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

REV	ECN	DESCRIPTION OF REVISION	CK APPD DATE
1	0018101741	ENGINEERING RELEASED	2019-06-06

J420 P2 CHINA: MLB-A

LAST_MODIFIED=Thu Jun 6 10:50:43 2019

LAST_MODIFICATION=Thu Jun 6 10:50:43 2019

SCH AND BOARD P/N

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	DESCRIPTION	
051-04756	1		SCH,MLB-A,YN,J420	SCH1	CRITICAL
820-01797	1		PCBF,MLB-A,YN,J420	PCB1	CRITICAL

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DRAWING TITLE

SCHEM,MLB-A,YN,J420

J4xx | System Block Diagram
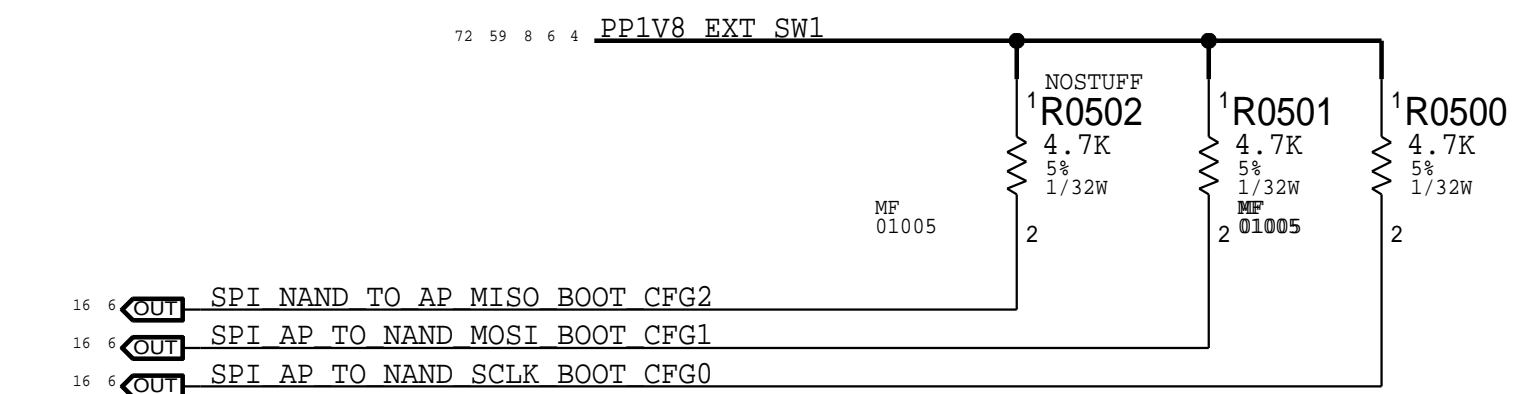
Apple Confidential   Updated: May 9th, 2019

Aruba [H11G]
6GB MCM 2272BGA

Left side components

- SEP EEPROM — Lynx → SEP_I2C/I2C[4]
- Gyro & Accel — Kobol
- Compass — Molybdenum
- Altimeter — Phosphorus → AOP_SPI
- Mass Storage — S4E + NAND — 24MHz → SPI[0]; Gen3 x1 Lane → PCIe[0]
- Mass Storage — S4E + NAND — Gen3 x1 Lane → PCIe[1]
- Display + Touch Panel
  - 56 Rx/40 Tx (J417), 84 Rx/48 Tx (J420)
  - Touch IC x2 — 1x Lanai, 1x Kona → AOP_UART[2]; 20MHz → SPI[3]
  - x4 Lanes @ 3.4Gbps (J417) / x6 Lanes @ 4.2Gbps (J420) → LPDP-TX
  - I2C[5]
- BL PMU — Athena — x2 Phases (J417), x3 Phases (J420) → SMC_I2C[3]; NUB_SPMI; SMC_I2C[0]
- Charger — Potomac
- Battery — 1S2P, 28.86WHr (J417), 36.71WHr (J420)
- Gas Gauge — SN27546 → SMC_I2C[2]
- USB Type-C
  - Type-C SS x2 TX/RX
  - USB 3.0 Redriver — USB3.1 Gen2 x1 TX/RX @ 10Gbps → USB3_C1; HBR3 x4 TX @ 8.1Gbps → DPTX
  - I2C
  - Type-C SBU x2 / Type-C CC x2 / Type-C HS x1 TX/RX
  - ACC Power, USBPD, USB2.0 MUX — ACE2
  - 5.2V Boost @ 1.5A → JTAG_SWD; UART[0]; DOCK_CONNECT; USB2.0 Mission; SMC_I2C[1]; I2C[0]
  - USB2.0 KiB → USB_C01; USB_C00
- Orion — HID
- Smart Contacts — Bellatrix2 — 5.2V Boost @ 1.5A → I2C[2]; UART[6]
- Scorpius — 9V Boost @ 1.0A → AOP_I2C[1]
- HES A Panel / HES C Panel
- Sheik — DMIC Gating Logic
- DMic1 (Left Spline) — Hawkeye → AOP_PDM_CLK0 / AOP_PDM_DATA0
- DMic2 (Right Spline) — Hawkeye
- DMic3 (CG) — Hawkeye → AOP_PDM_CLK2 / AOP_PDM_DATA1
- DMic4 (Rear) — Hawkeye → AOP_PDM_IN1_CLK
- DMic5 (Landscape) — Hawkeye → AOP_PDM_IN2_CLK / AOP_PDM_IN2_DAT

Speakers

- FH-L Tweeter / FH-L Woofer / FH-R Tweeter / FH-R Woofer — P/N
- Ardee-FH Amp x4 — TDM → I2S[2]; I2C[1]
- Borris — Master Boost
- Borris — Slave Boost → I2C[2]
- CN-L Tweeter / CN-L Woofer / CN-R Tweeter / CN-R Woofer — P/N
- Ardee-CN Amp x4 — TDM → I2S[1]

Right side components

- ISP_SPMI → RCam PMU — Adams
- LPDPRX[0:1] — x2 Lanes @ 6.6Gbps → Rear Cam Wide — Indiana
- Camera Strobe — Neon
- LPDPRX[6] — x1 Lanes @ 2.7Gbps → Jasper Cam — Jasper
- Jasper Driver — Will
- LPDPRX[4:5] — x2 Lanes @ 6.6Gbps → Rear Cam Swide — Ohio
- I2C[1] / I2C[2] / I2C[3] / I2C[4]
- I2S[3] → Penrose ADC — CS53L30 ← Flicker Sensor — Penrose
- ISP_FCAM_SPMI → Secondary PMU — Apollo
- LPDPRX[2:3] — x2 Lanes @ 6.6Gbps → Front Camera — Long Island
- ISP_I2C[2]
- ISP_I2C[1] / MIPI[0C] — x2 Lanes @ 1.6Gbps → IR Camera — Juliet (Savage)
- ISP_I2C[3] → VCSEL Driver — Rigel → VCSEL Safety — Mama Bear
  - VCSEL — Aragon
  - Sensor — Homer
  - Titus Module
- AOP_I2C[0]
  - VCSEL2 — Valencia
  - E-Fuse — Yogi
  - Prox — Calypso
  - Rosaline Module
  - ALS Corner 3 — Firefish2
  - ALS Corner 4 — Firefish2
- PCIe[2] / NUB_SPMI — Gen2 x1 Lane → WiFi/BT — GodFather
- AOP_SPI → UWB — Strider
- PCIe[3] — Gen2 x1 Lane → Baseband, GPS — ICE19
- AOP_UART[0] / NUB_SPMI — BB/GPS; I2S[0] — BB Audio (TBD)
- UART[3] → Venus — Pay

Title block

PAGE TITLE — **BLOCK DIAGRAM**
SYNC_DATE=03/09/2017
DRAWING NUMBER — SIZE

CKPLUS WAIVE TABLE

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

BOM GROUP	BOM OPTIONS
BASIC	COMMON,ALTERNATE

MECHANICAL PARTS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
806-13894	1	CAN,KONA,MLB	KONA_CAN	CRITICAL	
806-21276	1	CAN,RF,MLB_B	RF_CAN	CRITICAL	MLB_B
806-22567	1	FENCE,AP,MLB	AP_FENCE	CRITICAL	
806-21277	1	CAN,FM REMOTE FEM,MLB_B	FEM_CAN	CRITICAL	MLB_B
806-22182	1	CAN,WIFI-RF,MLB_A	WIFI_CAN	CRITICAL	MLB_A
806-21196	1	CAN,PENINSULA,MLB	PENINSULA_CAN	CRITICAL	
806-21278	1	CAN,ADAMS,MLB	RC_CAN	CRITICAL	

BARCODE LABEL/EEEE CODES

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
825-7691	1	EEEE FOR 639-08153 (MLB B BEST)	EEEE_M864	CRITICAL	EEEE_MLB_B_BEST
825-7691	1	EEEE FOR 639-08152 (MLB B SUPREME)	EEEE_M85R	CRITICAL	EEEE_MLB_B_SUPREME
825-7691	1	EEEE FOR 639-08154 (MLB B EXTREME)	EEEE_M86H	CRITICAL	EEEE_MLB_B_EXTREME
825-7691	1	EEEE FOR 639-08583 (MLB B EXTREME-TB)	EEEE_MQ8Y	CRITICAL	EEEE_MLB_B_EXTREME_TB
825-7691	1	EEEE FOR 639-08155 (MLB B PRIME)	EEEE_M86V	CRITICAL	EEEE_MLB_B_PRIME
825-7691	1	EEEE FOR 639-08156 (MLB B BEST ROW/JP)	EEEE_M876	CRITICAL	EEEE_MLB_B_JP_BEST
825-7691	1	EEEE FOR 639-08157 (MLB B SUPREME ROW/JP)	EEEE_M87K	CRITICAL	EEEE_MLB_B_JP_SUPREME
825-7691	1	EEEE FOR 639-08158 (MLB B EXTREME ROW/JP)	EEEE_M87X	CRITICAL	EEEE_MLB_B_JP_EXTREME
825-7691	1	EEEE FOR 639-08584 (MLB B EXTREME-TB ROW/JP)	EEEE_MQ99	CRITICAL	EEEE_MLB_B_JP_EXTREME_TB
825-7691	1	EEEE FOR 639-08159 (MLB B PRIME ROW/JP)	EEEE_M889	CRITICAL	EEEE_MLB_B_JP_PRIME
825-7691	1	EEEE FOR 639-08160 (MLB B BEST CH)	EEEE_M88N	CRITICAL	EEEE_MLB_B_CH_BEST
825-7691	1	EEEE FOR 639-08161 (MLB B SUPREME CH)	EEEE_M892	CRITICAL	EEEE_MLB_B_CH_SUPREME
825-7691	1	EEEE FOR 639-08162 (MLB B EXTREME CH)	EEEE_M89F	CRITICAL	EEEE_MLB_B_CH_EXTREME
825-7691	1	EEEE FOR 639-08585 (MLB B EXTREME-TB CH)	EEEE_MQ9N	CRITICAL	EEEE_MLB_B_CN_EXTREME_TB
825-7691	1	EEEE FOR 639-08163 (MLB B PRIME CH)	EEEE_M89X	CRITICAL	EEEE_MLB_B_CH_PRIME
825-7691	1	EEEE FOR 639-07411 (MLB A BEST)	EEEE_LNXM	CRITICAL	EEEE_MLB_A_BEST
825-7691	1	EEEE FOR 639-08465 (MLB A SUPREME)	EEEE_MMQP	CRITICAL	EEEE_MLB_A_SUPREME
825-7691	1	EEEE FOR 639-08466 (MLB A EXTREME)	EEEE_MMR2	CRITICAL	EEEE_MLB_A_EXTREME
825-7691	1	EEEE FOR 639-08586 (MLB A EXTREME-TB)	EEEE_MQD7	CRITICAL	EEEE_MLB_A_EXTREME_TB
825-7691	1	EEEE FOR 639-06063 (MLB A PRIME)	EEEE_JXPQ	CRITICAL	EEEE_MLB_A_PRIME

FERRITES

PART NUMBER	ALTERNATE FOR PART NUMBER	REFERENCE DESIGNATOR(S)	DESCRIPTION	BOM OPTION
155S00400	155S00200	FL2860,FL4254,FL4256...ETC	150OHM 200MA 0.7DCR 01005	
155S0660	155S0513	FL2761,ETC	0.04 DCR MURATA	

DIODES

PART NUMBER	ALTERNATE FOR PART NUMBER	REFERENCE DESIGNATOR(S)	DESCRIPTION	BOM OPTION
377S0155	377S0184	DZ4014,DZ4015,DZ4016...ETC	TVS BIDIR 5.5V 0.28PF 0201	

NAND

BEST FLASH CONFIGS (U1900 NOSTUFF) 64GB

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
335S00393	1	TOSHIBA,BICS4,64GB	U1800	CRITICAL	PROD_BEST

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
335S00388	335S00393	PROD_BEST	U1800	WD,BICS4,64GB

SUPREME FLASH CONFIGURATIONS 256GB

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
335S00394	2	TOSHIBA,BICS4,128GB	U1800,U1900	CRITICAL	PROD_SUPREME

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
335S00389	335S00394	PROD_SUPREME	U1800,U1900	WD,BICS4,128GB

EXTREME-WD FLASH CONFIGURATIONS 512GB

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
335S00408	1	WD,BICS4,256GB,10DP	U1800	CRITICAL	PROD_EXTREME
335S00390	1	WD,BICS4,256GB,8DP	U1900	CRITICAL	PROD_EXTREME

EXTREME-TB FLASH CONFIGURATIONS 512GB

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
335S00397	1	TOSHIBA,BICS4,256GB,10DP	U1800	CRITICAL	PROD_EXTREME_TB
335S00396	1	TOSHIBA,BICS4,256GB,8DP	U1900	CRITICAL	PROD_EXTREME_TB

PRIME FLASH CONFIGURATIONS 1TB

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
335S00391	2	WESTERNDIGITAL,BICS4,512GB	U1800,U1900	CRITICAL	PROD_PRIME

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
335S00425	335S00391	PROD_PRIME	U1800,U1900	SAMSUNG 3DV4,512GB

CAPS

PART NUMBER	ALTERNATE FOR PART NUMBER	REFERENCE DESIGNATOR(S)	DESCRIPTION	BOM OPTION
138S00141	138S00071	C4191,ETC	4UF 6.3V MURATA	
138S00117	138S00071	C7993,ETC	4UF 6.3V KYOCERA	
132S00211	132S00092	C3204,ETC	270PF 16V KYOCERA	
132S00212	132S00092	C3204,ETC	270PF 16V TAIYO YUDEN	
132S0436	132S00014	C0820,ETC	0.22UF 6.3V	
138S00148	138S00149	C1220,ETC	15UF 4V KYOCERA	
138S00150	138S00149	C1220,ETC	15UF 4V SAMSUNG	
138S00151	138S00149	C1220,ETC	15UF 4V TAIYO YUDEN	
138S0614	138S0732	C2218,ETC	1UF 10V 0402	
132S00088	132S0639	C2221,ETC	0.47UF 25V TAIYO YUNDEN	
138S0706	138S0739	C1215,ETC	1UF 10V 0201 MURATA	
138S0945	138S0739	C1215,ETC	1UF 10V 0201 KYOCERA	
131S00299	131S00118	C3334,ETC	180PF 50V TAIYO YUDEN	
128S00094	128S00067	C77DF,ETC	150UF 6.3V TOKIN	
128S00065	128S00067	C77DF,ETC	150UF 6.3V KEMET	
128S00069	128S00067	C77DF,ETC	150UF 6.3V KYOCERA	
138S00215	138S1068	C2350,ETC	4.7UF 16V TAIYO YUDEN	
131S00172	131S00164	C1232,ETC	220PF 16V KYOCERA	
131S00173	131S00164	C1232,ETC	220PF 16V TAIYO YUDEN	
131S0831	131S0730	C40A7,ETC.	15PF 50V 0201	
138S00139	138S00138	C12D1,C12F0	4UF 4V MURATA	
138S00164	138S00138	C12D1,C12F0	4UF 4V TAIYO YUDEN	
138S00084	138S00060	C8563,ETC	47UF 6.3V TAIYO YUNDEN	
131S00313	131S0824	C4632	330PF 25V TAIYO YUNDEN	
132S00175	132S00202	C4019,ETC	0.22UF KYOCERA ONLY	
132S00154	132S0683	C6352,ETC	0.1UF 01005 TAIYO	
138S0641	138S0700	C2206,ETC	2.2UF 10V 0402 TAIYO	
132S0316	132S00107	C3828,C3829	.1UF 6.3V 01005 TAIYO	
131S00164	131S00172	C2711,C2713	220PF 16V 01005 MURATA	
131S00173	131S00172	C2711,C2713	220PF 16V 01005 TAIYO	
138S00048	138S00003	C6000,ETC	15UF 6.3V 0402 KYOCERA	
138S0888	138S00003	C6000,ETC.	15UF 6.3V 0402 TAIYO	
138S1068	138S00215	C85A3	4.7UF 16V 0402 TAIYO	
138S0711	138S00020	C8513	10UF 6.3V 0402 TAIYO	
132S00185	132S0316	C1035,ETC.	0.1UF 6.3V 1005 KYO/YAG	

SOC

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
339S00633	1	IC,ARUBA A1,DEV,6G,HYNIX ATK	U0600	CRITICAL	

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
339S00634	339S00633		U0600	MICRON 6G ATK
339S00635	339S00633		U0600	HYNIX 6G SCK
339S00636	339S00633		U0600	MICRON 6G SCK

PMU-ATHENA

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
343S00326	1	IC,PMU,ATHENA,D2483A0,OTP-HC	U8100	CRITICAL	

PMU-APOLLO

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
343S00327	1	IC,PMU,APOLLO,D2537A0,OTP-NC	U7700	CRITICAL	

POTOMAC

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
343S00328	1	IC,POTOMAC,D2559A0,OTP-FC	U8500	CRITICAL	

ADAMS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
338S00524	1	IC,ADAMS,D2657,OTP-CD	U6100	CRITICAL	

PAGE TITLE

BOM TABLES

DRAWING NUMBER

SIZE

BOOT CONFIG ID

72 59 8 6 4 PP1V8 EXT SW1

NOSTUFF
R0502   R0501   R0500
4.7K   4.7K   4.7K
5%   5%   5%
1/32W   1/32W   1/32W
MF   MF   MF
01005   01005   01005

16 OUT SPI NAND TO AP MISO BOOT CFG2
16 OUT SPI AP TO NAND MOSI BOOT CFG1
16 OUT SPI AP TO NAND SCLK BOOT CFG0

BOOT_CFG[2:0]	MODE
000	SPIO NOR
001	SPIO NOR TEST
010	SPIO NAND
011	SPIO NAND TEST
100	SPIO NOR (40MHZ)
101	SPIO NOR (40MHZ) TEST
110	SPIO NOR (6MHZ)
111	SPIO NOR (6MHZ) TEST

CURRENT (PRODUCTION) --->

S/W READ FLOW
1. SET GPIO AS INPUT
2. DISABLE PU AND ENABLE PD
3. READ

BOARD ID

72 59 8 6 4 PP1V8 EXT SW1

R0514   R0513   NOSTUFF   MLB_B   NOSTUFF
          R0512   R0511   R0510
1.00K   1.00K   1.00K   1.00K   1.00K
5%   5%   5%   5%   5%
1/32W   1/32W   1/32W   1/32W   1/32W
MF   MF   MF   MF   MF
01005   01005   01005   01005   01005

OUT GPIO BRD ID4
OUT GPIO BRD ID3
OUT GPIO BRD ID2
OUT GPIO BRD ID1
OUT GPIO BRD ID0

BRD_ID[4:0]
J420 AP
11000   J420 DEV
        J421 DEV
        J421 AP
        J421 DEV

CURRENT SETTING --->

S/W READ FLOW
1. SET GPIO AS INPUT
2. DISABLE PU AND ENABLE PD
3. READ

BOARD REVISION

NOTE: STUFFING RESISTOR MEANS 0

IN   GPIO BRD REV0
OUT GPIO BRD REV1
OUT GPIO BRD REV2
OUT GPIO BRD REV3

BRD_REV[3:0]

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

BRD_REV[3:0]	
0000	PROTO 1 LOCAL
0001	PROTO 1 CHINA
0010	P1 CHINA NO UWB
0011	P1 CHINA NO UWB/RCAM
0100	P1 CHINA NO DOE MLB
0101	P2 LOCAL
0110	P2 CHINA
0111	
1000	
1001	
1010	
1011	

CURRENT SETTING --->

S/W READ FLOW
1. SET GPIO AS INPUT
2. ENABLE PU AND DISABLE PD
3. READ

(center)

9 IN WDOG SOC

R0531
0.00
0%
1/32W
01005

GPIO SOC TO PMU WDOG   59 OUT

NOSTUFF
R0532
240
5%
1/32W
01005
TP JTAG SOC TRST L   OUT 9 68

R0533
240
5%
1/32W
01005
JTAG SOC SEL   OUT 9 68

R0534
240
5%
1/32W
01005
SOC TESTMODE   OUT 5 68

MAKE_BASE=TRUE   GND   OUT 5

I2C ALIASES (right)

I2C0
DEVICE	8-BIT	7-BIT
ACE2(ONE-ACE)	0X70	0X38
ACE2(ALL)	0XD6	0X6B

68 6 IN I2C0 SCL 1V8   MAKE_BASE=TRUE I2C0 SCL 1V8   34 OUT
68 6 BI I2C0 SDA 1V8   MAKE_BASE=TRUE I2C0 SDA 1V8   34 BI

I2C1 SKR AMP PHRT 0X70 0X38
DEVICE	8-BIT	7-BIT
SKR AMP FHRW	0X72	0X39
SKR AMP FHLT	0X74	0X3A
SKR AMP FHLW	0X76	0X3B

70 68 6 IN I2C1 SCL 1V8   MAKE_BASE=TRUE I2C1 SCL 1V8   30 31 OUT
70 68 6 BI I2C1 SDA 1V8   MAKE_BASE=TRUE I2C1 SDA 1V8   30 31 BI

I2C2 SKR BOOST 0X60 0X30 / SKR BOOST SLV 0X62 0X31
DEVICE	8-BIT	7-BIT
SKR AMP CNRT	0X78	0X3C
SKR AMP CNRW	0X7A	0X3D
SKR AMP CNLT	0X7C	0X3E
SKR AMP CNLW	0X7E	0X3F
BELLATRIX	0X26	0X13

70 68 6 IN I2C2 SCL 1V8   MAKE_BASE=TRUE
I2C2 SCL 1V8   28 29 OUT
I2C2 SCL 1V8   26 BI
I2C2 SCL 1V8   56 BI
70 68 6 BI I2C2 SDA 1V8   MAKE_BASE=TRUE
I2C2 SDA 1V8   28 29 BI
I2C2 SDA 1V8   26 BI
I2C2 SDA 1V8   56 IN

I2C3
DEVICE	8-BIT	7-BIT
PENROSE ADC	0X90	0X48

68 6 IN I2C3 SCL 1V8   MAKE_BASE=TRUE I2C3 SCL 1V8   22 OUT
68 6 BI I2C3 SDA 1V8   MAKE_BASE=TRUE I2C3 SDA 1V8   22 BI

I2C4   SEP I2C

I2C5
DEVICE	8-BIT	7-BIT
TCON	0X30-0X4K	0X18-0X27
TEMP (U2400)	0XE0	0X70

IN I2C5 SCL 1V8   MAKE_BASE=TRUE I2C5 SCL 1V8   40 OUT
BI I2C5 SDA 1V8   MAKE_BASE=TRUE I2C5 SDA 1V8   40 BI

I2C0 AOP
DEVICE	8-BIT	7-BIT
ALS (C3)	0X72	0X39
ALS (C4)	0X52	0X29
YOGI (ROSALINE)	0X66	0X33
DOPPLER(ROSA.)	0XB0	0X58

68 6 IN I2C AOP I2CM0 SCL 1V8   MAKE_BASE=TRUE I2C AOP I2CM0 SCL 1V8   39 OUT
68 6 BI I2C AOP I2CM0 SDA 1V8   MAKE_BASE=TRUE I2C AOP I2CM0 SDA 1V8   39 BI

I2C1 AOP
DEVICE	8-BIT	7-BIT
SCORPIUS	0XAA	0X55

68 6 IN I2C AOP I2CM1 SCL 1V8   MAKE_BASE=TRUE I2C AOP I2CM1 SCL 1V8   64 OUT
68 6 BI I2C AOP I2CM1 SDA 1V8   MAKE_BASE=TRUE I2C AOP I2CM1 SDA 1V8   64 BI

ISP I2C0   NOT USED

ISP I2C1
DEVICE	8-BIT	7-BIT
	0X30	0X18

IN ISP I2C1 SCL 1V8   MAKE_BASE=TRUE ISP I2C1 SCL 1V8   38 OUT
BI ISP I2C1 SDA 1V8   MAKE_BASE=TRUE ISP I2C1 SDA 1V8   38 BI

ISP I2C2
8-BIT	7-BIT
0X20	0X10

IN ISP I2C2 SCL 1V8   MAKE_BASE=TRUE ISP I2C2 SCL 1V8   24 OUT
BI ISP I2C2 SDA 1V8   MAKE_BASE=TRUE ISP I2C2 SDA 1V8   24 BI

ISP I2C3
DEVICE	8-BIT	7-BIT
TITUS	0XCC	0X66
RIGEL	0XAA	0X55

7 IN ISP I2C3 SCL 1V8   MAKE_BASE=TRUE ISP I2C3 SCL 1V8   37 38 OUT
7 BI ISP I2C3 SDA 1V8   MAKE_BASE=TRUE ISP I2C3 SDA 1V8   37 38 BI

SMC I2C0
DEVICE	8-BIT	7-BIT
POTOMAC	0XEA	0X75

68 9 IN I2C SMC I2CM0 SCL 1V8   I2C SMC I2CM0 SCL 1V8   61 OUT
68 9 BI I2C SMC I2CM0 SDA 1V8   I2C SMC I2CM0 SDA 1V8   61 BI

SMC I2C1
DEVICE	8-BIT	7-BIT
ACE2	0X70	0X38

68 9 IN I2C SMC I2CM1 SCL 1V8   I2C SMC I2CM1 SCL 1V8   OUT
68 9 BI I2C SMC I2CM1 SDA 1V8   MAKE_BASE=TRUE I2C SMC I2CM1 SDA 1V8   BI

SMC I2C2
DEVICE	8-BIT	7-BIT
GASGAUGE	0XAA	0X55

68 9 IN I2C SMC I2CM2 SCL 1V8   I2C SMC I2CM2 SCL 1V8   64 OUT
68 9 BI I2C SMC I2CM2 SDA 1V8   I2C SMC I2CM2 SDA 1V8   64 BI

SMC I2C3
DEVICE	8-BIT	7-BIT
ATHENA	0X78	0X3C
APOLLO	0X80	0X40

68 9 IN I2C SMC I2CM3 SCL 1V8   MAKE_BASE=TRUE I2C SMC I2CM3 SCL 1V8   55 59 OUT
68 9 BI I2C SMC I2CM3 SDA 1V8   MAKE_BASE=TRUE I2C SMC I2CM3 SDA 1V8   55 59 BI

SMC I2C4   NOT USED

ADAMS I2C1
DEVICE	8-BIT	7-BIT
RCAM1(FOCUS)	0X18	0X0C
RCAM1(IN)	0X20	0X10
STROBE1	0XC6	0X63
STROBE2	0XCE	0X67

48 IN I2C1 RCAM PMU SCL   MAKE_BASE=TRUE I2C1 RCAM PMU SCL   25 48 OUT
48 BI I2C1 RCAM PMU SDA   MAKE_BASE=TRUE I2C1 RCAM PMU SDA   68 BI

ADAMS I2C2
DEVICE	8-BIT	7-BIT
PERISCOPE	0X20	0X10
JA RIKER	0X60	0X30
JA EEPROM	0XA2	0X51

48 IN I2C2 RCAM PMU SCL   MAKE_BASE=TRUE I2C2 RCAM PMU SCL   50 OUT
48 BI I2C2 RCAM PMU SDA   MAKE_BASE=TRUE I2C2 RCAM PMU SDA   50 BI

ADAMS I2C3
DEVICE	8-BIT	7-BIT
WILL	0X80	0X40

68 IN I2C3 RCAM PMU SCL   MAKE_BASE=TRUE I2C3 RCAM PMU SCL   47 OUT
68 BI I2C3 RCAM PMU SDA   MAKE_BASE=TRUE I2C3 RCAM PMU SDA   47 BI

ADAMS I2C4
DEVICE	8-BIT	7-BIT
RCAM2(OH)	0X40	0X20

48 IN I2C4 RCAM PMU SCL   MAKE_BASE=TRUE I2C4 RCAM PMU SCL   49 OUT
48 BI I2C4 RCAM PMU SDA   MAKE_BASE=TRUE I2C4 RCAM PMU SDA   49 BI

SOC: MAIN

This is a schematic diagram (page 3 of 20, symbol SYM 3 OF 20) for the SOC MAIN section, part number ARUBA-4G-21NM-H (U0600, FCBGA).

Key labeled nets and components visible:

USB signals:
- USB31_EXT_REF_CLK_P / USB31_EXT_REF_CLK_N (BB27/BC27)
- USB3_SOC_RX_P / USB3_SOC_RX_N → C0_USB31_RX_P / C0_USB31_RX_N (BB29/BC29)
- USB3_SOC_TX_P / USB3_SOC_TX_N → C0_USB31_TX_P / C0_USB31_TX_N (BE29/BF29)
- USB3_SOC_REXT → USB31_REXT (BA26)
- USB_SOC_P / USB_SOC_N → C00_USB_DP / C00_USB_DM (BC50/BC49)
- NC_C00_USB_ID → C00_USB_ID (AW42)
- C00_USB_SOC_REXT → C00_USB_REXT (BB36)
- USB_VBUS_DETECT_R → C00_USB_VBUS (AY42)
- USB_KIS_P / USB_KIS_N → C01_USB_DP / C01_USB_DM (BB50/BB49)
- NC_C01_USB_ID → C01_USB_ID (AW41)
- C01_USB_SOC_REXT → C01_USB_REXT (BB37)
- PP3V3_USB → C01_USB_VBUS (AY41)
- NC_C1_USB31_RXP / NC_C1_USB31_RXN → C1_USB31_RX_P / C1_USB31_RX_N (BB28/BC28)
- NC_C1_USB31_TXP / NC_C1_USB31_TXN → C1_USB31_TX_P / C1_USB31_TX_N (BE28/BF28)
- NC_C1_USB_DP / NC_C1_USB_DM → C1_USB_DP / C1_USB_DM (BD49/BD48)
- NC_C1_USB_ID → C1_USB_ID (AW43)
- C1_USB_SOC_REXT → C1_USB_REXT (BB35)
- NC_C1_USB_VBUS → C1_USB_VBUS (AY43)

DRAM / DDR signals (right side):
- DDR0_ZQ / DDR1_ZQ / DDR4_ZQ / DDR5_ZQ (A5/A6/A27/A28)
- DDR0_ZQ1 / DDR1_ZQ1 / DDR4_ZQ1 / DDR5_ZQ1 (A4/A7/A26/A29)
- DDR0_RREF / DDR1_RREF / DDR2_RREF / DDR3_RREF / DDR4_RREF / DDR5_RREF / DDR6_RREF / DDR7_RREF (M1/L1/A23/A24/A30/A31/L50/M50)

RESET / DFU / CLOCKS:
- GPIO_FORCE_DFU (AJ45)
- GPIO_PMU_TO_SOC_BTN_ONOFF_L (AH47)
- GPIO_PMU_TO_SOC_BTN_VOL_DOWN_L (AD49)
- SOC_TO_ACE_DFU_STATUS (AH45)
- SOC_TESTMODE (BF47)
- GPIO_PMU_TO_SYSTEM_ACTIVE_READY_R (AL48) → GPIO_PMU_TO_SYSTEM_ACTIVE_READY
- GND (BE45)
- RESET_PMU_TO_SYSTEM_L (AF10)
- XTAL_SOC_24M_IN (BF16)
- XTAL_SOC_24M_OUT (BF17)
- TST_CLKOUT (AM44)
- ADC_SOC_TO_PMU_ANALOGMUX_OUT (AC43)
- NC_GPIO_SOC_TO_WLAN_DEVICE_WAKE (AE47)
- SWD_SCORPIUS_SWCLK (AF47)
- GPIO_WLAN_TO_SOC_TIME_SYNC (AH46)
- SWD_TMS2 (Y47) / SWD_TMS3 (AB46) ← SWD_NAND1_SWDIO / SWD_NAND2_SWDIO

DFU1 IS RELEASED FIRST FOR DFU ENTER OPERATION

PPVDD_S1_QL resistor arrays:
- R0661–R0668: 240Ω 1% 1/32W MF 01005 → DDR0_ZQ, DDR1_ZQ, DDR4_ZQ, DDR5_ZQ; DDR0_ZQ1, DDR1_ZQ1, DDR4_ZQ1, DDR5_ZQ1
- R0669–R0676: 240Ω 1% 1/32W MF 01005 → DDR0_RREF, DDR1_RREF, DDR2_RREF, DDR3_RREF, DDR4_RREF, DDR5_RREF, DDR6_RREF, DDR7_RREF

PLACE_NEAR=U0600 notes for various DDR pins.

Other components:
- R0630: 30.1K 01005 MF 1/32W 1% NOSTUFF (USB_VBUS_DETECT)
- R06A2: 0Ω 5% 1/20W MF 0201
- R0650: 510K 5% 1/32W MF 01005 NOSTUFF
- R0651: 1.00K 1% 1/32W MF 01005
- Y0600: 1.60X1.20MM 24.000MHZ-20PPM-9.5PF-60OHM CRITICAL
- C0650: 12PF 5% 16V NP0-C0G 01005-1 CRITICAL
- C0651: 12PF 5% 16V NP0-C0G 01005-1 CRITICAL
- R0652 IS DEV BOARD SPECIFIC
- SOC_24M_O
- R1037: 1.00K 5% 1/32W MF 01005 (PP1V8_EXT_SW1 → SWD_NAND1_SWDIO)
- R1038: 1.00K 5% 1/32W MF 01005 (→ SWD_NAND2_SWDIO)
- R0621: 200 1% MF 1/32W 01005 (USB3_SOC_REXT, PLACE_NEAR=U0600.BA26:3MM)
- R0641: 200 1% 1/32W MF 01005 (C00_USB_SOC_REXT, PLACE_NEAR=U0600.BB36:3MM)
- R0640: 200 1% 1/32W MF 01005 (C01_USB_SOC_REXT, PLACE_NEAR=U0600.BB37:3MM)
- R0642: 200 1% 1/32W MF (C1_USB_SOC_REXT, PLACE_NEAR=U0600.BB35:3MM)

OMIT_TABLE

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

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FCBGA
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LYNX
APN:337S00584

U0702
STLNXA1L9YZ2S
WLCSP

SOC: I/OS

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DISPLAY OUT

Net	Pin	Signal
LPDP_SOC_TO_RCAM1_AUX	AT8	LPDPRX_AUX_D0_P
LPDP_SOC_TO_SWIDE_AUX	AT7	LPDPRX_AUX_D1_P
LPDP_SOC_TO_FCAM2_AUX	AU8	LPDPRX_AUX_D2_P
LPDP_SOC_TO_JASPER_AUX	AU7	LPDPRX_AUX_D3_P
NC_LPDPRX_AUX4	AV8	LPDPRX_AUX_D4_P
NC_LPDPRX_AUX5	AV7	LPDPRX_AUX_D5_P
NC_LPDPRX_AUX6	AW8	LPDPRX_AUX_D6_P
NC_LPDPRX_AUX7	AW7	LPDPRX_AUX_D7_P
LPDP_RCAM1_TO_SOC_DATA_P<0>	AT4	LPDPRX_RX_D0_P
LPDP_RCAM1_TO_SOC_DATA_N<0>	AT5	LPDPRX_RX_D0_N
LPDP_RCAM1_TO_SOC_DATA_P<1>	AT1	LPDPRX_RX_D1_P
LPDP_RCAM1_TO_SOC_DATA_N<1>	AT2	LPDPRX_RX_D1_N
LPDP_FCAM2_TO_SOC_DATA_P<0>	AU4	LPDPRX_RX_D2_P
LPDP_FCAM2_TO_SOC_DATA_N<0>	AU5	LPDPRX_RX_D2_N
LPDP_FCAM2_TO_SOC_DATA_P<1>	AU1	LPDPRX_RX_D3_P
LPDP_FCAM2_TO_SOC_DATA_N<1>	AU2	LPDPRX_RX_D3_N
LPDP_SWIDE_TO_SOC_DATA_P<0>	AV4	LPDPRX_RX_D4_P
LPDP_SWIDE_TO_SOC_DATA_N<0>	AV5	LPDPRX_RX_D4_N
LPDP_SWIDE_TO_SOC_DATA_P<1>	AV1	LPDPRX_RX_D5_P
LPDP_SWIDE_TO_SOC_DATA_N<1>	AV2	LPDPRX_RX_D5_N
LPDP_JASPER_TO_SOC_DATA_P	AW4	LPDPRX_RX_D6_P
LPDP_JASPER_TO_SOC_DATA_N	AW5	LPDPRX_RX_D6_N
	AW1	LPDPRX_RX_D7_P
	AW2	LPDPRX_RX_D7_N
LPDPRX_RCAL_POS	AY7	LPDPRX_RCAL_P
LPDPRX_RCAL_NEG	AY8	LPDPRX_RCAL_N

Pin	Signal	Net
AY50	LPDP_TX0P	LPDP_SOC_TO_TCON_DATA_P<0>
AY49	LPDP_TX0N	LPDP_SOC_TO_TCON_DATA_N<0>
AY47	LPDP_TX1P	LPDP_SOC_TO_TCON_DATA_P<1>
AY46	LPDP_TX1N	LPDP_SOC_TO_TCON_DATA_N<1>
AW50	LPDP_TX2P	LPDP_SOC_TO_TCON_DATA_P<2>
AW49	LPDP_TX2N	LPDP_SOC_TO_TCON_DATA_N<2>
AW47	LPDP_TX3P	LPDP_SOC_TO_TCON_DATA_P<3>
AW46	LPDP_TX3N	LPDP_SOC_TO_TCON_DATA_N<3>
AV50	LPDP_TX4P	LPDP_SOC_TO_TCON_DATA_P<4>
AV49	LPDP_TX4N	LPDP_SOC_TO_TCON_DATA_N<4>
AV47	LPDP_TX5P	LPDP_SOC_TO_TCON_DATA_P<5>
AV46	LPDP_TX5N	LPDP_SOC_TO_TCON_DATA_N<5>
AU47	LPDP_AUX_P	LPDP_SOC_TO_TCON_AUX_P
AU46	LPDP_AUX_N	LPDP_SOC_TO_TCON_AUX_N
AU50	LPDP_RCAL_P	LPDP_RCAL_POS
AU49	LPDP_RCAL_N	LPDP_RCAL_NEG
BB44	EDP_HPD	LPDP_TCON_TO_SOC_HPD
BE44	DISP_TOUCH_BSYNC0	GPIO_SOC_TO_GRAPE_DISPLAY_BSYNC0
BD45	DISP_TOUCH_BSYNC1	GPIO_SOC_TO_GRAPE_DISPLAY_BSYNC1
BC35	DISP_TOUCH_EB	GPIO_SOC_TO_DISPLAY_EB
BC46	DISP_POL	NC_DISPLAY_POL
BC45	DISP_I2C_SCL/DISP_SPMI_SCLK	NC_DISP_I2C_SCL
BC43	DISP_I2C_SDA/DISP_SPMI_SDATA	NC_DISP_I2C_SDA
AF49	DWI_CLK	GPIO_BRD_REV3
AG49	DWI_DO	GPIO_BRD_REV2
BE26	DP_EXT_TX0P	SOC_DP0_P_C
BE26	DP_EXT_TX0N	SOC_DP0_N_C
BF25	DP_EXT_TX1P	SOC_DP1_P_C
BE25	DP_EXT_TX1N	SOC_DP1_N_C
BF24	DP_EXT_TX2P	SOC_DP2_P_C
BE24	DP_EXT_TX2N	SOC_DP2_N_C
BF23	DP_EXT_TX3P	SOC_DP3_P_C
BE23	DP_EXT_TX3N	SOC_DP3_N_C
BC24	DP_EXT_AUX_P	SOC_TO_ACE_AUX_P_C
BB24	DP_EXT_AUX_N	SOC_TO_ACE_AUX_N_C
BC25	DP_EXT_RCAL_P	DP_EXT_RCAL_POS
BB25	DP_EXT_RCAL_N	DP_EXT_RCAL_NEG
BB45	DPTX_HPD	ACE_TO_SOC_HPD

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Net	Pin	Signal
NC_ISP_I2C0_SCL_1V8	V5	ISP_I2C0_SCL
NC_ISP_I2C0_SDA_1V8	T5	ISP_I2C0_SDA
ISP_I2C1_SCL_1V8	V7	ISP_I2C1_SCL
ISP_I2C1_SDA_1V8		ISP_I2C1_SDA
ISP_I2C2_SCL_1V8	W6	ISP_I2C2_SCL
ISP_I2C2_SDA_1V8	U4	ISP_I2C2_SDA
ISP_I2C3_SCL_1V8	T8	ISP_I2C3_SCL
ISP_I2C3_SDA_1V8	R8	ISP_I2C3_SDA
MIPI_PEARL_TO_SOC_CLK_P	BB1	MIPI0C_DPCLK
MIPI_PEARL_TO_SOC_CLK_N	BB2	MIPI0C_DNCLK
MIPI_PEARL_SOC_DATA_P<0>	BC1	MIPI0C_DPDATA0
MIPI_PEARL_SOC_DATA_N<0>	BC2	MIPI0C_DNDATA0
MIPI_PEARL_SOC_DATA_P<1>	BA1	MIPI0C_DPDATA1
MIPI_PEARL_SOC_DATA_N<1>	BA2	MIPI0C_DNDATA1
	BB4	MIPI1C_DPCLK
	BB5	MIPI1C_DNCLK
	BA4	MIPI1C_DPDATA0
	BA5	MIPI1C_DNDATA0
BC4	MIPI1C_DPDATA1	
BC5	MIPI1C_DNDATA1	

Pin	Signal	Net
V8	ISP_GPIO_0	GPIO_SOC_TO_FCAM2_SHTDWN_L
Y7	ISP_GPIO_1	GPIO_SOC_TO_PEARL_SHTDWN_L
R7	ISP_GPIO_2/SOC_DEBUG2/MTR_ISP_DOUT	GPIO_ISP_TO_ADAMS_RESET_L
T4	ISP_GPIO_3/MTR_ISP_SHTDWN	GPIO_ISP_TO_JASPER_SHTDWN_L
R6	ISP_GPIO_4/SOC_DEBUG3	NC_GPIO_ISP_TO_PENROSE_RST_L
R5	ISP_GPIO_5/SENSOR3_CLK	GPIO_RIGEL_TO_SOC_IRQ
T6	ISP_GPIO_6/ISP_FCAM_SPMI_SDATA/DISP_FCAM_SPMI_SDATA	ISP_SPMI_APOLLO_SDATA
T7	ISP_GPIO_7/ISP_FCAM_SPMI_SCLK/DISP_FCAM_SPMI_SCLK	ISP_SPMI_APOLLO_SCLK
W7	ISP_GPIO_8/ISP_SPMI_SDATA	ISP_SPMI_ADAMS_SDATA
R4	ISP_GPIO_9/ISP_SPMI_SCLK	ISP_SPMI_ADAMS_SCLK
T1	SENSOR0_CLK	CLK_SOC_TO_ADAMS_12MHZ
U1	SENSOR1_CLK	CLK_SOC_TO_FRONT_CAM_12MHZ
V1	SENSOR2_CLK	CLK_SOC_TO_PEARL_12MHZ
BE3	MIPI2C_DPCLK	
BE4	MIPI2C_DNCLK	
BF3	MIPI2C_DPDATA0	
BF4	MIPI2C_DNDATA0	
BD3	MIPI2C_DPDATA1	
BD4	MIPI2C_DNDATA1	
BF5	MIPI0C_REXT	MIPI0C_REXT
BF6	MIPI1C_REXT	
BF7	MIPI2C_REXT	

PLACE_NEAR=U0600.BF5.6MM

R0830
200
1%
1/32W
MF
01005

R0822
33
1/32W 5% MF
01005
CLK_SOC_TO_PEARL_12MHZ_R → CLK_SOC_TO_PEARL_12MHZ

R0812
33
1/32W 5% MF
01005
CLK_SOC_TO_ADAMS_12MHZ_R → CLK_SOC_TO_ADAMS_12MHZ

C0812
15PF
16V
NP0-C0G
01005-1

R0811
33
5% 1/32W
01005
CLK_SOC_TO_FRONT_CAM_12MHZ_R → CLK_SOC_TO_FRONT_CAM_12MHZ

C0811
15PF
16V
NP0-C0G
01005-1

DP_EXT_RCAL_POS
R0893
200
1%
1/32W
MF
01005
DP_EXT_RCAL_NEG

C0893
10PF
5%
16V
CERM
01005

LPDP_RCAL_POS
R0895
200
1%
1/32W
MF
01005
LPDP_RCAL_NEG

C0895
10PF
5%
16V
CERM
01005

LPDPRX_RCAL_POS
R0891
200
1%
1/32W
MF
01005
LPDPRX_RCAL_NEG

C0891
10PF
5%
16V
CERM
01005

PP1V8_SW1_CAM
R0805 681 1% 1/32W MF 01005
R0803 681 1% 1/32W MF 01005
ISP_I2C2_SCL_1V8
ISP_I2C2_SDA_1V8

PP1V8_SW1_CAM
R0850 681 1% 1/32W MF 01005
R0851 681 1% 1/32W MF 01005
ISP_I2C1_SCL_1V8
ISP_I2C1_SDA_1V8

PP1V8_SW1_CAM
R0852 681 1% 1/32W MF 01005
R0853 681 1% 1/32W MF 01005
ISP_I2C3_SCL_1V8
ISP_I2C3_SDA_1V8

SOC: PCIE

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

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NAND

WLAN/BT

BASEBAND

AC COUPLING CAPS ARE IN CONNECTOR PAGE

Signal (left)	Pin	SOC pin	Pin	Signal (right)
PCIE_NAND1_TO_SOC_TX_P	BF9	PCIE_RX0_P / PCIE_RX3_P	BF12	NC_90_PCIE_BB_TO_AP_TX_P
PCIE_NAND1_TO_SOC_TX_N	BE9	PCIE_RX0_N / PCIE_RX3_N	BE12	NC_90_PCIE_BB_TO_AP_TX_N
PCIE_SOC_TO_NAND1_TX_C_P	BC9	PCIE_TX0_P / PCIE_TX3_P	BC12	NC_90_PCIE_AP_TO_BB_TX_P
PCIE_SOC_TO_NAND1_TX_C_N	BB9	PCIE_TX0_N / PCIE_TX3_N	BB12	NC_90_PCIE_AP_TO_BB_TX_N

C0930 0.22UF 10% 01005 6.0WR-X5R
C0931 0.22UF 10% 01005 CER-X5R 6.3V

PCIE_SOC_TO_NAND1_TX_P
PCIE_SOC_TO_NAND1_TX_N

PCIE_SOC_TO_NAND1_REFCLK_P BE21 PCIE_REF_CLK0_P / PCIE_REF_CLK3_P BB22 NC_90_PCIE_AP_TO_BB_REFCLK_P
PCIE_SOC_TO_NAND1_REFCLK_N BF21 PCIE_REF_CLK0_N / PCIE_REF_CLK3_N BC22 NC_90_PCIE_AP_TO_BB_REFCLK_N
PCIE_NAND1_TO_SOC_CLKREQ_L BF38 PCIE_CLKREQ0* / PCIE_CLKREQ3* BF35 NC_PCIE_AP_BI_BB_CLKREQ_1V8_L
PCIE_SOC_TO_NAND1_RESET_L BF32 PCIE_PERST0* / PCIE_PERST3* BF41 NC_PCIE_AP_TO_BB_PERST_1V8_L

0R OPTION NEEDED FOR SECOND NAND

DUAL_NAND

C0932 0.22UF 10% 01005 6.0WR-X5R
C0933 0.22UF 10% 01005 CER-X5R 6.3V

PCIE_SOC_TO_NAND2_TX_P
PCIE_SOC_TO_NAND2_TX_N

PCIE_NAND2_TO_SOC_TX_P BF10 PCIE_RX1_P / PCIE_RX4_P BF13 NC_PCIE_RX4_P
PCIE_NAND2_TO_SOC_TX_N BE10 PCIE_RX1_N / PCIE_RX4_N BE13 NC_PCIE_RX4_N
PCIE_SOC_TO_NAND2_TX_C_P BC10 PCIE_TX1_P / PCIE_TX4_P BC13 NC_PCIE_TX4_P
PCIE_SOC_TO_NAND2_TX_C_N BB10 PCIE_TX1_N / PCIE_TX4_N BB13 NC_PCIE_TX4_N
PCIE_SOC_TO_NAND2_REFCLK_P BE20 PCIE_REF_CLK1_P / PCIE_REF_CLK4_P BB21 NC_PCIE_REF_CLK4_P
PCIE_SOC_TO_NAND2_REFCLK_N BF20 PCIE_REF_CLK1_N / PCIE_REF_CLK4_N BC21 NC_PCIE_REF_CLK4_N
PCIE_NAND2_TO_SOC_CLKREQ_L BF36 PCIE_CLKREQ1* / PCIE_CLKREQ4* BF40 GPIO_SOC_TO_BELLATRIX2_BOOST_EN
PCIE_SOC_TO_NAND2_RESET_L BC41 PCIE_PERST1* / PCIE_PERST4* BD42 NC_AP_TO_BB_COREDUMP_TRIG_1V8

DUAL_NAND

C0940 0.1UF 01005 X5R-CERM 6.3V
C0941 0.1UF 20% 01005 X5R-CERM 6.3V

PCIE_SOC_TO_WLAN_TX_P
PCIE_SOC_TO_WLAN_TX_N

PCIE_WLAN_TO_SOC_TX_P BF11 PCIE_RX2_P / PCIE_RX5_P BF14 NC_PCIE_RX5_P
PCIE_WLAN_TO_SOC_TX_N BE11 PCIE_RX2_N / PCIE_RX5_N BE14 NC_PCIE_RX5_N
PCIE_SOC_TO_WLAN_TX_C_P BC11 PCIE_TX2_P / PCIE_TX5_P BC14 NC_PCIE_TX5_P
PCIE_SOC_TO_WLAN_TX_C_N BB11 PCIE_TX2_N / PCIE_TX5_N BB14 NC_PCIE_TX5_N
PCIE_SOC_TO_WLAN_REFCLK_P BE19 PCIE_REF_CLK2_P / PCIE_REF_CLK5_P BB20 NC_PCIE_REF_CLK5_P
PCIE_SOC_TO_WLAN_REFCLK_N BF19 PCIE_REF_CLK2_N / PCIE_REF_CLK5_N BC20 NC_PCIE_REF_CLK5_N
PCIE_WLAN_TO_SOC_CLKREQ_L BF39 PCIE_CLKREQ2* / PCIE_CLKREQ5* BC34 NC_PCIE_CLKREQ5_L
PCIE_SOC_TO_WLAN_RESET_L BF45 PCIE_PERST2* / PCIE_PERST5* BE39 NC_GPIO_SOC_TO_BB_RESET_L

PCIE_RCAL_POS BC18 PCIE_RCAL_P / PAD_MTR_ANALOG_TEST_P Y44 MTR_ANALOG_TEST_POS
PCIE_RCAL_NEG BC17 PCIE_RCAL_N / PAD_MTR_ANALOG_TEST_N Y45 NC_PAD_MTR_ANALOG_TEST_NEG

MTR

PAD_MTR_RREF_P AB44 MTR_RFFE_POS
PAD_MTR_RREF_N AB45 MTR_RFFE_NEG
PAD_MTR_VREF_P AA43 NC_PAD_MTR_VREF_POS
PAD_MTR_VREF_N AA44 NC_PAD_MTR_VREF_NEG

R0949 39.2K 1% 1/32W MF 01005

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

PP1V8_EXT_SW1

R0950 47.0K 5% 1/32W MF 01005
R0930 47.0K 5% 1/32W MF 01005
R0940 47.0K 5% 1/32W MF 01005

PCIE_RCAL_POS

R0990 200 1% 1/32W MF 01005

PCIE_NAND1_TO_SOC_CLKREQ_L
PCIE_NAND2_TO_SOC_CLKREQ_L
PCIE_WLAN_TO_SOC_CLKREQ_L

PCIE_RCAL_NEG

C0990 10PF 5% 16V CERM 01005

BB HAS A 100K PU ON THEIR SIDE

PCIE_SOC_TO_NAND1_RESET_L
PCIE_SOC_TO_NAND2_RESET_L
PCIE_SOC_TO_WLAN_RESET_L

R0941 100K 5% 1/32W MF 01005
R0931 100K 5% 1/32W MF 01005
R0952 100K 5% 1/32W MF 01005

SOC: AOP

AOP I2C PULL-UPS

PP1V8 S3

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

I2C_AOP_I2CM0_SCL_1V8
I2C_AOP_I2CM0_SDA_1V8
I2C_AOP_I2CM1_SCL_1V8
I2C_AOP_I2CM1_SDA_1V8

PP1V8 S3

NOSTUFF NOSTUFF
R0090 R0091
10K 5% 1/32W MF 01005
10K 5% 1/32W MF 01005

OUT
IN
IN

GPIO_PMU_TO_SOC_IRQ_L
GPIO_APOLLO_TO_PMU_SOC_IRQ_L

U0600
ARUBA-4G-21NM-H
FCBGA
SYM 7 OF 20

AOP GPIO
GPIO MOLY TO AOP IRQ — AOP_FUNC[0] — AD1
GPIO PHOSPHORUS TO AOP IRQ — AOP_FUNC[1] — AD6
SPI MOLY CS L — AOP_FUNC[2] — AD2
GPIO KOBOL TO AOP INT — AOP_FUNC[3] — AF6
SPI KOBOL CS L — AOP_FUNC[4] — AD4
GPIO KOBOL TO AOP MOTION INT — AOP_FUNC[5] — AE1
SPI PHOSPHORUS CS L — AOP_FUNC[6] — AE3
GPIO ALS C3 TO AOP IRQ L — AOP_FUNC[7] — AF1
GPIO ALS C4 TO AOP IRQ L — AOP_FUNC[8] — AF2
GPIO ORION TO AOP IRQ — AOP_FUNC9/AOP_LPPLL — AF8
GPIO ROSALINE TO AOP IRQ L — AOP_FUNC[10] — AF5
— AOP_FUNC[11] — AF3
— AOP_FUNC[12] — AG5
GPIO GRAPE TO AOP IRQ L — AOP_FUNC13/AOP_PDM_CLK4 — AF4
GPIO GRAPE TO AOP TIME SYNC — AOP_FUNC14/AOP_PDM_CLK3 — AC6

AOP I2C
I2C_AOP_I2CM0_SCL_1V8 — AOP_I2CM0_SCL — AE7
I2C_AOP_I2CM0_SDA_1V8 — AOP_I2CM0_SDA — AE6
I2C_AOP_I2CM1_SCL_1V8 — AOP_I2CM1_SCL — AD7
I2C_AOP_I2CM1_SDA_1V8 — AOP_I2CM1_SDA — AD8

AOP I2S
GPIO GRAPE TO SCORPIUS TIME SYNC — AOP_I2S0_BCLK — AH1
GPIO TITUS TO AOP B2B DETECT — AOP_I2S0_DIN — AK5
NC GPM TO AOP DMIC DISABLE WARN L — AOP_I2S0_DOUT — AG8
NC AOP I2S0 LRCK — AOP_I2S0_LRCK — AH3
GPIO AOP TO SCORPIUSMCU NRST L — AOP_I2S0_MCK — AJ4

DMIC2 MIC SCLK — AOP_I2S1_BCLK/AOP_PDM_IN1_CLK — AG1
SLG TO AOP DMIC DISABLE WARN L — AOP_I2S1_DIN — AG2
DMIC3 MIC SD — AOP_I2S1_DOUT/AOP_PDM_IN2_DAT — AH6
DMIC4 MIC SCLK — AOP_I2S1_LRCK/AOP_PDM_IN2_CLK — AG7
DMIC3 MIC SCLK — AOP_I2S1_MCK/AOP_PDM_CLK2 — AJ5

AOP PDM
DMIC1 MIC SCLK — AOP_PDM_CLK0 — AF7
DMIC1 MIC SD — AOP_PDM_DATA0 — AK8
DMIC2 MIC SD — AOP_PDM_DATA1 — AE4
NC GPIO AOP TO NFC — AOP_PDM_DATAOUT — AG6
GPIO AOP TO ORION HWEN — AOP_PDM_OUT0_CLK — AJ7

AOP SPI
SPI SENSORS MISO — AOP_SPI_MISO — AC3
SPI SENSORS MOSI R — AOP_SPI_MOSI — AC2
SPI SENSORS SCLK R — AOP_SPI_SCLK — AC1

AOP UART
NC UART BB TO AOP TXD — AOP_UART0_RXD — AC5
NC UART AOP TO BB TXD — AOP_UART0_TXD — AC4
GPIO AOP TO WLAN CONTEXT B — AOP_UART1_RXD — AD3
GPIO AOP TO WLAN CONTEXT A — AOP_UART1_TXD — AD5
UART GRAPE TO AOP TX — AOP_UART2_RXD — AC7
UART AOP TO GRAPE TX — AOP_UART2_TXD — AC8

SPI SENSORS MOSI — R1020 33 — IN
SPI SENSORS SCLK — R1025 33

NUB GPIO
NUB_DOCK_ATTENTION/NUB_PDM_CLK1 — AM2 — NC NUB DOCK ATTENTION
NUB_DOCK_CONNECT — AM5 — USB TO SOC DOCK CONNECT
NUB_FUNC[15] — AM8 — NC NUB FUNC15
NUB_FUNC[16] — AK2 — GPIO SCORPIUS TO AOP IRQ
NUB_FUNC[17] — AM6 — NC NUB FUNC17
NUB_FUNC[18] — AM5 — NC NUB FUNC18
NUB_FUNC[19] — AM4 — NC NUB FUNC19
NUB_FUNC[20] — AN7 — NC NUB FUNC20
NUB_FUNC[21] — AN4 — NC AOP TO BBPMU FORCE PWM
NUB_FUNC[22] — AL1 — NC NUB FUNC22

NUB SPMI
NUB_SPMI_SCLK — AM7 — NUB SPMI SCLK
NUB_SPMI_SDATA — AL7 — NUB SPMI SDATA

NUB SWD
NUB_SWD_TCK_OUT — AK3 — SWD PERIPHERAL SWCLK
NUB_SWD_TMS0 — AL3 — NC SWD BB SWDIO
NUB_SWD_TMS1 — AN6 — SWD LANAI SWDIO

NUB JTAG
JTAG_SEL — AM1 — JTAG SOC SEL
JTAG_TCK — AP1
JTAG_TDI — AP4
JTAG_TDO — AP3 — TP JTAG SOC TDO
JTAG_TMS — AP7
JTAG_TRST* — AN8 — TP JTAG SOC TRST L

SMC I2C
SMC_I2CM0_SCL — AH5 — I2C_SMC_I2CM0_SCL_1V8
SMC_I2CM0_SDA — AH7 — I2C_SMC_I2CM0_SDA_1V8
SMC_I2CM1_SCL/SMC_UART1_TXD — AG3 — I2C_SMC_I2CM1_SCL_1V8
SMC_I2CM1_SDA/SMC_UART1_RXD — AJ6 — I2C_SMC_I2CM1_SDA_1V8
SMC_I2CM2_SCL — AL6 — I2C_SMC_I2CM2_SCL_1V8
SMC_I2CM2_SDA — AL6 — I2C_SMC_I2CM2_SDA_1V8
SMC_I2CM3_SCL — AK6 — I2C_SMC_I2CM3_SCL_1V8
SMC_I2CM3_SDA — AJ1 — I2C_SMC_I2CM3_SDA_1V8
SMC_I2CM4_SCL — AK4 — NC I2C SMC I2CM4 SCL 1V8
SMC_I2CM4_SDA — AL4 — NC I2C SMC I2CM4 SDA 1V8

SMC UART
SMC_UART0_RXD — AJ8 — NC SMC UART0 RXD
SMC_UART0_TXD — AG4 — SMC TO USBPD RST L

SMC GPIO
SMC_GPIO0 — AJ3 — GPIO POTOMAC TO SOC TO PMU IRQ L
SMC_GPIO1 — AJ2 — GPIO ACE TO SMC IRQ L

CLOCKS AND RESET
RT_CLK32768 — AM3 — CLK PMU TO AOP 32K
CLK24M_OUT — AK1 — CLK GRAPE 24MHZ — R0731 33 — CLK SOC TO GRAPE 24MHZ
CFSB_AON — AN3 — RESET PMU TO SYSTEM L
COLD_RESET* — AN2 — RESET PMU TO SYSTEM L R CRESET
AON_SLEEP1_RESET* — AN1 — NC AON SLEEP1 RESET L
WDOG — AP6 — WDOG SOC

PP1V8 S3
R0681 47.0K 1/32W 5% MF 01005
R0680 47.0K 1/32W 5% MF 01005
R0682 47.0K 1/32W 5% MF 01005

FROM SOC DATASHEET SEC:5.24.1

JTAG SOC TCK
TP JTAG SOC TDI
JTAG SOC TMS

PP1V8 S3
R0683 10K 5% 1/32W MF 01005

R0610 0.00 1/32W MF
RESET PMU TO SYSTEM L
C0683 0.1UF 6.3V 20% X5R-CERM

SMC I2C PULL-UPS

PP1V8 S3

R0850 4.7K 1/32W 5% MF 01005
R0851 4.7K 1/32W 5% MF 01005
R0603 4.7K 1/32W 5% MF 01005
R0604 4.7K 1/32W 5% MF 01005
R0206 4.7K 1/32W 5% MF 01005
R0102 4.7K 1/32W 5% MF 01005
R0841 2.2K 1/32W 5% MF 01005
R0842 2.2K 1/32W 5% MF 01005

I2C_SMC_I2CM0_SCL_1V8
I2C_SMC_I2CM0_SDA_1V8
I2C_SMC_I2CM1_SCL_1V8
I2C_SMC_I2CM1_SDA_1V8
I2C_SMC_I2CM2_SCL_1V8
I2C_SMC_I2CM2_SDA_1V8
I2C_SMC_I2CM3_SCL_1V8
I2C_SMC_I2CM3_SDA_1V8

THESE GATES HAVE BACKPOWER PROTECTION

PP1V8 EXT SW1
C1031 0.1UF 6.3V 20% X5R-CERM 01005
U1031 74AUP1G34GX SOT1226
R1032 33 PLACE_NEAR=U0600.AK3:13MM
SWD PERIPHERAL SWCLK — SWD PER NAND1 SWCLK R — SWD NAND1 SWCLK
NC

PP1V8 EXT SW1
C1035 0.1UF 20% X5R-CERM 01005
U1035 74AUP1G34GX SOT1226
R1035 33 PLACE_NEAR=U0600.AK3:13MM
SWD PERIPHERAL SWCLK — SWD PER NAND2 SWCLK R — SWD NAND2 SWCLK
NC

PP1V8 S2 GRAPE
C1032 0.1UF 6.3V 20% X5R-CERM 01005
U1032 74AUP1G34GX SOT1226
R1033 33 PLACE_NEAR=U0600.AK3:13MM
SWD PERIPHERAL SWCLK — SWD PER GRAPE SWCLK R — SWD LANAI SWCLK
NC

PP1V8 S2 GRAPE
R0612 1.00K 5% 1/32W MF 01005

SWD LANAI SWDIO

PP1V8 S3
C1033 0.1UF 6.3V 20% X5R-CERM 01005
U1034 74AUP1G34GX SOT1226
R1034 33 PLACE_NEAR=U0600.AK3:13MM
SWD PERIPHERAL SWCLK — SWD PER BB SWCLK R — NC SWD BB SWCLK
NC

U0600
ARUBA-4G-21NM-H
FCBGA
SYM 11 OF 20

U0600
ARUBA-4G-21NM-H
FCBGA
SYM 8 OF 20

PP1V8_S3

C1215 1UF
C1216 1UF
C1217 1UF
C1218 12PF
C1219 100PF

C1220 14UF
C1221 14UF
C1222 14UF

PP1V1_S3

PP1V2_SOC

C1266 0.1UF
C1265 2.2UF
C1264 0.1UF

C12D4 1.1UF
C12D5 0.22UF
C12D2 0.01UF
C12D3 18PF

PP1V1_S3

C1223 4.3UF
C1224 4.3UF
C1225 4.3UF
C1226 4.3UF
C1227 4.3UF
C1228 4.3UF
C1229 4.3UF
C1235 4.3UF
C1236 4.3UF
C1234 4.3UF

NC_VDDQL_SENSE

PPVDD_CPU_SRAM

VDD_CPU_SRAM: 1.6V @ 3000MA

C1463 14UF
C1450 14UF
C1410 14UF
C1452 14UF
C1407 14UF
C1459 12PF
C1458 100PF

PPVDD_GPU_SRAM

VDD_GPU_SRAM: 1.06V @1400MA

C1470 14UF
C1471 14UF
C1451 14UF
C1453 14UF

VDDIO11_DDRQ/1/2 1.1V @ 1700MA

PPVDD_S1_OL

C1201 1.5UF
C1202 1UF
C1209 12PF

C1203 1UF
C1204 1UF
C1205 1UF
C1206 1UF
C1208 100PF

C1214 0.47UF
C1210 0.47UF
C1211 0.47UF
C1212 0.47UF
C1213 0.47UF

C1478 100PF
C1479 12PF

PPVDD_S1_DCS

C1445 14UF
C1446 14UF
C1447 14UF
C1448 14UF

VDD_LOW: 0.8V @ 68MA (AOP)

PP0V775_S2_AOP

C12A0 4.3UF
C12A1 2.2UF
C12A2 0.22UF
C12A3 12PF
C12A4 100PF

PP0V775_S2_AOP
R12D0 10
PP0V775_S2_SOC_AOP_FLPPLL

C12D0 0.47UF

PP0V775_S2_AOP
R12D1 100
PP0V775_S2_SOC_AOP_ULPPLL

C12D1 4.7UF

PPVDD_S1_SOC
VDD_FIXED: 0.8V @ 4840MA

C148E 100PF

C1400 14UF
C1402 14UF
C1405 14UF
C1411 14UF

C1401 14UF
C1474 14UF
C1404 14UF
C1403 14UF
C1461 14UF

XW1100
SHORT-10L-0.1MM-SM
ADC_SOC_TO_PMU_VDD_SOC_R
ADC_SOC_TO_PMU_VDD_SOC

PLACE_NEAR=U0600.AH28:SMM

VDD_SOC_SENSE

SYNC_MASTER+DEV_REV_0.40
SYNC_DATE=12/17/2017

PAGE TITLE
SOC: POWER (DDR,SRAM)

DRAWING NUMBER
SIZE

VDD12_PLL_CPU: 1.2V @ 7MA
VDD12_PLL_SOC: 1.2V @ 4MA
VDD12_PLL_GPU: 1.2V @ 7MA
VDD12_PLL_LPDP: 1.2V @ 9MA
VDD12_PCIE_REFBUF: 1.2V @ 48MA
VDD12_LPDP_TX: 1.2V @ 45MA
VDD12_LPDP_RX: 1.2V @ 55MA
VDD12_USB3: 1.2V @ 25MA
VDD12_DP_EXT: 1.2V @ 40MA

VDD18_AOP: 1.8V @ TBDMA
VDD18_USB: 1.8V @ 7MA
VDD18_TSADC: 1.8V @ 10.4MA
VDDIO18_GRP: 1.8V @ TBDMA
VDD18_MIPI: 1.8V @ 2MA
VDD18_XTAL: 1.8V @ 2MA
VDD18_LPOSC: 1.8V @ 1MA
VDD18_FMON: 1.8V @ 1MA
VDD18_PCIE: 1.8V @ 81.7MA
VDD33_USB: 3.3V @ 5MA

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
138S000049	138S0831		C1121 & MORE	NDAR-//0ROBLEM:19974064

U0600
ARUBA-4G-21NM-H
FCBGA
SYM 12 OF 20

PP1V2_SOC

Pin	Signal
AY24	VDD12_DP_EXT
AY25	VDD12_DP_EXT
AY14	VDD12_LPDP_RX
AY15	VDD12_LPDP_RX
AY16	VDD12_LPDP_RX
BA37	VDD12_LPDP_TX
BA38	VDD12_LPDP_TX
BA39	VDD12_LPDP_TX
AY20	VDD12_PCIE
AY21	VDD12_PCIE
AY22	VDD12_PCIE
AY23	VDD12_PCIE_REFBUF
AT24	VDD12_PLL_ANE
AF34	VDD12_PLL_ECPU
AP24	VDD12_PLL_GPU
AY36	VDD12_PLL_LPDP
AJ35	VDD12_PLL_PCPU
AP23	VDD12_PLL_SOC
AW33	VDD33_USB_C00
AW34	VDD33_USB_C01
AW32	VDD33_USB_C1

Pin	Signal
AE37	VDD18_ADC
AF39	VDD18_AMUX
AG38	VDD18_EFUSE1
AP16	VDD18_EFUSE2
AF38	VDD18_EFUSE3
AR17	VDD18_FMON
AY18	VDD18_MIPIC
AL29	VDD18_TSADC_ANE
AH33	VDD18_TSADC_CPU058
AU31	VDD18_TSADC_CPU126
AT37	VDD18_TSADC_CPU34
AM35	VDD18_TSADC_CPU79
AB24	VDD18_TSADC_GPU0
AK14	VDD18_TSADC_SOC0
AA23	VDD18_TSADC_SOC1
	VDD18_TSADC_SOC2
AV13	VDD18_ULPPLL
BB34	VDD18_USB_C00
BA35	VDD18_USB_C01
BA33	VDD18_USB_C1
AY26	VDD18_USB3
BA23	VDD18_XTAL
AP12	VDDIO18_AOP
AR13	VDDIO18_AOP
AT12	VDDIO18_AOP
AU13	VDDIO18_AOP
AV12	VDDIO18_AOP
AL13	VDDIO18_GRP1
AM12	VDDIO18_GRP1
AN13	VDDIO18_GRP1
AY27	VDDIO18_GRP2
AY29	VDDIO18_GRP2
AY31	VDDIO18_GRP2
BA28	VDDIO18_GRP2
BA30	VDDIO18_GRP2
BA32	VDDIO18_GRP2
AG40	VDDIO18_GRP3
AH40	VDDIO18_GRP3
AJ39	VDDIO18_GRP3
AK40	VDDIO18_GRP3
AL39	VDDIO18_GRP3
AM40	VDDIO18_GRP3
AV40	VDDIO18_GRP3
AW39	VDDIO18_GRP3
AE39	VDDIO18_MTR

DOES THIS NEED FILTER?
PP1V8_EXT_SW1
DOES THIS NEED FILTER?
PP1V8_EXT_SW1

PP1V8_MICS_FMON
PP1V8_EXT_SW1

PP1V8_EXT_SW1

R12A0
49.9
1%
1/32W
MF

PP1V8_EXT.SW1

C12E0
2.2UF
20%
6.3V
X5R-CERM
0201

R12E0
100
0.1%
1/32W
MF

PP1V8_S1

VDD18_ULPPLL

C12F0
4.7UF
20%
CER-X5R
0201

PP1V8_XTAL_FILT

PP1V8_EXT_SW1

FL1210
240-OHM-25%-0.20A-1.0DCR

C12G0
0.1UF
10%
6.3V
0201

C12G1
2.2UF
20%
6.3V
0201

X5R-CERM

PP1V8_S3

C1256
8.2PF
+/-0.5PF
50V
C0G-CERM
201

C1255
0.22UF
10%
6.3V
CER-X5R
01005

2.2UF
C1254
20%
6.3V
X5R-CERM
0201

PP1V8_EXT_SW1

C1260
10UF
20%
6.3V
CERM-X5R
0402

CRITICAL

C1261
2.2UF
20%
6.3V
X5R-CERM
0201

2.2UF
C1262
20%
6.3V
X5R-CERM
0201

C1263
2.2UF
20%
6.3V
X5R-CERM
0201

MTR CONNECTION TO BE CONFIRMED WITH SEG

PP1V2_SOC

C12B0
2.2UF
20%
6.3V
X5R-CERM
0201

C12B1
0.22UF
10%
6.3V
CER-X5R
01005

C12B2
0.22UF
10%
16V
CER-X5R
01005

C12B3
18PF
5%
16V
C0G
01005

CRITICAL
C12B6
4.3UF
20%
4V
CERM
0402

CRITICAL
C12B5
4.3UF
20%
4V
CERM
0402

CRITICAL
C12B4
4.3UF
20%
4V
CERM
0402

PP1V2_SOC

CRITICAL
C12C0
4.3UF
20%
4V
CERM
0402

C12C3
0.01UF
10%
6.3V
X5R
01005

C12C4
18PF
5%
16V
C0G
01005

R065D
0.00
0%
1/32W
MF
01005

PP1V2_PCIE_REFBUF

CRITICAL
C12GC
4.3UF
20%
4V
CERM
0402

PP1V2_SOC

C12GD
0.1UF

01005

PP1V2_SOC

CRITICAL
C12I0
4.3UF
20%
4V
CERM
0402

C12I3
0.01UF
10%
6.3V
X5R
01005

C12I4
15PF
5%
16V
NP0-C0G
01005-1

PP3V3_USB

C12H0
0.1UF
20%
6.3V
X5R-CERM
01005

131S00290

PP1V8_EXT_SW1

CRITICAL
C12H4B
4.3UF
20%
4V
CERM
0402

CRITICAL
C12H4A
4.3UF
20%
4V
CERM
0402

CRITICAL
C12I40
4.3UF
20%
4V
CERM
0402

C1241
2.2UF
20%
6.3V
X5R-CERM
0201

C1244
0.22UF
10%
6.3V
CER-X5R
01005

PP1V8_EXT_SW1

CRITICAL
C12I1
4.3UF
20%
4V
CERM
0402

PP1V8_EXT_SW1

CRITICAL
C12J0
4.3UF
20%
4V
CERM
0402

C1242
2.2UF
20%
6.3V
X5R-CERM
0201

C1271
0.22UF
10%
6.3V
CER-X5R
01005

PP1V8_EXT_SW1

C1270
0.22UF
10%
6.3V
CER-X5R
01005

SYNC_MASTER=DEV_REV_0.40
SYNC_DATE=12/17/2017
PAGE TITLE
SOC: POWER (IO)
DRAWING NUMBER
SIZE

U0600
ARUBA-4G-21NM-H
FCBGA
SYM 9 OF 20

VDD_GPU: 1.06V @ 13800MA
0.8V @ 12400MA
0.7V @ 8700MA
0.575V @ 4400MA

PPVDD_GPU

VDD_CPU: 1.06V @ 13800MA
0.80V @ 8900MA
0.575V @3700MA

PPVDD_CPU

C1369
12PF
5%
25V
NP0-C0G
0201

C1368
100PF
5%
25V
C0G
0201

C1308
100PF
5%
25V
C0G
0201

C1309
12PF
5%
25V
NP0-C0G
0201

C1380 C1381 C1382 ... 14UF 20% 4V X5R 0402-D2X-1

C1385 C1386 C1387
14UF 20% 4V X5R 0402-D2X-1

C1310 C1311 C1312 C1313 C1314 C1315 C1316 C1317
14UF 20% 4V X5R 0402-D2X-1

XW1300
SHORT-10L-0.1MM-SM
PLACE_NEAR=U0600.AK33.5MM
ADC_SOC_TO_PMU_VDD_CPU_R   ADC_SOC_TO_PMU_VDD_CPU

PPVDD_ECPU

C1441 C1443 C1444
14UF 20% 4V X5R 0402-D2X-1

XW1301
SHORT-10L-0.1MM-SM
PLACE_NEAR=U0600.AF28.5MM
ADC_SOC_TO_PMU_VDD_GPU   ADC_SOC_TO_PMU_VDD_GPU_R

VDD_PCPU_SENSE

VDD_GPU_SENSE

PAGE TITLE
SOC: POWER (CPU, GPU)
DRAWING NUMBER   SIZE

VDD_FIXED_CPU: 0.8V @ 6MA
VDD_FIXED_PCIE:0.8V @ 290.1MA
VDD_FIXED_PCIE_REFBUF: 0.8V @ 20MA
VDD_FIXED_USB: 0.8V @ 6.6MA
VDD_FIXED_USB1: 0.8V @ 89.4MA
VDD_FIXED_USB3: 0.8V @ 89.4MA
VDD_FIXED_PLL_SOC: 0.8V @ 10MA
VDD_FIXED_PLL_DDR: 0.8V @ 4MA
VDD_FIXED_PLL_GPU: 0.8V @ 6MA
VDD_FIXED_PLL_LDPD: 0.8V @ 4MA
VDD_FIXED_MIPI: 0.8V @ 10MA
VDD_FIXED_PLL_LPDP: 0.8V @ 2MA
VDD_FIXED_LPDP_TX: 0.8V @ 43.2MA
VDD_FIXED_LPDP_RX: 0.8V @ 5.2MA

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

VDD_FIXED: 0.8V @ 4840MA

PPVDD_S1_FIXED

C1430 100PF 5% 25V C0G 0201

C1431 14UF 20% 4V X5R 0402-D2X-1
C1432 14UF 20% 4V X5R 0402-D2X-1
C1433 14UF 20% 4V X5R 0402-D2X-1
C1434 14UF 20% 4V X5R 0402-D2X-1
C1435 14UF 20% 4V X5R 0402-D2X-1
C1436 14UF 20% 4V X5R 0402-D2X-1
C1437 14UF 20% 4V X5R 0402-D2X-1
C1438 14UF 20% 4V X5R 0402-D2X-1

Pin	Signal
AB37	VDD_FIXED
AC14	VDD_FIXED
AG14	VDD_FIXED
AG16	VDD_FIXED
AG18	VDD_FIXED
AG20	VDD_FIXED
AG22	VDD_FIXED
AG24	VDD_FIXED
AG26	VDD_FIXED
AG28	VDD_FIXED
AG30	VDD_FIXED
AG32	VDD_FIXED
AG39	VDD_FIXED
AJ16	VDD_FIXED
AJ18	VDD_FIXED
AJ20	VDD_FIXED
AJ22	VDD_FIXED
AJ24	VDD_FIXED
AJ26	VDD_FIXED
AJ28	VDD_FIXED
AJ30	VDD_FIXED
AJ32	VDD_FIXED
AL14	VDD_FIXED
AL16	VDD_FIXED
AL18	VDD_FIXED
AL20	VDD_FIXED
AL22	VDD_FIXED
AL24	VDD_FIXED
AL26	VDD_FIXED
AL28	VDD_FIXED
AL30	VDD_FIXED
AM39	VDD_FIXED
AN14	VDD_FIXED
AN16	VDD_FIXED
AN18	VDD_FIXED
AN20	VDD_FIXED
AN22	VDD_FIXED
AN24	VDD_FIXED
AN26	VDD_FIXED
AR16	VDD_FIXED
AR18	VDD_FIXED
AR20	VDD_FIXED
AR22	VDD_FIXED
AR24	VDD_FIXED
AR26	VDD_FIXED
AU16	VDD_FIXED
AU18	VDD_FIXED
AU20	VDD_FIXED
AU22	VDD_FIXED
AU24	VDD_FIXED
AU26	VDD_FIXED
AU28	VDD_FIXED
AU30	VDD_FIXED
AU39	VDD_FIXED
AW28	VDD_FIXED
AW30	VDD_FIXED
AW32	VDD_FIXED
Y21	VDD_FIXED
Y25	VDD_FIXED
Y29	VDD_FIXED
Y35	VDD_FIXED

Signal	Pin
VDD_FIXED_PCPU	AK35
VDD_FIXED_ECPU	AF35
VDD_FIXED_PLL_ANE	AT26
VDD_FIXED_DP_EXT	AW24
VDD_FIXED_DP_EXT	AW25
VDD_FIXED_LPDP_RX	AW14
VDD_FIXED_LPDP_RX	AW15
VDD_FIXED_LPDP_RX	AW16
VDD_FIXED_LPDP_TX	AY37
VDD_FIXED_LPDP_TX	AY38
VDD_FIXED_LPDP_TX	AY39
VDD_FIXED_MIPIC	AW18
VDD_FIXED_PCIE	AW20
VDD_FIXED_PCIE	AW21
VDD_FIXED_PCIE	AW22
VDD_FIXED_PCIE_REFBUF	AW23
VDD_FIXED_MTR	AF40
VDD_FIXED_PLL_DDR0	AE9
VDD_FIXED_PLL_DDR1	AC9
VDD_FIXED_PLL_DDR2	R17
VDD_FIXED_PLL_DDR3	R25
VDD_FIXED_PLL_DDR4	
VDD_FIXED_PLL_DDR5	R29
VDD_FIXED_PLL_DDR6	R40
VDD_FIXED_PLL_DDR7	W42
VDD_FIXED_PLL_GPU	AR25
VDD_FIXED_PLL_LPDP	AW36
VDD_FIXED_PLL_SOC	AR23
VDD_FIXED_USB_C00	BA35
VDD_FIXED_USB_C01	AY35
VDD_FIXED_USB_C1	AY33
VDD_FIXED_USB3	AW26

PPVDD_S1_FIXED
PPVDD_S1_FIXED
PPVDD_S1_FIXED
PPVDD_S1_FIXED
PPVDD_S1_FIXED
PPVDD_S1_FIXED
PPVDD_S1_FIXED
PPVDD_S1_FIXED
PPVDD_S1_FIXED
PPVDD_S1_FIXED
PPVDD_S1_FIXED
PPVDD_S1_FIXED
PPVDD_S1_FIXED

PPVDD_S1_FIXED

CRITICAL
C1496 4.3UF 20% 4V CERM 0402

PPVDD_S1_FIXED_PCIE_R

R145D 0.00 0% 1/32W MF 01005

PPVDD_S1_FIXED

C14GD 0.1UF 20% 6.3V X5R-CERM 101005

C14GC 4.3UF 20% 4V CERM 0402

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

PP1V1_DDR_PLL_SOC_FILT
VDDIO11_PLL_DDR0-7 1.1V @ 17MA

PPVDD_S1_FIXED

C1230 2.2UF 20% 6.3V X5R-CERM 0201
C1231 0.22UF 10% 6.3V CER-X5R 01005
C1232 220PF 1% 16V C0G 01005
C14GB 0.1UF 20% 6.3V X5R-CERM 0100B
C14GA 0.1UF 20% 6.3V X5R-CERM 01005

C14A1 2.2UF 20% 6.3V X5R-CERM 0201

C1493 2.2UF 20% 6.3V X5R-CERM 0201

PAGE TITLE
SOC: POWER (SRAM, SOC)
DRAWING NUMBER
SIZE

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

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

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

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

VSS_DDR_SENSE   AL12   TPT_VSS_DDR_SENSE
VSS_PCPU_SENSE   AK32   TPT_VSS_PCPU_SENSE
VSS_SENSE   AG29   TPT_VSS_SENSE

PAGE TITLE

SOC: GND

DRAWING NUMBER   SIZE

U0600
ARUBA-4G-21NM-H
FCBGA
SYM 13 OF 20

U0600
ARUBA-4G-21NM-H
FCBGA
SYM 14 OF 20

U0600
ARUBA-4G-21NM-H
FCBGA
SYM 16 OF 20

U0600
ARUBA-4G-21NM-H
FCBGA
SYM 17 OF 20

SYNC_MASTER+DEV_REV_0.40
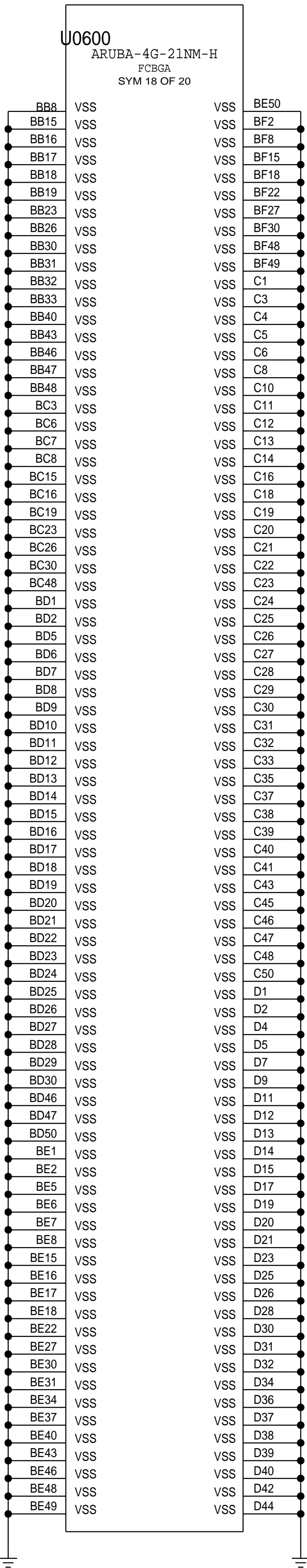SYNC_DATE+12/17/2017
PAGE TITLE

SOC: GND-2

DRAWING NUMBER
SIZE

S4E NAND1

FL1852
0.00
0%
1/32W
MF
01005

PP0V9_NAND1_VDD_PLL

C1822
4UF
20%
6.3V
CER-X5R
0201

C1823
0.1UF
10%
16V
X5R-CERM
0201

FL1850
0.00
0%
1/32W
MF
01005

PP1V8_NAND1_AVDD_H

PP1V8 EXT SW1

C1821
0.1UF
16V
X5R-CERM
0201

C1820
4UF
20%
6.3V
CER-X5R
0201

PP1V8_NAND1_AVDD18_PLL

R1851
0.00
0%
1/32W
MF
0201
NO_XNET_CONNECTION=1

C1826
0.1UF
10%
16V
X5R-CERM
0201

C1825
2.2UF
20%
6.3V

PP2V63 OTP

PP0V9 NAND

C1800 C1801 15UF 15UF 20% 6.3V CERM 0402

C1802 15UF 20% 6.3V CERM 0402

C1803 15UF 20% 6.3V CERM 0402

C1804 15UF 20% 6.3V CERM 0402

C1805 C1806 15UF 20% 6.3V CERM 0402

C1807 15UF 20% 6.3V CERM 0402

C1830 C1831 15UF 15UF 20% 6.3V CERM 0402

C1832 C1833 15UF 15UF 20% 6.3V CERM 0402

C1834 C1835 15UF 10.0UF 20% 6.3V CERM 0402

C1836 C1838 1.0UF X5R 0201-1

C1839 C1839A 12PF 2.7PF NP0-COG 0201

C181A 2.7PF +/-0.05PF COG-CERM 0201

C1808 15UF 20% 6.3V CERM 0402

C1809 15UF 20% CERM 0402

C1814 1.0UF X5R 0201-1

C1815 1.0UF 6.3V X5R 0201-1

C1816 1.0UF 6.3V X5R 0201-1

C1817 1.0UF 6.3V X5R 0201-1

C1818 100PF 5% C0G 0201

C1819 12PF 5% 25V NP0-C0G 0201

C1840 10UF 6.3V CERM-X5R 0402-2

C1841 10UF 6.3V CERM-X5R 0402-2

C1842 10UF 6.3V CERM-X5R 0402-2

C1843 10UF 6.3V CERM-X5R 0402-2

C1844 10UF 6.3V CERM-X5R 0402-2

C1845 10UF 6.3V CERM-X5R 0402-2

C1846 10UF 6.3V CERM-X5R 0402-2

C1847 10UF 6.3V CERM-X5R 0402-2

C1848 10UF 6.3V CERM-X5R 0402-2

C184A 2.7PF 25V COG-CERM 0201

C1849 10UF 6.3V CERM-X5R 0402-2

C1850 10UF 6.3V CERM-X5R 0402-2

C1851 10UF 20% 6.3V CERM-X5R 0402-2

C1855 1.0UF 6.3V X5R 0201-1

C1856 1.0UF 6.3V X5R 0201-1

C1857 1.0UF 6.3V X5R 0201-1

C1858 100PF 5% C0G 0201

C1859 12PF 5% 25V NP0-C0G 0201

NAND1_ANI1_VREF
NAND1_ANI0_VREF

U1800
SDMPEGFIH-512G
LGA
CRITICAL
OMIT_TABLE

PCI_AVDD_CLK_1
PCI_AVDD_CLK_2
PCI_AVDD_H
PCI_VDD_1
PCI_VDD_2
AVDD18_PLL
ANI0_VREF
ANI1_VREF
VDD
VDDIO
VPP
VDD_PLL
NC

CLK_SOC_TO_NAND1_24MHZ — M3 CLK_IN
PCIE_SOC_TO_NAND1_REFCLK_P — K11 PCIE_REFCLK_P GND_VOID=TRUE
PCIE_SOC_TO_NAND1_REFCLK_N — J12 PCIE_REFCLK_M GND_VOID=TRUE
PCIE_NAND1_TO_SOC_CLKREQ_L — P5 PCIE_CLKREQ_N
PCIE_NAND1_RESREF — H7 PCI_RESREF

R1804 3.01K 1% 1/32W MF 01005
NOSTUFF
C1899 10PF 25V C0G-CERM 01005
BOOM=NAND1

PCIE_SOC_TO_NAND1_TX_P — M11 PCIE_RX0_P GND_VOID=TRUE
PCIE_SOC_TO_NAND1_TX_N — N12 PCIE_RX0_M GND_VOID=TRUE

C1880 0.22UF 10% CER-X5R 6.3V CRITICAL CRITICAL
C1881 0.22UF

PCIE_NAND1_TO_SOC_TX_P
PCIE_NAND1_TO_SOC_TX_N

PCIE_NAND1_TO_SOC_TX_C_P — R12 PCIE_TX0_P GND_VOID=TRUE
PCIE_NAND1_TO_SOC_TX_C_N — PCIE_TX0_M GND_VOID=TRUE

GPIO_SOC_TO_NAND_RESET_L — L4 RESET*
G10 TRST*
NAND1_ZQ_C — K3 ZQ_C
NAND1_ZQ_N — C10 ZQ_N

R1800 100 0.1% 1/32W MF 01005
300 0.1% 1/32 MF 01005
MISS_P_DIFFPAIR

EXT_D0/BOOT0 — B3 GPIO_PMU_TO_NAND_LOW_BATT_L
EXT_D1/BOOT1 — C4 GPIO_SOC_TO_NAND_FW_STRAP
EXT_D2/BOOT2/SPINAND_SCLK — B5 SPI_AP_TO_NAND_SCLK_BOOT_CFG0
EXT_D3/SWD_UID0/SPINAND_MISO — C6 SPI_NAND_TO_AP_MISO_BOOT_CFG2
EXT_D4/UART_RX — B7 NC
EXT_D5/SWD_UID1/SPINAND_MOSI — C8 SPI_AP_TO_NAND_MOSI_BOOT_CFG1
EXT_D6/UART_TX — B9 NC
EXT_D7/SPF — B11 SYS_ALIVE
EXT_NCE/PERST* — E8 PCIE_SOC_TO_NAND1_RESET_L
EXT_NRE/JTAG_TMS — D7 SWD_NAND1_SWDIO_R — R1810 0.00 — SWD_NAND1_SWDIO
EXT_NWE/JTAG_TCK — E6 SWD_NAND1_SWCLK_R — R1811 0.00 — SWD_NAND1_SWCLK
EXT_RNB/JTAG_TDO — E4
EXT_CLE/JTAG_TDI — D5 NC
EXT_ALE/JTAG_SEL — D9
DROOP_N — T3
WP_N — G2 PP1V8 EXT SW1

VSS

S4E NAND2

FL1952
0.00
PP0V9_NAND2_VDD_PLL

C1922 C1923
4UF 0.1UF
6.3V 16V
CER-X5R XSR-CERM
0201 0201
DUAL_NAND DUAL_NAND

PP0V9_NAND

C1900 C1901 C1902 C1903 C1904 C1905 C1906 C1907
15UF 15UF 15UF 15UF 15UF 15UF 15UF 15UF
6.3V 6.3V 6.3V 6.3V 6.3V 6.3V 6.3V 6.3V
CERM CERM CERM CERM CERM CERM CERM CERM
0402 0402 0402 0402 0402 0402 0402 0402

FL1950
PP1V8_NAND2_AVDD_H 0.00

C1921 C1920
0.1UF 4UF
10V 6.3V
XSR-CERM DUAL_NAND
DUAL_NAND DUAL_NAND

PP1V8_NAND2_AVDD18_PLL R1951 0.00

C1926 C1925
0.1UF
10V
XSR-CERM XSR-CERM
DUAL_NAND DUAL_NAND

C191A C1908 C1909 C1914 C1915 C1916 C1917 C1918 C1919
2.7PF 15UF 6.3V 1.0UF 6.3V 1.0UF 6.3V 10PF 25V
0201 0402 0402 0201-1 0201-1 0201-1 0201

PP1V8_EXT_SW1

C1930 C1931 C1932 C1933 C1934 C1935 C1936 C1938 C1939 C193A
15UF 15UF 15UF 15UF 15UF 1.0UF 1.0UF 100PF 12PF 2.7PF
6.3V 6.3V 6.3V CERM CERM X5R X5R 0201 0201
0402 0402 0402 0201-1 0201-1

PP2V63_OTP

C1940 C1941 C1942 C1943 C1944 C1945 C1946 C1947 C1948 C194A
10UF 10UF 10UF 10UF 10UF 10UF 10UF 10UF 10UF 2.7PF
6.3V 6.3V 6.3V 6.3V 6.3V 6.3V 6.3V 6.3V 6.3V
CERM-X5R
0402-2

C1949 C1950 C1951 C1955 C1956 C1957 C1958 C1959
10UF 10UF 10UF 1.0UF 1.0UF 1.0UF 100PF 12PF
6.3V 6.3V 6.3V X5R X5R 0201
0402-2

NAND2_ANI1_VREF
NAND2_ANI0_VREF

U1900
SDMPEGFIH-512G
LGA
CRITICAL
OMIT_TABLE

CLK_SOC_TO_NAND2_24MHZ M3 CLK_IN
PCIE_SOC_TO_NAND2_REFCLK_P K11 PCIE_REFCLK_P
PCIE_SOC_TO_NAND2_REFCLK_N PCIE_REFCLK_M
PCIE_NAND2_TO_SOC_CLKREQ_L PCIE_CLKREQ_N
PCIE_NAND2_RESREF H7 PCI_RESREF
PCIE_SOC_TO_NAND2_TX_P M11 PCIE_RX0_P
PCIE_SOC_TO_NAND2_TX_N N12 PCIE_RX0_M

R1904
3.01K
C1999
10PF

C1980 0.22UF
C1981 0.22UF2

PCIE_NAND2_TO_SOC_TX_P
PCIE_NAND2_TO_SOC_TX_N
PCIE_NAND2_TO_SOC_TX_C_P R12 PCIE_TX0_P
PCIE_NAND2_TO_SOC_TX_C_N PCIE_TX0_M

GPIO_SOC_TO_NAND_RESET_L L4 RESET*
G10 TRST*
NAND2_ZQ_C K3 ZQ_C
NAND2_ZQ_N C10 ZQ_N

R1900 R1901
100 300
1/32W 1/32W

EXT_D0/BOOT0 B3 GPIO_PMU_TO_NAND_LOW_BATT_L
EXT_D1/BOOT1 C4 GPIO_SOC_TO_NAND_FW_STRAP
EXT_D2/BOOT2/SPINAND_SCLK B5
EXT_D3/SWD_UID0/SPINAND_MISO
EXT_D4/UART_RX C6 PP1V8_EXT_SW1
EXT_D5/SWD_UID1/SPINAND_MOSI B7 NC
EXT_D6/UART_TX C8
EXT_D7/SPF B9 NC
B11 SYS_ALIVE
EXT_NCE/PERST* E8 PCIE_SOC_TO_NAND2_RESET_L_R
EXT_NRE/JTAG_TMS D7 SWD_NAND2_SWDIO_R
EXT_NWE/JTAG_TCK E6 SWD_NAND2_SWCLK_R
EXT_RNB/JTAG_TDO E4
EXT_CLE/JTAG_TDI D5 NC
EXT_ALE/JTAG_SEL D9
DROOP_N T3
WP_N G2 PP1V8_EXT_SW1

R1920 0.00 PCIE_SOC_TO_NAND1_RESET_L
R1921 0.00 PCIE_SOC_TO_NAND2_RESET_L_R
R1910 0.00 SWD_NAND2_SWDIO
R1911 0.00 SWD_NAND2_SWCLK

VSS

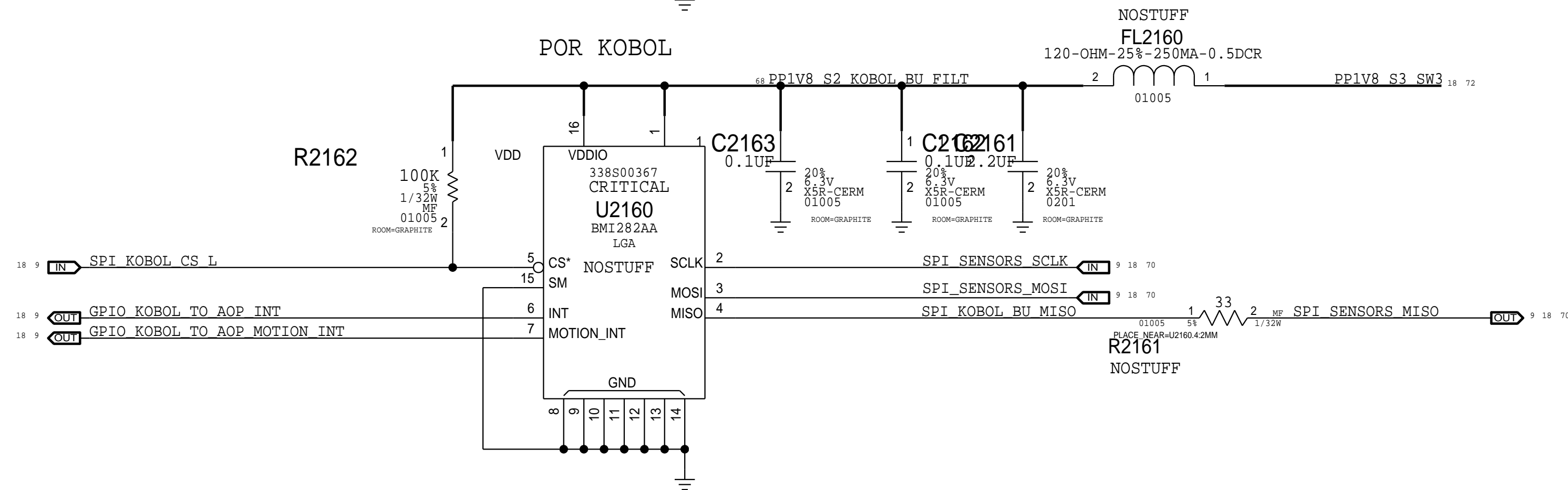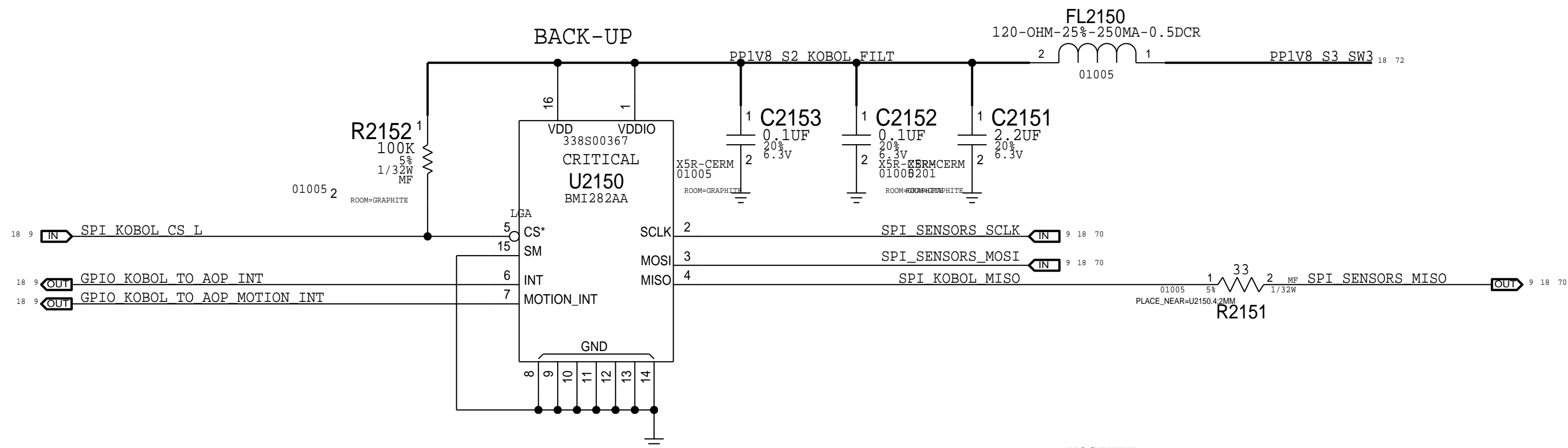PAGE TITLE
NAND: NAND2
DRAWING NUMBER
SIZE

SENSORS

KOBOL - ACCEL & GYRO

COMPASS/DMIC FLEX B2B

BACK-UP

FL2150
120-OHM-25%-250MA-0.5DCR
01005
PP1V8 S2 KOBOL FILT
PP1V8 S3 SW3

R2152
100K
1/32W
MF
01005

C2153
0.1UF
20%
6.3V
X5R-CERM
01005

C2152
0.1UF
20%
6.3V
X5R-CERM
01005

C2151
2.2UF
20%
6.3V
X5R-CERM
0201

U2150
338S00367
CRITICAL
BMI282AA
LGA

VDD VDDIO
CS*
SM
INT
MOTION_INT
SCLK
MOSI
MISO
GND

SPI KOBOL CS L
GPIO KOBOL TO AOP INT
GPIO KOBOL TO AOP MOTION_INT

SPI SENSORS SCLK
SPI_SENSORS_MOSI
SPI KOBOL MISO

R2151
33
1/32W
PLACE_NEAR=U2150.4.2MM

SPI SENSORS MISO

POR KOBOL

NOSTUFF
FL2160
120-OHM-25%-250MA-0.5DCR
01005
PP1V8 S2 KOBOL BU FILT
PP1V8 S3 SW3

R2162
100K
1/32W
MF
01005

C2163
0.1UF
20%
6.3V
X5R-CERM
01005

C2161
0.1UF 2.2UF
20%
6.3V
X5R-CERM
0201

U2160
338S00367
CRITICAL
BMI282AA
NOSTUFF
LGA

VDD VDDIO
CS*
SM
INT
MOTION_INT
SCLK
MOSI
MISO
GND

SPI KOBOL CS L
GPIO KOBOL TO AOP INT
GPIO KOBOL TO AOP MOTION_INT

SPI SENSORS SCLK
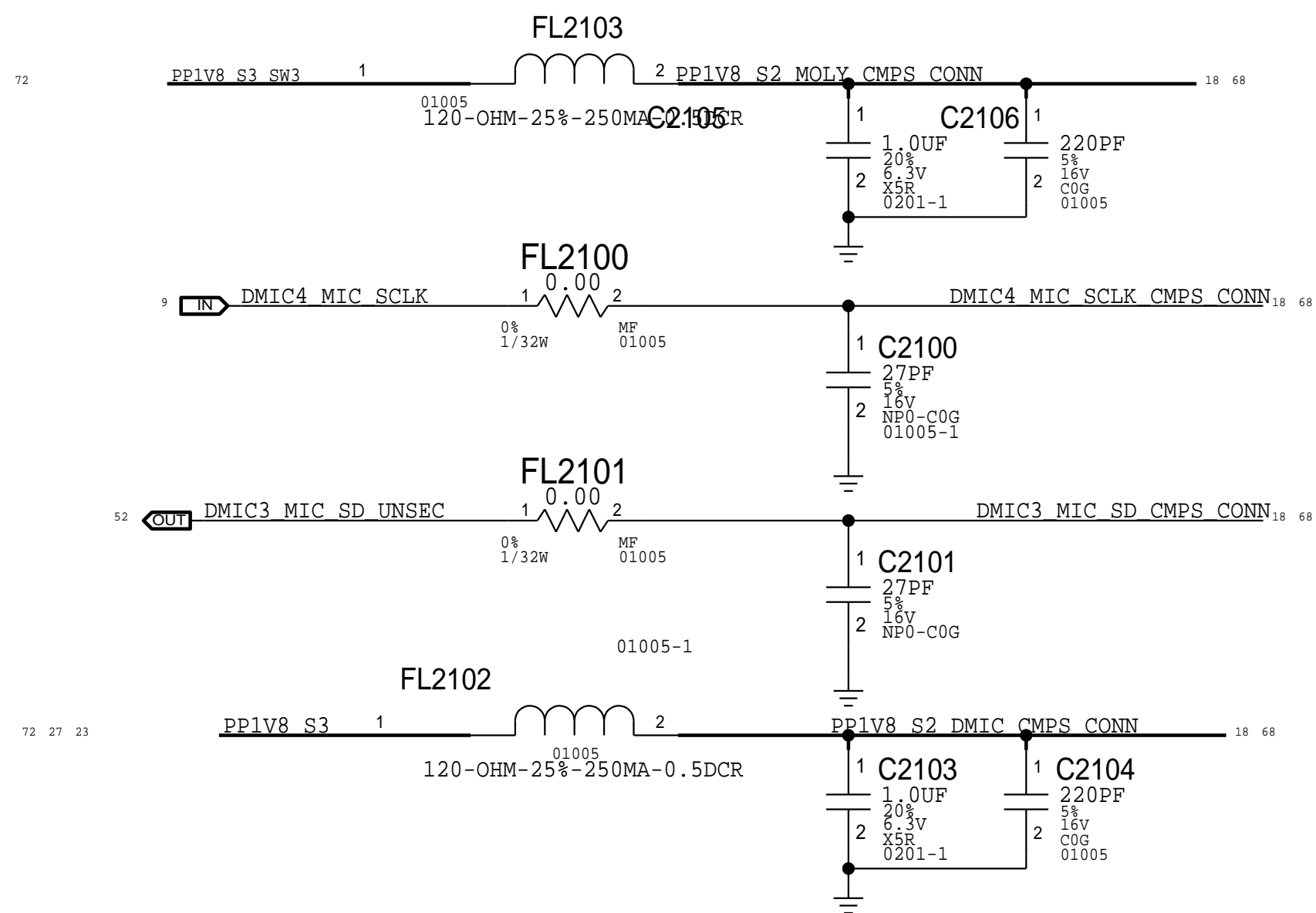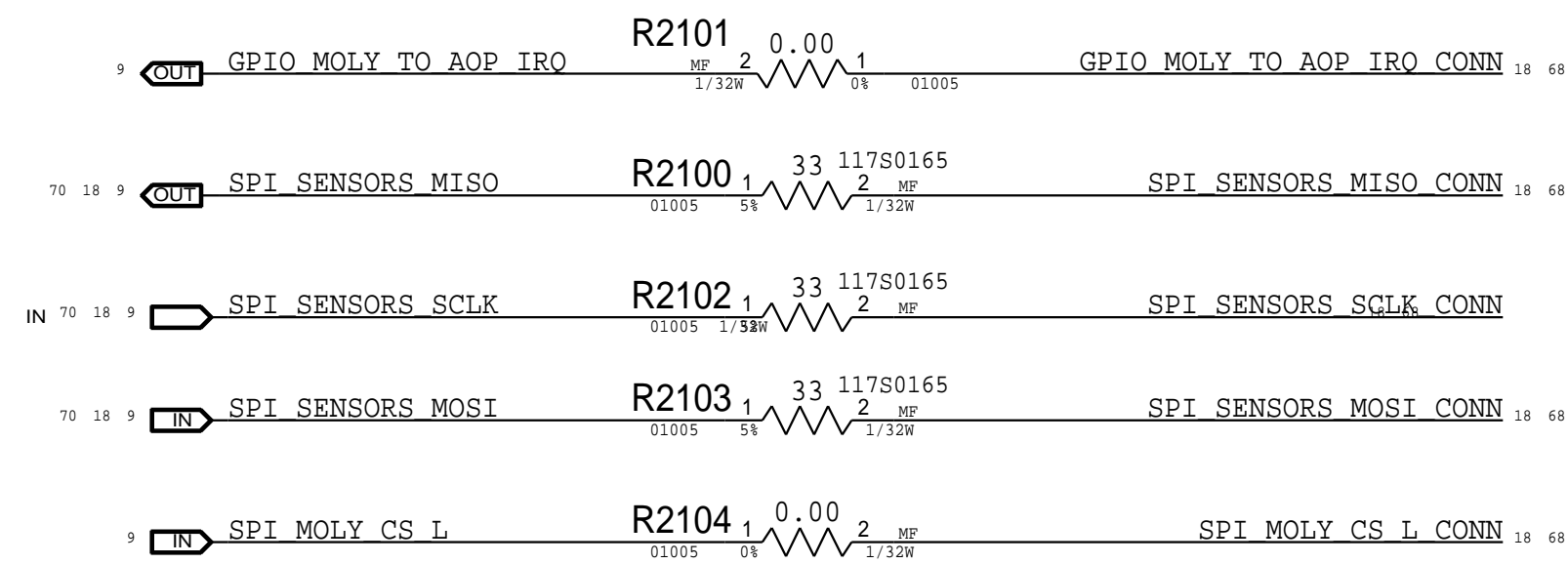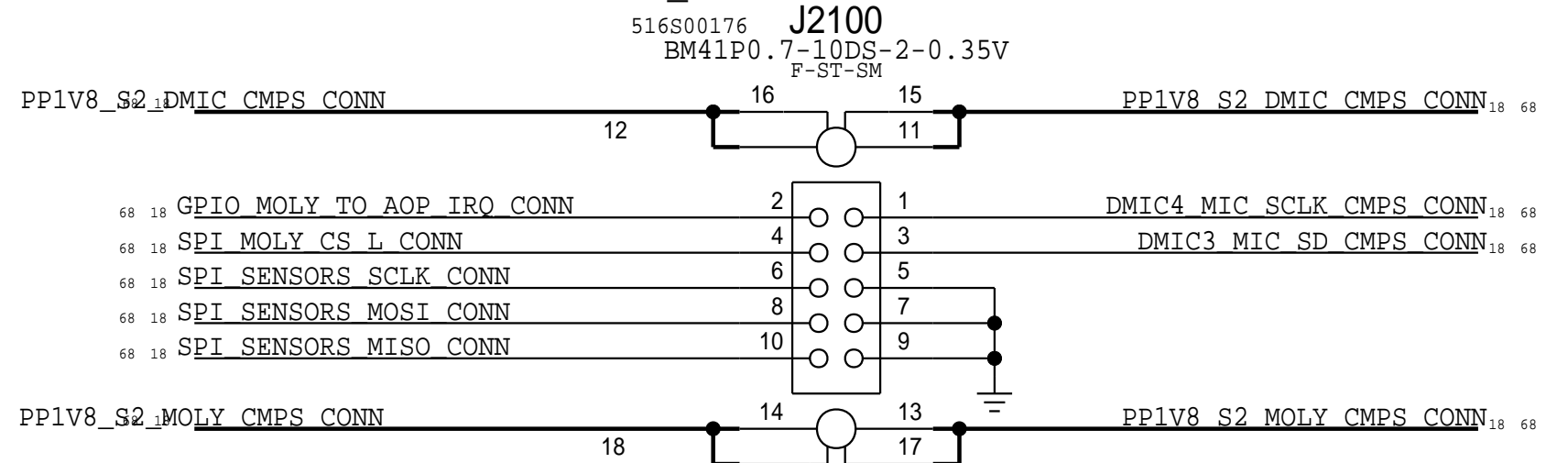SPI_SENSORS_MOSI
SPI KOBOL BU MISO

R2161
33
1/32W
PLACE_NEAR=U2160.4.2MM
NOSTUFF

SPI SENSORS MISO

PHOSPHORUS

BOSCH APN: 338S00334

FL2120
120-OHM-25%-250MA-0.5DCR
01005
PP1V8 S3 SW3
VOLTAGE=1.8V
PP1V8 PHOS FILT

C2120
0.1UF
20%
6.3V
X5R-CERM
0201-1

C2125
1.0UF
20%
6.3V
X5R-CERM
01005

R2120
100K
1/32W
MF
01005

U2120
BMP284BA
LGA
CRITICAL

VDD VDDIO
SDI
SCK
CS*
SDO
IRQ
GND

SPI SENSORS MOSI
SPI SENSORS SCLK
SPI PHOSPHORUS CS L

SPI PHOSPHORUS MISO

R2122
33
1/32W
01005
PLACE_NEAR=U2120.5.4MM

SPI SENSORS MISO

NOSTUFF
C2126
10PF
5%
16V
CERM
01005

GPIO PHOSPHORUS TO AOP IRQ

MLB SIDE: 516S00176
FLEX SIDE: 516S00175
MATCH J420_COMPASS FLEX 4.0.0
516S00176 J2100
BM41P0.7-10DS-2-0.35V
F-ST-SM

PP1V8_S2 DMIC CMPS CONN
GPIO MOLY TO AOP IRQ CONN
SPI MOLY CS L CONN
SPI SENSORS SCLK CONN
SPI SENSORS MOSI CONN
SPI SENSORS MISO CONN
PP1V8_S2 MOLY CMPS CONN

PP1V8 S2 DMIC CMPS CONN
DMIC4 MIC SCLK CMPS CONN
DMIC3 MIC SD CMPS CONN

PP1V8 S2 MOLY CMPS CONN

R2101 0.00
1/32W 01005
GPIO MOLY TO AOP IRQ
GPIO MOLY TO AOP IRQ CONN

R2100 33 117S0165
01005 5% 1/32W MF
SPI SENSORS MISO
SPI SENSORS MISO CONN

R2102 33 117S0165
01005 5% 1/32W MF
SPI SENSORS SCLK
SPI SENSORS SCLK CONN

R2103 33 117S0165
01005 5% 1/32W MF
SPI SENSORS MOSI
SPI SENSORS MOSI CONN

R2104 0.00
1/32W MF
01005
SPI MOLY CS L
SPI MOLY CS L CONN

FL2103
01005
120-OHM-25%-250MA-0.5DCR
PP1V8 S3 SW3
PP1V8 S2 MOLY CMPS CONN

C2105
1.0UF
20%
6.3V
X5R
0201-1

C2106
220PF
16V
C0G
01005

FL2100
0.00
1/32W MF
01005
DMIC4 MIC SCLK
DMIC4 MIC SCLK CMPS CONN

C2100
27PF
5%
16V
NP0-C0G
01005-1

FL2101
0.00
1/32W MF
01005
DMIC3 MIC SD UNSEC
DMIC3 MIC SD CMPS CONN

C2101
27PF
5%
16V
NP0-C0G
01005-1

FL2102
01005
120-OHM-25%-250MA-0.5DCR
PP1V8 S3
PP1V8 S2 DMIC CMPS CONN

C2103
1.0UF
20%
6.3V
X5R
0201-1

C2104
220PF
16V
C0G
01005

SYNC_MASTER=MLB_A_REV_0.6
SYNC_DATE=02/20/2018
PAGE TITLE
SENSOR: KOBOL, PHOS2, MOLY
DRAWING NUMBER
SIZE

LANAI MASTER

DOMBRA BST/LDO

BOOT OPTION

TOUCH: LANAI MASTER

U2200
BCM15957A0
BGA
SYM 1 OF 2
CRITICAL
343S00341

U2200
BCM15957A0
BGA
SYM 2 OF 2
CRITICAL

U2280
SN1705004A0
DSBGA

U22A1
ADP7112
WLCSP
353S02157
ADP7112ACBZ-1.2-R7

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

KONA: SLAVE

U2301
BCM15900B0K
BGA
SYM 1 OF 2
CRITICAL

U2301
BCM15900B0K
BGA
SYM 2 OF 2
CRITICAL

PP1V8 S3

R230A
10K
5%
1/32W
MF
01005

E11 AUXADC_REF
G12 AUXBUF_AIO_INPUT_3V
F13 AUXBUF_AIO_OUTPUT

D10 GPIO_ADC_00
D12 GPIO_ADC_01
D11 GPIO_ADC_02
F12 GPIO_ADC_03
E10 GPIO_ADC_04
E10 GPIO_ADC_05
G10 GPIO_ADC_06
G9   GPIO_ADC_07

LANAI M TO KONA S IPC1
LANAI M TO KONA S IPC2
TESTPOINT KONA S UART RX
TESTPOINT KONA S UART TX

GPIO SOC TO BT TO GRAPE TS SYNC
R2308 0.00
GPIO SOC TO SYS TS SYNC R
KONA TO TCON FORCE PWM

SPI LANAI M TO KONA S CS L
GPIO DOMBRA BST FB CTRL
GPIO DOMBRA BST FPWM
GPIO12 KONA LDO ADJ
GPIO13 KONA LDO EN
KONA S TO LANAI M RESET DET L
LANAI M TO KONA S TTW
KONA M BSYNC0
KONA M BSYNC1
KONA S TO GRAPE EB R
GPIO GRAPE TO SCORPIUS TIME SYNC

F8   GPIO_08
H11 GPIO_09
J9   GPIO_10
H9   GPIO_11
F7   GPIO_12
J10 GPIO_13
A6   GPIO_14
C6   GPIO_15
D9   GPIO_16
E8   GPIO_17
M9   GPIO_18
C5   GPIO_19

GPIO SOC TO GRAPE BSYNC0
GPIO SOC TO GRAPE BSYNC1
GPIO SOC TO GRAPE EB

R2306 0.00
R2307
R2309 0.00

KONA S TO LANAI M INT L
SPI LANAI M TO KONA S SCLK
SPI LANAI M TO KONA S MOSI
SPI LANAI M TO KONA S MISO
SPI LANAI M TO KONA S CS L

A7   H_INT*
A8   H_SCLK
A9   H_SDI
B8   H_SDO
B6   H_CS*
B5   H_ALT_CS*
A5   I2C_SCL
A4   I2C_SDA

KMSI MOSI
KMSI MISO
KMSI STRB OUT
KMSI STRB IN
PSE SYNC

A12 KMSI_MISO
B13 KMSI_MOSI
B12 KMSI_STRB_IN
A13 KMSI_STRB_OUT
C14 PSE_SYNC

BOOST_TEST
A15 BOOST_FBIN
B15 BOOST_ISENSE
D13 BOOST_NGATE
C15 BOOST_VBAT
D14 BOOST_VBAT_EN

SWD KONA SWCLK
SWD KONA SWDIO

E9   JTAG_RTCK
J7   JTAG_TCK
E7   JTAG_TMS
G7   JTAG_TDO
H8   JTAG_TRST*
G6   JTAG_SRST*
C7

GPIO SOC TO GRAPE RESET L
KONA S TEST MODE

H7   RESET*
K9   TEST_MODE

R2305
10K
1/32W
MF
01005

KONA BOOT0 S
KONA BOOT1 S
LANAI BGBIAS

K7   BOOT_CFG_0
J8   BOOT_CFG_1
E5   AFE_IO_BGBIAS

CLK KONA S 24MHZ

J15 XTALN
K15 XTALP
K13 XTAL_O_CLK_EXT
B4   IFO_CLK_EXT

C2301
10PF
5%
16V
CERM
01005

PAD_I_SELFCAPEXT
PAD_O_GUARDBUFFER
CORE_PMU_O_AON_TEST_PMU C11

1.2V EXT BUCK

U2350
TPS62675I
BGA
DIDT=TRUE

A2 VIN
B2 EN
FB
C1 GRAPE 1V2BUCK FB
A1 GRAPE 1V2BUCK MODE
GND

B1 GRAPE 1V2BUCK SW
L2350
0603
0.47UH-20%-3.1A-0.064OHM

PP1V2 GRAPE BUCK EXT

XW2350

PPVCC MAIN
C2350
4.7UF
16V
X5R
0402

GRAPE_1V2BUCK_EN

R2350
10K
01005
MF
1/32W
5%

PP1V8 S2 GRAPE

C2353
220PF
5%
16V
COG
01005

R2351
0.00
1/32W

R2352
0.00
1/32W
MF
01005
NOSTUFF

C2352
2.2UF
20%
6.3V
X5R-CERM
0201

C2351
2.2UF
20%
6.3V
X5R-CERM
0201

PP1V8 S2 GRAPE

PAD_I_TOUCH0 GRAPE RX<33> J5
PAD_I_TOUCH1 GRAPE RX<62> H3
PAD_I_TOUCH2 GRAPE RX<61> J2
PAD_I_TOUCH3 GRAPE RX<60> J3
PAD_I_TOUCH4 GRAPE RX<59> J4
PAD_I_TOUCH5 GRAPE RX<58> K5
PAD_I_TOUCH6 GRAPE RX<57> K4
PAD_I_TOUCH7 GRAPE RX<56> K3
PAD_I_TOUCH8 GRAPE RX<55> M5
PAD_I_TOUCH9 GRAPE RX<54> L5
PAD_I_TOUCH10 GRAPE RX<53> M1
PAD_I_TOUCH11 GRAPE RX<52> L6
PAD_I_TOUCH12 GRAPE RX<51> L6
PAD_I_TOUCH13 GRAPE RX<50> N1
PAD_I_TOUCH14 GRAPE RX<49> P6
PAD_I_TOUCH15 GRAPE RX<48> N6
PAD_I_TOUCH16 GRAPE RX<47> R7
PAD_I_TOUCH17 GRAPE RX<46> N7
PAD_I_TOUCH18 GRAPE RX<45> R8
PAD_I_TOUCH19 GRAPE RX<44> M6
PAD_I_TOUCH20 GRAPE RX<43> M7
PAD_I_TOUCH21 GRAPE RX<42> M7
PAD_I_TOUCH22 GRAPE RX<41> P9
PAD_I_TOUCH23 GRAPE RX<40> P9
PAD_I_TOUCH24 GRAPE RX<39> R9
PAD_I_TOUCH25 GRAPE RX<38> R9
PAD_I_TOUCH26 GRAPE RX<37> N10
PAD_I_TOUCH27 GRAPE RX<36> M10
PAD_I_TOUCH28 GRAPE RX<35> R10
PAD_I_TOUCH29 GRAPE RX<34> P10
PAD_I_TOUCH30 GRAPE TX<30> D2
PAD_I_TOUCH31 GRAPE TX<31> D1
PAD_I_TOUCH32 KONA S TOUCH32 VCOM C2
PAD_I_TOUCH33 NC C1
PAD_I_TOUCH34 GRAPE RX<63> B1
PAD_I_TOUCH35 GRAPE TX<32> P3
PAD_I_TOUCH36 GRAPE RX<31> N2
PAD_I_TOUCH37 GRAPE RX<30> P2
PAD_I_TOUCH38 GRAPE RX<29> P4
PAD_I_TOUCH39 GRAPE RX<28> P4
PAD_I_TOUCH40 GRAPE TX<29> G3
PAD_I_TOUCH41 GRAPE TX<28> D4
PAD_I_TOUCH42 GRAPE TX<27> D3
PAD_I_TOUCH43 GRAPE TX<26> G4
PAD_I_TOUCH44 GRAPE TX<25> E4
PAD_I_TOUCH45 GRAPE TX<24> E3
PAD_I_TOUCH46 GRAPE TX<23> F1
PAD_I_TOUCH47 GRAPE TX<22> F2
PAD_I_TOUCH48 GRAPE TX<21> F3
PAD_I_TOUCH49 GRAPE TX<20> H5
PAD_I_TOUCH50 GRAPE TX<19> F2
PAD_I_TOUCH51 GRAPE TX<18> G2
PAD_I_TOUCH52 GRAPE TX<17> G1
PAD_I_TOUCH53 GRAPE TX<16> H1
PAD_I_TOUCH54 GRAPE TX<15> P11
PAD_I_TOUCH55 GRAPE TX<14> N15
PAD_I_TOUCH56 GRAPE TX<13> N12
PAD_I_TOUCH57 GRAPE TX<12> P13
PAD_I_TOUCH58 GRAPE TX<11> P7
PAD_I_TOUCH59 GRAPE TX<10> R12
PAD_I_TOUCH60 GRAPE TX<9>   N13
PAD_I_TOUCH61 GRAPE TX<8>   M12
PAD_I_TOUCH62 GRAPE TX<7>   R13
PAD_I_TOUCH63 GRAPE TX<6>   L13
PAD_I_TOUCH64 GRAPE TX<5>   P14
PAD_I_TOUCH65 GRAPE TX<4>   M14
PAD_I_TOUCH66 GRAPE TX<3>   M13
PAD_I_TOUCH67 GRAPE TX<2>   N14
PAD_I_TOUCH68 GRAPE TX<1>   M15
PAD_I_TOUCH69 GRAPE TX<0>   R14

N5 NC
N4 NC

PP15V0 TOUCH FILT

C2311 0.47UF 20% 25V CER-X5R 0201
C2312 0.47UF 20% 25V CER-X5R 0201
C2313 0.47UF 20% 25V CER-X5R 0201
C2317 0.47UF 20% 25V CER-X5R 0201

C2333 0.47UF 20% 25V CER-X5R 0201
C2334 0.47UF 20% 25V CER-X5R 0201
C2335 0.47UF 20% 25V CER-X5R 0201

R15

B3   AFE_I_VDDHV15_EXT
C4   AFE_I_VDDHV15_EXT
L7   AFE_I_VDDHV15_EXT
J1   AFE_I_VDDHV15_EXT
H2   AFE_I_VDDHV15_EXT
K6   AFE_I_VDDHV15_EXT
L1   AFE_I_VDDHV15_EXT
L9   AFE_I_VDDHV15_EXT
M3   AFE_I_VDDHV15_EXT
E2   AFE_I_VDDHV15_EXT
N3   AFE_I_VDDHV15_EXT
L12 AFE_I_VDDHV15_EXT
G5   AFE_I_VDDHV15_EXT

PP3V3 GRAPE FILT

C2315 0.1UF 10% X5R-CERM 0201
C2316 0.1UF 10% X5R-CERM 0201
C2320 0.22UF 10% 10V X5R-CERM 0201

E13 BOOST_VDDA
C12 OTP_TMON_I_VDDA_3P3_EXT
R1   AFE_PMU_I_VDDA_3P3_EXT
G13 AUXBUF_PMU_I_VDDA_3P3_EXT
G14 AUXBUF_PMU_I_VDDHV_AUX_EXT
G15 AUXBUF_PMU_O_VDD_AUX_CAP

PP2V8 KONA S VDDANA

C2378 100PF 25V COG 0201
C2370 12PF NP0-COG 0201
C2302 0.1UF X5R-CERM 0201
C2303 0.1UF X5R-CERM 0201

C2304 0.1UF X5R-CERM 0201
C2305 0.1UF X5R-CERM 0201
C2306 0.1UF X5R-CERM 0201
C2307 2.2UF 0402 X5R-CERM

C3   AFE_I_VDDANA_3P3_AFE_PMU
D5   AFE_I_VDDANA_3P3_AFE_PMU
L4   AFE_I_VDDANA_3P3_AFE_PMU
L3   AFE_I_VDDANA_3P3_AFE_PMU
L8   AFE_I_VDDANA_3P3_AFE_PMU
M2   AFE_I_VDDANA_3P3_AFE_PMU
R11 AFE_I_VDDANA_3P3_AFE_PMU
M8   AFE_I_VDDANA_3P3_AFE_PMU
N8   AFE_I_VDDANA_3P3_AFE_PMU
R6   AFE_I_VDDANA_3P3_AFE_PMU
R2   AFE_PMU_O_VDDANA_3P3_PMU
R4   AFE_PMU_O_AVDD1P2_CAP

KONA S VDDADC CAP
C2318 1UF X5R-CERM 0402

R2390 150 1% 1/32W MF 01005
VCOM FILT VCOM LCD TO GRAPE

C2390 220PF 5% 25V COG 01005
C2391 27PF 5% 16V NP0-COG 01005-1

PP1V8 GRAPE XTAL FILT
J14 XTAL_PLL_AVDD1P8_I_VDDLDO_1P8_EXT
C2321 0.1UF X5R 0201
C2322 0.047UF X5R 0201

PP1V8 S2 GRAPE
F11
C2308 0.1UF 10% CERM-X5R 0201
C2309 0.1UF 10% CERM-X5R 0201
C2310 0.1UF 10% CERM-X5R 0201

E12 AUXADC_AVDDC_I_VDDIO_1P8_3P3_EXT
R3   AUXADC_AVDD_I_VDDIO_1P8_3P3_EXT
B9   AFE_PMU_I_VDDLDO_1P8_EXT
D7   AON_PAD_I_VDDIO_1P8_3P3_EXT
E6   AON_PAD_I_VDDIO_1P8_3P3_EXT
A2   AON_PAD_I_VDDIO_1P8_3P3_EXT
C13 I2C_PAD_I_VDDIO_1P8_3P3_EXT
B11 CORE_PAD_I_VDDIO_1P8_3P3_EXT
     CORE_PAD_I_VDDIO_1P8_3P3_EXT
C8   CORE_PMU_I_AON_VDDIO_1P8_3P3_EXT
A10 CORE_PMU_I_VDDLDO_1P8_EXT
A11 CORE_PMU_O_VDDCORE_1P2_CAP

PP1V8_GRAPE_AON_RC
PP1V2 GRAPE BUCK EXT

C2325 1UF X5R-CERM 0402
C2314 0.1UF X5R-CERM 0201

F14 AUXBUF_AVSS
C10 AUXADC_AVSS
D6   VSS
D8   VSS
F6   VSS
F9   VSS
G8   VSS
H10 VSS
K8   VSS
A14 VSS
E14 VSS
A1   VSS
A3   VSS
B7   VSS
H12 VSS
H13 VSS
K11 VSS
K12 VSS
K13 VSS
D15 VSS
E15 VSS
F15 VSS
G11 VSS
J11 VSS
J12 VSS
K10 VSS

H15 XTAL_AVSS
K14 XTAL_AVSS
B10 CORE_PMU_I_AVSS
H14 AUXBUF_PMU_I_AVSS

B2   PAD_I_AVSS
E1   PAD_I_AVSS
J1   PAD_I_AVSS
N11 PAD_I_AVSS
L2   PAD_I_AVSS
P15 PAD_I_AVSS
K2   PAD_I_AVSS
L10 PAD_I_AVSS
L15 PAD_I_AVSS
M4   PAD_I_AVSS
F5   PAD_I_AVSS
P5   PAD_I_AVSS
P8   PAD_I_AVSS
H4   PAD_I_AVSS

BOOT OPTION

PP1V8 S2 GRAPE

R2301 10K 5% 1/32W MF 01005
R2303 10K 1/32W MF 01005

KONA BOOT0 S
KONA BOOT1 S

R2302 10K 1/32W MF 01005
R2304 10K 5% 1/32W MF 01005

NOSTUFF

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
353S01570	353S00748		U2350	BUCK 1.2V 500MA

TOUCH: KONA SLAVE

PAGE TITLE
DRAWING NUMBER
SIZE

TOUCH FLEX CONNECTOR (SENSE)

FLEX: 516S00375

MLB: 516S00374

CRITICAL

J2400
AA37D-S060VA2
F-ST-SM

66   65

PWR

GRAPE_RX<63>   62   61   GRAPE_RX<0>
GRAPE_RX<62>   2   1   GRAPE_RX<1>
GRAPE_RX<61>   4   3   GRAPE_RX<2>
GRAPE_RX<60>   6   5   GRAPE_RX<3>
GRAPE_RX<59>   8   7   GRAPE_RX<4>
GRAPE_RX<58>   10   9   GRAPE_RX<5>
GRAPE_RX<57>   12   11   GRAPE_RX<6>
GRAPE_RX<56>   14   13   GRAPE_RX<7>
GRAPE_RX<55>   16   15   GRAPE_RX<8>
GRAPE_RX<54>   18   17   GRAPE_RX<9>
GRAPE_RX<53>   20   19   GRAPE_RX<10>
GRAPE_RX<52>   22   21   GRAPE_RX<11>
GRAPE_RX<51>   24   23   GRAPE_RX<12>
GRAPE_RX<50>   26   25   GRAPE_RX<13>
GRAPE_RX<49>   28   27   GRAPE_RX<14>
GRAPE_RX<48>   30   29   GRAPE_RX<15>
GRAPE_RX<47>   32   31   GRAPE_RX<16>
GRAPE_RX<46>   34   33   GRAPE_RX<17>
GRAPE_RX<45>   36   35   GRAPE_RX<18>
GRAPE_RX<44>   38   37   GRAPE_RX<19>
GRAPE_RX<43>   40   39   GRAPE_RX<20>
GRAPE_RX<42>   42   41   GRAPE_RX<21>
GRAPE_RX<41>   44   43   GRAPE_RX<22>
GRAPE_RX<40>   46   45   GRAPE_RX<23>
GRAPE_RX<39>   48   47   GRAPE_RX<24>
GRAPE_RX<38>   50   49   GRAPE_RX<25>
GRAPE_RX<37>   52   51   GRAPE_RX<26>
GRAPE_RX<36>   54   53   GRAPE_RX<27>
GRAPE_RX<35>   56   55   GRAPE_RX<28>
GRAPE_RX<34>   58   57   GRAPE_RX<29>
GRAPE_RX<33>   60   59   GRAPE_RX<30>
GRAPE_RX<32>   64   63   GRAPE_RX<31>

PWR

68   67

TOUCH FLEX CONNECTOR (DRIVE)

FLEX: 516S00380

MLB: 516S00379

CRITICAL

J2401
BB35L-RA56-3A
F-ST-SM

58   57

61

12
34
GRAPE_TX<1>   6   7   GRAPE_TX<0>
GRAPE_TX<3>   8   GRAPE_TX<2>
GRAPE_TX<5>   10   9   GRAPE_TX<4>
GRAPE_TX<7>   12   11   GRAPE_TX<6>
GRAPE_TX<9>   14   13   GRAPE_TX<8>
GRAPE_TX<11>   16   15   GRAPE_TX<10>
GRAPE_TX<13>   18   17   GRAPE_TX<12>
GRAPE_TX<15>   20   19   GRAPE_TX<14>
GRAPE_TX<17>   22   GRAPE_TX<16>
GRAPE_TX<19>   24   GRAPE_TX<18>
GRAPE_TX<21>   26   GRAPE_TX<20>
GRAPE_TX<23>   28   27   GRAPE_TX<22>
GRAPE_TX<25>   30   29   GRAPE_TX<24>
GRAPE_TX<27>   32   31   GRAPE_TX<26>
GRAPE_TX<29>   34   33   GRAPE_TX<28>
GRAPE_TX<31>   36   35   GRAPE_TX<30>
GRAPE_TX<33>   38   37   GRAPE_TX<32>
GRAPE_TX<35>   40   39   GRAPE_TX<34>
GRAPE_TX<37>   42   41   GRAPE_TX<36>
GRAPE_TX<39>   44   43   GRAPE_TX<38>
GRAPE_TX<41>   46   45   GRAPE_TX<40>
GRAPE_TX<43>   48   47   GRAPE_TX<42>
GRAPE_TX<45>   50   49   GRAPE_TX<44>
GRAPE_TX<47>   52   51   GRAPE_TX<46>
                     54   53
                     56   55

60   59

62

PAGE TITLE

TOUCH: GRAPE CONN

DRAWING NUMBER   SIZE

PENROSE ADC

7-BIT I2C ADD: 0X48

R2668
PP1V8_EXT_SW1   0.00   PP1V8_PENROSE_R
1% MF
1/20W 0201

3.3V
PP3V3_PENROSE_R   R2669
2 0.00 1
1% MF
1/20W 0201
PP3V3_PENROSE

C2660
0.1UF
20%
6.3V
X5R-CERM
01005

C2661
0.1UF
20%
6.3V
X5R-CERM
01005

U2660
CS53L30
WLCSP

VA A5
VP B6

PENROSE_ADC_FILT
C2662
2.2UF
6.3V
20%
X5R-CERM
0201

FL2670
FERR-150OHM-25%-200MA

PENROSE_VIS_IR_VOUT1_P
IN 1 PENROSE_VIS_IR_VOUT1_P_R 2

FILT+ A6

NOSTUFF 01005
C2663 155S00400
56PF
5%
25V
NP0/C0G
01005

A1 IN1+/DMIC1_SD
B1 IN1-

DMIC1_SCLK C2 NC
DMIC2_SCLK/AD1 C1 NC

PENROSE_VIS_IR_VOUT1_N
1 2 PENROSE_VIS_IR_VOUT1_N_C
10% 01005
CER-X5R 6.3V C2666 0.22UF

R2666
47
5%
1/32W
MF
01005
NOSTUFF

XW2600
OMIT
SHORT-10L-0.1MM-SM
PLACE_NEAR=J2710.7.2MM

A2 IN2+
B2 IN2-

ASP_LRCK/FSYNC C3 I2S3_SOC_TO_PENROSE_LRCK_R 1 2 R2660 0.00 I2S3_SOC_TO_PENROSE_LRCK IN
MF 1/32W 0% 01005

ASP_SCLK D2 I2S3_SOC_TO_PENROSE_BCLK_R 1 2 R2661 0.00 I2S3_SOC_TO_PENROSE_BCLK IN
MF 1/32W 0% 01005

A3 IN3+/DMIC2_SD
B3 IN3-

ASP_SDOUT1 D1 I2S3_PENROSE_TO_SOC_DOUT_R 1 2 R2662 33 I2S3_PENROSE_TO_SOC_DOUT OUT
1/32W 5% 01005

A4 IN4+
B4 IN4-

ASP_SDOUT2/AD0 E3 NC

MIC_BIAS_FILT D6 NC

NC C4 MIC1_BIAS
NC C5 MIC2_BIAS

FL2671
FERR-150OHM-25%-200MA

PENROSE_IR_VOUT2_P
IN 1 PENROSE_IR_VOUT2_P_R 2

RESET* E5 GPIO_ISP_TO_PENROSE_RST_R_L 1 2 R2663 0.00 GPIO_ISP_TO_PENROSE_RST_L IN
MF 1/32W 0% 01005

SYNC D4

MCLK E1 I2S3_SOC_TO_PENROSE_MCLK_R 1 2 R2664 0.00 I2S3_SOC_TO_PENROSE_MCLK IN
MF 1/32W 0% 01005

NOSTUFF 01005
C2664 155S00400
56PF
5%
25V
NP0/C0G
01005

NC C6 MIC3_BIAS
NC D5 MIC4_BIAS

MUTE E6
SCL D3 I2C3_SCL_1V8 IN

PENROSE_IR_VOUT2_N
1 2 PENROSE_IR_VOUT2_N_C
10% 01005
CER-X5R 6.3V C2667 0.22UF

SDA E2 I2C3_SDA_1V8 IO

R2667
47
5%
1/32W
MF
01005
NOSTUFF

XW2601
OMIT
SHORT-10L-0.1MM-SM
PLACE_NEAR=J2710.7.2MM

B5 GNDA
E4 GNDD

GPIO_ISP_TO_PENROSE_RST_R_L

R2665
100K
5%
1/32W
MF
01005
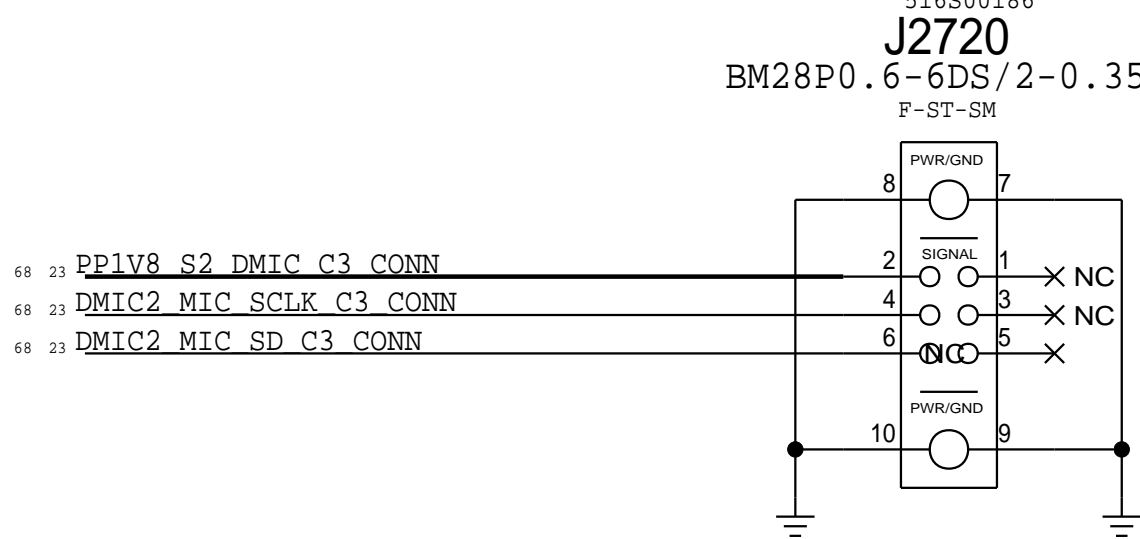
DMIC FLEX

MATCHED WITH C3_MIC_FLEX 1.0.0
MLB APN: 516S00186
FLEX APN: 516S00185

516S00186

J2720
BM28P0.6-6DS/2-0.35V
F-ST-SM

PP1V8 S2 DMIC C3 CONN
DMIC2 MIC SCLK C3 CONN
DMIC2 MIC SD C3 CONN

NC
NC

PB MANGO TREE FLEX B2B

MATCH J417_PB_MANGO TREE_FLEX 1.0.0
MLB APN: 516S00267
FLEX APN: 516S00268

516S00267

J2710
AA36D-S010VA1
F-ST-SM

PPSTROBE LED WARM2 CONN
PPSTROBE LED WARM1 CONN

LED_DRIVER_NTC CONN
PP3V0_PENROSE_CONN
PENROSE IR VOUT2 P
PENROSE VIS IR VOUT1 P
GPIO BTN ONOFF L CONN

PPSTROBE LED COOL2 CONN
PPSTROBE LED COOL1 CONN

VB FLEX B2B

MATCH J420_VOLLEY FLEX 1.0.0
MLB APN: 516S00186
FLEX APN: 516S00185

J2730
BM28P0.6-6DS/2-0.35V
F-ST-SM

GPIO BTN VOL DOWN L CONN
GPIO BTN VOL UP L CONN

516S00186

BUTTON FILTERS/ESD

PP3V0_PENROSE

FL2710
10-OHM-750MA
01005-1
155S0576

C2710
2.2UF
20%
6.3V
X5R-CERM
0201

C2711
131S00172
220PF
5%
16V
CER-COG
01005

PP3V0_PENROSE_CONN

GPIO BTN VOL DOWN L

FL2730
240-OHM-25%-0.20A-1.0DCR
01005

GPIO BTN VOL DOWN R L

R2730
100
5%
1/32W
MF
01005

GPIO BTN VOL DOWN L CONN

DZ2730
0201
12.8V-100PF

PP1V8 S3

FL2713
10-OHM-750MA
01005-1
155S0576

C2713
131S00172
220PF
5%
16V
CER-COG
01005

PP1V8_S2_DMIC_C3_CONN

GPIO BTN VOL UP L

FL2731
240-OHM-25%-0.20A-1.0DCR
01005

GPIO BTN VOL UP R L

R2731
100
5%
1/32W
MF
01005

GPIO BTN VOL UP L CONN

DZ2731
0201
12.8V-100PF

L2720
240-OHM-25%-0.20A-1.0DCR

GPIO BTN ONOFF L

GPIO BTN ONOFF R L
01005

R2720
100
5%
1/32W
MF
01005

GPIO BTN ONOFF L CONN

DZ2720
0201
12.8V-100PF

C3 HFX SENSOR

APN: 353S00786

PP1V8 S3

C2701
0.1UF
10%
6.3V
X7R
0201

U2701
HGDEDM033A
SM

VDD

OUT1
OUT2

GND

SOUTH_HALL
NORTH_HALL

R2701
0
5%
1/20W
MF
0201

NOSTUFF

R2702
0
5%
1/20W
MF
0201

GPIO_CPANEL_HALL_TO_PMU_IRQ_L

OUT1: SOUTH
OUT2: NORTH

MIC#4 FILTERS

DMIC2 MIC SCLK

FL2703
0.00
0%
1/32W
MF
01005

DMIC2 MIC SCLK C3 CONN

C2703
27PF
5%
16V
NPO-COG
01005
NOSTUFF

DMIC2 MIC SD UNSEC

FL2704
0.00
0%
1/32W
MF
01005

DMIC2 MIC SD C3 CONN

C2704
27PF
5%
16V
NPO-COG
01005
NOSTUFF

FRONT CAMERA (LI)

POWER FILTERS

FL2802
FERR-22-OHM-1A-0.055OHM
PP1V8_SW1_CAM — PP1V8_CAM_FRONT_CONN
VOLTAGE=1.8V
0201
C2880 220PF 5% 16V C0G 01005
C2881 1.0UF 20% 6.3V X5R 0201-1

FL2800
FERR-22-OHM-1A-0.055OHM
PP2V90_FRONT_CAM — PP2V90_FRONT_CAM_CONN
0201
C2801 220PF 5% 16V C0G 01005
C2803 1.0UF 20% 6.3V X5R 0201-1

FL2803
FERR-22-OHM-1A-0.055OHM
PP1V215_FRONT_CAM — PP1V215_FRONT_CAM_CONN
VOLTAGE=1.2V
0201
C2808 220PF 5% 16V C0G 01005
C2805 1.0UF 20% 6.3V X5R 0201-1

IO FILTERS

FL2880
120-OHM-25%-250MA-0.5DCR
GPIO_SOC_TO_FCAM2_SHTDWN_L — ISP_CAM_FRONT_SHUTDOWN_L_CONN
01005
R2840 100K 5% 1/32W MF 01005

FL2805
70-OHM-300MA
ISP_I2C2_SCL_1V8 — ISP_CAM_FRONT_SCL_CONN
01005-1

FL2801
70-OHM-300MA
ISP_I2C2_SDA_1V8 — ISP_CAM_FRONT_SDA_CONN
01005-1

FL2860
150OHM-25%-200MA-0.7DCR
CLK_SOC_TO_FRONT_CAM_12MHZ — ISP_CAM_FRONT_CLK_CONN
01005-2
C2800 56PF 5% 25V NP0/C0G 01005

FRONT CAMERA CONNECTOR

FLEX SIDE: 516S00396
MLB SIDE: 516S00395
MATCH J317_FRONT_CAM_ISLAND_FLEX A.0.0

J2800
BB35AA-RA18-3A
F-ST-SM

PP1V215_FRONT_CAM_CONN

23
20 19

1 2 GND_VDD=TRUE   LPDP_FCAM2_TO_SOC_DATA_C_P<1>
3 4 GND_VDD=TRUE   LPDP_FCAM2_TO_SOC_DATA_C_N<1>
ISP_CAM_FRONT_SCL_CONN   5 6
ISP_CAM_FRONT_SDA_CONN   7 8 GND_VDD=TRUE   LPDP_FCAM2_TO_SOC_DATA_C_P<0>
PP1V8_CAM_FRONT_CONN   9 10   LPDP_FCAM2_TO_SOC_DATA_C_N<0>
11 12 GND_VDD=TRUE
GPIO_FCAM_JULIET_TO_ACE_SYNC   13 14   LPDP_SOC_TO_FCAM2_AUX_CONN
15 16   ISP_CAM_FRONT_CLK_CONN
PP2V90_FRONT_CAM_CONN   18 17   ISP_CAM_FRONT_SHUTDOWN_L_CONN
21 22
24

MAKE_BASE=TRUE

LPDP AC COUPLING CAPS

LPDP_SOC_TO_FCAM2_AUX
C28A4 0.1UF
01005 6.3V 20% X5R-CERM
GND_VDD=TRUE   GND_VDD=TRUE
LPDP_SOC_TO_FCAM2_AUX_CONN
C2887 220PF 5% 10V NP0/C0G 01005
NOSTUFF

LPDP_FCAM2_TO_SOC_DATA_N<0>
C28A0 0.1UF
01005 6.3V 20% X5R-CERM
LPDP_FCAM2_TO_SOC_DATA_C_N<0>

LPDP_FCAM2_TO_SOC_DATA_P<0>
C28A1 0.1UF
01005 6.3V 20% X5R-CERM
LPDP_FCAM2_TO_SOC_DATA_C_P<0>

LPDP_FCAM2_TO_SOC_DATA_N<1>
C28A2 0.1UF
01005 6.3V 20% X5R-CERM
LPDP_FCAM2_TO_SOC_DATA_C_N<1>

LPDP_FCAM2_TO_SOC_DATA_P<1>
C28A3 0.1UF
01005 6.3V 20% X5R-CERM
LPDP_FCAM2_TO_SOC_DATA_C_P<1>

STROBE CIRCUITRY

LED DRIVER 1

APN: 353S00558

VOLTAGE=5.00V

PPVCC MAIN

C2902 C2904
10UF 10UF
20% 20%
6.3V 6.3V
CERM-X5R CERM-X5R
0402 0402

CRITICAL
L2900
0.47UH-20%-3.8A-0.0480HM
PIQA20121T-SM
SWITCH_MODE=TRUE DIDT=TRUE

PPSTROBE1 LX VOLTAGE=5.00V

PPSTROBE1 BST VOLTAGE=5.00V

C2907 C2910
10UF 10UF
20% 20%
6.3V 6.3V
CERM-X5R CERM-X5R
0402 0402

U2900
LM3566
DSBGA
CRITICAL

A2 IN
B1 SW
C2 HWEN 300K INT PD
B2 STROBE 300K INT PD
D2 TX INT PD
A3 SDA
B3 SCL

OUT C1
LED1 D3
LED2 D1
TORCH/TEMP C3

GND
A1

GPIO RCAM PMU TO STROBE DRIVER HWEN
WIDE AND SWIDE TO STROBE DRIVER STROBE
NC_BB TO AP GSM TXBURST
I2C1 RCAM PMU SDA
I2C1 RCAM PMU SCL

PPSTROBE LED COOL1 CONN

PPSTROBE LED WARM1 CONN

C2909 C2906
220PF 220PF
5% 5%
16V 16V
X7R X7R
01005 01005

CRITICAL
FL2904
120-OHM-25%-250MA-0.5DCR

LED DRIVER NTC
LED DRIVER NTC CONN

R2940
27K
0.5%
1/32W
MF
01005

C2919
100PF
5%
25V
C0G-CERM
01005

LED DRIVER 2

APN: 353S00868

PPVCC MAIN

C2952 C2954
10UF 10UF
20% 20%
6.3V 6.3V
CERM-X5R CERM-X5R
0402 0402

CRITICAL
L2950
0.47UH-20%-3.8A-0.0480HM
PIQA20121T-SM
SWITCH_MODE=TRUE DIDT=TRUE

PPSTROBE2 LX VOLTAGE=5.00V

PPSTROBE2 BST VOLTAGE=5.00V

C2957 C2960
10UF 10UF
20% 20%
6.3V 6.3V
CERM-X5R CERM-X5R
0402 0402

U2950
LM35662
DSBGA
CRITICAL

A2 IN
B1 SW
C2 HWEN 300K INT PD
B2 STROBE 300K INT PD
D2 TX INT PD
A3 SDA
B3 SCL

OUT C1
LED1 D3
LED2 D1
TORCH/TEMP C3

GND
A1

GPIO RCAM PMU TO STROBE DRIVER HWEN
WIDE AND SWIDE TO STROBE DRIVER STROBE
NC_BB TO AP GSM TXBURST
I2C1 RCAM PMU SDA
I2C1 RCAM PMU SCL

PPSTROBE LED COOL2 CONN

PPSTROBE LED WARM2 CONN

C2959 C2956
220PF 220PF
5% 5%
16V 16V
X7R X7R
01005 01005

LED DRIVER NTC

PAGE TITLE

CAMERA: STROBE

DRAWING NUMBER SIZE

BORRIS BOOST

BOOST MASTER

BOOST SLAVE

CAP RESERVOIR

CS35L91 (ARDEE)				
ADDR PIN PULL	RESISTOR	I2C ADDRESS		
GND	0K		0X70	AMP1 FHRT
VDD	0K	0X72		AMP2 FHRW
GND	4.99K		0X74	AMP3 FHLT
VDD	4.99K		0X76	AMP4 FHLW
GND	20K		0X78	AMP5 CNRT
VDD	20K	0X7A		AMP6 CNRW
GND	100K		0X7C	AMP7 CNLT
VDD	100K		0X7E	AMP8 CNLW

CS37L90 (BORRIS)		
ADDR PIN PULL	RESISTOR	I2C ADDRESS
GND	0K	0X60 MASTER
DVDD	0K	0X62 SLAVE

PAGE TITLE: AUDIO: BORRIS BOOST

DRAWING NUMBER

SIZE

DMIC CONN AND FILTERS

MIC FLEX B2B
MATCH J317_MIC_FLEX 5.2.0
MLB APN: 516S00186
FLEX APN: 516S00185

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

PWR/GND

68 27 DMIC1 MIC SCLK CONN
68 39 27 PP1V8 S2 DMIC CONN
68 27 DMIC1 MIC SD CONN

NC
PP1V8 S2 DMIC CONN 27 39 68
NC

10   9

ROUTING	BUS	SELECT	LOCATION	DATA ASSERTS ON	DATA LATCHED ON
MIC#1	PDM0	HIGH	LEFT	CLK RISING EDGE	CLK FALLING EDGE
MIC#2	PDM0	LOW	RIGHT	CLK FALLING EDGE	CLK RISING EDGE
PDMIC#3	HIGH		FRONT CLK RISING EDGE		CLK FALLING EDGE
PDMIC#4	LOW		REAR CLK FALLING EDGE	CLK RISING EDGE	
PDMIC#5	HIGH		LANDSCAPE CLK RISING EDGE	CLK FALLING EDGE	

DMIC2 FILTERS

FL3101
9 IN DMIC1 MIC SCLK
1 0.00 2
0%   MF
1/32W 01005
DMIC1 MIC SCLK CONN OUT 27 68

C3101
27PF
5%
16V
NP0-C0G
01005-1
NOSTUFF

FL3102
52 OUT DMIC1 MIC SD UNSEC
1 0.00 2
0%   MF
01005 1/32W
DMIC1 MIC SD CONN IN 27 68

C3102
27PF
5%
16V
NP0-C0G
01005-1
NOSTUFF

FL3154
72 23 18 PP1V8 S3
1 2
01005
120-OHM-25%-250MA-0.5DCR
PP1V8 S2 DMIC CONN 27 39 68

C3154
1.0UF
20%
6.3V
X5R
0201-1

C3155
220PF
5%
16V
C0G
01005

SYNC_MASTER=J317_REV_0_27   SYNC_DATE=05/21/2017
PAGE TITLE
AUDIO: DMIC B2B & FILTERS
DRAWING NUMBER   SIZE

CN L TWEETER SPEAKER AMP

PPV_BST_AUDIO
68 31 30 29 28 26

C3206 10UF 20% 25V X5R-CERM 0603
C3207 C3208 0.1UF 20% 16V X6S-CERM 0201
180PF 5% 50V NP0-C0G 0201

PPVCC_MAIN
28 29 30 31 72

C3200 10UF 20% 6.3V CERM-X5R 0402-9
C3201 C3202 0.1UF 20% 6.3V X5R-CERM 01005
270PF 10% 16V CERM-X7R 01005

PP1V8 SW1
72 31 30 29 28 26
C3203 1.0UF 20% 6.3V X5R 0201-1

PP1V8 SW1
26 28 29 30 31 72
C3205 1.0UF 20% 6.3V X5R 0201-1

I2C2 SCL 1V8   B2 I2C_SCL
I2C2 SDA 1V8   B3 I2C_SDA
SPKRAMP CN ADDRESS L T   D5 I2C_ADDR
ARDEE TO BORRIS BYPASS EN   C4 BYP_EN

E5 VDD_A
C1 VDD_SPK
B1 VDD_SPK
A5 VIO_ASP

U3200
CS35L91A1
WLCSP
338S00550

I2S1 SPKRAMP CN TO SOC DOUT
70 29 28 6   OUT   2 1
R3201 33 1/32W MF 01005
31 30 29 28 6

I2S SPKRAMP CN L T TO SOC DOUT   A2 ASP_DOUT
I2S1 SOC TO SPKRAMP CN DOUT   A1 ASP_DIN
I2S1 SOC TO SPKRAMP CN LRCK   A3 ASP_FSYNC
I2S1 SOC TO SPKRAMP CN BCLK   A4 ASP_BCLK
GPIO SPKRAMP TO SOC IRQ L   B4 IRQ*
GPIO SOC TO SPKRAMP RESET L   C5 RESET*

SPKRAMP_CN_L_T_VSNS_P
XW3200 SHORT-1OL-0.1MM-SM
1   2   NO_XNET_CONNECTION=1

SPKRAMP_CN_L_T_VSNS_N
XW3201 SHORT-1OL-0.1MM-SM
1   2   NO_XNET_CONNECTION=1

PP1V8 SW1
72 31 30 29 28 26
R3200 10K 5% 1/32W MF 01005 NOSTUFF
R3203 100K 1/32W MF 01005

GPIO SPKRAMP TO SOC IRQ L
68 68 31 30 29   IN
SPKRAMP CN ADDRESS L W

GPIO SOC TO SPKRAMP RESET L
31 30 29 28 6   IN
SPKRAMP CN ADDRESS L T
28

R3251 100K 5% 1/32W MF 01005
R3202 100K 5% 1/32W MF 01005

SPKRAMP_CN_VREFC1_L_T   E4 VREF_FILT
ARDEE SYNC   B5 SYNC
68 31 30 29 28 26

C3209 1.0UF 20% X5R 0201-1

E1 VSNSP_SPK
E2 VSNSN_SPK
D2 OUTP_SPK
C2 OUTN_SPK

E3 GND_A
C3 GND_SPK
D3 GND_SPK
D4 GND_SPK

SPKRAMP_CN_L_T_OUT_P
SPKRAMP_CN_L_T_OUT_N

C3236 NOSTUFF 180PF 2% 50V NP0-C0G 0201
131S00118

C3231 180PF 2% 50V NP0-C0G 0201
131S00118

C3232 180PF 2% 50V NP0-C0G 0201
131S00118

FUNC_TEST=TRUE
PLACE_NEAR=J3200.1:11MM
TP3200
PLACE_NEAR=J3200.1:11MM
TP3201
PLACE_NEAR=J3200.2:11MM
TP3202
PLACE_NEAR=J3200.2:11MM
TP3203
FUNC_TEST=TRUE

MLB APN: 518S00106
J3200
CFX3102-0221E
F-ST-SM
1
2

C3237 180PF 2% 50V NP0-C0G 0201
131S00118

C3233 180PF 2% 50V NP0-C0G 0201 NOSTUFF
131S00118

C3234 180PF 2% 50V NP0-C0G 0201 NOSTUFF
131S00118

PLACE_NEAR=J3200.1:5MM
PLACE_NEAR=J3200.2:5MM
PLACE_NEAR=J3200.2.5MM

CN L WOOFER SPEAKER AMP

PPV_BST_AUDIO
68 31 30 29 28 26

C3289 10UF 20% 25V X5R-CERM 0603 CRITICAL
C3290 0.1UF 20% 16V X6S-CERM 0201
C3291 180PF 2% 50V NP0-C0G 0201

PPVCC_MAIN
28 29 30 31 72

C3292 10UF 20% 6.3V CERM-X5R 0402-9 CRITICAL
C3293 0.1UF 20% 6.3V X5R-CERM 01005
C3294 270PF 10% 16V CERM-X7R 01005

PP1V8 SW1
72 31 30 29 28 26
C3295 1.0UF 20% 6.3V X5R 0201-1

PP1V8 SW1
26 28 29 30 31 72
C3297 1.0UF 20% 6.3V X5R 0201-1

I2C2 SCL 1V8   B2 I2C_SCL
I2C2 SDA 1V8   B3 I2C_SDA
SPKRAMP CN ADDRESS L W   D5 I2C_ADDR
ARDEE TO BORRIS BYPASS EN   C4 BYP_EN

E5 VDD_A
C1 VDD_SPK
B1 VDD_SPK
A5 VIO_ASP

U3250
CS35L91A1
WLCSP
338S00550

I2S1 SPKRAMP CN TO SOC DOUT
70 29 28 6   OUT   1
R3260 33 1/32W MF 01005
31 30 29 28 6   2

I2S SPKRAMP CN L W TO SOC DOUT   A2 ASP_DOUT
I2S1 SOC TO SPKRAMP CN DOUT   ASP_DIN A1
I2S1 SOC TO SPKRAMP CN LRCK   A3 ASP_FSYNC
I2S1 SOC TO SPKRAMP CN BCLK   A4 ASP_BCLK
GPIO SPKRAMP TO SOC IRQ L   B4 IRQ*
GPIO SOC TO SPKRAMP RESET L   C5 RESET*

SPKRAMP CN L W VSNS P
XW3250 SHORT-1OL-0.1MM-SM
1   2   NO_XNET_CONNECTION=1
PLACE_NEAR=J3250.1:5MM

SPKRAMP CN L W VSNS N
XW3251 SHORT-1OL-0.1MM-SM
1   2   NO_XNET_CONNECTION=1
PLACE_NEAR=J3250.2:5MM

SPKRAMP_CN_VREFC1_L_W   E4 VREF_FILT
ARDEE SYNC   SYNC   B5
68 31 30 29 28

C3280 1.0UF 20% X5R 0201-1

E1 VSNSP_SPK
E2 VSNSN_SPK
D2 OUTP_SPK
C2 OUTN_SPK

E3 GND_A
C3 GND_SPK
D3 GND_SPK
D4 GND_SPK

SPKRAMP CN L W OUT P
SPKRAMP CN L W OUT N

C3286 180PF 2% 50V NP0-C0G 0201 NOSTUFF
131S00118

C3281 180PF 2% 50V NP0-C0G 0201
131S00118

C3282 180PF 2% 50V NP0-C0G 0201 NOSTUFF
131S00118

FUNC_TEST=TRUE
PLACE_NEAR=J3250.1:11MM
TP3204
PLACE_NEAR=J3250.1:11MM
TP3205
PLACE_NEAR=J3250.2:11MM
TP3206
PLACE_NEAR=J3250.2:11MM
TP3207

J3250
CFX3102-0221E
F-ST-SM
1
2

C3287 180PF 2% 50V NP0-C0G 0201
131S00118

C3263 180PF 2% 50V NP0-C0G 0201 NOSTUFF
131S00118

C3284 180PF 2% 50V NP0-C0G 0201
131S00118

PLACE_NEAR=J3200.1:5MM
PLACE_NEAR=J3200.2:5MM

PAGE TITLE
AUDIO: SPEAKER AMPS (CNL)
DRAWING NUMBER
SIZE

CN R TWEETER SPEAKER AMP

PPV BST AUDIO

CRITICAL

C3306 10UF 20% 20V X5R-CERM 0603

C3307 C3308 0.1UF 20% 16V X6S-CERM 0201

180PF 2% 50V NP0-C0G 0201

PPVCC_MAIN

CRITICAL

C3300 10UF 20% 6.3V X5R-CERM 0402-9

C3301 0.1UF 20% 16V X5R-CERM 1005

C3302 270PF 2% 50V CERM-X7R 1005

PP1V8 SW1

C3303 1.0UF 20% 6.3V X5R 0201-1

E5 C1 D1 B1 A5
VDD_A VDD_SPK VDD_SPK VDD_BATT VIO_ASP

PP1V8 SW1

C3305 1.0UF 20% 6.3V X5R 0201-1

U3300
CS35L91A1
WLCSP
338S00550

I2C2 SCL 1V8 — B2 I2C_SCL
I2C2 SDA 1V8 — B3 I2C_SDA
SPKRAMP_CN_ADDRESS_R_T — D5 I2C_ADDR
ARDEE TO BORRIS BYPASS EN — C4 BYP_EN

R3301 33

I2S1 SPKRAMP CN TO SOC DOUT — OUT

I2S SPKRAMP CN R T TO SOC DOUT — ASP_DOUT
I2S1 SOC TO SPKRAMP CN DOUT — A1 ASP_DIN
I2S1 SOC TO SPKRAMP CN LRCK — A3 ASP_FSYNC
I2S1 SOC TO SPKRAMP CN BCLK — A4 ASP_BCLK
GPIO SPKRAMP TO SOC IRQ L — B4 IRQ*
GPIO SOC TO SPKRAMP RESET L — C5 RESET*

SPKRAMP_CN_VREFC1_R_T — E4 VREF_FILT

ARDEE SYNC — B5 SYNC

SPKRAMP_CN_R_T_VSNS_P

XW3300 SHORT-10L-0.1MM-SM

XW3301 SHORT-10L-0.1MM-SM

SPKRAMP_CN_R_T_VSNS_N

VSNSP_SPK E1
VSNSN_SPK E2

OUTN_SPK
OUTP_SPK D2
C2

SPKRAMP_CN_R_T_OUT_P

SPKRAMP_CN_R_T_OUT_N

NOSTUFF C3336 180PF 2% 50V NP0-C0G 0201

TP3300 A
TP3301 A
TP3302 A
TP3303 A

MLB APN: 518S00106
J3300
CFX3102-0221E
F-ST-SM

C3337 180PF 2% 50V NP0-C0G 0201 NOSTUFF

GND_A GND_SPK GND_SPK GND_SPK
E3 D3 D4

C3309 1.0UF 20% 6.3V X5R 0201-1

C3331 180PF 2% 50V NP0-C0G 0201

C3332 180PF 2% 50V NP0-C0G 0201

C3333 180PF 2% 50V NP0-C0G 0201 NOSTUFF

C3334 180PF 2% 50V NP0-C0G 0201 NOSTUFF

R3303 20.0K 5% 1/32W MF 01005

SPKRAMP_CN_ADDRESS_R_W
SPKRAMP_CN_ADDRESS_R_T

R3351 20.0K 5% 1/32W MF 01005

CN R WOOFER SPEAKER AMP

PPV BST AUDIO

CRITICAL

C3390 10UF 0.1UF 20% 20V X5R-CERM 0603

C3391 180PF 2% 50V NP0-C0G 0201

C3392 10UF 20% 6.3V CERM-X5R 0402-9

C3393 0.1UF 20% 16V X5R-CERM 1005

C3394 270PF 10% 16V CERM-X7R 1005

PPVCC_MAIN

PP1V8 SW1

C3395 1.0UF 20% 6.3V X5R 0201-1

E5 C1 D1 B1 A5
VDD_A VDD_SPK VDD_SPK VDD_BATT VIO_ASP

PP1V8 SW1

C3397 1.0UF 20% 6.3V X5R 0201-1

U3350
CS35L91A1
WLCSP
338S00550

I2C2 SCL 1V8 — B2 I2C_SCL
I2C2 SDA 1V8 — B3 I2C_SDA
SPKRAMP_CN_ADDRESS_R_W — D5 I2C_ADDR
ARDEE TO BORRIS BYPASS EN — C4 BYP_EN

R3360 33

I2S1 SPKRAMP CN TO SOC DOUT — OUT

I2S SPKRAMP CN R W TO SOC DOUT — A2 ASP_DOUT
I2S1 SOC TO SPKRAMP CN DOUT — A1 ASP_DIN
I2S1 SOC TO SPKRAMP CN LRCK — A3 ASP_FSYNC
I2S1 SOC TO SPKRAMP CN BCLK — A4 ASP_BCLK
GPIO SPKRAMP TO SOC IRQ L — B4 IRQ*
GPIO SOC TO SPKRAMP RESET L — C5 RESET*

SPKRAMP_CN_VREFC1_R_W — E4 VREF_FILT

ARDEE SYNC — B5 SYNC

SPKRAMP_CN_R_W_VSNS_P

XW3350 SHORT-10L-0.1MM-SM

XW3351 SHORT-10L-0.1MM-SM

SPKRAMP_CN_R_W_VSNS_N

VSNSP_SPK E1
VSNSN_SPK E2

OUTP_SPK D2
OUTN_SPK C2

SPKRAMP_CN_R_W_OUT_P

SPKRAMP_CN_R_W_OUT_N

NOSTUFF C3386 180PF 2% 50V NP0-C0G 0201

TP3304 A
TP3305 A
TP3306 A
TP3307 A

J3350
CFX3102-0221E
F-ST-SM

C3387 180PF 2% 50V NP0-C0G 0201 NOSTUFF

GND_A GND_SPK GND_SPK GND_SPK
E3 D3 D4

C3380 1.0UF 20% 6.3V X5R 0201-1

C3381 180PF 2% 50V NP0-C0G 0201

C3382 180PF 2% 50V NP0-C0G 0201

C3383 180PF 2% 50V NP0-C0G 0201 NOSTUFF

C3384 180PF 2% 50V NP0-C0G 0201 NOSTUFF

PAGE TITLE
AUDIO: SPEAKER AMPS (CNR)
DRAWING NUMBER
SIZE

FH L TWEETER SPEAKER AMP

FH L WOOFER SPEAKER AMP

AUDIO: SPEAKER AMPS (FHL)

U3400
CS35L91A1
WLCSP
338S00550

U3450
CS35L91A1
WLCSP
338S00550

MLB APN: 518S00159

J3401
CFX3104-0301E
F-ST-SM

SPKRAMP FH L W OUT N
SPKRAMP FH L W OUT P
SPKRAMP FH L T OUT P
SPKRAMP FH L W OUT N
SPKRAMP FH L T OUT N

SYNC_MASTER=J317_MLB_SYNC
SYNC_DATE=05/12/2017
PAGE TITLE
DRAWING NUMBER
SIZE

FH R TWEETER SPEAKER AMP

PPV_BST_AUDIO

PPVCC_MAIN

C3506 10UF 20% 25V X5R-CERM 0603

C3507 C3508 0.1UF 180PF 20% 50V 16V NP0-COG X6S-CERM 0201 0201

C3500 10UF 20% 6.3V CERM-X5R 0402-9

C3501 C3502 0.1UF 270PF 2% 16V 180 X5R-CERM 01005 01005

PP1V8 SW1

PP1V8 SW1

C3503 1.0UF 20% 6.3V X5R 0201-1

C3505 1.0UF 20% 6.3V X5R 0201-1

U3500 CS35L91A1 WLCSP 338S00550

E5 C1 D1 B1 A5
VDD_A VDD_SPK VDD_SPK VDD_BATT VIO_ASP

B2 I2C1_SCL_1V8 — I2C_SCL
B3 I2C1_SDA_1V8 — I2C_SDA
D5 SPKRAMP_FH_ADDRESS_R_T — I2C_ADDR
C4 ARDEE_TO_BORRIS_BYPASS_EN — BYP_EN

R3501 33 1/32W MF 01005

A2 I2S_SPKRAMP_FH_R_T_TO_SOC_DOUT — ASP_DOUT
A1 I2S2_SOC_TO_SPKRAMP_FH_DOUT — ASP_DIN
A3 I2S2_SOC_TO_SPKRAMP_FH_LRCK — ASP_FSYNC
A4 I2S2_SOC_TO_SPKRAMP_FH_BCLK — ASP_BCLK

B4 GPIO_SPKRAMP_TO_SOC_IRQ_L — IRQ*
C5 GPIO_SOC_TO_SPKRAMP_RESET_L — RESET*

E4 SPKRAMP_FH_VREFC1_R_T — VREF_FILT
B5 ARDEE_SYNC — SYNC

E1 VSNSP_SPK
E2 VSNSN_SPK
D2 OUTP_SPK
C2 OUTN_SPK

E3 D3 D4
GND_A GND_SPK GND_SPK GND_SPK

I2S2_SPKRAMP_FH_TO_SOC_DOUT

XW3500 SHORT-10L-0.1MM-SM
XW3501 SHORT-10L-0.1MM-SM

SPKRAMP_FH_R_T_VSNS_P
SPKRAMP_FH_R_T_VSNS_N

SPKRAMP_FH_R_T_OUT_P
SPKRAMP_FH_R_T_OUT_N

TP3500
TP3501
TP3502
TP3503

C3536 180PF 2% 50V NP0-COG 0201 NOSTUFF

C3537 180PF 2% 50V NP0-COG 0201 NOSTUFF

C3531 180PF 2% 50V NP0-COG 0201

C3532 180PF 2% 50V NP0-COG 0201

C3533 180PF 2% 50V NP0-COG 0201

C3534 180PF 2% 50V NP0-COG 0201

C3509 1.0UF 20% 6.3V X5R 0201-1

R3551 0.00 0% 1/32W MF 01005

SPKRAMP_FH_ADDRESS_R_W
SPKRAMP_FH_ADDRESS_R_T

R3503 0.00 0% 1/32W MF 01005

FH R WOOFER SPEAKER AMP

PPV_BST_AUDIO

PPVCC_MAIN

C3589 10UF 20% 25V X5R-CERM 0603

C3590 C3591 0.1UF 180PF 20% 50V 16V NP0-COG X6S-CERM 0201 0201

C3592 0.1UF 20% 6.3V CERM-X5R 0402-9

C3593 C3594 0.1UF 270PF 2% 16V 180 X5R-CERM 01005 01005

PP1V8 SW1

PP1V8 SW1

C3595 1.0UF 20% 6.3V X5R 0201-1

C3597 1.0UF 20% 6.3V X5R 0201-1

MLB APN: 518S00159

J3501 CFX3104-0301E F-ST-SM

SPKRAMP_FH_R_W_OUT_P
SPKRAMP_FH_R_W_OUT_N
SPKRAMP_FH_R_W_OUT_P

SPKRAMP_FH_R_T_OUT_N
SPKRAMP_FH_R_T_OUT_P

U3550 CS35L91A1 WLCSP 338S00550

E5 C1 D1 B1 A5
VDD_A VDD_SPK VDD_SPK VDD_BATT VIO_ASP

B2 I2C1_SCL_1V8 — I2C_SCL
B3 I2C1_SDA_1V8 — I2C_SDA
D5 SPKRAMP_FH_ADDRESS_R_W — I2C_ADDR
C4 ARDEE_TO_BORRIS_BYPASS_EN — BYP_EN

R3560 33 1/32W MF 01005

A2 I2S_SPKRAMP_FH_R_W_TO_SOC_DOUT — ASP_DOUT
A1 I2S2_SOC_TO_SPKRAMP_FH_DOUT — ASP_DIN
A3 I2S2_SOC_TO_SPKRAMP_FH_LRCK — ASP_FSYNC
A4 I2S2_SOC_TO_SPKRAMP_FH_BCLK — ASP_BCLK

B4 GPIO_SPKRAMP_TO_SOC_IRQ_L — IRQ*
C5 GPIO_SOC_TO_SPKRAMP_RESET_L — RESET*

E4 SPKRAMP_FH_VREFC1_R_W — VREF_FILT
B5 ARDEE_SYNC — SYNC

E1 VSNSP_SPK
E2 VSNSN_SPK
D2 OUTP_SPK
C2 OUTN_SPK

E3 D3 D4
GND_A GND_SPK GND_SPK GND_SPK

I2S2_SPKRAMP_FH_TO_SOC_DOUT

XW3550 SHORT-10L-0.1MM-SM
XW3551 SHORT-10L-0.1MM-SM

SPKRAMP_FH_R_W_VSNS_P
SPKRAMP_FH_R_W_VSNS_N

SPKRAMP_FH_R_W_OUT_P
SPKRAMP_FH_R_W_OUT_N

TP3504
TP3505
TP3506
TP3507

C3586 180PF 2% 50V NP0-COG 0201

C3587 180PF 2% 50V NP0-COG 0201 NOSTUFF

C3581 180PF 2% 50V NP0-COG 0201

C3582 180PF 2% 50V NP0-COG 0201

C3583 180PF 2% 50V NP0-COG 0201

C3584 180PF 2% 50V NP0-COG 0201

C3580 1.0UF 20% 6.3V X5R 0201-1

ACE BOOST

PPVCC_MAIN

L3600
1UH-20%-6.4A-0.038OHM
PIKA32251B-SM
ACE_BOOST_SW
DIDT=TRUE

C3626
0.01UF
10%
10V
X5R-CERM
0201

ACE_BOOST_BOOT

ACE_TO_BOOST_EN

10UF
20%
10V
X5R-CERM
0201

C3620
0.1UF
10% 5%
10V C0G
X5R-CERM
0402-0.1MM

C3621
0.1UF
10% 5%
10V C0G
X5R-CERM
0201

C3622
220PF
5%
16V
C0G
01005

U3620
SN61230A
VQFN

4 VIN   VOUT 7
5 SW
1 CBST   FB 3
2 EN
   GND
    6

R3621
100K
5%
1/32W
MF
01005

PP5V2_ACE_BOOST_OUT

C3623
220UF
20%
16V
X5R-CERM
01005

C3624
22UF
20%
10V
X5R-CERM
0603-1

C3625
22UF
20%
10V
X5R-CERM
0603-1

C3628
22UF
20%
10V
X5R-CERM
0603-1

C3629
22UF
20%
10V
X5R-CERM
0603-1

R3624
340K
5%
1/20W
MF
201

C3627
4.7PF
16V
NP0-C0G
01005

ACE_BOOST_FB

R3625
100K
1%
1/20W
MF
201

VBUS DETECT

R3684
0%
MF

PP3V3_S2_ACE

0.00
1/32W
01005

USB_VBUS_DETECT_R

EXT CAM SYNC

PP1V8_S3

C3631
0.1UF
10%
16V
CER
0201
NOSTUFF

GPIO_FCAM_JULIET_TO_ACE_SYNC

GPIO_RCAM_JASPER_TO_ACE_SYNC

IN

U3630
TXB0102YZPR
WCSP
NOSTUFF

A1 D2   C1 VCCA   B2 VCCB   A2
A2 D1   B1
                                           B2 A1
          OE C2
          GND
          B1

PP3V3_S2_ACE

C3632
0.1UF
10%
16V
CER
0201
NOSTUFF

FRONT_CAM_SYNC_ACE

REAR_CAM_SYNC_ACE

CAM_SYNC_LS_EN

NOSTUFF
R3633
100K
5%
1/32W
MF
01005

R3631
0.00
0% 1/32W MF 01005

R3632
0.00
0% 1/32W MF 01005

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
372S0194	372S0187		Q3790,Q6990	XSTR,N-CHN,34V,500MA

B2B CONNECTOR TO I/O FLEX

MATCH J317_IO_FLEX A.0.0

MLB 516S00266
FLEX 516S00265

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

68 36 33 PPVBUS_USB_CONN — 44 PWR 43 — ACE_CC1 BI 34 36 68

SIGNAL
2 · 1
4 · 3 GND_VOID_TRUE — ACE_SBU2_CONN BI 34 36 68
6 · 5
7 8 · GND_VOID_TRUE — USB3_TX1_CONN_P IN 36
10 9 · GND_VOID_TRUE — USB3_TX1_CONN_N IN 36
12 · 11
14 · 13 GND_VOID_TRUE — USB3_RX1_CONN_P OUT 36
16 · 15 GND_VOID_TRUE — USB3_RX1_CONN_N OUT 36
18 · 17
20 · 19 GND_VOID_TRUE — ACE_USB_BOT_CONN_N BI 34 36 67 68
22 · 21 GND_VOID_TRUE — ACE_USB_BOT_CONN_P BI 34 36 67 68
24 · 23
26 · 25 GND_VOID_TRUE — ACE_USB_TOP_CONN_P BI 34 36 67 68
28 · 27 GND_VOID_TRUE — ACE_USB_TOP_CONN_N BI 34 36 67 68
30 29 ·
32 · 31 GND_VOID_TRUE — USB3_TX2_CONN_N IN 36
34 · 33 GND_VOID_TRUE — USB3_TX2_CONN_P IN 36
36 · 35
38 · 37 GND_VOID_TRUE — USB3_RX2_CONN_N OUT 36
40 · 39 GND_VOID_TRUE — USB3_RX2_CONN_P OUT 36

68 36 33 ACE_SBU1_CONN BI — 42 GND_VOID_TRUE · 41

PWR
68 36 33 PPVBUS_USB_CONN — 46 45 — ACE_CC2 BI 34 36 68

GND
48 · 47
50 · 49
52 · 51
54 · 53
56 · 55
58 · 57
60 · 59
62 · 61
64 · 63
66 65 ·
68 · 67

TRANSIENT SUPPRESSION

68 36 33 PPVBUS_USB_CONN

C3790
0.022UF
10%
50V
X7R
0402

68 TRANS_DET_BASE

Q3790
ZXTN3035CLP
DFN10063

R3790
3.0K
1%
1/32W
MF
01005

PAGE TITLE
IO: IOFLEX B2B & SIM B2B
DRAWING NUMBER   SIZE

IO: ACE USB-C CONTROLLER

U3800
353S02158
CD3217B12BCE
FCBGA

BOM_COST_GROUP=USB-C

USB RE-DRIVER

APN: 353S02059
7-BIT I2C ADD: 0X50

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
353S01846	353S02059		U3900	PI3DPX1205AL USBC XBAR WFBGA

SOC_DP0_N_C   C0821   GND_VOID=TRUE   0.22UF   10%   01005   CER-X5R   6.3V
SOC_DP0_P_C   C0820   GND_VOID=TRUE   0.22UF   10%   01005   CER-X5R   6.3V
SOC_DP1_N_C   C0823   GND_VOID=TRUE   0.22UF   10%   01005   CER-X5R   6.3V
SOC_DP1_P_C   C0822   GND_VOID=TRUE   0.22UF   10%   01005   CER-X5R   6.3V
SOC_DP2_N_C   C0825   GND_VOID=TRUE   0.22UF   10%   01005   CER-X5R   6.3V
SOC_DP2_P_C   G0824   GND_VOID=TRUE   0.22UF   10%   01005   CER-X5R   6.3V
SOC_DP3_N_C   C0827   GND_VOID=TRUE   0.22UF   10%   01005   CER-X5R   6.3V
SOC_DP3_P_C   C0826   GND_VOID=TRUE   0.22UF   10%   01005   CER-X5R   6.3V

PP3V3_S2_REDRIVER   34 35 72

C3913   0.1UF   10%   16V   CER   0201
C3916   0.1UF   10%   16V   CER   0201
C3917   0.1UF   10%   16V   CER   0201
C3918   0.1UF   10%   16V   CER   0201
C3914   0.1UF   10%   16V   CER   0201
C3915   0.1UF   10%   16V   CER   0201
C3919   0.1UF   10%   16V   CER   0201
C3903   10UF   20%   10V   X5R-CERM   0402-0.1MM

VDD33   U3900   PI3DPX1225   QFN

SOC_DP0_N   34   AP_DP0N   CON_TX2N   19   USB3_TX2_CONN_CR_N   OUT
SOC_DP0_P   33   AP_DP0P   CON_TX2P   20   USB3_TX2_CONN_CR_P   OUT
SOC_DP1_N   31   AP_DP1N   CON_RX2N   15   USB3_RX2_CONN_CR_N   IN
SOC_DP1_P   30   AP_DP1P   CON_RX2P   16   USB3_RX2_CONN_CR_P   IN
SOC_DP2_N   36   AP_DP2N   CON_TX1N   12   USB3_TX1_CONN_CR_N   OUT
SOC_DP2_P   37   AP_DP2P   CON_TX1P   11   USB3_TX1_CONN_CR_P   OUT
SOC_DP3_N   39   AP_DP3N   CON_RX1N   8   USB3_RX1_CONN_CR_N   IN
SOC_DP3_P   40   AP_DP3P   CON_RX1P   7   USB3_RX1_CONN_CR_P   IN

USB3_SOC_TX_N   C3951   0.22UF   10% 6.3V   CER-X5R 01005
USB3_SOC_TX_P   C3950   0.22UF   10% 6.3V   CER-X5R 01005
USB3_SOC_RX_N   C3960   0.22UF   10% 6.3V   CER-X5R 01005
USB3_SOC_RX_P   C3961   0.22UF   10% 6.3V   CER-X5R 01005

USB3_SOC_TX_C_N   27   AP_SSTXN
USB3_SOC_TX_C_P   28   AP_SSTXP
USB3_SOC_RX_C_N   23   AP_SSRXN
USB3_SOC_RX_C_P   24   AP_SSRXP

AUXSBU1   4   NC
AUXSBU2   3   NC

1   AP_AUXP
2   AP_AUXN

NC   21   NC
NC   22   NC

SDA   5
SCL   6

IN_HPD   25   ACE_TO_SOC_HPD_R
EN   29

R3931   0.00   1/32W 0%   MF 01005
R3930   0.00   0% 1/MEW   01005   ACE_TO_SOC_HPD   IN
NOSTUFF

ACE_TO_REDRIVER_EN   IN   34

A0   9   INT 300K PD
A1   13   INT 200K PD
A2   18   INT 300K PD
NC   NC   NC

EPAD   41

I2C_REDRIVER_SDA
I2C_REDRIVER_SCL

I2C ISOLATION CIRCUIT

PP3V3_S2_REDRIVER   72 35 34
PP3V3_ACE_LDO   34 68

R3972   4.7K   5%   1/32W   MF   01005
R3971   4.7K   5%   1/32W   MF   01005
R3970   10K   5%   1/32W   MF   01005
C3970   0.1UF   10%   16V   CER   0201
C3971   0.1UF   10%   16V   CER   0201

U3970   FXMA2102L8X

VCCA   1
VCCB   8

URAK
I2C_REDRIVER_SCL   2   A0   B0   7   I2C_PULLUP   ACE_I2CM_SCL
I2C_REDRIVER_SDA   3   A1   B1   6   I2C_PULLUP   ACE_I2CM_SDA

I2C_REDRIVER_EN   5   OE

GND   4

PAGE TITLE   IO: ACE REDRIVER
DRAWING NUMBER   SIZE

USB CONN FILTERS

XW4050
SM
OMIT

PPVBUS USB EMI

68 56 34

C40A7
15PF
4A
50V
COG
0201
131S0730

R40A5
100K
5%
1/20W
MF
201

2   1

DZ40A8
27V-100PF-4A
0402

PPVBUS USB CONN
21 68

C40A6
0.1UF
10%
16V
X5R-CERM
0402

C40A8
0.01UF
10%
50V
X7R
402

C40A9
180PF
2%
50V
NPO-C0G
0201

USB3_RX1_CONN_CR_P   OUT 35   R4025   USB3_RX1_CONN_C_P   C4025   0.33UF   USB3_RX1_CONN_P   IN 33
USB3_RX1_CONN_CR_N   OUT 35   R4026   USB3_RX1_CONN_C_N   C4026   0.33UF   USB3_RX1_CONN_N   33

D4008 ESD8011 D4009 ESD8011   R4035 220K R4036 220K

USB3_RX2_CONN_CR_N   OUT 35   R4027   USB3_RX2_CONN_C_N   C4027   0.33UF   USB3_RX2_CONN_N   33
USB3_RX2_CONN_CR_P   OUT 35   R4028   USB3_RX2_CONN_C_P   C4028   0.33UF   USB3_RX2_CONN_P   IN 33

D4016 ESD8011 D4017 ESD8011   R4037 220K R4038 220K

USB3_TX1_CONN_CR_P   IN 35   R4019   USB3_TX1_CONN_C_P   C4019   0.22UF   USB3_TX1_CONN_P   OUT 33
USB3_TX1_CONN_CR_N   IN 35   R4020   USB3_TX1_CONN_C_N   C4020   0.22UF   USB3_TX1_CONN_N   OUT 33

D4002 ESD8011 D4003 ESD8011   R4049 220K R4040 220K

USB3_TX2_CONN_CR_N   IN 35   R4017   USB3_TX2_CONN_C_N   C4017   0.22UF   USB3_TX2_CONN_N   OUT 33
USB3_TX2_CONN_CR_P   IN 35   R4018   USB3_TX2_CONN_C_P   C4018   0.22UF   USB3_TX2_CONN_P   OUT 33

D4004 ESD8011 D4005 ESD8011   R4047 220K R4048 220K

ACE_USB_BOT_CONN_P   BI 68 67 34 33   BI
ACE_USB_BOT_CONN_N   BI 68 67 34 33   BI
ACE_USB_TOP_CONN_P   BI 68 67 34 33   BI
ACE_USB_TOP_CONN_N   BI 68 67 34 33   BI

DZ4014 DZ4015   DZ4016 DZ4017
5.5V-0.28PF 5.5V-0.28PF   5.5V-0.28PF 5.5V-0.28PF
0201 0201   0201 0201
377S0184 377S0184   377S0184 377S0184
0.28PF 0.28PF

ACE_SBU1_CONN   BI 68 34 33   BI
ACE_SBU2_CONN   68 34 33 BI   BI
ACE_CC1   68 34 33 BI   BI
ACE_CC2   68 34 33 BI   BI

DZ4011 DZ4012 DZ4010 DZ4013
ESDL2D-1BF4 ESDL2D-1BF4 ESDL2D-1BF4 ESDL2D-1BF4
0201 0201 0201 0201

377S00060

SYNC_MASTER=J320_USBDC
PAGE TITLE
SYNC_DATE=11/06/2018

IO: ACE FILTERS

DRAWING NUMBER   SIZE

Rigel Driver

PPVCC_MAIN

C4197
18UF
20%
CER-X5R
0402-0.1MM
ROOM=RIGEL

C4194
4UF
20%
CER-X5R
0201
ROOM=RIGEL

138S00071

C4193
4UF
20%
CER-X5R
0201
ROOM=RIGEL

138S00071

C4192
4UF
20%
CER-X5R
0201
ROOM=RIGEL

138S00071

C4191
4UF
20%
CER-X5R
0201
ROOM=RIGEL

138S00071

Terminate @ Cap via on VDD_MAIN plane.

OMIT
XW4100
SHORT-10L-0.1MM-SM
ROOM=RIGEL
PP_RIGEL_VINCORE

C4190
1UF
20%
X5R
0201
ROOM=RIGEL

PP1V8_SW1_CAM

PP_VANA

PPVCC_HIGH

C4195
1UF
20%
X5R
0201
ROOM=RIGEL

C4196
1UF
20%
X5R
0201
ROOM=RIGEL

C4198
4UF
20%
CER-X5R
0201
ROOM=RIGEL

138S00071

U4100
STB601A0
WLCSP

ROOM=RIGEL
CRITICAL

PP_TITUS_CATHODE — VK K4/K5/K6/K7/K8

TITUS_TO_RIGEL_VCSEL_NTC — NTC G4
OTPHV C4
TAMP D4
GPIO_APOLLO_TO_RIGEL_EN — ENA B3
YOGI_TO_RIGEL_STATUS — XEF1 C8
MAMA_BEAR_BI_RIGEL_STATUS — XEF0 C7
THROT B8
JULIET_PMU_TO_RIGEL_STROBE — STROBE A4
10K
R4101 RIGEL_TESTMODE_EN — TESTMODE B7
TESTMODE2 B5
TEST B6
CLK_SOC_TO_PEARL_12MHZ — MCLK A7
GPIO_RIGEL_TO_SOC_IRQ — INT B4
ISP_I2C3_SCL_1V8 — SCL A5
ISP_TITUS_RIGEL_SDA_R — SDA A6
PD0 G5
PD1 G6

RIGEL_LSCP — LSCP H7

C4122
0.01UF
10%
X5R
0105
ROOM=RIGEL

R4100
33.2
1%
1/32W
MF
01005

ISP_I2C3_SDA_1V8

VCC4
VCC3
VIN_LVT
VINVCORE
VANA
VINVCORE2
VINSDB
VINSDB
VINSDB
VINSUB
VINSUB
VINSUB
VINSUA
VINSUA
VINSUA
VINSDA
VINSDA
VINSDA

PP_RIGEL_BUCK_BOOST_A

VBBOUTA H10/J10/K10
VLXA D10/D9/E10 — RIGEL_VLXA
VCXA B10 — RIGEL_VCXA
BOOSTSDA C8 — BOOSTSDA
BULKSDA D8 — RIGEL_BULKSDA
BULKSDB D3 — RIGEL_BULKSDB
BOOSTSDB E3 — RIGEL_BOOSTSDB
VCXB B1/B2 — RIGEL_VCXB
VLXB D1/D2/E1 — RIGEL_VLXB
VBBOUTB J1/J2/J3

PP_RIGEL_BUCK_BOOST_B

C4105
4.7UF
20%
X5R
0402
ROOM=RIGEL

C4120
0.01UF
10%
X5R
01005
ROOM=RIGEL

C4121
0.01UF
10%
X5R
01005
ROOM=RIGEL

C4110
4.7UF
20%
X5R
0402

L4100
0.47UH-20%-4A-0.048OHM
DIDT=TRUE
PIWA20120H-SM
ROOM=RIGEL

C4100
4.7UF
20%
X5R
0402
ROOM=RIGEL

C4101
220PF
5%
C0G
01005
ROOM=RIGEL

L4101
0.47UH-20%-4A-0.048OHM
DIDT=TRUE
PIWA20120H-SM
ROOM=RIGEL

C4111
4.7UF
20%
X5R
0402
ROOM=RIGEL

C4112
220PF
5%
C0G
01005
ROOM=RIGEL

IOUT0 H9/K9/J9 — PP_TITUS_DENSE_ANODE
IOUT1 H1/H2/H3 — PP_TITUS_SPARSE_ANODE
IOUT2 K1/K2/K3 — PP_ROSALINE_ANODE
IOUT3 G1 — PP_TITUS_A_ANODE
IOUT4 G10 — PP_TITUS_B_ANODE

PGNDK
GNDCORE4
GNDCORE3
GNDCORE2
GNDCORE
GNDD
GNDS
PGNDB
PGNDA

OMIT
XW4101
SHORT-10L-0.135MM-SM
998-17721
PLACE_NEAR=U4100,F6.5MM
RIGEL_QUIET_GND

TITUS POWER FILTERING

69 38 37 PP TITUS B ANODE

69 38 37 PP TITUS A ANODE

69 38 37 PP TITUS DENSE ANODE

69 38 37 PP TITUS SPARSE ANODE

69 38 37 PP TITUS CATHODE

72 38 PP3V1 PEARL

C4292
220PF
5%
1
2
C0G
01005
ROOM=B2B_PEARL

C4293
220PF
5%
1
2
C0G
01005
ROOM=B2B_PEARL

C4294
220PF
5%
1
2
C0G
01005
ROOM=B2B_PEARL

C4295
220PF
5%
1
2
C0G
01005
ROOM=B2B_PEARL

C4296
220PF
5%
1
2
C0G
01005
ROOM=B2B_PEARL

C4297
220PF
5%
1
2
C0G
01005
ROOM=B2B_PEARL
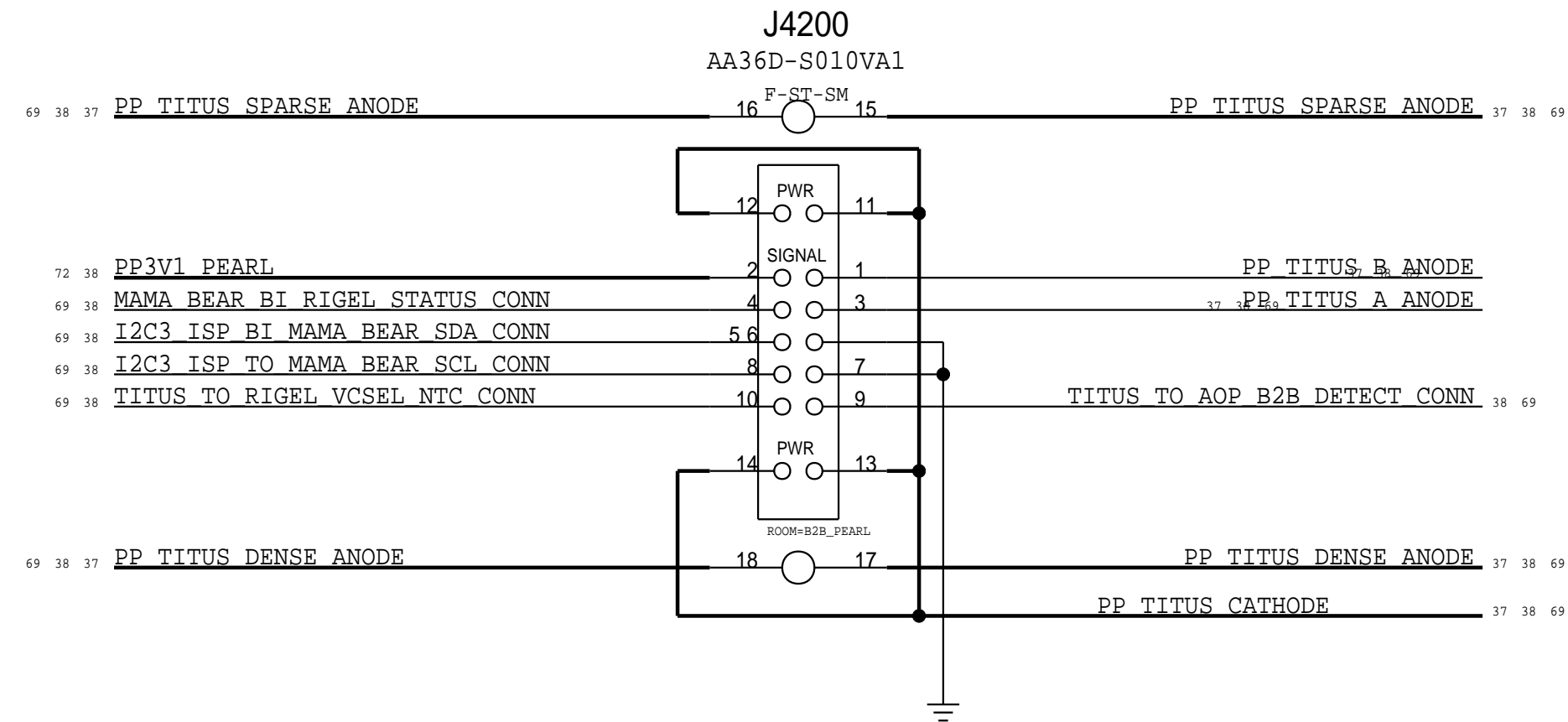
JEWEL CONNECTOR

MLB: 516S00267
FLEX: 516S00268
MATCH J317_JEWEL_FLEX A.1.0

J4200
AA36D-S010VA1
F-ST-SM

69 38 37 PP TITUS SPARSE ANODE   16   15   PP TITUS SPARSE ANODE 37 38 69

PWR
12   11

72 38 PP3V1 PEARL   2
SIGNAL
1

69 38 MAMA BEAR BI RIGEL STATUS CONN   4   3   PP TITUS A ANODE
69 38 I2C3 ISP BI MAMA BEAR SDA CONN   5 6
69 38 I2C3 ISP TO MAMA BEAR SCL CONN   8   7
69 38 TITUS TO RIGEL VCSEL NTC CONN   10   9   TITUS TO AOP B2B DETECT CONN 38 69

PWR
14   13

69 38 37 PP TITUS DENSE ANODE   18   17   PP TITUS DENSE ANODE 37 38 69

PP TITUS CATHODE 37 38 69

TITUS I/O

FL4254
150OHM-25%-200MA-0.7DCR
5 OUT GPIO_TITUS_TO_AOP_B2B_DETECT   1   2   TITUS_TO_AOP_B2B_DETECT_CONN 38 69
01005-2
ROOM=B2B_PEARL

C4254
220PF
5%
1
2
C0G
01005
ROOM=B2B_PEARL

FL4255
150OHM-25%-200MA-0.7DCR
37 OUT TITUS_TO_RIGEL_VCSEL_NTC   1   2   TITUS_TO_RIGEL_VCSEL_NTC_CONN 38 69
01005-2
ROOM=B2B_PEARL

C4255
220PF
5%
1
2
C0G
01005
ROOM=B2B_PEARL

R4256
10K
5%
1/32W
MF
01005
72 39 38 37 PP1V8_SW1_CAM   2   1

FL4256
150OHM-25%-200MA-0.7DCR
37 IN MAMA_BEAR_BI_RIGEL_STATUS   1   2   MAMA_BEAR_BI_RIGEL_STATUS_CONN 38 69
01005-2
ROOM=B2B_PEARL

C4256
220PF
5%
1
2
01005
ROOM=B2B_PEARL

ISP TITUS_RIGEL I2C

FL4252
70-OHM-300MA
ROOM=B2B_PEARL
37 4 IN ISP_I2C3_SCL_1V8   1   2   I2C3_ISP_TO_MAMA_BEAR_SCL_CONN 38 69
01005-1
I2C_PULLUP

FL4253
70-OHM-300MA
ROOM=B2B_PEARL
BI ISP_I2C3_SDA_1V8   1   2   I2C3_ISP_BI_MAMA_BEAR_SDA_CONN
01005-1
I2C_PULLUP

ISP JULIET I2C

FL4250
70-OHM-300MA
ROOM=B2B_PEARL
4 IN ISP_I2C1_SCL_1V8   1   2   ISP_JULIET_SCL_CONN 38 69
01005-1
I2C_PULLUP

FL4251
70-OHM-300MA
ROOM=B2B_PEARL
BI ISP_I2C1_SDA_1V8   1   2   ISP_JULIET_SDA_CONN 38 69
01005-1
I2C_PULLUP

R4260
0.00
0%
1/32W
MF
01005
ROOM=B2B_PEARL
7 IN GPIO_SOC_TO_PEARL_SHTDWN_L   1   2   AP_TO_JULIET_SHUTDOWN_L_CONN 38 69

C4260
220PF
5%
1
2
C0G
01005
ROOM=B2B_PEARL

FL4261
150OHM-25%-200MA-0.7DCR
37 7 IN CLK_SOC_TO_PEARL_12MHZ   1   2   AP_TO_JULIET_CLK_CONN 38 69
01005-2
ROOM=B2B_PEARL

C4262
56PF
5%
1
2
NP0/C0G
01005
ROOM=B2B_PEARL

Juliet Power and I/O

XW4270
SHORT-01005
72 PP1V215_PEARL   1   2   PP1V215_JULIET_DVDD_CONN 38 69
ROOM=B2B_PEARL

C4270
0.1UF
20%
1
2
X5R-CERM
01005
ROOM=B2B_PEARL

C4271
220PF
5%
1
2
C0G
01005
ROOM=B2B_PEARL

FL4272
10-OHM-750MA
72 PP2V85_PEARL   1   2   PP2V85_JULIET_AVDD_CONN 38 69
01005-1
ROOM=B2B_PEARL

C4272
0.1UF
20%
1
2
X5R-CERM
01005
ROOM=B2B_PEARL

C4273
220PF
5%
1
2
C0G
01005
ROOM=B2B_PEARL

R4263
0.00
0%
1/32W
MF
01005
ROOM=B2B_PEARL
37 OUT JULIET_PMU_TO_RIGEL_STROBE   1   2   JULIET_PMU_TO_RIGEL_STROBE_CONN 38 69

C4263
220PF
5%
1
2
C0G
01005
ROOM=B2B_PEARL

FL4274
10-OHM-750MA
38 37   1   2   PP1V8_JULIET_VDDIO_CONN 38 69
72 33 PP1V8_SW1_CAM
01005-1
ROOM=B2B_PEARL

C4274
0.1UF
20%
1
2
X5R-CERM
01005
ROOM=B2B_PEARL

C4275
220PF
5%
1
2
C0G
01005
ROOM=B2B_PEARL

72 IN GPIO_FCAM_JULIET_TO_ACE_SYNC

C4264
220PF
5%
1
2
C0G
01005
ROOM=B2B_PEARL
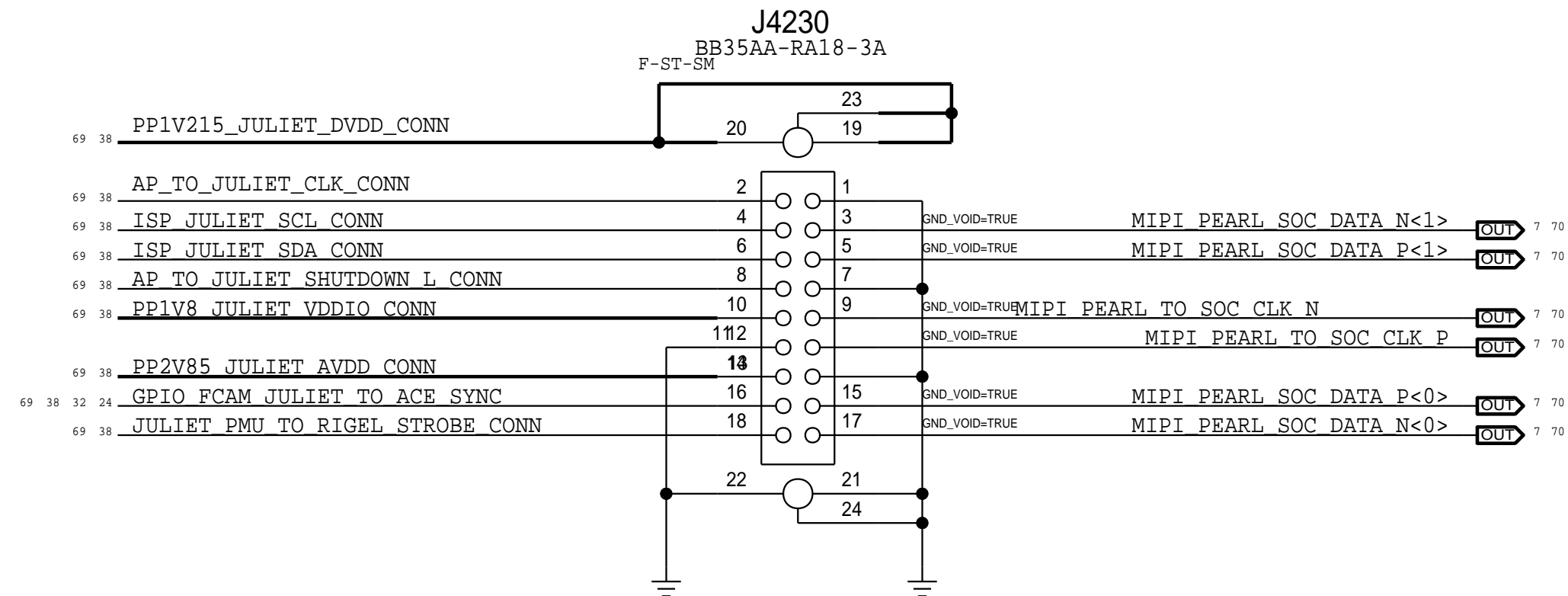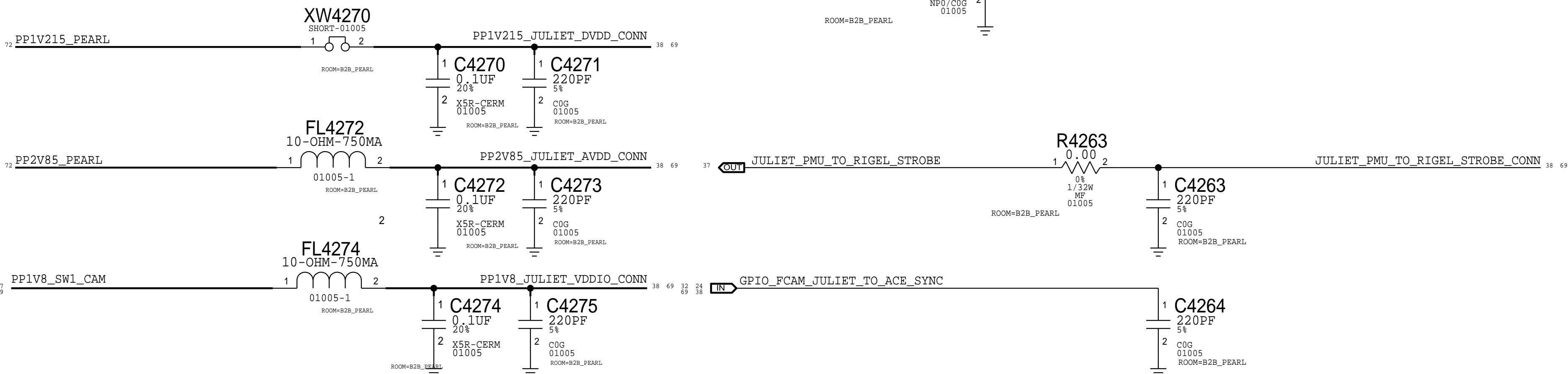
JULIET CONNECTOR

FLEX SIDE: 516S00396
MLB SIDE: 516S00395
MATCH J317_JULIET_FLEX A.0.0

J4230
BB35AA-RA18-3A
F-ST-SM

69 38 PP1V215_JULIET_DVDD_CONN   20   19   23
69 38 AP_TO_JULIET_CLK_CONN   2   1
69 38 ISP_JULIET_SCL_CONN   4   3   GND_VOID=TRUE   MIPI_PEARL_SOC_DATA_N<1> OUT 7 70
69 38 ISP_JULIET_SDA_CONN   6   5   GND_VOID=TRUE   MIPI_PEARL_SOC_DATA_P<1> OUT 7 70
69 38 AP_TO_JULIET_SHUTDOWN_L_CONN   8   7
69 38 PP1V8_JULIET_VDDIO_CONN   10   9   GND_VOID=TRUE   MIPI_PEARL_TO_SOC_CLK_N OUT 7 70
11 12   GND_VOID=TRUE   MIPI_PEARL_TO_SOC_CLK_P OUT 7 70
69 38 PP2V85_JULIET_AVDD_CONN   14   13
69 38 34 GPIO_FCAM_JULIET_TO_ACE_SYNC   16   15   GND_VOID=TRUE   MIPI_PEARL_SOC_DATA_P<0> OUT 7 70
69 38 37 JULIET_PMU_TO_RIGEL_STROBE_CONN   18   17   GND_VOID=TRUE   MIPI_PEARL_SOC_DATA_N<0> OUT 7 70
22   21
24

PAGE TITLE

PEARL: B2B TITUS + JULIET

DRAWING NUMBER

SIZE

ISP FCAM1 JULIET ROSALINE I2C

FL4300
70-OHM-300MA

I2C_AOP_I2CM0_SCL_1V8 —[IN]— 1 —○○○— 2 — I2C0_AOP_TO_PROX_ALS_YOGI_SCL_CONN 39 69
01005-1
I2C_PULLUP

FL4301
70-OHM-300MA

I2C_AOP_I2CM0_SDA_1V8 —[BI]— 1 —○○○— 2 — I2C0_AOP_BI_PROX_ALS_YOGI_SDA_CONN 39 69
01005-1
I2C_PULLUP

Yogi Signals

R4350
10K

PP1V8_SW1_CAM 72 38 37 ——— 2 /\/\ 1 ———
5%
1/32W
MF
01005

FL4350
150OHM-25%-200MA-0.7DCR

YOGI_TO_RIGEL_STATUS 37 —[BI]— 1 —○○○— 2 — YOGI_TO_RIGEL_STATUS_CONN 39 69
01005-2
ROOM=B2B_PEARL

C4350
220PF
5%
COG
01005
ROOM=B2B_PEARL

ROSALINE(AARM) CONNECTOR

MLB: 516S00150
FLEX: 516S00149
MATCH J417_AARM_FLEX A.0.0

J4300
AA37D-S014VA1
F-ST-SM

20 19
69 39 37 16 15 PP_ROSALINE_ANODE 37 39 69
69 39 I2C0_AOP_TO_PROX_ALS_YOGI_SCL_CONN 2 1
69 39 I2C0_AOP_BI_PROX_ALS_YOGI_SDA_CONN 4 3 YOGI_TO_RIGEL_STATUS_CONN 39 69
PP3V0_YOGI_PROX_ALS_CONN 6 5 PROX_BI_AP_AOP_INT_CONN_L 39 69
8 7 ALS_C4_TO_SOC_INT_CONN_L
68 39 DMIC2_MIC_SD_ROS_CONN 10 9
68 39 DMIC3_MIC_SCLK_ROS_CONN 12 11
68 27 PP1V8_S2_DMIC_CONN 14 13 ALS_C3_TO_SOC_INT_CONN_L 39 69
18 17
22 21

DMIC1 FILTERS ROSALINE CONN

FL4321
0.00

DMIC3_MIC_SCLK —[IN]— 1 —/\/\— 2 ———•—— DMIC3_MIC_SCLK_ROS_CONN 39 68
0%   MF
1/32W 01005

C4321
56PF
5%
25V
NP0/C0G
01005
NOSTUFF

FL4322
0.00

DMIC2_MIC_SD_UNSEC 52 23 —[OUT]— 1 —/\/\— 2 ——•—— DMIC2_MIC_SD_ROS_CONN 39 68
0%   MF
1/32W 01005

C4322
27PF
5%
16V
NP0-C0G
01005-1
NOSTUFF

PP_ROSALINE_ANODE 69 39 37 ——————————————•—— C4360
220PF
5%
COG
01005
ROOM=B2B_PEARL

PROX & ALS POWER

R4311
0.00

PP3V0_ALS 72 ——— 1 —/\/\— 2 ——•——•—— PP3V0_YOGI_PROX_ALS_CONN 39 69
0%
1/32W
MF
01005
ROOM=B2B_PEARL

C4313
2.2UF
20%
X5R-CERM
0201
ROOM=B2B_PEARL

C4314
220PF
5%
COG
01005
ROOM=B2B_PEARL

PROX/ALS I/O

R4317
0.00

GPIO_ROSALINE_TO_AOP_IRQ_L 70 9 —[IN]— 1 —/\/\— 2 ——•—— PROX_BI_AP_AOP_INT_CONN_L 39 69
MAKE_BASE=TRUE
0%
1/32W
MF
01005
ROOM=B2B_PEARL

C4317
220PF
5%
COG
01005
ROOM=B2B_PEARL

FL4318
150OHM-25%-200MA-0.7DCR

GPIO_ALS_C3_TO_AOP_IRQ_L 9 —[OUT]— 2 —○○○— 1 ——•—— ALS_C3_TO_SOC_INT_CONN_L 39 69
MAKE_BASE=TRUE
01005-2
ROOM=B2B_PEARL

C4318
220PF
5%
COG
01005
ROOM=B2B_PEARL

FL4319
150OHM-25%-200MA-0.7DCR

GPIO_ALS_C4_TO_AOP_IRQ_L 9 —[OUT]— 2 —○○○— 1 ——•—— ALS_C4_TO_SOC_INT_CONN_L 39 69
MAKE_BASE=TRUE
01005-2
ROOM=B2B_PEARL

C4319
220PF
5%
COG
01005
ROOM=B2B_PEARL

PAGE TITLE
PEARL: B2B ROSALINE + MISC
DRAWING NUMBER   SIZE

EDP AND PWR LED FLEX FILTERS AND CONNECTORS

LPDP_SOC_TO_TCON_DATA_N<4> C464A 0.1UF LPDP_DATA_EMI_N<4> CRITICAL L460A LPDP_DATA_EMI_CONN_N<4>
01005 6.3V 20% X5R-CERM

LPDP_SOC_TO_TCON_DATA_P<4> C464B 0.1UF LPDP_DATA_EMI_P<4> LPDP_DATA_EMI_CONN_P<4>
01005 20% 6.3V X5R-CERM
3.25 OHMS 0.1A 2.4GHZ
OMIT_TABLE

LPDP_SOC_TO_TCON_DATA_N<5> C464C 0.1UF LPDP_DATA_EMI_N<5> CRITICAL L460B LPDP_DATA_EMI_CONN_N<5>
01005 6.3V 20% X5R-CERM

LPDP_SOC_TO_TCON_DATA_P<5> C464D 0.1UF LPDP_DATA_EMI_P<5> LPDP_DATA_EMI_CONN_P<5>
01005 20% 6.3V X5R-CERM
3.25 OHMS 0.1A 2.4GHZ
OMIT_TABLE

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
15SS0897	2	TDK CMC	L460A,L460B	CRITICAL	

R468A 1.00M LPDP_DATA_EMI_CONN_N<4>
01005
R468B 1.00M LPDP_DATA_EMI_CONN_P<4>
01005
R468C 1.00M LPDP_DATA_EMI_N<5>
01005
R468D 1.00M LPDP_DATA_EMI_P<5>
01005

GPIO_SOC_TO_GRAPE_DISPLAY_BSYNC1 R4502 0.00 GPIO_SOC_TO_GRAPE_BSYNC1
1/32W 0% 01005 MF

GPIO_SOC_TO_GRAPE_DISPLAY_BSYNC0 R4504 0.00 GPIO_SOC_TO_GRAPE_BSYNC0
0% 1/32W MF 01005

GPIO_SOC_TO_DISPLAY_EB R4500 0.00 GPIO_SOC_TO_GRAPE_EB
0% 1/32W MF 01005

I2C5_SCL_1V8 R4561 0.00 I2C_TCON_SCL_1V8_CONN
PLACE_NEAR=J4500.42.10MM
0% 1/32W MF 01005
C4565 NOSTUFF 100PF 25V C0G-CERM 01005

I2C5_SDA_1V8 R4571 0.00 I2C_TCON_SDA_1V8_CONN
PLACE_NEAR=J4500.40.10MM
0% 1/32W MF 01005
C4575 NOSTUFF 100PF 25V C0G-CERM 01005

GPIO_PMU_TO_LCD_PWREN FL4560 0.00 GPIO_PMU_TO_LCD_PWREN_FILT
0% 1/32W MF 01005
C4560 100PF 25V C0G-CERM 01005

EDP FLEX CONN
APN (MLB): 516S00358
APN (FLEX): 516S00359
J4500
BM28P0.6-40DS-2-0.35V
F-ST-SM

LPDP_AUX_EMI_CONN_P
LPDP_AUX_EMI_CONN_N
PP1V8_S3
GPIO_APANEL_HALL_TO_PMU_IRQ_L
LPDP_DATA_EMI_CONN_P<0>
LPDP_DATA_EMI_CONN_N<0>
LPDP_HPD_EMI
LPDP_DATA_EMI_CONN_P<1>
LPDP_DATA_EMI_CONN_N<1>
NOSTUFF R4510 0.00 SOC_TO_TCON_FORCE_PWM
1/32W 0% MF 01005
SYS_TO_TCON_FORCE_PWM
LPDP_DATA_EMI_CONN_P<2>
LPDP_DATA_EMI_CONN_N<2>
R4511 0.00 KONA_TO_TCON_FORCE_PWM
1/32W 0% MF 01005
VCOM_LCD_TO_GRAPE
LPDP_DATA_EMI_CONN_P<3>
LPDP_DATA_EMI_CONN_N<3>
I2C_TCON_SDA_1V8_CONN
I2C_TCON_SCL_1V8_CONN
LPDP_DATA_EMI_CONN_P<4>
LPDP_DATA_EMI_CONN_N<4>
NC
LPDP_DATA_EMI_CONN_P<5>
LPDP_DATA_EMI_CONN_N<5>

POWER LED FLEX CONN
APN (MLB): 516S00356
APN (FLEX): 516S00357
J4510
BM28P0.6-36DS-2-0.35V
F-ST-SM1

PPVCC_MAIN_LCD_SW_CONN PWR PPVCC_MAIN_LCD_SW_CONN
GPIO_PMU_TO_LCD_PWREN_FILT GPIO_PMU_TO_LCD_PWREN_FILT
MAKE_BASE=TRUE
LED_IO_4_B LED_IO_6_B
LED_IO_3_B LED_IO_5_B
LED_IO_2_B PPLED_BACK_REG
LED_IO_1_B PPLED_BACK_REG
PPLED_BACK_REG
PPLED_BACK_REG
LED_IO_6_A LED_IO_6_C
LED_IO_5_A LED_IO_5_C
LED_IO_4_A LED_IO_4_C
LED_IO_3_A LED_IO_3_C
LED_IO_2_A LED_IO_2_C
LED_IO_1_A LED_IO_1_C
PWR

LED DRIVER FILTERS (NOSTUFF CAPS ON TCON SIDE)

LED_IO_1_C
LED_IO_2_C
LED_IO_3_C
LED_IO_4_C
LED_IO_5_C
LED_IO_6_C

C4500 100PF 50V C0G 0201
C4501 100PF 50V C0G 0201
C4502 100PF 50V C0G 0201
C4503 100PF 50V C0G 0201
C4504 100PF 50V C0G 0201
C4505 100PF 50V C0G 0201

LED_IO_1_B
LED_IO_2_B
LED_IO_3_B
LED_IO_4_B
LED_IO_5_B
LED_IO_6_B

C4506 100PF 50V C0G 0201
C4507 100PF 50V C0G 0201
C4508 100PF 50V C0G 0201
C4509 100PF 50V C0G 0201
C4510 100PF 50V C0G 0201
C4511 100PF 50V C0G 0201

LED_IO_1_A
LED_IO_2_A
LED_IO_3_A
LED_IO_4_A
LED_IO_5_A
LED_IO_6_A

C4520 100PF 50V C0G 0201
C4521 100PF 50V C0G 0201
C4522 100PF 50V C0G 0201
C4523 100PF 50V C0G 0201
C4524 100PF 50V C0G 0201
C4525 100PF 50V C0G 0201

PAGE TITLE
DISPLAY: B2B CONN
DRAWING NUMBER SIZE

EDP CONNECTOR SUPPORT

PP1V8_S3
C4653 0.1UF 16V X5R-CERM 0201 10%
R4654 10K 5% 1/32W MF 01005
R4652 10K 5% 1/32W MF 01005

SILEGO DELAY ELEMENT
QUIESCENT CURRENT : 0.5 UA

U4601 SLG4AP41158 STQFN
VDD

PPVCC_MAIN
C4640 0.1UF 16V X5R-CERM 0201 10%
C4641 0.1UF 16V X5R-CERM 0201 10%

VDD
U4600 SLG5AP1423V TFN
SL_CAP
CAP
ON
CRITICAL
GND

GPIO PMU TO LCD PWREN

SL_DEL0
SL_DEL1
SL_DEL2
SL_DEL3

SL_DEL
SL_DEL0
SL_DEL1
SL_DEL2
SL_DEL3

SL_DEL_0

GPIO PMU TO LCD PWREN DELAY

NC NC NC NC

R4605 100K 5% 1/32W MF 01005

C4670 4700PF 25V 10% CER-X5R 0201

LAYOUT NOTE:
PUT THERMAL VIAS AROUND U4600 IN CASE OF SHORTED CONDITION

R4651 10K 5% 1/32W MF 01005
R4657 10K 5% 1/32W MF 01005

CRITICAL GND

CRITICAL
L4601 FERR-220OHM-28%-8A
0603

PPVCC_MAIN_LCD_SW
PPVCC_MAIN_LCD_SW_CONN

R4601 51.1K 5% 1/32W MF 01005
C4603 0.1UF 16V X5R-CERM 0201 20% 0402-9
CRITICAL C4602 10UF 6.3V CERM-X5R
C4630 100PF 25V 5% COG-CERM 01005

C4632 330PF 25V NPO-COG 0201
C4633 6.8UF 6.3V 20% X5R5B 0402402
C4634 6.8UF 6.3V 20%
C4631 330PF 25V NPO-COG 0201

FALLING EDGE CONFIG

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

MIN OFF TIME

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

R4680 1.00M 01005
LPDP_DATA_EMI_CONN_N<0>

R4681 1.00M 01005
LPDP_DATA_EMI_CONN_P<0>

R4682 1.00M 01005
LPDP_DATA_EMI_N<1>

R4683 1.00M 01005
LPDP_DATA_EMI_P<1>

R4684 1.00M 01005
LPDP_DATA_EMI_CONN_N<2>

R4685 1.00M 01005
LPDP_DATA_EMI_CONN_P<2>

R4686 1.00M 01005
LPDP_DATA_EMI_N<3>

R4687 1.00M 01005
LPDP_DATA_EMI_P<3>

LPDP_SOC_TO_TCON_AUX_P
C4650 0.1UF 6.3V 20% X5R-CERM 01005
LPDP_AUX_EMI_P

LPDP_SOC_TO_TCON_AUX_N
C4651 0.1UF 6.3V 20% X5R-CERM 01005
LPDP_AUX_EMI_N

NOSTUFF CRITICAL
L4642
TAM0605-4SM-COMBO 3.25-OHM-0.1A-2.4GHZ
LPDP_AUX_EMI_CONN_P
LPDP_AUX_EMI_CONN_N

R4641 100K 5% 1/32W MF 01005
R4643 100K 5% 1/32W MF 01005

LPDP_SOC_TO_TCON_DATA_N<0>
C4643 0.1UF 6.3V 20% X5R-CERM 01005
LPDP_DATA_EMI_N<0>

LPDP_SOC_TO_TCON_DATA_P<0>
C4642 0.1UF 6.3V 20% X5R-CERM 01005
LPDP_DATA_EMI_P<0>

CRITICAL L4612
TAM0605-4SM-COMBO 3.25-OHM-0.1A-2.4GHZ OMIT_TABLE
LPDP_DATA_EMI_CONN_N<0>
LPDP_DATA_EMI_CONN_P<0>

LPDP_SOC_TO_TCON_DATA_N<1>
C4644 0.1UF 6.3V 20% X5R-CERM 01005
LPDP_DATA_EMI_N<1>

LPDP_SOC_TO_TCON_DATA_P<1>
C4645 0.1UF 6.3V 20% X5R-CERM 01005
LPDP_DATA_EMI_P<1>

CRITICAL L4622
TAM0605-4SM-COMBO 3.25-OHM-0.1A-2.4GHZ OMIT_TABLE
LPDP_DATA_EMI_CONN_N<1>
LPDP_DATA_EMI_CONN_P<1>

LPDP_SOC_TO_TCON_DATA_N<2>
C4646 0.1UF 6.3V 20% X5R-CERM 01005
LPDP_DATA_EMI_N<2>

LPDP_SOC_TO_TCON_DATA_P<2>
C4647 0.1UF 6.3V 20% X5R-CERM 01005
LPDP_DATA_EMI_P<2>

CRITICAL L4632
TAM0605-4SM-COMBO 3.25-OHM-0.1A-2.4GHZ OMIT_TABLE
LPDP_DATA_EMI_CONN_N<2>
LPDP_DATA_EMI_CONN_P<2>

LPDP_SOC_TO_TCON_DATA_N<3>
C4648 0.1UF 6.3V 20% X5R-CERM 01005
LPDP_DATA_EMI_N<3>

LPDP_SOC_TO_TCON_DATA_P<3>
C4649 0.1UF 6.3V 20% X5R-CERM 01005
LPDP_DATA_EMI_P<3>

CRITICAL L4602
TAM0605-4SM-COMBO 3.25-OHM-0.1A-2.4GHZ OMIT_TABLE
LPDP_DATA_EMI_CONN_N<3>
LPDP_DATA_EMI_CONN_P<3>

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

LPDP_HPD_EMI
L4690 0.00 0% 1/32W MF 01005
LPDP_TCON_TO_SOC_HPD

R4691 100K 5% 1/32W MF 01005

PPLED_OUT
L4685 CRITICAL FERR-600OHM-25%-0.5A-0.34OHM 0402
PPLED_BACK_REG

C4685 12PF 100V 5% CERM 0201
C4686 220PF 50V 5% COG 0201

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
155S0897	4	TDK CMC	L4602,L4622,L4632,L4612	CRITICAL	

PAGE TITLE
DISPLAY: EDP SUPPORT
DRAWING NUMBER
SIZE

WIFI/BT

J420: DIET COKE REMOTE FEMS

5GHZ UAT FEED

FL502_W
10-OHM-1.1A
01005
UAT_FEM

PP1V8 S2 EXT SW2
PP1V8 UAT FEM LNA

C504_W 4.7PF
C535_W 33PF
C505_W 10UF
C507_W 4.7PF
C538_W 33PF

PPVCC_MAIN

R563_W 0.00
50 WLAN A TX0
50 WLAN A TX0 VOID FEM IN

C566_W 0.3PF
C586_W 0.3PF
NOSTUFF

U_5G_U1_W
MDFEGFFB-126
LGA

5GHZ C0 VDET
RFA0 SW CTRL0
RFA0 SW CTRL1
RFA0 SW CTRL2

R562_W 0.00
50 WLAN A RX0 VOID FEM OUT
C561_W 0.3PF
C563_W 0.3PF
NOSTUFF
50 WLAN A RX0

5G TX IN
VDET
RF_SW_CTRL0
RF_SW_CTRL1
RF_SW_CTRL2
RF_SW_CTRL3
LAA_RX
RFFE_DATA
RFFE_CLK
USID1

5G_RX
ANT
5GHZ FEM UAT
GND_VOID=TRUE
RFFE_VIO
SAM
50 LAA TO R1 U

C581_W 4.7PF
C580_W 4.7PF
C579_W 4.7PF

R501_W 49.9

RFFE_DATA_W
RFFE_LAA DATA
RFFE_CLK_W
RFFE_LAA CLK
TP-P55

C521_W 18PF
C522_W 18PF
NOSTUFF

GND

PRODUCT_ID=0X41 (LAA RDM)
USID RX=0X6 (LAA RDM)

RFFE_VIO_W
RFFE_LAA VIO
R510_W 0.00
PP 1V8 VIO LAA UAT
TP-P55

C523_W 18PF
UAT_FEM

5GHZ LAT FEED

FL512_W
10-OHM-1.1A
01005
LAT_FEM

PP1V8 S2 EXT SW2
PP1V8 LAT FEM LNA

C536_W 33PF
C514_W 4.7PF
C506_W 10UF
C516_W 4.7PF
C537_W 33PF

PPVCC_MAIN

R573_W 0.00
50 WLAN A TX1 MCU
50 WLAN A TX1 VOID FEM IN

C576_W 0.3PF
NOSTUFF
C596_W 0.3PF

U_5G_L1_W
MDFEGFFB-126
LGA

5GHZ C1 VDET
RFA1 SW CTRL0
RFA1 SW CTRL1
RFA1 SW CTRL2

R572_W 0.00
50 WLAN A RX1 VOID FEM OUT
C573_W 0.3PF
NOSTUFF
C571_W 0.3PF
NOSTUFF
50 WLAN A RX1 MCU

5G TX IN
VDET
RF_SW_CTRL0
RF_SW_CTRL1
RF_SW_CTRL2
RF_SW_CTRL3
LAA_RX
RFFE_DATA
RFFE_CLK
USID1

5G_RX
ANT
5GHZ FEM LAT
GND_VOID=TRUE
RFFE_VIO
SAM
50 LAA TO R1 L

R574_W 0.00
RFA1 SW CTRL0 FEM
C583_W 4.7PF

R575_W 0.00
RFA1 SW CTRL1 FEM
C584_W 4.7PF

R576_W 0.00
RFA1 SW CTRL2 FEM
C585_W 4.7PF

R502_W 49.9

GND

PRODUCT_ID=0X41 (LAA RPM)
USID RX=0X5 (LAA RPM)

RFFE_LAA DATA
RFFE_LAA CLK

C525_W 18PF
NOSTUFF
C524_W 18PF
NOSTUFF

RFFE_LAA VIO
R564_W 0.00
PP 1V8 VIO LAA LAT
C533_W 18PF
LAT_FEM

| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |

J420: FRONT END

ANT5T (UPPER)

R609_W
1.5NH+/-0.1NH-1.0A

FL25GU_W
5GHZ
LFB185G5OCTBE599

R612_W
1.0NH-+/-0.05NH-1.1A-0.04OHM

JANT5T_W
MM4829-2702B
F-ST-SM

50_5GHZ_FEM_UAT
TO WLAN: LAA FEM UAT

50_5GHZ_FEM_UAT_M

50_ANT5T_M

50_ANT5T

GND_VOID=TRUE

C702_W
0.4PF
+/-0.1PF
25V
COG-CERM
201

C706_W
0.3PF
+/-0.05PF
25V
COG-CERM
0201

GND_VOID=TRUE GND_VOID=TRUE

C710_W
0.1PF
+/-0.1PF
25V
COG-CERM
201

C712_W
0.5PF
+/-0.05PF
25V
COG-CERM
0201
NOSTUFF

WF8 (UPPER RIGHT)

R614_W
0.00
1R
1/20W
MF
0201

BPFWF4_W
DEA202444BT-2Z80B1SJ
0805

R620_W
1.2NH+/-0.1NH-1.1A

JWF8_W
MM4829-2702B
F-ST-SM

50_WLAN_G_UAT

50_ANTWF8_WLAN_M

GND_VOID=TRUE GND_VOID=TRUE

50_ANTWF8_M

50_ANTWF8

GND_VOID=TRUE

C722_W
0.5PF
+/-0.05PF
25V
COG-CERM
0201
NOSTUFF

C725_W
0.5PF
+/-0.05PF
25V
COG-CERM
0201
NOSTUFF

C729_W
0.3PF
+/-0.05PF
25V
COG-CERM
0201

C731_W
0.5PF
+/-0.05PF
25V
COG-CERM
0201
NOSTUFF

ANT5B (LOWER)

R601_W
1.5NH+/-0.1NH-1.0A

FL25GL_W
5GHZ
LFB185G5OCTBE599

R604_W
0.8NH-+/-0.05NH-1.1A-0.04OHM

JANT5B_W
MM4829-2702B
F-ST-SM

50_5GHZ_FEM_LAT
TO WLAN: LAA FEM LAT

50_5GHZ_FEM_LAT_M

50_ANT5B_M

50_ANT5B

GND_VOID=TRUE GND_VOID=TRUE

GND_VOID=TRUE

C704_W
0.4PF
+/-0.1PF
25V
COG-CERM
201

C708_W
0.4PF
+/-0.1PF
25V
COG-CERM
201

C711_W
0.2PF
+/-0.05PF
25V
COG-CERM
0201

C713_W
0.5PF
+/-0.05PF
25V
COG-CERM
0201
NOSTUFF

WF7 (UPPER LEFT)

R711_W
1.6NH-+/-0.1NH-1A-0.05OHM

BPFWF5_W
DEA202444BT-2Z80B1SJ
0805

R621_W
1.0NH-+/-0.05NH-1.1A-0.04OHM

JWF7_W
MM4829-2702B
F-ST-SM

50_WLAN_G_C1

50_ANTWF72BPF

50_ANTWF7_M

50_ANTWF7

GND_VOID=TRUE GND_VOID=TRUE

GND_VOID=TRUE

C724_W
0.5PF
+/-0.05PF
25V
COG-CERM
0201

C727_W
0.5PF
+/-0.05PF
25V
COG-CERM
0201
NOSTUFF

C728_W
0.4PF
+/-0.1PF
25V
COG-CERM
201

C730_W
0.5PF
+/-0.05PF
25V
COG-CERM
0201
NOSTUFF

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
131S0631	1	CAP,CER,COG,0.3PF,0201,H-Q	C243_W	NOSTUFF
118S0724	1	RES, MF, 0.0 OHM, 1,1/20W, HF	R237_W	
118S0724	1	RES, MF, 0.0 OHM, 1, 1/20W, HF	R238_W	

PAGE TITLE
J420: Front End
DRAWING NUMBER   SIZE

| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |

RCAM ADAMS PMU

338S00457

U6100
D2657
WLCSP
SYM 1 OF 4
OMIT_TABLE

VCC MAIN   BUCKS

PPVCC_MAIN

VDD_BUCK0_0
B3 VDD_BUCK0_1
VDD_BUCK0_FB

C6090
18UF
20%
6.3V
CER-X5R
0402-0.1MM

C6094
4UF
20%
6.3V
CER-X5R
0201

138S00071
C6021
4UF
20%
6.3V
CER-X5R
0201

BUCK0_LX0_0 A2 LX_RCAM_PMU_BUCK
BUCK0_LX0_1 B2
BUCK0_FB D1

L6000
0.47UH-20%-4.0A-0.05OHM
DIDT=TRUE
PIJD2012-SM

PP1V4_ADAMS1_VDDL

C6000
15UF
20%
6.3V
COG
0402-0.1MM-1

C6001
15UF
6.3V
X5R
0402-0.1MM-1

C6002
220PF
5%
16V
COG
01005

C6003
15UF
20%
6.3V
X5R
0402-0.1MM-1

C6093
220PF
5%
16V
COG
01005

C6091
18UF
20%
6.3V
CER-X5R
0402-0.1MM

C6092
1UF
20%
10V
X5R
0201

B6 VDD_MAIN_1
F5 VDD_MAIN_2

XW6000
SHORT-10L-0.1MM-SM
OMIT

ANALOG_FB_RCAM_PMU_BUCK

U6100
338S00457
D2657
WLCSP
SYM 2 OF 4
OMIT_TABLE

LDO INPUT   LDO OUTPUT

PPVCC_HIGH

VDD_LDO1_2

C6095
4UF
20%
6.3V
CER-X5R
0201

C6096
4UF
20%
6.3V
CER-X5R
0201

C6097
220PF
5%
16V
COG
01005

VLDO1 H7 PP3V3_ADAMS_LDO1
VLDO2 G7 PP3V0_JASPER_RX_AVDDH

C6011
4UF
20%
6.3V
CER-X5R
0201

C6012
4UF
20%
6.3V
CER-X5R
0201

VDD_LDO3_4

VLDO3 G8 PP3V0_PENROSE
VLDO4 F7 PP3V3_JASPER_TX_AVDDH

C6013
4UF
20%
6.3V
CER-X5R
0201

C6014
4UF
20%
6.3V
CER-X5R
0201

D8 VDD_LDO5_6_7

VLDO5 E8 PP1V8_TOF_VDDIO_ADAMS
VLDO6 E7 PP2V85_WIDE_RCAM1_AVDDH1
VLDO7 D7 PP2V85_WIDE_RCAM2_AVDDH1

C6015
4UF
20%
6.3V
CER-X5R
0201

C6016
4UF
20%
6.3V
CER-X5R
0201

C6017
4UF
20%
6.3V
CER-X5R
0201

PP1V4_ADAMS1_VDDL

B8 VDD_LDO8_9   Vin = 0.8V - 1.9V

VLDO8 C8 PP1V215_RCAM_SWIDE_VDDL
VLDO9 C7 PP1V215_RCAM_WIDE_VDDL

C6098
4UF
20%
6.3V
CER-X5R
0201

C6018
4UF
20%
CER-X5R
6.3V
0201

C6019
4UF
20%
CER-X5R
6.3V
0201

VLDO10 E5 ADAMS_LDO10_SPARE

C6022
1.0UF
20%
6.3V
X5R
0201-1

VDD_HI:SW charge pump replacement

SW INPUT OUTPUT

VDD_HI A7
VPP_1V8 A5

PP1V8_SW

C6099
4UF
20%
6.3V
CER-X5R
0201

PP_1V8_SW A4 PP1V8_CAM_PMU1_IO_SW

VDD_MAX A6 PP_VDD_MAX_RCAM
VDD_RTC E4 PP_VDD_RTC_RCAM
VDD_RTC_DIG F4

G3 VPP_1V8_2

C6030
0.1UF
X5R-CERM
6.3V
01005
20%

138S0739
C6020
1UF
20%
10V
X5R
0201
PLACEHOLDER

C6023
1.0UF
20%
10V
X5R-CERM
0201-1

VDD_MAX: INTERNAL SUPPLY. POWER-OR OF VDD_HI OR VDD_MAIN

PAGE TITLE
CAMERA: ADAMS POWER (1/2)
DRAWING NUMBER   SIZE

RCAM ADAMS PMU IO

PP1V8 JASPER WILL VDDIO

PP1V8 CAM PMU1 IO SW

R6132 1.00K 5% 1/32W MF 01005
R6131 1.00K 5% 1/32W MF 01005
R6122 1.00K 5% 1/32W MF 01005
R6121 1.00K 5% 1/32W MF 01005
R6112 1.00K 5% 1/32W MF 01005
R6111 1.00K 5% 1/32W MF 01005
R6102 1.00K 5% 1/32W MF 01005
R6101 1.00K 5% 1/32W MF 01005

PP1V8_JASPER_WILL_VDDIO

R6137 10K 5% 1/32W MF 01005

U6100
D2657
WLCSP
SYM 3 OF 4
OMIT_TABLE

I2C1:WIDE/NEON
I2C1_RCAM_PMU_SCL   G5 SCL_1
I2C1_RCAM_PMU_SDA   G6 SDA_1

I2C2:JASPER(TOF)
I2C2 RCAM PMU SCL   J4 SCL_2
I2C2 RCAM PMU SDA   J5 SDA_2

I2C3: WILL
I2C3 RCAM PMU SCL   H4 SCL_3
I2C3 RCAM PMU SDA   H5 SDA_3

I2C4: SWIDE(OHIO)
I2C4_RCAM_PMU_SCL   H3 SCL_4
I2C4_RCAM_PMU_SDA   J3 SDA_4

I2C   GPIO

GPIO1   E1   GPIO RCAM PMU TO STROBE DRIVER HWEN
GPIO2   C2   GPIO RCAM PMU TO TOF PMU EN
GPIO3   D2   GPIO RCAM PMU TO TOF INT L
GPIO4   E2   GPIO RCAM PMU TO TOF SHUTDOWN L
GPIO5   F2   GPIO RCAM PMU TO JAS LDO EN
GPIO6   C3   GPIO RCAM PMU TO WIDE SHUTDOWN L
GPIO7   D3   GPIO RCAM PMU TO SWIDE SHUTDOWN L
GPIO8/TCAL   B4   ADAMS_TCAL
GPIO9/TDEV1   D6   C3 TEMP NTC P
GPIO10/TDEV2   F6   NC_ADAMS_GPIO10
GPIO11/TDEV3   B5   NC_ADAMS_GPIO11
GPIO12/TDEV4   C4   NC_ADAMS_GPIO12
GPIO13/FORCE_SYNC   E3   IO TOUCH TO MANY SCAN ACTIVE   R6133 20.00 0% MF 01005   GPIO SOC TO GRAPE DISPLAY BSYNC1

ISP SPMI ADAMS SCLK   R6152 20.00 1/32W 0% PLACE_NEAR=U6600,R4:50MM   ISP SPMI ADAMS SCLK R   J6 SCLK
ISP SPMI ADAMS SDATA   R6153 33 1/32W 0% MF PLACE_NEAR=U6100:H6:20MM   ISP SPMI ADAMS SDATA R   H6 SDATA

SPMI

ADAMS_CRASH_L   F3 CRASH*
GPIO_ISP_TO_ADAMS_RESET_L   G4 RESET*

RESET

RCAM PMU VREF   C5
RCAM_PMU_IREF   D5

VREF   REFERENCE
IREF

CLK EXPAND

CLK SOC TO ADAMS 12MHZ   F1 CLKI
CLK RCAM PMU TO WIDE 12MHZ   G2 CLKO_1
CLK RCAM PMU TO SWIDE 12MHZ   G1 CLKO_2
CLK RCAM PMU TO JASPER TOF 12MHZ   G3 CLKO_3
CLKO_4   H1 × NC

R6136 100K 5% 1/32W MF 01005

AMUX   B7   TP AMUX PMU FROM CAM PMU1   A TP6101 TP-F5

VPP_OTP
J1 Advanced Test Mode (OTP rewrite)

R6151 100K 5% 1/32W MF 01005
C6100 0.22UF 10% 6.3V CER-X5R 01005
R6150 200K 0.1% 1/20W TF 0201

PRIVACY MODE - CRASH

PP1V8_S3

R6135 100K 5% 1/32W MF 01005

ADAMS_CRASH_L

U6100
D2657
WLCSP
SYM 4 OF 4
OMIT_TABLE

A8 VSS
C1 VSS
C6 VSS
D4 VSS
E6 VSS
J2 VSS
J7 VSS
J8 VSS

A1 VSS_BUCK0
B1 VSS_BUCK0

ADAMS_TCAL
C3 TEMP_NTC_P

R6144 3.92K 0.1% 1/20W MF 0201
C6144 100PF 5% 16V NP0-C0G 01005-1

R6143 0201
C6143 100PF 5% 16V NP0-C0G 01005-1
NO_XNET_CONNECTION=1

10KOHM-1%-0.31MA
NO_XNET_CONNECTION=1

C3 TEMP NTC N

XW6143 PLACE_NEAR=U6100:D6:10MM

PART NUMBER	ALTERNATE FOR PART NUMBER	REFERENCE DESIGNATOR(S)	DESCRIPTION	BOM OPTION
152S00987	152S00814	L6200	IND ISAT 1.55A 63MOHM	

WILL

PPVCC_MAIN

C6207 220PF 5% 16V C0G 0402

C6200 18UF 20% 16V CER-X5R 0805

C6201 4UF 20% 6.3V CER-X5R 0201
138S00071

C6202 4UF 20% 6.3V CER-X5R 0201
138S00071

U6200
CD3710
DSBGA
BOOM=CAM_WILL

A4 VIN
B4 VIN
D4 VDD30
E4 VDDIO
E3 INT*
E2 CE
D1 SDA
E1 SCL
D2 DFT AMUX/GND

C4 VNEG
A3 VSN
B3 VSN
A2 VSP
B2 VSP
C1 VPOS
C2 VPOS

GND PGND
C3 D3 A1 B1

PP3V3_ADAMS_LDO1
PP1V8_JASPER_WILL_VDDIO

C6205 2.2UF 20% 6.3V X5R-CERM 0201

C6208 220PF 5% 16V C0G 01005

C6206 2.2UF 20% 6.3V X5R-CERM 0201

C6209 220PF 5% 16V C0G 01005

GPIO_RCAM_PMU_TO_TOF_INT_L
GPIO_RCAM_PMU_TO_TOF_PMU_EN

I2C3_RCAM_PMU_SDA
I2C3_RCAM_PMU_SCL

R6201 100K 5% 1/32W MF 01005

VSPAD: -19.5V (Typ), 5mA (Max)
PN_TOF_VSPAD
131S00118
C6210 180PF 5% 50V NP0-C0G 0201
C6211 2.2UF 20% 35V X5R 0402
C6212 2.2UF 20% 35V X5R 0402

LX_WILL_VSN
DIDT=TRUE
SWITCH_NODE=TRUE

1.00MM TALL INDUCTOR
L6200
1.00UH-20%-2.9A-0.075OHM
PIWA20121T
152S00814

LX_WILL_VSP
DIDT=TRUE
SWITCH_NODE=TRUE

VDDLAS: 7.5V (Typ), 50mA (Max)
PP_TOF_VDDLAS
131S00164
C6220 220PF 5% 16V C0G 01005
138S00070
C6221 4.7UF 20% 25V X5R 0402-0P1MM
C6222 4.7UF 20% 25V X5R 0402-0P1MM
C6224 4.7UF 20% 25V X5R 0402-0P1MM
C6225 4.7UF 20% 25V X5R 0402-0P1MM

DBG ONLY
TO BE REMOVED FOR POR
PPVCC_MAIN

R6260
117S0157
10K 5% 1/32W MF 01005

DBGLED_WILL_R

D6260
GREEN-80MCD-10MA-3.2V
0201
998-19488

DBGLED_WILL_FET

Q6260
NTNS3190NZ
XLLGA

GPIO_RCAM_PMU_TO_TOF_PMU_EN

JASPER VDDL LDO

PP1V4_ADAMS1_VDDL

GPIO_RCAM_PMU_TO_JAS_LDO_EN

PP3V3_JAS_EXT_LDO_R2

R6251
1/32W 0.00 0%
MF 01005

PP3V3_ADAMS_LDO1

U6250
SCY999247-1.20V
WLCSP
VER-1
353S01904

A2 VIN
B2 EN
VBIAS
GND
C1

VOUT A1
SNS B1

C6250 2.2UF 20% 6.3V X5R-CERM 0201

C6251 0.47UF 20% 6.3V X5R 01005-1

XW6210
SM

JAS_SNS

C6252 15UF 20% 6.3V 0402-0.1MM-1

C6253 15UF 20% 6.3V 0402-0.1MM-1

PP1V2_JASPER_DVDD

C6254 0.22UF 10% 6.3V CER-X5R 01005

CAMERA: JASPER POWER
PAGE TITLE
DRAWING NUMBER
SIZE

WIDE RCAM1 B2B

INDIANA
FLEX PLUG: 516S00248
MLB RCPT: 516S00197
MATCH J417_RCAM_INDIGO_FLEX 3.0.0

J6500
AA28D-S022VA1
F-ST-SM

516S00197

Pin		Pin	Signal
24		23	
2		1	GND_VOID=TRUE
4		3	GND_VOID=TRUE
6		5	
8		7	GND_VOID=TRUE
10		9	GND_VOID=TRUE
12		11	
14		13	
16		15	
18		17	
20		19	
22		21	
26		25	

LPDP_WIDE_BI_AP_AUX_CONN
AP_TO_WIDE_CLK_12MHZ_CONN
I2C_RCAM1_WIDE_SDA_CONN
I2C_RCAM1_WIDE_SCL_CONN

WIDE_SYNC_CONN
PP1V215_RCAM_WIDE_VDDL_CONN

LPDP_RCAM1_TO_SOC_DATA_C_N<0>
LPDP_RCAM1_TO_SOC_DATA_C_P<0>
LPDP_RCAM1_TO_SOC_DATA_C_N<1>
LPDP_RCAM1_TO_SOC_DATA_C_P<1>

WIDE_TO_STROBE_DRIVER_STROBE_CONN
PP2V85_RCAM_WIDE_AVDD_CONN
PP1V8_RCAM_WIDE_VDDIO_CONN
ISP_TO_WIDE_SHUTDOWN_CONN_L

POWER FILTERING

FL6501
10-OHM-750MA

PP1V8_CAM_PMU1_IO_SW → PP1V8_RCAM_WIDE_VDDIO_CONN

01005-1

C6501   C6502
220PF   1.0UF
20%   20%
16V   6.3V
C0G   X5R
01005   0201-1

FL6503
FERR-22-OHM-1A-0.055OHM

PP2V85_WIDE_RCAM1_AVDDH1 → PP2V85_RCAM_WIDE_AVDD_CONN

0201

C6503   C6504   C6505
220PF   1.0UF   4.7UF
20%   20%   20%
16V   6.3V   X5R
C0G   X5R   0402-0.1MM
01005   0201-1
               138S00009

FL6506
FERR-22-OHM-1A-0.055OHM

PP1V215_RCAM_WIDE_VDDL → PP1V215_RCAM_WIDE_VDDL_CONN

0201

C6506   C6507   C6508
220PF   1.0UF   4.7UF
20%   20%   20%
16V   6.3V   X5R
C0G   X5R   0402-0.1MM
01005   0201-1
               138S00009

ISP I2C

FL6520
70-OHM-300MA

I2C1_RCAM_PMU_SCL → I2C_RCAM1_WIDE_SCL_CONN
I2C_PULLUP

01005-1

C6520
56PF
5%
25V
NP0/C0G
01005
NOSTUFF

FL6521
70-OHM-300MA

I2C1_RCAM_PMU_SDA → I2C_RCAM1_WIDE_SDA_CONN
I2C_PULLUP

01005-1

C6521
56PF
5%
25V
NP0/C0G
01005
NOSTUFF

LPDP FILTERS

GND_VOID=TRUE   GND_VOID=TRUE

LPDP_RCAM1_TO_SOC_DATA_N<0>   C6510   0.1UF   LPDP_RCAM1_TO_SOC_DATA_C_N<0>
                              01005 6.3V   20% X5R-CERM

LPDP_RCAM1_TO_SOC_DATA_P<0>   C6511   0.1UF   LPDP_RCAM1_TO_SOC_DATA_C_P<0>
                              01005 6.3V   20% X5R-CERM
GND_VOID=TRUE

LPDP_RCAM1_TO_SOC_DATA_N<1>   C6512   0.1UF   GND_VOID=TRUE   LPDP_RCAM1_TO_SOC_DATA_C_N<1>
                              01005 6.3V   20% X5R-CERM

LPDP_RCAM1_TO_SOC_DATA_P<1>   C6513   0.1UF   LPDP_RCAM1_TO_SOC_DATA_C_P<1>
                              01005 6.3V   20% X5R-CERM
GND_VOID=TRUE

C6518
01005   0.1UF
LPDP_SOC_TO_RCAM1_AUX   LPDP_WIDE_BI_AP_AUX_CONN
6.3V X5R-CERM 20%

C6519
56PF
5%
25V
NP0/C0G
01005
NOSTUFF

IO FILTERS

FL6522
22
CLK_RCAM_PMU_TO_WIDE_12MHZ → AP_TO_WIDE_CLK_12MHZ_CONN
5%
1/32W
MF
01005
117S0182

C6522
56PF
5%
25V
NP0/C0G
01005

FL6523
0.00
GPIO_RCAM_PMU_TO_WIDE_SHUTDOWN_L → ISP_TO_WIDE_SHUTDOWN_CONN_L
0%
1/32W
MF
01005

C6523
56PF
5%
25V
NP0/C0G
01005
NOSTUFF

FL6524
0.00
WIDE_AND_SWIDE_TO_STROBE_DRIVER_STROBE → WIDE_TO_STROBE_DRIVER_STROBE_CONN
0%
1/32W
MF
01005

C6524
56PF
5%
25V
NP0/C0G
01005
NOSTUFF

R6532
0.00
WIDE_SWIDE_SYNC → WIDE_SYNC_CONN
0%
1/32W
MF
01005

SWIDE RCAM2 B2B

OHIO
FLEX PLUG: 516S00151
MLB RCPT: 516S00152
MATCH J417_RCAM_OHIO_PLAYERS_FLEX 2.0.0

J6600
AA26D-S022VA1
F-ST-SM

PP1V8_RCAM_SWIDE_VDDIO_CONN
ISP_TO_SWIDE_SHUTDOWN_CONN_L
SWIDE_SYNC_CONN

SWIDE_TO_STROBE_DRIVER_STROBE_CONN
I2C_RCAM2_SWIDE_SCL_CONN
I2C_RCAM2_SWIDE_SDA_CONN
AP_TO_SWIDE_CLK_12MHZ_CONN

PP1V215_RCAM_SWIDE_DVDD_CONN

PP2V85_RCAM_SWIDE_AVDDH1_CONN

GND_VOID=TRUE LPDP_SWIDE_TO_SOC_DATA_C_P<1>
GND_VOID=TRUE LPDP_SWIDE_TO_SOC_DATA_C_N<1>

GND_VOID=TRUE LPDP_SWIDE_TO_SOC_DATA_C_P<0>
GND_VOID=TRUE LPDP_SWIDE_TO_SOC_DATA_C_N<0>

LPDPC_AP_BI_SWIDE_AUX_RX_D2P_CONN

516S00152

POWER FILTERING

FL6601
10-OHM-750MA

PP1V8_CAM_PMU1_IO_SW

PP1V8_RCAM_SWIDE_VDDIO_CONN

01005-1

C6601
220PF
5%
16V
C0G
01005

C6602
1.0UF
20%
3.3V
X5R
0201-1

FL6603
FERR-22-OHM-1A-0.055OHM

PP2V85_SWIDE_RCAM2_AVDDH1

PP2V85_RCAM_SWIDE_AVDDH1_CONN

0201

C6603
220PF
16V
C0G

C6604
1.0UF
20%
6.3V
X5R
0201-1

C6605
4UF
20%
6.3V
CERM-X5R
0201
138S00141

FL6606
FERR-22-OHM-1A-0.055OHM

PP1V215_RCAM_SWIDE_VDDL

PP1V215_RCAM_SWIDE_DVDD_CONN

0201

C6606
220PF
5%
16V
C0G

C6607
4UF
20%
6.3V
CERM-X5R
0201
138S00141

ISP I2C

FL6620
70-OHM-300MA

I2C4_RCAM_PMU_SCL

I2C_RCAM2_SWIDE_SCL_CONN

01005-1

C6620
56PF
25V
NP0/C0G
01005
NOSTUFF

FL6621
70-OHM-300MA

I2C4_RCAM_PMU_SDA

I2C_RCAM2_SWIDE_SDA_CONN

01005-1

C6621
56PF
25V
NP0/C0G
01005
NOSTUFF

LPDP FILTERS

LPDP_SWIDE_TO_SOC_DATA_N<0>

GND_VOID=TRUE GND_VOID=TRUE
C6610   0.1UF
01005 6.3V 20% X5R-CERM

LPDP_SWIDE_TO_SOC_DATA_C_N<0>

LPDP_SWIDE_TO_SOC_DATA_P<0>

C6611   0.1UF
01005 6.3V 20% X5R-CERM
GND_VOID=TRUE GND_VOID=TRUE

LPDP_SWIDE_TO_SOC_DATA_C_P<0>

LPDP_SWIDE_TO_SOC_DATA_N<1>

GND_VOID=TRUE GND_VOID=TRUE
C6612   0.1UF
01005 6.3V 20% X5R-CERM

LPDP_SWIDE_TO_SOC_DATA_C_N<1>

LPDP_SWIDE_TO_SOC_DATA_P<1>

C6613   0.1UF
01005 6.3V 20% X5R-CERM
GND_VOID=TRUE GND_VOID=TRUE

LPDP_SWIDE_TO_SOC_DATA_C_P<1>

C6618   0.1UF
01005
6.3V 20% X5R-CERM

LPDP_SOC_TO_SWIDE_AUX

LPDPC_AP_BI_SWIDE_AUX_RX_D2P_CONN

C6619
56PF
25V
NP0/C0G
01005
NOSTUFF

IO FILTERS

FL6622
22

CLK_RCAM_PMU_TO_SWIDE_12MHZ

AP_TO_SWIDE_CLK_12MHZ_CONN

5%
1/32W
MF
01005
117S0182

C6622
56PF
25V
NP0/C0G
01005

FL6623
0.00

GPIO_RCAM_PMU_TO_SWIDE_SHUTDOWN_L

ISP_TO_SWIDE_SHUTDOWN_CONN_L

0%
1/32W
MF
01005

C6623
56PF
25V
NP0/C0G
01005
NOSTUFF

FL6624
0.00

WIDE_AND_SWIDE_TO_STROBE_DRIVER_STROBE

SWIDE_TO_STROBE_DRIVER_STROBE_CONN

0%
1/32W
MF
01005

C6624
56PF
5%
25V
NP0/C0G
01005
NOSTUFF

R6632
0.00

WIDE_SWIDE_SYNC

SWIDE_SYNC_CONN

0%
1/32W
MF
01005

JASPER B2B

MATCH JASPER_FLEX 1.2.0
MLB RCPT: 516S00483
FLEX PLUG: 516S00484

J6700
AA28DH-S16VA1
F-ST-SM

PP3V0 JASPER RX AVDDH
I2C JASPER SDA CONN
I2C JASPER SCL CONN
TOF_FSYNC CONN
GPIO PMU TO TOF INT CONN L
CLK RCAM PMU TO TOF 12MHZ CONN
LPDPC_AP BI TOF AUX RX D8P CONN
PP1V2 JASPER DVDD

PN TOF VSPAD CONN
PP1V8_CAM_TOF_VDDIO_CONN
GPIO_RCAM_PMU_TO_TOF_SHUTDOWN_CONN_L
PP3V3 JASPER TX AVDDH
PP TOF VDDLAS CONN
LPDP JASPER TO SOC DATA C P
LPDP JASPER TO SOC DATA C N

VDDL: Seperated on substrate & flex

Power Filtering

FL6700
22NH-150MA
0201

PP_TOF_VDDLAS
VDDLAS: 7.5V (Typ), 50mA (Max)
PP TOF VDDLAS CONN

C6700
220PF
5%
25V
C0G
01005
NOSTUFF

FL6702
0.00
PN_TOF_VSPAD
0%
1/32W
MF
01005

R6704
0.00
NOSTUFF
PP1V8 TOF VDDIO ADAMS
0%
1/32W
MF
01005

PN TOF VSPAD CONN
VSPAD: -19.5V (Typ), 5mA (Max)

C6702
220PF
5%
25V
C0G
0201

FL6703
10-OHM-750MA
01005-1

PP1V8_JASPER_WILL_VDDIO

R6705
0.00
PP1V8 CAM PMU1 IO SW
0%
1/32W
MF
01005

C6703
0.1UF
20%
6.3V
X5R-CERM
01005

C6704
220PF
5%
25V
C0G
0201

PP1V8 CAM TOF VDDIO CONN

PP3V0_JASPER_RX_AVDDH
PP3V3 JASPER TX AVDDH
PP1V2 JASPER DVDD

C6705 C6706   220PF   C6707 C6708   2.2UF   C6709   C670A
2.2UF   5%   2.2UF   220PF
20%   25V   20%   5%
6.3V   C0G   6.3V   25V
X5R-CERM   01005   X5R-CERM   C0G
0201   0201   01005

JASPER I2C

FL6720
70-OHM-300MA
I2C2 RCAM PMU SCL
01005-1
I2C JASPER SCL CONN

FL6721
70-OHM-300MA
I2C2 RCAM PMU SDA
01005-1
I2C JASPER SDA CONN

LPDP Filters

GND_VOD=TRUE   GND_VOD=TRUE
LPDP JASPER TO SOC DATA N   C6710   0.1UF   LPDP JASPER TO SOC DATA C N
01005 6.3V   20% X5R-CERM

LPDP JASPER TO SOC DATA P   C6711   0.1UF   LPDP JASPER TO SOC DATA C P
01005 6.3V   20% X5R-CERM
GND_VOD=TRUE   GND_VOD=TRUE

C6718   0.1UF
LPDP SOC TO JASPER AUX
01005   LPDPC_AP_BI_TOF_AUX_RX_D8P_CONN
6.3V   20% X5R-CERM

IO Filters

FL6722
22
CLK RCAM PMU TO JASPER TOF 12MHZ
5%
1/32W
MF
01005
117S0182
CLK RCAM PMU TO TOF 12MHZ CONN

C6722
56PF
5%
25V
NPO/C0G
01005

R6723
0.00
WIDE_SWIDE_SYNC
0%
1/32W
MF
01005
TOF_FSYNC CONN

R6724
0.00
GPIO RCAM JASPER TO ACE SYNC
0%
1/32W
MF
01005

R6725
0.00
GPIO RCAM PMU TO TOF INT L
0%
1/32W
MF
01005
GPIO_PMU_TO_TOF_INT_CONN_L

NOSTUFF
R6726
0.00
GPIO RCAM PMU TO TOF SHUTDOWN L
0%
1/32W
MF
01005
GPIO RCAM PMU TO TOF SHUTDOWN CONN L

R6727
0.00
GPIO ISP TO JASPER SHTDWN L
0%
1/32W
MF
01005

PAGE TITLE

CAMERA: B2B JASPER

DRAWING NUMBER

SIZE

STOCKHOLM

NFC CONTROLLER

PP1V8_S2_EXT_SW2

C203_S
0.22UF
10%
6.3V
CER-X5R
01005
NFC

PP209_S
P2MM-NSM
OMIT

C202_S   C214_S C215_S
2.2UF   2.2UF   2.2UF
20%   20%   20%
6.3V   6.3V   6.3V
X5R-CERM X5R-CERM X5R-CERM
0201   0201   0201
NFC   NFC   NFC

PP204_S
P2MM-NSM
OMIT

51 PP_VDD_NFC_TVDD

PP_VDD_NFC_AVDD
VOLTAGE=1.8

PP_NFC_VDDBOOST

PP_NFC_VDDC
PP_NFC_VDDNV

C211_S   C212_S   C213_S
2.2UF   2.2UF   100PF
20%   20%   20%
6.3V   6.3V   16V
X5R-CERM X5R-CERM NP0-COG
0201   0201   01005-1
NFC   NFC   NFC

X5R-CERM

PP_NFC_VREF   PP_NFC_VHV   PP_NFC_VDDPLL

PPVCC_MAIN

C270_S   C251_S   C252_S
2.2UF   100PF   0.22UF
20%   20%   10%
6.3V   16V   6.3V
X5R-CERM NP0-COG CER-X5R
0201   01005-1 01005
NFC   NFC

NFC

C204_S   C217_S   C207_S   C208_S   C209_S   C210_S
0.22UF   2.2UF   0.22UF   0.22UF   0.22UF   0.22UF
10%   20%   10%   10%   10%   10%
6.3V   6.3V   6.3V   6.3V   6.3V   6.3V
CER-X5R X5R-CERM CER-X5R CER-X5R CER-X5R CER-X5R
01005   0201   01005   01005   01005   01005
NFC   NFC   NFC   NFC   NFC   NFC

NC NC NC

B5 B6 A6 A7 E1 A3 B1 C2 C1 C3 E5 B3 H2 H3 F1 D2 G1

PMUVCC1 PMUVCC2 PMUVCC3 SIMVCC1 SIMVCC2 SIMVCC3 VBAT VBATPWR VDDA VDDBOOST VDDC VDDNV VDDPA VDDPLL VHV VREF VUP

H5

NFC_S
SN100VUK-B20191
WLCSP

NFC

DIG NFC   DIS SE

ANALOG SIGNAL

H8 NFC_CLK_REQ
J8 NFC_DWL_REQ
E4 NFC_GPIO0
F3 NFC_GPIO1
G6 NFC_GPIO2_AO
G5 NFC_GPIO3_AO
F2 NFC_HSU_CTS
    NFC_HSU_RTS
    NFC_HSU_RX
F4 NFC_HSU_TX
H7 NFC_IRQ
A5 NFC_SIM_SWIO1
B8 NFC_SIM_SWIO2
C8 NFC_SIM_SWIO3
G7 NFC_WKUP_REQ
    NFC_CLK
H6 NFC_XTAL1
B4 NFC_SIM_SWCTRL1
C6 NFC_SIM_SWCTRL2
J7 NFC_XTAL2
J5 RXP
J4 RXN
J1 TX1
J3 TX2
G2 TXVCASC
H1 TXVCM
C4 VEN
J6 RXVCM

SE_GPIO0 F8 NC
SE_GPIO1 D4 NC
SE_I2C_SCL G8 NC_I2C_R1_TO_NFC_SCL OUT
SE_I2C_SDA F7 NC_I2C_R1_TO_NFC_SDA BI
SE_ISO_CLK D6 NC
SE_ISO_IO D7 NC
SE_ISO_RST D3 NC
SE_SPI_CLK E8
SE_SPI_CS E6 NC
SE_SPI_MISO E7 NC
SE_SPI_MOSI D5 NC
BOOST_LX A1 NC

GPIO_SOC_TO_ROTTERDAM_DWLD_REQ IN
NFC_GPIO2_AO_ROTTERDAM
NFC_GPIO3_AO_ROTTERDAM
UART_HSU_TO_ROTTERDAM_RTS_L
UART_ROTTERDAM_TO_SOC_RTS_L
UART_SOC_TO_ROTTERDAM_TX   OUT
UART_ROTTERDAM_TO_SOC_TX   OUT

R207_R   R206_R
47K   47K
1%   1%
1/32W   1/32W
MF   MF
01005   01005
NFC   NFC

GPIO_SOC_TO_ROTTERDAM_DEV_WAKE IN

R203_S
22K
1%
1/32W
TK
01005
NFC

PP1V8_S2_EXT_SW2   PP1V8_S2_EXT_SW2_R

RXP_ROTTERDAM
RXN_ROTTERDAM

R205_S   R204_S
10K   10K
5%   5%
1/32W   1/32W
MF   MF
01005   01005
NFC   NFC

NFC_TXVCASC
NFC_TXVCM

GPIO_PMU_TO_ROTTERDAM_EN IN

C200_S
0.22UF
10%
6.3V
CER-X5R
01005
NFC
NOSTUFF

VMID

C222_S
0.1UF
10%
6.3V
CER-X5R
NFC
NOSTUFF

C201_S
0.22UF
10%
6.3V
CER-X5R
01005
NFC
NOSTUFF

51 PP_VDD_NFC_TVDD

VSS_DIG VSS_DIG VSS_DIG VSS_NFC VSS_PA VSS_PLL VSS_PMU VSS_PWR VSS_PWR VSS_REF VSS_SUB VSS_SUB

G4 C5 C7 D8 J2 H4 D1 A4 B2 E5 F6

PP200_S
P2MM-NSM
OMIT

UART_SOC_TO_ROTTERDAM_TX

PP201_S
P2MM-NSM
OMIT

GPIO_SOC_TO_ROTTERDAM_DWLD_REQ

PP206_S
P2MM-NSM
OMIT

PP207_S
P2MM-NSM
OMIT

GPIO_PMU_TO_ROTTERDAM_EN

PP202_S
P2MM-NSM
OMIT

PP203_S
P2MM-NSM
OMIT

GPIO_SOC_TO_ROTTERDAM_DEV_WAKE

PP208_S
P2MM-NSM
OMIT

UART_ROTTERDAM_TO_SOC_TX

UART_ROTTERDAM_TO_SOC_RTS_L

GPIO_SOC_TO_ROTTERDAM_DEV_WAKE
GPIO_SOC_TO_ROTTERDAM_DWLD_REQ
GPIO_PMU_TO_ROTTERDAM_EN

R200_S   R201_S   R202_S
10K   100K   100K
5%   5%   5%
1/32W   1/32W   1/32W
MF   MF   MF
01005   01005   01005
NFC   NFC   NFC

GPM: DMIC GATING

PP1V8_S3

C7600
0.1UF
10%
6.3V
CER-X5R
01005

APN: 311S00195 0.40 MAX HEIGHT
CHANGE TO 311S00196 FOR POR

GPM_DMIC_DISABLE_R_L

74LVC1G08FZ4
DFN1410
U7600
DMIC1_MIC_SD_R

R7601
100
5%
1/32W
MF
01005

DMIC1_MIC_SD

DMIC1_MIC_SD_UNSEC

311S00195

PP1V8_S3

C7650
0.1UF
10%
6.3V
CER-X5R
01005

U7650
SLG4AP43246
STQFN
343S00356

EXT PU ON PAGE 83

GPIO_APANEL_HALL_TO_PMU_IRQ_L

GPIO_CPANEL_HALL_TO_PMU_IRQ_L

HALL1_IN

HALL2_IN

INTERNAL PU ON PMU

HALL1_BUF_OUT

HALL2_BUF_OUT

MIC_DISABLE*

PRE_WARN

GPIO_APANEL_HALL_TO_PMU_IRQ_BUF_L

GPIO_CPANEL_HALL_TO_PMU_IRQ_BUF_L

GPM_DMIC_DISABLE_L

SLG_TO_AOP_DMIC_DISABLE_WARN_L

PP1V8_S3

NOSTUFF
R7651
100K
5%
1/32W
MF
01005

R7652
0.00
0%
1/32W
MF
01005

R7653
100K
5%
1/32W
MF
01005

GPM_DMIC_DISABLE_R_L

PP1V8_S3

C7601
0.1UF
10%
6.3V
CER-X5R
01005

74LVC1G08FZ4
DFN1410
U7601
DMIC2_MIC_SD_R

R7602
100
5%
1/32W
MF
01005

DMIC2_MIC_SD

DMIC2_MIC_SD_UNSEC

PP1V8_S3

C7602
0.1UF
10%
6.3V
CER-X5R
01005

GPM_DMIC_DISABLE_R_L

74LVC1G08FZ4
DFN1410
U7602
DMIC3_MIC_SD_R

R7603
100
5%
1/32W
MF
01005

DMIC3_MIC_SD

DMIC3_MIC_SD_UNSEC

APOLLO PMU (1/3)

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
152S00963	152S00885		L77A0,L8490	0.47UH 4A 0.027 OHM 2012
152S00964	152S00888		L7741, ETC.	0.15UH 8A 0.017 OHM 2012
152S01003	152S00888		L7741, ETC.	0.15UH 8A 0.017 OHM 2012

U7700
OMIT_TABLE
SYM 1 OF 4

PPVCC MAIN

OMIT_TABLE

C77DF 150UF 20% 6.3V TANT-POLY CASE-B1S-1
C77DD 220PF 16V COG 0201
C77DE 1.2PF 25V NPO-COG 0201

C77D0 20UF 20% 6.3V CERM-X5R 0402-0.1MM
C77D1 20UF 20% 6.3V 0402-0.1MM
C77D2 20UF 20% 6.3V 0402-0.1MM
C77D3 20UF 20% 6.3V 0402-0.1MM
C77D4 20UF 20% 6.3V 0402-0.1MM
C77D5 20UF 20% 6.3V 0402-0.1MM

C77D6 4UF 20% 6.3V CER-X5R 0201
C77D7 4UF 20% 6.3V CER-X5R 0201

SWITCHING LX NODES
POWER SUPPLY TO BUCKS

J1 VDD_BUCK4_01
VDD_BUCK4_01
VDD_BUCK4_01

N1 VDD_BUCK4_2
N2 VDD_BUCK4_2
N3 VDD_BUCK4_2

E1 VDD_BUCK5
E2 VDD_BUCK5
E3 VDD_BUCK5

B1 VDD_BUCK6
B3 VDD_BUCK6
B4 VDD_BUCK6

L5 VDD_BUCK10
M5 VDD_BUCK10
N5 VDD_BUCK10

L9 VDD_BUCK12
M9 VDD_BUCK12
VDD_BUCK12

VDDMAIN SUPPLY
VDD_MAIN
B5 VDD_MAIN_NW
J6 VDD_MAIN_SW
J10 VDD_MAIN_SE

BUCK4

H1 BUCK4_LX0
H2 BUCK4_LX0
H3 BUCK4_LX0

BUCK4 LX0
SWITCH_MODE=TRUE

APN: 152S00883
L7740
1.0UH-20%-4A-0.038OHM

K1 BUCK4_LX1
K2 BUCK4_LX1
K3 BUCK4_LX1

BUCK4 LX1
SWITCH_MODE=TRUE

L7741
0.15UH-20%-8A-0.017OHM
APN: 152S00888
2012

M1 BUCK4_LX2
M2 BUCK4_LX2
M3 BUCK4_LX2

BUCK4 LX2
SWITCH_MODE=TRUE

L7742
0.15UH-20%-8A-0.017OHM
APN: 152S00888
2012

H5 BUCK4_FB
BUCK4_FB

SHORT-10L-0.1MM-SM
XW7740

PP1V1_S3

C7740
C7741 15UF 20% 6.3V X5R 0402-0.1MM
C7742 15UF 20% 6.3V X5R 0402-0.1MM
C7743 15UF 20% 6.3V X5R 0402-0.1MM
C7744 15UF 20% 6.3V X5R 0402-0.1MM
C7745 15UF 20% 6.3V X5R 0402-0.1MM
C7746 15UF 20% 6.3V X5R 0402-0.1MM
C774F 220PF 16V COG 01005

C7747 15UF 20% 6.3V X5R 0402-0.1MM
C7748 15UF 20% 6.3V X5R 0402-0.1MM
C7749 15UF 20% 6.3V X5R 0402-0.1MM
C774A 15UF 20% 6.3V X5R 0402-0.1MM
C774B 15UF 20% 6.3V X5R 0402-0.1MM
C774C 15UF 20% 6.3V X5R 0402-0.1MM-1

138S00003

BUCK5

F1 BUCK5_LX
F2 BUCK5_LX
F3 BUCK5_LX

BUCK5 LX0

APN: 152S00883
L7750
1.0UH-20%-4A-0.038OHM
OMIT
PIKA20161B

E5 BUCK5_FB
BUCK5_FB
XWC7750
SM
PLACE_SIDE=TOP

PPVDD S1 FIXED

C7750 15UF 20% 6.3V X5R 0402-0.1MM
C7751 15UF 20% 6.3V X5R 0402-0.1MM
C7752 15UF 20% 6.3V X5R 0402-0.1MM-1
C775F 220PF 16V COG 01005

C7753 15UF 20% 6.3V X5R 0402-0.1MM-1
C7754 15UF 20% 6.3V X5R 0402-0.1MM-1
C7755 15UF 20% 6.3V X5R 0402-0.1MM-1

BUCK6

C1 BUCK6_LX
C2 BUCK6_LX
C3 BUCK6_LX

BUCK6 LX0

APN: 152S00887
L7760
1.0UH-20%-4.6A-0.04OHM
2020

D5 BUCK6_FB
BUCK6_FB
XW8160
PLACE_SIDE=TOP

A1 BUCK6_BYPASS
A2 BUCK6_BYPASS
A3 BUCK6_BYPASS
A4 BUCK6_BYPASS

PP2V63 OTP
138S00884

PP2V63 OTP

PROD_BEST
C7760 20UF 20% 6.3V CERM-X5R 0402-0.1MM
C7761 20UF 20% 6.3V CERM-X5R 0402-0.1MM
C7762 20UF 20% 6.3V CERM-X5R 0402-0.1MM
C7763 20UF 20% 6.3V CERM-X5R 0402-0.1MM
C7764 20UF 20% 6.3V CERM-X5R 0402-0.1MM
C7765 20UF 20% 6.3V CERM-X5R 0402-0.1MM
C7766 20UF 20% 6.3V CERM-X5R 0402-0.1MM
C776F 220PF 16V COG 01005

C7767 20UF 20% 6.3V CERM-X5R 0402-0.1MM
C7768 20UF 20% 6.3V CERM-X5R 0402-0.1MM
C7769 20UF 20% 6.3V CERM-X5R 0402-0.1MM
C776A 20UF 20% 6.3V CERM-X5R 0402-0.1MM
C776B 20UF 20% 6.3V CERM-X5R 0402-0.1MM

BUCK10

L6 BUCK10_LX
M6 BUCK10_LX
N6 BUCK10_LX

BUCK10 LX0
DIDT=TRUE
SWITCH_MODE=TRUE

L77A0
0.47UH-20%-4A-0.027OHM
2012
APN: 152S00885

J5 BUCK10_FB
BUCK10_FB
XW77A0
SM
PLACE_SIDE=TOP
X5R

PPVDD S1 OL

C77A0 15UF 20% 6.3V X5R 0402-0.1MM
C77A1 15UF 20% 6.3V X5R 0402-0.1MM
C77A2 15UF 20% 6.3V X5R 0402-0.1MM
C77A3 15UF 20% 6.3V X5R 0402-0.1MM-1
C77A4 15UF 20% 6.3V X5R 0402-0.1MM
C77AF 220PF 16V COG 01005

BUCK12

L8 BUCK12_LX
M8 BUCK12_LX
N8 BUCK12_LX

BUCK12 LX0
DIDT=TRUE
SWITCH_MODE=TRUE

L77C0
1.0UH-20%-4A-0.038OHM
PIKA20161B
APN: 152S00883

J9 BUCK12_FB
BUCK12_FB
XW77C0
SM
PLACE_SIDE=TOP

PP1V4 CAMERA

C77C0 15UF 20% 6.3V X5R 0402-0.1MM-1
C77C1 15UF 20% 6.3V X5R 0402-0.1MM-1
C77C2 15UF 20% 6.3V X5R 0402-0.1MM-1
C77C3 15UF 20% 6.3V X5R 0402-0.1MM-1
C77C4 15UF 20% 6.3V X5R 0402-0.1MM-1
C77CF 220PF 16V COG 01005

APOLLO PMU (2/3)

LDO INPUTS

OMIT_TABLE U7700
APOLLO-STUDY
SYM 2 OF 4
WLCSP

VDD_LDO_INPUT   LDO_OUTPUT

72 58 PPVCC HIGH

C12 VDD_LDO4
J12 VDD_LDO9

C7890
20UF
20%
6.3V
CERM-X5R
0402

C7891
20UF
20%
6.3V
CERM-X5R
0402

72 PP1V1 S3

L12 VDD_LDO10
M10 VDD_LDO15

C78A0
20UF
20%
6.3V
CERM-X5R
0402

C78A1
20UF
20%
6.3V
CERM-X5R
0402

H12 VDD_LDO17
K12 VDD_LDO18

72 58 PPVCC_MAIN

B12 VDD_LDO19
D12 VDD_LDO20

E12 VDD_LDO21
M11 VDD_LDO22

72 PP1V4 CAMERA

C78B0
4.3UF
20%
4V
CERM
0402
CRITICAL

C78B1
4.3UF
20%
4V
CERM
0402
CRITICAL

C78E0
15UF
20%
6.3V
X5R
0402-0.1MM

C7892
1UF
20%
6.3V
CERM
402

F12 VDD_LDO23
G12 VDD_LDO24

M12 VDD_LDO26
A11 VDD_LDO27

SWITCH INPUTS

APOLLO VDD_RTC

B9 DVDD   VRTC
B10 VRTC   SUPPLY PINS

C78E1
4UF
20%
6.3V
CER-X5R
0201
CRITICAL

C7906
0.22UF
20%
X5R
6.3V
0201

VBUCK4 B6
B7
VBUCK4

LOADSWITCH
RELATED BALLS

BUCK3_SW1 A6
BUCK3_SW3 A7
BUCK4_SW1 A8

VPUMP B8

TO CHECK: 1.8V
72 58 46 45 PP1V8 S3

C7993
4UF
20%
6.3V
CER-X5R
0201-1
CRITICAL
OMIT_TABLE

72 PP1V1 S3

NOSTUFF
C7994
1.0UF
20%
6.3V
X5R
0201-1

APOLLO_VPUMP
C7999
0.1UF
10%
6.3V
CERM-X5R
0201

LDO OUTPUTS

VLDO4 C13 (300MA: 1.2-3.68V)   PP3V0 ALS 68 72
VLDO9 J13 (390MA: 1-3.5V)   PP1V215 FRONT CAM 68 72

C7804
10UF
20%
6.3V
CERM-X5R
0402-9
CRITICAL

C7809
10UF
20%
6.3V
CERM-X5R
0402-9
CRITICAL

C12BA
4.3UF
30%
0402
4UERM
CRITICAL

VLDO10 L13 (130MA: 0.7-1.25V)   PP0V9 NAND 68 72
VLDO15 N10 (40MA: 0.675-1.5V)   PP0V775 S2 AOP 68 72

C78A5
1UF
30%
4V
0402
CERM
CRITICAL

C78A4
1UF
30%
4V
0402
CERM
CRITICAL

C7815
10UF
20%
6.3V
CERM-X5R
0402-9
CRITICAL

C7810
10UF
20%
6.3V
CERM-X5R
0402-9
CRITICAL

C7811
10UF
20%
6.3V
CERM-X5R
0402-9
CRITICAL

VLDO17 H13 (300MA: 1.2-3.68V)   PP3V3 PENROSE 68 72
VLDO18 K13 (400MA: 0.475-1.5V)   APOLLO LDO18 SPARE 72

C7816
1.0UF
20%
6.3V
X5R
0201-1
CRITICAL

C7817
10UF
20%
6.3V
CERM-X5R
0402-9
CRITICAL

VLDO19 B13 (300MA: 1.2-3.68V)   APOLLO LDO19 SPARE 72
VLDO20 D13 (300MA: 1.2-3.68V)   APOLLO LDO20 SPARE 72

C7814
1.0UF
20%
6.3V
X5R
0201-1
CRITICAL

VLDO21 E13 (300MA: 1.2-3.68V)   PP2V90 FRONT CAM 68 72
VLDO22 N11 (390MA: 1-3.52V)   PP1V215 PEARL 68 72

C78B6
4.3UF
30%
4V
0402
CERM
CRITICAL

C7818
10UF
20%
6.3V
CERM-X5R
0402-9
CRITICAL

C7821
10UF
20%
6.3V
CERM-X5R
0402-9
CRITICAL

VLDO23 F13   PP2V85 PEARL 68 72
VLDO24 G13   PP3V1 PEARL 68 72

C7822
10UF
20%
6.3V
CERM-X5R
0402-9
CRITICAL

C7819
10UF
20%
6.3V
CERM-X5R
0402-9
CRITICAL

VLDO26 M13   PP1V0 S2 R1 SPARE 68 72
VLDO27 A12   APOLLO LDO27 SPARE 72

C7893
1.0UF
20%
X5R
6.3V
0201-1
13850692

C7894
10UF
20%
6.3V
CERM-X5R
0402-9

SWITCH OUTPUTS

PP1V8 SW1 CAM 7 68 72
PP1V8 S3 SW3 68 72
PP1V1 SW1 SPARE 72

C7984
1.0UF
20%
6.3V
X5R
0201-1

C7974
1.0UF
20%
6.3V
X5R
0201-1

C7986
1.0UF
20%
6.3V
X5R
0201-1

U7700 (SYM 4 OF 4)

U7700
APOLLO-STUDY
SYM 4 OF 4

VSS

A13
C10
C11
C4
C5
D4
F4
G4
G5
H10
H8
H9
J4
K10
K5
K7
K8
K9
L10
L4
M4
N13

D6
F5

K4
K6

N4

VSS

VSS_BUCK1012   L7 M7 N7
VSS_BUCK4   L1 L2 L3
VSS_BUCK45   G1 G2 G3
VSS_BUCK6   D1 D2 D3
VSSA_BUCK10   H6
VSSA_BUCK12   J8
VSSA_BUCK4   H4
VSSA_BUCK5   E4
VSSA_BUCK6   A5
VSSA_LDO_E   F11
VSSA_LDO_N   A10
VSSA_LDO_S   N12
VSSA_E   G10
VSS_W   E6

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

U7700
APOLLO-STUDY
SYM 3 OF 4
WLCSP
OMIT_TABLE

APOLLO_IREF

R7903
200K
0.5%
1/20W
MF
0201
CRITICAL

APOLLO_ON_BUF

C7985
0.22UF
20%
6.3V
X5R
0201

APOLLO_VREF

C7905
0.1UF
10%
6.3V
CERM-X5R
0201

J11	IREF	
B11	ON_BUF	
H11	VREF	

RESET_PMU_TO_APOLLO_POTOMAC — J7 — CRASH*
GPIO_APOLLO_TO_PMU_SOC_IRQ_L — G9 — IRQ*
RESET_PMU_TO_APOLLO — W1 — RESET
I2C_SMC_I2CM3_SCL_1V8 — E10 — SCL
I2C_SMC_I2CM3_SDA_1V8 — F10 — SDA
ISP_SPMI_APOLLO_SCLK — R79A1 — 20.00 — ISP_SPMI_APOLLO_SCLK_R — D9 — SCLK
ISP_SPMI_APOLLO_SDATA — R79B1 — 33 — ISP_SPMI_APOLLO_SDATA_R — C9 — SDATA
APOLLO_TCAL — E11 — TCAL
BOARD_TEMP1A_P — D11 — TDEV1
BOARD_TEMP2A_P — D10 — TDEV2
— G11 — ATM
TPT_APOLLO_AMUX_AY — K11 — AMUX_AY

SYSTEM BALLS
GPIO5
GPIOS

GPIO1 — G8 — GPIO_PMU_TO_APOLLO_LDO10_ON — LDO10
GPIO2 — D8 — GPIO_PMU_TO_APOLLO_BUCK4_ON — BUCK4,LDO15,BUCK3_SW3
GPIO3 — C8 — GPIO_PMU_TO_APOLLO_BUCK3_SW1_ON
GPIO4 — C7 — GPIO_PMU_TO_APOLLO_BUCK5_ON — BUCK5,BUCK10
GPIO6 — D7 — GPIO_PMU_TO_APOLLO_BUCK6_ON
GPIO7 — E7 — GPIO_PMU_TO_APOLLO_LDO15_ON — LDO15 AND LDO26
GPIO8 — E7 — GPIO_PMU_TO_APOLLO_LDO17_ON_R
GPIO8 — E8 — NC_GPIO_APOLLO_GPIO8
GPIO9 — E9 — GPIO_PMU_TO_APOLLO_LP_MODE_L
GPIO10 — F6 — GPIO_APOLLO_TO_RIGEL_EN
GPIO11 — C6 — NC_GPIO_APOLLO_GPIO11
GPIO12 — F8 — NC_GPIO_APOLLO_GPIO12
GPIO13 — F9 — NC_GPIO_APOLLO_GPIO13
GPIO14 — H7 — NC_APPMU_TO_BBPMU_ON
GPIO14 — G7 — NC_GPIO_APOLLO_TO_BT_REG_ON
GPIO16 — G6 — GPIO_APOLLO_TO_WLAN_REG_ON
GPIO15

R7932
0.00
0%
MF
01005
PP1V8_SW1

R7933
0.00
0%
MF
01005
GPIO_PMU_TO_APOLLO_LDO17_ON

R7931
0.00
0%
MF
01005
PP1V8_SW1

R7940
3.92K
0.1%
0201
MF
CRITICAL
1/20W

C7940
100PF
25V
COG-CERM
01005

R2700
10KOHM-1%-0.31MA
CRITICAL

C7928
100PF
5%
25V
COG-CERM
01005
NO_XNET_CONNECTION=1

XW7928
SM

BOARD_TEMP1A_N

NO_XNET_CONNECTION=1
(TEMP1 - NEAR TITUS B2B???)

BOARD_TEMP2A_P

R7921
10KOHM-1%-0.31MA
CRITICAL
I196

C7921
100PF
5%
25V
COG-CERM
01005
NO_XNET_CONNECTION=1

XW7921
SM

BOARD_TEMP2A_N

NO_XNET_CONNECTION=1
(TEMP2 - NEAR FCAM CONN)

SYNC_MASTER=DEV_REV_0.40
SYNC_DATE=12/17/2017
PAGE TITLE
POWER: APOLLO (3/3)
DRAWING NUMBER
SIZE

ORION INPUT POWER PATH SWITCH & RVP

Q8000
CSD58900L

PPVBUS_PROT

ACC_PWRIN_EN1

J320DIFF: ADDED TPS TO ACC_PWRIN_EN

ACC_PWRIN_EN2

PP8000
P4MM SM   EXT_PWRIN_EN2

PP8001
P4MM SM   EXT_PWRIN_EN1

R8000
0
1/20W   FROM E75 RVP FET
PPVBUS_USB_EMI_R   PPVBUS_USB_EMI

VOLTAGE=15V

INRUSH LIMITER
SURGE RATED

NOTE DZ8051: CHECK FOOTPRINT WITH NXP ALTERNATE

CRITICAL
DZ8051
BZT52C10LP

R8051
220K
1/20W

C8073
1UF
10%
16V
X5R
0402

PPVBUS_ORION_RVP

VOLTAGE=15V

ORION RVP

PP5V2_BELLATRIX2_BOOST_VOUT

PP1V8_INT_ORION
VOLTAGE=1.8V

C8070
1UF
20%
10V
X5R
0201

C8071
1.0UF
20%
6.3V
X5R
0201-1

D3
D4
D5
D6
E3
E4
E5
E6   VP

U8000
CD3257
WCSP

F3
F4
F5
F6   ACC_PWR

PPVBUS_ORION

VOLTAGE=14.5V

Q8051
CSD68832L

CRITICAL

PP1V8_S3

A2
A4   VDD_INT_1V8
VDD_IO

GPIO_AOP_TO_ORION_HWEN

R8070
100K
1%
1/32W
MF
01005

C8072
1.0UF
20%
6.3V
X5R
0201-1

DATA   A3

R8060
499
1%
1/10W
MF-LF
603

FOR CONTAMINATION RESISTANCE MEASUREMENT

C4   HWEN

GPIO_ORION_TO_AOP_IRQ

INT   A5

I2C2_SCL_1V8
I2C2_SDA_1V8

C5
B6   SCL
SDA

ORION_COMM_FILT

GND/DFT   C2

ACE_ORION_TO_CHARGER_OVP_SW_EN_L

C6   VBUS_VALID*

(INTERNAL PD)   ACC_PWR_EN_L   B2

ACE_TO_BELLATRIX_ACC_PWR_EN_L

BELLATRIX_EXT_VBUS_VALID_L

C3   EXT_VBUS_VALID*

FOR DEBUG
ORION_CONN_STATUS
HEADER ONLY   CONN_STATUS*

UART_BELLATRIX2_TO_SOC_TX

B5   HS_RX_OUT

ACC_PWR_PRESENT_L/ADC_CH1   B1   BELLATRIX_TO_ACE_ACC_PWR_PRESENT_L

J320DIFF: REMOVED 3.3K PU

UART_SOC_TO_BELLATRIX2_TX   B4   HS_TX_IN

C8073

A1
A6
F1   GND

R8071
3.3K
1%
1/32W
MF
01005
NOSTUFF

PP1V8_INT_ORION

ATHENA BUCKS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
128S00067	4	CAP,TANT, 150UF	C81C0,C81C1,C81C2,C77DF	CRITICAL	

OMIT_TABLE
U8100
D2483A0P0VFAVAJ2
WLCSP
SYM 1 OF 5
BUCK

VDD_MAIN_N E7
VDD_MAIN_W G12
VDD_MAIN_NW D14
VDD_MAIN_E J6
VDD_MAIN_S P8
VDD_MAIN_SW R12
VDD_MAIN_S_ADC M11

VDD_BUCK0_01 L1
VDD_BUCK0_01 L2
VDD_BUCK0_01 L3
VDD_BUCK0_23 R1
VDD_BUCK0_23 R2
VDD_BUCK0_23 R3

VDD_BUCK1_01 A3
VDD_BUCK1_01 B3
VDD_BUCK1_01 C3
VDD_BUCK1_23 A7
VDD_BUCK1_23 B7
VDD_BUCK1_23 C7

VDD_BUCK2_01 V8
VDD_BUCK2_01 W8

VDD_BUCK3 V12
VDD_BUCK3 W12

VDD_BUCK7 W1
VDD_BUCK7 W2
VDD_BUCK7 W3
VDD_BUCK7 W4

BUCK0_LX0 K1
BUCK0_LX0 K2
BUCK0_LX0 K3
BUCK0_LX1 M1
BUCK0_LX1 M2
BUCK0_LX1 M3
BUCK0_LX2 P1
BUCK0_LX2 P2
BUCK0_LX2 P3
BUCK0_LX3 T1
BUCK0_LX3 T2
BUCK0_LX3 T3
BUCK0_FB M5

BUCK0_SNS — ADC SOC TO PMU VDD CPU

BUCK1_LX0 A2
BUCK1_LX0 B2
BUCK1_LX0 C2
BUCK1_LX0 D2
BUCK1_LX1 A4
BUCK1_LX1 B4
BUCK1_LX1 C4
BUCK1_LX2 A6
BUCK1_LX2 B6
BUCK1_LX2 C6
BUCK1_LX3 A8
BUCK1_LX3 B8
BUCK1_LX3 C8
BUCK1_FB E6
BUCK1_SNS G4 — ADC SOC TO PMU VDD GPU

BUCK2_LX0 V7
BUCK2_LX0 W7
BUCK2_LX1 V9
BUCK2_LX1 W9
BUCK2_FB T7
BUCK3_LX V11
BUCK3_LX W11
BUCK3_FB T11
BUCK7_LX V1
BUCK7_LX V2
BUCK7_LX V3
BUCK7_FB T5

Inductors

L8100 1.0UH-20%-4A-0.038OHM PIKA20161B BUCK0_LX0 APN:152S00883 SWITCH_MODE=TRUE
L8101 0.15UH-20%-8.8A-0.015OHM PIIA20161B BUCK0_LX1 APN:152S00887
L8102 0.15UH-20%-8.8A-0.015OHM PIIA20161B BUCK0_LX2 APN:152S00887
L8103 0.15UH-20%-8.8A-0.015OHM PIIA20161B BUCK0_LX3 APN:152S00887 SWITCH_MODE=TRUE
XW8100 BUCK0_FB PLACE_SIDE=TOP PPVDD_CPU

L8110 1.0UH-20%-4A-0.038OHM PIKA20161B BUCK1_LX0 APN:152S00883 SWITCH_MODE=TRUE
L8111 0.15UH-20%-8.8A-0.015OHM PIIA20161B BUCK1_LX1 APN:152S00887
L8112 0.15UH-20%-8.8A-0.015OHM PIIA20161B BUCK1_LX2 APN:152S00887 SWITCH_MODE=TRUE
L8113 0.15UH-20%-8.8A-0.015OHM PIIA20161B BUCK1_LX3 APN:152S00887 SWITCH_MODE=TRUE
XW8110 BUCK1_FB PLACE_SIDE=TOP PPVDD_GPU

L8120 APN:152S00883 1.0UH-20%-4A-0.038OHM PIKA20161B BUCK2_LX0 SWITCH_MODE=TRUE
L8121 0.15UH-20%-8A-0.017OHM BUCK2_LX1 APN:152S00888 2012L SWITCH_MODE=TRUE
XW8120 BUCK2_FB PLACE_SIDE=TOP
R8120 0.00 NOSTUFF 1/32W MF 1% 1005 NO_XNET_CONNECTION=1

L8130 APN:152S00884 1.0UH-20%-4.6A-0.04OHM BUCK3_LX0 SWITCH_MODE=TRUE
XW8130 BUCK3_FB PLACE_SIDE=TOP

L8170 1.0UH-20%-4A-0.038OHM PIKA20161B BUCK7_LX0 APN:152S00883 SWITCH_MODE=TRUE PPVDD_CPU_SRAM
XW8170 BUCK7_FB PLACE_SIDE=TOP

Signals

PPVDD_CPU
PPVDD_GPU
PPVDD_S1_SOC
PPVCC_MAIN
PPVDD_CPU_SRAM
PP1V8_S3
PPVDD CPU

Capacitors (VDD_MAIN side)

PPVCC_MAIN
CRITICAL C81A0 20UF 20% 6.3V CERM-X5R 0402-0.1MM
CRITICAL C81A1 20UF 20% 6.3V CERM-X5R 0402-0.1MM
CRITICAL C81A2 20UF 20% 6.3V CERM-X5R 0402-0.1MM
C81A3 4UF 20% 6.3V CERM-X5R 0201
C81A4 4UF 20% 6.3V CERM-X5R 0201

PPVCC_MAIN
CRITICAL C81A5 20UF 20% 6.3V CERM-X5R 0402-0.1MM
CRITICAL C81A6 / C81A7 20UF 20% 6.3V CERM-X5R 0402-0.1MM
C81A8 4UF 20% 6.3V CERM-X5R 0201
C81A9 20UF 20% CERM-X5R

PPVCC_MAIN
CRITICAL C81AA 20UF 20% 6.3V CERM-X5R 0402-0.1MM
CRITICAL C81AB 20UF 20% 6.3V CERM-X5R 0402-0.1MM
C81AC 4UF 20% 6.3V CERM-X5R 0201
C81AD 4UF 20% 6.3V CERM-X5R 0201

PPVCC_MAIN
OMIT_TABLE C81C0 CRITICAL 150UF 20% 6.3V TANT-POLY CASE-BIS-1
OMIT_TABLE C81C1 CRITICAL 150UF 20% 6.3V TANT-POLY CASE-BIS-1
OMIT_TABLE C81C2 CRITICAL 150UF 20% 6.3V TANT-POLY CASE-BIS-1
C81CE 220PF 5% 16V 01005
C81CF 12PF 5% 25V NP0-C0G 0201
C0G

CRITICAL C81D0 20UF 20% 6.3V CERM-X5R 0402-0.1MM
CRITICAL C81D1 4UF 20% 6.3V CERM-X5R 0201
CRITICAL C81D2 20UF 20% 6.3V CERM-X5R 0402-0.1MM
CRITICAL C81D3 20UF 20% 6.3V CERM-X5R 0402-0.1MM
CRITICAL C81D4 20UF 20% 6.3V CERM-X5R 0402-0.1MM
CRITICAL C81D5 20UF 20% 6.3V CERM-X5R 0402-0.1MM

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

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

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

PPVDD_CPU caps

C8100 15UF 20% 6.3V X5R 0402-0.1MM
C8101 15UF 20% 6.3V X5R 0402-0.1MM
C8102 15UF 6.3V X5R 0402-0.1MM
C8103 15UF 20% 6.3V X5R 0402-0.1MM
C8104 15UF X5R
C8105 15UF 20% 6.3V X5R 0402-0.1MM
C8106 15UF 20% 6.3V X5R 0402-0.1MM-1

C8107 15UF 20% 6.3V X5R 0402-0.1MM
C8108 15UF 20% 6.3V X5R 0402-0.1MM
C8109 15UF 6.3V X5R 0402-0.1MM
C810A 4UF X5R
C810B 15UF 6.3V X5R 0402-0.1MM
C810C 6.3V X5R
C810D 15UF X5R 0402-0.1MM-1

C810E 15UF X5R 0402-0.1MM
C810F 15UF X5R 0402-0.1MM
C810G X5R 0402-0.1MM
C810H X5R 0402-0.1MM
C810I 15UF X5R 0402-0.1MM
C810M 220PF 5% 16V C0G 01005

PPVDD_GPU caps

C8110 15UF 20% 6.3V X5R 0402-0.1MM
C8111 15UF 20% 6.3V X5R 0402-0.1MM
C8112 15UF 6.3V X5R 0402-0.1MM
C8113 15UF X5R 0402-0.1MM
C8114 15UF X5R 0402-0.1MM
C8115 15UF 20% 6.3V X5R 0402-0.1MM
C8116 15UF 20% 6.3V X5R 0402-0.1MM-1

C8117 15UF 20% 6.3V X5R 0402-0.1MM
C8118 15UF 20% 6.3V X5R 0402-0.1MM
C8119 15UF 6.3V X5R 0402-0.1MM
C811A 15UF X5R 0402-0.1MM
C811B 15UF 6.3V X5R 0402-0.1MM
C811C 15UF X5R 0402-0.1MM
C811D 15UF X5R 0402-0.1MM-1

C811E 15UF 6.3V X5R 0402-0.1MM
C811F 15UF X5R 0402-0.1MM
C811G X5R
C811H 15UF X5R
C811I 15UF X5R
C811M 220PF 5% 16V C0G 01005

PPVDD_S1_SOC caps

C8120 15UF 20% 6.3V X5R 0402-0.1MM
C8121 15UF 20% 6.3V X5R 0402-0.1MM
C8122 15UF 20% 6.3V X5R 0402-0.1MM
C8123 15UF X5R 0402-0.1MM

C8124 15UF X5R 0402-0.1MM
C8125 15UF 6.3V X5R 0402-0.1MM
C8126 15UF X5R 0402-0.1MM
C8127 15UF X5R 0402-0.1MM-1
C812F 220PF 5% 16V C0G 01005

C1280 1UF 4V CERM 0402
C1281 2.2UF 4V X5R-CERM 0201
C1282 2.2UF 4V X5R-CERM 0201
CRITICAL

PPVDD_S3 / PP1V8_S3 caps (C8130 row)

C8130 15UF 6.3V X5R 0402-0.1MM
C8131 15UF 20% 6.3V X5R 0402-0.1MM
C8132 15UF 6.3V X5R 0402-0.1MM
C8133 15UF 20% 6.3V X5R 0402-0.1MM
C8134 15UF 20% 6.3V X5R 0402-0.1MM
C8135 15UF 6.3V X5R 0402-0.1MM
C8136 15UF 6.3V X5R 0402-0.1MM
C8137 15UF 20% 6.3V X5R 0402-0.1MM
C8138 15UF X5R 0402-0.1MM
C813F 220PF 5% 16V C0G 01005

PPVDD_CPU_SRAM caps (C8170 row)

C8170 15UF 6.3V X5R 0402-0.1MM
C8171 15UF 6.3V X5R 0402-0.1MM
C8172 15UF 6.3V X5R 0402-0.1MM
C8173 15UF 6.3V X5R 0402-0.1MM
C8174 15UF 6.3V X5R 0402-0.1MM
C817F 220PF 5% 16V C0G 01005

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
197S0399	197S0392		Y8200	RDAR://PROBLEM/9936684
138S0703	138S0648		C8233,ECT	ALT FOR 4.7UF,6.3V,0402

U8100
D2483A0P0VFAVAJ2
WLCSP
SYM 5 OF 5
VSS

B15
C10
C11
C12
C14
C15
C16
D3
D4
D6
D7
D8
D9
D16
E3
E16
F3
F6
F7
G3
G13
H3
H5
H6
H13
J4
J5
J11
K4
K6
L6
M4
N11
T4
T12
U5
U7
U8
U9
U10
U11
U16
U17
U18
V4
V18
W18

VSS

N1
N2
N3
N4   VSS_BUCK0
J1
J2   VSS_BUCK011
J3
U1
U2   VSS_BUCK07
U3
U4
A1
A5   VSS_BUCK1_0 / VSS_BUCK1_1
B1
B5
C1   VSS_BUCK1
C5
D1
D5
E1   VSS_BUCK11
E2
A9
B9   VSS_BUCK19
C9
V6   VSS_BUCK2
W6
V10   VSS_BUCK23
W10
B13   VSS_BUCK8
A13
A15
A16
A17
A18   VSS_BOOST
D17
D18
F17
F18
H14
H15
H16   VSS_IDAC
L14
L15
L16
P14
P15
P16

P4   VSSA_BUCK0
G5   VSSA_BUCK111
      VSSA_BUCK2
      VSSA_BUCK3
U12   VSSA_BUCK7
W5   VSSA_BUCK89
G11
R17   VSS_RTC
C13   AVSS_BOOST
T14   AVSS_IDAC
F16   AVSS_LDO
T17
H11   AVSS_N
G6   AVSS_NE
F15   AVSS_NW
L4   AVSS_SE
R4   PVSS_S

U6

LDO INPUTS

U8100
D2483A0P0VFAVAJ2
WLCSP
SYM 3 OF 5

72 54 PPVCC HIGH

G17 VDD_LDO1
H17 VDD_LDO2
J17 VDD_LDO3
K17 VDD_LDO5
V17 VDD_LDO6
V16 VDD_LDO_6_1
L17 VDD_LDO7
     VDD_LDO8
P17 VDD_LDO11
V15 VDD_LDO13
U15 VDD_LDO14
     VDD_LDO16

C8292
20UF
20%
6.3V
CERM-X5R
0402

M7

72 54 PPVCC MAIN

72 PP1V8 SW1

C8294
4UF
20%
6.3V
CERM-X5R
0201

C8299
0.1UF
10%
2

PMU_VPUMP   U13 VPUMP
PMU_VDD_RTC   D13 VRTC_N
                 M6   VRTC_E
                 K11 DVDD
PMU_VREF   H12 VREF
PMU_IREF   J12 IREF
                 T13 ON_BUF

C8201   C8202   R8201   C8203
0.22UF   0.1UF   200K   0.1UF
20%   10%   0.5%   20%
6.3V   6.3V   1/20W   6.3V
CERM-X5R   CERM-X5R   MF   X5R-CERM
0201   0201   0201   01005

72 PP1V8 ALWAYS
(30MA: 1.8V)

C8260
0.22UF
20%
6.3V
X5R
0201

CRITICAL

72 54 46 45 PP1V8 S3

C8293   C8295
1.0UF   1.0UF
20%   20%
6.3V   6.3V
X5R   X5R
0201-1   0201-1

VBUCK3 K13
        V14 VBUCK3

BUCK3_SW1 W13
BUCK3_SW2 W14

LDO OUTPUTS

VLDO1   G18   (300MA; 1.2-3.68V)   PP3V3 S2 ACE 68 72
VLDO2   H18   (100MA; 1.2-1.605V) ATHENA LDO2 SPARE 72
VLDO3   J18   (300MA; 1.2-3.68V)   PP2V95_S2_THROTTLE 72

C8208   C8200
4UF   4UF
CRITICAL   CRITICAL
6.3V   6.3V
CER-X5R   CER-X5R
0201   0201

VLDO5   K18   (300MA; 1.2-3.68V)   PP3V3 S2 REDRIVER 68 72

VLDO6   W16   (250MA; 2.5-3.6V)   PP3V3 LDO6 SPARE
        W17

C8220   C8217
1.0UF   4UF
CRITICAL   CRITICAL
6.3V   6.3V
X5R   CER-X5R
0201-1   0201

VLDO7   L18   (300MA; 1.2-3.68V)   PP3V3 USB 68 72
                                   PP3V3 S2 SCORPIUS 68 72

VLDO8   M18
VLDO11 N18

C8228   C8224
4UF   4UF
CRITICAL   CRITICAL
20%   20%
6.3V   6.3V
CER-X5R   CER-X5R
0201   0201

VLDO13 P18   (300MA; 1.2-3.68V)   PP3V3 S2 GRAPE 68 72   PP3V0 S2 MISC 68 72
VLDO14 W15   (300MA; 0.675-1.5V) PP1V2 SOC 68 72   PP1V8 S2 LDO SCORPIUS 68 72

C8244   C8248   C8249   C8250   C8240
4UF   4.7UF   4.7UF   4.7UF   4UF
CRITICAL   CRITICAL   CRITICAL   CRITICAL   CRITICAL
20%   20%   20%   20%   20%
6.3V   6.3V   6.3V   6.3V   6.3V
X5R   CER-X5R   X5R   X5R   CER-X5R
0201   0201 402   402   402   0201

VLDO16 U14   (390MA; 1.0-3.5V)

PP1V8 SW1 65 55 68 72

C8256   C8270
4UF   1.0UF
20%   20%
6.3V   6.3V
CER-X5R   X5R
0201   0201-1

PP1V8 S2 GRAPE 68 72

C8274
1.0UF
20%
6.3V
0201-1

SYNC_MASTER=DEV_ARUBA_J3XX
SYNC_DATE=01/03/2018
PAGE TITLE
POWER: ATHENA (2/4)
DRAWING NUMBER
SIZE

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

U8100
D2483A0P0VFAVAJ2
WLCSP
SYM 4 OF 5

PLACE CAPS AND XWS NEAR PMU

CRITICAL
10KOHM-1%-0.31MA
R8328 C8328 100PF
(TEMP2 - NEAR DISPLAY CONN)
BOARD TEMP2 P
BOARD TEMP2 N XW8328

CRITICAL
10KOHM-1%-0.31MA
R8321 C8321 100PF
(TEMP3 - NEAR WIFI)
BOARD_TEMP3_P
BOARD_TEMP3_N XW8321

CRITICAL
10KOHM-1%-0.31MA
R8322 C8322 100PF
(TEMP3 - NEAR FH)
BOARD_TEMP4_P
BOARD_TEMP4_N XW8322

CRITICAL
10KOHM-1%-0.31MA
R8323 C8323 100PF
(TEMP5 - NEAR NAND)
BOARD_TEMP5_P
BOARD_TEMP5_N XW8323

CRITICAL
10KOHM-1%-0.31MA
R8324 C8324 100PF
(TEMP6 - NEAR POTOMAC)
BOARD TEMP6 P
BOARD_TEMP6_N XW8324

CRITICAL
10KOHM-1%-0.31MA
R8325 C8325 100PF
(TEMP7 - NEAR PMU)
BOARD TEMP7 P
BOARD TEMP7 N1 XW8325

CRITICAL
10KOHM-1%-0.31MA
R8326 C8326 100PF
(TEMP8 - NEAR SOC)
BOARD TEMP8 P
BOARD TEMP8 N XW8326

AMUX
ADC_SOC_TO_PMU_ANALOGMUX_OUT AMUX_A6
ADC_SOC_TO_PMU_VDD_CPU AMUX_A1 R6
ADC_SOC_TO_PMU_VDD_GPU AMUX_A2 R5
ADC_SOC_TO_PMU_VDD_SOC AMUX_A3 V5
TP_AMUX_AY AMUX_AY P6
NC_ADC_BB_TO_PMU_SW1_VOUT AMUX_B0 R7
NC_ADC_BB_TO_PMU_SW3_VOUT AMUX_B1 P7
NC_ADC_BB_TO_PMU_PP_1V85 AMUX_B2 N6
NC_AMUX_B3 N5
TP_AMUX_BY AMUX_BY

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

PMU_TCAL TCAL K12
C8340 100PF
CRITICAL
R8340 3.92K
PMU_EXTAL XTAL1 R18
PMU_XTAL XTAL2 T18

BUTTON
GPIO_PMU_TO_SOC_BTN_VOL_DOWN_L BUTTONO1 M10
GPIO_TO_SOC_BTN_ONOFF_L BUTTONO2 M9
GPIO_TO_SOC_BTN_VOL_UP_L BUTTONO3 N8

DBL_CLICK_DET DBL_CLICK_DET E9

PMU_SHUTDOWN SHDWN F5
BRICK_ID J13
IM_MEAS L13
CLK_PMU_TO_AOP_32K SLEEP_32K N9
CLK_PMU_TO_WLAN_32K OUT_32K N10

ADC_IN
ATHENA_CRASH CRASH* R8
C8302 0.01UF

NC VDD_HI_UVLO_DET F12

DROOP
GPIO_PMU_TO_GPU_TRIGGER_1 BUCK1_THROTTLE1* E4
GPIO_PMU_TO_GPU_TRIGGER_0 BUCK1_THROTTLE0* E5
GPIO_PMU_TO_CPU_TRIGGER_1 BUCK0_THROTTLE1* K5
GPIO_PMU_TO_CPU_TRIGGER_0 BUCK0_THROTTLE0* L5

GPIO
GPIO1 G10 GPIO_CPANEL_HALL_TO_PMU_IRQ_BUF_L
GPIO2 G9 GPIO_WLAN_TO_PMU_HOST_WAKE
GPIO3 G8 NC_GPIO_PMU_TO_R1_RESET_L
GPIO4 G7 NC_GPIO_BELFIELD_TO_PMU_WAKE_L
GPIO5 H10 NC_PMU_GPIO5
GPIO6 H9 NC_GPIO_BT_TO_PMU_HOST_WAKE
GPIO7 H8 NC_GPIO_SCORPIUS_TO_PMU_IRQ
GPIO8 H7 GPIO_PMU_TO_SOC_FORCE_DFU
GPIO9 H6 NC_GPIO_H6_TO_APPMU_WAKE_1V8_L
GPIO10 I9 NC_GPIO_CODEC_TO_PMU_WAKE_L
GPIO11 I8 GPIO_APANEL_HALL_TO_PMU_IRQ_BUF_L
GPIO12 J7 GPIO_PMU_TO_APOLLO_LDO17_ON
GPIO13 K10 GPIO_PMU_TO_APOLLO_LDO15_ON
GPIO14 K9 GPIO_POTOMAC_TO_PMU_WAKE
GPIO15 K8 GPIO_POTOMAC_TO_SOC_TO_PMU_IRQ_L
GPIO16 K7 GPIO_PMU_TO_NAND_LOW_BATT_L
GPIO17 L7 GPIO_PMU_TO_APOLLO_BUCK5_ON
GPIO18 L8 GPIO_PMU_TO_LCD_PWREN
GPIO19 I9 GPIO_PMU_TO_APOLLO_LDO10_ON
GPIO20 I10 GPIO_PMU_TO_APOLLO_BUCK4_ON
GPIO21 E14 GPIO_PMU_TO_1V8_EXT_SW2_ON
GPIO22 F13 NC_GPIO_PMU_GPIO22
GPIO23 M7 GPIO_PMU_TO_POTOMAC_LINCH_EN
GPIO24 F14 GPIO_PMU_TO_ROTTERDAM_EN
GPIO25 T16 NC_GPIO_NFC_TO_PMU_HOST_WAKE
GPIO26 T16 GPIO_PMU_TO_APOLLO_BUCK6_ON

PP1V8_S3
R8331 10K
1/32W

PMU EXTAL
PMU XTAL
Y8300
32.768K-20PPM-12.5PF
CRITICAL
C8316 18PF
C8315 18PF

OTHER
BUTTON1 R11 GPIO_BTN_VOL_DOWN_L
BUTTON2 R9 ONOFF_L
BUTTON3 R10 VOL_UP_L
BUTTON4 P11 NC_PMU_BTN4

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

SERIAL
SCLK F8 ATHENA_SCLK_R R79E1
SDATA F9 NUB_SPMI_ATHENA_SDATA_R R79C1 NUB_SPMI_SCLK
SCL F10 I2C_SMC_I2CM3_SCL_1V8 R79D1 NUB_SPMI_SDATA
SDA F11 I2C_SMC_I2CM3_SDA_1V8

NUB_SPMI_SCLK_RADIO
R79F1 3.3

BUTTON PULLUPS

FORCE_SYNC E12 PMU_SYNC R8305
SYS_ALIVE E13 SYS_ALIVE
IRQ_IN* M8 GPIO_APOLLO_TO_PMU_SOC_IRQ_L
IRQ* N7 GPIO_PMU_TO_SOC_IRQ_L
PRE_UVLO D11 VCCMAIN_DROOP_PMU_TO_SOC_L_R
FAULT_OUT* E8 NC_FAULT_OUT_L
REQUEST_DFU E10 PMU_REQUEST_DFU
ACTIVE_RDY E11 GPIO_PMU_TO_SYSTEM_ACTIVE_READY
ATM L11

R83A0 4.7K

PP1V8_ALWAYS
PP1V8_S3
R8395 100K
R8396 100K
GPIO_BTN_VOL_UP_L
GPIO_BTN_VOL_DOWN_L
GPIO_BTN_ONOFF_L

PP1V8 S3
PP1V8 ALWAYS
PP1V8 EXT SW1
R8372 100K R8300 10K R8301 10K R8373 10K R8370 10K
NOSTUFF

R8371 0.00
VCCMAIN_DROOP_PMU_TO_SOC_L
VCCMAIN_DROOP_PMU_TO_SOC_L_R
SYS ALIVE
RESET_PMU_TO_APOLLO_POTOMAC
GPIO PMU TO CPU TRIGGER 1
GPIO PMU TO CPU TRIGGER 0
R8315 0.00
ATHENA CRASH

PP1V8 EXT SW1
R8302 0.00
R8309 R8310 10K
10K

R8341 10K R8342 10K
PP1V8 S3

GPIO_CPANEL_HALL_TO_PMU_IRQ_L
GPIO_APANEL_HALL_TO_PMU_IRQ_L

GPIO PMU TO GPU TRIGGER 1
GPIO PMU TO GPU TRIGGER 0
R8304 0.00
NOSTUFF

RESET PMU TO APOLLO
R8317 RESET_PMU_TO_APOLLO_R
R8316 10K
NOSTUFF

POTOMAC

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
376S00182	376S000070		Q8581	NFET 20V 14A 0.008OHM
376S00182	376S00126		Q8580	NFET 20V 18A 0.004OHM
376S00071	376S00126		Q8580	NFET 20V 18A 0.004OHM

U8500
D2559A0P0V2AVAC2
WLCSP
OMIT_TABLE

PPVBUS PROT

C8500 10UF 20% 35V X5R-CERM 0603 CRITICAL
C8501 10UF 20% 35V X5R-CERM 0603 CRITICAL
C8502 10UF 20% 35V X5R-CERM 0603 CRITICAL

L13 VBUS
M13 VBUS
N13 VBUS
P13 VBUS

ACE_OPTION TO CHARGER OVP SW EN L
R8520 0% 0.00 1/32W MF 01005
OVP SW EN L R

RESET PMU TO APOLLO POTOMAC
R8521 0% 0.00 1/32W 01005 2 MF
NC POTOMAC BOOST PRE UVLO

GPIO PMU TO POTOMAC LINCH EN
R8522 0% 0.00 1/32W 2 MF
GPIO PMU TO POTOMAC LINCH EN R

R8523 0% 0.00 1/32W 01005 1 MF
PP1V8 SW1

GPIO POTOMAC TO PMU WAKE
USB VBUS DETECT
POTOMAC HV CHG OVERRIDE
GPIO PMU TO POTOMAC BOOST EN
GPIO POTOMAC TO SOC TO PMU IRQ L

I2C SMC I2CM0 SCL 1V8
I2C SMC I2CM0 SDA 1V8

BATT NTC P
PPVDD REF CHG
PPVDD POTOMAC GPIO
PPVDD POTOMAC CORE
POTOMAC IREF
POTOMAC VREF
POTOMAC ADC REF

VBUS_OV_OFF(GPIO1)
CRASE(GPIO2)
VSYS_HI_UVLO(GPIO3)
LINCH_EN(GPIO4)
WAKEUP(GPIO5)
USB_VBUS_DET(GPIO6)
HV_CHG_OVERRIDE(GPIO7)
BOOST_EN(GPIO8)
IRQ*
SCL
SDA
TBAT
VDD_REF_CHARGE
VDD_REF_CHARGE_PH0
VDD_REF_CHARGE_PH1
VDD_GPIO
VDDCORE
VDD_DIG
IREF
VREF
ADC_REF
ADC_IN_P
ADC_IN_N
H_TEST_MODE

VCENTER_3
VCENTER_0
VCENTER_1
VCENTER_1_HS
VBOOT_N0
VBOOT_DRV0
LX_BOOT_PH0
VBOOT_N1
VBOOT_DRV1
LX_BOOT_PH1
BOOST_HS_SUPPLY
BOOST_HS_SOURCE
VSYS_HI_S
VSYS_HI
VSYS_HI_EXT_DIO
VSYS_LO_BYPASS
LX_PH0
LX_BUBO
VSYS_LO_BUBO
LX_BOOST
LX_PH1
VSYS_LO_S
VSYS_LO_1
VSYS_LO_2
VSYS_LO_EXT_DIO
IBAT_1
IBAT_2
VBAT

PPVCENTER

C8555 0.1UF 10% 35V CER-X5R 0201
C8550 10UF 20% 35V X5R-CERM 0603 CRITICAL
C8557 0.1UF 10% 35V CER-X5R 0201 CRITICAL
C8551 10UF 20% 35V X5R-CERM 0603 CRITICAL
C8556 0.1UF 10% 20V CER-X5R 0201 CRITICAL
C8552 10UF 20% 20V X5R-CERM 0603 CRITICAL

PPVCENTER_1_HS
C8558 0.1UF 10% 10V X5R CRITICAL

POTOMAC VBOOT0 0.1UF C8560 16V 10% 0201 X5R-CERM CRITICAL
POTOMAC VBOOT PH0
POTOMAC VBOOT1 0.1UF C8561 16V 10% X5R-CERM CRITICAL
POTOMAC VBOOT PH1

POTOMAC HS SUPPLY
POTOMAC HS SRC
C8562 0.1UF 0201 X5R-CERM 16V CRITICAL

PPVCC_HIGH
C8567 47UF 20% 6.3V X5R-CERM 0603 CRITICAL
C8568 47UF 20% 6.3V X5R-CERM 0603 CRITICAL
C8569 47UF 20% 6.3V X5R-CERM 0603 CRITICAL
C8563 47UF 20% 6.3V X5R-CERM 0603 CRITICAL
C8564 47UF 20% 6.3V X5R-CERM 0603 CRITICAL
C8565 47UF 20% 6.3V X5R-CERM 0603 CRITICAL
C8566 47UF 20% 6.3V X5R-CERM 0603 CRITICAL

C8580 20UF 20% 6.3V CERM-X5R CRITICAL
C8588 20UF 20% 6.3V CERM-X5R CRITICAL
C8589 20UF 20% 6.3V CERM-X5R CRITICAL
C8581 20UF 20% 6.3V CERM-X5R CRITICAL
C8582 20UF 20% 6.3V CERM-X5R CRITICAL
C8583 20UF 20% 6.3V CERM-X5R CRITICAL
C8584 1.0UF 20% 10V X5R 0201-1 CRITICAL

R8581 470K 5% 1/32W 01005 NOSTUFF
Q8581 FDMC6688P MLP3.3X3.3 CRITICAL

POTOMAC HIGH DIO
DIDT=TRUE

PPVCC_MAIN
C85A0 10UF 20% 10V X5R-CERM
C8570 10UF 20% 10V X5R-CERM
C8571 10UF 20% 10V X5R-CERM
C8572 10UF 20% 10V X5R-CERM
C8573 10UF 20% 10V X5R-CERM
C8574 10UF 20% 10V X5R-CERM
C85A1 10UF 20% 10V X5R-CERM
C85A2 10UF 20% 10V X5R-CERM

R8580 470K 5% 1/32W MF 01005 NOSTUFF
Q8580 FDMC6686P POWER33 CRITICAL

L8570 1UH-20%-6.4A-0.038OHM
POTOMAC_LX_PH0
PIKA3225IB-SM
DIDT=TRUE

POTOMAC_LX_BUBO
DIDT=TRUE

PP1V8 ALWAYS
R8525 10K 5% 1/32W MF 01005
R8526 10K 5% 1/32W MF 01005

GPIO POTOMAC TO PMU WAKE
GPIO POTOMAC TO SOC TO PMU IRQ L

C8512 0.1UF 10% 16V X5R-CERM 0201 CRITICAL
C8513 10UF X5R CRITICAL
C8516 0.1UF 10% 16V X5R-CERM 0201
C8510 0.1UF 10% 16V X5R-CERM 0201
C8511 0.1UF 10% 16V X5R-CERM 0201
R8515 200K 0.5% 1/20W 0201
C8515 0.1UF 10% X5R-CERM 1320S444
C8514 0.1UF 10% 16V X5R-CERM 0201

PPBATT_VCC
C85A3 4.7UF 20% X5R 0402-1 CRITICAL
C8590 47UF 20% 6.3V CER-X5R 0603 CRITICAL
C8599 47UF 20% 6.3V CER-X5R 0603 CRITICAL
C8593 47UF 20% 6.3V CER-X5R 0603 CRITICAL
C8591 10UF 20% 6.3V CERM-X5R 0402-9 CRITICAL
C8592 10UF 20% 6.3V CERM-X5R 0402-9 CRITICAL

PPBATT_POS_RC
R8591 0.5 1/16W 402 MF
NOTE: FOR NO BATTERY SITUATION

L8571 0.47UH-20%-8.6A-0.024OHM
POTOMAC_LX_PH1
PIKA3225IB-SM
DIDT=TRUE

POTOMAC LOW DIO

R8593 499 1% 1/20W MF 201

R8592 0.00 0% 1/32W 01005 MF
BATT SNS R
BATT SNS

PP1V8 S3
PPVCC_MAIN

C8600
0.1UF
10%
16V
X5R-CERM
0201

C8601
1.0UF
20%
6.3V
X5R
0201-1

VDD

U8600
SLG5AP1630V
STDFN

EXT_SW_1V8_RAMP

7 CAP
2 ON
D 3
S 5

PP1V8_SW1

PP1V8_EXT_SW1

GND
8

C8602
2200PF
10%
6.3V
X5R-CERM
01005

R8602
100K
5%
1/32W
MF
01005

CRITICAL
C8604
10UF
20%
6.3V
CERM-X5R
0402-9

PP1V8 S3
PPVCC MAIN

C8610
0.1UF
10%
16V
X5R-CERM
0201

C8611
1.0UF
20%
6.3V
X5R
0201-1

VDD

U8610
SLG5AP1443V
TDFN
CRITICAL

EXT_SW2_1V8_RAMP

7 CAP
2 ON
D 3
S 5

GPIO_PMU_TO_1V8_EXT_SW2_ON

PP1V8_S2_EXT_SW2

GND
8

CRITICAL
C8612
4700PF
10%
6.3V
X5R

R8612
100K
5%
1/32W
MF
01005

CRITICAL
C8614
10UF
20%
6.3V
CERM-X5R
0402-9

01005

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
371S00133	371S00046		D8710	DIODE SCHOTTKY 30V 2A 0603

SCORPIUS BOOST

PPVCC_MAIN

L8701
1UH-20%-6.4A-0.038OHM
PIKA3225IB-SM

VOLTAGE=20V
PP20V SCORPIUS BOOST SW
DIDT=TRUE

VOLTAGE=20V
PP20V SCORPIUS BOOST VOUT

C8731
10UF
20%
X5R-CERM
0402-7

C8729
0.1UF
10%
10V
X5R-CERM
0201

220PF
5%
16V
A0G
01005

VOLTAGE=20V
PPVCC_BOOST20_INT

C8706
4.7UF
25V
X5R
0402-0P1MM

BOOST20_BST

C8707
100NF
25V
X7S
0402

C8736
180PF
10%
25V
NP0-C0G
0201

C8735
0.1UF
25V
CERM-X7R
0402

C8732
4.7UF
20%
25V
X5R
0402-0P1MM

C8737
10UF
20%
35V
X5R-CERM
0603

C8738
10UF
20%
35V
X5R-CERM
0603

C8739
10UF
20%
35V
X5R-CERM
0603

U8700
SN611781
QFN

VCC 10
12 VIN
11 EN INT 800K VOUT
FREQ/SYNC ISDRV 9
3 ILIMIT
COMP 4
AGND PGND
BST 13
SW 7
8
FB 5
NC

R8731
470K
1%
1/32W
MF
01005

R8733
10K 4K
1%
1/32W
MF
01005

R873A
1.5K
1%
1/32W
MF
01005

GPIO_SCORPIUS_BOOST_EN

GPIO_SCORPIUS_BOOST_VSET_DAC

BOOST20_FREQ

BOOST20_ILIM

BOOST20_VSET_DAC_R

R8734
470K
5%
1/32W
MF
01005
NOSTUFF

R8707
143K
1%
1/32W
MF
01005

R8708
105K
1%
1/32W
MF
01005

BOOST20_COMP

R8709
68.1K
1%
1/32W
MF
01005

BOOST20_COMP_R

R8732
75K
1%
1/32W
MF
01005

C8709
4.3PF
+/-0.1PF
25V
C0G
0201
NOSTUFF

C8708
180PF
2%
50V
NP0-C0G
0201

BOOST20_VSET_DAC

C873A
0.1UF
20%
6.3V
X5R-CERM
01005

BELLATRIX BOOST

PPVCC_MAIN

L8710
1UH-20%-6.4A-0.038OHM
PIKA3225IB-SM

BELLATRIX BOOST SW
DIDT=TRUE

D8710
DSN2
A K
NSR20F30NX

PP5V2 BELLATRIX2 BOOST VOUT

C8711
10UF
10%
10V
X5R-CERM
0402-0P1MM

C8712
0.1UF
10%
10V
X5R-CERM

C8713
220PF
5%
16V
C0G
01005

C8723
220PF
5%
16V
C0G

C8724
22UF
20%
10V
X5R-CERM
0603-1

C8725
22UF
20%
10V
X5R-CERM
0603-1

C8726
22UF
20%
10V
X5R-CERM

C8727
22UF
20%
10V
X5R-CERM
0603-1

R8716
316K
1%
1/20W
MF
201

C8720
47PF
5%
16V
NP0-C0G
01005

C8710
0.01UF
10%
10V
X5R-CERM
0201

U8710
SN61230A
VQFN

4 VIN VOUT 7
5 SW
1 CBST
2 EN
FB 3
GND

BELLATRIX BOOST BOOT

GPIO_SOC_TO_BELLATRIX2_BOOST_EN

GPIO BELLATRIX BOOST VSET R

R8711
100K
5%
1/32W
MF
01005

R8717
100K
1%
1/20W
MF
201

PAGE TITLE
POWER: SCORPIUS/BELLATRIX2 BOOSTS
DRAWING NUMBER
SIZE

SCORPIUS THROTTLE

SCORPIUS FLEX CONNECTOR
MATCH J317
MLB: 516S00150
FLEX: 516S00149

BATTERY CONNECTOR
MATCHES J207_BMU_051-01628_1.0.0
APN: 516-00013

ORION FLEX CONNECTOR
MLB: 516S00186
FLEX: 516S00185

PP2V95 S2 THROTTLE
R8995 2.2K
PP2V95 S2 SCORPIUS FILT
C8995 0.1UF
U8992 MAX40002ANS+ WLP
VCC/REF B1
IN OUT
GND
B2
PPVCC_MAIN
R8991 0.00
SCORP_THROT_IN A2
R8992 1.00M
SCORPIUS THROTTLE L A1
R8994 100
GPIO SCORPIUS BOOST EN

I2C SMC I2CM2 SDA 1V8
R8902 0.00
I2C_PULLUP I2C_SMC_SDA_TRNS
Q8900 DMN2990UFZ DFN0606
C8900 22PF
I2C SMC GASGAUGE SDA 1V8 CONN
I2C_PULLUP

PP1V8 S3
PP1V8 S3

I2C SMC I2CM2 SCL 1V8
R8903 0.00
I2C_PULLUP I2C_SMC_SCL_TRNS
Q8901 DMN2990UFZ DFN0606
C8901 22PF
I2C SMC GASGAUGE SCL 1V8 CONN
I2C_PULLUP

PPBATT VCC
C8925 22PF
C8929 4.7PF
C8927 180PF

I2C AOP I2CM1 SCL 1V8
FL8995 0.00
I2C SCORPIUS SCL 1V8 CONN
I2C_PULLUP

I2C AOP I2CM1 SDA 1V8
FL8996 0.00
I2C SCORPIUS SDA 1V8 CONN
I2C_PULLUP

PP1V8 S2 LDO SCORPIUS
FL8992 0.00
PP1V8 S2 LDO SCORPIUS CONN
C8992 220PF

PP1V8 S3
FL8994 0.00
PP1V8 S2 BUCK SCORPIUS CONN
C8994 220PF

PP3V3 S2 SCORPIUS
FL8991 0.00
PP3V3 S2 SCORPIUS CONN
C8991 220PF

J8900 BATT-J207 F-ST-TH
HDQ
THERM
PACK_POS
PACK_NEG
SENSE

BATT_SNS

J8901 AA37D-S014VA1 F-ST-SM
PP20V SCORPIUS BOOST VOUT
PP1V8 S2 BUCK SCORPIUS CONN
NC BB TO DOTARA TX IND
PP3V3 S2 SCORPIUS CONN
GPIO SCORPIUS BOOST VSET DAC
PP1V8 S2 LDO SCORPIUS CONN
GPIO GRAPE TO SCORPIUS TIME SYNC
GPIO BT TO SCORPIUS TX IND
GPIO SCORPIUS TO AOP IRQ
GPIO WLAN TO SCORPIUS TX IND
SOC TO SCORPIUSMCU BOOT0
GPIO AOP TO SCORPIUSMCU NRST L
I2C SCORPIUS SCL 1V8 CONN
I2C SCORPIUS SDA 1V8 CONN
GPIO SCORPIUS BOOST EN
SWD SCORPIUS SWCLK
SWD SCORPIUS SWDIO

PP20V SCORPIUS BOOST VOUT
C8996 0.1UF
C8997 0.01UF
C8998 220PF

PPVBUS ORION
FL8950 FERR-22OHM-28%-8A 0603
C8993 0.1UF
C8990 0.022UF
PPVBUS_ORION_CONN
C8950 180PF
DZ8900 UCLAMP2411ZA
O_T_DET_BASE
Q8990 ZXTN3035CLP DFN10063
R8990 3.0K
CRITICAL

ORION COMM FILT
R8951 49.9
ORION COMM FILT R
FL8951 120-OHM-25%-250MA-0.5DCR
C8951 0.01UF
C8955 15PF
DZ8901 12V-22PF
ORION COMM CONN

J8902 BM28P0.6-6DS/2-0.35V F-ST-SM
PWR/GND
SIGNAL
PWR/GND
CRITICAL

DEBUG RESET ACCESS

PP1V8_SW1
72 68 58 55

NOSTUFF
1 R9001
1K
5%
1/20W
MF
2 201

PMU_SHUTDOWN
68 59 OUT

TP9001
A
TP-P55

PP1V8_S3
72 20 9

NOSTUFF
1 R9000
1K
5%
1/16W
MF-LF
2 402

GPIO_FORCE_DFU
68 34 5 OUT

GPIO_PMU_TO_SOC_FORCE_DFU
59 IN

R9002
1 100K 2
5% MF
1/32W 01005

PPVCC_MAIN

1 R9003
2.2K
5%
1/20W
MF
2 201

VCC_MAIN_LED

A
D9002
LTW-C193TS5
0603
K 378S0377

PAGE TITLE

SOC: DEBUG

DRAWING NUMBER

SIZE

CELLULAR AND WLAN/BT ALIASES

BASEBAND

SOC/AOP/PMU GPIOS

NC_BB_TO_AP_RESET_DETECT_1V8_L — MAKE_BASE=TRUE — NC_BB_TO_AP_RESET_DETECT_1V8_L
NC_AP_TO_BB_COREDUMP_TRIG_1V8 — MAKE_BASE=TRUE — NC_AP_TO_BB_COREDUMP_TRIG_1V8
NC_SWD_BB_SWCLK — MAKE_BASE=TRUE — NC_SWD_BB_SWCLK
NC_SWD_BB_SWDIO — MAKE_BASE=TRUE — NC_SWD_BB_SWDIO
NC_APPMU_TO_BBPMU_ON — MAKE_BASE=TRUE — NC_APPMU_TO_BBPMU_ON

NC_PCIE_BB_TO_APPMU_WAKE_1V8_L — MAKE_BASE=TRUE — NC_PCIE_BB_TO_APPMU_WAKE_1V8_L
NC_UART_AOP_TO_BB_TXD — MAKE_BASE=TRUE — NC_UART_AOP_TO_BB_TXD
NC_UART_BB_TO_AOP_TXD — MAKE_BASE=TRUE — NC_UART_BB_TO_AOP_TXD
NC_AOP_TO_BBPMU_FORCE_PWM — MAKE_BASE=TRUE — NC_AOP_TO_BBPMU_FORCE_PWM
NC_BB_TO_DOTARA_TX_IND — MAKE_BASE=TRUE — NC_BB_TO_DOTARA_TX_IND
GPIO_SOC_TO_GRAPE_DISPLAY_BSYNC1 — MAKE_BASE=TRUE — GPIO_SOC_TO_GRAPE_DISPLAY_BSYNC1

PCIE

NC_90_PCIE_AP_TO_BB_REFCLK_P — MAKE_BASE=TRUE — NC_90_PCIE_AP_TO_BB_REFCLK_P
NC_90_PCIE_AP_TO_BB_REFCLK_N — MAKE_BASE=TRUE — NC_90_PCIE_AP_TO_BB_REFCLK_N
NC_PCIE_AP_BI_BB_CLKREQ_1V8_L — MAKE_BASE=TRUE — NC_PCIE_AP_BI_BB_CLKREQ_1V8_L
NC_PCIE_AP_TO_BB_PERST_1V8_L — MAKE_BASE=TRUE — NC_PCIE_AP_TO_BB_PERST_1V8_L
NC_90_PCIE_AP_TO_BB_TX_P — MAKE_BASE=TRUE — NC_90_PCIE_AP_TO_BB_TX_P
NC_90_PCIE_AP_TO_BB_TX_N — MAKE_BASE=TRUE — NC_90_PCIE_AP_TO_BB_TX_N
NC_90_PCIE_BB_TO_AP_TX_P — MAKE_BASE=TRUE — NC_90_PCIE_BB_TO_AP_TX_P
NC_90_PCIE_BB_TO_AP_TX_N — MAKE_BASE=TRUE — NC_90_PCIE_BB_TO_AP_TX_N

I2S

I2S0_SOC_TO_BB_BCLK — MAKE_BASE=TRUE — I2S0_SOC_TO_BB_BCLK
I2S0_BB_TO_SOC_DIN — MAKE_BASE=TRUE — I2S0_BB_TO_SOC_DIN
I2S0_SOC_TO_BB_DOUT — MAKE_BASE=TRUE — I2S0_SOC_TO_BB_DOUT
I2S0_SOC_TO_BB_LRCK — MAKE_BASE=TRUE — I2S0_SOC_TO_BB_LRCK
NC_BB_TO_AP_GSM_TXBURST — MAKE_BASE=TRUE — NC_BB_TO_AP_GSM_TXBURST
NC_UART_BB_TO_WLAN_COEX_1V8 — MAKE_BASE=TRUE — NC_UART_BB_TO_WLAN_COEX_1V8
NC_UART_WLAN_TO_BB_COEX_1V8 — MAKE_BASE=TRUE — NC_UART_WLAN_TO_BB_COEX_1V8

BASEBAND SWD

NC_PCIE_AP_TO_BB_PERST_1V8_L

R0951
100K
5%
1/32W
MF
01005

WLAN

POWER

PPVCC_MAIN — PPVCC_MAIN
PP1V8_S2_EXT_SW2 — PP1V8_S2_EXT_SW2
PP1V8_S2_EXT_SW2 — PP1V8_S2_EXT_SW2

GPIOS

GPIO_APOLLO_TO_WLAN_REG_ON — MAKE_BASE=TRUE — GPIO_APOLLO_TO_WLAN_REG_ON
GPIO_WLAN_TO_PMU_HOST_WAKE — MAKE_BASE=TRUE — GPIO_WLAN_TO_PMU_HOST_WAKE
CLK_PMU_TO_WLAN_32K — MAKE_BASE=TRUE — CLK_PMU_TO_WLAN_32K
GPIO_AOP_TO_WLAN_CONTEXT_A — MAKE_BASE=TRUE — GPIO_AOP_TO_WLAN_CONTEXT_A
GPIO_AOP_TO_WLAN_CONTEXT_B — MAKE_BASE=TRUE — GPIO_AOP_TO_WLAN_CONTEXT_B
GPIO_WLAN_TO_SOC_TIME_SYNC — MAKE_BASE=TRUE — GPIO_WLAN_TO_SOC_TIME_SYNC
GPIO_WLAN_TO_SCORPIUS_TX_IND — MAKE_BASE=TRUE — GPIO_WLAN_TO_SCORPIUS_TX_IND

SWD

SWD_WLAN_SWCLK — MAKE_BASE=TRUE — SWD_WLAN_SWCLK
SWD_WLAN_SWDIO — MAKE_BASE=TRUE — SWD_WLAN_SWDIO

PCIE

PCIE_SOC_TO_WLAN_REFCLK_P — MAKE_BASE=TRUE — PCIE_SOC_TO_WLAN_REFCLK_P
PCIE_SOC_TO_WLAN_REFCLK_N — MAKE_BASE=TRUE — PCIE_SOC_TO_WLAN_REFCLK_N
PCIE_SOC_TO_WLAN_TX_P — MAKE_BASE=TRUE — PCIE_SOC_TO_WLAN_TX_P
PCIE_SOC_TO_WLAN_TX_N — MAKE_BASE=TRUE — PCIE_SOC_TO_WLAN_TX_N
PCIE_WLAN_TO_SOC_TX_C_P — MAKE_BASE=TRUE — PCIE_WLAN_TO_SOC_TX_C_P
PCIE_WLAN_TO_SOC_TX_C_N — MAKE_BASE=TRUE — PCIE_WLAN_TO_SOC_TX_C_N
PCIE_WLAN_TO_SOC_CLKREQ_L — MAKE_BASE=TRUE — PCIE_WLAN_TO_SOC_CLKREQ_L
PCIE_SOC_TO_WLAN_RESET_L — MAKE_BASE=TRUE — PCIE_SOC_TO_WLAN_RESET_L

PCIE_WLAN_TO_SOC_TX_P — C9160 — 0.1UF — PCIE_WLAN_TO_SOC_TX_C_P
20% 01005
X5R-CERM 6.3V
PLACE_NEAR=U_WLAN_W.28.3MM

PCIE_WLAN_TO_SOC_TX_N — C9161 — 0.1UF — PCIE_WLAN_TO_SOC_TX_C_N
20% 01005
X5R-CERM 6.3V
GND_VG15=TRUE
PLACE_NEAR=U_WLAN_W.97.3MM

BLUETOOTH

SOC GPIOS

GPIO_TOUCH_TO_BT_SYNC — MAKE_BASE=TRUE — GPIO_TOUCH_TO_BT_SYNC
NC_I2C_BT_TO_SE_SCL — MAKE_BASE=TRUE — NC_I2C_BT_TO_SE_SCL
NC_I2C_BT_TO_SE_SDA — MAKE_BASE=TRUE — NC_I2C_BT_TO_SE_SDA
GPIO_SOC_TO_BT_TO_GRAPE_TS_SYNC — MAKE_BASE=TRUE — GPIO_SOC_TO_BT_TO_GRAPE_TS_SYNC   TO GODFATHER PIN15?   TO GODFATHER PIN14?
GPIO_BT_TO_SCORPIUS_TX_IND — MAKE_BASE=TRUE — GPIO_BT_TO_SCORPIUS_TX_IND
BT_TO_SOC_TIME_SYNC — MAKE_BASE=TRUE — BT_TO_SOC_TIME_SYNC

WLAN/BT SPMI

NUB_SPMI_SCLK_RADIO — MAKE_BASE=TRUE — NUB_SPMI_SCLK_RADIO
NUB_SPMI_SDATA — R9152 — 33 — SPMI_AOP_TO_RADIOS_DATA
1/32W 5% MF 01005 PLACE_NEAR=U_WLAN_W.193.20MM

ROTTERDAM(VENUS)

POWER

PPVCC_MAIN — PPVCC_MAIN
PP1V8_S2_EXT_SW2 — PP1V8_S2_EXT_SW2

GPIOS

GPIO_SOC_TO_ROTTERDAM_DEV_WAKE — MAKE_BASE=TRUE — GPIO_SOC_TO_ROTTERDAM_DEV_WAKE
GPIO_SOC_TO_ROTTERDAM_DWLD_REQ — MAKE_BASE=TRUE — GPIO_SOC_TO_ROTTERDAM_DWLD_REQ
GPIO_PMU_TO_ROTTERDAM_EN — MAKE_BASE=TRUE — GPIO_PMU_TO_ROTTERDAM_EN

UART

UART_SOC_TO_ROTTERDAM_TX — MAKE_BASE=TRUE — UART_SOC_TO_ROTTERDAM_TX
UART_ROTTERDAM_TO_SOC_TX — MAKE_BASE=TRUE — UART_ROTTERDAM_TO_SOC_TX
UART_SOC_TO_ROTTERDAM_RTS_L — MAKE_BASE=TRUE — UART_SOC_TO_ROTTERDAM_RTS_L
UART_ROTTERDAM_TO_SOC_RTS_L — MAKE_BASE=TRUE — UART_ROTTERDAM_TO_SOC_RTS_L

UWB - NC

COEX

NC_R1_TO_WLAN_COEX — MAKE_BASE=TRUE — NC_R1_TO_WLAN_COEX
NC_WLAN_TO_R1_COEX — MAKE_BASE=TRUE — NC_WLAN_TO_R1_COEX
NC_BT_TO_R1_TIME_SYNC — MAKE_BASE=TRUE — NC_BT_TO_R1_WAKE
                                          NC_BT_TO_R1_TIME_SYNC
NC_I2C_R1_TO_NFC_SCL — MAKE_BASE=TRUE — NC_I2C_R1_TO_NFC_SCL
NC_I2C_R1_TO_NFC_SDA — MAKE_BASE=TRUE — NC_I2C_R1_TO_NFC_SDA

BASEBAND NTC

I121
CRITICAL
R9150
10KOHM-1%-0.31MA
0201
NO_XNET_CONNECTION=1
(TEMP1 - NEAR BB PA)

PA_NTC_P
C9150
100PF
5%
COG-CERM
01005
NO_XNET_CONNECTION=1
PA_NTC_N

XW9150
SM

NOTE: XW SHOULD BE PLACED NEAR PMU

PAGE TITLE

ALIASES: BB/WLAN/BT

DRAWING NUMBER   SIZE

DISPLAY ZERO OHMS FOR CMC

R4640
LPDP_AUX_EMI_P   0.00   NO_XNET_CONNECTION=1   LPDP_AUX_EMI_CONN_P
GND_VOID=TRUE   1%   MF GND_VOID=TRUE
1/20W   0201

R4642
LPDP_AUX_EMI_N   0.00   NO_XNET_CONNECTION=1   LPDP_AUX_EMI_CONN_N
GND_VOID=TRUE   1%   MF GND_VOID=TRUE
1/20W   0201

USB SOC ZERO OHMS FOR CMC

R38A0
ACE_USB_TOP_P   0.00   NO_XNET_CONNECTION=1   ACE_USB_TOP_CONN_P
GND_VOID=TRUE   1%   MF GND_VOID=TRUE
1/20W   0201

R38A1
ACE_USB_TOP_N   0.00   NO_XNET_CONNECTION=1   ACE_USB_TOP_CONN_N
GND_VOID=TRUE   1%   MF GND_VOID=TRUE
1/20W   0201

R38A2
ACE_USB_BOT_P   0.00   NO_XNET_CONNECTION=1   ACE_USB_BOT_CONN_P
GND_VOID=TRUE   1%   MF
1/20W   0201

R38A3
ACE_USB_BOT_N   0.00   NO_XNET_CONNECTION=1   ACE_USB_BOT_CONN_N
GND_VOID=TRUE   1%   MF GND_VOID=TRUE
1/20W   0201

BATT_NTC_P

R9250   C9250
CRITICAL   I668   100PF   25V
5%
10KOHM-1%-0.31MA   X7G-CERM   0105A
0201   NO_XNET_CONNECTION=1

NO_XNET_CONNECTION=1   BATT_NTC_N

XW9250

XW9250
SN   SN

PAGE TITLE
ALIASES: J417/J420 DIFF
DRAWING NUMBER   SIZE

SMT TEST FIXTURE TP

POWER - BUCKS/SWITCHES
- PPVDD CPU
- PPVDD GPU
- PPVDD S1 SOC
- PP1V8 S3
- PP1V8 SW1
- PP1V8 S2 GRAPE
- PP1V8 SW1 CAM
- PP1V8 S3 SW3
- PP1V8 EXT SW1
- PP1V8 S2 EXT SW2
- PP1V1 S3
- PPVDD S1 FIXED
- PP2V63 OTP
- PPVDD CPU SRAM
- PPVDD GPU SRAM
- PPVDD S1 DCS
- PPVDD S1 OL
- PPVDD ECPU
- PP1V4 CAMERA

POWER - LDOS
- PP3V3 S2 ACE
- PP2V95 S2 THROTTLE
- PP3V0 ALS
- PP3V3 S2 REDRIVER
- PP3V3 USB
- PP3V3 S2 SCORPIUS
- PP1V215 FRONT CAM
- PP0V9 NAND
- PP3V0 S2 MISC
- PP1V2 SOC
- PP1V2 S2 GRAPE
- PP0V775 S2 AOP
- PP1V8 S2 LDO SCORPIUS
- PP2V50 FRONT CAM
- PP1V215 PEARL
- PP2V85 PEARL
- PP3V1 PEARL
- PP1V0 S2 R1 SPARE

POWER - OTHER
- PPVCENTER
- PPVBUS PROT
- PPVCC HIGH
- PP1V8 ALWAYS
- PPBATT VCC
- PPLED OUT
- PPVCC MAIN
- PPBATT POS RC
- PPVBUS USB EMI
- PP1V2 GRAPE BUCK EXT

POWER - DISPLAY
- PPVCC MAIN LCD SW CONN
- PPVCC MAIN LCD SW

POWER - BACKLIGHT
- PPLED BACK REG
- PPLED BACK REG
- PPLED BACK REG
- LED IO 1 A
- LED IO 2 A
- LED IO 3 A
- LED IO 4 A
- LED IO 5 A
- LED IO 6 A
- LED IO 1 B
- LED IO 2 B
- LED IO 3 B
- LED IO 4 B
- LED TO 5 B
- LED IO 1 C
- LED IO 2 C
- LED TO 3 C
- LED IO 4 C
- LED IO 5 C
- LED IO 6 B
- LED IO 6 C

BATTERY
- I2C SMC GASGAUGE SCL 1V8 CONN
- BATT SNS
- I2C SMC GASGAUGE SDA 1V8 CONN
- BATT NTC P

PMU - MISC
- PMU TCAL
- BOARD TEMP2 P
- BOARD TEMP3 P
- BOARD TEMP4 P
- BOARD TEMP5 P
- BOARD TEMP6 P
- BOARD TEMP7 P
- BOARD TEMP8 P
- TPT APOLLO AMUX AY
- TP AMUX AY
- TP AMUX BY
- GPIO PMU TO CPU TRIGGER 0
- GPIO PMU TO CPU TRIGGER 1
- VCCMAIN DROOP PMU TO SOC L
- SOCHOT1 SOC TO PMU L
- PMU SHUTDOWN
- GPIO PMU TO GPU TRIGGER 0
- GPIO PMU TO GPU TRIGGER 1
- BOARD TEMP2A P
- GPIO PMU TO APOLLO LDO10 ON
- GPIO PMU TO APOLLO BUCK4 ON

SOC - JTAG/RESET
- JTAG SOC SEL
- JTAG SOC TCK
- JTAG SOC TMS
- TP JTAG SOC TDI
- TP JTAG SOC TRST L
- SOC TESTMODE
- RESET PMU TO SYSTEM L
- GPIO FORCE DFU
- SOC TO ACE DFU STATUS
- TST CLKOUT
- GPIO PMU TO SYSTEM ACTIVE READY

SOC - UART
- UART SOC TO DEBUG TX
- UART DEBUG TO SOC TX

SOC - USB
- USB SOC P
- USB SOC N

USBC - CONN
- TRANS DET BASE
- PPVBUS USB CONN
- ACE CC1
- ACE CC2
- ACE USB TOP CONN N
- ACE USB TOP CONN P
- ACE USB BOT CONN N
- ACE USB BOT CONN P
- PPVBUS USB EMI

ACE
- PP5V2 ACE BOOST OUT
- PP3V3 ACE LDO
- ACE SPI CLK R
- ACE SPI CS R L
- ACE SPI MOSI R
- ACE SPI MISO R
- ACE SBU1 CONN
- ACE SBU2 CONN
- GPIO ACE TO SOC IRQ L
- RESET ACE TO PMU
- ACE TO BOOST EN
- ACE HRESET
- ACE ORION TO CHARGER OVP SW EN L
- GPIO ACE TO SMC IRQ L

ORION
- PPVBUS ORION RVP
- PPVBUS ORION CONN
- ORION COMM CONN
- GPIO ORION TO AOP IRQ
- PP5V2 BELLATRIX2 BOOST VOUT
- GPIO SOC TO BELLATRIX2 BOOST EN
- PP1V8 INT ORION
- ACE TO BELLATRIX ACC PWR EN L
- BELLATRIX TO ACE ACC PWR PRESENT L
- O T DET BASE

SCORPIUS
- PP20V SCORPIUS BOOST VOUT
- PP20V SCORPIUS BOOST VOUT
- GPIO SCORPIUS BOOST EN
- GPIO SCORPIUS BOOST VSET DAC
- GPIO AOP TO SCORPIUSMCU NRST L
- GPIO GRAPE TO SCORPIUS TIME SYNC
- SWD SCORPIUS SWCLK
- SWD SCORPIUS SWDIO
- GPIO SCORPIUS TO AOP IRQ
- SOC TO SCORPIUSMCU BOOT0
- PP1V8 S2 BUCK SCORPIUS CONN
- GPIO BT TO SCORPIUS TX IND
- GPIO WLAN TO SCORPIUS TX IND

AUDIO - SEE SPKR AMP PAGES FOR MORE
- PPV BST AUDIO
- PPV BST AUDIO
- GPIO SPKRAMP TO SOC IRQ L
- ARDEE SYNC

POWER - SENSORS
- PP1V8 S2 KOBOL BU FILT
- PP1V8 PHOS FILT
- PP1V8 S2 MOLY CMPS CONN

BUTTONS
- GPIO BTN ONOFF L CONN
- GPIO BTN VOL UP L CONN
- GPIO BTN VOL DOWN L CONN

SOC I2C
- I2C0 SCL 1V8
- I2C0 SDA 1V8
- I2C1 SCL 1V8
- I2C1 SDA 1V8
- I2C2 SCL 1V8
- I2C2 SDA 1V8
- I2C AOP I2CM0 SCL 1V8
- I2C AOP I2CM0 SDA 1V8
- I2C AOP I2CM1 SCL 1V8
- I2C AOP I2CM1 SDA 1V8
- I2C SMC I2CM0 SCL 1V8
- I2C SMC I2CM0 SDA 1V8
- I2C SMC I2CM1 SCL 1V8
- I2C SMC I2CM1 SDA 1V8
- I2C SMC I2CM2 SCL 1V8
- I2C SMC I2CM2 SDA 1V8
- I2C SMC I2CM3 SCL 1V8
- I2C SMC I2CM3 SDA 1V8
- USB VBUS DETECT R

SOC - BELLATRIX2 UART
- UART SOC TO BELLATRIX2 TX
- UART BELLATRIX2 TO SOC TX

SOC - GND
- TPT VSS SENSE
- TPT VSS PCPU SENSE
- TPT VSS DDR SENSE

SOC - POWER
- ADC SOC TO PMU VDD CPU
- ADC SOC TO PMU VDD GPU
- ADC SOC TO PMU VDD SOC

SOC - USB KIS
- USB KIS P
- USB KIS N

NAND - POWER
- PP1V8 NAND1 AVDD H
- PP1V8 NAND2 AVDD H

BASEBAND - ANT SWITCH PWR

BASEBAND - SIM CARD

BASEBAND - MISC

WIFI/BT
- CLK PMU TO WLAN 32K

HALL EFFECT
- GPIO APANEL HALL TO PMU IRQ L
- GPIO CPANEL HALL TO PMU IRQ L

DISPLAY
- LDPP HPD EMI
- GPIO PMU TO LCD PWREN
- I2C TCON SDA 1V8 CONN
- SYS TO TCON FORCE PWM

AOP
- CLK PMU TO AOP 32K

AUDIO - DIGITAL MICS
- DMIC1 MIC SCLK CONN
- DMIC1 MIC SD CONN
- DMIC2 MIC SCLK C3 CONN
- DMIC2 MIC SD C3 CONN
- DMIC3 MIC SCLK ROS CONN
- DMIC3 MIC SD ROS CONN
- PP1V8 S2 DMIC CONN
- DMIC4 MIC SCLK CMPS CONN
- DMIC3 MIC SD CMPS CONN
- PP1V8 S2 DMIC CMPS CONN
- PP1V8 S2 DMIC C3 CONN

TOUCH
- PP15V0 TOUCH FILT
- PP2V8 LANAI M VDDANA
- PP2V8 KONA S VDDANA
- GPIO DOMBRA BST FPWM
- GPIO KONA S DOMBRA BST EN
- GPIO DOMBRA BST FB CTRL

CMPS
- SPI SENSORS MISO CONN
- SPI SENSORS MOSI CONN
- SPI SENSORS SCLK CONN
- SPI MOLY CS L CONN
- GPIO MOLY TO AOP IRQ CONN

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

FIDUCIALS
- FID9301 0P5SMIP0SQ-NSP
- FID9302 0P5SMIP0SQ-NSP
- FID9303 0P5SMIP0SQ-NSP
- FID9305 0P5SMIP0SQ-NSP

SL9301 TH-NSP
SL9302 TH-NSP
SL9303 TH-NSP
SL-1.1X0.4-1.4X0.7
SL~0.9X0.35-1.2X0.65
SL9306 TH-NSP
SL9307 TH-NSP
SL9309
SL9311 TH-NSP
SL-1.1X0.4-1.4X0.7

STANDOFFS
SMT:860-00199
TH:860-00860/860-01104

- STD9312 STDOFF-3.3X1.8R0.95H-SM
- STD9315 STDOFF-3.3X1.8R0.95H-SM
- STD9316 STDOFF-3.3X1.8R0.95H-SM
- STD9317 STDOFF-3.3X1.8R0.95H-SM
- STD9318 STDOFF-3.3X1.8R0.95H-SM
- STD9330 STDOFF-3.3X1.8R0.95H-SM
- STD9331 STDOFF-3.3X1.8R0.95H-SM
- STD9358 STDOFF-3.3X1.8R0.95H-SM
- STD9359 STDOFF-3.3X1.8R0.95H-SM

APN: 860-00892
- STD9352 STDOFF-3.8X2.5R-0.75H-TH
- STD9357 STDOFF-3.8X2.5R-0.75H-TH

APN: 860-00860
- STD9350 STDOFF-3.8X2.5R-0.95H-1P65-TH
- STD9351 STDOFF-3.8X2.5R-0.95H-1P65-TH
- STD9353 STDOFF-3.8X2.5R-0.95H-1P65-TH
- STD9354 STDOFF-3.8X2.5R-0.95H-1P65-TH
- STD9355 STDOFF-3.8X2.5R-0.95H-1P65-TH
- STD9356 STDOFF-3.8X2.5R-0.95H-1P65-TH

APN: 860-01097
- STD9314 STDOFF-2.65X3.3R-0.65H-TH-0.35-1.8

JASPER/PENINSULA
- TP93P6
- TP93P7
- TP93P8
0V

VCC_HIGH
- TP939K
- TP939L PPVCC HIGH
- TP939M
- TP939N

VBUS ORION
- TP939C
- TP939D PPVBUS ORION CONN
- TP939E
- TP939F

VCC_MAIN
- TP939G
- TP939H PPVCC MAIN
- TP939I
- TP939J

VBUS USB
- TP9990 PLACE NEAR=C40A8.1:2MM
- TP9991 PLACE NEAR=C40A8.1:2MM
- TP9392 PLACE NEAR=C40A8.1:2MM
- TP9393 PLACE NEAR=C40A8.2:3MM
- TP9394 PLACE NEAR=C40A8.2:3MM
- TP9395 PLACE NEAR=C40A8.2:3MM
PPVBUS USB CONN

VBAT
- TP9380 PLACE NEAR=J8900.3:15MM
- TP9399 PLACE NEAR=J8900.3:15MM
- TP939A PLACE NEAR=J8900.3:15MM
- TP939B PLACE NEAR=J8900.3:15MM
- TP9396 PLACE NEAR=J8900.4:15MM
- TP9397 PLACE NEAR=J8900.4:15MM
- TP9398 PLACE NEAR=J8900.4:15MM
PPBATT_VCC

TEST: TPS/HOLES/FIDUCUALS

SMT TEST FIXTURE TP

POWER - ADAMS

TP	Net
TP9401	PP1V4_ADAMS1_VDDL
TP9402	PP3V3_ADAMS_LDO1
TP9403	PP3V0_JASPER_RX_AVDDH
TP9404	PP3V0_PENROSE
TP9405	PP3V3_JASPER_TX_AVDDH
TP9406	PP3V3_JAS_EXT_LDO_R2
TP9407	PP2V85_WIDE_RCAM1_AVDDH1
TP9408	PP2V85_SWIDE_RCAM2_AVDDH1
TP9409	PP1V215_RCAM_SWIDE_VDDL
TP940A	PP1V215_RCAM_WIDE_VDDL
TP940B	PP1V8_CAM_PMU1_IO_SW
TP940C	PN_TOF_VSPAD
TP940D	PN_TOF_VSPAD
TP940E	PP_TOF_VDDLAS
TP940F	PP_TOF_VDDLAS
TP940G	PP1V2_JASPER_DVDD

POWER - CAMERA (LI)
TP9411	PP1V215_FRONT_CAM_CONN
TP9412	PP1V8_CAM_FRONT_CONN
TP9413	PP2V90_FRONT_CAM_CONN

POWER - JULIET
TP9414	PP1V215_JULIET_DVDD_CONN
TP9415	PP1V8_JULIET_VDDIO_CONN
TP9416	PP2V85_JULIET_AVDD_CONN

POWER - CAMERA (IN)
TP9417	PP1V215_RCAM_WIDE_VDDL_CONN
TP9418	PP1V8_RCAM_WIDE_VDDIO_CONN
TP9419	PP2V85_RCAM_WIDE_AVDD_CONN

POWER - CAMERA (OH)
TP941A	PP1V215_RCAM_SWIDE_DVDD_CONN
TP941B	PP1V8_RCAM_SWIDE_VDDIO_CONN
TP941C	PP2V85_RCAM_SWIDE_AVDDH1_CONN

POWER - JASPER
TP941D	PP_TOF_VDDLAS_CONN
TP941E	PN_TOF_VSPAD_CONN
TP941F	PP1V8_CAM_TOF_VDDIO_CONN

CAMERA-STROBE/PENROSE
TP9421	PPSTROBE_LED_COOL1_CONN
TP9422	PPSTROBE_LED_WARM1_CONN
TP9423	PPSTROBE_LED_COOL2_CONN
TP9424	PPSTROBE_LED_WARM2_CONN
TP9425	PPSTROBE_LED_COOL1_CONN
TP9426	PPSTROBE_LED_WARM1_CONN
TP9427	PPSTROBE_LED_COOL2_CONN
TP9428	PPSTROBE_LED_WARM2_CONN
TP9429	LED_DRIVER_NTC_CONN
TP942A	PPSTROBE1_BST
TP942B	PPSTROBE2_BST
TP942C	PENROSE_IR_VOUT2_P_R
TP942D	PENROSE_VIS_IR_VOUT1_P_R
TP942E	GPIO_RCAM_PMU_TO_STROBE_DRIVER_HWEN
TP942F	PP3V0_PENROSE_CONN
TP942G	PP3V3_PENROSE

CAMERA - LI
TP942H	ISP_CAM_FRONT_CLK_CONN
TP942I	ISP_CAM_FRONT_SCL_CONN
TP942J	ISP_CAM_FRONT_SDA_CONN
TP942K	ISP_CAM_FRONT_SHUTDOWN_L_CONN

CAMERA - IN
TP942L	AP_TO_WIDE_CLK_12MHZ_CONN
TP942M	I2C_RCAM1_WIDE_SCL_CONN
TP942N	I2C_RCAM1_WIDE_SDA_CONN
TP942O	ISP_TO_WIDE_SHUTDOWN_CONN_L
TP942P	WIDE_SYNC_CONN
TP942Q	WIDE_TO_STROBE_DRIVER_STROBE_CONN

CAMERA - OH
TP942R	AP_TO_SWIDE_CLK_12MHZ_CONN
TP942S	I2C_RCAM2_SWIDE_SCL_CONN
TP942T	I2C_RCAM2_SWIDE_SDA_CONN
TP942U	ISP_TO_SWIDE_SHUTDOWN_CONN_L
TP942V	SWIDE_SYNC_CONN
TP942W	SWIDE_TO_STROBE_DRIVER_STROBE_CONN

CAMERA - JASPER
TP942X	CLK_RCAM_PMU_TO_TOF_12MHZ_CONN
TP942Y	I2C_JASPER_SCL_CONN
TP942Z	I2C_JASPER_SDA_CONN
TP943X	GPIO_PMU_TO_TOF_INT_CONN_L
TP943Y	TOF_FSYNC_CONN
TP943Z	GPIO_RCAM_PMU_TO_TOF_SHUTDOWN_CONN_L

TITUS/ROSALINE/JULIET
TP9431	PP_TITUS_DENSE_ANODE
TP9432	PP_TITUS_DENSE_ANODE
TP9433	PP_TITUS_SPARSE_ANODE
TP9434	PP_TITUS_SPARSE_ANODE
TP9435	PP_TITUS_A_ANODE
TP9436	PP_TITUS_A_ANODE
TP9437	PP_TITUS_B_ANODE
TP9438	PP_TITUS_B_ANODE
TP9439	PP_TITUS_CATHODE
TP943A	PP_TITUS_CATHODE
TP943B	PP_ROSALINE_ANODE
TP943C	PP_ROSALINE_ANODE
TP943D	GPIO_RIGEL_TO_SOC_IRQ
TP943E	RIGEL_TESTMODE_EN
TP943F	JULIET_PMU_TO_RIGEL_STROBE_CONN
TP943G	I2C3_ISP_BI_MAMA_BEAR_SDA_CONN
TP943H	I2C3_ISP_TO_MAMA_BEAR_SCL_CONN
TP943I	MAMA_BEAR_BI_RIGEL_STATUS_CONN
TP943J	TITUS_TO_AOP_B2B_DETECT_CONN
TP943K	ISP_JULIET_SCL_CONN
TP943L	ISP_JULIET_SDA_CONN
TP943M	AP_TO_JULIET_CLK_CONN
TP943N	AP_TO_JULIET_SHUTDOWN_L_CONN
TP943O	I2C0_AOP_TO_PROX_ALS_YOGI_SCL_CONN
TP943P	I2C0_AOP_BI_PROX_ALS_YOGI_SDA_CONN
TP943Q	PP3V0_YOGI_PROX_ALS_CONN
TP943R	YOGI_TO_RIGEL_STATUS_CONN
TP943S	PROX_BI_AP_AOP_INT_CONN_L
TP943T	ALS_C4_TO_SOC_INT_CONN_L
TP943U	ALS_C3_TO_SOC_INT_CONN_L
TP943V	TITUS_TO_RIGEL_VCSEL_NTC_CONN
TP943W	

DMIC GATING
| TP9461 | GPM_DMIC_DISABLE_L |
| TP9463 | SLG_TO_AOP_DMIC_DISABLE_WARN_L |

WILL I2C
| TP9464 | I2C3_RCAM_PMU_SCL |
| TP9465 | I2C3_RCAM_PMU_SDA |

PENROSE ADC I2C
| TP9466 | I2C3_SCL_1V8 |
| TP9467 | I2C3_SDA_1V8 |

CAM SYNC
TP9451	FRONT_CAM_SYNC_ACE
TP9452	GPIO_FCAM_JULIET_TO_ACE_SYNC
TP9453	GPIO_RCAM_PMU_TO_TOF_PMU_EN
TP9454	WIDE_SYNC_CONN
TP9455	REAR_CAM_SYNC_ACE

TEST: TPS ADDITIONAL

DRAWING NUMBER   SIZE

EE CHARACTERIZATION PROBE POINT

SOC

PP9504	ADC SOC TO PMU ANALOGMUX OUT
PP9505	ADC SOC TO PMU VDD CPU R
PP9506	ADC SOC TO PMU VDD GPU R
PP9507	ADC SOC TO PMU VDD SOC R

FOR SEG, TO DELETE IN EVT AND MOVE TP HERE

PP9503	PPVDD S1 SOC
PP950E	PPVDD S1 FIXED
PP950K	PPVDD ECPU
PP93T4	PPVDD CPU SRAM
PP93T6	PPVDD GPU SRAM

ACE/REDRIVER

PP9510	ACE_UART_RX
PP9511	ACE_UART_TX

FH SPEAKER I2S

PP9521	I2S2 SOC TO SPKRAMP FH BCLK
PP9522	I2S2 SOC TO SPKRAMP FH LRCK
PP9523	I2S2 SOC TO SPKRAMP FH DOUT
PP9524	I2S2 SPKRAMP FH TO SOC DOUT

CN SPEAKER I2S

PP9525	I2S1 SOC TO SPKRBST CN MCLK
PP9526	I2S1 SOC TO SPKRAMP CN BCLK
PP9527	I2S1 SOC TO SPKRAMP CN LRCK
PP9528	I2S1 SOC TO SPKRAMP CN DOUT
PP9529	I2S1 SPKRAMP CN TO SOC DOUT
PP952D	GPIO BST MASTER TO SOC IRQ L
PP952E	GPIO BST SLAVE TO SOC IRQ L
PP952F	BST CLK SYNC
PP952G	BST SYNC R

PENROSE

PP952A	I2S3 SOC TO PENROSE BCLK
PP952B	I2S3 SOC TO PENROSE LRCK
PP952C	I2S3 PENROSE TO SOC DOUT
PP952H	I2S3 SOC TO PENROSE MCLK

ORION

PP953B	GPIO AOP TO ORION HWEN
PP953C	ORION CONN STATUS

SENSOR SPI LINES

PP9544	SPI SENSORS SCLK
PP9545	SPI SENSORS MISO
PP9546	SPI SENSORS MOSI
PP9547	SPI SENSORS SCLK
PP9549	SPI SENSORS MOSI

PMU/CHARGER

PP95G1	GPIO PMU TO SOC IRQ L
PP95G7	USB_VBUS_DETECT
PP95G2	NUB SPMI SCLK
PP95G3	NUB SPMI SDATA
PP95G4	ISP SPMI APOLLO SCLK
PP95G5	ISP SPMI APOLLO SDATA
PP9539	SYS ALIVE
PP95G0	GPIO ROSALINE TO AOP IRQ L

GRAPE

PP9580	SPI SOC TO GRAPE SCLK
PP9581	SPI SOC TO GRAPE MISO
PP9582	SPI SOC TO GRAPE MOSI
PP9583	SPI SOC TO GRAPE CS L
PP9584	GPIO SOC TO GRAPE RESET L
PP9585	GPIO GRAPE TO AOP IRQ L
PP9586	KONA S TO LANAI M RESET DET L
PP9587	PSE SYNC
PP9588	KMSI MISO
PP9589	KMSI MOSI
PP958A	KMSI STRB IN
PP958B	KMSI STRB OUT
PP958C	LANAI BOOST ATEST
PP958D	TESTPOINT KONA S UART TX
PP958E	TESTPOINT KONA S UART RX
PP958H	SWD KONA SWDIO
PP958I	SWD KONA SWCLK
PP958J	GPIO12 KONA LDO ADJ
PP958K	GPIO13 KONA LDO EN
PP958L	GPIO GRAPE TO AOP TIME SYNC
PP958M	CLK LANAI M 24MHZ
PP958N	GPIO SOC TO GRAPE BSYNC0
PP958P	GPIO SOC TO GRAPE BSYNC1
PP958X	UART AOP TO GRAPE TX
PP958Y	UART GRAPE TO AOP TX
PP958Z	UART DEBUG TO GRAPE TX
PP958Q	SPI LANAI M TO KONA S MISO
PP958T	SPI LANAI M TO KONA S SCLK
PP958U	SPI LANAI M TO KONA S CS L
PP958W	SPI LANAI M TO KONA S MOSI

GRAPE POWER

PP958R	PP3V3 GRAPE FILT
PP958S	PP1V8 GRAPE XTAL FILT
PP958V	PP1V8 GRAPE AON RC

DMIC SECURED

PP9590	DMIC1 MIC SD
PP9591	DMIC2 MIC SD
PP9592	DMIC3 MIC SD

AUDIO PPS FOR I2C

PP95GA	I2C1 SCL 1V8
PP95GB	I2C1 SDA 1V8
PP95GC	I2C2 SCL 1V8
PP95GD	I2C2 SDA 1V8

WIFI(SEE MORE ON PAGE 49)

PP95BL	GPIO SOC TO BT TO GRAPE TS SYNC

WLAN PCIE TPS

PP95E0	PCIE WLAN TO SOC TX P
PP95E1	PCIE WLAN TO SOC TX N
PP95E2	PCIE SOC TO WLAN TX P
PP95E3	PCIE SOC TO WLAN TX N
PP95E4	PCIE SOC TO WLAN REFCLK P
PP95E5	PCIE SOC TO WLAN REFCLK N

NAND

PP95D6	PCIE_SOC_TO_NAND1_RESET_L
PP95DD	PCIE_SOC_TO_NAND2_RESET_L
PP95DE	NAND1 ANI1 VREF
PP95DF	NAND1 ANI0 VREF
PP95DG	NAND2 ANI1 VREF
PP95DH	NAND2 ANI0 VREF
PP95DI	GPIO_SOC_TO_NAND_FW_STRAP
PP95DJ	GPIO_SOC_TO_NAND_RESET_L

IR CAMERA - JULIET

PP9550	MIPI PEARL TO SOC CLK P
PP9551	MIPI PEARL TO SOC CLK N
PP9552	MIPI PEARL SOC DATA P<0>
PP9553	MIPI PEARL SOC DATA N<0>
PP9554	MIPI PEARL SOC DATA P<1>
PP9555	MIPI PEARL SOC DATA N<1>

CAMERA - FRONT

PP9560	LPDP_SOC_TO_FCAM2_AUX
PP9562	LPDP FCAM2 TO SOC DATA P<0>
PP9563	LPDP FCAM2 TO SOC DATA N<0>
PP9564	LPDP FCAM2 TO SOC DATA P<1>
PP9565	LPDP FCAM2 TO SOC DATA N<1>

LPDPRX TPS

PP95F4	LPDP_SOC TO RCAM1 AUX
PP95F9	LPDP_SOC TO SWIDE AUX
PP95FC	LPDP_SOC_TO_JASPER_AUX

EE DC RESISTANCE TABLE

DC RESISTANCE FAI REQUIRED MEASUREMENTS			
FROM PIN (REFDES.PN)	TO PIN (REFDES.PN)	VALUE (MILLIOHM) (OPTIONAL)	TOLERANCE (+/-) (OPTIONAL)
U8100.K3	L8100.1	?	?
U8100.M3	L8101.1	?	?
U8100.P3	L8102.1	?	?
U8100.T3	L8103.1	?	?
L8103.2	U0600.AM28	?	?
U8100.A2	L8110.1	?	?
U8100.C4	L8111.1	?	?
U8100.C6	L8112.1	?	?
U8100.A8	L8113.1	?	?
L8112.2	U0600.AF15	?	?
L8120.1	U8100.V7	?	?
L8121.1	U8100.V9	?	?
L8121.2	U0600.Y14	?	?
L8130.1	U8100.V11	?	?
L8130.2	U7600.6	?	?
L8130.2	U2701.3	?	?
L8130.2	U7700.B6	?	?
L8130.2	U7602.6	?	?
L8130.2	U8000.A4	?	?
L8130.2	U0600.N12	?	?
L8130.2	U8600.3	?	?
U8600.5	U0600.AE39	?	?
U8600.5	U0702.A1	?	?
U8600.5	U1800.E2	?	?
U8600.5	U1900.E2	?	?
U7700.H3	L7740.1	?	?
U7700.K3	L7741.1	?	?
U7700.M3	L7742.1	?	?
L7742.2	U7700.L12	?	?
L7742.2	U0600.C49	?	?
U7700.F3	L7750.1	?	?
L7750.2	U0600.AY39	?	?
U7700.C3	L7760.1	?	?
L7760.2	U1800.L12	?	?
L7760.2	U1900.G4	?	?
U8100.V3	L8170.1	?	?
U8100.B12	L8480.1	?	?
L8480.2	U0600.AE17	?	?
J8900.3	Q8580.5	?	?
Q8580.1	U2900.A2	?	?
Q8580.1	U2950.A2	?	?
Q8580.1	U4100.F1	?	?
Q8581.1	U7700.D12	?	?
Q8580.1	U8100.W1	?	?
Q8580.1	U4600.3	?	?
U4600.5	L4601.1	?	?
L4601.2	J4520.1	?	?
Q8580.1	U3200.B1	?	?
Q8580.1	L3000.2	?	?
L3000.1	U3000.A2	?	?
Q8580.1	U3300.B1	?	?
Q8580.1	L3001.2	?	?
L3001.1	U3000.F2	?	?
Q8580.1	U3400.B1	?	?
Q8580.1	L3002.2	?	?
L3002.1	U3001.A2	?	?
Q8580.1	U3500.B1	?	?
Q8580.1	L3003.2	?	?
L3003.1	U3001.F2	?	?
Q8580.1	L3600.1	?	?
L3600.2	U3620.5	?	?
Q8580.1	L8425.1	?	?
L8425.2	U8100.C17	?	?
Q8580.1	L8455.1	?	?
L8455.2	U8100.B17	?	?
Q8580.1	L8701.1	?	?
L8701.2	U8700.7	?	?
Q8580.1	U2350.A2	?	?
Q8580.1	L8710.1	?	?
L8710.2	U8710.5	?	?
Q8580.1	Q2201.7	?	?
Q2201.1	R2208.1	?	?
R2208.2	L2201.1	?	?
L2201.2	Q2202.3	?	?
U8500.L7	L8570.1	?	?
U8500.E5	L8571.1	?	?
L8570.2	U8500.L10	?	?
L8571.2	U8500.A10	?	?
J3700.46	XW4050.1	?	?
XW4050.2	U3800.G6	?	?
XW4050.2	R8000.2	?	?
R8000.1	U8000.C1	?	?
U3800.M3	U8500.L13	?	?
U3620.7	U3800.N14	?	?
U3800.M15	J3700.43	?	?
U3800.M17	J3700.45	?	?
U3800.M7	XW4050.2	?	?
U8710.M7	U8000.E3	?	?
U8000.F6	Q8051.3	?	?
Q8051.2	FL8950.1	?	?
FL8950.2	J8902.10	?	?
U8100.J18	R8995.2	?	?
U7700.C13	R4311.1	?	?
R4311.2	J4300.6	?	?
U8100.L18	U0600.AW32	?	?
U8100.K18	U3900.10	?	?

DC RESISTANCE FAI REQUIRED MEASUREMENTS			
FROM PIN (REFDES.PN)	TO PIN (REFDES.PN)	VALUE (MILLIOHM) (OPTIONAL)	TOLERANCE (+/-) (OPTIONAL)
U8100.M18	J8901.4	?	?
U7700.J13	FL2803.1	?	?
FL2803.2	J2800.1	?	?
U7700.L13	U1900.R8	?	?
U7700.L13	U1800.G6	?	?
U8100.P18	L2204.1	?	?
L2204.2	U2200.E12	?	?
L2204.2	U2301.R1	?	?
U8100.W15	U0600.AC10	?	?
U7700.N10	U0600.AV15	?	?
U8100.U14	J8901.10	?	?
U6100.E7	FL6503.1	?	?
FL6503.2	J6500.17	?	?
U6100.C7	FL6506.1	?	?
FL6506.2	J6500.26	?	?
U6100.A4	U2610.D1	?	?
U6100.A4	U2600.C2	?	?
U6100.A4	U2650.C2	?	?
U7700.E13	FL2800.1	?	?
FL2800.2	J2800.17	?	?
U7700.N11	XW4270.1	?	?
XW4270.2	J4230.19	?	?
U7700.F13	FL4272.1	?	?
FL4272.2	J4230.14	?	?
U7700.G13	J4200.2	?	?
U3200.D2	J3200.5	?	?
U3200.C2	J3200.4	?	?
U3250.D2	J3200.1	?	?
U3250.C2	J3200.3	?	?
U3300.D2	J3300.4	?	?
U3300.C2	J3300.5	?	?
U3350.D2	J3300.3	?	?
U3350.C2	J3300.1	?	?
U3400.D2	J3400.3	?	?
U3400.C2	J3400.1	?	?
U3450.D2	J3400.4	?	?
U3450.C2	J3400.5	?	?
U3500.D2	J3500.1	?	?
U3500.C2	J3500.3	?	?
U3550.D2	J3500.5	?	?
U3550.C2	J3500.4	?	?

POWER CONNECTIONS

ATHENA BUCK0 (ACTIVE)
PPVDD_CPU — PPVDD_CPU
MAKE_BASE=TRUE
VOLTAGE=1.08V

ATHENA BUCK1 (SW CTRL)
PPVDD_GPU — PPVDD_GPU
MAKE_BASE=TRUE
VOLTAGE=1.06V

ATHENA BUCK2 (SLEEP1)
PPVDD_S1_SOC — PPVDD_S1_SOC
MAKE_BASE=TRUE
VOLTAGE=0.81V

ATHENA BUCK3 (SLEEP3)
PP1V8_S3 — PP1V8_S3
MAKE_BASE=TRUE

ATHENA BUCK3 SW1 (ACTIVE)
PP1V8_SW1 — PP1V8_SW1
MAKE_BASE=TRUE

ATHENA BUCK3 => EXT_SW1(ACTIVE)
PP1V8_EXT_SW1 — PP1V8_EXT_SW1
MAKE_BASE=TRUE

ATHENA BUCK3 => EXT SW2 (SLEEP2)
PP1V8_S2_EXT_SW2 — PP1V8_S2_EXT_SW2
MAKE_BASE=TRUE

ATHENA BUCK3 SW2 (SLEEP2)
PP1V8_S2_GRAPE — PP1V8_S2_GRAPE
MAKE_BASE=TRUE

APOLLO BUCK3 SW1 (ACTIVE)
PP1V8_SW1_CAM — PP1V8_SW1_CAM
MAKE_BASE=TRUE

APOLLO BUCK3 SW3 (SLEEP2)
PP1V8_S3_SW3 — PP1V8_S3_SW3
MAKE_BASE=TRUE

APOLLO BUCK4 (SLEEP3)
PP1V1_S3 — PP1V1_S3
MAKE_BASE=TRUE

APOLLO BUCK4 SW1 (SPARE)
PP1V1_SW1_SPARE — PP1V1_SW1_SPARE
MAKE_BASE=TRUE
VOLTAGE=1.1V

APOLLO BUCK5 (SLEEP1)
PPVDD_S1_FIXED — PPVDD_S1_FIXED
MAKE_BASE=TRUE
VOLTAGE=0.81V

APOLLO BUCK6 (ACTIVE)
PP2V63_OTP — PP2V63_OTP
MAKE_BASE=TRUE

ATHENA BUCK7 (ACTIVE)
PPVDD_CPU_SRAM — PPVDD_CPU_SRAM
MAKE_BASE=TRUE

ATHENA BUCK8 (SW CTRL)
PPVDD_GPU_SRAM — PPVDD_GPU_SRAM
MAKE_BASE=TRUE

ATHENA BUCK9 (SLEEP1)
PPVDD_S1_DCS — PPVDD_S1_DCS
MAKE_BASE=TRUE
VOLTAGE=0.91V

APOLLO BUCK10 (SLEEP1)
PPVDD_S1_QL — PPVDD_S1_QL
MAKE_BASE=TRUE
VOLTAGE=0.6V

ATHENA BUCK11 (ACTIVE)
PPVDD_ECPU — PPVDD_ECPU
MAKE_BASE=TRUE
VOLTAGE=1.08V

APOLLO BUCK12 (ACTIVE)
PP1V4_CAMERA — PP1V4_CAMERA
MAKE_BASE=TRUE

ATHENA LD01 (SLEEP2)
PP3V3_S2_ACE — PP3V3_S2_ACE
MAKE_BASE=TRUE

ATHENA LDO2 (SPARE)
ATHENA_LDO2_SPARE — ATHENA_LDO2_SPARE
MAKE_BASE=TRUE

ATHENA LDO3 (SLEEP2)
PP2V95_S2_THROTTLE — PP2V95_S2_THROTTLE
MAKE_BASE=TRUE

ATHENA_LDO5 (SLEEP2)
PP3V3_S2_REDRIVER — PP3V3_S2_REDRIVER
MAKE_BASE=TRUE

ATHENA LDO6 (SPARE)
PP3V3_LDO6_SPARE — PP3V3_LDO6_SPARE
MAKE_BASE=TRUE

ATHENA LDO7 (ACTIVE)
PP3V3_USB — PP3V3_USB
MAKE_BASE=TRUE

ATHENA LDO8 (SLEEP2)
PP3V3_S2_SCORPIUS — PP3V3_S2_SCORPIUS
MAKE_BASE=TRUE

APOLLO LDO10 (ACTIVE)
PP0V9_NAND — PP0V9_NAND
MAKE_BASE=TRUE

ATHENA LDO11 (SLEEP2)
PP3V0_S2_MISC — PP3V0_S2_MISC
MAKE_BASE=TRUE

ATHENA LDO13 (SW CTRL)
PP3V3_S2_GRAPE — PP3V3_S2_GRAPE

ATHENA LDO14 (ACTIVE)
PP1V2_SOC — PP1V2_SOC
MAKE_BASE=TRUE

APOLLO LDO15 (SLEEP2)
PP0V775_S2_AOP — PP0V775_S2_AOP
MAKE_BASE=TRUE

ATHENA LDO16 (SLEEP2)
PP1V8_S2_LDO_SCORPIUS — PP1V8_S2_LDO_SCORPIUS
MAKE_BASE=TRUE

APOLLO LDO17(ACTIVE)
PP3V3_PENROSE — PP3V3_PENROSE   200 MA(MAX)
MAKE_BASE=TRUE

APOLLO LDO23(SW CTRL)
PP2V85_PEARL — PP2V85_PEARL   18 MA(MAX)
MAKE_BASE=TRUE

APOLLO LDO21(SW CTRL)
PP2V90_FRONT_CAM — PP2V90_FRONT_CAM   43 MA(MAX)
MAKE_BASE=TRUE

APOLLO LDO9 (ACTIVE)
PP1V215_FRONT_CAM — PP1V215_FRONT_CAM
MAKE_BASE=TRUE

APOLLO LDO22(SW CTRL)
PP1V215_PEARL — PP1V215_PEARL   110 MA(MAX)
MAKE_BASE=TRUE

APOLLO LDO4 (SW CTRL)
PP3V0_ALS — PP3V0_ALS
MAKE_BASE=TRUE

APOLLO LDO18 (SPARE)
APOLLO_LDO18_SPARE — APOLLO_LDO18_SPARE   460 MA
MAKE_BASE=TRUE

APOLLO LDO19 (SPARE)
APOLLO_LDO19_SPARE — APOLLO_LDO19_SPARE
MAKE_BASE=TRUE

APOLLO LDO20 (SPARE)
APOLLO_LDO20_SPARE — APOLLO_LDO20_SPARE
MAKE_BASE=TRUE

APOLLO LDO24(SW CTRL)
PP3V1_PEARL — PP3V1_PEARL   25 MA(MAX)
MAKE_BASE=TRUE

APOLLO LDO26 (SPARE)
PP1V0_S2_R1_SPARE — PP1V0_S2_R1_SPARE
MAKE_BASE=TRUE

APOLLO LDO27 (SPARE)
APOLLO_LDO27_SPARE — APOLLO_LDO27_SPARE
MAKE_BASE=TRUE

ADAMS:

ADAMS_BUCK0 (SW CONTROL)
PP1V4_ADAMS1_VDDL — PP1V4_ADAMS1_VDDL
MAKE_BASE=TRUE

ADAMS_LDO1 (SW CONTROL)
PP3V3_ADAMS_LDO1 — PP3V3_ADAMS_LDO1
PP3V3_ADAMS_LDO1
MAKE_BASE=TRUE

ADAMS_LDO2 (SW CONTROL)
PP3V0_JASPER_RX_AVDDH — PP3V0_JASPER_RX_AVDDH
MAKE_BASE=TRUE

ADAMS_LDO3 (SW CONTROL)
PP3V0_PENROSE — PP3V0_PENROSE
MAKE_BASE=TRUE

ADAMS_LDO4 (SW CONTROL)
PP3V3_JASPER_TX_AVDDH — PP3V3_JASPER_TX_AVDDH
MAKE_BASE=TRUE

ADAMS_LDO5 (SW CONTROL)
PP1V8_TOF_VDDIO_ADAMS — PP1V8_TOF_VDDIO_ADAMS
MAKE_BASE=TRUE

ADAMS_LDO6 (SW CONTROL)
PP2V85_WIDE_RCAM1_AVDDH1 — PP2V85_WIDE_RCAM1_AVDDH1
MAKE_BASE=TRUE

ADAMS_LDO7 (SW CONTROL)
PP2V85_SWIDE_RCAM2_AVDDH1 — PP2V85_SWIDE_RCAM2_AVDDH1
MAKE_BASE=TRUE

ADAMS_LDO8 (SW CONTROL)
PP1V215_RCAM_SWIDE_VDDL — PP1V215_RCAM_SWIDE_VDDL
MAKE_BASE=TRUE

ADAMS_LDO9 (SW CONTROL)
PP1V215_RCAM_WIDE_VDDL — PP1V215_RCAM_WIDE_VDDL
MAKE_BASE=TRUE

ADAMS_LDO10 (SPARE)
ADAMS_LDO10_SPARE — ADAMS_LDO10_SPARE
MAKE_BASE=TRUE

ADAMS_SW1 (SW CONTROL)
PP1V8_CAM_PMU1_IO_SW — PP1V8_CAM_PMU1_IO_SW
MAKE_BASE=TRUE

CHARGER MAIN
PPVCC_MAIN — PPVCC_MAIN
MAKE_BASE=TRUE
DIDT=TRUE

CHARGER HIGH
PPVCC_HIGH — PPVCC_HIGH
MAKE_BASE=TRUE

BATTERY
PPBATT_VCC — PPBATT_VCC
DIDT=TRUE

USB POWER INPUT
PPVBUS_PROT — PPVBUS_PROT
MAKE_BASE=TRUE

ON_BUF
PP1V8_ALWAYS — PP1V8_ALWAYS
MAKE_BASE=TRUE

BACKLIGHT BOOST
PPLED_OUT — PPLED_OUT
MAKE_BASE=TRUE