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.

J318 PREEVT 2: MLB-B

LAST_MODIFICATION=Mon Apr 16 10:01:40 2018
J320_DEV_ARUBA_J3XX SYNC VER 0.43.0
J320_RADIO_MLB SYNC VER 0.157.0
J317_WIFI_MLB SYNC VER 0.80.0
J320_NFC_MLB SYNC VER 0.22.0

REV	ECN	DESCRIPTION OF REVISION	CK APPD / DATE
6	0012005808	ENGINEERING RELEASED	2018-04-16

SCH AND BOARD P/N

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
051-03638	1	SCHEM,MLB-B,(NY),J318	SCH1	CRITICAL	
820-01352	1	PCBF,MLB-B,(NY),J318	PCB1	CRITICAL	

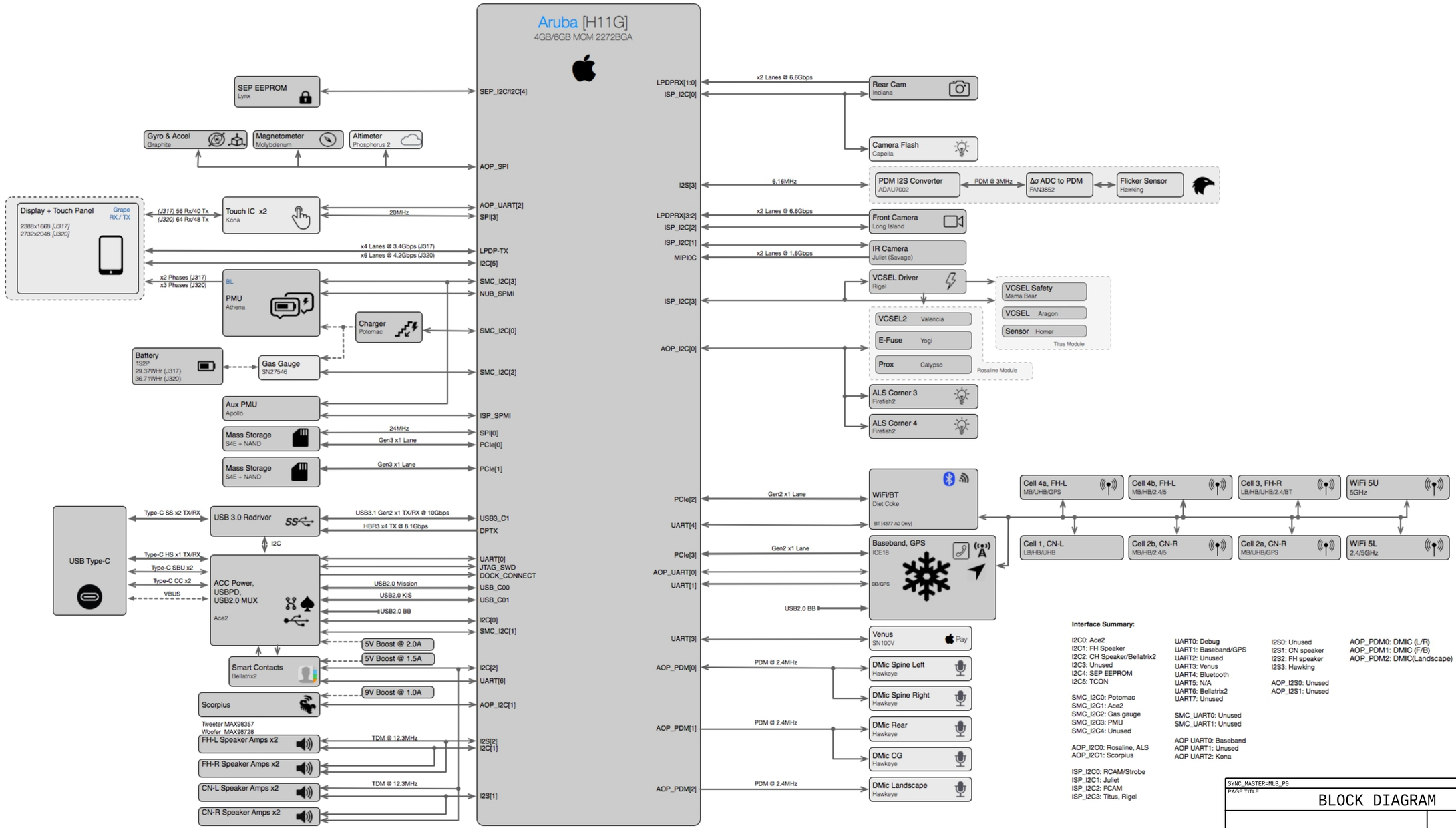
SYNC_MASTER=MLB_P0 SYNC_DATE=07/17/2017

DRAWING TITLE

SCHEM,MLB-B,(NY),J318

J317/J320 | System Block Diagram - Major Interfaces

Apple Confidential Updated: Dec 17, 2017



Interface Summary:

I2C0: Ace2
I2C1: FH Speaker
I2C2: CH Speaker/Bellatrix2
I2C3: Unused
I2C4: SEP EEPROM
I2C5: TCON

SMC_I2C0: Potomac
SMC_I2C1: Ace2
SMC_I2C2: Gas gauge
SMC_I2C3: PMU
SMC_I2C4: Unused

AOP_I2C0: Rosaline, ALS
AOP_I2C1: Scorpius

ISP_I2C0: RCAM/Strobe
ISP_I2C1: Juliet
ISP_I2C2: FCAM
ISP_I2C3: Titus, Rigel

UART0: Debug
UART1: Baseband/GPS
UART2: Unused
UART3: Venus
UART4: Bluetooth
UART5: N/A
UART6: Bellatrix2
UART7: Unused

SMC_UART0: Unused
SMC_UART1: Unused

AOP UART0: Baseband
AOP UART1: Unused
AOP UART2: Kona

I2S0: Unused
I2S1: CN speaker
I2S2: FH speaker
I2S3: Hawking

AOP_I2S0: Unused
AOP_I2S1: Unused

AOP_PDM0: DMIC (L/R)
AOP_PDM1: DMIC (F/B)
AOP_PDM2: DMIC(Landscape)

SYNC_MASTER=MLB_P0 SYNC_DATE=07/17/2017

PAGE TITLE

BLOCK DIAGRAM

CKPLUS WAIVE TABLE

CKPLUS RULE EXCEPTIONS	REQUIRED
SCHEMATIC DEFINED CONSTRAINTS (YES/NO)	NO

MECHANICAL PARTS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
806-16652	1	FENCE,KONA,MLB	TOUCH_FENCE	CRITICAL	
806-12808	1	CAN,RF,MLB_B	CELL_FENCE	CRITICAL	MLB_B
806-16643	1	CAN,WLAN,MLB	AP_FENCE	CRITICAL	
806-12983	1	CAN,FH REMOTE FEM,MLB_B	RFEM_FENCE	CRITICAL	MLB_B
806-14412	1	CAN,REMOTE FEM,GNSS,MLB_A	RFEMGNSS_FENCE	CRITICAL	MLB_A
806-15354	1	CAN,VENUS,MLB_B	NFC_FENCE	CRITICAL	MLB_B
806-16219	1	CAN,VENUS,MLB_A	VENUS_FENCE	CRITICAL	MLB_A

BARCODE LABEL/EEEE CODES

QTY	PART#		DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
1	825-7691	1	EEEE FOR 639-05502 (MLB B BEST)	EEEE_JM83	CRITICAL	EEEE_MLB_B_BEST
	825-7691	1	EEEE FOR 639-05503 (MLB B SUPREME)	EEEE_JM84	CRITICAL	EEEE_MLB_B_SUPREME
	825-7691	1	EEEE FOR 639-05504 (MLB B EXTREME)	EEEE_JM85	CRITICAL	EEEE_MLB_B_EXTREME
	825-7691	1	EEEE FOR 639-05505 (MLB B PRIME)	EEEE_JM86	CRITICAL	EEEE_MLB_B_PRIME
	825-7691	1	EEEE FOR 639-05506 (MLB B BEST JP)	EEEE_JM87	CRITICAL	EEEE_MLB_B_JP_BEST
1	825-7691	1	EEEE FOR 639-05507 (MLB B SUPREME JP)	EEEE_JM88	CRITICAL	EEEE_MLB_B_JP_SUPREME
1	825-7691	1	EEEE FOR 639-05508 (MLB B EXTREME JP)	EEEE_JM89	CRITICAL	EEEE_MLB_B_JP_EXTREME
	825-7691	1	EEEE FOR 639-05509 (MLB B PRIME JP)	EEEE_JM8C	CRITICAL	EEEE_MLB_B_JP_PRIME
	825-7691	1	EEEE FOR 639-05510 (MLB B BEST CH)	EEEE_JM8D	CRITICAL	EEEE_MLB_B_CH_BEST
	825-7691	1	EEEE FOR 639-05511 (MLB B SUPREME CH)	EEEE_JM8F	CRITICAL	EEEE_MLB_B_CH_SUPREME
	825-7691	1	EEEE FOR 639-05512 (MLB B EXTREME CH)	EEEE_JM8G	CRITICAL	EEEE_MLB_B_CH_EXTREME
	825-7691	1	EEEE FOR 639-05513 (MLB B PRIME CH)	EEEE_JM8H	CRITICAL	EEEE_MLB_B_CH_PRIME
1	825-7691	1	EEEE FOR 639-05514 (MLB A BEST)	EEEE_JM8J	CRITICAL	EEEE_MLB_A_BEST
	825-7691	1	EEEE FOR 639-05515 (MLB A SUPREME)	EEEE_JM8K	CRITICAL	EEEE_MLB_A_SUPREME
	825-7691	1	EEEE FOR 639-05516 (MLB A EXTREME)	EEEE_JM8L	CRITICAL	EEEE_MLB_A_EXTREME
	825-7691	1	EEEE FOR 639-05517 (MLB A PRIME)	EEEE_JM8M	CRITICAL	EEEE_MLB_A_PRIME

CAPS

PART NUMBER	ALTERNATE FOR PART NUMBER	REFERENCE DESIGNATOR(S)	DESCRIPTION	BOM OPTION
138S00140	138S00141	C4191,ETC	4.0UF TAIYO YUNDEN	
138S00229	138S0884	C7760,ETC	20UF KYOCERA	
138S00143	138S00144	C7740,ETC	22UF KYOCERA	
138S00163	138S00144	C7740,ETC	22UF TAIYO YUDEN	
138S00140	138S00139	C1800,ETC	3.9UF KYOCERA	
138S00164	138S00139	C1800,ETC	4UF TAIYO YUDEN	

SOC

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
339S00494	1	IC,ARUBA	U0600	CRITICAL	BEST_PROD
339S00494	1	IC,ARUBA	U0600	CRITICAL	SUPREME_PROD
339S00494	1	IC,ARUBA	U0600	CRITICAL	EXTREME_PROD

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
339S00502	339S00494		U0600	MICRON

PART#

	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL		BOM OPTION
339S00501	1	IC,ARUBA	U0600	CRITICAL		PRIME_PROD

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
339S00503	339S00501		U0600	MICRON

ATHENA

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
343S00252	1	IC,PMU,ATHENA,D2483A0,OTP-BF	U8100	CRITICAL	

APOLLO

PART#

	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
343S00248	1	IC,PMU,APOLLO,D2537A0,OTP-BE	U7700	CRITICAL	

POTOMAC

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
343S00257	1	IC,CHRGR,POTOMAC,D2559A0,OTP-BG	U8500	CRITICAL	

NAND

BEST FLASH CONFIGURATIONS(U1900 NOSTUFF)

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
335S00356	1	TOSHIBA,BICS3	U1800	CRITICAL	BEST_PROD

PART NUMBER

	ALTERNATE FOR PART NUMBER	REF DES	COMMENTS:	
335S00349	335S00356	BEST_PROD	U1800	WESTERNDIGITAL,BICS3

SUPREME FLASH CONFIGURATIONS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
335S00357	2	TOSHIBA,BICS3	U1800,U1900	CRITICAL	SUPREME_PROD

PART NUMBER

	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:	
335S00246	335S00357	SUPREME_PROD	U1800,U1900	WESTERNDIITAL,BICS3	

EXTREME FLASH CONFIGURATIONS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
335S00358	1	TOSHIBA,BICS3	U1800,U1900	CRITICAL	EXTREME_PROD

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
335S00247	335S00358	EXTREME_PROD	U1800,U1900	WESTERNDIGITAL,BICS3
335S00276	335S00358	EXTREME_PROD	U1800,U1900	SAMSUNG,3DV4

PRIME FLASH CONFIGURATIONS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
335S00352	1	WESTERNDIGITAL,BICS3	U1800,U1900	CRITICAL	PRIME_PROD

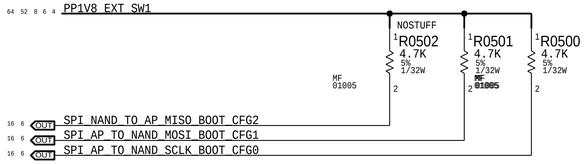
PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
335S00339	335S00352	PRIME_PROD	U1800,U1900	SAMSUNG,3DV4

SYNC_MASTER=MLB_P0 SYNC_DATE=07/17/2017

PAGE TITLE

BOM TABLES

BOOT CONFIG ID

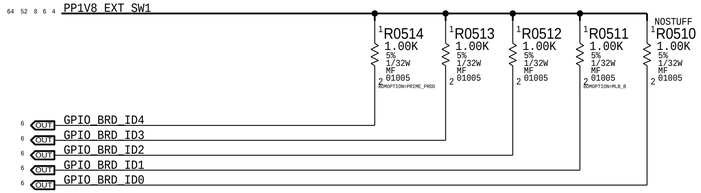


BOOT_CFG[3:0]	MODE
000	SPI0 NOR
001	SPI0 NOR TEST
(PRODUCTION) ---> 010	SPI0 NAND
CURRENT SETTING (PROTO) ---> 011	SPI0 NAND TEST
100	SPI0 NOR (40MHZ)
101	SPI0 NOR (40MHZ) TEST
110	SPI0 NOR (60MHZ)
111	SPI0 NOR (60MHZ) TEST

S/W READ FLOW

1. SET GPIO AS INPUT
2. DISABLE PU AND ENABLE PD
3. READ

BOARD ID

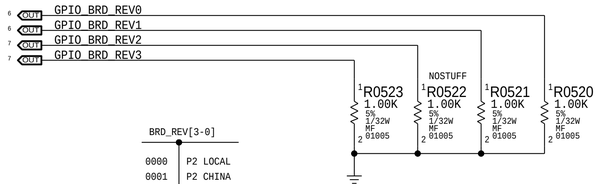


BRD_ID[4-0]		
01100	J317 AP	RDAR//PROBLEM/34701379
J317 DEV		
CURRENT SETTING ---> J318 AP		
J318 DEV		
11100	J317X AP	RDAR//PROBLEM/35276777
11101	J317X DEV	
---> 11110	J318X AP	
11111	J318X DEV	

S/W READ FLOW

1. SET GPIO AS INPUT
2. DISABLE PU AND ENABLE PD
3. READ

BOARD REVISION

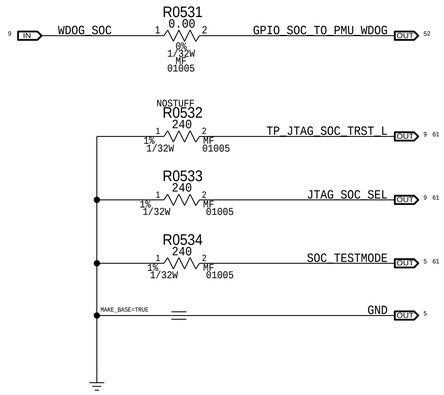


BRD_REV[3-0]	
0000	P2 LOCAL
0001	P2 CHINA
0010	P2 CHINA 2
0011	PREEVT
CURRENT SETTING ---> 0100	PREEVT 2
0101	UNUSED
0110	UNUSED
0111	UNUSED
1000	UNUSED
1001	UNUSED
UNUSED 1010	

NOTE: STUFFING RESISTOR MEANS 0

S/W READ FLOW

1. SET GPIO AS INPUT
2. ENABLE PU AND DISABLE PD
3. READ



I2C0

DEVICE	8-BIT	7-BIT
ACE(SINGLE ACE)	0X70	0X38

I2C0_SCL_1V8 ↔ I2C0_SCL_1V8
I2C0_SDA_1V8 ↔ I2C0_SDA_1V8

I2C1

DEVICE	8-BIT	7-BIT
SKR AMP FH_L_W 0X74	0X3A	
SKR AMP FH_R_W 0X78	0X3C	

I2C1_SCL_1V8 ↔ I2C1_SCL_1V8
I2C1_SDA_1V8 ↔ I2C1_SDA_1V8

I2C2

DEVICE	8-BIT	7-BIT
SKR AMP CN_L_W 0X74	0X3A	
SKR AMP CN_R_W 0X78	0X3C	
BELLATRIX	0X26	0X13

I2C2_SCL_1V8 ↔ I2C2_SCL_1V8, I2C2_SCL_1V8
I2C2_SDA_1V8 ↔ I2C2_SDA_1V8, I2C2_SDA_1V8

I2C3

NOT USED

I2C3_SCL_1V8_NOTUSED ↔ I2C3_SCL_1V8_NOTUSED
I2C3_SDA_1V8_NOTUSED ↔ I2C3_SDA_1V8_NOTUSED

SERC I2C

I2C5

DEVICE	8-BIT	7-BIT
TCON 0X30-0X4E		0X18-0X27
TCON MCU	0XAC	0X56
TCON EEPROM	0XA0	0X50
TCON TEMP(U2400)	0XE0	0X70
TCON TEMP(U2401)	0XE2	0X71
TCON TEMP(U2402)	0XE4	0X72

I2C5_SCL_1V8 ↔ I2C5_SCL_1V8
I2C5_SDA_1V8 ↔ I2C5_SDA_1V8

AOP I2C0

DEVICE	8-BIT	7-BIT
ALS (FL-L)	0X52	0X29
ALS (FL-R)	0X72	0X39
VCSEL(ROSALINE)	0X66	0X33
DOPPLER(ROSALINE)	0XB0	0X58

I2C_AOP_I2CM0_SCL_1V8 ↔ I2C_AOP_I2CM0_SCL_1V8
I2C_AOP_I2CM0_SDA_1V8 ↔ I2C_AOP_I2CM0_SDA_1V8

AOP I2C1

DEVICE	8-BIT	7-BIT
SCORPIUS	0XAA	0X55

I2C_AOP_I2CM1_SCL_1V8 ↔ I2C_AOP_I2CM1_SCL_1V8
I2C_AOP_I2CM1_SDA_1V8 ↔ I2C_AOP_I2CM1_SDA_1V8

ISP I2C0

DEVICE	8-BIT	7-BIT
RCAM	0X20	0X10
STROBE1	0XC6	0X63
STROBE2	0XCE	0X67

ISP_I2C0_SCL_1V8 ↔ ISP_I2C0_SCL_1V8
ISP_I2C0_SDA_1V8 ↔ ISP_I2C0_SDA_1V8

ISP I2C1

DEVICE	8-BIT	7-BIT
JULIET	0X30	0X18

ISP_I2C1_SCL_1V8 ↔ ISP_I2C1_SCL_1V8
ISP_I2C1_SDA_1V8 ↔ ISP_I2C1_SDA_1V8

ISP I2C2

DEVICE	8-BIT	7-BIT
FCAM 0X20	0X10	

ISP_I2C2_SCL_1V8 ↔ ISP_I2C2_SCL_1V8
ISP_I2C2_SDA_1V8 ↔ ISP_I2C2_SDA_1V8

ISP I2C3

DEVICE	8-BIT	7-BIT
TITUS	0XCC	0X66
RIGEL	0XAA	0X55

ISP_I2C3_SCL_1V8 ↔ ISP_I2C3_SCL_1V8
ISP_I2C3_SDA_1V8 ↔ ISP_I2C3_SDA_1V8

SMC I2C0

DEVICE	8-BIT	7-BIT
POTOMAC	0XEA	0X75

I2C_SMC_I2CM0_SCL_1V8 ↔ I2C_SMC_I2CM0_SCL_1V8
I2C_SMC_I2CM0_SDA_1V8 ↔ I2C_SMC_I2CM0_SDA_1V8

SMC I2C1

DEVICE	8-BIT	7-BIT
ACE2	0X70	0X38

I2C_SMC_I2CM1_SCL_1V8 ↔ I2C_SMC_I2CM1_SCL_1V8
I2C_SMC_I2CM1_SDA_1V8 ↔ I2C_SMC_I2CM1_SDA_1V8

SMC I2C2

DEVICE	8-BIT	7-BIT
GASGAUGE	0XAA	0X55

I2C_SMC_I2CM2_SCL_1V8 ↔ I2C_SMC_I2CM2_SCL_1V8
I2C_SMC_I2CM2_SDA_1V8 ↔ I2C_SMC_I2CM2_SDA_1V8

SMC I2C3

DEVICE	8-BIT	7-BIT
ATHENA	0X78	0X3C
0X80 0X40		

I2C_SMC_I2CM3_SCL_1V8 ↔ I2C_SMC_I2CM3_SCL_1V8
I2C_SMC_I2CM3_SDA_1V8 ↔ I2C_SMC_I2CM3_SDA_1V8

SMC I2C4

NOT USED

SYNC_MASTER=MLB_P0 SYNC_DATE=07/17/2017

PAGE TITLE

SOC: MISC & ALIASES

SOC: MAIN

OMIT_TABLE

U0600
ARUBA-4G-21NM-H
FCBGA
SYM 3 OF 20

		BB27	USB31_EXT_REF_CLK_P		
		BC27	USB31_EXT_REF_CLK_N		
33	IN	USB3_SOC_RX_P	BB29	C0_USB31_RX_P	
33	IN	USB3_SOC_RX_N	BC29	C0_USB31_RX_N	
33	OUT	USB3_SOC_TX_P	BE29	C0_USB31_TX_P	
33	OUT	USB3_SOC_TX_N	BF29	C0_USB31_TX_N	
5		USB3_SOC_REXT	BA26	USB31_REXT	
61 32	BI	USB_SOC_P	BC50	C00_USB_DP	
61 32	BI	USB_SOC_N	BC49	C00_USB_DM	
		NC_C00_USB_ID	AW42	C00_USB_ID	
5		C00_USB_SOC_REXT	BB36	C00_USB_REXT	
61 33		USB_VBUS_DETECT_R	AY42	C00_USB_VBUS	
61 32	BI	USB_KIS_P	BB50	C01_USB_DP	
61 32	BI	USB_KIS_N	BB49	C01_USB_DM	
		NC_C01_USB_ID	AW41	C01_USB_ID	
5		C01_USB_SOC_REXT	BB37	C01_USB_REXT	
64 11		PP3V3_USB	AY41	C01_USB_VBUS	
		NC_C1_USB31_RXP	BB28	C1_USB31_RX_P	
		NC_C1_USB31_RXN	BC28	C1_USB31_RX_N	
		NC_C1_USB31_TXP	BE28	C1_USB31_TX_P	
		NC_C1_USB31_TXN	BF28	C1_USB31_TX_N	
		NC_C1_USB_DP	BD49	C1_USB_DP	
		NC_C1_USB_DM	BD48	C1_USB_DM	
		NC_C1_USB_ID	AW43	C1_USB_ID	
5		C1_USB_SOC_REXT	BB35	C1_USB_REXT	
		NC_C1_USB_VBUS	AY43	C1_USB_VBUS	
16 5	BI	SWD_NAND1_SWDIO	Y47	SWD_TMS2	
17 5	BI	SWD_NAND2_SWDIO	AB46	SWD_TMS3	SWD

		DDR0_ZQ	A5	DDR0_ZQ	5
		DDR1_ZQ	A6	DDR1_ZQ	5
		DDR4_ZQ	A27	DDR4_ZQ	5
		DDR5_ZQ	A28	DDR5_ZQ	5
		DDR0_ZQ1	A4	DDR0_ZQ1	5
		DDR1_ZQ1	A7	DDR1_ZQ1	5
		DDR4_ZQ1	A26	DDR4_ZQ1	5
		DDR5_ZQ1	A29	DDR5_ZQ1	5
		DRAM			
		DDR0_RREF	M1	DDR0_RREF	5
		DDR1_RREF	L1	DDR1_RREF	5
		DDR2_RREF	A23	DDR2_RREF	5
		DDR3_RREF	A24	DDR3_RREF	5
		DDR4_RREF	A30	DDR4_RREF	5
		DDR5_RREF	A31	DDR5_RREF	5
		DDR6_RREF	L50	DDR6_RREF	5
		DDR7_RREF	M50	DDR7_RREF	5
		FORCE_DFU	AJ45 INT PD	GPIO_FORCE_DFU	IN 58 61
		RESET			
		REQUEST_DFU1	AH47	GPIO_PMU_TO_SOC_BTN_ONOFF_L	IN 52
		REQUEST_DFU2	AD49	GPIO_PMU_TO_SOC_BTN_VOL_DOWN_L	IN 52
		DFU_STATUS	AH45	SOC_TO_ACE_DFU_STATUS	OUT 32 61
		TESTMODE	BF47	SOC_TESTMODE	IN 4 61
		CFSB	AL48	GPIO_PMU_TO_SYSTEM_ACTIVE_READY_R	
		HOLD_RESET	BE45	GND	IN 4
		LP4_IN_RESET*	AF10	RESET_PMU_TO_SYSTEM_L	IN 9 52
		CLOCKS	XI0	BF16	XTAL_SOC_24M_IN
			XO0	BF17	XTAL_SOC_24M_OUT
		TST_CLKOUT/CTM_TRIGGER	AM44	TST_CLKOUT	OUT 61
		ANALOGMUX_OUT	AC43	ADC_SOC_TO_PMU_ANALOGMUX_OUT	OUT 52 62
		TMR32_PWM0	AE47	NC_GPIO_SOC_TO_WLAN_DEVICE_WAKE	OUT 60
		TMR32_PWM1	AF47	SWD_SCORPIUS_SWCLK	OUT 57 61
		TMR32_PWM2	AH46	GPIO_WLAN_TO_SOC_TIME_SYNC	IN 59 61

R06A2
0
5%
1/20W
MF
0201

GPIO_PMU_TO_SYSTEM_ACTIVE_READY IN 32 52 61

DFU1 IS RELEASED FIRST FOR DFU ENTER OPERATION

R0630
30.1K
1%
1/32W
MF
01005
BI

USB_VBUS_DETECT 62 54 IN

PPVDD_S1_QL 64 10 5

R0661 R0662 R0663 R0664 R0665 R0666 R0667 R0668
240 1% 1/32W MF 01005

DDR0_ZQ PLACE_NEAR=U0600.A5:5MM
DDR1_ZQ PLACE_NEAR=U0600.A6:5MM
DDR4_ZQ PLACE_NEAR=U0600.A27:5MM
DDR5_ZQ PLACE_NEAR=U0600.A28:5MM
DDR0_ZQ1 PLACE_NEAR=U0600.A4:5MM
DDR1_ZQ1 PLACE_NEAR=U0600.A7:5MM
DDR4_ZQ1 PLACE_NEAR=U0600.A26:5MM
DDR5_ZQ1 PLACE_NEAR=U0600.A29:5MM

PPVDD_S1_QL 64 10 5

R0669 R0670 R0671 R0672 R0673 R0674 R0675 R0676
240 1% 1/32W MF 01005

DDR0_RREF PLACE_NEAR=U0600.M1:5MM
DDR1_RREF PLACE_NEAR=U0600.L1:5MM
DDR2_RREF PLACE_NEAR=U0600.A23:5MM
DDR3_RREF PLACE_NEAR=U0600.A24:5MM
DDR4_RREF PLACE_NEAR=U0600.A30:5MM
DDR5_RREF PLACE_NEAR=U0600.A31:5MM
DDR6_RREF PLACE_NEAR=U0600.L50:5MM
DDR7_RREF PLACE_NEAR=U0600.M50:5MM

PP1V8_EXT_SW1 64 17 16 9 5
PP1V8_EXT_SW1 64 17 16 9 5

R1037 1.00K 5% 1/32W MF 01005
R1038 1.00K 5% 1/32W MF 01005

16 5 SWD_NAND1_SWDIO
17 5 SWD_NAND2_SWDIO

NOSTUFF
R0650
510K
5%
1/32W
MF
01005

CRITICAL
R0651
1.00K
1%
1/32W
MF
01005

Y0600
1.60X1.20MM
24.000MHZ-20PPM-9.5PF-60OHM

SOC_24M_O

CRITICAL
C0650
12PF
5%
16V
NP0-C0G
01005-1

CRITICAL
C0651
12PF
5%
16V
NP0-C0G
01005-1

USB3_SOC_REXT 5
PLACE_NEAR=U0600.BA26:6MM
R0621 200 1% 1/32W MF 01005

C00_USB_SOC_REXT 5
PLACE_NEAR=U0600.BB36:6MM
R0641 200 1% 1/32W MF 01005

C01_USB_SOC_REXT 5
PLACE_NEAR=U0600.BB37:6MM
R0640 200 1% 1/32W MF 01005

C1_USB_SOC_REXT 5
PLACE_NEAR=U0600.BB35:6MM
R0642 200 1% 1/32W MF 01005

PART NUMBER PART NUMBER	ALTERNATE FOR	BOM ~~OPTIONS~~		COMMENTS:
197S0591		Y0600		EPSON,24MHZ.XTAL
197S0588	197S0591		Y0600	TXC,24MHZ,XTAL

SYNC_MASTER=DEV_ARUBA_J3XX
SYNC_DATE=12/14/2017

PAGE TITLE

SOC: MAIN

SOC: GPIO

U0600 ARUBA-4G-21NM-H FCBGA SYM 5 OF 20

I2S

I2S0_BCLK	Y1	NC_SOC_I2S0_BCLK
I2S0_DIN/SIO_LEAP_MADI_IN /AOP_LEAP_MADI_IN	W4	NC_SOC_I2S0_DIN
I2S0_DOUT/SIO_LEAP_MADI_OUT /AOP_LEAP_MADI_OUT	Y4	NC_SOC_I2S0_DOUT
	V3	NC_SOC_I2S0_LRCK
	W3	NC_SOC_I2S0_MCLK
I2S1_DIN	BF31	I2S1_SOC_TO_SPKRAMP_CN_BCLK
I2S1_DOUT	BC32	I2S1_SPKRAMP_CN_TO_SOC_DOUT
I2S1_LRCK	BD33	I2S1_SOC_TO_SPKRAMP_CN_DOUT
I2S1_MCK	BD31	I2S1_SOC_TO_SPKRAMP_CN_LRCK
	BC31	I2S1_SOC_TO_SPKRAMP_CN_MCLK_R
I2S2_BCLK/AP_PDM_IN2_CLK	R1	I2S2_SOC_TO_SPKRAMP_FH_BCLK
I2S2_DIN/AP_PDM_IN1_CLK	U3	I2S2_SPKRAMP_FH_TO_SOC_DOUT
I2S2_DOUT/AP_PDM_IN1_DAT	T2	I2S2_SOC_TO_SPKRAMP_FH_DOUT
I2S2_LRCK/AP_PDM_IN2_DAT	T3	I2S2_SOC_TO_SPKRAMP_FH_LRCK
I2S2_MCK/AP_PDM_OUT0_CLK	R3	I2S2_SOC_TO_SPKRAMP_FH_MCLK_R
I2S3_BCLK	BF44	I2S3_SOC_TO_HAWKING_BCLK
I2S3_DIN	BD39	I2S3_HAWKING_TO_SOC_DOUT
I2S3_DOUT	BC42	NC_GPIO_XBAR_EN_PULSE_L
I2S3_LRCK	BC37	I2S3_SOC_TO_HAWKING_LRCK
I2S3_MCK	BD38	NC_GPIO_CODEC_TO_SOC_IRQ_L
AP_PDM_OUT0_DAT	W2	NC_GPIO_XBAR_DIS_PULSE_L

SPI

SPI0_MISO	AA4	SPI_NAND_TO_AP_MISO_BOOT_CFG2
SPI0_MOSI	AA3	SPI_AP_TO_NAND_MOSI_BOOT_CFG1
SPI0_SCLK	AA5	SPI_AP_TO_NAND_SCLK_BOOT_CFG0_R
SPI1_MISO	BE38	NC_SPI_BELFIELD_MISO
SPI1_MOSI	BC40	NC_SPI_BELFIELD_MOSI
SPI1_SCLK	BF37	NC_SPI_BELFIELD_SCLK
SPI1_SSIN	BC36	NC_SPI_BELFIELD_CS_L
SPI2_MISO	BC33	NC_SPI_MESA_MISO
SPI2_MOSI	BE32	NC_SPI_MESA_MOSI
SPI2_SCLK	BD32	NC_SPI_MESA_SCLK
	BE33	NC_GPIO_MESA_TO_SOC_IRQ
SPI3_MISO	BF34	SPI_SOC_TO_GRAPE_MISO
SPI3_MOSI	BD43	SPI_SOC_TO_GRAPE_MOSI
SPI3_SCLK	BF33	SPI_SOC_TO_GRAPE_SCLK_R
SPI3_SSIN	BD44	SPI_SOC_TO_GRAPE_CS_L
SPI4_MISO	Y3	NC_SPI4_MISO
SPI4_MOSI	V2	DBL_CLICK_DET
SPI4_SCLK	R2	NC_SPI4_SCLK
SPI5_MISO	BE35	NC_GPIO_BELFIELD_TO_SOC_IRQ_L
	BC39	NC_GPIO_SOC_TO_BELFIELD_RESET_L
SPI5_SCLK	BE36	NC_GPIO_SOC_TO_CODEC_RESET_L
SPI5_SSIN	BC38	NC_GPIO_SOC_TO_SCORPIUSMCU_NRST_L

I2C

I2C0_SCL	AG45	I2C0_SCL_1V8
I2C0_SDA	AG46	I2C0_SDA_1V8
I2C1_SCL	V4	I2C1_SCL_1V8
I2C1_SDA	V5	I2C1_SDA_1V8
I2C2_SCL	AK45	I2C2_SCL_1V8
I2C2_SDA	AL45	I2C2_SDA_1V8
I2C3_SCL	V6	I2C3_SCL_1V8_NOTUSED
I2C3_SDA	Y6	I2C3_SDA_1V8_NOTUSED
I2C4_SCL	W1	I2C4_SCL_1V8
I2C4_SDA	AA2	I2C4_SDA_1V8
I2C5_SCL	BE47	I2C5_SCL_1V8
I2C5_SDA	BD47	I2C5_SDA_1V8

TRIGGER

SOCHOT1	AA48	SOCHOT1_SOC_TO_PMU_L
DROOP	AE49	VCCMAIN_DROOP_PMU_TO_SOC_L
CPU_TRIGGER0	AE48	GPIO_PMU_TO_CPU_TRIGGER_0
CPU_TRIGGER1	AA49	GPIO_PMU_TO_CPU_TRIGGER_1
GPU_TRIGGER0	AF48	GPIO_PMU_TO_GPU_TRIGGER_0
GPU_TRIGGER1	AD48	GPIO_PMU_TO_GPU_TRIGGER_1

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GPIO

GPIO[0]	AJ47	SOC_TO_SCORPIUSMCU_BOOT0
GPIO[1]	AH49	GPIO_PMU_TO_SOC_BTN_VOL_UP_L
GPIO[2]	AJ48	NC_SOC_GPIO2
GPIO[3]	AH48	GPIO_SOC_TO_GRAPE_RESET_L
GPIO[4]	AF50	GPIO_BRD_REV0
GPIO[5]	BC44	NC_GPIO_SOC_TO_ROTTERDAM_EN
GPIO[6]	BF46	NC_DISPLAY_ID
GPIO[7]	BB38	GPIO_SOC_BT_DEVICE_WAKE
GPIO[8]	BD40	GPIO_SOC_TO_ROTTERDAM_DEV_WAKE
GPIO[9]	AJ49	NC_SOC_GPIO9
GPIO[10]	AC45	GPIO_ACE_TO_SOC_IRQ_L
GPIO[11]	AJ46	GPIO_SOC_TO_LED_DRIVER_EN
GPIO[12]	AD43	SWD_SCORPIUS_SWDIO
GPIO[13]	AG48	NC_GPIO_SOC_TO_BB_MESA_ON
GPIO[14]	AC44	NC_SOC_GPIO14
GPIO[15]	AH50	GPIO_BRD_REV1
GPIO[16]	BB42	GPIO_SOC_TO_ROTTERDAM_DWLD_REQ
GPIO[17]	BB39	BT_AUDIO_SYNC
GPIO[18]	Y49	NC_SOC_GPIO18
GPIO[19]	AF46	GPIO_SOC_TO_SPKRAMP_RESET_L
GPIO[20]	Y46	NC_SOC_GPIO20
GPIO[21]	AE46	SOC_TO_TCON_FORCE_PWM
GPIO[22]	AA46	GPIO_SPKRAMP_TO_SOC_IRQ_L
GPIO[23]	AL44	NC_GPIO_SOC_TO_PP2V9_RCAM_ADJ
GPIO[24]	AM45	GPIO_SOC_TO_BT_TO_GRAPE_TS_SYNC
GPIO[25]	W50	NC_SOC_GPIO25
GPIO[26]	W49	NC_SOC_GPIO26

BOARD ID

BOARD_ID0	V50	GPIO_BRD_ID0
BOARD_ID1	AE50	GPIO_BRD_ID1
BOARD_ID2	AJ50	GPIO_BRD_ID2
BOARD_ID3	AA1	GPIO_BRD_ID3
BOARD_ID4	Y48	GPIO_BRD_ID4

UART

UART0_RXD	AL50	UART_DEBUG_TO_SOC_TX
UART0_TXD	AM50	UART_SOC_TO_DEBUG_TX
UART1_CTSN	BD37	UART_BB_GPS_TO_SOC_RTS_L
UART1_RTSN	BD36	UART_SOC_TO_BB_GPS_RTS_L
UART1_RXD	BD34	UART_BB_GPS_TO_SOC_TX
UART1_TXD		UART_SOC_TO_BB_GPS_TX
UART2_CTSN	AK48	NC_UART_WLAN_TO_SOC_RTS_L
UART2_RTSN	AK49	NC_UART_SOC_TO_WLAN_RTS_L
UART2_RXD	AL49	NC_UART_WLAN_TO_SOC_TX
UART2_TXD	AM49	NC_UART_SOC_TO_WLAN_TX
UART3_CTSN	AL47	UART_ROTTERDAM_TO_SOC_RTS_L
UART3_RTSN	AM46	UART_SOC_TO_ROTTERDAM_RTS_L
UART3_RXD	AM47	UART_ROTTERDAM_TO_SOC_TX
UART3_TXD		UART_SOC_TO_ROTTERDAM_TX
UART4_CTSN	BB41	UART_BT_TO_SOC_RTS_L
UART4_RTSN	BD41	UART_SOC_TO_BT_RTS_L
UART4_RXD	BE42	UART_BT_TO_SOC_TX
UART4_TXD	BE41	UART_SOC_TO_BT_TX
UART6_RXD	AJ44	UART_BELLATRIX2_TO_SOC_TX
UART6_TXD	AH44	UART_SOC_TO_BELLATRIX2_TX
UART7_RXD	AL46	NC_UART_ACC_TO_SOC_TX
UART7_TXD	AK46	NC_UART_SOC_TO_ACC_TX

NAND

NAND_SYS_CLK	BF43	CLK_NAND_24MHZ
NAND_SYS_CLK_DUAL	BF42	CLK_NAND2_24MHZ
SSD_BFH	U6	GPIO_SOC_TO_NAND_FW_STRAP
SSD_RESET*	U7	GPIO_SOC_TO_NAND_RESET_L

R0732

CLK_NAND_24MHZ → 33 5% 1/32W MF 01005 → CLK_SOC_TO_NAND_24MHZ

PLACE_NEAR=U0600.BF43:5MM

R0730

CLK_NAND2_24MHZ → 33 5% 1/32W MF 01005 → CLK_SOC_TO_NAND2_24MHZ

PLACE_NEAR=U0600.BF42:5MM

R0703 / R0701 / R0702 / R0707

33 5% 1/32W MF 01005

PLACE_NEAR=U0600.XXX:5MM

I2S1_SOC_TO_SPKRAMP_CN_MCLK → I2S1_SOC_TO_SPKRAMP_CN_MCLK_R

I2S2_SOC_TO_SPKRAMP_FH_MCLK → I2S2_SOC_TO_SPKRAMP_FH_MCLK_R

SPI_AP_TO_NAND_SCLK_BOOT_CFG0 → SPI_AP_TO_NAND_SCLK_BOOT_CFG0_R

SPI_SOC_TO_GRAPE_SCLK → SPI_SOC_TO_GRAPE_SCLK_R

R0790 / R0791

PP1V8_ALWAYS, PP1V8_EXT_SW1 → R0790 47.0K 5% 1/32W MF 01005 → VCCMAIN_DROOP_PMU_TO_SOC_L

R0791 47.0K 5% 1/32W MF 01005 → SOCHOT1_SOC_TO_PMU_L

R0750 / R0751 / R0752 / R0753 / R0754 / R0755 / R0758 / R0759 / R0756 / R0757 / R0760 / R0761

PP1V8_EXT_SW1

2.2K 5% 1/32W MF 01005 (R0758, R0759: NOSTUFF)

1.00K 5% 1/32W MF 01005

I2C0_SCL_1V8, I2C0_SDA_1V8, I2C1_SCL_1V8, I2C1_SDA_1V8, I2C2_SCL_1V8, I2C2_SDA_1V8, I2C3_SCL_1V8_NOTUSED, I2C3_SDA_1V8_NOTUSED, I2C4_SCL_1V8, I2C4_SDA_1V8, I2C5_SCL_1V8, I2C5_SDA_1V8

LYNX

APN:337S00507

PP1V8_EXT_SW1 → C07C0 0.47UF 20% 6.3V X5R 01005

U0702 STLNXA1L9YZ2 WLCSP

I2C4_SDA_1V8 → SDA (B1)

I2C4_SCL_1V8 → SCL (A2)

NC (A3, C1)

VCC (A1)

VSS (B2, B3, C2, C3)

NOSTUFF C07B0 56PF 5% 25V NP0-C0G-CERM 01005

NOSTUFF C07A0 56PF 5% 25V NP0-C0G-CERM 01005

SYNC_MASTER=DEV_ARUBA_J3XX SYNC_DATE=12/14/2017

PAGE TITLE

SOC: I/OS

SOC: LPDP & MIPI

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FCBGA
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FCBGA
SYM 1 OF 20

SYNC_MASTER=DEV_ARUBA_J3XX
SYNC_DATE=12/14/2017
PAGE TITLE
SOC: LPDP & MIPI

SOC: PCIE

PER PCISIG SPEC, AC COUPLING CAPS SHOULD BE BETWEEN
176 NF AND 265 NF FOR GEN1/2/3

NAND

PLACE_NEAR=U0600.BC9:15MM
GND_VOID=TRUE
C0930 0.22UF 10% 6.3V 01005 CER-X5R
C0931 0.22UF 10% 6.3V 01005 CER-X5R
GND_VOID=TRUE
PLACE_NEAR=U0600.BB9:15MM

PCIE_SOC_TO_NAND1_TX_P (OUT 16) — C0930 — PCIE_SOC_TO_NAND1_TX_C_P — BC9
PCIE_SOC_TO_NAND1_TX_N (OUT 16) — C0931 — PCIE_SOC_TO_NAND1_TX_C_N — BB9

PCIE_NAND1_TO_SOC_TX_P (IN 16) — BF9
PCIE_NAND1_TO_SOC_TX_N (IN 16) — BE9
PCIE_SOC_TO_NAND1_REFCLK_P (OUT 16) — BE21
PCIE_SOC_TO_NAND1_REFCLK_N (OUT 16) — BF21
PCIE_NAND1_TO_SOC_CLKREQ_L (IN 16 8) — BF38
PCIE_SOC_TO_NAND1_RESET_L (OUT 62 17 16 8) — BF32

DUAL_NAND
PLACE_NEAR=U0600.BC10:15MM
GND_VOID=TRUE
C0932 0.22UF 10% 6.3V 01005 CER-X5R
C0933 0.22UF 10% 6.3V 01005 CER-X5R
GND_VOID=TRUE
PLACE_NEAR=U0600.BB10:15MM
DUAL_NAND

PCIE_SOC_TO_NAND2_TX_P (OUT 17) — C0932 — PCIE_SOC_TO_NAND2_TX_C_P — BC10
PCIE_SOC_TO_NAND2_TX_N (OUT 17) — C0933 — PCIE_SOC_TO_NAND2_TX_C_N — BB10

PCIE_NAND2_TO_SOC_TX_P (IN 17) — BF10
PCIE_NAND2_TO_SOC_TX_N (IN 17) — BE10
PCIE_SOC_TO_NAND2_REFCLK_P (OUT 17) — BE20
PCIE_SOC_TO_NAND2_REFCLK_N (OUT 17) — BF20
PCIE_NAND2_TO_SOC_CLKREQ_L (IN 17 8) — BF36
PCIE_SOC_TO_NAND2_RESET_L (OUT 62 17 8) — BC41

WLAN/BT

PLACE_NEAR=U0600.BC11:15MM
GND_VOID=TRUE
C0940 0.1UF 20% X5R-CERM 6.3V 01005
C0941 0.1UF 20% X5R-CERM 6.3V 01005
GND_VOID=TRUE
PLACE_NEAR=U0600.BB11:15MM

PCIE_SOC_TO_WLAN_TX_P (OUT 59) — C0940 — PCIE_SOC_TO_WLAN_TX_C_P — BC11
PCIE_SOC_TO_WLAN_TX_N (OUT 59) — C0941 — PCIE_SOC_TO_WLAN_TX_C_N — BB11

PCIE_WLAN_TO_SOC_TX_P (IN 62 59) — BF11
PCIE_WLAN_TO_SOC_TX_N (IN 62 59) — BE11
PCIE_SOC_TO_WLAN_REFCLK_P (OUT 59) — BE19
PCIE_SOC_TO_WLAN_REFCLK_N (OUT 59) — BF19
PCIE_WLAN_TO_SOC_CLKREQ_L (IN 59 8) — BF39
PCIE_SOC_TO_WLAN_RESET_L (OUT 59 8) — BF45

PCIE_RCAL_POS (8) — BC18
PCIE_RCAL_NEG (8) — BC17

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FCBGA
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PCIE_RX0_P
PCIE_RX0_N
PCIE_TX0_P
PCIE_TX0_N
PCIE_REF_CLK0_P
PCIE_REF_CLK0_N
PCIE_CLKREQ0*
PCIE_PERST0*
PCIE_RX1_P
PCIE_RX1_N
PCIE_TX1_P
PCIE_TX1_N
PCIE_REF_CLK1_P
PCIE_REF_CLK1_N
PCIE_CLKREQ1*
PCIE_PERST1*
PCIE_RX2_P
PCIE_RX2_N
PCIE_TX2_P
PCIE_TX2_N
PCIE_REF_CLK2_P
PCIE_REF_CLK2_N
PCIE_CLKREQ2*
PCIE_PERST2*
PCIE_RCAL_P
PCIE_RCAL_N

PCIE_RX3_P — BF12 — PCIE_BB_TO_SOC_TX_P (IN 59 62)
PCIE_RX3_N — BE12 — PCIE_BB_TO_SOC_TX_N (IN 59 62)
PCIE_TX3_P — BC12 — PCIE_SOC_TO_BB_TX_C_P (59)
PCIE_TX3_N — BB12 — PCIE_SOC_TO_BB_TX_C_N (59)
PCIE_REF_CLK3_P — BB22 — PCIE_SOC_TO_BB_REFCLK_P (OUT 59)
PCIE_REF_CLK3_N — BC22 — PCIE_SOC_TO_BB_REFCLK_N (OUT 59)
PCIE_CLKREQ3* — BF35 — PCIE_BB_TO_SOC_CLKREQ_L (IN 59)
PCIE_PERST3* — BF41 — PCIE_SOC_TO_BB_RESET_L (OUT 59)

BASEBAND

AC COUPLING CAPS ARE IN CONNECTOR PAGE

PCIE_RX4_P — BF13 — NC_PCIE_RX4_P
PCIE_RX4_N — BE13 — NC_PCIE_RX4_N
PCIE_TX4_P — BC13 — NC_PCIE_TX4_P
PCIE_TX4_N — BB13 — NC_PCIE_TX4_N
PCIE_REF_CLK4_P — BB21 — NC_PCIE_REF_CLK4_P
PCIE_REF_CLK4_N — BC21 — NC_PCIE_REF_CLK4_N
PCIE_CLKREQ4* — BF40 — GPIO_SOC_TO_BELLATRIX2_BOOST_EN (OUT 56 61)
PCIE_PERST4* — BD42 — GPIO_SOC_TO_BB_COREDUMP (OUT 59)
PCIE_RX5_P — BF14 — NC_PCIE_RX5_P
PCIE_RX5_N — BE14 — NC_PCIE_RX5_N
PCIE_TX5_P — BC14 — NC_PCIE_TX5_P
PCIE_TX5_N — BB14 — NC_PCIE_TX5_N
PCIE_REF_CLK5_P — BB20 — NC_PCIE_REF_CLK5_P
PCIE_REF_CLK5_N — BC20 — NC_PCIE_REF_CLK5_N
PCIE_CLKREQ5* — BC34 — GPIO_SOC_TO_BB_GPS_SYNC (OUT 59)
PCIE_PERST5* — BE39 — GPIO_SOC_TO_BB_RESET_L (OUT 59 61)

PAD_MTR_ANALOG_TEST_P — AB44 — PAD_MTR_ANALOG_TEST_POS
PAD_MTR_ANALOG_TEST_N — AB45 — PAD_MTR_ANALOG_TEST_NEG
MTR
PAD_MTR_RREF_P — AB44 — MTR_RFFE_POS
PAD_MTR_RREF_N — AB45 — MTR_RFFE_NEG
PAD_MTR_VREF_P — AA43 — NC_PAD_MTR_VREF_POS
PAD_MTR_VREF_N — AA44 — NC_PAD_MTR_VREF_NEG

R0949 39.2K 1% 1/32W MF 01005

TO BE CHECKED WITH SEG- DO NOT MATCH WITH SILVAL
IS THE PULL-UP VOLTAGE CORRECT?

PCIE_RCAL_POS (8) — R0990 200 1% 1/32W MF 01005 — PCIE_RCAL_NEG (8)
C0990 10PF 5% 16V CERM 01005

PP1V8_EXT_SW1 (64 52 6 4)
R0950 47.0K 5% 1/32W MF 01005
R0930 47.0K 5% 1/32W MF 01005
R0940 47.0K 5% 1/32W MF 01005
PCIE_NAND1_TO_SOC_CLKREQ_L (16 8)
PCIE_NAND2_TO_SOC_CLKREQ_L (17 8)
PCIE_WLAN_TO_SOC_CLKREQ_L (59 8)
BB HAS A 100K PU ON THEIR SIDE

PCIE_SOC_TO_NAND1_RESET_L (62 17 16 8)
PCIE_SOC_TO_NAND2_RESET_L (62 17 8)
PCIE_SOC_TO_WLAN_RESET_L (59 8)
R0941 100K 5% 1/32W MF 01005
R0931 100K 5% 1/32W MF 01005
R0952 100K 5% 1/32W MF 01005

SYNC_MASTER=DEV_ARUBA_J3XX
SYNC_DATE=12/14/2017
PAGE TITLE
SOC: PCIE

SOC: AOP

AOP I2C PULL-UPS

PP1V8_S3

R1050 1.00K 5% 1/32W MF 01005
R1051 1.00K 5% 1/32W MF 01005
R1052 1.00K 5% 1/32W MF 01005
R1053 1.00K 5% 1/32W MF 01005

I2C_AOP_I2CM0_SCL_1V8
I2C_AOP_I2CM0_SDA_1V8
I2C_AOP_I2CM1_SCL_1V8
I2C_AOP_I2CM1_SDA_1V8

PP1V8_S3

R1000 10K 5% 1/32W MF 01005 NOSTUFF
R1001 10K 5% 1/32W MF 01005 NOSTUFF

GPIO_PMU_TO_SOC_IRQ_L
GPIO_APOLLO_TO_PMU_SOC_IRQ_L

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GPIO_MOLY_TO_AOP_IRQ	AOP_FUNC[0]	AD1	AOP GPIO
GPIO_PHOSPHORUS_TO_AOP_IRQ	AOP_FUNC[1]	AD6	
SPI_MOLY_CS_L	AOP_FUNC[2]	AD2	
GPIO_GRAPHITE_TO_AOP_INT	AOP_FUNC[3]	AF6	
SPI_GRAPHITE_CS_L	AOP_FUNC[4]	AD4	
GPIO_GRAPHITE_TO_AOP_MOTION_INT	AOP_FUNC[5]	AE1	
SPI_PHOSPHORUS_CS_L	AOP_FUNC[6]	AE3	
GPIO_ALS_FH1_TO_AOP_IRQ_L	AOP_FUNC[7]	AF1	
GPIO_ALS_FH2_TO_AOP_IRQ_L	AOP_FUNC[8]	AF2	
GPIO_ORION_TO_AOP_IRQ	AOP_FUNC9/AOP_LPPLL	AF8	
GPIO_ROSALINE_TO_AOP_IRQ_L	AOP_FUNC[10]	AF5	
(USE SOC INTERNAL PULL-UP)	AOP_FUNC[11]	AF3	
(USE SOC INTERNAL PULL-UP)	AOP_FUNC[12]	AG5	
GPIO_GRAPE_TO_AOP_IRQ_L	AOP_FUNC13/AOP_PDM_CLK4	AF4	
GPIO_KONA_TO_AOP_TIME_SYNC	AOP_FUNC14/AOP_PDM_CLK3	AC6	
I2C_AOP_I2CM0_SCL_1V8	AOP_I2CM0_SCL	AE7	AOP I2C
I2C_AOP_I2CM0_SDA_1V8	AOP_I2CM0_SDA	AE6	NUB JTAG
I2C_AOP_I2CM1_SCL_1V8	AOP_I2CM1_SCL	AD7	
I2C_AOP_I2CM1_SDA_1V8	AOP_I2CM1_SDA	AD8	
GPIO_KONA_S_TO_SCORPIUS_TIME_SYNC	AOP_I2S0_BCLK	AH1	AOP I2S
GPIO_TITUS_TO_AOP_B2B_DETECT	AOP_I2S0_DIN	AK5	
NC_I2S_AOP_TO_CODEC_DOUT_R	AOP_I2S0_DOUT	AG8	
NC_I2S_AOP_TO_CODEC_LRCK	AOP_I2S0_LRCK	AH3	
GPIO_AOP_TO_SCORPIUSMCU_NRST_L	AOP_I2S0_MCK	AJ4	
DMIC2_MIC_SCLK	AOP_I2S1_BCLK/AOP_PDM_IN1_CLK	AG1	
NC_AOP_I2S1_DIN	AOP_I2S1_DIN	AG2	
DMIC3_MIC_SD	AOP_I2S1_DOUT/AOP_PDM_IN2_DAT	AH6	
DMIC4_MIC_SCLK	AOP_I2S1_LRCK/AOP_PDM_IN2_CLK	AG7	
DMIC3_MIC_SCLK	AOP_I2S1_MCK/AOP_PDM_CLK2	AJ5	
DMIC1_MIC_SCLK	AOP_PDM_CLK0	AF7	AOP PDM
DMIC1_MIC_SD	AOP_PDM_DATA0	AK8	
DMIC2_MIC_SD	AOP_PDM_DATA1	AE4	
GPIO_AOP_TO_NFC	AOP_PDM_DATAOUT	AG6	
GPIO_AOP_TO_ORION_HWEN	AOP_PDM_OUT0_CLK	AJ7	
SPI_SENSORS_MISO	AOP_SPI_MISO	AC3	AOP SPI
SPI_SENSORS_MOSI_R	AOP_SPI_MOSI	AC2	SMC GPIO
SPI_SENSORS_SCLK_R	AOP_SPI_SCLK	AC1	
UART_BB_TO_AOP_TX	AOP_UART0_RXD	AC5	AOP UART
UART_AOP_TO_BB_TX	AOP_UART0_TXD	AC4	
GPIO_AOP_TO_WLAN_CONTEXT_B	AOP_UART1_RXD	AD3	
GPIO_AOP_TO_WLAN_CONTEXT_A	AOP_UART1_TXD	AD5	
UART_GRAPE_TO_AOP_TX	AOP_UART2_RXD	AC7	
UART_AOP_TO_GRAPE_TX	AOP_UART2_TXD	AC8	

NUB_DOCK_ATTENTION/NUB_PDM_CLK1		AM2	NC_NUB_DOCK_ATTENTION
NUB_DOCK_CONNECT		AN5	USB_TO_SOC_DOCK_CONNECT
NUB GPIO	NUB_FUNC[15]	AM8	NC_NUB_FUNC15
	NUB_FUNC[16]	AK2	GPIO_SCORPIUS_TO_AOP_IRQ
	NUB_FUNC[17]	AM6	NC_NUB_FUNC17
	NUB_FUNC[18]	AM5	NC_NUB_FUNC18
	NUB_FUNC[19]	AM4	NC_NUB_FUNC19
	NUB_FUNC[20]	AN7	NC_NUB_FUNC20
	NUB_FUNC[21]	AN4	NC_NUB_FUNC21
	NUB_FUNC[22]	AL1	NC_NUB_FUNC22
NUB SPMI	NUB_SPMI_SCLK	AM7	NUB_SPMI_ATHENA_SCLK
	NUB_SPMI_SDATA	AL7	NUB_SPMI_ATHENA_SDATA
NUB SWD	NUB_SWD_TCK_OUT	AK3	SWD_PERIPHERAL_SWCLK
	NUB_SWD_TMS0	AL3	SWD_ACE_SWDIO
	NUB_SWD_TMS1	AN6	SWD_GRAPE_SWDIO
JTAG_SEL		AM1	JTAG_SOC_SEL
JTAG_TCK		AP1	JTAG_SOC_TCK
JTAG_TDI		AP4	TP_JTAG_SOC_TDI
JTAG_TDO		AP3	TP_JTAG_SOC_TDO
JTAG_TMS		AP7	JTAG_SOC_TMS
JTAG_TRST*		AN8	TP_JTAG_SOC_TRST_L
SMC I2C	SMC_I2CM0_SCL	AK7	I2C_SMC_I2CM0_SCL_1V8
	SMC_I2CM0_SDA	AH7	I2C_SMC_I2CM0_SDA_1V8
SMC_I2CM1_SCL/SMC_UART1_TXD		AG3	I2C_SMC_I2CM1_SCL_1V8
SMC_I2CM1_SDA/SMC_UART1_RXD		AH4	I2C_SMC_I2CM1_SDA_1V8
	SMC_I2CM2_SCL	AJ6	I2C_SMC_I2CM2_SCL_1V8
	SMC_I2CM2_SDA	AL6	I2C_SMC_I2CM2_SDA_1V8
	SMC_I2CM3_SCL	AK6	I2C_SMC_I2CM3_SCL_1V8
	SMC_I2CM3_SDA	AJ1	I2C_SMC_I2CM3_SDA_1V8
	SMC_I2CM4_SCL	AK4	I2C_SMC_I2CM4_SCL_1V8
	SMC_I2CM4_SDA	AL4	I2C_SMC_I2CM4_SDA_1V8
	SMC_UART0_RXD	AJ8	NC_SMC_UART0_RXD
	SMC_UART0_TXD	AG4	NC_GPIO_SMC_TO_USBPD_RST_L
SMC_GPIO0		AJ3	GPIO_POTOMAC_TO_SOC_TO_PMU_IRQ_L
SMC_GPIO1		AJ2	GPIO_ACE_TO_SMC_IRQ_L
RT_CLK32768		AM3	CLK_PMU_TO_AOP_32K
CLKS AND RESET	CLK24M_OUT	AK1	CLK_GRAPE_24MHZ
	CFSB_AON	AN3	RESET_PMU_TO_SYSTEM_L
	COLD_RESET*	AN2	RESET_PMU_TO_SYSTEM_L_R_CRESET
	AON_SLEEP1_RESET*	AN1	NC_AON_SLEEP1_RESET_L
WDOG		AP6	WDOG_SOC

R1020 33 5% 1/32W MF 01005
R1025 33 5% 1/32W MF 01005

R0731 33 5% 1/32W MF 01005 PLACE_NEAR=U0600.AK1:5MM

R0610 0.00 MB% 1/32W 01005

PP1V8_S3
R0681 47.0K 5% 1/32W MF 01005
R0680 47.0K 5% 1/32W MF 01005
R0682 47.0K 5% 1/32W MF 01005
FROM SOC DATASHEET SEC:5.24.1

PP1V8_S3
R0683 10K 5% 1/32W MF 01005
C0683 0.1UF 20% 6.3V X5R-CERM 01005

SMC I2C PULL-UPS

PP1V8_S3

R0960 4.7K 5% 1/32W MF 01005
R0961 4.7K 5% 1/32W MF 01005
R0962 4.7K 5% 1/32W MF 01005
R0963 4.7K 5% 1/32W MF 01005
R0964 4.7K 5% 1/32W MF 01005
R0965 4.7K 5% 1/32W MF 01005
R09A2 2.2K 5% 1/32W MF 01005
R09A3 2.2K 5% 1/32W MF 01005
R09A4 4.7K 5% 1/32W MF 01005 NOSTUFF
R09A5 4.7K 5% 1/32W MF 01005 NOSTUFF

I2C_SMC_I2CM0_SCL_1V8
I2C_SMC_I2CM0_SDA_1V8
I2C_SMC_I2CM1_SCL_1V8
I2C_SMC_I2CM1_SDA_1V8
I2C_SMC_I2CM2_SCL_1V8
I2C_SMC_I2CM2_SDA_1V8
I2C_SMC_I2CM3_SCL_1V8
I2C_SMC_I2CM3_SDA_1V8
I2C_SMC_I2CM4_SCL_1V8
I2C_SMC_I2CM4_SDA_1V8

THESE GATES HAVE BACKPOWER PROTECTION

PP1V8_EXT_SW1
C1031 0.1UF 20% 6.3V X5R-CERM 01005
U1031 74AUP1G34GX SOT1226
R1032 33 5% 1/32W MF 01005
SWD_PERIPHERAL_SWCLK PLACE_NEAR=U0600.AK3:13MM
SWD_PER_NAND1_SWCLK_R
SWD_NAND1_SWCLK

PP1V8_EXT_SW1
C1035 0.1UF 20% 6.3V X5R-CERM 01005
U1035 74AUP1G34GX SOT1226
R1035 33 5% 1/32W MF 01005
SWD_PERIPHERAL_SWCLK PLACE_NEAR=U0600.AK3:13MM
SWD_PER_NAND2_SWCLK_R
SWD_NAND2_SWCLK

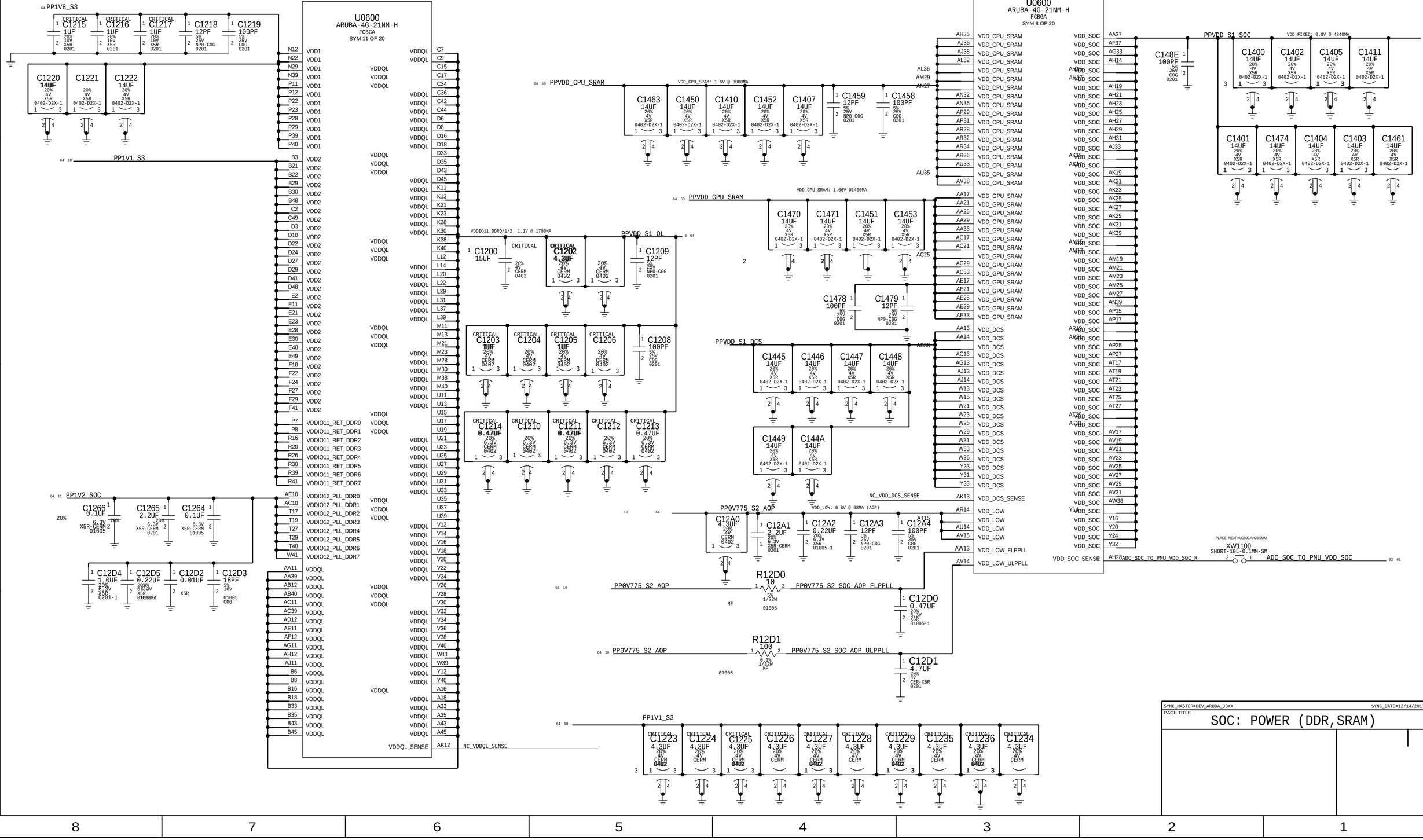
PP1V8_S2_GRAPE
C1032 0.1UF 20% 6.3V X5R-CERM 01005
U1032 74AUP1G34GX SOT1226
R1033 33 5% 1/32W MF 01005
SWD_PERIPHERAL_SWCLK PLACE_NEAR=U0600.AK3:13MM
SWD_PER_KONA_SWCLK_R
SWD_GRAPE_SWCLK

PP1V8_S3
C1033 0.1UF 20% 6.3V X5R-CERM 01005
U1034 74AUP1G34GX SOT1226
R1034 33 5% 1/32W MF 01005
SWD_PERIPHERAL_SWCLK PLACE_NEAR=U0600.AK3:13MM
SWD_PER_ACE_SWCLK_R
SWD_ACE_SWCLK

PP1V8_S2_GRAPE
PP1V8_S3
R0611 1.00K 5% 1/32W MF 01005
R0612 1.00K 5% 1/32W MF 01005
SWD_ACE_SWDIO
SWD_GRAPE_SWDIO

SYNC_MASTER=DEV_ARUBA_J3XX	SYNC_DATE=12/14/2017
PAGE TITLE	SOC: AOP

SOC: POWER (DDR,SRAM)

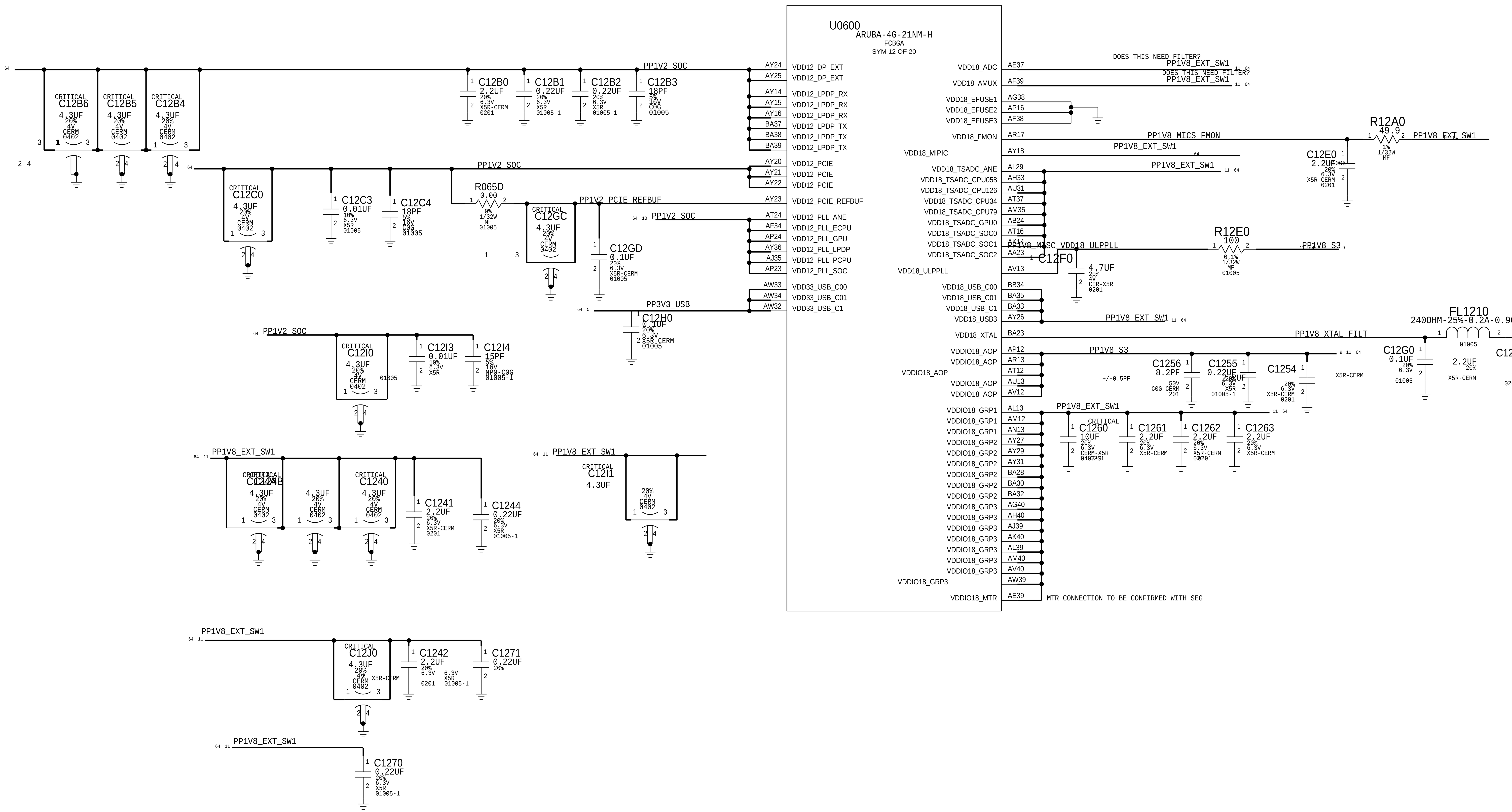


SOC: POWER (IO)

VDD12_PLL_CPU: 1.2V @ 7MA
VDD12_PLL_SOC: 1.2V @ 4MA
VDD12_PLL_GPU: 1.2V @ 7MA
VDD12_PLL_LPDP: 1.2V @ 9MA
VDD12_PCIE_REFBUF: 1.2V @ 48MA
VDD12_LPDP_TX: 1.2V @ 45MA
VDD12_LPDP_RX: 1.2V @ 55MA
VDD12_USB3: 1.2V @ 25MA

VDD18_AOP: 1.8V @ TBDMA
VDD18_USB: 1.8V @ 17MA
VDD18_TSADC: 1.8V @ 10.4MA
VDDIO18_GRP: 1.8V @ TBDMA
VDD18_MIPI: 1.8V @ 2MA
VDD18_XTAL: 1.8V @ 2MA
VDD18_LPOSC: 1.8V @ 1MA
VDD18_FMON: 1.8V @ 1MA
VDD18_PCIE: 1.8V @ 81.7MA
VDD33_USB: 3.3V @ 5MA

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
138S00049	138S0831		C1221 & MORE	RDAR://PROBLEM/19974064



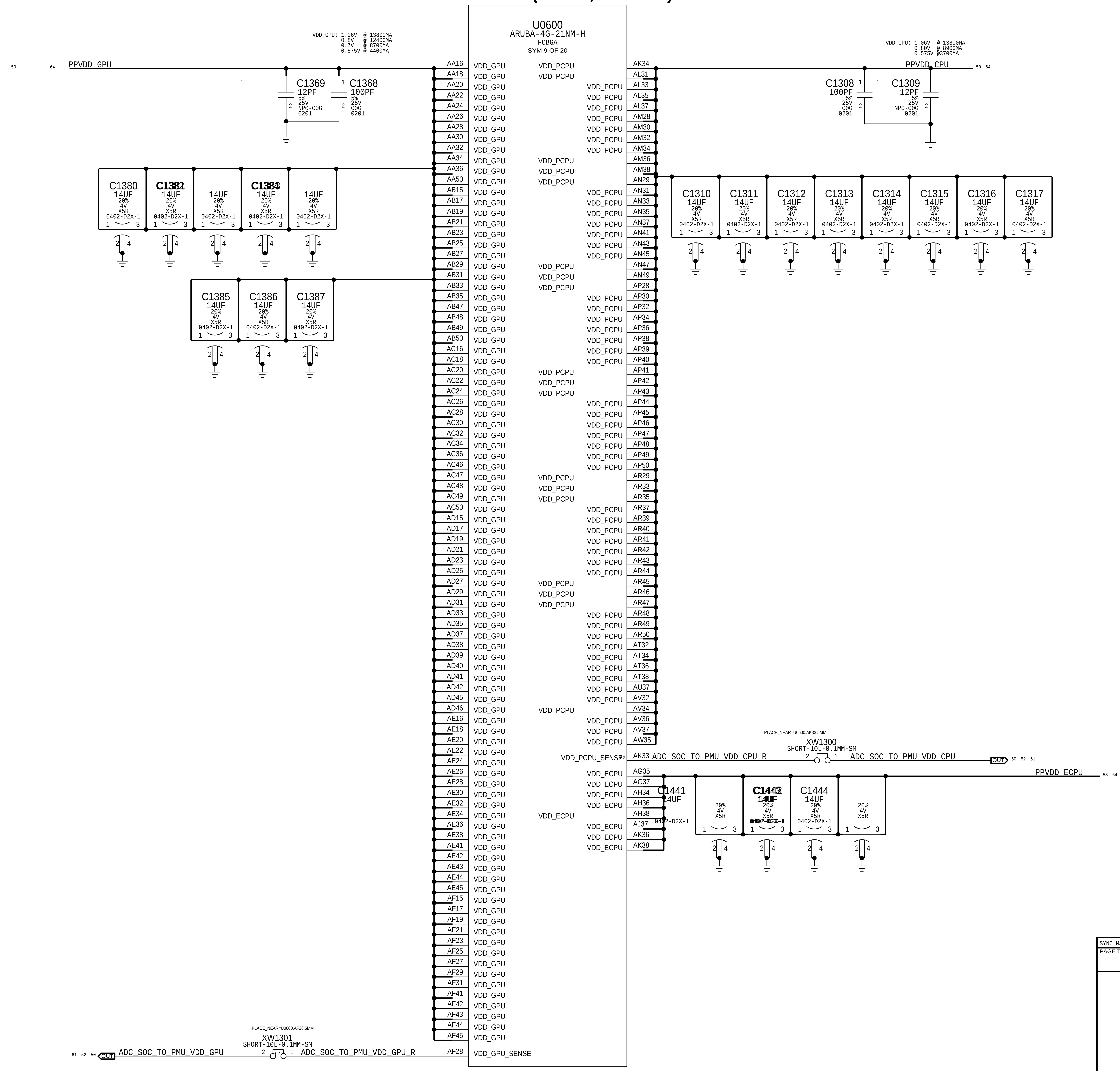
U0600
ARUBA-4G-21NM-H
FCBGA
SYM 12 OF 20
AY24 VDD12_DP_EXT
AY25 VDD12_DP_EXT
AY14 VDD12_LPDP_RX
AY15 VDD12_LPDP_RX
AY16 VDD12_LPDP_RX
BA37 VDD12_LPDP_TX
BA38 VDD12_LPDP_TX
BA39 VDD12_LPDP_TX
AY20 VDD12_PCIE
AY21 VDD12_PCIE
AY22 VDD12_PCIE
AY23 VDD12_PCIE_REFBUF
AT24 VDD12_PLL_ANE
AF34 VDD12_PLL_ECPU
AP24 VDD12_PLL_GPU
AY36 VDD12_PLL_LPDP
AJ35 VDD12_PLL_PCPU
AP23 VDD12_PLL_SOC
AW33 VDD33_USB_C00
AW34 VDD33_USB_C01
AW32 VDD33_USB_C1
VDD18_ADC AE37
VDD18_AMUX AF39
VDD18_EFUSE1 AG38
VDD18_EFUSE2 AP16
VDD18_EFUSE3 AF38
VDD18_FMON AR17
VDD18_MIPIC AY18
VDD18_TSADC_ANE AL29
VDD18_TSADC_CPU058 AH33
VDD18_TSADC_CPU126 AU31
VDD18_TSADC_CPU34 AT37
VDD18_TSADC_CPU79 AM35
VDD18_TSADC_GPU0 AB24
VDD18_TSADC_SOC0 AT16
VDD18_TSADC_SOC1 AK14
VDD18_TSADC_SOC2 AA23
VDD18_ULPPLL AV13
VDD18_USB_C00 BB34
VDD18_USB_C01 BA35
VDD18_USB_C1 BA33
VDD18_USB3 AY26
VDD18_XTAL BA23
VDDIO18_AOP AP12
VDDIO18_AOP AR13
VDDIO18_AOP AT12
VDDIO18_AOP AU13
VDDIO18_AOP AV12
VDDIO18_GRP1 AL13
VDDIO18_GRP1 AM12
VDDIO18_GRP1 AN13
VDDIO18_GRP2 AY27
VDDIO18_GRP2 AY29
VDDIO18_GRP2 AY31
VDDIO18_GRP2 BA28
VDDIO18_GRP2 BA30
VDDIO18_GRP2 BA32
VDDIO18_GRP3 AG40
VDDIO18_GRP3 AH40
VDDIO18_GRP3 AJ39
VDDIO18_GRP3 AK40
VDDIO18_GRP3 AL39
VDDIO18_GRP3 AM40
VDDIO18_GRP3 AV40
VDDIO18_GRP3 AW39
VDDIO18_MTR AE39
MTR CONNECTION TO BE CONFIRMED WITH SEG
DOES THIS NEED FILTER?
PP1V8_EXT_SW1
PP1V8_MICS_FMON
PP1V8_MISC_VDD18_ULPPLL
PP1V8_S3
PP1V8_XTAL_FILT
PP1V2_SOC
PP1V2_PCIE_REFBUF
PP3V3_USB
R12A0 49.9 1% 1/32W MF
R12E0 100 0.1% 1/32W MF 01005
R065D 0.00 0% 1/32W MF 01005
FL1210 240OHM-25%-0.2A-0.9OHM 01005
CRITICAL C12B6 4.3UF 20% 4V CERM 0402
CRITICAL C12B5 4.3UF 20% 4V CERM 0402
CRITICAL C12B4 4.3UF 20% 4V CERM 0402
C12B0 2.2UF 20% 6.3V X5R-CERM 0201
C12B1 0.22UF 20% 6.3V X5R 01005-1
C12B2 0.22UF 20% 6.3V X5R 01005-1
C12B3 18PF 5% 16V C0G 01005
CRITICAL C12C0 4.3UF 20% 4V CERM 0402
C12C3 0.01UF 10% 6.3V X5R 01005
C12C4 18PF 5% 16V C0G 01005
CRITICAL C12GC 4.3UF 20% 4V CERM 0402
C12GD 0.1UF 20% 6.3V X5R-CERM 01005
C12H0 0.1UF 20% 6.3V X5R-CERM 01005
CRITICAL C12I0 4.3UF 20% 4V CERM 0402
C12I3 0.01UF 10% 6.3V X5R
C12I4 15PF 5% 16V NP0-C0G 01005-1
CRITICAL C124B 4.3UF 20% 4V CERM 0402
CRITICAL C1240 4.3UF 20% 4V CERM 0402
C1241 2.2UF 20% 6.3V X5R-CERM 0201
C1244 0.22UF 20% 6.3V X5R 01005-1
CRITICAL C12I1 4.3UF 20% 4V CERM 0402
CRITICAL C12J0 4.3UF 20% 4V CERM 0402
C1242 2.2UF 20% 6.3V X5R-CERM 0201
C1271 0.22UF 20% 6.3V X5R 01005-1
C1270 0.22UF 20% 6.3V X5R 01005-1
C12E0 2.2UF 20% 6.3V X5R-CERM 0201
C12F0 4.7UF 20% 4V CER-X5R 0201
C1256 8.2PF +/-0.5PF 50V C0G-CERM 201
C1255 0.22UF 20% 6.3V X5R 01005-1
C1254 2.2UF 20% 6.3V X5R-CERM 0201
CRITICAL C1260 10UF 20% 6.3V CERM-X5R 0402
C1261 2.2UF 20% 6.3V X5R-CERM
C1262 2.2UF 20% 6.3V X5R-CERM 0201
C1263 2.2UF 20% 6.3V X5R-CERM
C12G0 0.1UF 20% 6.3V 01005
C12G1 2.2UF 20% 6.3V X5R-CERM 0201-2

SYNC_MASTER=DEV_ARUBA_J3XX SYNC_DATE=12/14/2017

PAGE TITLE

SOC: POWER (IO)

SOC: POWER (CPU, GPU)



SYNC_MASTER=DEV_ARUBA_J3XX SYNC_DATE=12/14/2017

PAGE TITLE

SOC: POWER (CPU, GPU)

SOC: POWER (SRAM, SOC)

VDD_FIXED_CPU: 0.8V @ 6MA
VDD_FIXED_PCIE:0.8V @ 290.1MA
VDD_FIXED_PCIE_REFBUF: 0.8V @ 20MA
VDD_FIXED_USB: 0.8V @ 6.6MA
VDD_FIXED_USB3: 0.8V @ 89.4MA
VDD_FIXED_PLL_SOC: 0.8V @ 10MA
VDD_FIXED_PLL_GPU: 0.8V @ 6MA
VDD_FIXED_PLL_DDR: 0.8V @ 4MA
VDD_FIXED_MIPI: 0.8V @ 10MA
VDD_FIXED_PLL_LPDP: 0.8V @ 2MA
VDD_FIXED_LPDP_TX: 0.8V @ 43.2MA
VDD_FIXED_LPDP_RX: 0.8V @ 5.2MA
VDD_FIXED_DP_EXT: 0.8V @ 32.2MA

VDD_FIXED: 0.8V @ 4840MA

C1430 100PF 5% 25V C0G 0201

C1431 14UF 20% 4V X5R 0402-DZX-1

C1432 14UF 20% 4V X5R 0402-DZX-1

C1433 14UF 20% 4V X5R 0402-DZX-1

C1434 14UF 20% 4V X5R 0402-DZX-1

C1435 14UF 20% 4V X5R 0402-DZX-1

C1436 14UF 20% 4V X5R 0402-DZX-1

C1437 14UF 20% 4V X5R 0402-DZX-1

C1438 14UF 20% 4V X5R 0402-DZX-1

PPVDD_S1_FIXED

U0600
ARUBA-4G-21NM-H
FCBGA
SYM 10 OF 20

AB37	VDD_FIXED	
AC14	VDD_FIXED	
AG14	VDD_FIXED	
AG16	VDD_FIXED	
AG18	VDD_FIXED	
AG20	VDD_FIXED	
AG22	VDD_FIXED	
AG24	VDD_FIXED	
AG26	VDD_FIXED	
AG28	VDD_FIXED	
AG30	VDD_FIXED	
AG32	VDD_FIXED	
AG39	VDD_FIXED	
AJ16	VDD_FIXED	
AJ18	VDD_FIXED	
AJ20	VDD_FIXED	
AJ22	VDD_FIXED	
AJ24	VDD_FIXED	
AJ26	VDD_FIXED	
AJ28	VDD_FIXED	
AJ30	VDD_FIXED	
AJ32	VDD_FIXED	
AL14	VDD_FIXED	
AL16	VDD_FIXED	
AL18	VDD_FIXED	
AL20	VDD_FIXED	
AL22	VDD_FIXED	
AL24	VDD_FIXED	
AL26	VDD_FIXED	
AL28	VDD_FIXED	
AL30	VDD_FIXED	
AM39	VDD_FIXED	
AN14	VDD_FIXED	
AN16	VDD_FIXED	
AN18	VDD_FIXED	
AN20	VDD_FIXED	
AN22	VDD_FIXED	
AN24	VDD_FIXED	
AN26	VDD_FIXED	
AR16	VDD_FIXED	
AR18	VDD_FIXED	
AR20	VDD_FIXED	
AR22	VDD_FIXED	
AR24	VDD_FIXED	
AR26	VDD_FIXED	
AU16	VDD_FIXED	
AU18	VDD_FIXED	
AU20	VDD_FIXED	
AU22	VDD_FIXED	
AU24	VDD_FIXED	
AU26	VDD_FIXED	
AU28	VDD_FIXED	
AU30	VDD_FIXED	
AU39	VDD_FIXED	
AW28	VDD_FIXED	
AW30	VDD_FIXED	
Y15	VDD_FIXED	
Y21	VDD_FIXED	
Y25	VDD_FIXED	
Y29	VDD_FIXED	
Y35	VDD_FIXED	

VDD_FIXED_PCPU	AK35	
VDD_FIXED_ECPU	AF35	
VDD_FIXED_PLL_ANE	AT26	PPVDD_S1_FIXED 13 64
VDD_FIXED_DP_EXT	AW24	PPVDD_S1_FIXED
VDD_FIXED_DP_EXT	AW25	
VDD_FIXED_LPDP_RX	AW14	PPVDD_S1_FIXED
VDD_FIXED_LPDP_RX	AW15	
VDD_FIXED_LPDP_RX	AW16	
VDD_FIXED_LPDP_TX	AY37	PPVDD_S1_FIXED 64
VDD_FIXED_LPDP_TX	AY38	
VDD_FIXED_LPDP_TX	AY39	
VDD_FIXED_MIPIC	AW18	PPVDD_S1_FIXED 64
VDD_FIXED_PCIE	AW20	PPVDD_S1_FIXED
VDD_FIXED_PCIE	AW21	
VDD_FIXED_PCIE	AW22	
VDD_FIXED_PCIE_REFBUF	AW23	
VDD_FIXED_MTR	AF40	VDD_FIXED_MTR UNDER WHICH VOLTAGE NAME? VDDIO11_PLL_DDR0-7 1.1V @ 17MA
VDD_FIXED_PLL_DDR0	AE9	PP1V1_DDR_PLL_SOC_FILT
VDD_FIXED_PLL_DDR1	AC9	
VDD_FIXED_PLL_DDR2	R17	
VDD_FIXED_PLL_DDR3	R39	
VDD_FIXED_PLL_DDR4	R37	
VDD_FIXED_PLL_DDR5	R38	
VDD_FIXED_PLL_DDR6	R40	
VDD_FIXED_PLL_DDR7	W42	
VDD_FIXED_PLL_GPU	AR25	PPVDD_S1_FIXED 64
VDD_FIXED_PLL_LPDP	AW36	PPVDD_S1_FIXED 13 64
VDD_FIXED_PLL_SOC	AR23	PPVDD_S1_FIXED 13 64
VDD_FIXED_USB_C0	BA34	PPVDD_S1_FIXED
VDD_FIXED_USB_C01	AY35	
VDD_FIXED_USB_C1	AY33	
VDD_FIXED_USB3	AW26	PPVDD_S1_FIXED 64

PPVDD_S1_FIXED 64

C1496 4.3UF 20% 4V CERM 0402

PPVDD_S1_FIXED_PCIE_R

R145D 0.00 5% 1/32W MF 01005

PPVDD_S1_FIXED 13 64

C14GC 4.3UF 20% 4V CERM 0402

C14GD 0.1UF 20% 6.3V X5R-CERM 01005

C1230 2.2UF 20% 6.3V X5R-CERM 0201005

C1231 0.22UF 10% 6.3V CER-X5R

C1232 220PF 5% 16V C0G 01005

C14GB 0.1UF 20% 6.3V X5R-CERM

C14GA 0.1UF 20% 6.3V X5R-CERM 01005

R1230 120-OHM-25%-250MA-0.5DCR 01005

PPVDD_S1_FIXED 64

C14A1 2.2UF 20% 6.3V X5R-CERM 0201

PPVDD_S1_FIXED 13 64

C1493 2.2UF 20% 6.3V X5R-CERM 0201-2

SYNC_MASTER=DEV_ARUBA_J3XX	SYNC_DATE=12/14/2017
PAGE TITLE	
SOC: POWER (SRAM, SOC)	

SOC: GND (1)

U0600
ARUBA-4G-21NM-H
FCBGA
SYM 18 OF 20

BB8	VSS	VSS	BE50
BB15	VSS	VSS	BF2
BB16	VSS	VSS	BF8
BB17	VSS	VSS	BF15
BB18	VSS	VSS	BF18
BB19	VSS	VSS	BF22
BB23	VSS	VSS	BF27
BB26	VSS	VSS	BF30
BB30	VSS	VSS	BF48
BB31	VSS	VSS	BF49
BB32	VSS	VSS	C1
BB33	VSS	VSS	C3
BB40	VSS	VSS	C4
BB43	VSS	VSS	C5
BB46	VSS	VSS	C6
BB47	VSS	VSS	C8
BB48	VSS	VSS	C10
BC3	VSS	VSS	C11
BC6	VSS	VSS	C12
BC7	VSS	VSS	C13
BC8	VSS	VSS	C14
BC15	VSS	VSS	C16
BC16	VSS	VSS	C18
BC19	VSS	VSS	C19
BC23	VSS	VSS	C20
BC26	VSS	VSS	C21
BC30	VSS	VSS	C22
BC48	VSS	VSS	C23
BD1	VSS	VSS	C24
BD2	VSS	VSS	C25
BD5	VSS	VSS	C26
BD6	VSS	VSS	C27
BD7	VSS	VSS	C28
BD8	VSS	VSS	C29
BD9	VSS	VSS	C30
BD10	VSS	VSS	C31
BD11	VSS	VSS	C32
BD12	VSS	VSS	C33
BD13	VSS	VSS	C35
BD14	VSS	VSS	C37
BD15	VSS	VSS	C38
BD16	VSS	VSS	C39
BD17	VSS	VSS	C40
BD18	VSS	VSS	C41
BD19	VSS	VSS	C43
BD20	VSS	VSS	C45
BD21	VSS	VSS	C46
BD22	VSS	VSS	C47
BD23	VSS	VSS	C48
BD24	VSS	VSS	C50
BD25	VSS	VSS	D1
BD26	VSS	VSS	D2
BD27	VSS	VSS	D4
BD28	VSS	VSS	D5
BD29	VSS	VSS	D7
BD30	VSS	VSS	D9
BD46	VSS	VSS	D11
BD47	VSS	VSS	D12
BD50	VSS	VSS	D13
BE1	VSS	VSS	D14
BE2	VSS	VSS	D15
BE5	VSS	VSS	D17
BE6	VSS	VSS	D19
BE7	VSS	VSS	D20
BE8	VSS	VSS	D21
BE15	VSS	VSS	D23
BE16	VSS	VSS	D25
BE17	VSS	VSS	D26
BE18	VSS	VSS	D28
BE22	VSS	VSS	D30
BE27	VSS	VSS	D31
BE30	VSS	VSS	D32
BE31	VSS	VSS	D34
BE34	VSS	VSS	D36
BE37	VSS	VSS	D37
BE40	VSS	VSS	D38
BE43	VSS	VSS	D39
BE46	VSS	VSS	D40
BE48	VSS	VSS	D42
BE49	VSS	VSS	D44

U0600
ARUBA-4G-21NM-H
FCBGA
SYM 19 OF 20

D46	VSS	VSS	F40
D47	VSS	VSS	F42
D49	VSS	VSS	F43
D50	VSS	VSS	F44
E1	VSS	VSS	F45
E3	VSS	VSS	F46
E4	VSS	VSS	F47
E5	VSS	VSS	F48
E6	VSS	VSS	F49
E7	VSS	VSS	F50
E8	VSS	VSS	G1
E9	VSS	VSS	G2
E10	VSS	VSS	G3
E12	VSS	VSS	G4
E13	VSS	VSS	G5
E14	VSS	VSS	G6
E15	VSS	VSS	G7
E16	VSS	VSS	G8
E17	VSS	VSS	G9
E18	VSS	VSS	G10
E19	VSS	VSS	G11
E20	VSS	VSS	G12
E22	VSS	VSS	G13
E24	VSS	VSS	G14
E25	VSS	VSS	G15
E26	VSS	VSS	G16
E27	VSS	VSS	G17
E29	VSS	VSS	G18
E31	VSS	VSS	G19
E32	VSS	VSS	G20
E33	VSS	VSS	G21
E34	VSS	VSS	G22
E35	VSS	VSS	G23
E36	VSS	VSS	G24
E37	VSS	VSS	G25
E38	VSS	VSS	G26
E39	VSS	VSS	G27
E41	VSS	VSS	G28
E42	VSS	VSS	G29
E43	VSS	VSS	G30
E44	VSS	VSS	G31
E45	VSS	VSS	G32
E46	VSS	VSS	G33
E47	VSS	VSS	G34
E48	VSS	VSS	G35
E50	VSS	VSS	G36
F1	VSS	VSS	G37
F2	VSS	VSS	G38
F3	VSS	VSS	G39
F4	VSS	VSS	G40
F5	VSS	VSS	G41
F6	VSS	VSS	G42
F7	VSS	VSS	G43
F8	VSS	VSS	G44
F9	VSS	VSS	G45
F11	VSS	VSS	G46
F12	VSS	VSS	G47
F13	VSS	VSS	G48
F14	VSS	VSS	G49
F15	VSS	VSS	G50
F16	VSS	VSS	H1
F17	VSS	VSS	H2
F18	VSS	VSS	H3
F19	VSS	VSS	H4
F20	VSS	VSS	H5
F21	VSS	VSS	H6
F23	VSS	VSS	H7
F25	VSS	VSS	H8
F26	VSS	VSS	H9
F28	VSS	VSS	H10
F30	VSS	VSS	H11
F31	VSS	VSS	H12
F32	VSS	VSS	H13
F33	VSS	VSS	H14
F34	VSS	VSS	H15
F35	VSS	VSS	H16
F36	VSS	VSS	H17
F37	VSS	VSS	H18
F38	VSS	VSS	H19
F39	VSS	VSS	H20

U0600
ARUBA-4G-21NM-H
FCBGA
SYM 20 OF 20

T10	VSS	VSS	V35
T11	VSS	VSS	V37
T12	VSS	VSS	V39
T13	VSS	VSS	V41
T14	VSS	VSS	V42
T15	VSS	VSS	V43
T16	VSS	VSS	V44
T18	VSS	VSS	V45
T20	VSS	VSS	V46
T21	VSS	VSS	V47
T22	VSS	VSS	V48
T23	VSS	VSS	V49
T24	VSS	VSS	W9
T25	VSS	VSS	W10
T26	VSS	VSS	W12
T28	VSS	VSS	W14
T30	VSS	VSS	W16
T31	VSS	VSS	W20
T32	VSS	VSS	W22
T33	VSS	VSS	W24
T34	VSS	VSS	W30
T35	VSS	VSS	W32
T36	VSS	VSS	W34
T37	VSS	VSS	W40
T38	VSS	VSS	W43
T39	VSS	VSS	W44
T41	VSS	VSS	W45
T42	VSS	VSS	W46
T43	VSS	VSS	W47
T44	VSS	VSS	W48
T45	VSS	VSS	Y2
T46	VSS	VSS	Y5
T47	VSS	VSS	Y8
T48	VSS	VSS	Y9
T49	VSS	VSS	Y10
T50	VSS	VSS	Y11
U2	VSS	VSS	Y13
U5	VSS	VSS	Y22
U8	VSS	VSS	Y30
U9	VSS	VSS	Y34
U10	VSS	VSS	Y39
U12	VSS	VSS	Y41
U14	VSS	VSS	Y42
U16	VSS	VSS	Y43
U18	VSS	VSS	Y50
U20	VSS	VSS	AC41
U22	VSS	VSS	AD24
U24	VSS	VSS	AD28
U26	VSS	VSS	AD9
U28	VSS	VSS	AE2
U30	VSS	VSS	AE8
U32	VSS		
U34	VSS		
U36	VSS		
U38	VSS		
U40	VSS		
U41	VSS		
U42	VSS		
U43	VSS		
U44	VSS		
U45	VSS		
U46	VSS		
U47	VSS		
U48	VSS		
U49	VSS		
U50	VSS		
V9	VSS		
V10	VSS		
V11	VSS		
V13	VSS		
V15	VSS		
V17	VSS		
V19	VSS		
V21	VSS		
V23	VSS		
V25	VSS		
V27	VSS		
V29	VSS		
V31	VSS		
V33	VSS		

VSS_DDR_SENSE	AL12	TP_VSS_DDR_SENSE 61
VSS_PCPU_SENSE	AK32	TP_VSS_PCPU_SENSE 61
VSS_SENSE	AG29	TP_VSS_SENSE 61

U0600
ARUBA-4G-21NM-H
FCBGA
SYM 15 OF 20

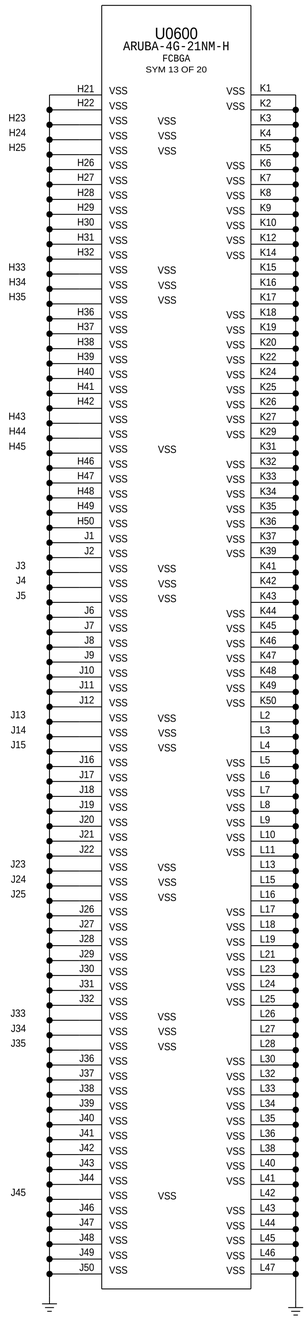
A2	VSS	VSS	AC12
A3	VSS	VSS	AC15
A8	VSS	VSS	AC19
A9	VSS	VSS	AC23
A10	VSS	AC27	VSS
A11	VSS	VSS	AC31
A12	VSS	VSS	AC35
A13	VSS	VSS	AC37
A14	VSS	VSS	AC38
A15	VSS	VSS	AC40
A17	VSS	VSS	AC42
A19	VSS	VSS	AD10
A20	VSS	VSS	AD11
A21	VSS	VSS	AD16
A22	VSS	AD18	VSS
A25	VSS	VSS	AD20
A32	VSS	VSS	AD22
A34	VSS	VSS	AD26
A36	VSS	VSS	AD30
A37	VSS	VSS	AD32
A38	VSS	VSS	AD34
A39	VSS	VSS	AD36
A40	VSS	VSS	AD44
A41	VSS	VSS	AD47
A42	VSS	AD50	VSS
A44	VSS	VSS	AE5
A46	VSS	VSS	AE12
A47	VSS	VSS	AE15
A48	VSS	VSS	AE19
A49	VSS	VSS	AE23
AA6	VSS	VSS	AE27
AA7	VSS	VSS	AE31
AA8	VSS	VSS	AE35
AA9	VSS	VSS	AE40
AA10	VSS	AF9	VSS
AA12	VSS	VSS	AF11
AA15	VSS	AF16	
AA19	VSS	VSS	AF18
AA27	VSS	VSS	AF20
AA31	VSS	VSS	AF22
AA35	VSS	VSS	AF24
AA38	VSS	VSS	AF26
AA40	VSS	VSS	AF30
AA41	VSS	VSS	AF32
AA42	VSS	AF33	VSS
AA45	VSS	VSS	AF36
AA47	VSS	AG9	
AB1	VSS	VSS	AG10
AB2	VSS	VSS	AG12
AB3	VSS	VSS	AG15
AB4	VSS	VSS	AG17
AB5	VSS	VSS	AG19
AB6	VSS	VSS	AG21
AB7	VSS	VSS	AG23
AB8	VSS	AG25	VSS
AB9	VSS	AG27	VSS
AB10	VSS	AG31	
AB11	VSS	VSS	AG34
AB13	VSS	VSS	AG36
AB14	VSS	VSS	AG41
AB16	VSS	VSS	AG42
AB18	VSS	VSS	AG43
AB20	VSS	VSS	AG44
AB22	VSS	VSS	AG47
AB26	VSS	VSS	AG50
AB28	VSS	VSS	AH2
AB30	VSS	AH5	
AB32	VSS	VSS	AH8
AB34	VSS	VSS	AH9
AB36	VSS	VSS	AH10
AB39	VSS	VSS	AH11
AB41	VSS	VSS	AH13
AB42	VSS	VSS	AH16
AB43	VSS	VSS	AH18

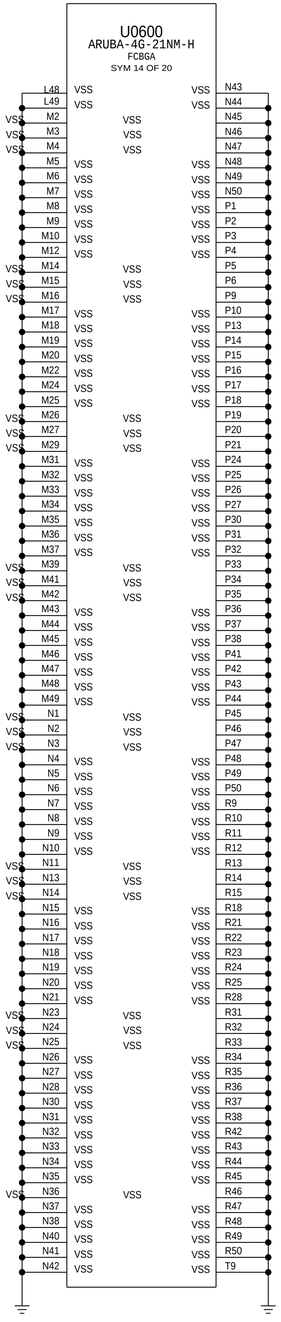
SYNC_MASTER=DEV_ARUBA_J3XX SYNC_DATE=12/14/2017

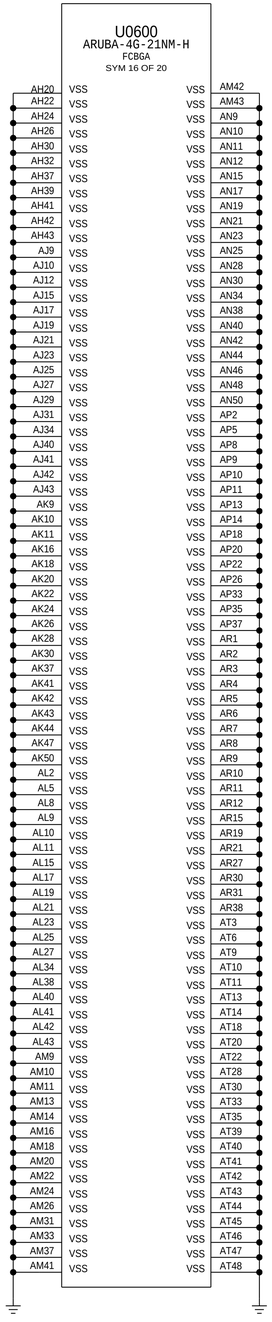
PAGE TITLE

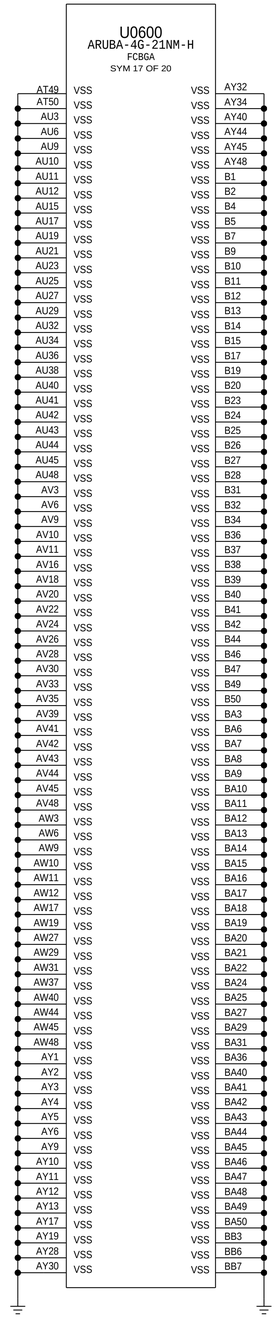
SOC: GND

SOC: GND (2)









SYNC_MASTER=DEV_ARUBA_J3XX SYNC_DATE=12/14/2017

PAGE TITLE

SOC: GND-2


S4E NAND
CAPS
?MA MAX
PP1V8_EXT_SW1
C1826 4UF 20% 4V X5R 0201 ROOM=NAND1
C1810 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=NAND1
C1829 10UF 20% 6.3V CERM-X5R 0402-2 ROOM=NAND1
C1830 10UF 20% 6.3V CERM-X5R 0402-2 ROOM=NAND1
C1824 4UF 20% 4V X5R 0201 ROOM=NAND1
C1841 4UF 20% 4V X5R 0201 ROOM=NAND1
C1843 4UF 20% 4V X5R 0201 ROOM=NAND1
C1845 4UF 20% 4V X5R 0201 ROOM=NAND1
C1847 4UF 20% 4V X5R 0201 ROOM=NAND1
C1811 220PF 5% 16V C0G 01005 ROOM=NAND1
C1817 4.7PF +/-0.1PF 16V NP0-C0G 01005 ROOM=NAND1
C1823 68PF 5% 6.3V 01005 ROOM=NAND1
C1812 47PF 5% 16V NP0-C0G 01005 ROOM=NAND1
?MA MAX
PP0V9_NAND
C1802 26UF 20% 4V X5R 0402-0.1MM ROOM=NAND1
C1805 26UF 20% 4V X5R 0402-0.1MM ROOM=NAND1
C1800 4UF 20% 4V X5R 0201 ROOM=NAND1
C1801 4UF 20% 4V X5R 0201 ROOM=NAND1
C1822 4UF 20% 4V X5R 0201 ROOM=NAND1
C1827 4UF 20% 4V X5R 0201 ROOM=NAND1
C1840 4UF 20% 4V X5R 0201 ROOM=NAND1
C1842 4UF 20% 4V X5R 0201 ROOM=NAND1
C1844 4UF 20% 4V X5R 0201 ROOM=NAND1
C1846 4UF 20% 4V X5R 0201 ROOM=NAND1
C1803 220PF 5% 16V C0G 01005 ROOM=NAND1
C1806 220PF 5% 16V C0G 01005 ROOM=NAND1
C1809 4.7PF +/-0.1PF 16V NP0-C0G 01005 ROOM=NAND1
C1814 68PF 5% 6.3V NP0-C0G 01005 ROOM=NAND1
C1820 47PF 5% 16V NP0-C0G 01005 ROOM=NAND1
C1828 22PF 5% 16V CERM 01005 ROOM=NAND1
PP2V63_OTP
C1883 10UF 20% 6.3V CERM-X5R 0402-2 ROOM=NAND1
C1882 10UF 20% 6.3V CERM-X5R 0402-2 ROOM=NAND1
C1899 10UF 20% 6.3V CERM-X5R 0402-2 ROOM=NAND1
C1898 10UF 20% 6.3V CERM-X5R 0402-2 ROOM=NAND1
C1887 4UF 20% 6.3V CERM-X5R 0201 ROOM=NAND1
C1886 4UF 20% 6.3V CERM-X5R 0201 ROOM=NAND1
C1885 4UF 6.3V CERM-X5R 0201 ROOM=NAND1
C1884 4UF 20% 6.3V CERM-X5R 0201 ROOM=NAND1
PP1V8_EXT_SW1
C1888 10UF 20% 6.3V CERM-X5R 0402-2 ROOM=NAND1
C1889 10UF 20% 6.3V CERM-X5R 0402-2 ROOM=NAND1
C1890 4UF 20% 4V X5R 0201 ROOM=NAND1
C1891 4UF 4V 20% X5R 0201 ROOM=NAND1
C1892 4UF 4V 20% X5R 0201 ROOM=NAND1
C1893 4UF 20% 4V X5R 0201 ROOM=NAND1
PP0V9_NAND
C1894 26UF 20% 4V X5R 0402-0.1MM ROOM=NAND1
C1895 26UF 20% 4V X5R 0402-0.1MM ROOM=NAND1
C1896 4UF 20% 4V X5R 0201 ROOM=NAND1
C1897 4UF 20% 4V X5R 0201 ROOM=NAND1
?MA MAX (1US PEAK POWER)
PP2V63_OTP
C1813 10UF 20% 6.3V CERM-X5R 0402-2 ROOM=NAND1
C1816 10UF 20% 6.3V CERM-X5R 0402-2 ROOM=NAND1
C1819 10UF 20% 6.3V CERM-X5R 0402-2 ROOM=NAND1
C1821 10UF 20% 6.3V CERM-X5R 0402-2 ROOM=NAND1
C1849 C1850 4UF 20% 6.3V CERM-X5R 0201 ROOM=NAND1
C1861 C1852 4UF 20% 6.3V CERM-X5R 0201 ROOM=NAND1
C1815 22PF 5% 16V CERM 01005 ROOM=NAND1
C1818 4.7PF +/-0.1PF 16V 6.3V NP0-C0G 01005 ROOM=NAND1
C1831 68PF 5% NP0-C0G 01005
C1832 100PF 5% 25V 16V C0G-CERM 01005 ROOM=NAND1
C1834 220PF 5% C0G 01005 ROOM=NAND1
C1835 220PF 5% 16V C0G 01005
C1836 220PF 5% 16V 25V C0G 01005 ROOM=NAND1
C1837 100PF 5% C0G-CERM ROOM=NAND1
OMIT XW1800 SHORT-10L-0.1MM-SM ROOM=NAND1
PP1V8_NAND1_AVDD_H
NAND1_ANI1_VREF
NAND1_ANI0_VREF
U1800
SDMPEGFIH-512G
LGA
CRITICAL
OMIT_TABLE
PCI_AVDD_CLK_1 PCI_AVDD_CLK_2 PCI_AVDD_H PCI_VDD_1 PCI_VDD_2 AVDD18_PLL ANI0_VREF ANI1_VREF VDD VDDIO VCC VDD_PLL VPP
NC
CLK_SOC_TO_NAND_24MHZ M3 CLK_IN
PCIE_SOC_TO_NAND1_REFCLK_P K11 PCIE_REFCLK_P
PCIE_SOC_TO_NAND1_REFCLK_N J12 PCIE_REFCLK_M
PCIE_NAND1_TO_SOC_CLKREQ_L P5 PCIE_CLKREQ_N
PCIE_NAND1_RESREF H7 PCI_RESREF
PCIE_SOC_TO_NAND1_TX_P M11 PCIE_RX0_P
PCIE_SOC_TO_NAND1_TX_N N12 PCIE_RX0_M
GND_VOID=TRUE
R1804 3.01K 1% 1/32W MF 01005 ROOM=NAND1
PLACE_NEAR=U1800.R12:8MM
C1880 0.22UF 10% 01005 CER-X5R 6.3V
C1881 0.22UF 10% 01005 CER-X5R 6.3V
PLACE_NEAR=U1800.T11:8MM
PCIE_NAND1_TO_SOC_TX_P
PCIE_NAND1_TO_SOC_TX_N
PCIE_NAND1_TO_SOC_TX_C_P R12 PCIE_TX0_P
PCIE_NAND1_TO_SOC_TX_C_N T11 PCIE_TX0_M
GPIO_SOC_TO_NAND_RESET_L RESET* L4
G10 TRST*
Board trace <= 0.2Ohm
NAND1_ZQ_C K3 ZQ_C
NAND1_ZQ_N C10 ZQ_N
CKPLUS_WAIVE=MISS_P_DIFFPAIR
R1800 100 0.1% 1/32W MF 01005 ROOM=NAND1
R1801 300 0.1% 1/32 MF 01005
VSS
EXT_D0/BOOT0 B3 GPIO_PMU_TO_NAND_LOW_BATT_L
EXT_D1/BOOT1 C4 GPIO_SOC_TO_NAND_FW_STRAP
EXT_D2/BOOT2/SPINAND_SCLK B5 SPI_AP_TO_NAND_SCLK_BOOT_CFG0
EXT_D3/SWD_UID0/SPINAND_MISO C6 SPI_NAND_TO_AP_MISO_BOOT_CFG2
EXT_D4/UART_RX B7 NC
EXT_D5/SWD_UID1/SPINAND_MOSI C8 SPI_AP_TO_NAND_MOSI_BOOT_CFG1
EXT_D6/UART_TX B9 NC
EXT_D7/SPF B11 SYS_ALIVE
EXT_NCE/PERST* E8 PCIE_SOC_TO_NAND1_RESET_L
EXT_NRE/JTAG_TMS D7 SWD_NAND1_SWDIO_R R1810 0.00 SWD_NAND1_SWDIO
EXT_NWE/JTAG_TCK E6 SWD_NAND1_SWCLK_R R1811 0.00 SWD_NAND1_SWCLK
EXT_RNB/JTAG_TDO E4
EXT_CLE/JTAG_TDI D5 NC
EXT_ALE/JTAG_SEL D9
DROOP_N T3
WP_N G2 PP1V8_EXT_SW1
PAGE TITLE
NAND: NAND1

S4E NAND CAPS

SYNC_MASTER=J320_MLB SYNC_DATE=09/23/2017

PAGE TITLE

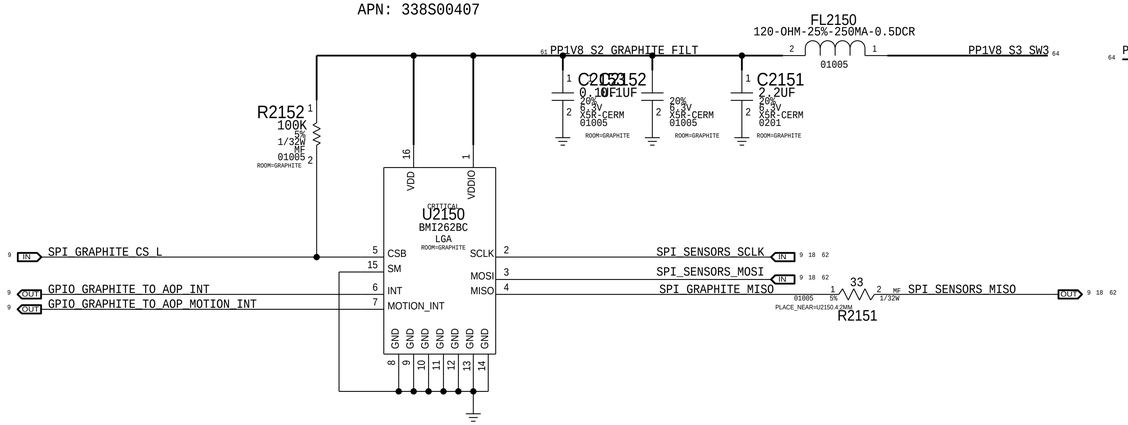
NAND: NAND2

SENSORS

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
155S00016	155S0686		FL2120,ECT	RDAR://PROBLEM/15809407

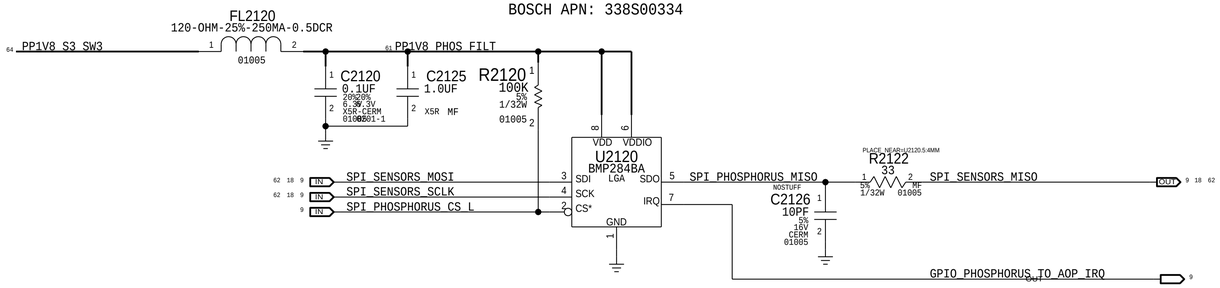
GRAPHITE - ACCEL & GYRO

APN: 338S00407



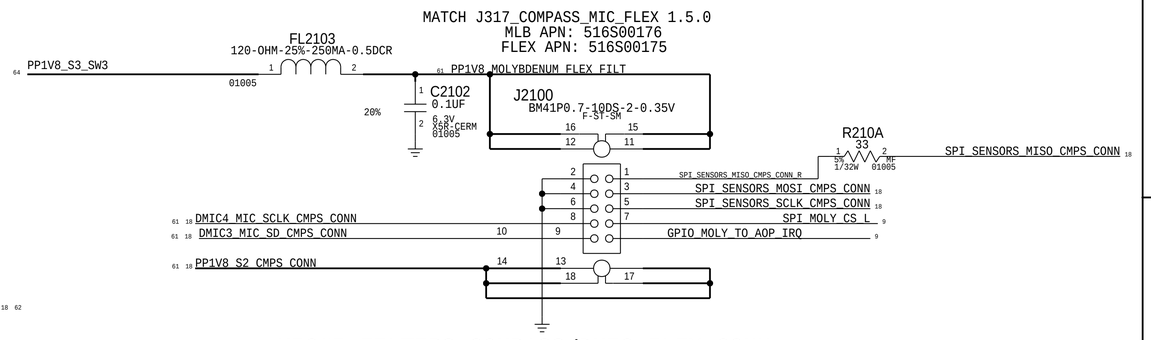
PHOSPHORUS2

BOSCH APN: 338S00334

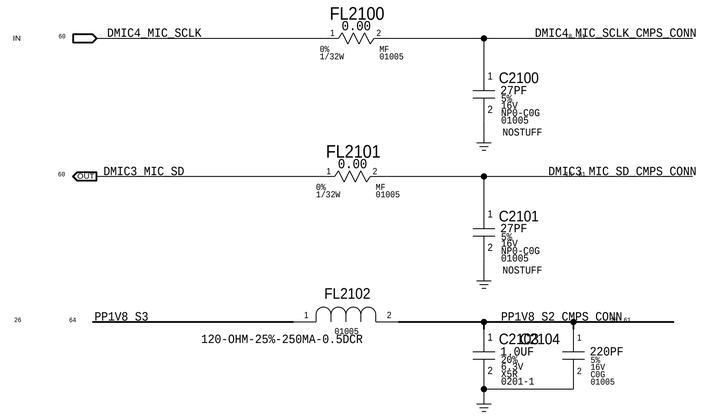


COMPASS/DMIC FLEX B2B

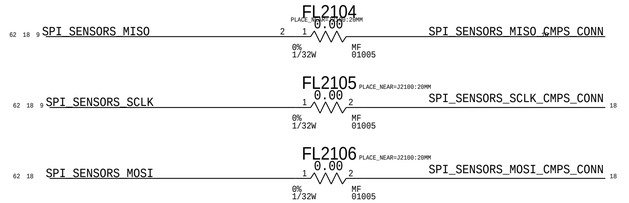
MATCH J317_COMPASS_MIC_FLEX 1.5.0
MLB APN: 516S00176
FLEX APN: 516S00175



MIC#5 FILTERS COMPASS/DMIC FLEX CONN



SPI FILTERS



SYNC_MASTER=MLB_P9 SYNC_DATE=07/17/2017

PAGE TITLE

SENSOR: GRAPHITE, PHOS2, MOLY

PART NUMBER / ALTERNATE FOR	PART NUMBER	BOM OPTIONS / REF DES		COMMENTS:
138S0641	138S0700		C2206,ETC	RDAR://PROBLEM/20618071
376S00191	376S00061		Q2202	
371S00118	371S00117		D2201	ONSEMI

SYNC_MASTER=J207_MLB_B SYNC_DATE=03/13/2017

PAGE TITLE

TOUCH: KONA MASTER


KONA: SLAVE
U2301
BCM15900B0K
BGA
SYM 1 OF 2
CRITICAL
AUXADC_REF
AUXBUF_AIO_INPUT_3V
AUXBUF_AIO_OUTPUT
GPIO_ADC_00
GPIO_ADC_01
GPIO_ADC_02
GPIO_ADC_03
GPIO_ADC_04
GPIO_ADC_05
GPIO_ADC_06
GPIO_ADC_07
GPIO_08
GPIO_09
GPIO_10
GPIO_11
GPIO_12
GPIO_13
GPIO_14
GPIO_15
GPIO_16
GPIO_17
GPIO_18
GPIO_19
H_INT*
H_SCLK
H_SDI
H_SDO
H_CS*
H_ALT_CS*
I2C_SCL
I2C_SDA
KMSI_MISO
KMSI_MOSI
KMSI_STRB_IN
KMSI_STRB_OUT
PSE_SYNC
BOOST_ATEST
BOOST_FBIN
BOOST_ISENSE
BOOST_NGATE
BOOST_VBAT
BOOST_VBAT_EN
JTAG_RTCK
JTAG_TCK
JTAG_TMS
JTAG_TDI
JTAG_TDO
JTAG_TRST*
JTAG_SRST*
RESET*
TEST_MODE
BOOT_CFG_0
BOOT_CFG_1
AFE_IO_BGBIAS
XTALN
XTALP
XTAL_O_CLK_EXT
IFO_CLK_EXT
PAD_I_SELFCAPEXT
PAD_O_GUARDBUFFER
CORE_PMU_O_AON_TEST_PMU
NC
GPIO_SOC_TO_BT_TO_GRAPE_TS_SYNC
NOSTUFF
R2308
0.00
0%
1/32W
MF
01005
GPIO_SOC_TO_SYS_TS_SYNC_R
GPIO_KONA_TO_TCON_FORCE_PWM
KONA_M_TO_KONA_S_IPC1
KONA_M_TO_KONA_S_IPC2
TESTPOINT_KONA_S_UART_RX
TESTPOINT_KONA_S_UART_TX
SPI_KONA_M_TO_KONA_S_CS_L
TESTPOINT_KONA_IPC_EVENT_1
TESTPOINT_KONA_IPC_EVENT_2
TESTPOINT_KONA_IPC_EVENT_3
TESTPOINT_KONA_IPC_EVENT_4
TESTPOINT_KONA_IPC_EVENT_5
KONA_S_TO_KONA_M_RESET_DET_L
KONA_M_TO_KONA_S_TTW
GPIO_SOC_TO_GRAPE_BSYNC0
GPIO_SOC_TO_GRAPE_BSYNC1
GPIO_SOC_TO_GRAPE_EB
GPIO_KONA_S_TO_SCORPIUS_TIME_SYNC
R2306
R2307
R2309
KONA_M_BSYNC0
KONA_M_BSYNC1
GPIO_SOC_TO_GRAPE_EB_R
KONA_S_TO_KONA_M_INT_L
SPI_KONA_M_TO_KONA_S_SCLK
SPI_KONA_M_TO_KONA_S_MOSI
SPI_KONA_M_TO_KONA_S_MISO
SPI_KONA_M_TO_KONA_S_CS_L
KMSI_MOSI
KMSI_MISO
KMSI_STRB_OUT
KMSI_STRB_IN
PSE_SYNC
GPIO_SOC_TO_GRAPE_RESET_L
KONA_S_TEST_MODE
R2305
10K
5%
KONA_BOOT0_S
KONA_BOOT1_S
KONA_BGBIAS
CLK_KONA_S_24MHZ
C2301
10PF
5%
16V
CERM
01005
PAD_I_TOUCH0 … PAD_I_TOUCH69
GRAPE_RX<55> … GRAPE_RX<28>
NC_KONA_S_TOUCH28 … NC_KONA_S_TOUCH41
GRAPE_TX<0> … GRAPE_TX<19>
NC_KONA_S_TOUCH62 … NC_KONA_S_TOUCH69
1.2V EXT BUCK
PPVCC_MAIN
C2350
4.7UF
20%
16V
X5R
0402
U2350
TPS626751
BGA
VIN
EN
SW
FB
MODE
GND
GRAPE_1V2BUCK_EN
R2350
10K
01005
MF
1/32W
5%
PP1V8_S2_GRAPE
L2350
0603
0.47UH-20%-3.1A-0.064OHM
GRAPE_1V2BUCK_SW
GRAPE_1V2BUCK_FB
GRAPE_1V2BUCK_MODE
XW2350
SM
R2351
0.00
R2352
0.00
NOSTUFF
PP1V2_GRAPE_BUCK_EXT
C2353
220PF
5%
16V
C0G
01005
C2352
2.2UF
20%
10V
X5R
0201
C2351
2.2UF
20%
10V
X5R
0201
U2301
BCM15900B0K
BGA
SYM 2 OF 2
CRITICAL
PP15V0_TOUCH_FILT
C2311
C2312
C2313
C2317
C2333
C2334
C2335
0.47UF
20%
25V
CER-X5R
0201
AFE_I_VDDHV15_EXT
PP3V3_GRAPE_FILT
C2315
0.1UF
C2316
0.1UF
C2320
0.22UF
BOOST_VDDA
OTP_TMON_I_VDDA_3P3_EXT
AFE_PMU_I_VDDA_3P3_EXT
AUXBUF_PMU_I_VDDA_3P3_EXT
AUXBUF_PMU_I_VDDHV_AUX_EXT
AUXBUF_PMU_O_VDD_AUX_CAP
PP2V8_KONA_S_VDDANA
C2378
100PF
C2302
12PF
C2303
0.1UF
C2304
0.1UF
C2305
0.1UF
C2306
0.1UF
C2307
2.2UF
AFE_I_VDDANA_3P3_AFE_PMU
AFE_PMU_O_VDDANA_3P3_PMU
AFE_PMU_O_AVDD1P2_CAP
KONA_S_VDDADC_CAP
C2318
1UF
10%
10V
X5R-CERM
0402
PP1V8_GRAPE_XTAL_FILT
C2321
0.1UF
C2322
0.047UF
XTAL_PLL_AVDD1P8_I_VDDLDO_1P8_EXT
PP1V8_S2_GRAPE
C2308
0.1UF
C2309
0.1UF
C2310
0.1UF
AUXADC_AVDDC_I_VDDIO_1P8_3P3_EXT
AUXADC_AVDD_I_VDDIO_1P8_3P3_EXT
AFE_PMU_I_VDDLDO_1P8_EXT
AON_PAD_I_VDDIO_1P8_3P3_EXT
I2C_PAD_I_VDDIO_1P8_3P3_EXT
CORE_PAD_I_VDDIO_1P8_3P3_EXT
CORE_PMU_I_AON_VDDIO_1P8_3P3_EXT
CORE_PMU_I_VDDLDO_1P8_EXT
CORE_PMU_O_VDDCORE_1P2_CAP
PP1V8_GRAPE_AON_RC
PP1V2_GRAPE_BUCK_EXT
C2325
1UF
C2314
0.1UF
AUXBUF_AVSS
AUXADC_AVSS
VSS
XTAL_AVSS
CORE_PMU_I_AVSS
AUXBUF_PMU_I_AVSS
PAD_I_AVSS
BOOT OPTION
R2301
10K
R2303
10K
R2302
10K
R2304
10K
NOSTUFF
KONA_BOOT0_S
KONA_BOOT1_S
SYNC_MASTER=J207_MLB_B
SYNC_DATE=03/13/2017
PAGE TITLE
TOUCH: KONA SLAVE

TOUCH FLEX CONNECTOR (SENSE)

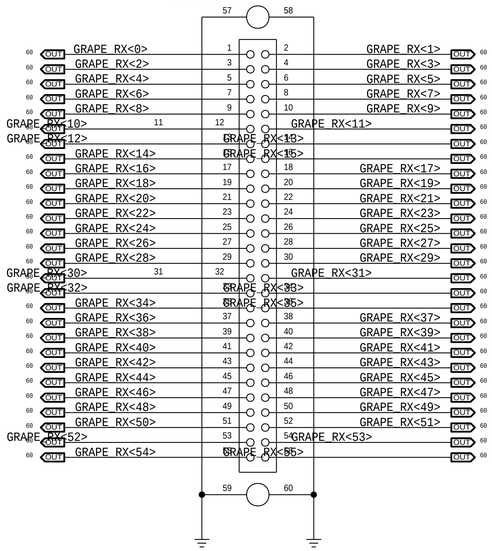
MATCHES J317_GRAPE_FLEX_LS_MAIN_V2 2.0.0

MLB: 516S00419
FLEX: 516S00420

MOUNTING PINS CAN BE USED FOR ELECTRICAL CONNECTIONS

CRITICAL

J2400
BM28P0.6-56DS-2-0.35V
F-ST-SM



TOUCH FLEX CONNECTOR (DRIVE)

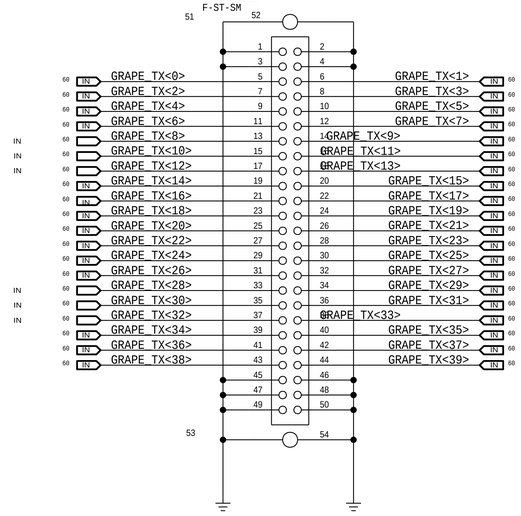
MATCHES J317_GRAPE_FLEX_LS_MAIN_V2 2.0.0

MLB: 516S00099
FLEX: 516S00098

MOUNTING PINS CAN BE USED FOR ELECTRICAL CONNECTIONS

CRITICAL

J2401
505066-5022
F-ST-SM

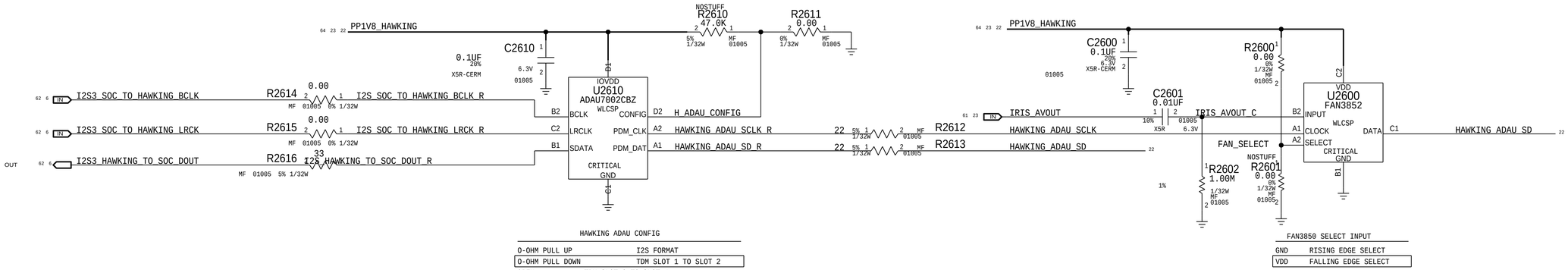


SYNC_MASTER=MLB_P0
SYNC_DATE=07/17/2017

PAGE TITLE

TOUCH: GRAPE CONN

HAWKING



HAWKING ADAU CONFIG

0-OHM PULL UP	I2S FORMAT
0-OHM PULL DOWN	TDM SLOT 1 TO SLOT 2
OPEN	TDM SLOT 3 TO SLOT 4
47K-OHM PULL UP	TDM SLOT 5 TO SLOT 6
47K-OHM PULL DOWN	TDM SLOT 7 TO SLOT 8

FAN3850 SELECT INPUT

GND	RISING EDGE SELECT
VDD	FALLING EDGE SELECT

SYNC_MASTER=MLB_P0 SYNC_DATE=07/17/2017

PAGE TITLE

CAMERA: HAWKING

CORNER3 XFER FLEX B2B

MATCHES J317_C3_TRANSFER_FLEX 4.0.0
MLB: 516S00063
FLEX: 516S00064

J2700
505066-5422
F-ST-SM

XW2702 SM
XW2700 SM
XW2703 SM
XW2701 SM

FL2710
120-OHM-25%-250MA-0.5DCR
FL2720
70-OHM-300MA
FL2721
70-OHM-300MA
FL2722
150OHM-25%-200MA-0.7DCR
C2720
56PF

FL2791
FERR-22-OHM-1A-0.055OHM
C2795
220PF
C2796
1.0UF

FL2761
FERR-22-OHM-1A-0.055OHM
C2760
220PF
C2761
1.0UF
C2762
6.8UF

FL2781
FERR-22-OHM-1A-0.055OHM
C2786
220PF
C2787
1.0UF

C27A4
0.1UF
C2787
220PF

LPDP AC COUPLING CAPS

C27A0 0.1UF
C27A1 0.1UF
C27A2 0.1UF
C27A3 0.1UF

BUTTON FILTERS/ESD

FL2771
240-OHM-25%-0.20A-1.0DCR
R2771
100
DZ2771
12.8V-100PF

FL2772
240-OHM-25%-0.20A-1.0DCR
R2772
100
DZ2772
12.8V-100PF

L2773
240-OHM-25%-0.20A-1.0DCR
R2773
100
DZ2773
12.8V-100PF

MIC#4 FILTERS

FL2703
0.00
C2703
27PF

FL2704
0.00
C2704
27PF

HALL PWR FILTER

FL2748
80-OHM-25%-0.5A-0.13DCR
C274A
1.0UF
C274B
220PF

RFFE FILTERS

R2798
0.00
C2798
33PF

R2799
0.00
C2799
33PF

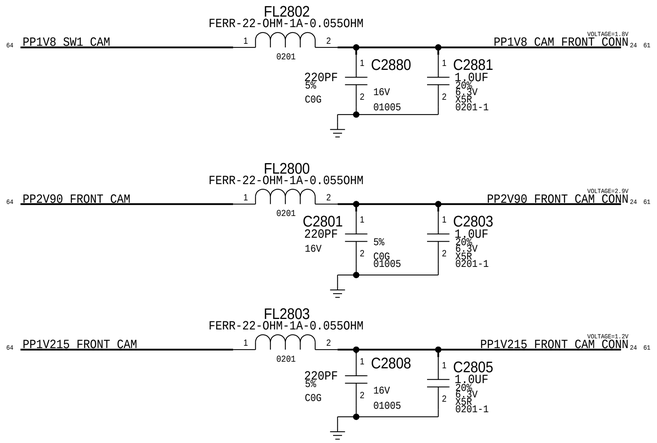
FL2782
80-OHM-25%-0.5A-0.13DCR
C2792
1.0UF
C2793
220PF

FL2783
80-OHM-25%-0.5A-0.13DCR
C2794
1.0UF
C2797
220PF

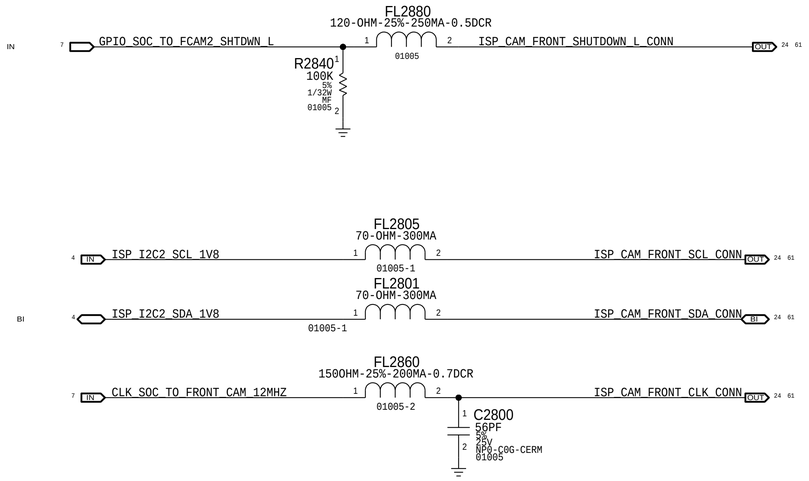
SYNC_MASTER=J317_MLB_B_MYST	SYNC_DATE=08/02/2017
PAGE TITLE	
CAMERA: B2B REAR(C3 CONN)	

FRONT CAMERA (LI)

POWER FILTERS

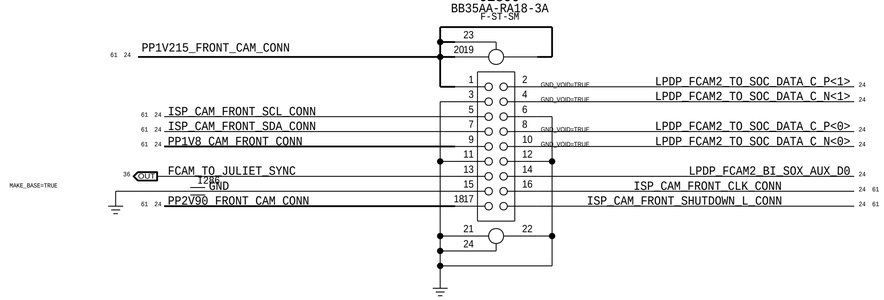


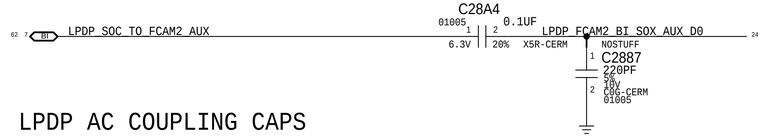
IO FILTERS



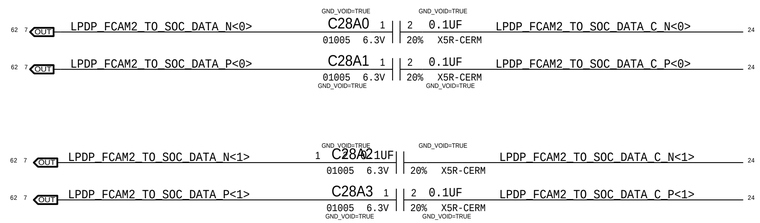
FRONT CAMERA CONNECTOR

FLEX SIDE: 516S00396
MLB SIDE: 516S00395
MATCH J317_FRONT_CAM_ISLAND_FLEX 3.0.0





LPDP AC COUPLING CAPS



PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
155S00200		FL2860,ECT		J317 P1

SYNC_MASTER=J317_MLB_B_POC_MOD SYNC_DATE=05/24/2017

PAGE TITLE

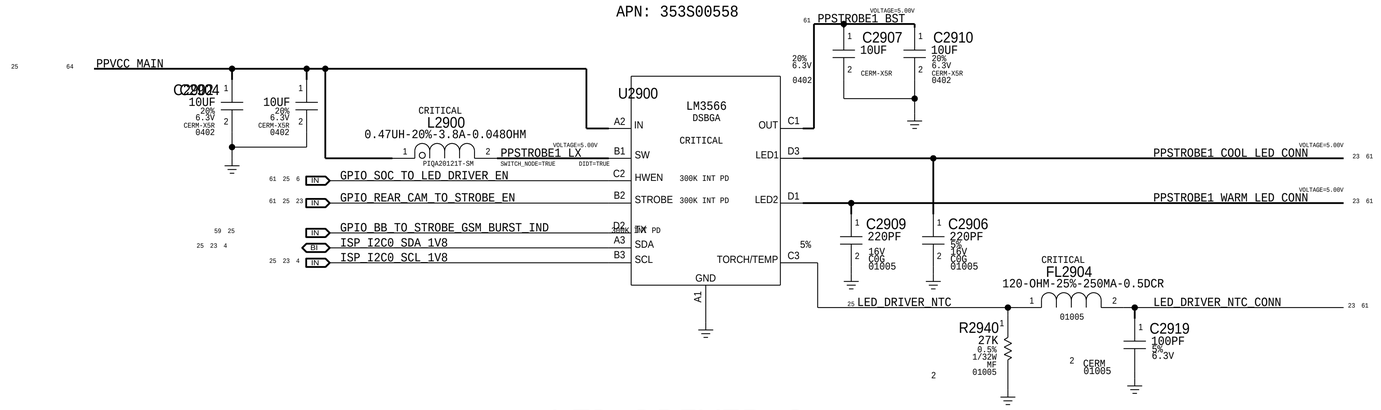
CAMERA: B2B FRONT

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
138S0875	138S0678		C2902, ETC	RDAR://PROBLEM/26929420

STROBE CIRCUITRY

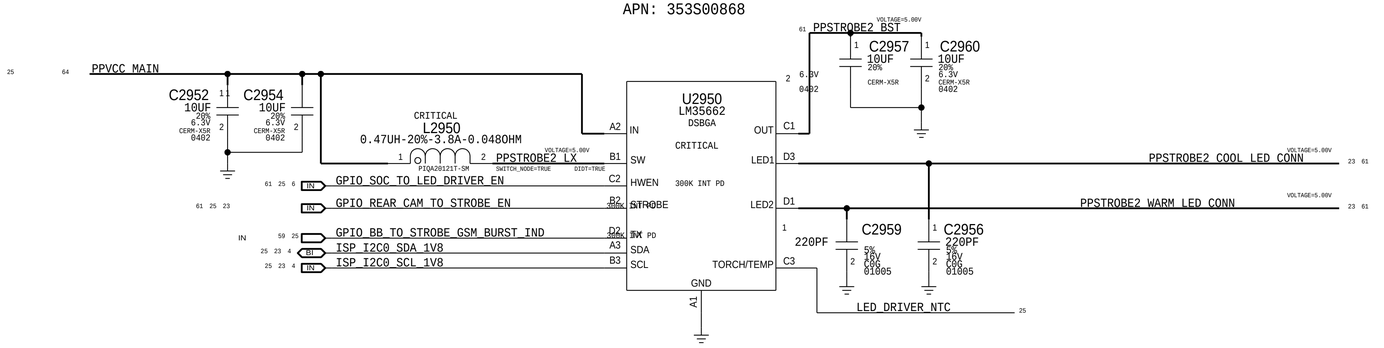
LED DRIVER 1

APN: 353S00558



LED DRIVER 2

APN: 353S00868



SYNC_MASTER=J207_MLB_B SYNC_DATE=03/13/2017

PAGE TITLE

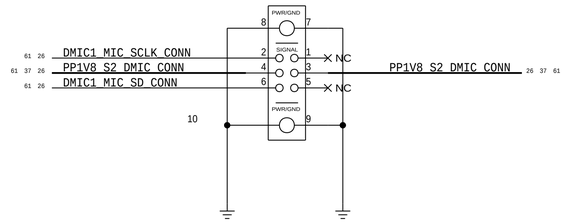
CAMERA: STROBE

DMIC CONN AND MIC#1/MIC#2 FILTERS

MIC FLEX B2B

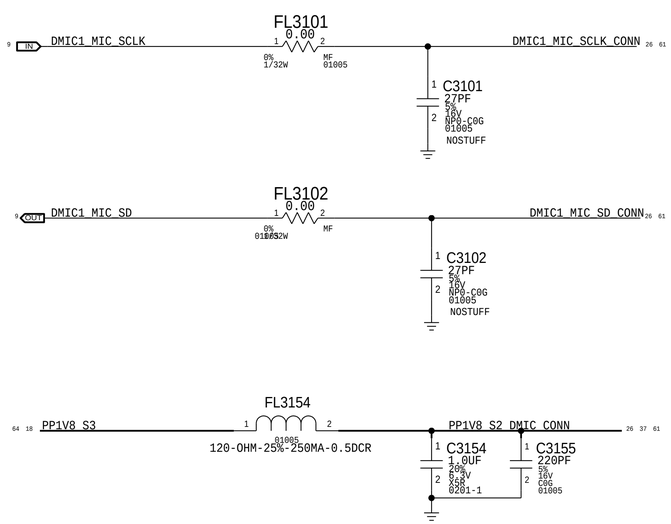
MATCH J317_MIC_FLEX(MATCH EVT MIC FLEX PER MO REQUEST)
MLB APN: 516S00186
FLEX APN: 516S00185

J3100
BM28P0.6-6DS/2-0.35V
F-ST-SM



ROUTING	BUS	SELECT	LOCATION	DATA ASSERTS ON	DATA LATCHED ON
MIC#1	PDM0	HIGH	LEFT	CLK RISING EDGE	CLK FALLING EDGE
MIC#2	PDM0	LOW	RIGHTCLK FALLING	EDGE	CLK RISING EDGE
MIC#3	PDM1	HIGH	FRONT(ON TM)	CLK RISING EDGE	CLK FALLING EDGE
MIC#4	PDM1	LOW	REAR(C3)	CLK FALLING EDGE	CLK RISING EDGE
MIC#5	PDM2	HIGH	LANDSCAPE	CLK RISING EDGE	CLK FALLING EDGE

MIC#1/MIC#2 FILTERS

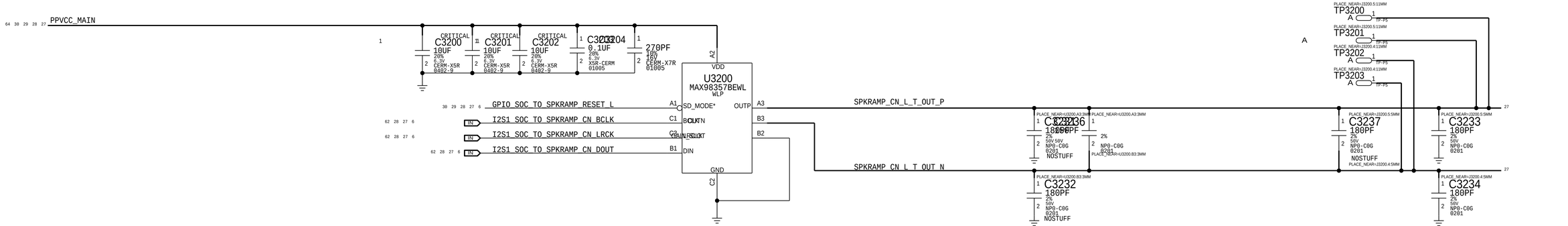


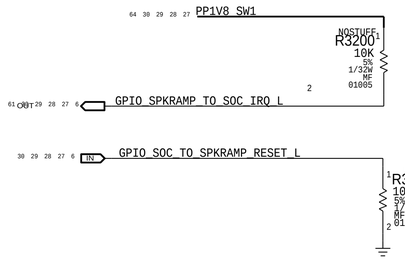
SYNC_MASTER=J320_MLB SYNC_DATE=05/11/2017

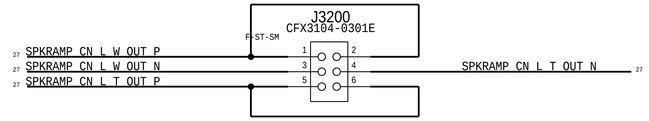
PAGE TITLE

AUDIO: DMIC B2B & FILTERS

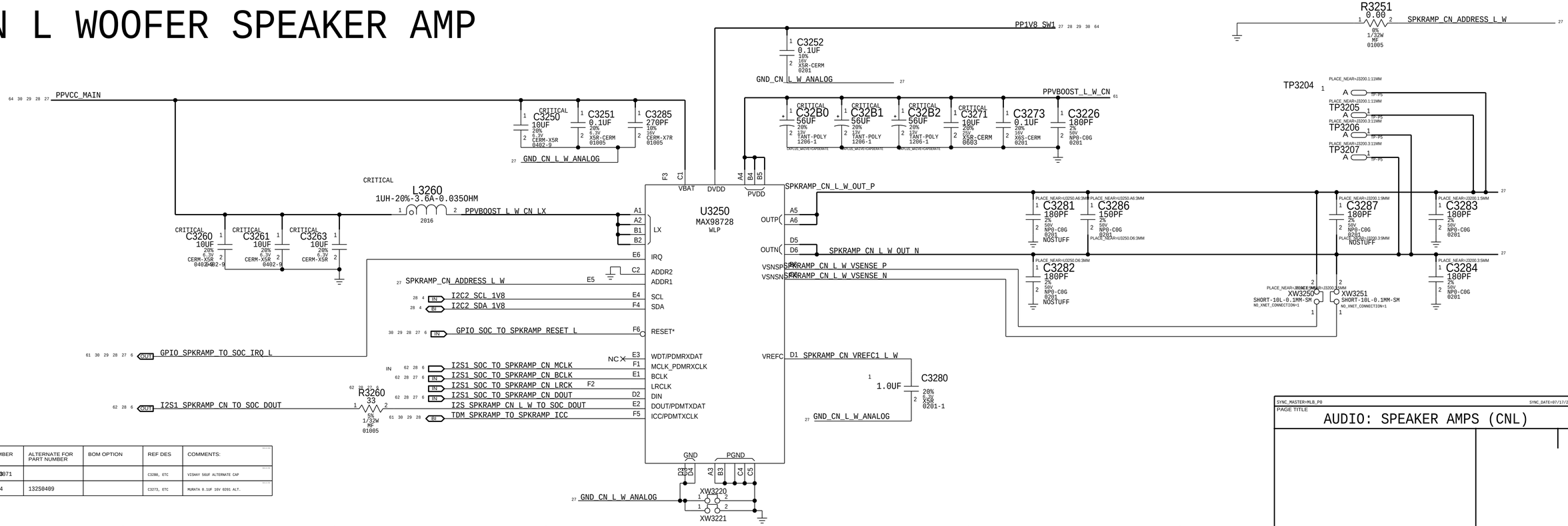
CN L TWEETER SPEAKER AMP(TDM CHANNEL 1 OF 8)







CN L WOOFER SPEAKER AMP



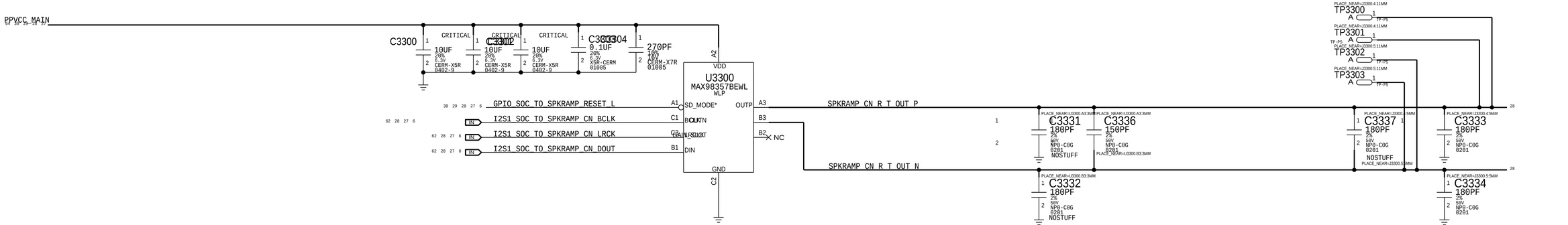
PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
128S00071			C3200, ETC	VISHAY 56UF ALTERNATE CAP
132S00064	132S0409		C3273, ETC	MURATA 0.1UF 16V 0201 ALT.

SYNC_MASTER=MLB_P0 SYNC_DATE=07/17/2017

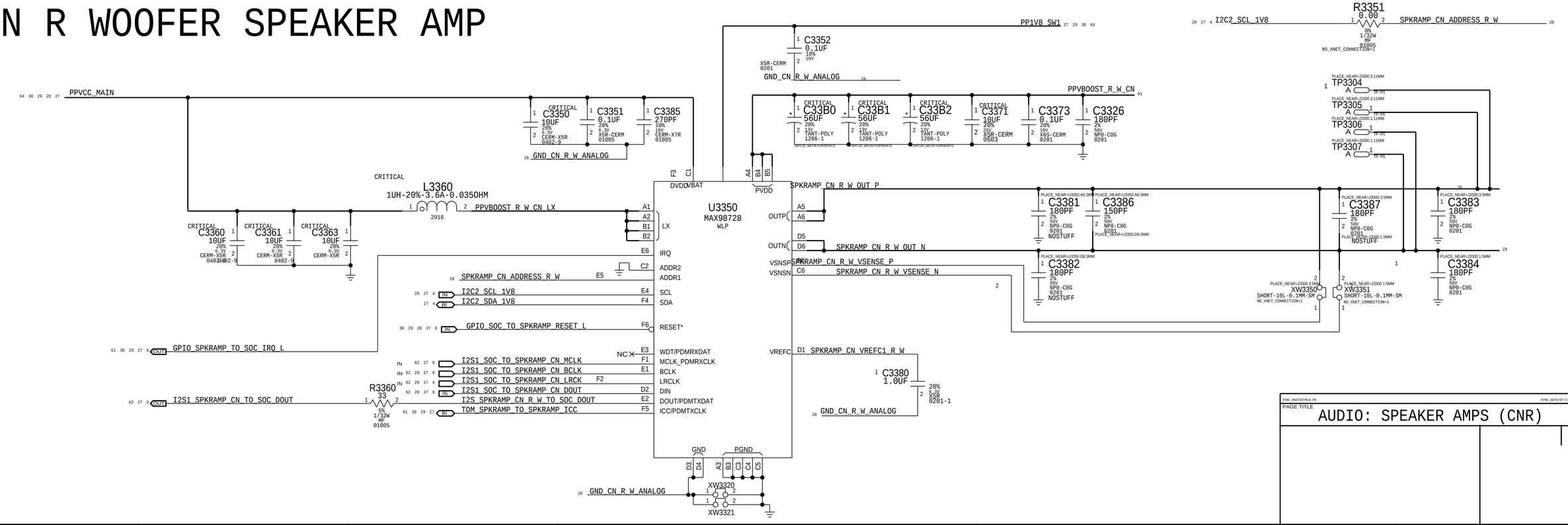
PAGE TITLE

AUDIO: SPEAKER AMPS (CNL)

CN R TWEETER SPEAKER AMP(TDM CHANNEL 3 OF 8)



CN R WOOFER SPEAKER AMP

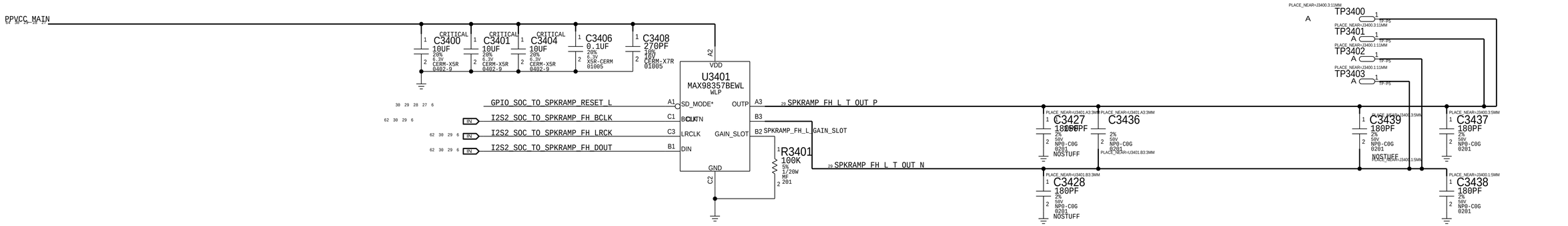


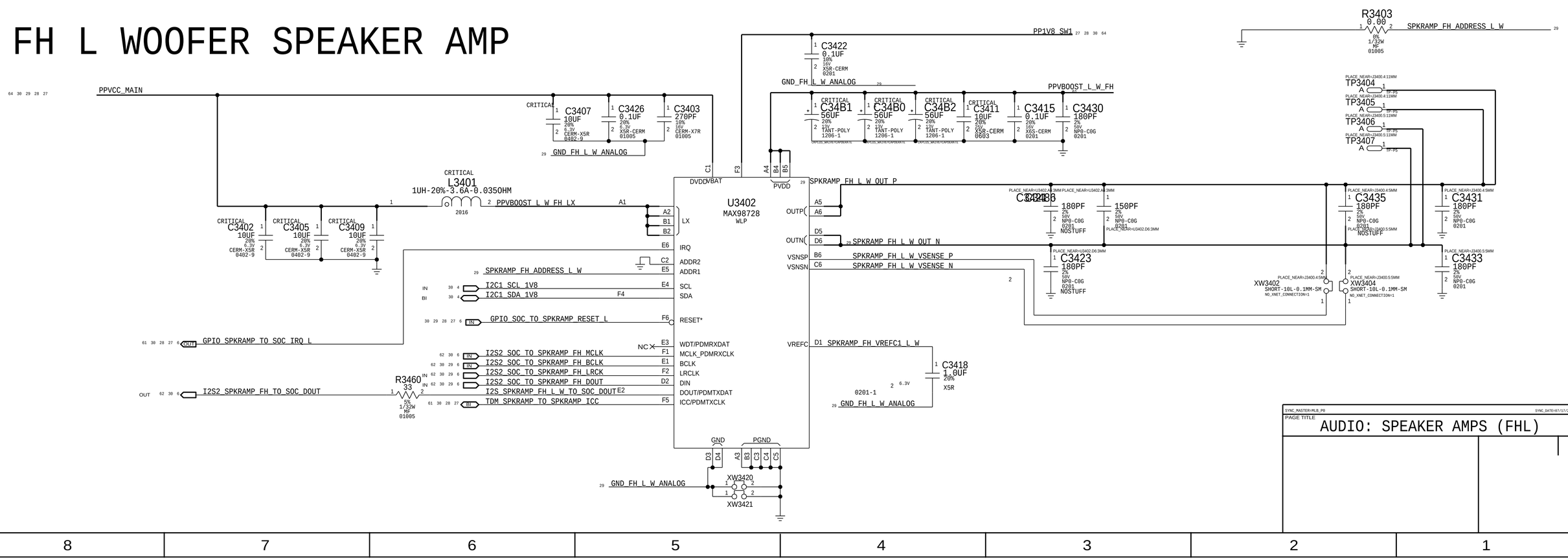
SYNC_MASTER=MLB_P9 SYNC_DATE=07/17/2017

PAGE TITLE

AUDIO: SPEAKER AMPS (CNR)

FH L TWEETER SPEAKER AMP(TDM CHANNEL 5 OF 8)





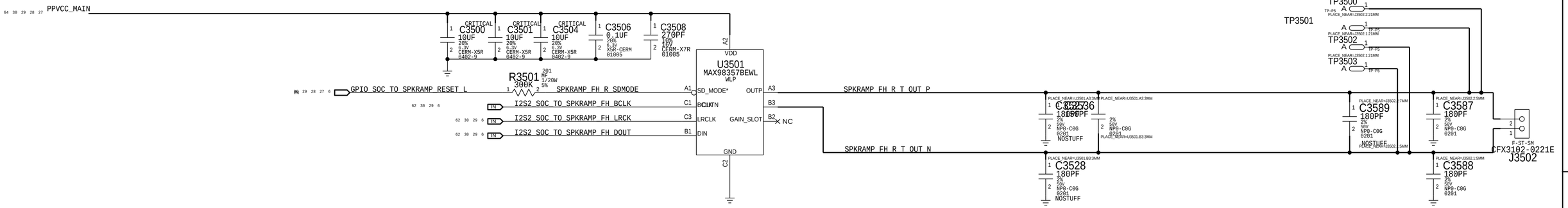
FH L WOOFER SPEAKER AMP

SYNC_MASTER=MLB_P0 SYNC_DATE=07/17/2017

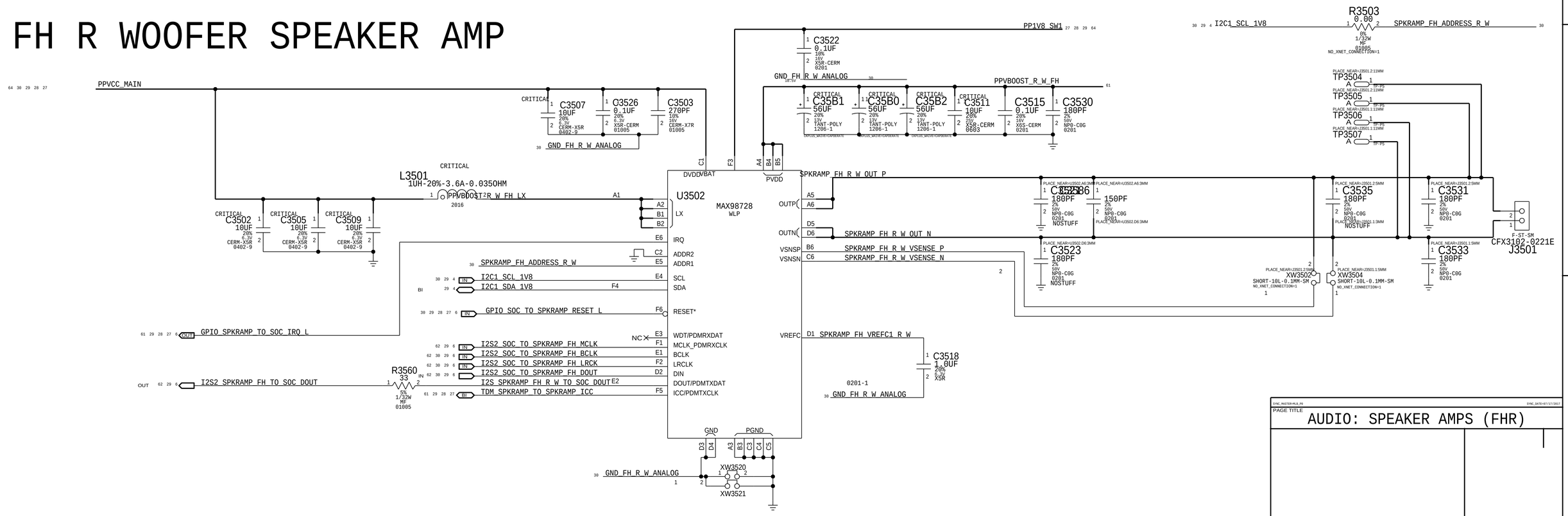
PAGE TITLE

AUDIO: SPEAKER AMPS (FHL)

FH R TWEETER SPEAKER AMP(TDM CHANNEL 7 OF 8)



FH R WOOFER SPEAKER AMP



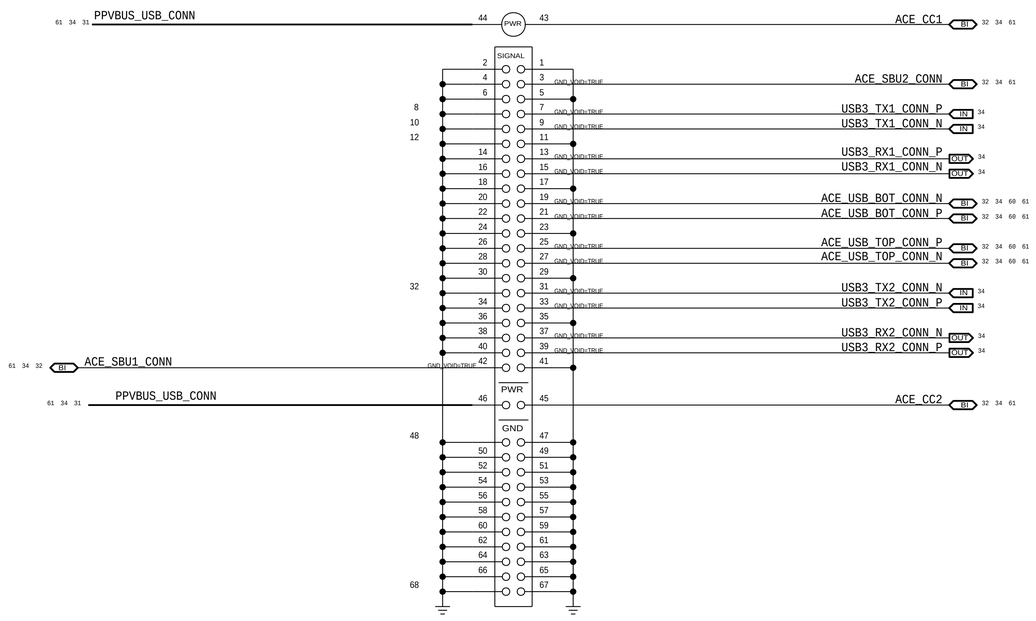
PAGE TITLE

AUDIO: SPEAKER AMPS (FHR)

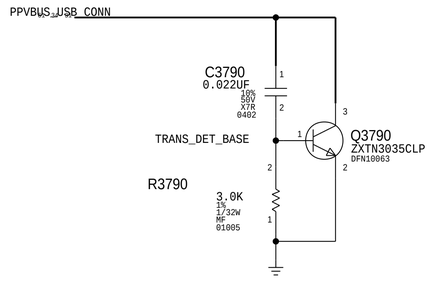
42PIN IO B2B

MLB 516S00266
FLEX 516S00265
MATCH J317_IO_FLEX 5.0.0

J3700
20759-042E-02
F-ST-SM



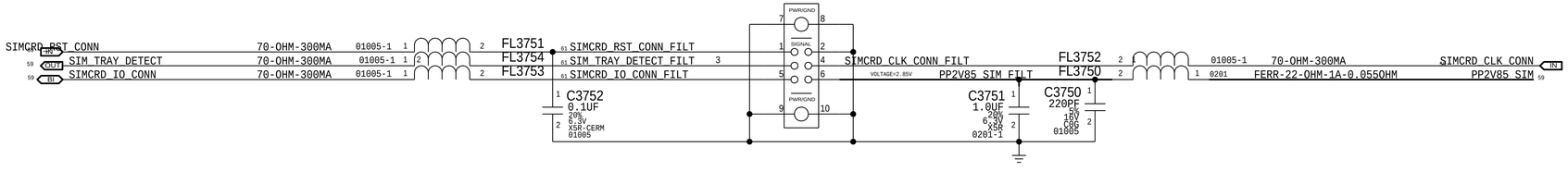
TRANSIENT SUPPRESSION



B2B CONNECTOR TO SIM

FLEX 516S00185
MLB 516S00186
MATCH J317_SIM_FLEX 3.1.0

J3750
BM28P0.6-6DS/2-0.35V
F-ST-SM



SYNC_MASTER=J317_MLB_B_POC_MOD	SYNC_DATE=05/24/2017
PAGE TITLE	IO: IOFLEX B2B & SIM B2B

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
341S01086	1	PRE-PROGRAMMED ACE2 SPI FLASH V12 FW	U3890	CRITICAL	

SYNC_MASTER=DEV_SCORPIUS_DISCRETE SYNC_DATE=12/08/2017

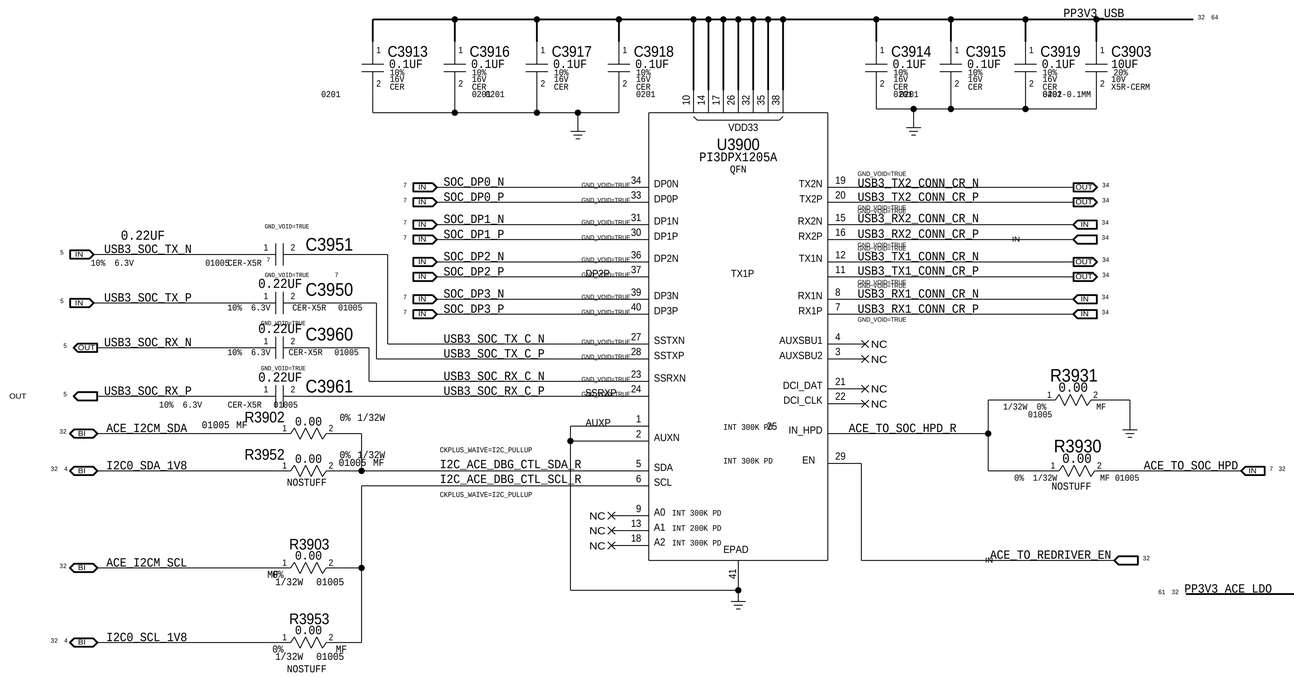
PAGE TITLE

IO: ACE CONTROLLER

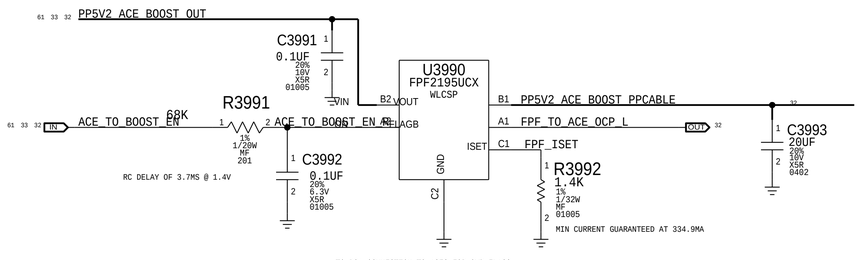
PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
132S00154	132S0683			0.1UF 01005 TAIYO ALT.

USB RE-DRIVER

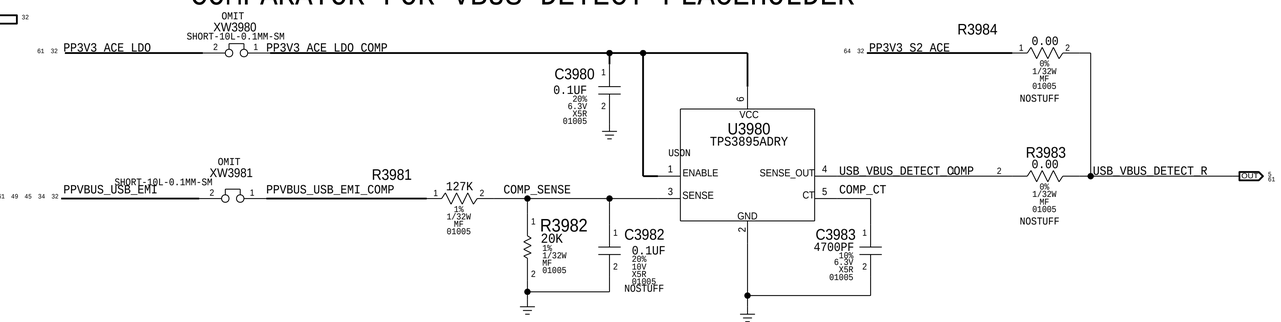
APN: 353S01236
7-BIT I2C ADD: 0X50



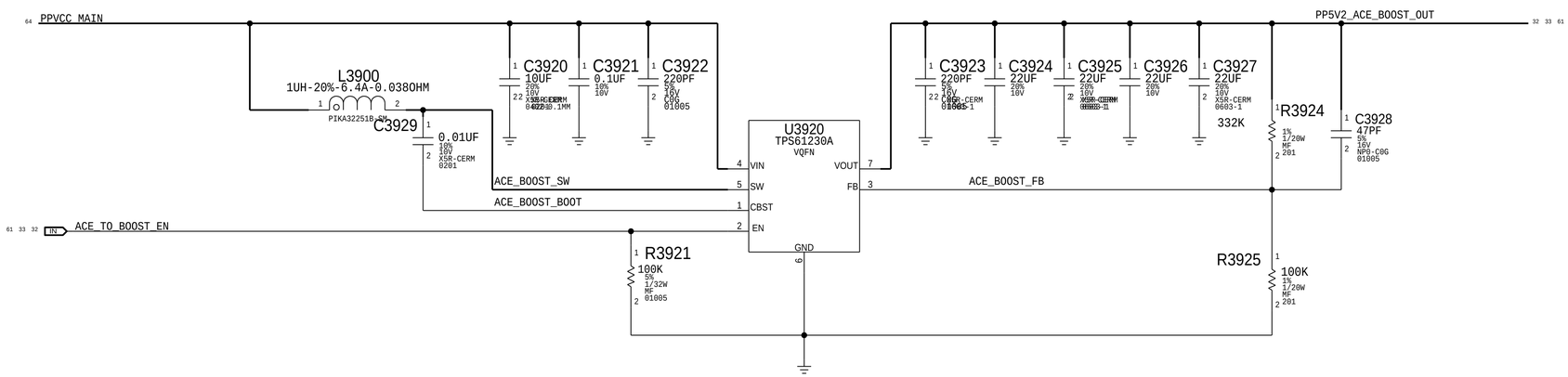
ACE2 PPCABLE CURRENT LIMITER



COMPARATOR FOR VBUS DETECT PLACEHOLDER



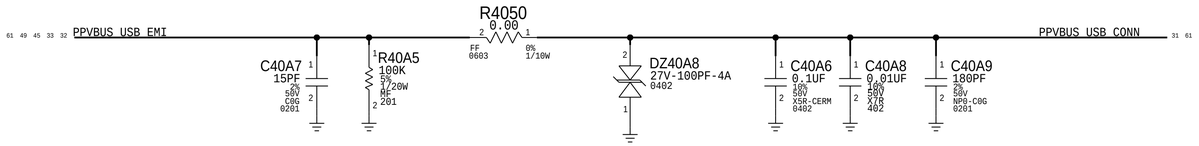
5.2V BOOST

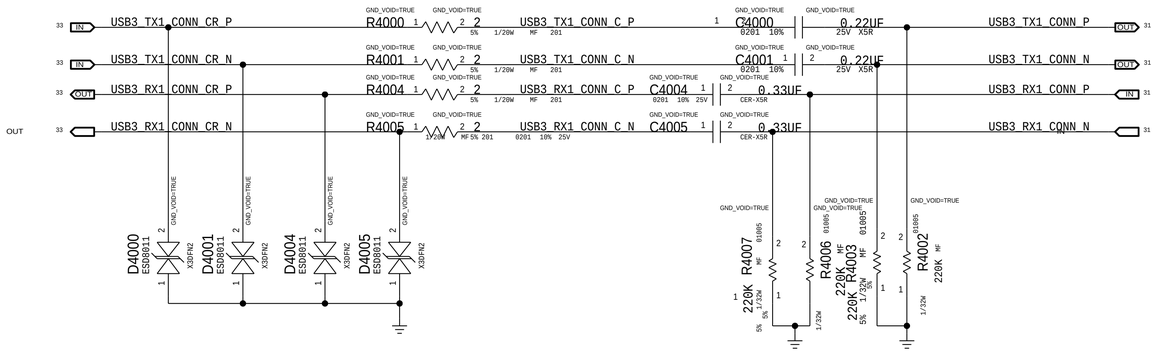


PAGE TITLE

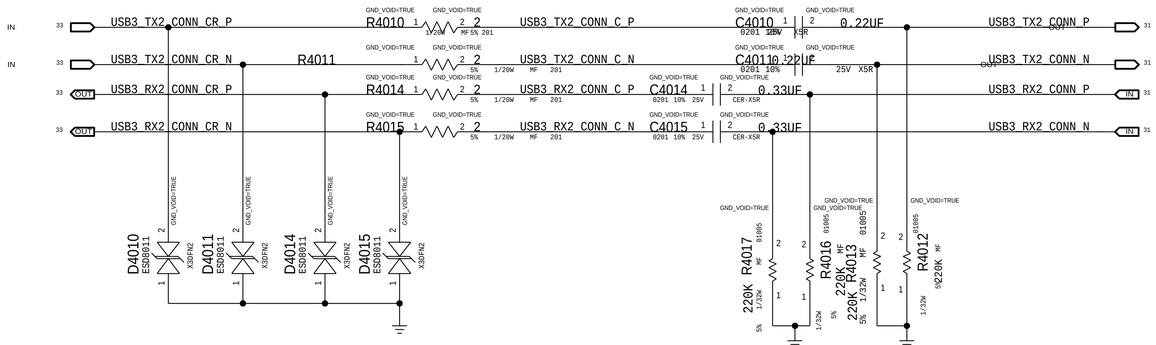
IO: ACE PERIPHERALS

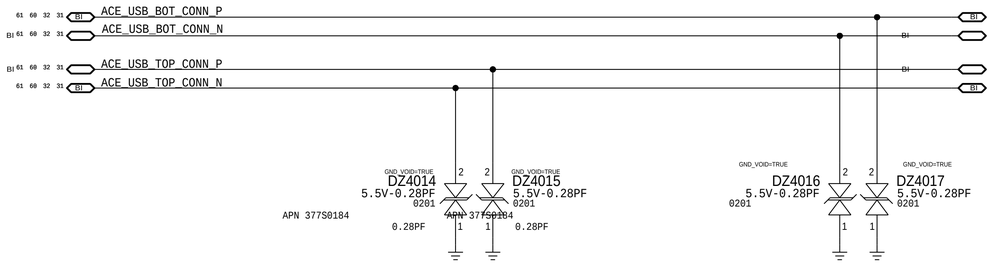
USB CONN FILTERS

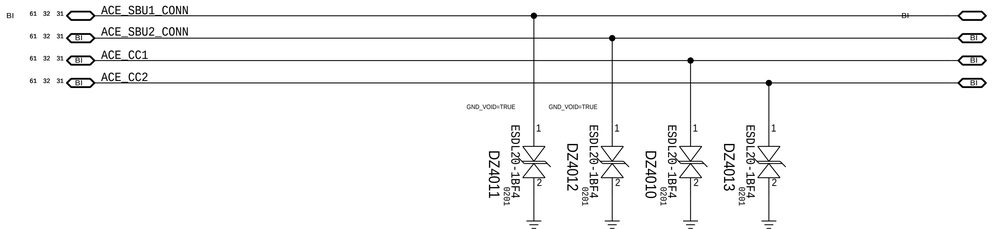




NOTE: USB3 ESD DIODES CHANGED TO 377S00031 WITH NON-THICKSTNCL VERSION
PREVIOUS APN:377S00106 IS PENDING INVESTIGATION







SYNC_MASTER=J320_ACE SYNC_DATE=05/05/2017

PAGE TITLE

IO: ACE FILTERS

Rigel Driver

PPVCC_MAIN
C4197 18UF 20% CER-X5R 0402-0.1MM ROOM=RIGEL
C4194 4UF 20% CERM-X5R 0201 ROOM=RIGEL
C4193 4UF 20% CERM-X5R 0201 ROOM=RIGEL
C4192 4UF 20% CERM-X5R 0201 ROOM=RIGEL
C4191 4UF 20% CERM-X5R 0201 ROOM=RIGEL
Terminate @ Cap via on VDD_MAIN plane.
OMIT XW4100 SHORT-10L-0.1MM-SM ROOM=RIGEL
PP_RIGEL_VINCORE
C4190 1UF 20% X5R 0201 ROOM=RIGEL

PP1V8_SW1_CAM
PP_VANA
PPVCC_HIGH
C4195 1UF 20% X5R 0201 ROOM=RIGEL
C4196 1UF 20% X5R 0201 ROOM=RIGEL
C4198 4UF 20% CERM-X5R 0201 ROOM=RIGEL

PP_TITUS_CATHODE
TITUS_TO_RIGEL_VCSEL_NTC
GPIO_APOLLO_TO_RIGEL_EN
YOGI_TO_RIGEL_STATUS
MAMA_BEAR_BI_RIGEL_STATUS
JULIET_PMU_TO_RIGEL_STROBE
10K 5% 1/32W MF 01005 RIGEL_TESTMODE_EN
R4101
CLK_SOC_TO_PEARL_12MHZ
GPIO_RIGEL_TO_SOC_IRQ
ISP_I2C3_SDA_1V8
R4100 33.2 1% 1/32W MF 01005
ISP_I2C3_SCL_1V8
ISP_TITUS_RIGEL_SDA_R
RIGEL_LSCP
C4122 0.01UF 10% X5R 01005 ROOM=RIGEL

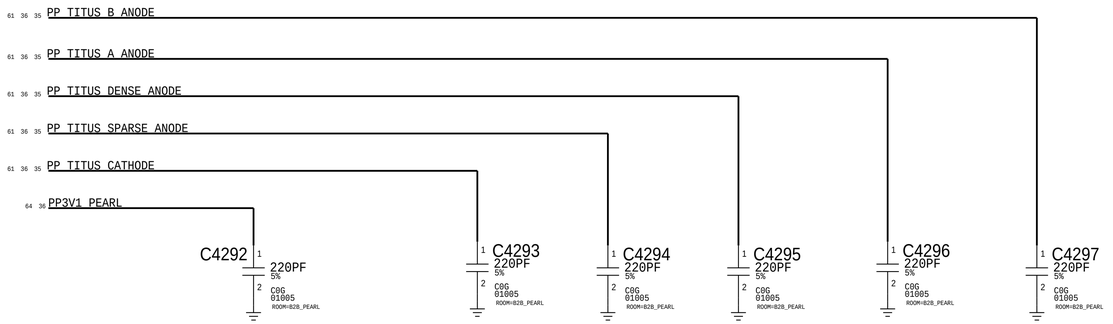
U4100 STB601A0 WLCSP ROOM=RIGEL CRITICAL

PP_RIGEL_BUCK_BOOST_A
RIGEL_VLXA
C4105 4.7UF 20% X5R 0402 ROOM=RIGEL
C4120 0.01UF 10% X5R 01005 ROOM=RIGEL
RIGEL_BOOSTSDA
RIGEL_BULKSDA
RIGEL_BULKSDB
RIGEL_BOOSTSDB
RIGEL_VCXB
C4121 0.01UF 10% X5R 01005 ROOM=RIGEL
C4110 4.7UF 20% X5R 0402 ROOM=RIGEL
RIGEL_VLXB
PP_RIGEL_BUCK_BOOST_B
L4100 0.47UH-20%-4A-0.048OHM PIWA20120H-SM ROOM=RIGEL
C4100 4.7UF 20% X5R 0402 ROOM=RIGEL
C4101 220PF 5% C0G 01005 ROOM=RIGEL
L4101 0.47UH-20%-4A-0.048OHM PIWA20120H-SM ROOM=RIGEL
C4111 4.7UF 20% X5R 0402 ROOM=RIGEL
C4112 220PF 5% C0G 01005 ROOM=RIGEL

PP_TITUS_DENSE_ANODE
PP_TITUS_SPARSE_ANODE
PP_ROSALINE_ANODE
PP_TITUS_A_ANODE
PP_TITUS_B_ANODE

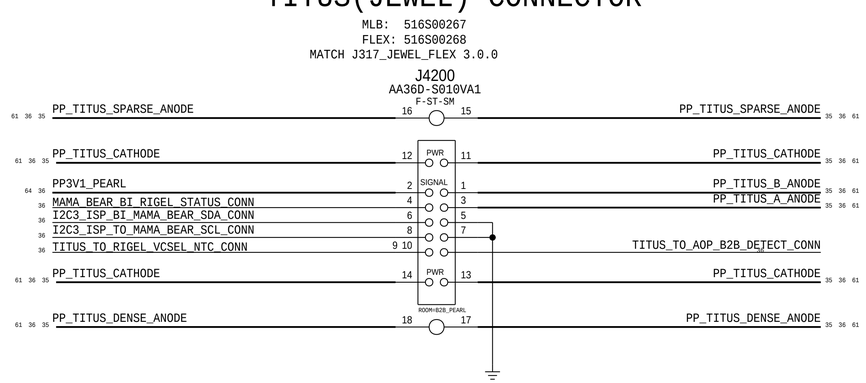
PAGE TITLE
PEARL: RIGEL DRIVER

TITUS POWER FILTERING

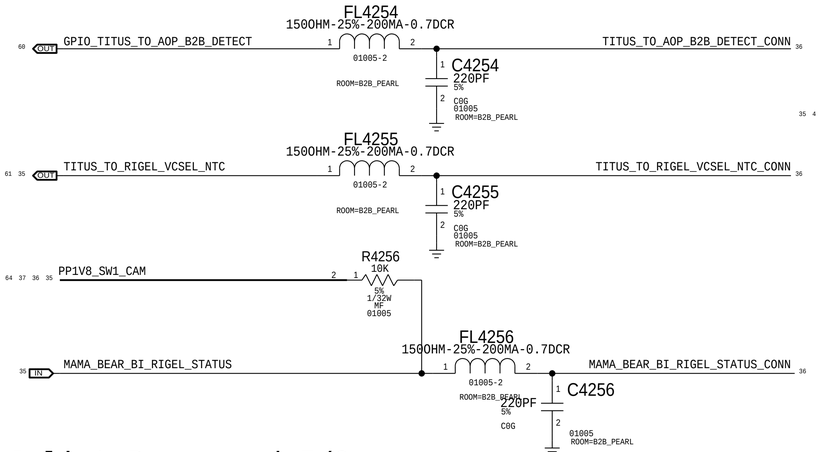


TITUS(JEWEL) CONNECTOR

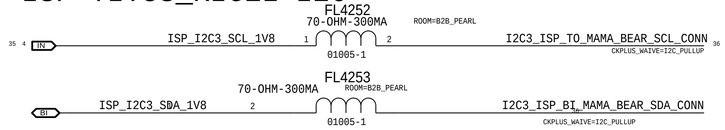
MLB: 516S00267
FLEX: 516S00268
MATCH J317_JEWEL_FLEX 3.0.0



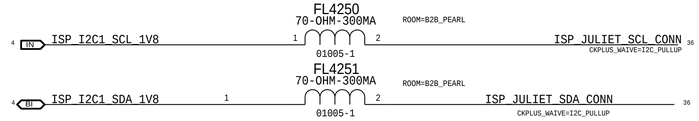
TITUS I/O



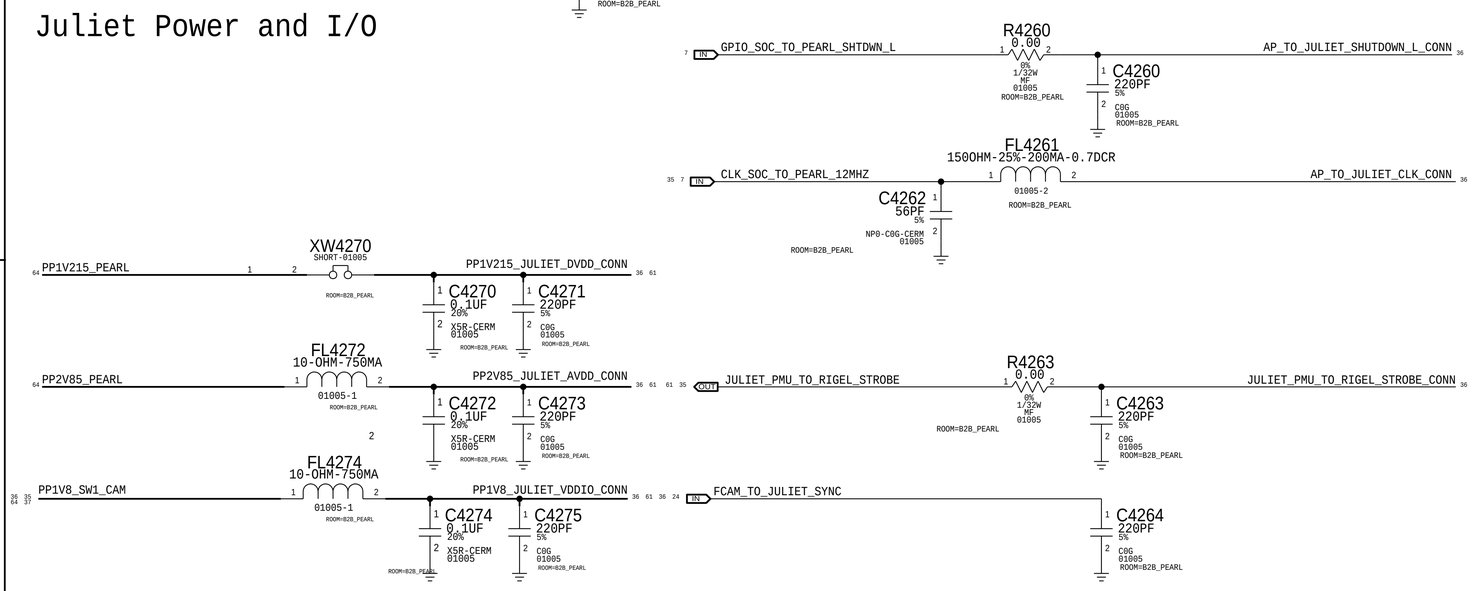
ISP TITUS_RIGEL I2C



ISP JULIET I2C

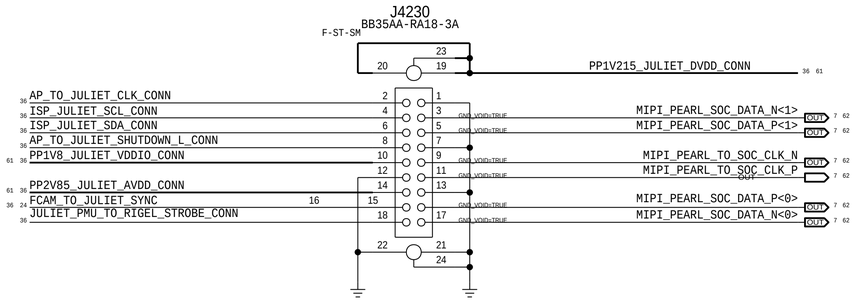


Juliet Power and I/O



Juliet Connector

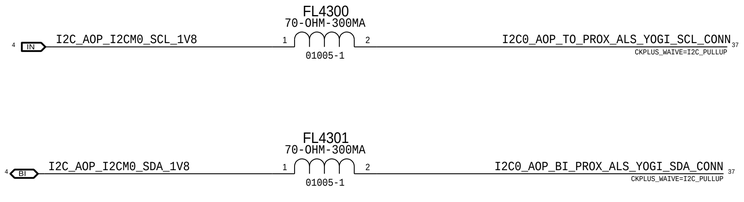
MLB: 516S00395
FLEX: 516S00396
MATCH J317_JULIET_FLEX 4.0.0



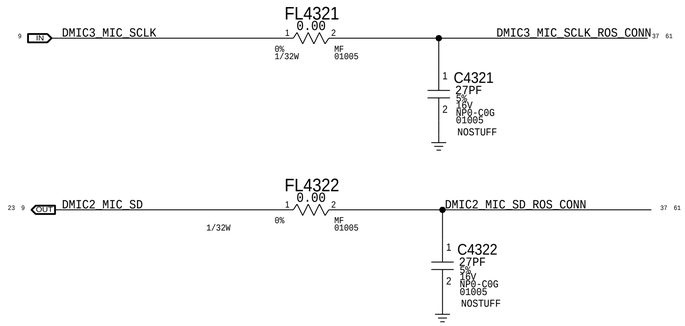
PAGE TITLE

PEARL: B2B TITUS + JULIET

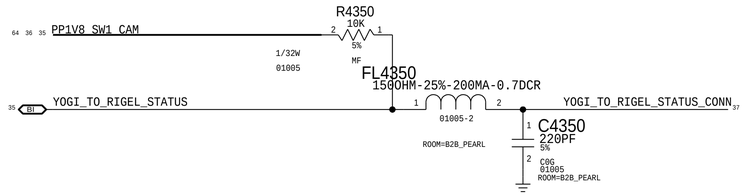
ISP FCAM1 JULIET ROSALINE I2C



MIC#3 FILTERS ROSALINE CONN

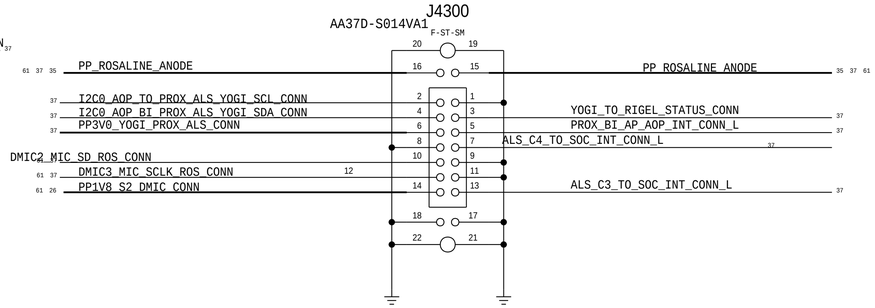


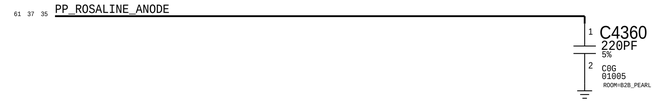
Yogi Signals



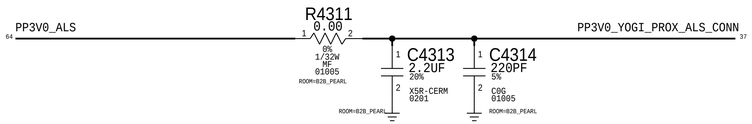
ROSALINE(AARM) CONNECTOR

MLB: 516S00150
FLEX: 516S00149
MATCH J317_AARM_FLEX 4.0.0

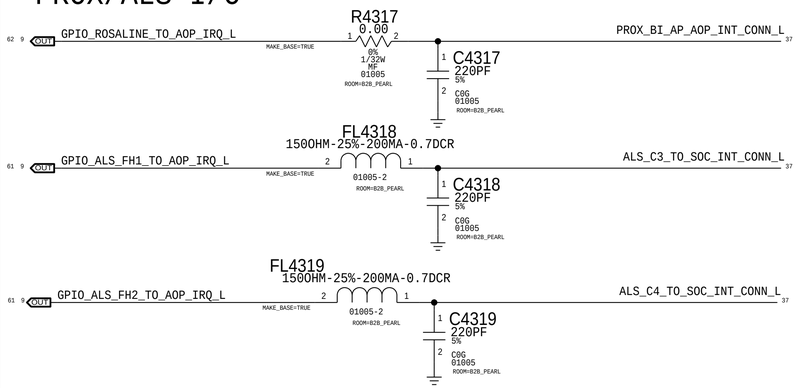




PROX & ALS POWER

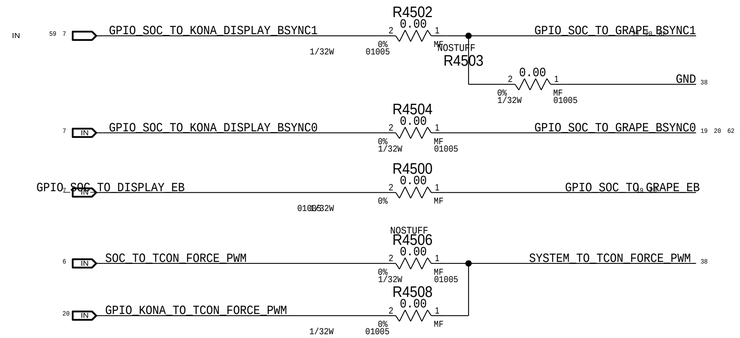


PROX/ALS I/O

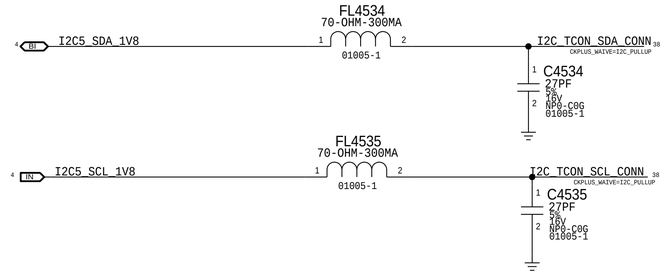


PAGE TITLE
PEARL: B2B ROSALINE + MISC

EDP FLEX FILTERS AND CONNECTORS



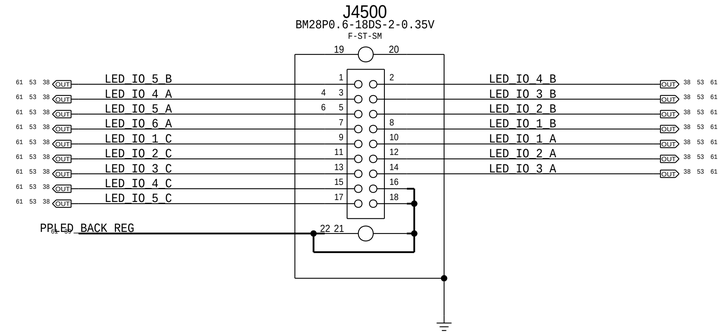
TCON I2C FILTERS



HALL PWR FILTER

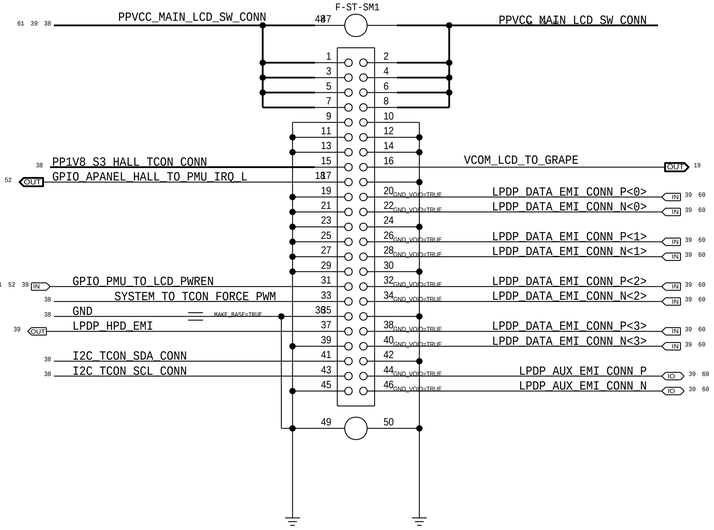
BL CONN MLB SIDE 18+2 PIN B2B

FLEX APN: 516S00363
MLB APN: 516S00362
MATCHES J317_BACKLIGHT_FLEX 3.2.0

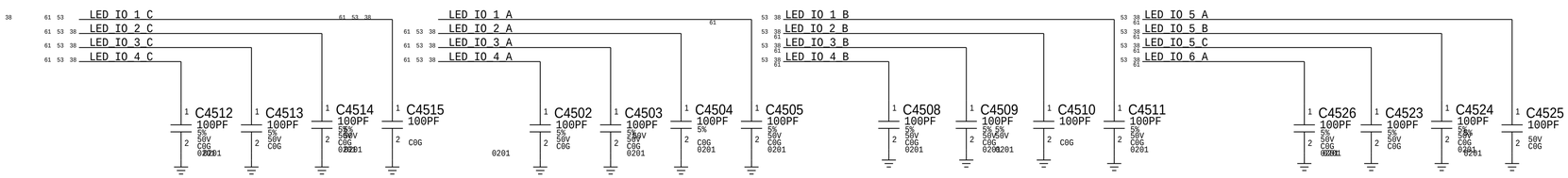


EDP CONN MLB SIDE 46+2 PIN B2B

FLEX APN: 516S00365
MLB APN: 516S00364
MATCHES J317_EDP_FLEX 2.2.0

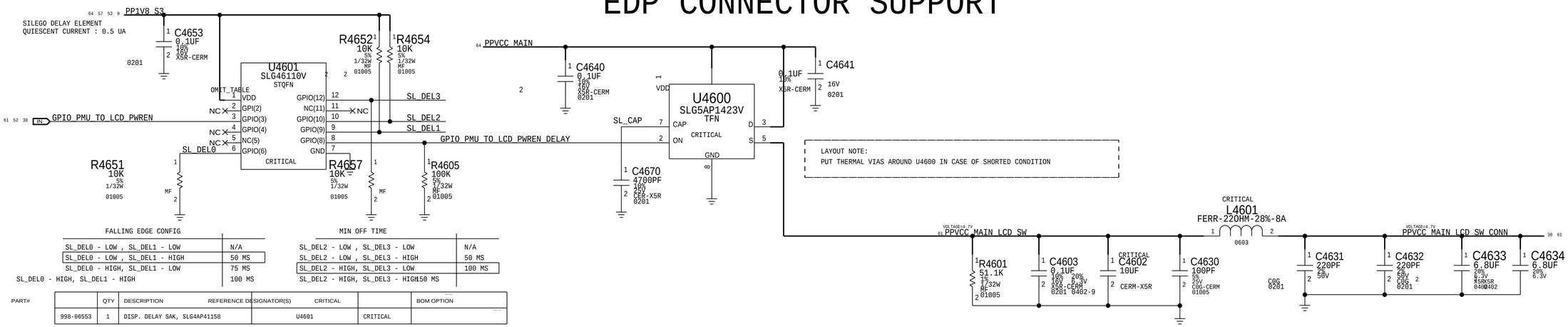


LED DRIVER FILTERS



SYNC_MASTER=J207_MLB_B
SYNC_DATE=03/27/2017
PAGE TITLE
DISPLAY: B2B CONN

EDP CONNECTOR SUPPORT



FALLING EDGE CONFIG

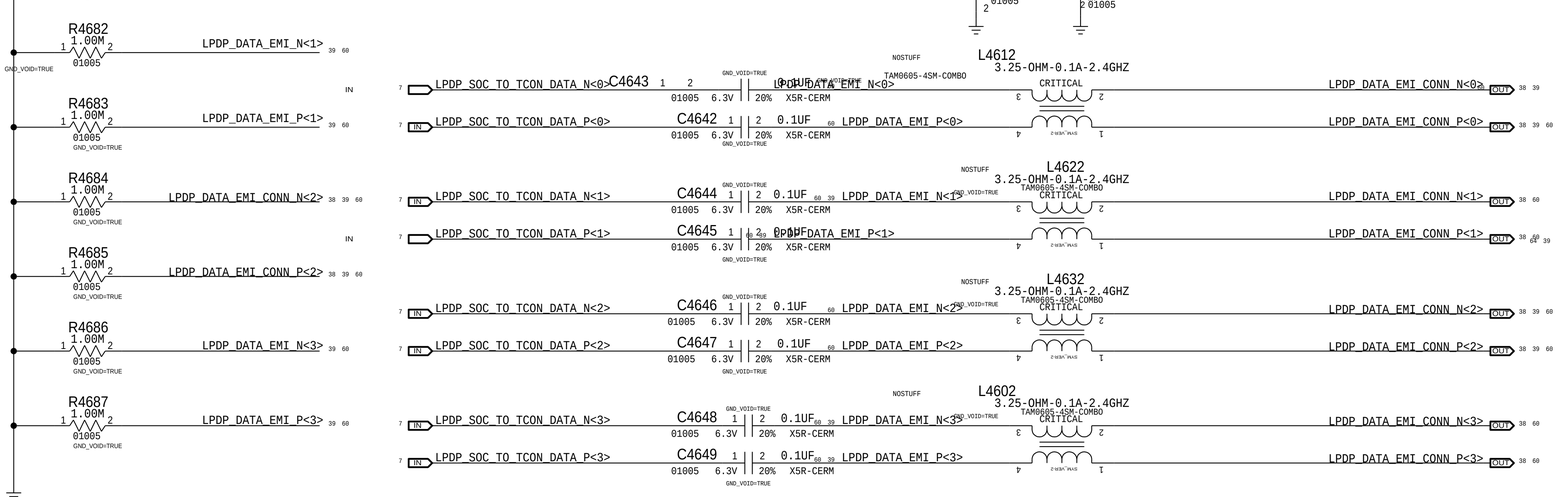
SL_DEL0 - LOW , SL_DEL1 - LOW	N/A
SL_DEL0 - LOW , SL_DEL1 - HIGH	50 MS
SL_DEL0 - HIGH, SL_DEL1 - LOW	75 MS
SL_DEL0 - HIGH, SL_DEL1 - HIGH	100 MS

MIN OFF TIME

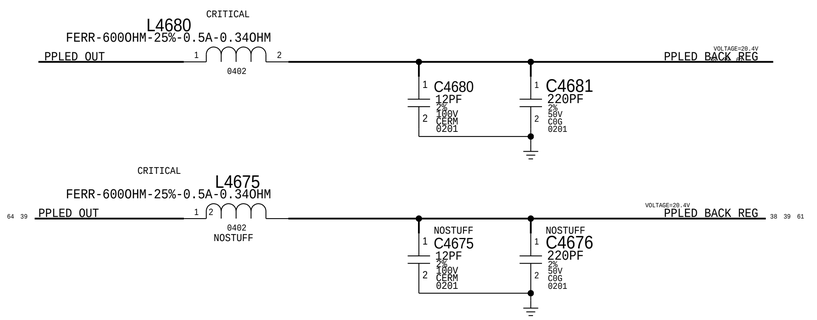
SL_DEL2 - LOW , SL_DEL3 - LOW	N/A
SL_DEL2 - LOW , SL_DEL3 - HIGH	50 MS
SL_DEL2 - HIGH, SL_DEL3 - LOW	100 MS
SL_DEL2 - HIGH, SL_DEL3 - HIGH	150 MS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
998-06553	1	DISP. DELAY SAK, SLG4AP41158	U4601	CRITICAL	

NOTE: COMMON MODE CHOKES ARE NOSTUFFED AND 2X ZERO OHMS FOR A DIFFERENT CASE ARE STUFFED TO TEST WITHOUT A COMMON MODE CHOKE.



TULIP HPD VOLTAGE IS 1.8V COMPATIBLE, VOLTAGE DIVIDER REMOVED
RDAR://PROBLEM/15390794

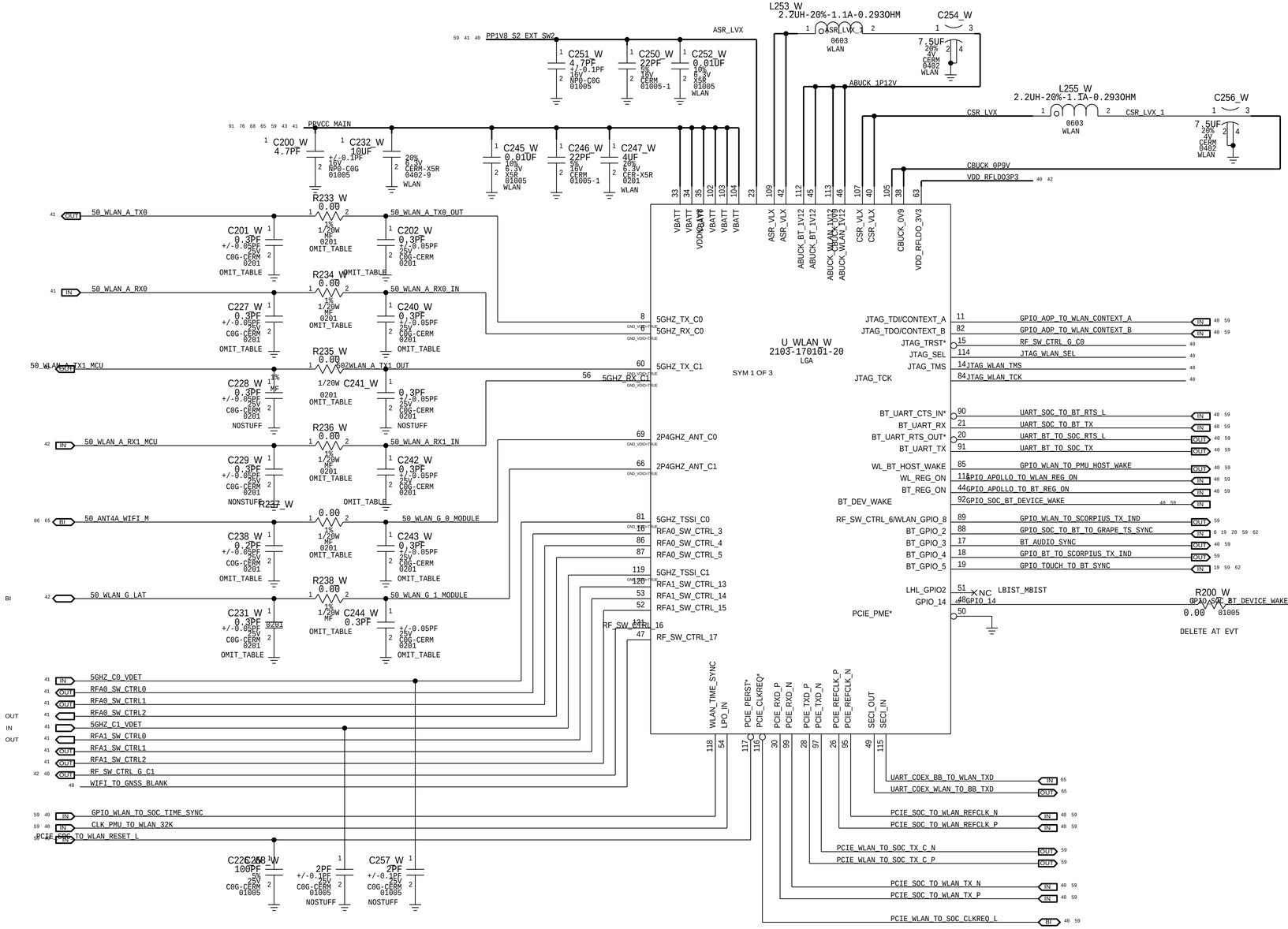


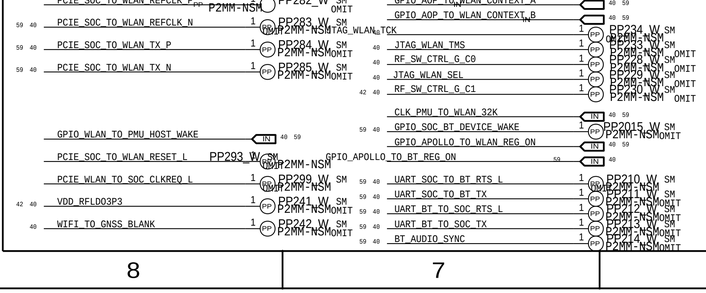
SYNC_MASTER=J207_MLB_B
SYNC_DATE=05/07/2017

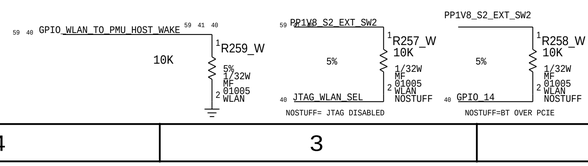
PAGE TITLE

DISPLAY: EDP SUPPORT

J317+J318: DIET COKE PRIMARY MODULE







PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
998-13647	998-13645		U_WLAN_W	MURATA

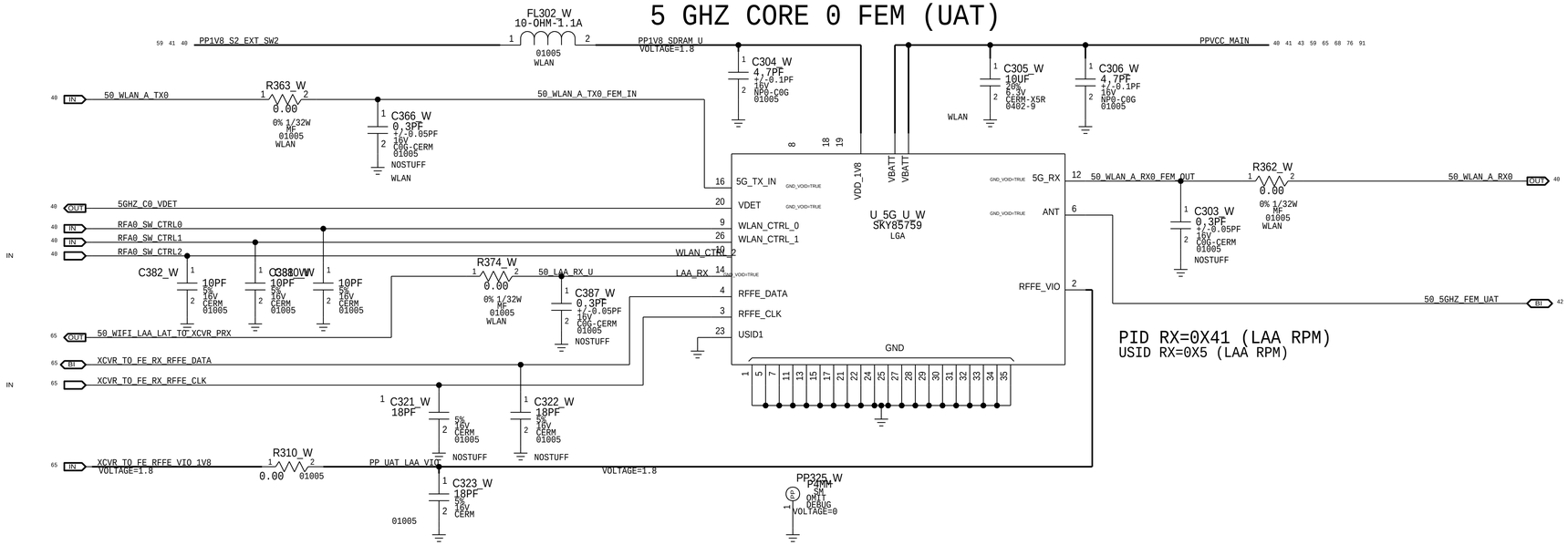
SYNC_MASTER=RADIO_MLB SYNC_DATE=03/16/2018

PAGE TITLE

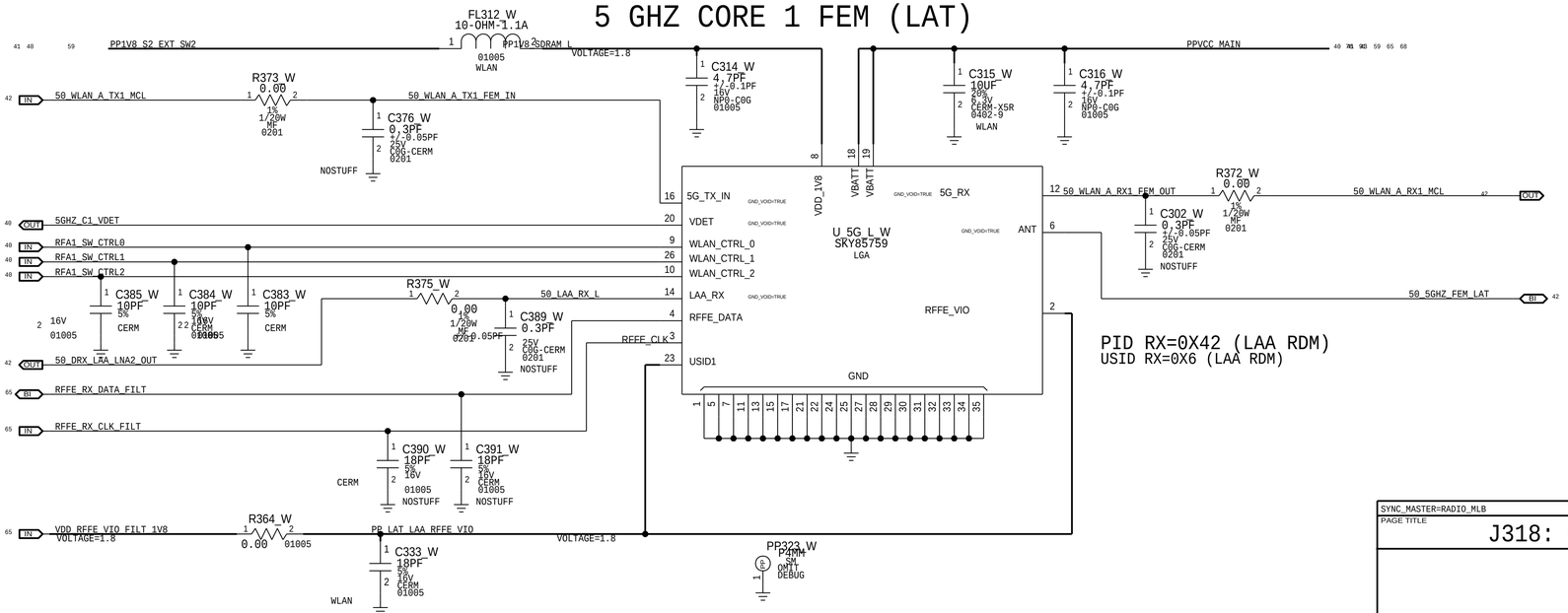
J317+J318: Diet Coke Primary Module

J318: DIET COKE REMOTE FEMS

5 GHZ CORE 0 FEM (UAT)



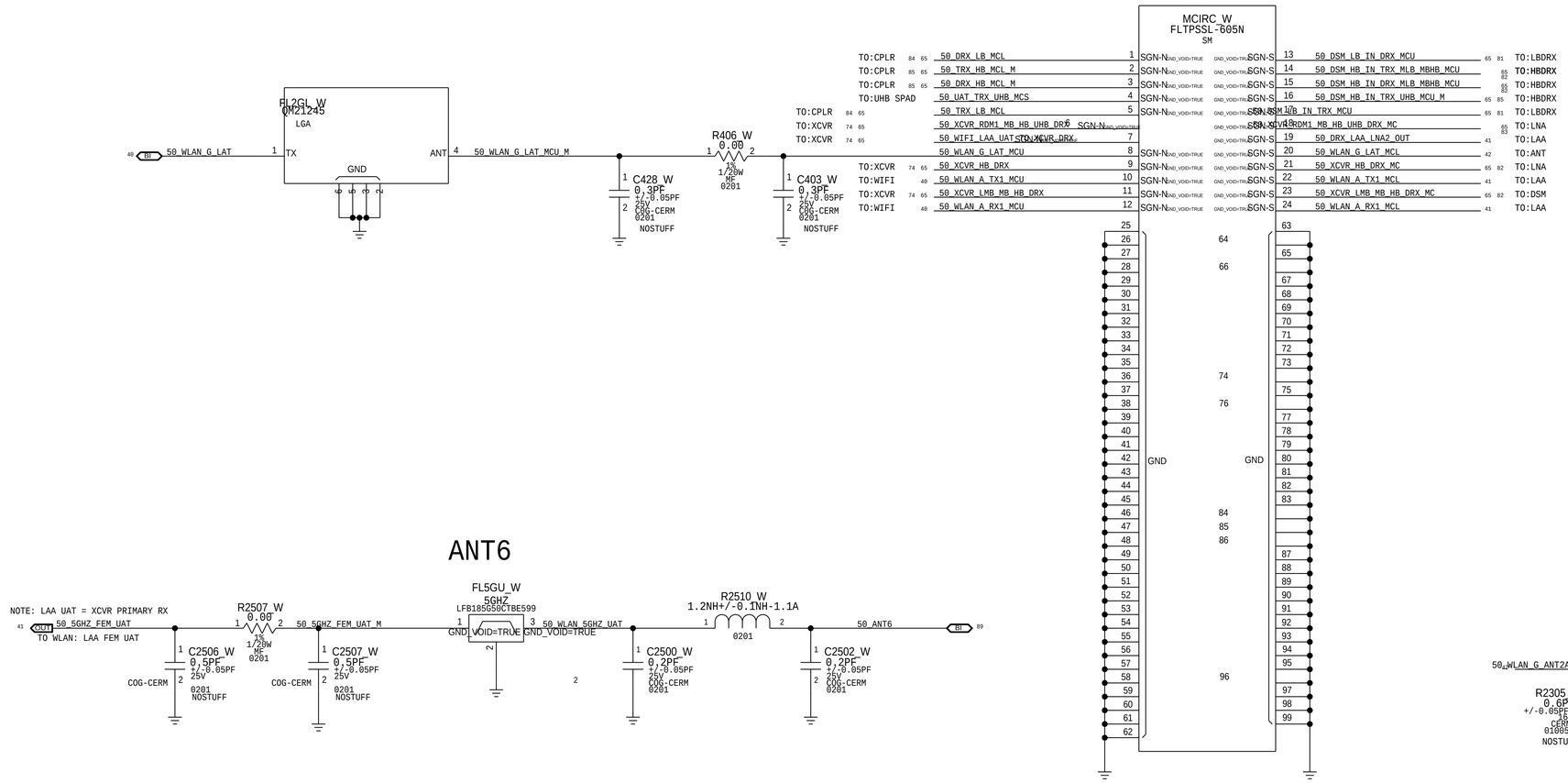
5 GHZ CORE 1 FEM (LAT)

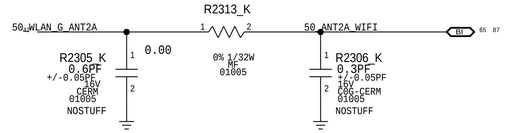


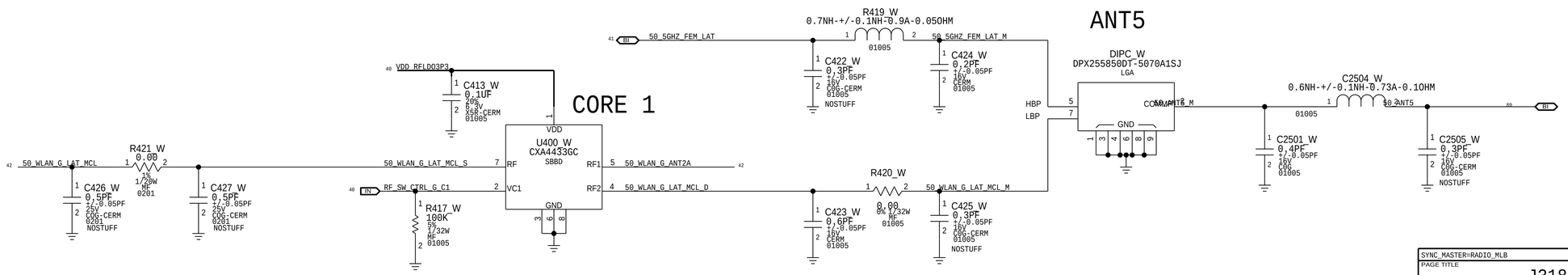
PART	DESCRIPTION	QTY	REFERENCE DESIGNATOR	NOTE
		1	NONSTUFF	C243_W	NONSTUFF
		1	NONSTUFF	C238_W	NONSTUFF
118S0724		1	RES,MF,0.0 OHM,0201,HIGH FREQ	R237_W	
131S0431		1	CAP,CER,C0G,0.2PF,,0201,H-Q	C202_W	
152S00059		1	IND,FILM,1.6NH,+/-,1000MA,UH-Q,0201	R233_W	
131S0431		1	CAP,CER,C0G,0.2PF,,0201,H-Q	C201_W	
131S0431		1	CAP,CER,C0G,0.2PF,25V,0201,H-Q	C240_W	
152S00059		1	IND,FILM,1.6NH,,1000MA,UH-Q,0201	R234_W	
131S0631		1	CAP,CER,C0G,0.3PF,25V,0201,H-Q	C227_W	
118S0724		1	RES,MF,0.0 OHM,0201,HIGH FREQ	R236_W	
118S0724		1	RES,MF,0.0 OHM,0201,HIGH FREQ	R238_W	
118S0724		1	RES,MF,0.0 OHM,0201,HIGH FREQ	R235_W	
	NOSTUFF	1		C242_W	NOSTUFF
		1	NOSTUFF	C244_W	NOSTUFF
		1	NOSTUFF	C231_W	NOSTUFF

SYNC_MASTER=RADIO_MLB	SYNC_DATE=03/16/2018
PAGE TITLE	
J318: Remote FEMs	

J318: METROCIRC



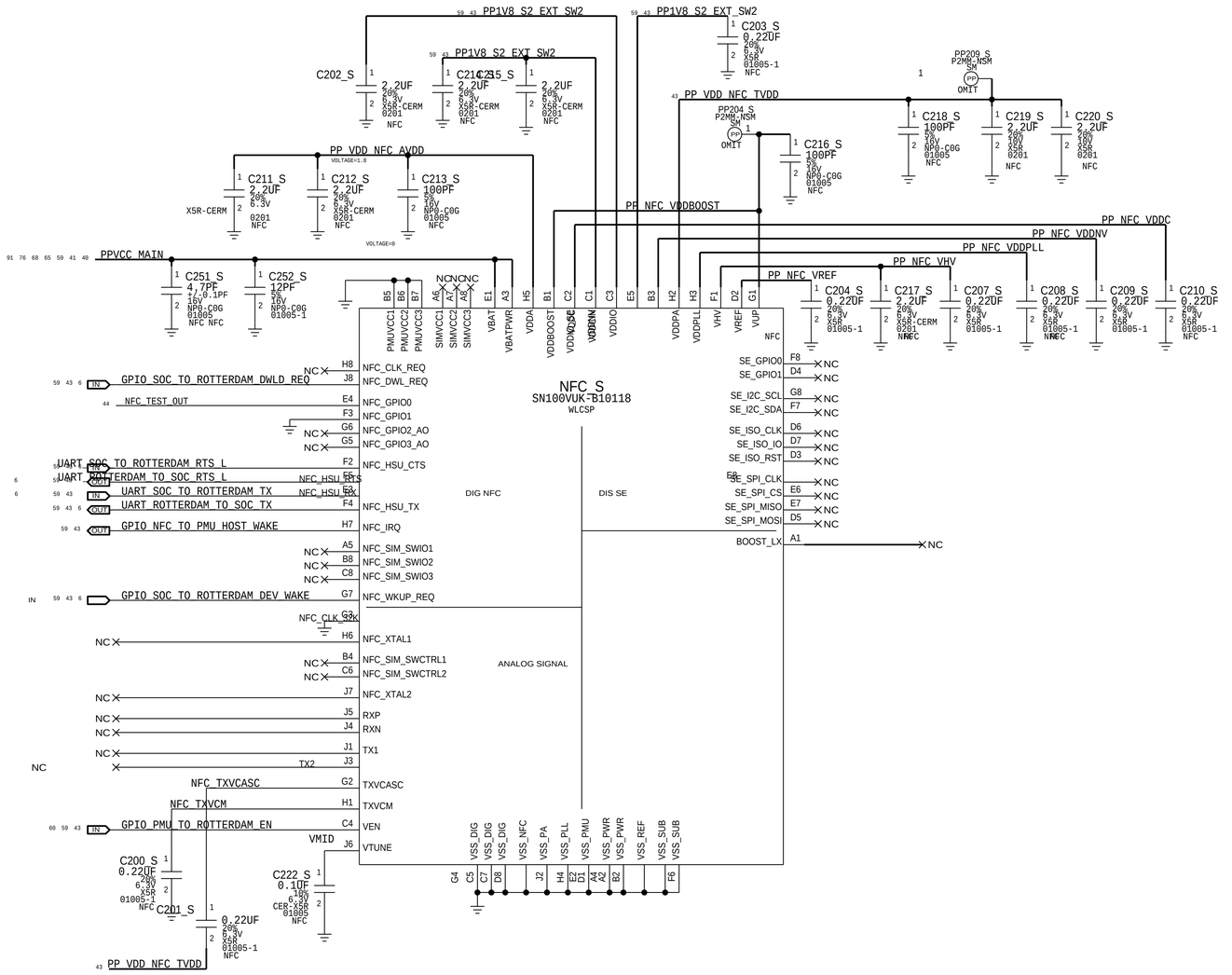




SYNC_MASTER=RADIO_MLB	SYNC_DATE=03/16/2018
PAGE TITLE	
J318: Metrocirc	

STOCKHOLM

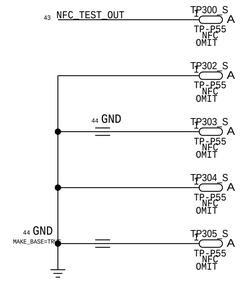
NFC CONTROLLER



SYNC_MASTER=NFC_MLB
SYNC_DATE=01/25/2018
PAGE TITLE
NFC CONTROLLER

STOCKHOLM

NFC FRONT END(DELETED PREEVT)

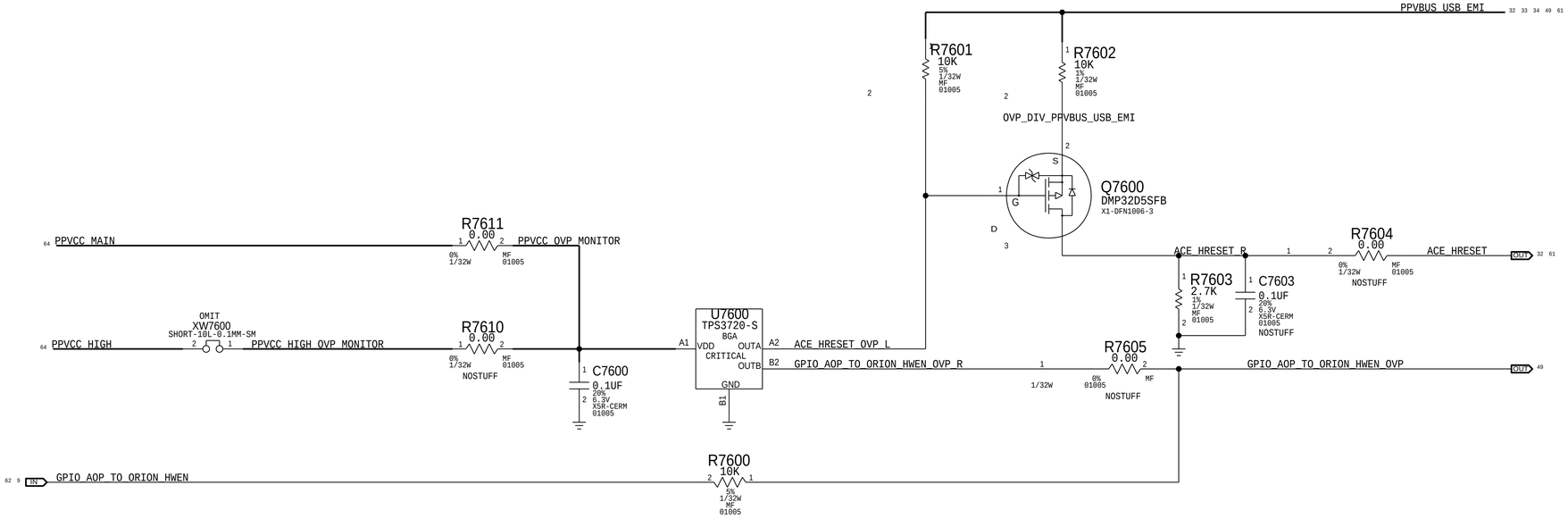


SYNC_MASTER=NFC_MLB SYNC_DATE=01/23/2018

PAGE TITLE

NFC FRONT END

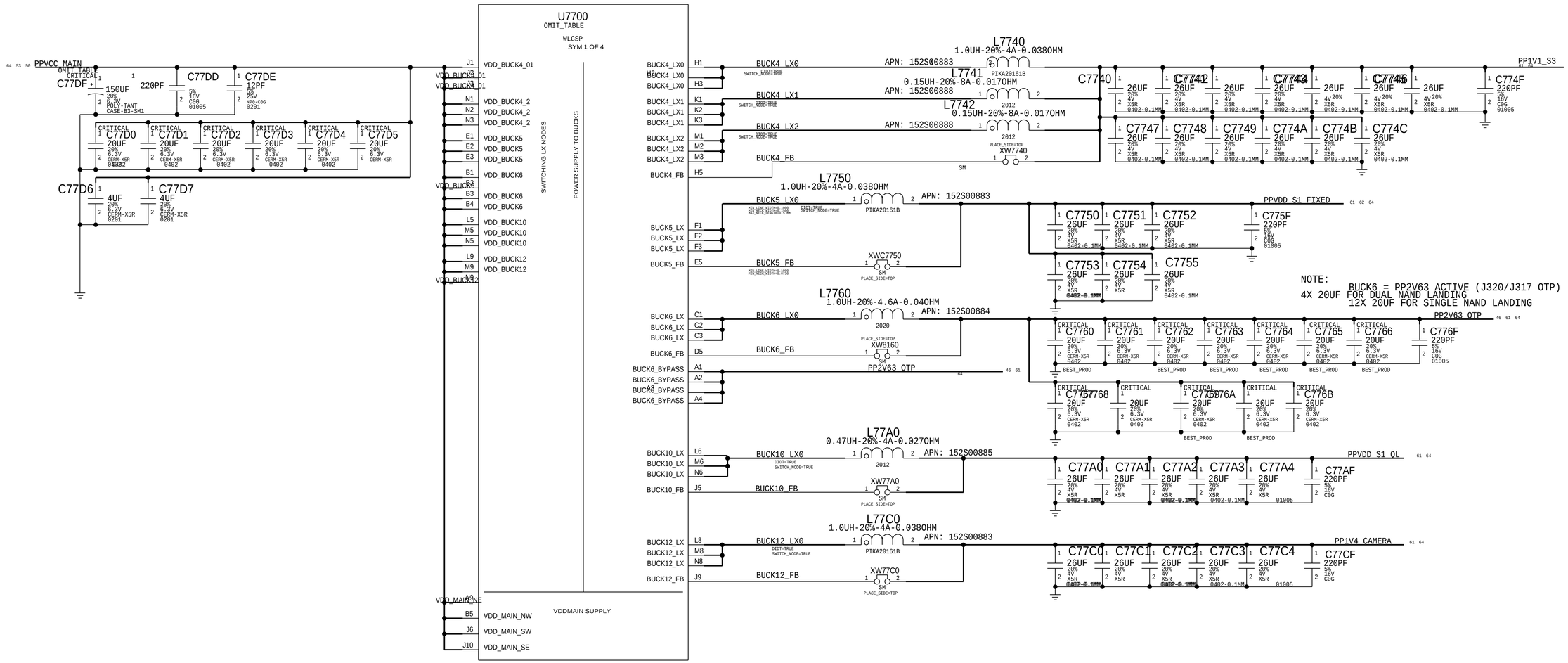
VCC_MAIN OVER VOLTAGE VBUS CUT-OFF



SYNC_MASTER=OV_CUTOFF	SYNC_DATE=01/17/2018
PAGE TITLE	POWER: OV CUT-OFF

APOLLO PMU (1/3)

TO CHECK: CAPACITORS AND INDUCTOR VALUE

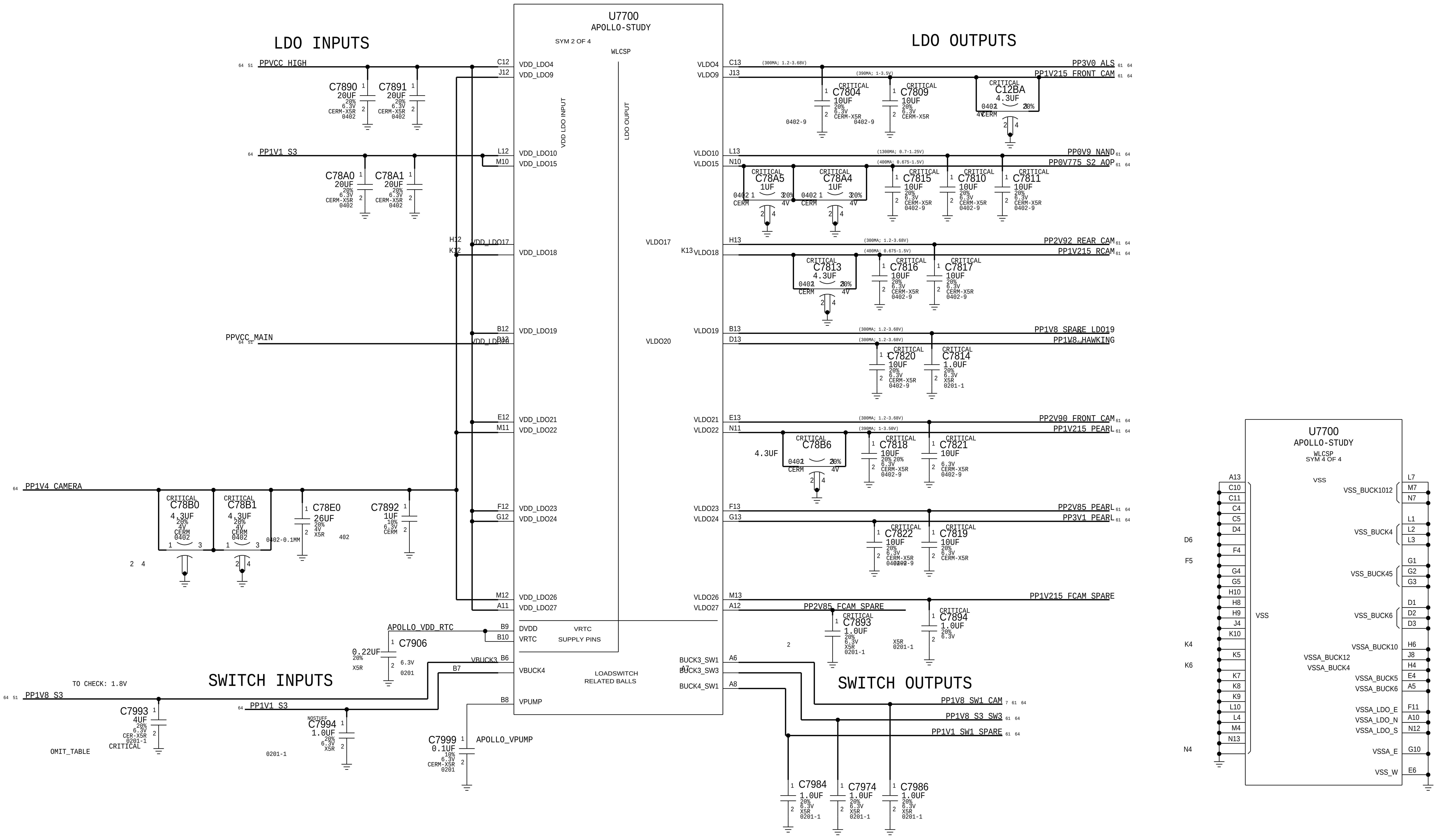


SYNC_MASTER=DEV_ARUBA_J3XX SYNC_DATE=12/14/2017

PAGE TITLE

POWER: APOLLO (1/3)

APOLLO PMU (2/3)



SYNC_MASTER=DEV_ARUBA_J3XX SYNC_DATE=12/14/2017

PAGE TITLE

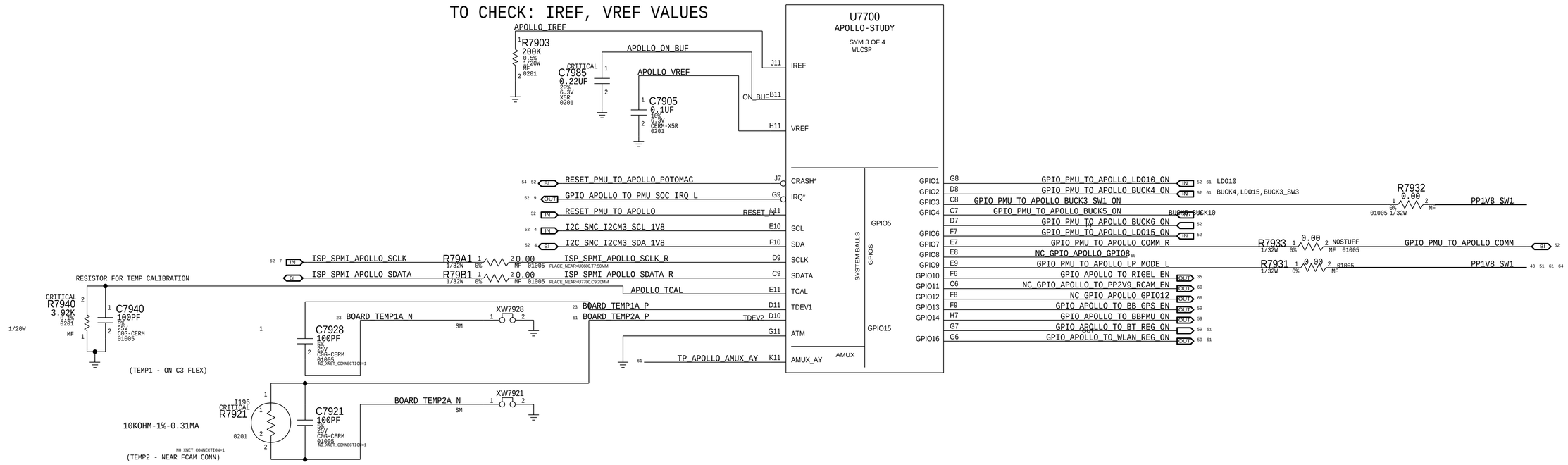
POWER: APOLLO (2/3)

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
138S00071	1	CAP,X5R,4UF	C7993	CRITICAL	

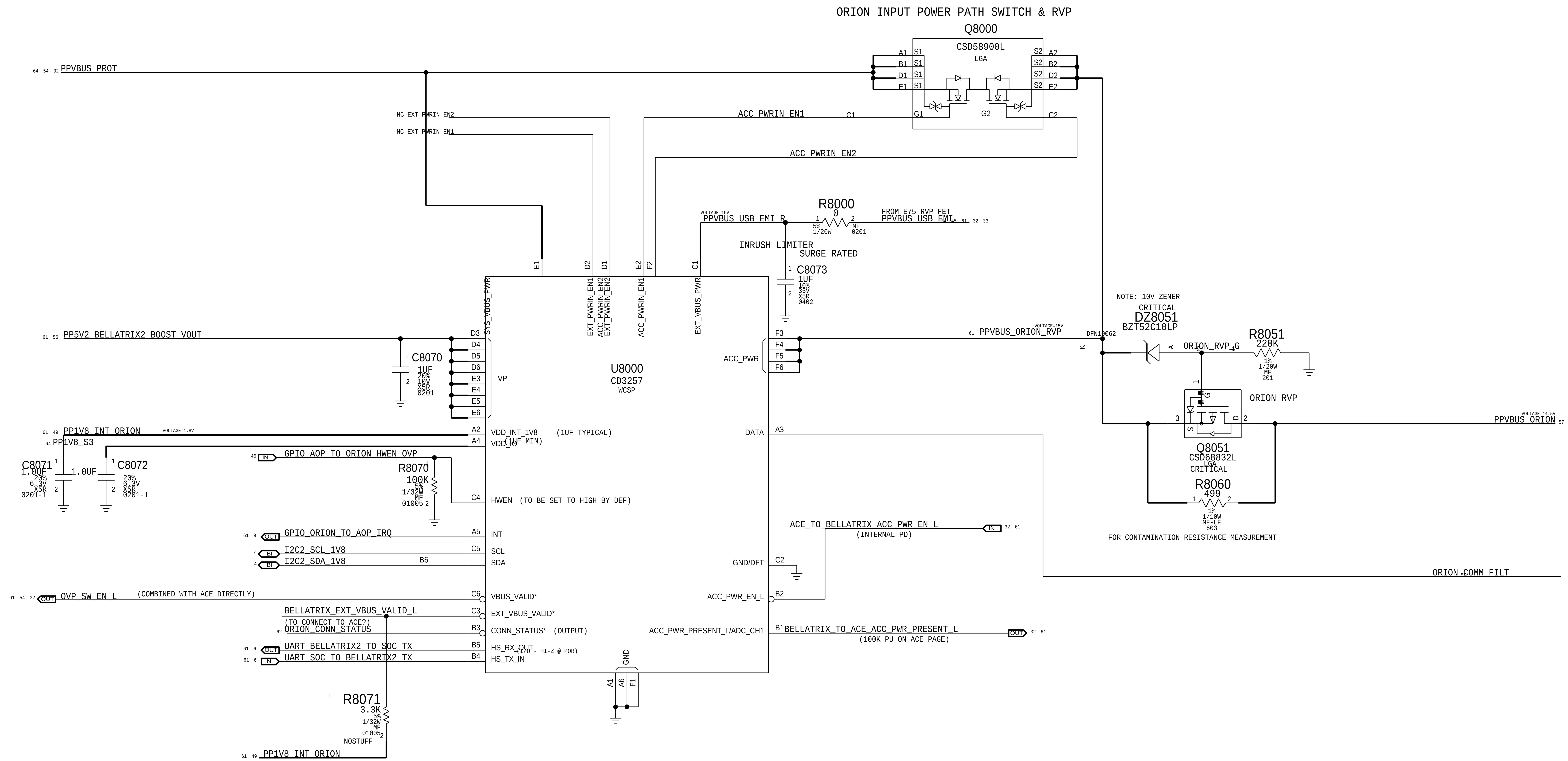
PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
138S00117	138S00071		C7993	

APOLLO PMU (3/3)

TO CHECK: IREF, VREF VALUES



SYNC_MASTER=DEV_ARUBA_J3XX	SYNC_DATE=12/14/2017
PAGE TITLE	
POWER: APOLLO (3/3)	



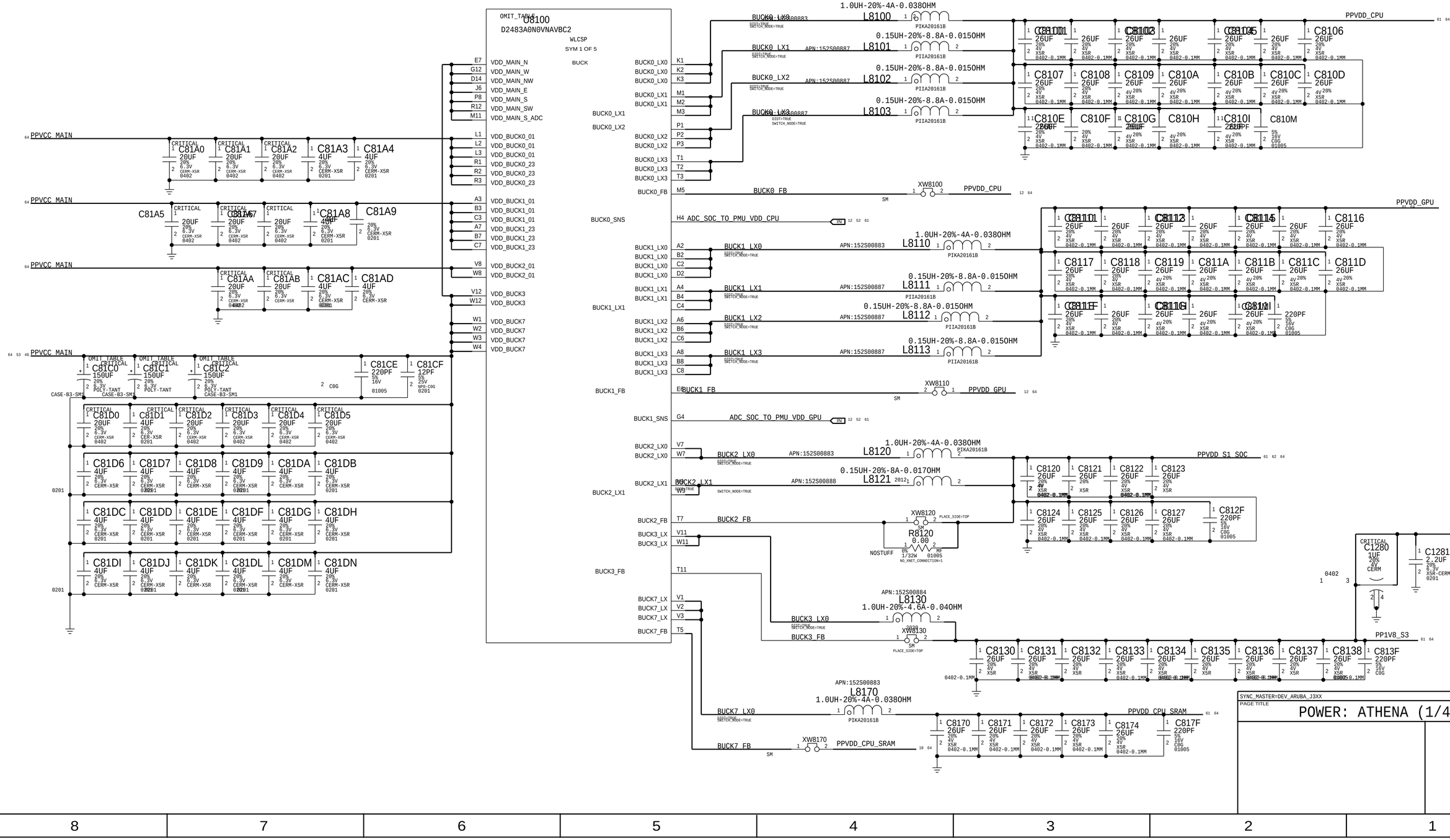
SYNC_MASTER=J320_MLB SYNC_DATE=05/11/2017

PAGE TITLE

POWER: ORION & B2B FETS

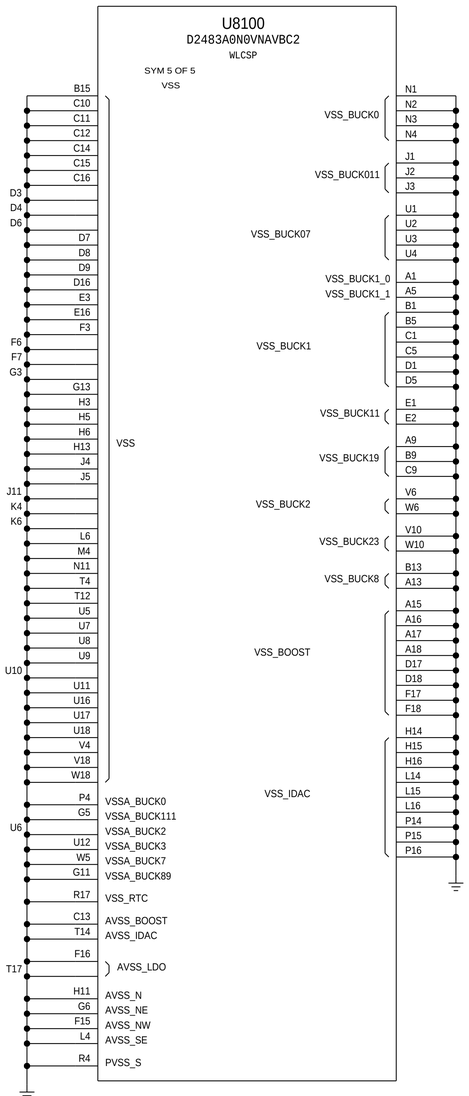
ATHENA BUCKS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
128S00062	4	CAP,TANT, 150UF	C81C0,C81C1,C81C2,C77DF	CRITICAL	

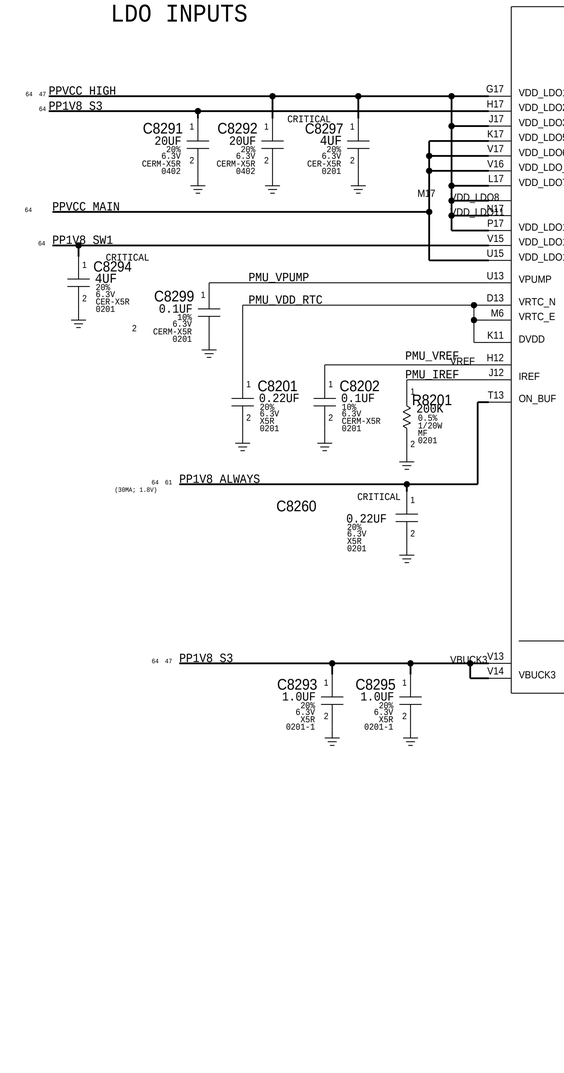


ATHENA PMU (2/4)

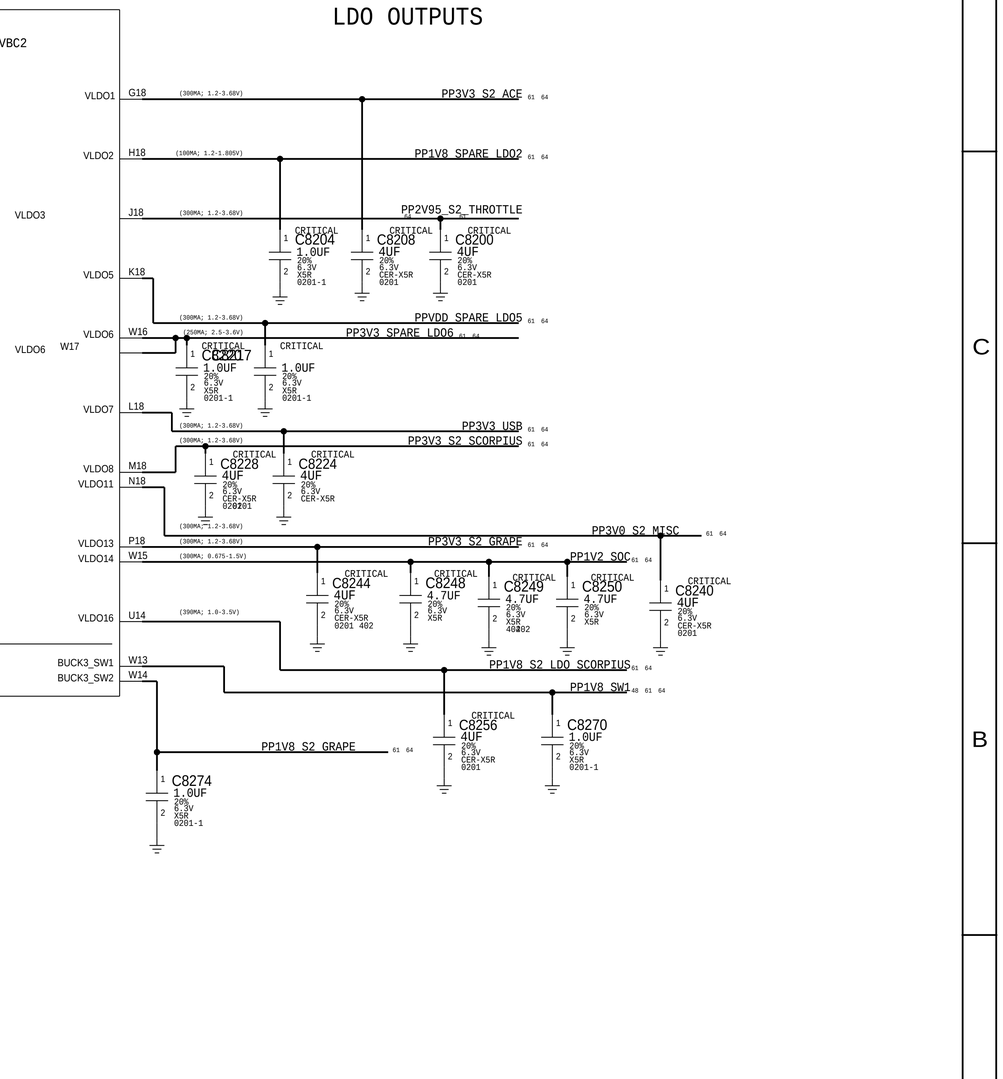
PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
197S0399	197S0392		Y8300	RDAR://PROBLEM/9936684
138S0703	138S0648		C8250,ECT	ALT FOR 4.7UF,6.3V,0402



LDO INPUTS



LDO OUTPUTS



SYNC_MASTER=DEV_ARUBA_J3XX	SYNC_DATE=12/14/2017
PAGE TITLE	POWER: ATHENA (2/4)

ATHENA PMU (3/4)

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
138S0706	138S0739		C8308,ECT	
118S0764	118S0717		R8340	RDAR://PROBLEM/8388367
107S0150	107S0208		R8321-R8328	RDAR://PROBLEM/8388367

PLACE CAPS AND XWS NEAR PMU

U8100
D2483A0N0VNAVBC2
WLCSP
SYM 4 OF 5

AMUX
GPIO
TDEV
BUTTON
OTHER
RESET
SERIAL
DROOP

(TEMP2 - NEAR DISPLAY CONN)
CRITICAL I682 R8328 10KOHM-1%-0.31MA 0201 NO_XNET_CONNECTION=1
C8328 100PF 5% 25V C0G-CERM 01005 NO_XNET_CONNECTION=1
PLACE_NEAR=U8100.P13:13MM
BOARD_TEMP2_P
BOARD_TEMP2_N
XW8328 SM

(TEMP3 - NEAR WIFI)
CRITICAL I683 R8321 10KOHM-1%-0.31MA 0201 NO_XNET_CONNECTION=1
C8321 100PF 5% 25V C0G-CERM 01005 NO_XNET_CONNECTION=1
PLACE_NEAR=U8100.N13:13MM
BOARD_TEMP3_P
BOARD_TEMP3_N
XW8321 SM

(TEMP3 - NEAR FH)
CRITICAL I669 R8322 10KOHM-1%-0.31MA 0201 NO_XNET_CONNECTION=1
C8322 100PF 5% 25V C0G-CERM 01005 NO_XNET_CONNECTION=1
PLACE_NEAR=U8100.N12:13MM
BOARD_TEMP4_P
BOARD_TEMP4_N
XW8322 SM

(TEMP5 - NEAR NAND
CRITICAL I697 R8323 10KOHM-1%-0.31MA 0201 NO_XNET_CONNECTION=1
C8323 100PF 5% 25V C0G-CERM 01005 NO_XNET_CONNECTION=1
PLACE_NEAR=U8100.M13:13MM
BOARD_TEMP5_P
BOARD_TEMP5_N
XW8323 SM

(TEMP6 - NEAR POTOMAC)
CRITICAL I699 R8324 10KOHM-1%-0.31MA 0201 NO_XNET_CONNECTION=1
C8324 100PF 5% 25V C0G-CERM 01005 NO_XNET_CONNECTION=1
PLACE_NEAR=U8500.C1:10MM
PLACE_NEAR=U8100.M12:13MM
BOARD_TEMP6_P
BOARD_TEMP6_N
XW8324 SM

(TEMP7 - NEAR PMU)
CRITICAL I708 R8325 10KOHM-1%-0.31MA 0201 NO_XNET_CONNECTION=1
C8325 100PF 5% 25V C0G-CERM 01005 NO_XNET_CONNECTION=1
PLACE_NEAR=U8100.K13:13MM
BOARD_TEMP7_P
BOARD_TEMP7_N
XW8325 SM

(TEMP8 - NEAR SOC)
CRITICAL I702 R8326 10KOHM-1%-0.31MA 0201 NO_XNET_CONNECTION=1
C8326 100PF 5% 25V C0G-CERM 01005 NO_XNET_CONNECTION=1
PLACE_NEAR=U8100.L12:13MM
BOARD_TEMP8_P
BOARD_TEMP8_N
XW8326 SM

USB_TS_TO_PMU_BRICKID_R
R8399 100K 5% 1/32W MF 01005

ADC_SOC_TO_PMU_ANALOGMUX_OUT → AMUX_A0 T6
ADC_SOC_TO_PMU_VDD_CPU → AMUX_A1 R6
ADC_SOC_TO_PMU_VDD_GPU → AMUX_A2 R5
ADC_SOC_TO_PMU_VDD_SOC → AMUX_A3 V5
TP_AMUX_AY → AMUX_AY P6
NC_ADC_BB_TO_PMU_SW1_VOUT → AMUX_B0 R7
NC_ADC_BB_TO_PMU_SW3_VOUT → AMUX_B1 P7
NC_ADC_BB_TO_PMU_PP_1V85 → AMUX_B2 N6
NC → AMUX_B3 N5
TP_AMUX_BY → AMUX_BY P5

PA_NTC_P → TDEV1 R13
TDEV2 P13
TDEV3 N13
TDEV4 N12
TDEV5 M13
TDEV6 M12
TDEV7 K13
TDEV8 L12

PMU_TCAL → TCAL K12
C8340 100PF 5% 25V C0G-CERM 01005
CRITICAL R8340 3.92K 0.1% 0201 1/20W MF

PMU_EXTAL → XTAL1 R18
PMU_XTAL → XTAL2 T18

GPIO_PMU_TO_SOC_BTN_VOL_DOWN_L → BUTTON01 M10
GPIO_PMU_TO_SOC_BTN_ONOFF_L → BUTTON02 M9
GPIO_PMU_TO_SOC_BTN_VOL_UP_L → BUTTON03 N8
BUTTON04

DBL_CLICK_DET → DBL_CLICK_DET E9

PMU_SHUTDOWN → SHDWN F5
USB_TS_TO_PMU_BRICKID_R → BRICK_ID J13
IM_MEAS L13
CLK_PMU_TO_AOP_32K → SLEEP_32K N9
CLK_PMU_TO_WLAN_32K → OUT_32K N10
ADC_IN P12
ATHENA_CRASH → CRASH* R8
C8302 0.01UF 10% 6.3V X5R 01005
NC → VDD_HI_UVLO_DET E12
GPIO_PMU_TO_GPU_TRIGGER_1 → BUCK1_THROTTLE1* E4
GPIO_PMU_TO_GPU_TRIGGER_0 → BUCK1_THROTTLE0* E5
GPIO_PMU_TO_CPU_TRIGGER_1 → BUCK0_THROTTLE1* K5
GPIO_PMU_TO_CPU_TRIGGER_0 → BUCK0_THROTTLE0* L5

GPIO1
GPIO2 G10 GPIO_CPANEL_HALL_TO_PMU_IRQ_L
GPIO3 G9 GPIO_WLAN_TO_PMU_HOST_WAKE
GPIO4 G8 NC_GPIO_PMU_GPIO3
GPIO5 G7 NC_GPIO_BELFIELD_TO_PMU_WAKE_L
GPIO6 H10 GPIO_PMU_TO_BB_VBUS_DET
GPIO7 H9 NC_GPIO_BT_TO_PMU_HOST_WAKE
GPIO8 H8 NC_GPIO_SCORPIUS_TO_PMU_IRQ
GPIO9 H7 GPIO_PMU_TO_SOC_FORCE_DFU
J10 GPIO_BB_TO_PMU_HOST_WAKE_L
J9 NC_GPIO_CODEC_TO_PMU_WAKE_L
GPIO10 J8 GPIO_APANEL_HALL_TO_PMU_IRQ_L
GPIO11 J7 GPIO_PMU_TO_APOLLO_COMM
GPIO12 K10 GPIO_PMU_TO_APOLLO_LDO15_ON
GPIO13 K9 GPIO_POTOMAC_TO_PMU_WAKE
GPIO14 K8 GPIO_POTOMAC_TO_SOC_TO_PMU_IRQ_L
GPIO15 L7 GPIO_PMU_TO_NAND_LOW_BATT_L
GPIO16 L8 GPIO_PMU_TO_APOLLO_BUCK5_ON
GPIO17 L9 GPIO_PMU_TO_APOLLO_LDO10_ON
GPIO18 L10 GPIO_PMU_TO_APOLLO_BUCK4_ON
GPIO19 E14 GPIO_PMU_TO_1V8_EXT_SW2_ON
GPIO20 F13 NC_PMU_TO_3V3_EXT_SW_ON
GPIO21 M7 GPIO_PMU_TO_POTOMAC_LINCH_EN
GPIO22 F14 GPIO_PMU_TO_ROTTERDAM_EN
GPIO23 T15 GPIO_NFC_TO_PMU_HOST_WAKE
GPIO24 T16 GPIO_PMU_TO_APOLLO_BUCK6_ON
GPIO25
GPIO26

R8331 10K 5% 1/32W MF 01005
PP1V8_S3 → OUT 54

BUTTON01 R11 GPIO_BTN_VOL_DOWN_L
BUTTON02 P9 GPIO_BTN_ONOFF_L
BUTTON03 P10 GPIO_BTN_VOL_UP_L
BUTTON04 P11 NC_PMU_BTN4

RESET_IN1 T10 GPIO_SOC_TO_PMU_WDOG
RESET_IN2 T9 RESET_ACE_TO_PMU
RESET_IN3 T8 SOCHOT1_SOC_TO_PMU_L
RESET_OUT R10 RESET_PMU_TO_APOLLO_R
RESET* R9 RESET_PMU_TO_SYSTEM_L

SCLK F8 NUB_SPMI_ATHENA_SCLK_R → R79C1 2.00 1/32W MF 01005 → NUB_SPMI_ATHENA_SCLK
SDATA F9 NUB_SPMI_ATHENA_SDATA_R → R79D1 2.00 1/32W MF 01005 → NUB_SPMI_ATHENA_SDATA
SCL F10 I2C_SMC_I2CM3_SCL_1V8
SDA F11 I2C_SMC_I2CM3_SDA_1V8

FORCE_SYNC E12 PMU_SYNC → R8305 0.00 1/32W MF 01005
SYS_ALIVE E13 SYS_ALIVE
IRQ_IN* M8 GPIO_APOLLO_TO_PMU_SOC_IRQ_L
IRQ* N7 GPIO_PMU_TO_SOC_IRQ_L
PRE_UVLO D11 VCCMAIN_DROOP_PMU_TO_SOC_L_R
FAULT_OUT* E8 NC_FAULT_OUT_L
REQUEST_DFU E10 PMU_REQUEST_DFU
ACTIVE_RDY E11 GPIO_PMU_TO_SYSTEM_ACTIVE_READY
ATM L11

R83A0 4.7K 5% 1/32W MF 01005

NOTE: MAY NEED TO CHANGE XTAL CKT BASED ON CHARACTERIZATION

PMU_EXTAL
PMU_XTAL
Y8300 32.768K-20PPM-12.5PF 2012-1
CRITICAL C8316 18PF 5% 25V C0G-CERM 0201
CRITICAL C8315 18PF 5% 25V C0G-CERM 0201

BUTTON PULLUPS

PP1V8_ALWAYS
PP1V8_S3
PP1V8_S3
R8395A 100K 5% 1/32W MF 01005
R8396 100K 5% 1/32W MF 01005
GPIO_BTN_VOL_UP_L
GPIO_BTN_VOL_DOWN_L
GPIO_BTN_ONOFF_L

PLACE U8350 AND U8351 CLOSE TO T JUNCTION
THESE BUFFERS MIGHT NOT BE NEEDED FOR MLB. TBD.

PP1V8_S3
PP1V8_ALWAYS
PP1V8_EXT_SW1

R8372 NOSTUFF 100K 5% 1/32W MF 01005
R8300 10K 5% 1/32W MF 01005
R8301 10K 5% 1/32W MF 01005
R8373 NOSTUFF 10K 5% 1/32W MF 01005
R8370 10K 5% 1/32W MF 01005

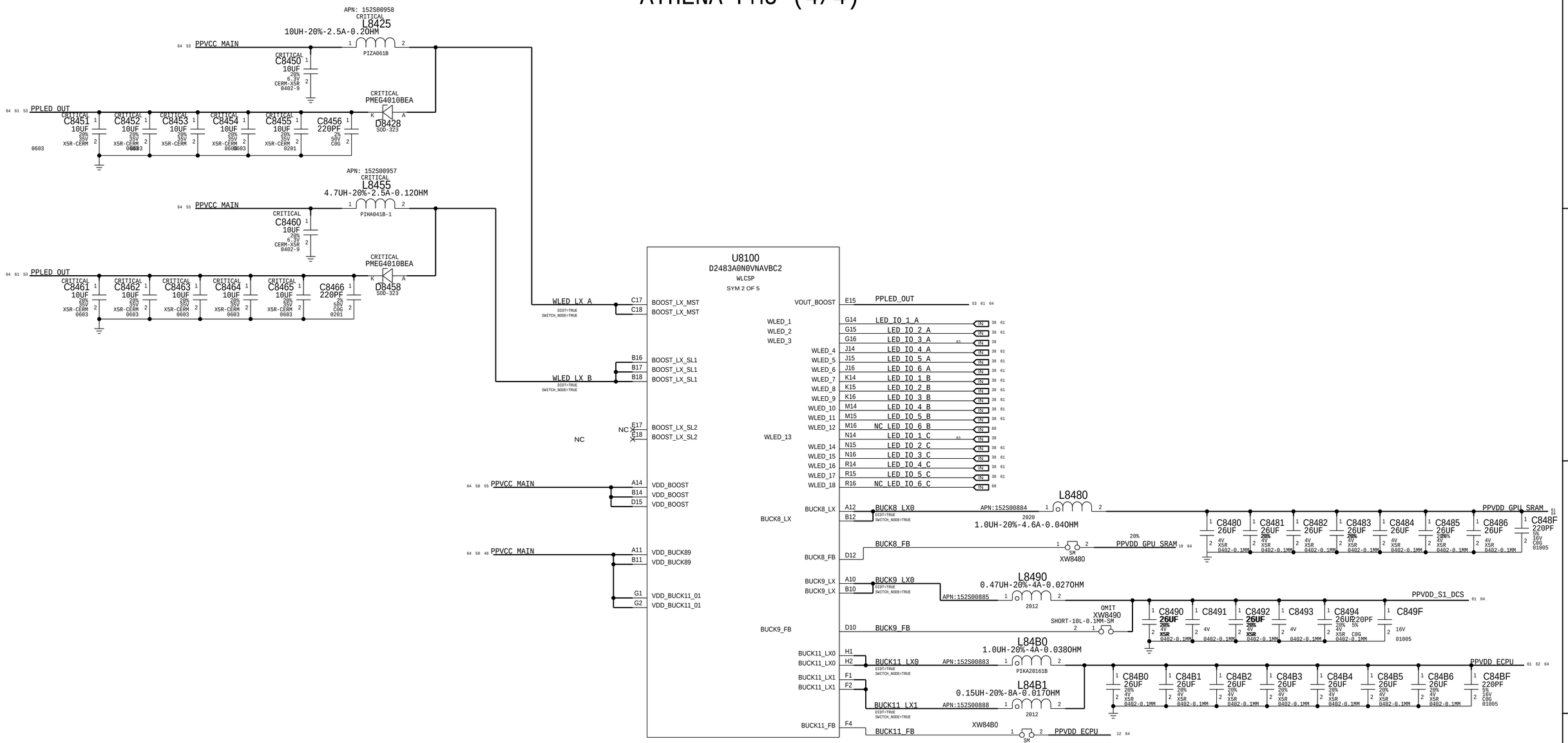
VCCMAIN_DROOP_PMU_TO_SOC_L → R8371 0.00 → VCCMAIN_DROOP_PMU_TO_SOC_L_R
SYS_ALIVE
RESET_PMU_TO_APOLLO_POTOMAC
GPIO_PMU_TO_CPU_TRIGGER_1
GPIO_PMU_TO_CPU_TRIGGER_0
ATHENA_CRASH → R8315 0.00

PP1V8_EXT_SW1 → R8302 0.00
R8309 10K 5% 1/32W MF 01005
R8310 NOSTUFF 10K 5% 1/32W MF 01005
GPIO_PMU_TO_GPU_TRIGGER_1 → R8304 0.00 NOSTUFF
GPIO_PMU_TO_GPU_TRIGGER_0
RESET_PMU_TO_APOLLO → R8317 10K NOSTUFF
RESET_PMU_TO_APOLLO_R → R8316 0.00

PP1V8_S3
R8341 NOSTUFF 10K 1% 1/20W MF 201
R8342 NOSTUFF 10K 1% 1/20W MF 201
GPIO_CPANEL_HALL_TO_PMU_IRQ_L
GPIO_APANEL_HALL_TO_PMU_IRQ_L

SYNC_MASTER=DEV_ARUBA_J3XX
SYNC_DATE=12/14/2017
PAGE TITLE
POWER: ATHENA (3/4)

ATHENA PMU (4/4)



SYNC_MASTER=DEV_ARUBA_J3XX	SYNC_DATE=12/14/2017
PAGE TITLE	
POWER: ATHENA (4/4)	

POTOMAC

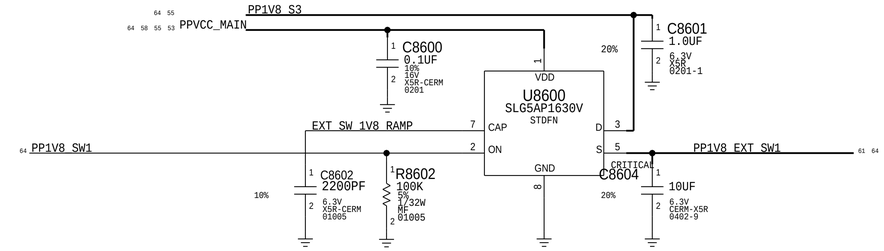
PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
376S00071	376S00070		Q8581,ECT	RDAR://PROBLEM/20277540

SYNC_MASTER=DEV_ARUBA_J3XX SYNC_DATE=12/14/2017

PAGE TITLE

POWER: CHARGER

EXTERNAL POWER SWITCHES



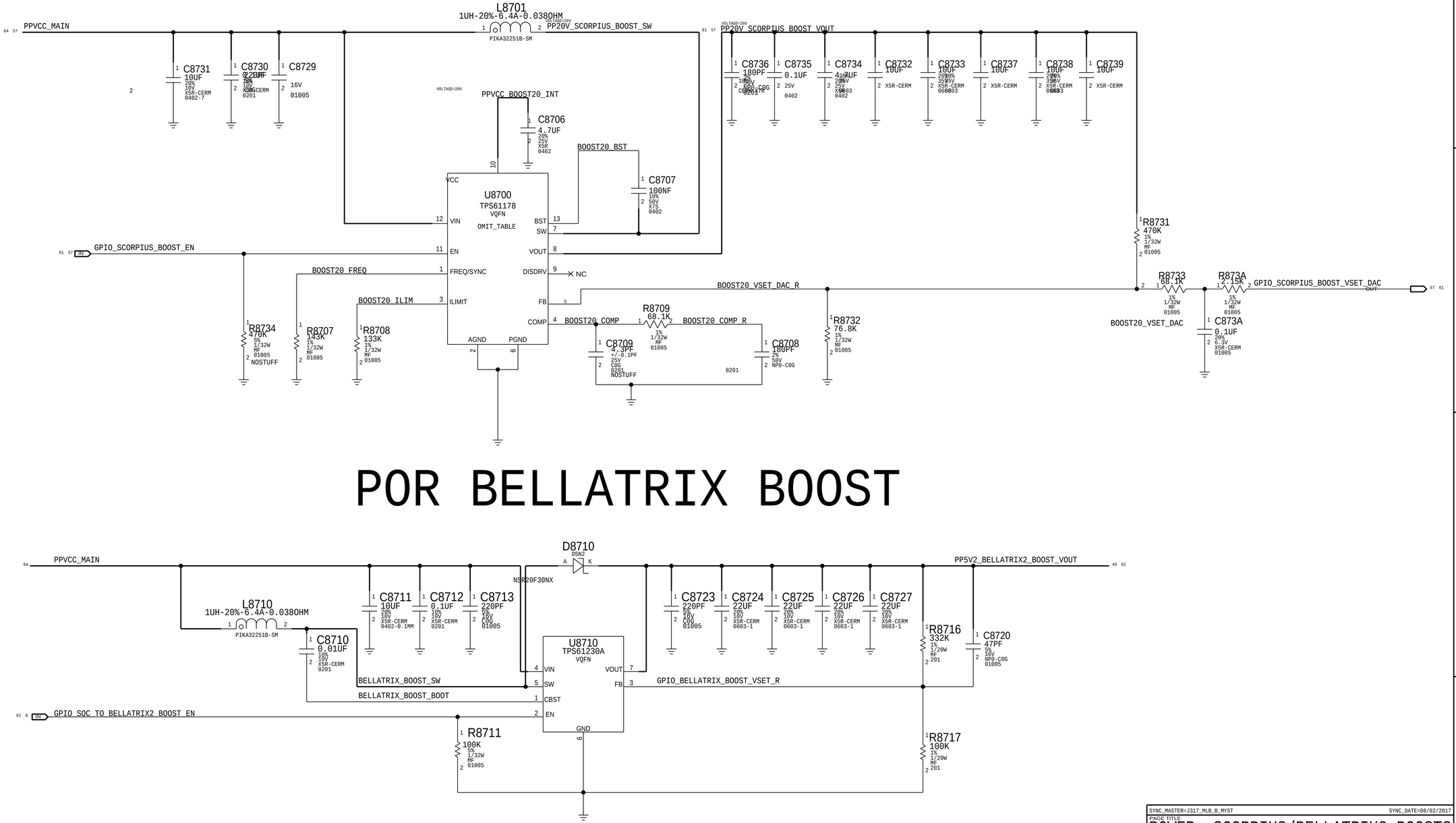
SYNC_MASTER=DEV_ARUBA_J3XX SYNC_DATE=12/14/2017

PAGE TITLE

POWER: EXTERNAL SWITCHES

SCORPIUS BOOST 20V

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
998-13794	1	IC,SCORPIUS BOOST	U8700	CRITICAL	



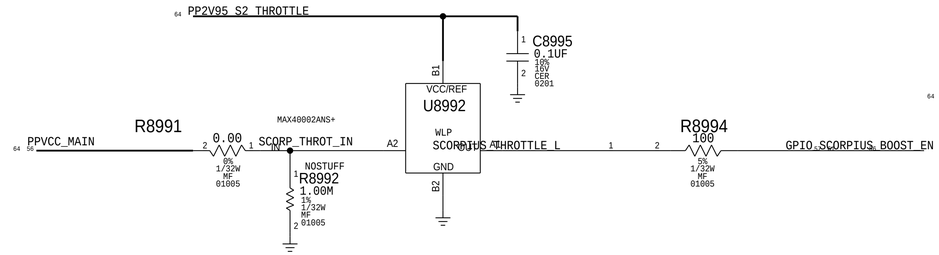
POR BELLATRIX BOOST

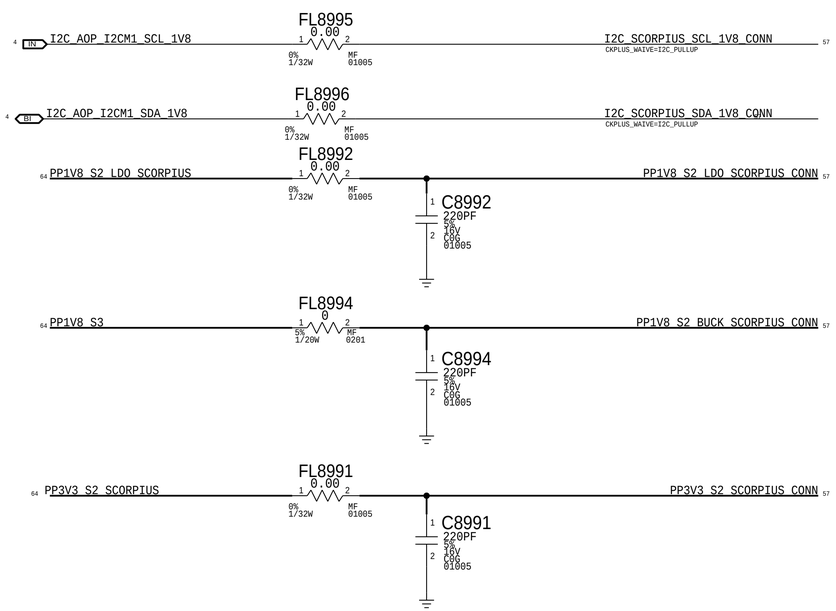
SYNC_MASTER=J317_MLB_B_MYST SYNC_DATE=08/02/2017

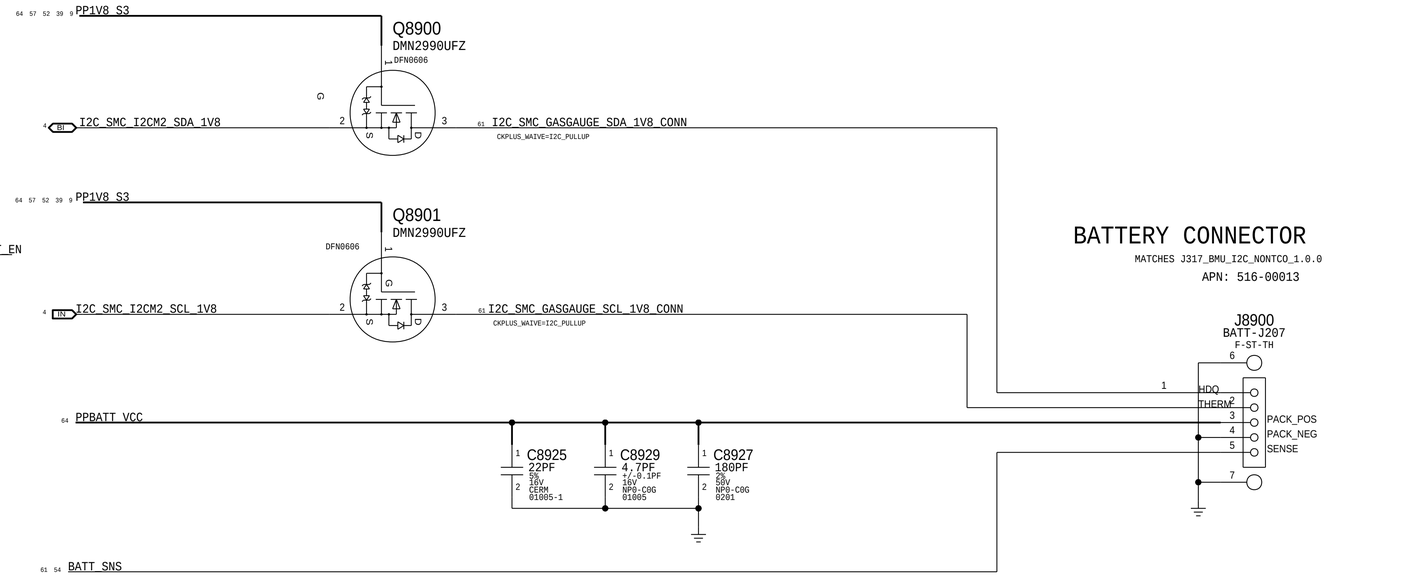
PAGE TITLE

POWER: SCORPIUS/BELLATRIX2 BOOSTS

SCORPIUS THROTTLE







BATTERY CONNECTOR

MATCHES J317_BMU_I2C_NONTCO_1.0.0

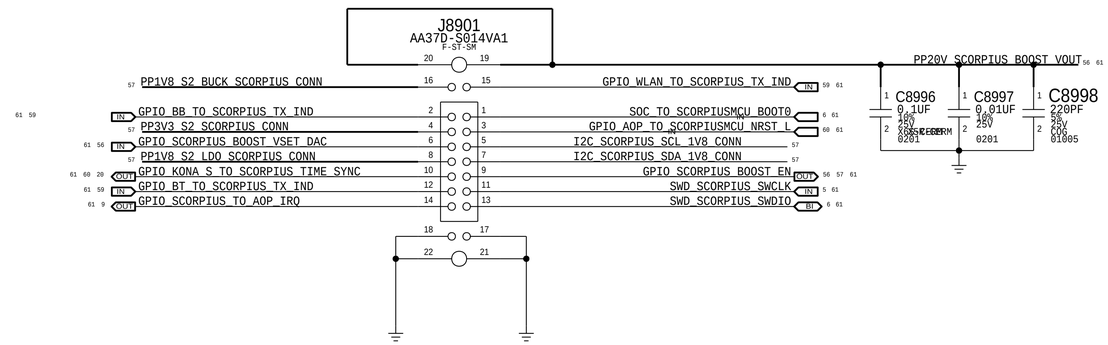
APN: 516-00013

SCORPIUS FLEX CONNECTOR

MATCH J317_SCORPIUS_FLEX 4.1.0

MLB: 516S00150

FLEX: 516S00149

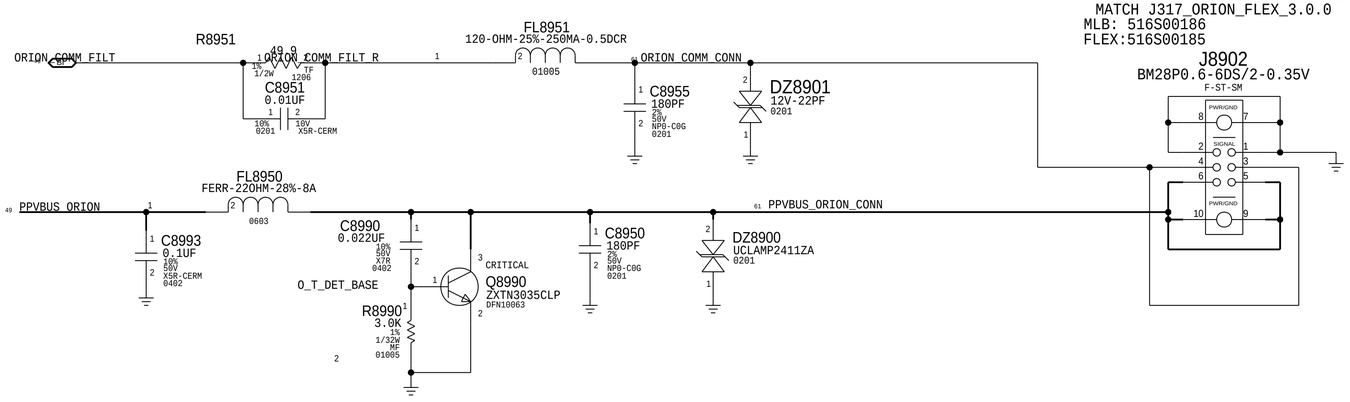


ORION FLEX CONNECTOR

MATCH J317_ORION_FLEX_3.0.0

MLB: 516S00186

FLEX:516S00185



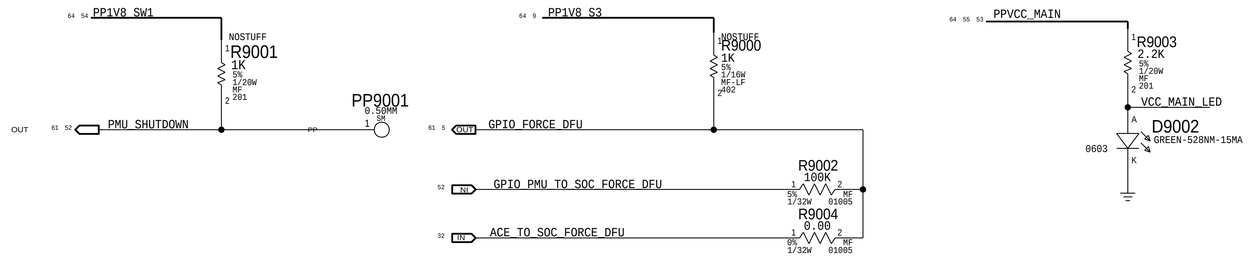
SYNC_MASTER=MLB_P0

SYNC_DATE=07/17/2017

PAGE TITLE

POWER: BATTERY & ORION & SCORPIUS CONN

DEBUG RESET ACCESS



SYNC_MASTER=J207_MLB_B SYNC_DATE=03/13/2017

PAGE TITLE

SOC: DEBUG

CELLULAR AND WLAN/BT ALIASES

BASEBAND

SOC/AOP/PMU GPIOS

7	IN	GPIO_SOC_TO_BB_SDWN_L	MAKE_BASE=TRUE	GPIO_SOC_TO_BB_SDWN_L	OUT	65 67 91
61 8	IN	GPIO_SOC_TO_BB_RESET_L	MAKE_BASE=TRUE	GPIO_SOC_TO_BB_RESET_L	OUT	65 69 91
61 7	OUT	GPIO_BB_TO_SOC_RESET_DET_L	MAKE_BASE=TRUE	GPIO_BB_TO_SOC_RESET_DET_L	IN	65 69 91
8	IN	GPIO_SOC_TO_BB_COREDUMP	MAKE_BASE=TRUE	GPIO_SOC_TO_BB_COREDUMP	OUT	65 69 91
59		SWD_BB_SWCLK	MAKE_BASE=TRUE	SWD_BB_SWCLK	OUT	65 70 91
59 32	BI	SWD_BB_SWDIO	MAKE_BASE=TRUE	SWD_BB_SWDIO	BI	65 70 91
48	IN	GPIO_APOLLO_TO_BBPMU_ON	MAKE_BASE=TRUE	GPIO_APOLLO_TO_BBPMU_ON	OUT	65 67 91
61 52	IN	GPIO_PMU_TO_BB_VBUS_DET	MAKE_BASE=TRUE	GPIO_PMU_TO_BB_VBUS_DET	OUT	65 69 91
52	OUT	GPIO_BB_TO_PMU_HOST_WAKE_L	MAKE_BASE=TRUE	GPIO_BB_TO_PMU_HOST_WAKE_L	IN	65 69 91
9	IN	UART_AOP_TO_BB_TX	MAKE_BASE=TRUE	UART_AOP_TO_BB_TX	OUT	65 69 91
9	OUT	UART_BB_TO_AOP_TX	MAKE_BASE=TRUE	UART_BB_TO_AOP_TX	IN	65 69 91
61 57	OUT	GPIO_BB_TO_SCORPIUS_TX_IND	MAKE_BASE=TRUE	GPIO_BB_TO_SCORPIUS_TX_IND	IN	65 69
91 65	OUT	GPIO_SOC_TO_KONA_DISPLAY_BSYNC1		GPIO_SOC_TO_KONA_DISPLAY_BSYNC1	MAKE_BASE=TRUE IN	7 38

POWER

64	PPVCC_MAIN	PPVCC_MAIN	40 41 43 59 65 68 76 91
64	PP3V0_S2_MISC	PP3V0_S2_MISC	23 65 88
64 59	PP1V8_S2_EXT_SW2	PP1V8_S2_EXT_SW2	23 65 88

PCIE

8	IN	PCIE_SOC_TO_BB_REFCLK_P	MAKE_BASE=TRUE	PCIE_SOC_TO_BB_REFCLK_P	OUT	65 69 91
8	IN	PCIE_SOC_TO_BB_REFCLK_N	MAKE_BASE=TRUE	PCIE_SOC_TO_BB_REFCLK_N	OUT	65 69 91
8	OUT	PCIE_BB_TO_SOC_CLKREQ_L	MAKE_BASE=TRUE	PCIE_BB_TO_SOC_CLKREQ_L	IN	65 69 91
59 8	IN	PCIE_SOC_TO_BB_RESET_L	MAKE_BASE=TRUE	PCIE_SOC_TO_BB_RESET_L	OUT	65 69 75 91
59		PCIE_SOC_TO_BB_TX_P	MAKE_BASE=TRUE	PCIE_SOC_TO_BB_TX_P	OUT	65 69 91
59		PCIE_SOC_TO_BB_TX_N	MAKE_BASE=TRUE	PCIE_SOC_TO_BB_TX_N	OUT	65 69 91
59		PCIE_BB_TO_SOC_TX_C_P	MAKE_BASE=TRUE	PCIE_BB_TO_SOC_TX_C_P	IN	65 69
PCIE_BB_TO_SOC_TX_C_N			MAKE_BASE=TRUE	PCIE_BB_TO_SOC_TX_C_N	IN	65 69

8 IN PCIE_SOC_TO_BB_TX_C_P — C0950 1 | 2 0.1UF 6.3V 20% 01005 X5R-CERM — PCIE_SOC_TO_BB_TX_P 59
PLACE_NEAR=U0600.BC12: 8MM
GND_VOID=TRUE

8 IN PCIE_SOC_TO_BB_TX_C_N — C0951 1 | 2 0.1UF 6.3V 20% 01005 X5R-CERM — PCIE_SOC_TO_BB_TX_N 59
PLACE_NEAR=U0600.BB12: 8MM
GND_VOID=TRUE

PCIE_BB_TO_SOC_TX_P 59 OUT — C0952 1 | 2 0.1UF 20% 01005 6.3V X5R-CERM — PCIE_BB_TO_SOC_TX_C_P
PLACE_NEAR=U_BB_K.AH5: 5MM
GND_VOID=TRUE

62 8 OUT PCIE_BB_TO_SOC_TX_N — C0953 1 | 2 0.1UF 6.3V 20% 01005 X5R-CERM — PCIE_BB_TO_SOC_TX_C_N 59
PLACE_NEAR=U_BB_K.AJ6: 5MM
GND_VOID=TRUE

USB

61 32	BI	USB_BB_P	MAKE_BASE=TRUE	USB_BB_P	BI	65
61 32	BI	USB_BB_N	MAKE_BASE=TRUE	USB_BB_N	BI	65

PMU ADC

52	OUT	NC_ADC_BB_TO_PMU_PP_1V85		NC_ADC_BB_TO_PMU_PP_1V85	MAKE_BASE=TRUE	
52	OUT	NC_ADC_BB_TO_PMU_SW1_VOUT		NC_ADC_BB_TO_PMU_SW1_VOUT	MAKE_BASE=TRUE	
52	OUT	NC_ADC_BB_TO_PMU_SW3_VOUT		NC_ADC_BB_TO_PMU_SW3_VOUT	MAKE_BASE=TRUE	
25	OUT	GPIO_BB_TO_STROBE_GSM_BURST_IND	MAKE_BASE=TRUE	GPIO_BB_TO_STROBE_GSM_BURST_IND	IN	65 70 91

SIM CARD

31	SIM_TRAY_DETECT	MAKE_BASE=TRUE	SIM_TRAY_DETECT		65 69 91
31	SIMCRD_CLK_CONN	MAKE_BASE=TRUE	SIMCRD_CLK_CONN		65 69 91
31	PP2V85_SIM	MAKE_BASE=TRUE	PP2V85_SIM	71 90 91	65 68
31	SIMCRD_IO_CONN	MAKE_BASE=TRUE	SIMCRD_IO_CONN	90 91	65 69
31	SIMCRD_RST_CONN	MAKE_BASE=TRUE	SIMCRD_RST_CONN	91	65 69

BASEBAND SWD

64 59 PP1V8_S2_EXT_SW2 — NOSTUFF R9130 1.00K 5% 1/32W MF 01005 — 2 — 59 32 SWD_BB_SWDIO

59 8 PCIE_SOC_TO_BB_RESET_L — R0951 100K 5% 1/32W MF 01005 — 2

32 IN SWD_BB_SWCLK_ACE — R9134 33 5% 1/32W MF 01005 — SWD_BB_SWCLK 59
PLACE_NEAR=U3800.G16:13MM

GPS

6	IN	UART_SOC_TO_BB_GPS_TX	MAKE_BASE=TRUE	UART_SOC_TO_BB_GPS_TX	OUT	65 72 91
6	OUT	UART_BB_GPS_TO_SOC_TX	MAKE_BASE=TRUE	UART_BB_GPS_TO_SOC_TX	IN	65 72 91
6	IN	UART_SOC_TO_BB_GPS_RTS_L	MAKE_BASE=TRUE	UART_SOC_TO_BB_GPS_RTS_L	OUT	65 73 91
6	OUT	UART_BB_GPS_TO_SOC_RTS_L	MAKE_BASE=TRUE	UART_BB_GPS_TO_SOC_RTS_L	IN	65 72 91
48	IN	GPIO_APOLLO_TO_BB_GPS_EN	MAKE_BASE=TRUE	GPIO_APOLLO_TO_BB_GPS_EN	OUT	65 67 72 91
GPIO_SOC_TO_BB_GPS_SYNC			MAKE_BASE=TRUE	GPIO_SOC_TO_BB_GPS_SYNC	OUT	65 72 91
61 7	IN	TP_GPIO_SOC_TO_BB_GPS_DEVICE_WAKE		TP_GPIO_SOC_TO_BB_GPS_DEVICE_WAKE	MAKE_BASE=TRUE	
7	OUT	GPIO_BB_GPS_TO_SOC_LOW_PWR_IND	MAKE_BASE=TRUE	GPIO_BB_GPS_TO_SOC_LOW_PWR_IND	IN	65 72 91

WLAN

POWER

64	PPVCC_MAIN	PPVCC_MAIN	40 41 43 59 65 68 76 91
64	PP1V8_S2_EXT_SW2	PP1V8_S2_EXT_SW2	40 41

GPIOS

61 48	IN	GPIO_APOLLO_TO_WLAN_REG_ON	MAKE_BASE=TRUE	GPIO_APOLLO_TO_WLAN_REG_ON	OUT	40
61 52	OUT	GPIO_WLAN_TO_PMU_HOST_WAKE	MAKE_BASE=TRUE	GPIO_WLAN_TO_PMU_HOST_WAKE	IN	40
61 52	IN	CLK_PMU_TO_WLAN_32K	MAKE_BASE=TRUE	CLK_PMU_TO_WLAN_32K	OUT	40
61 9	IN	GPIO_AOP_TO_WLAN_CONTEXT_A	MAKE_BASE=TRUE	GPIO_AOP_TO_WLAN_CONTEXT_A	OUT	40
61 9	IN	GPIO_AOP_TO_WLAN_CONTEXT_B	MAKE_BASE=TRUE	GPIO_AOP_TO_WLAN_CONTEXT_B	OUT	40
61 5	OUT	GPIO_WLAN_TO_SOC_TIME_SYNC	MAKE_BASE=TRUE	GPIO_WLAN_TO_SOC_TIME_SYNC	IN	40
61 57	OUT	GPIO_WLAN_TO_SCORPIUS_TX_IND	MAKE_BASE=TRUE	GPIO_WLAN_TO_SCORPIUS_TX_IND	IN	40

UART(SHARE WITH BT)

PCIE

8	IN	PCIE_SOC_TO_WLAN_REFCLK_P	MAKE_BASE=TRUE	PCIE_SOC_TO_WLAN_REFCLK_P	OUT	40
8	IN	PCIE_SOC_TO_WLAN_REFCLK_N	MAKE_BASE=TRUE	PCIE_SOC_TO_WLAN_REFCLK_N	OUT	40
8	IN	PCIE_SOC_TO_WLAN_TX_P	MAKE_BASE=TRUE	PCIE_SOC_TO_WLAN_TX_P	OUT	40
8	IN	PCIE_SOC_TO_WLAN_TX_N	MAKE_BASE=TRUE	PCIE_SOC_TO_WLAN_TX_N	OUT	40
59		PCIE_WLAN_TO_SOC_TX_C_P	MAKE_BASE=TRUE	PCIE_WLAN_TO_SOC_TX_C_P	IN	40
59		PCIE_WLAN_TO_SOC_TX_C_N	MAKE_BASE=TRUE	PCIE_WLAN_TO_SOC_TX_C_N	IN	40
8	OUT	PCIE_WLAN_TO_SOC_CLKREQ_L	MAKE_BASE=TRUE	PCIE_WLAN_TO_SOC_CLKREQ_L	IN	40
8	IN	PCIE_SOC_TO_WLAN_RESET_L	MAKE_BASE=TRUE	PCIE_SOC_TO_WLAN_RESET_L	OUT	40

PLACE_NEAR=U_WLAN_W:28:3MM
GND_VOID=TRUE

62 8 PCIE_WLAN_TO_SOC_TX_P — C9160 1 | 2 0.1UF 20% 01005 X5R-CERM 6.3V — PCIE_WLAN_TO_SOC_TX_C_P 59

62 8 PCIE_WLAN_TO_SOC_TX_N — C9161 1 | 2 0.1UF 20% 01005 X5R-CERM 6.3V — PCIE_WLAN_TO_SOC_TX_C_N 59

GND_VOID=TRUE
PLACE_NEAR=U_WLAN_W:97:3MM

BLUETOOTH

SOC GPIOS

61 48	IN	GPIO_APOLLO_TO_BT_REG_ON	MAKE_BASE=TRUE	GPIO_APOLLO_TO_BT_REG_ON	OUT	40
6	IN	GPIO_SOC_BT_DEVICE_WAKE	MAKE_BASE=TRUE	GPIO_SOC_BT_DEVICE_WAKE	OUT	40

UART

6	IN	UART_SOC_TO_BT_TX	MAKE_BASE=TRUE	UART_SOC_TO_BT_TX	OUT	40
6	IN	UART_SOC_TO_BT_RTS_L	MAKE_BASE=TRUE	UART_SOC_TO_BT_RTS_L	OUT	40
6	OUT	UART_BT_TO_SOC_TX	MAKE_BASE=TRUE	UART_BT_TO_SOC_TX	IN	40
6	OUT	UART_BT_TO_SOC_RTS_L	MAKE_BASE=TRUE	UART_BT_TO_SOC_RTS_L	IN	40

	IN	GPIO_SOC_TO_BT_TO_GRAPE_TS_SYNC	MAKE_BASE=TRUE	GPIO_SOC_TO_BT_TO_GRAPE_TS_SYNC	OUT	36 19 20 40
62 59 40 19	IN	GPIO_TOUCH_TO_BT_SYNC	MAKE_BASE=TRUE	GPIO_TOUCH_TO_BT_SYNC	OUT	19 40 59 62
61 57	OUT	GPIO_BT_TO_SCORPIUS_TX_IND	MAKE_BASE=TRUE	GPIO_BT_TO_SCORPIUS_TX_IND	IN	40
6	OUT	BT_AUDIO_SYNC	MAKE_BASE=TRUE	BT_AUDIO_SYNC	IN	40

ROTTERDAM(VENUS)

POWER

64	PPVCC_MAIN	PPVCC_MAIN	40 41 43 59 65 68 76 91
64	PP1V8_S2_EXT_SW2	PP1V8_S2_EXT_SW2	43

GPIOS

59 43 6	IN	GPIO_SOC_TO_ROTTERDAM_DEV_WAKE	MAKE_BASE=TRUE	GPIO_SOC_TO_ROTTERDAM_DEV_WAKE	OUT	6 43 59
59 43 6	IN	GPIO_SOC_TO_ROTTERDAM_DWLD_REQ	MAKE_BASE=TRUE	GPIO_SOC_TO_ROTTERDAM_DWLD_REQ	OUT	6 43 59
60 59 43	IN	GPIO_PMU_TO_ROTTERDAM_EN	MAKE_BASE=TRUE	GPIO_PMU_TO_ROTTERDAM_EN	OUT	43 59 60
52	OUT	GPIO_NFC_TO_PMU_HOST_WAKE	MAKE_BASE=TRUE	GPIO_NFC_TO_PMU_HOST_WAKE	IN	43

UART

59 43 6	IN	UART_SOC_TO_ROTTERDAM_TX	MAKE_BASE=TRUE	UART_SOC_TO_ROTTERDAM_TX	OUT	6 43 59
59 43 6	OUT	UART_ROTTERDAM_TO_SOC_TX	MAKE_BASE=TRUE	UART_ROTTERDAM_TO_SOC_TX	IN	6 43 59
59 43 6	IN	UART_SOC_TO_ROTTERDAM_RTS_L	MAKE_BASE=TRUE	UART_SOC_TO_ROTTERDAM_RTS_L	OUT	6 43 59
59 43 6	OUT	UART_ROTTERDAM_TO_SOC_RTS_L	MAKE_BASE=TRUE	UART_ROTTERDAM_TO_SOC_RTS_L	IN	6 43 59

BASEBAND NTC

PA_NTC_P 52 — I121 CRITICAL R9150 10KOHM-1%-0.31MA 0201 — C9150 100PF 5% 25V C0G-CERM 01005 — PA_NTC_N — XW9150 SM

NO_XNET_CONNECTION=1 (TEMP1 - NEAR BB PA)
NO_XNET_CONNECTION=1

NOTE: XW SHOULD BE PLACED NEAR PMU

SYNC_MASTER=J207_MLB_B SYNC_DATE=04/20/2017

PAGE TITLE: ALIASES: BB/WLAN/BT

J317/J320 DIFF NET ALIASES

KONA MASTER SENSE/DRIVE

GRAPE_RX<27>	MAKE_BASE=TRUE			GRAPE_RX<27>	
GRAPE_RX<26>	MAKE_BASE=TRUE			GRAPE_RX<26>	
GRAPE_RX<25>	MAKE_BASE=TRUE			GRAPE_RX<25>	
GRAPE_RX<24>	MAKE_BASE=TRUE			GRAPE_RX<24>	
GRAPE_RX<23>	MAKE_BASE=TRUE		GRAPE_RX<23>		
GRAPE_RX<22>	MAKE_BASE=TRUE		GRAPE_RX<22>		
GRAPE_RX<21>		MAKE_BASE=TRUE		GRAPE_RX<21>	
GRAPE_RX<20>		MAKE_BASE=TRUE	GRAPE_RX<20>		
GRAPE_RX<19>	MAKE_BASE=TRUE			GRAPE_RX<19>	
GRAPE_RX<18>	MAKE_BASE=TRUE			GRAPE_RX<18>	
GRAPE_RX<17>	MAKE_BASE=TRUE			GRAPE_RX<17>	
GRAPE_RX<16>	MAKE_BASE=TRUE			GRAPE_RX<16>	
GRAPE_RX<15>	MAKE_BASE=TRUE			GRAPE_RX<15>	
GRAPE_RX<14>	MAKE_BASE=TRUE			GRAPE_RX<14>	
GRAPE_RX<13>	MAKE_BASE=TRUE			GRAPE_RX<13>	
GRAPE_RX<12>	MAKE_BASE=TRUE			GRAPE_RX<12>	
GRAPE_RX<11>	MAKE_BASE=TRUE			GRAPE_RX<11>	
GRAPE_RX<10>	MAKE_BASE=TRUE		GRAPE_RX<10>		
GRAPE_RX<9>		MAKE_BASE=TRUE		GRAPE_RX<9>	
GRAPE_RX<8>	MAKE_BASE=TRUE		GRAPE_RX<8>		
GRAPE_RX<7>		MAKE_BASE=TRUE	GRAPE_RX<7>		
GRAPE_RX<6>	MAKE_BASE=TRUE			GRAPE_RX<6>	
GRAPE_RX<5>	MAKE_BASE=TRUE			GRAPE_RX<5>	
GRAPE_RX<4>	MAKE_BASE=TRUE			GRAPE_RX<4>	
GRAPE_RX<3>	MAKE_BASE=TRUE			GRAPE_RX<3>	
GRAPE_RX<2>	MAKE_BASE=TRUE			GRAPE_RX<2>	
GRAPE_RX<1>	MAKE_BASE=TRUE			GRAPE_RX<1>	
GRAPE_RX<0>	MAKE_BASE=TRUE			GRAPE_RX<0>	
NC_KONA_M_TOUCH28	MAKE_BASE=TRUE			NC_KONA_M_TOUCH28	
NC_KONA_M_TOUCH29	MAKE_BASE=TRUE			NC_KONA_M_TOUCH29	
NC_KONA_M_TOUCH30	MAKE_BASE=TRUE			NC_KONA_M_TOUCH30	
NC_KONA_M_TOUCH31	MAKE_BASE=TRUE		NC_KONA_M_TOUCH31		
NC_KONA_M_TOUCH32	MAKE_BASE=TRUE		NC_KONA_M_TOUCH32		
NC_KONA_M_TOUCH33	MAKE_BASE=TRUE			NC_KONA_M_TOUCH33	
KONA_M_TOUCH34_VCOM		MAKE_BASE=TRUE		KONA_M_TOUCH34_VCOM	
NC_KONA_M_TOUCH35	MAKE_BASE=TRUE			NC_KONA_M_TOUCH35	
NC_KONA_M_TOUCH36	MAKE_BASE=TRUE			NC_KONA_M_TOUCH36	
NC_KONA_M_TOUCH37	MAKE_BASE=TRUE			NC_KONA_M_TOUCH37	
NC_KONA_M_TOUCH38	MAKE_BASE=TRUE			NC_KONA_M_TOUCH38	
NC_KONA_M_TOUCH39	MAKE_BASE=TRUE			NC_KONA_M_TOUCH39	
NC_KONA_M_TOUCH40	MAKE_BASE=TRUE			NC_KONA_M_TOUCH40	
NC_KONA_M_TOUCH41	MAKE_BASE=TRUE			NC_KONA_M_TOUCH41	
GRAPE_TX<20>	MAKE_BASE=TRUE			GRAPE_TX<20>	
GRAPE_TX<21>	MAKE_BASE=TRUE			GRAPE_TX<21>	
GRAPE_TX<22>	MAKE_BASE=TRUE		GRAPE_TX<22>		
GRAPE_TX<23>	MAKE_BASE=TRUE		GRAPE_TX<23>		
GRAPE_TX<24>		MAKE_BASE=TRUE		GRAPE_TX<24>	
GRAPE_TX<25>		MAKE_BASE=TRUE	GRAPE_TX<25>		
GRAPE_TX<26>	MAKE_BASE=TRUE			GRAPE_TX<26>	
GRAPE_TX<27>	MAKE_BASE=TRUE			GRAPE_TX<27>	
GRAPE_TX<28>	MAKE_BASE=TRUE			GRAPE_TX<28>	
GRAPE_TX<29>	MAKE_BASE=TRUE			GRAPE_TX<29>	
GRAPE_TX<30>	MAKE_BASE=TRUE			GRAPE_TX<30>	
GRAPE_TX<31>	MAKE_BASE=TRUE			GRAPE_TX<31>	
GRAPE_TX<32>	MAKE_BASE=TRUE			GRAPE_TX<32>	
GRAPE_TX<33>	MAKE_BASE=TRUE			GRAPE_TX<33>	
GRAPE_TX<34>	MAKE_BASE=TRUE			GRAPE_TX<34>	
GRAPE_TX<35>	MAKE_BASE=TRUE		GRAPE_TX<35>		
GRAPE_TX<36>		MAKE_BASE=TRUE		GRAPE_TX<36>	
GRAPE_TX<37>	MAKE_BASE=TRUE		GRAPE_TX<37>		
GRAPE_TX<38>		MAKE_BASE=TRUE	GRAPE_TX<38>		
GRAPE_TX<39>	MAKE_BASE=TRUE			GRAPE_TX<39>	
NC_KONA_M_TOUCH62	MAKE_BASE=TRUE			NC_KONA_M_TOUCH62	
NC_KONA_M_TOUCH63	MAKE_BASE=TRUE			NC_KONA_M_TOUCH63	
NC_KONA_M_TOUCH64	MAKE_BASE=TRUE			NC_KONA_M_TOUCH64	
NC_KONA_M_TOUCH65	MAKE_BASE=TRUE			NC_KONA_M_TOUCH65	
NC_KONA_M_TOUCH66	MAKE_BASE=TRUE			NC_KONA_M_TOUCH66	
NC_KONA_M_TOUCH67	MAKE_BASE=TRUE			NC_KONA_M_TOUCH67	
NC_KONA_M_TOUCH68	MAKE_BASE=TRUE			NC_KONA_M_TOUCH68	
NC_KONA_M_TOUCH69	MAKE_BASE=TRUE			NC_KONA_M_TOUCH69	

KONA SLAVE SENSE/DRIVE

GRAPE_RX<55>	MAKE_BASE=TRUE			GRAPE_RX<55>	
GRAPE_RX<54>	MAKE_BASE=TRUE			GRAPE_RX<54>	
GRAPE_RX<53>	MAKE_BASE=TRUE			GRAPE_RX<53>	
GRAPE_RX<52>	MAKE_BASE=TRUE			GRAPE_RX<52>	
GRAPE_RX<51>	MAKE_BASE=TRUE			GRAPE_RX<51>	
GRAPE_RX<50>	MAKE_BASE=TRUE			GRAPE_RX<50>	
GRAPE_RX<49>	MAKE_BASE=TRUE			GRAPE_RX<49>	
GRAPE_RX<48>	MAKE_BASE=TRUE			GRAPE_RX<48>	
GRAPE_RX<47>	MAKE_BASE=TRUE			GRAPE_RX<47>	
GRAPE_RX<46>	MAKE_BASE=TRUE			GRAPE_RX<46>	
GRAPE_RX<45>	MAKE_BASE=TRUE			GRAPE_RX<45>	
GRAPE_RX<44>	MAKE_BASE=TRUE			GRAPE_RX<44>	
GRAPE_RX<43>	MAKE_BASE=TRUE			GRAPE_RX<43>	
GRAPE_RX<42>	MAKE_BASE=TRUE			GRAPE_RX<42>	
GRAPE_RX<41>	MAKE_BASE=TRUE			GRAPE_RX<41>	
GRAPE_RX<40>	MAKE_BASE=TRUE			GRAPE_RX<40>	
GRAPE_RX<39>	MAKE_BASE=TRUE			GRAPE_RX<39>	
GRAPE_RX<38>	MAKE_BASE=TRUE			GRAPE_RX<38>	
GRAPE_RX<37>	MAKE_BASE=TRUE			GRAPE_RX<37>	
GRAPE_RX<36>	MAKE_BASE=TRUE		GRAPE_RX<36>		
GRAPE_RX<35>	MAKE_BASE=TRUE			GRAPE_RX<35>	
GRAPE_RX<34>	MAKE_BASE=TRUE			GRAPE_RX<34>	
GRAPE_RX<33>	MAKE_BASE=TRUE			GRAPE_RX<33>	
GRAPE_RX<32>	MAKE_BASE=TRUE			GRAPE_RX<32>	
GRAPE_RX<31>	MAKE_BASE=TRUE			GRAPE_RX<31>	
GRAPE_RX<30>	MAKE_BASE=TRUE			GRAPE_RX<30>	
GRAPE_RX<29>	MAKE_BASE=TRUE			GRAPE_RX<29>	
GRAPE_RX<28>	MAKE_BASE=TRUE			GRAPE_RX<28>	
NC_KONA_S_TOUCH28	MAKE_BASE=TRUE			NC_KONA_S_TOUCH28	
NC_KONA_S_TOUCH29	MAKE_BASE=TRUE			NC_KONA_S_TOUCH29	
NC_KONA_S_TOUCH30	MAKE_BASE=TRUE			NC_KONA_S_TOUCH30	
NC_KONA_S_TOUCH31	MAKE_BASE=TRUE		NC_KONA_S_TOUCH31		
NC_KONA_S_TOUCH32	MAKE_BASE=TRUE		NC_KONA_S_TOUCH32		
NC_KONA_S_TOUCH33	MAKE_BASE=TRUE			NC_KONA_S_TOUCH33	
NC_KONA_S_TOUCH34	MAKE_BASE=TRUE			NC_KONA_S_TOUCH34	
NC_KONA_S_TOUCH35	MAKE_BASE=TRUE			NC_KONA_S_TOUCH35	
NC_KONA_S_TOUCH36	MAKE_BASE=TRUE			NC_KONA_S_TOUCH36	
NC_KONA_S_TOUCH37	MAKE_BASE=TRUE			NC_KONA_S_TOUCH37	
NC_KONA_S_TOUCH38	MAKE_BASE=TRUE			NC_KONA_S_TOUCH38	
NC_KONA_S_TOUCH39	MAKE_BASE=TRUE			NC_KONA_S_TOUCH39	
NC_KONA_S_TOUCH40	MAKE_BASE=TRUE			NC_KONA_S_TOUCH40	
NC_KONA_S_TOUCH41	MAKE_BASE=TRUE			NC_KONA_S_TOUCH41	
GRAPE_TX<0>	MAKE_BASE=TRUE			GRAPE_TX<0>	
GRAPE_TX<1>	MAKE_BASE=TRUE			GRAPE_TX<1>	
GRAPE_TX<2>	MAKE_BASE=TRUE			GRAPE_TX<2>	
GRAPE_TX<3>	MAKE_BASE=TRUE			GRAPE_TX<3>	
GRAPE_TX<4>	MAKE_BASE=TRUE			GRAPE_TX<4>	
GRAPE_TX<5>	MAKE_BASE=TRUE			GRAPE_TX<5>	
GRAPE_TX<6>	MAKE_BASE=TRUE			GRAPE_TX<6>	
GRAPE_TX<7>	MAKE_BASE=TRUE			GRAPE_TX<7>	
GRAPE_TX<8>	MAKE_BASE=TRUE			GRAPE_TX<8>	
GRAPE_TX<9>	MAKE_BASE=TRUE			GRAPE_TX<9>	
GRAPE_TX<10>	MAKE_BASE=TRUE			GRAPE_TX<10>	
GRAPE_TX<11>	MAKE_BASE=TRUE			GRAPE_TX<11>	
GRAPE_TX<12>	MAKE_BASE=TRUE			GRAPE_TX<12>	
GRAPE_TX<13>	MAKE_BASE=TRUE			GRAPE_TX<13>	
GRAPE_TX<14>	MAKE_BASE=TRUE			GRAPE_TX<14>	
GRAPE_TX<15>	MAKE_BASE=TRUE			GRAPE_TX<15>	
GRAPE_TX<16>	MAKE_BASE=TRUE			GRAPE_TX<16>	
GRAPE_TX<17>	MAKE_BASE=TRUE		GRAPE_TX<17>		
GRAPE_TX<18>	MAKE_BASE=TRUE			GRAPE_TX<18>	
GRAPE_TX<19>	MAKE_BASE=TRUE			GRAPE_TX<19>	
NC_KONA_S_TOUCH62	MAKE_BASE=TRUE			NC_KONA_S_TOUCH62	
NC_KONA_S_TOUCH63	MAKE_BASE=TRUE			NC_KONA_S_TOUCH63	
NC_KONA_S_TOUCH64	MAKE_BASE=TRUE			NC_KONA_S_TOUCH64	
NC_KONA_S_TOUCH65	MAKE_BASE=TRUE			NC_KONA_S_TOUCH65	
NC_KONA_S_TOUCH66	MAKE_BASE=TRUE			NC_KONA_S_TOUCH66	
NC_KONA_S_TOUCH67	MAKE_BASE=TRUE			NC_KONA_S_TOUCH67	
NC_KONA_S_TOUCH68	MAKE_BASE=TRUE			NC_KONA_S_TOUCH68	
NC_KONA_S_TOUCH69	MAKE_BASE=TRUE			NC_KONA_S_TOUCH69	

LPDP_TX/BACKLIGHT

NC_LED_IO_6_B	MAKE_BASE=TRUE	NC_LED_IO_6_B	
NC_LED_IO_6_C	MAKE_BASE=TRUE	NC_LED_IO_6_C	
NC_LPDP_SOC_TO_TCON_DATA_P<4>	MAKE_BASE=TRUE	NC_LPDP_SOC_TO_TCON_DATA_P<4>	
NC_LPDP_SOC_TO_TCON_DATA_N<4>	MAKE_BASE=TRUE	NC_LPDP_SOC_TO_TCON_DATA_N<4>	
NC_LPDP_SOC_TO_TCON_DATA_P<5>	MAKE_BASE=TRUE	NC_LPDP_SOC_TO_TCON_DATA_P<5>	
NC_LPDP_SOC_TO_TCON_DATA_N<5>	MAKE_BASE=TRUE	NC_LPDP_SOC_TO_TCON_DATA_N<5>	

LPDP/USB2 CMC REPLACEMENT

LPDP_AUX_EMI_P	R4640 0.00		LPDP_AUX_EMI_CONN_P
LPDP_AUX_EMI_N	R4642 0.00		LPDP_AUX_EMI_CONN_N
LPDP_DATA_EMI_N<0>	R4638 0.00		LPDP_DATA_EMI_CONN_N<0>
LPDP_DATA_EMI_P<0>	R4639 0.00		LPDP_DATA_EMI_CONN_P<0>
LPDP_DATA_EMI_N<1>	R4644 0.00		LPDP_DATA_EMI_CONN_N<1>
LPDP_DATA_EMI_P<1>	R4645 0.00		LPDP_DATA_EMI_CONN_P<1>
LPDP_DATA_EMI_N<2>	R4646 0.00		LPDP_DATA_EMI_CONN_N<2>
LPDP_DATA_EMI_P<2>	R4647 0.00		LPDP_DATA_EMI_CONN_P<2>
LPDP_DATA_EMI_N<3>	R4648 0.00		LPDP_DATA_EMI_CONN_N<3>
LPDP_DATA_EMI_P<3>	R4649 0.00		LPDP_DATA_EMI_CONN_P<3>

ACE_USB_TOP_P	R38A0 0.00		ACE_USB_TOP_CONN_P
ACE_USB_TOP_N	R38A1 0.00		ACE_USB_TOP_CONN_N
ACE_USB_BOT_P	R38A2 0.00		ACE_USB_BOT_CONN_P
ACE_USB_BOT_N	R38A3 0.00		ACE_USB_BOT_CONN_N

MLB/DEV DIFF NET ALIASES(TO BE CLEANED UP)

SOC GPIO:

NC_UART_ACC_TO_SOC_TX	MAKE_BASE=TRUE	NC_UART_ACC_TO_SOC_TX
NC_UART_SOC_TO_ACC_TX	MAKE_BASE=TRUE	NC_UART_SOC_TO_ACC_TX
NC_SOC_I2S0_BCLK	MAKE_BASE=TRUE	NC_SOC_I2S0_BCLK
NC_SOC_I2S0_LRCK	MAKE_BASE=TRUE	NC_SOC_I2S0_LRCK
NC_SOC_I2S0_DOUT	MAKE_BASE=TRUE	NC_SOC_I2S0_DOUT
NC_SOC_I2S0_DIN	MAKE_BASE=TRUE	NC_SOC_I2S0_DIN
NC_NUB_DOCK_ATTENTION	MAKE_BASE=TRUE	NC_NUB_DOCK_ATTENTION
NC_GPIO_XBAR_EN_PULSE_L	MAKE_BASE=TRUE	NC_GPIO_XBAR_EN_PULSE_L
NC_GPIO_XBAR_DIS_PULSE_L	MAKE_BASE=TRUE	NC_GPIO_XBAR_DIS_PULSE_L
NC_I2S0_SOC_TO_BELFIELD_MCLK	MAKE_BASE=TRUE	NC_I2S0_SOC_TO_BELFIELD_MCLK
NC_GPIO_CODEC_TO_SOC_IRQ_L	MAKE_BASE=TRUE	NC_GPIO_CODEC_TO_SOC_IRQ_L
NC_SPI_BELFIELD_MISO	MAKE_BASE=TRUE	NC_SPI_BELFIELD_MISO
NC_SPI_BELFIELD_MOSI	MAKE_BASE=TRUE	NC_SPI_BELFIELD_MOSI
NC_SPI_BELFIELD_CS_L	MAKE_BASE=TRUE	NC_SPI_BELFIELD_CS_L
NC_SPI_BELFIELD_SCLK	MAKE_BASE=TRUE	NC_SPI_BELFIELD_SCLK
NC_SPI_MESA_MISO	MAKE_BASE=TRUE	NC_SPI_MESA_MISO
NC_SPI_MESA_MOSI	MAKE_BASE=TRUE	NC_SPI_MESA_MOSI
NC_SPI_MESA_SCLK	MAKE_BASE=TRUE	NC_SPI_MESA_SCLK
NC_GPIO_MESA_TO_SOC_IRQ	MAKE_BASE=TRUE	NC_GPIO_MESA_TO_SOC_IRQ
NC_GPIO_BELFIELD_TO_SOC_IRQ_L	MAKE_BASE=TRUE	NC_GPIO_BELFIELD_TO_SOC_IRQ_L
NC_GPIO_SOC_TO_BELFIELD_RESET_L	MAKE_BASE=TRUE	NC_GPIO_SOC_TO_BELFIELD_RESET_L
NC_GPIO_SOC_TO_CODEC_RESET_L	MAKE_BASE=TRUE	NC_GPIO_SOC_TO_CODEC_RESET_L
NC_DISPLAY_ID	MAKE_BASE=TRUE	NC_DISPLAY_ID
NC_UART_WLAN_TO_SOC_RTS_L	MAKE_BASE=TRUE	NC_UART_WLAN_TO_SOC_RTS_L
NC_UART_SOC_TO_WLAN_RTS_L	MAKE_BASE=TRUE	NC_UART_SOC_TO_WLAN_RTS_L
NC_UART_WLAN_TO_SOC_TX	MAKE_BASE=TRUE	NC_UART_WLAN_TO_SOC_TX
NC_UART_SOC_TO_WLAN_TX	MAKE_BASE=TRUE	NC_UART_SOC_TO_WLAN_TX
NC_GPIO_SOC_TO_BB_MESA_ON	MAKE_BASE=TRUE	NC_GPIO_SOC_TO_BB_MESA_ON
NC_GPIO_SOC_TO_PP2V9_RCAM_ADJ	MAKE_BASE=TRUE	NC_GPIO_SOC_TO_PP2V9_RCAM_ADJ
NC_GPIO_SOC_TO_WLAN_DEVICE_WAKE	MAKE_BASE=TRUE	NC_GPIO_SOC_TO_WLAN_DEVICE_WAKE
NC_GPIO_SOC_TO_SCORPIUSMCU_NRST_L	MAKE_BASE=TRUE	NC_GPIO_SOC_TO_SCORPIUSMCU_NRST_L

AOP GPIO:

GPIO_KONA_S_TO_SCORPIUS_TIME_SYNC	MAKE_BASE=TRUE	GPIO_KONA_S_TO_SCORPIUS_TIME_SYNC
GPIO_TITUS_TO_AOP_B2B_DETECT	MAKE_BASE=TRUE	GPIO_TITUS_TO_AOP_B2B_DETECT
NC_I2S_AOP_TO_CODEC_DOUT_R	MAKE_BASE=TRUE	NC_I2S_AOP_TO_CODEC_DOUT_R
NC_I2S_AOP_TO_CODEC_LRCK	MAKE_BASE=TRUE	NC_I2S_AOP_TO_CODEC_LRCK
NC_AOP_I2S1_DIN	MAKE_BASE=TRUE	NC_AOP_I2S1_DIN
DMIC3_MIC_SD	MAKE_BASE=TRUE	DMIC3_MIC_SD
DMIC4_MIC_SCLK	MAKE_BASE=TRUE	DMIC4_MIC_SCLK
GPIO_AOP_TO_SCORPIUSMCU_NRST_L	MAKE_BASE=TRUE	GPIO_AOP_TO_SCORPIUSMCU_NRST_L
SWD_ACE_SWDIO	MAKE_BASE=TRUE	SWD_ACE_SWDIO
SWD_GRAPE_SWDIO	MAKE_BASE=TRUE	SWD_GRAPE_SWDIO
NC_GPIO_SMC_TO_USBPD_RST_L	MAKE_BASE=TRUE	NC_GPIO_SMC_TO_USBPD_RST_L

ATHENA GPIO:

GPIO_BTN_VOL_DOWN_L	MAKE_BASE=TRUE	GPIO_BTN_VOL_DOWN_L
NC_GPIO_SCORPIUS_TO_PMU_IRQ	MAKE_BASE=TRUE	NC_GPIO_SCORPIUS_TO_PMU_IRQ
NC_GPIO_BELFIELD_TO_PMU_WAKE_L	MAKE_BASE=TRUE	NC_GPIO_BELFIELD_TO_PMU_WAKE_L
NC_GPIO_CODEC_TO_PMU_WAKE_L	MAKE_BASE=TRUE	NC_GPIO_CODEC_TO_PMU_WAKE_L
GPIO_PMU_TO_ROTTERDAM_EN	MAKE_BASE=TRUE	GPIO_PMU_TO_ROTTERDAM_EN
NC_GPIO_BT_TO_PMU_HOST_WAKE	MAKE_BASE=TRUE	NC_GPIO_BT_TO_PMU_HOST_WAKE
NC_GPIO_PMU_GPIO3	MAKE_BASE=TRUE	NC_GPIO_PMU_GPIO3

APOLLO GPIO:

NC_PMU_TO_3V3_EXT_SW_ON	MAKE_BASE=TRUE	NC_PMU_TO_3V3_EXT_SW_ON
NC_GPIO_APOLLO_TO_PP2V9_RCAM_EN	MAKE_BASE=TRUE	NC_GPIO_APOLLO_TO_PP2V9_RCAM_EN
NC_GPIO_APOLLO_GPIO8	MAKE_BASE=TRUE	NC_GPIO_APOLLO_GPIO8
NC_GPIO_APOLLO_GPIO12	MAKE_BASE=TRUE	NC_GPIO_APOLLO_GPIO12

TODO LIST:

TBD,SHOULD BE BETWEEN SCORPIUS AND NFC ONLY

GPIO_AOP_TO_NFC — PP9207 P3MM

TBD,NTC MAY STILL COME FROM J8900

BATT_NTC — R9250 10KOHM-1% 0201-1 CRITICAL

SYNC_DATE=04/07/2017

PAGE TITLE: ALIASES: J317/J320 DIFF

SMT TEST FIXTURE TP

POWER - BUCKS/SWITCHES

TP9301 PPVDD_CPU 50 64
TP9302 PPVDD_GPU 50 64
TP9303 PPVDD_S1_SOC 50 62 64
TP9304 PP1V8_S3 50 64
TP9305 PP1V1_S3 48 51 64
TP9306 PP1V8_S2_GRAPE 51 64
TP9307 PP1V8_SW1_CAM 7 47 64
TP9308 PP1V8_S3_SW3 47 64
TP9309 PP1V8_EXT_SW1 55 64
TP930A PP1V8_S2_EXT_SW2 55 64
TP930C PP1V1_S3 46 64
TP930D PP1V1_SW1_SPARE 47 64
TP930E PPVDD_S1_FIXED 46 62 64
TP930F PP2V63_OTP 46 64
TP930G PPVDD_CPU_SRAM 50 64
TP930H PPVDD_GPU_SRAM 53 64
TP930I PPVDD_S1_DCS 53 64
TP930J PPVDD_S1_QL 46 64
TP930K PPVDD_ECPU 53 62 64
TP930L PP1V4_CAMERA 46 64

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TP9312 PP1V8_SPARE_LDO2 51 64
TP9313 PP2V05_S2_THROTTLE 53 64
TP9314 PP3V0_ALS 47 64
TP9315 PPVDD_SPARE_LDO5 51 64
TP9316 PP3V3_SPARE_LDO6 51 64
TP9317 PP3V3_USB 51 64
TP9318 PP3V3_S2_SCORPIUS 53 64
TP9319 PP1V215_FRONT_CAM 47 64
TP931A PP0V9_NAND 47 64
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TP931D PP1V2_SOC 53 64
TP931E PP0V775_S2_AOP 47 64
TP931F PP1V8_S2_LDO_SCORPIUS 51 64
TP931G PP2V92_REAR_CAM 47 61 64
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TP931J PP1V8_SPARE_LDO19 47 64
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TP931L PP2V90_FRONT_CAM 47 64
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TP9348 PPBATT_POS_RC 54
TP9349 PPVBUS_USB_EMI 32 33 34 45 49 61
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TP9350 PP1V215_FRONT_CAM_CONN 24
TP9351 PP1V8_CAM_FRONT_CONN 24
TP9352 PP2V90_FRONT_CAM_CONN 24

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TP9353 PP1V215_CAM_REAR_CONN 23
TP9354 PP1V8_CAM_REAR_CONN 23
TP9355 PP2V92_AVDD_CAM_REAR_CONN 23

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TP9356 PP1V215_JULIET_DVDD_CONN 36
TP9357 PP1V8_JULIET_VDDIO_CONN 36
TP9358 PP2V85_JULIET_AVDD_CONN 36

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TP9373 LED_IO_2_A 38 53
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TP93C6 TP_JTAG_SOC_TDO 9
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TP93CA TST_CLKOUT 5
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TP93D0 UART_SOC_TO_DEBUG_TX 6 32
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TP93R1 PP3V3_ACE_LDO 32 33
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TP93E3 PPVBUS_ORION_CONN 57 61
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TP93FB

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TP93G2 PP1V8_PHOS_FILT 18
TP93G4 PP1V8_MOLYBDENUM_FLEX_FILT 18

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TP93G7 GPIO_BTN_VOL_DOWN_L_CONN 23
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TP93G9 I2C0_SDA_1V8 4 6
TP93GA I2C1_SCL_1V8 4 6
TP93GB I2C1_SDA_1V8 4 6
TP93GC I2C2_SCL_1V8 4 6
TP93GD I2C2_SDA_1V8 4 6
TP93GE I2C5_SCL_1V8 4 6
TP93GF I2C5_SDA_1V8 4 6

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TP93GM I2C_AOP_I2CM0_SCL_1V8 4 9
TP93GN I2C_AOP_I2CM0_SDA_1V8 4 9
TP93GG TP93GO I2C_AOP_I2CM1_SCL_1V8 4 9
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TP93I9 ISP_CAM_IN_SDA_CONN 23
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TP93K4 DMIC2_MIC_SCLK_C3_CONN 23
TP93K5 DMIC2_MIC_SD_C3_CONN 23
TP93KE DMIC3_MIC_SCLK_ROS_CONN 37
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TP93RC PP_TITUS_SPARSE_ANODE 35 36 61
TP93RD PP_TITUS_SPARSE_ANODE 35 36 61
TP93RE PP_TITUS_A_ANODE 35 36 61
TP93RG PP_TITUS_A_ANODE 35 36 61
TP93RH PP_TITUS_A_ANODE 35 36 61
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TP93K7 PPSTROBE1_WARM_LED_CONN 23 25 61
TP93K8 PPSTROBE2_COOL_LED_CONN 23 25 61
TP93K9 PPSTROBE2_WARM_LED_CONN 23 25 61
TP93KA PPSTROBE1_COOL_LED_CONN 23 25 61
TP93KB PPSTROBE1_WARM_LED_CONN 23 25 61
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TP93KC PPSTROBE2_WARM_LED_CONN 23 25 61
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TP93M1 GPIO_REAR_CAM_TO_STROBE_EN 23 25
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TP93M3 PPSTROBE2_BST 25
TP93M4 IRIS_AVOUT 22 23
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TP93GK I2C_SMC_I2CM0_SCL_1V8 4 9
TP93GL I2C_SMC_I2CM0_SDA_1V8 4 9
I2C_SMC_I2CM1_SCL_1V8 4 9
I2C_SMC_I2CM1_SDA_1V8 4 9
I2C_SMC_I2CM2_SCL_1V8 4 9
TP93GP I2C_SMC_I2CM2_SDA_1V8 4 9
TP93GQ I2C_SMC_I2CM3_SCL_1V8 4 9
TP93GR I2C_SMC_I2CM3_SDA_1V8 4 9

FIDUCIALS

FID9300 FID 0P5SM1P0SQ-NSP
FID9301 FID 0P5SM1P0SQ-NSP
FID9302 FID 0P5SM1P0SQ-NSP
FID9303 FID 0P5SM1P0SQ-NSP
FID9304 FID 0P5SM1P0SQ-NSP
FID9305 FID 0P5SM1P0SQ-NSP

CAN MOUNTING HOLES

DRILL SIZE: 1.1MM X 0.4MM
PLATING SIZE: 1.4MM X 0.7MM
APN: 998-2691

SL9300 TH-NSP SL-1.1X0.4-1.4X0.7
SL9301 TH-NSP SL-1.1X0.4-1.4X0.7
SL9302 TH-NSP SL-1.1X0.4-1.4X0.7
SL9304 TH-NSP SL-1.1X0.4-1.4X0.7
SL9305 TH-NSP SL-1.1X0.4-1.4X0.7
SL9310 TH-NSP SL-1.1X0.4-1.4X0.7
SL9311 TH-NSP SL-1.1X0.4-1.4X0.7

STANDOFFS

SMT:860-01014/860-00199 TH:860-00860

STD9312 STDOFF-2.73OD0.95H
STD9313 STDOFF-3.8X2.5R-0.95H-1P65-TH
STD9323 STDOFF-3.3X1.8R0.95H-SM
STD9322 STDOFF-3.8X2.5R-0.95H-1P65-TH
STD9314 STDOFF-3.3X1.8R0.95H-SM
STD9316 STDOFF-3.8X2.5R-0.95H-1P65-TH
STD9315 STDOFF-3.3X1.8R0.95H-SM
STD9317 STDOFF-3.8X2.5R-0.95H-1P65-TH
STD9318 STDOFF-3.3X1.8R0.95H-SM
STD9324 STDOFF-3.8X2.5R-0.95H-1P65-TH
STD9319 STDOFF-3.3X1.8R0.95H-SM
STD9325 STDOFF-3.8X2.5R-0.95H-1P65-TH
STD9320 STDOFF-3.3X1.8R0.95H-SM

VCC_MAIN

TP939G TP939H TP939I TP939J TP-1P0-TOP
PPVCC_MAIN 54 61 64

VBUS_ORION

TP939C TP939D TP939E TP939F TP-1P0-TOP
PPVBUS_ORION_CONN 57 61

VBUS USB

TP9390 TP9391 TP9392 TP9393 TP9394 TP9395 TP-1P0-TOP
PLACE_NEAR=C40A8:1.20MM
PLACE_NEAR=C40A8:2.30MM
PPVBUS_USB_CONN

VBAT

TP9399 TP939A TP939B TP939C TP939D TP939E TP939F TP9397 TP9398 TP-1P0-TOP
PLACE_NEAR=J8900.3:15MM
PLACE_NEAR=J8900.4:15MM
PPBATT_VCC 54 61 64

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EE CHARACTERIZATION PROBE POINT

SOC

PP9504 P3MM SM — PP — 1 — ADC SOC TO PMU ANALOGMUX OUT — 5 52
PP9505 P4MM SM — PP — 1 — ADC SOC TO PMU VDD CPU R — 12
PP9506 P4MM SM — PP — 1 — ADC SOC TO PMU VDD GPU R — 12
PP9507 P4MM SM — PP — 1 — ADC SOC TO PMU VDD SOC R — 10

FOR SEG, TO DELETE IN EVT AND MOVE TP HERE

PP9503 P4MM SM — PP — 1 — PPVDD S1 SOC — 58 61 64
PP950E P4MM SM — PP — 1 — PPVDD S1 FIXED — 46 61 64
PP950K P4MM SM — PP — 1 — PPVDD ECPU — 53 61 64

ACE/REDRIVER

PP9510 P4MM SM — PP — 1 — ACE_UART_RX — 32
PP9511 P4MM SM — PP — 1 — ACE_UART_TX — 32

FH SPEAKER I2S

PP9520 P4MM SM — PP — 1 — I2S2_SOC_TO_SPKRAMP_FH_MCLK — PLACE_NEAR=U3402.F1:50MM — 6 29 30
PP9521 P4MM SM — PP — 1 — I2S2_SOC_TO_SPKRAMP_FH_BCLK — PLACE_NEAR=U3402.E1:50MM — 6 29 30
PP9522 P4MM SM — PP — 1 — I2S2_SOC_TO_SPKRAMP_FH_LRCK — PLACE_NEAR=U3402.F2:50MM — 6 29 30
PP9523 P4MM SM — PP — 1 — I2S2_SOC_TO_SPKRAMP_FH_DOUT — PLACE_NEAR=U3402.D2:50MM — 6 29 30
PP9524 P4MM SM — PP — 1 — I2S2_SPKRAMP_FH_TO_SOC_DOUT — PLACE_NEAR=U0600.U3:50MM — 6 29 30

CN SPEAKER I2S

PP9525 P4MM SM — PP — 1 — I2S1_SOC_TO_SPKRAMP_CN_MCLK — PLACE_NEAR=U3250.F1:100MM — 6 27 28
PP9526 P4MM SM — PP — 1 — I2S1_SOC_TO_SPKRAMP_CN_BCLK — PLACE_NEAR=U3250.E1:50MM — 6 27 28
PP9527 P4MM SM — PP — 1 — I2S1_SOC_TO_SPKRAMP_CN_LRCK — PLACE_NEAR=U3250.F2:100MM — 6 27 28
PP9528 P4MM SM — PP — 1 — I2S1_SOC_TO_SPKRAMP_CN_DOUT — PLACE_NEAR=U3250.D2:100MM
PP9529 P4MM SM — PP — 1 — I2S1_SPKRAMP_CN_TO_SOC_DOUT — PLACE_NEAR=U0600.BC32:100MM

HAWKING

PP952A P4MM SM — PP — 1 — I2S3_SOC_TO_HAWKING_BCLK — PLACE_NEAR=R2614.2:50MM — 6 22
PP952B P4MM SM — PP — 1 — I2S3_SOC_TO_HAWKING_LRCK — PLACE_NEAR=R2615.2:50MM — 6 22
PP952C P4MM SM — PP — 1 — I2S3_HAWKING_TO_SOC_DOUT — PLACE_NEAR=U0600.BD39:50MM — 6 22

EUPHRATES

PP9539 P4MM SM — PP — 1 — SYS_ALIVE — 16 17 52

ORION

PP953B P4MM SM — PP — 1 — GPIO_AOP_TO_ORION_HWEN — 9 45
PP953C P4MM SM — PP — 1 — ORION_CONN_STATUS — 49

SENSOR SPI LINES

PP9544 P3MM SM — PP — 1 — SPI_SENSORS_SCLK — PLACE_NEAR=U2150.2:10MM — 9 18 62
PP9545 P3MM SM — PP — 1 — SPI_SENSORS_MISO — PLACE_NEAR=U0600.AC3:10MM — 9 18
PP9546 P3MM SM — PP — 1 — SPI_SENSORS_MOSI — PLACE_NEAR=U2150.3:10MM — 9 18 62
PP9547 P3MM SM — PP — 1 — SPI_SENSORS_SCLK — PLACE_NEAR=U2120.4:10MM — 9 18 62
PP9549 P3MM SM — PP — 1 — SPI_SENSORS_MOSI — PLACE_NEAR=U2120.3:10MM — 62 — 9 18

PMU/EUPHRATES

PP95G1 P4MM SM — PP — 1 — GPIO_PMU_TO_SOC_IRQ_L — 9 52
PP95G7 P4MM SM — PP — 1 — USB_VBUS_DETECT — 5 54
PP95G2 P4MM SM — PP — 1 — NUB_SPMI_ATHENA_SCLK — 9 52
PP95G3 P4MM SM — PP — 1 — NUB_SPMI_ATHENA_SDATA — 9 52
PP95G4 P4MM SM — PP — 1 — ISP_SPMI_APOLLO_SCLK — 7 48
PP95G5 P4MM SM — PP — 1 — ISP_SPMI_APOLLO_SDATA — 7 48

PP95G0 P4MM SM — PP — 1 — GPIO_ROSALINE_TO_AOP_IRQ_L — 9 37

GRAPE

PP9580 P3MM SM — PP — 1 — SPI_SOC_TO_GRAPE_SCLK — 6 19
PP9581 P3MM SM — PP — 1 — SPI_SOC_TO_GRAPE_MISO — 6 19
PP9582 P3MM SM — PP — 1 — SPI_SOC_TO_GRAPE_MOSI — 6 19
PP9583 P3MM SM — PP — 1 — SPI_SOC_TO_GRAPE_CS_L — 6 19
PP9584 P3MM SM — PP — 1 — GPIO_SOC_TO_GRAPE_RESET_L — 6 19 20
PP9585 P3MM SM — PP — 1 — GPIO_GRAPE_TO_AOP_IRQ_L — 9 19
PP9586 P3MM SM — PP — 1 — KONA_S_TO_KONA_M_RESET_DET_L — 19 20
PP9587 P3MM SM — PP — 1 — PSE_SYNC — 19 20
PP9588 P3MM SM — PP — 1 — KMSI_MISO — 19 20
PP9589 P3MM SM — PP — 1 — KMSI_MOSI — 19 20
PP958A P3MM SM — PP — 1 — KMSI_STRB_IN — 19 20
PP958B P3MM SM — PP — 1 — KMSI_STRB_OUT — 19 20
PP958C P3MM SM — PP — 1 — KONA_BOOST_ATEST — 19
PP958D P3MM SM — PP — 1 — TESTPOINT_KONA_S_UART_TX — 20
PP958E P3MM SM — PP — 1 — TESTPOINT_KONA_S_UART_RX — 20

PP958G P3MM SM — PP — 1 — TESTPOINT_KONA_IPC_EVENT_1 — 20
PP958H P3MM SM — PP — 1 — TESTPOINT_KONA_IPC_EVENT_2 — 20
PP958I P3MM SM — PP — 1 — TESTPOINT_KONA_IPC_EVENT_3 — 20
PP958J P3MM SM — PP — 1 — TESTPOINT_KONA_IPC_EVENT_4 — 20
PP958K P3MM SM — PP — 1 — TESTPOINT_KONA_IPC_EVENT_5 — 20
PP958L P3MM SM — PP — 1 — GPIO_KONA_TO_AOP_TIME_SYNC — 9 19
PP958M P3MM SM — PP — 1 — CLK_KONA_M_24MHZ — 19
PP958N P3MM SM — PP — 1 — GPIO_SOC_TO_GRAPE_BSYNC0 — 19 20 38
PP958P P3MM SM — PP — 1 — GPIO_SOC_TO_GRAPE_BSYNC1 — 19 20 38
PP958X P3MM SM — PP — 1 — UART_AOP_TO_GRAPE_TX — 9 19
PP958Y P3MM SM — PP — 1 — UART_GRAPE_TO_AOP_TX — 9 19

GRAPE POWER

PP958R P3MM SM — PP — 1 — PP3V3_GRAPE_FILT — 19 20
PP958S P3MM SM — PP — 1 — PP1V8_GRAPE_XTAL_FILT — 19 28
PP958V P3MM SM — PP — 1 — PP1V8_GRAPE_AON_RC — 19 28

WIFI(SEE MORE ON PAGE 49)

PP95BL P4MM SM — PP — 1 — GPIO_SOC_TO_BT_TO_GRAPE_TS_SYNC — 6 19 20 40 59
PP95BM P4MM SM — PP — 1 — GPIO_TOUCH_TO_BT_SYNC — 19 40 59

WLAN PCIE TPS(SEE MORE ON PAGE 49)

PP95E0 P2MM SM — PP — 1 — PLACE_NEAR=U0600.BF11:100MM — PCIE_WLAN_TO_SOC_TX_P — 8 59
PP95E1 P2MM SM — PP — 1 — PLACE_NEAR=U0600.BE11:100MM — PCIE_WLAN_TO_SOC_TX_N — 8 59

BB PCIE TPS(SEE MORE ON PAGE 127)

PP95E8 P2MM SM — PP — 1 — PLACE_NEAR=U0600.BF12:100MM — PCIE_BB_TO_SOC_TX_P — 8 59
PP95E9 P2MM SM — PP — 1 — PLACE_NEAR=U0600.BE12:100MM — PCIE_BB_TO_SOC_TX_N — 8 59

NAND

PP95D6 P3MM SM — PP — 1 — PLACE_NEAR=U1800.E8:50MM — PCIE_SOC_TO_NAND1_RESET_L — 8 16 17
PP95DD P3MM SM — PP — 1 — PLACE_NEAR=U1900.E8:50MM — PCIE_SOC_TO_NAND2_RESET_L — 8 17
PP95DE P2MM SM — PP — 1 — PLACE_NEAR=U1800.J4:50MM — NAND1_ANI1_VREF — 16
PP95DF P3MM SM — PP — 1 — PLACE_NEAR=U1800.G12:50MM — NAND1_ANI0_VREF — 16
PP95DG P3MM SM — PP — 1 — PLACE_NEAR=U1900.J4:50MM — NAND2_ANI1_VREF — 17
PP95DH P3MM SM — PP — 1 — PLACE_NEAR=U1900.G12:50MM — NAND2_ANI0_VREF — 17
PP95DI P3MM SM — PP — 1 — PLACE_NEAR=U1900.C4:50MM — GPIO_SOC_TO_NAND_FW_STRAP — 6 16 17
PP95DJ P3MM SM — PP — 1 — PLACE_NEAR=U1900.L4:50MM — GPIO_SOC_TO_NAND_RESET_L — 6 16 17

IR CAMERA - JULIET

PP9550 P2MM SM — PP — 1 — MIPI_PEARL_TO_SOC_CLK_P — NO_XNET_CONNECTION=1 — 7 36
PP9551 P2MM SM — PP — 1 — MIPI_PEARL_TO_SOC_CLK_N — NO_XNET_CONNECTION=1 — 7 36
PP9552 P2MM SM — PP — 1 — MIPI_PEARL_SOC_DATA_P<0> — NO_XNET_CONNECTION=1 — 7 36
PP9553 P2MM SM — PP — 1 — MIPI_PEARL_SOC_DATA_N<0> — NO_XNET_CONNECTION=1 — 7 36
PP9554 P2MM SM — PP — 1 — MIPI_PEARL_SOC_DATA_P<1> — NO_XNET_CONNECTION=1 — 7 36
PP9555 P2MM SM — PP — 1 — MIPI_PEARL_SOC_DATA_N<1> — NO_XNET_CONNECTION=1 — 7 36

CAMERA - FRONT

PP9560 P2MM SM — PP — 1 — LPDP_SOC_TO_FCAM2_AUX — PLACE_NEAR=U0600.AU8:100MM — NO_XNET_CONNECTION=1 — 7 24
PP9562 P2MM SM — PP — 1 — LPDP_FCAM2_TO_SOC_DATA_P<0> — PLACE_NEAR=U0600.AU4:100MM — NO_XNET_CONNECTION=1 — 7 24
PP9563 P2MM SM — PP — 1 — LPDP_FCAM2_TO_SOC_DATA_N<0> — PLACE_NEAR=U0600.AU5:100MM — NO_XNET_CONNECTION=1 — 7 24
PP9564 P2MM SM — PP — 1 — LPDP_FCAM2_TO_SOC_DATA_P<1> — PLACE_NEAR=U0600.AU1:100MM — NO_XNET_CONNECTION=1 — 7 24
PP9565 P2MM SM — PP — 1 — LPDP_FCAM2_TO_SOC_DATA_N<1> — PLACE_NEAR=U0600.AU2:100MM — NO_XNET_CONNECTION=1 — 7 24

LPDPRX TPS

PP95F0 P2MM SM — PP — 1 — LPDP_RCAM1_TO_SOC_DATA_P<0> — PLACE_NEAR=U0600.AT4:100MM — 7 23
PP95F1 P2MM SM — PP — 1 — LPDP_RCAM1_TO_SOC_DATA_N<0> — PLACE_NEAR=U0600.AT5:100MM — 7 23
PP95F2 P2MM SM — PP — 1 — LPDP_RCAM1_TO_SOC_DATA_P<1> — PLACE_NEAR=U0600.AT1:100MM — 7 23
PP95F3 P2MM SM — PP — 1 — LPDP_RCAM1_TO_SOC_DATA_N<1> — PLACE_NEAR=U0600.AT2:100MM — 7 23
PP95F4 P2MM SM — PP — 1 — LPDP_SOC_TO_RCAM1_AUX — PLACE_NEAR=U0600.AT8:100MM — 7 23

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EE DC RESISTANCE TABLE

DC RESISTANCE FAI REQUIRED MEASUREMENTS			
FROM PIN (REFDES.PN)	TO PIN (RFFDES.PN)	VALUE (MILLIOHM) (OPTIONAL)	TOLERANCE (+/-) (OPTIONAL)
U8100.K3	L8100.1	?	?
U8100.M3	L8101.1	?	?
U8100.P3	L8102.1	?	?
U8100.T3	L8103.1	?	?
L8103.2	U0600.AM28	?	?
U8100.A2	L8110.1	?	?
U8100.C4	L8111.1	?	?
U8100.C6	L8112.1	?	?
U8100.A8	L8113.1	?	?
L8112.2	U0600.AF15	?	?
L8120.1	U8100.V7	?	?
L8121.1	U8100.V9	?	?
L8121.2	U0600.Y14	?	?
L8130.1	U8100.V11	?	?
L8130.2	U3800.A12	?	?
L8130.2	FL2748.1	?	?
L8130.2	U7700.B6	?	?
L8130.2	U8100.H17	?	?
L8130.2	U8000.A4	?	?
L8130.2	U0600.N12	?	?
L8130.2	U8600.3	?	?
U8600.5	U0600.AE39	?	?
U8600.5	U0702.A1	?	?
U8600.5	U1800.E2	?	?
U8600.5	U1900.E2	?	?
U7700.H3	L7740.1	?	?
U7700.K3	L7741.1	?	?
U7700.M3	L7742.1	?	?
L7742.2	U7700.L12	?	?
L7742.2	U0600.C49	?	?
U7700.F3	L7750.1	?	?
L7750.2	U0600.AY39	?	?
U7700.C3	L7760.1	?	?
L7760.2	U1800.L12	?	?
L7760.2	U1900.G4	?	?
U8100.V3	L8170.1	?	?
U8100.B12	L8480.1	?	?
L8480.2	U0600.AE17	?	?
J8900.3	Q8580.5	?	?
Q8580.1	U2900.A2	?	?
Q8580.1	U2950.A2	?	?
Q8580.1	U4100.F1	?	?
Q8580.1	U7700.D12	?	?
Q8580.1	U8100.W1	?	?
Q8580.1	U4600.3	?	?
U4600.5	L4601.1	?	?
L4601.2	J4520.1	?	?
Q8580.1	U3200.A2	?	?
Q8580.1	L3260.1	?	?
L3260.2	U3250.A2	?	?
Q8580.1	U3300.A2	?	?
Q8580.1	L3360.1	?	?
L3360.2	U3350.A2	?	?
Q8580.1	U3401.A2	?	?
Q8580.1	L3401.1	?	?
L3401.2	U3402.A2	?	?
Q8580.1	U3501.A2	?	?
Q8580.1	L3501.1	?	?
L3501.2	U3502.A2	?	?
Q8580.1	L3900.1	?	?
L3900.2	U3920.5	?	?
Q8580.1	L8425.1	?	?
L8425.2	U8100.C17	?	?
Q8580.1	L8455.1	?	?
L8455.2	U8100.B17	?	?
Q8580.1	L8701.1	?	?
L8701.2	U8700.7	?	?
Q8580.1	U2350.A2	?	?
Q8580.1	L8710.1	?	?
L8710.2	U8710.5	?	?
Q8580.1	Q2201.7	?	?
Q2201.1	R2208.1	?	?
R2208.2	L2201.1	?	?
L2201.2	Q2202.3	?	?
U8500.L7	L8570.1	?	?
U8500.E5	L8571.1	?	?
L8570.2	U8500.L10	?	?
L8571.2	U8500.A10	?	?
J3700.46	R4050.1	?	?
R4050.2	U3800.G8	?	?
R4050.2	R8000.2	?	?
R8000.1	U8000.C1	?	?
U3800.F5	U8500.L13	?	?
U3920.7	U3800.K9	?	?
U3800.L14	J3700.43	?	?
U3800.L16	J3700.45	?	?
U3800.D5	R4050.2	?	?
U8710.7	U8000.E3	?	?
U8000.F6	Q8051.3	?	?
Q8051.2	FL8950.1	?	?
FL8950.2	J8902.10	?	?
U8100.J18	U8992.B1	?	?
U7700.C13	R4311.1	?	?
R4311.2	J4300.6	?	?
U8100.L18	U0600.AW32	?	?
U8100.L18	U3900.10	?	?

DC RESISTANCE FAI REQUIRED MEASUREMENTS			
FROM PIN (REFDES.PN)	TO PIN (RFFDES.PN)	VALUE (MILLIOHM) (OPTIONAL)	TOLERANCE (+/-) (OPTIONAL)
U8100.M18	FL8991.1	?	?
U7700.J13	FL2803.1	?	?
FL2803.2	J2800.1	?	?
U7700.L13	U1900.R8	?	?
U7700.L13	U1800.G6	?	?
U8100.P18	L2204.1	?	?
L2204.2	U2200.C12	?	?
L2204.2	U2301.R1	?	?
U8100.W15	U0600.AC10	?	?
U7700.N10	U0600.AV15	?	?
U8100.U14	FL8992.1	?	?
U7700.H13	FL2761.1	?	?
FL2761.2	J2700.48	?	?
U7700.K13	FL2791.1	?	?
FL2791.2	J2700.14	?	?
U7700.D13	U2610.D1	?	?
U7700.D13	U2600.C2	?	?
U7700.D13	J2700.1	?	?
U7700.E13	FL2800.1	?	?
FL2800.2	J2800.17	?	?
U7700.N11	XW4270.1	?	?
XW4270.2	J4230.19	?	?
U7700.F13	FL4272.1	?	?
FL4272.2	J4230.14	?	?
U7700.G13	J4200.2	?	?
U3200.A3	J3200.5	?	?
U3200.B3	J3200.4	?	?
U3250.A5	J3200.1	?	?
U3250.D5	J3200.3	?	?
U3300.A3	J3300.4	?	?
U3300.B3	J3300.5	?	?
U3350.A5	J3300.3	?	?
U3350.D5	J3300.1	?	?
U3401.A3	J3400.3	?	?
U3401.B3	J3400.1	?	?
U3402.A5	J3400.4	?	?
U3402.D5	J3400.5	?	?
U3501.A3	J3502.2	?	?
U3501.B3	J3502.1	?	?
U3502.A5	J3501.2	?	?
U3502.D5	J3501.1	?	?

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POWER CONNECTIONS

ATHENA_BUCK0 (ACTIVE)

PPVDD_CPU — MAKE_BASE=TRUE — PPVDD_CPU — 12 50

ATHENA_BUCK1 (SW_CONTROL)

PPVDD_GPU — MAKE_BASE=TRUE — PPVDD_GPU — 12 50

ATHENA_BUCK2 (SLEEP1)

PPVDD_S1_SOC — MAKE_BASE=TRUE — PPVDD_S1_SOC — 10

ATHENA_BUCK3 (SLEEP3)

PP1V8_S3 — MAKE_BASE=TRUE — PP1V8_S3 — 10
PP1V8_S3 — 9 32
PP1V8_S3 — 49
PP1V8_S3 — 9 11
PP1V8_S3 — 23 38 52
PP1V8_S3 — 9 39 52 57
PP1V8_S3 — 55
PP1V8_S3 — 47 51
PP1V8_S3 — 51
PP1V8_S3 — 9 58
PP1V8_S3 — 57
PP1V8_S3 — 18 26

BUCK3_SWITCHES

ATHENA_BUCK3_SW1 (ACTIVE)

PP1V8_SW1 — MAKE_BASE=TRUE — PP1V8_SW1 — 27 28 29 30
PP1V8_SW1 — 55
PP1V8_SW1 — 54 58
PP1V8_SW1 — 51

ATHENA_BUCK3_SW2 (SLEEP2)

PP1V8_S2_GRAPE — MAKE_BASE=TRUE — PP1V8_S2_GRAPE — 9 19 20

APOLLO_BUCK3_SW1 (ACTIVE)

PP1V8_SW1_CAM — MAKE_BASE=TRUE — PP1V8_SW1_CAM — 4 MA(MAX) — 24
PP1V8_SW1_CAM — 123 MA(MAX) — 23
PP1V8_SW1_CAM — 35 MA(MAX) — 35 36 37

APOLLO_BUCK3_SW3 (SLEEP2)

PP1V8_S3_SW3 — MAKE_BASE=TRUE — PP1V8_S3_SW3 — 18
PP1V8_S3_SW3 — 18
PP1V8_S3_SW3 — 18

BUCK3_EXT_SW1 (ACTIVE)

PP1V8_EXT_SW1 — MAKE_BASE=TRUE — PP1V8_EXT_SW1 — 11
PP1V8_EXT_SW1 — 11
PP1V8_EXT_SW1 — 11
PP1V8_EXT_SW1 — 11
PP1V8_EXT_SW1 — 5 9 16 17
PP1V8_EXT_SW1 — 6
PP1V8_EXT_SW1 — 4 6 8 52
PP1V8_EXT_SW1 — 11

BUCK3_S2_EXT_SW2 (SLEEP2)

PP1V8_S2_EXT_SW2 — MAKE_BASE=TRUE — PP1V8_S2_EXT_SW2 — 59
PP1V8_S2_EXT_SW2 — 59
PP1V8_S2_EXT_SW2 — 59

APOLLO_BUCK4 (SLEEP3)

PP1V1_S3 — MAKE_BASE=TRUE — PP1V1_S3 — 47
PP1V1_S3 — 47
PP1V1_S3 — 10

APOLLO_BUCK4_SW1 (SPARE)

PP1V1_SW1_SPARE — MAKE_BASE=TRUE

APOLLO_BUCK5 (SLEEP1)

PPVDD_S1_FIXED — MAKE_BASE=TRUE — PPVDD_S1_FIXED — 13
PPVDD_S1_FIXED — 13
PPVDD_S1_FIXED — 13
PPVDD_S1_FIXED — 13
PPVDD_S1_FIXED — 13
PPVDD_S1_FIXED — 13
PPVDD_S1_FIXED — 13
PPVDD_S1_FIXED — 13
PPVDD_S1_FIXED — 13
PPVDD_S1_FIXED — 13
PPVDD_S1_FIXED — 13
PPVDD_S1_FIXED — 13

APOLLO_BUCK6 (ACTIVE)

PP2V63_OTP — MAKE_BASE=TRUE — PP2V63_OTP — 16 17

ATHENA_BUCK7 (ACTIVE)

PPVDD_CPU_SRAM — MAKE_BASE=TRUE — PPVDD_CPU_SRAM — 10 50

ATHENA_BUCK8 (SW_CONTROL)

PPVDD_GPU_SRAM — MAKE_BASE=TRUE — PPVDD_GPU_SRAM — 10 53

ATHENA_BUCK9 (SLEEP1)

PPVDD_S1_DCS — MAKE_BASE=TRUE — PPVDD_S1_DCS — 10

APOLLO_BUCK10 (SLEEP1)

PPVDD_S1_QL — MAKE_BASE=TRUE — PPVDD_S1_QL — 5 10

ATHENA_BUCK11 (ACTIVE)

PPVDD_ECPU — MAKE_BASE=TRUE — PPVDD_ECPU — 12 53

APOLLO_BUCK12 (SW CONTROL)

PP1V4_CAMERA — MAKE_BASE=TRUE — PP1V4_CAMERA — 47

ATHENA_LDO1 (SLEEP 2)

PP3V3_S2_ACE — MAKE_BASE=TRUE — PP3V3_S2_ACE — 32 33

ATHENA_LDO2 (SPARE)

PP1V8_SPARE_LDO2 — MAKE_BASE=TRUE — PP1V8_SPARE_LDO2

ATHENA_LDO3 (SLEEP2)

PP2V95_S2_THROTTLE — MAKE_BASE=TRUE — PP2V95_S2_THROTTLE — 57

APOLLO_LDO4 (SW CONTROL)

PP3V0_ALS — MAKE_BASE=TRUE — PP3V0_ALS — 37

ATHENA_LDO5 (SPARE)

PPVDD_SPARE_LDO5 — MAKE_BASE=TRUE

ATHENA_LDO6 (SPARE)

PP3V3_SPARE_LDO6 — MAKE_BASE=TRUE — PP3V3_SPARE_LDO6

ATHENA_LDO7 (ACTIVE)

PP3V3_USB — MAKE_BASE=TRUE — PP3V3_USB — 5 11
PP3V3_USB — 32 33

ATHENA_LDO8 (SLEEP2)

PP3V3_S2_SCORPIUS — MAKE_BASE=TRUE — PP3V3_S2_SCORPIUS — 57

APOLLO_LDO9 (SW CONTROL)

PP1V215_FRONT_CAM — MAKE_BASE=TRUE — PP1V215_FRONT_CAM — 24

APOLLO_LDO10 (ACTIVE)

PP0V9_NAND — MAKE_BASE=TRUE — PP0V9_NAND — 16 17

ATHENA_LDO11 (SLEEP2)

PP3V0_S2_MISC — MAKE_BASE=TRUE — PP3V0_S2_MISC — 59

ATHENA_LDO13 (SLEEP2)

PP3V3_S2_GRAPE — MAKE_BASE=TRUE — PP3V3_S2_GRAPE — 19

ATHENA_LDO14 (ACTIVE)

PP1V2_SOC — MAKE_BASE=TRUE — PP1V2_SOC — 11
PP1V2_SOC — 10 11
PP1V2_SOC — 11
PP1V2_SOC — 11

APOLLO_LDO15 (SLEEP2)

PP0V775_S2_AOP — MAKE_BASE=TRUE — PP0V775_S2_AOP — 10

ATHENA_LDO16 (SLEEP2)

PP1V8_S2_LDO_SCORPIUS — MAKE_BASE=TRUE — PP1V8_S2_LDO_SCORPIUS — 57

APOLLO_LDO17 (SW CONTROL)

PP2V92_REAR_CAM — MAKE_BASE=TRUE — PP2V92_REAR_CAM — 200 MA(MAX) — 23

APOLLO_LDO18 (SW CONTROL)

PP1V215_RCAM — MAKE_BASE=TRUE — PP1V215_RCAM — 460 MA(MAX) — 23

APOLLO_LDO19 (SPARE)

PP1V8_SPARE_LDO19 — MAKE_BASE=TRUE — PP1V8_SPARE_LDO19

APOLLO_LDO20 (SW CONTROL)

PP1V8_HAWKING — MAKE_BASE=TRUE — PP1V8_HAWKING — 22 23

APOLLO_LDO21 (SW CONTROL)

PP2V90_FRONT_CAM — MAKE_BASE=TRUE — PP2V90_FRONT_CAM — 43 MA(MAX) — 24

APOLLO_LDO22 (SW CONTROL)

PP1V215_PEARL — MAKE_BASE=TRUE — PP1V215_PEARL — 110 MA(MAX) — 36

APOLLO_LDO23 (SW CONTROL)

PP2V85_PEARL — MAKE_BASE=TRUE — PP2V85_PEARL — 18 MA(MAX) — 36

APOLLO_LDO24 (SW CONTROL)

PP3V1_PEARL — MAKE_BASE=TRUE — PP3V1_PEARL — 25 MA(MAX) — 36

CHARGER MAIN

PPVCC_MAIN — MAKE_BASE=TRUE — PPVCC_MAIN — 50
PPVCC_MAIN — 50
PPVCC_MAIN — 50
PPVCC_MAIN — 46 50 53
PPVCC_MAIN — 47 51
PPVCC_MAIN — 33
PPVCC_MAIN — 39
PPVCC_MAIN — 53
PPVCC_MAIN — 35
PPVCC_MAIN — 59
PPVCC_MAIN — 59
PPVCC_MAIN — 25
PPVCC_MAIN — 53 55 58
PPVCC_MAIN — 19 20
PPVCC_MAIN — 27 28 29 30
PPVCC_MAIN — 56 57
PPVCC_MAIN — 59
PPVCC_MAIN — 56
PPVCC_MAIN — 45

CHARGER HIGH

PPVCC_HIGH — MAKE_BASE=TRUE — PPVCC_HIGH — 47 51
PPVCC_HIGH — 35
PPVCC_HIGH — 45

BATTERY

PPBATT_VCC — MAKE_BASE=TRUE — PPBATT_VCC — 57

USB POWER INPUT

PPVBUS_PROT — MAKE_BASE=TRUE — PPVBUS_PROT — 32 49 54

ATHENA_ON_BUF

PP1V8_ALWAYS — MAKE_BASE=TRUE — PP1V8_ALWAYS — 6 52 54

BACKLIGHT BOOST

PPLED_OUT — MAKE_BASE=TRUE — PPLED_OUT — 39

SYNC_MASTER=J207_MLB_B — SYNC_DATE=04/10/2017

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ALIASES: POWER

ICE18.5/6 PRE-EVT

SYSTEM POWER

POWER

59 43 41 40 91 76 65 IO PPVCC_MAIN

IO 88 59 23 PP1V8_S2_EXT_SW2 — PP1V8_S2_EXT_SW2 91

CKPLUS_WAIVE=SYNONYM_CHECK

IO 88 59 23 PP3V0_S2_MISC

WLAN COEX

91 69 IN UART_COEX_BB_TO_WLAN_TXD — UART_COEX_BB_TO_WLAN_TXD
MAKE_BASE=TRUE

IN 91 69 UART_COEX_WLAN_TO_BB_TXD — 91 UART_COEX_WLAN_TO_BB_TXD
MAKE_BASE=TRUE

TO WIFI: XCVR TO UAT LAA FEM

91 83 81 79 78 77 76 73 IN XCVR_TO_FE_RFFE_VIO_1V8 — XCVR_TO_FE_RFFE_VIO_1V8 41
MAKE_BASE=TRUE

91 83 81 79 78 77 73 IN XCVR_TO_FE_RX_RFFE_CLK — XCVR_TO_FE_RX_RFFE_CLK 41
MAKE_BASE=TRUE

91 83 81 79 78 77 73 IN XCVR_TO_FE_RX_RFFE_DATA — XCVR_TO_FE_RX_RFFE_DATA 41
MAKE_BASE=TRUE

TO WIFI: XCVR TO LAT LAA FEM

IN 83 82 81 IN VDD_RFFE_VIO_FILT_1V8 — VDD_RFFE_VIO_FILT_1V8
MAKE_BASE=TRUE

83 82 81 IN RFFE_RX_CLK_FILT — RFFE_RX_CLK_FILT 41
MAKE_BASE=TRUE

83 82 81 IN RFFE_RX_DATA_FILT — RFFE_RX_DATA_FILT 41
MAKE_BASE=TRUE

FROM WIFI: LAA FEM TO XCVR

74 IN 50_WIFI_LAA_LAT_TO_XCVR_PRX — 50_WIFI_LAA_LAT_TO_XCVR_PRX 41
MAKE_BASE=TRUE

74 42 IN 50_WIFI_LAA_UAT_TO_XCVR_DRX

WIFI RF

IO 86 40 50_ANT4A_WIFI_M

87 42 IO 50_ANT2A_WIFI

METROCIRC

84 42 IO 50_TRX_LB_MCL

84 42 IO 50_DRX_LB_MCL

85 42 IO 50_TRX_HB_MCL_M

IO 85 42 50_DRX_HB_MCL_M

79 42 IO 50_UAT_TRX_UHB_MCS

81 42 IO 50_DSM_LB_IN_TRX_MCU

82 42 IO 50_DSM_HB_IN_TRX_MLB_MBHB_MCU

81 42 IO 50_DSM_LB_IN_DRX_MCU

82 42 IO 50_DSM_HB_IN_DRX_MLB_MBHB_MCU

85 42 IO 50_DSM_HB_IN_TRX_UHB_MCU_M

74 42 IO 50_XCVR_RDM1_MB_HB_UHB_DRX

IO 83 42 50_XCVR_RDM1_MB_HB_UHB_DRX_MC

74 42 IO 50_XCVR_HB_DRX

82 42 IO 50_XCVR_HB_DRX_MC

74 42 IO 50_XCVR_LMB_MB_HB_DRX

82 42 IO 50_XCVR_LMB_MB_HB_DRX_MC

SCORPIUS

69 59 IO GPIO_BB_TO_SCORPIUS_TX_IND

DEBUG USB

R100 K
0.00
5%
1/32W
MF
01005

91 69 90_USB_BB_R_P 1 — 2 USB_BB_P 59 65

91 69 90_USB_BB_R_N 1 — 2 USB_BB_N 59 65

R101 K
0.00
5%
1/32W
MF
01005

SYSTEM INTERCONNECT

POWER-KEEPING

91 67 59 IO GPIO_APOLLO_TO_BBPMU_ON

91 69 59 IO GPIO_SOC_TO_BB_RESET_L

91 GPIO_SOC_TO_BB_SDWN_L

91 GPIO_SOC_TO_BB_COREDUMP

91 69 IO GPIO_BB_TO_SOC_RESET_DET_L

PCIE

91 69 59 IO GPIO_BB_TO_PMU_HOST_WAKE_L

91 75 69 59 IO PCIE_SOC_TO_BB_RESET_L

91 69 59 IO PCIE_BB_TO_SOC_CLKREQ_L

69 59 IO PCIE_BB_TO_SOC_TX_C_P

IO 69 59 IO PCIE_BB_TO_SOC_TX_C_N

91 69 59 IO PCIE_SOC_TO_BB_TX_P

IO 91 69 59 IO PCIE_SOC_TO_BB_TX_N

IO 91 69 59 IO PCIE_SOC_TO_BB_REFCLK_P

91 69 59 IO PCIE_SOC_TO_BB_REFCLK_N

AOP UART

91 69 59 IO UART_BB_TO_AOP_TX

91 69 59 IO UART_AOP_TO_BB_TX

JTAG-SWD

91 70 59 IO SWD_BB_SWCLK

IO 91 70 59 IO SWD_BB_SWDIO

DEBUG USB

65 59 IO USB_BB_P

65 59 IO USB_BB_N

91 69 59 IO GPIO_PMU_TO_BB_VBUS_DET

SYSTEM COEX

91 59 IO GPIO_SOC_TO_KONA_DISPLAY_BSYNC1

PEAK POWER MANAGEMENT

59 91 70 IO GPIO_BB_TO_STROBE_GSM_BURST_IND

GNSS

91 72 59 IO UART_SOC_TO_BB_GPS_TX

91 72 59 IO UART_BB_GPS_TO_SOC_TX

91 73 59 IO UART_SOC_TO_BB_GPS_RTS_L

91 72 59 IO UART_BB_GPS_TO_SOC_RTS_L

91 72 67 59 IO GPIO_APOLLO_TO_BB_GPS_EN

91 GPIO_SOC_TO_BB_GPS_SYNC

59 91 GPIO_BB_GPS_TO_SOC_LOW_PWR_IND

SIM

91 69 59 IO SIM_TRAY_DETECT

91 90 69 59 IO SIMCRD_IO_CONN

91 69 59 IO SIMCRD_CLK_CONN

91 69 59 IO SIMCRD_RST_CONN

90 71 68 50 91 IO PP2V85_SIM

TUNER CONTROL

IO 85 23 BB_TO_UAT_RFFE_CLK_C3

85 23 BB_TO_UAT_RFFE_DATA_C3

J3X ALTERNATES

PART NUMBER	ALTERNATE FOR PART NUMBER	REFERENCE DESIGNATOR(S)	DESCRIPTION	BOM OPTION
155S00376	155S00366	BPF1L_K	TDK BPF	
132S0436	132S00014		CAP, 1UF	

SYNC_MASTER=RADIO_MLB SYNC_DATE=04/12/2018

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CELL: TABLE OF CONTENTS

BOM TABLES

BULK CAP ALTERNATES

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
138S00144	138S00143			CAP,26UF
138S00144	138S00163			CAP,26UF

XO ALTERNATES

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
197S00156	197S00155			TXC
197S00179	197S00155			NDK

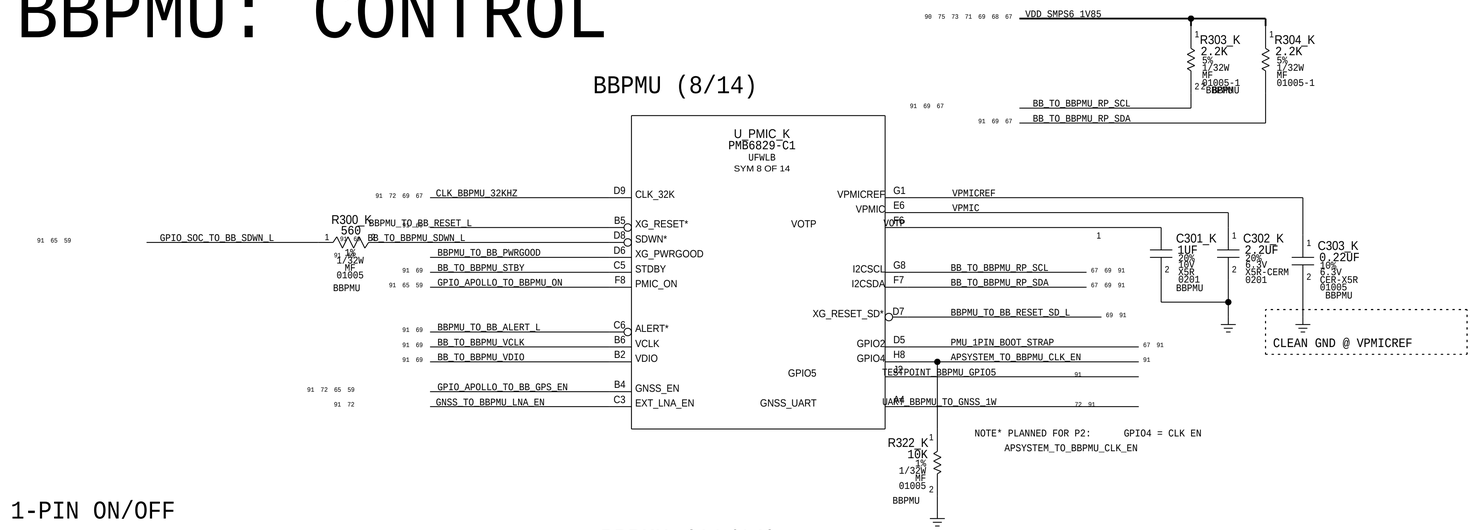
SYNC_MASTER=RADIO_MLB SYNC_DATE=04/12/2018

PAGE TITLE

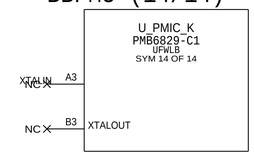
BOM TABLES

BBPMU: CONTROL

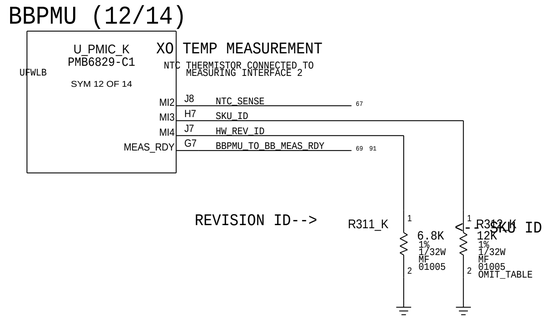
BBPMU (8/14)



BBPMU (14/14)



BBPMU (12/14)



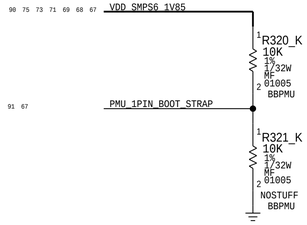
1-PIN ON/OFF

RDAR://27569396

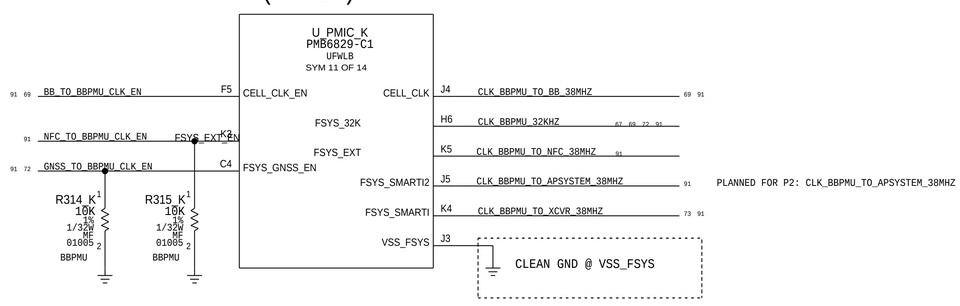
1-PIN ON/OFF STRAP FOR XPMU B0

H = LEGACY

L = 1-PIN ON/OFF



BBPMU (11/14)



REVISION

R311_K	MLB/DEV REVISION
0.0	POC
1.2K	PROTO 0 LOCAL
2.2K	PROTO 0.5 CHINA
3.3K	PROTO 1
4.7K	PROTO 2
6.8K	PRE-EVT
8.2K	
10K	
12K	
15K	
18K	
22K	
27K	
33K	
39K	
47K	
56K	
82K	
100K	
120K	
150K	PROTO 0.5 DOE

SKU/CATEGORY

R312_K	HW REVISION	
0.0	RFDEV JP	
1.2K	ICE 18.0 JP	> ICE 18.0
2.2K	ICE 18.0 ROW	
3.3K	ICE 18.1 JP	
4.7K	ICE 18.1 ROW	ICE 18.1
6.8K	ICE 18.2 JP	> ICE 18.2
8.2K	ICE 18.2 ROW	
10K	RFDEV ROW	
12K	ICE 18.5 JP	> ICE 18.5
15K	ICE 18.6 JP	ICE 18.6
18K	DARWIN	
22K	ICE 18.5 US	
27K	ICE 18.6 US	
33K		
39K		
47K		
56K		
82K		
100K		
120K		
150K		

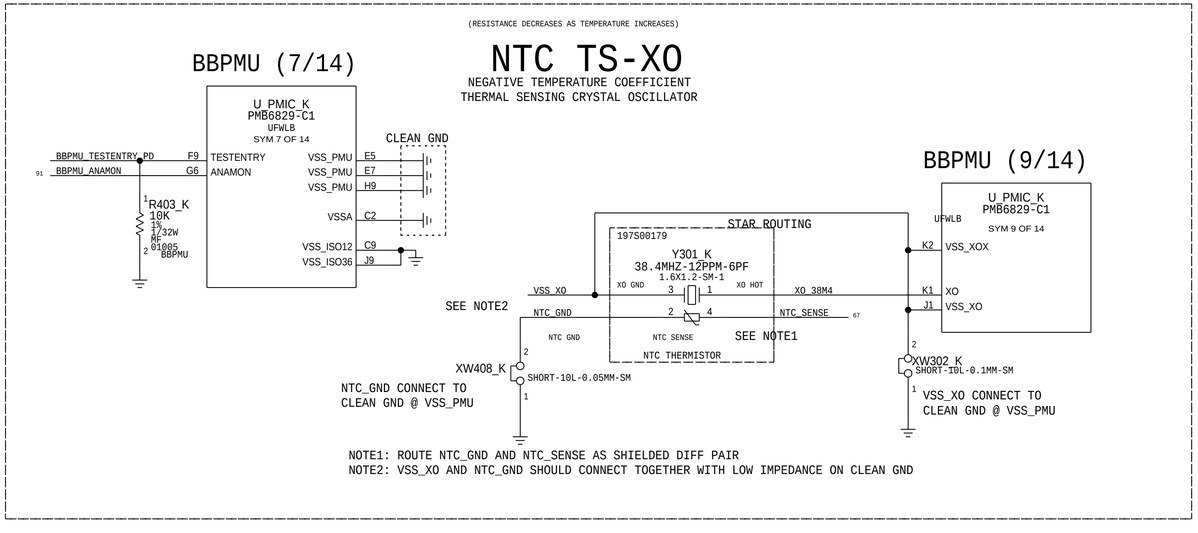
RDAR://27081897

BBPMU (7/14)

(RESISTANCE DECREASES AS TEMPERATURE INCREASES)

NTC TS-XO

NEGATIVE TEMPERATURE COEFFICIENT
THERMAL SENSING CRYSTAL OSCILLATOR



BBPMU ADC TABLES

SKU ID

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION	
118S0730	1	RES,MF,12K OHM, 1/32W,01005	R312_K	J321_JP	ICE18.5 JP
118S0615	1	RES,MF,15K OHM, 1/32W,01005	R312_K	J318_JP	ICE18.6 JP
118S00074	1	RES,MF,22K OHM, 1/32W,01005	R312_K	J321_US	ICE18.5 US
118S00122	1	RES,MF,27K OHM, 1/32W,01005	R312_KJ318_US		ICE18.6 US

SYNC_MASTER=RADIO_MLB SYNC_DATE=04/12/2018

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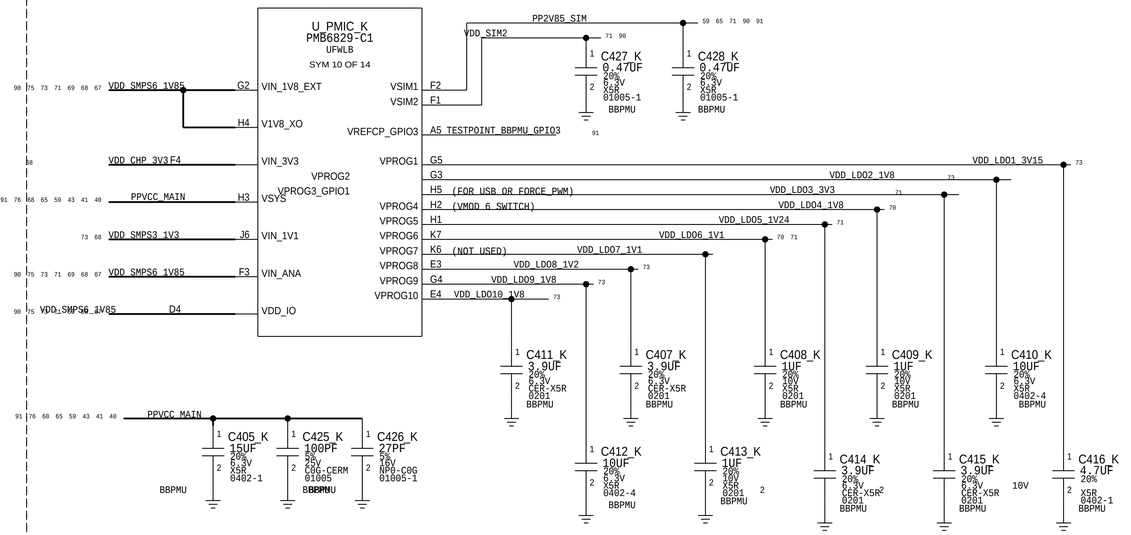
BBPMU: CONTROL

BBPMU: RAILS

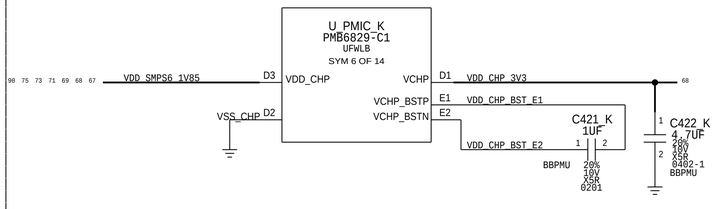
PROGRAMMABLE LDOS

BBPMU (10/14)



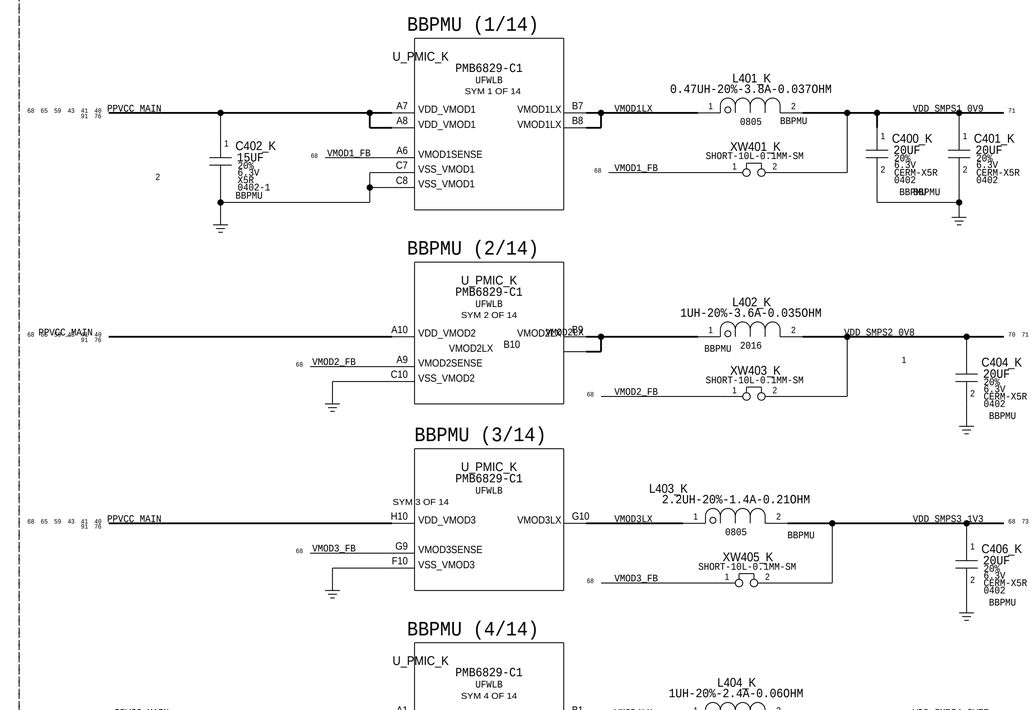
CHARGE PUMP

BBPMU (6/14)



SWITCHERS

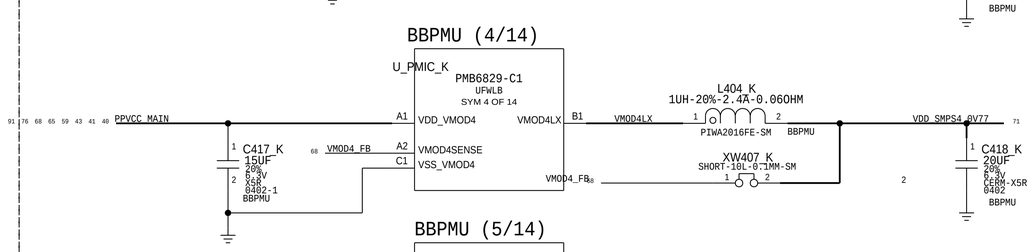
BBPMU (1/14)



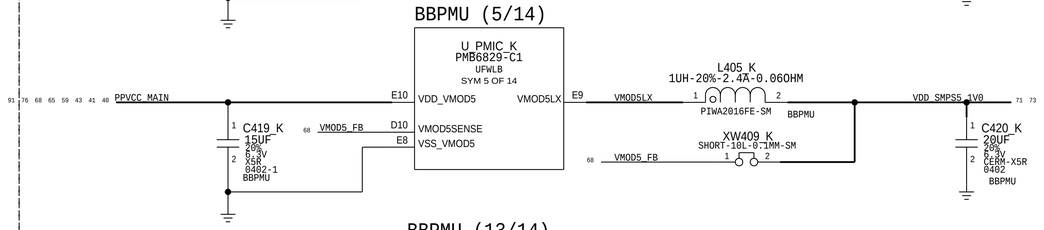
BBPMU (2/14)

BBPMU (3/14)

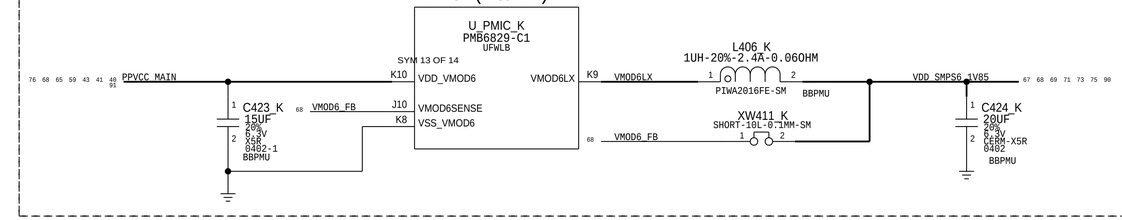
BBPMU (4/14)



BBPMU (5/14)



BBPMU (13/14)



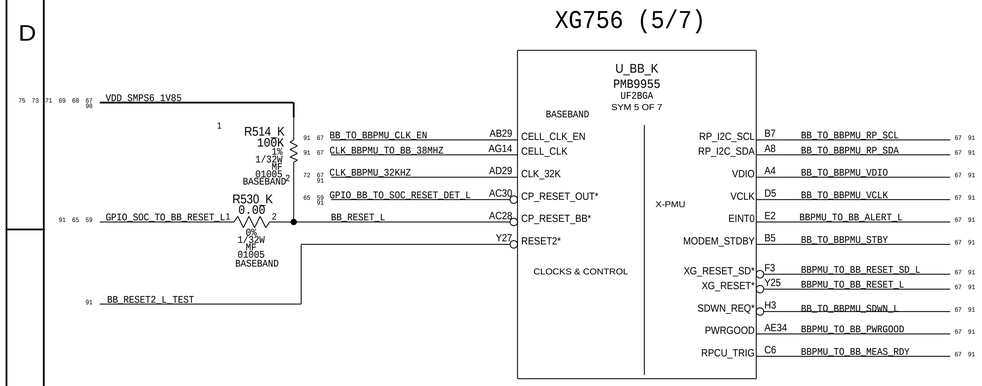
SYNC_MASTER=RADIO_MLB SYNC_DATE=04/12/2018

PAGE TITLE

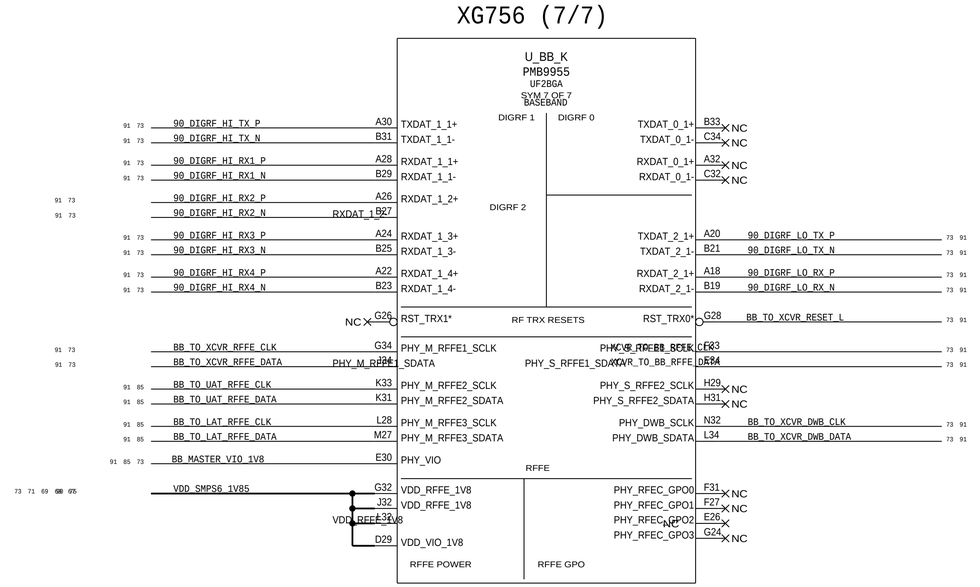
BBPMU: RAILS

BB: INTERFACE

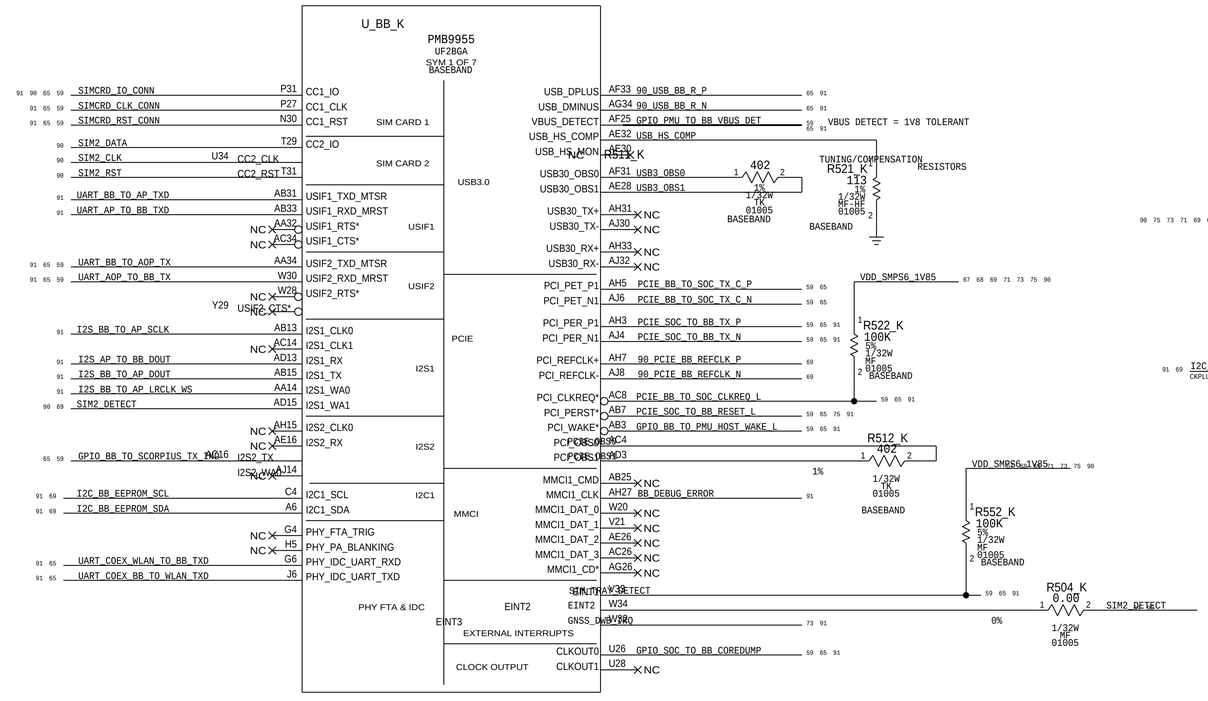
XG756 (5/7)



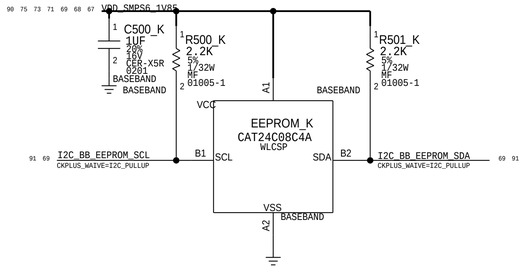
XG756 (7/7)

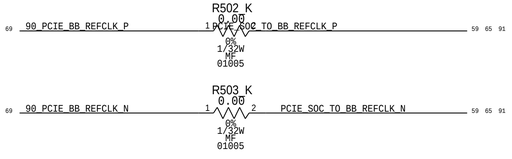


XG756 (1/7)



BB EEPROM





SYNC_MASTER=RADIO_MLB SYNC_DATE=04/12/2018

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BB: INTERFACE

BB: DDR PWR & JTAG

HOOKS FOR DDR4 TESTING/CAL

XG756 (2/7)

U_BB_K
PMB9955
UF2BGA
SYM 2 OF 7

NAND_ADQ_0 AF23
NAND_ADQ_1 AJ24
NAND_ADQ_2 AC20
NAND_ADQ_3 AJ22
NAND_ADQ_4 AG22
NAND_ADQ_5 Y21
NAND_ADQ_6 AH23
NAND_ADQ_7 AA20
NAND_ALE AE24
NAND_CE* AE22
NAND_CLE AC22
NAND_RB* AJ26
NAND_RE* AD21
NAND_WE* AD23
NAND_WP*
NAND_CLK_X_IN_OUT AG24
NAND
LPDDR

ZQ_DRAM K1 BB_ZQDRAM
DDR_OBS0 L4 BB_DDR_OBS0
DDR_OBS1 J2 BB_DDR_OBS1
DDR_RCOMP R2 BB_DDRCOMP
DDR_RESET* V1 NC

R600_K 240 1% 1/32W MF 01005 BASEBAND
VDD_LDO6_1V1 68 70 71

R603_K 80.6 1% 1/32W MF 01005 BASEBAND
R602_K 49.9 1% 1/32W MF 01005 BASEBAND
R601_K 49.9 1% 1/32W MF 01005 BASEBAND

SWD_BB_SWCLK
R620_K 91 65 55 2 1 0.00 0% 1/32W MF 01005 BASEBAND

VDD_LDO4_1V8 68
C600_K 2.2UF 20% 6.3V X5R-CERM 0201 BASEBAND
C601_K 0.1UF 20% 6.3V X5R-CERM 01005 BASEBAND
C602_K 0.1UF 20% 6.3V X5R-CERM 01005 BASEBAND

VDD_LDO6_1V1 71 70 68
C603_K 1UF 20% 16V CER-X5R 0201 BASEBAND
C604_K 1UF 20% 16V CER-X5R 0201 BASEBAND
C605_K 0.1UF 20% 6.3V X5R-CERM 01005 BASEBAND
C606_K 0.1UF 20% 6.3V X5R-CERM 01005 BASEBAND

VDD_SMPS2_0V8 71 68
VDD_LDO6_1V1 71 70 68
C607_K 0.1UF 20% 6.3V X5R-CERM 01005 BASEBAND
C608_K 0.1UF 20% 6.3V X5R-CERM 01005 BASEBAND

VDD1_DRAM C2
VDD1_DRAM AE2
VDD_DDR_IO M5
VDD_DDR_IO P5
VDD_DDR_IO T5
VDD_DDR_IO V5
VDD_DIG_DDR N6
VDD_DIG_DDR R6
VDD_DIG_DDR U6
VDD_DIG_DDR W6
VDD_DDR_DRAM B3
VDD_DDR_DRAM F1
VDD_DDR_DRAM M1
VDD_DDR_DRAM T1
VDD_DDR_DRAM Y1
VDD_DDR_DRAM
VDD_DDR_DRAM AG2
MEMORY POWER

VSS C8, C16, C20, C30, D1, D21, D23, D27, E12, E18, F5, F15, G2, G20, G22, G30, H1, H33, J8, J18, K13, K19, K21, K23, K25, K27, K29, L2, L22, M3, M11, M13

NC: AH25, AD1

XG756 (6/7)

U_BB_K
PMB9955
UF2BGA
SYM 6 OF 7

JTAG
TDO F7
TDI B11
TMS E6
TCK A12
TRST* C12
RTCK G8
BB_JTAG_TDO 91
BB_JTAG_TDI 91
SWD_BB_SWDIO
SWD_JTAG_TCK_SWDCLK_R
BB_JTAG_TRST_L 91 75

HW_MON1 C10 75
HW_MON2 AB19 75
TRIG_IN A10 75
MONTITORING SINGLALS

THERM_SNSA R20
THERM_SNSC P19
EDM_COM H19
EDM_RES F19
DNU_CPU_L2_LYA+ T7
DNU_CPU_L2_LYA- U8
RCT_MON1 M17
RCT_MON2 M19
SENSE & MONITORING

BB_VSS_SENSE 71
VSS_SENSE P23

DUMMY_BALL A2
DUMMY_BALL A34
DUMMY_BALL B1
DUMMY_BALL AH1
DUMMY_BALL AJ2
DUMMY_BALL AJ34
DUMMY

MIPI PTI
PHY MIPI PTI

MIPI_PTI1_CLK AE18
MIPI_PTI1_DATA0 AJ16
MIPI_PTI1_DATA1 Y15
MIPI_PTI1_DATA2 Y13
MIPI_PTI1_DATA3 V15
MIPI_PTI1_DATA4 AA16
MIPI_PTI1_DATA5 AH17
MIPI_PTI1_DATA6 AD17
MIPI_PTI1_DATA7 AJ18
MIPI_PTI1_DATA8 AH19
MIPI_PTI1_DATA9 V17
MIPI_PTI1_DATA10 AJ20
MIPI_PTI1_DATA11 U18
MIPI_PTI1_DATA12 W18
MIPI_PTI1_DATA13 AA18
MIPI_PTI1_DATA14 Y19
MIPI_PTI1_DATA15 AG20

PHY_MIPI_PTI1_CLK G10
PHY_MIPI_PTI1_DATA0 C18
PHY_MIPI_PTI1_DATA1 F17
PHY_MIPI_PTI1_DATA2 G12
PHY_MIPI_PTI1_DATA3 K15
PHY_MIPI_PTI1_DATA4 B17
PHY_MIPI_PTI1_DATA5 M7
PHY_MIPI_PTI1_DATA6 J10
PHY_MIPI_PTI1_DATA7 J16
PHY_MIPI_PTI1_DATA8 L10
PHY_MIPI_PTI1_DATA9 B15
PHY_MIPI_PTI1_DATA10 J12
PHY_MIPI_PTI1_DATA11 A14
PHY_MIPI_PTI1_DATA12 A16
PHY_MIPI_PTI1_DATA13 C14
PHY_MIPI_PTI1_DATA14 F13
PHY_MIPI_PTI1_DATA15 G14

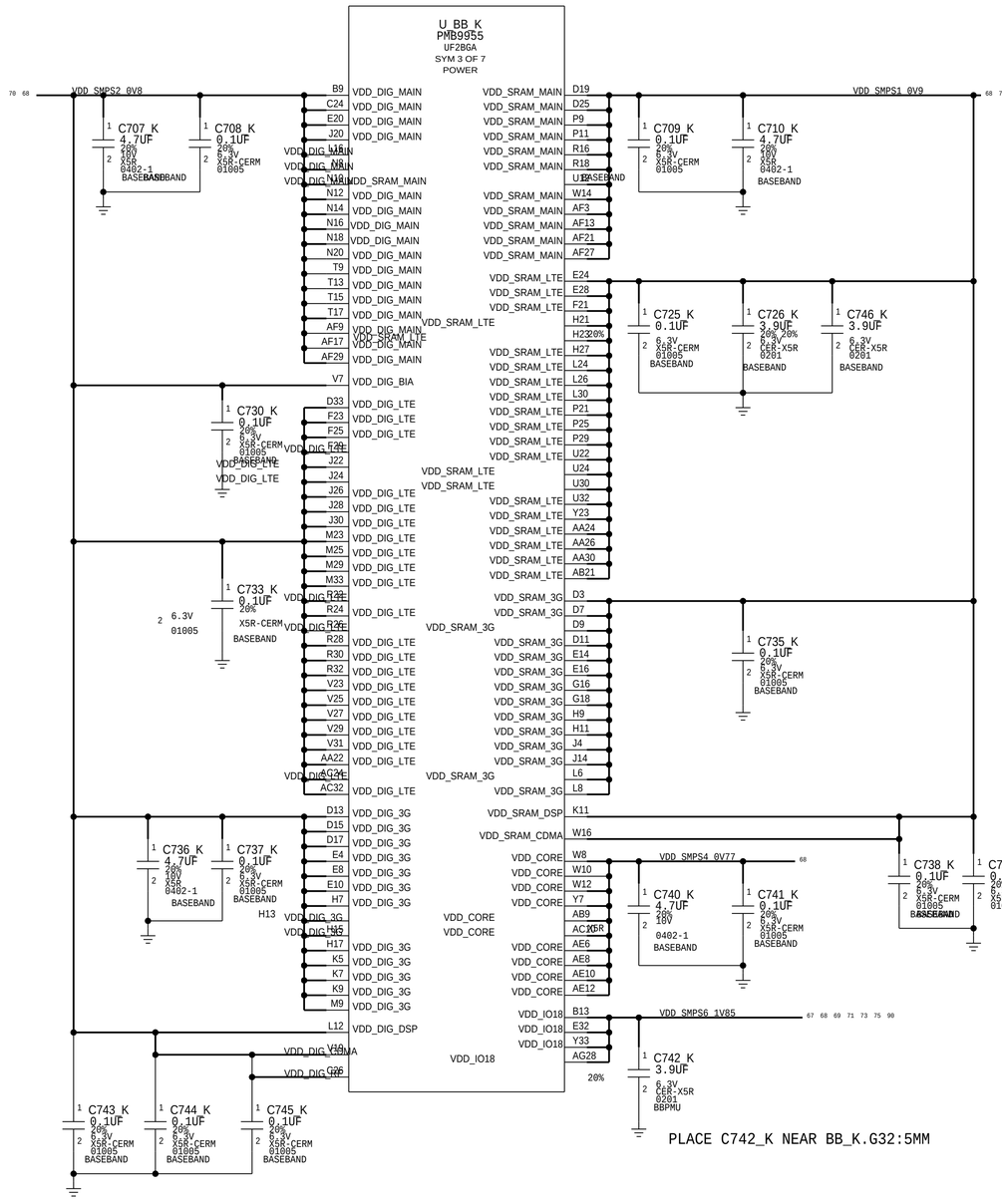
MIPI_PTI1_DATA11
GPIO_BB_TO_STROBE_GSM_BURST_IND 65 91

NC

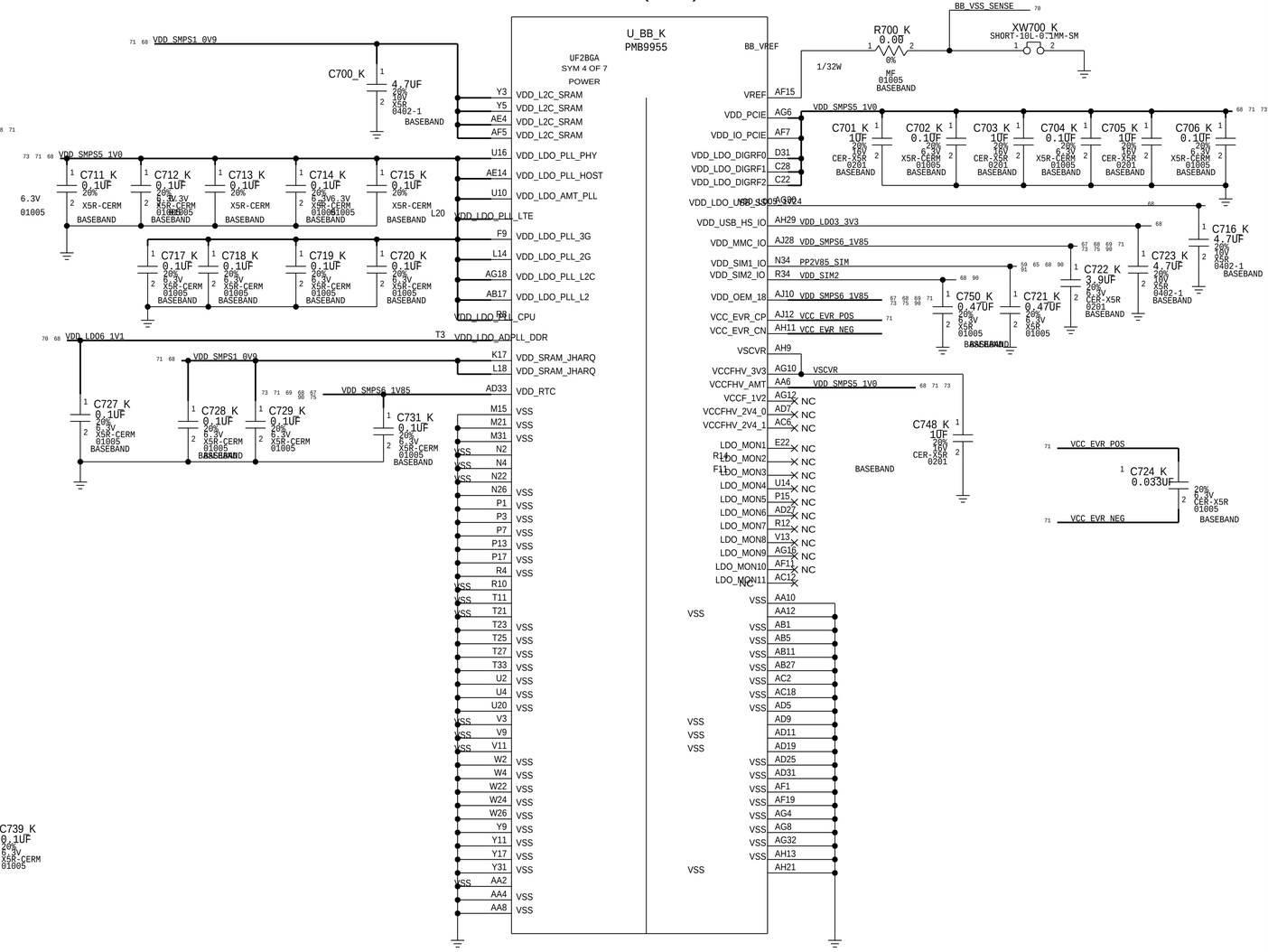
SYNC_MASTER=RADIO_MLB	SYNC_DATE=04/12/2018
PAGE TITLE	BB: DDR PWR & JTAG

BB: DIGITAL PWR

XG756 (3/7)



XG756 (4/7)



SYNC_MASTER=RADIO_MLB SYNC_DATE=04/12/2018

PAGE TITLE

BB: DIGITAL PWR

XCVR: TRANSMIT & GNSS

SMARTI7 (4/7)

U_XCVR_K
PMB5762-A2
UFWLB
SYM 4 OF 7

PADACF+	L4	50_ET_DAC_P	76 91
PADACF-	M3	50_ET_DAC_N	76 91
RAMPDAC	K3	NC	
TX_LB1	T1	50_XCVR_TX_LB1	
TX_LB2	U2	NC	
TX_MB1	R2	50_TX_MB1	
TX_MB2	Y1	50_XCVR_TX_MB2	
TX_MB3	AA2	50_TX_MB3_MLB_2G	79
TX_MB4	P1	NC	
TX_HB	AB1	50_XCVR_TX_HB	
TX_UB	AC2	50_XCVR_TX_UHB	79

2G TX OUTPUT
1400 - 1600
3400 - 3600

R1305_K
0.00
5%
1/32W
MF
01005
RADIO_LB_PAD

C1309_K
47PF
5%
16V
NP0-C0G
01005
NOSTUFF
RADIO_LB_PAD

50_XCVR_TO_LBPAD_TX_LB1
699 - 915 MHZ

C1410_K
27PF
5%
16V
NP0-C0G
01005-1
RADIO_HB_PAD

50_XCVR_TO_HBPAD_TX_MB1
1710 - 1995 MHZ

L1400_K
10NH-+/-3%-0.25A
01005
RADIO_HB_PAD
NOSTUFF

C1411_K
27PF
5%
16V
NP0-C0G
01005-1
RADIO_HB_PAD

50_XCVR_TO_HBPAD_TX_2G_HB
1710 - 1995 MHZ

L1415_K
10NH-+/-3%-0.25A
01005
RADIO_HB_PAD
NOSTUFF

C1412_K
27PF
5%
16V
NP0-C0G
01005-1
RADIO_HB_PAD

50_XCVR_TO_HBPAD_TX_HB
2300 - 2690 MHZ

L1401_K
10NH-+/-3%-0.25A
01005
RADIO_HB_PAD
NOSTUFF

SMARTI7 (3/7)

FLTGPS_K
SAW-GPS
SAFRO1G56XB0F57
LGA

86 50_GNSS_SAW
4 INPUT
OUTPUT
GND
GND
1
3

5.1PF
2 GNSS_RF_IN_MATCH
1

L801_K
4.7NH-3%-0.35A-0.35OHM
01005
2

C800_K
1 2
+/-0.1PF
16V
NP0-C0G
01005

50_GNSS_RF_IN_UNMATCH

MINIMUM TRACE CAPACITANCE.
REMOVE GND UNDERNEATH TRACE.

U_XCVR_K
PMB5762-A2
UFWLB
SYM 3 OF 7

GN_RF_IN	B1		
GN_LPO_CLK	H1	CLK_BBPMU_32KHZ	91 69 67
JTAG_MODE	H11		
GN_NTC	F5	UART_BBPMU_TO_GNSS_IN	91 67
	L6	GPIO_APOLLO_TO_GPS_EN	91 67 65 59
GN_NTCMI-	C2		
GN_NTCMI+	D3		
GN_PPS_IN	F3	GPIO_SOC_TO_BB_GPS_SYNC	59 65 91
GN_UART_RTS	F7	UART_GNSS_TO_AP_RTS_L_R	72
GN_UART_RX	H7	UART_SOC_TO_BB_GPS_TX	59 65 91
GN_UART_TX	H3	UART_GNSS_TO_AP_TXD_R	72
GN_LNA_EN	G2	GNSS_TO_BBPMU_LNA_EN	67 91
GN_UART_WAKE	F6	GNSS_TO_AP_LOW_PWR_IND_R	
GN_FSYS_REQ	H5	GNSS_TO_BBPMU_CLK_EN	

R825_K
100K
5%
1/32W
MF
01005

UART_GNSS_TO_AP_RTS_L_R
R820_K
49.9
1%
1/32W
MF
01005
UART_BB_GPS_TO_SOC_RTS_L 65 91 59

72 UART_GNSS_TO_AP_TXD_R
R821_K
49.9
1%
1/32W
MF
01005
UART_BB_GPS_TO_SOC_TX 59 65 91

GNSS_TO_AP_LOW_PWR_IND_R
R822_K
49.9
1%
1/32W
MF
01005
GPIO_BB_GPS_TO_SOC_LOW_PWR_IND 59

SYNC_MASTER=RADIO_MLB
SYNC_DATE=04/12/2018
PAGE TITLE
XCVR: TX & GNSS

XCVR: INTERFACE & PWR

SMARTI7 (1/7)

U_XCVR_K
PMB5762-A2
UFWLB
SYM 1 OF 7

(LAYOUT: MAX DCR 85MOHM)
73 VDD_SMPS5_1V0

(LAYOUT: STAR ROUTE)
73 VDD_SMPS3_1V3

FL900_K 2400HM-25%-0.2A-0.9OHM 01005 OMIT

XW910_K SHORT-10L-0.1MM-SM XCVR1 XCVR OMIT

C900_K 0.47UF 20% 6.3V X5R 01005-1

C901_K 0.1UF 20% 6.3V X5R-CERM 01005 XCVR

C902_K 0.1UF 20% 6.3V X5R-CERM 01005 XCVR

C903_K 100PF 5% 25V C0G-CERM 01005 XCVR

C904_K 10UF 20% 10V X5R-CERM 0402-10 XCVR

C905_K 0.1UF 20% 6.3V X5R-CERM 01005 XCVR

C906_K 10UF 20% 10V X5R-CERM 0402-10 XCVR

C907_K 0.1UF 20% 6.3V X5R-CERM 01005 XCVR

CAP IMPROVES TX GAMMA SPURS (XCVR BALL N6)

73 VDD1V3_TXPLL

C921_K 6800PF 10% 6.3V X5R 01005 XCVR

XW901_K SHORT-10L-0.1MM-SM OMIT XCVR

XW909_K SHORT-10L-0.1MM-SM OMIT XCVR

73 VDD1V3_TXPLL (SEE 0.1U CAP ON LEFT)

73 VDD_SMPS3_1V3 STAR ROUTE

C908_K 0.1UF 20% 6.3V X5R-CERM 01005 XCVR

C909_K 0.1UF 20% 6.3V X5R-CERM 01005 XCVR

C912_K 0.1UF 20% 6.3V X5R-CERM 01005 XCVR

C913_K 0.1UF 20% 6.3V X5R-CERM 01005 XCVR

XW902_K SHORT-10L-0.1MM-SM OMIT XCVR

XW903_K SHORT-10L-0.1MM-SM XCVR OMIT

XW905_K SHORT-10L-0.1MM-SM OMIT XCVR

C916_K 0.1UF 20% 6.3V X5R-CERM 01005 XCVR

XW906_K SHORT-10L-0.1MM-SM OMIT XCVR

XW907_K SHORT-10L-0.1MM-SM OMIT XCVR

AC8	VDD1V0_DIG	
F1	VDD1V1_GN	VFE_XCVR_CORE_F1
E2	VDD1V3_GN	VRF_ANA_1V3_GN
AA18	VDD1V3_RX1PLL	VFE_XCVR_ANA_1V3
C18	VDD1V3_RX2PLL	
H19	VDD1V3_RX3PLL	VDD1V3_RXPLL_2_3
P17	VDD1V3_RX4PLL	VFE_XCVR_ANA_1V3
N6	VDD1V3_TXPLL	
AB17	VDD1V3_RX1DCO	
B17	VDD1V3_RX2DCO	VDD1V3_RX2DCO
G18	VDD1V3_RX3DCO	VDD1V3_RX3DCO
N18	VDD1V3_RX4DCO	VFE_XCVR_ANA_1V3
AB21	VDD1V3_RC_LO1	
A20	VDD1V3_RC_LO2	
F21	VDD1V3_RC_LO2	VDD1V3_RC_LO
K21	VDD1V3_RC_LO1	
Y17	VDD1V3_RC_ADC1	
D17	VDD1V3_RC_ADC2	
J16	VDD1V3_RC_ADC2	VDD1V3_RC_ADC
U16	VDD1V3_RC_ADC1	
Y19	VDD1V3_RC_GM1	
D19	VDD1V3_RC_GM2	
K19	VDD1V3_RC_GM2	
T19	VDD1V3_RC_GM1	VDD1V3_RC_GM

G6	VDD1V8_IO_2	
U8	VDD1V8_IO	
A4	VDD1V8_GN	
AA20	VDD1V8_RXPLL_1	VDD_HI_1V8_PLL
C20	VDD1V8_RXPLL_2	
AC4	VDD1V8_TXPLL	
F13	VDD1V8_CI	
P7	VDD1V8_CI_2	VDD_SMPS6_1V85 73
AB7	VDD_MEM_RET	VDD_SMPS5_1V0 73
D1	VDD_CEXT_GN	CEXT_GN
W2	VDD_CEXT_TX	CEXT_TX
B13	VDD1V3_MPHY	VDD_SMPS3_1V3 73 STAR ROUTE
F23	VDD1V3_RDRF	VDD1V3_RDRF
V23	VDD1V3_RXRF	
N4	VDD1V3_TXANA	
U4	VDD1V3_TXDCO	
V3	VDD1V3_TXRF	
G12	VDD1V3_CI	

VDD_SMPS6_1V85 73

STAR ROUTE VDD_LDO10_1V8 73

XW900_K SHORT-10L-0.1MM-SM OMIT XCVR

C911_K 1UF 20% 10V X5R 0201 XCVR

C910_K 1UF 20% 10V X5R 0201 XCVR

XW904_K SHORT-10L-0.1MM-SM OMIT XCVR

C915_K 0.47UF 20% 6.3V X5R 01005 XCVR

C917_K 2200PF 10% 16V X5R-CERM 01005 XCVR

C918_K 0.1UF 20% 6.3V X5R-CERM 01005 XCVR

C919_K 6800PF 10% 6.3V X5R 01005 XCVR

VDD1V3_TXRF = 230MA

XW908_K SHORT-10L-0.1MM-SM OMIT XCVR

VDD1V3_CI

SMARTI7 (7/7)

U_XCVR_K
PMB5762-A2
UFWLB
SYM 7 OF 7

TIE A2 TO SYSTEM GND PLANE.
DO NOT TIE TO SURFACE GND.

A2	VSS_GN_RF	
A6	VSS	
A14	VSS	
B3	VSS	
B5	VSS	
B15	VSS	
B19	VSS	
B21	VSS	
C4	VSS	
C10	VSS	
C16	VSS	
D5	VSS	
D15	VSS	
D21	VSS	
E4	VSS	
E6	VSS	
E8	VSS	
E10	VSS	
E12	VSS	
E14	VSS	
E16	VSS	
E18	VSS	
E20	VSS	
F15	VSS	
G8	VSS	
G10	VSS	
G14	VSS	
G16	VSS	
G20	VSS	
H15	VSS	
H17	VSS	
H21	VSS	
J2	VSS	
J4	VSS	
J6	VSS	
J8	VSS	
J10	VSS	
J12	VSS	
J14	VSS	
J18	VSS	
J20	VSS	
K5	VSS	
K13	VSS	
K15	VSS	
K17	VSS	
L8	VSS	
L10	VSS	
L12	VSS	
L14	VSS	
L16	VSS	
L18	VSS	
L20	VSS	
M5	VSS	
M7	VSS	
M13	VSS	
M21	VSS	
N2	VSS	
N10	VSS	
N14	VSS	
N16	VSS	
N20	VSS	
P3	VSS	
P5	VSS	
P9	VSS	
P11	VSS	
P13	VSS	
P15	VSS	
P19	VSS	
P21	VSS	
R4	VSS	
R6	VSS	
R8	VSS	
R10	VSS	
R14	VSS	
R16	VSS	
R18	VSS	
R20	VSS	
T3	VSS	
T15	VSS	
T17	VSS	
T21	VSS	
U6	VSS	
U10	VSS	
U12	VSS	
U14	VSS	
U18	VSS	
U20	VSS	
V7	VSS	
V15	VSS	
V17	VSS	
V19	VSS	
V21	VSS	
W4	VSS	
W6	VSS	
W10	VSS	
W14	VSS	
W16	VSS	
W18	VSS	
W20	VSS	
Y3	VSS	
Y13	VSS	
Y15	VSS	
Y21	VSS	
AA4	VSS	
AA6	VSS	
AA10	VSS	
AA14	VSS	
AA16	VSS	
AB3	VSS	
AB13	VSS	
AB15	VSS	
AB19	VSS	
AC6	VSS	
AC10	VSS	
AC14	VSS	
AC20	VSS	

SMARTI7 (2/7)

U_XCVR_K
PMB5762-A2
UFWLB
SYM 2 OF 7

F9	DWB_SDATA	91 69 BB_TO_XCVR_DWB_DATA
F11	DWB_SCLK	91 69 BB_TO_XCVR_DWB_CLK
W8	RESET_MAIN*	91 69 BB_TO_XCVR_RESET_L
H13	FSYS_CLK	91 67 CLK_BBPMU_TO_XCVR_38MHZ
V9	TCKC	
T9	TMSC	TMSC 100K INTERNAL PULLPUP (B0)
A8	MPHY2_RX1_DAT	91 69 90_DIGRF_HI_RX1_P
B7	MPHY2_RX1_DATX	91 69 90_DIGRF_HI_RX1_N
A10	MPHY2_RX2_DAT	91 69 90_DIGRF_HI_RX2_P
B9	MPHY2_RX2_DATX	91 69 90_DIGRF_HI_RX2_N
D9	MPHY2_RX3_DAT	91 69 90_DIGRF_HI_RX3_P
C8	MPHY2_RX3_DATX	91 69 90_DIGRF_HI_RX3_N
A12	MPHY2_RX4_DAT	91 69 90_DIGRF_HI_RX4_P
B11	MPHY2_RX4_DATX	91 69 90_DIGRF_HI_RX4_N
D7	MPHY2_TX_DAT	91 69 90_DIGRF_HI_TX_P
C6	MPHY2_TX_DATX	91 69 90_DIGRF_HI_TX_N
C14	MPHY1_RX_DAT	91 69 90_DIGRF_LO_RX_P
D13	MPHY1_RX_DATX	91 69 90_DIGRF_LO_RX_N
C12	MPHY1_TX_DAT	91 69 90_DIGRF_LO_TX_P
D11	MPHY1_TX_DATX	91 69 90_DIGRF_LO_TX_N

Y11	GPO0	NC
Y9	GPO1	NC
AB9	GPO2	UART_SOC_TO_BB_GPS_RTS_L 59 65 91
AA8	GPO3	NC
Y7	GPO4	GNSS_DWB_IRQ 60 91
AA12	GPO5	NC
AB11	GPO6	NC
AC12	GPO7	NC
K11	MRFFE_VIO	XCVR_TO_FE_RFFE_VIO_1V8 65 76 77 78 79 81 83 91
N12	MRFFE1_SDATA	XCVR_TO_BB_RFFE_DATA 69 91
M11	MRFFE1_SCLK	XCVR_TO_BB_RFFE_CLK 69 91
R12	MRFFE2_SDATA	XCVR_TO_FE_TX_RFFE_DATA 76 77 78 79 84 91
T13	MRFFE2_SCLK	XCVR_TO_FE_TX_RFFE_CLK 77 78 79 84 91
V13	MRFFE3_SDATA	XCVR_TO_FE_RX_RFFE_DATA 91
T11	MRFFE3_SCLK	XCVR_TO_FE_RX_RFFE_CLK 91
W12	MRFFE4_SDATA	NC
V11	MRFFE4_SCLK	NC
H9	SRFFE_VIO	BB_MASTER_VIO_1V8 69 85 91
K7	SRFFE1_SDATA	BB_TO_XCVR_RFFE_DATA 69 91
K9	SRFFE1_SCLK	BB_TO_XCVR_RFFE_CLK 69 91
N8	SRFFE2_SDATA	NC
M9	SRFFE2_SCLK	NC

MAYBE ADD TEST POINTS

C922_K 1000PF 10% 10V X5R 01005 XCVR

C923_K 1000PF 10% 10V X5R 01005 XCVR

XCVR + FRONT END POWER DISTRIBUTION

(RDAR://28679083)

CONFIGURATION 4

68 VDD_SMPS3_1V3	VDD_SMPS3_1V3	73
71 68 VDD_SMPS5_1V0	VDD_SMPS5_1V0	73
75 71 69 68 67 90 VDD_SMPS6_1V85	VDD_SMPS6_1V85	73
68 VDD_LDO1_3V15	VDD_LDO1_3V15	77 78 79 84
68 VDD_LDO2_1V8	VDD_LDO2_1V8	77 78 79 81 82 83
68 VDD_LDO8_1V2	VDD_LDO8_1V2	78
68 VDD_LDO9_1V8	VDD_LDO9_1V8	86
68 VDD_LDO10_1V8	VDD_LDO10_1V8	73

MAKE_BASE=TRUE

SYNC_MASTER=RADIO_MLB	SYNC_DATE=04/12/2018
PAGE TITLE	XCVR: INTERFACE & PWR

XCVR: PRIMARY/DIVERSITY RX

SMARTI7 PRX (5/7)

U_XCVR_K
PMB5762-A2
UFWLB
SYM 5 OF 7

FBR1	K1	TIE L2 TO SYSTEM GND PLANE. DO NOT TIE TO SURFACE GND.
FBR2	M1	NC
VSS_SHIELD_FBR_1	L2	
RX1	P23	50_RX1_LAA_PRX
RX2	R22	50_XCVR_UHB_PRX
RX3	T23	50_HB_PRX_HB2_TO_XCVR
RX4	U22	50_HB_PRX_HB1_TO_XCVR
RX5	W22	
RX6	Y23	50_HB_PRX_MB2_TO_XCVR
RX7	AA22	50_LBPAD_PRX_LB_TO_XCVR
RX8	AB23	50_RX8_MLB_PRX
RX9	AC22	50_HB_PRX_MB1_TO_XCVR
RXM1	N22	50_XCVR_RXM1_MB_HB_UHB_PRX
RXM2	M23	

50_XCVR_CPLR_OUT → INT (84)

CONNECT ALL UNUSED RX PORTS TO GND.

C1000_K
2.7PF
+/-0.1PF
16V
NP0-C0G
01005-1
XCVR

50_WIFI_LAA_LAT_TO_XCVR_PRX (65) FROM WLAN

L1000_K
0.4NH+/-0.1NH-1.0A-0.03OHM
01005
XCVR

L1002_K
0.6NH+/-0.1NH-0.95A-0.05OHM
01005
XCVR
(79)

L1004_K
0.6NH+/-0.1NH-0.95A-0.05OHM
01005
XCVR
(78)

L1006_K
0.6NH+/-0.1NH-0.95A-0.05OHM
01005
XCVR
(78)

L1008_K
1.0NH+/-0.1NH-0.9A-0.05OHM
01005
XCVR
(78)

L1010_K
1.0NH+/-0.1NH-0.9A-0.05OHM
01005
XCVR
(78)

L1012_K
1.9NH+/-0.1NH-0.70A
01005
XCVR
(77)

L1013_K
1.6NH+/-0.1NH-0.70A
01005
XCVR
(79)

L1014_K
0.9NH+/-0.1NH-0.9A-0.05OHM
01005
XCVR
(83)

SMARTI7 DRX (6/7)

U_XCVR_K
PMB5762-A2
UFWLB
SYM 6 OF 7

RD1	J22	50_RD1_LAA_DRX
RD2	H23	
RD3	G22	
RD4	E22	
RD5	D23	
RD6	C22	
RD7	B23	
RD8	A22	
RDM1	K23	
RDM2	L22	

S7 PORT MAP CHANGE 10/11/2016:
USE RD6 INSTEAD OF RD3.
CONNECT ALL UNUSED RD PORTS TO GND.

C1001_K
2.7PF
+/-0.1PF
16V
NP0-C0G
01005-1
XCVR

50_WIFI_LAA_UAT_TO_XCVR_DRX (42 65) FROM WLAN

L1001_K
0.7NH+/-0.1NH-0.63A
01005
XCVR

50_XCVR_RD2_MB_HB_UHB_DRX (82)

L1003_K
0.9NH+/-0.1NH-0.9A-0.05OHM
01005
XCVR

50_XCVR_LMB_MB_HB_DRX (42 65)

L1005_K
0.8NH+/-0.1NH-0.9A-0.05OHM
01005
XCVR

50_XCVR_HB_DRX (42 65)

L1007_K
0.6NH+/-0.1NH-0.95A-0.05OHM
01005
XCVR

50_XCVR_LB_DRX (81)

L1009_K
1.9NH+/-0.1NH-0.70A
01005
XCVR

50_XCVR_RDM1_MB_HB_UHB_DRX (42 65)

L1011_K
0.9NH+/-0.1NH-0.9A-0.05OHM
01005
XCVR

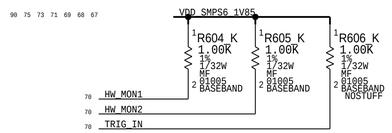
SYNC_MASTER=RADIO_MLB SYNC_DATE=04/12/2018
PAGE TITLE
XCVR: PRX DRX

KAROO CONFIG

BOOTCFG

BOOTSTRAPS ARE INTERNALLY PULLED DOWN

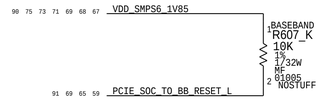
	HW_MON1	HW_MON2	TRIG_IN
NAND	0	0	1
FLASHLESS	1	0	1
FLASHLESS WDOG DIS	1	1	0
NAND (NON-SECURE)	1	1	1



THESE DON'T CHANGE FOR KAROO CONFIG MLBS, DEV ONLY

PERST_L

PERST_L SIGNAL LOW WILL KEEP BB IN RESET.

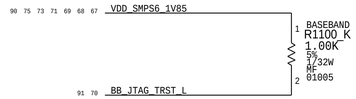


STUFF PU WHEN AP IS NOT CONNECTED
(KAROO CONFIG: USB BOOT)

DEFAULTS SET TO AP/FLASHLESS BOOT

JTAG_RESET_L

TO ENABLE SWD, JTAG_TRST_L MUST BE PULLED HIGH



STUFF PU WHEN USING JTAG

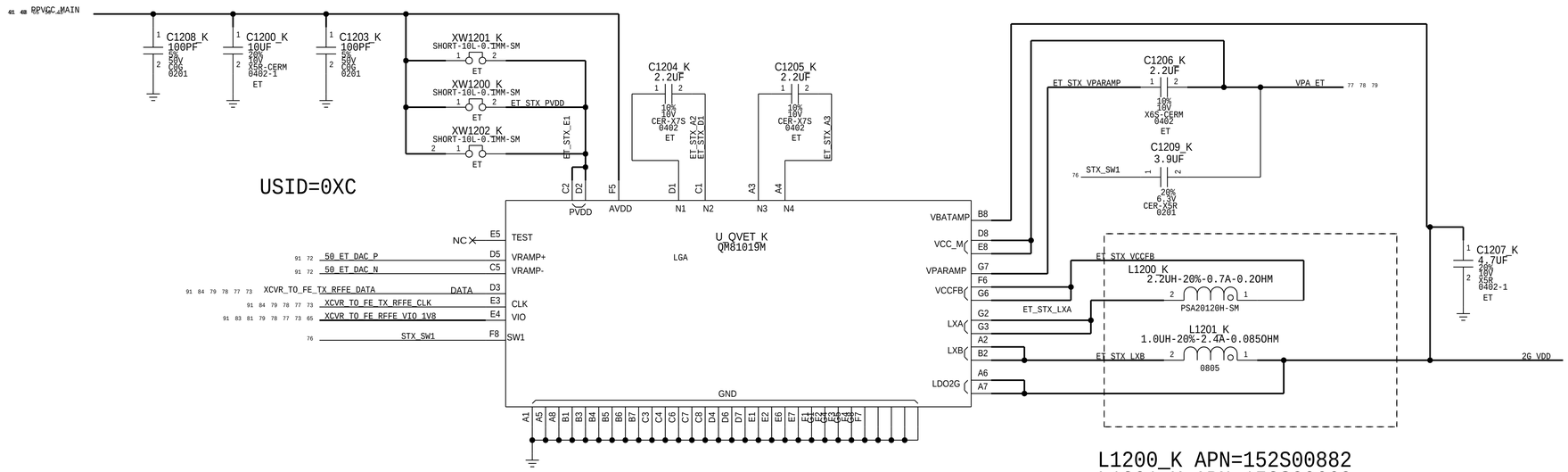
SYNC_MASTER=RADIO_MLB SYNC_DATE=04/12/2018

PAGE TITLE

KAROO CONFIG

ET MODULATOR

ALPES STX ES7.2.1 MODULE



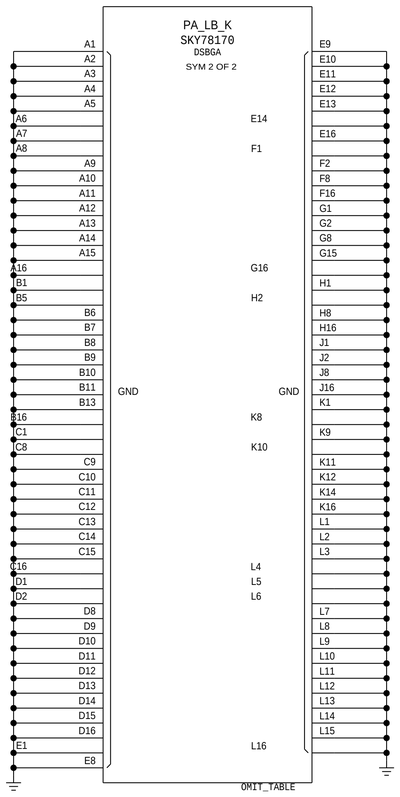
L1200_K APN=152S00882
L1201_K APN=152S00669

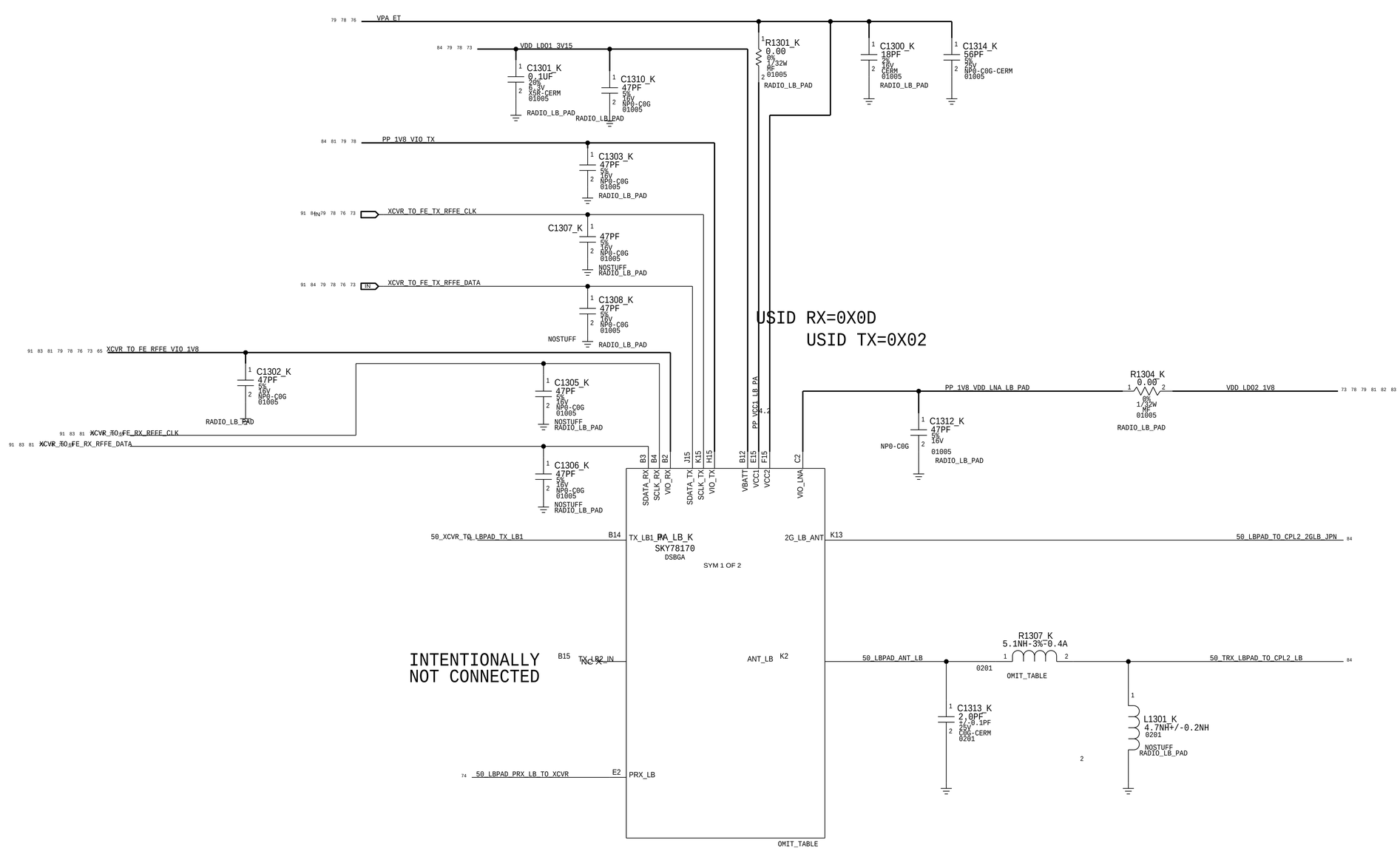
SYNC_MASTER=RADIO_MLB SYNC_DATE=04/12/2018

PAGE TITLE

ET

LB SPAD





QTY	PART DESCRIPTION		REFERENCE DESIGNATOR(S)	BOM OPTION	
353S01345	1	SKY78170 B28	PA_LB_K	J321_JP	ICE18.5 JP
353S01345	1	SKY78170 B28	PA_LB_K	J318_JP	ICE18.6 JP
353S01577	1	SKY78203 B71	PA_LB_K	J321_US	ICE18.5 US
353S01577	1	SKY78203 B71	PA_LB_K	J318_US	ICE18.6 US
152S2005	1	IND 5.1NH 3& 0201	R1307_K	J321	
152S2002	1	IND 4.3NH 3& 0201	R1307_K	J318	

SYNC_MASTER=RADIO_MLB SYNC_DATE=04/12/2018

PAGE TITLE

LB SPAD

HB SPAD


USID RX=0X0E
USID TX=0X03
VPA_ET
VOLTAGE=4.2
C1400_K 47PF 16V NP0-C0G 01005 RADIO_HB_PAD NOSTUFF
5%
RADIO_HB_PAD
R1401_K 0.00 0% 1/32W MF 01005
4.2
PP_VCC1_HB_PA
VDD_LDO1_3V15
C1402_K 0.1UF 20% 6.3V X5R-CERM 01005 RADIO_HB_PAD
PP_1V8_VIO_TX
C1404_K 10PF 2% 25V C0G-CERM 01005 RADIO_HB_PAD
XCVR_TO_FE_TX_RFFE_CLK
C1405_K 10PF 2% 25V C0G-CERM 01005 NOSTUFF RADIO_HB_PAD
XCVR_TO_FE_TX_RFFE_DATA
C1406_K 10PF 2% 25V C0G-CERM 01005 NOSTUFF RADIO_HB_PAD
XCVR_TO_FE_RFFE_VIO_1V8
C1407_K 10PF 2% 25V C0G-CERM 01005 RADIO_HB_PAD
XCVR_TO_FE_RX_RFFE_CLK
C1408_K 10PF 2% 25V C0G-CERM 01005 NOSTUFF RADIO_HB_PAD
XCVR_TO_FE_RX_RFFE_DATA
C1409_K 10PF 2% 25V C0G-CERM 01005 NOSTUFF RADIO_HB_PAD
VDD_LDO2_1V8
C1401_K 1000PF 10% 6.3V X5R-CERM 01005 RADIO_HB_PAD
VDD_LDO8_1V2
C1403_K 0.1UF 20% 6.3V X5R-CERM 01005 RADIO_HB_PAD
PA_HB_K
AFEM-8092-AP1
LGA
SYM 1 OF 3
VIO_RX SDATA_RX SCLK_RX SDATA_TX SCLK_TX VIO_TX VBATT VCC1 VCC2 VBIAS_LNA VDD_LNA
50_XCVR_TO_HBPAD_TX_HB TX_HB_IN
50_XCVR_TO_HBPAD_TX_MB1 TX_MB1_IN
50_XCVR_TO_HBPAD_TX_2G_HB 2G_HB_IN
2G_HB_OUT 50_HBPAD_TO_CPL2_2GHB_JPN
50_HB_PRX_MB1_TO_XCVR PRX_MB1
50_HB_PRX_MB2_TO_XCVR PRX_MB2
50_HB_PRX_HB1_TO_XCVR PRX_HB1
50_HB_PRX_HB2_TO_XCVR PRX_HB2
ANT 50_HBPAD_ANT_MATCH
R1404_K 0.00 1% 1/20W MF 0201 RADIO_HB_PAD
50_TRX_HBPAD_TO_CPL2
HP_TDD_ANT
C1414_K 0.5PF +/-0.05PF 25V C0G-CERM 0201 RADIO_HB_PAD NOSTUFF
1.7NH-+/-0.1NH-0.8A-0.07OHM
R1407_K 0201 OMIT_TABLE
50_HBPAD_HPUE_TDD
50_TRX_HBPAD_TDD_TO_CPL2_HPUE
C1415_K 0.3PF +/-0.1PF 16V NP0-C0G 01005 NOSTUFF
C1416_K 0.3PF +/-0.1PF 16V NP0-C0G 01005 NOSTUFF
PA_HB_K
AFEM-8092-AP1
LGA
SYM 2 OF 3
PA_HB_K
AFEM-8092-AP1
LGA
SYM 3 OF 3
GND

NEEDS REVIEW CHANGED AT PRE-EVT

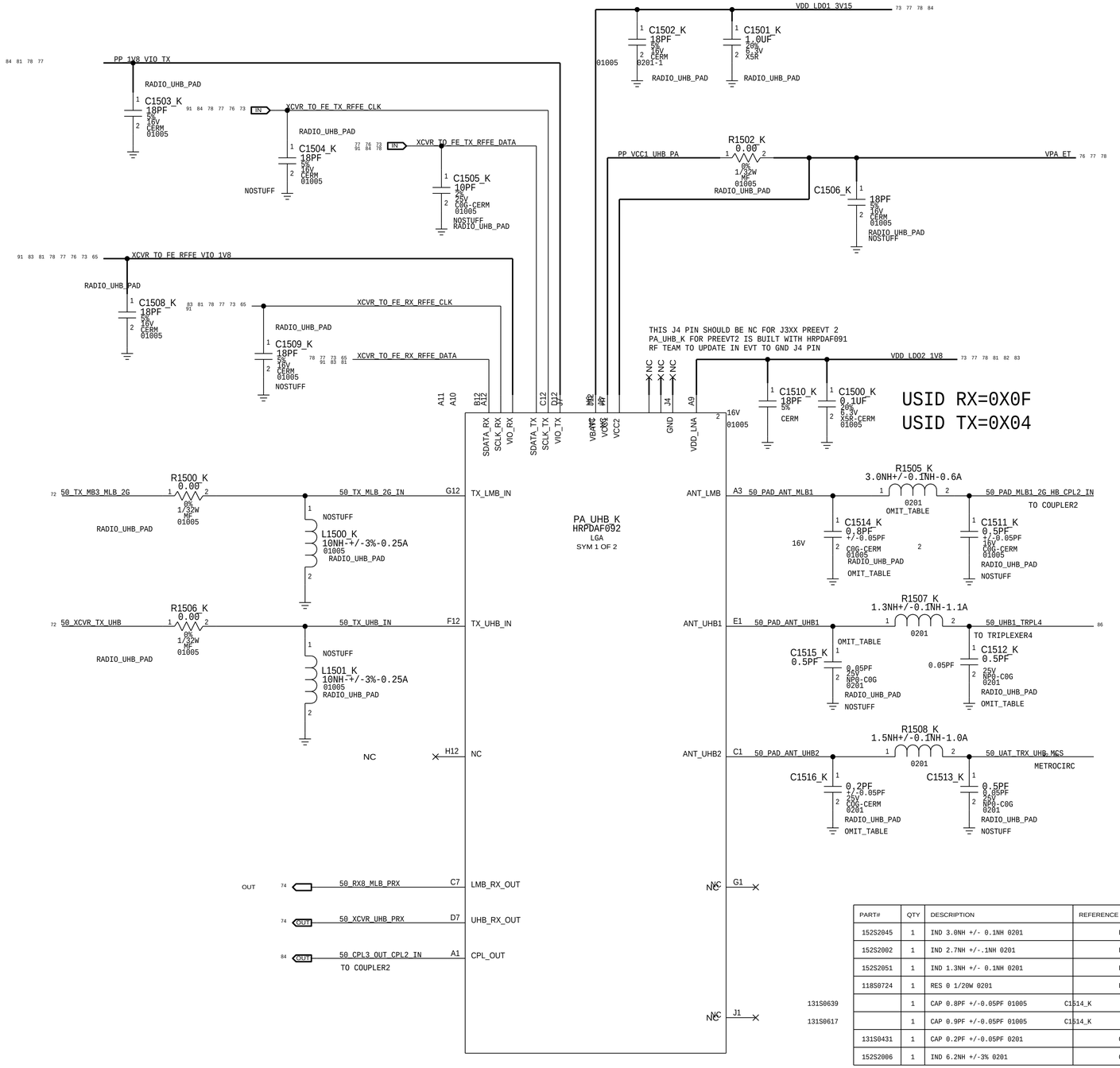
PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
152S00058	1	IND, 1.7NH +/- 0.05NH 0201	R1407_K	J321
152S2024	1	IND 1.4NH +/-0.1NH 0201	R1407_K	J318

SYNC_MASTER=RADIO_MLB SYNC_DATE=04/12/2018

PAGE TITLE

HB SPAD

UHB LMB SPAD



PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION	
152S2045	1	IND 3.0NH +/- 0.1NH 0201	R1505_K	J321	
152S2002	1	IND 2.7NH +/-.1NH 0201	R1505_K	J318	
152S2051	1	IND 1.3NH +/- 0.1NH 0201	R1507_K	J321	
118S0724	1	RES 0 1/20W 0201	R1507_K	J318	
131S0639	1	CAP 0.8PF +/-0.05PF 01005	C1514_K	J321	
131S0617	1	CAP 0.9PF +/-0.05PF 01005	C1514_K	J318	
131S0431	1	CAP 0.2PF +/-0.05PF 0201	C1516_K	J318	NO STUFF ON J321
152S2006	1	IND 6.2NH +/-3% 0201	C1512_K	J318	NO STUFF ON J321

SYNC_MASTER=RADIO_MLB SYNC_DATE=04/12/2018

PAGE TITLE: UHB LMB SPAD

DRAWING NUMBER: 0

SIZE:

BLANK PAGE

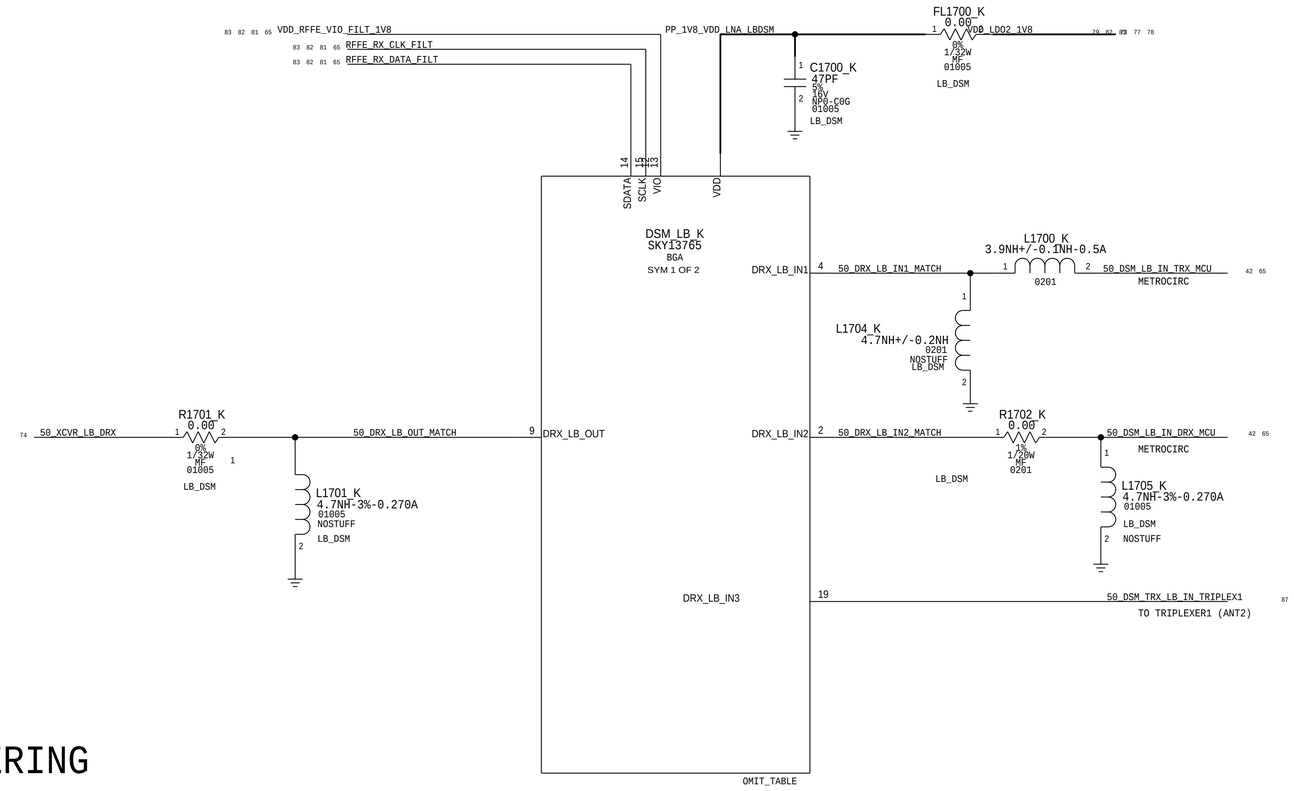
SYNC_MASTER=RADIO_MLB SYNC_DATE=04/12/2018

PAGE TITLE

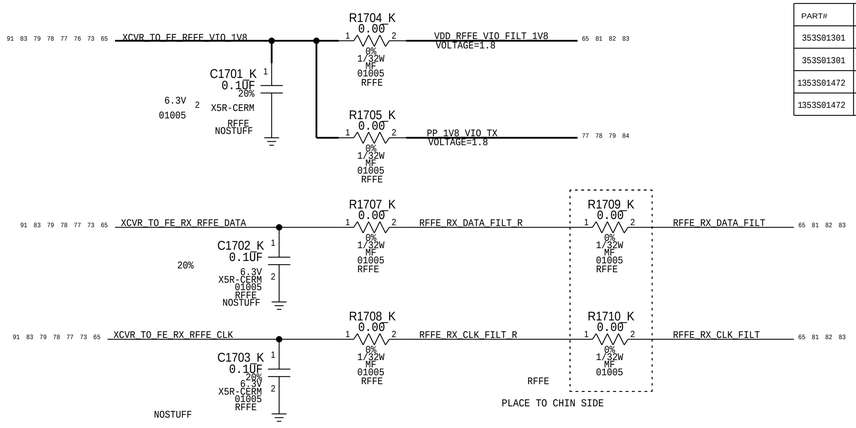
BLANK PAGE

LB DIVERSITY RECEIVE LNA

USID RX=0X09



RFFE FILTERING



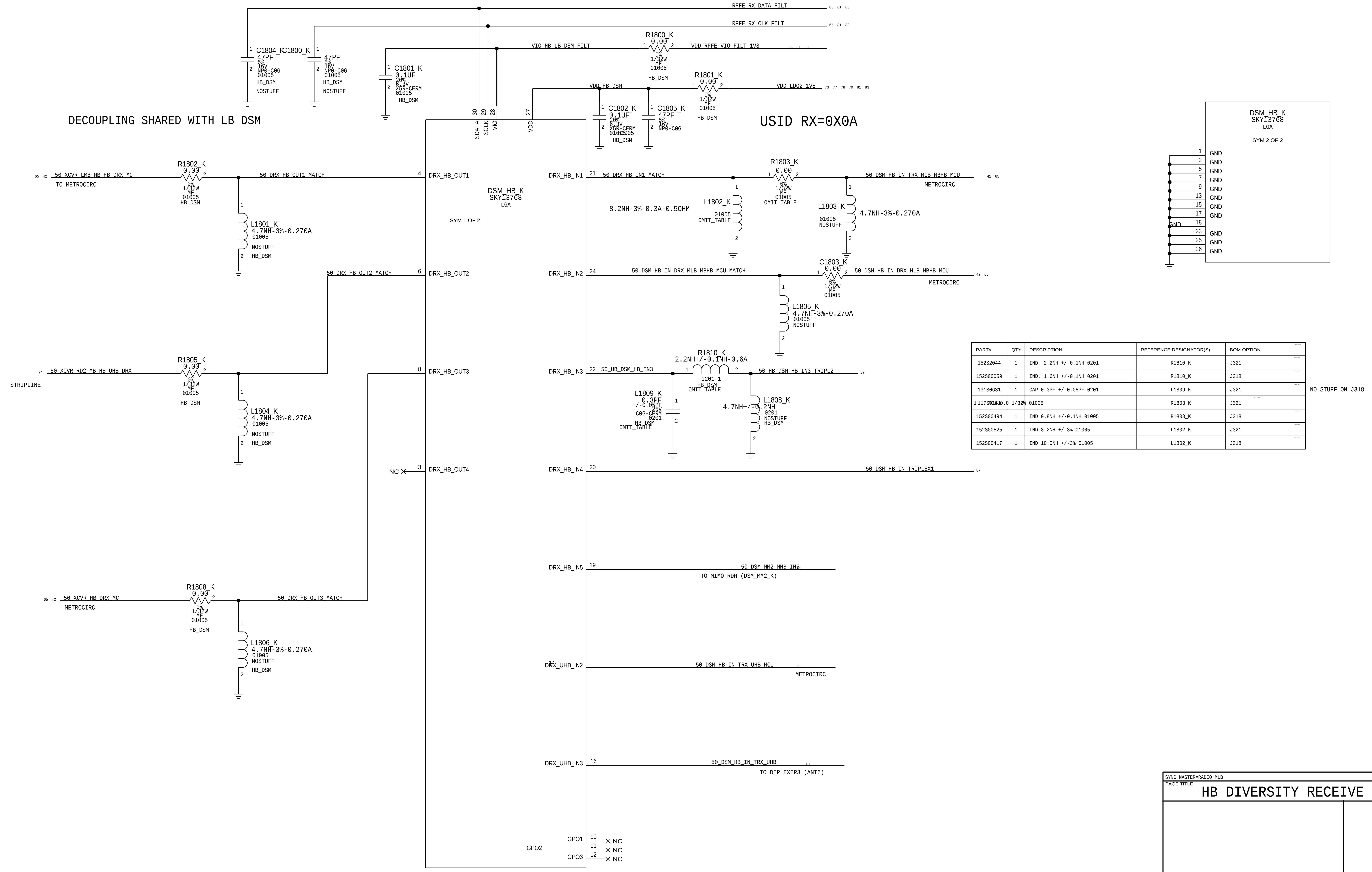
PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION	
353S01301	1	SKY13765 B28	DSM_LB_K	J321_JP	ICE18.5 JP
353S01301	1	SKY13765 B28	DSM_LB_K	J318_JP	ICE18.6 JP
1353S01472		SKY13785 B71	DSM_LB_K	J321_US	ICE18.5 US
1353S01472		SKY13785 B71	DSM_LB_K	J318_US	ICE18.6 US

SYNC_MASTER=RADIO_MLB SYNC_DATE=04/12/2018

PAGE TITLE

LB DIVERSITY RECEIVE LNA

HB DIVERSITY RECEIVE LNA



RFFE_RX_DATA_FILT 65 81 83
RFFE_RX_CLK_FILT 65 81 83
VIO_HB_LB_DSM_FILT
R1800_K 0.00 0% 1/32W MF 01005 HB_DSM
VDD_RFFE_VIO_FILT_1V8 65 81 83
C1804_K 47PF 5% 16V NP0-C0G 01005 HB_DSM NOSTUFF
C1800_K 47PF 5% 16V NP0-C0G 01005 HB_DSM NOSTUFF
C1801_K 0.1UF 20% 6.3V X5R-CERM 01005 HB_DSM
VDD_HB_DSM
R1801_K 0.00 0% 1/32W MF 01005 HB_DSM
VDD_LDO2_1V8 73 77 78 79 81 83
C1802_K 0.1UF 20% 6.3V X5R-CERM 0100501005 HB_DSM
C1805_K 47PF 5% 16V NP0-C0G
DECOUPLING SHARED WITH LB DSM
USID RX=0X0A
SDATA SCLK VIO VDD
DSM_HB_K SKY13768 LGA
SYM 1 OF 2
DRX_HB_OUT1 DRX_HB_OUT2 DRX_HB_OUT3 DRX_HB_OUT4
DRX_HB_IN1 DRX_HB_IN2 DRX_HB_IN3 DRX_HB_IN4 DRX_HB_IN5 DRX_UHB_IN2 DRX_UHB_IN3
GPO1 GPO2 GPO3
NC
65 42 50_XCVR_LMB_MB_HB_DRX_MC
TO METROCIRC
R1802_K 0.00 0% 1/32W MF 01005 HB_DSM
50_DRX_HB_OUT1_MATCH
L1801_K 4.7NH-3%-0.270A 01005 NOSTUFF HB_DSM
50_DRX_HB_OUT2_MATCH
74 50_XCVR_RD2_MB_HB_UHB_DRX
STRIPLINE
R1805_K 0.00 0% 1/32W MF 01005 HB_DSM
L1804_K 4.7NH-3%-0.270A 01005 NOSTUFF HB_DSM
65 42 50_XCVR_HB_DRX_MC
METROCIRC
R1808_K 0.00 0% 1/32W MF 01005 HB_DSM
50_DRX_HB_OUT3_MATCH
L1806_K 4.7NH-3%-0.270A 01005 NOSTUFF HB_DSM
50_DRX_HB_IN1_MATCH
8.2NH-3%-0.3A-0.5OHM
L1802_K 01005 OMIT_TABLE
R1803_K 0.00 0% 1/32W MF 01005 OMIT_TABLE
L1803_K 4.7NH-3%-0.270A 01005 NOSTUFF
50_DSM_HB_IN_TRX_MLB_MBHB_MCU 42 65
METROCIRC
50_DSM_HB_IN_DRX_MLB_MBHB_MCU_MATCH
C1803_K 0.00 0% 1/32W MF 01005
50_DSM_HB_IN_DRX_MLB_MBHB_MCU 42 65
METROCIRC
L1805_K 4.7NH-3%-0.270A 01005 NOSTUFF
50_HB_DSM_HB_IN3
R1810_K 2.2NH+/-0.1NH-0.6A 0201-1 HB_DSM OMIT_TABLE
50_HB_DSM_HB_IN3_TRIPL2 87
L1809_K 0.3PF +/-0.05PF 25V C0G-CERM 0201 HB_DSM OMIT_TABLE
L1808_K 4.7NH+/-0.2NH 0201 NOSTUFF HB_DSM
50_DSM_HB_IN_TRIPLEX1 87
50_DSM_MM2_MHB_IN5 83
TO MIMO RDM (DSM_MM2_K)
50_DSM_HB_IN_TRX_UHB_MCU 85
METROCIRC
50_DSM_HB_IN_TRX_UHB 87
TO DIPLEXER3 (ANT6)
DSM_HB_K SKY13768 LGA
SYM 2 OF 2
GND

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
152S2044	1	IND, 2.2NH +/-0.1NH 0201	R1810_K	J321
152S00059	1	IND, 1.6NH +/-0.1NH 0201	R1810_K	J318
131S0631	1	CAP 0.3PF +/-0.05PF 0201	L1809_K	J321
117S0161	1	RES 0.0 1/32W 01005	R1803_K	J321
152S00494	1	IND 0.8NH +/-0.1NH 01005	R1803_K	J318
152S00525	1	IND 8.2NH +/-3% 01005	L1802_K	J321
152S00417	1	IND 10.0NH +/-3% 01005	L1802_K	J318

NO STUFF ON J318

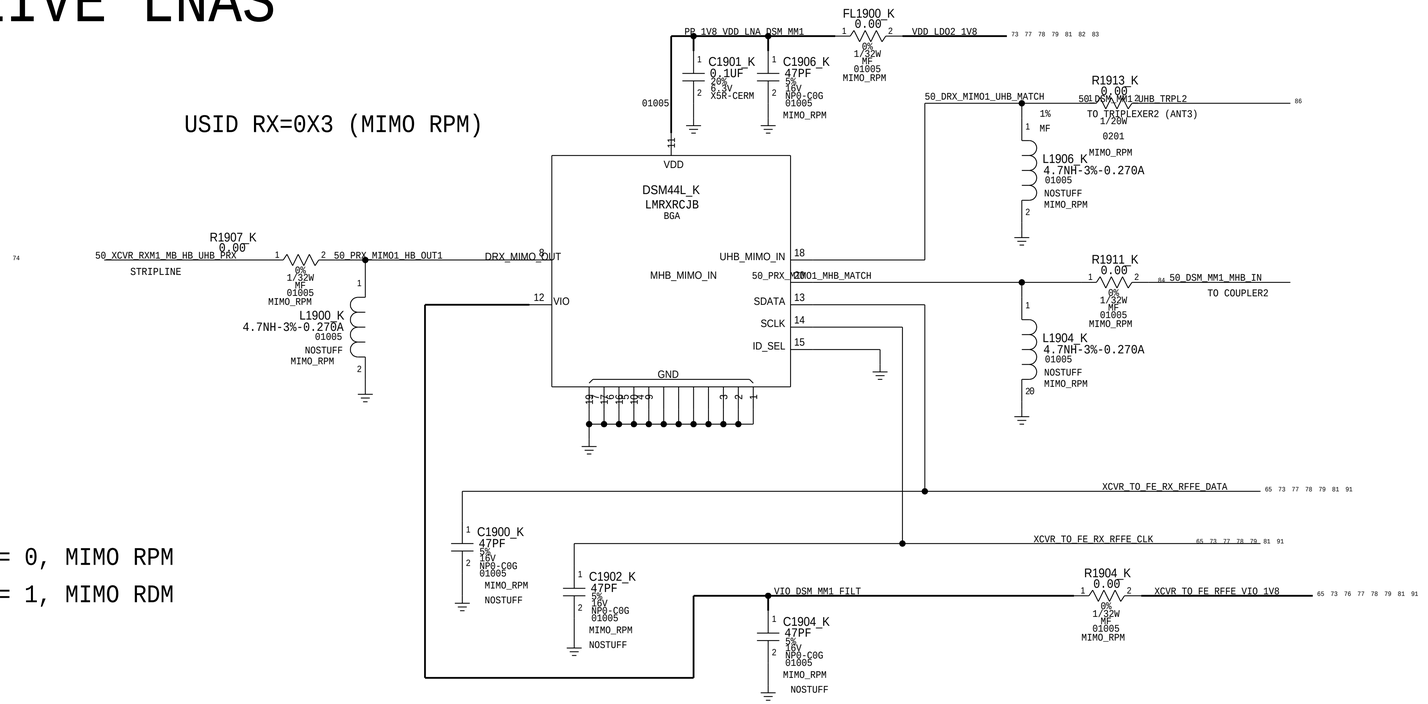
SYNC_MASTER=RADIO_MLB SYNC_DATE=04/12/2018

PAGE TITLE

HB DIVERSITY RECEIVE LNA

MIMO RECEIVE LNAS

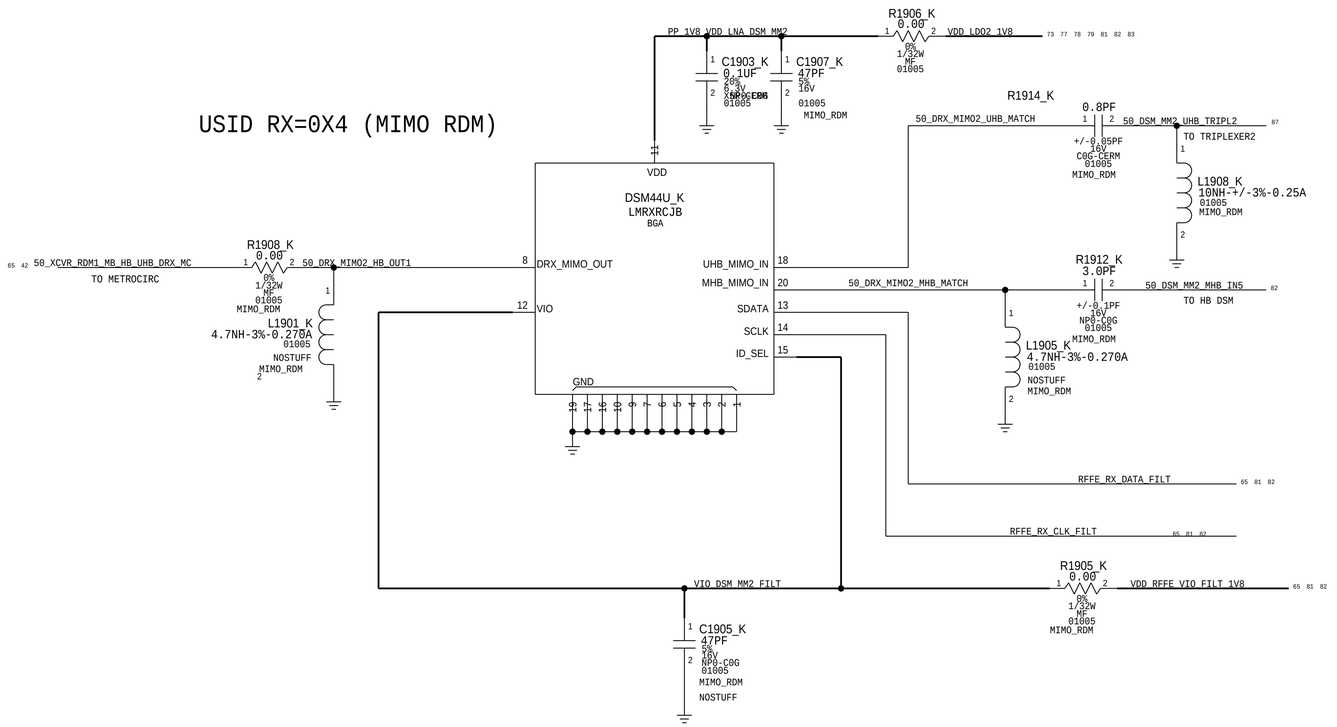
USID RX=0X3 (MIMO RPM)



ID_SEL = 0, MIMO RPM

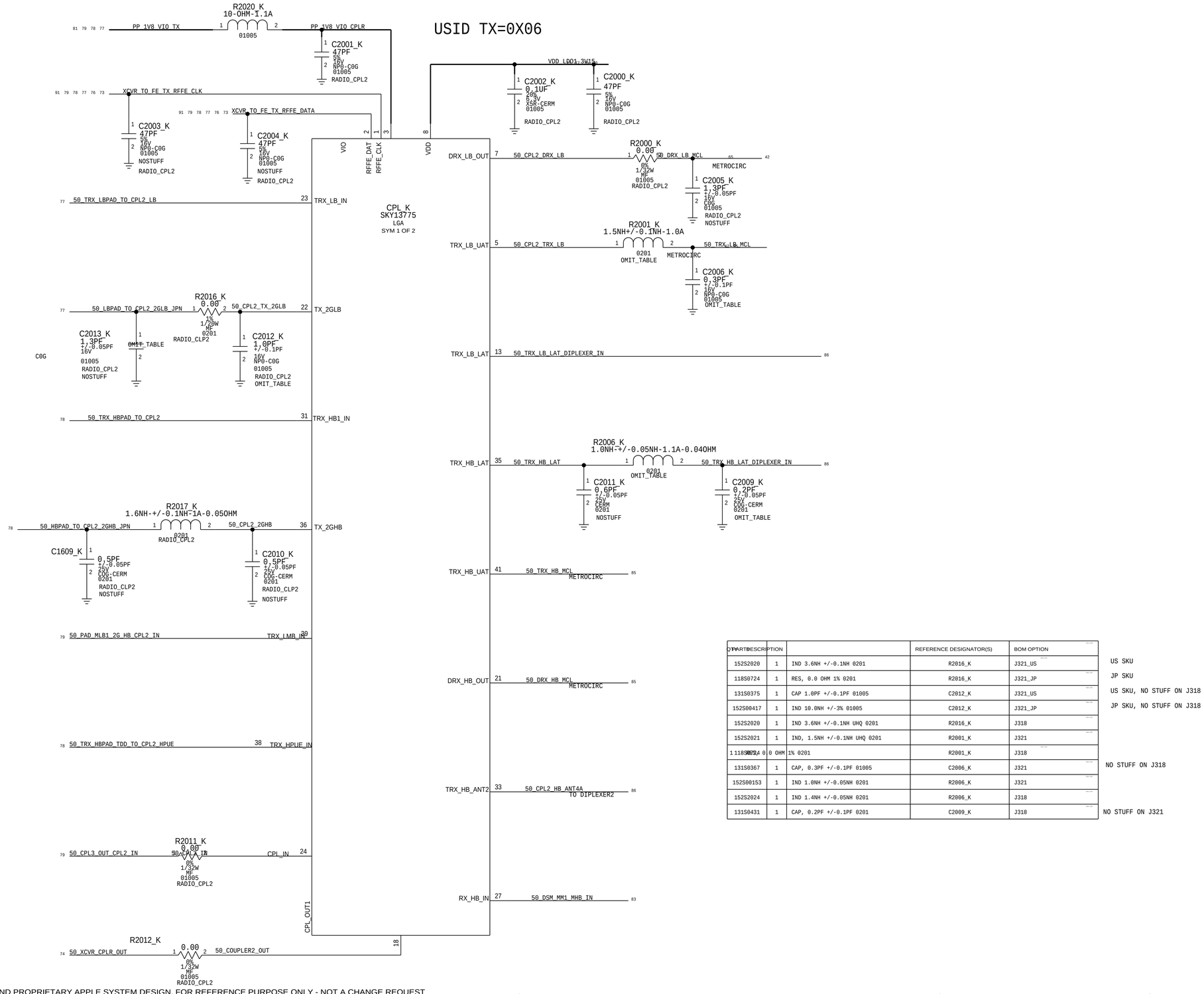
ID_SEL = 1, MIMO RDM

USID RX=0X4 (MIMO RDM)



SYNC_MASTER=RADIO_MLB	SYNC_DATE=04/12/2018
PAGE TITLE	MIMO RECEIVE LNAS

LOWER ANTENNA AND COUPLER

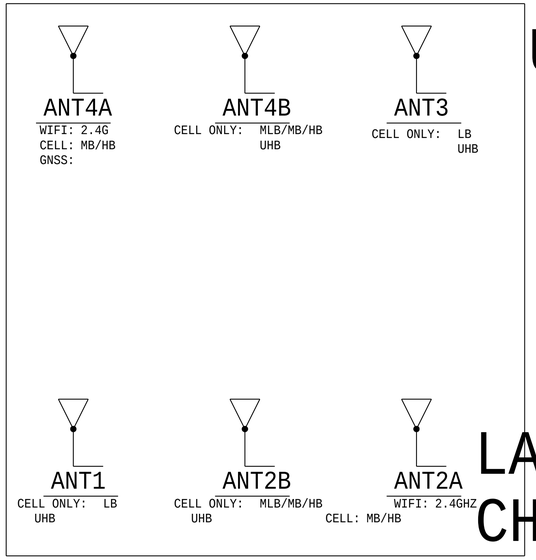


QTY	PART DESCRIPTION		REFERENCE DESIGNATOR(S)	BOM OPTION	
152S2020	1	IND 3.6NH +/-0.1NH 0201	R2016_K	J321_US	US SKU
118S0724	1	RES, 0.0 OHM 1% 0201	R2016_K	J321_JP	JP SKU
131S0375	1	CAP 1.0PF +/-0.1PF 01005	C2012_K	J321_US	US SKU, NO STUFF ON J318
152S00417	1	IND 10.0NH +/-3% 01005	C2012_K	J321_JP	JP SKU, NO STUFF ON J318
152S2020	1	IND 3.6NH +/-0.1NH UHQ 0201	R2016_K	J318	
152S2021	1	IND, 1.5NH +/-0.1NH UHQ 0201	R2001_K	J321	
118S0724	1	RES, 0.0 OHM 1% 0201	R2001_K	J318	
131S0367	1	CAP, 0.3PF +/-0.1PF 01005	C2006_K	J321	NO STUFF ON J318
152S00153	1	IND 1.0NH +/-0.05NH 0201	R2006_K	J321	
152S2024	1	IND 1.4NH +/-0.05NH 0201	R2006_K	J318	
131S0431	1	CAP, 0.2PF +/-0.1PF 0201	C2009_K	J318	NO STUFF ON J321

SYNC_MASTER=RADIO_MLB SYNC_DATE=04/12/2018

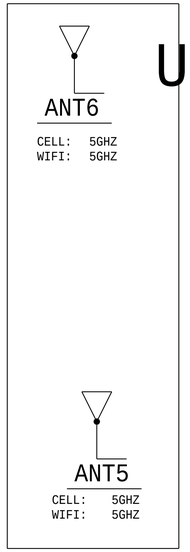
PAGE TITLE

LOWER ANTENNA & COUPLER



UAT PRIMARY FOREHEAD

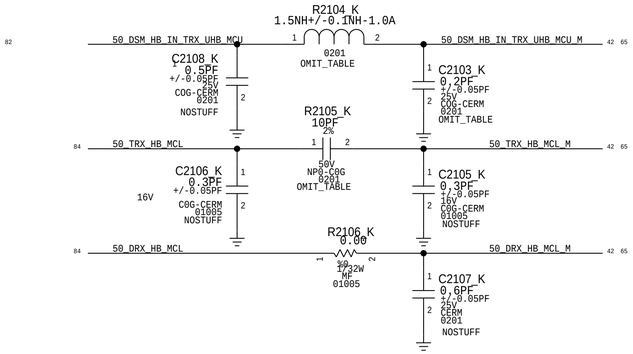
LAT DIVERSITY CHIN



UPPER LAA

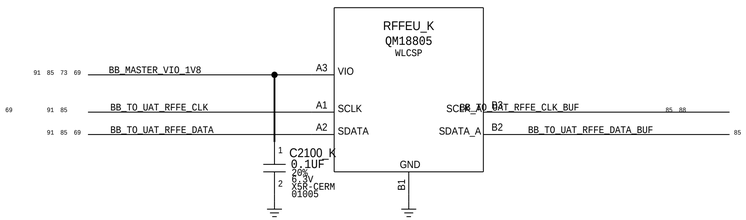
LOWER LAA

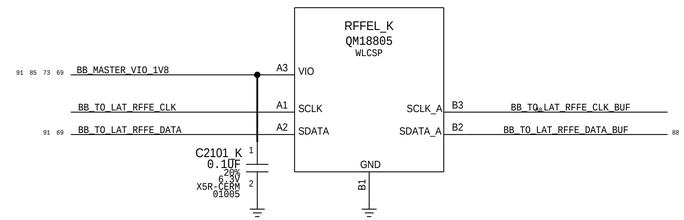
METROCIRC MATCHING

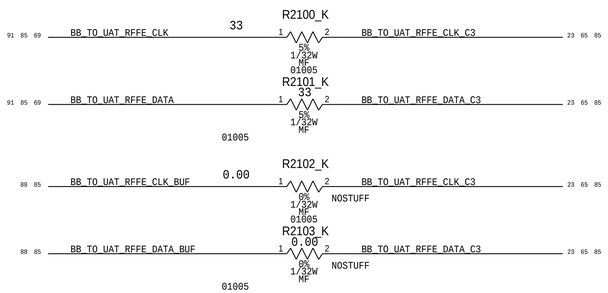


PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION	
152S2021	1	IND 1.5NH +/-0.05NH 0201	R2104_K	J321	
152S00153	1	IND 1.0NH +/-0.05NH 0201	R2104_K	J318	
131S0431	1	CAP 0.2PF +/-0.05PF 0201	C2103_K	J321	NO STUFF ON J318
131S00115	1	CAP 10.0PF +/-2% 0201	R2105_K	J321	
118S0724	1	RES 0.0 1/20W 0201	R2105_K	J318	

TUNER RFFE BUFFERS



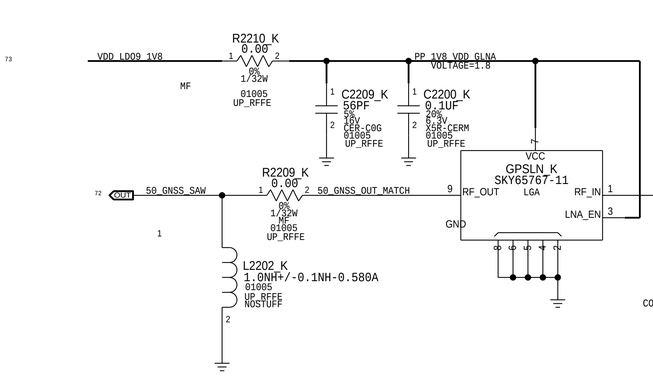




SYNC_MASTER=RADIO_MLB	SYNC_DATE=04/12/2018
PAGE TITLE	
ANTENNAS	

UPPER ANTENNA FEED

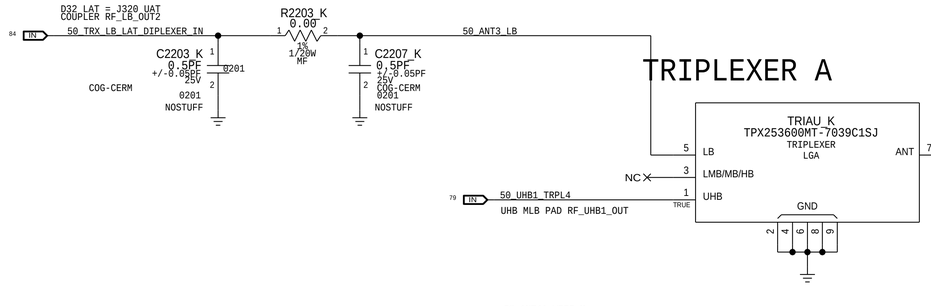
GPS LNA



PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
152S2042	1	IND, 1.8NH +/-0.1NH UHQ 0201	R2213_K	J321
152S00157	1	IND, 1.2NH +/-0.05NH UHQ 0201	R2213_K	J318
131S0363	1	IND, 1.2NH +/-0.05NH UHQ 0201	C2206_K	J321
152S2042	1	IND 1.8NH +/-0.1NH 0201	R2214_K	J321
152S2024	1	IND 1.4NH +/-0.1NH 0201	R2214_K	J318

NO STUFF ON J318

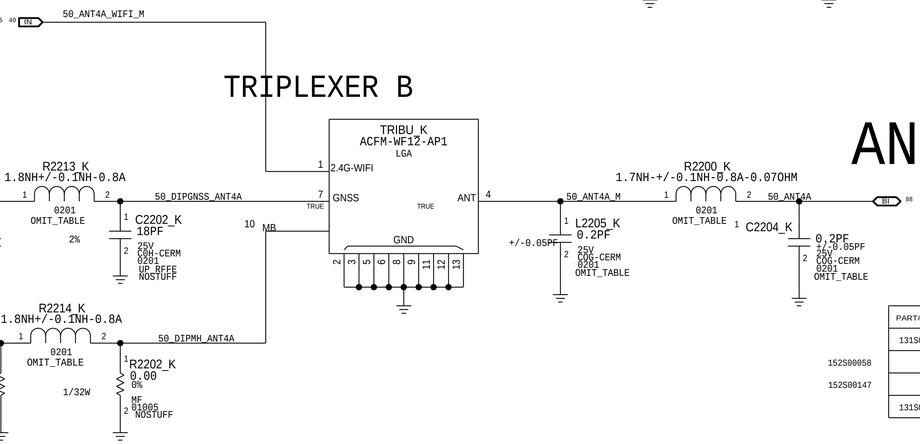
TRIPLEXER A



ANT3

PART#	QTY		DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
152S00153	1		IND, 1.0NH +/-0.05NH 0201	L2201_K	J321
	152S00059	1	IND, 1.6NH +/-0.1NH 0201	L2201_K	J318

TRIPLEXER B



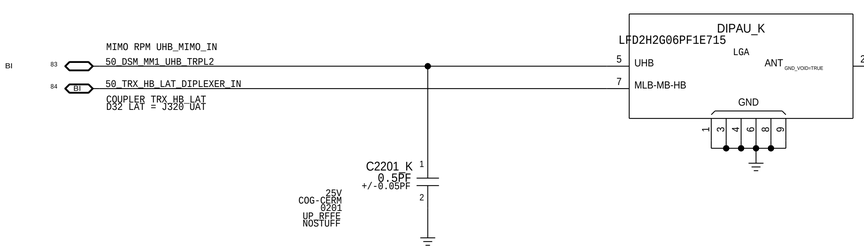
ANT4A

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
131S0431	1	CAP, 0.2PF +/-0.05PF 0201	L2205_K	J321
152S00058	1	IND, 1.7NH +/-0.1NH UHQ 0201	R2200_K	J321
152S00147	1	IND, 0.6NH +/-0.05NH UHQ 0201	R2200_K	J318
131S0431	1	CAP 0.2PF +/-0.05PF 0201	C2204_K	J318

NO STUFF ON J318

NO STUFF ON J321

DIPLEXER A



ANT4B

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
131S0329	1	CAP, 0.4PF +/-0.05PF 0201	R2207_K	J318
118S0724	1	RES, 0.0 OHM 0201	R2217_K	J321
152S2042	1	IND, 1.8NH +/-0.1NH UHQ 0201	R2217_K	J318

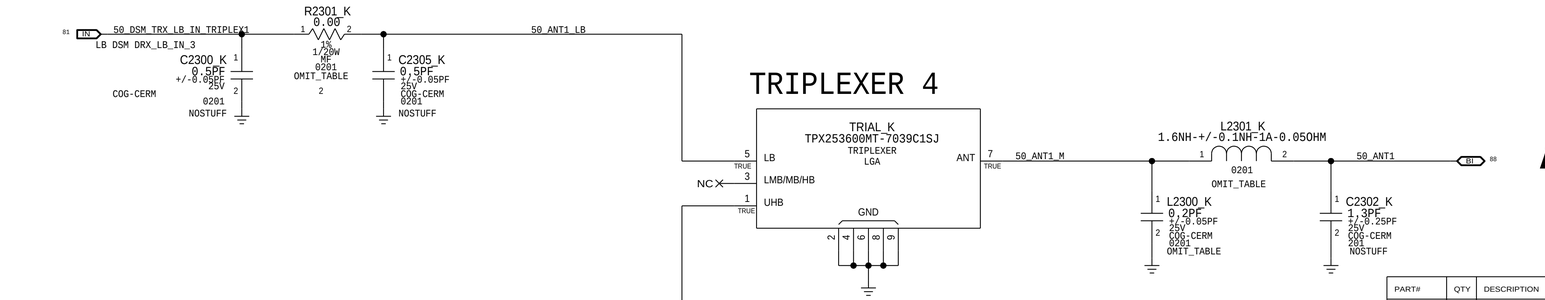
NO STUFF ON J321

SYNC_MASTER=RADIO_MLB SYNC_DATE=04/12/2018

PAGE TITLE

ANTENNA: UAT FEED

LOWER ANTENNA FEED



PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION	
152S00059	1	IND, 1.6NH +/-0.1NH UHQ 0201	L2301_K	J321	
152S2042	1	IND, 1.8NH +/-0.1NH UHQ 0201	L2301_K	J318	
131S0431	1	CAP 0.2PF +/-0.05PF 0201	L2300_K	J318	NO STUFF ON J321

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION	
131S0431	1	CAP, 0.5PF +/-0.05PF 0201	L2303_K	J321	NO STUFF ON J318
152S00058	1	IND, 1.7NH +/-0.1NH UHQ 0201	R2300_K	J321	
1 152S2024		IND, 1.4NH +/-0.1NH UHQ 0201	R2300_K	J318	
1 131S0893		CAP 0.2PF +/-0.05PF 01005	C2301_K	J318	NO STUFF ON J321
131S0368	1	CAP 0.4PF +/-0.1PF 01005	C2303_K	J318	NO STUFF ON J321

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION	
131S0329	1	CAP, 0.4PF +/-0.05PF 0201	R2307_K	J321	NO STUFF ON J318
152S2051	1	IND, 1.3NH +/-0.1NH UHQ 0201	R2314_K	J321	
152S00150	1	IND, 0.7NH +/-0.1NH UHQ 0201	R2314_K	J318	

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION	
118S0724	1	RES, 0.0 OHM 1% 0201	R2301_K	J321	
1152S00015		IND, 2.1NH +/-0.1NH UHQ 0201	R2301_K	J318	NO STUFF ON J321
152S00496	1	IND 0.6NHNH +/-0.1NH 01005	R2323_K	J321	
152S00492	1	IND 1.0NH +/-0.05NH 01005	R2323_K	J318	
152S00424	1	IND 1.7NH +/-0.1NH 01005	L2315_K	J321	
152S00422	1	IND 1.5NH +/-0.1NH 01005	L2315_K	J318	

SYNC_MASTER=RADIO_MLB SYNC_DATE=04/12/2018

PAGE TITLE

ANTENNA: LAT FEED

ANTENNA MLC

UAT

FL2403_K
150OHM-25%-200MA-0.7DCR
88 65 59 23 PP1V8_S2_EXT_SW2 — 1 — 01005-2 — 2 — PP_TUNER_1V8_UAT_B2B 88
C2400_K 220PF 5% 16V C0G 01005

FL2402_K
150OHM-25%-200MA-0.7DCR
88 65 59 23 PP3V0_S2_MISC — 1 — 01005-2 — 2 — PP_TUNER_3V0_UAT_B2B 88
C2403_K 220PF 5% 16V C0G 01005

JUAT_K
MM3929-2700A10
M-ST-SM1

86	50_ANT4A	1	GND_VOID=TRUE
		2	
88	PP_TUNER_1V8_UAT_B2B	3	
88	BB_TO_UAT_RFFE_DATA_B2B	4	
88	BB_TO_UAT_RFFE_CLK_B2B	5	
88	PP_TUNER_3V0_UAT_B2B	6	
		7	
86	50_ANT4B	8	GND_VOID=TRUE
		9	
86	50_ANT3	10	GND_VOID=TRUE
		11	
		12	

RFFE FILTERS

R2402_K 0.00 0% 1/32W MF 01005
85 BB_TO_UAT_RFFE_CLK_BUF — 1 — 2 — BB_TO_UAT_RFFE_CLK_B2B 88
C2404_K 33PF 5% 16V NP0-C0G-CERM 01005 NOSTUFF

R2403_K 0.00 0% 1/32W MF 01005
85 BB_TO_UAT_RFFE_DATA_BUF — 1 — 2 — BB_TO_UAT_RFFE_DATA_B2B 88
C2405_K 33PF 5% 16V NP0-C0G-CERM 01005 NOSTUFF

LAT

FL2400_K
150OHM-25%-200MA-0.7DCR
88 65 59 23 PP1V8_S2_EXT_SW2 — 1 — 01005-2 — 2 — PP_TUNER_1V8_LAT_B2B
C2401_K 220PF 5% 16V C0G 01005

FL2401_K
150OHM-25%-200MA-0.7DCR
88 65 59 23 PP3V0_S2_MISC — PP_TUNER_3V0_LAT_B2B — 1 — 01005-2 — 2
C2402_K 220PF 5% 16V C0G 01005

JLAT_K
MM3929-2700A10
M-ST-SM1

50_ANT2A	87	1	GND_VOID=TRUE
		2	
87	50_ANT2B	3	GND_VOID=TRUE
		4	
88	PP_TUNER_3V0_LAT_B2B	5	
88	BB_TO_LAT_RFFE_CLK_B2B	6	
88	BB_TO_LAT_RFFE_DATA_B2B	7	
88	PP_TUNER_1V8_LAT_B2B	8	
		9	
87	50_ANT1	10	GND_VOID=TRUE
		11	
		12	

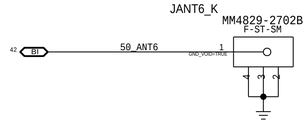
RFFE FILTERS

R2400_K 0.00 0% 1/32W MF 01005 UAT_GPO
85 BB_TO_LAT_RFFE_CLK_BUF — 1 — 2 — BB_TO_LAT_RFFE_CLK_B2B 88
C2406_K 33PF 5% 16V NP0-C0G-CERM 01005 NOSTUFF

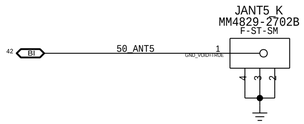
R2401_K 0.00 0% 1/32W MF 01005 UAT_GPO
85 BB_TO_LAT_RFFE_DATA_BUF — 1 — 2 — BB_TO_LAT_RFFE_DATA_B2B 88
C2407_K 33PF 5% 16V NP0-C0G-CERM 01005 NOSTUFF

SYNC_MASTER=RADIO_MLB SYNC_DATE=04/12/2018
PAGE TITLE
ANTENNA: MLC

ANT6 (UPPER)



ANT5 (LOWER)



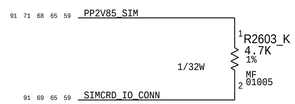
SYNC_MASTER=RADIO_MLB SYNC_DATE=04/12/2018

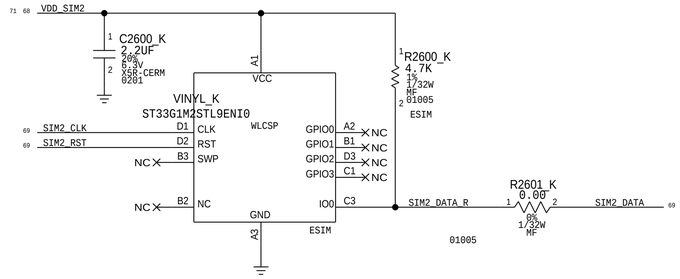
PAGE TITLE

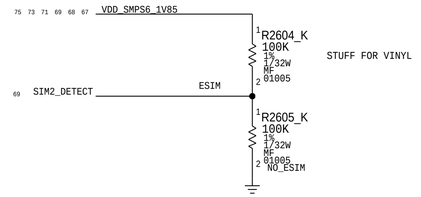
ANTENNA: LAA

SIM

VINYL







SYNC_MASTER=RADIO_MLB	SYNC_DATE=04/12/2018
PAGE TITLE	
SIM/VINYL	

DEBUG: TEST POINTS

DEBUG

PP2450_K P4MM-SM 1 PP — BB_DEBUG_ERROR — 69
PP24C0_K P4MM-SM 1 PP — BB_JTAG_TDO — 70 91
PP24C1_K P4MM-SM 1 PP — BB_JTAG_TDI — 70 91
PP2401_K P4MM-SM 1 PP — BBPMU_TO_BB_MEAS_RDY — 67 69

I2S

PP24A1_K P4MM-SM 1 PP — I2S_BB_TO_AP_SCLK — 69
PP24A2_K P4MM-SM 1 PP — I2S_BB_TO_AP_LRCLK_WS — 69
PP24A3_K P4MM-SM 1 PP — I2S_AP_TO_BB_DOUT — 69
PP24A4_K P4MM-SM 1 PP — I2S_BB_TO_AP_DOUT — 69

VDIO

PP24E7_K P4MM-SM 1 PP — BBPMU_ANAMON — 67
PP2411_K P4MM-SM 1 PP — BB_TO_BBPMU_VDIO — 67 69
PP2422_K P4MM-SM 1 PP — BB_TO_BBPMU_VCLK — 69 — 67
PP2409_K P4MM-SM 1 PP — BBPMU_TO_BB_ALERT_L — 67 69

POWER-KEEPING

P4MM
PP2497_K SM 1 PP — GPIO_SOC_TO_BB_SDWN_L — 59 65 67
PP2410_K P4MM-SM 1 PP — BB_TO_XCVR_RESET_L — 69 73
PP24A9_K P4MM-SM 1 PP — BB_TO_BBPMU_SDWN_L — 67 69
SM
PP2425_K P4MM-SM 1 PP — BBPMU_TO_BB_RESET_L — 67 69

CLKS

PP24E0_K P4MM-SM 1 PP — APSYSTEM_TO_BBPMU_CLK_EN — 67
PP2427_K P4MM-SM 1 PP — NFC_TO_BBPMU_CLK_EN — 67
PP2429_K P4MM-SM 1 PP — CLK_BBPMU_TO_BB_38MHZ — 67 69
PP2483_K P4MM-SM 1 PP — CLK_BBPMU_TO_NFC_38MHZ — 72
PP2485_K P4MM-SM 1 PP — CLK_BBPMU_TO_XCVR_38MHZ — 67 73
PP24E1_K P4MM-SM 1 PP — CLK_BBPMU_TO_APSYSTEM_38MHZ — 67

AOP UART

PP24E5_K P4MM-SM 1 PP — UART_BB_TO_AOP_TX — 59 65 69
PP24E6_K P4MM-SM 1 PP — UART_AOP_TO_BB_TX — 59 65 69

P4MM PP
PP24E9_K SM 1 PP — UART_BBPMU_TO_GNSS_1W — 72 — 67
PP24F2_K P4MM-SM 1 PP — PMU_1PIN_BOOT_STRAP — 67
PP24F5_K P4MM-SM 1 PP — BB_RESET2_L_TEST — 69
PP24F4_K P4MM-SM 1 PP — TESTPOINT_BBPMU_GPIO5 — 67
PP2702_K P4MM-SM 1 PP — MIPI_PTI1_DATA11 — 70

VENDOR REQUESTED 7/28/17

GNSS

PP24E4_K P4MM-SM 1 PP — GNSS_DWB_IRQ — 69 73
PP24A6_K P4MM-SM 1 PP — GPIO_SOC_TO_BB_GPS_SYNC — 59 65 72
PP2419_K P4MM-SM 1 PP — GNSS_TO_BBPMU_LNA_EN — 67 72

I2C

PP24E2_K P4MM-SM 1 PP — I2C_BB_EEPROM_SDA — 69
PP24E3_K P4MM-SM 1 PP — I2C_BB_EEPROM_SCL — 69
PP2713_K P4MM-SM 1 PP — BB_TO_BBPMU_RP_SDA — 67 69
PP2714_K P4MM-SM 1 PP — BB_TO_BBPMU_RP_SCL — 67 69

COEXISTENCE

PP24A5_K P4MM-SM 1 PP — GPIO_BB_TO_STROBE_GSM_BURST_IND — 59 65 70
PP2412_K P4MM-SM 1 PP — GPIO_SOC_TO_KONA_DISPLAY_BSYNC1 — 59 65
SM 1
PP2498_K P4MM-SM PP — TESTPOINT_BBPMU_GPIO3 — 68

ET

P4MM
PP2434_K P4MM-SM 1 PP — 50_ET_DAC_P — 72 76
PP2435_K SM 1 PP — 50_ET_DAC_N — 72 76

PP2706_K P4MM-SM 1 PP — GPIO_BB_TO_PMU_HOST_WAKE_L — 59 65 69
PP2700_K P4MM-SM 1 PP — GPIO_BB_TO_SOC_RESET_DET_L — 59 65 69
PP2701_K P4MM-SM 1 PP — GPIO_SOC_TO_BB_COREDUMP — 59 65 69
PP2703_K P4MM-SM 1 PP — BBPMU_TO_BB_PWRGOOD — 67 69
PP2704_K P4MM-SM 1 PP — CLK_BBPMU_32KHZ — 67 69 72
PP2705_K P4MM-SM 1 PP — GPIO_BB_GPS_TO_SOC_LOW_PWR_IND — 59 65 72

PP2707_K P4MM-SM 1 PP — PCIE_BB_TO_SOC_CLKREQ_L — 59 65 69
PP2708_K SM 1 PP — PCIE_SOC_TO_BB_RESET_L — 59 65 69 75
PP2709_K P4MM-SM 1 PP — BB_TO_BBPMU_CLK_EN — 67 69
PP2710_K P4MM-SM 1 PP — GNSS_TO_BBPMU_CLK_EN — 67 72
PP2711_K SM 1 PP — BB_TO_BBPMU_STBY — 67 69
PP2712_K P4MM-SM 1 PP — BBPMU_TO_BB_RESET_SD_L — 67 69

DIGRF

PP24B0_K P2MM-NSM SM 1 PP — 90_DIGRF_LO_TX_P — 69 73
PP24B1_K P2MM-NSM SM 1 PP — 90_DIGRF_LO_TX_N — 69 73
PP24B2_K P2MM-NSM SM 1 PP — 90_DIGRF_LO_RX_P — 69 73
PP24B3_K P2MM-NSM SM 1 PP — 90_DIGRF_LO_RX_N — 69 73
PP24B4_K P2MM-NSM SM 1 PP — 90_DIGRF_HI_TX_P — 69 73
PP24B5_K P2MM-NSM SM 1 PP — 90_DIGRF_HI_TX_N — 69 73
PP24B6_K P2MM-NSM SM 1 PP — 90_DIGRF_HI_RX1_P — 69 73
PP24B7_K P2MM-NSM SM 1 PP — 90_DIGRF_HI_RX1_N — 69 73
PP24D0_K P2MM-NSM SM 1 PP — 90_DIGRF_HI_RX2_P — 69 73
PP24D1_K P2MM-NSM SM 1 PP — 90_DIGRF_HI_RX2_N — 69 73
PP24D2_K P2MM-NSM SM 1 PP — 90_DIGRF_HI_RX3_P — 69 73
PP24D3_K P2MM-NSM SM 1 PP — 90_DIGRF_HI_RX3_N — 69 73
PP24D5_K P2MM-NSM SM 1 PP — 90_DIGRF_HI_RX4_P — 69 73
PP24D6_K P2MM-NSM SM 1 PP — 90_DIGRF_HI_RX4_N — 69 73

LO
HI

BB RFFE

P4MM
PP2486_K P4MM-SM 1 PP — BB_TO_UAT_RFFE_DATA — 69 85
PP2487_K SM 1 PP — BB_TO_UAT_RFFE_CLK — 69 85
PP2488_K P4MM-SM 1 PP — BB_TO_LAT_RFFE_CLK — 69 85
PP2489_K P4MM-SM 1 PP — BB_TO_LAT_RFFE_DATA — 69 85
PP24A7_K P4MM-SM 1 PP — BB_TO_XCVR_DWB_CLK — 69 73
PP24A8_K P4MM-SM 1 PP — BB_TO_XCVR_DWB_DATA — 69 73
PP24E0_K P4MM-SM 1 PP — BB_MASTER_VIO_1V8 — 69 73 85

XCVR RFFE

PP24E8_K P4MM-SM XCVR_TO_FE_RFFE_VIO_1V8 — 66 73 74 77 78 79 83 85
PP2467_K P4MM-SM 1 PP — BB_TO_XCVR_RFFE_DATA — 69 73
PP2468_K P4MM-SM 1 PP — BB_TO_XCVR_RFFE_CLK — 69 73
PP2469_K P4MM-SM XCVR_TO_BB_RFFE_DATA — 69 73
PP2470_K P4MM-SM 1 PP — XCVR_TO_BB_RFFE_CLK — 69 73
PP2471_K P4MM-SM 1 PP — XCVR_TO_FE_TX_RFFE_DATA — 73 76 77 78 79 84
PP2472_K P4MM-SM XCVR_TO_FE_TX_RFFE_CLK — 73 76 77 78 79 84
PP2473_K P4MM-SM 1 PP — XCVR_TO_FE_RX_RFFE_DATA — 65 73 77 78 79 83 85
PP2474_K P4MM-SM 1 PP — XCVR_TO_FE_RX_RFFE_CLK — 65 73 77 78 79 83 85

DEBUG CONNECTOR

MLB 516S1185
FLEX 516S1184

J_DEBUG
20-5857-036-001-829
F-ST-SM

91 76 68 65 59 43 41 40 PPVCC_MAIN — 41 — 37 — 38

91	USB_BB_VBUS	1	2	90_USB_BB_R_P	65 69
3	NC	4	5	90_USB_BB_R_N	65 69
NC		6	7	PP2V85_SIM	59 65 68 71 90
67 65 59	GPIO_APOLLO_TO_BBPMU_ON	8	9	SIMCRD_RST_CONN	59 65 69
65	PP1V8_S2_EXT_SW2	10	11	SIMCRD_CLK_CONN	59 65 69
91 70	BB_JTAG_TDO	12	13	SIMCRD_IO_CONN	59 65 69 90
91 70	BB_JTAG_TDI	14	15	NC	
75 70	BB_JTAG_TRST_L	16	17	SIM_TRAY_DETECT	59 65 69
69 65 59	GPIO_SOC_TO_BB_RESET_L	18	19	NC	
70 65 59	SWD_BB_SWCLK	20	21	UART_SOC_TO_BB_GPS_TX	59 65 72
70 65 59	SWD_BB_SWDIO	22	23	UART_BB_GPS_TO_SOC_RTS_L	59 65 72
91 76 68 65 59 43 41 40	PPVCC_MAIN	24	25	UART_BB_GPS_TO_SOC_TX	59 65 72
NC		26	27	UART_SOC_TO_BB_GPS_RTS_L	59 65 73
69	UART_BB_TO_AP_TXD	28	29	GPIO_APOLLO_TO_BB_GPS_EN	59 65 67 72
69	UART_AP_TO_BB_TXD	30	31	NC	
NC		32	33	UART_COEX_BB_TO_WLAN_TXD	65 69
		34	35	UART_COEX_WLAN_TO_BB_TXD	65 69
NC		36		NC	

23

39 — 42 — 40 NOSTUFF

USB_BB_VBUS — 91
R2700_K 20K 1% 1/32W MF 01005 — 1 — 2 — GPIO_PMU_TO_BB_VBUS_DET — 59 65 69
R2701_K 16K 1% 1/32W MF 01005 — 1 — 2

PCIE

PP2442_K P4MM-SM 1 PP — PCIE_SOC_TO_BB_TX_P — 59 65 69
PP2443_K P4MM-SM 1 PP — PCIE_SOC_TO_BB_TX_N — 59 65 69
PP2444_K P4MM-SM 1 PP — PCIE_SOC_TO_BB_REFCLK_P — 59 65 69
PP2445_K P4MM-SM 1 PP — PCIE_SOC_TO_BB_REFCLK_N — 59 65 69

SYNC_MASTER=RADIO_MLB
SYNC_DATE=04/12/2018