

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

REV	ECN	DESCRIPTION OF REVISION	CK APPD	DATE
7	0011175308	ENGINEERING RELEASED		2018-02-05

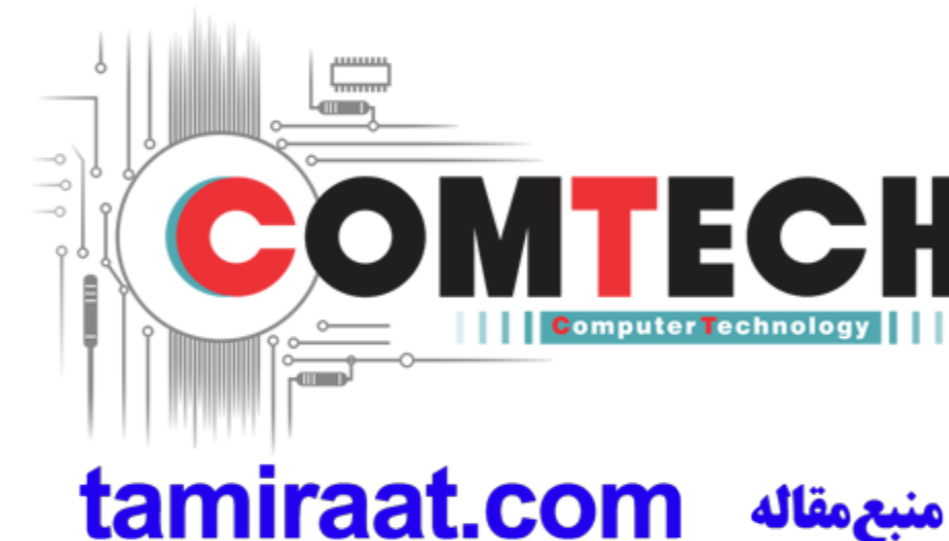
# D32/D33 Top MLB: EVT (D32 Build)

LAST\_MODIFICATION=Wed Jan 31 16:37:18 2018

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BOM:639-03991 (Ultimate)  
 BOM:639-03992 (Extreme)  
 BOM:639-03990 (Max)  
 MCO:056-05750

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
051-02545	1	SCH_MLB_TOP_D32	SCH	CRITICAL	?
820-00997	1	PCB_MLB_TOP_D32	PCB	CRITICAL	?



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DRAWING TITLE		SCH, MLB, TOP, D32	
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# Display CMC's

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
155S00415	155S00391	ALT_PARTS	ALL	CMC, 350GM, 7MG+, MDR

# NAND Ultimate

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
335S00340	1	HYNIX, 3DV4, ULTIMATE	U2600	CRITICAL	ULTIMATE

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
335S00359	335S00340	ALT_PARTS	U2600	TOSHIBA, BICS3, ULT
335S00286	335S00340	ALT_PARTS	U2600	SANDISK, BICS3, ULT
335S00288	335S00340	ALT_PARTS	U2600	SAMSUNG, 3DV4, ULT

# Global R/C Alternates

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
138S0648	138S0652	ALT_PARTS	ALL	09P, 20K, 4, 70K, 4, 30, 4, 6900, 440, 7000
138S0739	138S0706	ALT_PARTS	ALL	05P, 02K, 30K, 0, 200K, 20K, 4, 30, 20K
138S00049	138S0831	ALT_PARTS	ALL	09P, 02K, 30K, 1, 20P, 20K, 4, 30, 20K

# Yangtze Inductors

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
152S00872	152S00918	ALT_PARTS	ALL	IND, MLD, 0.470H, 20K
152S00847	152S00918	ALT_PARTS	ALL	IND, MLD, 0.470H, 20K

CRITICAL PART#	COMMENT
152S00918	IND, MLD, 0.220H, 20K, 5.6A, 40MOHM, H=65, 1608

# Extreme

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
335S00342	1	HYNIX, 3DV4, Extreme	U2600	CRITICAL	EXTREME

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
335S00247	335S00342	ALT_PARTS	U2600	SANDISK, BISC3, SUPREME
335S00276	335S00342	ALT_PARTS	U2600	SAMSUNG, 3DV4, SUPREME
335S00358	335S00342	ALT_PARTS	U2600	TOSHIBA, 3DV4, SUPREME

# Denali Inductors

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
152S00878	152S00831	ALT_PARTS	ALL	IND, MLD, 0.220H, 20K, 5.6A, 40MOHM, H=65, 1608
152S00818	152S00831	ALT_PARTS	ALL	IND, MLD, 0.470H, 20K, 4.5A, 40MOHM, H=65, 1608, 20K
152S00835	152S00822	ALT_PARTS	ALL	IND, MLD, 0.470H, 20K, 4.5A, 40MOHM, H=65, 2012
152S00827	152S00822	ALT_PARTS	ALL	IND, MLD, 0.470H, 20K, 4.5A, 40MOHM, H=65, 2012
152S00877	152S00817	ALT_PARTS	ALL	IND, MLD, 0.100H, 20K, 1.7A, 6900K, H=65, 2012
152S00829	152S00817	ALT_PARTS	ALL	IND, MLD, 0.100H, 20K, 1.7A, 6900K, H=65, 2012
152S00825	152S00823	ALT_PARTS	ALL	IND, MLD, 100H, 20K, 3.0A, 60MO, H=65, 2016
152S00833	152S00819	ALT_PARTS	ALL	IND, MLD, 100H, 20K, 3.0A, 60MO, H=65, 2012
152S00824	152S00819	ALT_PARTS	ALL	IND, MLD, 100H, 20K, 3.0A, 60MO, H=65, 2012
152S00834	152S00820	ALT_PARTS	ALL	IND, MLD, 0.470H, 20K, 1.7A, 6900K, H=65, 2012
152S00828	152S00820	ALT_PARTS	ALL	IND, MLD, 0.470H, 20K, 1.7A, 6900K, H=65, 2012
152S00826	152S00821	ALT_PARTS	ALL	IND, MLD, 100H, 20K, 3.0A, 60MO, H=65, 2012
152S00866	152S00821	ALT_PARTS	ALL	IND, MLD, 100H, 20K, 3.0A, 60MO, H=65, 2012

CRITICAL PART#	COMMENT
152S00831	IND, MLD, 0.220H, 20K, 5.6A, 40MOHM, H=65, 1608
152S00822	IND, MLD, 0.470H, 20K, 4.5A, 40MOHM, H=65, 2012
152S00817	IND, MLD, 0.100H, 20K, 1.7A, 6900K, H=65, 2012
152S00823	IND, MLD, 100H, 20K, 3.0A, 60MO, H=65, 2016
152S00819	IND, MLD, 100H, 20K, 1.7A, 6900K, H=65, 2012
152S00820	IND, MLD, 0.470H, 20K, 3.0A, 42MO, H=65, 2012
152S00821	IND, MLD, 100H, 20K, 2.2A, 60MO, H=65, 2012

# Max

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
335S00343	1	HYNIX, 3DV4, MAX	U2600	CRITICAL	MAX

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
335S00339	335S00343	ALT_PARTS	U2600	SAMSUNG, 3DV4, MAX

# XTAL Alternate

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
197S0612	197S00118	ALT_PARTS	Y1000	XTAL, 24K, 1612
197S00120	197S00118	ALT_PARTS	Y1000	XTAL, 24K, 1612

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

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

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

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

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

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

# NEON Alternate

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
152S00721	152S00876	ALT_PARTS	14100, 14120	TY, IND

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
138S00221	138S00146	ALT_PARTS	ALL	0402, 5.1uF@3V, Kyocera

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

# ANSEL Alternate

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
152S00716	152S00875	ALT_PARTS	13700	TY, IND

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

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



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### EEEE Codes

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
825-7691	1	EEEE FOR (MLB_TOP,639-03991,ULTIMATE)	EEEE_HMV1	CRITICAL	ULTIMATE
825-7691	1	EEEE FOR (MLB_TOP,639-03992,EXTREME)	EEEE_HMV2	CRITICAL	EXTREME
825-7691	1	EEEE FOR (MLB_TOP,639-03990,MAX)	EEEE_HMV0	CRITICAL	MAX

### Cyprus OMIT

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
339S00510	1	CYPRUS 4GB Micron	U1000	CRITICAL	SOC

### Cyprus ALTs

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
339S00511	339S00510	ALT_PARTS	U1000	CYPRUS 4GB Rymix
339S00512	339S00510	ALT_PARTS	U1000	CYPRUS 4GB Samsung

### Combo Stiffener

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
604-19651	1	Combo Stiffener	ST0401	CRITICAL	ALL

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D

C

C

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B

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A



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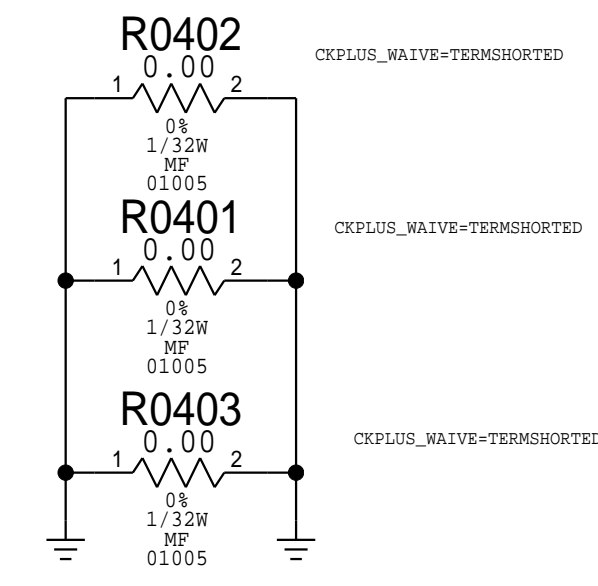
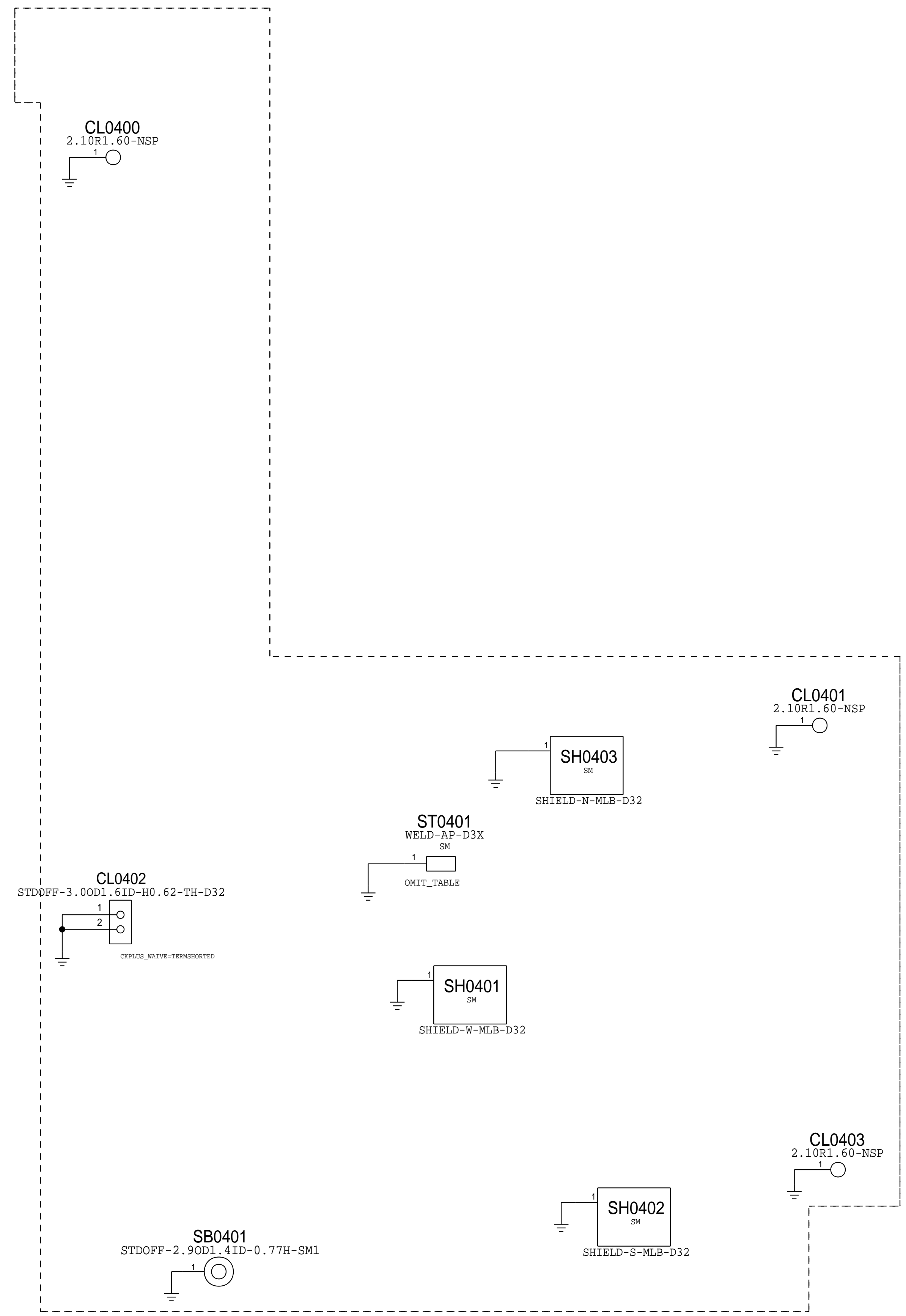
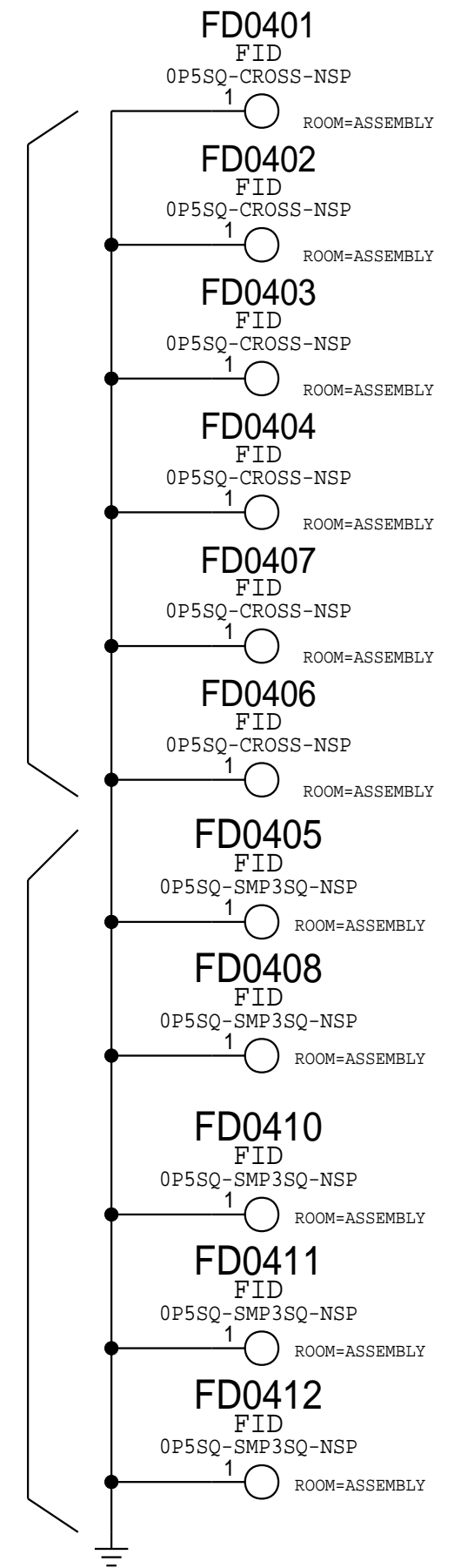
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FIDUCIALS



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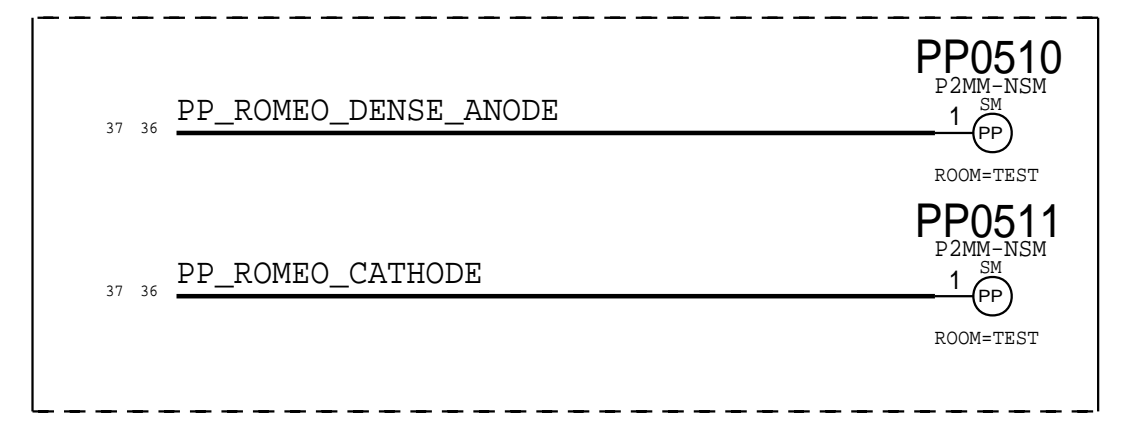
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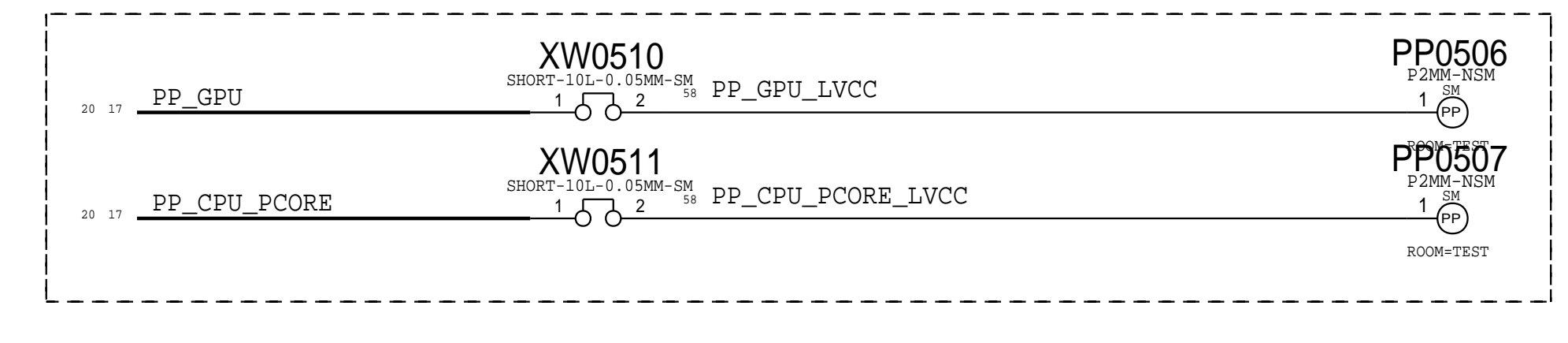
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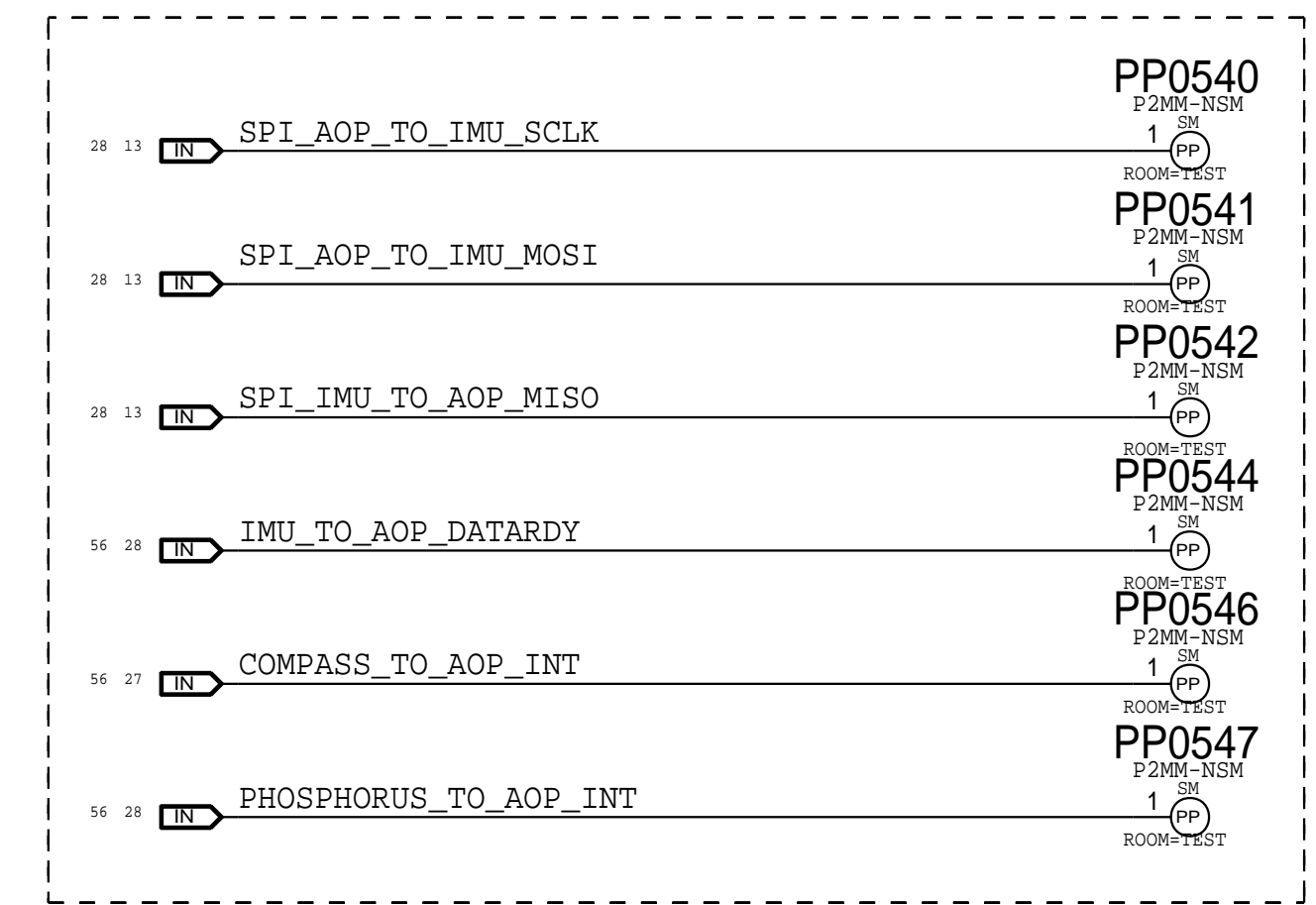
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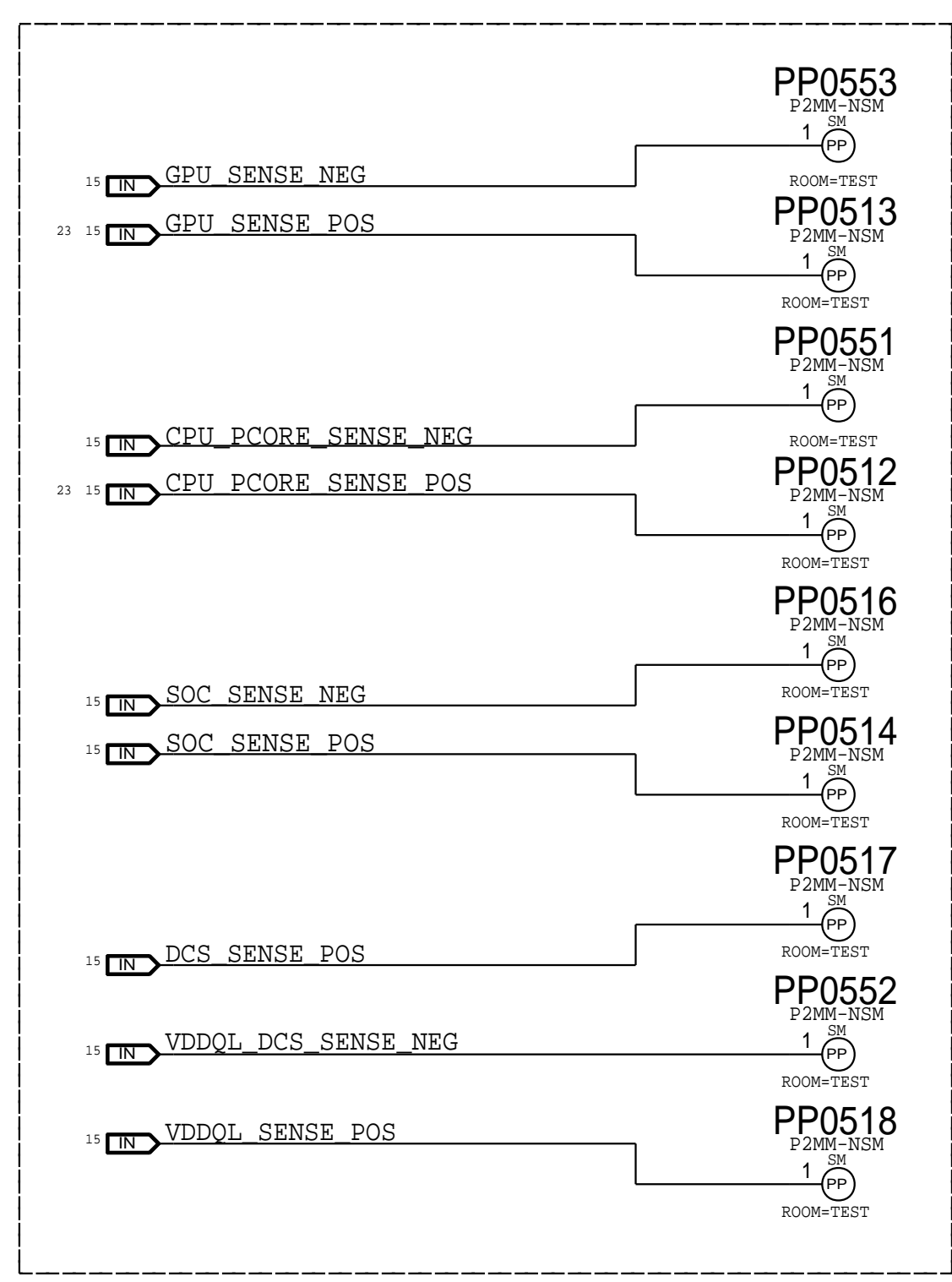
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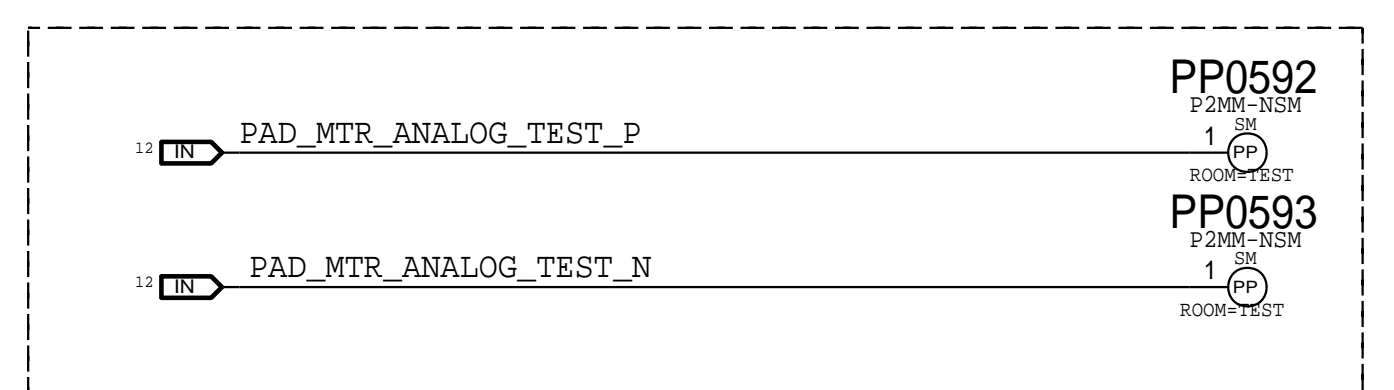
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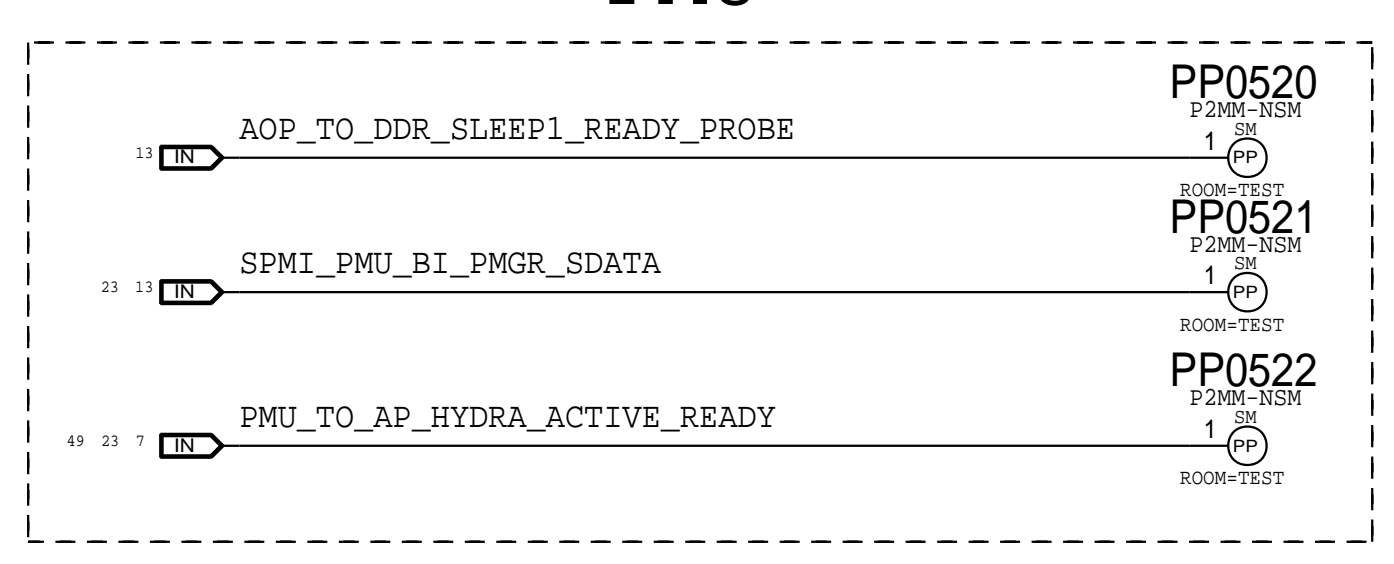
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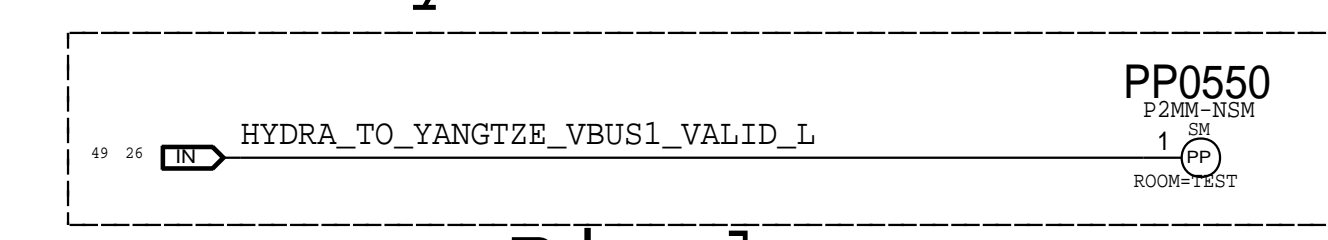
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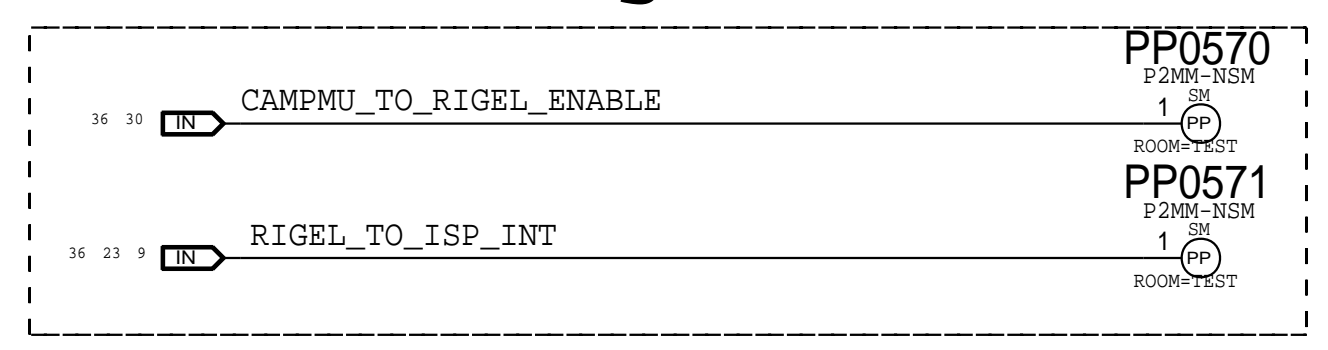
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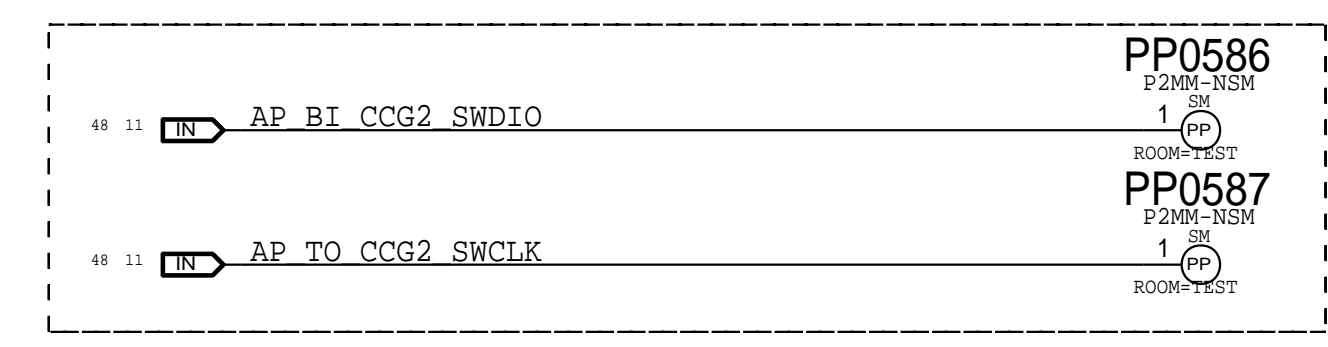
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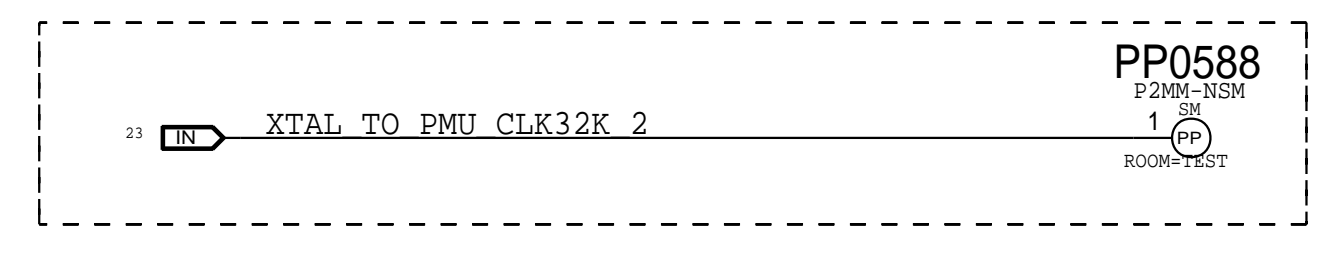
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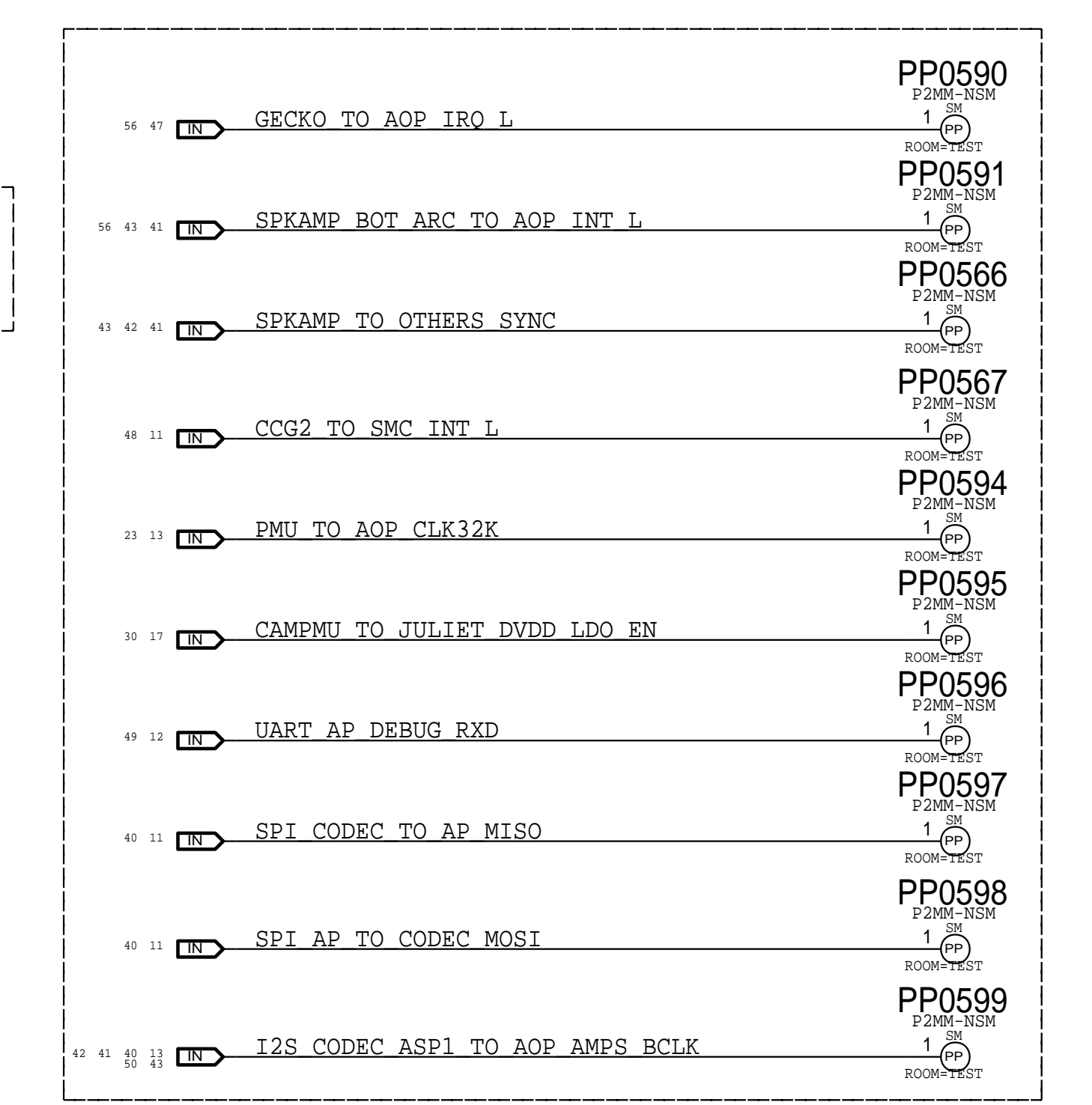
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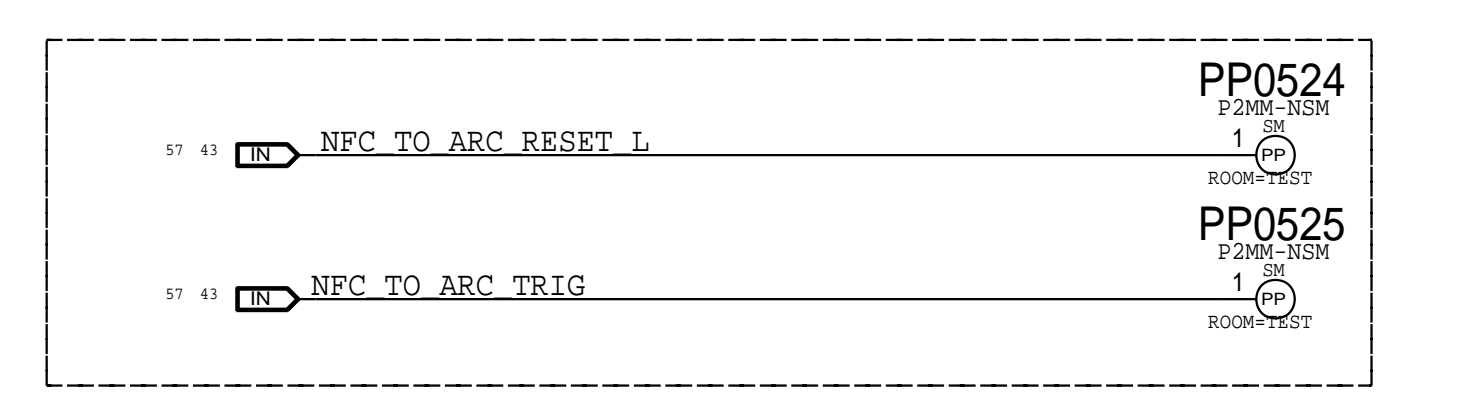
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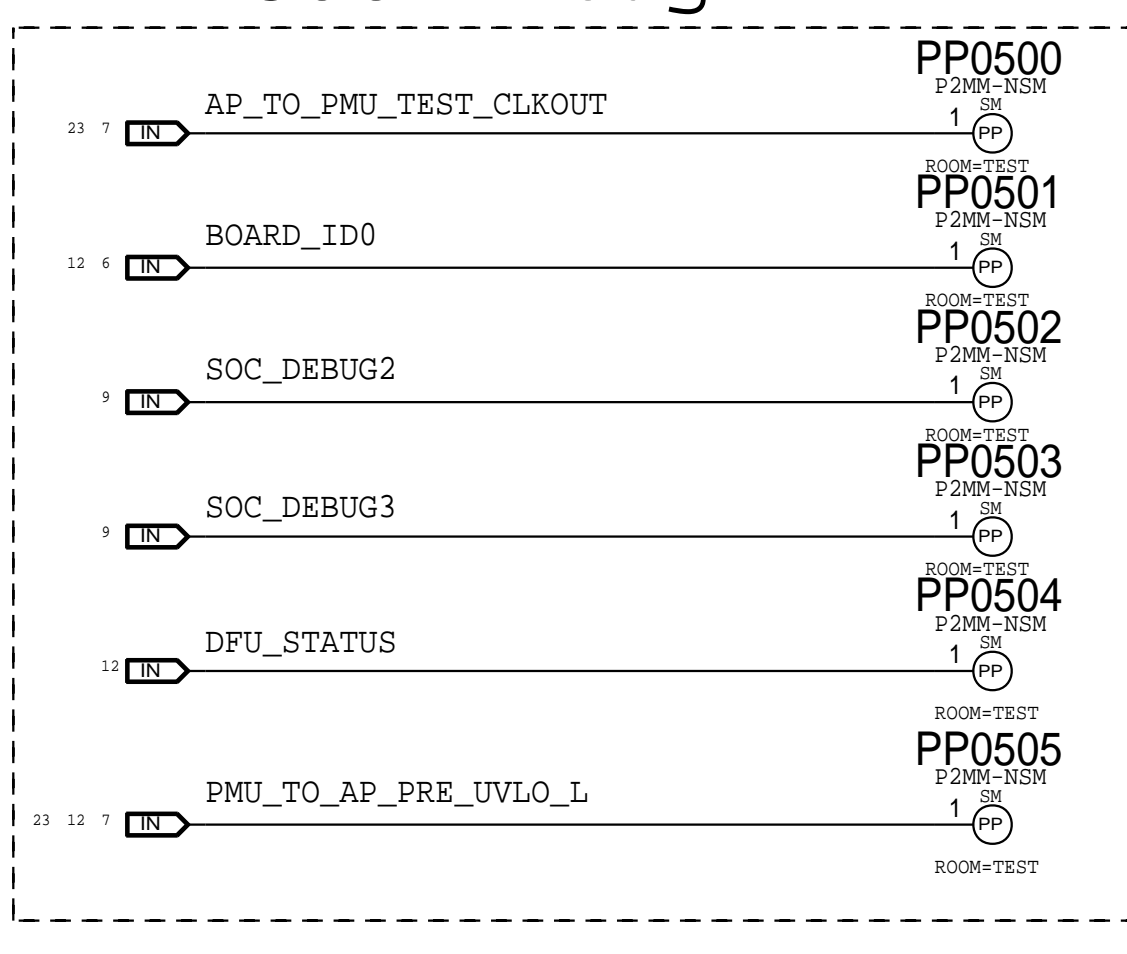
### VALIDATION PP's



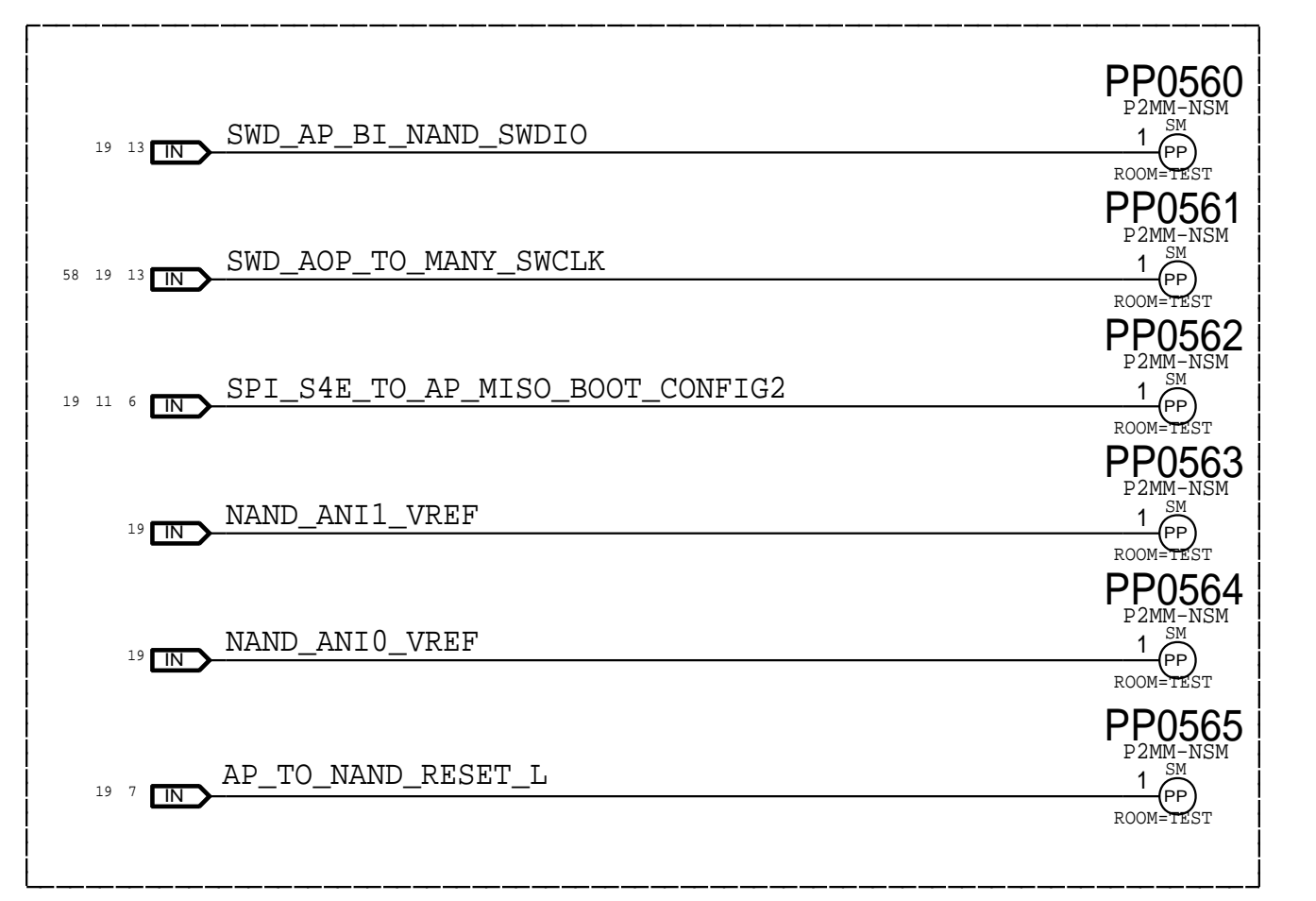
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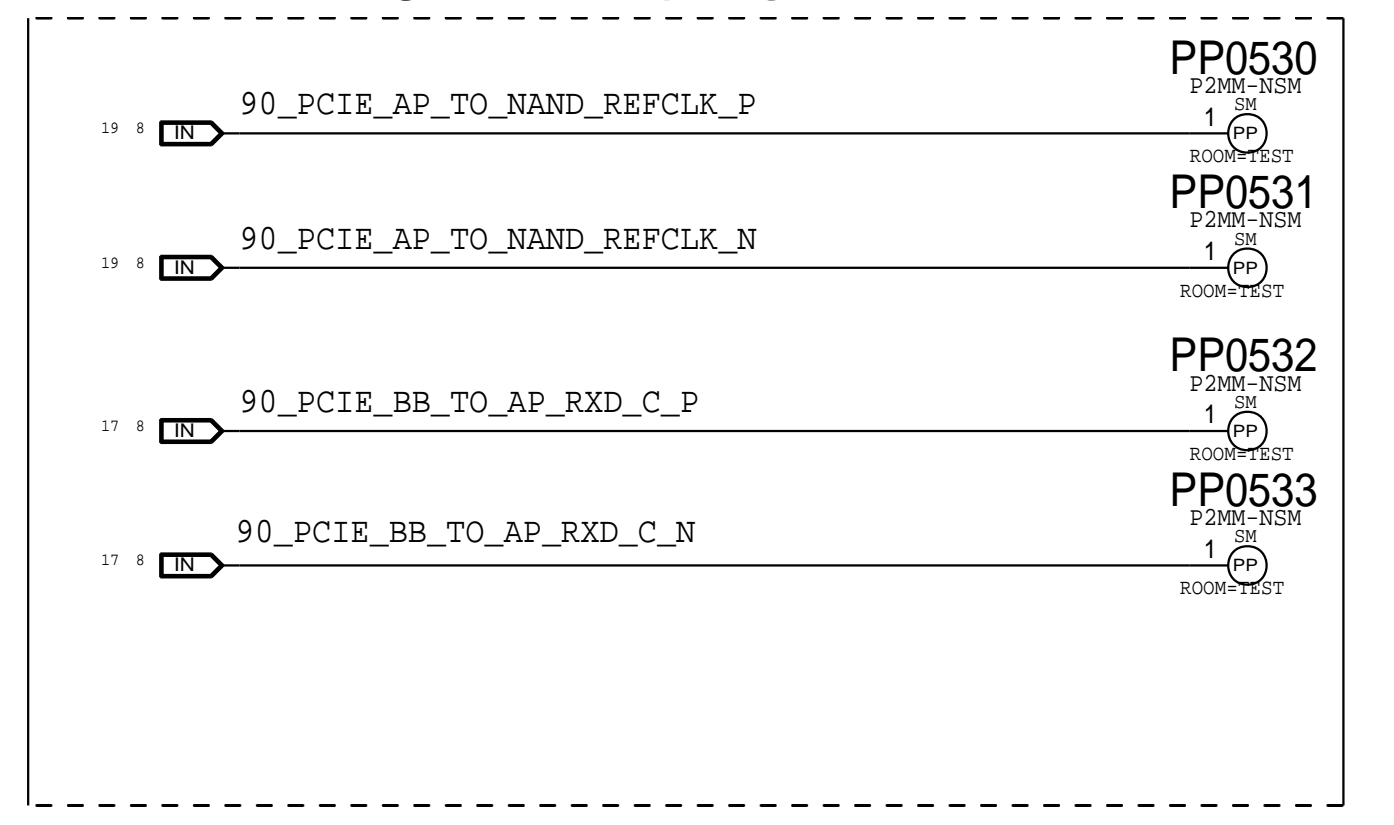
### SOC Debug



### NAND



### PCIE Refclk



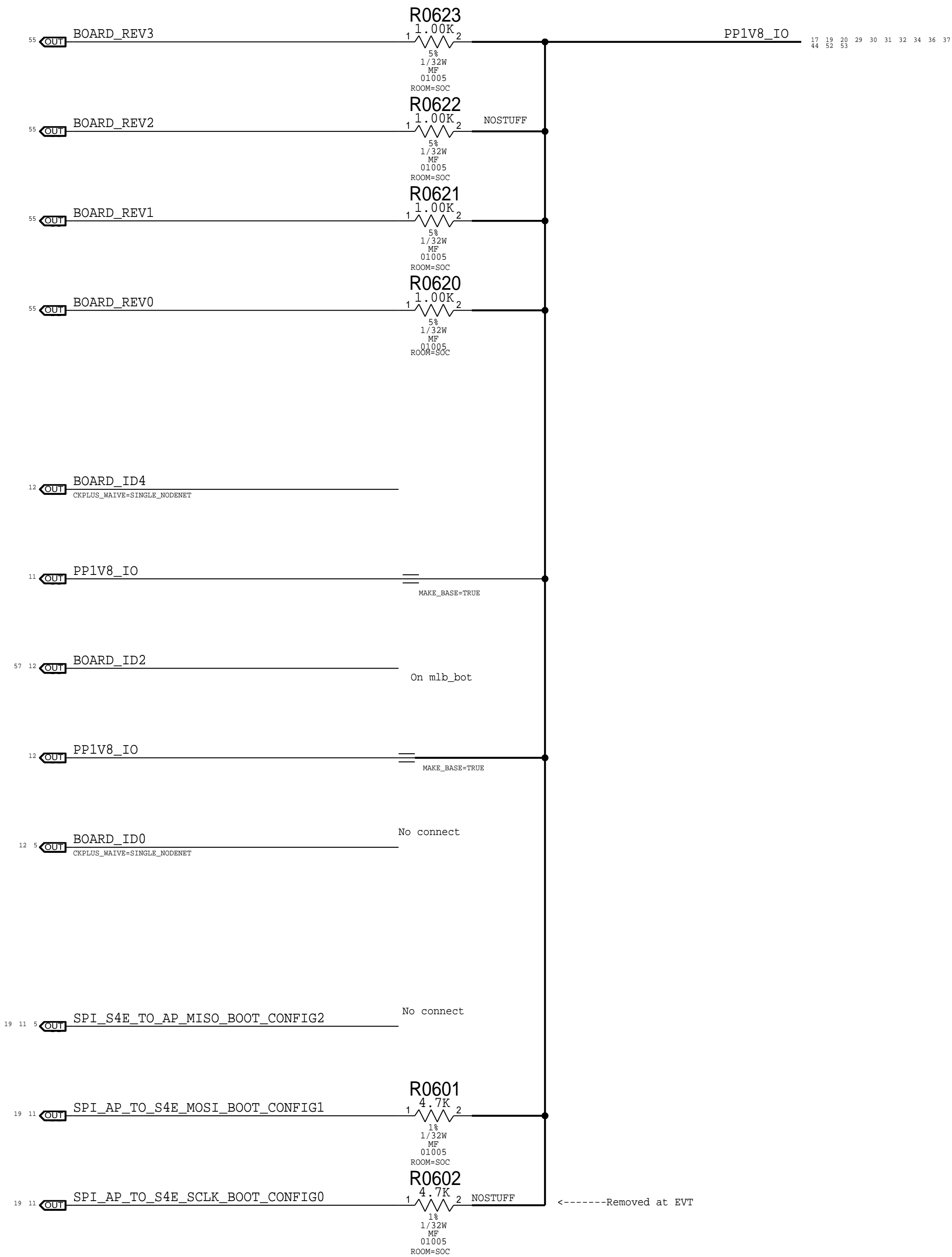
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# TOP BOARD ONLY CONFIGURATION IS D33 MLB MAV BOTTOM BOARD SELECTS ICE/MAV and D32/D33



BOOTSTRAPPING: BOARD REV  
BOARD ID  
BOOT CONFIG



SELECTED --->

DEFAULT --->

POR --->

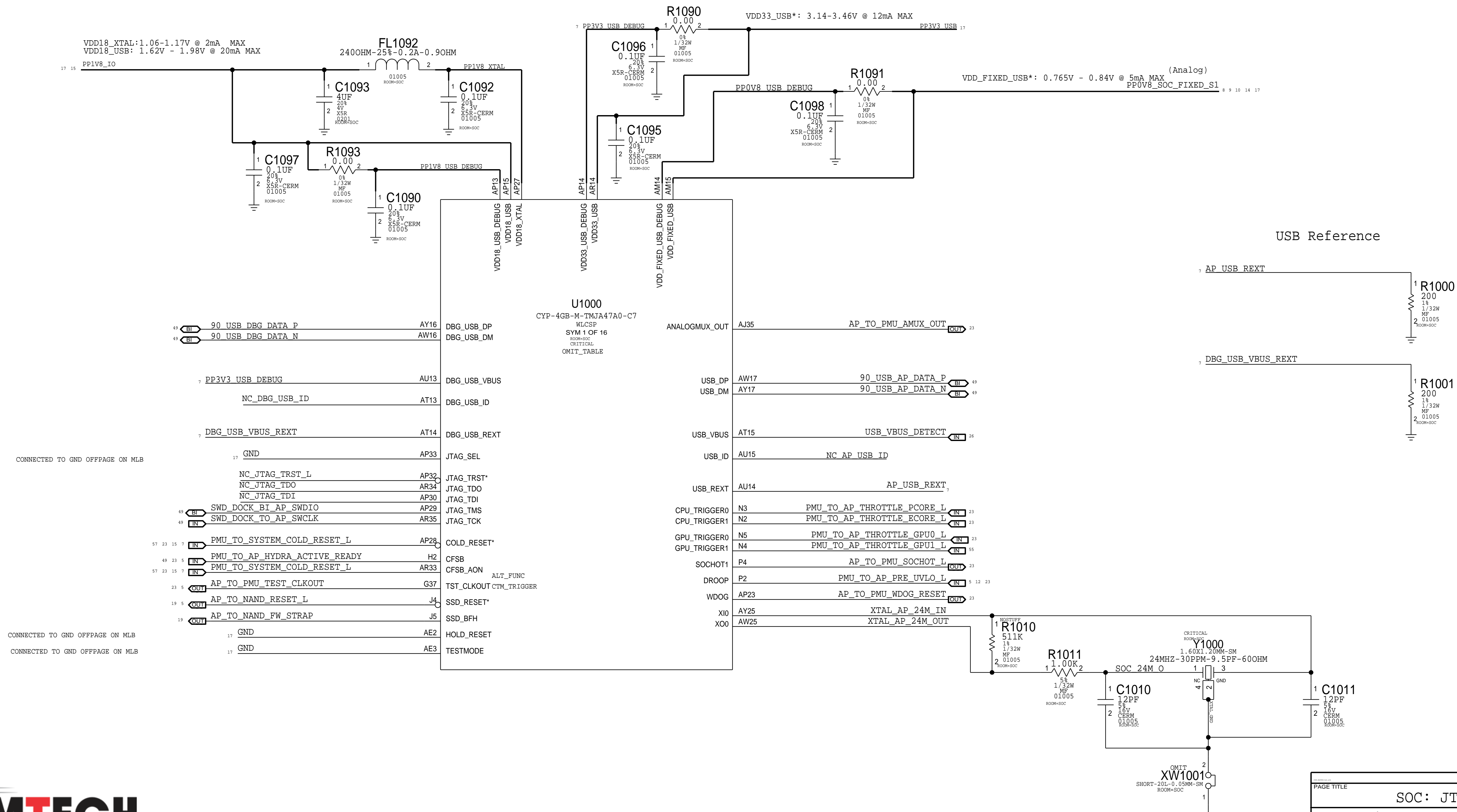
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Float = Low PU = High				
	3	2	1	0
	Build Major		Build Minor	
Proto 1	1	1	1	1
(Spare)	1	1	1	0
Proto 2	1	1	0	1
(Spare)	1	1	0	0
EVT	1	0	1	1
(Spare)	1	0	1	0
Carrier	0	1	1	1
(Spare)	0	1	1	0
DVT	0	0	1	1
(Spare)	0	0	1	0
(Spare)	0	0	0	1
PVT	0	0	0	0

Board ID[4:0]					
Float = Low PU = High					
	4	3	2	1	0
	Denali = 0, Imola = 1	Mav = 0, Ice = 1	00=Open 01=D33 10=N84 11=D32	MLB = 0, Dev = 1	
D32 MLB	0	0	1	1	0
D32p MLB	1	0	1	1	0
D32 Dev	0	0	1	1	1
D32p Dev	1	0	1	1	1
D321 MLB	0	1	1	1	0
D321p MLB	1	1	1	1	0
D321 Dev	0	1	1	1	1
D321p Dev	1	1	1	1	1
D33 MLB	0	0	0	1	0
D33p MLB	1	0	0	1	0
D33 Dev	0	0	0	1	1
D33p Dev	1	0	0	1	1
D331 MLB	0	1	0	1	0
D331p MLB	1	1	0	1	0
D331 Dev	0	1	0	1	1
D331p Dev	1	1	0	1	1

Boot Config [2:0]			
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SPI NOR on SPI0 12 MHz	0	0	0
SPI NOR on SPI0 12 MHz Test	0	0	1
SPI NAND on SPI0 12 MHz	0	1	0
SPI NAND on SPI0 12 MHz Test	0	1	1
SPI NOR on SPI0 40 MHz	1	0	0
SPI NOR on SPI0 40 MHz Test	1	0	1
SPI NOR on SPI0 6 MHz	1	1	0
SPI NOR on SPI0 6 MHz Test	1	1	1

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# SOC - USB, JTAG, XTAL

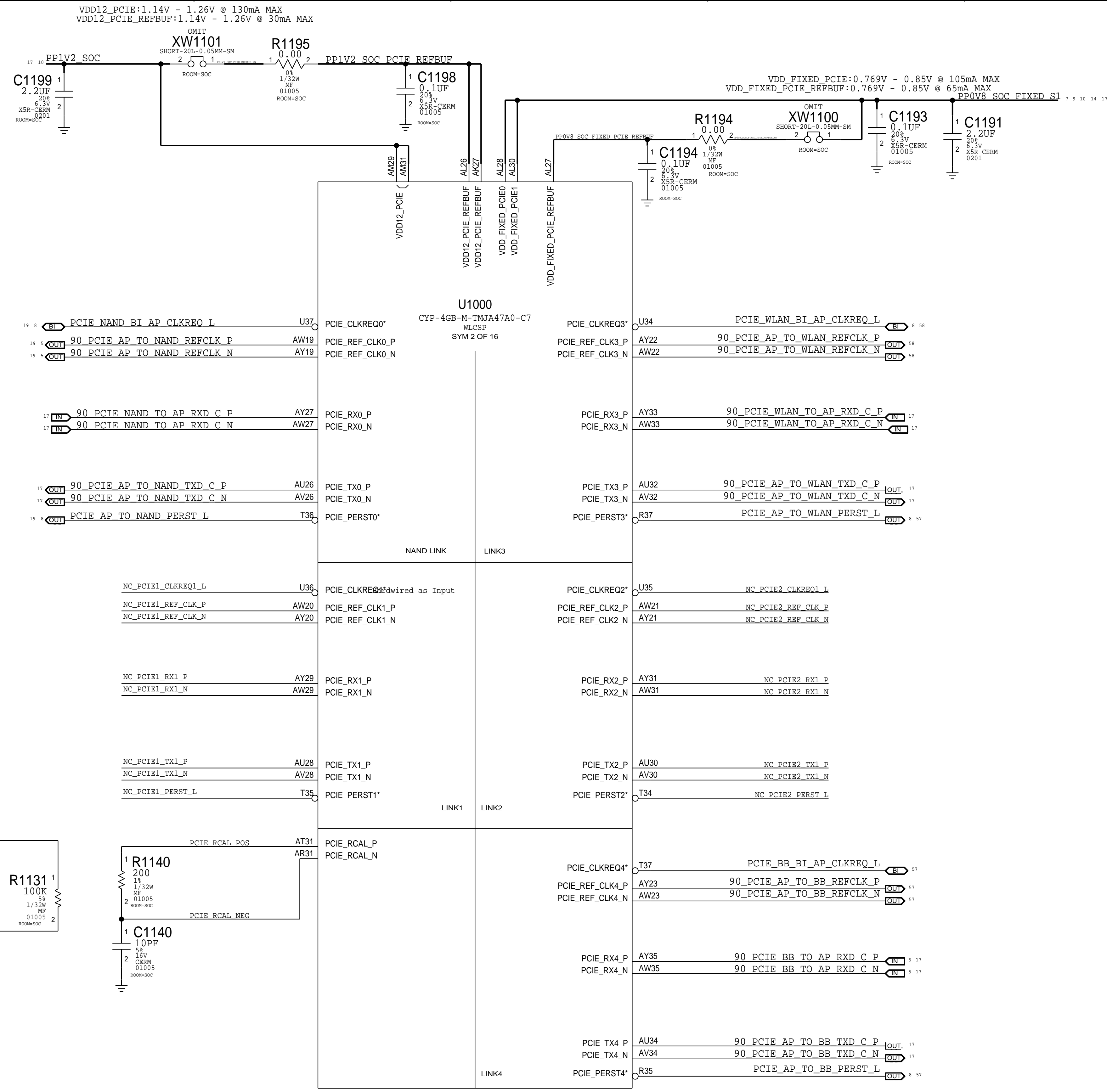


## USB Reference

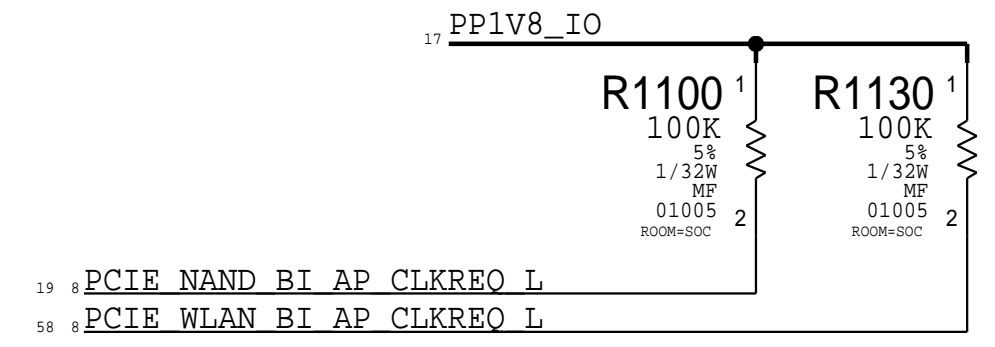


PAGE TITLE		
SOC: JTAG, USB, XTAL		
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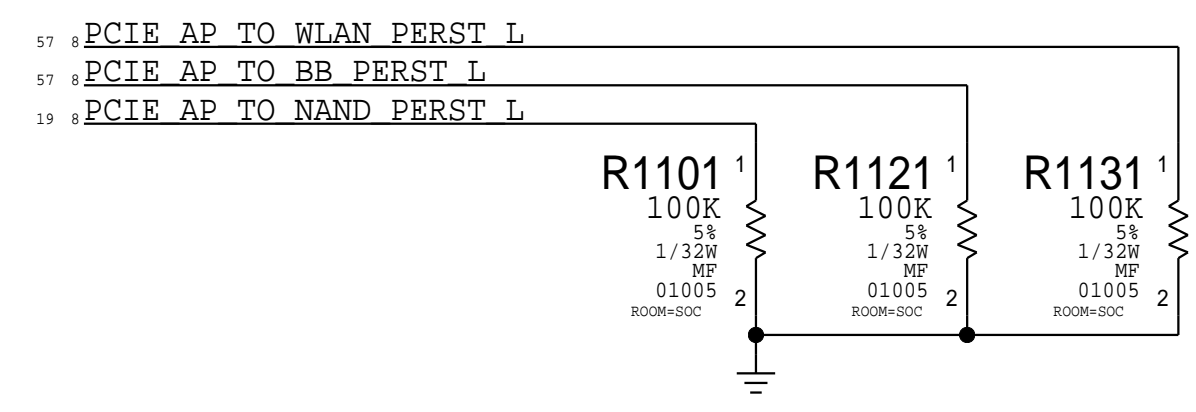
# SOC - PCIE



PCie BB CLKREQ PU on BB domain  
PCie Clock Request Pull-Ups



PCie Reset Pull-Downs



PCIE LINK 0

PCIE LINK 3

PCIE LINK 4



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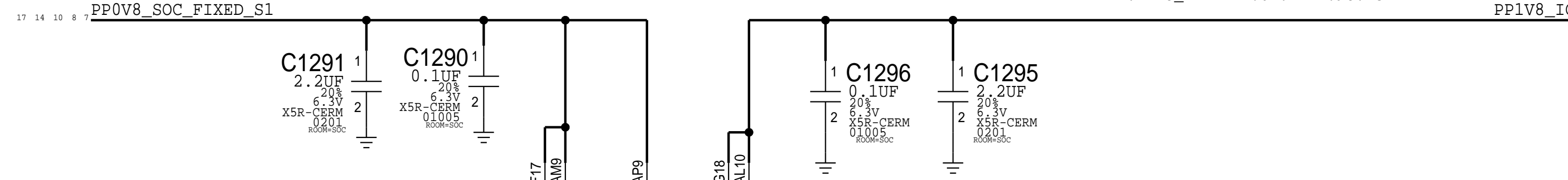
# SOC - MIPI



NEED MIPI LANE AND POLAIRTY SWAPPING MAP

(Analog)  
 VDD\_FIXED\_MIPID 0.769V - 0.85V @ TBDma MAX  
 VDD\_FIXED\_MIPIC 0.769V - 0.85V @ TBDma MAX  
 VDD\_FIXED\_MIPID\_PLL 0.769V - 0.85V @ TBDma MAX

VDD18\_MIPI\*:1.62V - 1.98V @ TBDma MAX



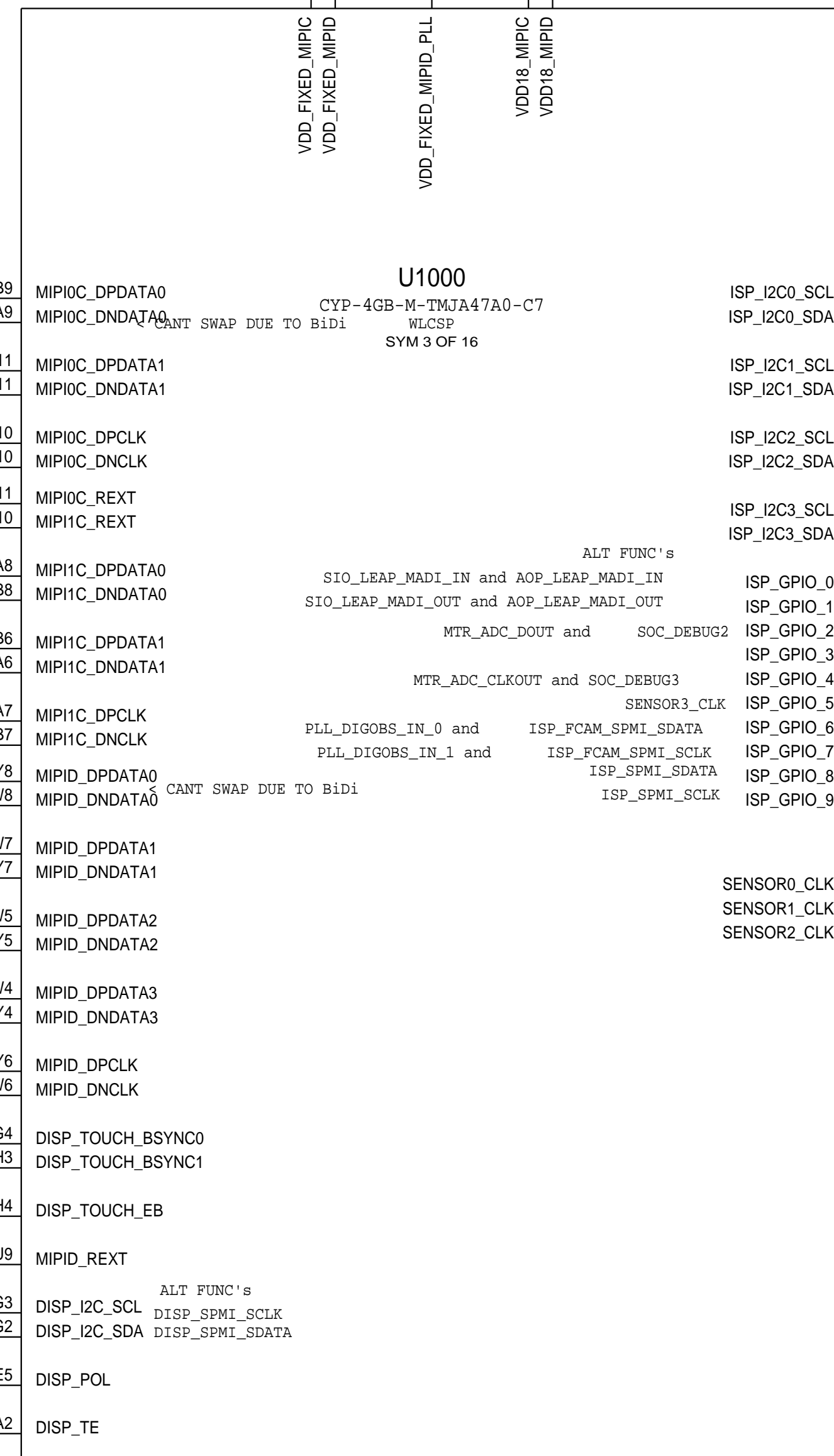
MIPI lanes can all flip polarity for routing purposes

Juliet MIPI

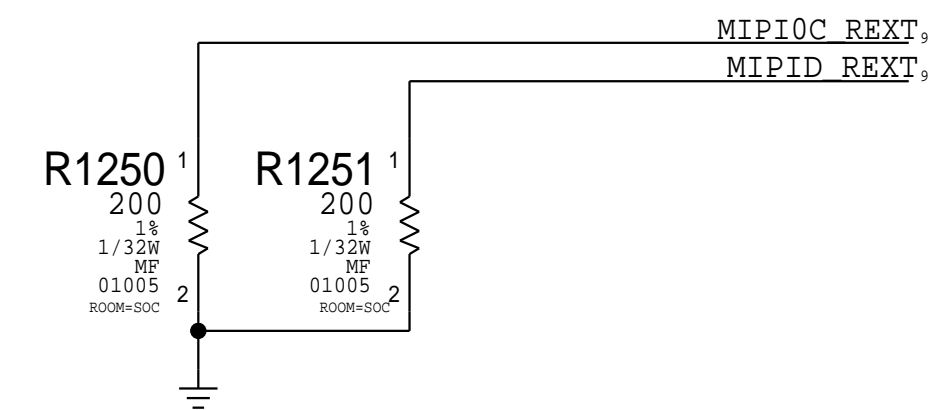
Display MIPI

GNDed offpage on MLB

GNDed offpage on MLB

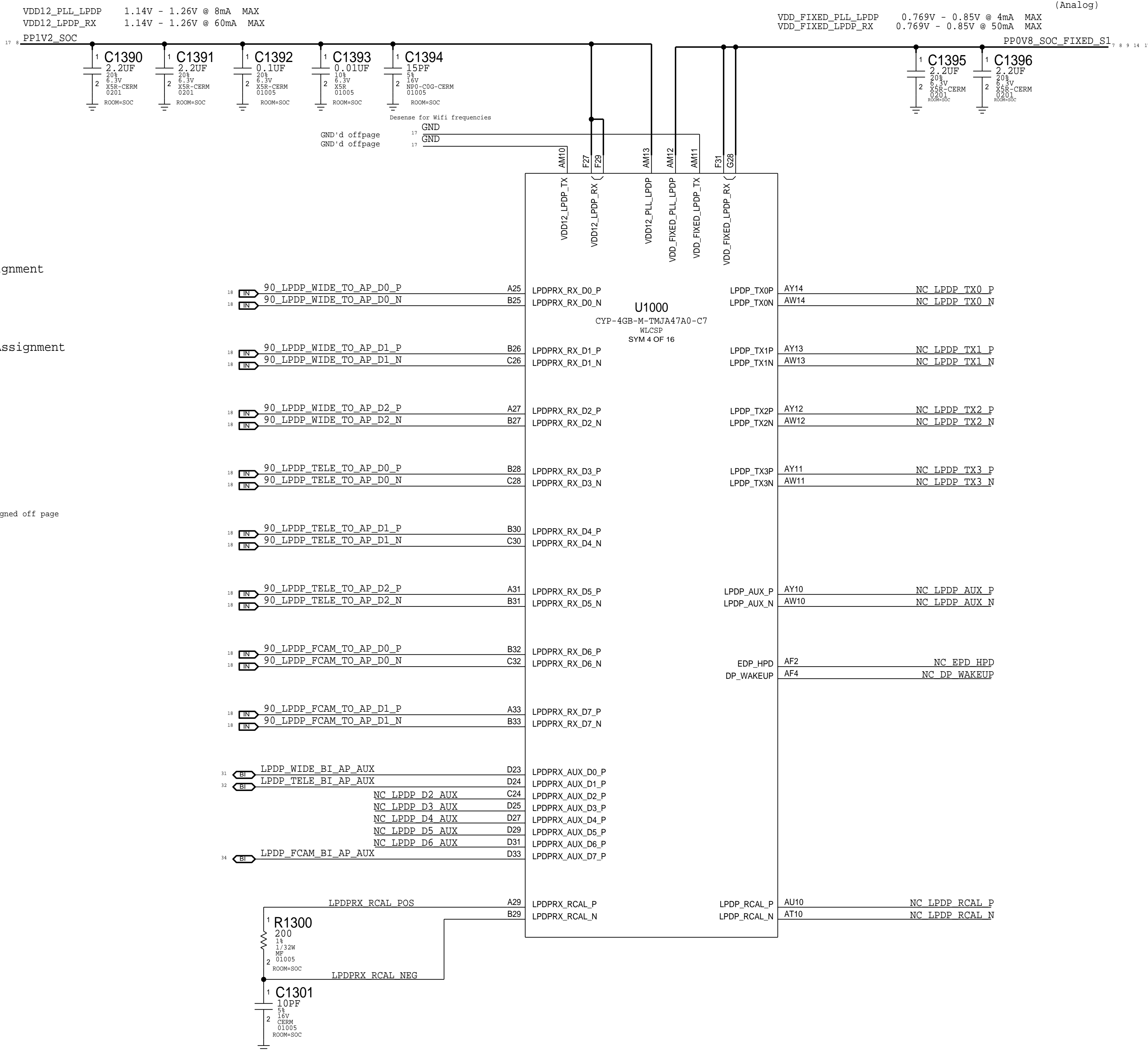


## MIPI Reference



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SOC: MIPI		
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	PAGE	12 OF 85
	SHEET	9 OF 60

# SOC - LPDP



### Dan LPDP Lane Assignment

Wide: 0-2  
Tele: 3-5  
Fcam: 6-7

### Justin LPDP Lane Assignment

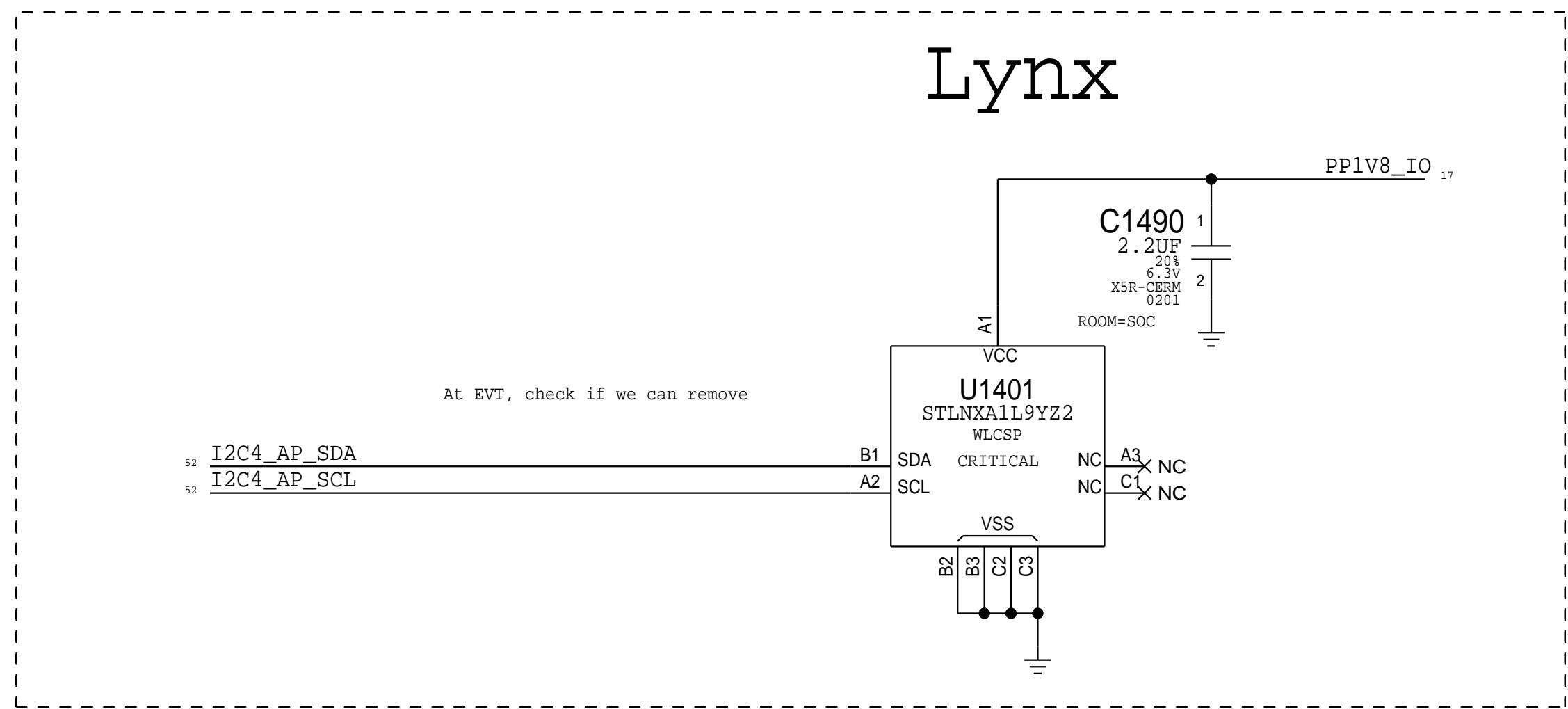
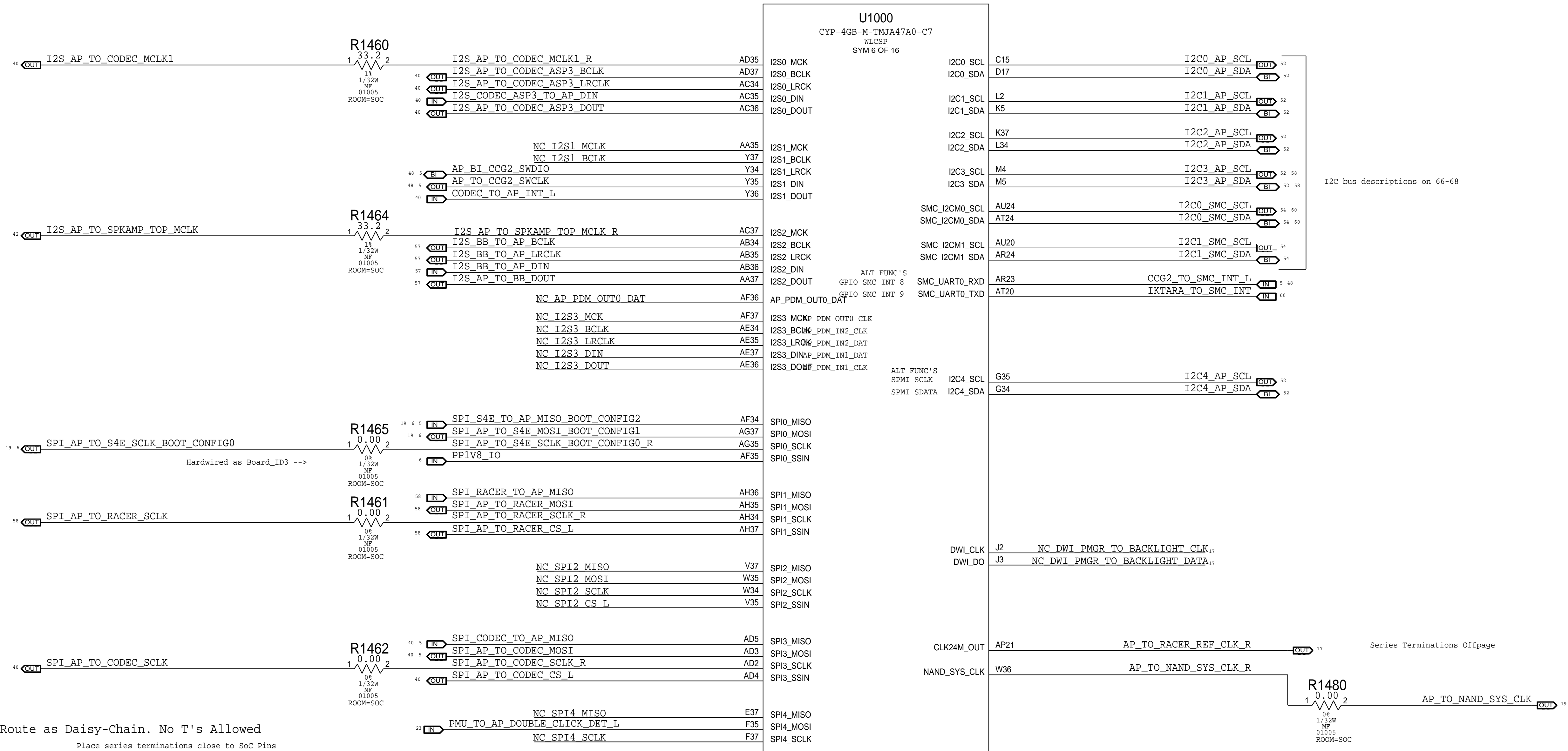
Wide: 2-4  
Tele: 5-7  
Fcam: 0-1

LPD Assigned off page



PAGE TITLE			SOC: LPDP		
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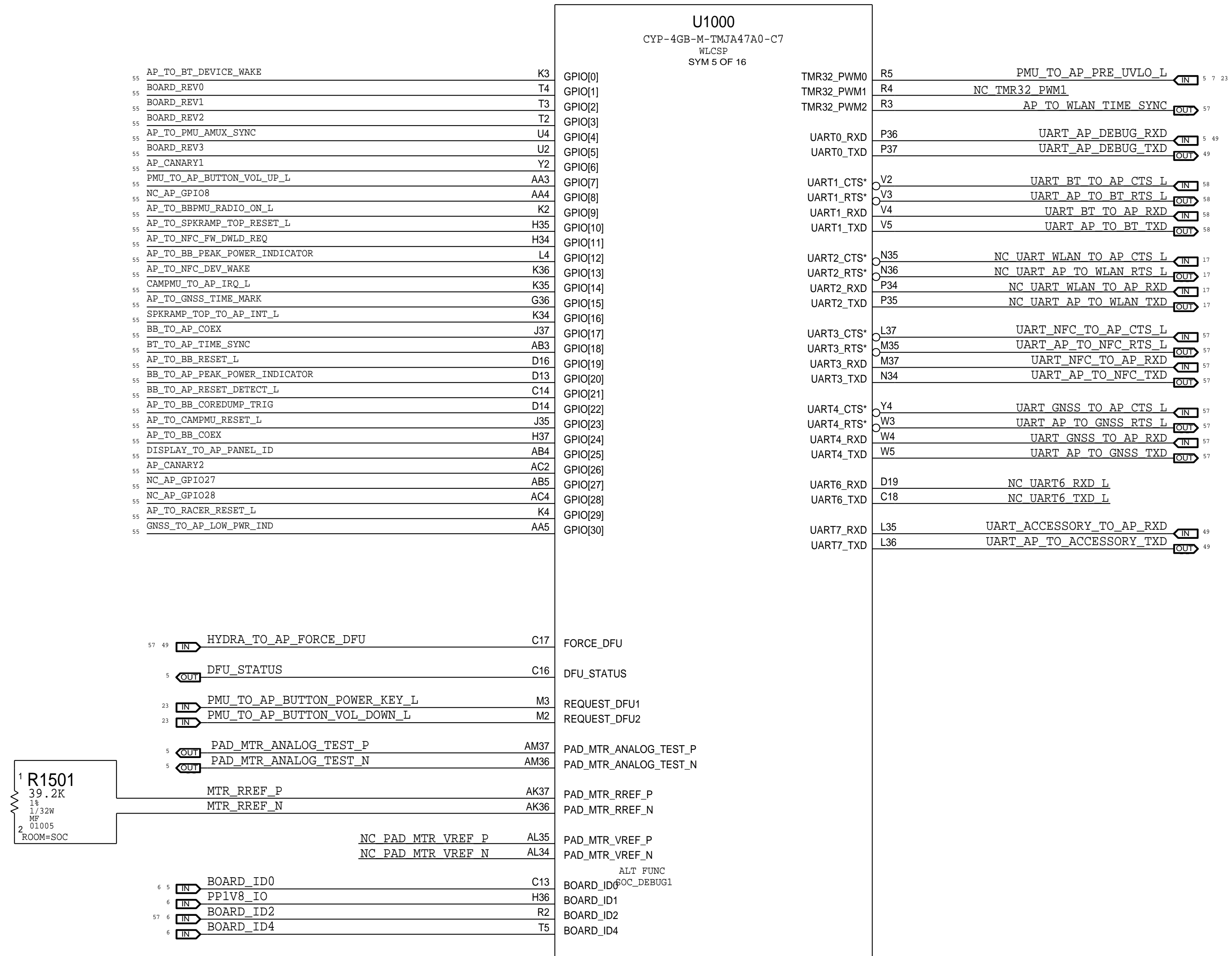
# SOC - SERIAL INTERFACES



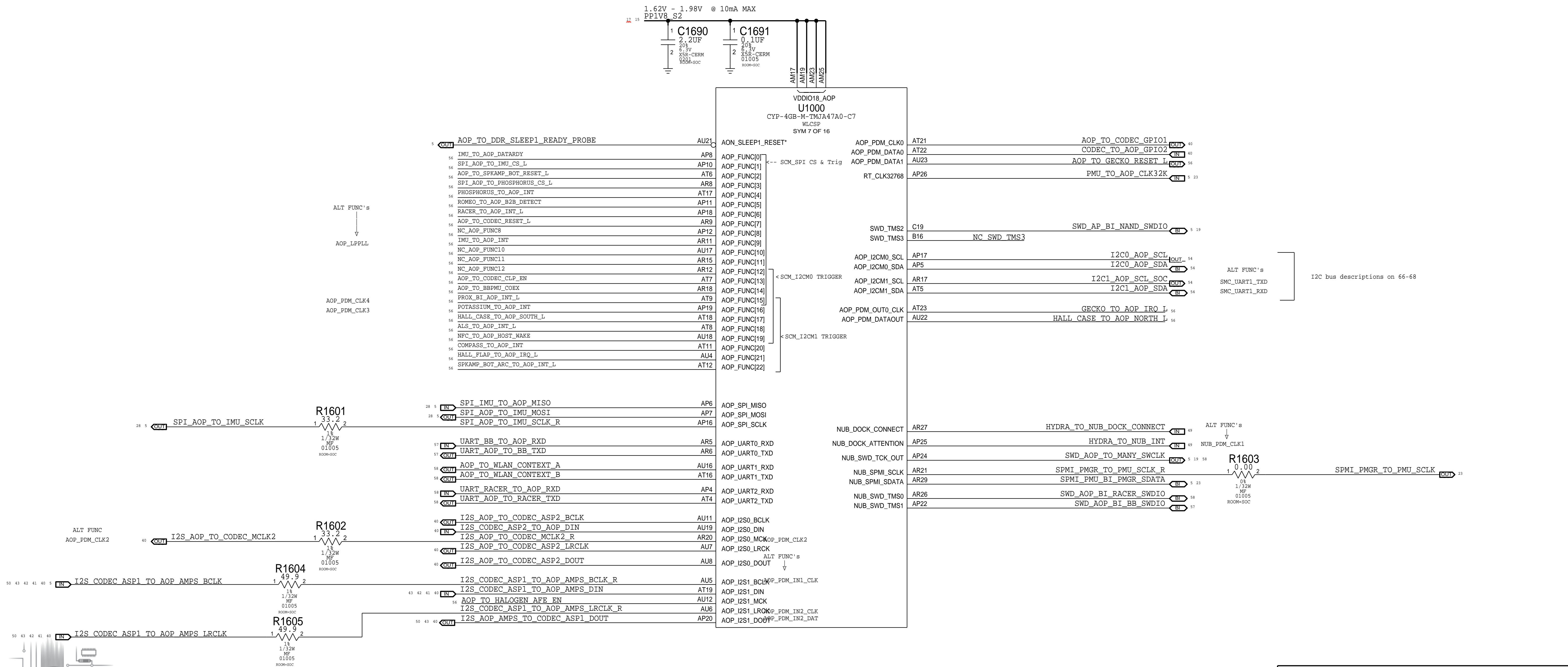
PAGE TITLE			SOC: SERIAL		
DRAWING NUMBER		051-02545	SIZE	D	
REVISION		7.0.0	BRANCH		
PAGE		14 OF 85	SHEET		
SHEET		11 OF 60	NOTICE OF PROPRIETARY PROPERTY: THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE INC. THE POSSESSOR AGREES TO THE FOLLOWING: I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IT IN WHOLE OR PART IV ALL RIGHTS RESERVED		

# SOC - GPIO INTERFACES

GPIOs are wired on page 70



# SOC - AOP



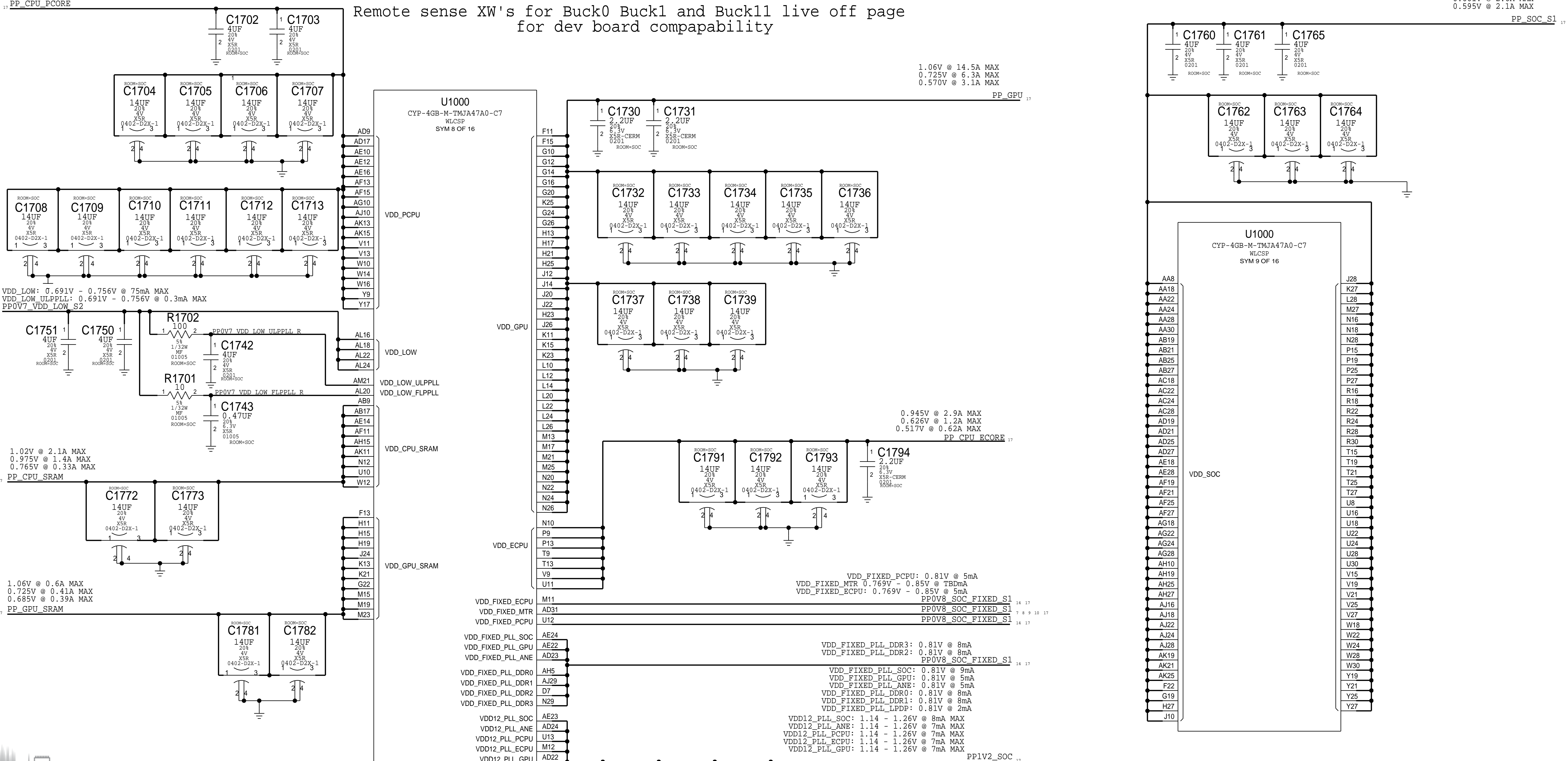
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SOC: AOP		
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BRANCH		
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# SOC - CPU, GPU & SOC RAILS

1.06V @ 13.8A MAX  
 0.905V @ 12.9A MAX  
 0.527V @ 2.4A MAX

0.783V @ 4.2A MAX  
 0.661V @ 2.6A MAX  
 0.595V @ 2.1A MAX

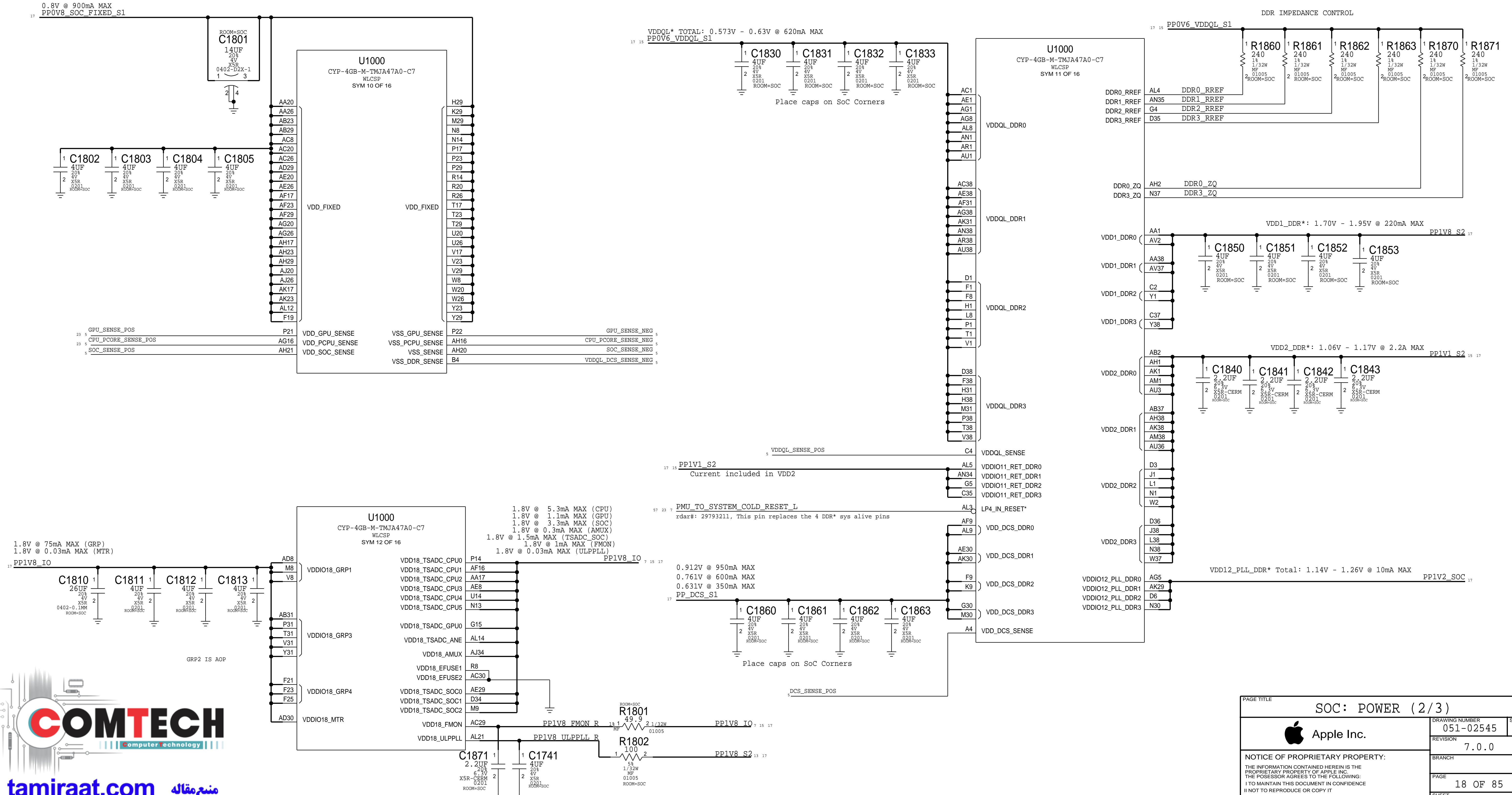
Remote sense XW's for Buck0 Buck1 and Buck11 live off page for dev board compapability



tamiraat.com منبع مقاله

PAGE TITLE		
SOC: POWER (1/3)		
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# SOC - CPU, GPU & SOC RAILS



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		SHEET	15 OF 60

# SOC - POWER SUPPLIES



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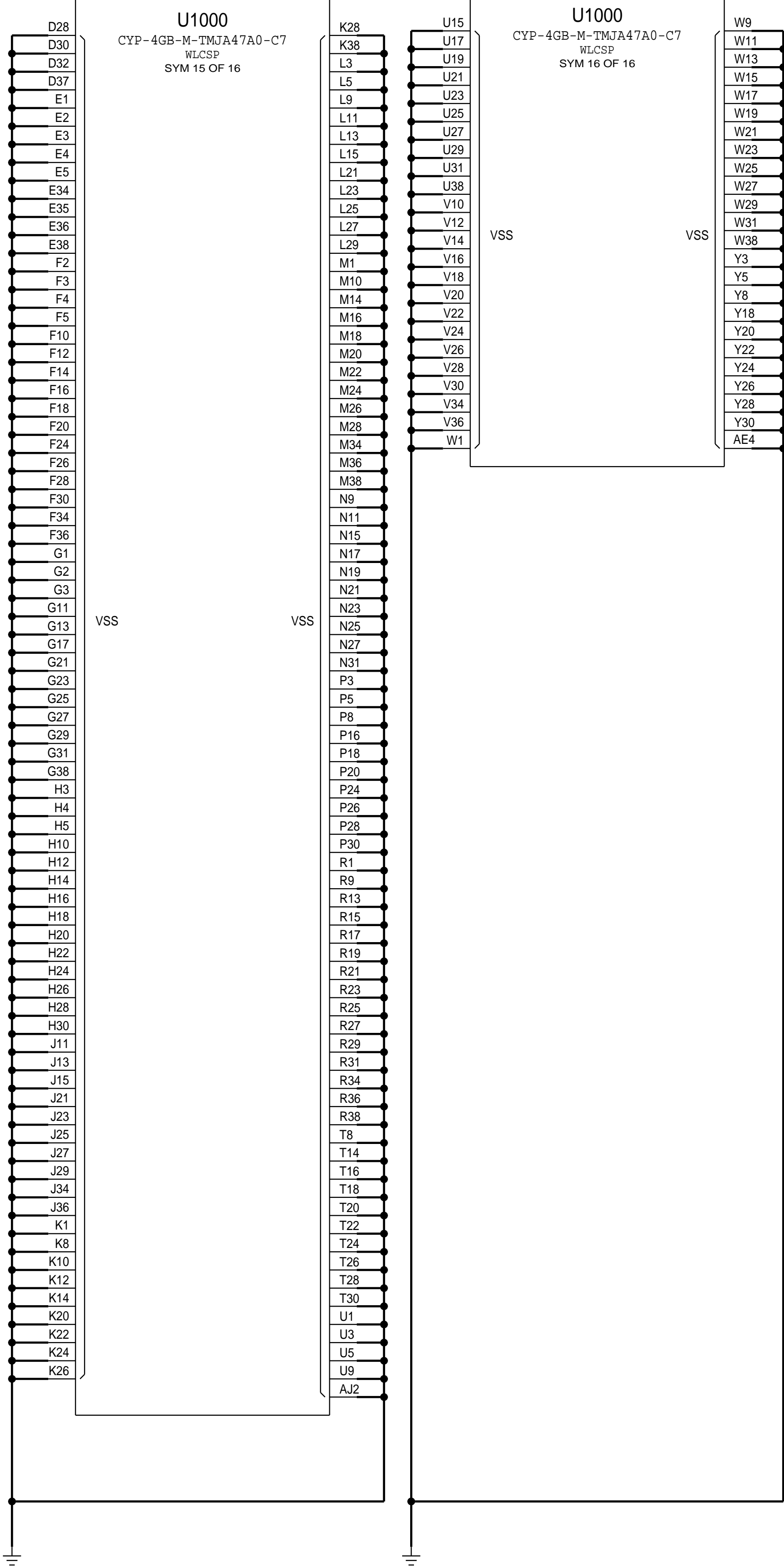
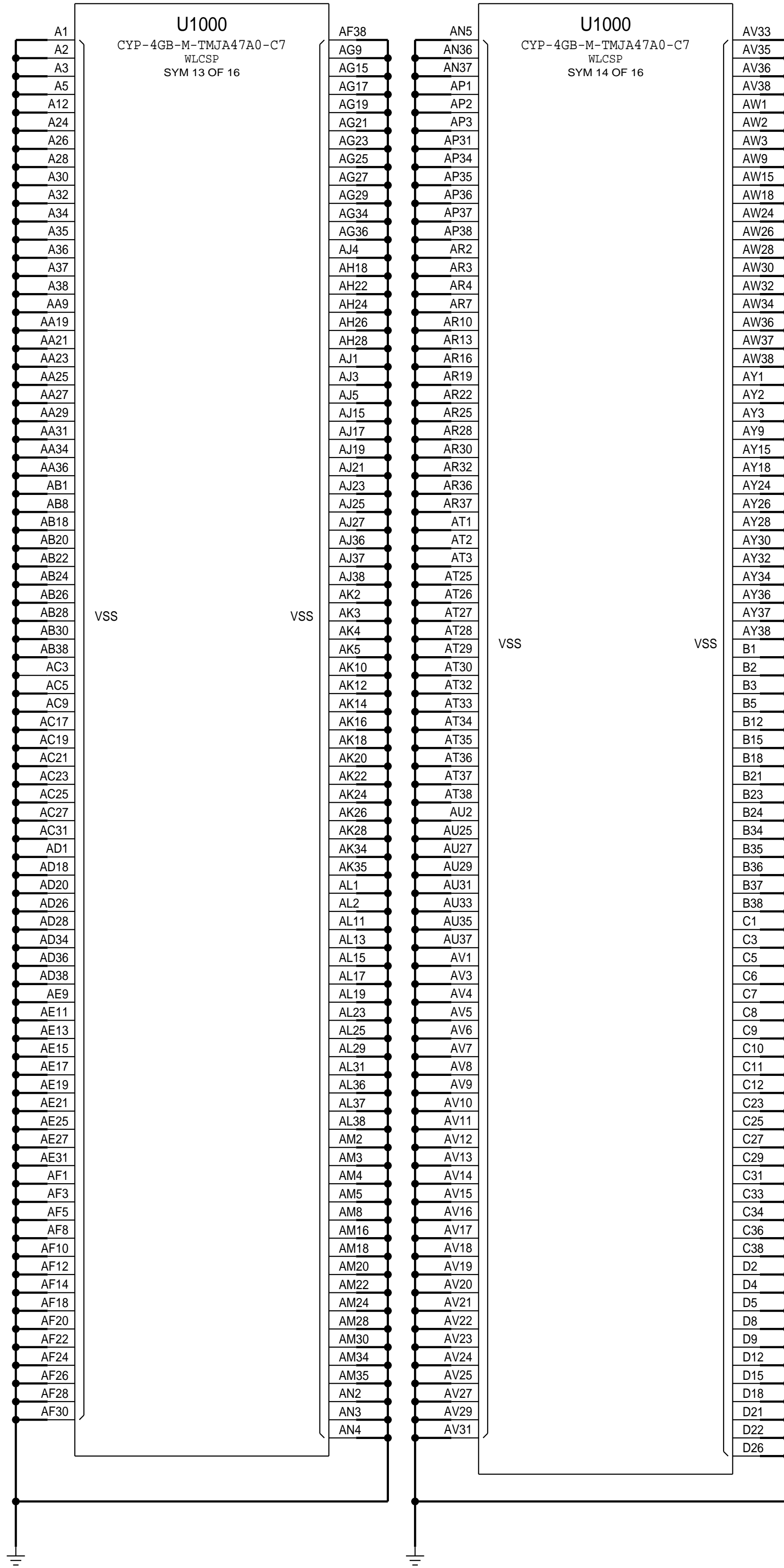
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PAGE TITLE			SOC: POWER (3/3)		
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Medusa Compatibility

PCIE Series Caps

FF Touch Compatibility

FF Display Compatibility

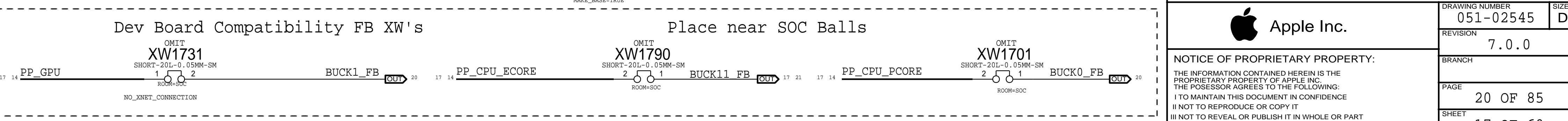
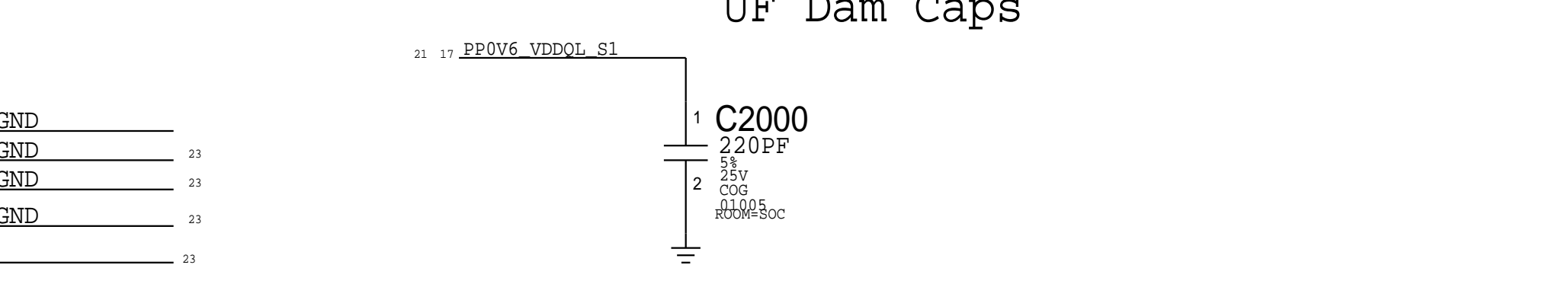
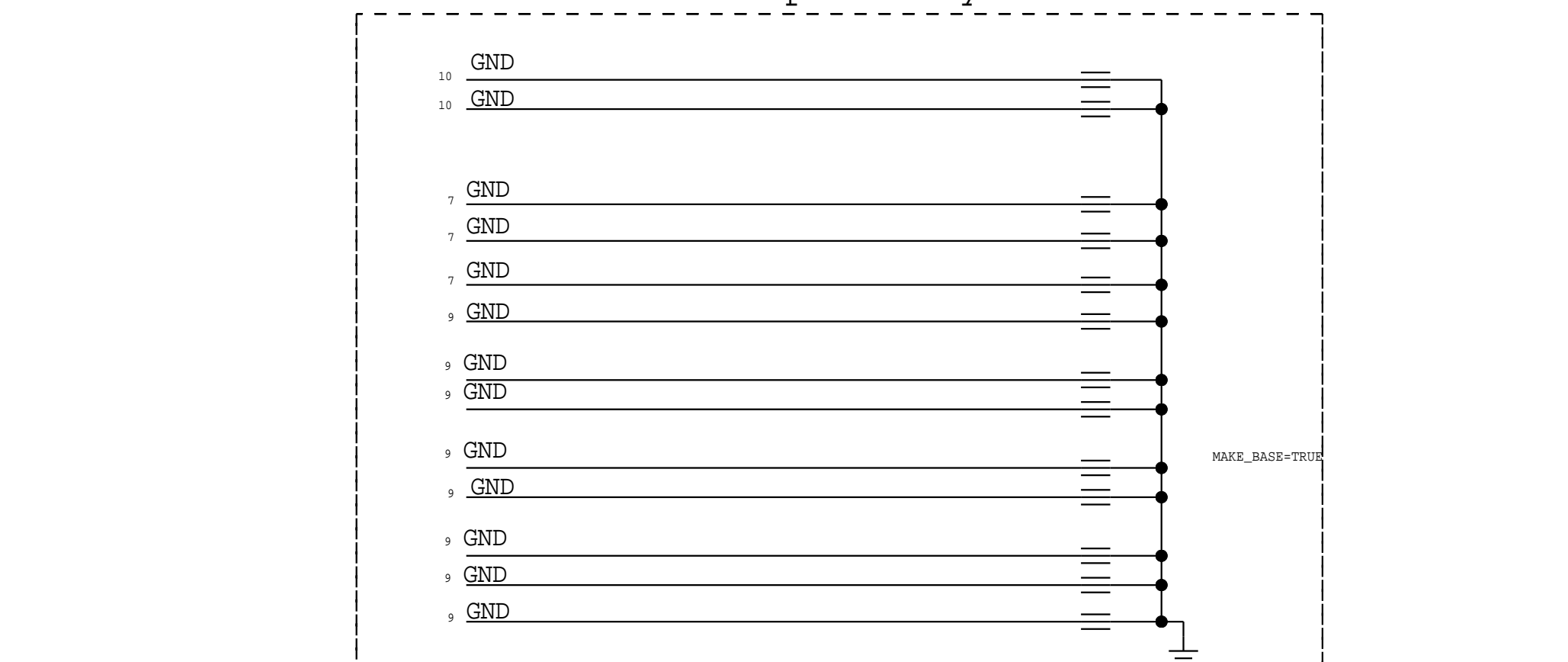
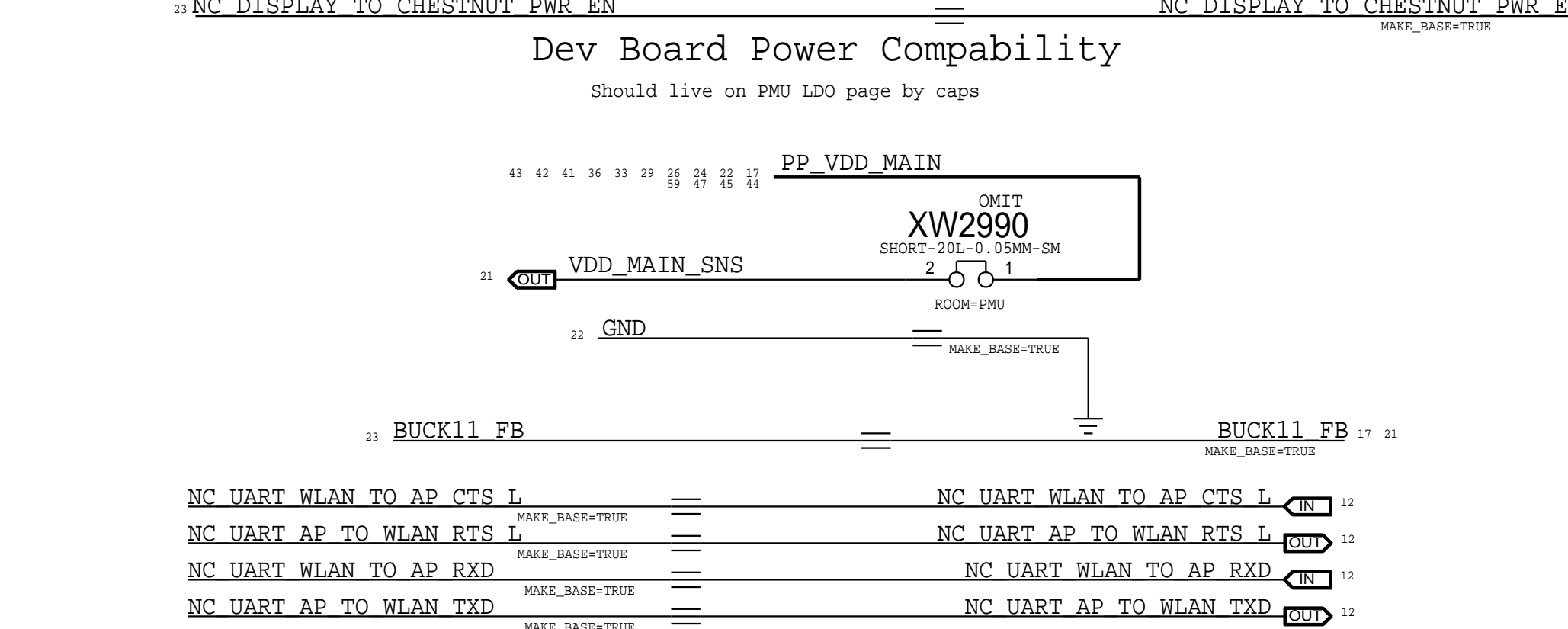
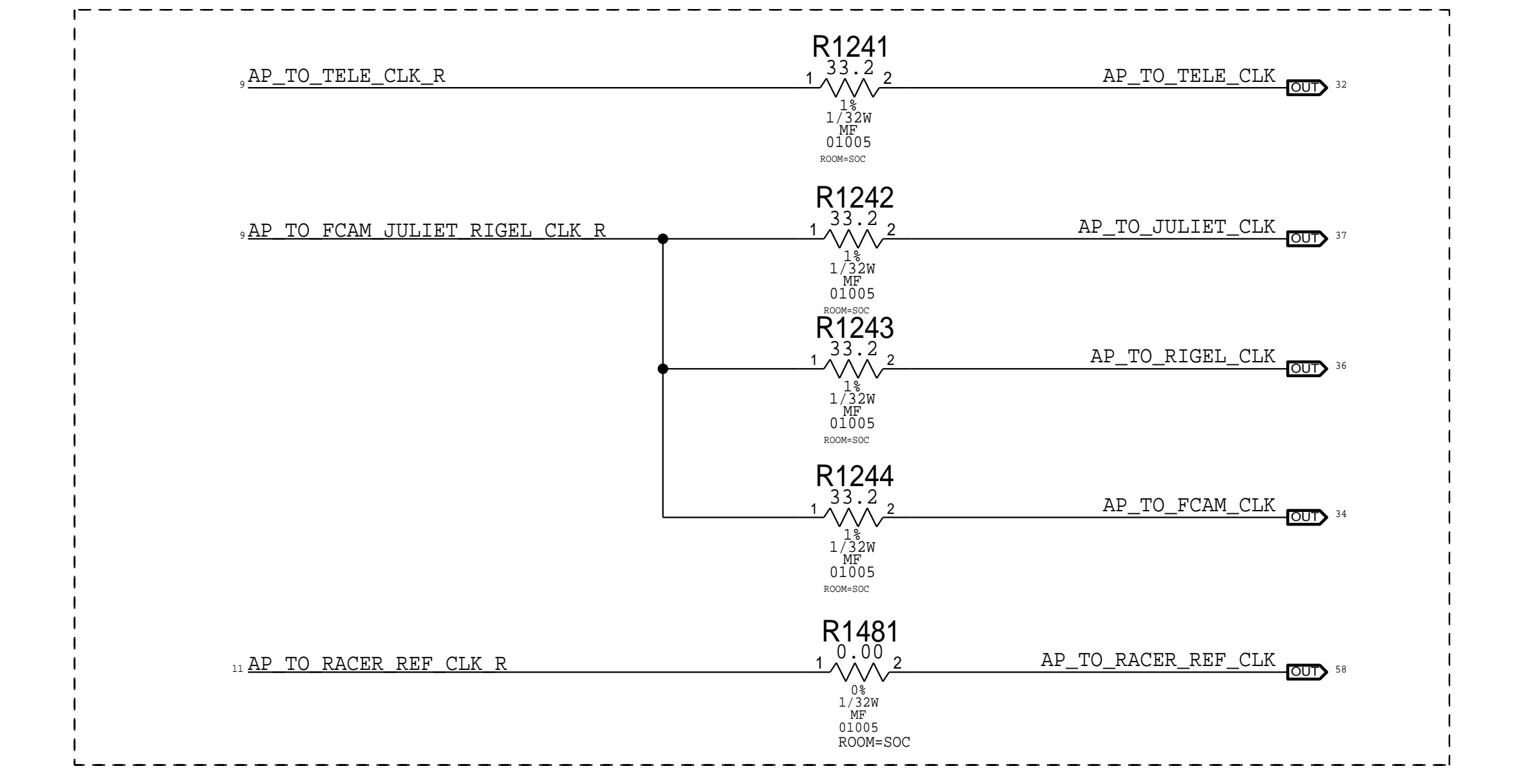
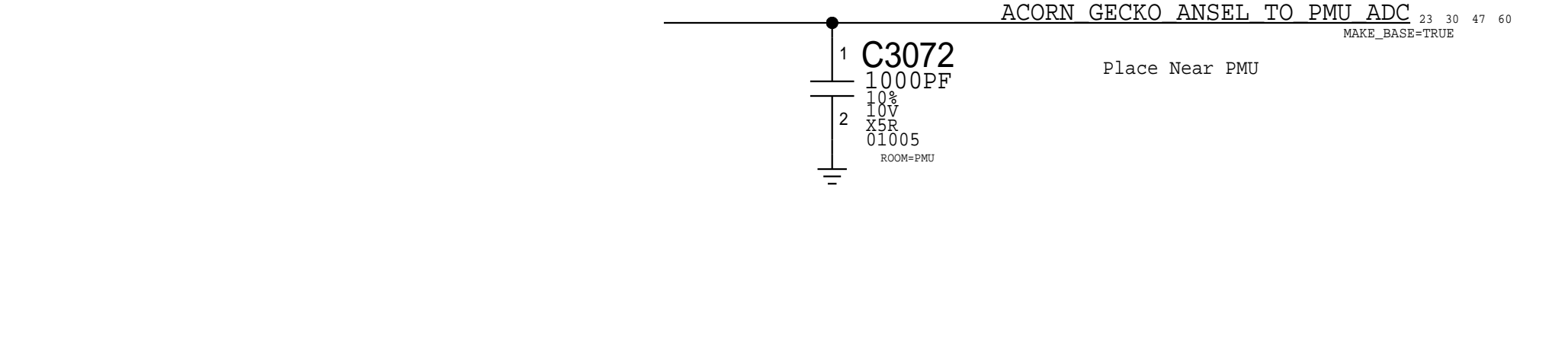
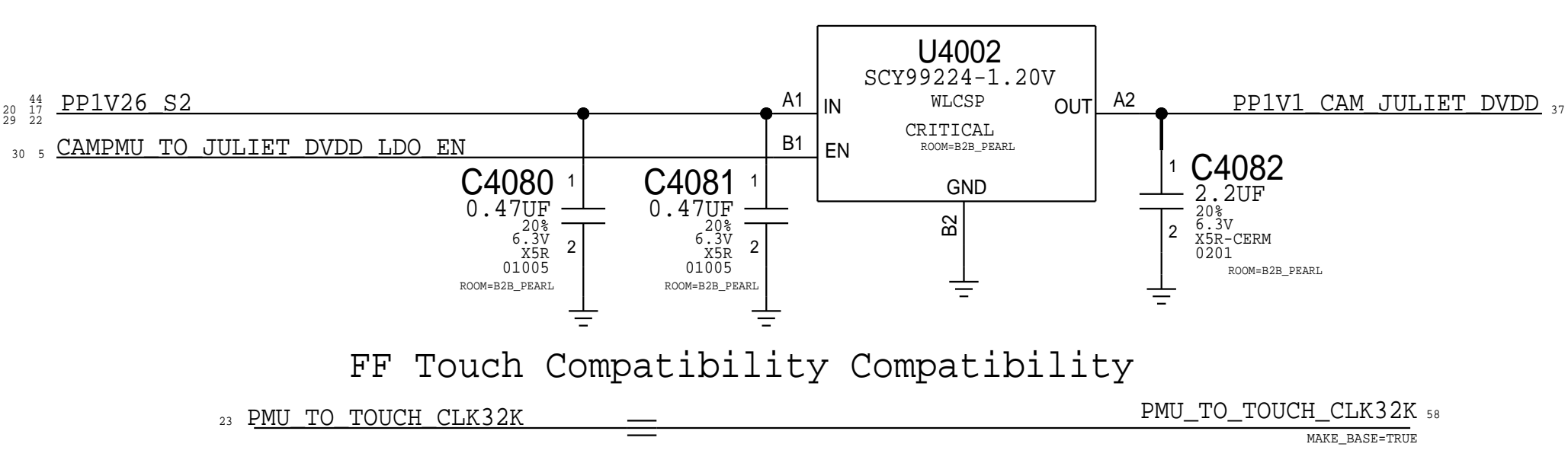
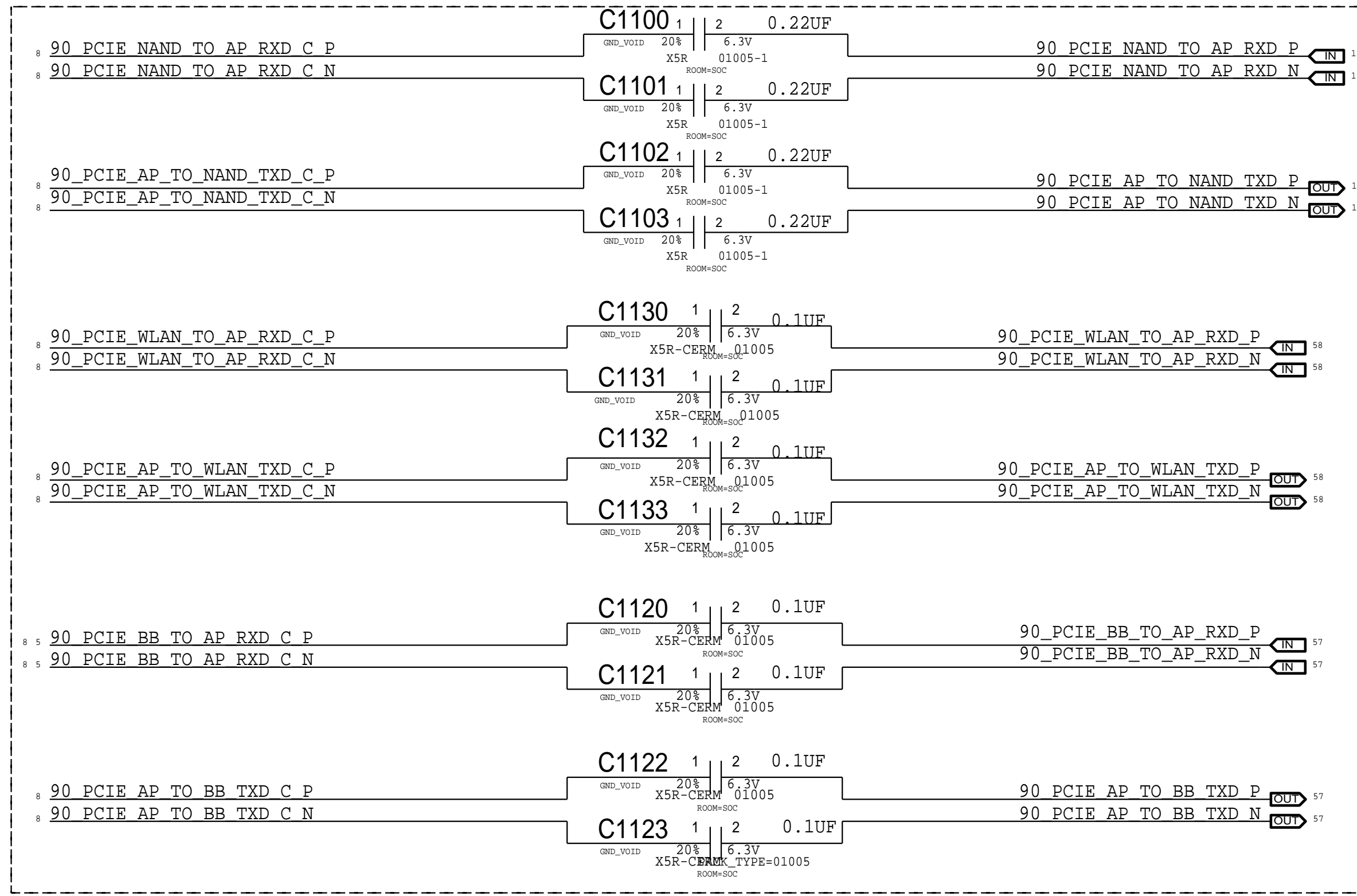
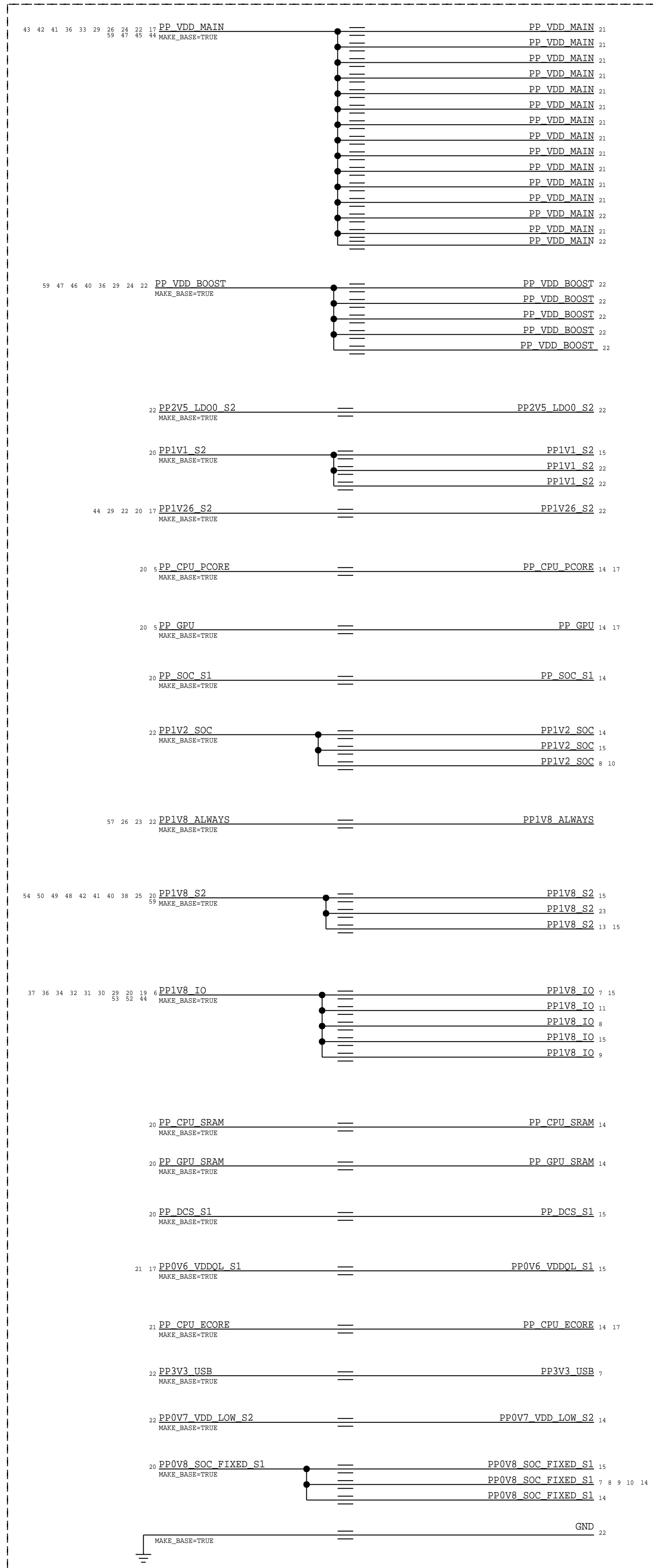
FF Specific CLK Series Terminations

Dev Board Compatibility GNDs

UF Dam Caps

Dev Board Compatibility FB XW's

Place near SOC Balls



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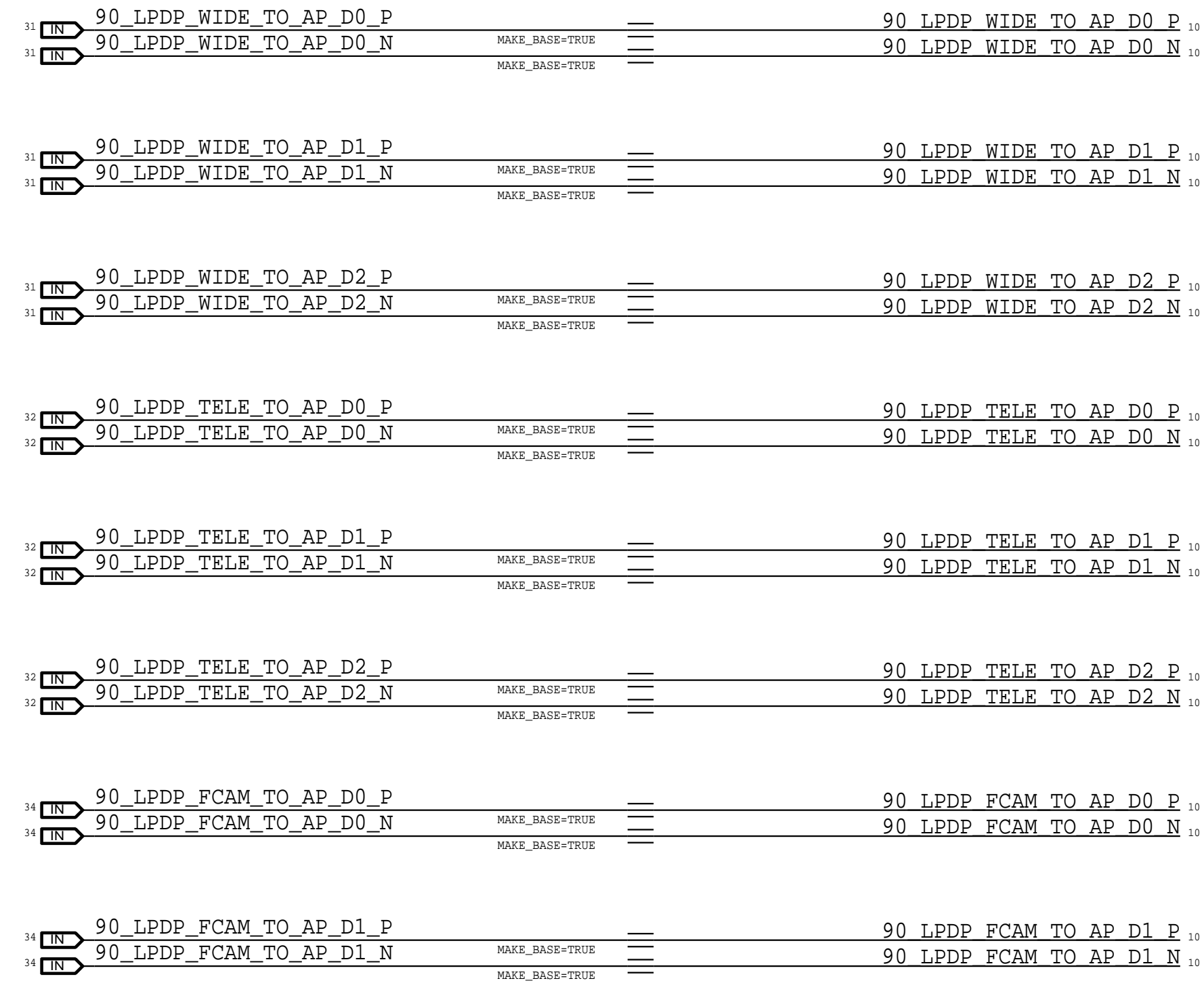
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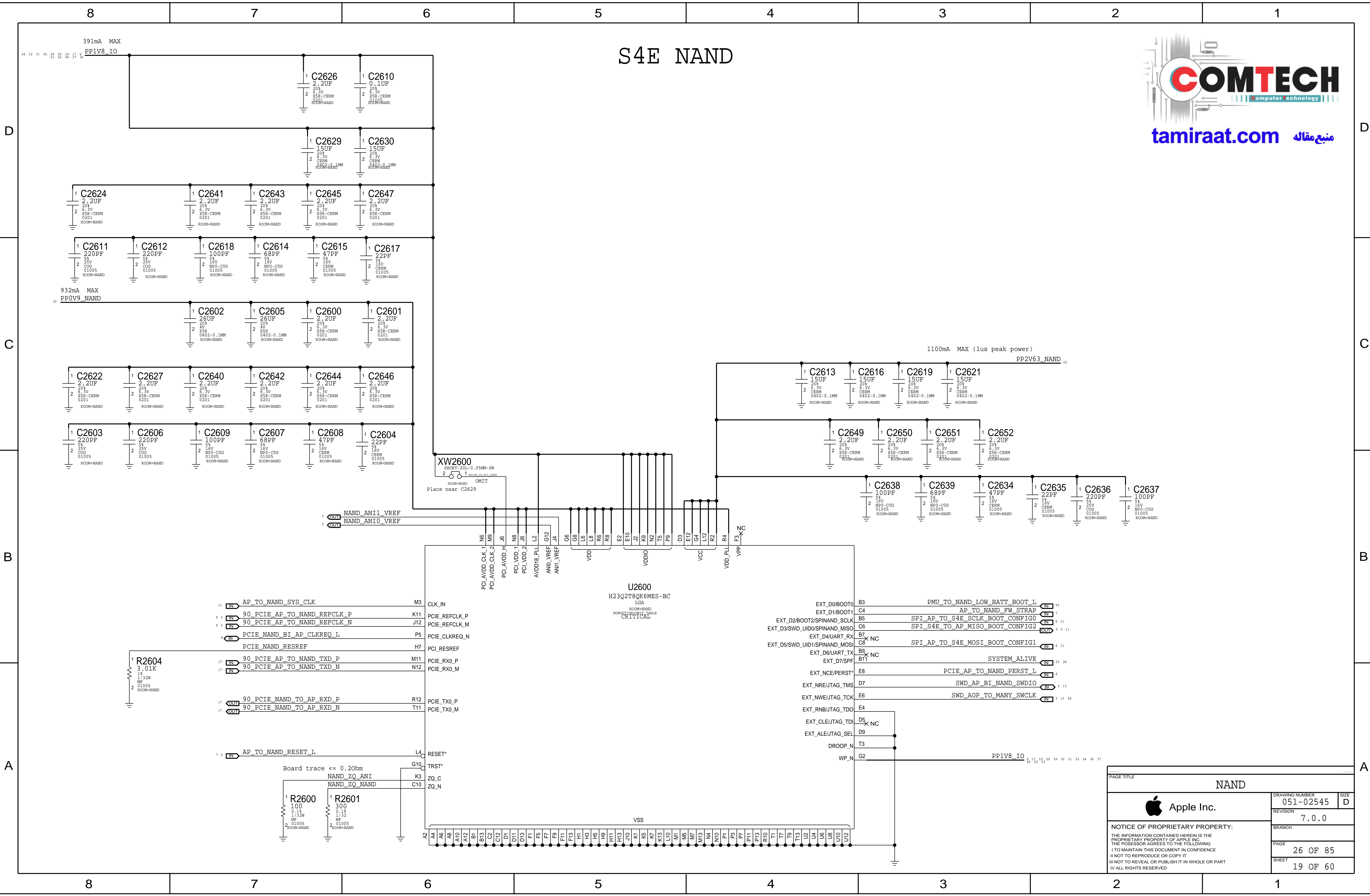
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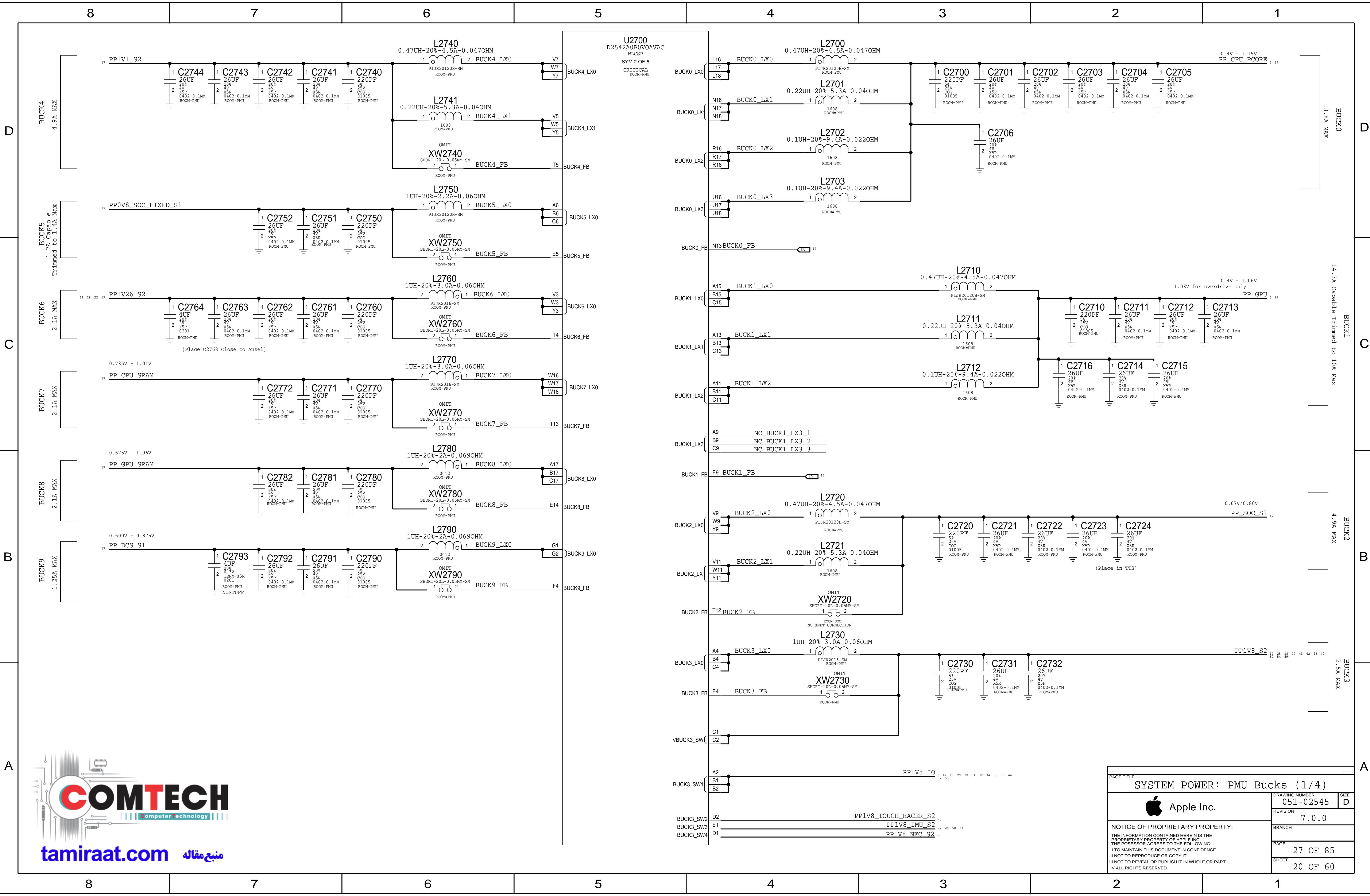


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# S4E NAND

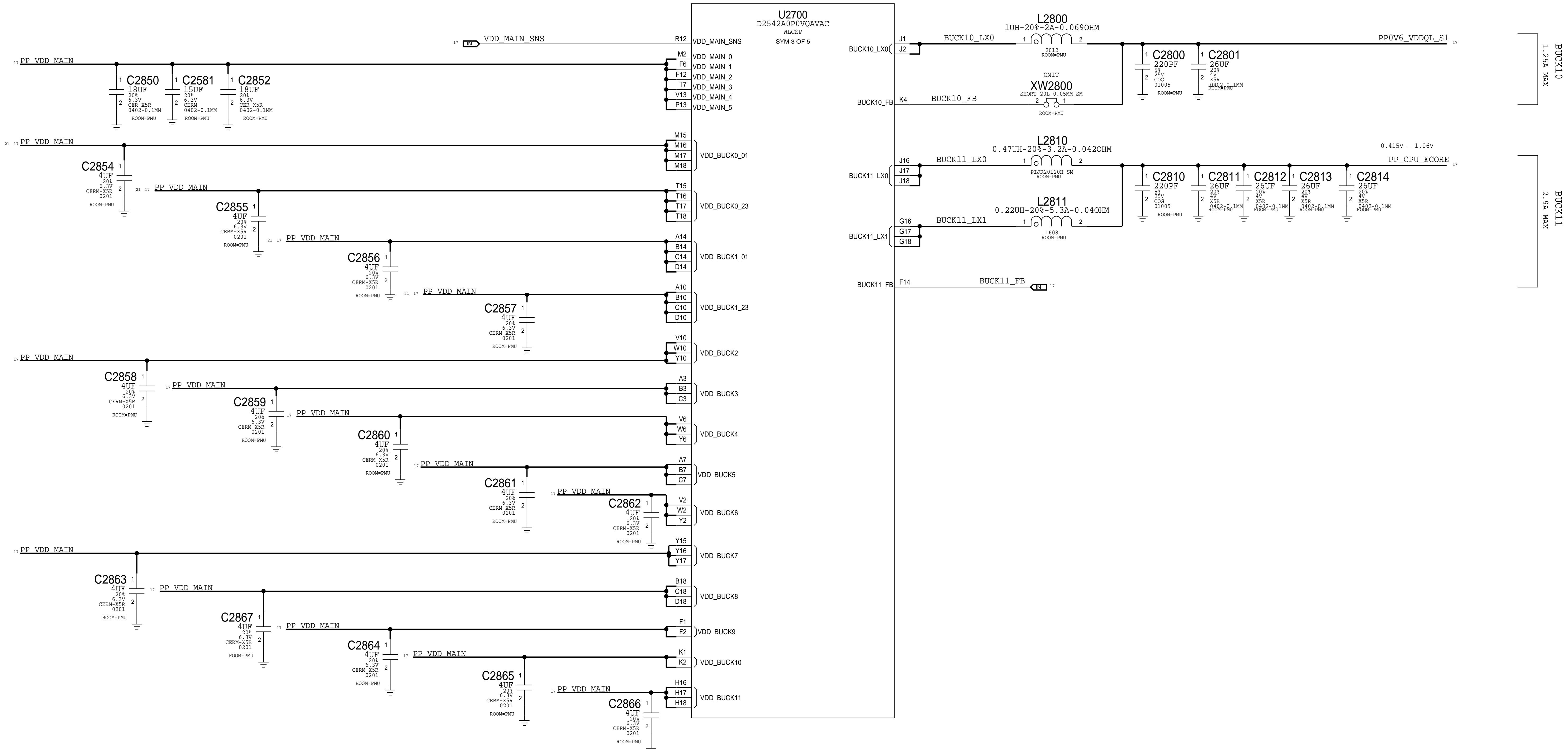


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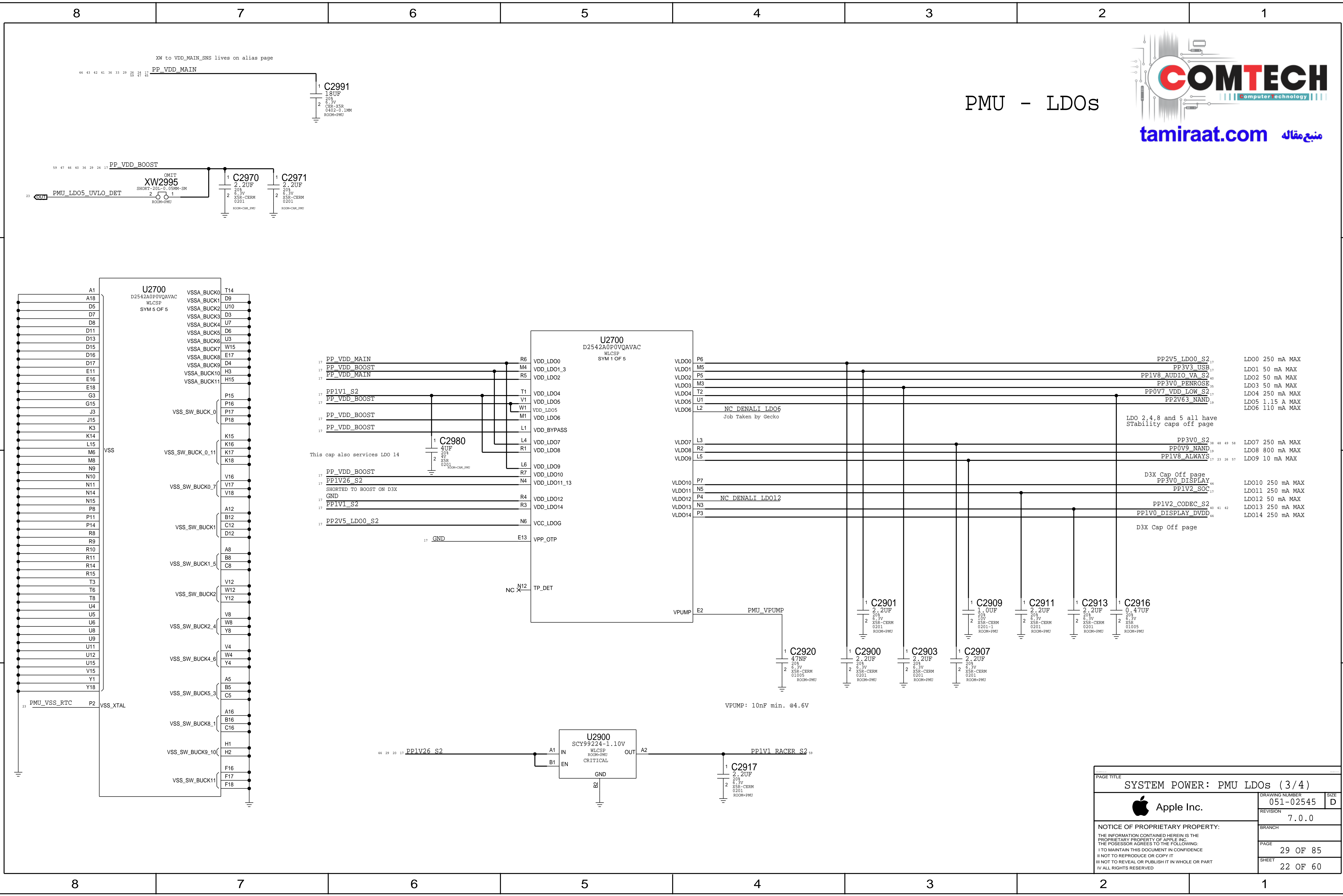
PAGE TITLE		SYSTEM POWER: PMU Bucks (1/4)	
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# PMU - BUCKS



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# PMU - LDOs



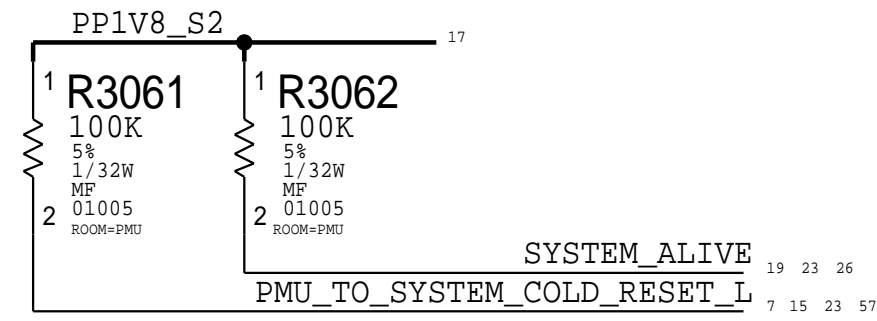
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# PMU - GPIOs

TODO: Update  
CONTROL PIN NOTES:

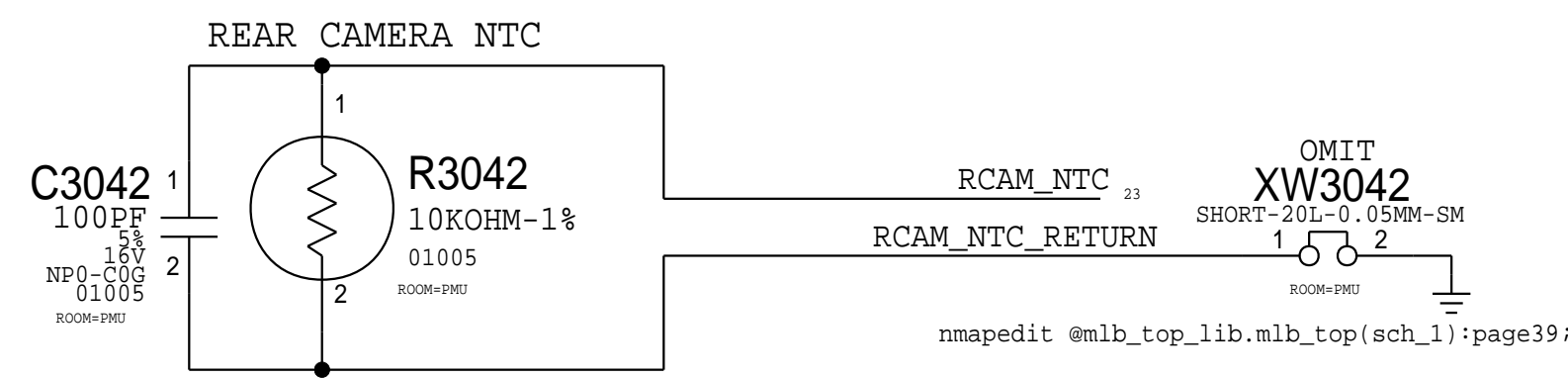
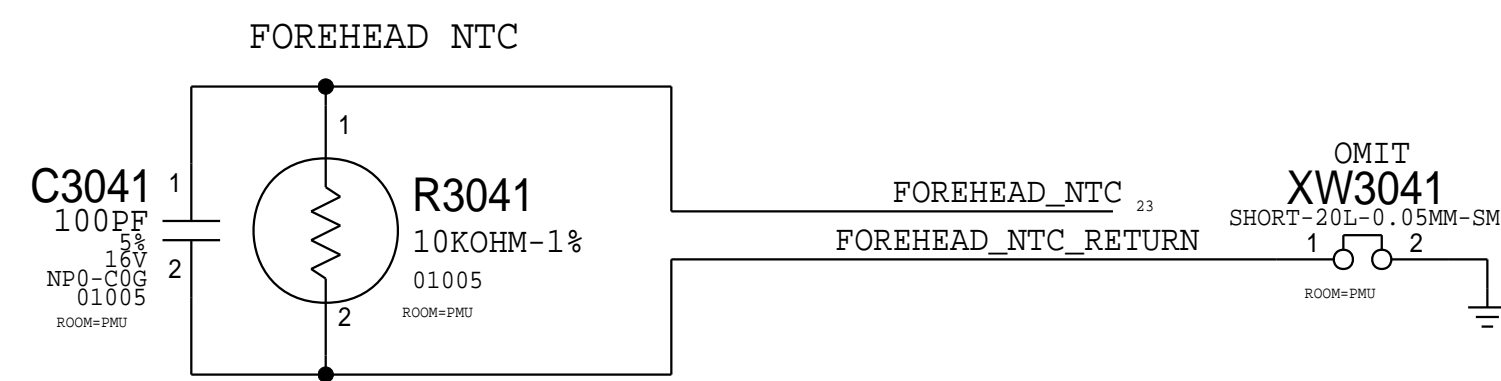
- NOTE (1): INPUT PULL-DOWN 100-300k
- NOTE (2): INPUT PULL-DOWN 1M
- NOTE (3): INPUT PULL-UP OR DOWN 100k-300k
- NOTE (4): OUTPUT OPEN-DRAIN, REQUIRES PULL-UP

## COLD\_RESET & SYSTEM\_ALIVE

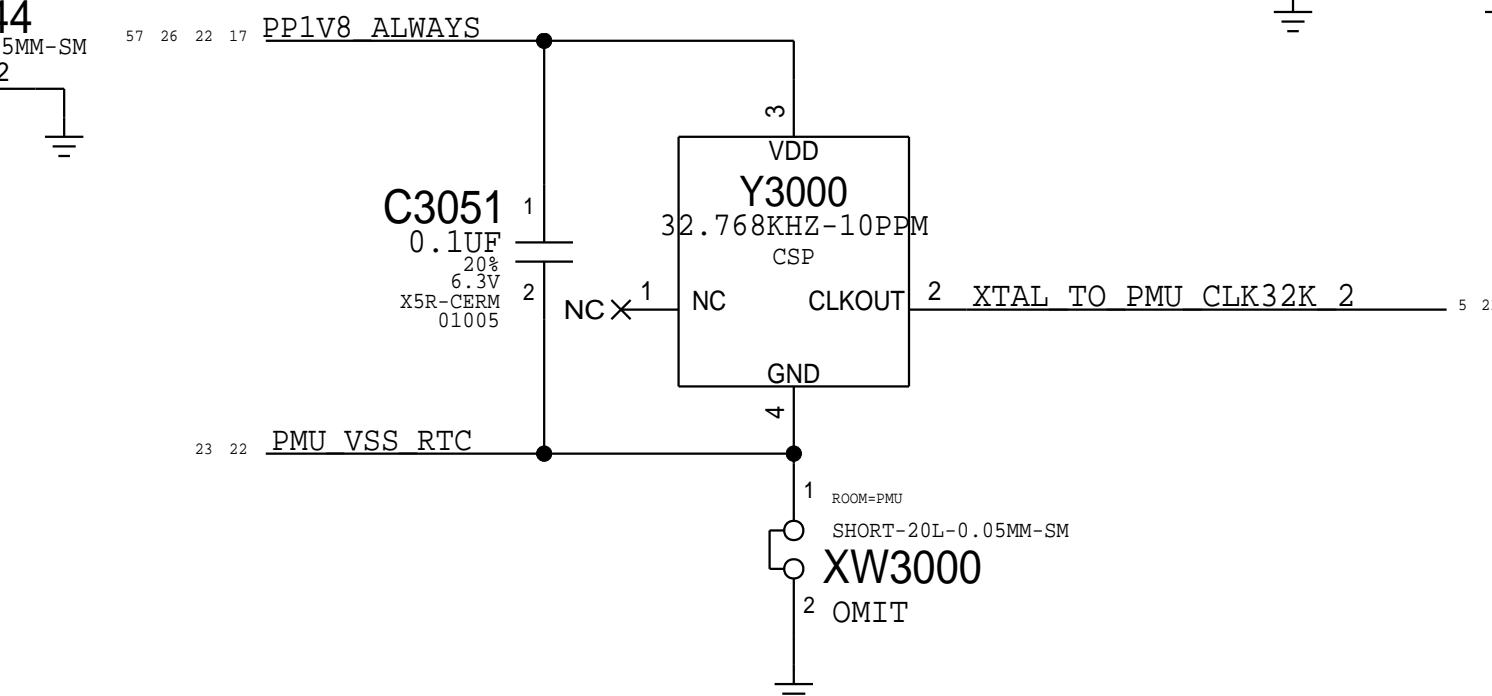
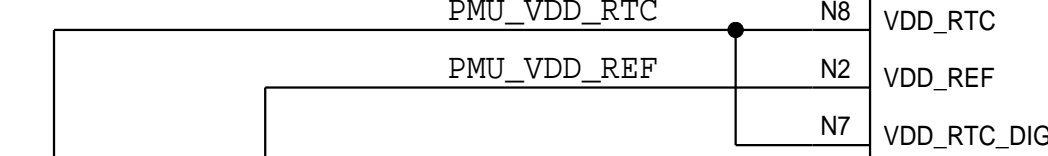
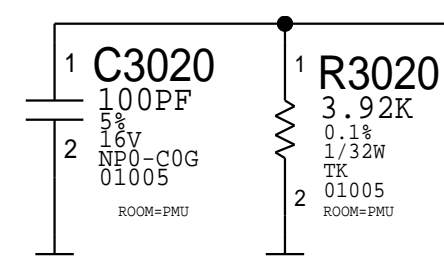
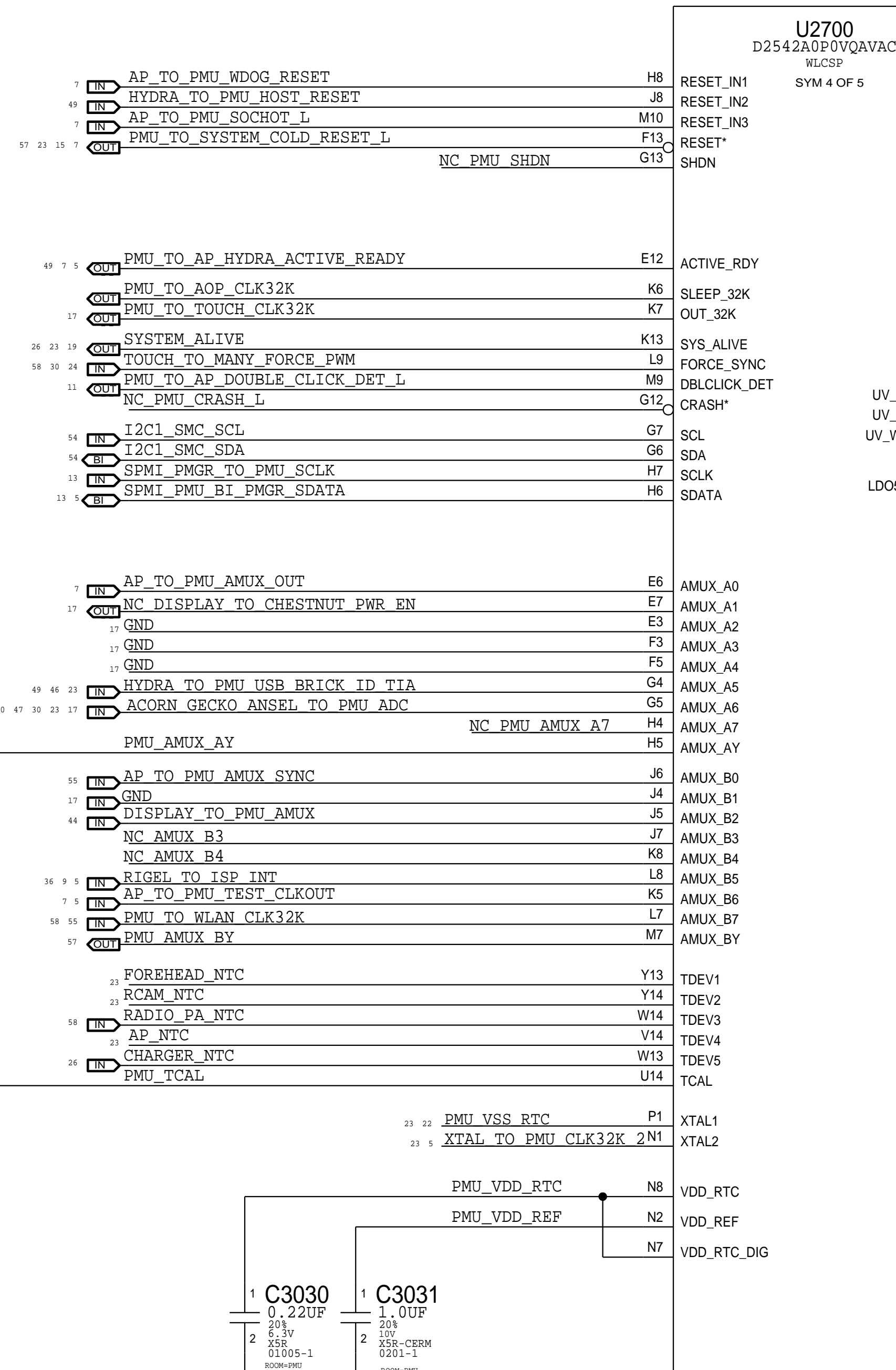
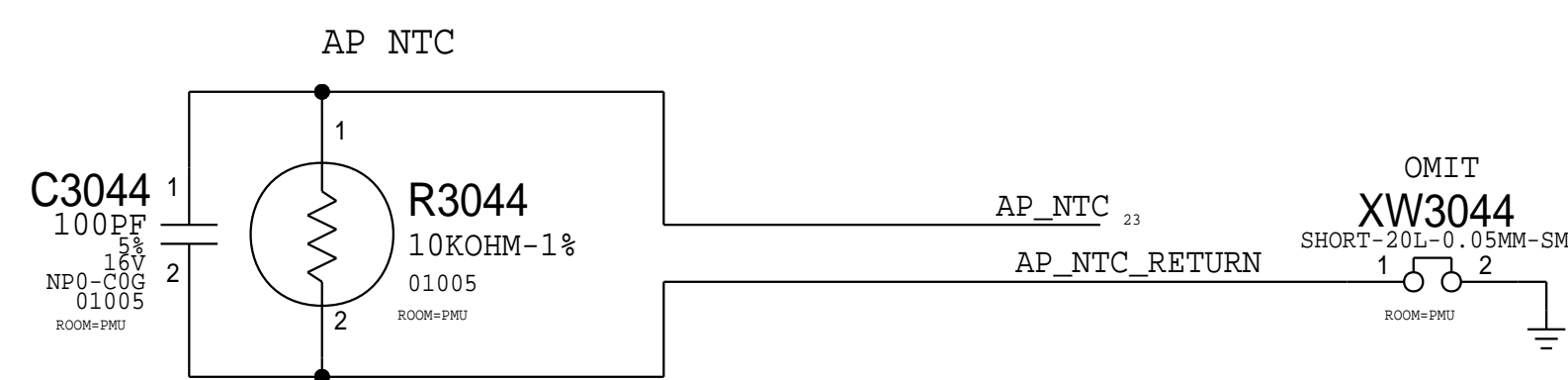


Only has DS control when powered by VBUCK3  
Only has DS control when powered by VBUCK3

## NTCs



## RADIO PA NTC on MLB Bottom



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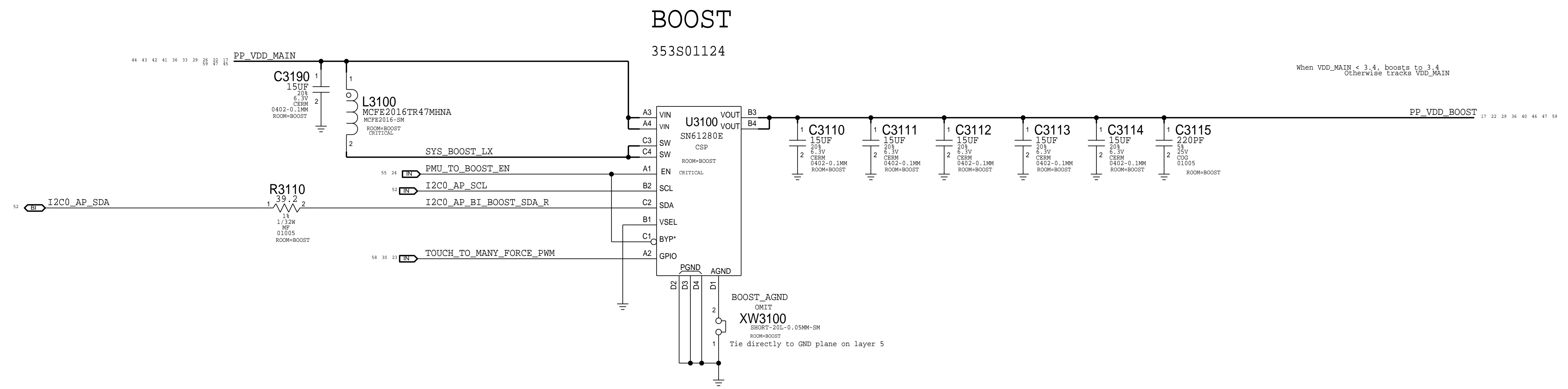
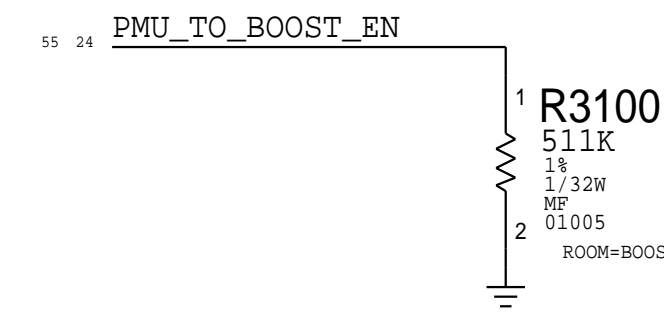
C

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Boost Enable Pull

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
152S00871	152S00869	ALT_PARTS	L3100	BOOST IND ALT, CYN
152S00873	152S00869	ALT_PARTS	L3100	BOOST IND ALT, YTK

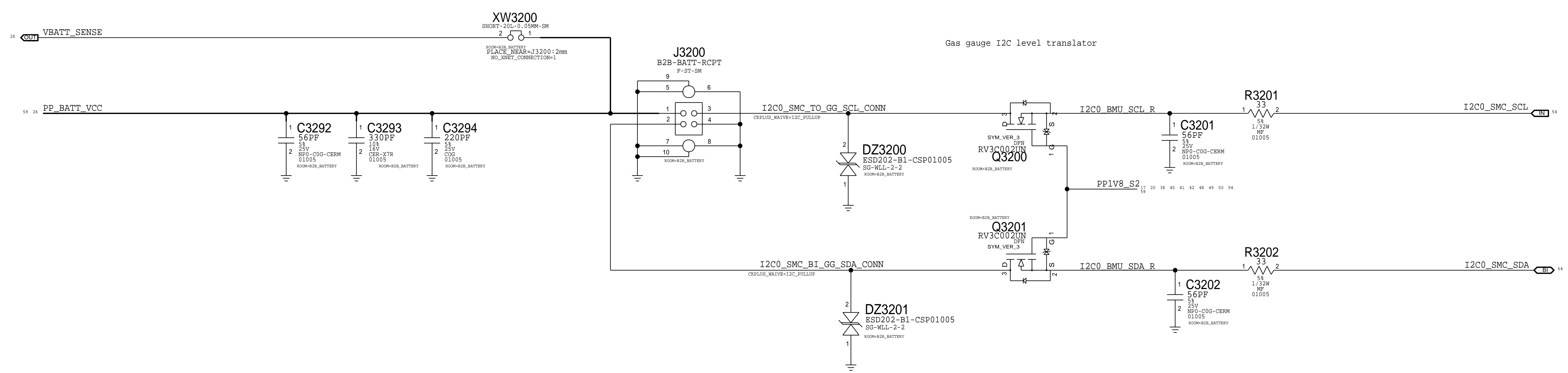


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SYSTEM POWER: Boost		
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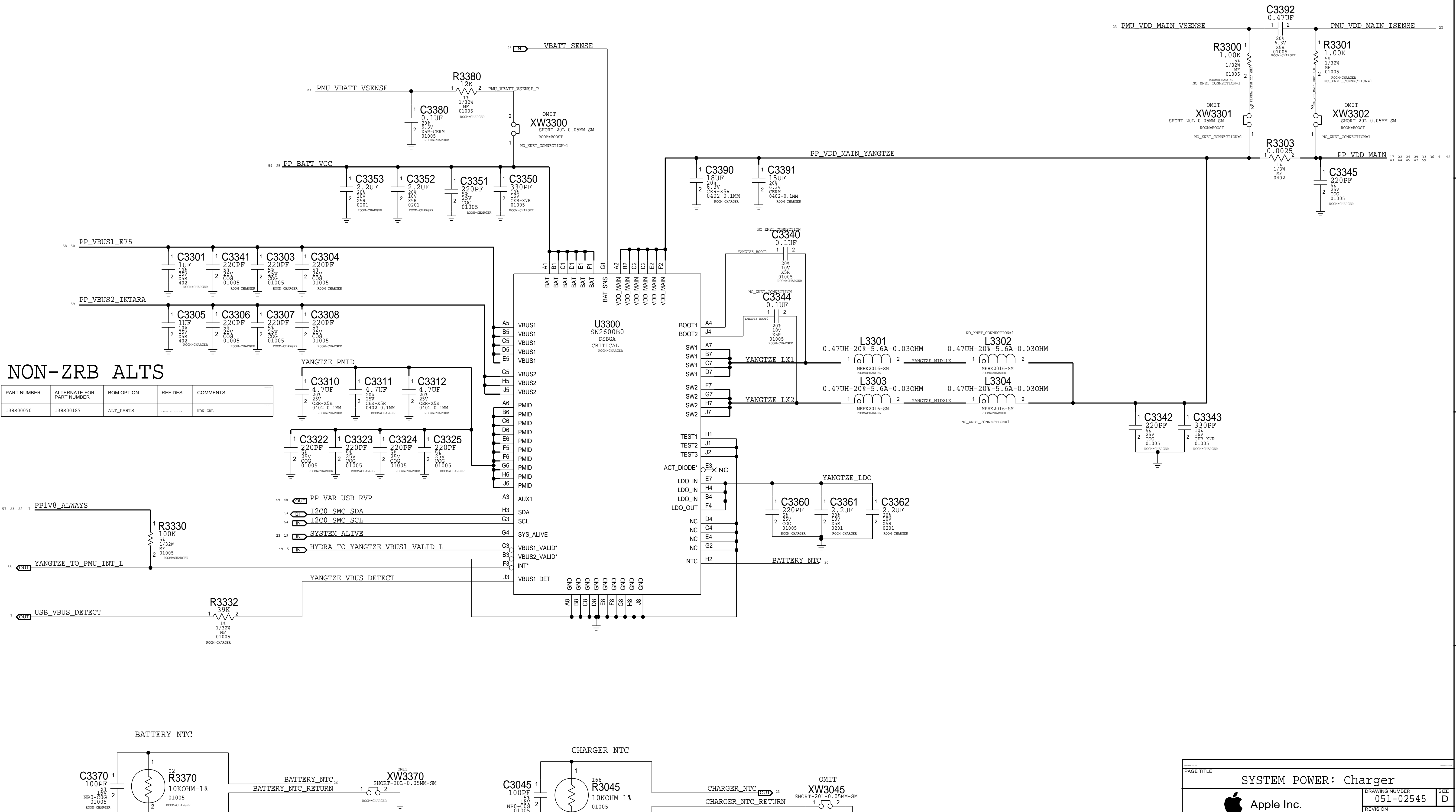
# BATTERY CONNECTOR

Rcpt: 516S00232  
Plug: 516S00233



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# YANGTZE CHARGER



## NON-ZRB ALTS

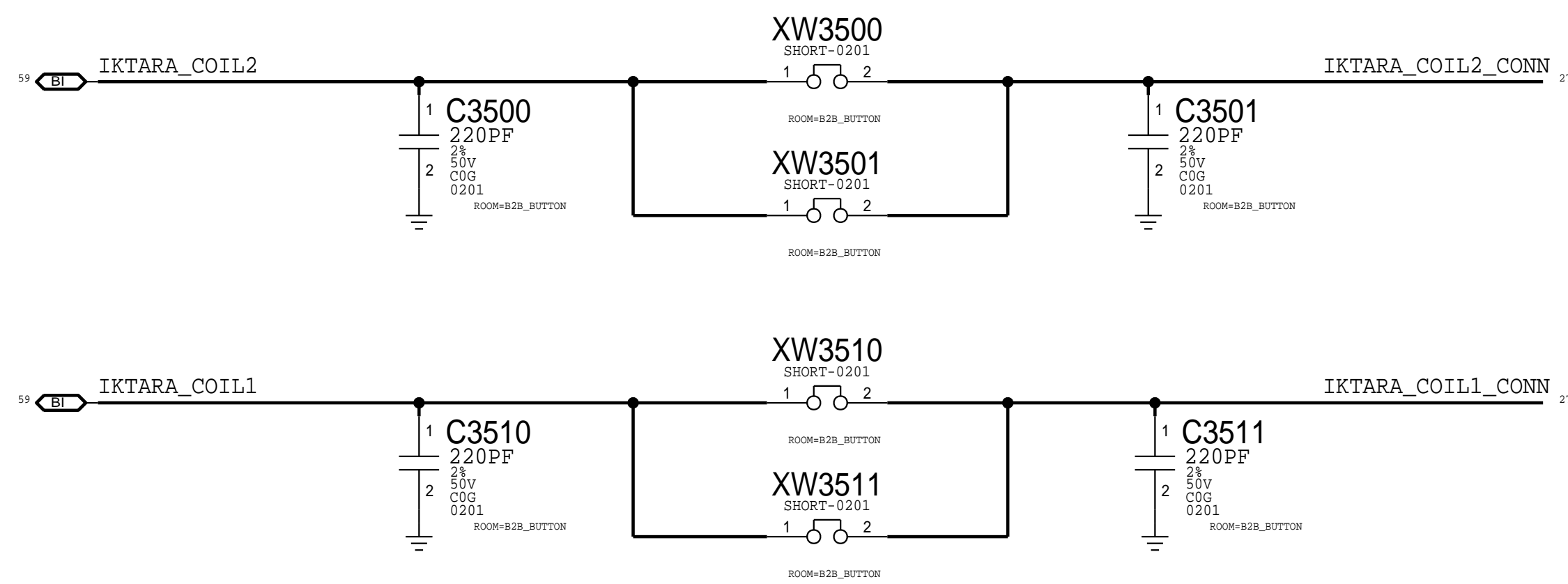
PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
138S00070	138S00187	ALT_PARTS	XXXX-XXXX	NON-ZRB

PAGE TITLE		SYSTEM POWER: Charger	
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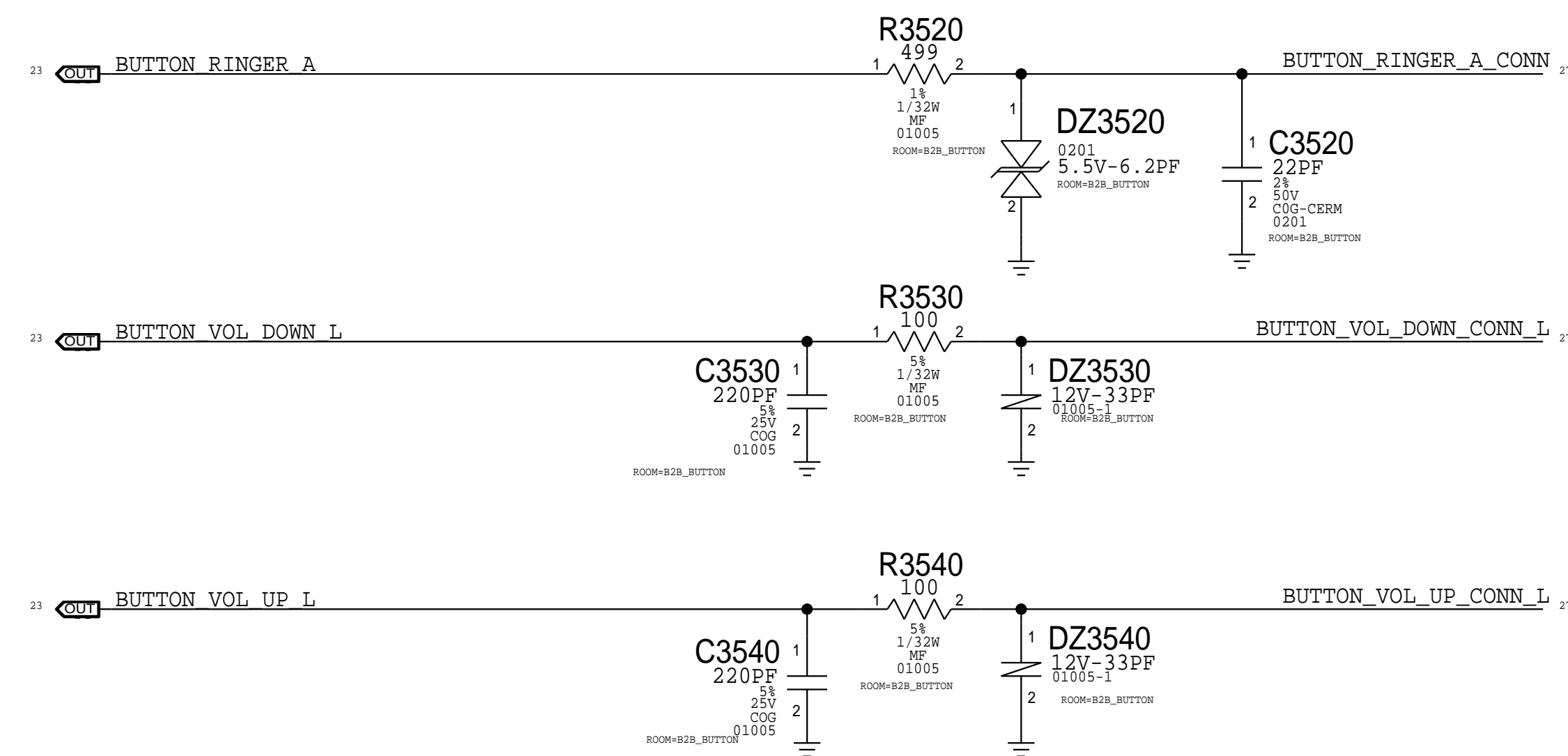
# Cyclone + Button Connector

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

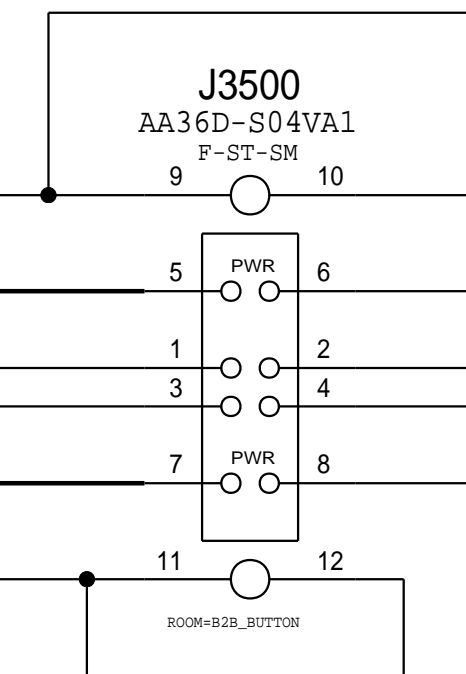
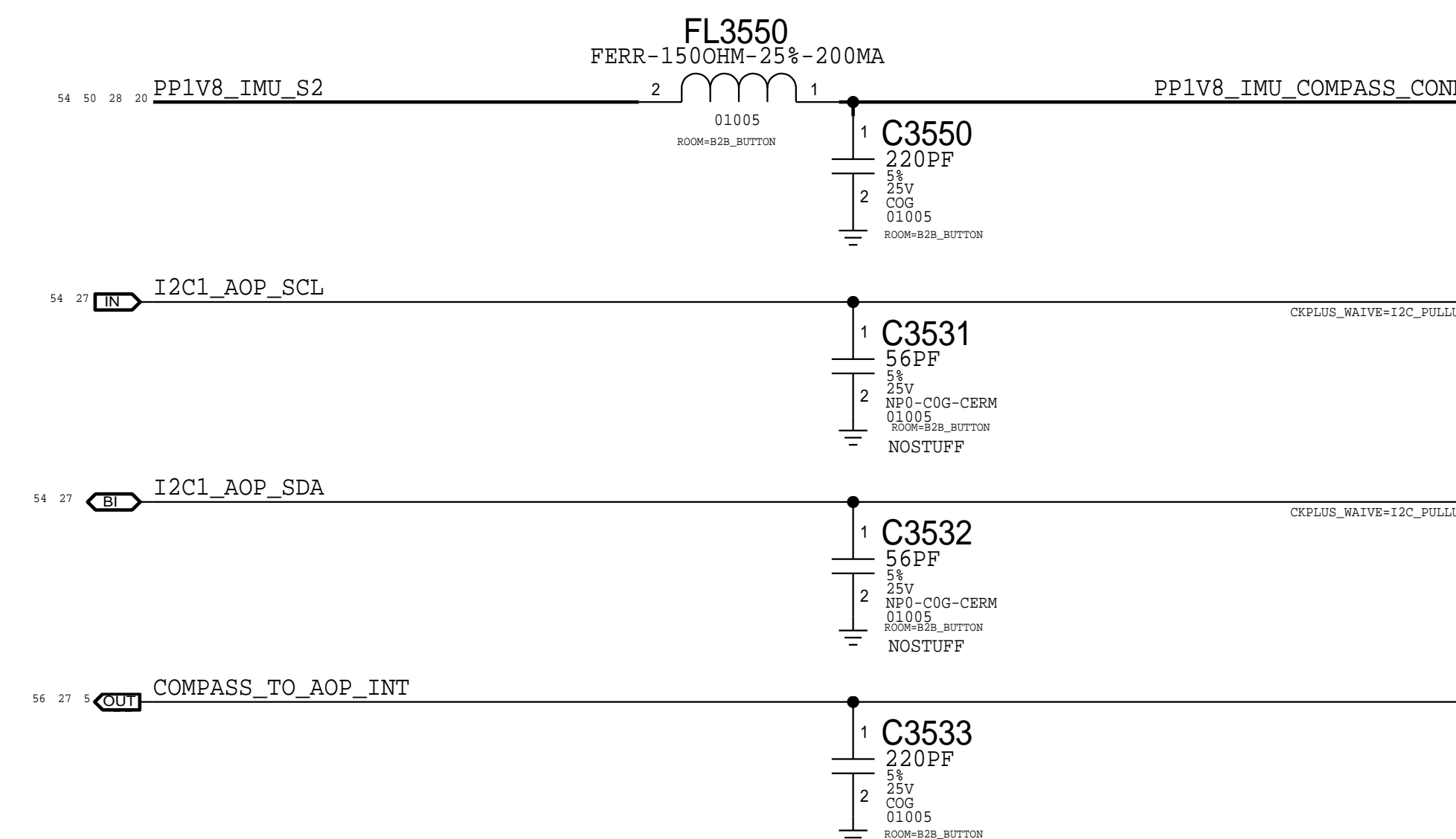
## Cyclone Filtering



## BUTTONS



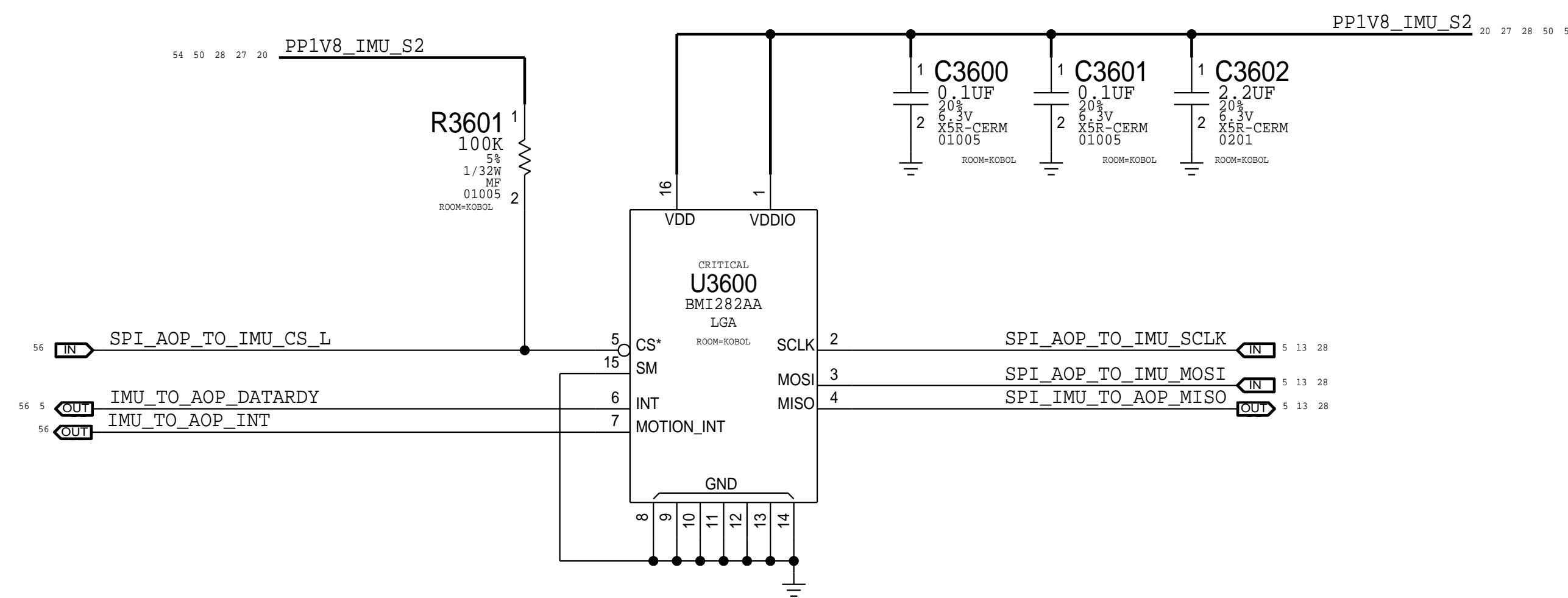
## Compass



PAGE TITLE		
SYSTEM POWER: B2B Cyclone + Button		
	DRAWING NUMBER	051-02545
	REVISION	7.0.0
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BRANCH	PAGE	35 OF 85
SHEET		27 OF 60

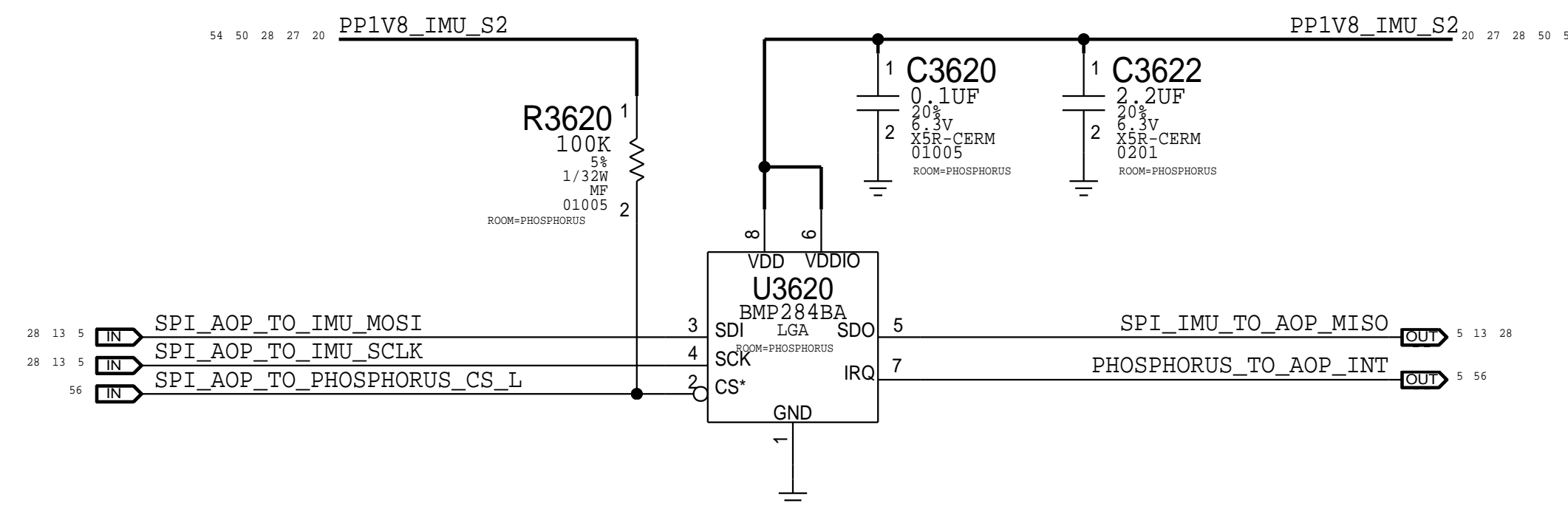
# Kobol - Accel & Gyro

APN: 338S00367



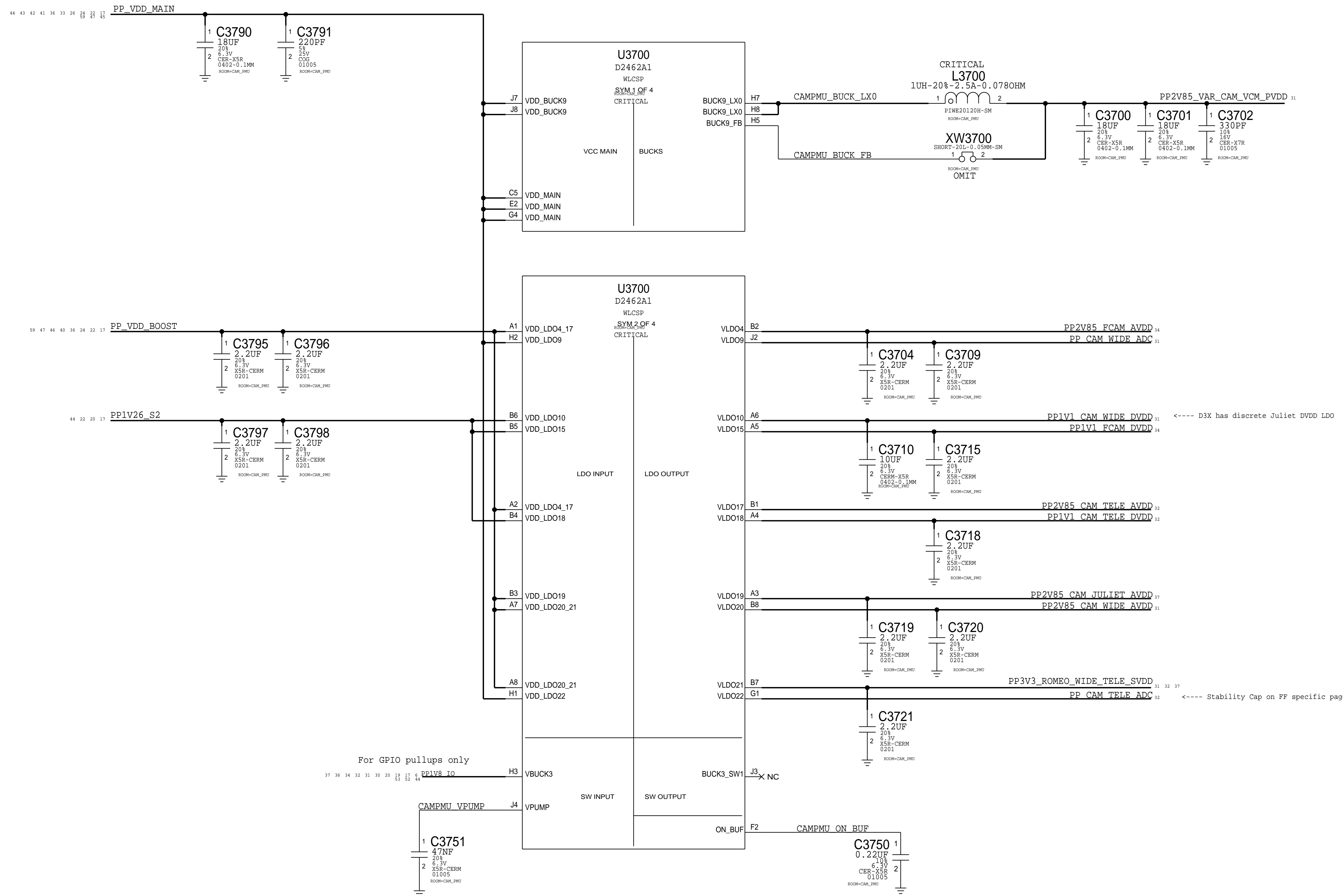
# Phosphorus

BOSCH (APN:338S00334)



PAGE TITLE			SENSORS	
	DRAWING NUMBER	051-02545	SIZE	D
	REVISION	7.0.0		
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# Camera PMU



AVDD: Analog Supply (Pixels)  
 ADC: ADC Supply  
 DVDD: Digital Supply  
 SVDD: AF Sensor Supply  
 PVDD: AF Driver Supply

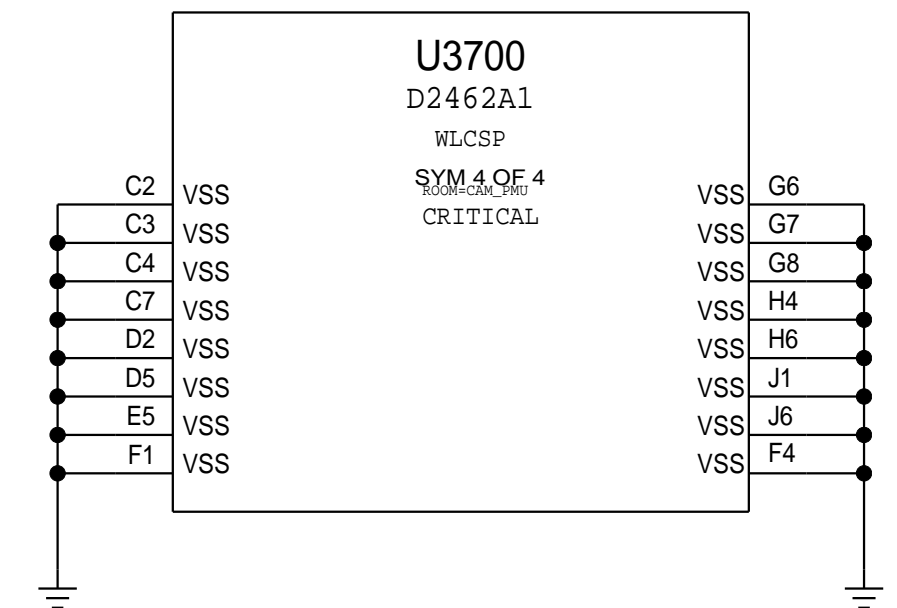
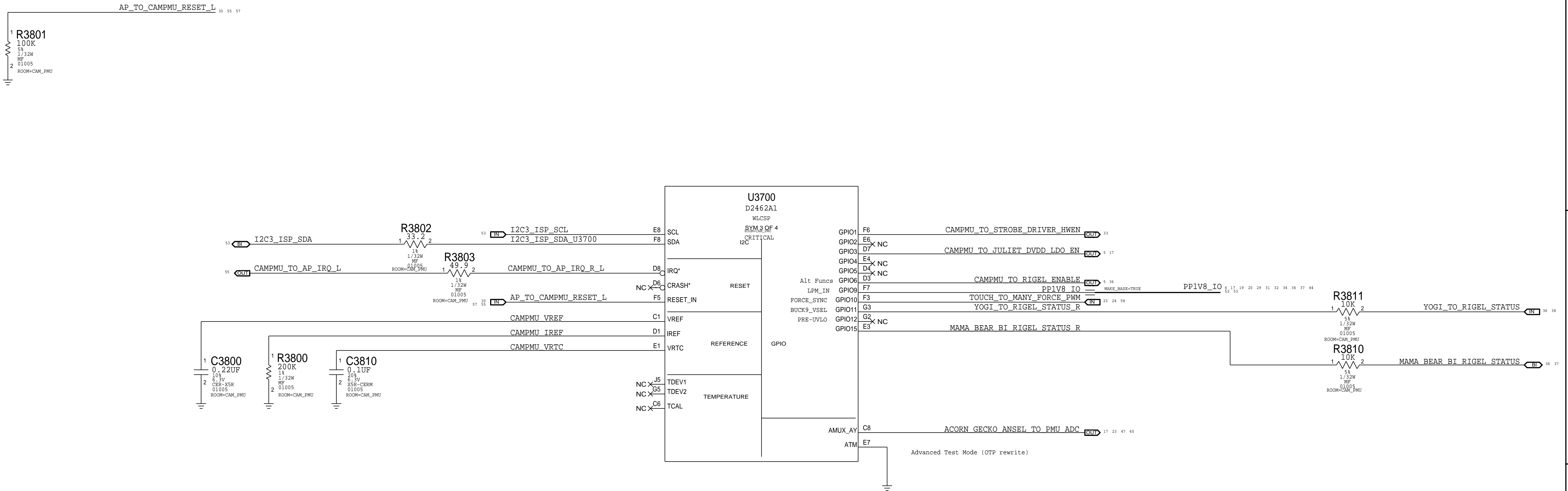
<---- D3X has discrete Juliet DVDD LDO

<---- Stability Cap on FF specific page



PAGE TITLE <b>CAMERA: PMU (1/2)</b>		
Apple Inc.	DRAWING NUMBER 051-02545	SIZE D
	REVISION 7.0.0	BRANCH
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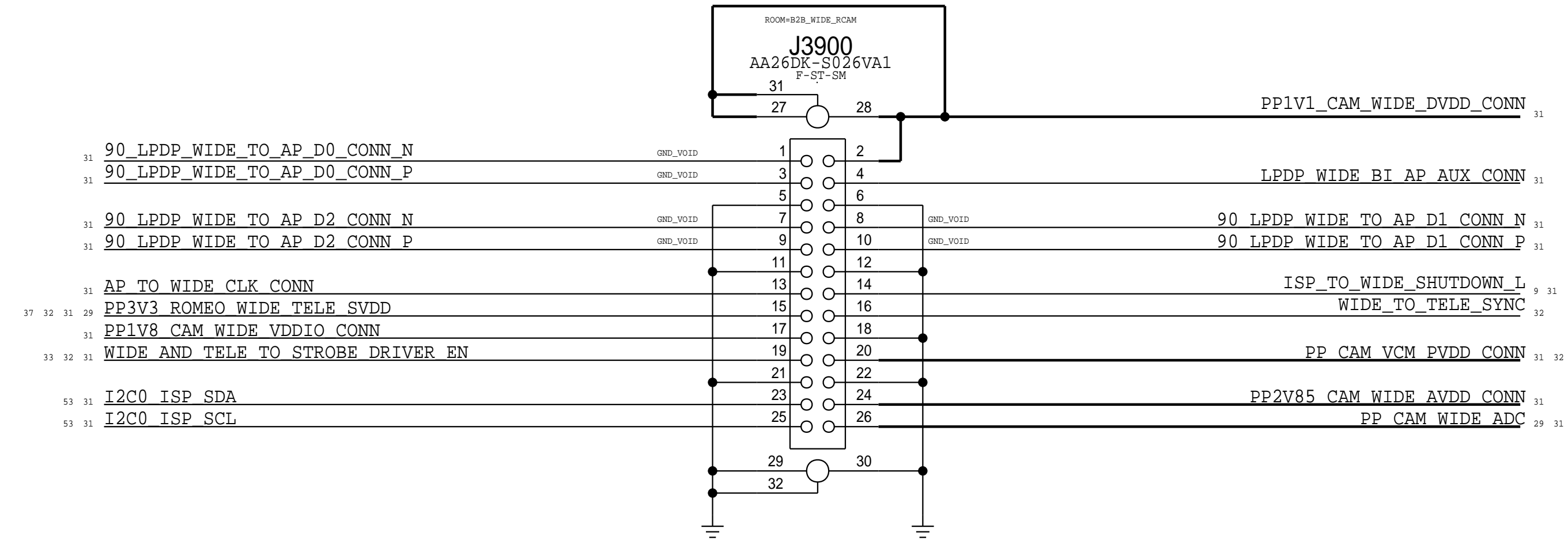
Pull Downs



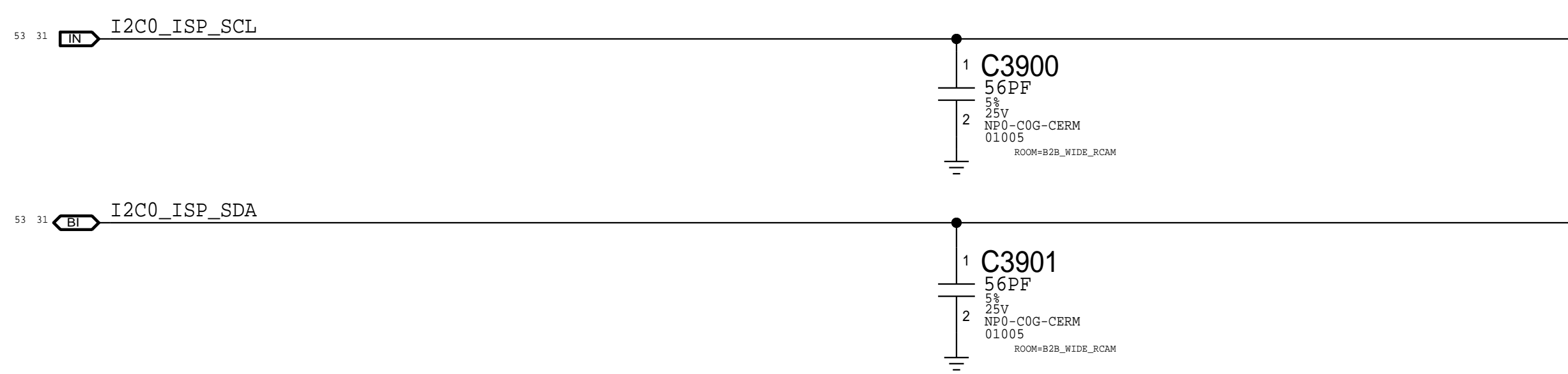
PAGE TITLE <b>CAMERA: PMU (2/2)</b>		
	DRAWING NUMBER 051-02545	SIZE D
	REVISION 7.0.0	BRANCH
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PAGE 38 OF 85	SHEET 30 OF 60	

# Wide Camera Connector

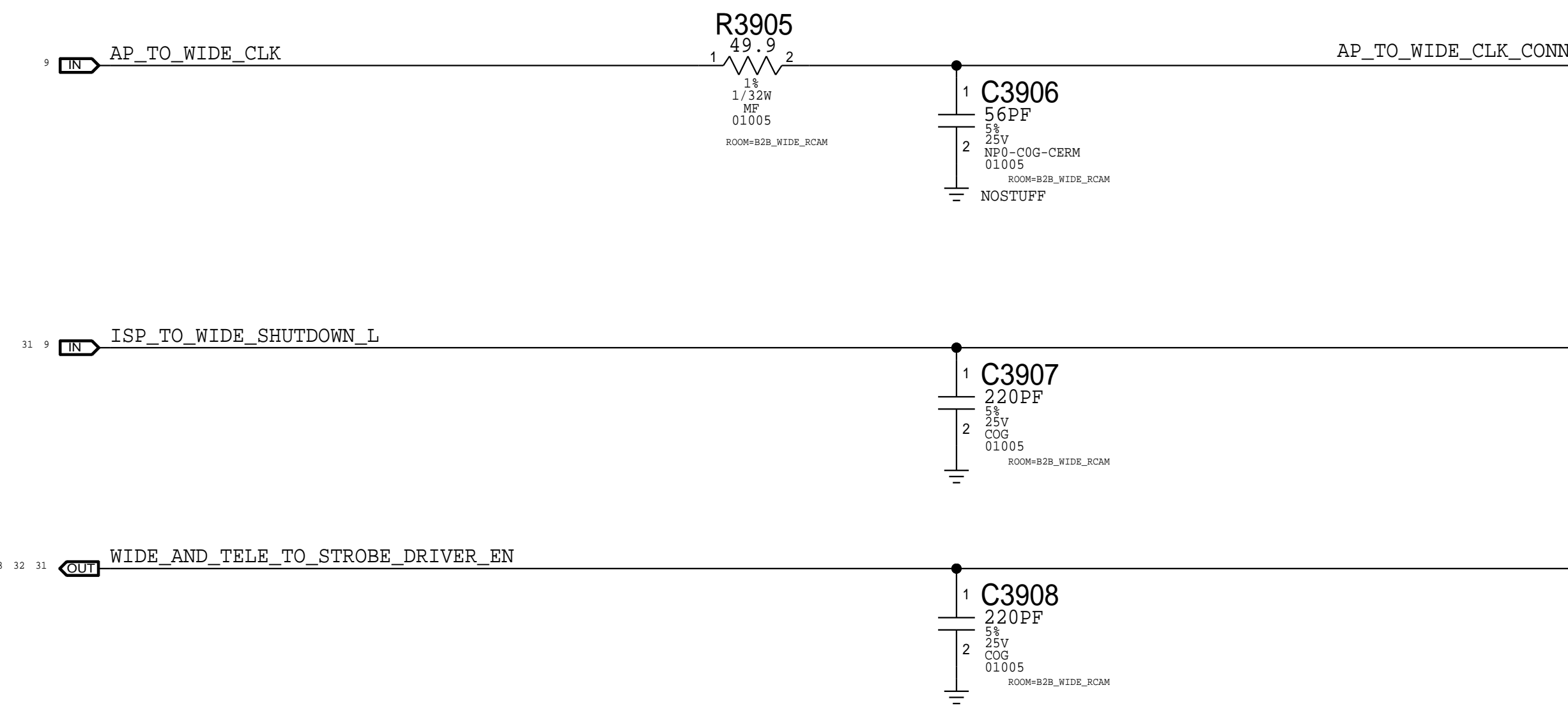
Rcpt: 516S00313 <-- This one on MLB  
 Plug: 516S00314



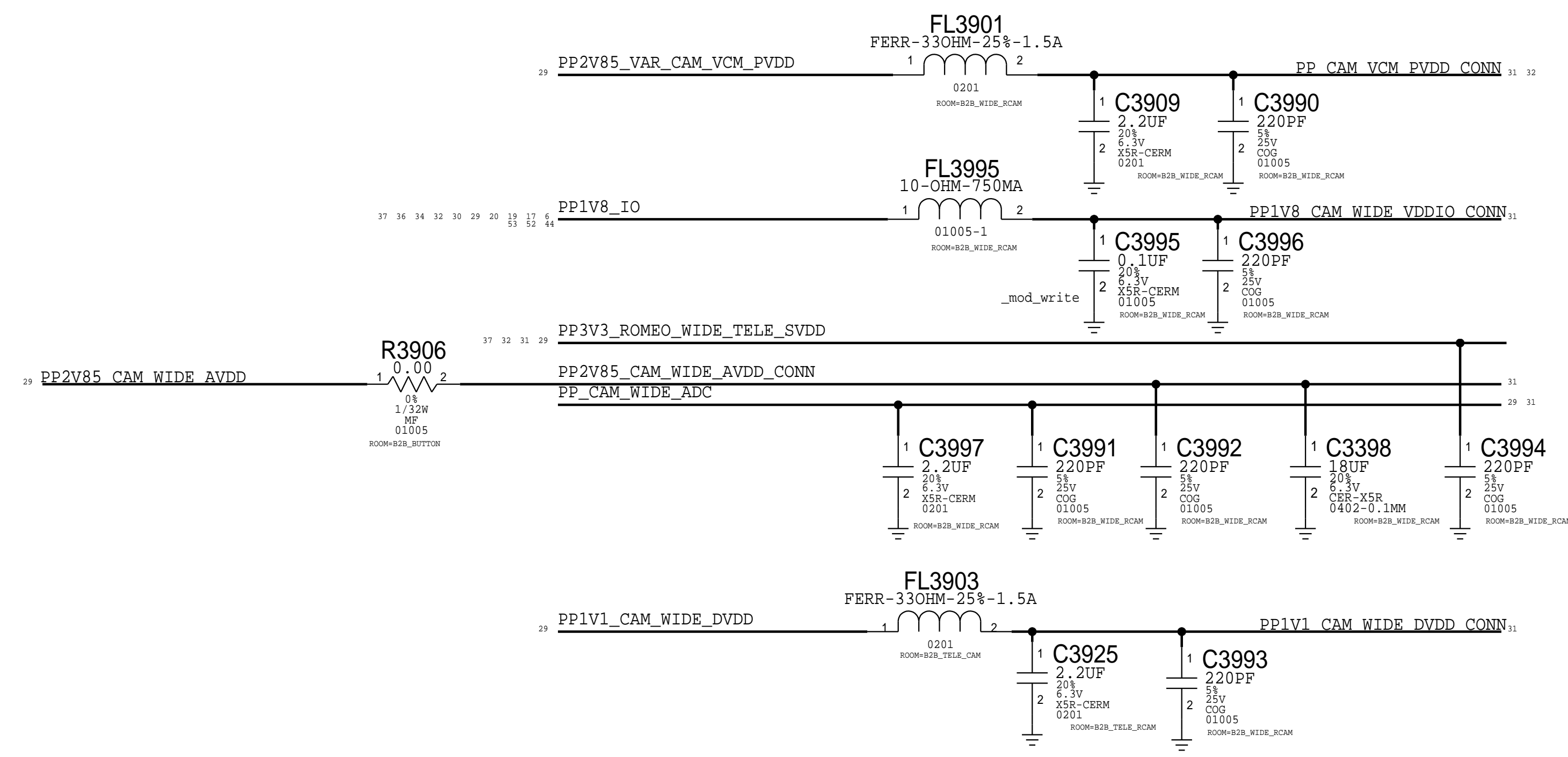
## ISP I2C



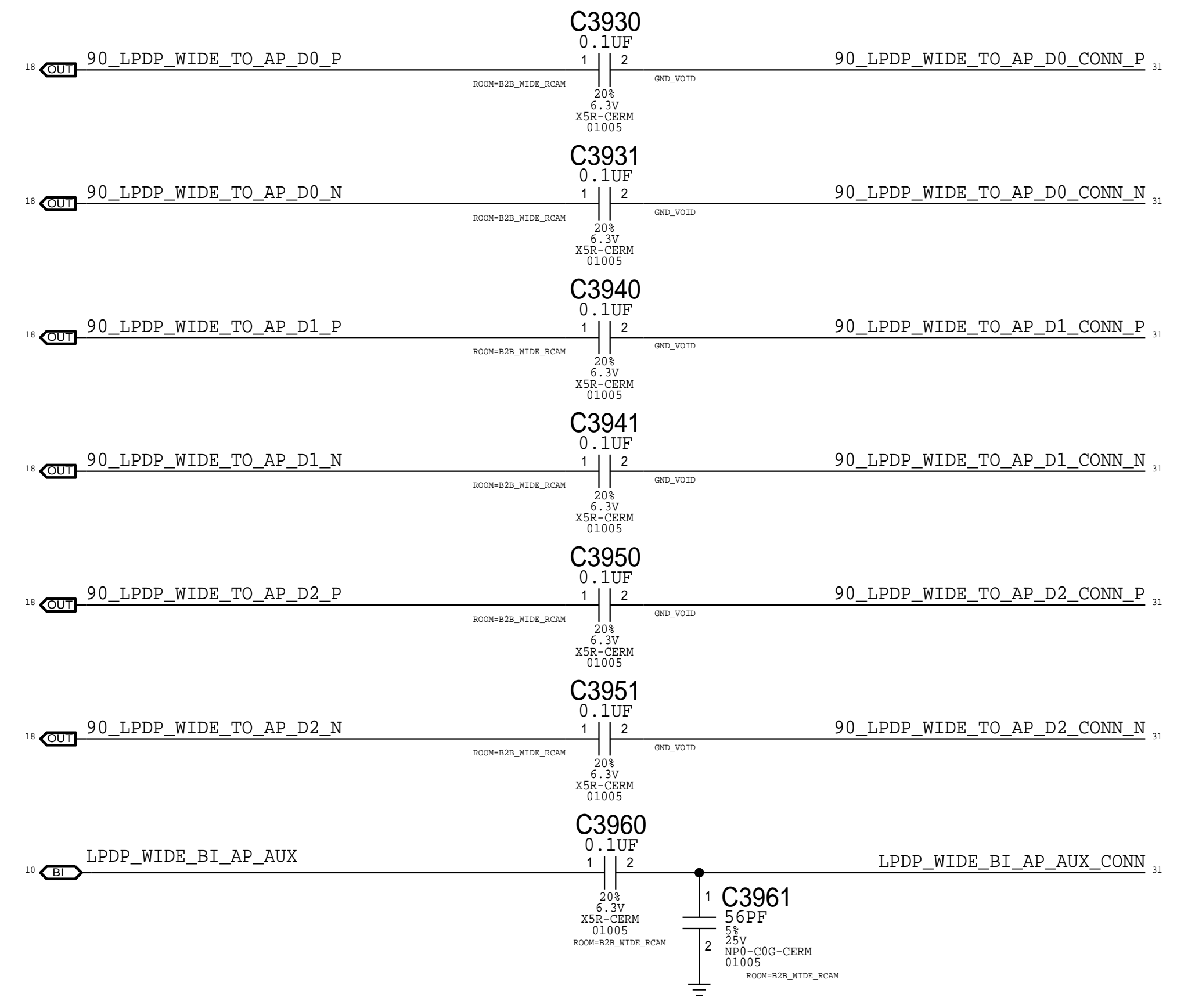
## IO Filters



## Power Filtering



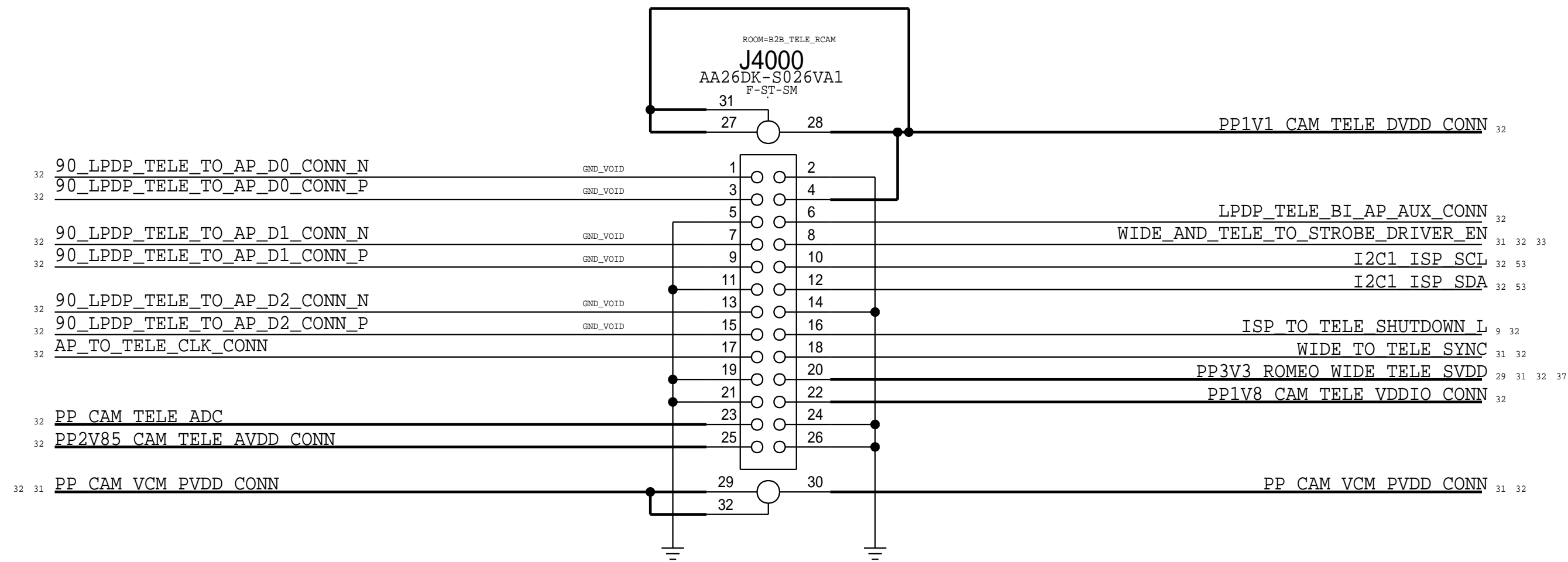
## LPDP Filters



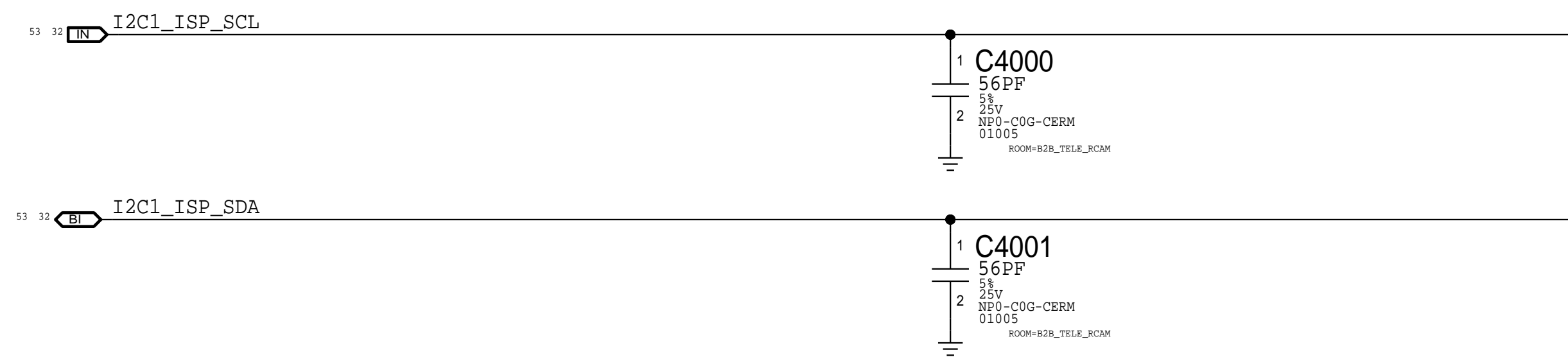
PAGE TITLE		
CAMERA: B2B Wide (TX)		
DRAWING NUMBER	051-02545	SIZE
REVISION	7.0.0	D
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# Tele Camera Connector

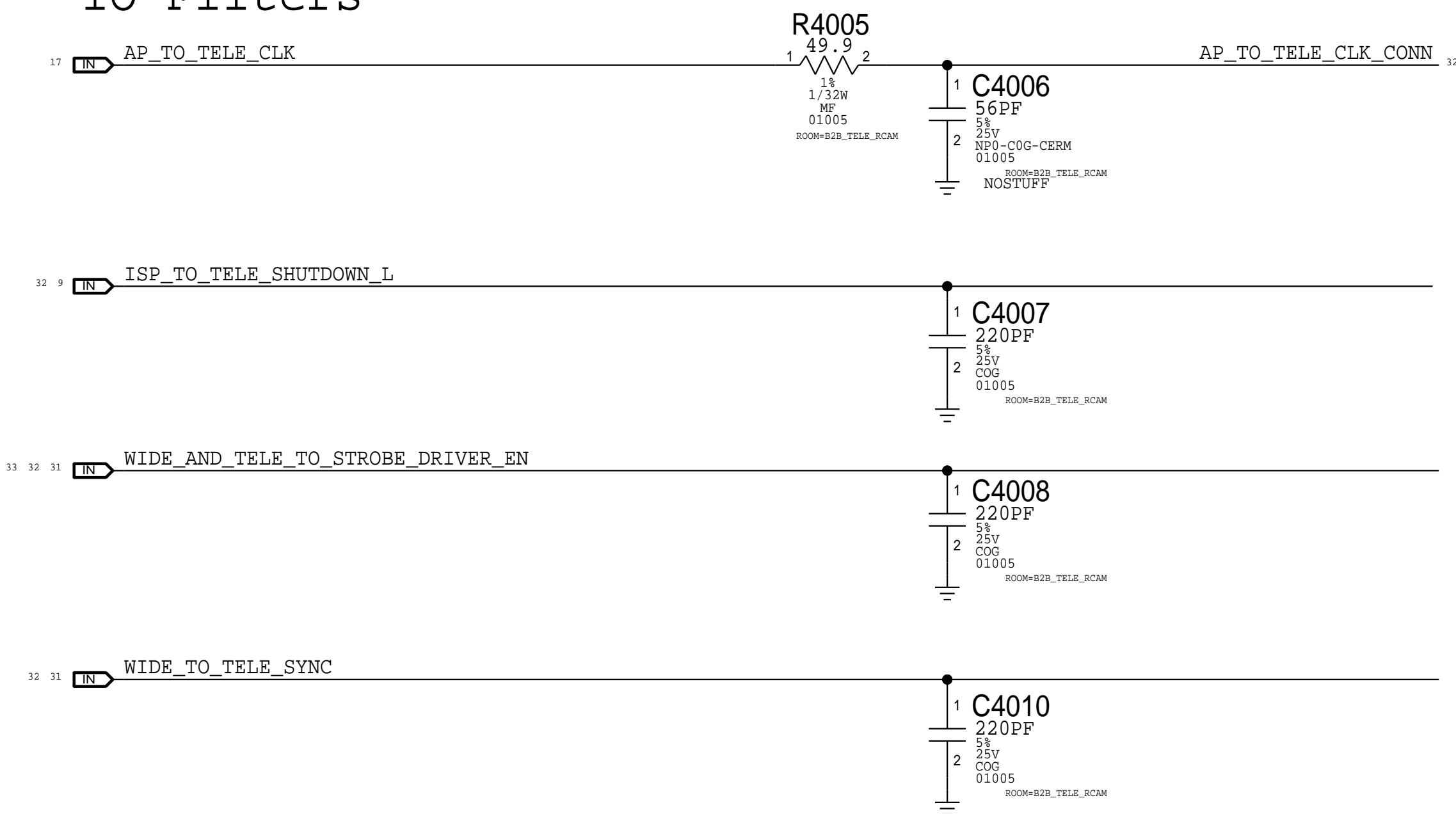
Rcpt: 516S00313 <-- This one on MLB  
 Plug: 516S00314



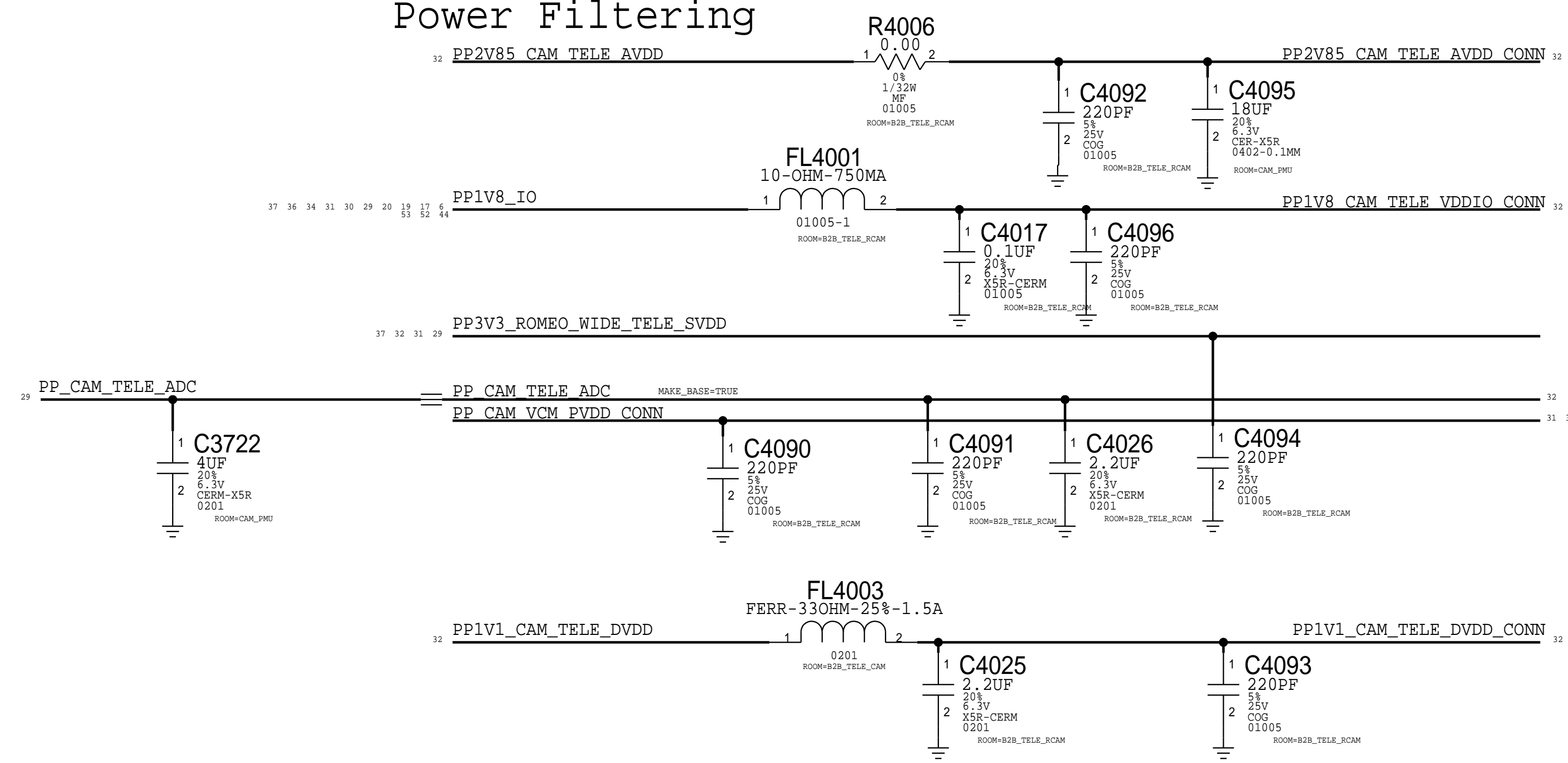
## ISP I2C



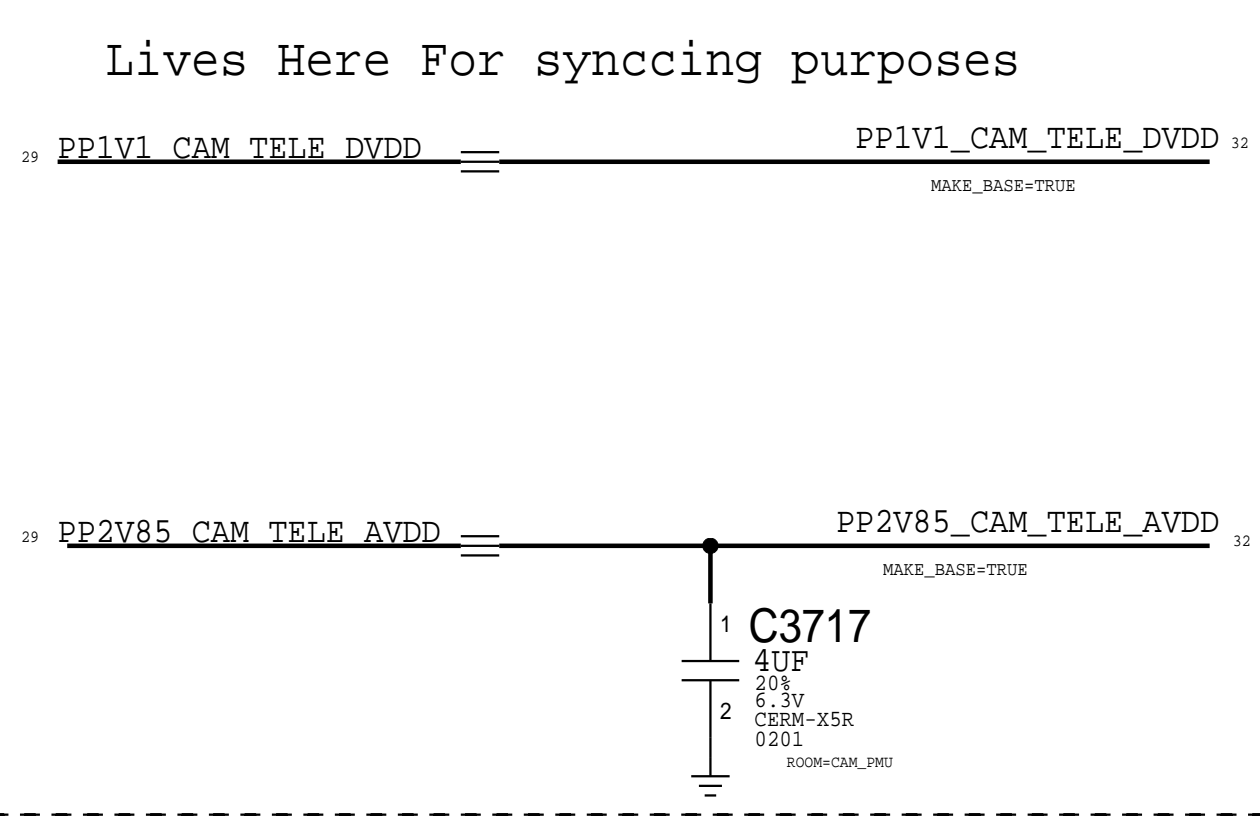
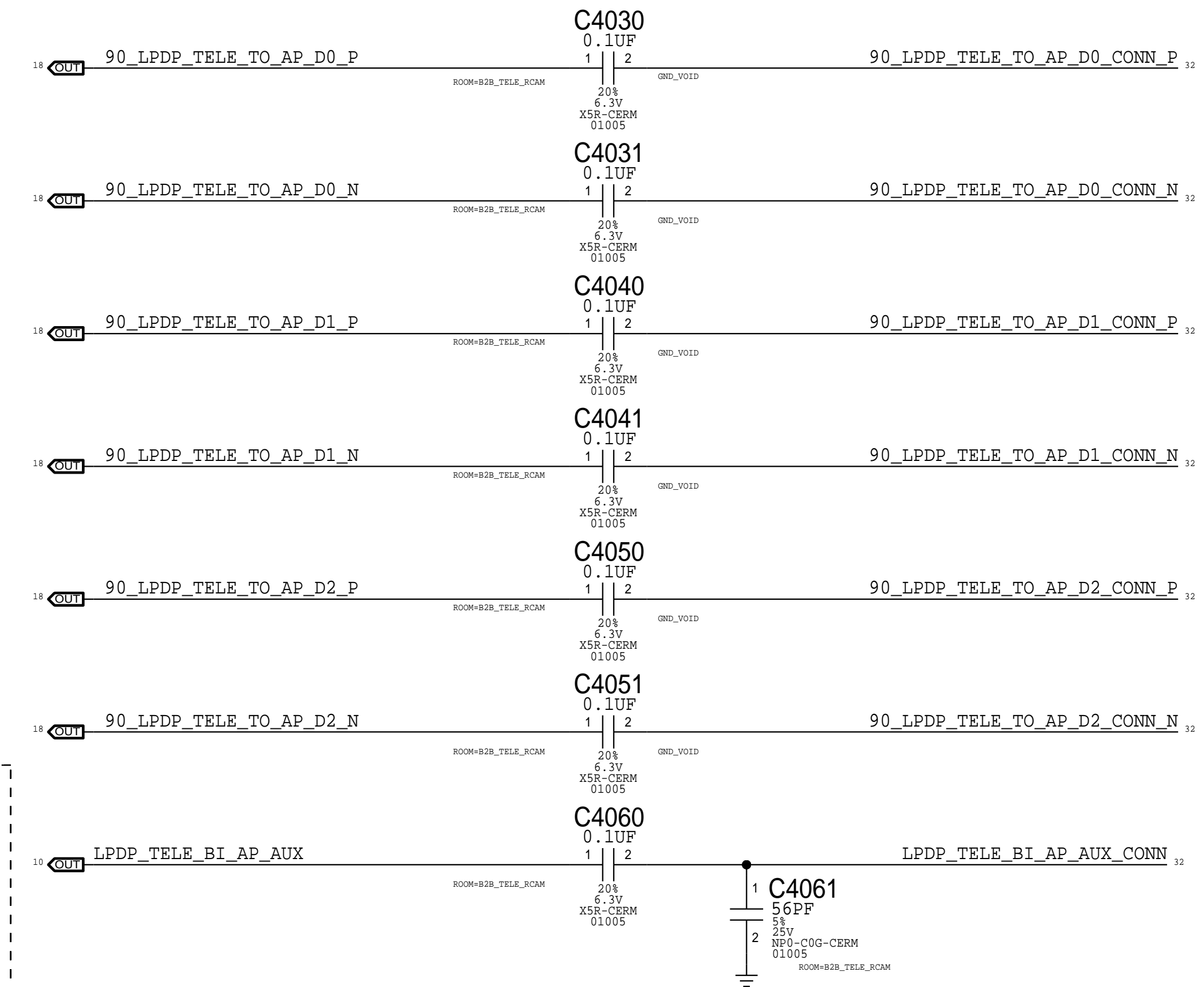
## IO Filters



## Power Filtering



## LPDP

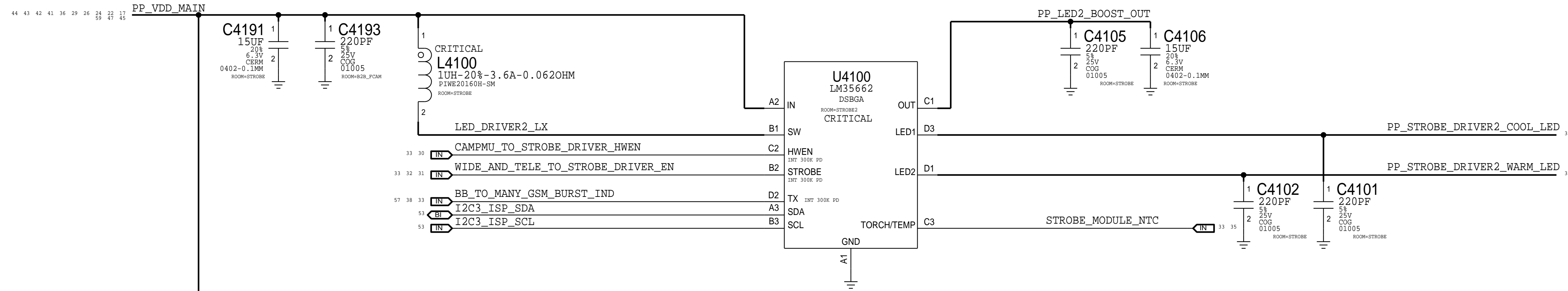


PAGE TITLE <b>CAMERA: B2B Tele [MT]</b>		
	DRAWING NUMBER 051-02545	SIZE D
	REVISION 7.0.0	
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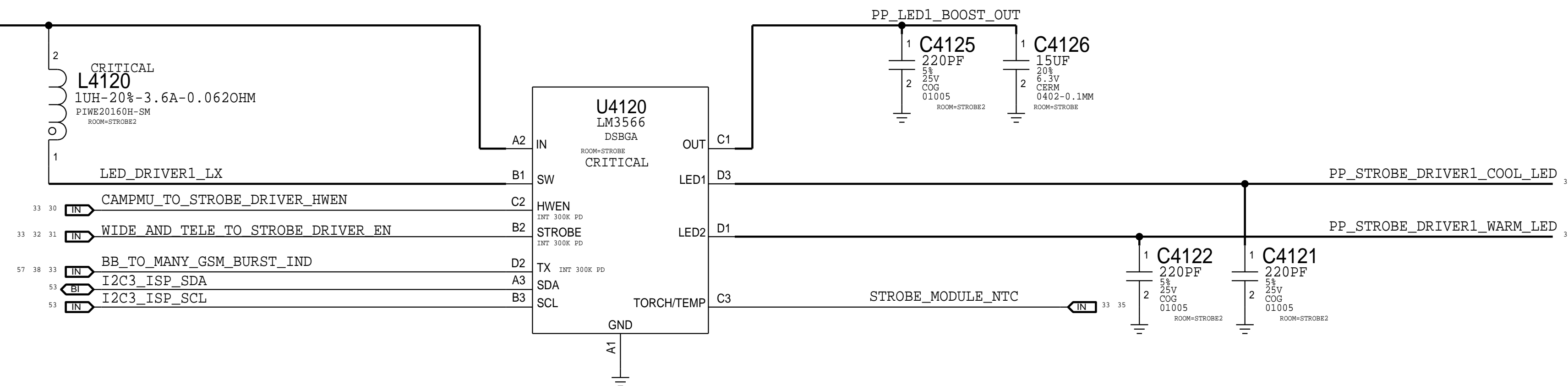


# LED STROBE DRIVERS (NEON)

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

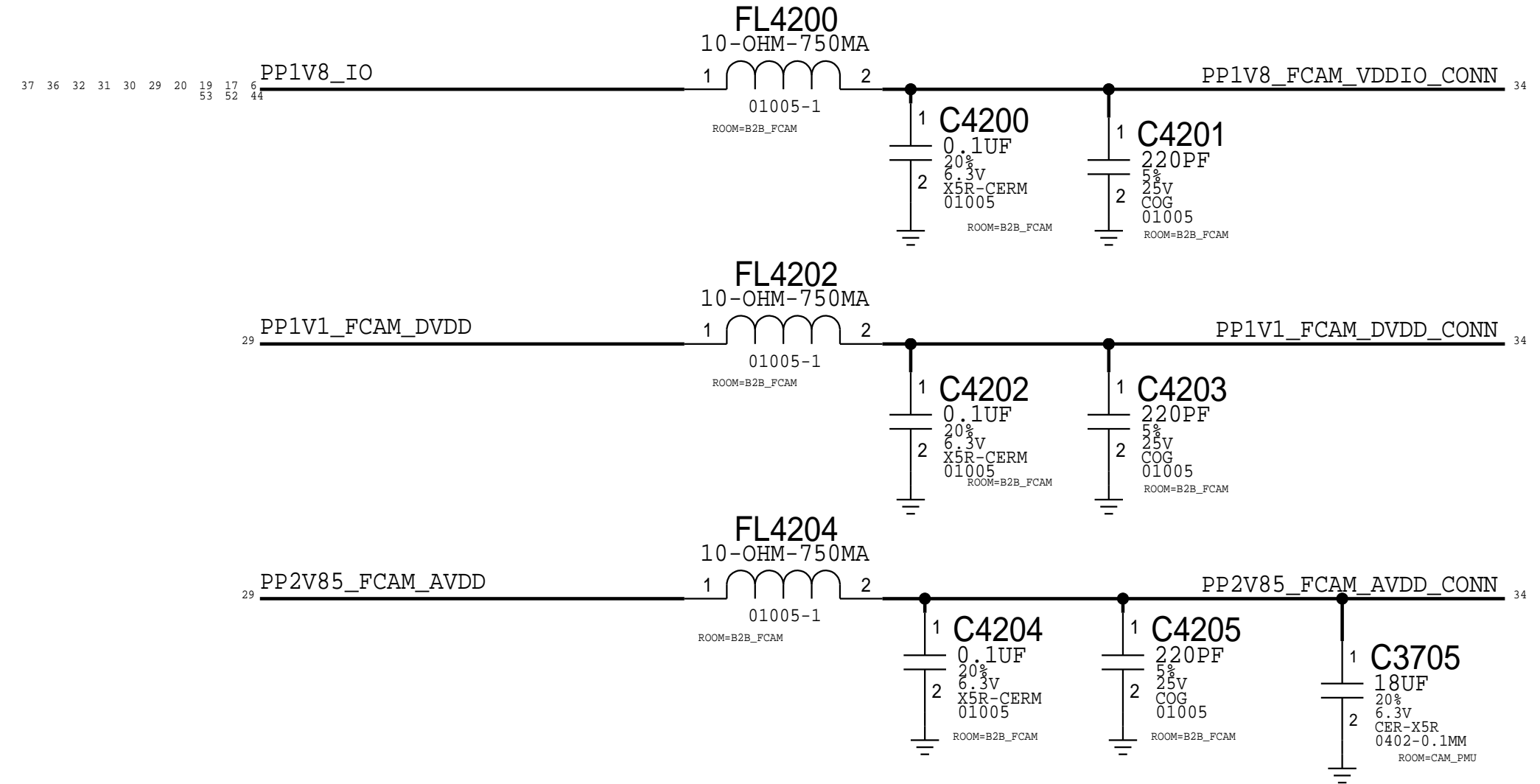


APN: 353S00558  
I2C Address (7-bit): 0x63



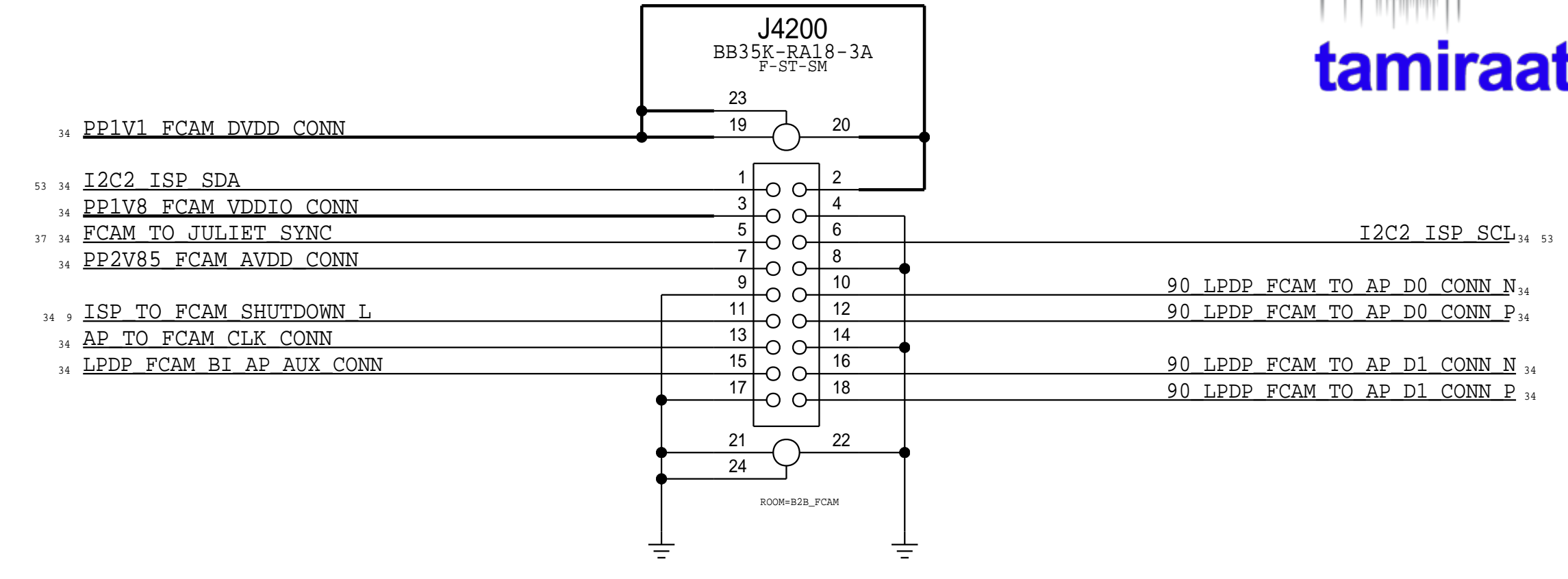


LONG ISLAND POWER

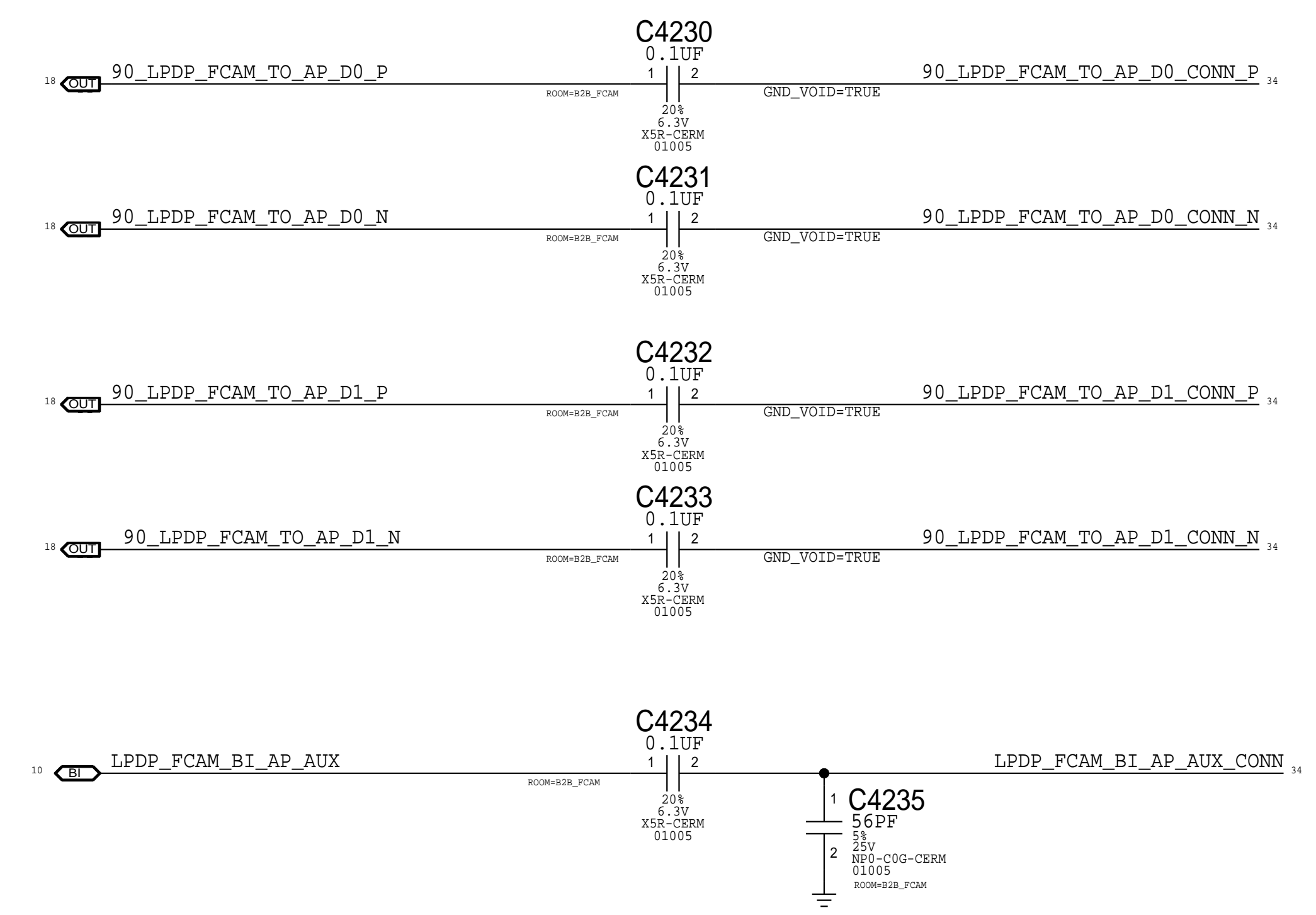


FCAM Connector

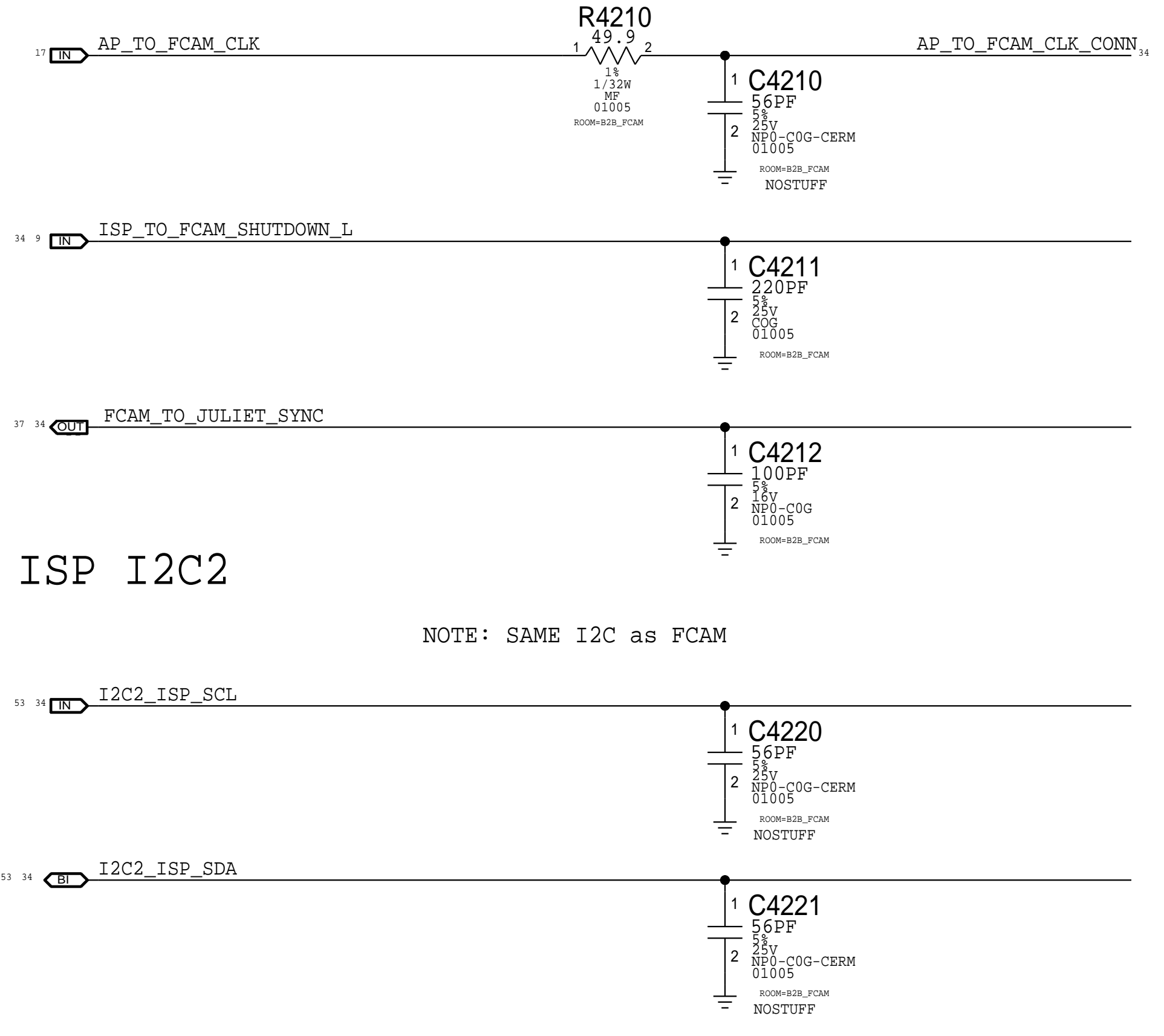
Rept: 516S00244 <-- This one on MLB  
Plug: 516S00245



LPDP FILTERS



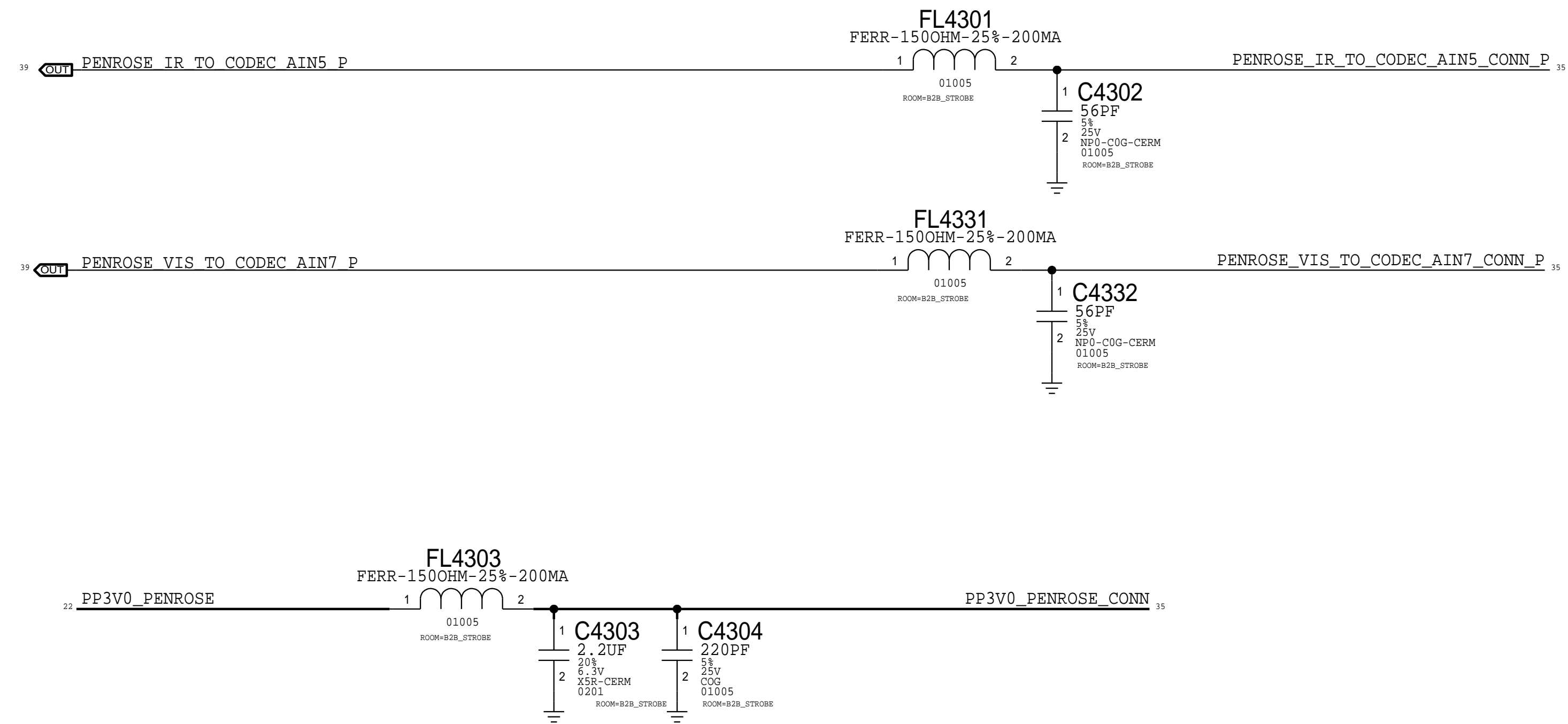
FCAM I/O



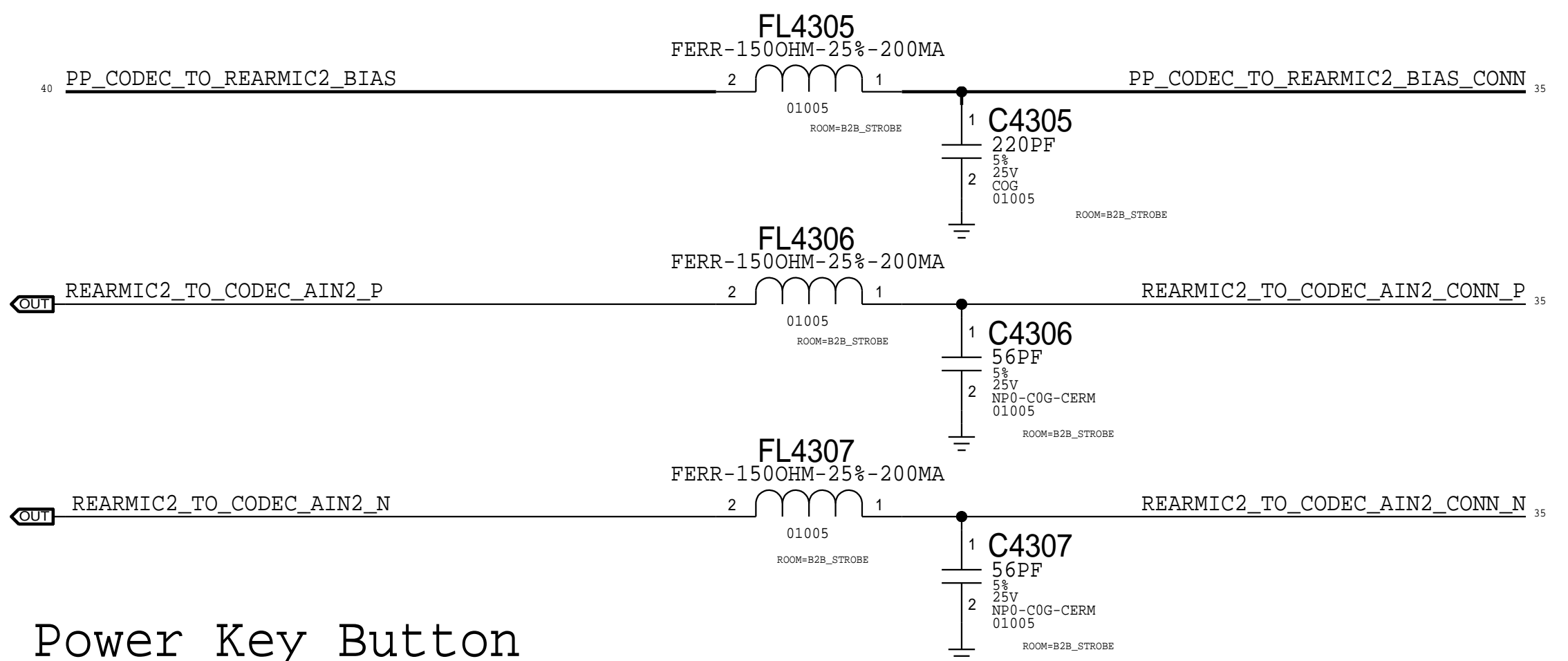
NOTE: SAME I2C as FCAM

PAGE TITLE		
CAMERA: B2B Fcam		
	DRAWING NUMBER	051-02545
	REVISION	7.0.0
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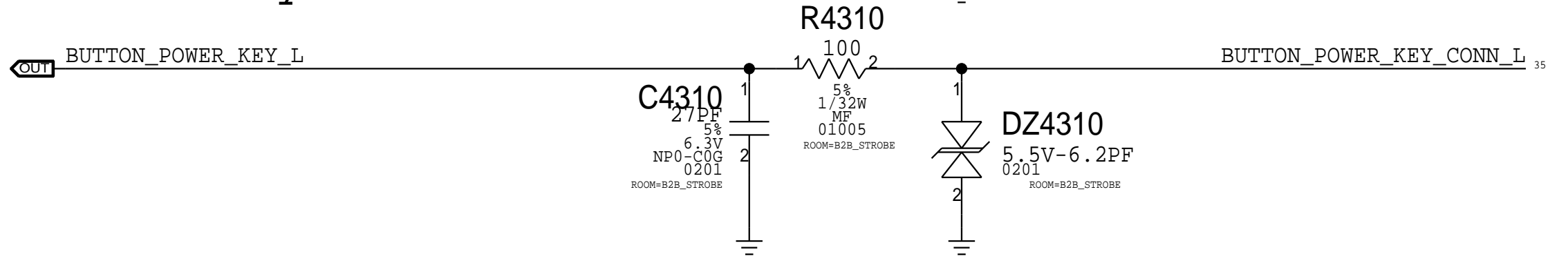
PENROSE



MIC2 (ANC REF)

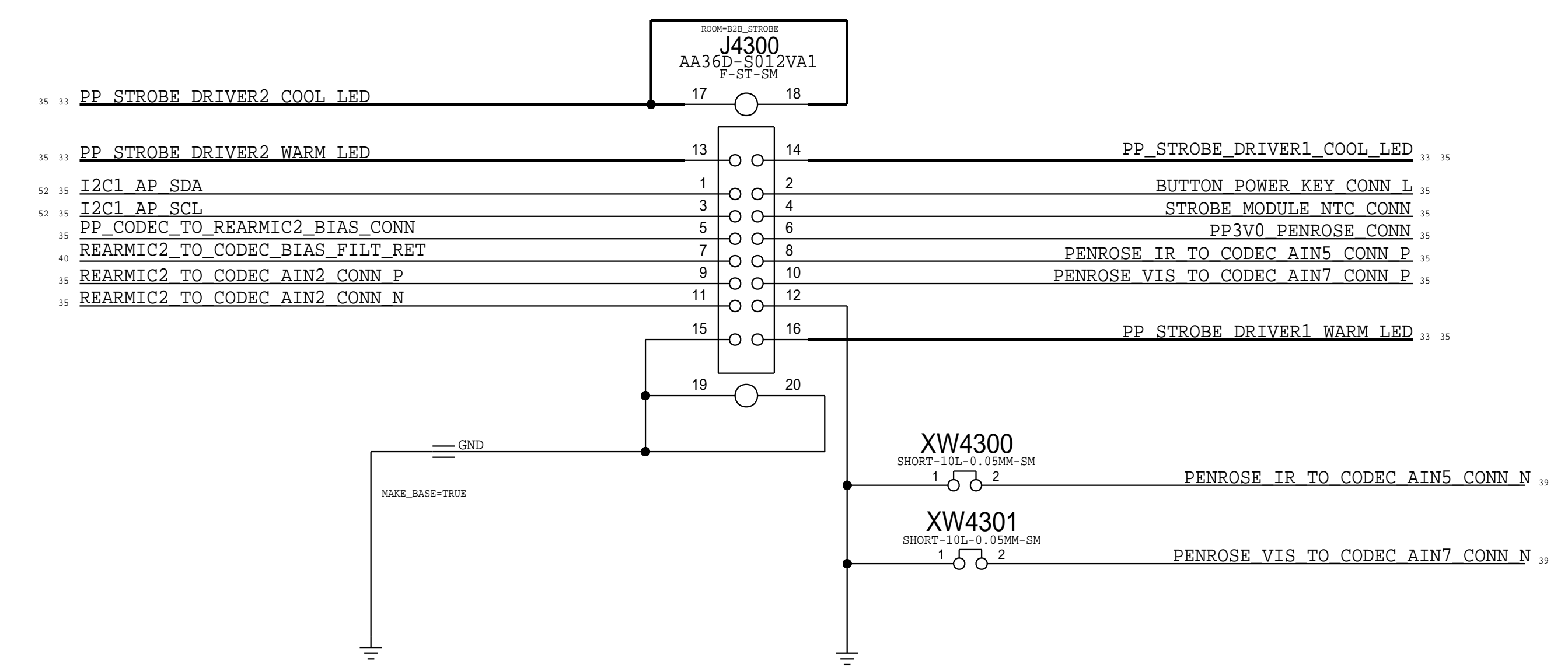


Power Key Button

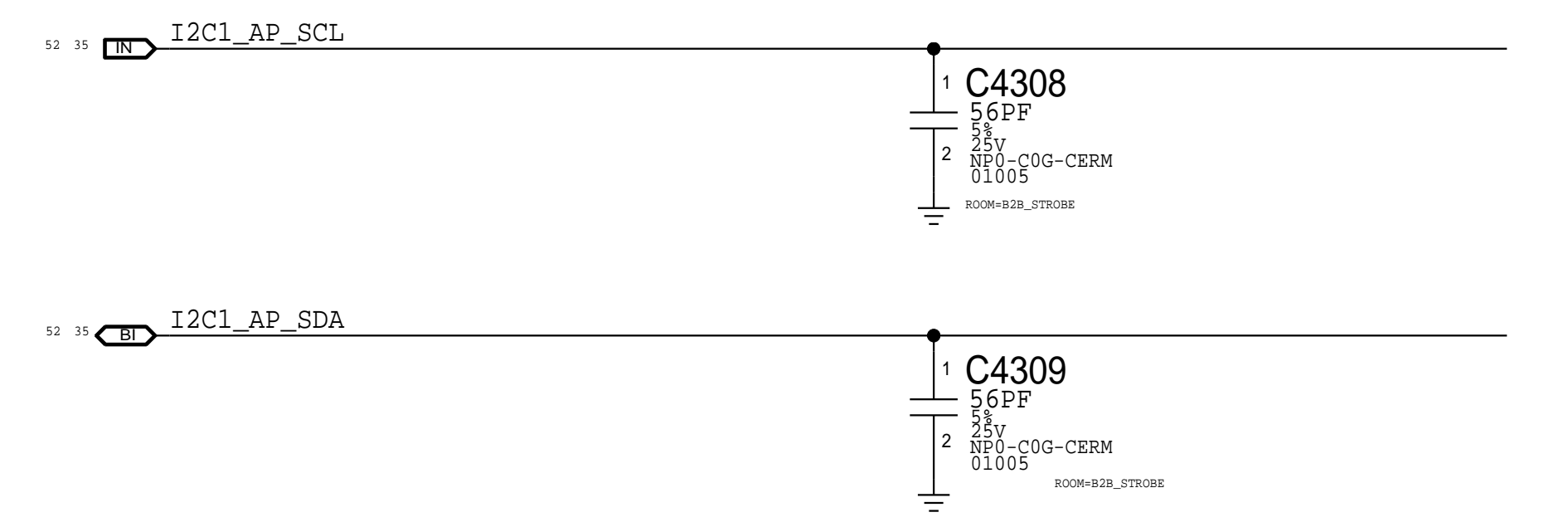
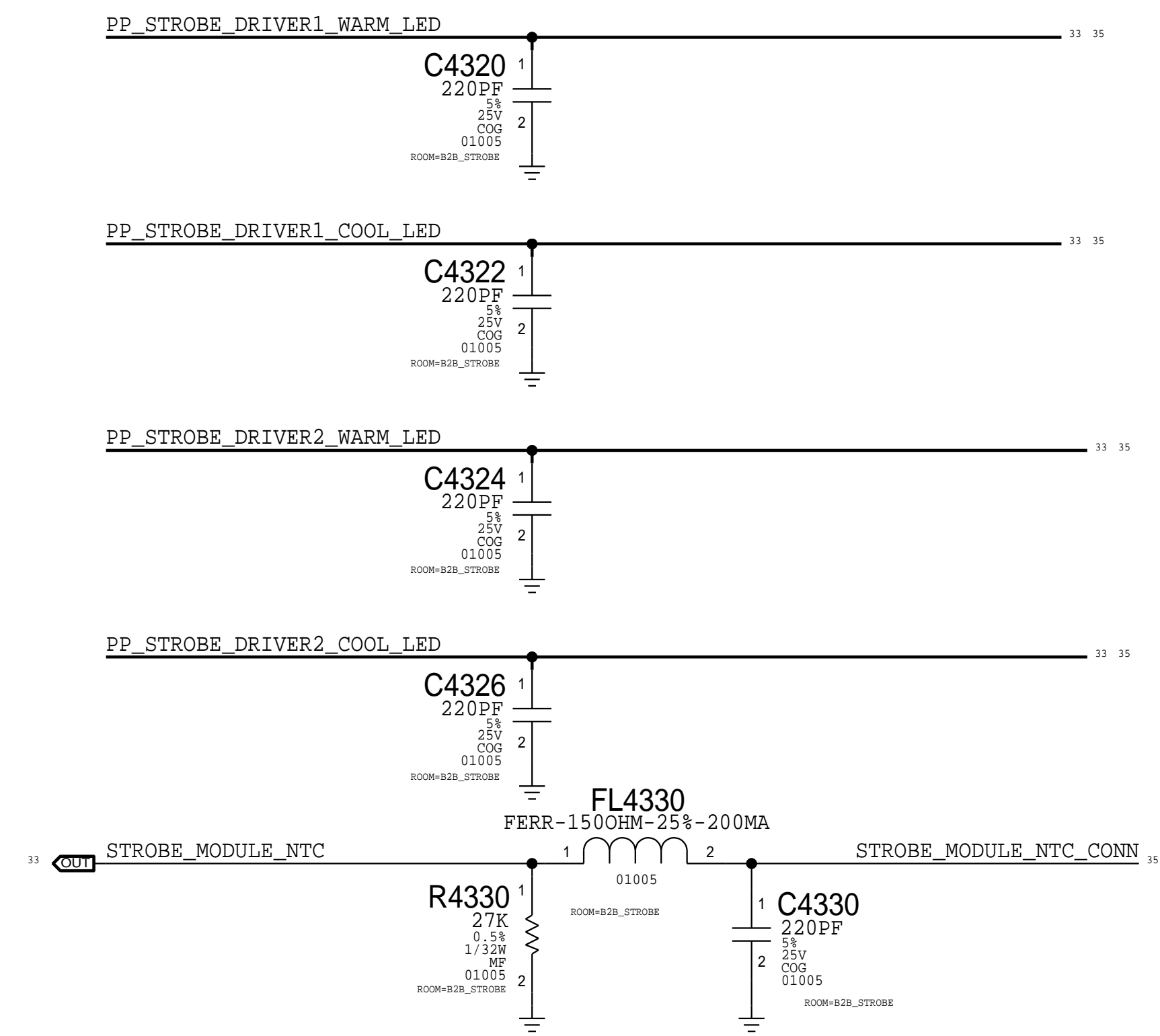


Strobe Connector

Rcpt: 516S00381 <-- This one on MLB  
 Plug: 516S00382



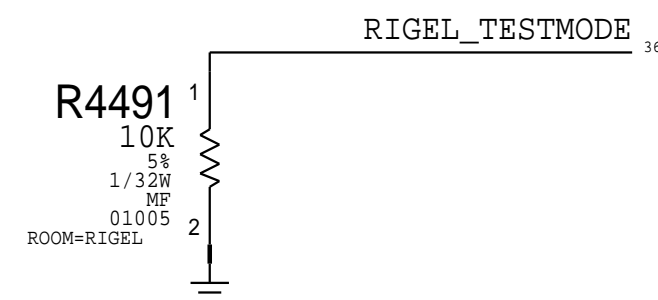
Strobe Filtering



PAGE TITLE <b>CAMERA: B2B Strobe + Hold Button</b>		
	DRAWING NUMBER 051-02545	SIZE D
	REVISION 7.0.0	BRANCH
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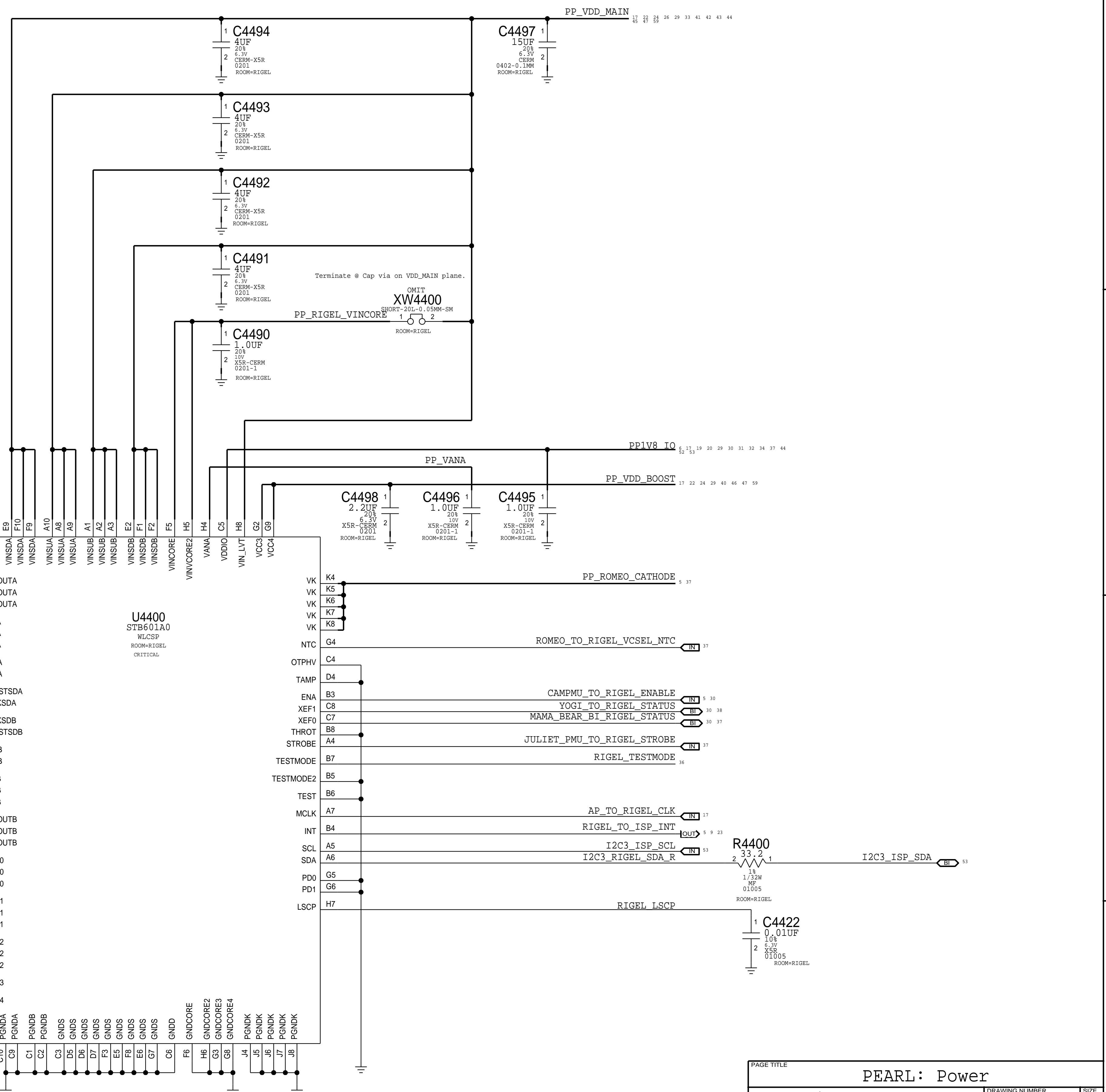
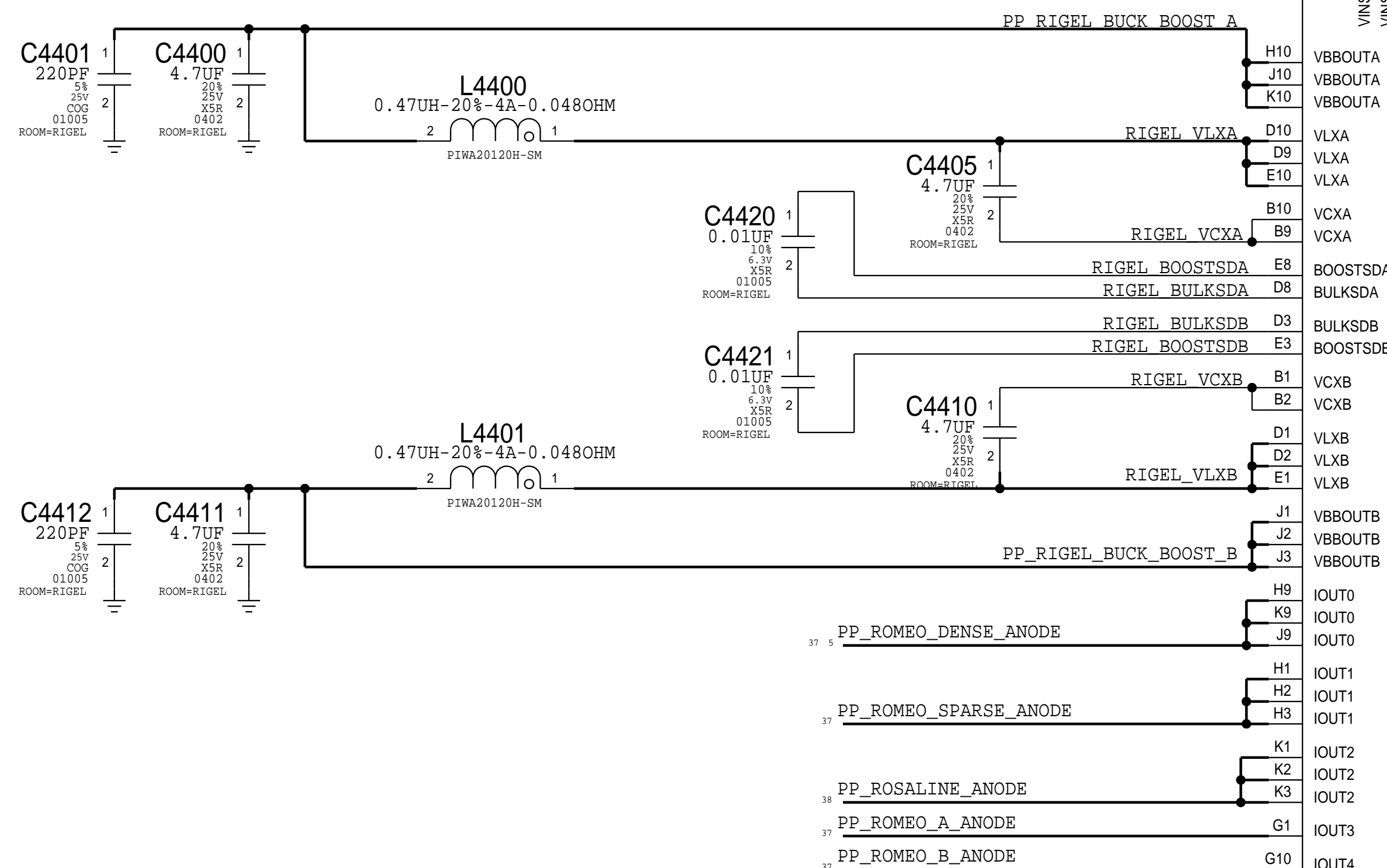
# Rigel Driver

## Test Mode Debugging



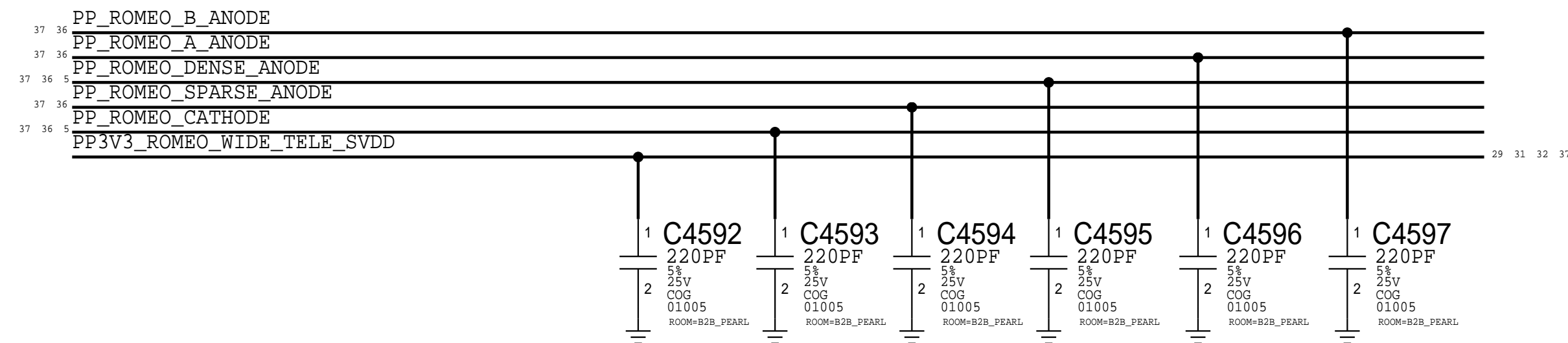
## Rigel ALTs

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
152S00720	152S00640	ALT_PARTS	L4400, L4401	RIGEL Inductors

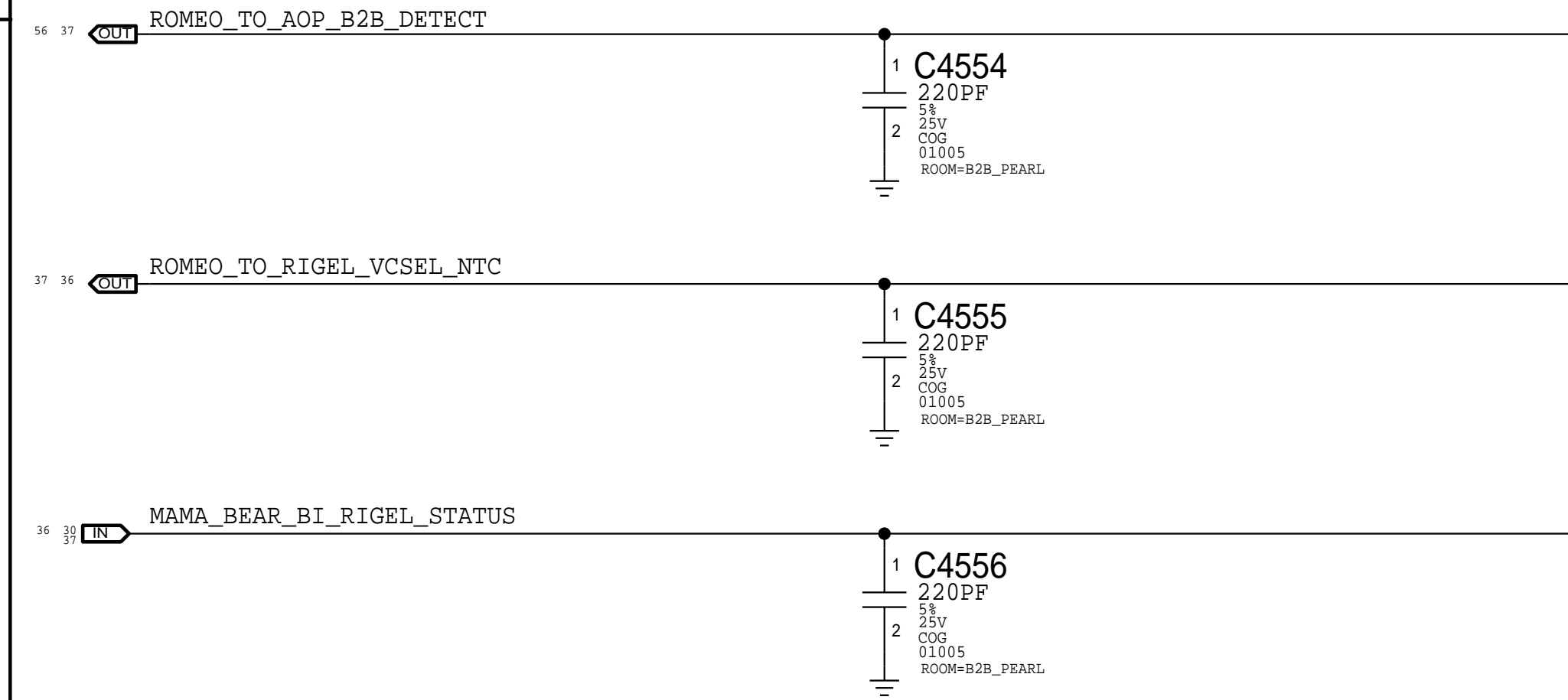


PAGE TITLE		
PEARL: Power		
Apple Inc.	DRAWING NUMBER	SIZE
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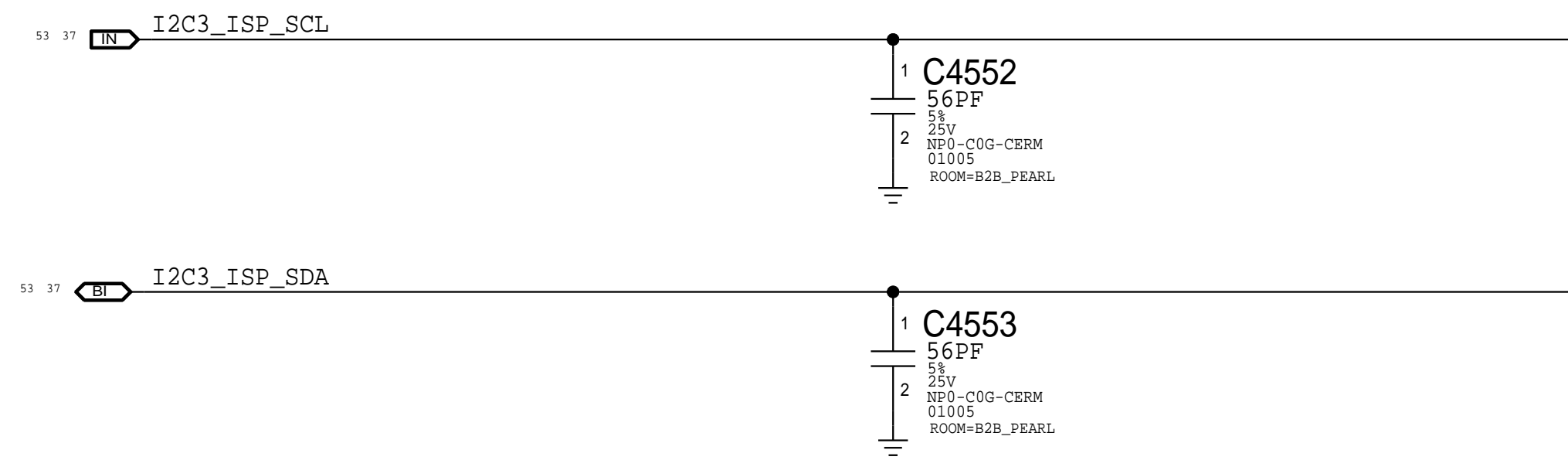
### Romeo Power Filtering



### Romeo I/O

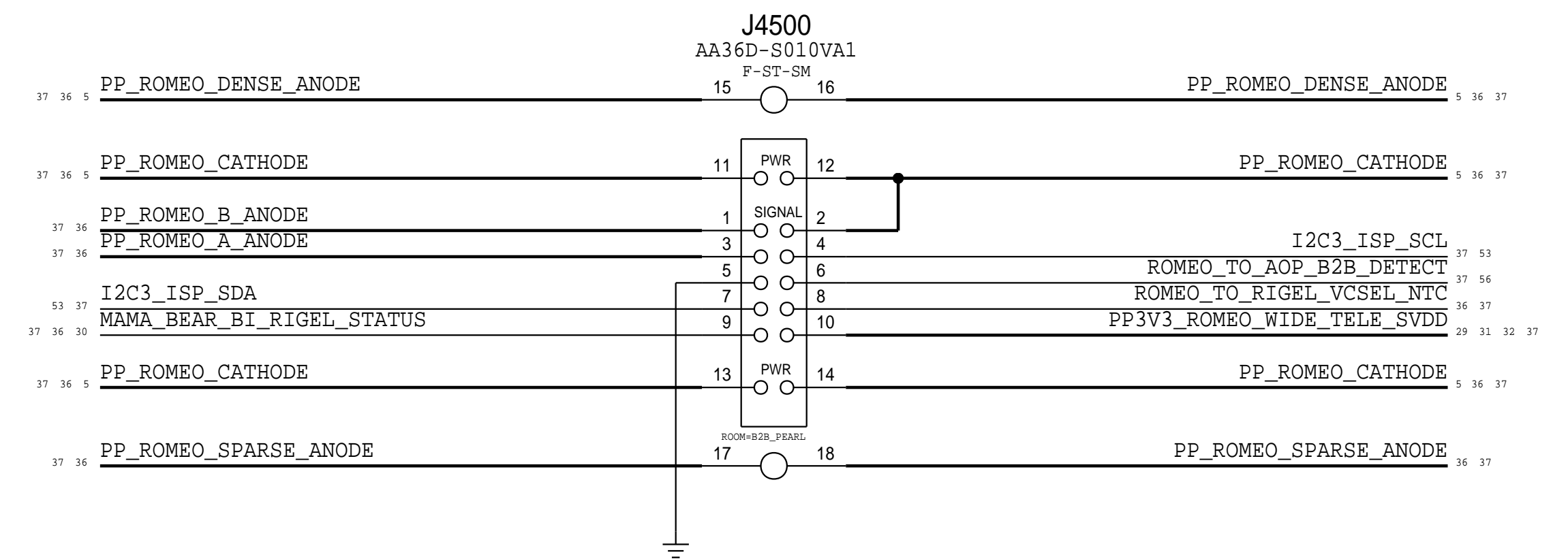


### ISP I2C3



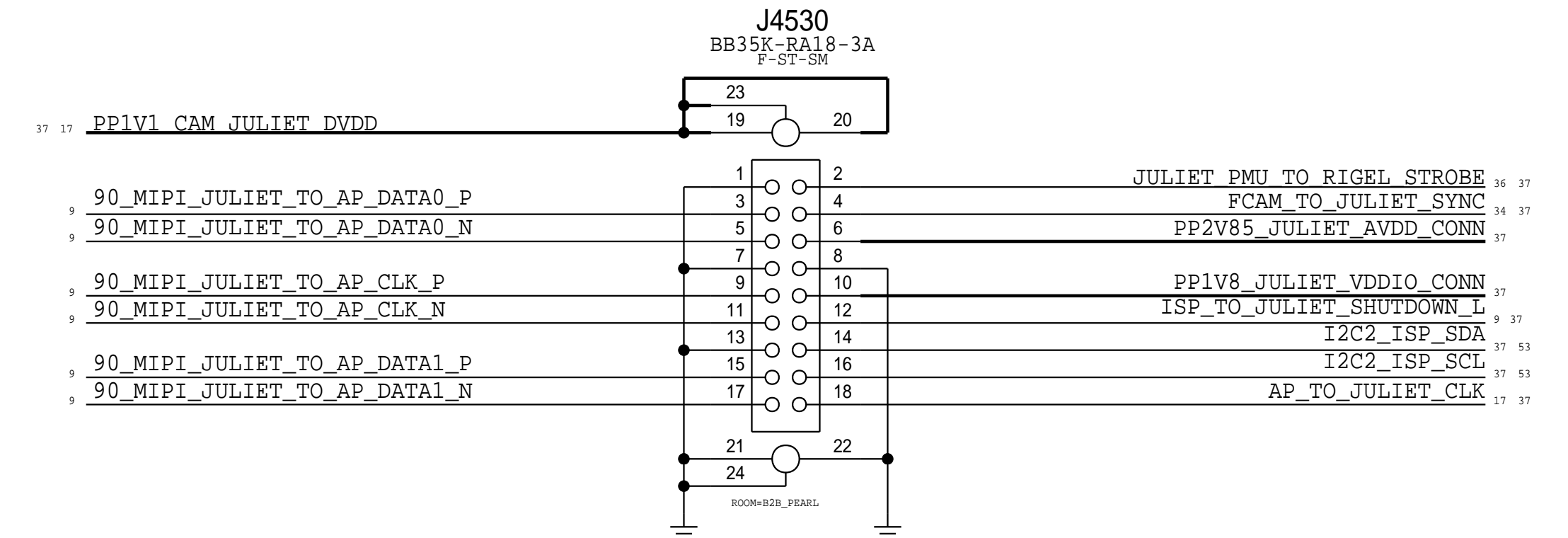
### Romeo Connector

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

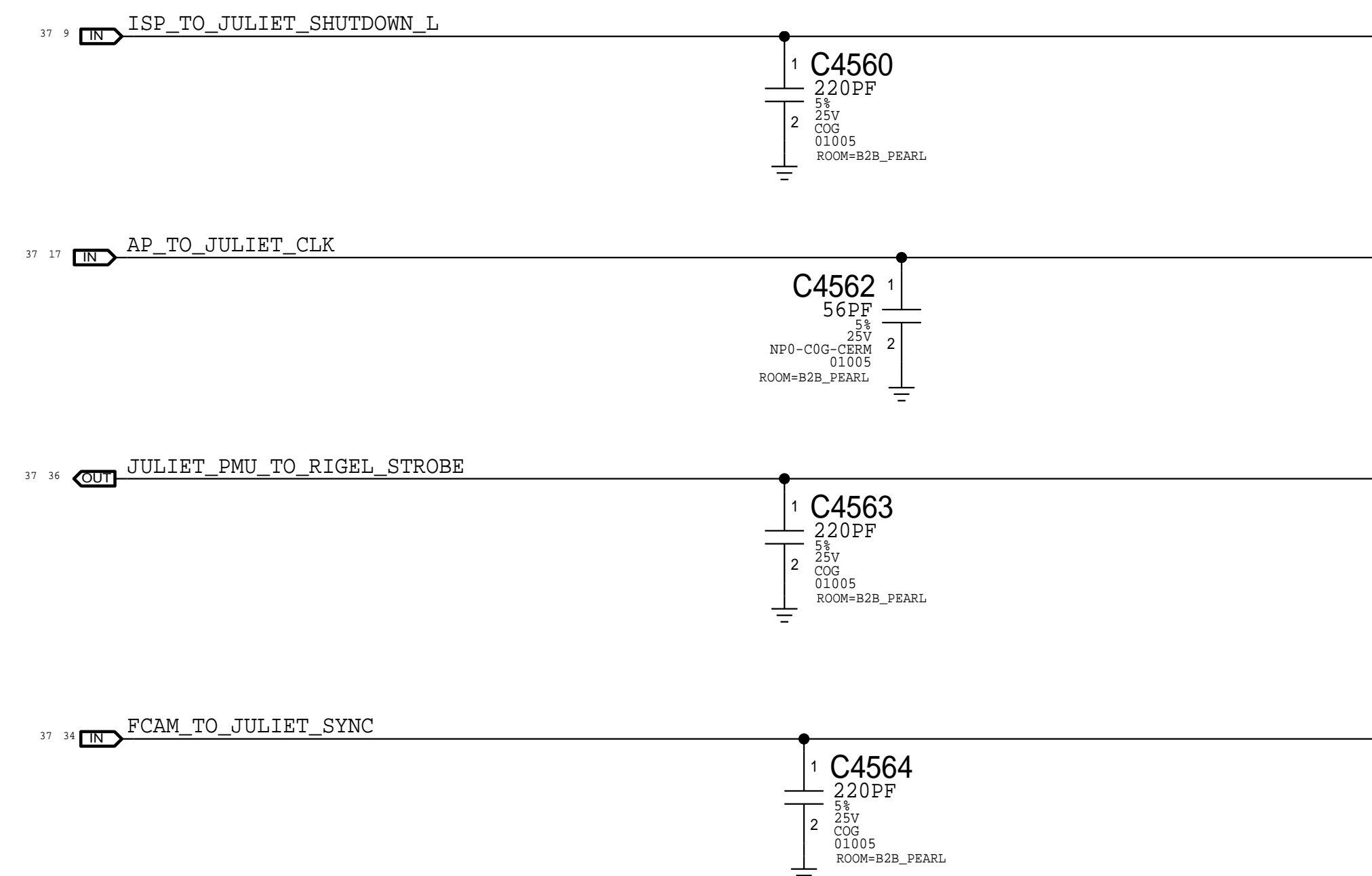
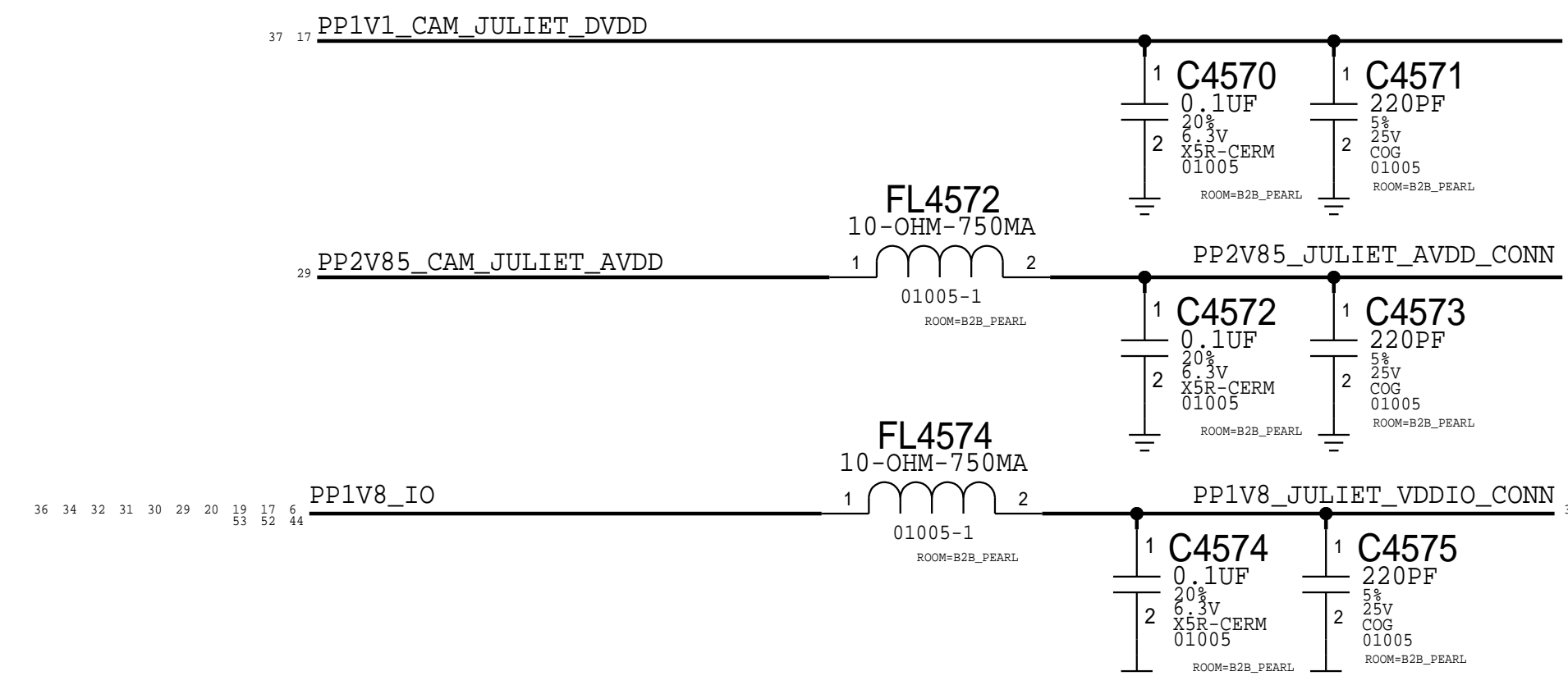


### Juliet Connector

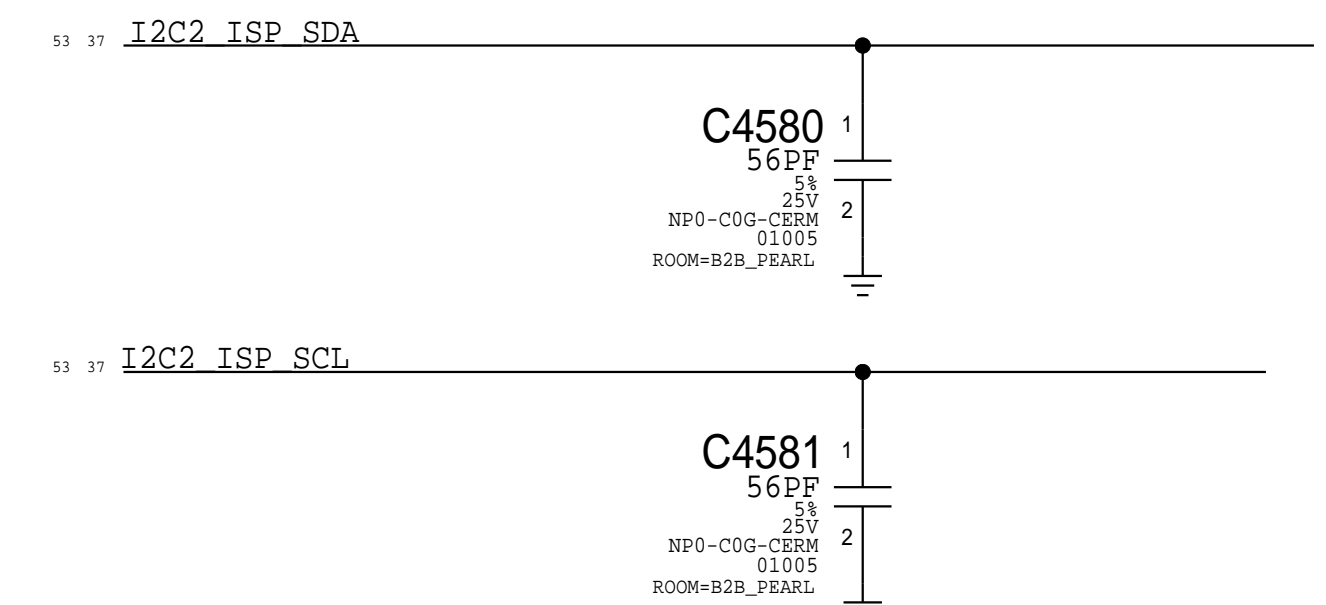
Rcpt: 516S00244 <-- This one on MLB  
 Plug: 516S00245



### Juliet Power and I/O

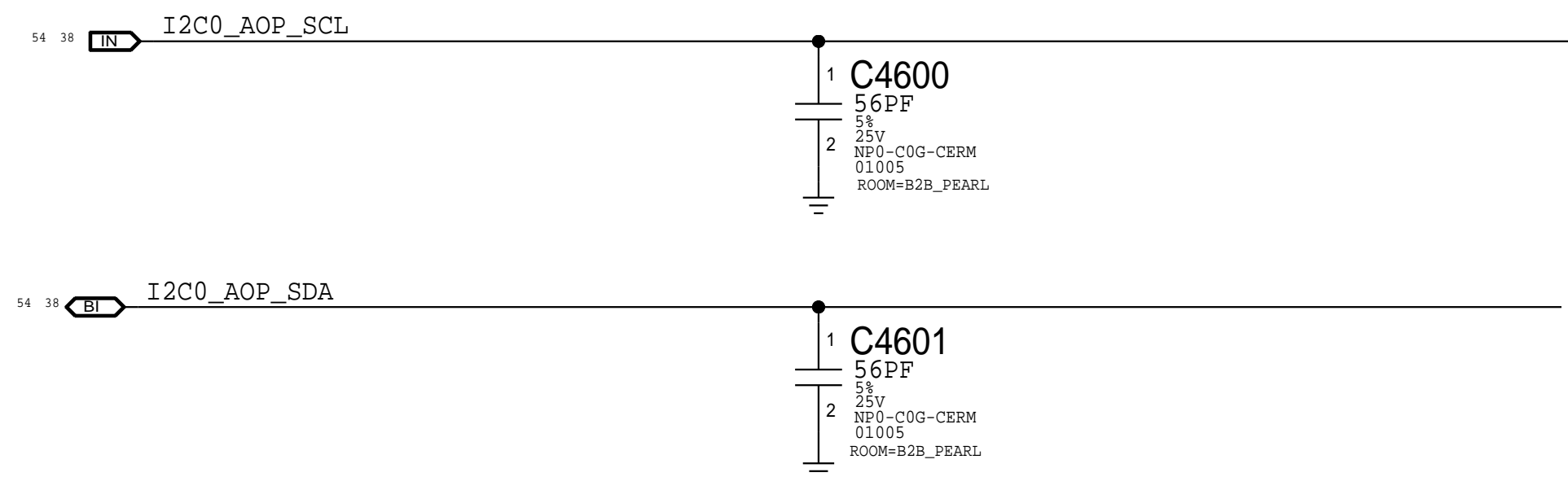


NOTE: SAME I2C as FCAM

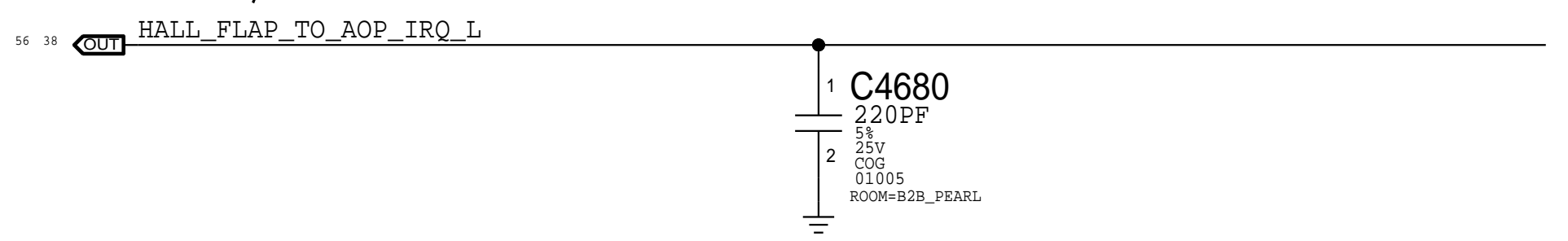


PAGE TITLE		
PEARL: B2B Romeo + Juliet		
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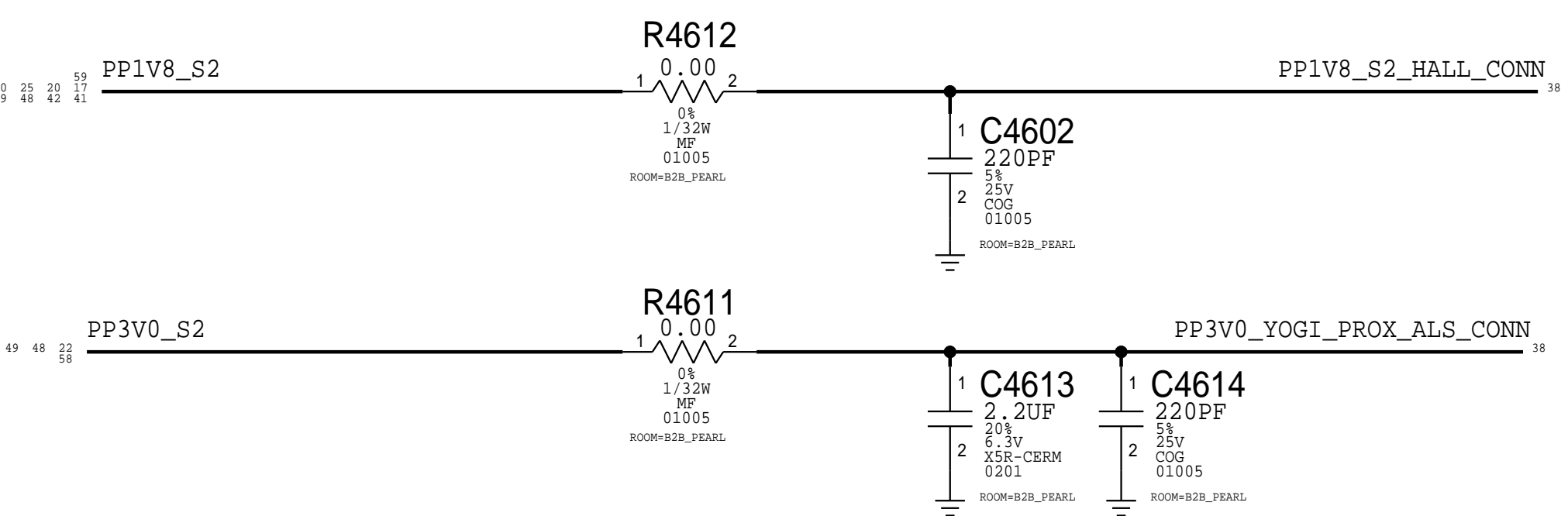
AOP I2C



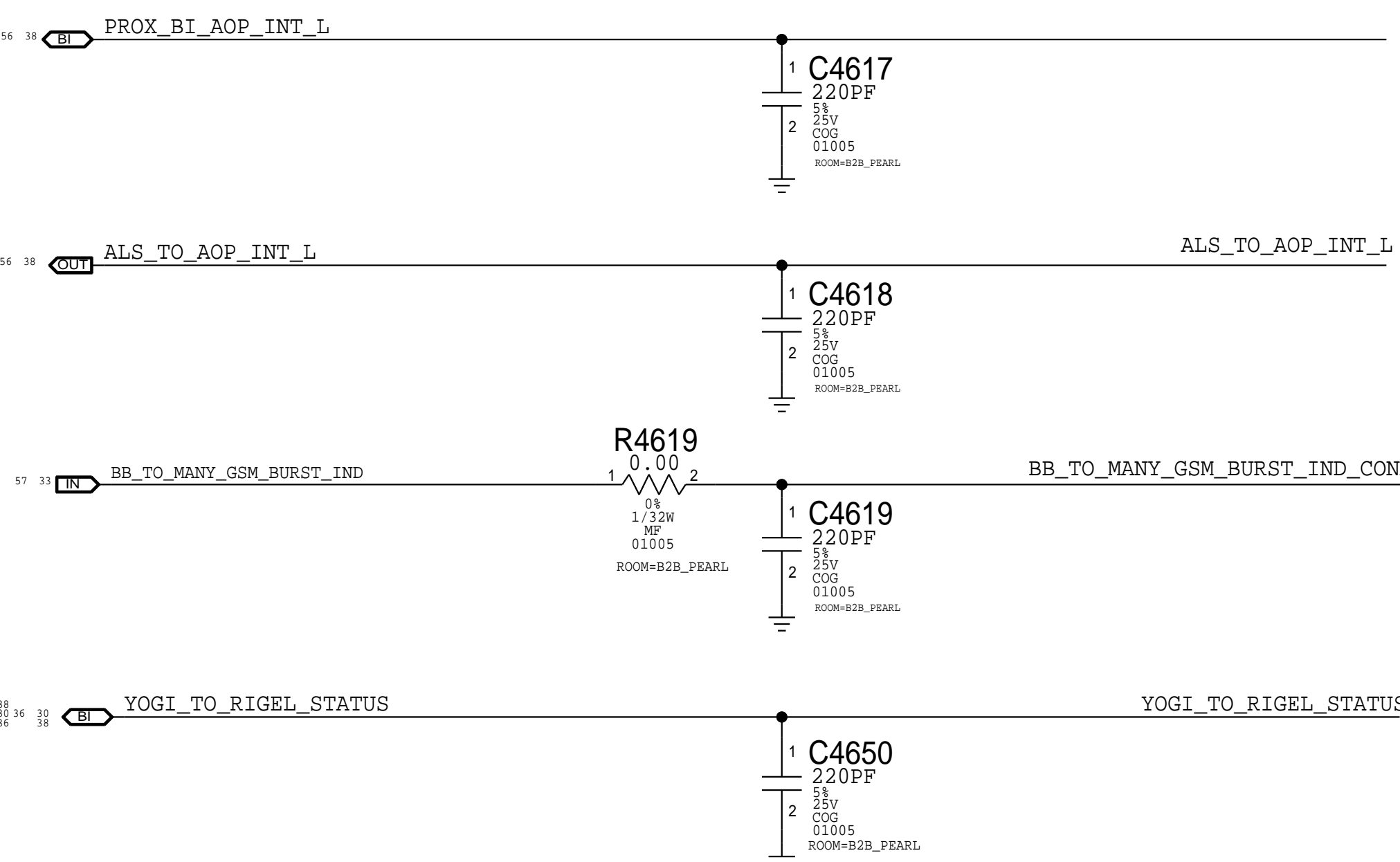
HALL I/Os



PROX & HALL POWER

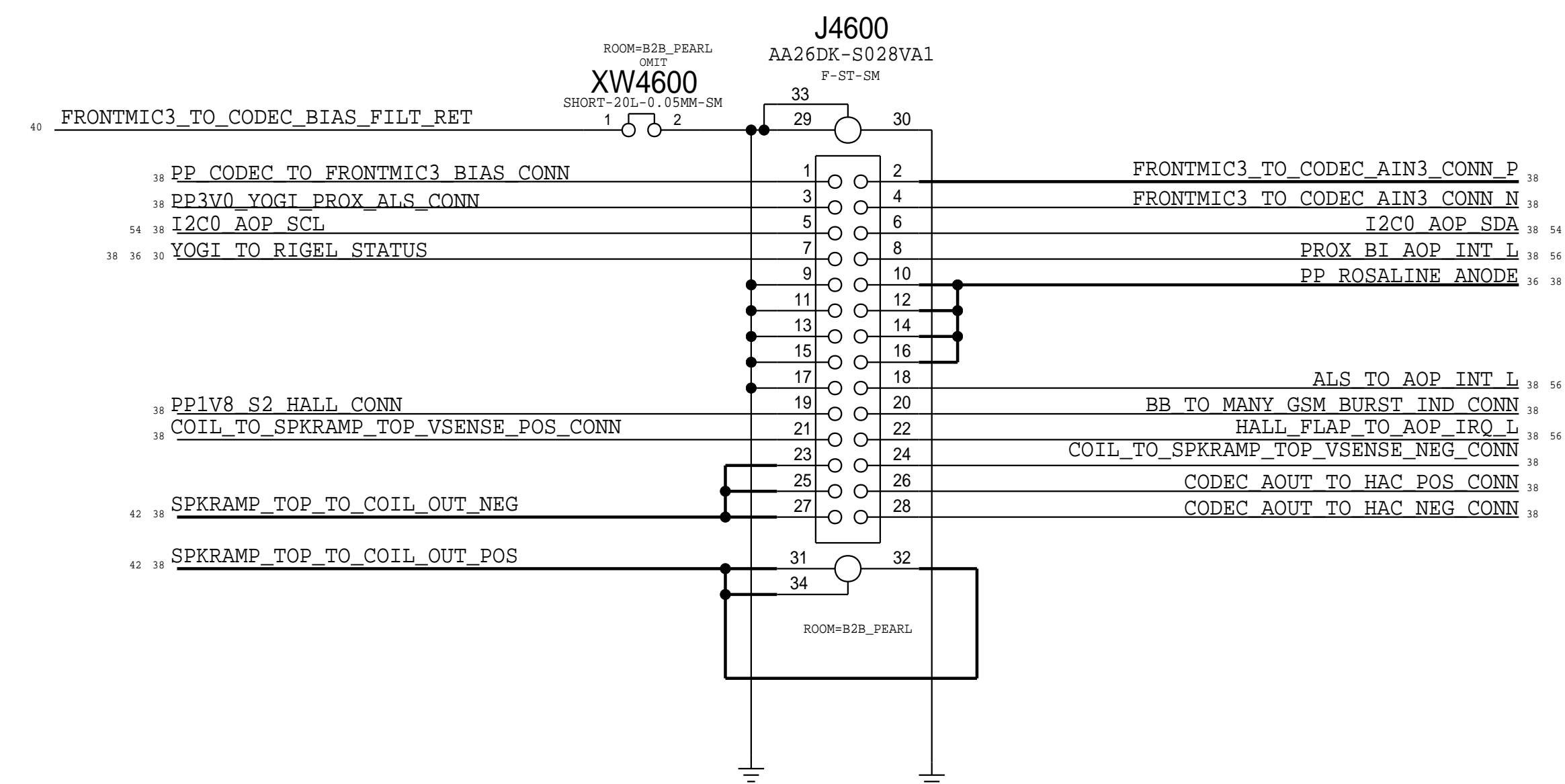


PROX/ALS/YOGI I/O

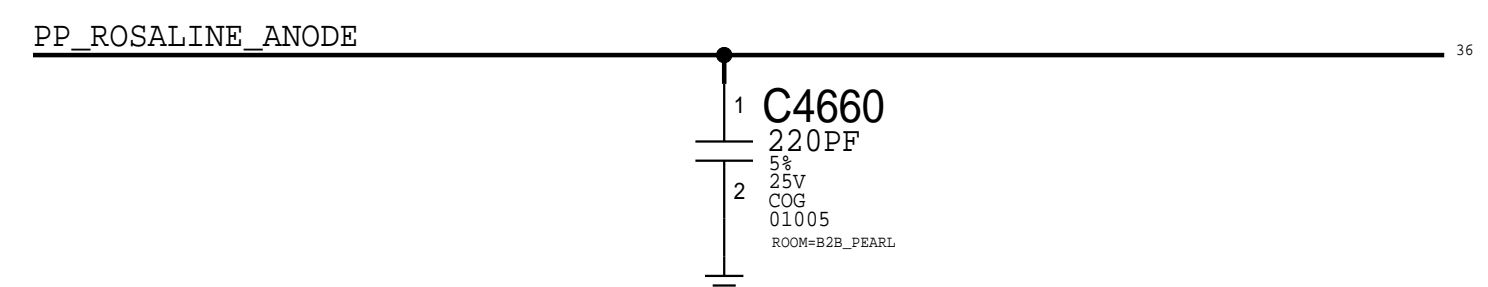


Rosaline + Sensor Connector

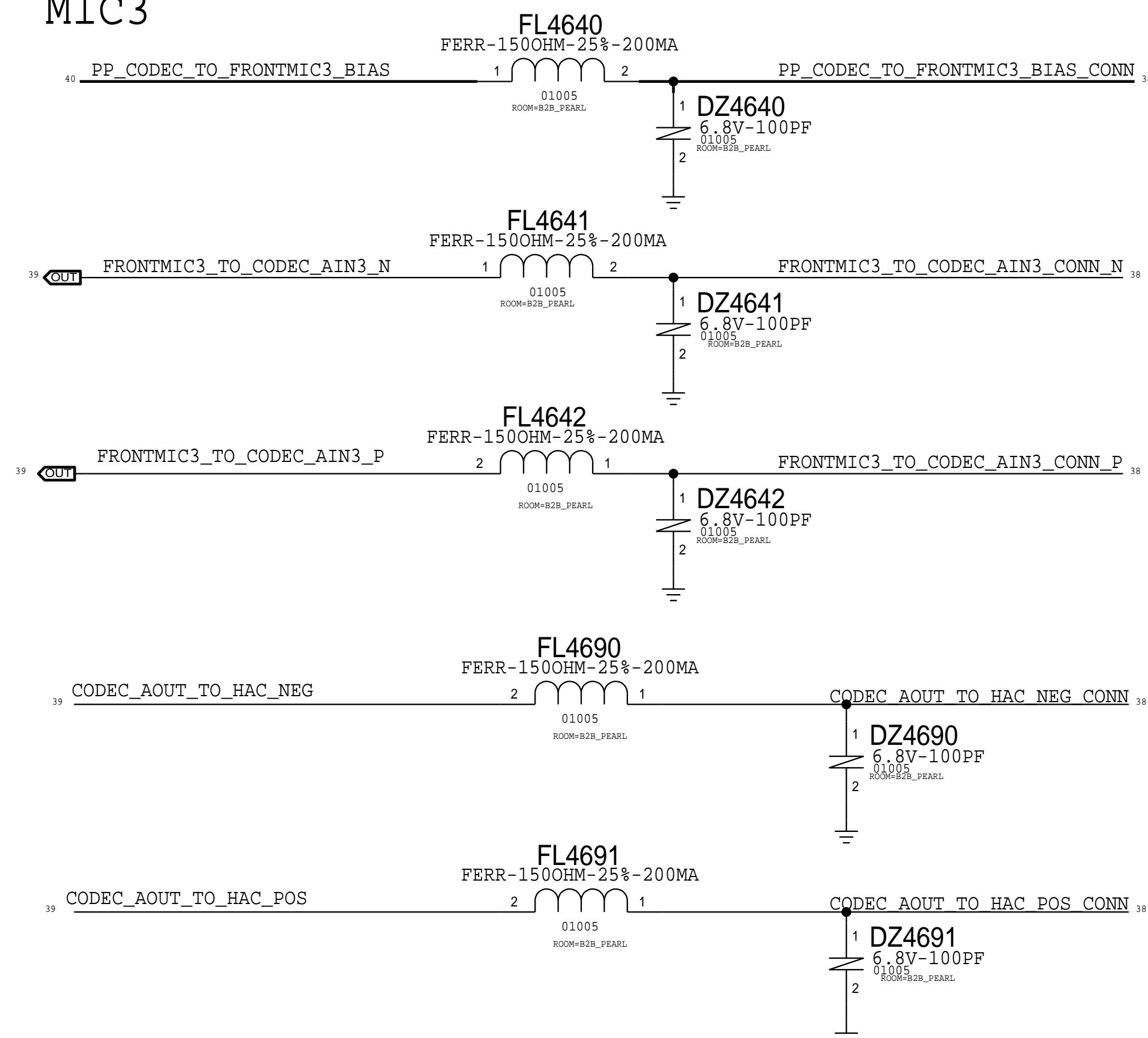
Rcpt: 516S00325 <-- This one on MLB  
Plug: 516S00326



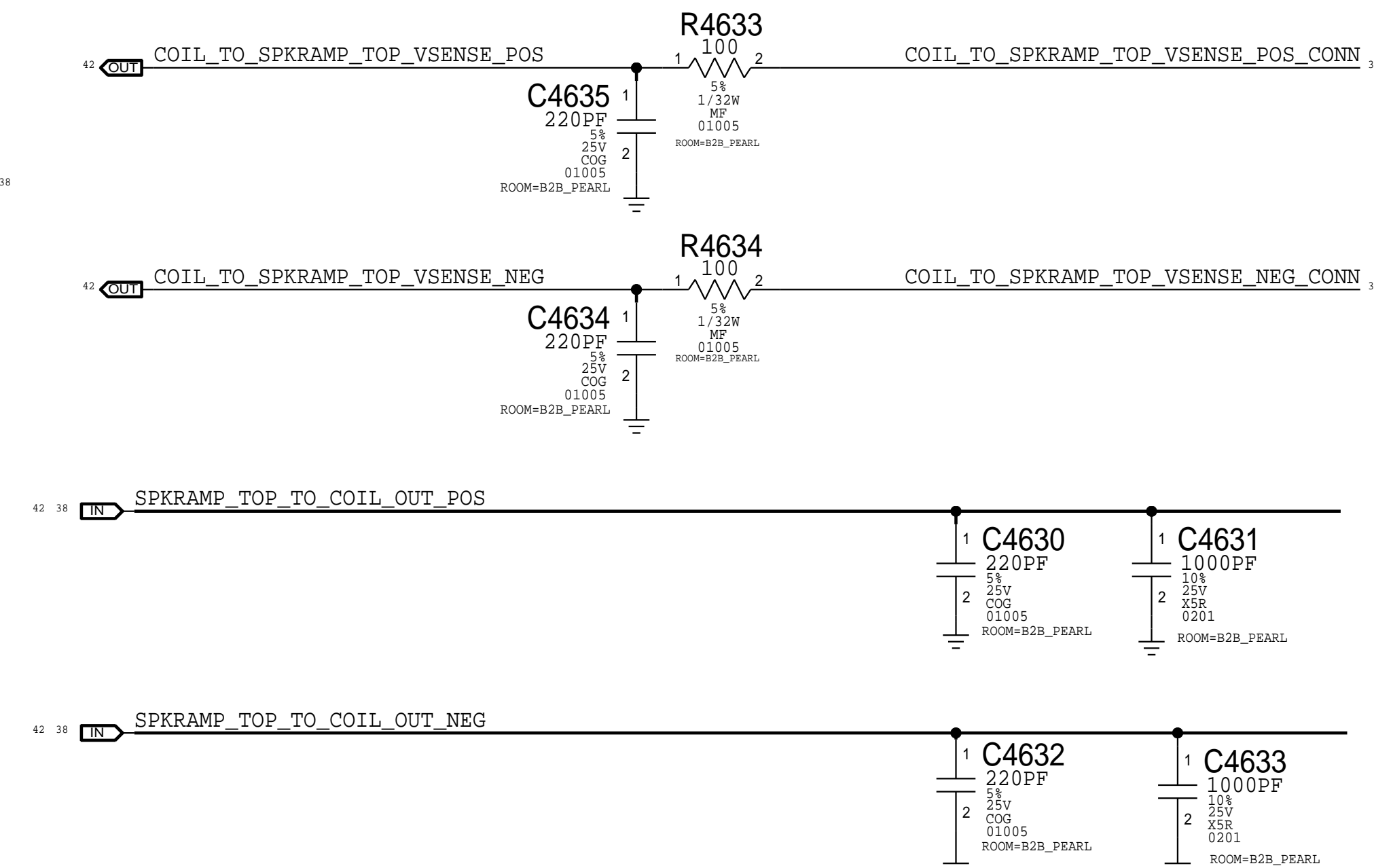
Yogi Signals



MIC3

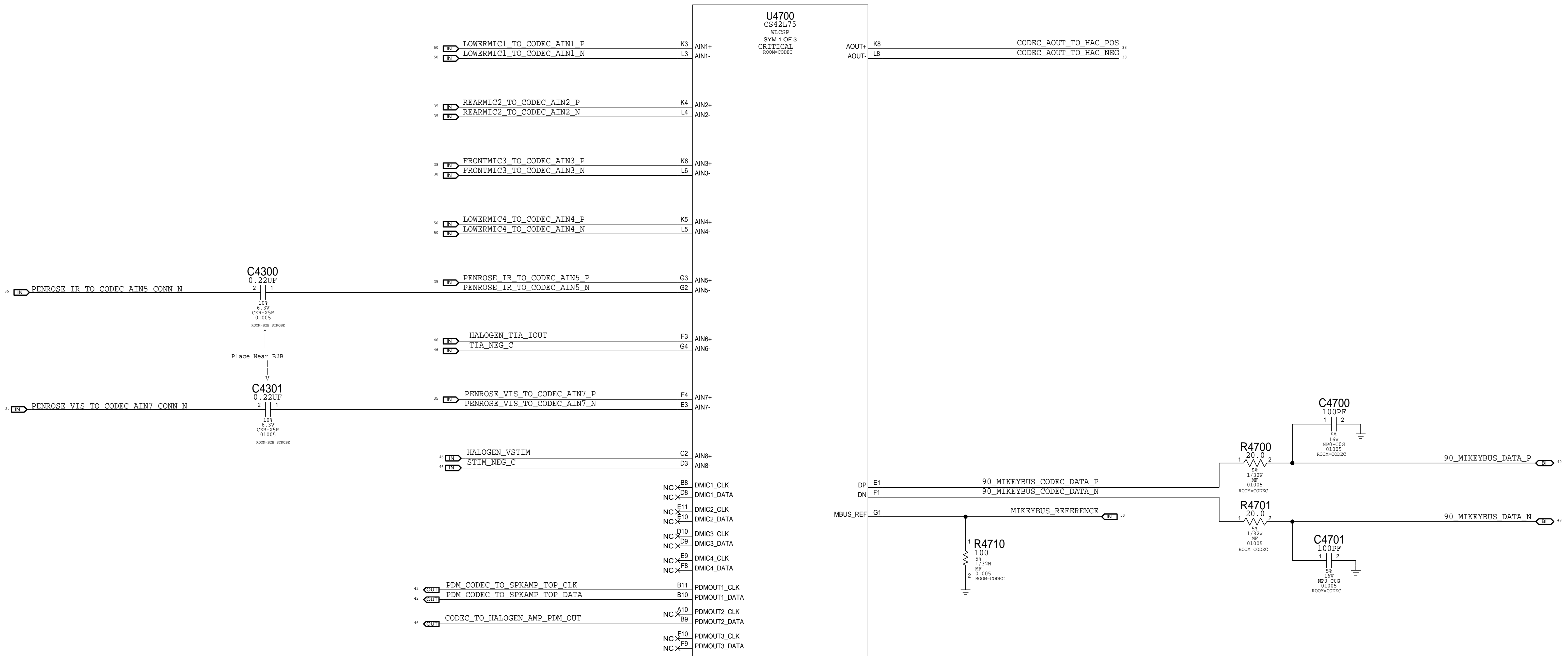


SPEAKER2



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



# CALLAN AUDIO CODEC (POWER & I/O)

D

C

B

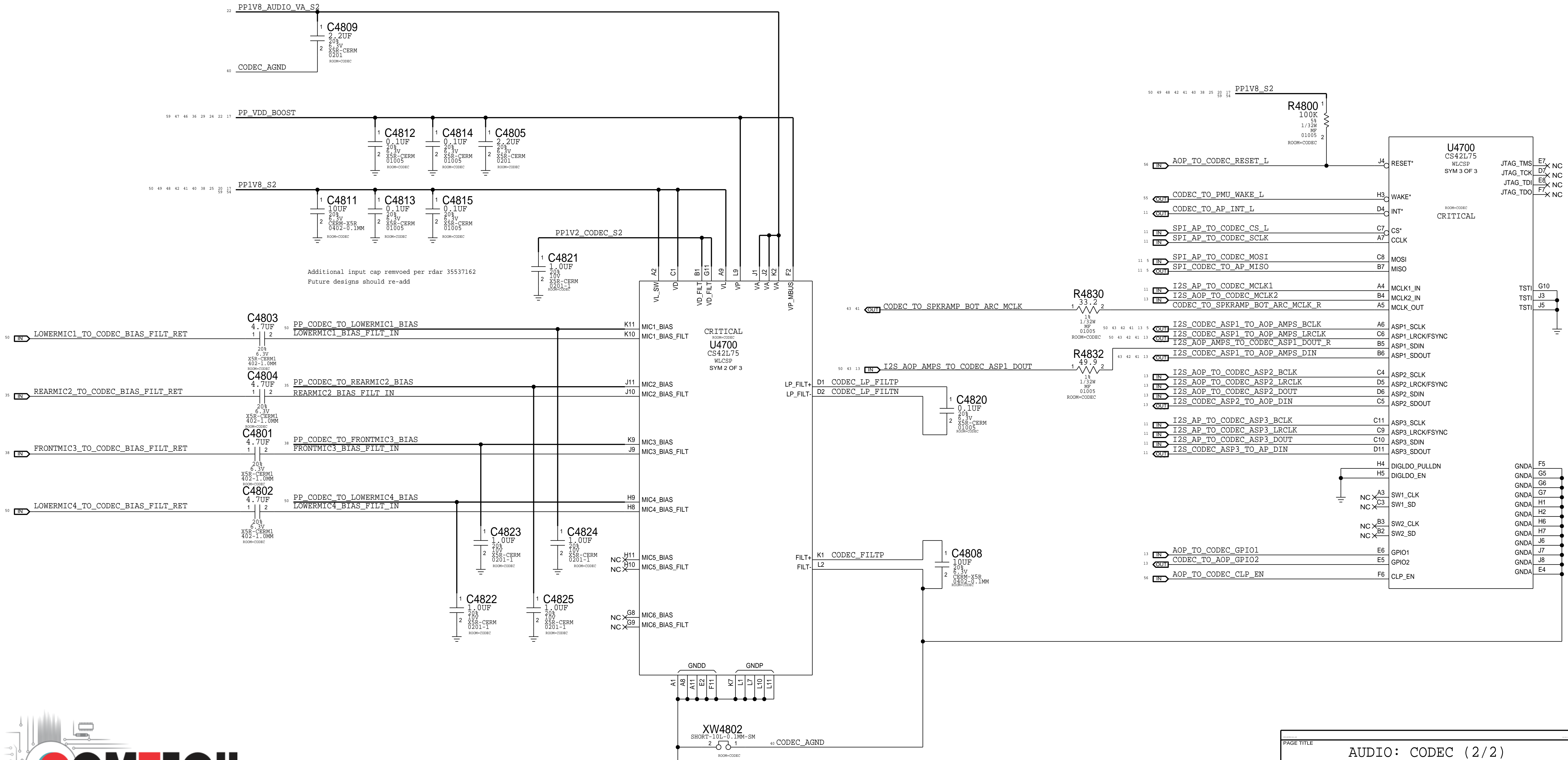
A

D

C

B

A

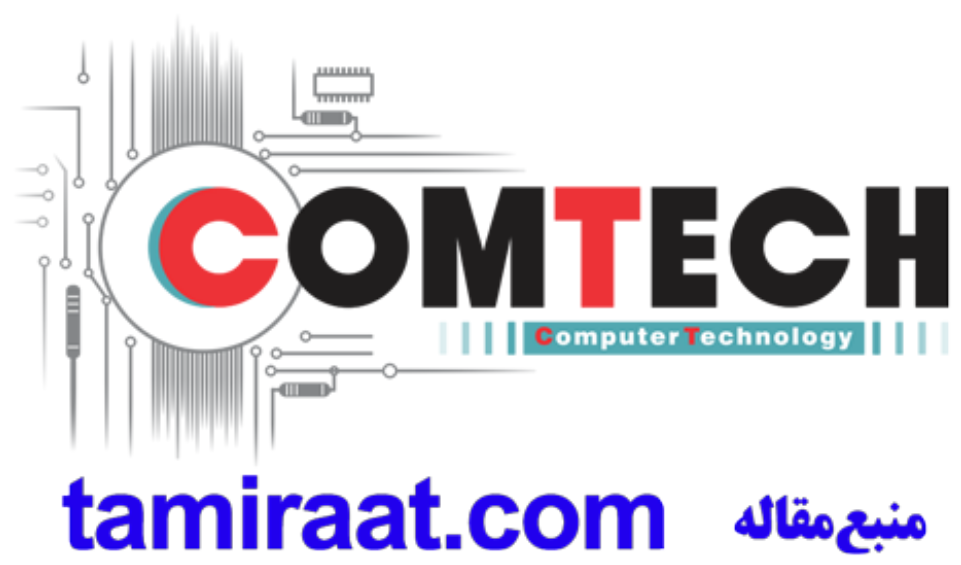
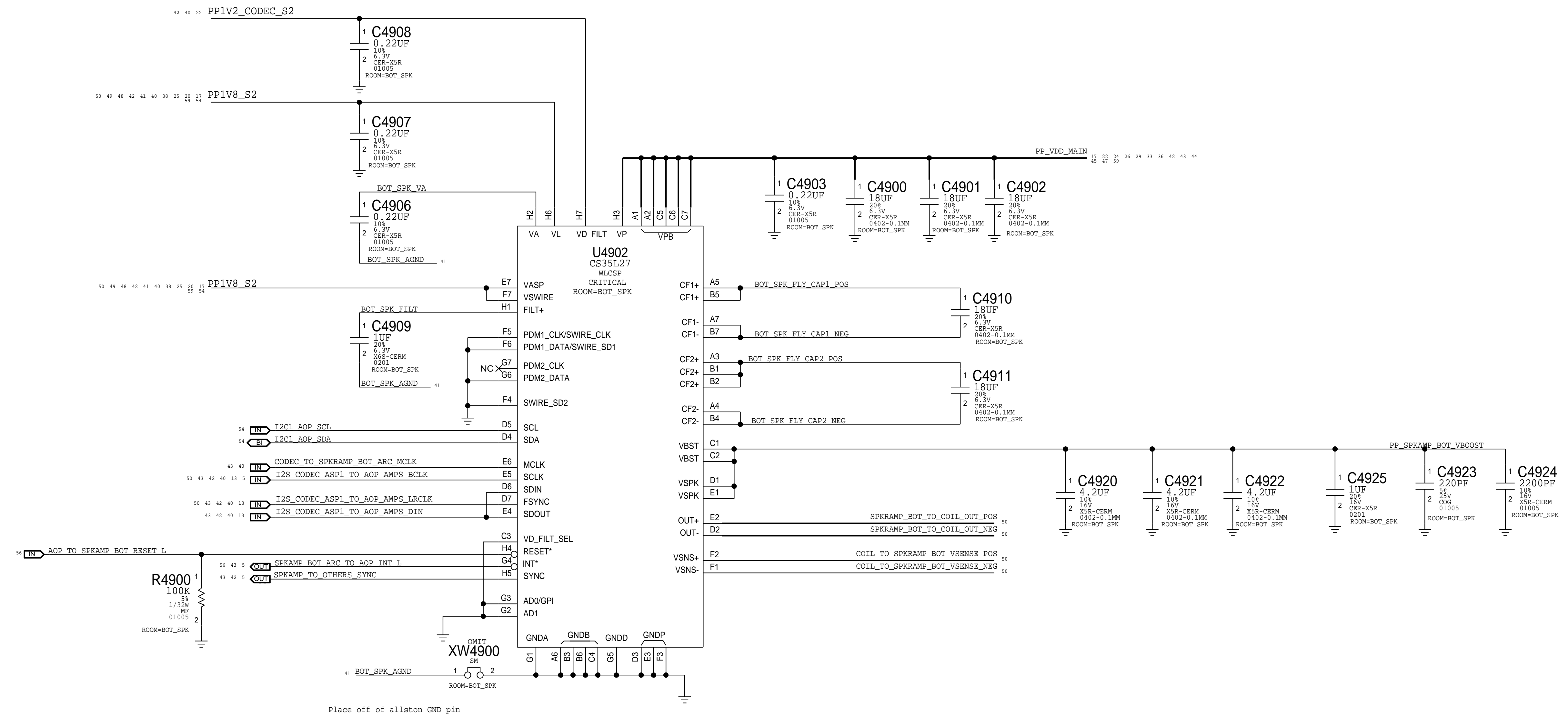


PAGE TITLE		AUDIO: CODEC (2/2)	
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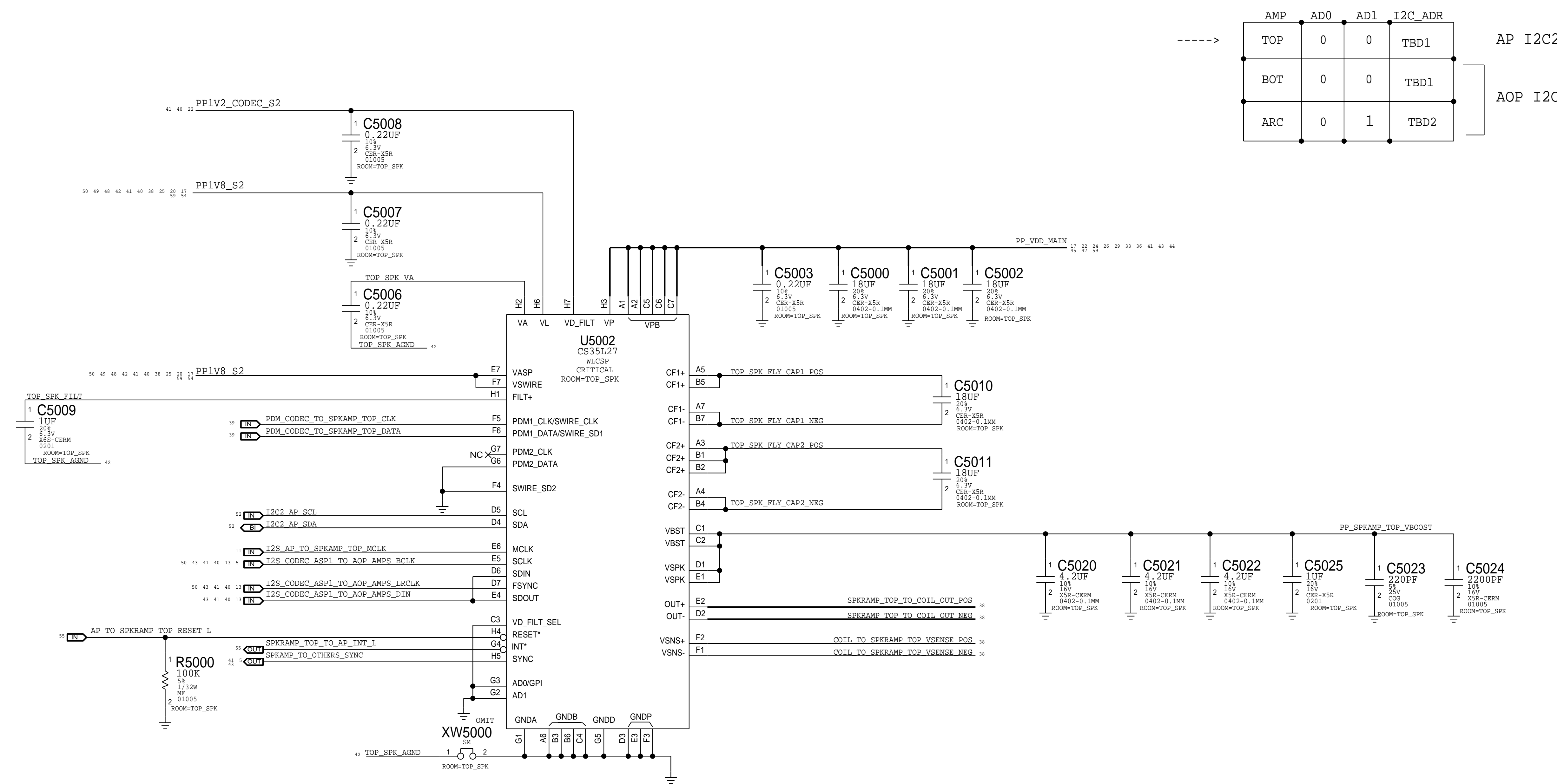


	AMP	AD0	AD1	I2C_ADR	
----->	TOP	0	0	TBD1	AP I2C2
	BOT	0	0	TBD1	
	ARC	0	1	TBD2	

AOP I2C1



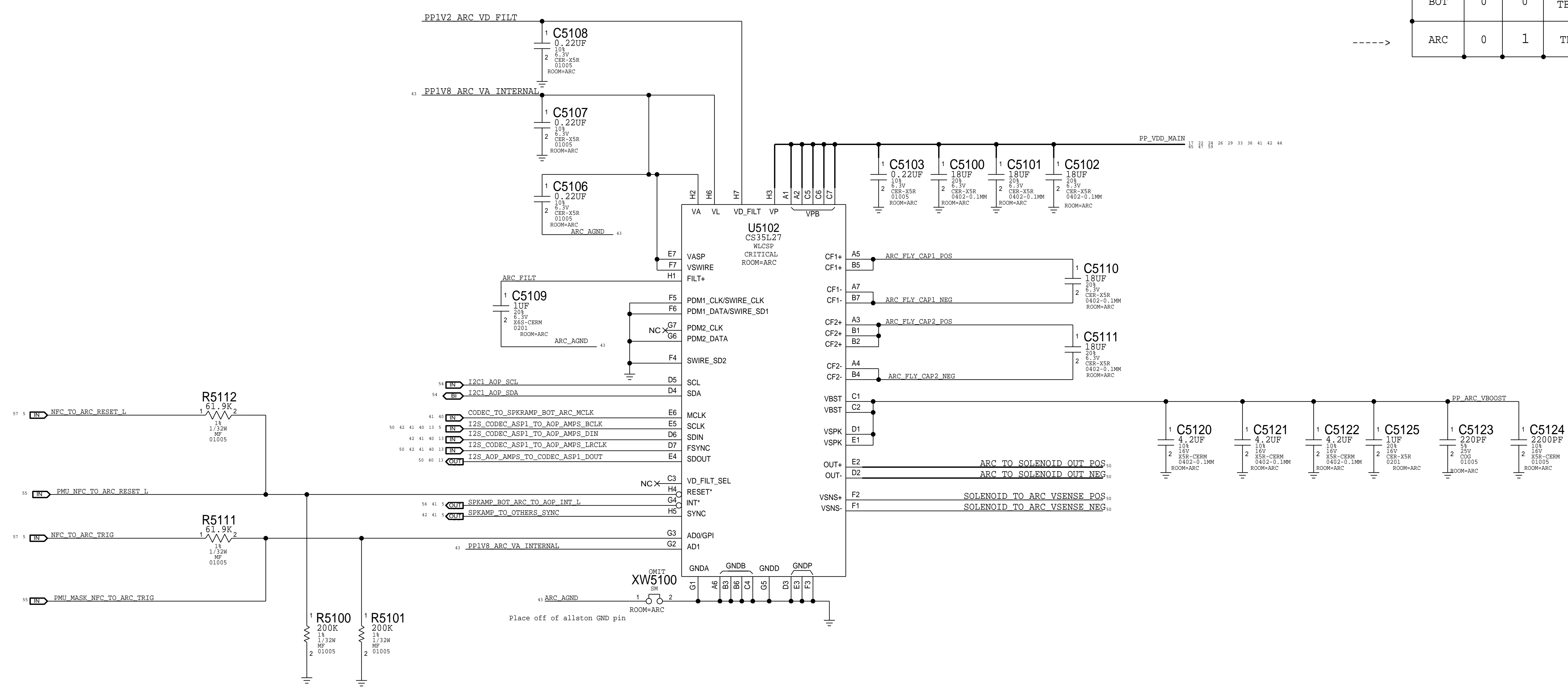
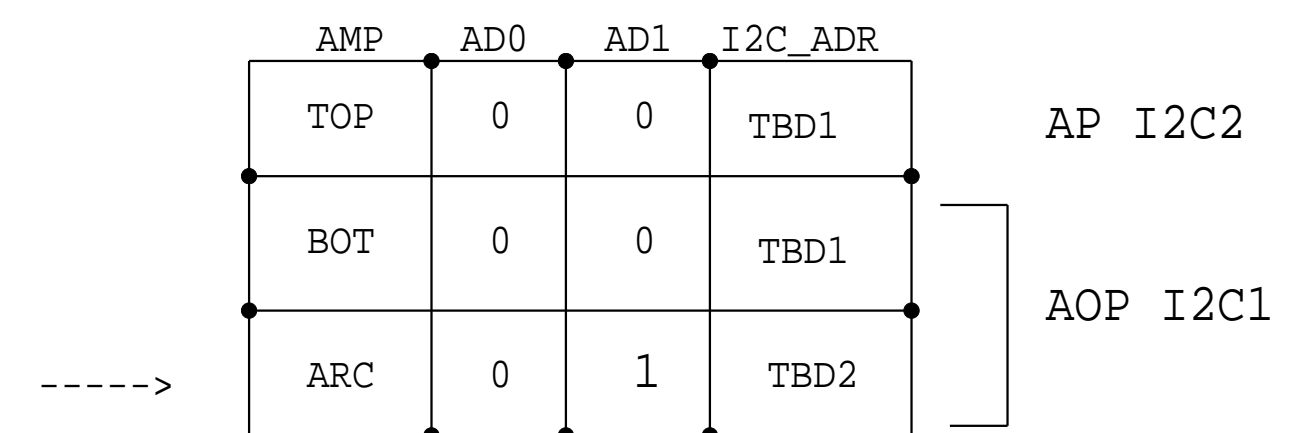
PAGE TITLE		AUDIO: SOUTH SPKAMP	
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	AMP	AD0	AD1	I2C_ADR
AP I2C2	TOP	0	0	TBD1
AOP I2C1	BOT	0	0	TBD1
	ARC	0	1	TBD2

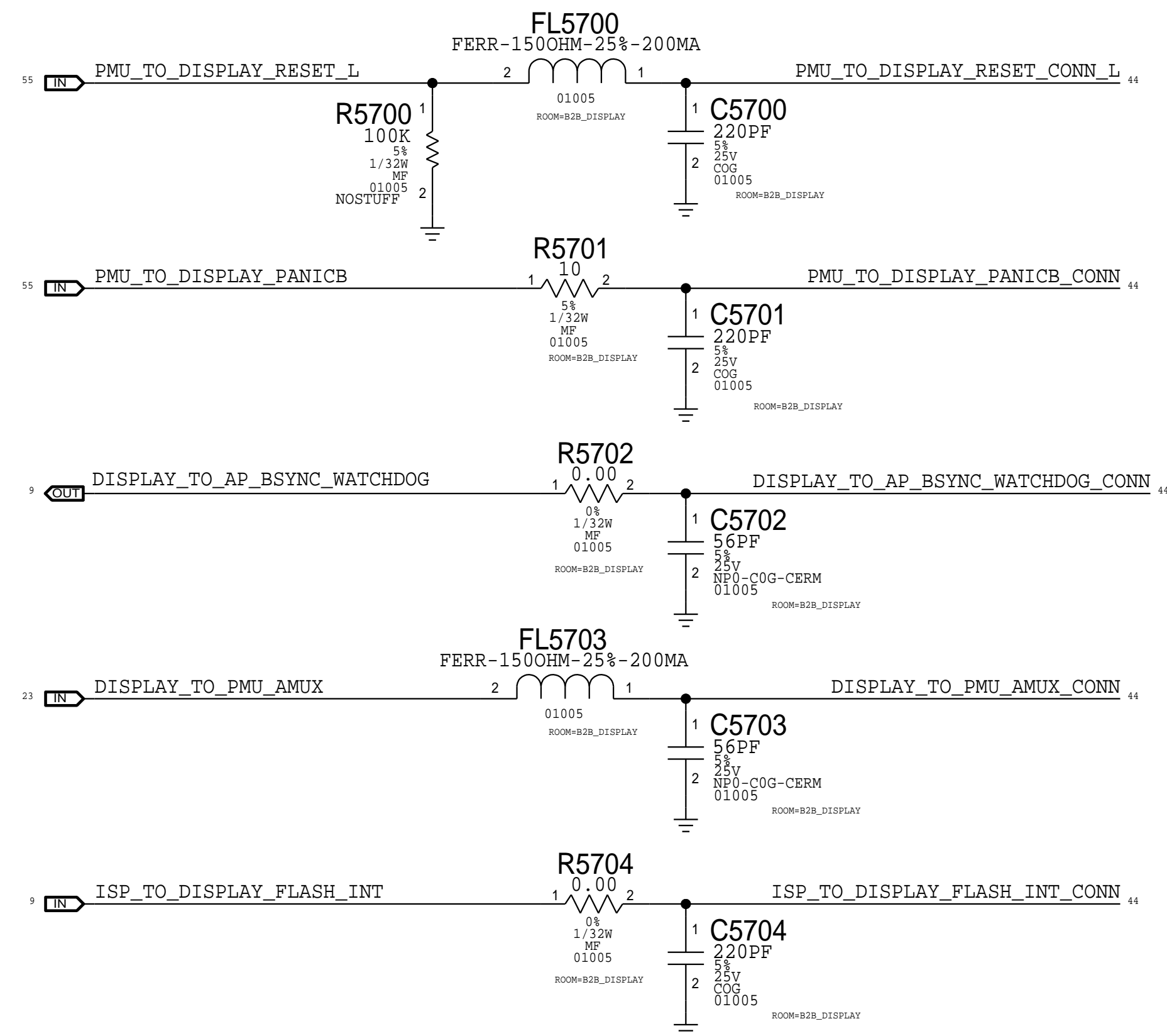


PAGE TITLE			AUDIO: NORTH SPKAMP	
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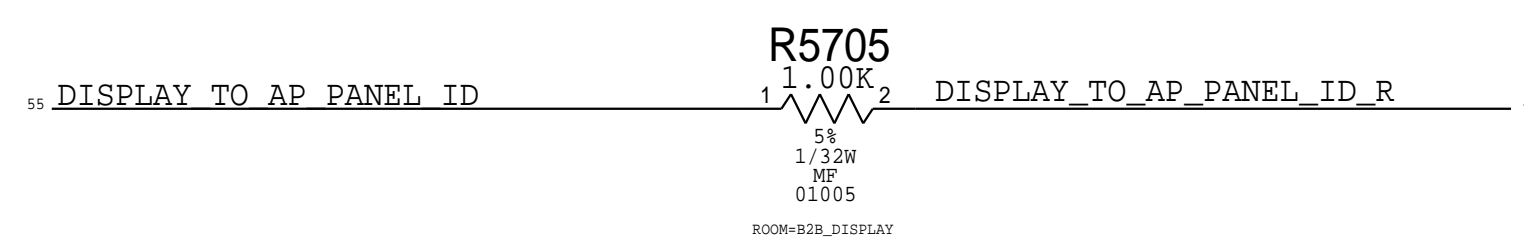


PAGE TITLE				ARC: AMP	
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		SHEET	43 OF 60		

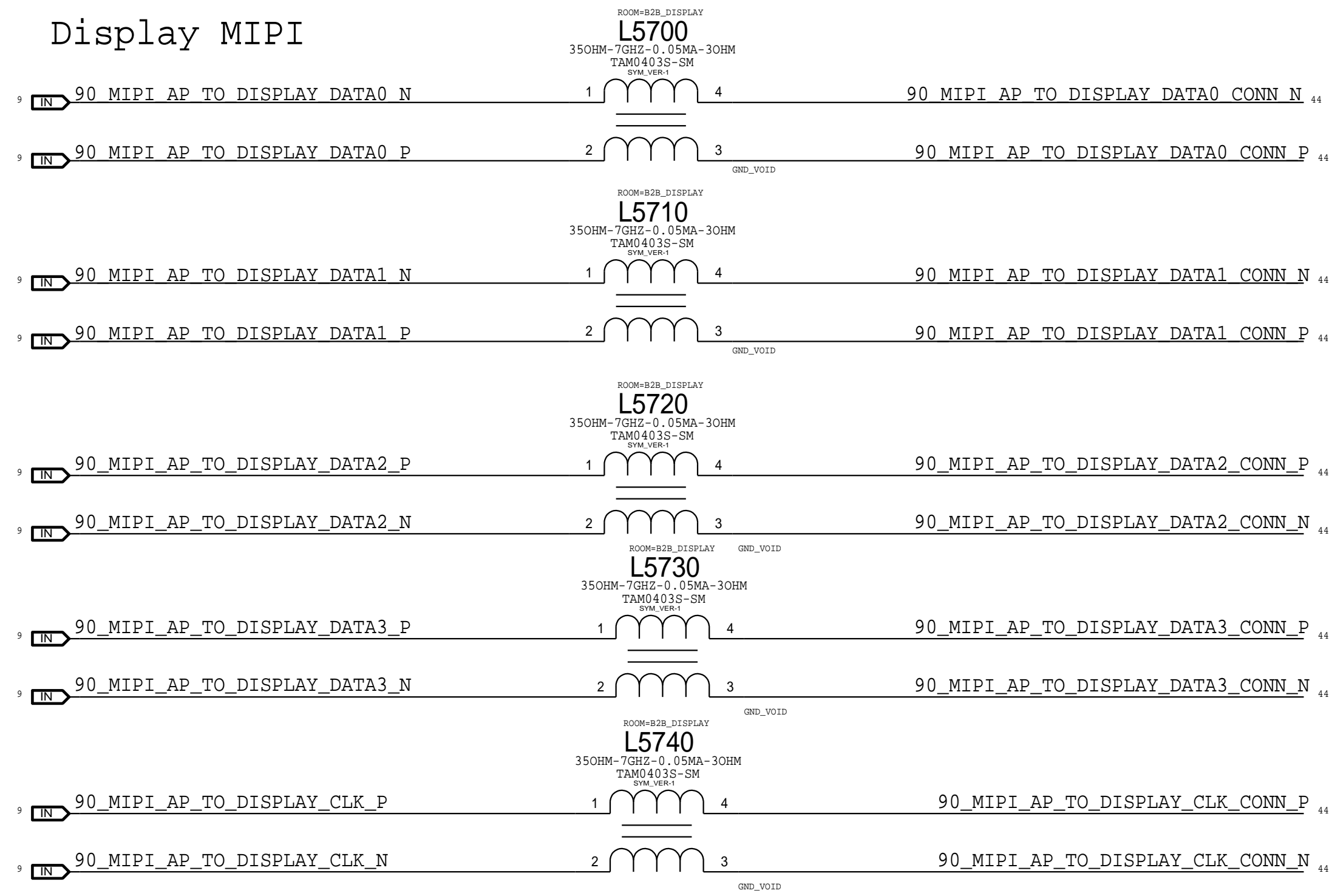
Display Control Signals



Display 1V0 LDO for D33 second display vendor  
rdar: #29872369

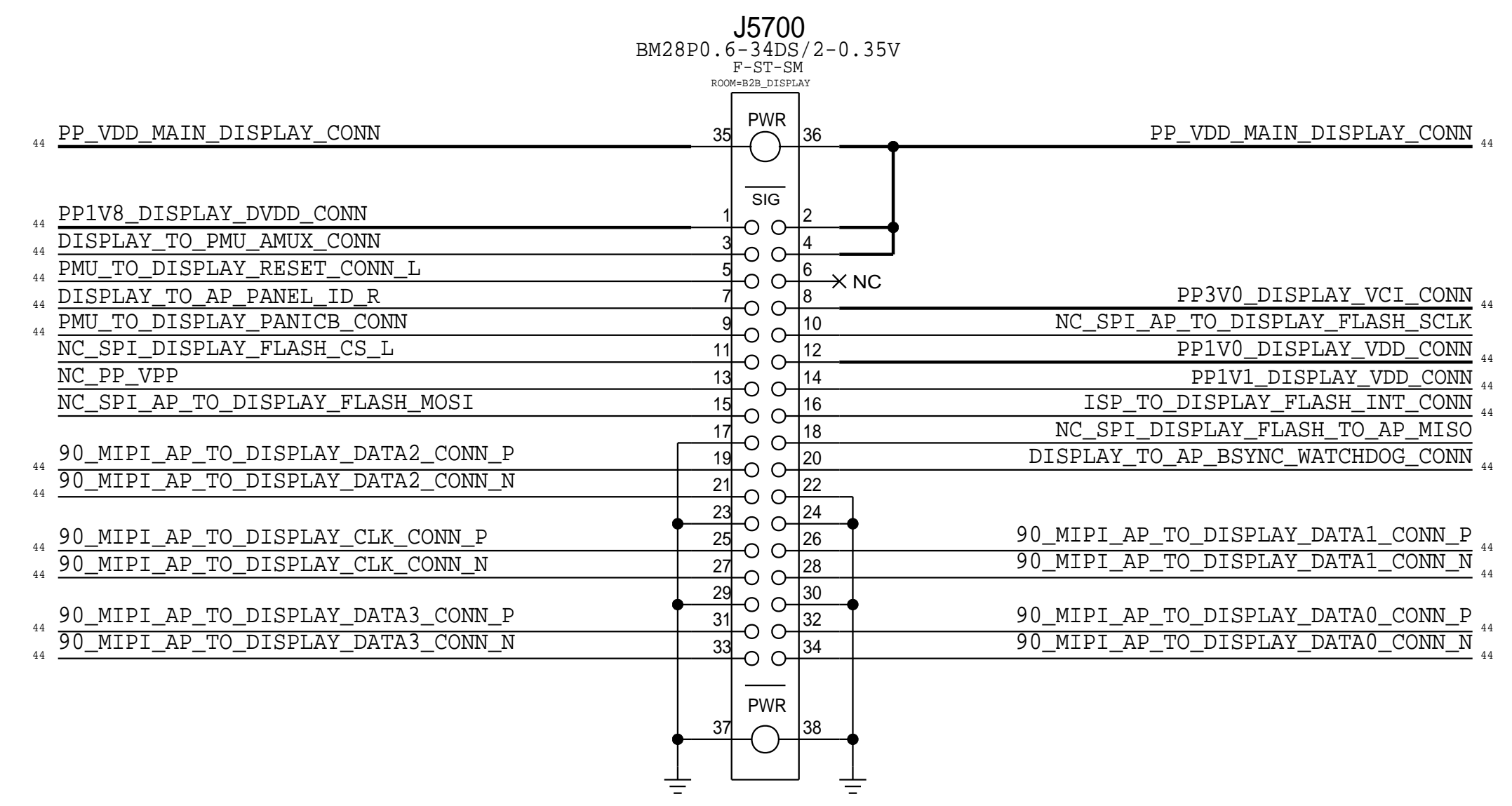


Display MIPI

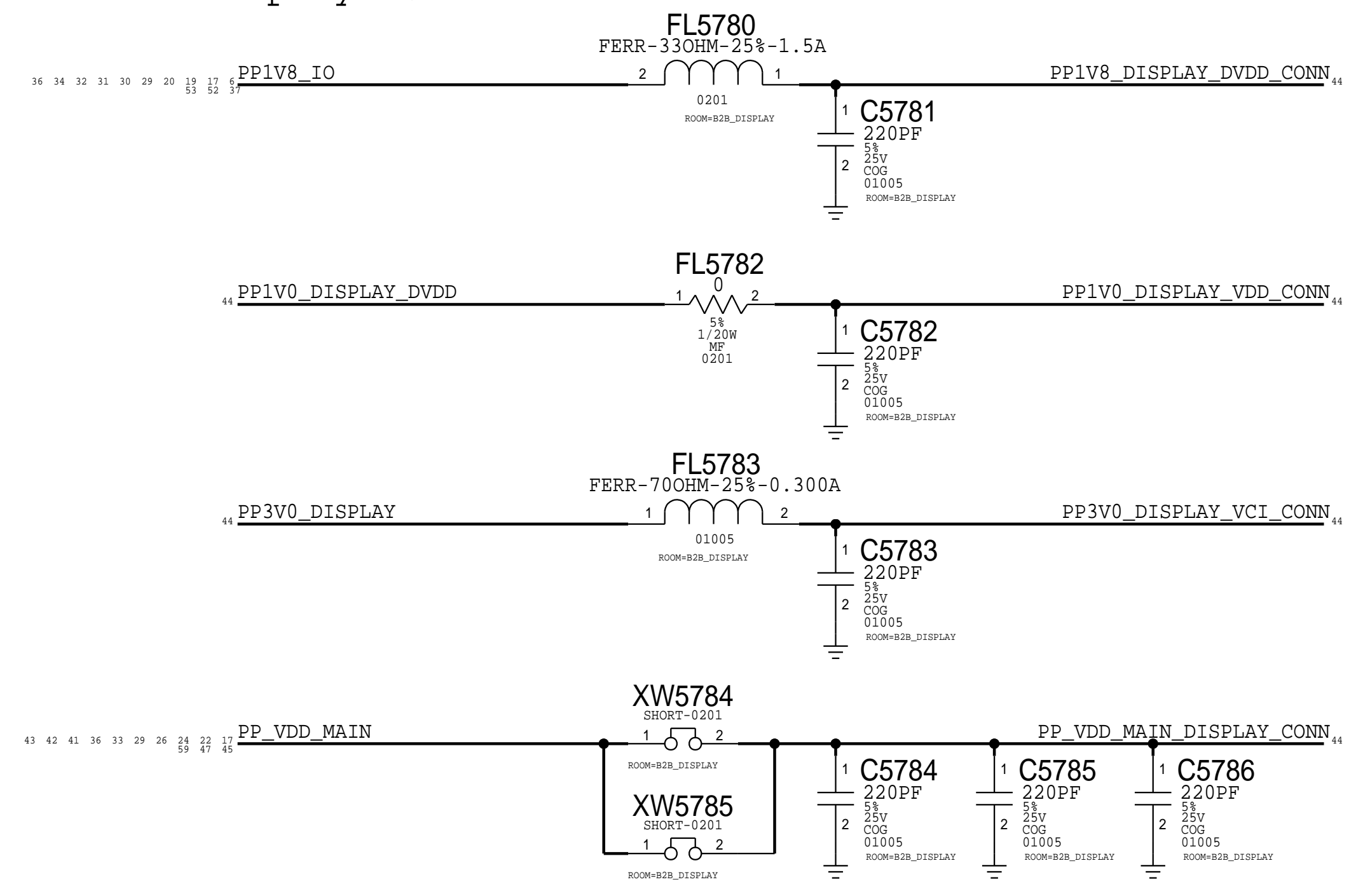


Display Flex Connector

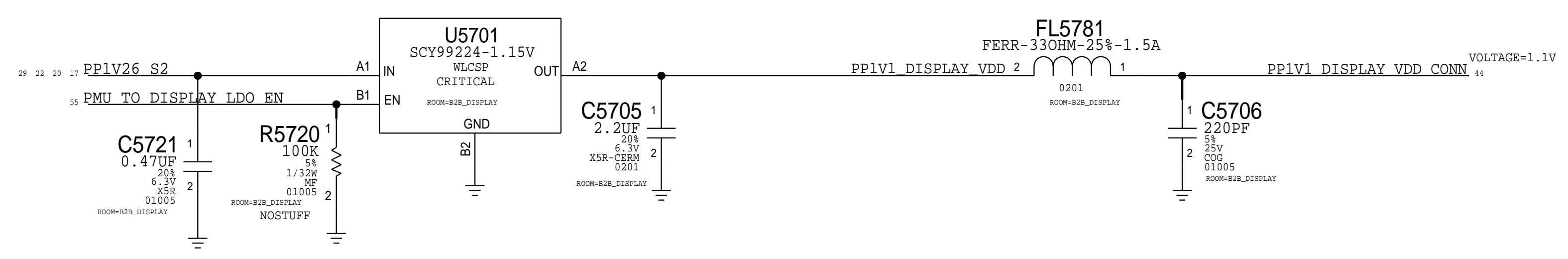
Rept: 516S00210 <-- This one on MLB  
Plug: 516S00211



Display Power

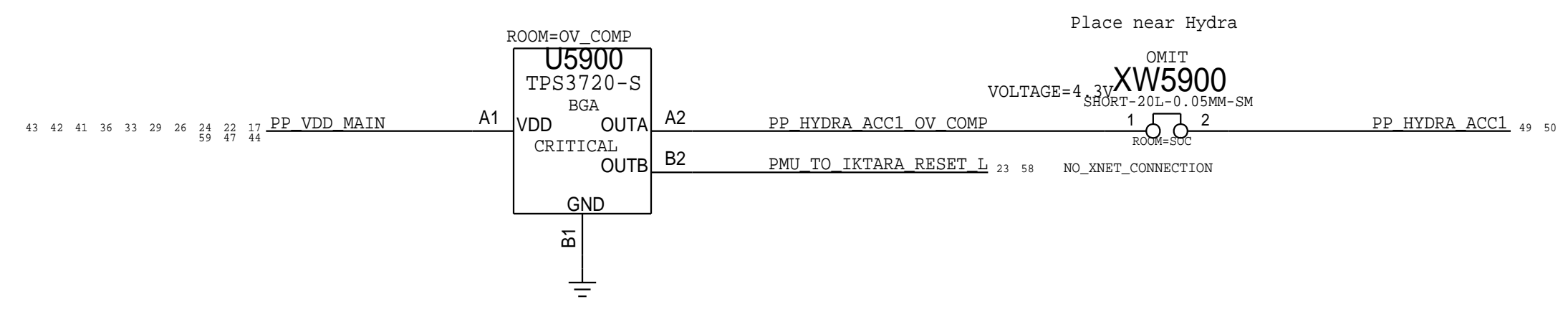


1.2V LDO is for LGC test chip  
Once normal panel is available switch to 1.1V



PAGE TITLE		CG: B2B Display	
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# VDD\_MAIN OV CUT-OFF CIRCUIT

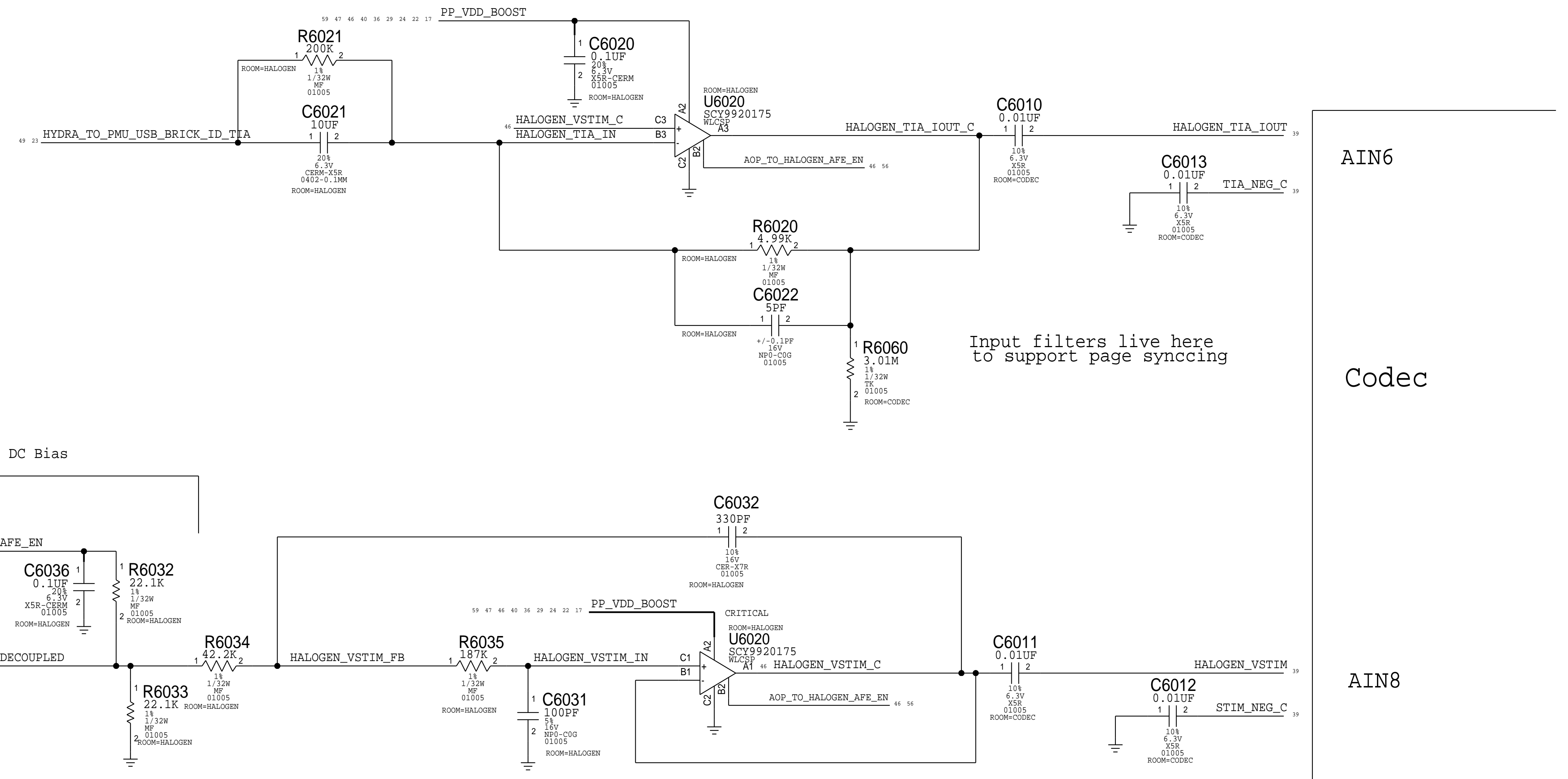


PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
353S01375	353S01398	ALT_PARTS	U5900	ON SEMI



PAGE TITLE I/O: Overvoltage Cut-Off Circuit		
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# LDCM



Input filters live here to support page syncing

PDM attenuation

DC Bias

R6130 Value Quartered due to: 33165127



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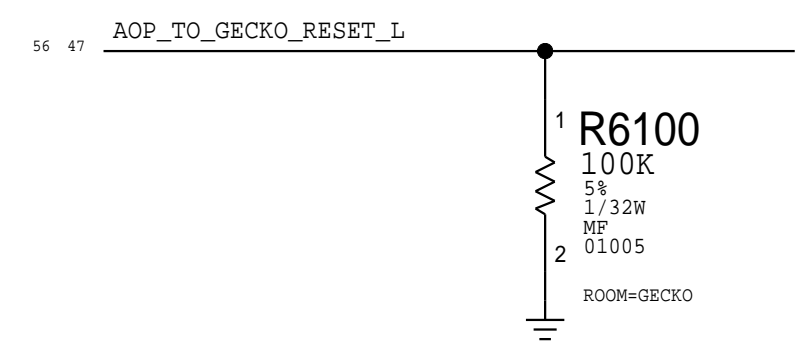
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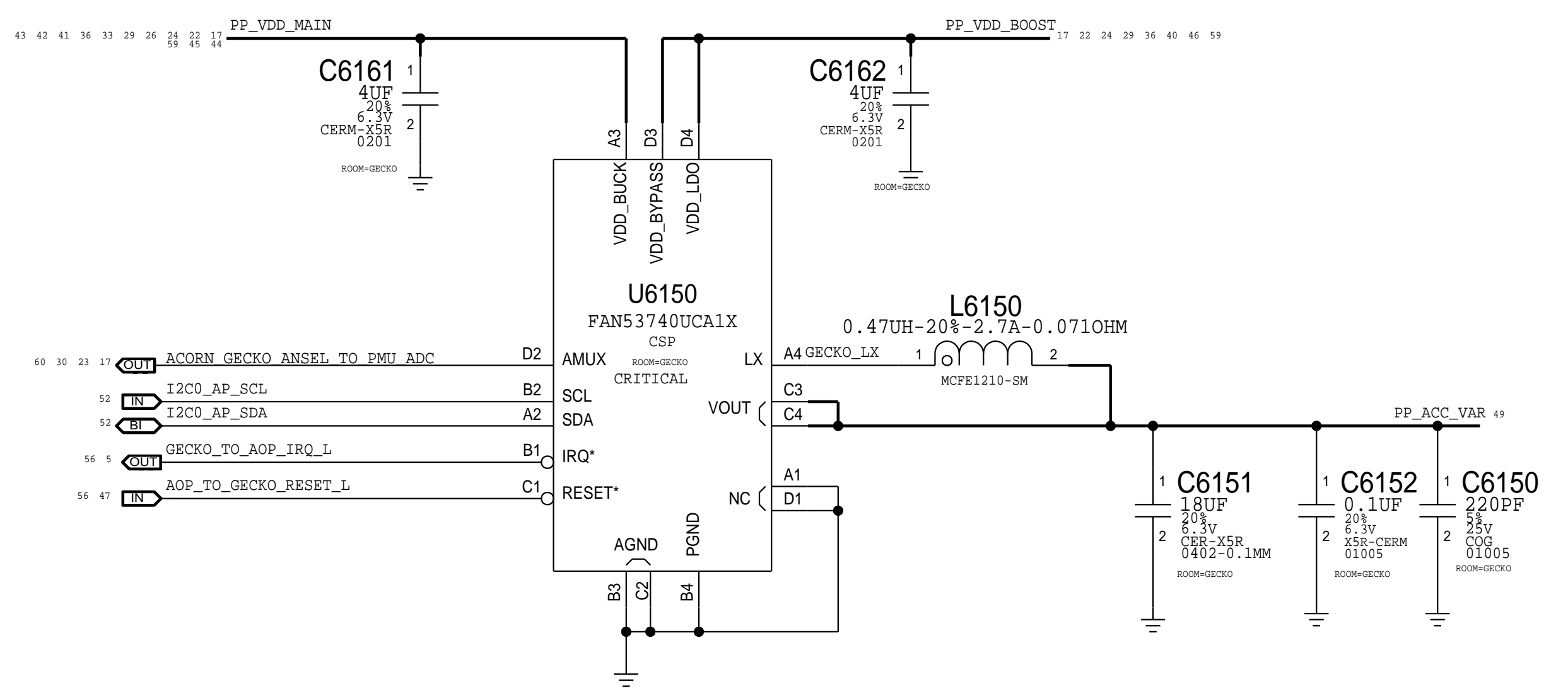
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GECKO Reset Pull Down



Gecko

I2C ADDRESS: 0X52



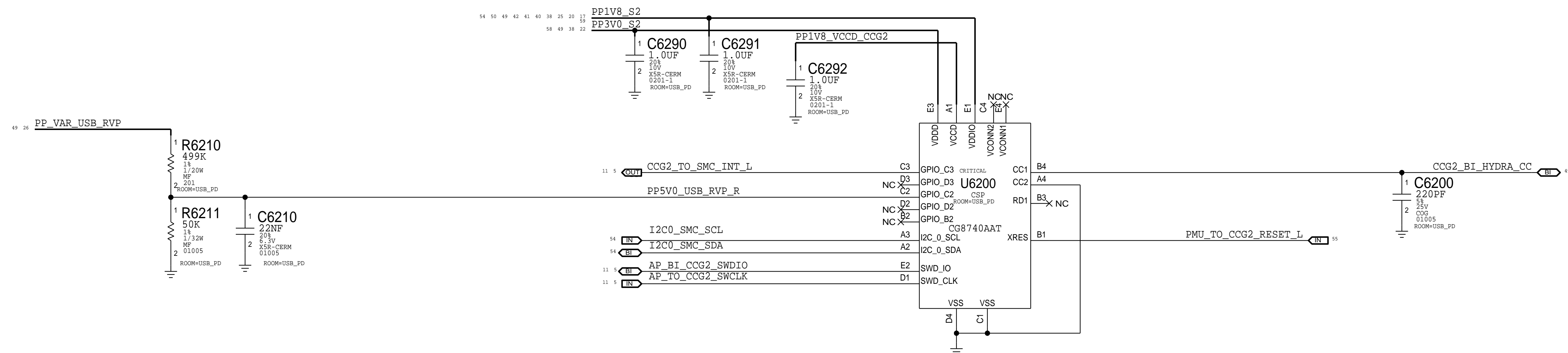
IND Alternate

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
152800854	152800853	ALT_PARTS	L6150	IND_PWB_0_4700_204_2_0A_CV
152800855	152800853	ALT_PARTS	L6150	IND_PWB_0_4700_204_2_1A_Moravia



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# USB-PD



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			SHEET	48 OF 60	



# Hydra

I2C Address: 0011010X

8 7 6 5 4 3 2 1

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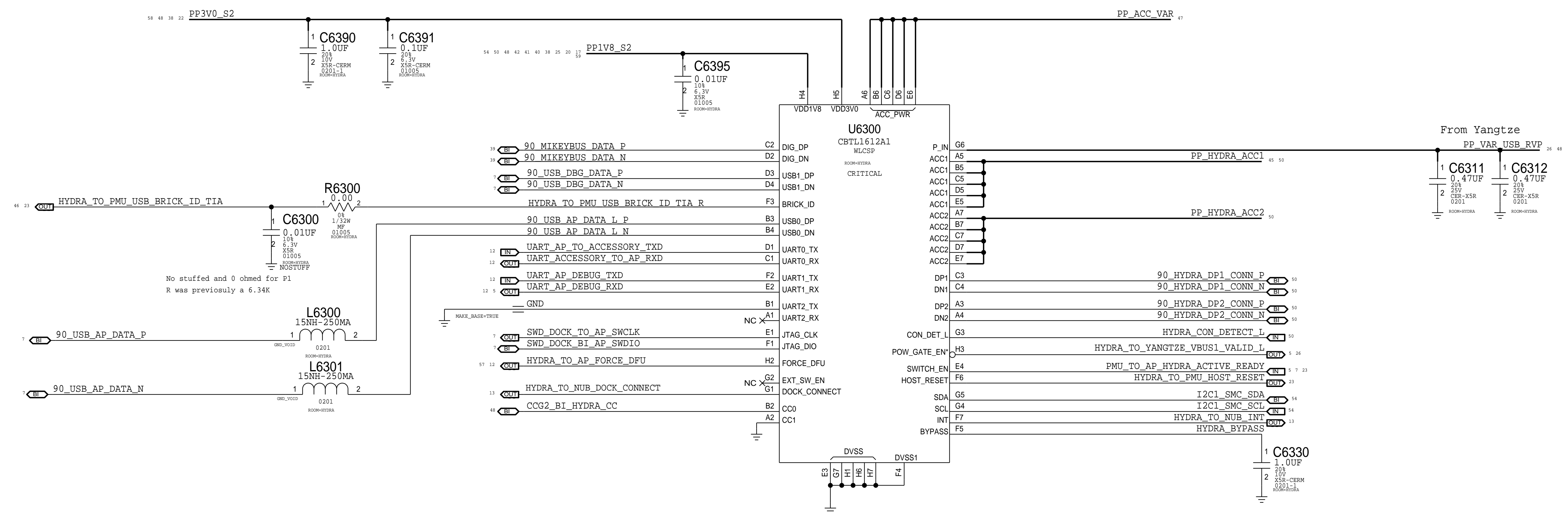
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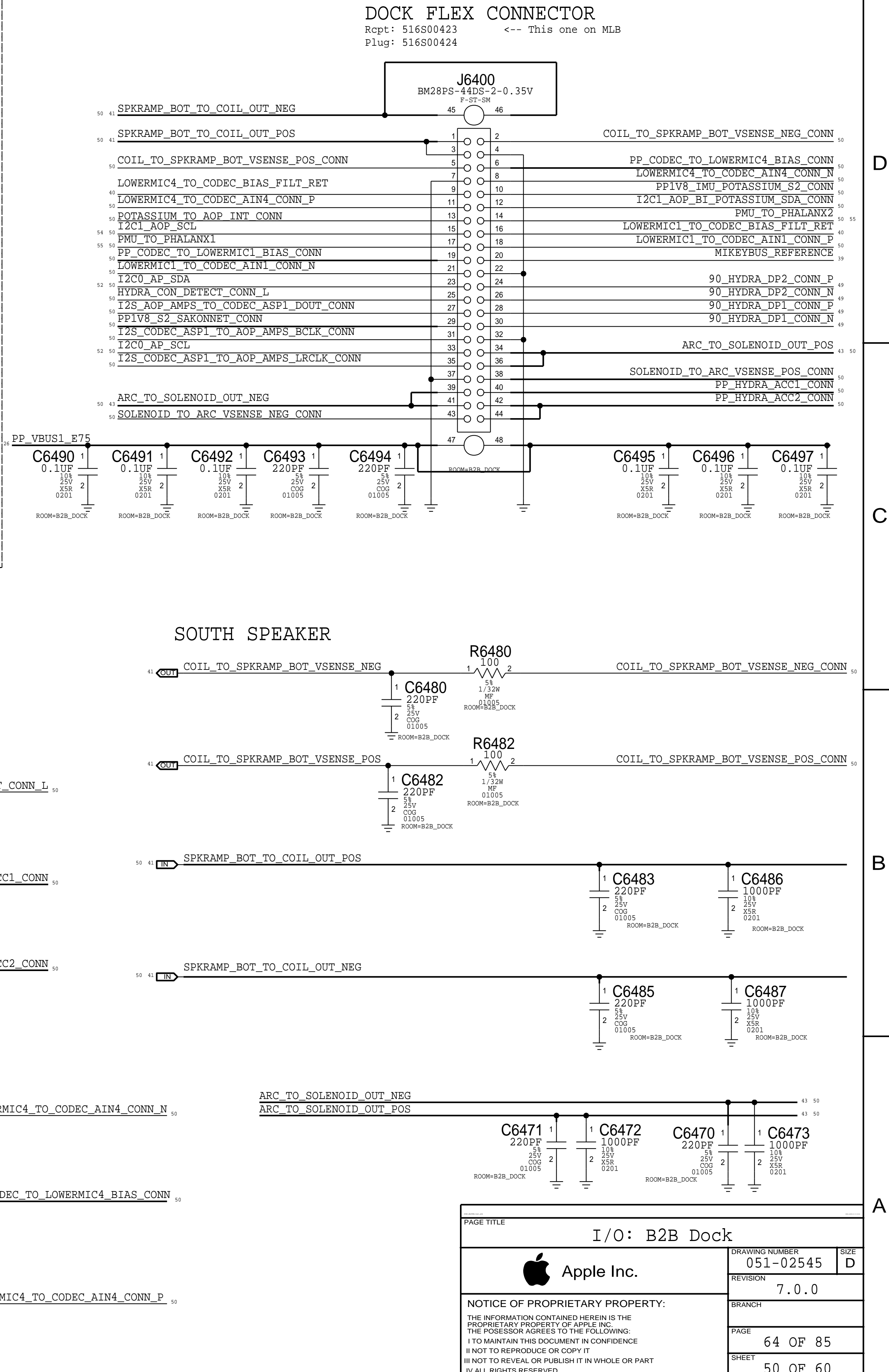
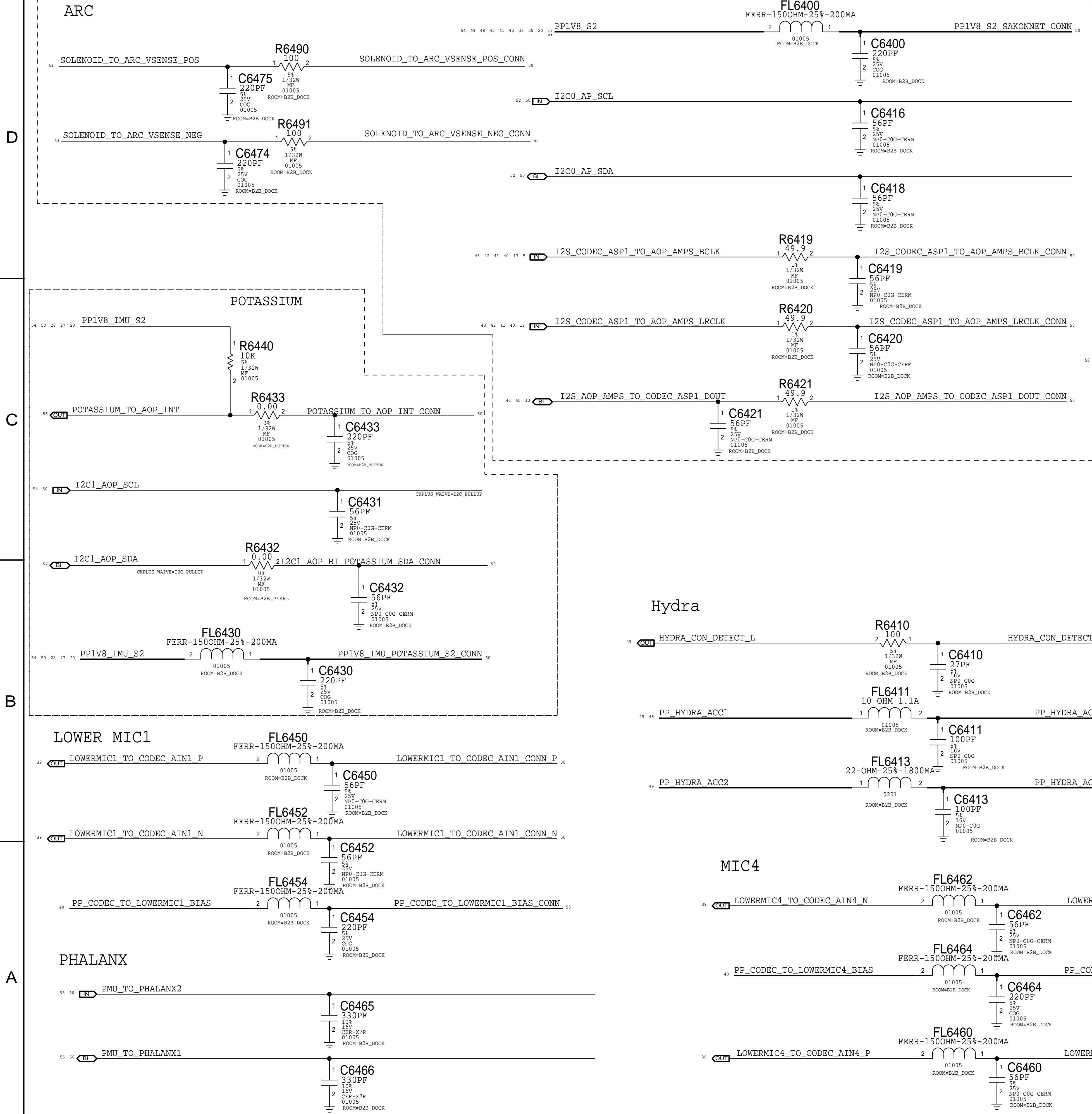
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8 7 6 5 4 3 2 1



DOCK FLEX CONNECTOR  
 Rpt: 516S00423 <-- This one on MLB  
 Plug: 516S00424

SOUTH SPEAKER

PAGE TITLE		I/O: B2B Dock	
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Top Board Interposer APN:998-12513 <--- STUFFED  
Bot Board Interposer APN:998-12514



J\_INT\_BOT  
SMT-PAD  
SYM 1 OF 2

Table with 3 columns: Pin Number, Label, and Description. Contains pins 1 through 94.

INTERPOSER-MLB-BOT-V3-D32

J\_INT\_BOT  
SMT-PAD  
SYM 2 OF 2

Table with 3 columns: Pin Number, Label, and Description. Contains pins 189 through 358.

INTERPOSER-MLB-BOT-V3-D32

D

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D

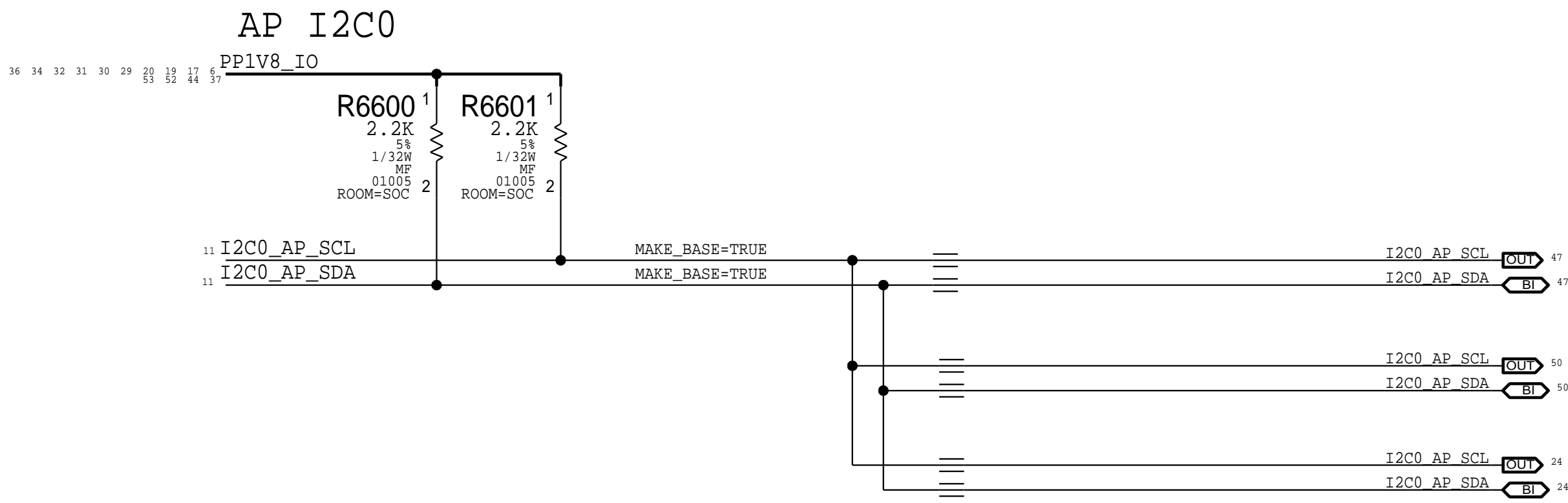
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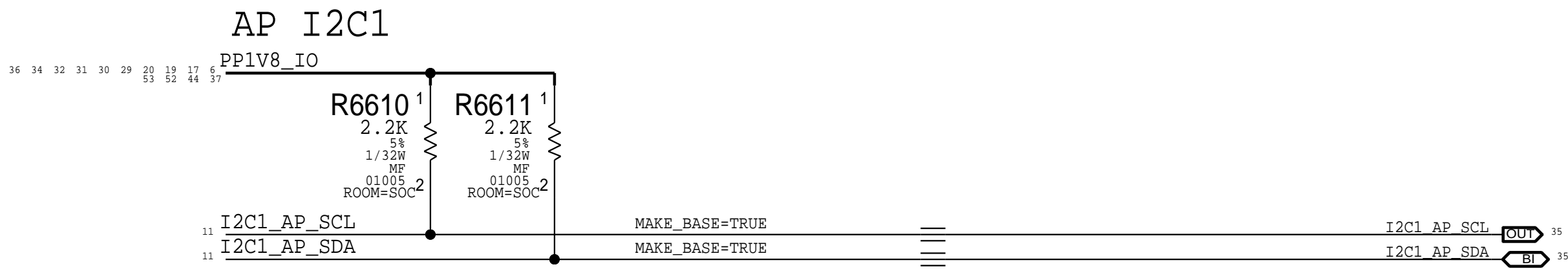
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Technical drawing header and footer containing Apple Inc. logo, drawing number 051-02545, revision 7.0.0, and a notice of proprietary property.

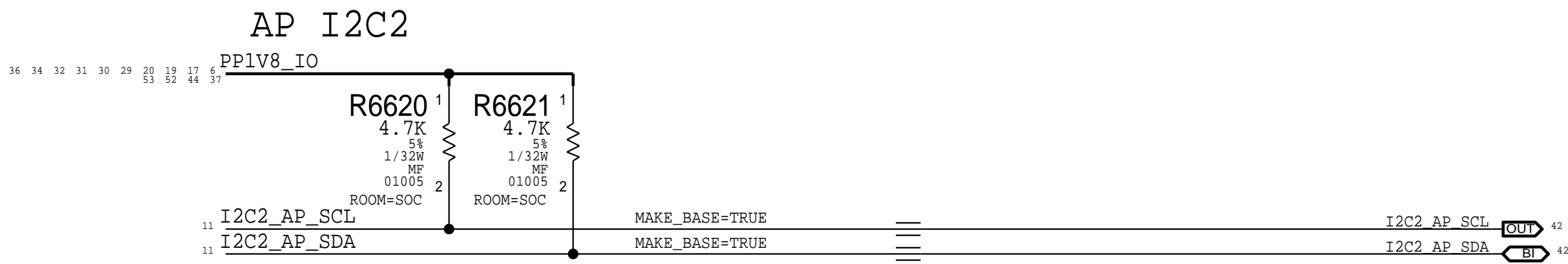
# AP I2C



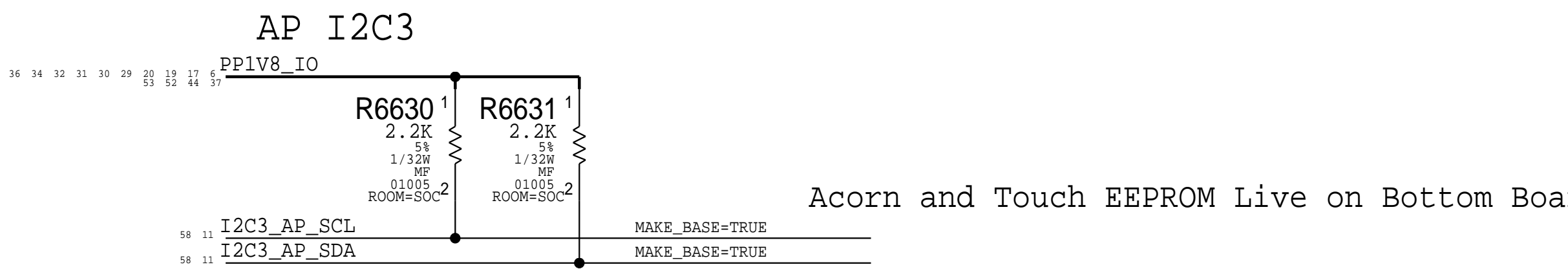
Bus Name	Bus Voltage	Bus Speed	Device	7-Bit Addr.	Binary	8-Bit Addr.	Min Speed	Max Speed	Location
AP I2C0	PP1V8_IO	400 kHz	GECKO	0x52	1010 010X	0xA4, 0xA5	-	1 MHz	TOP MLB
			SAKONNET	0x08	0001 000X	0x10, 0x11	-	1 MHz	Dock Flex
			BOOST	0x75	1110 101X	0xEA, 0xEB	-	400 KHz	TOP MLB
			ARC EEPROM	0x50	1010 000X	0xA0, 0xA1	-	400 KHz	Dock Flex



Bus Name	Bus Voltage	Bus Speed	Device	7-Bit Addr.	Binary	8-Bit Addr.	Min Speed	Max Speed	Location
AP I2C1	PP1V8_IO	100 kHz	MIC2	0x56	1010 100X	0xA8, 0xA9	-	1 MHz	Strobe Flex

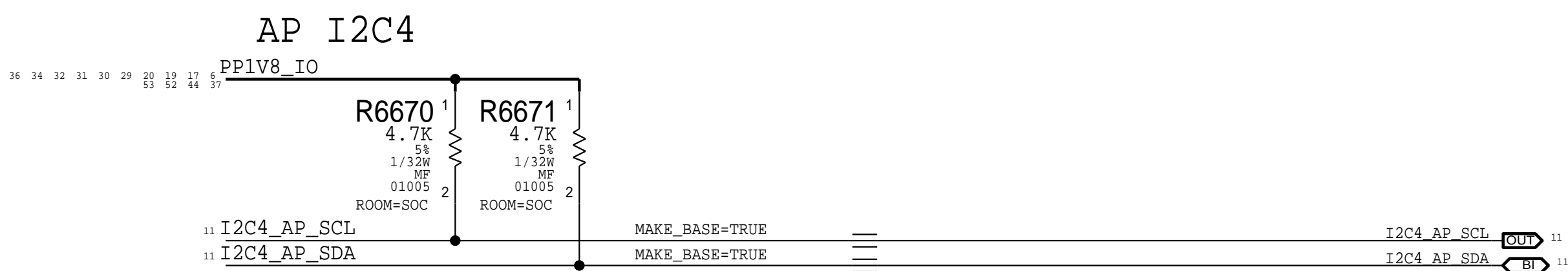


Bus Name	Bus Voltage	Bus Speed	Device	7-Bit Addr.	Binary	8-Bit Addr.	Min Speed	Max Speed	Location
AP I2C2	PP1V8_IO	1 MHz	Top Speaker Amp	0x40	1000 000X	0x80, 0x81	-	1 MHz	Top MLB



Acorn and Touch EEPROM Live on Bottom Board

Bus Name	Bus Voltage	Bus Speed	Device	7-Bit Addr.	Binary	8-Bit Addr.	Min Speed	Max Speed	Location
AP I2C3	PP1V8_IO	400 kHz	ACORN	0x2A	0101 010X	0x54, 0x55	-	1 MHz	Bot MLB
			TOUCH EEPROM	0x51	1010 001X	0xA2, 0xA3	-	1 MHz	Touch Flex

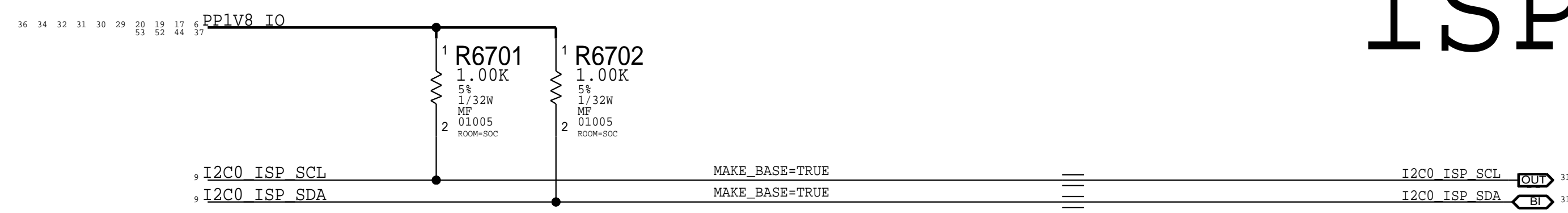


Bus Name	Bus Voltage	Bus Speed	Device	7-Bit Addr.	Location
AP I2C4	PP1V8_IO	400 kHz	LYNX	0x71	Top MLB

PAGE TITLE		
SYSTEM: AP I2C		
	DRAWING NUMBER	SIZE
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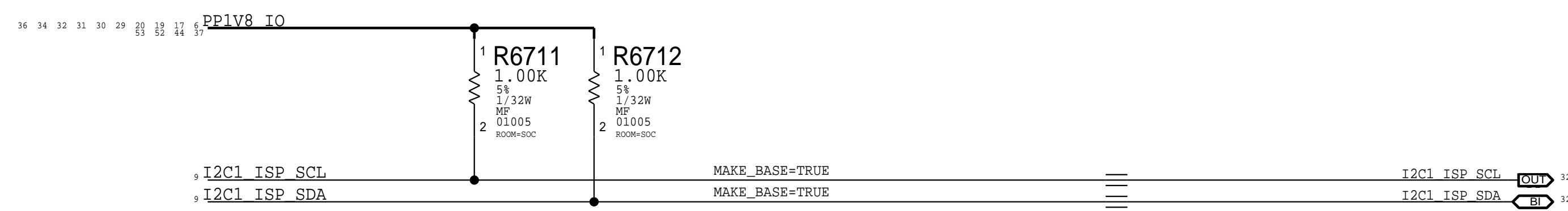
# ISP I2C

ISP I2C0



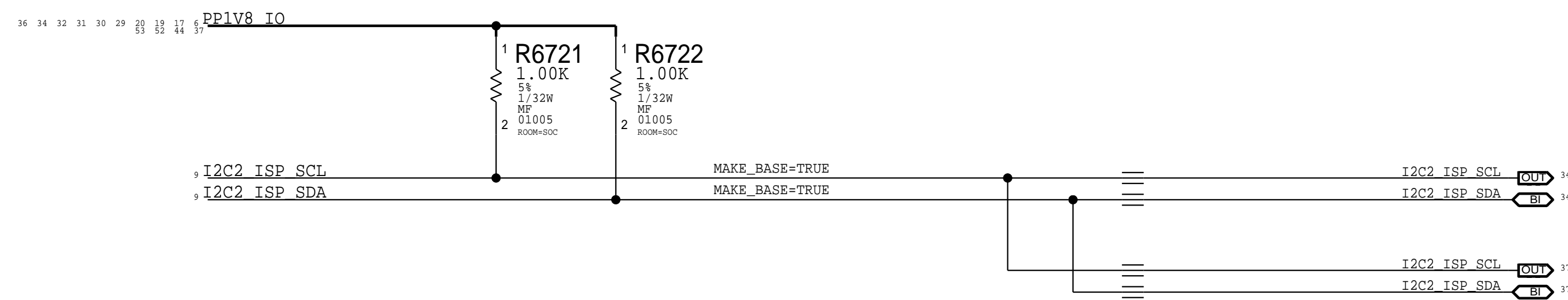
Bus Name	Bus Voltage	Bus Speed	Device	7-Bit Addr.	Binary	8-Bit Addr.	Min Speed	Max Speed	Location
ISP I2C0	PPIV8_IO	1 MHz	Austin	0X10	0010 000X	0x20, 0x21	-	1 MHz	Wide Cam
			Raman	0X3C	0111 100X	0x78, 0x79	-	1 MHz	Wide Cam

ISP I2C1



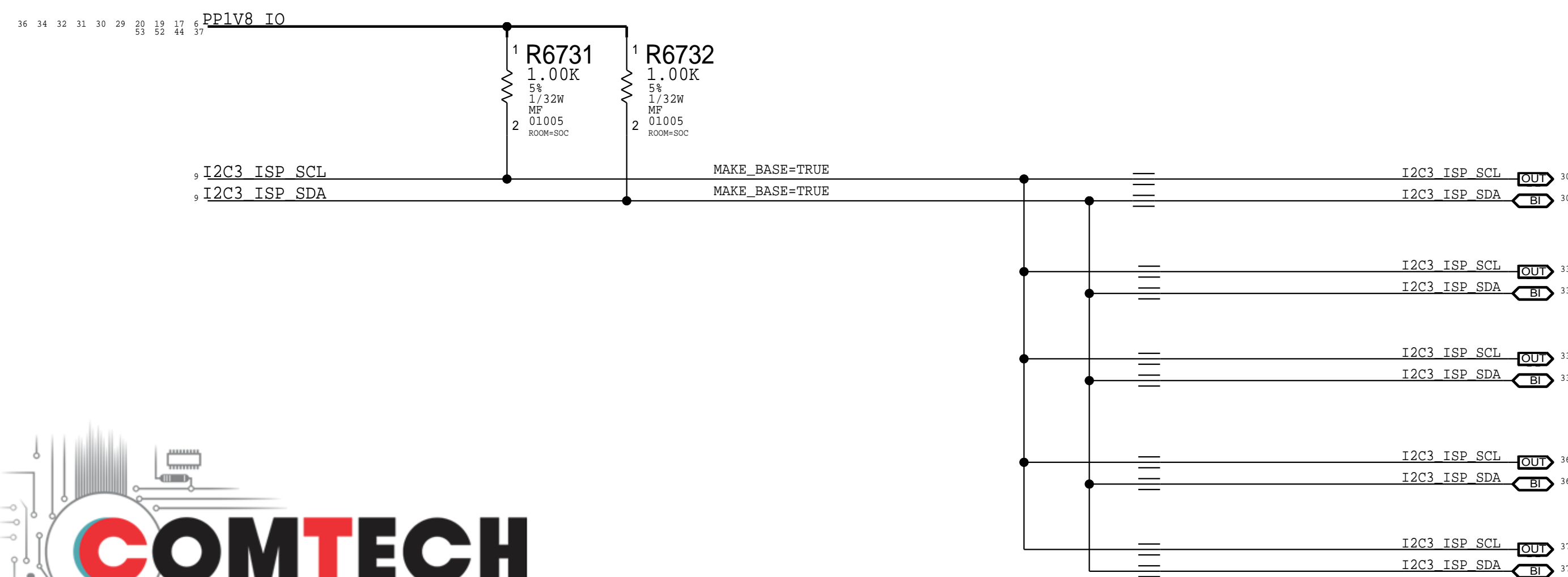
Bus Name	Bus Voltage	Bus Speed	Device	7-Bit Addr.	Binary	8-Bit Addr.	Min Speed	Max Speed	Location
ISP I2C1	PPIV8_IO	1 MHz	Billings	0x20	0100 000X	0x40, 0x41	-	1 MHz	Tele Cam
			Grunberg+	0x1C	0011 100X	0x38, 0x39	-	1 MHz	Tele Cam

ISP I2C2



Bus Name	Bus Voltage	Bus Speed	Device	7-Bit Addr.	Binary	8-Bit Addr.	Min Speed	Max Speed	Location
ISP I2C2	PPIV8_IO	1 MHz	Yonkers	0x10	0010 000X	0x20, 0x21	-	1 MHz	Fcam
			Flatiron	0x70	1110 000X	0xE0, 0xE1	-	1 MHz	Fcam
			Savage	0x18	0011 000X	0x30, 0x31	-	1 MHz	Juliet Flex

ISP I2C3



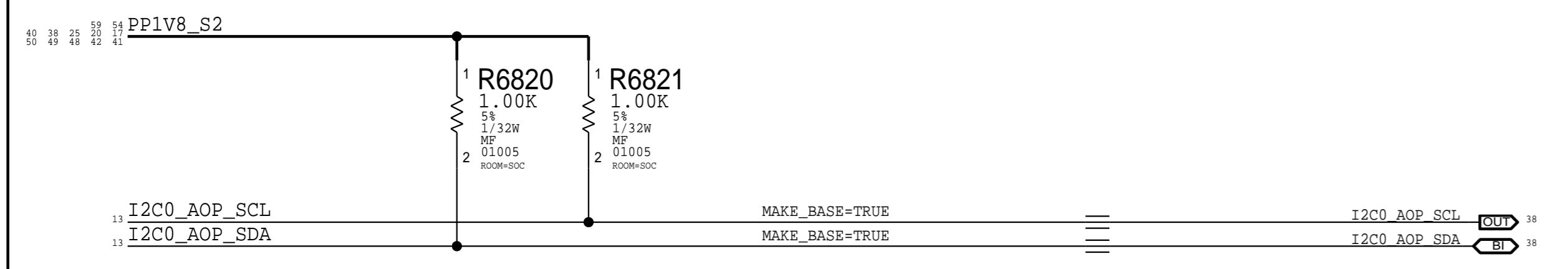
Bus Name	Bus Voltage	Bus Speed	Device	7-Bit Addr.	Binary	8-Bit Addr.	Min Speed	Max Speed	Location
ISP I2C3	PPIV8_IO	1 MHz	Ansel	0x40	1000 000X	0x80, 0x81	-	1 MHz	Top Board
			Neon	0x63	1100 011X	0xC6, 0xC7	-	1 MHz	Top Board
			Neon	0x67	1100 111X	0xCE, 0xCF	-	1 MHz	Top Board
			Rigel	0x55	1100 011X	0xAA, 0xAB	-	1 MHz	Top Board
			Mama Bear	0x50	1010 000X	0xA0, 0xA1	-	1 MHz	Romeo Flex



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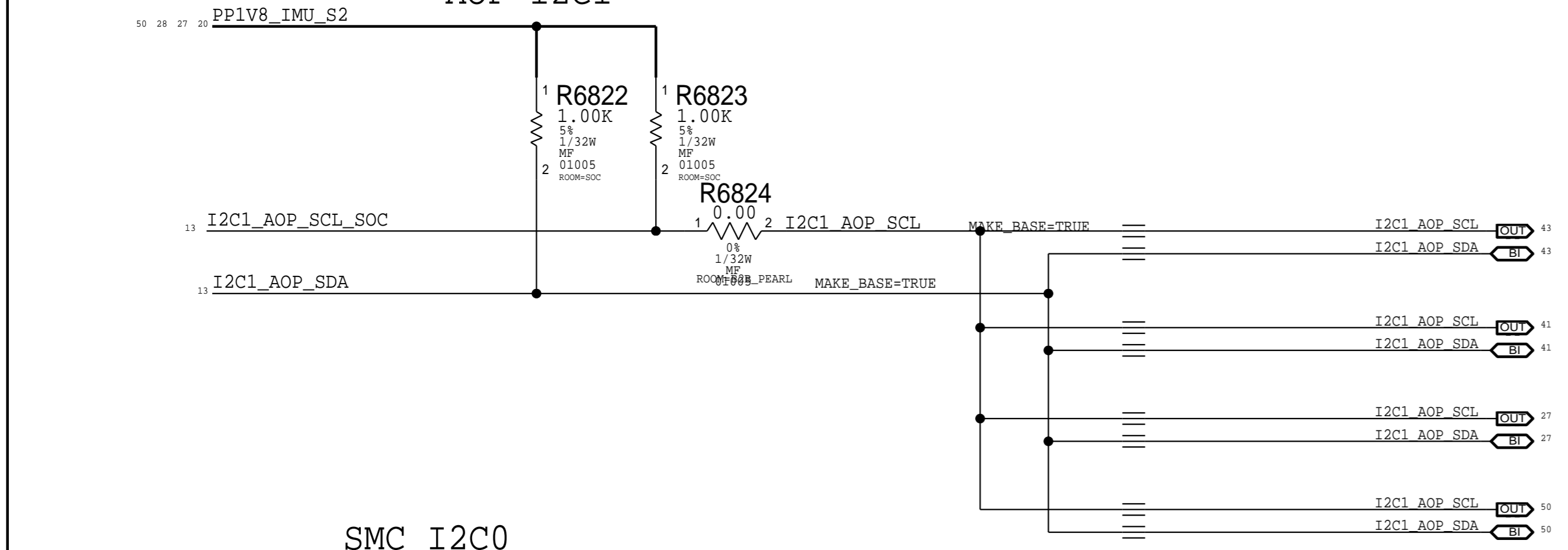
# AOP / SMC I2C

AOP I2C0



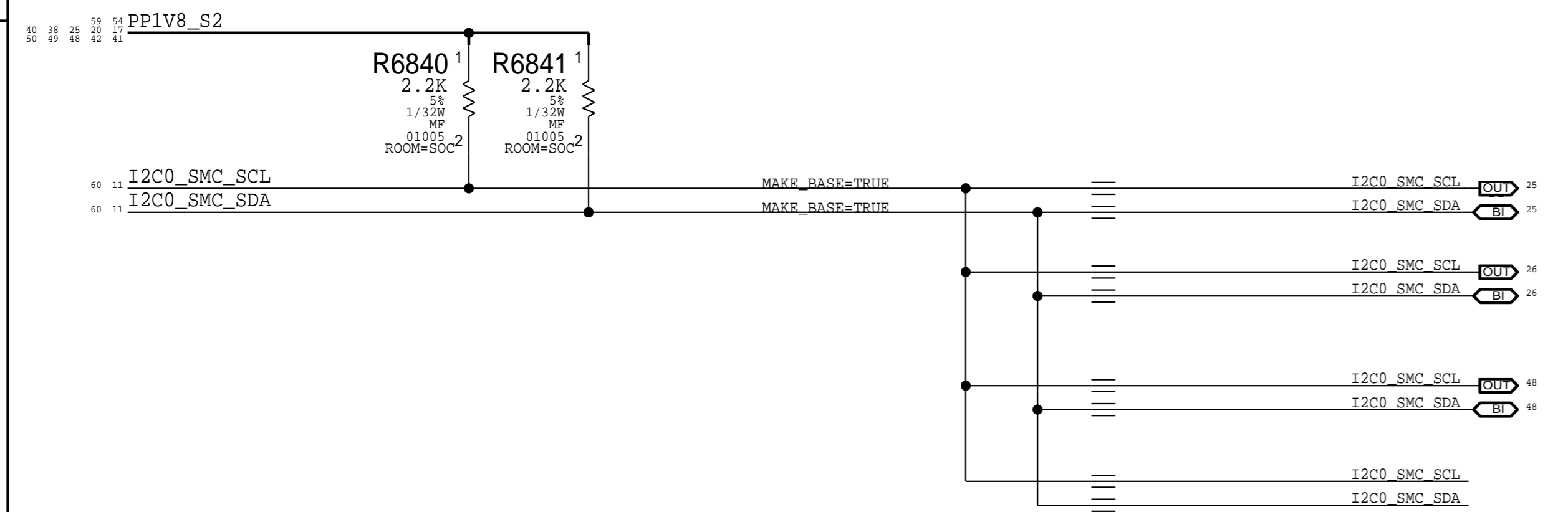
Bus Name	Bus Voltage	Bus Speed	Device	7-Bit Addr.	Binary	8-Bit Addr.	Min Speed	Max Speed	Location
AOP I2C0	PP1V8_S2	750 kHz	Doppler	0x58	1011 000X	0xB0, 0xB1	-	1 MHz	Sensor Flex
			Blackbird	0x29	0101 001X	0x52, 0x53	-	1 MHz	Sensor Flex
			Yogi	0x33	0110 011X	0x66, 0x67	-	1 MHz	Sensor Flex

AOP I2C1



Bus Name	Bus Voltage	Bus Speed	Device	7-Bit Addr.	Binary	8-Bit Addr.	Min Speed	Max Speed	Location
AOP I2C1	PP1V8_IMU_S2	400 kHz	Arc	0x42	1000 001X	0x82, 0x83	-	1 MHz	Top Board
			Bottom Speaker	0x40	1000 000X	0x80, 0x81	-	1 MHz	Top Board
			Moly	0x0E	0001 110X	0x1C, 0x1D	-	1 MHz	Button Cyclone
			Potassium	0x76	1110 110X	0xEC, 0xED	-	1 MHz	Dock Flex

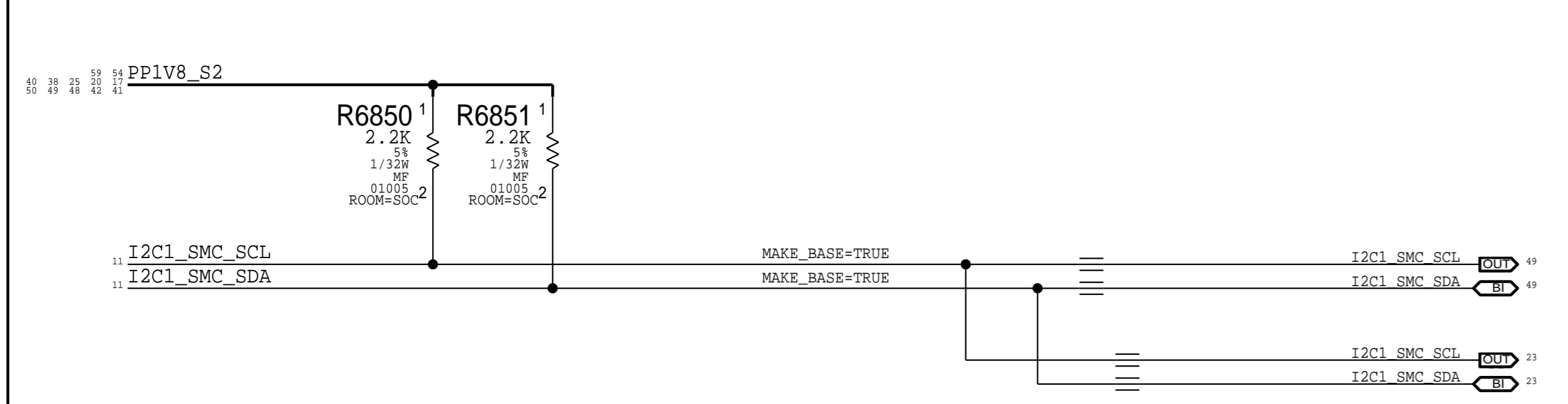
SMC I2C0



Bus Name	Bus Voltage	Bus Speed	Device	7-Bit Addr.	Binary	8-Bit Addr.	Min Speed	Max Speed	Location
SMC I2C0	PP1V8_S2	400 kHz	Yangtze	0x71	1110 001X	0xE2, 0xE3	-	400 KHz	Top Board
			Iktara	0x39	0111 001X	0x72, 0x73	-	400 KHz	Bot Board
			CCG2	0x12	0010 010X	0x24, 0x25	-	1 MHz	Top Board
			Gas Guage	0x55	0010 010X	0xAA, 0xAB	-	1 MHz	BMU Flex
			Roswell	0x10	0100 000X	0x20, 0x21	-	400 KHz	BMU Flex

Lives on bottom board

SMC I2C1



Bus Name	Bus Voltage	Bus Speed	Device	7-Bit Addr.	Binary	8-Bit Addr.	Min Speed	Max Speed	Location
SMC I2C1	PP1V8_S2	400 kHz	Hydra	0x1A	0011 010X	0x34, 0x35	-	400 KHz	Top Board
			Denali	0x74	1110 100X	0xE8, 0xE9	-	400 KHz	Top Board

# AP / PMU GPIOs

GPIO	AP	PMU
GPIO_0	AP_TO_BT_DEVICE_WAKE	AP_TO_BT_DEVICE_WAKE
GPIO_1	BOARD_REV0	BOARD_REV0
GPIO_2	BOARD_REV1	BOARD_REV1
GPIO_3	BOARD_REV2	BOARD_REV2
GPIO_4	AP_TO_PMU_AMUX_SYNC	AP_TO_PMU_AMUX_SYNC
GPIO_5	BOARD_REV3	BOARD_REV3
GPIO_6	AP_CANARY1	AP_CANARY1
GPIO_7	PMU_TO_AP_BUTTON_VOL_UP_L	PMU_TO_AP_BUTTON_VOL_UP_L
GPIO_8	NC_AP_GPIO8	NC_AP_GPIO8
GPIO_9	AP_TO_BBPMU_RADIO_ON_L	AP_TO_BBPMU_RADIO_ON_L
GPIO_10	AP_TO_SPKRAMP_TOP_RESET_L	AP_TO_SPKRAMP_TOP_RESET_L
GPIO_11	AP_TO_NFC_FW_DWLD_REQ	AP_TO_NFC_FW_DWLD_REQ
GPIO_12	AP_TO_BB_PEAK_POWER_INDICATOR	AP_TO_BB_PEAK_POWER_INDICATOR
GPIO_13	AP_TO_NFC_DEV_WAKE	AP_TO_NFC_DEV_WAKE
GPIO_14	CAMPMU_TO_AP_IRQ_L	CAMPMU_TO_AP_IRQ_L
GPIO_15	AP_TO_GNSS_TIME_MARK	AP_TO_GNSS_TIME_MARK
GPIO_16	SPKRAMP_TOP_TO_AP_INT_L	SPKRAMP_TOP_TO_AP_INT_L
GPIO_17	BB_TO_AP_COEX	BB_TO_AP_COEX
GPIO_18	BT_TO_AP_TIME_SYNC	BT_TO_AP_TIME_SYNC
GPIO_19	AP_TO_BB_RESET_L	AP_TO_BB_RESET_L
GPIO_20	BB_TO_AP_PEAK_POWER_INDICATOR	BB_TO_AP_PEAK_POWER_INDICATOR
GPIO_21	BB_TO_AP_RESET_DETECT_L	BB_TO_AP_RESET_DETECT_L
GPIO_22	AP_TO_BB_COREDUMP_TRIG	AP_TO_BB_COREDUMP_TRIG
GPIO_23	AP_TO_CAMPMU_RESET_L	AP_TO_CAMPMU_RESET_L
GPIO_24	AP_TO_BB_COEX	AP_TO_BB_COEX
GPIO_25	DISPLAY_TO_AP_PANEL_ID	DISPLAY_TO_AP_PANEL_ID
GPIO_26	AP_CANARY2	AP_CANARY2
GPIO_27	NC_AP_GPIO27	NC_AP_GPIO27
GPIO_28	NC_AP_GPIO28	NC_AP_GPIO28
GPIO_29	AP_TO_RACER_RESET_L	AP_TO_RACER_RESET_L
GPIO_30	GNSS_TO_AP_LOW_PWR_IND	GNSS_TO_AP_LOW_PWR_IND

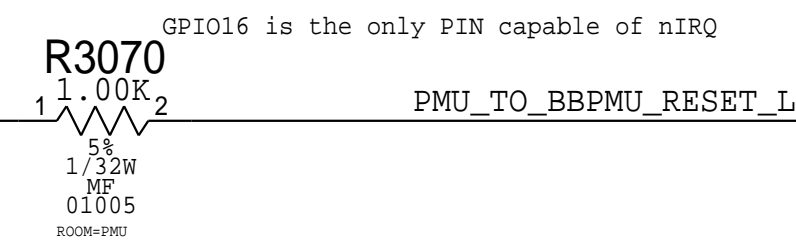
SOC

GPIO_1	PMU_TO_CCG2_RESET_L	PMU_TO_CCG2_RESET_L
GPIO_2	PMU_TO_AP_THROTTLE_GPU1_L	PMU_TO_AP_THROTTLE_GPU1_L
GPIO_3	NC_BT_TO_PMU_HOST_WAKE	NC_BT_TO_PMU_HOST_WAKE
GPIO_4	WLAN_TO_PMU_HOST_WAKE	WLAN_TO_PMU_HOST_WAKE
GPIO_5	BB_TO_PMU_PCIE_HOST_WAKE_L	BB_TO_PMU_PCIE_HOST_WAKE_L
GPIO_6	PMU_NFC_TO_ARC_RESET_L	PMU_NFC_TO_ARC_RESET_L
GPIO_7	PMU_TO_GNSS_EN	PMU_TO_GNSS_EN
GPIO_8	PMU_TO_WLAN_CLK32K	PMU_TO_WLAN_CLK32K
GPIO_9	PMU_TO_BT_REG_ON	PMU_TO_BT_REG_ON
GPIO_10	PMU_TO_PHALANX2	PMU_TO_PHALANX2
GPIO_11	YANGTZE_TO_PMU_INT_L	YANGTZE_TO_PMU_INT_L
GPIO_12	CODEC_TO_PMU_WAKE_L	CODEC_TO_PMU_WAKE_L
GPIO_13	PMU_MASK_NFC_TO_ARC_TRIG	PMU_MASK_NFC_TO_ARC_TRIG
GPIO_14	PMU_TO_WLAN_REG_ON	PMU_TO_WLAN_REG_ON
GPIO_15	PMU_TO_NFC_VDD_MAIN_EN	PMU_TO_NFC_VDD_MAIN_EN
GPIO_16	PMU_TO_NAND_LOW_BATT_BOOT_L	PMU_TO_NAND_LOW_BATT_BOOT_L
GPIO_17	PMU_TO_PHALANX1	PMU_TO_PHALANX1
GPIO_18	PMU_TO_DISPLAY_RESET_L	PMU_TO_DISPLAY_RESET_L
GPIO_19	PMU_TO_BBPMU_RESET_R_L	PMU_TO_BBPMU_RESET_R_L
GPIO_20	PMU_TO_NFC_EN	PMU_TO_NFC_EN
GPIO_21	NC_PMU_GPIO21	NC_PMU_GPIO21
GPIO_22	PMU_TO_IKTARA_EN_EXT_1V8	PMU_TO_IKTARA_EN_EXT_1V8
GPIO_23	PMU_TO_BOOST_EN	PMU_TO_BOOST_EN
GPIO_24	PMU_TO_DISPLAY_PANICB	PMU_TO_DISPLAY_PANICB
GPIO_25	PMU_TO_DISPLAY_LDO_EN	PMU_TO_DISPLAY_LDO_EN

PMU

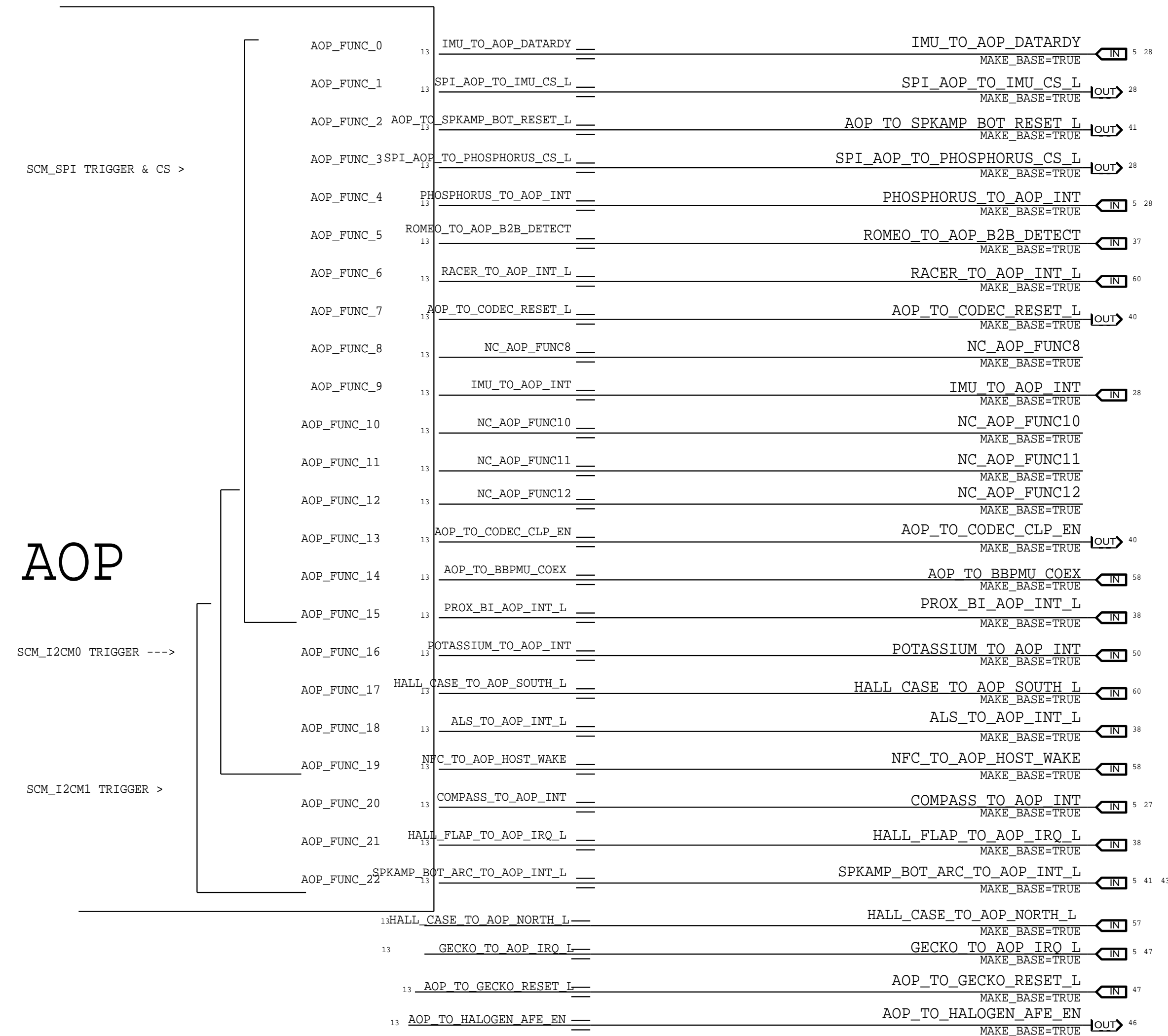
Held Through 1 Reset

Sequenced GPIOs



PAGE TITLE			SYSTEM: SOC/PMU GPIOs		
DRAWING NUMBER		051-02545	SIZE	D	
REVISION		7.0.0	BRANCH		
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# AOP GPIOs







# Interposer Aliases: Pins 145-285

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**MAKE\_BASE=TRUE**

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51 GND ==> MAKE_BASE=TRUE GND 58 59
51 GND ==> MAKE_BASE=TRUE GND 57 58 59
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51 GND ==> MAKE_BASE=TRUE GND 57 58 59
51 GND ==> MAKE_BASE=TRUE GND 57 58 59
51 GND ==> MAKE_BASE=TRUE GND 57 58 59
51 GND ==> MAKE_BASE=TRUE GND 57 58 59
51 GND ==> MAKE_BASE=TRUE GND 57 58 59
51 GND ==> MAKE_BASE=TRUE GND 57 58 59
51 GND ==> MAKE_BASE=TRUE GND 57 58 59
51 PP_VDD_MAIN ==> MAKE_BASE=TRUE PP_VDD_MAIN 49
51 PP_VDD_MAIN ==> MAKE_BASE=TRUE PP_VDD_MAIN 49
51 GND ==> MAKE_BASE=TRUE GND 57 58 59
51 PP_VDD_MAIN ==> MAKE_BASE=TRUE PP_VDD_MAIN 49
51 PP_VDD_MAIN ==> MAKE_BASE=TRUE PP_VDD_MAIN 49
51 GND ==> MAKE_BASE=TRUE GND 57 58 59
51 PMU_TO_NFC_EN ==> MAKE_BASE=TRUE PMU_TO_NFC_EN 45
51 GND ==> MAKE_BASE=TRUE GND 57 58 59
51 PMU_TO_BBEMU_RESET_L ==> MAKE_BASE=TRUE PMU_TO_BBEMU_RESET_L 45
51 GND ==> MAKE_BASE=TRUE GND 57 58 59
51 PMU_TO_TOUCH_CLK32K ==> MAKE_BASE=TRUE PMU_TO_TOUCH_CLK32K 17
51 GND ==> MAKE_BASE=TRUE GND 57 58 59
51 PCIE_WLAN_BI_AP_CLKREQ_L ==> MAKE_BASE=TRUE PCIE_WLAN_BI_AP_CLKREQ_L 4
51 GND ==> MAKE_BASE=TRUE GND 57 58 59
51 GND ==> MAKE_BASE=TRUE GND 57 58 59
51 BB_TO_PMU_PCIE_HOST_WAKE_L ==> MAKE_BASE=TRUE BB_TO_PMU_PCIE_HOST_WAKE_L 45
51 GND ==> MAKE_BASE=TRUE GND 57 58 59
51 WLAN_TO_PMU_HOST_WAKE ==> MAKE_BASE=TRUE WLAN_TO_PMU_HOST_WAKE 45
51 GND ==> MAKE_BASE=TRUE GND 57 58 59
51 PMU_TO_WLAN_CLK32K ==> MAKE_BASE=TRUE PMU_TO_WLAN_CLK32K 21 24 30
51 GND ==> MAKE_BASE=TRUE GND 57 58 59
51 NFC_TO_AOP_HOST_WAKE ==> MAKE_BASE=TRUE NFC_TO_AOP_HOST_WAKE 46
51 GND ==> MAKE_BASE=TRUE GND 57 58 59
51 TOUCH_TO_MANY_FORCE_PWM ==> MAKE_BASE=TRUE TOUCH_TO_MANY_FORCE_PWM 23 24 30
51 GND ==> MAKE_BASE=TRUE GND 57 58 59
51 UART_AP_TO_BT_TXD ==> MAKE_BASE=TRUE UART_AP_TO_BT_TXD 12
51 GND ==> MAKE_BASE=TRUE GND 57 58 59
51 UART_AP_TO_BT_RTS_L ==> MAKE_BASE=TRUE UART_AP_TO_BT_RTS_L 12
51 GND ==> MAKE_BASE=TRUE GND 57 58 59
51 GND ==> MAKE_BASE=TRUE GND 57 58 59
51 GND ==> MAKE_BASE=TRUE GND 57 58 59
51 GND ==> MAKE_BASE=TRUE GND 57 58 59
51 GND ==> MAKE_BASE=TRUE GND 57 58 59
51 GND ==> MAKE_BASE=TRUE GND 57 58 59
51 GND ==> MAKE_BASE=TRUE GND 57 58 59
51 GND ==> MAKE_BASE=TRUE GND 57 58 59
51 GND ==> MAKE_BASE=TRUE GND 57 58 59
51 GND ==> MAKE_BASE=TRUE GND 57 58 59
51 AP_CANARY2 ==> MAKE_BASE=TRUE AP_CANARY2 55
51 GND ==> MAKE_BASE=TRUE GND 58 59
51 PP1V8_NFC_S2 ==> MAKE_BASE=TRUE PP1V8_NFC_S2 40
51 PMU_TO_GNSS_EN ==> MAKE_BASE=TRUE PMU_TO_GNSS_EN 45
51 PMU_TO_BT_REG_ON ==> MAKE_BASE=TRUE PMU_TO_BT_REG_ON 45
51 GND ==> MAKE_BASE=TRUE GND 58 59
51 90_PCIE_AP_TO_WLAN_REFCLK_N ==> MAKE_BASE=TRUE 90_PCIE_AP_TO_WLAN_REFCLK_N 4
51 90_PCIE_AP_TO_WLAN_REFCLK_P ==> MAKE_BASE=TRUE 90_PCIE_AP_TO_WLAN_REFCLK_P 4
51 GND ==> MAKE_BASE=TRUE GND 58 59
51 90_PCIE_AP_TO_WLAN_TXD_P ==> MAKE_BASE=TRUE 90_PCIE_AP_TO_WLAN_TXD_P 17
51 90_PCIE_AP_TO_WLAN_TXD_N ==> MAKE_BASE=TRUE 90_PCIE_AP_TO_WLAN_TXD_N 17
51 GND ==> MAKE_BASE=TRUE GND 58 59
51 90_PCIE_WLAN_TO_AP_RXD_N ==> MAKE_BASE=TRUE 90_PCIE_WLAN_TO_AP_RXD_N 17
51 90_PCIE_WLAN_TO_AP_RXD_P ==> MAKE_BASE=TRUE 90_PCIE_WLAN_TO_AP_RXD_P 17
51 GND ==> MAKE_BASE=TRUE GND 58 59
51 PP3V0_S2 ==> MAKE_BASE=TRUE PP3V0_S2 38 48 49
51 PP1V8_TOUCH_RACER_S2 ==> MAKE_BASE=TRUE PP1V8_TOUCH_RACER_S2 49
51 PP1V8_TOUCH_RACER_S2 ==> MAKE_BASE=TRUE PP1V8_TOUCH_RACER_S2 49
51 PMU_TO_WLAN_REG_ON ==> MAKE_BASE=TRUE PMU_TO_WLAN_REG_ON 45
51 RADIO_PA_NTC ==> MAKE_BASE=TRUE RADIO_PA_NTC 43
51 BT_TO_AP_TIME_SYNC ==> MAKE_BASE=TRUE BT_TO_AP_TIME_SYNC 45
51 UART_BT_TO_AP_RXD ==> MAKE_BASE=TRUE UART_BT_TO_AP_RXD 12
    
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THIS SIDE HAS ATTRIBUTE  
**MAKE\_BASE=TRUE**

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51 GND ==> MAKE_BASE=TRUE GND 58 59
51 GND ==> MAKE_BASE=TRUE GND 58 59
51 UART_BT_TO_AP_CTS_L ==> MAKE_BASE=TRUE UART_BT_TO_AP_CTS_L 12
51 GND ==> MAKE_BASE=TRUE GND 58 59
51 GND ==> MAKE_BASE=TRUE GND 58 59
51 GND ==> MAKE_BASE=TRUE GND 58 59
51 GND ==> MAKE_BASE=TRUE GND 58 59
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51 GND ==> MAKE_BASE=TRUE GND 58 59
51 GND ==> MAKE_BASE=TRUE GND 58 59
51 GND ==> MAKE_BASE=TRUE GND 58 59
51 GND ==> MAKE_BASE=TRUE GND 58 59
51 PP_VBUS1_E75 ==> MAKE_BASE=TRUE PP_VBUS1_E75 26 50
51 GND ==> MAKE_BASE=TRUE GND 58 59
51 PP_GPU_LVCC ==> MAKE_BASE=TRUE PP_GPU_LVCC 5
51 GND ==> MAKE_BASE=TRUE GND 58 59
51 PP_CPU_PCORE_LVCC ==> MAKE_BASE=TRUE PP_CPU_PCORE_LVCC 5
51 GND ==> MAKE_BASE=TRUE GND 58 59
51 PP_BATT_VCC ==> MAKE_BASE=TRUE PP_BATT_VCC 49
51 PP_BATT_VCC ==> MAKE_BASE=TRUE PP_BATT_VCC 49
51 GND ==> MAKE_BASE=TRUE GND 58 59
51 AP_TO_BT_DEVICE_WAKE ==> MAKE_BASE=TRUE AP_TO_BT_DEVICE_WAKE 55
51 AOP_TO_WLAN_CONTEXT_A ==> MAKE_BASE=TRUE AOP_TO_WLAN_CONTEXT_A 13
51 UART_AOP_TO_RACER_TXD ==> MAKE_BASE=TRUE UART_AOP_TO_RACER_TXD 13
51 SWD_AOP_TO_MANY_SWCLK ==> MAKE_BASE=TRUE SWD_AOP_TO_MANY_SWCLK 5 13 39
51 SPI_AP_TO_RACER_MOSI ==> MAKE_BASE=TRUE SPI_AP_TO_RACER_MOSI 11
51 SPI_AP_TO_RACER_SCLK ==> MAKE_BASE=TRUE SPI_AP_TO_RACER_SCLK 11
51 PP1V1_RACER_S2 ==> MAKE_BASE=TRUE PP1V1_RACER_S2 49
51 PP1V1_RACER_S2 ==> MAKE_BASE=TRUE PP1V1_RACER_S2 49
51 PP1V1_RACER_S2 ==> MAKE_BASE=TRUE PP1V1_RACER_S2 49
51 AP_TO_RACER_REF_CLK ==> MAKE_BASE=TRUE AP_TO_RACER_REF_CLK 17
51 GND ==> MAKE_BASE=TRUE GND 58 59
51 AOP_TO_BBEMU_COEX ==> MAKE_BASE=TRUE AOP_TO_BBEMU_COEX 56
51 PP_VBUS2_IKTARA ==> MAKE_BASE=TRUE PP_VBUS2_IKTARA 59
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51 PP_VBUS2_IKTARA ==> MAKE_BASE=TRUE PP_VBUS2_IKTARA 59
51 PP_VBUS2_IKTARA ==> MAKE_BASE=TRUE PP_VBUS2_IKTARA 59
51 GND ==> MAKE_BASE=TRUE GND 58 59
51 AOP_TO_WLAN_CONTEXT_B ==> MAKE_BASE=TRUE AOP_TO_WLAN_CONTEXT_B 13
51 GND ==> MAKE_BASE=TRUE GND 58 59
51 UART_RACER_TO_AOP_RXD ==> MAKE_BASE=TRUE UART_RACER_TO_AOP_RXD 13
51 GND ==> MAKE_BASE=TRUE GND 58 59
51 SPI_RACER_TO_AP_MISO ==> MAKE_BASE=TRUE SPI_RACER_TO_AP_MISO 11
51 GND ==> MAKE_BASE=TRUE GND 58 59
51 SPI_AP_TO_RACER_CS_L ==> MAKE_BASE=TRUE SPI_AP_TO_RACER_CS_L 11
51 GND ==> MAKE_BASE=TRUE GND 58 59
51 PMU_TO_IKTARA_RESET_L ==> MAKE_BASE=TRUE PMU_TO_IKTARA_RESET_L 23 45
51 GND ==> MAKE_BASE=TRUE GND 58 59
51 SWD_AOP_BI_RACER_SWDIO ==> MAKE_BASE=TRUE SWD_AOP_BI_RACER_SWDIO 13
51 GND ==> MAKE_BASE=TRUE GND 58 59
51 I2C3_AP_SDA ==> MAKE_BASE=TRUE I2C3_AP_SDA 51 CPPLUS_MAIVE=I2C_PULLUP
51 GND ==> MAKE_BASE=TRUE GND 58 59
51 I2C3_AP_SCL ==> MAKE_BASE=TRUE I2C3_AP_SCL 51 CPPLUS_MAIVE=I2C_PULLUP
51 GND ==> MAKE_BASE=TRUE GND 58 59
51 GND ==> MAKE_BASE=TRUE GND 58 59
51 GND ==> MAKE_BASE=TRUE GND 58 59
51 GND ==> MAKE_BASE=TRUE GND 58 59
51 GND ==> MAKE_BASE=TRUE GND 58 59
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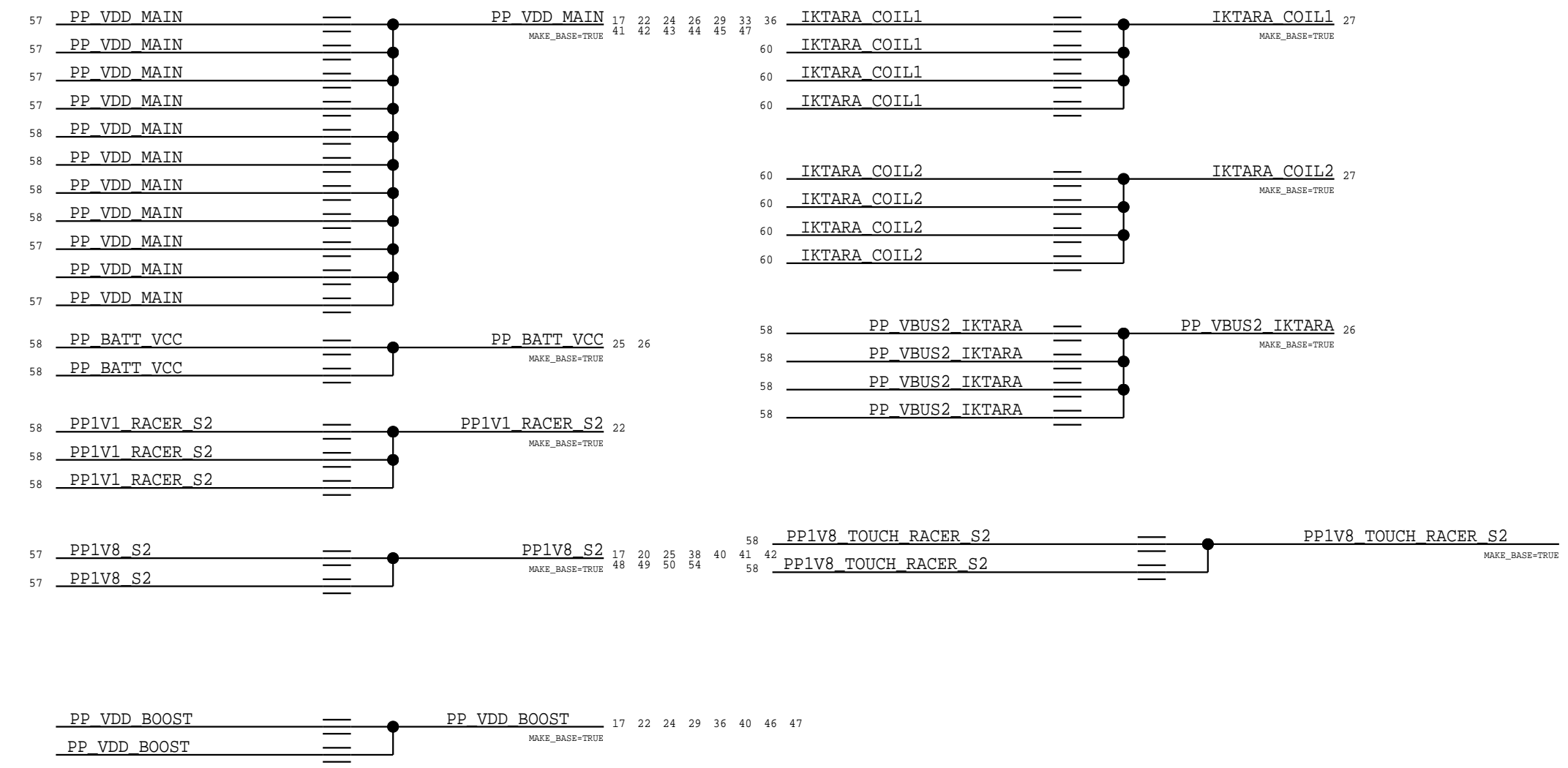
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2

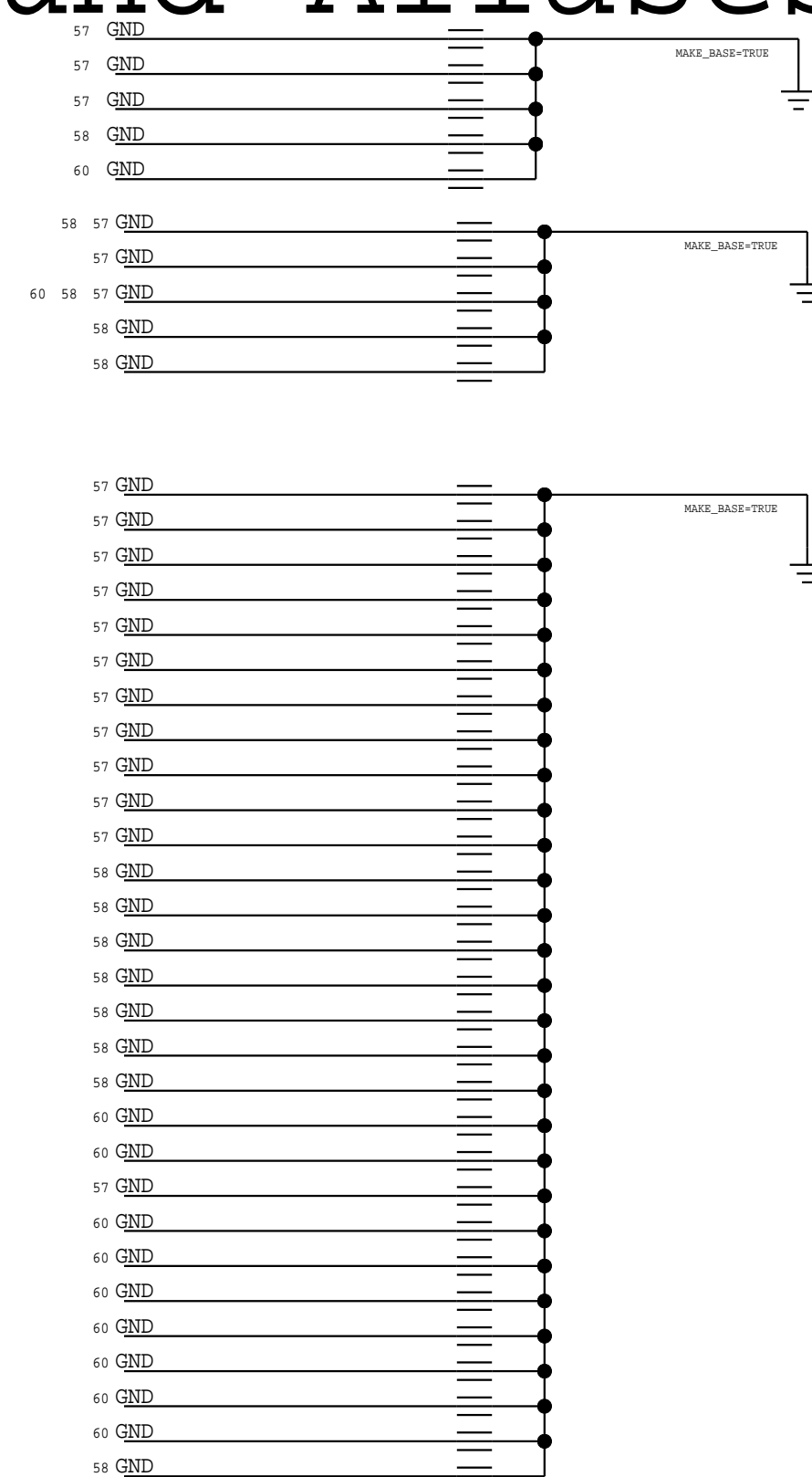
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# Interposer Top Level Aliases

## Power Aliases



## Ground Aliases



PAGE TITLE Interposer: Top Aliases		
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