

MENTOR

I/O INTERFACE

RESEARCH IN MOTION CONFIDENTIAL

HIERARCHICAL BLOCK MAIN		COPYRIGHT 2009, RESEARCH IN MOTION LIMITED 295 PHILLIP ST. WATERLOO, ONTARIO, CANADA PHONE: (519) 888-7465, FAX (519) 888-6306	
DRAWN BY CDMA-HW Team		TITLE Aries WiFi (Samsung Mem)	
R&D CHECK		(uses: PCB-25756-002)	
IFG CHECK		SIZE	
Ed: Led Bu: yll		DRAWING No. SCH-27749-002	
Last Ed: 1 Sep 10, 2009, 6:12:31 pm		REV 1A SHEET 1 OF 17	

ETCH
SHEET(S) 13

BT_WLAN_XCVR
SHEET(S) 4

RF_ANT
SHEET(S) 2

SYNTH
SHEET(S) 5

CDMA TRX RF
SHEET(S) 3

PROCESSOR
SHEET(S) 6
7
15
16 17

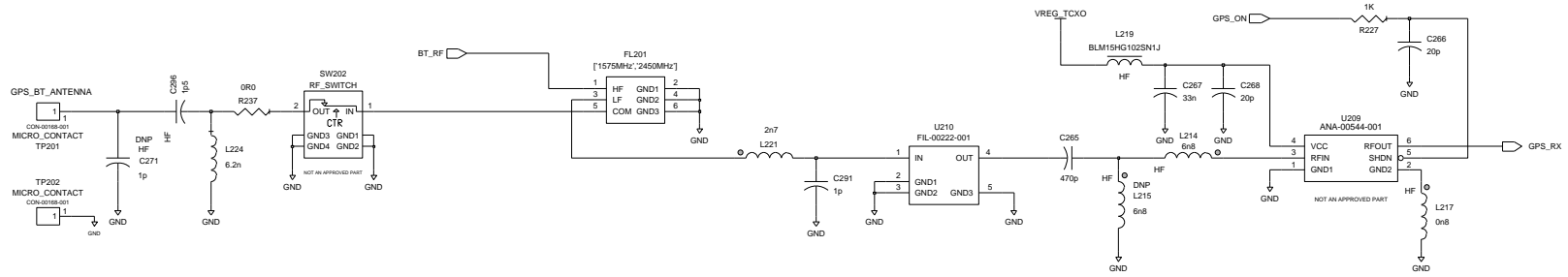
POWER2
SHEET(S) 8
9

I/O INTERFACE
SHEET(S) 10
14

AUDIO
SHEET(S) 12

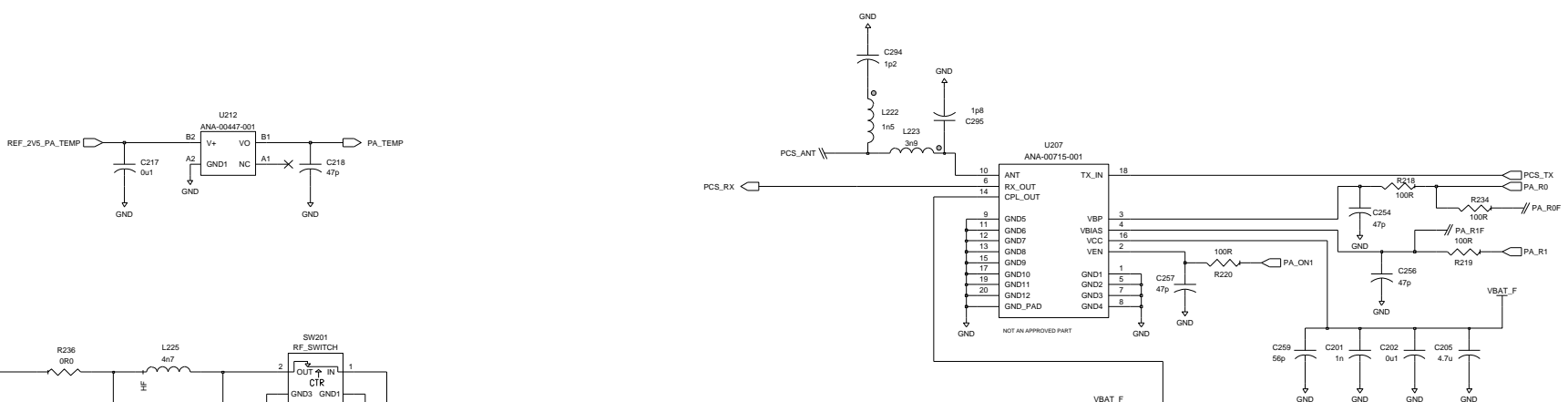
D

D



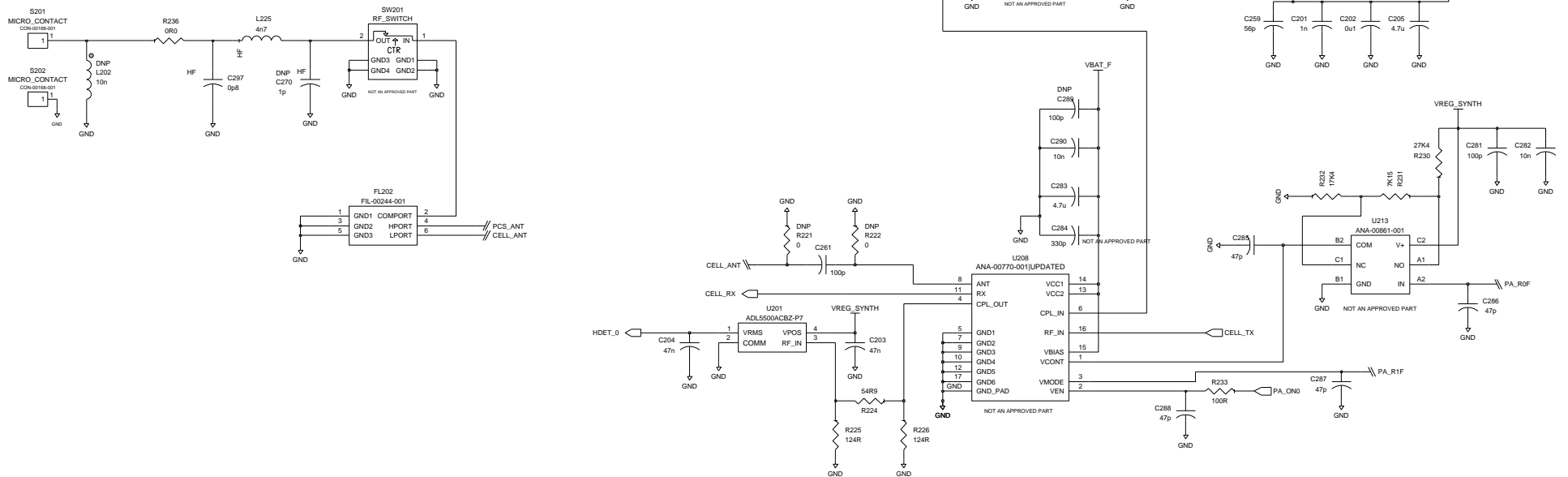
C

C



B

B



A

A



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HIERARCHICAL BLOCK RF_ANT		COPYRIGHT 2009, RESEARCH IN MOTION LIMITED 295 PHILLIP ST. WATERLOO, ONTARIO, CANADA PHONE: (519) 888-7465, FAX (519) 888-6306	
DRAWN BY CDMA HW Team		TITLE Aries WiFi (Samsung Mem)	
R&D CHECK		(uses: PCB-25756-002)	
HFG CHECK		SIZE DRAWING No. SCH-27749-002	
Edi Led Bu: yll		C REV 1A SHEET 2 OF 17	
Last Ed1: Aug 18, 2009, 2:23:03 pm			

4

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C

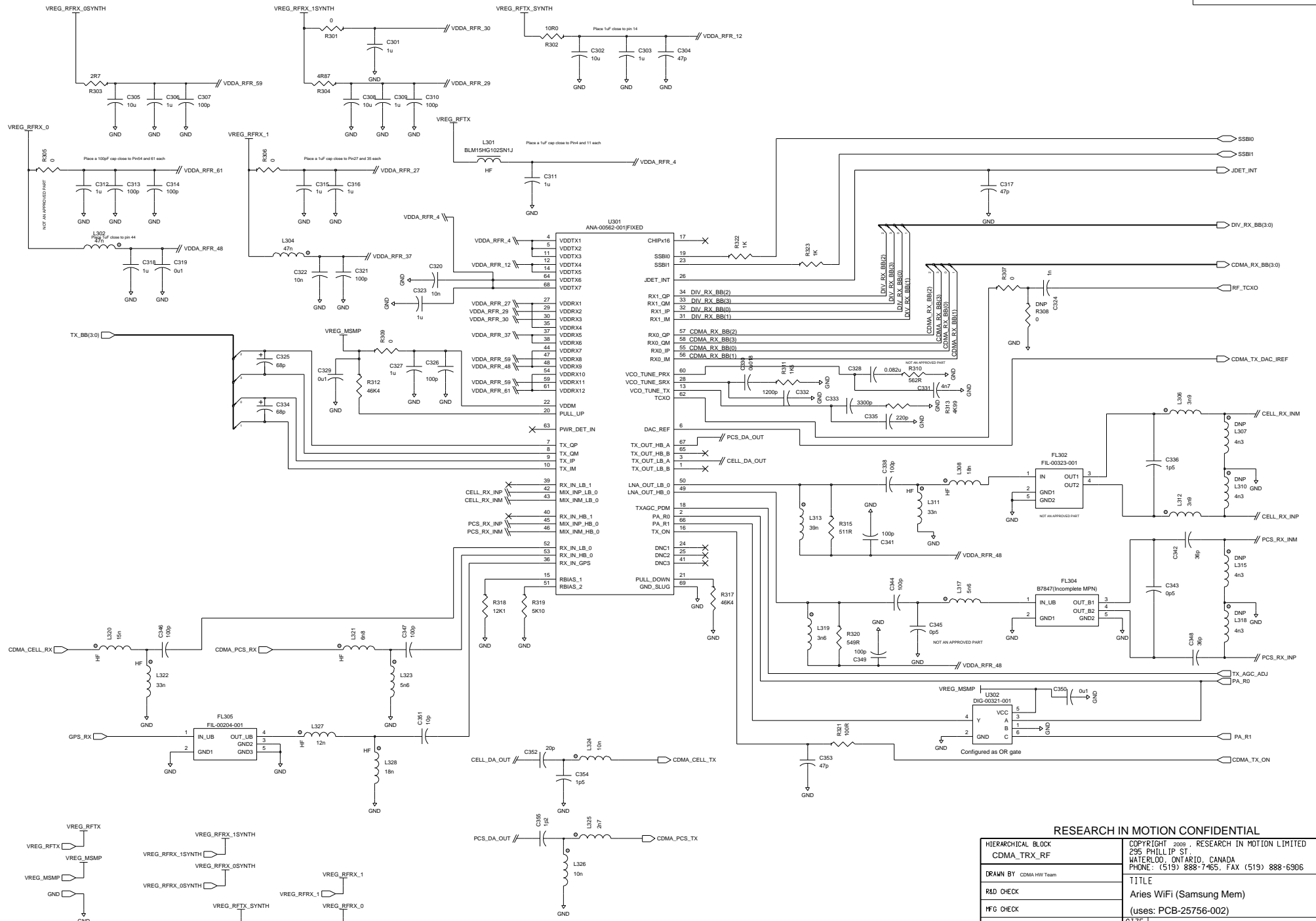
C

B

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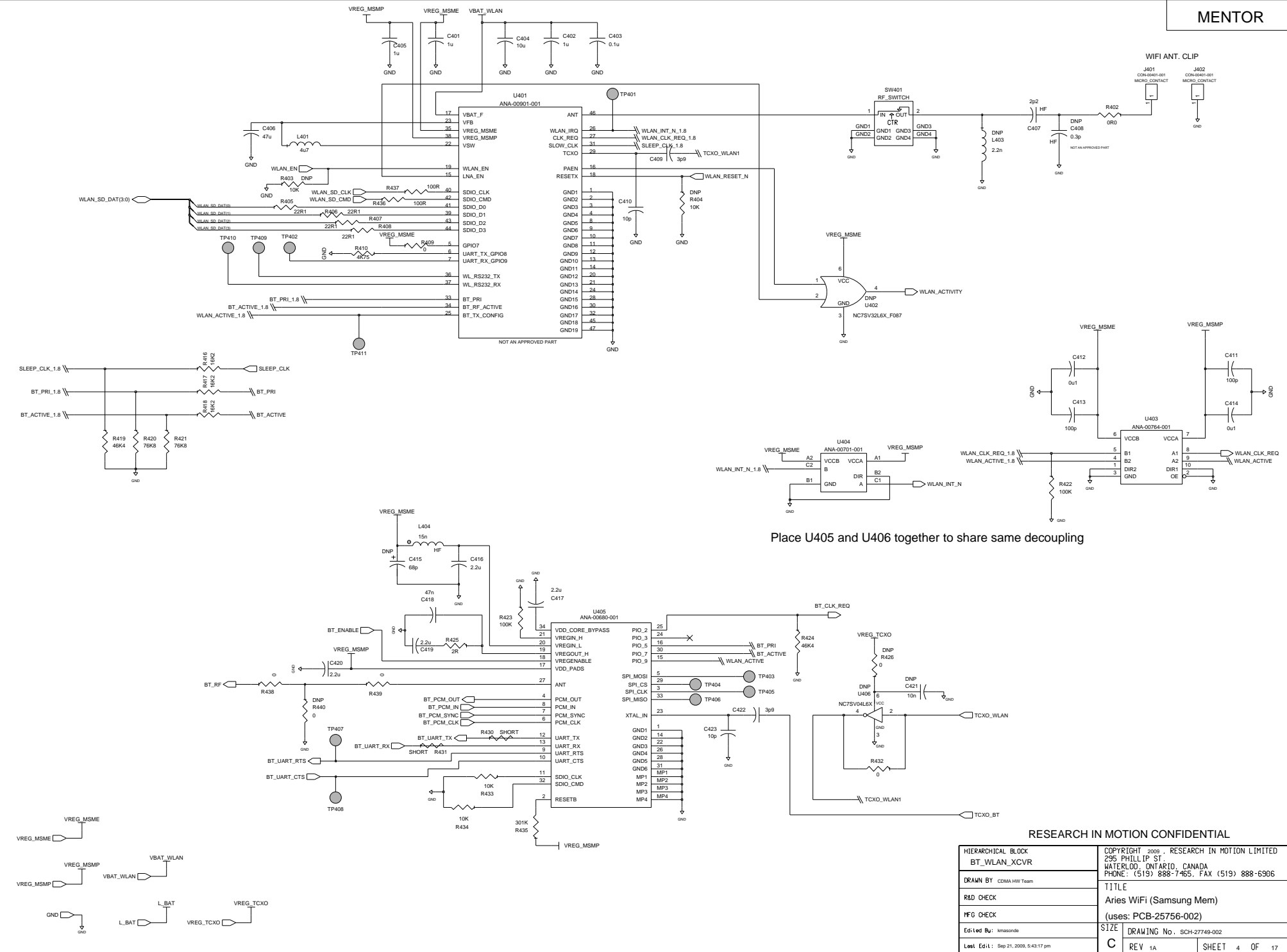
A

A



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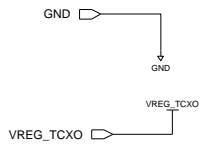
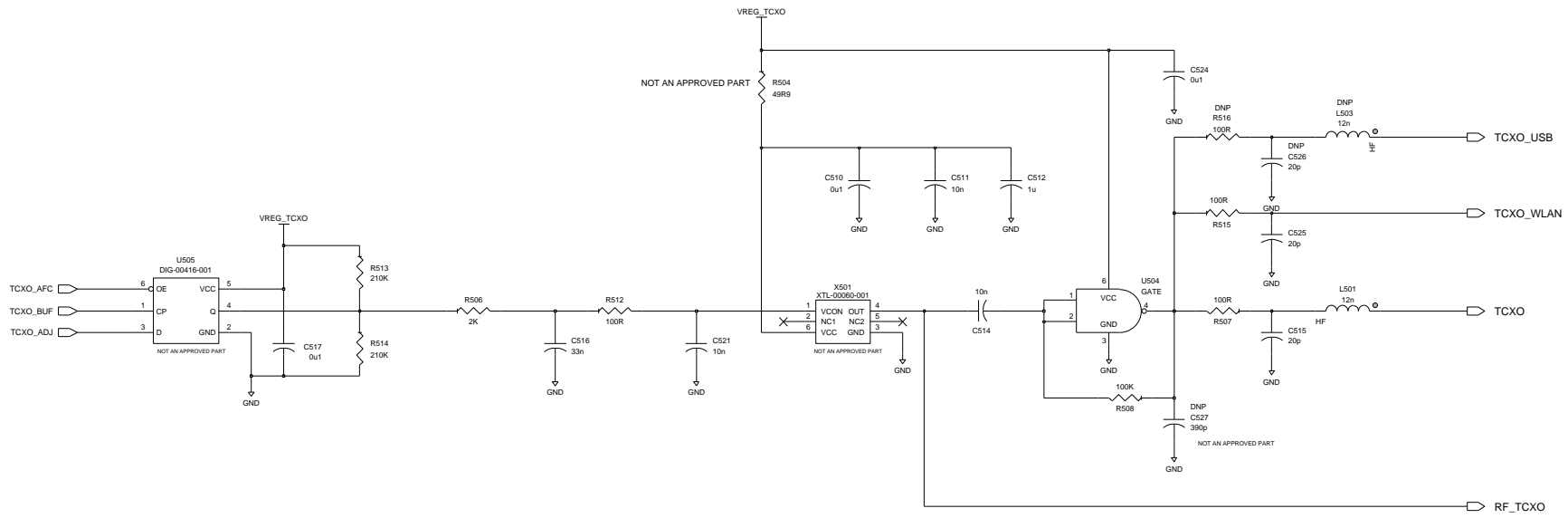
HIERARCHICAL BLOCK		CDMA_TRX_RF	
DRAWN BY		CDMA-HW Team	
R&D CHECK			
MFG CHECK			
Edi Led Bu: yll		TITLE	
Level Ed1: Aug 18, 2009, 2:21:49 pm		Aries WiFi (Samsung Mem)	
		(uses: PCB-25756-002)	
SIZE		DRAWING No. SCH-27749-002	
REV 1A		SHEET 3 OF 17	



Place U405 and U406 together to share same decoupling

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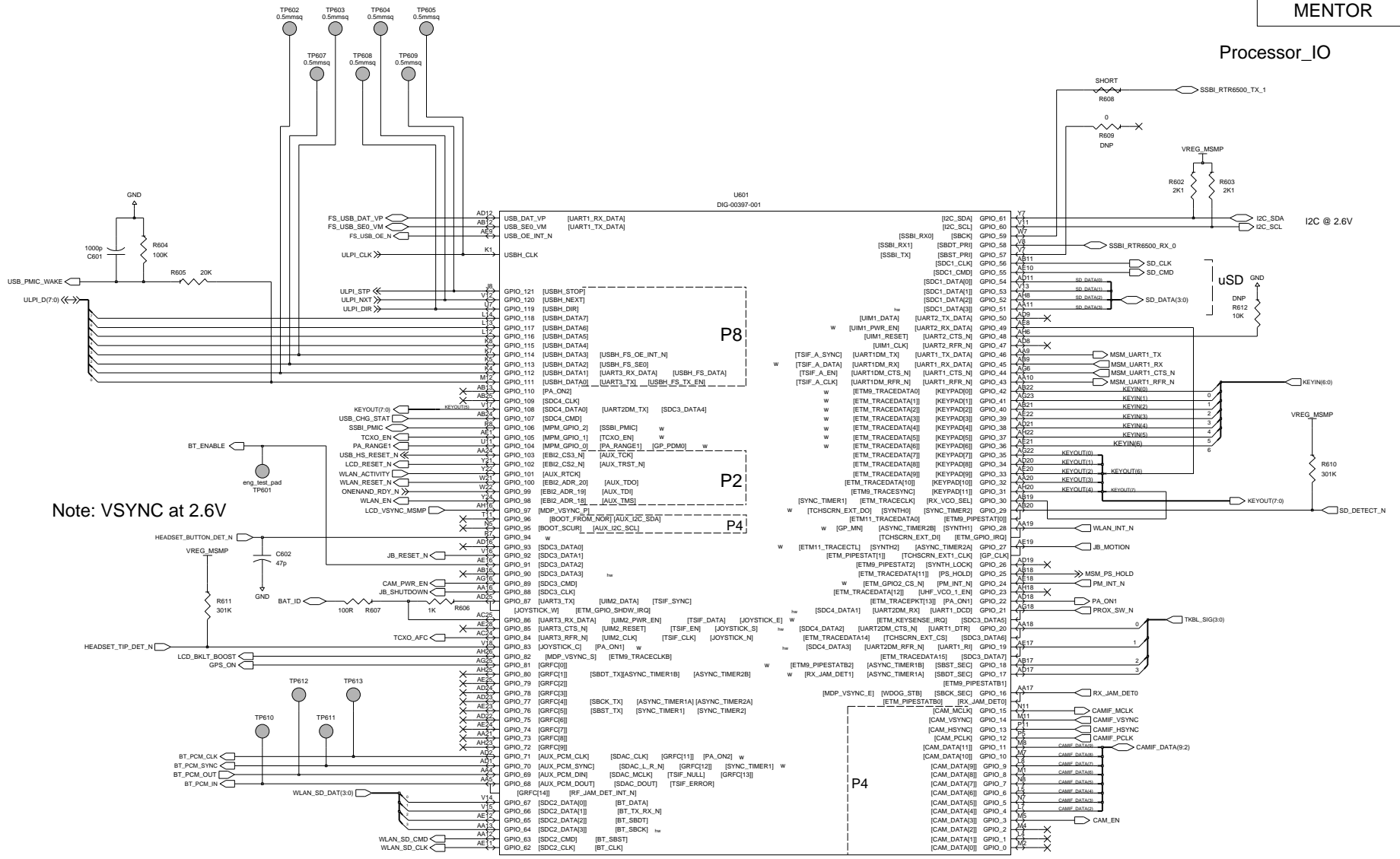
HIERARCHICAL BLOCK BT_WLAN_XCVR		COPYRIGHT 2009, RESEARCH IN MOTION LIMITED 295 PHILLIP ST. WATERLOO, ONTARIO, CANADA PHONE: (519) 888-7465, FAX (519) 888-6306	
DRAWN BY: CDMA-HW Team		TITLE Aries WiFi (Samsung Mem)	
R&D CHECK		(uses: PCB-25756-002)	
F&G CHECK		SIZE	
Ed: Led Bu: mmasonds		DRAWING No. SCH-27749-002	
Last Ed: 1: Sep 21, 2009, 6:43:17 pm		REV 1A SHEET 4 OF 17	



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HIERARCHICAL BLOCK SYNTH		COPYRIGHT 2009, RESEARCH IN MOTION LIMITED 295 PHILLIP ST. WATERLOO, ONTARIO, CANADA PHONE: (519) 888-7465, FAX (519) 888-6306	
DRAWN BY: CDMA-HW Team		TITLE Aries WiFi (Samsung Mem)	
R&D CHECK		(uses: PCB-25756-002)	
MFG CHECK		SIZE DRAWING No. SCH-27749-002	
Ed: Led Bu: yll		C	
Level: Ed1:1 Aug 18, 2009, 2:22:29 pm		REV 1A	SHEET 5 OF 17

Processor_IO

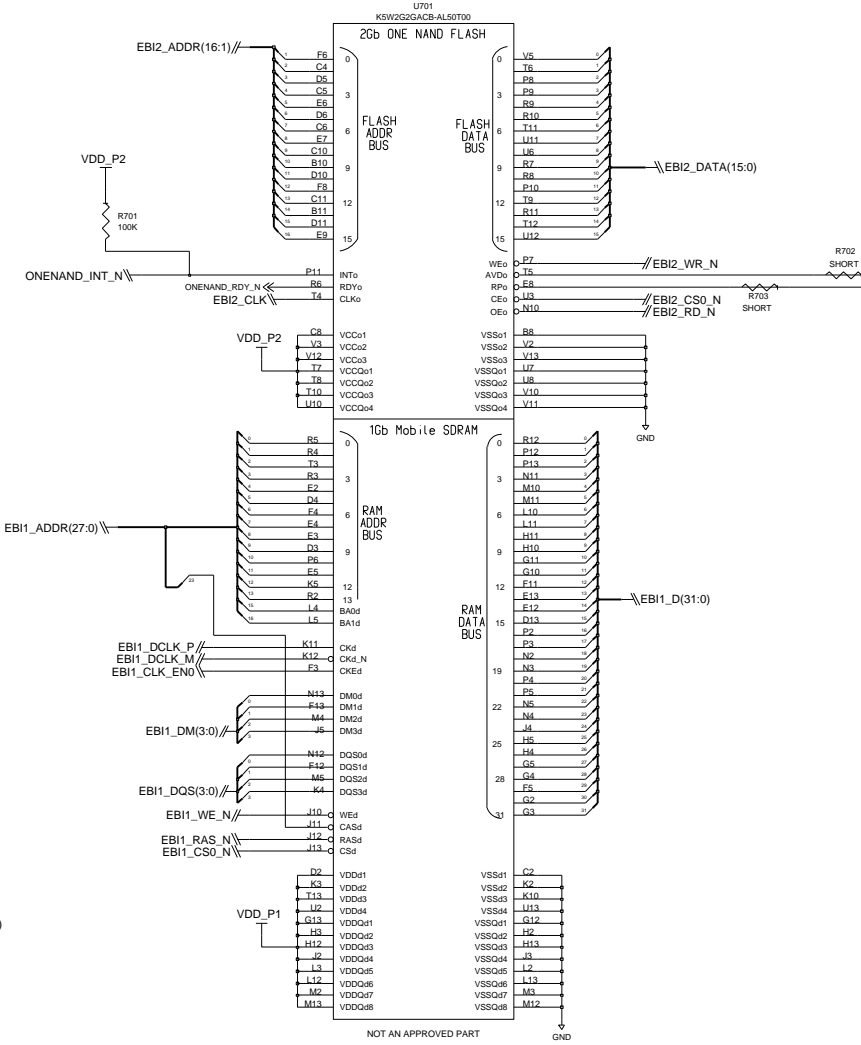
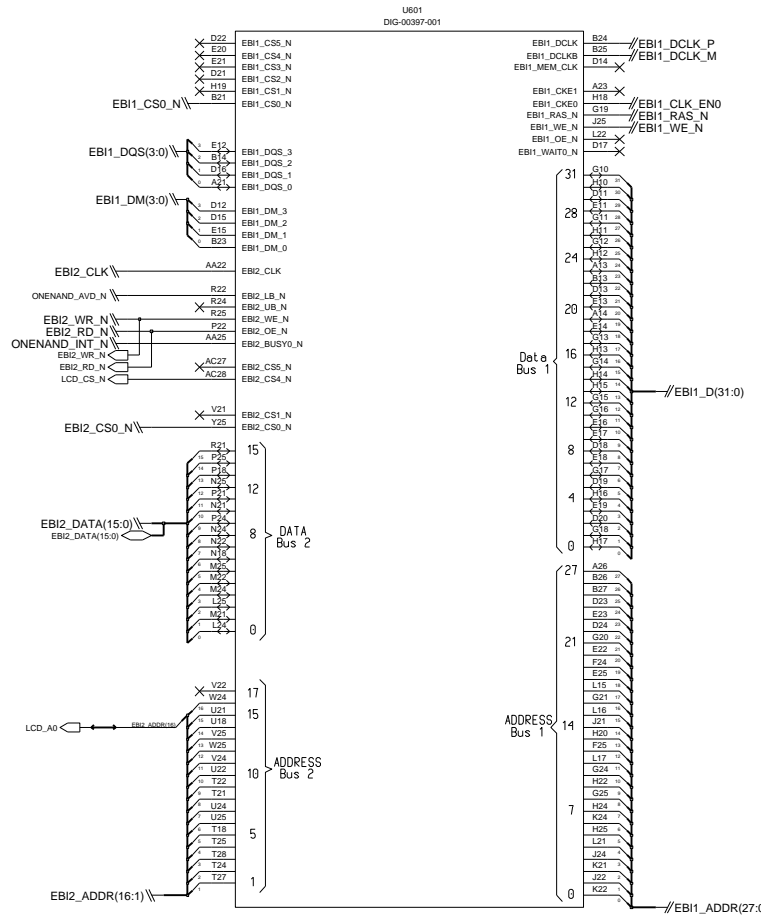
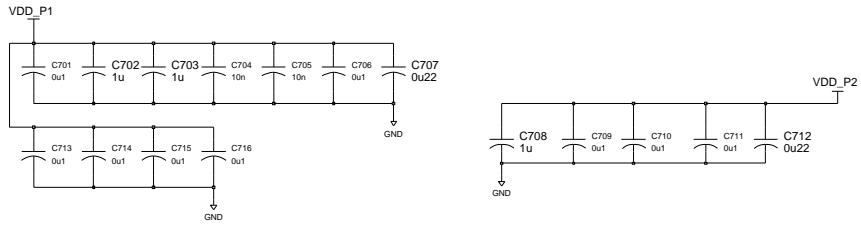


Note: VSYNC at 2.6V

NOT AN APPROVED PART

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HIERARCHICAL BLOCK PROCESSOR	COPYRIGHT 2009, RESEARCH IN MOTION LIMITED 295 PHILLIP ST. WATERLOO, ONTARIO, CANADA PHONE: (519) 888-7465, FAX (519) 888-6306
DRAWN BY CDMA HW Team	TITLE Aries WiFi (Samsung Mem)
R&D CHECK	(uses: PCB-25756-002)
RFG CHECK	SIZE DRAWING No. SCH-27749-002
Edi Led Bu: yll	REV 1A SHEET 6 OF 17
Loel Ed1: Aug 18, 2009, 2:27:01 pm	

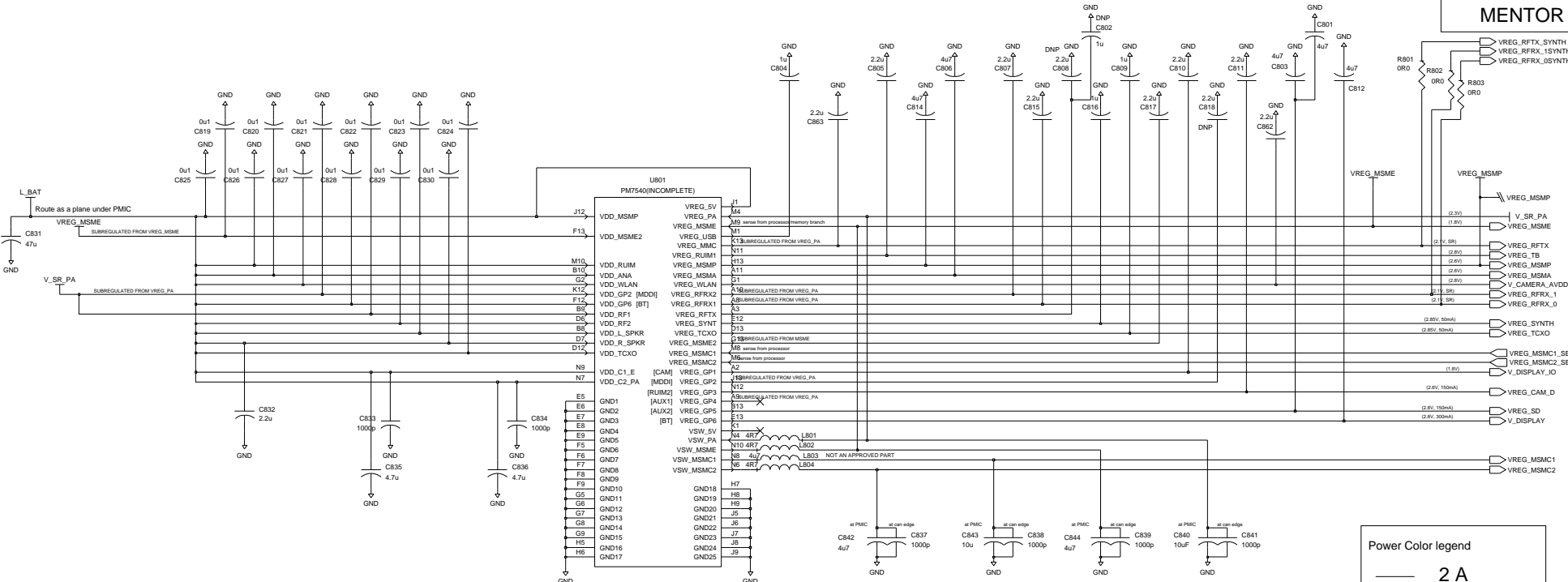


NOT AN APPROVED PART

NOT AN APPROVED PART
PRG-28534-001202bga0.65_1.4nt_060425

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HIERARCHICAL BLOCK PROCESSOR2	COPYRIGHT 2009, RESEARCH IN MOTION LIMITED 295 PHILLIP ST. WATERLOO, ONTARIO, CANADA PHONE: (519) 888-7465, FAX (519) 888-6306
DRAWN BY CDMA HW Team	TITLE Aries WiFi (Samsung Mem)
R&D CHECK	(uses: PCB-25756-002)
RFG CHECK	SIZE DRAWING No. SCH-27749-002
Edi Led Bu: ylli	C REV 1A SHEET 7 OF 17
Last Edi: Aug 18, 2009, 2:27:17 pm	



Power Color legend

- 2 A
- 500 mA
- 300 mA
- 150 mA
- 50 mA

D

D

C

C

B

B

A

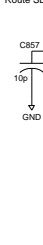
A

Route as a plane under PMIC

Route SLEEP_CLK and TCXO_BUF short and direct

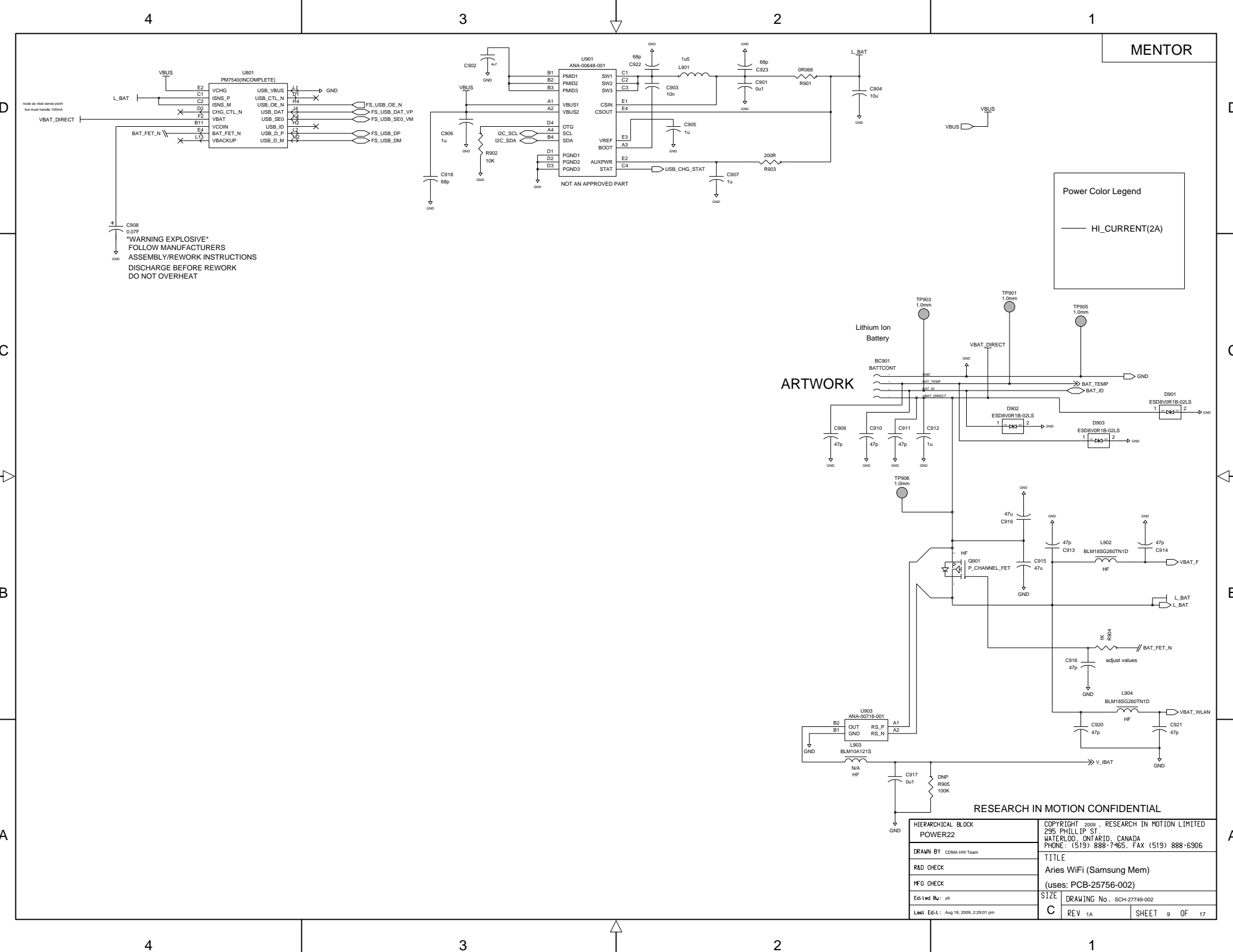
Place components as close to PMIC as possible

Common ground must be routed to pin A13 BEFORE being connected to main ground plane



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HIERARCHICAL BLOCK POWER2		COPYRIGHT 2009, RESEARCH IN MOTION LIMITED 295 PHILLIP ST. WATERLOO, ONTARIO, CANADA PHONE: (519) 888-7465, FAX (519) 888-6306	
DRAWN BY CDMA HW Team		TITLE Aries WiFi (Samsung Mem)	
R&D CHECK		(uses: PCB-25756-002)	
IFG CHECK		SIZE DRAWING No. SCH-27749-002	
Edi Led Bu: yll		C REV 1A SHEET 8 OF 17	
Last Ed1: Aug 18, 2009, 2:29:18 pm			



Power Color Legend

— HI_CURRENT(2A)

ARTWORK

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HIERARCHICAL BLOCK POWER22	COPYRIGHT 2009, RESEARCH IN MOTION LIMITED 295 PHILLIP ST. WATERLOO, ONTARIO, CANADA PHONE: (519) 888-7465, FAX (519) 888-6306
DRAWN BY CDMA HW Team	TITLE Aries WiFi (Samsung Mem)
R&D CHECK	(uses: PCB-25756-002)
MFG CHECK	SIZE DRAWING No. SCH-27749-002
Ed: Led Bu: yll	C
Level: Ed1: Aug 18, 2009, 2:29:01 pm	REV 1A SHEET 9 OF 17

4

3

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1

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C

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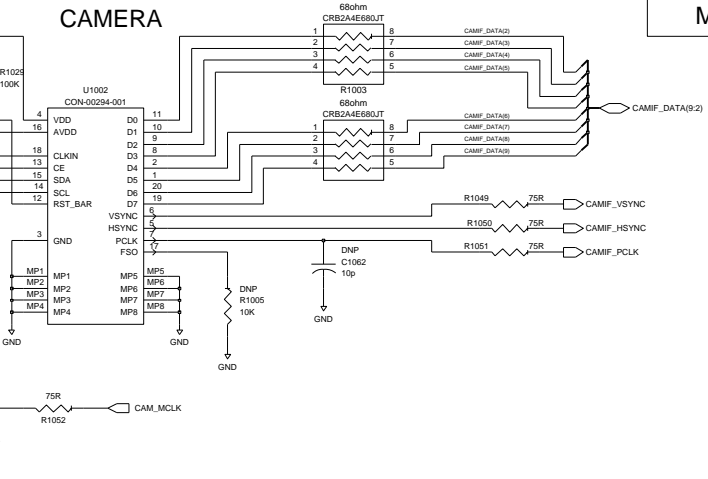
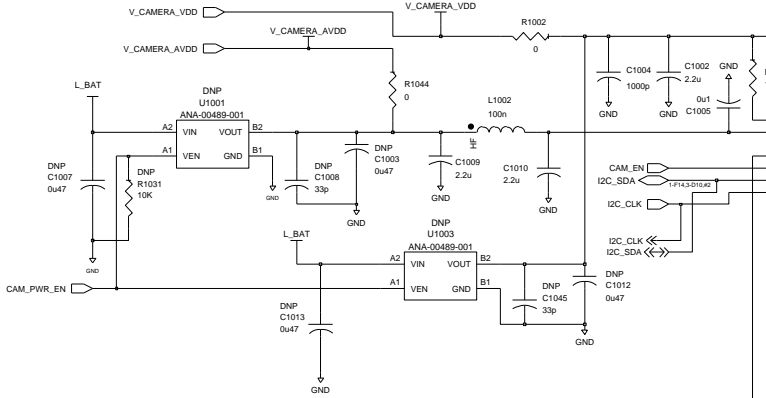
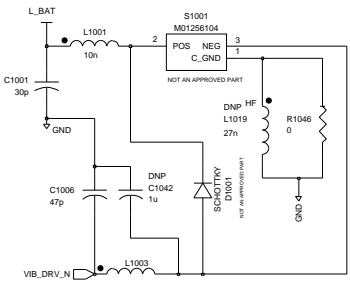
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D

C

B

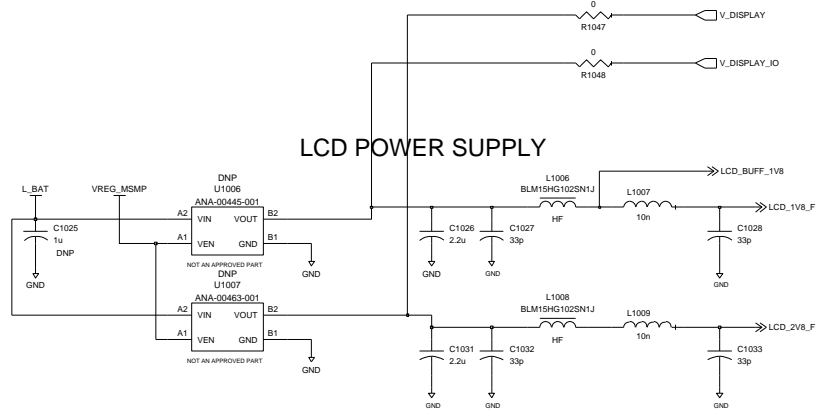
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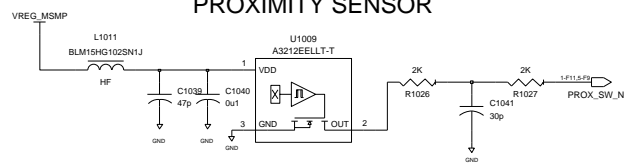
VIBRATOR CIRCUIT

CAMERA

LCD POWER SUPPLY



PROXIMITY SENSOR



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HIERARCHICAL BLOCK JOINTERFACE		COPYRIGHT 2009, RESEARCH IN MOTION LIMITED 295 PHILLIP ST. WATERLOO, ONTARIO, CANADA PHONE: (519) 888-7465, FAX (519) 888-6306	
DRAWN BY CDMA-HW Team		TITLE Aries WiFi (Samsung Mem)	
R&D CHECK		(uses: PCB-25756-002)	
MFG CHECK		SIZE DRAWING No. SCH-27749-002	
Ed: Led Bu: yll		C REV 1A SHEET 10 OF 17	
Level Ed1: Aug 18, 2009, 2:33:28 pm			

D

C

B

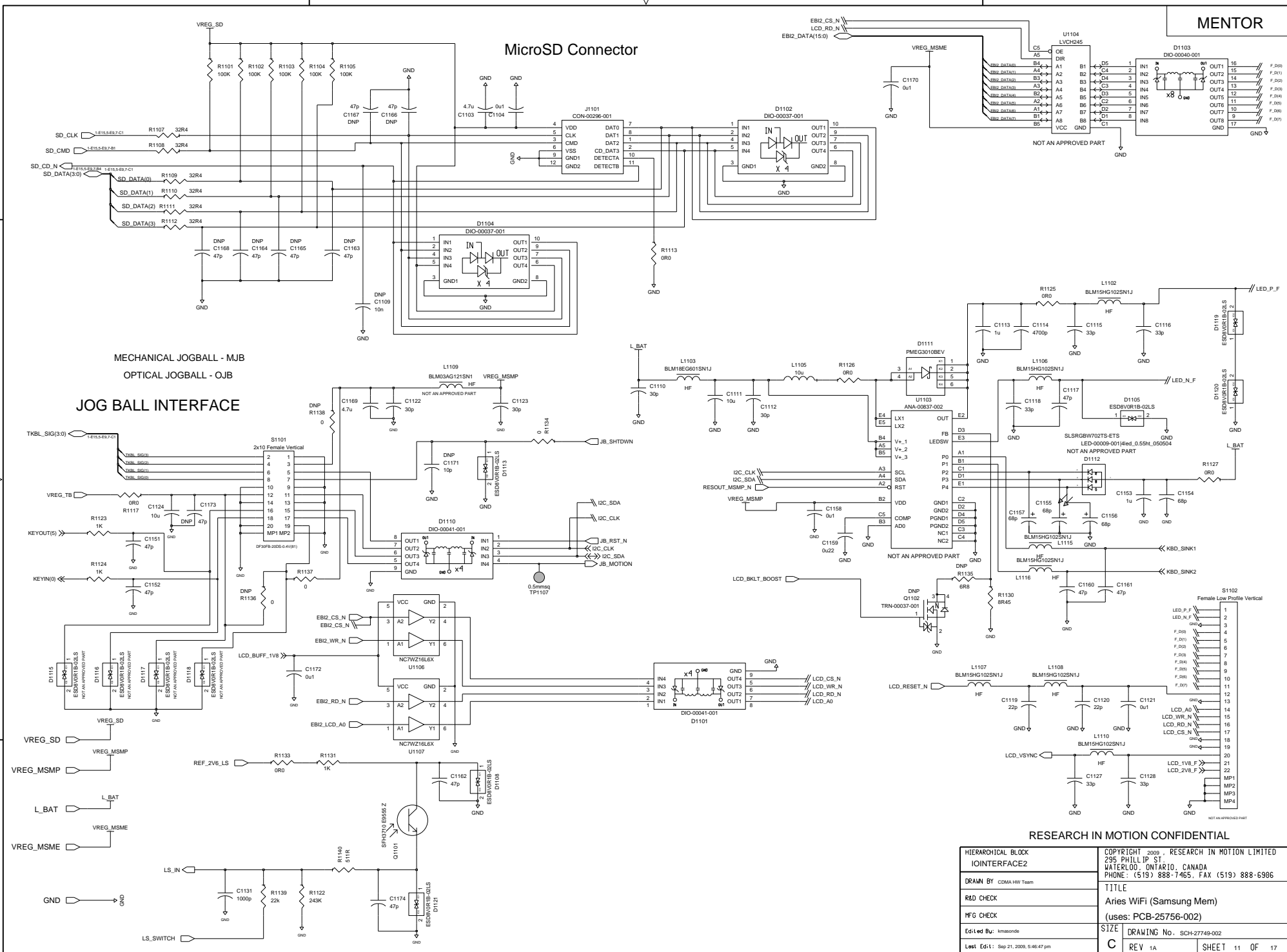
A

D

C

B

A



HIERARCHICAL BLOCK		COPYRIGHT 2009, RESEARCH IN MOTION LIMITED	
JOINTERFACE2		295 PHILLIP ST.	
DRAWN BY CDMA HW Team		WATERLOO, ONTARIO, CANADA	
R&D CHECK		PHONE: (519) 888-7465, FAX (519) 888-6906	
MFG CHECK		TITLE	
Edited By: kmasonde		Aries WiFi (Samsung Mem)	
Last Edt 1: Sep 21, 2009, 5:46:47 pm		(uses: PCB-25756-002)	
SIZE		DRAWING No. SCH-27749-002	
C		REV 1A	
		SHEET 11 OF 17	

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4

3

2

1

4

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2

1

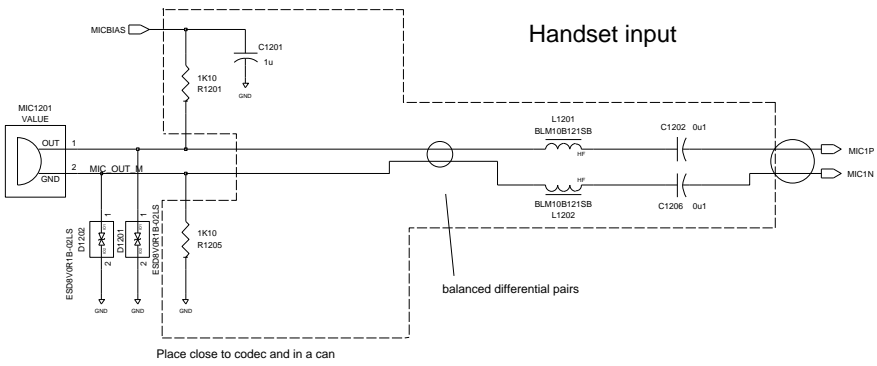
MicroSD Connector

MENTOR

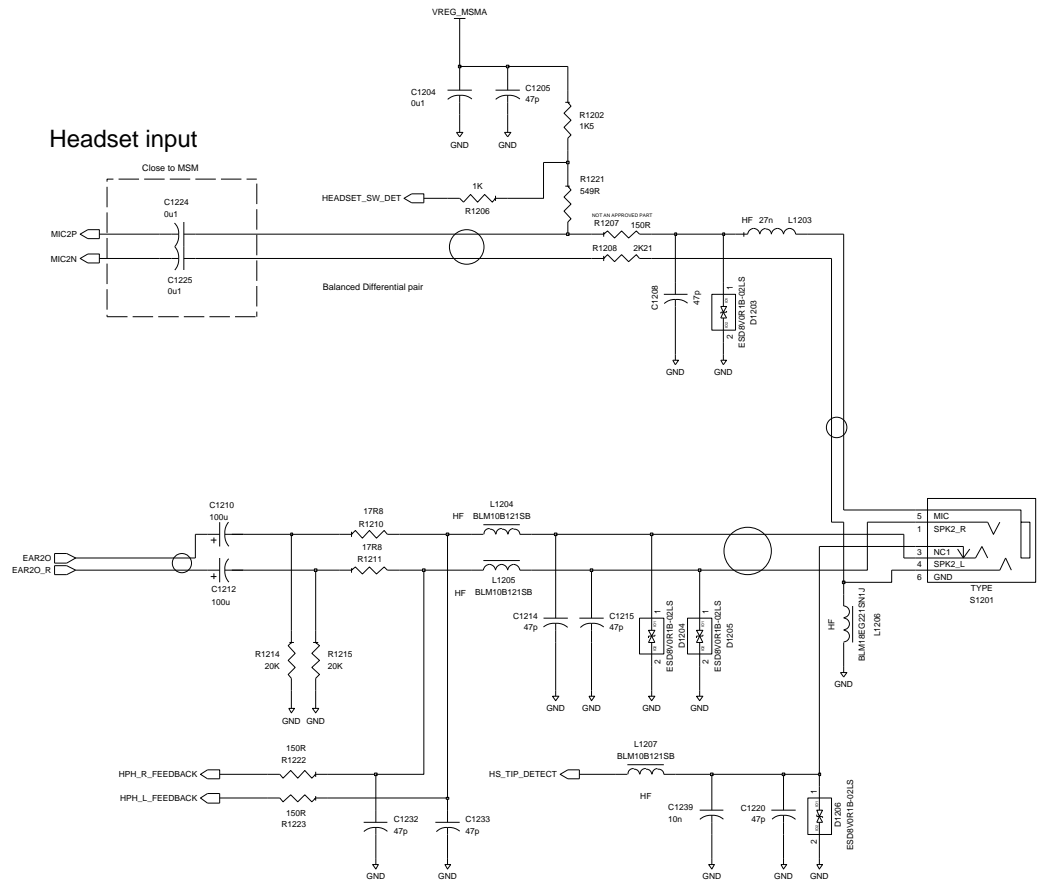
MECHANICAL JOGBALL - MJB
OPTICAL JOGBALL - OJB

JOG BALL INTERFACE

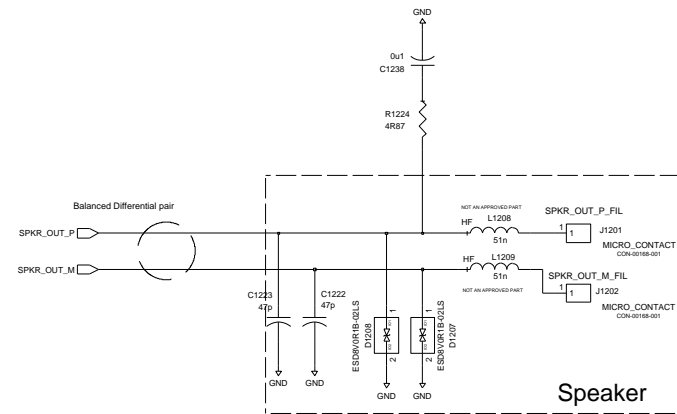
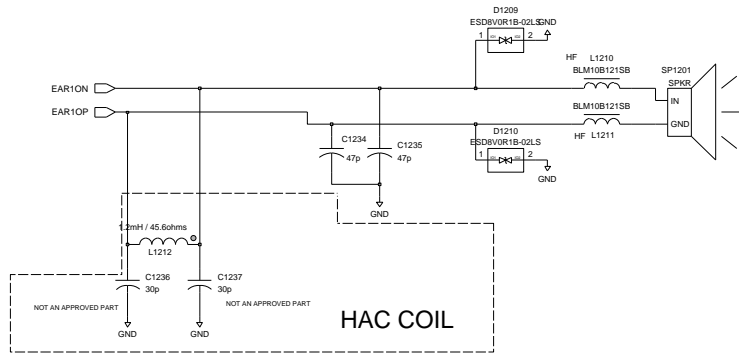
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Headset input

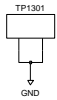
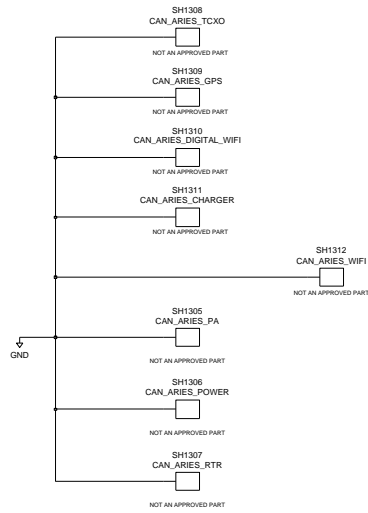
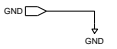


Headset output



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HIERARCHICAL BLOCK	AUDIO	COPYRIGHT 2009, RESEARCH IN MOTION LIMITED 295 PHILLIP ST. WATERLOO, ONTARIO, CANADA PHONE: (519) 888-7465, FAX (519) 888-6306
DRAWN BY	CDMA-HW Team	
R&D CHECK		TITLE Aries WiFi (Samsung Mem)
MFG CHECK		(uses: PCB-25756-002)
Edi Led Bu: yll		SIZE DRAWING No. SCH-27749-002
Level: Ed14: Aug 18, 2009, 2:29:49 pm		C REV 1A SHEET 12 OF 17



DISPLAY BEZEL PAD GROUNDING



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HIERARCHICAL BLOCK ETCH		COPYRIGHT 2009, RESEARCH IN MOTION LIMITED 295 PHILLIP ST. WATERLOO, ONTARIO, CANADA PHONE: (519) 888-7465, FAX (519) 888-6306	
DRAWN BY: CDMA-HW Team		TITLE Aries WiFi (Samsung Mem)	
R&D CHECK		(uses: PCB-25756-002)	
MFG CHECK		SIZE	
Edi Led Bu: yll		DRAWING No. SCH-27749-002	
Last Edt1: Aug 18, 2009, 2:24:01 pm		C	REV 1A SHEET 13 OF 17

SIDE KEYS

MENTOR

VOLUME UP KEY

CAMERA SHUTTER

KEY_OUT_0

KEY_OUT_1

KEY_OUT_2

KEY_OUT_3

KEY_OUT_4

KEY_OUT_5

KEY_OUT_6

KEY_OUT_7

VOLUME DOWN KEY

PUSH TO TALK KEY

KEY_IN_0

KEY_IN_1

KEY_IN_2

KEY_IN_3

KEY_IN_4

KEY_IN_5

KEY_IN_6

FORWARD KEY

LOCK-REWIND KEY

KEY_IN_0

KEY_IN_1

KEY_IN_2

KEY_IN_3

KEY_IN_4

KEY_IN_5

KEY_IN_6

PLAY/PAUSE KEY

SW_SEND

SW_BROWSE

SW_ESC

SW_END

SW_O

SW_W

SW_E

SW_R

SW_T

SW_Y

SW_U

SW_J

SW_O

SW_P

SW_A

SW_S

SW_D

SW_F

SW_G

SW_H

SW_I

SW_K

SW_L

SW_DEL

SW_ALT

SW_Z

SW_X

SW_C

SW_V

SW_B

SW_N

SW_M

SW_SPK

SW_RET

SW_SHIFT_L

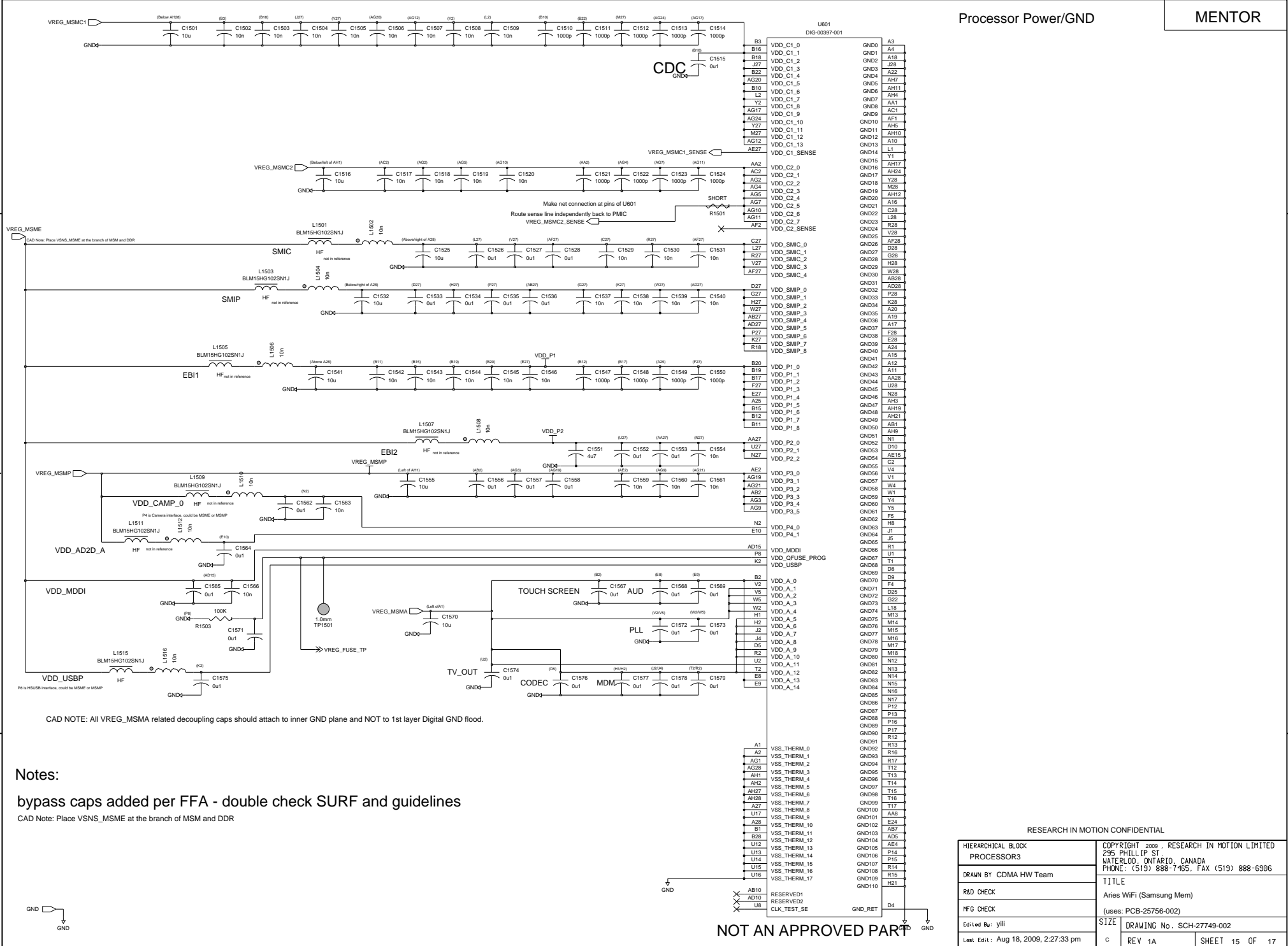
SW_0

SW_SPACE

SW_SYM

SW_SHIFT_R

HIERARCHICAL BLOCK JOINTERFACE3		COPYRIGHT 2009, RESEARCH IN MOTION LIMITED 295 PHILLIP ST. WATERLOO, ONTARIO, CANADA PHONE: (519) 888-7465, FAX (519) 888-6306	
DRAWN BY CDMA-HW Team		TITLE Aries WiFi (Samsung Mem)	
R&D CHECK		(uses: PCB-25756-002)	
F&G CHECK		SIZE DRAWING No. SCH-27749-002	
Edi Led Bu: yll		C REV 1A SHEET 14 OF 17	
Label Ed1: Aug 18, 2009, 2:34:05 pm			



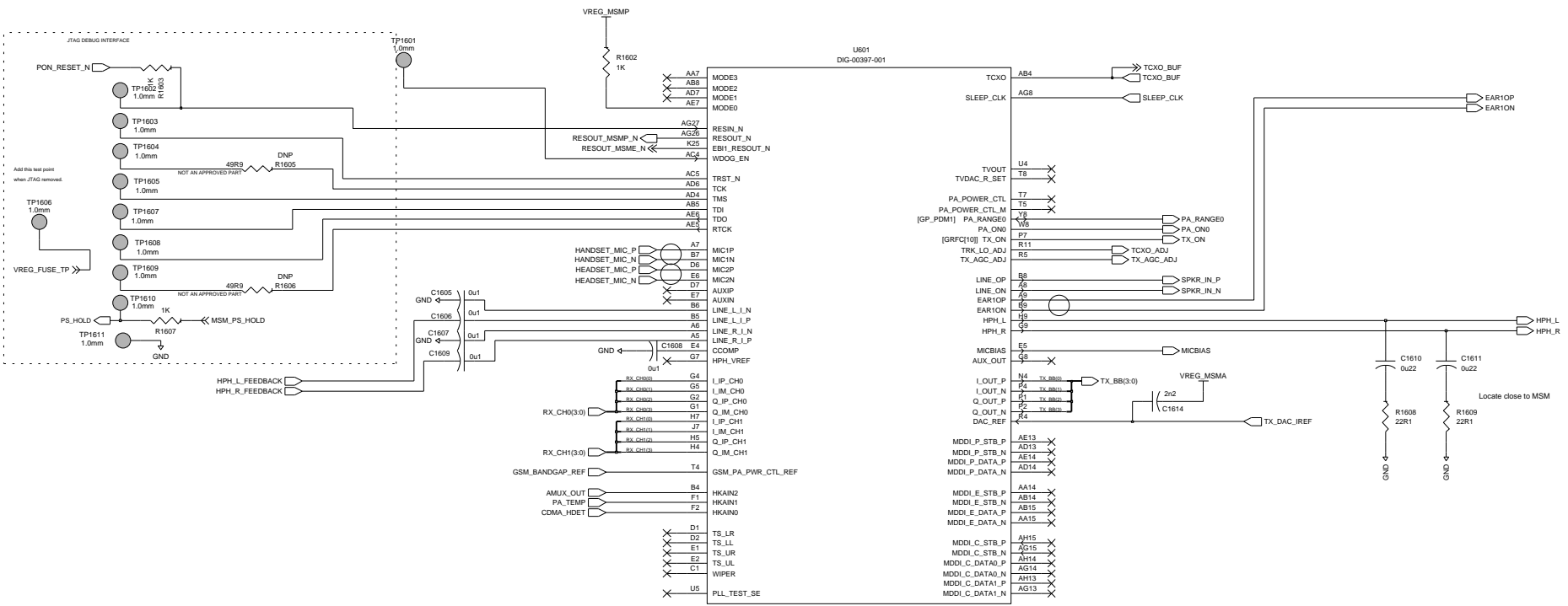
U601 DIG-00397-001

B3	VDD_C1_0	GND0	A3
B16	VDD_C1_1	GND1	A4
B18	VDD_C1_2	GND2	A18
Z77	VDD_C1_3	GND3	Z28
B22	VDD_C1_4	GND4	A22
AG20	VDD_C1_5	GND5	AH7
B10	VDD_C1_6	GND6	AH11
L2	VDD_C1_7	GND7	AH4
Y2	VDD_C1_8	GND8	AA1
AG17	VDD_C1_9	GND9	AC1
AG24	VDD_C1_10	GND10	AF1
Y27	VDD_C1_11	GND11	AH5
M27	VDD_C1_12	GND12	AH10
AG12	VDD_C1_13	GND13	A10
AE27	VDD_C1_SENSE	GND14	L1
AA2	VDD_C2_0	GND15	AH17
AC2	VDD_C2_1	GND16	AH24
AG2	VDD_C2_2	GND17	Y28
AG4	VDD_C2_3	GND18	N28
AG5	VDD_C2_4	GND19	AH12
AG7	VDD_C2_5	GND21	A16
AG10	VDD_C2_6	GND22	C28
AG11	VDD_C2_7	GND23	L28
AF2	VDD_C2_SENSE	GND24	R28
C27	VDD_SMIC_0	GND25	V28
L27	VDD_SMIC_1	GND26	AF28
R27	VDD_SMIC_2	GND27	G28
V27	VDD_SMIC_3	GND28	H28
AF27	VDD_SMIC_4	GND29	V28
D27	VDD_SMIP_0	GND30	AF28
G27	VDD_SMIP_1	GND31	AD28
H27	VDD_SMIP_2	GND32	P28
W27	VDD_SMIP_3	GND33	K28
AB27	VDD_SMIP_4	GND34	A20
AD27	VDD_SMIP_5	GND36	A19
P27	VDD_SMIP_6	GND37	A17
K27	VDD_SMIP_7	GND38	F28
R18	VDD_SMIP_8	GND39	A24
B20	VDD_P1_0	GND40	A15
B19	VDD_P1_1	GND41	A12
B17	VDD_P1_2	GND42	A28
F27	VDD_P1_3	GND43	U28
E27	VDD_P1_4	GND44	N28
A26	VDD_P1_5	GND45	AH3
B15	VDD_P1_6	GND47	AH19
B12	VDD_P1_7	GND48	AH21
B11	VDD_P1_8	GND49	AB1
AA27	VDD_P2_0	GND50	AH9
U27	VDD_P2_1	GND51	N1
N27	VDD_P2_2	GND52	D10
AE2	VDD_P3_0	GND53	AE15
AG19	VDD_P3_1	GND54	C2
AG21	VDD_P3_2	GND55	V4
AG2	VDD_P3_3	GND56	V1
AG3	VDD_P3_4	GND57	V4
AG9	VDD_P3_5	GND58	W1
N2	VDD_P4_0	GND59	Y4
E10	VDD_P4_1	GND60	Y5
AD15	VDD_MDDI	GND61	F5
F8	VDD_QFUSE_PROG	GND62	H8
K2	VDD_USBP	GND63	J1
B2	VDD_A_0	GND64	J5
V2	VDD_A_1	GND65	R1
W5	VDD_A_2	GND66	U1
W2	VDD_A_3	GND67	T1
H1	VDD_A_4	GND68	D8
H2	VDD_A_5	GND69	D9
J2	VDD_A_7	GND70	F4
R2	VDD_A_8	GND71	D25
U2	VDD_A_9	GND72	G22
T2	VDD_A_10	GND73	L18
E8	VDD_A_11	GND74	M14
C1574	VDD_A_12	GND75	M15
C1576	VDD_A_13	GND76	M16
C1577	VDD_A_14	GND77	M17
C1578		GND78	M18
C1579		GND79	M19
		GND80	N12
		GND81	N13
		GND82	N15
		GND83	N16
		GND84	N17
		GND85	P12
		GND86	P13
		GND87	P16
		GND88	P17
		GND89	R12
		GND90	R13
		GND91	R16
		GND92	R17
		GND93	T12
		GND94	T13
		GND95	T14
		GND96	T15
		GND97	T16
		GND98	T17
		GND99	AA8
		GND100	E24
		GND101	AB7
		GND102	AD5
		GND103	P14
		GND104	P15
		GND105	R14
		GND106	R15
		GND107	R16
		GND108	R15
		GND109	H21
		GND110	H21

A1	VSS_THERM_0
A2	VSS_THERM_1
AG1	VSS_THERM_2
AG28	VSS_THERM_3
AH1	VSS_THERM_4
AH2	VSS_THERM_5
AH7	VSS_THERM_6
AH9	VSS_THERM_7
A27	VSS_THERM_8
U17	VSS_THERM_9
A28	VSS_THERM_10
B1	VSS_THERM_11
B28	VSS_THERM_12
U12	VSS_THERM_13
U13	VSS_THERM_14
U14	VSS_THERM_15
U15	VSS_THERM_16
U16	VSS_THERM_17

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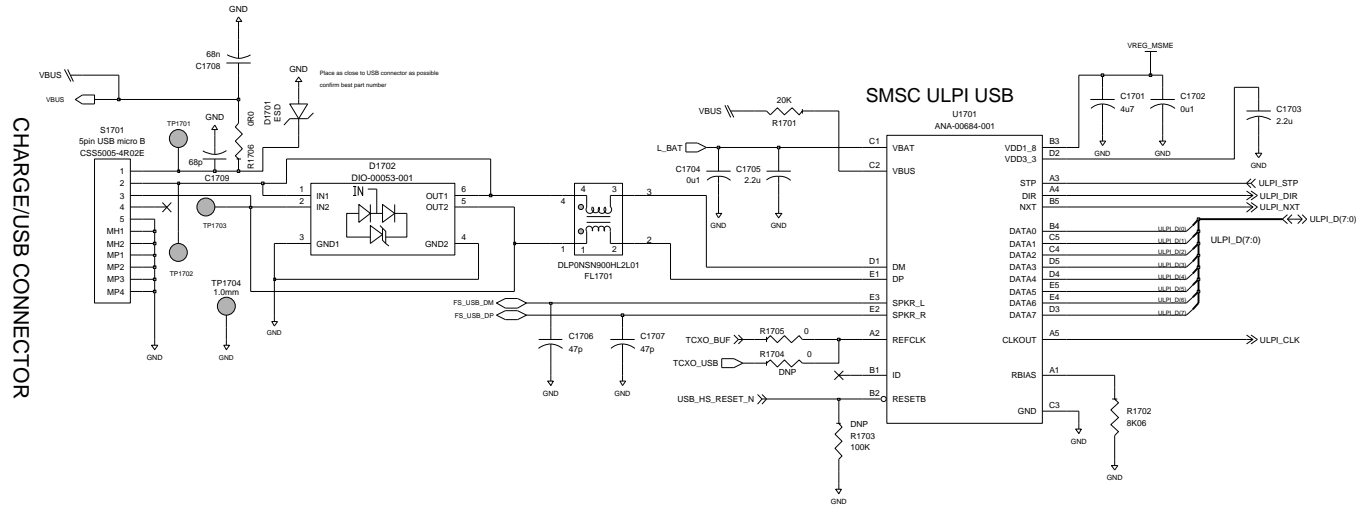
HIERARCHICAL BLOCK	PROCESSOR3	COPYRIGHT 2009, RESEARCH IN MOTION LIMITED
DRAWN BY	CDMA HW Team	295 PHILLIP ST. WATERLOO, ONTARIO, CANADA PHONE: (519) 888-7465, FAX (519) 888-6306
R&D CHECK		TITLE
IFG CHECK		Aries WiFi (Samsung Mem)
Edi Led Bu: ylli		(uses: PCB-25756-002)
SIZE	REV 1A	SCH-27749-002
Last Edt: Aug 18, 2009, 2:27:33 pm		SHEET 15 OF 17



NOT AN APPROVED PART

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DRAWN BY: CDMA HW Team		TITLE Aries WiFi (Samsung Mem)	
R&D CHECK		(uses: PCB-25756-002)	
MFG CHECK		SIZE DRAWING No. SCH-27749-002	
Edi Led Bu: yll		C	
Last Ed1: Aug 18, 2009, 2:27:48 pm		REV 1A	SHEET 16 OF 17



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DRAWN BY: CDMA HW Team		TITLE Aries WiFi (Samsung Mem)	
R&D CHECK		(uses: PCB-25756-002)	
MFG CHECK		SIZE DRAWING No. SCH-27749-002	
Edi Led Bu: yll		C	
Last Ed: 1: Aug 18, 2009, 2:28:05 pm		REV 1A	SHEET 17 OF 17