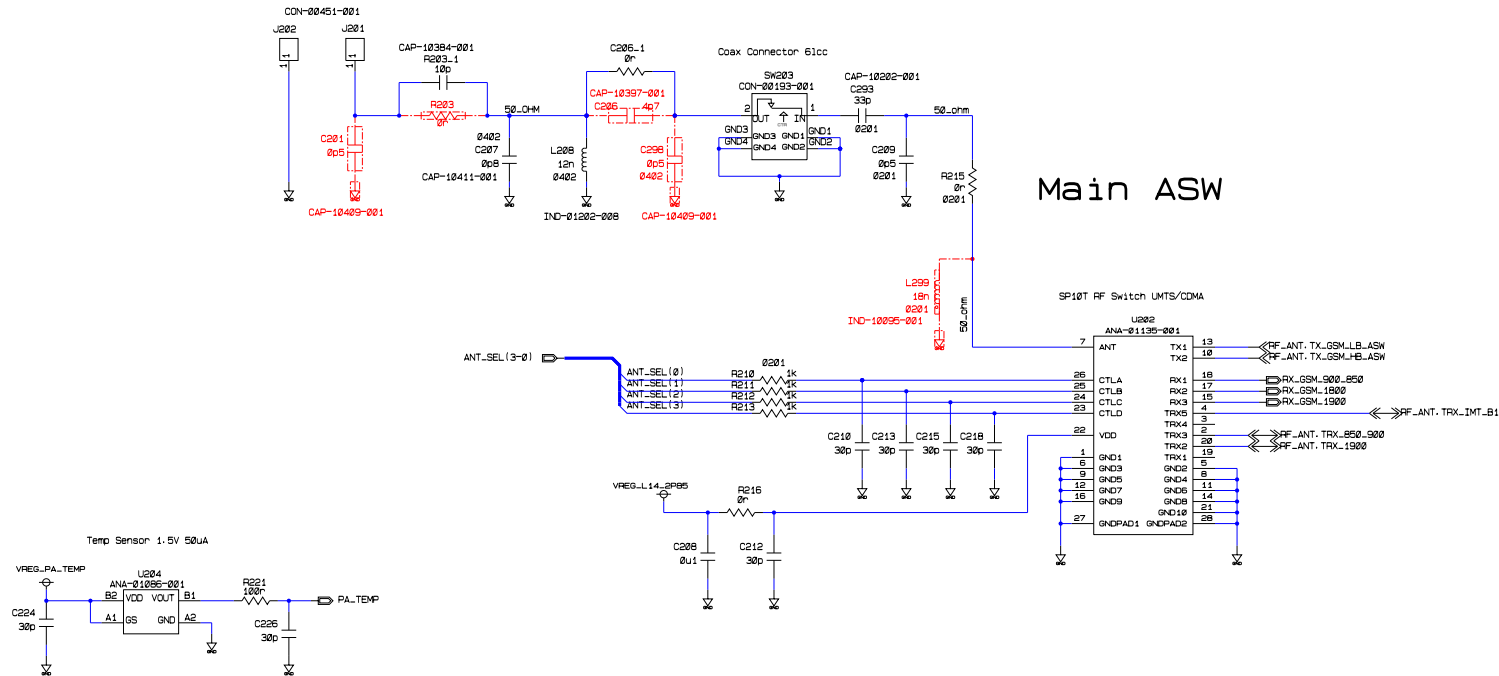
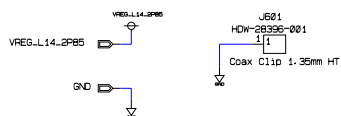
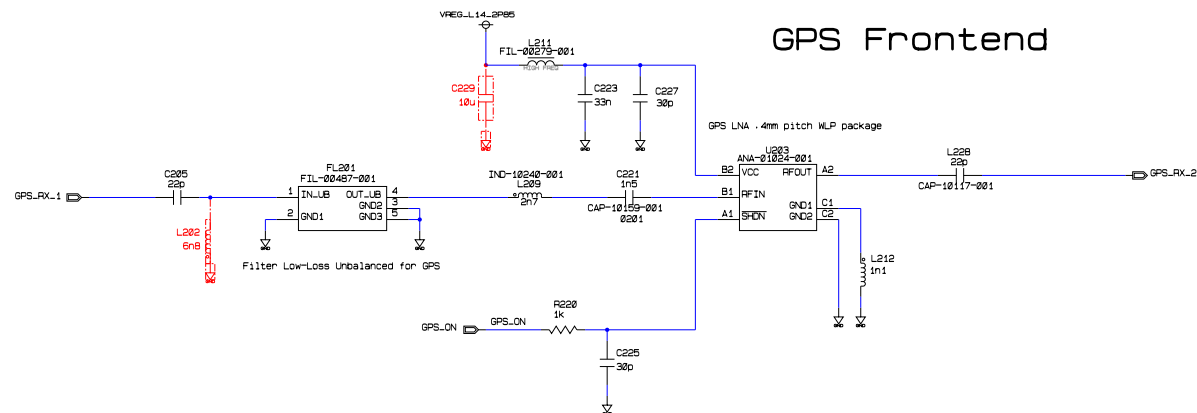




ANTENNA CONTACTS



GPS Frontend



RESEARCH IN MOTION CONFIDENTIAL

HIERARCHICAL BLOCK	COPYRIGHT 2011 RESEARCH IN MOTION LIMITED 295 PHILIP ST. WATERLOO, ONTARIO CANADA
DRAWN BY nly	PHONE (519) 888-7465 FAX (519) 888-6906
RAD CHECK team	TITLE R040 Main PCB - 1 2 8
WFS CHECK mfgcn	Uses PCB-38629-903
EDITED BY nly	SIZE DRAWING NO. SCH-38631-903
LAST EDIT: 2011/03/31 13:37:09	REV H SHEET 2 of 19

D

C

B

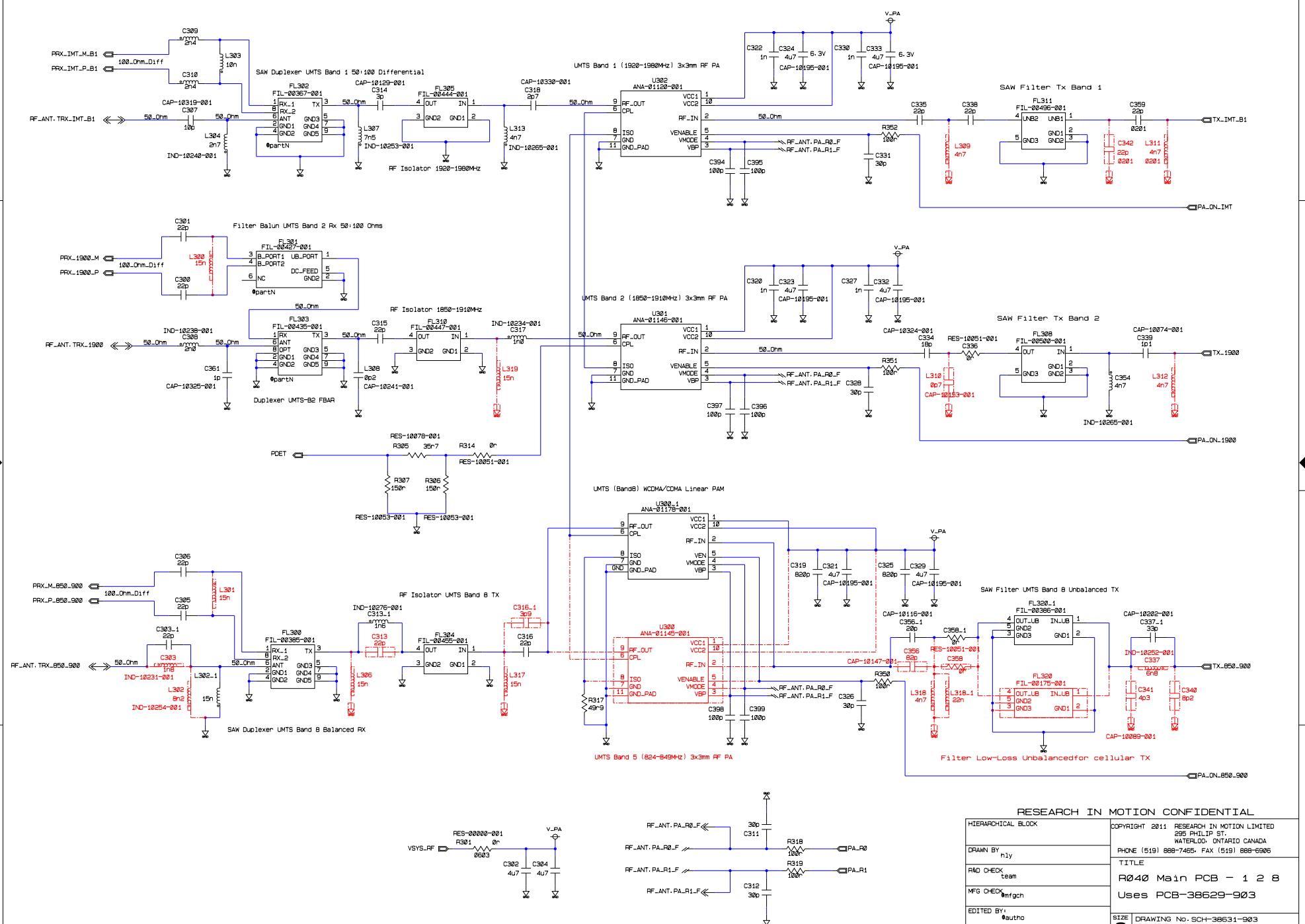
A

D

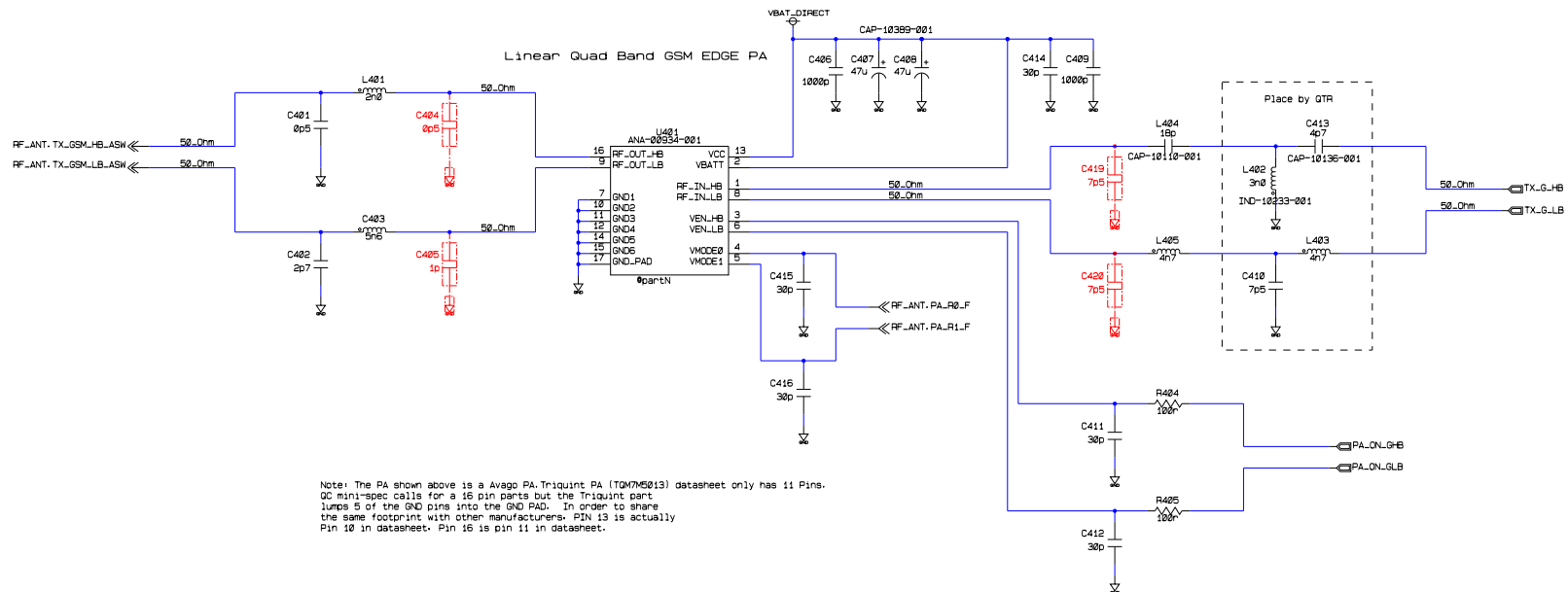
C

B

A



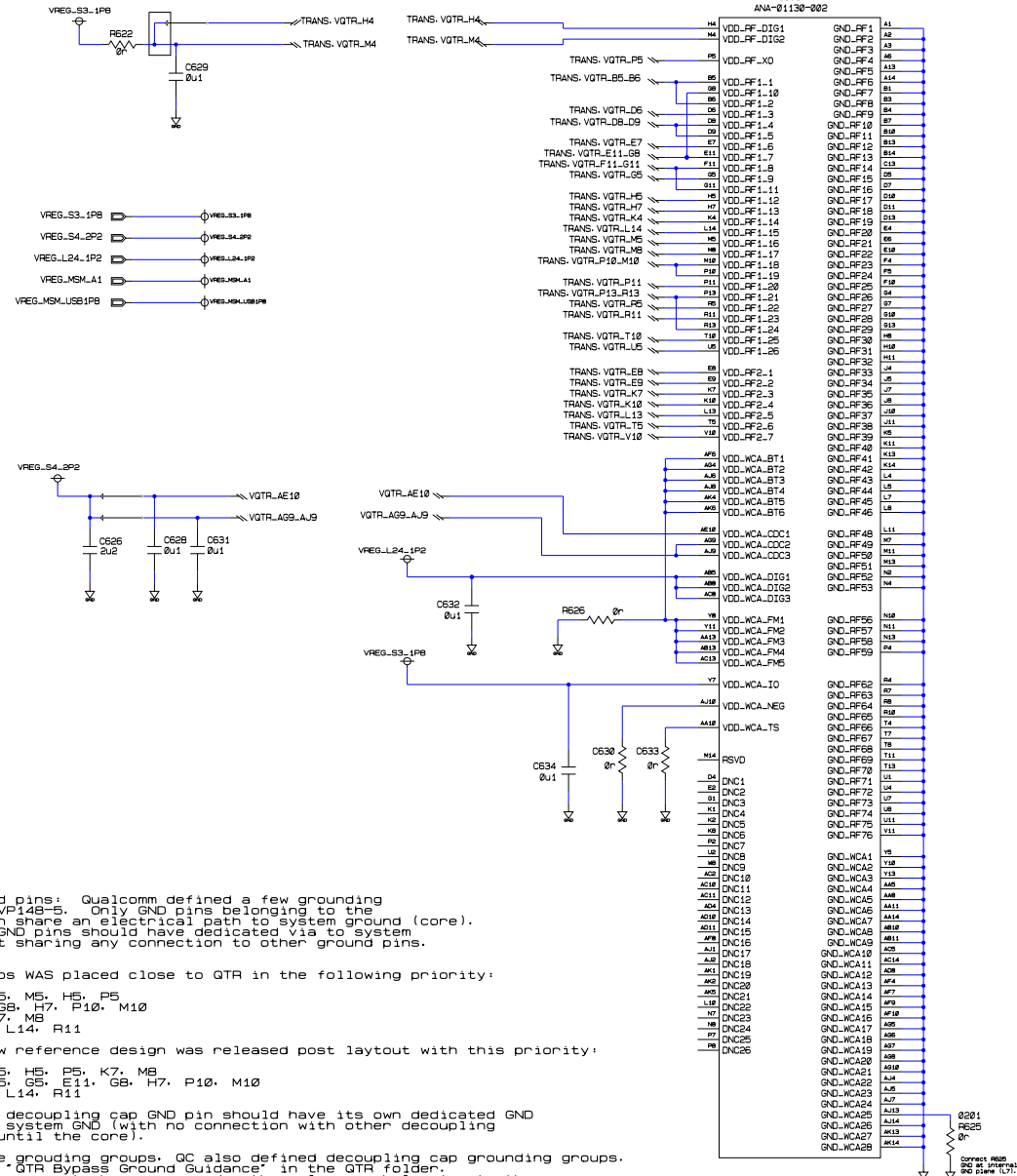
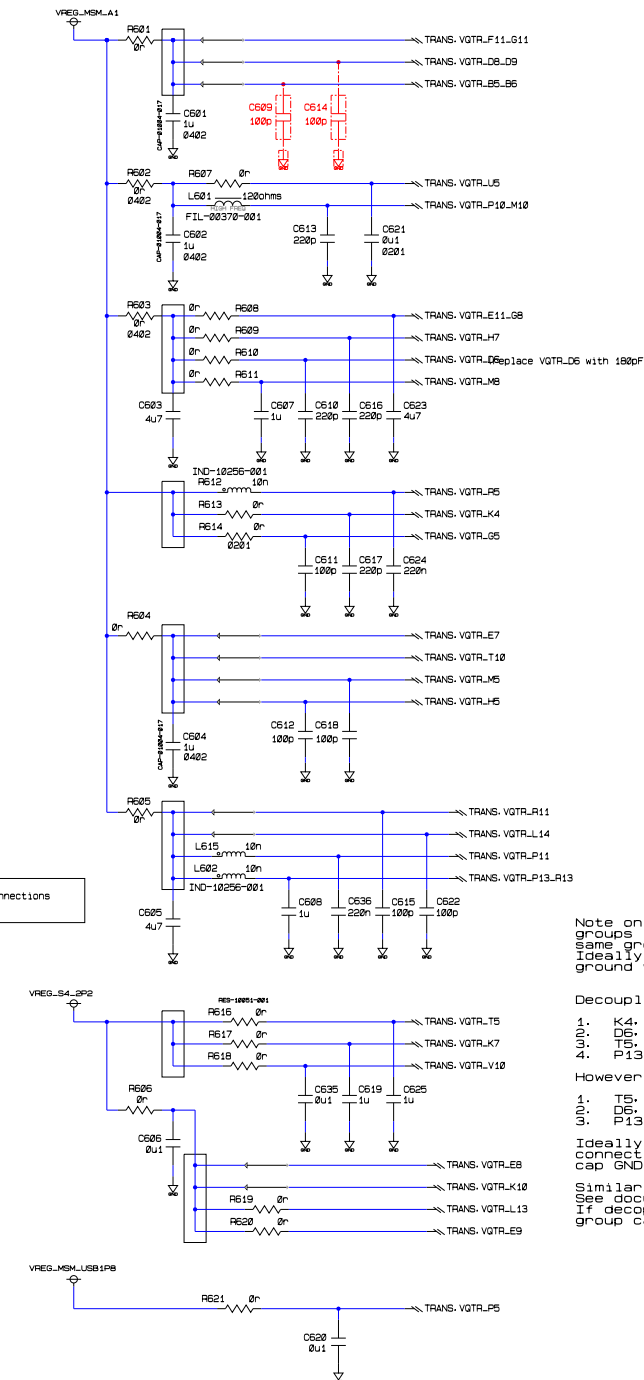
RESEARCH IN MOTION CONFIDENTIAL		
HIERARCHICAL BLOCK	COPYRIGHT 2011 RESEARCH IN MOTION LIMITED 295 PHILIP ST. WATERLOO, ONTARIO CANADA	
DRAWN BY nly	PHONE (519) 888-7465 FAX (519) 888-6986	
RAO CHECK team	TITLE R040 Main PCB - 1 2 8	
WFS CHECK mfrgn	Uses PCB-38629-903	
EDITED BY autho	SIZE C	DRAWING No. SCH-38631-903
LAST EDIT: 2011/03/31 13:37:10	REV H	SHEET 3 of 19



VBAT_DIRECT

RESEARCH IN MOTION CONFIDENTIAL

HIERARCHICAL BLOCK	COPYRIGHT 2011 RESEARCH IN MOTION LIMITED 295 PHILIP ST. WATERLOO, ONTARIO CANADA
DRAWN BY: hly	PHONE (519) 888-7485 FAX (519) 888-6986
R&D CHECK team	TITLE
MFG CHECK emfgh	R040 Main PCB - 1 2 8
EDITED BY: hly	Uses PCB-38629-903
LAST EDIT: 2011/03/31 13:37:10	SIZE C
	DRAWING No. SCH-38631-903
	REV H SHEET 4 of 19



Note on ground pins: Qualcomm defined a few grounding groups in 80-VP148-5. Only GND pins belonging to the same group can share an electrical path to system ground (core). Ideally each GND pins should have dedicated via to system ground without sharing any connection to other ground pins.

Decoupling Caps WAS placed close to QTR in the following priority:

1. K4, R5, G5, M5, H5, P5
2. D6, E11, G8, H7, P10, M10
3. T5, U5, K7, M8
4. P13, R13, L14, R11

However, a new reference design was released post layout with this priority:

1. T5, U5, M5, H5, P5, K7, M8
2. D6, K4, R5, G5, E11, G8, H7, P10, M10
3. P13, R13, L14, R11

Ideally, each decoupling cap GND pin should have its own dedicated GND connection to system GND (with no connection with other decoupling cap GND pins until the core).

Similar to the grounding groups, QC also defined decoupling cap grounding groups.

See document: "QTR Bypass Ground Guidance" in the QTR folder.
If decoupling caps must share a ground path, only caps belonging to the same group can share a ground connection to system ground.

RESEARCH IN MOTION CONFIDENTIAL			
HIERARCHICAL BLOCK		COPYRIGHT 2011 RESEARCH IN MOTION LIMITED 230 DULP ST WATERLOO, ONTARIO CANADA	
DRAWN BY nly		PHONE (519) 888-7465 FAX (519) 888-6206	
RWD CHECK team		TITLE R040 Main PCB - 1 2 8	
WFG CHECK mfrfgh		USING PCB-38629-903	
EDITED BY: nly		SIZE DRAWING NO. SCH-38631-903	
LAST EDITED: 2011/03/31 13:37:11		C REV H SHEET 6 of 19	

□



B

7

A

PROCESSOR/MEMORY INTERFACE

D

D

C

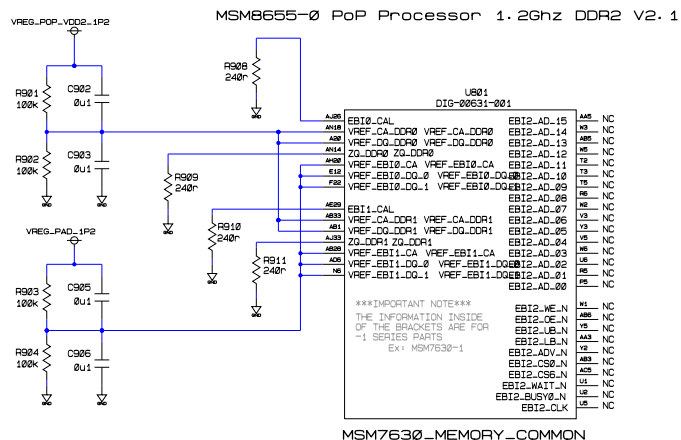
C

B

B

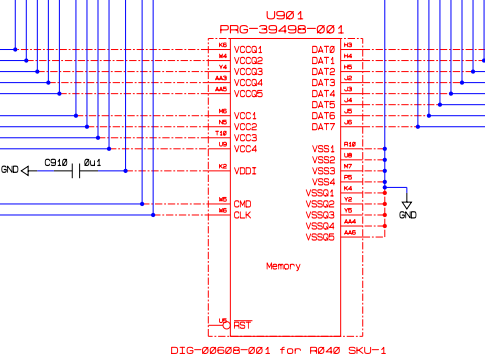
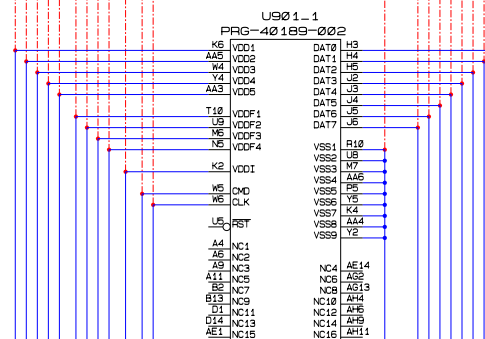
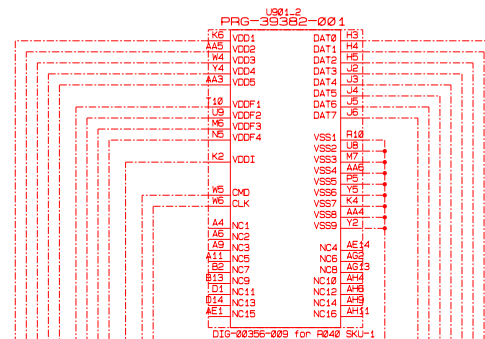
A

A



MMC Powering options
Option 1 - VREG_MSM-1VB and VREG_MMC-2VB5
OPT-3 on PM0058 must be floating
MMC can be powered down

Option 2 - VREG_S3-1PB and VREG_MSM-SD
OPT-3 on PM 0058 pulled high
MMC can't be powered down



Memory

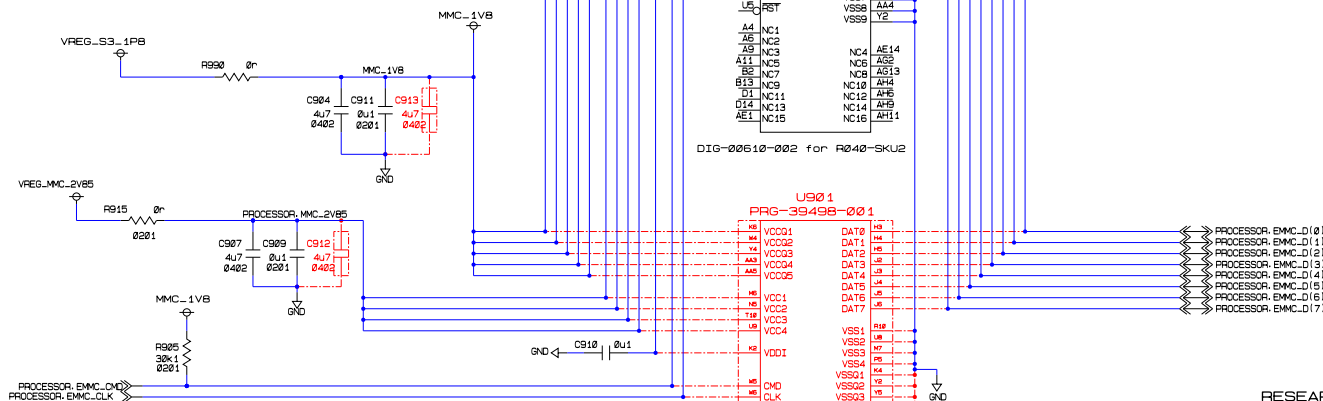
U002

PRG-39577-002

Stacked Part

768MB DDR

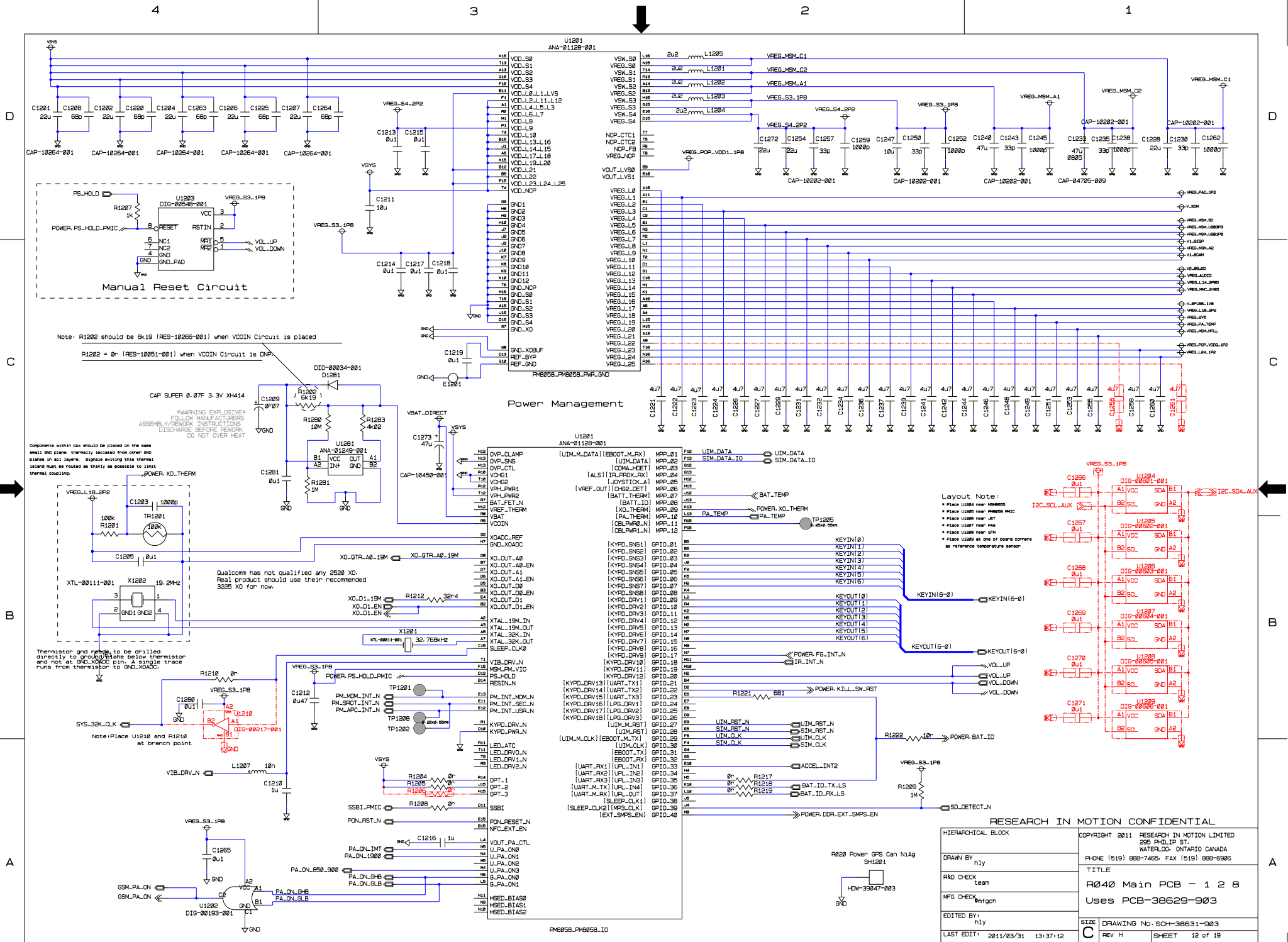
STK-00024-002 for MSM8655



RESEARCH IN MOTION CONFIDENTIAL

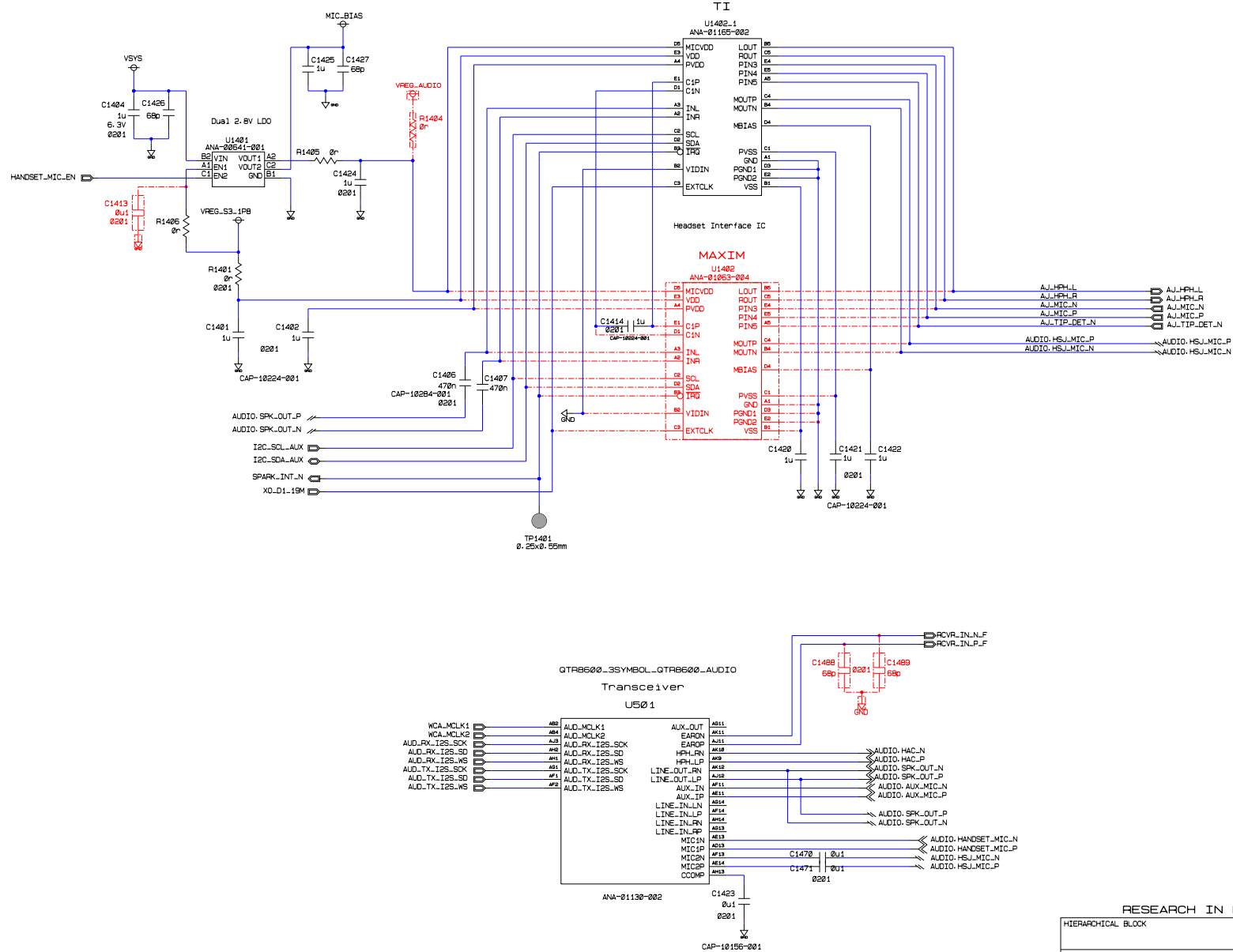
HIERARCHICAL BLOCK	COPYRIGHT 2011 RESEARCH IN MOTION LIMITED 295 PHILIP ST. WATERLOO, ONTARIO CANADA
DRAWN BY hly	PHONE (519) 888-7465 FAX (519) 888-6986
RMD CHECK team	TITLE R040 Main PCB - 1 2 8
MFG CHECK emfich	Uses PCB-38629-903
EDITED BY hly	SIZE DRAWING No. SCH-38631-903
LAST EDIT: 2011/03/31 13:37:14	REV H SHEET 9 of 19





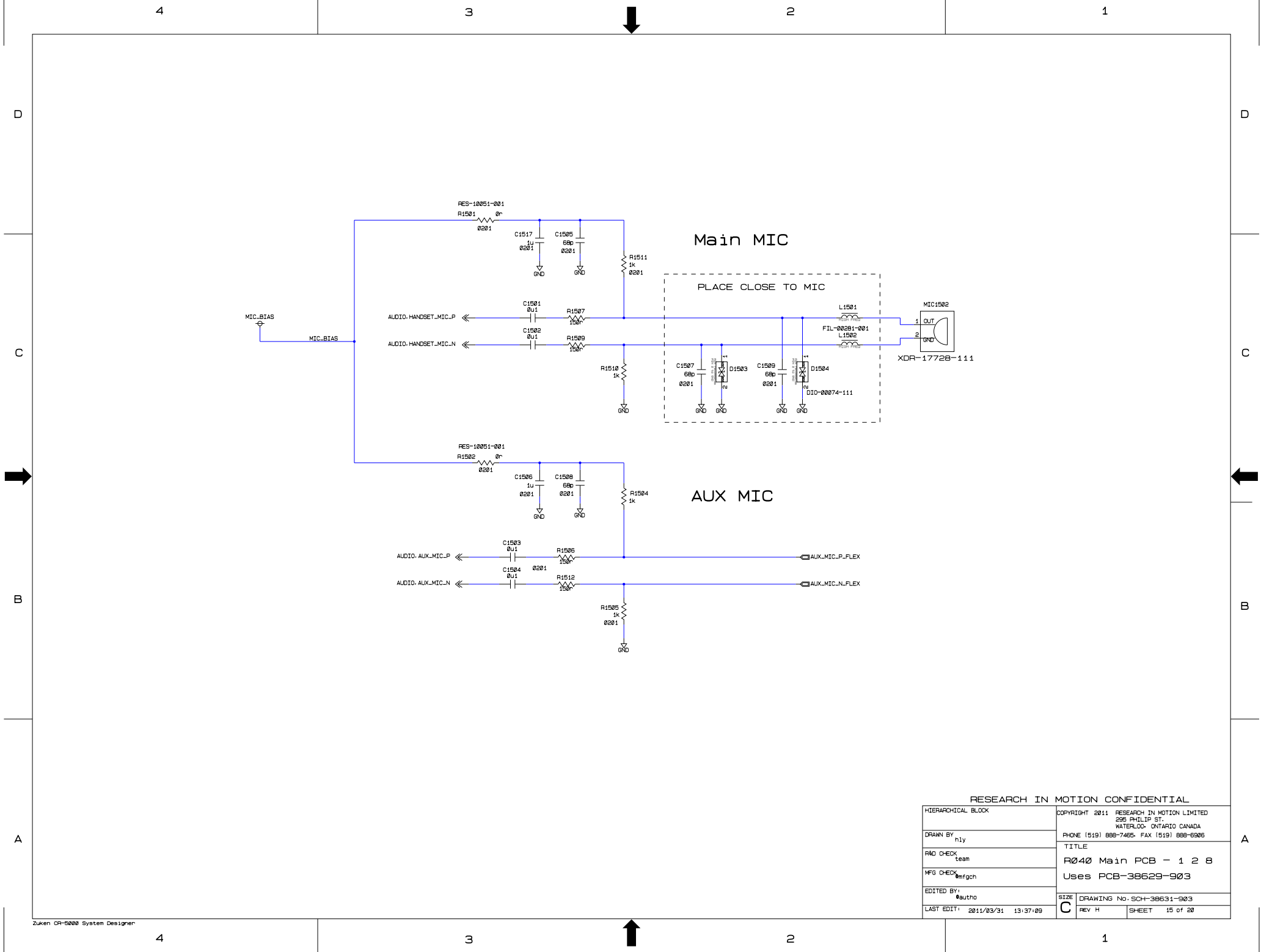


SPARK IMPLEMENTATION

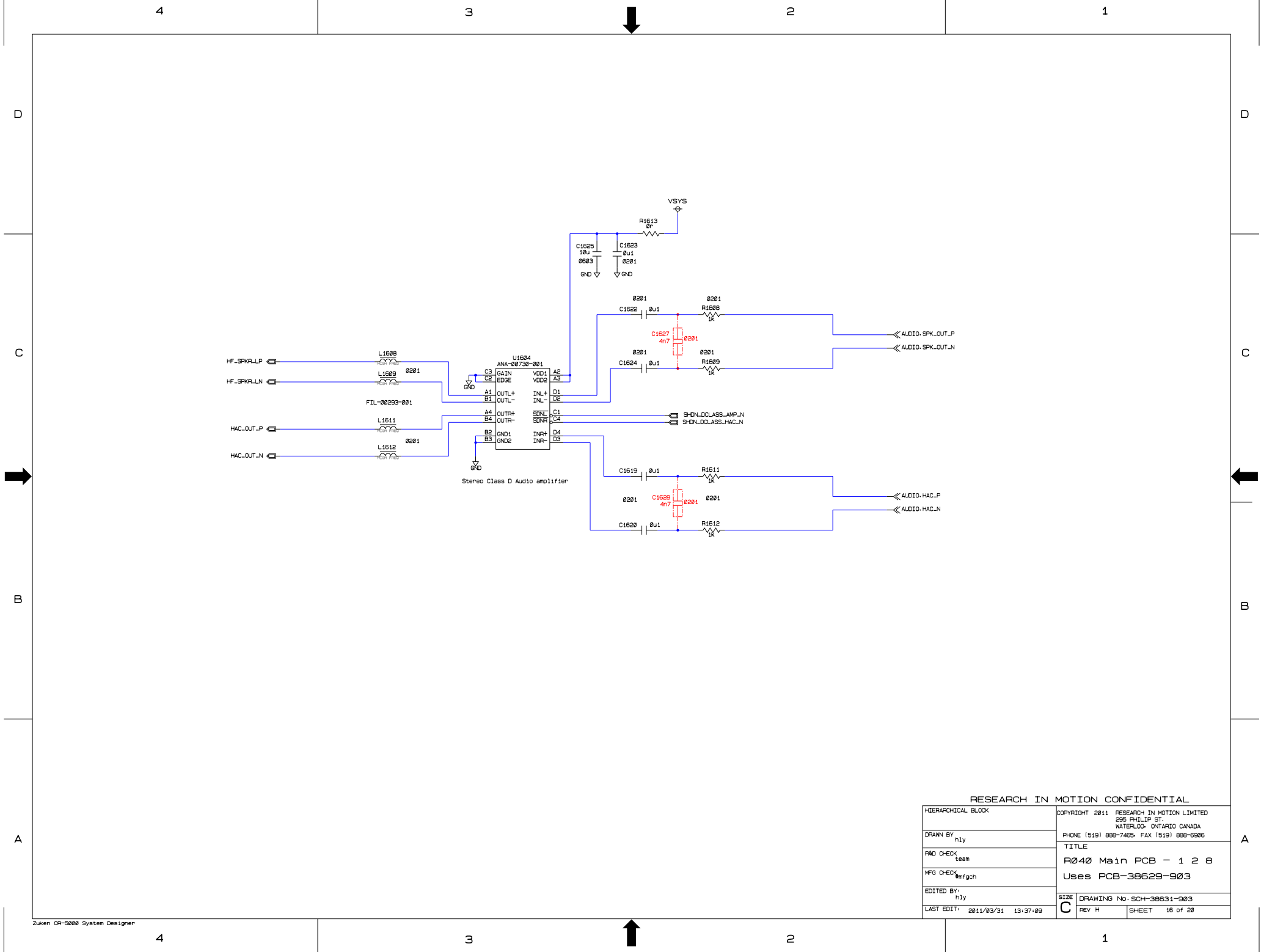


RESEARCH IN MOTION CONFIDENTIAL

HIERARCHICAL BLOCK	COPYRIGHT 2011 RESEARCH IN MOTION LIMITED 295 PHILIP ST. WATERLOO, ONTARIO CANADA PHONE (519) 886-7465 FAX (519) 886-6986
DRAWN BY hly	TITLE R040 Main PCB - 1 2 8
RND CHECK team	Uses PCB-38629-903
MFG CHECK emfgh	SIZE DRAWING No. SCH-38631-903
EDITED BY hly	REV H
LAST EDIT: 2011/03/31 13:37:09	SHEET 14 of 20

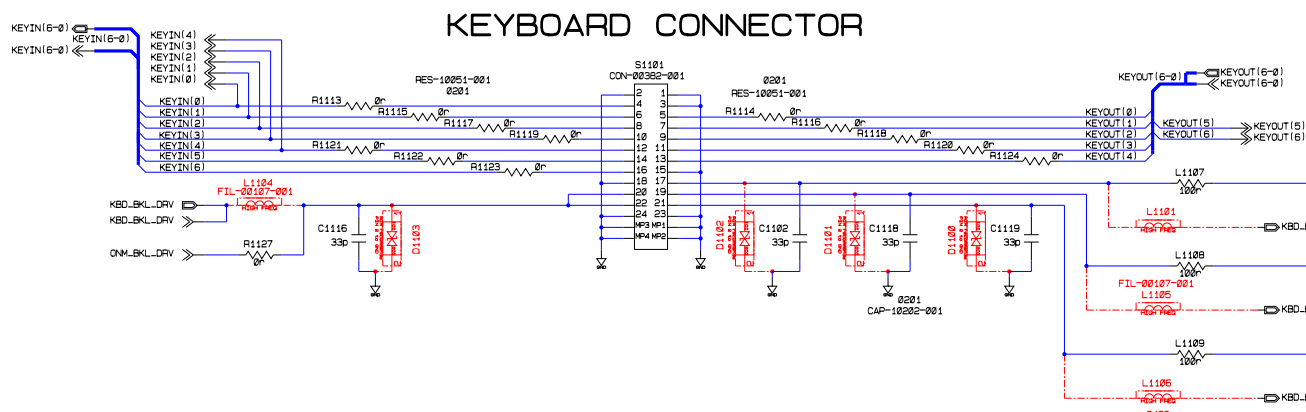
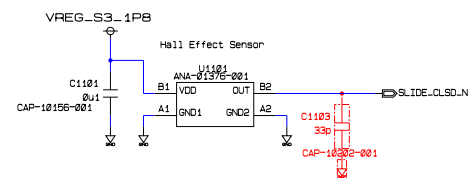
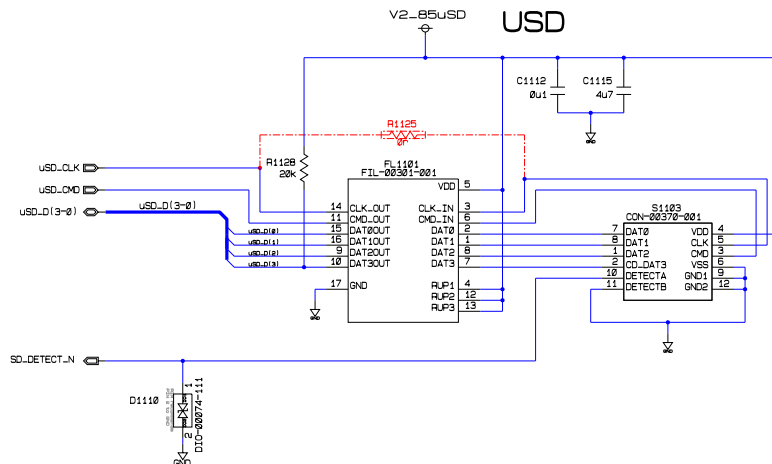
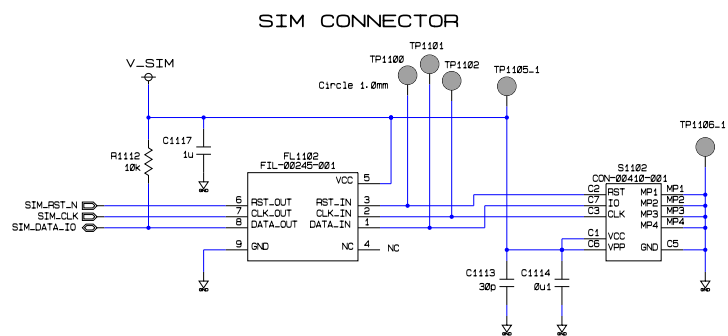
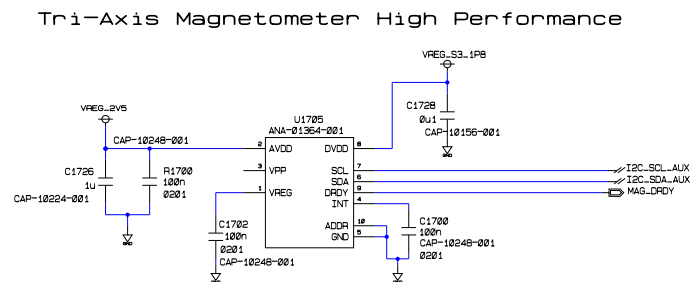
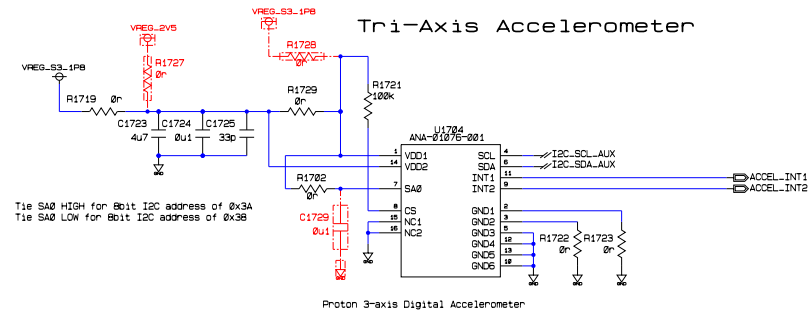


RESEARCH IN MOTION CONFIDENTIAL		
HIERARCHICAL BLOCK	COPYRIGHT 2011 RESEARCH IN MOTION LIMITED 295 PHILIP ST. WATERLOO, ONTARIO CANADA	
DRAWN BY	hly	PHONE (519) 880-7465 FAX (519) 880-6986
R&D CHECK	team	TITLE
MFG CHECK	emfgch	R040 Main PCB - 1 2 8
EDITED BY	autho	Uses PCB-38629-903
LAST EDIT	2011/03/31 13:37:09	SIZE
		DRAWING No. SCH-38631-903
		REV H
		SHEET 15 of 20



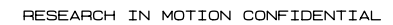
RESEARCH IN MOTION CONFIDENTIAL

HIERARCHICAL BLOCK		COPYRIGHT 2011 RESEARCH IN MOTION LIMITED 295 PHILIP ST. WATERLOO, ONTARIO CANADA	
DRAWN BY: hly		PHONE (519) 888-7485 FAX (519) 888-6986	
R&D CHECK team		TITLE	
MFG CHECK emfgch		R040 Main PCB - 1 2 8	
EDITED BY: hly		Uses PCB-38629-903	
LAST EDIT: 2011/03/31 13:37:09		SIZE C	DRAWING No. SCH-38631-903
		REV H	SHEET 16 of 20



RESEARCH IN MOTION CONFIDENTIAL	
HIERARCHICAL BLOCK	COPYRIGHT 2011 RESEARCH IN MOTION LIMITED 220 RUPPULP ST WATERLOO, ONTARIO CANADA PHONE (519) 888-7455 FAX (519) 888-6906
DRAWN BY nly	TITLE R040 Main PCB - 1 2 8
RMO CHECK team	Uses PCB-38629-903
MFG CHECK omfgh	
EDITED BY nly	SIZE DRAWING No. SCH-38631-903
LAST EDIT: 2011/03/31 13:37:15	REV H SHEET 17 of 19

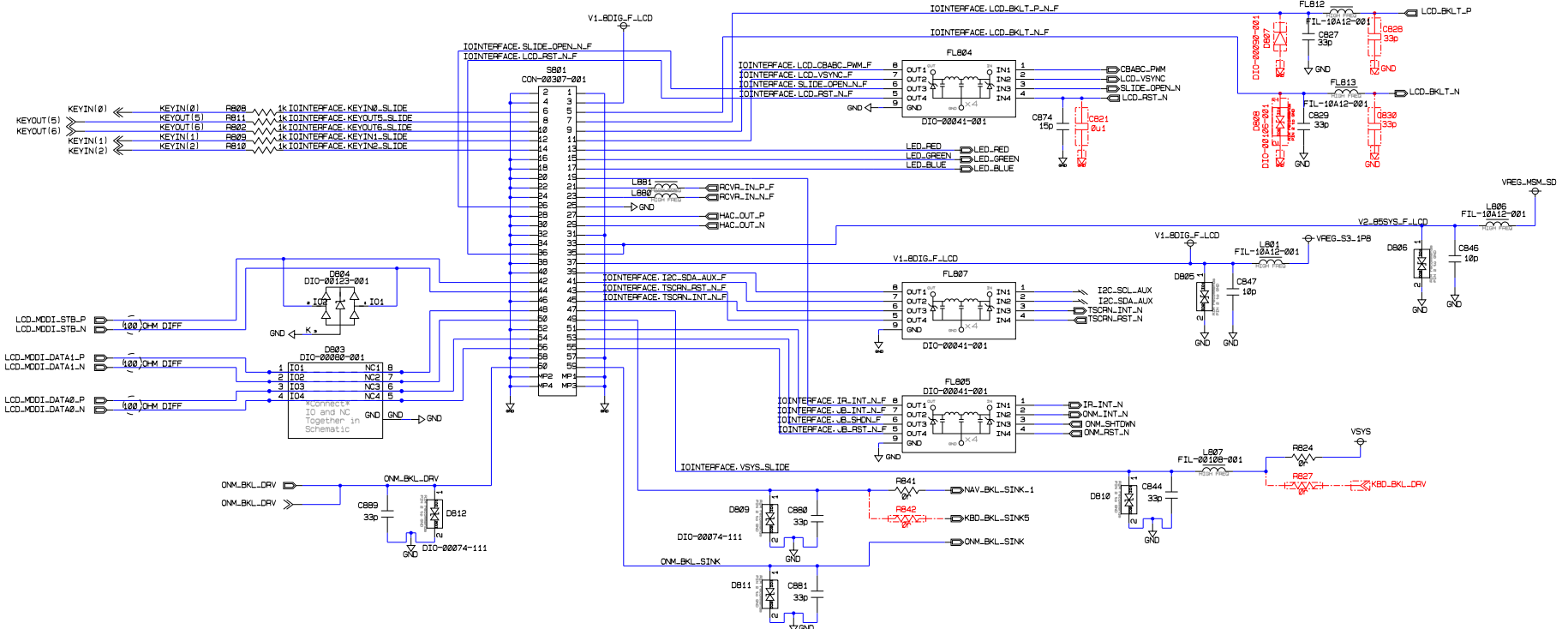
987 ISP cut 1.3 (TSMC fab)



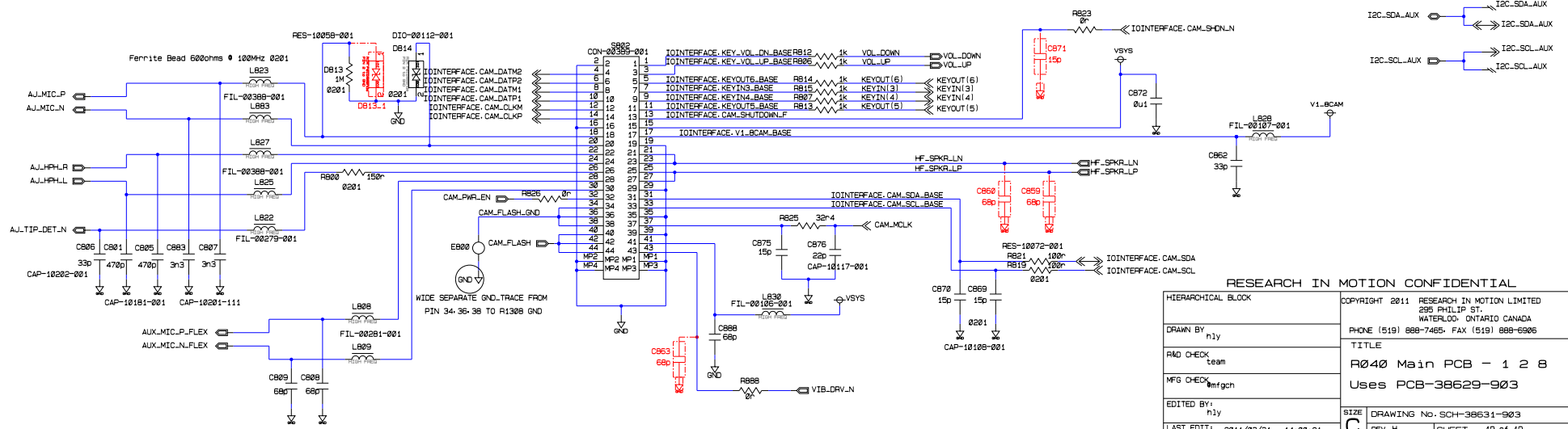
Zuken CR-5000 System Designer

LCD/TOUCH SLIDE FLEX INTERFACE CONNECTOR

SLIDE & BASE FLEX INTERFACE CONNECTORS



AUDIO, CAMERA & BASE FLEX CONNECTOR



RESEARCH IN MOTION CONFIDENTIAL

HIERARCHICAL BLOCK	COPYRIGHT 2011 RESEARCH IN MOTION LIMITED 295 PHILIP ST. WATERLOO, ONTARIO CANADA
DRAWN BY nly	PHONE (519) 888-7465 FAX (519) 888-6986
RWD CHECK team	TITLE R040 Main PCB - 1 2 8
WFS CHECK mfgcn	Uses PCB-38629-903
EDITED BY nly	SIZE C
LAST EDIT: 2011/03/31 14:00:21	DRAWING No. SCH-38631-903
	REV H SHEET 19 of 19