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.

J211: MLB-B

LAST_MODIFICATION=Sun Sep 30 23:08:21 2018

REV	ECN	DESCRIPTION OF REVISION	CK APPD / DATE
8	0014250029	ENGINEERING RELEASED	2018-09-30

SCH AND BOARD P/N

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
051-03977	1	SCHEM,MLB-B,NY,J211	SCH1	CRITICAL	
820-01495	1	PCBF,MLB-B,NY,J211	PCB1	CRITICAL	

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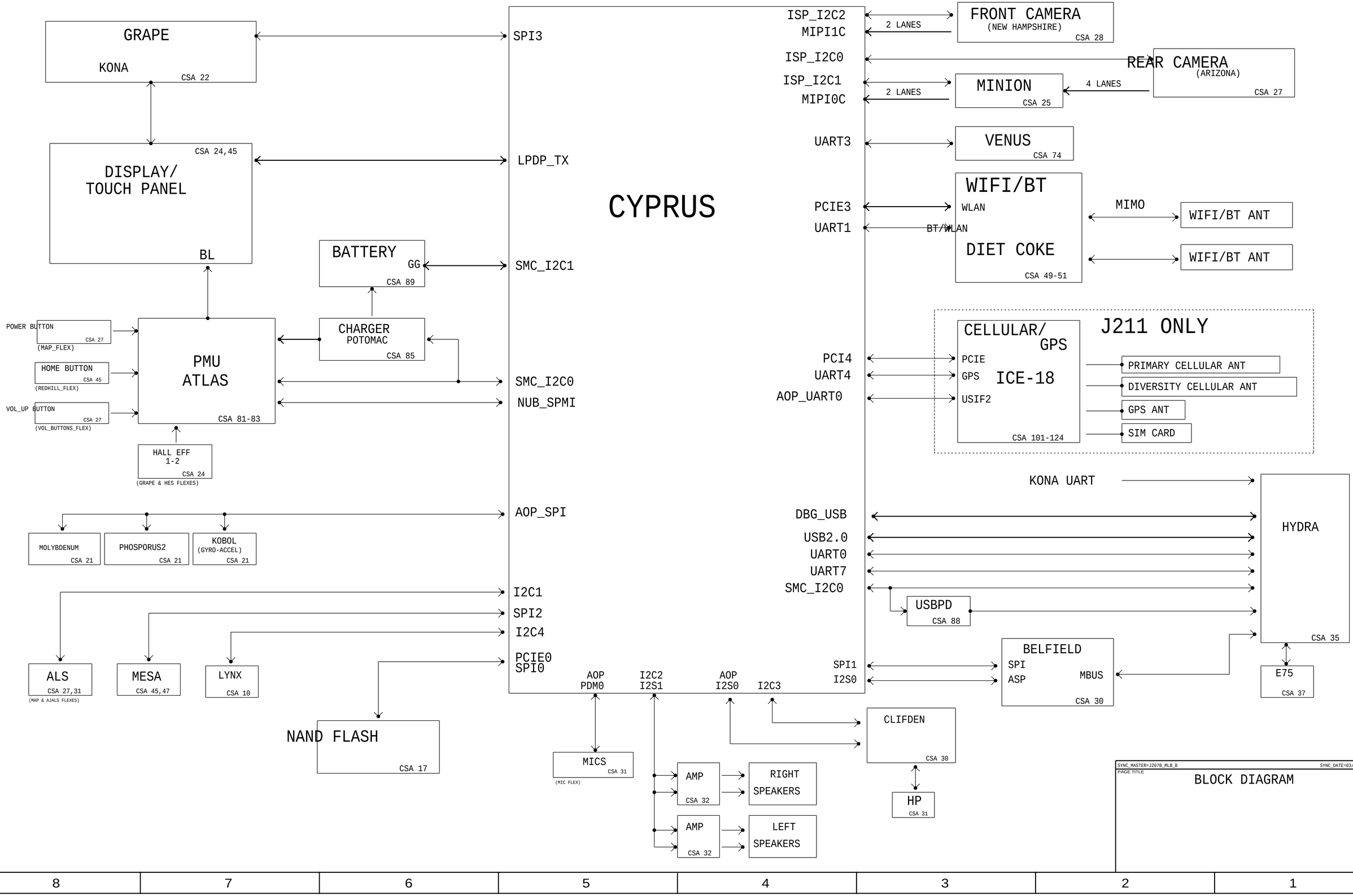
SYNC_MASTER=J207_MLB_B_ARUBA SYNC_DATE=03/05/2018

DRAWING TITLE

SCHEM,MLB-B,NY,J211


GRAPE
KONA
CSA 22
SPI3
DISPLAY/
TOUCH PANEL
CSA 24,45
BL
LPDP_TX
CYPRUS
BATTERY
GG
CSA 89
SMC_I2C1
POWER BUTTON
CSA 27
(MAP_FLEX)
HOME BUTTON
CSA 45
(REDHILL_FLEX)
VOL_UP BUTTON
CSA 27
(VOL_BUTTONS_FLEX)
PMU
ATLAS
CSA 81-83
CHARGER
POTOMAC
CSA 85
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CSA 21
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SPI2
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AOP
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CSA 32
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SPEAKERS
AMP
CSA 32
LEFT
SPEAKERS
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MIPI1C
2 LANES
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(NEW HAMPSHIRE)
CSA 28
ISP_I2C0
REAR CAMERA
(ARIZONA)
CSA 27
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MIPI0C
2 LANES
MINION
CSA 25
4 LANES
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CSA 74
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UART1
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AOP_UART0
CELLULAR/
GPS
PCIE
GPS
ICE-18
USIF2
CSA 101-124
PRIMARY CELLULAR ANT
DIVERSITY CELLULAR ANT
GPS ANT
SIM CARD
KONA UART
HYDRA
CSA 35
DBG_USB
USB2.0
UART0
UART7
SMC_I2C0
USBPD
CSA 88
SPI1
I2S0
BELFIELD
SPI
ASP
MBUS
CSA 30
E75
CSA 37
CLIFDEN
CSA 30
HP
CSA 31
SYNC_MASTER=J207B_MLB_B
SYNC_DATE=03/30/2018
PAGE TITLE
BLOCK DIAGRAM

CKPLUS WAIVE TABLE

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

ALTERNATES

	PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
	371S0730	371S00172			D82P0
155S00200		155S00400		FL2860	
	155S00194	155S00400			FL2860
	128S00067	128S00094			C81C0-2
	128S00069	128S00094			C81C0-2
	155S0755	155S00341			FL2700-2,FL4540,FL4710
	131S00172	131S00164			220PF,16V,01005
131S00173		131S00164		C2743,C2801,...	
	376S00159	376S00311			Q8061
	377S0116	377S00132			DZ3540
	138S00116	138S00071			C810D-E,...
	138S00117	138S00071			C810D-E,...
	138S00143	138S00144			C81A0-4,...
	138S00163	138S00144			C81A0-4,...
138S00138		138S00139		C133A-B,...	
	138S00164	138S00139			C133A-B,...
	138S00084	138S00060			C8563-69,...
	152S01037	152S00887			L8101-03,...
	132S00229	132S00010			C8555-57
152S00963		152S00885		L8190,A0	
	197S00120	197S00118			Y0600
	372S0194	372S0187			Q3790,Q8990
	376S00319	376S00104			Q2201
	376S00182	376S00126			Q8580
	155S0664	155S00018			FL2742,48,...

SOC

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
339S00544	1	POP,CYPRUS+3GB 18NM,B1,M,DEV,CSP1262	U0600	CRITICAL	

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
	339S00544	U0600		HYNIX
339S00545				
339S00546	339S00544		U0600	SAMSUNG

NAND

BEST FLASH CONFIGURATIONS (64GB)

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
335S00286	1	NAND,3DV3,64GBT,S4E,256G,SD,SLGA110	U1700	CRITICAL	BEST

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
335S00359	335S00286		U1700	TOSHIBA

ULTIMATE FLASH CONFIGURATIONS (128GB)

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
335S00357	1	NAND,3DV3,128GBT,S4E,256G,T,SLGA110	U1700	CRITICAL	ULTIMATE

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
335S00246	335S00357		U1700	WD

SUPREME FLASH CONFIGURATIONS (256GB)

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
335S00247	1	NAND,3DV3,256GBT,S4E,256G,SD,SLGA110	U1700	CRITICAL	SUPREME

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
335S00358	335S00247		U1700	TOSHIBA

EXTREME FLASH CONFIGURATIONS (512GB)

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
335S00339	1	NAND,3DV4,512GBT,S4E,512G,SD,SLGA110	U1700	CRITICAL	EXTREME

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
335S00343	335S00339		U1700	HYNIX

CCG2

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
341S01186	1	PRGM ASSY,IC,CCG2,FW,CYPRESS,V0.3,CSP20	U8809	CRITICAL	

SENSORS

KOBOL

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
338S00367	1	IC,KOBOL,BMI282AA,LGA16	U2150	CRITICAL	KOBOL

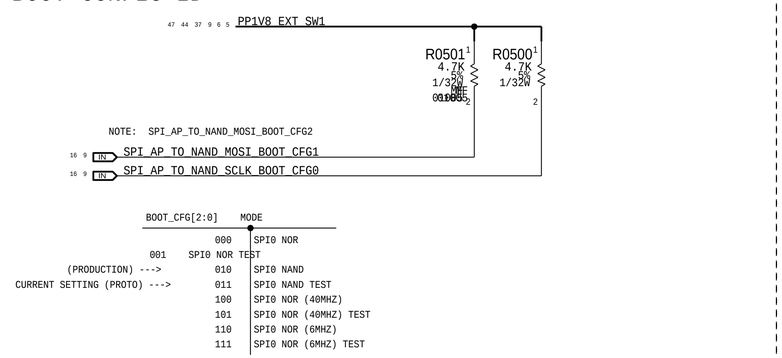
PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:

SYNC_MASTER=J217_MLB_B SYNC_DATE=04/09/2018

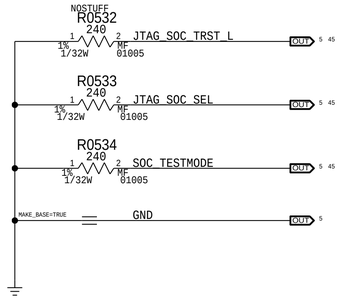
PAGE TITLE

BOM TABLES

BOOT CONFIG ID



BOOT_CFG[2:0]	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 (6MHZ)
111	SPI0 NOR (6MHZ) TEST



I2C0 — NOT USED

I2C1

DEVICE	8-BIT	7-BIT
ALS - C4	0X52	0X29
ALS - C3	0X72	0X39

I2C1_SCL_1V8 (IN) — MAKE_BASE=TRUE — I2C1_SCL_1V8 (OUT)
I2C1_SDA_1V8 (BI) — MAKE_BASE=TRUE — I2C1_SDA_1V8 (BI)

I2C2

DEVICE	8-BIT	7-BIT
SKR AMP CN R	0X72	0X39
SKR AMP CN L	0X74	0X3A

I2C2_SCL_1V8 (IN) — MAKE_BASE=TRUE — I2C2_SCL_1V8 (OUT)
I2C2_SDA_1V8 (BI) — MAKE_BASE=TRUE — I2C2_SDA_1V8 (BI)

I2C3

DEVICE	8-BIT	7-BIT
CODEC	0X90	0X48
HYDRA	0X34	0X1A

I2C3_SCL_1V8 (IN) — MAKE_BASE=TRUE — I2C3_SCL_1V8 (BI)
I2C3_SCL_1V8 (OUT)
I2C3_SDA_1V8 (IN) — MAKE_BASE=TRUE — I2C3_SDA_1V8 (OUT)
I2C3_SDA_1V8 (BI)

I2C4 LYNX

DEVICE	8-BIT	7-BIT
	0XXX	0XXX

I2C4_SCL_1V8 (IN) — MAKE_BASE=TRUE — I2C4_SCL_1V8 (OUT)
I2C4_SDA_1V8 (BI) — MAKE_BASE=TRUE — I2C4_SDA_1V8 (BI)

AOP I2C M0 — NOT USED

AOP I2C M1 — NOT USED

ISP I2C0

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

ISP_I2C0_SCL_1V8 (IN) — MAKE_BASE=TRUE — ISP_I2C0_SCL_1V8 (OUT)
ISP_I2C0_SDA_1V8 (BI) — MAKE_BASE=TRUE — ISP_I2C0_SDA_1V8 (BI)

ISP I2C1

DEVICE	8-BIT	7-BIT
MINION	0X??	0X??

ISP_I2C1_SCL_1V8 (IN) — MAKE_BASE=TRUE — ISP_I2C1_SCL_1V8 (OUT)
ISP_I2C1_SDA_1V8 (BI) — MAKE_BASE=TRUE — ISP_I2C1_SDA_1V8 (BI)

ISP I2C2

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

ISP_I2C2_SCL_1V8 (IN) — MAKE_BASE=TRUE — ISP_I2C2_SCL_1V8 (OUT)
ISP_I2C2_SDA_1V8 (BI) — MAKE_BASE=TRUE — ISP_I2C2_SDA_1V8 (BI)

ISP I2C3 — NOT USED

SMC I2C0

DEVICE	8-BIT	7-BIT
ATLAS	0X78	0X3C
POTOMAC	0XEA	0X75
USBPD	0X24	0X12

I2C_SMC_I2CM0_SCL_1V8 (IN) — MAKE_BASE=TRUE — I2C_SMC_I2CM0_SCL_1V8 (OUT)
I2C_SMC_I2CM0_SCL_1V8 (OUT)
I2C_SMC_I2CM0_SCL_1V8 (OUT)
I2C_SMC_I2CM0_SDA_1V8 (BI) — MAKE_BASE=TRUE — I2C_SMC_I2CM0_SDA_1V8 (BI)
I2C_SMC_I2CM0_SDA_1V8 (BI)
I2C_SMC_I2CM0_SDA_1V8 (BI)

SMC I2C1

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

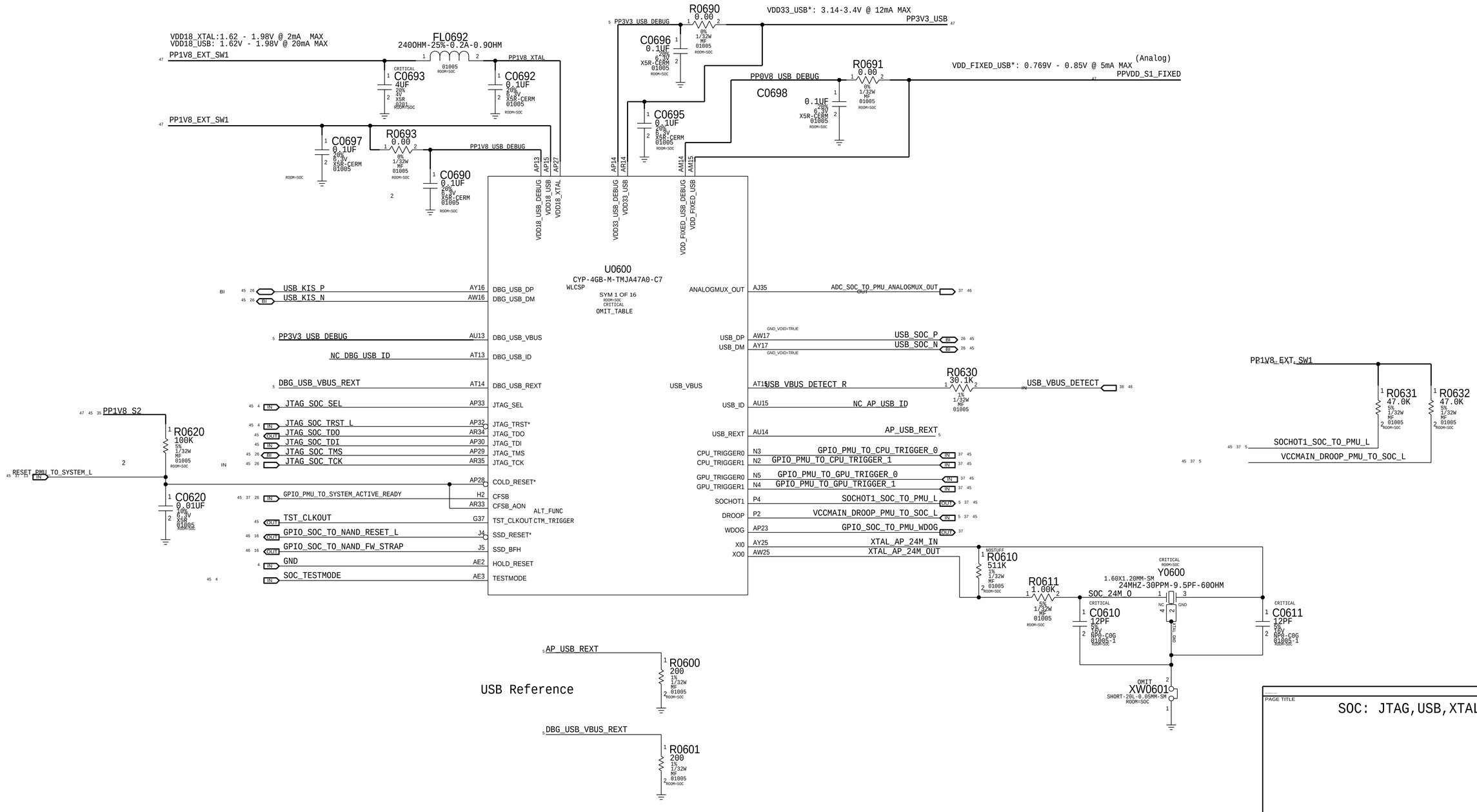
I2C_SMC_I2CM1_SCL_1V8 (IN) — MAKE_BASE=TRUE — I2C_SMC_I2CM1_SCL_1V8 (OUT)
I2C_SMC_I2CM1_SDA_1V8 (BI) — MAKE_BASE=TRUE — I2C_SMC_I2CM1_SDA_1V8 (BI)

SYNC_MASTER=MLB_B_DOE SYNC_DATE=07/30/2018

PAGE TITLE

SOC: MISC & ALIASES

SOC - USB, JTAG, XTAL



SOC - PCIE

VDD12_PCIE:1.14V - 1.26V @ 60mA MAX
VDD12_PCIE_REFBUF:1.08V - 1.26V @ 20mA MAX

PP1V2_SOC → R0795 0.00 1/32W MF 01005 ROOM=SOC → PP1V2_SOC_PCIE_REFBUF
C0799 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=SOC CRITICAL
C0798 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=SOC

VDD_FIXED_PCIE:0.769V - 0.85V @ 60mA MAX
VDD_FIXED_PCIE_REFBUF:0.769V - 0.85V @ 50mA MAX
PPVDD_S1_FIXED
PP0V8_SOC_FIXED_PCIE_REFBUF → R0794 0.00 1/32W MF 01005 ROOM=SOC
C0793 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=SOC
C0791 2.2UF 20% 6.3V X5R-CERM 0201 CRITICAL
C0794 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=SOC

U0600
CYP-4GB-M-TMJA47A0-C7
WLCSP
SYM 2 OF 16

VDD12_PCIE: AM29, AM31
VDD12_PCIE_REFBUF: AL26, AK27
VDD_FIXED_PCIE0: AL28
VDD_FIXED_PCIE1: AL30
VDD_FIXED_PCIE_REFBUF: AL27

PCIE LINK 0

PCIE_NAND1_TO_SOC_CLKREQ_L	U37	PCIE_CLKREQ0*	
PCIE_SOC_TO_NAND1_REFCLK_P	AW19	PCIE_REF_CLK0_P	
PCIE_SOC_TO_NAND1_REFCLK_N	AY19	PCIE_REF_CLK0_N	
PCIE_NAND1_TO_SOC_TX_P	AY27	PCIE_RX0_P	
PCIE_NAND1_TO_SOC_TX_N	AW27	PCIE_RX0_N	
PCIE_SOC_TO_NAND1_TX_C_P	AU26	PCIE_TX0_P	
PCIE_SOC_TO_NAND1_TX_C_N	AV26	PCIE_TX0_N	
PCIE_SOC_TO_NAND1_RESET_L	T36	PCIE_PERST0*	

PCIE_SOC_TO_NAND1_TX_P → C0700 0.22UF 10% CER-X5R 01005 6.3V GND_VOID=TRUE
PCIE_SOC_TO_NAND1_TX_N → C0701 0.22UF 10% CER-X5R 01005 6.3V GND_VOID=TRUE
CRITICAL

PCIE LINK 3

PCIE_CLKREQ3*	U34	PCIE_WLAN_TO_SOC_CLKREQ_L	
PCIE_REF_CLK3_P	AY22	PCIE_SOC_TO_WLAN_REFCLK_P	
PCIE_REF_CLK3_N	AW22	PCIE_SOC_TO_WLAN_REFCLK_N	
PCIE_RX3_P	AY33	PCIE_WLAN_TO_SOC_TX_P	
PCIE_RX3_N	AW33	PCIE_WLAN_TO_SOC_TX_N	
PCIE_TX3_P	AU32	PCIE_SOC_TO_WLAN_TX_C_P	
PCIE_TX3_N	AV32	PCIE_SOC_TO_WLAN_TX_C_N	
PCIE_PERST3*	R37	PCIE_SOC_TO_WLAN_RESET_L	

C0702 0.1UF 20% 6.3V X5R-CERM 01005 CRITICAL GND_VOID=TRUE
C0703 0.1UF 20% 6.3V X5R-CERM 01005 CRITICAL GND_VOID=TRUE
PCIE_SOC_TO_WLAN_TX_P
PCIE_SOC_TO_WLAN_TX_N

NAND LINK | LINK3

NC_PCIE1_CLKREQ1_L	U36	PCIE_CLKREQ1*	
NC_PCIE1_REF_CLK_P	AW20	PCIE_REF_CLK1_P	
NC_PCIE1_REF_CLK_N	AY20	PCIE_REF_CLK1_N	
NC_PCIE1_RX1_P	AY29	PCIE_RX1_P	
NC_PCIE1_RX1_N	AW29	PCIE_RX1_N	
NC_PCIE1_TX1_P	AU28	PCIE_TX1_P	
NC_PCIE1_TX1_N	AV28	PCIE_TX1_N	
NC_PCIE1_PERST1_L	T35	PCIE_PERST1*	

PCIE_CLKREQ2*	U35	NC_PCIE2_CLKREQ2_L	
PCIE_REF_CLK2_P	AW21	NC_PCIE2_REF_CLK_P	
PCIE_REF_CLK2_N	AY21	NC_PCIE2_REF_CLK_N	
PCIE_RX2_P	AY31	NC_PCIE2_RX1_P	
PCIE_RX2_N	AW31	NC_PCIE2_RX1_N	
PCIE_TX2_P	AU30	NC_PCIE2_TX1_P	
PCIE_TX2_N	AV30	NC_PCIE2_TX1_N	
PCIE_PERST2*	T34	NC_PCIE2_PERST2_L	

LINK1 | LINK2

PCIE_RCAL_POS → AT31 PCIE_RCAL_P
AR31 PCIE_RCAL_N
R0740 200 1% 1/32W MF 01005 ROOM=SOC
PCIE_RCAL_NEG
C0740 10PF 5% 16V CERM 01005 ROOM=SOC CRITICAL

PCIE_CLKREQ4*	T37	PCIE_BB_TO_SOC_CLKREQ_L	
PCIE_REF_CLK4_P	AY23	PCIE_SOC_TO_BB_REFCLK_P	
PCIE_REF_CLK4_N	AW23	PCIE_SOC_TO_BB_REFCLK_N	
PCIE_RX4_P	AY35	PCIE_BB_TO_SOC_TX_P	
PCIE_RX4_N	AW35	PCIE_BB_TO_SOC_TX_N	
PCIE_TX4_P	AU34	PCIE_SOC_TO_BB_TX_C_P	
PCIE_TX4_N	AV34	PCIE_SOC_TO_BB_TX_C_N	
PCIE_PERST4*	R35	PCIE_SOC_TO_BB_RESET_L	

LINK4

PCIE LINK 4

PCIe BB CLKREQ PU on BB domain

PCIe Clock Request Pull-Ups

PP1V8_EXT_SW1
R0700 100K 5% 1/32W MF 01005 ROOM=SOC
R0730 100K 5% 1/32W MF 01005 ROOM=SOC
PCIE_NAND1_TO_SOC_CLKREQ_L
PCIE_WLAN_TO_SOC_CLKREQ_L

PCIe Reset Pull-Downs

PCIE_SOC_TO_WLAN_RESET_L
PCIE_SOC_TO_NAND1_RESET_L
R0701 100K 5% 1/32W MF 01005 ROOM=SOC
R0731 100K 5% 1/32W MF 01005 ROOM=SOC

SYNC_MASTER=J217_MLB_B
SYNC_DATE=04/09/2018
PAGE TITLE
SOC: PCIE

SOC - MIPI

(Analog)
VDD_FIXED_MIPID 0.769V - 0.85V @ 95mA MAX
VDD_FIXED_MIPIC 0.769V - 0.85V @ 10mA MAX
VDD_FIXED_MIPID_PLL 0.769V - 0.85V @ 45mA MAX

VDD18_MIPID:1.62V - 1.98V @ 37mA MAX
VDD18_MIPIC:1.62V - 1.98V @ 7mA MAX

47 PPVDD_S1_FIXED

C0891 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=SOC
C0890 0.1UF 20% 6.3V X5R-CERM 01005
C0896 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=SOC
C0895 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=SOC

47 PP1V8_EXT_SW1

F17 VDD_FIXED_MIPIC
AM9 VDD_FIXED_MIPID
AP9 VDD_FIXED_MIPID_PLL
G18 VDD18_MIPIC
AL10 VDD18_MIPID

U0600
CYP-4GB-M-TMJA47A0-C7
WLCSP
SYM 3 OF 16

MIPI lanes can all flip polarity for routing purposes

46 20 IN MIPI_MINION_TO_SOC_DATA_P<0>	B9	MIPI0C_DPDATA0	< CANT SWAP DUE TO BiDi
46 20 IN MIPI_MINION_TO_SOC_DATA_N<0>	A9	MIPI0C_DNDATA0	
46 20 IN MIPI_MINION_TO_SOC_DATA_P<1>	A11	MIPI0C_DPDATA1	
46 20 IN MIPI_MINION_TO_SOC_DATA_N<1>	B11	MIPI0C_DNDATA1	
46 20 IN MIPI_MINION_TO_SOC_CLK_P	B10	MIPI0C_DPCLK	
46 20 IN MIPI_MINION_TO_SOC_CLK_N	A10	MIPI0C_DNCLK	
7 MIPI0C_REXT	D11	MIPI0C_REXT	
7 MIPI1C_REXT	D10	MIPI1C_REXT	
46 22 IN MIPI_NH_CAM_TO_SOC_DATA_P<0>	A8	MIPI1C_DPDATA0	
46 22 IN MIPI_NH_CAM_TO_SOC_DATA_N<0>	B8	MIPI1C_DNDATA0	
46 22 IN MIPI_NH_CAM_TO_SOC_DATA_P<1>	B6	MIPI1C_DPDATA1	
46 22 IN MIPI_NH_CAM_TO_SOC_DATA_N<1>	A6	MIPI1C_DNDATA1	
46 22 IN MIPI_NH_CAM_TO_SOC_CLK_P	A7	MIPI1C_DPCLK	
46 22 IN MIPI_NH_CAM_TO_SOC_CLK_N	B7	MIPI1C_DNCLK	
	AY8	MIPID_DPDATA0	< CANT SWAP DUE TO BiDi
	AW8	MIPID_DNDATA0	
	AW7	MIPID_DPDATA1	
AY7		MIPID_DNDATA1	
AW5		MIPID_DPDATA2	
	AY5	MIPID_DNDATA2	
	AW4	MIPID_DPDATA3	
	AY4	MIPID_DNDATA3	
	AY6	MIPID_DPCLK	
	AW6	MIPID_DNCLK	
28 OUT GPIO_SOC_TO_KONA_DISPLAY_BSYNC0	AG4	DISP_TOUCH_BSYNC0	
28 OUT GPIO_SOC_TO_KONA_DISPLAY_BSYNC1	AH3	DISP_TOUCH_BSYNC1	
NC_DISP_TOUCH_EB	AH4	DISP_TOUCH_EB	
	AU9	MIPID_REXT	
NC_DISP_I2C_SCL	AG3	DISP_I2C_SCL	ALT FUNC's DISP_SPMI_SCLK
NC_DISP_I2C_SDA	AG2	DISP_I2C_SDA	DISP_SPMI_SDATA
NC_DISP_POL	AE5	DISP_POL	
NC_DISP_TE	AA2	DISP_TE	

INTENDED FOR MIPI DISPLAY WITH COMMAND MODE
BUT ALSO A GPIO

ALT FUNC's
SIO_LEAP_MADI_IN and AOP_LEAP_MADI_IN
SIO_LEAP_MADI_OUT and AOP_LEAP_MADI_OUT
MTR_ADC_DOUT and SOC_DEBUG2
MTR_ADC_CLKOUT and SOC_DEBUG3
PLL_DIGOBS_IN_0 and ISP_FCAM_SPMI_SDATA
PLL_DIGOBS_IN_1 and ISP_FCAM_SPMI_SCLK
ISP_SPMI_SDATA
ISP_SPMI_SCLK
SENSOR3_CLK

ISP_I2C0_SCL	A16	ISP_I2C0_SCL_1V8	OUT 4 7
ISP_I2C0_SDA	C21	ISP_I2C0_SDA_1V8	BI 4 7
ISP_I2C1_SCL	A17	ISP_I2C1_SCL_1V8	OUT 4 7
ISP_I2C1_SDA	B20	ISP_I2C1_SDA_1V8	BI 4 7
ISP_I2C2_SCL	A18	ISP_I2C2_SCL_1V8	OUT 4 7
ISP_I2C2_SDA	C22	ISP_I2C2_SDA_1V8	BI 4 7
ISP_I2C3_SCL	A19	NC_ISP_I2C3_SCL	
ISP_I2C3_SDA	A20	NC_ISP_I2C3_SDA	
ISP_GPIO_0	A23	GPIO_SOC_TO_FRONT_CAM_SHTDWN_L	OUT 22 45
ISP_GPIO_1	A22	GPIO_SOC_TO_REAR_CAM_SHTDWN_L	OUT 21
ISP_GPIO_2	A21	PP_SOC_DEBUG2	46
ISP_GPIO_3	B22	NC_ISP_GPIO_3	
ISP_GPIO_4	A15	PP_SOC_DEBUG3	
ISP_GPIO_5	B19	GPIO_SOC_TO_MINION_SHTDWN_L	OUT 20
ISP_GPIO_6	C20	NC_ISP_GPIO_6	
ISP_GPIO_7	A13	GPIO_SOC_TO_MINION_CRESET_L	OUT 20 45
ISP_GPIO_8	B13	GPIO_MINION_TO_SOC_CONFIG_DONE	IN 20 45 46
ISP_GPIO_9	D20	NC_ISP_GPIO_9	
SENSOR0_CLK	A14	CLK_SOC_TO_REAR_CAM_12MHZ_R	
SENSOR1_CLK	B14	CLK_SOC_TO_FRONT_CAM_12MHZ_R	
SENSOR2_CLK	B17	CLK_SOC_TO_MINION_12MHZ_R	

47 45 36 PP1V8_CAM

R0802 681 1% 1/32W MF 01005
R0806 1.00K 1% 1/32W MF 01005
R0805 681 1% 1/32W MF 01005

7 4 ISP_I2C0_SCL_1V8
7 4 ISP_I2C0_SDA_1V8
7 4 ISP_I2C1_SCL_1V8
7 4 ISP_I2C1_SDA_1V8
7 4 ISP_I2C2_SCL_1V8
7 4 ISP_I2C2_SDA_1V8

NOSTUFF R0860 0.00 0% 1/32W MF 01005

GPIO_SOC_TO_MINION_SHTDWN_L OUT 20

R0812 33 5% 1/32W MF 01005
CLK_SOC_TO_REAR_CAM_12MHZ OUT 21
C0812 15PF 5% 16V NP0-C0G 01005-1

R0811 33 5% 1/32W MF 01005
CLK_SOC_TO_FRONT_CAM_12MHZ OUT 22 45
C0811 15PF 5% 16V NP0-C0G 01005-1

R0813 33 5% 1/32W MF 01005
CLK_SOC_TO_MINION_12MHZ OUT 20 46

MIPI Reference

MIPI0C_REXT 7
MIPI1C_REXT 7

R0850 200 1% 1/32W MF 01005 ROOM=SOC
R0851 200 1% 1/32W MF 01005 ROOM=SOC

SYNC_MASTER=J217_MLB_B SYNC_DATE=04/09/2018
PAGE TITLE
SOC: MIPI

SOC - LPDP

VDD12_PLL_LPDP 1.14V - 1.26V @ 9mA MAX
VDD12_LPDP_RX 1.14V - 1.26V @ 115mA MAX
PP1V2_SOC

C0990 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=SOC
C0991 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=SOC
C0992 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=SOC
C0993 0.01UF 10% 6.3V X5R 01005 ROOM=SOC
C0994 15PF 5% 16V NP0-C0G 01005-1 ROOM=SOC
Desense for Wifi frequencies

GND'd offpage
GND'd offpage

(Analog)
VDD_FIXED_PLL_LPDP 0.769V - 0.85V @ 3mA MAX
VDD_FIXED_LPDP_RX 0.769V - 0.85V @ 30mA MAX
PPVDD_S1_FIXED

C0995 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=SOC
C0996 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=SOC

F27 VDD12_LPDP_TX
F29 VDD12_LPDP_RX
AM10 VDD12_PLL_LPDP
AM13 VDD_FIXED_PLL_LPDP
AR12 VDD_FIXED_LPDP_TX
G28 VDD_FIXED_LPDP_RX

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SYM 4 OF 16

A25	LPDPRX_RX_D0_P		LPDP_TX0P	AY14	LPDP_SOC_TO_TCON_DATA_P<0> OUT 28
B25	LPDPRX_RX_D0_N		LPDP_TX0N	AW14	LPDP_SOC_TO_TCON_DATA_N<0> OUT 28
B26	LPDPRX_RX_D1_P		LPDP_TX1P	AY13	LPDP_SOC_TO_TCON_DATA_P<1> OUT 28
C26	LPDPRX_RX_D1_N		LPDP_TX1N	AW13	LPDP_SOC_TO_TCON_DATA_N<1> OUT 28
A27	LPDPRX_RX_D2_P		LPDP_TX2P	AY12	LPDP_SOC_TO_TCON_DATA_P<2> OUT 28
B27	LPDPRX_RX_D2_N		LPDP_TX2N	AW12	LPDP_SOC_TO_TCON_DATA_N<2> OUT 28
B28	LPDPRX_RX_D3_P		LPDP_TX3P	AY11	LPDP_SOC_TO_TCON_DATA_P<3> OUT 28
C28	LPDPRX_RX_D3_N		LPDP_TX3N	AW11	LPDP_SOC_TO_TCON_DATA_N<3> OUT 28
B30	LPDPRX_RX_D4_P				
C30	LPDPRX_RX_D4_N				
A31	LPDPRX_RX_D5_P		LPDP_AUX_P	AY10	LPDP_SOC_TO_TCON_AUX_P BI 28
B31	LPDPRX_RX_D5_N		LPDP_AUX_N	AW10	LPDP_SOC_TO_TCON_AUX_N BI 28
B32	LPDPRX_RX_D6_P				
C32	LPDPRX_RX_D6_N		EDP_HPD	AF2	LPDP_TCON_TO_SOC_HPD IN 28 45
			DP_WAKEUP	AF4	NC_DP_WAKEUP
A33	LPDPRX_RX_D7_P				
B33	LPDPRX_RX_D7_N				

NC_LPDP_D0_AUX	D23	LPDPRX_AUX_D0_P
NC_LPDP_D1_AUX	D24	LPDPRX_AUX_D1_P
NC_LPDP_D2_AUX	C24	LPDPRX_AUX_D2_P
NC_LPDP_D3_AUX	D25	LPDPRX_AUX_D3_P
NC_LPDP_D4_AUX	D27	LPDPRX_AUX_D4_P
NC_LPDP_D5_AUX	D29	LPDPRX_AUX_D5_P
NC_LPDP_D6_AUX	D31	LPDPRX_AUX_D6_P
NC_LPDP_D7_AUX	D33	LPDPRX_AUX_D7_P

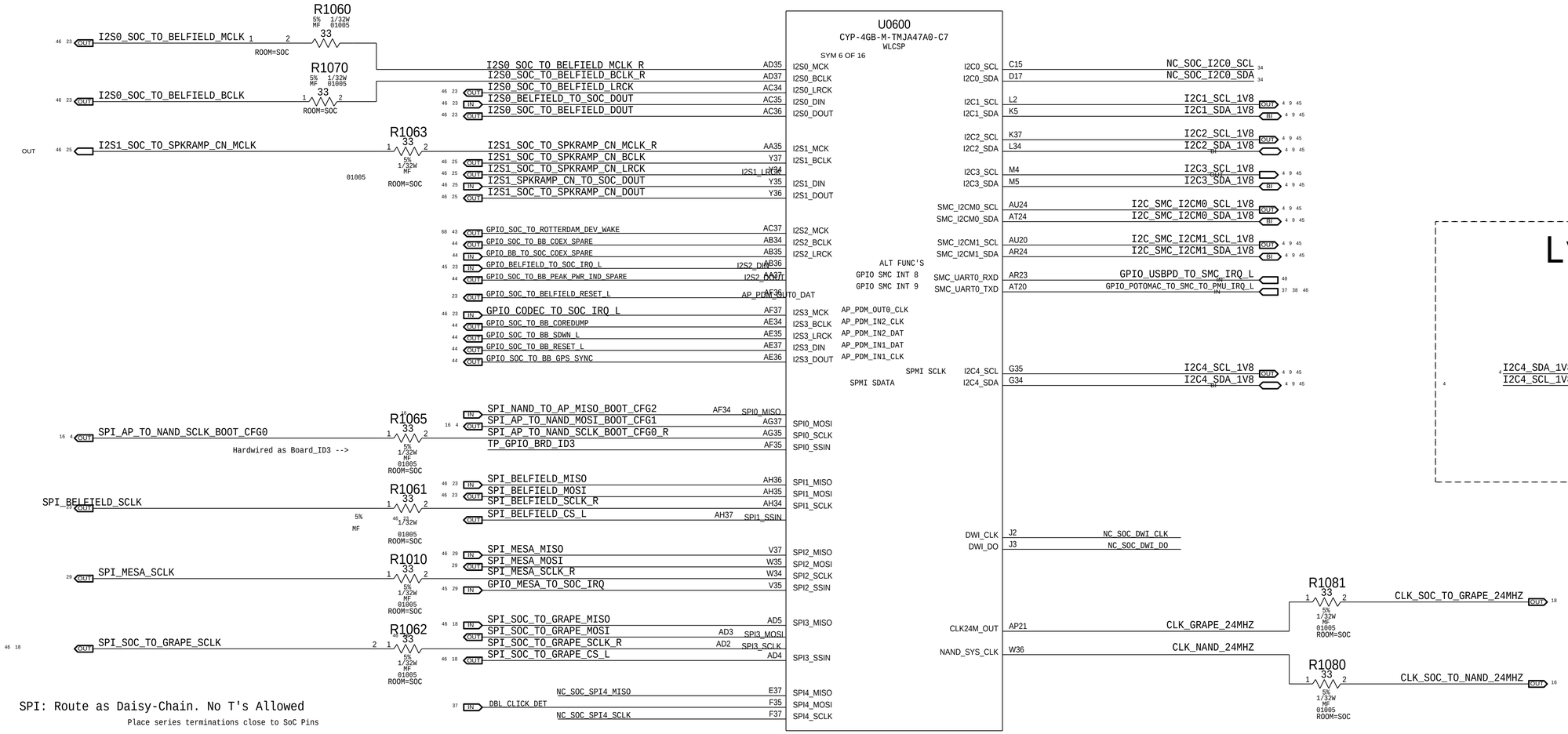
OK PER SANJEEV MAHESHWARI (3/9/18)

NC_LPDPRX_RCAL_POS	A29	LPDPRX_RCAL_P	LPDP_RCAL_P	AU10	LPDP_RCAL_POS
NC_LPDPRX_RCAL_NEG	B29	LPDPRX_RCAL_N	LPDP_RCAL_N	AT10	LPDP_RCAL_NEG

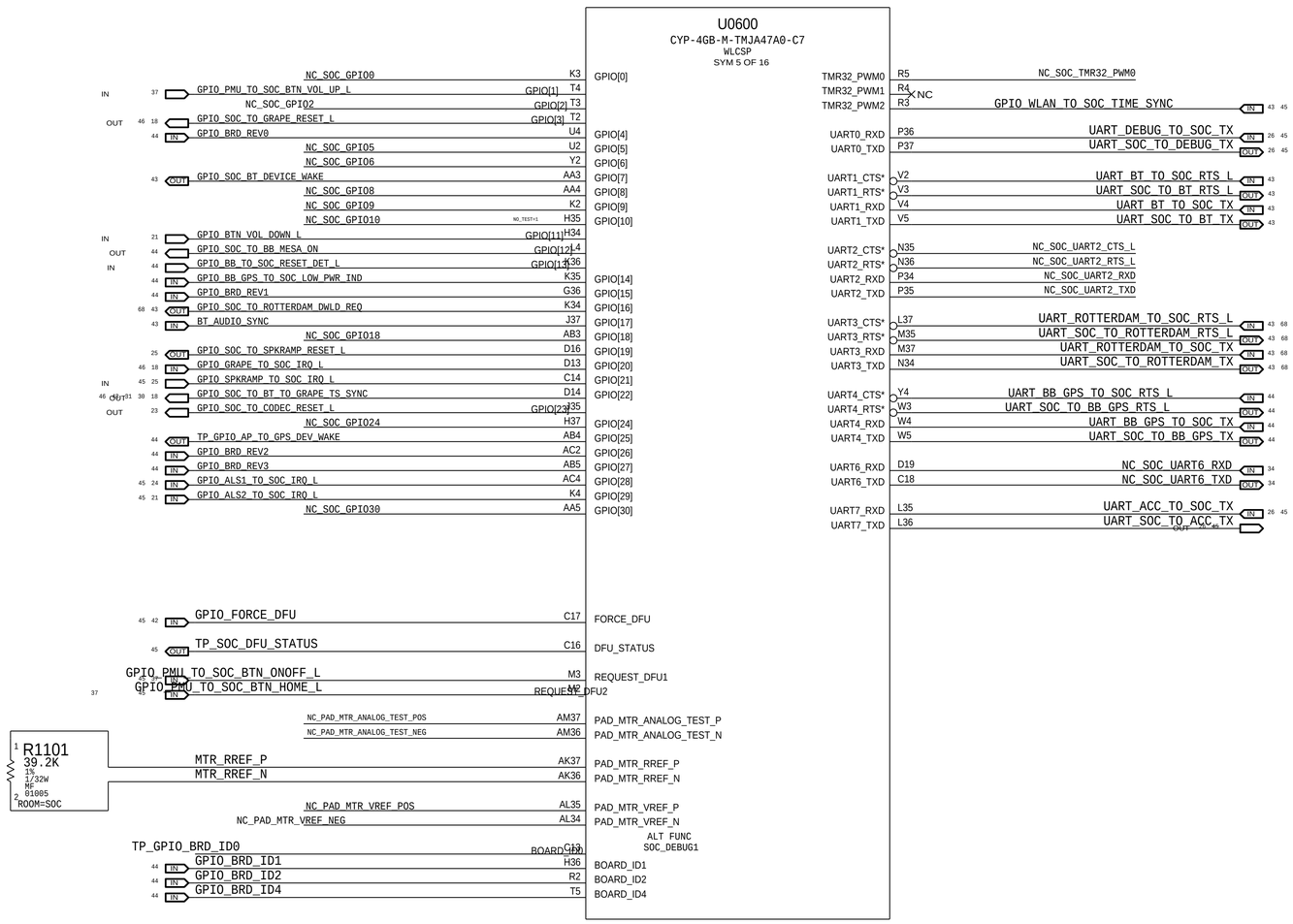
R0901 200 1% 1/32W MF 01005 ROOM=SOC
C0902 10PF 5% CERM 16V 01005 ROOM=SOC

PAGE TITLE
SOC: LPDP

SOC - SERIAL INTERFACES



SOC - GPIO INTERFACES



PAGE TITLE

SOC: GPIO & UART

SOC - AOP

1.62V - 1.98V @ 10mA MAX
PP1V8_S2
C1290 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=SOC
C1291 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=SOC
AM17 AM19 AM23 AM25
VDDIO18_AOP

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WLCSP
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PP_SOC_AON_SLEEP1_RESET_L	AU21	AON_SLEEP1_RESET*	
NC_AOP_FUNC0	AP8	AOP_FUNC[0]	<-- SCM_SPI CS & Trig
NC_AOP_FUNC1	AP10	AOP_FUNC[1]	
NC_AOP_FUNC2	AT6	AOP_FUNC[2]	
NC_AOP_FUNC3	AR8	AOP_FUNC[3]	
SPI_KOBOL_CS_L	AT7	AOP_FUNC[4]	
GPIO_PHOSPHORUS_TO_AOP_IRQ	AR14	AOP_FUNC[5]	
SPI_PHOSPHORUS_CS_L	AP18	AOP_FUNC[6]	
NC_AOP_FUNC7	AR9	AOP_FUNC[7]	
NC_AOP_FUNC8	AP12	AOP_FUNC[8]	
NC_AOP_FUNC_9	AR11	AOP_FUNC[9]	
NC_AOP_FUNC_10	AU17	AOP_FUNC[10]	
SPI_MOLY_CS_L	AR15	AOP_FUNC[11]	
GPIO_KOBOL_TO_AOP_INT	AR12	AOP_FUNC[12]	<SCM_I2CM0_TRIGGER
NC_AOP_FUNC13	AT13	AOP_FUNC[13]	AOP_I2CM1_SCL
GPIO_MOLY_TO_AOP_IRQ	AR18	AOP_FUNC[14]	AOP_I2CM1_SDA
GPIO_KOBOL_TO_AOP_MOTION_INT	AT8	AOP_FUNC[15]	
NC_AOP_FUNC16	AP19	AOP_FUNC[16]	
NC_AOP_FUNC17	AT18	AOP_FUNC[17]	
NC_AOP_FUNC18	AT8	AOP_FUNC[18]	
NC_AOP_FUNC19	AU18	AOP_FUNC[19]	<SCM_I2CM1 TRIGGER
NC_AOP_FUNC20	AT11	AOP_FUNC[20]	
GPIO_AOP_TO_WLAN_CONTEXT_B	AU4	AOP_FUNC[21]	
NC_AOP_FUNC22	AT12	AOP_FUNC[22]	
SPI_SENSORS_MISO	AP6	AOP_SPI_MISO	
SPI_SENSORS_MOSI_R	AP7	AOP_SPI_MOSI	
SPI_SENSORS_SCLK_R	AP16	AOP_SPI_SCLK	
UART_BB_TO_AOP_TX	AR5	AOP_UART0_RXD	
UART_AOP_TO_BB_TX	AR6	AOP_UART0_TXD	
NC_AOP_UART1_RXD	AU16	AOP_UART1_RXD	
NC_AOP_UART1_TXD	AT16	AOP_UART1_TXD	
GPIO_PMU_TO_SOC_IRQ_L	AR4	AOP_UART2_RXD	
GPIO_AOP_TO_WLAN_CONTEXT_A	AT4	AOP_UART2_TXD	
I2S_AOP_TO_CODEC_BCLK_R	AU11	AOP_I2S0_BCLK	
I2S_CODEC_TO_AOP_DOUT	AU19	AOP_I2S0_DIN	
NC_AOP_I2S0_MCK	AR20	AOP_I2S0_MCK	AOP_PDM_CLK2
I2S_AOP_TO_CODEC_LRCK	AU7	AOP_I2S0_LRCK	
I2S_AOP_TO_CODEC_DOUT	AU8	AOP_I2S0_DOUT	ALT FUNC's
NC_AOP_I2S1_BCLK	AU5	AOP_I2S1_BCLK	AOP_PDM_IN1_CLK
NC_AOP_I2S1_DIN	AT15	AOP_I2S1_DIN	
NC_AOP_I2S1_MCK	AU12	AOP_I2S1_MCK	
NC_AOP_I2S1_LRCK	AU6	AOP_I2S1_LRCK	AOP_PDM_IN2_CLK
NC_AOP_I2S1_DOUT	AP20	AOP_I2S1_DOUT	AOP_PDM_IN2_DAT

AOP_PDM_CLK0	AT21	DMIC1_MIC_SCLK	OUT 24
AOP_PDM_DATA0	AT22	DMIC1_MIC_SD	IN 24
AOP_PDM_DATA1	AU23	NC_AOP_PDM_DATA1	
RT_CLK32768	AP26	CLK_PMU_TO_AOP_32K	IN 37 45
SWD_TMS2	C19	SWD_NAND1_SWDIO	BI 11 16
SWD_TMS3	B16	SWD_GRAPE_SWDIO	BI 11 18
AOP_I2CM0_SCL	AP17	NC_AOP_I2CM0_SCL	
AOP_I2CM0_SDA	AP5	NC_AOP_I2CM0_SDA	
AOP_I2CM1_SCL	AR17	NC_AOP_I2CM1_SCL	
AOP_I2CM1_SDA	AT5	NC_AOP_I2CM1_SDA	
AOP_PDM_OUT0_CLK	AT23	NC_AOP_PDM_OUT0_CLK	
AOP_PDM_DATAOUT	AU22	NC_AOP_PDM_DATAOUT	
NUB_DOCK_CONNECT	AR27	USB_TO_SOC_DOCK_CONNECT	IN 26
NUB_DOCK_ATTENTION	AP25	GPIO_HYDRA_TO_SMC_IRQ	IN 26 45
NUB_SWD_TCK_OUT	AP24	SWD_PERIPHERAL_SWCLK	11
NUB_SPMI_SCLK	AR21	NUB_SPMI_ATLAS_SCLK	BI 37 45
NUB_SPMI_SDATA	AR29	NUB_SPMI_ATLAS_SDATA	BI 37 45
NUB_SWD_TMS0	AR26	NC_NUB_SWD_TMS0	BI
NUB_SWD_TMS1	AP22	SWD_USBPD_SWDIO	BI 11 34 40

ALT FUNC's
AOP_LPPLL
AOP_PDM_CLK4
AOP_PDM_CLK3
ALT FUNC
AOP_PDM_CLK2
ALT FUNC's
NUB_PDM_CLK1

R1230 33 5% 1/32W MF 01005 ROOM=SOC
SPI_SENSORS_MOSI
R1201 33 5% 1/32W MF 01005 ROOM=SOC
SPI_SENSORS_SCLK
R1231 33 5% 1/32W MF 01005 ROOM=SOC
I2S_AOP_TO_CODEC_BCLK

PP1V8_GRAPE
PP1V8_EXT_SW1
R1216 1.00K 5% 1/32W MF 01005
R1217 1.00K 5% 1/32W MF 01005
SWD_NAND1_SWDIO
SWD_GRAPE_SWDIO

PP1V8_S2
NOSTUFF R1240 1.00K 5% 1/32W MF 01005
SWD_USBPD_SWDIO

THESE GATES HAVE BACKPOWER PROTECTION

PP1V8_S2
C1250 0.1UF 20% 6.3V X5R-CERM 01005
U1250 74AUP1G34GX SOT1226
R1250 33 5% 1/32W MF 01005
SWD_PERIPHERAL_SWCLK
PLACE_NEAR=U0600.AK3:13MM
SWD_PER_USBPD_SWCLK_R
SWD_USBPD_SWCLK_R
R1251 33 5% 1/32W MF 01005
SWD_USBPD_SWCLK

THESE GATES HAVE BACKPOWER PROTECTION

PP1V8_EXT_SW1
C1220 0.1UF 20% 6.3V X5R-CERM 01005
U1200 74AUP1G34GX SOT1226
R1220 33 5% 1/32W MF 01005
SWD_PERIPHERAL_SWCLK
PLACE_NEAR=U0600.AK3:13MM
SWD_PER_NAND1_SWCLK_R
SWD_NAND1_SWCLK

PP1V8_GRAPE
C1221 0.1UF 20% 6.3V X5R-CERM 01005
U1201 74AUP1G34GX SOT1226
R1221 33 5% 1/32W MF 01005
SWD_PERIPHERAL_SWCLK
PLACE_NEAR=U0600.AK3:13MM
SWD_PER_GRAPE_SWCLK_R
SWD_GRAPE_SWCLK

SYNC_MASTER=J217_MLB_B
SYNC_DATE=04/09/2018
PAGE TITLE
SOC: AOP

SOC - CPU, GPU & SOC RAILS

1.06V @ 13.8A MAX
0.905V @ 8.9A MAX
0.527V @ 1.6A MAX
PPVDD_CPU

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

U0600
CYP-4GB-M-TMJA47A0-C7
WLCSP
SYM 8 OF 16

1.06V @ 10.5A MAX
0.725V @ 6.3A MAX
0.570V @ 3.1A MAX
PPVDD_GPU

VDD_LOW: 0.691V - 0.756V @ 220mA MAX
VDD_LOW_ULPPLL: 0.691V - 0.756V @ 0.3mA MAX
VDD_LOW_FLPPLL: 0.691V - 0.756V @ 0.03mA MAX
PP0V75_S2_AOP

PP0V7_VDD_LOW_ULPPLL_R
PP0V7_VDD_LOW_FLPPLL_R

1.02V @ 2.1A MAX
0.975V @ 1.4A MAX
0.765V @ 0.33A MAX
PPVDD_CPU_SRAM

1.06V @ 1.6A MAX
0.725V @ 1.1A MAX
0.685V @ 1.03A MAX
PPVDD_GPU_SRAM

1.00V @ 2.9A MAX
0.750V @ 1.9A MAX
0.07V @ 1.14A MAX
PPVDD_ECPU

VDD_FIXED_PCPU: 0.769 - 0.85V @ 5mA
VDD_FIXED_MTR 0.769V - 0.85V @ 1mA
VDD_FIXED_ECPU: 0.769V - 0.85V @ 5mA
PPVDD_S1_FIXED

VDD_FIXED_PLL_SOC: 0.81V @ 9mA
VDD_FIXED_PLL_ANE: 0.81V @ 5mA
VDD_FIXED_PLL_GPU: 0.81V @ 5mA
VDD_FIXED_PLL_DDR*: 0.81V @ 8mA

VDD12_PLL_SOC: 1.14 - 1.26V @ 8mA MAX
VDD12_PLL_ANE: 1.14 - 1.26V @ 4mA MAX
VDD12_PLL_PCPU: 1.14 - 1.26V @ 4mA MAX
VDD12_PLL_ECPU: 1.14 - 1.26V @ 4mA MAX
VDD12_PLL_GPU: 1.14 - 1.26V @ 4mA MAX
PP1V2_SOC

0.783V @ 4.2A MAX
0.661V @ 2.6A MAX
0.595V @ 2.1A MAX
PPVDD_S1_SOC

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WLCSP
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VDD_PCPU	VDD_GPU	VDD_LOW	VDD_LOW_ULPPLL
VDD_LOW_FLPPLL	VDD_CPU_SRAM	VDD_GPU_SRAM	VDD_ECPU
VDD_SOC			

SYNC_MASTER=J217_MLB_B
SYNC_DATE=04/09/2018
PAGE TITLE
SOC: POWER (1/3)

SOC - CPU, GPU & SOC RAILS

0.81V @ 900mA MAX
PPVDD_S1_FIXED

C1401 14UF 20% 4V X5R 0402-D2X-1

C1402 4UF 20% 4V X5R 0201 ROOM=SOC
C1403 4UF 20% 4V X5R 0201 ROOM=SOC
C1404 4UF 20% 4V X5R 0201 ROOM=SOC
C1405 4UF 20% 4V X5R 0201 ROOM=SOC

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AA20 AA26 AB23 AB29 AC8 AC20 AC26 AD29 AE20 AE26 AF17 AF23 AF29 AG20 AG26 AH17 AH23 AH29 AJ20 AJ26 AK17 AK23 AL12 F19 — VDD_FIXED

H29 K29 M29 N8 N14 P17 P23 P29 R14 R20 R26 T17 T23 T29 U20 U26 V17 V23 V29 W8 W20 W26 Y23 Y29 — VDD_FIXED

ADC_SOC_TO_PMU_VDD_GPU → P21 VDD_GPU_SENSE
ADC_SOC_TO_PMU_VDD_CPU → AG16 VDD_PCPU_SENSE
ADC_SOC_TO_PMU_VDD_SOC → AH21 VDD_SOC_SENSE

VSS_GPU_SENSE P22 → GPU_SENSE_NEG
VSS_PCPU_SENSE AH16 → CPU_PCORE_SENSE_NEG
VSS_SENSE AH20 → SOC_SENSE_NEG
VSS_DDR_SENSE B4 → VDDQL_DCS_SENSE_NEG

VDDQL* TOTAL: 0.60V - 0.63V @ 620mA MAX
PPVDD_S1_QL

C1490 4UF 20% 4V X5R 0201 ROOM=SOC
C1430 4UF 20% 4V X5R 0201 ROOM=SOC
C1431 4UF 20% 4V X5R 0201 ROOM=SOC
C1432 4UF 20% 4V X5R 0201 ROOM=SOC
C1433 4UF 20% 4V X5R 0201 ROOM=SOC

Place caps on SoC Corners

C1492 0.1UF 6.3V X5R-CERM 01005 ROOM=SOC

U0600
CYP-4GB-M-TMJA47A0-C7
WLCSP
SYM 11 OF 16

AC1 AE1 AG1 AG8 AL8 AN1 AR1 AU1 — VDDQL_DDR0
AC38 AE38 AF31 AG38 AK31 AN38 AR38 AU38 — VDDQL_DDR1
D1 F1 F8 H1 L8 P1 T1 V1 — VDDQL_DDR2
D38 F38 H31 H38 M31 P38 T38 V38 — VDDQL_DDR3

C4 VDDQL_SENSE ← VDDQL_SENSE_POS
AL5 VDDIO11_RET_DDR0
AN34 VDDIO11_RET_DDR1
C5 VDDIO11_RET_DDR2
C35 VDDIO11_RET_DDR3
PP1V1_S2 → Current included in VDD2

RESET_PMU_TO_SYSTEM_L → AL3 LP4_IN_RESET*
rdar#: 29795211, This pin replaces the 4 DDR* sys alive pins

AF9 VDD_DCS_DDR0
AL9
AE30 VDD_DCS_DDR1
AK30
F9 VDD_DCS_DDR2
K9
G30 VDD_DCS_DDR3
M30
A4 VDD_DCS_SENSE → DCS_SENSE_POS

1.00V @ 1.14A MAX
0.85V @ 750mA MAX
0.70V @ 430mA MAX
PPVDD_S1_DCS

C1460 4UF 20% 4V X5R 0201 ROOM=SOC
C1461 4UF 20% 4V X5R 0201 ROOM=SOC
C1462 4UF 20% 4V X5R 0201 ROOM=SOC
C1463 4UF 20% 4V X5R 0201 ROOM=SOC

Place caps on SoC Corners

DDR IMPEDANCE CONTROL
PPVDD_S1_QL

R1460 240 1% 1/32W MF 0100S ROOM=SOC
R1461 240 1% 1/32W MF 0100S ROOM=SOC
R1462 240 1% 1/32W MF 0100S ROOM=SOC
R1463 240 1% 1/32W MF 0100S ROOM=SOC
R1470 240 1% 1/32W MF 0100S ROOM=SOC
R1471 240 1% 1/32W MF 0100S ROOM=SOC

DDR0_RREF AL4 DDR0_RREF
DDR1_RREF AN35 DDR1_RREF
DDR2_RREF G4 DDR2_RREF
DDR3_RREF D35 DDR3_RREF

DDR0_ZQ AH2 DDR0_ZQ
DDR3_ZQ DDR3_ZQ

VDD1_DDR*: 1.70V - 1.95V @ 220mA MAX
PP1V8_S2

AA1 AV2 AA38 AV37 C2 Y1 C37 Y38 — VDD1_DDR0 VDD1_DDR1 VDD1_DDR2 VDD1_DDR3

C1450 4UF 20% 4V X5R 0201 ROOM=SOC
C1451 4UF 20% 4V X5R 0201 ROOM=SOC
C1452 4UF 20% 4V X5R 0201 ROOM=SOC
C1453 4UF 20% 4V X5R 0201 ROOM=SOC

VDD2_DDR*: 1.06V - 1.17V @ 2.2A MAX
PP1V1_S2

AB2 AH1 AK1 AM1 AU3 AB37 AH38 AK38 AM38 AU36 D3 J1 L1 N1 W2 D36 J38 L38 N38 W37 — VDD2_DDR0 VDD2_DDR1 VDD2_DDR2 VDD2_DDR3

C1440 663mV
C1441 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=SOC
C1442 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=SOC
C1443 2.2UF 20% 4V X5R-CERM 0201 ROOM=SOC
C1480 2.2UF 20% X5R-CERM 0201 ROOM=SOC
4UF 20% X5R ROOM=SOC
C1481 4UF 20% 4V X5R 0201 ROOM=SOC

VDD12_PLL_DDR* Total: 1.14V - 1.26V @ 7mA MAX
PP1V2_SOC

AG5 AK29 D6 N30 — VDDIO12_PLL_DDR0 VDDIO12_PLL_DDR1 VDDIO12_PLL_DDR2 VDDIO12_PLL_DDR3

1.8V @ 75mA MAX (GRP*)
1.8V @ 25mA MAX (MTR)
PP1V8_EXT_SW1
CRITICAL

C1410 26UF 20% 4V X5R 0402-0.1MM ROOM=SOC
C1411 4UF 20% 4V X5R 0201 ROOM=SOC
C1412 4UF 20% 4V X5R 0201 ROOM=SOC
C1413 4UF 20% 4V X5R 0201 ROOM=SOC

GRP2 IS AOP

U0600
CYP-4GB-M-TMJA47A0-C7
WLCSP
SYM 12 OF 16

AD8 M8 V8 — VDDIO18_GRP1
AB31 P31 T31 V31 Y31 — VDDIO18_GRP3
F21 F23 F25 — VDDIO18_GRP4
AD30 — VDDIO18_MTR

1.8V @ 3mA MAX (CPU)
1.8V @ 0.5mA MAX (GPU)
1.8V @ 0.5mA MAX (ANE)
1.8V @ 0.3mA MAX (AMUX)
1.8V @ 1.5mA MAX (SOC)
1.8V @ 1mA MAX (FMON)
1.8V @ 0.03mA MAX (ULPPLL)
PP1V8_EXT_SW1

P14 AF16 AA17 AE8 U14 N13 — VDD18_TSADC_CPU0 CPU1 CPU2 CPU3 CPU4 CPU5
G15 — VDD18_TSADC_GPU0
AL14 — VDD18_TSADC_ANE
AJ34 — VDD18_AMUX
R8 — VDD18_EFUSE1
AC30 — VDD18_EFUSE2
AE29 D34 M9 — VDD18_TSADC_SOC0 SOC1 SOC2
AC29 — VDD18_FMON
AL21 — VDD18_ULPPLL

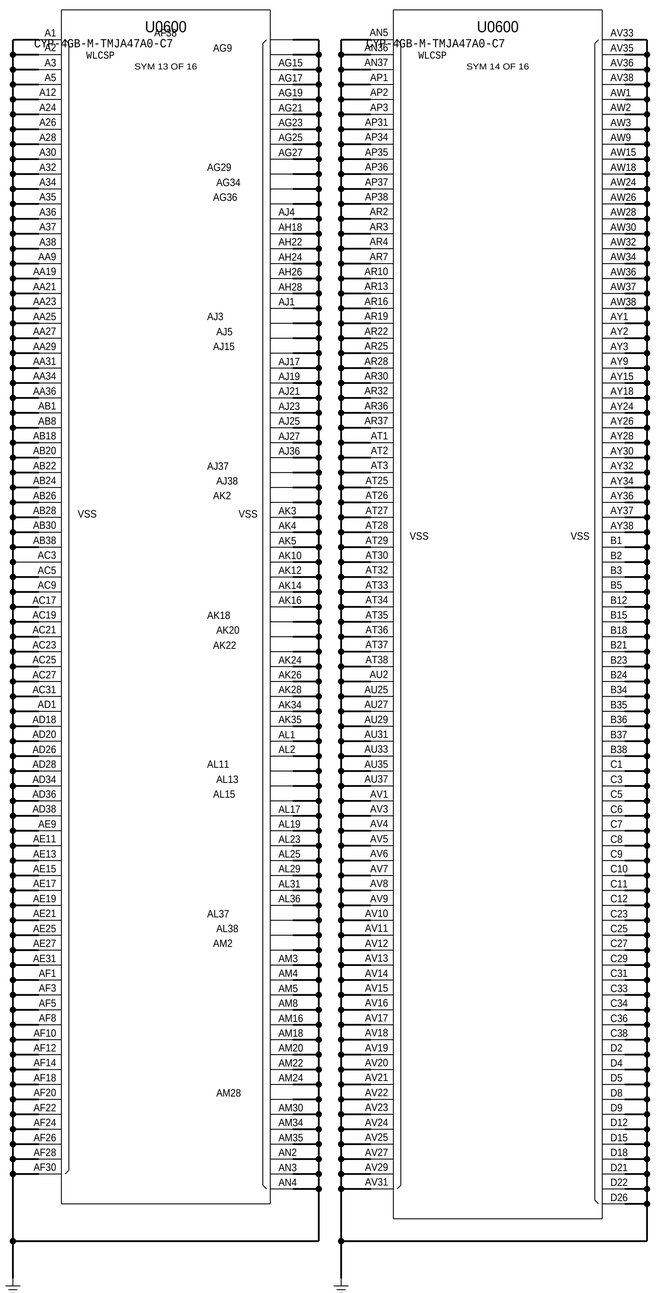
PP1V8_FMON_R
R1401 49.9 1% MF 1/32W 01005 ROOM=SOC
PP1V8_EXT_SW1

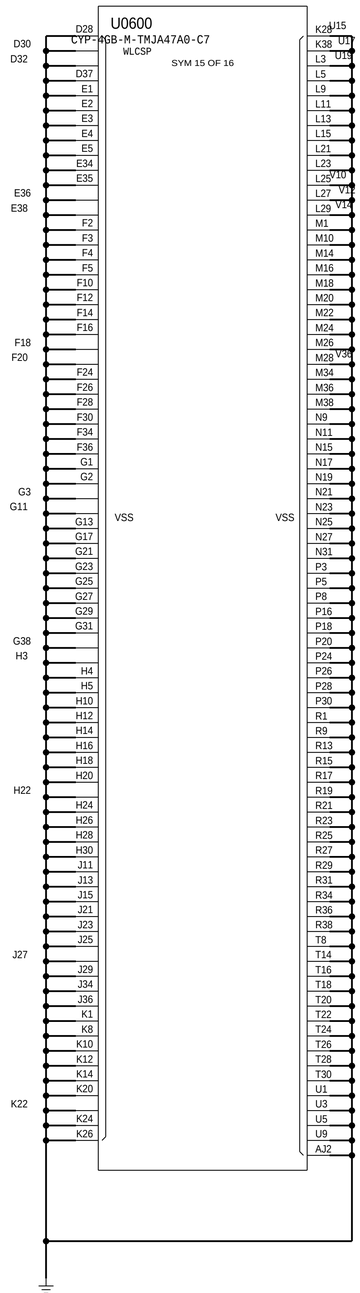
PP1V8_ULPPLL_R
R1402 100 5% MF 01005 ROOM=SOC 1/32W
PP1V8_S2

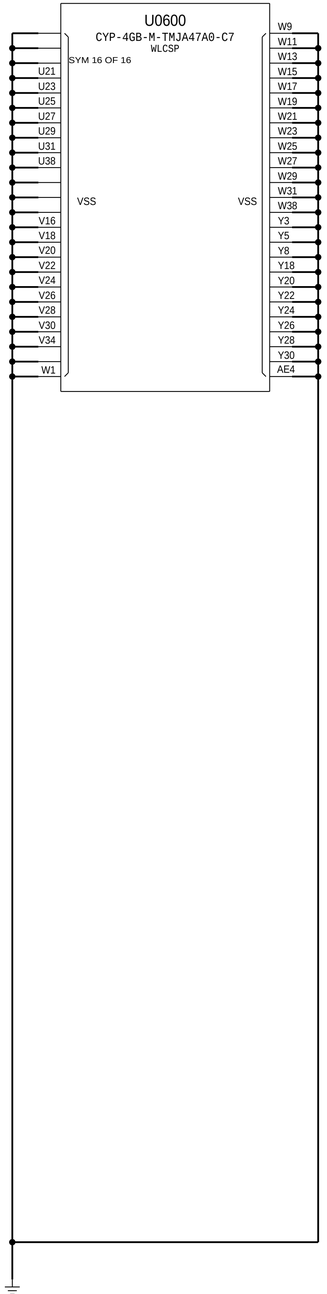
C1471 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=SOC
C1444 4UF 20% 4V X5R 0201 ROOM=SOC

SYNC_MASTER=J217_MLB_B
SYNC_DATE=04/09/2018
PAGE TITLE
SOC: POWER (2/3)

SOC - POWER SUPPLIES







PAGE TITLE

SOC: POWER (3/3)

BOTTOM SIDE SOC CAPS

0.1UF = 132S00238 (0201, 0.11MM)

PPVDD_S1_QL

PPVDD_S1_FIXED

PPVDD_S1_SOC

PPVDD_ECPU

PPVDD_CPU

PPVDD_CPU_SRAM

PPVDD_GPU_SRAM

PPVDD_GPU

SYNC_MASTER=MLB_B_DOE_1.1.0

SYNC_DATE=08/22/2018

PAGE TITLE

SOC: BOTTOM SIDE DECAPS

S4E NAND

PP1V8_EXT_SW1
391mA MAX
C1726 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=NAND
C1710 0.1UF 20% 6.3V X5R-CERM 01005
CRITICAL
C1729 15UF 20% 6.3V CERM 0402-0.1MM ROOM=NAND
C1730 15UF 20% 6.3V CERM 0402-0.1MM ROOM=NAND
2.2UF
C1724 C1741 C1743 C1745 C1747
C1711 220PF 5% 25V COG 01005 ROOM=NAND
C1712 220PF 5% 25V COG 01005
C1718 100PF 5% 16V NP0-C0G 01005
C1714 68PF 5% 16V
C1717 22PF 5% 16V CERM 01005 ROOM=NAND
PP0V9_NAND
932mA MAX
CRITICAL
C1702 26UF 20% 4V X5R 0402-0.1MM ROOM=NAND
C1705 26UF 20% 4V X5R 0402-0.1MM ROOM=NAND
C1700 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=NAND
C1701 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=NAND
C1722 C1727 C1740 C1742 C1744 C1746 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=NAND
220PF 5% COG
C1703 25V 01005 ROOM=NAND
C1706 220PF 5% 25V COG NP0-C0G 01005 ROOM=NAND
C1709 16V 01005-1 ROOM=NAND
C1707 68PF 5% 16V NP0-C0G 01005 ROOM=NAND
C1704 22PF 5% 16V CERM 01005 ROOM=NAND
1100mA MAX (1us peak power)
PP2V63_NAND
C1713 C1716 C1719 C1721 15UF 20% 6.3V CERM 0402-0.1MM ROOM=NAND
C1749 C1750 C1751 C1752 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=NAND
C1738 100PF 5% 16V NP0-C0G 01005-1 ROOM=NAND
C1739 68PF 5% 16V NP0-C0G 01005 ROOM=NAND
C1735 22PF 5% 16V CERM 01005 ROOM=NAND
C1736 220PF 5% 25V COG 01005 ROOM=NAND
C1737 100PF 5% 16V NP0-C0G 01005-1 ROOM=NAND
XW1700 SHORT-28L-0.05MM-SM PP2V63_NAND_H ROOM=NAND
PLACE NEAR C1729
OMIT
NAND1_ANI1_VREF
NAND1_ANI0_VREF
U1700
SDMPEGFIH-512G
LGA
OMIT_TABLE
CRITICAL
CLK_SOC_TO_NAND_24MHZ
PCIE_SOC_TO_NAND1_REFCLK_P
PCIE_SOC_TO_NAND1_REFCLK_N
PCIE_NAND1_TO_SOC_CLKREQ_L
PCIE_NAND1_RESREF
R1798 3.01K 1% 1/32W MF 01005
PCIE_SOC_TO_NAND1_TX_P
PCIE_SOC_TO_NAND1_TX_N
CRITICAL
C1780 0.22UF 10% 6.3V X5R-CER 01005
C1781 0.22UF 10% 6.3V X5R-CER 01005
PCIE_NAND1_TO_SOC_TX_P
PCIE_NAND1_TO_SOC_TX_N
GPIO_SOC_TO_NAND_RESET_L
BOARD TRACE <= 0.20HM
NAND1_ZQ_C_RES
NAND1_ZQ_N_RES
R1799 100 0.1% 1/32W MF 01005
R1797 300 0.1% 1/32 MF 01005
EXT_D0/BOOT0 GPIO_PMU_TO_NAND_LOW_BATT_L
EXT_D1/BOOT1 GPIO_SOC_TO_NAND_FW_STRAP
EXT_D2/BOOT2/SPINAND_SCLK SPI_AP_TO_NAND_SCLK_BOOT_CFG0
EXT_D3/SWD_UID0/SPINAND_MISO SPI_NAND_TO_AP_MISO_BOOT_CFG2
EXT_D4/UART_RX NC
EXT_D5/SWD_UID1/SPINAND_MOSI SPI_AP_TO_NAND_MOSI_BOOT_CFG1
EXT_D6/UART_TX NC
EXT_D7/SPF SYS_ALIVE
EXT_NCE/PERST* PCIE_SOC_TO_NAND1_RESET_L
EXT_NRE/JTAG_TMS SWD_NAND1_SWDIO_R R1710 0.00 SWD_NAND1_SWDIO
EXT_NWE/JTAG_TCK SWD_NAND1_SWCLK_R R1711 0.00 SWD_NAND1_SWCLK
EXT_RNB/JTAG_TDO
EXT_CLE/JTAG_TDI NC
EXT_ALE/JTAG_SEL
DROOP_N
WP_N PP1V8_EXT_SW1
VSS

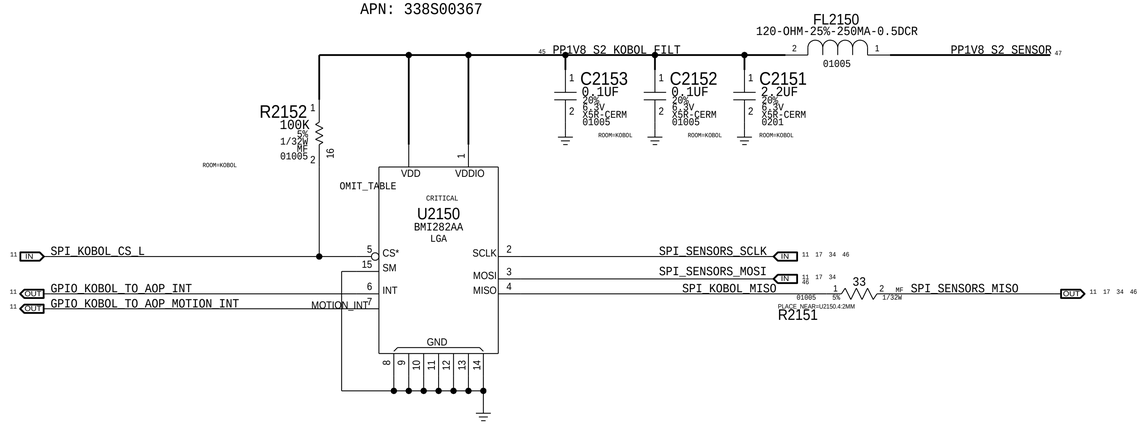
SYNC_MASTER=2217_MLB_B
PAGE TITLE
NAND: S4E NAND

SENSORS

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

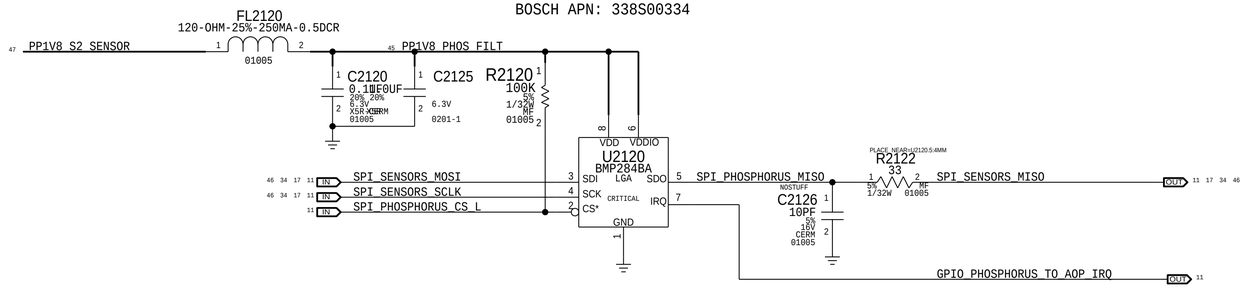
KOBOL - ACCEL & GYRO

APN: 338S00367



PHOSPHORUS2

BOSCH APN: 338S00334



SYNC_MASTER=2217_PLB_B

SYNC_DATE=04/28/1918

PAGE TITLE

SENSOR: KOBOL, PHOS2

KONA

U2200 BCM15900B0K — BGA — SYM 1 OF 2 — CRITICAL

E11	AUXADC_REF		
G12	AUXBUF_AIO_INPUT_3V		
F13	AUXBUF_AIO_OUTPUT		
D10	GPIO_ADC_00	PAD_I_TOUCH0	J5
D12	GPIO_ADC_01	PAD_I_TOUCH1	H3
D11	GPIO_ADC_02	PAD_I_TOUCH2	J2
F12	GPIO_ADC_03	PAD_I_TOUCH3	J3
E10	GPIO_ADC_04	PAD_I_TOUCH4	J4
F10	GPIO_ADC_05	PAD_I_TOUCH5	K5
G10	GPIO_ADC_06	PAD_I_TOUCH6	K4
G9	GPIO_ADC_07	PAD_I_TOUCH7	K3
F8	GPIO_08	PAD_I_TOUCH8	M5
D11	GPIO_09	PAD_I_TOUCH9	L5
J9	GPIO_10	PAD_I_TOUCH10	M1
H9	GPIO_11	PAD_I_TOUCH11	K1
F7	GPIO_12	PAD_I_TOUCH12	L6
J10	GPIO_13	PAD_I_TOUCH13	N1
A6	GPIO_14	PAD_I_TOUCH14	P6
C6	GPIO_15	PAD_I_TOUCH15	N6
D9	GPIO_16	PAD_I_TOUCH16	R7
E8	GPIO_17	PAD_I_TOUCH17	N7
C9	GPIO_18	PAD_I_TOUCH18	R8
C5	GPIO_19	PAD_I_TOUCH19	M6
A7	H_INT*	PAD_I_TOUCH20	P7
A8	H_SCLK	PAD_I_TOUCH21	M7
A9	H_SDI	PAD_I_TOUCH22	N9
B8	H_SDO	PAD_I_TOUCH23	P9
B6	H_CS*	PAD_I_TOUCH24	M9
B5	H_ALT_CS*	PAD_I_TOUCH25	R9
A5	I2C_SCL	PAD_I_TOUCH26	N10
A4	I2C_SDA	PAD_I_TOUCH27	M10
A12	KMSI_MISO	PAD_I_TOUCH28	R10
B13	KMSI_MOSI	PAD_I_TOUCH29	P10
B12	KMSI_STRB_IN	PAD_I_TOUCH30	D2
A13	KMSI_STRB_OUT	PAD_I_TOUCH31	D1
C14	PSE_SYNC	PAD_I_TOUCH32	C2
B14	BOOST_ATEST	PAD_I_TOUCH33	C1
A15	BOOST_FBIN	PAD_I_TOUCH34	B1
B15	BOOST_ISENSE	PAD_I_TOUCH35	P3
D13	BOOST_NGATE	PAD_I_TOUCH36	N2
C15	BOOST_VBAT	PAD_I_TOUCH37	P1
D14	BOOST_VBAT_EN	PAD_I_TOUCH38	P2
E9	JTAG_RTCK	PAD_I_TOUCH39	P4
J7	JTAG_TCK	PAD_I_TOUCH40	G3
E7	JTAG_TMS	PAD_I_TOUCH41	D4
G7	JTAG_TDI	PAD_I_TOUCH42	D3
H8	JTAG_TDO	PAD_I_TOUCH43	G4
G6	JTAG_TRST*	PAD_I_TOUCH44	E4
C7	JTAG_SRST*	PAD_I_TOUCH45	E3
H7	RESET*	PAD_I_TOUCH46	F1
K9	TEST_MODE	PAD_I_TOUCH47	F4
K7	BOOT_CFG_0	PAD_I_TOUCH48	F3
J8	BOOT_CFG_1	PAD_I_TOUCH49	H5
R5	AFE_IO_BGBIAS	PAD_I_TOUCH50	F2
J15	XTALN	PAD_I_TOUCH51	G2
K15	XTALP	PAD_I_TOUCH52	G1
J13	XTAL_O_CLK_EXT	PAD_I_TOUCH53	H1
B4	IFO_CLK_EXT	PAD_I_TOUCH54	P11
N5	NC	PAD_I_TOUCH55	N15
N4	NC	PAD_I_TOUCH56	N12
C11	NC	PAD_I_TOUCH57	P13
		PAD_I_TOUCH58	P12
		PAD_I_TOUCH59	R12
		PAD_I_TOUCH60	N13
		PAD_I_TOUCH61	M12
		PAD_I_TOUCH62	R13
		PAD_I_TOUCH63	L13
		PAD_I_TOUCH64	P14
		PAD_I_TOUCH65	M14
		PAD_I_TOUCH66	M13
		PAD_I_TOUCH67	N14
		PAD_I_TOUCH68	M15
		PAD_I_TOUCH69	R14

GRAPE_TX<0> … GRAPE_TX<15> (OUT), GRAPE_RX<0> … GRAPE_RX<29> (IN)

U2200 BCM15900B0K — BGA — SYM 2 OF 2 — CRITICAL

B3	AFE_I_VDDHV15_EXT	AUXBUF_AVSS	F14
C4	AFE_I_VDDHV15_EXT	AUXADC_AVSS	C10
L7	AFE_I_VDDHV15_EXT	VSS	D6
E5	AFE_I_VDDHV15_EXT	VSS	D8
M11	AFE_I_VDDHV15_EXT	VSS	F6
H2	AFE_I_VDDHV15_EXT	VSS	
K6	AFE_I_VDDHV15_EXT	VSS	F9
L1	AFE_I_VDDHV15_EXT	VSS	G8
L9	AFE_I_VDDHV15_EXT	VSS	H10
M3	AFE_I_VDDHV15_EXT	VSS	K8
E2	AFE_I_VDDHV15_EXT	VSS	A14
N3	AFE_I_VDDHV15_EXT	VSS	E14
L12	AFE_I_VDDHV15_EXT	VSS	A1
G5	AFE_I_VDDHV15_EXT	VSS	A3
R15	AFE_I_VDDHV15_EXT	VSS	B7
E13	BOOST_VDDA	VSS	H12
C12	OTP_TMON_I_VDDA_3P3_EXT	VSS	H13
R1	AFE_PMU_I_VDDA_3P3_EXT	VSS	K11
G13	AUXBUF_PMU_I_VDDA_3P3_EXT	VSS	K12
G14	AUXBUF_PMU_I_VDDHV_AUX_EXT	VSS	K13
G15	AUXBUF_PMU_O_VDD_AUX_CAP	VSS	D15
C3	AFE_I_VDDANA_3P3_AFE_PMU	VSS	E15
D5	AFE_I_VDDANA_3P3_AFE_PMU	VSS	F15
H6	AFE_I_VDDANA_3P3_AFE_PMU	VSS	G11
L4	AFE_I_VDDANA_3P3_AFE_PMU	VSS	J11
L3	AFE_I_VDDANA_3P3_AFE_PMU	VSS	J12
L8	AFE_I_VDDANA_3P3_AFE_PMU	VSS	K10
M2	AFE_I_VDDANA_3P3_AFE_PMU	XTAL_AVSS	H15
R11	AFE_I_VDDANA_3P3_AFE_PMU	XTAL_AVSS	K14
M8	AFE_I_VDDANA_3P3_AFE_PMU	CORE_PMU_I_AVSS	B10
N8	AFE_I_VDDANA_3P3_AFE_PMU	AUXBUF_PMU_I_AVSS	H14
J6	AFE_I_VDDANA_3P3_AFE_PMU	PAD_I_AVSS	P7
L11	AFE_I_VDDANA_3P3_AFE_PMU	PAD_I_AVSS	E1
L14	AFE_I_VDDANA_3P3_AFE_PMU	PAD_I_AVSS	J1
R6	AFE_I_VDDANA_3P3_AFE_PMU	PAD_I_AVSS	N11
R2	AFE_PMU_O_VDDANA_3P3_PMU	PAD_I_AVSS	L2
R4	AFE_PMU_O_AVDD1P2_CAP	PAD_I_AVSS	P15
J14	XTAL_PLL_AVDD1P8_I_VDDLDO_1P8_EXT	PAD_I_AVSS	K2
F11	AUXADC_AVDDC_I_VDDIO_1P8_3P3_EXT	PAD_I_AVSS	L10
E12	AUXADC_AVDD_I_VDDIO_1P8_3P3_EXT	PAD_I_AVSS	L15
R3	AFE_PMU_I_VDDLDO_1P8_EXT	PAD_I_AVSS	M1
B9	AON_PAD_I_VDDIO_1P8_3P3_EXT	PAD_I_AVSS	P1
D7	AON_PAD_I_VDDIO_1P8_3P3_EXT	PAD_I_AVSS	P5
E6	AON_PAD_I_VDDIO_1P8_3P3_EXT	PAD_I_AVSS	P8
A2	I2C_PAD_I_VDDIO_1P8_3P3_EXT	PAD_I_AVSS	H4
C13	CORE_PAD_I_VDDIO_1P8_3P3_EXT		
C8	CORE_PAD_I_VDDIO_1P8_3P3_EXT		
B11	CORE_PMU_I_AON_VDDIO_1P8_3P3_EXT		
A10	CORE_PMU_I_VDDLDO_1P8_EXT		
A11	CORE_PMU_O_VDDCORE_1P2_CAP		

MARKED AS CRITICAL DUE TO PART ISSUES IN THE PAST W/0201

R2205 0.00 5% 1/32W MF 01005

SPI_SOC_TO_GRAPE_CS_L (IN) — KONA_M_GPIO_15

TODO: CHECK BSYNC CONNECTIVITY

R2214 1.00M 5% 1/32W MF 01005

PP3V3_GRAPE_FILT — KONA_BOOST_ATEST

R2211 10K 5% 1/32W MF 01005

GPIO_SOC_TO_GRAPE_RESET_L (IN) — KONA_M_TEST_MODE

C2216 20PF 5% 16V C0G 01005

CLK_SOC_TO_GRAPE_24MHZ (IN) — CLK_TOUCH_24MHZ_C

XW2201 SHORT-8L-0.091MM-SM

CLK_TOUCH_24MHZ_C — CLK_KONA_M_24MHZ

C2217 20PF 5% 16V C0G 01005

R2206 1.00K 5% 1/32W MF 01005

KONA_BOOST_EN — KONA_BOOST_EN_R

Q2201 SIA445EDJ SC70-6L — CRITICAL

PPVCC_MAIN — KONA_BOOST_MAIN_GATED

R2207 10K 5% 1/32W MF 01005

C2211 1UF 20% 16V CER-X5R 0201

C2226 0.1UF 10% 25V X5R 0201 — CRITICAL

NO_XNET_CONNECTION=1

C2220 10UF 20% 16V X5R-CERM 0402-7

R2208 0.15 1% 1/8W MF 0402

KONA_BOOST_MAIN_GATED — KONA_BOOST_MAIN_R

DIDT=TRUE

XW2204 SHORT-8L-0.091MM-SM

KONA_BOOST_VBAT

XW2203 SHORT-8L-0.091MM-SM

KONA_BOOST_ISENSE

L2201 22UH-20%-0.61A-0.60HM — CRITICAL

SOD523 — KONA_BOOST_MAIN_R — KONA_BOOST_LX

VLF504010-SM

SWITCH_NODE=TRUE

Q2202 CSD17381F4 0402 — CRITICAL

KONA_BOOST_NGATE

D2201 ZLLS350TA-55 — CRITICAL

KONA_BOOST_LX — PP15V0_TOUCH

C2223 10UF 20% 25V X5R-CERM 0603

C2225 10UF 20% 25V X5R-CERM 0603

C2268 220PF 10% 25V X7R-CERM 0201

XW2205 SHORT-8L-0.091MM-SM

NO_XNET_CONNECTION=1

KONA_BOOST_FBIN

R2222 3.3 5% 1/10W MF-LF 402 — CRITICAL

PP15V0_TOUCH — PP15V0_TOUCH_FILT

VOLTAGE=VSV

C2221 0.47UF 20% 25V CER-X5R 02010201 — CRITICAL

C2222 0.47UF 20% 25V CER-X5R

C2223 0.47UF 20% 25V CER-X5R 0201

C2232 0.47UF 20% 25V CER-X5R

C2233 0.47UF 20% 25V CER-X5R 0201

C2234 0.47UF 20% 25V CER-X5R 0201

C2235 0.47UF 20% 25V CER-X5R 0201

C2236 100PF 5% 25V C0G 0201

C2237 12PF 5% 25V NP0-C0G 0201

L2204 FERR-220-OHM 0402

PP3V3_GRAPE — PP3V3_GRAPE_FILT

VOLTAGE=3.3V

C2238 100PF 5% 25V C0G 0201

C2239 12PF 5% 25V NP0-C0G 0201

C2224 0.47UF 20% 25V CER-X5R 0201

C2225 0.22UF 20% 10V CERM-X5R 0201

C2231 0.22UF 20% 10V CERM-X5R 0201

PP2V8_KONA_M_VDDANA

C2278 12PF 5% 25V C0G 0201

C2279 5% 25V NP0-C0G 0201

C2201 0.1UF 10% 10V X5R-CERM 0201

C2202 10% 10V X5R-CERM 0201

C2203 0.1UF 10% 10V X5R-CERM 0201

C2204 0.1UF 10% 10V X5R-CERM

C2205 0.1UF 10% 10V X5R-CERM 0402

C2206 2.2UF 10% 10V X5R-CERM

KONA_M_VDDADC_CAP

C2229 1UF 10% 10V X5R-CERM 0402

L2203 FERR-220-OHM 0402 — CRITICAL

PP1V8_GRAPE_XTAL_FILT

C2227 0.1UF 10% 10V X5R 0201 — CRITICAL

C2228 0.22UF 20% 10V CERM-X5R 0201 — CRITICAL

PP1V8_GRAPE

C2248 100PF 5% 25V C0G 0201

C2249 12PF 5% 25V NP0-C0G 0201

C2207 2.2UF 10% 10V X5R-CERM 0402

C2208 0.1UF 10% 6.3V CERM-X5R 0201

C2209 0.1UF 10% 6.3V CERM-X5R 0201

C2210 0.1UF 10% 6.3V CERM-X5R 0201

R2281 100 1% 1/20W MF 201

PP1V8_GRAPE_AON_RC

C2281 2.2UF 10% 10V X5R-CERM 0402 — CRITICAL

KONA_M_VDDCORE_CAP

C2218 1UF 10% 10V X5R-CERM 0402 — CRITICAL

C2219 0.1UF 10% 6.3V CERM-X5R 0201

BOOT OPTION

PP1V8_GRAPE

R2201 10K 5% 1/32W MF 01005 — NOSTUFF

R2203 10K 5% 1/32W MF 01005

KONA_BOOT0_M

R2202 10K 5% 1/32W MF 01005

R2204 10K 5% 1/32W MF 01005 — NOSTUFF

KONA_BOOT1_M

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
	138S0700	C2206,ETC	ROAR://PROBLEM/20618071	
376S00191	376S00061		Q2202	

371S00118	371S00175		D2201	
371S00117	371S00175		D2201	

SYNC_MASTER=J217_MLB_B — SYNC_DATE=04/09/2018

PAGE TITLE

TOUCH: KONA

TOUCH CONNECTOR

CRITICAL

J2400
AA21
F-ST-SM

(MATE WITH J5 ON J211_GRAPE_FLEX)

18	IN	GRAPE_TX<39>	2	1	GRAPE_TX<0>	IN	18
18	IN	GRAPE_TX<38>	4	3	GRAPE_TX<1>	IN	18
18	IN	GRAPE_TX<37>	6	5	GRAPE_TX<2>	IN	18
18	IN	GRAPE_TX<36>	8	7	GRAPE_TX<3>	IN	18
18	IN	GRAPE_TX<35>	10	9	GRAPE_TX<4>	IN	18
18	IN	GRAPE_TX<34>	12	11	GRAPE_TX<5>	IN	18
18	IN	GRAPE_TX<33>	14	13	GRAPE_TX<6>	IN	18
18	IN	GRAPE_TX<32>	16	15	GRAPE_TX<7>	IN	18
	IN	GRAPE_TX<31>	18	17	GRAPE_TX<8>	IN	18
	IN	GRAPE_TX<30>	20	19	GRAPE_TX<9>	IN	18
18	IN	GRAPE_TX<29>	22	21	GRAPE_TX<10>	IN	18
18	IN	GRAPE_TX<28>	24	23	GRAPE_TX<11>	IN	18
18	IN	GRAPE_TX<27>	26	25	GRAPE_TX<12>	IN	18
18	IN	GRAPE_TX<26>	28	27	GRAPE_TX<13>	IN	18
18	IN	GRAPE_TX<25>	30	29	GRAPE_TX<14>	IN	18
18	IN	GRAPE_TX<24>	32	31	GRAPE_TX<15>	IN	18
18	IN	GRAPE_TX<23>	34	33	GRAPE_TX<16>	IN	18
18	IN	GRAPE_TX<22>	36	35	GRAPE_TX<17>	IN	18
	IN	GRAPE_TX<21>	38	37	GRAPE_TX<18>	IN	18
	IN	GRAPE_TX<20>	40	39	GRAPE_TX<19>	IN	18
			42	41			

CRITICAL

J2401
AA21
F-ST-SM

(MATE WITH J6 ON J211_GRAPE_FLEX)

19	PP1V8_S2R_HALL_FILT		2	1	PMU_GPIO_MB_HALL0_IRQ_F		19
			4	3	PMU_GPIO_MB_HALL1_IRQ_F		19
			6	5			
			8	7			
			10	9			
			12	11			
18	OUT	GRAPE_RX<29>	14	13	GRAPE_RX<14>	OUT	18
18	OUT	GRAPE_RX<28>	16	15	GRAPE_RX<13>	OUT	18
18	OUT	GRAPE_RX<27>	18	17	GRAPE_RX<12>	OUT	18
18	OUT	GRAPE_RX<26>	20	19	GRAPE_RX<11>	OUT	18
18	OUT	GRAPE_RX<25>	22	21	GRAPE_RX<10>	OUT	18
18	OUT	GRAPE_RX<24>	24	23	GRAPE_RX<9>	OUT	18
18	OUT	GRAPE_RX<23>	26	25	GRAPE_RX<8>	OUT	18
18	OUT	GRAPE_RX<22>	28	27	GRAPE_RX<7>	OUT	18
18	OUT	GRAPE_RX<21>	30	29	GRAPE_RX<6>	OUT	18
18	OUT	GRAPE_RX<20>	32	31	GRAPE_RX<5>	OUT	18
18	OUT	GRAPE_RX<19>	34	33	GRAPE_RX<4>	OUT	18
18	OUT	GRAPE_RX<18>	36	35	GRAPE_RX<3>	OUT	18
18	OUT	GRAPE_RX<17>	38	37	GRAPE_RX<2>	OUT	18
18	OUT	GRAPE_RX<16>	40	39	GRAPE_RX<1>	OUT	18
18	OUT	GRAPE_RX<15>	42	41	GRAPE_RX<0>	OUT	18
			46	45			

FL2400
240-OHM-0.2A-0.8-OHM
0201-2

47 37 IN PP1V8_S2 → PP1V8_S2R_HALL_FILT 19 VOLTAGE=3V

C2480 27PF 5% 16V NP0/C0G 01005-1
C2481 0UF 20% 6.3V 16V X6S 0201 2-1
C2482 1000PF 10% 16V X7R 0201

FL2401
240-OHM-0.2A-0.8-OHM
0201-2

34 OUT GPIO_HALL_EDGE_TO_PMU_IRQ → PMU_GPIO_MB_HALL0_IRQ_F 19

C2450 56PF 5% 16V NP0/C0G 01005

FL2402
240-OHM-0.2A-0.8-OHM
0201-2

34 OUT GPIO_HALL_CENTER_TO_PMU_IRQ → PMU_GPIO_MB_HALL1_IRQ_F 19

C2452 56PF 5% 16V NP0/C0G 01005

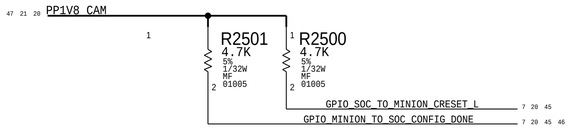
SYNC_MASTER=J217_MLB_B	SYNC_DATE=04/09/2018
PAGE TITLE	
TOUCH: GRAPE CONN	

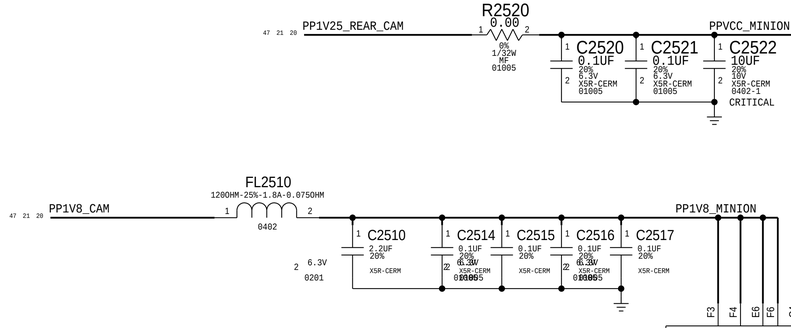
MINION

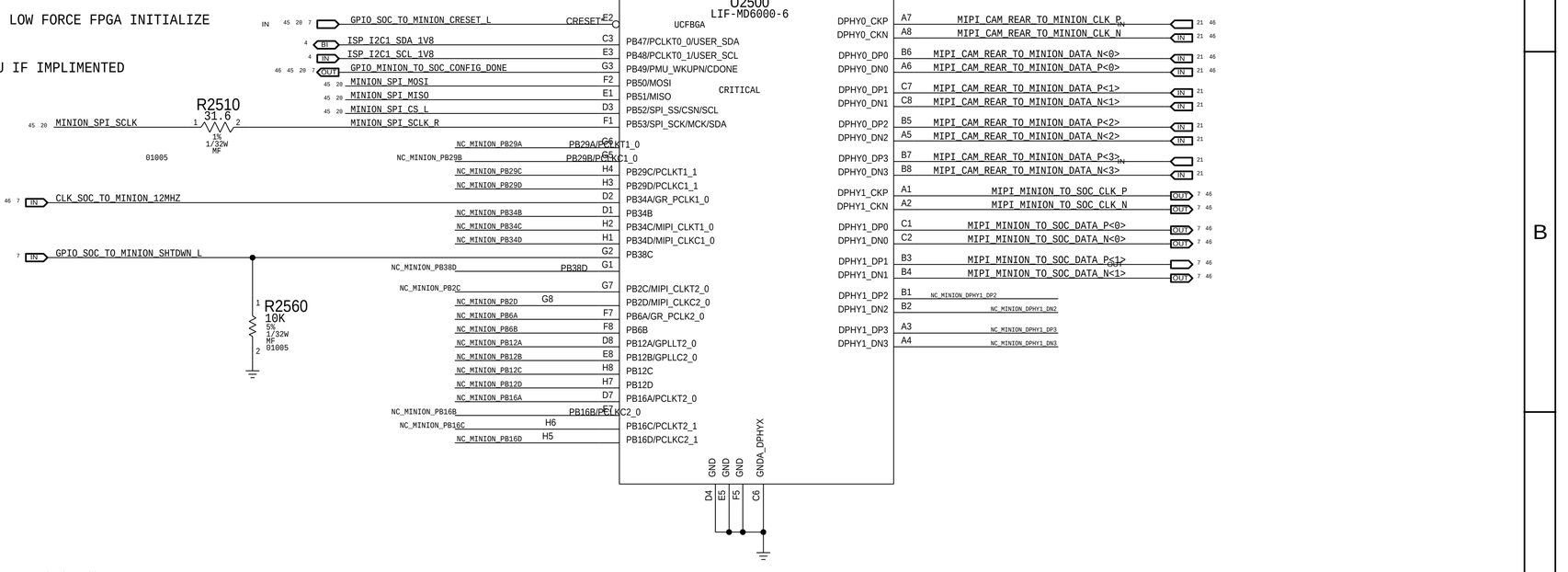
VCCIO: NOM 1.8V
VCC: NOM 1.2V (1.25V CAMERA RAIL IS ACCEPTABLE)
VCCAUX: NOM 2.5V (2.6V CAMERA RAIL IS ACCEPTABLE)

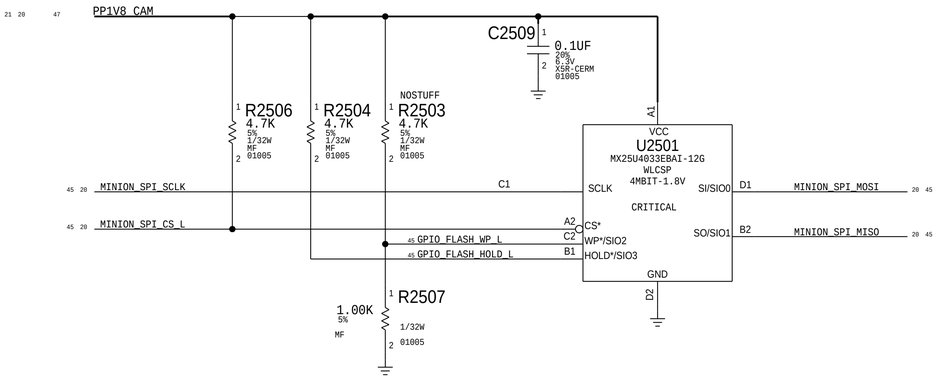
LOW FORCE FPGA INITIALIZE

HIGH INDICATES FPGA INITIALIZED AND LOW WAKE PMU IF IMPLIMENTED









SYNC_MASTER=J217_MLB_B SYNC_DATE=04/09/2018

PAGE TITLE

CAMERA: MIPI BRIDGE

REAR CAM, ALS-PWR-BUTTON, VOLUME-BUTTON FLEXES

REAR CAMERA CONNECTOR

CRITICAL
U2700
400MHZ-0.1A-27PF
1208
IN1 IN2 IN3 IN4 OUT1 OUT2 OUT3 OUT4 GND

CLK_SOC_TO_REAR_CAM_12MHZ
GPIO_SOC_TO_REAR_CAM_SHTDWN_L
ISP_I2C0_SDA_1V8
ISP_I2C0_SCL_1V8
ISP_REAR_CAM_SHTDWN_FILT_L
ISP_REAR_CAM_SDA_FILT
ISP_REAR_CAM_SCL_FILT

APN: 516S00073
PLUG: 516S0750
CRITICAL
J2750
AA07A-S026VA1
F-ST-SM

CRITICAL
L2750
FERR-150OHM-25%-200MA
01005
CLK_SOC_TO_REAR_CAM_CLK_LC
CLK_REAR_CAM_CONN

ISP_REAR_CAM_SHTDWN_FILT_L
ISP_REAR_CAM_SDA_FILT
ISP_REAR_CAM_SCL_FILT
PP1V8_CAM_REAR_FILT
PP2V6_CAM_REAR_AF_FILT
PP1V25_CAM_REAR_FILT
PP2V9_AVDD_CAM_REAR_FILT

MIPI0C_CAM_REAR_DATA_FILT_N<0>
MIPI0C_CAM_REAR_DATA_FILT_P<0>
MIPI_CAM_REAR_DATA_FILT_N<1>
MIPI_CAM_REAR_DATA_FILT_P<1>
MIPI_CAM_REAR_CLK_FILT_N
MIPI_CAM_REAR_CLK_FILT_P
MIPI_CAM_REAR_DATA_FILT_N<2>
MIPI_CAM_REAR_DATA_FILT_P<2>

CRITICAL
L2710 L2711 L2720 L2712
EXCX4CE
90-OHM-0.1A
MIPI_CAM_REAR_TO_MINION_DATA_N<0>
MIPI_CAM_REAR_TO_MINION_DATA_P<0>
MIPI_CAM_REAR_TO_MINION_DATA_N<1>
MIPI_CAM_REAR_TO_MINION_DATA_P<1>
MIPI_CAM_REAR_TO_MINION_CLK_N
MIPI_CAM_REAR_TO_MINION_CLK_P
MIPI_CAM_REAR_TO_MINION_DATA_N<2>
MIPI_CAM_REAR_TO_MINION_DATA_P<2>

CRITICAL
L2713
EXCX4CE
90-OHM-0.1A
MIPI_CAM_REAR_TO_MINION_DATA_N<3>
MIPI_CAM_REAR_TO_MINION_DATA_P<3>
MIPI_CAM_REAR_DATA_FILT_N<3>
MIPI_CAM_REAR_DATA_FILT_P<3>

R2750
100K
5%
1/32W
MF
01005

ALS_PWR_BUTTON_FLEX CONN

MLB 516S00186
ALS_PWR_BUTTON_FLEX 516S00185

J2700
BM28P0.6-6DS/2-0.35V
F-ST-SM
CRITICAL
PWR/GND SIGNAL PWR/GND
PP3V0_ALS2_CONN
GPIO_BTN_ONOFF_L_CONN
I2C_ALS2_SDA_CONN
I2C_ALS2_SCL_CONN
GPIO_ALS2_TO_SOC_IRQ_L_CONN

FL2700
240OHM-25%-0.2A-0.90HM
01005
GPIO_BTN_ONOFF_L
GPIO_BTN_ONOFF_R_L
R2773
100
MF 5% 1/32W 01005
GPIO_BTN_ONOFF_L_CONN
CRITICAL
DZ2773
0201
12.8V-100PF

FL2739
70-OHM-300MA
01005-1
GPIO_ALS2_TO_SOC_IRQ_L
GPIO_ALS2_TO_SOC_IRQ_L_CONN
CKPLUS_WAIVE=I2C_PULLUP

FL2740
70-OHM-300MA
01005-1
I2C1_SDA_1V8
I2C_ALS2_SDA_CONN
CKPLUS_WAIVE=I2C_PULLUP

FL2741
70-OHM-300MA
01005-1
I2C1_SCL_1V8
I2C_ALS2_SCL_CONN
CKPLUS_WAIVE=I2C_PULLUP

FL2742
80-OHM-25%-0.5A-0.13DCR
0201
PP3V0_ALS
PP3V0_ALS2_CONN
C2742 1.0UF 20% 6.3V X5R 0201-1
C2743 1000PF 10% 16V X5R-CERM 01005

VOLUME_BUTTON_FLEX CONNECTOR

MLB 516S00186
VOLUME_BUTTON_FLEX 516S00185

J2760
BM28P0.6-6DS/2-0.35V
F-ST-SM
PWR/GND SIGNAL PWR/GND
GPIO_BTN_VOL_UP_L_CONN
GPIO_BTN_VOL_DOWN_L_CONN

FL2771
240OHM-25%-0.2A-0.90HM
01005
GPIO_BTN_VOL_DOWN_L
GPIO_BTN_VOL_DOWN_R_L
R2771
100
MF 5% 1/32W 01005
GPIO_BTN_VOL_DOWN_L_CONN
DZ2771
0201
12.8V-100PF

FL2772
240OHM-25%-0.2A-0.90HM
01005
GPIO_BTN_VOL_UP_L
GPIO_BTN_VOL_UP_R_L
R2772
100
MF 5% 1/32W 01005
GPIO_BTN_VOL_UP_L_CONN
DZ2772
0201
12.8V-100PF

FL2701
80-OHM-25%-0.5A-0.13DCR
0201
PP2V9_REAR_CAM
PP2V9_AVDD_CAM_REAR_FILT
C2700 56PF 5% 16V NP0/C0G 010050201-1
C2701 1.0UF 20% 6.3V X5R
C2702 1000PF 10% 6.3V X5R-CERM 01005

FL2704
80-OHM-25%-0.5A-0.13DCR
0201
PP2V6_REAR_CAM_AF
PP2V6_CAM_REAR_AF_FILT
C2703 56PF 5% 16V NP0/C0G 01005
C2704 1.0UF 20% 6.3V 0201-1
C2705 1000PF 10% 6.3V X5R-CERM 01005

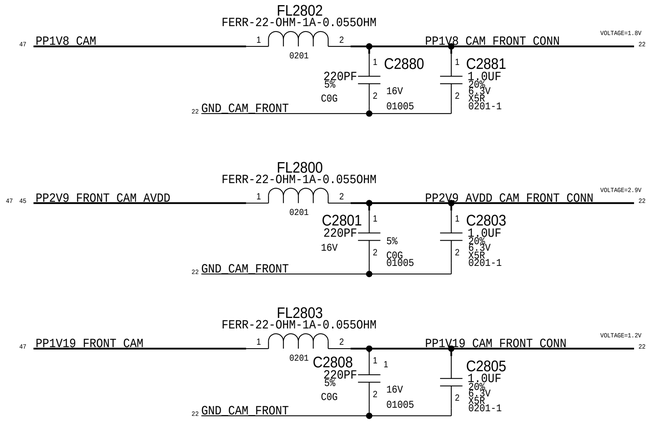
FL2702
80-OHM-25%-0.5A-0.13DCR
0201
PP1V8_CAM
PP1V8_CAM_REAR_FILT
C2706 56PF 5% 16V NP0/C0G 01005
C2707 1.0UF 20% 6.3V X5R 0201-1
C2708 1000PF 10% 6.3V X5R-CERM 01005

FL2703
FERR-22-OHM-1A-0.0550HM
0201
PP1V25_REAR_CAM
PP1V25_CAM_REAR_FILT
C2709 56PF 5% 16V NP0/C0G 01005
C2710 1.0UF 20% 6.3V X5R 0201-1
C2711 1000PF 10% 6.3V X5R-CERM 01005

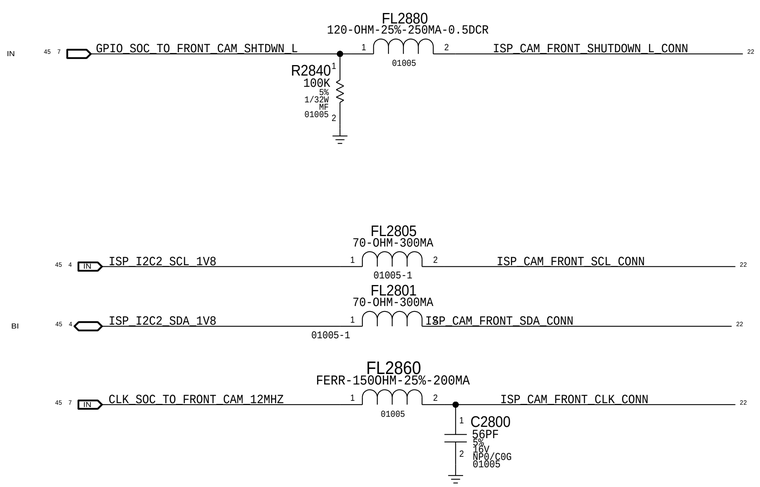
SYNC_MASTER=J217_MLB_B
SYNC_DATE=04/09/2018
PAGE TITLE
FLEX CONNS: RCAM, ALS-PWR-BTN, VOL-BTN

FRONT CAMERA (NH)

POWER FILTERS



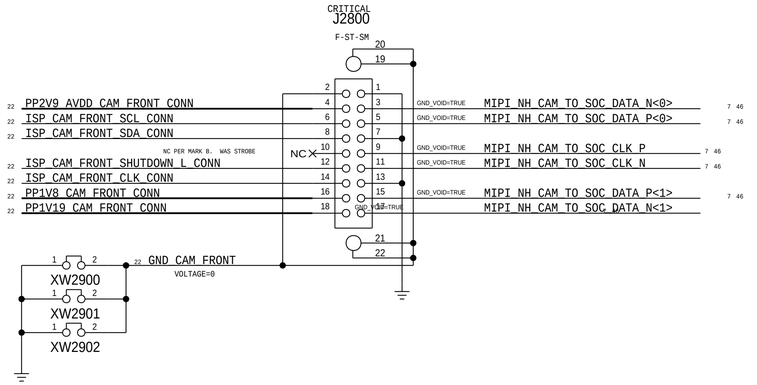
IO FILTERS



FRONT CAMERA CONNECTOR

MATCHES J120_FRONT_CAM_FLEX_051-01272_2.0.0

FLEX SIDE: 516S00194
MLB SIDE: 516S00193



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

SYNC_MASTER=2217_MLB_B
SYNC_DATE=04/09/2018

PAGE TITLE

CAMERA: FRONT

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
155S00338	155S00402			L3000-5

CLIFDEN

47 23 PP1V8_S2_EXT_SW2

R3098 10K 5% 1/32W MF 01005

R3099 10K 5% 1/32W MF 01005

23 9 GPIO_SOC_TO_BELFIELD_RESET_L

23 10 GPIO_SOC_TO_CODEC_RESET_L

47 PP1V7_S2_VA_VCP

C3001 4.7UF 20% 6.3V X5R 0201

C3003 0.1UF 10% CERM-X5R

C3009 2.2UF 20% 6.3V X5R-CERM 0201

C3051 2.2UF 20% 6.3V X5R-CERM 0201

23 GND_AUDIO_CODEC

L83_PVCP

L83_NVCP

C3008 4.7UF 20% 6.3V X5R 402

C3007 4.7UF 20% 6.3V X5R 402

47 23 PPVCC_MAIN

R3019 10K 5% 1/32W MF 01005

VL_SEL

GPIO_CODEC_TO_SOC_IRQ_L

GPIO_CODEC_TO_PMU_WAKE_L

GPIO_SOC_TO_CODEC_RESET_L

U3000 CS42L83A WLCSP-SKT

E6	+VCP_FILT	
G6	-VCP_FILT	
F6	GNDCP	
C4	VL_SEL	
D4	DIGLDO_PDN*	
B7	INT*	
C6	WAKE*	
C5	RESET*	
A6	SPDIF_TX	
D3	SWIRE_SEL	
B5	ASP_LRCK/FSYNC	
A5	SWIRE_SD/ASP_SDIN	
A4	ASP_SDOUT	
B4	SWIRE_CLK/ASP_SCLK	
C3	AD0	
B2	AD1	
A1	SDA	
A2	SCL	
E7	FLYP	
F7	FLYC	
G7	FLYN	
C1	FILT_P	
D2	GNDA	
C2	GNDHS	
G1	GNDD	
C7	GNDD	
B6	GNDD	
B3	GNDL	
B6	VCP	
B1	VA	
A3	VD_FILT	
A2	VL	
B7	VP	

I2S_CODEC_TO_AOP_DOUT

R3011 22 5% 1/32W MF 01005

I2S_AOP_TO_CODEC_LRCK

I2S_AOP_TO_CODEC_DOUT

I2S_CLIFDEN_TO_AOP_DOUT_R

I2S_AOP_TO_CODEC_BCLK

I2C3_SDA_1V8

I2C3_SCL_1V8

C3005 4.7UF 20% 6.3V X5R 402

C3006 4.7UF 20% 6.3V X5R 402

L83_FLYP

L83_FLYC

L83_FLYN

L83_FILT

C3010 10UF 20% 16V X5R-CERM 0402-3

VOLTAGE=0V

XW3000 SM

23 GND_AUDIO_CODEC

PLACE_NEAR=U3000.A3:5MM

PP1V8_S2_EXT_SW2 23 47

C3002 0.1UF 20% 6.3V X5R-CERM 01005

PPVCC_MAIN 23 47

C3004 0.1UF 10% 6.3V X5R 0201

C3040 10UF 20% CERM-X5R 0402-9

C3041 10UF 20% 6.3V CERM-X5R 0402-9

C3042 10UF 20% CERM-X5R 0402-9

D5	HPSENSA	
E5	HPOUTA	CODEC_HP_LEFT
F5	HPSENSB	
G5	HPOUTB	CODEC_HP_RIGHT
F1	HS4	CODEC_HP_HS4
E2	HS_CLAMP2	
E1	HSIN+	CODEC_HP_HSINP
G2	HS3	CODEC_HP_HS3
F2	HS_CLAMP1	
D1	HSIN-	CODEC_HP_HSINN
F4	HS4_REF	CODEC_HP_HS4_REF
G4	HS3_REF	CODEC_HP_HS3_REF
G3	RING_SENSE	NC
F3	TIP_SENSE	CODEC_HP_DET
F3	HSBIAS_FILT	HSBIAS_FILT
E3	HSBIAS_FILT_REF	HSBIAS_FILT_REF

XW3006 SHORT-10L-0.1MM-SM NO_XNET_CONNECTION=1

XW3007 SM NO_XNET_CONNECTION=1

C3012 4.7UF 20% 6.3V X5R 402

R3020 3.3K 5% 1/32W MF 01005

CODEC_HP_DET_R

R3021 1.00K 5% 1/32W MF 01005

R3022 1.00K 5% 1/32W MF 01005

L3000 FERR-330HM-25%-1.5A 0201 CRITICAL — CODEC_HP_LEFT_CONN (OUT)

L3001 FERR-330HM-25%-1.5A 0201 CRITICAL — CODEC_HP_RIGHT_CONN (OUT)

L3002 FERR-330HM-25%-1.5A 0201 CRITICAL — CODEC_HP_HS4_CONN (IN)

L3003 FERR-330HM-25%-1.5A 0201 CRITICAL — CODEC_HP_HS3_CONN (IN)

RDAR//PROBLEM/26018872

L3004 FERR-330HM-25%-1.5A 0201 CRITICAL — CODEC_HP_HS4_REF_CONN (IN)

L3005 FERR-330HM-25%-1.5A 0201 CRITICAL — CODEC_HP_HS3_REF_CONN (IN)

L3020 240-OHM-0.2A-0.8-OHM 0201-2 — CODEC_HP_HEADSET_DET_CONN (IN)

C3020 4700PF 10% 6.3V X5R 01005 NOSTUFF

BELFIELD

47 29 PPVCC_MAIN

C3062 0.1UF 10% 16V X5R-CERM 0201

PP1V8_S2_EXT_SW2 23 47

C3061 0.1UF 20% 5.3V X5R-CERM 01005

U3050 CS46L10 WLCSP CRITICAL

D5	VP	
B5	VD	
A5	VD_FILT	NC
D2	WAKE*	GPIO_BELFIELD_TO_PMU_WAKE_L
D3	INT*	GPIO_BELFIELD_TO_SOC_IRQ_L
D4	RESET*	GPIO_SOC_TO_BELFIELD_RESET_L
B1	MCLK	I2S0_SOC_TO_BELFIELD_MCLK
A1	SCLK	I2S0_SOC_TO_BELFIELD_BCLK
B2	LRCK/FSYNC	I2S0_SOC_TO_BELFIELD_LRCK
A2	AD2/SDOUT	I2S0_BELFIELD_TO_SOC_DOUT
A3	SDIN	I2S0_SOC_TO_BELFIELD_DOUT
B3	AD0/CS_L	SPI_BELFIELD_CS_L
A4	SCL/CCLK	SPI_BELFIELD_SCLK
C4	AD1/MOSI	SPI_BELFIELD_MOSI
B4	SDA/MISO	SPI_BELFIELD_MISO
C3	DIGLDO_PDN	
D1	D+	BELFIELD_MBUS_P
C1	D-	BELFIELD_MBUS_N
C2	MBUS_REF	BELFIELD_MBUS_REF
C5	GND	

R3030 12 5% 1/20W MF 201

R3031 12 5% 1/20W MF 201

C3030 100PF 5% 16V NP0-C0G 01005-1 NO_XNET_CONNECTION=1

C3031 100PF 5% 16V NP0-C0G 01005 NOSTUFF NO_XNET_CONNECTION=1

C3032 100PF 5% 16V NP0-C0G 01005-1 NO_XNET_CONNECTION=1

MIKEY_HYDRA_P (BI) 26 45

MIKEY_HYDRA_N (BI) 26 45

SYNC_MASTER=J217_MLB_B SYNC_DATE=04/09/2018

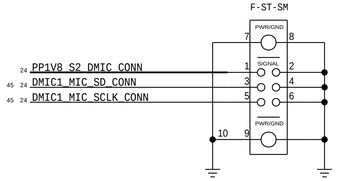
PAGE TITLE

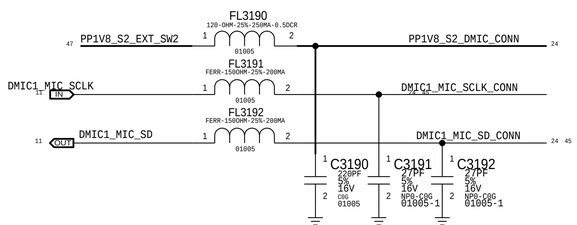
AUDIO: CLIFDEN, BELFIELD

DMIC FLEX CONN & ALS1 FILTERS

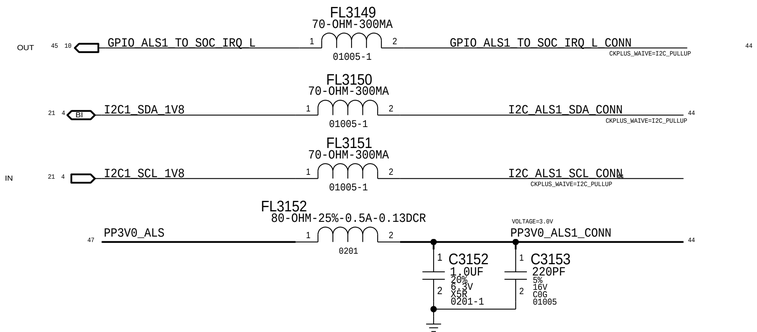
MLB 516S00186
MIC_CELL_FLEX 516S00185

J3110
BM28P0.6-6DS/2-0.35V
F-ST-SM





BUS	ROUTING	SELECT	LOCATION	DATA ASSERTS ON	DATA LATCHED ON
DMIC1	MIC1	HIGH	CENTER SPLINE	CLK RISING EDGE	CLK FALLING EDGE
	MIC2 DMIC1	LOW	REAR	CLK FALLING EDGE	CLK RISING EDGE

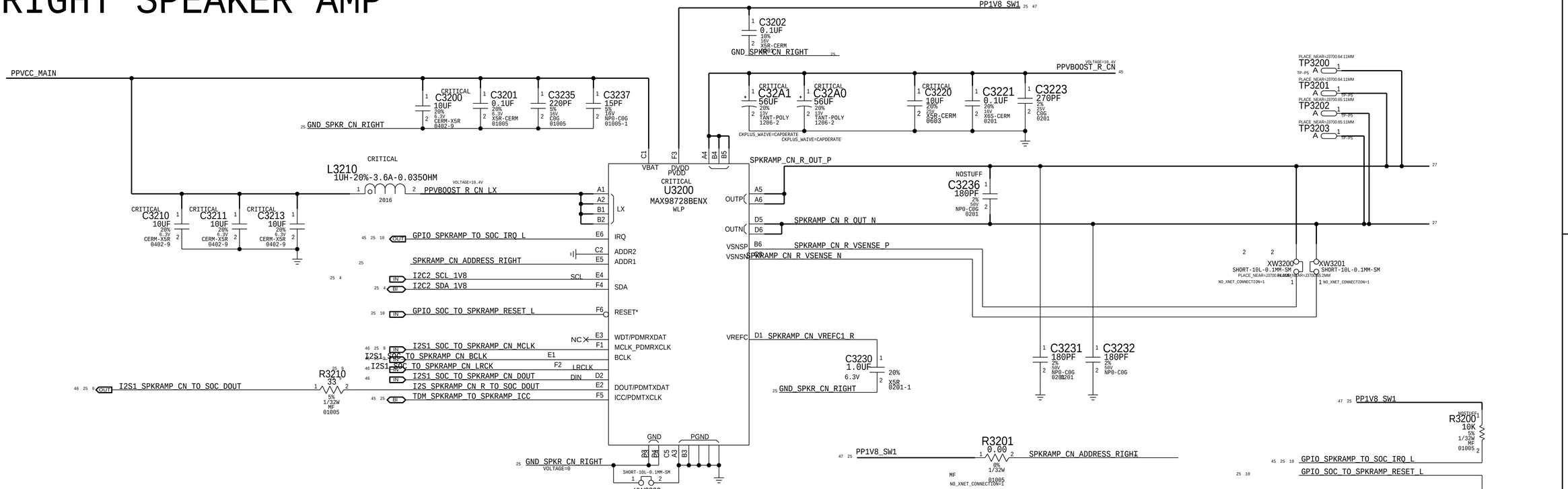


SYNC_MASTER=J217_MLB_B
SYNC_DATE=04/09/2018

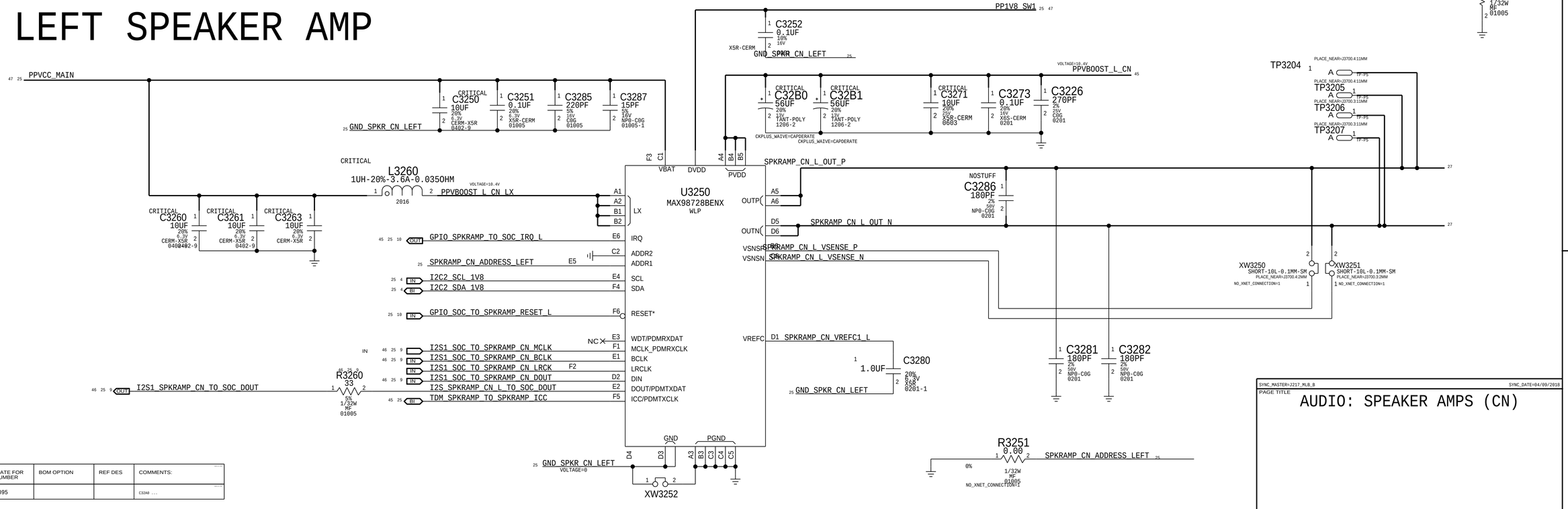
PAGE TITLE

FLEX CONN: DMIC, ALS1 FILTERS

CN RIGHT SPEAKER AMP



CN LEFT SPEAKER AMP



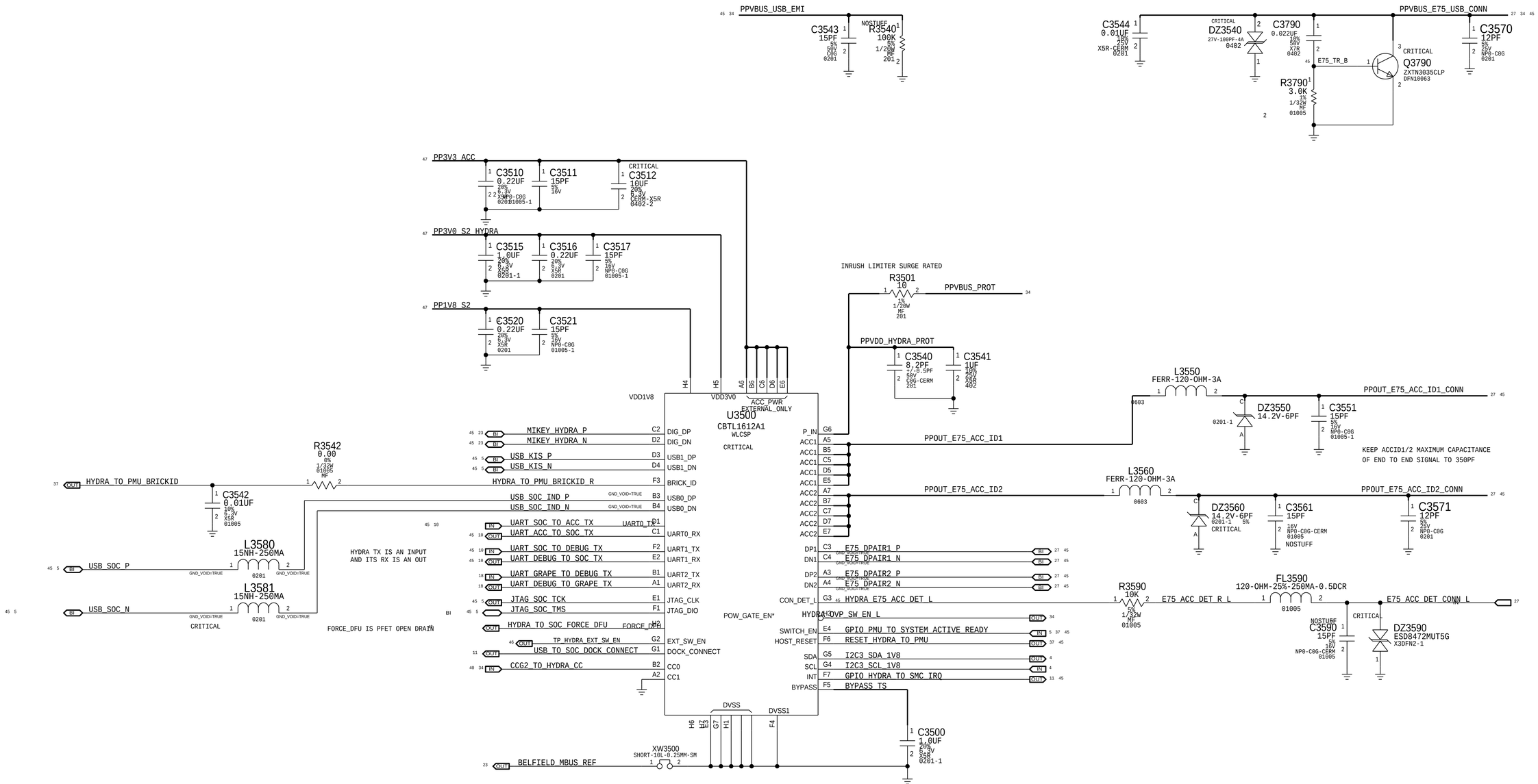
PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
128S00073	128S00095			C3248 ...

SYNC_MASTER=J217_MLB_B SYNC_DATE=04/09/2018

PAGE TITLE

AUDIO: SPEAKER AMPS (CN)

HYDRA

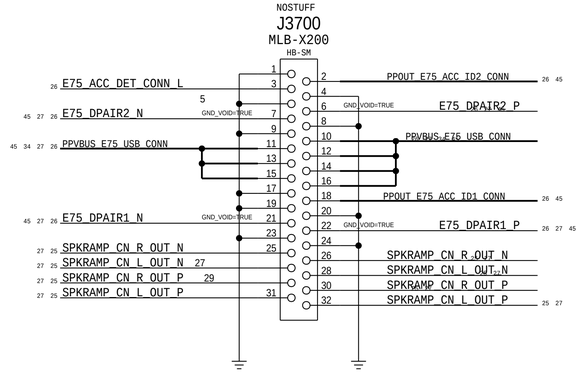


SYNC_MASTER=J217_MLB_B SYNC_DATE=04/09/2018

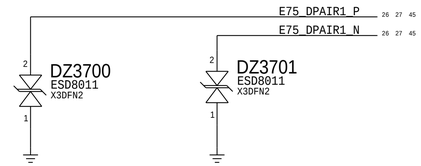
PAGE TITLE

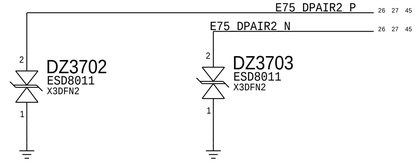
IO: HYDRA

HOTBAR CONNECTOR TO I/0 FLEX



NEW -> 998-7178 36-PIN CONN (CON_36HB_D1)
OLD -> 998-5933 32-PIN CONN (CON_32HB_D)



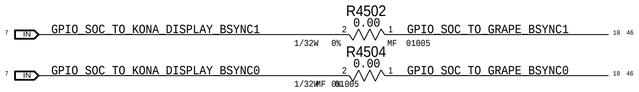


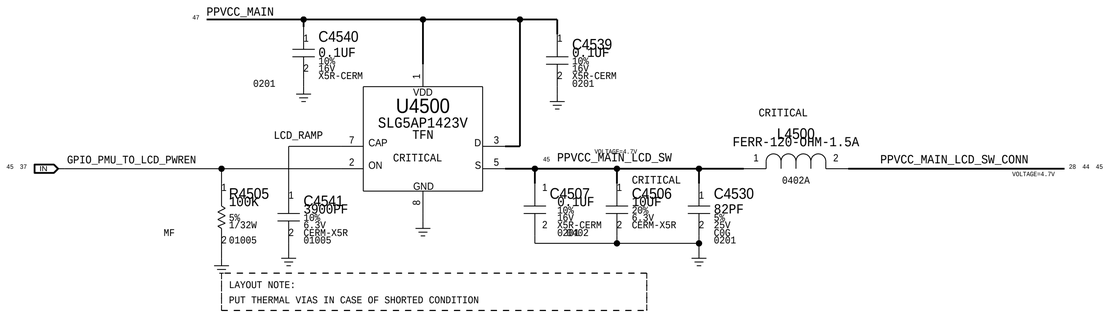
SYNC_MASTER=MLB_B_DOE SYNC_DATE=07/30/2018

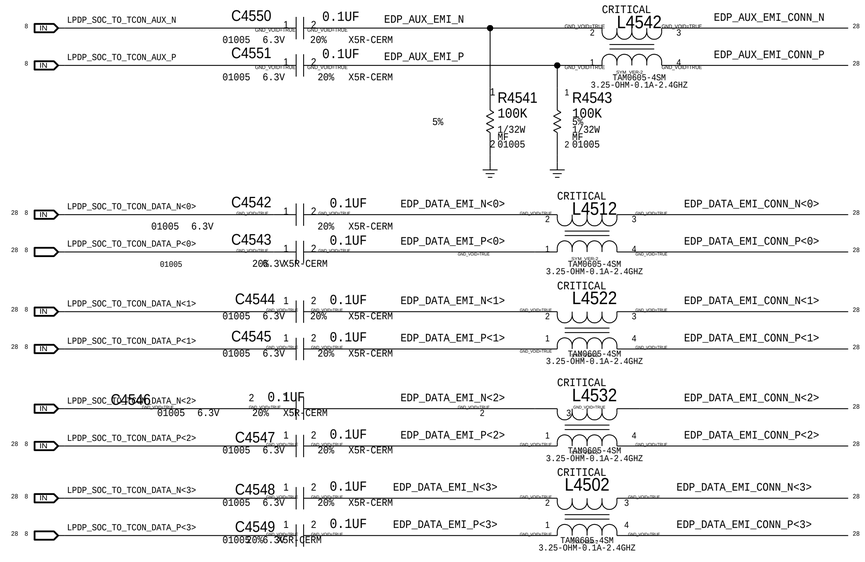
PAGE TITLE

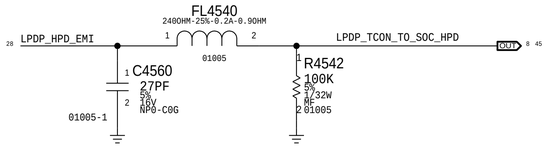
IO: HOTBAR

DISPLAY CONNECTOR

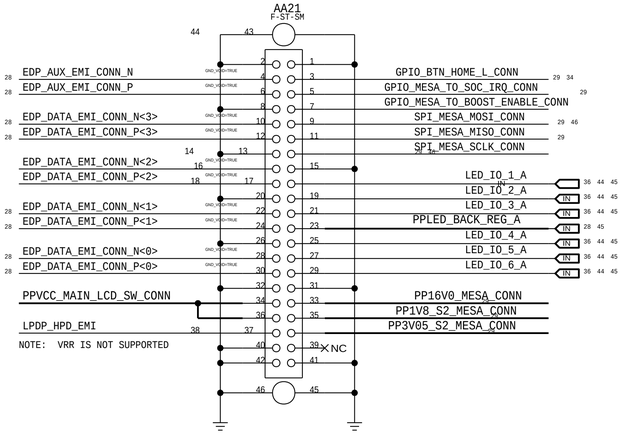


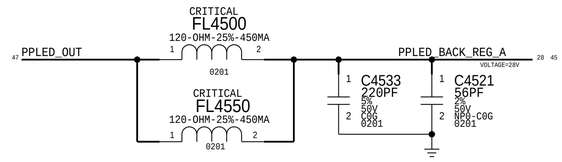






P/N 516S1070 (MLB)
P/N 516S1071 (FLEX)





PART NUMBER PART NUMBER	ALTERNATE FOR	BOM OPTIONS	COMMENTS:	
155S0914	155S0897			L4502,12,22,32,42

SYNC_MASTER=MLB_B_DOE
SYNC_DATE=07/30/2018

PAGE TITLE

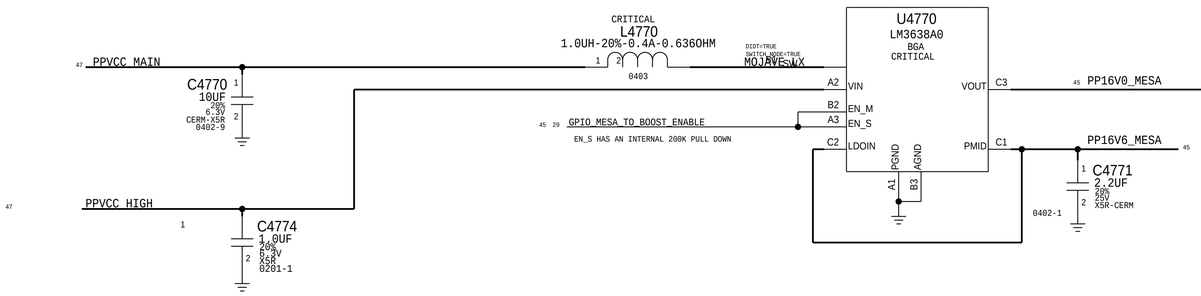
DISPLAY: FILTERS & CONN

MESA & HOME BUTTON

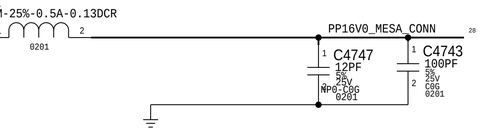
PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
132S00088	132S0639		C4746, ETC	RDAR://PROBLEM/26928883

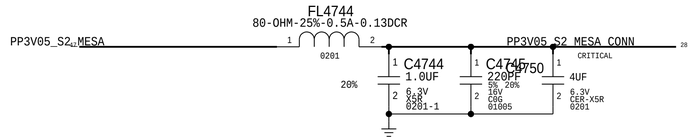
MOJAVE

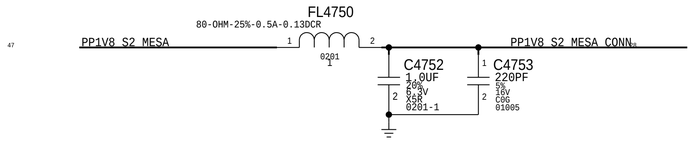
USING A0 (APN 353S00671)

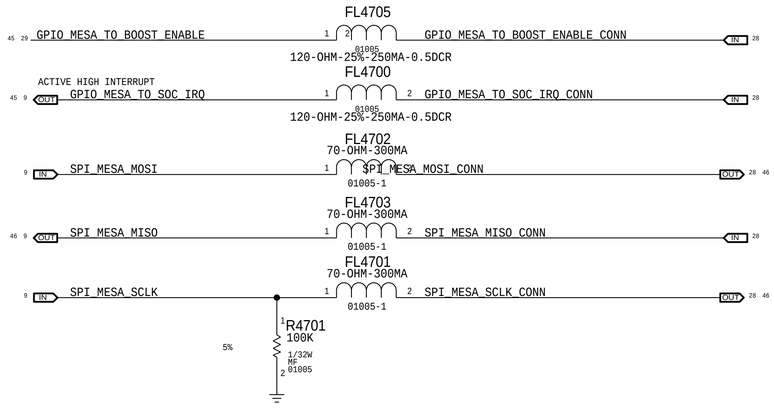


FILTERS

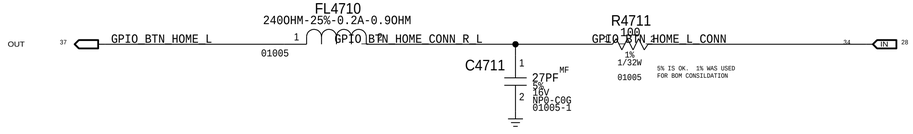








HOME BUTTON FILTERS



SYNC_MASTER=J217_MLB_B SYNC_DATE=04/09/2018

PAGE TITLE

SENSOR: MESA

WLAN SYMBOL IO PORTS

POWER

51 44 43 32 31 68 67 59 IO PPVCC_MAIN VOLTAGE=3.8

43 31 IO PP1V8_S2_EXT_SW2 VOLTAGE=1.8

CONTROL

43 31 IO GPIO_PMU_TO_WLAN_REG_ON

43 31 IO GPIO_PMU_TO_BT_REG_ON

43 31 IO GPIO_SOC_BT_DEVICE_WAKE

CLOCKS

43 31 IO CLK_PMU_TO_WLAN_32K

GPIO_WLAN_TO_SOC_TIME_SYNC IO

WLAN PCIE

43 31 IO PCIE_SOC_TO_WLAN_REFCLK_P

43 31 IO PCIE_SOC_TO_WLAN_REFCLK_N

43 31 IO PCIE_SOC_TO_WLAN_TX_P

43 31 IO PCIE_SOC_TO_WLAN_TX_N

43 31 IO PCIE_WLAN_TO_SOC_TX_C_P

43 31 IO PCIE_WLAN_TO_SOC_TX_C_N

IO 43 31 PCIE_SOC_TO_WLAN_RESET_L

IO 43 31 PCIE_WLAN_TO_SOC_CLKREQ_L

IO 43 31 GPIO_WLAN_TO_PMU_HOST_WAKE

BLWLAN UART

43 31 IO UART_SOC_TO_BT_TX

43 31 IO UART_BT_TO_SOC_TX

43 31 IO UART_SOC_TO_BT_RTS_L

43 31 IO UART_BT_TO_SOC_RTS_L

AOP

IO 43 31 GPIO_AOP_TO_WLAN_CONTEXT_A

IO 43 31 GPIO_AOP_TO_WLAN_CONTEXT_B

COEX

44 31 IO UART_COEX_BB_TO_WLAN_TXD

44 31 IO UART_COEX_WLAN_TO_BB_TXD

RF

33 32 IO 50_PRX_LAA_LNA2_OUT

33 32 IO 50_PRX_LAA_LNA1_OUT

RFFE

56 32 IO PP_1V8_XCVR_TO_FE_RX_RFFE_IO

56 32 30 IO XCVR_RX_RFFE_CLK_WLAN

56 32 30 IO XCVR_RX_RFFE_DATA_WLAN

56 32 IO PP_1V8_XCVR_TO_FE_RX_RFFE_IO

56 32 30 IO XCVR_RX_RFFE_CLK_WLAN

56 32 30 IO XCVR_RX_RFFE_DATA_WLAN

PENCIL

13 46 43 31 18 IO GPIO_SOC_TO_BT_TO_GRAPE_TS_SYNC

46 43 31 18 IO GPIO_TOUCH_TO_BT_SYNC

43 31 IO NC_BT_TO_SCORPIUS_TX_IND

43 31 IO NC_GPIO_WLAN_TO_SCORPIUS_TX_IND

SYNC_MASTER=WIFI_MLB_0.33.0 SYNC_DATE=09/30/2018

PAGE TITLE

J210+J211 WiFi+BT_GNSS

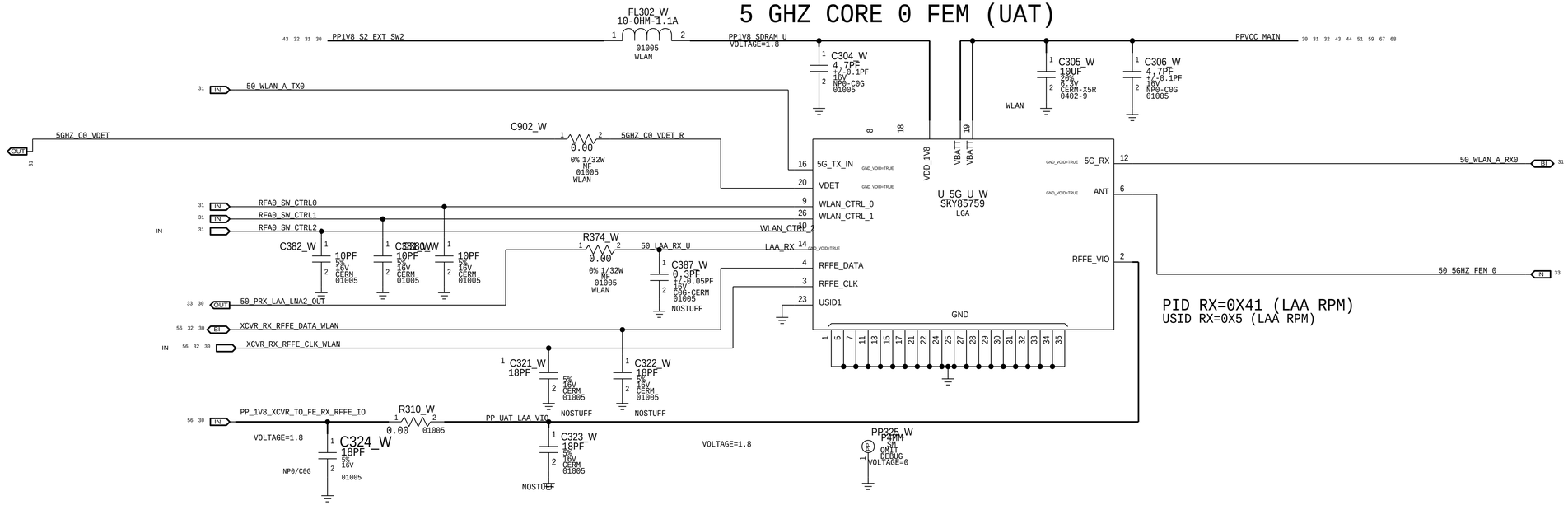
J210+J211: DIET COKE PRIMARY MODULE

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
339S00551	339S00540		U_WLAN_W	USI

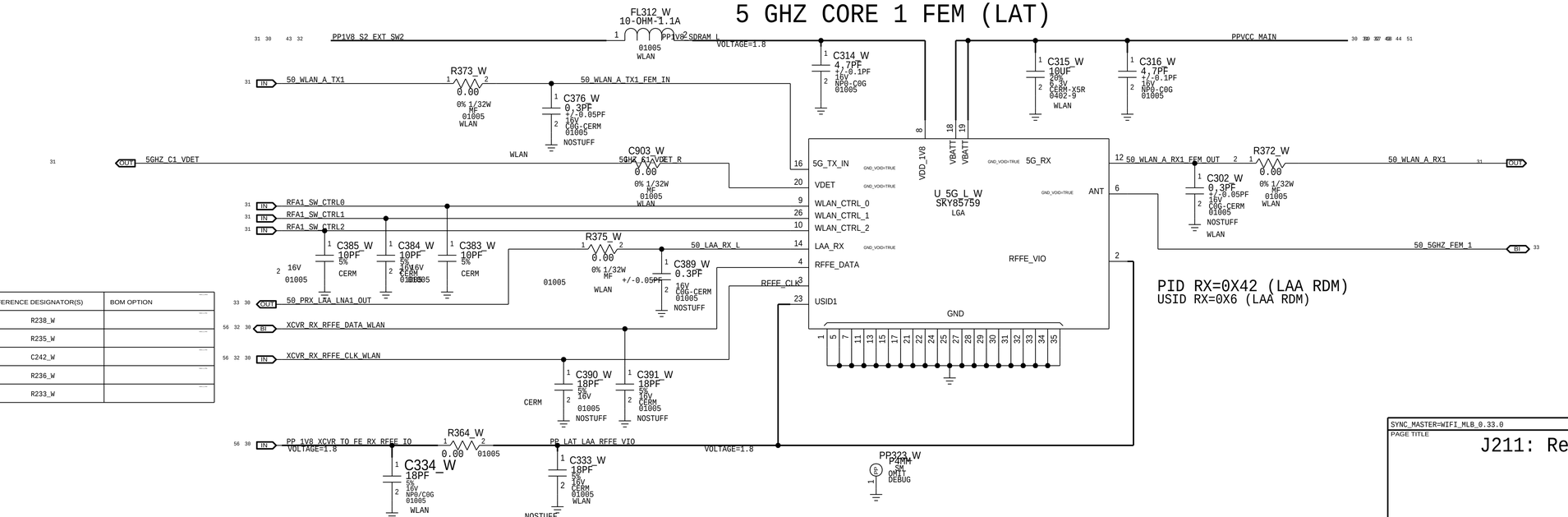
SYNC_MASTER=WIFI_MLB_0.33.0 SYNC_DATE=09/30/2018

J211: DIET COKE REMOTE FEMS

5 GHZ CORE 0 FEM (UAT)



5 GHZ CORE 1 FEM (LAT)



PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
152S1974	1	IND,0.3NH,+/-0.1NH,990MA,UH-Q,01005	R238_W	
152S00025	1	IND,0.5NH,0.1NH,730MA,UH-Q,01005	R235_W	
131S00339	1	CAP,C0G,0.2PF,+/-0.05PF,01005	C242_W	
152S00033	1	IND,0.5NH,+/-0.1NH,900MA,SHQ,01005	R236_W	
152S00025	1	IND,0.5NH,+/-0.1NH,730MA,UA-Q,01005	R233_W	

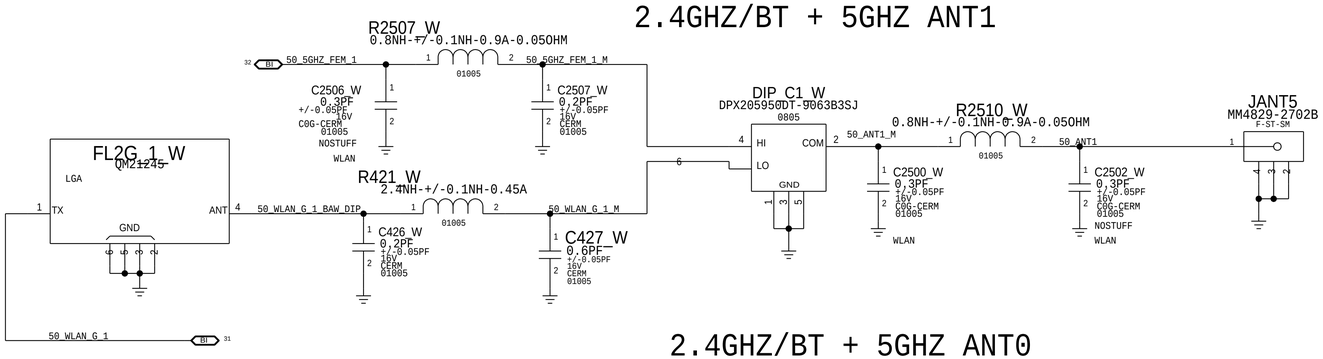
SYNC_MASTER=WIFI_MLB_0.33.0 SYNC_DATE=09/30/2018

PAGE TITLE

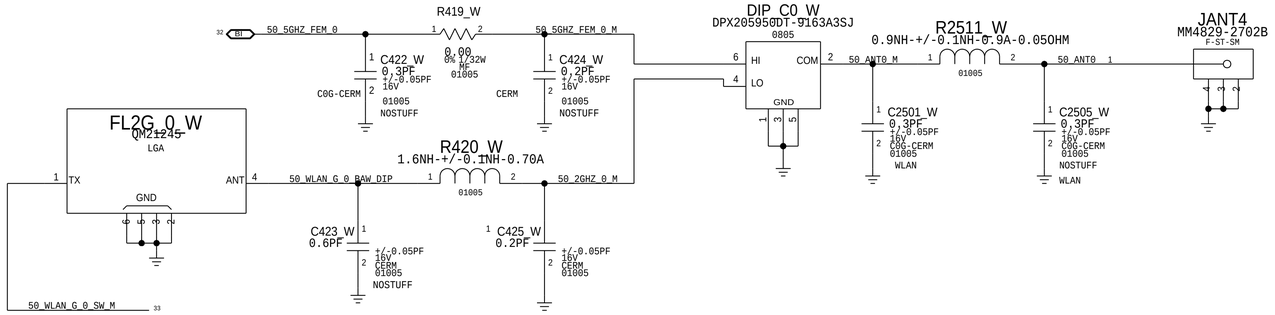
J211: Remote FEMs

J211: FRONT END

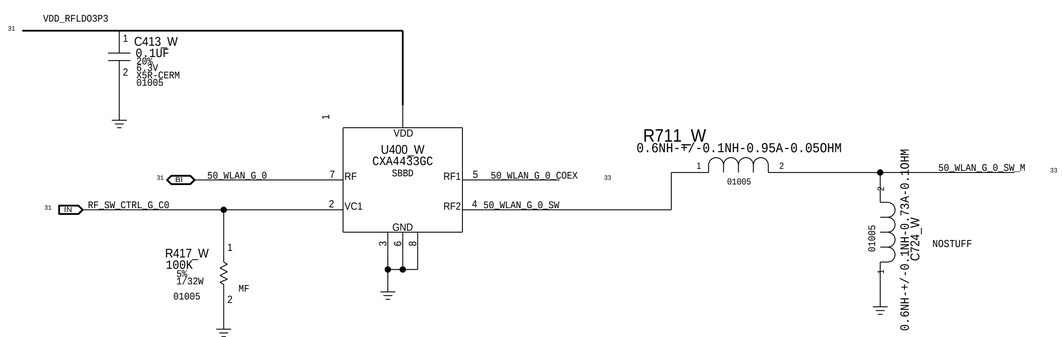
2.4GHZ/BT + 5GHZ ANT1



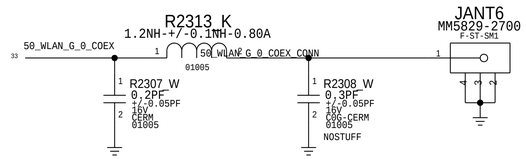
2.4GHZ/BT + 5GHZ ANT0



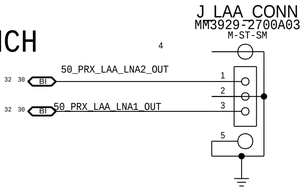
2.4GHZ DIVERSITY SWITCHING



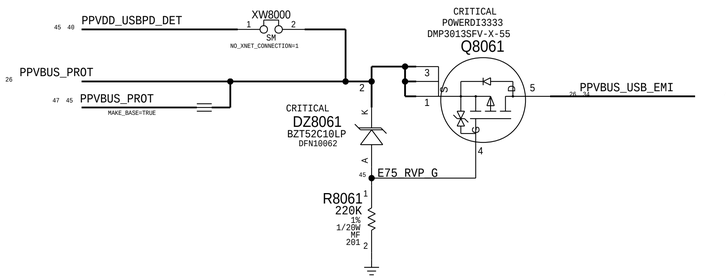
2.4GHZ/BT COAX LAUNCH TO QUADPLEXER

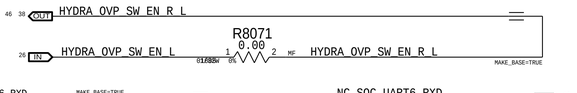


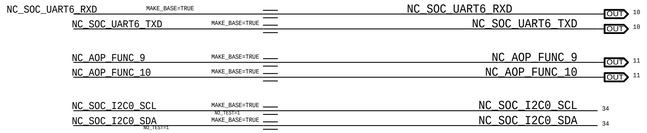
CELLULAR LAA SIGNAL COAX LAUNCH

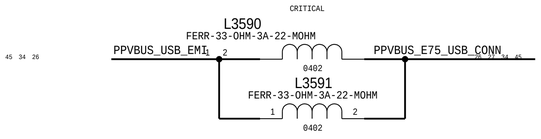


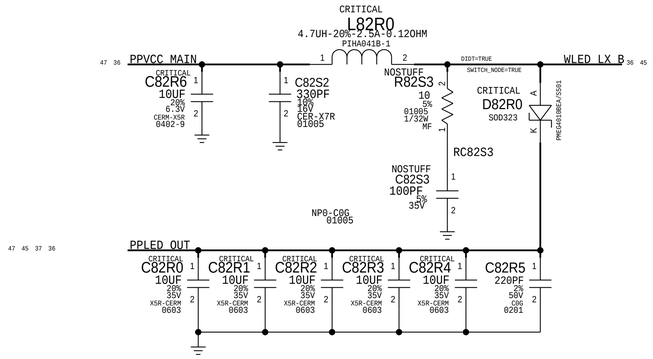
SYNC_MASTER=WIFI_MLB_0.33.0	SYNC_DATE=09/30/2018
PAGE TITLE	
J211: Front End	

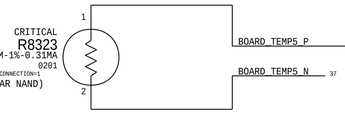


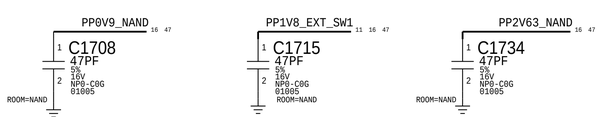


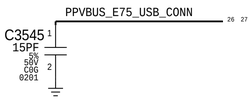


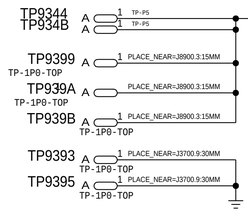


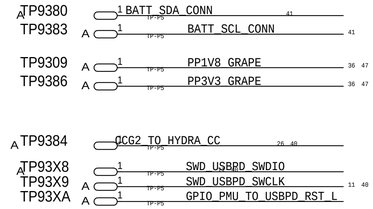


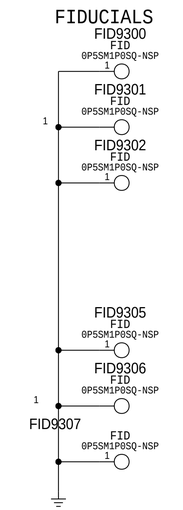


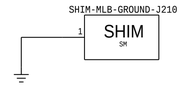


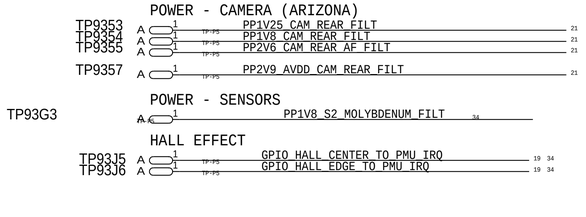


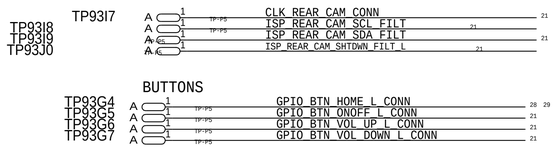




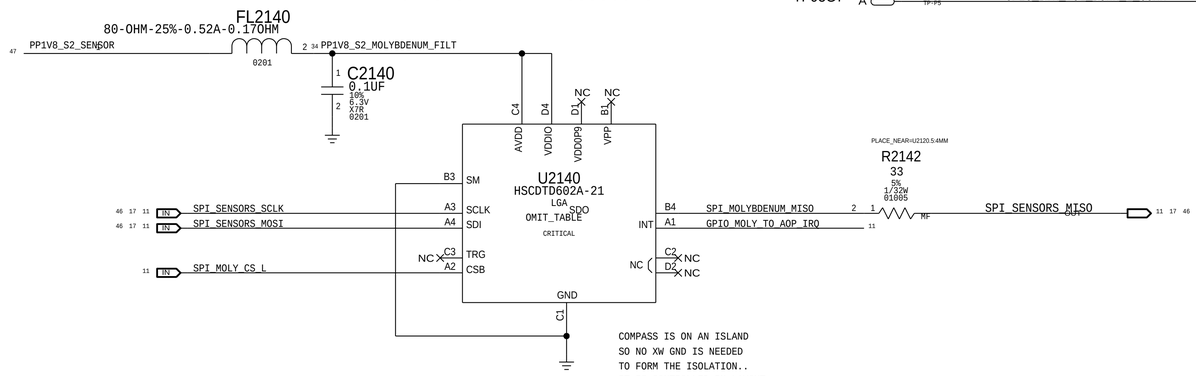








MOLYBDENUM-21 APN 338S00449
MAGNESIUM-2A APN 338S00282



ATLAS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
343S00282	1	IC,PMU,ATLAS,D2652A0,OTP-BC,CSP400	U8100	CRITICAL	

POTOMAC

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION	
343S00286	1	IC,PMU,POTOMAC,D2650A0,OTP-DC,CSP182	U8500 CRITICAL		

COMPASS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
338S00282	1	IC,COMPASS,MAGNESIUM,601A-2A,FLGA14	U2140	CRITICAL	MAGNESIUM
338S00449	1	IC,COMPASS,MOLYBDENUM,SPI-21,FLGA14	U2140	CRITICAL	MOLYBDENUM

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

SYNC_MASTER=J211_MLB_B
SYNC_DATE=06/28/2018

PAGE TITLE

J210-J211 UNIQUE

ATLAS BUCKS

OMIT_TABLE

U8100
D2652
WLCSP
D2652A0F0VFAVBC2
SYM 1 OF 5

POWER SUPPLY FOR BUCKS
SWITCHING LX NODES
VDDMAIN SUPPLY

VDD_BUCK0_01 C3
VDD_BUCK0_01 C2
VDD_BUCK0_01 C1
VDD_BUCK0_23 G3
VDD_BUCK0_23 G2
VDD_BUCK0_23 G1
VDD_BUCK1_01 V3
VDD_BUCK1_01 V2
VDD_BUCK1_01 V1
VDD_BUCK1_2 P3
VDD_BUCK1_2 P2
VDD_BUCK1_2 P1
VDD_BUCK2_01 A9
VDD_BUCK2_01 B9
VDD_BUCK2_01 C9
VDD_BUCK4_01 V13
VDD_BUCK4_01 W13
VDD_BUCK4_01 Y13
VDD_BUCK5_BUCK3 A13
VDD_BUCK5_BUCK3 B13
VDD_BUCK5_BUCK3 C13
VDD_BUCK6 A17
VDD_BUCK6 B17
VDD_BUCK6 C17
VDD_BUCK7 A5
VDD_BUCK7 B5
VDD_BUCK7 C5
VDD_BUCK8 W5
VDD_BUCK8 Y5
VDD_BUCK9_BUCK10 W9
VDD_BUCK9_BUCK10 Y9
VDD_BUCK11_01 L3
VDD_BUCK11_01 L2
VDD_BUCK11_01 L1
BUCK6_BYPASS A18
BUCK6_BYPASS B18
BUCK6_BYPASS C18
DVDD N11
VDD_BOOST V17
VDD_BOOST W17
VDD_MAIN_C L12
VDD_MAIN_NE E16
VDD_MAIN_NW E5
VDD_MAIN_S_ADC M12
VDD_MAIN_SE R15
VDD_MAIN_SW R6

47 PPVCC_MAIN
C810A 20UF 20% 6.3V CERM-X5R 0402
C810B 20UF 20% 6.3V CERM-X5R 0402
C810C 20UF 20% 6.3V CERM-X5R 0402
C810D 4UF 20% 6.3V CER-X5R 0201
C810E 4UF 20% 6.3V CER-X5R 0201

47 PPVCC_MAIN
C811A 20UF 20% 6.3V CERM-X5R 0402
C811B 20UF 20% 6.3V CERM-X5R 0402
C811C 20UF 20% 6.3V CERM-X5R 0402
C811D 4UF 20% 6.3V CER-X5R 0201
C811E 4UF 20% 6.3V CER-X5R 0201

47 PPVCC_MAIN
C8127 20UF 20% 6.3V CERM-X5R 0402
C8128 20UF 20% 6.3V CERM-X5R 0402
C8129 4UF 20% 6.3V CER-X5R 0201
C812A 4UF 20% 6.3V CER-X5R 0201

47 PPVCC_MAIN
C81C0 150UF 20% 6.3V TANT-POLY CASE-B3-1
C81C1 150UF 20% 6.3V TANT-POLY CASE-B3-1
C81C2 150UF 20% 6.3V TANT-POLY CASE-B3-1
C81CE 220PF 5% 25V NPO-C0G 0201
C81CF 12PF 5% 25V NPO-C0G 0201

C81D0 20UF 20% 6.3V CERM-X5R 0402
C81D1 20UF 20% 6.3V CERM-X5R
C81D2 20UF 20% 6.3V CERM-X5R 0402
C81D3 20UF 20% 6.3V CERM-X5R
C81D4 20UF 20% 6.3V CERM-X5R 0402
C81D5 20UF 20% 6.3V CERM-X5R
C17

C81D6 4UF 20% 6.3V CER-X5R 0201
C81D7 4UF 20% 6.3V CER-X5R 0201
C81D8 4UF 20% 6.3V CER-X5R 0201
C81D9 4UF 20% 6.3V CER-X5R 0201
C81DA 4UF 20% 6.3V CER-X5R 0201
C81DB 4UF 20% 6.3V CER-X5R 0201

C81DC 4UF 20% 6.3V CER-X5R 0201
C81DD 4UF 20% 6.3V CER-X5R 0201
C81DE 4UF 20% 6.3V CER-X5R 0201
C81DF 4UF 20% 6.3V CER-X5R 0201
C81DG 4UF 20% 6.3V CER-X5R 0201
C81DH 4UF 20% 6.3V CER-X5R 0201

C81DI 4UF 20% 6.3V CER-X5R 0201
C81DJ 4UF 20% 6.3V CER-X5R 0201
C81DK 4UF 20% 6.3V CER-X5R 0201
C81DL 4UF 20% 6.3V CER-X5R 0201
C81DM 4UF 20% 6.3V CER-X5R 0201
C81DN 4UF 20% 6.3V CER-X5R 0201

47 45 35 PP2V63_NAND
37 ATLAS_VDD_RTC
47 39 PPVCC_MAIN

BUCK0_LX0 B3
BUCK0_LX0 B2
BUCK0_LX0 B1
BUCK0_LX1 D3
BUCK0_LX1 D2
BUCK0_LX1 D1
BUCK0_LX2 F3
BUCK0_LX2 F2
BUCK0_LX2 F1
BUCK0_LX3 H3
BUCK0_LX3 H2
BUCK0_LX3 H1
BUCK0_FB F5
BUCK0_SNS G5

BUCK0 LX0 L8100 1.0UH-20%-4A-0.038OHM CRITICAL DIDT=TRUE SWITCH_NODE=TRUE APN:152S00882 PIKA20161B
BUCK0 LX1 L8101 0.15UH-20%-8.8A-0.015OHM CRITICAL DIDT=TRUE SWITCH_NODE=TRUE APN:152S00887 PIIA20161B
BUCK0 LX2 L8102 0.15UH-20%-8.8A-0.015OHM DIDT=TRUE SWITCH_NODE=TRUE APN:152S00887 PIIA20161B
BUCK0 LX3 L8103 0.15UH-20%-8.8A-0.015OHM DIDT=TRUE SWITCH_NODE=TRUE APN:152S00887 PIIA20161B NO_XNET_CONNECTION=1 NOSTUFF
BUCK0_FB R8100 0.00 1/32W 0% MF 01005 010051/32W
XW8100 SM PPVDD_CPU 12 15 47

PPVDD_CPU 45 47
C8100 C8101 C8102 C8103 C8104 C8105 C8106 C8107 C8108 C810F 26UF 20% 4V X5R 0402-0.1MM
C810G C810H C810J C810K C810L C810M C810N C810P C810Q 26UF 20% 4V X5R 0402-0.1MM
C8109 220PF 5% 16V C0G 01005

ADC_SOC_TO_PMU_VDD_CPU IN 13 37 45 46

BUCK1_LX0 W3
BUCK1_LX0 W2
BUCK1_LX0 W1
BUCK1_LX1 U3
BUCK1_LX1 U2
BUCK1_LX1 U1
BUCK1_LX2 R3
BUCK1_LX2 R2
BUCK1_LX2 R1
BUCK1_FB U5
BUCK1_SNS R5

BUCK1 LX0 L8110 1.0UH-20%-4A-0.038OHM DIDT=TRUE SWITCH_NODE=TRUE APN:152S00883 PIKA20161B
BUCK1 LX1 L8111 0.15UH-20%-8.8A-0.015OHM DIDT=TRUE SWITCH_NODE=TRUE APN:152S00887 PIIA20161B
BUCK1 LX2 L8112 0.15UH-20%-8.8A-0.015OHM DIDT=TRUE SWITCH_NODE=TRUE APN:152S00887 PIIA20161B
BUCK1_FB R8110 0.00 1/32W 0% MF 01005 NOSTUFF NO_XNET_CONNECTION=1
BUCK1 FB
ADC_SOC_TO_PMU_VDD_GPU IN 13 37 45 46

PPVDD_GPU 45 47
C8110 C8111 C8112 C8113 C8114 C8115 C8116 C8117 C8118 C811M C811F C811G C811H C811J C811K C811L 26UF 20% 4V X5R 0402-0.1MM
C8119 220PF 5% 16V C0G 01005
XW8110 SM PPVDD_GPU

BUCK2_LX0 A8
BUCK2_LX0 B8
BUCK2_LX0 C8
BUCK2_LX1 A10
BUCK2_LX1 B10
BUCK2_LX1 C10
BUCK2_FB E9

BUCK2 LX0 L8120 1.0UH-20%-4A-0.038OHM DIDT=TRUE SWITCH_NODE=TRUE APN:152S00883 PIKA20161B
BUCK2 LX1 L8121 0.15UH-20%-8A-0.017OHM CRITICAL DIDT=TRUE SWITCH_NODE=TRUE 2012-1
BUCK2_FB R8120 0.00 1/32W 0% MF 01005 NOSTUFF NO_XNET_CONNECTION=1
XW8120 SM

PPVDD_S1_S0C 45 47
C8120 C8121 C8122 C8123 C8124 C8125 C812B C812C 26UF 20% 4V X5R 0402-0.1MM
C8126 220PF 5% 16V C0G 01005

BUCK3_LX A14
BUCK3_LX B14
BUCK3_LX C14
BUCK3_FB E13

BUCK3 LX0 L8130 1.0UH-20%-4.6A-0.040HM 2020 APN:152S00884
XW8130 SM PLACE_SIDE=TOP

PP1V8_S2 5 45 47
C8130 C8131 C8132 C8133 C8134 C8135 C813A C813B C813C C8136 C8137 C8138 26UF 20% 4V X5R 0402-0.1MM
C3139 1UF 20% 4V CERM 0402
2.2UF 20% 6.3V X5R-CERM 0201
220PF 5% 16V C0G 01005 CRITICAL

BUCK4_LX0 V12
BUCK4_LX0 W12
BUCK4_LX0 Y12
BUCK4_LX1 V14
BUCK4_LX1 W14
BUCK4_LX1 Y14
BUCK4_FB T13

BUCK4 LX0 L8140 1.0UH-20%-4A-0.038OHM DIDT=TRUE SWITCH_NODE=TRUE APN: 152S00883 PIKA20161B
BUCK4 LX1 L8141 0.15UH-20%-8A-0.017OHM DIDT=TRUE SWITCH_NODE=TRUE 2012-1
BUCK4_FB XW8140 SM PLACE_SIDE=TOP

PP1V1_S2 45 47
C8140 C8141 C8142 C8143 C8144 C8145 C8146 26UF 20% 4V X5R 0402-0.1MM
C814D 220PF 5% 16V C0G 01005
C8147 C8148 C8149 C814A C814B C814C 26UF 20% 4V X5R 0402-0.1MM NOSTUFF

BUCK5_LX A12
BUCK5_LX B12
BUCK5_LX C12
BUCK5_FB E11

BUCK5 LX0 L8150 1.0UH-20%-4A-0.038OHM APN: 152S00883 PIKA20161B DIDT=TRUE SWITCH_NODE=TRUE
XWC8150 SM PLACE_SIDE=TOP

PPVDD_S1_FIXED 45 47
C8150 C8151 C8152 C8153 26UF 20% 4V X5R 0402-0.1MM
C8156 220PF 5% 16V C0G 01005

PP2V63_NAND 35 45 47
C8160 C8161 C8162 C8163 C8164 C8165 C8166 C8167 C8168 C8169 C816A C816B C816C 20UF 20% 6.3V CERM-X5R 0402
C8160 C8161 C8162 C8163 C8164 C8165 C8166 C8167 C8168 C8169 C816A C816B C816C 220PF 5% 16V C0G 01005

BUCK6_LX A16
BUCK6_LX B16
BUCK6_LX C16
BUCK6_FB E17

BUCK6 LX0 L8160 1.0UH-20%-4A-0.038OHM APN: 152S00883 PIKA20161B DIDT=TRUE SWITCH_NODE=TRUE
XW8160 SM PLACE_SIDE=TOP

PPVDD_CPU_SRAM 45 47
C8170 C8171 C8172 C8173 C8174 26UF 20% 4V X5R 0402-0.1MM
C8174 220PF 5% 16V C0G 01005

BUCK7_LX A6
BUCK7_LX B6
BUCK7_LX C6
BUCK7_FB E7

BUCK7 LX0 L8170 1.0UH-20%-4A-0.038OHM APN: 152S00883 PIKA20161B DIDT=TRUE SWITCH_NODE=TRUE
XW8170 SM

BUCK8_LX W6
BUCK8_LX Y6
BUCK8_FB U7

BUCK8 LX0 L8180 1.0UH-20%-4.6A-0.04OHM CRITICAL 2020 APN:152S00884 DIDT=TRUE SWITCH_NODE=TRUE
XW8180 SHORT-10L-0.1MM-SM

PPVDD_GPU_SRAM 45 47
C8180 C8181 C8182 C8183 C8185 26UF 20% 4V X5R 0402-0.1MM
C8184 220PF 5% 16V

BUCK9_LX W8
BUCK9_LX Y8
BUCK9_FB U8

BUCK9 LX0 L8190 0.47UH-20%-4A-0.027OHM CRITICAL 2012 APN:152S00885 DIDT=TRUE SWITCH_NODE=TRUE
XW8190 SHORT-10L-0.1MM-SM

PPVDD_S1_DCS 45 47
C8190 C8191 C8192 C8195 C8196 26UF 20% 4V X5R 0402-0.1MM
C8193 4UF 20% 6.3V CER-X5R 0201
C8194 220PF 5% 16V C0G 01005

BUCK10_LX W10
BUCK10_LX Y10
BUCK10_FB U10

BUCK10 LX0 L81A0 0.47UH-20%-4A-0.027OHM APN: 152S00885 DIDT=TRUE SWITCH_NODE=TRUE
XW81A0 SM PLACE_SIDE=TOP

PPVDD_S1_QL 45 47
C81A0 C81A1 C81A2 C81A3 26UF 20% 4V X5R 0402-0.1MM
C81A5 220PF 5% 16V C0G 01005

BUCK11_LX0 K3
BUCK11_LX0 K2
BUCK11_LX0 K1
BUCK11_LX1 M3
BUCK11_LX1 M2
BUCK11_LX1 M1
BUCK11_FB M5

BUCK11 LX0 L81B0 1.0UH-20%-4A-0.038OHM APN:152S00883 PIKA20161B DIDT=TRUE SWITCH_NODE=TRUE
BUCK11 LX1 L81B1 0.15UH-20%-8A-0.017OHM DIDT=TRUE SWITCH_NODE=TRUE 2012-1
BUCK11 FB XW81B0 SM PLACE_SIDE=TOP

PPVDD_ECPU 45 47
C81B0 C81B1 C81B2 C81B3 C81B4 C81B5 C81B7 C81B8 26UF 20% 4V X5R 0402-0.1MM
C81B6 220PF 5% 16V C0G 01005

SYNC_MASTER=J217_MLB_B SYNC_DATE=04/09/2018
PAGE TITLE
POWER: ATLAS (1/3)

ATLAS LDOS (2/3)

OMIT_TABLE

U8100
D2652
WLCSP
D2652A0F0VFAVBC2
SYM 5 OF 5

POWER VSS FOR BUCKS, BOOST, IDAC

VSS GENERAL AND SHIELD FOR BG (BANDGAP), ADC

ANALOG VSS (VSSA FOR BUCKS AND ANALOG CIRCUITRY)

Y20	VSS_BOOST	VSS	Y16
Y19	VSS_BOOST	W4	
VSS_BOOST		VSS	V18
VSS_BOOST		VSS	V10
U20	VSS_BOOST	VSS	V8
U19	VSS_BOOST	VSS	V6
		VSS	V5
E4	VSS_BUCK0	VSS	V4
E3	VSS_BUCK0	VSS	U18
E2	VSS_BUCK0	VSS	U17
E1	VSS_BUCK0	VSS	U15
A4	VSS_BUCK0	U14	
A3	VSS_BUCK0	VSS	U4
VSS_BUCK0		VSS	
A1	VSS_BUCK0	VSS	R4
		VSS	P14
J4	VSS_BUCK0_11	VSS	P6
J3	VSS_BUCK0_11	VSS	P4
J2	VSS_BUCK0_11	VSS	N14
J1	VSS_BUCK0_11	VSS	N13
		VSS	M14
Y4	VSS_BUCK1	VSS	M4
Y3	VSS_BUCK1	L14	
Y2	VSS_BUCK1	VSS	L11
VSS_BUCK1		VSS	
T4	VSS_BUCK1	L4	
T3	VSS_BUCK1	VSS	K10
T2	VSS_BUCK1	VSS	K4
T1	VSS_BUCK1	VSS	J10
		VSS	H4
N4	VSS_BUCK11	VSS	G11
N3	VSS_BUCK11	VSS	F4
N2	VSS_BUCK11	VSS	E10
VSS_BUCK11		D17	
VSS_BUCK2_7		VSS	D16
B7	VSS_BUCK2_7	VSS	
A7	VSS_BUCK2_7	VSS	D15
		VSS	D14
Y15	VSS_BUCK4	VSS	D12
W15	VSS_BUCK4	VSS	D11
V15	VSS_BUCK4	VSS	D10
		VSS	D9
Y11	VSS_BUCK4_10	VSS	D8
W11	VSS_BUCK4_10	VSS	D6
VSS_BUCK4_10		VSS	D4
C1		VSS	C4
VSS_BUCK5_2		VSS	
B11	VSS_BUCK5_2	VSS	B4
A11	VSS_BUCK5_2	VSS	A20
		VSS	A19
C15	VSS_BUCK6_3	AVSS_BOOST	V16
B15	VSS_BUCK6_3	AVSS_C	L10
A15	VSS_BUCK6_3	AVSS_LDO;AVSS_S	U16
Y7	VSS_BUCK9_8	AVSS_SE	T14
VSS_BUCK9_8		VSS_RTC	D19
VSS_IDAC		VSSA_BUCK0	G4
N16	VSS_IDAC	VSSA_BUCK1;VSSA_BUCK8	T5
N15	VSS_IDAC	VSSA_BUCK2	E8
K17	VSS_IDAC	VSSA_BUCK3	E14
K16	VSS_IDAC	VSSA_BUCK4	U13
K15	VSS_IDAC	VSSA_BUCK5	D13
G17	VSS_IDAC	VSSA_BUCK6	D18
G16	VSS_IDAC	VSSA_BUCK7	D7
VSS_IDAC	G15	VSSA_BUCK9	V7
PVSS	P8	VSSA_BUCK10	V9
		VSSA_BUCK11	L5
T18	PVSS_LDO	VSSA_IDAC	E15
R18	PVSS_LDO		
P18	PVSS_LDO		
E18	PVSS_LDO		
E19	PVSS_LDO		
D5	PVSS*		
PVSS_SP	U12		

LDO INPUTS

OMIT_TABLE

U8100
D2652
WLCSP
D2652A0F0VFAVBC2
SYM 2 OF 5

LDO INPUT

LDO OUTPUT

LOADSWITCH RELATED BALLS

47 PPVCC_HIGH	B20	VDD_LDO1_LDO3	(300MA; 1.2-3.6V)	C20 VLDO1
	B19	VDD_LDO3	(300MA; 1.65-1.805V)	F20 VLDO2
47 PP1V8_S2	F19	VDD_LDO2	(300MA; 1.2-3.6V)	C19 VLDO3
	G19	VDD_LDO4	(300MA; 1.2-3.6V)	G20 VLDO4
	H19	VDD_LDO5	(300MA; 1.2-3.6V)	H20 VLDO5
	R19	VDD_LDO6	(250MA; 1.2-3.6V)	R20 VLDO6
	T19	VDD_LDO6_1		T20 VLDO6
47 PP1V1_S2	J19	VDD_LDO7	(300MA; 1.2-3.6V)	J20 VLDO7
	K19	VDD_LDO8	(300MA; 1.2-3.6V)	K20 VLDO8
	J18	VDD_LDO9	(500MA; 0.675-1.5V)	H18 VLDO9
	N18	VDD_LDO10	(710MA; 0.675-1.5V)	M18 VLDO10
	L19	VDD_LDO11	(300MA; 1.2-3.6V)	L20 VLDO11
	M19	VDD_LDO12	(300MA; 1.2-3.6V)	
47 PP1V8_EXT_SW1	F18	VDD_LDO14	(500MA; 0.675-1.5V)	M20 VLDO13
	R16	VDD_LDO15	(400MA; 0.6-1.0V)	G18 VLDO14
47 PPVCC_MAIN	N19	VDD_LDO16	(300MA; 1.2-3.6V)	R17 VLDO15
	K18	VDD_LDO17	(400MA; 0.675-1.5V)	N20 VLDO16
47 PP1V8_S2	T16	VDD_LDO18	(500MA; 0.675-1.5V)	L18 VLDO17
	P19	VDD_LDO19	(300MA; 1.2-3.6V)	T17 VLDO18
	F13	VBUCK3		P20 VLDO19
	G13	VBUCK3		
47 45 PP1V8_SW1	F12	BUCK3_SW1		
47 34 PP1V8_GRAPE	G12	BUCK3_SW2		
47 PP1V8_S2_SENSOR	F11	BUCK3_SW3		
	F14	VPUMP		
	V20	BOOST_LX_MST		
	V19	BOOST_LX_MST		
	W20	BOOST_LX_SL		
BOOST_LX_SL	W19	BOOST_LX_SL		
	W18	BOOST_LX_SL		
WLED_LX_B 34 45				

C822A 20UF 20% 6.3V CERM-X5R 0402 — CRITICAL
C821A 20UF 20% 6.3V CERM-X5R 0402
C82AA 20UF 20% 6.3V CERM-X5R 0402
C82AB 1UF 10% 6.3V CERM 402
C82J0 4UF 20% 6.3V CER-X5R 0201 — CRITICAL
C82K0 1.0UF 20% 6.3V X5R 0201-1
C82L0 1.0UF 20% 6.3V X5R 0201-1
C82M0 1.0UF 20% 6.3V X5R 0201-1
PMU_VPUMP
C82N0 0.1UF 10% 6.3V CERM-X5R 0201

APN: 152S00958
CRITICAL
L82P0
10UH-20%-2.5A-0.2OHM
PIZA061B

PPVCC_MAIN — C82P6 10UF 20% 6.3V CERM-X5R 0402-9 — CRITICAL — NOSTUFF C82S0 330PF 10% 16V CERM-X7R 01005 — R82S1 10 5% 1/32W MF 01005 — WLED_LX_A
DIDT=TRUE SWITCH_NODE=TRUE
CRITICAL D82P0 SOD323 (PRESRG1UBEA/SB01)
RC82S1
NOSTUFF C82S1 100PF 5% 50V NP0-C0G 01005

PPLED_OUT — C82P0 10UF 20% 6.3V X5R-CERM 0603 — CRITICAL — C82P1 10UF 20% 6.3V X5R-CERM 0603 — CRITICAL — C82P2 10UF 20% 6.3V X5R-CERM 0603 — CRITICAL — C82P3 10UF 20% 6.3V X5R-CERM 0603 — CRITICAL — C82P4 10UF 20% 6.3V X5R-CERM 0603 — CRITICAL — C82P5 220PF 5% 50V C0G 0201

C8210 4UF 20% 6.3V CER-X5R 0201 — CRITICAL — PP3V0_S2_HYDRA
C8220 4UF 20% 6.3V CER-X5R — CRITICAL — PP1V7_S2_VA_VCP
C8230 1.0UF 20% 6.3V X5R 0201-1 — PP1V8_CAM
C8240 10UF 20% 6.3V CERM-X5R 0402-9 — CRITICAL — PP3V0_ALS
C8250 4UF 20% 6.3V CER-X5R — CRITICAL — PP3V3_GRAPE
C8260 4UF 20% 6.3V CER-X5R — CRITICAL — PP3V3_ACC
C8261 4UF 20% 6.3V CER-X5R — CRITICAL — PP3V3_USB
C8270 4UF 20% 6.3V CER-X5R 0201 — CRITICAL — PP3V05_S2_MESA
C8280 4UF 20% 6.3V CER-X5R 0201 — CRITICAL — PP1V19_SPARE_LDO9
C8290 4UF 20% 6.3V CER-X5R 0201 — CRITICAL — PP0V9_NAND
C82A0 10UF 20% 6.3V CERM-X5R 0402-9 — CRITICAL
C82A1 10UF 20% 6.3V CERM-X5R 0402-9 — CRITICAL — PP2V9_REAR_CAM
C82B0 10UF 20% 6.3V CERM-X5R 0402-9 — CRITICAL — PP2V9_FRONT_CAM_AVDD
C82B1 10UF 20% 6.3V CERM-X5R 0402-9 — CRITICAL — PP1V2_SOC
C82C0 4.7UF 20% 6.3V X5R 402 — CRITICAL
C82C1 4.7UF 20% 6.3V X5R — CRITICAL
C82C2 4.7UF 20% 6.3V X5R 402 — CRITICAL — PP0V75_S2_AOP
C82D0 1UF 4V 20% X5R 0402 CERM — CRITICAL
C82D1 10UF 20% 6.3V CERM-X5R 0402-9 — CRITICAL — PP1V8_S2_MESA
C82E0 4UF 20% 6.3V CER-X5R 0201 — CRITICAL — PP1V19_FRONT_CAM
C82F0 4.3UF 4V 20% CERM 0402 — CRITICAL
C82F1 10UF 20% 6.3V CERM-X5R 0402-9 — CRITICAL

C82G0 4.3UF 4V 20% CERM 0402 — CRITICAL — PP1V25_REAR_CAM
C82G1 10UF 20% 6.3V CERM-X5R 0402-9 — CRITICAL
PP2V6_REAR_CAM_AF
C82H0 4UF 20% 6.3V CER-X5R 0201 — CRITICAL

OMIT_TABLE

U8100
D2652
WLCSP
D2652A0F0VFAVBC2
SYM 3 OF 5
WLED

45 44 28 IN LED_IO_1_A	P15	WLED1	
45 44 28 IN LED_IO_2_A	P16	WLED2	
45 44 28 IN LED_IO_3_A	P17	WLED3	
45 44 28 IN LED_IO_4_A	M15	WLED4	
45 44 28 IN LED_IO_5_A	M16	WLED5	
IN LED_IO_6_A	M17	WLED6	
45 IN LED_IO_1_B	L15	WLED7	
45 IN LED_IO_2_B	L16	WLED8	
45 IN LED_IO_3_B	L17	WLED9	
45 IN LED_IO_4_B	J15	WLED10	
45 IN LED_IO_5_B	J16	WLED11	
NC	J17	WLED12	
NC	J15	WLED13	
NC	J16	WLED14	
NC	J17	WLED15	
NC	E15	WLED16	
NC	E16	WLED17	
NC	E17	WLED18	

45 44 28

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
138S0703	138S0648		C8233,ECT	ALT FOR 4.7UF,6.3V,0402

SYNC_MASTER=J217_MLB_B
SYNC_DATE=04/09/2018
PAGE TITLE

POWER: ATLAS (2/3)

ATLAS (3/3)

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
118S0764	118S0717		R8340	RDAR://PROBLEM/8380367
107S0150	107S0208		R8321-R8328	RDAR://PROBLEM/8380367

OMIT_TABLE

U8100
D2652
WLCSP
D2652A0F0VFAVBC2
SYM 4 OF 5

PP1V8_ALWAYS
PP1V8_S2
R8300 100K 5% 1/32W MF 01005
R8301 100K 5% 1/32W MF 01005
R8302 100K 5% 1/32W MF 01005

GPIO_BTN_HOME_L → BUTTON1 R8
GPIO_BTN_ONOFF_L → BUTTON2 R9
GPIO_BTN_VOL_UP_L → BUTTON3 R10
BUTTON4 NC R11

PP1V8_EXT_SW1
PP1V8_S2
R8303 10K 5% 1/32W MF 01005
R8304 0.00 01005 1/32W MF 0%
NOSTUFF R8305 100K 5% 1/32W MF 01005

GPIO_PMU_TO_SOC_BTN_HOME_L → BUTTONO1 P11
GPIO_PMU_TO_SOC_BTN_ONOFF_L → BUTTONO2 P12
GPIO_PMU_TO_SOC_BTN_VOL_UP_L → BUTTONO3 R12
HYDRA_TO_PMU_BRICKID → BRICK_ID K13
VCCMAIN_DROOP_PMU_TO_SOC_L → VCCMAIN_DROOP_PMU_TO_SOC_L_R PRE_UVLO M10
SYS_ALIVE → SYS_ALIVE N10
ATLAS_TO_POTOMAC_CRASH_L → CRASH* M6
GPIO_PMU_TO_CPU_TRIGGER_0 → BUCK0_THROTTLE0* K5
GPIO_PMU_TO_CPU_TRIGGER_1 → BUCK0_THROTTLE1* J5
GPIO_PMU_TO_GPU_TRIGGER_0 → BUCK1_THROTTLE0* P5
GPIO_PMU_TO_GPU_TRIGGER_1 → BUCK1_THROTTLE1* N5
GPIO_SOC_TO_PMU_WDOG → RESET_IN1 N12
RESET_HYDRA_TO_PMU → RESET_IN2 M11
SOCHOT1_SOC_TO_PMU_L → RESET_IN3 P13
RESET_PMU_TO_SYSTEM_L → RESET* F6
GPIO_PMU_TO_SOC_IRQ_L → IRQ* E12
PMU_SHUTDOWN → SHDWN F7
GPIO_PMU_TO_SYSTEM_ACTIVE_READY → ACTIVE_RDY F9
I2C_SMC_I2CM0_SCL_1V8 → SCL P9
I2C_SMC_I2CM0_SDA_1V8 → SDA P10
NUB_SPMI_ATLAS_SCLK → R8306 1/32W 0% → ATLAS_SCLK → SCLK R7
PA_NTC_P → TDEV1 G14
TDEV2 H14
TDEV3 J14
TDEV4 J13
TDEV5 H13
TDEV6 K12
TDEV7 J12
TDEV8 H12
TCAL J11
ATLAS_TCAL → C8340 100PF 5% 25V C0G-CERM 01005 → 3.92K 0.1% 1/20W MF 0201
CLK_PMU_TO_WLAN_32K → OUT_32K G10
CLK_PMU_TO_AOP_32K → SLEEP_32K G9
PMU_EXTAL → XTAL1 E20
PMU_XTAL → XTAL2 D20
DBL_CLICK_DET → DBL_CLICK_DET H10
ATLAS_FAULT_OUT_L → FAULT_OUT* G6
FORCE_SYNC → R8307 0.00 1/32W MF 01005 → FORCE_SYNC F10
REQUEST_DFU E6
NUB_SPMI_ATLAS_SDATA → R8308 1/32W 0% 0.00 MF 01005 → SDATA P7
PPLED_OUT → VOUT_BOOST W16
ATLAS_REQ_DFU → R8309 4.7K 5% 1/32W MF 01005

SYSTEM BALLS
GPIOS
GPIO1 N9 GPIO_HALL_CENTER_TO_PMU_IRQ
GPIO2 N8 GPIO_WLAN_TO_PMU_HOST_WAKE
GPIO3 N7 NC_PMU_GPIO3
GPIO4 N6 GPIO_BELFIELD_TO_PMU_WAKE_L
GPIO5 M9 NC_PMU_GPIO5
GPIO6 M8 NC_PMU_GPIO6
GPIO7 M7 GPIO_PMU_TO_USBPD_RST_L
GPIO8 L9 GPIO_PMU_TO_SOC_FORCE_DFU
GPIO9 L8 GPIO_PMU_HOST_WAKE_L
GPIO10 CODEC_TO_PMU_WAKE_L
GPIO11 HALL_EDGE_TO_PMU_IRQ
GPIO12 K9 GPIO_PMU_TO_BB_GPS_EN
GPIO13 K8 GPIO_PMU_TO_BBPMU_ON
GPIO14 K7 GPIO_POTOMAC_TO_PMU_WAKE
GPIO15 K6 GPIO_POTOMAC_TO_SMC_TO_PMU_IRQ_L
GPIO16 J9 GPIO_PMU_TO_NAND_LOW_BATT_L
GPIO17 J8 GPIO_PMU_TO_BT_REG_ON
GPIO18 J7 GPIO_PMU_TO_LCD_PWREN
GPIO19 GPIO_PMU_TO_WLAN_REG_ON
GPIO20 PMU_TO_1V8_EXT_SW1_ON
GPIO21 H8 GPIO_PMU_TO_1V8_EXT_SW2_ON
GPIO22 H7 NC_PMU_GPIO22
GPIO23 H6 GPIO_PMU_TO_POTOMAC_LINCH_EN
GPIO24 G8 GPIO_PMU_TO_ROTTERDAM_EN
GPIO25 G7 NC_PMU_GPIO25
GPIO26 F8 NC_PMU_GPIO26

PP1V8_S2 → R8331 10K 5% 1/32W MF 01005

AMUX
AMUX_A0 T10 ADC_SOC_TO_PMU_ANALOGMUX_OUT
AMUX_A1 T11 NC_ADC_SOC_TO_PMU_VDD_CPU
AMUX_A2 T12 NC_ADC_SOC_TO_PMU_VDD_GPU
AMUX_A3 T12 ADC_SOC_TO_PMU_VDD_SOC
AMUX_AY T9 TP_AMUX_AY
AMUX_B0 T8 NC_ADC_BB_TO_PMU_SW1_VOUT
AMUX_B1 T7 NC_ADC_BB_TO_PMU_SW3_VOUT
AMUX_B2 T6 NC_ADC_BB_TO_PMU_PP_1V85
AMUX_BY U6 NC
U9 TP_AMUX_BY

ATM K11

VRTC
VRTC SUPPLY PINS
H5
T15 ATLAS_VDD_RTC
C8302 0.01UF 10% 6.3V X5R 01005
C8303 0.22UF 20% 6.3V X5R 0201

ADC_IN H11 ATLAS_ADC_IN
IREF L13 ATLAS_IREF
ON_BUF R14 → PP1V8_ALWAYS
C8305 0.22UF 20% 6.3V X5R 0201

VREF M13 ATLAS_VREF
IM_MEAS K14
VDD_HI_UVLO_DET R13 NC
C8304 0.1UF 10% 6.3V CERM-X5R 0201
R8320 200K 0.5% 1/20W MF 0201

PP1V8_S2
R8341 NOSTUFF 10K 1% 1/20W MF 201
R8342 NOSTUFF 10K 1% 1/20W MF 201
GPIO_HALL_CENTER_TO_PMU_IRQ
GPIO_HALL_EDGE_TO_PMU_IRQ

PLACE CAPS AND XWS NEAR PMU

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

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

CRITICAL R8322 10KOHM-1%-0.31MA 0201 NO_XNET_CONNECTION=1 (TEMP3 - NEAR RCAM J211) - NEAR FH J217)
C8322 100PF 5% 25V C0G-CERM 01005 NO_XNET_CONNECTION=1 PLACE_NEAR=U8100.N12:13MM
BOARD_TEMP4_P → BOARD_TEMP4_N → XW8322 SM PLACE_NEAR=U8100.N12:13MM

C8323 100PF 5% 25V C0G-CERM 01005 NO_XNET_CONNECTION=1 PLACE_NEAR=U8100.M13:13MM
BOARD_TEMP5_P → BOARD_TEMP5_N → XW8323 SM PLACE_NEAR=U8100.M13:13MM

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

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

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

PP1V8_EXT_SW1
R8310 10K 5% 1/32W MF 01005
R8311 10K 5% 1/32W MF 01005
R8312 10K 5% 1/32W MF 01005
R8313 10K 5% 1/32W MF 01005
OUT GPIO_PMU_TO_CPU_TRIGGER_1
NOSTUFF R8314 0.00 0% 1/32W MF 01005
GPIO_PMU_TO_CPU_TRIGGER_0
GPIO_PMU_TO_GPU_TRIGGER_1
NOSTUFF R8315 0.00 0% 1/32W MF 01005
OUT GPIO_PMU_TO_GPU_TRIGGER_0

NOTE: MAY NEED TO CHANGE XTAL CKT BASED ON CHARACTERIZATION

PMU_EXTAL
PMU_XTAL
CRITICAL Y8300 32.768K-20PPM-12.5PF 2.0X1.2X0.60-SM1
CRITICAL C8316 18PF 5% 25V C0G-CERM 0201
CRITICAL C8315 18PF 5% 25V C0G-CERM 0201

SYNC_MASTER=J217_MLB_B SYNC_DATE=04/09/2018
PAGE TITLE
POWER: ATLAS (3/3)

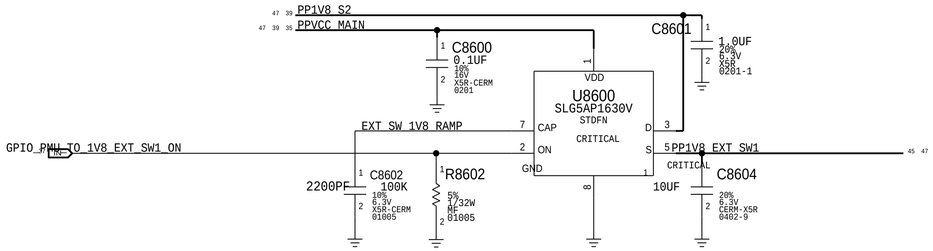
POTOMAC/RENO

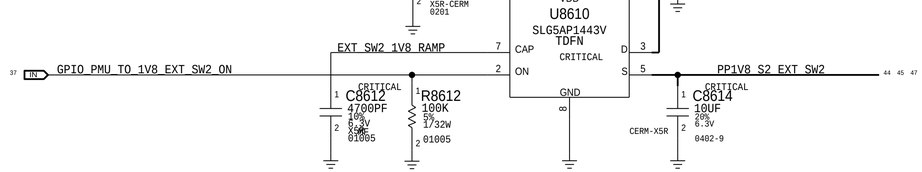
PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
376S00071	376S00070		Q8581,ECT	RDAR://PROBLEM/20277540

U8500
D2559A0P0V2AVAC2
WLCSP
OMIT_TABLE

PAGE TITLE
POWER: CHARGER

EXTERNAL POWER SWITCHES





SYNC_MASTER=J217_MLB_B SYNC_DATE=04/09/2018

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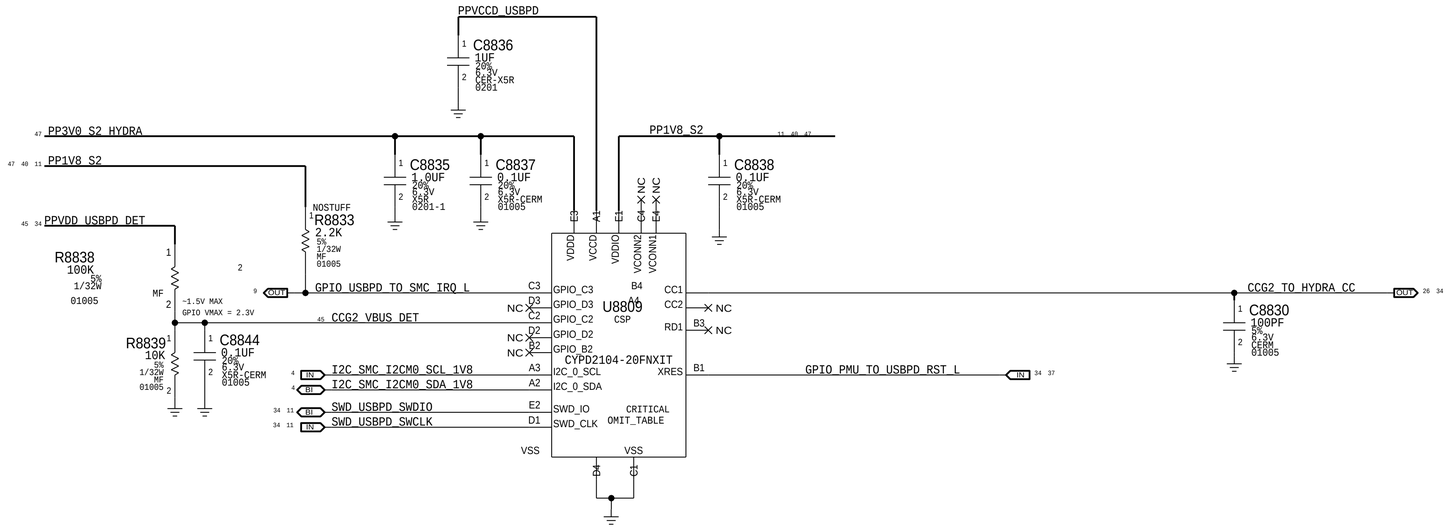
POWER: EXTERNAL SWITCHES

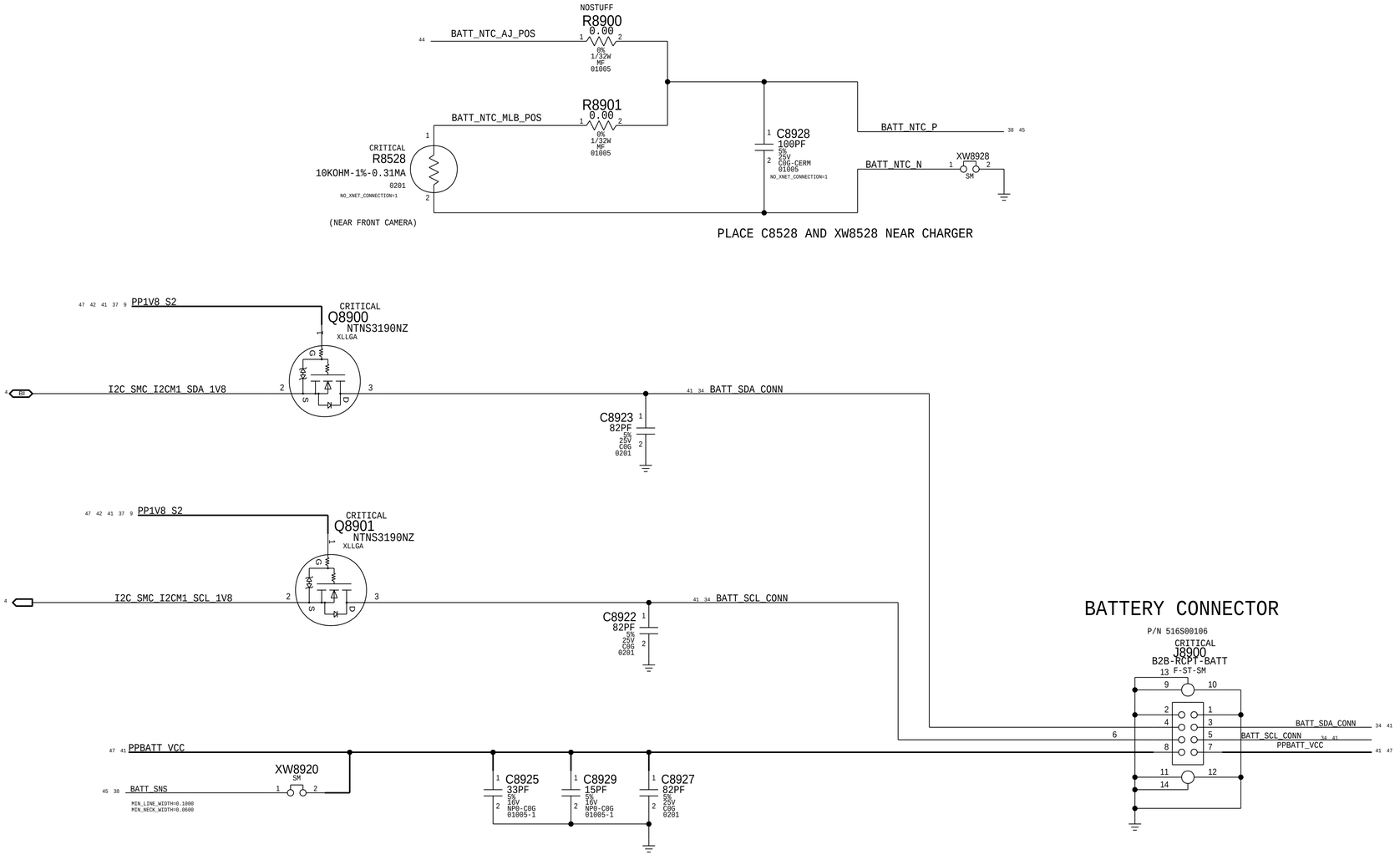
USBPD



SYNC_MASTER=J217_MLB_B SYNC_DATE=04/09/2018

PAGE TITLE

POWER: USB PD

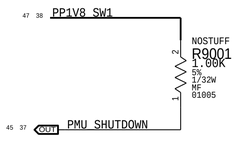


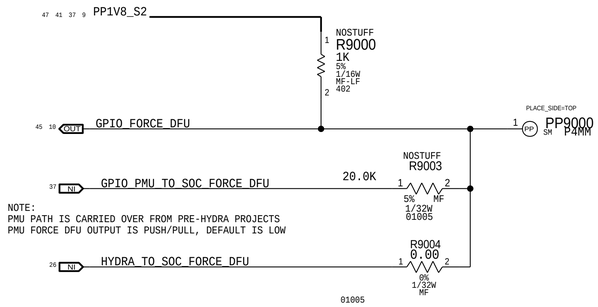
SYNC_MASTER=J207B_MLB_B SYNC_DATE=03/30/2018

PAGE TITLE

POWER: BATTERY CONN

DEBUG RESET ACCESS





SYNC_MASTER=J217_MLB_B
SYNC_DATE=04/09/2018

PAGE TITLE

SOC: DEBUG

WLAN/BT ALIASES

WLAN

POWER

47	PPVCC_MAIN			PPVCC_MAIN	30 31 32 44 51 59 67 68
47	PP1V8_S2_EXT_SW2			PP1V8_S2_EXT_SW2	30 31 32

GPIOS

45 37	IN	GPIO_PMU_TO_WLAN_REG_ON	MAKE_BASE=TRUE	GPIO_PMU_TO_WLAN_REG_ON	OUT	30 31
45 37	OUT	GPIO_WLAN_TO_PMU_HOST_WAKE	MAKE_BASE=TRUE	GPIO_WLAN_TO_PMU_HOST_WAKE	IN	30 31
37	IN	CLK_PMU_TO_WLAN_32K	MAKE_BASE=TRUE	CLK_PMU_TO_WLAN_32K	OUT	30 31
45 11	IN	GPIO_AOP_TO_WLAN_CONTEXT_A	MAKE_BASE=TRUE	GPIO_AOP_TO_WLAN_CONTEXT_A	OUT	30 31
45 11	IN	GPIO_AOP_TO_WLAN_CONTEXT_B	MAKE_BASE=TRUE	GPIO_AOP_TO_WLAN_CONTEXT_B	OUT	30 31
45 10	OUT	GPIO_WLAN_TO_SOC_TIME_SYNC	MAKE_BASE=TRUE	GPIO_WLAN_TO_SOC_TIME_SYNC	IN	30 31
		NC_GPIO_WLAN_TO_SCORPIUS_TX_IND	MAKE_BASE=TRUE	NC_GPIO_WLAN_TO_SCORPIUS_TX_IND	IN	30 31

UART (SHARED WITH BT)

PCIE

6	IN	PCIE_SOC_TO_WLAN_REFCLK_P	MAKE_BASE=TRUE	PCIE_SOC_TO_WLAN_REFCLK_P	OUT	30 31
6	IN	PCIE_SOC_TO_WLAN_REFCLK_N	MAKE_BASE=TRUE	PCIE_SOC_TO_WLAN_REFCLK_N	OUT	30 31
6	IN	PCIE_SOC_TO_WLAN_TX_P	MAKE_BASE=TRUE	PCIE_SOC_TO_WLAN_TX_P	OUT	30 31
6	IN	PCIE_SOC_TO_WLAN_TX_N	MAKE_BASE=TRUE	PCIE_SOC_TO_WLAN_TX_N	OUT	30 31
43		PCIE_WLAN_TO_SOC_TX_C_P	MAKE_BASE=TRUE	PCIE_WLAN_TO_SOC_TX_C_P	IN	30 31
43		PCIE_WLAN_TO_SOC_TX_C_N	MAKE_BASE=TRUE	PCIE_WLAN_TO_SOC_TX_C_N	IN	30 31
46 6	OUT	PCIE_WLAN_TO_SOC_CLKREQ_L	MAKE_BASE=TRUE	PCIE_WLAN_TO_SOC_CLKREQ_L	IN	30 31
46 6	IN	PCIE_SOC_TO_WLAN_RESET_L	MAKE_BASE=TRUE	PCIE_SOC_TO_WLAN_RESET_L	OUT	30 31

GND_VOID=TRUE

46 6 PCIE_WLAN_TO_SOC_TX_P — C9160 1 2 0.1UF PCIE_WLAN_TO_SOC_TX_C_P 43

6.3V 20% 01005 X5R-CERM

46 6 PCIE_WLAN_TO_SOC_TX_N — C9161 1 2 0.1UF PCIE_WLAN_TO_SOC_TX_C_N 43

20% 6.3V X5R-CERM 01005 GND_VOID=TRUE

BLUETOOTH

SOC GPIOS

DIETCOKE COMBINES BT AND WLAN WAKE TO PMU

45 37	IN	GPIO_PMU_TO_BT_REG_ON	MAKE_BASE=TRUE	GPIO_PMU_TO_BT_REG_ON	OUT	30 31
10	IN	GPIO_SOC_BT_DEVICE_WAKE	MAKE_BASE=TRUE	GPIO_SOC_BT_DEVICE_WAKE	OUT	30 31

UART

10	IN	UART_SOC_TO_BT_TX	MAKE_BASE=TRUE	UART_SOC_TO_BT_TX	OUT	30 31
10	IN	UART_SOC_TO_BT_RTS_L	MAKE_BASE=TRUE	UART_SOC_TO_BT_RTS_L	OUT	30 31
	OUT	UART_BT_TO_SOC_TX	MAKE_BASE=TRUE	UART_BT_TO_SOC_TX	IN	30 31
10	OUT	UART_BT_TO_SOC_RTS_L	MAKE_BASE=TRUE	UART_BT_TO_SOC_RTS_L	IN	30 31
46 43 31 30 18 10	IN	GPIO_SOC_TO_BT_TO_GRAPE_TS_SYNC	MAKE_BASE=TRUE	GPIO_SOC_TO_BT_TO_GRAPE_TS_SYNC	OUT	10 18 30 31 43 46
46 43 31 30 18	IN	GPIO_TOUCH_TO_BT_SYNC	MAKE_BASE=TRUE	GPIO_TOUCH_TO_BT_SYNC	OUT	18 30 31 43 46
		NC_BT_TO_SCORPIUS_TX_IND	MAKE_BASE=TRUE	NC_BT_TO_SCORPIUS_TX_IND	IN	30 31
10	OUT	BT_AUDIO_SYNC	MAKE_BASE=TRUE	BT_AUDIO_SYNC	IN	31

ROTTERDAM

POWER

PPVCC_MAIN = PP_VDD_MAIN (VCCMAIN ROTTERDAM CONNECTED THROUGH RADIO PPVCC_MAIN ALIAS)

47	PP1V8_S2_EXT_SW2			PP1V8_S2_EXT_SW2	68

GPIOS

68 43 9	IN	GPIO_SOC_TO_ROTTERDAM_DEV_WAKE	MAKE_BASE=TRUE	GPIO_SOC_TO_ROTTERDAM_DEV_WAKE	OUT	9 43 68
68 43 10	IN	GPIO_SOC_TO_ROTTERDAM_DWLD_REQ	MAKE_BASE=TRUE	GPIO_SOC_TO_ROTTERDAM_DWLD_REQ	OUT	10 43 68
37	IN	GPIO_PMU_TO_ROTTERDAM_EN	MAKE_BASE=TRUE	GPIO_PMU_TO_ROTTERDAM_EN	OUT	68

UART

68 43 10	IN	UART_SOC_TO_ROTTERDAM_TX	MAKE_BASE=TRUE	UART_SOC_TO_ROTTERDAM_TX	OUT	10 43 68
68 43 10	OUT	UART_ROTTERDAM_TO_SOC_TX	MAKE_BASE=TRUE	UART_ROTTERDAM_TO_SOC_TX	IN	10 43 68
68 43 10	IN	UART_SOC_TO_ROTTERDAM_RTS_L	MAKE_BASE=TRUE	UART_SOC_TO_ROTTERDAM_RTS_L	OUT	10 43 68
68 43 10	OUT	UART_ROTTERDAM_TO_SOC_RTS_L	MAKE_BASE=TRUE	UART_ROTTERDAM_TO_SOC_RTS_L	IN	10 43 68

SYNC_MASTER=J207B_MLB_B SYNC_DATE=04/18/2018

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ALIASES: WLAN/BT

BASEBAND

BOARD ID

PP1V8_EXT_SW1 (47 44 37 9 6 5 4)

R0514	1.00K	5% 1/32W MF	01005
R0512	1.00K	5% 1/32W MF	01005
R0511	1.00K	5% 1/32W MF	01005

CELL

GPIO_BRD_ID4 (10 OUT)
GPIO_BRD_ID3 = 0
GPIO_BRD_ID2 (10 OUT)
GPIO_BRD_ID1 (10 OUT)
GPIO_BRD_ID0 = 0

CURRENT SETTING --->

BRD_ID[4-0]	
10100	J210 AP
10101	J210 DEV
10110	J211 AP
10111	J211 DEV

S/W READ FLOW

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

BOARD REVISION

NOTE: STUFFING RESISTOR MEANS 1

PP1V8_EXT_SW1 (47 44 37 9 6 5 4)

R0523	1.00K	5% 1/32W MF	01005	
R0522	1.00K	5% 1/32W MF	01005	
R0521	1.00K	5% 1/32W MF	01005	NOSTUFF
R0520	1.00K	5% 1/32W MF	01005	

GPIO_BRD_REV3 (10 OUT)
GPIO_BRD_REV2 (10 OUT)
GPIO_BRD_REV1 (10 OUT)
GPIO_BRD_REV0 (10 OUT)

CURRENT SETTING --->

BRD_REV[3-0]	
1111	P1 - NO RCAM SUPPORT
1110	P1 - RCAM SUPPORT
1101	P2
1100	TBD
TBD 1011	
1010	TBD

S/W READ FLOW

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

MECHANICAL PARTS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
806-17486	1	TOUCH_FENCE,MLB,KONA,YY,J210	TOUCH_FENCE	CRITICAL	
806-17488	1	RF_FENCE,MLB,RF,NY,J211	RF_FENCE	CRITICAL	
806-17484	1	FENCE,MLB,AP,NY,J211	AP_FENCE	CRITICAL	

SOC GPIOS

GPIO_SOC_TO_BB_SDWN_L	MAKE_BASE=TRUE	GPIO_SOC_TO_BB_SDWN_L	(44 9 IN)	(50 67 OUT)
GPIO_SOC_TO_BB_RESET_L	MAKE_BASE=TRUE	GPIO_SOC_TO_BB_RESET_L	(44 9 IN)	(52 67 OUT)
GPIO_BB_TO_SOC_RESET_DET_L	MAKE_BASE=TRUE	GPIO_BB_TO_SOC_RESET_DET_L	(44 10 OUT)	(52 67 IN)
GPIO_SOC_TO_BB_COREDUMP	MAKE_BASE=TRUE	GPIO_SOC_TO_BB_COREDUMP	(IN)	(52 67 OUT)
GPIO_SOC_TO_BB_MESA_ON	MAKE_BASE=TRUE	GPIO_SOC_TO_BB_MESA_ON	(10 IN)	(52 67 OUT)
NC_NUB_SWD_TMS0		NC_NUB_SWD_TMS0	(11)	
GPIO_PMU_TO_BBPMU_ON	MAKE_BASE=TRUE	GPIO_PMU_TO_BBPMU_ON	(44 37 IN)	(50 67)
GPIO_BB_TO_PMU_HOST_WAKE_L	MAKE_BASE=TRUE	GPIO_BB_TO_PMU_HOST_WAKE_L	(45 37 OUT)	(52 67)
UART_AOP_TO_BB_TX	MAKE_BASE=TRUE	UART_AOP_TO_BB_TX	(11 IN)	(52 67 OUT)
UART_BB_TO_AOP_TX	MAKE_BASE=TRUE	UART_BB_TO_AOP_TX	(11 OUT)	(52 67 IN)

GPIO_SOC_TO_KONA_DISPLAY_BSYNC1 = AP_TO_BBPMU_FORCE_PWM
(DISCONNECTED PER MARK OSCAI - TOUCH DRI)

POWER

PPVCC_MAIN	PPVCC_MAIN	(44)	(30 31 32 43 51 59 67 68)
PP3V0_S2_HYDRA	PP3V0_S2_HYDRA	(44)	(71)
PP1V8_S2_EXT_SW2	PP1V8_S2_EXT_SW2	(44)	(67 71)

PCIE

PCIE_SOC_TO_BB_REFCLK_P	MAKE_BASE=TRUE	PCIE_SOC_TO_BB_REFCLK_P	(IN)	(67)
PCIE_SOC_TO_BB_REFCLK_N	MAKE_BASE=TRUE	PCIE_SOC_TO_BB_REFCLK_N	(6 IN)	(67)
PCIE_BB_TO_SOC_CLKREQ_L	MAKE_BASE=TRUE	PCIE_BB_TO_SOC_CLKREQ_L	(OUT)	(52 67)
PCIE_SOC_TO_BB_RESET_L	MAKE_BASE=TRUE	PCIE_SOC_TO_BB_RESET_L	(44 6 IN)	(52 58 67 OUT)
PCIE_SOC_TO_BB_TX_P	MAKE_BASE=TRUE	PCIE_SOC_TO_BB_TX_P	(44)	(52 67)
PCIE_SOC_TO_BB_TX_N	MAKE_BASE=TRUE	PCIE_SOC_TO_BB_TX_N	(44)	(52 67)
PCIE_BB_TO_SOC_TX_C_P	MAKE_BASE=TRUE	PCIE_BB_TO_SOC_TX_C_P	(44)	(52)
PCIE_BB_TO_SOC_TX_C_N	MAKE_BASE=TRUE	PCIE_BB_TO_SOC_TX_C_N	(44)	(52)

PCIE_SOC_TO_BB_TX_C_P (6 IN) — C0950 1 — 6.3V 20% — 0.1UF — 2 01005 X5R-CERM — PCIE_SOC_TO_BB_TX_P (44)
PLACE_NEAR=U0600.AY17:5MM
GND_VOID=TRUE

PCIE_SOC_TO_BB_TX_C_N (6 IN) — C0951 1 — 6.3V 20% — 0.1UF — 2 01005 X5R-CERM — PCIE_SOC_TO_BB_TX_N (44)
PLACE_NEAR=U0600.AY17:5MM
GND_VOID=TRUE

PCIE_BB_TO_SOC_TX_P (6 OUT) — C0952 1 — 6.3V 20% — 0.1UF — 2 01005 X5R-CERM — PCIE_BB_TO_SOC_TX_C_P (44)
PLACE_NEAR=U_BB_K.AH5:5MM
GND_VOID=TRUE

PCIE_BB_TO_SOC_TX_N (6 OUT) — C0953 1 — 6.3V 20% — 0.1UF — 2 01005 X5R-CERM — PCIE_BB_TO_SOC_TX_C_N (44)
PLACE_NEAR=U_BB_K.AJ6:5MM
GND_VOID=TRUE

PMU ADC

NC_ADC_BB_TO_PMU_PP_1V85	MAKE_BASE=TRUE	NC_ADC_BB_TO_PMU_PP_1V85	(37 OUT)
NC_ADC_BB_TO_PMU_SW1_VOUT	MAKE_BASE=TRUE	NC_ADC_BB_TO_PMU_SW1_VOUT	(37 OUT)
NC_ADC_BB_TO_PMU_SW3_VOUT	MAKE_BASE=TRUE	NC_ADC_BB_TO_PMU_SW3_VOUT	(37 OUT)

GPS

UART_SOC_TO_BB_GPS_TX	MAKE_BASE=TRUE	UART_SOC_TO_BB_GPS_TX	(10 IN)	(55 67)
UART_BB_GPS_TO_SOC_TX	MAKE_BASE=TRUE	UART_BB_GPS_TO_SOC_TX	(10 OUT)	(55 67)
UART_SOC_TO_BB_GPS_RTS_L	MAKE_BASE=TRUE	UART_SOC_TO_BB_GPS_RTS_L	(10 IN)	(56 67)
UART_BB_GPS_TO_SOC_RTS_L	MAKE_BASE=TRUE	UART_BB_GPS_TO_SOC_RTS_L	(10 OUT)	(55 67)
GPIO_PMU_TO_BB_GPS_EN	MAKE_BASE=TRUE	GPIO_PMU_TO_BB_GPS_EN	(37 IN)	(50 55 67)
GPIO_SOC_TO_BB_GPS_SYNC	MAKE_BASE=TRUE	GPIO_SOC_TO_BB_GPS_SYNC	(9 OUT)	(55 67)
TP_GPIO_AP_TO_GPS_DEV_WAKE	MAKE_BASE=TRUE	TP_GPIO_AP_TO_GPS_DEV_WAKE	(10 IN)	(44)
GPIO_BB_GPS_TO_SOC_LOW_PWR_IND	MAKE_BASE=TRUE	GPIO_BB_GPS_TO_SOC_LOW_PWR_IND	(10 OUT)	(55 67)

376S1245

SPARE GPIOS

GPIO_BB_TO_SOC_COEX_SPARE	MAKE_BASE=TRUE	GPIO_BB_TO_SOC_COEX_SPARE	(9 OUT)	(52)
GPIO_SOC_TO_BB_COEX_SPARE	MAKE_BASE=TRUE	GPIO_SOC_TO_BB_COEX_SPARE	(9 IN)	(52)
GPIO_SOC_TO_BB_PEAK_PWR_IND_SPARE	MAKE_BASE=TRUE	GPIO_SOC_TO_BB_PEAK_PWR_IND_SPARE	(9 IN)	(52)

CAN MOUNTING HOLES

DRILL SIZE: 1.1MM X 0.4MM
PLATING SIZE: 1.4MM X 0.7MM

SL9300 TH-NSP (1) — SL-1.1X0.35-1.4X0.65
SL9301 TH-NSP (1) — SL-1.1X0.35-1.4X0.65 — STD9313 APN: 998-4653
SL9303 TH-NSP (1) — SL-1.1X0.4-1.4X0.7
SL9304 TH-NSP (1) — SL-1.1X0.4-1.4X0.7
SL9305 TH-NSP (1) — SL-1.1X0.4-1.4X0.7 — STD9315 APN: 998-2291 *STDOFF-2.730D0.95H
SL9310 TH-NSP (1) — SL-1.1X0.4-1.4X0.7

STANDOFFS

STD9312 STDOFF-3.3X1.8R0.95H-SM (1)
STD9313 STDOFF-3.3X1.8R0.95H-SM (1)
STD9323 STDOFF-3.3X1.8R0.95H-SM (1)
STD9316 STDOFF-2.730D0.95H (1)

CLIP

CLIP-RETENTION-WIFIJUMPER-NY-J211

1 WIFI_CLIP SM

BARCODE LABEL/EEEE CODES

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
825-7691	1	EEEE FOR (MLB B BEST)	EEEE_K43W	CRITICAL	BEST_NA
825-7691	1	EEEE FOR (MLB B BEST)	EEEE_KLC0	CRITICAL	BEST_CH
825-7691	1	EEEE FOR (MLB B BEST)	EEEE_KL9M	CRITICAL	BEST_ROW
825-7691	1	EEEE FOR (MLB B ULTIMATE)	EEEE_LFLC	CRITICAL	ULTIMATE_NA
825-7691	1	EEEE FOR (MLB B ULTIMATE)	EEEE_LFKQ	CRITICAL	ULTIMATE_CH
825-7691	1	EEEE FOR (MLB B ULTIMATE)	EEEE_LFLH	CRITICAL	ULTIMATE_ROW
825-7691	1	EEEE FOR (MLB B SUPREME)	EEEE_K435	CRITICAL	SUPREME_NA
825-7691	1	EEEE FOR (MLB B SUPREME)	EEEE_KL98	CRITICAL	SUPREME_CH
825-7691	1	EEEE FOR (MLB B SUPREME)	EEEE_KL8X	CRITICAL	SUPREME_ROW
825-7691	1	EEEE FOR (MLB B EXTREME)	EEEE_K43R	CRITICAL	EXTREME_NA
825-7691	1	EEEE FOR (MLB B EXTREME)	EEEE_KLCR	CRITICAL	EXTREME_CH
825-7691	1	EEEE FOR (MLB B EXTREME)	EEEE_KLCC	CRITICAL	EXTREME_ROW

ALTERNATES

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
131S00299	131S00118			
138S00148	138S00149			
	138S00149			
138S00151	138S00149			
138S00049	138S0831			
138S00086	138S0884			
155S0660	155S0513			
371S0685	371S00176			
	376S1102			
132S00232	132S00014			
132S00233	132S00014			
197S0612	197S00118			
377S0184	377S0155			
197S0392	197S0369			
197S0399	197S0369			

138S00150

BASEBAND NTC

I964 PLACE_NEAR=PA_LB_K:20MM
CRITICAL
R9150 10KOHM-1%-0.31MA 0201 NO_XNET_CONNECTION=1
C9150 100PF 5% 25V C0G-CERM 01005 NO_XNET_CONNECTION=1
PA_NTC_P (37)
PA_NTC_N — XW9150 SM
(TEMP1 - NEAR BB)

NOTE: XW AND CAP SHOULD BE PLACED NEAR PMU

PPVCC_MAIN_LCD_SW_CONN (28 45) VOLTAGE=4.7V
C4532 330PF 10% 16V CER-X7R 01005

LED DRIVER FILTERS

LED_IO_1_A (45 36 28)
LED_IO_2_A (45 36 28)
LED_IO_3_A (45 36 28)
LED_IO_4_A (45 36 28)
LED_IO_5_A (45 36 28)
LED_IO_6_A (45 36 28)

C4523 C4525 C4502 C4503 C4504 C4505: 100PF 5% 50V C0G 0201

BUCK3_S2_EXT_SW2 (SLEEP2)

PP1V8_S2_EXT_SW2 (47 45 39) MAKE_BASE=TRUE — PP1V8_S2_EXT_SW2 (44)

LDO1 (SLEEP2)

PP3V0_S2_HYDRA (47 45 36) MAKE_BASE=TRUE — PP3V0_S2_HYDRA (44)

CHARGER MAIN

PPVCC_MAINPPVCC_MAIN (47 45 38) MAKE_BASE=TRUE — (44)

BB PP'S

PP95EA	PP	PCIE_BB_TO_SOC_CLKREQ_L	(6 44)
PP95ED	PP	PCIE_SOC_TO_BB_RESET_L	(6 44)
PP95EE	PP	TP_GPIO_AP_TO_GPS_DEV_WAKE	(44)

PLACE_NEAR=U0600.BK35:4MM
PLACE_NEAR=BB_RF.AA11:3MM
PLACE_NEAR=BB_RF.AA11:3MM

BASEBAND TP'S

TP93H0	A	GPIO_PMU_TO_BBPMU_ON	(37 44)
TP93H1	A	GPIO_SOC_TO_BB_SDWN_L	(9 44)
TP93H2	A	GPIO_BB_TO_SOC_RESET_DET_L	(10 44)
TP93H3	A	GPIO_SOC_TO_BB_RESET_L	(9 44)
TP93H6	A	PSIM_DETECT_RCPT	(52 70)
TP93H7	A	PSIM_CLK_RCPT	(52 70)
TP93H8	A	PSIM_DATA_RCPT	(52 70)
TP93H9	A	PSIM_RST_RCPT	(52 70)

TP93M0 A, TP93M1 A, TP93M2 A — TP-P5

PCIE_SOC_TO_BB_RESET_L (44 6) — R0951 100K 5% 1/32W MF 01005

MLB 516S00186
WF3_FLEX_516S00185
CRITICAL
J3100
BM28P0.6-6DS/2-0.35V
F-ST-SM

PP_TUNER_3V0_L_ANT_B2B (71 44) — 8 PWR/GND — PP_TUNER_3V0_L_ANT_B2B (44 71)
ANT_TRANSLATOR_GPO1 (71 44) — 5 SIGNAL — 6 — ANT_TRANSLATOR_GPO1 (44 71)
ANT_TRANSLATOR_GPO2 (71 44) — 3 — 4 — ANT_TRANSLATOR_GPO2 (44 71)
ANT_TRANSLATOR_GPO3 (71 44) — 1 — 2 — ANT_TRANSLATOR_GPO3 (44 71)
9 PWR/GND — 10

C3162 27PF 5% 16V NP0-C0G 01005-1
C3161 27PF 5% 16V NP0-C0G 01005-1
C3160 27PF 5% 16V NP0-C0G 01005-1

516S00197 - MLB
(516S00248 - SWAJALS_FLEX)
CRITICAL
J3150
AA28D-S022VA1
F-ST-SM

BATT_NTC_AJ_POS (41)
CODEC_HP_HS3_CONN (45 23 OUT)
CODEC_HP_RIGHT_CONN (45 23 IN)
BB_TO_L_ANT_RFFE_CLK_B2B (71 IN)
BB_TO_L_ANT_RFFE_DATA_B2B (71 IN)
PP_TUNER_1V8_L_ANT_B2B (71 IN)
ANT_TRANSLATOR_GPO6 (71 IN)
ANT_TRANSLATOR_GPO4 (71 IN)
ANT_TRANSLATOR_GPO5 (71 IN)
PP_TUNER_3V0_L_ANT_B2B (71 44 IN)

CODEC_HP_LEFT_CONN (IN) (23 45)
CODEC_HP_HEADSET_DET_CONN (OUT) (23 45)
CODEC_HP_HS4_CONN (OUT) (23 45)
CODEC_HP_HS4_REF_CONN (IN) (23 45)
CODEC_HP_HS3_REF_CONN (IN) (23 45)
I2C_ALS1_SDA_CONN
I2C_ALS1_SCL_CONN (24)
GPIO_ALS1_TO_SOC_IRQ_L_CONN (24)
PP3V0_ALS1_CONN (24)

C3122 27PF 5% 16V NP0-C0G 01005
C3150 0.1UF 10% 6.3V CERM-X5R 0201
C3120 27PF 5% 16V NP0-C0G 01005
C3142 27PF 5% 16V NP0-C0G 01005
C3130 27PF 5% 16V NP0-C0G 01005
C3102 27PF 5% 16V NP0-C0G 01005
C3101 0.1UF 10% 6.3V CERM-X5R 0201
C3121 27PF 5% 16V NP0-C0G 01005
C3141 27PF 5% 16V NP0-C0G 01005
NOSTUFF DZ3103 40V-1PF 0201
NOSTUFF DZ3102 40V-1PF 0201
NOSTUFF DZ3100 40V-1PF 0201
NOSTUFF DZ3101 40V-1PF 0201

COEX UART: BB - WLAN

UART_COEX_BB_TO_WLAN_TXD (6 IN) — MAKE_BASE=TRUE — UART_COEX_BB_TO_WLAN_TXD (OUT) (30 31)
UART_COEX_WLAN_TO_BB_TXD (67 52 OUT) — MAKE_BASE=TRUE — UART_COEX_WLAN_TO_BB_TXD (IN) (30 31)

SYNC_MASTER=J217_MLB_B
SYNC_DATE=04/09/2019
PAGE TITLE
BASEBAND UNIQUE

SMT TEST FIXTURE TP

POWER - BUCKS

TP9301 PPVDD_CPU 35 47
TP9302 PPVDD_GPU 35 47
TP9303 PPVDD_S1_SOC 35 47
TP9304 PP1V8_S2 5 35 47
TP9305 PP1V8_SW1 36 47
TP9306 PP1V8_EXT_SW1 39 47
TP9307 PP1V8_CAM 7 36 47
TP9308 PP1V8_S2_EXT_SW2 39 44 47

TP9311 PP1V1_S2 35 47

TP9313 PPVDD_S1_FIXED 35 47
TP9316 PP2V63_NAND 35 47

TP9319 PPVDD_CPU_SRAM 35 47
TP9320 PPVDD_GPU_SRAM 35 47
TP9321 PPVDD_ECPU 35 47

TP938C PPVDD_S1_DCS 35 47
TP938D PPVDD_S1_QL 35 47

POWER - LDOS

TP9322 PP3V0_S2_HYDRA 36 44 47
TP9323 PP1V7_S2_VA_VCP 36 47
TP9324 PP2V6_REAR_CAM_AF 36 47
TP9325 PP3V0_ALS 36 47

TP9327 PP3V3_ACC 36 47
TP9328 PP3V3_USB 36 47
TP9329 PP3V05_S2_MESA 36 47
TP9330 PP1V19_FRONT_CAM 36 47
TP9381 PP0V9_NAND 36 47

TP9333 PP2V9_REAR_CAM 36 47
TP9334 PP1V2_SOC 36 47
TP9335 PP0V75_S2_AOP 36 47
TP9336 PP1V8_S2_MESA 36 47

POWER - OTHER

TP9340 PPVCENTER 38
TP9341 PPVBUS_PROT 34 47
TP9342 PPVCC_HIGH 38 47
TP9343 PP1V8_ALWAYS 37 47

TP9345 PPLED_OUT 34 36 37 47
TP9346 PPVCC_MAIN 38 44 45 47
TP9347 PPVCC_MAIN 38 44 45 47
TP9348 PPBATT_POS_RC 38
TP934A PP16V0_MESA 29

POWER - CAMERA (NH)

TP9352 PP2V9_FRONT_CAM_AVDD 22 47

POWER - DISPLAY

TP9360 PPVCC_MAIN_LCD_SW_CONN 28 44
TP9361 PPVCC_MAIN_LCD_SW 28

POWER - BACKLIGHT

TP9362 PPLED_BACK_REG_A 28 45
TP9368 PPLED_BACK_REG_A 28 45

TP9363 LED_IO_1_A 28 36 44
TP9364 LED_IO_2_A 28 36 44
TP9365 LED_IO_3_A 28 36 44
TP9366 LED_IO_4_A 28 36 44
TP9367 LED_IO_5_A 28 36 44
TP9374 LED_IO_6_A 28 36 44

TP9369 LED_IO_1_B 36
TP9370 LED_IO_2_B 36
TP9371 LED_IO_3_B 36
TP9372 LED_IO_4_B 36
TP9373 LED_IO_5_B 36

TP9375 WLED_LX_A 36
TP9376 WLED_LX_B 34 36

BATTERY

TP9381 BATT_NTC_P 38 41
TP9382 BATT_SNS 38 41

HYDRA

TP938A GPIO_HYDRA_TO_SMC_IRQ 11 26
TP938B RESET_HYDRA_TO_PMU 26 37

USBPD

TP938E PPVDD_USBPD_DET 34 40
TP938F CCG2_VBUS_DET 40

TP9390 PLACE_NEAR=J3700.19:20MM TP-1P0-TOP
TP9391 PLACE_NEAR=J3700.19:20MM TP-1P0-TOP
TP9392 PLACE_NEAR=J3700.19:20MM TP-1P0-TOP PPVBUS_USB_EMI 26 34 45
TP9394 PLACE_NEAR=J3700.9:30MM TP-1P0-TOP
TP9396 PLACE_NEAR=J8900.4:15MM TP-1P0-TOP
TP9397 PLACE_NEAR=J8900.4:15MM TP-1P0-TOP
TP9398 PLACE_NEAR=J8900.4:15MM TP-1P0-TOP

PMU

TP93A0 GPIO_WLAN_TO_PMU_HOST_WAKE 37 43
TP93A2 GPIO_BB_TO_PMU_HOST_WAKE_L 37 44
TP93A3 ATLAS_ICAL 37
TP93A5 BOARD_TEMP2_P 37
TP93A6 BOARD_TEMP3_P 37
TP93A7 BOARD_TEMP4_P 37
TP93A8 BOARD_TEMP5_P 34 37
TP93A9 BOARD_TEMP6_P 37
TP93B0 BOARD_TEMP7_P 37
TP93B1 BOARD_TEMP8_P 37

TP93B4 TP_AMUX_AY 37
TP93B5 TP_AMUX_BY 37

TP93B7 NUB_SPMI_ATLAS_SDATA 11 37
TP93B8 NUB_SPMI_ATLAS_SCLK 11 37
TP93B9 GPIO_PMU_TO_CPU_TRIGGER_0 5 37
TP93BA GPIO_PMU_TO_CPU_TRIGGER_1 5 37
TP93BB VCCMAIN_DROOP_PMU_TO_SOC_L 5 37
TP93BC SOCHOT1_SOC_TO_PMU_L 5 37
TP93BD PMU_SHUTDOWN 37 42
TP93BE GPIO_PMU_TO_GPU_TRIGGER_0 5 37
TP93BF GPIO_PMU_TO_GPU_TRIGGER_1 5 37

TP93BI GPIO_PMU_TO_SOC_BTN_HOME_L 10 37
TP93BJ GPIO_PMU_TO_SOC_BTN_ONOFF_L 10 37

SOC - JTAG/RESET

TP93C1 JTAG_SOC_SEL 4 5
TP93C2 JTAG_SOC_TCK 5 26
TP93C3 JTAG_SOC_TMS 5 26
TP93C4 JTAG_SOC_TDI 5
TP93C5 JTAG_SOC_TRST_L 4 5
TP93C6 JTAG_SOC_TDO 5
TP93C7 SOC_TESTMODE 4 5
TP93C8 RESET_PMU_TO_SYSTEM_L 5 13 37
TP93C9 GPIO_FORCE_DFU 10 42
TP93CA TP_SOC_DFU_STATUS 10
TP93CB TST_CLKOUT 5
TP93CC GPIO_PMU_TO_SYSTEM_ACTIVE_READY 5 26 37

SOC - UART

TP93D0 UART_SOC_TO_DEBUG_TX 10 26
TP93D1 UART_DEBUG_TO_SOC_TX 10 26

SOC - USB

TP93D2 USB_SOC_N 5 26
TP93D3 USB_SOC_P 5 26

E75

TP93D4 HYDRA_E75_ACC_DET_L 26
TP93D5 PPVBUS_E75_USB_CONN 26 27 34
TP93D6 PPOUT_E75_ACC_ID1_CONN 26 27 45
TP93D7 PPOUT_E75_ACC_ID2_CONN 26 27 45
TP93D8 E75_DPAIR1_N 26 27
TP93D9 E75_DPAIR1_P 26 27
TP93E0 E75_DPAIR2_N 26 27
TP93E1 E75_DPAIR2_P 26 27
TP93EB PPVBUS_USB_EMI 26 34 45

TP93E2 E75_RVP_G 34
TP93E3 E75_TR_B 26

TP93EC PPOUT_E75_ACC_ID1_CONN 26 27 45
TP93ED PPOUT_E75_ACC_ID2_CONN 26 27 45

AUDIO - HEADPHONE

TP93E5 CODEC_HP_HEADSET_DET_CONN 23 44
TP93E6 CODEC_HP_HS3_CONN 23 44
TP93E7 CODEC_HP_HS3_REF_CONN 23 44
TP93E8 CODEC_HP_HS4_CONN 23 44
TP93E9 CODEC_HP_HS4_REF_CONN 23 44
TP93F0 CODEC_HP_LEFT_CONN 23 44
TP93F1 CODEC_HP_RIGHT_CONN 23 44

AUDIO - SPEAKER AMPS

TP93F2 PPVBOOST_R_CN 25
TP93F3 PPVBOOST_L_CN 25

TP93FA GPIO_SPKRAMP_TO_SOC_IRQ_L 10 25
TP93FB TDM_SPKRAMP_TO_SPKRAMP_TCC 25

AUDIO - CODEC

TP93F6 GPIO_CODEC_TO_PMU_WAKE_L 23 37

TP93F8 MIKEY_HYDRA_P 23 26
TP93F9 MIKEY_HYDRA_N 23 26

POWER - SENSORS

TP93G0 PP1V8_S2_KOBOL_FILT 17
TP93G2 PP1V8_PHOS_FILT 17

I2C

TP93GG I2C1_SCL_1V8 4 9
TP93GH I2C1_SDA_1V8 4 9
TP93GC I2C2_SCL_1V8 4 9
TP93GD I2C2_SDA_1V8 4 9
TP93GE I2C3_SCL_1V8 4 9
TP93GF I2C3_SDA_1V8 4 9
TP93HE I2C4_SCL_1V8 4 9
TP93HF I2C4_SDA_1V8 4 9

WIFI/BT

TP93I0 GPIO_PMU_TO_BT_REG_ON 37 43
TP93I1 GPIO_PMU_TO_WLAN_REG_ON 37 43
TP93I2 CLK_PMU_TO_WLAN_32K 37 43

TP93IB GPIO_WLAN_TO_SOC_TIME_SYNC 10 43
TP93IC JTAG_WLAN_SEL 31

TP93IE GPIO_AOP_TO_WLAN_CONTEXT_A 11 43
TP93IF GPIO_AOP_TO_WLAN_CONTEXT_B 11 43

CAMERA - NH

TP93I3 CLK_SOC_TO_FRONT_CAM_12MHZ 7 22
TP93I4 ISP_I2C2_SCL_1V8 4 22
TP93I5 ISP_I2C2_SDA_1V8 4 22
TP93I6 GPIO_SOC_TO_FRONT_CAM_SHTDWN_L 7 22

CAMERA - ARIZONA

TP93J3 GPIO_SOC_TO_MINION_CRESET_L 7 20
TP93J4 MINION_SPI_MOSI 20
TP93J2 MINION_SPI_MISO 20
TP93JA MINION_SPI_SCLK 20
TP93JB MINION_SPI_CS_L 20
TP93JE GPIO_FLASH_WP_L 20
TP93JF GPIO_FLASH_HOLD_L 20

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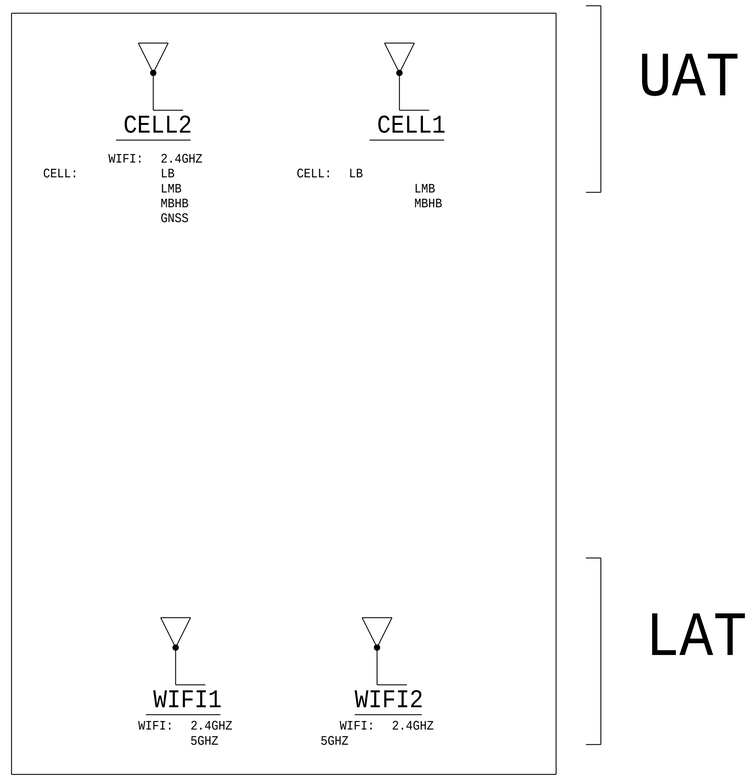
POWER: ALIASES

ICE18.7/8 RADIO

ANTENNA BLOCK DIAGRAM



UAT

LAT

SYNC_MASTER=RADIO_MLB_0.37.0 SYNC_DATE=09/30/2018

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ANTENNA DIAGRAM

BOM TABLES

FERRITE ALTERNATES

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
155S00131	155S00341	BOM_TABLE_ALTS	FL900_K	FERR BD, 240OHM
155S00414	155S0876	BOM_TABLE_ALTS	ALL	FERR BD, 100HM
155S00200	155S00400	BOM_TABLE_ALTS	ALL	FERR BD, 150OHM
155S00200	155S00400	BOM_TABLE_ALTS	ALL	FERR BD, 150OHM

ETIC CAP ALTERNATES

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
138S00237	138S00167	BOM_TABLE_ALTS	C1204_K	CAP,2.2UF
138S00237	138S00167	BOM_TABLE_ALTS	C1205_K	CAP,2.2UF
138S00237	138S00167	BOM_TABLE_ALTS	C1206_K	CAP,2.2UF

CAP ALTERNATES

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
138S00086	138S0884	BOM_TABLE_ALTS	ALL	CAP,20UF
138S00103	138S1103	BOM_TABLE_ALTS	ALL	CAP,4.7UF
138S00133	138S00133	BOM_TABLE_ALTS	ALL	CAP,0.47UF

EEPROM ALTERNATES

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
335S00013	335S0894	BOM_TABLE_ALTS	EEPROM_K	EEPROM,8KBIT,I2C

XTAL ALTERNATES

PART NUMBER	ALTERNATE FOR	BOM OPTION	REF DES	COMMENTS:
197S00155	197S00155	BOM_TABLE_ALTS	Y301_K	XTAL,38.4MHZ,TXC
197S00179	197S00155	BOM_TABLE_ALTS	Y301_K	XTAL,38.4MHZ,NDK

ROW SKU

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
353S01345	1	IC,LB PAD,B28,SKY78170,DSBGA112	PA_LB_K	ROW
353S01301	1	IC,SKY13765,LB DSM,DSBGA20,B28	DSM_LB_K	ROW
337S00578	1	IC,ST33G1M2STL9ENL0,VINYL,BGA3X4	U_SIM	ROW
138S0831	1	CAP,CER,X5R,2.2UF,20%,6.3V,0201	C10_SIM	ROW
118S0636	1	RES,MF,1/32W,4.7K OHM,1%,01005,SMD	R12_SIM	ROW
117S0161	1	RES,MF,1/32W,0.0 OHM, 0%,01005,SMD	R13_SIM	ROW
117S0158	1	RES,MF,1/32W,100K OHM,5%,01005,SMD	R10_SIM	ROW

NA SKU

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
353S01170	1	IC,LB PAD,B71,SKY78203,DSBGA112	PA_LB_K	NA
353S01417	1	IC,SKY13785,LB DSM,DSBGA20,B71	DSM_LB_K	NA
337S00578	1	IC,ST33G1M2STL9ENL0,VINYL,BGA3X4	U_SIM	NA
138S0831	1	CAP,CER,X5R,2.2UF,20%,6.3V,0201	C10_SIM	NA
118S0636	1	RES,MF,1/32W,4.7K OHM,1%,01005,SMD	R12_SIM	NA
117S0161	1	RES,MF,1/32W,0.0 OHM, 0%,01005,SMD	R13_SIM	NA
117S0158	1	RES,MF,1/32W,100K OHM,5%,01005,SMD	R16_SIM	NA

CHINA SKU

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
353S01345	1	IC,LB PAD,B28,SKY78170,DSBGA112	PA_LB_K	CHINA
353S01301	1	IC,SKY13765,LB DSM,DSBGA20,B28	DSM_LB_K	CHINA
117S0158	1	RES,MF,1/32W,100K OHM,5%,01005,SMD	R11_SIM	CHINA

QTY	PART#	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
1	118S00117	RES,1%,1.2K OHM,1/32W,01005	R311_K	ROW
1	118S00117	RES,1%,1.2K OHM,1/32W,01005	R312_K	ROW
1	117S0161	RES,1%,0.0 OHM,1/32W,01005	R311_K	NA

UPDATE FOR EVT BUILD!

SYNC_MASTER=RADIO_MLB_0.37.0 SYNC_DATE=09/30/2018

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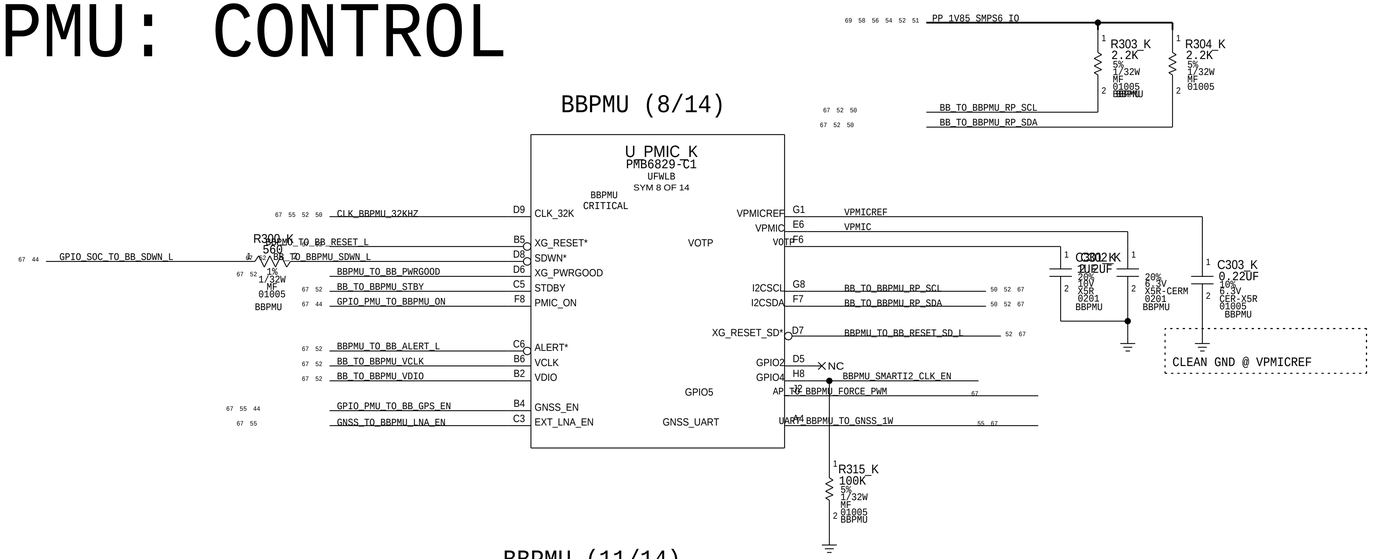
BOM TABLES

BBPMU: CONTROL

BBPMU (8/14)



PP_1V85_SMPS6_IQ

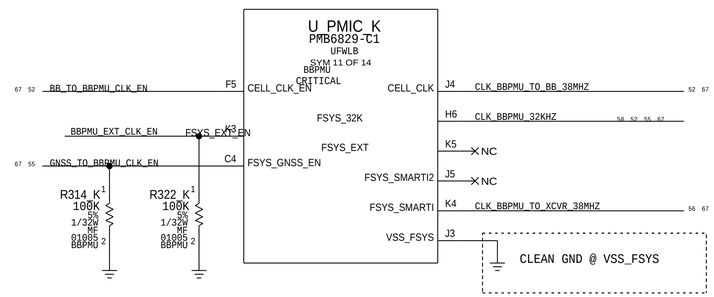
R303_K 2.2K 5% 1/32W MF 01005 BBPMU

R304_K 2.2K 5% 1/32W MF 01005 BBPMU

BB_TO_BBPMU_RP_SCL

BB_TO_BBPMU_RP_SDA

BBPMU (11/14)

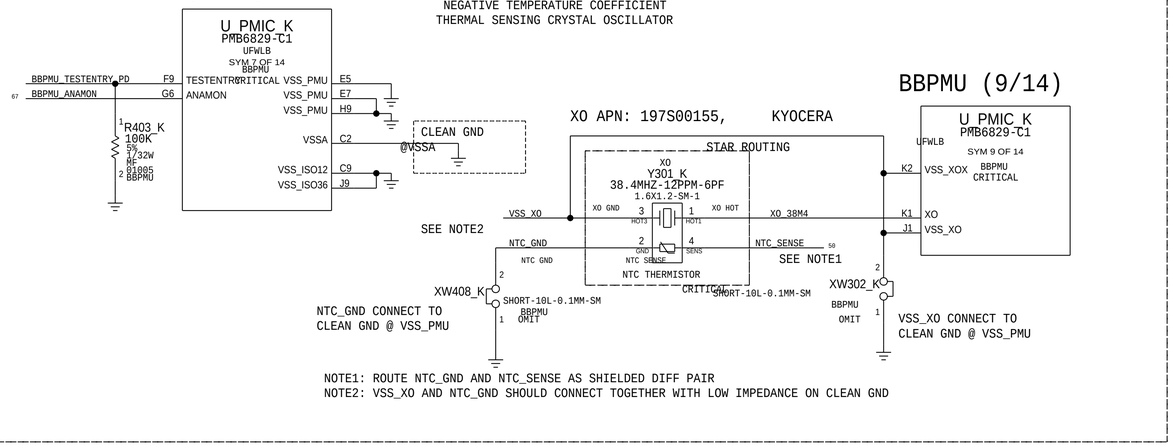


BBPMU (7/14)

NTC TS-XO

NEGATIVE TEMPERATURE COEFFICIENT
THERMAL SENSING CRYSTAL OSCILLATOR

(RESISTANCE DECREASES AS TEMPERATURE INCREASES)

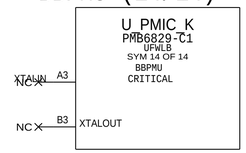


NOTE1: ROUTE NTC_GND AND NTC_SENSE AS SHIELDED DIFF PAIR
NOTE2: VSS_XO AND NTC_GND SHOULD CONNECT TOGETHER WITH LOW IMPEDANCE ON CLEAN GND

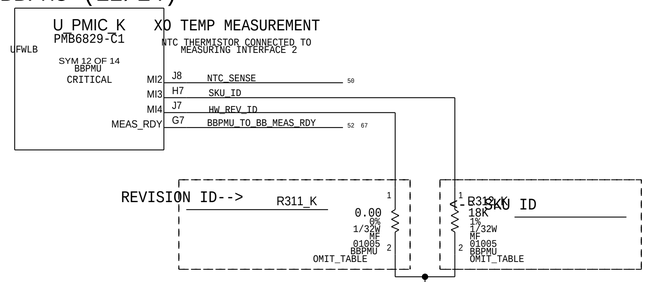
BBPMU (9/14)

BBPMU (14/14)

POR: 32K CLK GENERATED INTERNALLY
OPTIONAL PINS FOR EXTERNAL OSC



BBPMU (12/14)



REVISION

R311_K	MLB REVISION
0.0	PROTO 1 - LOCAL - NA
1.2K	PROTO 1 - LOCAL - ROW
2.2K	PROTO 1 - FXLH - NA
3.3K	PROTO 1 - FXLH - ROW
4.7K	PROTO 2 - LOCAL - NA
6.8K	PROTO 2 - LOCAL - ROW
8.2K	PROTO 2 - FXLH - NA
10K	PROTO 2 - FXLH - ROW
12K	EVT - LOCAL - NA
15K	EVT - LOCAL - ROW
18K	EVT - FXLH - NA
22K	EVT - FXLH - ROW
27K	DVT - LOCAL - NA
33K	DVT - LOCAL - ROW
39K	DVT - FXLH - NA
47K	DVT - FXLH - ROW
56K	PVT - FXLH - NA
68K	PVT - FXLH - ROW
82K	DOE1 - NA
100K	DOE1 - ROW
120K	
150K	

SKU/CATEGORY

R312_K	HW REVISION	X-CODE
0.0	RFDEV JP	
1.2K	ICE 18.0 JP	X1344 (ICE 18.0)
2.2K	ICE 18.0 ROW	
3.3K	ICE 18.1 JP	X1049 (ICE 18.1)
4.7K	ICE 18.1 ROW	
6.8K	ICE 18.2 JP	X1210 (ICE 18.2)
8.2K	ICE 18.2 ROW	
10K	RFDEV ROW	
12K	ICE 18.5 JP	X1170
15K	ICE 18.6 JP	X1176
18K	ICE 18.7	
22K	ICE 18.5 US	X1170
27K	ICE 18.6 US	X1176
33K	ICE 18.0 NA	X1344
39K	RFDEV NA	
47K	ICE 18.1 NA	X1049
56K	ICE 18.2 NA	X1210
68K	ICE 18.8	
82K	KAROO INTERNAL	
100K	KAROO INTERNAL	
120K	KAROO INTERNAL	
150K		

HWID TABLE RDAR://32880011
ADC TABLE RDAR://27081897

BBPMU ADC TABLES

SYNC_MASTER=RADIO_MLB_0.37.0 SYNC_DATE=09/30/2018
PAGE TITLE
BBPMU: CONTROL

BBPMU: RAILS

PROGRAMMABLE LDOS

BBPMU (10/14)

U_PMIC_K
PMB6829-C1
UFWLB
SYM 1 OF 14
BBPMU

PP_VDD_SIM1 → VSIM1 (F2)
PP_VDD_SIM2 → VSIM2 (F1)
C427_K 0.47UF 20% 6.3V X5R 01005-1 BBPMU
C428_K 0.47UF 20% 6.3V X5R 01005-1 BBPMU

PP1V85_SMPS6_IO → VIN_1V8_EXT (G2) CRITICAL
V1V8_XO (H4)
VREFCP_GPIO3 (A5) TOUCH_TO_MANY_SCAN_STATE

PMU-C0: GPIO3 IS MUXABLE WITH FORCE_PWM1

PP_3V3_CHP_F4 → VIN_3V3 (G1)
VPROG2
VPROG3_GPIO1
PPVCC_MAIN → VSYS (H3)
PP1V3_SMPS3_XCVR_ANA → VIN_1V1 (J6)
PP1V85_SMPS6_IO → VIN_ANA (F3)
PP1V85_SMPS6_IO → VDD_IO (D4)

VPROG1 (G5) → PP_3V15_LDO1_VFE_AUX
VPROG2 (G3) → PP_1V8_LDO2_VFE_LNA
VPROG3 (H5) → PP_3V3_LDO3_USB_HS
VPROG4 (H2) VMOD_6_SWITCH → PP_1V8_LDO4_BB_MEM
VPROG5 (H1) → PP_1V24_LDO5_USB_SS
VPROG6 (K7) → PP_1V1_LDO6_BB_IO
VPROG7 (K6) NC
VPROG8 (E3) → PP_1V2_LDO8_HBPAD
VPROG9 (G4) → PP_1V8_LDO9_GNSS
VPROG10 (E4) PP_1V8_LDO10_XCVR_HI

C460_K 2.2UF 20% 6.3V X5R-CERM 0201 BBPMU
C461_K 2.2UF 20% 6.3V X5R-CERM 0201 BBPMU
C462_K 2.2UF 20% 6.3V X5R-CERM 0201 BBPMU
C463_K 2.2UF 20% 6.3V X5R-CERM 0201 BBPMU
C408_K 1UF 20% 10V X5R 0201 BBPMU
C409_K 1UF 20% 10V X5R 0201 BBPMU
C410_K 10UF 20% 6.3V X5R-CERM 0402-0.1MM BBPMU
C412_K 10UF 20% 6.3V X5R-CERM 0402-0.1MM BBPMU
C464_K 2.2UF 20% 6.3V X5R-CERM 0201 BBPMU
C465_K 2.2UF 20% X5R-CERM 0201 BBPMU
C466_K 2.2UF 20% 6.3V X5R-CERM 0201 BBPMU
C467_K 2.2UF 20% 6.3V X5R-CERM 0201 BBPMU
C416_K 4.7UF 20% 10V X5R 0402-1 BBPMU

PPVCC_MAIN
C405_K 15UF 20% 6.3V X5R 0402-1 BBPMU
C425_K 100PF 5% 25V C0G-CERM 01005 BBPMU
C426_K 27PF 5% 16V NP0-C0G 01005-1 BBPMU

CHARGE PUMP

BBPMU (6/14)

U_PMIC_K
PMB6829-C1
UFWLB
SYM 6 OF 14
BBPMU

PP1V85_SMPS6_IO → VDD_CHP CRITICAL (D3)
VSS_CHP (D2)
VCHP (D1) → PP_3V3_CHP
VCHP_BSTP (E1) VDD_CHP_BST_E1
VCHP_BSTN (E2) VDD_CHP_BST_E2
C421_K 1UF BBPMU 20% 10V X5R 0201
C422_K 4.7UF 20% 10V X5R 0402-1 BBPMU

PP
P2MM-NSM
OMIT SM

PP400_K → PP_3V15_LDO1_VFE_AUX
PP401_K → PP_1V8_LDO2_VFE_LNA
PP2480_K → PP_3V3_LDO3_USB_HS
PP2481_K → PP_1V8_LDO4_BB_MEM
PP2482_K → PP_1V24_LDO5_USB_SS
PP2490_K → PP_1V1_LDO6_BB_IO
PP404_K → PP_1V2_LDO8_HBPAD
PP405_K → PP_1V8_LDO9_GNSS
PP406_K → PP_1V8_LDO10_XCVR_HI

SWITCHERS

SMPS1/2/4 SHARED VDD_MAIN INTERNALLY
SMPS3/5/6 SHARED VDD_MAIN INTERNALLY

BBPMU (1/14) APN:152S00539 Z=0.8MM

U_PMIC_K PMB6829-C1 UFWLB SYM 1 OF 14 BBPMU
PPVCC_MAIN → VDD_VMOD0 CRITICAL (A7), VDD_VMOD1 (A8)
C471_K 2.2UF 20% 6.3V X5R-CERM 0201
C402_K 15UF 20% 6.3V X5R 0402-1 BBPMU
VMOD1_FB (A6) VMOD1SENSE
VSS_VMOD1 (C7, C8)
VMOD1LX (B7, B8) CRITICAL
L401_K 0.47UH-20%-3.8A-0.037OHM 0805 BBPMU
XW401_K SHORT-10L-0.1MM-SM OMIT
PP_0V9_SMPS1_BB_SRAM
C400_K 20UF 20% 6.3V CERM-X5R 0402 BBPMU
C401_K 20UF 20% 6.3V CERM-X5R 0402 BBPMU
C480_K 220PF 5% 25V C0G 01005

BBPMU (2/14) APN:152S00436 Z=0.8MM

U_PMIC_K PMB6829-C1 UFWLB SYM 2 OF 14 BBPMU
PPVCC_MAIN → VDD_VMOD2 CRITICAL (A10), VDD_VMOD2LX (B10)
C473_K 2.2UF 20% 6.3V X5R-CERM 0201
VMOD2_FB (A9) VMOD2SENSE
VSS_VMOD2 (C10)
VMOD2LX (B9) CRITICAL
L402_K 1UH-20%-3.6A-0.035OHM BBPMU 2016
XW403_K SHORT-10L-0.1MM-SM OMIT
PP_0V8_SMPS2_BB_DIG
C481_K 220PF 5% 25V C0G 01005
C404_K 20UF 20% 6.3V CERM-X5R 0402 BBPMU

BBPMU (3/14) APN:152S00945 Z=0.7MM

U_PMIC_K PMB6829-C1 UFWLB SYM 3 OF 14 BBPMU
PPVCC_MAIN → VDD_VMOD3 CRITICAL (H10)
VMOD3_FB (G9) VMOD3SENSE
VSS_VMOD3 (F10)
VMOD3LX (G10) CRITICAL
L403_K 2.2UH-20%-1.4A-0.19OHM 0805 BBPMU
XW405_K SHORT-10L-0.1MM-SM OMIT
PP_1V3_SMPS3_XCVR_ANA
C482_K 220PF 5% 25V C0G 01005
C406_K 20UF 20% 6.3V CERM-X5R 0402 BBPMU

BBPMU (4/14) APN:152S00630 Z=0.65MM

U_PMIC_K PMB6829-C1 UFWLB SYM 4 OF 14 BBPMU
PPVCC_MAIN → VDD_VMOD4 CRITICAL (A1)
C474_K 2.2UF 20% 6.3V X5R-CERM 0201
C417_K 15UF 20% 6.3V X5R 0402-1 BBPMU
VMOD4_FB (A2) VMOD4SENSE
VSS_VMOD4 (C1)
VMOD4LX (B1) CRITICAL
L404_K 1UH-20%-2.4A-0.060HM PIWA2016FE-SM BBPMU
XW407_K SHORT-10L-0.1MM-SM OMIT
PP_0V77_SMPS4_BB_CORE
C483_K 220PF 5% 25V C0G 01005
C418_K 20UF 20% 6.3V CERM-X5R 0402 BBPMU

BBPMU (5/14) APN:152S00630 Z=0.65MM

U_PMIC_K PMB6829-C1 UFWLB SYM 5 OF 14 BBPMU
PPVCC_MAIN → VDD_VMOD5 CRITICAL (E10)
C472_K 2.2UF 20% 6.3V X5R-CERM 0201
C419_K 15UF 20% 6.3V X5R 0402-1 BBPMU
VMOD5_FB (D10) VMOD5SENSE
VSS_VMOD5 (E8)
VMOD5LX (E9) CRITICAL
L405_K 1UH-20%-2.4A-0.060HM PIWA2016FE-SM BBPMU
XW409_K SHORT-10L-0.1MM-SM OMIT
PP_1V8_SMPS5_XCVR_CORE
C484_K 220PF 5% 25V C0G 01005
C420_K 20UF 20% 6.3V CERM-X5R 0402 BBPMU

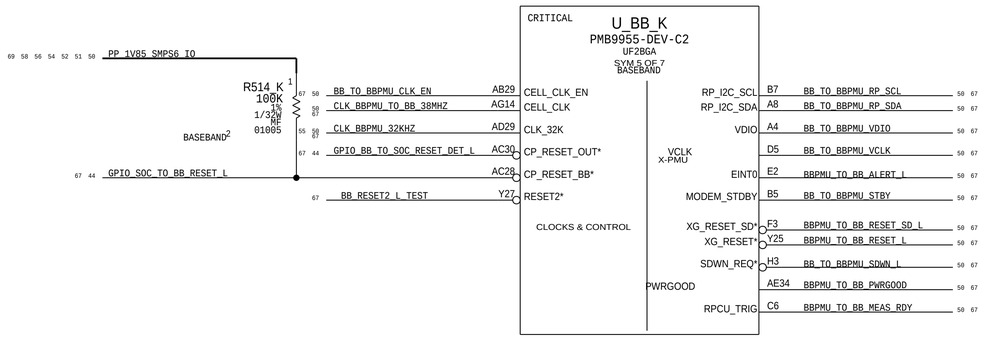
BBPMU (13/14) APN:152S00630 Z=0.65MM

U_PMIC_K PMB6829-C1 UFWLB SYM 13 OF 14 BBPMU
PPVCC_MAIN → VDD_VMOD6 CRITICAL (K10)
C423_K 15UF 20% 6.3V X5R 0402-1 BBPMU
VMOD6_FB (J10) VMOD6SENSE
VSS_VMOD6 (K8)
VMOD6LX (K9) CRITICAL
L406_K 1UH-20%-2.4A-0.060HM PIWA2016FE-SM BBPMU
XW411_K SHORT-10L-0.1MM-SM OMIT
PP_1V85_SMPS6_IO
C485_K 220PF 5% 25V C0G 01005
C424_K 20UF 20% 6.3V CERM-X5R 0402 BBPMU

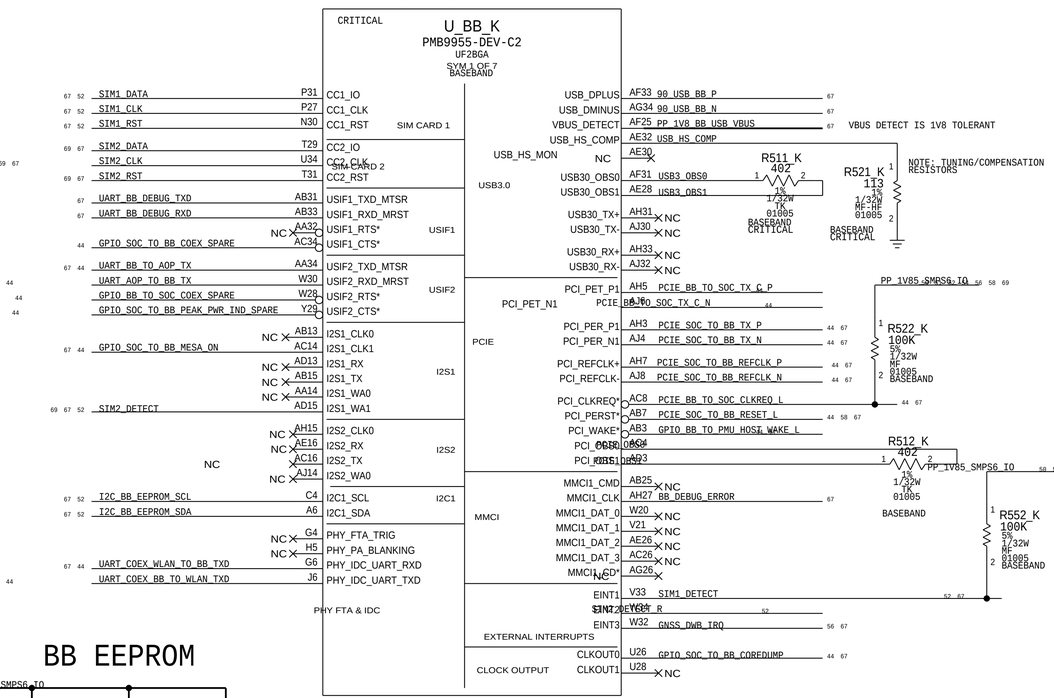
SYNC_MASTER=RADIO_MLB_0.37.0 SYNC_DATE=09/30/2018
PAGE TITLE
BBPMU: RAILS

BB: INTERFACE

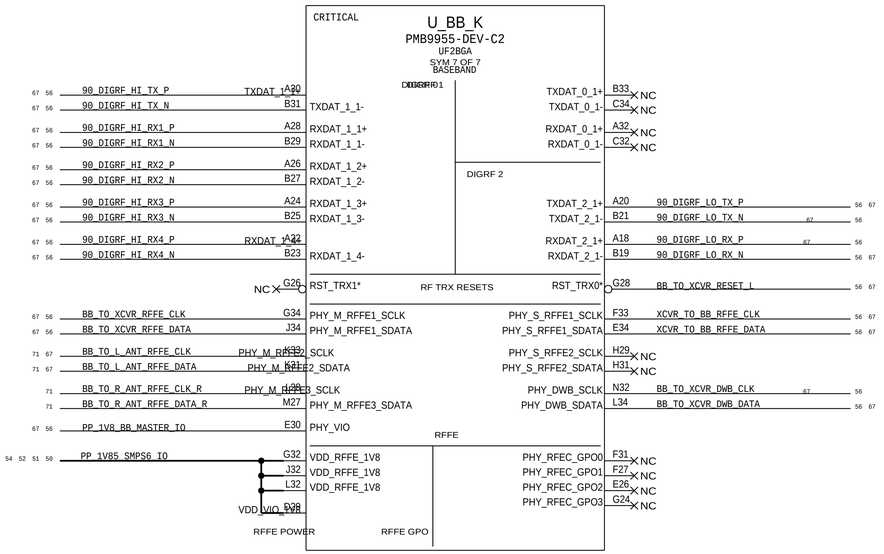
XG756 (5/7)



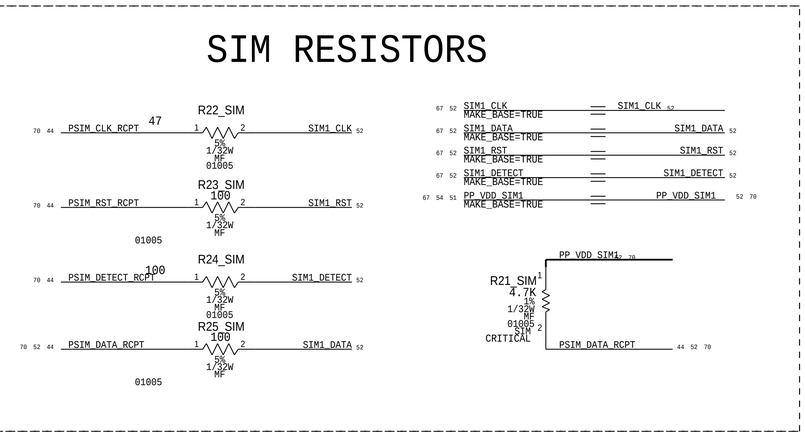
XG756 (1/7)



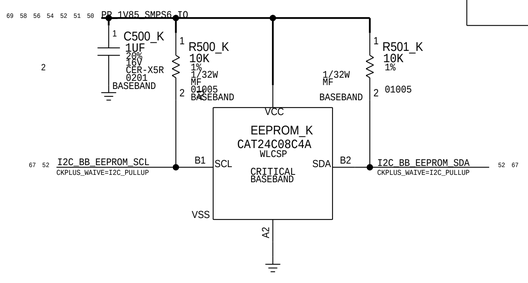
XG756 (7/7)



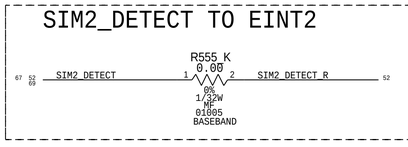
SIM RESISTORS



BB EEPROM



SIM2_DETECT TO EINT2



SYNC_MASTER=RADIO_MLB_0.37.0 SYNC_DATE=09/30/2018

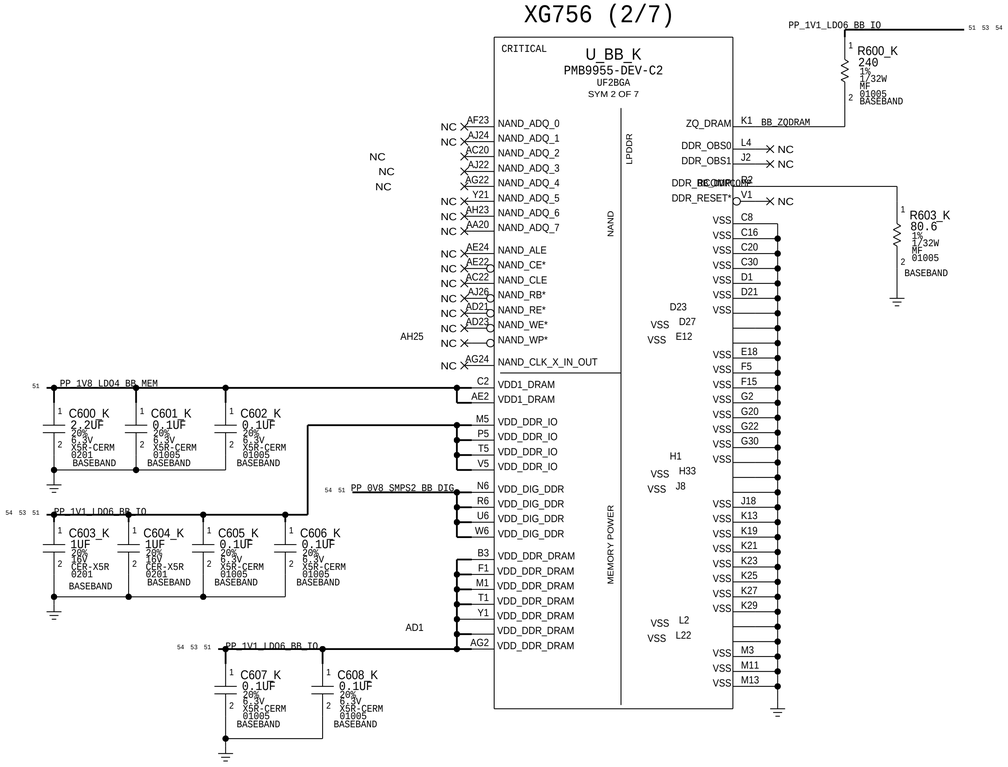
PAGE TITLE

BB: INTERFACE

BB: DDR PWR & JTAG

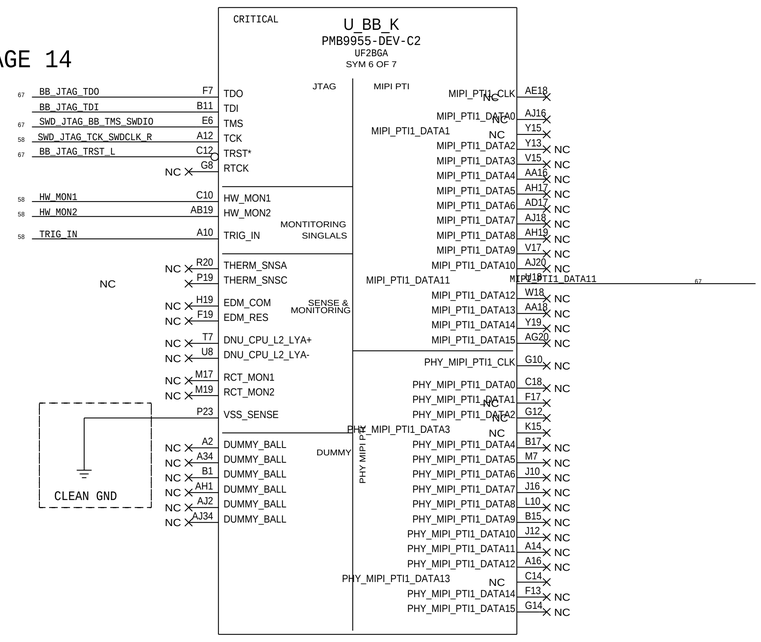
HOOKS FOR DDR4 TESTING/CAL

XG756 (2/7)



SWD, SEE PAGE 14

XG756 (6/7)



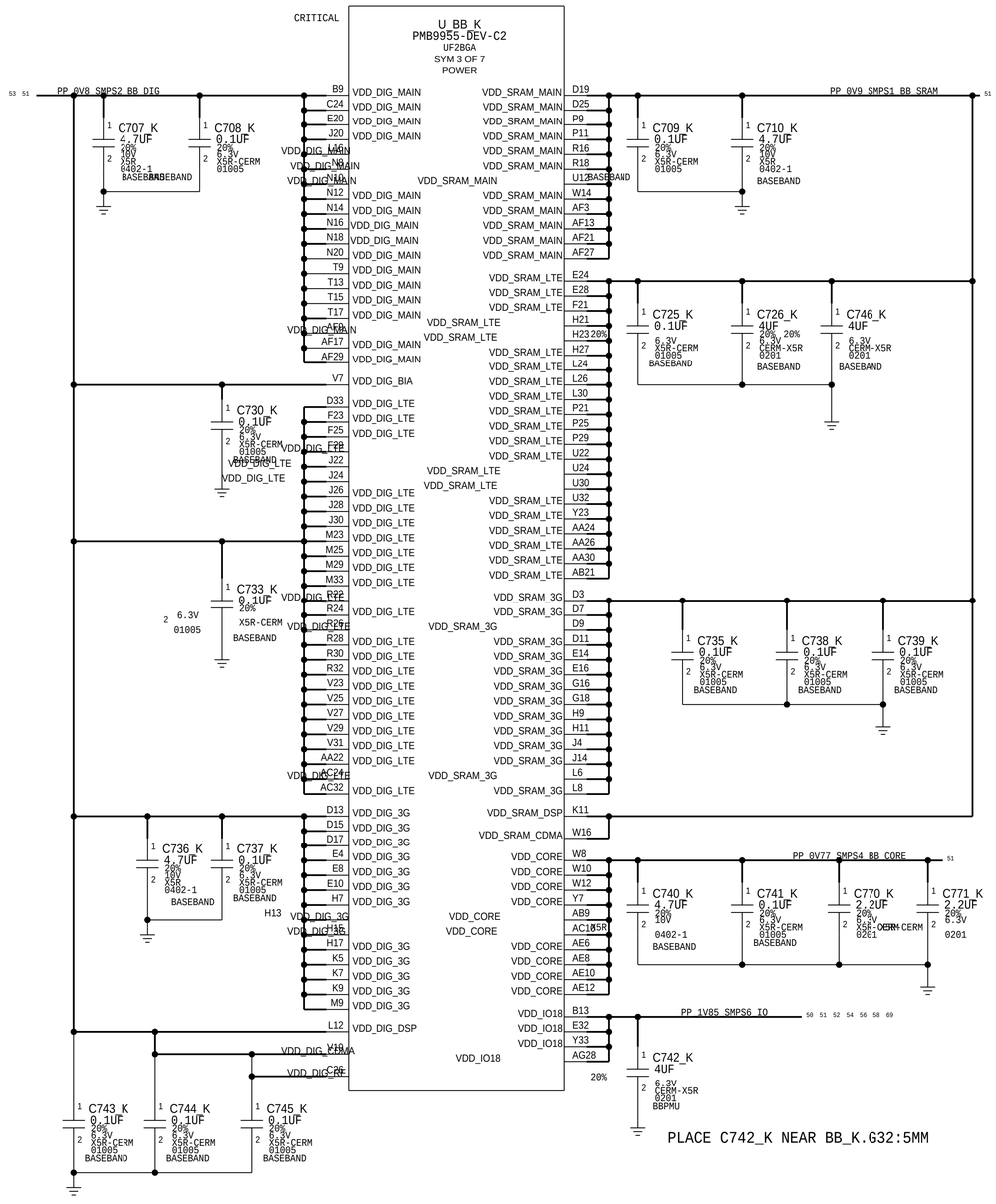
SYNC_MASTER=RADIO_MLB_0.37.0 SYNC_DATE=09/30/2018

PAGE TITLE

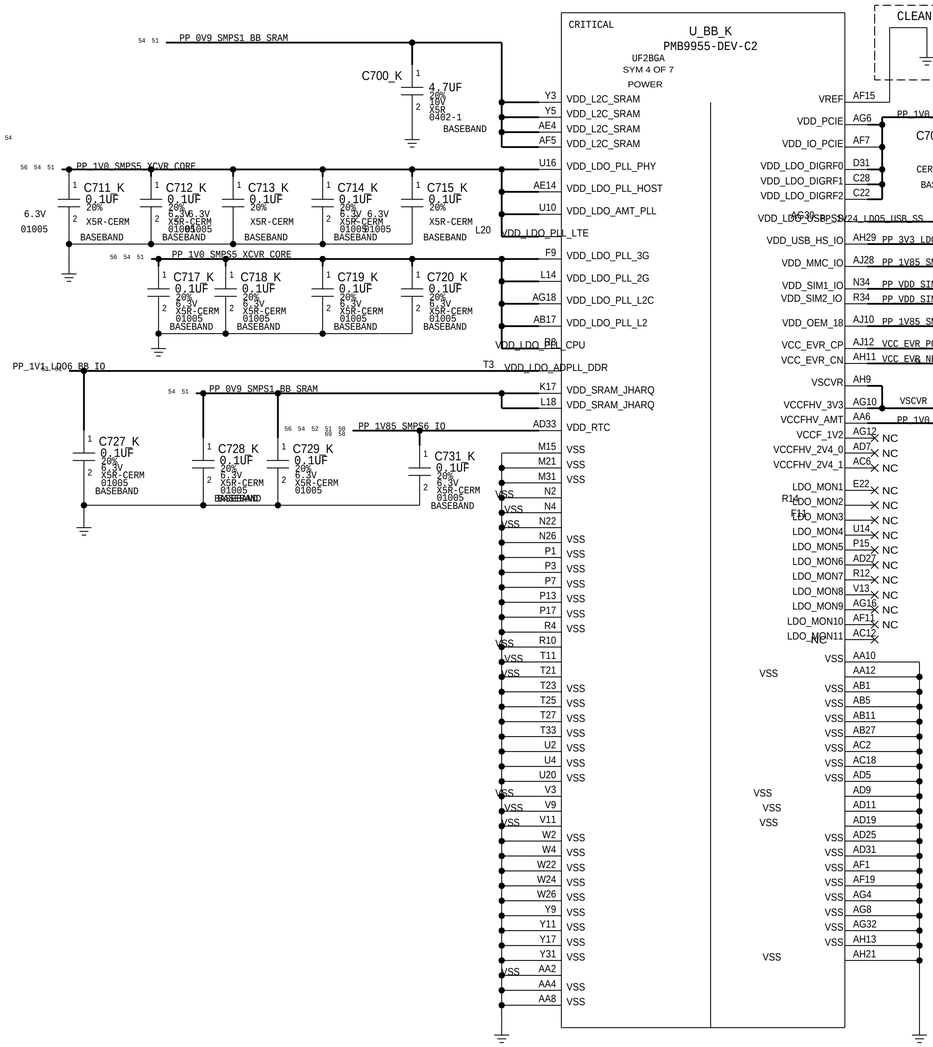
BB: DDR PWR & JTAG

BB: DIGITAL PWR

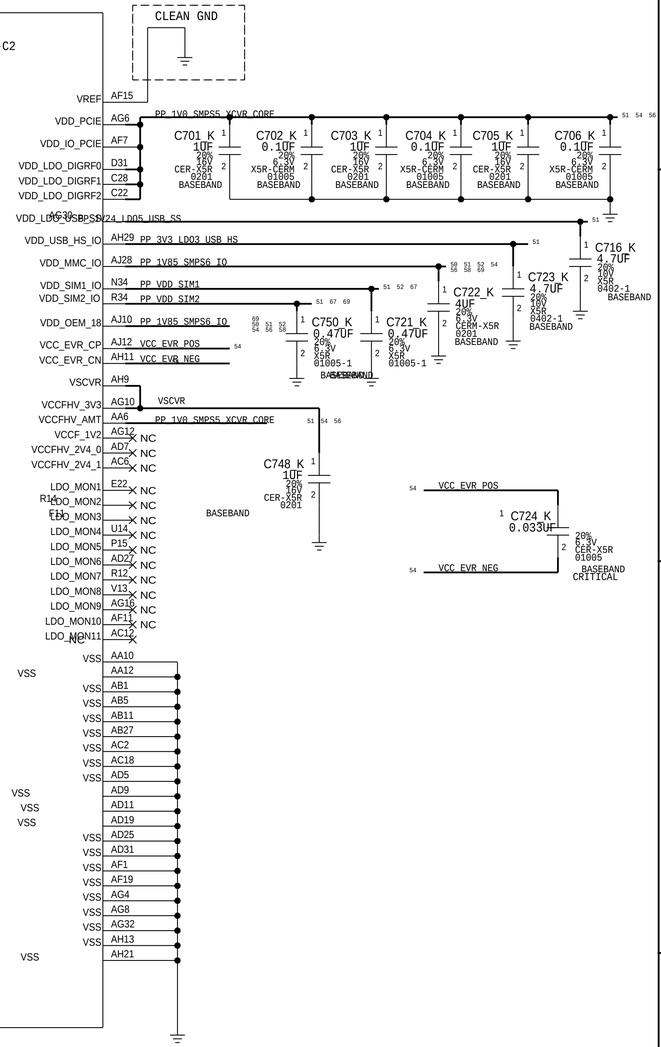
XG756 (3/7)



XG756 (4/7)



CLEAN GND



SYNC_MASTER=RADIO_MLB_0.37.0	SYNC_DATE=09/30/2018
PAGE TITLE	
BB: DIGITAL PWR	

XCVR: TRANSMIT & GNSS

SMARTI7.1 (4/7)

U_XCVR_K
PMB5762-A2
UFWLB
SYM 4 OF 7
XCVR
CRITICAL

PADACF+	L4	50_ET_DAC_P	59 67
PADACF-	M3	50_ET_DAC_N	59 67
RAMPDAC	K3	NC	
TX_LB1	T1	50_XCVR_TX_LB1	
TX_LB2	U2	NC	
TX_MB1	R2	50_XCVR_TX_MB1	
TX_MB2	Y1	50_XCVR_TX_MB2	
TX_MB3	AA2	50_TX_MB3_MLB_2G	62
TX_MB4	P1	NC	
TX_HB	AB1	50_XCVR_TX_HB	
TX_UB	AC2	NC	

1400 - 1600

R1305_K 0.00 5% 1/32W MF 01005 RADIO_LB_PAD CRITICAL
C1309_K 47PF 5% 16V NP0-C0G 01005 NOSTUFF RADIO_LB_PAD
50_XCVR_TO_LBPAD_TX_LB1 699 - 915 MHZ 60

C1410_K 27PF 5% 16V NP0-C0G 01005-1 RADIO_HB_PAD CRITICAL
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 CRITICAL
50_XCVR_TO_HBPAD_TX_2G_HB 1710 - 1995 MHZ 61
L1415_K 10NH-+/-3%-0.25A 01005 RADIO_HB_PAD NOSTUFF

C1412_K 27PF 5% 16V NP0-C0G 01005-1 RADIO_HB_PAD CRITICAL
50_XCVR_TO_HBPAD_TX_HB 2300 - 2690 MHZ 61
L1401_K 10NH-+/-3%-0.25A 01005 RADIO_HB_PAD NOSTUFF

FLTGPS_K SAW-GPS SAFRQ1G56XB0F57 LGA CRITICAL
50_GNSS_SAW 66 → 4 INPUT; GND GND 1 3; OUTPUT 2 → 50_GNSS_RF_IN_MATCH

6.4PF
L801_K 4.1NH-+/-0.1NH-0.18A 01005 CRITICAL
C800_K +/-0.1PF 16V C0G 01005 CRITICAL
50_GNSS_RF_IN_UNMATCH
L808_K 4.1NH-+/-0.1NH-0.18A 01005 NOSTUFF

MINIMUM TRACE CAPACITANCE.
REMOVE GND UNDERNEATH TRACE.

SMARTI7.1 (3/7)

U_XCVR_K
PMB5762-A2
UFWLB
SYM 3 OF 7
XCVR
CRITICAL

GN_RF_IN	B1		
GN_LPO_CLK	H1	CLK_BBPMU_32KHZ	67 52 50
JTAG_MODE	H11		
GN_NTC	F5	UART_BBPMU_TO_GNSS_1W	67 50
GN_EN	L6	GPIO_PMU_TO_BB_GPS_EN	67 50 44
GN_NTCMI-	C2		
GN_NTCMI+	D3	NC	
GN_PPS_IN	F3	GPIO_SOC_TO_BB_GPS_SYNC	44 67
GN_UART_RTS	F7	UART_GNSS_TO_AP_RTS_L_R	55
GN_UART_RX	H7	UART_SOC_TO_BB_GPS_TX	44 67
GN_UART_TX	H3	UART_GNSS_TO_AP_TXD_R	55
GN_GNSSEN	G2	GNSS_TO_BBPMU_LNA_EN	50 67
GN_UART_CTS	G4	GNSS_TO_AP_LOW_PWR_IND_R	55
GN_FSYSREQ	H5	GNSS_TO_BBPMU_CLK_EN_R	50 67

R825_K 100K 5% 1/32W MF 01005

R820_K 49.9 1% 1/32W MF 01005
55 UART_GNSS_TO_AP_RTS_L_R → UART_BB_GPS_TO_SOC_RTS_L 44 67

R821_K 49.9 1% 1/32W MF 01005
55 UART_GNSS_TO_AP_TXD_R → UART_BB_GPS_TO_SOC_TX 44 67

R822_K 0.00 0% 1/32W MF 01005
55 GNSS_TO_AP_LOW_PWR_IND_R → GPIO_BB_GPS_TO_SOC_LOW_PWR_IND 44 67

R823_K 49.9 1% 1/32W MF 01005
55 GNSS_TO_BBPMU_CLK_EN_R → GNSS_TO_BBPMU_CLK_EN 50 67

SYNC_MASTER=RADIO_MLB_0.37.0 SYNC_DATE=09/30/2018
PAGE TITLE
XCVR: TX & GNSS

XCVR: INTERFACE & PWR

SMARTI7.1 (1/7)

(LAYOUT: MAX DCR 85MOHM)
56 54 51 PP_1V0_SMPS5_XCVR_CORE

(LAYOUT: STAR ROUTE)
56 51 PP_1V3_SMPS3_XCVR_ANA

C906_K 15UF 20% 6.3V X5R 04020805 CRITICAL
C907_K 0.1UF 20% 6.3V X5R-CERM 01005 XCVR CRITICAL
FL900_K 2400HM-25%-0.2A-0.90HM 01005 XCVR CRITICAL
C905_K 0.1UF 20% 6.3V X5R-CERM 01005 XCVR CRITICAL
XW910_K SHORT-10L-0.1MM-SM OMIT XCVR1
C900_K 0.47UF 20% 6.3V X5R 01005-1 XCVR CRITICAL
C901_K 0.1UF 20% 6.3V X5R-CERM 01005 XCVR CRITICAL

CAP IMPROVES TX GAMMA SPURS (XCVR BALL N6)
56 PP_1V3_XCVR_TXPLL
C921_K 6800PF 10% 6.3V X5R 01005 XCVR CRITICAL

XW901_K SHORT-10L-0.1MM-SM OMIT XCVR
XW909_K SHORT-10L-0.1MM-SM OMIT XCVR

56 51 PP_1V3_SMPS3_XCVR_ANA
STAR ROUTE

C908_K 0.1UF 20% 6.3V X5R-CERM 01005 CRITICAL
C909_K 0.1UF 20% 6.3V X5R 01005 NOSTUFF XCVR
C912_K 0.1UF 20% 6.3V X5R 01005 XCVR
C913_K 0.1UF 20% 6.3V X5R-CERM 01005 CRITICAL
REMOVED C914_K (HIGHLY PROBABLE)

XW902_K SHORT-10L-0.1MM-SM OMIT XCVR
XW903_K SHORT-10L-0.1MM-SM OMIT XCVR
XW905_K SHORT-10L-0.1MM-SM OMIT XCVR
XW906_K SHORT-10L-0.1MM-SM OMIT XCVR
XW907_K SHORT-10L-0.1MM-SM OMIT XCVR

C916_K 0.1UF 20% 6.3V X5R 01005 NOSTUFF XCVR
PP_1V3_XCVR_RC_ADC
PP_1V3_XCVR_RC_GM
REMOVED C920_K (HIGHLY PROBABLE)

CRITICAL
U_XCVR_K
PMB5762-A2
UFWLB
SYM 1 OF 7
XCVR

AC8	VDD1V0_DIG	
F1	VDD1V1_GN	PP_1V0_XCVR_CORE_F1
E2	VDD1V3_GN	PP_1V3_XCVR_ANA_GN
AA18	VDD1V3_RX1PLL	PP_1V3_SMPS3_XCVR_ANA
C18	VDD1V3_RX2PLL	PP_1V3_XCVR_RXPLL_2_3
H19	VDD1V3_RX3PLL	
P17	VDD1V3_RX4PLL	PP_1V3_SMPS3_XCVR_ANA
N6	VDD1V3_TXPLL	56 PP_1V3_XCVR_TXPLL (SEE 0.1U CAP ON LEFT)
AB17	VDD1V3_RX1DCO	
B17	VDD1V3_RX2DCO	PP_1V3_XCVR_RX2DCO
G18	VDD1V3_RX3DCO	PP_1V3_XCVR_RX3DCO
N18	VDD1V3_RX4DCO	PP_1V3_SMPS3_XCVR_ANA
AB21	VDD1V3_RC_LO1	
A20	VDD1V3_RC_LO2	PP_1V3_XCVR_RC_LO
F21	VDD1V3_RC_LO2	
K21	VDD1V3_RC_LO1	
Y17	VDD1V3_RC_ADC1	
D17	VDD1V3_RC_ADC2	
J16	VDD1V3_RC_ADC2	PP_1V3_XCVR_RC_ADC
U16	VDD1V3_RC_ADC1	
Y19	VDD1V3_RC_GM1	
D19	VDD1V3_RC_GM2	
K19	VDD1V3_RC_GM2	
T19	VDD1V3_RC_GM1	PP_1V3_XCVR_RC_GM

G6	VDD1V8_IO_2	PP_1V85_SMPS6_IO
U8	VDD1V8_IO	
A4	VDD1V8_GN	
AA20	VDD1V8_RXPLL_1	PP_1V8_XCVR_HI_PLL
C20	VDD1V8_RXPLL_2	
AC4	VDD1V8_TXPLL	
F13	VDD1V8_CI	
P7	VDD1V8_CI_2	PP_1V85_SMPS6_IO
AB7	VDD_MEM_RET	PP_1V0_SMPS5_XCVR_CORE
D1	VDD_CEXT_GN	CEXT_GN
W2	VDD_CEXT_TX	CEXT_TX
B13	VDD1V3_MPHY	
F23	VDD1V3_RDRF	
V23	VDD1V3_RXRF	PP_1V3_XCVR_RDRF
N4	VDD1V3_TXANA	
U4	VDD1V3_TXDCO	
V3	VDD1V3_TXRF	
G12	VDD1V3_CI	

C902_K 0.1UF 20% 6.3V X5R-CERM 01005 XCVR CRITICAL
STAR ROUTE
C903_K 100PF 5% 25V C0G-CERM 01005 XCVR CRITICAL
PP_1V8_LDO10_XCVR_HI
C904_K 15UF 20% 6.3V X5R 0402-1 CRITICAL
XW900_K SHORT-10L-0.1MM-SM OMIT XCVR

C911_K 1UF 20% 10V X5R 0201 XCVR CRITICAL
C910_K 1UF 20% 10V X5R 0201 XCVR CRITICAL

XCVR + FRONT END POWER DISTRIBUTION
CONFIGURATION 4 (RDAR://28679083)

C919_K 6800PF 10% 6.3V X5R 01005 XCVR CRITICAL
C918_K 0.1UF 20% 6.3V X5R-CERM 01005 XCVR CRITICAL
VDD1V3_TXRF = 230MA
C917_K 2200PF 10% 16V X5R-CERM 01005 XCVR CRITICAL
XW904_K SHORT-10L-0.1MM-SM OMIT XCVR
C915_K 0.47UF 20% 6.3V X5R 01005-1 XCVR NOSTUFF

PP_1V3_SMPS3_XCVR_ANA
STAR ROUTE

XW908_K SHORT-10L-0.1MM-SM OMIT XCVR
PP_1V3_XCVR_CI

SMARTI7.1 (7/7)

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

U_XCVR_K
PMB5762-A2
UFWLB
SYM 7 OF 7
XCVR

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

SMARTI7.1 (2/7)

CRITICAL
U_XCVR_K
PMB5762-A2
UFWLB
SYM 2 OF 7
XCVR

F9	DWB_SDATA	GPO0	Y11 NC
F11	DWB_SCLK	GPO1	Y9 NC
W8	RESET_MAIN*	GPO2	AB9 UART_SOC_TO_BB_GPS_RTS_L
		GPO3	AA8 NC
H13	FSYS_CLK	GPO4	Y7 GNSS_DWB_IRQ
		GPO5	AA12 NC
V9	TCKC	GPO6	AB11 NC
T9	TMSC	GPO7	AC12 NC
A8	MPHY2_RX1_DAT	MRFFE_VIO	K11 PP_1V8_XCVR_TO_FE_RX_RFFE_IO
B7	MPHY2_RX1_DATX	MRFFE1_SDATA	N12 XCVR_TO_BB_RFFE_DATA
A10	MPHY2_RX2_DAT	MRFFE1_SCLK	M11 XCVR_TO_BB_RFFE_CLK
B9	MPHY2_RX2_DATX	MRFFE2_SDATA	R12 XCVR_TO_FE_TX_RFFE_DATA
B3	MPHY2_RX3_DAT	MRFFE2_SCLK	T13 XCVR_TO_FE_TX_RFFE_CLK
A3	MPHY2_RX3_DATX	MRFFE3_SDATA	V13 XCVR_TO_FE_RX_RFFE_DATA
A12	MPHY2_RX4_DAT	MRFFE3_SCLK	T11 XCVR_TO_FE_RX_RFFE_CLK
B11	MPHY2_RX4_DATX	MRFFE4_SDATA	W12 NC
D7	MPHY2_TX_DAT	MRFFE4_SCLK	V11 NC
C6	MPHY2_TX_DATX		
C14	MPHY1_RX_DAT	SRFFE_VIO	H9 PP_1V8_BB_MASTER_IO
D13	MPHY1_RX_DATX	SRFFE1_SDATA	K7 BB_TO_XCVR_RFFE_DATA
C12	MPHY1_TX_DAT	SRFFE1_SCLK	K9 BB_TO_XCVR_RFFE_CLK
D11	MPHY1_TX_DATX	SRFFE2_SDATA	N8 NC
		SRFFE2_SCLK	M9 NC

90_DIGRF_HI_RX1_P 90_DIGRF_HI_RX1_N 90_DIGRF_HI_RX2_P 90_DIGRF_HI_RX2_N 90_DIGRF_HI_RX3_P 90_DIGRF_HI_RX3_N 90_DIGRF_HI_RX4_P 90_DIGRF_HI_RX4_N 90_DIGRF_HI_TX_P 90_DIGRF_HI_TX_N
90_DIGRF_LO_RX_P 90_DIGRF_LO_RX_N 90_DIGRF_LO_TX_P 90_DIGRF_LO_TX_N
BB_TO_XCVR_DWB_DATA BB_TO_XCVR_DWB_CLK BB_TO_XCVR_RESET_L CLK_BBPMU_TO_XCVR_38MHZ

C922_K 1000PF 10% 16V X5R 01005 XCVR
C923_K 1000PF 10% 16V X5R 01005 XCVR
MAYBE ADD TEST POINTS

RFFE XCVR DAMPING RESISTORS

R1709_K 0.00 5% 1/32W MF 01005 RFFE NO_XNET_CONNECTION=1
XCVR_TO_FE_RX_RFFE_DATA → XCVR_RX_RFFE_DATA_WLAN
R1710_K 0.00 5% 1/32W MF 01005 RFFE NO_XNET_CONNECTION=1
XCVR_TO_FE_RX_RFFE_CLK → XCVR_RX_RFFE_CLK_WLAN
R1713_K 0.00 5% 1/32W MF 01005 RFFE NO_XNET_CONNECTION=1
XCVR_TO_FE_TX_RFFE_CLK → XCVR_TX_RFFE_CLK_HBPA_ET
R1714_K 0.00 5% 1/32W MF 01005 RFFE NO_XNET_CONNECTION=1
XCVR_TO_FE_TX_RFFE_DATA → XCVR_TX_RFFE_DATA_HBPA_ET

R1704_K 0.00 5% 1/32W MF 01005 RFFE
PP_1V8_XCVR_TO_FE_RX_RFFE_IO → PP_1V8_LBDSM_RFFE_IO_FILT
C1701_K 0.1UF 20% 6.3V X5R-CERM 01005 RFFE NOSTUFF
R1705_K 0.00 5% 1/32W MF 01005 RFFE
PP_1V8_XCVR_TO_FE_TX_RFFE_IO

TO WIFI: XCVR TO UAT LAA FEM

PP_1V8_XCVR_TO_FE_RX_RFFE_IO — MAKE_BASE=TRUE — PP_1V8_XCVR_TO_FE_RX_RFFE_IO
XCVR_RX_RFFE_CLK_WLAN — MAKE_BASE=TRUE — XCVR_RX_RFFE_CLK_WLAN
XCVR_RX_RFFE_DATA_WLAN — MAKE_BASE=TRUE — XCVR_RX_RFFE_DATA_WLAN

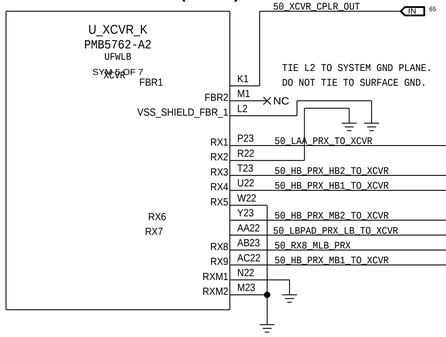
TO WIFI: XCVR TO LAT LAA FEM

PP_1V8_XCVR_TO_FE_RX_RFFE_IO — MAKE_BASE=TRUE — PP_1V8_XCVR_TO_FE_RX_RFFE_IO
XCVR_RX_RFFE_CLK_WLAN — MAKE_BASE=TRUE — XCVR_RX_RFFE_CLK_WLAN
XCVR_RX_RFFE_DATA_WLAN — MAKE_BASE=TRUE — XCVR_RX_RFFE_DATA_WLAN

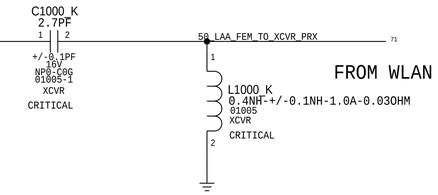
SYNC_MASTER=RADIO_MLB_0.37.0 SYNC_DATE=09/30/2018
PAGE TITLE
XCVR: INTERFACE & PWR

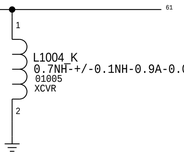
XCVR: PRIMARY/DIVERSITY RX

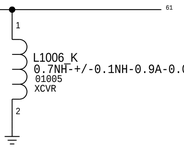
SMARTI7.1 PRX (5/7)

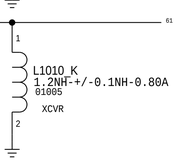


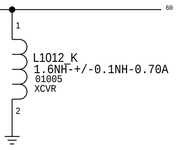
CONNECT ALL UNUSED RX PORTS TO GND.

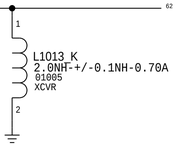




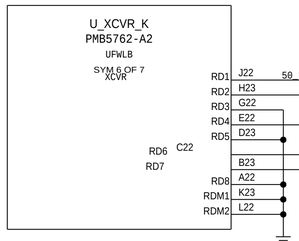








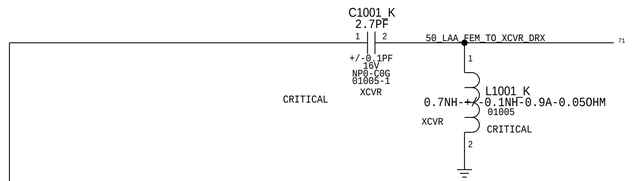
SMARTI7.1 DRX (6/7)

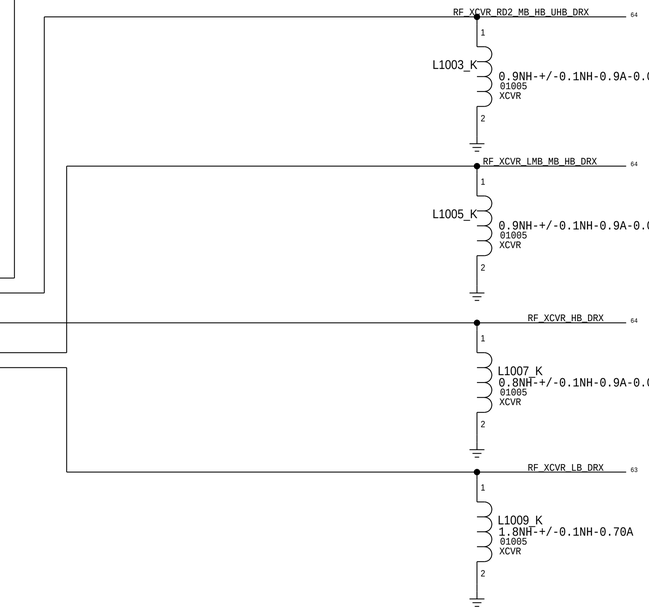


S7 PORT MAP CHANGE 10/11/2016:

CONNECT ALL UNUSED RD PORTS TO GND.

USE RD6 INSTEAD OF RD3.





SYNC_MASTER=RADIO_MLB_0.37.0 SYNC_DATE=09/30/2018

PAGE TITLE

XCVR: PRX DRX

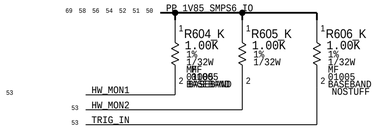
HW CONFIG OPTIONS

BOOT

BOOTCFG

BOOTSTRAPS ARE INTERNALLY PULLED DOWN

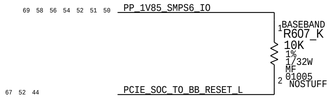
	HW_MON1	HW_MON2	TRIG_IN
NAND	0	0	1
FLASHLESS	1	0	1
FLASHLESS WDOG DIS	1	1	0
NAND (NON-SECURE)	1	1	1



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

PERST_L

PERST_L SIGNAL LOW WILL KEEP BB IN RESET.

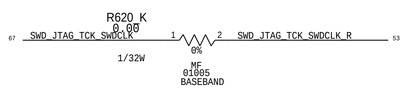


STUFF PU WHEN AP IS NOT CONNECTED
(KAROO CONFIG: USB BOOT)

SWD

SWD ENABLE

TO ENABLE SWD, STUFF R620_K



NOSTUFF WITH PROD FUSED BB

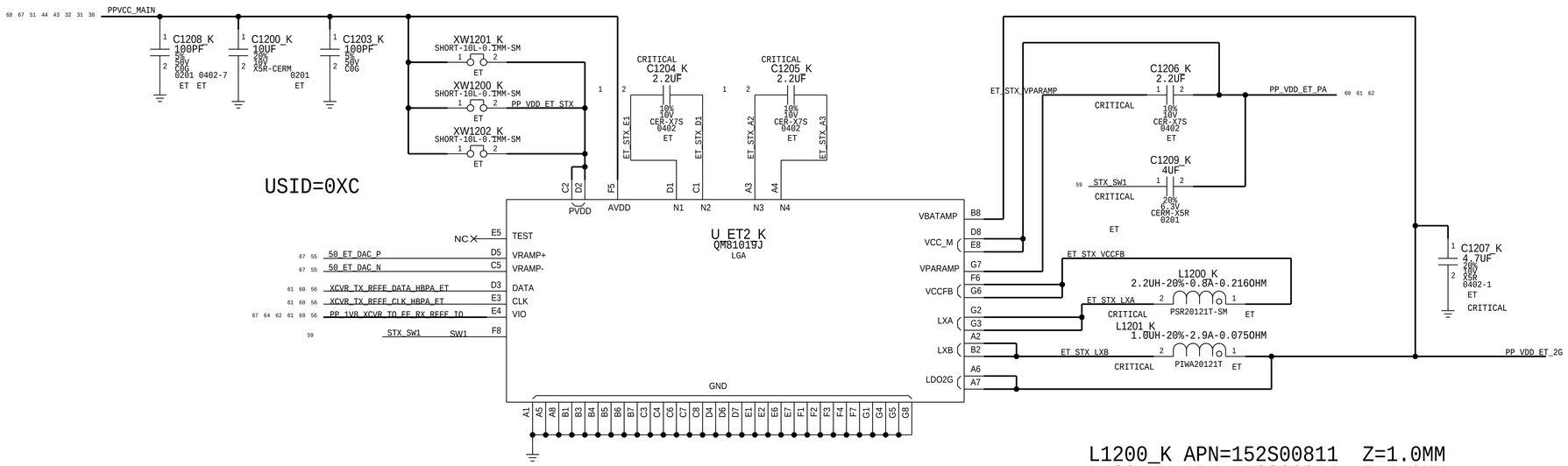
SYNC_MASTER=RADIO_MLB_0.37.0 SYNC_DATE=09/30/2018

PAGE TITLE

HW CONFIG OPTIONS

ET MODULATOR

ALPES STX E1.0.1 MODULE

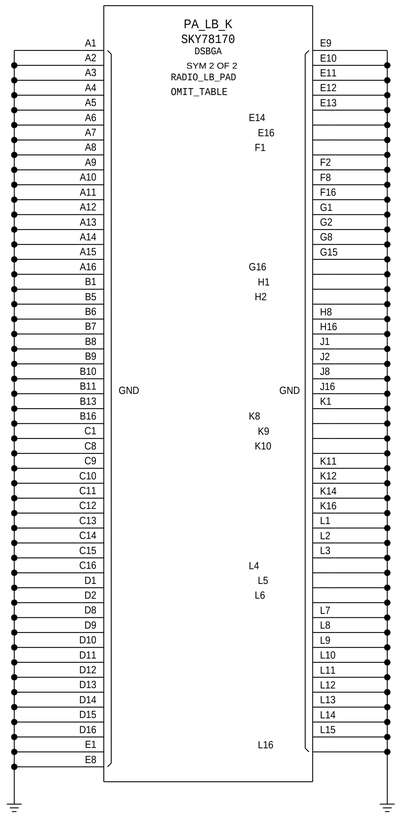


L1200_K APN=152S00811 Z=1.0MM
L1201_K APN=152S00814 Z=1.0MM

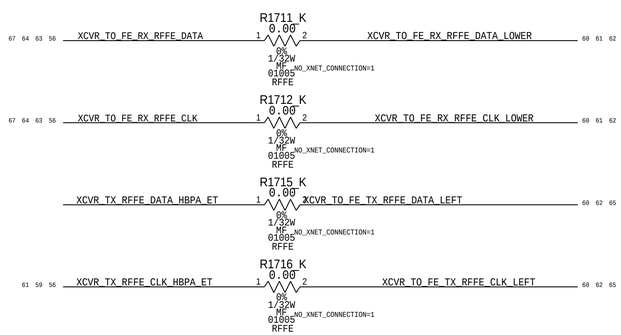
C1204_K, C1205_K, C1206_K: KYOCERA APN=138S00167
C1204_K, C1205_K, C1206_K ALTERNATE: MURATA APN=138S00237

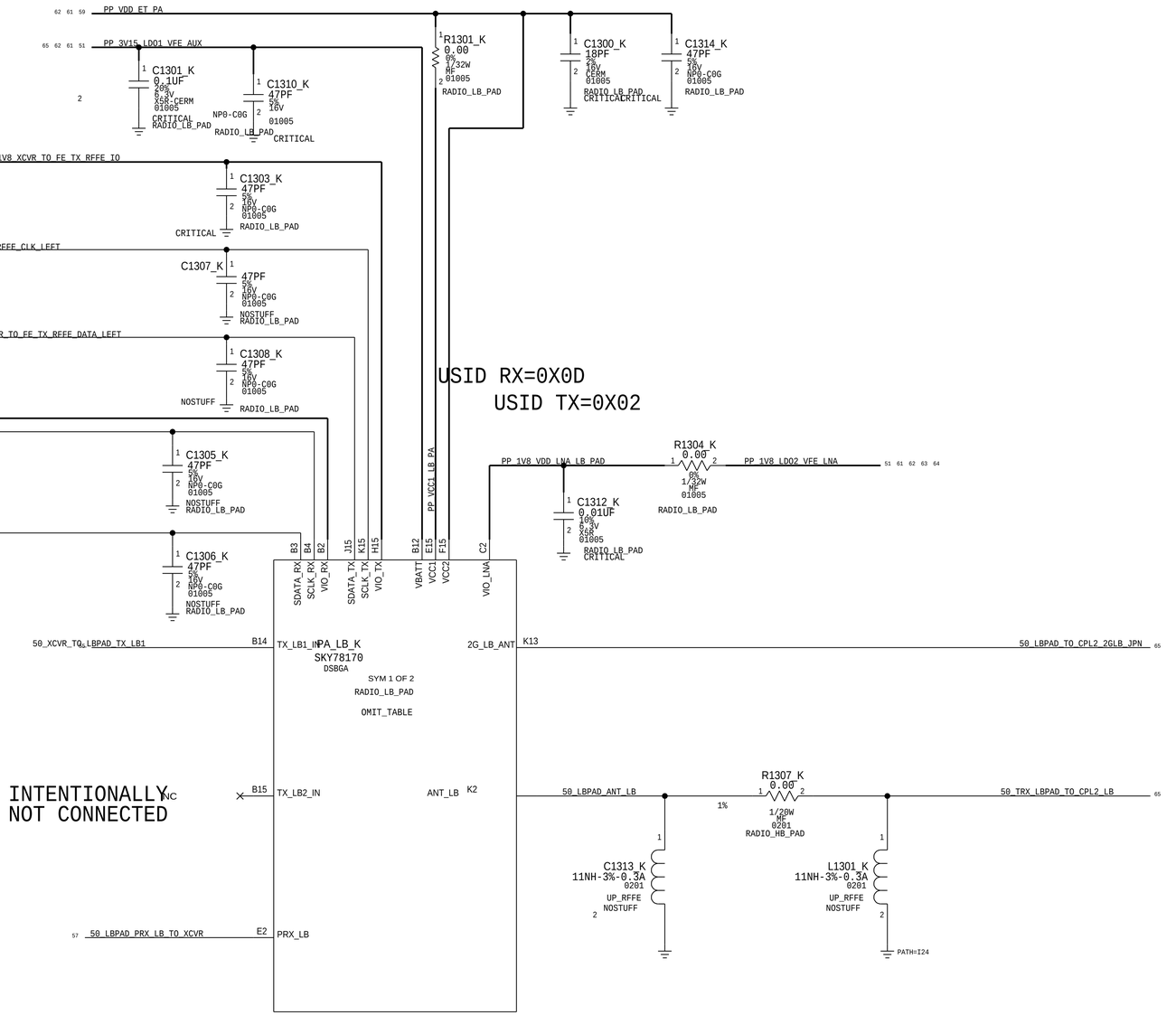
SYNC_MASTER=RADIO_MLB_0.37.0 SYNC_DATE=09/30/2018
PAGE TITLE
ET

LB SPAD



RFFE DAMPING RESISTORS





SYNC_MASTER=RADIO_MLB_0.37.0 SYNC_DATE=09/30/2018

PAGE TITLE

LB SPAD

HB SPAD

PP_VDD_ET_PA
C1400_K 47PF 5% 16V C0G-CERN 01005 RADIO_HB_PAD NOSTUFF
R1401_K 0.00 5% 1/32W MF 01005 RADIO_HB_PAD
PP_VCC1_HB_PA
PP_1V8_LDO2_VFE_LNA
C1401_K 1000PF 10% 6.3V X5R-CERM 01005 RADIO_HB_PAD CRITICAL
PP_3V15_LDO1_VFE_AUX
C1402_K 0.1UF 20% 6.3V X5R-CERM 01005 RADIO_HB_PAD CRITICAL
PP_1V2_LDO8_HBPAD
C1403_K 0.1UF 20% 6.3V X5R-CERM 01005 RADIO_HB_PAD CRITICAL
PP_1V8_XCVR_TO_FE_TX_RFFE_IO
C1404_K 10PF 2% 25V C0G-CERM 01005 RADIO_HB_PAD CRITICAL
XCVR_TX_RFFE_CLK_HBPA_ET
C1405_K 10PF 2% 25V C0G-CERM 01005 NOSTUFF RADIO_HB_PAD
XCVR_TX_RFFE_DATA_HBPA_ET
C1406_K 10PF 2% 25V C0G-CERM 01005 NOSTUFF RADIO_HB_PAD
PP_1V8_XCVR_TO_FE_RX_RFFE_IO
C1407_K 10PF 2% 25V C0G-CERM 01005 CRITICAL RADIO_HB_PAD
RFFE_RX_CLK_HBPA
C1408_K 10PF 2% 25V C0G-CERM 01005 NOSTUFF RADIO_HB_PAD
RFFE_RX_DATA_HBPA
C1409_K 10PF 2% 25V C0G-CERM 01005 NOSTUFF RADIO_HB_PAD

PA_HB_K
AFEM-8092-AP1
LGA
SYM 1 OF 3

9	VBATT	TX_HB_IN	21
16	VCC1	TX_MB1_IN	20
15	VCC2	2G_HB_IN	19
39	VBIAS_LNA	2G_HB_OUT	7
38	VDD_LNA	PRX_MB1	34
28	VIO_RX	PRX_MB2	36
27	SDATA_RX	PRX_HB1	30
26	SCLK_RX	PRX_HB2	32
25	SDATA_TX	ANTPAD_ANT_MATCH	1
24	SCLK_TX	HP_TDD_ANT	3
23	VIO_TX		

50_XCVR_TO_HBPAD_TX_HB
50_XCVR_TO_HBPAD_TX_MB1
50_XCVR_TO_HBPAD_TX_2G_HB
50_HB_PRX_MB1_TO_XCVR
50_HB_PRX_MB2_TO_XCVR
50_HB_PRX_HB1_TO_XCVR
50_HB_PRX_HB2_TO_XCVR
50_HBPAD_TO_CPL2_2GHB_JPN
50_TRX_HBPAD_TO_CPL2
R1404_K 0.00 1% 1/20W MF 0201 RADIO_HB_PAD
C1414_K 0.5PF +/-0.05PF 25V C0G-CERM 0201 RADIO_HB_PAD NOSTUFF
C1430_K 0.5PF +/-0.05PF 25V C0G-CERM 0201 RADIO_HB_PAD NOSTUFF
R1406_K 0.00 1% 1/20W MF 0201 RADIO_HB_PAD
R1407_K 0.00 1% 1/20W MF 0201 RADIO_HB_PAD
50_HBPAD_HPUE_TDD
50_HBPAD_HPUE_TDD_MATCH
50_TRX_HBPAD_TDD_TO_CPL2_HPUE
C1415_K 0.5PF +/-0.05PF 25V C0G-CERM 0201 RADIO_HB_PAD NOSTUFF

USID RX=0X0E
USID TX=0X03

HB PA RFFE DAMPING

XCVR_TO_FE_RX_RFFE_DATA_LOWER — R1707_K 0.00 5% 1/32W MF 01005 RFFE NO_XNET_CONNECTION=1 — RFFE_RX_DATA_HBPA
XCVR_TO_FE_RX_RFFE_CLK_LOWER — R1708_K 0.00 5% 1/32W MF 01005 RFFE NO_XNET_CONNECTION=1 — RFFE_RX_CLK_HBPA

PA_HB_K
AFEM-8092-AP1
LGA
SYM 2 OF 3

2	GND	GND	93
4	GND	GND	94
5	GND	GND	95
6	GND	GND	96
8	GND	GND	97
10	GND	GND	98
11	GND	GND	99
12	GND	GND	100
13	GND	GND	101
14	GND	GND	102
17	GND	GND	103
18	GND	GND	104
22	GND	GND	105
29	GND	GND	106
31	GND	GND	107
33	GND	GND	108
35	GND	GND	109
37	GND	GND	110
40	GND	GND	111
41	GND	GND	112
42	GND	GND	113
43	GND	GND	114
44	GND	GND	115
45	GND	GND	116
46	GND	GND	117
47	GND	GND	118
48	GND	GND	119
49	GND	GND	120
50	GND	GND	121
51	GND	GND	122
52	GND	GND	123
53	GND	GND	124
54	GND	GND	125
55	GND	GND	126
56	GND	GND	127
57	GND	GND	128
58	GND	GND	129
59	GND	GND	130
60	GND	GND	131
61	GND	GND	132
62	GND	GND	133
63	GND	GND	134
64	GND	GND	135
65	GND	GND	136
66	GND	GND	137
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69	GND	GND	140
70	GND	GND	141
71	GND	GND	142
72	GND	GND	143
73	GND	GND	144
74	GND	GND	145
75	GND	GND	146
76	GND	GND	147
77	GND	GND	148
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83	GND	GND	154
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86	GND	GND	157
87	GND	GND	158
88	GND	GND	159
89	GND	GND	160
90	GND	GND	161
91	GND	GND	162
92	GND	GND	163

PA_HB_K
AFEM-8092-AP1
LGA
SYM 3 OF 3

164	GND	GND	243
165	GND	GND	244
166	GND	GND	245
167	GND	GND	246
168	GND	GND	247
169	GND	GND	248
170	GND	GND	249
171	GND	GND	250
172	GND	GND	251
173	GND	GND	252
174	GND	GND	253
175	GND	GND	254
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194	GND	GND	273
195	GND	GND	274
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199	GND	GND	278
200	GND	GND	279
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235	GND	GND	314
236	GND	GND	315
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240	GND	GND	319
241	GND	GND	320
242	GND		

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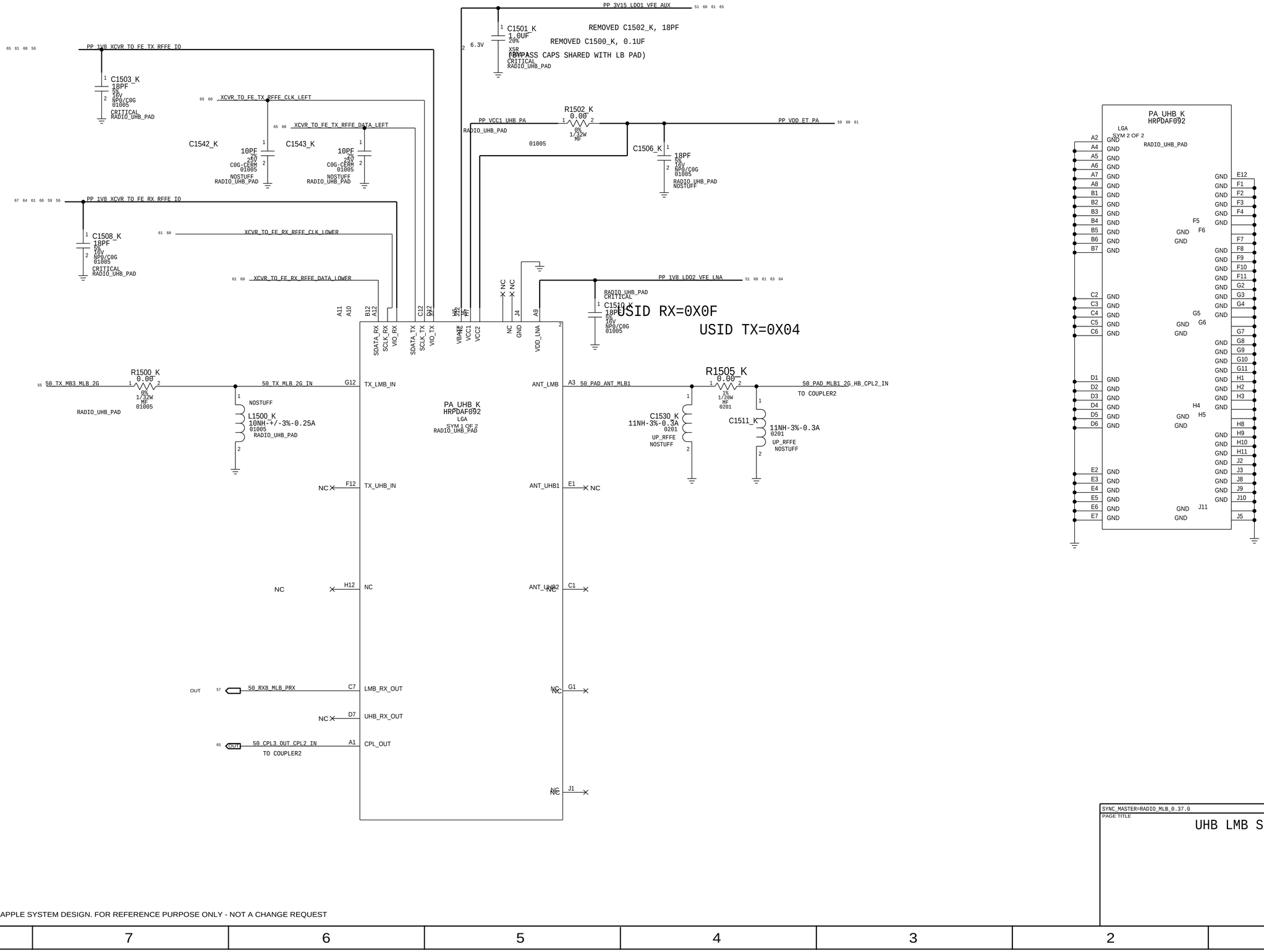
PAGE TITLE
HB SPAD

UHB LMB SPAD



CONFIDENTIAL AND PROPRIETARY APPLE SYSTEM DESIGN. FOR REFERENCE PURPOSE ONLY - NOT A CHANGE REQUEST

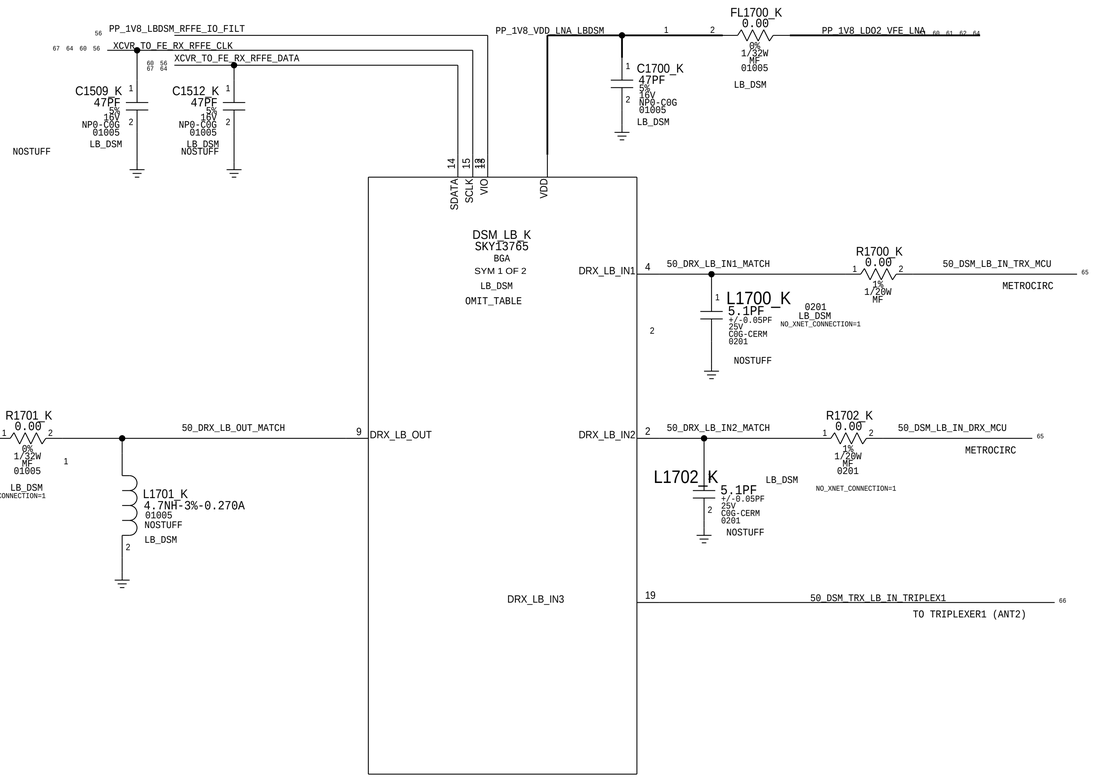
SYNC_MASTER=RADIO_MLB_0.37.0 SYNC_DATE=09/30/2018

PAGE TITLE

UHB LMB SPAD

LB DIVERSITY RECEIVE LNA

USID RX=0X09



SYNC_MASTER=RADIO_MLB_0.37.0 SYNC_DATE=09/30/2018

PAGE TITLE

LB DIVERSITY RECEIVE LNA

HB DIVERSITY RECEIVE LNA

DECOUPLING SHARED WITH LB DSM

67 63 60 56 XCVR_TO_FE_RX_RFFE_CLK
C1800_K 47PF 5% 16V NP0-C0G 01005 HB_DSM NOSTUFF
1.8
PP1V8_HB_LB_DSM_TO_FILT
C1801_K 0.1UF 20% 6.3V X6S-CERM 01005 HB_DSM CRITICAL
R1800_K 0.00 0% 1/32W MF 01005 HB_DSM
PP1V8_XCVR_TO_FE_RX_RFFE_IO 66 59 60 61 62 67

67 63 60 56 XCVR_TO_FE_RX_RFFE_DATA
C1804_K 47PF 5% 16V NP0-C0G 01005 HB_DSM NOSTUFF
SDATA 30
SCLK 29
VIO 28
VDD 27
PP1V8_VDD_LNA_HBDSM
C1802_K 0.1UF 20% 6.3V X6S-CERM 01005 HB_DSM CRITICAL
R1801_K 0.00 0% 1/32W MF 01005 HB_DSM
PP1V8_LD02_VFE_LNA 51 60 61 62 63

USID RX=0X0A

DSM_HB_K
SKYI3790
BGA
SYM 1 OF 2

57 RF_XCVR_LMB_MB_HB_DRX
TO STRIPLINE
R1802_K 0.00 0% 1/32W MF 01005 HB_DSM
NO_XNET_CONNECTION=1
50_DRX_HB_OUT1_MATCH 4
L1801_K 4.7NH-3%-0.270A 01005 NOSTUFF HB_DSM
DRX_HB_OUT1

50_DRX_HB_OUT2_MATCH 6
DRX_HB_OUT2

57 RF_XCVR_RD2_MB_HB_UHB_DRX
STRIPLINE
R1805_K 0.00 0% 1/32W MF 01005 HB_DSM
NO_XNET_CONNECTION=1
8 DRX_HB_OUT3
L1804_K 4.7NH-3%-0.270A 01005 NOSTUFF HB_DSM

NC 3 DRX_HB_OUT4

57 RF_XCVR_HB_DRX
STRIPLINE
R1808_K 0.00 0% 1/32W MF 01005 HB_DSM
NO_XNET_CONNECTION=1
50_DRX_HB_OUT3_MATCH
L1806_K 4.7NH-3%-0.270A 01005 NOSTUFF HB_DSM

DRX_HB_IN1 21 50_DRX_HB_IN1_MATCH
R1803_K 0.00 1% 1/20W MF 0201 HB_DSM
50_DSM_HB_IN_TRX_MLB_MBHB_MCU 65
METROCIRC
L1800_K 11NH-3%-0.3A 0201 UP_RFFE NOSTUFF
NO_XNET_CONNECTION=1
L1802_K 0.6PF +/-0.05PF 25V CERM 0201 HB_DSM NOSTUFF

DRX_HB_IN2 24 50_DSM_HB_IN_DRX_MLB_MBHB_MCU_MATCH
C1803_K 0.00 1% 1/20W MF 0201 HB_DSM
50_DSM_HB_IN_DRX_MLB_MBHB_MCU 65
METROCIRC
L1803_K 11NH-3%-0.3A 0201 UP_RFFE NOSTUFF
NO_XNET_CONNECTION=1
L1805_K 11NH-3%-0.3A 0201 UP_RFFE NOSTUFF

DRX_HB_IN3 22
50_DSM_HB_IN_TRIPLEX1 66
TO TRIPLEXER1 (ANT2)

DRX_HB_IN4 20 50_DRX_HB_IN4_TERM
R1806_K 49.9 1% 1/32W MF 01005

DRX_HB_IN5 50_DRX_HB_IN5_TERM 18
R1807_K 49.9 1% 1/32W MF 01005

DRX_UHB_IN2 14 NC
DRX_UHB_IN3 16 NC

GPO1 10 NC
GPO2
GPO3 12 NC
11 NC

DSM_HB_K
SKYI3790
BGA
SYM 2 OF 2

1 GND
2 GND
5 GND
7 GND
9 GND
13 GND
15 GND
17 GND
GND 18
23 GND
25 GND
26 GND

SYNC_MASTER=RADIO_MLB_0.37.0 SYNC_DATE=09/30/2018
PAGE TITLE
HB DIVERSITY RECEIVE LNA

LOWER ANTENNA AND COUPLER

USID TX=0X06

R2020_K
10-OHM-I.1A
01005
PP_1V8_XCVR_TO_FE_TX_RFFE_IO
PP_1V8_VIO_CPLR

C2001_K
47PF
5%
16V
NP0-C0G
01005
RADIO_CPL2

XCVR_TO_FE_TX_RFFE_CLK_LEFT
XCVR_TO_FE_TX_RFFE_DATA_LEFT

C2003_K
47PF
5%
16V
NP0-C0G
01005
NOSTUFF
RADIO_CPL2

C2004_K
47PF
5%
16V
NP0-C0G
01005
NOSTUFF
RADIO_CPL2

PP_3V15_LDO1_VFE_AUX

C2002_K
0.1UF
20%
6.3V
X5R-CERM
01005
CRITICAL
RADIO_CPL2

C2000_K
47PF
5%
16V
NP0-C0G
01005
CRITICAL
RADIO_CPL2

CRITICAL
VIO
RFFE_DAT
RFFE_CLK
VDD

CPL_K
HFQFEGVGB
LGA
SYM 1 OF 2

50_TRX_LBPAD_TO_CPL2_LB
TRX_LB_IN

DRX_LB_OUT
50_DSM_LB_IN_DRX_MCU

C2005_K
5.1PF
+/-0.05PF
25V
C0G-CERM
0201
NOSTUFF

TRX_LB_UAT
50_DSM_LB_IN_TRX_MCU

C2006_K
5.1PF
+/-0.05PF
25V
C0G-CERM
0201
NOSTUFF

TRX_LB_LAT
50_TRX_LB_LAT_DIPLEXER_IN

R2016_K
0.00
5%
1/20W
MF
0201
RADIO_CLP2

50_LBPAD_TO_CPL2_2GLB_JPN
50_CPL2_TX_2GLB
TX_2GLB

L2005_K
10NH-3%-250MA
0201
RADIO_CLP2
NOSTUFF

L2033_K
10NH-3%-250MA
0201
RADIO_CLP2
NOSTUFF

50_TRX_HBPAD_TO_CPL2
TRX_HB1_IN

TRX_HB_LAT
50_TRX_HB_A_LAT

R2017_K
10NH-3%-250MA
0201
RADIO_CLP2
NOSTUFF

50_HBPAD_TO_CPL2_2GHB_JPN
50_CPL2_2GHB
TX_2GHB

2GHB MATCH

L2100_K
10NH-3%-250MA
0201
RADIO_CLP2
NOSTUFF
CKPLUS_WAIVE=TERMSHORTED

C2007_K
10NH-3%-250MA
0201
RADIO_CLP2
NOSTUFF

50_2GHB_NOTCH_CAP

C1609_K
0.6PF
+/-0.05PF
25V
C0G
CERM
0201
UP_RFFE
NOSTUFF
CKPLUS_WAIVE=TERMSHORTED

TRX_LMB_IN

TRX_HB_UAT
41
50_DSM_HB_IN_TRX_MLB_MBHB_MCU

DRX_HB_OUT
21
50_DSM_HB_IN_DRX_MLB_MBHB_MCU

TRX_HPUE_IN
50_PAD_MLB1_2G_HB_CPL2_IN
50_TRX_HBPAD_TDD_TO_CPL2_HPUE

TRX_HB_ANT2
33
50_TRX_HB_M_LAT_TERM

R2023_K
49.9
1%
1/32W
MF
01005

R2011_K
0.00
0%
1/32W
MF
01005
RADIO_CPL2
NO_XNET_CONNECTION=1

50_CPL3_OUT_CPL2_IN
50_CPL3_IN

R2012_K
0.00
0%
1/32W
MF
01005
RADIO_CPL2
NO_XNET_CONNECTION=1

50_XCVR_CPLR_OUT
50_COUPLER2_OUT

CPL_OUT1

RX_HB_IN
27
50_DRX_HB_OUT_TERM

R2022_K
49.9
1%
1/32W
MF
01005

CRITICAL
CPL_K
HFQFEGVGB
LGA
SYM 2 OF 2

PRIMARY ANT

LB-MHB DIPLEXER1 (ANT1)

R2006_K
0.00
1%
1/20W
MF
0201

50_TRX_HB_A_LAT
50_TRX_HB_A_LAT_DIPLEXER_IN

L2004_K
11NH-3%-0.3A
0201
RADIO_CPL2
UP_RFFE
NOSTUFF

C2009_K
0.6PF
+/-0.05PF
25V
C0G
CERM
0201
UP_RFFE
NOSTUFF

DIPLX1_K
DPX202690DT-4221B1SJ
0905
CRITICAL
HB
HI
LB
LO
COM
GND

50_RADIO_ANT1_MATCH

R2005_K
0.00
1%
1/20W
MF
0201
UP_RFFE

50_RADIO_ANT1

J_CELL_P
MM4829-2702B
F-ST-SM

L2003_K
11NH-3%-0.3A
0201
UP_RFFE
NOSTUFF

C2008_K
0.6PF
+/-0.05PF
25V
C0G
CERM
0201
UP_RFFE
NOSTUFF

R2032_K
0.00
1%
1/20W
MF
0201
RADIO_CPL2

50_TRX_LB_LAT_DIPLEXER_IN
50_TRX_LB_LAT_DIPLEXER_IN_MATCH

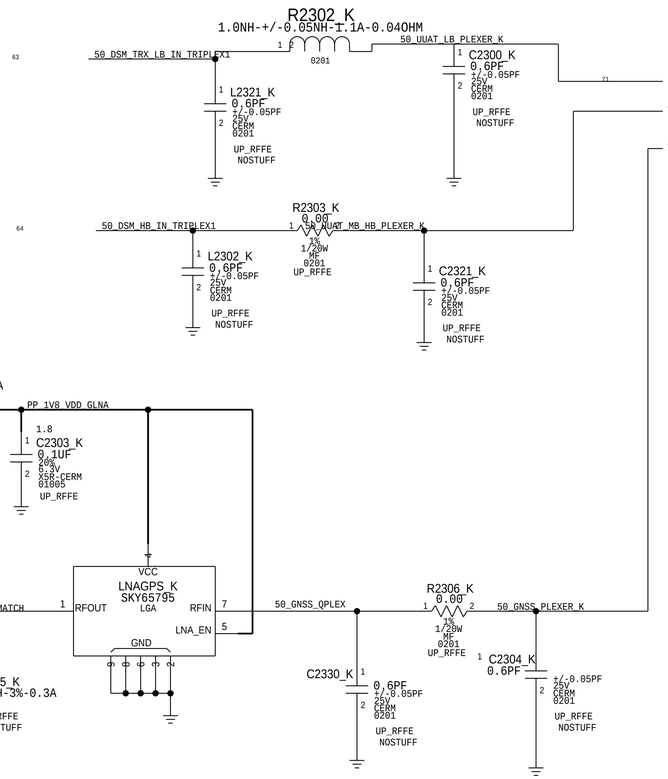
L2030_K
11NH-3%-0.3A
0201
UP_RFFE
NOSTUFF

C2031_K
0.6PF
+/-0.05PF
25V
C0G
CERM
0201
UP_RFFE
NOSTUFF
LMB/MB/HB_ALT

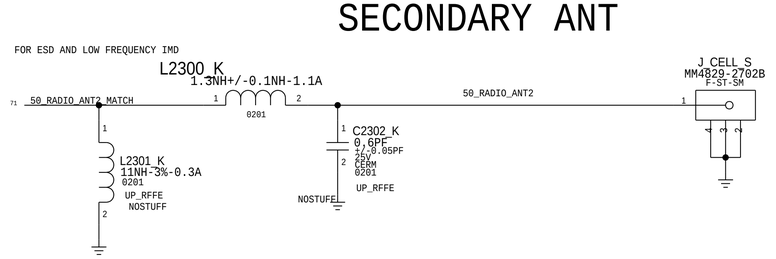
SYNC_MASTER=RADIO_MLB_0.37.0
SYNC_DATE=09/30/2018
PAGE TITLE
LOWER ANTENNA & COUPLER

UPPER ANTENNA FEEDS

LB/MHB/GPS/2.4G WLAN QUADPLEXER



SECONDARY ANT



GNSS LNA

SYNC_MASTER=RADIO_MLB_0.37.0 SYNC_DATE=09/30/2018

PAGE TITLE

UPPER ANTENNA FEEDS

DEBUG: TEST POINTS

CLKS

PP2429_K P4MM SM PP 1 — CLK_BBPMU_TO_BB_38MHZ — 50 52

PP2485_K P4MM SM PP 1 — CLK_BBPMU_TO_XCVR_38MHZ — 50 56

DEBUG

PP2450_K P4MM SM PP 1 — BB_DEBUG_ERROR — 52

PP2401_K P4MM SM PP 1 — BBPMU_TO_BB_MEAS_RDY — 50 52

PP2701_K P4MM SM 1 — GPIO_SOC_TO_BB_COREDUMP — 44 52

POWER-KEEPING

PP2700_K P4MM SM 1 — GPIO_BB_TO_SOC_RESET_DET_L — 44 52

PP2497_K P4MM SM 1 — GPIO_SOC_TO_BB_SDWN_L — 44 50

PP2410_K P4MM SM 1 — BB_TO_XCVR_RESET_L — 52 56

PP24A9_K P4MM SM 1 — BB_TO_BBPMU_SDWN_L — 50 52

PP2425_K P4MM SM PP 1 — BBPMU_TO_BB_RESET_L — 50 52

COEXISTENCE

PP2412_K P4MM SM PP 1 — AP_TO_BBPMU_FORCE_PWM — 50

PP2498_K P4MM SM PP 1 — TOUCH_TO_MANY_SCAN_STATE — 51

ET

PP2434_K P4MM SM PP 1 — 50_ET_DAC_P — 55 59

PP2435_K P4MM SM PP 1 — 50_ET_DAC_N — 55 59

BBPMU

PP2710_K P4MM SM PP 1 — GNSS_TO_BBPMU_CLK_EN — 50 55

PP2703_K P4MM SM PP 1 — BBPMU_TO_BB_PWRGOOD — 50 52

PP2704_K SM 1 — CLK_BBPMU_32KHZ — 50 52 55

PP2711_K P4MM SM PP 1 — BB_TO_BBPMU_STBY — 50 52

PP2712_K P4MM SM PP 1 — BBPMU_TO_BB_RESET_SD_L — 50 52

PP2709_K P4MM SM PP 1 — BB_TO_BBPMU_CLK_EN — 50 52

SIM 2

PP21A0_K P4MM SM PP 1 — SIM2_CLK — 52 69

PP21A3_K P4MM SM PP 1 — SIM2_DATA — 52 69

PP21A6_K P4MM SM PP 1 — SIM2_RST — 52 69

PP21B0_K P4MM SM PP 1 — SIM2_DETECT — 52 69

PP21B3_K P4MM SM PP 1 — PP_VDD_SIM2 — 51 54 69

PP21B5_K P4MM SM PP 1 — SIM2_DATA_R — 68

GNSS

PP24E4_K P4MM SM PP 1 — GNSS_DWB_IRQ — 52 56

PP24A6_K P4MM SM PP 1 — GPIO_SOC_TO_BB_GPS_SYNC — 55

PP2419_K P4MM SM PP 1 — GNSS_TO_BBPMU_LNA_EN — 50 55

PP24E9_K P4MM SM PP 1 — UART_BBPMU_TO_GNSS_1W — 50 55

PP2705_K P4MM SM PP 1 — GPIO_BB_GPS_TO_SOC_LOW_PWR_IND

I2C

PP24E2_K P4MM SM PP 1 — I2C_BB_EEPROM_SDA — 52

PP24E3_K P4MM SM PP 1 — I2C_BB_EEPROM_SCL — 52

PP2713_K P4MM SM PP 1 — BB_TO_BBPMU_RP_SDA — 50 52

PP2714_K P4MM SM PP 1 — BB_TO_BBPMU_RP_SCL — 50 52

MISC

PP24F5_K P4MM SM PP 1 — BB_RESET2_L_TEST — 52

PP24E6_K P4MM SM PP 1 — GPIO_SOC_TO_BB_MESA_ON — 44 52

PP2702_K P4MM SM PP 1 — MIPI_PTI1_DATA11 — 53

VDIO

PP24E7_K P4MM SM PP 1 — BBPMU_ANAMON — 50

PP2411_K P4MM SM PP 1 — BB_TO_BBPMU_VDIO — 50 52

PP2422_K P4MM SM PP 1 — BB_TO_BBPMU_VCLK — 50 52

PP2409_K P4MM SM PP 1 — BBPMU_TO_BB_ALERT_L — 50 52

AOP UART

PP24F5_K P4MM SM PP 1 — UART_BB_TO_AOP_TX — 44 52

PP24F6_K P4MM SM PP 1 — UART_AOP_TO_BB_TX — 44 52

PCIE

PP2442_K P4MM SM PP 1 — PCIE_SOC_TO_BB_TX_P — 44 52

PP2443_K P4MM SM PP 1 — PCIE_SOC_TO_BB_TX_N — 44 52

PP2444_K P4MM SM PP 1 — PCIE_SOC_TO_BB_REFCLK_P — 44 52

PP2445_K P4MM SM PP 1 — PCIE_SOC_TO_BB_REFCLK_N — 44 52

PP2706_K P4MM SM PP 1 — GPIO_BB_TO_PMU_HOST_WAKE_L — 44 52

PP2707_K P4MM SM PP 1 — PCIE_BB_TO_SOC_CLKREQ_L — 44 52

PP2708_K P4MM SM PP 1 — PCIE_SOC_TO_BB_RESET_L — 44 52 58

BB RFFE

PP2488_K P4MM SM PP 1 — BB_TO_L_ANT_RFFE_CLK — 52 71

PP2489_K P4MM SM PP 1 — BB_TO_L_ANT_RFFE_DATA — 52 71

PP24A7_K P4MM SM PP 1 — BB_TO_XCVR_DWB_CLK — 52 56

PP24A8_K P4MM SM PP 1 — BB_TO_XCVR_DWB_DATA — 52 56

PP24F0_K P4MM SM PP 1 — BB_MASTER_IO — 52 56

DIGRF

PP24B0_K P2MM-NSM SM PP 1 — 90_DIGRF_LO_TX_P — 52 56

PP24B1_K P2MM-NSM SM PP 1 — 90_DIGRF_LO_TX_N — 52 56

PP24B2_K P2MM-NSM SM PP 1 — 90_DIGRF_LO_RX_P — 52 56

PP24B3_K P2MM-NSM SM PP 1 — 90_DIGRF_LO_RX_N — 52 56

PP24B4_K P2MM-NSM SM PP 1 — 90_DIGRF_HI_TX_P — 52 56

PP24B5_K P2MM-NSM SM PP 1 — 90_DIGRF_HI_TX_N — 52 56

PP24B6_K P2MM-NSM SM PP 1 — 90_DIGRF_HI_RX1_P — 52 56

PP24B7_K P2MM-NSM SM PP 1 — 90_DIGRF_HI_RX1_N — 52 56

PP24D0_K P2MM-NSM SM PP 1 — 90_DIGRF_HI_RX2_P — 52 56

PP24D1_K P2MM-NSM SM PP 1 — 90_DIGRF_HI_RX2_N — 52 56

PP24D2_K P2MM-NSM SM PP 1 — 90_DIGRF_HI_RX3_P — 52 56

PP24D3_K P2MM-NSM SM PP 1 — 90_DIGRF_HI_RX3_N — 52 56

PP24D5_K P2MM-NSM SM PP 1 — 90_DIGRF_HI_RX4_P — 52 56

PP24D6_K P2MM-NSM SM PP 1 — 90_DIGRF_HI_RX4_N — 52 56

LO

HI

XCVR RFFE

PP24E8_K P4MM SM PP 1 — XCVR_TO_FE_RX_RFFE_IO — 52 54 59 60 61

PP2467_K P4MM-NSM SM PP 1 — BB_TO_XCVR_RFFE_DATA — 52 56

PP2468_K P4MM-NSM SM PP 1 — BB_TO_XCVR_RFFE_CLK — 52 56

PP2469_K P4MM-NSM SM PP 1 — XCVR_TO_BB_RFFE_DATA — 52 56

PP2470_K P4MM SM PP 1 — XCVR_TO_BB_RFFE_CLK — 52 56

PP2471_K P4MM SM PP 1 — XCVR_TO_FE_TX_RFFE_DATA — 56

PP2472_K P4MM SM PP 1 — XCVR_TO_FE_TX_RFFE_CLK — 56

PP2473_K P4MM SM PP 1 — XCVR_TO_FE_RX_RFFE_DATA — 56 60 63 64

PP2474_K P4MM SM PP 1 — XCVR_TO_FE_RX_RFFE_CLK — 56 60 63 64

DEBUG CONNECTOR

MLB 516S1185
FLEX 516S1184

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

68 67 59 51 44 43 32 31 30 — PPVCC_MAIN — 41 37 38

USB_BB_VBUS	1	2	90_USB_BB_P	52
NC	3	4	90_USB_BB_N	52
NC	5	6	PP_VDD_SIM1	51 52 54
50 44 GPIO_PMU_TO_BBPMU_ON	7	8	SIM1_RST	52
71 44 PP1V8_S2_EXT_SW2	9	10	SIM1_CLK	52
53 BB_JTAG_TDO	11	12	SIM1_DATA	52
53 BB_JTAG_TDI	13	14	NC	
53 BB_JTAG_TRST_L	15	16	SIM1_DETECT	52
52 44 GPIO_SOC_TO_BB_RESET_L	17	18	NC	
58 SWD_JTAG_TCK_SWDCLK	19	20	UART_SOC_TO_BB_GPS_TX	44 55
SWD_JTAG_BB_TMS_SWDIO	21	22	UART_BB_GPS_TO_SOC_RTS_L	44 55
68 67 59 51 44 43 32 31 30 PPVCC_MAIN	23	24	UART_BB_GPS_TO_SOC_TX	44 55
NC	25	26	UART_SOC_TO_BB_GPS_RTS_L	44 56
52 UART_BB_DEBUG_TXD	27	28	GPIO_PMU_TO_BB_GPS_EN	44 50 55
52 UART_BB_DEBUG_RXD	29	30	NC	
NC	31	32	UART_COEX_BB_TO_WLAN_TXD	44 52
	33	34	UART_COEX_WLAN_TO_BB_TXD	44 52
NC	35	36	NC	
	39	40		
	42			

USB_BB_VBUS — 67

1% R2700_K 20K 1/32W MF 01005 — PP_1V8_BB_USB_VBUS — 52

R2701_K 16K 1% 1/32W MF 01005

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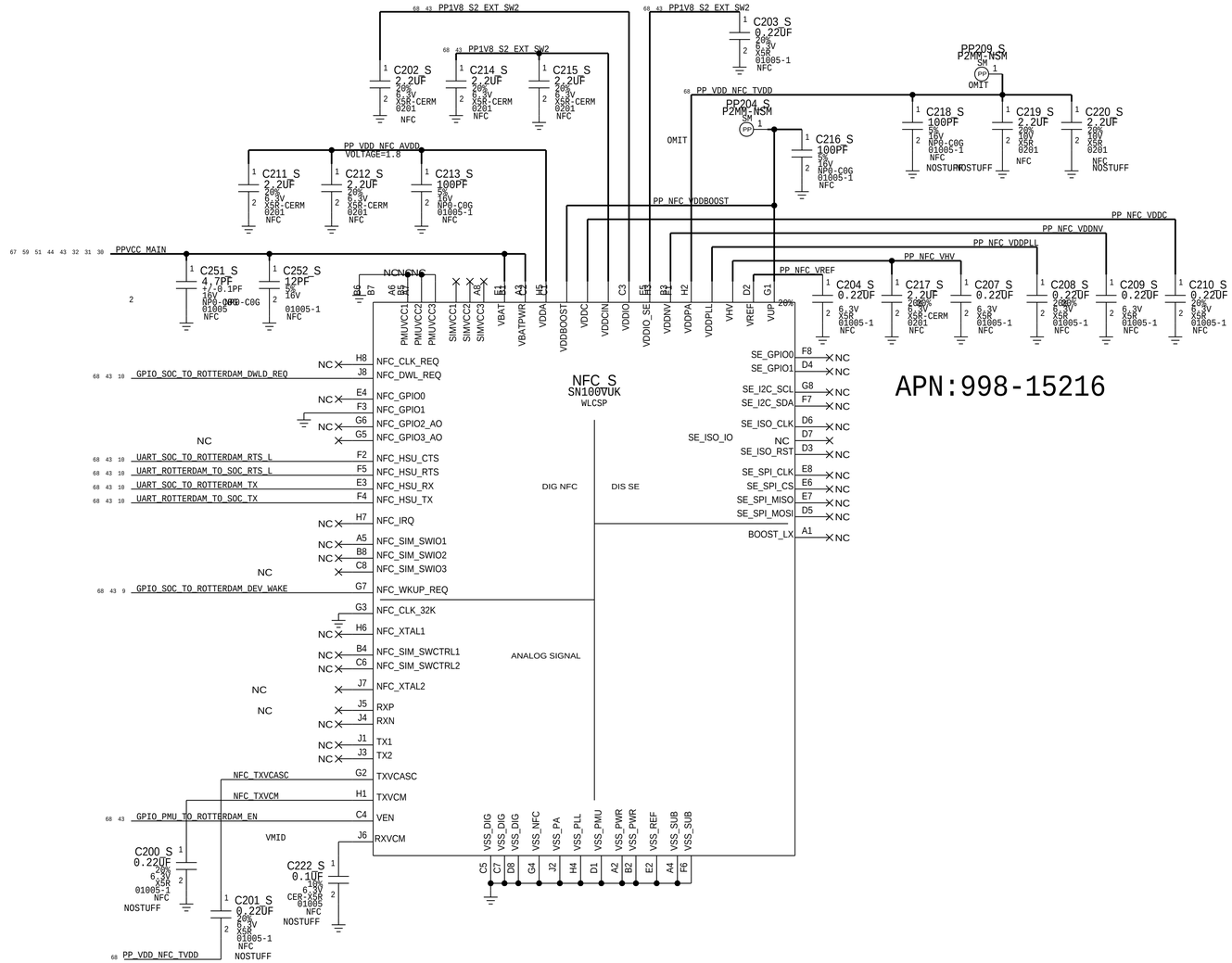
TEST POINTS

VENUS



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VENUS

ESIM

67 52 SIM2_CLK — SIM2_CLK 69
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67 52 SIM2_DATA — SIM2_DATA 69
MAKE_BASE=TRUE

67 52 SIM2_RST — SIM2_RST 69
MAKE_BASE=TRUE

67 52 SIM2_DETECT — 69 SIM2_DETECT
MAKE_BASE=TRUE

67 54 51 PP_VDD_SIM2 — #PP_VDD_SIM2
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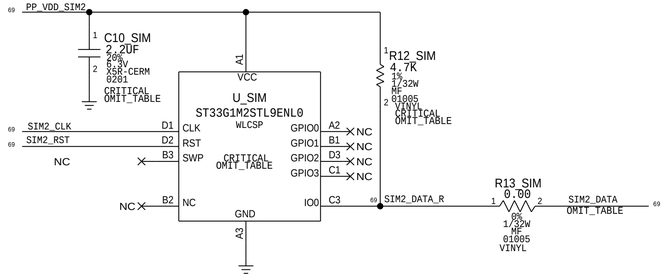
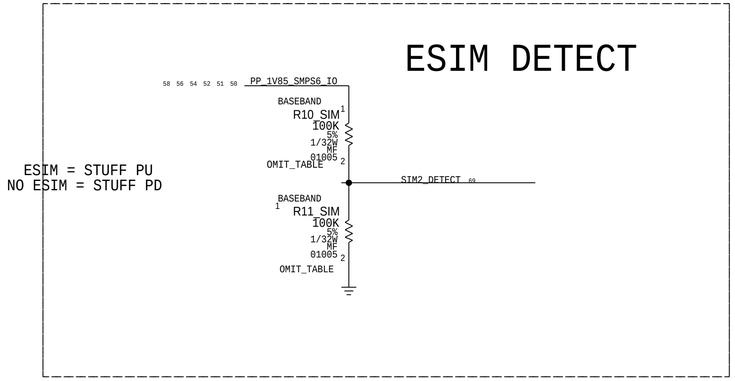
67 SIM2_DATA_R — SIM2_DATA_R 69
MAKE_BASE=TRUE

VINYL
APN: 337S00578
NL0, BIRCH 4.0 DEV 2





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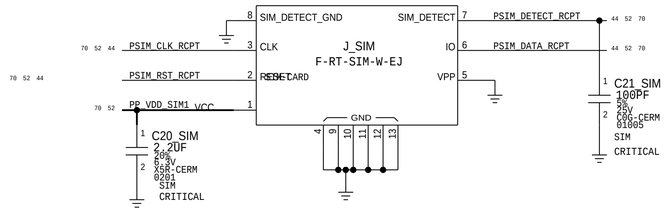
SIM: ESIM

PSIM

ICE18.7/8 PHYSICAL SIM

ICE17 PART OFFERS MORE SHIELDING AND PLACEMENT AREA

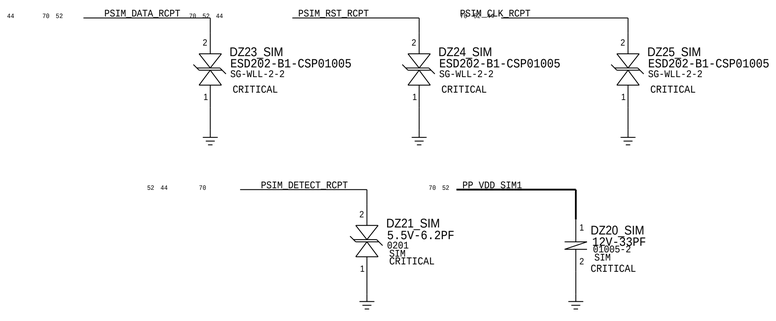
PSIM RCPT



ICE18.7 ONLY

APN:512S00003

ESD DIODES



TVS DIODES ALTERNATES

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
377S00183		BOM_TABLE_ALTS	ALL	TVS,DIODE,5.5V,0201
377S00001		BOM_TABLE_ALTS	ALL	TVS,DIODE,5V,01005

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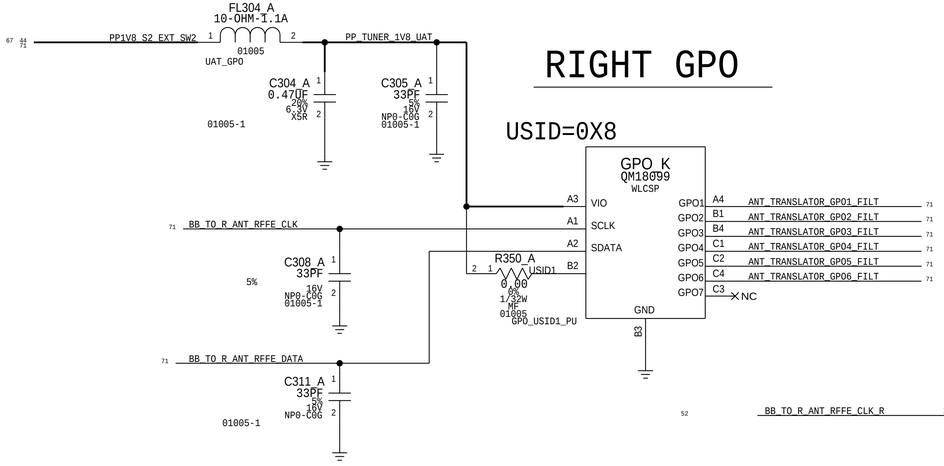
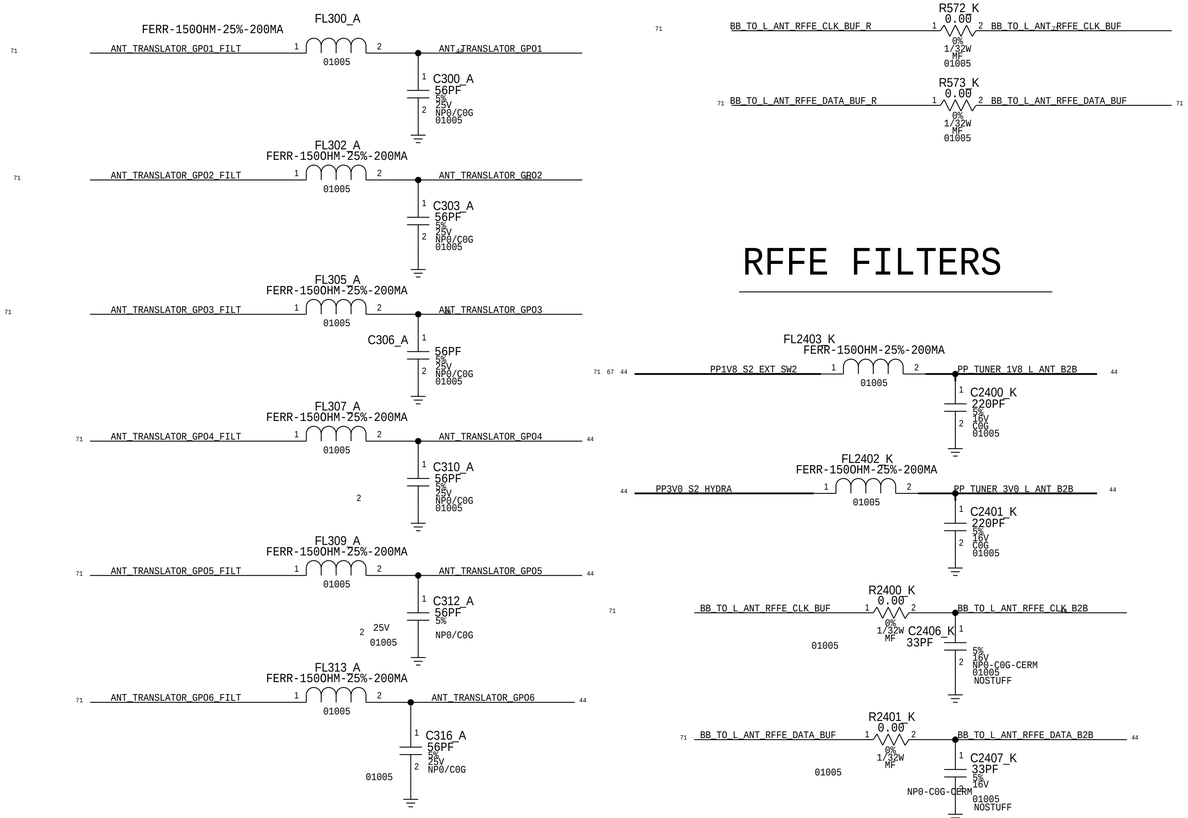
SIM: PSIM

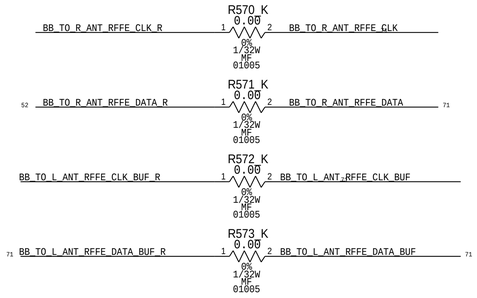
QPLEXER + ANT RFFE

RIGHT GPO

USID=0X8

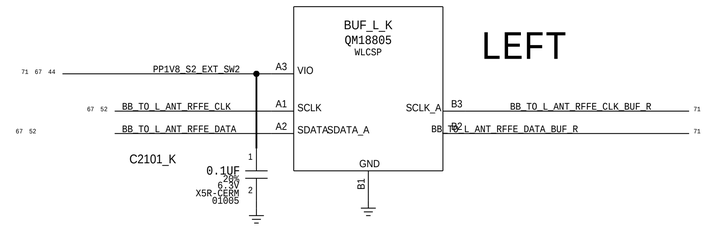




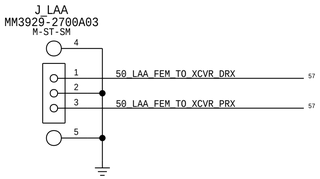


RFFE FILTERS

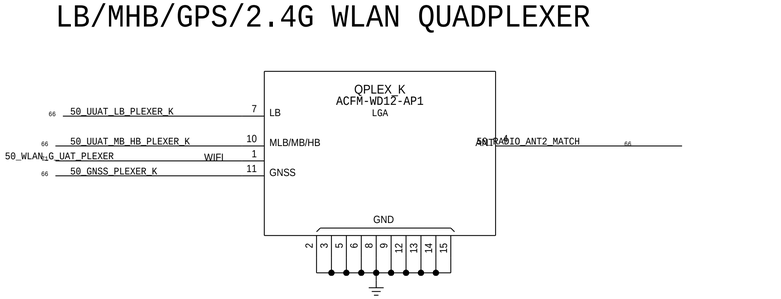
RFFE BUFFERS



LAA DUAL COAX CONNECTOR



LB/MHB/GPS/2.4G WLAN QUADPLEXER



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18.7 QPLEXER & ANT RFFE