

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

REV	ECN	DESCRIPTION OF REVISION	CK APPD	DATE
9	0008409760	ENGINEERING RELEASED		2017-04-05

X891/X893 MLB Top: EVT

LAST_MODIFICATION=Mon Apr 3 13:03:06 2017

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35	45	PEARL: B2B Romeo + Juliet	test_mlb	10/13/2016					
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37	47	AUDIO: CODEC (1/2)	test_mlb	10/13/2016					
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39	49	AUDIO: Speaker Amp Bottom		08/25/2015					
40	50	AUDIO: Speaker Amp Top		08/25/2015					
41	51	ARC: Driver	test_mlb	10/13/2016					
42	56	CG: Power Supplies - Touch & Display	test_mlb	10/13/2016					
43	57	CG: B2B Display	test_mlb	10/13/2016					
44	58	CG: B2B Orb & Touch		08/25/2015					
45	59	I/O: Overvoltage Cut-Off Circuit	sync	01/10/2017					

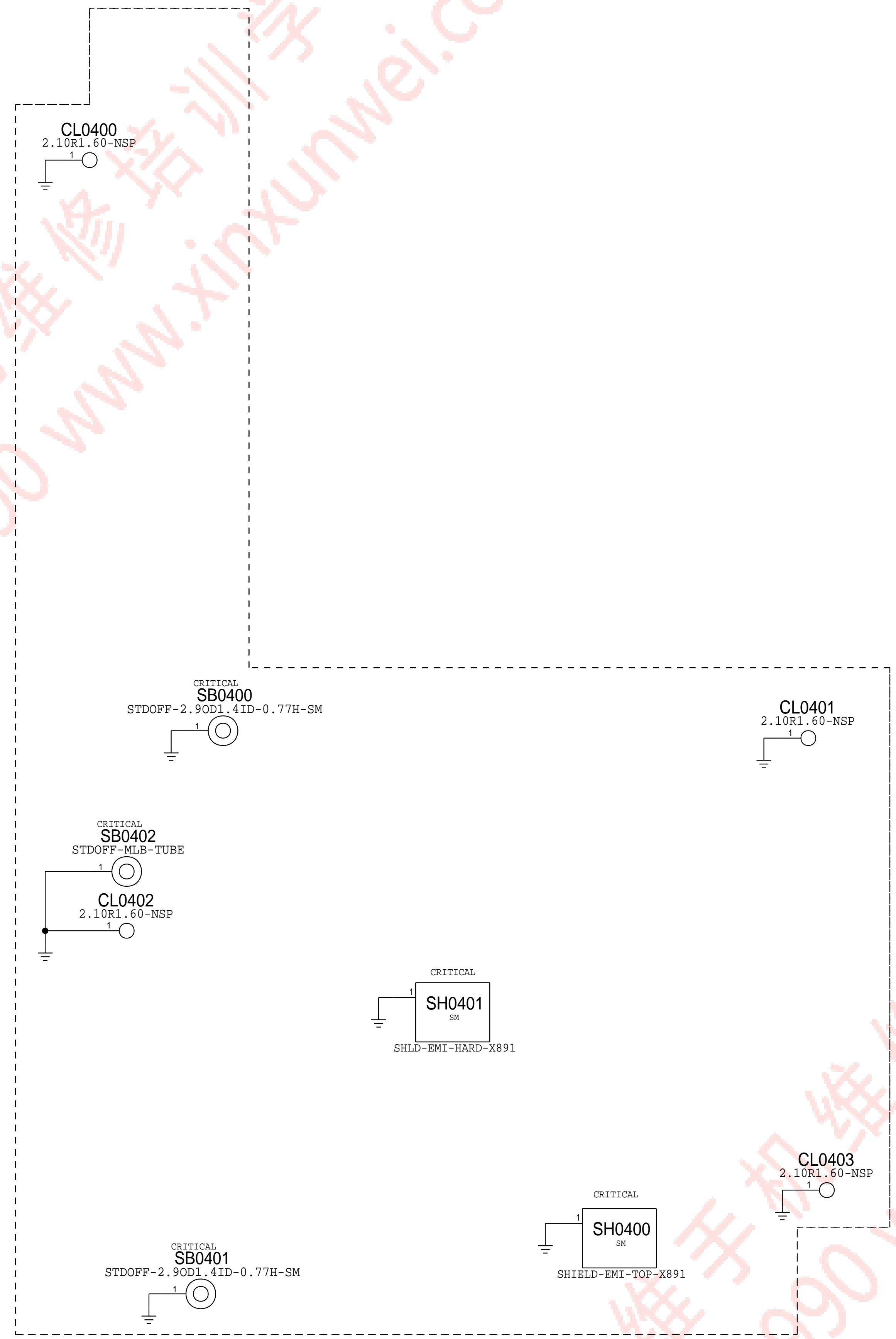
BOM:639-04583 (Ultimate)
 BOM:639-03409 (Extreme)
 MCO:056-04077

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
051-02221	1	SCH_MLB_TOP_X891	SCH	NO	COMMON
820-00863	1	PCB_MLB_TOP_X891	PCB	NO	COMMON

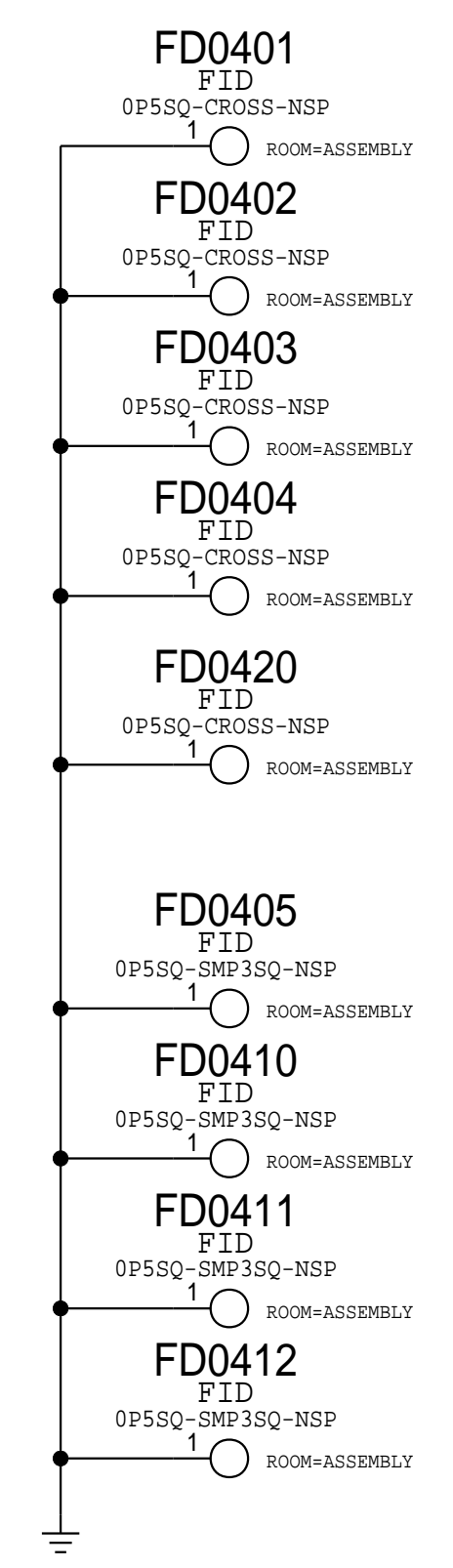


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FIDUCIALS

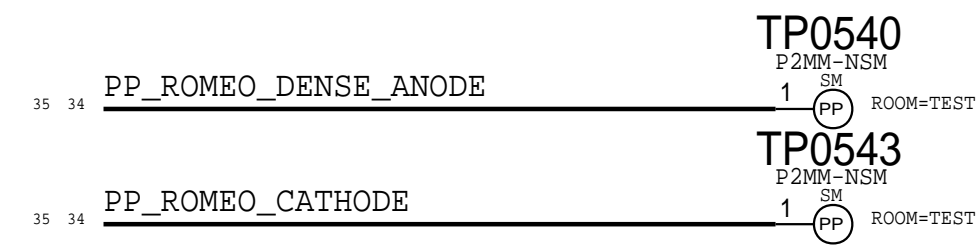


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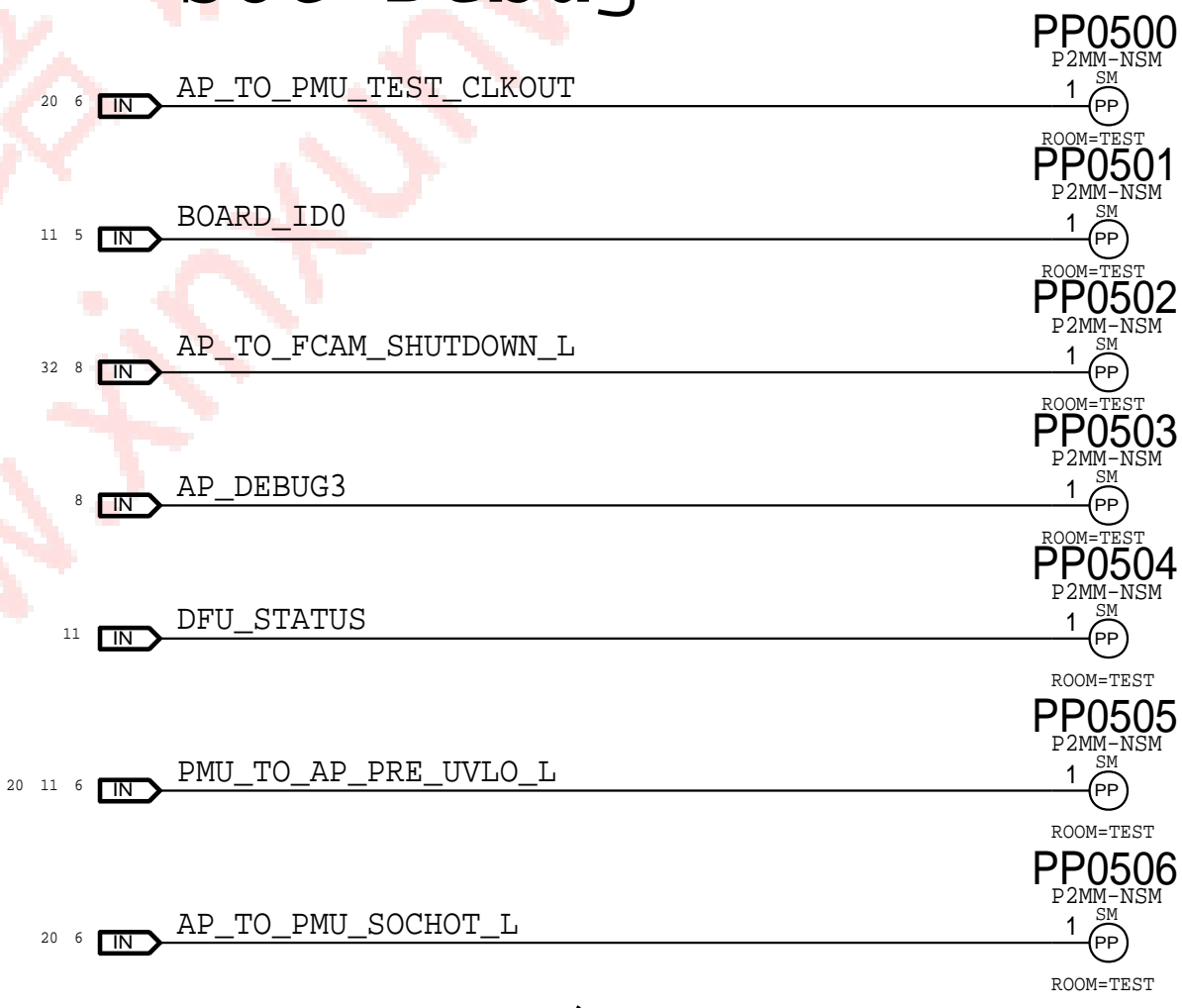
Test Points

Probe Points

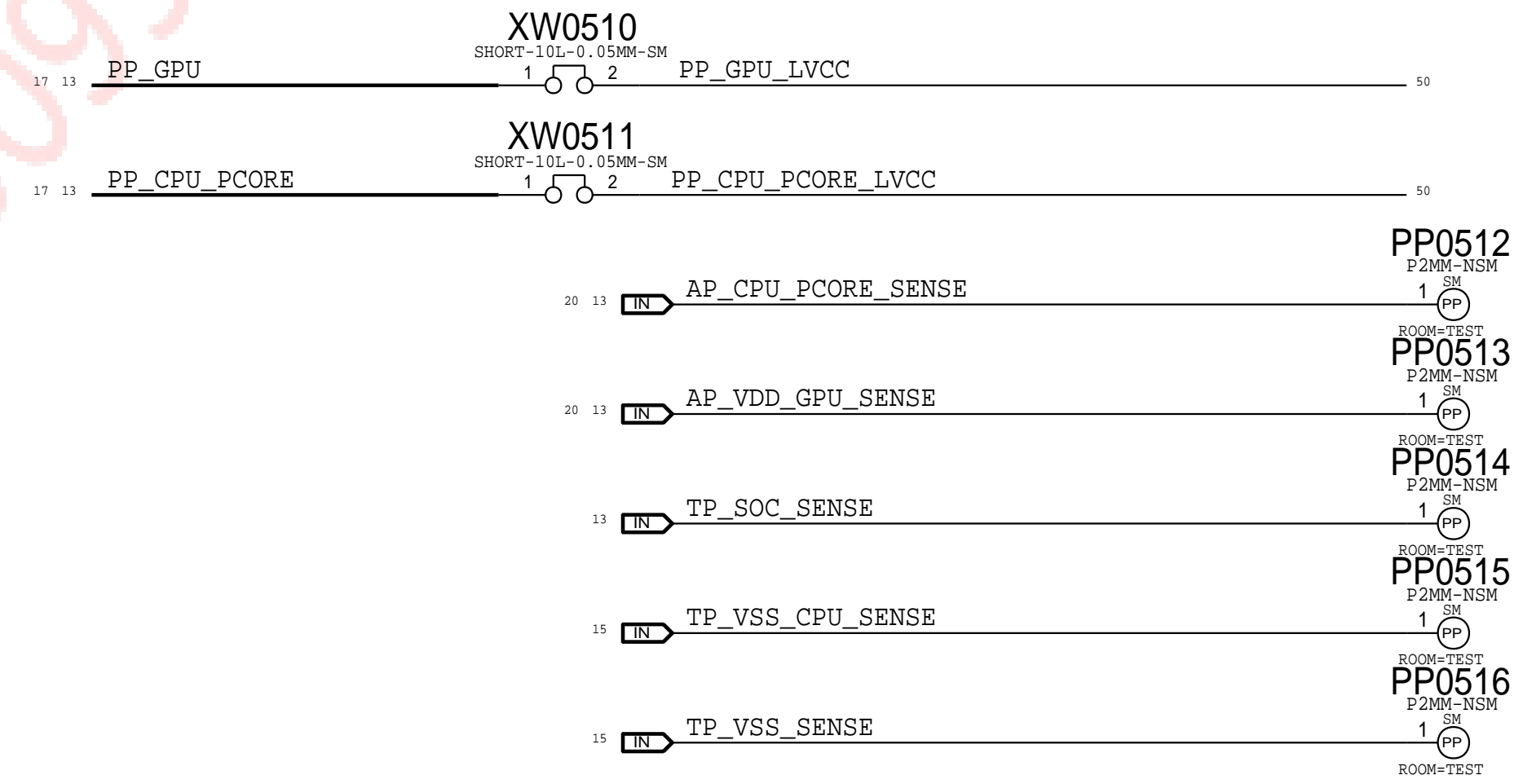
POWER



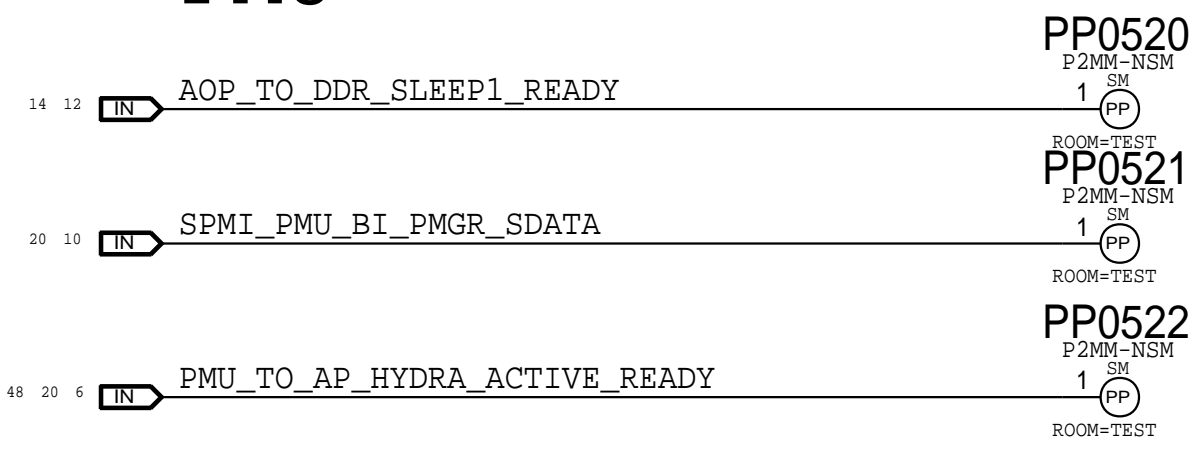
SOC Debug



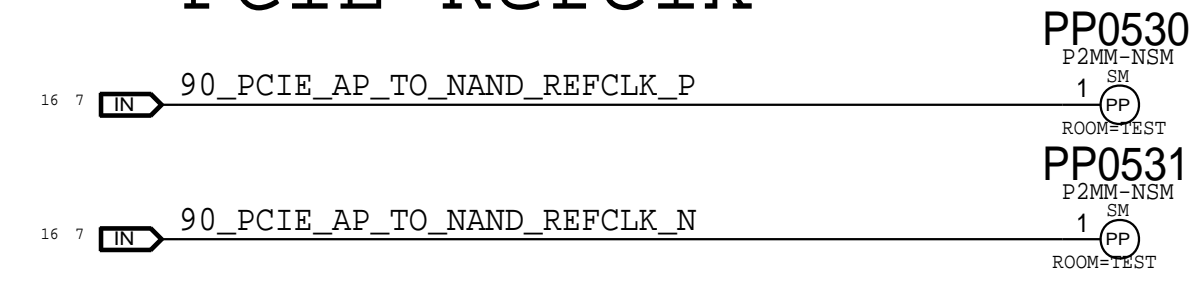
SOC CPU/GPU



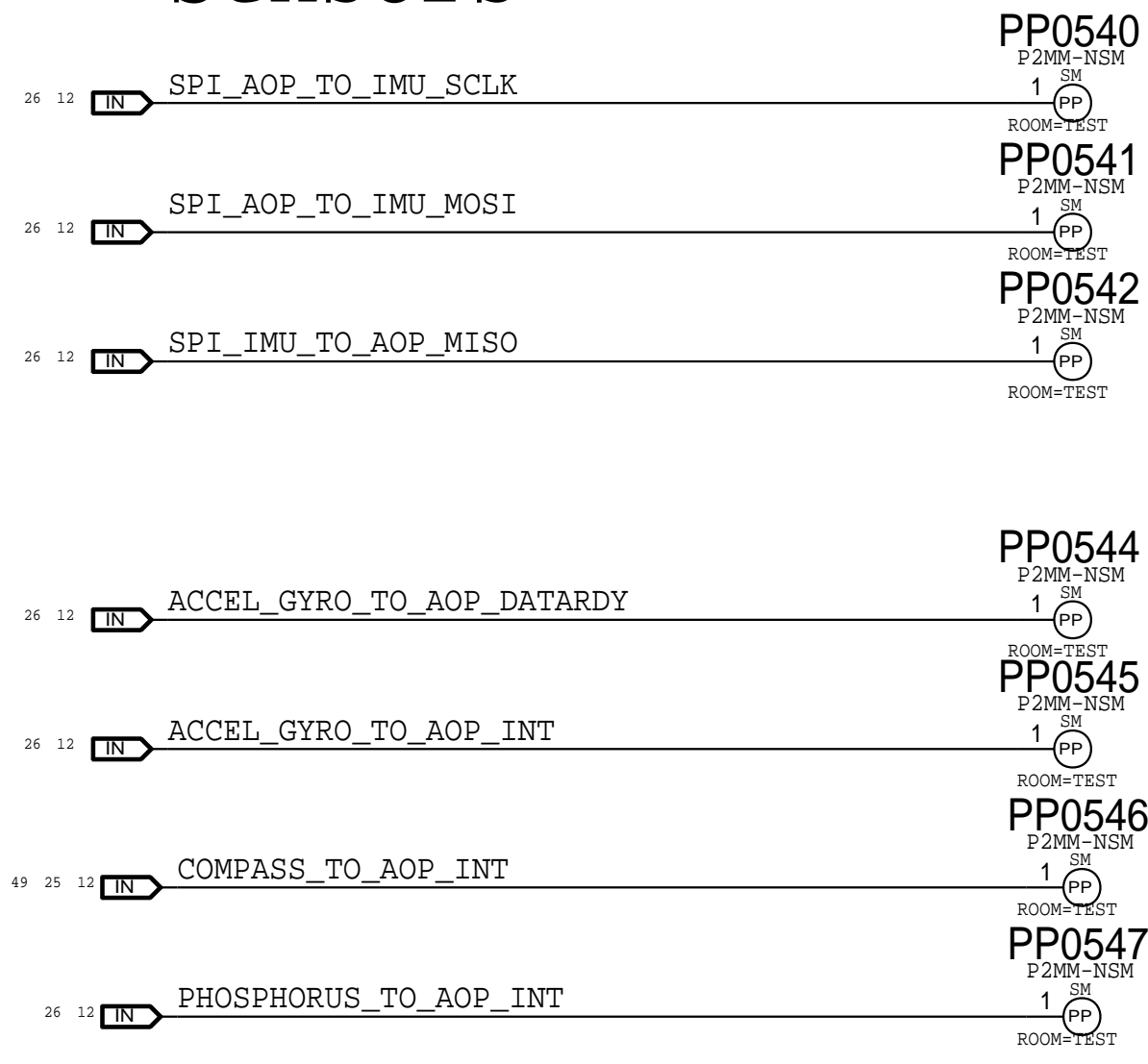
PMU



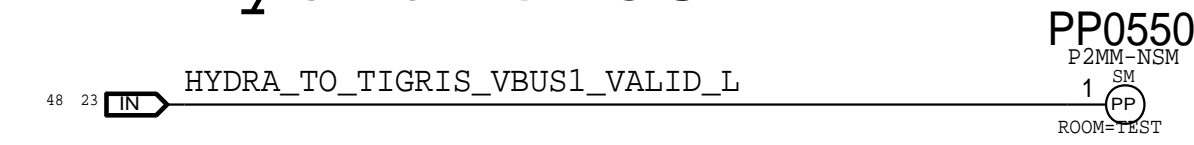
PCIe Refclk



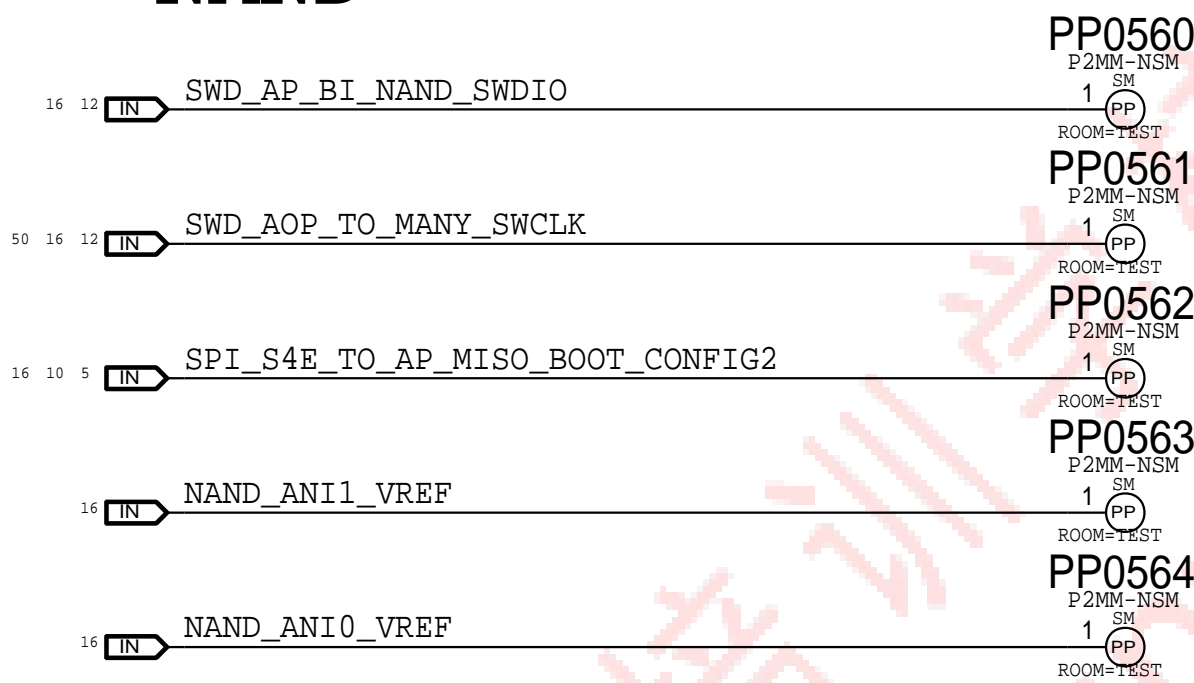
Sensors



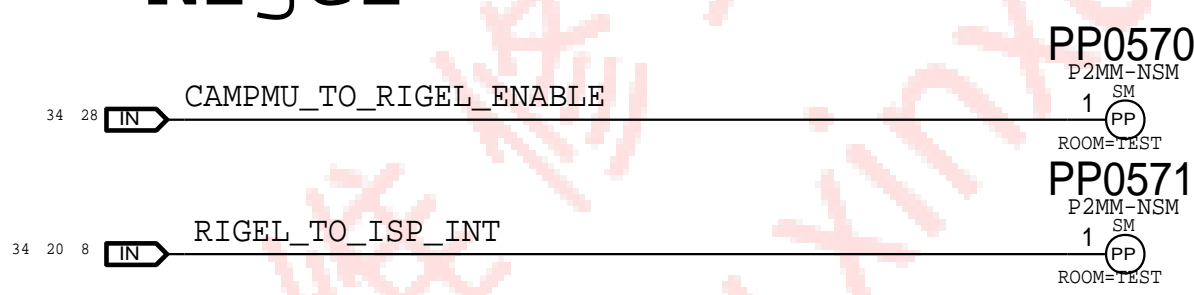
Hydra VBUS



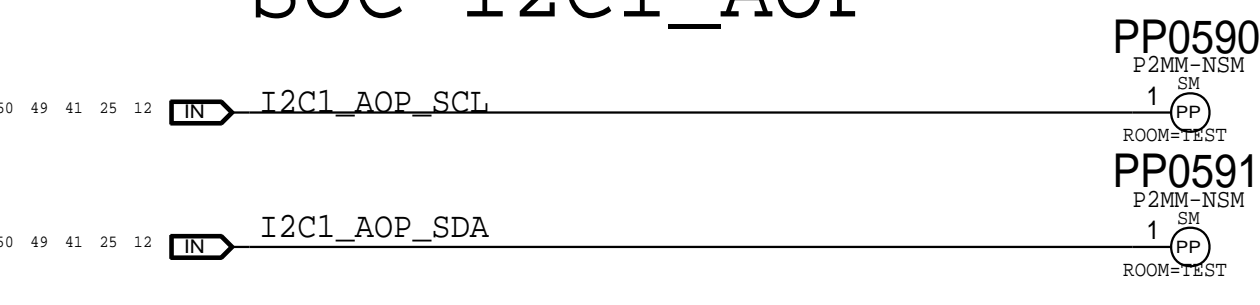
NAND



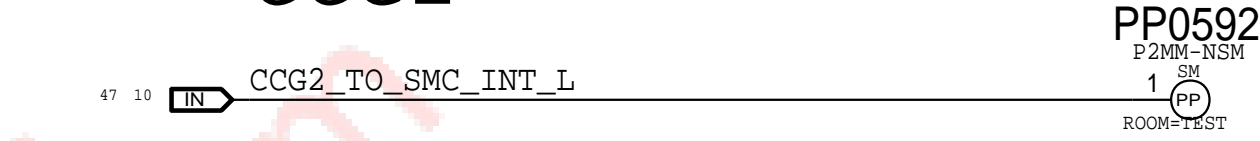
Rigel



SOC I2C1_AOP

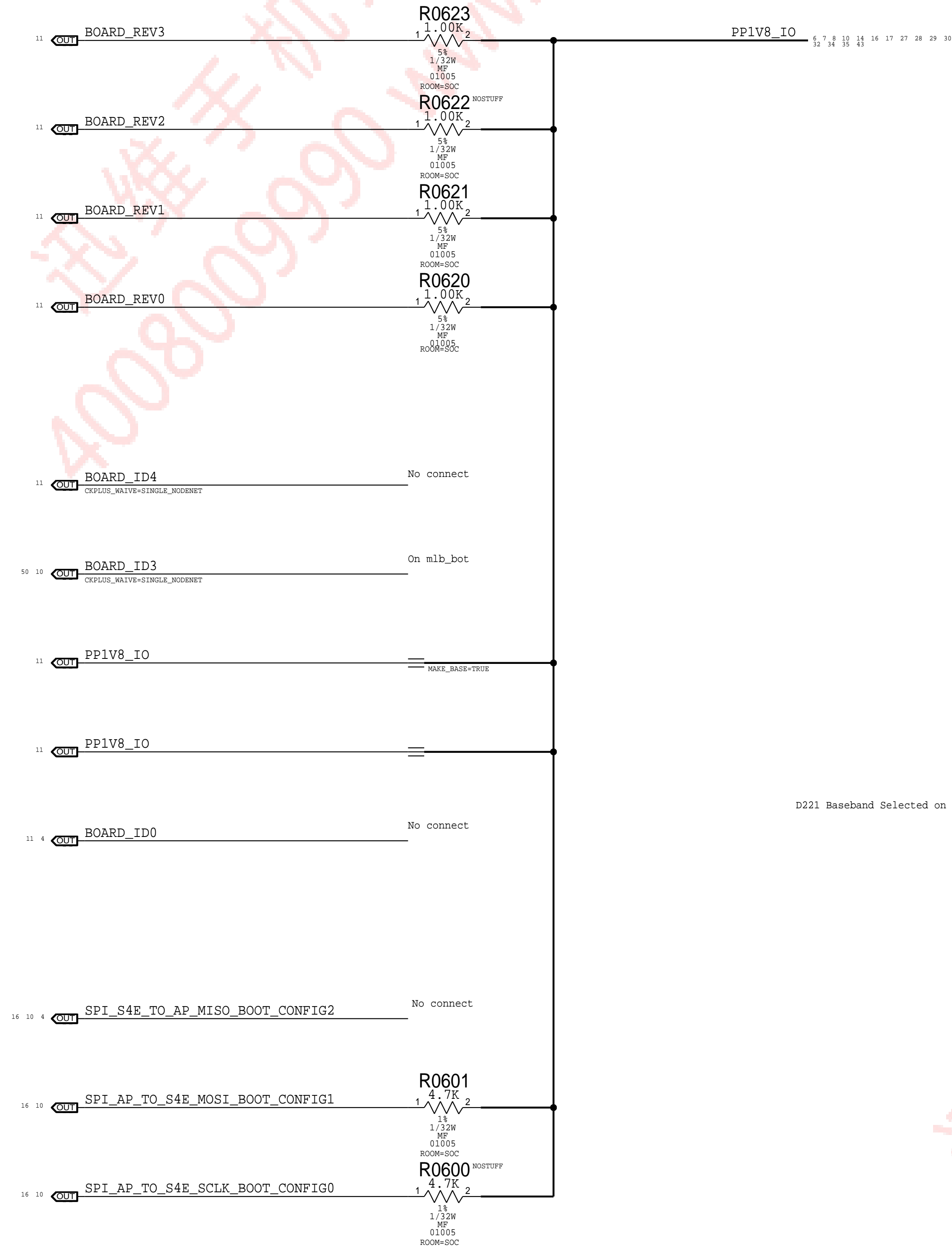


CCG2



PAGE TITLE		
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BOOTSTRAPPING: BOARD REV BOARD ID BOOT CONFIG



Board Rev[3:0]				
Float=Low PU=High				
	3	2	1	0
	Build Major		Build Minor	
Proto 1	1	1	1	1
Proto 1 (DOE6)	1	1	1	0
Proto 2	1	1	0	1
Proto 3	1	1	0	0
EVT	1	0	1	1
(Spare)	1	0	1	0
Carrier	0	1	1	1
(Spare)	0	1	1	0
DVT	0	0	1	1
(Spare)	0	0	1	0
(Spare)	0	0	0	1
PVT	0	0	0	0

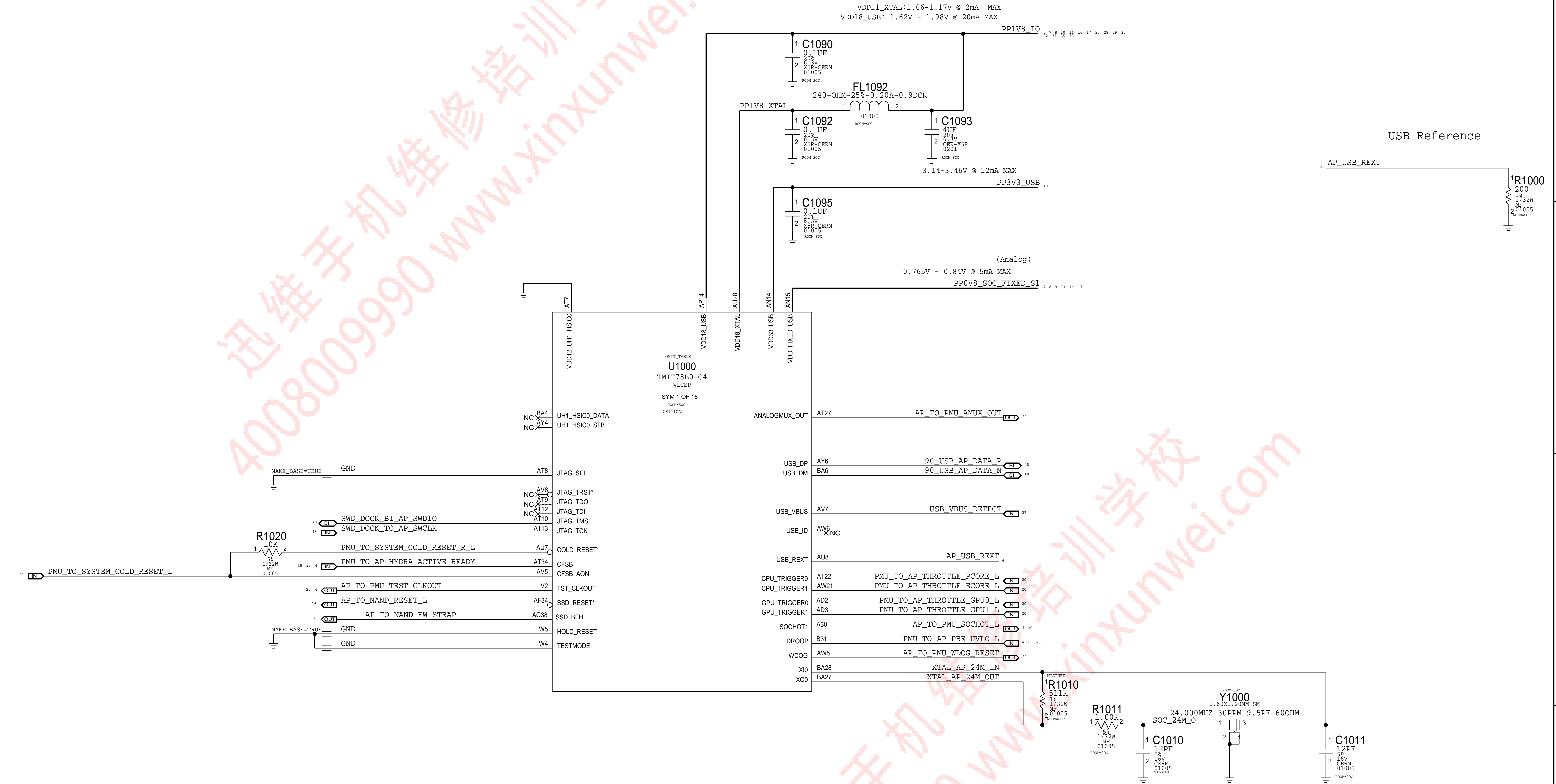
Board ID[4:0]					
Float=Low PU=High					
	4	3	2	1	0
	X	Baseband	Form Factor	MLB/Dev	
D20 MLB	0	0	0	1	0
D20 Dev	0	0	0	1	1
D21 MLB	0	0	1	0	0
D21 Dev	0	0	1	0	1
D22 MLB	0	0	1	1	0
D22 Dev	0	0	1	1	1
D201 MLB	0	1	0	1	0
D201 Dev	0	1	0	1	1
D211 MLB	0	1	1	0	0
D211 Dev	0	1	1	0	1
D221 MLB	0	1	1	1	0
D221 Dev	0	1	1	1	1

Boot Config[2:0]			
Float=Low PU=High			
	2	1	0
SPI0	0	0	0
SPI0 Test Mode	0	0	1
SPI0 NAND	0	1	0
SPI0 NAND Test	0	1	1
Slow SPI0 Test	1	1	0



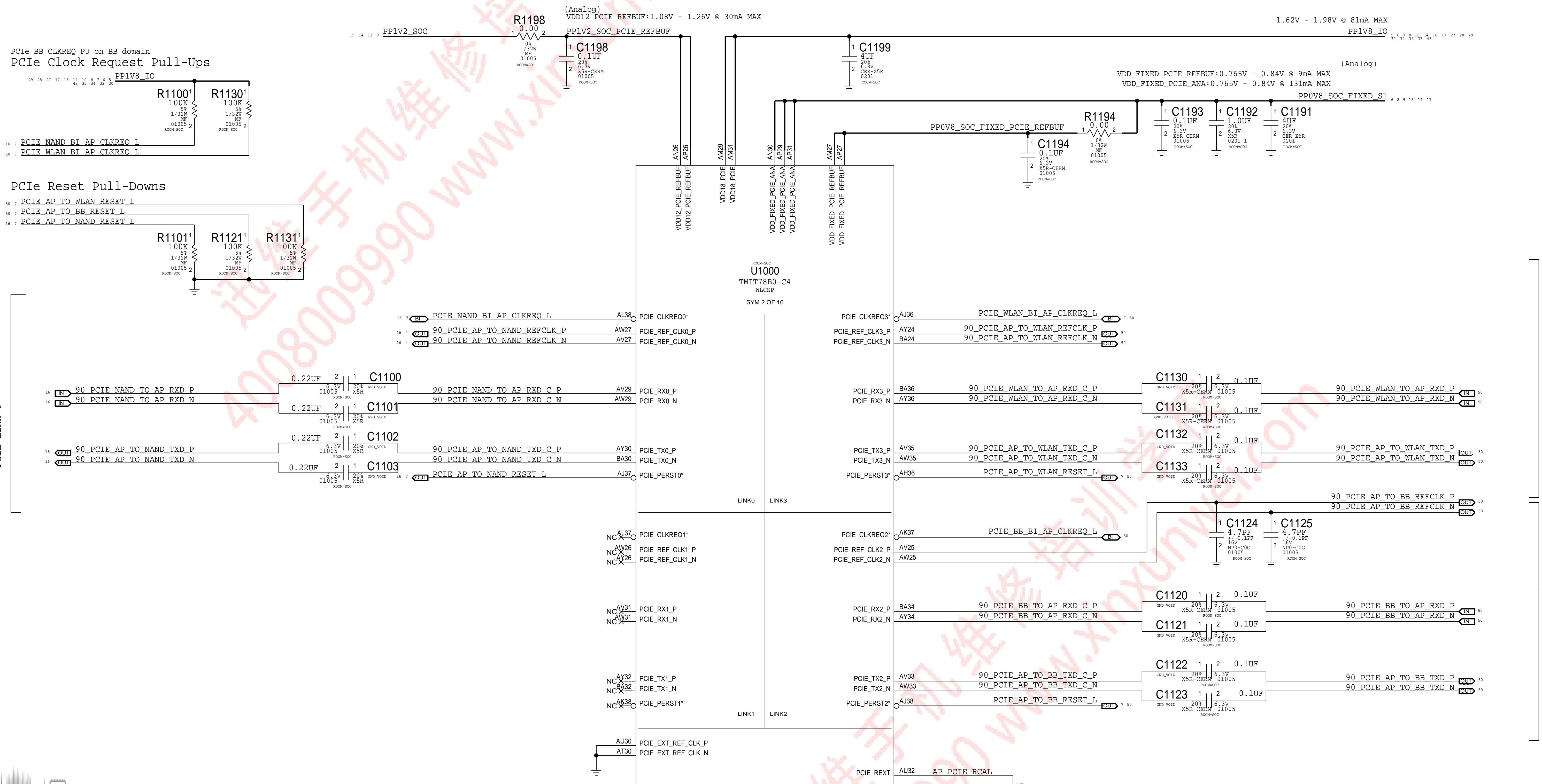
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SOC - USB, JTAG, XTAL



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SOC - PCIE INTERFACES



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SOC - MIPI & ISP INTERFACES

MIPI Lane & Polarity Swapping

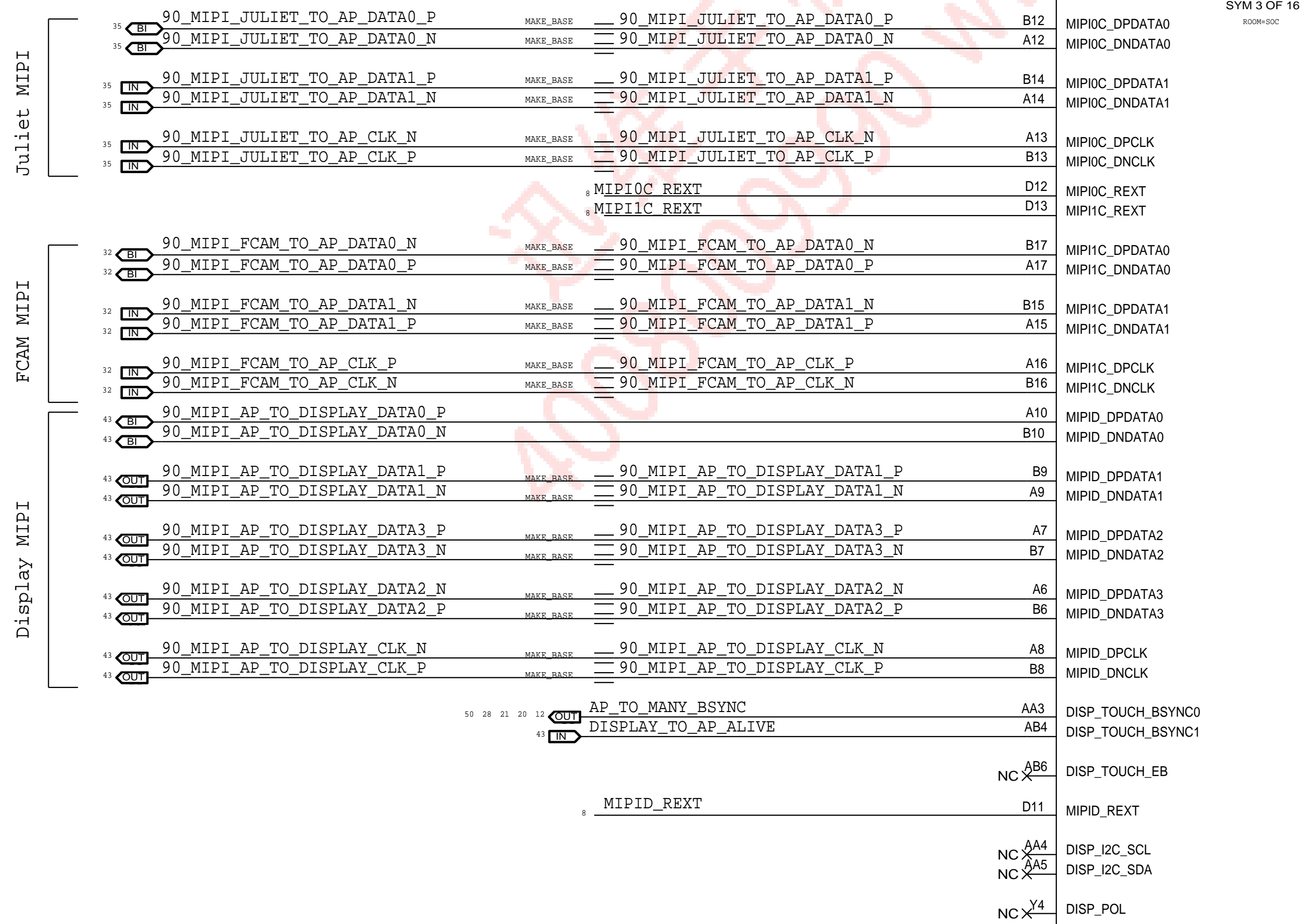
Program	Function	SOC LANE	DISTAL LANE	Lane Swap	Polarity Swap
X901	Display	Clock_P	Clock_N		✓
		Clock_N	Clock_P		
		Lane_0_P	Lane_0_N		
		Lane_0_N	Lane_0_P		
		Lane_1_P	Lane_1_N		
		Lane_1_N	Lane_1_P		
	Lane_2_P	Lane_2_N	✓		
	Lane_2_N	Lane_2_P			
	Lane_3_P	Lane_3_N	✓		
	Lane_3_N	Lane_3_P			
	FCAM	Clock_P	Clock_N		
		Clock_N	Clock_P		
Lane_0_P		Lane_0_N			
Lane_0_N		Lane_0_P			
Lane_1_P		Lane_1_N			
Lane_1_N		Lane_1_P			
JULIET	Clock_P	Clock_N		✓	
	Clock_N	Clock_P			
	Lane_0_P	Lane_0_N			
	Lane_0_N	Lane_0_P			
	Lane_1_P	Lane_1_N			
	Lane_1_N	Lane_1_P			

(Analog)
0.765V - 0.84V @ 40mA MAX
PP0V8_SOC_FIXED_S1

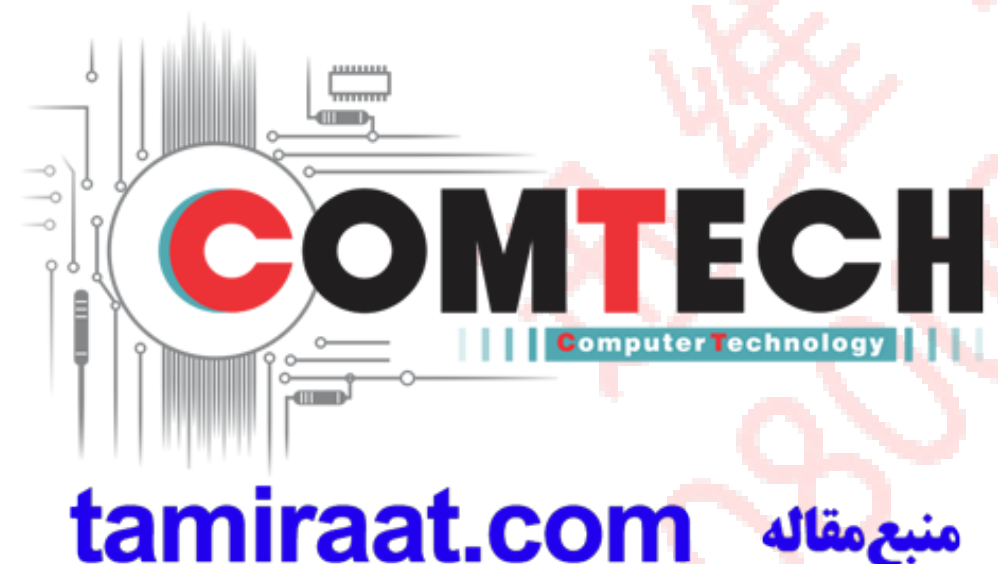
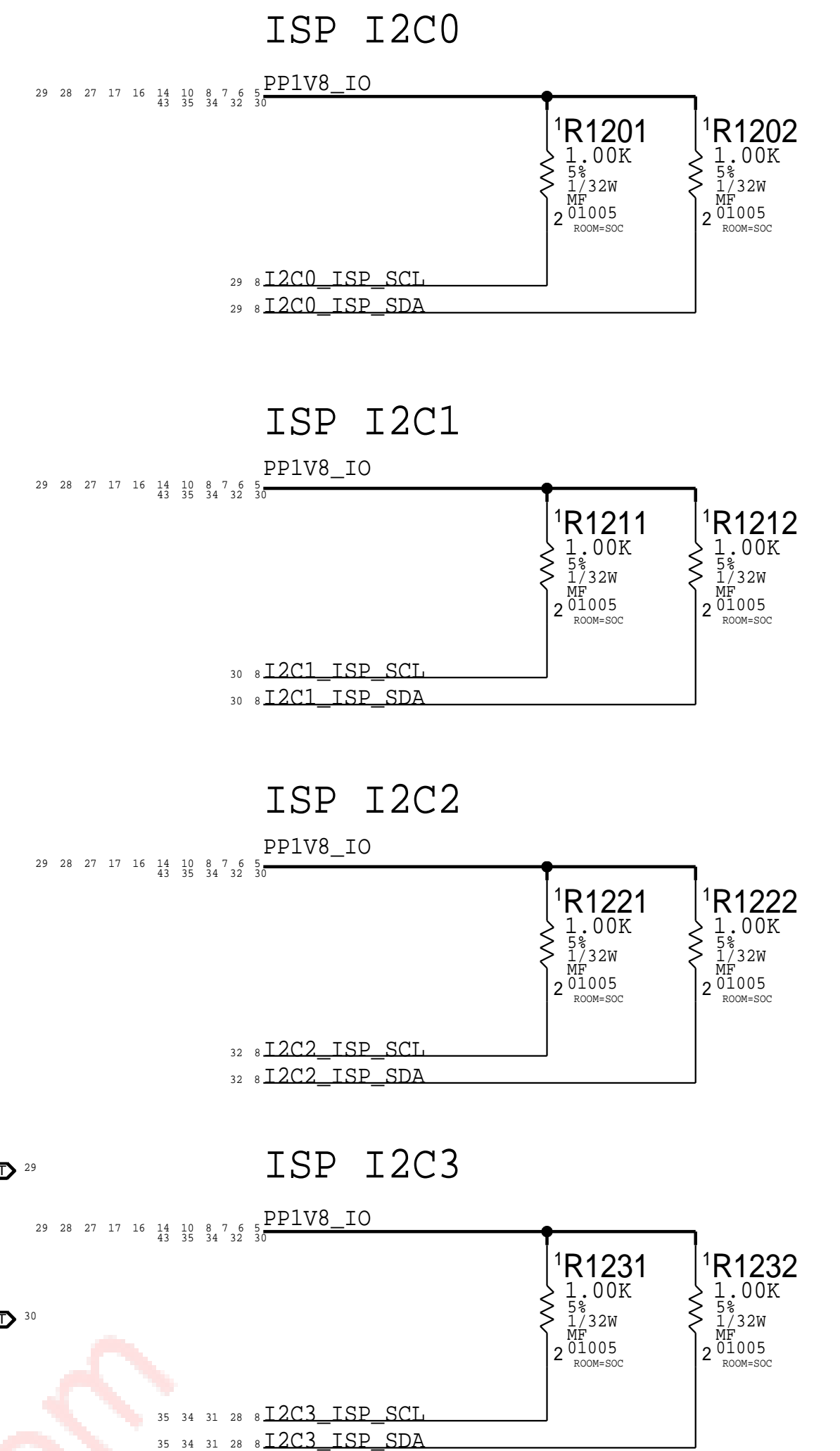
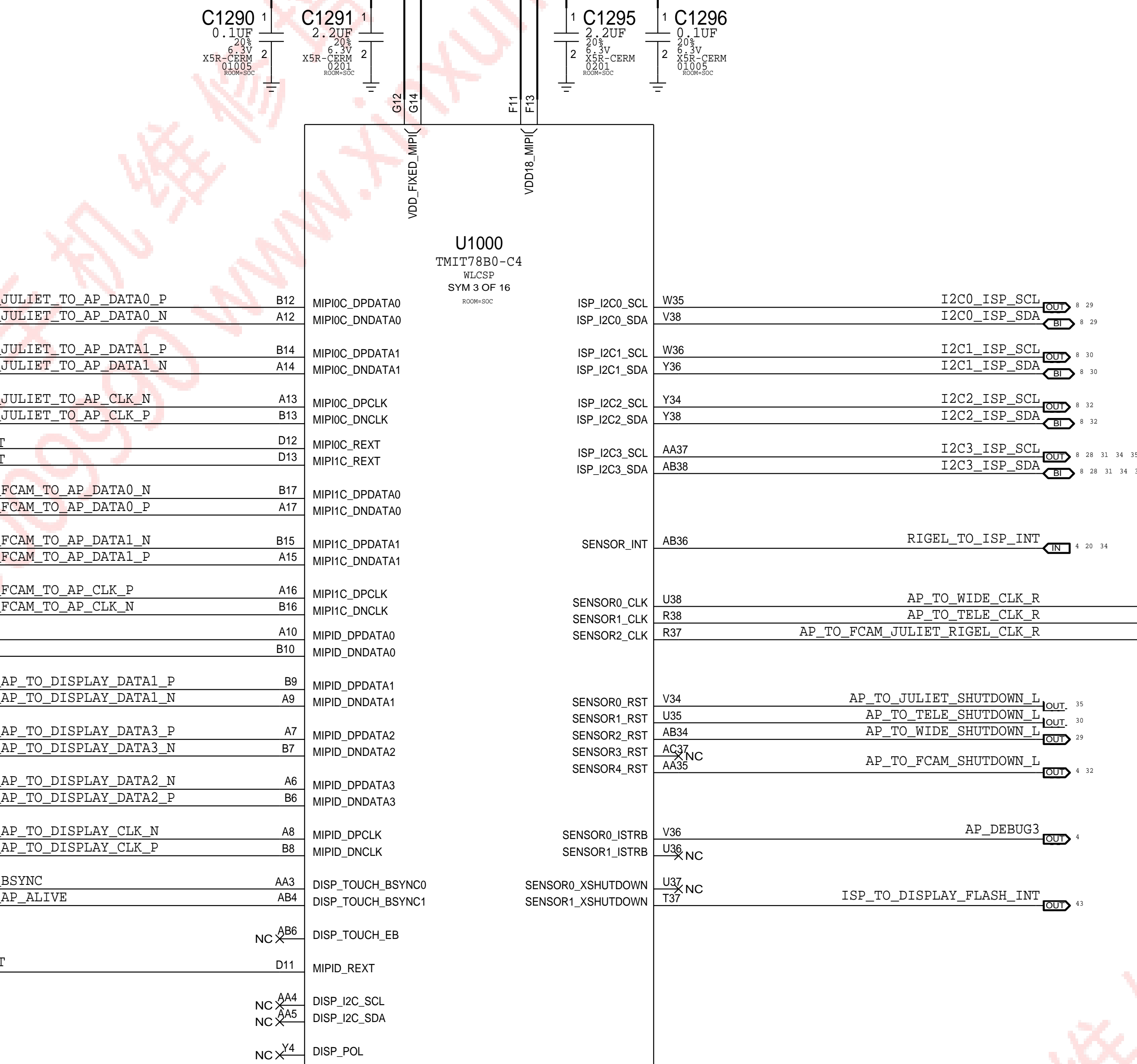
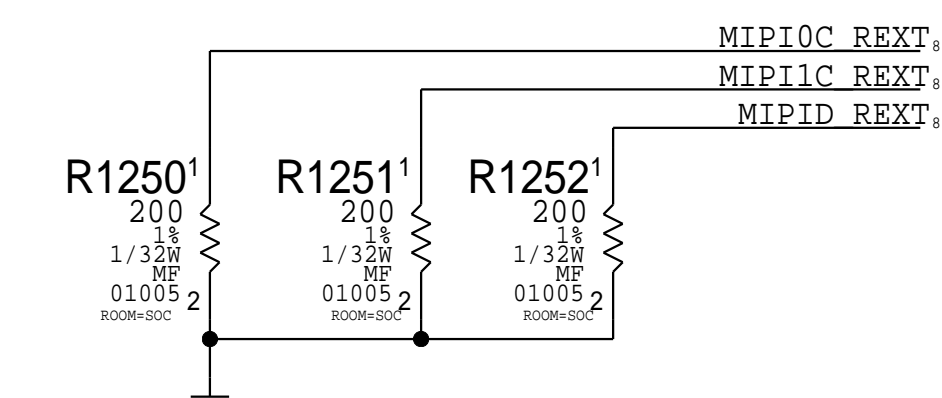
1.62V - 1.98V @ 10mA MAX
PPIV8_IO

17 14 13 9 7 6

5,6,7 8,10,14 16 17 27 28 29 30

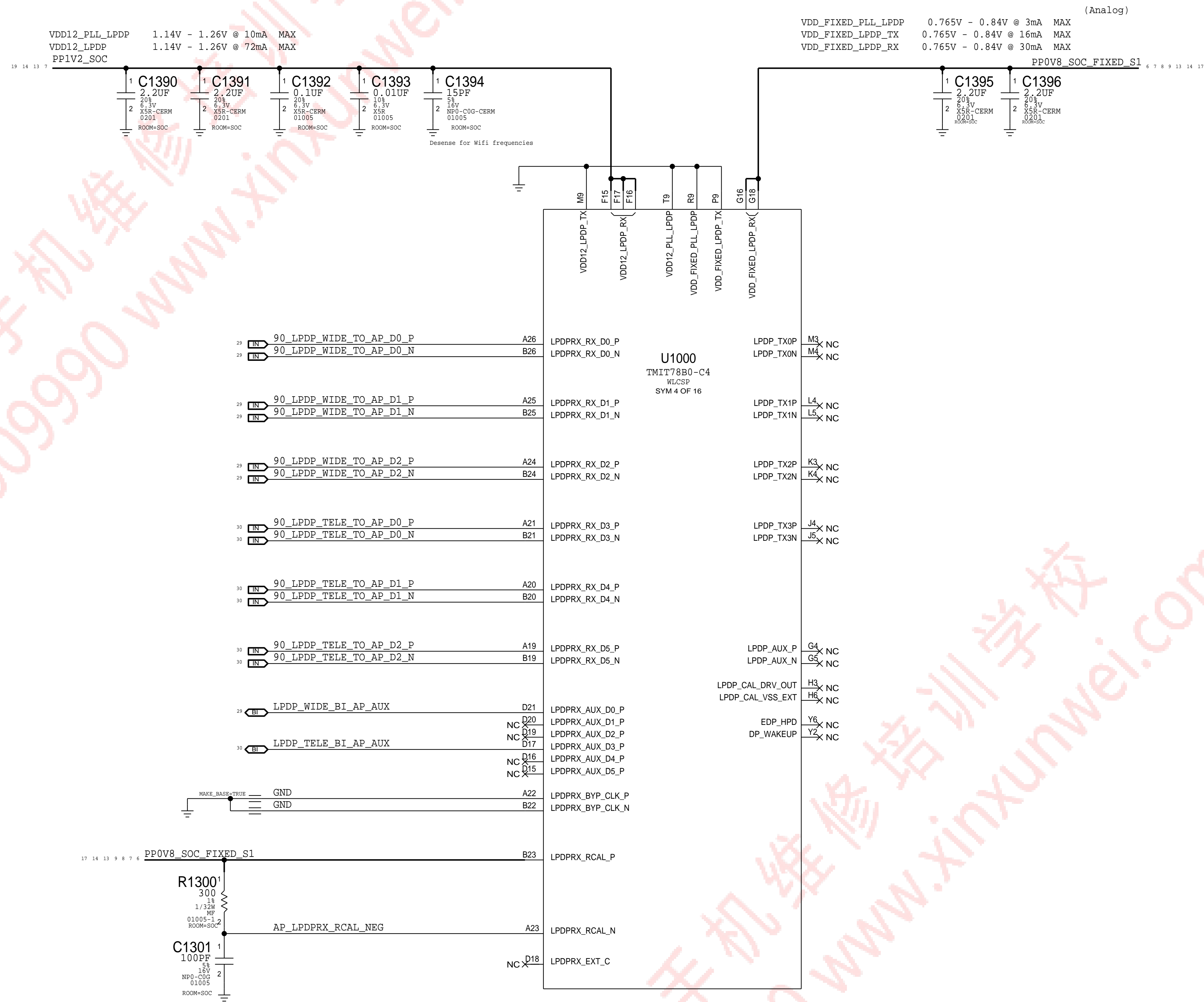


MIPI Reference



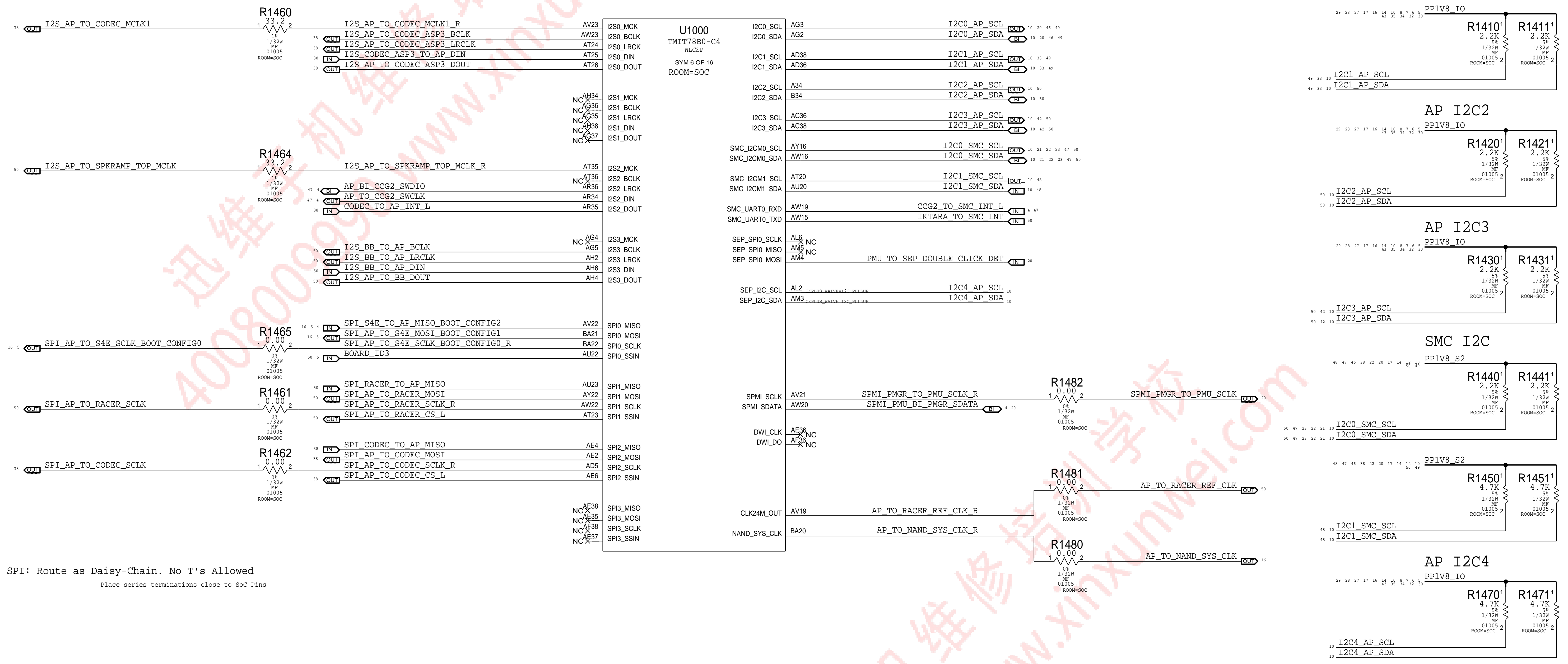
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SOC - LPDP



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SOC - SERIAL INTERFACES



SPI: Route as Daisy-Chain. No T's Allowed
Place series terminations close to SoC Pins

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
335800234	1	WLCSP	U1490	CRITICAL	COMMON

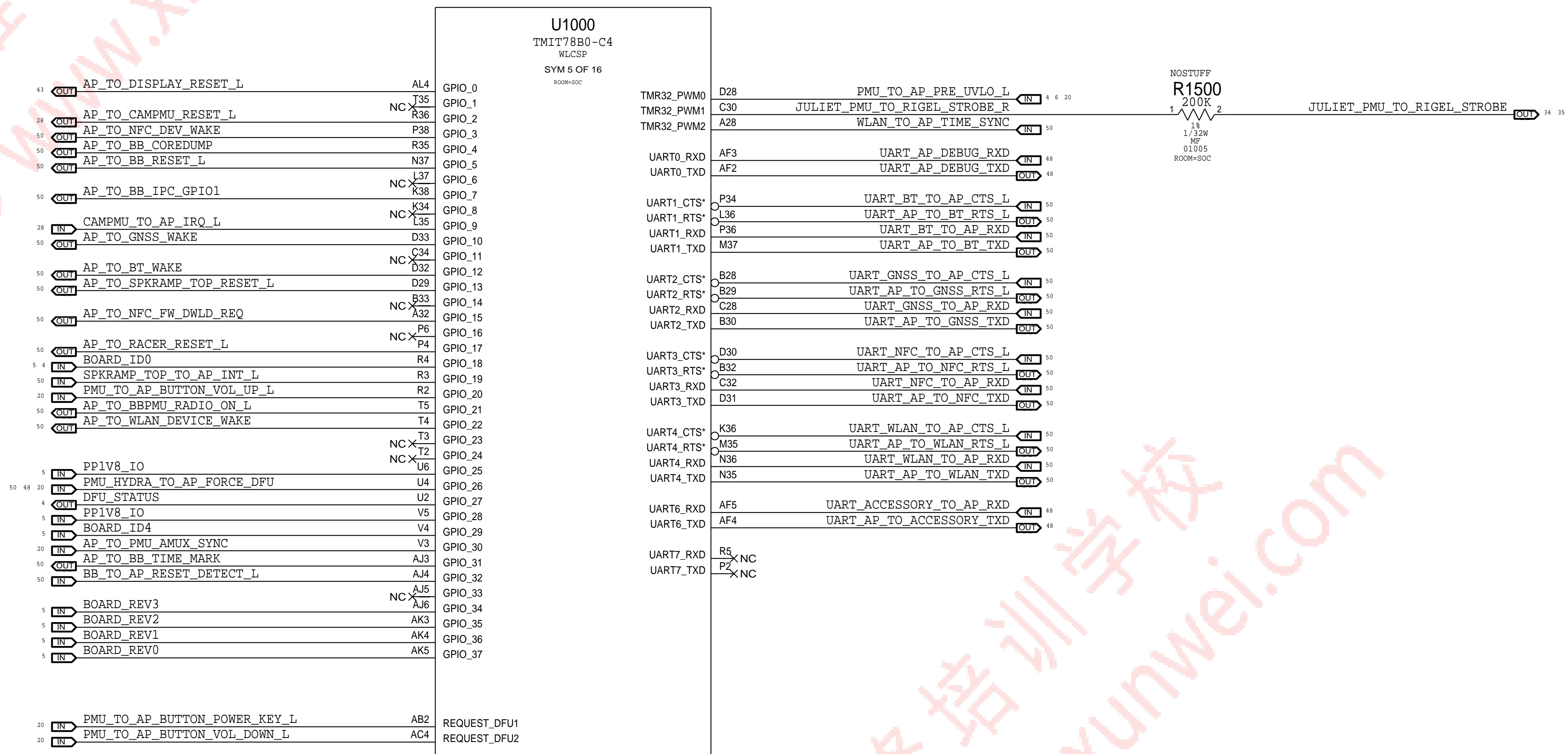
PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
335800233	335800234	BOM_TABLE_ALTS	U1490	U1490



tamiraat.com منبع مقاله

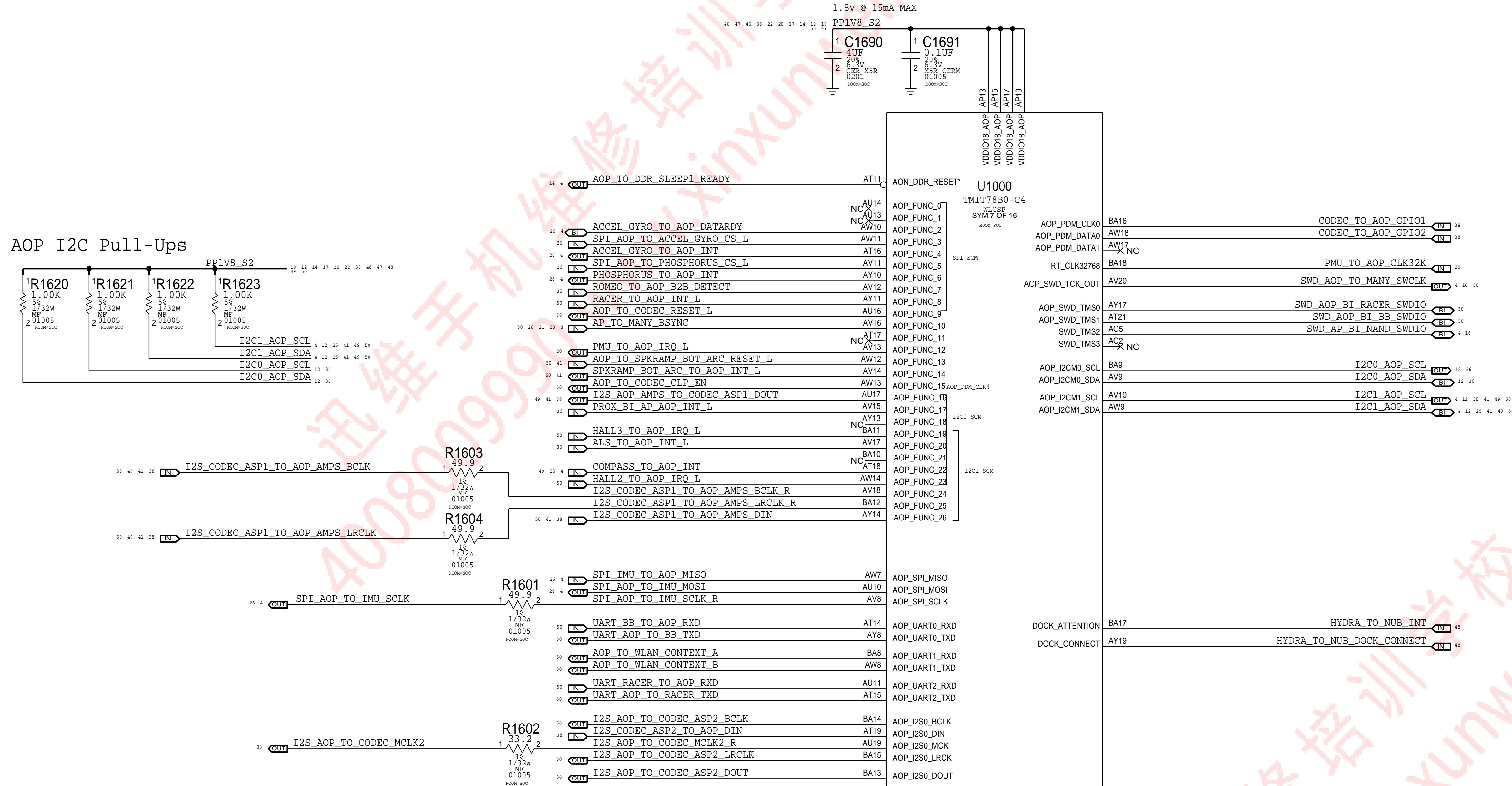
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SOC - GPIO INTERFACES



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SOC - AOP



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SOC - CPU, GPU & SOC RAILS

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

PP_CPU_CORE

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

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

D

D

C

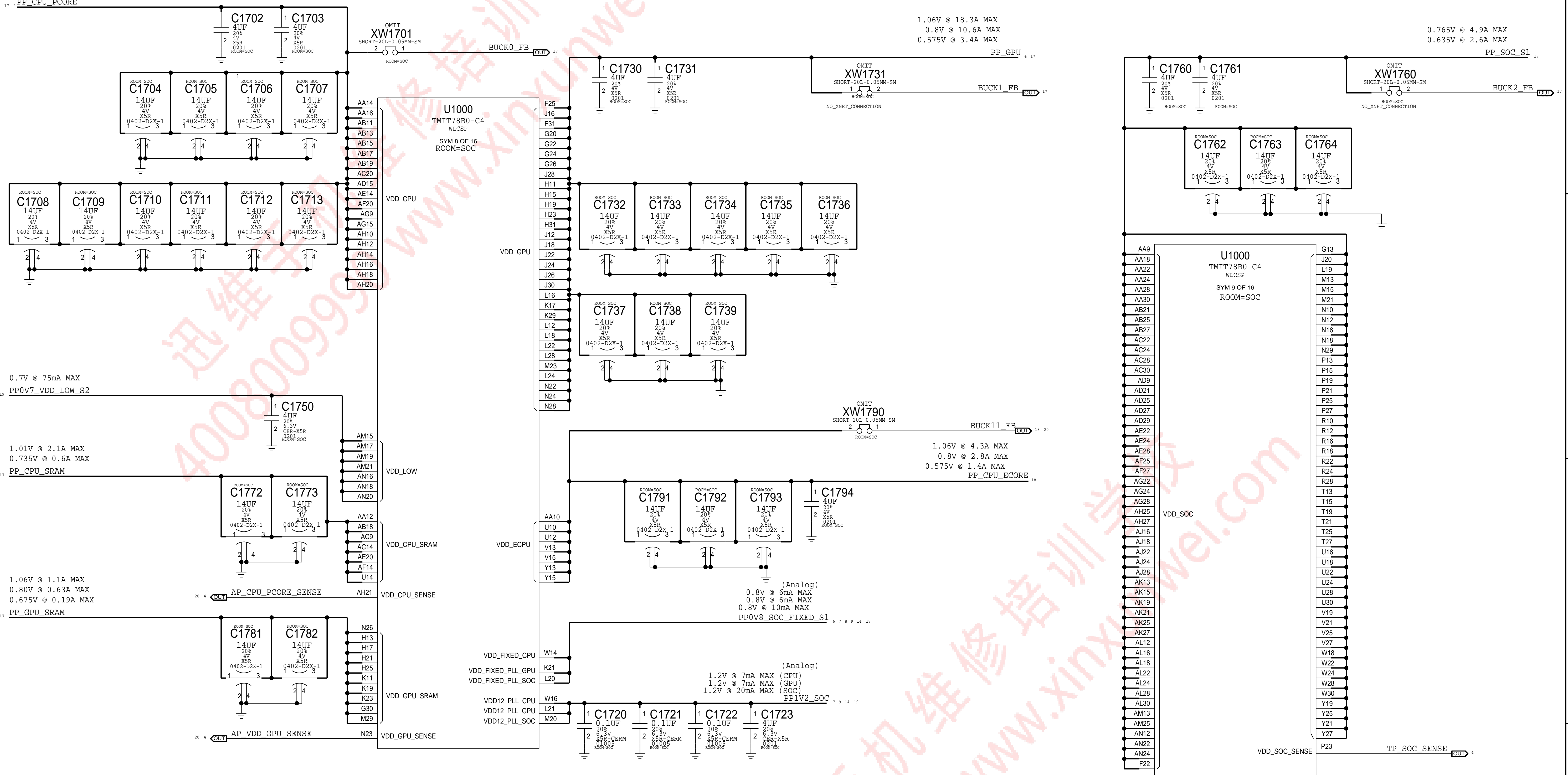
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B

B

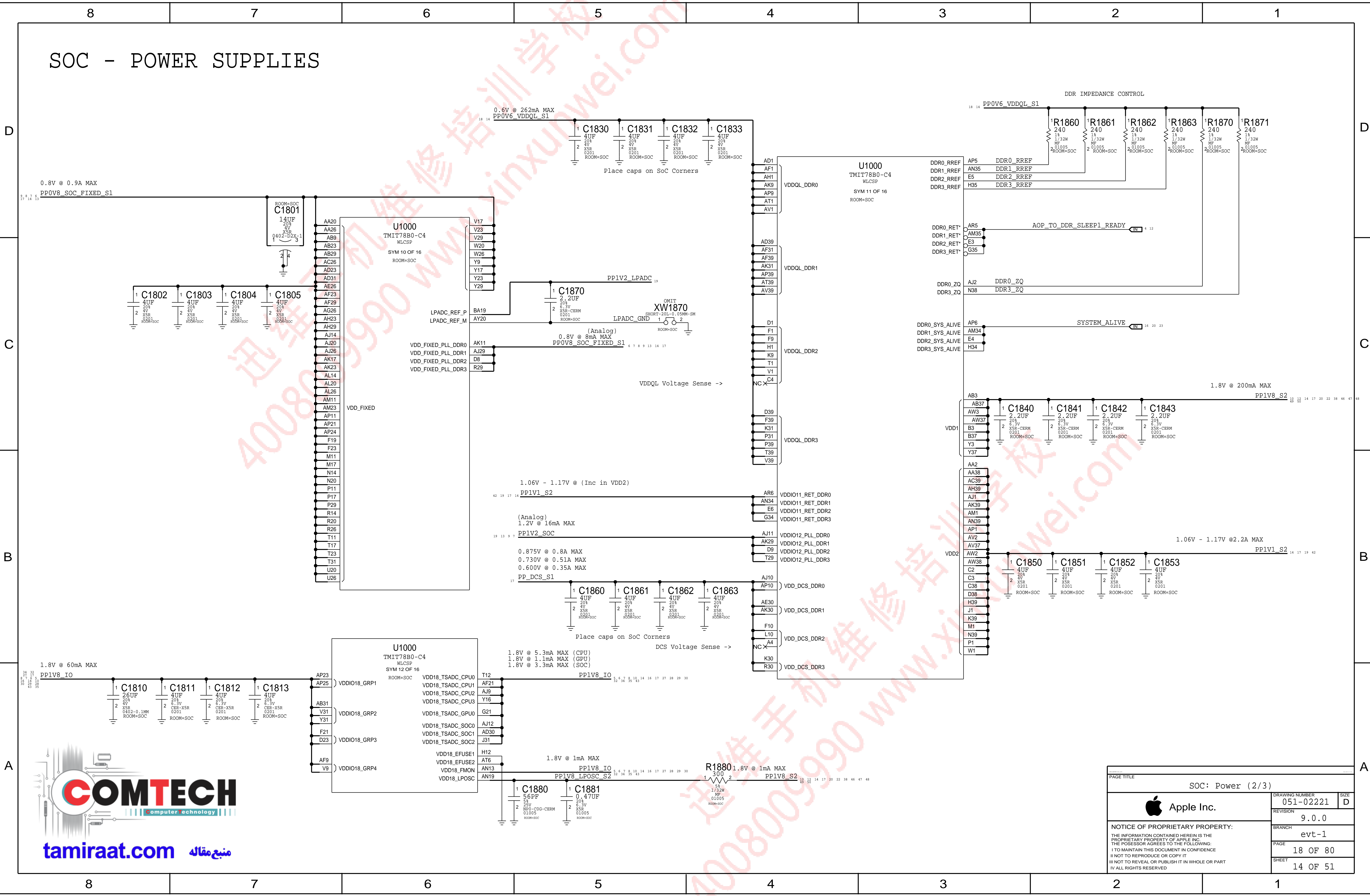
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A



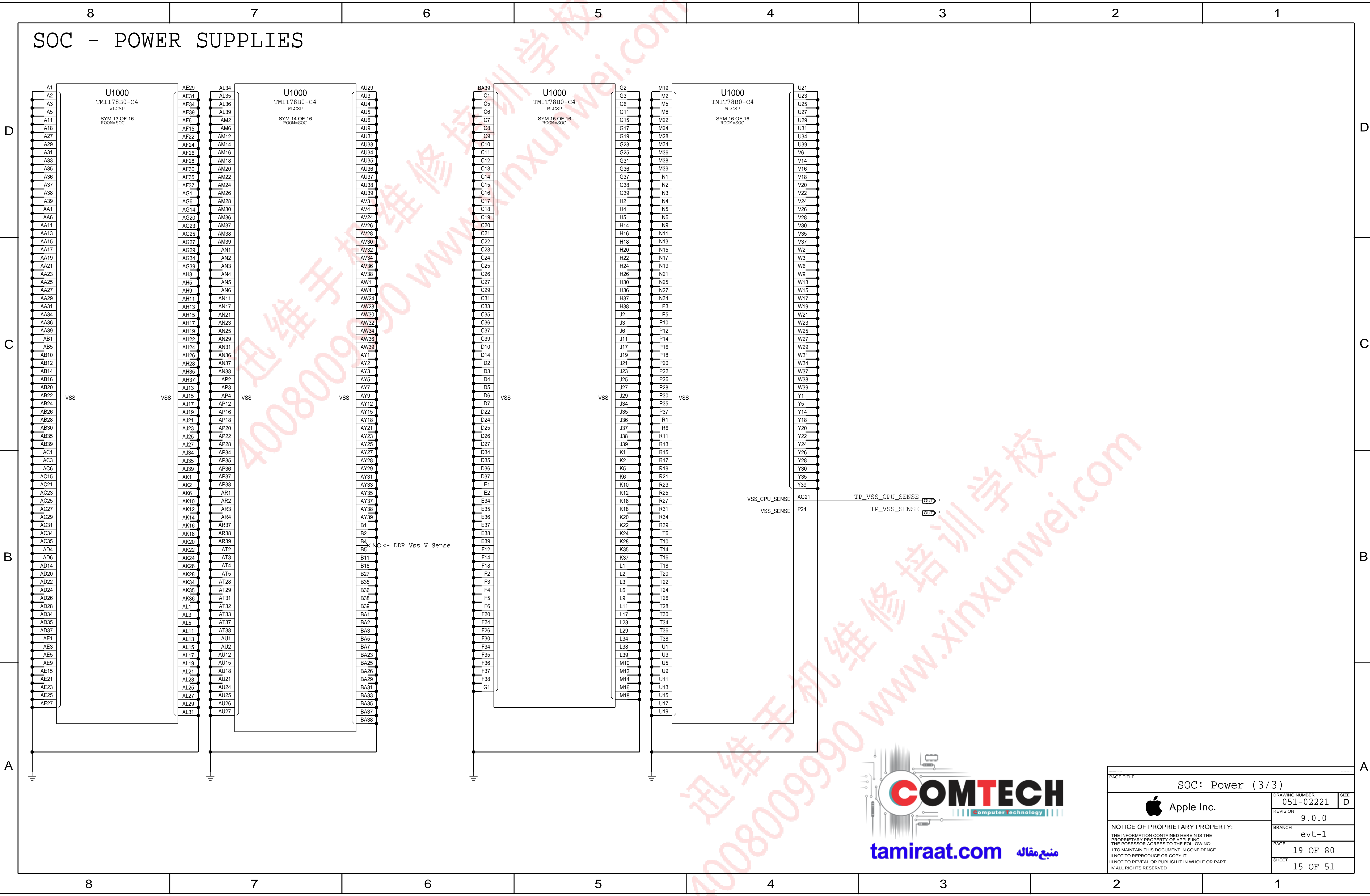
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SOC - POWER SUPPLIES



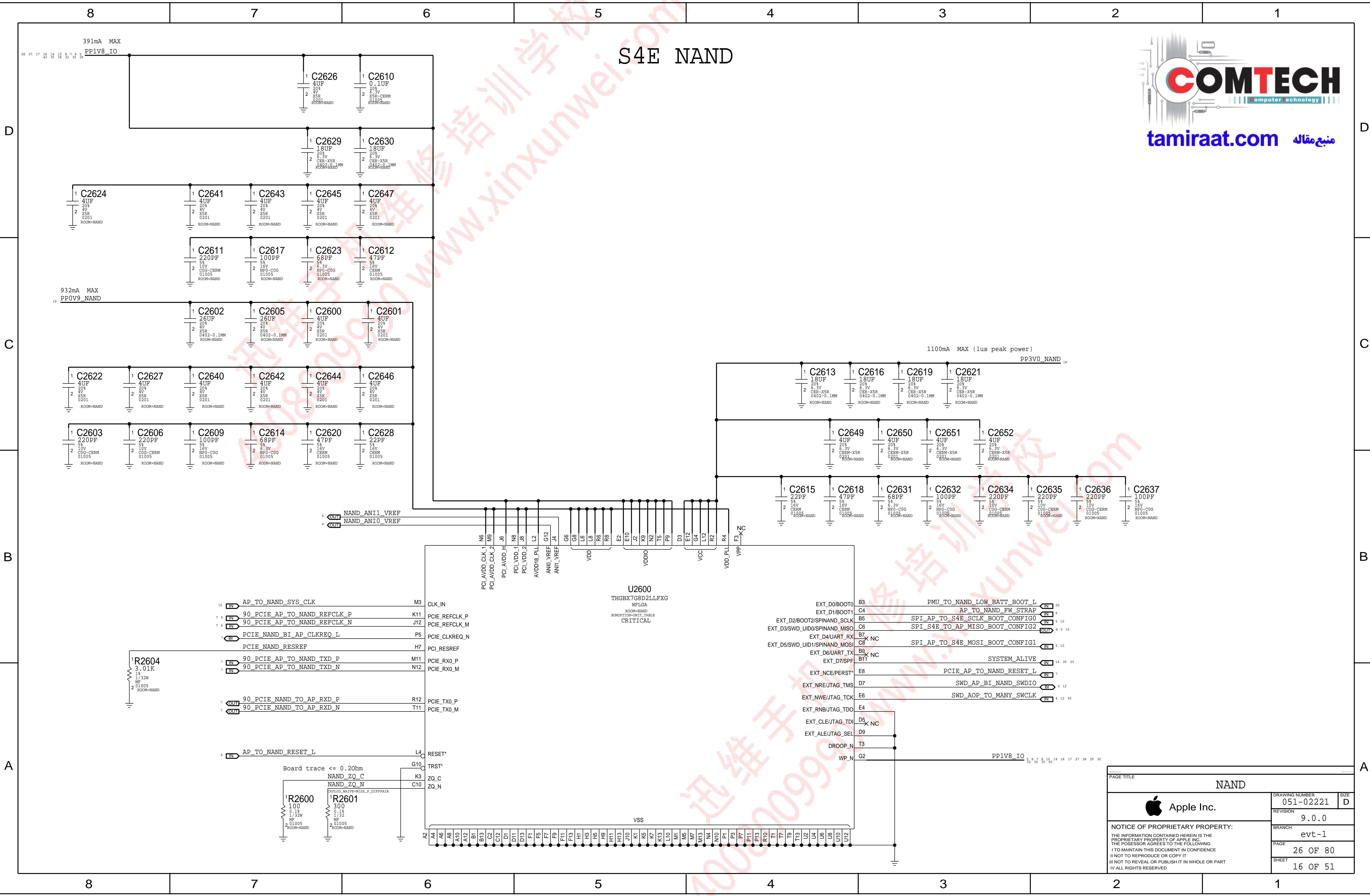
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SOC - POWER SUPPLIES



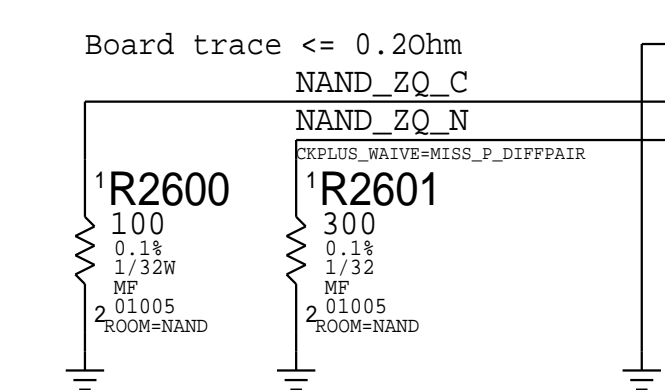
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S4E NAND

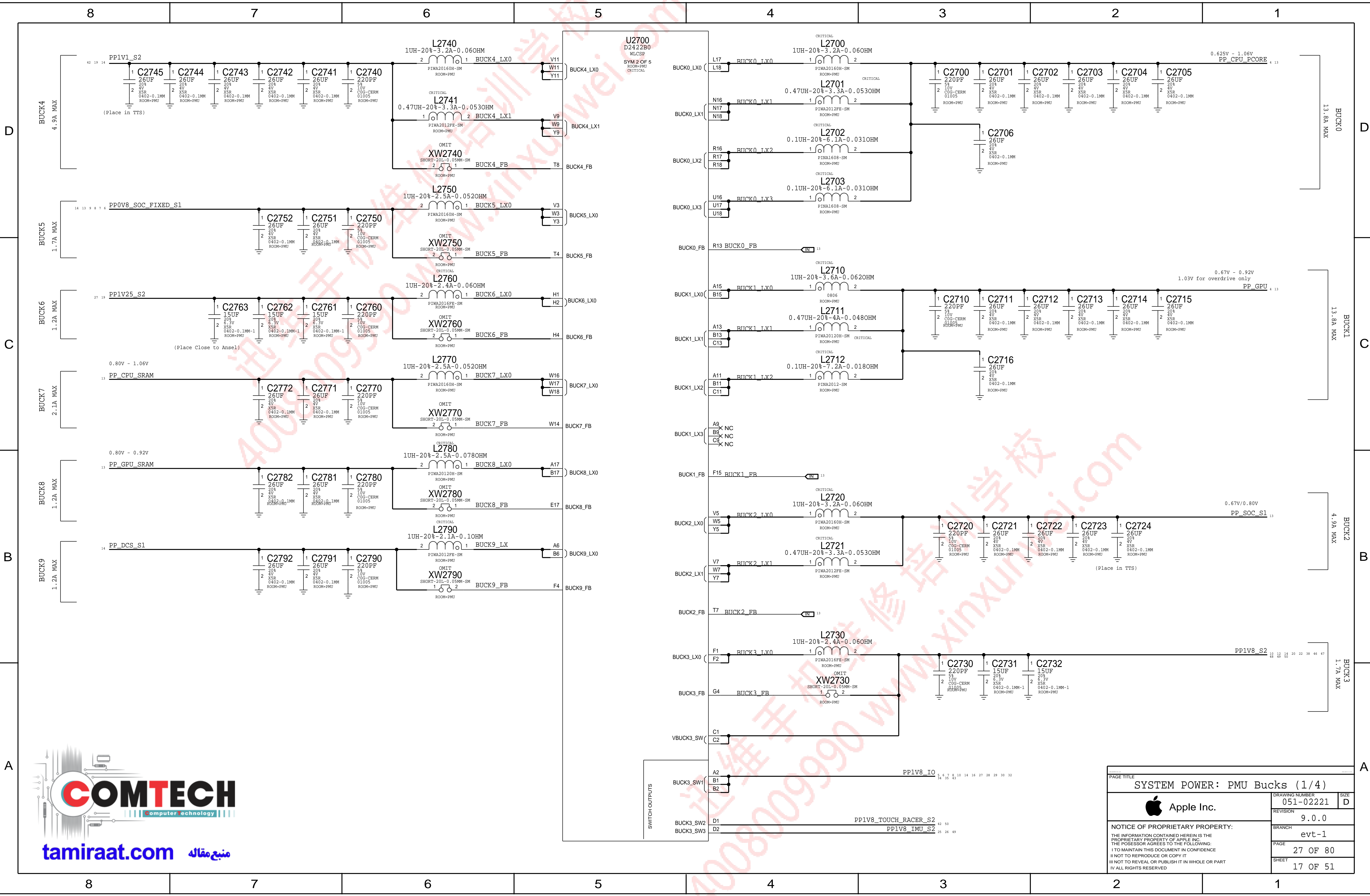


16	AP_TO_NAND_SYS_CLK	M3	CLK_IN
7	90_PCIE_AP_TO_NAND_REFCLK_P	K11	PCIE_REFCLK_P
7	90_PCIE_AP_TO_NAND_REFCLK_N	J12	PCIE_REFCLK_M
7	PCIE_NAND_BI_AP_CLKREQ_L	P5	PCIE_CLKREQ_N
7	PCIE_NAND_RESREF	H7	PCI_RESREF
7	90_PCIE_AP_TO_NAND_TXD_P	M11	PCIE_RX0_P
7	90_PCIE_AP_TO_NAND_TXD_N	N12	PCIE_RX0_M
7	90_PCIE_NAND_TO_AP_RXD_P	R12	PCIE_TX0_P
7	90_PCIE_NAND_TO_AP_RXD_N	T11	PCIE_TX0_M
6	AP_TO_NAND_RESET_L	L4	RESET*

B3	PMU_TO_NAND_LOW_BATT_BOOT_L	20
C4	AP_TO_NAND_FW_STRAP	6
B5	SPI_AP_TO_S4E_SCLK_BOOT_CONFIG0	5 10
C6	SPI_S4E_TO_AP_MISO_BOOT_CONFIG2	5 10
B7	SPI_AP_TO_S4E_MOSI_BOOT_CONFIG1	5 10
B8	SYSTEM_ALIVE	14 20 23
E8	PCIE_AP_TO_NAND_RESET_L	7
D7	SWD_AP_BI_NAND_SWDIO	4 12
E6	SWD_AOP_TO_MANY_SWCLK	4 12 50
E4		
D5		
D9		
T3		
G2	PP1V8_IO	5 6 7 8 10 14 16 17 27 28 29 30



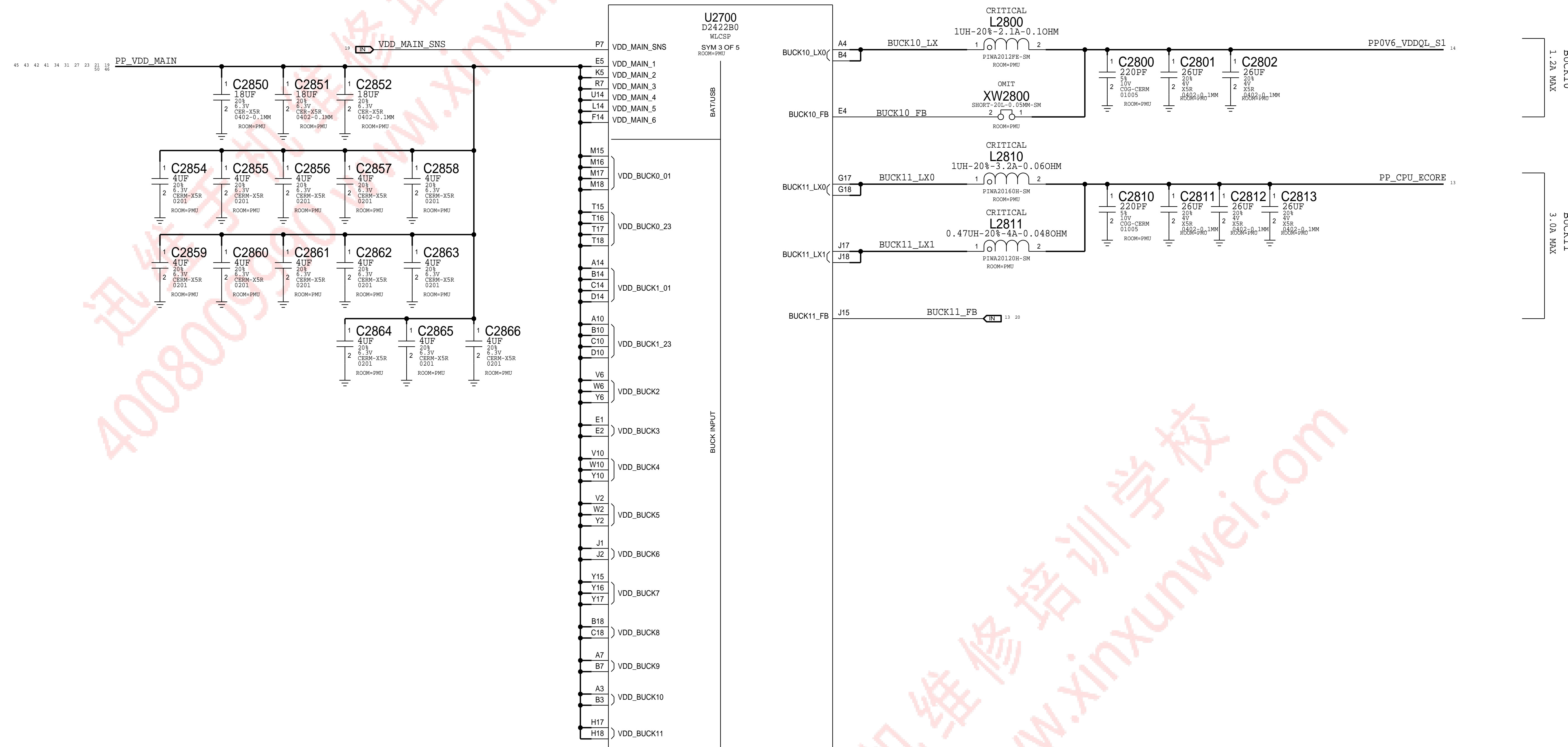
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	PAGE	26 OF 80
	SHEET	16 OF 51



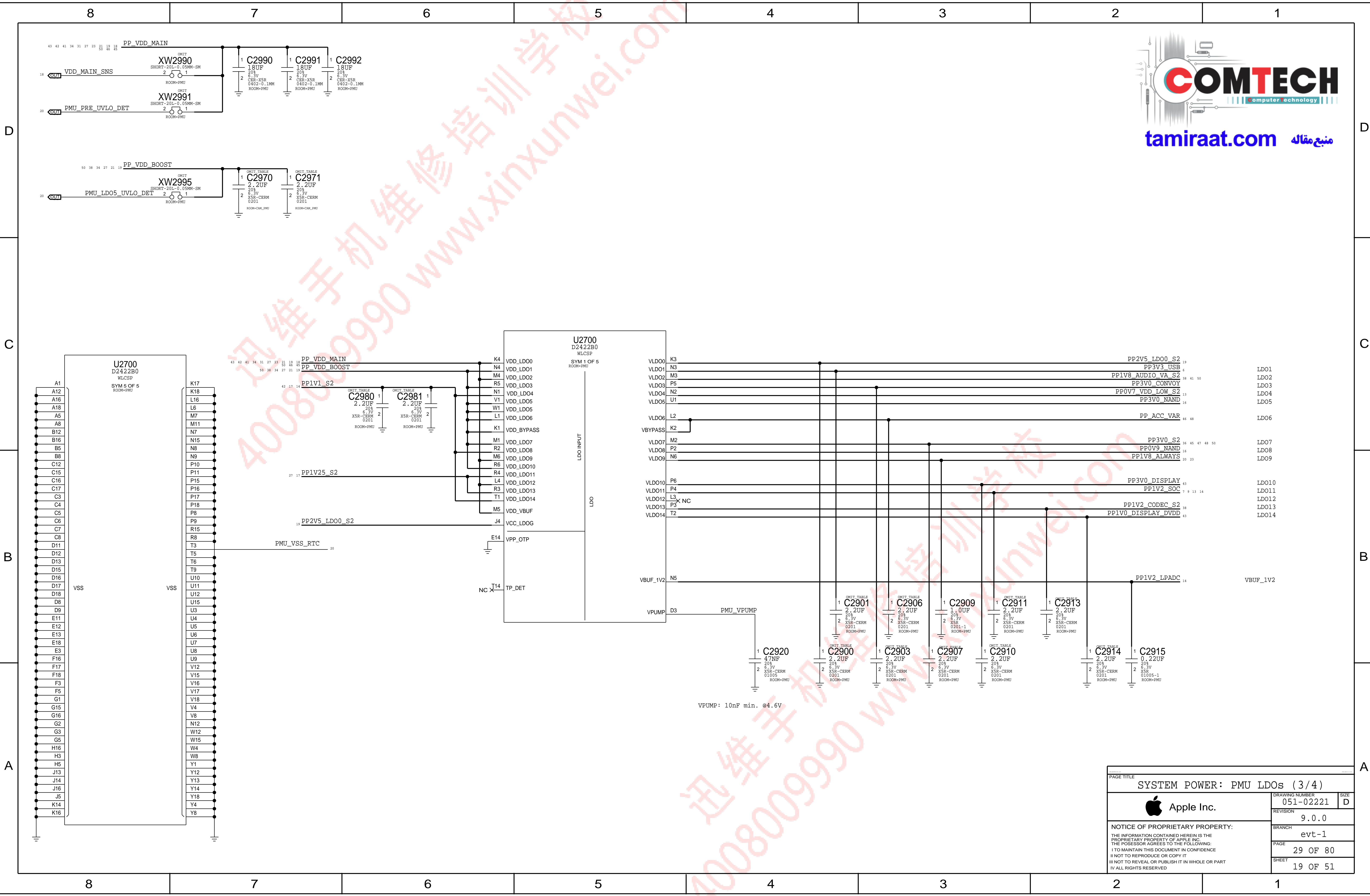
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SYSTEM POWER: PMU Bucks (1/4)		
DRAWING NUMBER		SIZE
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REVISION		
9.0.0		
BRANCH		
evt-1		
PAGE		
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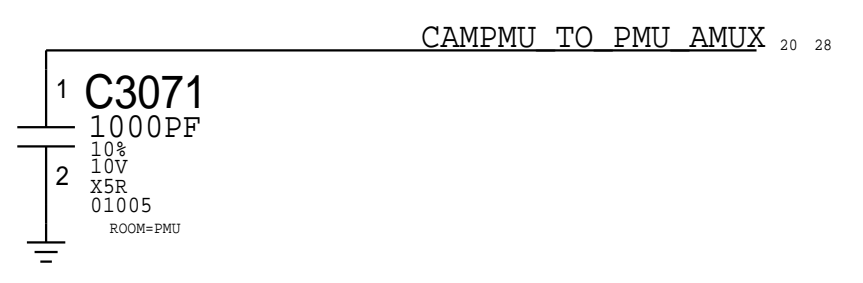
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	PAGE	28 OF 80
	SHEET	18 OF 51



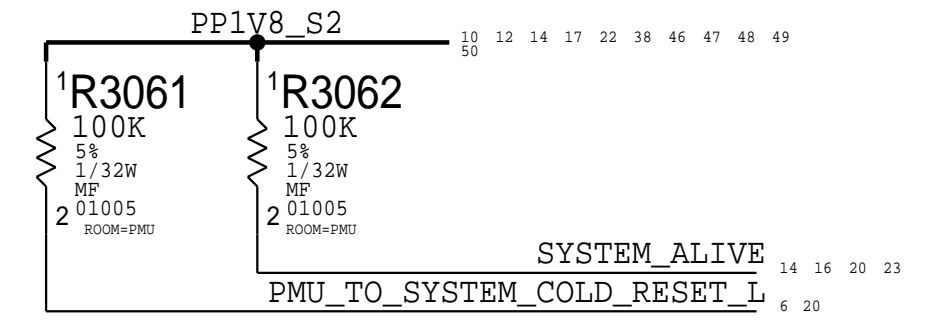
4008009990 www.xinxunwei.com
 迅维手机维修培训学校

PAGE TITLE		
SYSTEM POWER: PMU LDOs (3/4)		
Apple Inc.	DRAWING NUMBER	051-02221
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	PAGE	29 OF 80
	SHEET	19 OF 51

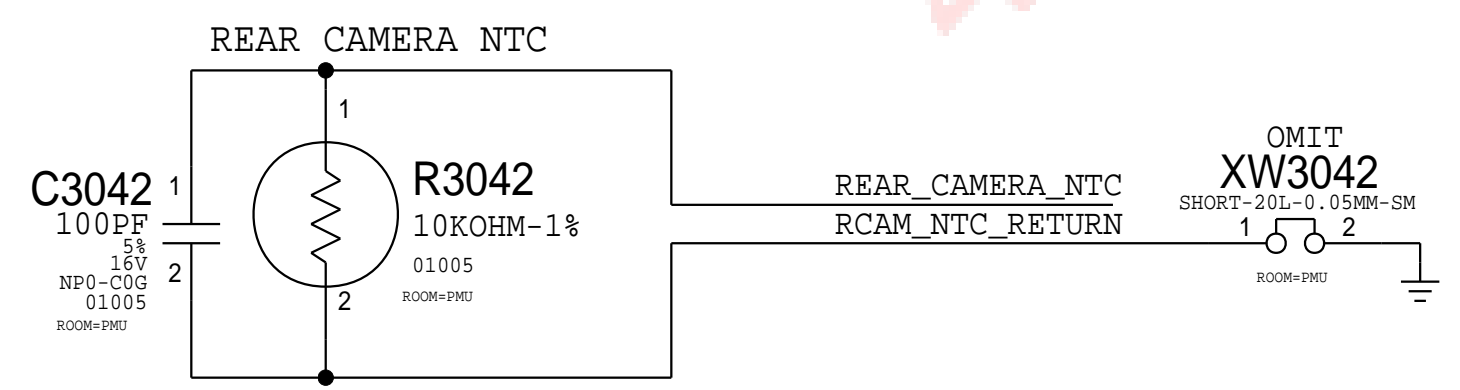
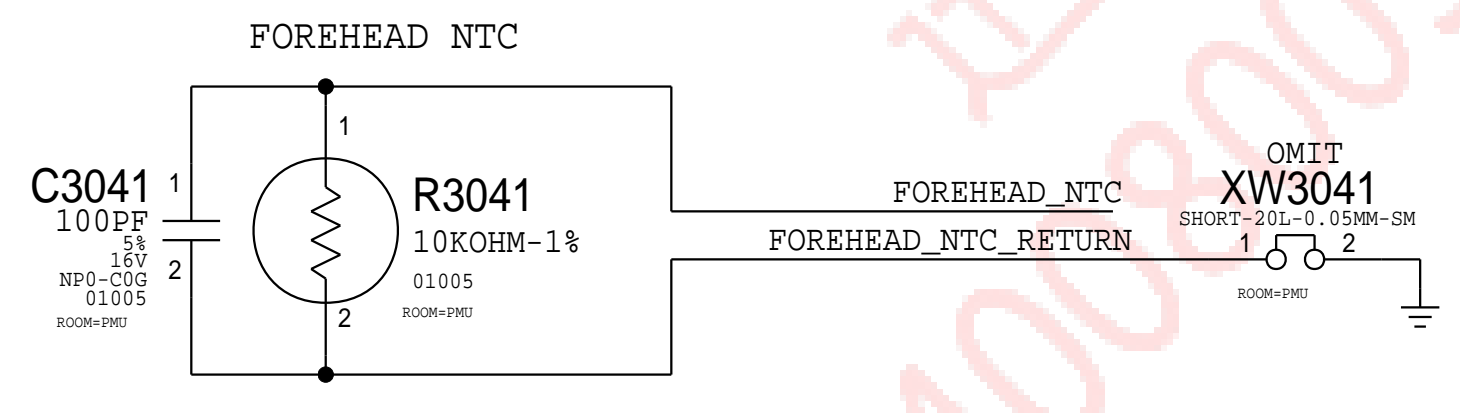
D Ansel AMUX



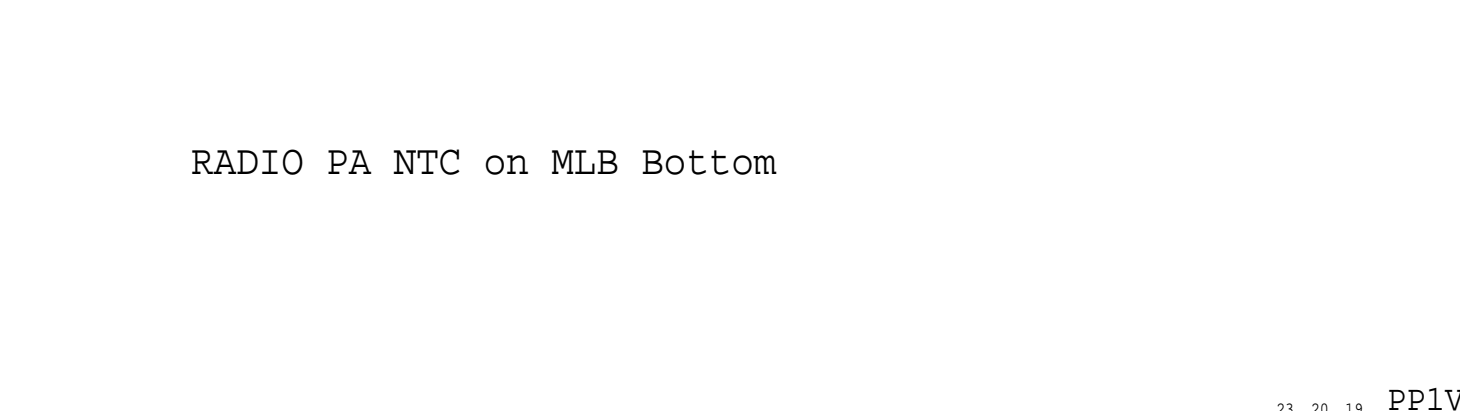
C COLD_RESET & SYSTEM_ALIVE



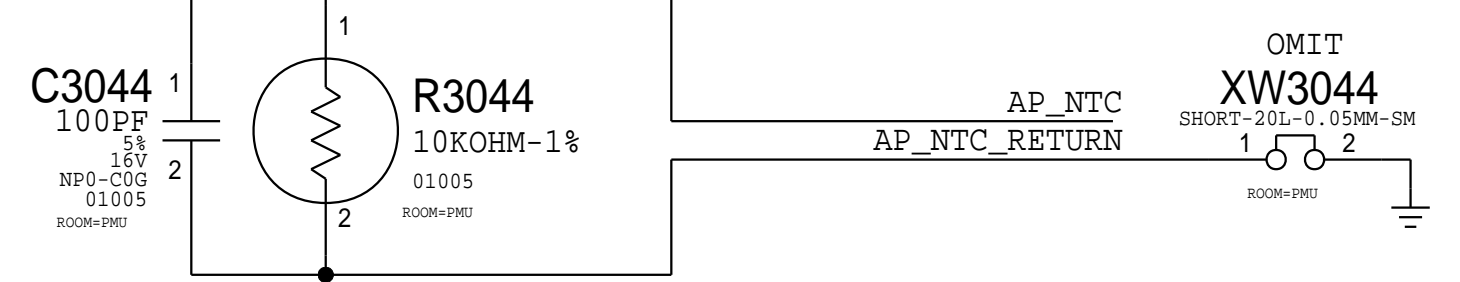
C NTCs



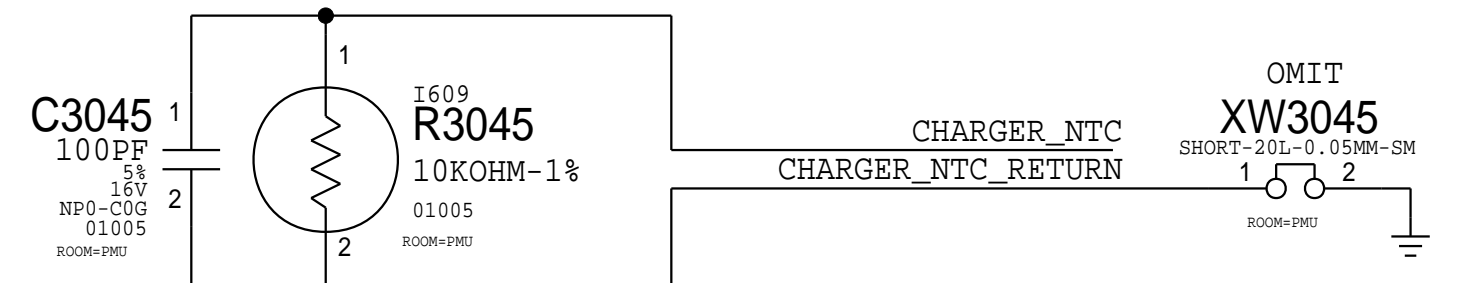
B RADIO PA NTC on MLB Bottom



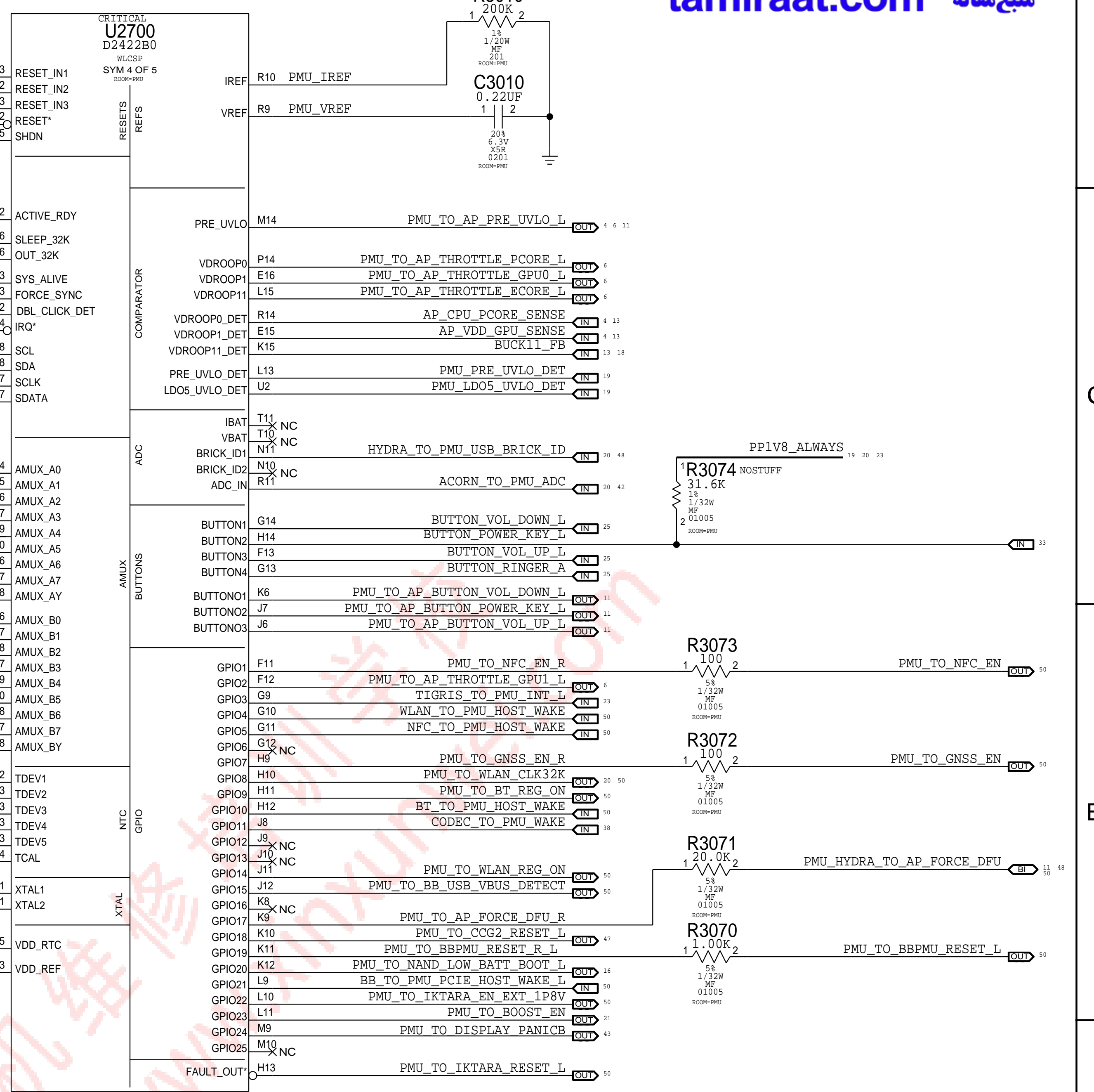
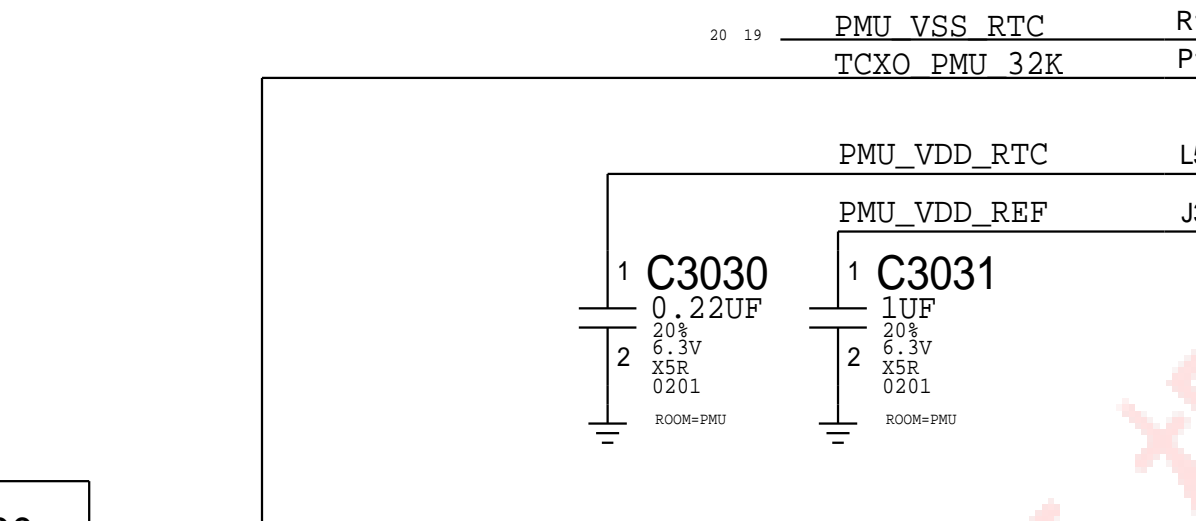
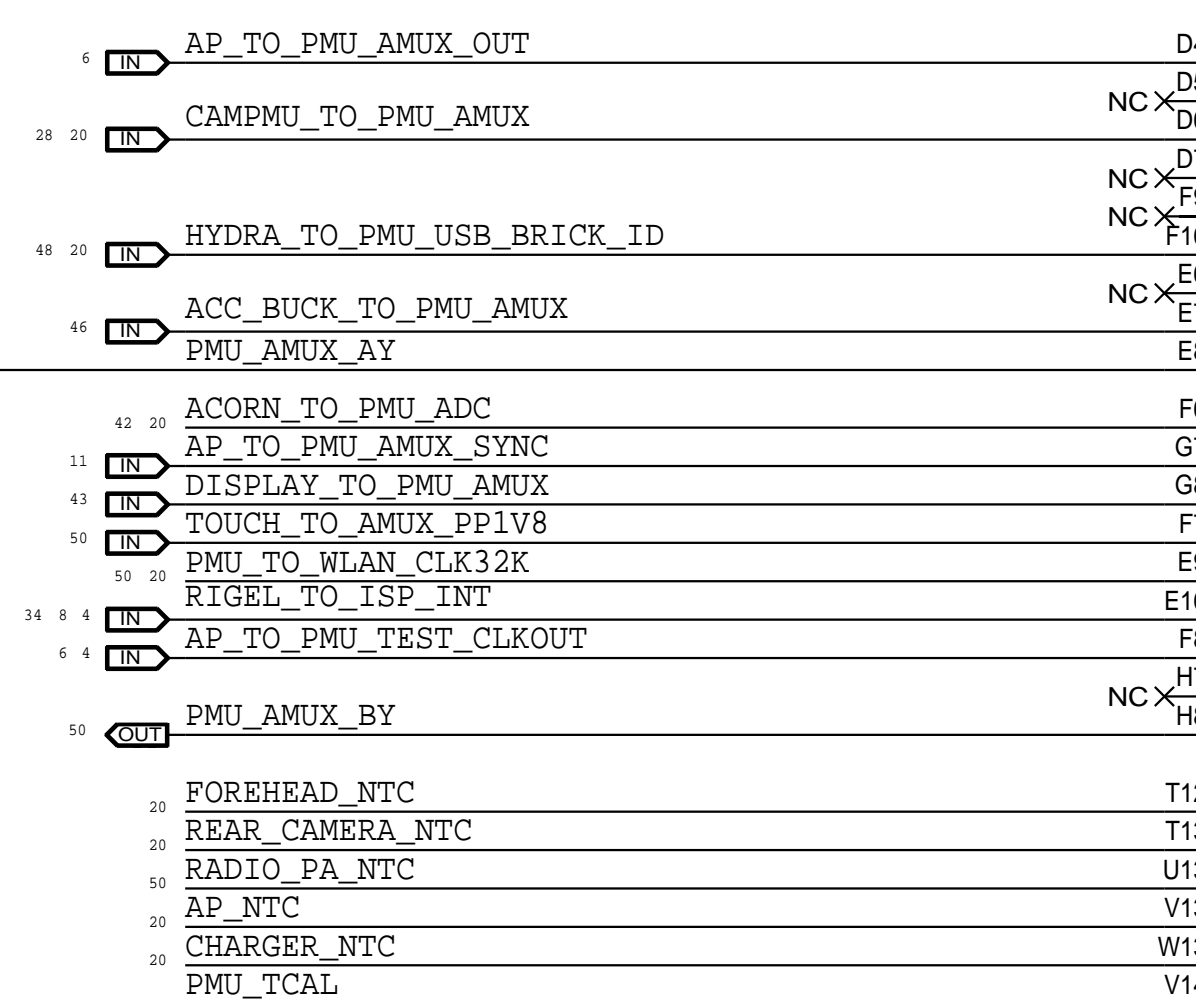
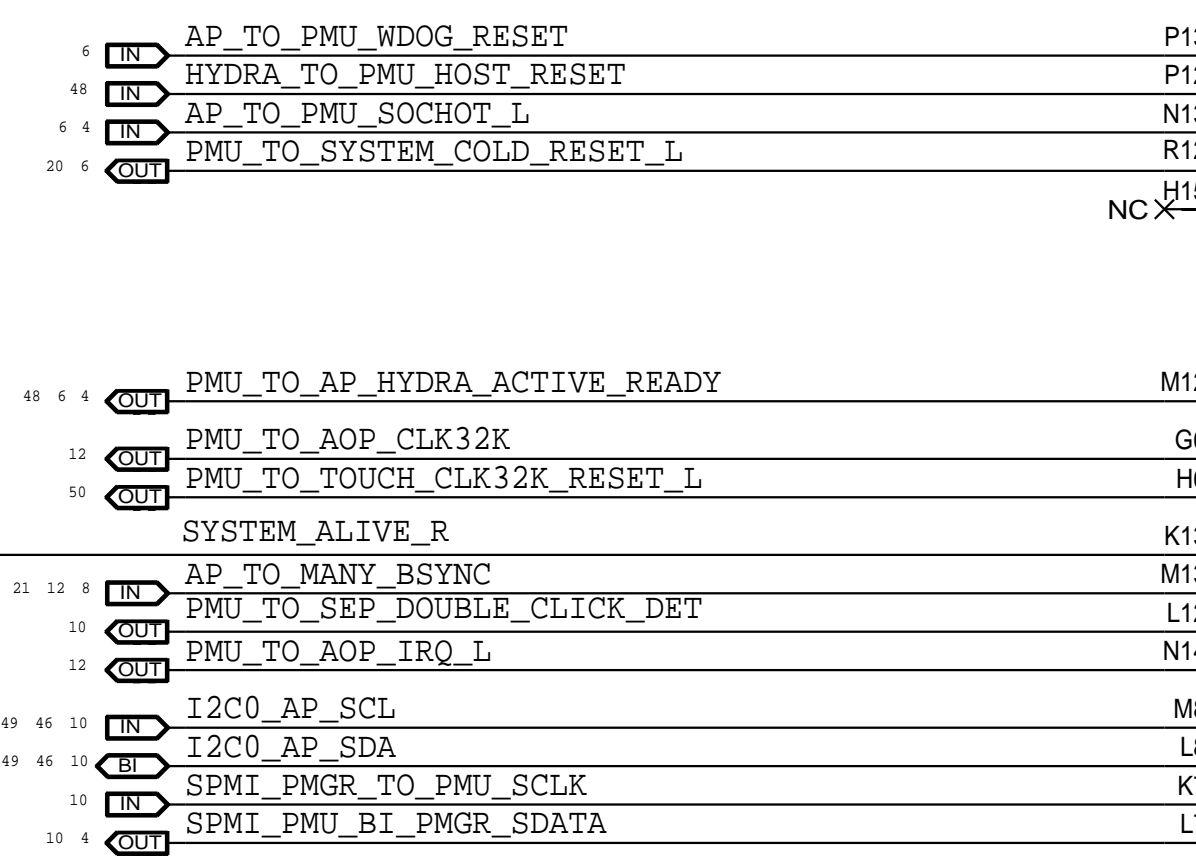
A AP NTC



A CHARGER NTC

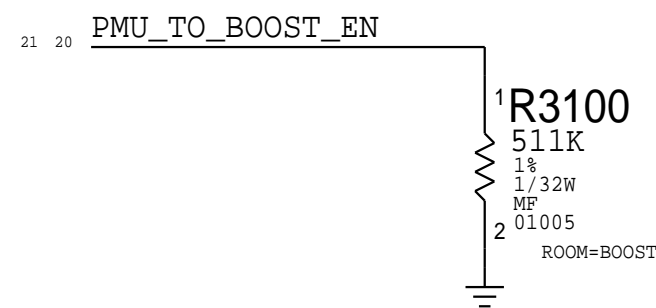


NOTE:100PF CAPS ARE THE SAMPLING CAPS FOR PMU ADC



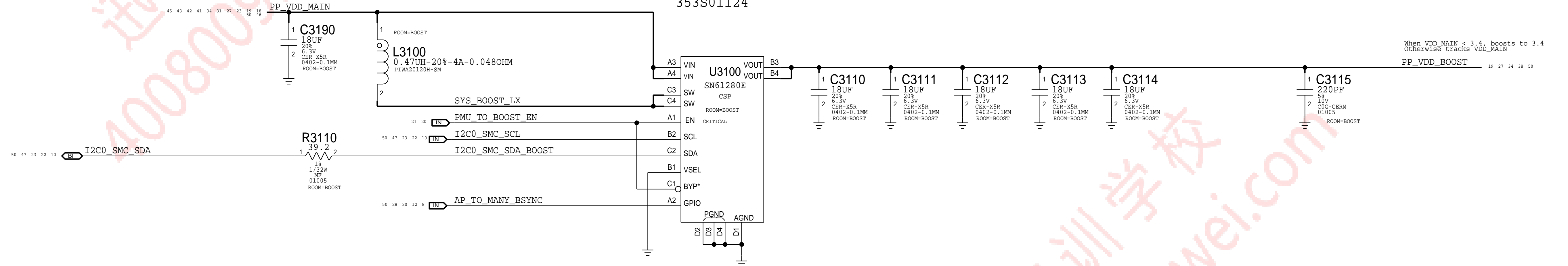
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	SIZE	D

Boost Enable Pull



BOOST

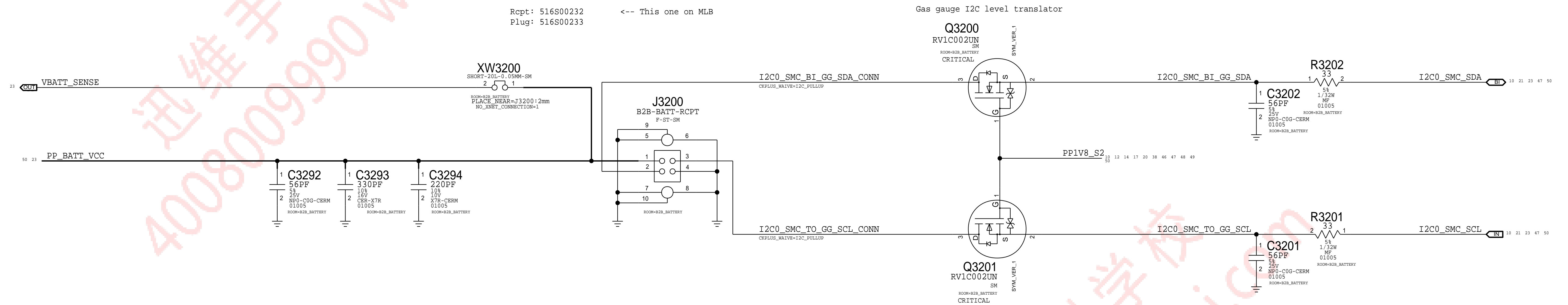
353S01124



PAGE TITLE		
SYSTEM POWER: Boost		
Apple Inc.	DRAWING NUMBER	051-02221
	REVISION	9.0.0
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	PAGE	31 OF 80
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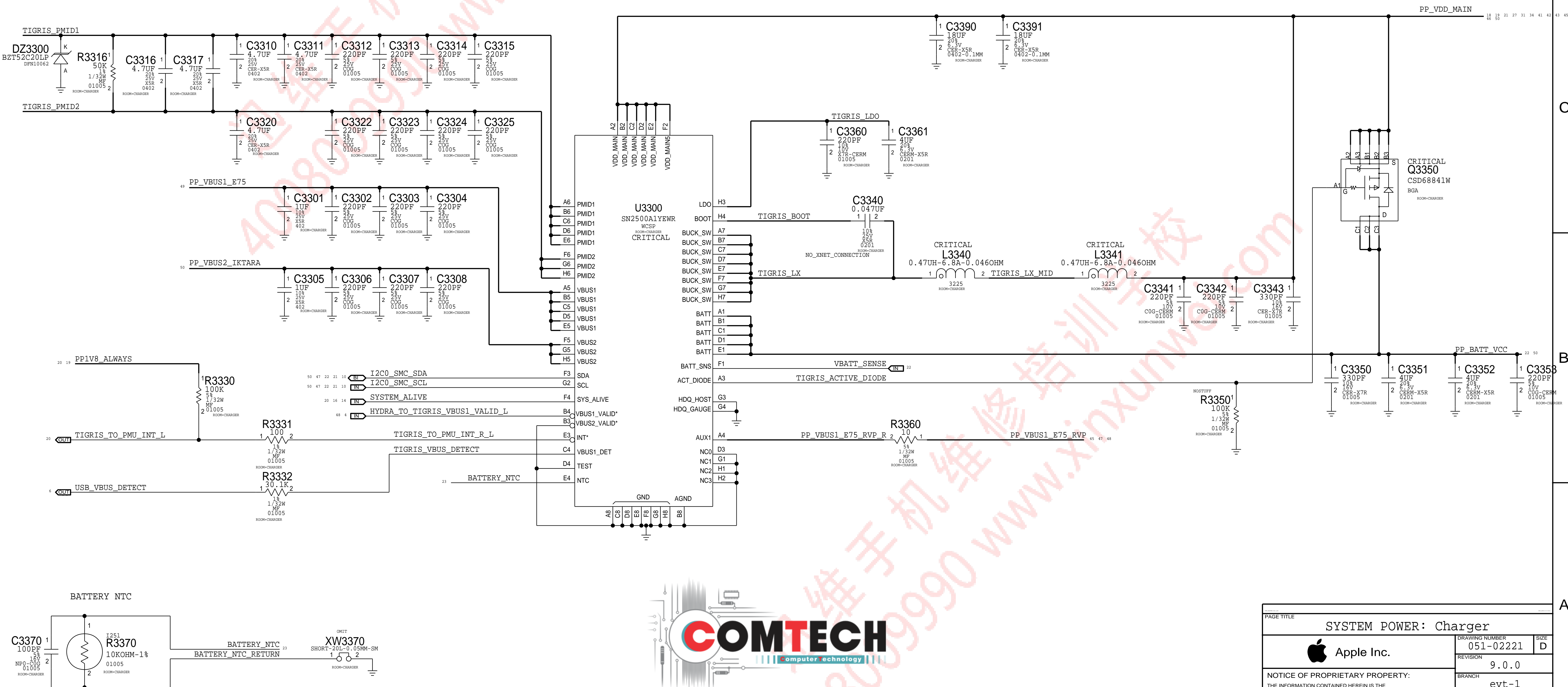
BATTERY CONNECTOR

Rcpt: 516S00232 <-- This one on MLB
Plug: 516S00233



PAGE TITLE		
SYSTEM POWER: B2B Battery		
Apple Inc.	DRAWING NUMBER	051-02221
	REVISION	9.0.0
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TIGRIS2 CHARGER



PAGE TITLE		
SYSTEM POWER: Charger		
	DRAWING NUMBER	051-02221
	REVISION	9.0.0
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Iktara Components on MLB Bottom



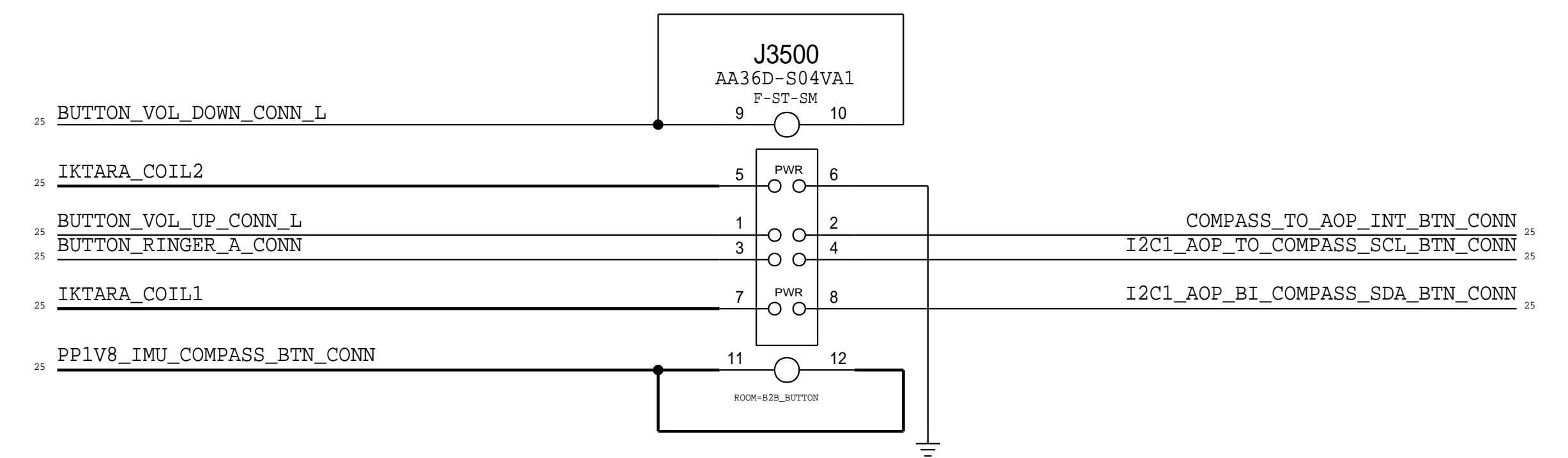
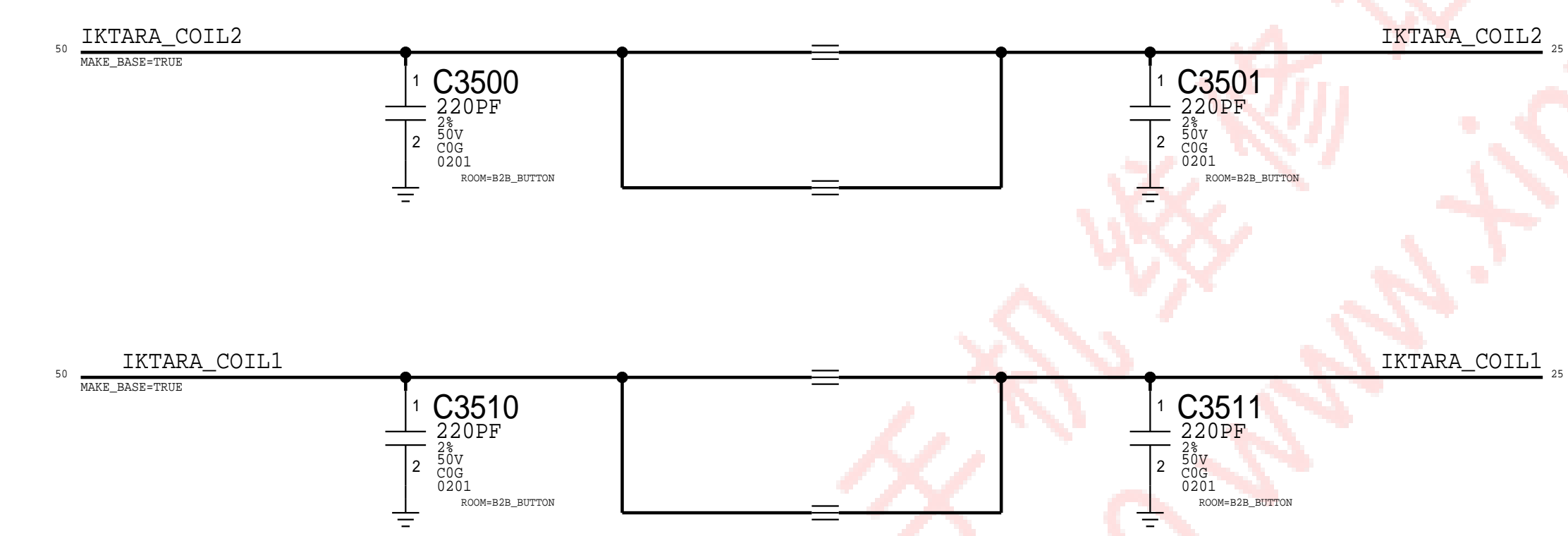
PAGE TITLE		
SYSTEM POWER: Iktara		
DRAWING NUMBER	051-02221	SIZE
		D
REVISION	9.0.0	
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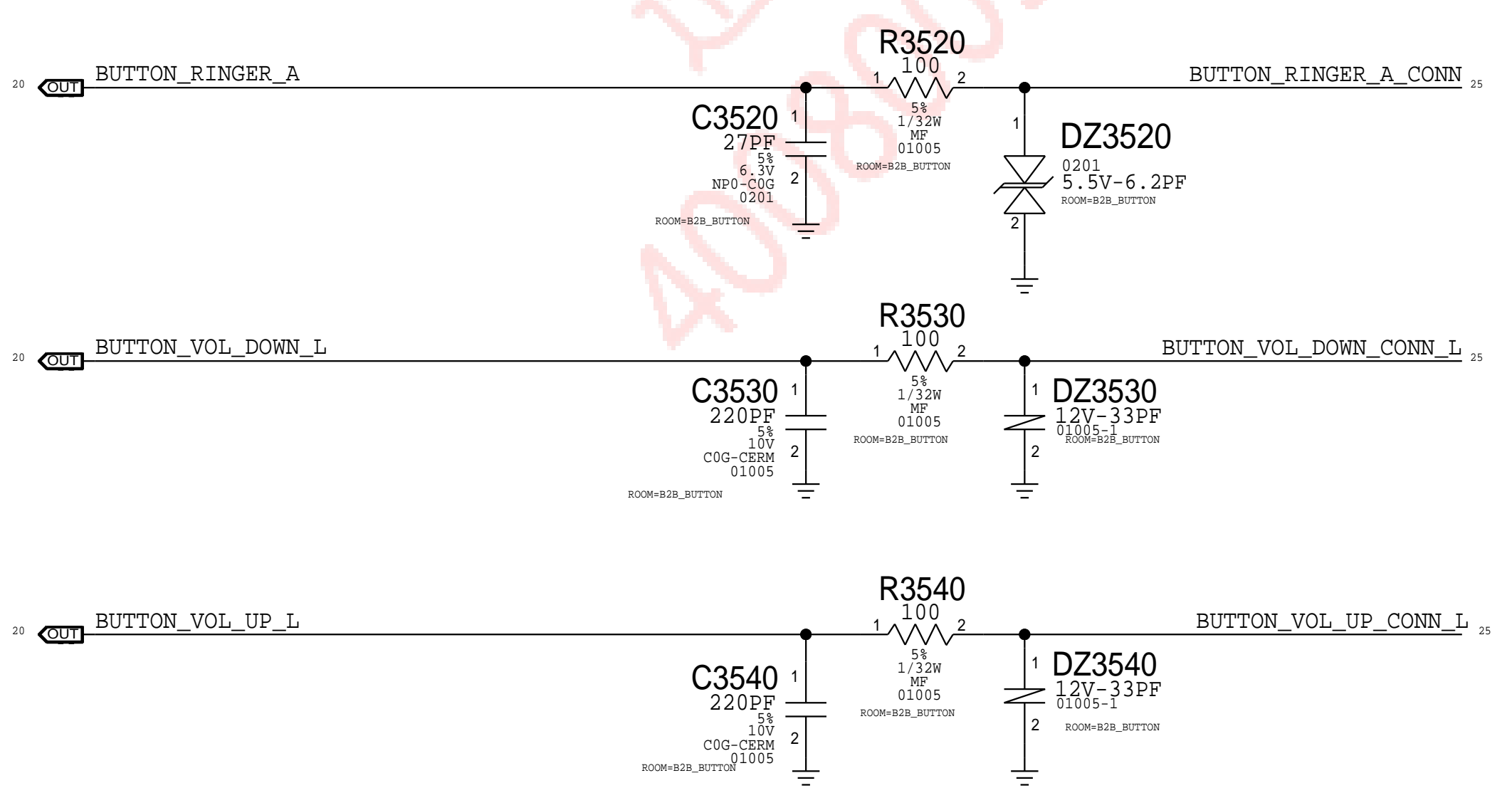
Cyclone + Button Connector

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

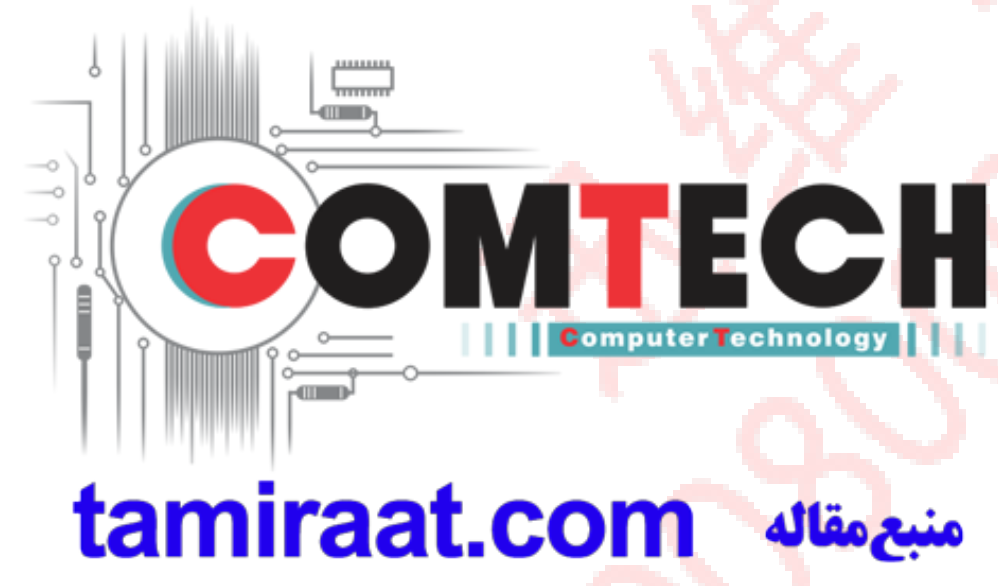
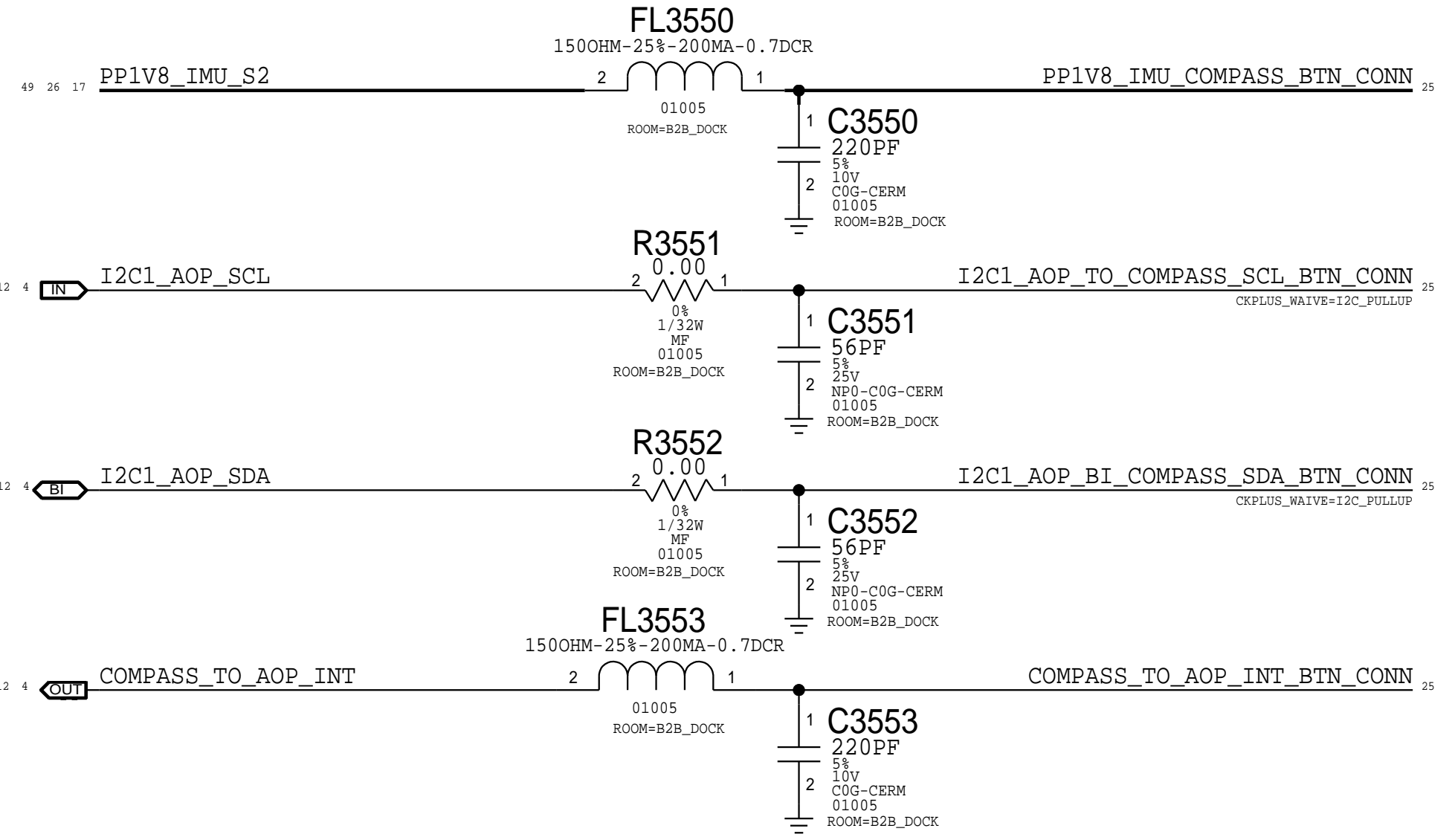
Cyclone Filtering



BUTTONS



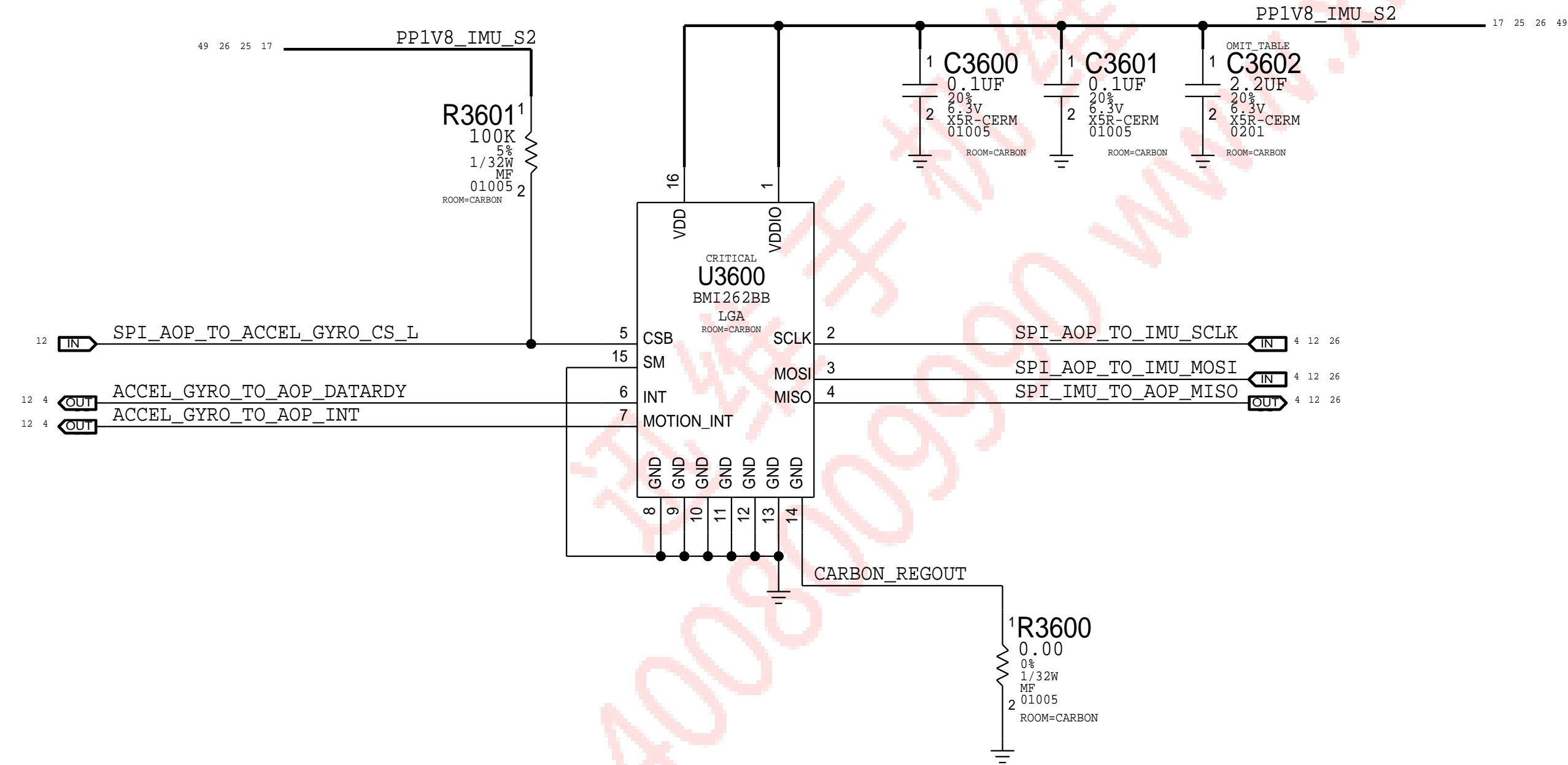
Compass (Button Flex Location)



PAGE TITLE SYSTEM POWER: B2B Cyclone + Button		
Apple Inc.	DRAWING NUMBER 051-02221	SIZE D
	REVISION 9.0.0	BRANCH evt-1
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Graphite - Accel & Gyro

APN: 338S00304

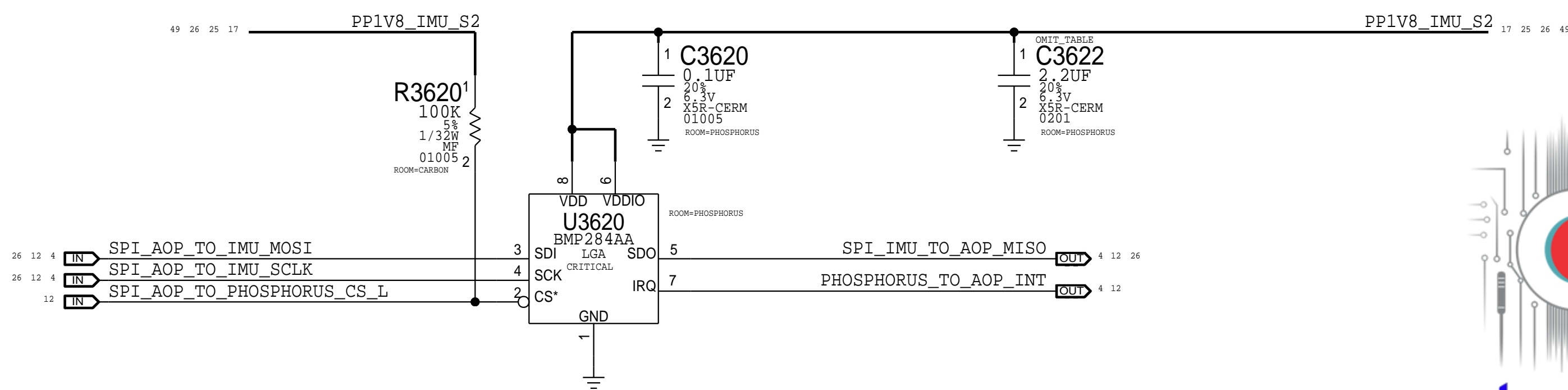


Magnesium - Compass

(On Dock or Button Flex)

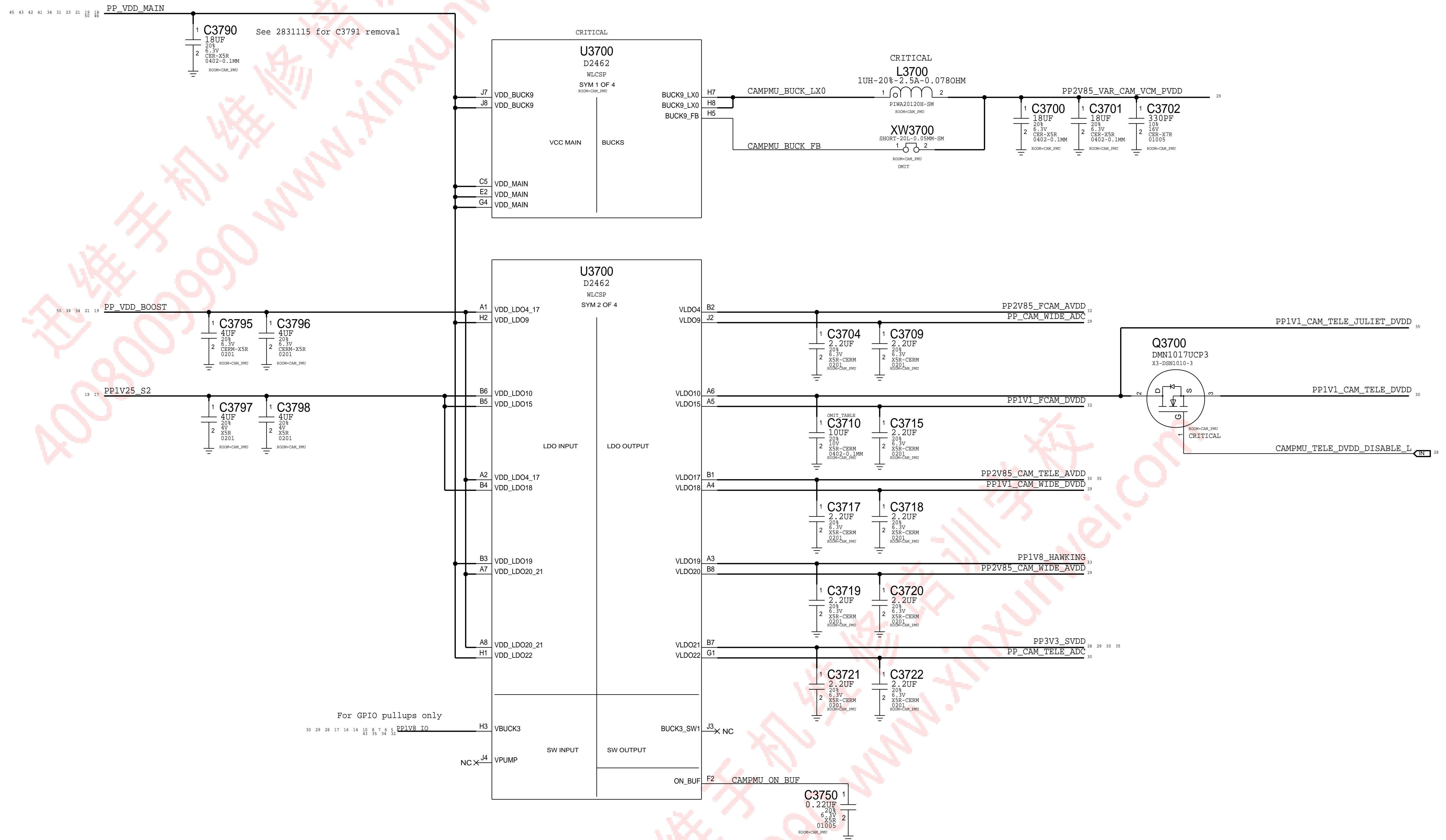
Phosphorus

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



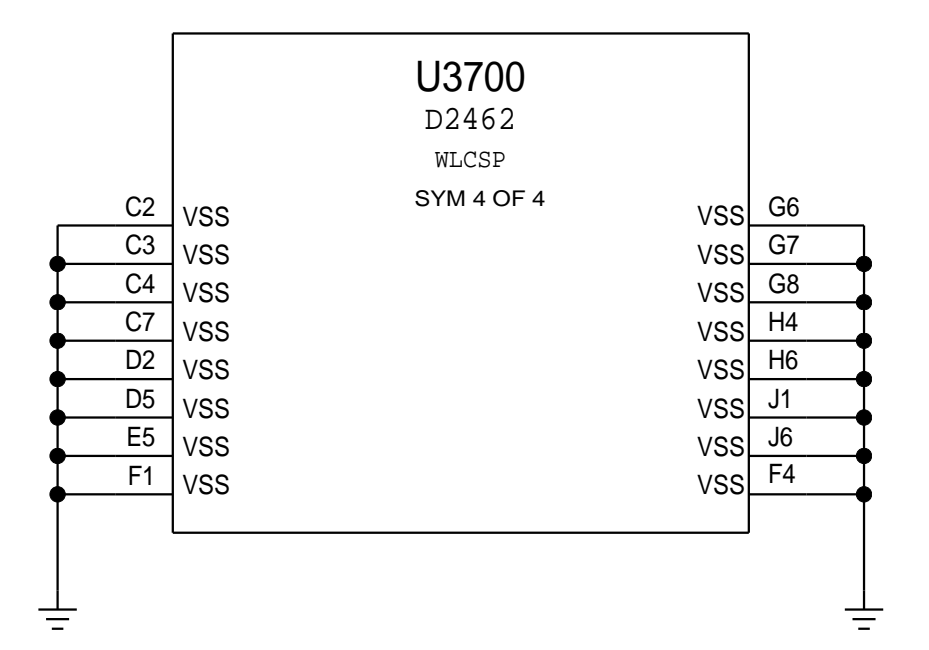
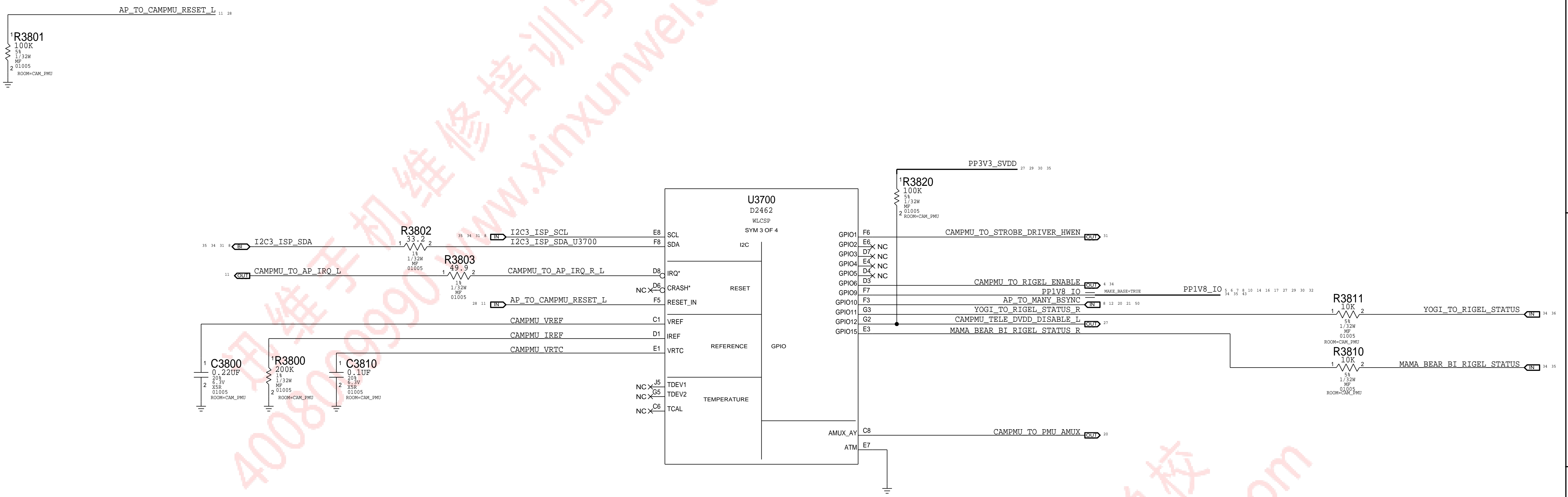
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SENSORS		
	DRAWING NUMBER	051-02221
	REVISION	9.0.0
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Camera PMU



PAGE TITLE CAMERA: PMU (1/2)		
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	REVISION 9.0.0	BRANCH evt-1
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PAGE 37 OF 80	SHEET 27 OF 51	

Pull Downs

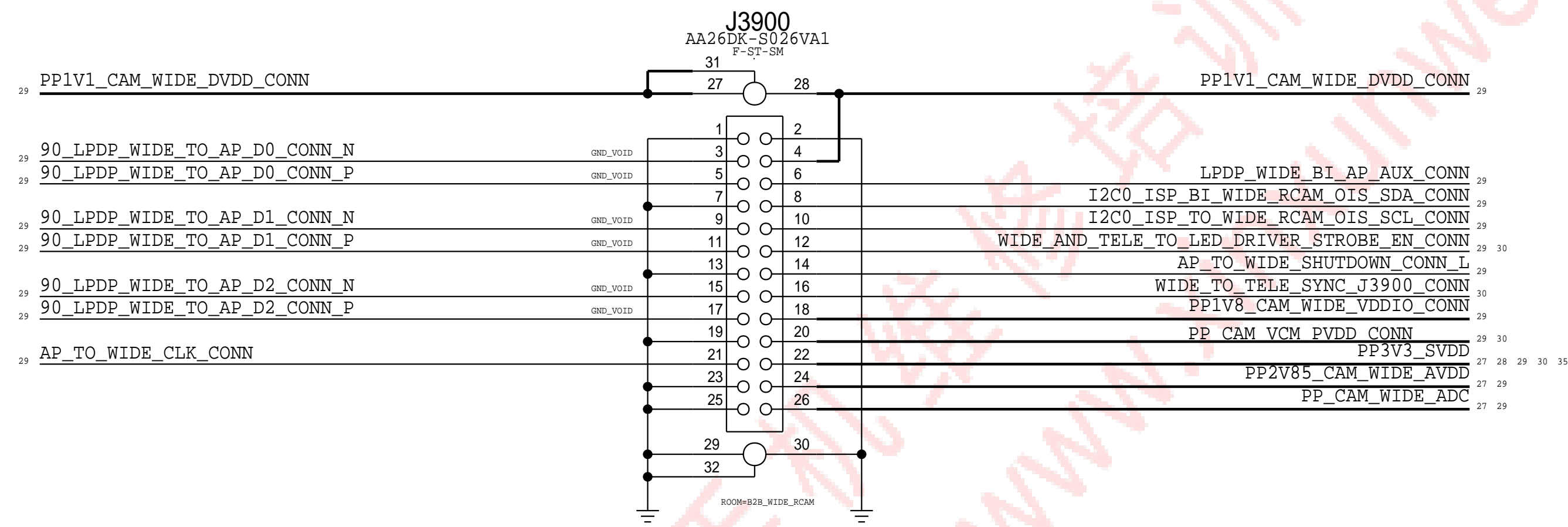


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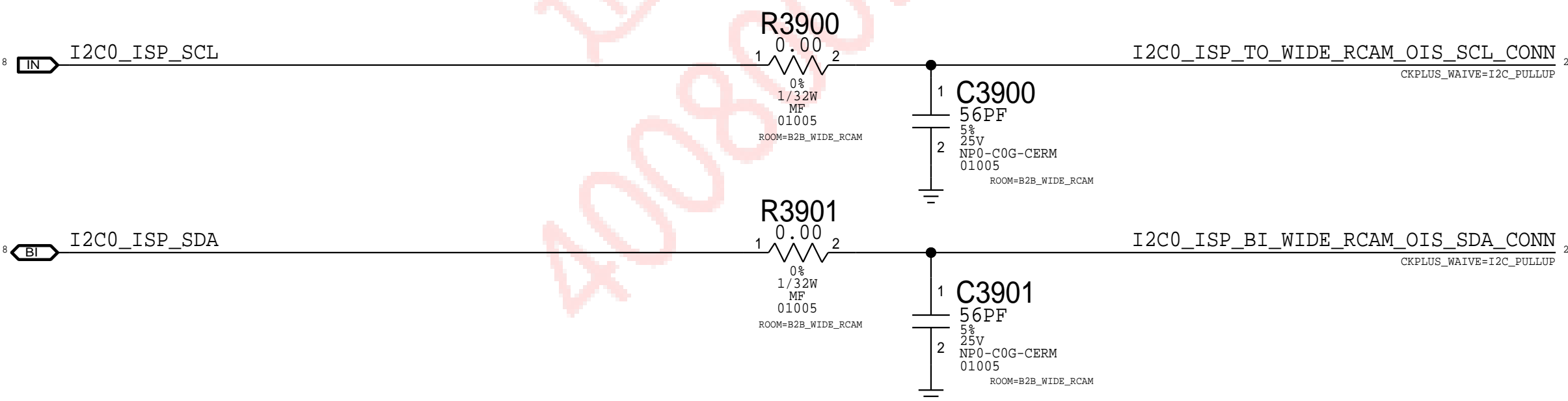
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	REVISION 9.0.0	BRANCH evt-1
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Wide Camera Connector

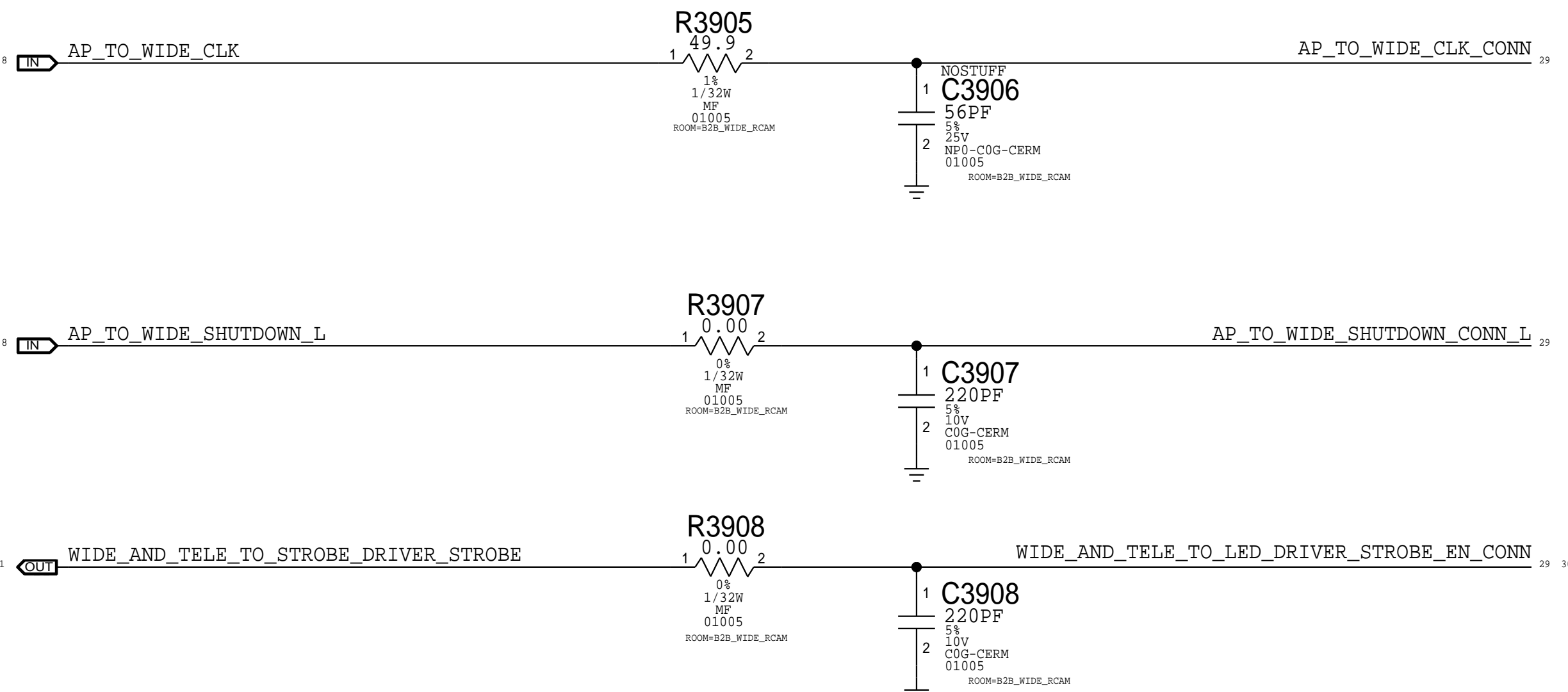
Rcpt: 516S00313 <-- This one on MLB
 Plug: 516S00314



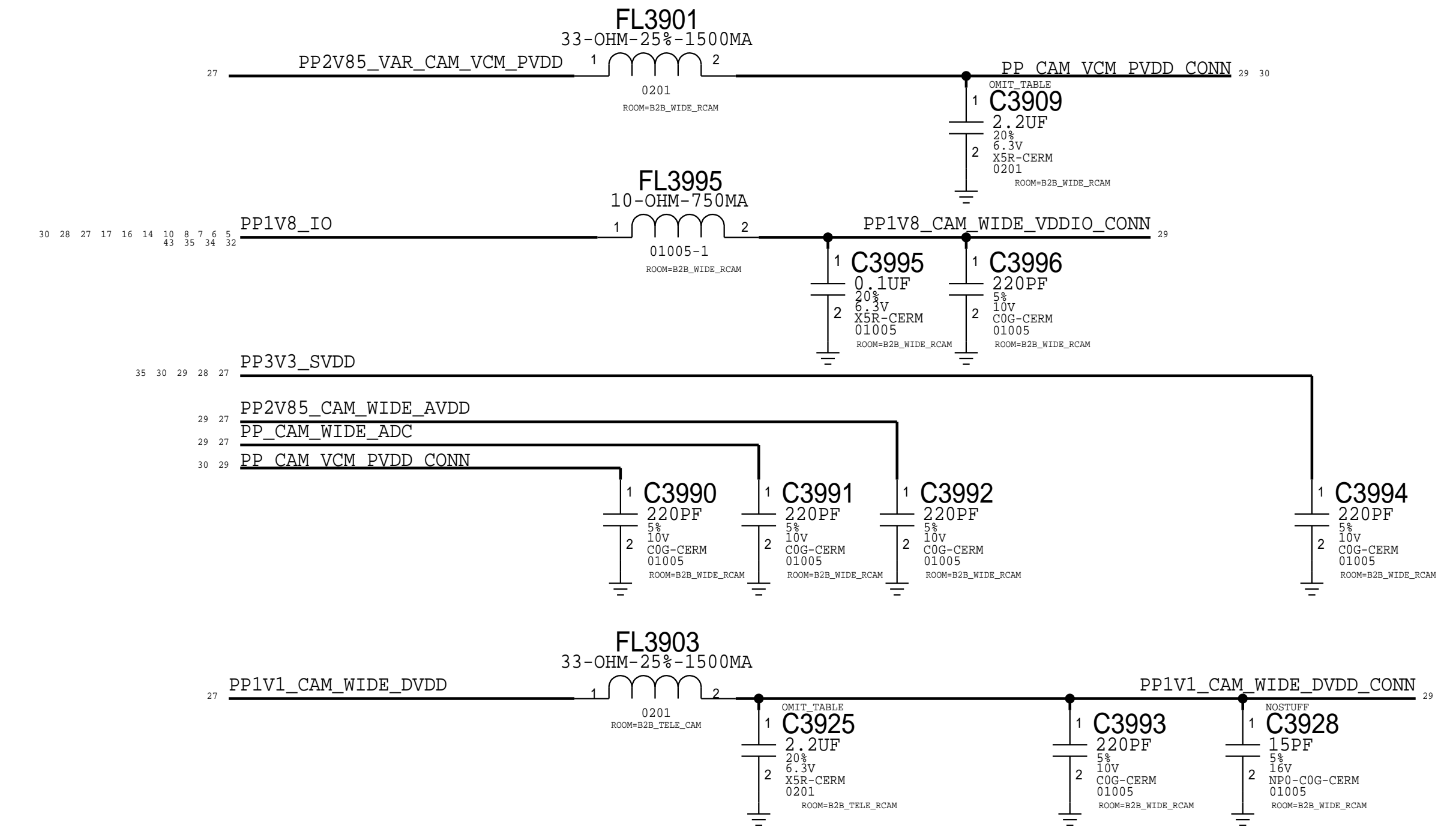
ISP I2C



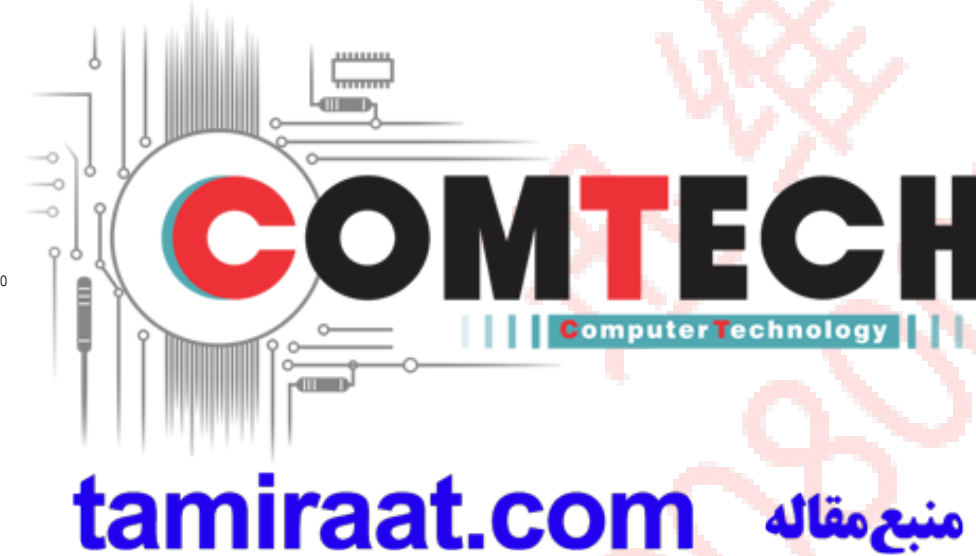
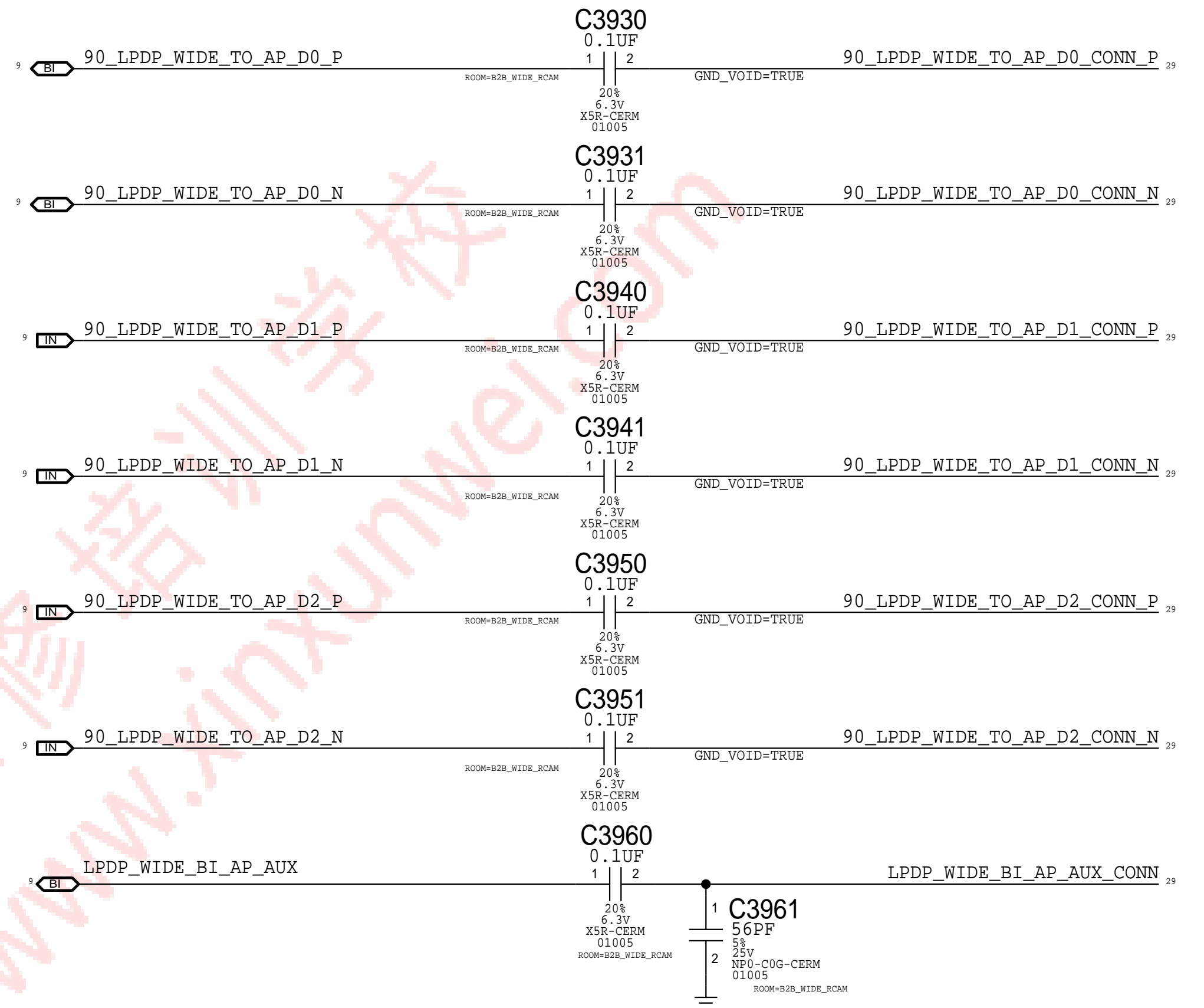
IO Filters



Power Filtering



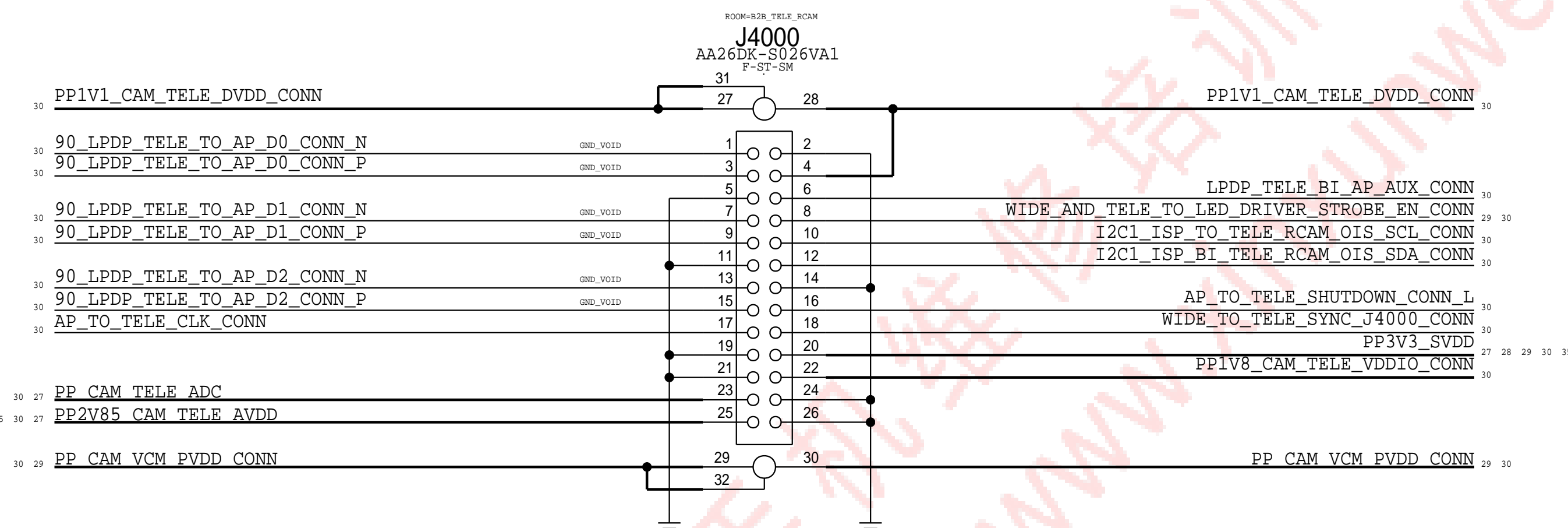
LPDP Filters



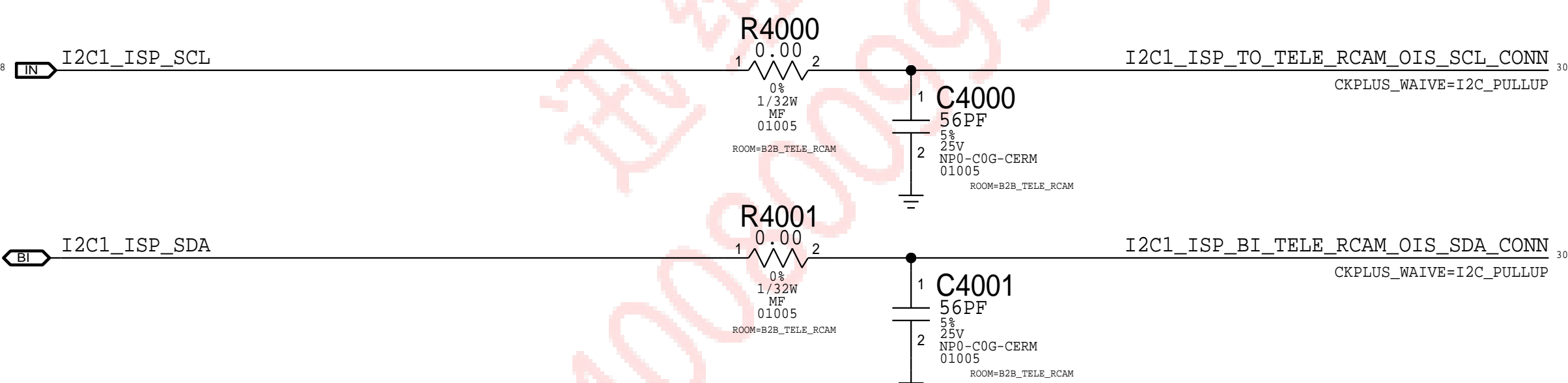
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Tele Camera Connector

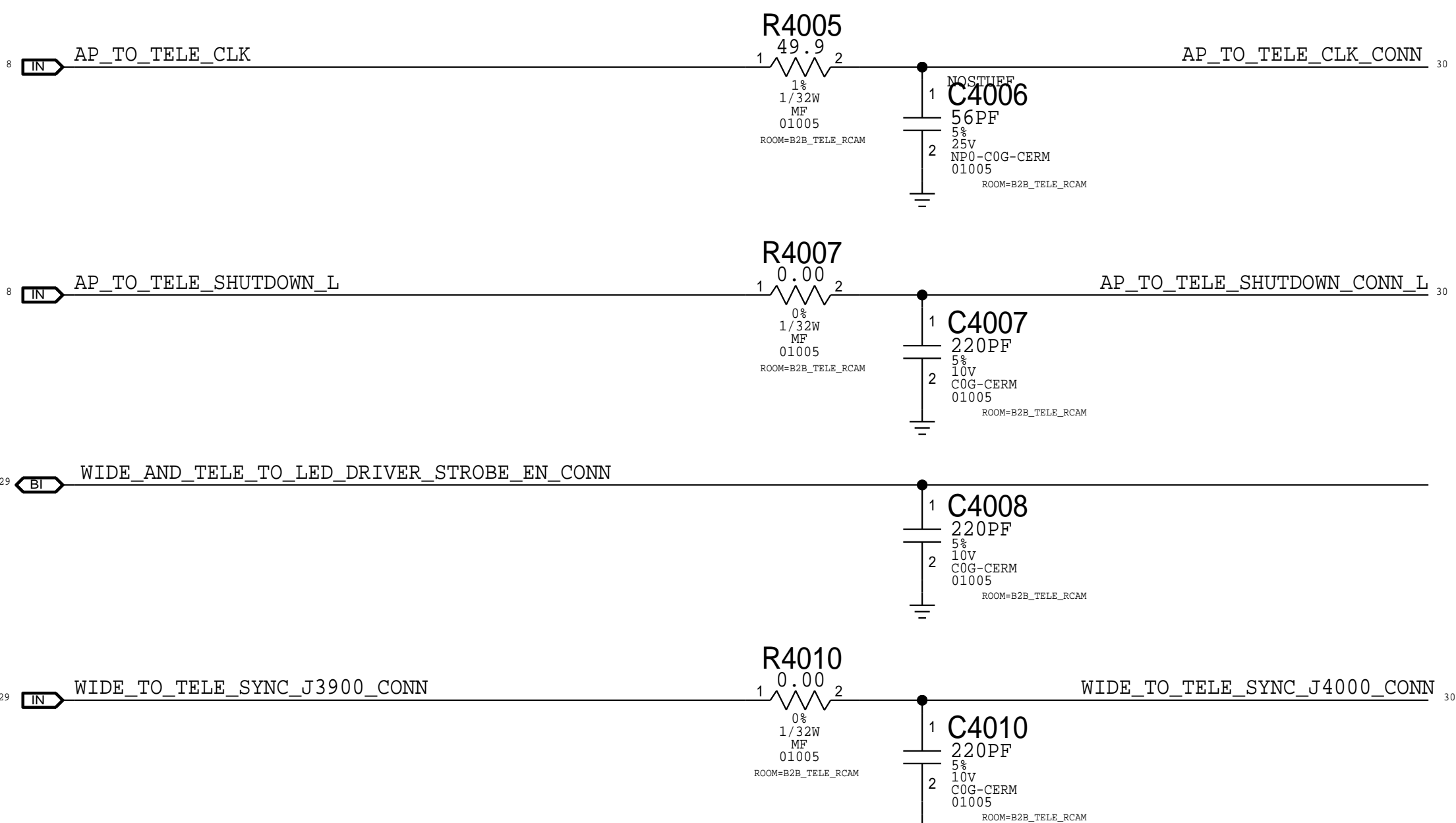
Rcpt: 516S00313 <-- This one on MLB
 Plug: 516S00314



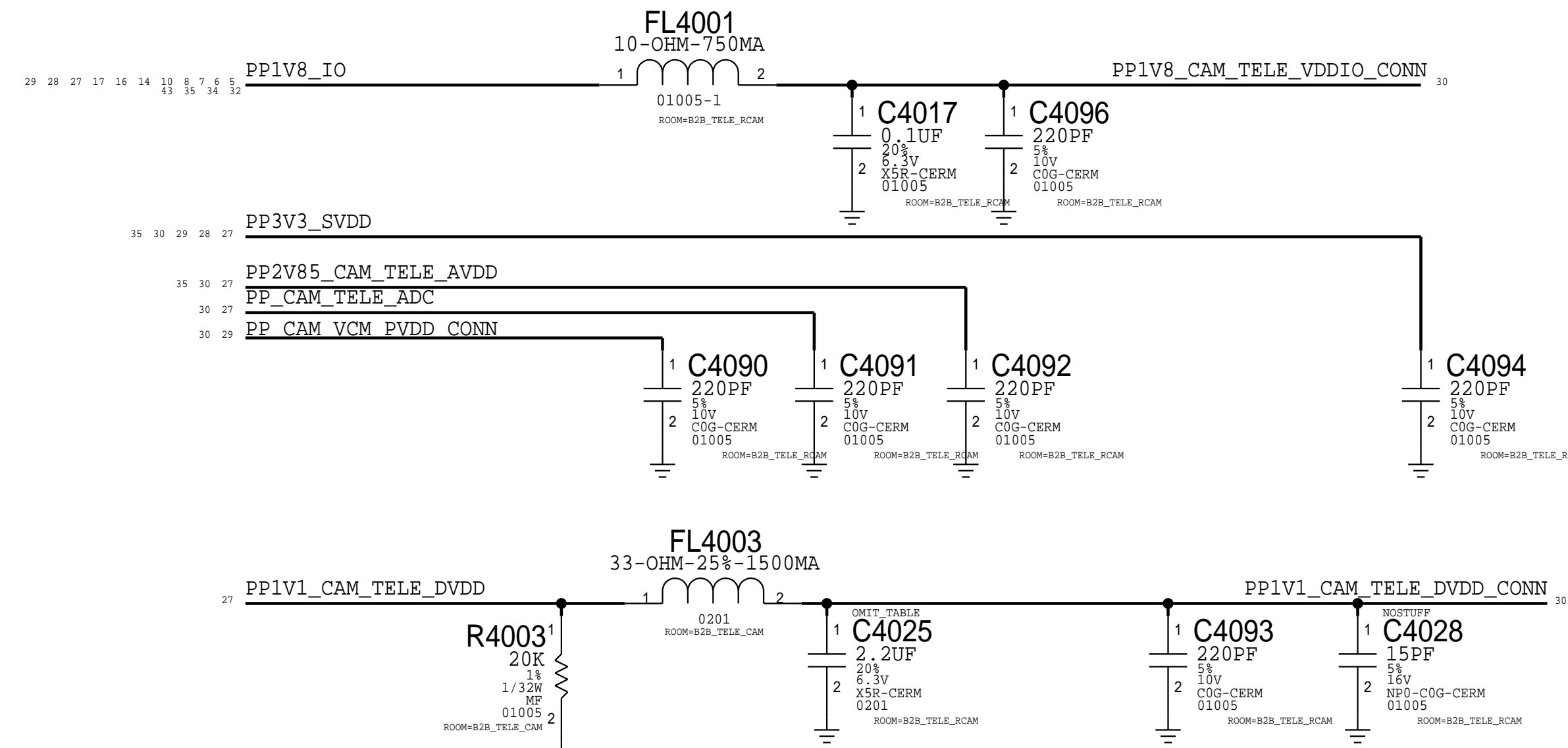
ISP I2C



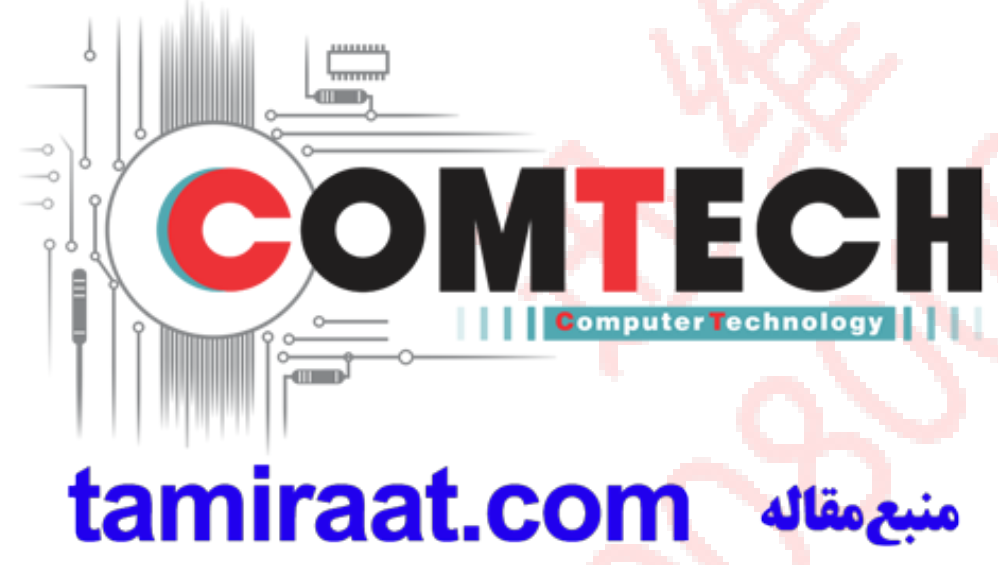
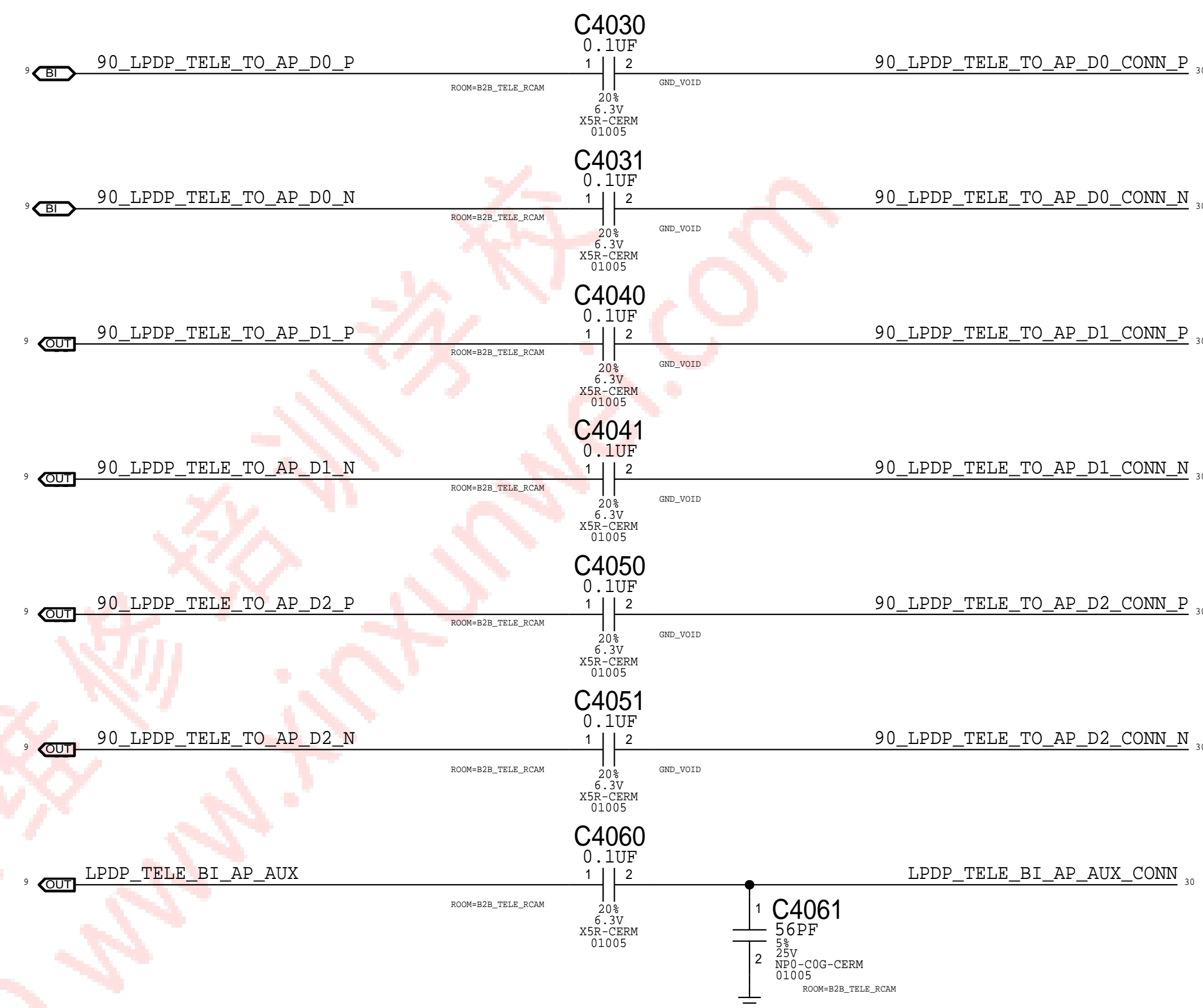
IO Filters



Power Filtering



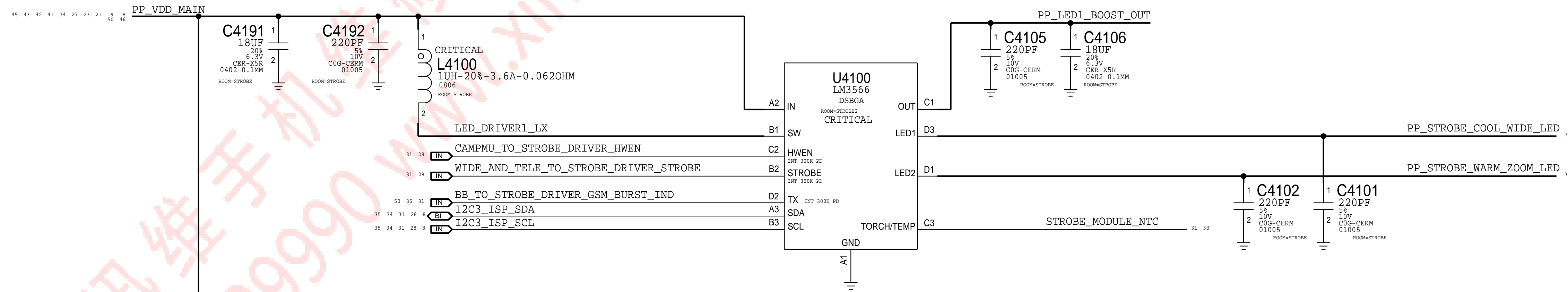
LPDP



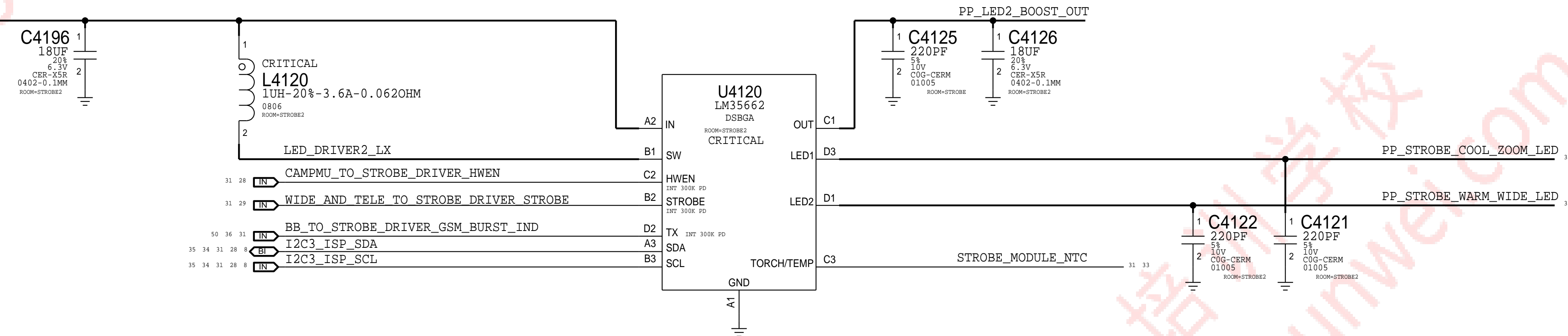
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LED STROBE DRIVERS (NEON)

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



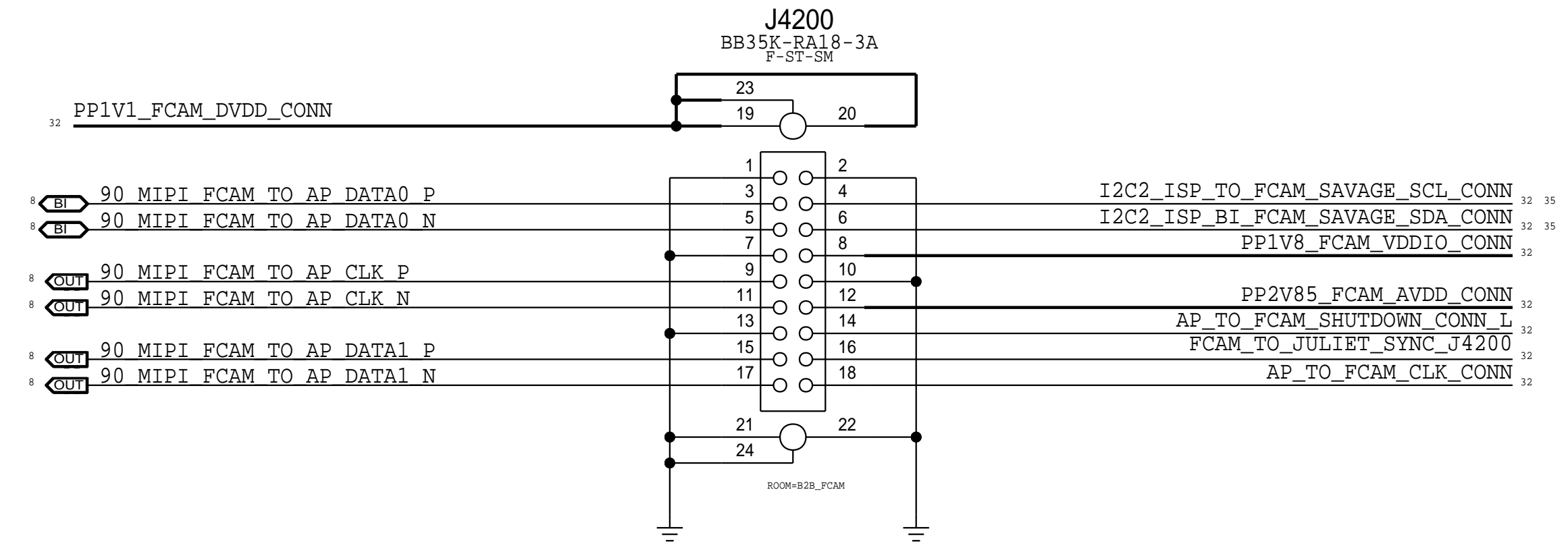
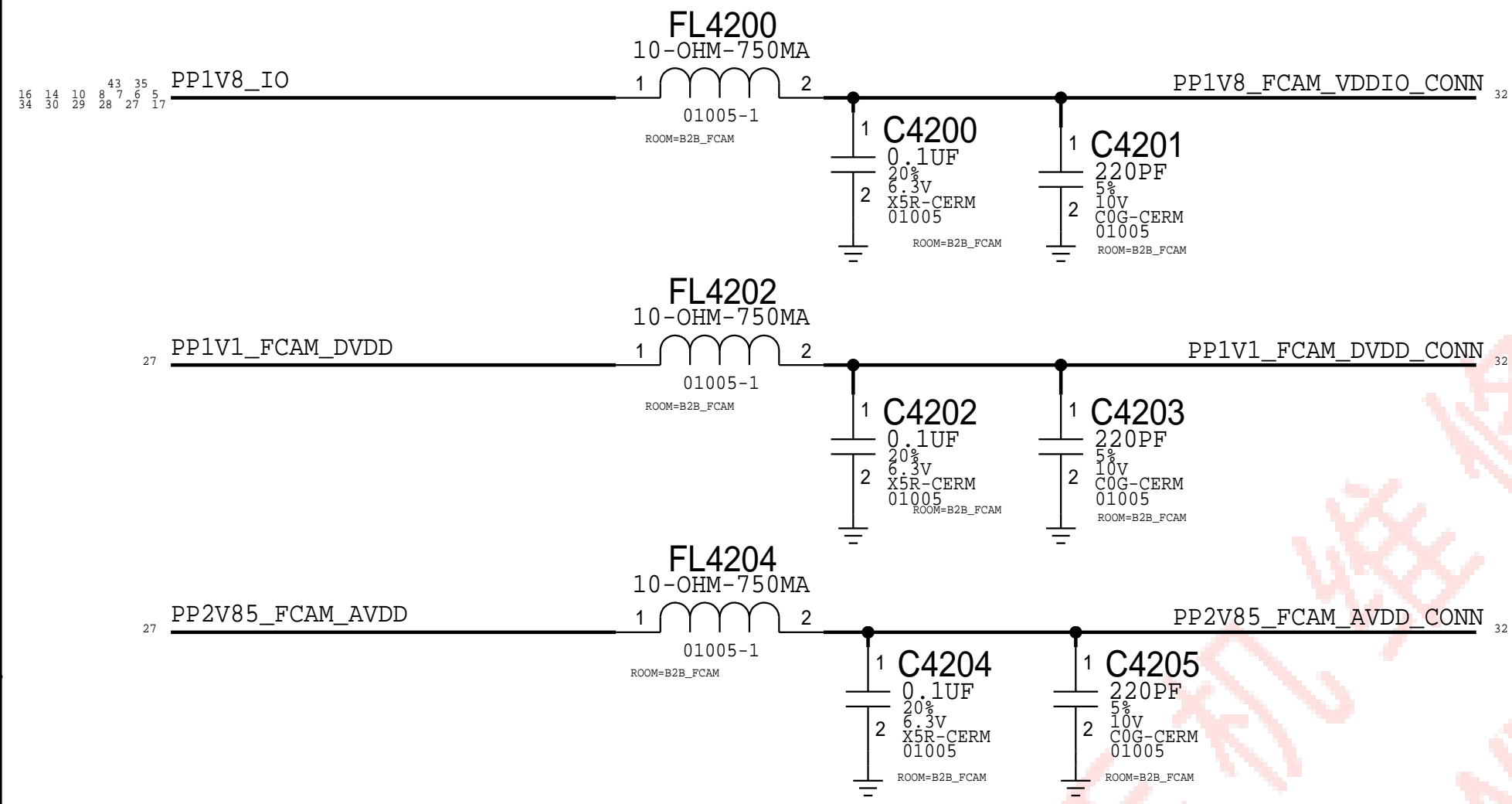
APN:353S00868
I2C Address (7-bit): 0x67



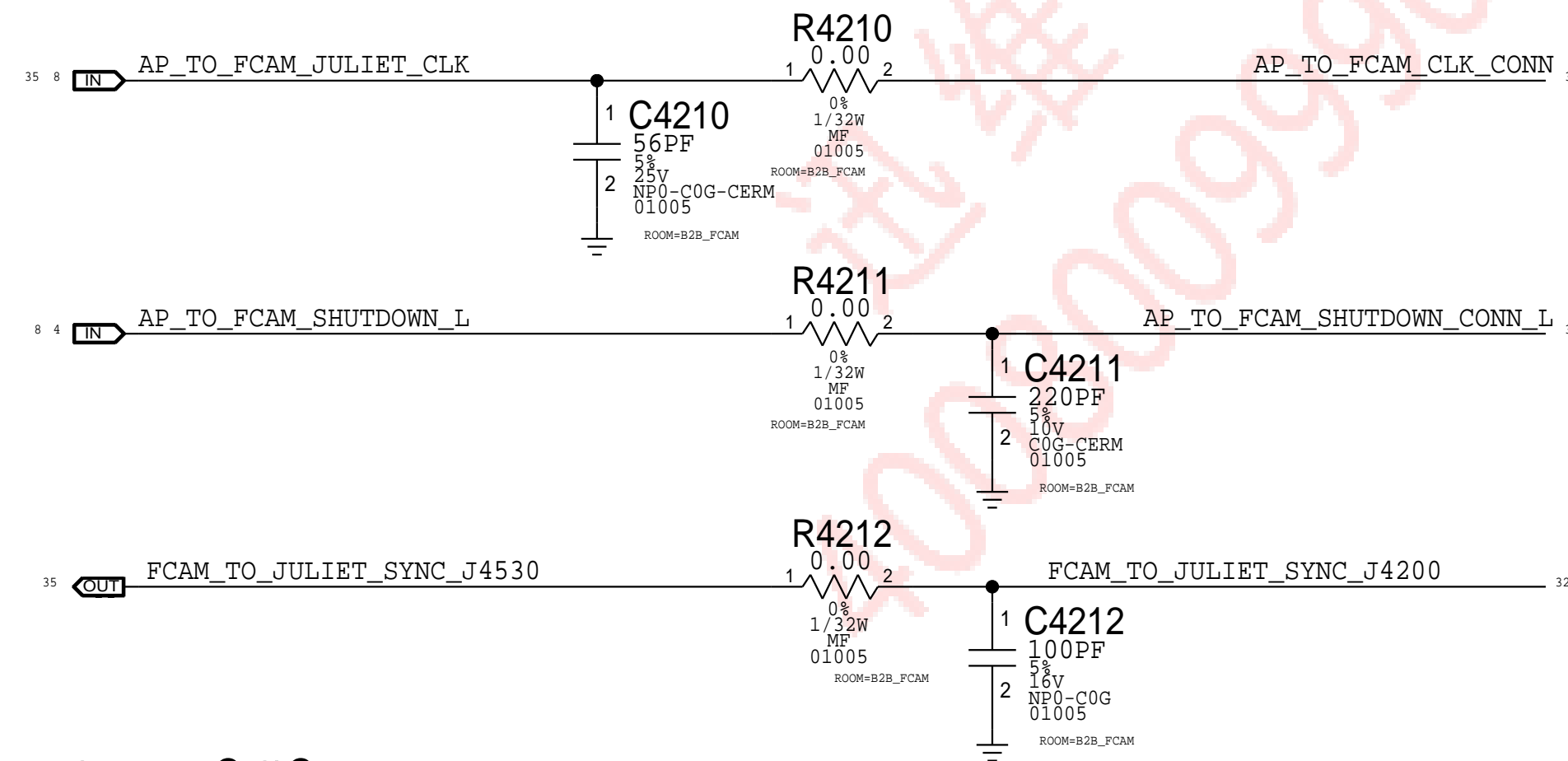
NEW HAMPSHIRE POWER

FCAM Connector

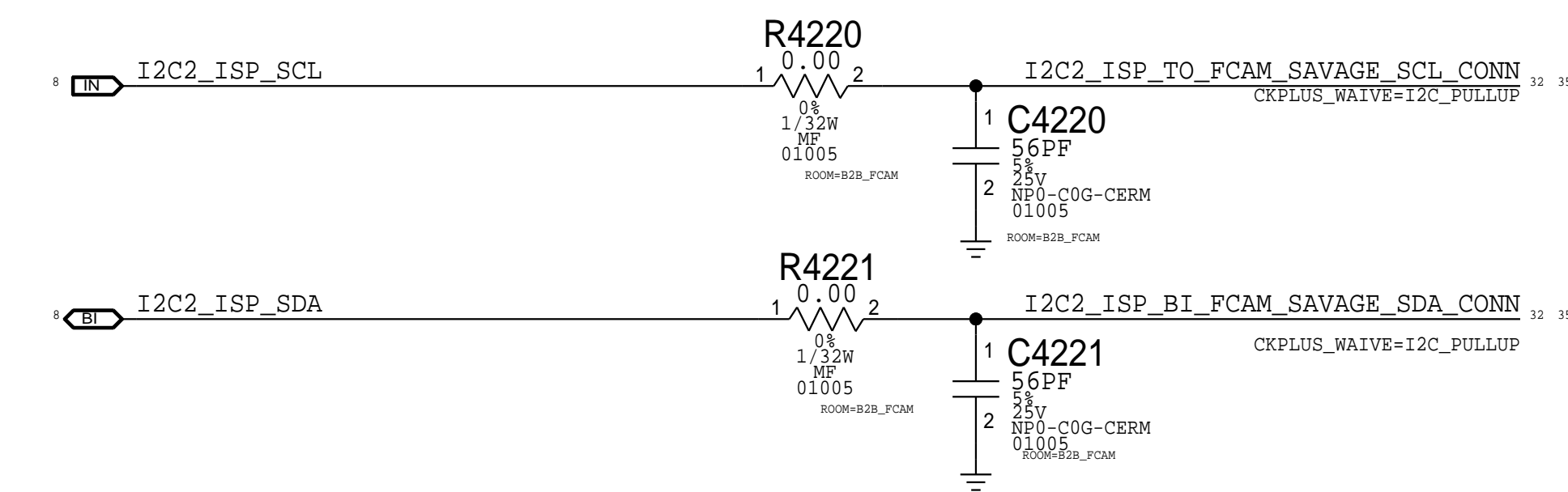
Rcpt: 516S00244 <-- This one on MLB
 Plug: 516S00245



FCAM I/O

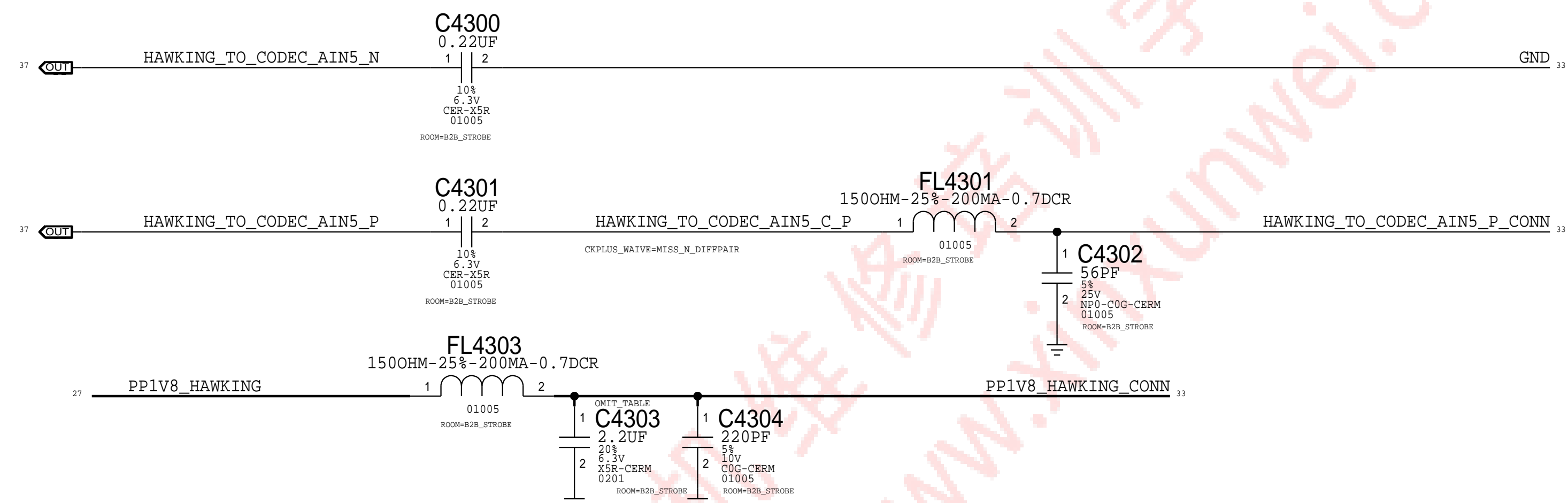


ISP I2C2

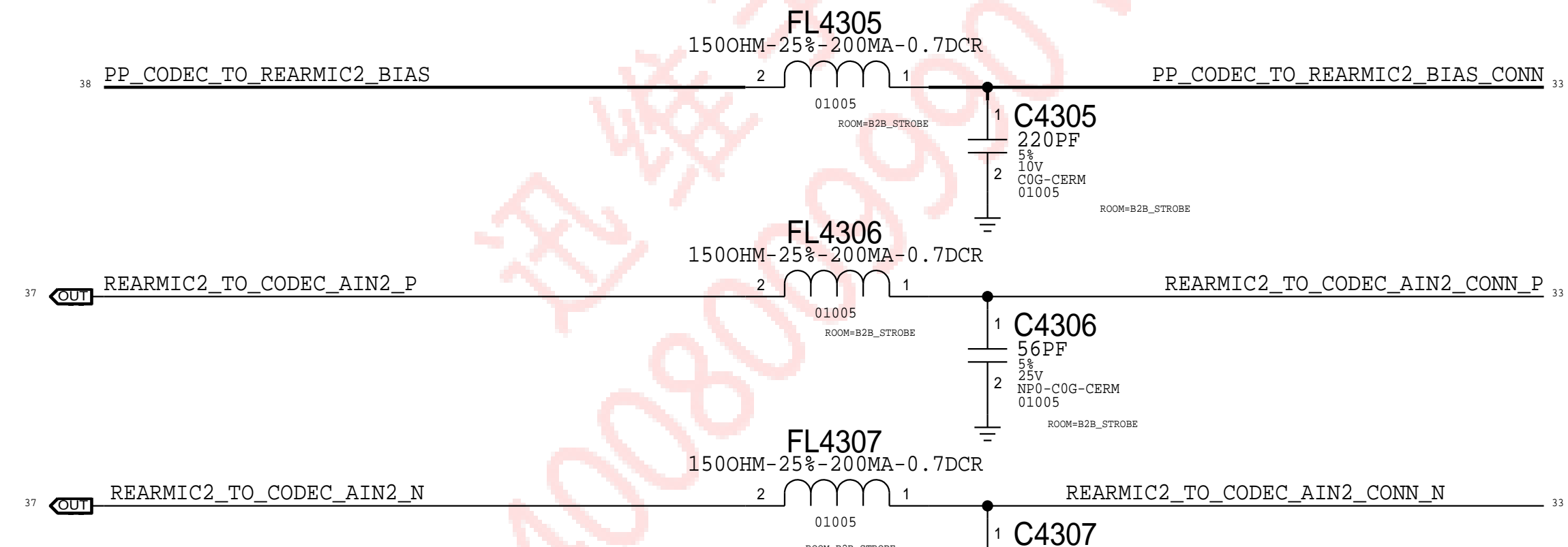


PAGE TITLE		
CAMERA: B2B FCAM		
Apple Inc.	DRAWING NUMBER	051-02221
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	PAGE	42 OF 80
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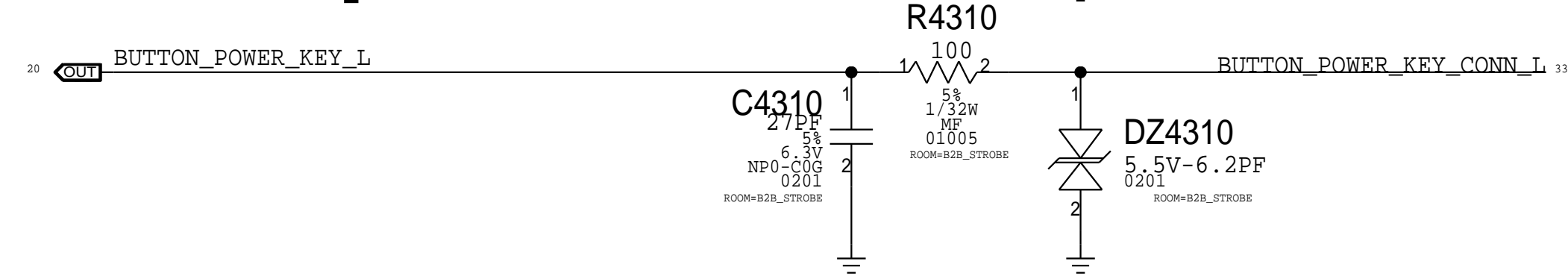
HAWKING



MIC2 (ANC REF)

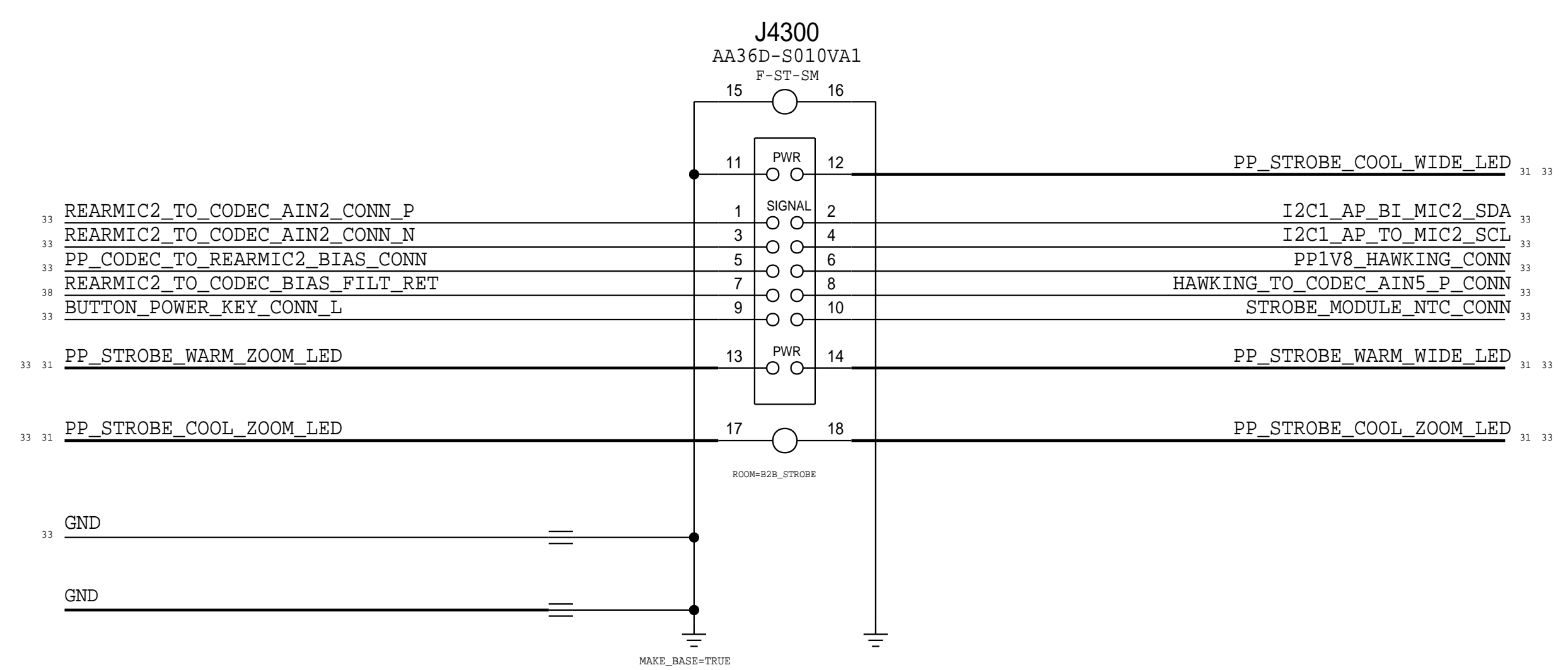


Power Key Button

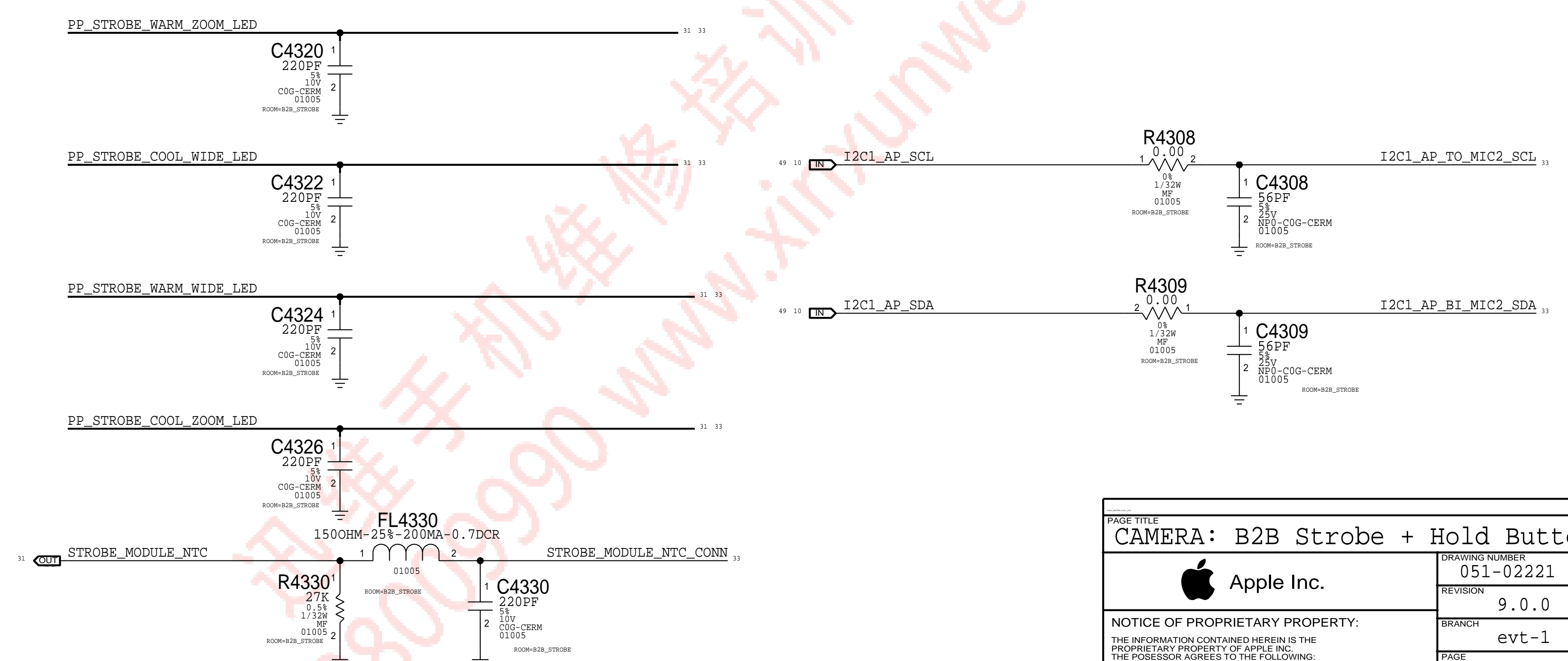


Strobe Connector

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

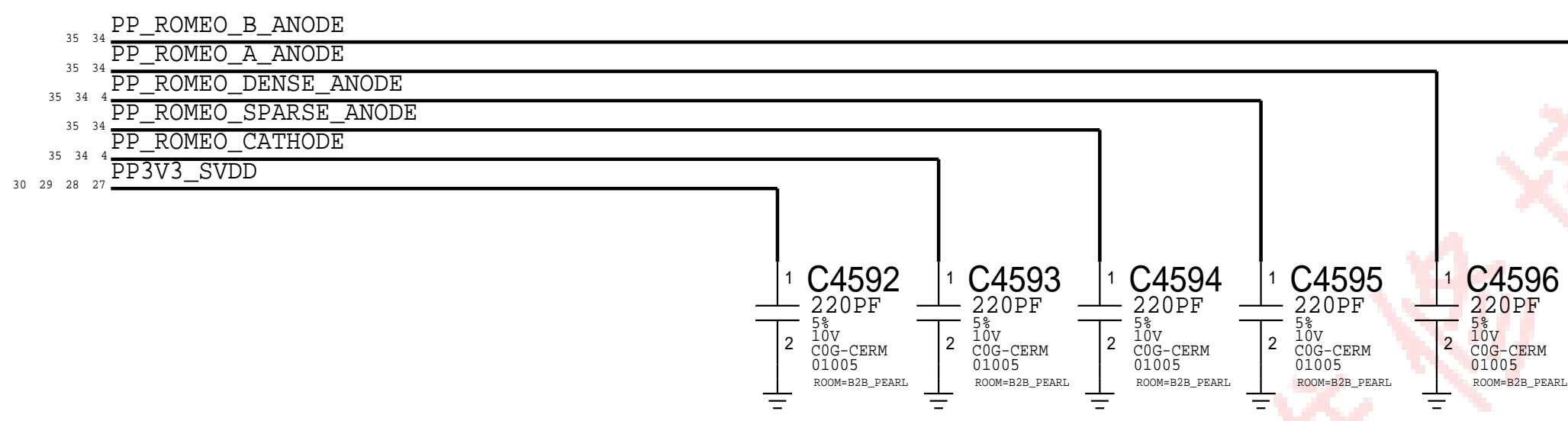


Strobe Filtering

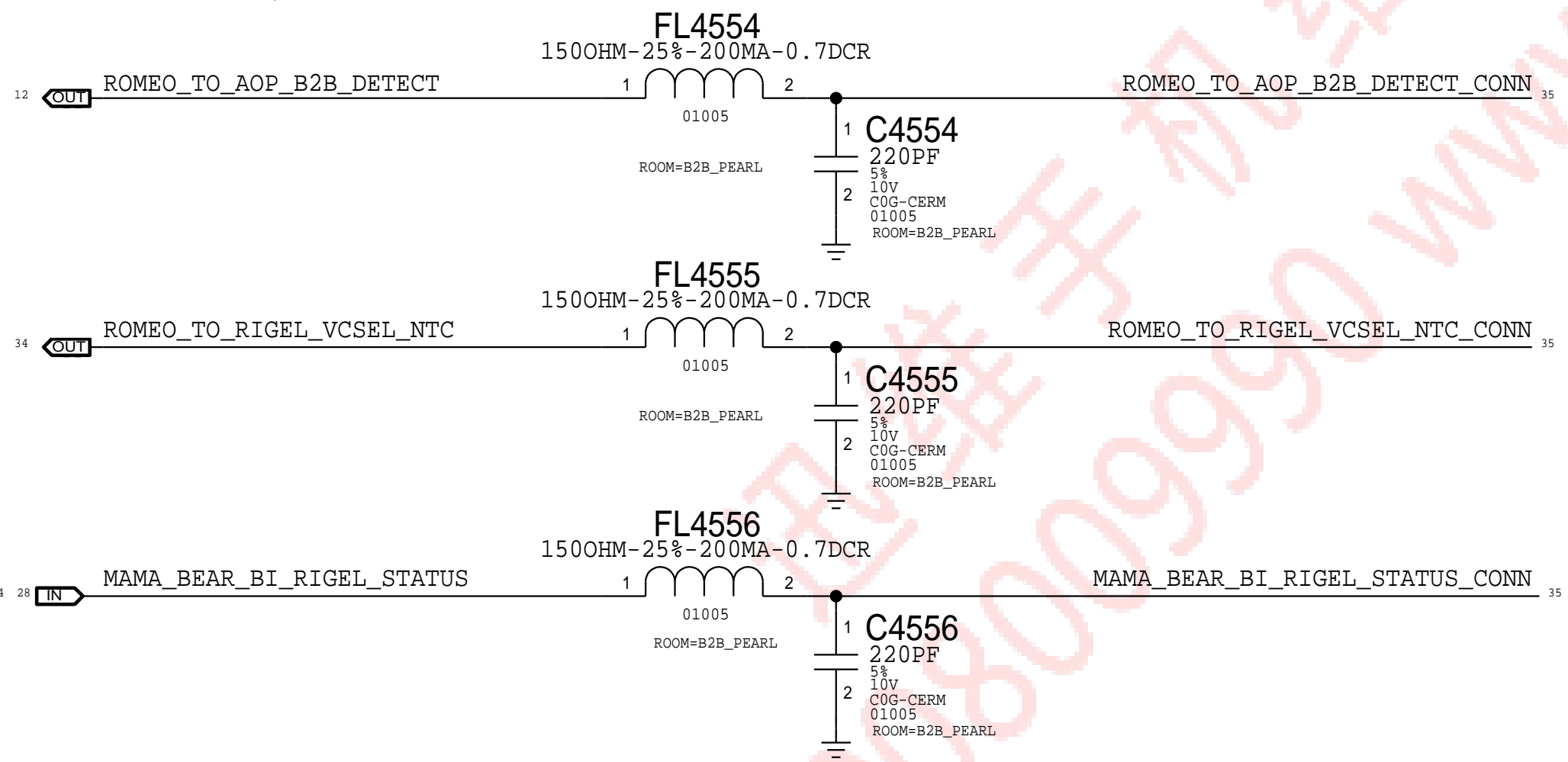


PAGE TITLE CAMERA: B2B Strobe + Hold Button		
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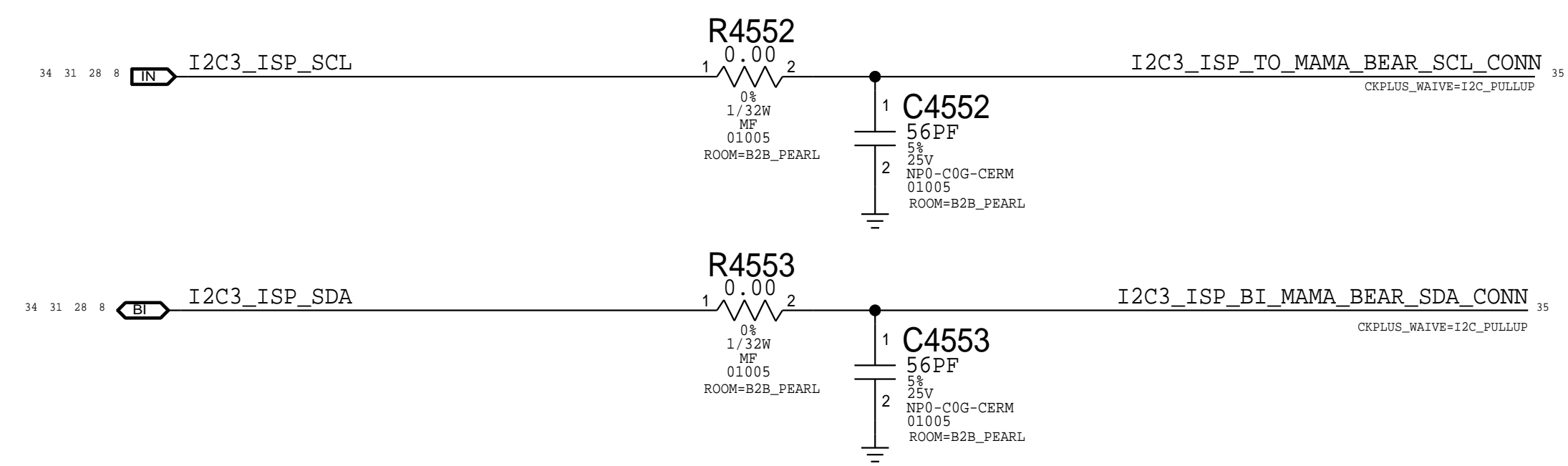
Romeo Power Filtering



Romeo I/O

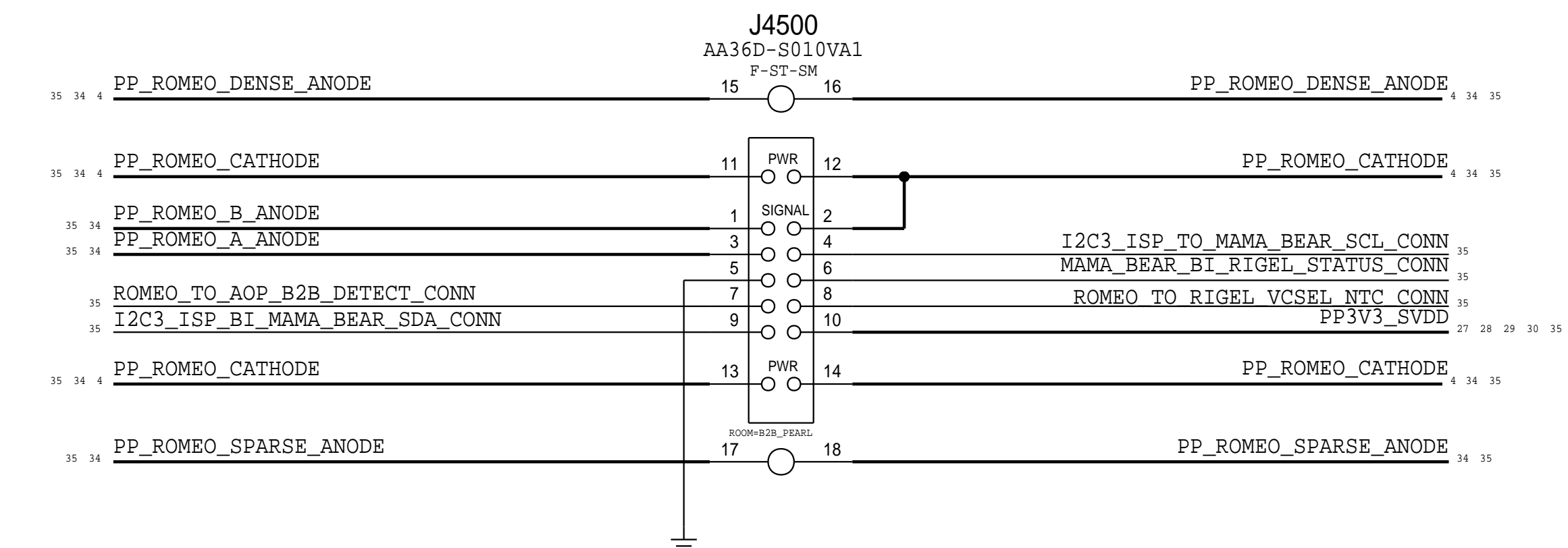


ISP I2C3

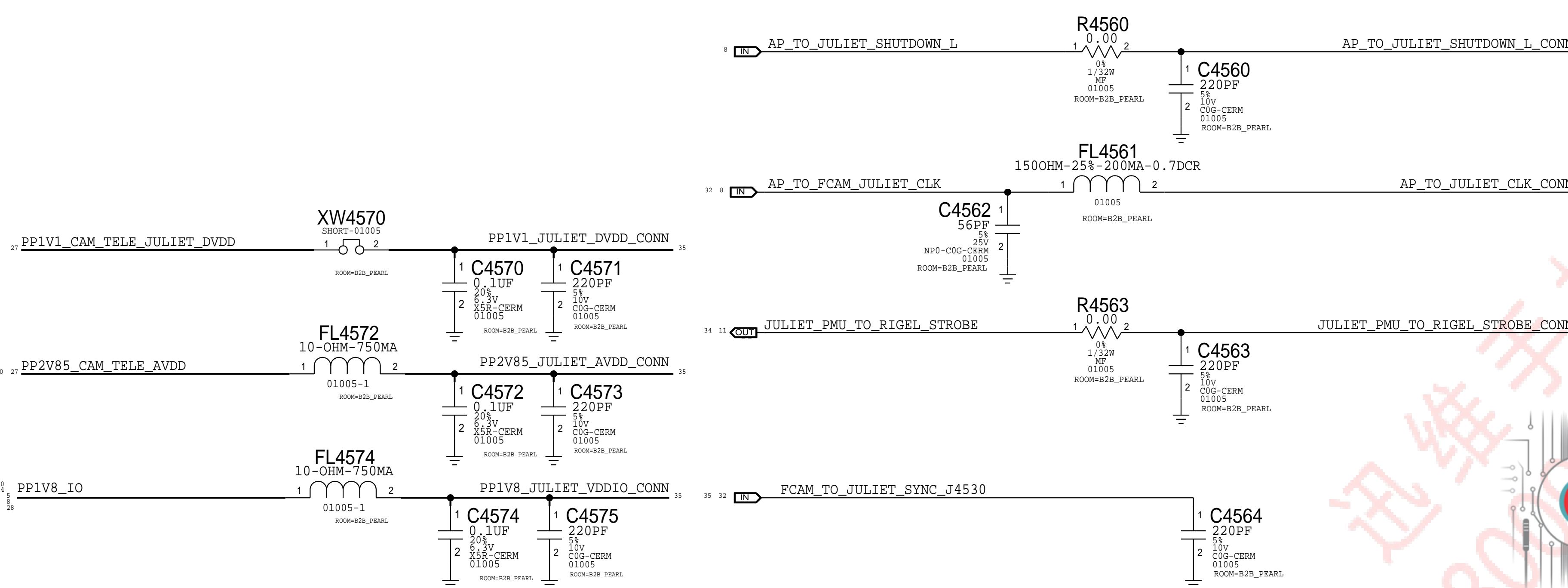


Romeo Connector

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

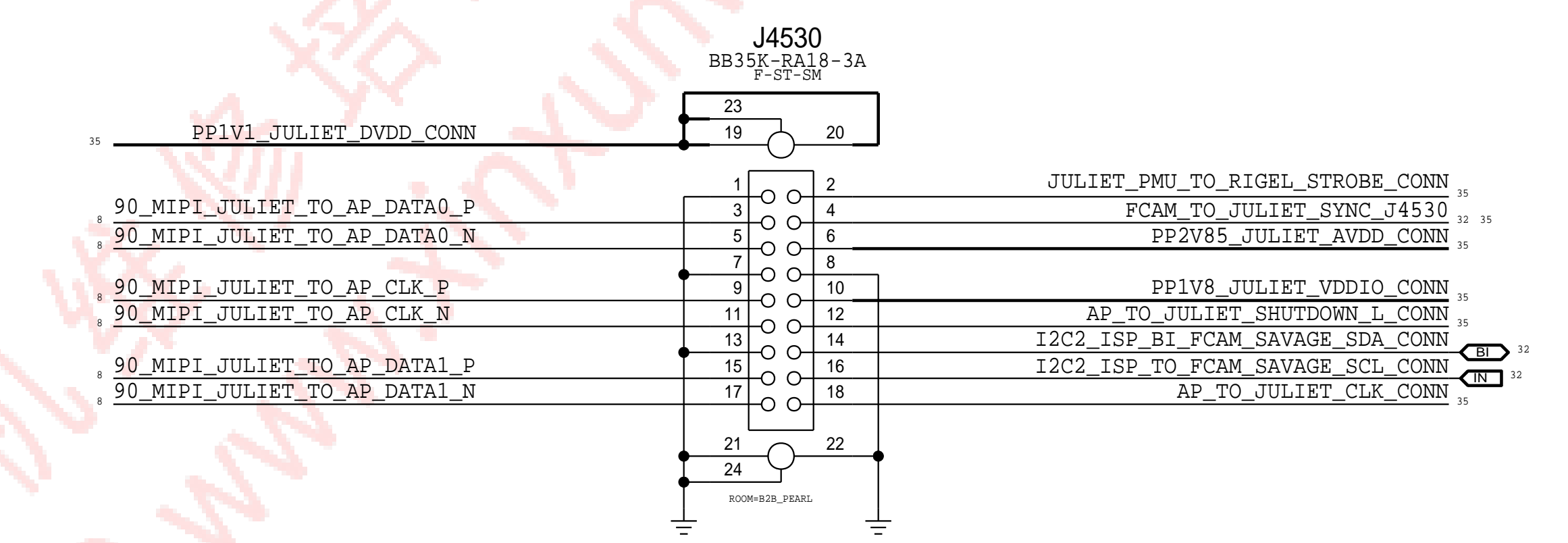


Juliet Power and I/O



Juliet Connector

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

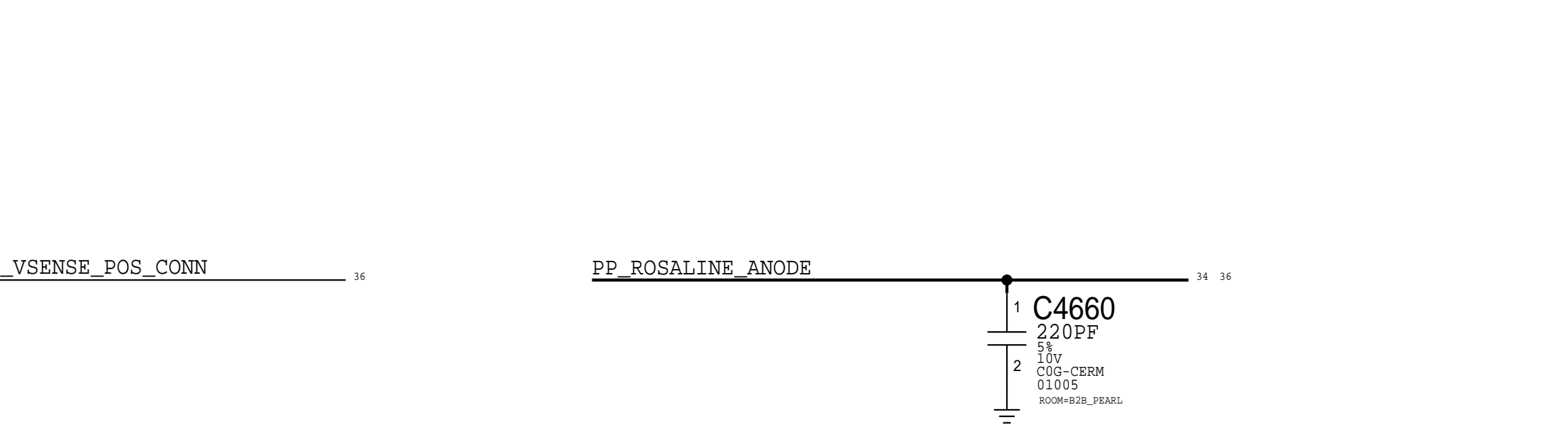
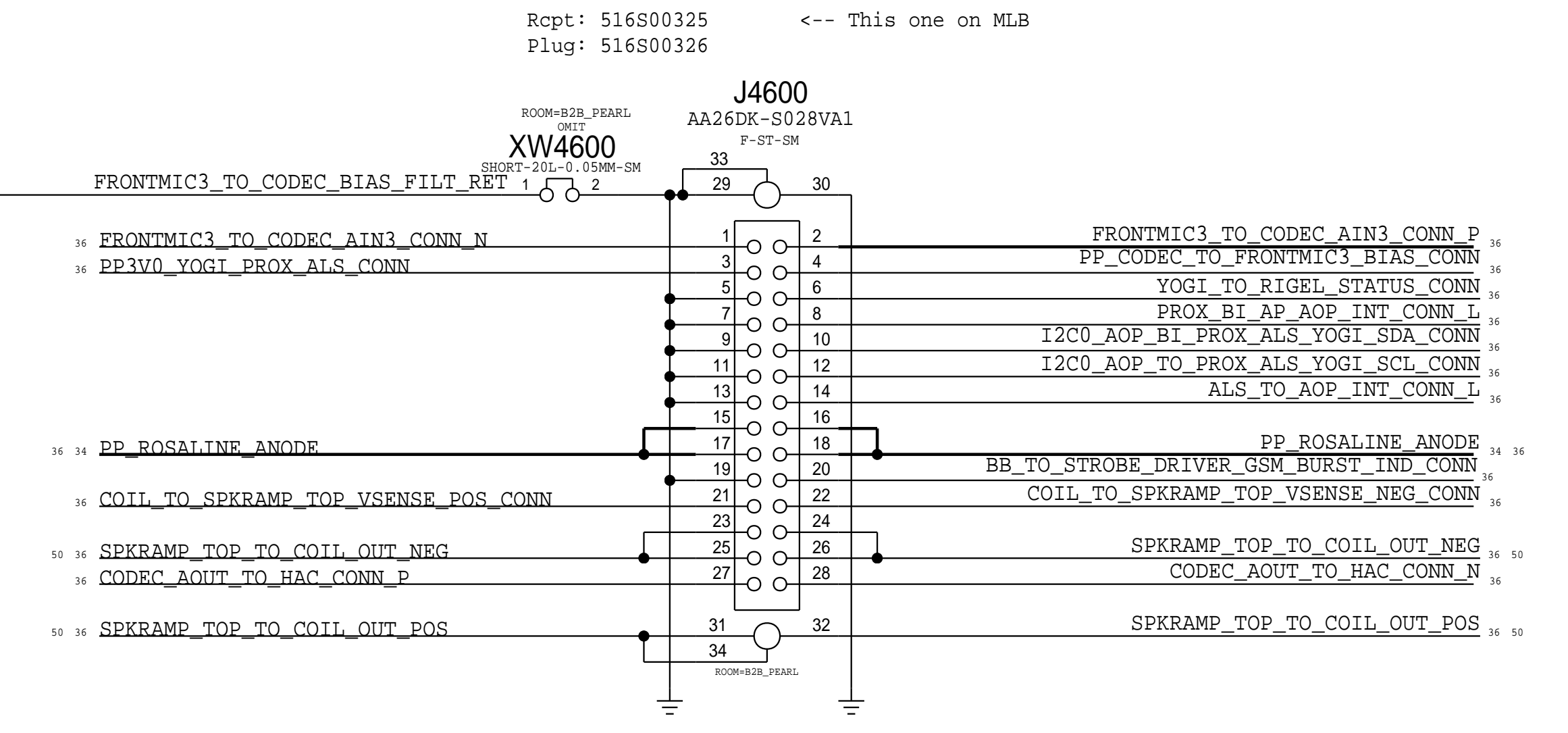
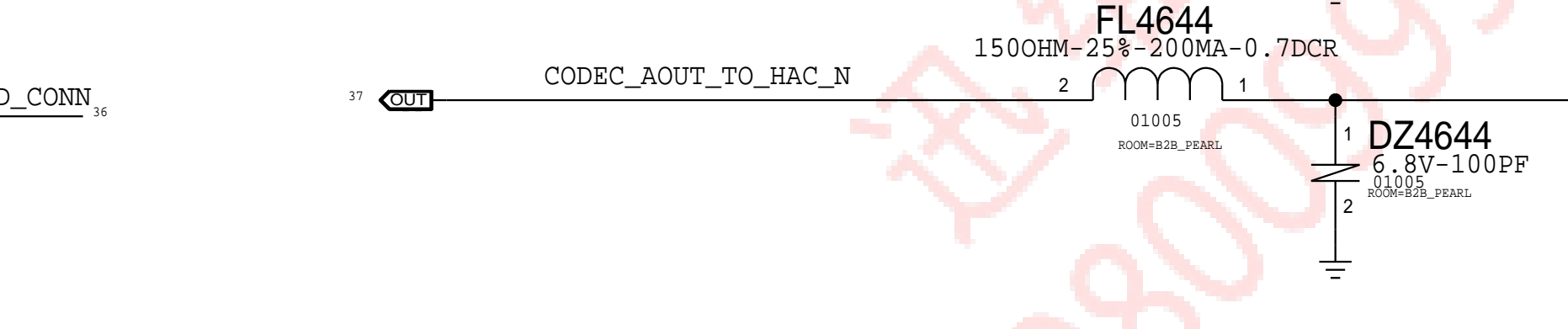
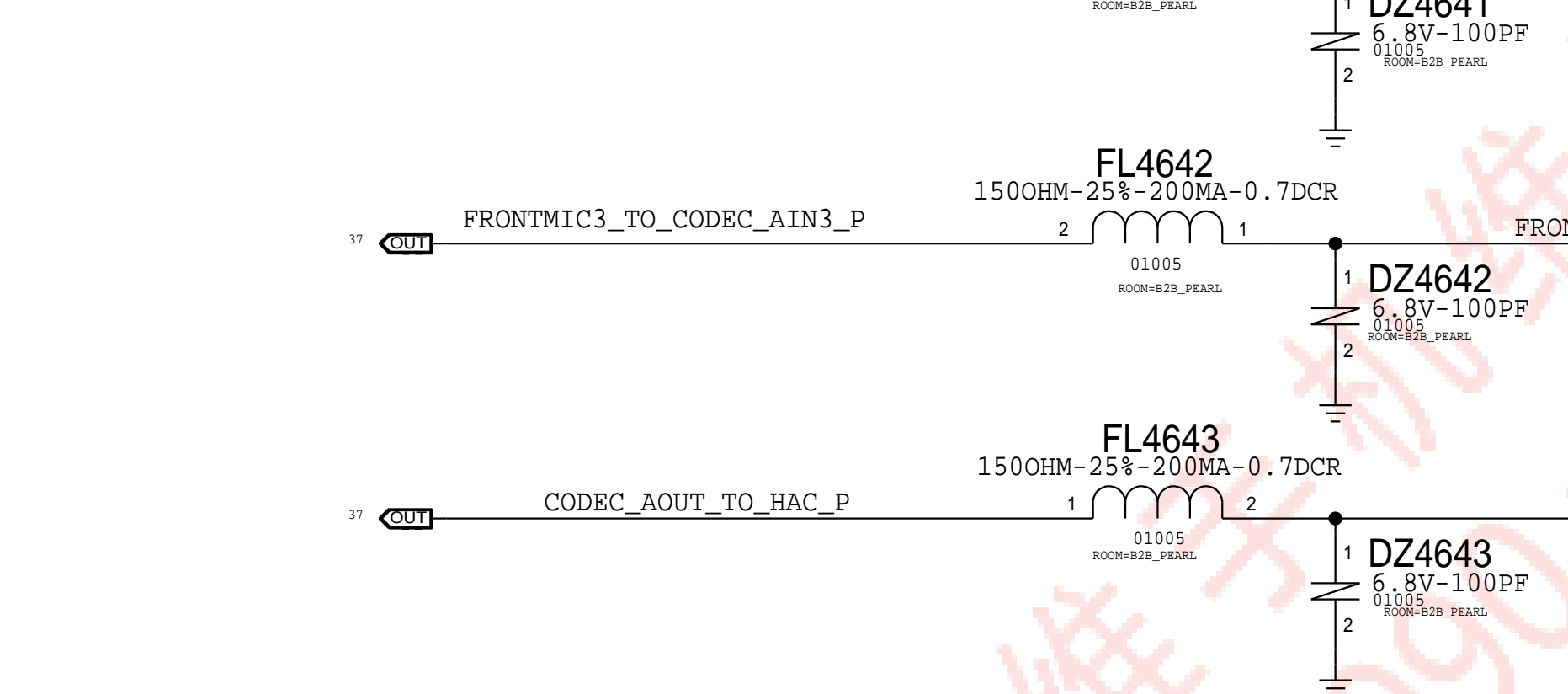
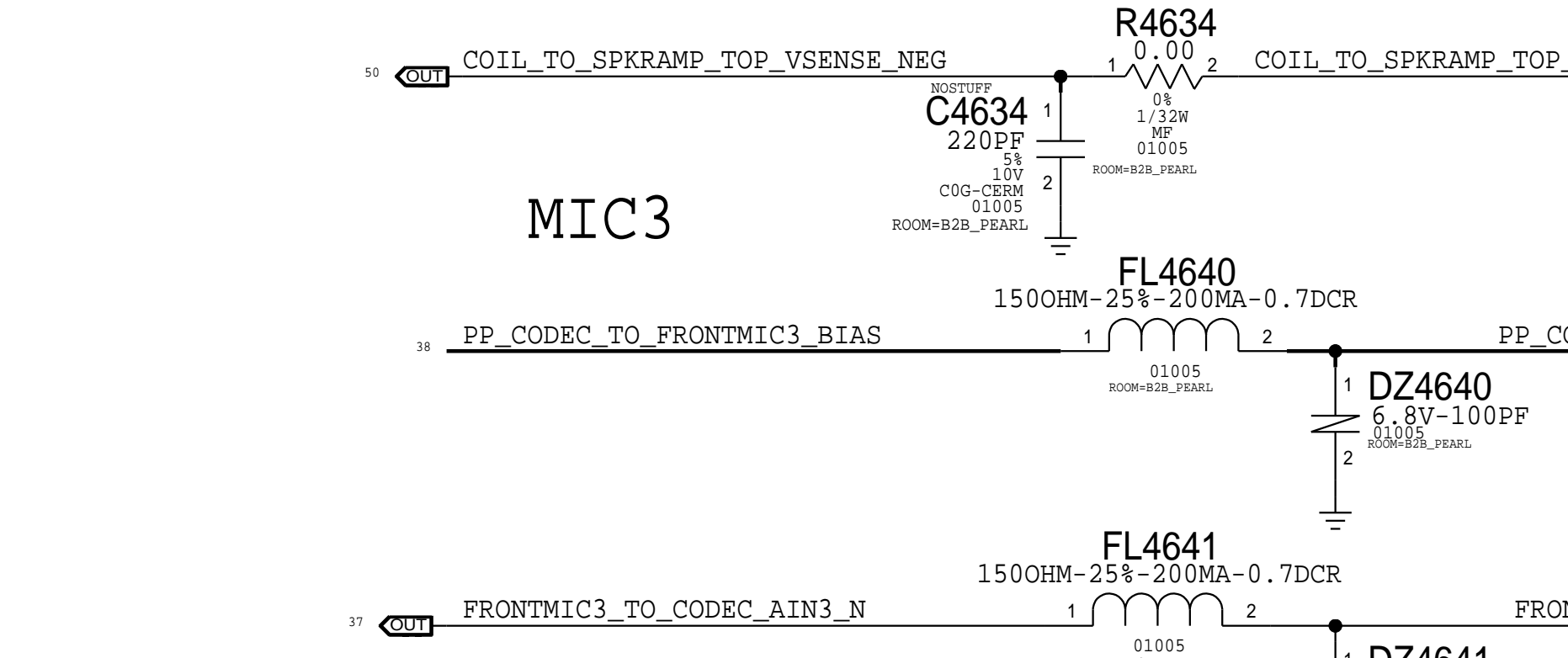
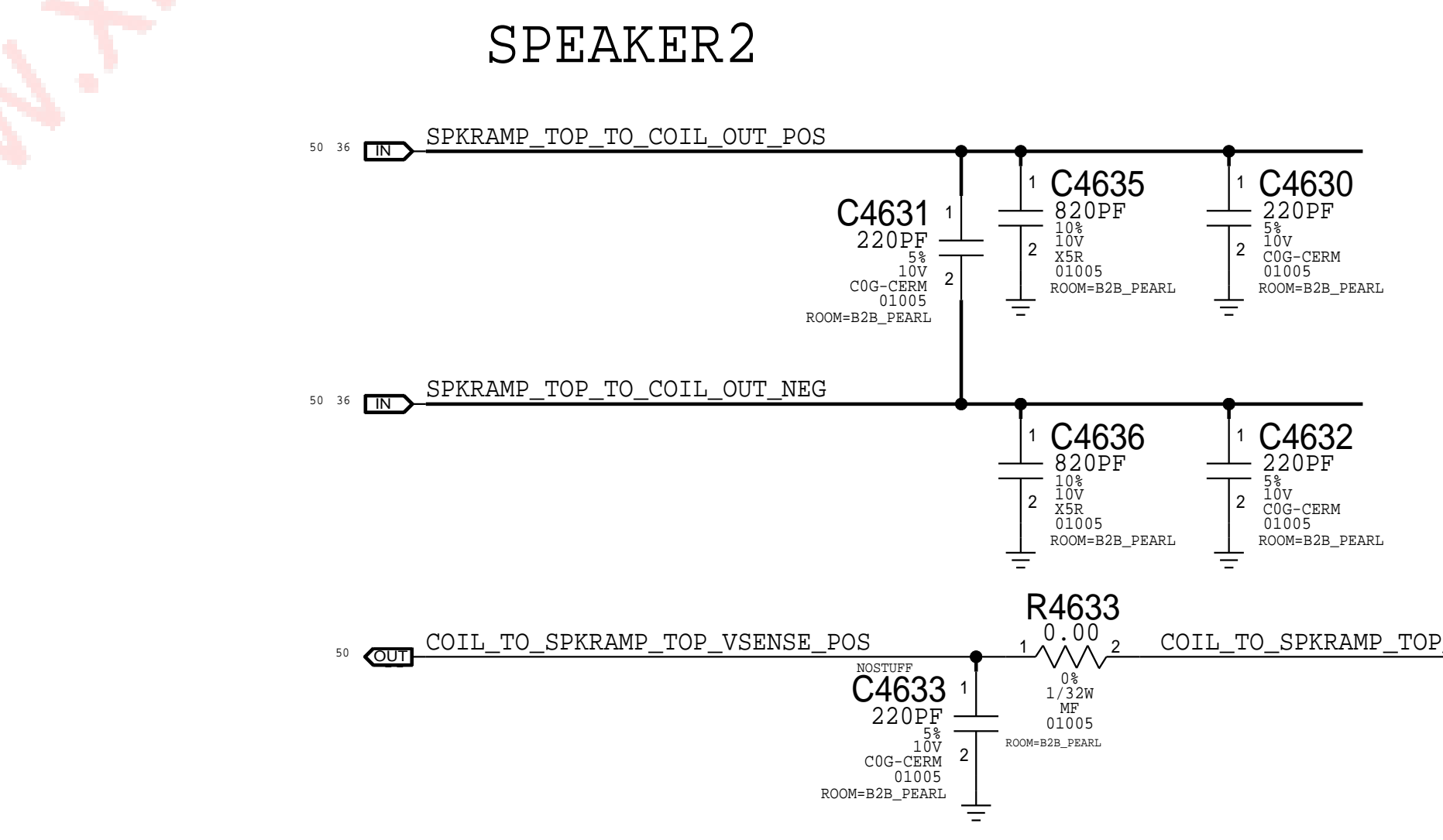
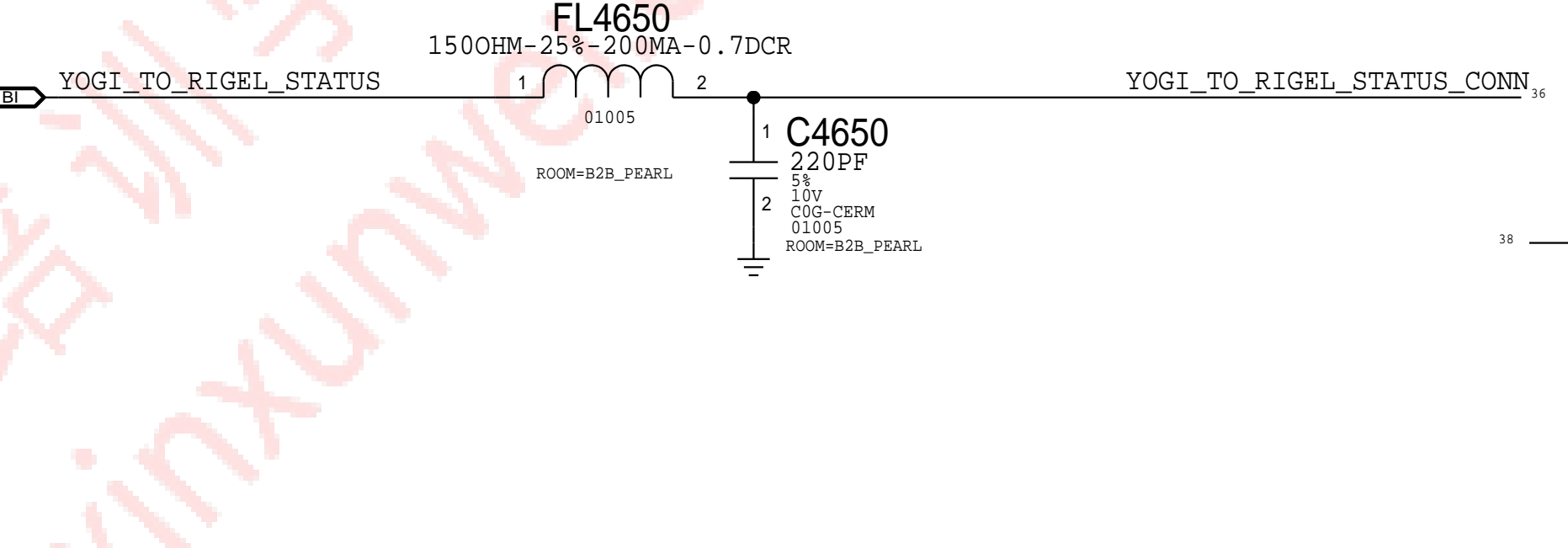
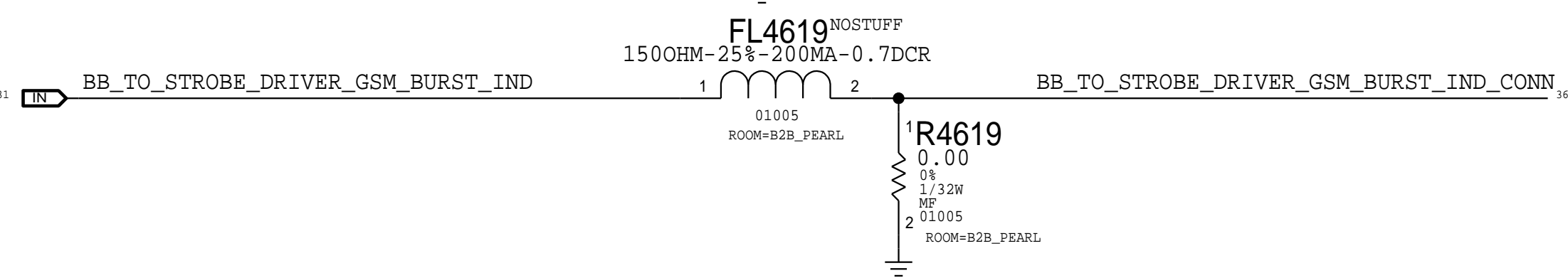
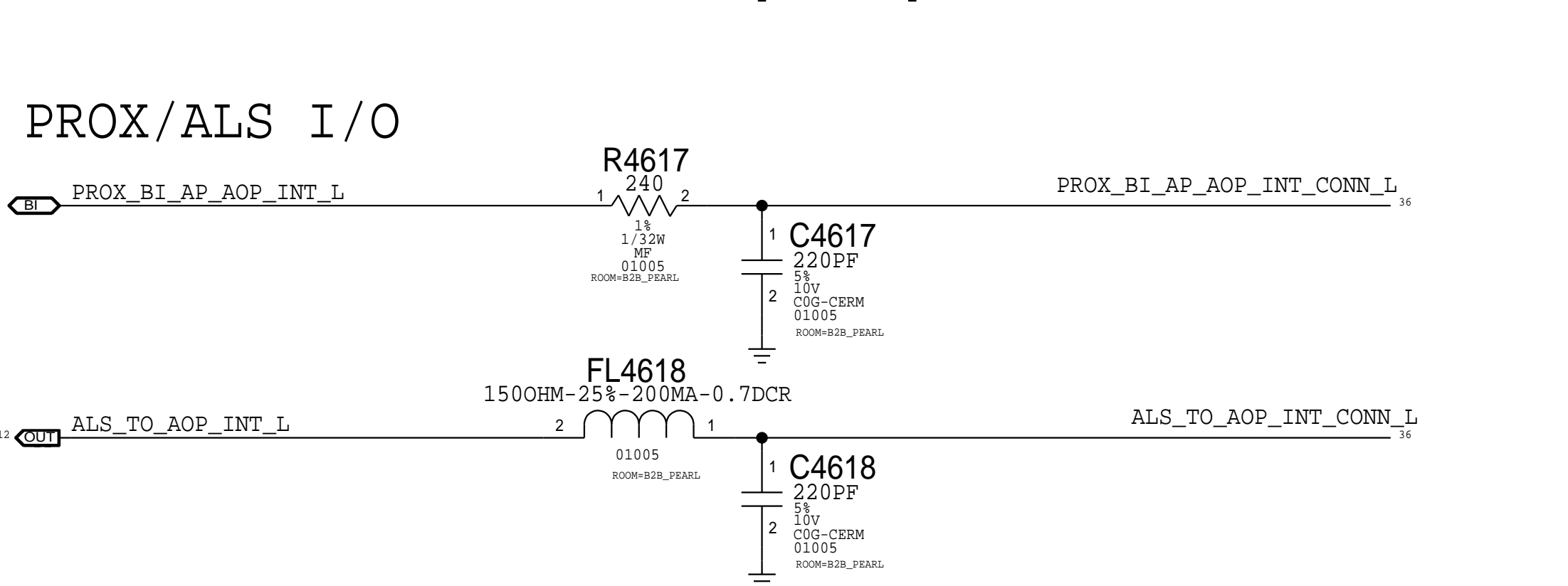
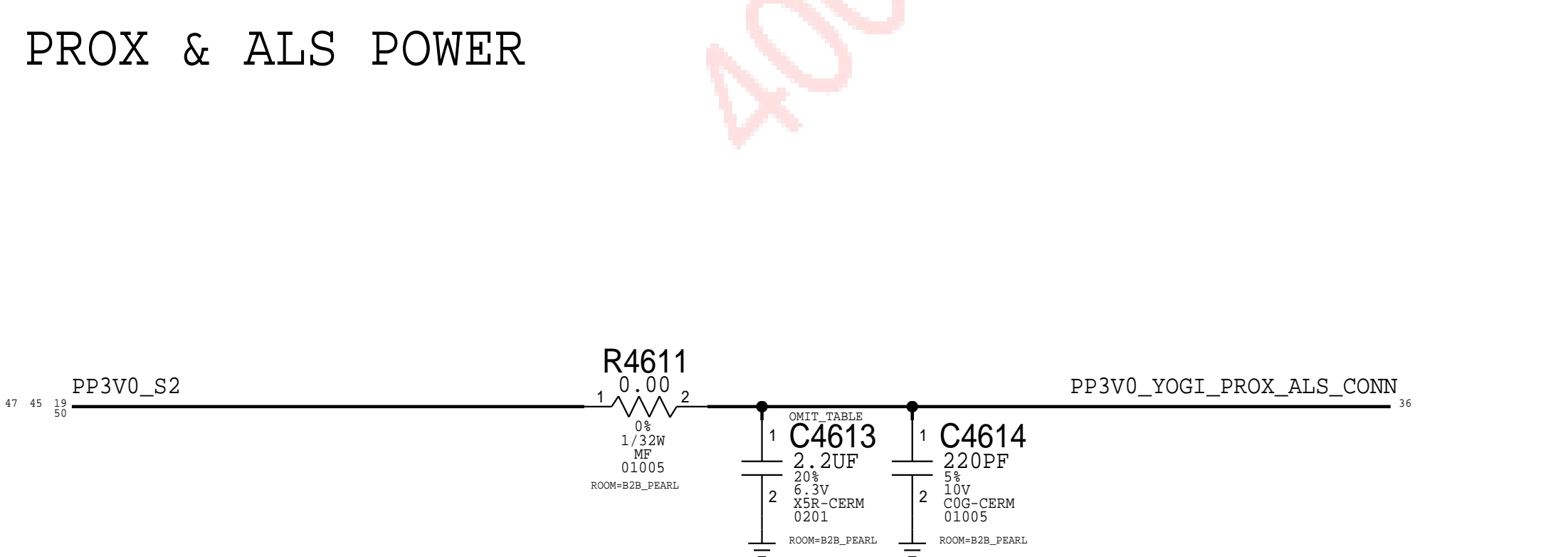
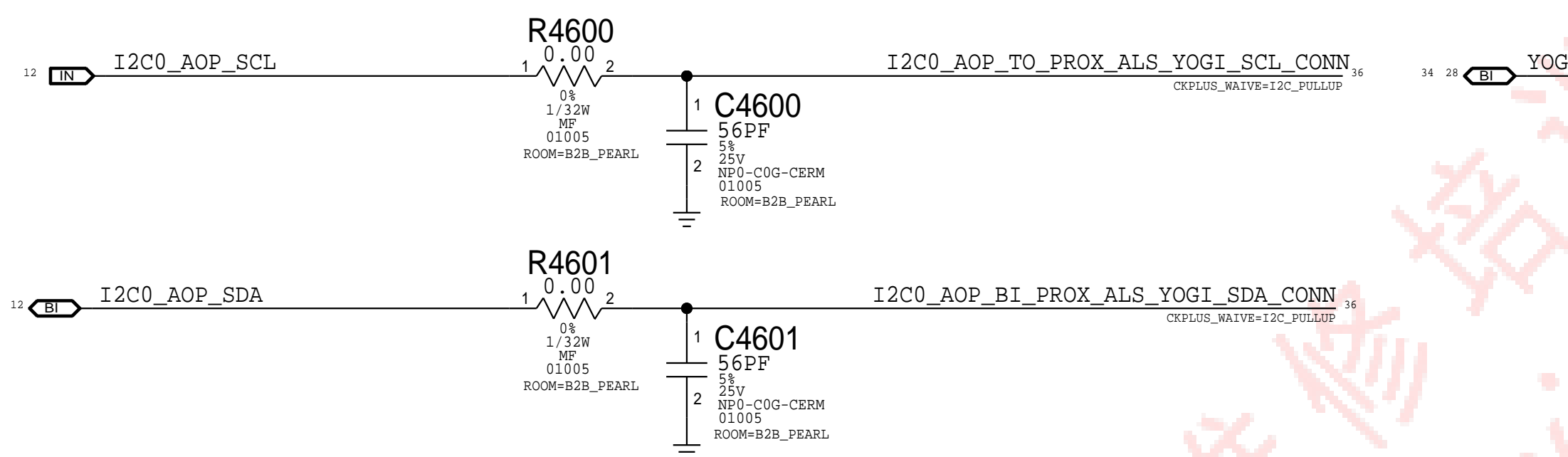


PAGE TITLE PEARL: B2B Romeo + Juliet		
Apple Inc.	DRAWING NUMBER	051-02221
	REVISION	9.0.0
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	SHEET	35 OF 51

AOP I2C

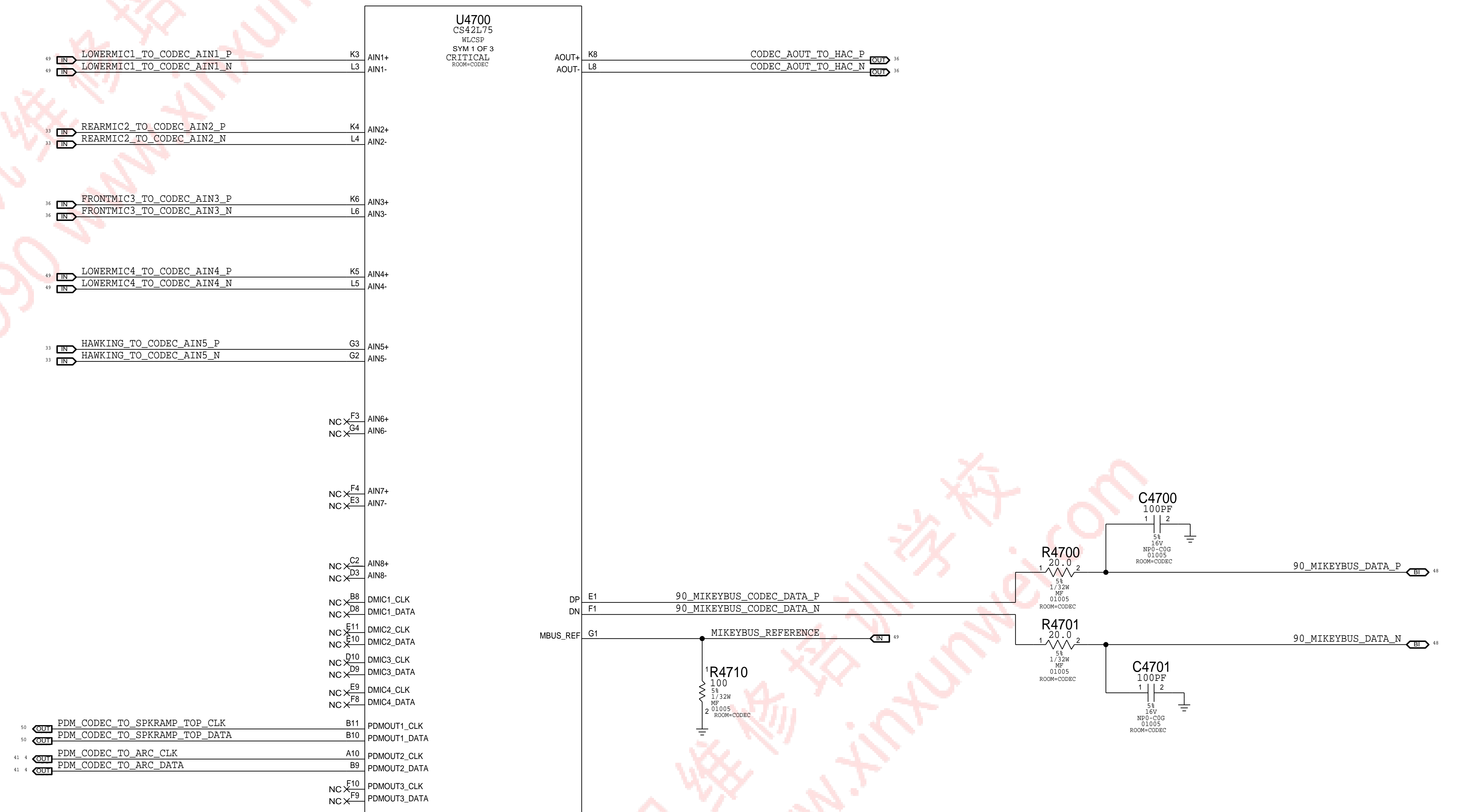
Yogi Signals

Rosaline + Misc Connector

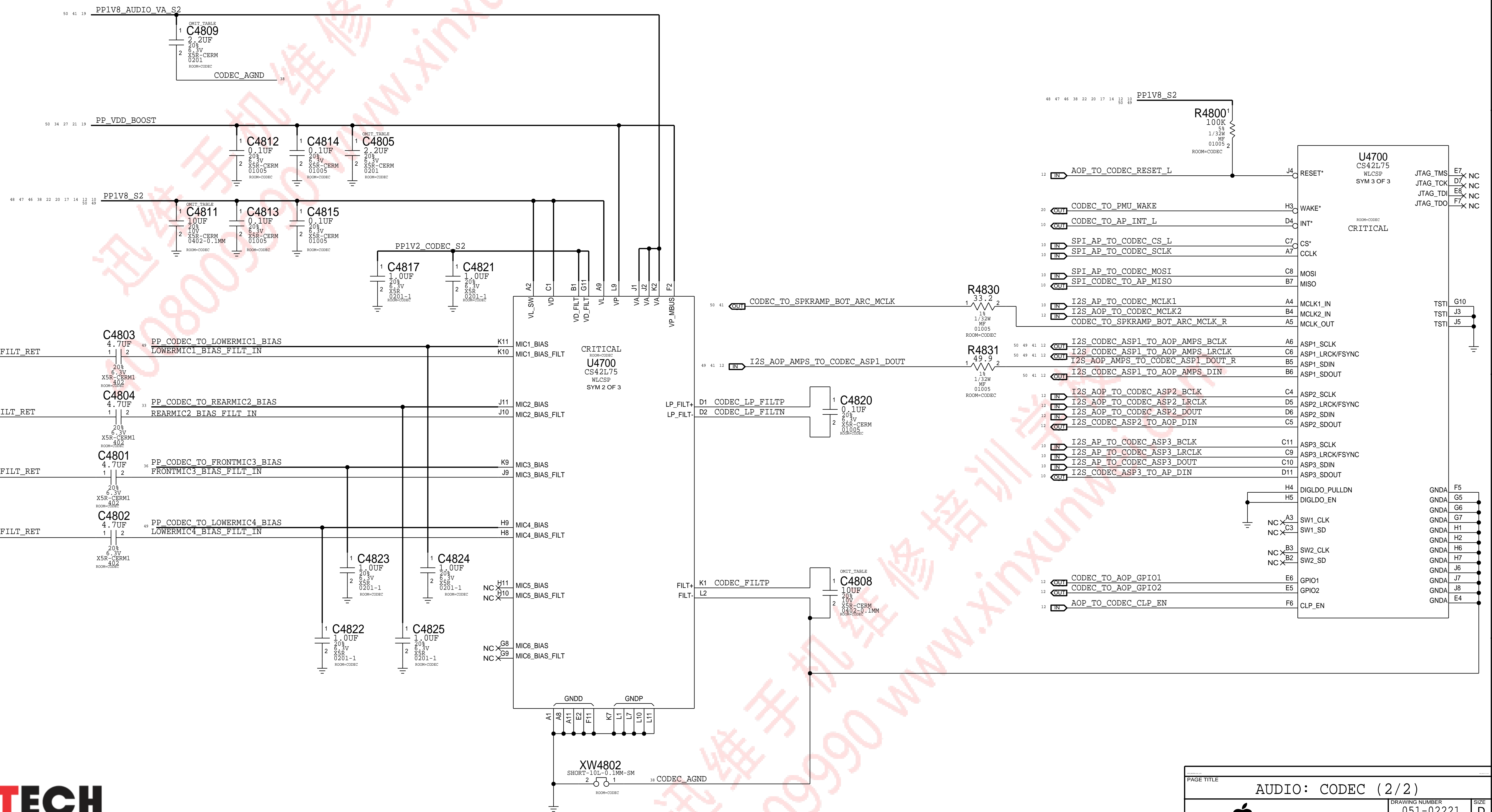


PAGE TITLE PEARL: B2B Rosaline + Misc		
Apple Inc.	DRAWING NUMBER 051-02221	SIZE D
	REVISION 9.0.0	
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	PAGE 46 OF 80	
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CALLAN AUDIO CODEC (ANALOG INPUTS & OUTPUTS)



CALLAN AUDIO CODEC (POWER & I/O)



PAGE TITLE		
AUDIO: CODEC (2/2)		
	DRAWING NUMBER	051-02221
	REVISION	9.0.0
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South Speaker Amplifier on MLB Bottom



PAGE TITLE		AUDIO: Speaker Amp Bottom		SYNC_DATE=08/25/2015	
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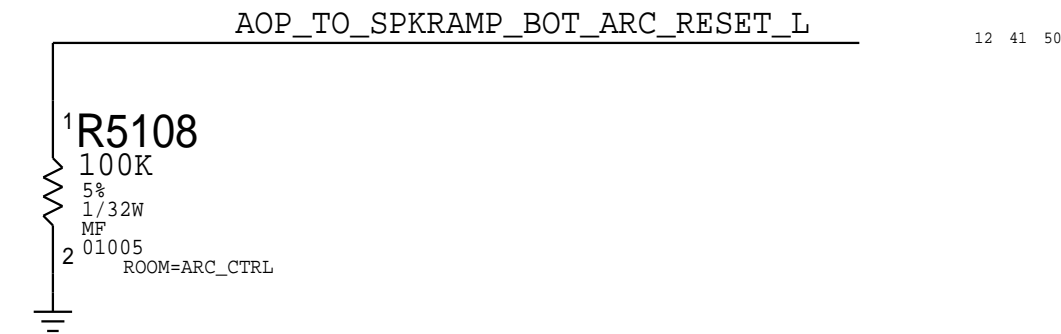
North Speaker Amplifier on MLB Bottom



PAGE TITLE			AUDIO: Speaker Amp Top	
DRAWING NUMBER		051-02221	SIZE	
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BRANCH		evt-1		
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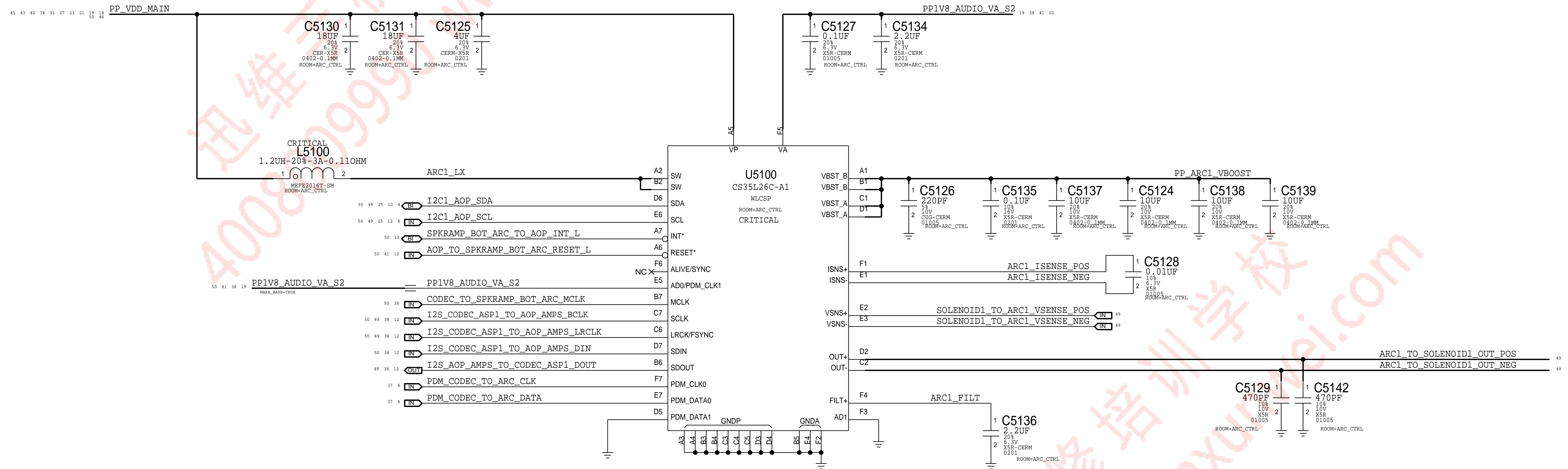
SYNC_DATE=08/25/2015

Pull Downs



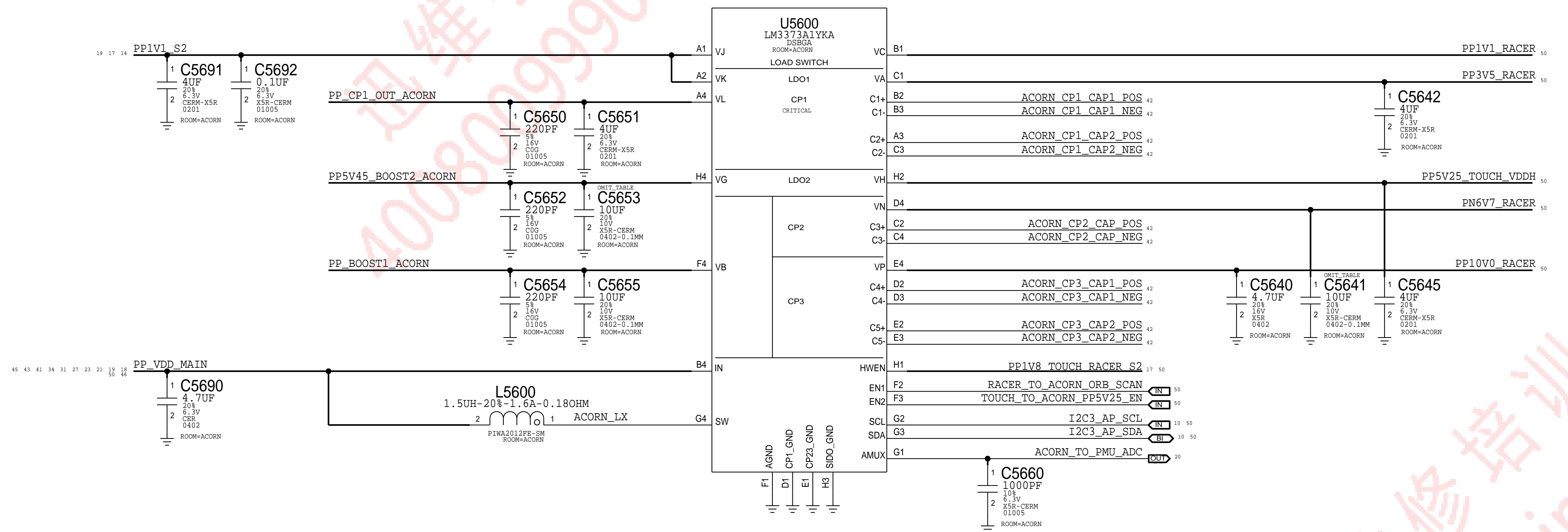
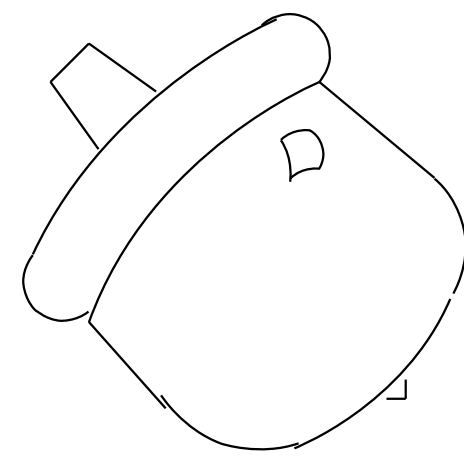
ARC DRIVER

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

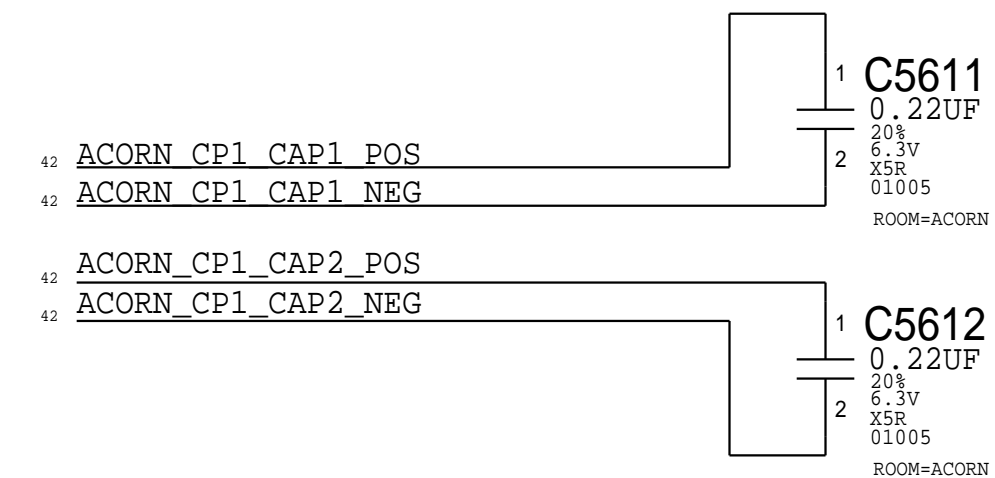


PAGE TITLE ARC: Driver		
Apple Inc.	DRAWING NUMBER 051-02221	SIZE D
	REVISION 9.0.0	BRANCH evt-1
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED		PAGE 51 OF 80
		SHEET 41 OF 51

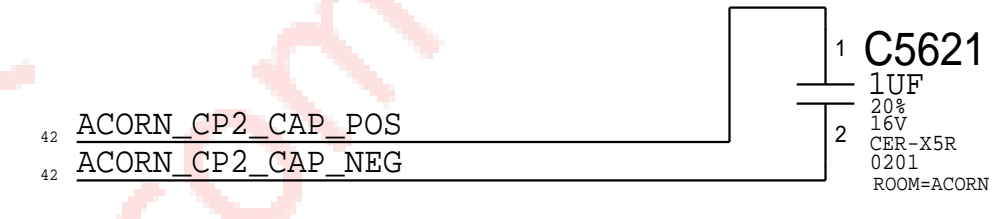
Acorn PMU



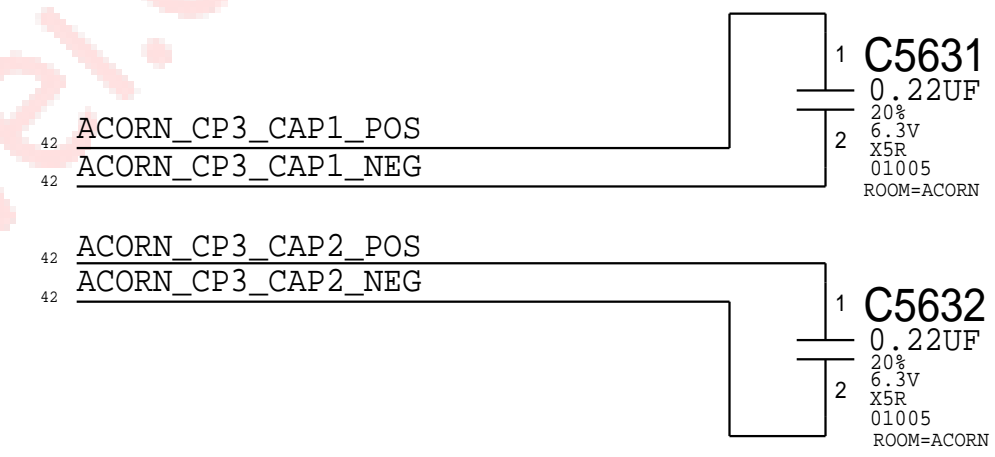
Charge Pump 1 Caps



Charge Pump 2 Caps

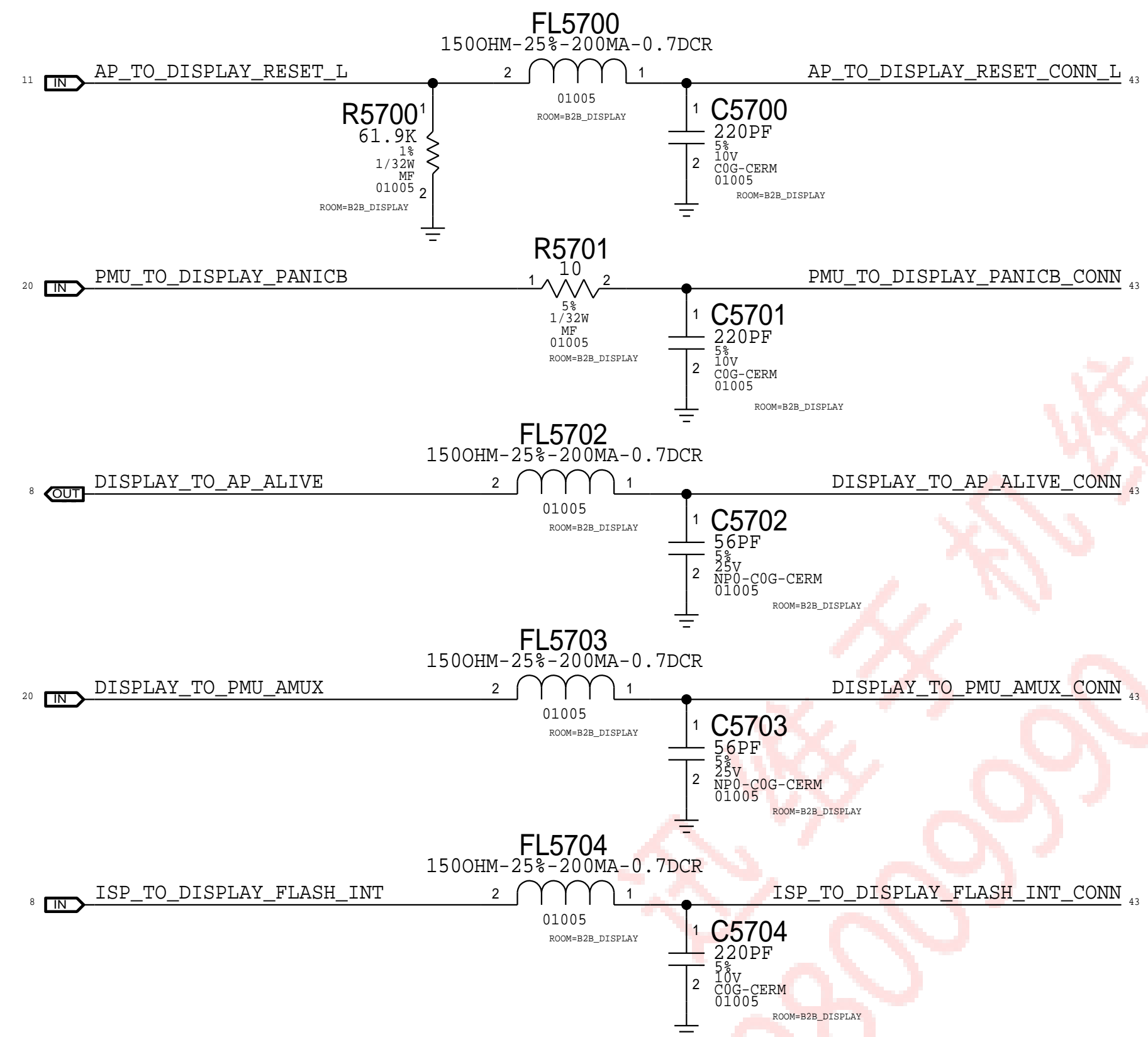


Charge Pump 3 Caps

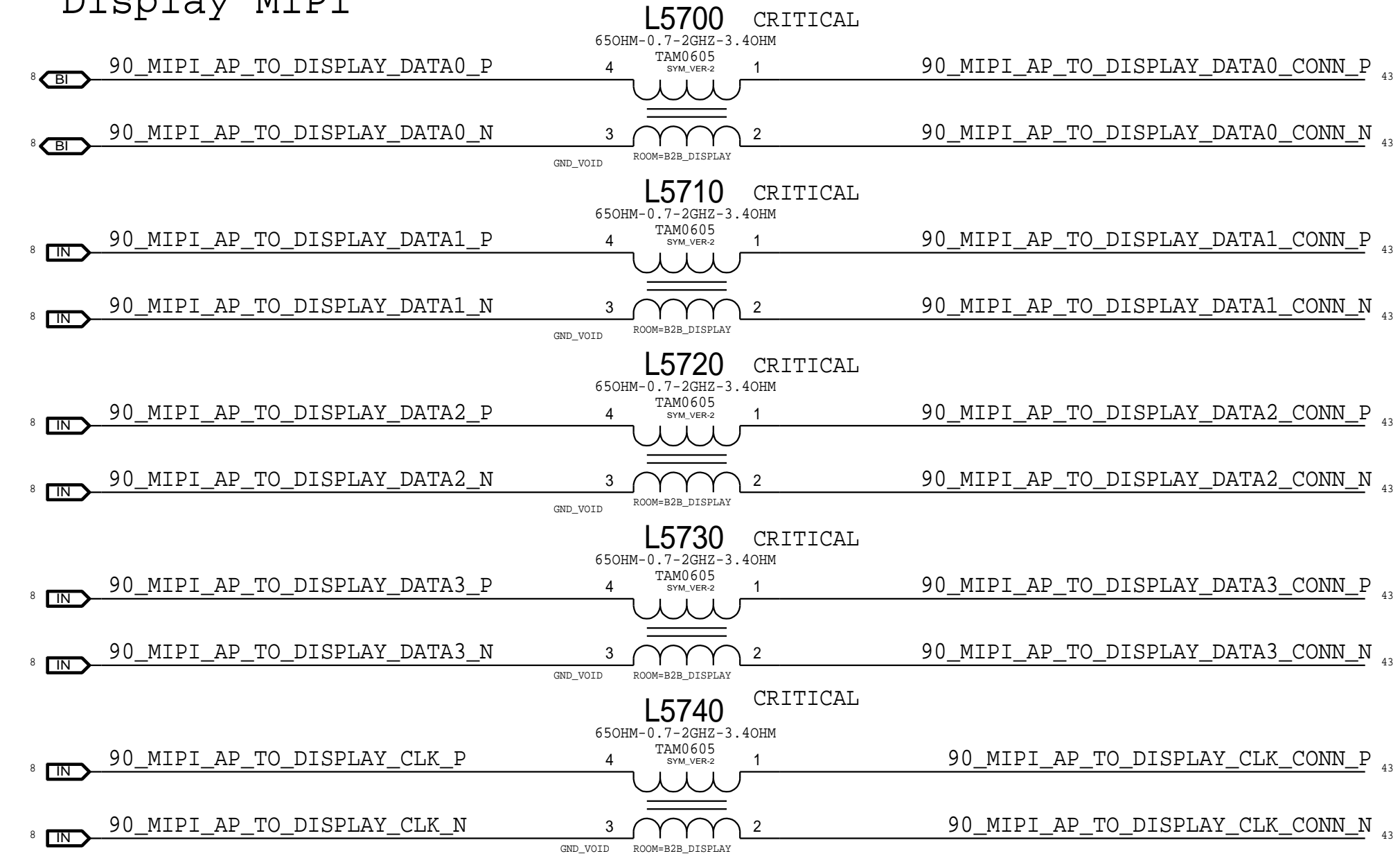


PAGE TITLE CG: Power Supplies - Touch & Display		
Apple Inc.	DRAWING NUMBER 051-02221	SIZE D
	REVISION 9.0.0	BRANCH evt-1
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED		
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Display Control Signals

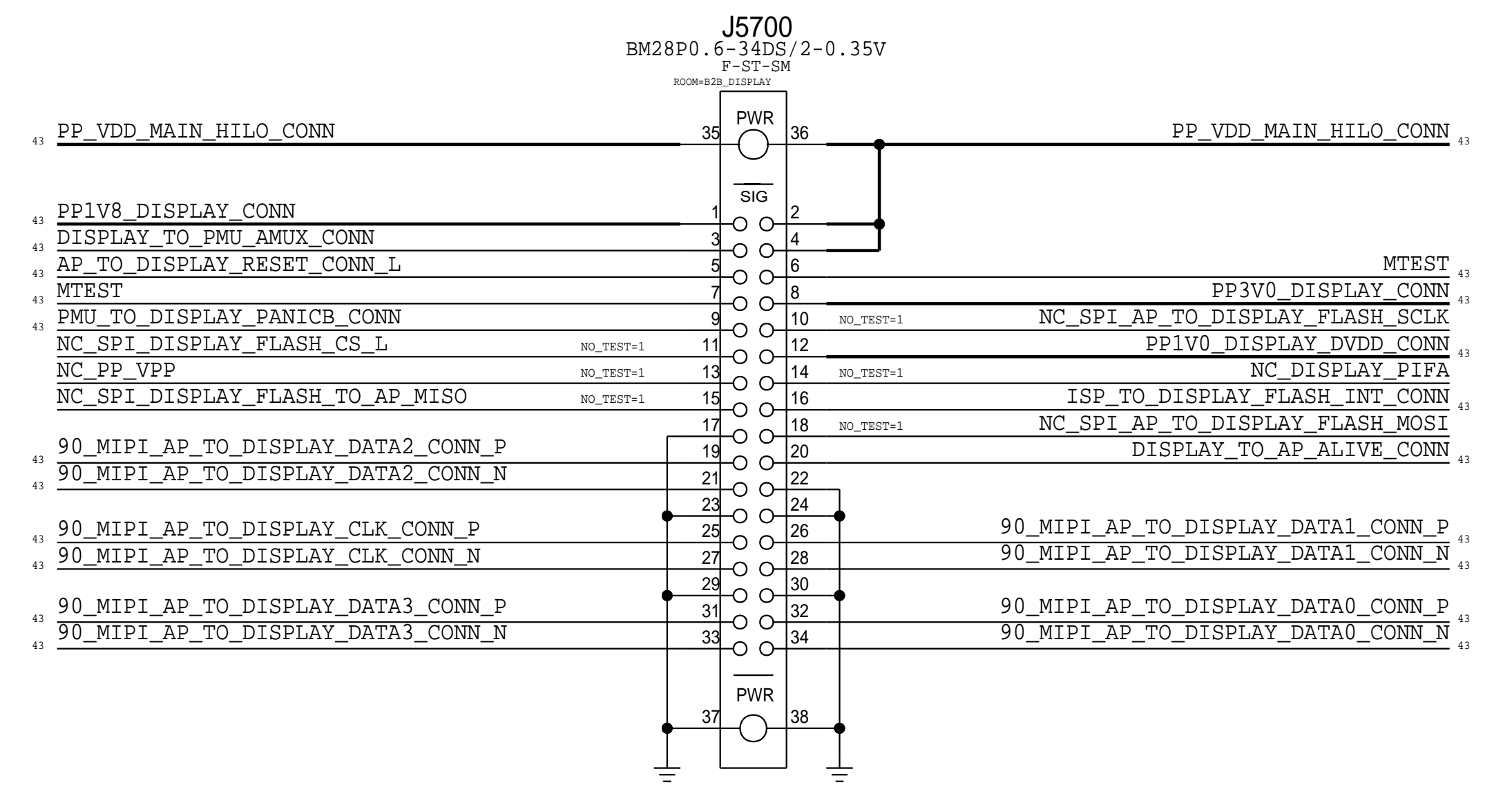


Display MIPI

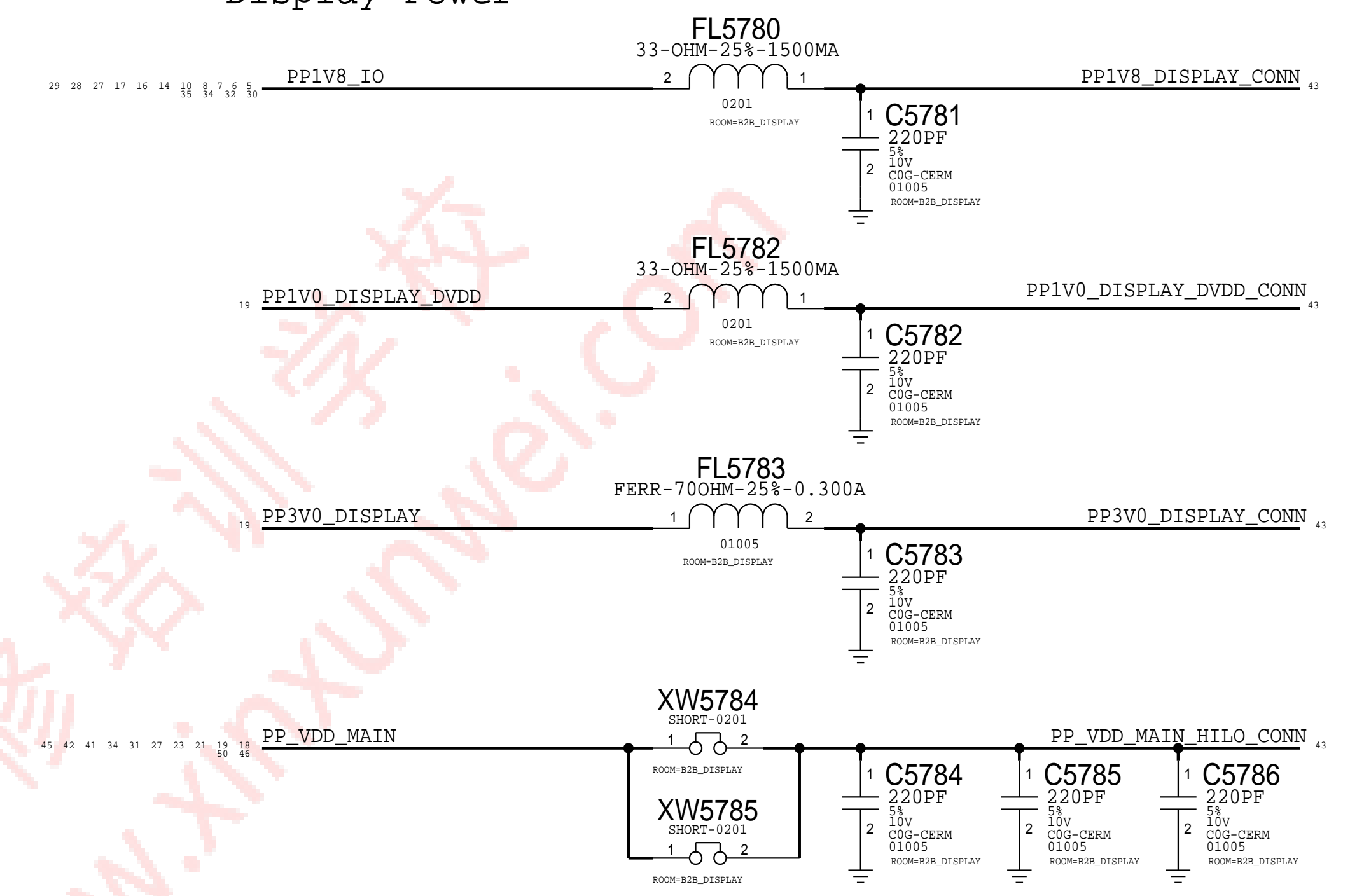


Display Flex Connector

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




Display Power



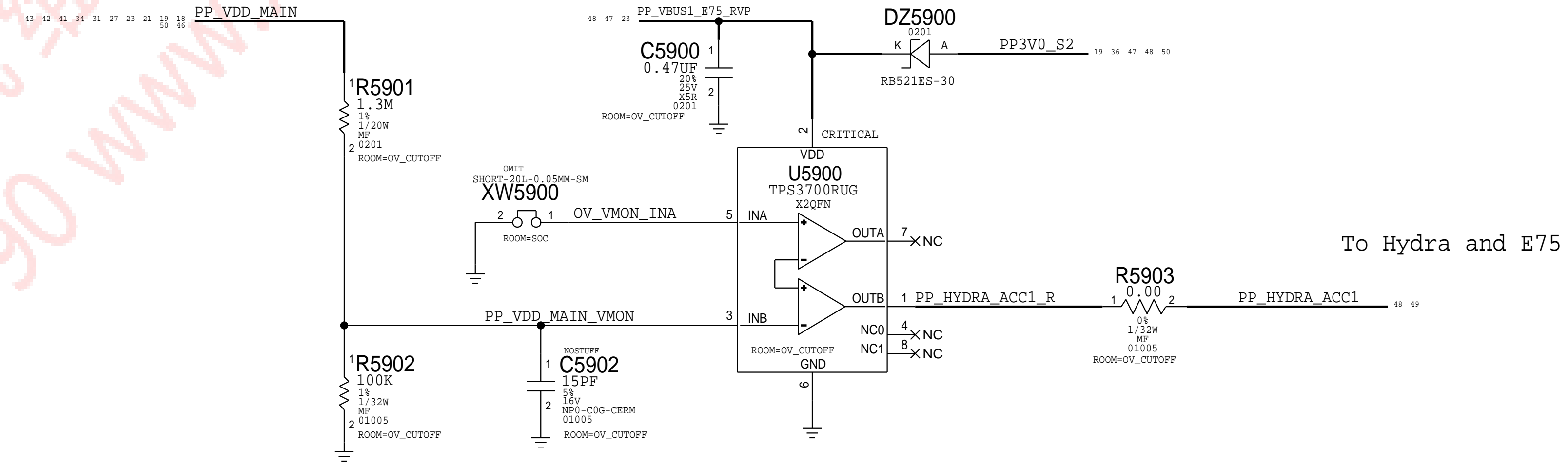
PAGE TITLE		
CG: B2B Display		
	DRAWING NUMBER	051-02221
	REVISION	9.0.0
NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED	BRANCH	evt-1
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Orb + Touch Connector on MLB Bottom

PAGE TITLE			SYNC_DATE=08/25/2015	
CG: B2B Orb & Touch				
 Apple Inc.	DRAWING NUMBER	051-02221	SIZE	D
	REVISION	9.0.0		
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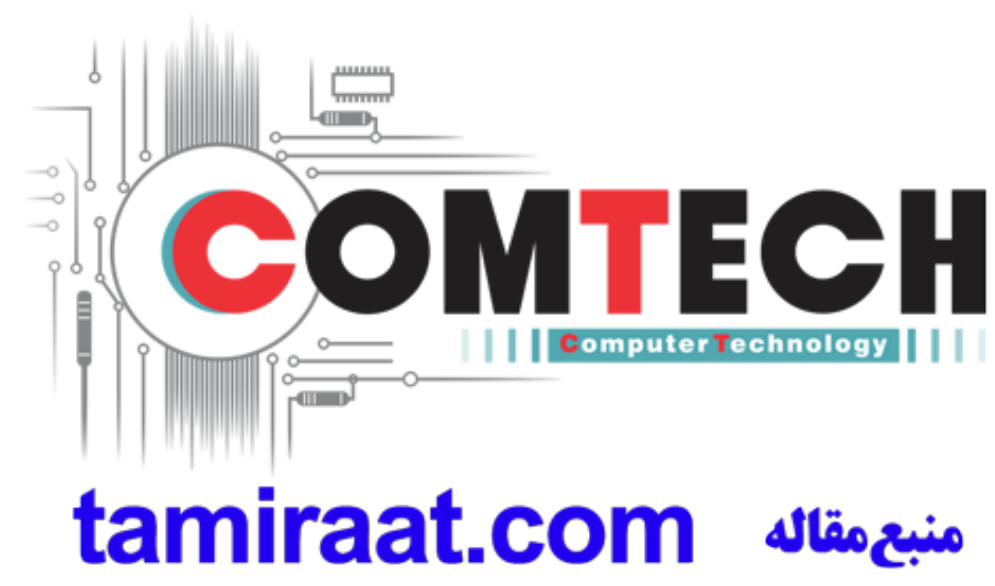
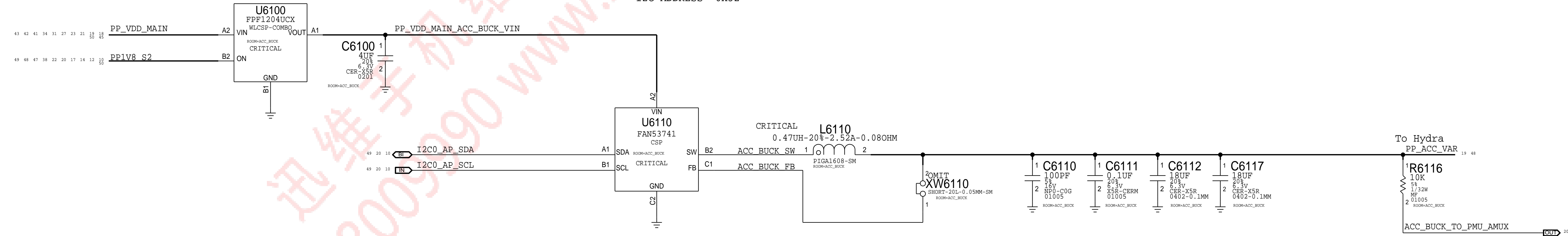
VDD_MAIN OV CUT-OFF CIRCUIT



PAGE TITLE I/O: Overvoltage Cut-Off Circuit		
Apple Inc.	DRAWING NUMBER	051-02221
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ACCESSORY BUCK

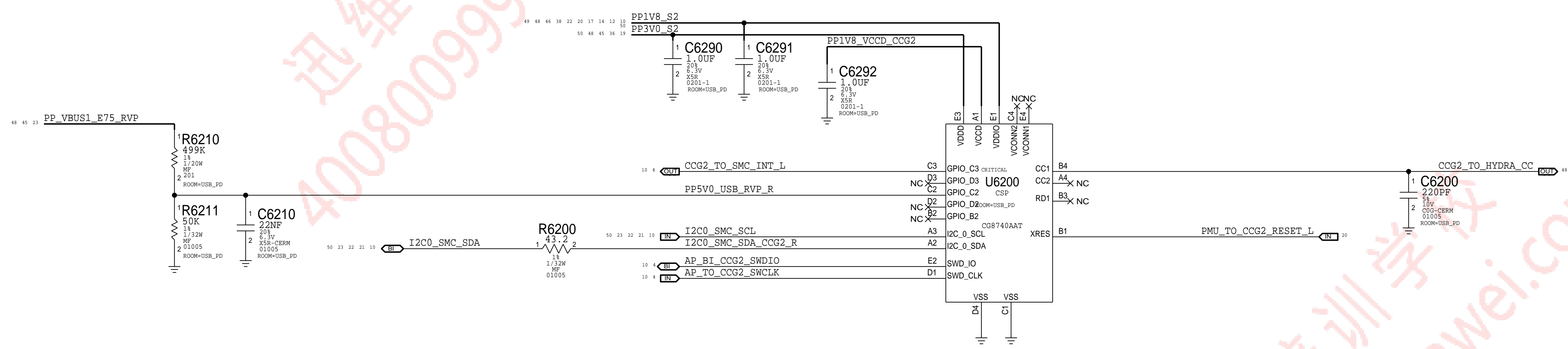
I2C ADDRESS: 0x52



منبع مقاله

PAGE TITLE			I/O: Accessory Buck		
Apple Inc.	DRAWING NUMBER	051-02221	SIZE	D	
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USB-PD

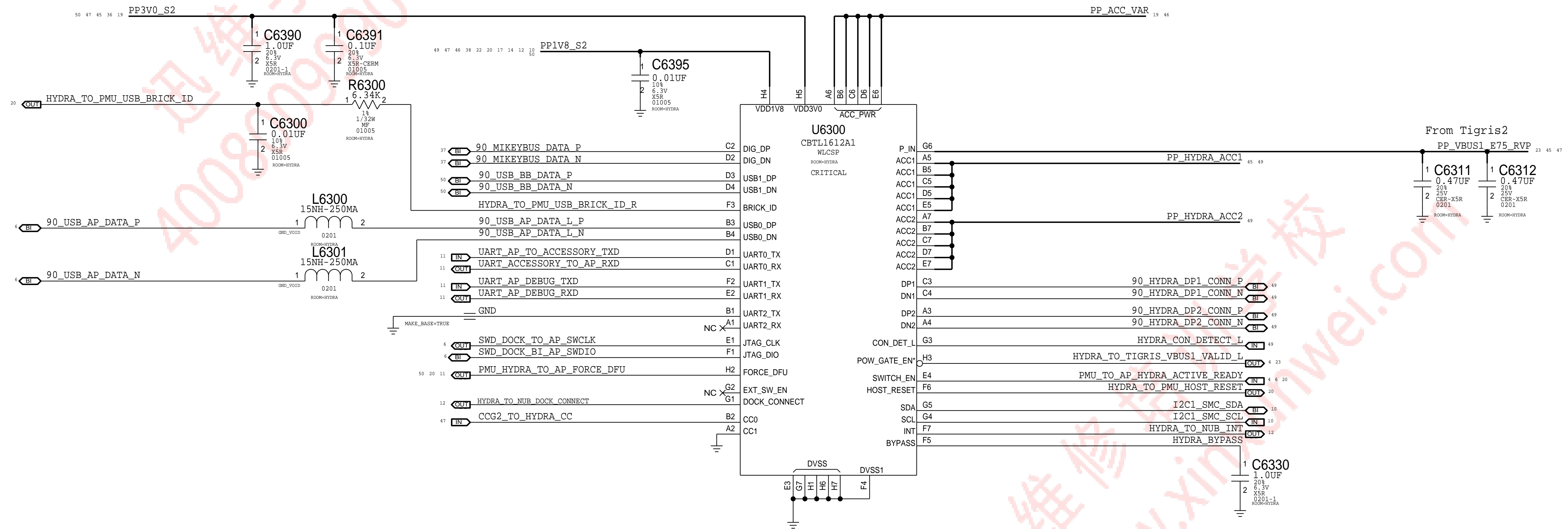


منبع مقاله

PAGE TITLE			I/O: USB PD		
	DRAWING NUMBER	051-02221	SIZE	D	
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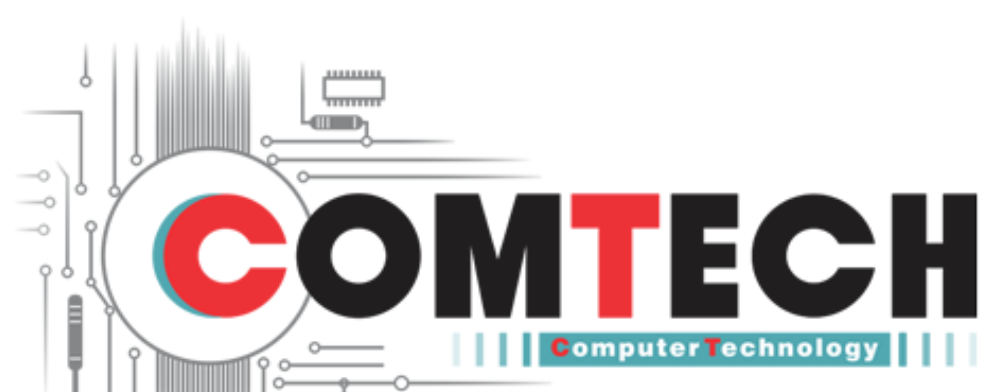
Hydra

I2C Address: 0011010X



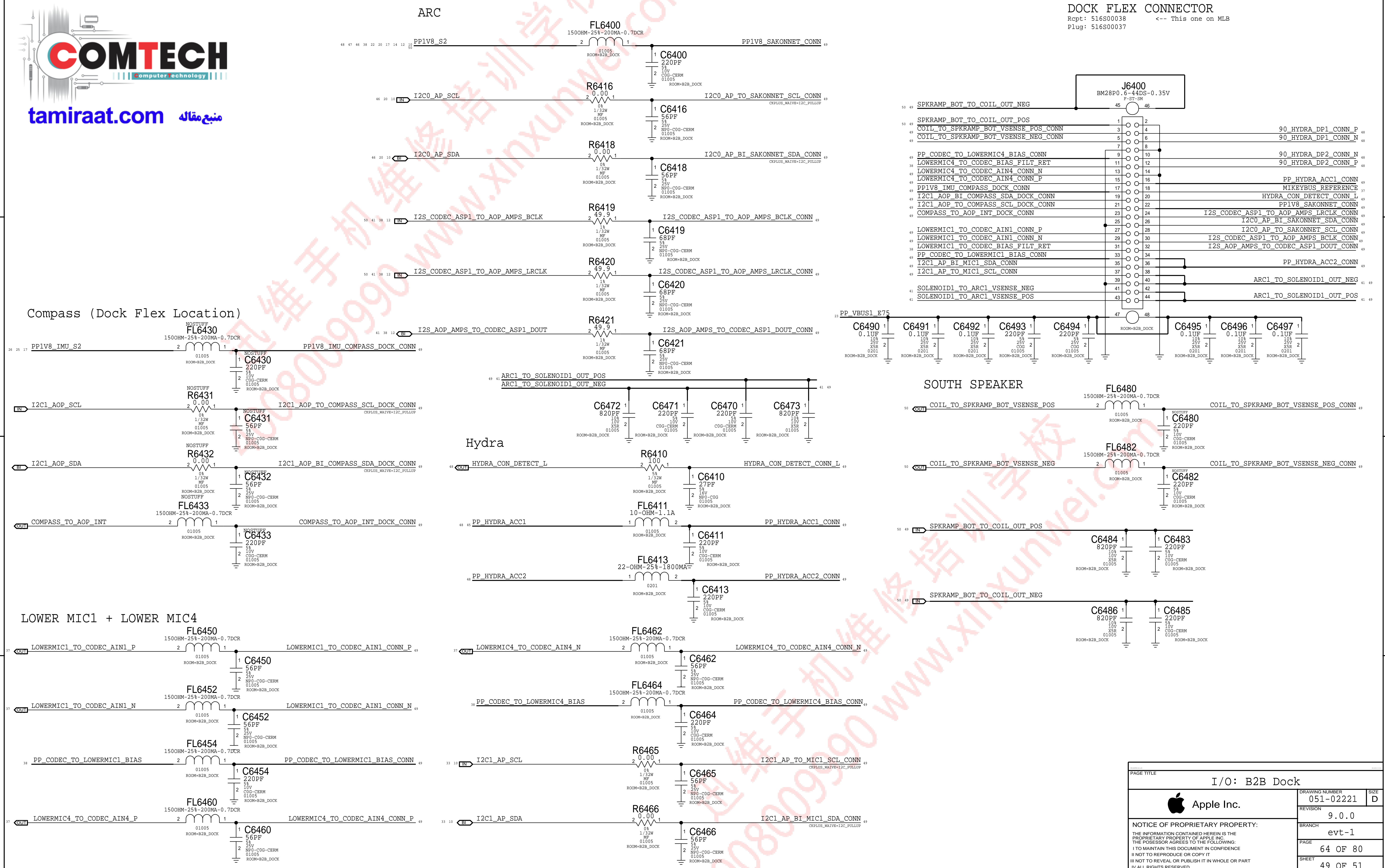
منبع مقاله

PAGE TITLE		
I/O: Hydra		
	DRAWING NUMBER	051-02221
	REVISION	9.0.0
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tamiraat.com منبع مقاله

DOCK FLEX CONNECTOR
Rept: 516S00038 <-- This one on MLB
Plug: 516S00037



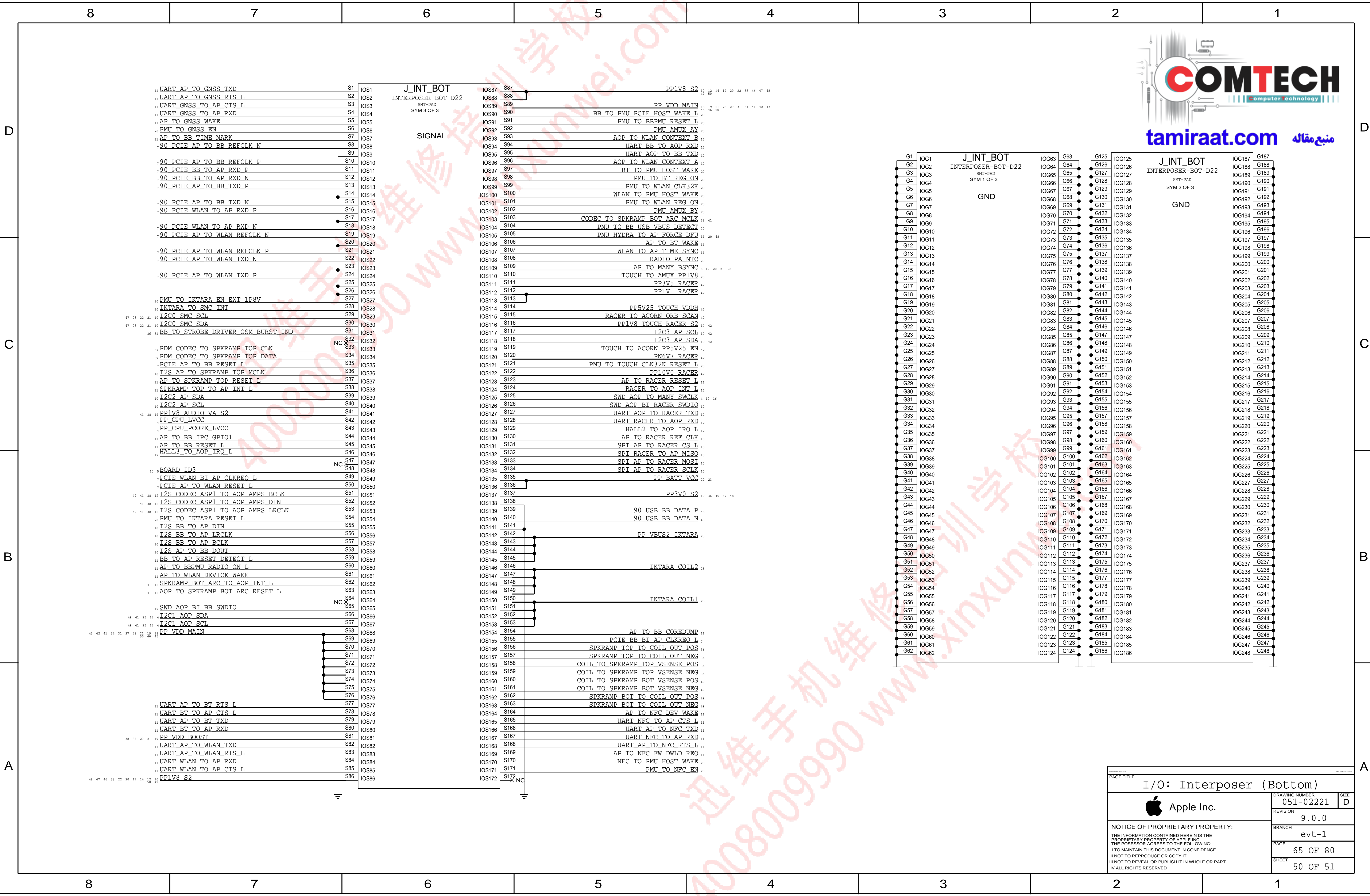
Compass (Dock Flex Location)

LOWER MIC1 + LOWER MIC4

Hydra

SOUTH SPEAKER

PAGE TITLE I/O: B2B Dock		
	DRAWING NUMBER 051-02221	SIZE D
	REVISION 9.0.0	BRANCH evt-1
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J_INT BOT
INTERPOSER-BOT-D22
SYM 3 OF 3

J_INT BOT
INTERPOSER-BOT-D22
SYM 1 OF 3

J_INT BOT
INTERPOSER-BOT-D22
SYM 2 OF 3

PAGE TITLE I/O: Interposer (Bottom)		
Apple Inc.	DRAWING NUMBER 051-02221	SIZE D
	REVISION 9.0.0	
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Radios on MLB Bottom



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

REV	ECN	DESCRIPTION OF REVISION	CK APPD	DATE
6	0008416016	ENGINEERING RELEASED		2017-04-06

X891 MLB Bottom: EVT

LAST MODIFICATION=Wed Apr 5 18:45:28 2017

PAGE	CSA	CONTENTS	SYNC	DATE	PAGE	CSA	CONTENTS	SYNC	DATE
1	1	TABLE OF CONTENTS							
2	2	SYSTEM: BOM Tables		11/03/2016					
3	4	SYSTEM: Mechanical Components		11/03/2016					
4	6	BOOTSTRAPPING		11/03/2016					
5	7	SYSTEM: Testpoints (Bottom)	test_mlb	11/09/2016					
6	34	SYSTEM POWER: Iktara	test_mlb	11/09/2016					
7	49	AUDIO: Speaker Amp Bottom	test_mlb	11/09/2016					
8	50	AUDIO: Speaker Amp Top	test_mlb	11/09/2016					
9	55	HALL EFFECT	test_mlb	03/23/2017					
10	58	CG: B2B Luna & Touch	test_mlb	11/09/2016					
11	66	I/O: Interposer (Top)	test_mlb	11/10/2016					
12	80	RADIOS	test_mlb	08/19/2016					
13	1	pagel							
14	2	BOM_OMIT_TABLE							
15	3	PMIC: BUCKS & LDOS							
16	4	PMIC: CLOCKS & CONTROL							
17	5	BB: POWER							
18	6	BB: CONTROL & HS PERIPHERALS							
19	7	BB: GPIOs & QLINK							
20	8	XCVR							
21	9	XCVR							
22	10	QPOET MODULE							
23	11	LB PAD							
24	12	HB PAD							
25	13	UHB PAD							
26	14	2G PA							
27	15	LB DSM							
28	16	HB DSM							
29	17	COUPLER2							
30	18	GNSS							
31	19	METROCI RC							
32	20	LOWER ANTENNA							
33	21	UPPER ANTENNA							
34	22	SIM, EUICC, DEBUG CONN	SIM TRAY	07/05/2016					
35	23	TEST POINTS	PROBE POINTS	07/06/2016					
36	24	RFFE TO GPO TRANSLATOR							
37	1	pagel							
38	75	NFC							
39	1	SymbolPorts							
40	4	Guinness	WIFI	01/30/2014					
41	5	WiFiANTFeeds							


BOM: 639-03222 (ROW)
 BOM: 639-03410 (JPN)
 MCO: 056-04079

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
051-02222	1	SCH,MLB,BOT,X891	SCH	NO	COMMON
820-00864	1	PCB,MLB,BOT,X891	PCB	NO	COMMON

Sub Designs

SOURCE PROJECT	SUB-DESIGN NAME	VERSION	HARD/ SOFT	SYNC_DATE/TIME
D22	RADIO_MLB	0.149.0	S	2017_04_05_18:45:19
D22	NFC_MLB	0.22.0	S	2017_03_22_22:10:24
D22	WIFI_MLB	0.20.0	S	2017_04_04_08:01:02

TABLE OF CONTENTS

DRAWING TITLE SCH,MLB,BOT,X891		DRAWING NUMBER 051-02222	SIZE D
 Apple Inc.		REVISION 6.0.0	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	
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EEEE Codes

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
825-7691	1	EEEE FOR (MLB_BOT, 639-03410, JPN)	EEEE_HP27	NO	JPN
825-7691	1	EEEE FOR (MLB_BOT, 639-03222, ROW)	EEEE_HLJ9	NO	ROW

Global Capacitors

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

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

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
138S00143	138S00144	BOM_TABLE_ALTS	ALL	0402.16uF@1V, Kyocera
138S00163	138S00144	BOM_TABLE_ALTS	ALL	0402.16uF@1V, Taiyo

CRITICAL PART#	COMMENT
138S00144	0402.16uF@1V

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
138S00138	138S00139	BOM_TABLE_ALTS	ALL	0201.3uF@1V, Kyocera
138S00164	138S00139	BOM_TABLE_ALTS	ALL	0201.3uF@1V, Taiyo

CRITICAL PART#	COMMENT
138S00139	0201.3uF@1V

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
138S00145	138S00146	BOM_TABLE_ALTS	ALL	0402.5.1uF@3V, Kyocera
138S00165	138S00146	BOM_TABLE_ALTS	ALL	0402.5.1uF@3V, Taiyo

CRITICAL PART#	COMMENT
138S00146	0402.5.1uF@3V

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
138S00140	138S00141	BOM_TABLE_ALTS	ALL	0201.1.1uF@3V, Kyocera
138S00142	138S00141	BOM_TABLE_ALTS	ALL	0201.1.1uF@3V, SEMCO
138S00166	138S00141	BOM_TABLE_ALTS	ALL	0201.1.1uF@3V, Taiyo

CRITICAL PART#	COMMENT
138S00141	0201.1.1uF@3V

Global Ferrites

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

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

Global R/C Alternates

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
138S0648	138S0652	BOM_TABLE_ALTS	ALL	CAP_XSR, 4.7UF, 6.3V, 0.65MM, 0402, TAIYO
138S00024	138S0986	BOM_TABLE_ALTS	ALL	CAP_XSR, 3-TERRM, 7.5UF, 20V, 4V, 0402, TAIYO/TK
138S0706	138S0739	BOM_TABLE_ALTS	ALL	CAP_CER, 11UF, 20V, 10V, XSR, 0201, MURATA
138S0945	138S0739	BOM_TABLE_ALTS	ALL	CAP_CER, 11UF, 20V, 10V, XSR, 0201, MURATA
138S0739	138S0706	BOM_TABLE_ALTS	ALL	CAP_CER, XSR, 0.22UF, 20V, 6.3V, 20A
132S0436	132S0400	BOM_TABLE_ALTS	ALL	CAP_CER, XSR, 0.22UF, 20V, 6.3V, 01005
138S00049	138S0831	BOM_TABLE_ALTS	ALL	CAP_CER, XSR, 2.2UF, 20V, 6.3V, 0201

CRITICAL PART#	COMMENT
138S0652	CAP_XSR, 4.7UF, 6.3V, 0.65MM, 0402, TAIYO
138S0986	CAP_CER, 3-TERRM, 7.5UF, 20V, 4V, 0402, TAIYO/TK
138S0739	CAP_CER, 11UF, 20V, 10V, XSR, 0201, MURATA
138S0706	CAP_CER, XSR, 0.22UF, 20V, 6.3V, 20A
132S0400	CAP_CER, XSR, 0.22UF, 20V, 6.3V, 01005
138S0831	CAP_CER, XSR, 2.2UF, 20V, 6.3V, 0201

Global Inductors

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
152S00653	152S00651	BOM_TABLE_ALTS	ALL	IND, 1.20H, 3A, 2016, 0.65Z
152S00654	152S00652	BOM_TABLE_ALTS	ALL	IND, 1.20H, 3A, 2016, 0.8Z

CRITICAL PART#	COMMENT
152S00651	IND, 1.20H, 3A, 2016, 0.65Z
152S00652	IND, 1.20H, 3A, 2016, 0.8Z

Multi-Vendor Criticals

CRITICAL PART#	COMMENT	CRITICAL PART#	COMMENT
138S0979	CAP_CER, XSR, 10UF, 20V, 10V, 0402, B=0.65MM	132S00008	CAP_CER, 0.1UF, 10V, 50V, X7R, 0402
138S0683	CAP_CER, XSR, 1UF, 10V, 25V, 0402	131S0804	CAP_CER, 27PF, 5V, COG, 25V, 0201
132S0663	CAP_CER, XSR, 1UF, 10V, 25V, 0402	131S0307	CAP_CER, NP0/COG, 100PF, 5V, 16V, 01005
132S0288	CAP_CER, XSR, 0.1UF, 10V, 16V, 0201	131S00053	CAP_CER, COG, 220PF, 5V, 10V, 01005
132S0275	CAP_CER, XSR, 470PF, 10V, 01005	117S0055	RES, NP, 1/20W, 2K OHM, 5, 0201, SMD
132S0245	CAP_CER, XSR, 0.01UF, 10V, 6.3V, 01005	107S0257	THERMISTOR, NTC, 10K OHM, 1A, B=3435, 01005

Iktara

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
132S00021	8	CAP_CER, 0.082UF, 10V, 50V, X7R, 0402	C3451, C3452, C3453, C3454, C3455, C3456, C3457, C3458	NO	COMMON
132S0423	2	CAP_CER, 0.022UF, 50V, X7R, 10V, 0402	C3455, C3465	CRITICAL	COMMON
132S0423	2	CAP_CER, 0.022UF, 50V, X7R, 10V, 0402	C3456, C3466	CRITICAL	NOSTUFF

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
685-00183	685-00182	BOM_TABLE_ALTS	SUBBOM_DS	SUBBOM_MLB, BOT, CAP, TYPICAL, X891

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
685-00182	1	SUBBOM_MLB, BOT, DIODES, DIODES, X891	SUBBOM_DS	CRITICAL	COMMON
371S00133	4	DIODES, SHOTTKY DIODE, 30V, 2A, D603	D3400, D3401, D3402, D3403	CRITICAL	DIODES_DS
371S00132	4	ONSEMI, SHOTTKY DIODE, 30V, 2A, D603	D3400, D3401, D3402, D3403	CRITICAL	ONSEMI_DS

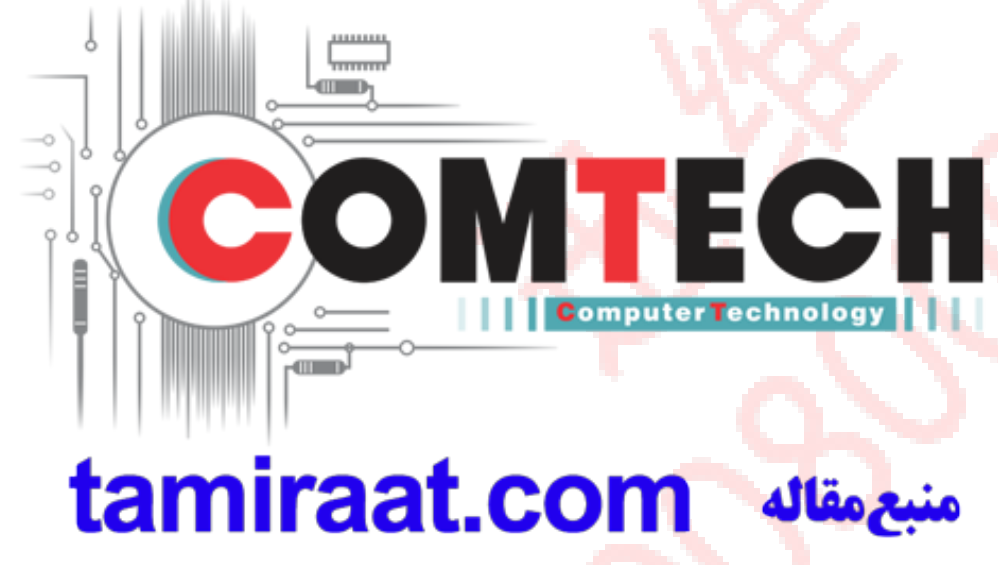
Soft-Term Cap Sub BOMs

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
685-00157	1	SUBBOM_MLB, BOT, CAP, TYPICAL, X891	SUBBOM_CAP	CRITICAL	COMMON

Touch/Luna B2B

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

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
685-00158	685-00157	BOM_TABLE_ALTS	SUBBOM_CAP	SUBBOM_MLB, BOT, CAP, SOFT, X891



PAGE TITLE		SYSTEM: BOM Tables	
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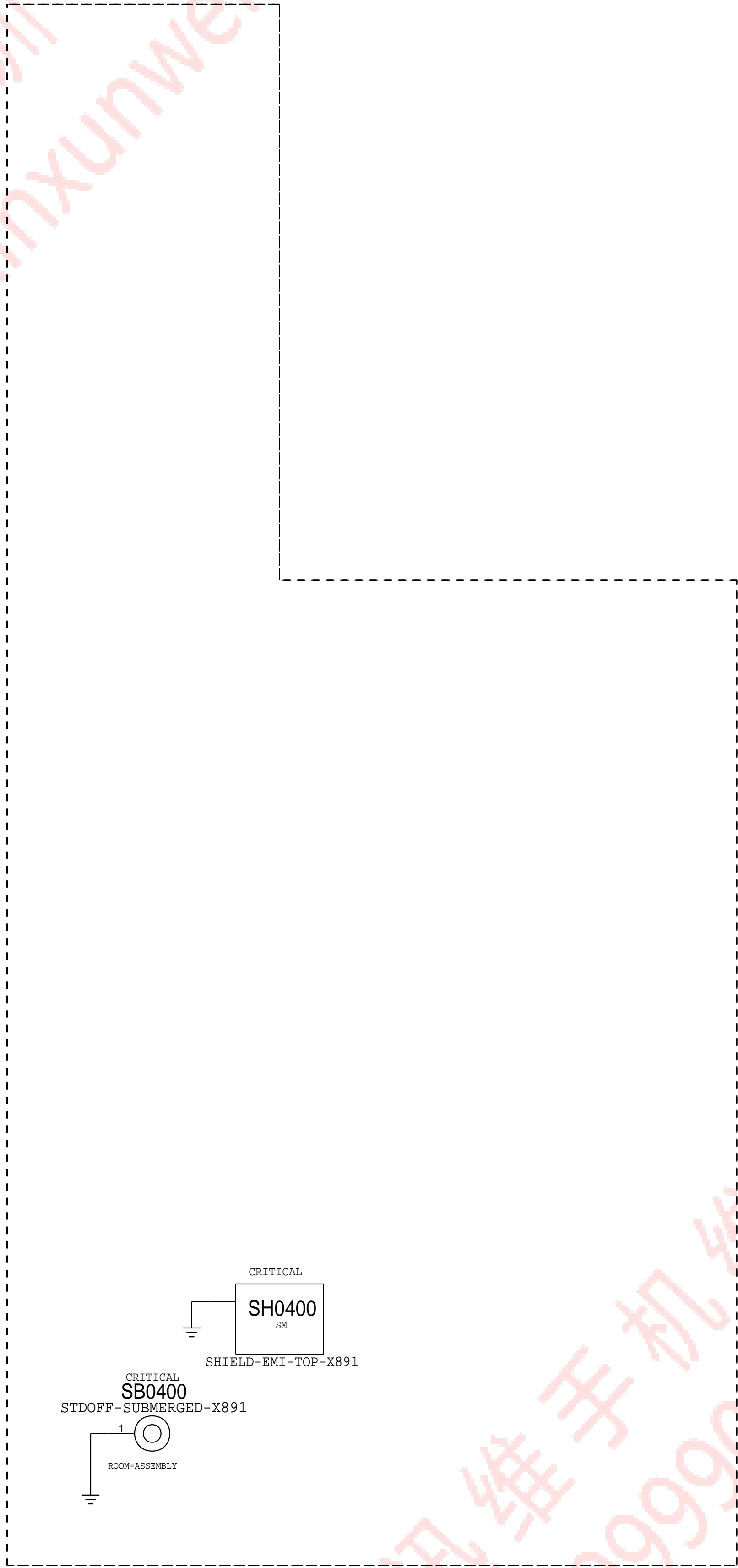
B

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FIDUCIALS

- FD0401
FID
OP55Q-CROSS-NSP
1
ROOM=ASSEMBLY
- FD0402
FID
OP55Q-CROSS-NSP
1
ROOM=ASSEMBLY
- FD0403
FID
OP55Q-CROSS-NSP
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ROOM=ASSEMBLY



منبع مقاله

PAGE TITLE			SYSTEM: Mechanical Components
Apple Inc.	DRAWING NUMBER	051-02222	SIZE D
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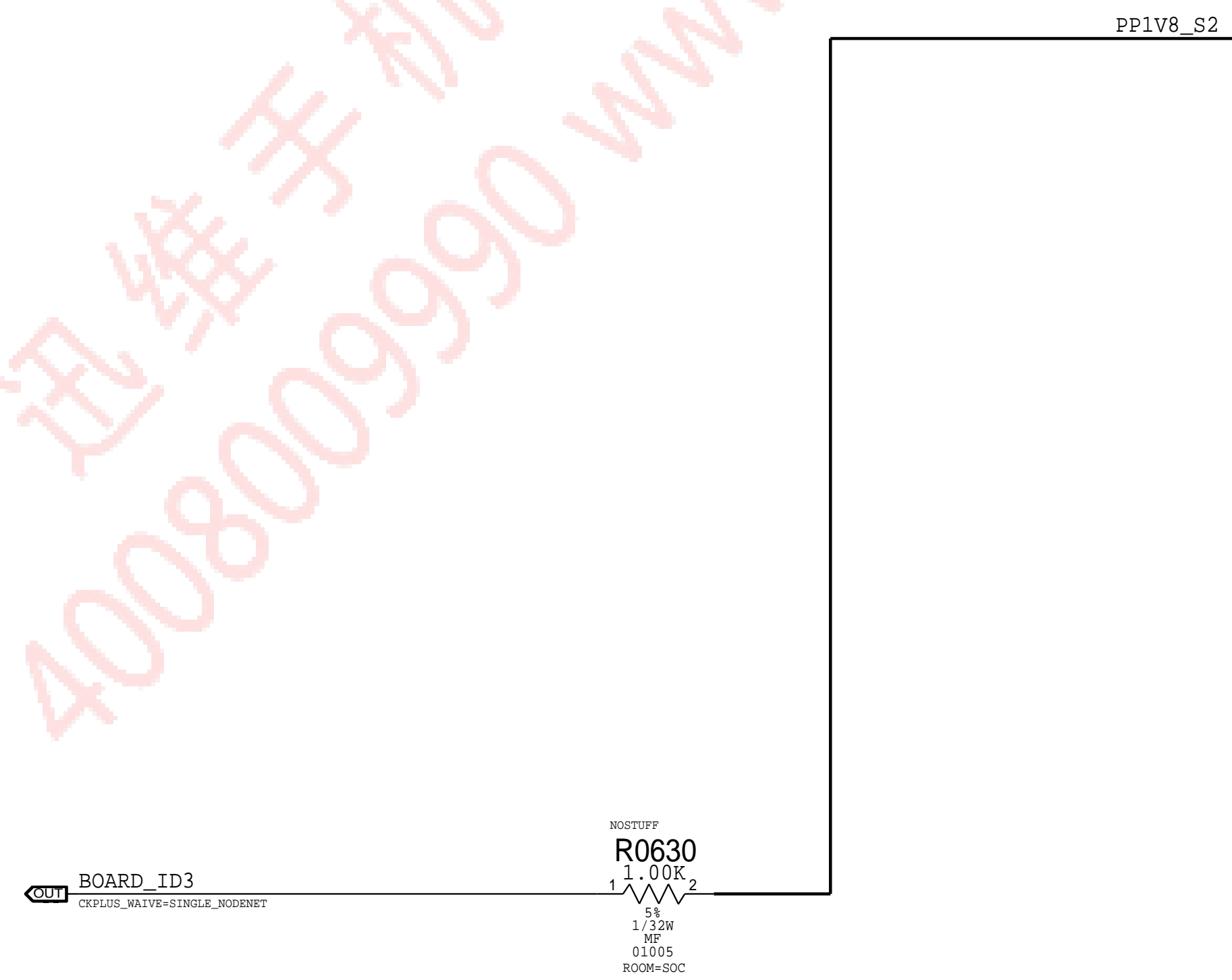
4

3

2

1

BOOTSTRAPPING: BOARD ID[3]



D22 Selected (BOARD_ID3) ->

Board Rev[3:0]				
Float=Low PU=High				
	3	2	1	0
	Build Major		Build Minor	
Proto 1	1	1	1	1
Proto 2	1	1	1	0
Proto 3	1	1	0	1
(Spare)	1	1	0	0
EVT	1	0	1	1
(Spare)	1	0	1	0
Carrier	0	1	1	1
(Spare)	0	1	1	0
DVT	0	0	1	1
(Spare)	0	0	1	0
(Spare)	0	0	0	1
PVT	0	0	0	0

Board ID[4:0]					
Float=Low PU=High					
	4	3	2	1	0
	X	Baseband	Form Factor	MLB/Dev	
D20 MLB	0	0	0	1	0
D20 Dev	0	0	0	1	1
D21 MLB	0	0	1	0	0
D21 Dev	0	0	1	0	1
D22 MLB	0	0	1	1	0
D22 Dev	0	0	1	1	1
D201 MLB	0	1	0	1	0
D201 Dev	0	1	0	1	1
D211 MLB	0	1	1	0	0
D211 Dev	0	1	1	0	1
D221 MLB	0	1	1	1	0
D221 Dev	0	1	1	1	1

Boot Config[2:0]			
Float=Low PU=High			
	2	1	0
SPI0	0	0	0
SPI0 Test Mode	0	0	1
SPI0 NAND	0	1	0
SPI0 NAND Test	0	1	1
Slow SPI0 Test	1	1	0

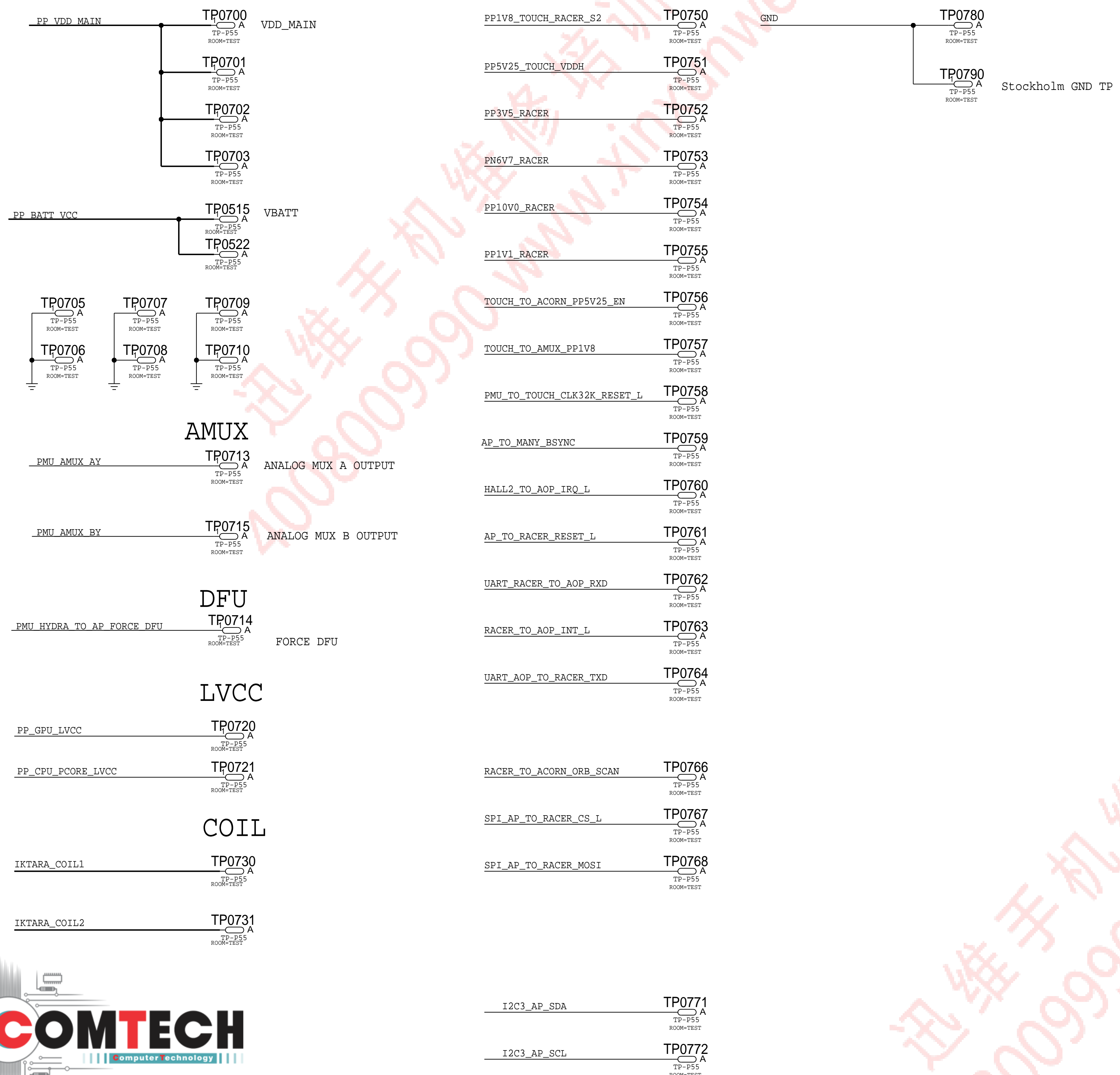


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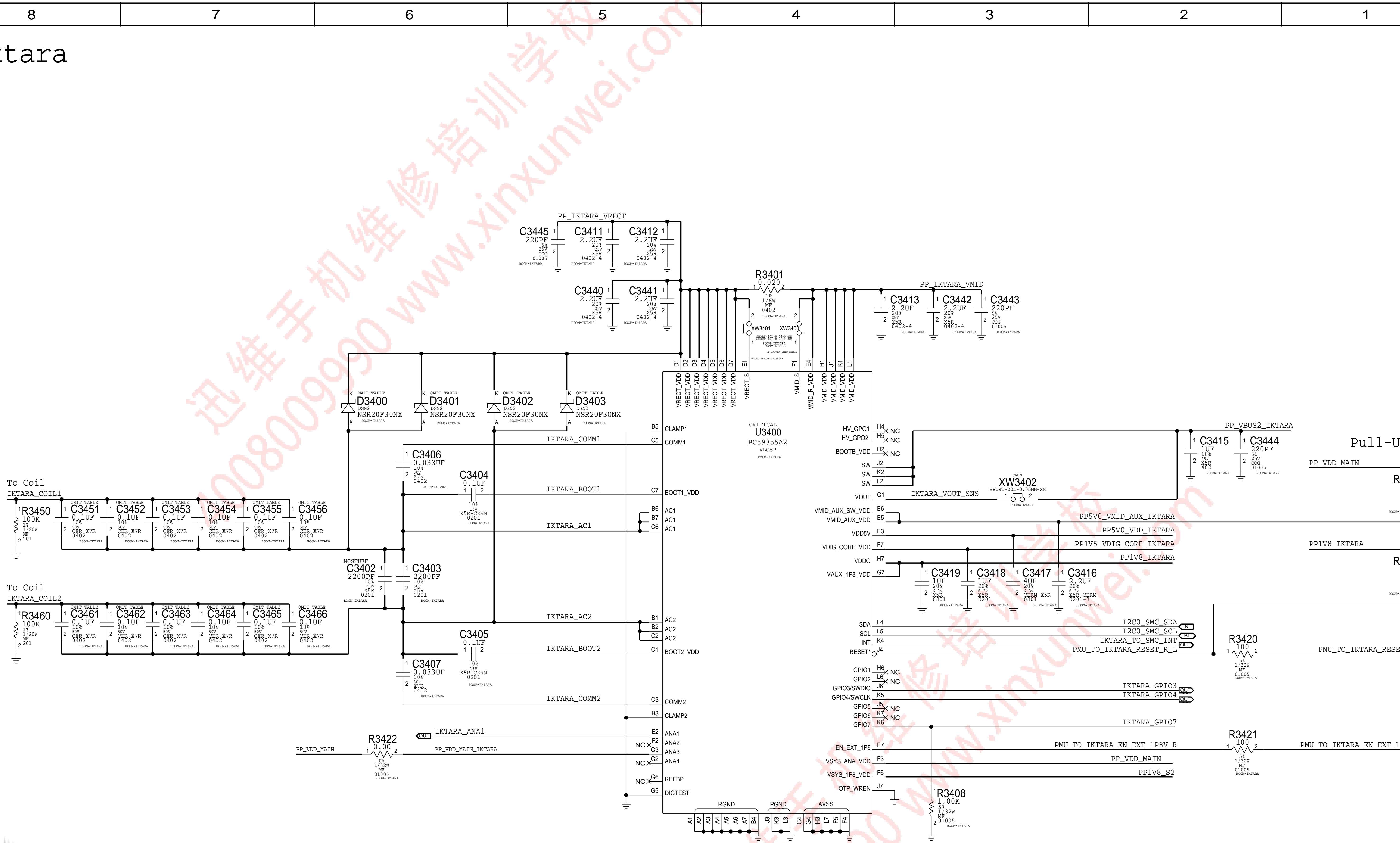
Test Points

Probe Points



PAGE TITLE		SYSTEM: Testpoints (Bottom)	
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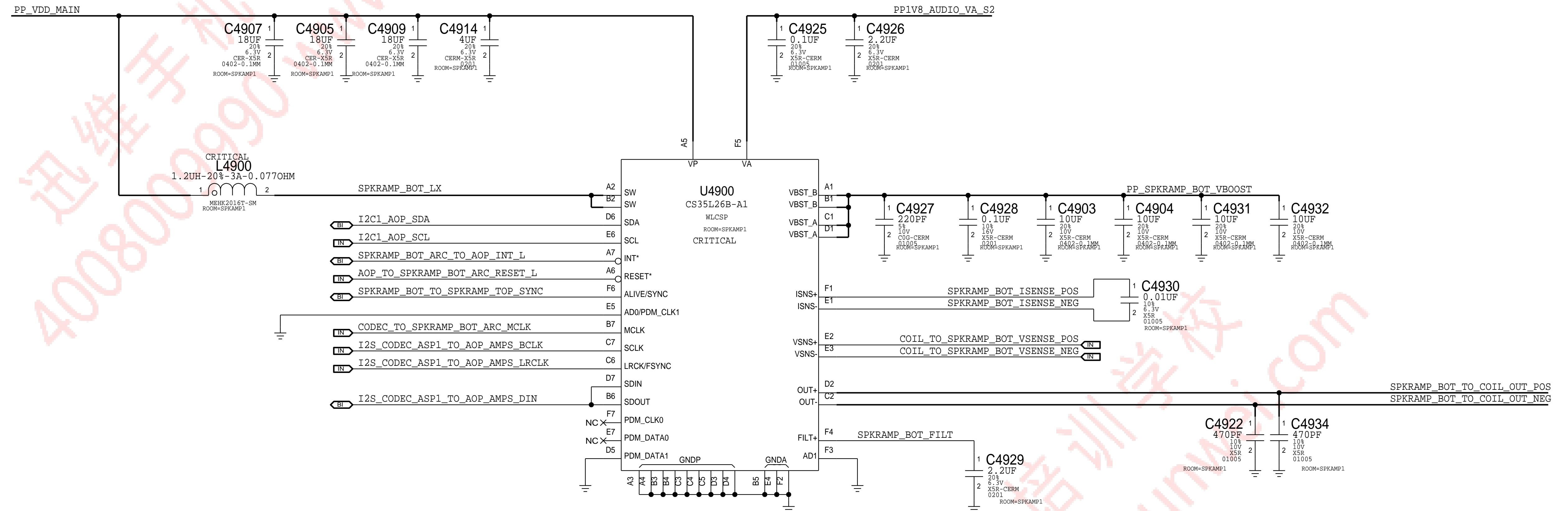


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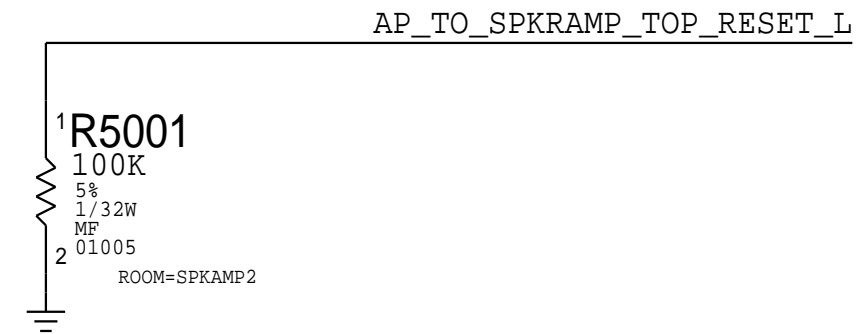
South Speaker Amplifier

APN: 338S00295

I2C ADDRESS: 1000 000x
0x80



Pull Downs

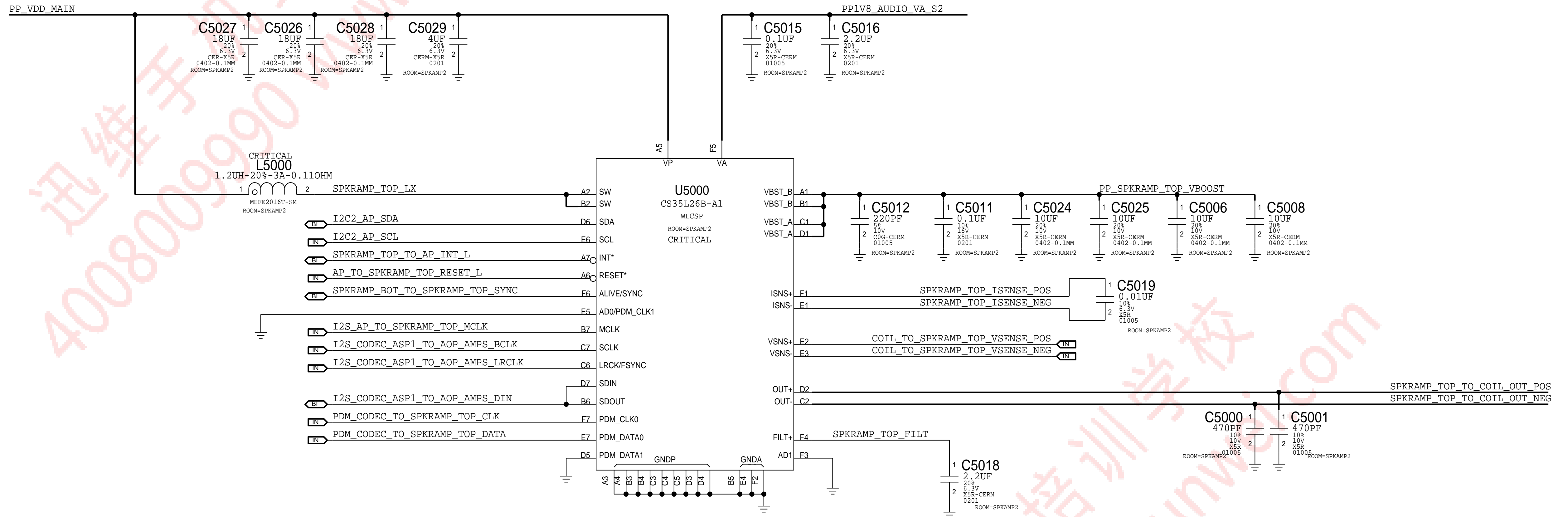


North Speaker Amplifier

APN: 338S00295

I2C ADDRESS: 1000 000x

0x80

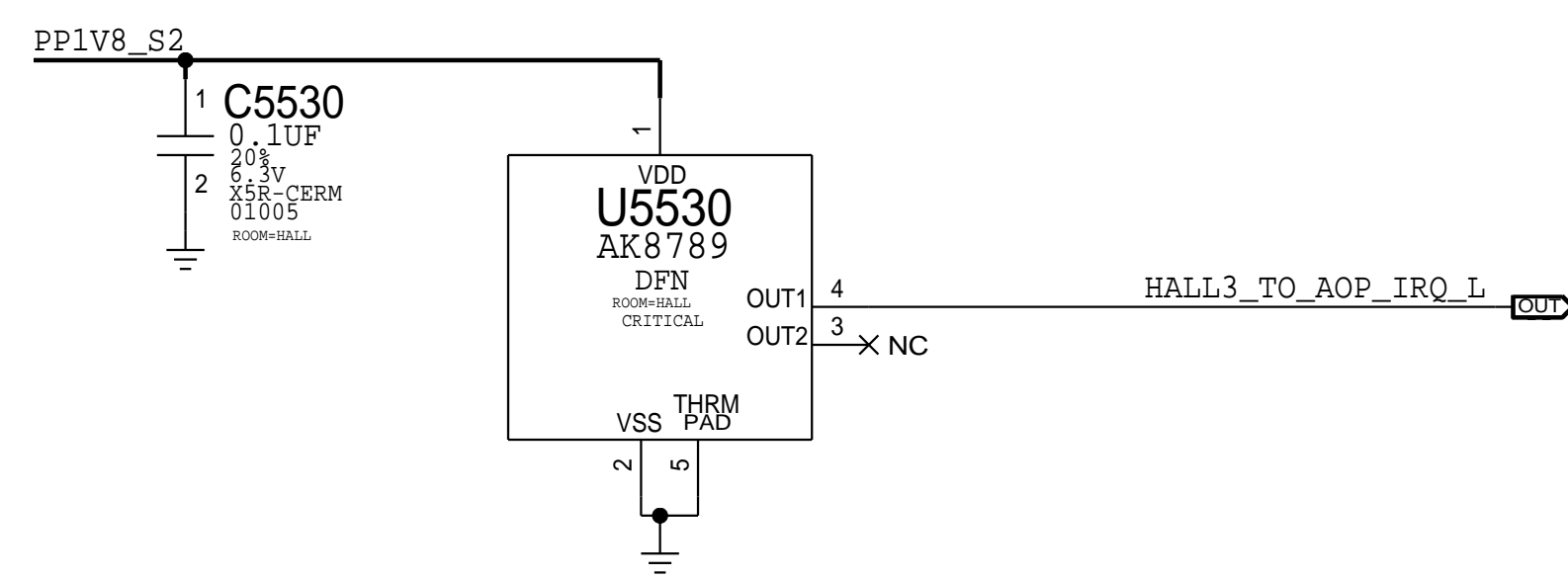


PAGE TITLE		
AUDIO: Speaker Amp Top		
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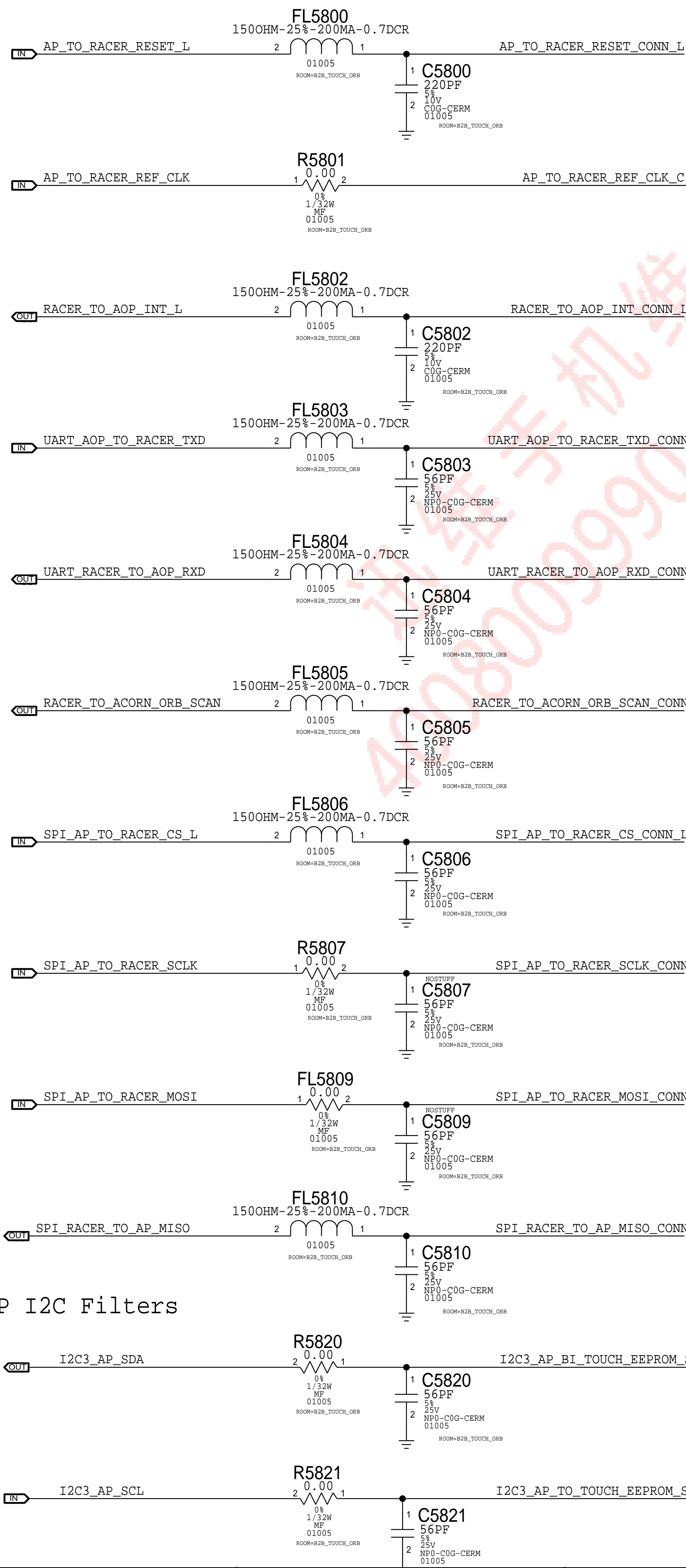
Hall Effect

APN: 353S3697

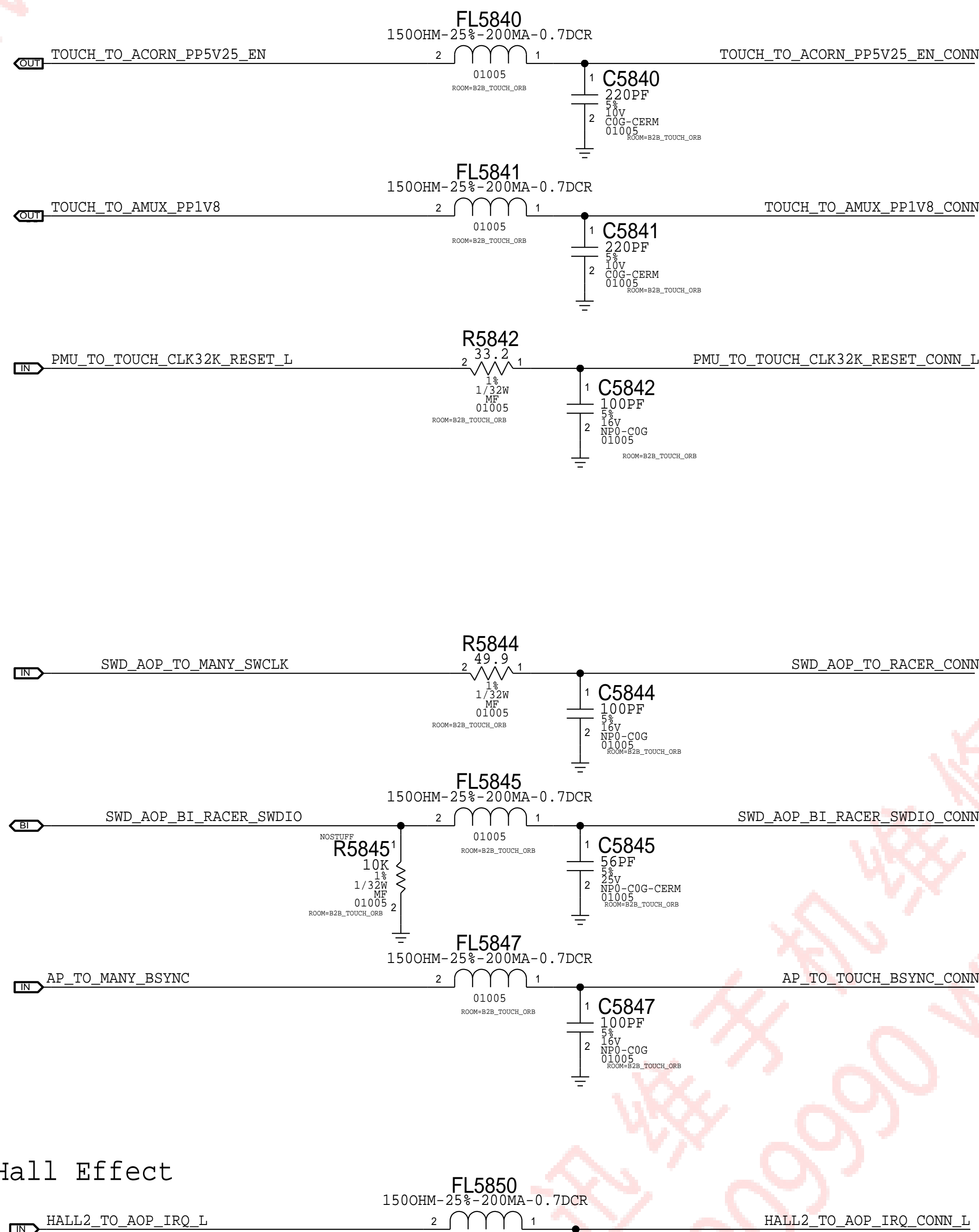


PAGE TITLE			HALL EFFECT		
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Racer I/O



Touch and Misc I/O

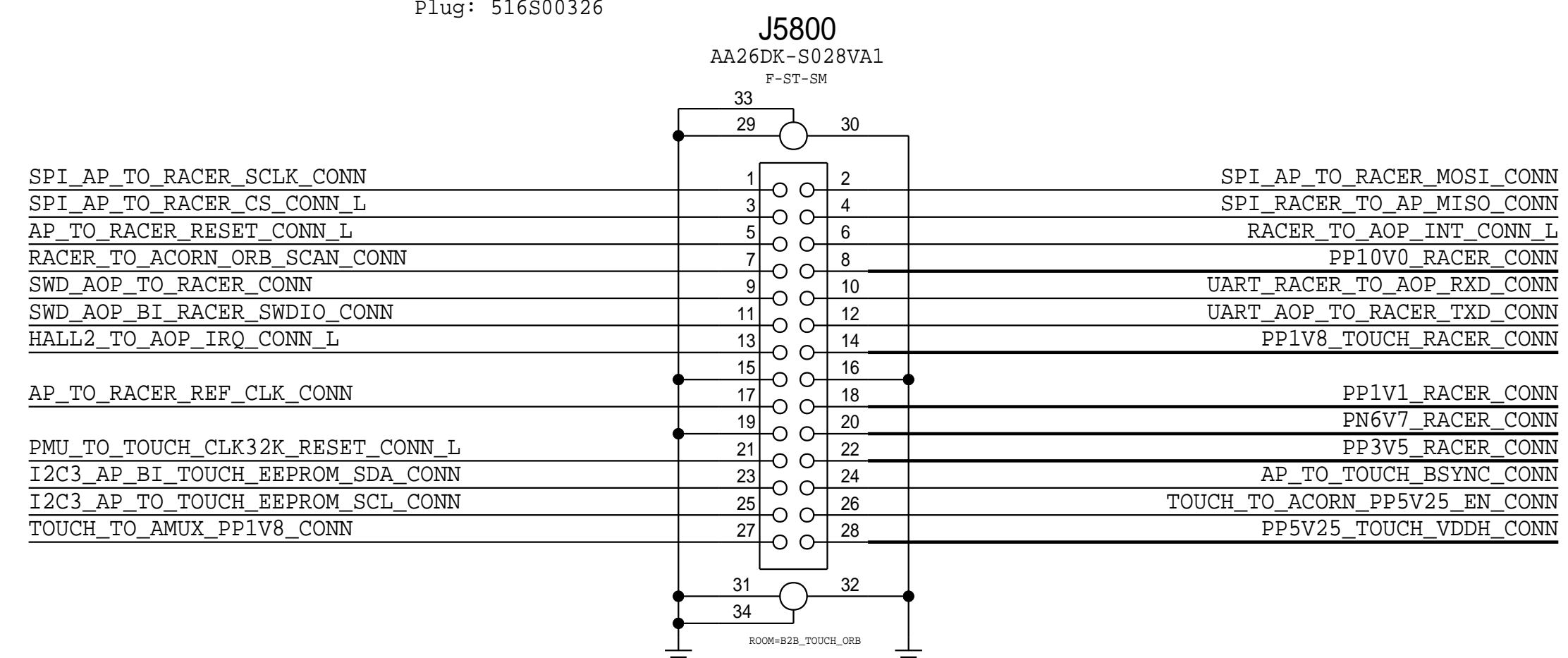


Hall Effect

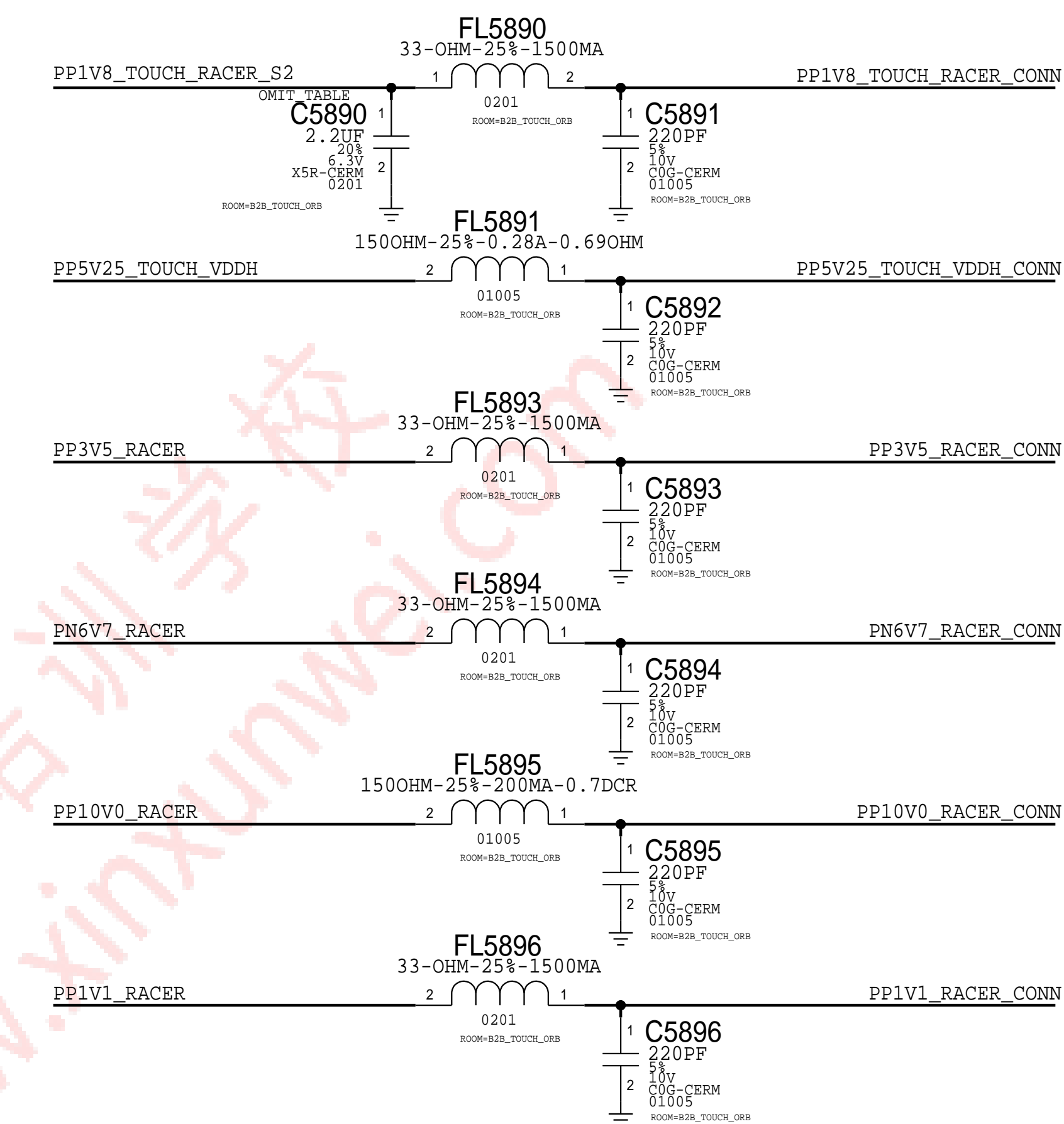


Luna + Touch Connector

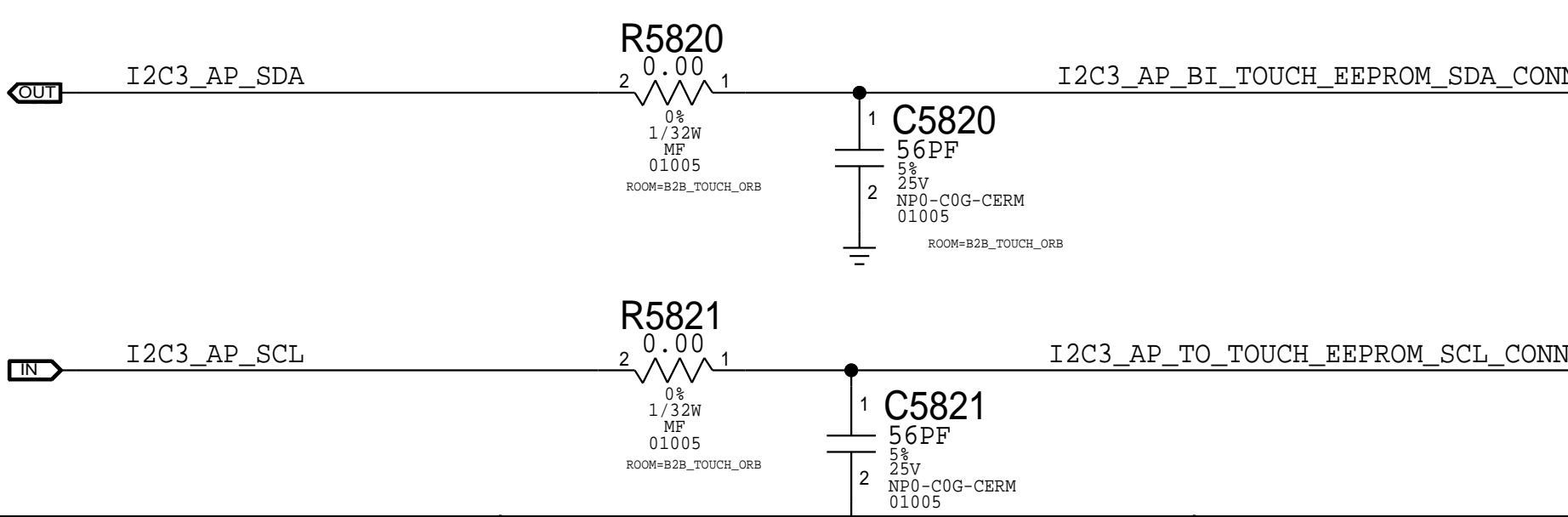
Rcpt: 516S00325 <-- This one on MLB
Plug: 516S00326



Touch And Racer Power



AP I2C Filters



PAGE TITLE		
CG: B2B Luna & Touch		
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D

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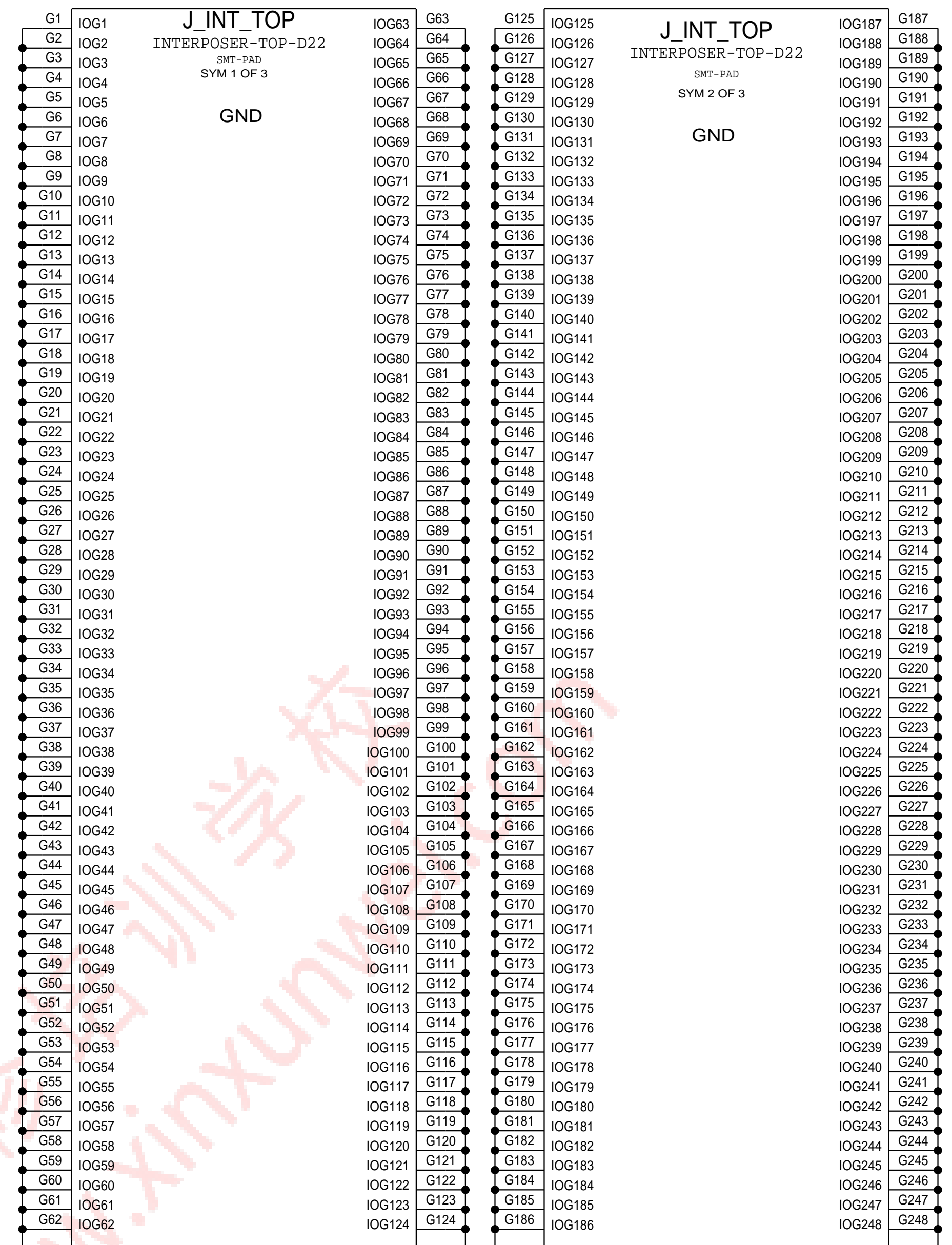
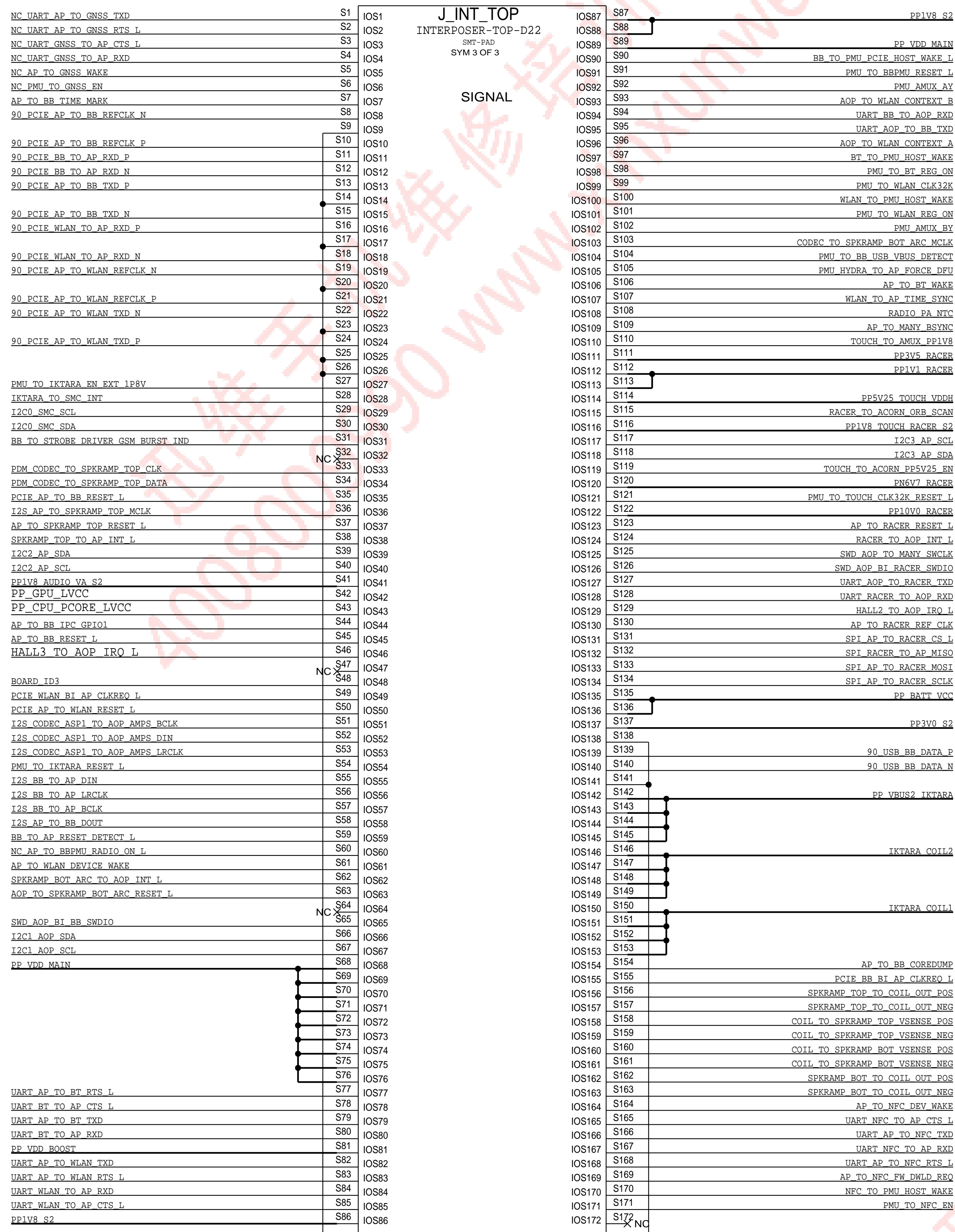
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2. ALL CAPACITANCE VALUES ARE IN MICROFARADS.
3. ALL CRYSTALS & OSCILLATOR VALUES ARE IN HERTZ.

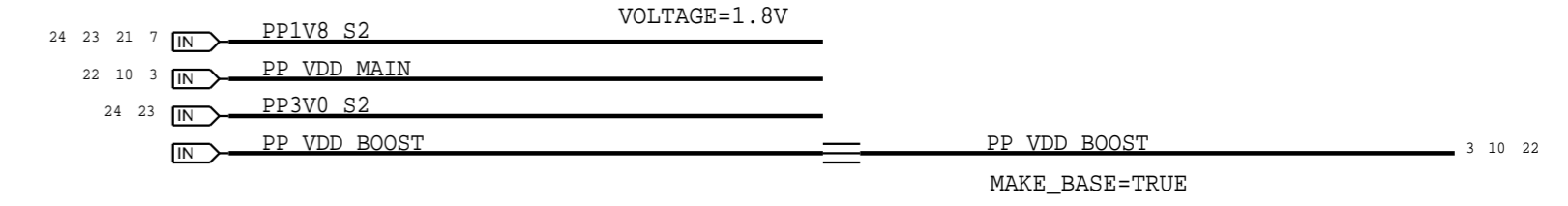
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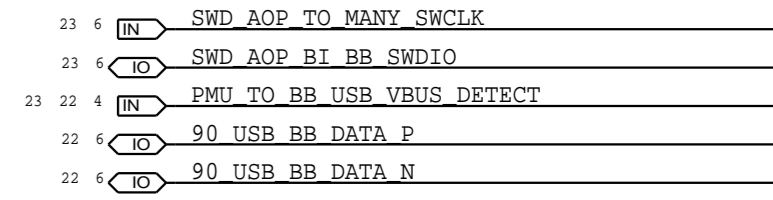
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EVT

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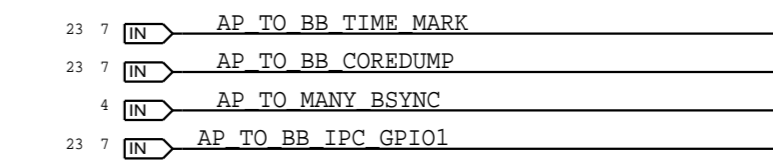
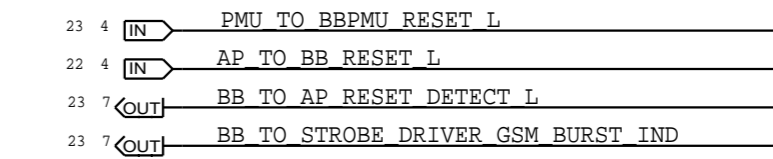
AP CONNECTIONS POWER



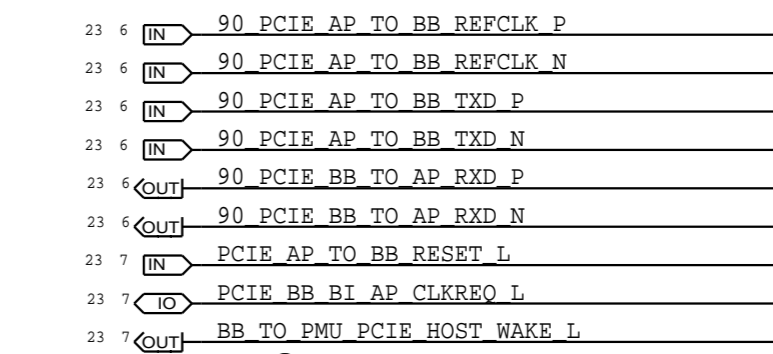
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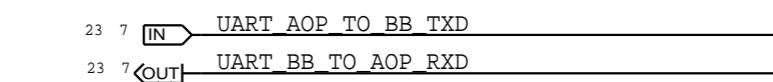
BB CONTROL



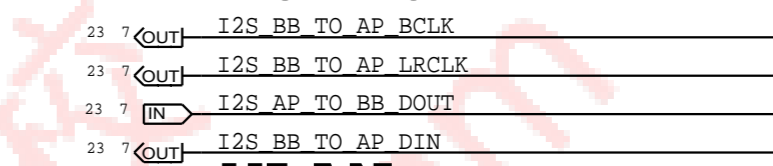
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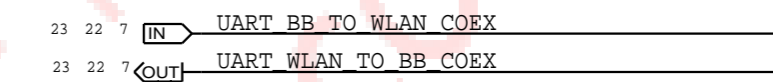
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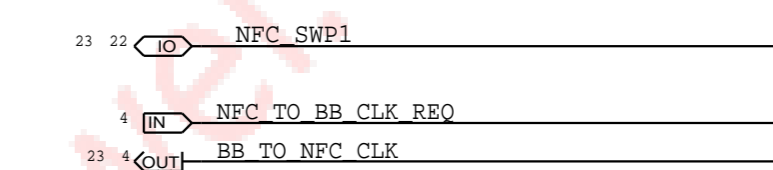
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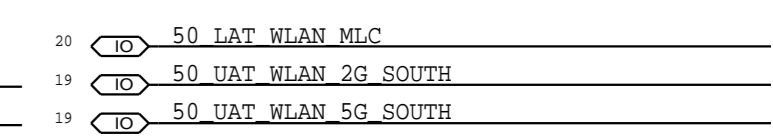
WLAN



STOCKHOLM



WIFI



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16	6	PMIC: CLOCKS & CONTROL	<SYNC_MASTER4>	<SYNC_DATE4>
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18	34	BB: CONTROL & HS PERIPHERALS	ap_core_flat	09/09/15
19	49	BB: GPIOs & QLINK	ap_core_flat	09/09/15
20	50	XCVR	ap_core_flat	09/09/15
21	58	XCVR	ap_core_flat	09/09/15
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28	<CSA_PAGE16>	HB DSM	ap_core_flat	09/09/15
29	<CSA_PAGE17>	COUPLER2	ap_core_flat	09/09/15
30	<CSA_PAGE18>	GNSS	ap_core_flat	09/09/15
31	<CSA_PAGE19>	METROCIIRC	ap_core_flat	09/09/15
32	<CSA_PAGE20>	LOWER ANTENNA	ap_core_flat	09/09/15
33	<CSA_PAGE21>	UPPER ANTENNA	ap_core_flat	09/09/15
34	<CSA_PAGE22>	SIM, EUICC, DEBUG CONN	ap_core_flat	09/09/15
35	<CSA_PAGE23>	TEST POINTS	ap_core_flat	09/09/15
36	<CSA_PAGE24>	RFFE TO GPO TRANSLATOR	ap_core_flat	09/09/15
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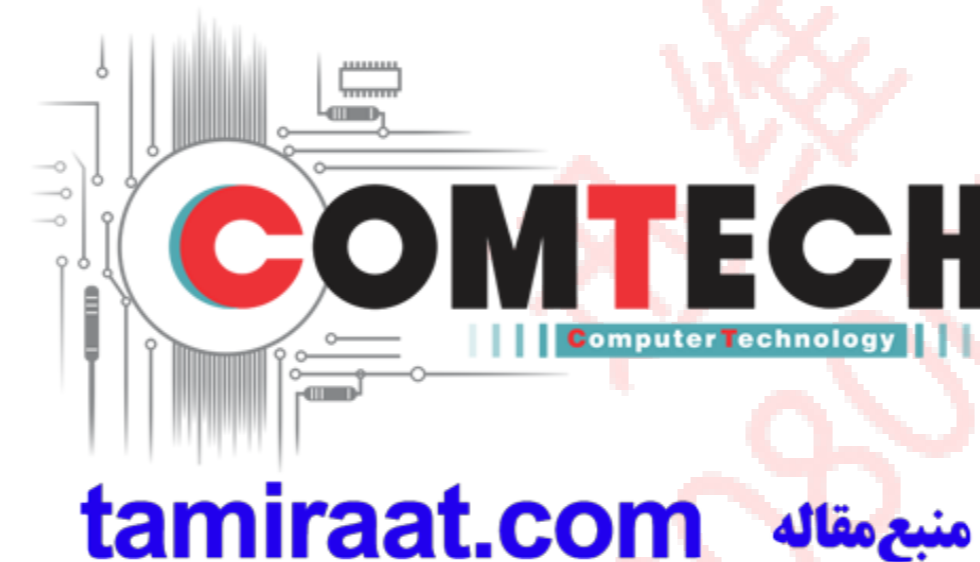
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BOM: 939-XXXXX

ALTERNATES

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197S00065	197S00093	Y401_E	XTAL, 38P4MHZ	BOM_TABLE_ALTS
197S00065	197S00067	Y401_E	XTAL, 38P4MHZ	BOM_TABLE_ALTS

DOCK

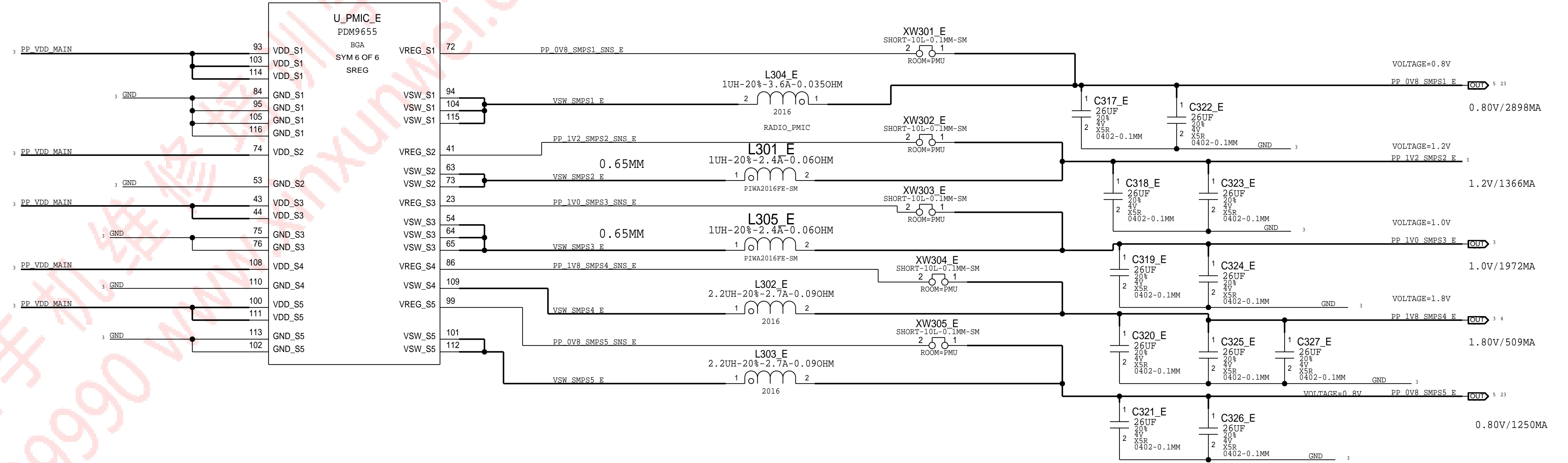


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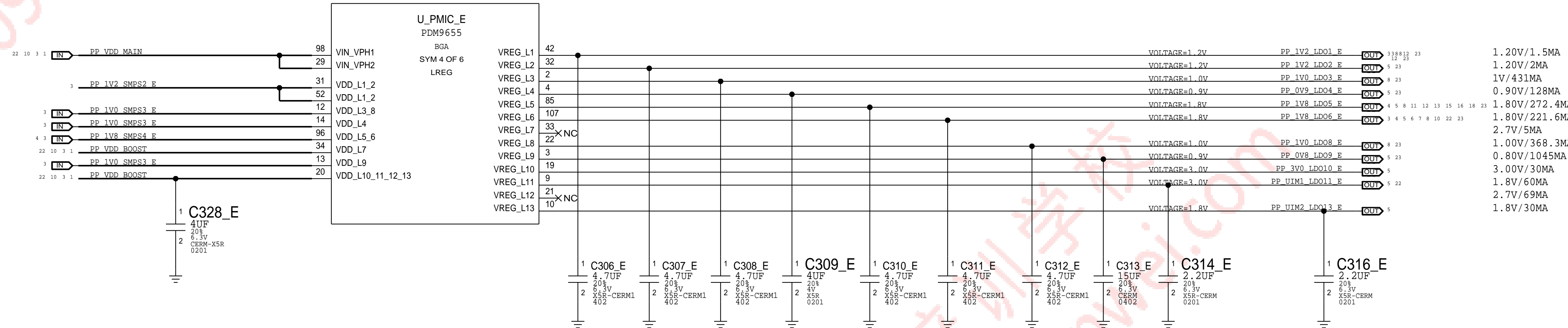
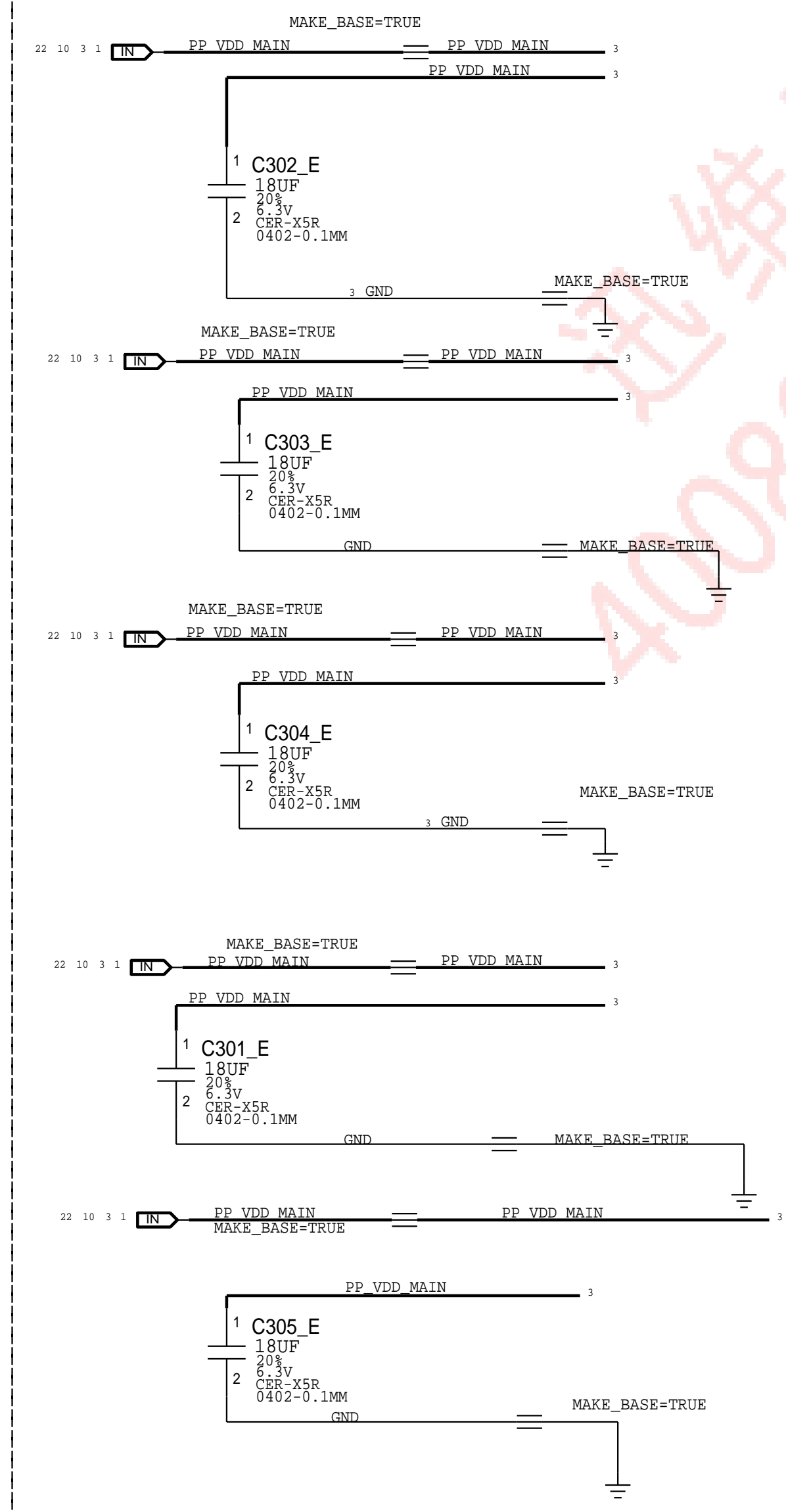
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Apple Inc.		REVISION 6.0.0	BRANCH evt-1
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RF PMIC: SWITCHERS & LDOS

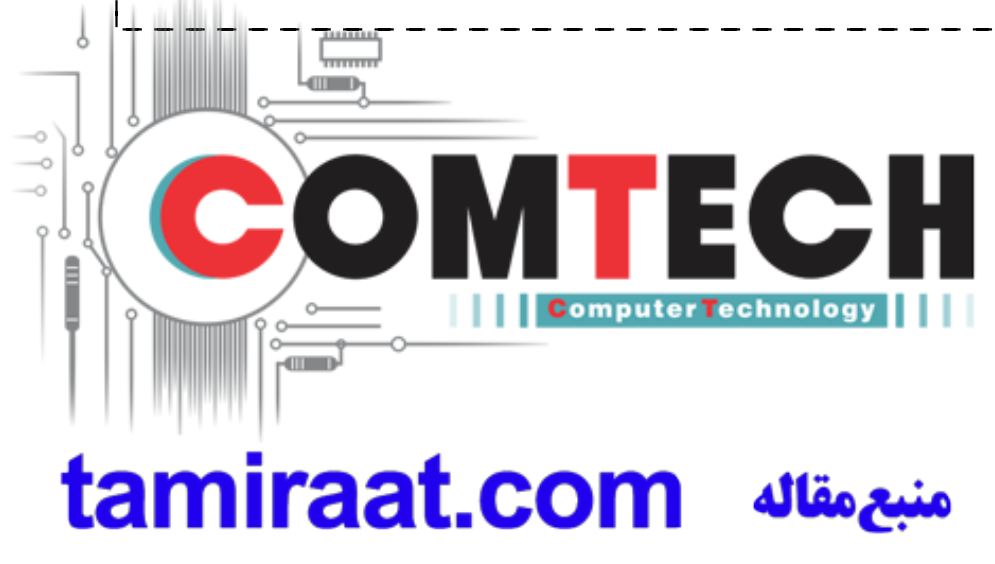
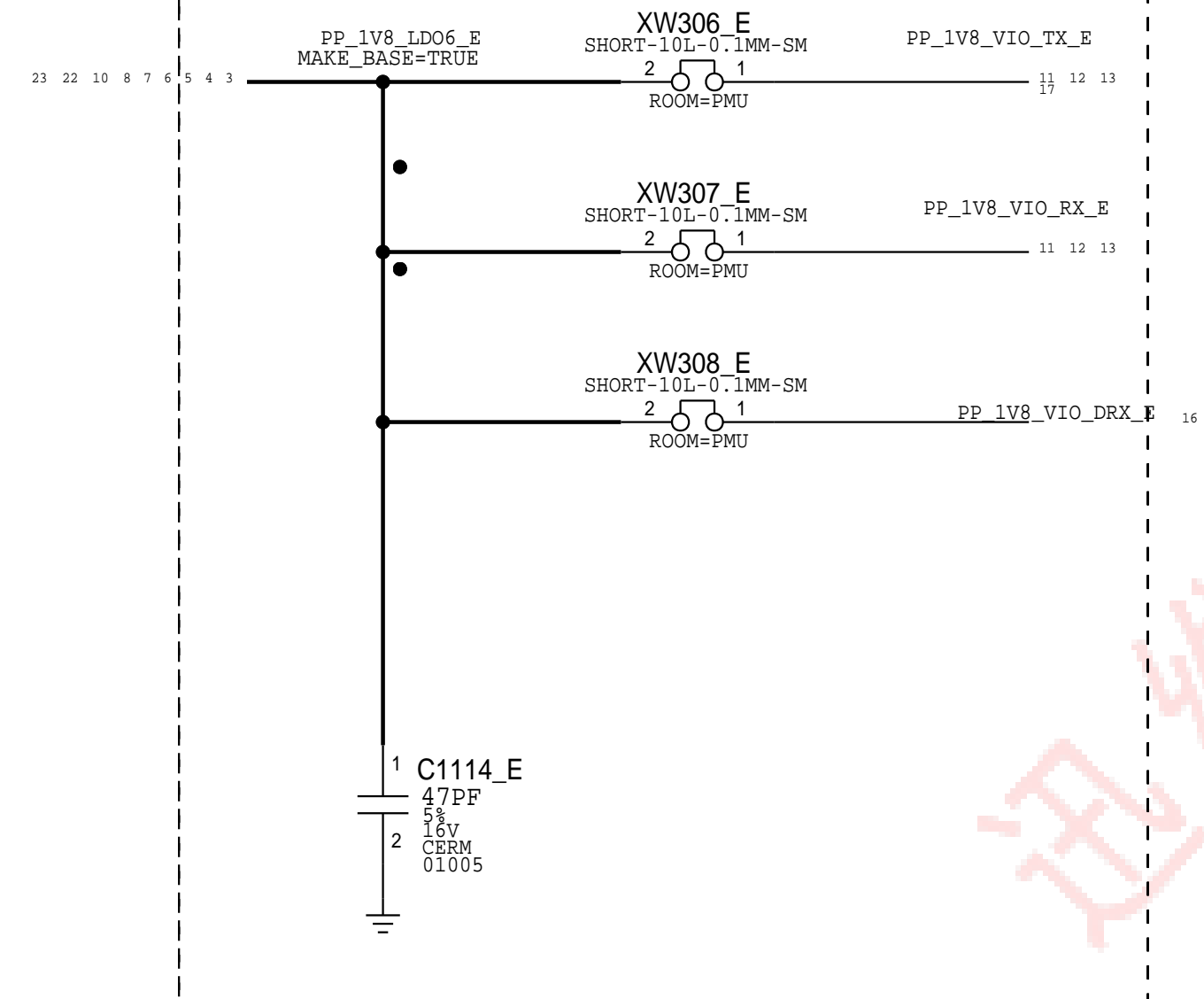
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SWITCHERS BULK CAPS



VIO TX & RX



PAGE TITLE		
PMIC: BUCKS & LDOS		
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	PAGE	3 OF 24
	SHEET	15 OF 41

RF PMIC: XTAL, CLOCKS AND MISCELLANEOUS

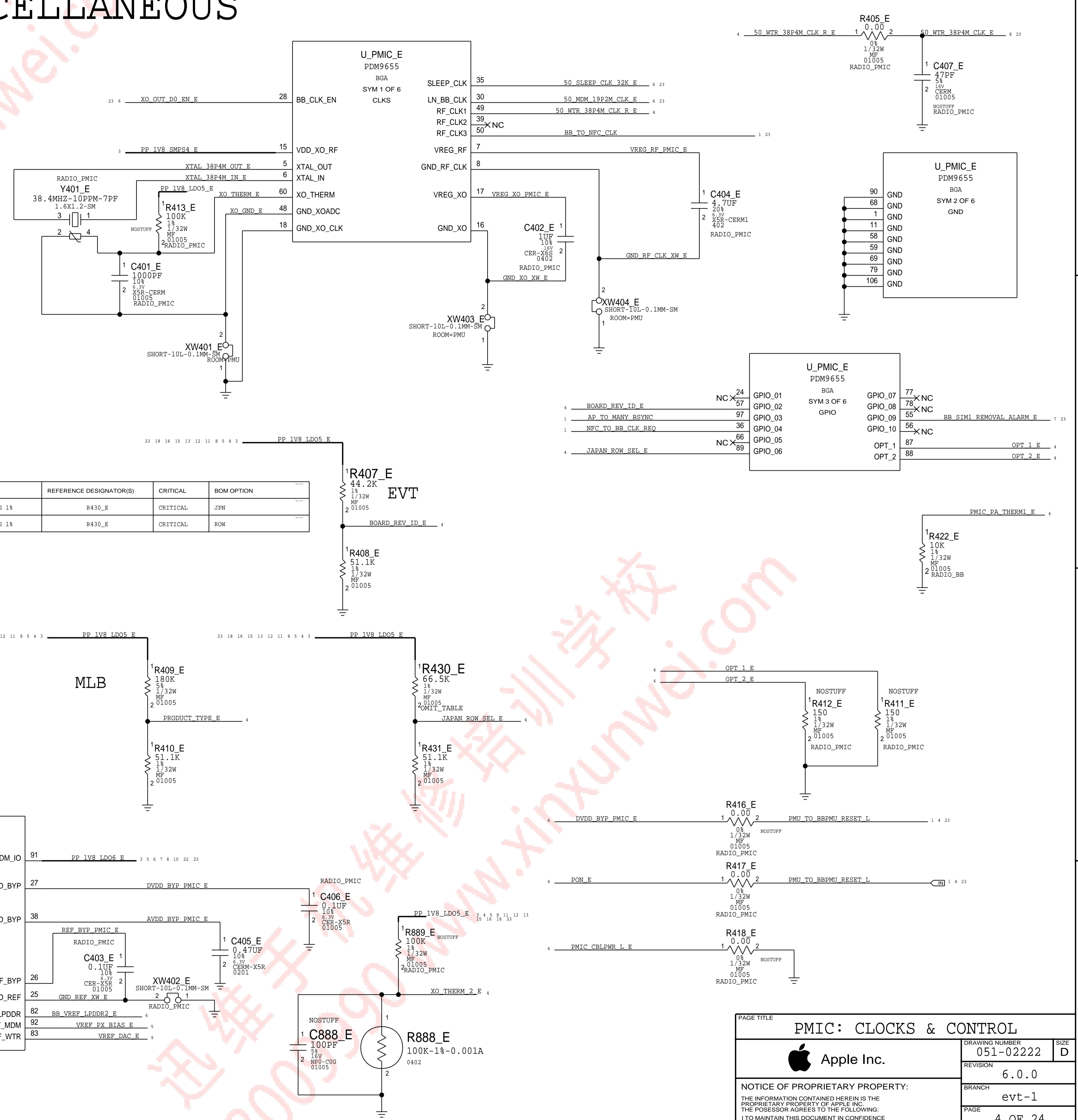
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0.15V-0.25V	422K	51.1K	PROTO1.5
0.35V-0.45V	180K	51.1K	PROTO2.5/DEV2
0.55V-0.65V	105K	51.1K	PROTO1/DEV3
0.75V-0.85V	66.5K	51.1K	PROTO2/DEV4
0.95V-1.05V	44.2K	51.1K	EVT
1.15V-1.25V	28K	51.1K	CARRIER/DEV5
1.35V-1.45V	16.5K	51.1K	DVT/DEV6
1.55V-1.65V	7.87K	51.1K	PVT/DEV7
1.75V-1.85V	10K	NOSTUFF	PROTO3

PA_THERM2	R409	R410	PRODUCT TYPE	Y
0.00V-0.10V	NOSTUFF	51.1K	RADIO DEV	1
0.15V-0.25V	422K	51.1K	3RD TYPE	2
0.35V-0.45V	180K	51.1K	POR MLB (FF)	3
0.55V-0.65V	105K	51.1K	SPARE	4
0.75V-0.85V	66.5K	51.1K	SPARE	5
0.95V-1.05V	44.2K	51.1K	SPARE	6
1.15V-1.25V	28K	51.1K	SPARE	7
1.35V-1.45V	16.5K	51.1K	SPARE	8
1.55V-1.65V	7.87K	51.1K	SPARE	9
1.75V-1.85V	10K	NOSTUFF	SPARE	A

JPN_ROW_SEL	R430	R431	MAV PLATFORM	Y	SKU
<0.10V	NOSTUFF	51.1K	MAV17.0	0	ROW
0.15V-0.25V	422K	51.1K	MAV17.1	1	JPN
0.35V-0.45V	180K	51.1K	MAV17.2	2	ROW
0.55V-0.65V	105K	51.1K	MAV17.3	3	JPN
0.75V-0.85V	66.5K	51.1K	MAV17.4	4	ROW
0.95V-1.05V	44.2K	51.1K	MAV17.5	5	JPN
1.15V-1.25V	28K	51.1K	MAV17.6	6	ROW
1.35V-1.45V	16.5K	51.1K	MAV17.7	7	JPN
1.55V-1.65V	7.87K	51.1K	MAV17.8	8	ROW
1.75V-1.85V	10K	NOSTUFF	MAV17.9	9	JPN

NOTE XTAL SYMBOL MIRRORED COMPARED TO PREVIOUS SCH

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
11880743	1	RESISTOR 01005, 44.2K OHMS 1%	R430_E	CRITICAL	JPN
11880612	1	RESISTOR 01005, 66.5K OHMS 1%	R430_E	CRITICAL	ROW

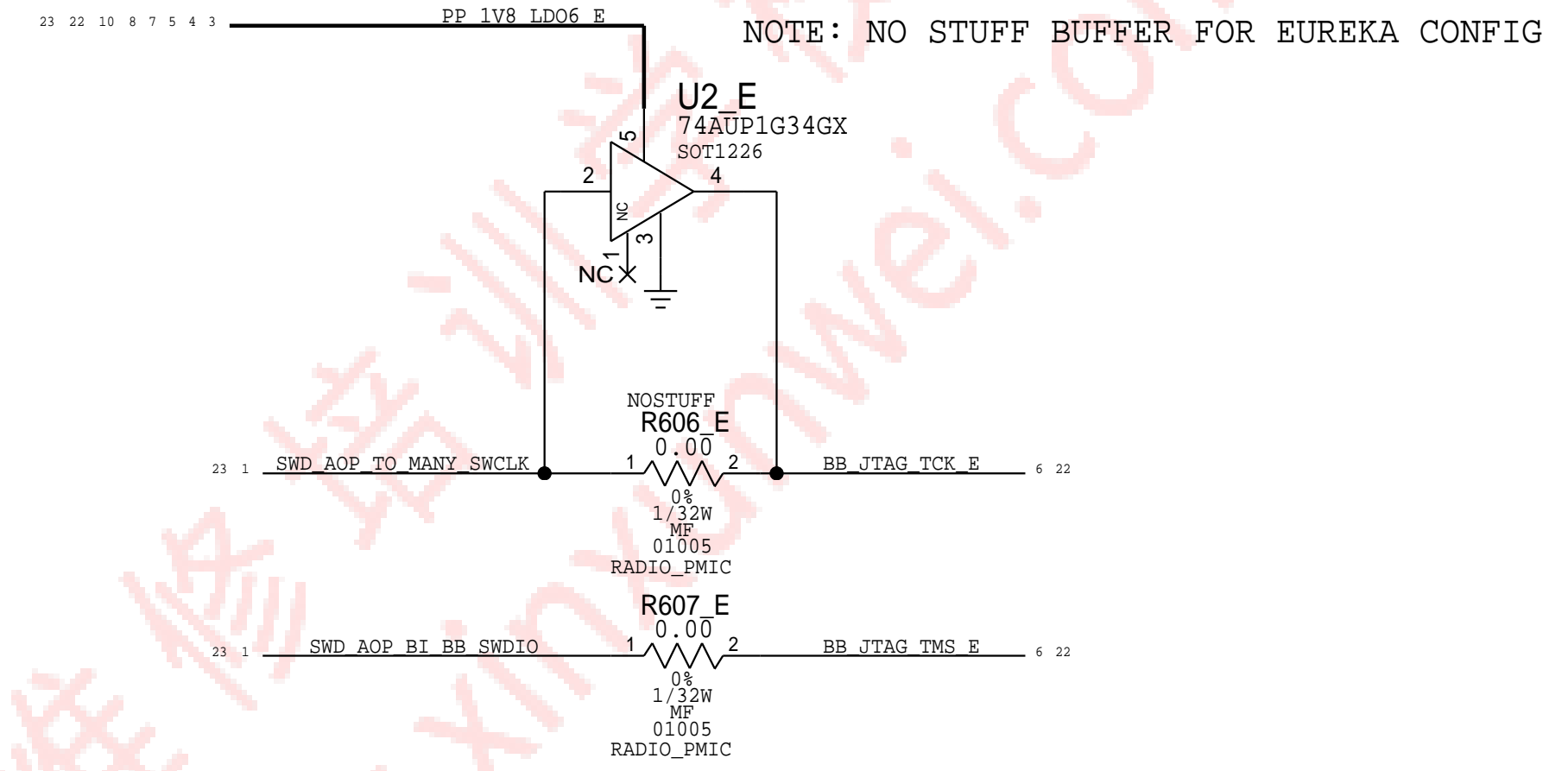
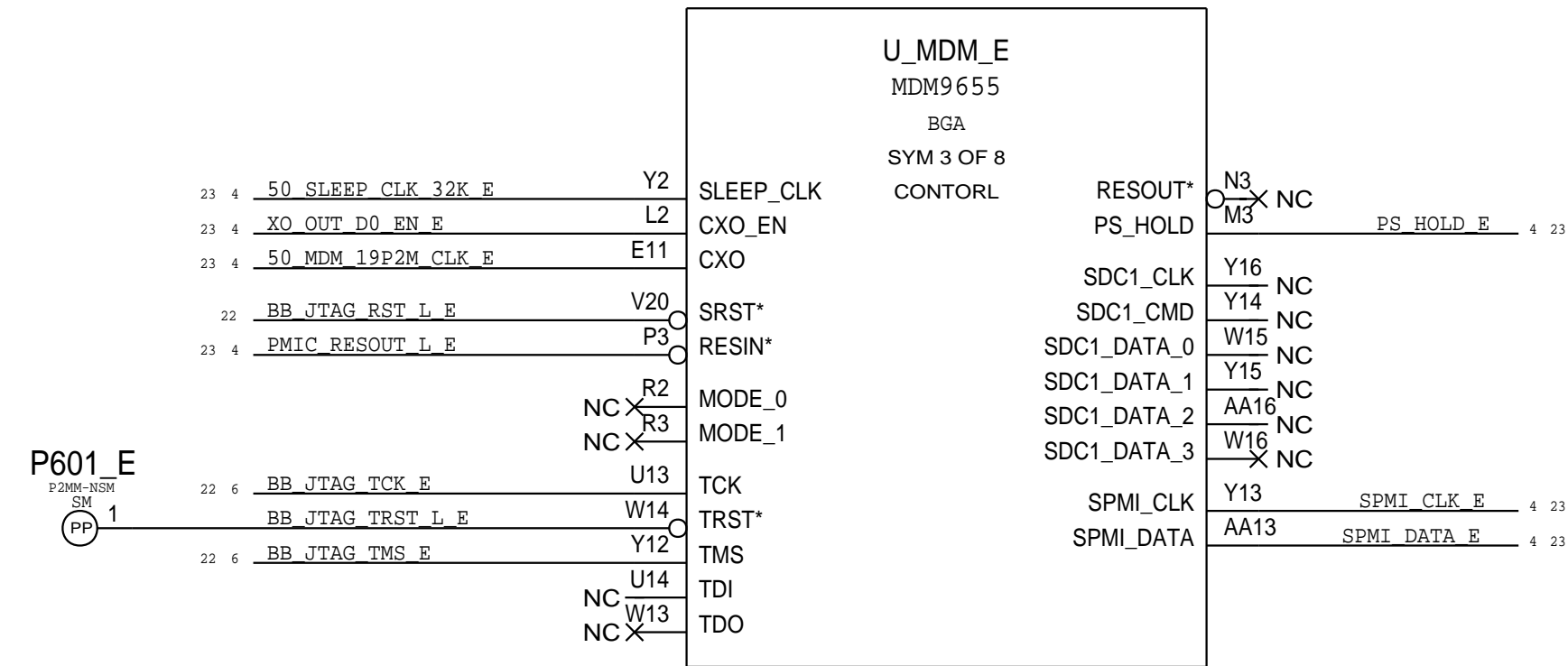
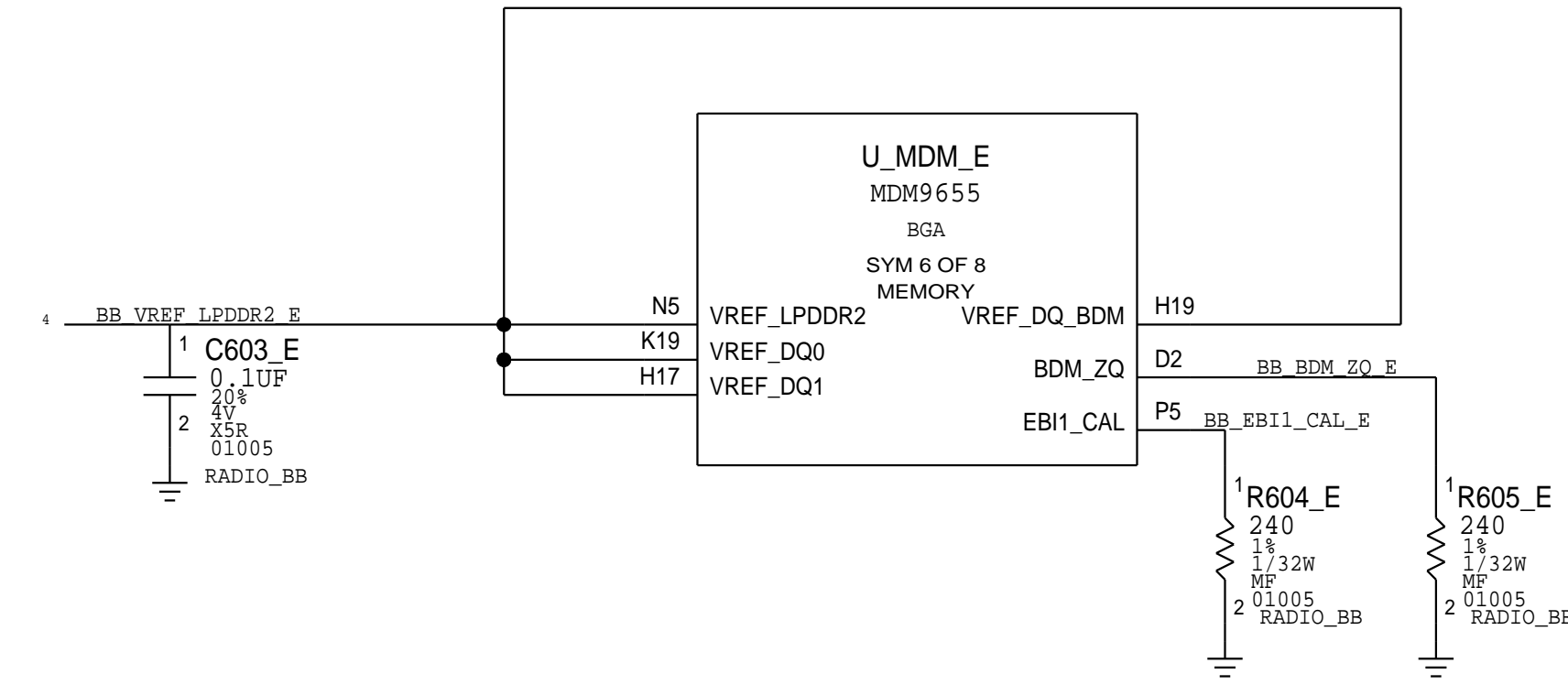
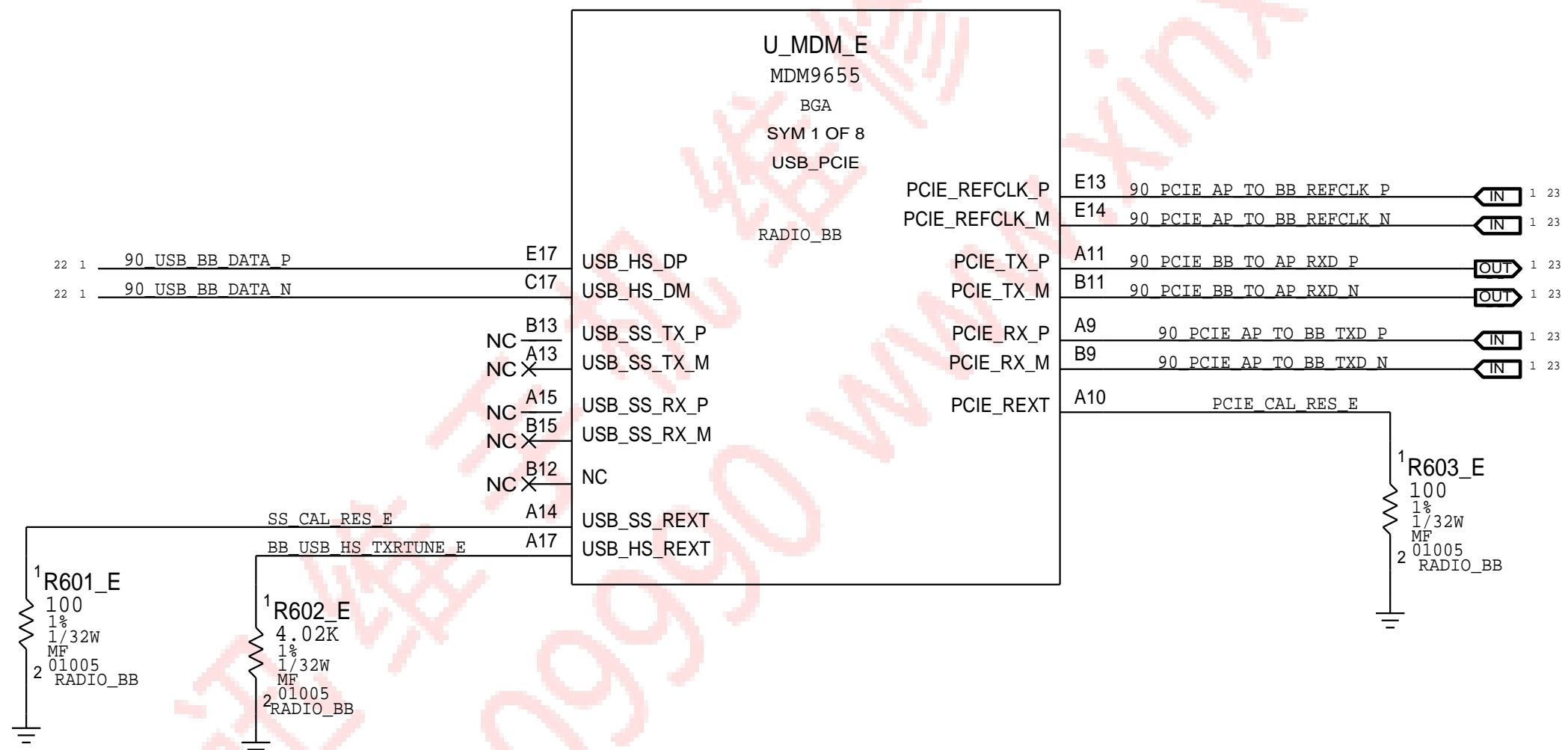


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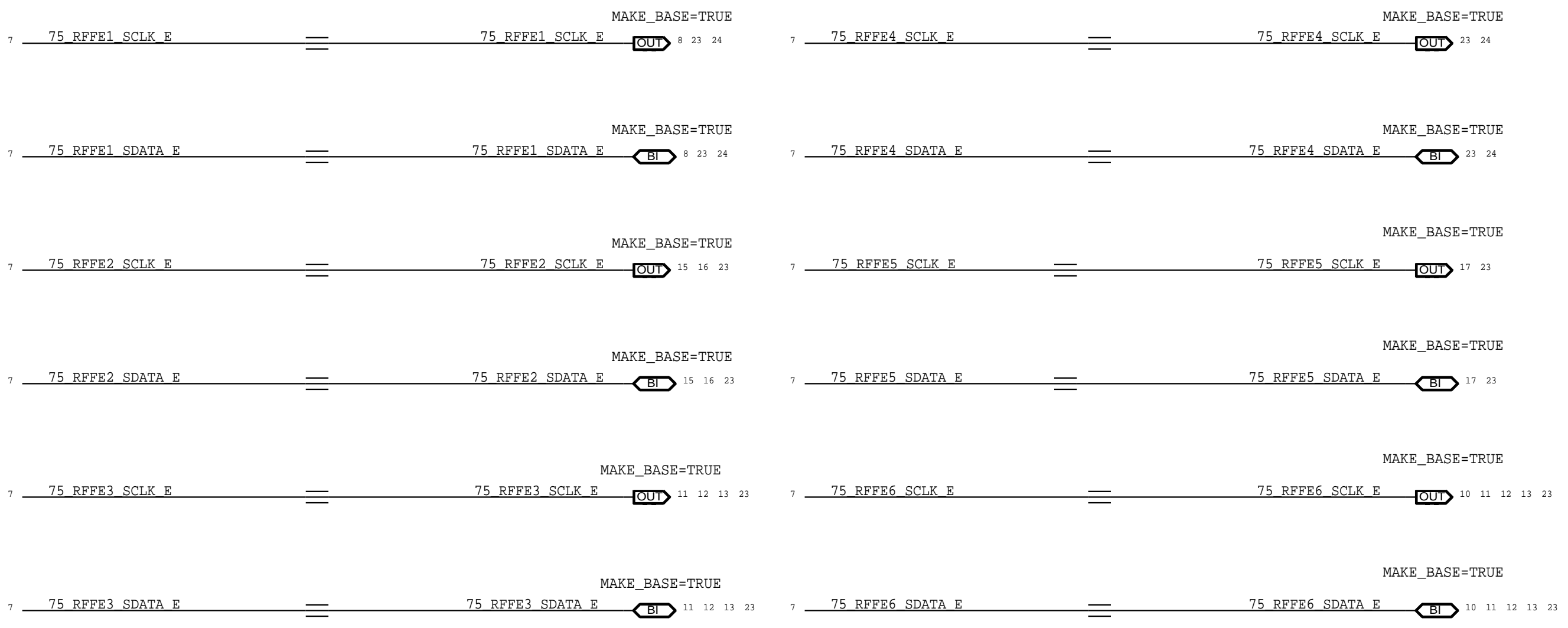
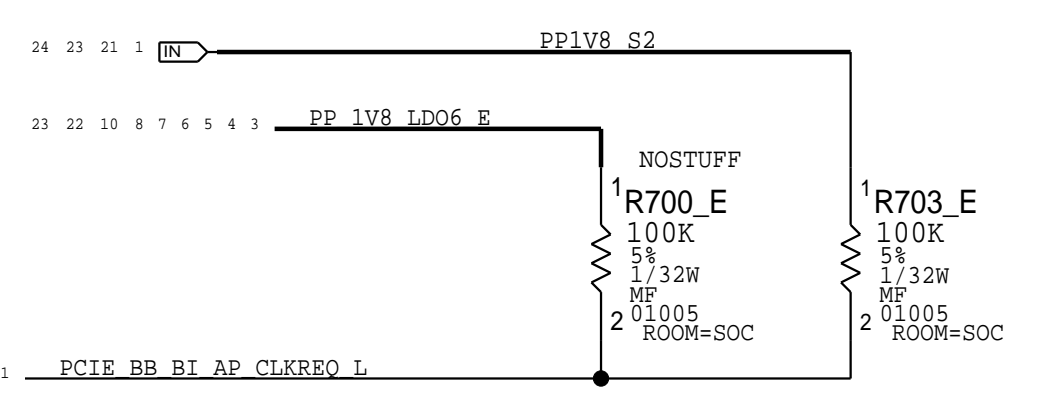
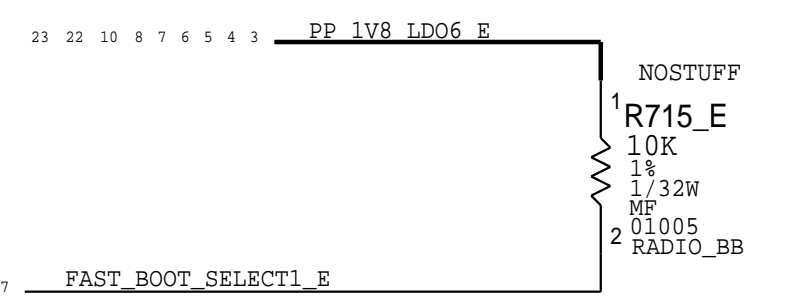
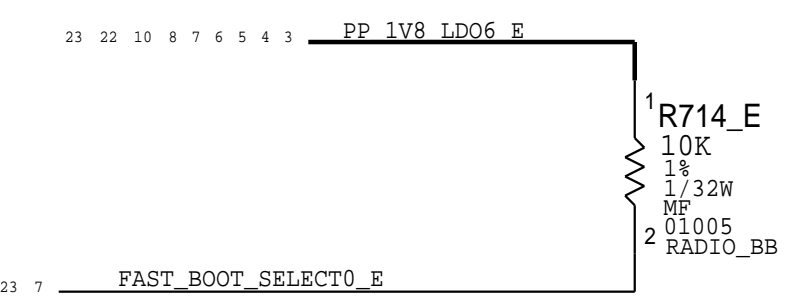
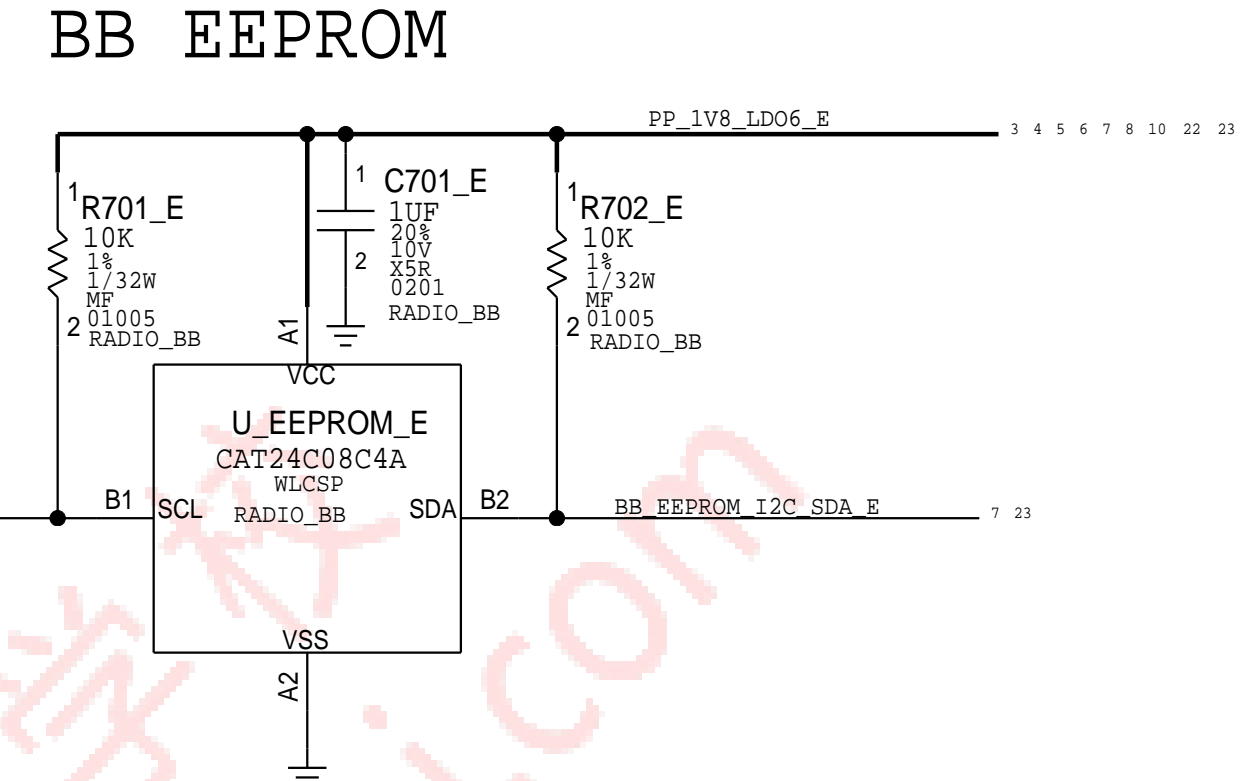
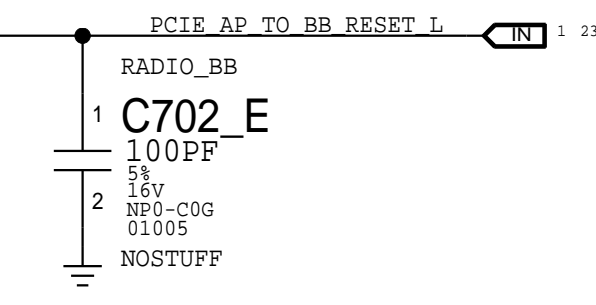
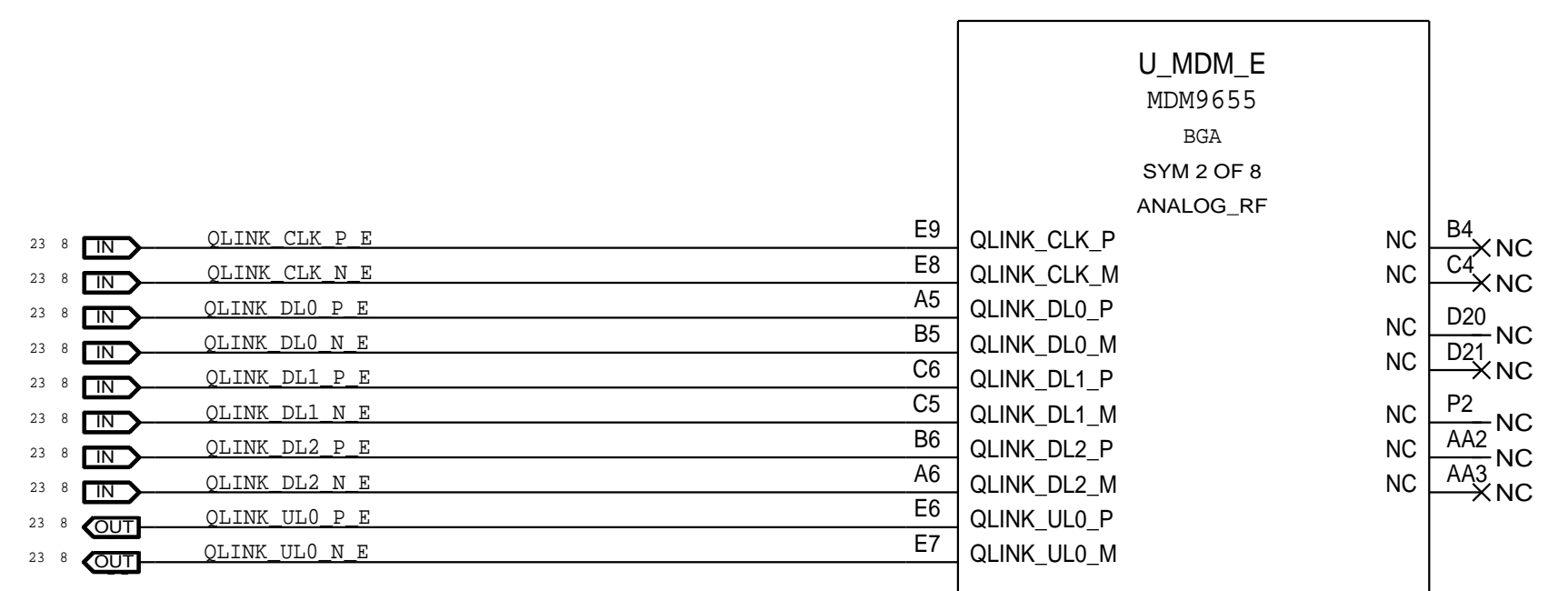
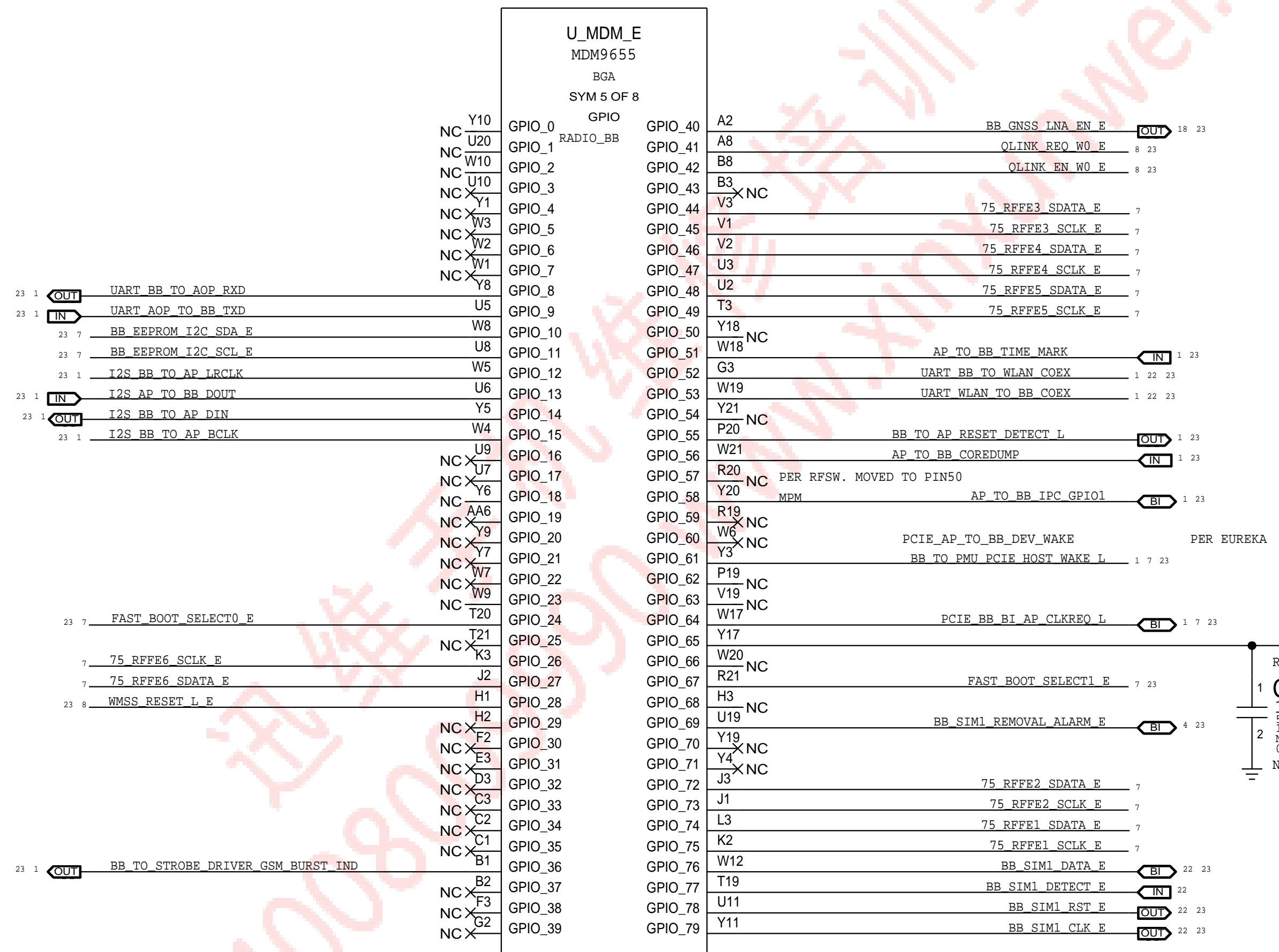
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Apple Inc.		DRAWING NUMBER	051-02222
		REVISION	6.0.0
		BRANCH	evt-1
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OPT CONFIG

BB: CONTROL & HS PERIPHERALS



BB:GPIOS & QLINK



RFFE MAP

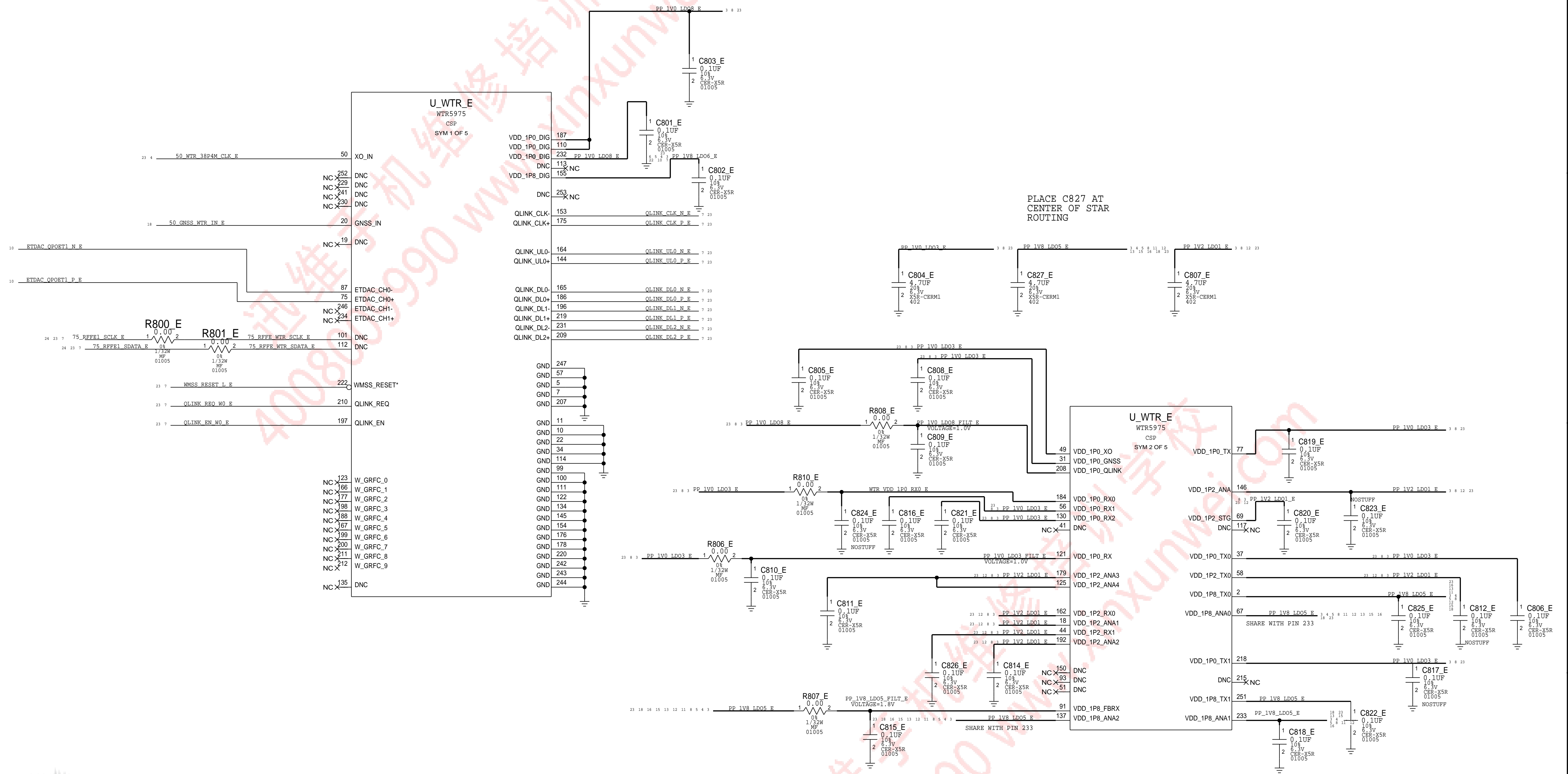
- RFFE1 - WTR, LATGPO, LATUNE
- RFFE2 - HB DSM, LB DSM
- RFFE3 - UHB, HB, LB PAD LNA
- RFFE4 - UATGPO, UATUNE
- RFFE5 - CPL
- RFFE6 - QET, 2G PA/UHB, HB, LA PAD



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PAGE TITLE BB: GPIOS & QLINK		
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		SHEET 19 OF 41

TRANSCEIVER: QLINK & POWER



PLACE C827 AT CENTER OF STAR ROUTING

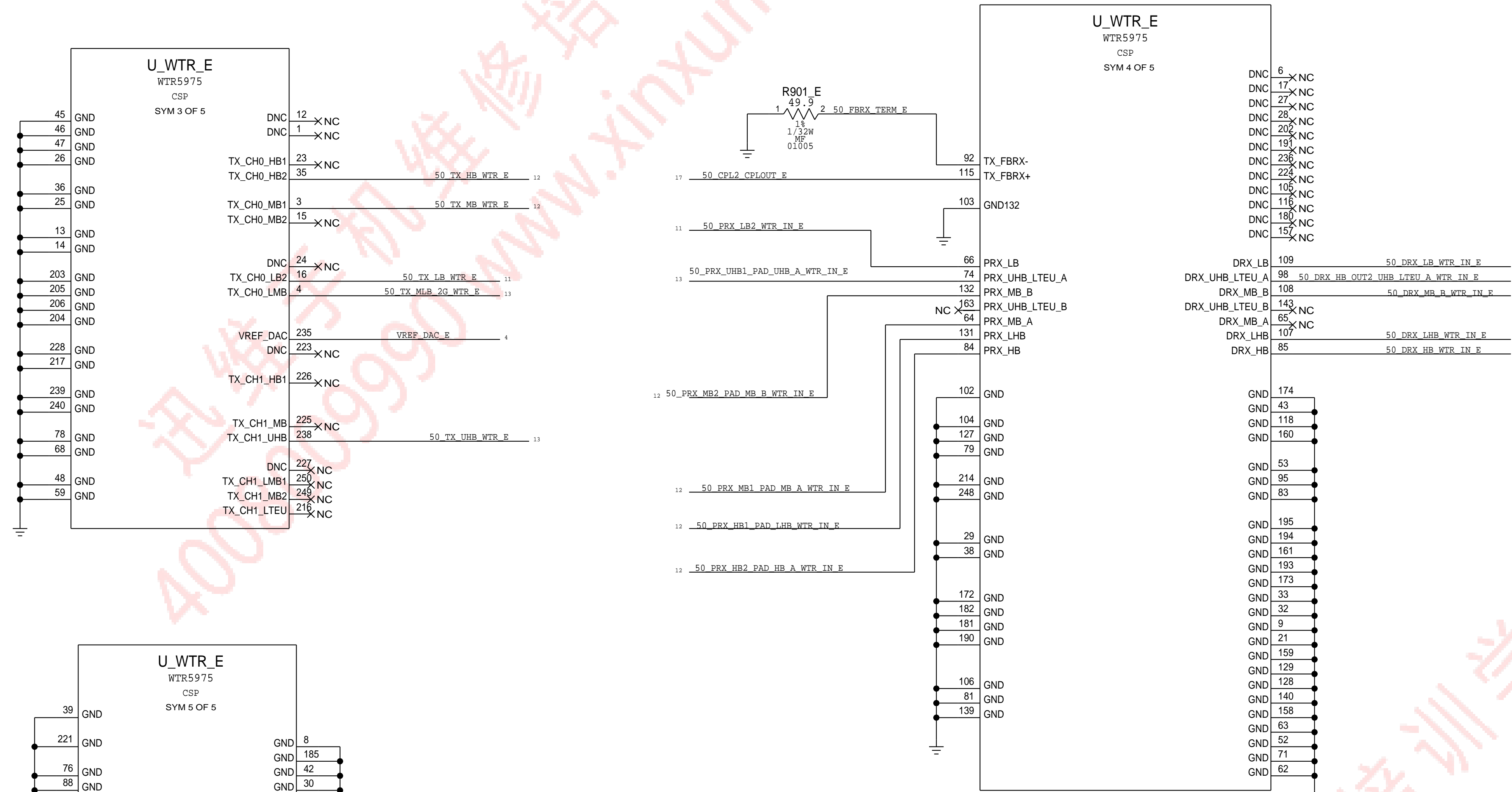


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BRANCH		
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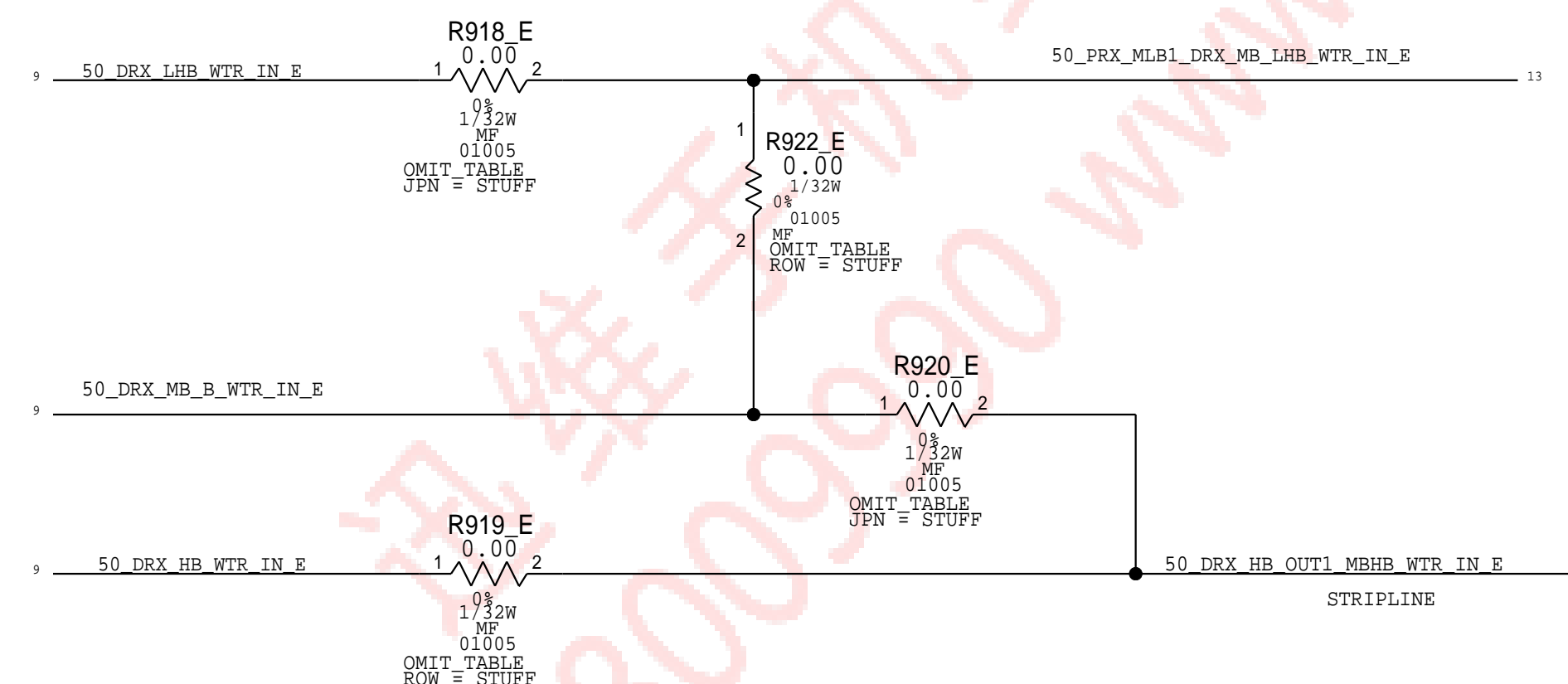
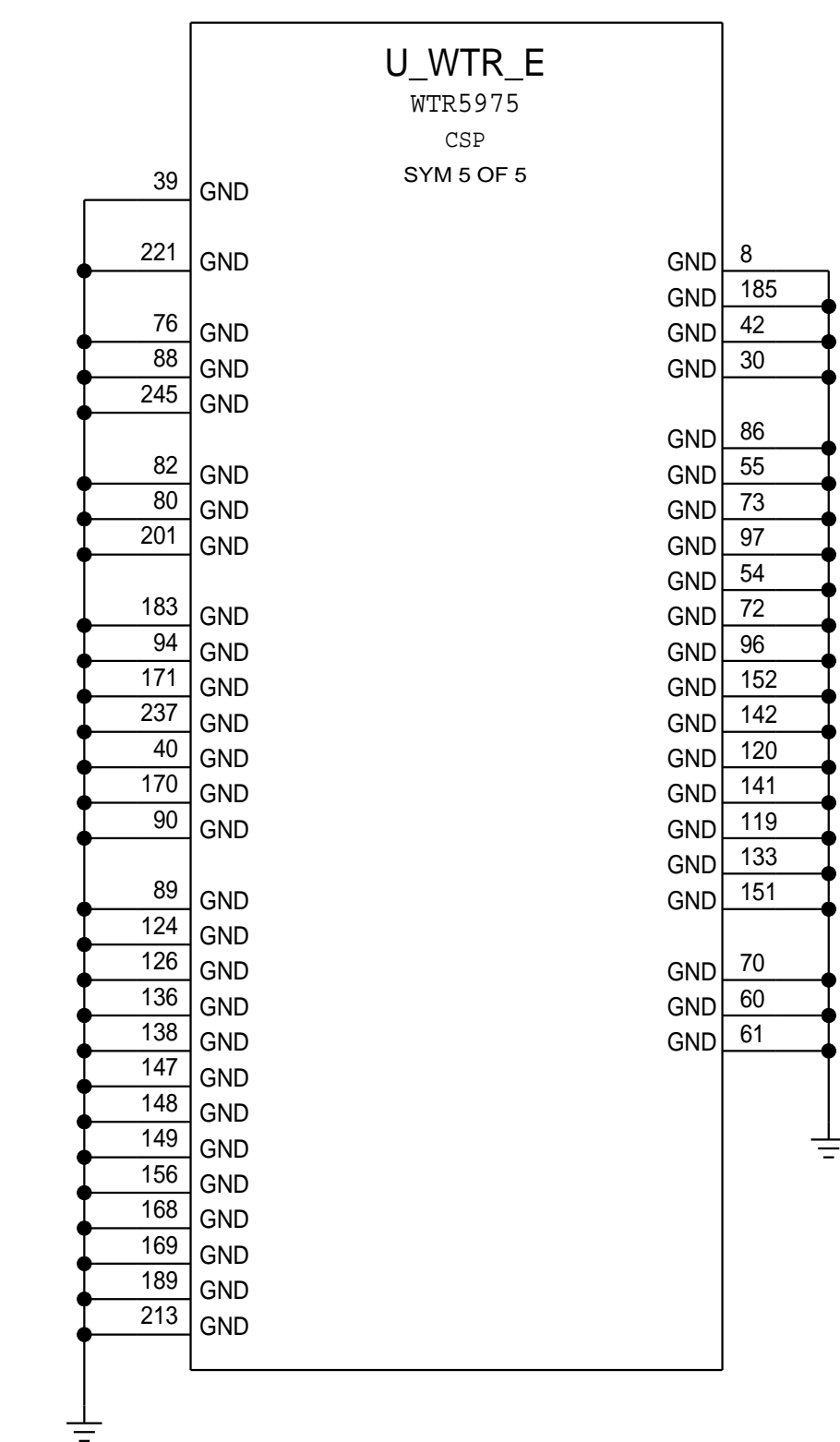
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TRANSCEIVER: TX & RX

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
11780161	1	01005 0R	R919_E	CRITICAL	ROW
11780161	1	01005 0R	R922_E	CRITICAL	ROW



PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
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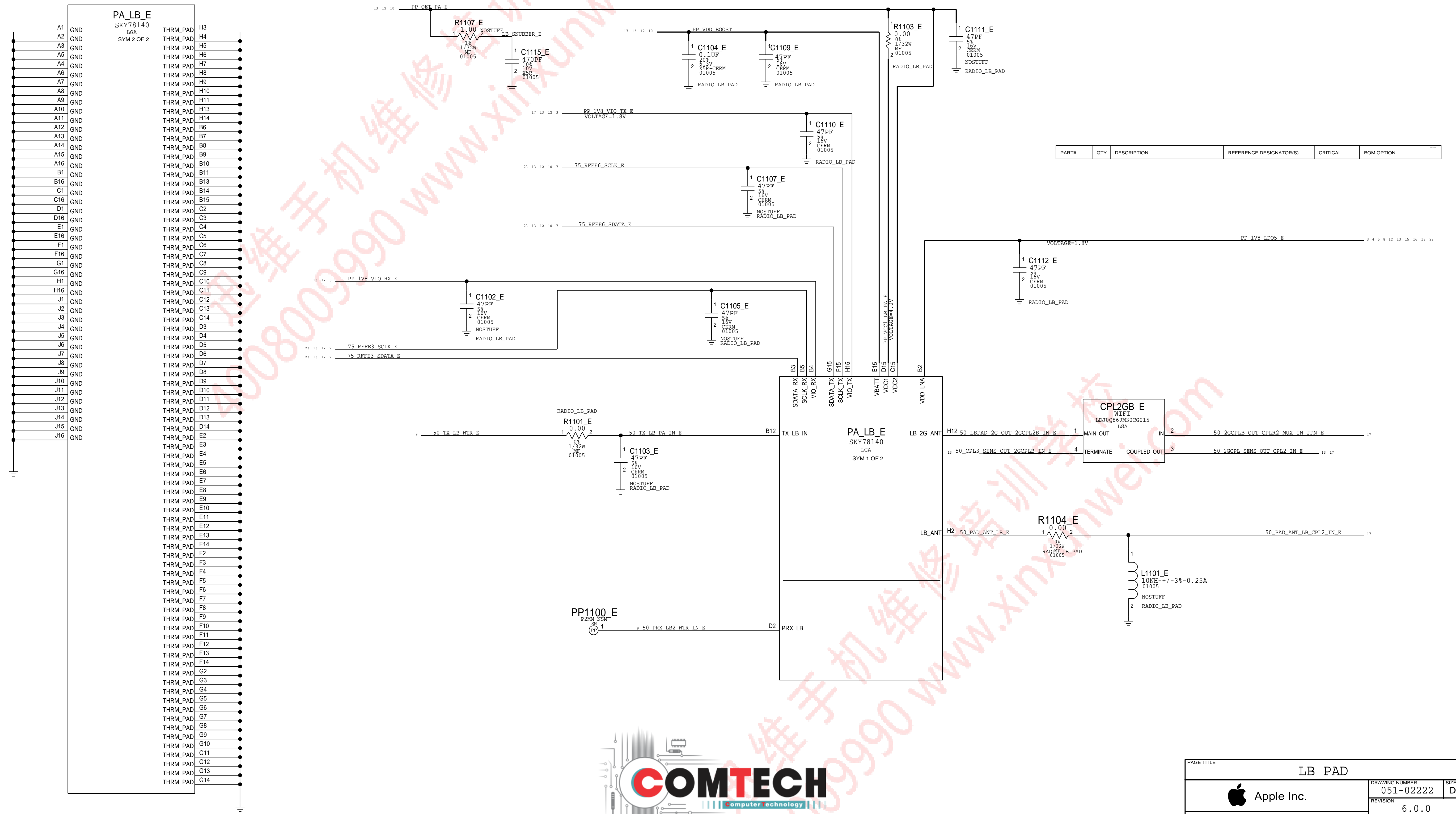


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		PAGE	9 OF 24
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LB PAD

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
155800316	1	2G CPLB JPN	CPL2GB_E	CRITICAL	JPN

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
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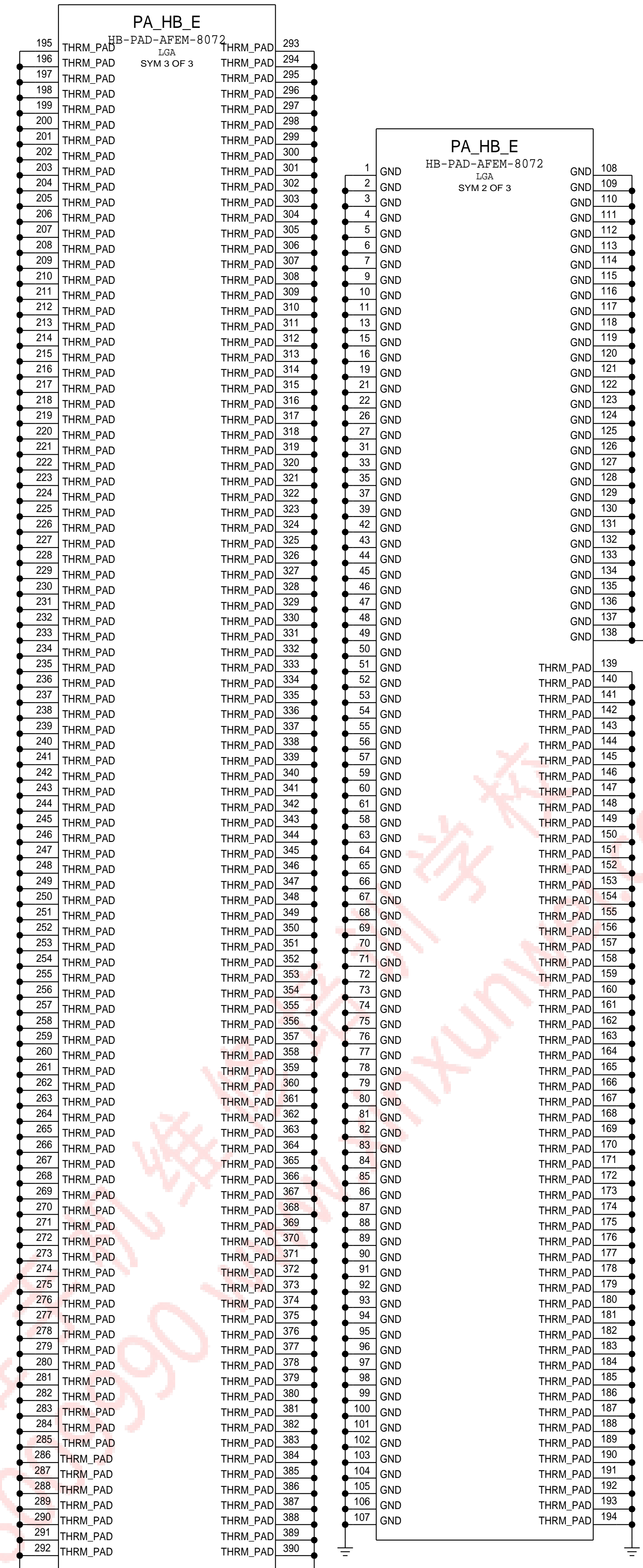
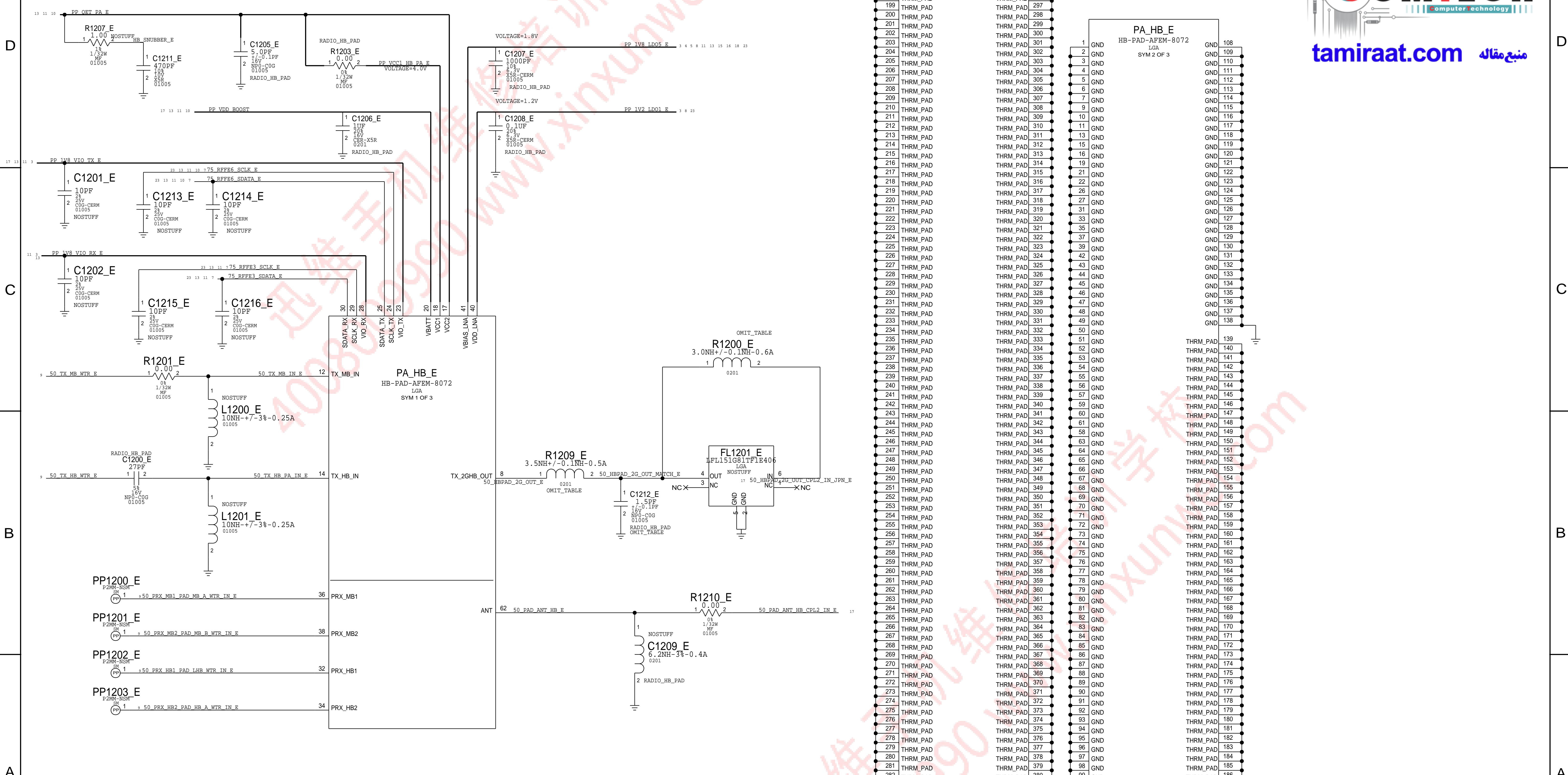


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HB PAD



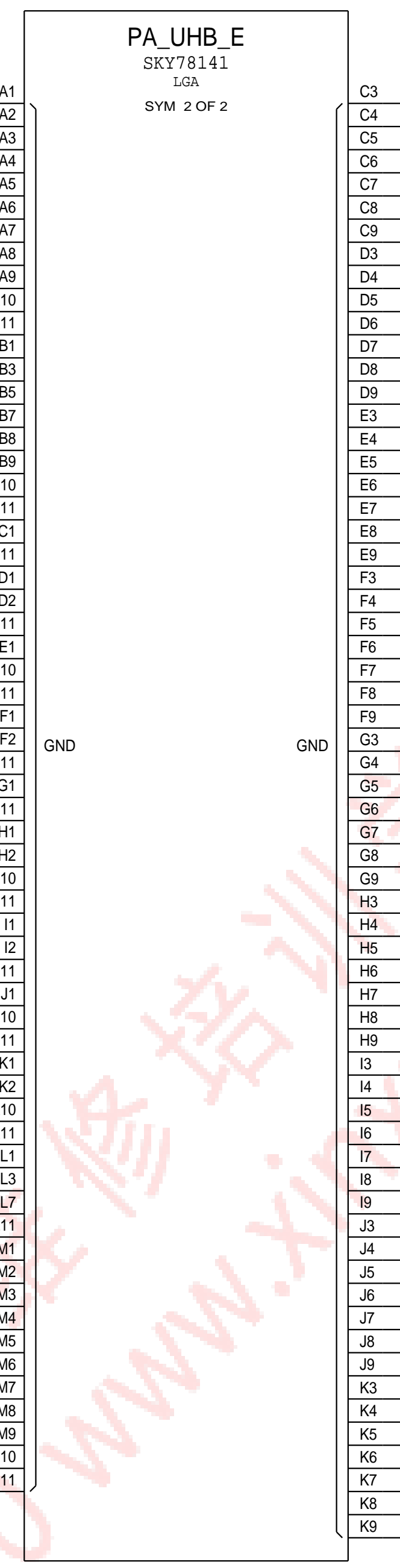
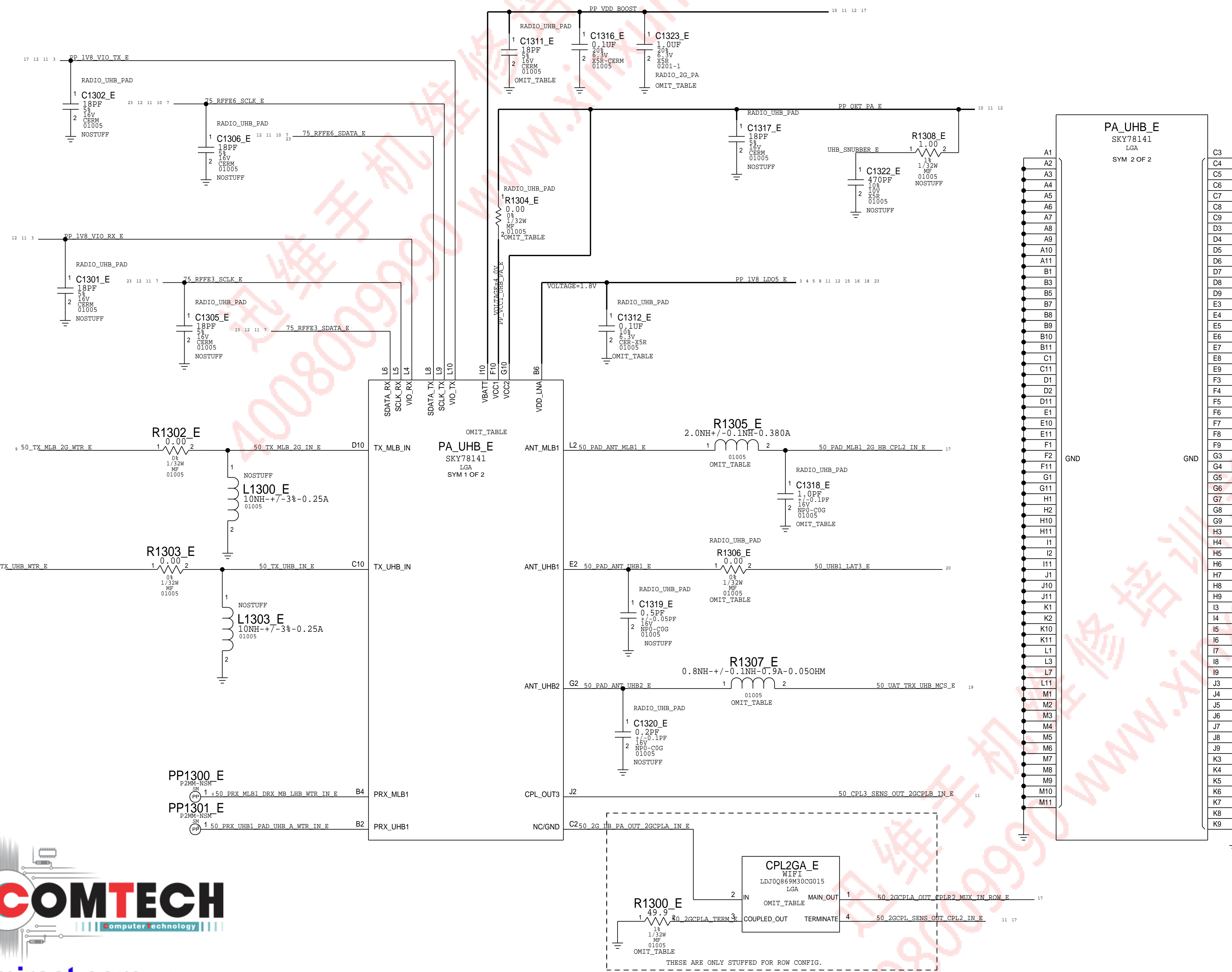
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152S2045	1	0201 2G HB MATCH, 3.0MH 0.6A	R1200_E	CRITICAL	JFN
131S0246	1	01005 2G HB MATCH, 1.5PF	C1212_E	CRITICAL	JFN

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
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PAGE TITLE		HB PAD	
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UHB / 2G PAD -JPN

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
353801243	1	UHB PAD MP	PA_UHB_E	CRITICAL	JPN
11780161	1	MLB/2GTX IN MCH2, 0 OHMS	R1302_E	CRITICAL	JPN
11780161	1	UHB INPOT MCH1, 0 OHMS	R1303_E	CRITICAL	JPN
11780161	1	MLB/2G MB OUT MCH1 01005 OR	R1305_E	CRITICAL	JPN
11780161	1	UHB1 OUTPUT MCH1, 0 OHMS	R1306_E	CRITICAL	JPN
152800494	1	UHB2 OUT/DRX BP MCH1, 0.8NH 0.9A	R1307_E	CRITICAL	JPN
13280693	1	UHB LNA DECOUPLING, 0.1UF 6.3V 10%	C1312_E	CRITICAL	JPN
13180214	1	VBAT DECOUPLING, 18PF	C1311_E	CRITICAL	JPN
13880692	1	VBAT DECOUPLING, 1UF	C1323_E	CRITICAL	JPN
11780161	1	VCC2/VCC1 RESISTOR OPTION, 0 OHM	R1304_E	CRITICAL	JPN
13180375	1	MLB OUTPUT MCH UAT, 01005 1.0PF	C1318_E	CRITICAL	JPN



PAGE TITLE		
UHB PAD		SIZE
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THESE ARE ONLY STUFFED FOR ROW CONFIG.

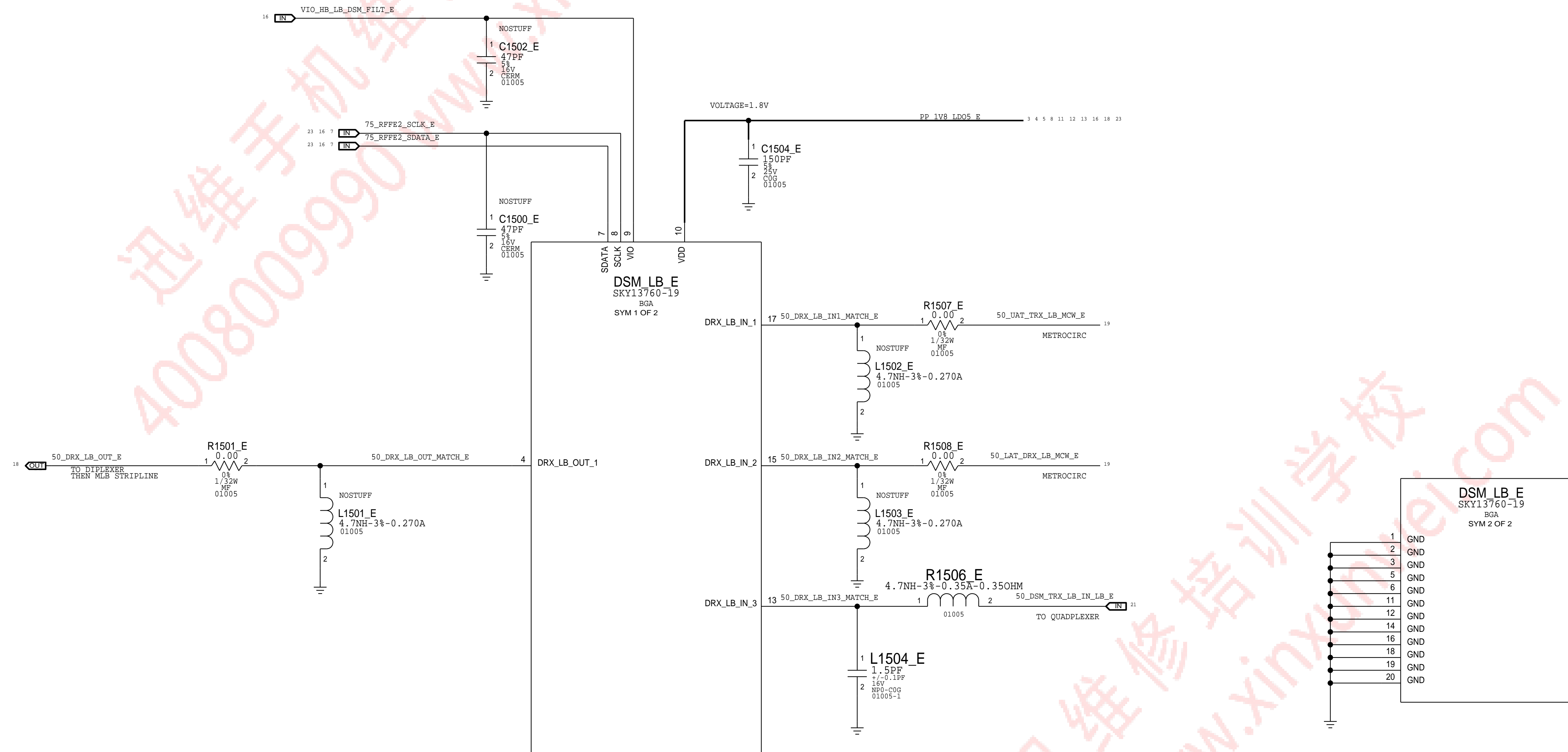
2G PA - ROW

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11780161	1	UHB INFUT MCH1, 0 OHMS	R1303_E	CRITICAL	ROW
15281917	1	01005 2.0NH 0.6A	R1305_E	CRITICAL	ROW
11780161	1	UHB2 OUT/DRX BP MCH1, 0 OHMS	R1307_E	CRITICAL	ROW
13180214	1	VBAT DECOUPLING,18PF	C1311_E	CRITICAL	ROW
13880692	1	VBAT DECOUPLING, 1UF	C1323_E	CRITICAL	ROW
11780161	1	VCC2/VCC1 RESISTOR OPTION, 0 OHM	R1304_E	CRITICAL	ROW
155800316	1	ROW CLPA	CPL2GA_E	CRITICAL	ROW
11880652	1	01005 49.9R	R1300_E	CRITICAL	ROW



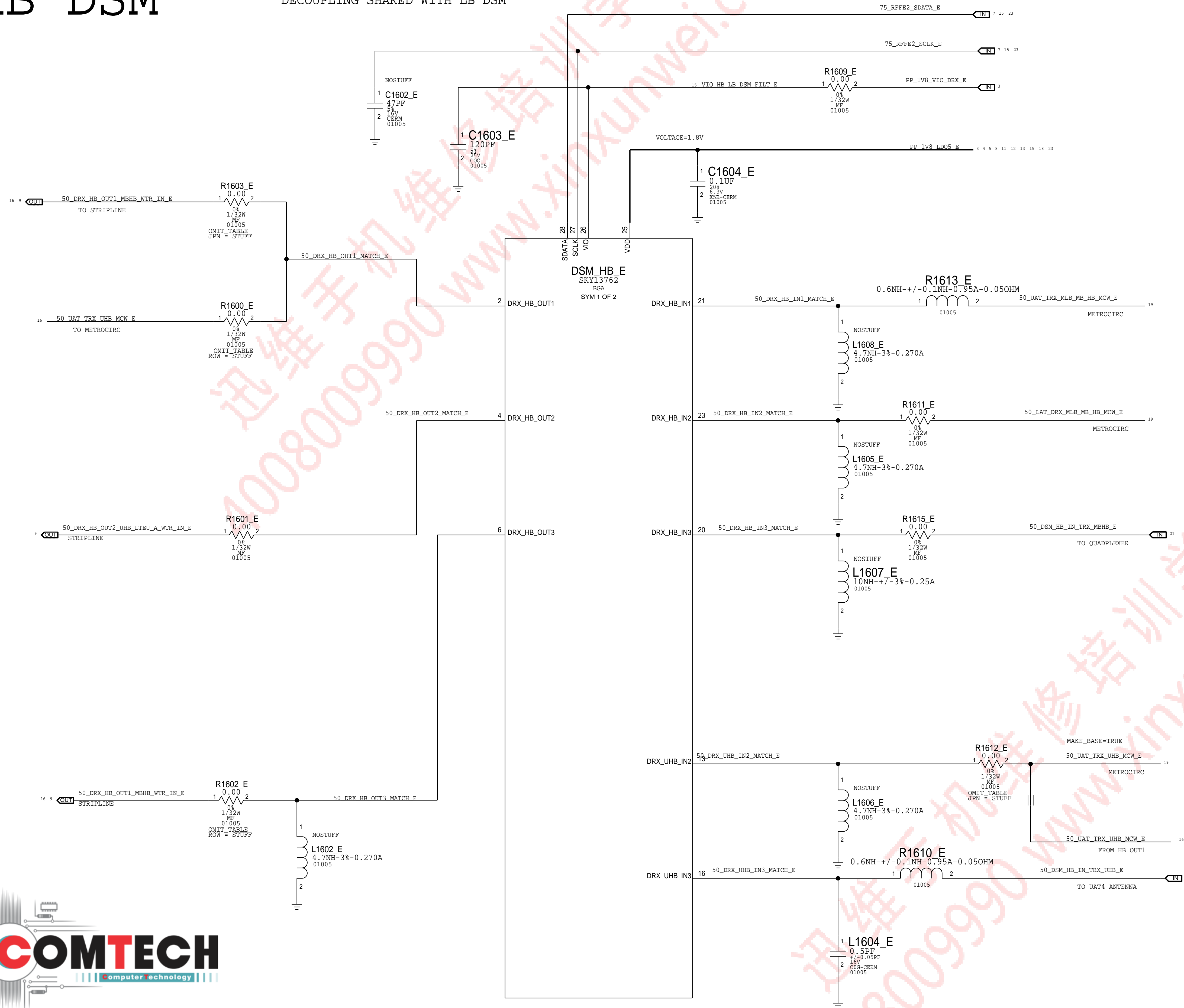
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LB DSM



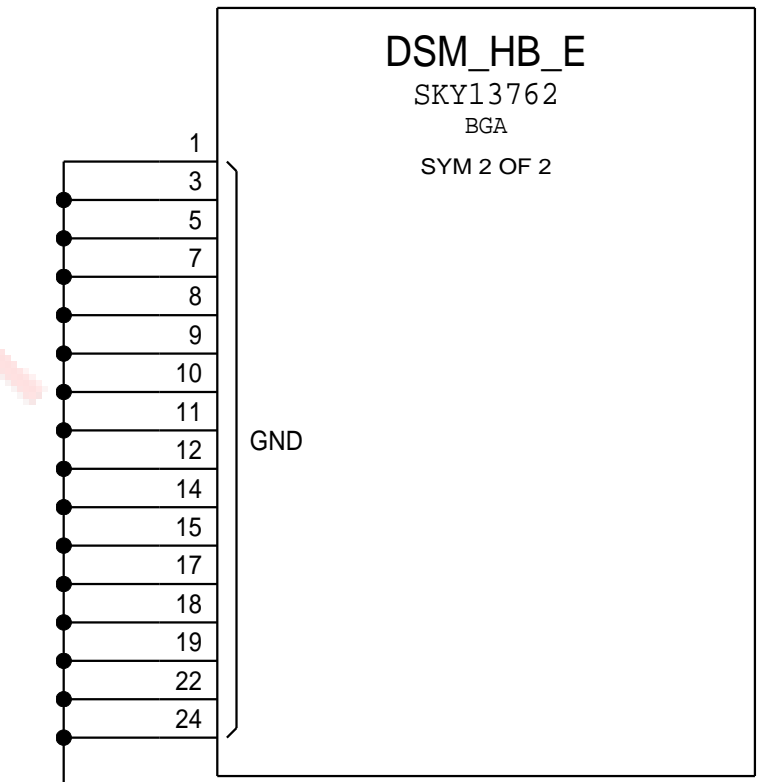
HB DSM

DECOUPLING SHARED WITH LB DSM



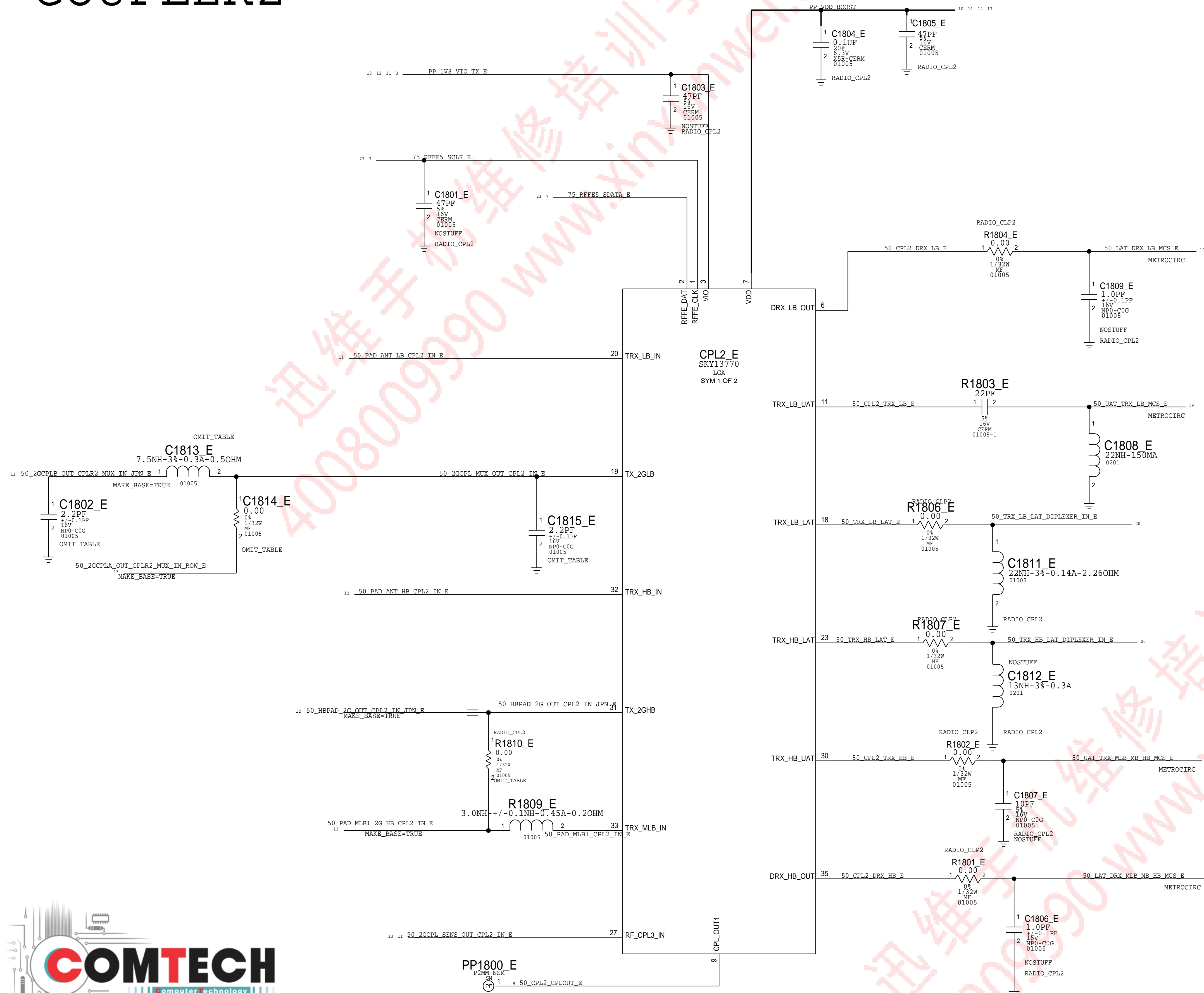
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PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
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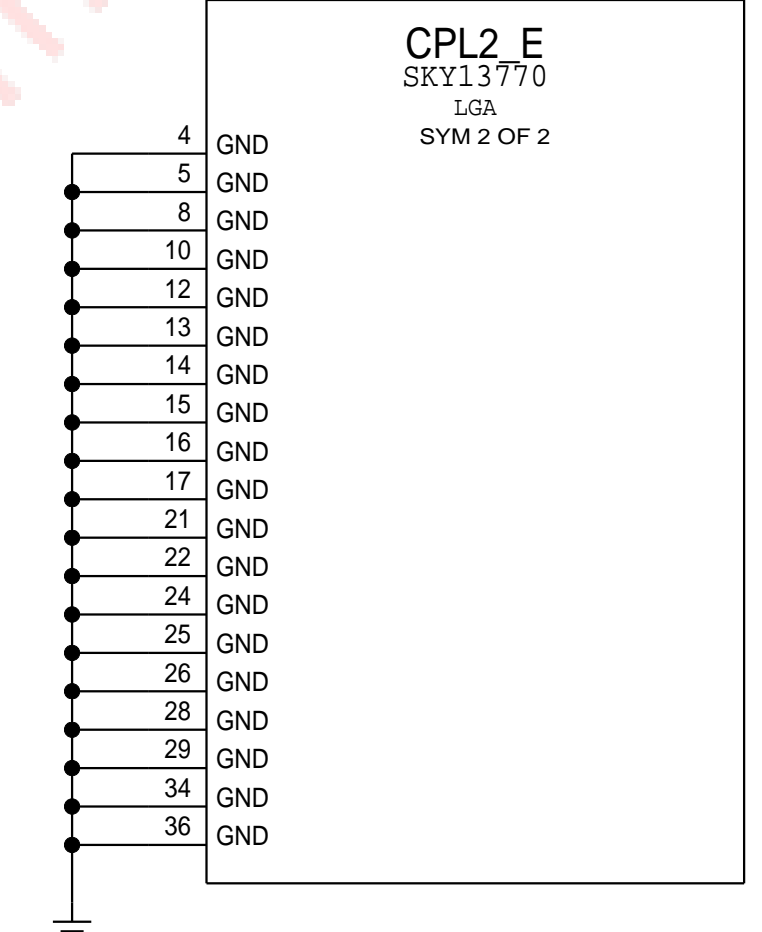
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COUPLER2



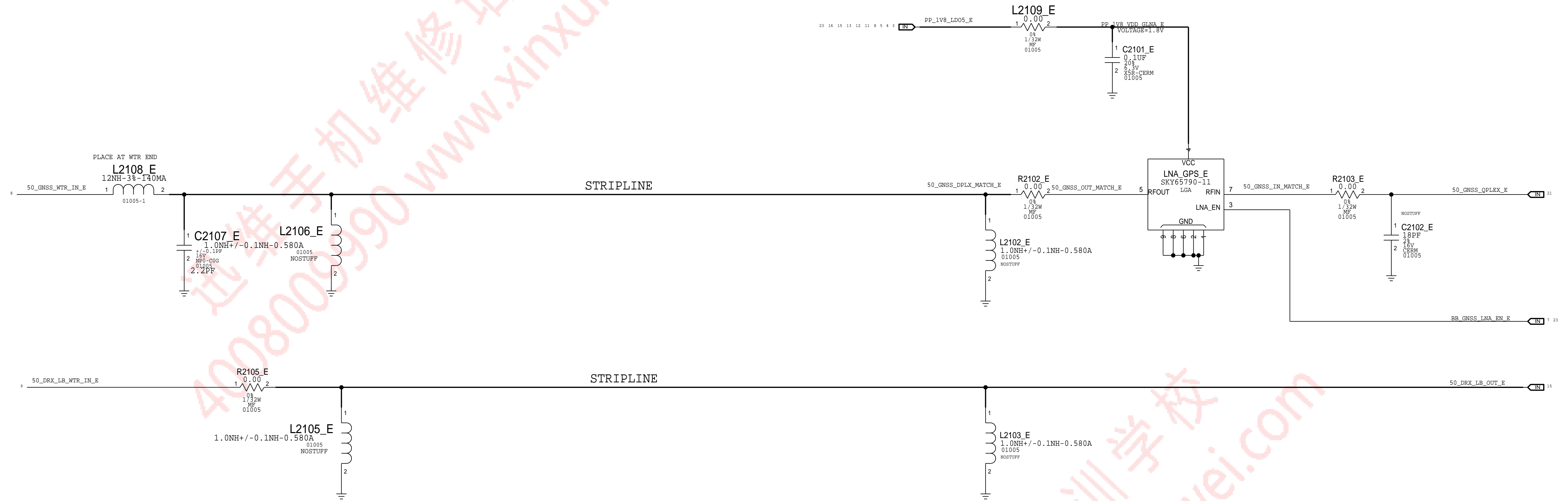
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152800524	1	01005 7NSH 300MA	C1813_E	CRITICAL	JFN
13180249	1	01005 2.2PF 0.1PF	C1815_E	CRITICAL	JFN
13180249	1	01005 2.2PF 0.1PF	C1802_E	CRITICAL	JFN

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
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11780161	1	01005 0R	C1814_E	CRITICAL	ROW



PAGE TITLE		
COUPLER2		
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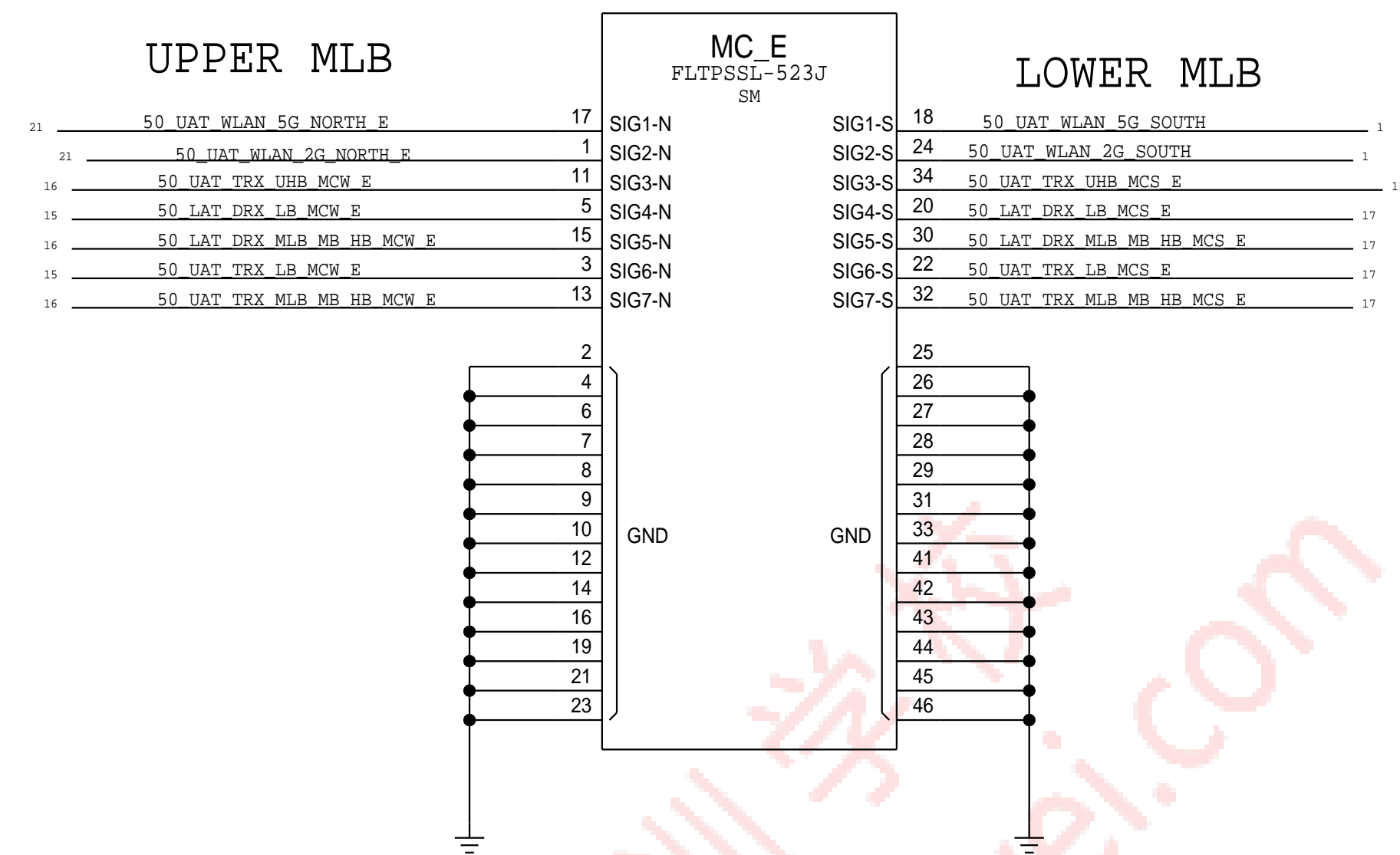
GPS & GPS/LB DIPLEXER



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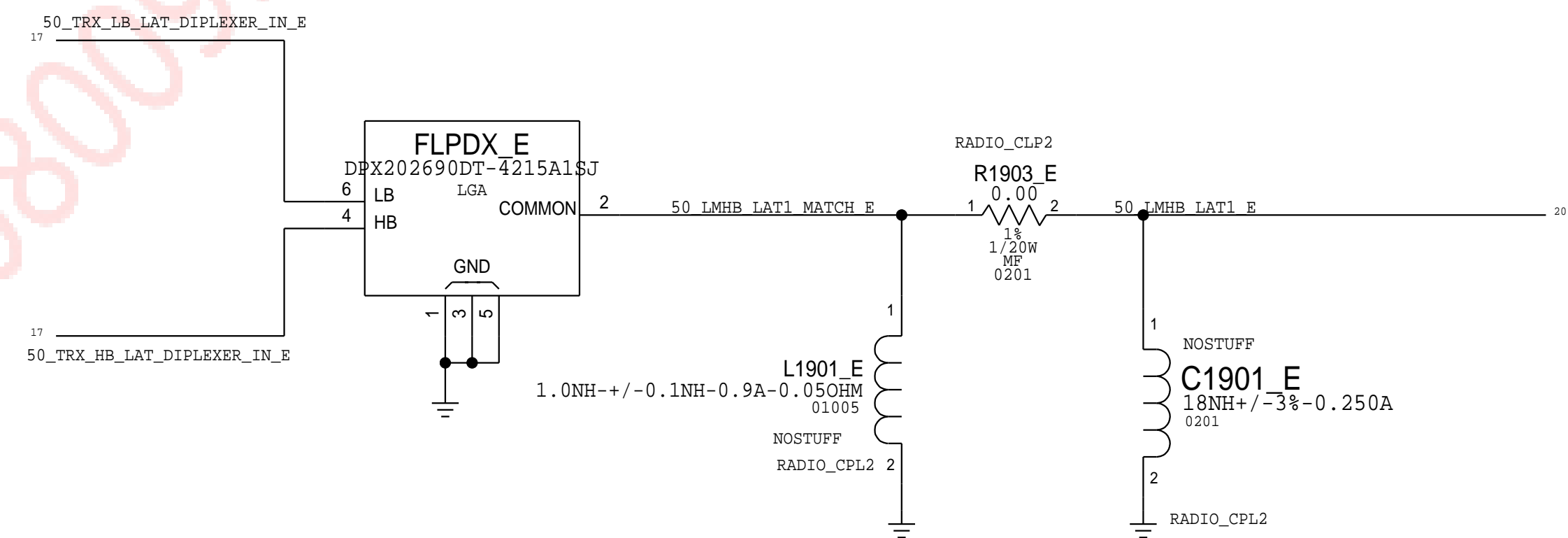
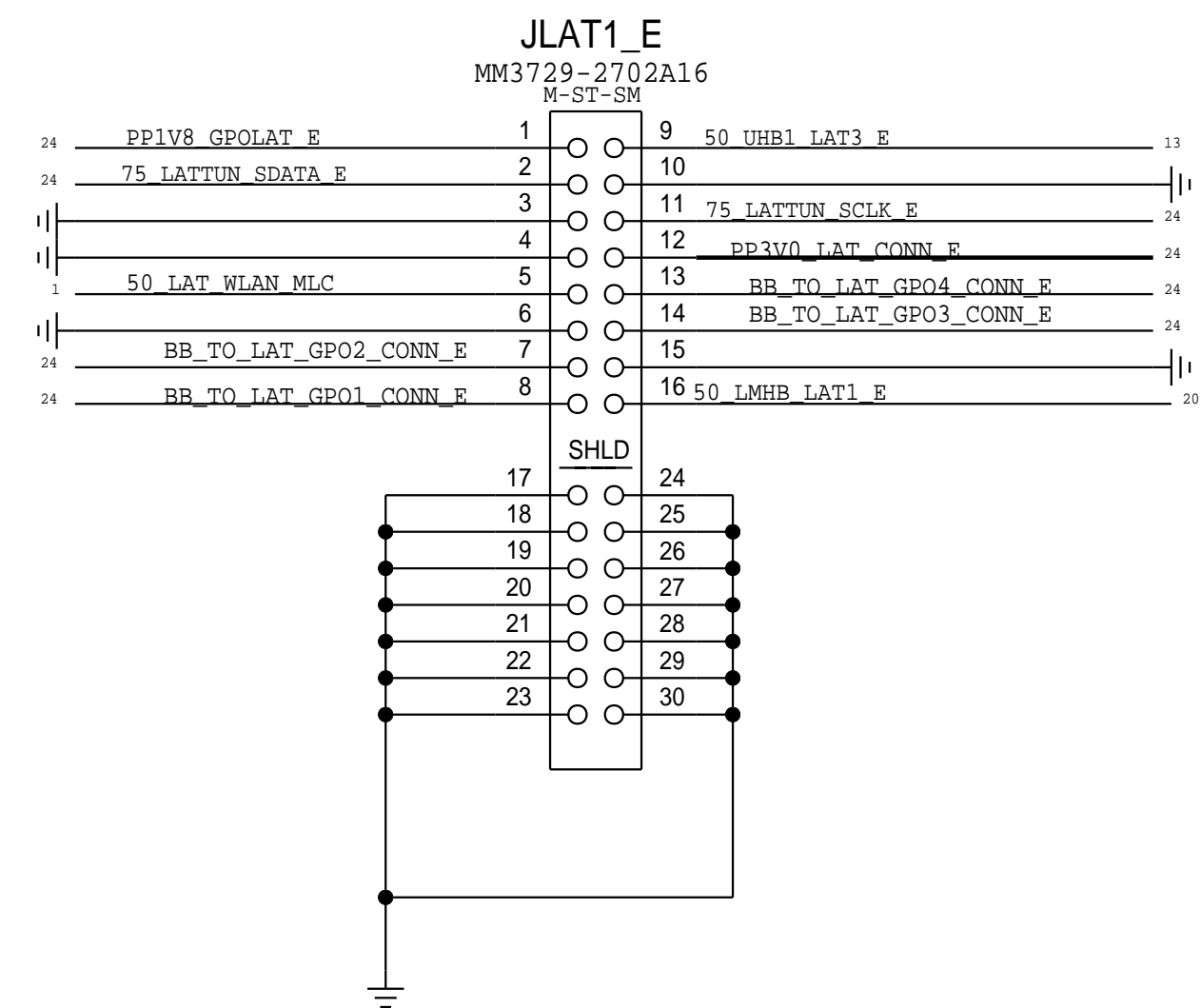
METROCIRC

METROCIRC



LOWER ANTENNA

迅维手机维修培训学校
4008009990 www.xinxunwei.com

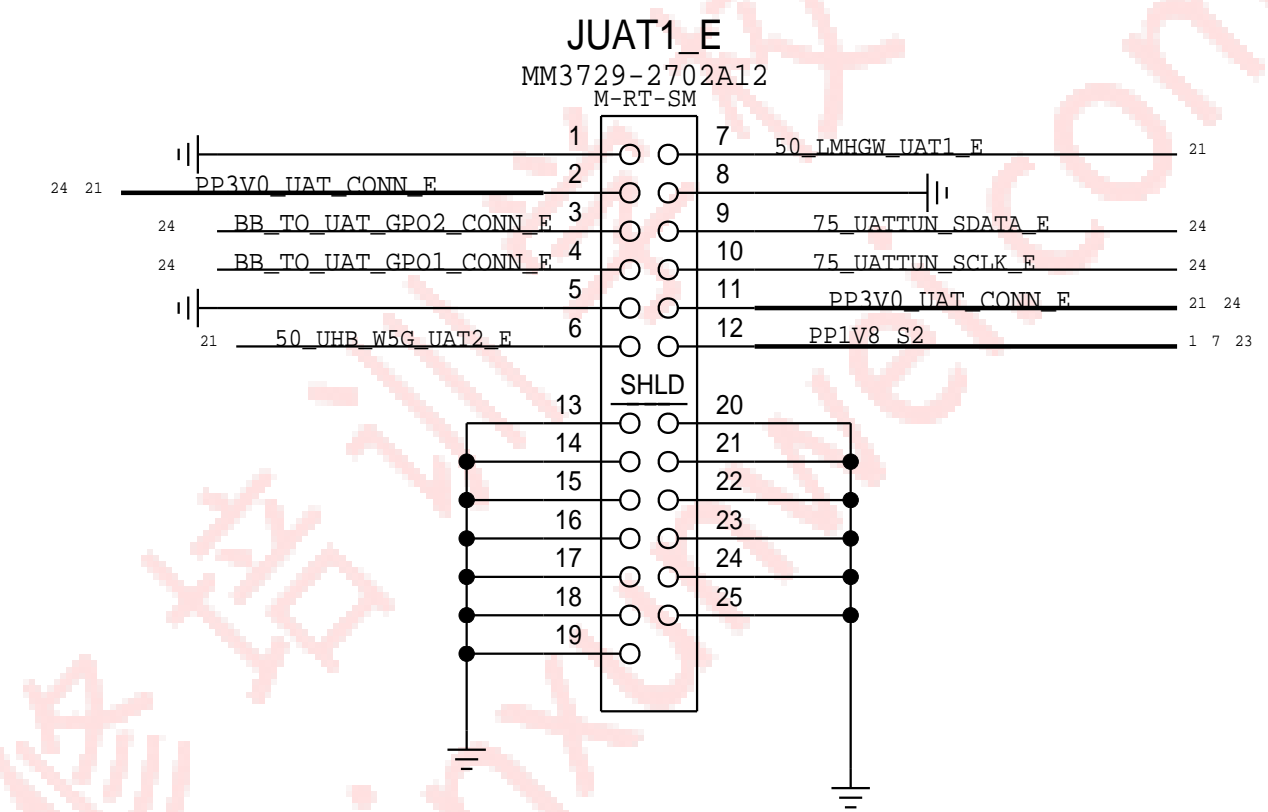
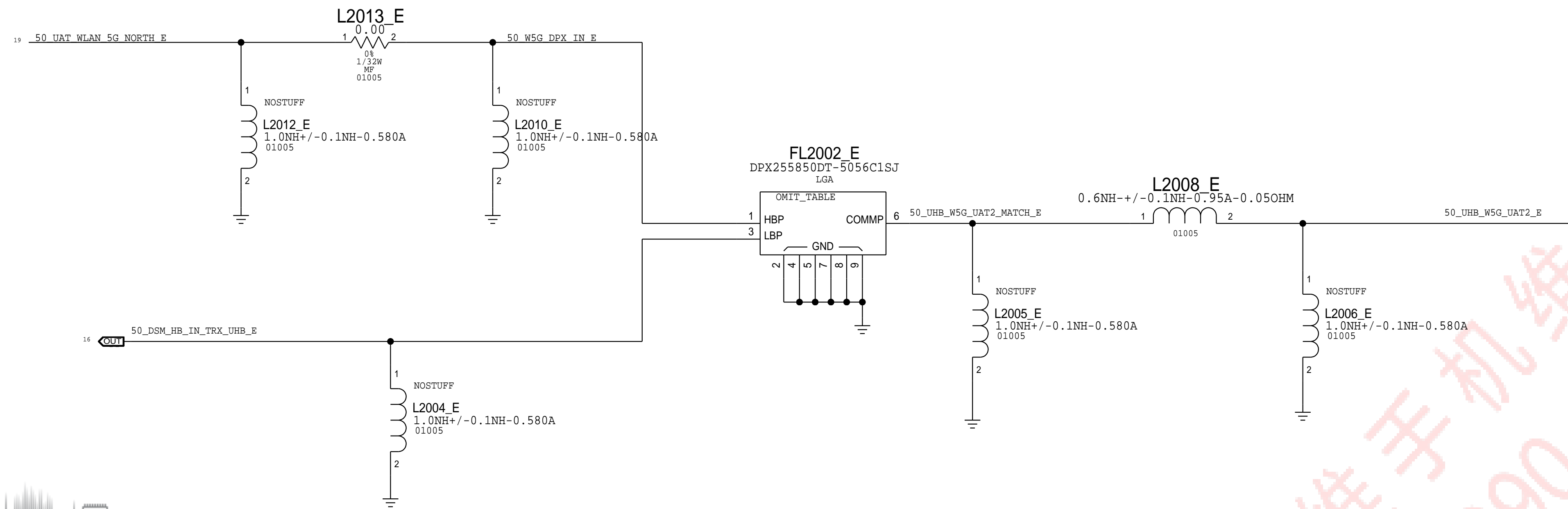
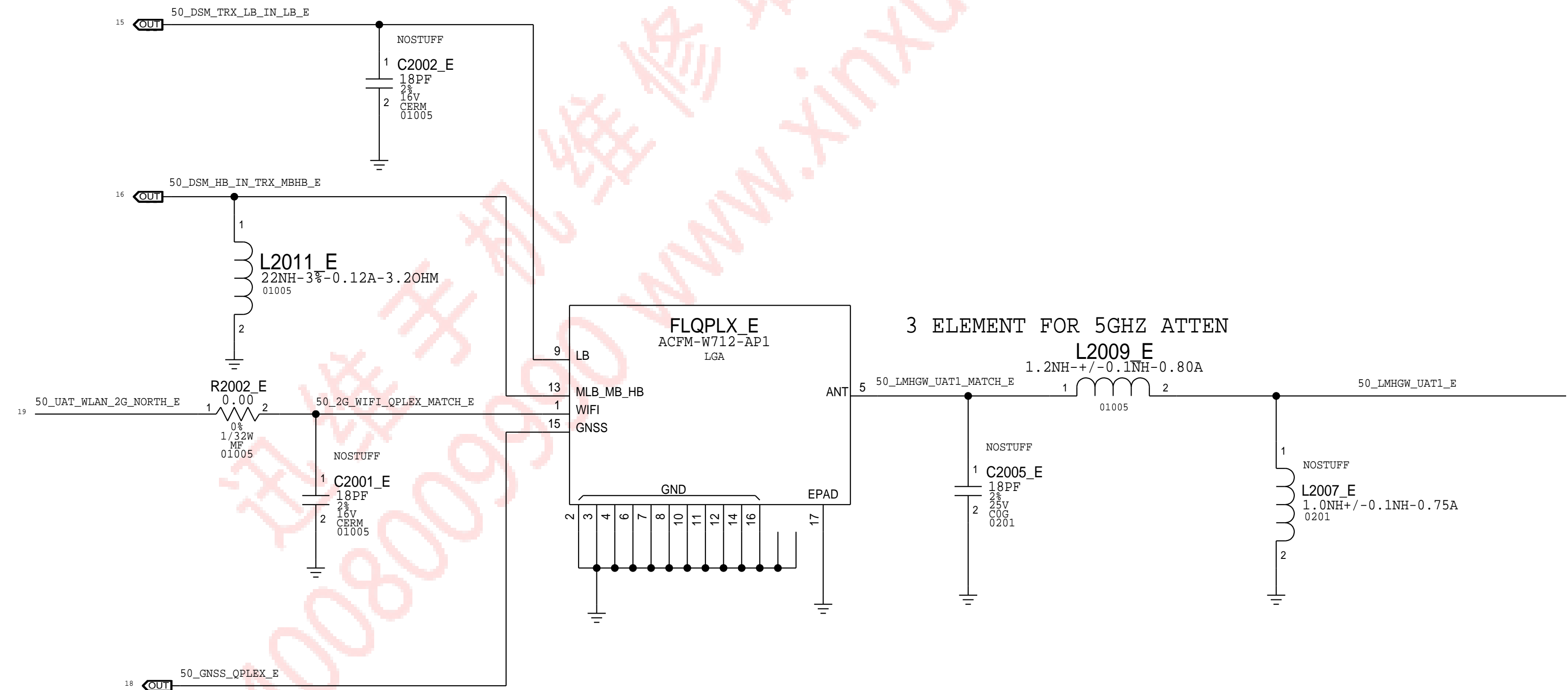


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Apple Inc.	DRAWING NUMBER	051-02222
	REVISION	6.0.0
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	PAGE	20 OF 24
	SHEET	32 OF 41

UAT & LB/UHB DIPLEXER

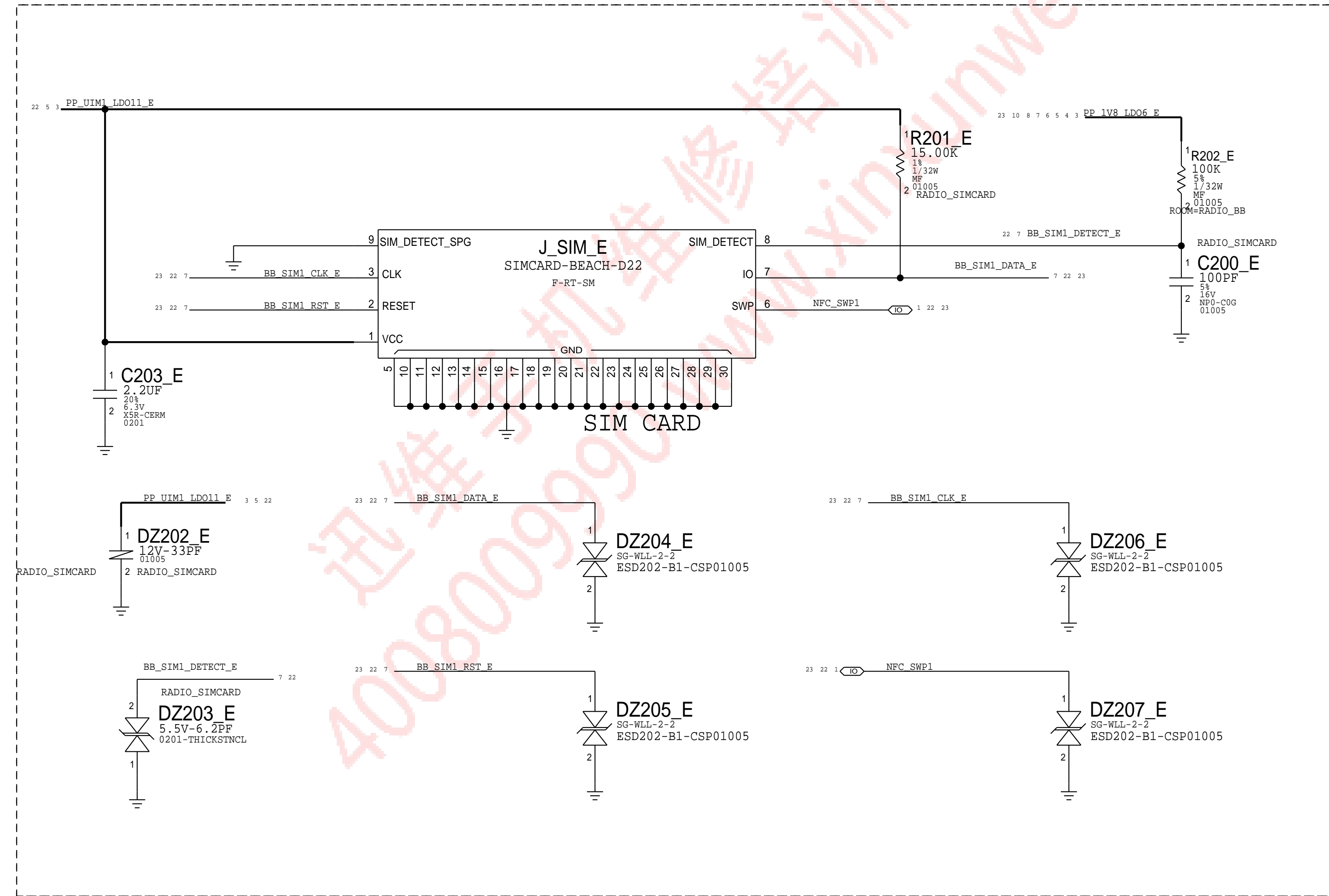
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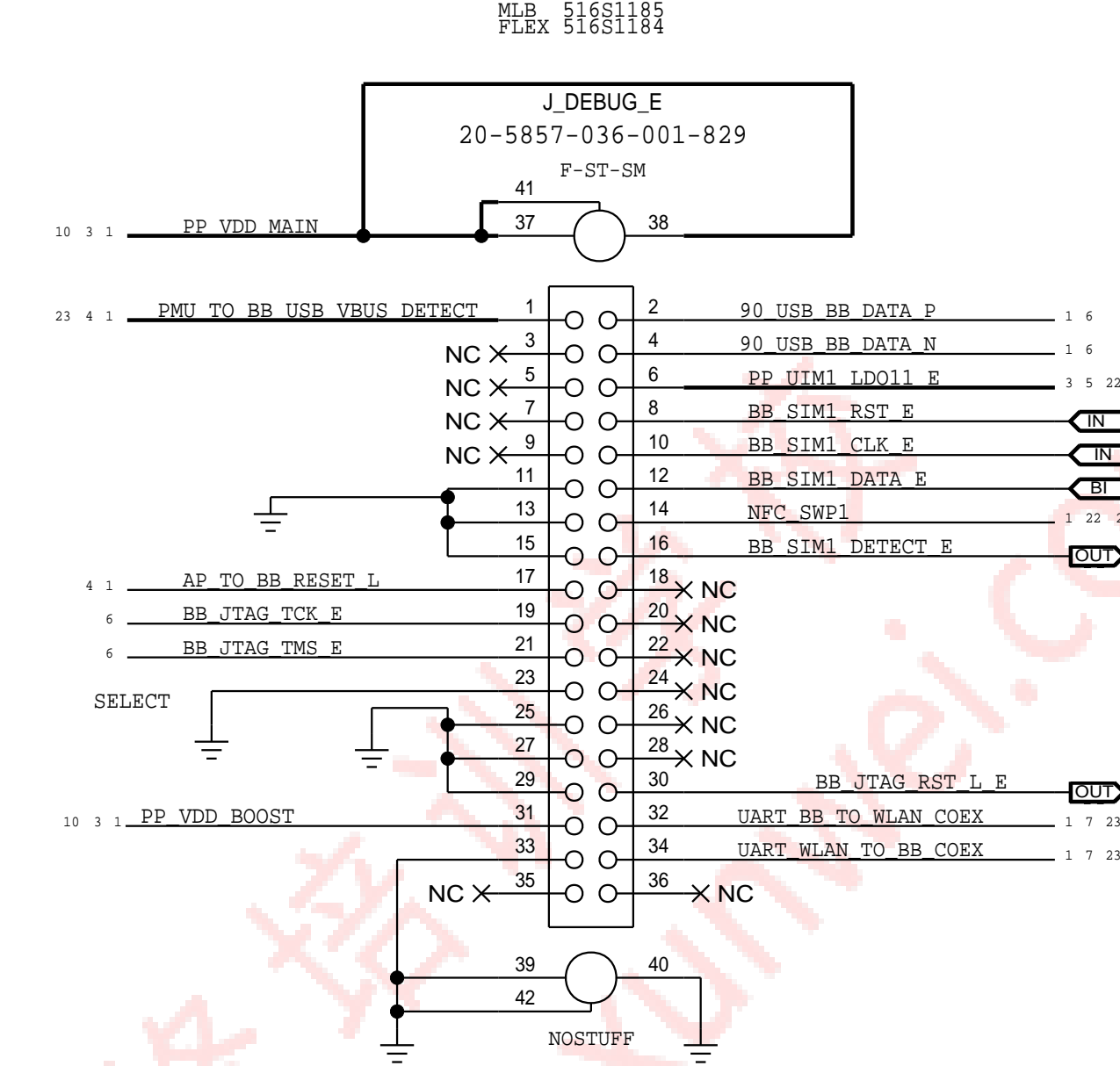


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	PAGE	21 OF 24
	SHEET	33 OF 41
	SIZE	D

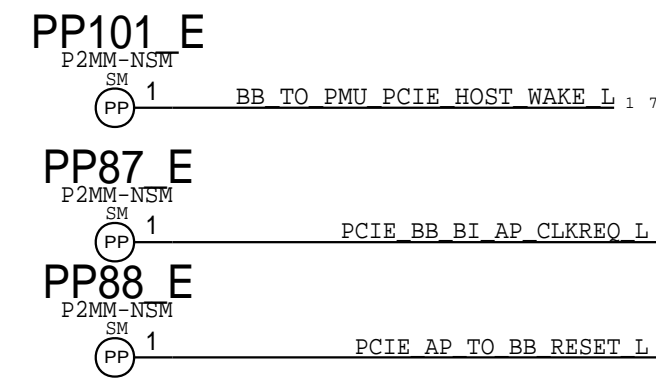
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DEBUG CONNECTOR

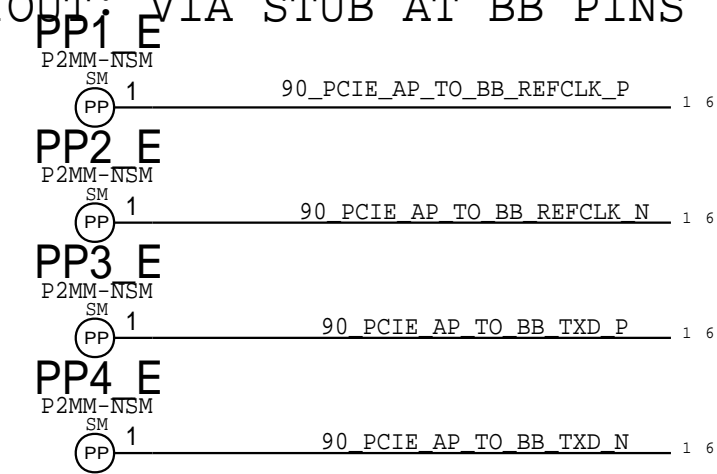


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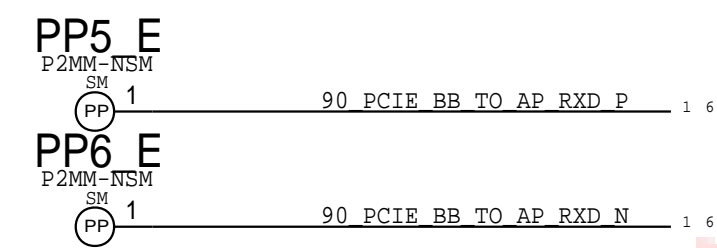


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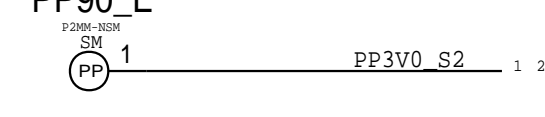
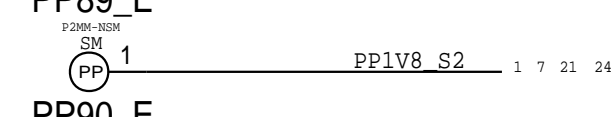
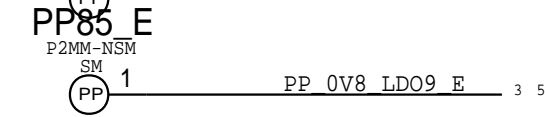
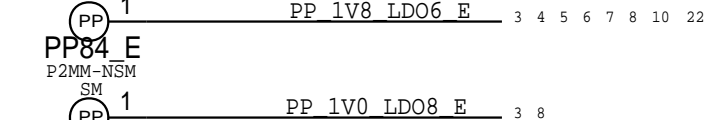
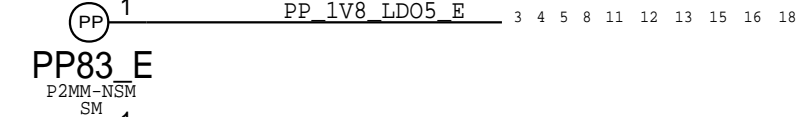
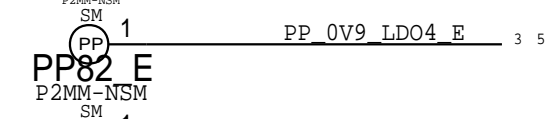
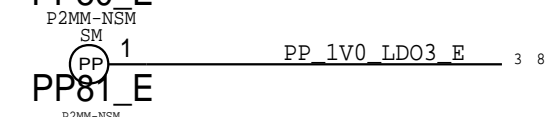
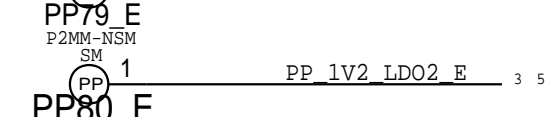
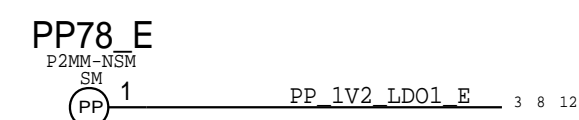
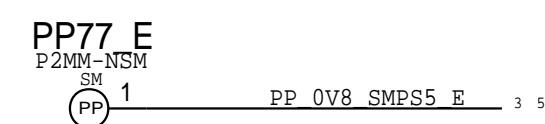
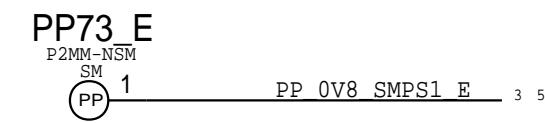
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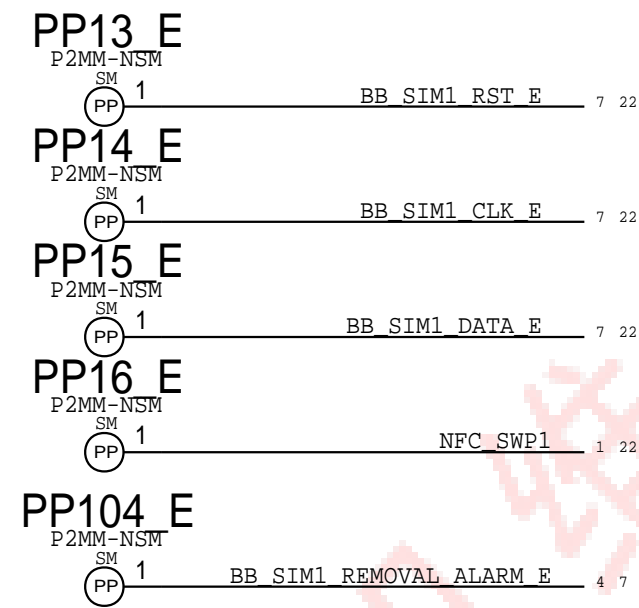
LAYOUT: VIA STUB AT PADS



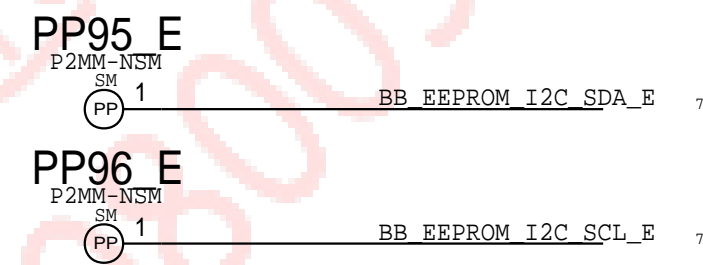
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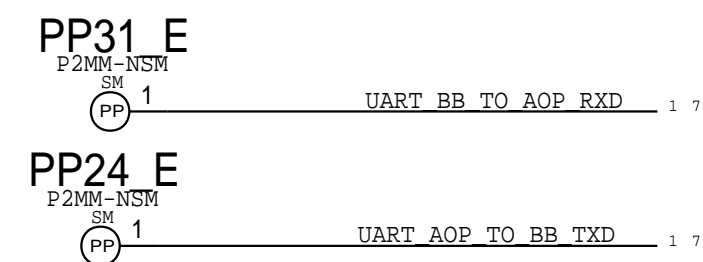
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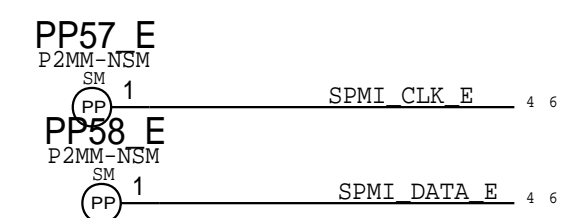
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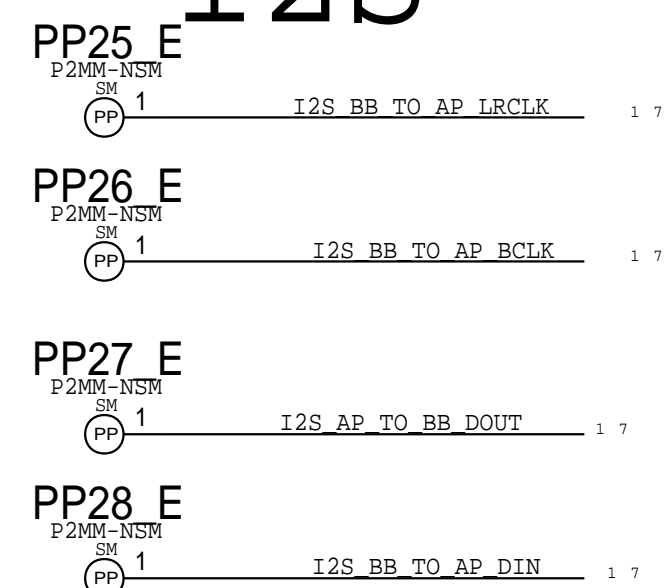
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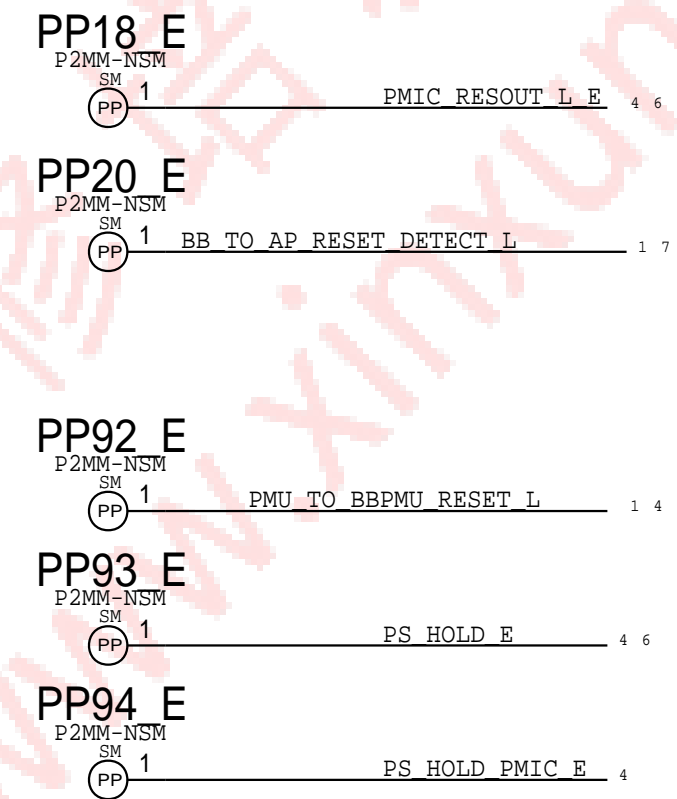
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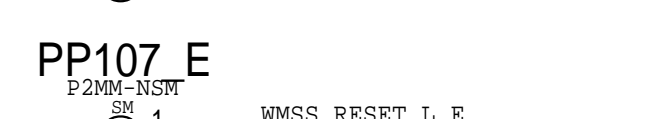
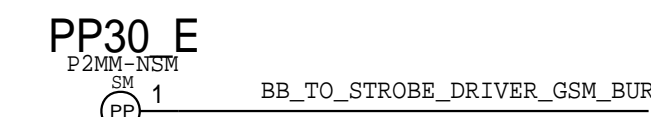
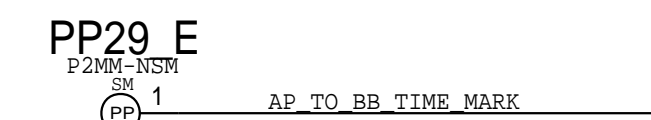
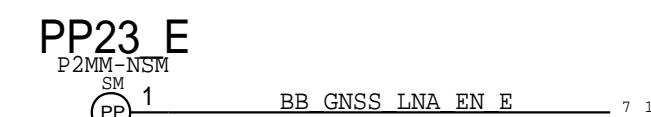
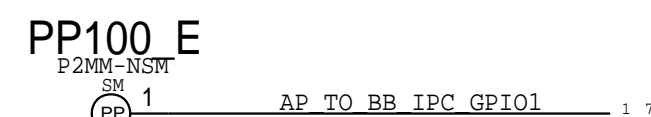
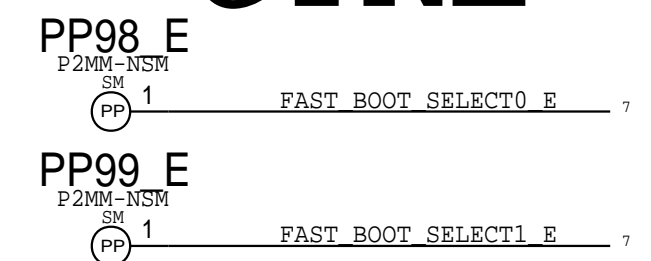
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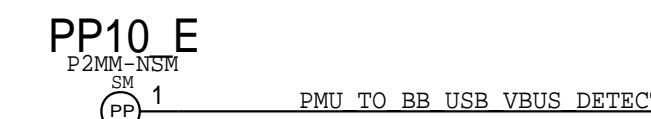
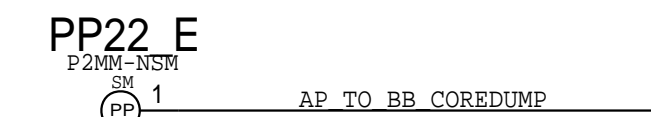
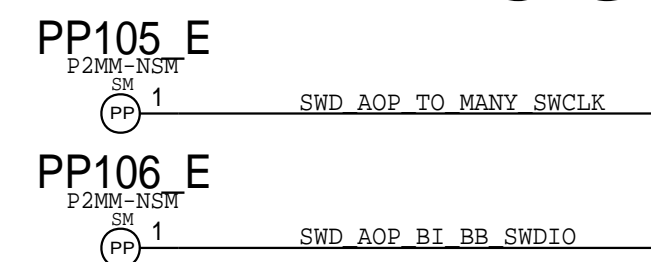
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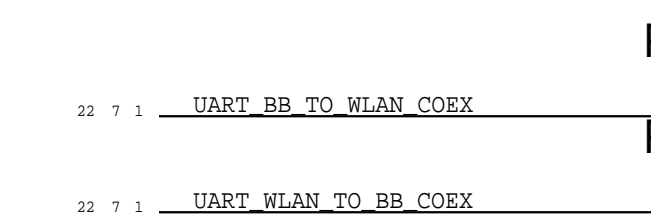
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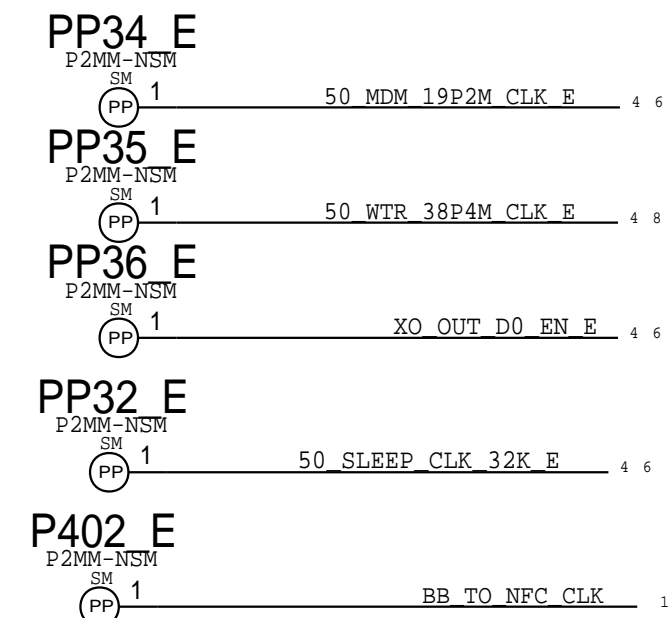


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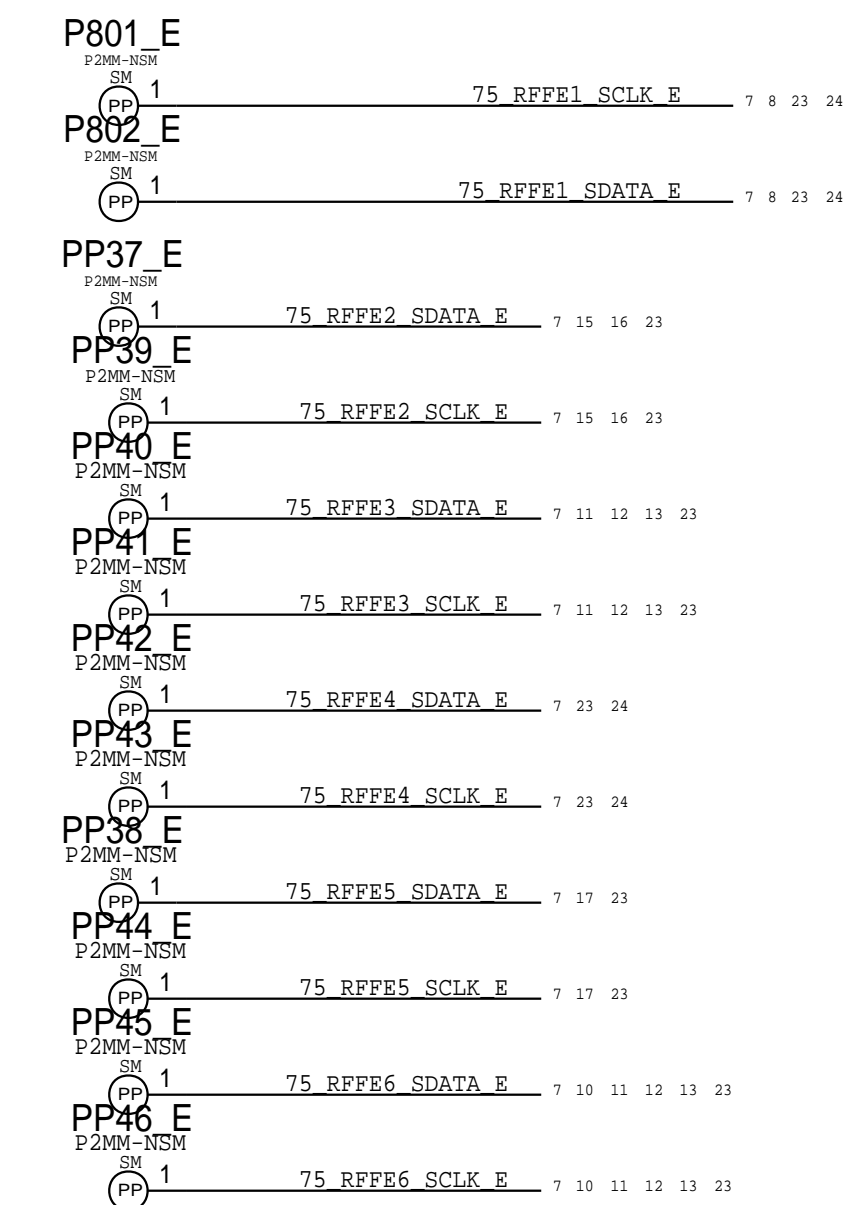


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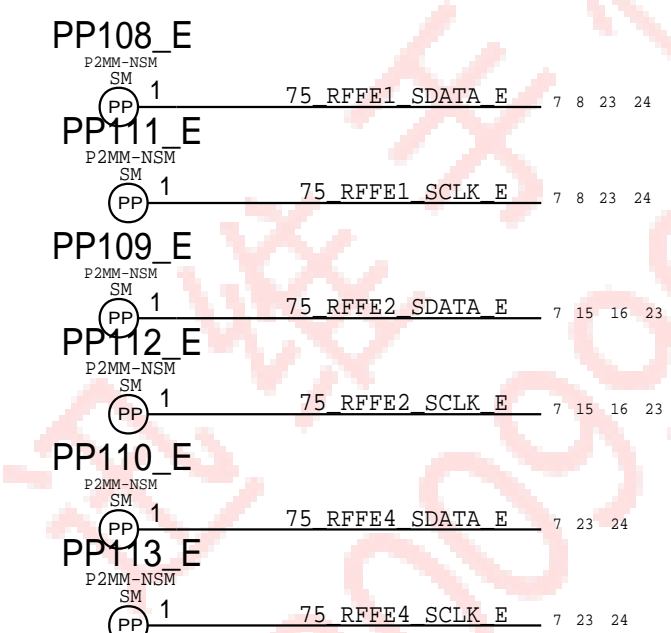
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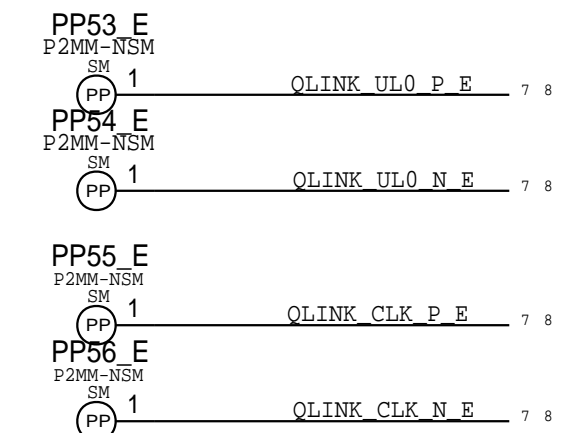


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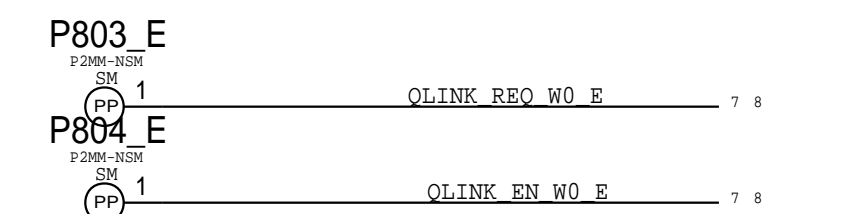
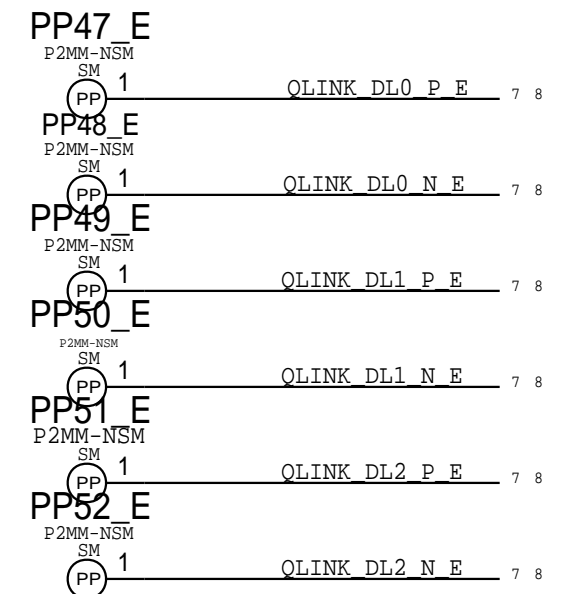


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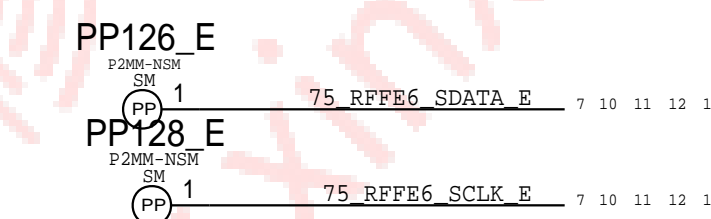
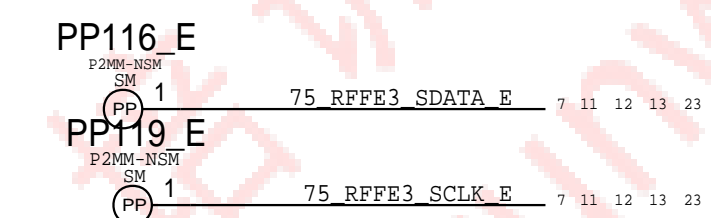
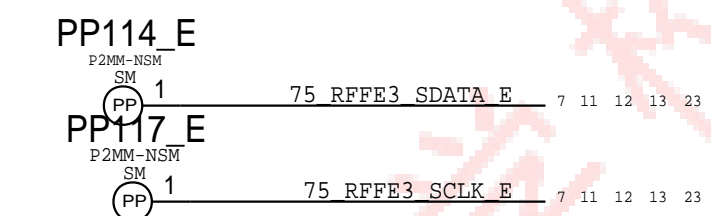
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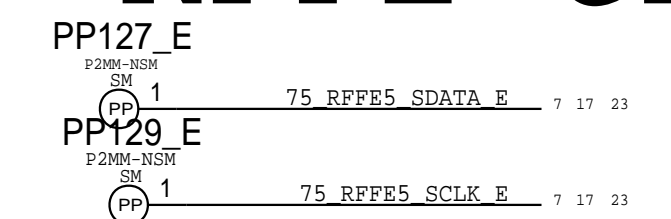
LAYOUT: VIA STUB AT BB PINS



RFFE PA/LNA



RFFE CPL



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	REVISION	6.0.0	D
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		PAGE	23 OF 24
		SHEET	35 OF 41

D

C

B

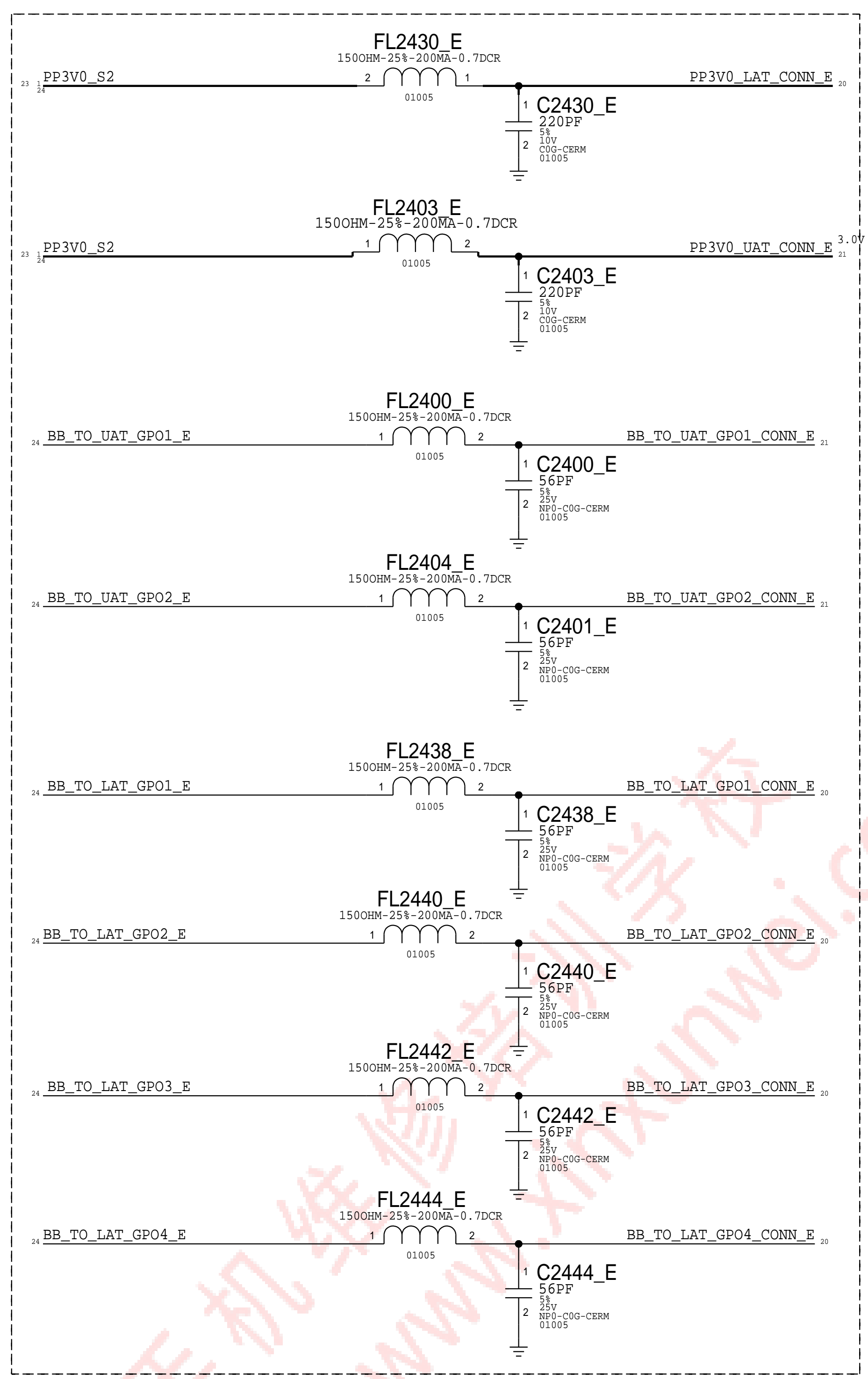
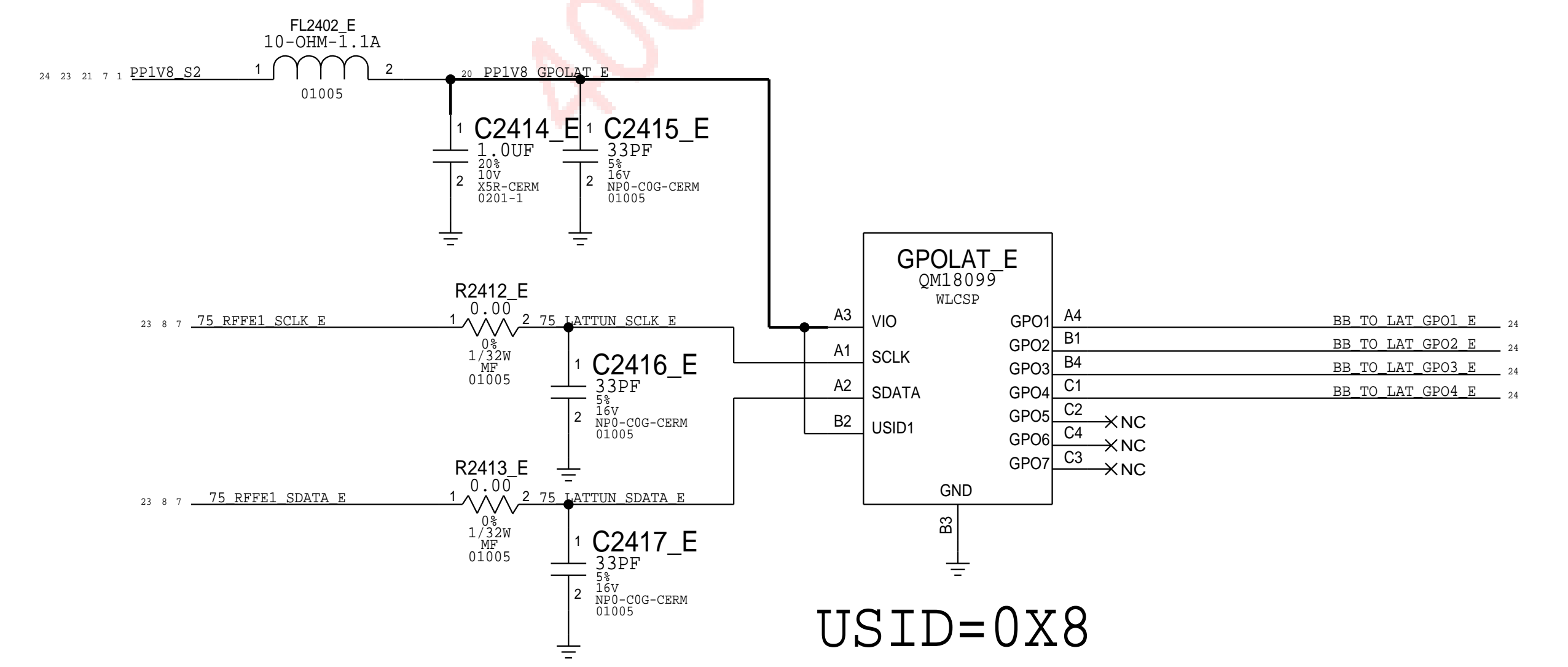
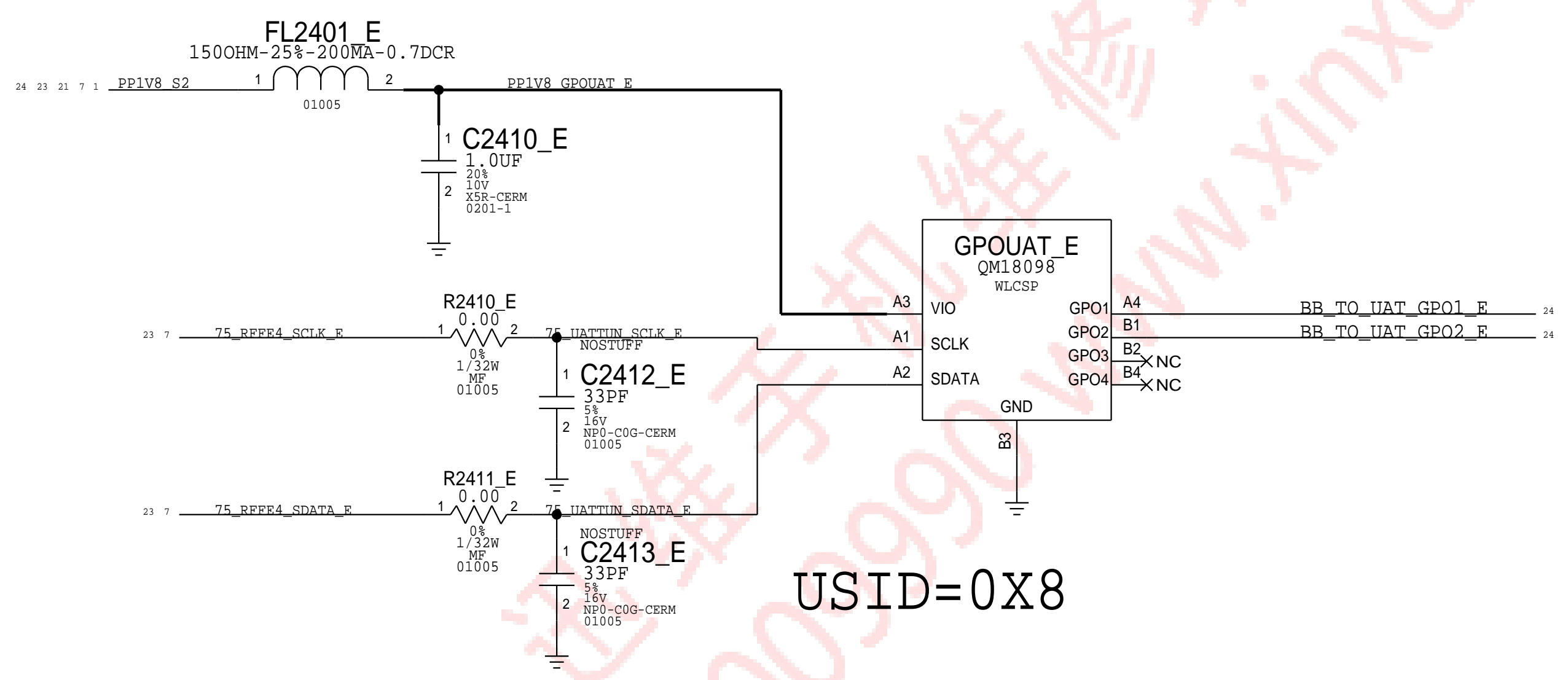
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D

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B

A



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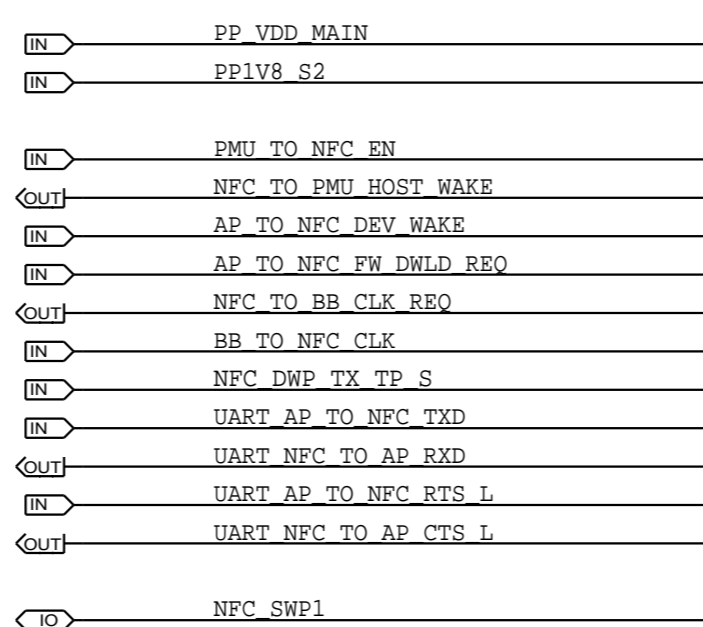
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BRANCH evt-1	PAGE 24 OF 24	SHEET 36 OF 41

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

REV	ECN	DESCRIPTION OF REVISION	CK APPD	DATE
6	0008416016	ENGINEERING RELEASED		2017-04-06

D22 NFC_MLB

MARCH 22, 2017



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page1



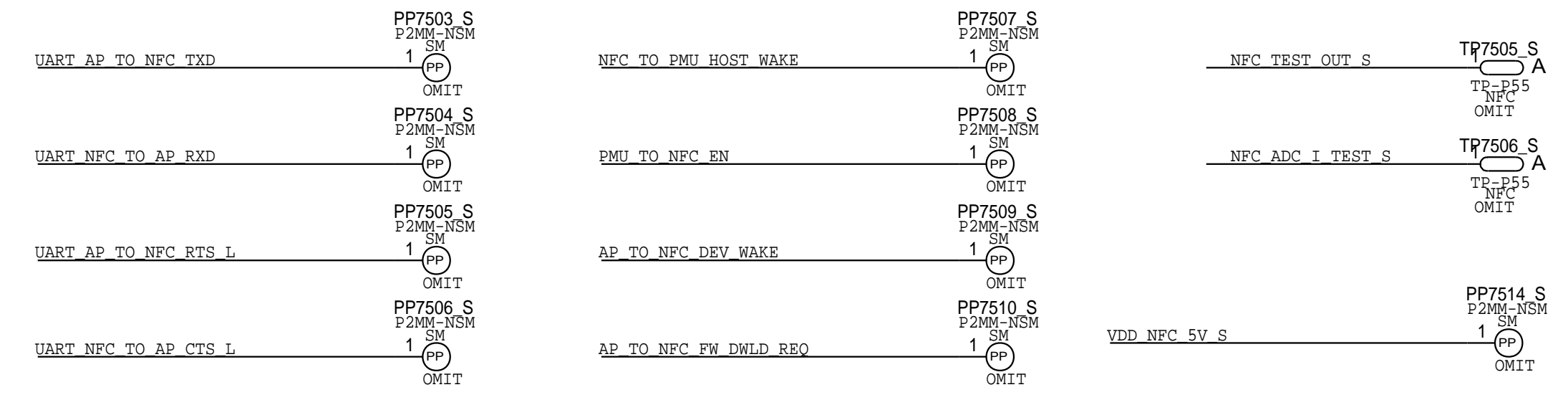
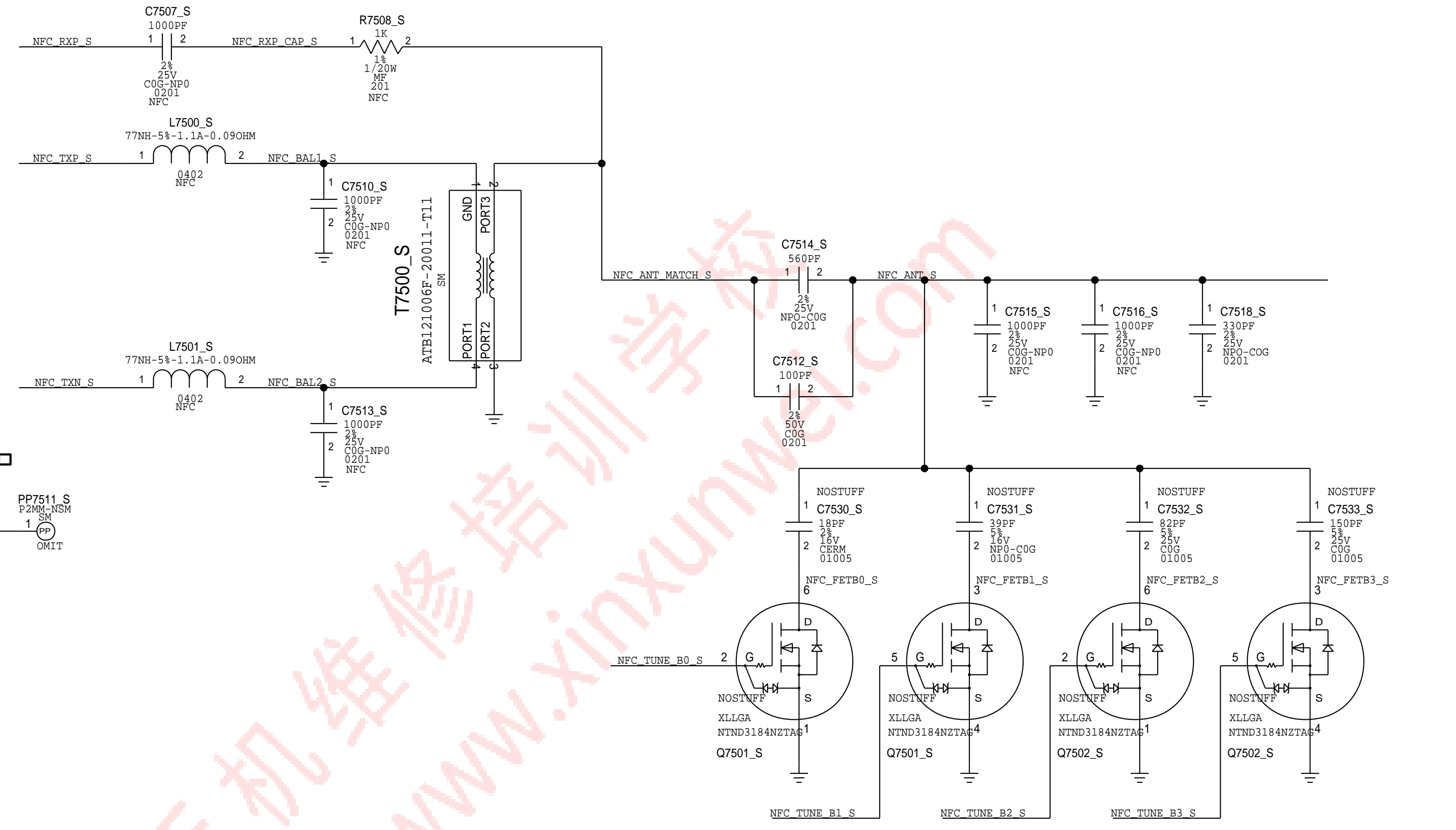
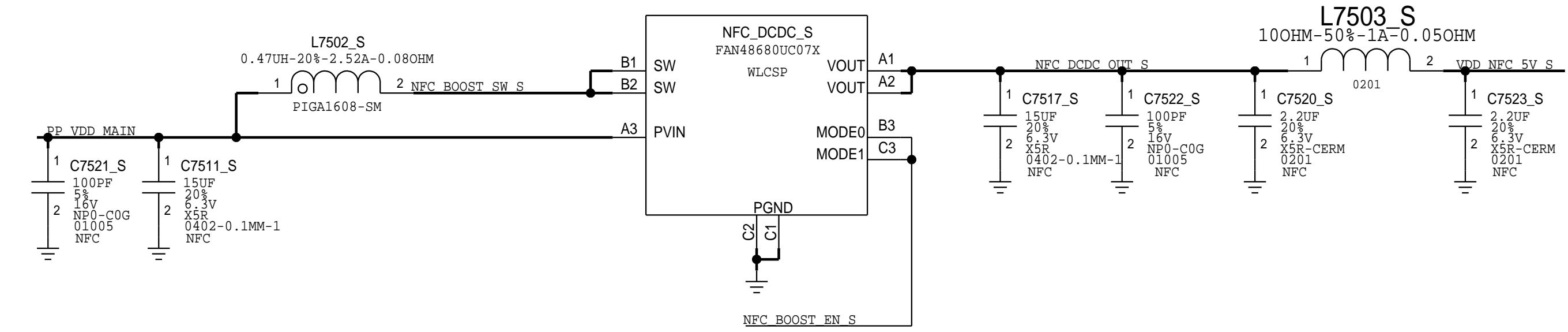
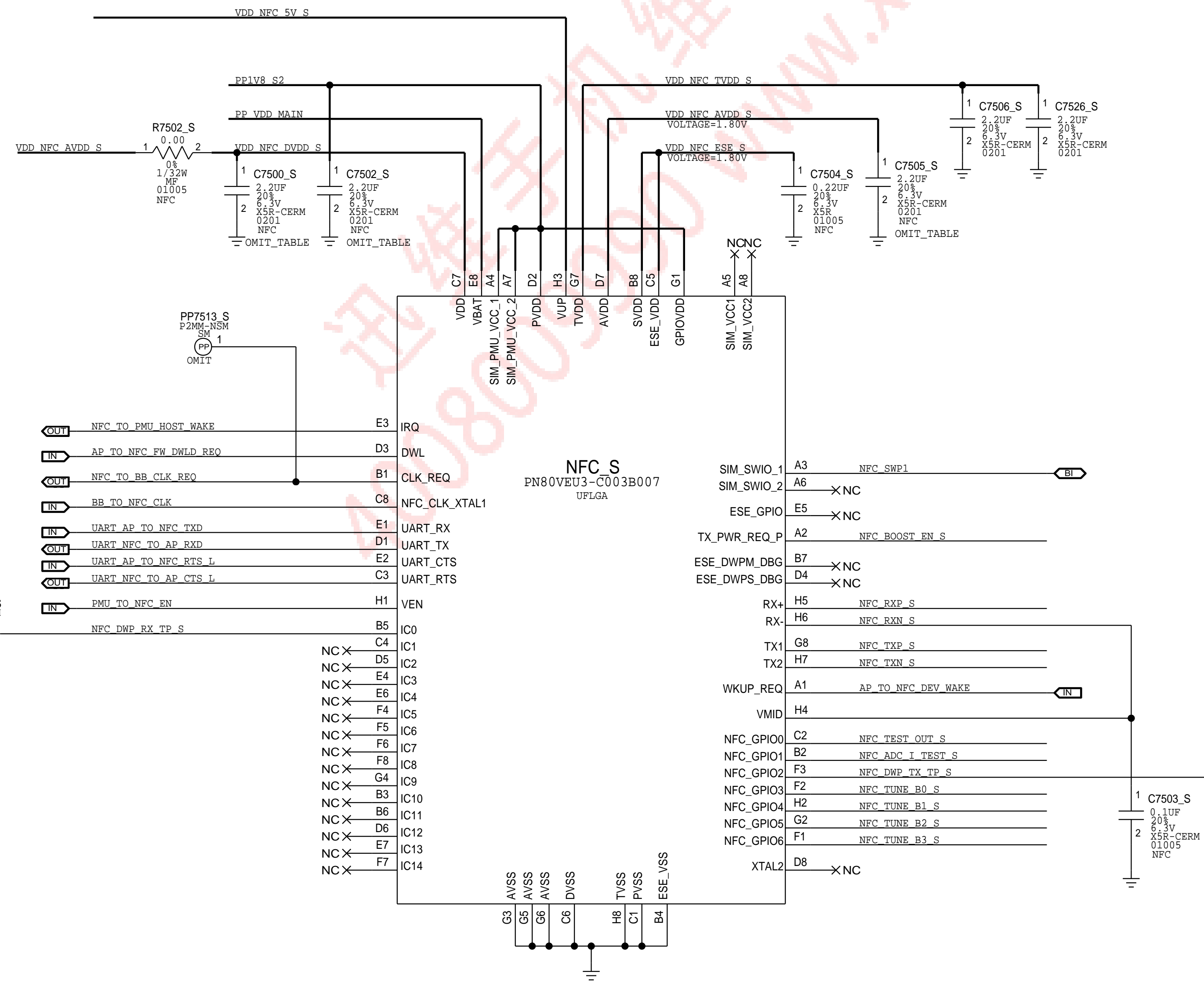
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STOCKHOLM

5V BOOSTER

NFC CONTROLLER

NFC FRONT END



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PAGE TITLE		NFC	
	DRAWING NUMBER	051-02222	SIZE
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		SHEET	38 OF 41

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

REV	ECN	DESCRIPTION OF REVISION	CK APPD	DATE
6	0008416016	ENGINEERING RELEASED		2017-04-06

D22/D221 WIFI_MLB (GUINNESS)

APR 03, 2017

PDF PAGE	CSA PAGE	CONTENTS
2	76	GUINNESS
3	77	WIFI FRONT-END

POWER

- 2 (IN) PP_VDD_MAIN
- 2 (IN) PPIV8_S2

CLOCKS

- 2 (IN) PMU_TO_WLAN_CLK32K
- 2 (IN) WLAN_TO_AP_TIME_SYNC

CONTROL

- 2 (IN) PMU_TO_WLAN_REG_ON
- 2 (IN) PMU_TO_BT_REG_ON
- 2 (OUT) BT_TO_PMU_HOST_WAKE
- 2 (IN) AP_TO_BT_WAKE

WLAN_PCIE

- 2 (IN) 90_PCIE_AP_TO_WLAN_REFCLK_P
- 2 (IN) 90_PCIE_AP_TO_WLAN_REFCLK_N
- 2 (IN) 90_PCIE_AP_TO_WLAN_TXD_P
- 2 (IN) 90_PCIE_AP_TO_WLAN_TXD_N
- 2 (OUT) 90_PCIE_WLAN_TO_AP_RXD_P
- 2 (OUT) 90_PCIE_WLAN_TO_AP_RXD_N
- 2 (IN) PCIE_AP_TO_WLAN_RESET_L
- 2 (TO) PCIE_WLAN_BI_AP_CLKREQ0_L
- 2 (OUT) WLAN_TO_PMU_HOST_WAKE
- 2 (IN) AP_TO_WLAN_DEVICE_WAKE

WLAN_UART

- 2 (OUT) UART_WLAN_TO_AP_RXD
- 2 (IN) UART_AP_TO_WLAN_TXD
- 2 (OUT) UART_WLAN_TO_AP_CTS_L
- 2 (IN) UART_AP_TO_WLAN_RTS_L

BLUETOOTH_UART

- 2 (IN) UART_AP_TO_BT_TXD
- 2 (OUT) UART_BT_TO_AP_RXD
- 2 (IN) UART_AP_TO_BT_RTS_L
- 2 (OUT) UART_BT_TO_AP_CTS_L

AOP

- 2 (IN) AOP_TO_WLAN_CONTEXT_A
- 2 (IN) AOP_TO_WLAN_CONTEXT_B

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- 2 (IN) UART_BB_TO_WLAN_COEX
- 2 (OUT) UART_WLAN_TO_BB_COEX

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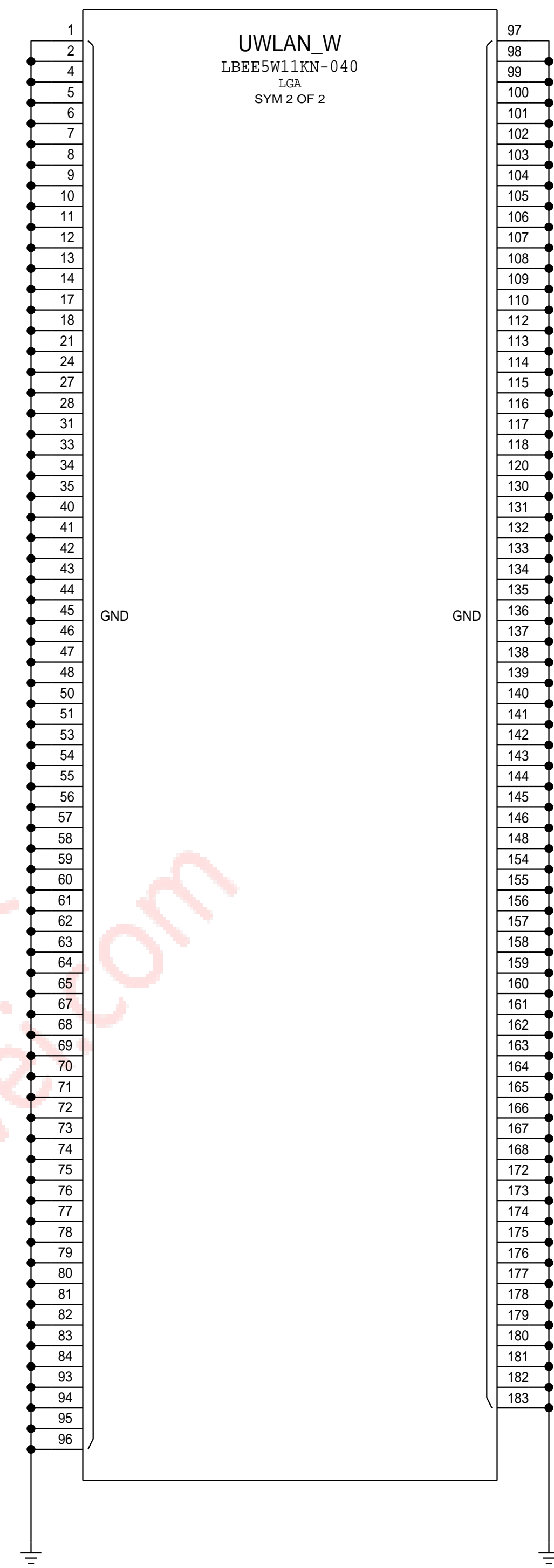
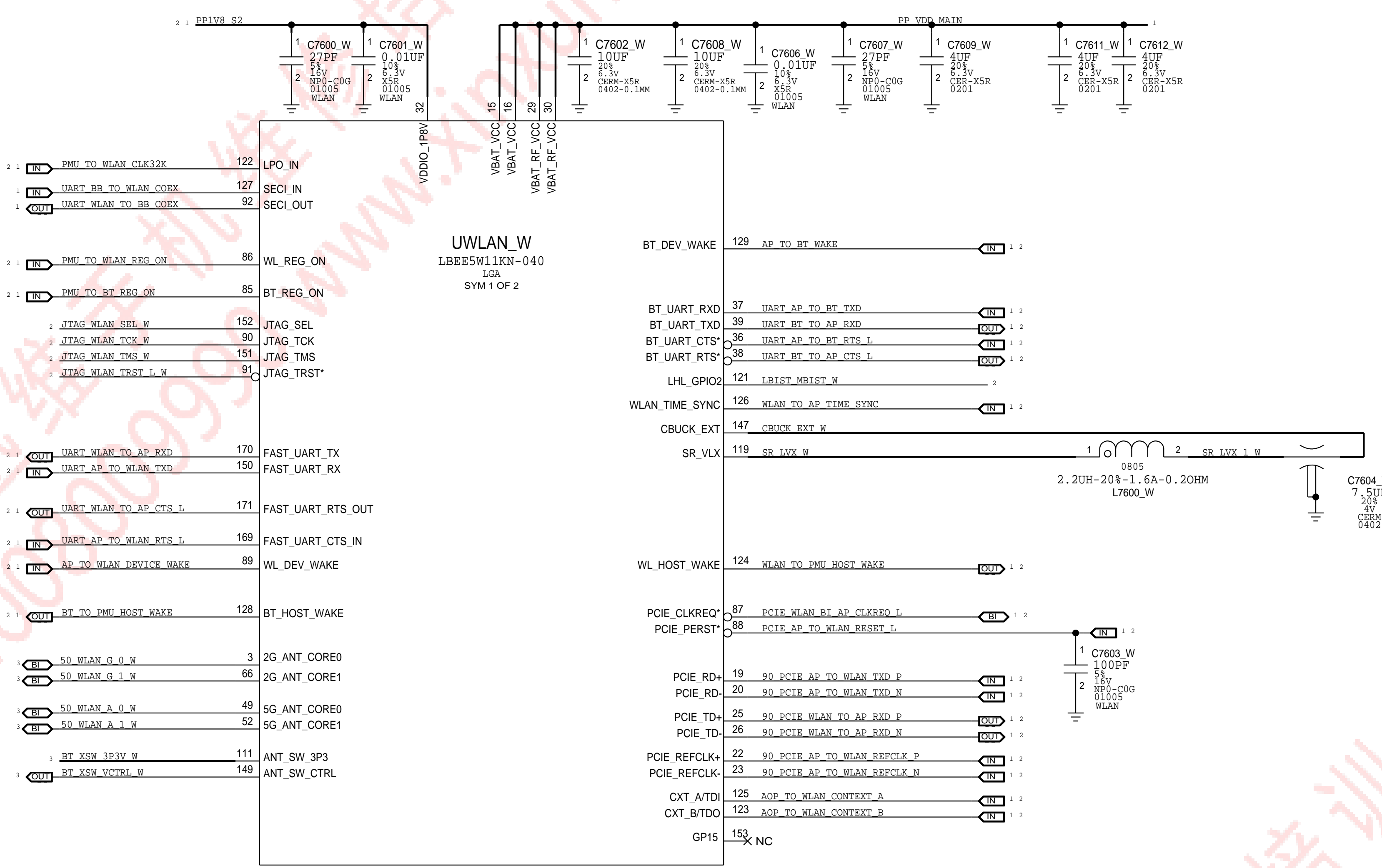
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- 3 (TO) 50_UAT_WLAN_5G_SOUTH
- 3 (TO) 50_LAT_WLAN_MLC

SymbolPorts



DRAWING TITLE		SCH, MLB, BOT, X891	
Apple Inc.	DRAWING NUMBER	051-02222	SIZE D
	REVISION	6.0.0	
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WIFI/BT



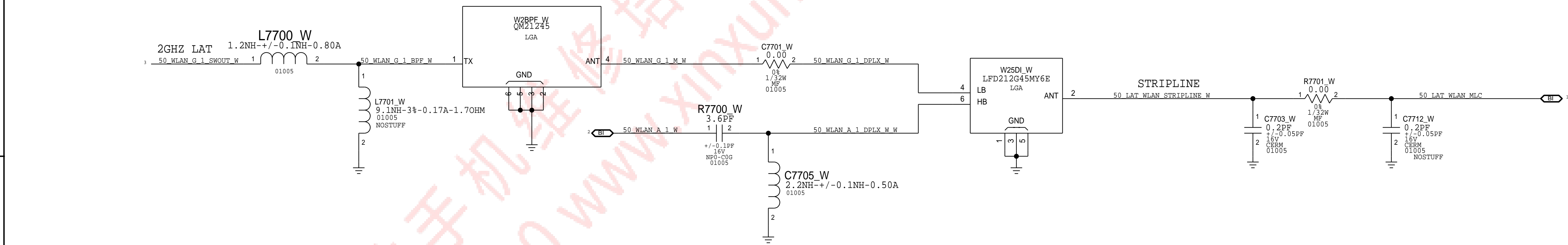
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2	AOP TO WLAN CONTEXT B	PP7601 W P2MM-NSM OMIT	1	PP7611 W P2MM-NSM OMIT	1	PP7627 W P2MM-NSM OMIT	1	PP7631 W P2MM-NSM OMIT
3	UART WLAN TO AP RXD	PP7603 W P2MM-NSM OMIT	1	PP7612 W P2MM-NSM OMIT	1	PP7628 W P2MM-NSM OMIT	1	PP7629 W P2MM-NSM OMIT
4	UART AP TO WLAN TXD	PP7604 W P2MM-NSM OMIT	1	PP7614 W P2MM-NSM OMIT	1	PP7625 W P2MM-NSM OMIT	1	PP7621 W P2MM-NSM OMIT
5	JTAG WLAN TCK W	PP7605 W P2MM-NSM OMIT	1	PP7615 W P2MM-NSM OMIT	1	PP7620 W P2MM-NSM OMIT	1	PP7624 W P2MM-NSM OMIT
6	JTAG WLAN TMS W	PP7606 W P2MM-NSM OMIT	1	PP7616 W P2MM-NSM OMIT	1	PP7621 W P2MM-NSM OMIT	1	PP7621 W P2MM-NSM OMIT
7	JTAG WLAN TRST L W	PP7607 W P2MM-NSM OMIT	1	PP7617 W P2MM-NSM OMIT	1	PP7622 W P2MM-NSM OMIT	1	PP7622 W P2MM-NSM OMIT
8	AP TO WLAN DEVICE WAKE	PP7608 W P2MM-NSM OMIT	1	PP7618 W P2MM-NSM OMIT	1	PP7623 W P2MM-NSM OMIT	1	PP7623 W P2MM-NSM OMIT
9	BT TO PMU HOST WAKE	PP7609 W P2MM-NSM OMIT	1	PP7619 W P2MM-NSM OMIT	1	PP7624 W P2MM-NSM OMIT	1	PP7624 W P2MM-NSM OMIT
10	PMU TO WLAN CLK32K	PP7610 W P2MM-NSM OMIT	1	PP7620 W P2MM-NSM OMIT	1	PP7625 W P2MM-NSM OMIT	1	PP7625 W P2MM-NSM OMIT
11	WLAN TO PMU HOST WAKE	PP7611 W P2MM-NSM OMIT	1	PP7621 W P2MM-NSM OMIT	1	PP7626 W P2MM-NSM OMIT	1	PP7626 W P2MM-NSM OMIT
12	90 PCIE AP TO WLAN REFCLK P	PP7612 W P2MM-NSM OMIT	1	PP7622 W P2MM-NSM OMIT	1	PP7627 W P2MM-NSM OMIT	1	PP7627 W P2MM-NSM OMIT
13	90 PCIE AP TO WLAN REFCLK N	PP7613 W P2MM-NSM OMIT	1	PP7623 W P2MM-NSM OMIT	1	PP7628 W P2MM-NSM OMIT	1	PP7628 W P2MM-NSM OMIT
14	90 PCIE WLAN TO AP RXD P	PP7614 W P2MM-NSM OMIT	1	PP7624 W P2MM-NSM OMIT	1	PP7629 W P2MM-NSM OMIT	1	PP7629 W P2MM-NSM OMIT
15	90 PCIE AP TO WLAN TXD P	PP7615 W P2MM-NSM OMIT	1	PP7625 W P2MM-NSM OMIT	1	PP7630 W P2MM-NSM OMIT	1	PP7630 W P2MM-NSM OMIT
16	90 PCIE AP TO WLAN TXD N	PP7616 W P2MM-NSM OMIT	1	PP7626 W P2MM-NSM OMIT	1	PP7631 W P2MM-NSM OMIT	1	PP7631 W P2MM-NSM OMIT
17	PCIE AP TO WLAN RESET L	PP7617 W P2MM-NSM OMIT	1	PP7627 W P2MM-NSM OMIT	1	PP7632 W P2MM-NSM OMIT	1	PP7632 W P2MM-NSM OMIT
18	JTAG WLAN SEL W	PP7618 W P2MM-NSM OMIT	1	PP7628 W P2MM-NSM OMIT	1	PP7633 W P2MM-NSM OMIT	1	PP7633 W P2MM-NSM OMIT
19	PMU TO WLAN REG_ON	PP7619 W P2MM-NSM OMIT	1	PP7629 W P2MM-NSM OMIT	1	PP7634 W P2MM-NSM OMIT	1	PP7634 W P2MM-NSM OMIT
20	PMU TO BT REG_ON	PP7620 W P2MM-NSM OMIT	1	PP7630 W P2MM-NSM OMIT	1	PP7635 W P2MM-NSM OMIT	1	PP7635 W P2MM-NSM OMIT
21	JTAG WLAN TCK W	PP7621 W P2MM-NSM OMIT	1	PP7631 W P2MM-NSM OMIT	1	PP7636 W P2MM-NSM OMIT	1	PP7636 W P2MM-NSM OMIT
22	JTAG WLAN TMS W	PP7622 W P2MM-NSM OMIT	1	PP7632 W P2MM-NSM OMIT	1	PP7637 W P2MM-NSM OMIT	1	PP7637 W P2MM-NSM OMIT
23	JTAG WLAN TRST L W	PP7623 W P2MM-NSM OMIT	1	PP7633 W P2MM-NSM OMIT	1	PP7638 W P2MM-NSM OMIT	1	PP7638 W P2MM-NSM OMIT
24	AP TO WLAN DEVICE WAKE	PP7624 W P2MM-NSM OMIT	1	PP7634 W P2MM-NSM OMIT	1	PP7639 W P2MM-NSM OMIT	1	PP7639 W P2MM-NSM OMIT
25	BT TO PMU HOST WAKE	PP7625 W P2MM-NSM OMIT	1	PP7635 W P2MM-NSM OMIT	1	PP7640 W P2MM-NSM OMIT	1	PP7640 W P2MM-NSM OMIT
26	WLAN TO AP TIME SYNC	PP7626 W P2MM-NSM OMIT	1	PP7636 W P2MM-NSM OMIT	1	PP7641 W P2MM-NSM OMIT	1	PP7641 W P2MM-NSM OMIT
27	PCIE WLAN BI AP CLKREQ L	PP7627 W P2MM-NSM OMIT	1	PP7637 W P2MM-NSM OMIT	1	PP7642 W P2MM-NSM OMIT	1	PP7642 W P2MM-NSM OMIT
28	UART WLAN TO AP CTS L	PP7628 W P2MM-NSM OMIT	1	PP7638 W P2MM-NSM OMIT	1	PP7643 W P2MM-NSM OMIT	1	PP7643 W P2MM-NSM OMIT
29	PCIE WLAN BI AP CLKREQ L	PP7629 W P2MM-NSM OMIT	1	PP7639 W P2MM-NSM OMIT	1	PP7644 W P2MM-NSM OMIT	1	PP7644 W P2MM-NSM OMIT
30	UART AP TO WLAN RTS L	PP7630 W P2MM-NSM OMIT	1	PP7640 W P2MM-NSM OMIT	1	PP7645 W P2MM-NSM OMIT	1	PP7645 W P2MM-NSM OMIT
31	90 PCIE WLAN TO AP RXD N	PP7631 W P2MM-NSM OMIT	1	PP7641 W P2MM-NSM OMIT	1	PP7646 W P2MM-NSM OMIT	1	PP7646 W P2MM-NSM OMIT
32	90 PCIE WLAN TO AP RXD P	PP7632 W P2MM-NSM OMIT	1	PP7642 W P2MM-NSM OMIT	1	PP7647 W P2MM-NSM OMIT	1	PP7647 W P2MM-NSM OMIT
33	LBIST MBIST W	PP7633 W P2MM-NSM OMIT	1	PP7643 W P2MM-NSM OMIT	1	PP7648 W P2MM-NSM OMIT	1	PP7648 W P2MM-NSM OMIT
34	UART AP TO BT TXD	PP7634 W P2MM-NSM OMIT	1	PP7644 W P2MM-NSM OMIT	1	PP7649 W P2MM-NSM OMIT	1	PP7649 W P2MM-NSM OMIT
35	UART BT TO AP RXD	PP7635 W P2MM-NSM OMIT	1	PP7645 W P2MM-NSM OMIT	1	PP7650 W P2MM-NSM OMIT	1	PP7650 W P2MM-NSM OMIT
36	UART AP TO BT RTS L	PP7636 W P2MM-NSM OMIT	1	PP7646 W P2MM-NSM OMIT	1	PP7651 W P2MM-NSM OMIT	1	PP7651 W P2MM-NSM OMIT
37	UART BT TO AP CTS L	PP7637 W P2MM-NSM OMIT	1	PP7647 W P2MM-NSM OMIT	1	PP7652 W P2MM-NSM OMIT	1	PP7652 W P2MM-NSM OMIT
38	AP TO BT WAKE	PP7638 W P2MM-NSM OMIT	1	PP7648 W P2MM-NSM OMIT	1	PP7653 W P2MM-NSM OMIT	1	PP7653 W P2MM-NSM OMIT

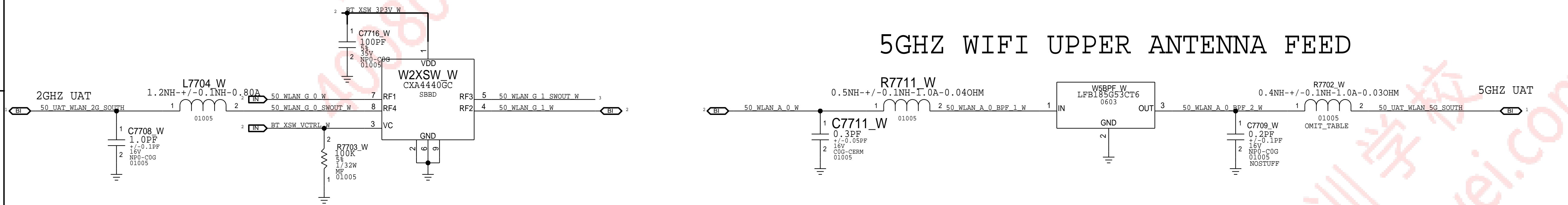


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WIFI LOWER ANTENNA FEED



5GHZ WIFI UPPER ANTENNA FEED



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