

8

TPN

BUCK0\_THERMAL\_THROTTLE\_L

TRUE

42

8

TPN

BUCK1\_THERMAL\_THROTTLE\_L

TRUE

114

42

TPN

SPMU\_VDDMAIN\_UVWARN\_L

TRUE

114

42

TPN

MPMU\_VDDHI\_UVWARN\_L

TRUE

42

8

TPN

MPMU\_VDDMAIN\_UVWARN\_L

TRUE

98

39

33

TPN

SPMU\_SCRASH\_L

TRUE

38

6

TPN

PMU\_CLK32K\_SOC

TRUE

74

73

38

TPN

PMU\_CLK32K\_WLBT

TRUE

97

40

39

TPN

MPMU\_SHDN

TRUE

41

40

TPN

UPC\_PMU\_RESET\_1V8

TRUE

100

67

66

41

TPN

UPC\_PMU\_RESET\_3V3

TRUE

42

6

TPN

SOC\_WDOG

TRUE

42

8

TPN

DBL\_CLICK\_DET

TRUE

RF SEQUENCE

6

TPN

SOC\_HOLD\_RESET

TRUE


BOM\_COST\_GROUP=NO CATEGORY

SYNC\_MASTER=KELVIN\_X2487\_MLB

SYNC\_DATE=07/19/2021

PAGE TITLE

FCT (2/2)

 Apple Inc.

DRAWING NUMBER

051-07793

SIZE

D

REVISION

5.0.0

BRANCH

evt-1

PAGE

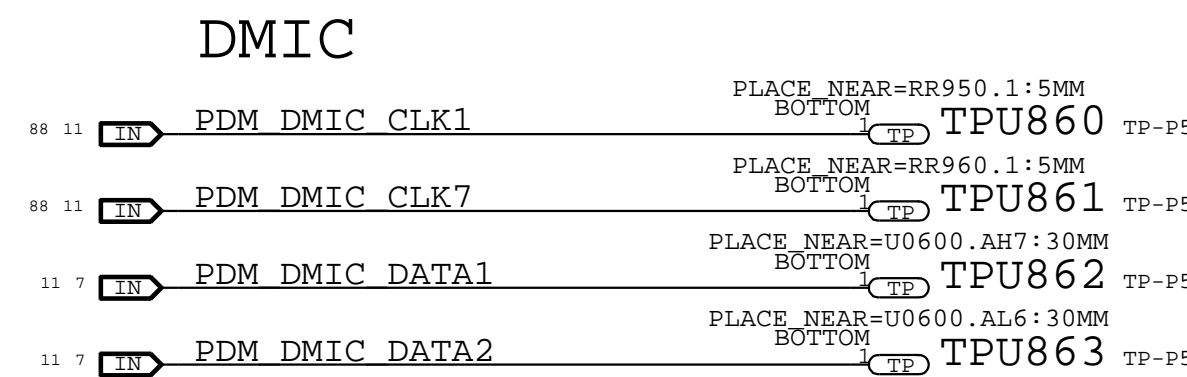
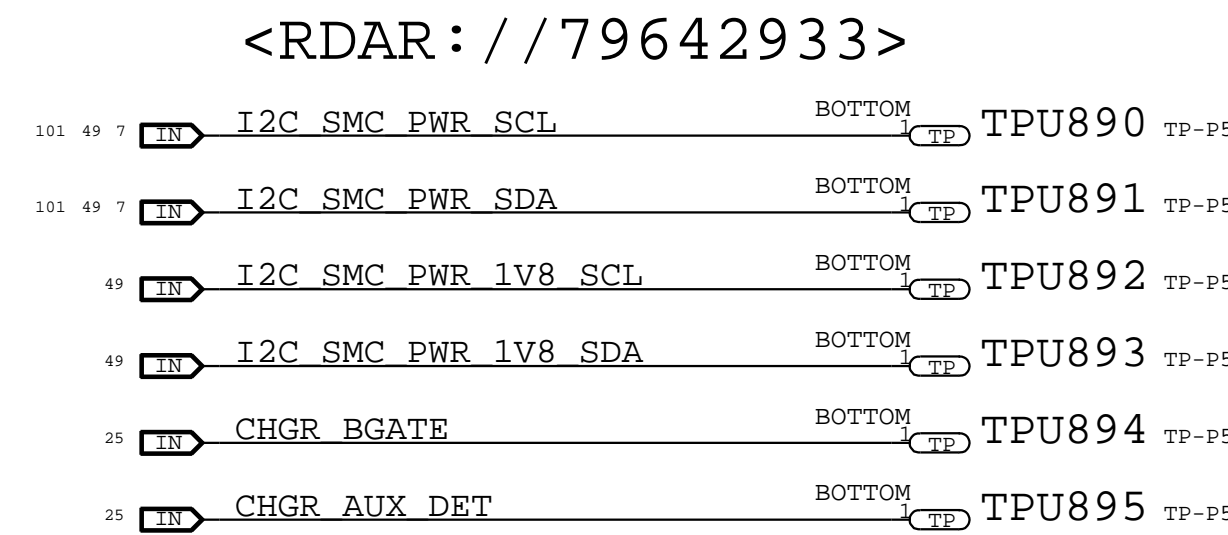
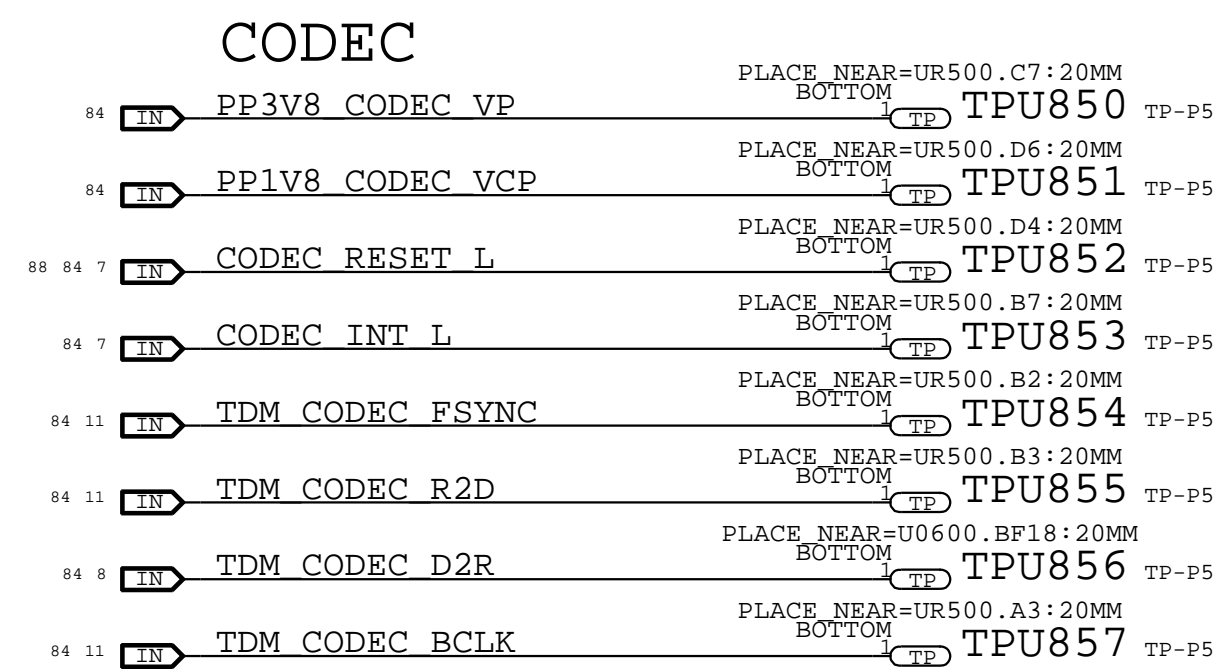
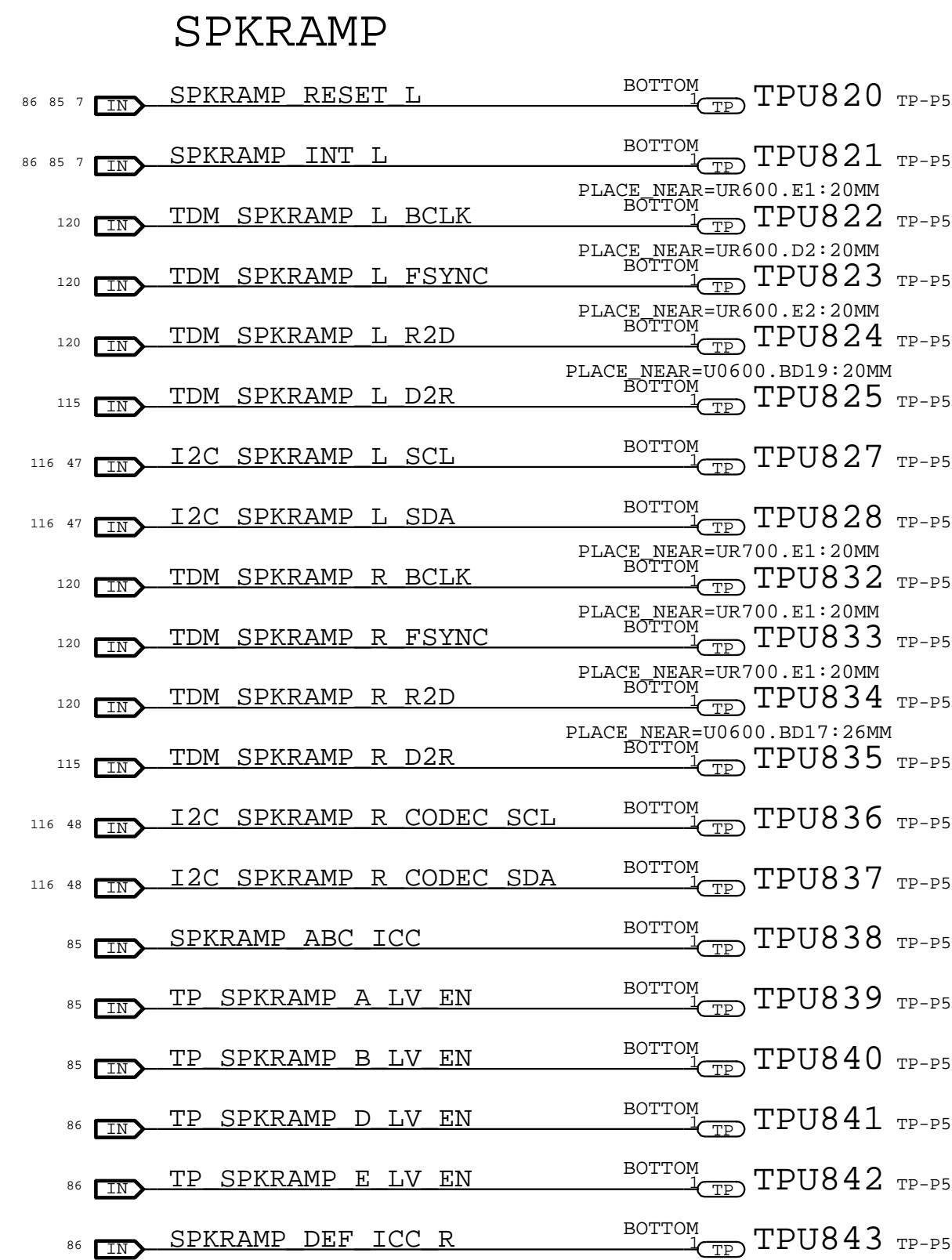
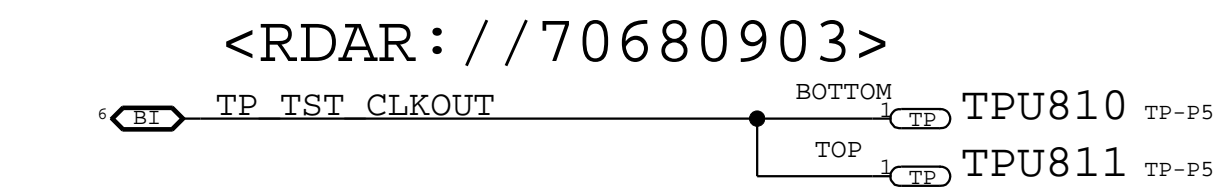
267 OF 999


SHEET

98 OF 128

NOTICE OF PROPRIETARY PROPERTY:

THE INFORMATION CONTAINED HEREIN IS THE  
PROPRIETARY PROPERTY OF APPLE INC.  
THE POSSESSOR AGREES TO THE FOLLOWING:  
I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE  
II NOT TO REPRODUCE OR COPY IT  
III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART  
IV ALL RIGHTS RESERVED



SYNC_MASTER=KELVIN_X2487_MLB		SYNC_DATE=07/19/2021	
PAGE TITLE			
TP SUPPORT			
 Apple Inc.	DRAWING NUMBER		SIZE
	051-07793		D
	REVISION		
NOTICE OF PROPRIETARY PROPERTY:		5.0.0	
THE INFORMATION CONTAINED HEREIN IS THE		BRANCH	
PROPRIETARY PROPERTY OF APPLE INC.		evt-1	
THE POSSESSOR AGREES TO THE FOLLOWING:		PAGE	
I. TO MAINTAIN THIS DOCUMENT IN CONFIDENCE		268 OF 999	
II. NOT TO REPRODUCE OR COPY IT		SHEET	
III. NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART		99 OF 128	
IV. ALL RIGHTS RESERVED			

BOM\_COST\_GROUP=NO CATEGORY

D

C

B

A

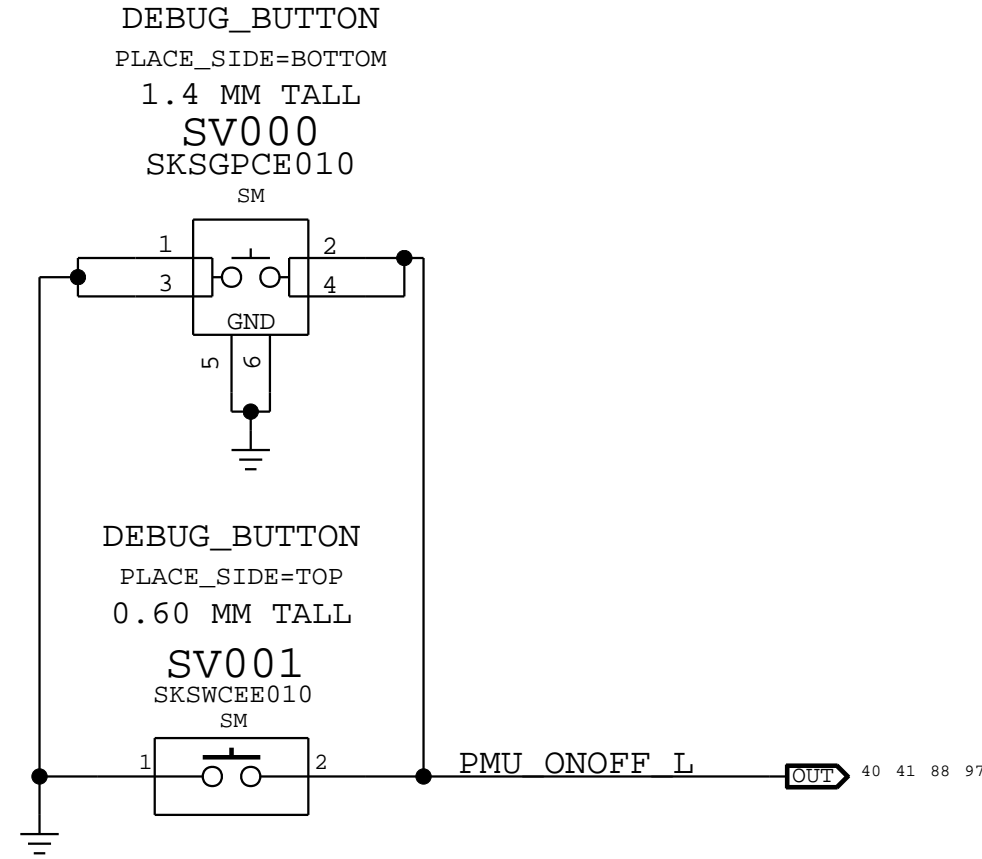
D

C

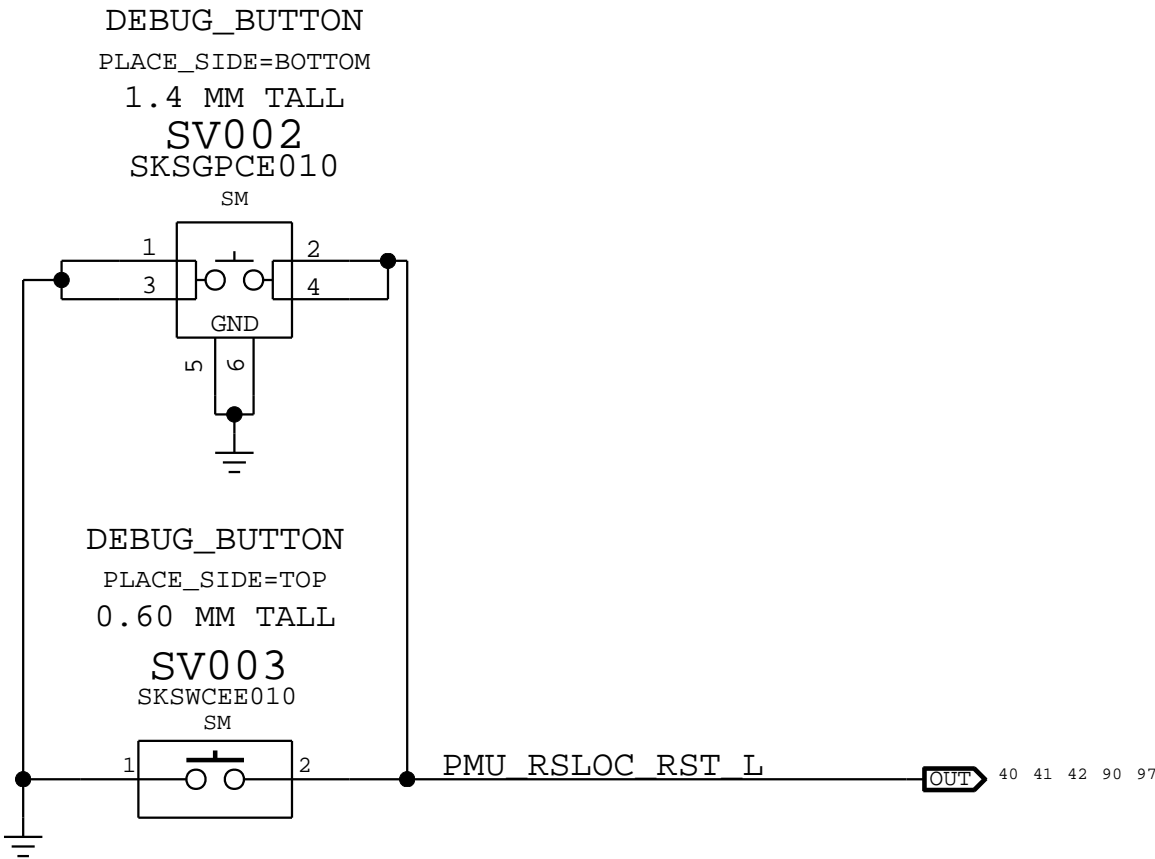
B

A

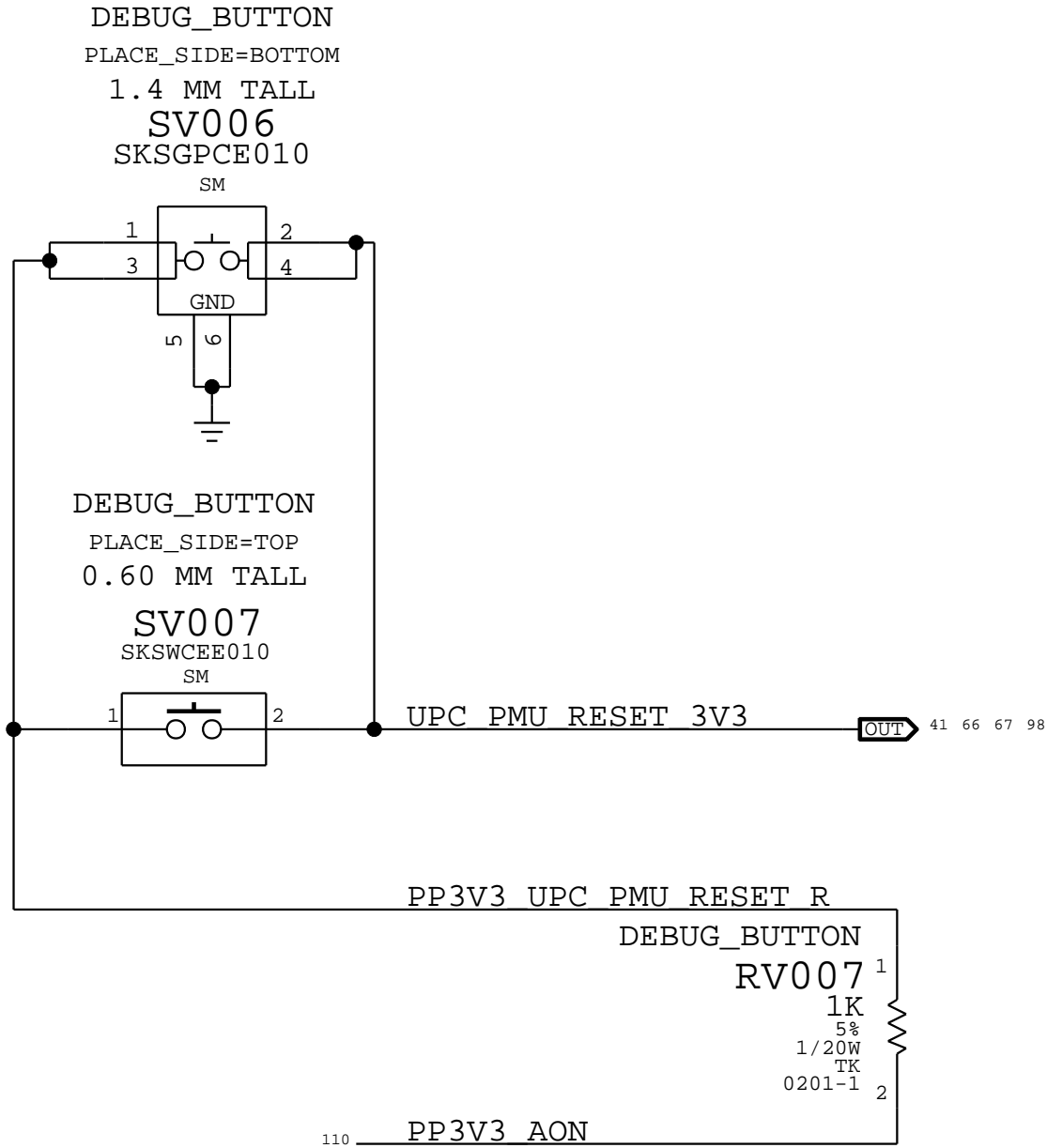
POWER BUTTON



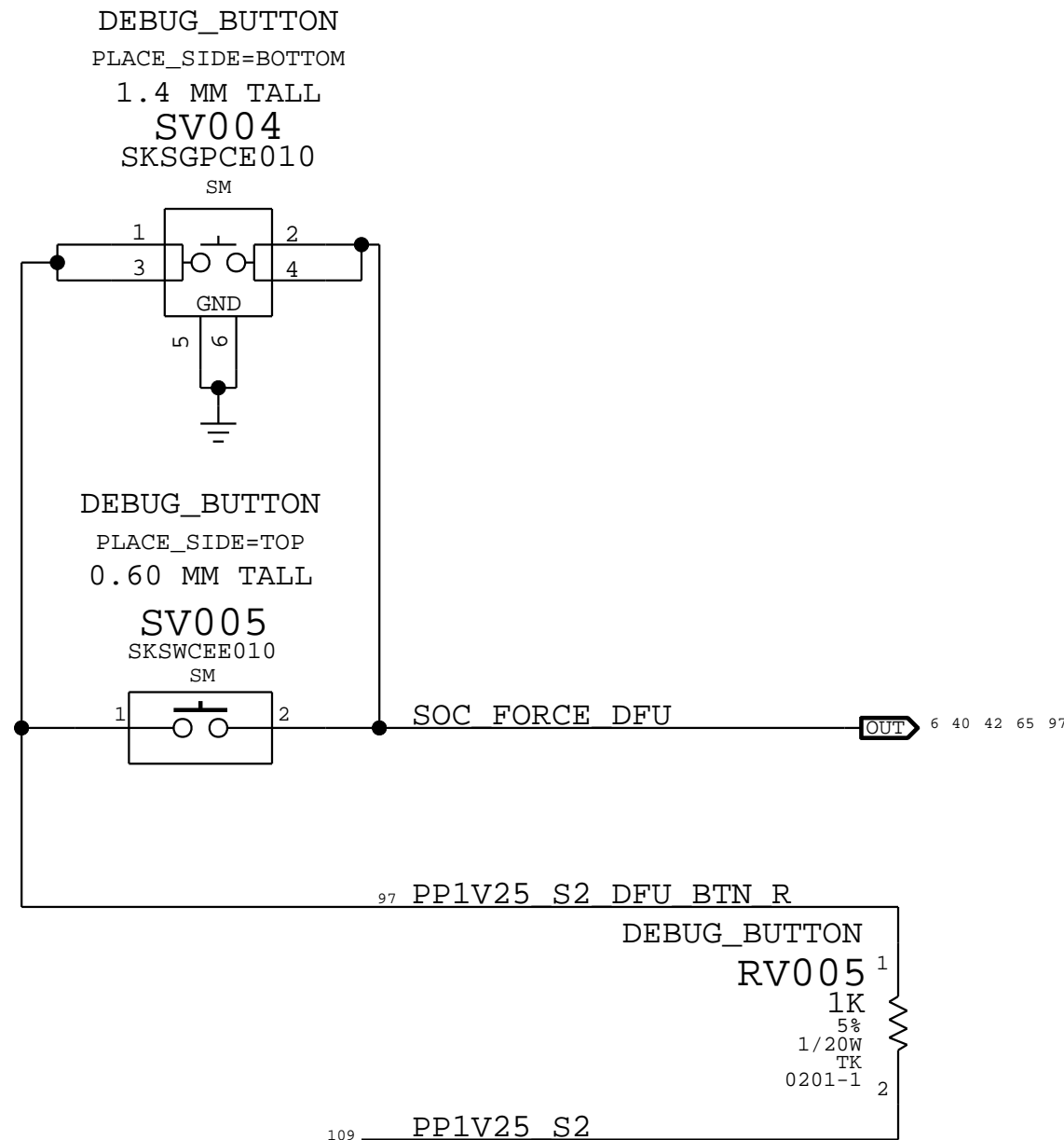
RSLOC




UPC RESET  
(RESET PMU)



FORCE DFU



BOM\_COST\_GROUP=DEBUG

PAGE TITLE		
DEBUG: BUTTONS		
 Apple Inc.	DRAWING NUMBER	051-07793
	REVISION	5.0.0
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	BRANCH	evt-1
	PAGE	270 OF 999
	SHEET	100 OF 128



D

C

B

A

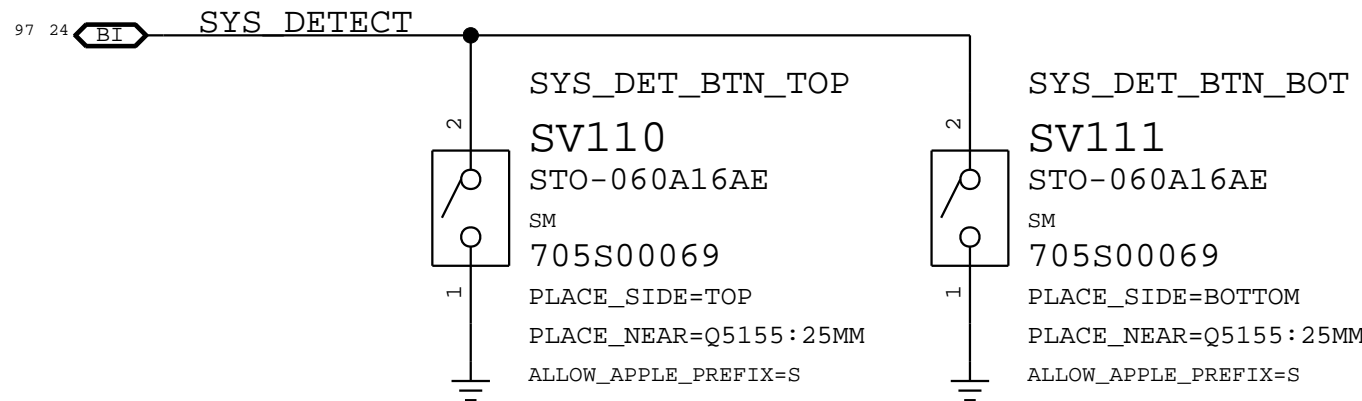
D

C

B

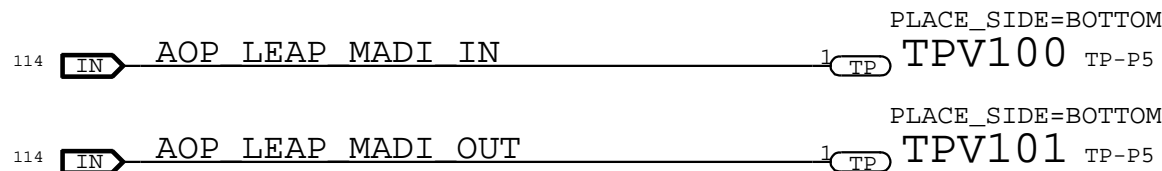
A

BUTTONS TO DISCONNECT BATTERY WITHOUT UNPLUGGING FLEX



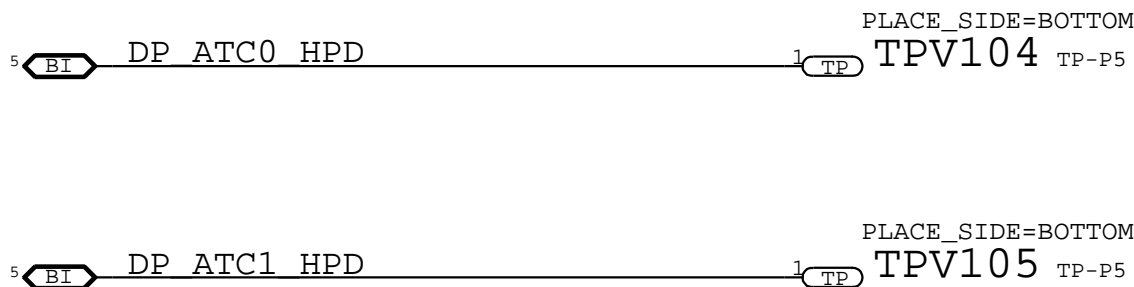
MADI DEBUG INTERFACE

PLACE ON BOTTOM SIDE EASILY ACCESSIBLE  
<RDAR://70197137>



HPD TMU CLKOUT TEST POINTS

<RDAR://78124579>



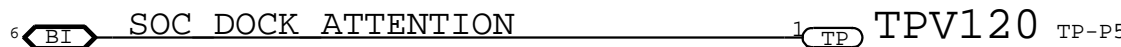
MPMU FORCE SYNC TP

IN STOWE, FORCE\_SYNC (FORCE BUCKS TO PWM) IS OVERLOADED ON GPIO 9  
<RDAR://71572096>



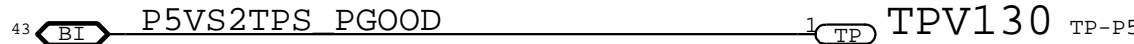
DOCK ATTENTION TP

<RDAR://71293051>

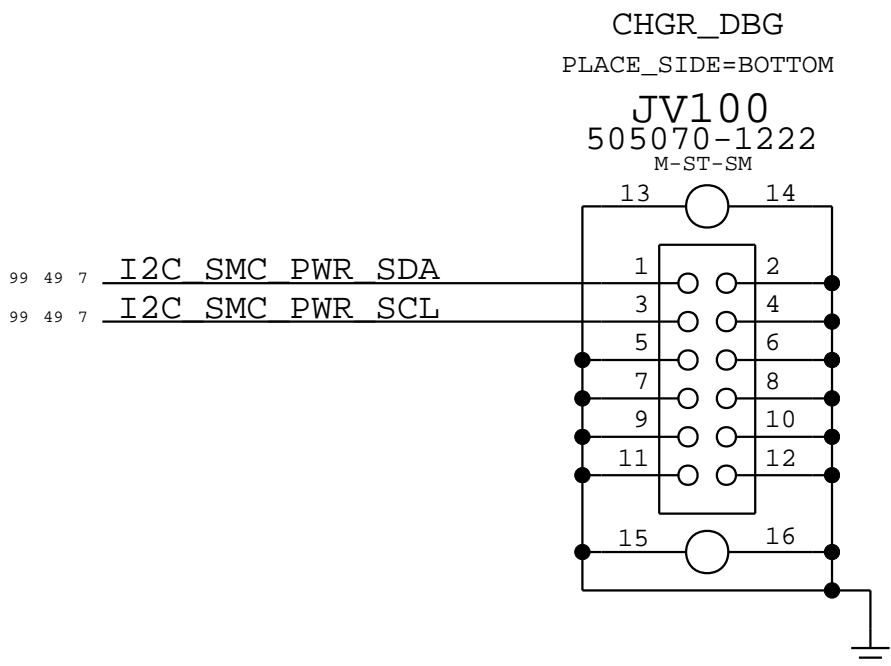


5V VR PGOOD


TP REMOVE CHECKPLUS WARNING SINCE THE PGOOD HAS A OFFPAGE, AND IT NO LONGER GOES TO CHARGER SWITCHOVER



CHARGER ARKANOID CONN



BOM\_COST\_GROUP=DEBUG

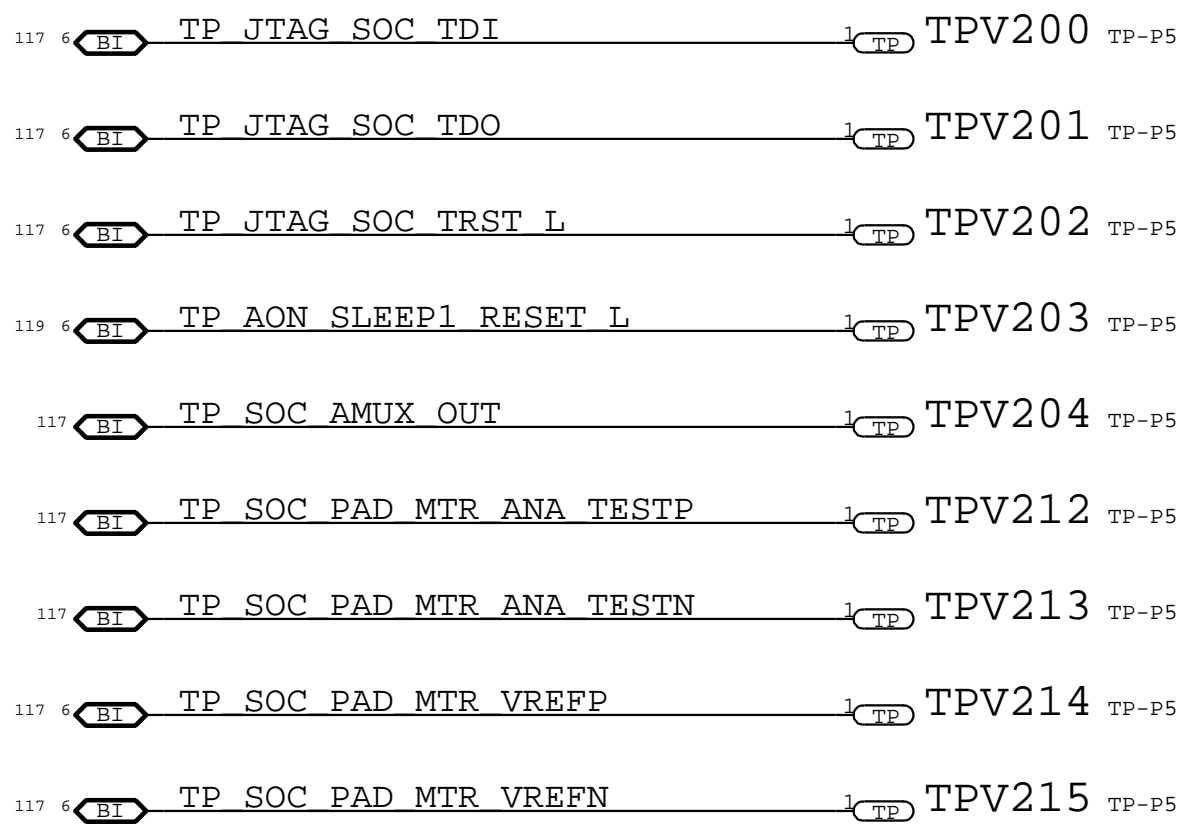
PAGE TITLE		
DEBUG: MISC		
 Apple Inc.	DRAWING NUMBER	051-07793
	REVISION	5.0.0
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	BRANCH	evt-1
	PAGE	271 OF 999
	SHEET	101 OF 128

D

D

## UNUSED SOC TEST POINTS

TEST POINT SYMBOLS ADDED TO FACILITATE PAL PILOT ROUTING



PLACE SIDE=BOTTOM

C


C

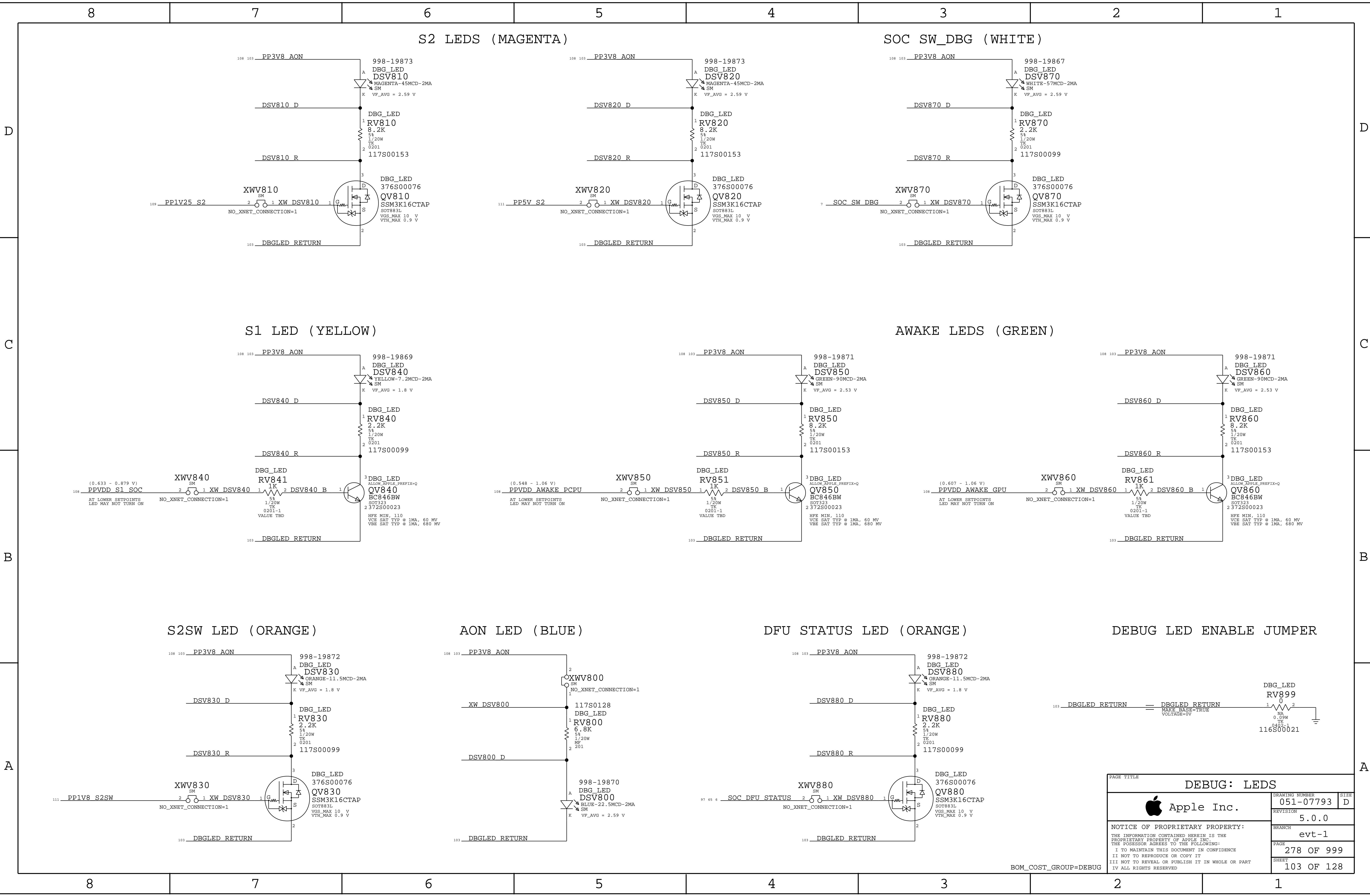
B


B

A

A

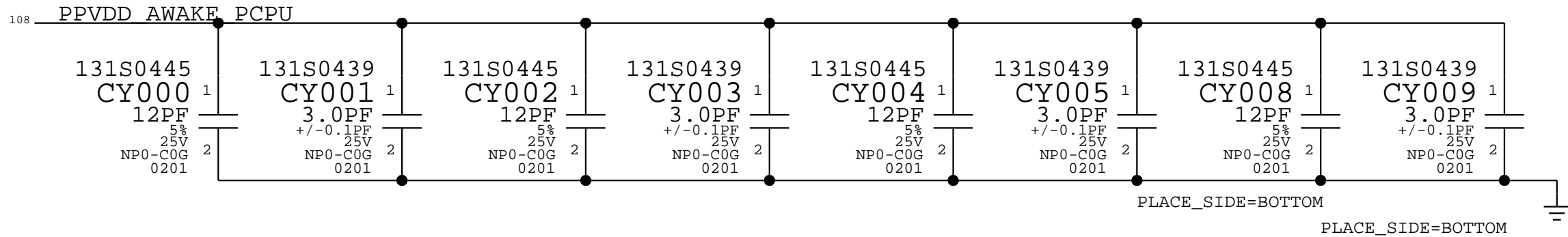
PAGE TITLE		
DEBUG: SOC TEST POINTS		
 Apple Inc.	DRAWING NUMBER	SIZE
	051-07793	D
NOTICE OF PROPRIETARY PROPERTY:  THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THIS POSSESSOR AGREES TO THE FOLLOWING:  I I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT  III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	REVISION	
	5.0.0	
	BRANCH	
	evt-1	
	PAGE	
	272 OF 999	
	SHEET	
	102 OF 128	



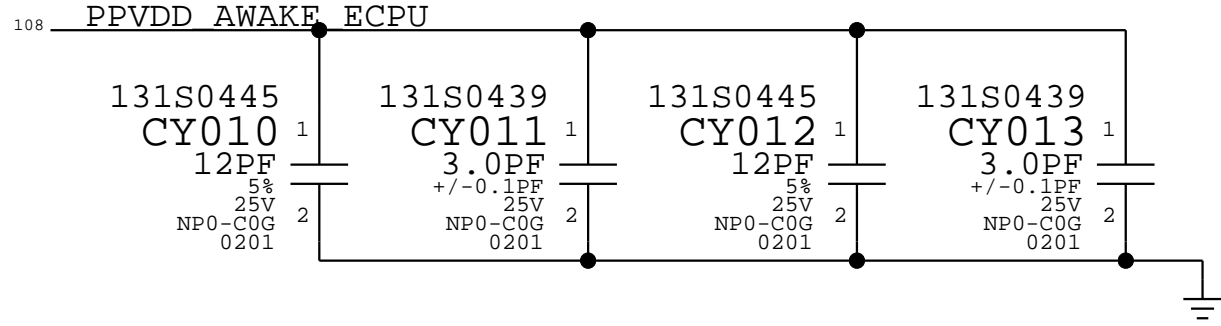
PAGE TITLE		
DEBUG: LEDS		
 Apple Inc.	DRAWING NUMBER	051-07793
	REVISION	5.0.0
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	BRANCH	evt-1
	PAGE	278 OF 999
	SHEET	103 OF 128

## SOC DESENSE

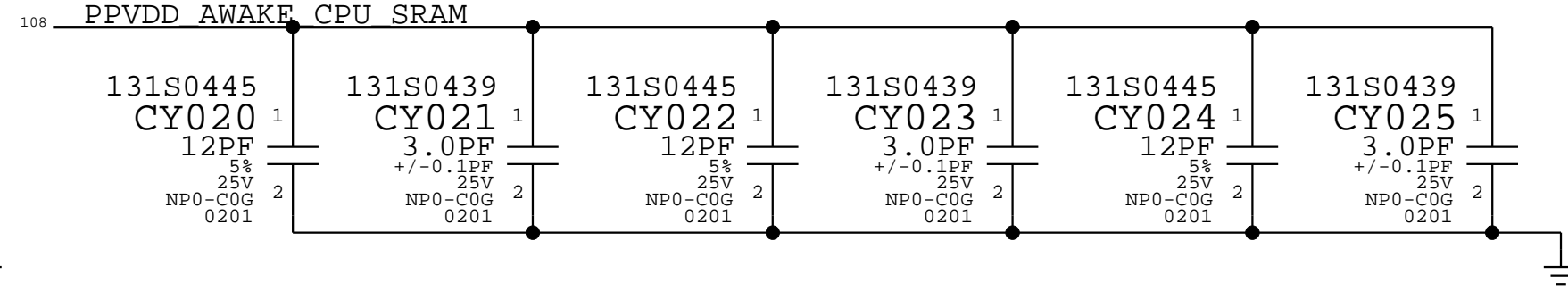
SOC - PCPU



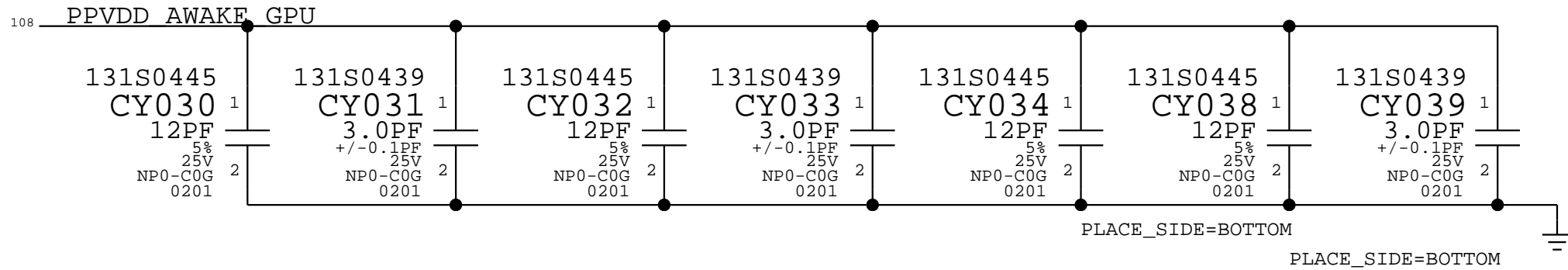
SOC - ECPU



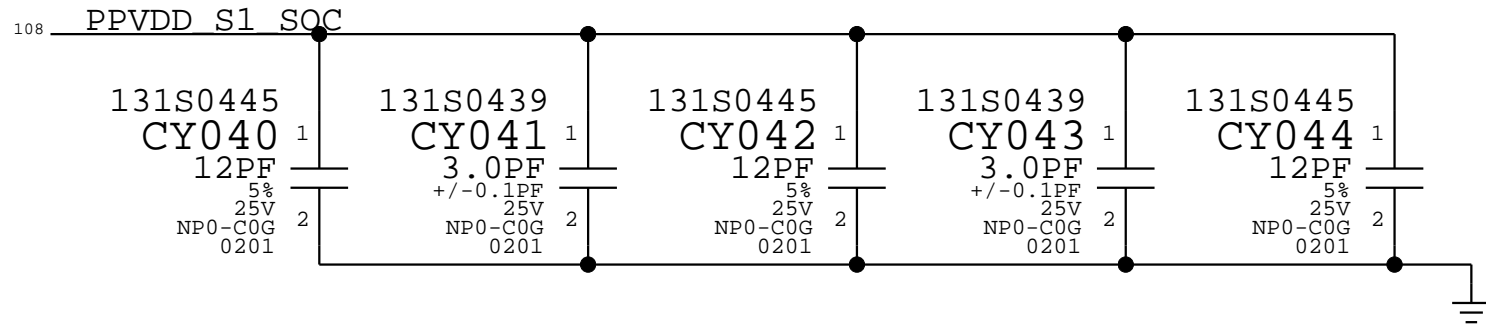
SOC - CPU SRAM



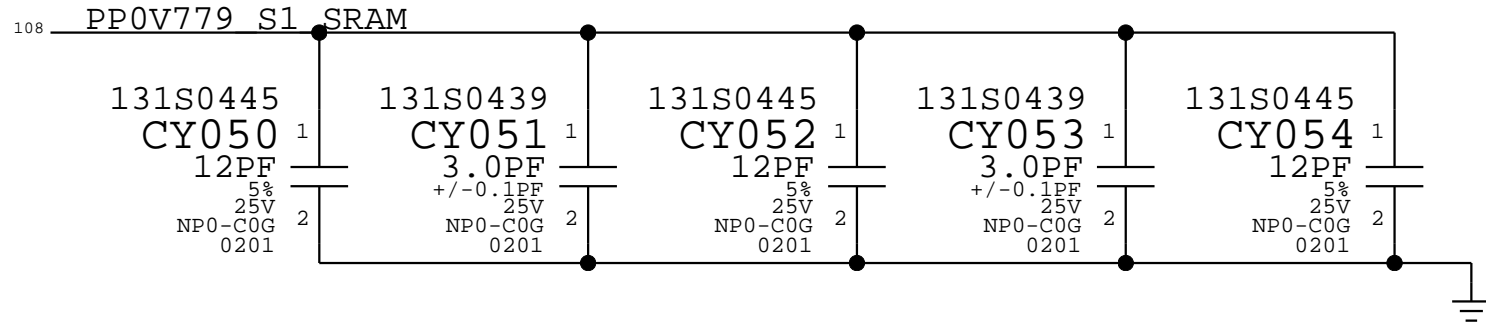
SOC - GPU



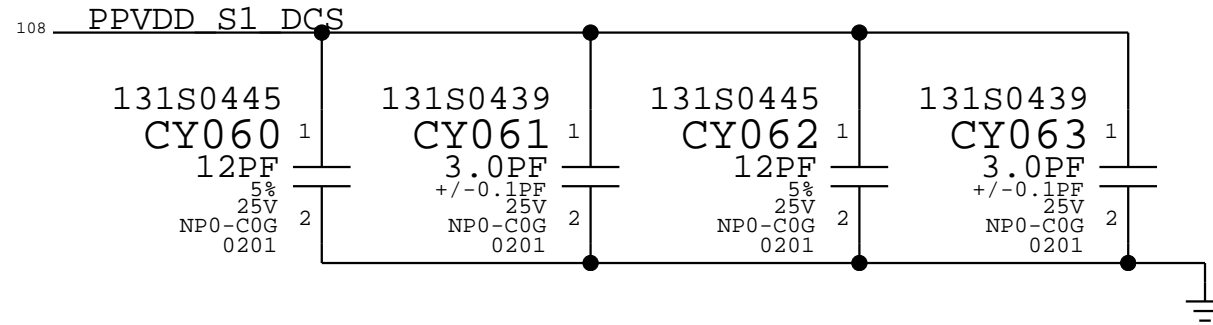
SOC - SOC\_S1



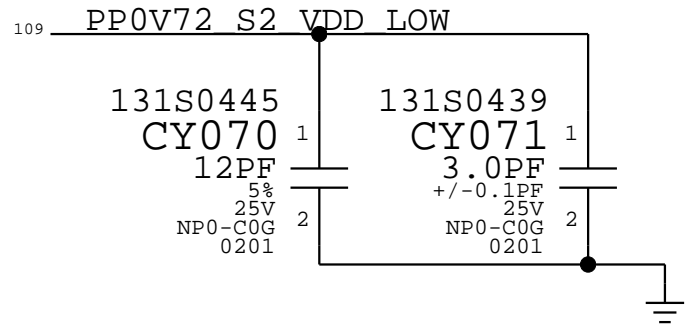
SOC - SRAM\_S1



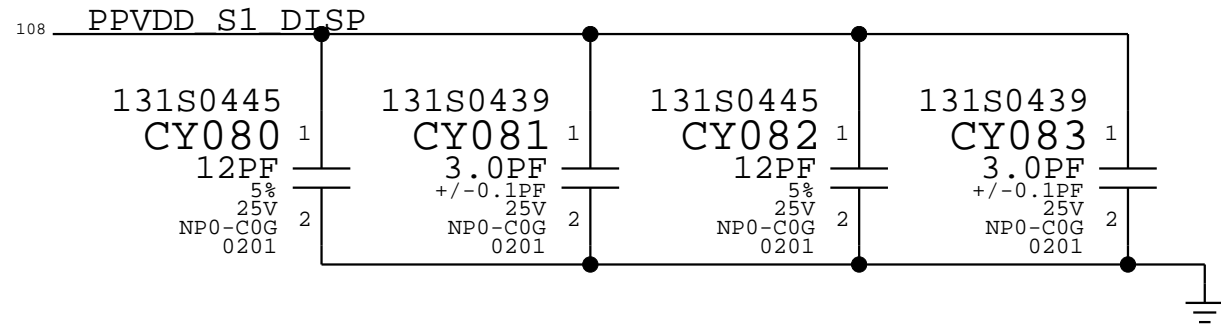
SOC - DCS\_S1



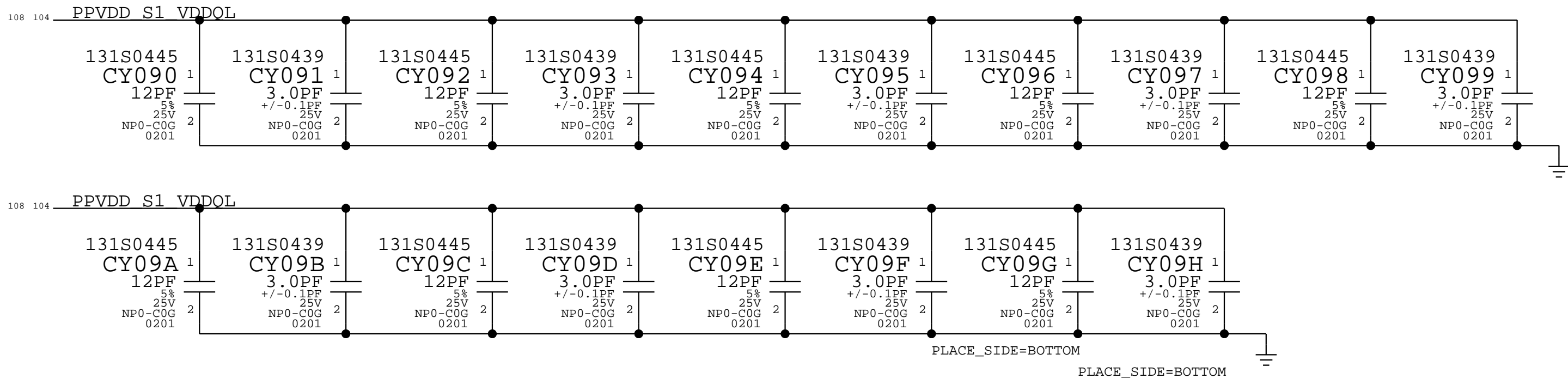
SOC - VDD\_LOW\_S2



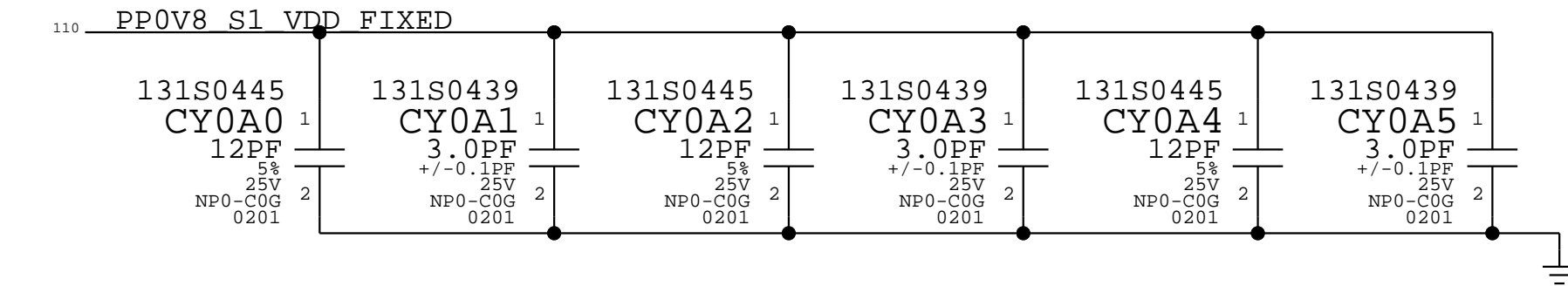
SOC - DISP\_S1



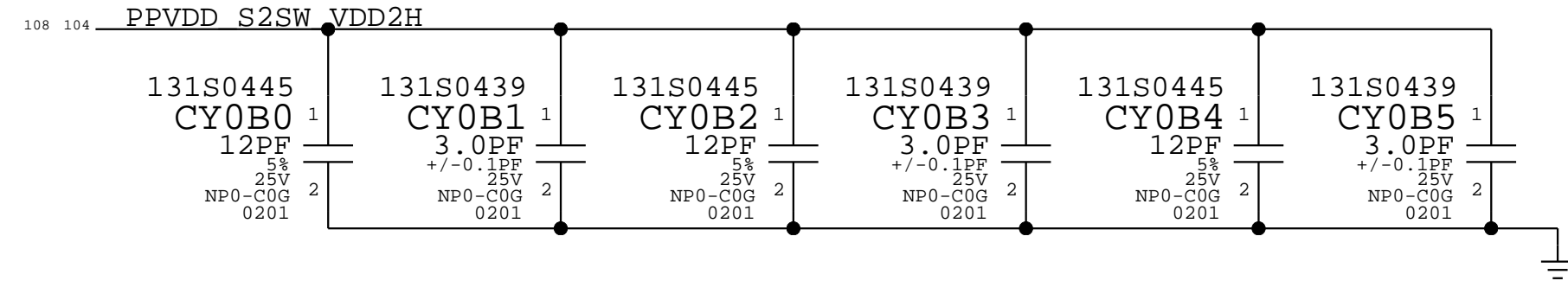
SOC - VDDQ\_S1



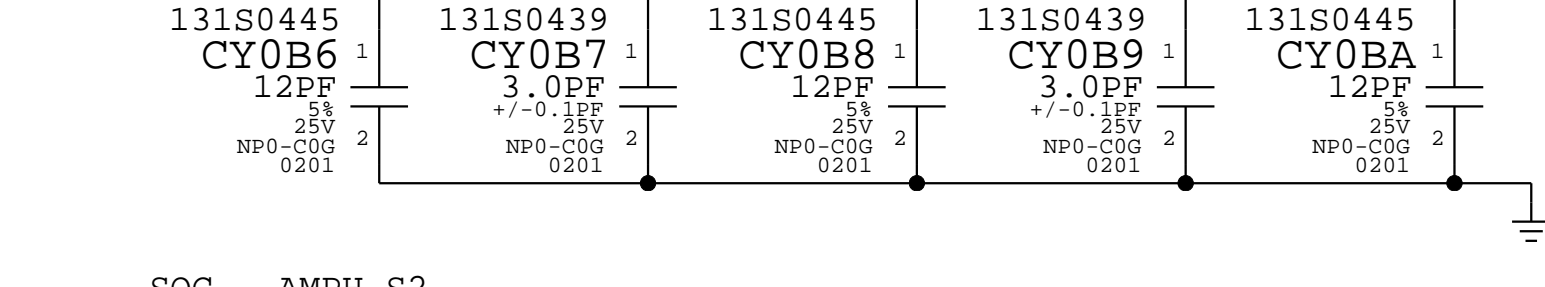
SOC - VDD\_FIXED\_S1



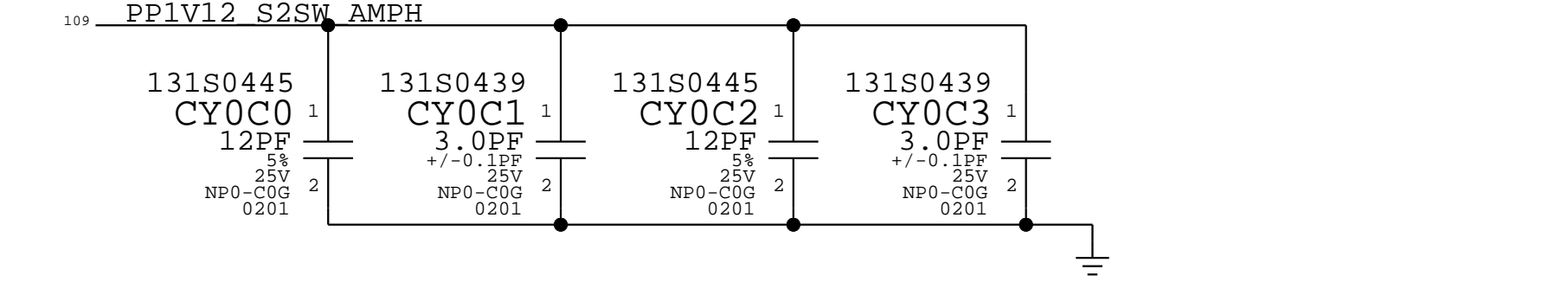
SOC - VDD2H / VDD2L



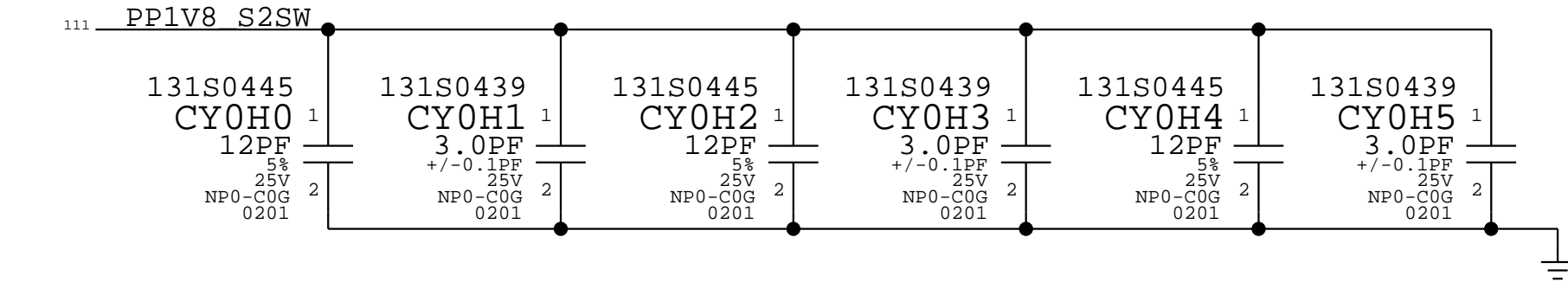
SOC - AMPH\_S2



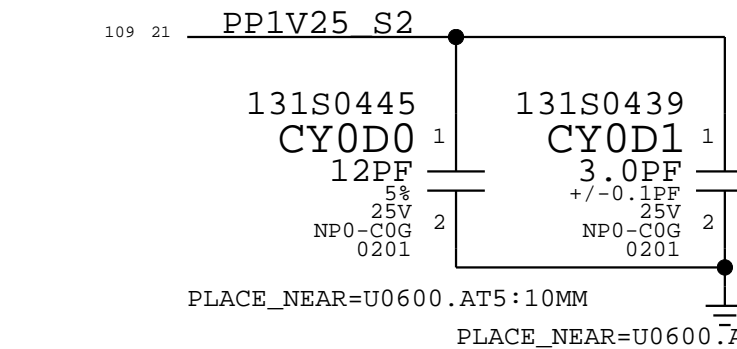
SOC - VDD1



SOC - VDD12

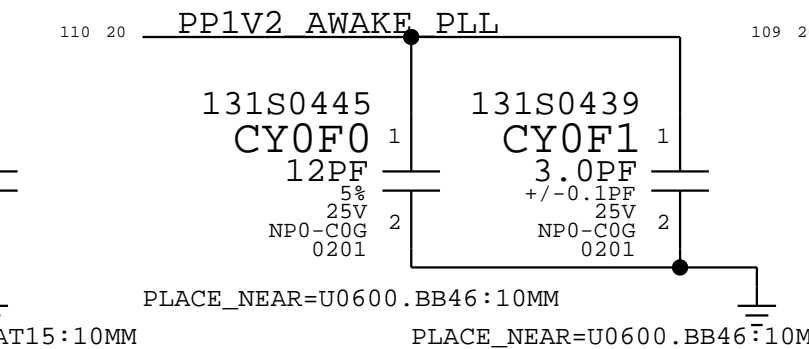


SOC - VDDIO\_AOP\_S2

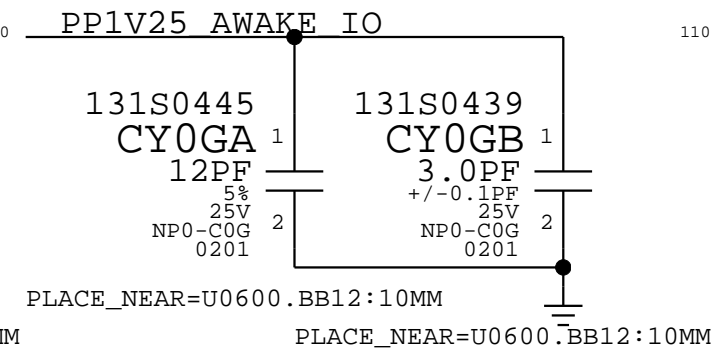


PP1V2\_AWAKE\_PLL (LDO8)

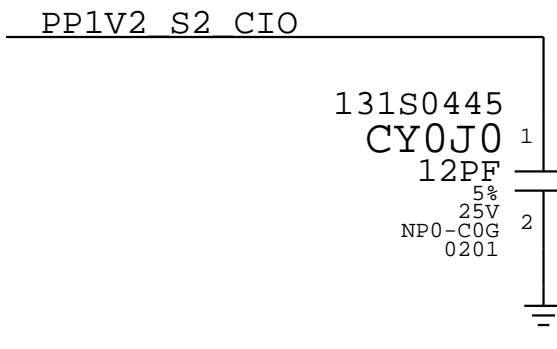
SOC - VDD12\_PCIE



SOC - VDD12\_LPDP\_RX

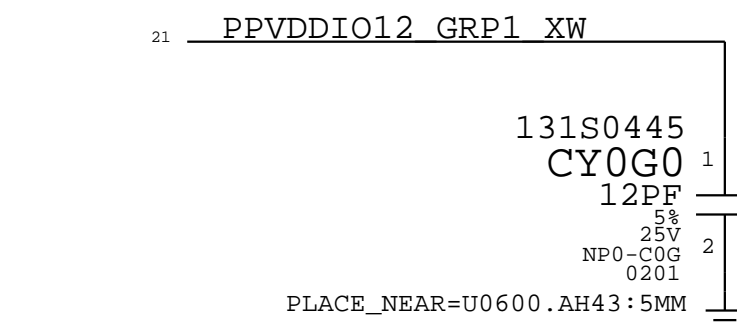


SOC - VDD12\_CIO\_S2

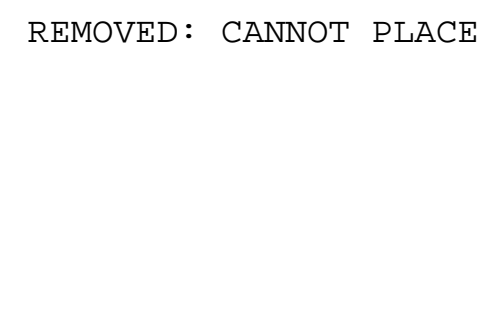


PP1V25\_AWAKE\_IO (SW3)

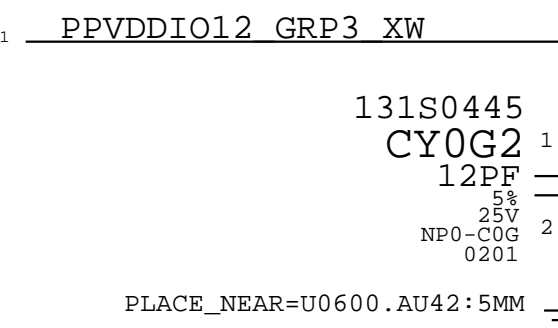
SOC - VDDIO12\_GRP1



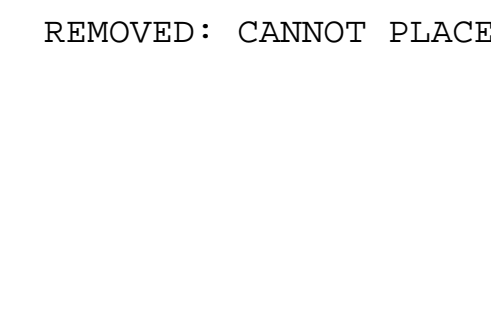
SOC - VDDIO\_GRP2\_S2



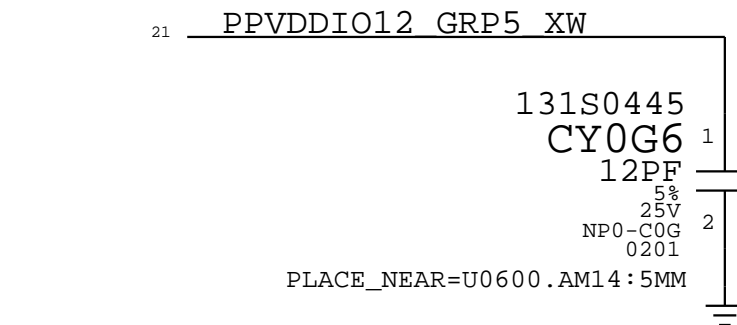
SOC - VDDIO12\_GRP3



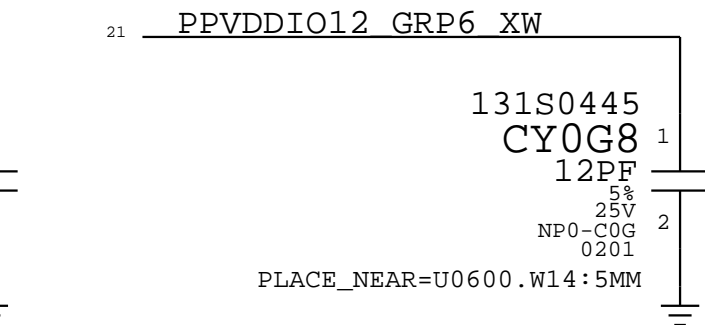
SOC - VDDIO12\_GRP4



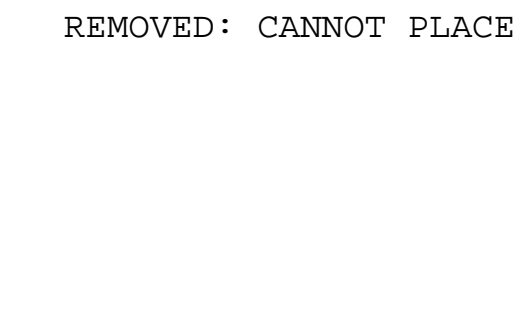
SOC - VDDIO12\_GRP5




SOC - VDDIO12\_GRP6



SOC - VDDIO18\_GRP2

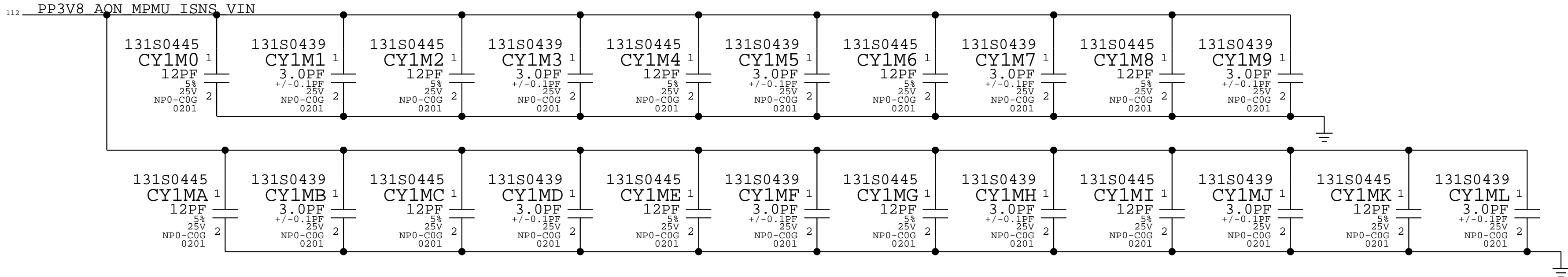


SYNC_MASTER=XEI_X2487_MLB		SYNC_DATE=05/25/2021	
PAGE TITLE			
DESENSE 1			
 Apple Inc.	DRAWING NUMBER		SIZE
	051-07793		D
NOTICE OF PROPRIETARY PROPERTY:  THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	REVISION		5.0.0
	BRANCH		evt-1
	PAGE		300 OF 999
	SHEET		104 OF 128

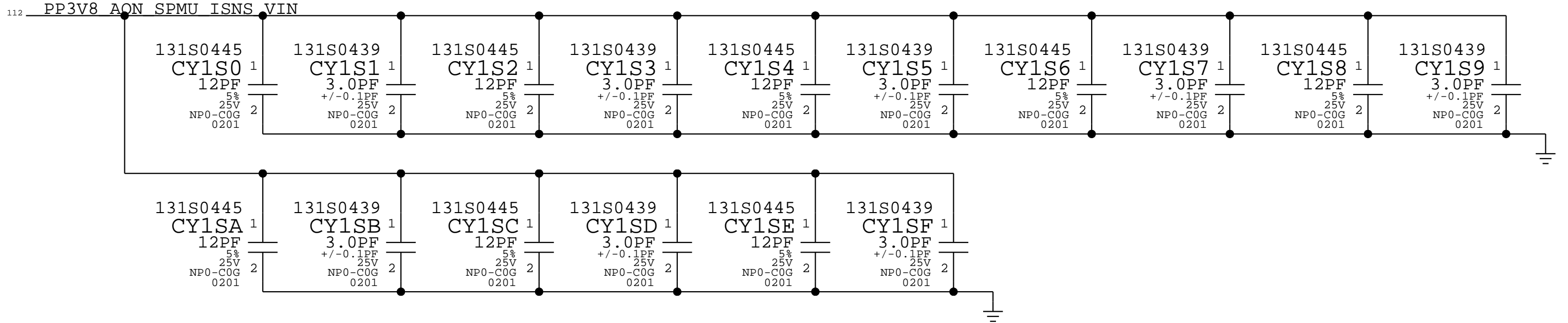
BOM\_COST\_GROUP=DESENSE

PMU DESENSE

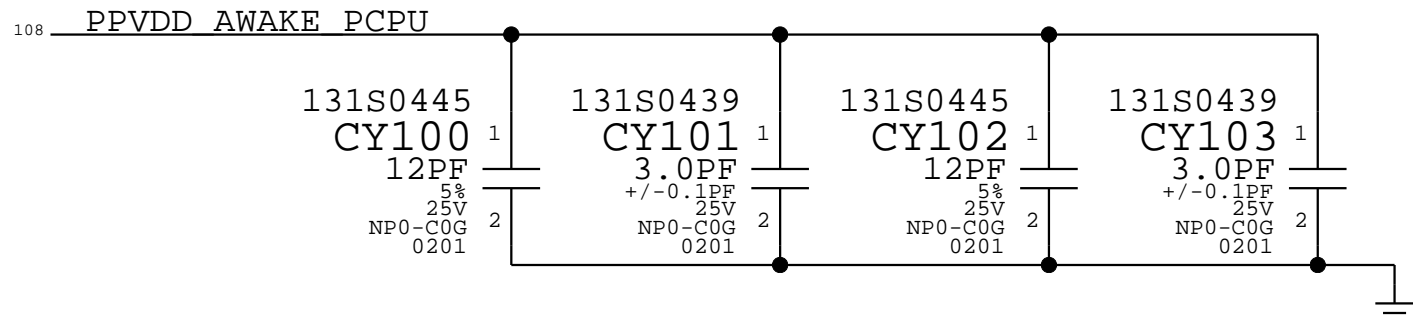
MPMU DESENSE CAPS: 1 PAIR PER BUCK/BOOST



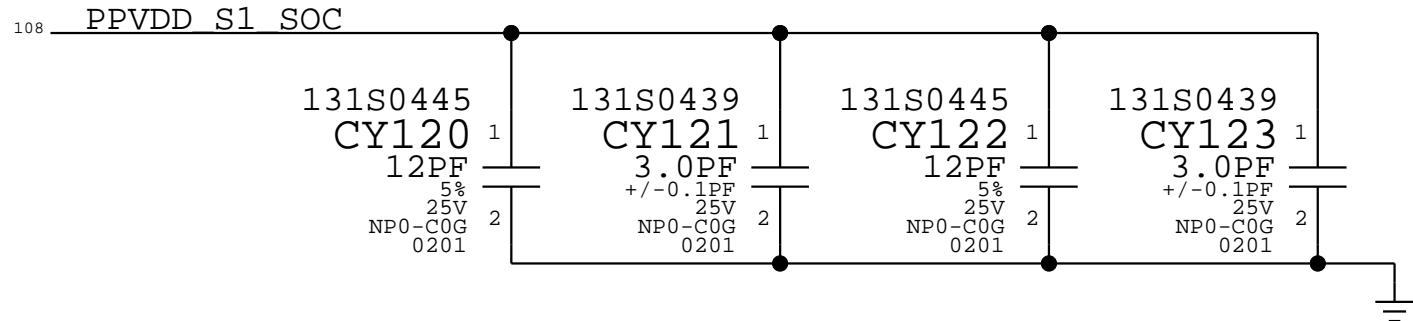
SPMU DESENSE CAPS: 1 PAIR PER BUCK/BOOST



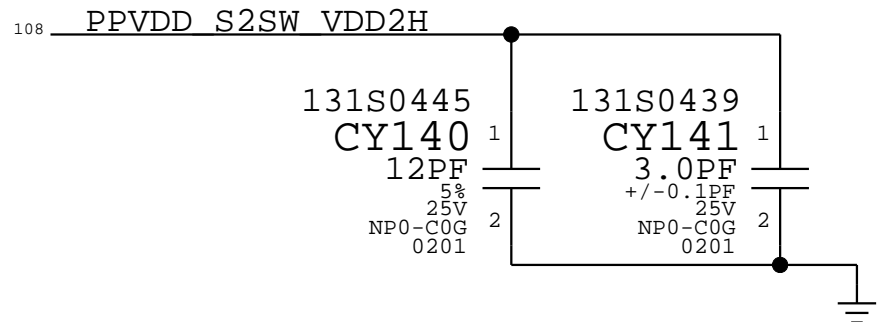
PMU BUCK0



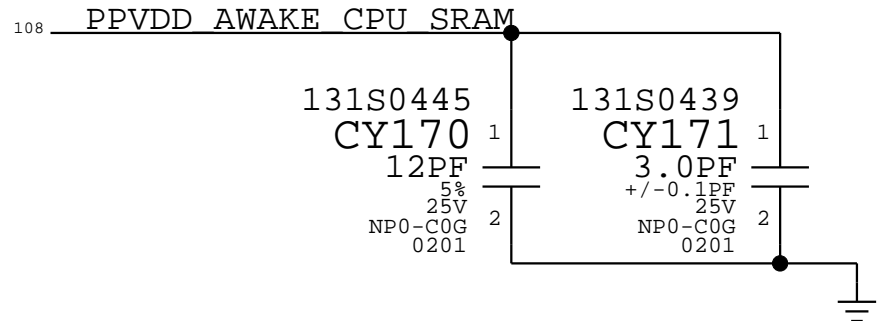
PMU BUCK2



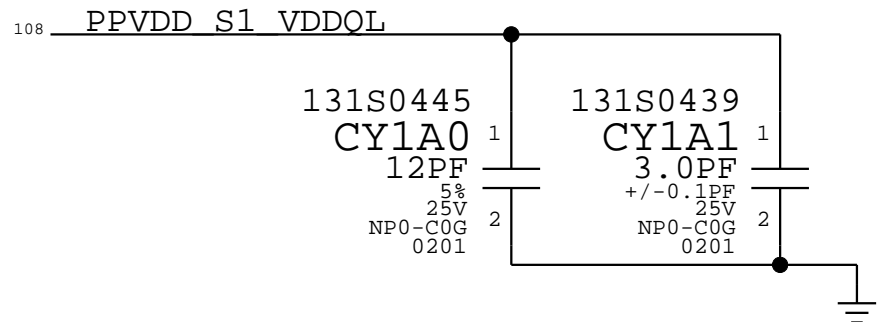
PMU BUCK4



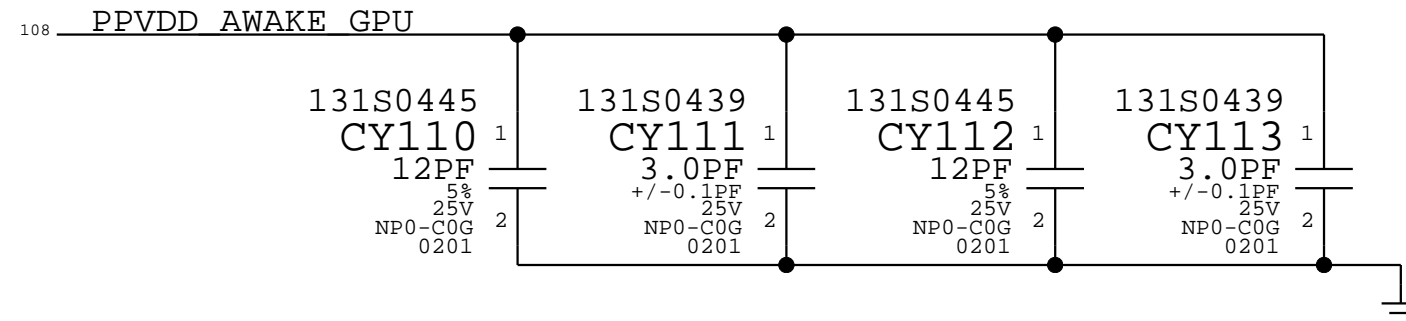
PMU BUCK7



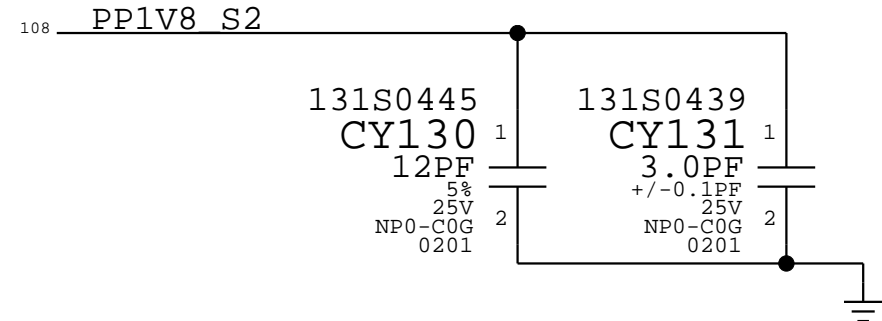
PMU BUCK10



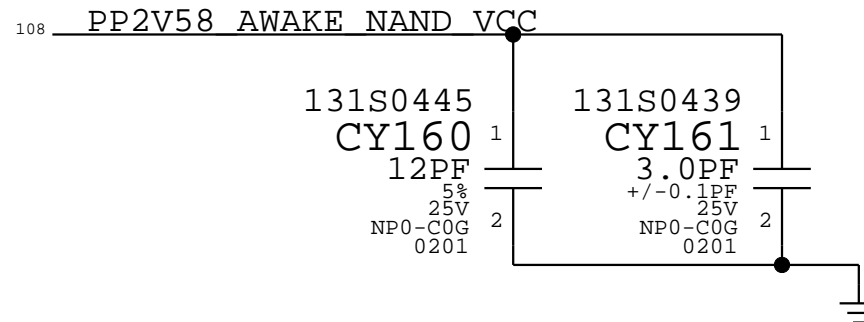
PMU BUCK1



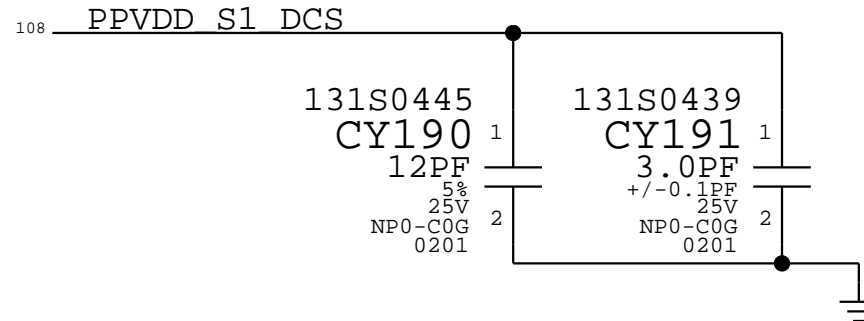
PMU BUCK3



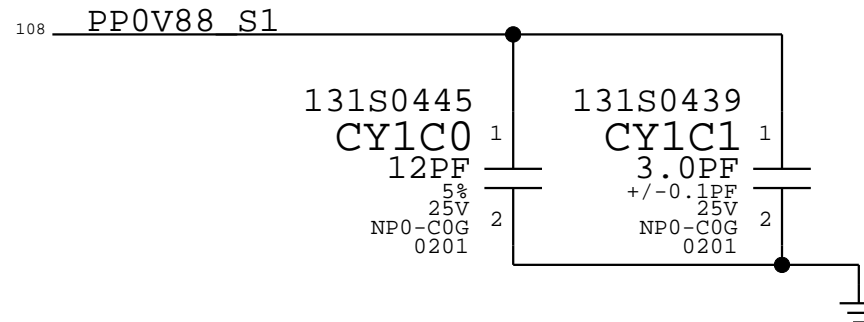
PMU BUCK6



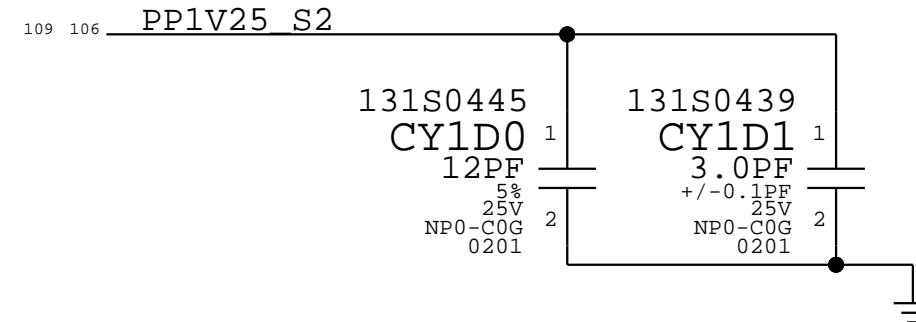
PMU BUCK9



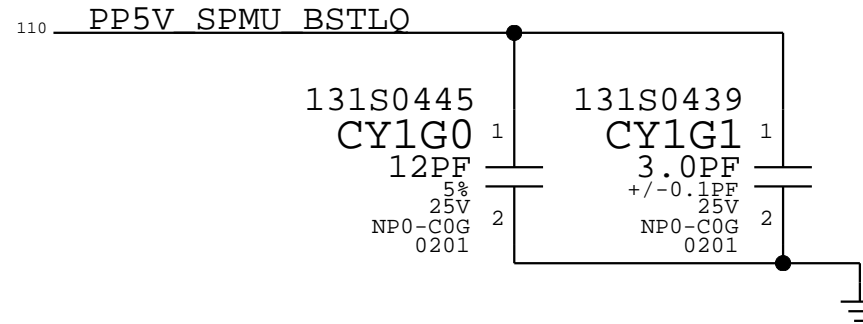
PMU BUCK12



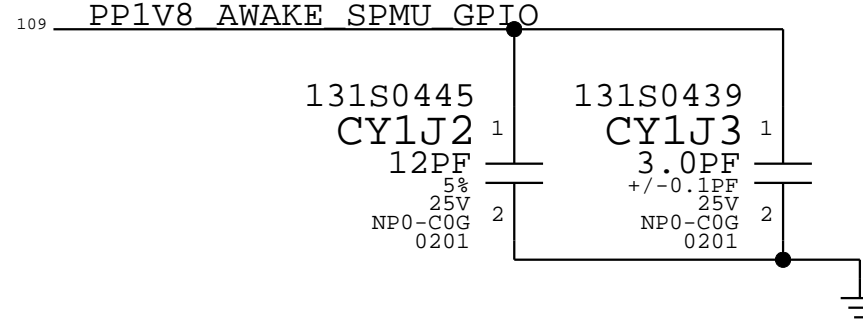
PMU BUCK13



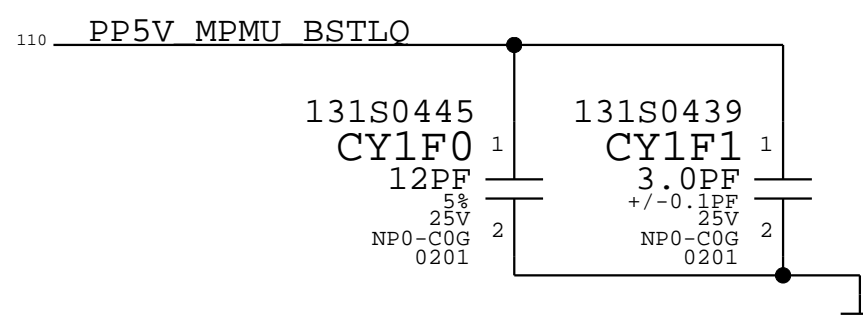
PMU BSTLQ - SPMU



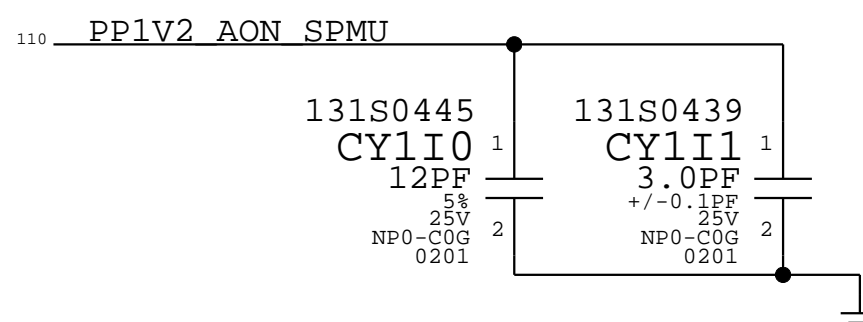
PMU SW4



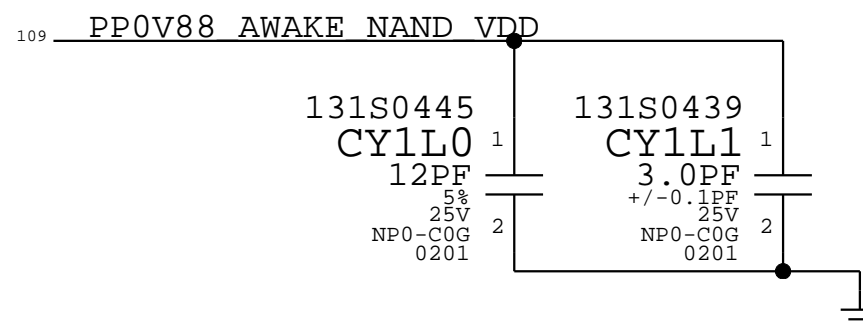
PMU BSTLQ - MPMU



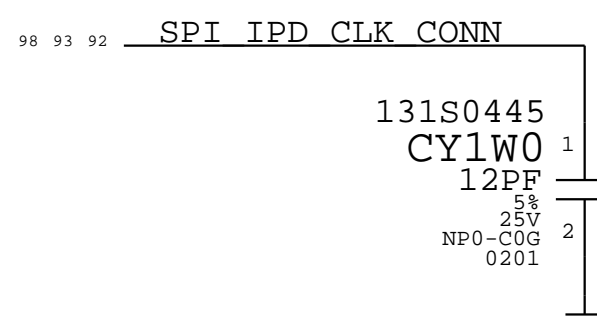
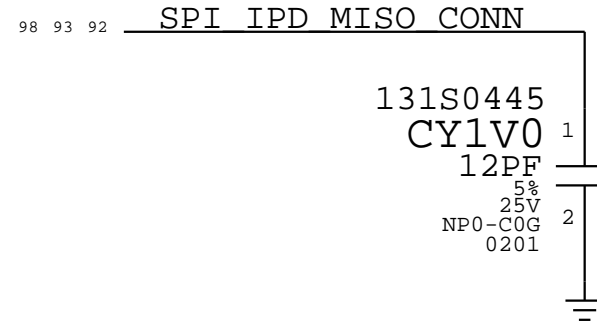
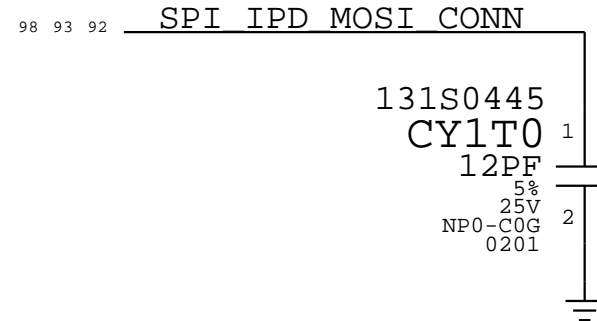
PMU LDO9B - SPMU



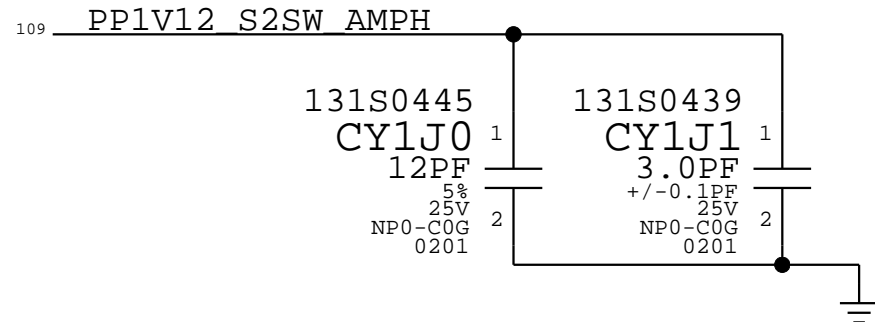
PMU SW6/SW7



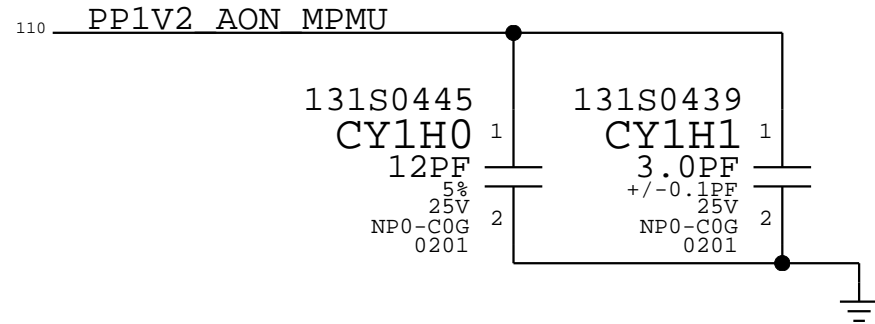
TPAD



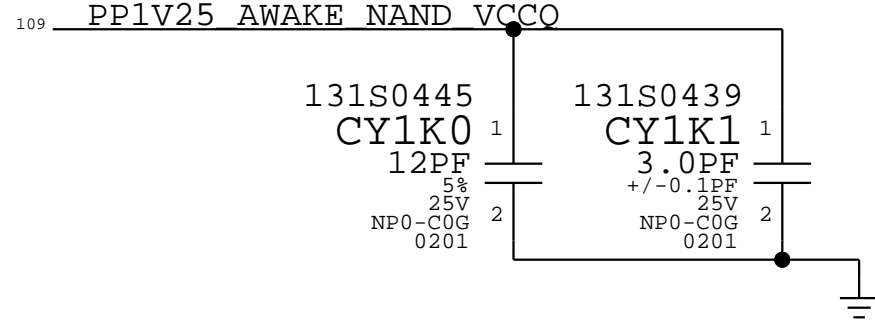
PMU BUCK14



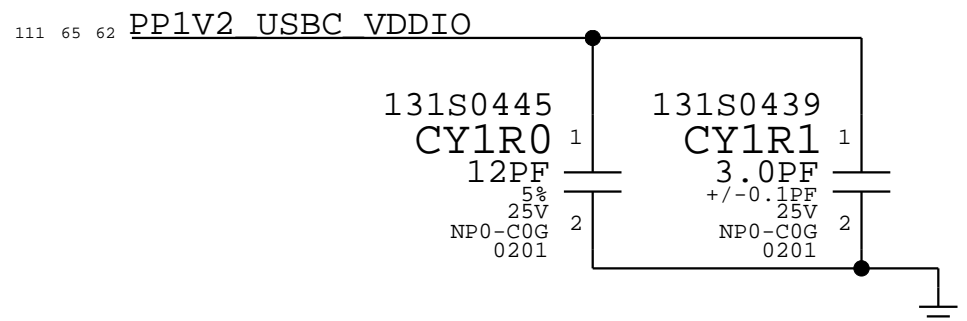
PMU LDO9B - MPMU



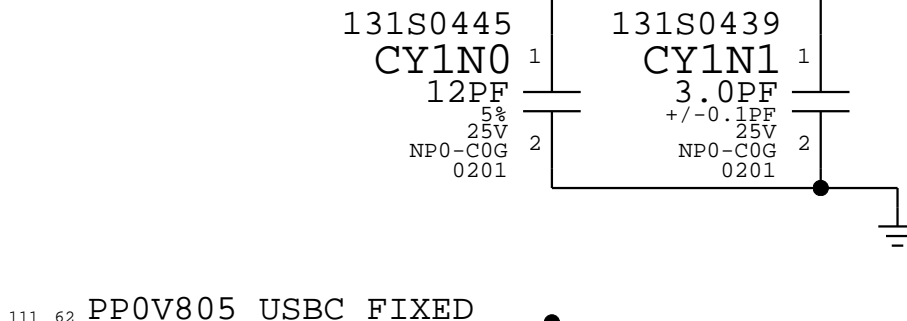
PMU SW5



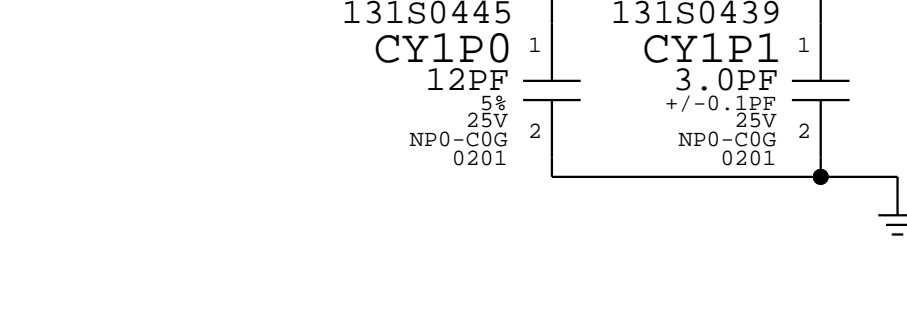
USB




PP0V855 USBC CIO



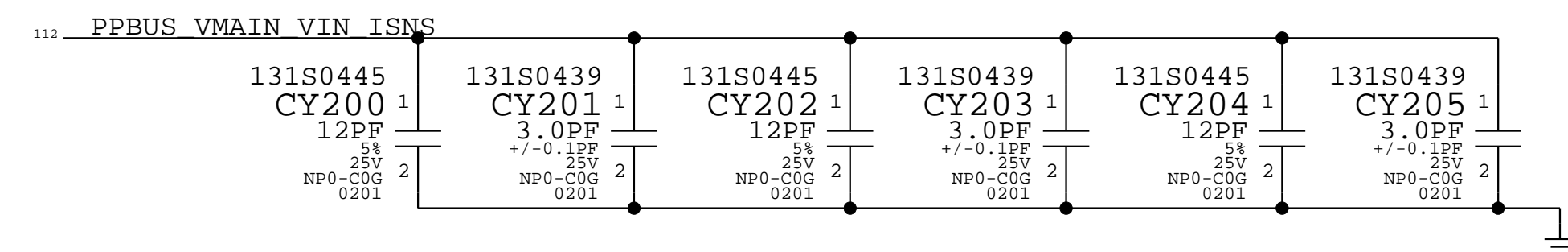
PP0V805 USBC FIXED



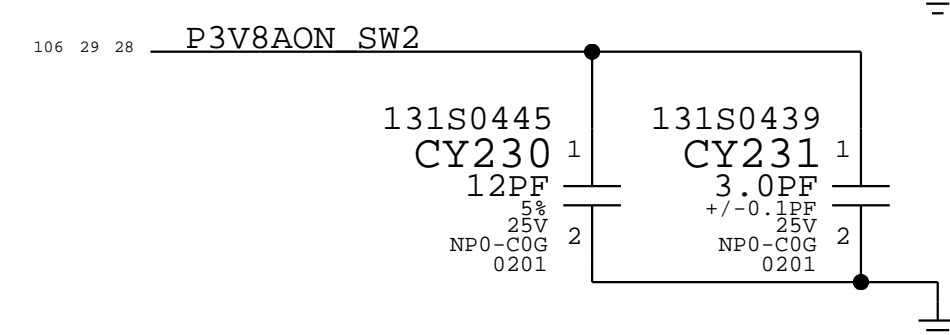
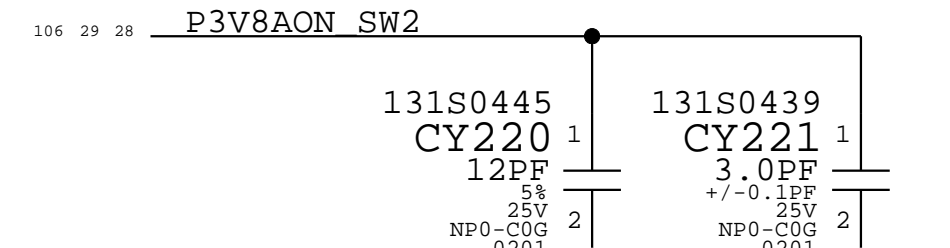
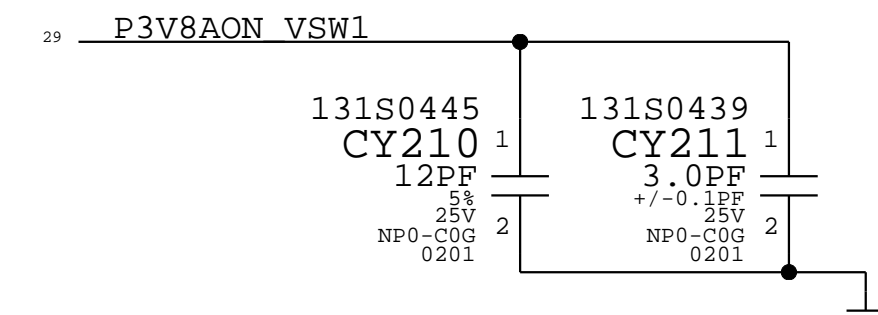
SYNC_MASTER=KEI_X2487_MLB		SYNC_DATE=06/21/2021	
PAGE TITLE			
DESENSE 2			
 Apple Inc.		DRAWING NUMBER	051-07793
		SIZE	D
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED		REVISION	5.0.0
		BRANCH	evt-1
		PAGE	301 OF 999
		SHEET	105 OF 128

BOM\_COST\_GROUP=DESENSE

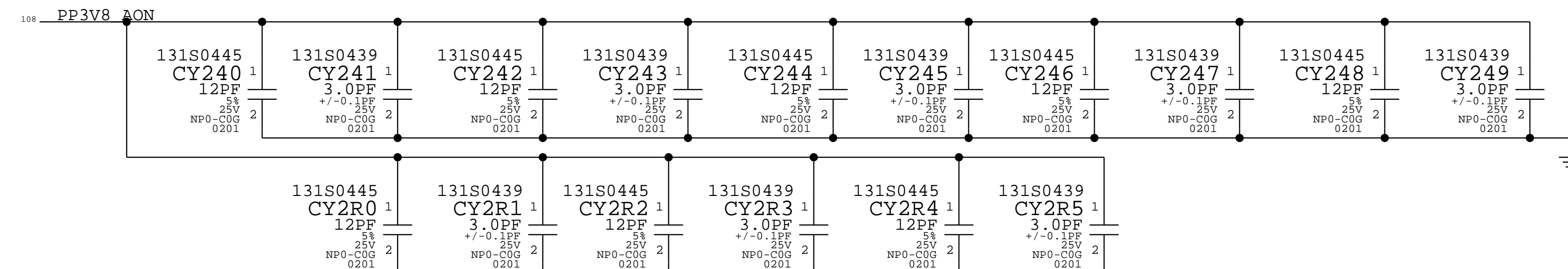




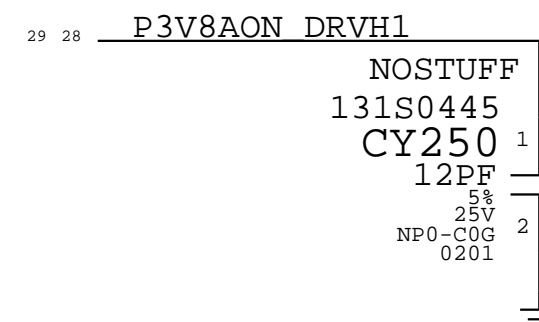
ICEMAN DESENSE CAPS <RDAR://70139950>, SWITCHING NODES



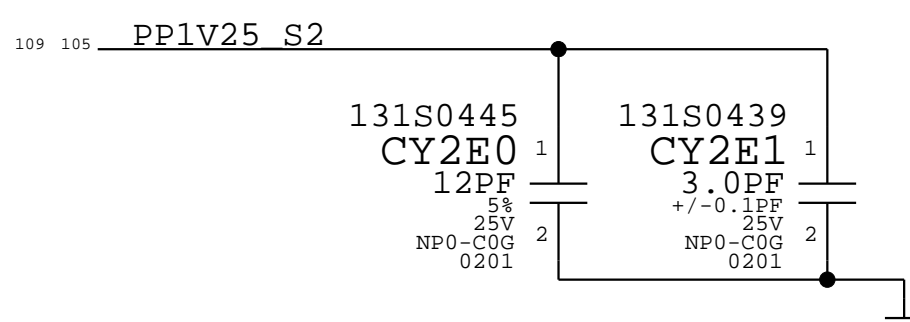
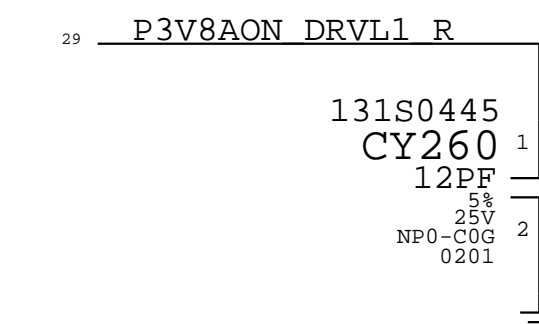
ICEMAN DESENSE CAPS <RDAR://70139950>, OUTPUT NODE



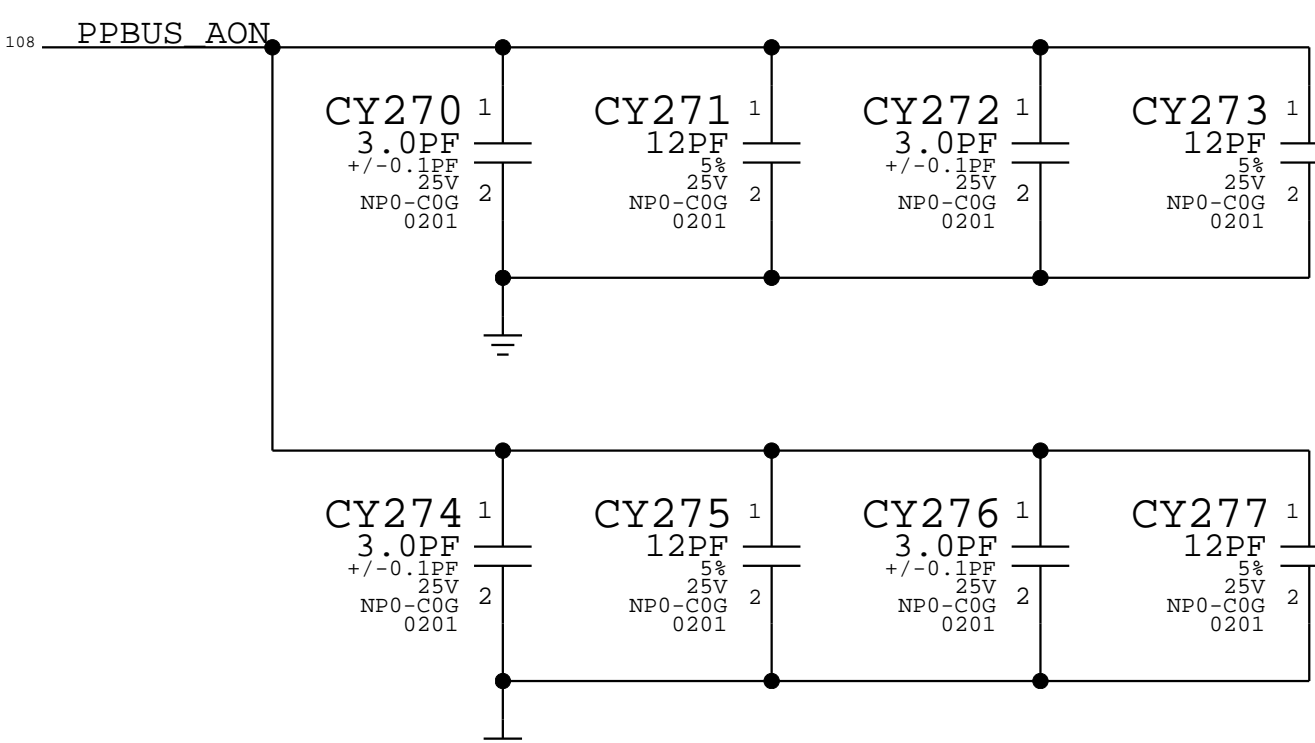
ICEMAN DESENSE CAPS <RDAR://70139950>, DRVH1 TO GND



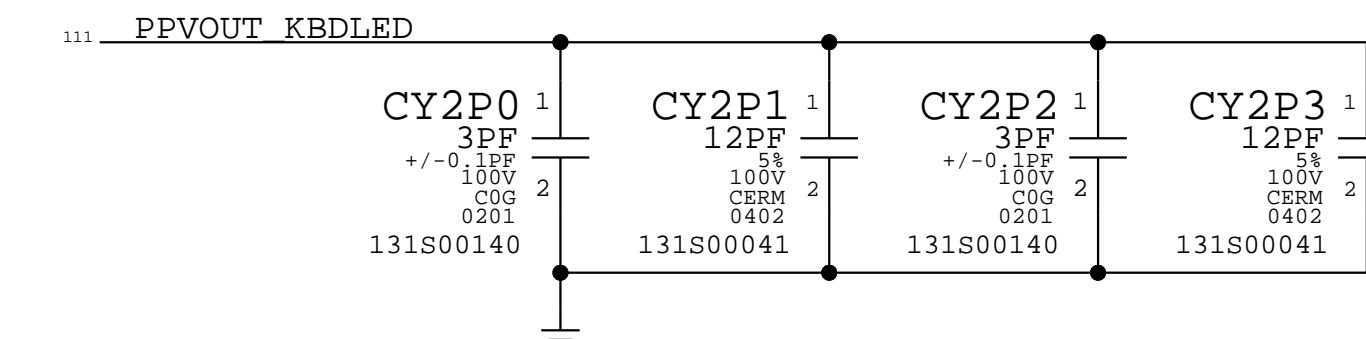
ICEMAN DESENSE CAPS <RDAR://70139950>, DRVL1\_R TO GND



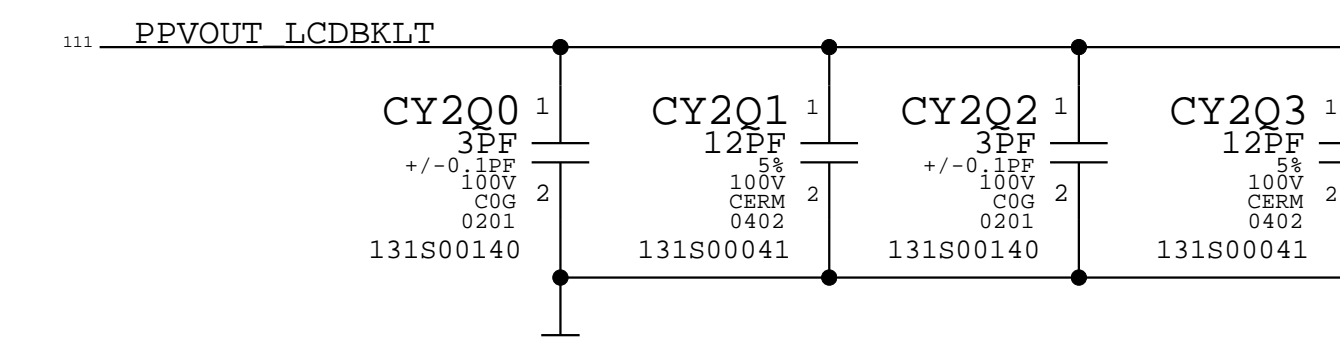
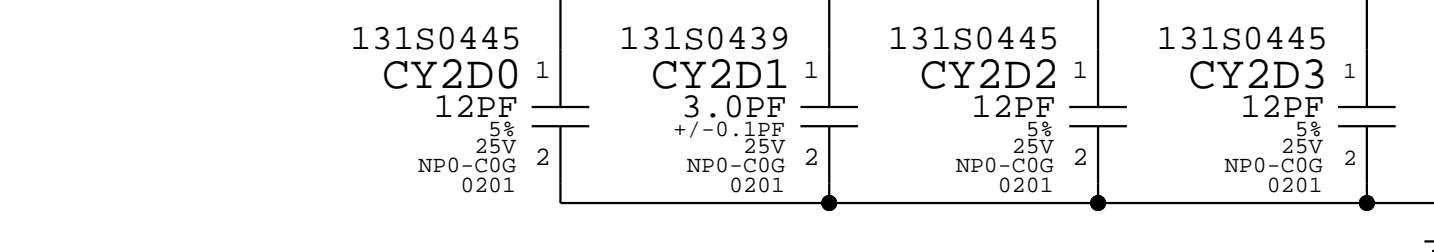
PBUS



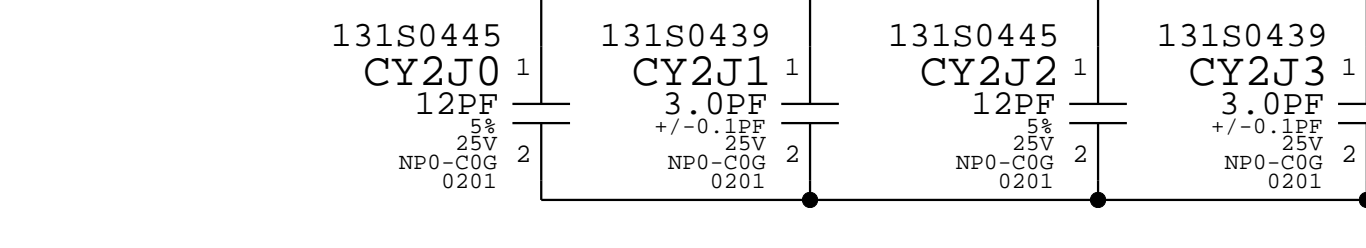
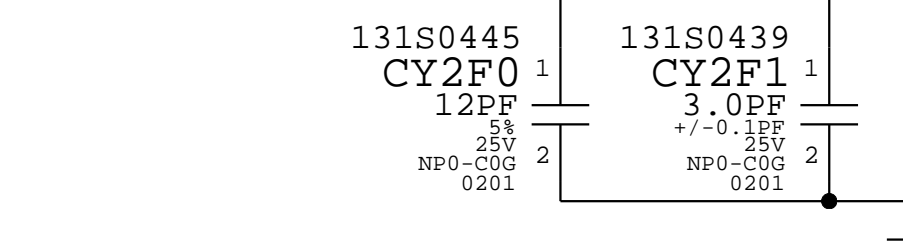
KBD BACKLIGHT



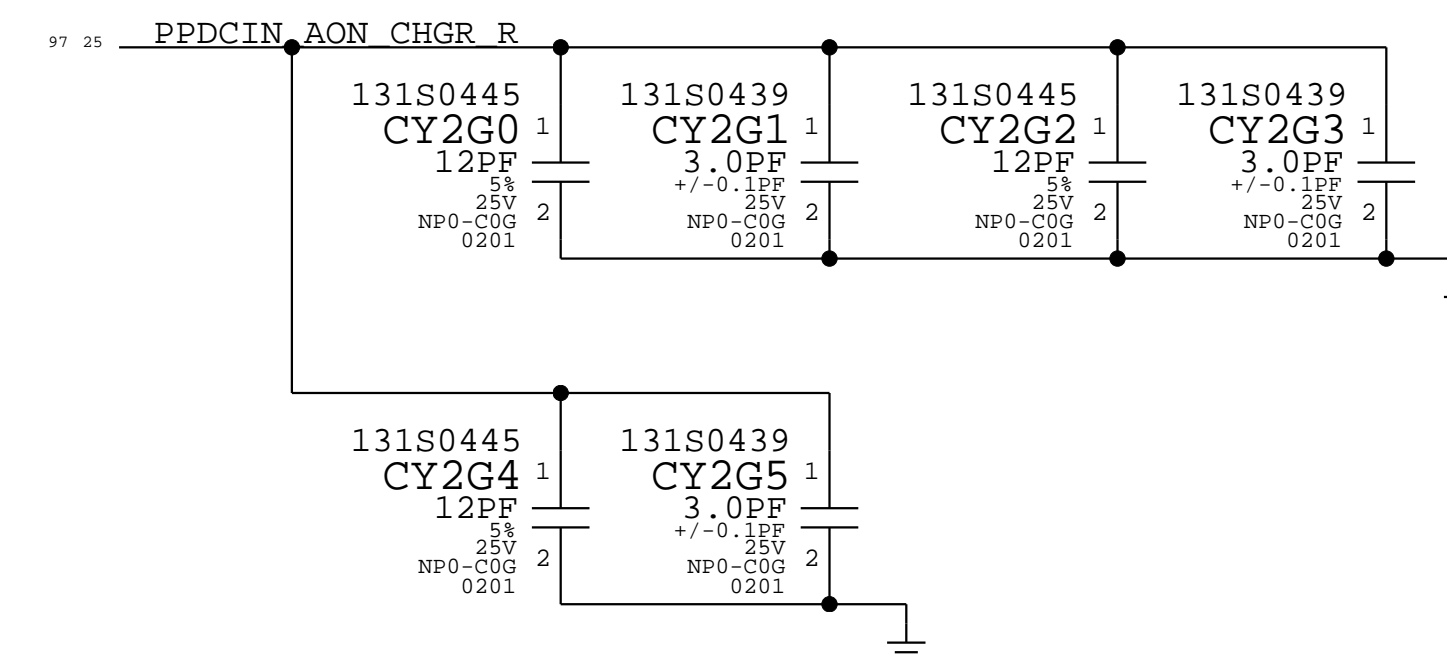
LCD BACKLIGHT

111 PP5V S2

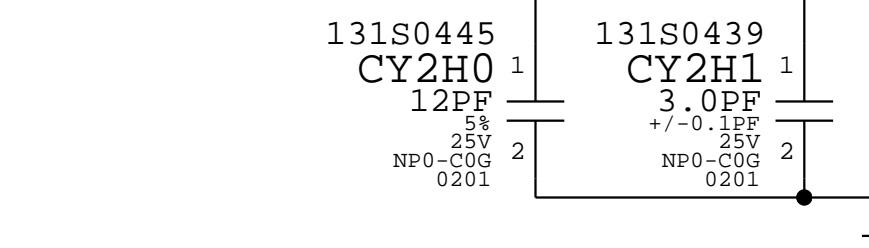
112 PPBUS AON 5VS2 VIN ISNS

112 81 PP5V S2 KBDLED ISNS

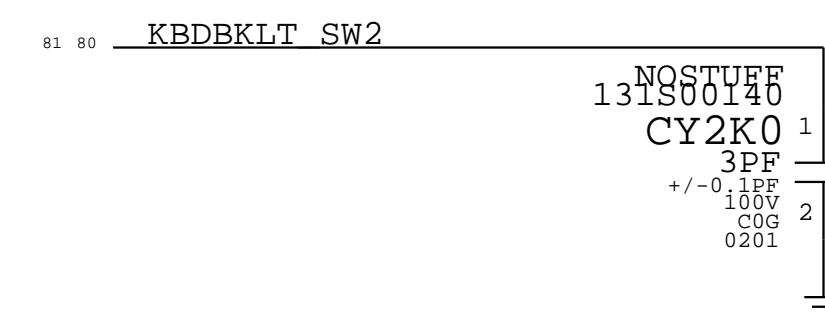
DESENSE CAPS <RDAR://72553915>



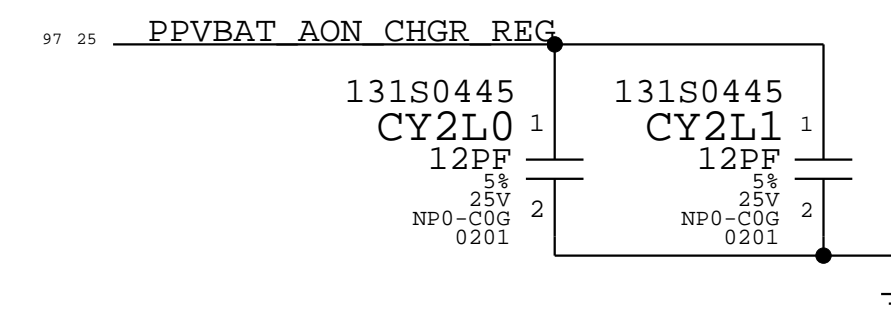
108 PPDCIN USBC AON



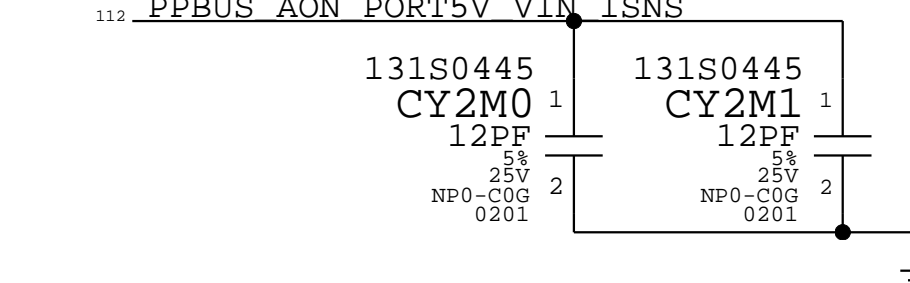
KBD DESENSE CAPS <RDAR://72633448>



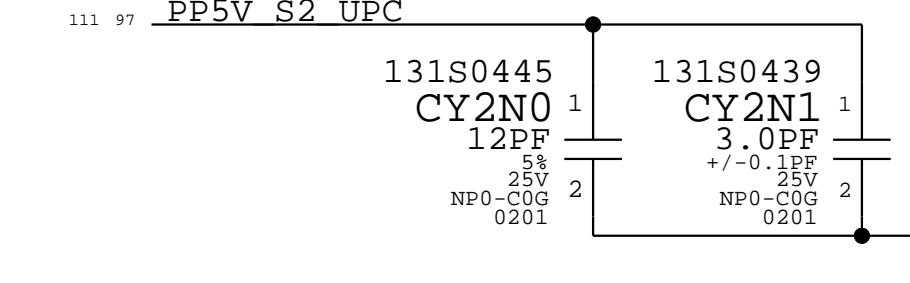
DESENSE CAPS <RDAR://72553915>




DESENSE CAPS <RDAR://72553915>



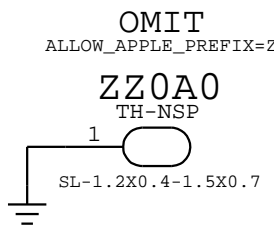
DESENSE CAPS <RDAR://72553915>



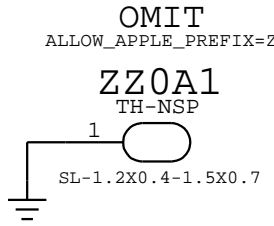
FORM NO. 100-1087000-0000, REV. 01/01		FORM NO. 100-1087000-0000, REV. 01/01	
PAGE TITLE			
 Apple Inc.		DRAWING NUMBER 051-07793	
		REVISION 5.0.0	
NOTICE OF PROPRIETARY PROPERTY:		BRANCH	
THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE I NOT TO REPRODUCE OR COPY IT I NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART I ALL RIGHTS RESERVED		PAGE 302 OF 999	
		SHEET 106 OF 128	

BOM\_COST\_GROUP=DESENSE

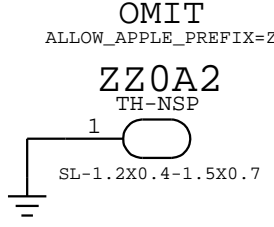
SHIELD CAN ALIGNMENT HOLES



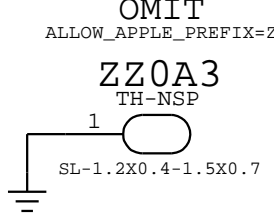
998-A0440



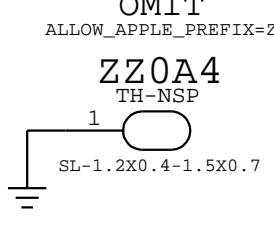
998-A0440



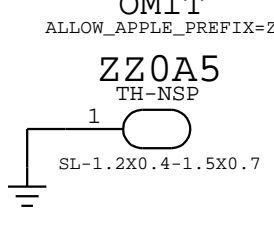
998-A0440



998-A0440

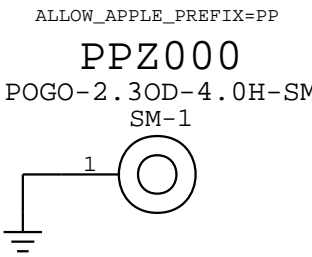


998-A0440

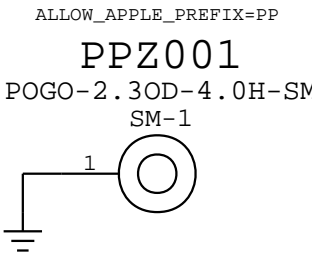


998-A0440

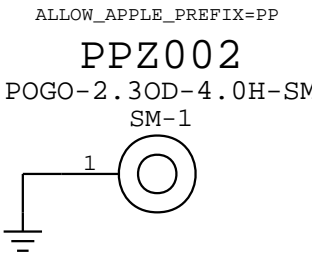
POGO PINS



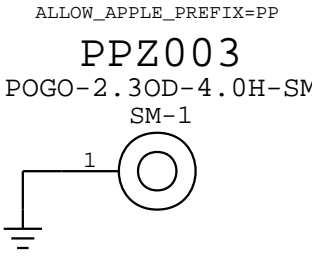
870-09667



870-09667



870-09667



870-09667

FENCE SPMU

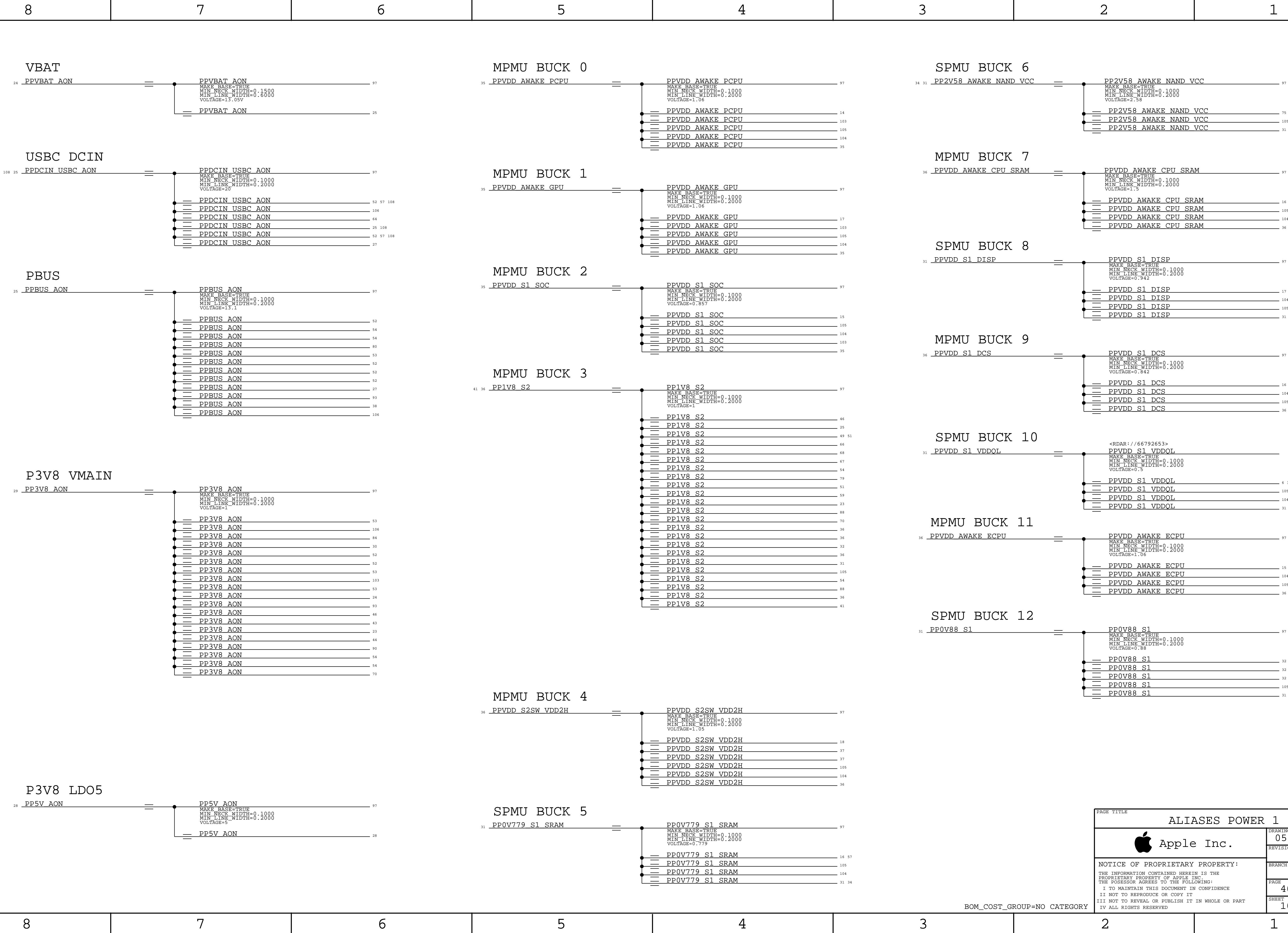
PART NUMBER	QTY	DESCRIPTION	REFERENCE DES	CRITICAL	BOM OPTION
806-33908	1	FENCE,SPMU,X2498	FENCE_SPMU	CRITICAL	FENCE_SPMU


FENCE COMBO

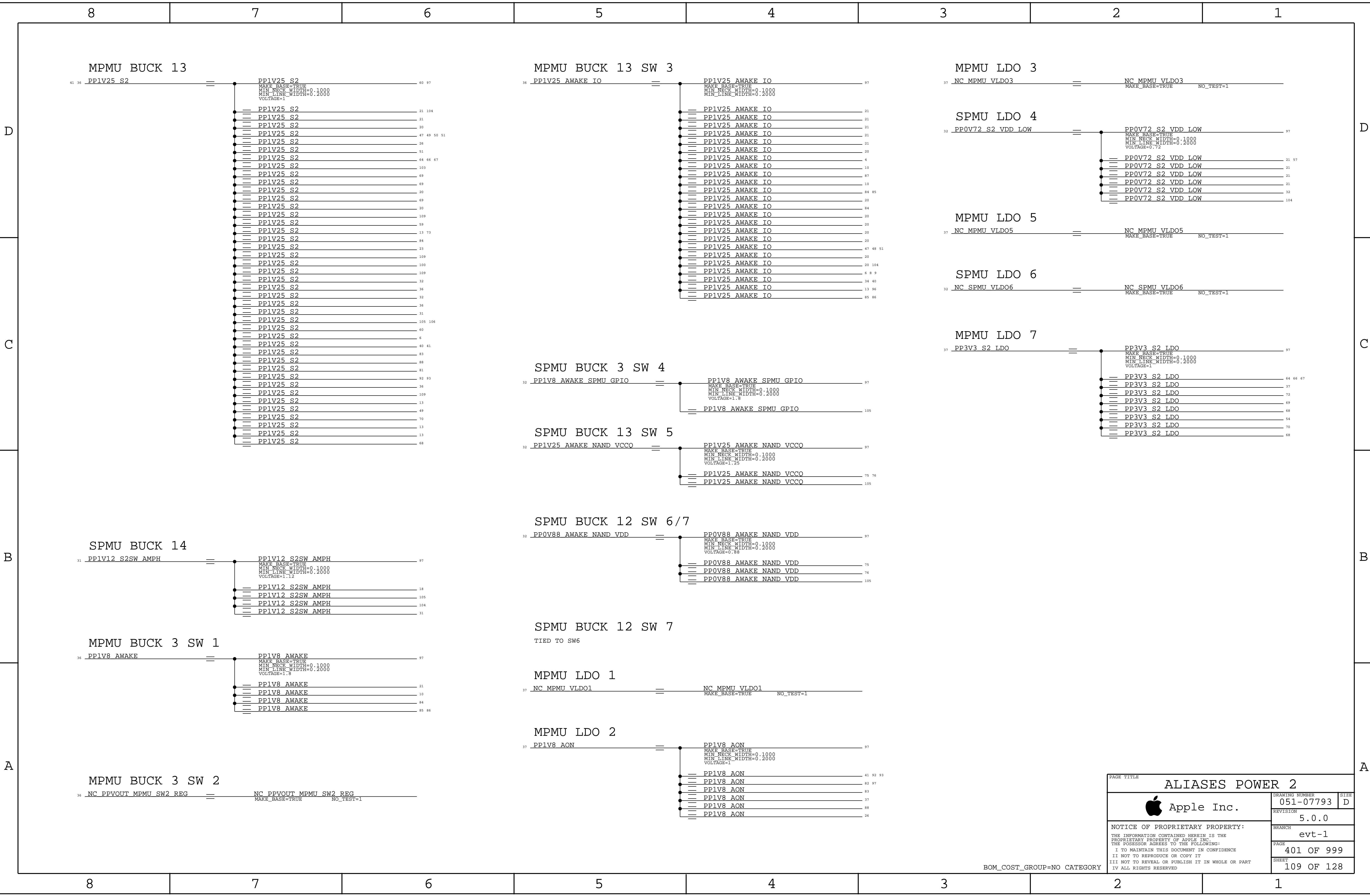
PART NUMBER	QTY	DESCRIPTION	REFERENCE DES	CRITICAL	BOM OPTION
806-33909	1	FENCE,COMBO,X2498	FENCE_COMBO	CRITICAL	FENCE_COMBO


FENCE USBC

PART NUMBER	QTY	DESCRIPTION	REFERENCE DES	CRITICAL	BOM OPTION
806-24455	1	FENCE,BURNSIDE BRIDGE,X1727	FENCE_USBC	CRITICAL	FENCE_USBC

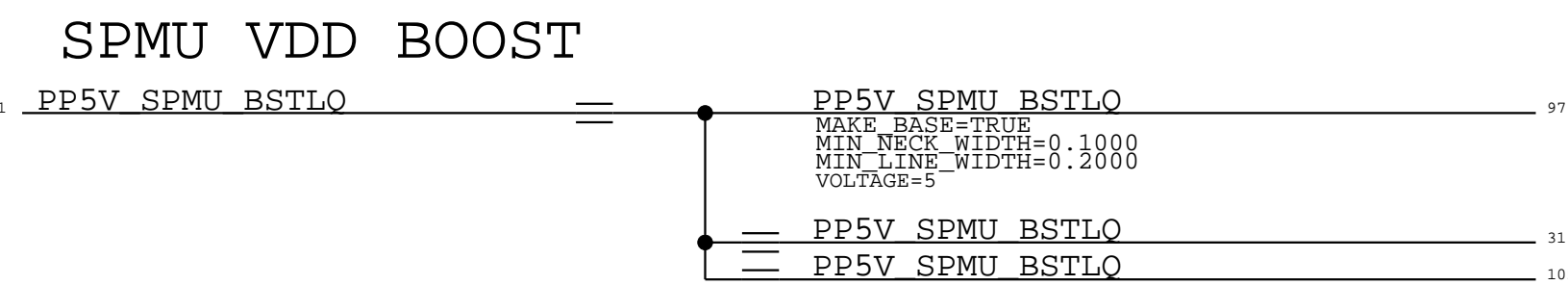
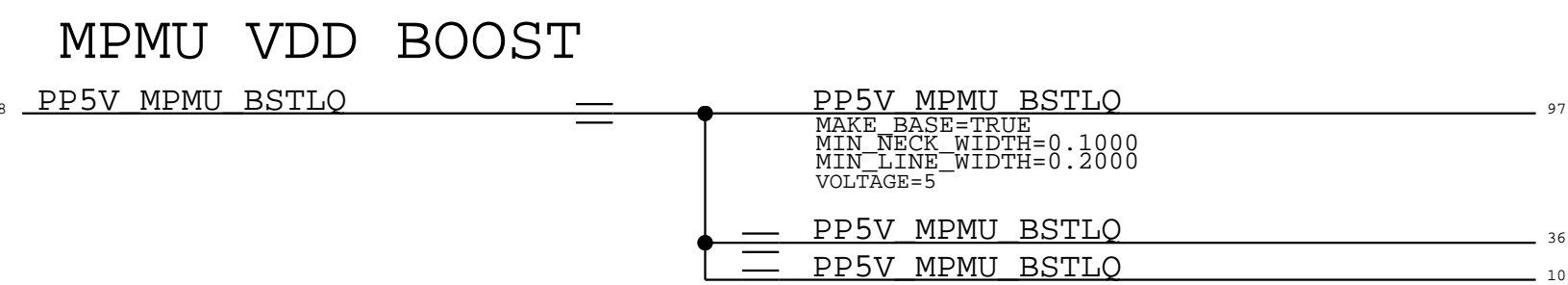
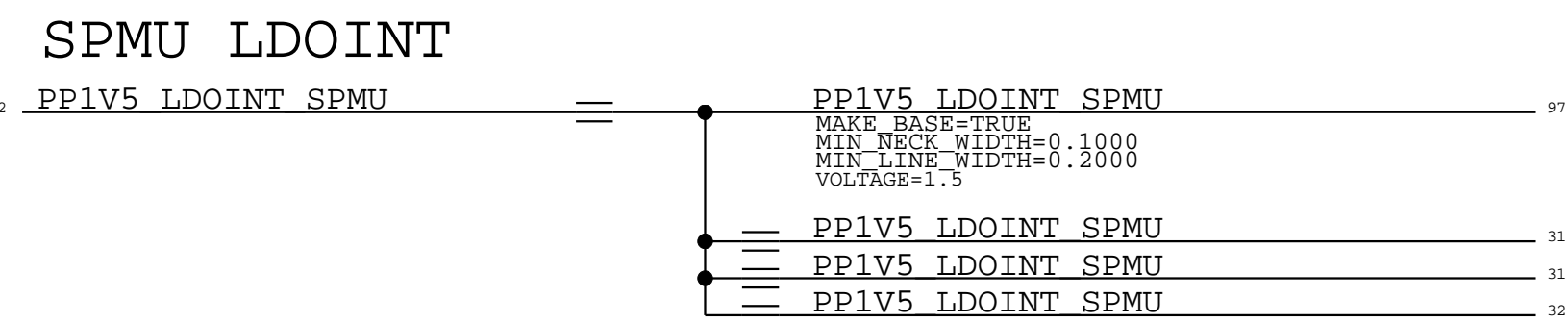
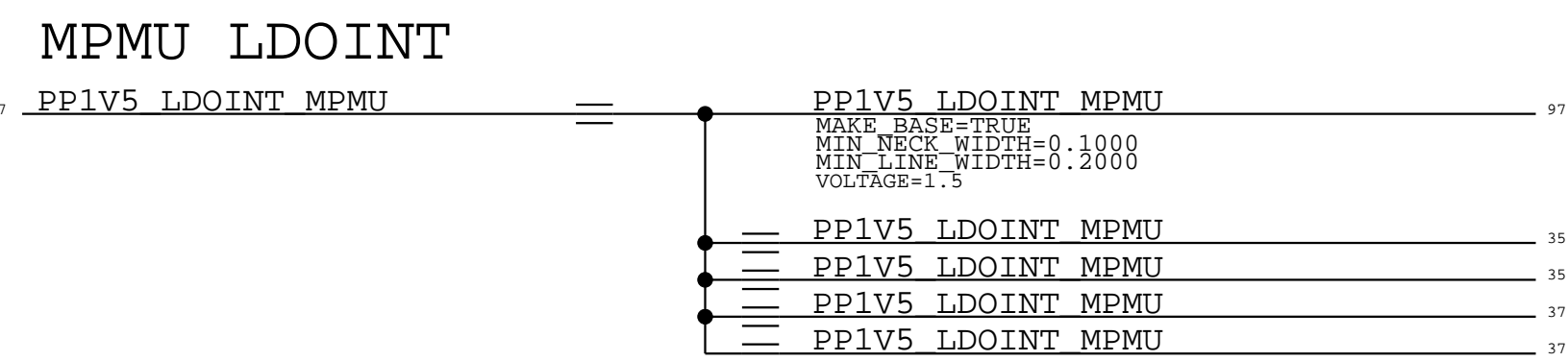
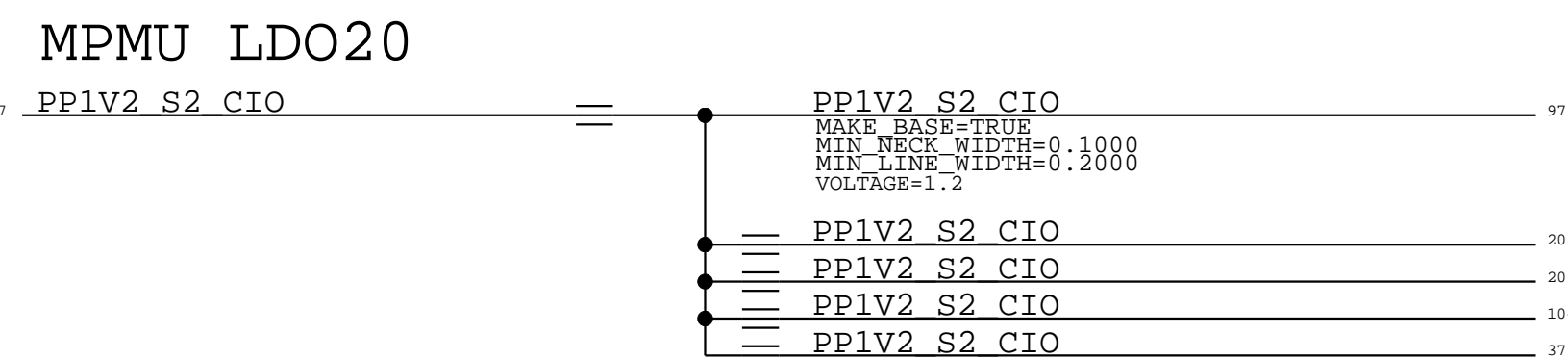
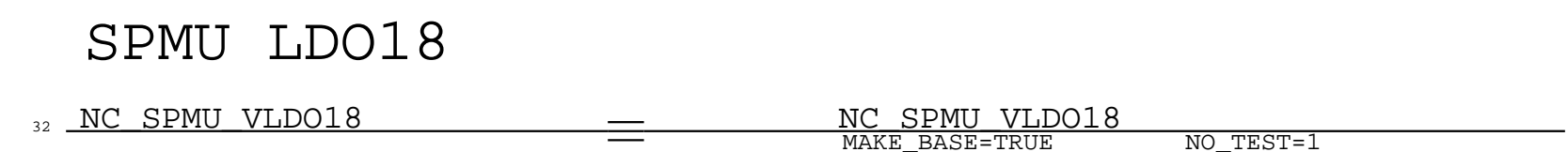
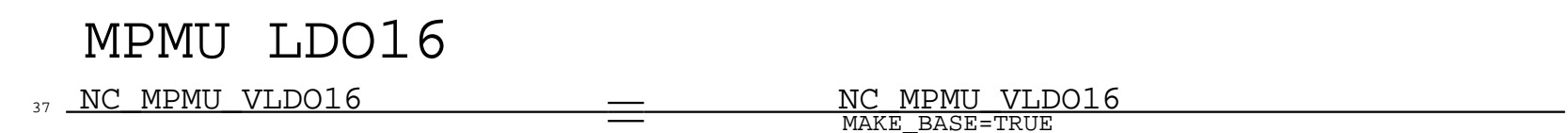
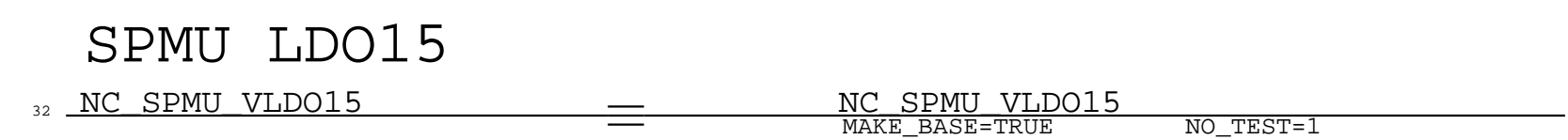
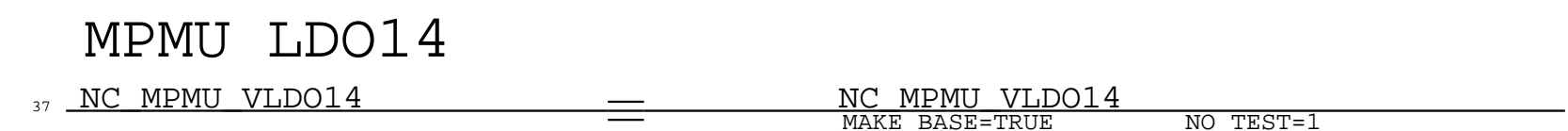
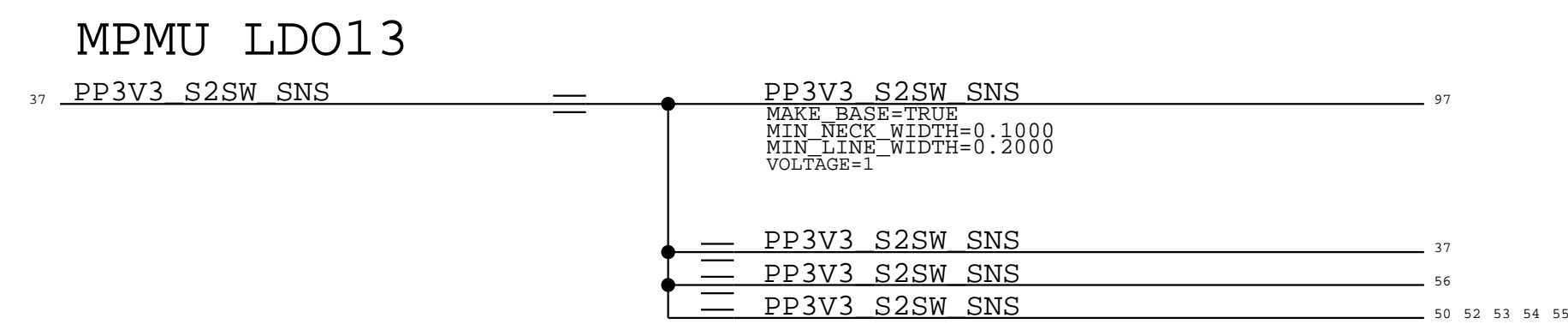
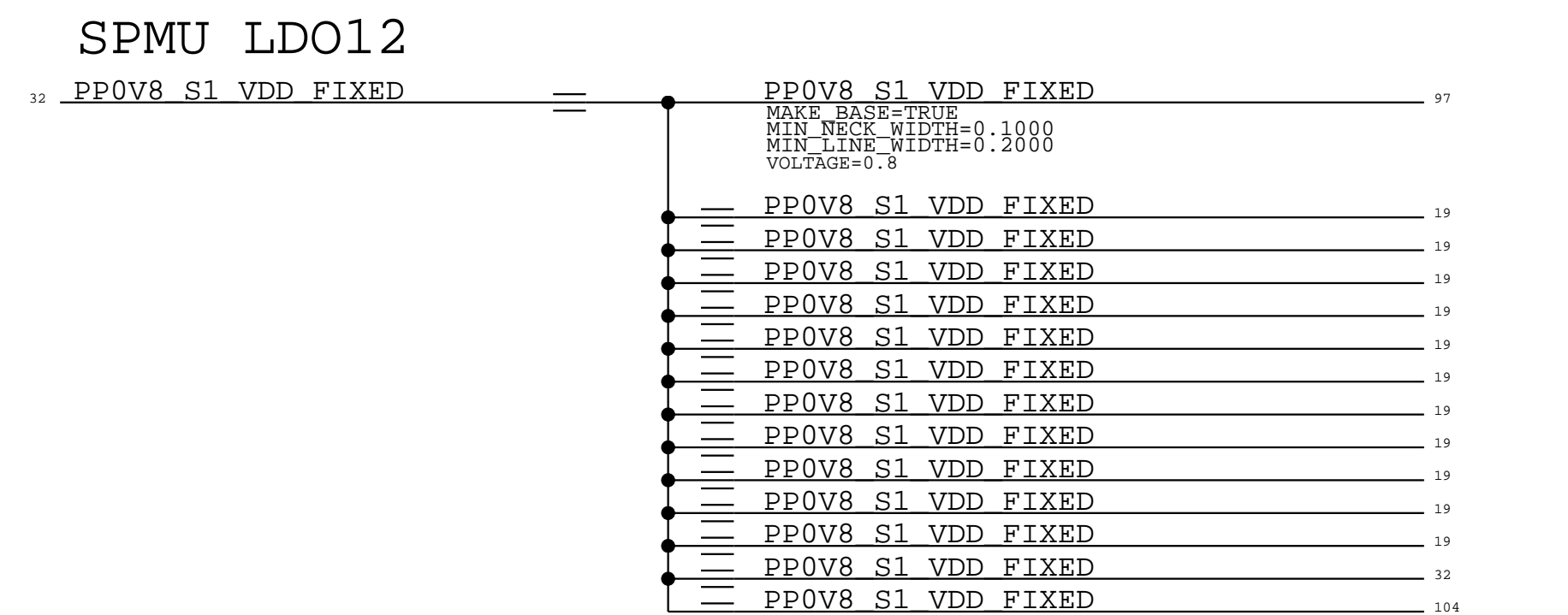
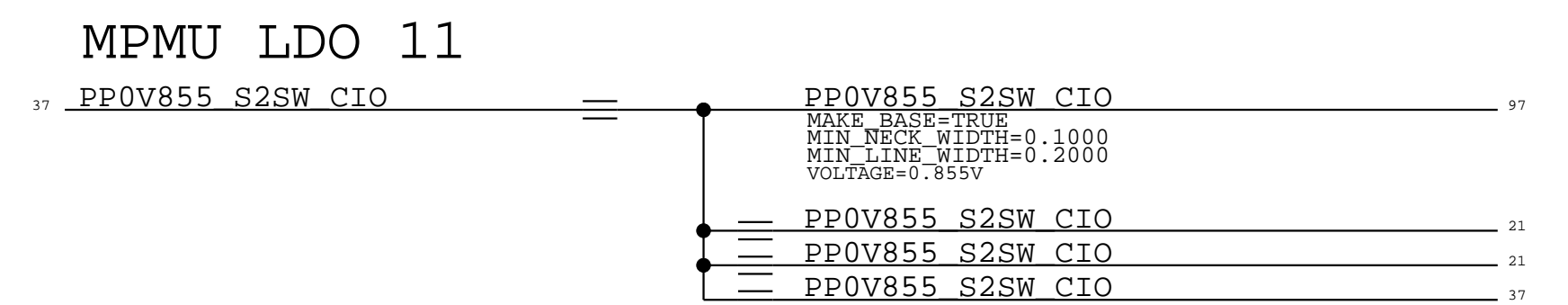
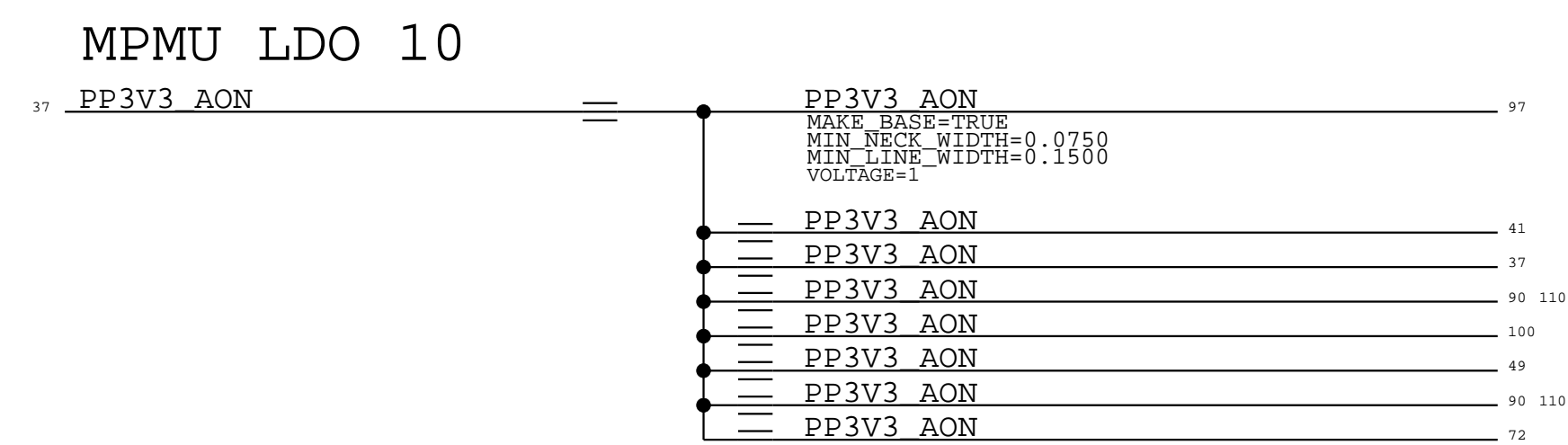
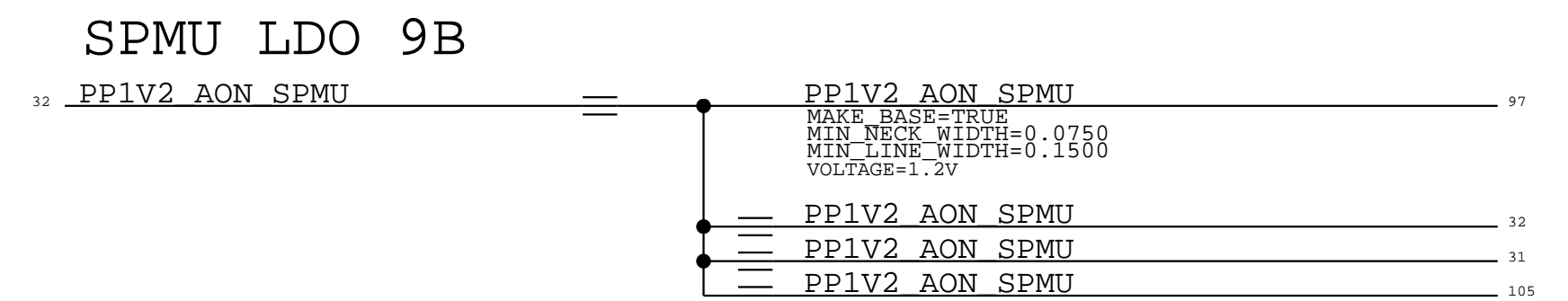
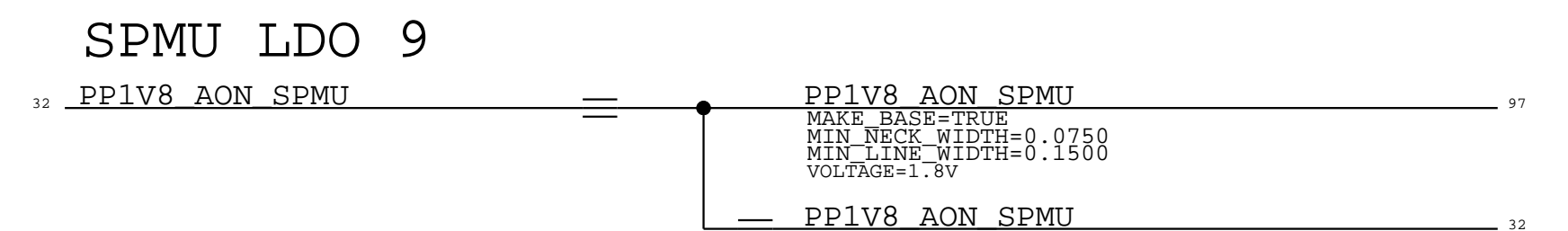
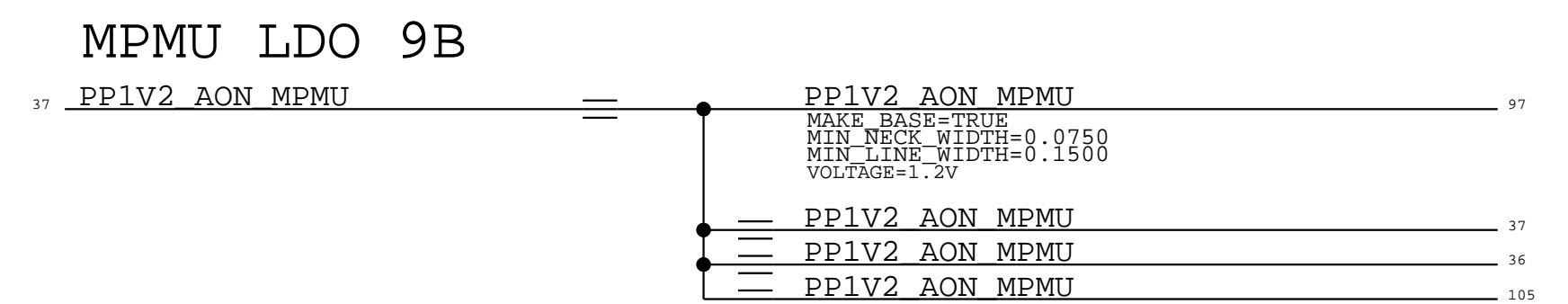
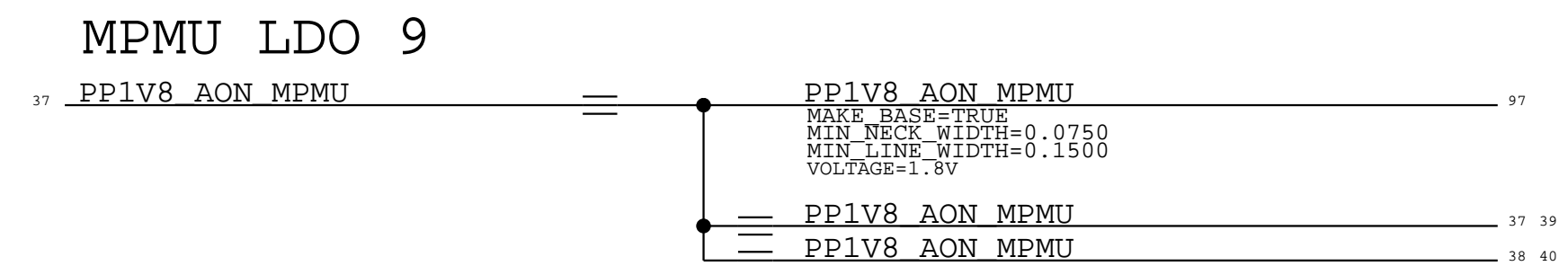
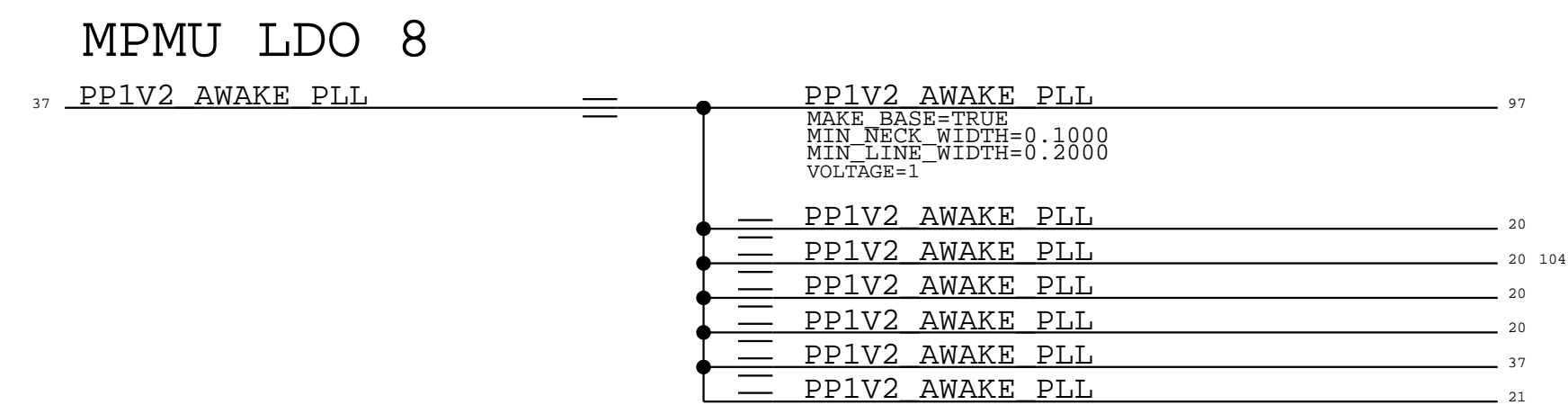


PAGE TITLE		
ALIASES POWER 1		
 Apple Inc.	DRAWING NUMBER	SIZE
	051-07793	D
	REVISION 5.0.0	
NOTICE OF PROPRIETARY PROPERTY:		
THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE I NOT TO REPRODUCE OR COPY IT I NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART I ALL RIGHTS RESERVED		
BRANCH		
evt-1		
PAGE		
400 OF 999		
SHEET		
108 OF 128		




PAGE TITLE		
ALIASES POWER 2		
 Apple Inc.	DRAWING NUMBER	SIZE
	051-07793	D
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	REVISION	5.0.0
	BRANCH	evt-1
	PAGE	401 OF 999
	SHEET	109 OF 128

BOM\_COST\_GROUP=NO CATEGORY

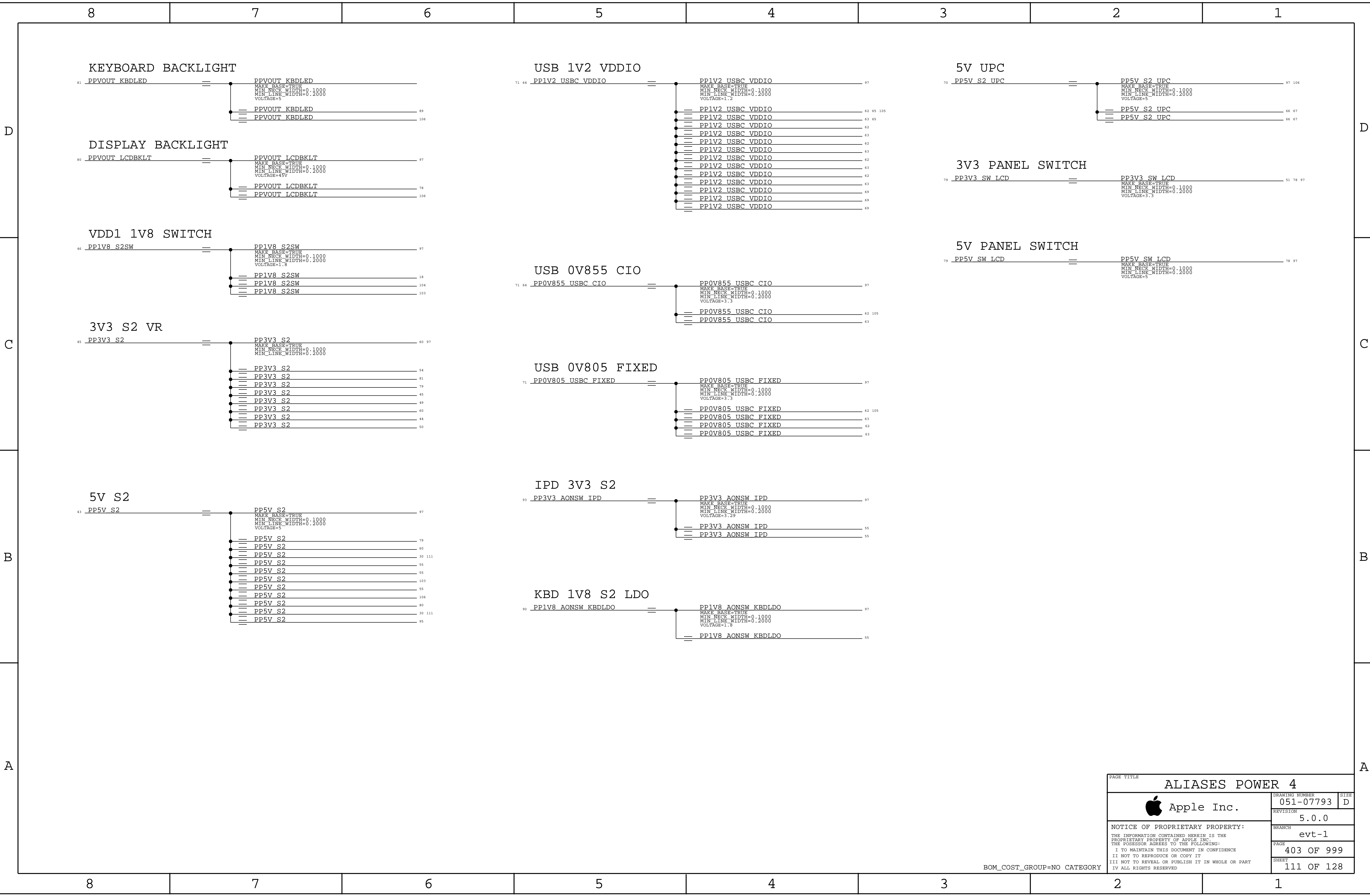



```
MPMU LDO RTC
SHORTED TO MPMU LDINT FOR PORTABLES
```

PAGE TITLE		ALIASES POWER 3	
 Apple Inc.	DRAWING NUMBER		SIZE
	051-07793		D
	REVISION		
NOTICE OF PROPRIETARY PROPERTY:		5.0.0	
THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED		BRANCH	
		evt-1	
		PAGE	
		402 OF 999	
		SHEET	
		110 OF 128	

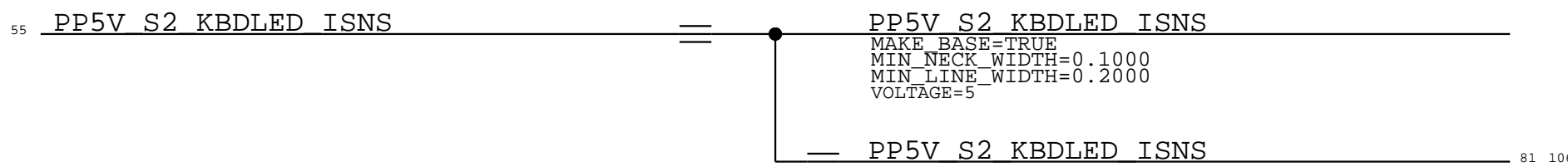
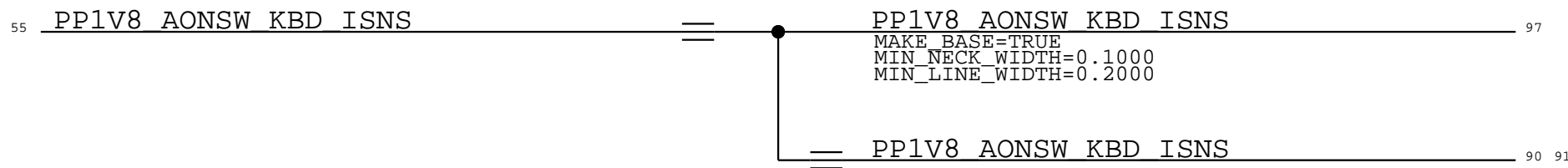
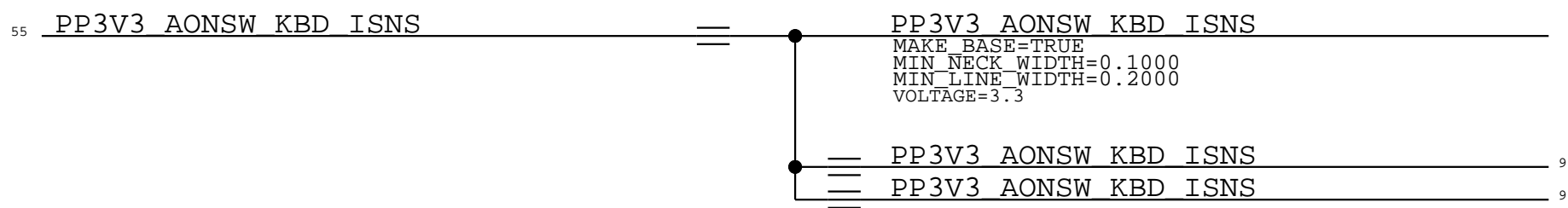
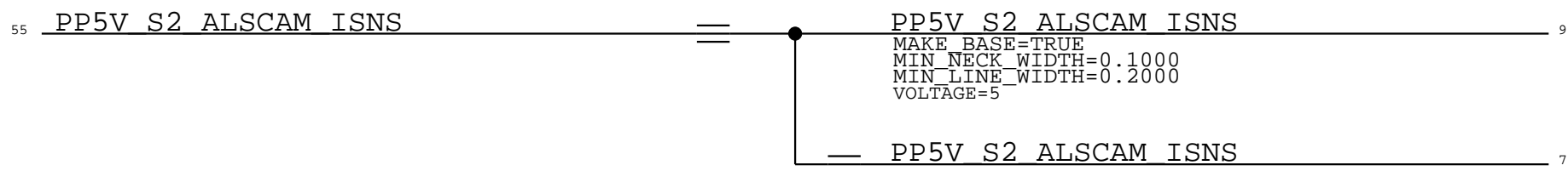
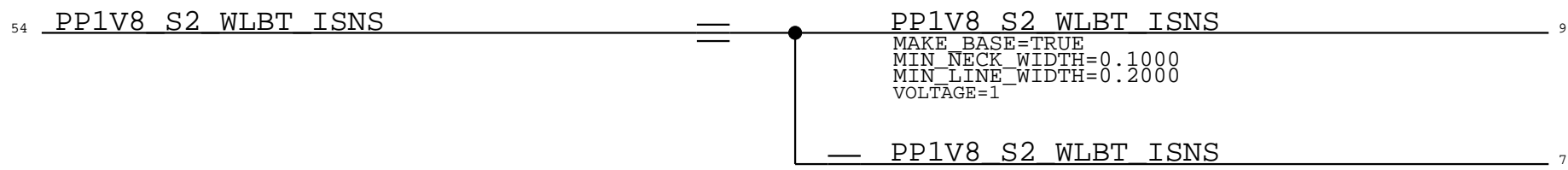
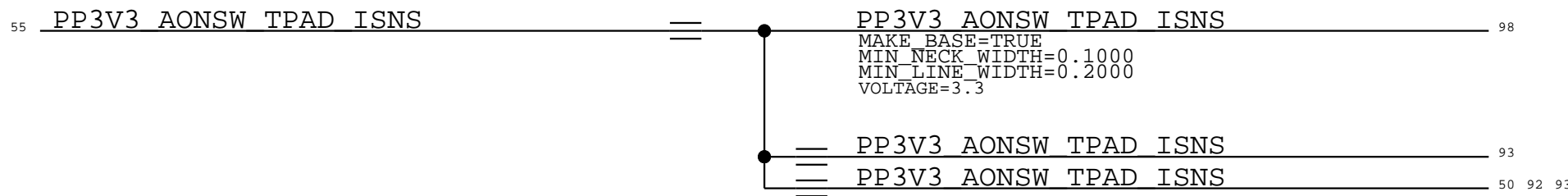
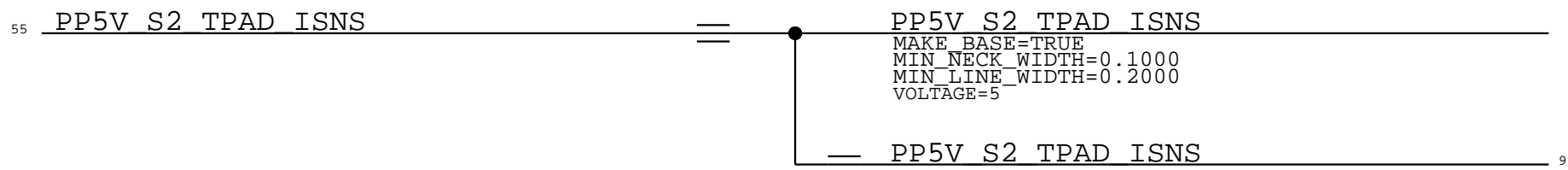
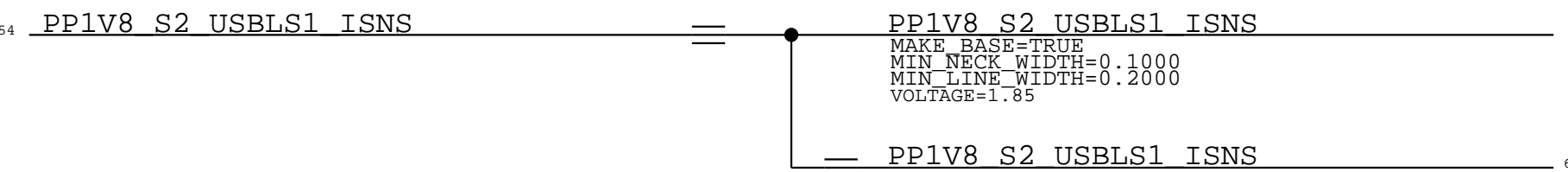
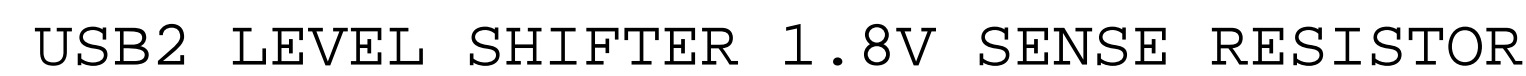
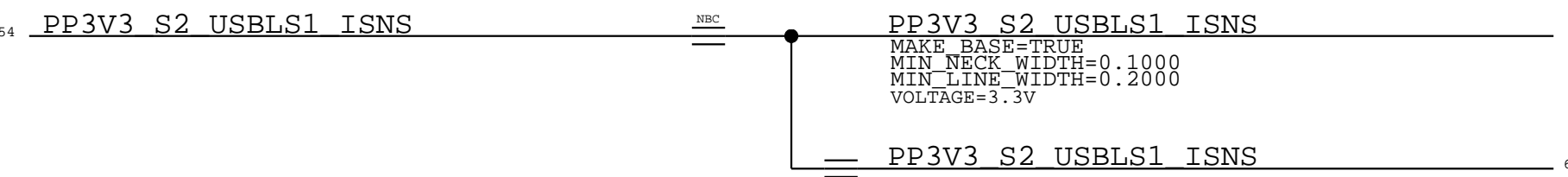
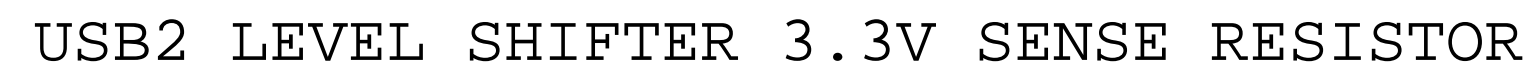
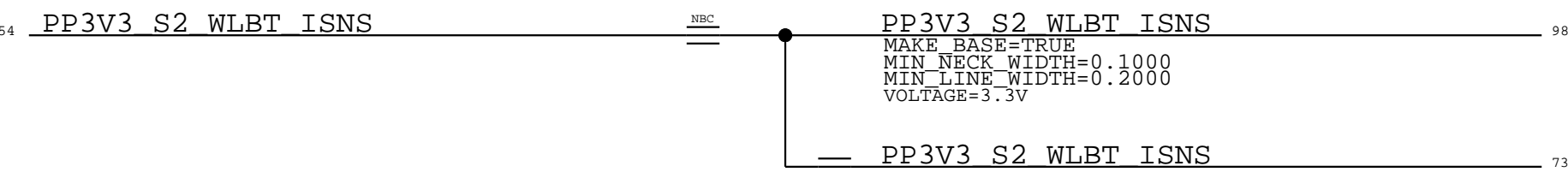
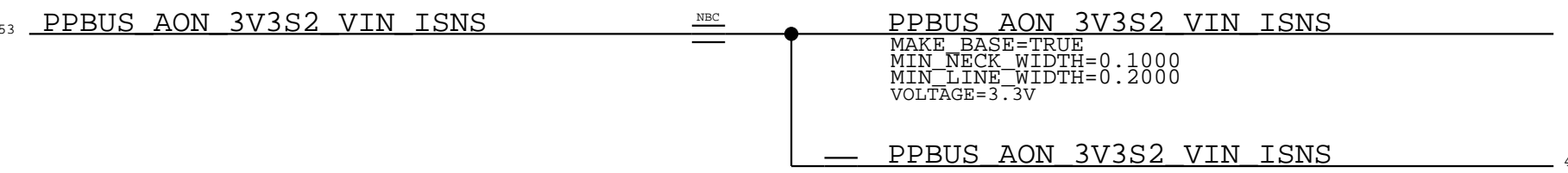
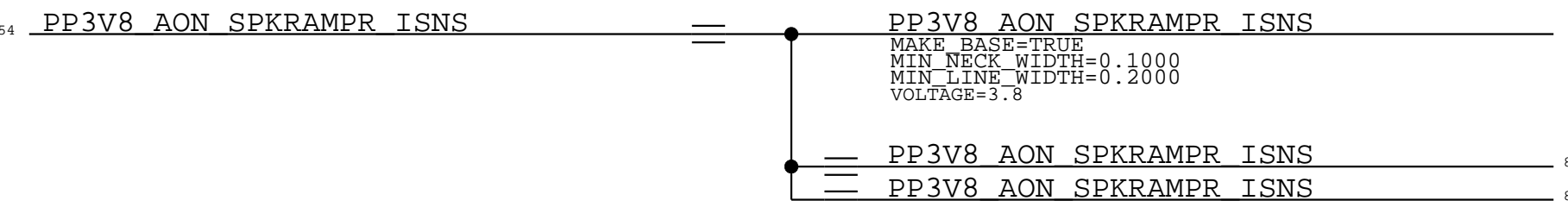
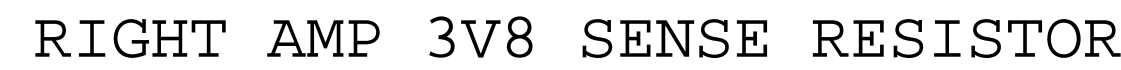
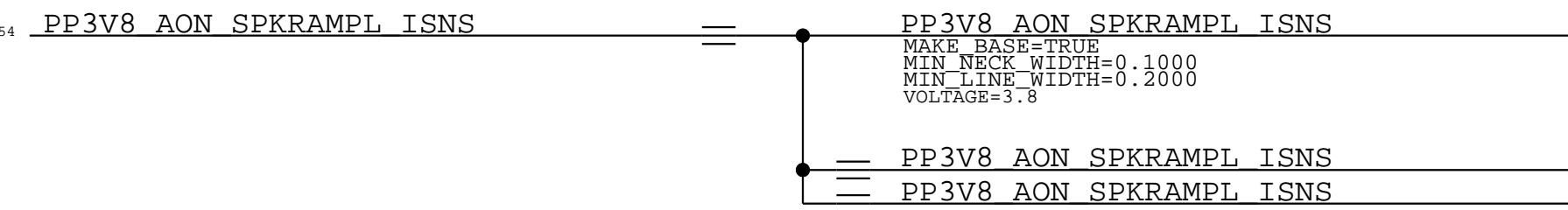
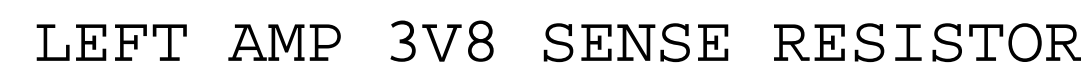
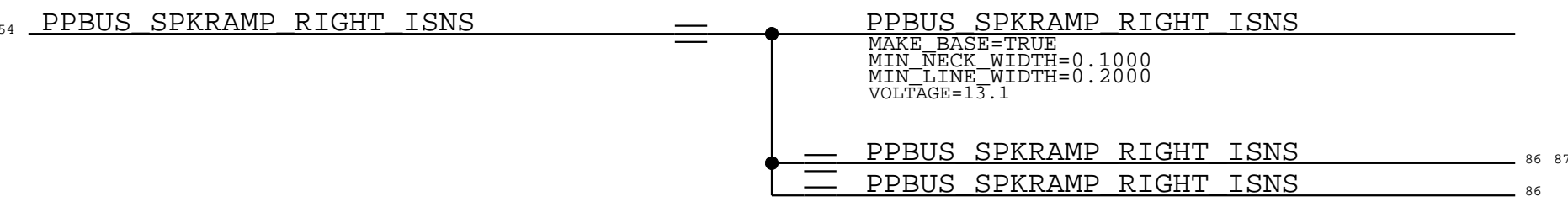
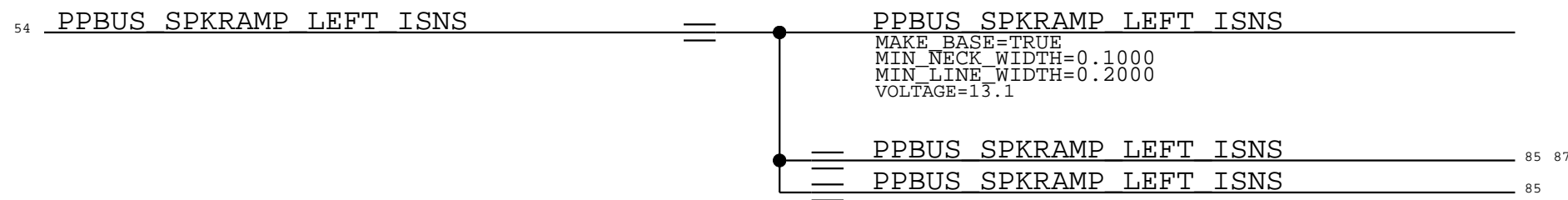
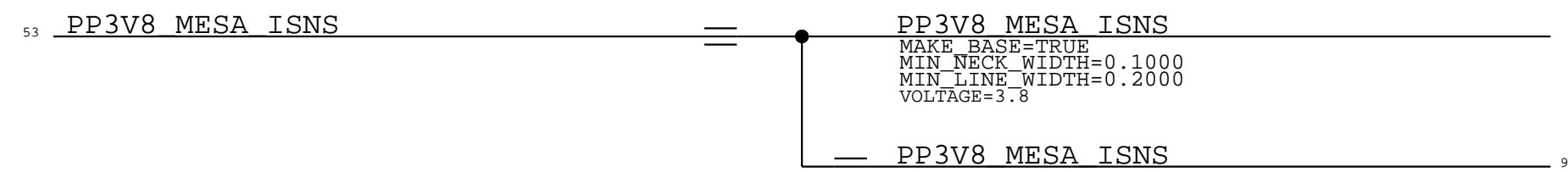
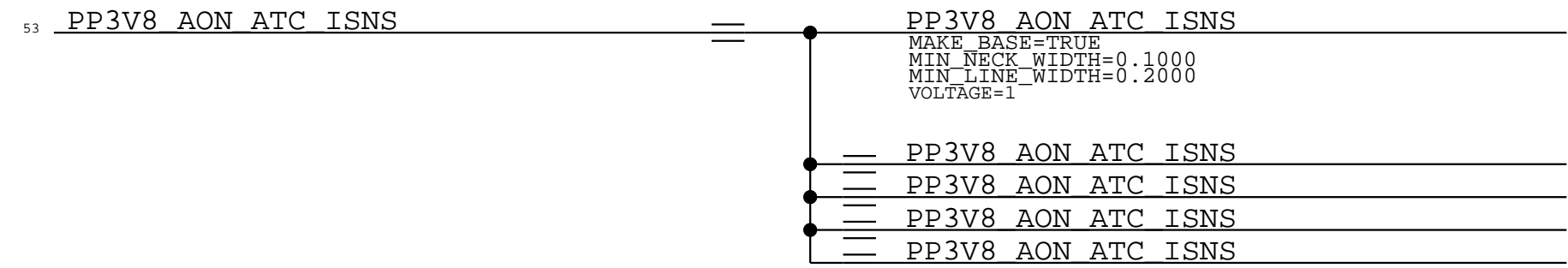
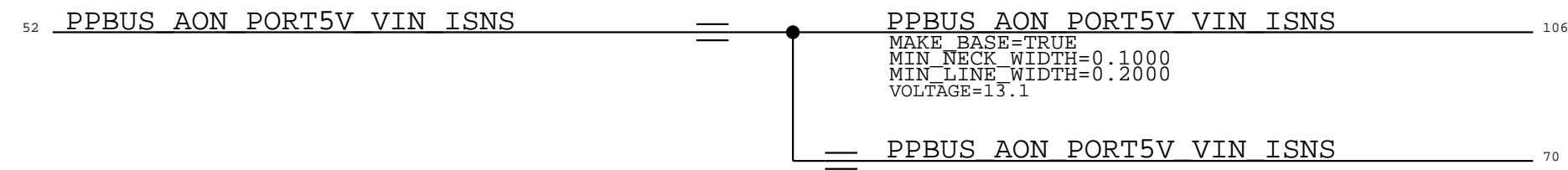
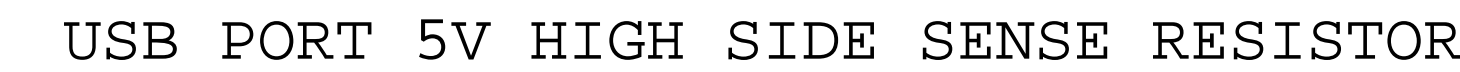
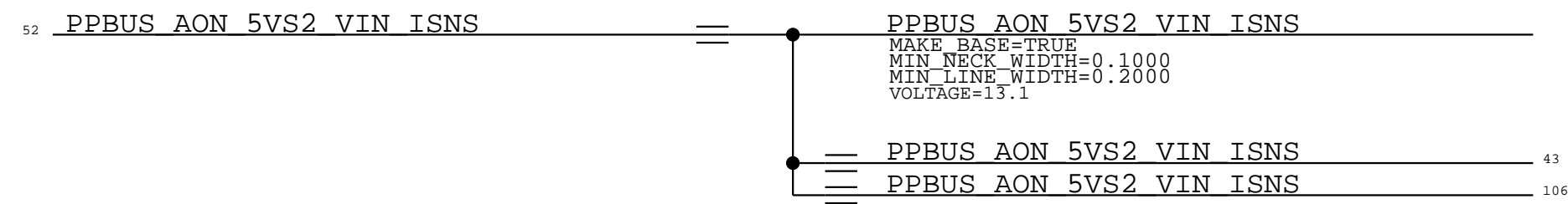
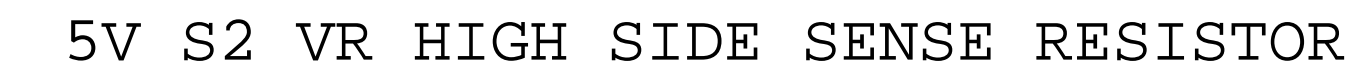
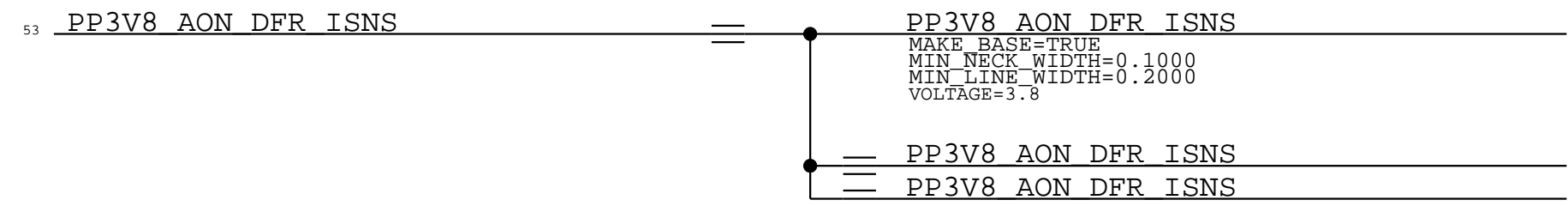
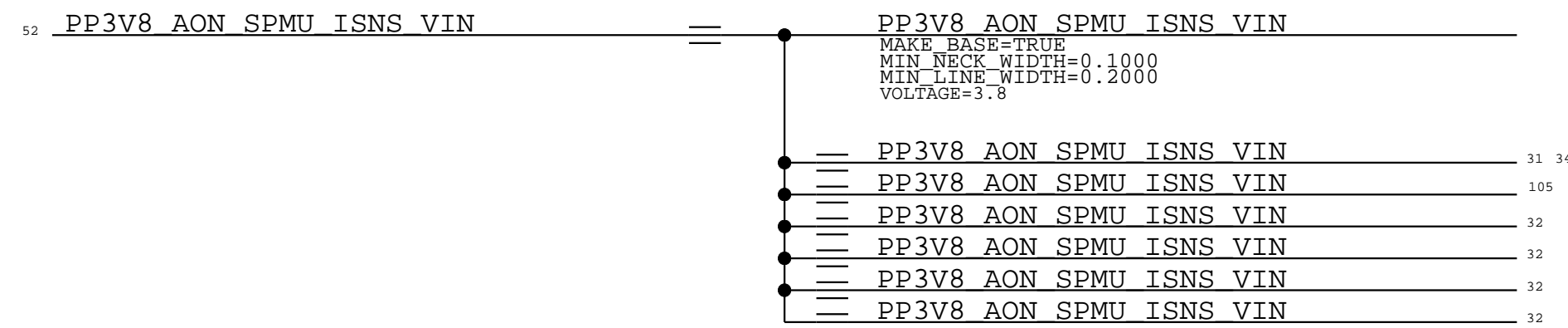
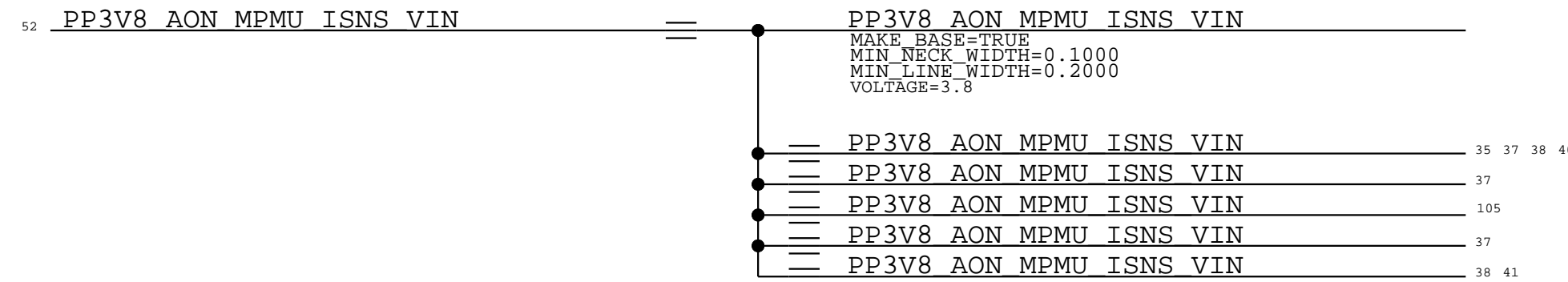
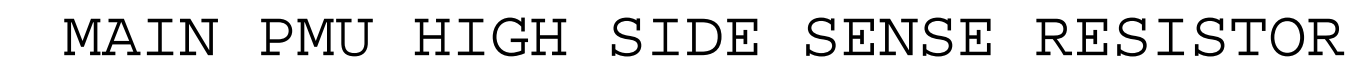
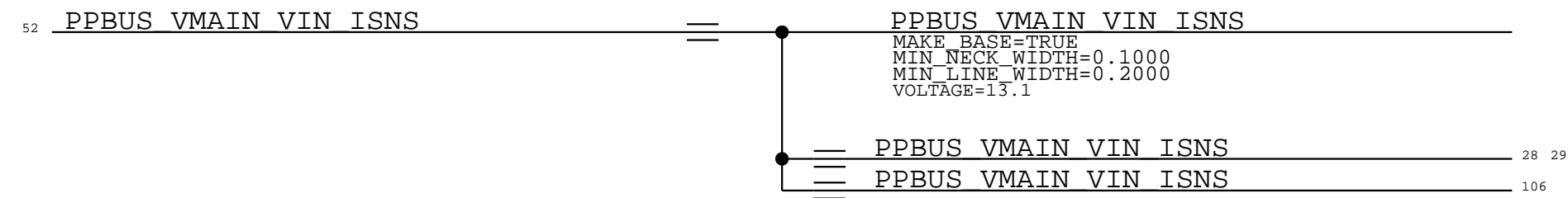
BOM\_COST\_GROUP=NO CATEGORY





PAGE TITLE		
ALIASES POWER 4		
 Apple Inc.	DRAWING NUMBER	051-07793
	REVISION	5.0.0
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	BRANCH	evt-1
	PAGE	403 OF 999
	SHEET	111 OF 128


BOM\_COST\_GROUP=NO CATEGORY



[illegible]


	8	7	6	5	4	3	2	1																
D	<div>AP GPIO (AWAKE)</div> <div><div><div><div><div>7</div><div>NC SOC AP GPIO 01</div><div>==</div><div>NC SOC AP GPIO 01</div><div>MAKE_BASE=TRUE</div></div><div>NO ALIAS NEEDED FOR THIS GPIO</div><div>NO ALIAS NEEDED FOR THIS GPIO</div><div>NO ALIAS NEEDED FOR THIS GPIO</div><div>NO ALIAS NEEDED FOR THIS GPIO</div><div>NO ALIAS NEEDED FOR THIS GPIO</div><div>NO ALIAS NEEDED FOR THIS GPIO</div><div>7</div><div>NC SWD UPC SWDIO1 R</div><div>==</div><div>NC SWD UPC SWDIO1 R</div><div>MAKE_BASE=TRUE</div></div><div><div><div>7</div><div>NC SOC AP GPIO 10</div><div>==</div><div>NC SOC AP GPIO 10</div><div>MAKE_BASE=TRUE</div></div><div>NO ALIAS NEEDED FOR THIS GPIO</div><div>NO ALIAS NEEDED FOR THIS GPIO</div><div>NO ALIAS NEEDED FOR THIS GPIO</div><div>NO ALIAS NEEDED FOR THIS GPIO</div><div>7</div><div>DFR TOUCH RESET L</div><div>==</div><div>DFR TOUCH RESET L</div><div>MAKE_BASE=TRUE</div><div>13</div></div><div><div><div>7</div><div>DFR DISP RESET L</div><div>==</div><div>DFR DISP RESET L</div><div>MAKE_BASE=TRUE</div></div><div>7</div><div>DFR DISP INT</div><div>==</div><div>DFR DISP INT</div><div>MAKE_BASE=TRUE</div><div>13</div></div><div><div><div>7</div><div>NC SOC AP GPIO 18</div><div>==</div><div>NC SOC AP GPIO 18</div><div>MAKE_BASE=TRUE</div></div><div>7</div><div>DFR TOUCH INT L</div><div>==</div><div>DFR TOUCH INT L</div><div>MAKE_BASE=TRUE</div><div>96</div></div><div><div><div>7</div><div>NC SOC AP GPIO 20</div><div>==</div><div>NC SOC AP GPIO 20</div><div>MAKE_BASE=TRUE</div></div><div>NO ALIAS NEEDED FOR THIS GPIO</div><div>NO ALIAS NEEDED FOR THIS GPIO</div><div>7</div><div>NC SOC AP GPIO 23</div><div>==</div><div>NC SOC AP GPIO 23</div><div>MAKE_BASE=TRUE</div><div>7</div><div>DFR PWR EN</div><div>==</div><div>DFR PWR EN</div><div>MAKE_BASE=TRUE</div><div>95</div></div><div><div><div>7</div><div>NC SOC AP GPIO 25</div><div>==</div><div>NC SOC AP GPIO 25</div><div>MAKE_BASE=TRUE</div></div><div>7</div><div>NC SOC AP GPIO 26</div><div>==</div><div>NC SOC AP GPIO 26</div><div>MAKE_BASE=TRUE</div></div></div><div>SGPIO</div><div>NO ALIAS NEEDED FOR THIS GPIO</div><div><div><div>8</div><div>NC SOC SGPIO1</div><div>==</div><div>NC SOC SGPIO1</div><div>MAKE_BASE=TRUE</div></div></div><div>ISP GPIO</div><div><div><div><div>5</div><div>NC FTCAM RESET L</div><div>==</div><div>NC FTCAM RESET L</div><div>MAKE_BASE=TRUE</div></div><div>5</div><div>NC SOC ISP GPIO 1</div><div>==</div><div>NC SOC ISP GPIO 1</div><div>MAKE_BASE=TRUE</div></div><div><div><div>5</div><div>NC SOC ISP GPIO 2</div><div>==</div><div>NC SOC ISP GPIO 2</div><div>MAKE_BASE=TRUE</div></div><div>5</div><div>NC SOC ISP GPIO 3</div><div>==</div><div>NC SOC ISP GPIO 3</div><div>MAKE_BASE=TRUE</div></div></div><div>SMC GPIO</div><div>NO ALIAS NEEDED FOR THIS GPIO</div><div><div><div>7</div><div>NC SOC SMC GPIO 1</div><div>==</div><div>NC SOC SMC GPIO 1</div><div>MAKE_BASE=TRUE</div></div></div></div>								<div>AOP GPIO (S2)</div> <div><div><div><div><div>7</div><div>NC SOC AOP FUNC 0</div><div>==</div><div>NC SOC AOP FUNC 0</div><div>MAKE_BASE=TRUE</div></div><div>7</div><div>NC SOC AOP FUNC 1</div><div>==</div><div>NC SOC AOP FUNC 1</div><div>MAKE_BASE=TRUE</div></div><div>7</div><div>NC SOC AOP FUNC 2</div><div>==</div><div>NC SOC AOP FUNC 2</div><div>MAKE_BASE=TRUE</div></div><div>7</div><div>NC SOC AOP FUNC 3</div><div>==</div><div>NC SOC AOP FUNC 3</div><div>MAKE_BASE=TRUE</div></div> <div>7</div> <div>NC ALS INT L</div> <div>==</div> <div>NC ALS INT L</div> <div>MAKE_BASE=TRUE</div> <div><div><div>7</div><div>NC SPI_DP2HDMI_HOLD_L</div><div>==</div><div>NC SPI_DP2HDMI_HOLD_L</div><div>MAKE_BASE=TRUE</div></div><div>NO ALIAS NEEDED FOR THIS GPIO</div><div>NO ALIAS NEEDED FOR THIS GPIO</div><div>NO ALIAS NEEDED FOR THIS GPIO</div><div>7</div><div>NC HDMI CEC AOP_TX</div><div>==</div><div>NC HDMI CEC AOP_TX</div><div>MAKE_BASE=TRUE</div></div> <div><div><div>7</div><div>NC HDMI CEC AOP_RX</div><div>==</div><div>NC HDMI CEC AOP_RX</div><div>MAKE_BASE=TRUE</div></div><div>7</div><div>NC WLAN_CONTEXT_A</div><div>==</div><div>NC WLAN_CONTEXT_A</div><div>MAKE_BASE=TRUE</div></div> <div><div><div>7</div><div>NC WLAN_CONTEXT_B</div><div>==</div><div>NC WLAN_CONTEXT_B</div><div>MAKE_BASE=TRUE</div></div><div>7</div><div>NC SPI_LAS_CS_L</div><div>==</div><div>NC SPI_LAS_CS_L</div><div>MAKE_BASE=TRUE</div></div> <div><div><div>7</div><div>NC HDMI HPD AOP</div><div>==</div><div>NC HDMI HPD AOP</div><div>MAKE_BASE=TRUE</div></div></div> <div>NUB GPIO (S2)</div> <div><div><div><div><div>7</div><div>NC SOC NUB_FUNC_0</div><div>==</div><div>NC SOC NUB_FUNC_0</div><div>MAKE_BASE=TRUE</div></div><div>NO ALIAS NEEDED FOR THIS GPIO</div><div>NO ALIAS NEEDED FOR THIS GPIO</div><div>7</div><div>AOP_LEAP_MADI_IN</div><div>==</div><div>AOP_LEAP_MADI_IN</div><div>MAKE_BASE=TRUE</div><div>101</div></div><div><div><div>7</div><div>AOP_LEAP_MADI_OUT</div><div>==</div><div>AOP_LEAP_MADI_OUT</div><div>MAKE_BASE=TRUE</div><div>101</div></div><div>NO ALIAS NEEDED FOR THIS GPIO</div><div>NO ALIAS NEEDED FOR THIS GPIO</div><div>7</div><div>NC SOC NUB_GPIO_7</div><div>==</div><div>NC SOC NUB_GPIO_7</div><div>MAKE_BASE=TRUE</div></div><div><div><div>7</div><div>NC SOC NUB_GPIO_8</div><div>==</div><div>NC SOC NUB_GPIO_8</div><div>MAKE_BASE=TRUE</div></div><div>7</div><div>NC SOC AOP_FUNC19</div><div>==</div><div>NC SOC AOP_FUNC19</div><div>MAKE_BASE=TRUE</div></div><div><div><div>7</div><div>NC SOC AOP_FUNC20</div><div>==</div><div>NC SOC AOP_FUNC20</div><div>MAKE_BASE=TRUE</div></div><div>NO ALIAS NEEDED FOR THIS GPIO</div><div>7</div><div>NC SOC NUB_GPIO_12</div><div>==</div><div>NC SOC NUB_GPIO_12</div><div>MAKE_BASE=TRUE</div></div></div></div> <div>ISP GPIO</div> <div>NO ALIAS NEEDED FOR THIS GPIO</div> <div>NO ALIAS NEEDED FOR THIS GPIO</div> <div><div><div>8</div><div>NC_TOUCHID_BKLT_PWM</div><div>==</div><div>NC_TOUCHID_BKLT_PWM</div><div>MAKE_BASE=TRUE</div></div></div>								<div>MTP GPIO</div> <div>NO ALIAS NEEDED FOR THIS GPIO</div> <div><div><div><div>8</div><div>IPD_MTP_FUNC_1</div><div>==</div><div>IPD_MTP_FUNC_1</div><div>MAKE_BASE=TRUE</div></div><div>93</div></div><div><div><div>8</div><div>NC_SOC_MTP_FUNC_2</div><div>==</div><div>NC_SOC_MTP_FUNC_2</div><div>MAKE_BASE=TRUE</div></div></div><div>NO ALIAS NEEDED FOR THIS GPIO</div><div>NOTE: MTP GPIO 4 DOES NOT EXIST</div><div>NO ALIAS NEEDED FOR THIS GPIO</div><div><div><div>8</div><div>NC_SOC_MTP_FUNC_6</div><div>==</div><div>NC_SOC_MTP_FUNC_6</div><div>MAKE_BASE=TRUE</div></div><div>8</div><div>NC_SOC_MTP_FUNC_7</div><div>==</div><div>NC_SOC_MTP_FUNC_7</div><div>MAKE_BASE=TRUE</div></div></div> <div>THROTTLE</div> <div><div><div><div>8</div><div>_SPMU_VDDMAIN_UVWARN_L</div><div>==</div><div>_SPMU_VDDMAIN_UVWARN_L</div><div>MAKE_BASE=TRUE</div></div><div>42</div><div>98</div></div><div><div><div>8</div><div>_NC_BKLTBOOST_THROT_L</div><div>==</div><div>_NC_BKLTBOOST_THROT_L</div><div>MAKE_BASE=TRUE</div></div></div><div><div><div>8</div><div>_MPMU_VDDHI_UVWARN_L</div><div>==</div><div>_MPMU_VDDHI_UVWARN_L</div><div>MAKE_BASE=TRUE</div></div><div>42</div><div>98</div></div></div>							
C									C															
B									B															
A	<div>8</div> <div>7</div> <div>6</div> <div>5</div> <div>4</div> <div>3</div> <div>2</div> <div>1</div> <div><div><div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div><div>ALIASES SOC GPIO</div><div><div><div>DRAWING NUMBER</div><div>051-07793</div></div><div><div>REVISION</div><div>5.0.0</div></div><div><div>BRANCH</div><div>evt-1</div></div><div><div>PAGE</div><div>420 OF 999</div></div><div><div>SHEET</div><div>114 OF 128</div></div></div></div><div><div>NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED</div><div>BOM_COST_GROUP=NO CATEGORY</div></div></div></div></div></div>								A															


	8	7	6	5	4	3	2	1	
D	AP SPI (AWAKE)		AOP SPI (S2)		AOP I2S				D
	115 8 4	BOOT_CONFIG2 == BOOT_CONFIG2 MAKE_BASE=TRUE	4 8 115	NO ALIAS NEEDED FOR THIS GPIO	7	NC AOP I2S0 BCLK == NC AOP I2S0 BCLK MAKE_BASE=TRUE			
	115 8 4	BOOT_CONFIG1 == BOOT_CONFIG1 MAKE_BASE=TRUE	4 8 115	NO ALIAS NEEDED FOR THIS GPIO	7	NC AOP I2S0 DIN == NC AOP I2S0 DIN MAKE_BASE=TRUE			
	115 8 4	BOOT_CONFIG0 == BOOT_CONFIG0 MAKE_BASE=TRUE	4 8 115	NO ALIAS NEEDED FOR THIS GPIO	7	NC AOP I2S0 DOUT == NC AOP I2S0 DOUT MAKE_BASE=TRUE			
	NO ALIAS NEEDED FOR THIS GPIO		7	NC AOP I2S0 LRCLK == NC AOP I2S0 LRCLK MAKE_BASE=TRUE					
	NO ALIAS NEEDED FOR THIS GPIO		7	NC PDM DMIC CLK2 R == NC PDM DMIC CLK2 R MAKE_BASE=TRUE					
	NO ALIAS NEEDED FOR THIS GPIO		NO ALIAS NEEDED FOR THIS GPIO						
	NO ALIAS NEEDED FOR THIS GPIO		7	NC PDM DMIC DATA4 == NC PDM DMIC DATA4 MAKE_BASE=TRUE					
	NO ALIAS NEEDED FOR THIS GPIO		NO ALIAS NEEDED FOR THIS GPIO						
	NO ALIAS NEEDED FOR THIS GPIO		NO ALIAS NEEDED FOR THIS GPIO						
C	8	SPI TOUCHID 1V8 MISO == SPI TOUCHID 1V8 MISO MAKE_BASE=TRUE	88 97 113						C
	8	SPI TOUCHID 1V8 MOSI R == SPI TOUCHID 1V8 MOSI R MAKE_BASE=TRUE	11						
	8	SPI TOUCHID 1V8 CLK R == SPI TOUCHID 1V8 CLK R MAKE_BASE=TRUE	11						
	8	NC SOC SPI2 CS L == NC SOC SPI2 CS L MAKE_BASE=TRUE							
	AP SPI 3 ALIASES MOVED TO FORM FACTOR SPECIFIC PAGE								
	AP SPI 3 ALIASES MOVED TO FORM FACTOR SPECIFIC PAGE								
	AP SPI 3 ALIASES MOVED TO FORM FACTOR SPECIFIC PAGE								
	AP SPI 3 ALIASES MOVED TO FORM FACTOR SPECIFIC PAGE								
	NO ALIAS NEEDED FOR THIS GPIO								
	NO ALIAS NEEDED FOR THIS GPIO								
B	8	NC SOC AP SPI5 MISO == NC SOC AP SPI5 MISO MAKE_BASE=TRUE						B	
	8	NC SOC AP SPI5 MOSI == NC SOC AP SPI5 MOSI MAKE_BASE=TRUE							
	8	NC SOC AP SPI5 SCLK == NC SOC AP SPI5 SCLK MAKE_BASE=TRUE							
	8	NC SOC AP SPI5 CS L == NC SOC AP SPI5 CS L MAKE_BASE=TRUE							
	SEP SPI								
	8	NC SOC SSPI0 MISO == NC SOC SSPI0 MISO MAKE_BASE=TRUE							
	8	NC SOC SSPI0 MOSI == NC SOC SSPI0 MOSI MAKE_BASE=TRUE							
	8	NC SOC SSPI0 SCLK == NC SOC SSPI0 SCLK MAKE_BASE=TRUE							
	DISP SPI								
	9	I2C DISP BKLT SCL == I2C DISP BKLT SCL MAKE_BASE=TRUE	51						
A	9	I2C DISP BKLT SDA == I2C DISP BKLT SDA MAKE_BASE=TRUE	51						A
	9	NC SPI DISP BKLT CLK R == NC SPI DISP BKLT CLK R MAKE_BASE=TRUE							
	9	NC SPI DISP BKLT CS L == NC SPI DISP BKLT CS L MAKE_BASE=TRUE							
	MTP SPI								
	NO ALIAS NEEDED FOR THIS GPIO								
	NO ALIAS NEEDED FOR THIS GPIO								
	NO ALIAS NEEDED FOR THIS GPIO								
	NO ALIAS NEEDED FOR THIS GPIO								

PAGE TITLE			ALIASES SOC SPI, I2S		
 Apple Inc.		DRAWING NUMBER	051-07793	SIZE	
		REVISION	5.0.0	D	
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED		BRANCH		evt-1	
		PAGE		421 OF 999	
		SHEET		115 OF 128	



8		7		6		5		4		3		2		1	
D	AP SPMI														D
	<div><div>8</div><div>NC SOC AP SPMI0 SCLK</div><div>==</div><div>NC SOC AP SPMI0 SCLK</div><div>MAKE_BASE=TRUE</div></div>														
	<div><div>8</div><div>NC SOC AP SPMI0 SDATA</div><div>==</div><div>NC SOC AP SPMI0 SDATA</div><div>MAKE_BASE=TRUE</div></div>														
	DISP SPMI														
<div><div>9</div><div>NC SPMI DISP BKLT CLK R</div><div>==</div><div>NC SPMI DISP BKLT CLK R</div><div>MAKE_BASE=TRUE</div></div>															
<div><div>9</div><div>NC SPMI DISP BKLT DATA R</div><div>==</div><div>NC SPMI DISP BKLT DATA R</div><div>MAKE_BASE=TRUE</div></div>															
C	ISP SPMI														C
	<div><div>5</div><div>NC SOC ISP SPMI0 SCLK</div><div>==</div><div>NC SOC ISP SPMI0 SCLK</div><div>MAKE_BASE=TRUE</div></div>														
	<div><div>5</div><div>NC SOC ISP SPMI0 SDATA</div><div>==</div><div>NC SOC ISP SPMI0 SDATA</div><div>MAKE_BASE=TRUE</div></div>														
	<div><div>5</div><div>NC SOC ISP SPMI1 SCLK</div><div>==</div><div>NC SOC ISP SPMI1 SCLK</div><div>MAKE_BASE=TRUE</div></div>														
<div><div>5</div><div>NC SOC ISP SPMI1 SDATA</div><div>==</div><div>NC SOC ISP SPMI1 SDATA</div><div>MAKE_BASE=TRUE</div></div>															
B	AOP SPMI														B
	<div><div>7</div><div>NC SPMI AOP WLAN HEB CLK R</div><div>==</div><div>NC SPMI AOP WLAN HEB CLK R</div><div>MAKE_BASE=TRUE</div></div>														
	<div><div>7</div><div>NC SPMI AOP WLAN HEB DATA R</div><div>==</div><div>NC SPMI AOP WLAN HEB DATA R</div><div>MAKE_BASE=TRUE</div></div>														
	NO ALIAS NEEDED FOR THIS GPIO														
NO ALIAS NEEDED FOR THIS GPIO															
A	NUB SPMI														A
	NO ALIAS NEEDED FOR THIS GPIO														
	NO ALIAS NEEDED FOR THIS GPIO														
	NO ALIAS NEEDED FOR THIS GPIO														
B	ISP I2C														B
	NO ALIAS NEEDED FOR THIS GPIO														
	NO ALIAS NEEDED FOR THIS GPIO														
	<div><div>5</div><div>NC SOC ISP I2C1 SCL</div><div>==</div><div>NC SOC ISP I2C1 SCL</div><div>MAKE_BASE=TRUE</div></div>														
<div><div>5</div><div>NC SOC ISP I2C1 SDA</div><div>==</div><div>NC SOC ISP I2C1 SDA</div><div>MAKE_BASE=TRUE</div></div>															
A	AOP I2C														A
	NO ALIAS NEEDED FOR THIS GPIO														
	NO ALIAS NEEDED FOR THIS GPIO														
	<div><div>7</div><div>NC SOC AOP I2CM1 SCL</div><div>==</div><div>NC SOC AOP I2CM1 SCL</div><div>MAKE_BASE=TRUE</div></div>														
<div><div>7</div><div>NC SOC AOP I2CM1 SDA</div><div>==</div><div>NC SOC AOP I2CM1 SDA</div><div>MAKE_BASE=TRUE</div></div>															
<div><div>7</div><div>NC SOC AOP I2CM2 SCL</div><div>==</div><div>NC SOC AOP I2CM2 SCL</div><div>MAKE_BASE=TRUE</div></div>															
<div><div>7</div><div>NC SOC AOP I2CM2 SDA</div><div>==</div><div>NC SOC AOP I2CM2 SDA</div><div>MAKE_BASE=TRUE</div></div>															
BOM_COST_GROUP=NO CATEGORY															
8		7		6		5		4		3		2		1	

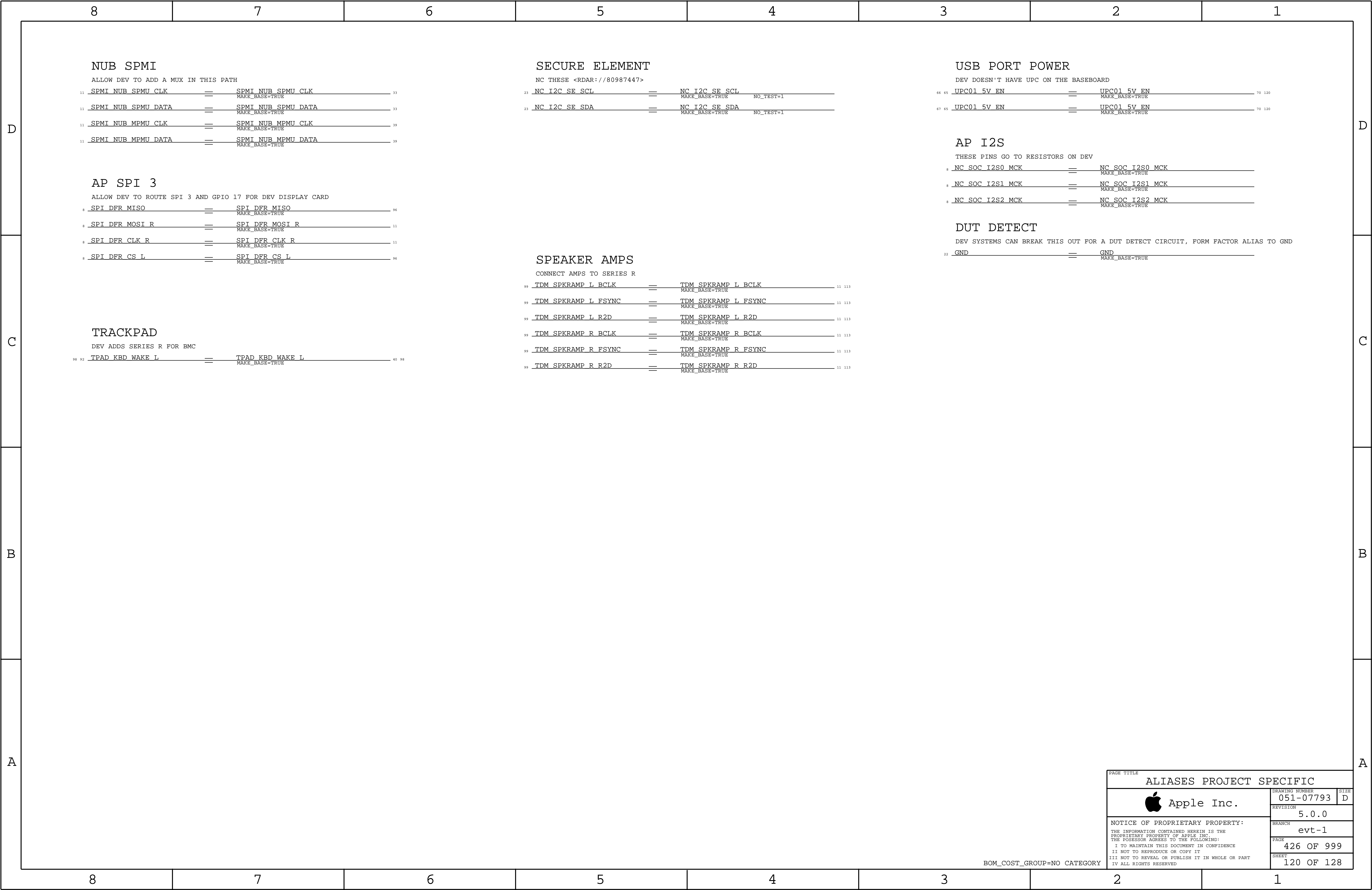
PAGE TITLE		
ALIASES SOC SPMI, I2C		
 Apple Inc.	DRAWING NUMBER	051-07793
	REVISION	5.0.0
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	BRANCH	evt-1
	PAGE	422 OF 999
	SHEET	116 OF 128

PAGE TITLE			ALIASES SOC SPMI, I2C		
 Apple Inc.		DRAWING NUMBER		SIZE	
		051-07793		D	
NOTICE OF PROPRIETARY PROPERTY:  THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED		REVISION		5.0.0	
		BRANCH		evt-1	
		PAGE		422 OF 999	
		SHEET		116 OF 128	

	8	7	6	5	4	3	2	1			
D	AP UART (AWAKE)		SWD AND JTAG		TEST AND DEBUG						
	NO ALIAS NEEDED FOR THIS GPIO				NO ALIAS NEEDED FOR THIS GPIO						
	NO ALIAS NEEDED FOR THIS GPIO				NO ALIAS NEEDED FOR THIS GPIO						
	7	NC SOC AP UART1 CTS L	==	NC SOC AP UART1 CTS L			6	TP SOC AMUX OUT	==	TP SOC AMUX OUT	102
				MAKE_BASE=TRUE						MAKE_BASE=TRUE	
	7	NC SOC AP UART1 RTS L	==	NC SOC AP UART1 RTS L			6	TP SOC PAD MTR ANA TESTP	==	TP SOC PAD MTR ANA TESTP	102
				MAKE_BASE=TRUE						MAKE_BASE=TRUE	
	7	NC SOC AP UART1 RXD	==	NC SOC AP UART1 RXD			6	TP SOC PAD MTR ANA TESTN	==	TP SOC PAD MTR ANA TESTN	102
				MAKE_BASE=TRUE						MAKE_BASE=TRUE	
	7	NC SOC AP UART1 TXD	==	NC SOC AP UART1 TXD			102 6	TP SOC PAD MTR VREFP	==	TP SOC PAD MTR VREFP	
C				MAKE_BASE=TRUE						MAKE_BASE=TRUE	
	7	NC UART WLAN D2R CTS L	==	NC UART WLAN D2R CTS L			102 6	TP SOC PAD MTR VREFN	==	TP SOC PAD MTR VREFN	
				MAKE_BASE=TRUE						MAKE_BASE=TRUE	
	7	NC UART WLAN R2D RTS L	==	NC UART WLAN R2D RTS L							
				MAKE_BASE=TRUE							
	7	NC UART WLAN D2R	==	NC UART WLAN D2R							
				MAKE_BASE=TRUE							
	7	NC UART WLAN R2D	==	NC UART WLAN R2D							
				MAKE_BASE=TRUE							
	7	NC SOC AP UART3 CTS L	==	NC SOC AP UART3 CTS L							
B				MAKE_BASE=TRUE							
	7	NC SOC AP UART3 RTS L	==	NC SOC AP UART3 RTS L							
				MAKE_BASE=TRUE							
	7	NC SOC AP UART3 RXD	==	NC SOC AP UART3 RXD							
				MAKE_BASE=TRUE							
	7	NC SOC AP UART3 TXD	==	NC SOC AP UART3 TXD							
				MAKE_BASE=TRUE							
	7	NC SOC AP UART4 RXD	==	NC SOC AP UART4 RXD							
				MAKE_BASE=TRUE							
	7	NC SOC AP UART4 TXD	==	NC SOC AP UART4 TXD							
A				MAKE_BASE=TRUE							
	7	UART TCON 1V8 D2R	==	UART TCON 1V8 D2R							78
				MAKE_BASE=TRUE							
	7	NC SOC AP UART6 R2D	==	NC SOC AP UART6 R2D							
				MAKE_BASE=TRUE							
	7	NC SOC AP UART7 D2R	==	NC SOC AP UART7 D2R							
				MAKE_BASE=TRUE							
	7	NC SOC AP UART7 R2D	==	NC SOC AP UART7 R2D							
				MAKE_BASE=TRUE							
			AOP UART								
B											
	7	NC SOC AOP UART0 RXD	==	NC SOC AOP UART0 RXD							
				MAKE_BASE=TRUE							
	7	NC SOC AOP UART0 TXD	==	NC SOC AOP UART0 TXD							
				MAKE_BASE=TRUE							
	7	NC SOC AOP UART1 RXD	==	NC SOC AOP UART1 RXD							
				MAKE_BASE=TRUE							
	7	NC SOC AOP UART1 TXD	==	NC SOC AOP UART1 TXD							
				MAKE_BASE=TRUE							
	7	NC SOC AOP UART2 RXD	==	NC SOC AOP UART2 RXD							
A				MAKE_BASE=TRUE							
	7	NC SOC AOP UART2 TXD	==	NC SOC AOP UART2 TXD							
				MAKE_BASE=TRUE							
			SMC UART								
B											
			NO ALIAS NEEDED FOR THIS GPIO								
A											
			NO ALIAS NEEDED FOR THIS GPIO								

8		7		6		5		4		3		2		1	
D	PCIE														
	NO ALIAS NEEDED FOR THIS GPIO														
	NO ALIAS NEEDED FOR THIS GPIO														
	NO ALIAS NEEDED FOR THIS GPIO														
	NO ALIAS NEEDED FOR THIS GPIO														
	NO ALIAS NEEDED FOR THIS GPIO														
	NO ALIAS NEEDED FOR THIS GPIO														
	NO ALIAS NEEDED FOR THIS GPIO														
	NO ALIAS NEEDED FOR THIS GPIO														
	NO ALIAS NEEDED FOR THIS GPIO														
C	STORAGE PCIE														
	NO ALIAS NEEDED FOR THIS GPIO														
	NO ALIAS NEEDED FOR THIS GPIO														
	NO ALIAS NEEDED FOR THIS GPIO														
	NO ALIAS NEEDED FOR THIS GPIO														
	NO ALIAS NEEDED FOR THIS GPIO														
	NO ALIAS NEEDED FOR THIS GPIO														
	NO ALIAS NEEDED FOR THIS GPIO														
	NO ALIAS NEEDED FOR THIS GPIO														
	NO ALIAS NEEDED FOR THIS GPIO														
B	LPDP TX														
	NO ALIAS NEEDED FOR THIS GPIO														
	NO ALIAS NEEDED FOR THIS GPIO														
	NO ALIAS NEEDED FOR THIS GPIO														
	NO ALIAS NEEDED FOR THIS GPIO														
	NO ALIAS NEEDED FOR THIS GPIO														
	NO ALIAS NEEDED FOR THIS GPIO														
	NO ALIAS NEEDED FOR THIS GPIO														
	NO ALIAS NEEDED FOR THIS GPIO														
	NO ALIAS NEEDED FOR THIS GPIO														
A	DISPLAY MISC														
	NO ALIAS NEEDED FOR THIS GPIO														
	NO ALIAS NEEDED FOR THIS GPIO														
	NO ALIAS NEEDED FOR THIS GPIO														
	NO ALIAS NEEDED FOR THIS GPIO														
	NO ALIAS NEEDED FOR THIS GPIO														
	NO ALIAS NEEDED FOR THIS GPIO														
	NO ALIAS NEEDED FOR THIS GPIO														
	NO ALIAS NEEDED FOR THIS GPIO														
	NO ALIAS NEEDED FOR THIS GPIO														
BOM_COST_GROUP=NO CATEGORY															
8		7		6		5		4		3		2		1	
<div><div><div><div><div></div><div>ALIASES SOC PCIE, LPDP TX</div></div><div><div><div><div><div></div><div>Apple Inc.</div></div><div><div>NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED</div></div></div><div><div><div>DRAWING NUMBER 051-07793</div><div>REVISION 5.0.0</div><div>BRANCH evt-1</div><div>PAGE 424 OF 999</div><div>SHEET 118 OF 128</div></div><div><div>SIZE D</div></div></div></div></div></div></div></div>															

		8		7		6		5		4		3		2		1	
		LPDP RX				MISC						SENSE SIGNALS					
		9 NC SOC LPDP RX D0 P == NC SOC LPDP RX D0 P MAKE_BASE=TRUE				9 DFR TOUCH CLK32K RESET L == DFR TOUCH CLK32K RESET L MAKE_BASE=TRUE 96						14 VSNS ABSMIN PCPU == VSNS ABSMIN PCPU MAKE_BASE=TRUE 57					
		9 NC SOC LPDP RX D0 N == NC SOC LPDP RX D0 N MAKE_BASE=TRUE				NO ALIAS NEEDED FOR THIS GPIO											
		9 NC SOC LPDP RX D1 P == NC SOC LPDP RX D1 P MAKE_BASE=TRUE				NO ALIAS NEEDED FOR THIS GPIO											
		9 NC SOC LPDP RX D1 N == NC SOC LPDP RX D1 N MAKE_BASE=TRUE				NO ALIAS NEEDED FOR THIS GPIO											
		9 NC SOC LPDP RX D2P == NC SOC LPDP RX D2P MAKE_BASE=TRUE				9 DFR DISP TE == DFR DISP TE MAKE_BASE=TRUE 96						20 GND == GND MAKE_BASE=TRUE					
		9 NC SOC LPDP RX D2N == NC SOC LPDP RX D2N MAKE_BASE=TRUE				NO ALIAS NEEDED FOR THIS GPIO						20 GND == GND MAKE_BASE=TRUE					
		9 NC SOC LPDP RX D3P == NC SOC LPDP RX D3P MAKE_BASE=TRUE				NO ALIAS NEEDED FOR THIS GPIO											
		9 NC SOC LPDP RX D3N == NC SOC LPDP RX D3N MAKE_BASE=TRUE				119 102 6 TP AON SLEEP1 RESET L == TP AON SLEEP1 RESET L MAKE_BASE=TRUE 6 102 119											
		9 NC SOC LPDP RX D4P == NC SOC LPDP RX D4P MAKE_BASE=TRUE				NO ALIAS NEEDED FOR THIS GPIO											
		9 NC SOC LPDP RX D4N == NC SOC LPDP RX D4N MAKE_BASE=TRUE				NO ALIAS NEEDED FOR THIS GPIO											
		9 NC SOC LPDP RX D5P == NC SOC LPDP RX D5P MAKE_BASE=TRUE				NO ALIAS NEEDED FOR THIS GPIO											
		9 NC SOC LPDP RX D5N == NC SOC LPDP RX D5N MAKE_BASE=TRUE				60 SMC FAN 0 PWM == SMC FAN 0 PWM MAKE_BASE=TRUE 7						5 NC SOC MIPI0C DPCLK == NC SOC MIPI0C DPCLK MAKE_BASE=TRUE					
		9 NC SOC LPDP RX D6P == NC SOC LPDP RX D6P MAKE_BASE=TRUE				60 SMC FAN 0 TACH == SMC FAN 0 TACH MAKE_BASE=TRUE 7						5 NC SOC MIPI0C DNCLK == NC SOC MIPI0C DNCLK MAKE_BASE=TRUE					
		9 NC SOC LPDP RX D6N == NC SOC LPDP RX D6N MAKE_BASE=TRUE				9 NC SOC SMC FPWM2 == NC SOC SMC FPWM2 MAKE_BASE=TRUE						5 NC SOC MIPI0C DPDATA<0> == NC SOC MIPI0C DPDATA<0> MAKE_BASE=TRUE					
		9 NC SOC LPDP RX D7P == NC SOC LPDP RX D7P MAKE_BASE=TRUE				9 NC SOC SMC FPWM3 == NC SOC SMC FPWM3 MAKE_BASE=TRUE						5 NC SOC MIPI0C DNDATA<0> == NC SOC MIPI0C DNDATA<0> MAKE_BASE=TRUE					
		9 NC SOC LPDP RX D7N == NC SOC LPDP RX D7N MAKE_BASE=TRUE				5 NC SOC SENSOR 0 CLK == NC SOC SENSOR 0 CLK MAKE_BASE=TRUE						5 NC SOC MIPI0C DPDATA<1> == NC SOC MIPI0C DPDATA<1> MAKE_BASE=TRUE					
		9 NC SOC LPDP RX D8P == NC SOC LPDP RX D8P MAKE_BASE=TRUE				5 NC SOC SENSOR 1 CLK == NC SOC SENSOR 1 CLK MAKE_BASE=TRUE						5 NC SOC MIPI0C DNDATA<1> == NC SOC MIPI0C DNDATA<1> MAKE_BASE=TRUE					
		9 NC SOC LPDP RX D8N == NC SOC LPDP RX D8N MAKE_BASE=TRUE				5 NC SOC SENSOR 2 CLK == NC SOC SENSOR 2 CLK MAKE_BASE=TRUE						5 MIPI FTCAM CLK P == MIPI FTCAM CLK P MAKE_BASE=TRUE 78					
		9 NC SOC LPDP RX D9P == NC SOC LPDP RX D9P MAKE_BASE=TRUE				5 NC SOC SENSOR 3 CLK == NC SOC SENSOR 3 CLK MAKE_BASE=TRUE						5 MIPI FTCAM CLK N == MIPI FTCAM CLK N MAKE_BASE=TRUE 78					
		9 NC SOC LPDP RX D9N == NC SOC LPDP RX D9N MAKE_BASE=TRUE										5 MIPI FTCAM DATA P<0> == MIPI FTCAM DATA P<0> MAKE_BASE=TRUE 78					
		9 NC SOC LPDP RX D10P == NC SOC LPDP RX D10P MAKE_BASE=TRUE										5 MIPI FTCAM DATA N<0> == MIPI FTCAM DATA N<0> MAKE_BASE=TRUE 78					
		9 NC SOC LPDP RX D10N == NC SOC LPDP RX D10N MAKE_BASE=TRUE										5 NC MIPI FTCAM DATA P<1> == NC MIPI FTCAM DATA P<1> MAKE_BASE=TRUE					
		9 NC SOC LPDP RX D11P == NC SOC LPDP RX D11P MAKE_BASE=TRUE										5 NC MIPI FTCAM DATA N<1> == NC MIPI FTCAM DATA N<1> MAKE_BASE=TRUE					
		9 NC SOC LPDP RX D11N == NC SOC LPDP RX D11N MAKE_BASE=TRUE				9 NC LPDP DP2HDMI HPD == NC LPDP DP2HDMI HPD MAKE_BASE=TRUE						5 MIPI DFR CLK P == MIPI DFR CLK P MAKE_BASE=TRUE 95					
		9 NC LPDP FTCAM AUX C == NC LPDP FTCAM AUX C MAKE_BASE=TRUE				9 NC DISP BKLT LSYNC == NC DISP BKLT LSYNC MAKE_BASE=TRUE						5 MIPI DFR CLK N == MIPI DFR CLK N MAKE_BASE=TRUE 95					
		9 NC SOC LPDP RX AUX D1 == NC SOC LPDP RX AUX D1 MAKE_BASE=TRUE				9 NC DISP BKLT FSYNC == NC DISP BKLT FSYNC MAKE_BASE=TRUE						5 MIPI DFR DATA P == MIPI DFR DATA P MAKE_BASE=TRUE 95					
		9 NC SOC LPDP RX AUX D2 == NC SOC LPDP RX AUX D2 MAKE_BASE=TRUE										5 MIPI DFR DATA N == MIPI DFR DATA N MAKE_BASE=TRUE 95					
		9 NC SOC LPDP RX AUX D3 == NC SOC LPDP RX AUX D3 MAKE_BASE=TRUE										5 NC SOC MIPI0C REXT == NC SOC MIPI0C REXT MAKE_BASE=TRUE					
		9 NC SOC LPDP RX AUX D4 == NC SOC LPDP RX AUX D4 MAKE_BASE=TRUE										5 SOC MIPI1C REXT == SOC MIPI1C REXT MAKE_BASE=TRUE 13					
		9 NC SOC LPDP RX AUX D5 == NC SOC LPDP RX AUX D5 MAKE_BASE=TRUE										5 SOC MIPID REXT == SOC MIPID REXT MAKE_BASE=TRUE 13					
		9 NC SOC LPDP RX AUX D6 == NC SOC LPDP RX AUX D6 MAKE_BASE=TRUE															
		9 NC SOC LPDP RX AUX D7 == NC SOC LPDP RX AUX D7 MAKE_BASE=TRUE															
		9 NC SOC LPDP RX AUX D8 == NC SOC LPDP RX AUX D8 MAKE_BASE=TRUE															
		9 NC SOC LPDP RX AUX D9 == NC SOC LPDP RX AUX D9 MAKE_BASE=TRUE															
		9 NC SOC LPDP RX AUX D10 == NC SOC LPDP RX AUX D10 MAKE_BASE=TRUE															
		9 NC SOC LPDP RX AUX D11 == NC SOC LPDP RX AUX D11 MAKE_BASE=TRUE															
		9 NC SOC LPDP RX0 RCAL POS == NC SOC LPDP RX0 RCAL POS MAKE_BASE=TRUE															
		9 NC SOC LPDP RX0 RCAL NEG == NC SOC LPDP RX0 RCAL NEG MAKE_BASE=TRUE															
		9 NC SOC LPDP RX1 RCAL POS == NC SOC LPDP RX1 RCAL POS MAKE_BASE=TRUE															
		9 NC SOC LPDP RX1 RCAL NEG == NC SOC LPDP RX1 RCAL NEG MAKE_BASE=TRUE															



SECURE ELEMENT

NC THESE <RDAR://80987447>

23

NC\_I2C\_SE\_SCL

==

NC\_I2C\_SE\_SCL

NO\_TEST=1

MAKE\_BASE=TRUE

23

NC\_I2C\_SE\_SDA

==

NC\_I2C\_SE\_SDA

NO\_TEST=1

MAKE\_BASE=TRUE

SPEAKER AMPS

CONNECT AMPS TO SERIES R

99

TDM\_SPKRAMP\_L\_BCLK

==

TDM\_SPKRAMP\_L\_BCLK

11

113

MAKE\_BASE=TRUE

99

TDM\_SPKRAMP\_L\_FSYNC

==

TDM\_SPKRAMP\_L\_FSYNC

11

113

MAKE\_BASE=TRUE

99

TDM\_SPKRAMP\_L\_R2D

==

TDM\_SPKRAMP\_L\_R2D

11

113

MAKE\_BASE=TRUE

99

TDM\_SPKRAMP\_R\_BCLK

==

TDM\_SPKRAMP\_R\_BCLK

11

113

MAKE\_BASE=TRUE

99

TDM\_SPKRAMP\_R\_FSYNC

==

TDM\_SPKRAMP\_R\_FSYNC

11

113

MAKE\_BASE=TRUE

99

TDM\_SPKRAMP\_R\_R2D

==

TDM\_SPKRAMP\_R\_R2D

11

113

MAKE\_BASE=TRUE

USB PORT POWER

DEV DOESN'T HAVE UPC ON THE BASEBOARD

66

65

UPC01\_5V\_EN

==

UPC01\_5V\_EN

70

120

MAKE\_BASE=TRUE

67

65

UPC01\_5V\_EN

==

UPC01\_5V\_EN

70

120

MAKE\_BASE=TRUE

AP I2S

THESE PINS GO TO RESISTORS ON DEV

8

NC\_SOC\_I2S0\_MCK

==

NC\_SOC\_I2S0\_MCK

MAKE\_BASE=TRUE

8

NC\_SOC\_I2S1\_MCK

==

NC\_SOC\_I2S1\_MCK

MAKE\_BASE=TRUE

8

NC\_SOC\_I2S2\_MCK

==

NC\_SOC\_I2S2\_MCK

MAKE\_BASE=TRUE

DUT DETECT

DEV SYSTEMS CAN BREAK THIS OUT FOR A DUT DETECT CIRCUIT, FORM FACTOR ALIAS TO GND

22

GND

==

GND

MAKE\_BASE=TRUE

8

7

6

5

4

3

2

1

8

7

6

5

4




3

2

1







D	C	B	A	8	7	6	5	4	3	2	1																																																																																																																																																																																																									
				POR BOMS																																																																																																																																																																																																																
				<table><tr><th>BOM NUMBER</th><th>BOM NAME</th><th>BOM OPTIONS</th></tr><tr><td>639-15874</td><td>PCBA,MLB1,8GB,KX-256GB,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:8G,X2487_NAND:256GB_KX</td></tr><tr><td>639-15875</td><td>PCBA,MLB1,16GB,KX-256GB,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:16G,X2487_NAND:256GB_KX</td></tr><tr><td>639-16171</td><td>PCBA,MLB1,24GB,KX-256GB,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:24G,X2487_NAND:256GB_KX</td></tr><tr><td>639-15876</td><td>PCBA,MLB1,8GB,HY-256GB,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:8G,X2487_NAND:256GB_HY</td></tr><tr><td>639-15877</td><td>PCBA,MLB1,16GB,HY-256GB,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:16G,X2487_NAND:256GB_HY</td></tr><tr><td>639-16172</td><td>PCBA,MLB1,24GB,HY-256GB,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:24G,X2487_NAND:256GB_HY</td></tr><tr><td>639-15878</td><td>PCBA,MLB1,8GB,KX-512GB,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:8G,X2487_NAND:512GB_KX</td></tr><tr><td>639-15879</td><td>PCBA,MLB1,16GB,KX-512GB,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:16G,X2487_NAND:512GB_KX</td></tr><tr><td>639-16173</td><td>PCBA,MLB1,24GB,KX-512GB,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:24G,X2487_NAND:512GB_KX</td></tr><tr><td>639-15880</td><td>PCBA,MLB1,8GB,WD-512GB,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:8G,X2487_NAND:512GB_WD</td></tr><tr><td>639-15881</td><td>PCBA,MLB1,16GB,WD-512GB,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:16G,X2487_NAND:512GB_WD</td></tr><tr><td>639-16174</td><td>PCBA,MLB1,24GB,WD-512GB,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:24G,X2487_NAND:512GB_WD</td></tr><tr><td>639-15882</td><td>PCBA,MLB1,8GB,HY-512GB,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:8G,X2487_NAND:512GB_HY</td></tr><tr><td>639-15883</td><td>PCBA,MLB1,16GB,HY-512GB,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:16G,X2487_NAND:512GB_HY</td></tr><tr><td>639-16175</td><td>PCBA,MLB1,24GB,HY-512GB,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:24G,X2487_NAND:512GB_HY</td></tr><tr><td>639-15884</td><td>PCBA,MLB1,8GB,KX-1TB,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:8G,X2487_NAND:1TB_KX</td></tr><tr><td>639-15885</td><td>PCBA,MLB1,16GB,KX-1TB,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:16G,X2487_NAND:1TB_KX</td></tr><tr><td>639-16176</td><td>PCBA,MLB1,24GB,KX-1TB,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:24G,X2487_NAND:1TB_KX</td></tr><tr><td>639-15886</td><td>PCBA,MLB1,8GB,WD-1TB,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:8G,X2487_NAND:1TB_WD</td></tr><tr><td>639-15887</td><td>PCBA,MLB1,16GB,WD-1TB,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:16G,X2487_NAND:1TB_WD</td></tr><tr><td>639-16177</td><td>PCBA,MLB1,24GB,WD-1TB,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:24G,X2487_NAND:1TB_WD</td></tr><tr><td>639-15888</td><td>PCBA,MLB1,8GB,KX-2TB,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:8G,X2487_NAND:2TB_KX</td></tr><tr><td>639-15889</td><td>PCBA,MLB1,16GB,KX-2TB,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:16G,X2487_NAND:2TB_KX</td></tr><tr><td>639-16178</td><td>PCBA,MLB1,24GB,KX-2TB,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:24G,X2487_NAND:2TB_KX</td></tr><tr><td>639-15890</td><td>PCBA,MLB1,8GB,WD-2TB,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:8G,X2487_NAND:2TB_WD</td></tr><tr><td>639-15891</td><td>PCBA,MLB1,16GB,WD-2TB,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:16G,X2487_NAND:2TB_WD</td></tr><tr><td>639-16179</td><td>PCBA,MLB1,24GB,WD-2TB,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:24G,X2487_NAND:2TB_WD</td></tr><tr><td>639-16796</td><td>PCBA,MLB1,8GB,HY-2TB,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:8G,X2487_NAND:2TB_HY</td></tr><tr><td>639-16797</td><td>PCBA,MLB1,16GB,HY-2TB,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:16G,X2487_NAND:2TB_HY</td></tr><tr><td>639-16798</td><td>PCBA,MLB1,24GB,HY-2TB,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:24G,X2487_NAND:2TB_HY</td></tr><tr><td colspan="11">DEV BOMS</td></tr><tr><td colspan="11"><table><tr><th>BOM NUMBER</th><th>BOM NAME</th><th>BOM OPTIONS</th></tr><tr><td>939-12095</td><td>PCBA,DEV,NO-CPU,NO-SSD,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:OFF,X2487_NAND:OFF</td></tr><tr><td>939-12096</td><td>PCBA,DEV,MLB1,8GB,NO-SSD,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:8G,X2487_NAND:OFF</td></tr><tr><td>939-12097</td><td>PCBA,DEV,MLB1,16GB,NO-SSD,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:16G,X2487_NAND:OFF</td></tr><tr><td>939-12624</td><td>PCBA,DEV,MLB1,24GB,NO-SSD,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:24G,X2487_NAND:OFF</td></tr><tr><td>939-12098</td><td>PCBA,DEV,NO-CPU,KX-256GB,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:OFF,X2487_NAND:256GB_KX</td></tr><tr><td>939-12099</td><td>PCBA,DEV,NO-CPU,WD-2TB,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:OFF,X2487_NAND:2TB_WD</td></tr><tr><td>939-12100</td><td>PCBA,DEV,INT-CPU,INT-SSD,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:INT,X2487_NAND:INT</td></tr><tr><td>939-12101</td><td>PCBA,DEV,NO-CPU,INT-SSD,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:OFF,X2487_NAND:INT</td></tr><tr><td>939-12102</td><td>PCBA,DEV,INT-CPU,NO-SSD,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:INT,X2487_NAND:OFF</td></tr><tr><td>939-12103</td><td>PCBA,DEV,RF-TUNING,X2487</td><td>SCH,PCB,RF_CONN</td></tr></table></td></tr><tr><td colspan="11">BOM_COST_GROUP=NO CATEGORY</td></tr><tr><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr></table> <table><tr><td colspan="3">PAGE TITLE</td></tr><tr><td colspan="3">BOM VARIANT TABLES</td></tr><tr><td rowspan="2"> Apple Inc.</td><td>DRAWING NUMBER</td><td>SIZE</td></tr><tr><td>051-07793</td><td>D</td></tr><tr><td rowspan="2">NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED</td><td>REVISION</td><td></td></tr><tr><td>5.0.0</td><td></td></tr><tr><td rowspan="2"></td><td>BRANCH</td><td></td></tr><tr><td>evt-1</td><td></td></tr><tr><td rowspan="2"></td><td>PAGE</td><td></td></tr><tr><td>600 OF 999</td><td></td></tr><tr><td rowspan="2"></td><td>SHEET</td><td></td></tr><tr><td>122 OF 128</td><td></td></tr></table>											BOM NUMBER	BOM NAME	BOM OPTIONS	639-15874	PCBA,MLB1,8GB,KX-256GB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:8G,X2487_NAND:256GB_KX	639-15875	PCBA,MLB1,16GB,KX-256GB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:16G,X2487_NAND:256GB_KX	639-16171	PCBA,MLB1,24GB,KX-256GB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:24G,X2487_NAND:256GB_KX	639-15876	PCBA,MLB1,8GB,HY-256GB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:8G,X2487_NAND:256GB_HY	639-15877	PCBA,MLB1,16GB,HY-256GB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:16G,X2487_NAND:256GB_HY	639-16172	PCBA,MLB1,24GB,HY-256GB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:24G,X2487_NAND:256GB_HY	639-15878	PCBA,MLB1,8GB,KX-512GB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:8G,X2487_NAND:512GB_KX	639-15879	PCBA,MLB1,16GB,KX-512GB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:16G,X2487_NAND:512GB_KX	639-16173	PCBA,MLB1,24GB,KX-512GB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:24G,X2487_NAND:512GB_KX	639-15880	PCBA,MLB1,8GB,WD-512GB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:8G,X2487_NAND:512GB_WD	639-15881	PCBA,MLB1,16GB,WD-512GB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:16G,X2487_NAND:512GB_WD	639-16174	PCBA,MLB1,24GB,WD-512GB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:24G,X2487_NAND:512GB_WD	639-15882	PCBA,MLB1,8GB,HY-512GB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:8G,X2487_NAND:512GB_HY	639-15883	PCBA,MLB1,16GB,HY-512GB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:16G,X2487_NAND:512GB_HY	639-16175	PCBA,MLB1,24GB,HY-512GB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:24G,X2487_NAND:512GB_HY	639-15884	PCBA,MLB1,8GB,KX-1TB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:8G,X2487_NAND:1TB_KX	639-15885	PCBA,MLB1,16GB,KX-1TB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:16G,X2487_NAND:1TB_KX	639-16176	PCBA,MLB1,24GB,KX-1TB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:24G,X2487_NAND:1TB_KX	639-15886	PCBA,MLB1,8GB,WD-1TB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:8G,X2487_NAND:1TB_WD	639-15887	PCBA,MLB1,16GB,WD-1TB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:16G,X2487_NAND:1TB_WD	639-16177	PCBA,MLB1,24GB,WD-1TB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:24G,X2487_NAND:1TB_WD	639-15888	PCBA,MLB1,8GB,KX-2TB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:8G,X2487_NAND:2TB_KX	639-15889	PCBA,MLB1,16GB,KX-2TB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:16G,X2487_NAND:2TB_KX	639-16178	PCBA,MLB1,24GB,KX-2TB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:24G,X2487_NAND:2TB_KX	639-15890	PCBA,MLB1,8GB,WD-2TB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:8G,X2487_NAND:2TB_WD	639-15891	PCBA,MLB1,16GB,WD-2TB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:16G,X2487_NAND:2TB_WD	639-16179	PCBA,MLB1,24GB,WD-2TB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:24G,X2487_NAND:2TB_WD	639-16796	PCBA,MLB1,8GB,HY-2TB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:8G,X2487_NAND:2TB_HY	639-16797	PCBA,MLB1,16GB,HY-2TB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:16G,X2487_NAND:2TB_HY	639-16798	PCBA,MLB1,24GB,HY-2TB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:24G,X2487_NAND:2TB_HY	DEV BOMS											<table><tr><th>BOM NUMBER</th><th>BOM NAME</th><th>BOM OPTIONS</th></tr><tr><td>939-12095</td><td>PCBA,DEV,NO-CPU,NO-SSD,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:OFF,X2487_NAND:OFF</td></tr><tr><td>939-12096</td><td>PCBA,DEV,MLB1,8GB,NO-SSD,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:8G,X2487_NAND:OFF</td></tr><tr><td>939-12097</td><td>PCBA,DEV,MLB1,16GB,NO-SSD,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:16G,X2487_NAND:OFF</td></tr><tr><td>939-12624</td><td>PCBA,DEV,MLB1,24GB,NO-SSD,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:24G,X2487_NAND:OFF</td></tr><tr><td>939-12098</td><td>PCBA,DEV,NO-CPU,KX-256GB,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:OFF,X2487_NAND:256GB_KX</td></tr><tr><td>939-12099</td><td>PCBA,DEV,NO-CPU,WD-2TB,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:OFF,X2487_NAND:2TB_WD</td></tr><tr><td>939-12100</td><td>PCBA,DEV,INT-CPU,INT-SSD,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:INT,X2487_NAND:INT</td></tr><tr><td>939-12101</td><td>PCBA,DEV,NO-CPU,INT-SSD,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:OFF,X2487_NAND:INT</td></tr><tr><td>939-12102</td><td>PCBA,DEV,INT-CPU,NO-SSD,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:INT,X2487_NAND:OFF</td></tr><tr><td>939-12103</td><td>PCBA,DEV,RF-TUNING,X2487</td><td>SCH,PCB,RF_CONN</td></tr></table>											BOM NUMBER	BOM NAME	BOM OPTIONS	939-12095	PCBA,DEV,NO-CPU,NO-SSD,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:OFF,X2487_NAND:OFF	939-12096	PCBA,DEV,MLB1,8GB,NO-SSD,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:8G,X2487_NAND:OFF	939-12097	PCBA,DEV,MLB1,16GB,NO-SSD,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:16G,X2487_NAND:OFF	939-12624	PCBA,DEV,MLB1,24GB,NO-SSD,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:24G,X2487_NAND:OFF	939-12098	PCBA,DEV,NO-CPU,KX-256GB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:OFF,X2487_NAND:256GB_KX	939-12099	PCBA,DEV,NO-CPU,WD-2TB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:OFF,X2487_NAND:2TB_WD	939-12100	PCBA,DEV,INT-CPU,INT-SSD,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:INT,X2487_NAND:INT	939-12101	PCBA,DEV,NO-CPU,INT-SSD,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:OFF,X2487_NAND:INT	939-12102	PCBA,DEV,INT-CPU,NO-SSD,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:INT,X2487_NAND:OFF	939-12103	PCBA,DEV,RF-TUNING,X2487	SCH,PCB,RF_CONN	BOM_COST_GROUP=NO CATEGORY											8	7	6	5	4	3	2	1	PAGE TITLE			BOM VARIANT TABLES			 Apple Inc.	DRAWING NUMBER	SIZE	051-07793	D	NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	REVISION		5.0.0			BRANCH		evt-1			PAGE		600 OF 999			SHEET		122 OF 128	
				BOM NUMBER	BOM NAME	BOM OPTIONS																																																																																																																																																																																																														
				639-15874	PCBA,MLB1,8GB,KX-256GB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:8G,X2487_NAND:256GB_KX																																																																																																																																																																																																														
				639-15875	PCBA,MLB1,16GB,KX-256GB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:16G,X2487_NAND:256GB_KX																																																																																																																																																																																																														
				639-16171	PCBA,MLB1,24GB,KX-256GB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:24G,X2487_NAND:256GB_KX																																																																																																																																																																																																														
				639-15876	PCBA,MLB1,8GB,HY-256GB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:8G,X2487_NAND:256GB_HY																																																																																																																																																																																																														
				639-15877	PCBA,MLB1,16GB,HY-256GB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:16G,X2487_NAND:256GB_HY																																																																																																																																																																																																														
				639-16172	PCBA,MLB1,24GB,HY-256GB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:24G,X2487_NAND:256GB_HY																																																																																																																																																																																																														
				639-15878	PCBA,MLB1,8GB,KX-512GB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:8G,X2487_NAND:512GB_KX																																																																																																																																																																																																														
				639-15879	PCBA,MLB1,16GB,KX-512GB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:16G,X2487_NAND:512GB_KX																																																																																																																																																																																																														
				639-16173	PCBA,MLB1,24GB,KX-512GB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:24G,X2487_NAND:512GB_KX																																																																																																																																																																																																														
				639-15880	PCBA,MLB1,8GB,WD-512GB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:8G,X2487_NAND:512GB_WD																																																																																																																																																																																																														
				639-15881	PCBA,MLB1,16GB,WD-512GB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:16G,X2487_NAND:512GB_WD																																																																																																																																																																																																														
				639-16174	PCBA,MLB1,24GB,WD-512GB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:24G,X2487_NAND:512GB_WD																																																																																																																																																																																																														
				639-15882	PCBA,MLB1,8GB,HY-512GB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:8G,X2487_NAND:512GB_HY																																																																																																																																																																																																														
639-15883	PCBA,MLB1,16GB,HY-512GB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:16G,X2487_NAND:512GB_HY																																																																																																																																																																																																																		
639-16175	PCBA,MLB1,24GB,HY-512GB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:24G,X2487_NAND:512GB_HY																																																																																																																																																																																																																		
639-15884	PCBA,MLB1,8GB,KX-1TB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:8G,X2487_NAND:1TB_KX																																																																																																																																																																																																																		
639-15885	PCBA,MLB1,16GB,KX-1TB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:16G,X2487_NAND:1TB_KX																																																																																																																																																																																																																		
639-16176	PCBA,MLB1,24GB,KX-1TB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:24G,X2487_NAND:1TB_KX																																																																																																																																																																																																																		
639-15886	PCBA,MLB1,8GB,WD-1TB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:8G,X2487_NAND:1TB_WD																																																																																																																																																																																																																		
639-15887	PCBA,MLB1,16GB,WD-1TB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:16G,X2487_NAND:1TB_WD																																																																																																																																																																																																																		
639-16177	PCBA,MLB1,24GB,WD-1TB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:24G,X2487_NAND:1TB_WD																																																																																																																																																																																																																		
639-15888	PCBA,MLB1,8GB,KX-2TB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:8G,X2487_NAND:2TB_KX																																																																																																																																																																																																																		
639-15889	PCBA,MLB1,16GB,KX-2TB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:16G,X2487_NAND:2TB_KX																																																																																																																																																																																																																		
639-16178	PCBA,MLB1,24GB,KX-2TB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:24G,X2487_NAND:2TB_KX																																																																																																																																																																																																																		
639-15890	PCBA,MLB1,8GB,WD-2TB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:8G,X2487_NAND:2TB_WD																																																																																																																																																																																																																		
639-15891	PCBA,MLB1,16GB,WD-2TB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:16G,X2487_NAND:2TB_WD																																																																																																																																																																																																																		
639-16179	PCBA,MLB1,24GB,WD-2TB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:24G,X2487_NAND:2TB_WD																																																																																																																																																																																																																		
639-16796	PCBA,MLB1,8GB,HY-2TB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:8G,X2487_NAND:2TB_HY																																																																																																																																																																																																																		
639-16797	PCBA,MLB1,16GB,HY-2TB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:16G,X2487_NAND:2TB_HY																																																																																																																																																																																																																		
639-16798	PCBA,MLB1,24GB,HY-2TB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:24G,X2487_NAND:2TB_HY																																																																																																																																																																																																																		
DEV BOMS																																																																																																																																																																																																																				
<table><tr><th>BOM NUMBER</th><th>BOM NAME</th><th>BOM OPTIONS</th></tr><tr><td>939-12095</td><td>PCBA,DEV,NO-CPU,NO-SSD,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:OFF,X2487_NAND:OFF</td></tr><tr><td>939-12096</td><td>PCBA,DEV,MLB1,8GB,NO-SSD,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:8G,X2487_NAND:OFF</td></tr><tr><td>939-12097</td><td>PCBA,DEV,MLB1,16GB,NO-SSD,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:16G,X2487_NAND:OFF</td></tr><tr><td>939-12624</td><td>PCBA,DEV,MLB1,24GB,NO-SSD,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:24G,X2487_NAND:OFF</td></tr><tr><td>939-12098</td><td>PCBA,DEV,NO-CPU,KX-256GB,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:OFF,X2487_NAND:256GB_KX</td></tr><tr><td>939-12099</td><td>PCBA,DEV,NO-CPU,WD-2TB,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:OFF,X2487_NAND:2TB_WD</td></tr><tr><td>939-12100</td><td>PCBA,DEV,INT-CPU,INT-SSD,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:INT,X2487_NAND:INT</td></tr><tr><td>939-12101</td><td>PCBA,DEV,NO-CPU,INT-SSD,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:OFF,X2487_NAND:INT</td></tr><tr><td>939-12102</td><td>PCBA,DEV,INT-CPU,NO-SSD,X2487</td><td>ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:INT,X2487_NAND:OFF</td></tr><tr><td>939-12103</td><td>PCBA,DEV,RF-TUNING,X2487</td><td>SCH,PCB,RF_CONN</td></tr></table>											BOM NUMBER	BOM NAME	BOM OPTIONS	939-12095	PCBA,DEV,NO-CPU,NO-SSD,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:OFF,X2487_NAND:OFF	939-12096	PCBA,DEV,MLB1,8GB,NO-SSD,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:8G,X2487_NAND:OFF	939-12097	PCBA,DEV,MLB1,16GB,NO-SSD,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:16G,X2487_NAND:OFF	939-12624	PCBA,DEV,MLB1,24GB,NO-SSD,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:24G,X2487_NAND:OFF	939-12098	PCBA,DEV,NO-CPU,KX-256GB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:OFF,X2487_NAND:256GB_KX	939-12099	PCBA,DEV,NO-CPU,WD-2TB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:OFF,X2487_NAND:2TB_WD	939-12100	PCBA,DEV,INT-CPU,INT-SSD,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:INT,X2487_NAND:INT	939-12101	PCBA,DEV,NO-CPU,INT-SSD,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:OFF,X2487_NAND:INT	939-12102	PCBA,DEV,INT-CPU,NO-SSD,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:INT,X2487_NAND:OFF	939-12103	PCBA,DEV,RF-TUNING,X2487	SCH,PCB,RF_CONN																																																																																																																																																																									
BOM NUMBER	BOM NAME	BOM OPTIONS																																																																																																																																																																																																																		
939-12095	PCBA,DEV,NO-CPU,NO-SSD,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:OFF,X2487_NAND:OFF																																																																																																																																																																																																																		
939-12096	PCBA,DEV,MLB1,8GB,NO-SSD,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:8G,X2487_NAND:OFF																																																																																																																																																																																																																		
939-12097	PCBA,DEV,MLB1,16GB,NO-SSD,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:16G,X2487_NAND:OFF																																																																																																																																																																																																																		
939-12624	PCBA,DEV,MLB1,24GB,NO-SSD,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:24G,X2487_NAND:OFF																																																																																																																																																																																																																		
939-12098	PCBA,DEV,NO-CPU,KX-256GB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:OFF,X2487_NAND:256GB_KX																																																																																																																																																																																																																		
939-12099	PCBA,DEV,NO-CPU,WD-2TB,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:OFF,X2487_NAND:2TB_WD																																																																																																																																																																																																																		
939-12100	PCBA,DEV,INT-CPU,INT-SSD,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:INT,X2487_NAND:INT																																																																																																																																																																																																																		
939-12101	PCBA,DEV,NO-CPU,INT-SSD,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:OFF,X2487_NAND:INT																																																																																																																																																																																																																		
939-12102	PCBA,DEV,INT-CPU,NO-SSD,X2487	ALT_CMN,ALTERNATE:PART,X2487_CMN_BOM,CPU:INT,X2487_NAND:OFF																																																																																																																																																																																																																		
939-12103	PCBA,DEV,RF-TUNING,X2487	SCH,PCB,RF_CONN																																																																																																																																																																																																																		
BOM_COST_GROUP=NO CATEGORY																																																																																																																																																																																																																				
8	7	6	5	4	3	2	1																																																																																																																																																																																																													
PAGE TITLE																																																																																																																																																																																																																				
BOM VARIANT TABLES																																																																																																																																																																																																																				
 Apple Inc.	DRAWING NUMBER	SIZE																																																																																																																																																																																																																		
	051-07793	D																																																																																																																																																																																																																		
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	REVISION																																																																																																																																																																																																																			
	5.0.0																																																																																																																																																																																																																			
	BRANCH																																																																																																																																																																																																																			
	evt-1																																																																																																																																																																																																																			
	PAGE																																																																																																																																																																																																																			
	600 OF 999																																																																																																																																																																																																																			
	SHEET																																																																																																																																																																																																																			
	122 OF 128																																																																																																																																																																																																																			

8		7		6		5		4		3		2		1			
SOC						SPMU						NAND0					
PART NUMBER	QTY	DESCRIPTION	REFERENCE DES	CRITICAL	BOM OPTION	PART NUMBER	QTY	DESCRIPTION	REFERENCE DES	CRITICAL	BOM OPTION	PART NUMBER	QTY	DESCRIPTION	REFERENCE DES	CRITICAL	BOM OPTION
939-11077	1	PCBA,CORBETT,X1711	U0600	CRITICAL	CPU:INT	998-23585	1	IC,PMU,SPMU,CSP196	U7700	CRITICAL	SPMU:DEV	998-18368	1	IC,NAND,85E MCP ROUTING STUDY,LGA110	UN000	CRITICAL	NAND0:85E_STUDY
998-23363	1	IC,DEV,STA,BGA	U0600	CRITICAL	CPU:DEV	998-24583	1	IC,PMU,SPMU,A0,OTP-JPC,CSP196	U7700	CRITICAL	SPMU:A0_JPC	335S00516	1	NAND,BICSST,128GB,85E,XX.X,512G,K,LGA110	UN000	CRITICAL	NAND0:128GB_KX
998-27901	1	SOC,STA B1+8G,1Y,10FSTP,HP,BX,H,M2565	U0600	CRITICAL	CPU:8G	998-25434	1	IC,PMU,SPMU,A0,OTP-JPD,CSP196	U7700	CRITICAL	SPMU:A0_JPD	335S00503	1	NAND,3DV6T,128GB,85E,XX.X,512G,H,LGA110	UN000	CRITICAL	NAND0:128GB_HY
998-27902	1	SOC,STA B1+16G,1Y,10FSTP,HP,BX,H,M2565	U0600	CRITICAL	CPU:16G	998-26198	1	IC,PMU,SPMU,A0,OTP-JPF,WLCSP196	U7700	CRITICAL	SPMU:A0_JPF	335S00518	1	NAND,BICSST,320GB,85E,XX.X,512G,K,LGA110	UN000	CRITICAL	NAND0:320GB_KX
998-27903	1	SOC,STA B1+24G,1Z,10FSTP,HP,BX,H,M2565	U0600	CRITICAL	CPU:24G	998-26683	1	IC,PMU,SPMU,A0,OTP-JPG,WLCSP196	U7700	CRITICAL	SPMU:A0_JPG	335S00517	1	NAND,BICSST,256GB,85E,XX.X,512G,K,LGA110	UN000	CRITICAL	NAND0:256GB_KX
HYNIX HIGH POWER SET AS PRIMARY AND ALL OTHER OPTIONS AS ALTERNATES TO REDUCE NUMBER OF CONFIG BOMS						998-26878	1	IC,PMU,SPMU,A0,OTP-JPH,WLCSP196	U7700	CRITICAL	SPMU:A0_JPH	335S00532	1	NAND,BICSST,320GB,85E,XX.X,512G,W,LGA110	UN000	CRITICAL	NAND0:320GB_WD
EUSB LS						998-27502	1	IC,PMU,SPMU,A0,OTP-JPI,WLCSP196	U7700	CRITICAL	SPMU:A0_JPI	335S00531	1	NAND,BICSST,256GB,85E,XX.X,512G,W,LGA110	UN000	CRITICAL	NAND0:256GB_WD
PART NUMBER	QTY	DESCRIPTION	REFERENCE DES	CRITICAL	BOM OPTION	998-27710	1	IC,PMU,SPMU,A0,OTP-JPJ,WLCSP196	U7700	CRITICAL	SPMU:A0_JPJ	335S00505	1	NAND,3DV6T,320GB,85E,XX.X,512G,H,LGA110	UN000	CRITICAL	NAND0:320GB_HY
338S00628	2	IC,PRT,CD2E226B,B0,LSB1,OTP-6,CSP25	UF600,UF650	CRITICAL	EUSB_LS:B0_LSB1_OTP6	998-27998	1	IC,PMU,SPMU,A1,OTP-JPK,WLCSP196	U7700	CRITICAL	SPMU:A1_JPK	335S00504	1	NAND,3DV6T,256GB,85E,XX.X,512G,H,LGA110	UN000	CRITICAL	NAND0:256GB_HY
LFKA						MPMU						NAND0					
PART NUMBER	QTY	DESCRIPTION	REFERENCE DES	CRITICAL	BOM OPTION	PART NUMBER	QTY	DESCRIPTION	REFERENCE DES	CRITICAL	BOM OPTION	PART NUMBER	QTY	DESCRIPTION	REFERENCE DES	CRITICAL	BOM OPTION
998-21959	2	IC,RTMR,A0,USB-C RETIMER,FCCSP154	UF000,UF100	CRITICAL	ATCRTMR:A0_DEV	998-23524	1	IC,PMU,MPMU,CSP420	U8100	CRITICAL	MPMU:DEV	335S00519	1	NAND,BICSST,512GB,85E,XX.X,512G,K,LGA110	UN000	CRITICAL	NAND0:512GB_KX
998-25504	2	IC,RTMR,B0,USB-C RETIMER,DEV,CSP154	UF000,UF100	CRITICAL	ATCRTMR:B0_DEV	998-24581	1	IC,PMU,MPMU,A0,OTP-JPC,CSP420	U8100	CRITICAL	MPMU:A0_JPC	335S00534	1	NAND,BICSST,576GB,85E,XX.X,512G,W,LGA110	UN000	CRITICAL	NAND0:576GB_WD
998-27476	2	IC,RTMR,B1,USB-C RETIMER,DEV,CSP154	UF000,UF100	CRITICAL	ATCRTMR:B1_DEV	998-25433	1	IC,PMU,MPMU,A0,OTP-JPD,CSP420	U8100	CRITICAL	MPMU:A0_JPD	335S00533	1	NAND,BICSST,512GB,85E,XX.X,512G,W,LGA110	UN000	CRITICAL	NAND0:512GB_WD
338S00888	2	IC,RTMR,B1,USB-C RETIMER,ATK,CSP154	UF000,UF100	CRITICAL	ATCRTMR:B1_POR_ATK	998-26197	1	IC,PMU,MPMU,A0,OTP-JPF,WLCSP420	U8100	CRITICAL	MPMU:A0_JPF	335S00521	1	NAND,BICSST,1TB,85E,XX.X,512G,K,LGA110	UN000	CRITICAL	NAND0:1TB_KX
338S00889	2	IC,RTMR,B1,USB-C RETIMER,SKC,CSP154	UF000,UF100	CRITICAL	ATCRTMR:B1_POR_SKC	998-26682	1	IC,PMU,MPMU,A0,OTP-JPG,WLCSP420	U8100	CRITICAL	MPMU:A0_JPG	335S00535	1	NAND,BICSST,1TB,85E,XX.X,512G,W,LGA110	UN000	CRITICAL	NAND0:1TB_WD
338S00890	2	IC,RTMR,B1,USB-C RETIMER,ASE,CSP154	UF000,UF100	CRITICAL	ATCRTMR:B1_POR_ASE	998-26877	1	IC,PMU,MPMU,A0,OTP-JPH,WLCSP420	U8100	CRITICAL	MPMU:A0_JPH	335S00508	1	NAND,3DV6T,1TB,85E,XX.X,512G,H,LGA110	UN000	CRITICAL	NAND0:1TB_HY
						998-27501	1	IC,PMU,MPMU,A0,OTP-JPI,WLCSP420	U8100	CRITICAL	MPMU:A0_JPI	939-08815	1	PCBA,BAND1PUR,X1711	UN000	CRITICAL	NAND0:INTERPOSER
						998-27709	1	IC,PMU,MPMU,A0,OTP-JPJ,WLCSP420	U8100	CRITICAL	MPMU:A0_JPJ	NAND1					
UPC 0, UPC 1						998-27997	1	IC,PMU,MPMU,A1,OTP-JPK,WLCSP420	U8100	CRITICAL	MPMU:A1_JPK	PART NUMBER	QTY	DESCRIPTION	REFERENCE DES	CRITICAL	BOM OPTION
PART NUMBER	QTY	DESCRIPTION	REFERENCE DES	CRITICAL	BOM OPTION	SE CERES						998-18368	1	IC,NAND,85E MCP ROUTING STUDY,LGA110	UN100	CRITICAL	NAND1:85E_STUDY
353S02158	2	IC,CD3217,ACE2,B2,USB PWR SW W/HV,BGA123	UF400,UF500	CRITICAL	USBCPC:LEGACY	PART NUMBER	QTY	DESCRIPTION	REFERENCE DES	CRITICAL	BOM OPTION	335S00516	1	NAND,BICSST,128GB,85E,XX.X,512G,K,LGA110	UN100	CRITICAL	NAND1:128GB_KX
353S02742	2	IC,CD3217,ACE2,B2,USB PWR SW W/HV,BGA123	UF400,UF500	CRITICAL	USBCPC:B2_ROM2	338S00630	1	IC,SIN210V,B1,CERES_PROD,VER=MU,WLCSP81	U5000	CRITICAL	SE:PROD_SW_MU	335S00503	1	NAND,3DV6T,128GB,85E,XX.X,512G,H,LGA110	UN100	CRITICAL	NAND1:128GB_HY
353S02993	2	IC,ACE2,B3,USB PWR SW W/HV,ROM3,BGA123	UF400,UF500	CRITICAL	USBCPC:B3_ROM3	338S00629	1	IC,SIN210V,B1,CERES_DEV,SW=LN,WLCSP81	U5000	CRITICAL	SE:DEV_SW_LN	335S00518	1	NAND,BICSST,320GB,85E,XX.X,512G,K,LGA110	UN100	CRITICAL	NAND1:320GB_KX
AMR ASSEMBLY						WIFI						335S00517	1	NAND,BICSST,256GB,85E,XX.X,512G,K,LGA110	UN100	CRITICAL	NAND1:256GB_KX
PART NUMBER	QTY	DESCRIPTION	REFERENCE DES	CRITICAL	BOM OPTION	PART NUMBER	QTY	DESCRIPTION	REFERENCE DES	CRITICAL	BOM OPTION	335S00532	1	NAND,BICSST,320GB,85E,XX.X,512G,W,LGA110	UN100	CRITICAL	NAND1:320GB_WD
677-23569	1	SUBASSY (T&R) PCBA,AMR INTERPOSER,X1799	JR200	CRITICAL	AMR:X1799	339S00763	1	MODULE,WLAN_BT,RASPUTIN,ES6.11,M,LGA549	UL000	CRITICAL	WIFI:M_ES6P11	335S00531	1	NAND,BICSST,256GB,85E,XX.X,512G,W,LGA110	UN100	CRITICAL	NAND1:256GB_WD
SPI ACE UPC0 PROGRAMMABLE						339S00940	1	MODULE,WLAN_BT,RASPUTIN,ES6.7,U,LGA549	UL000	CRITICAL	WIFI:U_ES6P7	335S00505	1	NAND,3DV6T,320GB,85E,XX.X,512G,H,LGA110	UN100	CRITICAL	NAND1:320GB_HY
PART NUMBER	QTY	DESCRIPTION	REFERENCE DES	CRITICAL	BOM OPTION	339S01028	1	MODULE,WIFI,RASPUTIN,ES6.9,U,LGA549	UL000	CRITICAL	WIFI:U_ES6P9	335S00504	1	NAND,3DV6T,256GB,85E,XX.X,512G,H,LGA110	UN100	CRITICAL	NAND1:256GB_HY
335S00133	1	IC,SPI SERIAL FLASH,8MBITS,3.0V,US0N8	UF260	CRITICAL	UPC01_ROM:BLANK_WINBOND	SOC ROM						335S00520	1	NAND,BICSST,576GB,85E,XX.X,512G,K,LGA110	UN100	CRITICAL	NAND1:576GB_KX
335S00537	1	IC,SPI SERIAL FLASH,8MBIT,2-3.6V,US0N8	UF260	CRITICAL	UPC01_ROM:BLANK_MACRONIX	PART NUMBER	QTY	DESCRIPTION	REFERENCE DES	CRITICAL	BOM OPTION	335S00519	1	NAND,BICSST,512GB,85E,XX.X,512G,K,LGA110	UN100	CRITICAL	NAND1:512GB_KX
335S00570	1	IC,FLASH,8MBIT,3V,D,2X3MM,US0N8	UF260	CRITICAL	UPC01_ROM:BLANK_DIALOG	998-22993	1	IC,FLASH,64MBIT,1.2V,QE=1,M,4X4MM,SON8	U1900	CRITICAL	SOC_ROM:DEV_WINBOND	335S00534	1	NAND,BICSST,576GB,85E,XX.X,512G,W,LGA110	UN100	CRITICAL	NAND1:576GB_WD
335S00571	1	IC,FLASH,8MBIT,3V,G,2X3MM,US0N8	UF260	CRITICAL	UPC01_ROM:BLANK_GIGADEVICE	998-22994	1	IC,FLASH,64MBIT,1.2V,QE=1,M,4X4MM,SON8	U1900	CRITICAL	SOC_ROM:DEV_MACRONIX	335S00533	1	NAND,BICSST,512GB,85E,XX.X,512G,W,LGA110	UN100	CRITICAL	NAND1:512GB_WD
341S01914	1	ROM,ACE-P01 (VXXX) PROTO-1,X2211	UF260	CRITICAL	UPC01_ROM:FW_X2211	335S00574	1	IC,FLASH,64MBIT,1.2V,QE=1,M,4X4MM,SON8	U1900	CRITICAL	SOC_ROM:WINBOND	335S00521	1	NAND,BICSST,1TB,85E,XX.X,512G,K,LGA110	UN100	CRITICAL	NAND1:1TB_KX
341S02020	1	ROM,ACE-P01 (VXXX) PROTO-1,X2487	UF260	CRITICAL	UPC01_ROM:FW_P0	335S00575	1	IC,FLASH,64MBIT,1.2V,QE=1,M,4X4MM,SON8	U1900	CRITICAL	SOC_ROM:MACRONIX	335S00535	1	NAND,BICSST,1TB,85E,XX.X,512G,W,LGA110	UN100	CRITICAL	NAND1:1TB_WD
341S02080	1	ROM,ACE-P01 (V3.006.0.4) NEW,P1,X2487	UF260	CRITICAL	UPC01_ROM:V3P006P0P4	RT13 ROM						335S00508	1	NAND,3DV6T,1TB,85E,XX.X,512G,H,LGA110	UN100	CRITICAL	NAND1:1TB_HY
341S02104	1	ROM,ACE-P01 (V3.010.0.4) FIX,P-1,X2487	UF260	CRITICAL	UPC01_ROM:V3P010P0P4	PART NUMBER	QTY	DESCRIPTION	REFERENCE DES	CRITICAL	BOM OPTION	939-08815	1	PCBA,BAND1PUR,X1711	UN100	CRITICAL	NAND1:INTERPOSER
RT13 DISCHARGE FETS																	
PART NUMBER	QTY	DESCRIPTION	REFERENCE DES	CRITICAL	BOM OPTION												
376S00002	3	NFET,DUAL,30V,0.4A,1.2 OHM,SOT563-6	QF910,QF940,QF960	CRITICAL													
CHANGE PRIMARY SO WE CAN SET DIFFERENT SETS OF ALTS FOR THE RT13VR DISCHARGE FETS VS THE OTHER FETS																	



D	8		7		6		5		4		3		2		1																																																																																																																																																																																																																																																																																									
	SYSTEM EE																																																																																																																																																																																																																																																																																																							
	<table><tr><th>PART NUMBER</th><th>ALTERNATE FOR PART NUMBER</th><th>BOM OPTION</th><th>REF DES</th><th>COMMENTS:</th></tr><tr><td>197S00318</td><td>197S00323</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://73672537&gt;</td></tr><tr><td>197S00335</td><td>197S00323</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://73672537&gt;</td></tr><tr><td>107S0276</td><td>107S00020</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://72344523&gt;</td></tr><tr><td>197S0590</td><td>197S0591</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74453590&gt;</td></tr><tr><td>197S0588</td><td>197S0591</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74453590&gt;</td></tr><tr><td>376S00292</td><td>376S1140</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74151331&gt;</td></tr><tr><td>740S00081</td><td>740S00053</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74151268&gt;</td></tr><tr><td>107S00365</td><td>107S00373</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74150055&gt;</td></tr><tr><td>311S00285</td><td>311S00279</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74149701&gt;</td></tr><tr><td>377S00210</td><td>377S00172</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74149325&gt;</td></tr><tr><td>311S00267</td><td>311S00244</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74206523&gt;</td></tr><tr><td>311S00269</td><td>311S00234</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74206479&gt;</td></tr><tr><td>138S00047</td><td>138S00073</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74205854&gt;</td></tr><tr><td>311S00268</td><td>311S00246</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74206431&gt;</td></tr><tr><td>377S00186</td><td>377S00060</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74205815&gt;</td></tr><tr><td>138S00049</td><td>138S0831</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74205775&gt;</td></tr><tr><td>155S00097</td><td>155S0664</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74205681&gt;</td></tr><tr><td>155S0823</td><td>155S0644</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74205619&gt;</td></tr><tr><td>155S0275</td><td>155S00188</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74205557&gt;</td></tr><tr><td>155S0660</td><td>155S0513</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74205441&gt;</td></tr><tr><td>138S00229</td><td>138S00107</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74204980&gt;</td></tr><tr><td>138S0715</td><td>138S0732</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74203774&gt;</td></tr><tr><td>138S00104</td><td>138S0978</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74203696&gt;</td></tr><tr><td>107S0150</td><td>107S00460</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74203571&gt;</td></tr><tr><td>107S00298</td><td>107S00460</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74203571&gt;</td></tr><tr><td>353S02402</td><td>353S1429</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74203527&gt;</td></tr><tr><td>353S02897</td><td>353S1429</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://76782934&gt;</td></tr><tr><td>377S00166</td><td>377S00160</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74203284&gt;</td></tr><tr><td>376S1080</td><td>376S0820</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74371447&gt;</td></tr><tr><td>132S00229</td><td>132S00010</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74371419&gt;</td></tr><tr><td>138S0852</td><td>138S0818</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74371364&gt;</td></tr><tr><td>138S00097</td><td>138S0750</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74371277&gt;</td></tr><tr><td>311S00156</td><td>311S00129</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74371188&gt;</td></tr><tr><td>376S00224</td><td>376S00282</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74371082&gt;</td></tr><tr><td>376S1128</td><td>376S00282</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74371082&gt;</td></tr><tr><td>353S00878</td><td>353S00599</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74371021&gt;</td></tr><tr><td>138S00332</td><td>138S00328</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74370983&gt;</td></tr><tr><td>138S00416</td><td>138S00328</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://75630410&gt;</td></tr><tr><td>371S00085</td><td>371S00325</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://84307925&gt;</td></tr><tr><td>107S00101</td><td>107S00005</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74370853&gt;</td></tr><tr><td>107S00102</td><td>107S00017</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74370421&gt;</td></tr><tr><td>311S00013</td><td>311S00332</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74370381&gt;</td></tr><tr><td>377S0155</td><td>377S0184</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74370211&gt;</td></tr><tr><td>353S02455</td><td>353S02112</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74150342&gt;</td></tr><tr><td>128S00058</td><td>128S00098</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74043733&gt;</td></tr><tr><td>128S00105</td><td>128S00098</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74043733&gt;</td></tr><tr><td>138S00385</td><td>138S00377</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74041033&gt;</td></tr><tr><td>311S00352</td><td>311S00353</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://80049017&gt;</td></tr><tr><td>376S00146</td><td>376S1061</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://80050247&gt;</td></tr><tr><td>107S00021</td><td>107S0284</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://79745917&gt;</td></tr><tr><td>377S00123</td><td>377S00031</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://79886515&gt;</td></tr><tr><td>131S00134</td><td>131S00041</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://79782812&gt;</td></tr><tr><td>107S00029</td><td>107S00087</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://79782537&gt;</td></tr><tr><td>107S00071</td><td>107S00053</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://79781604&gt;</td></tr><tr><td>377S00223</td><td>377S00040</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://76766041&gt;</td></tr></table>																PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:	197S00318	197S00323	ALT_CMN	ALL	<RDAR://73672537>	197S00335	197S00323	ALT_CMN	ALL	<RDAR://73672537>	107S0276	107S00020	ALT_CMN	ALL	<RDAR://72344523>	197S0590	197S0591	ALT_CMN	ALL	<RDAR://74453590>	197S0588	197S0591	ALT_CMN	ALL	<RDAR://74453590>	376S00292	376S1140	ALT_CMN	ALL	<RDAR://74151331>	740S00081	740S00053	ALT_CMN	ALL	<RDAR://74151268>	107S00365	107S00373	ALT_CMN	ALL	<RDAR://74150055>	311S00285	311S00279	ALT_CMN	ALL	<RDAR://74149701>	377S00210	377S00172	ALT_CMN	ALL	<RDAR://74149325>	311S00267	311S00244	ALT_CMN	ALL	<RDAR://74206523>	311S00269	311S00234	ALT_CMN	ALL	<RDAR://74206479>	138S00047	138S00073	ALT_CMN	ALL	<RDAR://74205854>	311S00268	311S00246	ALT_CMN	ALL	<RDAR://74206431>	377S00186	377S00060	ALT_CMN	ALL	<RDAR://74205815>	138S00049	138S0831	ALT_CMN	ALL	<RDAR://74205775>	155S00097	155S0664	ALT_CMN	ALL	<RDAR://74205681>	155S0823	155S0644	ALT_CMN	ALL	<RDAR://74205619>	155S0275	155S00188	ALT_CMN	ALL	<RDAR://74205557>	155S0660	155S0513	ALT_CMN	ALL	<RDAR://74205441>	138S00229	138S00107	ALT_CMN	ALL	<RDAR://74204980>	138S0715	138S0732	ALT_CMN	ALL	<RDAR://74203774>	138S00104	138S0978	ALT_CMN	ALL	<RDAR://74203696>	107S0150	107S00460	ALT_CMN	ALL	<RDAR://74203571>	107S00298	107S00460	ALT_CMN	ALL	<RDAR://74203571>	353S02402	353S1429	ALT_CMN	ALL	<RDAR://74203527>	353S02897	353S1429	ALT_CMN	ALL	<RDAR://76782934>	377S00166	377S00160	ALT_CMN	ALL	<RDAR://74203284>	376S1080	376S0820	ALT_CMN	ALL	<RDAR://74371447>	132S00229	132S00010	ALT_CMN	ALL	<RDAR://74371419>	138S0852	138S0818	ALT_CMN	ALL	<RDAR://74371364>	138S00097	138S0750	ALT_CMN	ALL	<RDAR://74371277>	311S00156	311S00129	ALT_CMN	ALL	<RDAR://74371188>	376S00224	376S00282	ALT_CMN	ALL	<RDAR://74371082>	376S1128	376S00282	ALT_CMN	ALL	<RDAR://74371082>	353S00878	353S00599	ALT_CMN	ALL	<RDAR://74371021>	138S00332	138S00328	ALT_CMN	ALL	<RDAR://74370983>	138S00416	138S00328	ALT_CMN	ALL	<RDAR://75630410>	371S00085	371S00325	ALT_CMN	ALL	<RDAR://84307925>	107S00101	107S00005	ALT_CMN	ALL	<RDAR://74370853>	107S00102	107S00017	ALT_CMN	ALL	<RDAR://74370421>	311S00013	311S00332	ALT_CMN	ALL	<RDAR://74370381>	377S0155	377S0184	ALT_CMN	ALL	<RDAR://74370211>	353S02455	353S02112	ALT_CMN	ALL	<RDAR://74150342>	128S00058	128S00098	ALT_CMN	ALL	<RDAR://74043733>	128S00105	128S00098	ALT_CMN	ALL	<RDAR://74043733>	138S00385	138S00377	ALT_CMN	ALL	<RDAR://74041033>	311S00352	311S00353	ALT_CMN	ALL	<RDAR://80049017>	376S00146	376S1061	ALT_CMN	ALL	<RDAR://80050247>	107S00021	107S0284	ALT_CMN	ALL	<RDAR://79745917>	377S00123	377S00031	ALT_CMN	ALL	<RDAR://79886515>	131S00134	131S00041	ALT_CMN	ALL	<RDAR://79782812>	107S00029	107S00087	ALT_CMN	ALL	<RDAR://79782537>	107S00071	107S00053	ALT_CMN	ALL	<RDAR://79781604>	377S00223	377S00040	ALT_CMN	ALL	<RDAR://76766041>
	PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:																																																																																																																																																																																																																																																																																																			
	197S00318	197S00323	ALT_CMN	ALL	<RDAR://73672537>																																																																																																																																																																																																																																																																																																			
	197S00335	197S00323	ALT_CMN	ALL	<RDAR://73672537>																																																																																																																																																																																																																																																																																																			
	107S0276	107S00020	ALT_CMN	ALL	<RDAR://72344523>																																																																																																																																																																																																																																																																																																			
	197S0590	197S0591	ALT_CMN	ALL	<RDAR://74453590>																																																																																																																																																																																																																																																																																																			
	197S0588	197S0591	ALT_CMN	ALL	<RDAR://74453590>																																																																																																																																																																																																																																																																																																			
	376S00292	376S1140	ALT_CMN	ALL	<RDAR://74151331>																																																																																																																																																																																																																																																																																																			
740S00081	740S00053	ALT_CMN	ALL	<RDAR://74151268>																																																																																																																																																																																																																																																																																																				
107S00365	107S00373	ALT_CMN	ALL	<RDAR://74150055>																																																																																																																																																																																																																																																																																																				
311S00285	311S00279	ALT_CMN	ALL	<RDAR://74149701>																																																																																																																																																																																																																																																																																																				
377S00210	377S00172	ALT_CMN	ALL	<RDAR://74149325>																																																																																																																																																																																																																																																																																																				
311S00267	311S00244	ALT_CMN	ALL	<RDAR://74206523>																																																																																																																																																																																																																																																																																																				
311S00269	311S00234	ALT_CMN	ALL	<RDAR://74206479>																																																																																																																																																																																																																																																																																																				
138S00047	138S00073	ALT_CMN	ALL	<RDAR://74205854>																																																																																																																																																																																																																																																																																																				
311S00268	311S00246	ALT_CMN	ALL	<RDAR://74206431>																																																																																																																																																																																																																																																																																																				
377S00186	377S00060	ALT_CMN	ALL	<RDAR://74205815>																																																																																																																																																																																																																																																																																																				
138S00049	138S0831	ALT_CMN	ALL	<RDAR://74205775>																																																																																																																																																																																																																																																																																																				
155S00097	155S0664	ALT_CMN	ALL	<RDAR://74205681>																																																																																																																																																																																																																																																																																																				
155S0823	155S0644	ALT_CMN	ALL	<RDAR://74205619>																																																																																																																																																																																																																																																																																																				
155S0275	155S00188	ALT_CMN	ALL	<RDAR://74205557>																																																																																																																																																																																																																																																																																																				
155S0660	155S0513	ALT_CMN	ALL	<RDAR://74205441>																																																																																																																																																																																																																																																																																																				
138S00229	138S00107	ALT_CMN	ALL	<RDAR://74204980>																																																																																																																																																																																																																																																																																																				
138S0715	138S0732	ALT_CMN	ALL	<RDAR://74203774>																																																																																																																																																																																																																																																																																																				
138S00104	138S0978	ALT_CMN	ALL	<RDAR://74203696>																																																																																																																																																																																																																																																																																																				
107S0150	107S00460	ALT_CMN	ALL	<RDAR://74203571>																																																																																																																																																																																																																																																																																																				
107S00298	107S00460	ALT_CMN	ALL	<RDAR://74203571>																																																																																																																																																																																																																																																																																																				
353S02402	353S1429	ALT_CMN	ALL	<RDAR://74203527>																																																																																																																																																																																																																																																																																																				
353S02897	353S1429	ALT_CMN	ALL	<RDAR://76782934>																																																																																																																																																																																																																																																																																																				
377S00166	377S00160	ALT_CMN	ALL	<RDAR://74203284>																																																																																																																																																																																																																																																																																																				
376S1080	376S0820	ALT_CMN	ALL	<RDAR://74371447>																																																																																																																																																																																																																																																																																																				
132S00229	132S00010	ALT_CMN	ALL	<RDAR://74371419>																																																																																																																																																																																																																																																																																																				
138S0852	138S0818	ALT_CMN	ALL	<RDAR://74371364>																																																																																																																																																																																																																																																																																																				
138S00097	138S0750	ALT_CMN	ALL	<RDAR://74371277>																																																																																																																																																																																																																																																																																																				
311S00156	311S00129	ALT_CMN	ALL	<RDAR://74371188>																																																																																																																																																																																																																																																																																																				
376S00224	376S00282	ALT_CMN	ALL	<RDAR://74371082>																																																																																																																																																																																																																																																																																																				
376S1128	376S00282	ALT_CMN	ALL	<RDAR://74371082>																																																																																																																																																																																																																																																																																																				
353S00878	353S00599	ALT_CMN	ALL	<RDAR://74371021>																																																																																																																																																																																																																																																																																																				
138S00332	138S00328	ALT_CMN	ALL	<RDAR://74370983>																																																																																																																																																																																																																																																																																																				
138S00416	138S00328	ALT_CMN	ALL	<RDAR://75630410>																																																																																																																																																																																																																																																																																																				
371S00085	371S00325	ALT_CMN	ALL	<RDAR://84307925>																																																																																																																																																																																																																																																																																																				
107S00101	107S00005	ALT_CMN	ALL	<RDAR://74370853>																																																																																																																																																																																																																																																																																																				
107S00102	107S00017	ALT_CMN	ALL	<RDAR://74370421>																																																																																																																																																																																																																																																																																																				
311S00013	311S00332	ALT_CMN	ALL	<RDAR://74370381>																																																																																																																																																																																																																																																																																																				
377S0155	377S0184	ALT_CMN	ALL	<RDAR://74370211>																																																																																																																																																																																																																																																																																																				
353S02455	353S02112	ALT_CMN	ALL	<RDAR://74150342>																																																																																																																																																																																																																																																																																																				
128S00058	128S00098	ALT_CMN	ALL	<RDAR://74043733>																																																																																																																																																																																																																																																																																																				
128S00105	128S00098	ALT_CMN	ALL	<RDAR://74043733>																																																																																																																																																																																																																																																																																																				
138S00385	138S00377	ALT_CMN	ALL	<RDAR://74041033>																																																																																																																																																																																																																																																																																																				
311S00352	311S00353	ALT_CMN	ALL	<RDAR://80049017>																																																																																																																																																																																																																																																																																																				
376S00146	376S1061	ALT_CMN	ALL	<RDAR://80050247>																																																																																																																																																																																																																																																																																																				
107S00021	107S0284	ALT_CMN	ALL	<RDAR://79745917>																																																																																																																																																																																																																																																																																																				
377S00123	377S00031	ALT_CMN	ALL	<RDAR://79886515>																																																																																																																																																																																																																																																																																																				
131S00134	131S00041	ALT_CMN	ALL	<RDAR://79782812>																																																																																																																																																																																																																																																																																																				
107S00029	107S00087	ALT_CMN	ALL	<RDAR://79782537>																																																																																																																																																																																																																																																																																																				
107S00071	107S00053	ALT_CMN	ALL	<RDAR://79781604>																																																																																																																																																																																																																																																																																																				
377S00223	377S00040	ALT_CMN	ALL	<RDAR://76766041>																																																																																																																																																																																																																																																																																																				
C	SYSTEM EE																																																																																																																																																																																																																																																																																																							
	<table><tr><th>PART NUMBER</th><th>ALTERNATE FOR PART NUMBER</th><th>BOM OPTION</th><th>REF DES</th><th>COMMENTS:</th></tr><tr><td>138S00330</td><td>138S00081</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74370168&gt;</td></tr><tr><td>311S00254</td><td>311S00245</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74370093&gt;</td></tr><tr><td>107S00094</td><td>107S00109</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74151209&gt;</td></tr><tr><td>376S00516</td><td>376S00544</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://85838031&gt;</td></tr><tr><td>376S1112</td><td>376S00544</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://85838031&gt;</td></tr><tr><td>371S00220</td><td>371S00307</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74443357&gt;</td></tr><tr><td>132S00176</td><td>132S0640</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74443234&gt;</td></tr><tr><td>155S00512</td><td>155S0897</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74452504&gt;</td></tr><tr><td>740S0118</td><td>740S00028</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74443626&gt;</td></tr><tr><td>740S0144</td><td>740S00028</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74443626&gt;</td></tr><tr><td>138S00148</td><td>138S00149</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74041065&gt;</td></tr><tr><td>138S00151</td><td>138S00149</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74041065&gt;</td></tr><tr><td>138S00150</td><td>138S00149</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74041065&gt;</td></tr><tr><td>107S00041</td><td>107S00039</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74456444&gt;</td></tr><tr><td>311S00335</td><td>311S00155</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://75317754&gt;</td></tr><tr><td>311S00360</td><td>311S00362</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://81722614&gt;</td></tr><tr><td>311S00361</td><td>311S00362</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://81722614&gt;</td></tr><tr><td>116S00014</td><td>116S00044</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://81986250&gt;</td></tr><tr><td>107S00479</td><td>107S00478</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://83504734&gt;</td></tr><tr><td>155S00007</td><td>155S0667</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://83600488&gt;</td></tr><tr><td>155S00029</td><td>155S0667</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://83600488&gt;</td></tr><tr><td>311S00375</td><td>311S00008</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://84685554&gt;</td></tr><tr><td>311S00310</td><td>311S00306</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://86492903&gt;</td></tr><tr><td>311S00078</td><td>311S00275</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://87351982&gt;</td></tr><tr><td>132S00064</td><td>132S0409</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://87353549&gt;</td></tr><tr><td>138S00181</td><td>138S0835</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://87353192&gt;</td></tr><tr><td>138S00291</td><td>138S0835</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://87353192&gt;</td></tr><tr><td>155S00648</td><td>155S00647</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://87353138&gt;</td></tr><tr><td>155S0694</td><td>155S0387</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://87352546&gt;</td></tr></table>																PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:	138S00330	138S00081	ALT_CMN	ALL	<RDAR://74370168>	311S00254	311S00245	ALT_CMN	ALL	<RDAR://74370093>	107S00094	107S00109	ALT_CMN	ALL	<RDAR://74151209>	376S00516	376S00544	ALT_CMN	ALL	<RDAR://85838031>	376S1112	376S00544	ALT_CMN	ALL	<RDAR://85838031>	371S00220	371S00307	ALT_CMN	ALL	<RDAR://74443357>	132S00176	132S0640	ALT_CMN	ALL	<RDAR://74443234>	155S00512	155S0897	ALT_CMN	ALL	<RDAR://74452504>	740S0118	740S00028	ALT_CMN	ALL	<RDAR://74443626>	740S0144	740S00028	ALT_CMN	ALL	<RDAR://74443626>	138S00148	138S00149	ALT_CMN	ALL	<RDAR://74041065>	138S00151	138S00149	ALT_CMN	ALL	<RDAR://74041065>	138S00150	138S00149	ALT_CMN	ALL	<RDAR://74041065>	107S00041	107S00039	ALT_CMN	ALL	<RDAR://74456444>	311S00335	311S00155	ALT_CMN	ALL	<RDAR://75317754>	311S00360	311S00362	ALT_CMN	ALL	<RDAR://81722614>	311S00361	311S00362	ALT_CMN	ALL	<RDAR://81722614>	116S00014	116S00044	ALT_CMN	ALL	<RDAR://81986250>	107S00479	107S00478	ALT_CMN	ALL	<RDAR://83504734>	155S00007	155S0667	ALT_CMN	ALL	<RDAR://83600488>	155S00029	155S0667	ALT_CMN	ALL	<RDAR://83600488>	311S00375	311S00008	ALT_CMN	ALL	<RDAR://84685554>	311S00310	311S00306	ALT_CMN	ALL	<RDAR://86492903>	311S00078	311S00275	ALT_CMN	ALL	<RDAR://87351982>	132S00064	132S0409	ALT_CMN	ALL	<RDAR://87353549>	138S00181	138S0835	ALT_CMN	ALL	<RDAR://87353192>	138S00291	138S0835	ALT_CMN	ALL	<RDAR://87353192>	155S00648	155S00647	ALT_CMN	ALL	<RDAR://87353138>	155S0694	155S0387	ALT_CMN	ALL	<RDAR://87352546>																																																																																																																																		
	PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:																																																																																																																																																																																																																																																																																																			
	138S00330	138S00081	ALT_CMN	ALL	<RDAR://74370168>																																																																																																																																																																																																																																																																																																			
	311S00254	311S00245	ALT_CMN	ALL	<RDAR://74370093>																																																																																																																																																																																																																																																																																																			
	107S00094	107S00109	ALT_CMN	ALL	<RDAR://74151209>																																																																																																																																																																																																																																																																																																			
	376S00516	376S00544	ALT_CMN	ALL	<RDAR://85838031>																																																																																																																																																																																																																																																																																																			
	376S1112	376S00544	ALT_CMN	ALL	<RDAR://85838031>																																																																																																																																																																																																																																																																																																			
	371S00220	371S00307	ALT_CMN	ALL	<RDAR://74443357>																																																																																																																																																																																																																																																																																																			
	132S00176	132S0640	ALT_CMN	ALL	<RDAR://74443234>																																																																																																																																																																																																																																																																																																			
155S00512	155S0897	ALT_CMN	ALL	<RDAR://74452504>																																																																																																																																																																																																																																																																																																				
740S0118	740S00028	ALT_CMN	ALL	<RDAR://74443626>																																																																																																																																																																																																																																																																																																				
740S0144	740S00028	ALT_CMN	ALL	<RDAR://74443626>																																																																																																																																																																																																																																																																																																				
138S00148	138S00149	ALT_CMN	ALL	<RDAR://74041065>																																																																																																																																																																																																																																																																																																				
138S00151	138S00149	ALT_CMN	ALL	<RDAR://74041065>																																																																																																																																																																																																																																																																																																				
138S00150	138S00149	ALT_CMN	ALL	<RDAR://74041065>																																																																																																																																																																																																																																																																																																				
107S00041	107S00039	ALT_CMN	ALL	<RDAR://74456444>																																																																																																																																																																																																																																																																																																				
311S00335	311S00155	ALT_CMN	ALL	<RDAR://75317754>																																																																																																																																																																																																																																																																																																				
311S00360	311S00362	ALT_CMN	ALL	<RDAR://81722614>																																																																																																																																																																																																																																																																																																				
311S00361	311S00362	ALT_CMN	ALL	<RDAR://81722614>																																																																																																																																																																																																																																																																																																				
116S00014	116S00044	ALT_CMN	ALL	<RDAR://81986250>																																																																																																																																																																																																																																																																																																				
107S00479	107S00478	ALT_CMN	ALL	<RDAR://83504734>																																																																																																																																																																																																																																																																																																				
155S00007	155S0667	ALT_CMN	ALL	<RDAR://83600488>																																																																																																																																																																																																																																																																																																				
155S00029	155S0667	ALT_CMN	ALL	<RDAR://83600488>																																																																																																																																																																																																																																																																																																				
311S00375	311S00008	ALT_CMN	ALL	<RDAR://84685554>																																																																																																																																																																																																																																																																																																				
311S00310	311S00306	ALT_CMN	ALL	<RDAR://86492903>																																																																																																																																																																																																																																																																																																				
311S00078	311S00275	ALT_CMN	ALL	<RDAR://87351982>																																																																																																																																																																																																																																																																																																				
132S00064	132S0409	ALT_CMN	ALL	<RDAR://87353549>																																																																																																																																																																																																																																																																																																				
138S00181	138S0835	ALT_CMN	ALL	<RDAR://87353192>																																																																																																																																																																																																																																																																																																				
138S00291	138S0835	ALT_CMN	ALL	<RDAR://87353192>																																																																																																																																																																																																																																																																																																				
155S00648	155S00647	ALT_CMN	ALL	<RDAR://87353138>																																																																																																																																																																																																																																																																																																				
155S0694	155S0387	ALT_CMN	ALL	<RDAR://87352546>																																																																																																																																																																																																																																																																																																				
B	DCDC																																																																																																																																																																																																																																																																																																							
	<table><tr><th>PART NUMBER</th><th>ALTERNATE FOR PART NUMBER</th><th>BOM OPTION</th><th>REF DES</th><th>COMMENTS:</th></tr><tr><td>152S00979</td><td>152S00874</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://71851492&gt;</td></tr><tr><td>152S00343</td><td>152S01325</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://78817158&gt;</td></tr><tr><td>138S0789</td><td>138S0941</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74151732&gt;</td></tr><tr><td>138S00164</td><td>138S00138</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74151613&gt;</td></tr><tr><td>138S00280</td><td>138S00138</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74151613&gt;</td></tr><tr><td>138S00139</td><td>138S00138</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74151613&gt;</td></tr><tr><td>107S00055</td><td>107S00090</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74151396&gt;</td></tr><tr><td>128S0364</td><td>128S0264</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74428092&gt;</td></tr><tr><td>376S00303</td><td>376S00012</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74423676&gt;</td></tr><tr><td>128S00069</td><td>128S00067</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74424059&gt;</td></tr><tr><td>128S00094</td><td>128S00067</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74424059&gt;</td></tr><tr><td>128S00087</td><td>128S00011</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74428451&gt;</td></tr><tr><td>128S00026</td><td>128S00011</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74428451&gt;</td></tr><tr><td>128S00031</td><td>128S00011</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74428451&gt;</td></tr><tr><td>128S00039</td><td>128S00038</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74424316&gt;</td></tr><tr><td>128S0302</td><td>128S00038</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74424316&gt;</td></tr><tr><td>152S00398</td><td>152S00204</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74426184&gt;</td></tr><tr><td>376S1147</td><td>376S00281</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74425029&gt;</td></tr><tr><td>152S00182</td><td>152S00703</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74425813&gt;</td></tr><tr><td>152S01317</td><td>152S01268</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74427202&gt;</td></tr><tr><td>152S01494</td><td>152S01263</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74426334&gt;</td></tr><tr><td>152S01378</td><td>152S01283</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74754401&gt;</td></tr><tr><td>152S00367</td><td>152S01248</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74751850&gt;</td></tr><tr><td>152S01452</td><td>152S01248</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74751850&gt;</td></tr><tr><td>152S00708</td><td>152S00265</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://74751673&gt;</td></tr><tr><td>152S01695</td><td>152S00198</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://80048367&gt;</td></tr><tr><td>138S00284</td><td>138S00136</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://79783536&gt;</td></tr><tr><td>138S00413</td><td>138S00410</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://79784459&gt;</td></tr><tr><td>138S00343</td><td>138S00329</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://79783647&gt;</td></tr><tr><td>152S00997</td><td>152S00476</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://80048586&gt;</td></tr><tr><td>138S1065</td><td>138S1058</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://81275265&gt;</td></tr><tr><td>376S00227</td><td>376S00203</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://83513398&gt;</td></tr><tr><td>376S00204</td><td>376S00203</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://83513398&gt;</td></tr><tr><td>376S00226</td><td>376S00203</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://83513398&gt;</td></tr><tr><td>376S00007</td><td>376S1179</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://84175400&gt;</td></tr><tr><td>376S00228</td><td>376S1179</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://84175400&gt;</td></tr><tr><td>152S00991</td><td>152S00984</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://84171872&gt;</td></tr></table>																PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:	152S00979	152S00874	ALT_CMN	ALL	<RDAR://71851492>	152S00343	152S01325	ALT_CMN	ALL	<RDAR://78817158>	138S0789	138S0941	ALT_CMN	ALL	<RDAR://74151732>	138S00164	138S00138	ALT_CMN	ALL	<RDAR://74151613>	138S00280	138S00138	ALT_CMN	ALL	<RDAR://74151613>	138S00139	138S00138	ALT_CMN	ALL	<RDAR://74151613>	107S00055	107S00090	ALT_CMN	ALL	<RDAR://74151396>	128S0364	128S0264	ALT_CMN	ALL	<RDAR://74428092>	376S00303	376S00012	ALT_CMN	ALL	<RDAR://74423676>	128S00069	128S00067	ALT_CMN	ALL	<RDAR://74424059>	128S00094	128S00067	ALT_CMN	ALL	<RDAR://74424059>	128S00087	128S00011	ALT_CMN	ALL	<RDAR://74428451>	128S00026	128S00011	ALT_CMN	ALL	<RDAR://74428451>	128S00031	128S00011	ALT_CMN	ALL	<RDAR://74428451>	128S00039	128S00038	ALT_CMN	ALL	<RDAR://74424316>	128S0302	128S00038	ALT_CMN	ALL	<RDAR://74424316>	152S00398	152S00204	ALT_CMN	ALL	<RDAR://74426184>	376S1147	376S00281	ALT_CMN	ALL	<RDAR://74425029>	152S00182	152S00703	ALT_CMN	ALL	<RDAR://74425813>	152S01317	152S01268	ALT_CMN	ALL	<RDAR://74427202>	152S01494	152S01263	ALT_CMN	ALL	<RDAR://74426334>	152S01378	152S01283	ALT_CMN	ALL	<RDAR://74754401>	152S00367	152S01248	ALT_CMN	ALL	<RDAR://74751850>	152S01452	152S01248	ALT_CMN	ALL	<RDAR://74751850>	152S00708	152S00265	ALT_CMN	ALL	<RDAR://74751673>	152S01695	152S00198	ALT_CMN	ALL	<RDAR://80048367>	138S00284	138S00136	ALT_CMN	ALL	<RDAR://79783536>	138S00413	138S00410	ALT_CMN	ALL	<RDAR://79784459>	138S00343	138S00329	ALT_CMN	ALL	<RDAR://79783647>	152S00997	152S00476	ALT_CMN	ALL	<RDAR://80048586>	138S1065	138S1058	ALT_CMN	ALL	<RDAR://81275265>	376S00227	376S00203	ALT_CMN	ALL	<RDAR://83513398>	376S00204	376S00203	ALT_CMN	ALL	<RDAR://83513398>	376S00226	376S00203	ALT_CMN	ALL	<RDAR://83513398>	376S00007	376S1179	ALT_CMN	ALL	<RDAR://84175400>	376S00228	376S1179	ALT_CMN	ALL	<RDAR://84175400>	152S00991	152S00984	ALT_CMN	ALL	<RDAR://84171872>																																																																																										
	PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:																																																																																																																																																																																																																																																																																																			
	152S00979	152S00874	ALT_CMN	ALL	<RDAR://71851492>																																																																																																																																																																																																																																																																																																			
	152S00343	152S01325	ALT_CMN	ALL	<RDAR://78817158>																																																																																																																																																																																																																																																																																																			
	138S0789	138S0941	ALT_CMN	ALL	<RDAR://74151732>																																																																																																																																																																																																																																																																																																			
	138S00164	138S00138	ALT_CMN	ALL	<RDAR://74151613>																																																																																																																																																																																																																																																																																																			
	138S00280	138S00138	ALT_CMN	ALL	<RDAR://74151613>																																																																																																																																																																																																																																																																																																			
	138S00139	138S00138	ALT_CMN	ALL	<RDAR://74151613>																																																																																																																																																																																																																																																																																																			
	107S00055	107S00090	ALT_CMN	ALL	<RDAR://74151396>																																																																																																																																																																																																																																																																																																			
128S0364	128S0264	ALT_CMN	ALL	<RDAR://74428092>																																																																																																																																																																																																																																																																																																				
376S00303	376S00012	ALT_CMN	ALL	<RDAR://74423676>																																																																																																																																																																																																																																																																																																				
128S00069	128S00067	ALT_CMN	ALL	<RDAR://74424059>																																																																																																																																																																																																																																																																																																				
128S00094	128S00067	ALT_CMN	ALL	<RDAR://74424059>																																																																																																																																																																																																																																																																																																				
128S00087	128S00011	ALT_CMN	ALL	<RDAR://74428451>																																																																																																																																																																																																																																																																																																				
128S00026	128S00011	ALT_CMN	ALL	<RDAR://74428451>																																																																																																																																																																																																																																																																																																				
128S00031	128S00011	ALT_CMN	ALL	<RDAR://74428451>																																																																																																																																																																																																																																																																																																				
128S00039	128S00038	ALT_CMN	ALL	<RDAR://74424316>																																																																																																																																																																																																																																																																																																				
128S0302	128S00038	ALT_CMN	ALL	<RDAR://74424316>																																																																																																																																																																																																																																																																																																				
152S00398	152S00204	ALT_CMN	ALL	<RDAR://74426184>																																																																																																																																																																																																																																																																																																				
376S1147	376S00281	ALT_CMN	ALL	<RDAR://74425029>																																																																																																																																																																																																																																																																																																				
152S00182	152S00703	ALT_CMN	ALL	<RDAR://74425813>																																																																																																																																																																																																																																																																																																				
152S01317	152S01268	ALT_CMN	ALL	<RDAR://74427202>																																																																																																																																																																																																																																																																																																				
152S01494	152S01263	ALT_CMN	ALL	<RDAR://74426334>																																																																																																																																																																																																																																																																																																				
152S01378	152S01283	ALT_CMN	ALL	<RDAR://74754401>																																																																																																																																																																																																																																																																																																				
152S00367	152S01248	ALT_CMN	ALL	<RDAR://74751850>																																																																																																																																																																																																																																																																																																				
152S01452	152S01248	ALT_CMN	ALL	<RDAR://74751850>																																																																																																																																																																																																																																																																																																				
152S00708	152S00265	ALT_CMN	ALL	<RDAR://74751673>																																																																																																																																																																																																																																																																																																				
152S01695	152S00198	ALT_CMN	ALL	<RDAR://80048367>																																																																																																																																																																																																																																																																																																				
138S00284	138S00136	ALT_CMN	ALL	<RDAR://79783536>																																																																																																																																																																																																																																																																																																				
138S00413	138S00410	ALT_CMN	ALL	<RDAR://79784459>																																																																																																																																																																																																																																																																																																				
138S00343	138S00329	ALT_CMN	ALL	<RDAR://79783647>																																																																																																																																																																																																																																																																																																				
152S00997	152S00476	ALT_CMN	ALL	<RDAR://80048586>																																																																																																																																																																																																																																																																																																				
138S1065	138S1058	ALT_CMN	ALL	<RDAR://81275265>																																																																																																																																																																																																																																																																																																				
376S00227	376S00203	ALT_CMN	ALL	<RDAR://83513398>																																																																																																																																																																																																																																																																																																				
376S00204	376S00203	ALT_CMN	ALL	<RDAR://83513398>																																																																																																																																																																																																																																																																																																				
376S00226	376S00203	ALT_CMN	ALL	<RDAR://83513398>																																																																																																																																																																																																																																																																																																				
376S00007	376S1179	ALT_CMN	ALL	<RDAR://84175400>																																																																																																																																																																																																																																																																																																				
376S00228	376S1179	ALT_CMN	ALL	<RDAR://84175400>																																																																																																																																																																																																																																																																																																				
152S00991	152S00984	ALT_CMN	ALL	<RDAR://84171872>																																																																																																																																																																																																																																																																																																				
A	RT13																																																																																																																																																																																																																																																																																																							
	<table><tr><th>PART NUMBER</th><th>ALTERNATE FOR PART NUMBER</th><th>BOM OPTION</th><th>REF DES</th><th>COMMENTS:</th></tr><tr><td>338S00889</td><td>338S00888</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://87743800&gt;</td></tr><tr><td>338S00890</td><td>338S00888</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://87743800&gt;</td></tr></table>																PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:	338S00889	338S00888	ALT_CMN	ALL	<RDAR://87743800>	338S00890	338S00888	ALT_CMN	ALL	<RDAR://87743800>																																																																																																																																																																																																																																																																									
	PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:																																																																																																																																																																																																																																																																																																			
	338S00889	338S00888	ALT_CMN	ALL	<RDAR://87743800>																																																																																																																																																																																																																																																																																																			
	338S00890	338S00888	ALT_CMN	ALL	<RDAR://87743800>																																																																																																																																																																																																																																																																																																			
	RT13 ROM ALTS																																																																																																																																																																																																																																																																																																							
	<table><tr><th>PART NUMBER</th><th>ALTERNATE FOR PART NUMBER</th><th>BOM OPTION</th><th>REF DES</th><th>COMMENTS:</th></tr><tr><td>335S00575</td><td>335S00574</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://77802684&gt;</td></tr></table>																PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:	335S00575	335S00574	ALT_CMN	ALL	<RDAR://77802684>																																																																																																																																																																																																																																																																														
	PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:																																																																																																																																																																																																																																																																																																			
	335S00575	335S00574	ALT_CMN	ALL	<RDAR://77802684>																																																																																																																																																																																																																																																																																																			
	RT13 CAN SUPPORT BOTH VENDORS, SOC CANNOT, IS SINGLE SOURCE 335S00575																																																																																																																																																																																																																																																																																																							
RT13 VR DISCHARGER FET ALTS																																																																																																																																																																																																																																																																																																								
<table><tr><th>PART NUMBER</th><th>ALTERNATE FOR PART NUMBER</th><th>BOM OPTION</th><th>REF DES</th><th>COMMENTS:</th></tr><tr><td>376S0855</td><td>376S00002</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://87561915&gt;</td></tr><tr><td>376S00078</td><td>376S00002</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://87561915&gt;</td></tr><tr><td>376S00588</td><td>376S00002</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://87561915&gt;</td></tr></table>																PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:	376S0855	376S00002	ALT_CMN	ALL	<RDAR://87561915>	376S00078	376S00002	ALT_CMN	ALL	<RDAR://87561915>	376S00588	376S00002	ALT_CMN	ALL	<RDAR://87561915>																																																																																																																																																																																																																																																																					
PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:																																																																																																																																																																																																																																																																																																				
376S0855	376S00002	ALT_CMN	ALL	<RDAR://87561915>																																																																																																																																																																																																																																																																																																				
376S00078	376S00002	ALT_CMN	ALL	<RDAR://87561915>																																																																																																																																																																																																																																																																																																				
376S00588	376S00002	ALT_CMN	ALL	<RDAR://87561915>																																																																																																																																																																																																																																																																																																				
RT13 VR DISCHARGER REQUIRES LOWER DCR																																																																																																																																																																																																																																																																																																								
NON RT13 VR DISCHARGER FET ALTS																																																																																																																																																																																																																																																																																																								
<table><tr><th>PART NUMBER</th><th>ALTERNATE FOR PART NUMBER</th><th>BOM OPTION</th><th>REF DES</th><th>COMMENTS:</th></tr><tr><td>376S00002</td><td>376S0855</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://87561676&gt;</td></tr><tr><td>376S00078</td><td>376S0855</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://87561676&gt;</td></tr><tr><td>376S00588</td><td>376S0855</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://87561676&gt;</td></tr><tr><td>376S00332</td><td>376S0855</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://87561676&gt;</td></tr><tr><td>376S00074</td><td>376S0855</td><td>ALT_CMN</td><td>ALL</td><td>&lt;RDAR://87561676&gt;</td></tr></table>																PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:	376S00002	376S0855	ALT_CMN	ALL	<RDAR://87561676>	376S00078	376S0855	ALT_CMN	ALL	<RDAR://87561676>	376S00588	376S0855	ALT_CMN	ALL	<RDAR://87561676>	376S00332	376S0855	ALT_CMN	ALL	<RDAR://87561676>	376S00074	376S0855	ALT_CMN	ALL	<RDAR://87561676>																																																																																																																																																																																																																																																											
PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:																																																																																																																																																																																																																																																																																																				
376S00002	376S0855	ALT_CMN	ALL	<RDAR://87561676>																																																																																																																																																																																																																																																																																																				
376S00078	376S0855	ALT_CMN	ALL	<RDAR://87561676>																																																																																																																																																																																																																																																																																																				
376S00588	376S0855	ALT_CMN	ALL	<RDAR://87561676>																																																																																																																																																																																																																																																																																																				
376S00332	376S0855	ALT_CMN	ALL	<RDAR://87561676>																																																																																																																																																																																																																																																																																																				
376S00074	376S0855	ALT_CMN	ALL	<RDAR://87561676>																																																																																																																																																																																																																																																																																																				
NON RT13 VR DISCHARGER CAN TOLERATE HIGHER DCR SO MORE ALTS																																																																																																																																																																																																																																																																																																								
BOM_COST_GROUP=NO CATEGORY																																																																																																																																																																																																																																																																																																								

	8	7	6	5	4	3	2	1																																																																																																																																																					
D	<div>REF_SOC_H14G<table><tr><td>PACK_OPTIONS TO INCLUDE IN NETLIST</td><td></td></tr><tr><td>LPDP_INT_RCAL</td><td></td></tr><tr><td>SOC_MIPI_ENABLE</td><td>LPDP INT IS USED FOR INTERNAL DISPLAY</td></tr><tr><td>PCIE_GPO</td><td>TURN ON MIPI CAPS &lt;RDAR:///71485720&gt;</td></tr><tr><td>OCELOT_BYPASS:10UF</td><td></td></tr></table></div> <div>REF_CHARGER_SUONA<table><tr><td>PACK_OPTIONS TO INCLUDE IN NETLIST</td><td></td></tr><tr><td>CHGR_60W</td><td></td></tr><tr><td>CHGR_TP_TOP</td><td>X2487'S CHARGER IS B379 WHICH IS 61W</td></tr><tr><td>CHGR_TP_BOT</td><td></td></tr></table></div> <div>REF_VR_ICEMAN<table><tr><td>PACK_OPTIONS TO INCLUDE IN NETLIST</td><td></td></tr><tr><td>3V8_AON_PBUS-B12</td><td>D2 CAP SIZE</td></tr><tr><td>3V8_AON_I2C-POR</td><td>SHORT I2C TO GND POR, TP FOR DEV &lt;RDAR:///64007819&gt;</td></tr><tr><td>3V8_INDUCTOR:2P4MM</td><td>USE TALLER INDUCTORS</td></tr><tr><td>3V8_AON_MLCC-LN</td><td>USE LOW NOISE CAPS</td></tr><tr><td>3V8_AON_LG_R:YES</td><td></td></tr></table></div> <div>PMU_STOWE_VALE_PORTABLES<table><tr><td>PACK_OPTIONS TO INCLUDE IN NETLIST</td><td></td></tr><tr><td>PMU_32K_XOSC</td><td></td></tr><tr><td>PMU_VDDMAIN_EXTRA_CAPS</td><td></td></tr><tr><td>BUCK5_LOCAL_CAPS</td><td></td></tr><tr><td>BUCK8_LOCAL_CAPS</td><td></td></tr><tr><td>BUCK14_LOCAL_CAPS</td><td></td></tr><tr><td>PMU_32K_WLBT</td><td>&lt;RDAR:///83497092&gt;</td></tr></table></div> <div>REF_VR_5V_TPS62130<table><tr><td>PACK_OPTIONS TO INCLUDE IN NETLIST</td><td></td></tr><tr><td>5VS2TPS_PBUS-D2</td><td></td></tr></table></div> <div>REF_VR_3V3_TPS62135<table><tr><td>PACK_OPTIONS TO INCLUDE IN NETLIST</td><td></td></tr><tr><td>3V3_S2_PBUS-D2</td><td></td></tr><tr><td>3V3_S2_10UF-COMBO</td><td></td></tr></table></div> <div>REF_IMU_SOVEREIGN<table><tr><td>PACK_OPTIONS TO INCLUDE IN NETLIST</td><td></td></tr><tr><td>REFIMU_VDD:LCFILT</td><td></td></tr><tr><td>REFIMU_TP:P5MM</td><td></td></tr><tr><td>REFIMU_TEST:NO</td><td></td></tr></table></div> <div>REF_USBC_LFKA_ACE2<table><tr><td>PACK_OPTIONS TO INCLUDE IN NETLIST</td><td></td></tr><tr><td>USBC_SPI_UPC0</td><td></td></tr><tr><td>USBC_DEBUG_UPC0</td><td></td></tr><tr><td>USBC_LAPTOP</td><td></td></tr><tr><td>PKGS:SMALL_PITCH</td><td></td></tr><tr><td>USBC_SPI_NO_2ND_ROM</td><td></td></tr><tr><td>USBC_SPI_UPC0_AND_NO_2ND_ROM</td><td></td></tr><tr><td>KEEP_SMALL_ARKANOID_CONN</td><td></td></tr><tr><td>ACE2_SS_CAP</td><td></td></tr><tr><td>ACTIVE_READY:LARGE_PITCH</td><td></td></tr><tr><td>ACE2_5V_INPUT_CAP</td><td></td></tr><tr><td>INV:DPW</td><td></td></tr></table></div> <div>REF_USBC_VR_LT8642_1<table><tr><td>PACK_OPTIONS TO INCLUDE IN NETLIST</td><td></td></tr><tr><td>5VUSBC01_PBUS-D2</td><td></td></tr><tr><td>5VUSBC01_THINSTNCL</td><td></td></tr><tr><td>5VUSBC01_AND:PP</td><td></td></tr></table></div>				PACK_OPTIONS TO INCLUDE IN NETLIST		LPDP_INT_RCAL		SOC_MIPI_ENABLE	LPDP INT IS USED FOR INTERNAL DISPLAY	PCIE_GPO	TURN ON MIPI CAPS <RDAR:///71485720>	OCELOT_BYPASS:10UF		PACK_OPTIONS TO INCLUDE IN NETLIST		CHGR_60W		CHGR_TP_TOP	X2487'S CHARGER IS B379 WHICH IS 61W	CHGR_TP_BOT		PACK_OPTIONS TO INCLUDE IN NETLIST		3V8_AON_PBUS-B12	D2 CAP SIZE	3V8_AON_I2C-POR	SHORT I2C TO GND POR, TP FOR DEV <RDAR:///64007819>	3V8_INDUCTOR:2P4MM	USE TALLER INDUCTORS	3V8_AON_MLCC-LN	USE LOW NOISE CAPS	3V8_AON_LG_R:YES		PACK_OPTIONS TO INCLUDE IN NETLIST		PMU_32K_XOSC		PMU_VDDMAIN_EXTRA_CAPS		BUCK5_LOCAL_CAPS		BUCK8_LOCAL_CAPS		BUCK14_LOCAL_CAPS		PMU_32K_WLBT	<RDAR:///83497092>	PACK_OPTIONS TO INCLUDE IN NETLIST		5VS2TPS_PBUS-D2		PACK_OPTIONS TO INCLUDE IN NETLIST		3V3_S2_PBUS-D2		3V3_S2_10UF-COMBO		PACK_OPTIONS TO INCLUDE IN NETLIST		REFIMU_VDD:LCFILT		REFIMU_TP:P5MM		REFIMU_TEST:NO		PACK_OPTIONS TO INCLUDE IN NETLIST		USBC_SPI_UPC0		USBC_DEBUG_UPC0		USBC_LAPTOP		PKGS:SMALL_PITCH		USBC_SPI_NO_2ND_ROM		USBC_SPI_UPC0_AND_NO_2ND_ROM		KEEP_SMALL_ARKANOID_CONN		ACE2_SS_CAP		ACTIVE_READY:LARGE_PITCH		ACE2_5V_INPUT_CAP		INV:DPW		PACK_OPTIONS TO INCLUDE IN NETLIST		5VUSBC01_PBUS-D2		5VUSBC01_THINSTNCL		5VUSBC01_AND:PP		<div>REF_WIRELESS_RASPUTIN (NOT SYNCED TO REF DESIGN)<table><tr><td>PACK_OPTIONS TO INCLUDE IN NETLIST</td><td></td></tr><tr><td>SUNWAY</td><td>TWO ANTENNA SYSTEM, SUNWAY CONNECTOR &lt;RDAR:///63744679&gt;</td></tr><tr><td>WLBT_DBG_CONN</td><td>ENABLE DEBUG CONNECTOR</td></tr></table></div> <div>REF_STORAGE_S5E<table><tr><td>PACK_OPTIONS TO INCLUDE IN NETLIST</td><td></td></tr><tr><td>SSD_4_3UF_0402THICK</td><td></td></tr></table></div> <div>REF_BLC_BEN<table><tr><td>PACK_OPTIONS TO INCLUDE IN NETLIST</td><td></td></tr><tr><td>BLC_FERRITE:NO</td><td>RETAIN PARITY WITH X1799 WHICH HAS NO FERRITE</td></tr><tr><td>BLC_BULK:1206</td><td>RETAIN PARITY WITH X1799 WHICH HAS 1206</td></tr><tr><td>BLC_IND:15UH</td><td>RETAIN PARITY WITH X1799 WHICH HAS 15UH</td></tr><tr><td>BLC_FET:NO</td><td>RETAIN PARITY WITH X1799 WHICH HAS BLC FET</td></tr><tr><td>BLC_CBULK:1206</td><td>RETAIN PARITY WITH X1799 WHICH HAS 1206 PACKAGES</td></tr><tr><td>BLC_FERRITE:NO</td><td>RETAIN PARITY WITH X1799 WHICH HAS NO FERRITE</td></tr><tr><td>BLC_RP8XX:0402</td><td></td></tr><tr><td>BLC_FUSE:YES</td><td></td></tr></table></div> <div>REF_SECDIS_AMR_H14X<table><tr><td>PACK_OPTIONS TO INCLUDE IN NETLIST</td><td></td></tr><tr><td>AMR_INTERPOSER_LEFT</td><td>ONLY LEFT AMR IS ON THE MLB</td></tr></table></div> <div>REF_SPKRAMP_TAS5770<table><tr><td>PACK_OPTIONS TO INCLUDE IN NETLIST</td><td></td></tr><tr><td>SPKRAMP_A</td><td>X2487 4 AMPS, 2 LEFT AND 2 RIGHT</td></tr><tr><td>SPKRAMP_B</td><td></td></tr><tr><td>SPKRAMP_D</td><td></td></tr><tr><td>SPKRAMP_E</td><td></td></tr><tr><td>SPKRAMP_ICC_GB</td><td>SAME ICC PACK OPTION AS X2211</td></tr></table></div> <div>TOUCHID<table><tr><td>PACK_OPTIONS TO INCLUDE IN NETLIST</td><td></td></tr></table></div>				PACK_OPTIONS TO INCLUDE IN NETLIST		SUNWAY	TWO ANTENNA SYSTEM, SUNWAY CONNECTOR <RDAR:///63744679>	WLBT_DBG_CONN	ENABLE DEBUG CONNECTOR	PACK_OPTIONS TO INCLUDE IN NETLIST		SSD_4_3UF_0402THICK		PACK_OPTIONS TO INCLUDE IN NETLIST		BLC_FERRITE:NO	RETAIN PARITY WITH X1799 WHICH HAS NO FERRITE	BLC_BULK:1206	RETAIN PARITY WITH X1799 WHICH HAS 1206	BLC_IND:15UH	RETAIN PARITY WITH X1799 WHICH HAS 15UH	BLC_FET:NO	RETAIN PARITY WITH X1799 WHICH HAS BLC FET	BLC_CBULK:1206	RETAIN PARITY WITH X1799 WHICH HAS 1206 PACKAGES	BLC_FERRITE:NO	RETAIN PARITY WITH X1799 WHICH HAS NO FERRITE	BLC_RP8XX:0402		BLC_FUSE:YES		PACK_OPTIONS TO INCLUDE IN NETLIST		AMR_INTERPOSER_LEFT	ONLY LEFT AMR IS ON THE MLB	PACK_OPTIONS TO INCLUDE IN NETLIST		SPKRAMP_A	X2487 4 AMPS, 2 LEFT AND 2 RIGHT	SPKRAMP_B		SPKRAMP_D		SPKRAMP_E		SPKRAMP_ICC_GB	SAME ICC PACK OPTION AS X2211	PACK_OPTIONS TO INCLUDE IN NETLIST										D
PACK_OPTIONS TO INCLUDE IN NETLIST																																																																																																																																																													
LPDP_INT_RCAL																																																																																																																																																													
SOC_MIPI_ENABLE	LPDP INT IS USED FOR INTERNAL DISPLAY																																																																																																																																																												
PCIE_GPO	TURN ON MIPI CAPS <RDAR:///71485720>																																																																																																																																																												
OCELOT_BYPASS:10UF																																																																																																																																																													
PACK_OPTIONS TO INCLUDE IN NETLIST																																																																																																																																																													
CHGR_60W																																																																																																																																																													
CHGR_TP_TOP	X2487'S CHARGER IS B379 WHICH IS 61W																																																																																																																																																												
CHGR_TP_BOT																																																																																																																																																													
PACK_OPTIONS TO INCLUDE IN NETLIST																																																																																																																																																													
3V8_AON_PBUS-B12	D2 CAP SIZE																																																																																																																																																												
3V8_AON_I2C-POR	SHORT I2C TO GND POR, TP FOR DEV <RDAR:///64007819>																																																																																																																																																												
3V8_INDUCTOR:2P4MM	USE TALLER INDUCTORS																																																																																																																																																												
3V8_AON_MLCC-LN	USE LOW NOISE CAPS																																																																																																																																																												
3V8_AON_LG_R:YES																																																																																																																																																													
PACK_OPTIONS TO INCLUDE IN NETLIST																																																																																																																																																													
PMU_32K_XOSC																																																																																																																																																													
PMU_VDDMAIN_EXTRA_CAPS																																																																																																																																																													
BUCK5_LOCAL_CAPS																																																																																																																																																													
BUCK8_LOCAL_CAPS																																																																																																																																																													
BUCK14_LOCAL_CAPS																																																																																																																																																													
PMU_32K_WLBT	<RDAR:///83497092>																																																																																																																																																												
PACK_OPTIONS TO INCLUDE IN NETLIST																																																																																																																																																													
5VS2TPS_PBUS-D2																																																																																																																																																													
PACK_OPTIONS TO INCLUDE IN NETLIST																																																																																																																																																													
3V3_S2_PBUS-D2																																																																																																																																																													
3V3_S2_10UF-COMBO																																																																																																																																																													
PACK_OPTIONS TO INCLUDE IN NETLIST																																																																																																																																																													
REFIMU_VDD:LCFILT																																																																																																																																																													
REFIMU_TP:P5MM																																																																																																																																																													
REFIMU_TEST:NO																																																																																																																																																													
PACK_OPTIONS TO INCLUDE IN NETLIST																																																																																																																																																													
USBC_SPI_UPC0																																																																																																																																																													
USBC_DEBUG_UPC0																																																																																																																																																													
USBC_LAPTOP																																																																																																																																																													
PKGS:SMALL_PITCH																																																																																																																																																													
USBC_SPI_NO_2ND_ROM																																																																																																																																																													
USBC_SPI_UPC0_AND_NO_2ND_ROM																																																																																																																																																													
KEEP_SMALL_ARKANOID_CONN																																																																																																																																																													
ACE2_SS_CAP																																																																																																																																																													
ACTIVE_READY:LARGE_PITCH																																																																																																																																																													
ACE2_5V_INPUT_CAP																																																																																																																																																													
INV:DPW																																																																																																																																																													
PACK_OPTIONS TO INCLUDE IN NETLIST																																																																																																																																																													
5VUSBC01_PBUS-D2																																																																																																																																																													
5VUSBC01_THINSTNCL																																																																																																																																																													
5VUSBC01_AND:PP																																																																																																																																																													
PACK_OPTIONS TO INCLUDE IN NETLIST																																																																																																																																																													
SUNWAY	TWO ANTENNA SYSTEM, SUNWAY CONNECTOR <RDAR:///63744679>																																																																																																																																																												
WLBT_DBG_CONN	ENABLE DEBUG CONNECTOR																																																																																																																																																												
PACK_OPTIONS TO INCLUDE IN NETLIST																																																																																																																																																													
SSD_4_3UF_0402THICK																																																																																																																																																													
PACK_OPTIONS TO INCLUDE IN NETLIST																																																																																																																																																													
BLC_FERRITE:NO	RETAIN PARITY WITH X1799 WHICH HAS NO FERRITE																																																																																																																																																												
BLC_BULK:1206	RETAIN PARITY WITH X1799 WHICH HAS 1206																																																																																																																																																												
BLC_IND:15UH	RETAIN PARITY WITH X1799 WHICH HAS 15UH																																																																																																																																																												
BLC_FET:NO	RETAIN PARITY WITH X1799 WHICH HAS BLC FET																																																																																																																																																												
BLC_CBULK:1206	RETAIN PARITY WITH X1799 WHICH HAS 1206 PACKAGES																																																																																																																																																												
BLC_FERRITE:NO	RETAIN PARITY WITH X1799 WHICH HAS NO FERRITE																																																																																																																																																												
BLC_RP8XX:0402																																																																																																																																																													
BLC_FUSE:YES																																																																																																																																																													
PACK_OPTIONS TO INCLUDE IN NETLIST																																																																																																																																																													
AMR_INTERPOSER_LEFT	ONLY LEFT AMR IS ON THE MLB																																																																																																																																																												
PACK_OPTIONS TO INCLUDE IN NETLIST																																																																																																																																																													
SPKRAMP_A	X2487 4 AMPS, 2 LEFT AND 2 RIGHT																																																																																																																																																												
SPKRAMP_B																																																																																																																																																													
SPKRAMP_D																																																																																																																																																													
SPKRAMP_E																																																																																																																																																													
SPKRAMP_ICC_GB	SAME ICC PACK OPTION AS X2211																																																																																																																																																												
PACK_OPTIONS TO INCLUDE IN NETLIST																																																																																																																																																													
C													C																																																																																																																																																
B													B																																																																																																																																																
A													A																																																																																																																																																
	8	7	6	5	4	3	2	1																																																																																																																																																					
								PAGE TITLE		PACK OPTIONS																																																																																																																																																			
								 Apple Inc.		DRAWING NUMBER		051-07793	SIZE	D																																																																																																																																															
										REVISION		5.0.0																																																																																																																																																	
								NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED		BRANCH		evt-1																																																																																																																																																	
										PAGE		700 OF 999																																																																																																																																																	
										SHEET		126 OF 128																																																																																																																																																	
								BOM_COST_GROUP=NO CATEGORY																																																																																																																																																					

PAGE TITLE			PACK OPTIONS		
 Apple Inc.		DRAWING NUMBER	051-07793	SIZE	D
		REVISION	5.0.0		
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED		BRANCH	evt-1		
		PAGE	700	OF	999
		SHEET	126	OF	128

BOM\_COST\_GROUP=NO CATEGORY



8		7		6		5		4		3		2		1			
D																D	
C																C	
B																B	
A																A	
8		7		6		5		4		3		2		1			

PIN DELAY MAPPING FILE	
REFERENCE DESIGNATOR	PIN DELAY CSV FILE NAME
U0600	2020_12_05_soc_ballmap_spec_ov19_pin_delay_v3.csv
UF000	2020_12_28_usbc_ballmap_spec_v0p5_pin_delay_v1_uf000_0p.csv
UF100	2020_12_28_usbc_ballmap_spec_v0p5_pin_delay_v1_uf100_0p.csv

<RDAR://71422226>


<RDAR://72706458>

<RDAR://72706458>

<

PIN DELAY MAPPING FILE	
REFERENCE DESIGNATOR	PIN DELAY CSV FILE NAME
U0600	2020_12_05_soc_ballmap_spec_v019_pin_delay_v3.csv
UF000	2020_12_28_umbc_ballmap_spec_v0p5_pin_delay_v1_uf000_0p.csv
UF100	2020_12_28_umbc_ballmap_spec_v0p5_pin_delay_v1_uf100_0p.csv

<RDAR://71422226>  
<RDAR://72706458>  
<RDAR://72706458>

PAGE TITLE		
PIN DELAYS		
 Apple Inc.	DRAWING NUMBER	051-07793
	REVISION	5.0.0
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	BRANCH	evt-1
	PAGE	701 OF 999
	SHEET	127 OF 128

BOM\_COST\_GROUP=NO CATEGORY

8		7		6		5		4		3		2		1	
D	SAME PAGE NETS WITH OFF-PAGE, SOC						I2C PULL UP WAIVERS						D		
	<div><div>BT</div>SOC REQUEST DFU1 L</div> <div><div>BT</div>SOC REQUEST DFU2 L</div> <div><div>BT</div>SOC KIS DFU SELECT</div> <div><div>BT</div>SOC EUSB VBUS DETECT</div>						<div><div>98 93 90</div><div>BT</div>CKPLUS_WAIVE=I2C_PULLUP I2C KBD_SCL</div> <div><div>98 93 90</div><div>BT</div>CKPLUS_WAIVE=I2C_PULLUP I2C KBD_SDA</div>							D	
C	SAME PAGE NETS WITH OFF-PAGE, REF AMR H14X														C
	<div><div>82</div><div>BT</div>AMR2 OR ND 1V8</div>														
B															B
A															A
8		7		6		5		4		3		2		1	

PAGE TITLE

CHECKPLUS SUPPORT

DRAWING NUMBER

051-07793

SIZE

D

REVISION

5.0.0

BRANCH

evt-1

PAGE

999 OF 999

SHEET

128 OF 128

NOTICE OF PROPRIETARY PROPERTY:

THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING:

I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE

II NOT TO REPRODUCE OR COPY IT


III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART

IV ALL RIGHTS RESERVED

BOM\_COST\_GROUP=NO CATEGORY

PAGE TITLE

CHECKPLUS SUPPORT

 Apple Inc.

NOTICE OF PROPRIETARY PROPERTY:  
THE INFORMATION CONTAINED HEREIN IS THE  
PROPRIETARY PROPERTY OF APPLE INC.  
THE POSSESSOR AGREES TO THE FOLLOWING:  
I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE  
II NOT TO REPRODUCE OR COPY IT  
III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART  
IV ALL RIGHTS RESERVED

DRAWING NUMBER  
051-07793

REVISION  
5.0.0

BRANCH  
evt-1

PAGE  
999 OF 999

SHEET  
128 OF 128

SIZE  
D

BOM\_COST\_GROUP=NO CATEGORY