

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
2	0010746377	ENGINEERING RELEASED		2017-12-08

D3XP Top MLB: P1 (D33P Build)

LAST_MODIFICATION=Thu Dec 7 19:07:43 2017

PAGE	CSA	CONTENTS	SYNC	DATE	PAGE	CSA	CONTENTS	SYNC	DATE
1	1	TABLE OF CONTENTS	FullSync	08/01/2017	46	60	I/O: LDCM	d32_mlb_top_051-02346752010	
2	2	SYSTEM:BOM Tables	test_mlb	10/13/2016	47	61	I/O: Gecko	d32_mlb_top_051-02346752010	
3	3	SYSTEM:BOM Tables FF Specific		08/09/2017	62		I/O: USB PD	d32_mlb_top_051-02346752010	
4	4	SYSTEM: Mechanical Components	d32_mlb_top_051-02346752010	08/09/2017	63		I/O: Hydra	d32_mlb_top_051-02346752010	
5	5	SYSTEM: Testpoints (Top)	d32_mlb_top_051-02346752010		50	64	I/O: B2B Dock	d32_mlb_top_051-02346752010	
6	6	BOOTSTRAPPING	FullSync	08/01/2017	51	65	B2B: Interposer Bot	d32_mlb_top_051-02346752010	
7	10	SOC: JTAG,USB,XTAL	d32_mlb_top_051-02346752010		52	66	SYSTEM: AP I2C	d32_mlb_top_051-02346752010	
8	11	SOC: PCIE	d32_mlb_top_051-02346752010		53	67	SYSTEM: ISP I2C	d32_mlb_top_051-02346752010	
9	12	SOC: MIPI	d32_mlb_top_051-02346752010		54	68	SYSTEM: AOP/SMC I2C	d32_mlb_top_051-02346752010	
10	13	SOC: LPDP	d32_mlb_top_051-02346752010		70		SYSTEM: SOC/PMU GPIOs	05/09/2017	
11	14	SOC: SERIAL	d32_mlb_top_051-02346752010		56	71	SYSTEM: AOP GPIOs	d32_mlb_top_051-02346752010	
12	15	SOC: GPIO & UART	d32_mlb_top_051-02346752010		57	81	Interposer: Pins 1-144	d32_mlb_top_051-02346752010	
13	16	SOC: AOP	d32_mlb_top_051-02346752010		58	82	Interposer: Pins 145-285	d32_mlb_top_051-02346752010	
14	17	SOC: POWER (1/3)	FullSync	08/01/2017	59	83	Interposer: Top Aliases	d32_mlb_top_051-02346752010	
15	18	SOC: POWER (2/3)	FullSync	08/01/2017	60	85	Interposer: Pins 286-359	d32_mlb_top_051-02346752010	
16	19	SOC: POWER (3/3)	d32_mlb_top_051-02346752010						
17	20	SOC: DEV BOARD ALIASES	APSYNC	08/16/2017					
18	21	SOC: LPDP ALIASES	d32_mlb_top_051-02346752010						
19	26	NAND	d32_mlb_top_051-02346752010						
20	27	SYSTEM POWER: PMU Bucks (1/4)	pmuind	08/08/2017					
21	28	SYSTEM POWER: PMU Bucks (2/4)	pmuind	08/08/2017					
22	29	SYSTEM POWER: PMU LDOs (3/4)	test_mlb	06/26/2017					
23	30	SYSTEM POWER: PMU (4/4)	test_mlb	06/26/2017					
24	31	SYSTEM POWER: Boost	d32_mlb_top_051-02346752010						
25	32	SYSTEM POWER: B2B Battery	d32_mlb_top_051-02346752010						
26	33	SYSTEM POWER: Charger	d32_mlb_top_051-02346752010						
27	35	SYSTEM POWER: B2B Cyclone + Button	d32_mlb_top_051-02346752010						
28	36	SENSORS	d32_mlb_top_051-02346752010						
29	37	CAMERA: PMU (1/2)	d32_mlb_top_051-02346752010						
30	38	CAMERA: PMU (2/2)	d32_mlb_top_051-02346752010						
31	39	CAMERA: B2B Wide (TX)	d32_mlb_top_051-02346752010						
32	40	CAMERA: B2B Tele [MT]	d32_mlb_top_051-02346752010						
33	41	CAMERA: Strobe Drivers	d32_mlb_top_051-02346752010						
34	42	CAMERA: B2B Fcam	d32_mlb_top_051-02346752010						
35	43	CAMERA: B2B Strobe + Hold Button	d32_mlb_top_051-02346752010						
36	44	PEARL: Power	d32_mlb_top_051-02346752010						
37	45	PEARL: B2B Romeo + Juliet	d32_mlb_top_051-02346752010						
38	46	PEARL: B2B Rosaline + Sensor	d32_mlb_top_051-02346752010						
39	47	AUDIO: CODEC (1/2)	d32_mlb_top_051-02346752010						
40	48	AUDIO: CODEC (2/2)	d32_mlb_top_051-02346752010						
41	49	AUDIO: SOUTH SPKAMP	d32_mlb_top_051-02346752010						
42	50	AUDIO: NORTH SPKAMP	d32_mlb_top_051-02346752010						
43	51	ARC: AMP	d32_mlb_top_051-02346752010						
44	57	CG: B2B Display	d32_mlb_top_051-02346752010						
45	59	I/O: Overvoltage Cut-Off Circuit	d32_mlb_top_051-02346752010						

BOM:639-04967 (Ultimate)
 BOM:639-04965 (Extreme)
 BOM:639-04966 (MAX)
 MCO:056-05750

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
051-03228	1	SCH_MLB_TOP_IMOLA_X1048	SCH	CRITICAL	?
820-01225	1	PCB_MLB_TOP_IMOLA_X1048	PCB	CRITICAL	?



SYNC_MASTER=FullSync		TABLE OF CONTENTS		SYNC_DATE=08/01/2017	
DRAWING TITLE SCH, MLB, TOP, IMOLA, D33					
DRAWING NUMBER 051-03228		REVISION 2.0.0		SIZE D	
BRANCH					
PAGE 1 OF 85					
SHEET 1 OF 60					

Display CMC's

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
155S00415	155S00391	ALT_PARTS	ALL	CMC, 350SM, 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:
335S00285	335S00340	ALT_PARTS	U2600	TOSHIBA, B1CS3, ULT
335S00286	335S00340	ALT_PARTS	U2600	SANDISK, B1CS3, ULT
335S00288	335S00340	ALT_PARTS	U2600	SAMSUNG, 3DV4, ULT

Extreme

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
335S00241	1	HYNIX, 3DV3, Extreme	U2600	CRITICAL	EXTREME

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
335S00342	335S00241	ALT_PARTS	U2600	HYNIX, 3DV4, SUPREME
335S00228	335S00241	ALT_PARTS	U2600	TOSHIBA, 3DV4, SUPREME
335S00241	335S00241	ALT_PARTS	U2600	SANDISK, B1CS3, SUPREME
335S00276	335S00241	ALT_PARTS	U2600	SAMSUNG, 3DV4, SUPREME
335S00338	335S00241	ALT_PARTS	U2600	SAMSUNG, 3DV4, SUPREME

Max

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
335S00339	1	SAMSUNG, 3DV4, MAX	U2600	CRITICAL	

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

Extreme

TODO: Need to get ALT APN's
Global Capacitors

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

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

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

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

Global R/C Alternates

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
118S0764	118S0717	ALT_PARTS	ALL	RES, 3.32K, 0.1%, 0201
138S0648	138S0652	ALT_PARTS	ALL	CAP, 100K, 4.7V, 4.7K, 5%, 0.1%, 0503, 0503, 0503
138S0739	138S0706	ALT_PARTS	ALL	CAP, 100K, 5V, 0.1%, 0.1%, 0.1%, 0.1%
138S00049	138S0831	ALT_PARTS	ALL	IND, 100UH, 0.22UH, 20%, 5.6A, 40MORH, H=65, 1608
132S00289316		ALT_PARTS	ALL	CAP, 100K, 5V, 0.1%, 0.1%, 0.1%, 0.1%

Yangtze Inductors

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
152S00847	152S00918	ALT_PARTS	ALL	IND, MLD, 0.22UH, 20%, 5.6A, 40MORH, H=65, 1608
152S00872	152S00918	ALT_PARTS	ALL	IND, MLD, 0.22UH, 20%, 5.6A, 40MORH, H=65, 1608

CRITICAL PART#	COMMENT
152S00847	IND, MLD, 0.22UH, 20%, 5.6A, 40MORH, H=65, 1608
152S00872	IND, MLD, 0.22UH, 20%, 5.6A, 40MORH, H=65, 1608

PMIC Inductors

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
152S00870721		ALT_PARTS		IND, MLD, 1UH, 20%, 5.6A, 40MORH, H=65, 1608
152S00826821		ALT_PARTS		IND, MLD, 1UH, 20%, 2.1A, 52MH, H=0.80, 2012
152S00866	152S00821	ALT_PARTS		IND, MLD, 1UH, 20%, 2.1A, 52MH, H=0.80, 2012
152S00878	152S00831	ALT_PARTS	ALL	IND, MLD, 0.22UH, 20%, 5.6A, 40MORH, H=65, 1608
152S00818	152S00831	ALT_PARTS	ALL	IND, MLD, 0.22UH, 20%, 5.6A, 40MORH, H=65, 1608
152S00716	152S00875	ALT_PARTS	ALL	IND, MLD, 1.0UH, 20%, 2.5A, 78MH, H=0.8, 2012
152S00824	152S00833	ALT_PARTS	L2740	IND, MLD, 1UH, 20%, 2A, 69MH, H=0.65, 2012
152S00833		ALT_PARTS		IND, MLD, 1UH, 20%, 2A, 69MH, H=0.65, 2012
152S00825	152S00823	ALT_PARTS	ALL	IND, MLD, 1UH, 20%, 2A, 69MH, H=0.65, 2012
998-13888	152S00898	ALT_PARTS	ALL	IND, MLD, 0.1UH, 0.1A, 10MH, H=0.200, 2012
998-13887	152S00897	ALT_PARTS	ALL	IND, MLD, 0.1UH, 0.1A, 10MH, H=0.200, 2012

CRITICAL PART#	COMMENT
152S00870	IND, MLD, 1UH, 20%, 5.6A, 40MORH, H=65, 1608
152S00826	IND, MLD, 1UH, 20%, 2.1A, 52MH, H=0.80, 2012
152S00866	IND, MLD, 1UH, 20%, 2.1A, 52MH, H=0.80, 2012
152S00878	IND, MLD, 0.22UH, 20%, 5.6A, 40MORH, H=65, 1608
152S00818	IND, MLD, 0.22UH, 20%, 5.6A, 40MORH, H=65, 1608
152S00716	IND, MLD, 1.0UH, 20%, 2.5A, 78MH, H=0.8, 2012
152S00824	IND, MLD, 1UH, 20%, 2A, 69MH, H=0.65, 2012
152S00819	IND, MLD, 1UH, 20%, 2A, 69MH, H=0.65, 2012
152S00825	IND, MLD, 1UH, 20%, 2A, 69MH, H=0.65, 2012

XTAL Alternate

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

Old EEPROM

PART#	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
335S00234	1	EEPROM_CAS24S128	U1402	CRITICAL

NEON Alternate

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

ANSEL Alternate

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

PAGE TITLE		
SYSTEM:BOM Tables		
DRAWING NUMBER	051-03228	SIZE D
REVISION	2.0.0	
BRANCH		
PAGE	2 OF 85	
SHEET	2 OF 60	

EEEE Codes

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
825-7691	1	EEEE FOR (MLA_TOP_2MOLA_433-4967_ULTIMATE)	EEEE_JCN3	CRITICAL	ULTIMATE
825-7691	1	EEEE FOR (MLA_TOP_2MOLA_433-4494_EXTREME)	EEEE_JCN1	CRITICAL	EXTREME
825-7691	1	EEEE FOR (MLA_TOP_2MOLA_433-4494_STANDARD)	EEEE_JCN2	CRITICAL	MAX

Cyprus OMIT

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
339S00463	1	CYPRUS 4GB	U1000	CRITICAL	SOC

Cyprus ALTs

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
339S00464	339S00463	ALT_PARTS	U1000	CYPRUS 4GB
339S00465	339S00463	ALT_PARTS	U1000	CYPRUS 4GB

Combo Stiffener

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

Kobol OMIT

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
338S00367	1	KOBOL	U3600	CRITICAL	COMMON

Kobol Alternate

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
338S00304	338S00367	ALT_PARTS	U3600	IC:GRANITE181282AA.LGAL6
998-12443	338S00367	ALT_PARTS	U3600	IC:GRANITE181282AA.LGAL6

PMU XTAL Alternate

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
197S00102	197S00098	ALT_PARTS	Y3080	PMU XTAL_EDS
197S00103	197S00098	ALT_PARTS	Y3080	PMU XTAL_TSC
197S00173	197S00098	ALT_PARTS	Y3080	PMU XTAL_HDC



PAGE TITLE		SYSTEM:BOM Tables FF Specific	
DRAWING NUMBER	051-03228	SIZE	D
REVISION	2.0.0		
BRANCH			
PAGE	3 OF 85		
SHEET	3 OF 60		

8

7

6

5

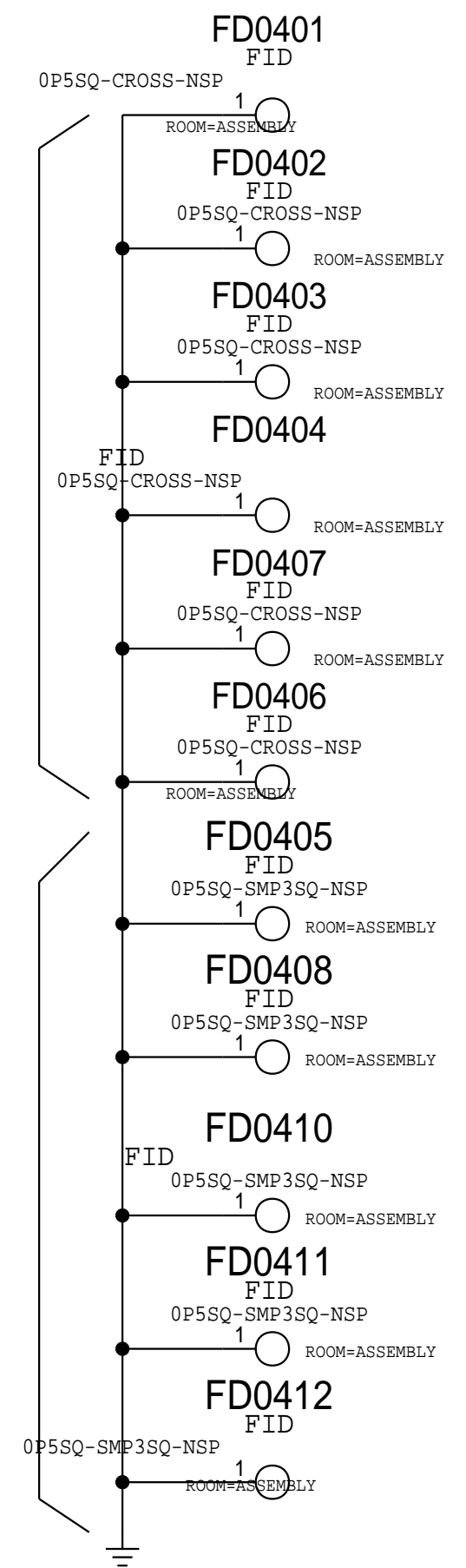
4

3

2

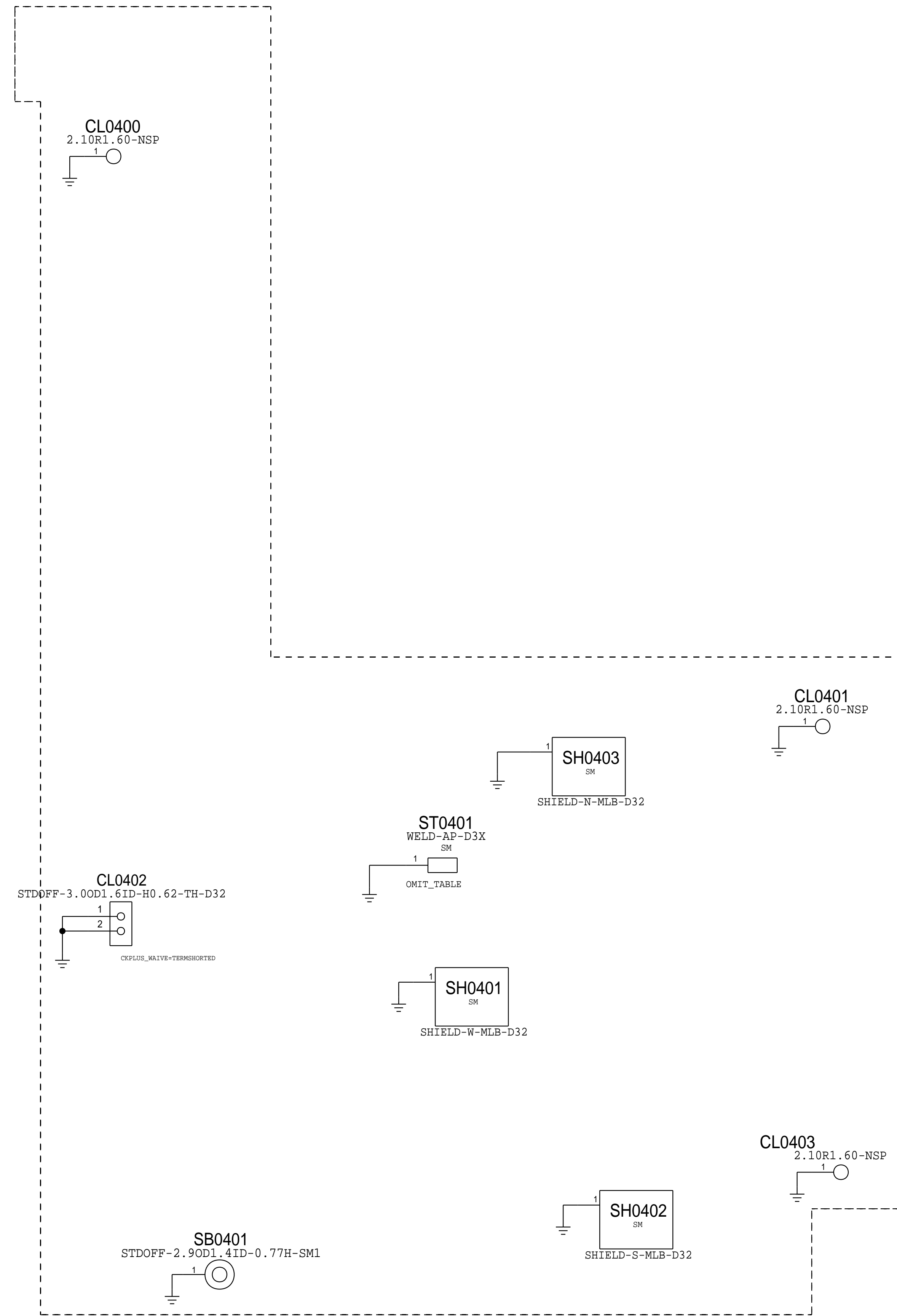
1

FIDUCIALS



Crosses

Squares



PAGE TITLE		SYSTEM: Mechanical Components	
DRAWING NUMBER	051-03228	SIZE	D
REVISION	2.0.0		
BRANCH			
PAGE	4 OF 85		
SHEET	4 OF 60		



8

7

6

5

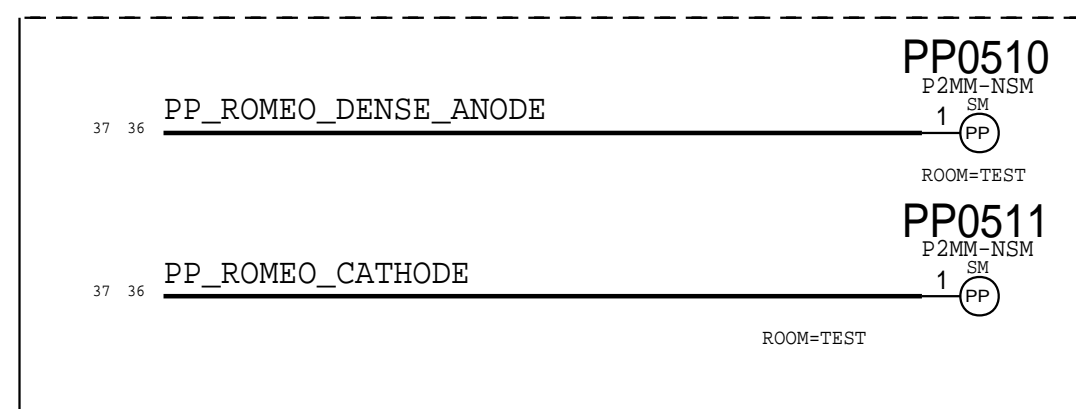
4

3

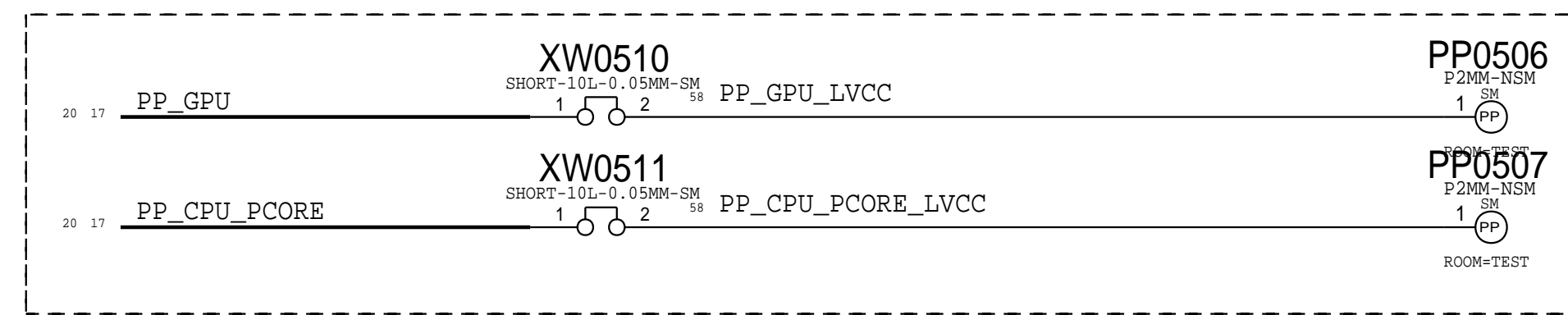
2

1

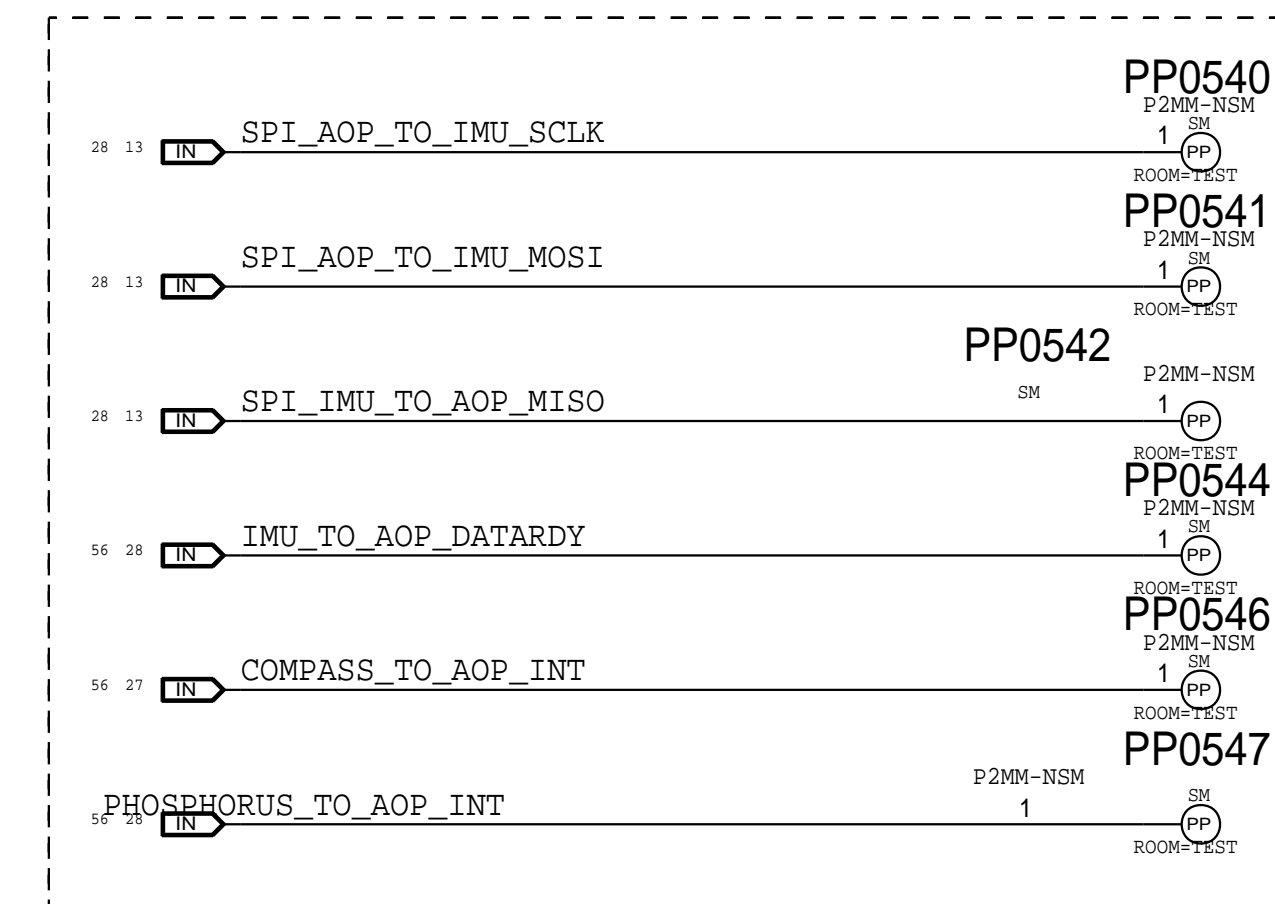
PEARL



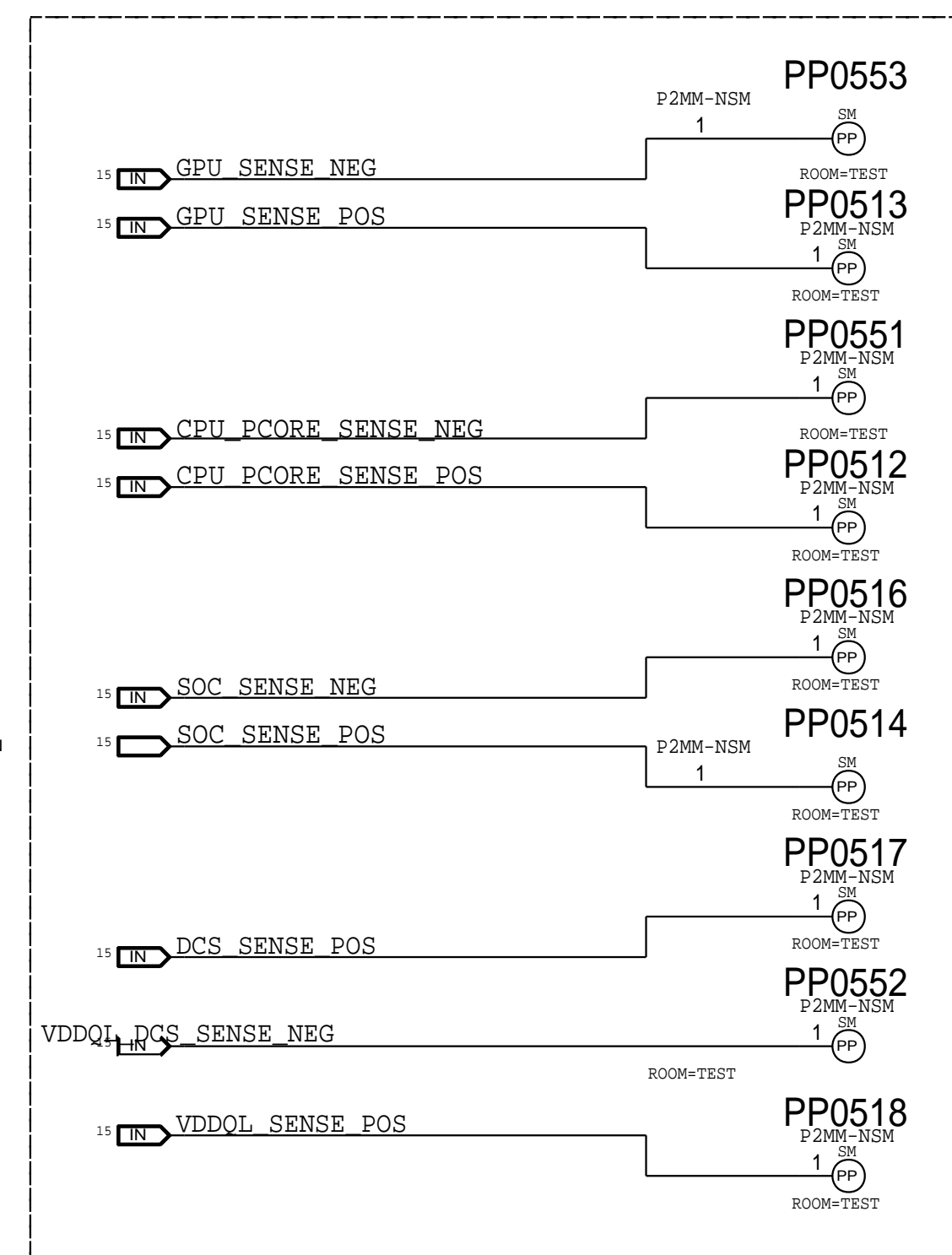
LVCC



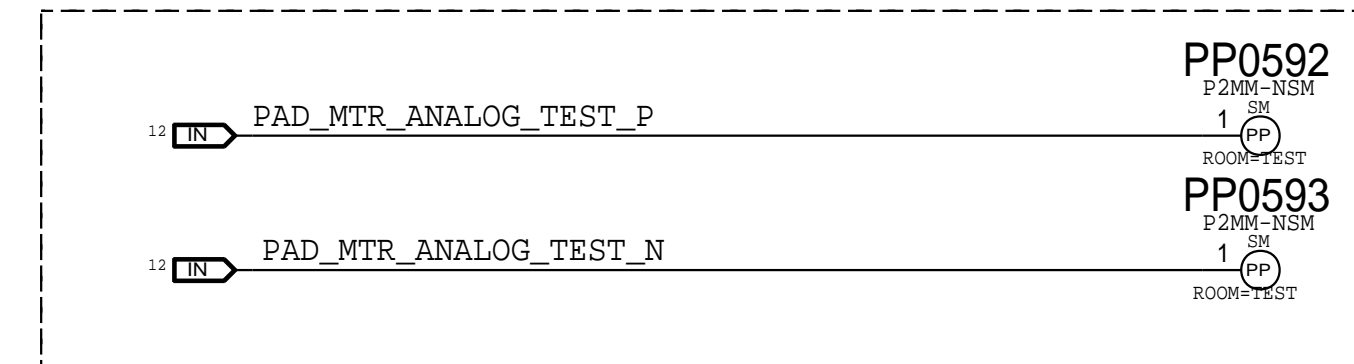
Sensors



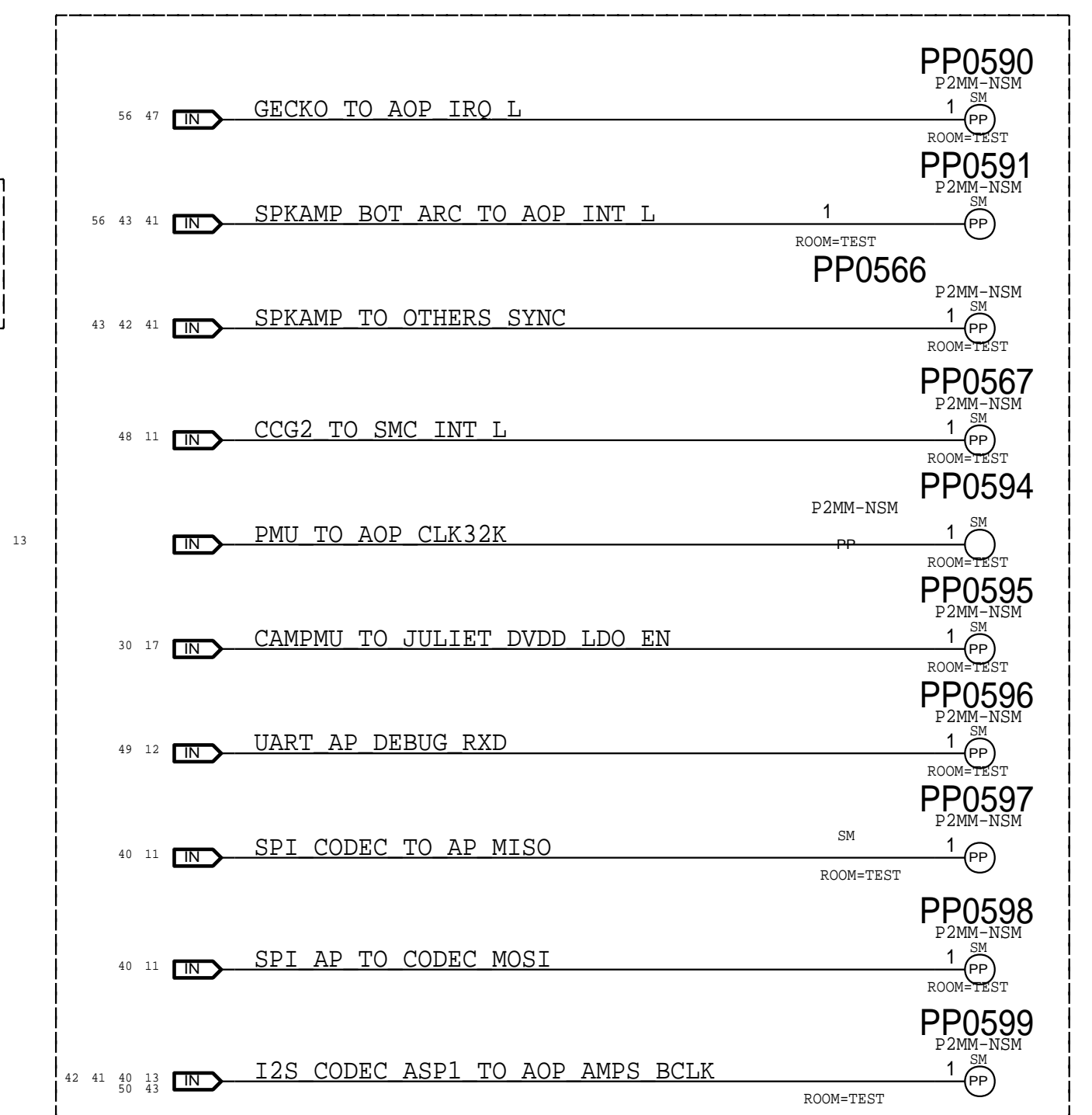
BUMP SENSE



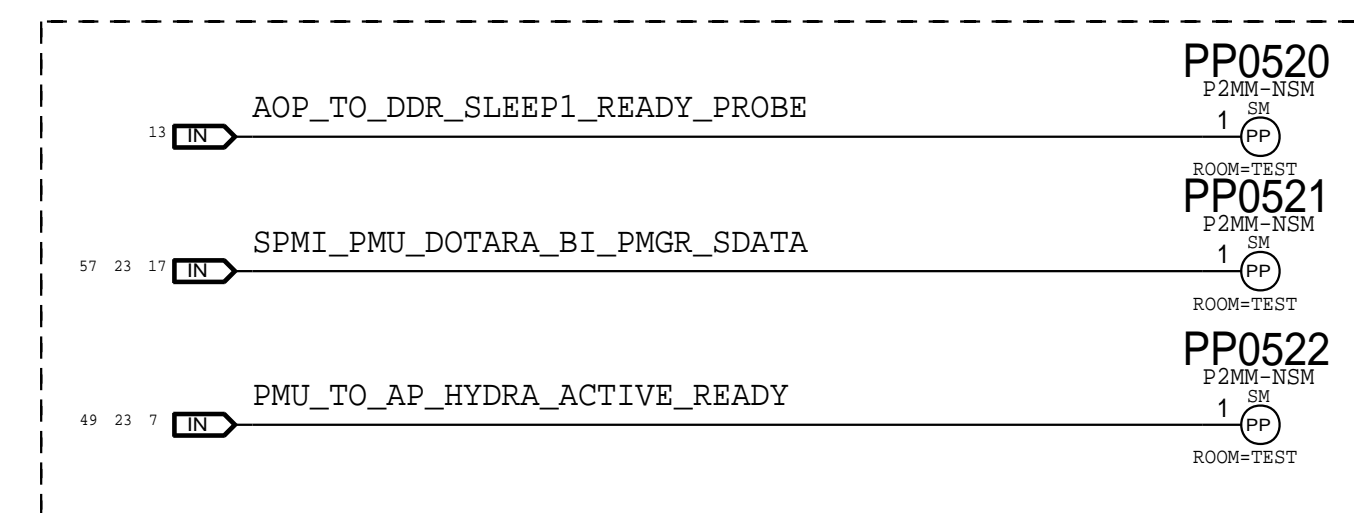
METROLOGY



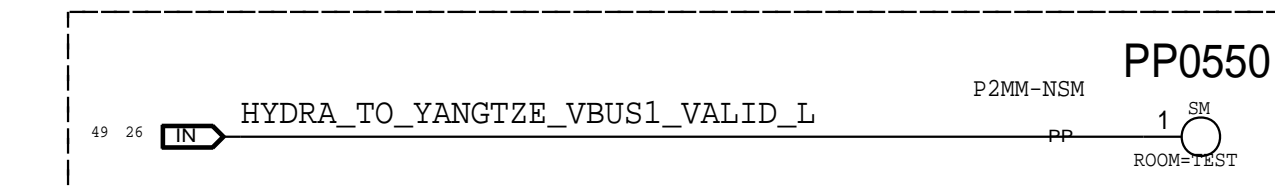
VALIDATION PP'S



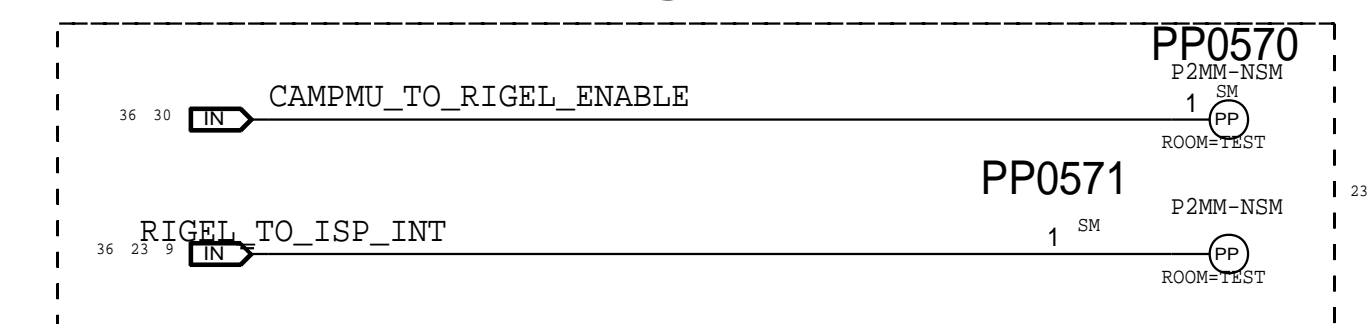
PMU



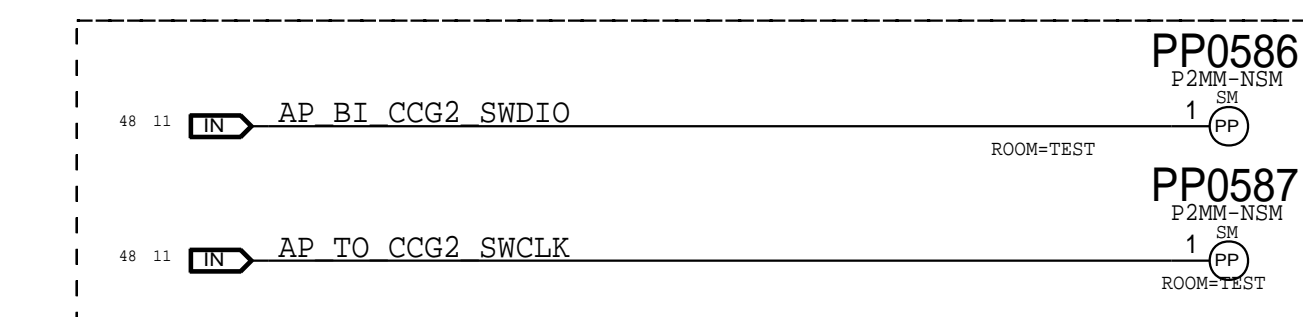
Hydra VBUS



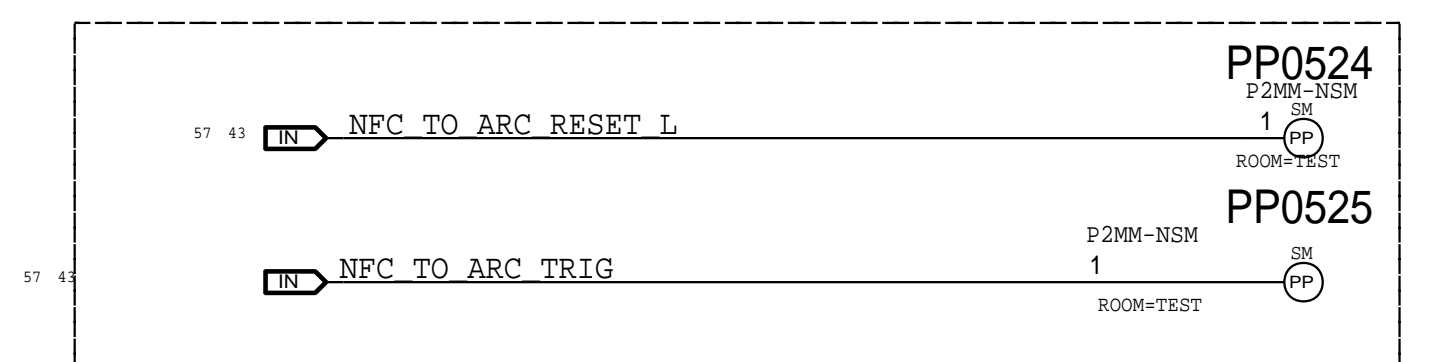
Rigel



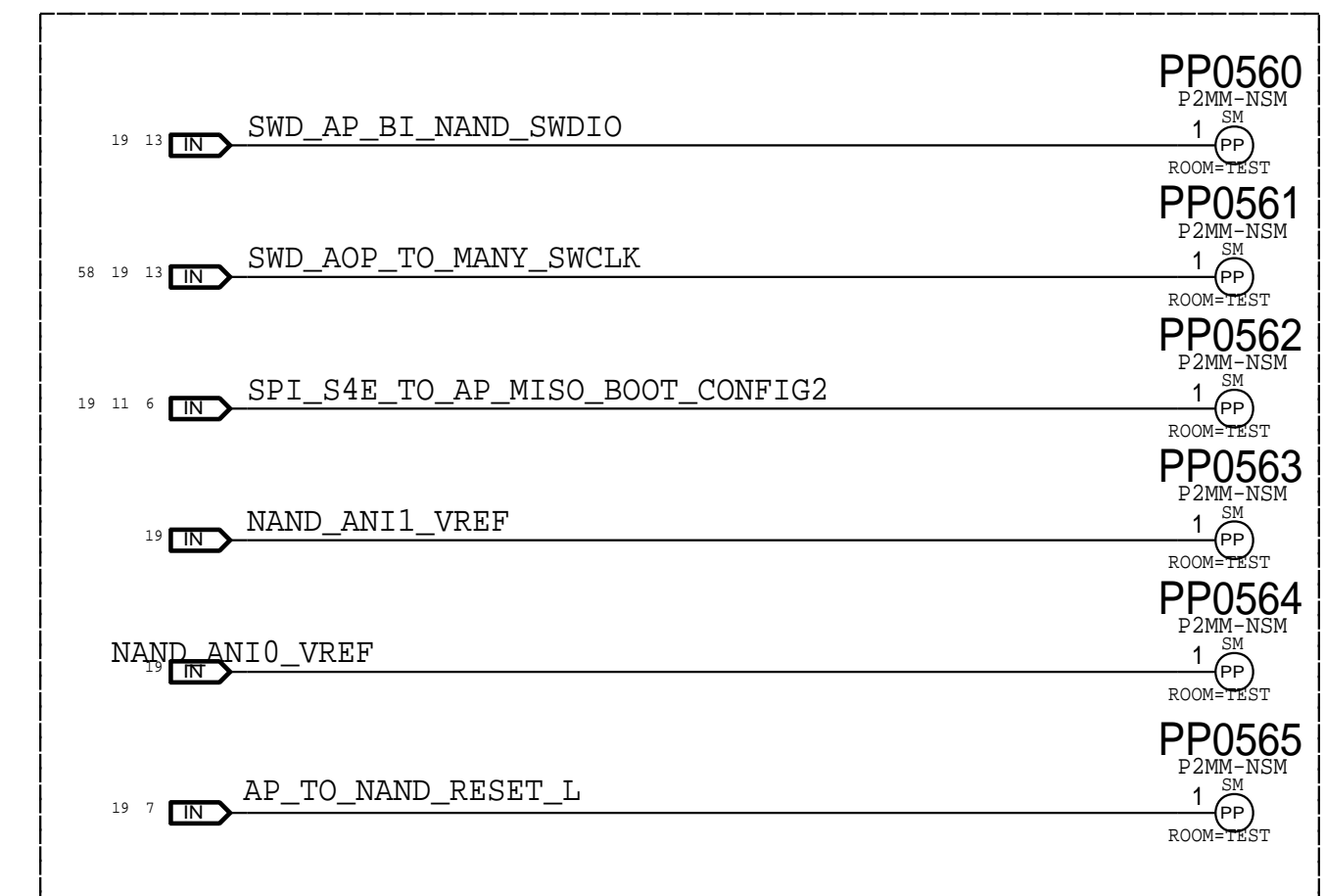
CCG SWD



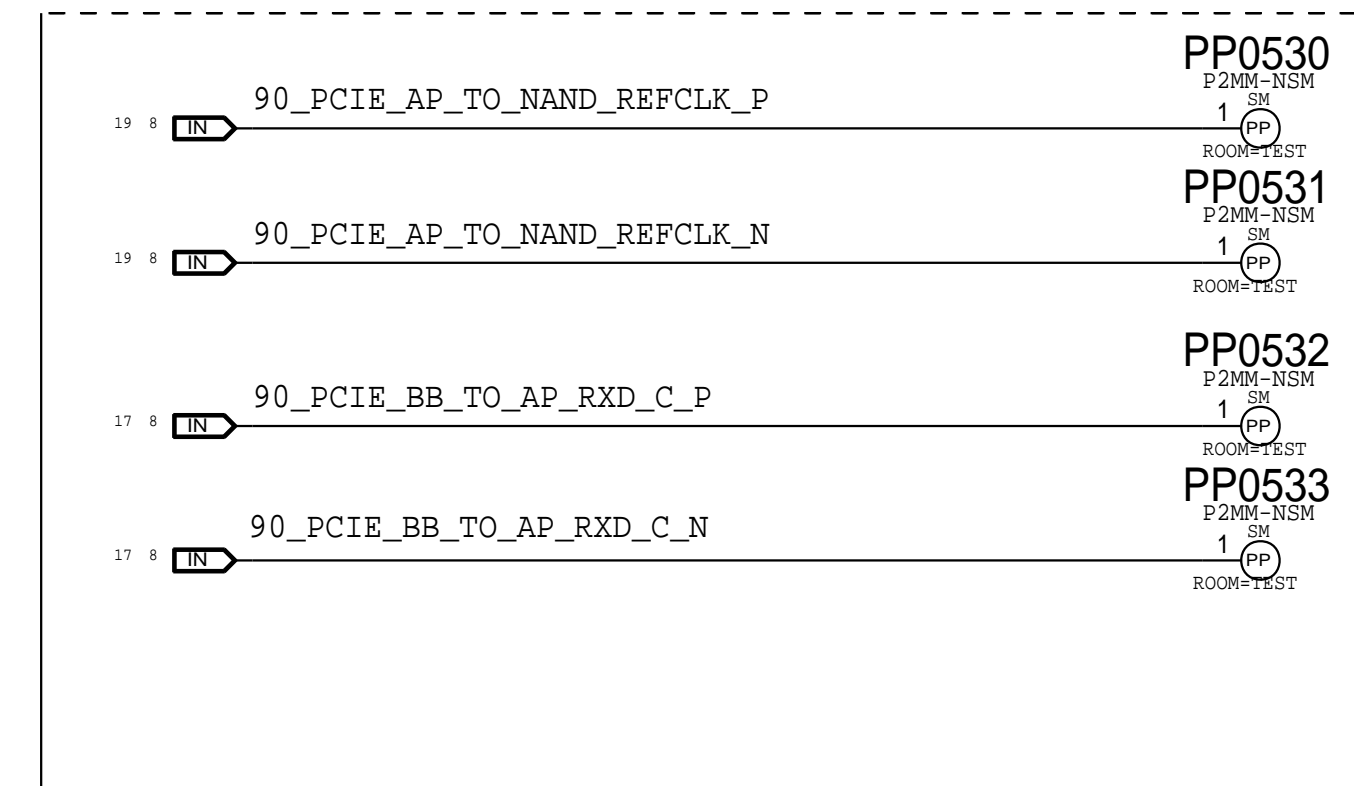
WALLET MODE



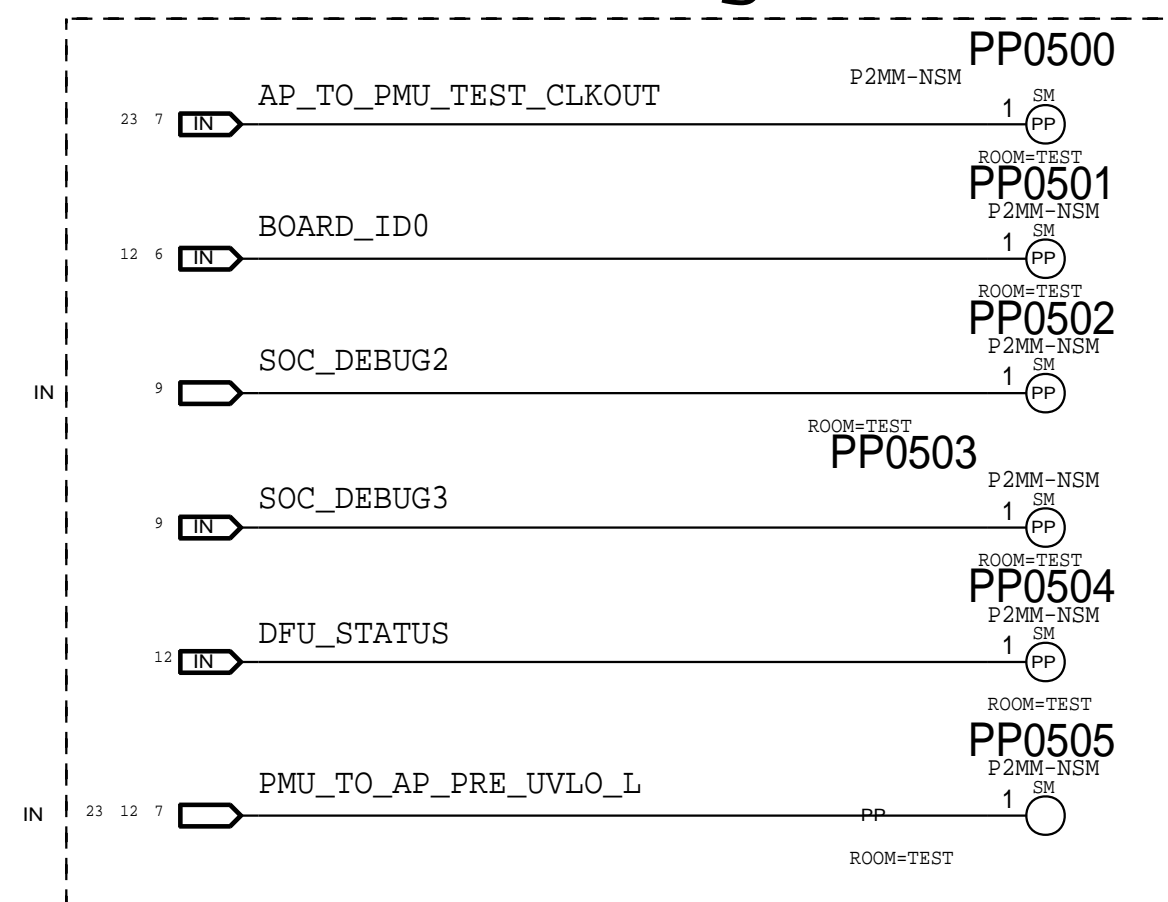
NAND



PCIE Refclk



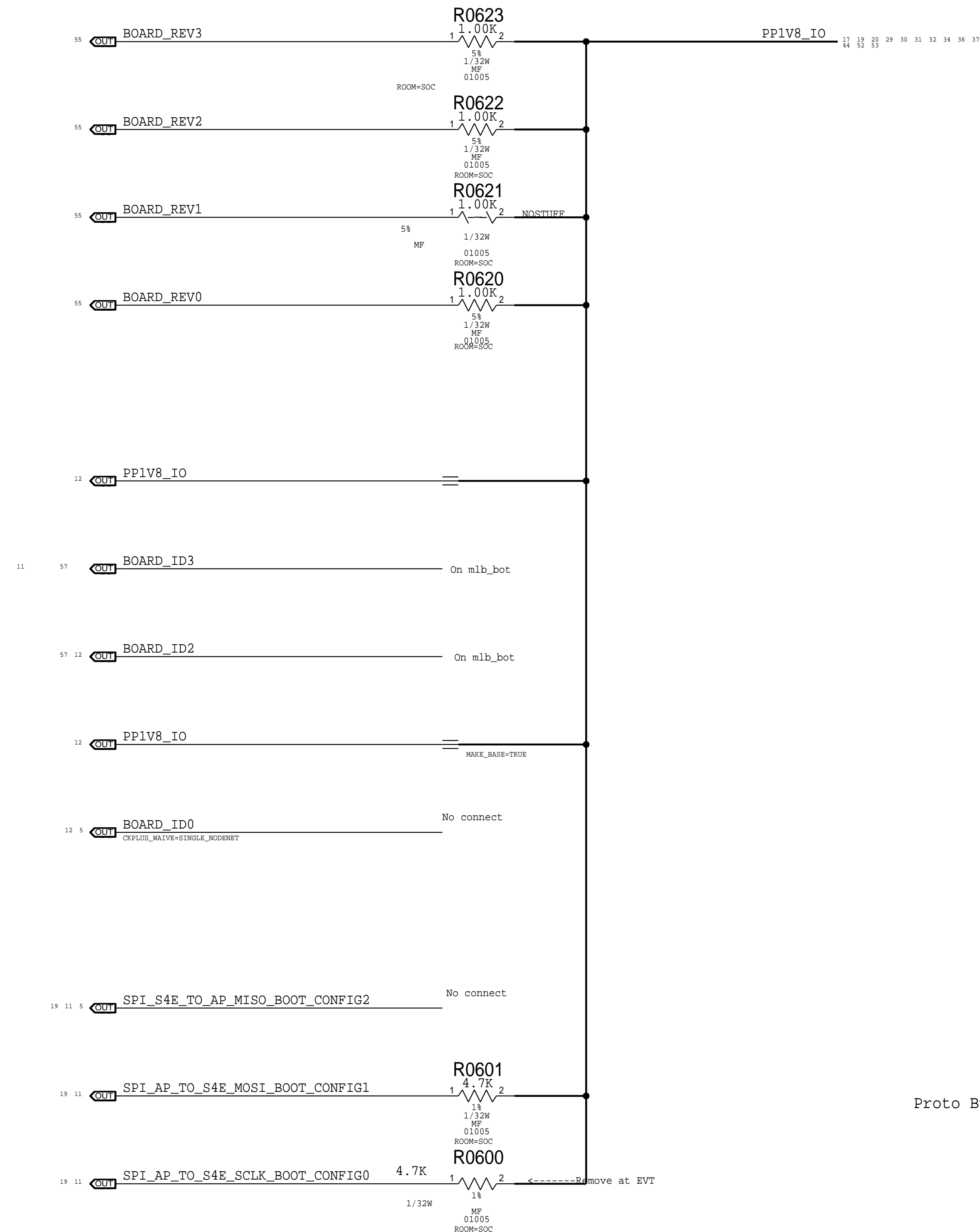
SOC Debug



PAGE TITLE		
SYSTEM: Testpoints (Top)		
DRAWING NUMBER	051-03228	SIZE
REVISION	2.0.0	D
BRANCH		
PAGE	5 OF 85	
SHEET	5 OF 60	

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

BOOTSTRAPPING: BOARD REV
BOARD ID
BOOT CONFIG



SELECTED -->

Board Rev[3:0]				
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

DEFAULT -->

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	
D33 MLB Mav	0	0	0	1	0
D33p MLB Mav	1	0	0	1	0
D33 Dev Mav	0	0	0	1	1
D33p Dev Mav	1	0	0	1	1
D33 MLB Ice	0	1	0	1	0
D33p MLB Ice	1	1	0	1	0
D33 Dev Ice	0	1	0	1	1
D33p Dev Ice	1	1	0	1	1
D32 MLB Mav	0	0	1	1	0
D32 Dev Mav	0	0	1	1	1
D32 MLB Ice	0	1	1	1	0
D32 Dev Ice	0	1	1	1	1

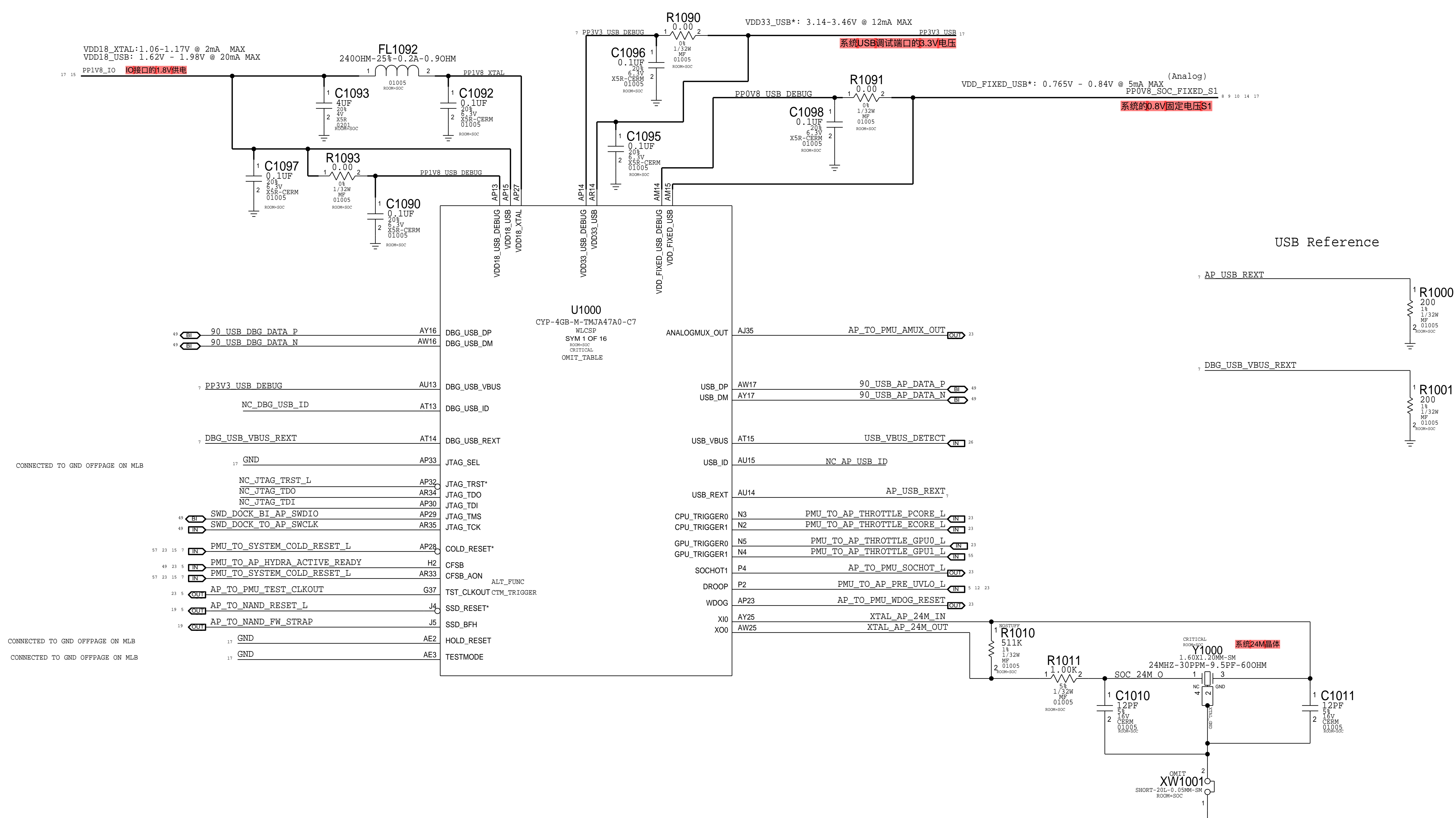
POR -->

Proto Builds -->

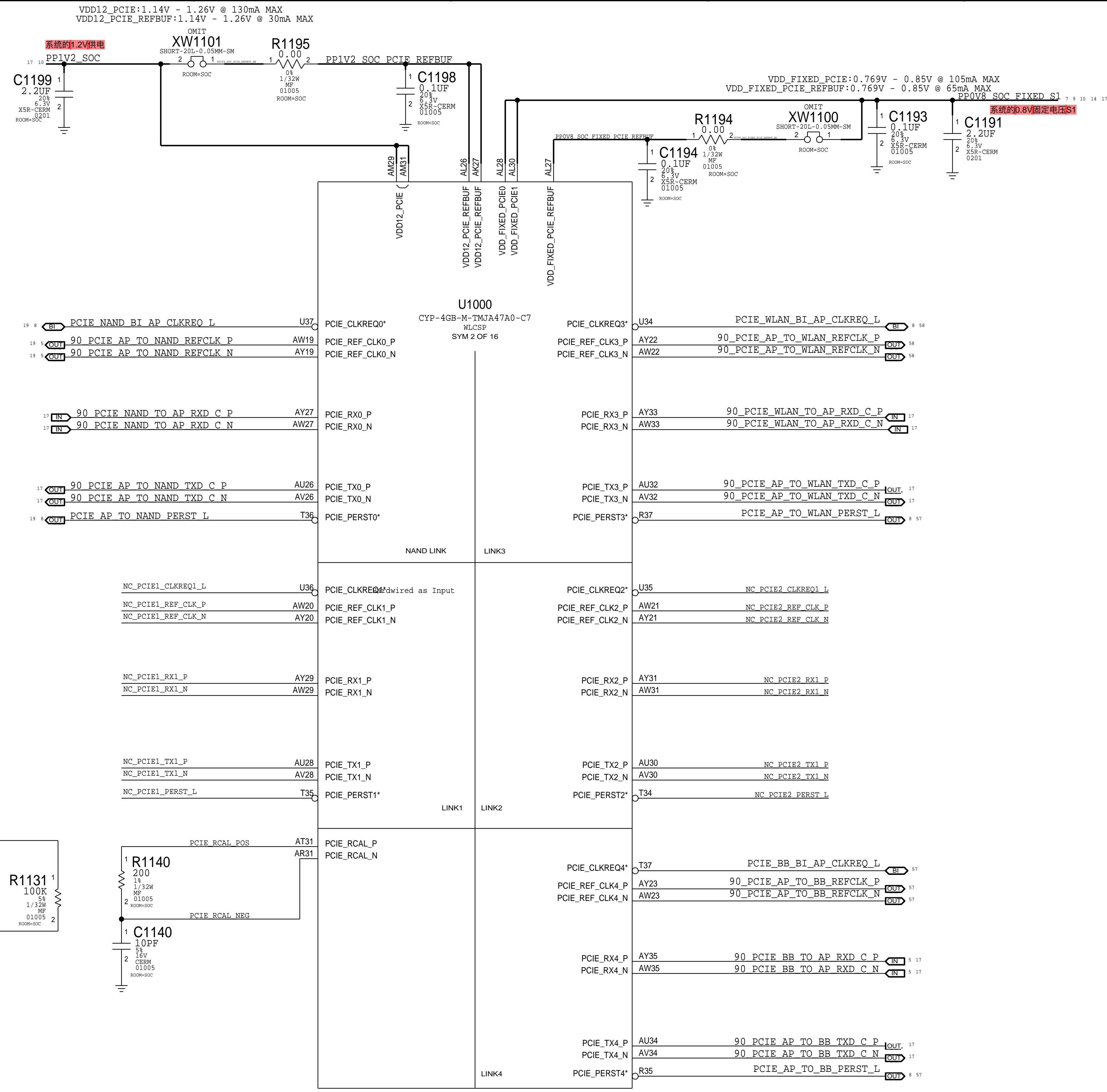
Boot Config [2:0]			
Float = Low PU = High			
	2	1	0
SPI NOR on SPI0 12 MHz	0	0	0
SPI NOR on SPI0 12 MHz Test	0	0	1
SPI NAND on SPI0 12 MHz	0	1	0
SPI NAND on SPI0 12 MHz Test	0	1	1
SPI NOR on SPI0 40 MHz	1	0	0
SPI NOR on SPI0 40 MHz Test	1	0	1
SPI NOR on SPI0 6 MHz	1	1	0
SPI NOR on SPI0 6 MHz Test	1	1	1

PAGE TITLE		
BOOTSTRAPPING		
DRAWING NUMBER	051-03228	SIZE D
REVISION	2.0.0	
BRANCH		
PAGE	6 OF 85	
SHEET	6 OF 60	

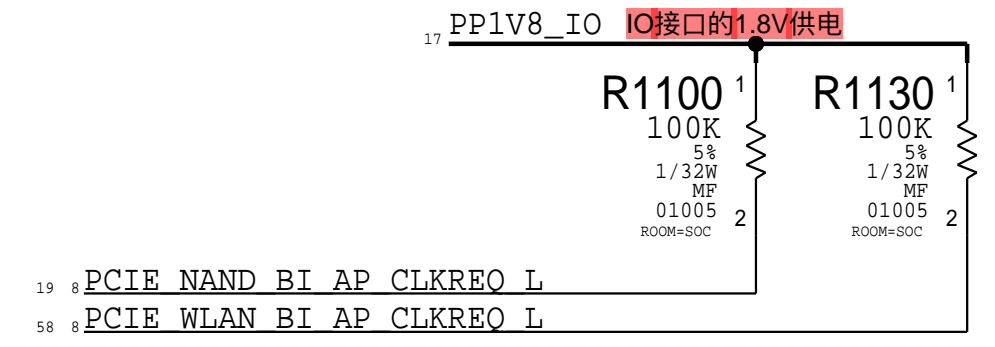
SOC - USB, JTAG, XTAL



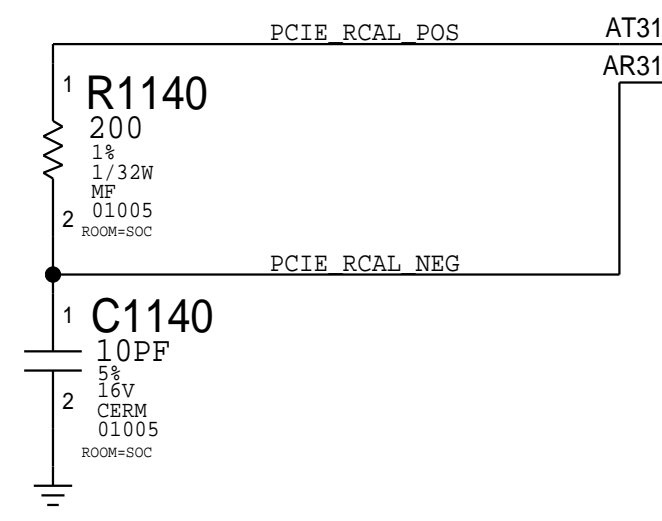
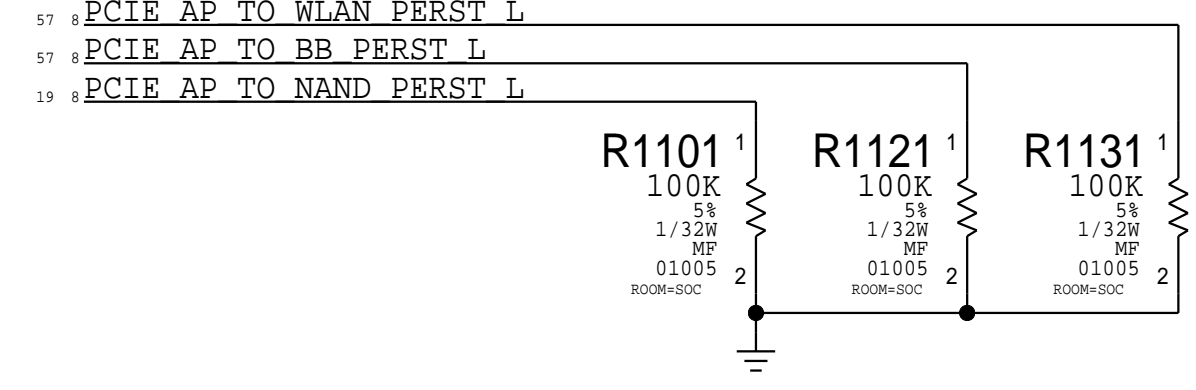
SOC - PCIE



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



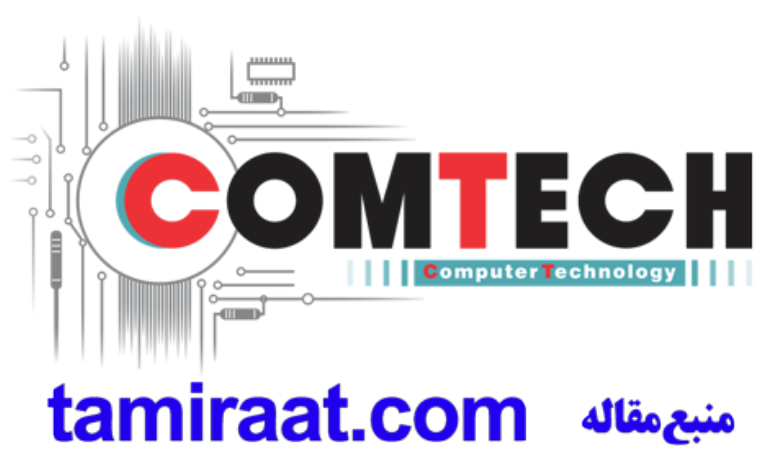
PCie Reset Pull-Downs



PCIE LINK 0

PCIE LINK 3

PCIE LINK 4



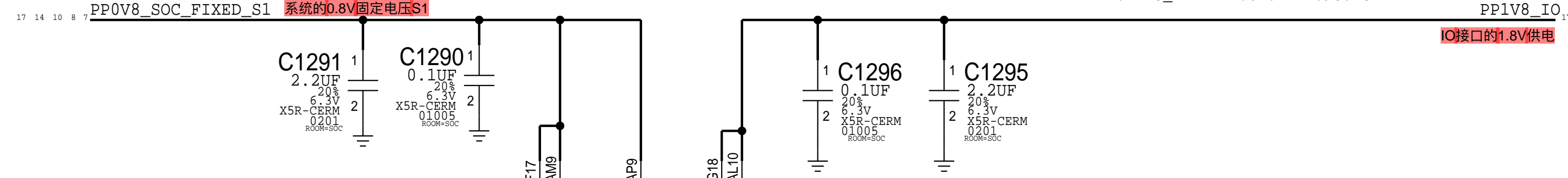
PAGE TITLE		SOC: PCIE	
DRAWING NUMBER	051-02545	SIZE	D
REVISION	7.0.0		
BRANCH			
PAGE	11 OF 85		
SHEET	8 OF 60		

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 PPIV8_IO_17



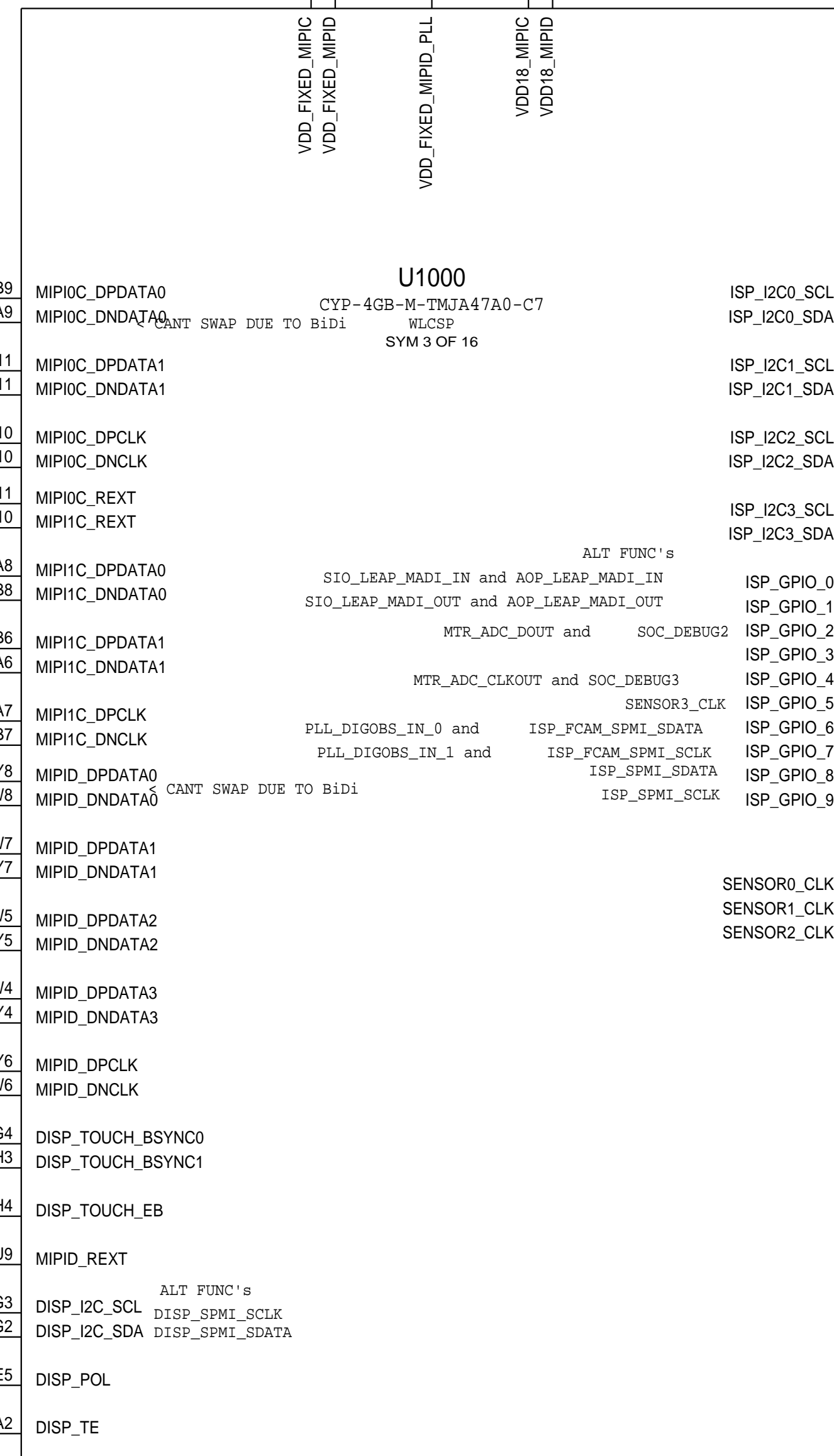
MIPI lanes can all flip polarity for routing purposes

Juliet MIPI

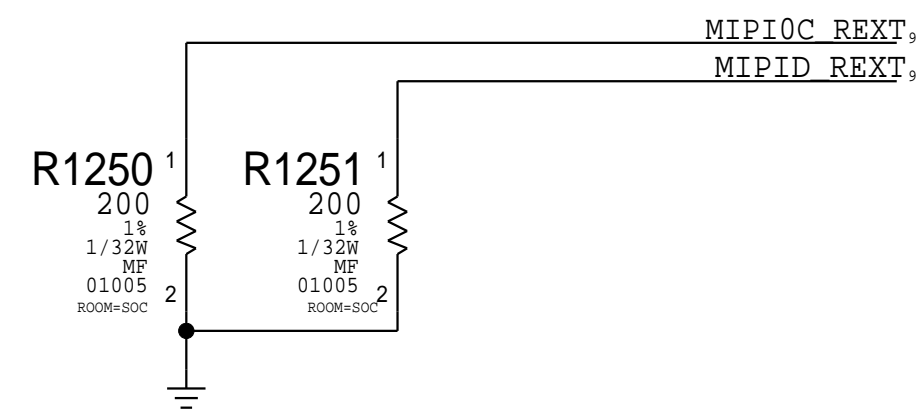
Display MIPI

GNDed offpage on MLB

GNDed offpage on MLB

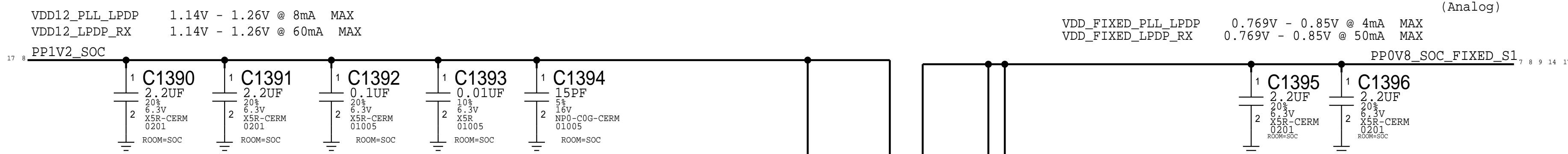


MIPI Reference



PAGE TITLE		
SOC: MIPI		
DRAWING NUMBER	051-02545	SIZE
REVISION	7.0.0	D
BRANCH		
PAGE		
12 OF 85		
SHEET		
9 OF 60		

SOC - LPDP



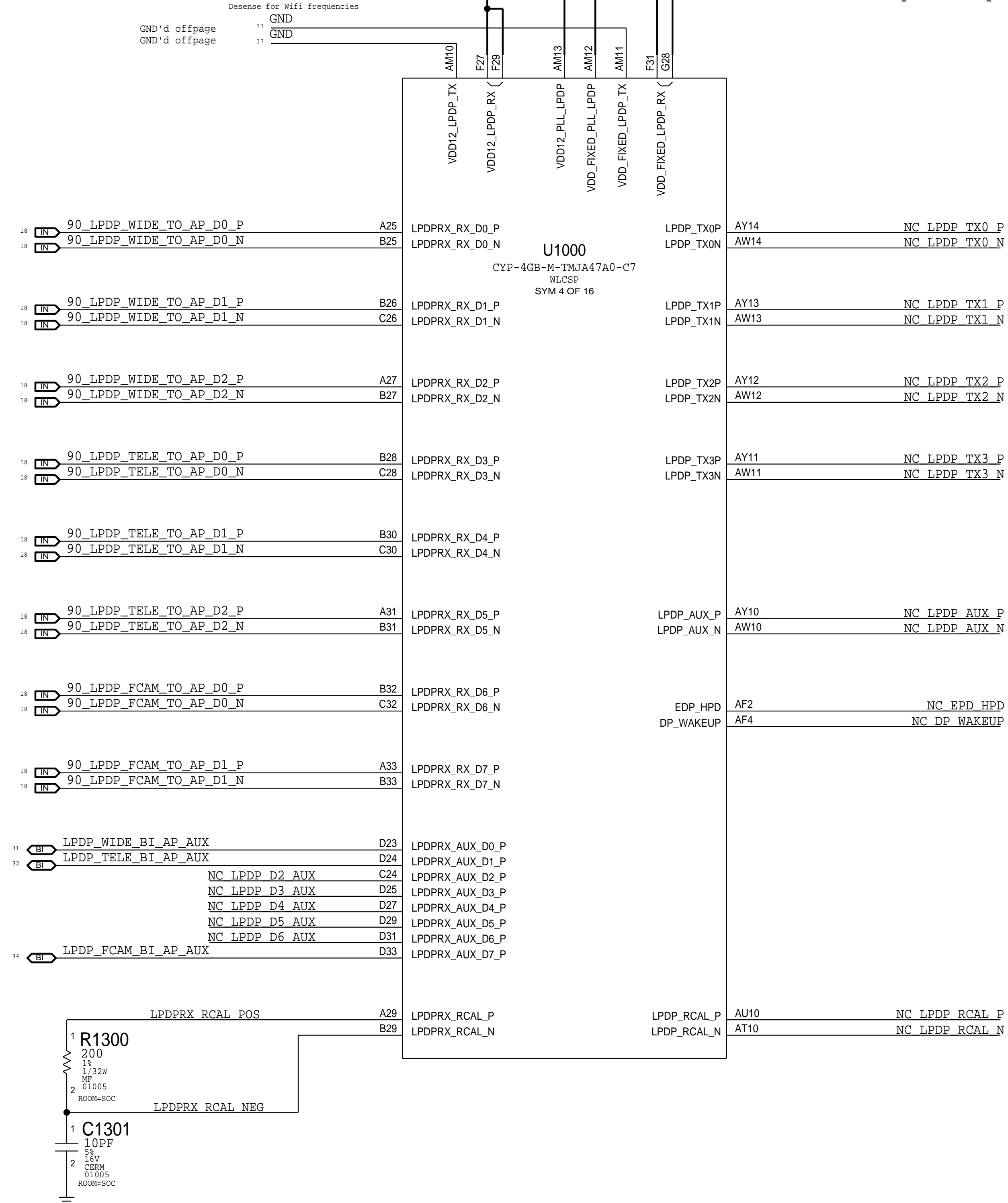
Dan LPDP Lane Assignment

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

Justin LPDP Lane Assignment

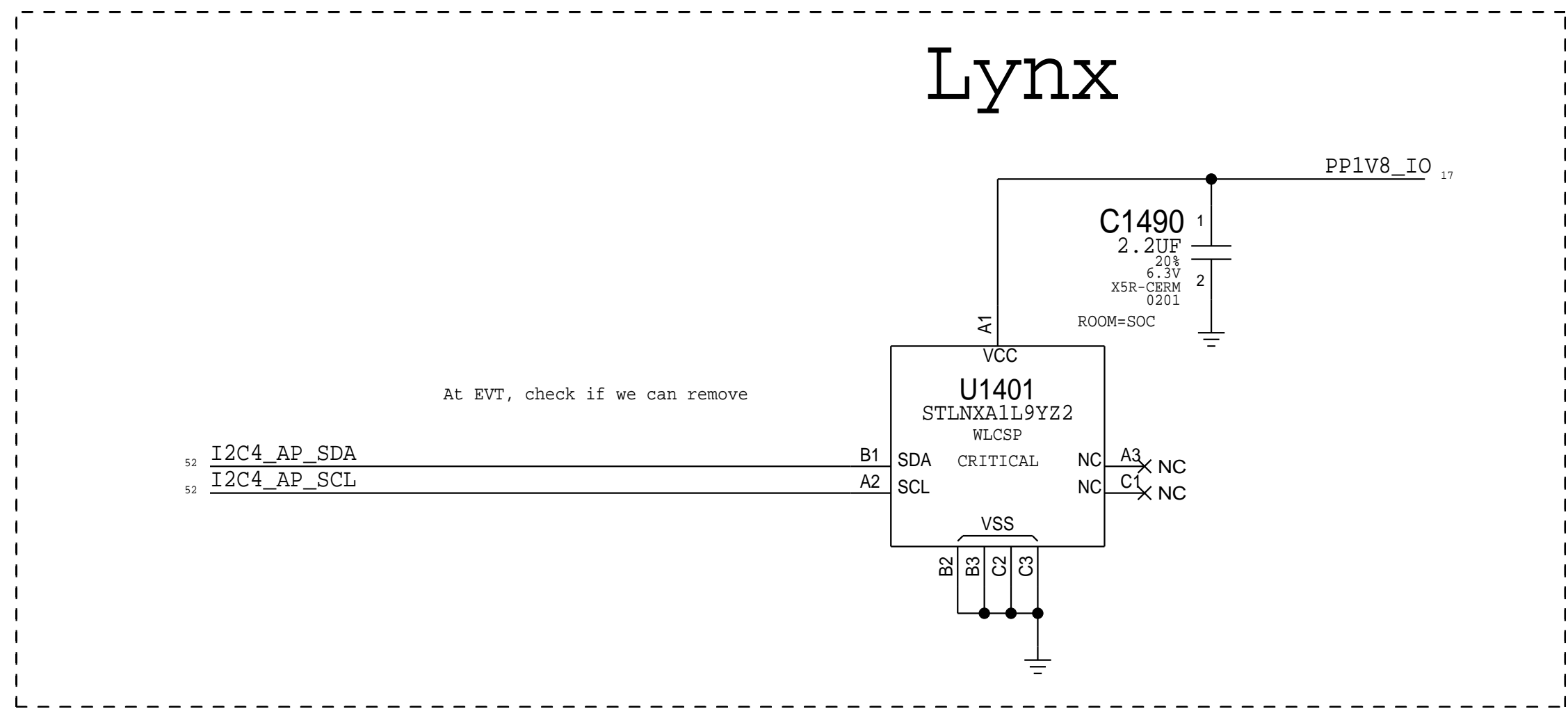
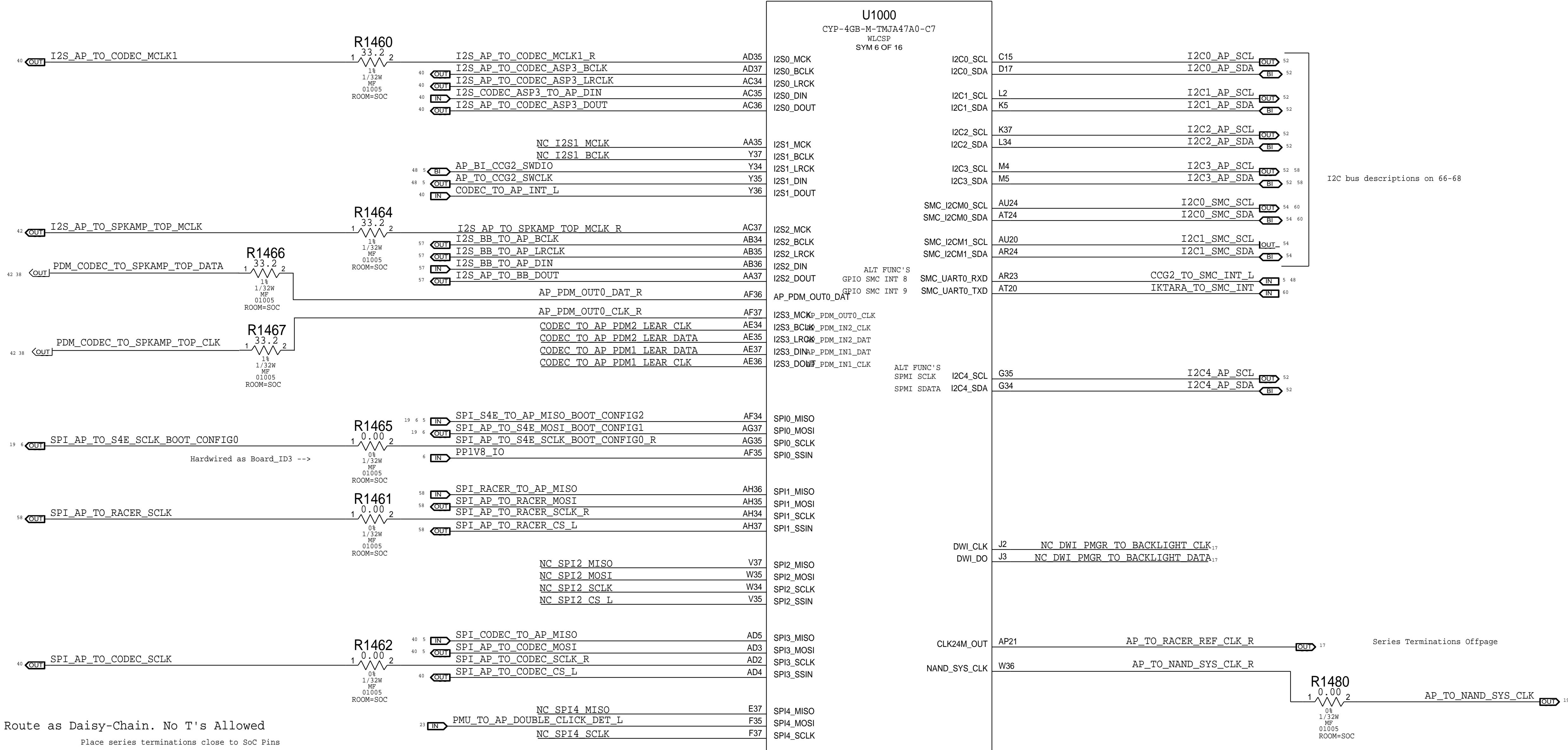
Wide: 2-4
Tele: 5-7
Fcam: 0-1

LPD Assigned off page



PAGE TITLE		
SOC: LPDP		
DRAWING NUMBER	051-02545	SIZE
REVISION	7.0.0	D
BRANCH		
PAGE	13 OF 85	
SHEET	10 OF 60	

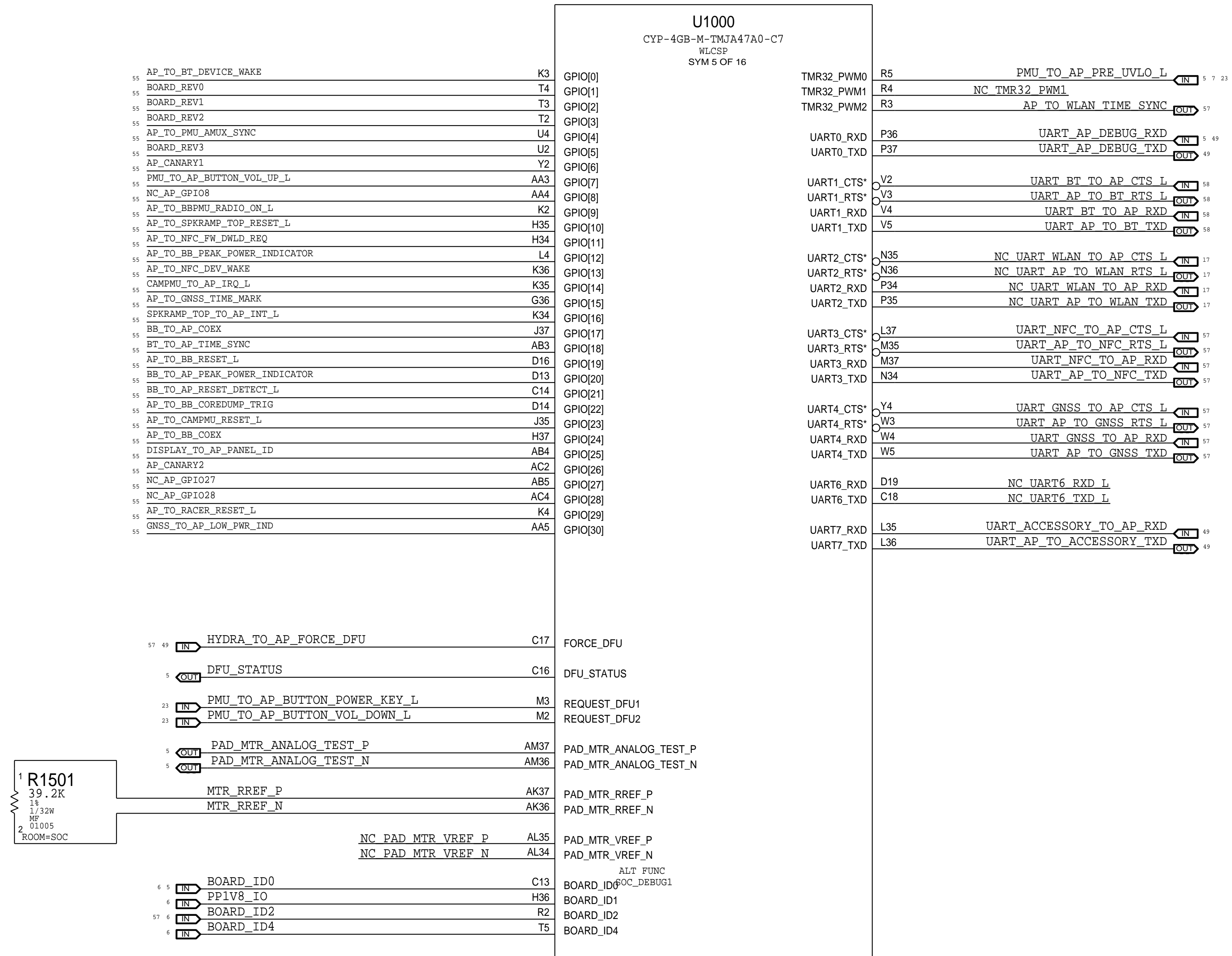
SOC - SERIAL INTERFACES



PAGE TITLE		
SOC: SERIAL		
DRAWING NUMBER	051-02545	SIZE
REVISION	7.0.0	D
BRANCH		
PAGE		
14 OF 85		
SHEET		
11 OF 60		

SOC - GPIO INTERFACES

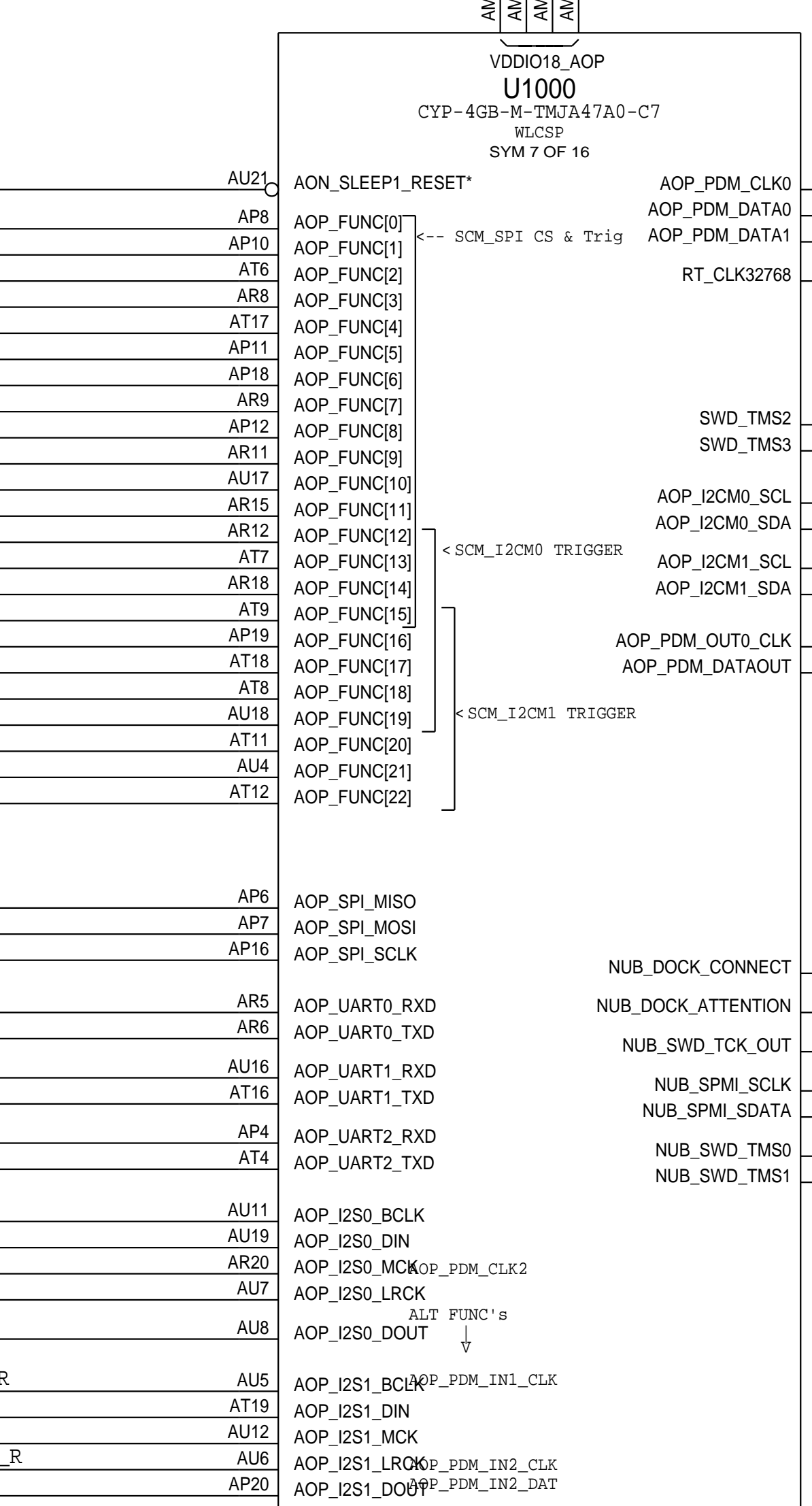
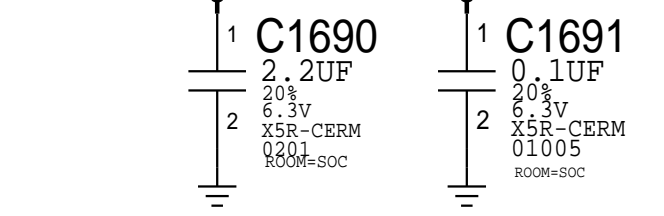
GPIOs are wired on page 70



PAGE TITLE		
SOC: GPIO & UART		
DRAWING NUMBER	051-02545	SIZE
REVISION	7.0.0	D
BRANCH		
PAGE	15 OF 85	
SHEET	12 OF 60	

SOC - AOP

1.62V - 1.98V @ 10mA MAX
P1V8_S2



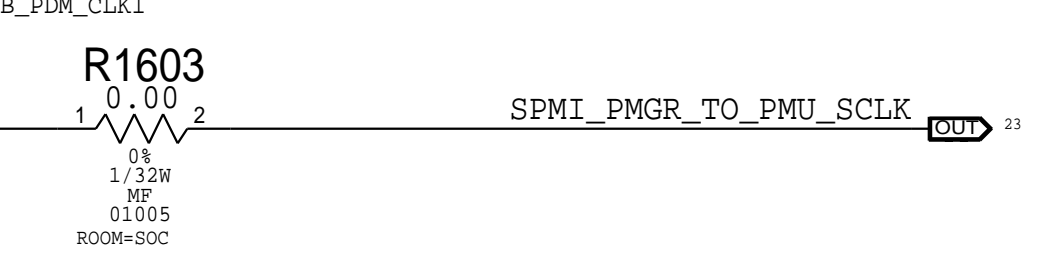
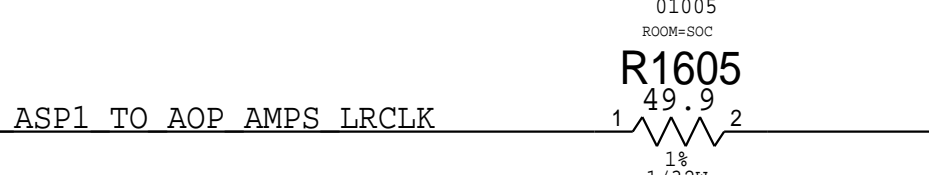
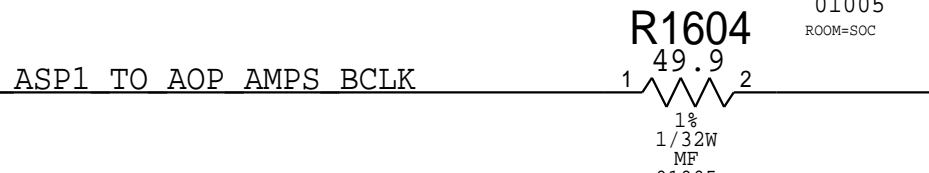
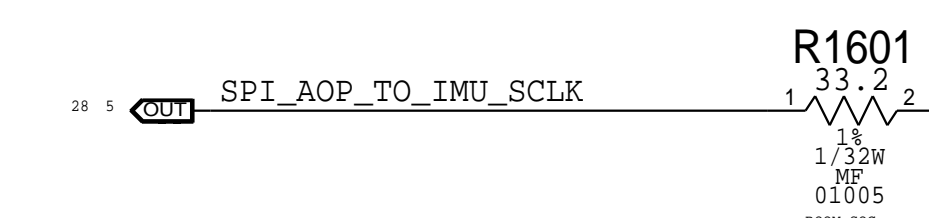
- 56 AOP_TO_DDR_SLEEP1_READY_PROBE AU21
- 56 IMU_TO_AOP_DATARDY AP8
- 56 SPI_AOP_TO_IMU_CS_L AP10
- 56 AOP_TO_SPKAMP_BOT_RESET_L AT6
- 56 SPI_AOP_TO_PHOSPHORUS_CS_L AR8
- 56 PHOSPHORUS_TO_AOP_INT AT17
- 56 ROMEO_TO_AOP_B2B_DETECT AP11
- 56 RACER_TO_AOP_INT_L AP18
- 56 AOP_TO_CODEC_RESET_L AR9
- 56 NC_AOP_FUNC8 AP12
- 56 IMU_TO_AOP_INT AR11
- 56 NC_AOP_FUNC10 AU17
- 56 NC_AOP_FUNC11 AR15
- 56 NC_AOP_FUNC12 AR12
- 56 AOP_TO_CODEC_CLP_EN AT7
- 56 AOP_TO_BBPMU_COEX AR18
- 56 PROX_BI_AOP_INT_L AT9
- 56 FOTASSIUM_TO_AOP_INT AP19
- 56 HALL_CASE_TO_AOP_SOUTH_L AT18
- 56 ALS_TO_AOP_INT_L AT8
- 56 NFC_TO_AOP_HOST_WAKE AU18
- 56 COMPASS_TO_AOP_INT AT11
- 56 HALL_FLAP_TO_AOP_IRQ_L AU4
- 56 SPKAMP_BOT_ARC_TO_AOP_INT_L AT12

- 28 5 IN SPI_IMU_TO_AOP_MISO AP6
- 28 5 OUT SPI_AOP_TO_IMU_MOSI AP7
- 28 5 OUT SPI_AOP_TO_IMU_SCL_R AP16
- 57 IN UART_BB_TO_AOP_RXD AR5
- 57 OUT UART_AOP_TO_BB_TXD AR6
- 58 OUT AOP_TO_WLAN_CONTEXT_A AU16
- 58 OUT AOP_TO_WLAN_CONTEXT_B AT16
- 58 IN UART_RACER_TO_AOP_RXD AP4
- 58 OUT UART_AOP_TO_RACER_TXD AT4
- 40 OUT I2S_AOP_TO_CODEC_ASP2_BCLK AU11
- 40 IN I2S_CODEC_ASP2_TO_AOP_DIN AU19
- 40 OUT I2S_AOP_TO_CODEC_MCLK2_R AR20
- 40 OUT I2S_AOP_TO_CODEC_ASP2_LRCLK AU7
- 40 OUT I2S_AOP_TO_CODEC_ASP2_DOUT AU8
- 43 42 41 IN I2S_CODEC_ASP1_TO_AOP_AMPS_BCLK_R AU5
- 43 42 41 IN I2S_CODEC_ASP1_TO_AOP_AMPS_DIN AT19
- 56 AOP_TO_HALOGEN_AFE_EN AU12
- 40 IN I2S_CODEC_ASP1_TO_AOP_AMPS_LRCLK_R AU6
- 40 OUT I2S_AOP_AMPS_TO_CODEC_ASP1_DOUT AP20

- AT21 AOP_TO_CODEC_GPIO1 OUT 40
- AT22 CODEC_TO_AOP_GPIO2 IN 40
- AU23 AOP_TO_GECKO_RESET_L IN 56
- AP26 PMU_TO_AOP_CLK32K IN 5 23
- C19 SWD_AP_BI_NAND_SWDIO OUT 5 19
- B16 NC_SWD_TMS3
- AP17 I2C0_AOP_SCL IOUT 54
- AP5 I2C0_AOP_SDA IN 54
- AR17 I2C1_AOP_SCL_SOC IOUT 54
- AT5 I2C1_AOP_SDA IN 54
- AT23 GECKO_TO_AOP_IRQ_L 56
- AU22 HALL_CASE_TO_AOP_NORTH_L 56
- AR27 HYDRA_TO_NUB_DOCK_CONNECT IN 49
- AP25 HYDRA_TO_NUB_INT IN 49
- AP24 SWD_AOP_TO_MANY_SWCLK OUT 5 19 58
- AR21 SPMI_PMGR_TO_PMU_SCL_R IN 5 23
- AR29 SPMI_PMU_BI_PMGR_SDATA IN 5 23
- AR26 SWD_AOP_BI_RACER_SWDIO IN 58
- AP22 SWD_AOP_BI_BB_SWDIO IN 57

ALT FUNC'S
AOP_LPPLL
AOP_PDM_CLK4
AOP_PDM_CLK3

ALT FUNC'S
SMC_UART1_TXD
SMC_UART1_RXD
I2C bus descriptions on 66-68



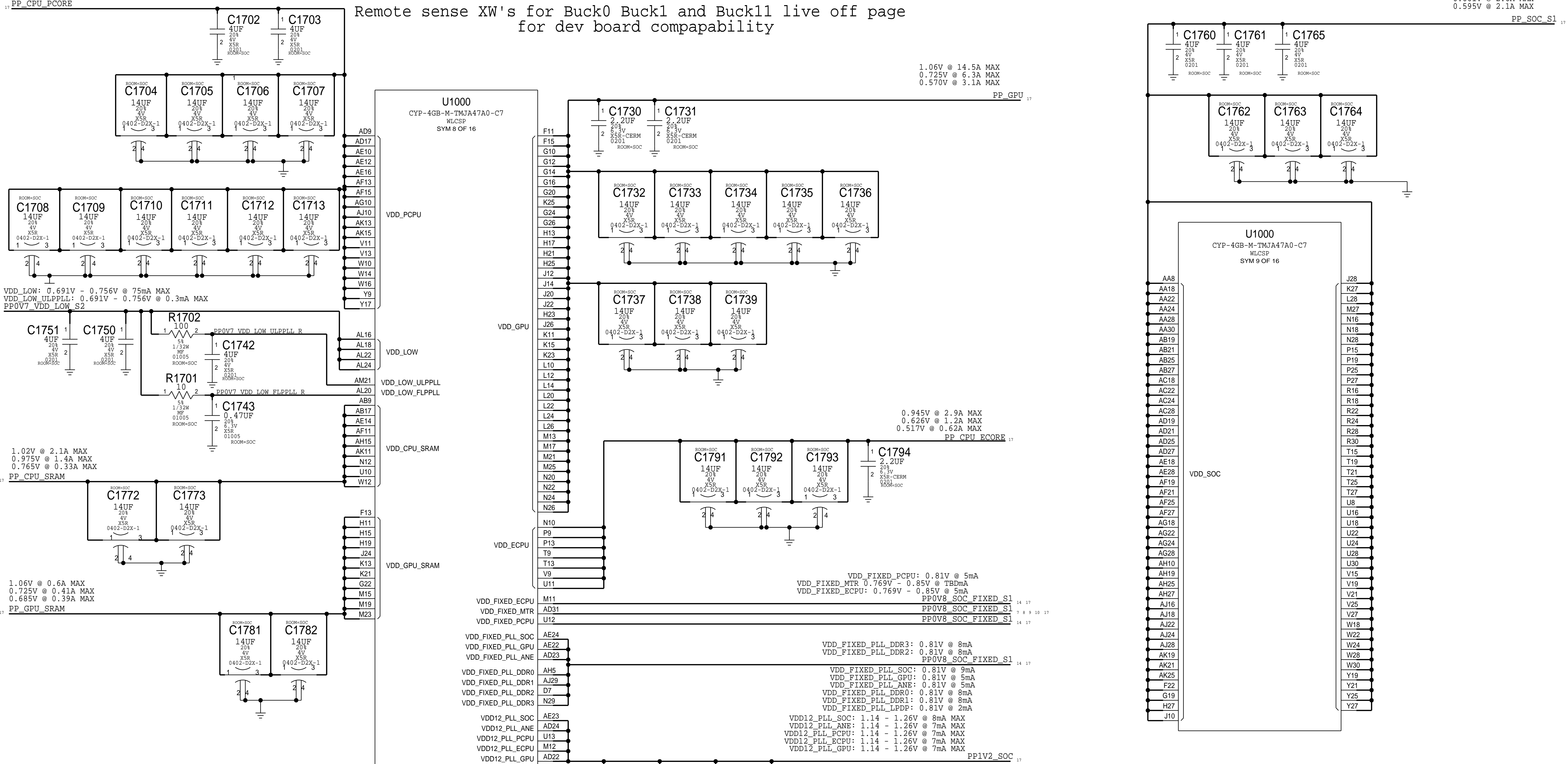
PAGE TITLE		
SOC: AOP		
DRAWING NUMBER	051-02545	SIZE
REVISION	7.0.0	D
BRANCH		
PAGE	16 OF 85	
SHEET	13 OF 60	

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

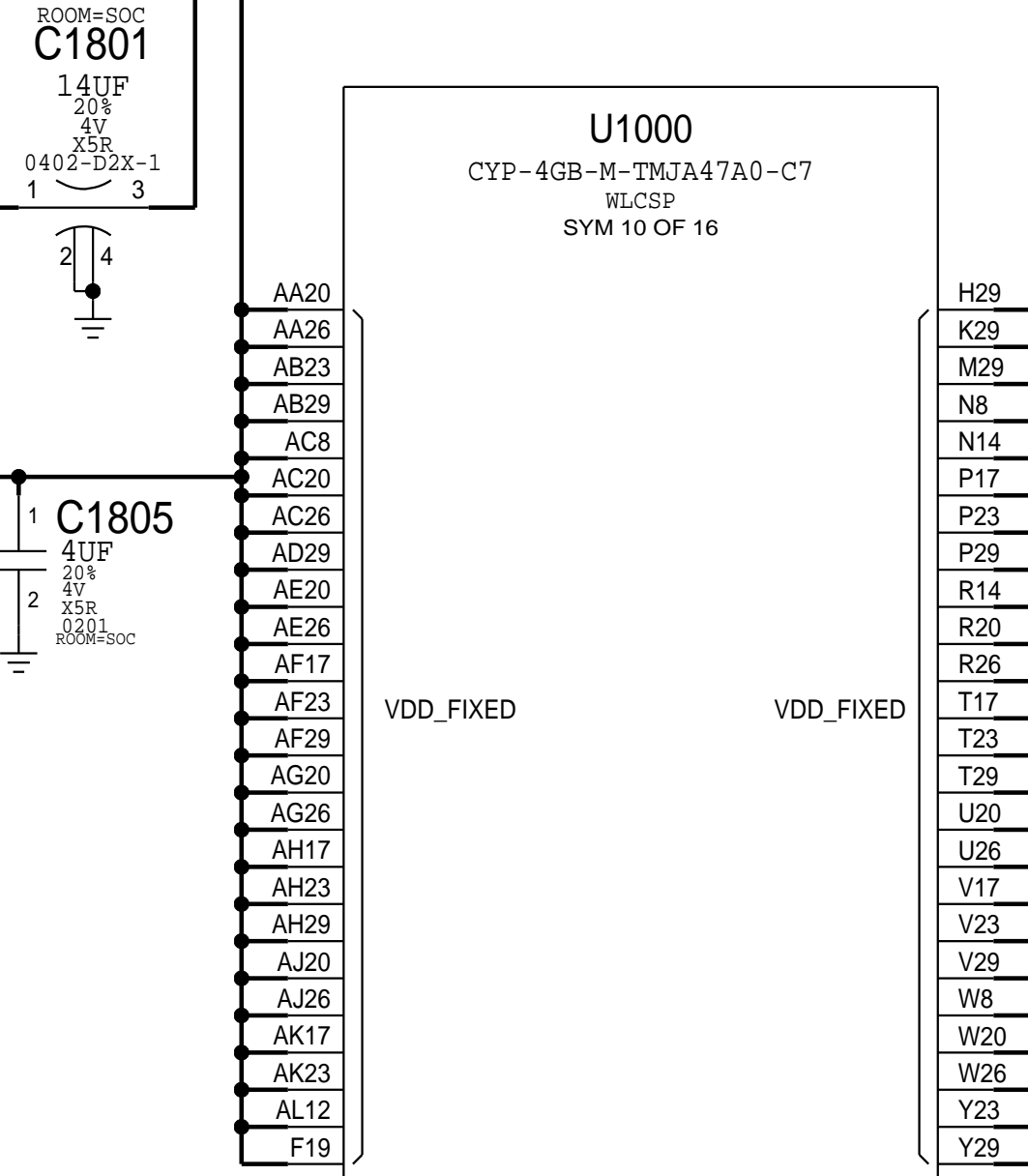
Remote sense XW's for Buck0 Buck1 and Buck11 live off page for dev board compapability



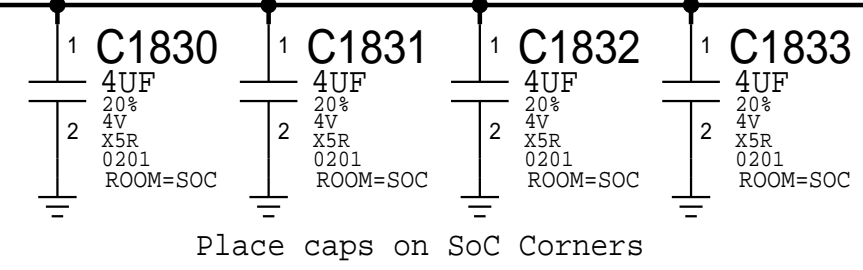
PAGE TITLE		
SOC: POWER (1/3)		
DRAWING NUMBER	051-02545	SIZE
REVISION	7.0.0	D
BRANCH		
PAGE	17 OF 85	
SHEET	14 OF 60	

SOC - CPU, GPU & SOC RAILS

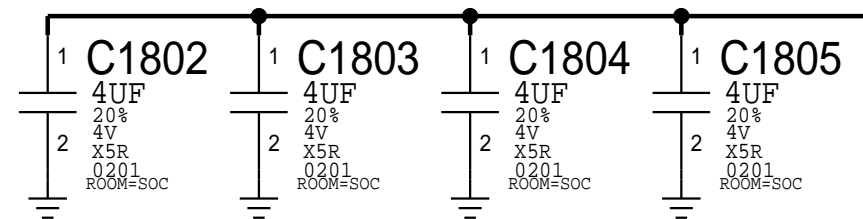
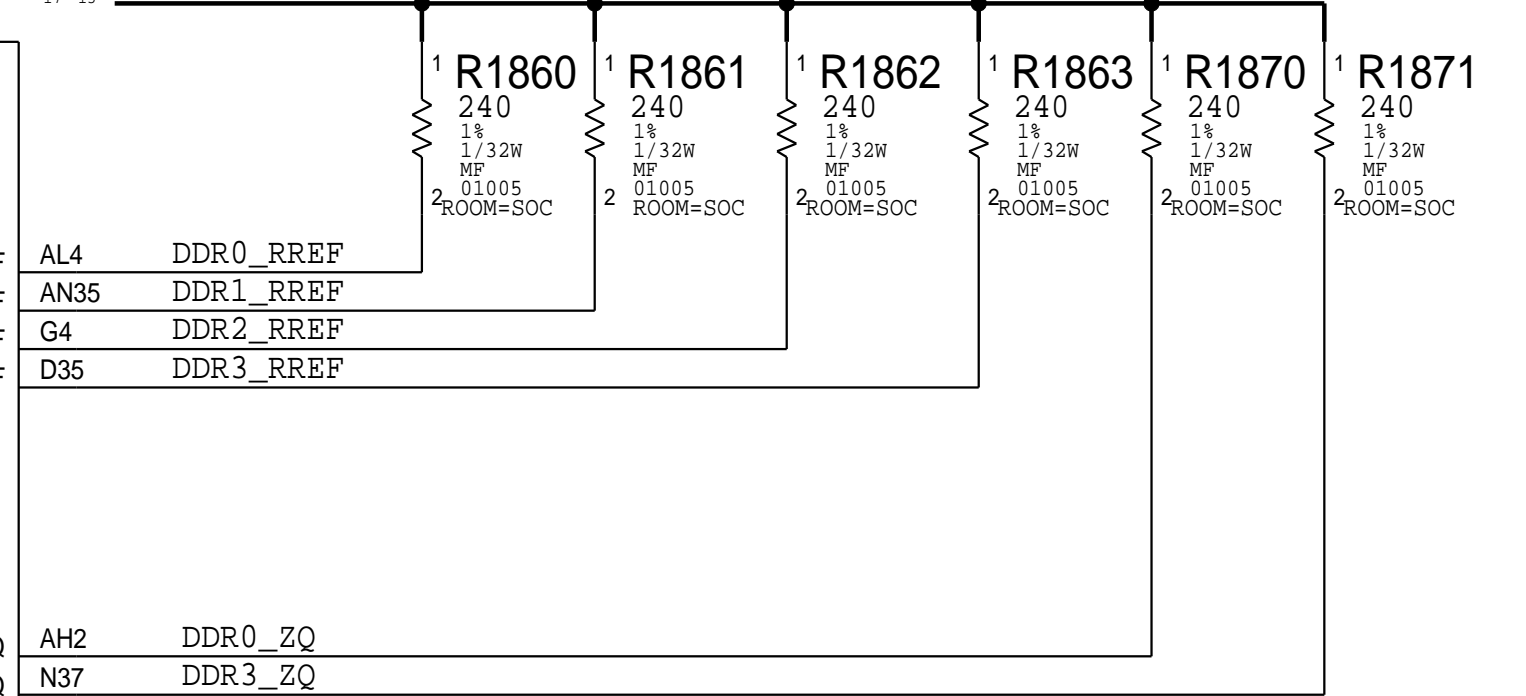
0.8V @ 900mA MAX
PP0V8_SOC_FIXED_S1



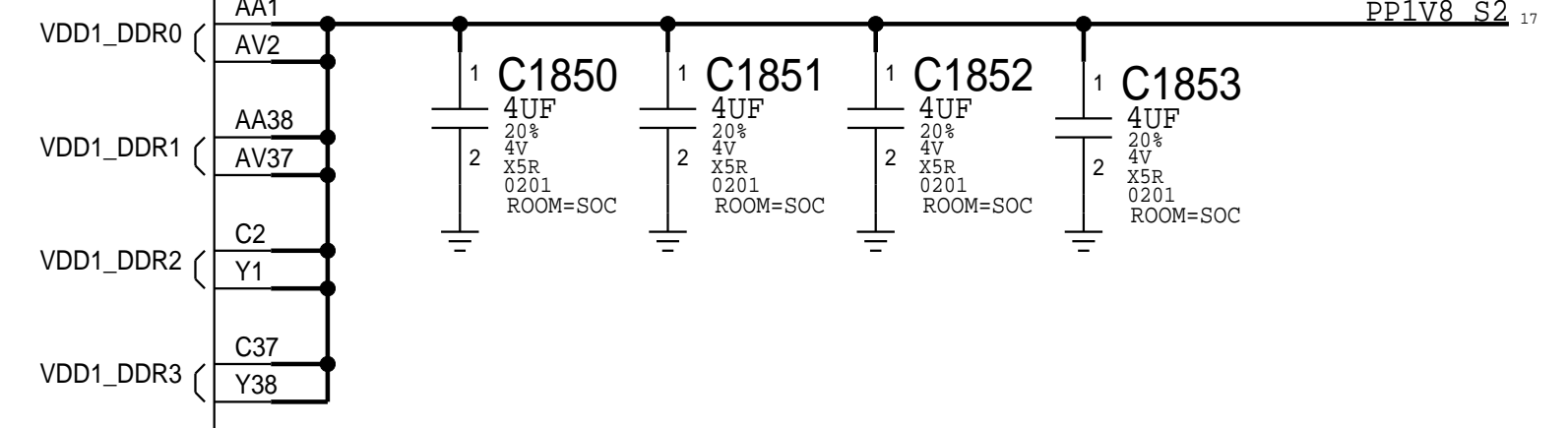
VDDQL* TOTAL: 0.573V - 0.63V @ 620mA MAX
PP0V6_VDDQL_S1



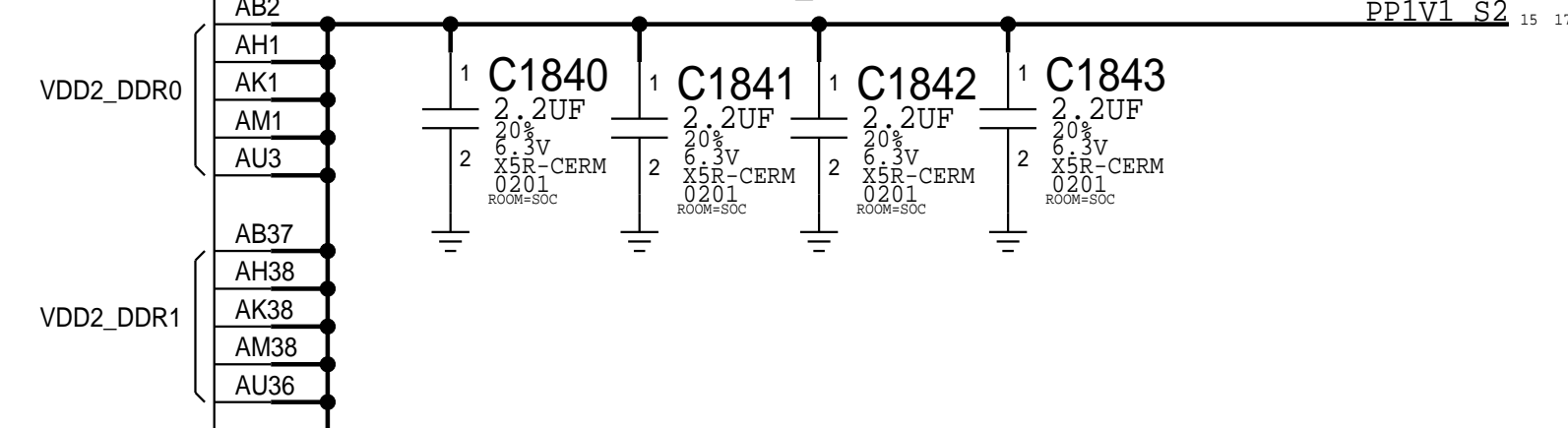
DDR IMPEDANCE CONTROL



VDD1_DDR*: 1.70V - 1.95V @ 220mA MAX



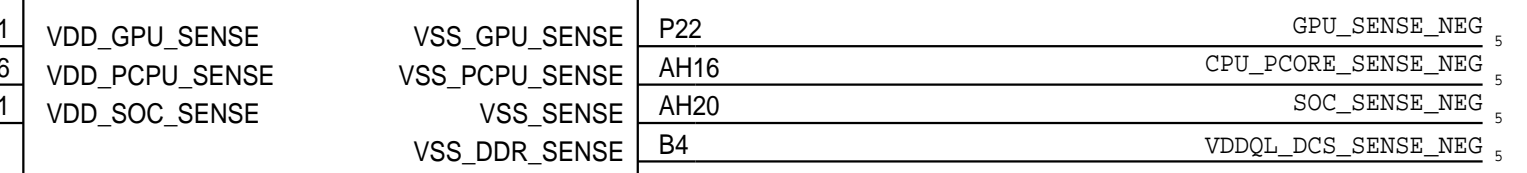
VDD2_DDR*: 1.06V - 1.17V @ 2.2A MAX



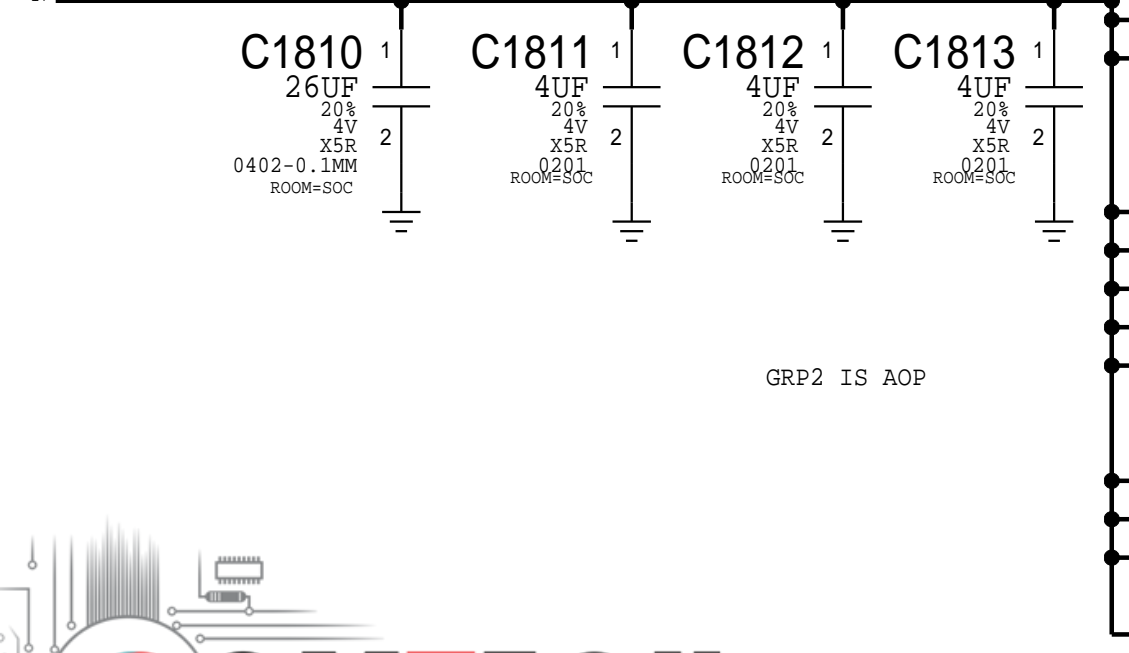
VDD12_PLL_DDR* Total: 1.14V - 1.26V @ 10mA MAX



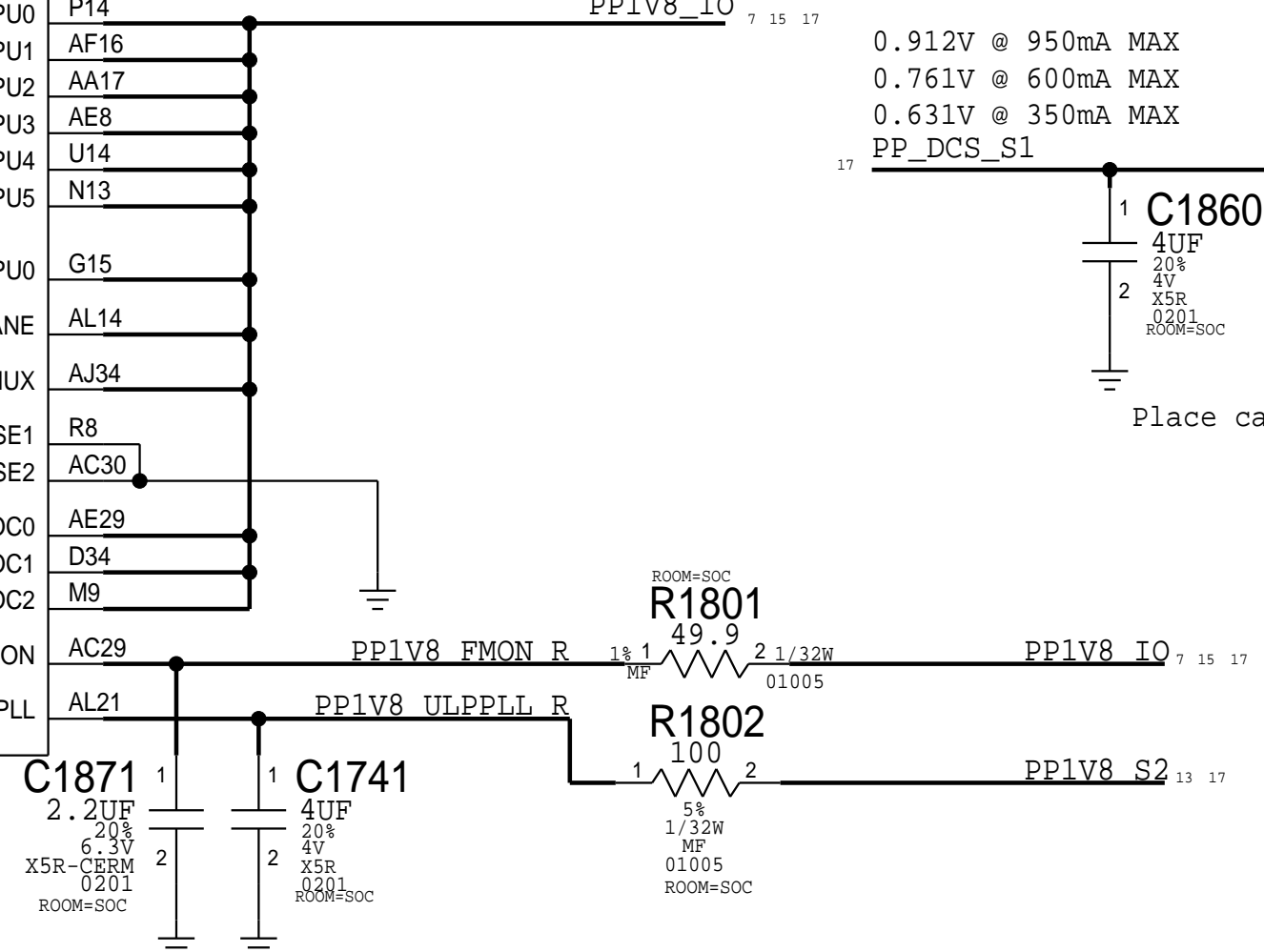
GPU_SENSE_POS
CPU_PCORE_SENSE_POS
SOC_SENSE_POS



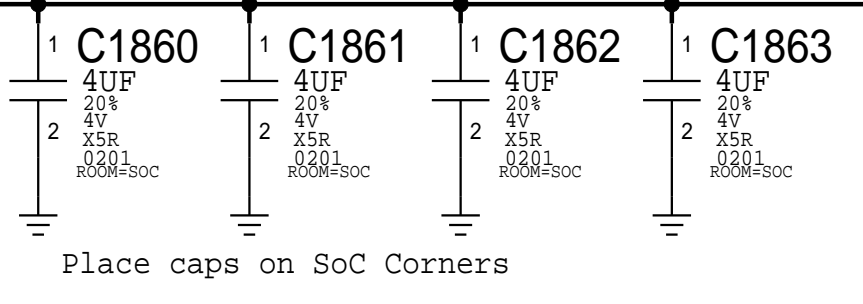
1.8V @ 75mA MAX (GRP)
1.8V @ 0.03mA MAX (MTR)
PP1V8_IO



1.8V @ 5.3mA MAX (CPU)
1.8V @ 1.1mA MAX (GPU)
1.8V @ 3.3mA MAX (SOC)
1.8V @ 0.3mA MAX (AMUX)
1.8V @ 1.5mA MAX (TSADC_SOC)
1.8V @ 1mA MAX (FMON)
1.8V @ 0.03mA MAX (ULPPLL)

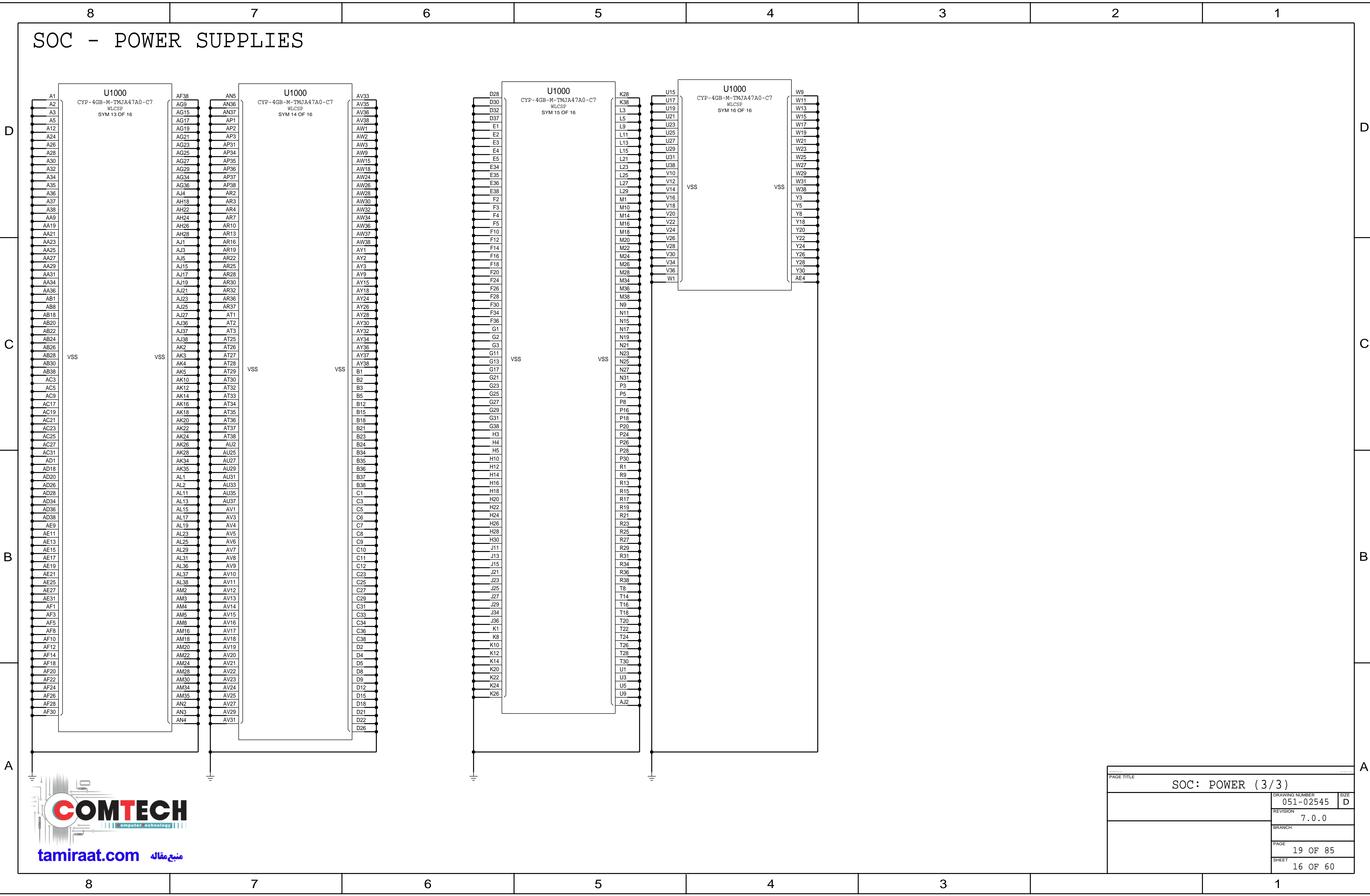


0.912V @ 950mA MAX
0.761V @ 600mA MAX
0.631V @ 350mA MAX
PP_DCS_S1



PAGE TITLE		
SOC: POWER (2/3)		
DRAWING NUMBER	051-02545	SIZE
REVISION	7.0.0	
BRANCH		
PAGE	18 OF 85	
SHEET	15 OF 60	

SOC - POWER SUPPLIES



PAGE TITLE		
SOC: POWER (3/3)		
DRAWING NUMBER	051-02545	SIZE
REVISION	7.0.0	D
BRANCH		
PAGE	19 OF 85	
SHEET	16 OF 60	

Medusa Compatibility

PCIE Series Caps

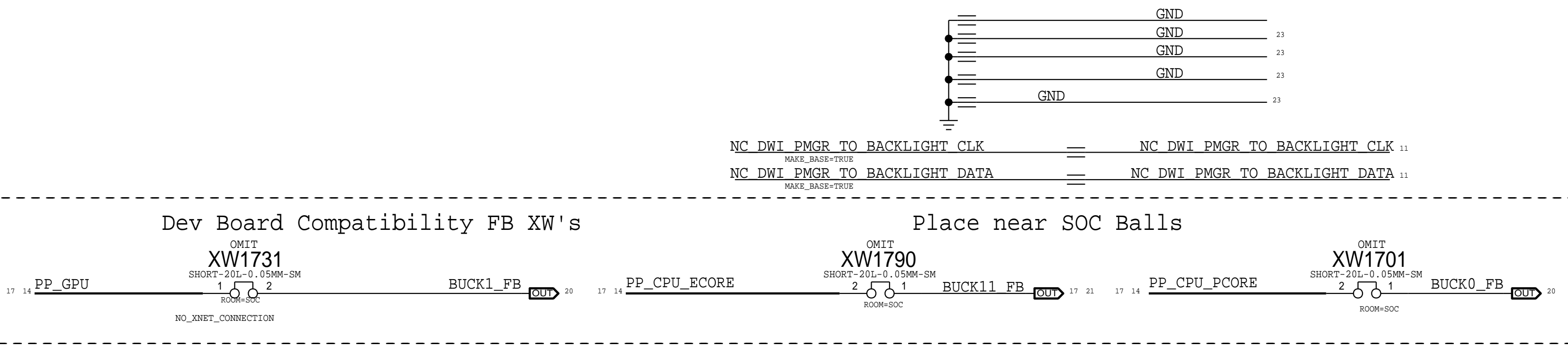
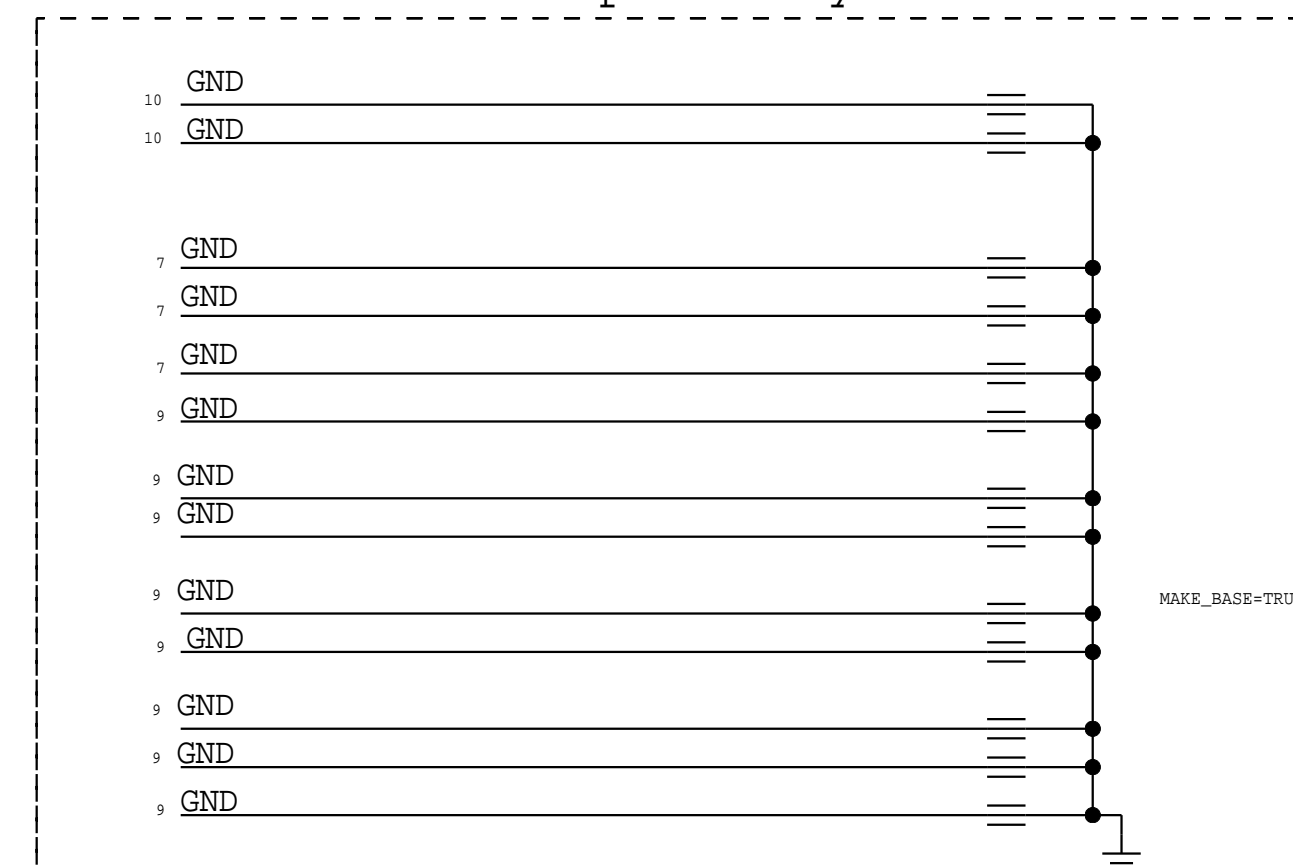
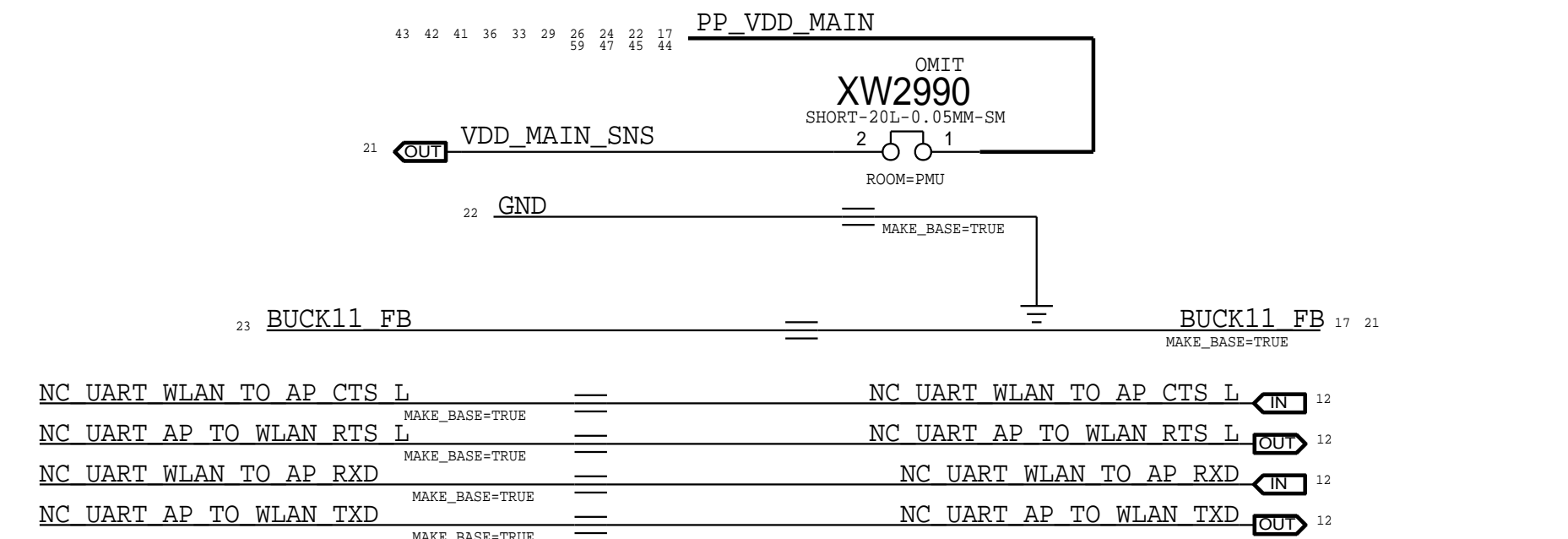
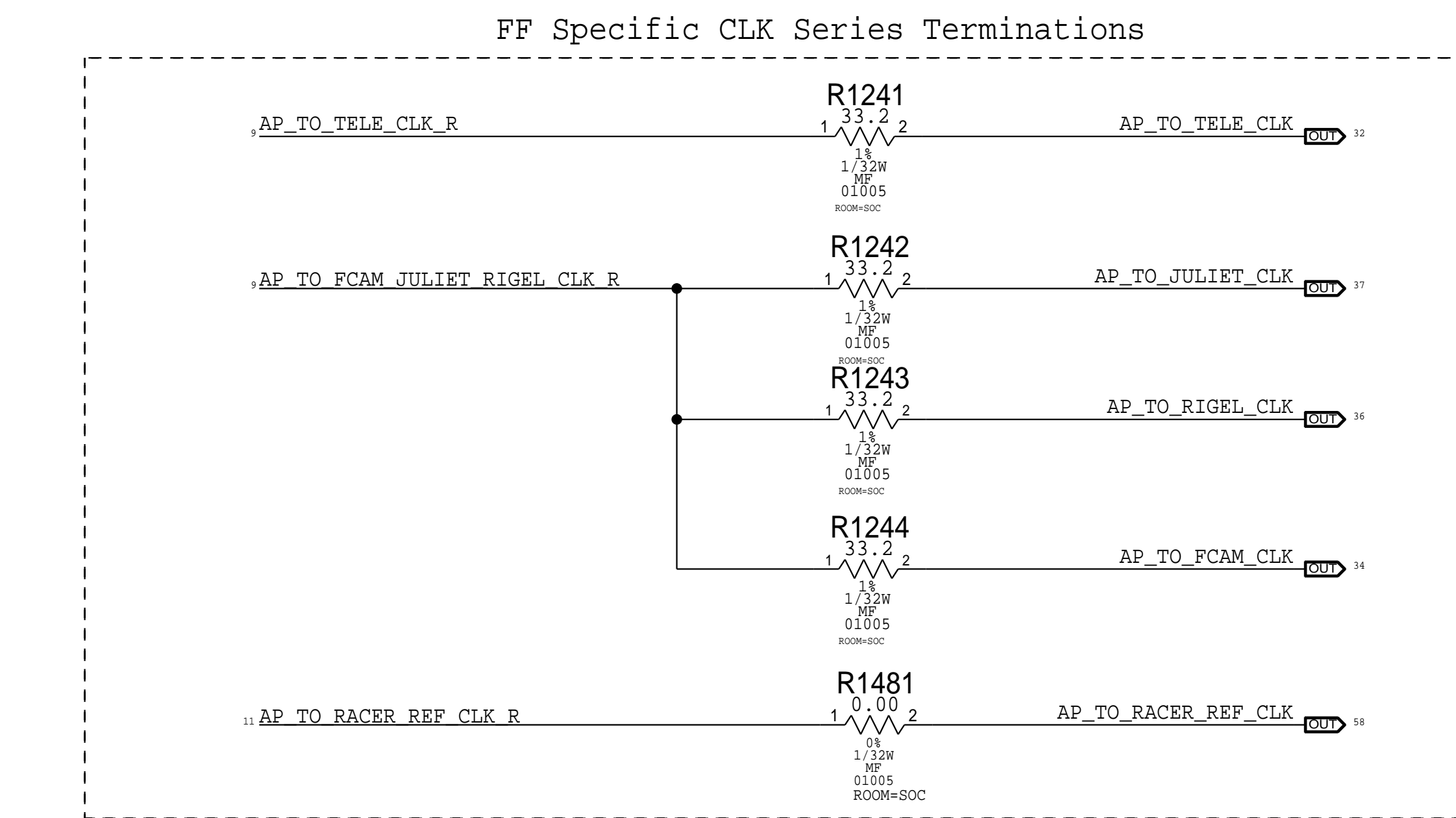
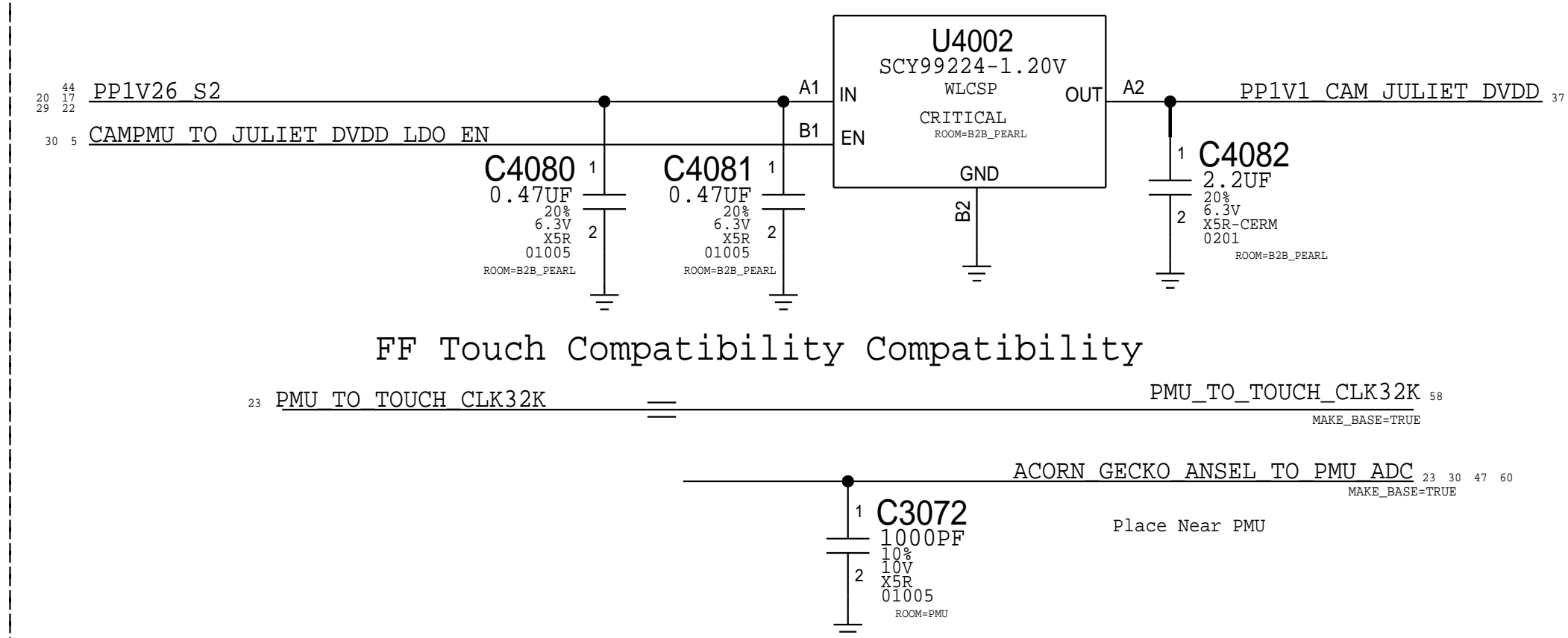
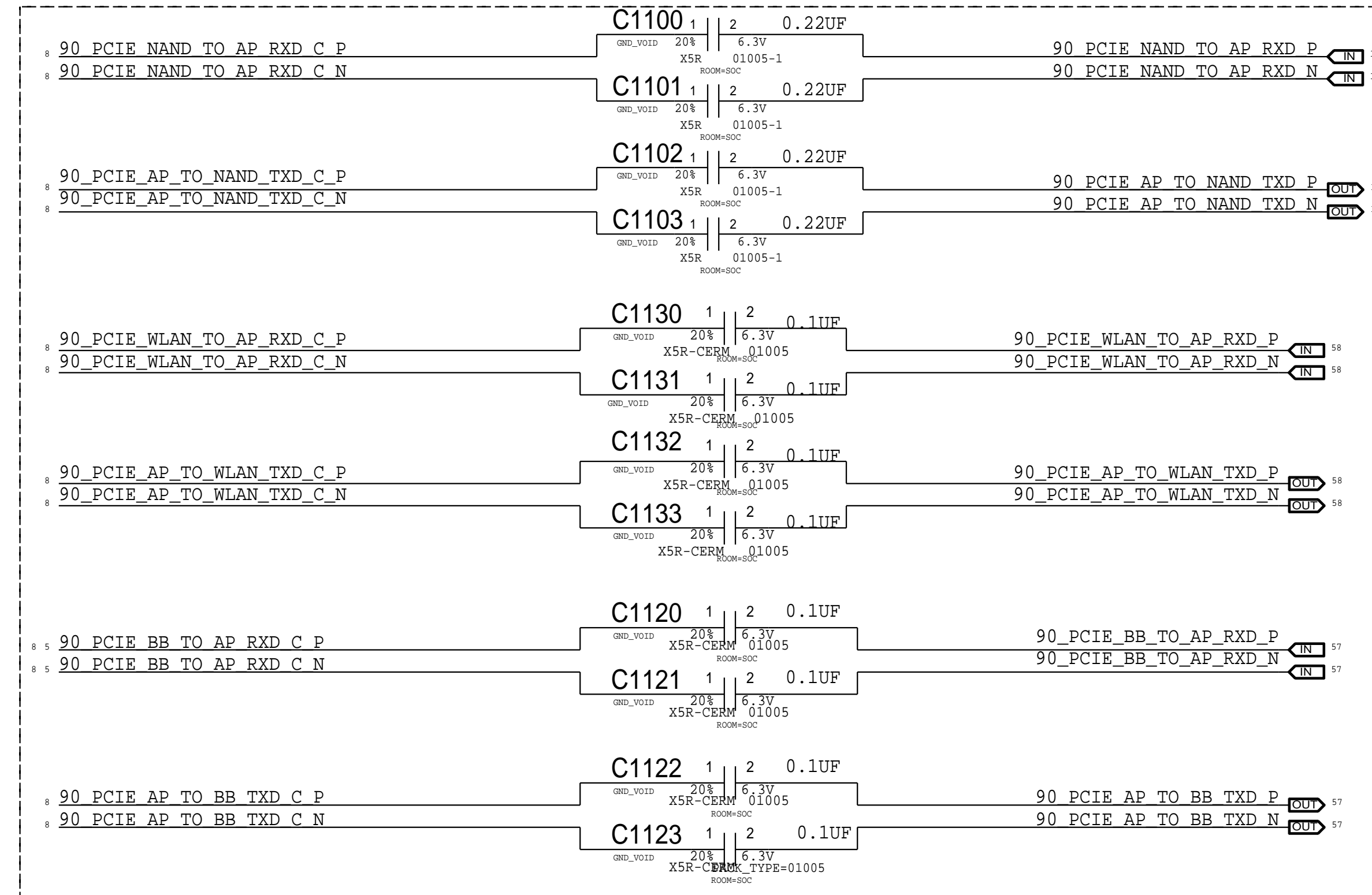
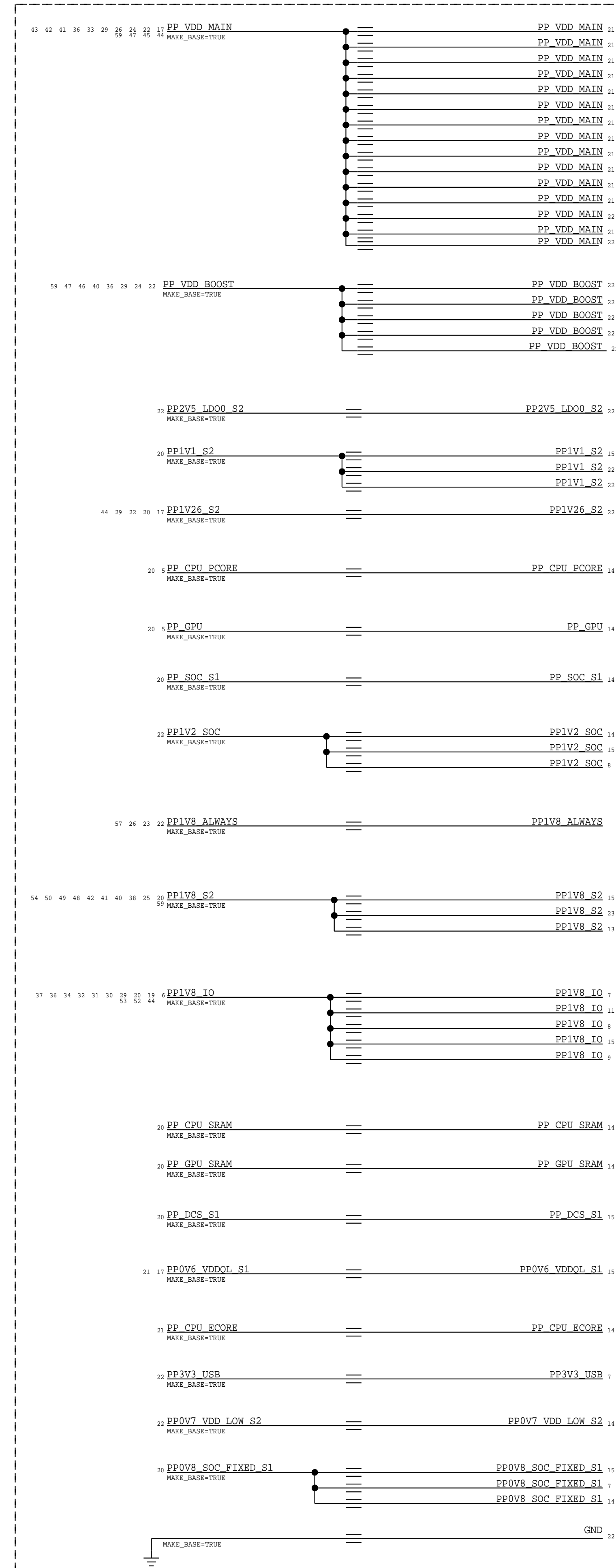
FF Touch Compatibility

FF Display Compatibility

Dev Board Power Compatibility

Dev Board Compatibility GNDs

UF Dam Caps



PAGE TITLE		SOC: DEV BOARD ALIASES	
DRAWING NUMBER	051-02545	SIZE	D
REVISION	7.0.0	BRANCH	
PAGE	20 OF 85	SHEET	17 OF 60

D

D

C

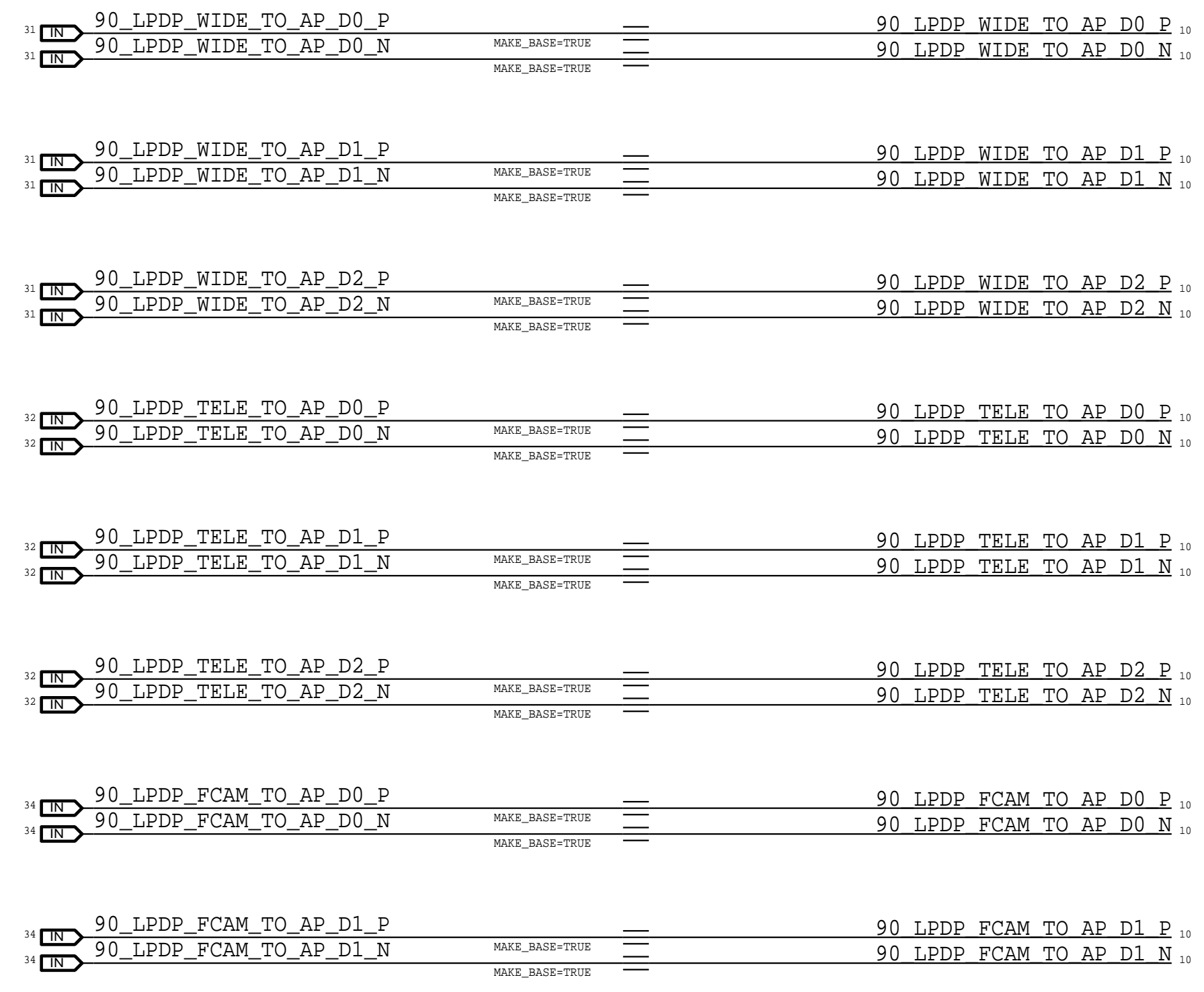
C

B

B

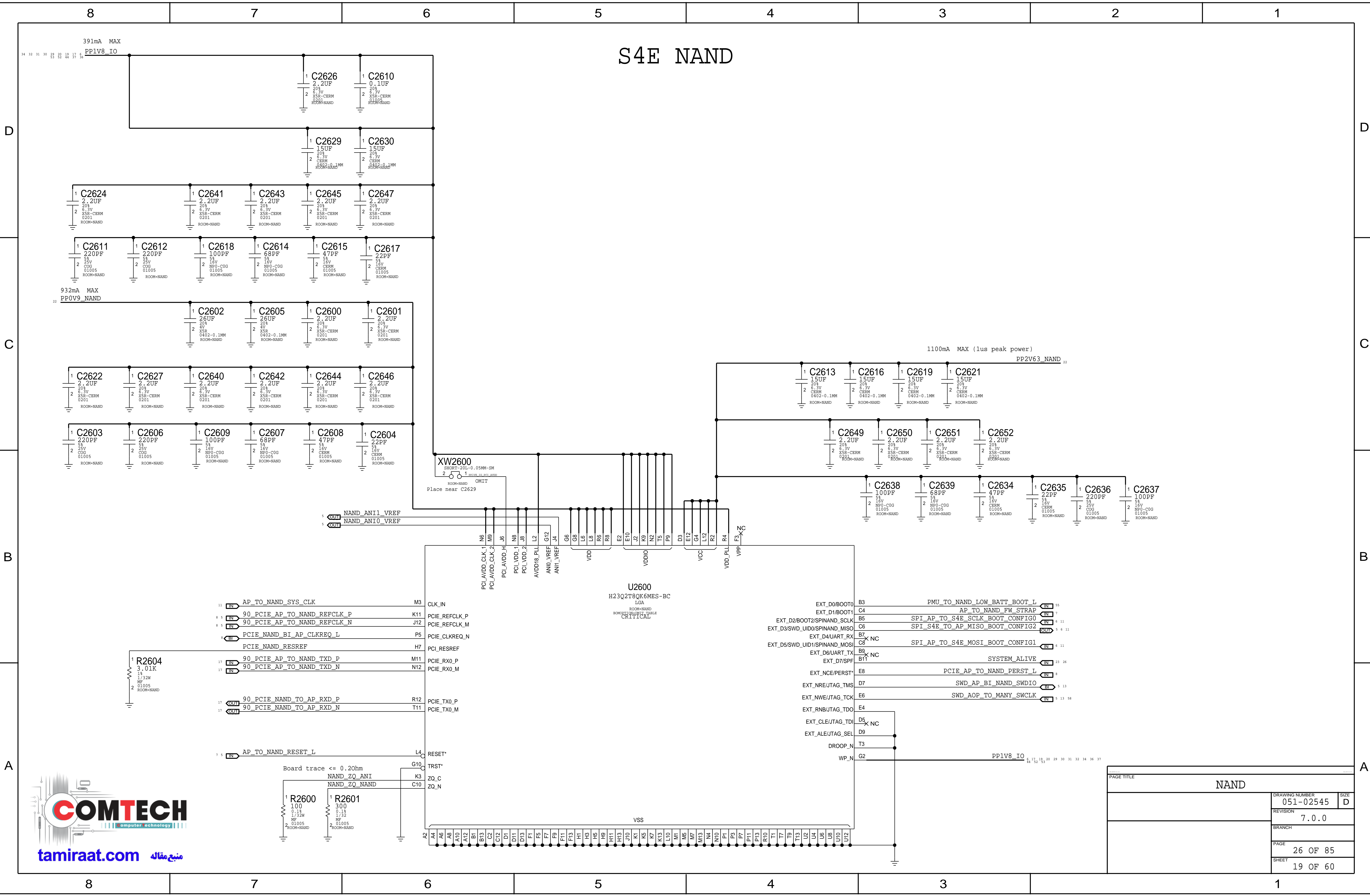
A

A

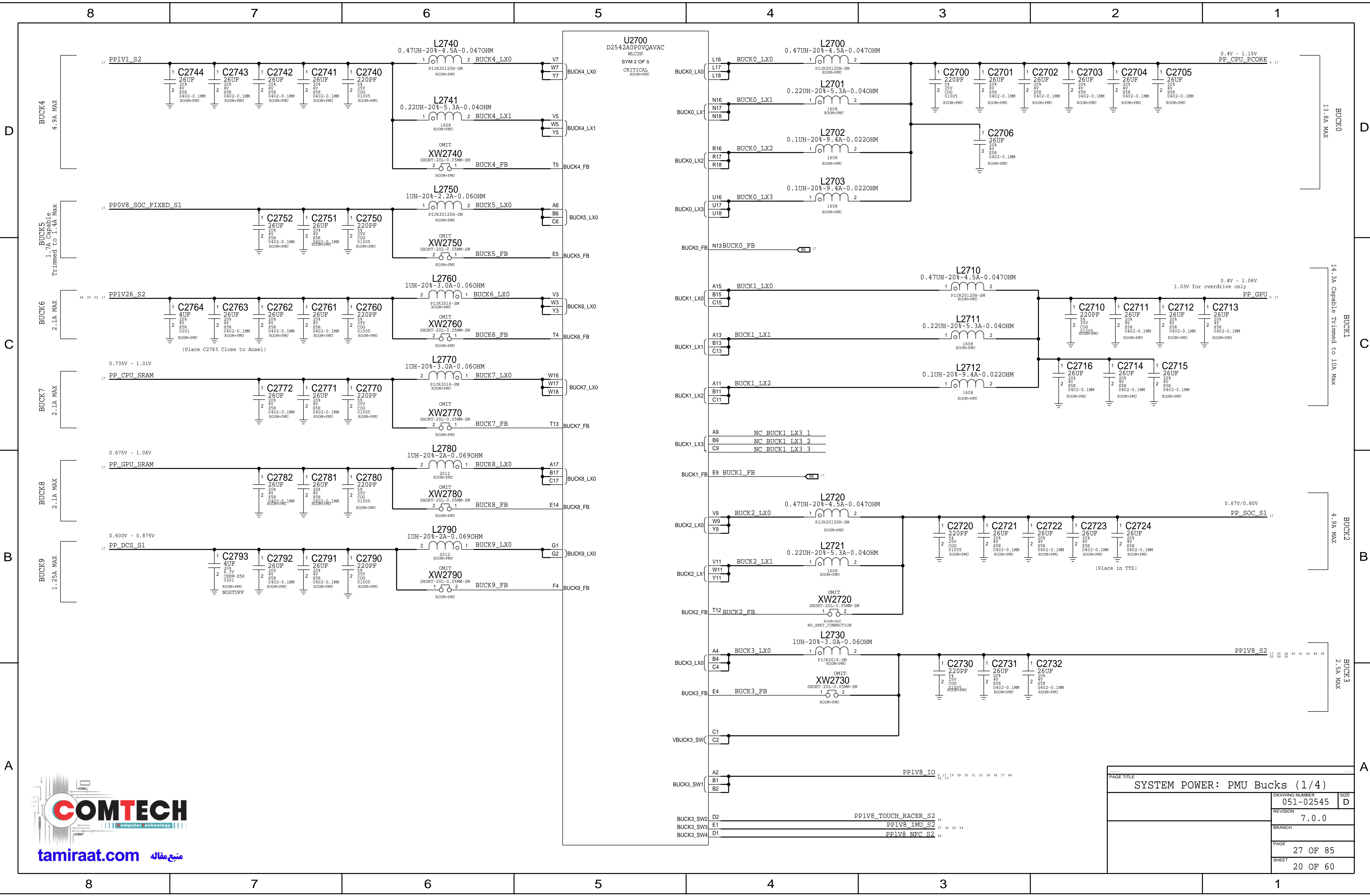


PAGE TITLE		SOC: LPDP ALIASES	
DRAWING NUMBER	051-02545	SIZE	D
REVISION	7.0.0		
BRANCH			
PAGE	21 OF 85		
SHEET	18 OF 60		

S4E NAND

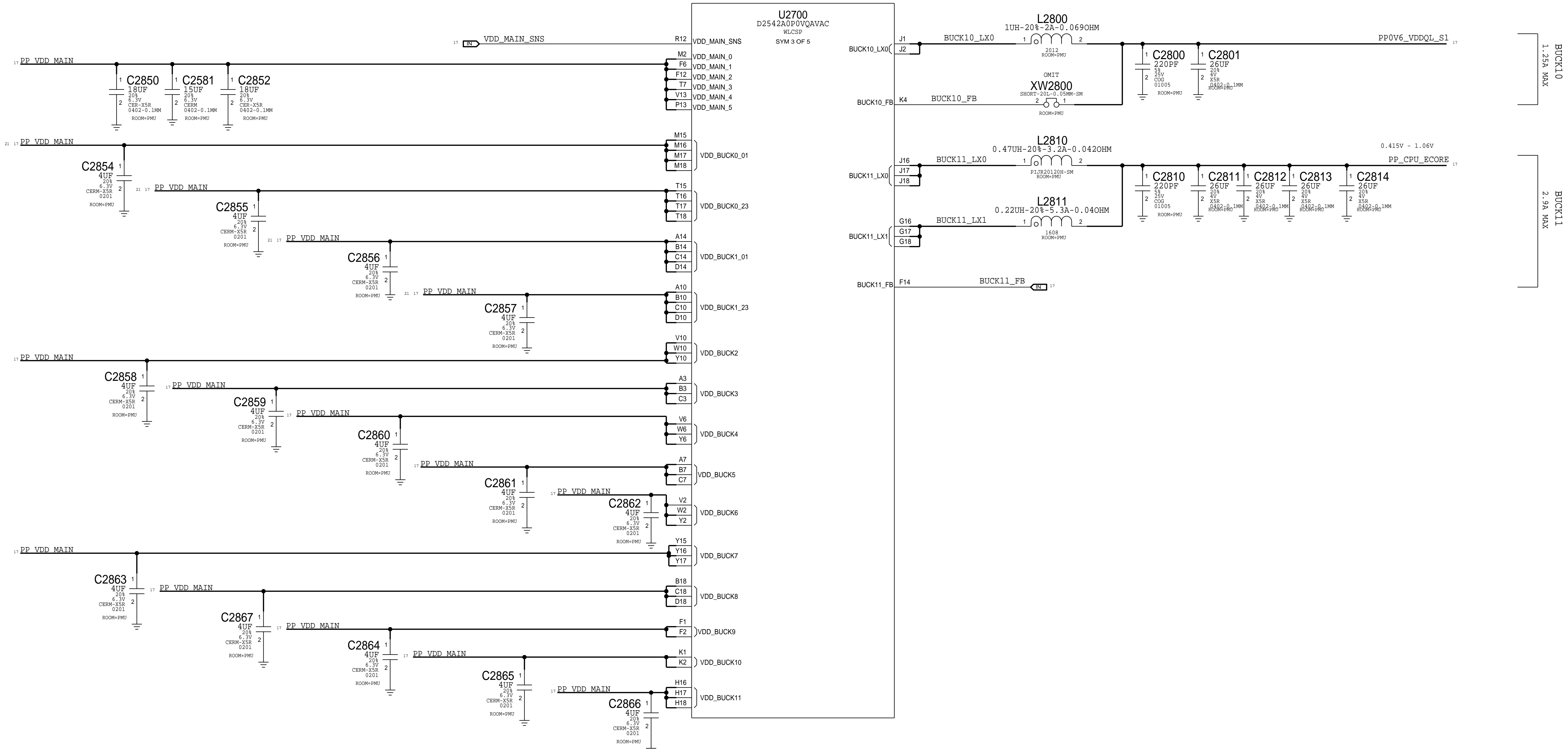


PAGE TITLE		
NAND		
DRAWING NUMBER	051-02545	SIZE
REVISION	7.0.0	D
BRANCH		
PAGE	26 OF 85	
SHEET	19 OF 60	



PAGE TITLE	
SYSTEM POWER: PMU Bucks (1/4)	
DRAWING NUMBER	051-02545
REVISION	7.0.0
BRANCH	
PAGE	27 OF 85
SHEET	20 OF 60

PMU - BUCKS



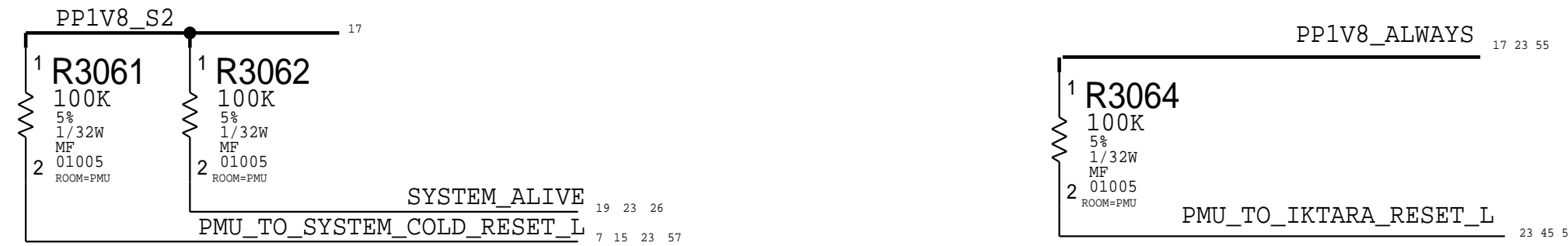
PAGE TITLE		
SYSTEM POWER: PMU Bucks (2/4)		
DRAWING NUMBER	051-02545	SIZE
REVISION	7.0.0	D
BRANCH		
PAGE		
28 OF 85		
SHEET		
21 OF 60		

PMU - GPIOs

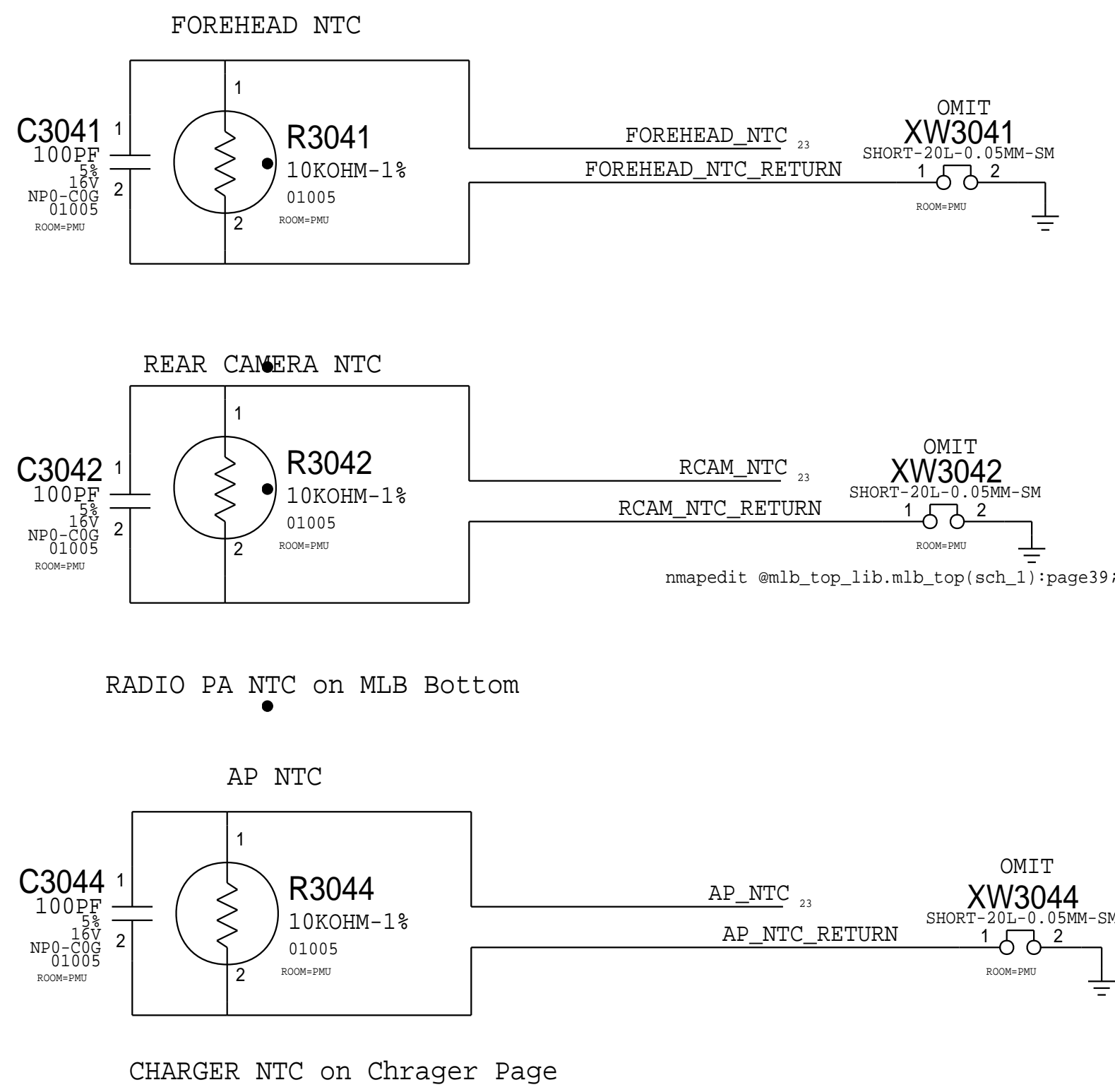
TODO: Update
CONTROL PIN NOTES:

- 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

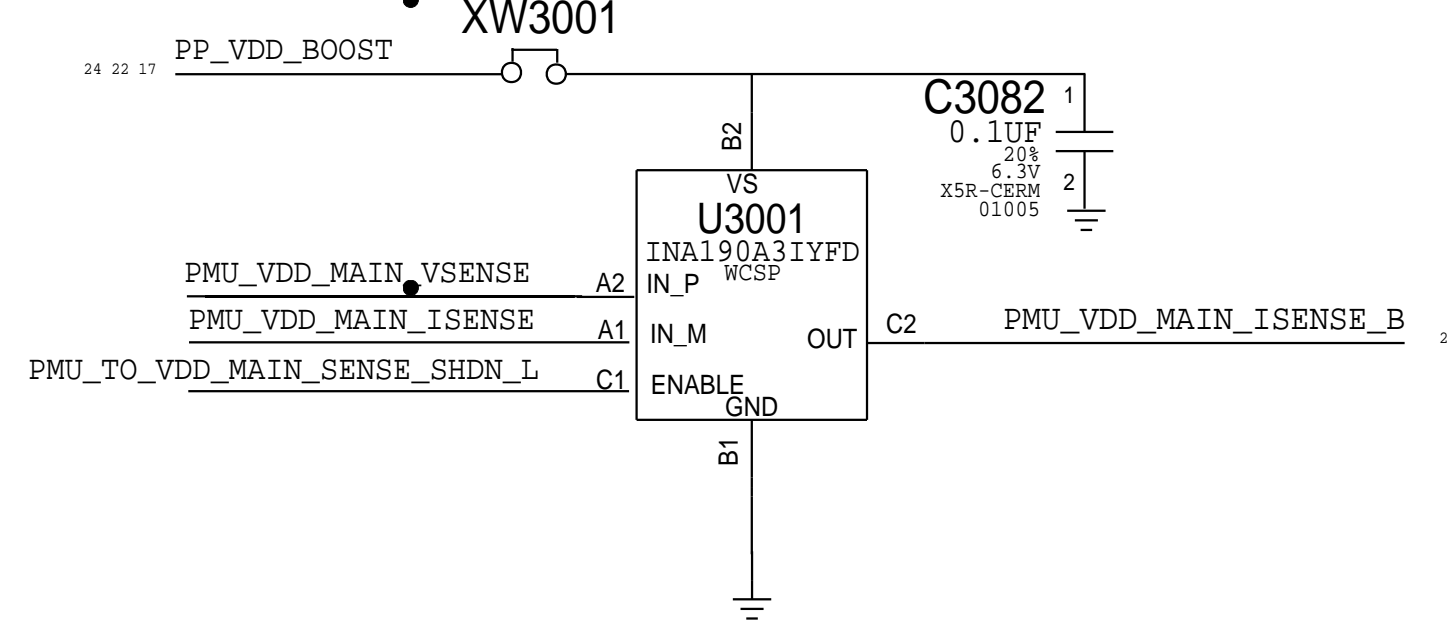
COLD_RESET & SYSTEM_ALIVE



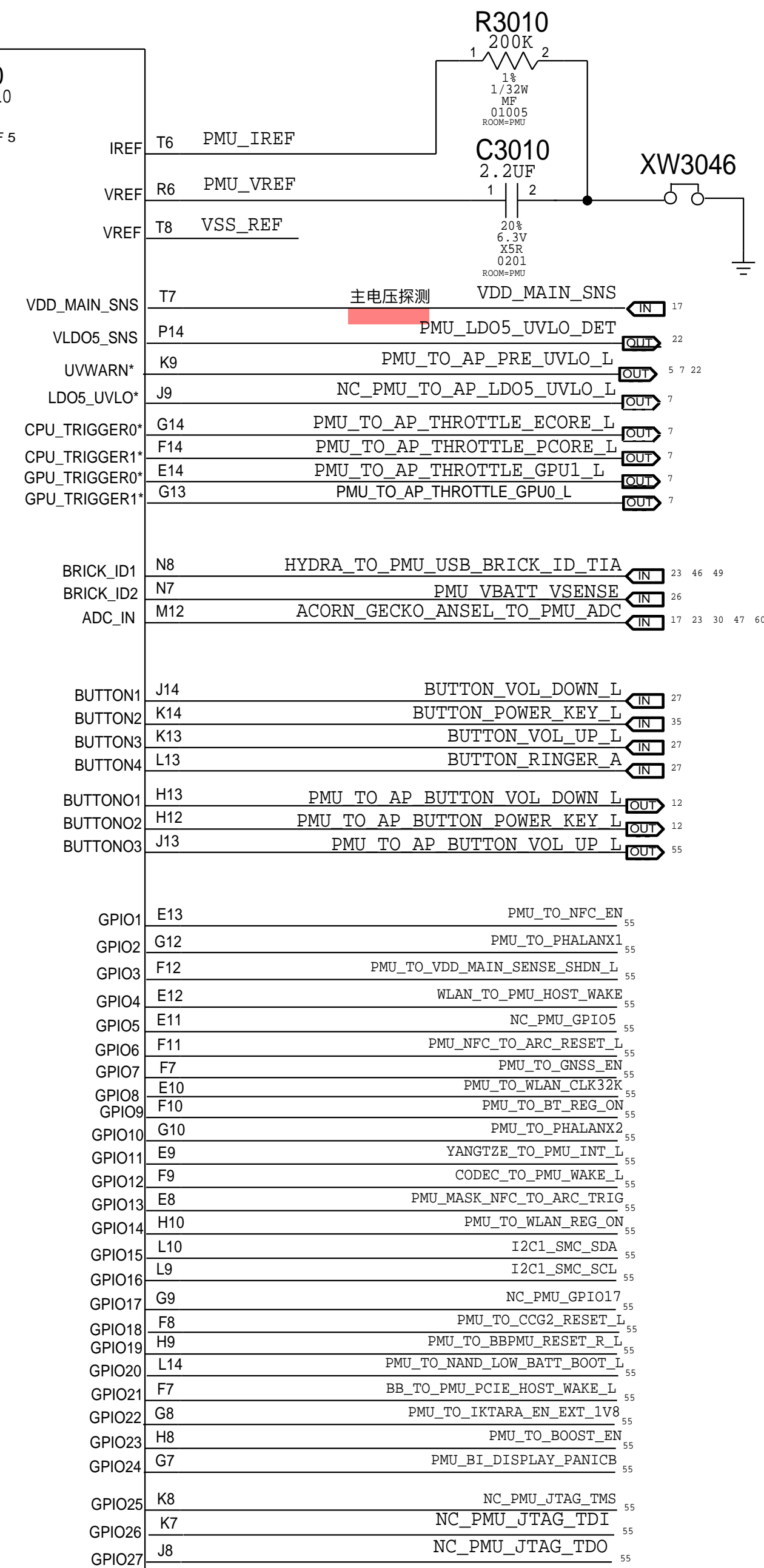
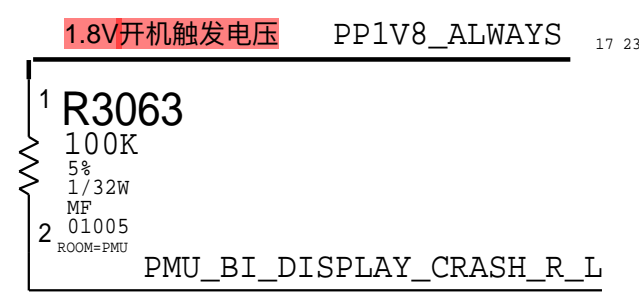
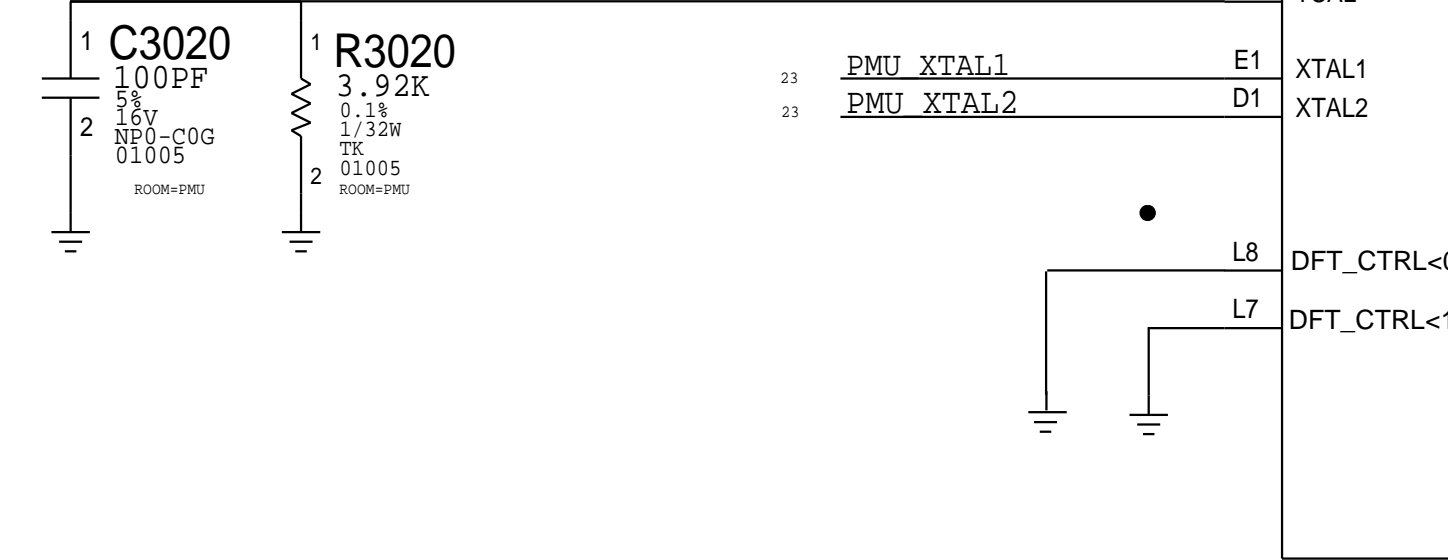
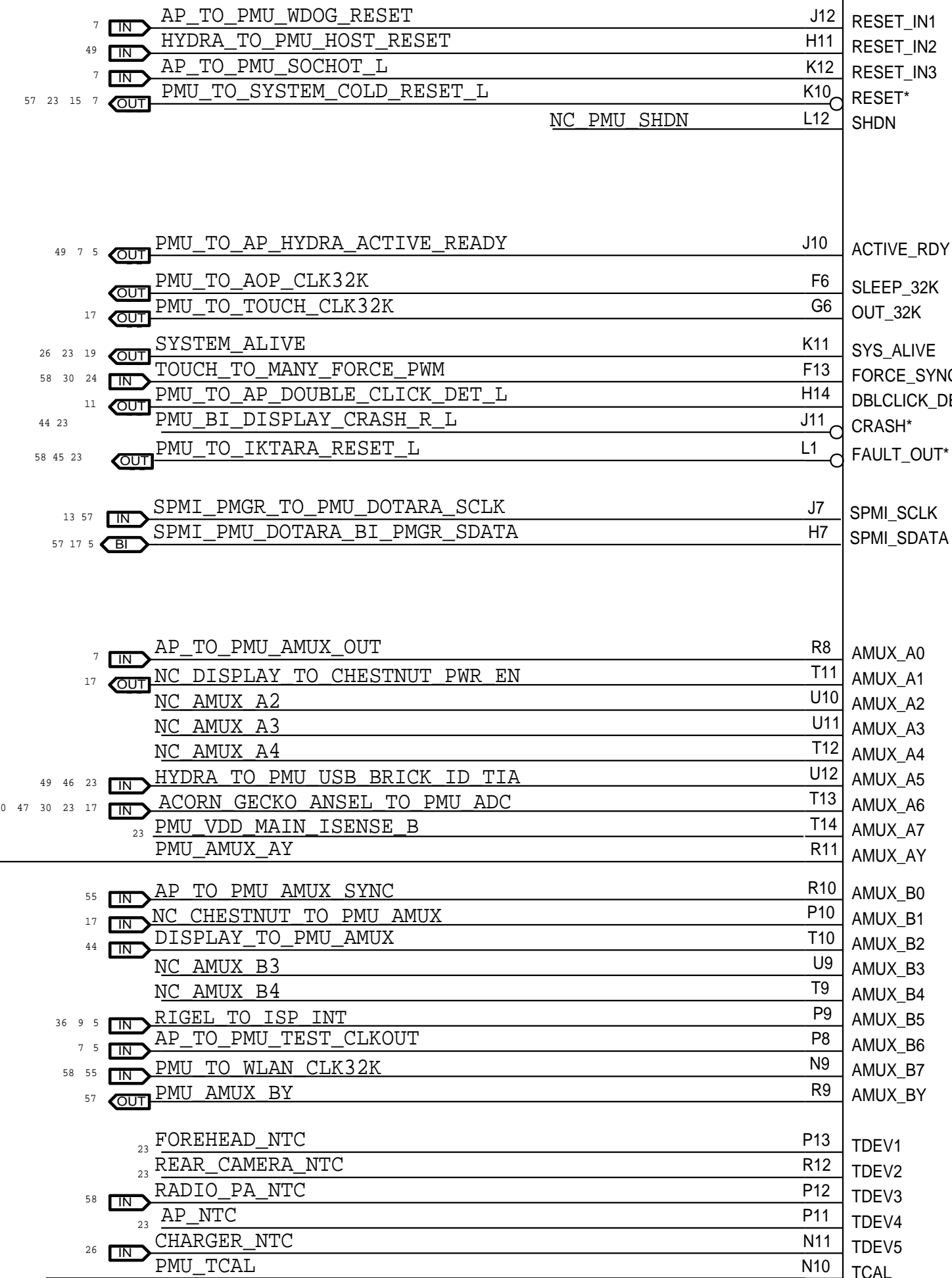
NTCs



iBATT SENSE

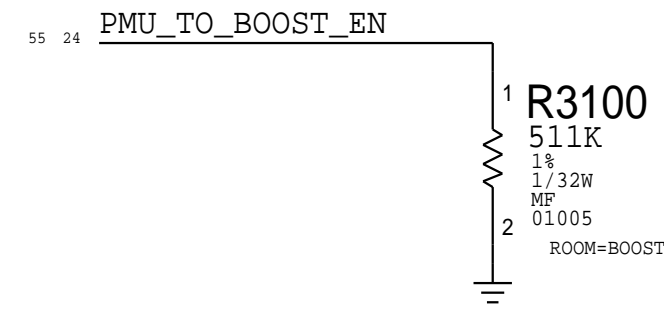


NOTE: 100PF CAPS ARE THE SAMPLING CAPS FOR PMU ADC



PAGE TITLE	
SYSTEM POWER: PMU (4/4)	
DRAWING NUMBER	051-02545
REVISION	7.0.0
BRANCH	
PAGE	30 OF 85
SHEET	23 OF 60

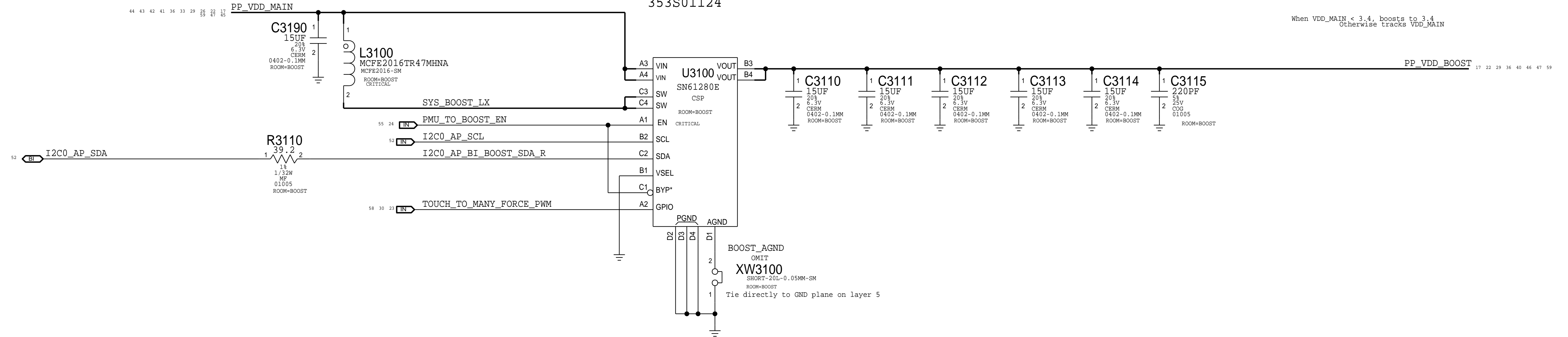
Boost Enable Pull



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

BOOST

353S01124



PAGE TITLE		
SYSTEM POWER: Boost		
DRAWING NUMBER	051-02545	SIZE D
REVISION	7.0.0	
BRANCH		
PAGE	31 OF 85	
SHEET	24 OF 60	

8

7

6

5

4

3

2

1

D

D

C

C

B

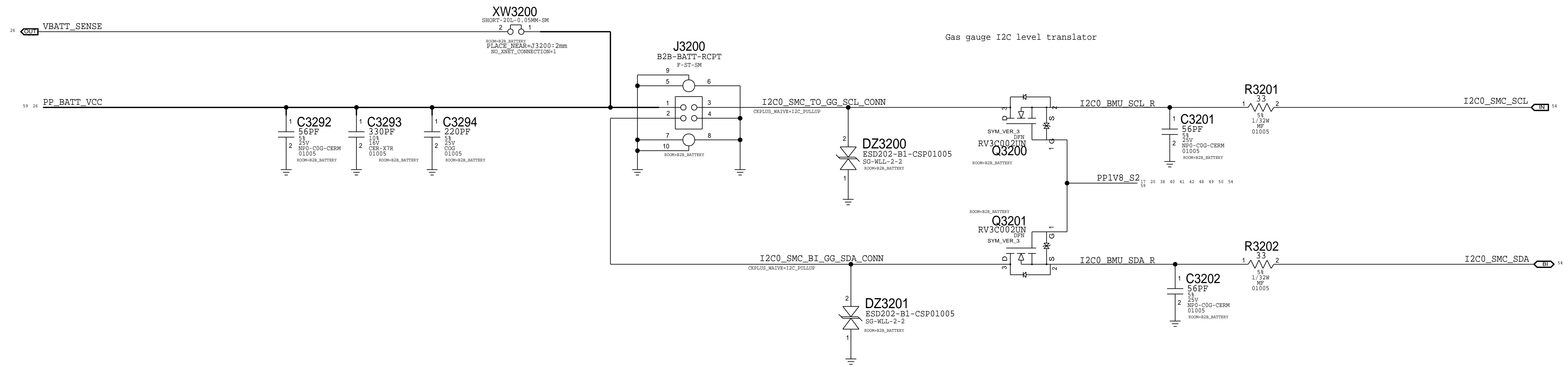
B

A

A

BATTERY CONNECTOR

Rcpt: 516S00232
Plug: 516S00233



PAGE TITLE		
SYSTEM POWER: B2B Battery		
DRAWING NUMBER	051-02545	SIZE
REVISION	7.0.0	D
BRANCH		
PAGE	32 OF 85	
SHEET	25 OF 60	

8

7

6

5

4

3

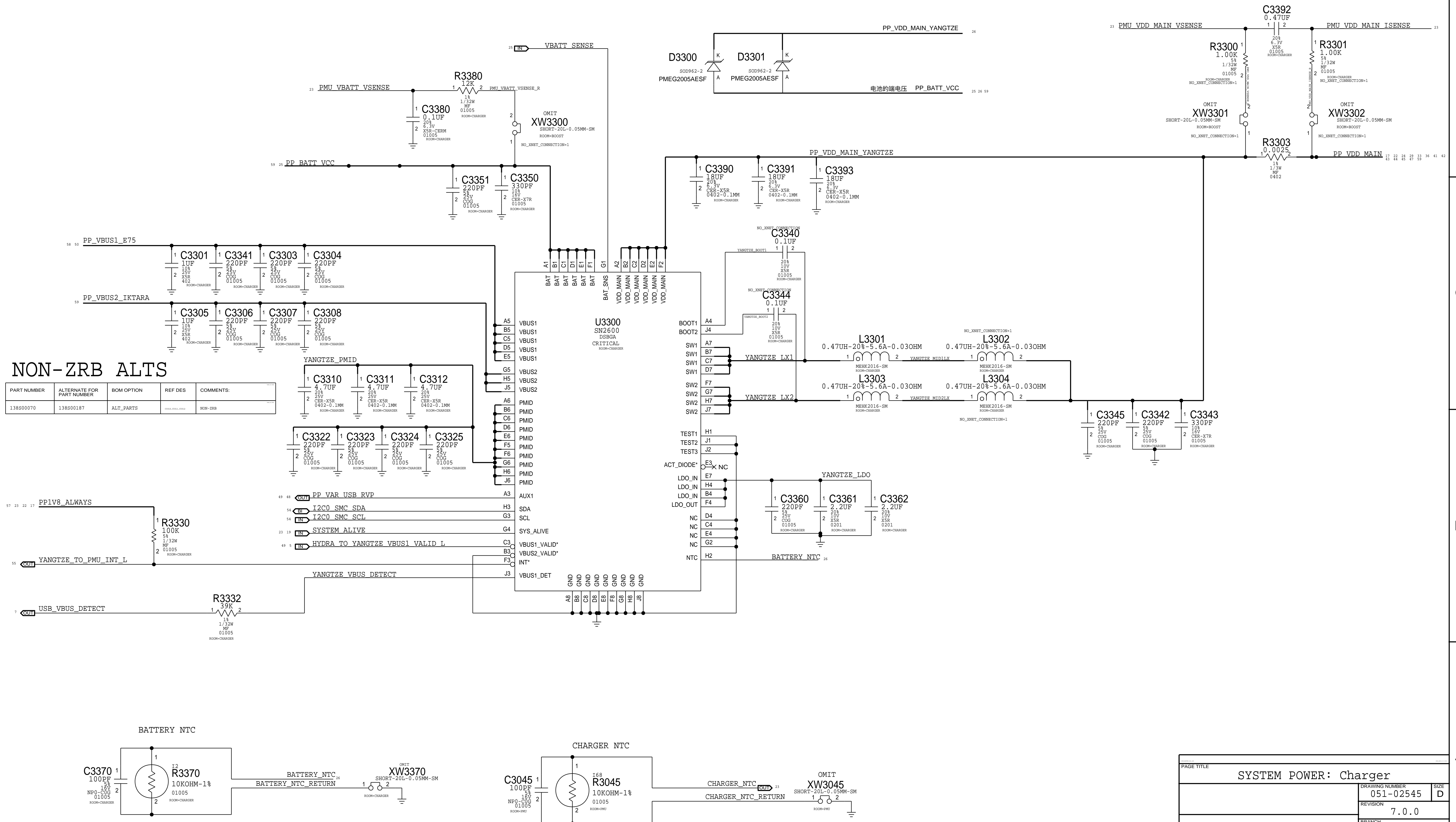
2

1

YANGTZE CHARGER

NON-ZRB ALTS

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

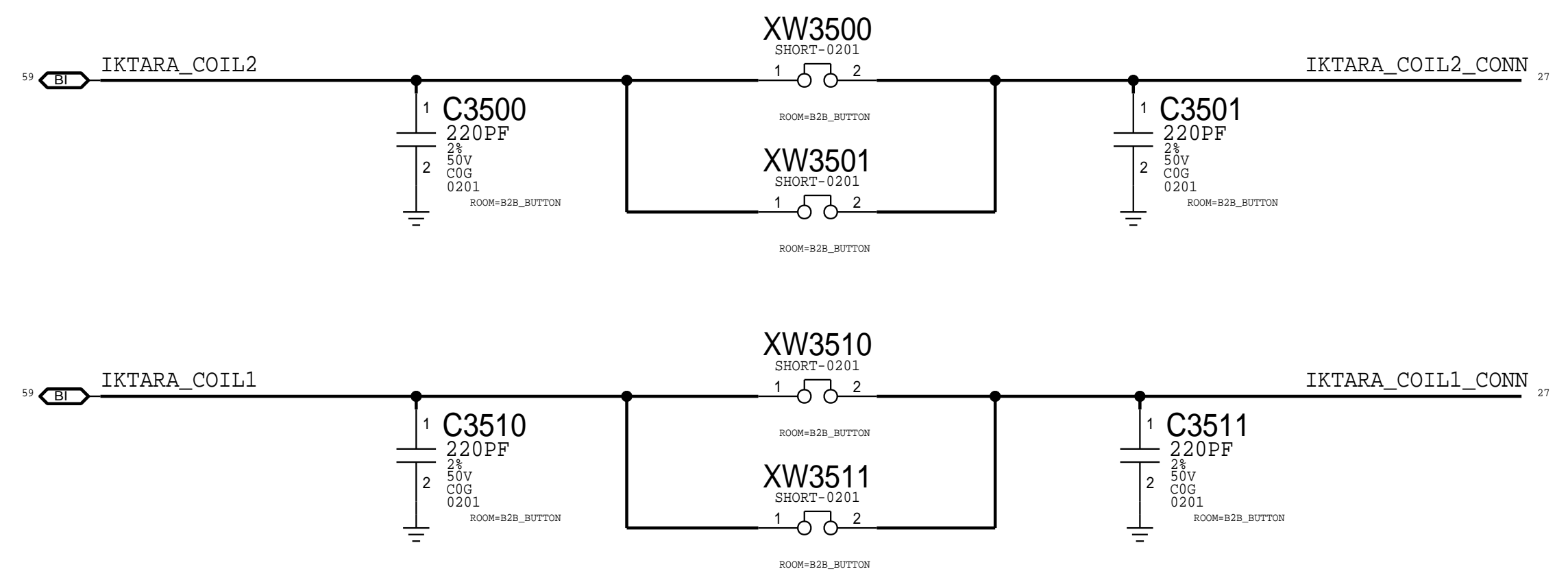


PAGE TITLE	
SYSTEM POWER: Charger	
DRAWING NUMBER	051-02545
REVISION	7.0.0
BRANCH	
PAGE	33 OF 85
SHEET	26 OF 60

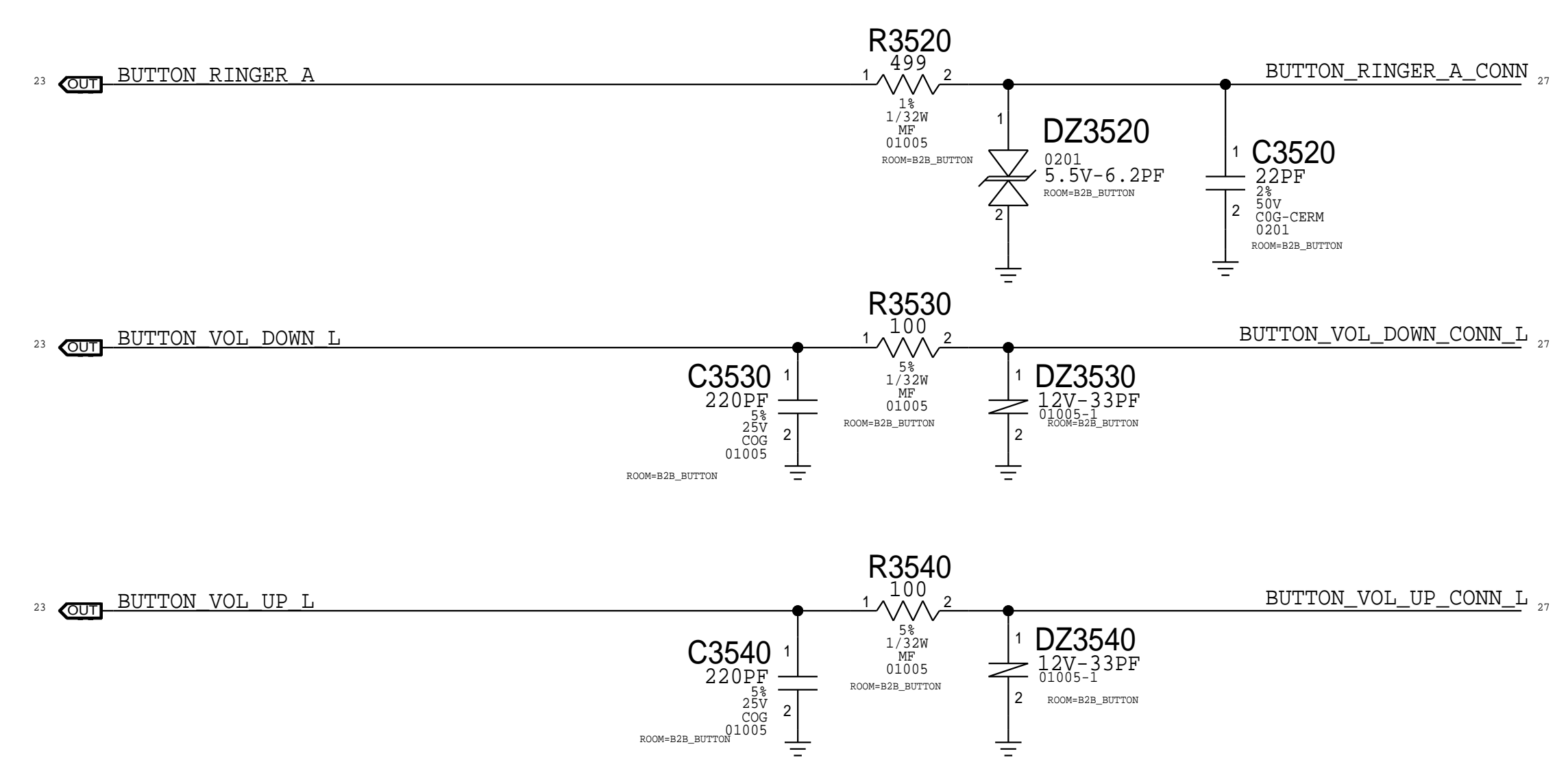
Cyclone + Button Connector

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

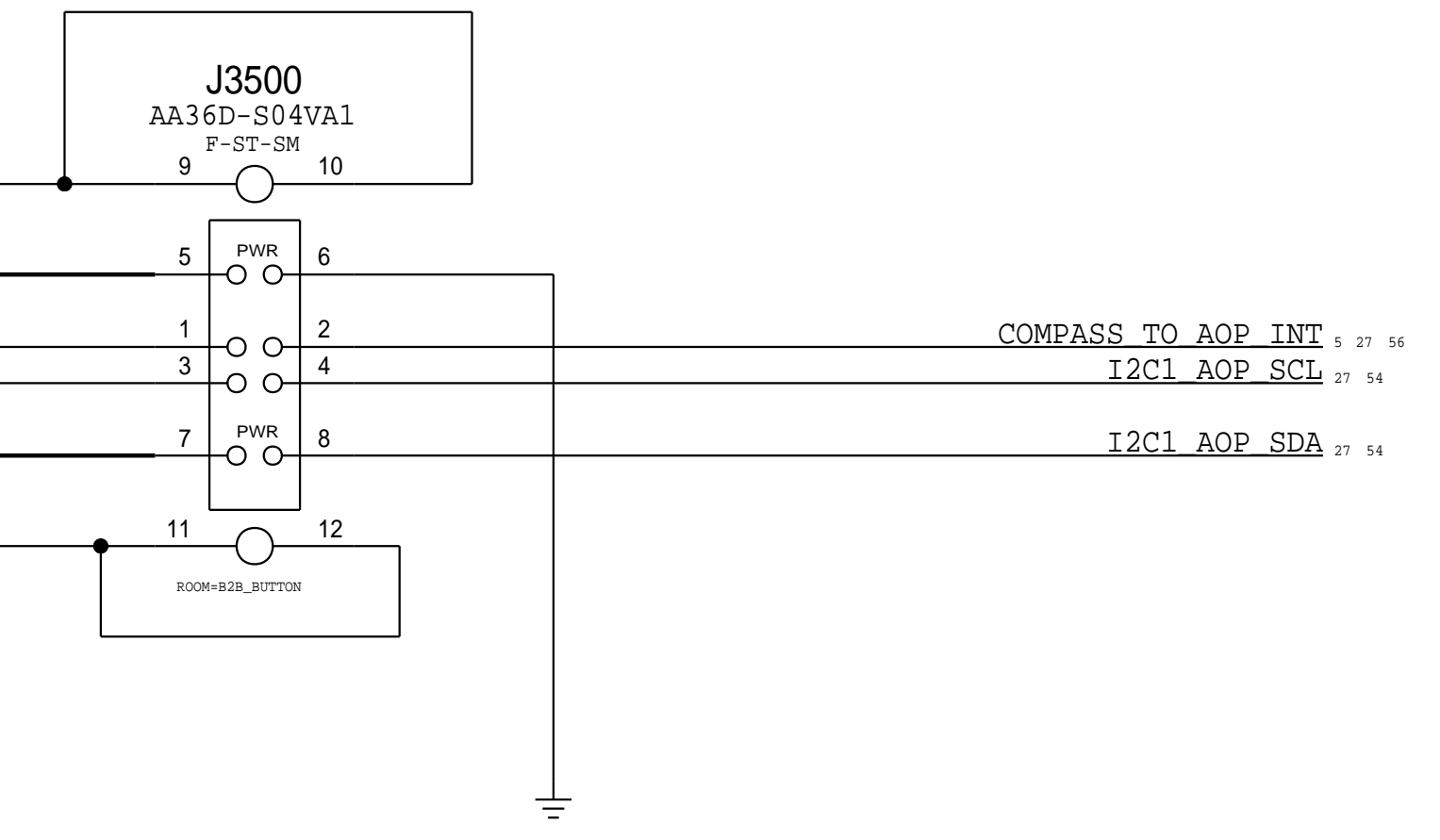
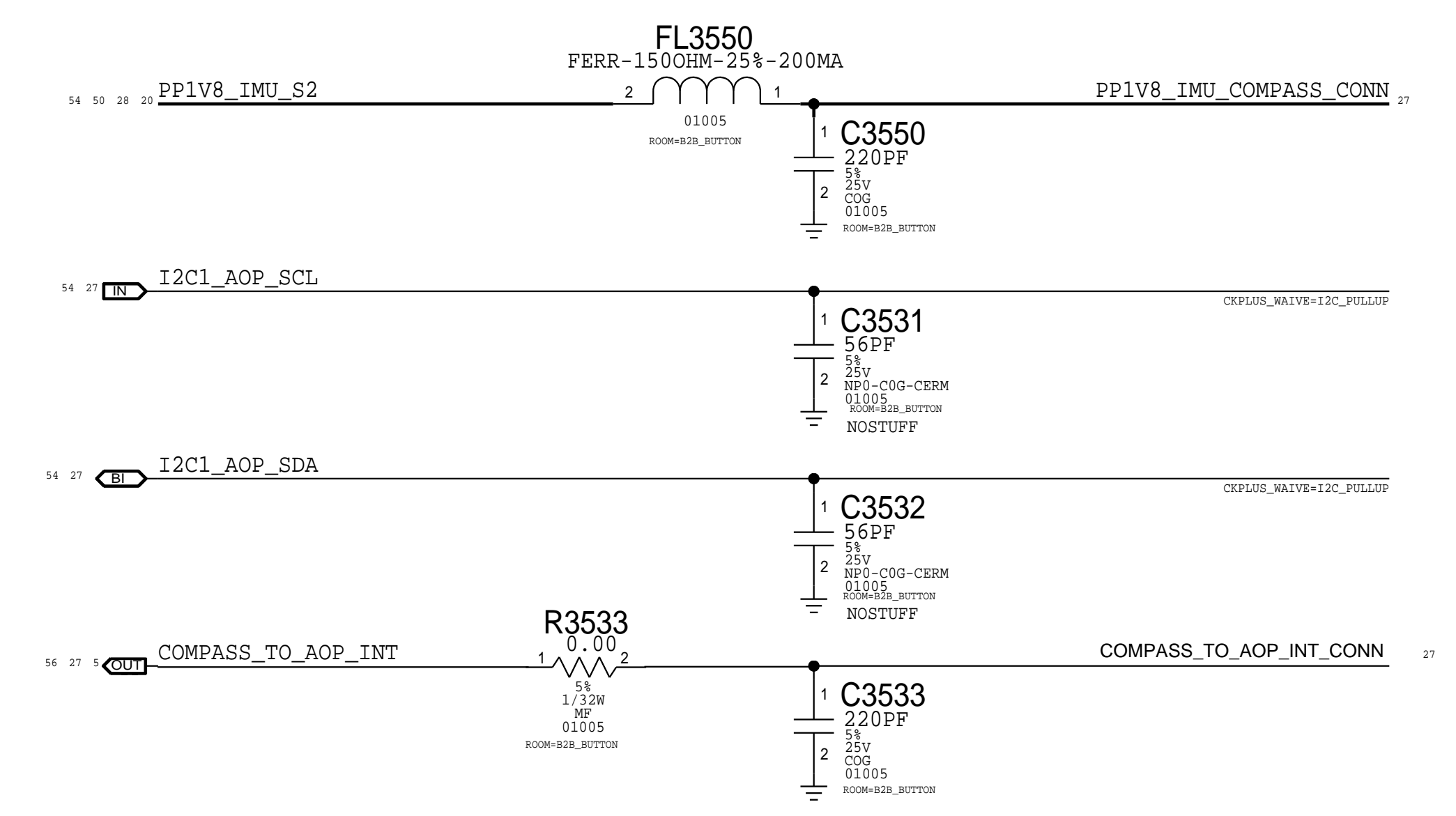
Cyclone Filtering



BUTTONS



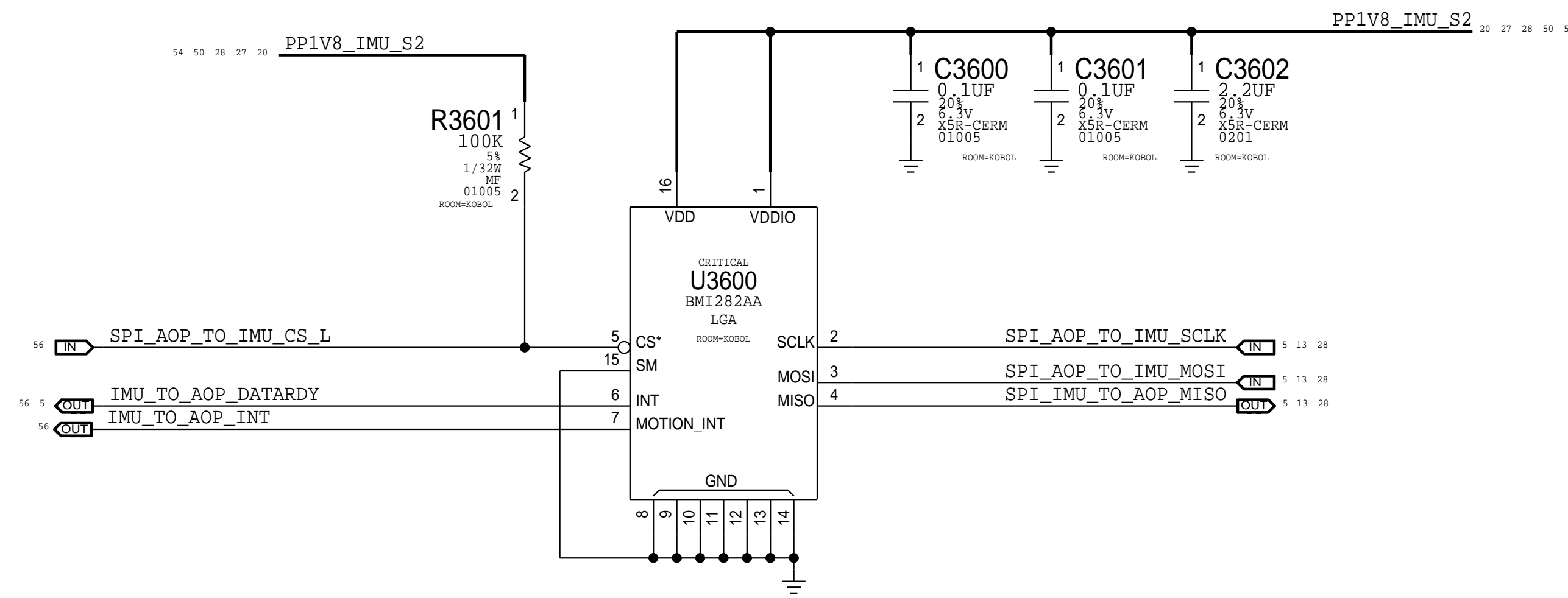
Compass



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

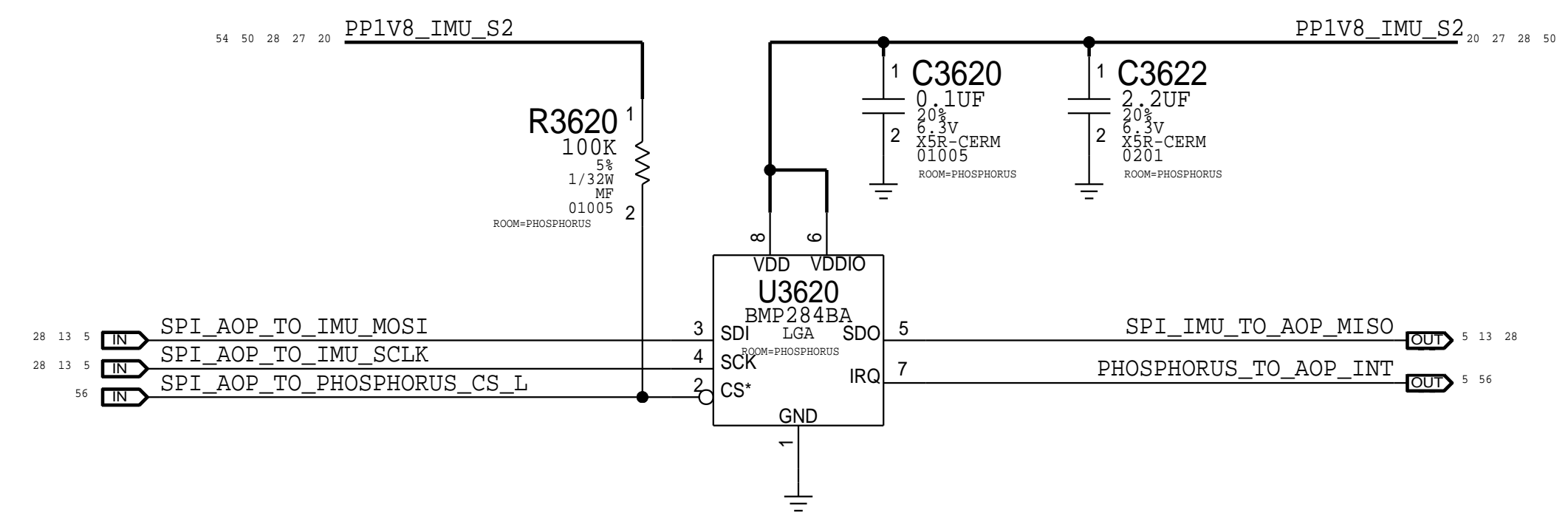
Kobol - Accel & Gyro

APN: 338S00367



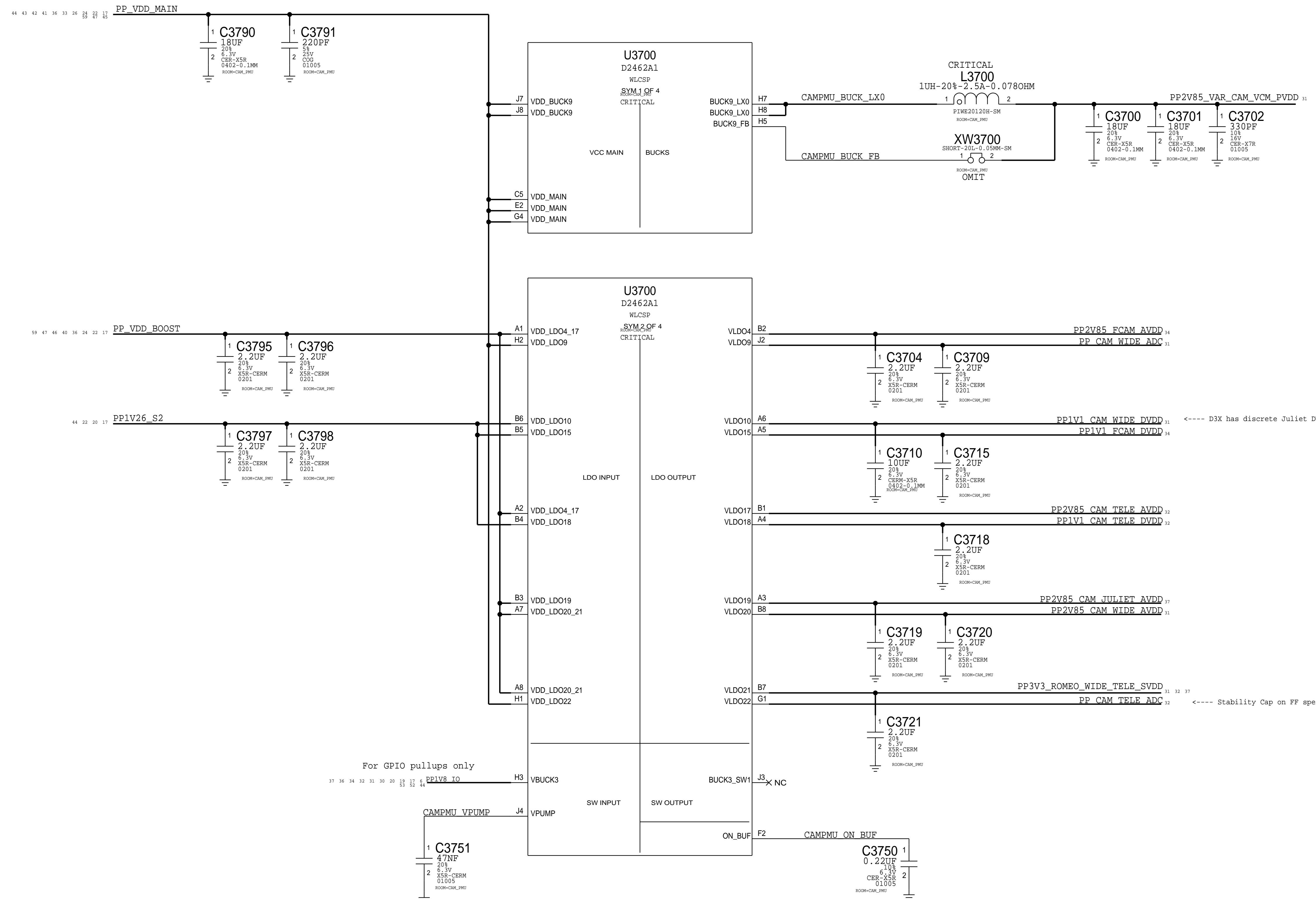
Phosphorus

BOSCH (APN:338S00334)



PAGE TITLE		
SENSORS		
DRAWING NUMBER	051-02545	SIZE
REVISION	7.0.0	D
BRANCH		
PAGE	36 OF 85	
SHEET	28 OF 60	

Camera PMU



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

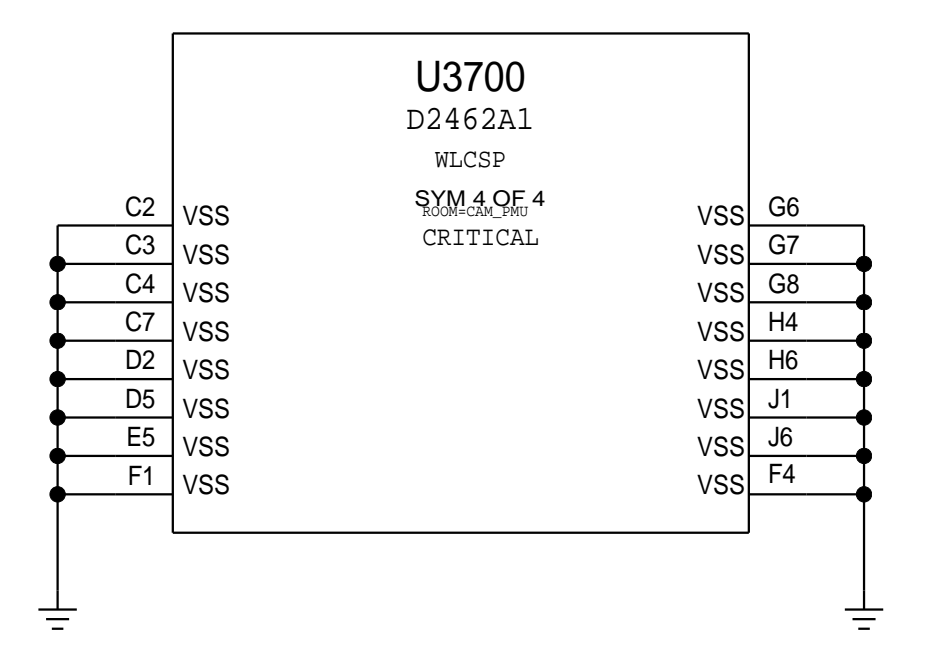
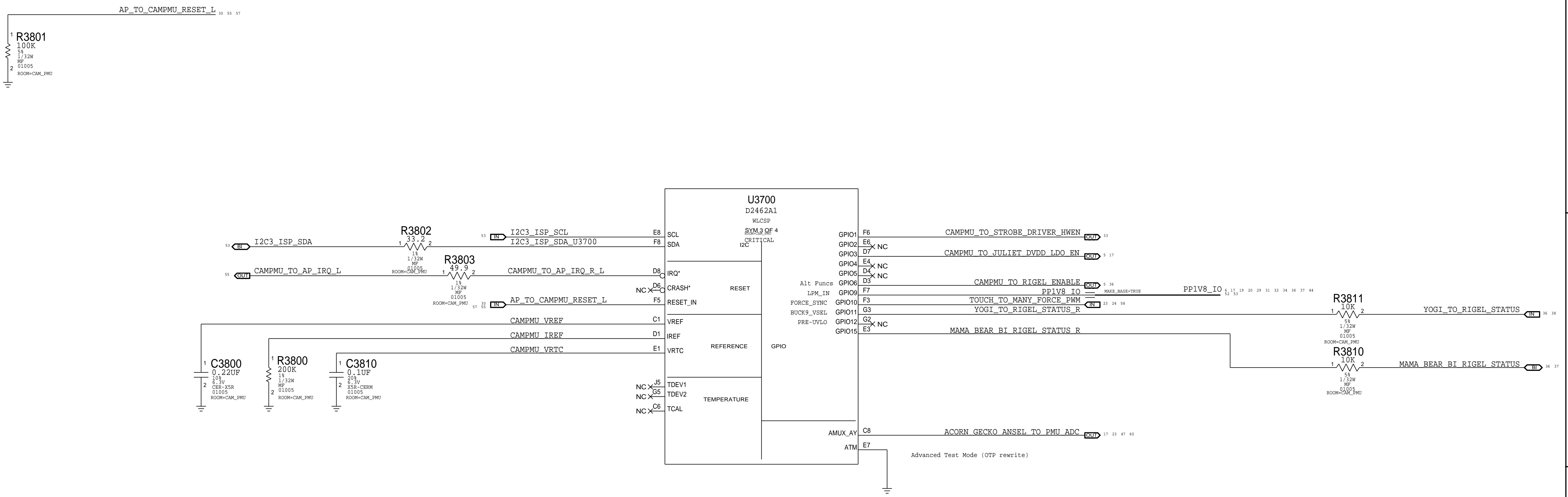
<---- D3X has discrete Juliet DVDD LDO

<---- Stability Cap on FF specific page



PAGE TITLE		
CAMERA: PMU (1/2)		
DRAWING NUMBER	051-02545	SIZE
REVISION	7.0.0	D
BRANCH		
PAGE	37 OF 85	
SHEET	29 OF 60	

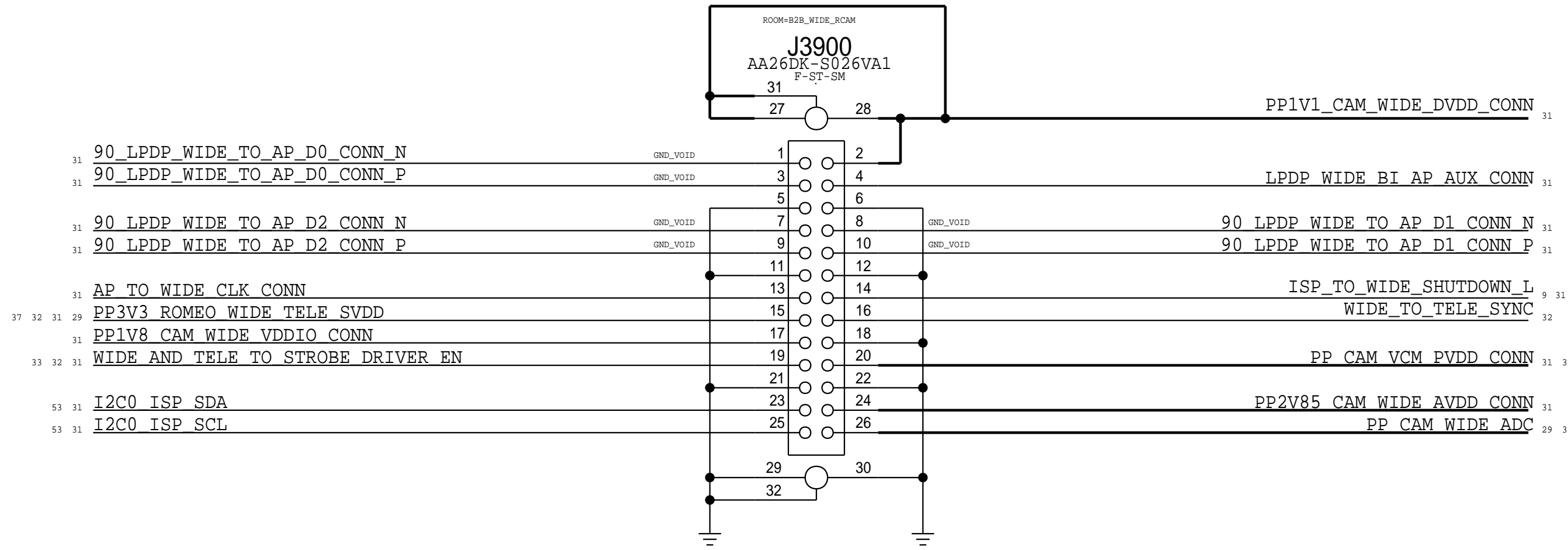
Pull Downs



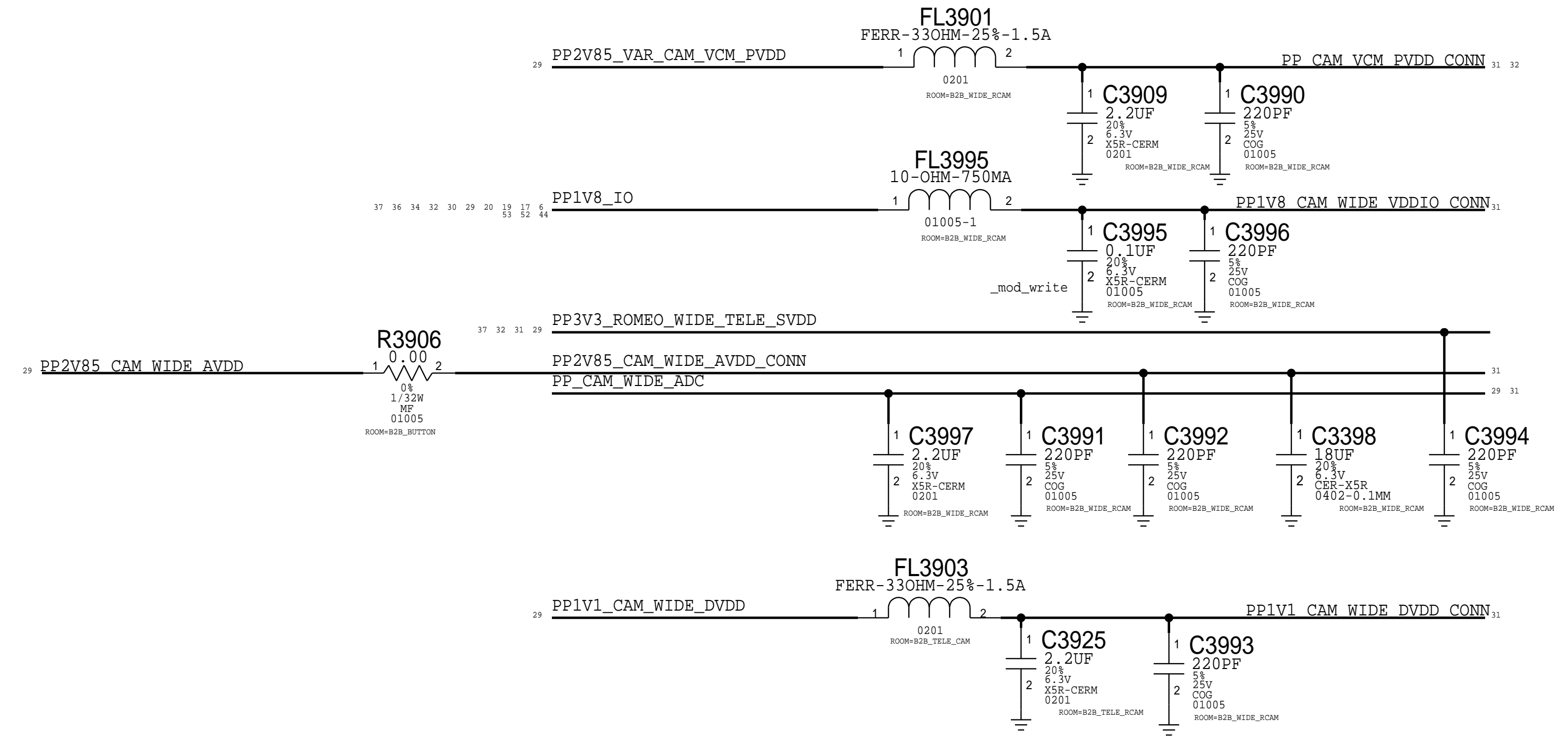
PAGE TITLE		
CAMERA: PMU (2/2)		
DRAWING NUMBER	051-02545	SIZE
REVISION	7.0.0	D
BRANCH		
PAGE	38 OF 85	
SHEET	30 OF 60	

Wide Camera Connector

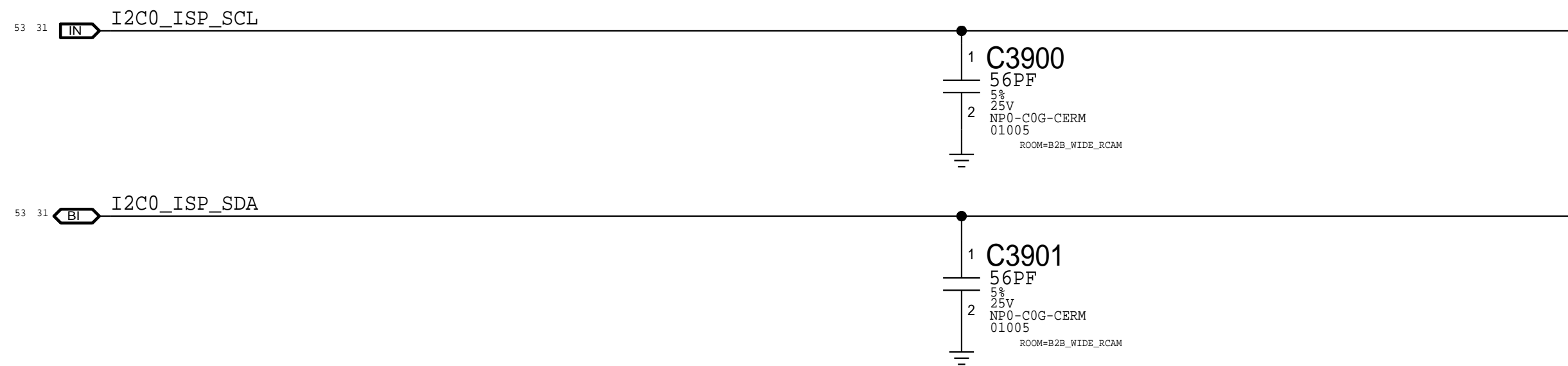
Rcpt: 516S00313 <-- This one on MLB
 Plug: 516S00314



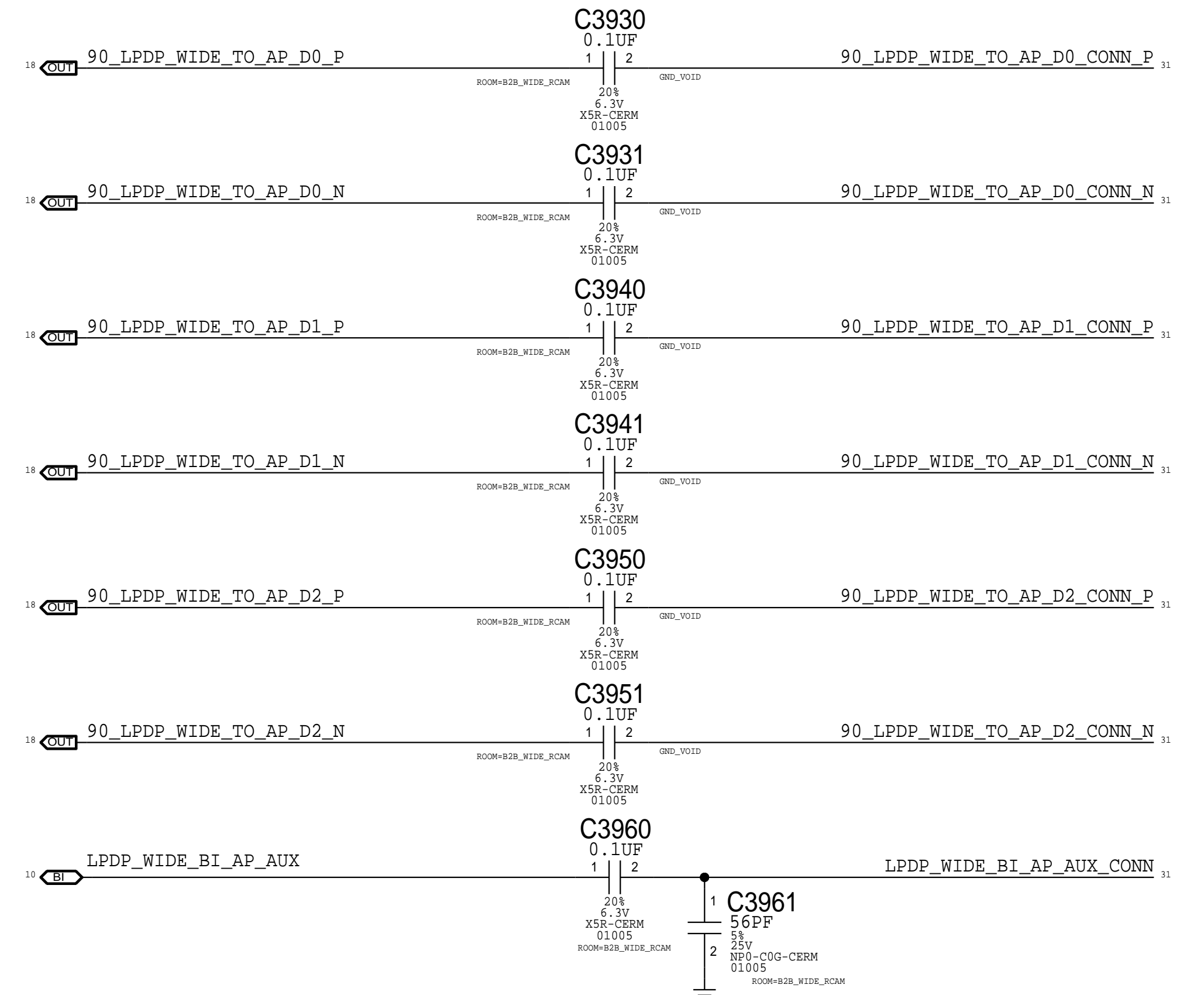
Power Filtering



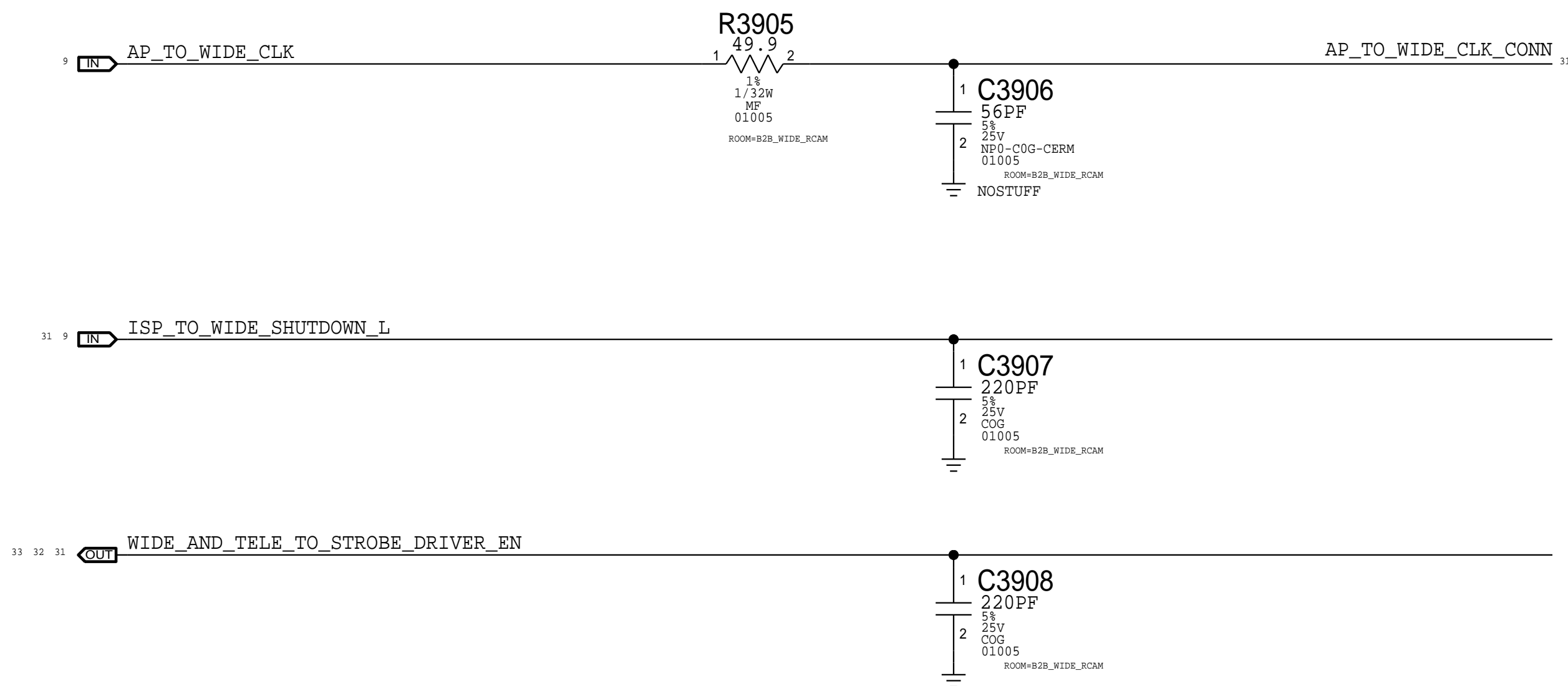
ISP I2C



LPDP Filters



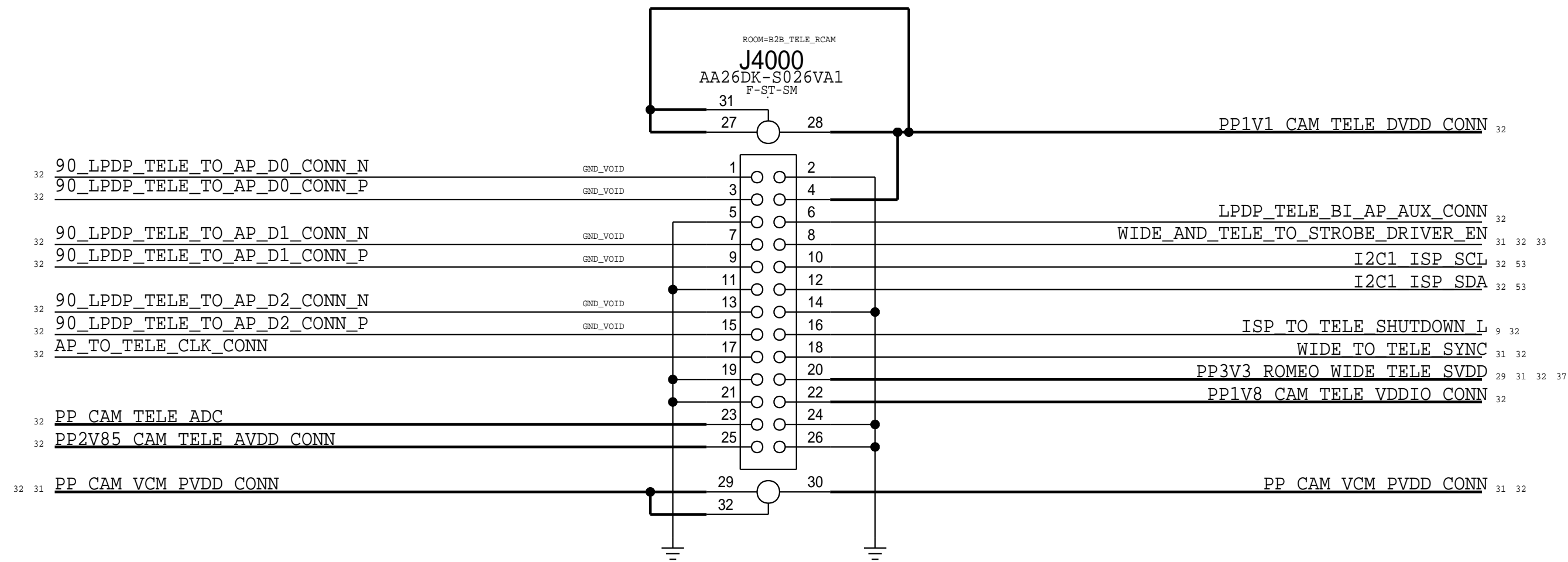
IO Filters



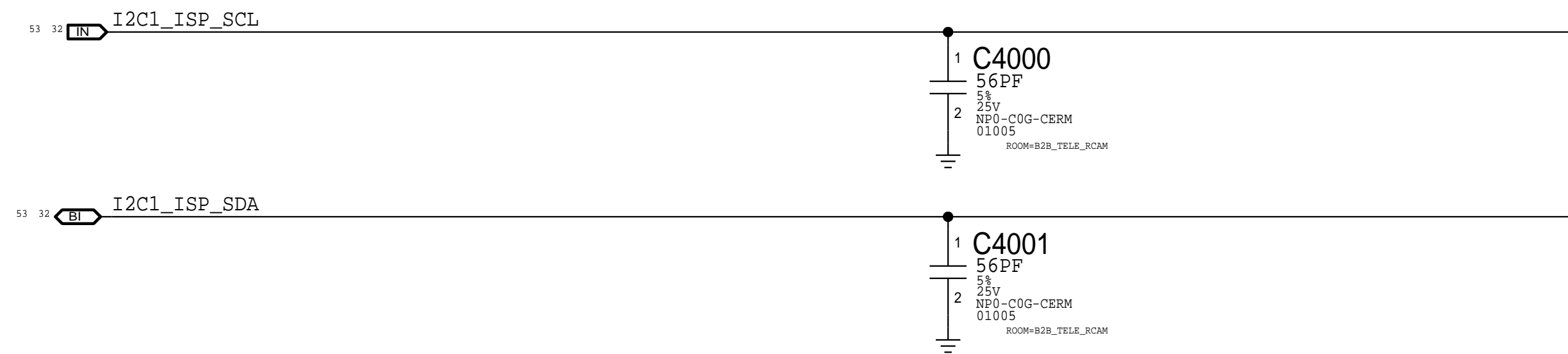
PAGE TITLE		
CAMERA: B2B Wide (TX)		
DRAWING NUMBER	051-02545	SIZE
REVISION	7.0.0	D
BRANCH		
PAGE	39 OF 85	
SHEET	31 OF 60	

Tele Camera Connector

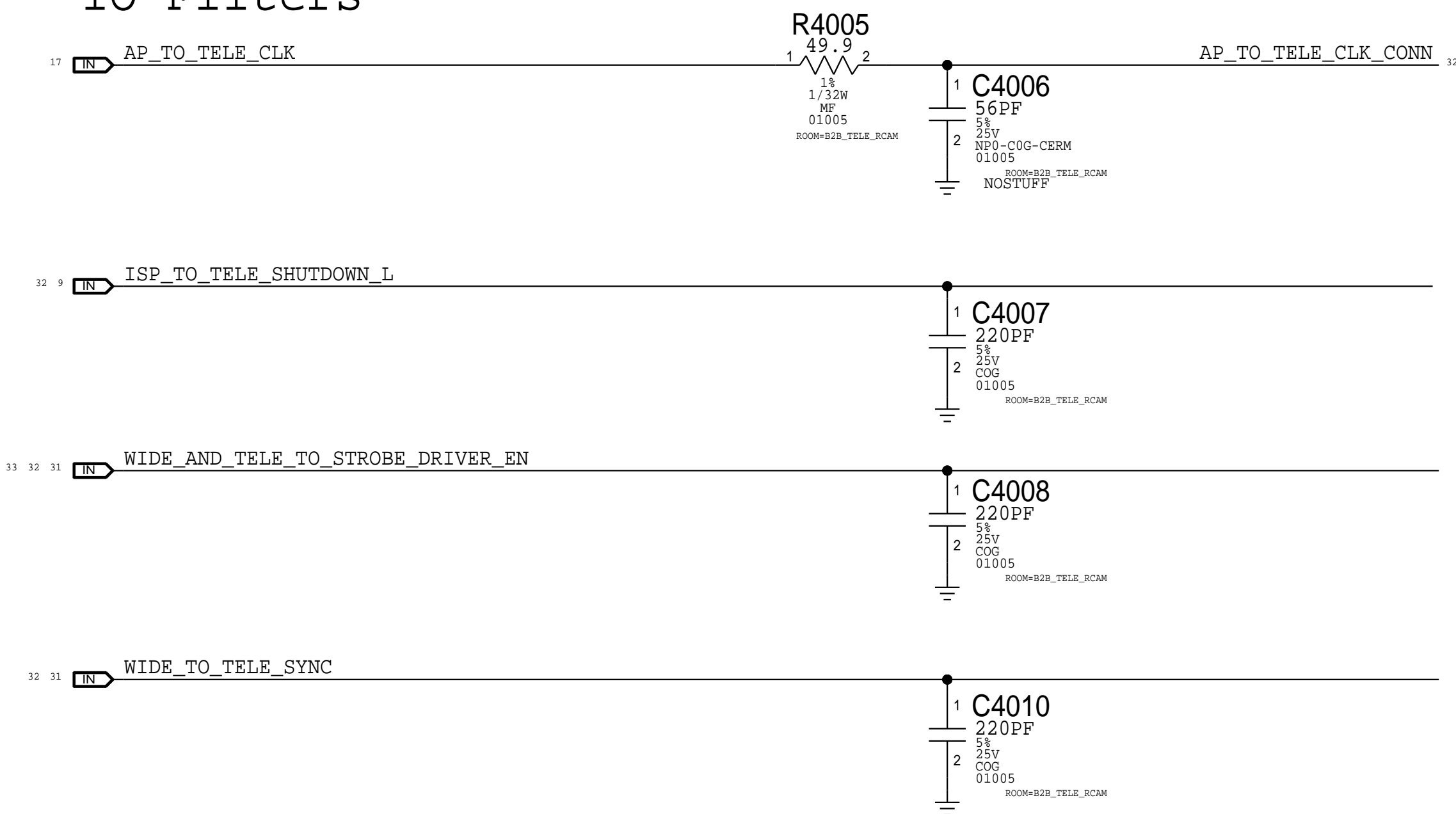
Rcpt: 516S00313 <-- This one on MLB
 Plug: 516S00314



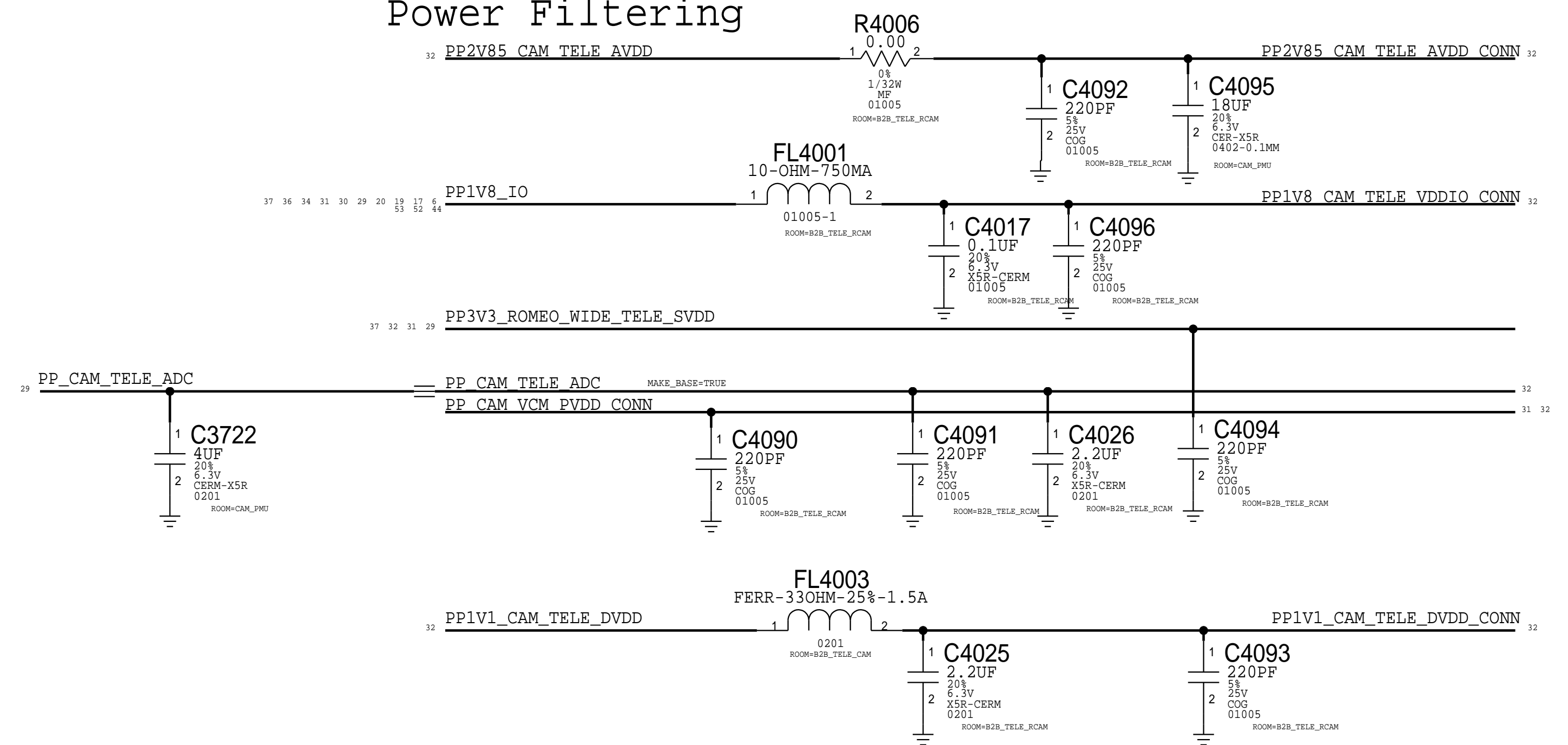
ISP I2C



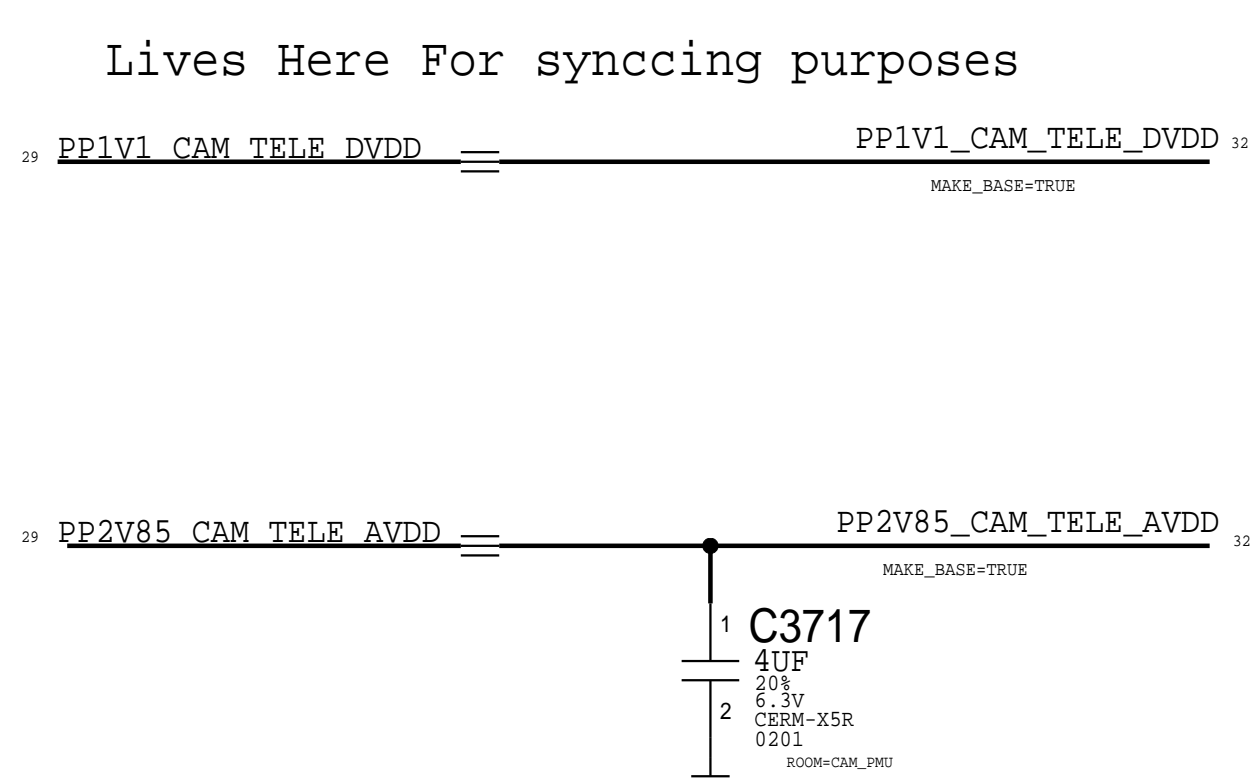
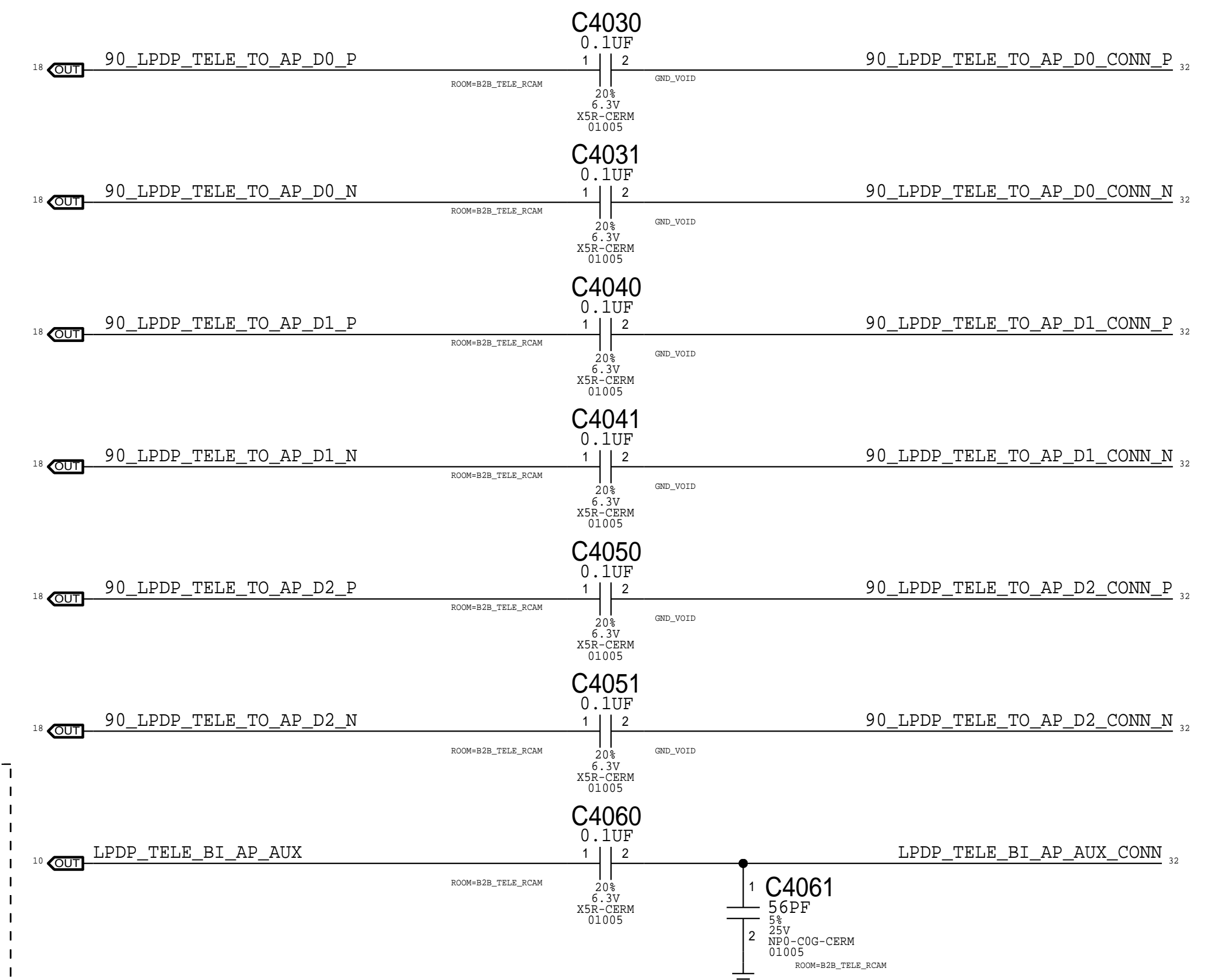
IO Filters



Power Filtering



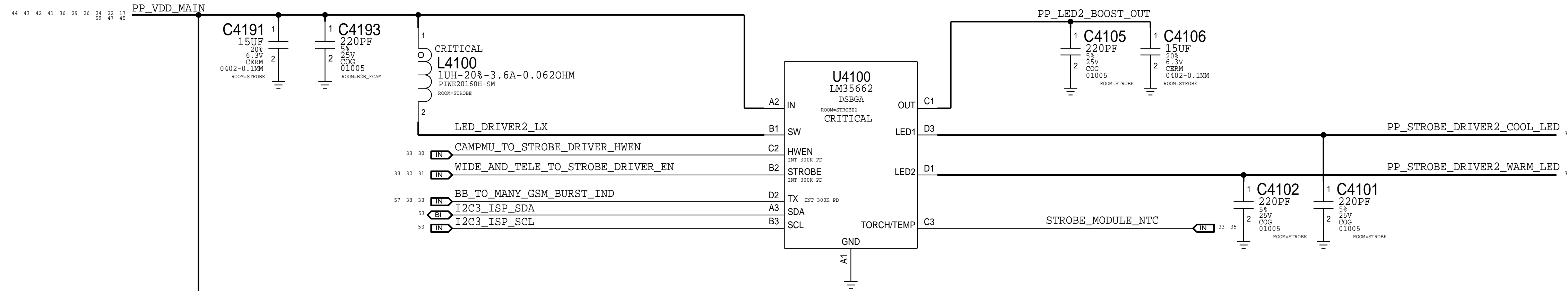
LPDP



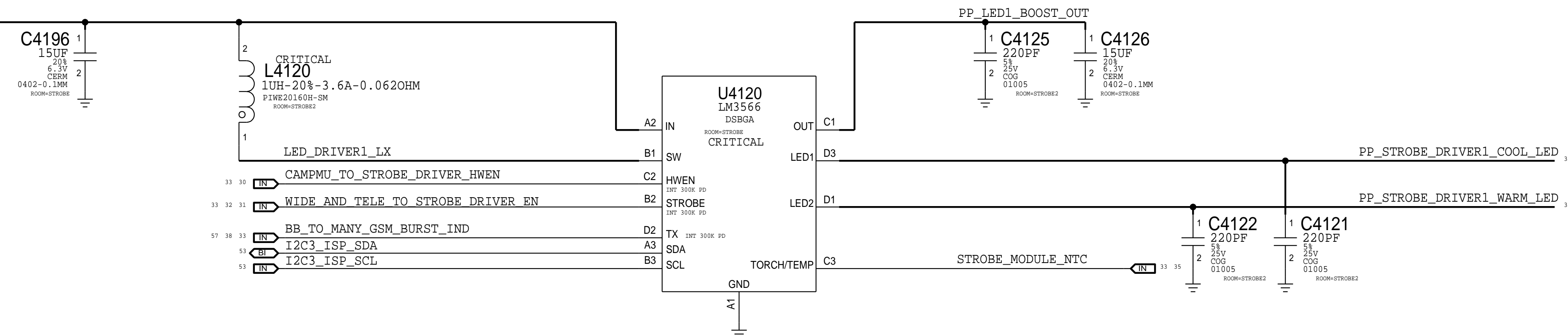
PAGE TITLE		
CAMERA: B2B Tele [MT]		
DRAWING NUMBER	051-02545	SIZE
REVISION	7.0.0	D
BRANCH		
PAGE	40 OF 85	
SHEET	32 OF 60	

LED STROBE DRIVERS (NEON)

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

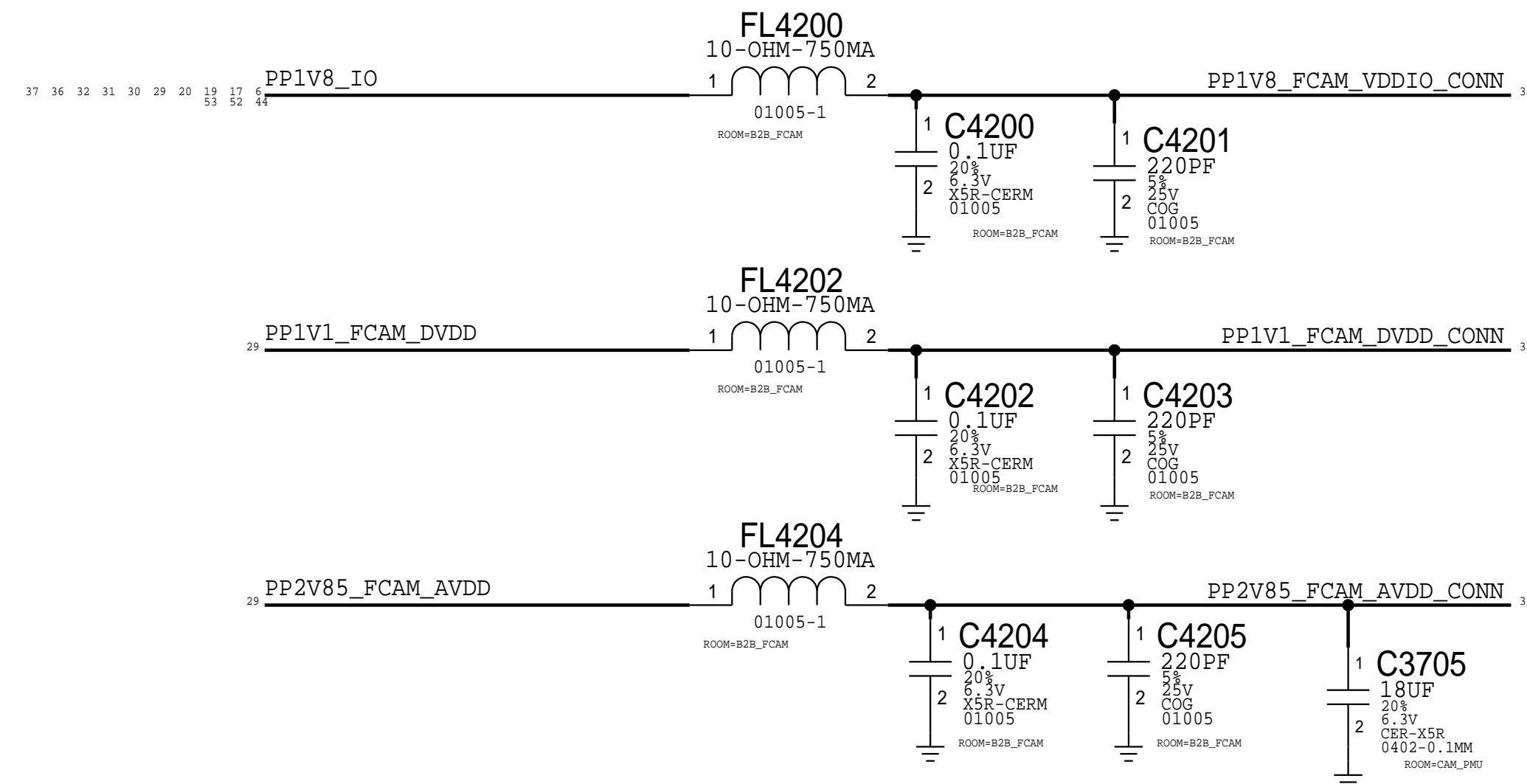


APN: 353S00558
I2C Address (7-bit): 0x63



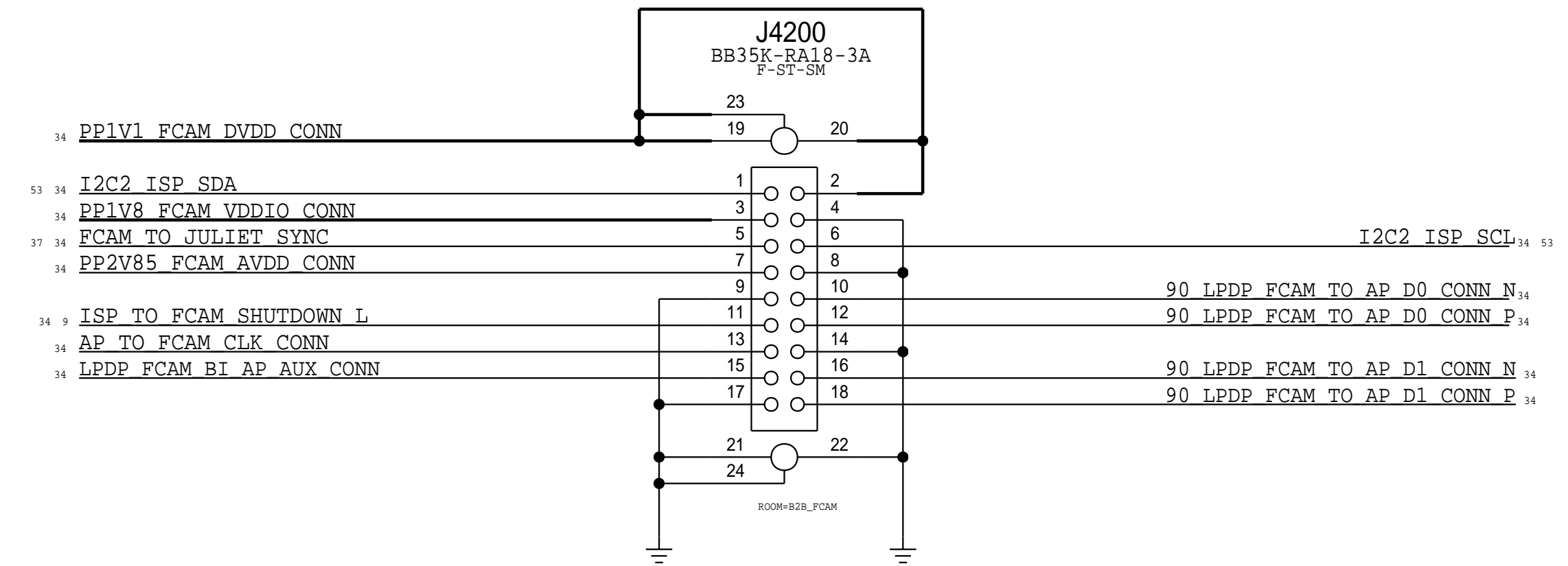
PAGE TITLE		
CAMERA: Strobe Drivers		
DRAWING NUMBER	051-02545	SIZE
REVISION	7.0.0	D
BRANCH		
PAGE	41 OF 85	
SHEET	33 OF 60	

LONG ISLAND POWER

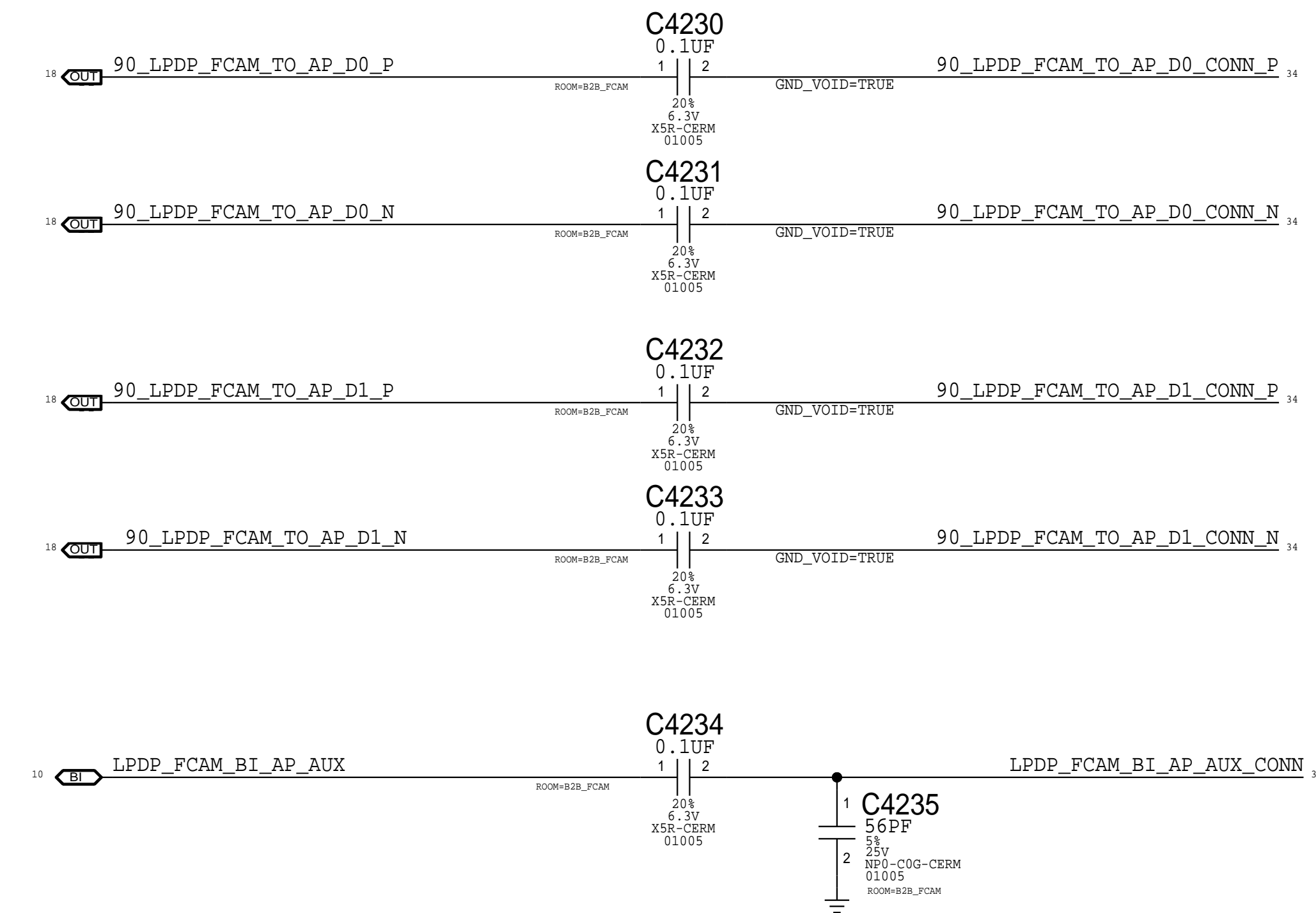


FCAM Connector

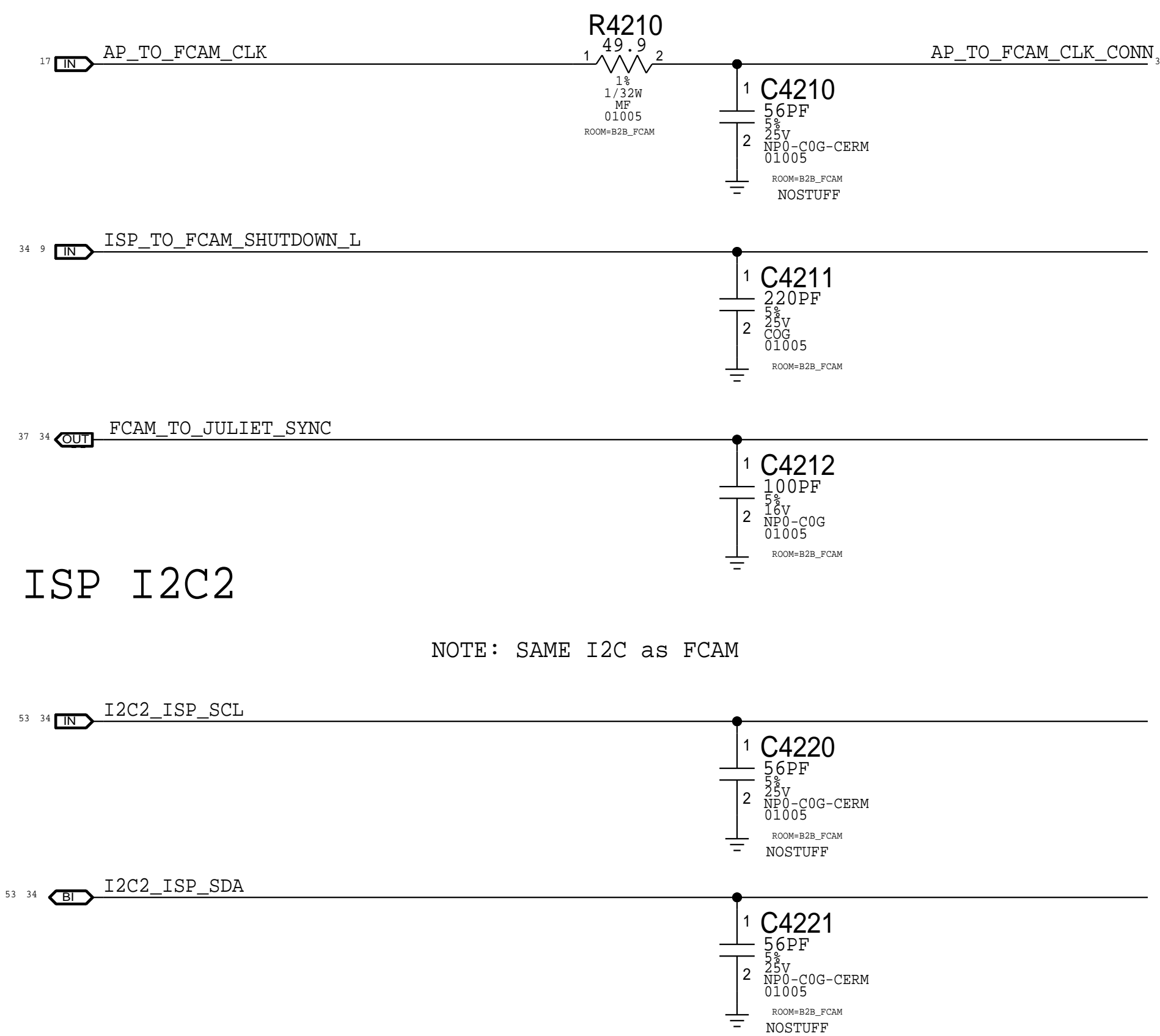
Rept: 516S00244 <-- This one on MLB
 Plug: 516S00245



LPDP FILTERS



FCAM I/O



NOTE: SAME I2C as FCAM

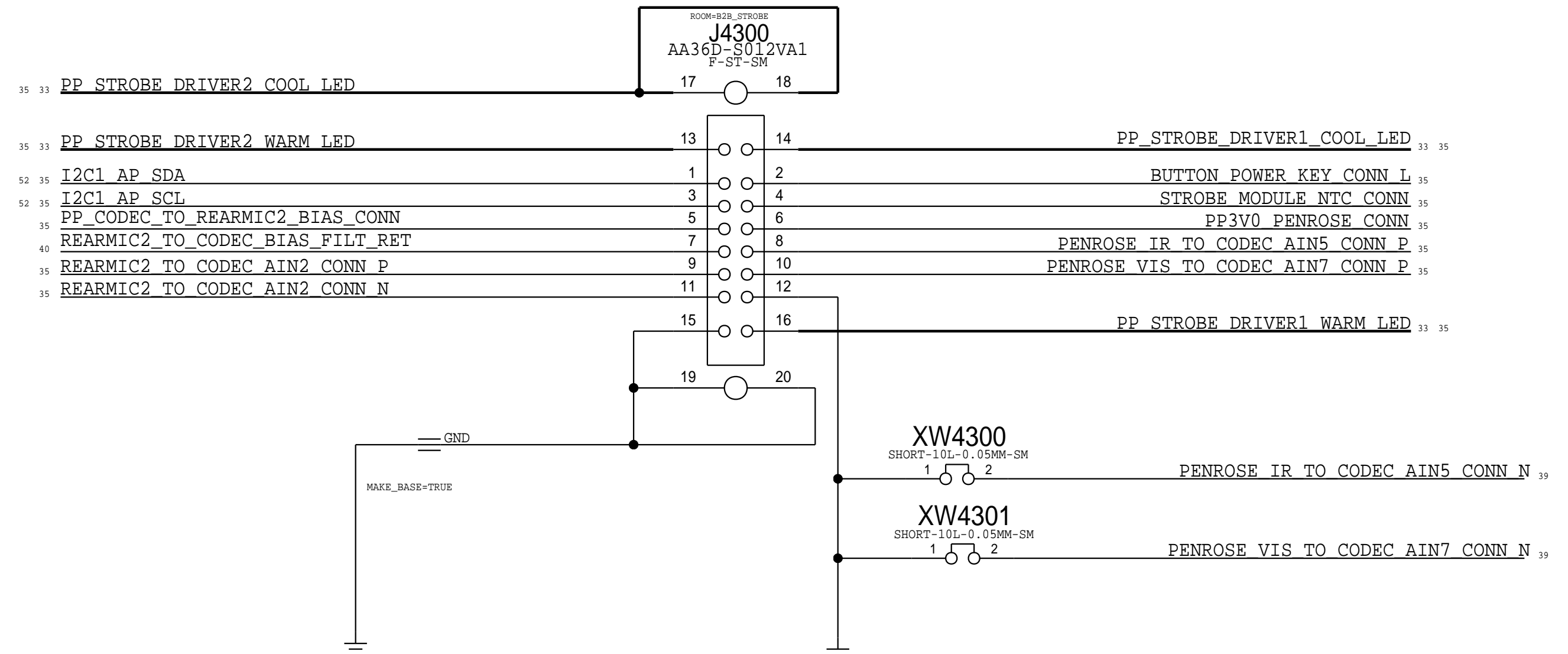
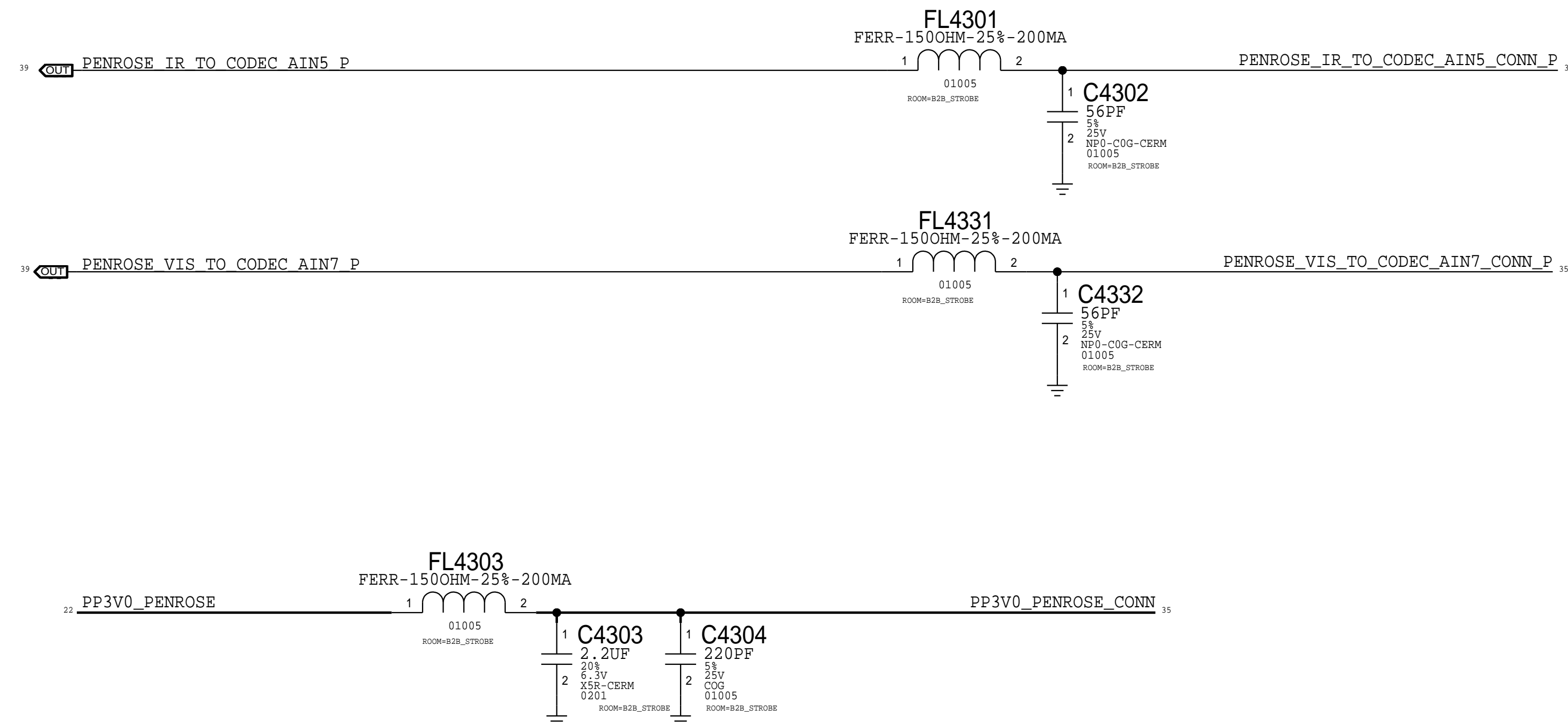


PAGE TITLE		
CAMERA: B2B Fcam		
DRAWING NUMBER	051-02545	SIZE
REVISION	7.0.0	D
BRANCH		
PAGE	42 OF 85	
SHEET	34 OF 60	

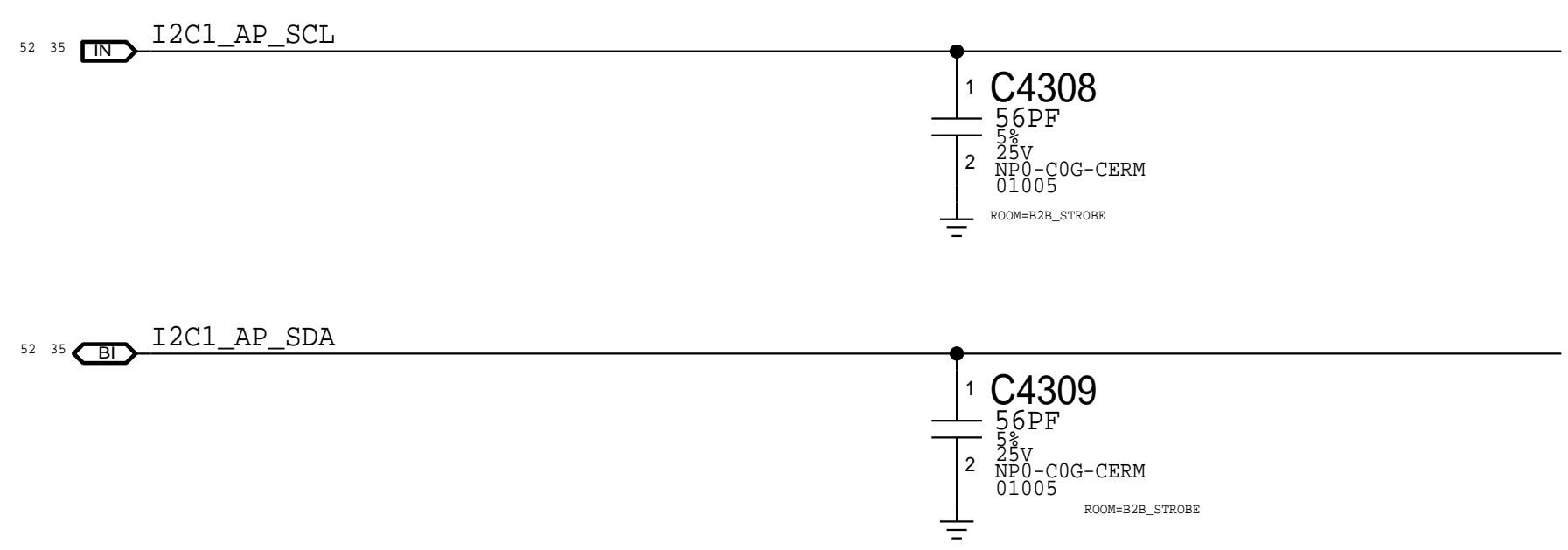
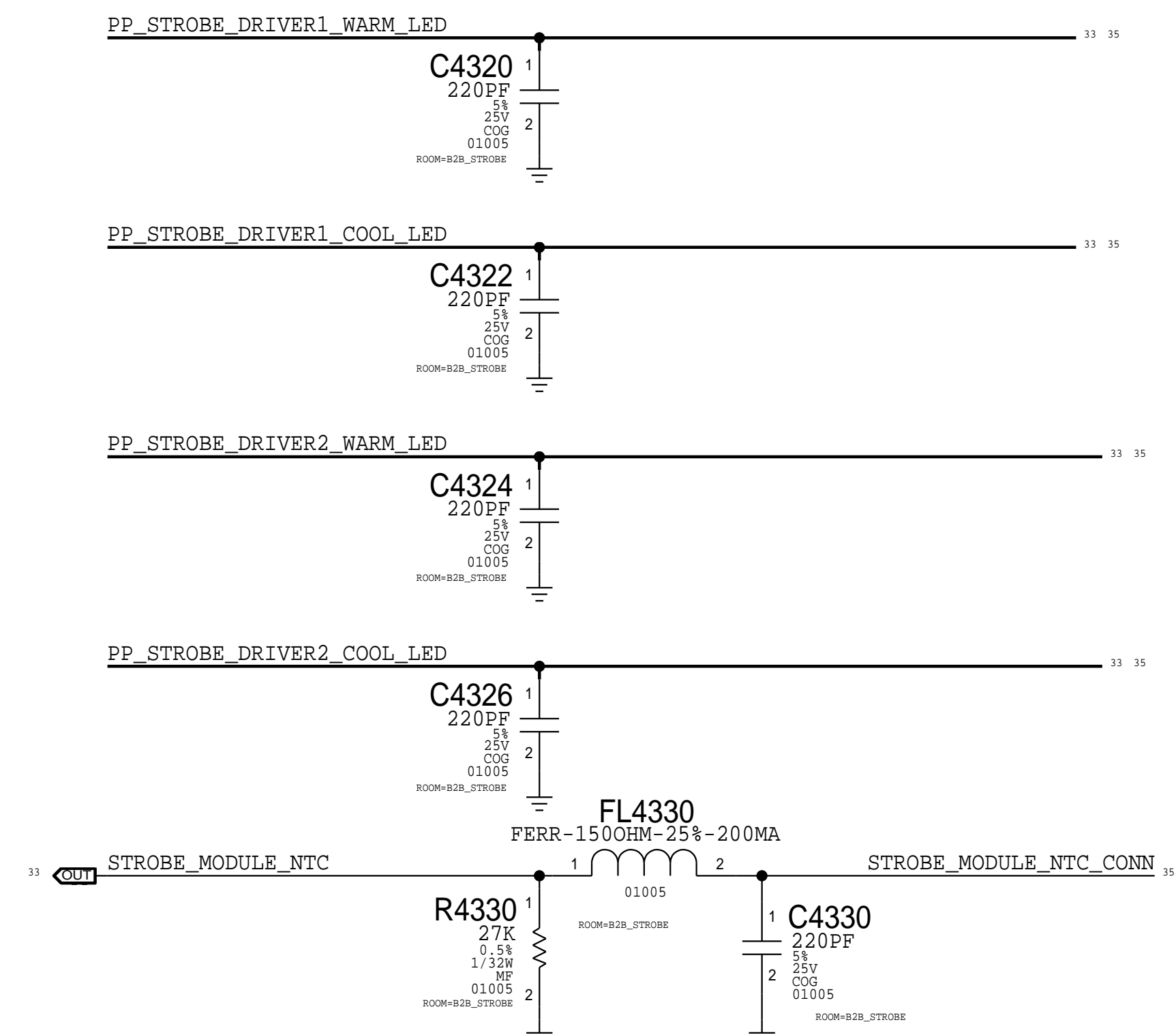
Strobe Connector

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

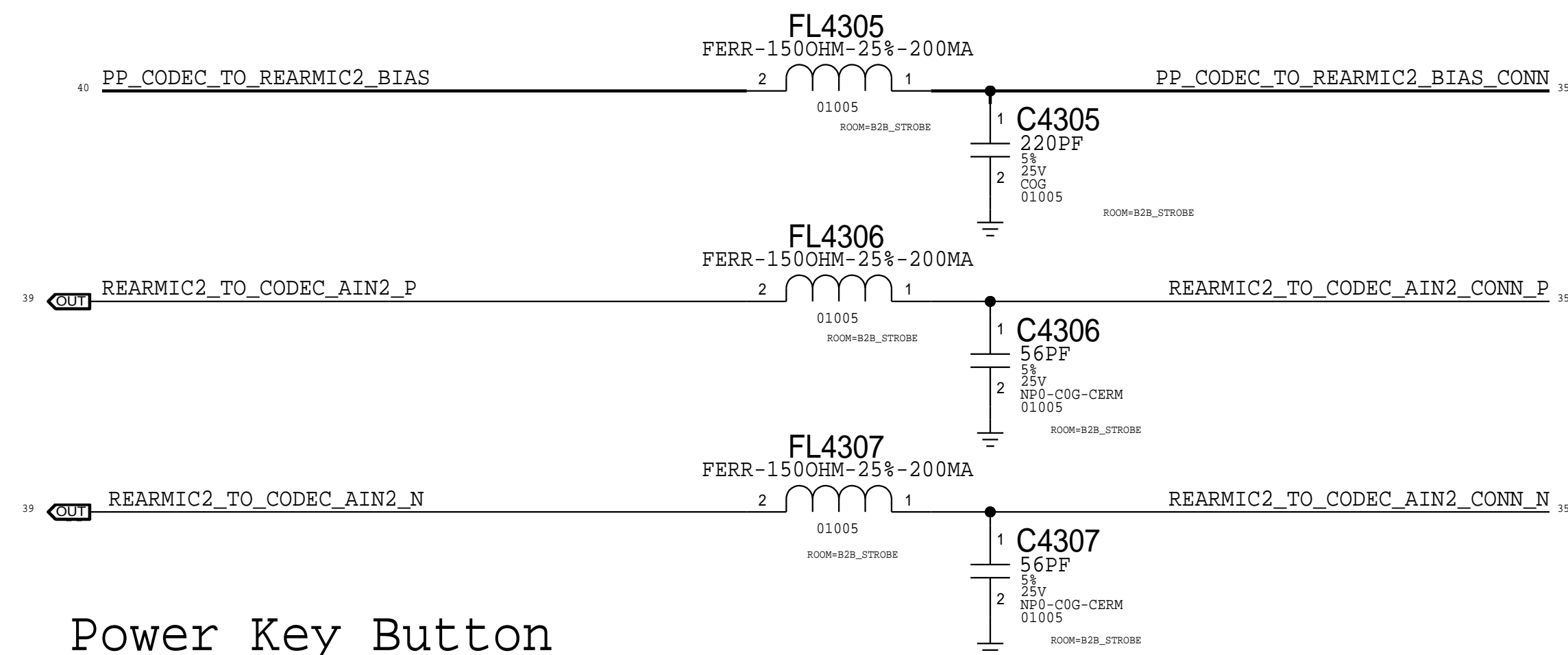
PENROSE



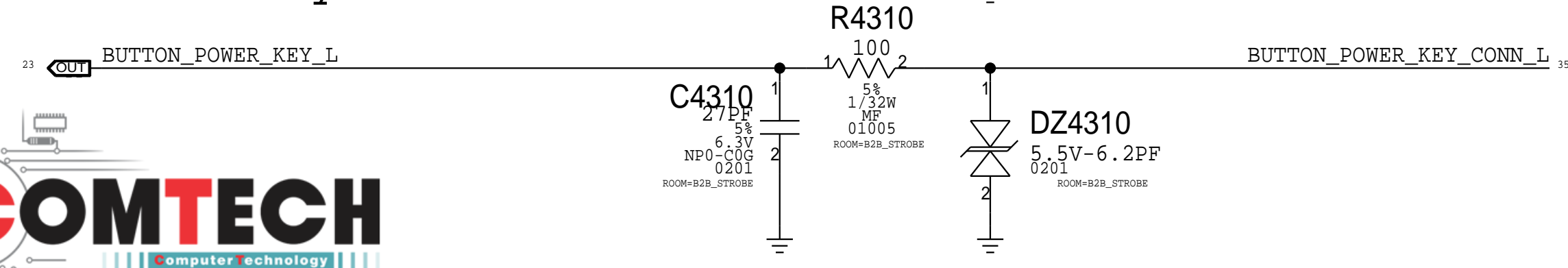
Strobe Filtering



MIC2 (ANC REF)



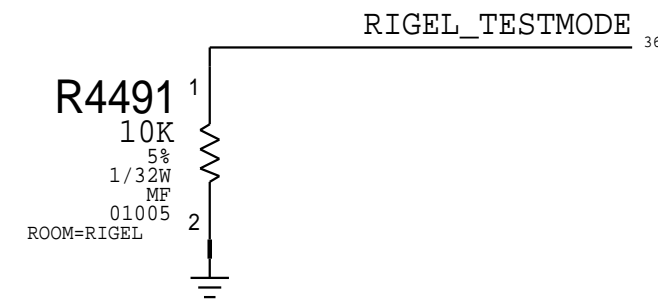
Power Key Button



PAGE TITLE		
CAMERA: B2B Strobe + Hold Button		
DRAWING NUMBER	051-02545	SIZE
REVISION	7.0.0	D
BRANCH		
PAGE		
43 OF 85		
SHEET		
35 OF 60		

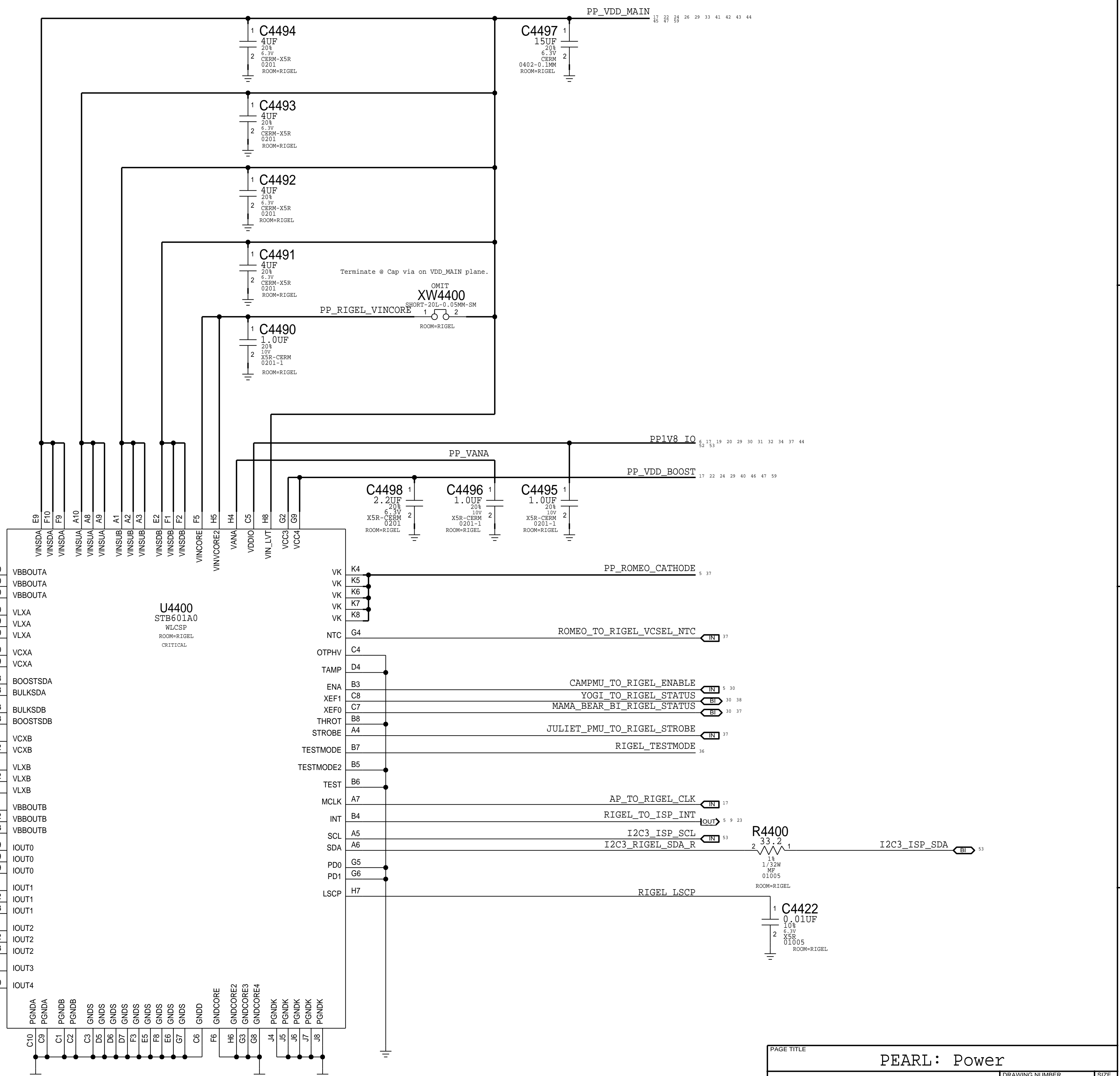
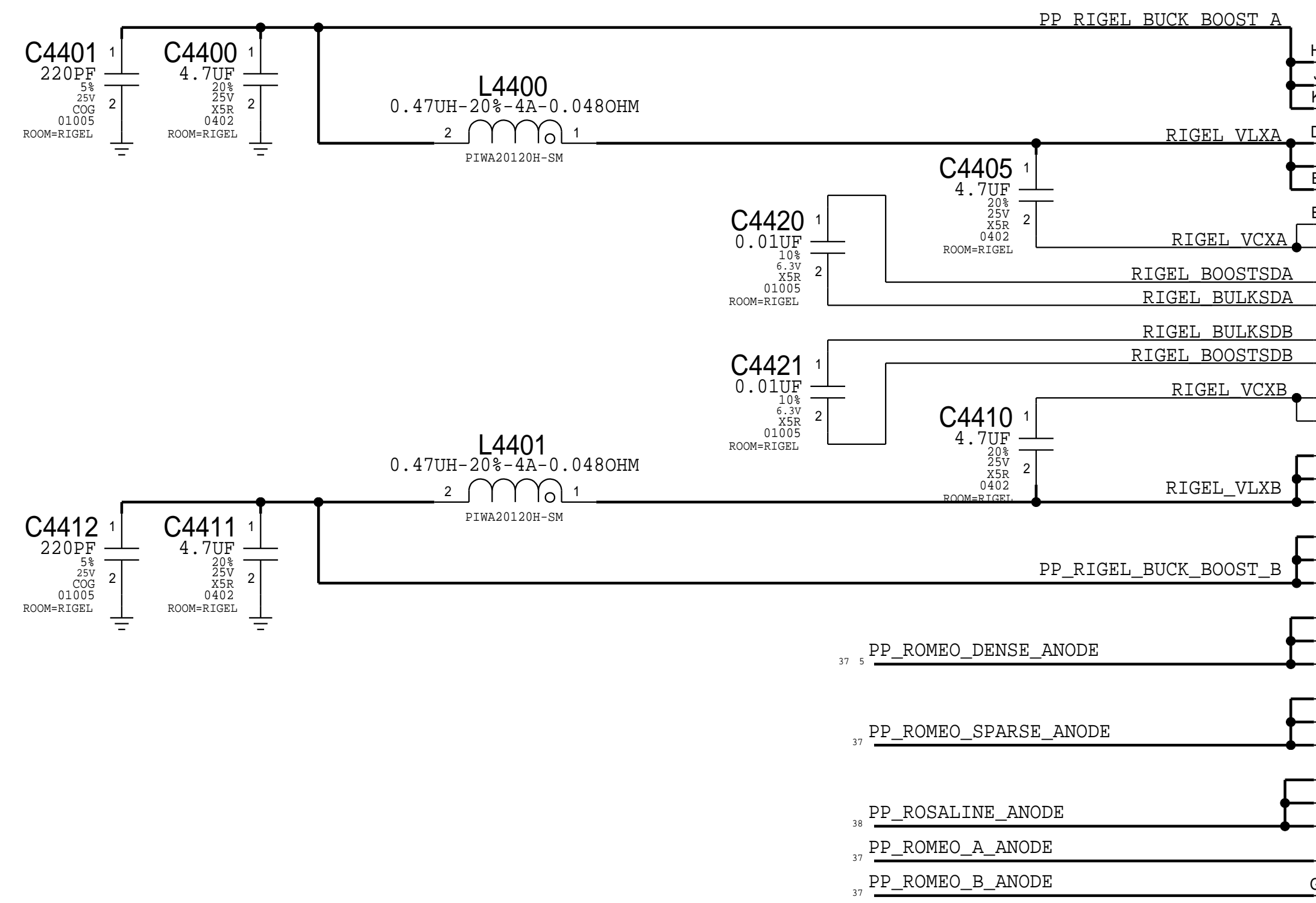
Rigel Driver

Test Mode Debugging



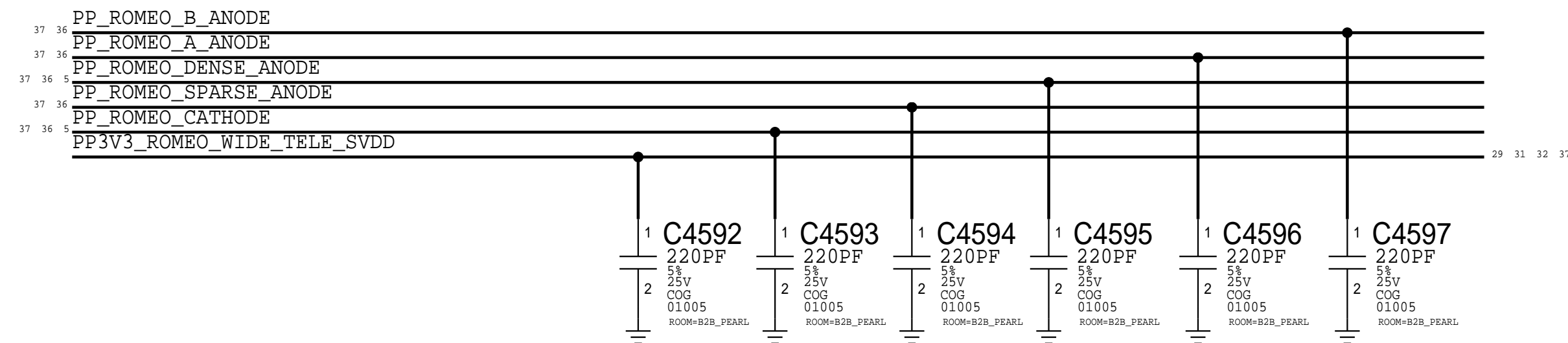
Rigel ALTs

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

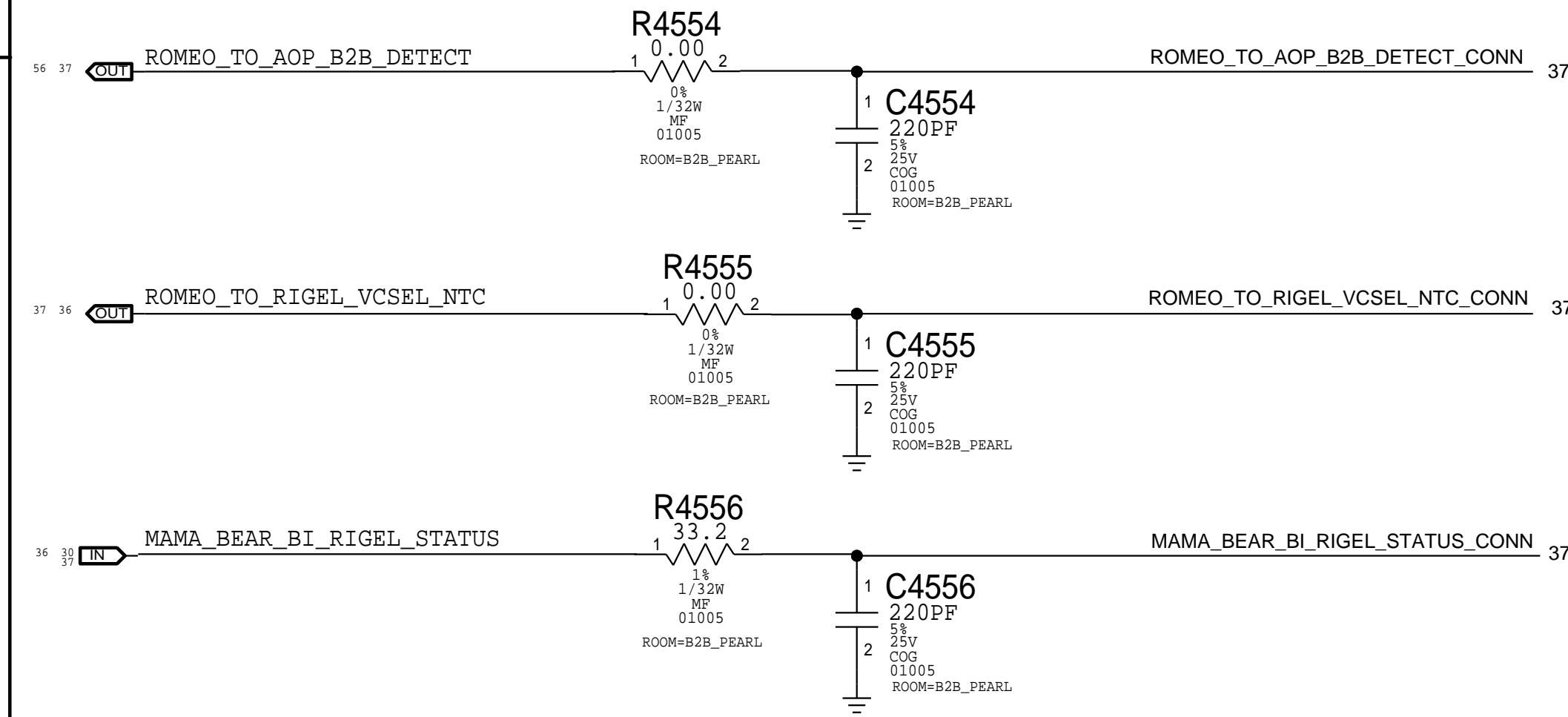


PAGE TITLE		
PEARL: Power		
DRAWING NUMBER	051-02545	SIZE
REVISION	7.0.0	D
BRANCH		
PAGE	44 OF 85	
SHEET	36 OF 60	

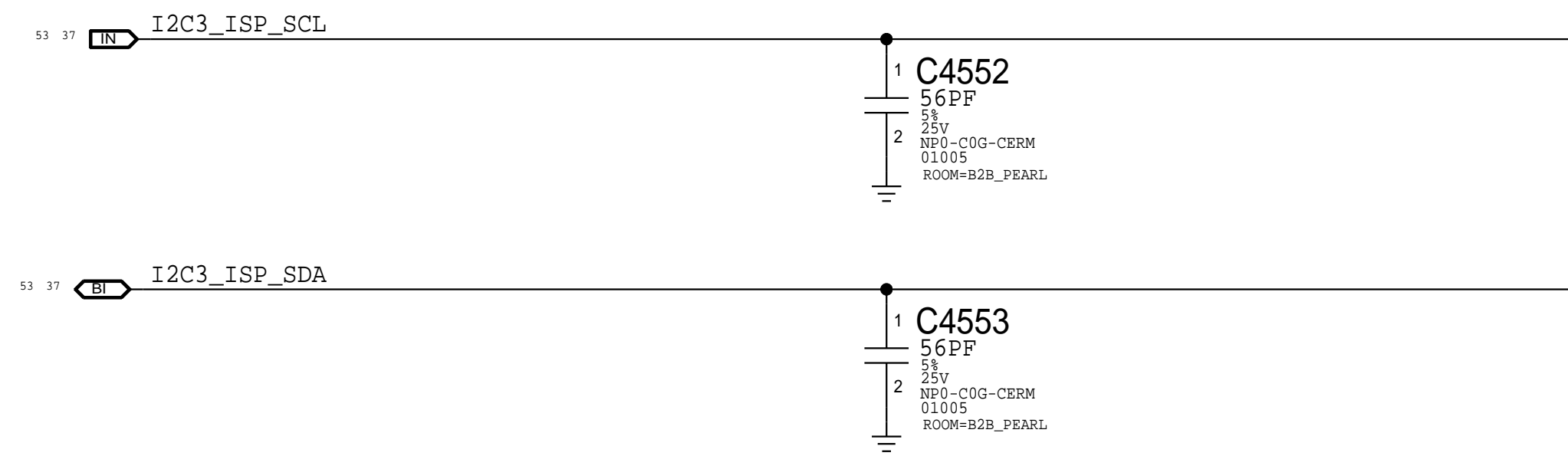
Romeo Power Filtering



Romeo I/O

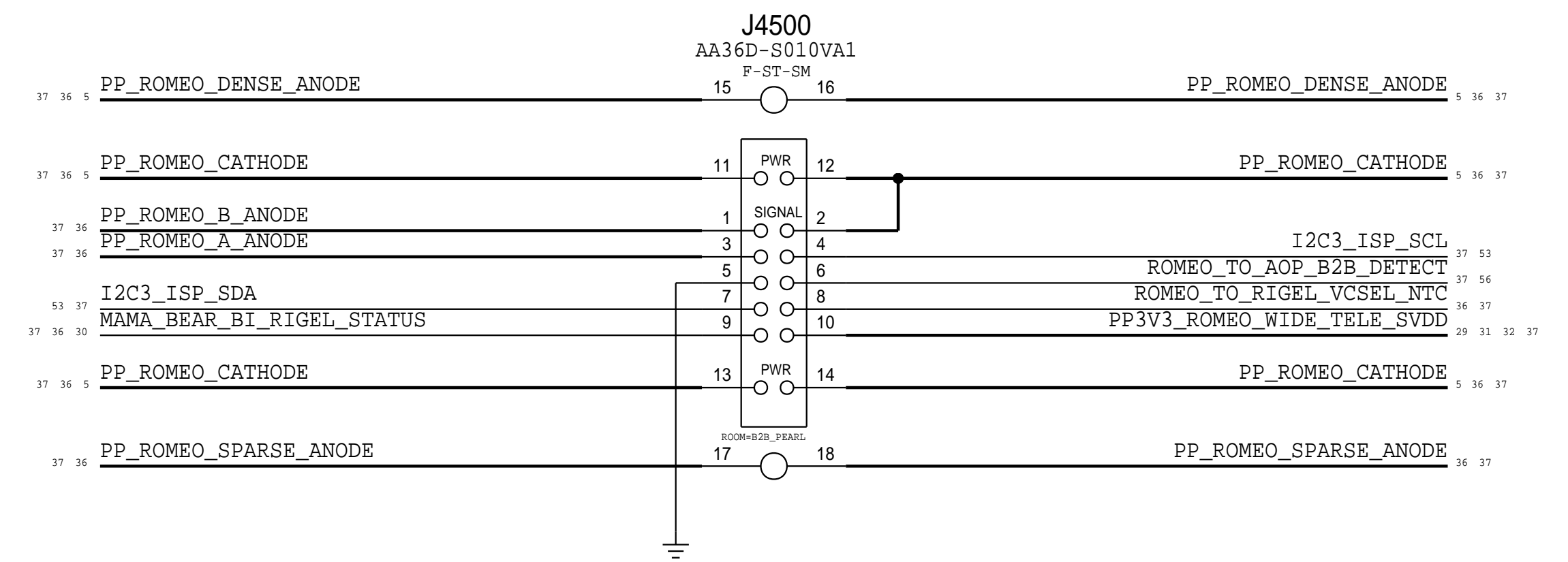


ISP I2C3



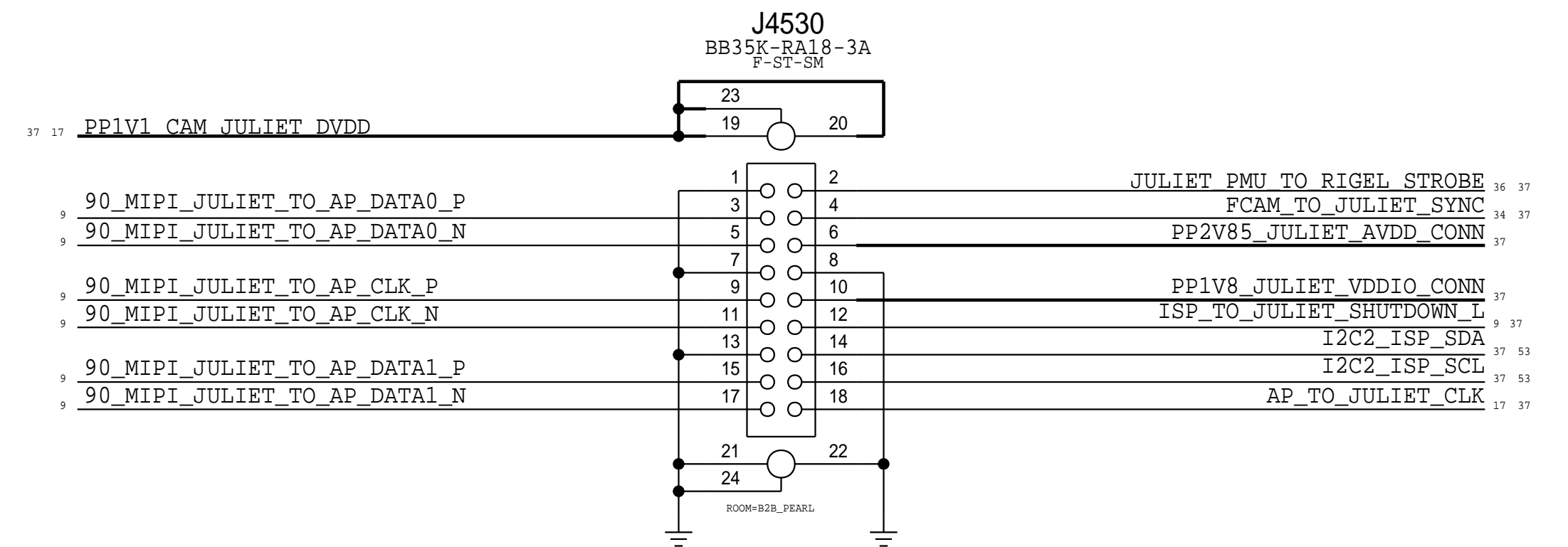
Romeo Connector

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

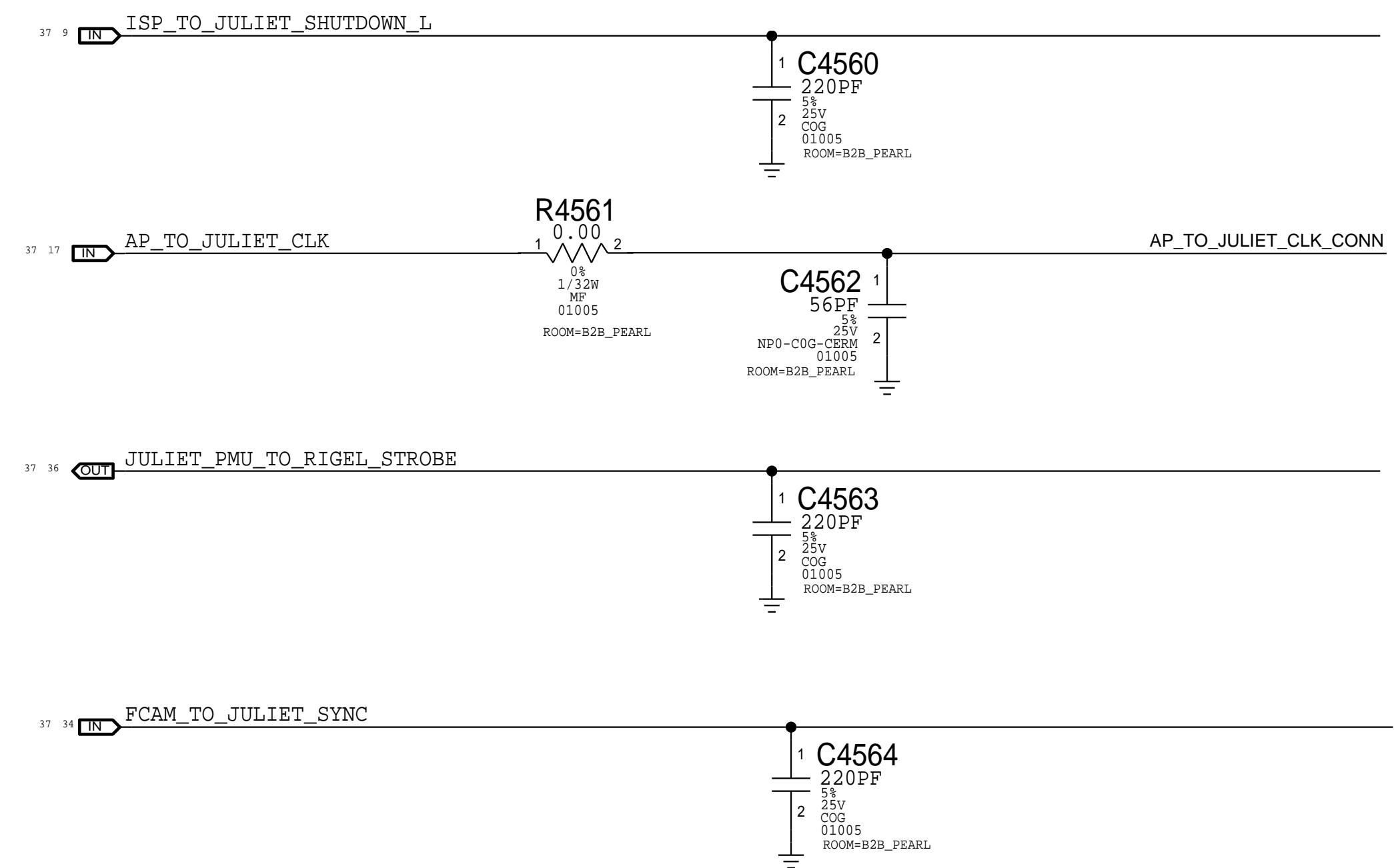
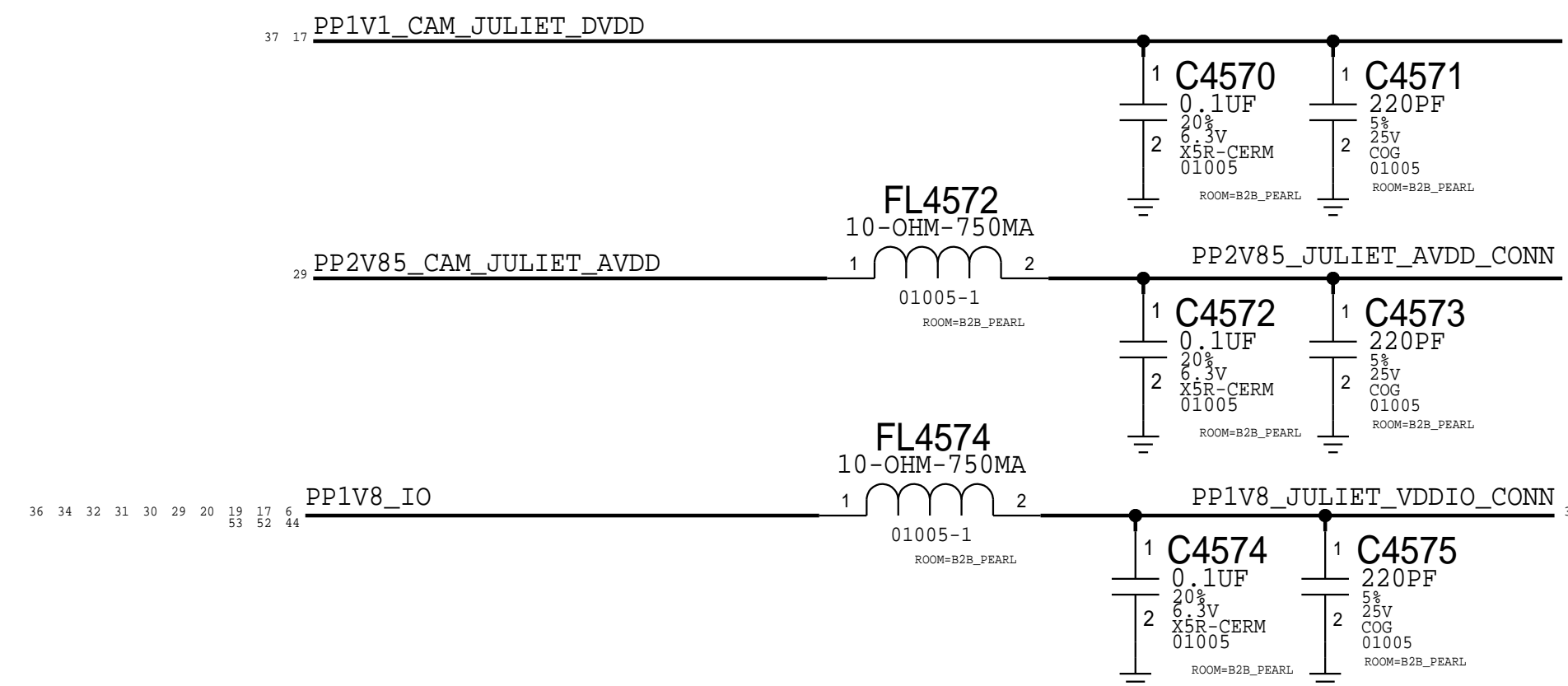


Juliet Connector

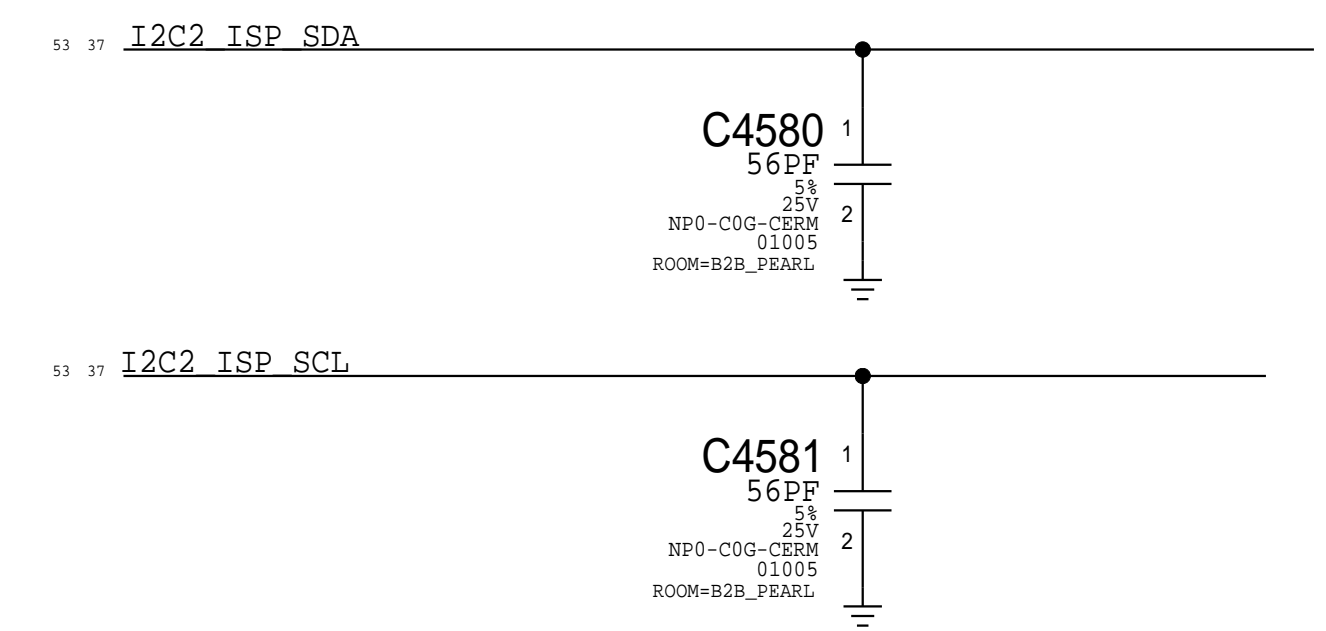
Rcpt: 516S00244 <-- This one on MLB
 Plug: 516S00245



Juliet Power and I/O

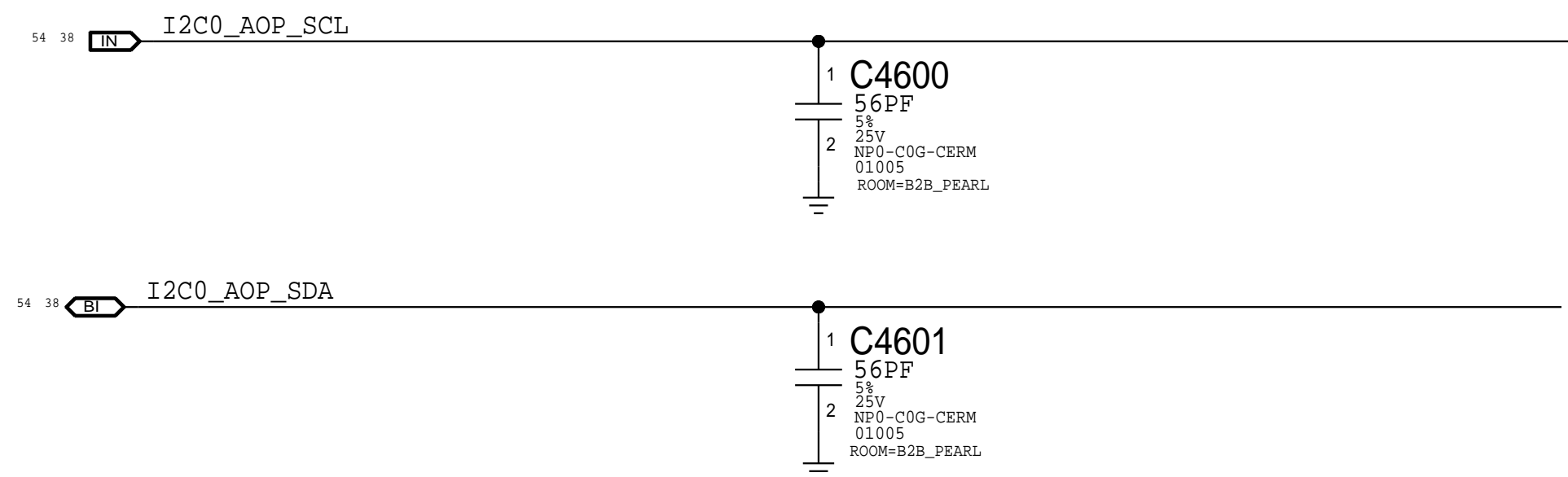


NOTE: SAME I2C as FCAM

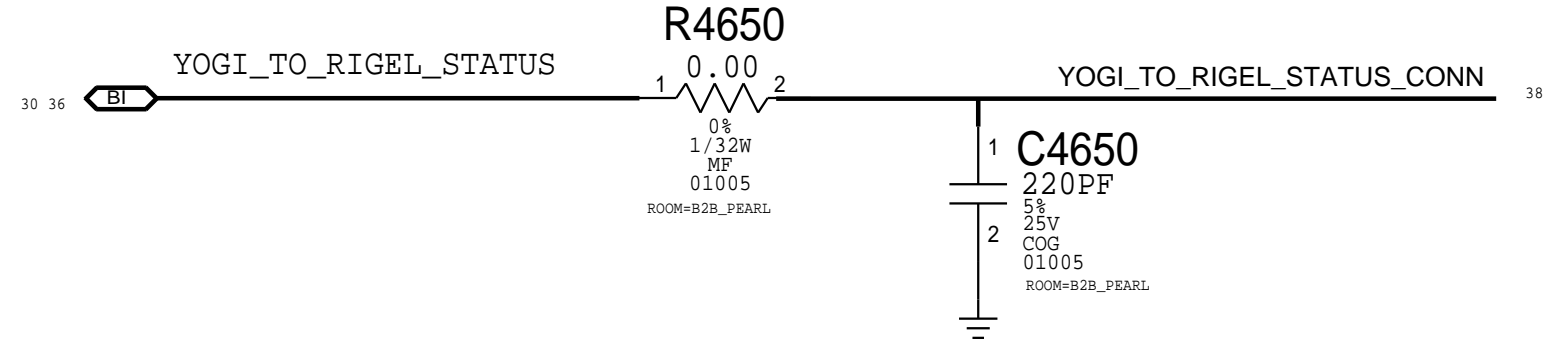


PAGE TITLE		
PEARL: B2B Romeo + Juliet		
DRAWING NUMBER	051-02545	SIZE
REVISION	7.0.0	D
BRANCH		
PAGE	45 OF 85	
SHEET	37 OF 60	

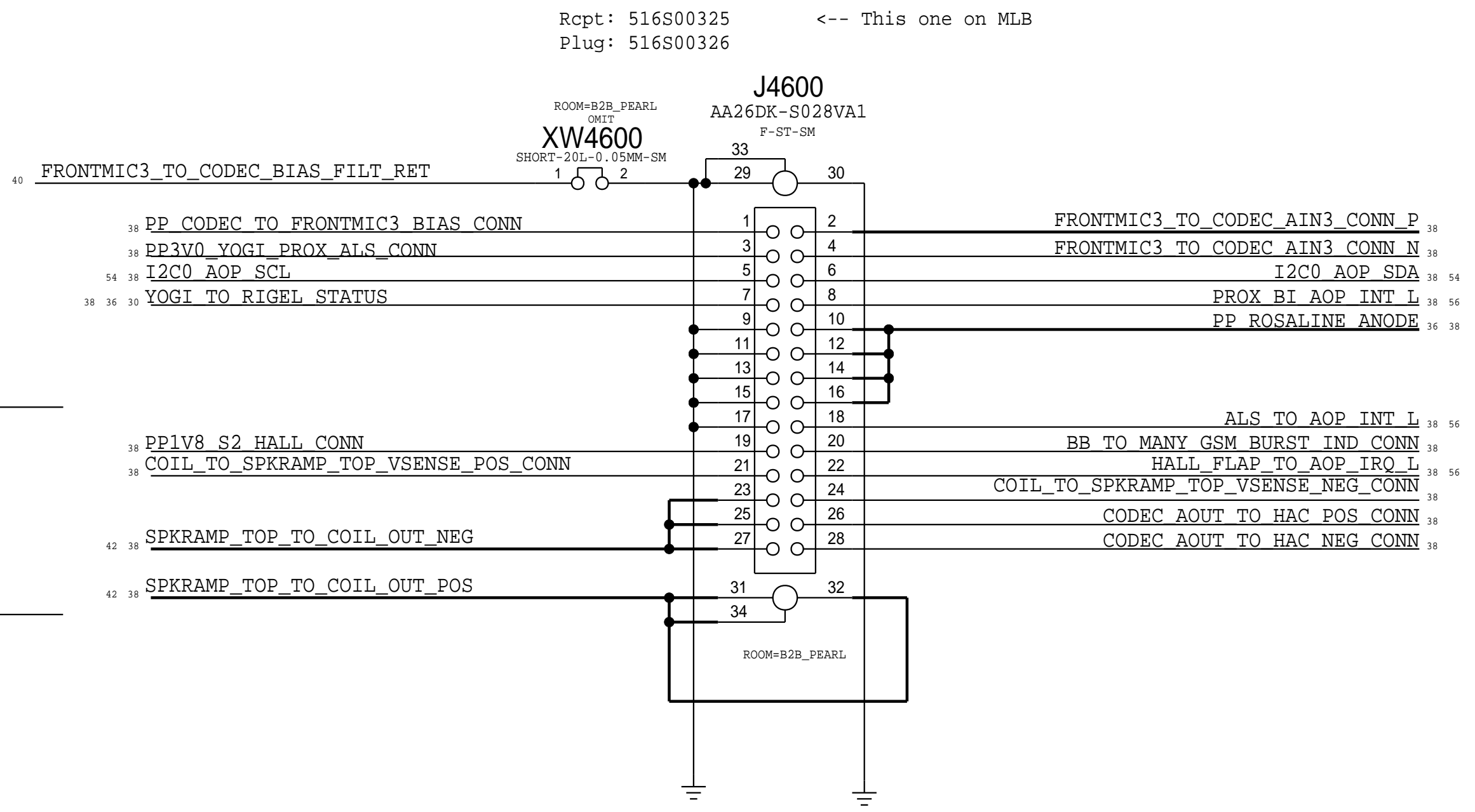
AOP I2C



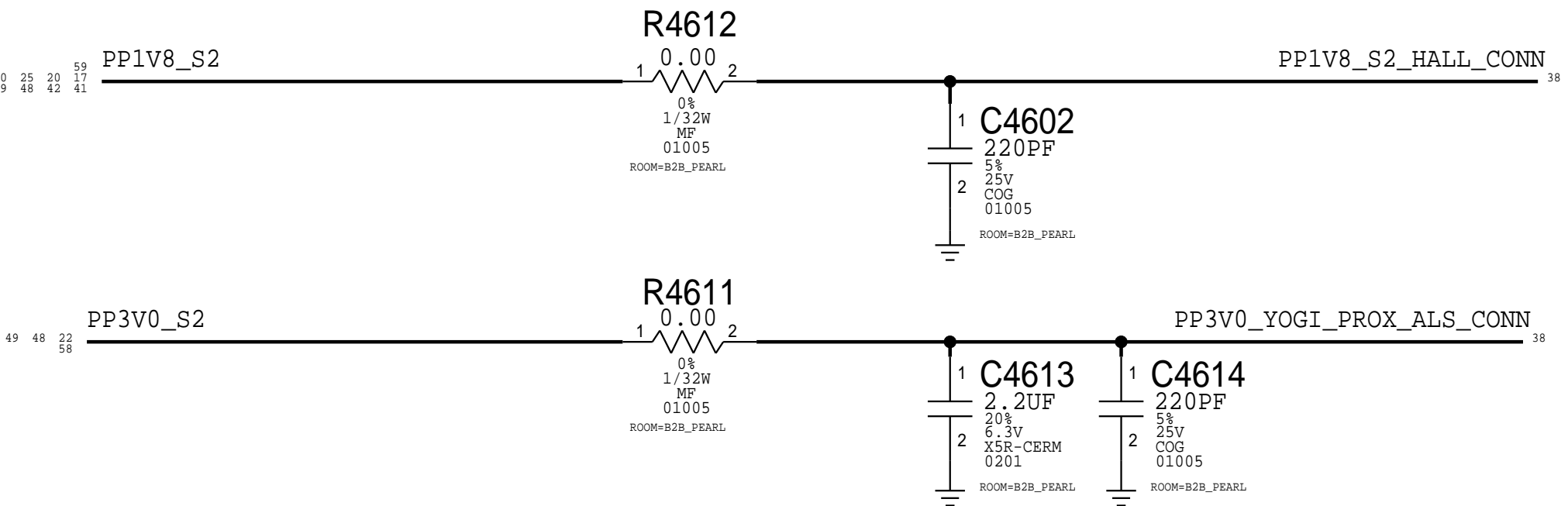
Yogi Signals



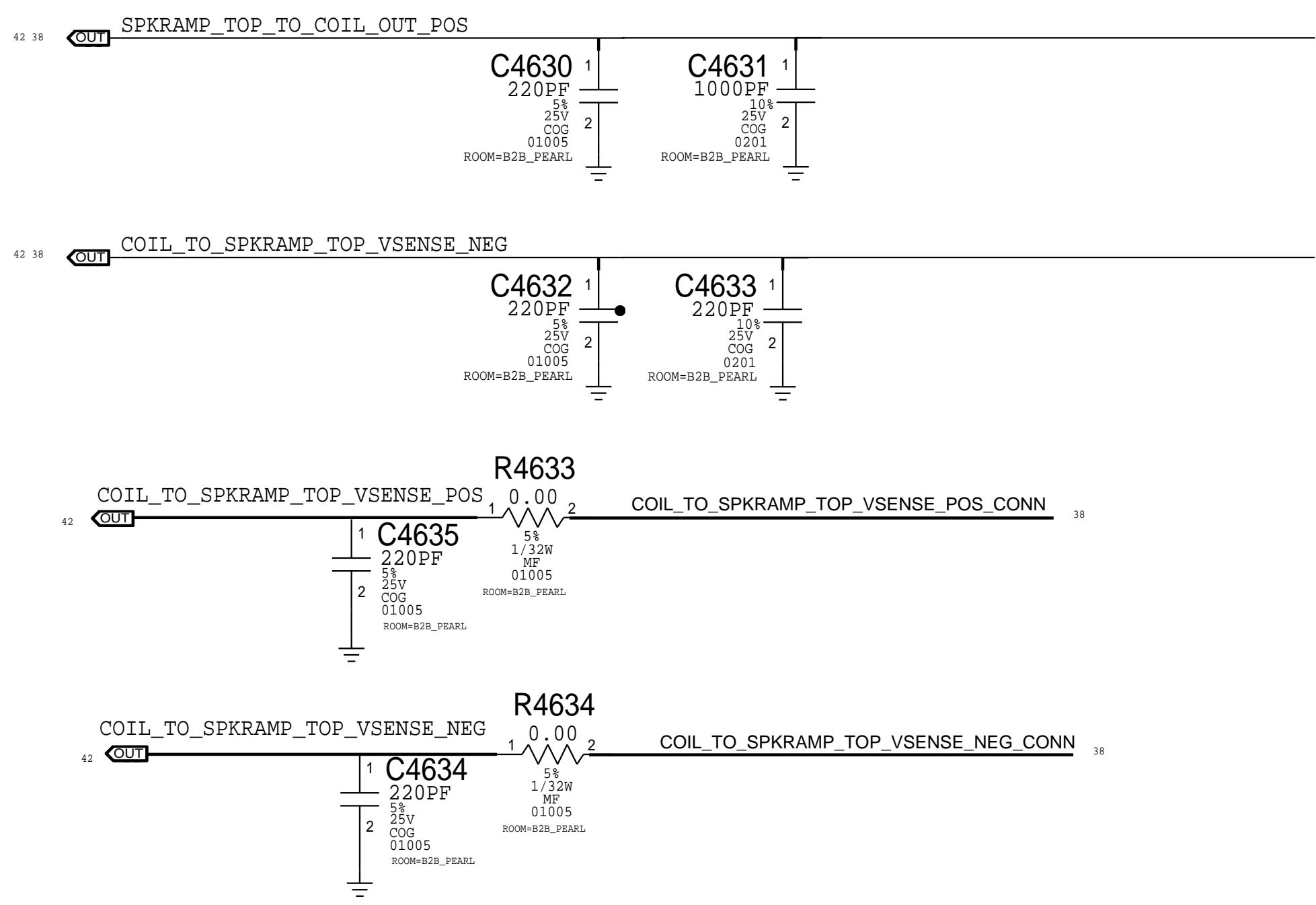
Rosaline + Sensor Connector



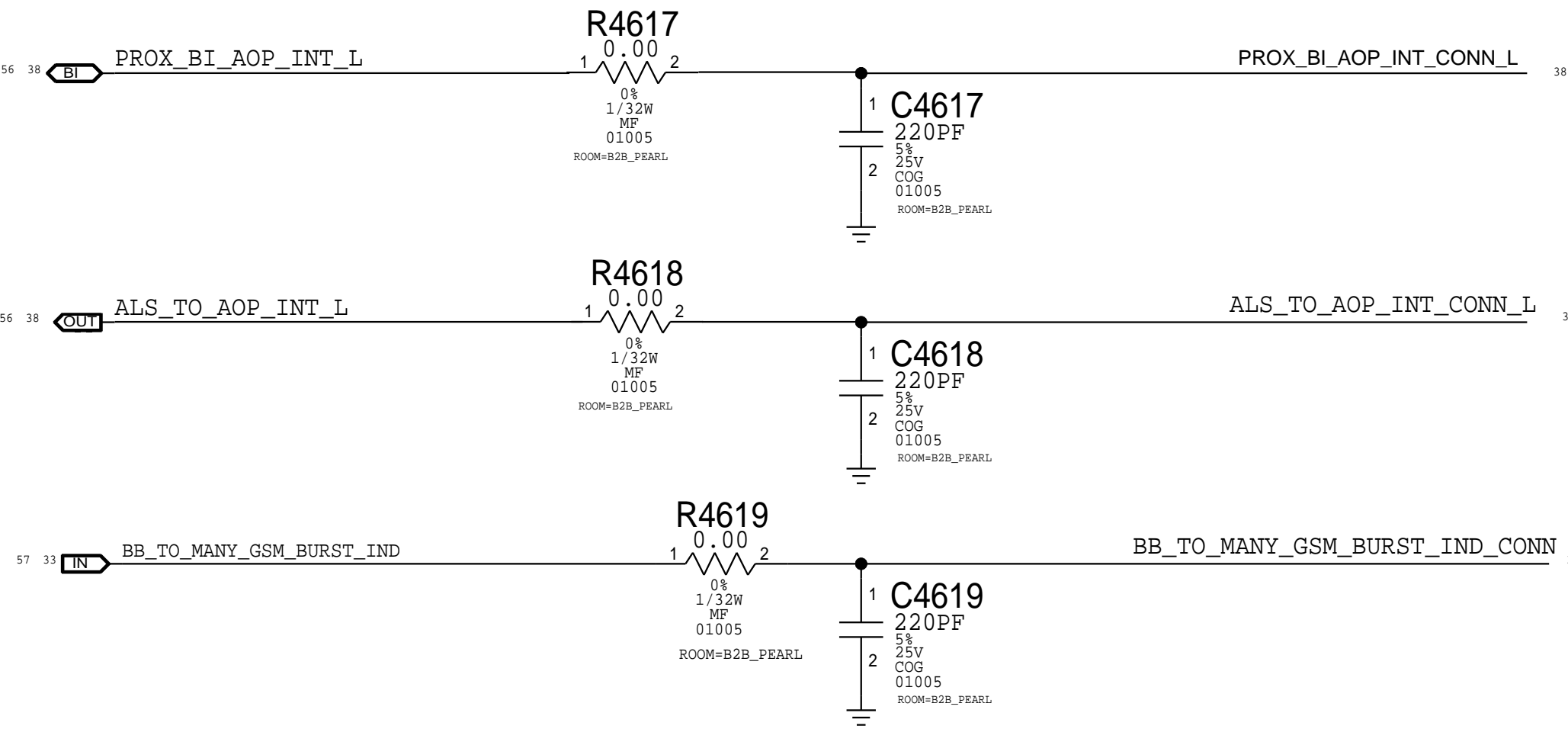
PROX & HALL POWER



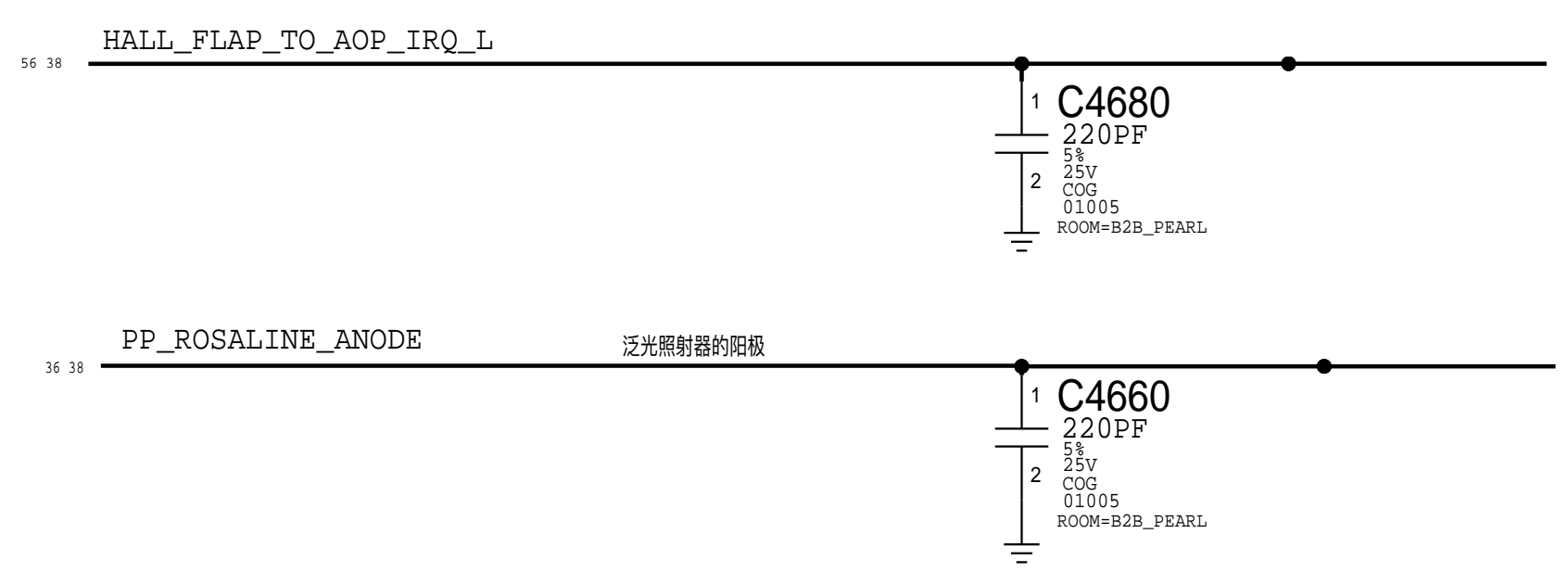
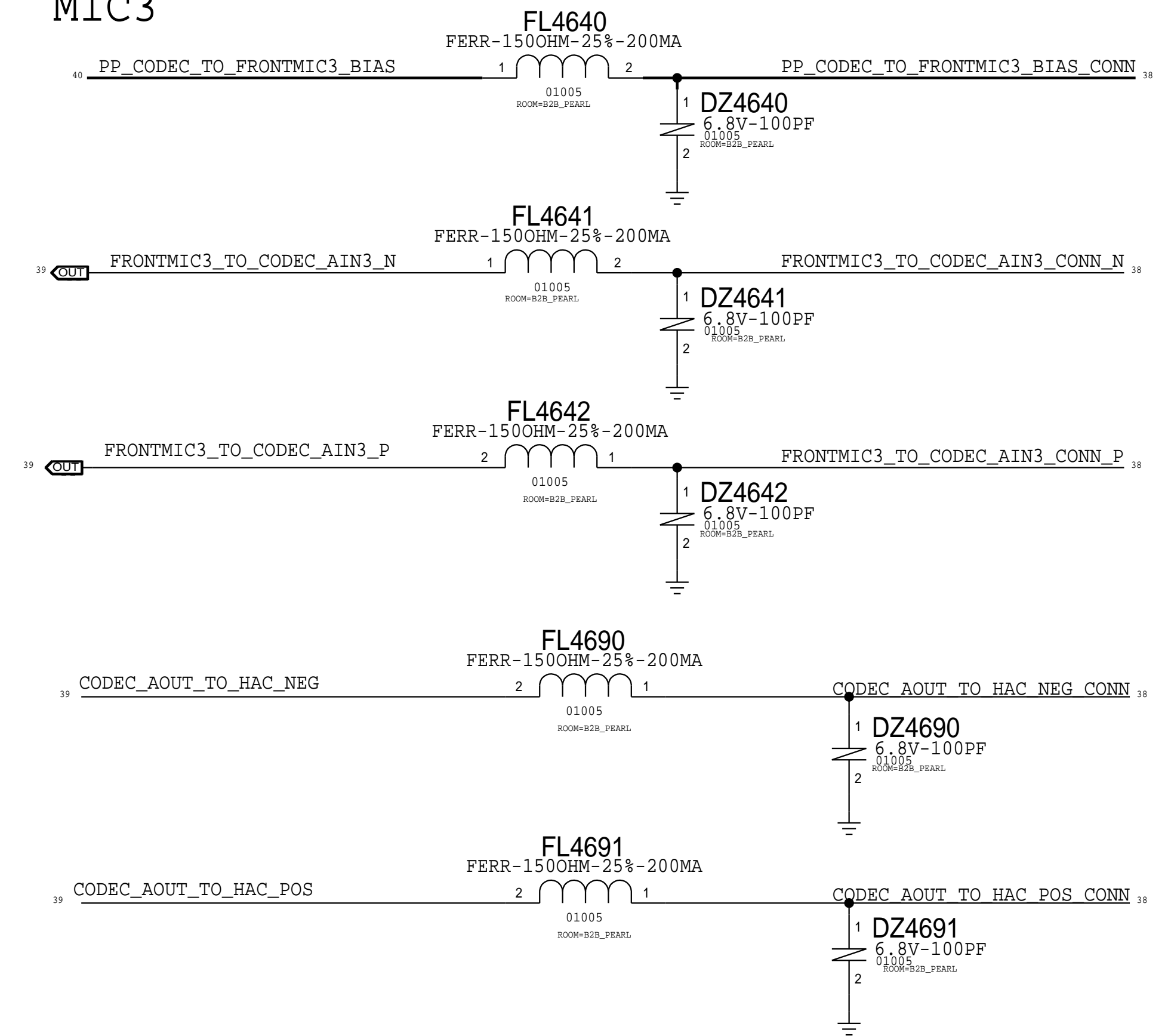
SPEAKER2



PROX/ALS/YOGI I/O

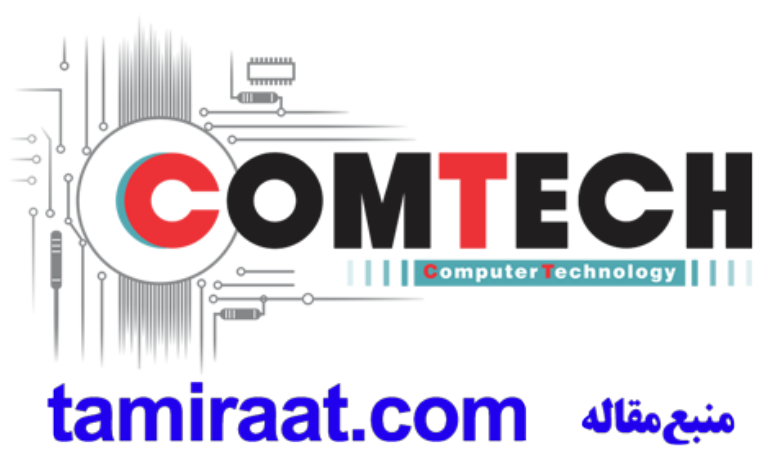


MIC3



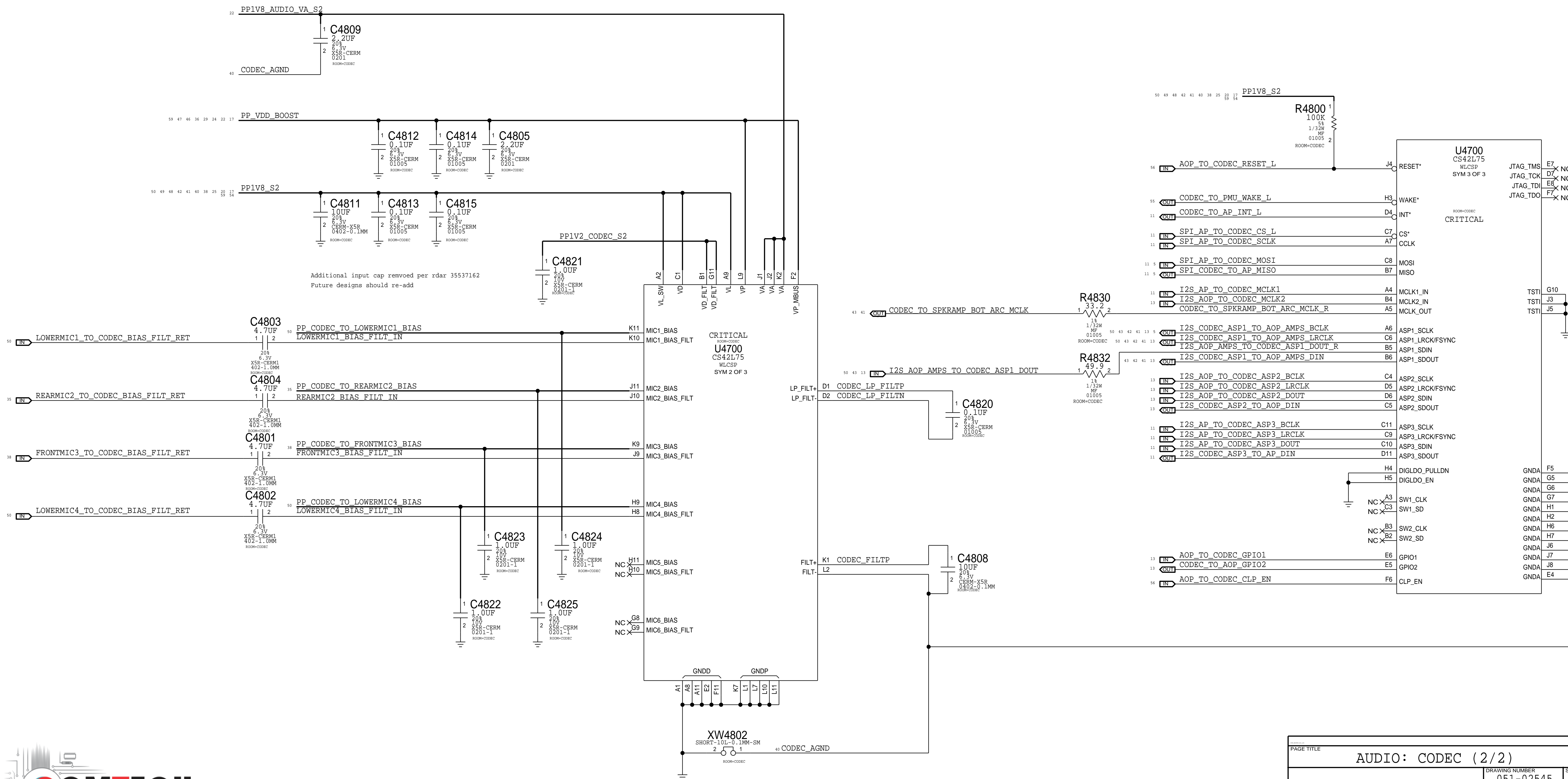
PAGE TITLE		
PEARL: B2B Rosaline + Sensor		
DRAWING NUMBER	051-02545	SIZE
REVISION	7.0.0	D
BRANCH		
PAGE	46 OF 85	
SHEET	38 OF 60	

CALLAN AUDIO CODEC (ANALOG INPUTS & OUTPUTS)



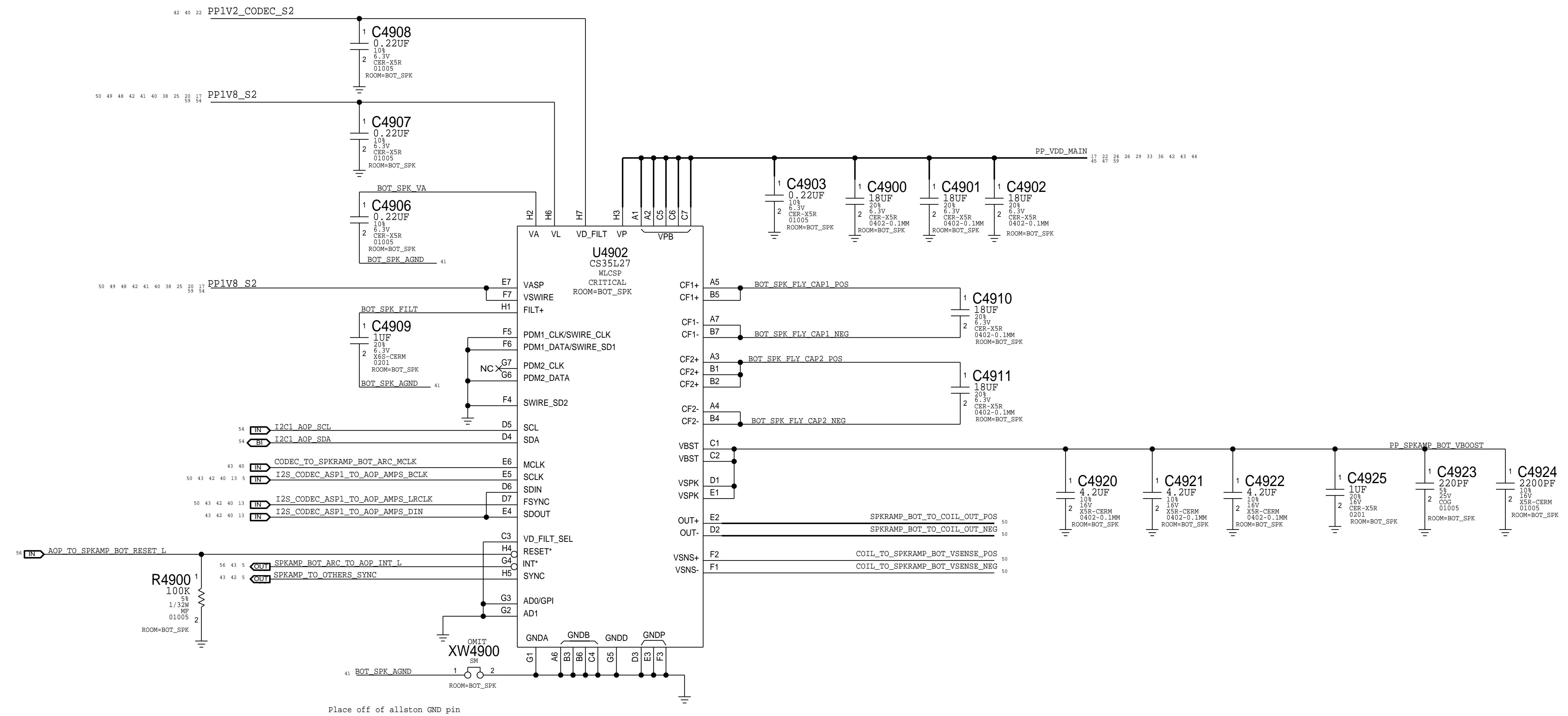
PAGE TITLE		
AUDIO: CODEC (1/2)		
DRAWING NUMBER	051-02545	SIZE
REVISION	7.0.0	D
BRANCH		
PAGE	47 OF 85	
SHEET	39 OF 60	

CALLAN AUDIO CODEC (POWER & I/O)

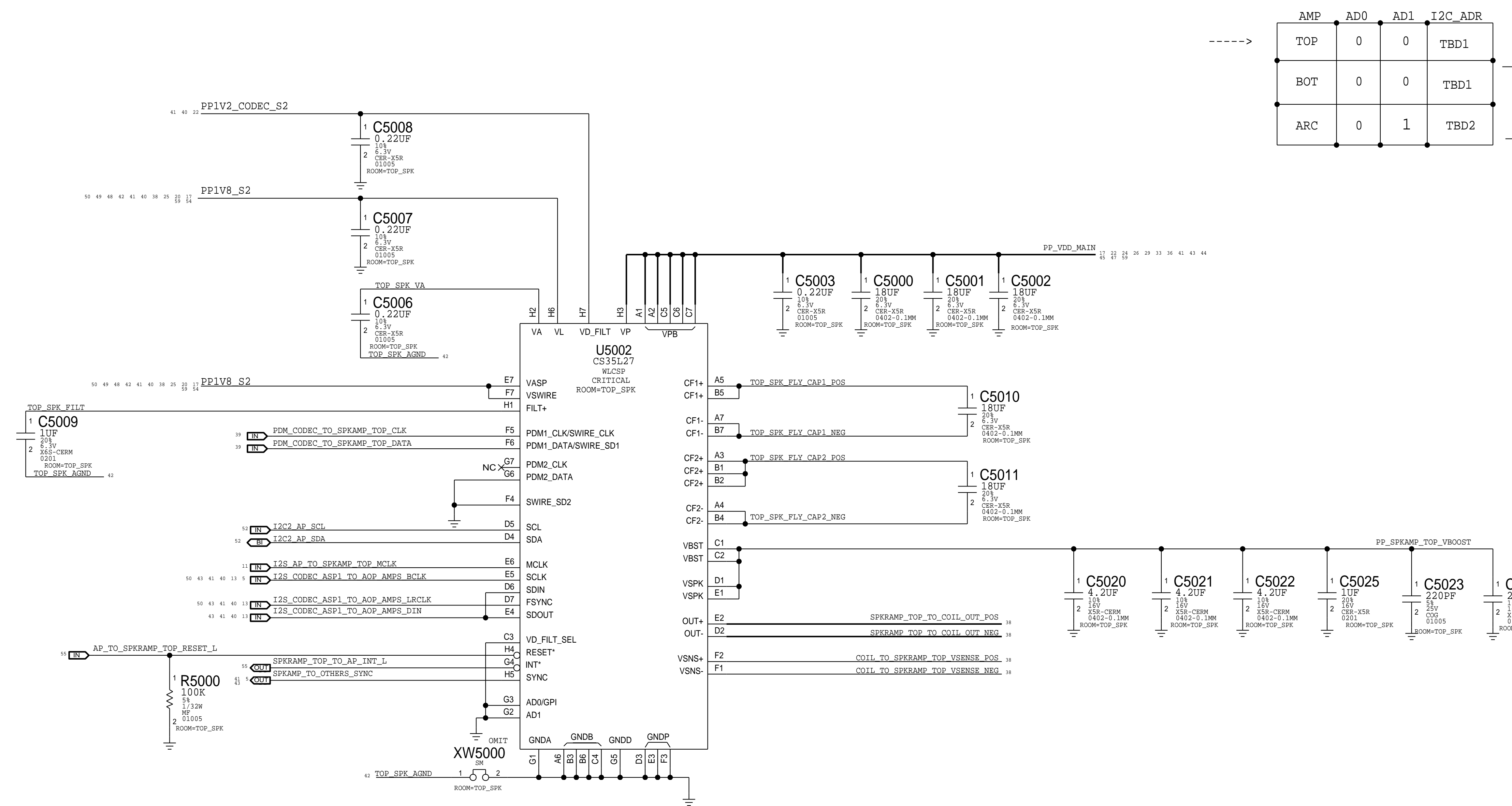


PAGE TITLE		
AUDIO: CODEC (2/2)		
DRAWING NUMBER	051-02545	SIZE
REVISION	7.0.0	D
BRANCH		
PAGE	48 OF 85	
SHEET	40 OF 60	

	AMP	AD0	AD1	I2C_ADR	
----->	TOP	0	0	TBD1	AP I2C2
	BOT	0	0	TBD1	AOP I2C1
	ARC	0	1	TBD2	



PAGE TITLE			SYNC_DATE=04/05/2017
AUDIO: SOUTH SPKAMP			
DRAWING NUMBER	051-02545	SIZE	D
REVISION	7.0.0		
BRANCH			
PAGE	49 OF 85		
SHEET	41 OF 60		



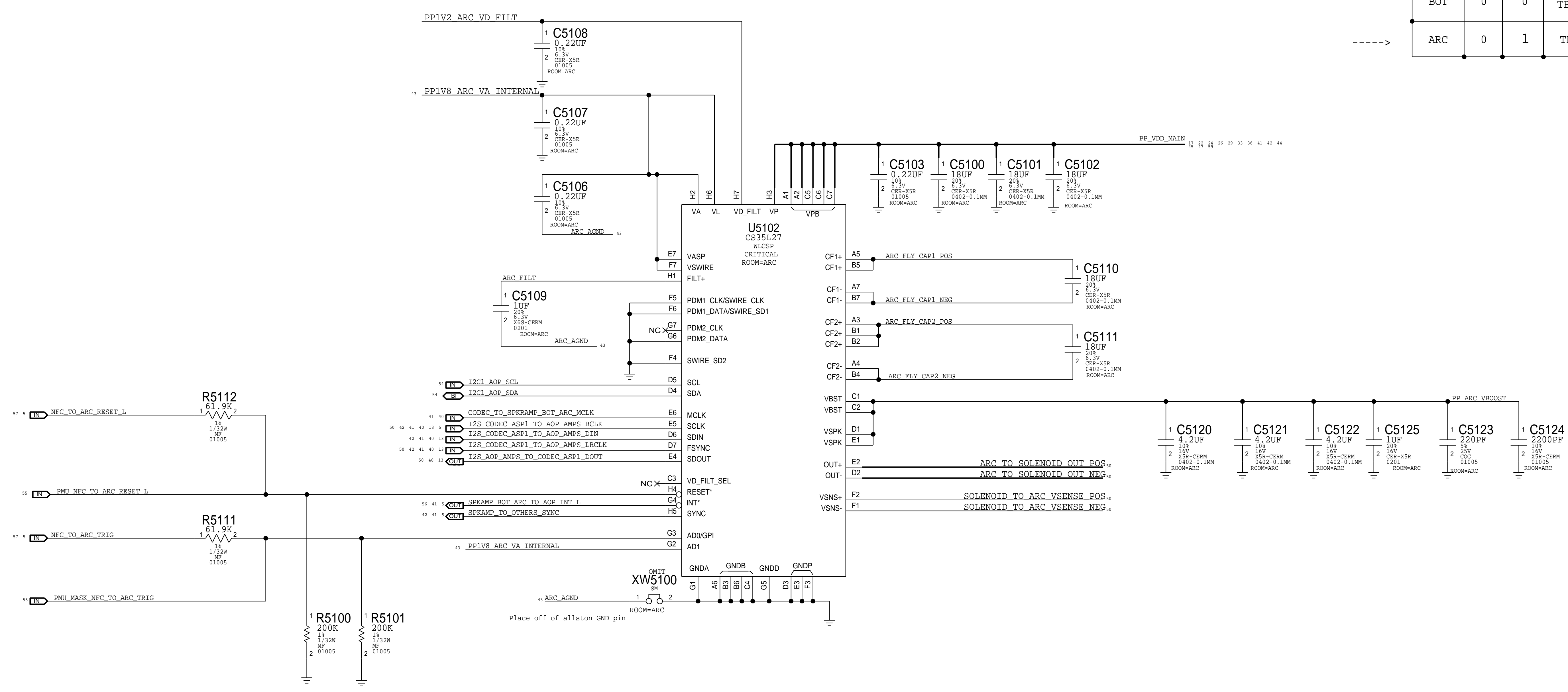
AMP	AD0	AD1	I2C_ADR
TOP	0	0	TBD1
BOT	0	0	TBD1
ARC	0	1	TBD2

AP I2C2
AOP I2C1



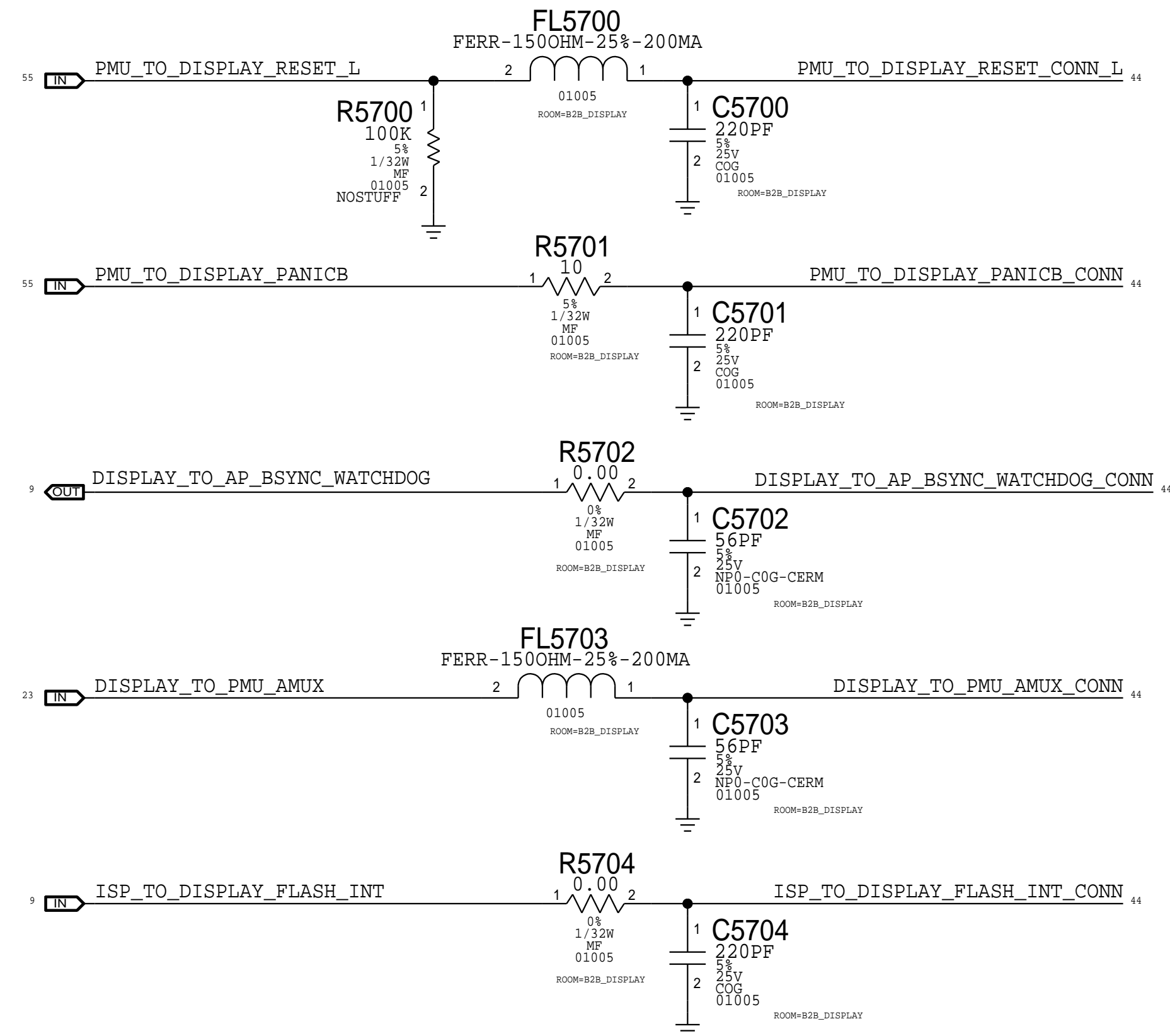
PAGE TITLE		
AUDIO: NORTH SPKAMP		
DRAWING NUMBER	051-02545	SIZE
REVISION	7.0.0	D
BRANCH		
PAGE		
50 OF 85		
SHEET		
42 OF 60		

	AMP	AD0	AD1	I2C_ADR	
TOP	0	0	TBD1	AP I2C2	
BOT	0	0	TBD1		
ARC	0	1	TBD2	AOP I2C1	



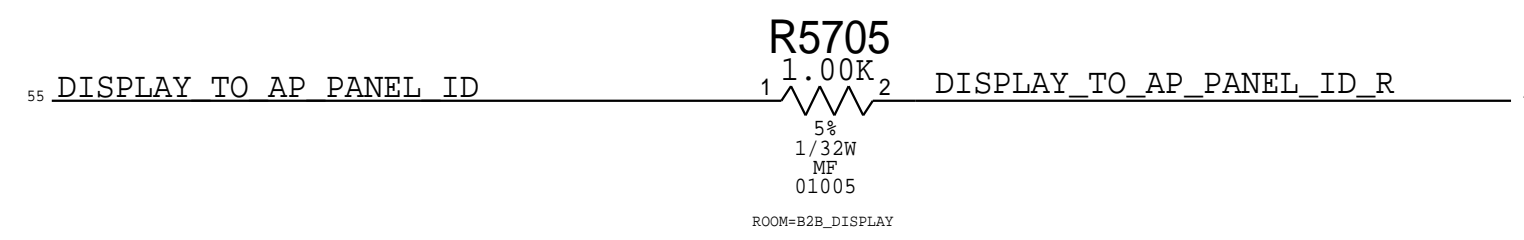
PAGE TITLE		
ARC: AMP		
DRAWING NUMBER	051-02545	SIZE
REVISION	7.0.0	D
BRANCH		
PAGE		
51 OF 85		
SHEET		
43 OF 60		

Display Control Signals



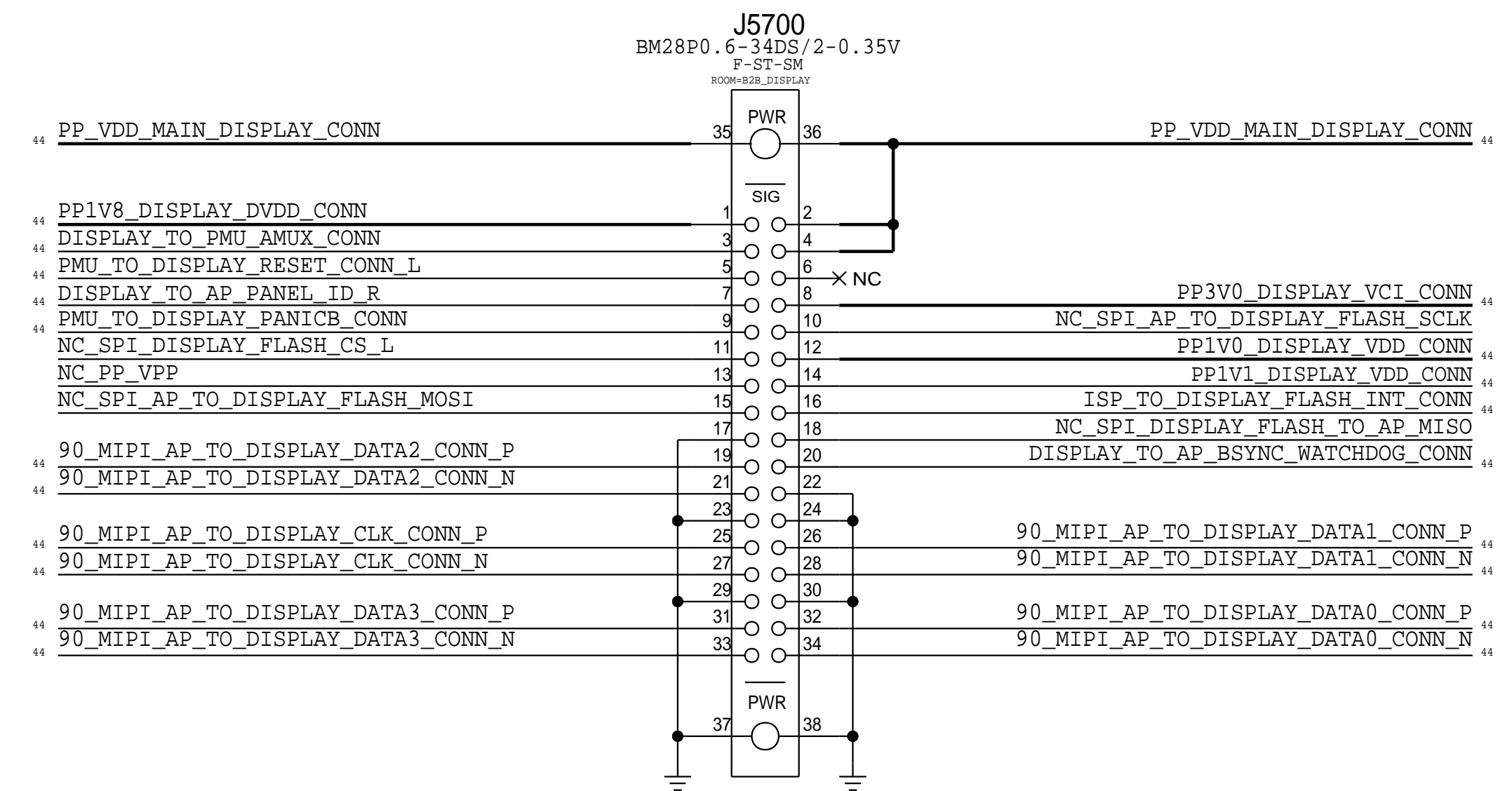
Display 1V0 LDO for D33 second display vendor

rdar: #29872369



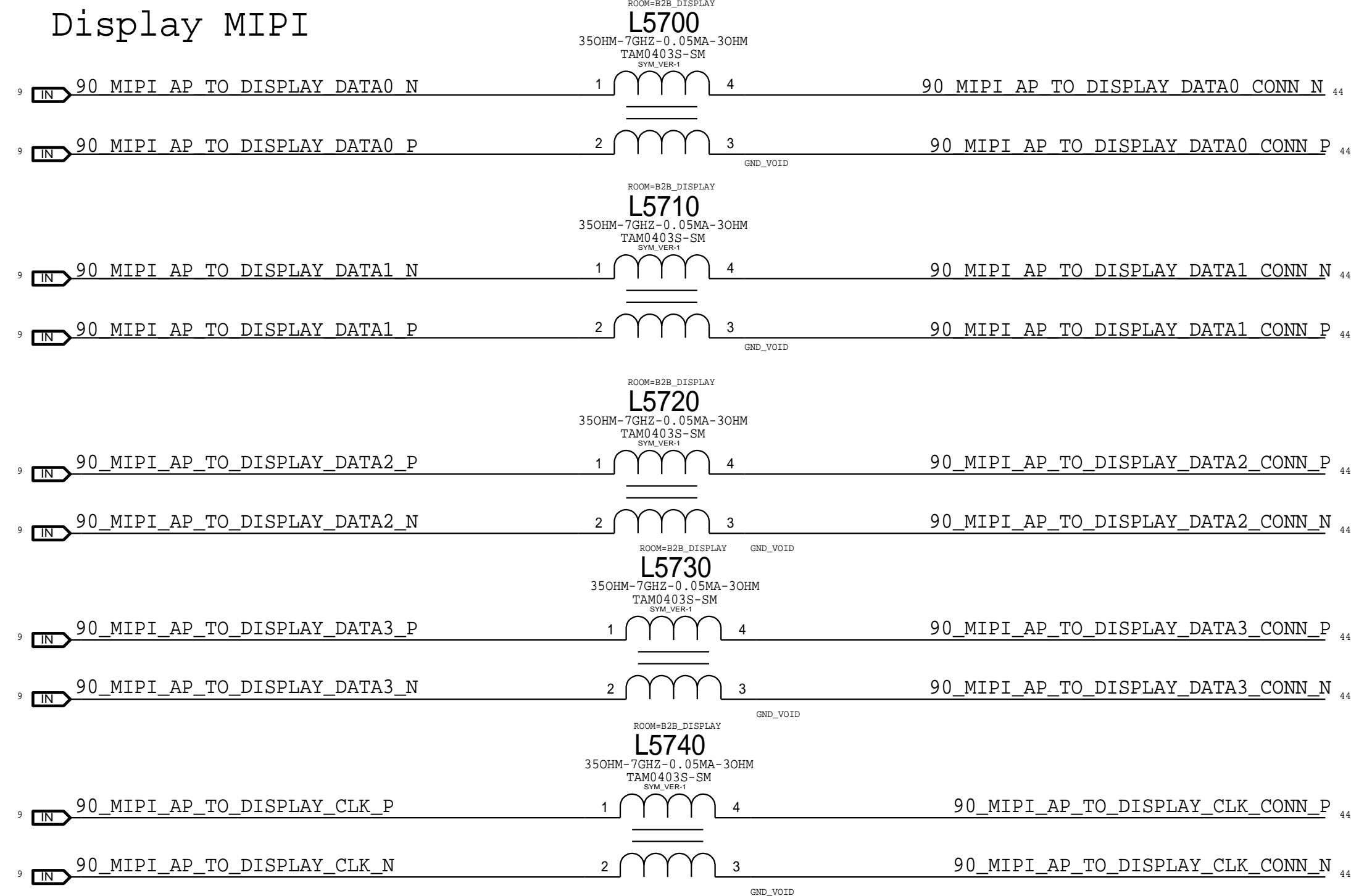
Display Flex Connector

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

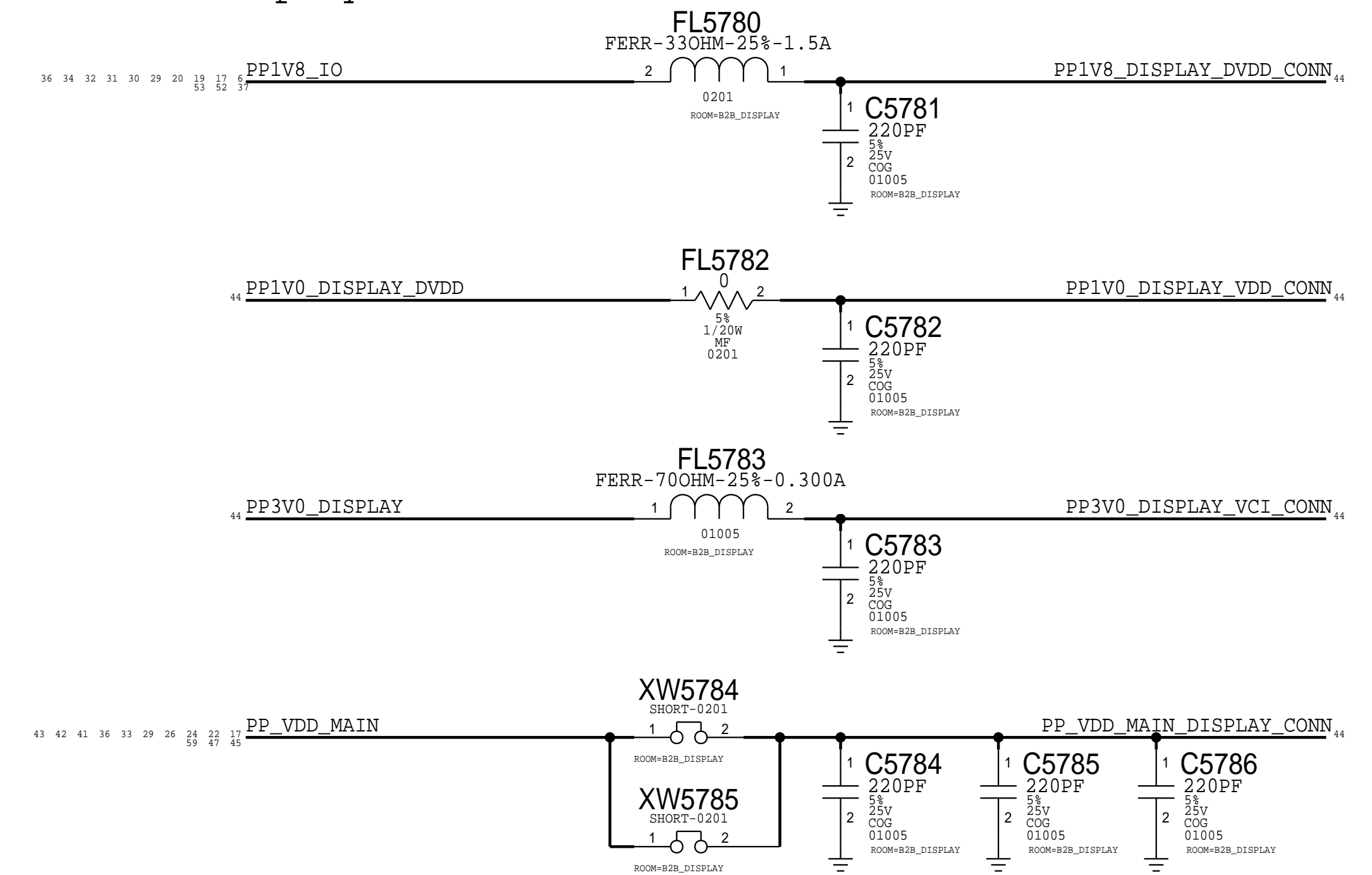


Display MIPI

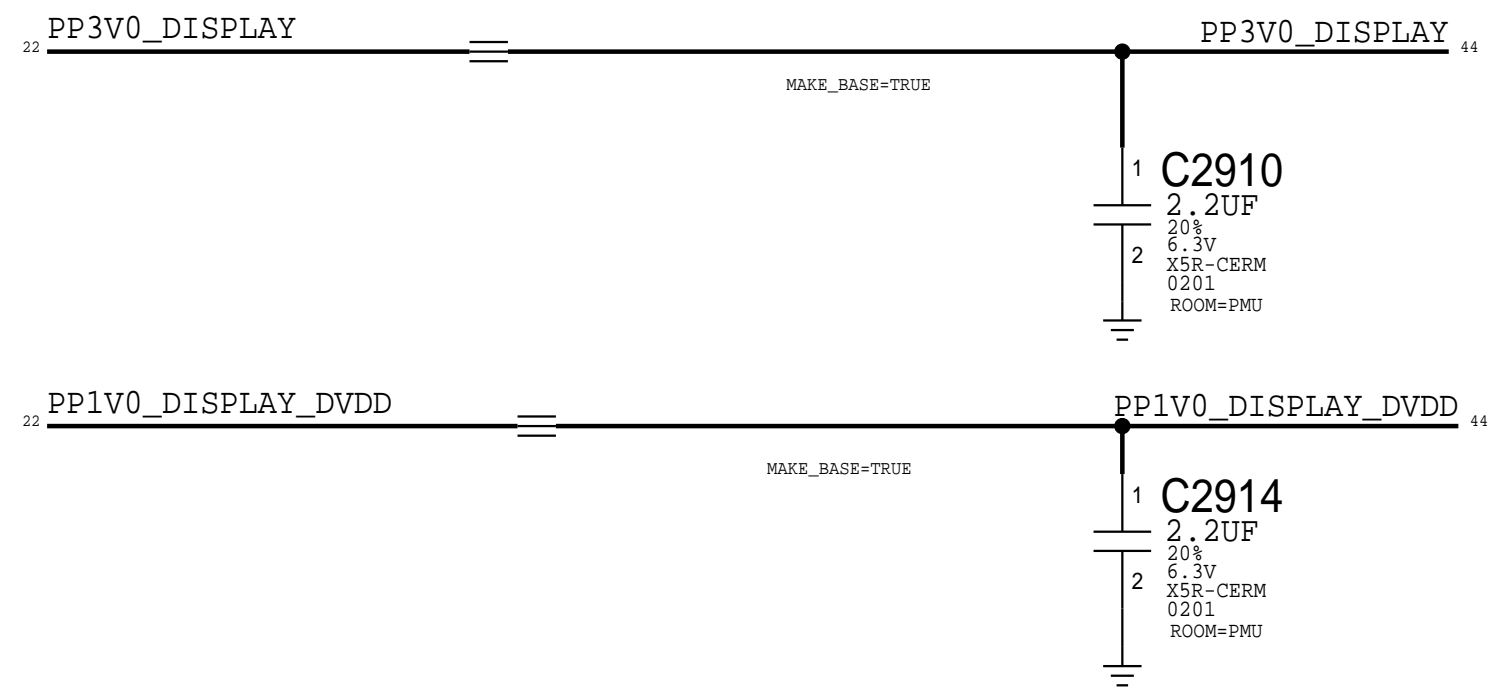
Display MIPI



Display Power

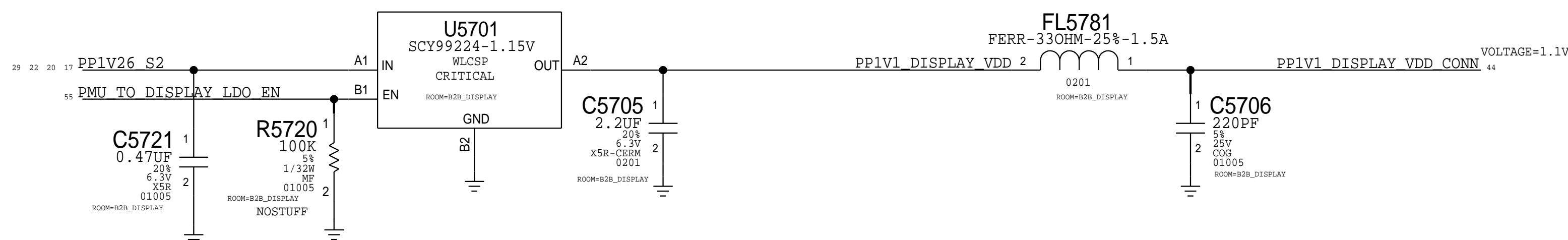


Here for sync'ing purposes



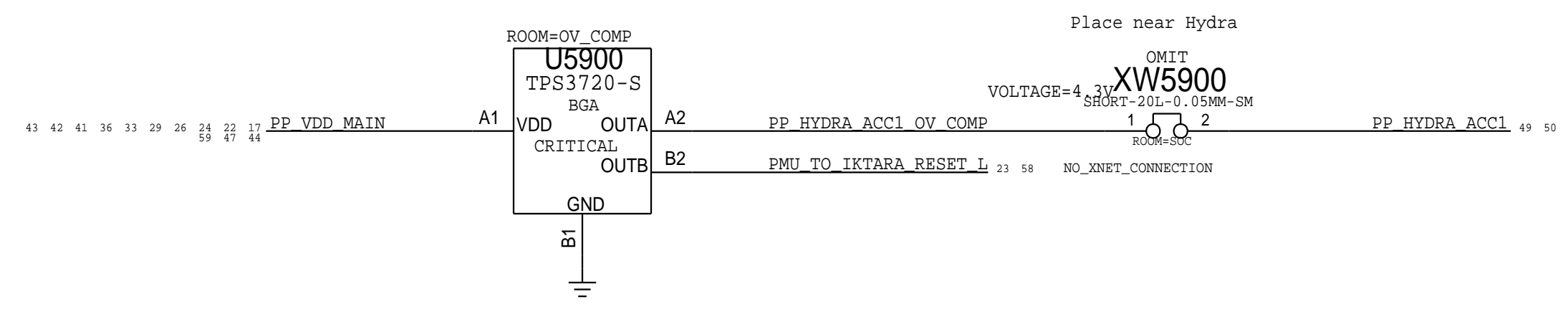
1.2V LDO is for LGC test chip

Once normal panel is available switch to 1.1V



PAGE TITLE		CG: B2B Display	
DRAWING NUMBER	051-02545	SIZE	D
REVISION	7.0.0		
BRANCH			
PAGE	57 OF 85		
SHEET	44 OF 60		

VDD_MAIN OV CUT-OFF CIRCUIT

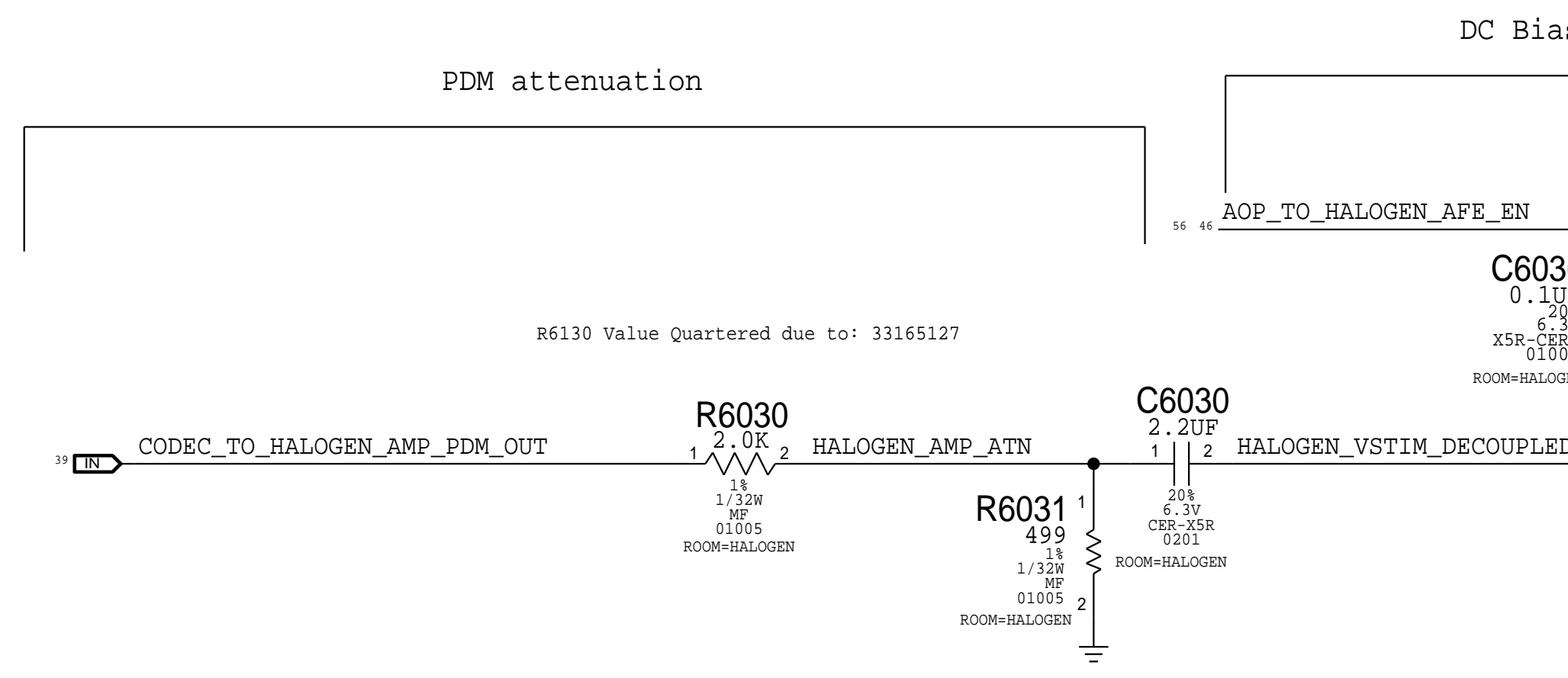
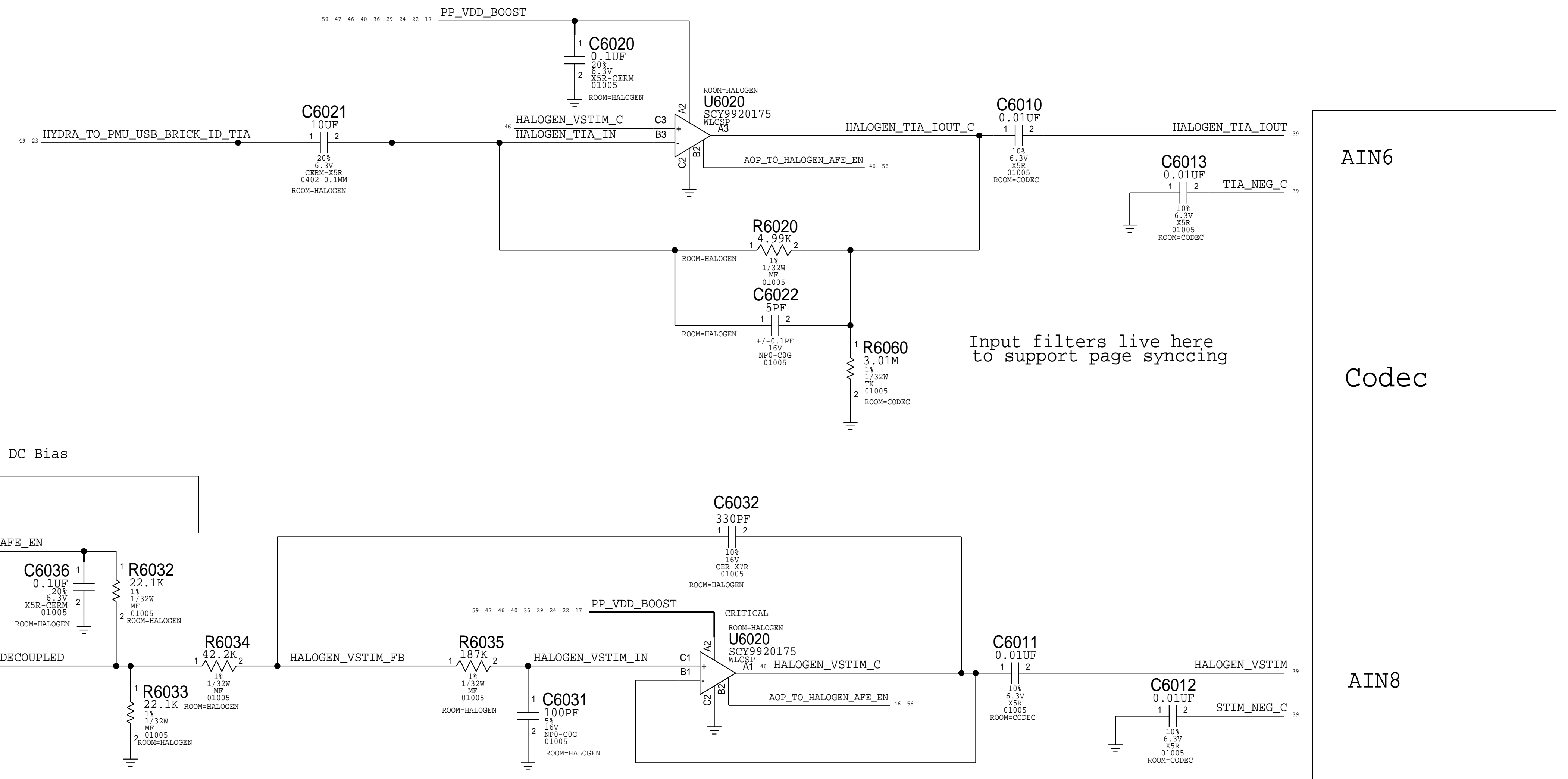


PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
353S01375	353S01398	ALT_PARTS	U5900	ON SEMI



PAGE TITLE I/O: Overvoltage Cut-Off Circuit		
DRAWING NUMBER 051-02545	SIZE D	
REVISION 7.0.0		
BRANCH		
PAGE 59 OF 85		
SHEET 45 OF 60		

LDCM



PAGE TITLE		
I/O: LDCM		
DRAWING NUMBER	051-02545	SIZE
REVISION	7.0.0	D
BRANCH		
PAGE		
60 OF 85		
SHEET		
46 OF 60		

D

D

C

C

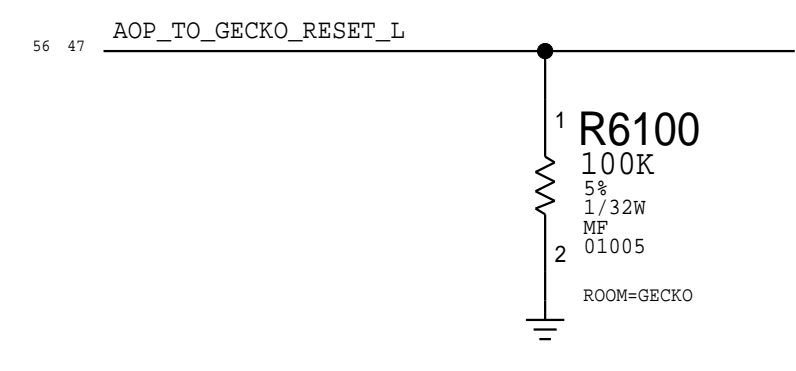
B

B

A

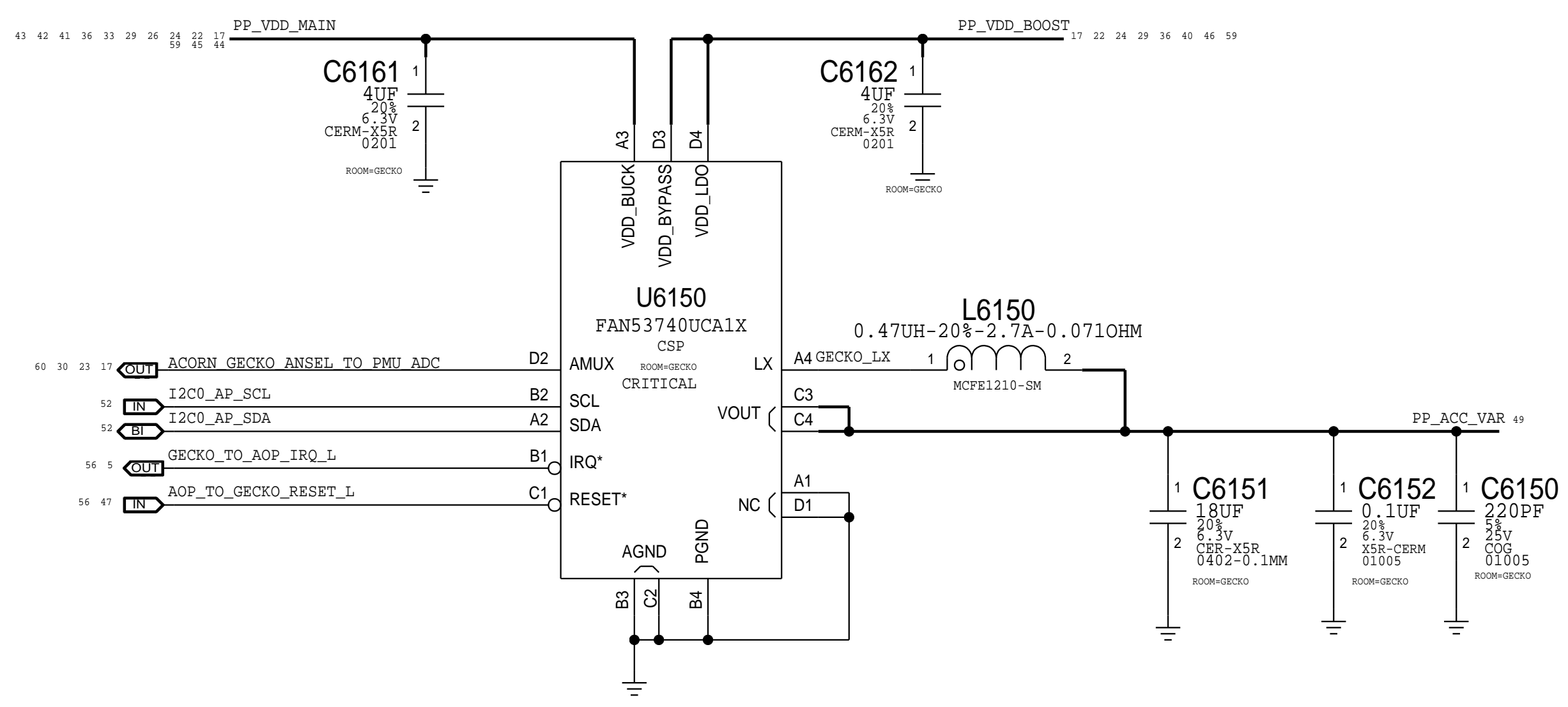
A

GECKO Reset Pull Down



Gecko

I2C ADDRESS: 0X52



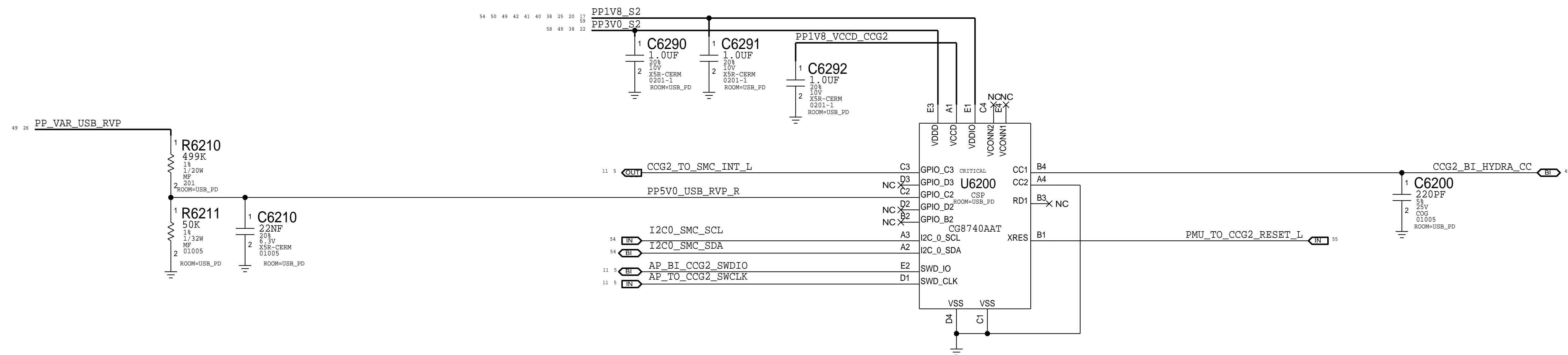
IND Alternate

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
152800854	152800853	ALT_PARTS	L6150	IND.PWB.0.4700.204.2.0A.CY
152800855	152800853	ALT_PARTS	L6150	IND.PWB.0.4700.204.2.1A.Moravia



PAGE TITLE		
I/O: Gecko		
DRAWING NUMBER	051-02545	SIZE
REVISION	7.0.0	D
BRANCH		
PAGE	61 OF 85	
SHEET	47 OF 60	

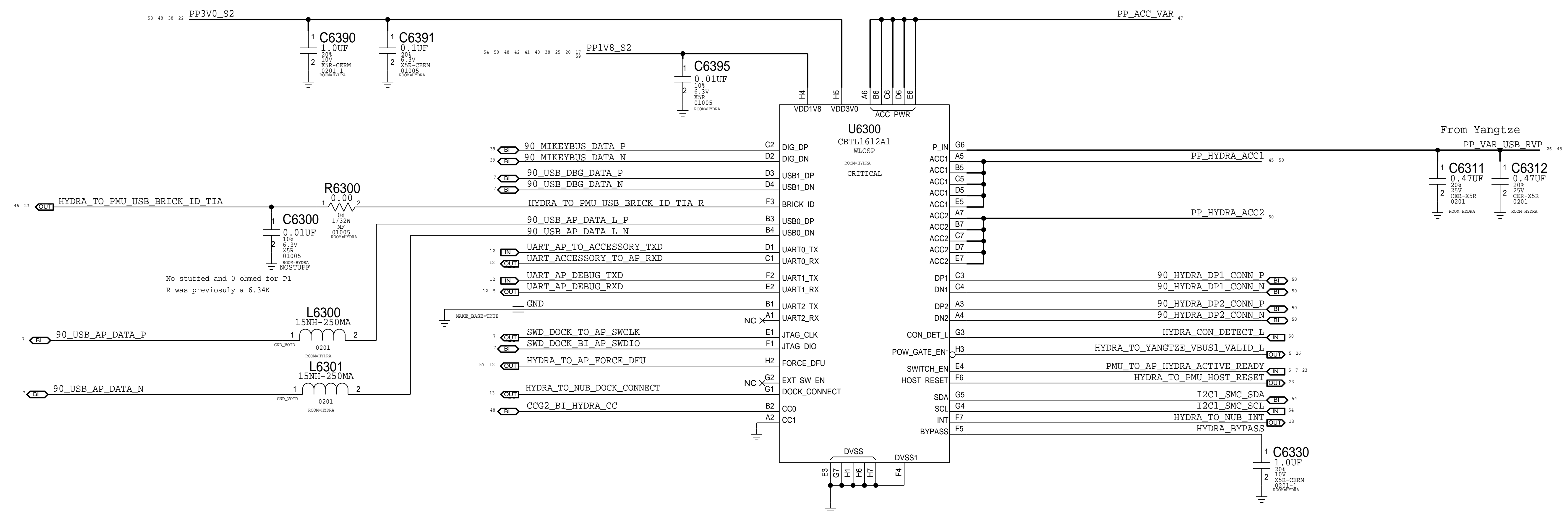
USB-PD



PAGE TITLE		
I/O: USB PD		
DRAWING NUMBER	051-02545	SIZE
REVISION	7.0.0	D
BRANCH		
PAGE	62 OF 85	
SHEET	48 OF 60	

Hydra

I2C Address: 0011010X



No stuffed and 0 ohmed for P1
R was previously a 6.34K



PAGE TITLE		
I/O: Hydra		
DRAWING NUMBER	051-02545	SIZE
REVISION	7.0.0	D
BRANCH		
PAGE	63 OF 85	
SHEET	49 OF 60	

Top Board Interposer APN:998-12513 <--- STUFFED
 Bot Board Interposer APN:998-12514

J_INT_BOT
SMT-PAD
SYM 1 OF 2

INTERPOSER-MLB-BOT-V3-D32

IO1	95	AP_TO_NFC_DEV_WAKE
IO2	96	AP_TO_NFC_FW_DWLD_REQ
IO3	97	GND
IO4	98	PMU_TO_NFC_VDD_MAIN_EN
IO5	99	UART_AOP_TO_BB_TXD
IO6	100	UART_AP_TO_GNSS_TXD
IO7	101	GND
IO8	102	AP_TO_BB_COREDUMP_TRIG
IO9	103	UART_AP_TO_NFC_TXD
IO10	104	UART_NFC_TO_AP_RXD
IO11	105	BB_TO_AP_RESET_DETECT_L
IO12	106	GND
IO13	107	BOARD_ID2
IO14	108	AP_TO_GNSS_TIME_MARK
IO15	109	NC_INTERPOSER_I09
IO16	110	TO_BB_PEAK_POWER_INDICATOR
IO17	111	AP_TO_BBPMU_RADIO_ON_L
IO18	112	PP_VDD_MAIN
IO19	113	PP_VDD_MAIN
IO20	114	PP_VDD_MAIN
IO21	115	GND
IO22	116	90_PCIE_BB_TO_AP_RXD_N
IO23	117	90_PCIE_BB_TO_AP_RXD_P
IO24	118	GND
IO25	119	90_PCIE_AP_TO_BB_TXD_N
IO26	120	90_PCIE_AP_TO_BB_TXD_P
IO27	121	GND
IO28	122	90_PCIE_AP_TO_BB_REFLCK_P
IO29	123	90_PCIE_AP_TO_BB_REFLCK_N
IO30	124	GND
IO31	125	UART_BB_TO_AOP_RXD
IO32	126	UART_GNSS_TO_AP_RXD
IO33	127	PCIE_AP_TO_BB_PERST_L
IO34	128	UART_NFC_TO_AP_CTS_L
IO35	129	GND
IO36	130	UART_AP_TO_NFC_RTS_L
IO37	131	PMU_AMUX_BX
IO38	132	PMU_AMUX_AX
IO39	133	GND
IO40	134	PCIE_BB_BI_AP_CLKREQ_L
IO41	135	NC_INT_135
IO42	136	TO_BB_PEAK_POWER_INDICATOR
IO43	137	GND
IO44	138	PP_VDD_MAIN
IO45	139	PP_VDD_MAIN
IO46	140	PP_VDD_MAIN
IO47	141	GND
IO48	142	GND
IO49	143	GND
IO50	144	GND
IO51	145	GND
IO52	146	GND
IO53	147	GND
IO54	148	GND
IO55	149	GND
IO56	150	GND
IO57	151	GND
IO58	152	GND
IO59	153	GND
IO60	154	PP_VDD_MAIN
IO61	155	PP_VDD_MAIN
IO62	156	GND
IO63	157	PP_VDD_MAIN
IO64	158	PP_VDD_MAIN
IO65	159	GND
IO66	160	PMU_TO_NFC_EN
IO67	161	GND
IO68	162	PMU_TO_BBPMU_RESET_L
IO69	163	GND
IO70	164	PMU_TO_TOUCH_CLK32K
IO71	165	GND
IO72	166	PCIE_WLAN_BI_AP_CLKREQ_L
IO73	167	GND
IO74	168	GND
IO75	169	BB_TO_PMU_PCIE_HOST_WAKE_L
IO76	170	GND
IO77	171	GND
IO78	172	WLAN_TO_PMU_HOST_WAKE
IO79	173	GND
IO80	174	PMU_TO_WLAN_CLK32K
IO81	175	GND
IO82	176	NFC_TO_AOP_HOST_WAKE
IO83	177	GND
IO84	178	TOUCH_TO_MANY_FORCE_PWM
IO85	179	GND
IO86	180	UART_AP_TO_BT_TXD
IO87	181	GND
IO88	182	UART_AP_TO_BT_RTS_L
IO89	183	GND
IO90	184	GND
IO91	185	GND
IO92	186	GND
IO93	187	GND
IO94	188	GND

J_INT_BOT
SMT-PAD
SYM 2 OF 2

INTERPOSER-MLB-BOT-V3-D32

IO189	189	GND
IO190	190	GND
IO191	191	GND
IO192	192	GND
IO193	193	GND
IO194	194	CORN_GECKO_ANSEL_TO_PMU_ADC
IO195	195	GND
IO196	196	RACER_TO_AOP_INT_L
IO197	197	GND
IO198	198	HALL_CASE_TO_AOP_SOUTH_L
IO199	199	GND
IO200	200	PMU_TO_IKTARA_EN_EXT_LV8
IO201	201	GND
IO202	202	IKTARA_TO_SMC_INT
IO203	203	GND
IO204	204	I2C0_SMC_SCL
IO205	205	I2C0_SMC_SDA
IO206	206	GND
IO207	207	IKTARA_COIL2
IO208	208	IKTARA_COIL2
IO209	209	IKTARA_COIL2
IO210	210	IKTARA_COIL2
IO211	211	IKTARA_COIL1
IO212	212	IKTARA_COIL1
IO213	213	IKTARA_COIL1
IO214	214	IKTARA_COIL1
IO215	215	GND
IO216	216	NC_INTERPOSER_I09
IO217	217	GND
IO218	218	NC_INTERPOSER_311
IO219	219	GND
IO220	220	AP_CANARY1
IO221	221	GND
IO222	222	GND
IO223	223	GND
IO224	224	GND
IO225	225	GND
IO226	226	GND
IO227	227	GND
IO228	228	GND
IO229	229	GND
IO230	230	GND
IO231	231	GND
IO232	232	GND
IO233	233	GND
IO234	234	GND
IO235	235	GND
IO236	236	GND
IO237	237	GND
IO238	238	GND
IO239	239	GND
IO240	240	GND
IO241	241	GND
IO242	242	GND
IO243	243	GND
IO244	244	GND
IO245	245	GND
IO246	246	GND
IO247	247	GND
IO248	248	GND
IO249	249	GND
IO250	250	GND
IO251	251	GND
IO252	252	GND
IO253	253	GND
IO254	254	GND
IO255	255	GND
IO256	256	GND
IO257	257	GND
IO258	258	GND
IO259	259	GND
IO260	260	GND
IO261	261	GND
IO262	262	GND
IO263	263	GND
IO264	264	GND
IO265	265	GND
IO266	266	GND
IO267	267	GND
IO268	268	GND
IO269	269	GND
IO270	270	GND
IO271	271	GND
IO272	272	GND
IO273	273	GND
IO274	274	GND
IO275	275	GND
IO276	276	GND
IO277	277	GND
IO278	278	GND
IO279	279	GND
IO280	280	GND
IO281	281	GND

D

D

C

C

B

B

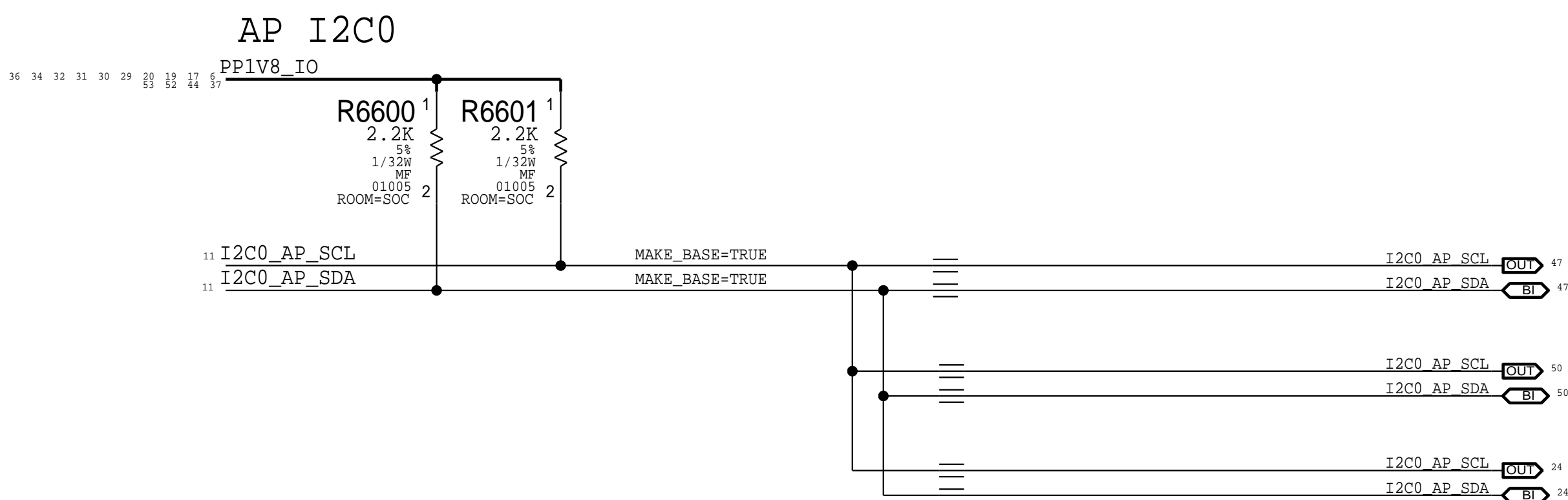
A

A

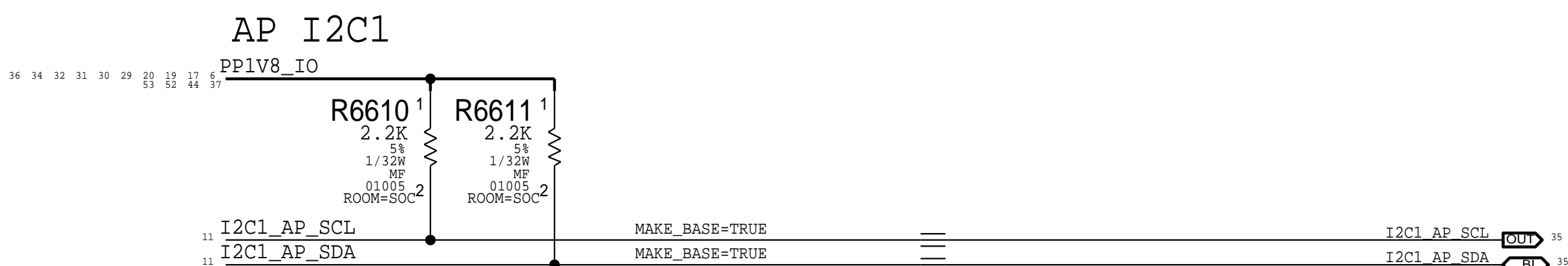


PAGE TITLE	
B2B: Interposer Bot	
DRAWING NUMBER	051-02545
REVISION	7.0.0
BRANCH	
PAGE	65 OF 85
SHEET	51 OF 60

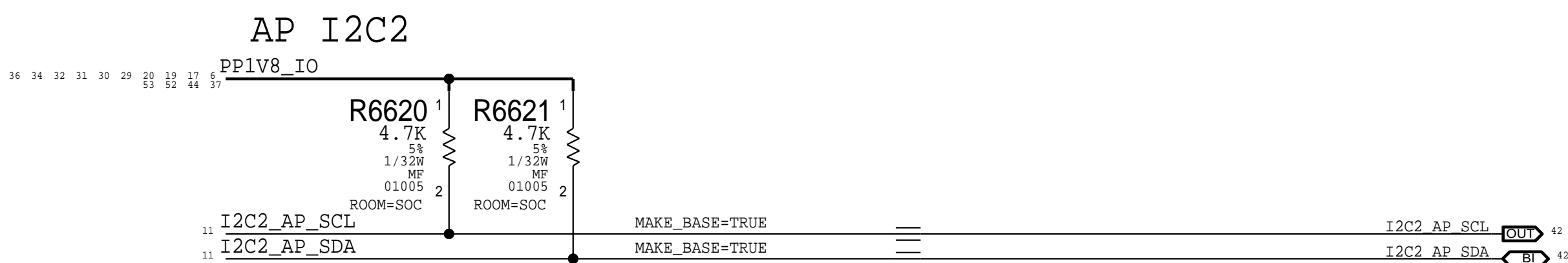
AP I2C



Bus Name	Bus Voltage	Bus Speed	Device	7-Bit Addr.	Binary	8-Bit Addr.	Min Speed	Max Speed	Location
AP I2C0	PPIV8_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	PPIV8_IO	100 kHz	MIC2	0x56	1010 100X	0xA8, 0xA9	-	1 MHz	Strobe Flex

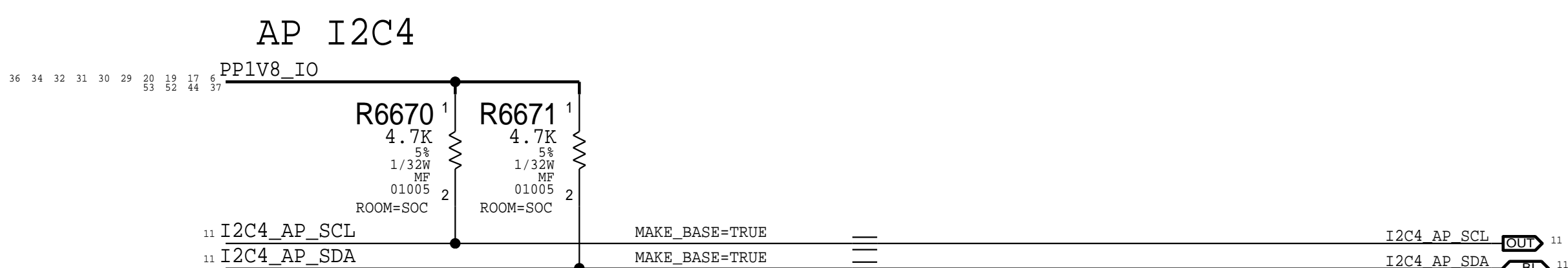


Bus Name	Bus Voltage	Bus Speed	Device	7-Bit Addr.	Binary	8-Bit Addr.	Min Speed	Max Speed	Location
AP I2C2	PPIV8_IO	1 MHz	Top Speaker Amp	0x40	1000 000X	0x80, 0x81	-	1 MHz	Top MLB



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	PPIV8_IO	400 kHz	ACORN	0x2A	0101 010X	0x54, 0x55	-	1 MHz	Bot MLB
			TOUCH EEPROM	0x51	1010 001X	0xA2, 0xA3	-	1 MHz	Touch Flex

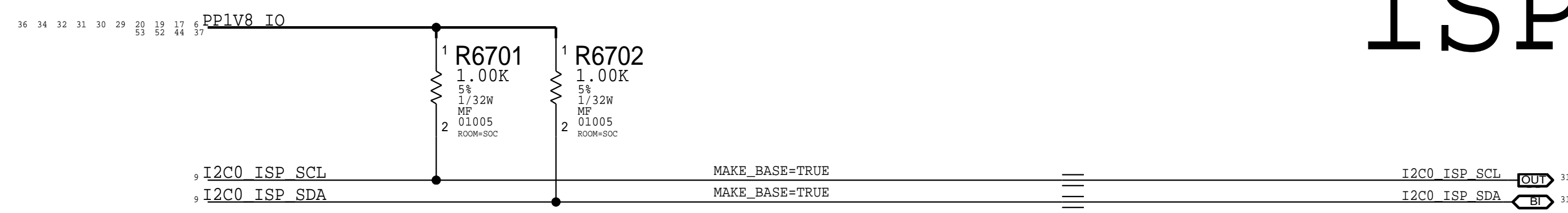


Bus Name	Bus Voltage	Bus Speed	Device	7-Bit Addr.	Location
AP I2C4	PPIV8_IO	400 kHz	LYNX	0x71	Top MLB

PAGE TITLE		
SYSTEM: AP I2C		
DRAWING NUMBER	051-02545	SIZE D
REVISION	7.0.0	
BRANCH		
PAGE	66 OF 85	
SHEET	52 OF 60	

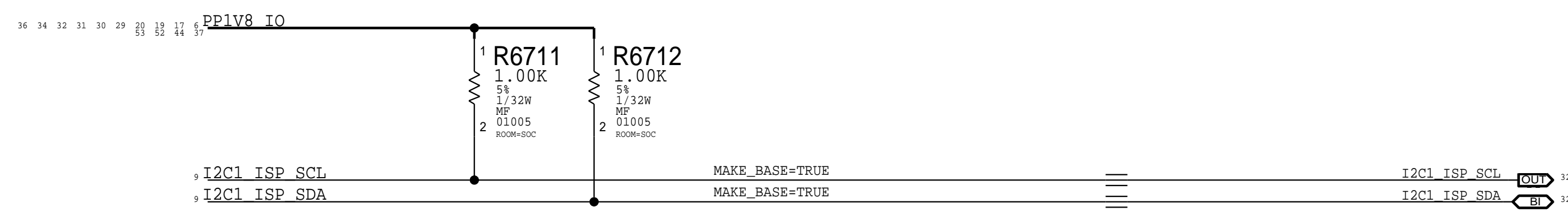
ISP I2C

ISP I2C0



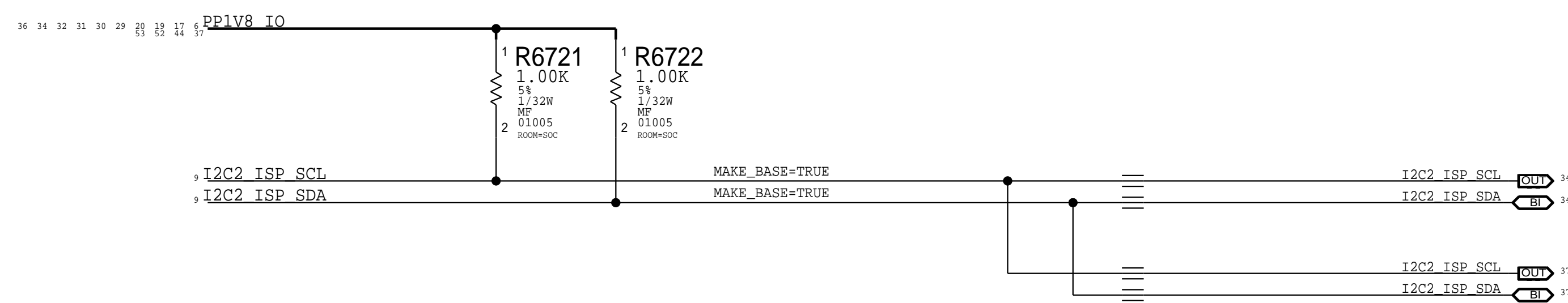
Bus Name	Bus Voltage	Bus Speed	Device	7-Bit Addr.	Binary	8-Bit Addr.	Min Speed	Max Speed	Location
ISP I2C0	PPIV8_IO	1 MHz	Austin	0X10	0010 000X	0x20, 0x21	-	1 MHz	Wide Cam
			Raman	0X3C	0111 100X	0x78, 0x79	-	1 MHz	Wide Cam

ISP I2C1



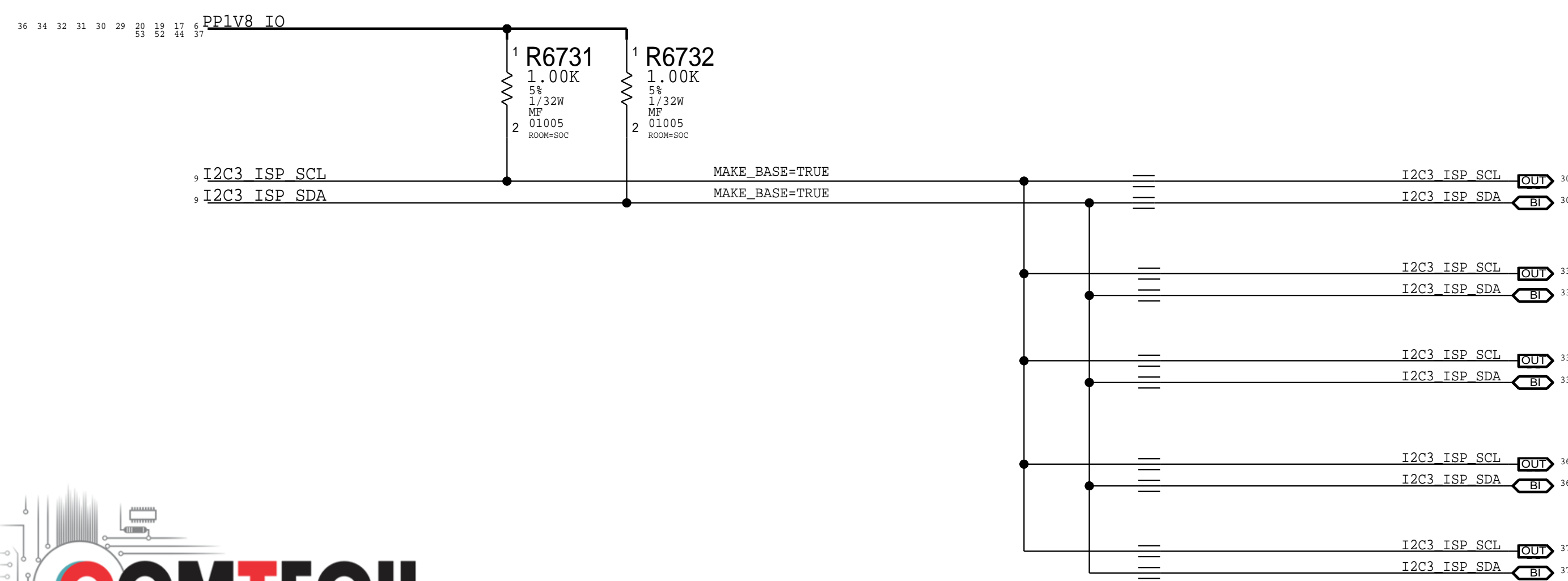
Bus Name	Bus Voltage	Bus Speed	Device	7-Bit Addr.	Binary	8-Bit Addr.	Min Speed	Max Speed	Location
ISP I2C1	PPIV8_IO	1 MHz	Billings	0x20	0100 000X	0x40, 0x41	-	1 MHz	Tele Cam
			Grunberg+	0x1C	0011 100X	0x38, 0x39	-	1 MHz	Tele Cam

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

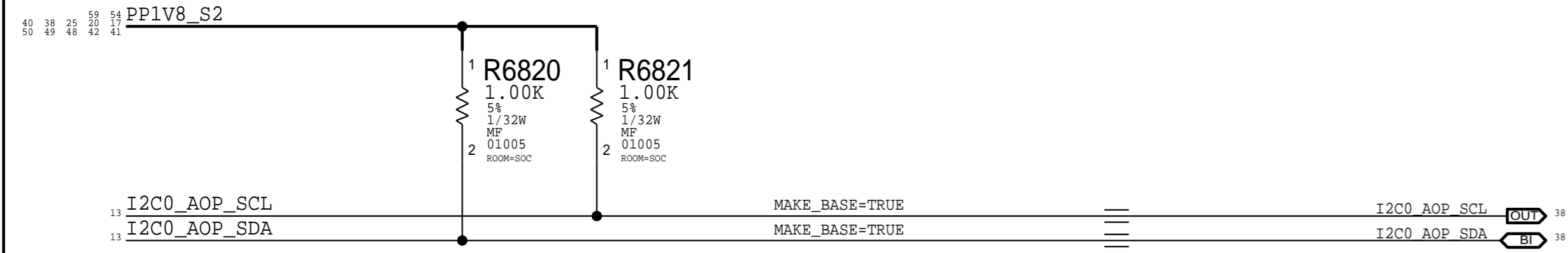
ISP I2C3



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

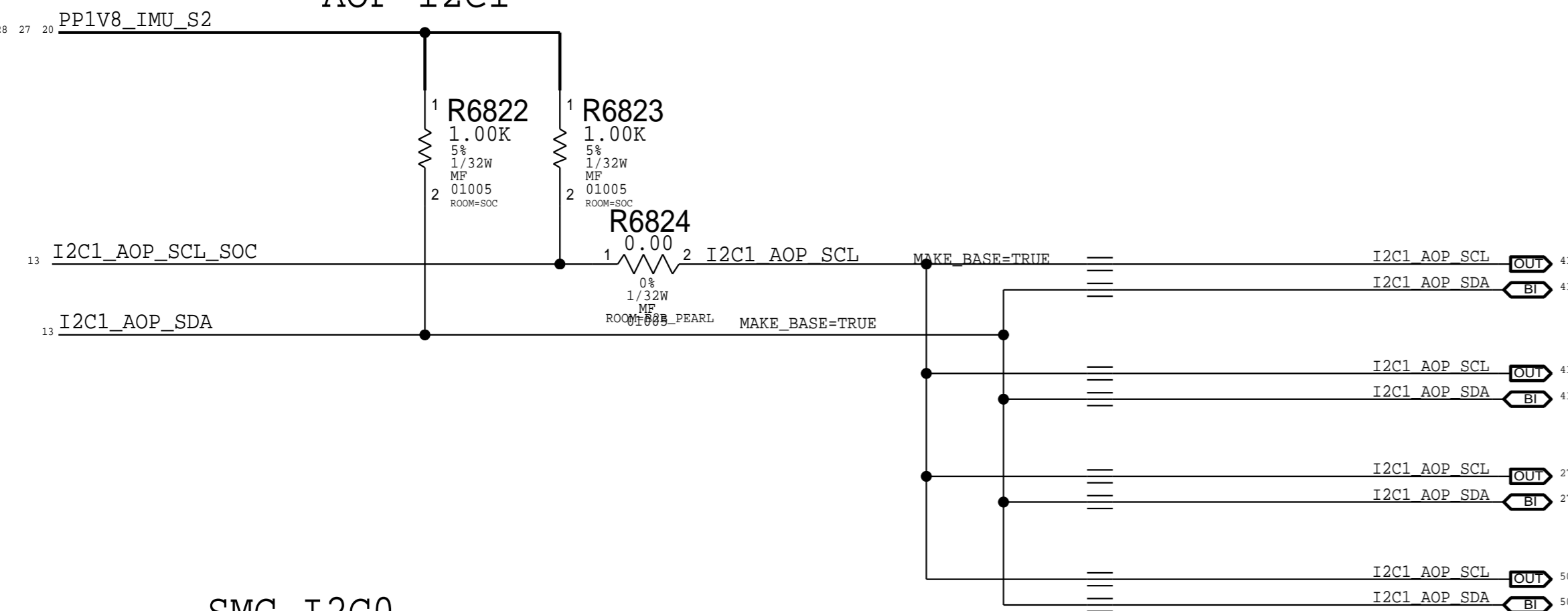
AOP / SMC I2C

AOP I2C0



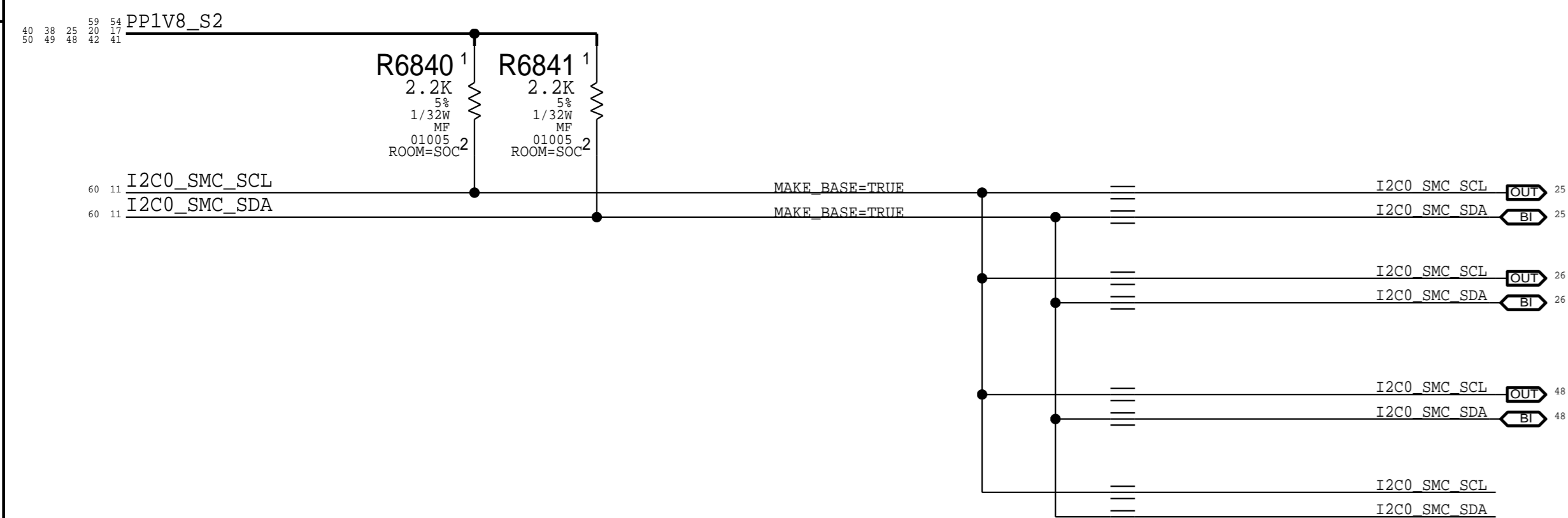
Bus Name	Bus Voltage	Bus Speed	Device	7-Bit Addr.	Binary	8-Bit Addr.	Min Speed	Max Speed	Location
AOP I2C0	PPIV8_S2	750 kHz	Doppler	0x58	1011 000X	0xB0, 0xB1	-	1 MHz	Sensor Flex
			Blackbird	0x29	0101 001X	0x52, 0x53	-	1 MHz	Sensor Flex
			Yogi	0x33	0110 011X	0x66, 0x67	-	1 MHz	Sensor Flex

AOP I2C1



Bus Name	Bus Voltage	Bus Speed	Device	7-Bit Addr.	Binary	8-Bit Addr.	Min Speed	Max Speed	Location
AOP I2C1	PPIV8_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

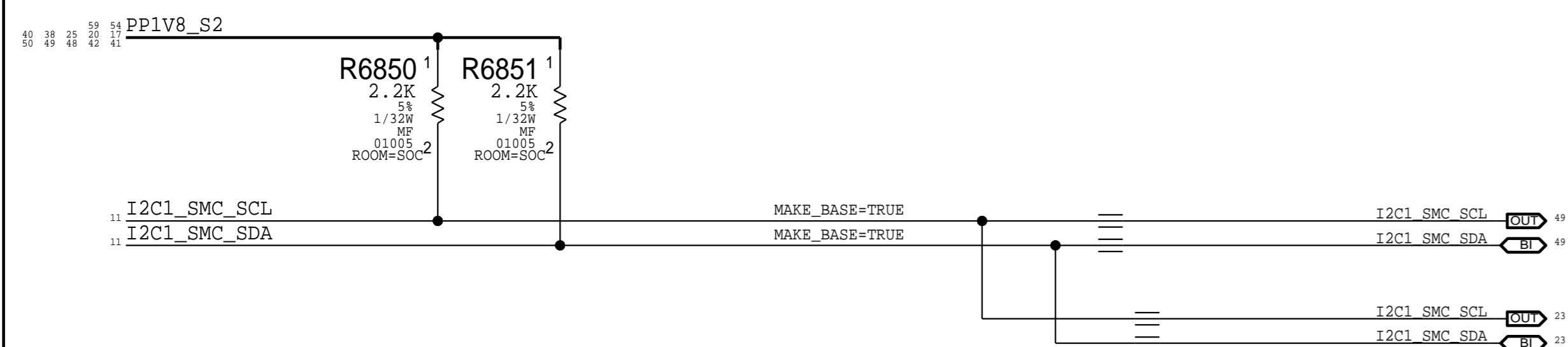
SMC I2C0



Bus Name	Bus Voltage	Bus Speed	Device	7-Bit Addr.	Binary	8-Bit Addr.	Min Speed	Max Speed	Location
SMC I2C0	PPIV8_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	PPIV8_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

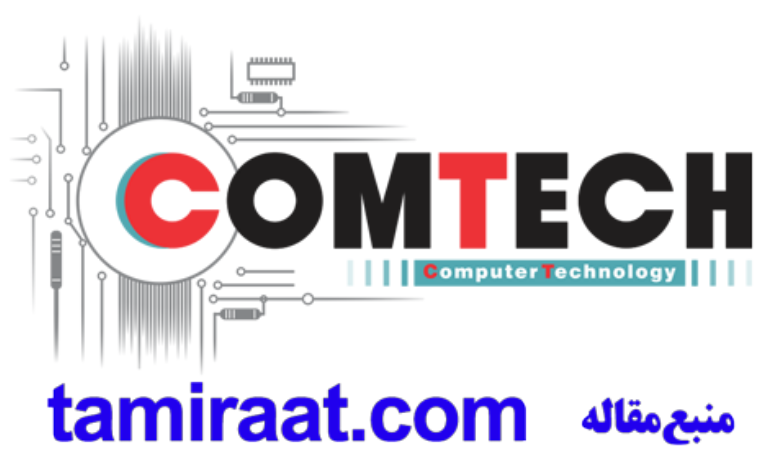
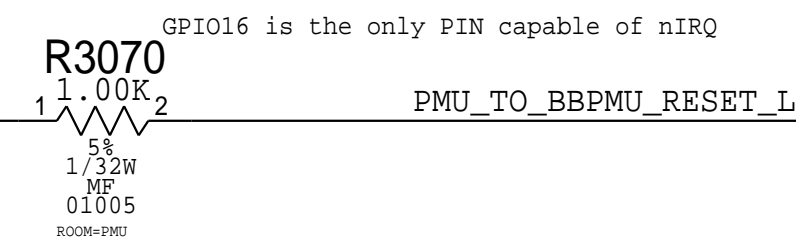
SOC

GPIO	PMU	AP
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
REVISION	7.0.0	D
BRANCH		
PAGE	70 OF 85	
SHEET	55 OF 60	

AOP GPIOs

