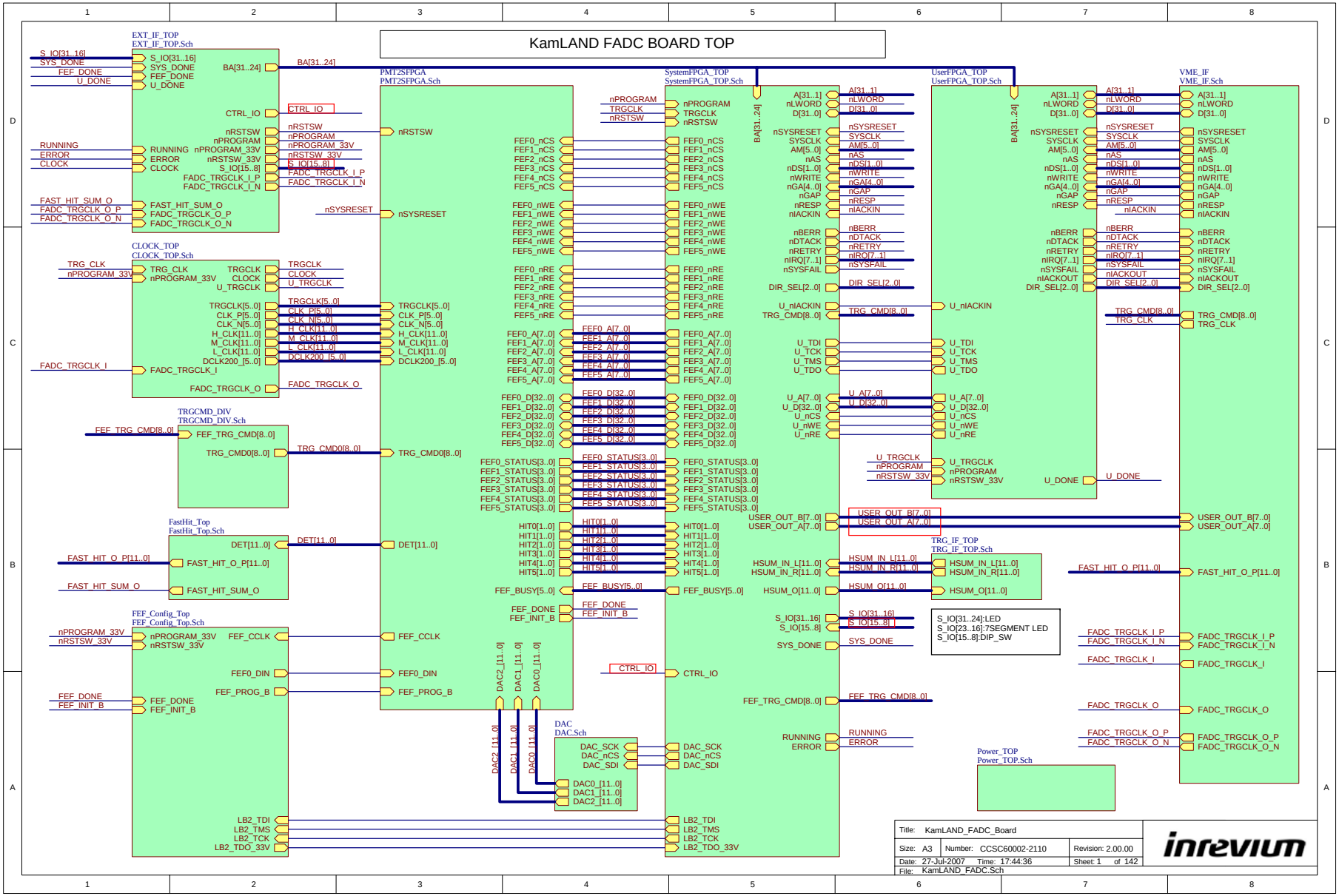
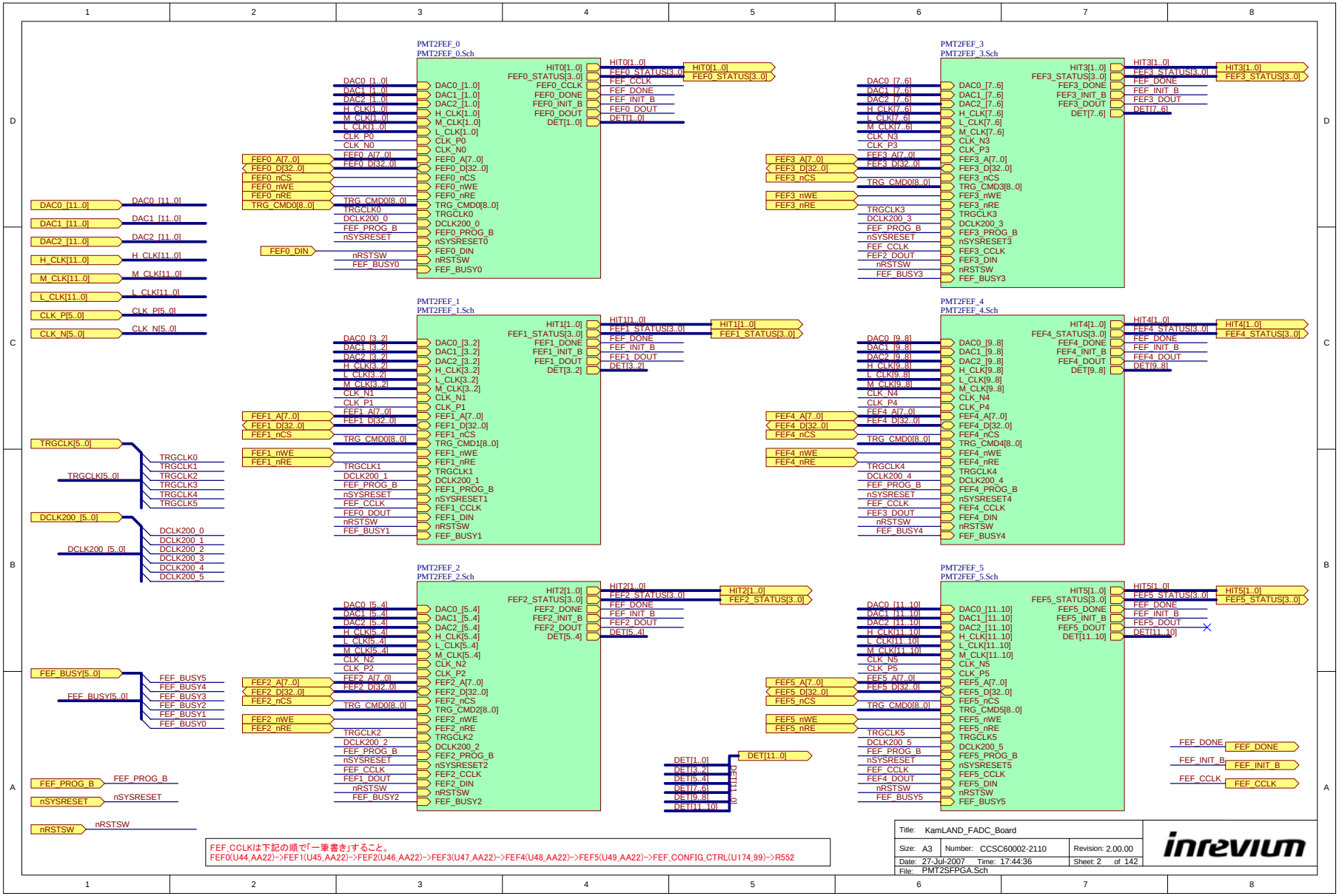
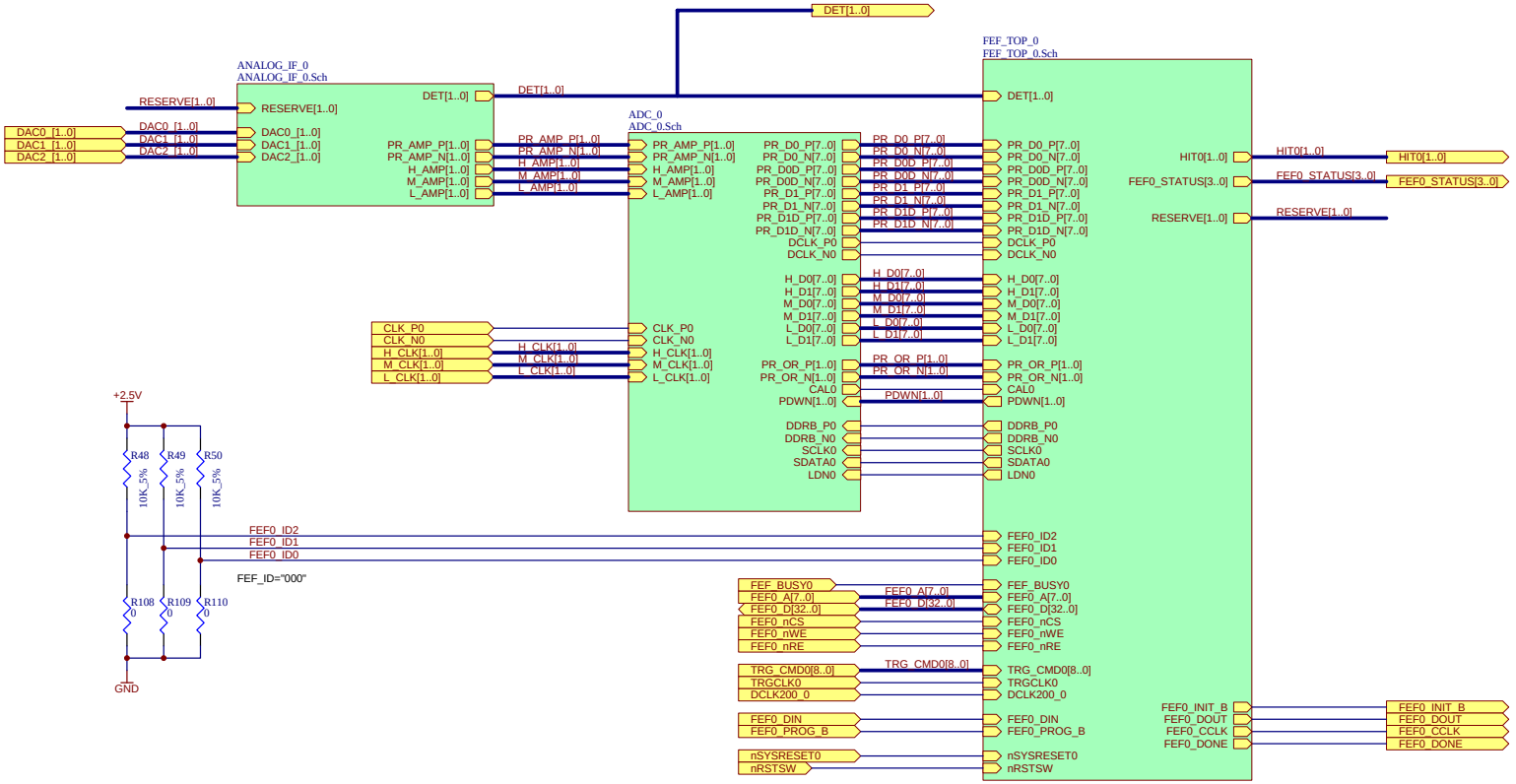

KamLAND FADC BOARD TOP
EXT_IF_TOP
EXT_IF_TOP.Sch
CLOCK_TOP
CLOCK_TOP.Sch
TRGCMD_DIV
TRGCMD_DIV.Sch
FastHit_Top
FastHit_Top.Sch
FEF_Config_Top
FEF_Config_Top.Sch
PMT2SFPGA
PMT2SFPGA.Sch
SystemFPGA_TOP
SystemFPGA_TOP.Sch
UserFPGA_TOP
UserFPGA_TOP.Sch
VME_IF
VME_IF.Sch
TRG_IF_TOP
TRG_IF_TOP.Sch
DAC
DAC.Sch
Power_TOP
Power_TOP.Sch
S_IO[31..24]:LED
S_IO[23..16]:7SEGMENT LED
S_IO[15..8]:DIP_SW
Title: KamLAND_FADC_Board
Size: A3
Number: CCSC60002-2110
Revision: 2.00.00
Date: 27-Jul-2007
Time: 17:44:36
Sheet: 1 of 142
File: KamLAND_FADC.Sch
inrevium



Title:	KamLAND_FADC_Board
Size: A3	Number: CCSC60002-2110
Revision: 2.00.00	
Date: 27-Jul-2007	Time: 17:44:36
Sheet: 2 of 142	
File: PMT2SFPGA.Sch	

inrevium

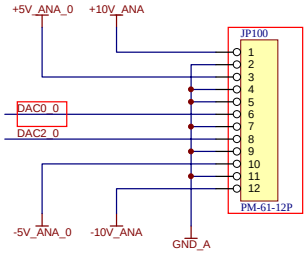
PMT[1..0] to FrontEnd FPGA 0
TOP

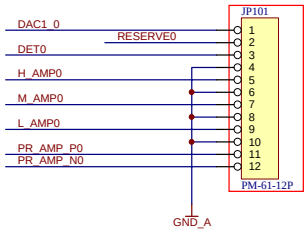


Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:44:37		Sheet: 3 of 142
File: PMT2FEF_0.Sch			

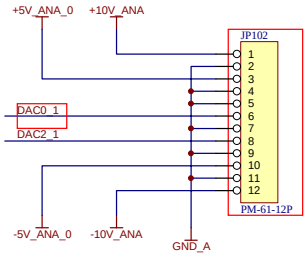
inrevium

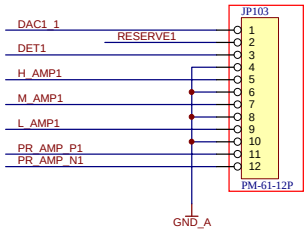
PMT[0]

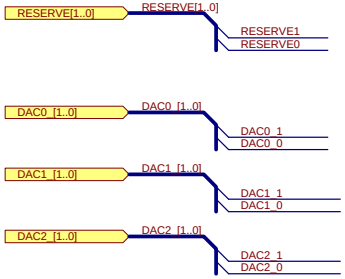


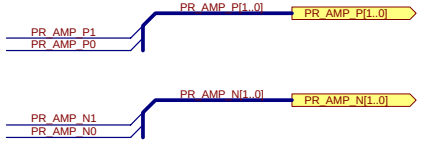


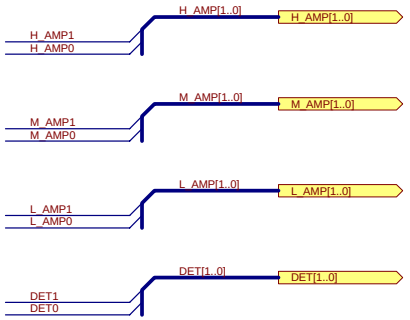
PMT[1]







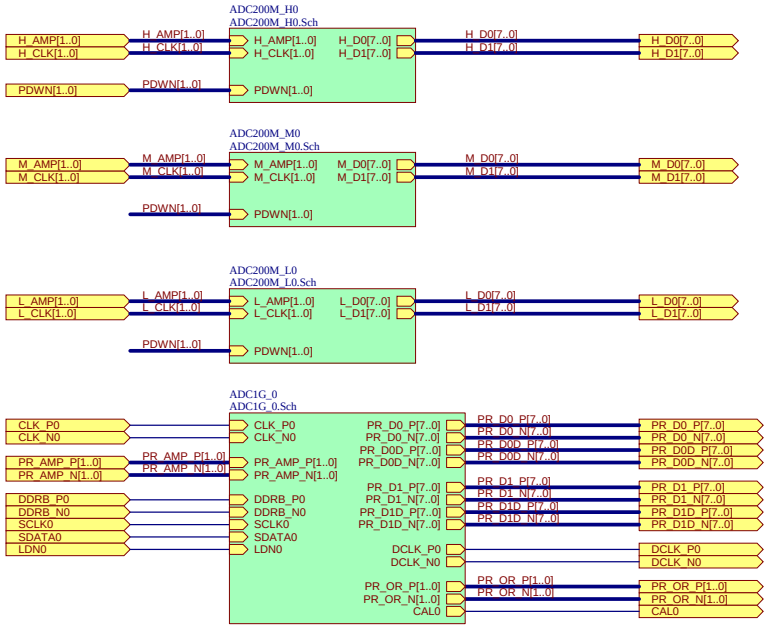




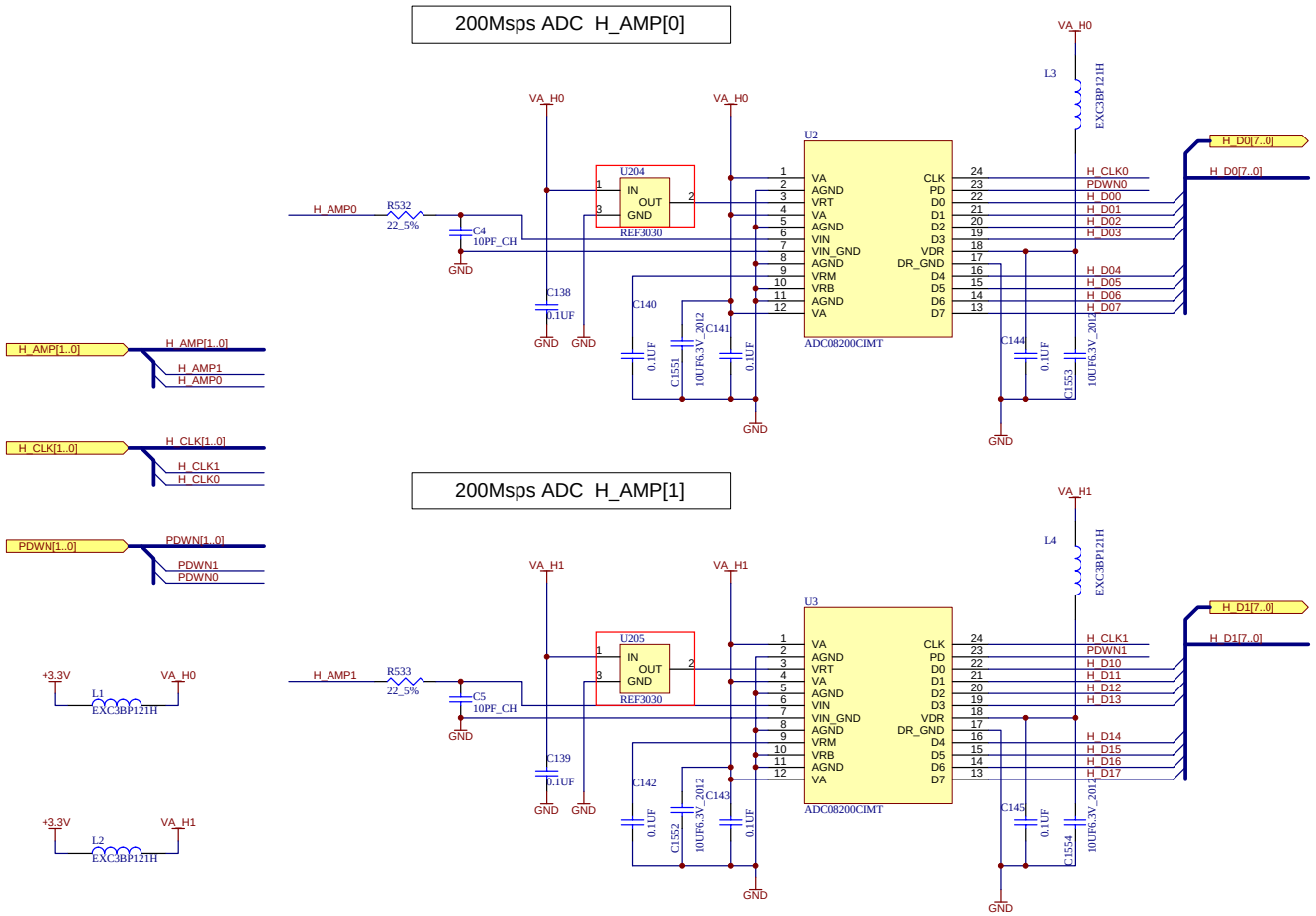
Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:44:37		Sheet: 4 of 142
File: ANALOG_IF_0.Sch			

inrevium

ADC[1..0]
TOP

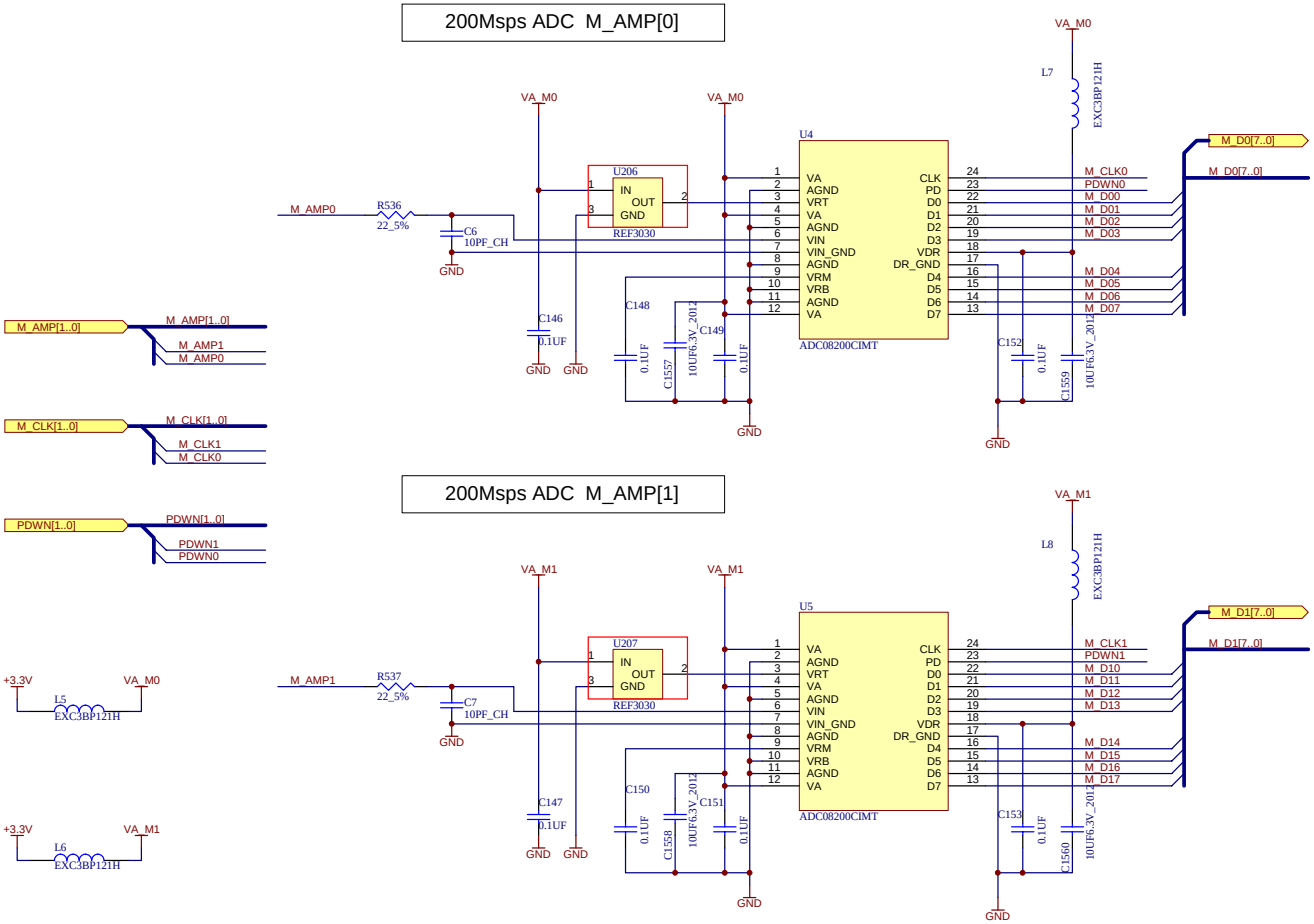


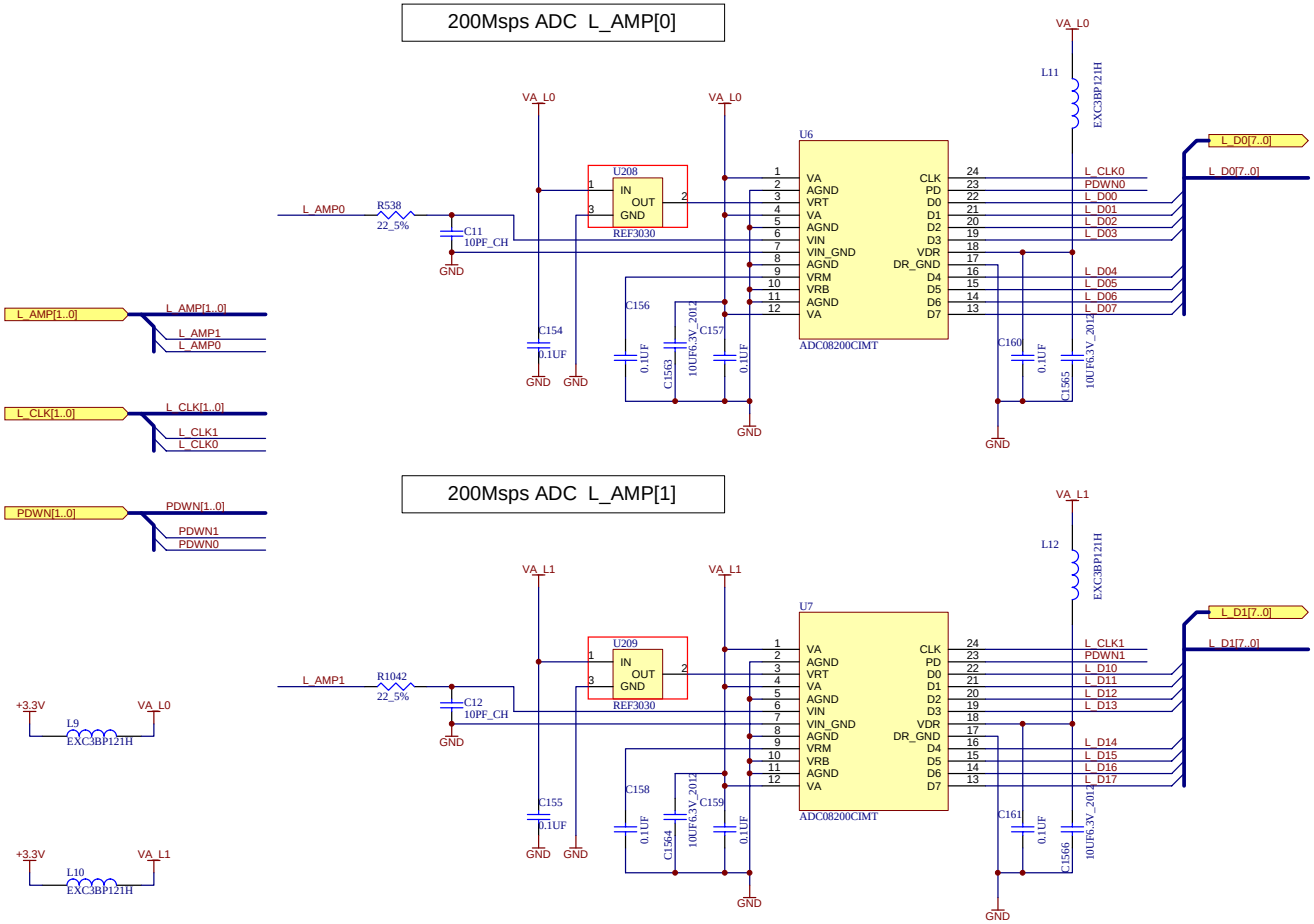
Title: KamLAND_FADC_Board			inrevium
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	
Date: 27-Jul-2007	Time: 17:44:38	Sheet: 5 of 142	
File: ADC_0.Sch			



Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:44:38		Sheet: 6 of 142
File: ADC200M_H0.Sch			

inrevium

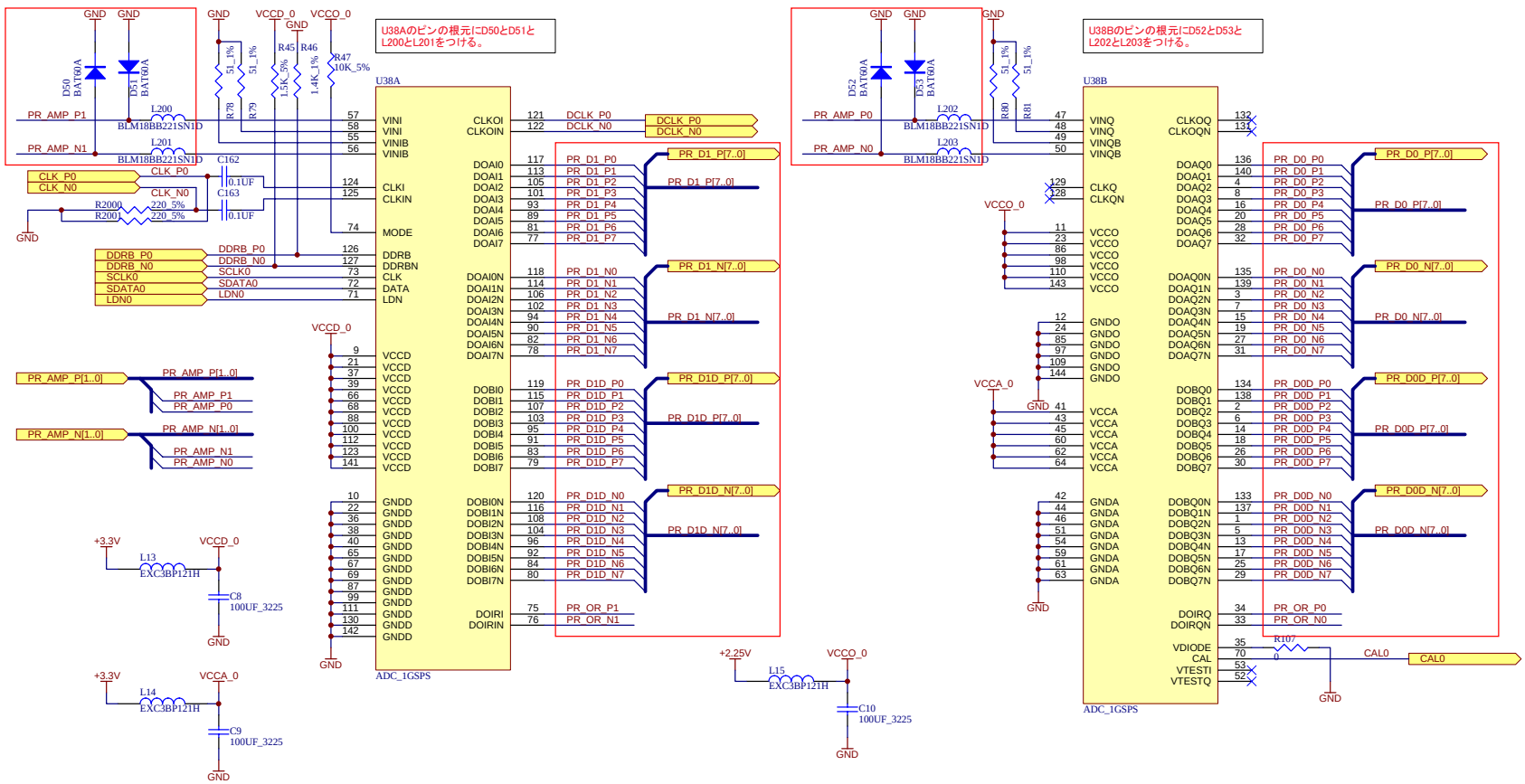

200Msps ADC M_AMP[0]
200Msps ADC M_AMP[1]
M_AMP[1..0]
M_AMP1
M_AMP0
M_CLK[1..0]
M_CLK1
M_CLK0
PDWN[1..0]
PDWN1
PDWN0
M_AMP0
M_AMP1
R536
R537
22_5%
C6
C7
10PF_CH
U206
U207
IN
OUT
GND
REF3030
C146
C147
0.1UF
C148
C149
C150
C151
C1557
C1558
10UF6.3V_2012
U4
U5
ADC08200CIMT
VA
AGND
VRT
VIN
VIN_GND
VRM
VRB
DR_GND
CLK
PD
D0
D1
D2
D3
VDR
D4
D5
D6
D7
M_CLK0
PDWN0
M_D00
M_D01
M_D02
M_D03
M_D04
M_D05
M_D06
M_D07
M_CLK1
PDWN1
M_D10
M_D11
M_D12
M_D13
M_D14
M_D15
M_D16
M_D17
M_D0[7..0]
M_D1[7..0]
C152
C153
C1559
C1560
L7
L8
EXC3BP121H
L5
L6
+3.3V
VA_M0
VA_M1
Title: KamLAND_FADC_Board
Size: A3
Number: CCSC60002-2110
Revision: 2.00.00
Date: 27-Jul-2007
Time: 17:44:39
Sheet: 7 of 142
File: ADC200M_M0.Sch
inrevium



Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:44:39		Sheet: 8 of 142
File: ADC200M_L0.Sch			

inrevium

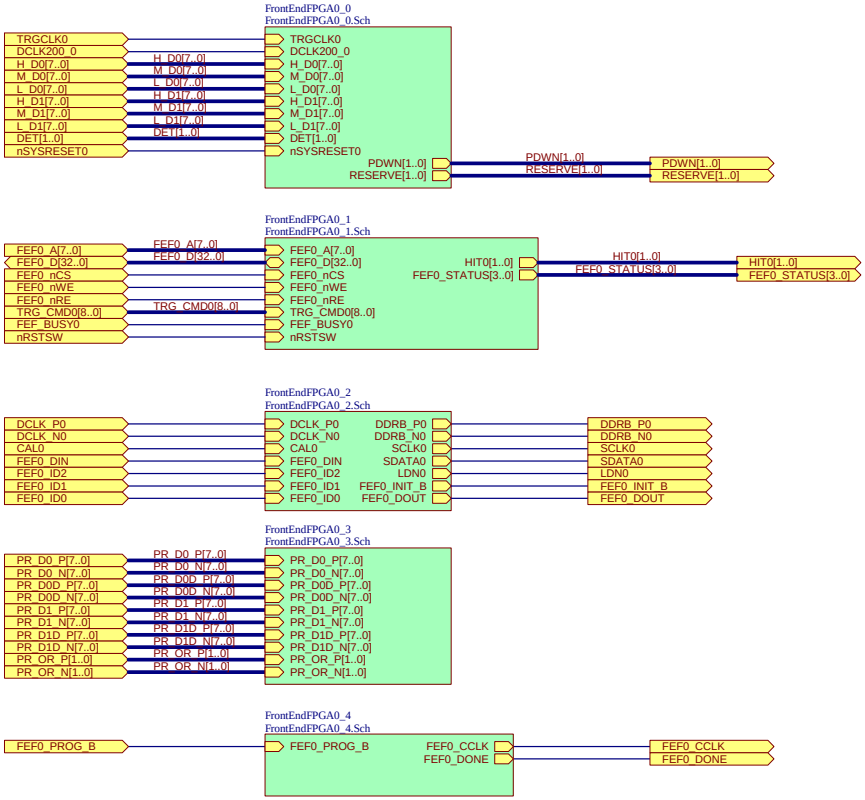
1Gsps ADC PR_AMP[1..0]



Title:	KamLAND_FADC_Board
Size: A3	Number: CCSC60002-2110
Revision: 2.00.00	
Date: 27-Jul-2007	Time: 17:44:40
Sheet: 9 of 142	
File: ADC1G_0.Sch	

inrevium

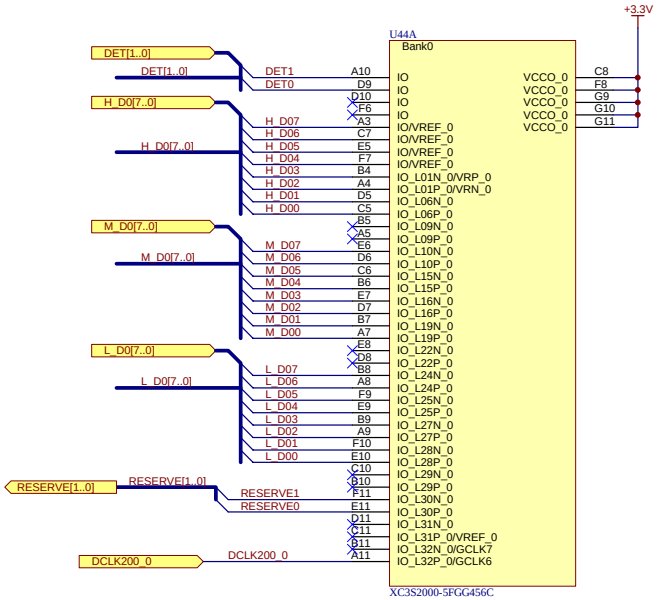
FrontEnd FPGA 0
TOP



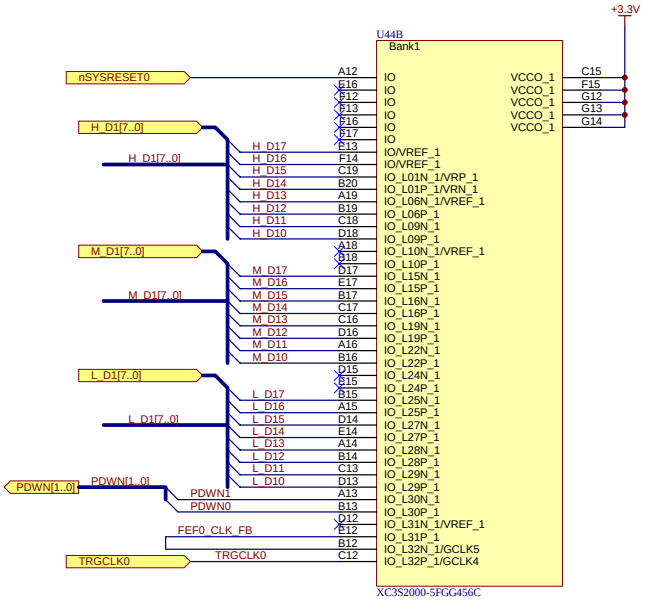
Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	
Date: 27-Jul-2007	Time: 17:44:40	Sheet: 10 of 142	
File: FEF_TOP_0.Sch			

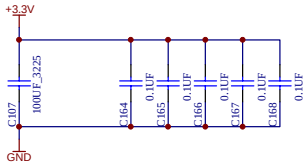
inrevium

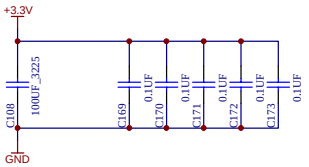
AMP I/F
200M ADC I/F
(LVCMOS33)



VME I/F
200M ADC I/F
(LVCMOS33)



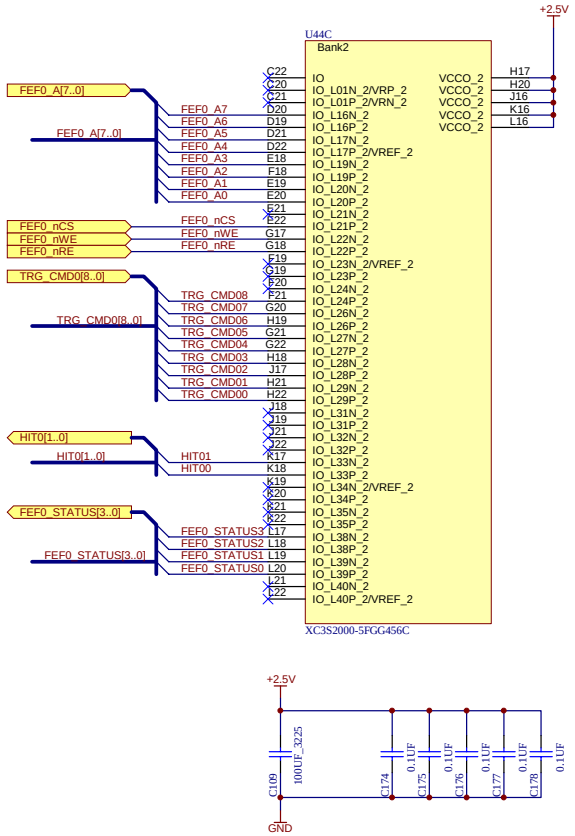




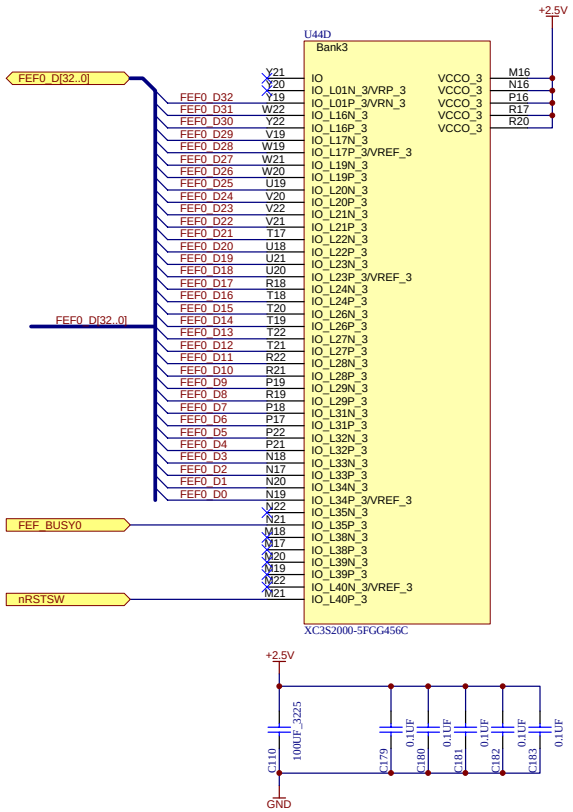
Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:44:41		Sheet: 11 of 142
File: FrontEndFPGA0_0.Sch			

inrevium

SYSTEM FPGA I/F
(LVCMOS25)



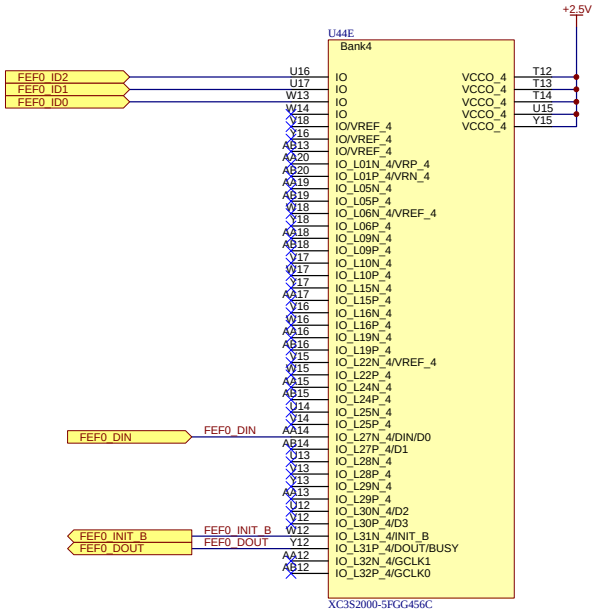
SYSTEM FPGA I/F
(LVCMOS25)

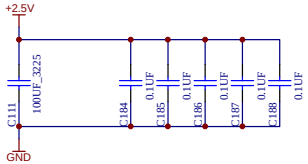


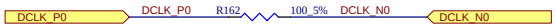
Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:44:41		Sheet: 12 of 142
File: FrontEndFPGA0_1.Sch			

inrevium

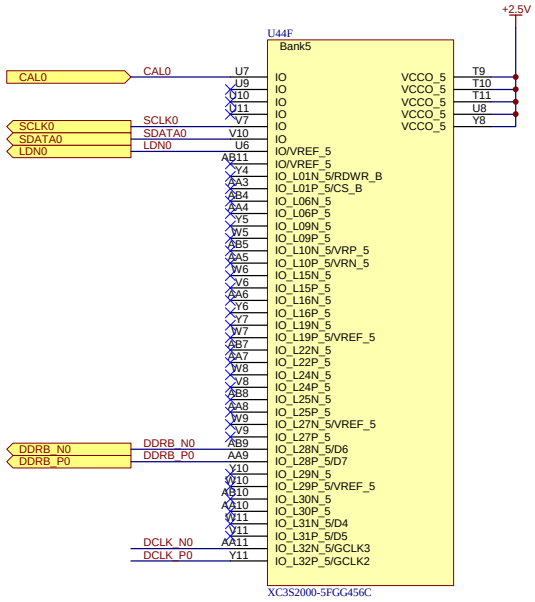
CONFIG CTRL I/F (LVCMOS25)

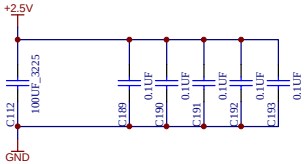




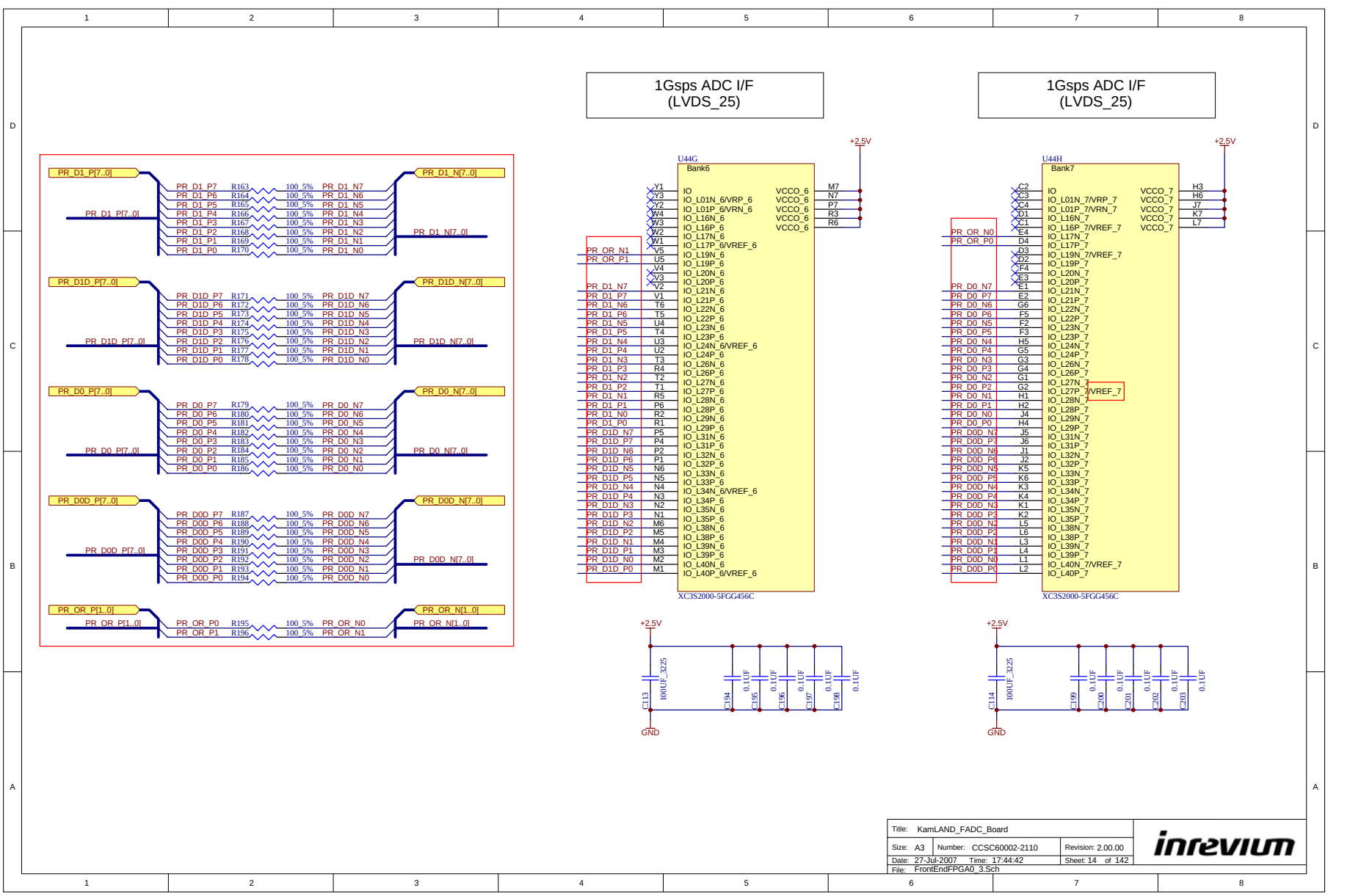


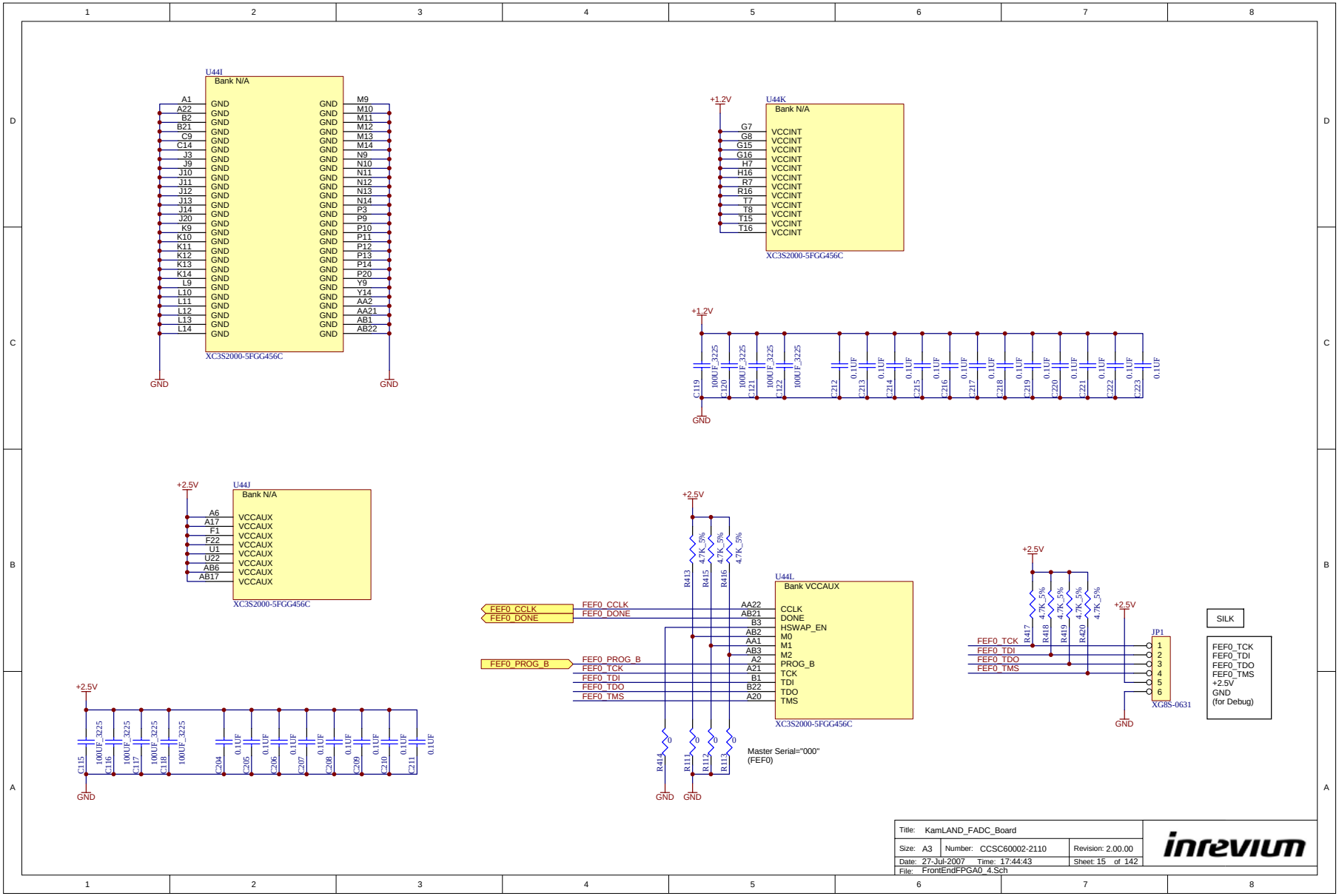
1Gsps ADC I/F (LVDS_25,LVCMOS25)



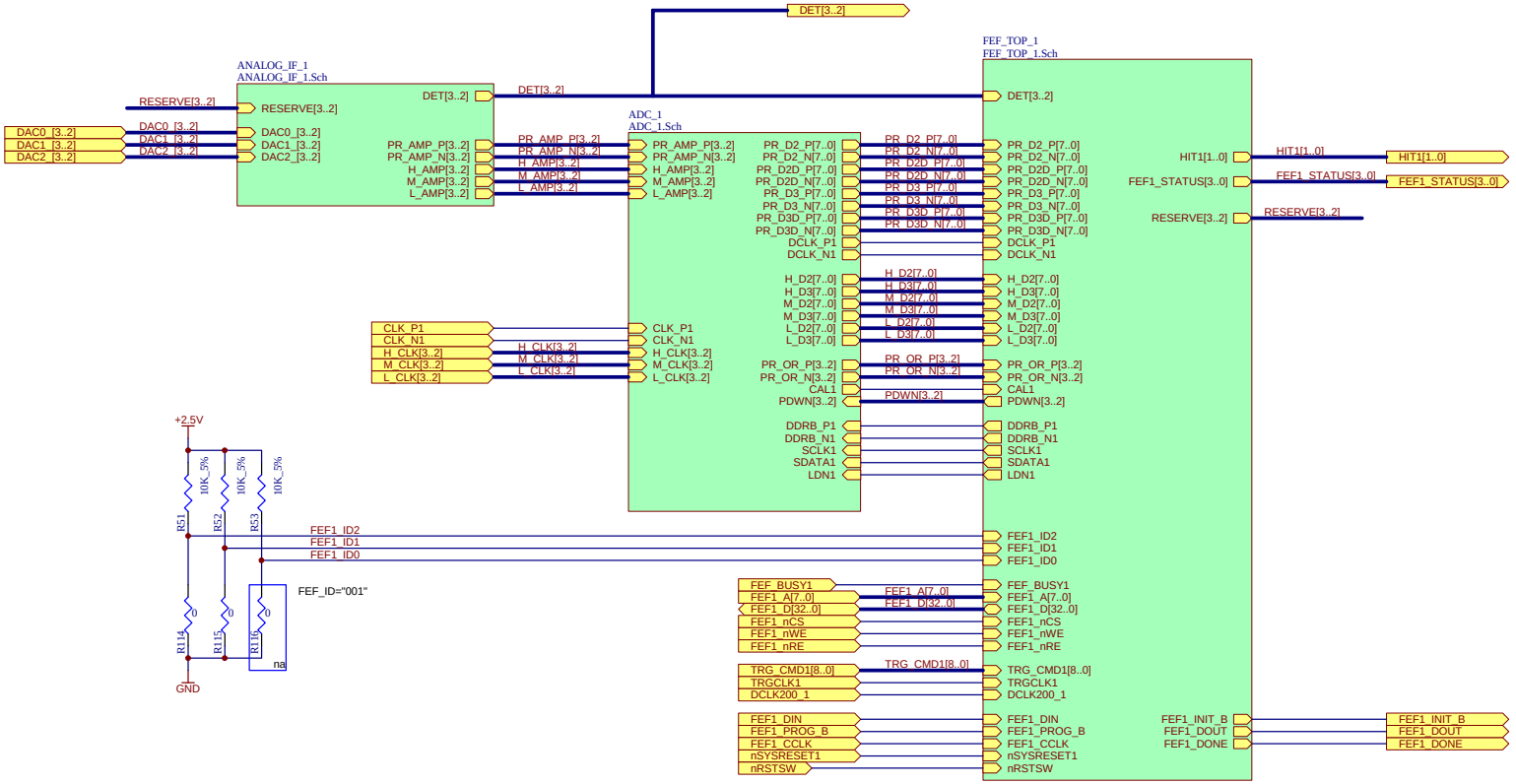


Title: KamLAND_FADC_Board			inrevium
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	
Date: 27-Jul-2007 Time: 17:44:42		Sheet: 13 of 142	
File: FrontEndFPGA0_2.Sch			


1Gsps ADC I/F
(LVDS_25)
1Gsps ADC I/F
(LVDS_25)
PR_D1_P[7..0]
PR_D1_N[7..0]
PR_D1D_P[7..0]
PR_D1D_N[7..0]
PR_D0_P[7..0]
PR_D0_N[7..0]
PR_D0D_P[7..0]
PR_D0D_N[7..0]
PR_OR_P[1..0]
PR_OR_N[1..0]
U44G
Bank6
U44H
Bank7
XC3S2000-5FGG456C
+2.5V
GND
100UF_3225
0.1UF
Title: KamLAND_FADC_Board
Size: A3
Number: CCSC60002-2110
Revision: 2.00.00
Date: 27-Jul-2007
Time: 17:44:42
Sheet: 14 of 142
File: FrontEndFPGA0_3.Sch
inrevium


U44I
Bank N/A
XC3S2000-5FGG456C
GND
U44K
Bank N/A
XC3S2000-5FGG456C
VCCINT
+1.2V
U44J
Bank N/A
XC3S2000-5FGG456C
VCCAUX
+2.5V
U44L
Bank VCCAUX
XC3S2000-5FGG456C
CCLK
DONE
HSWAP_EN
M0
M1
M2
PROG_B
TCK
TDI
TDO
TMS
FEF0_CCLK
FEF0_DONE
FEF0_PROG_B
FEF0_TCK
FEF0_TDI
FEF0_TDO
FEF0_TMS
Master Serial="000"
(FEF0)
JP1
XG8S-0631
SILK
FEF0_TCK
FEF0_TDI
FEF0_TDO
FEF0_TMS
+2.5V
GND
(for Debug)
Title: KamLAND_FADC_Board
Size: A3
Number: CCSC60002-2110
Revision: 2.00.00
Date: 27-Jul-2007
Time: 17:44:43
Sheet: 15 of 142
File: FrontEndFPGA0_4.Sch
inrevium

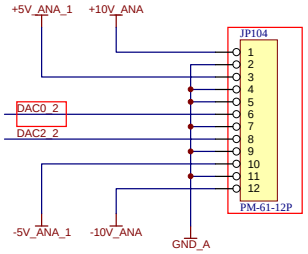
PMT[3..2] to FrontEnd FPGA 1
TOP

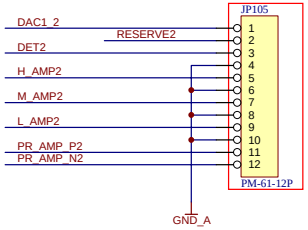


Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:44:43		Sheet: 16 of 142
File: PMT2FEF_1.Sch			

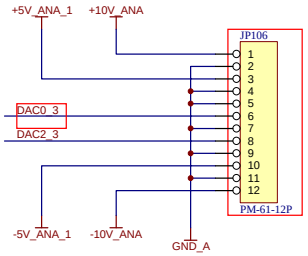
inrevium

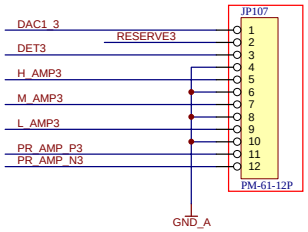
PMT[2]

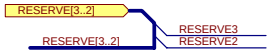


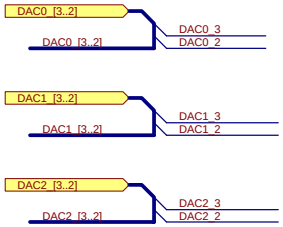


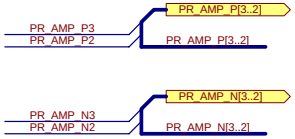
PMT[3]

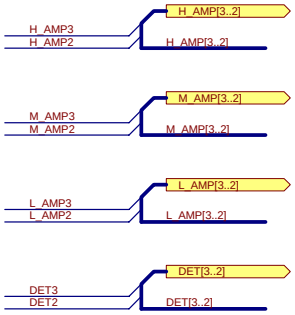






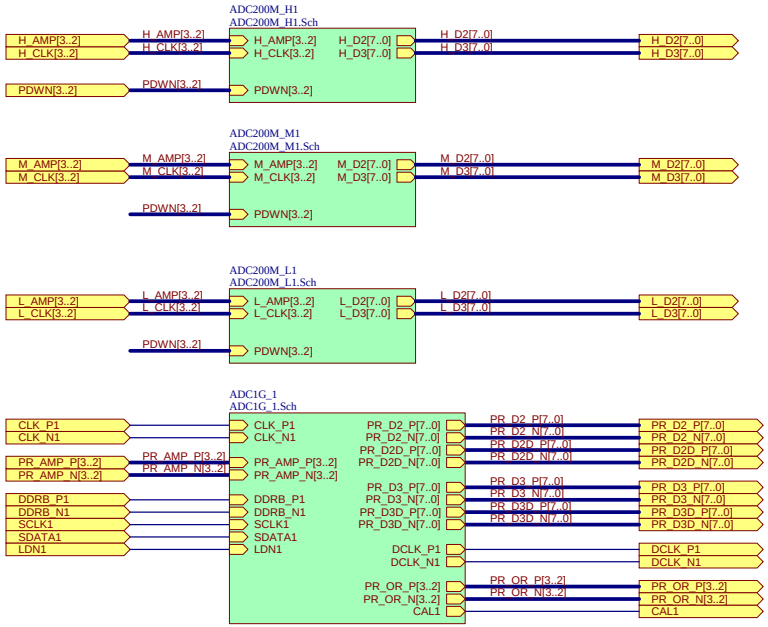




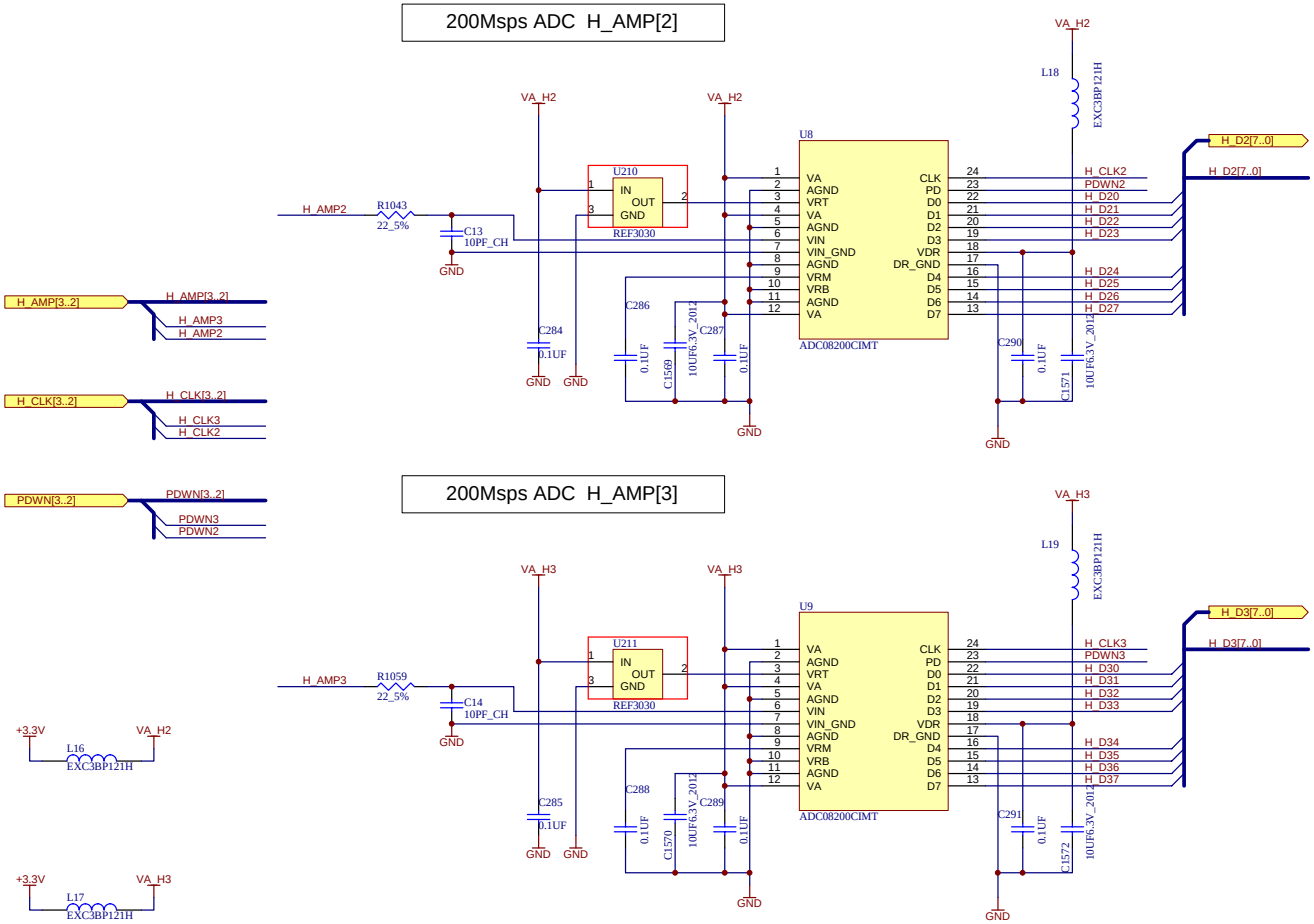


Title: KamLAND_FADC_Board			inrevium
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	
Date: 27-Jul-2007 Time: 17:44:50		Sheet: 17 of 142	
File: ANALOG_IF_1.Sch			

ADC[3..2]
TOP

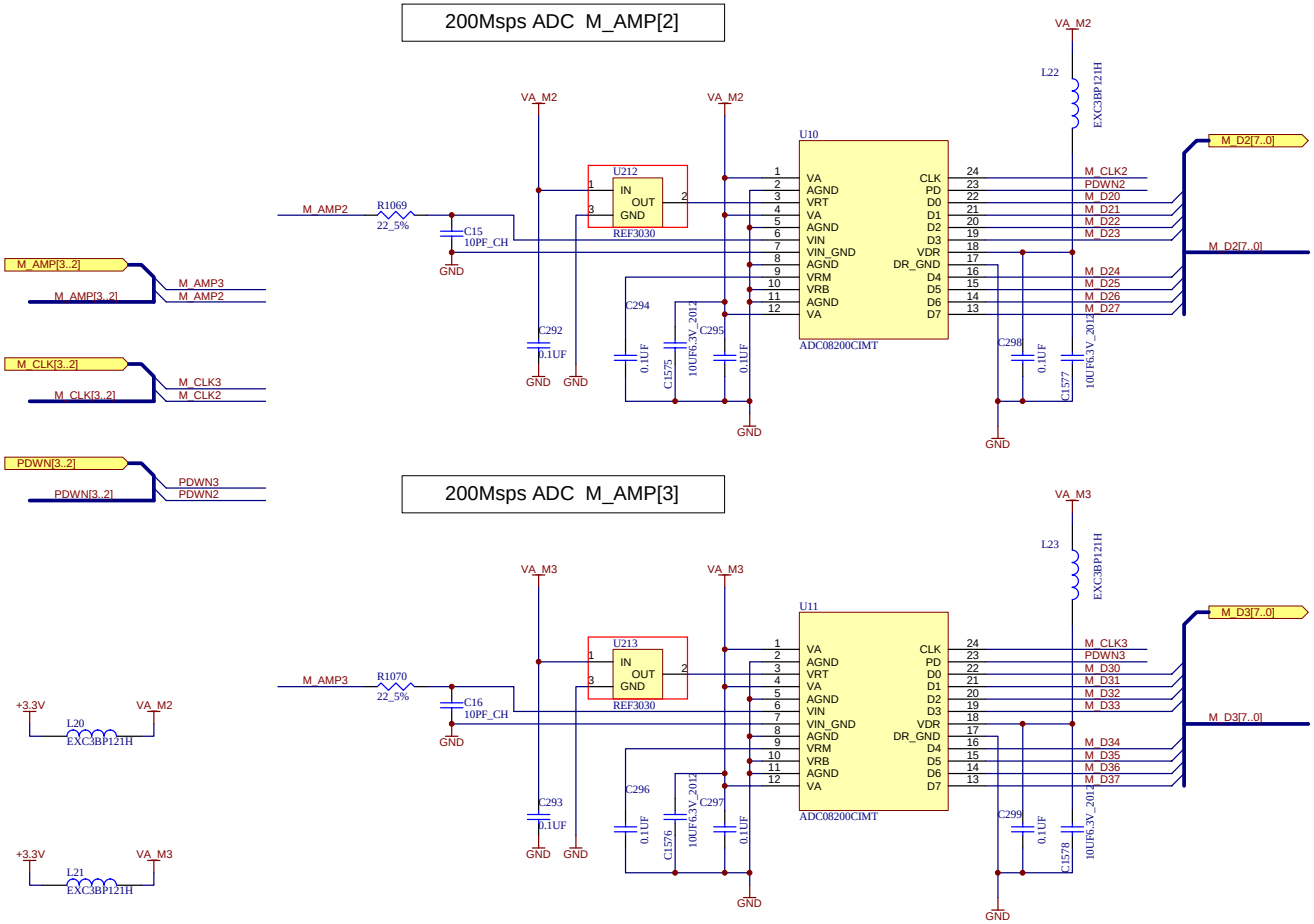


Title: KamLAND_FADC_Board			inrevium
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	
Date: 27-Jul-2007	Time: 17:44:47	Sheet: 18 of 142	
File: ADC_1.Sch			



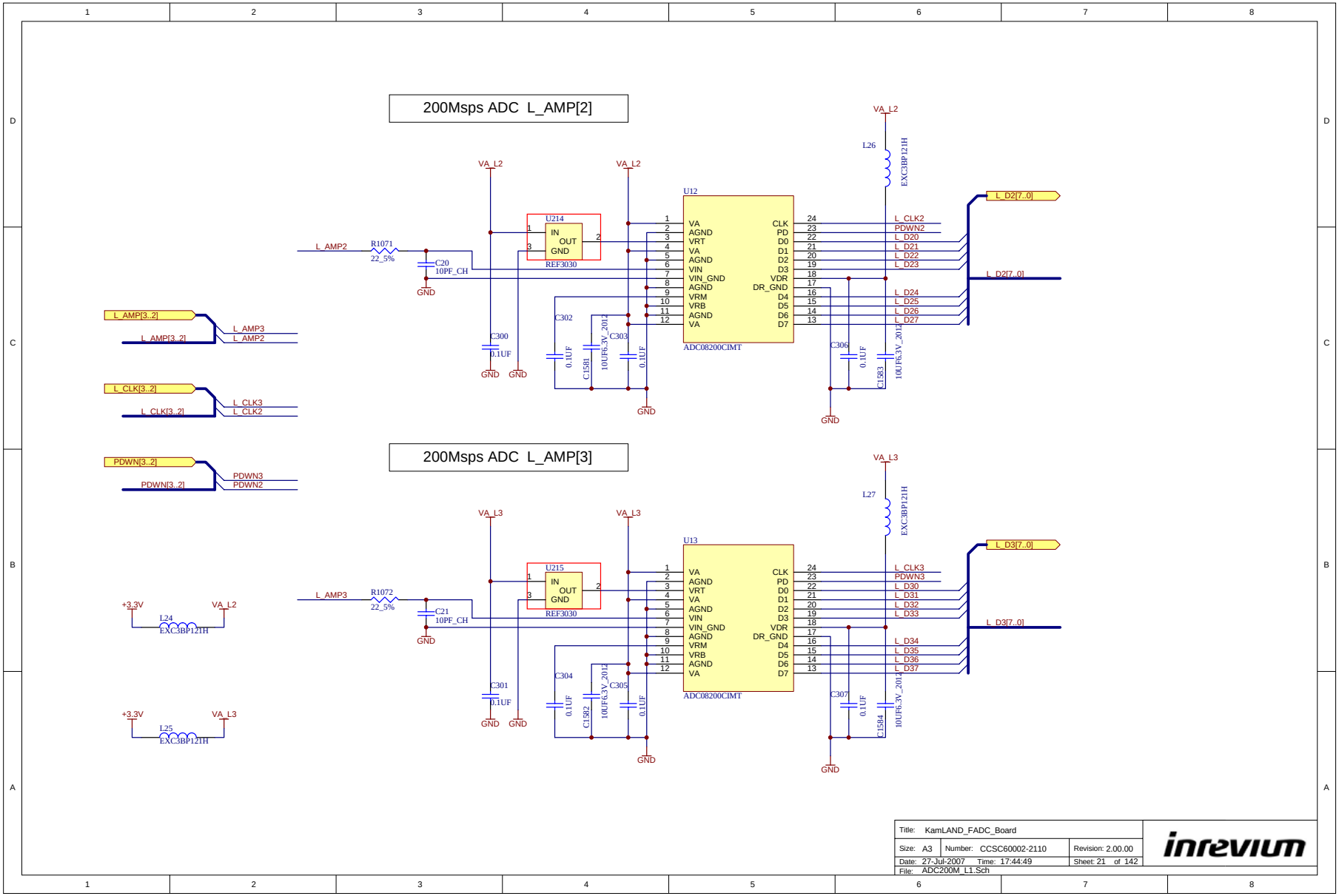
Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:44:47		Sheet: 19 of 142
File: ADC200M_H1.Sch			

inrevium

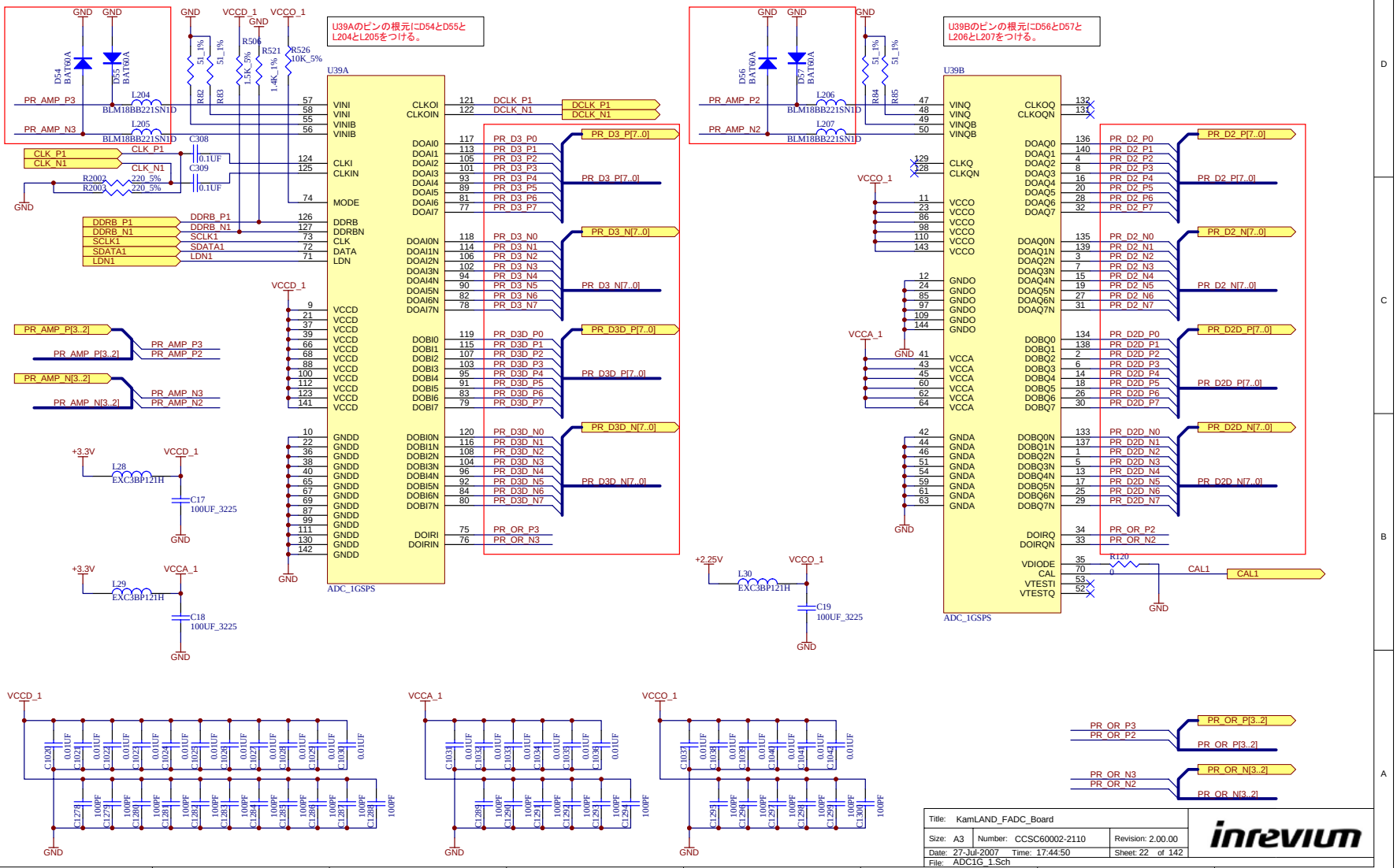


Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:44:48		Sheet: 20 of 142
File: ADC200M_M1.Sch			

inrevium


200Msps ADC L_AMP[2]
200Msps ADC L_AMP[3]
L_AMP[3..2]
L_CLK[3..2]
PDWN[3..2]
L_AMP2
L_AMP3
L_CLK2
L_CLK3
PDWN2
PDWN3
R1071
R1072
22_5%
C20
C21
10PF_CH
U214
U215
REF3030
IN
OUT
GND
C300
C301
C302
C303
C304
C305
C306
C307
0.1UF
10UF6.3V_2012
C1581
C1582
C1583
C1584
U12
U13
ADC08200CIMT
VA
AGND
VRT
VRB
VRM
VIN
VIN_GND
DR_GND
CLK
PD
D0
D1
D2
D3
D4
D5
D6
D7
VA_L2
VA_L3
L26
L27
EXC3BP121H
L_D2[7..0]
L_D3[7..0]
L_D20
L_D21
L_D22
L_D23
L_D24
L_D25
L_D26
L_D27
L_D30
L_D31
L_D32
L_D33
L_D34
L_D35
L_D36
L_D37
+3.3V
L24
L25
Title: KamLAND_FADC_Board
Size: A3
Number: CCSC60002-2110
Revision: 2.00.00
Date: 27-Jul-2007
Time: 17:44:49
Sheet: 21 of 142
File: ADC200M_L1.Sch
inrevium

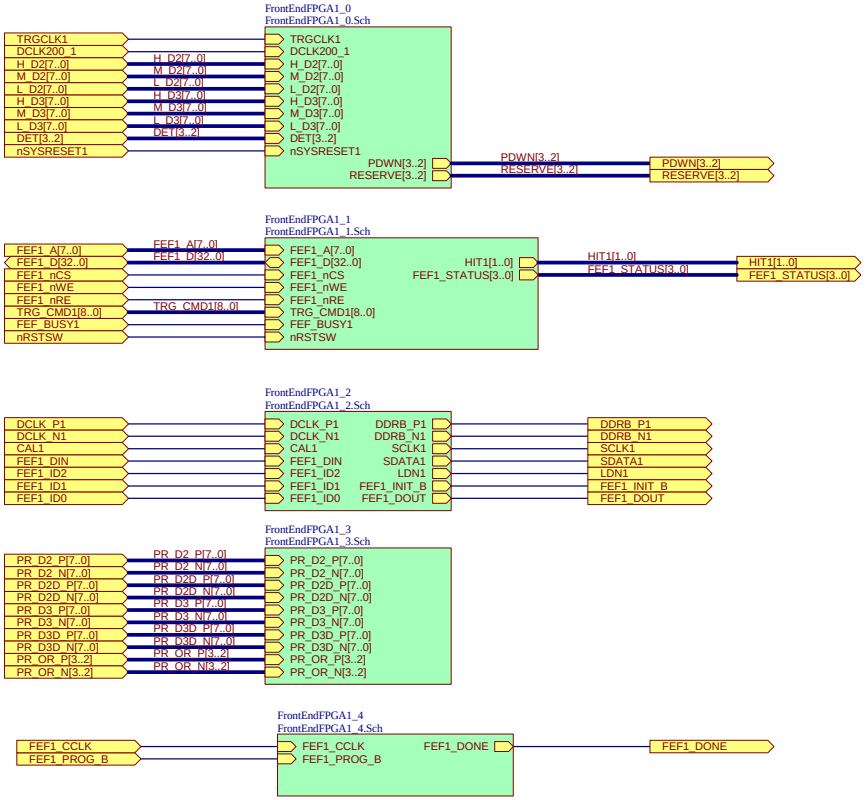
1Gsps ADC PR_AMP[3..2]



Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	
Date: 27-Jul-2007	Time: 17:44:50	Sheet: 22 of 142	
File: ADC1G_1.Sch			

inrevium

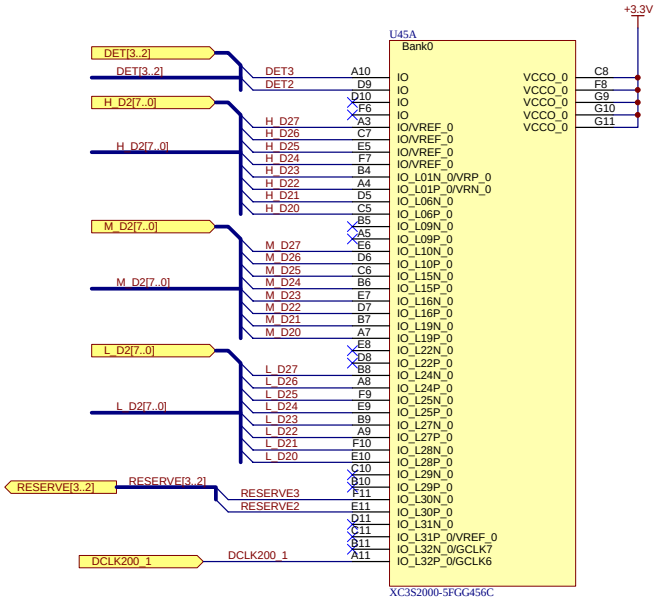
FrontEnd FPGA 1
TOP

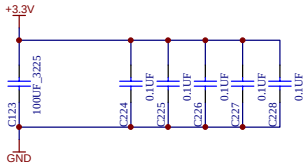


Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	
Date: 27-Jul-2007	Time: 17:44:44	Sheet: 23 of 142	
File: FEF_TOP_1.Sch			

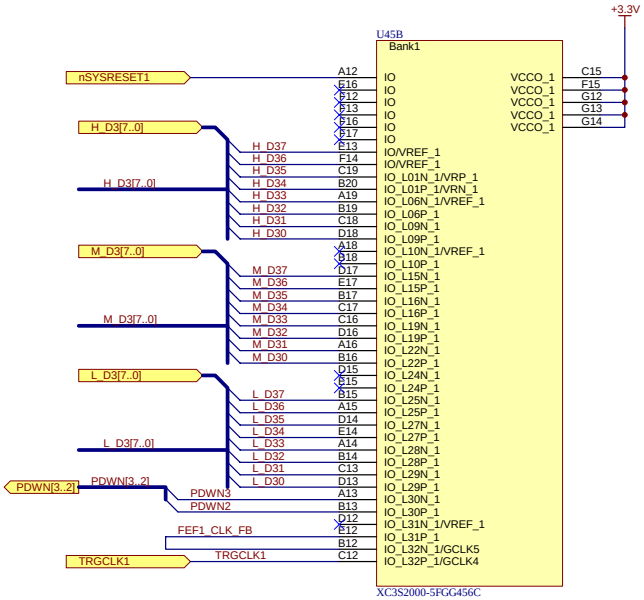
inrevium

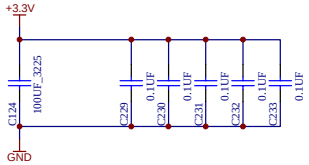
AMP I/F
200M ADC I/F
(LVCMOS33)





VME I/F
200M ADC I/F
(LVCMOS33)

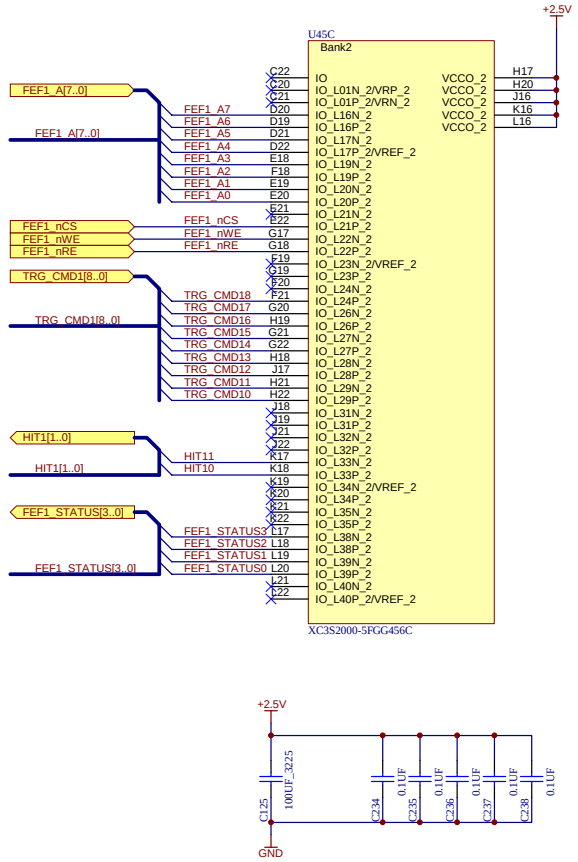




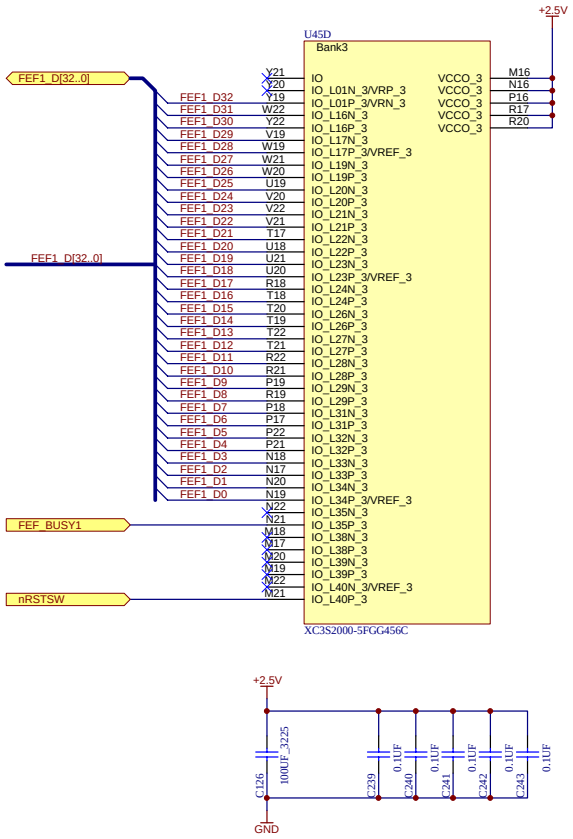
Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:44:44		Sheet: 24 of 142
File: FrontEndFPGA1_0.Sch			

inrevium

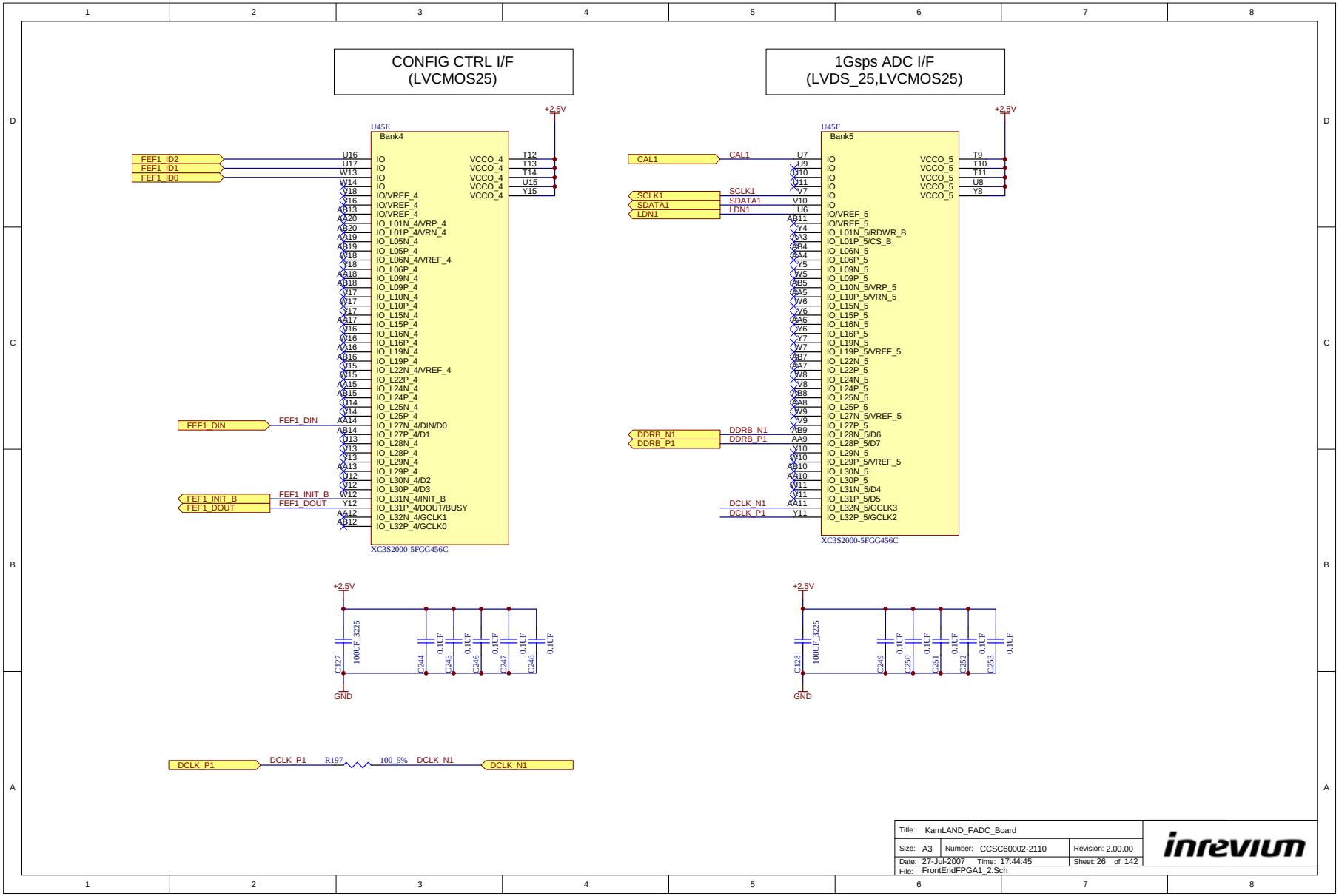
SYSTEM FPGA I/F
(LVCMOS25)

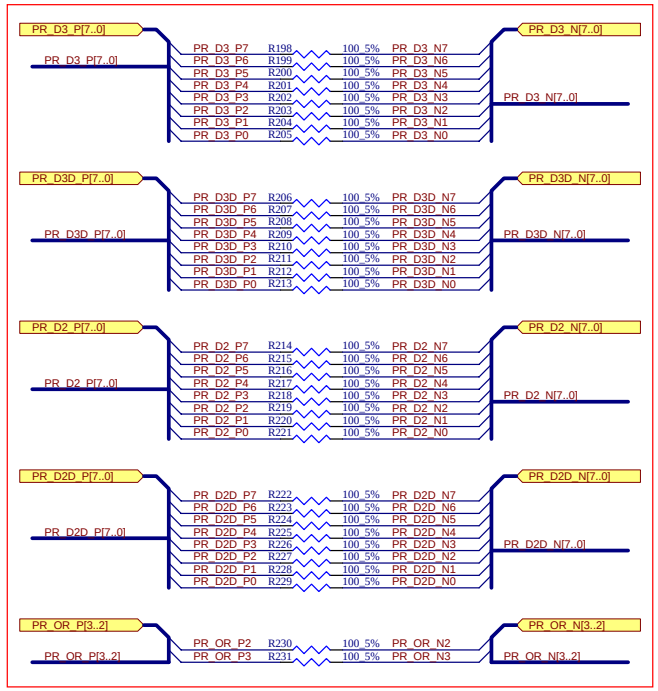


SYSTEM FPGA I/F
(LVCMOS25)

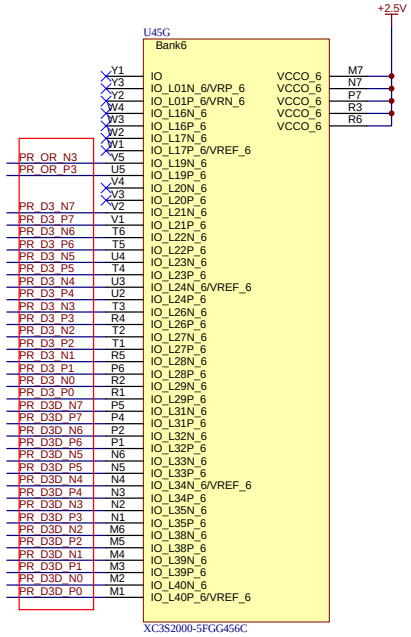


Title: KamLAND_FADC_Board			inrevium
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	
Date: 27-Jul-2007 Time: 17:44:45		Sheet: 25 of 142	
File: FrontEndFPGA1_1.Sch			

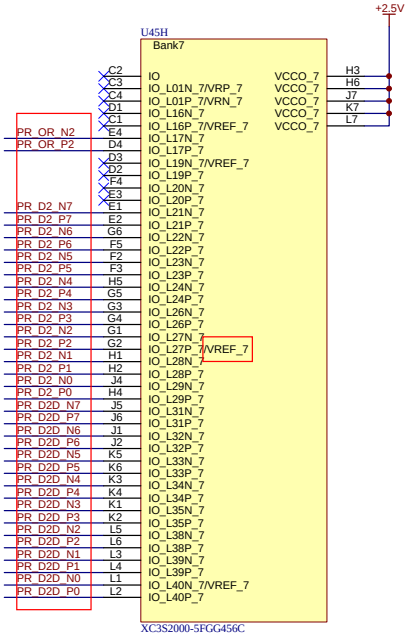

CONFIG CTRL I/F
(LVCMOS25)
1Gsps ADC I/F
(LVDS_25,LVCMOS25)
U45E
Bank4
XC3S2000-5FGG456C
U45F
Bank5
XC3S2000-5FGG456C
+2.5V
GND
FEF1_ID2
FEF1_ID1
FEF1_ID0
FEF1_DIN
FEF1_INIT_B
FEF1_DOUT
CAL1
SCLK1
SDATA1
LDN1
DDRB_N1
DDRB_P1
DCLK_N1
DCLK_P1
C127
100UF_3225
C244
C245
C246
C247
C248
C128
C249
C250
C251
C252
C253
0.1UF
R197
100_5%
Title: KamLAND_FADC_Board
Size: A3
Number: CCSC60002-2110
Revision: 2.00.00
Date: 27-Jul-2007
Time: 17:44:45
Sheet: 26 of 142
File: FrontEndFPGA1_2.Sch
inrevium



1Gsps ADC I/F
(LVDS_25)

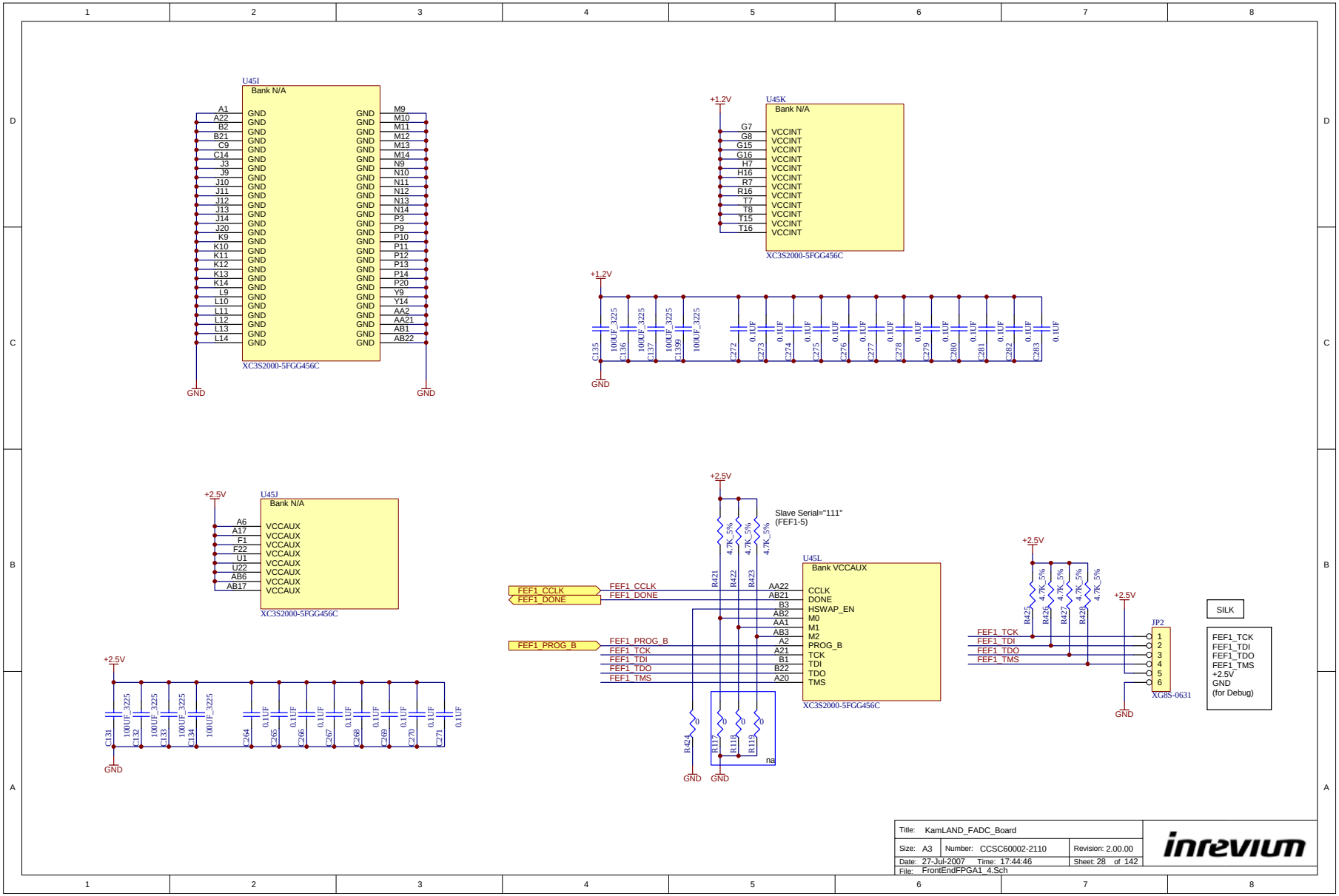


1Gsps ADC I/F
(LVDS_25)

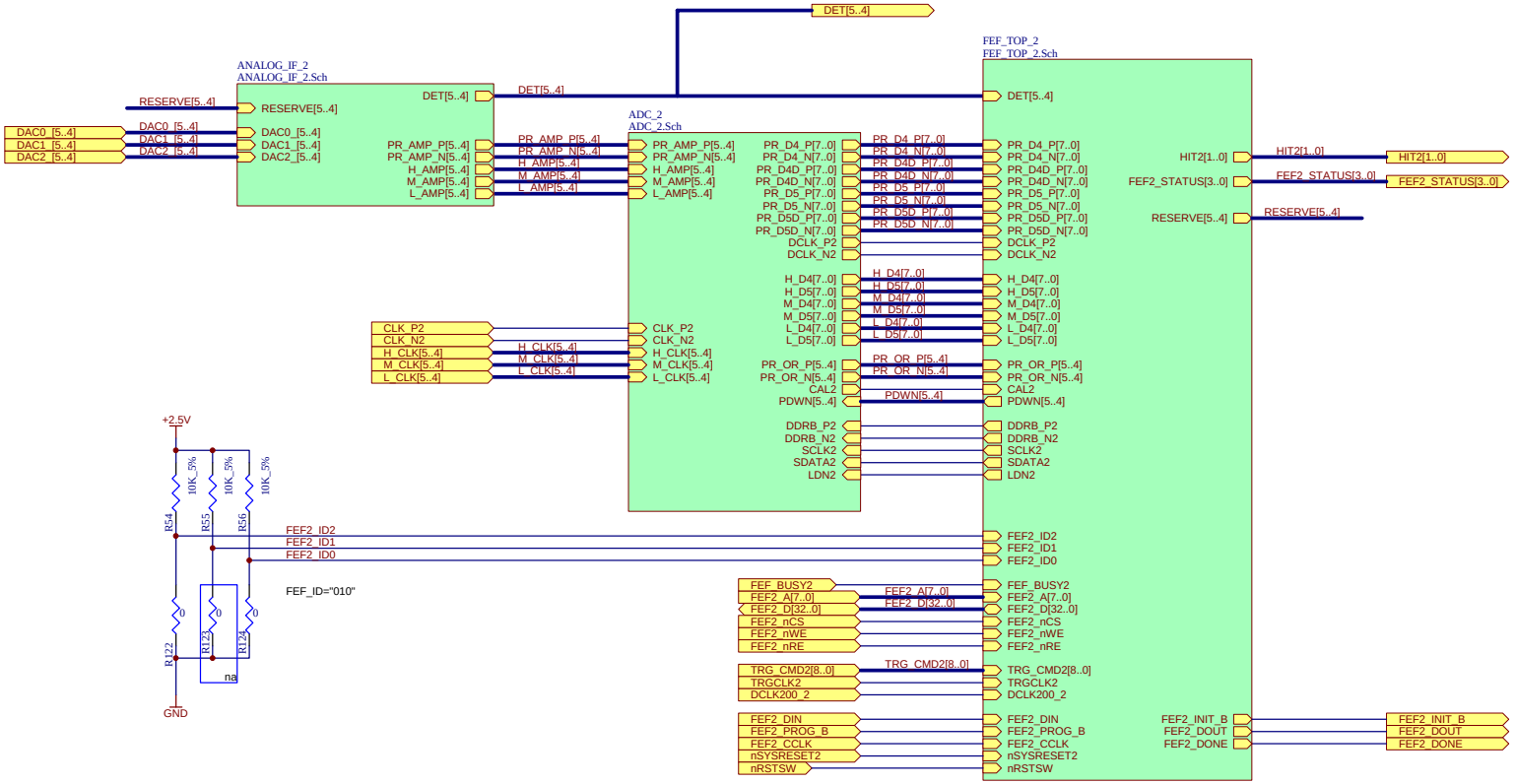


Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:44:46		Sheet: 27 of 142
File: FrontEndFPGA1_3.Sch			

inrevium


U45I
Bank N/A
XC3S2000-5FGG456C
GND
U45K
Bank N/A
XC3S2000-5FGG456C
+1.2V
U45J
Bank N/A
XC3S2000-5FGG456C
+2.5V
U45L
Bank VCCAUX
XC3S2000-5FGG456C
Slave Serial="111"
(FEF1-5)
FEF1_CCLK
FEF1_DONE
FEF1_PROG_B
FEF1_TCK
FEF1_TDI
FEF1_TDO
FEF1_TMS
JP2
XG8S-0631
SILK
FEF1_TCK
FEF1_TDI
FEF1_TDO
FEF1_TMS
+2.5V
GND
(for Debug)
Title: KamLAND_FADC_Board
Size: A3
Number: CCSC60002-2110
Revision: 2.00.00
Date: 27-Jul-2007
Time: 17:44:46
Sheet: 28 of 142
File: FrontEndFPGA1_4.Sch
inrevium

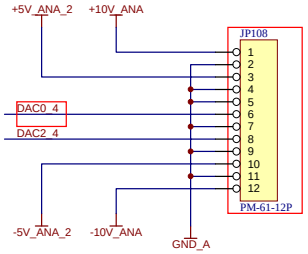
PMT[5..4] to FrontEnd FPGA 2
TOP

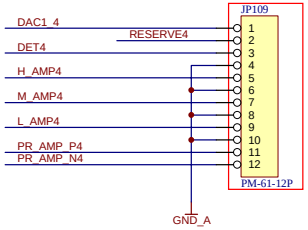


Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:44:51		Sheet: 29 of 142
File: PMT2FEF_2.Sch			

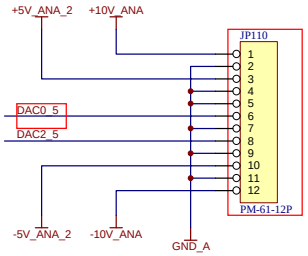
inrevium

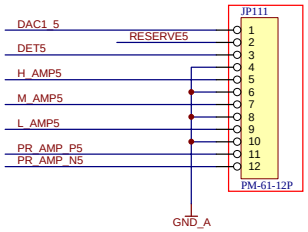
PMT[4]

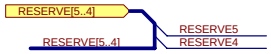


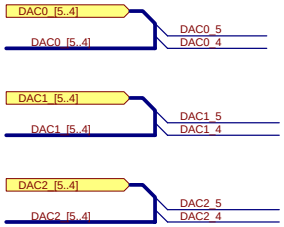


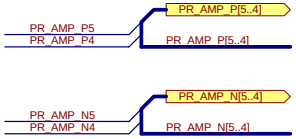
PMT[5]

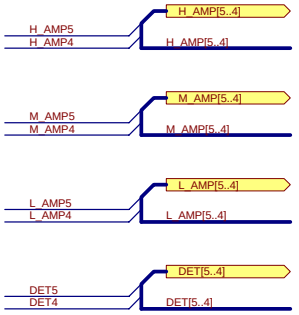






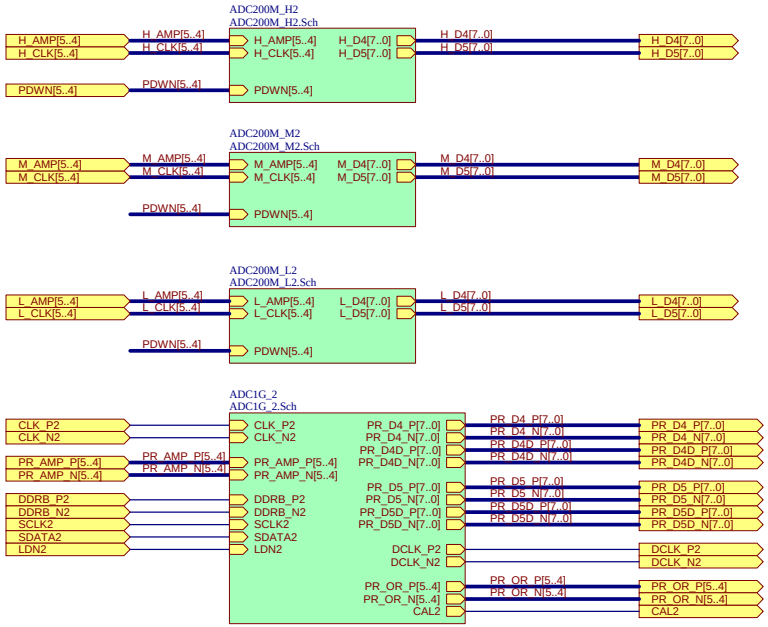




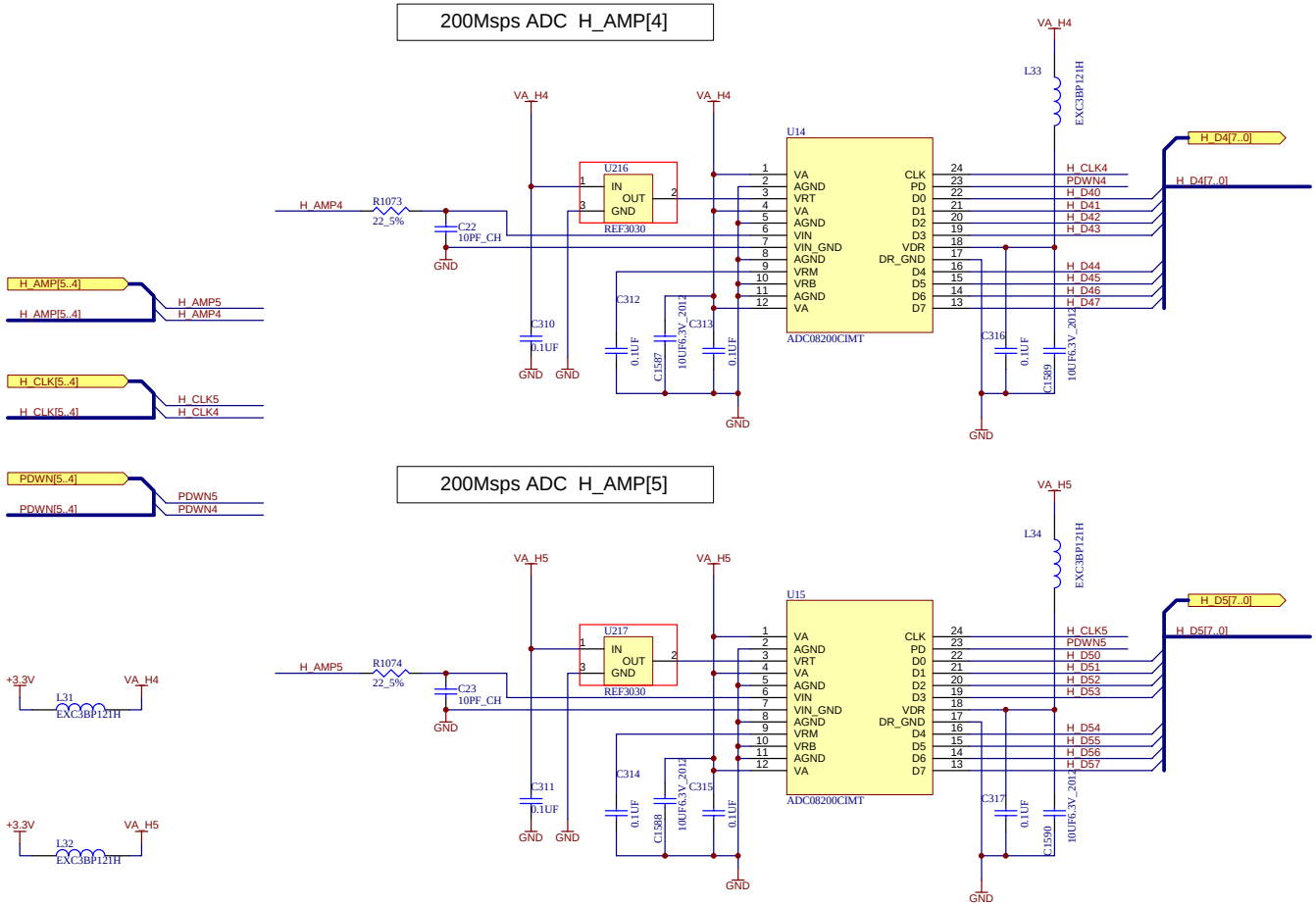


Title: KamLAND_FADC_Board			inrevium
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	
Date: 27-Jul-2007 Time: 17:44:51		Sheet: 30 of 142	
File: ANALOG_IF_2.Sch			

ADC[5..4]
TOP

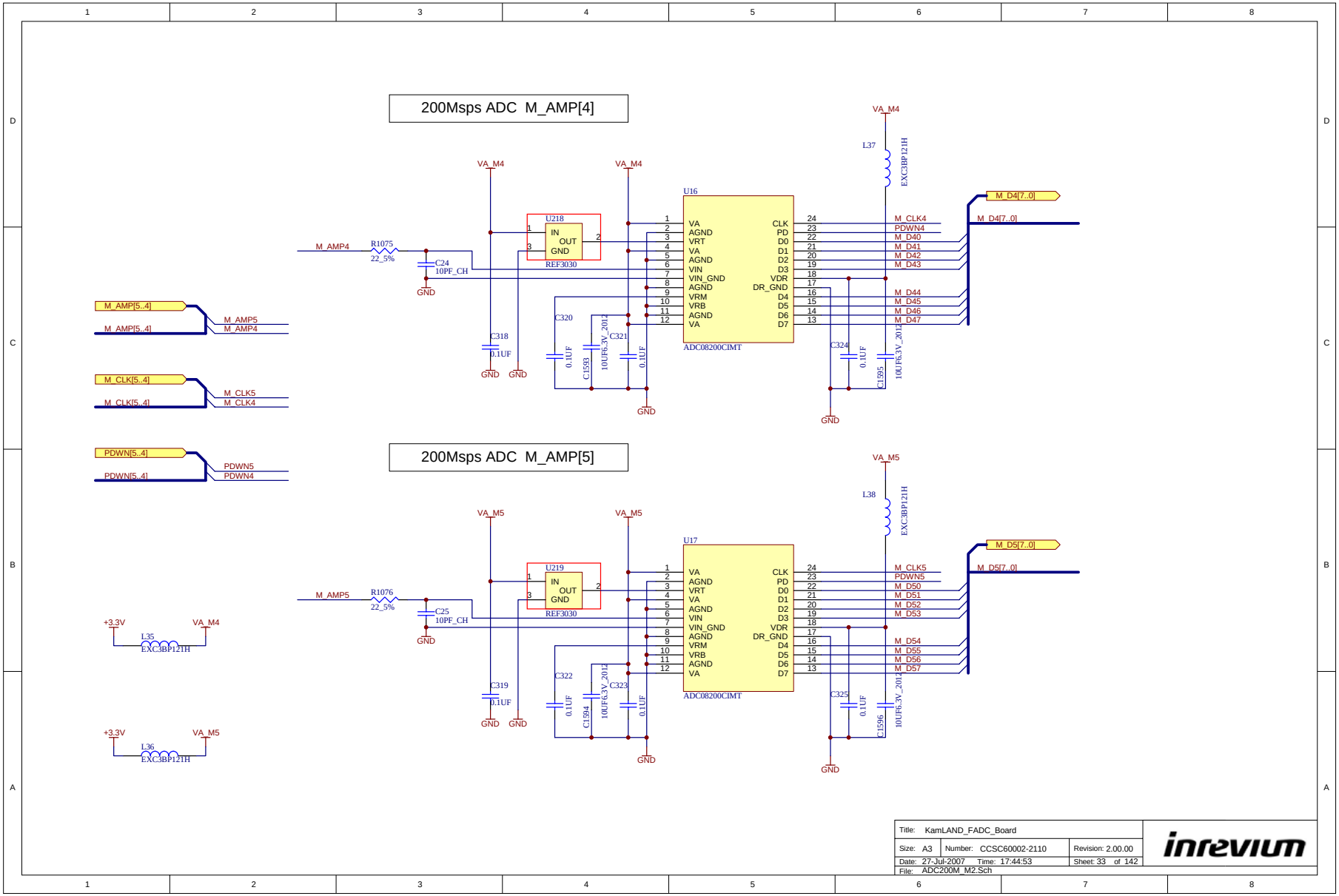


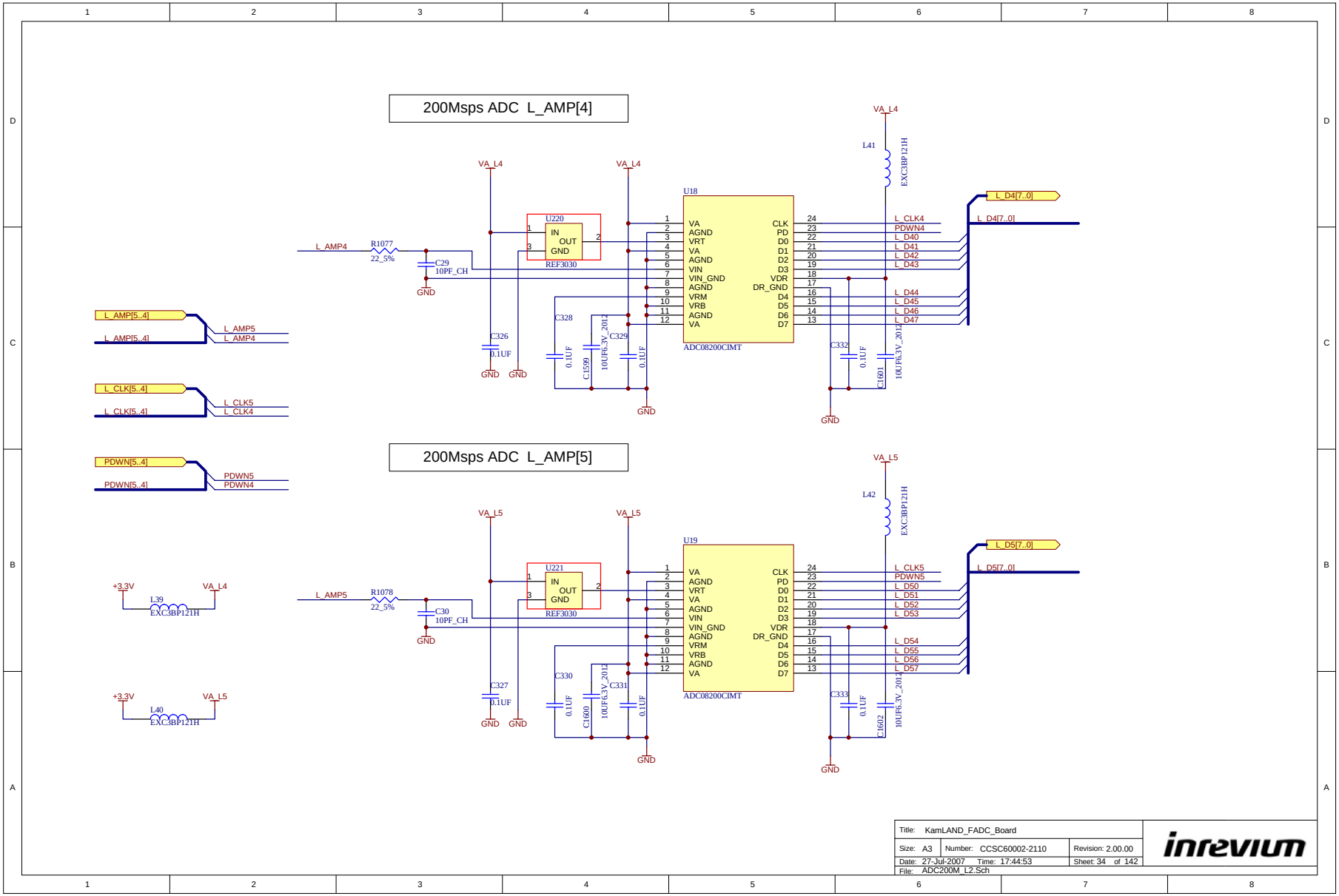
Title: KamLAND_FADC_Board			inrevium
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	
Date: 27-Jul-2007	Time: 17:44:52	Sheet: 31 of 142	
File: ADC_2.Sch			



Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:44:52		Sheet: 32 of 142
File: ADC200M_H2.Sch			

inrevium

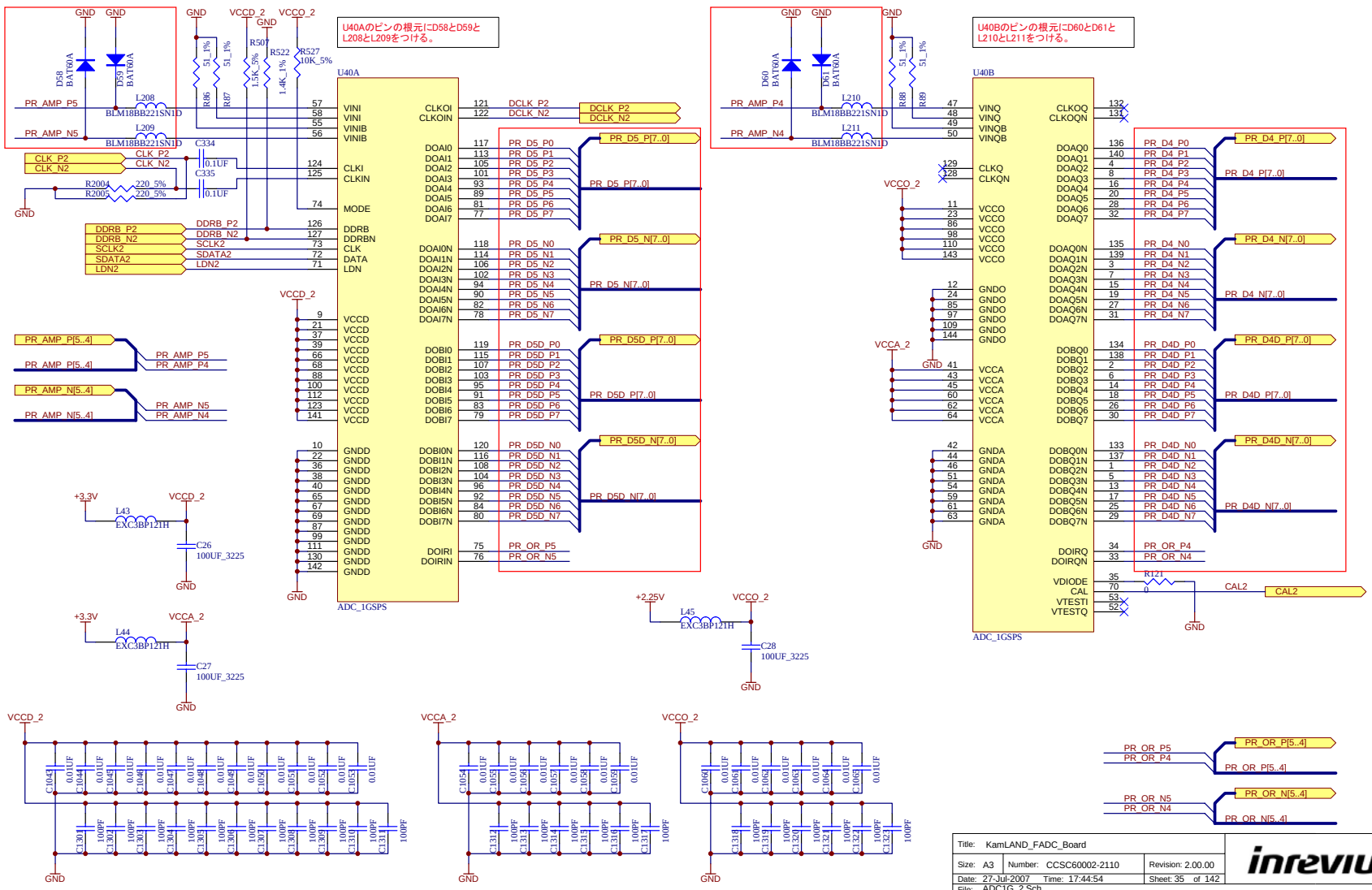

200Msps ADC M_AMP[4]
200Msps ADC M_AMP[5]
M_AMP[5..4]
M_AMP5
M_AMP4
M_CLK[5..4]
M_CLK5
M_CLK4
PDWN[5..4]
PDWN5
PDWN4
M_AMP4
M_AMP5
R1075
R1076
22_5%
C24
C25
10PF_CH
U218
U219
IN
OUT
GND
REF3030
C318
C319
0.1UF
C320
C321
C322
C323
10UF6.3V_2012
C1593
C1594
U16
U17
ADC08200CIMT
VA
AGND
VRT
VIN
VIN_GND
VRM
VRB
CLK
PD
D0
D1
D2
D3
VDR
DR_GND
D4
D5
D6
D7
M_CLK4
PDWN4
M_D40
M_D41
M_D42
M_D43
M_D44
M_D45
M_D46
M_D47
M_CLK5
PDWN5
M_D50
M_D51
M_D52
M_D53
M_D54
M_D55
M_D56
M_D57
M_D4[7..0]
M_D5[7..0]
C324
C325
C1595
C1596
L37
L38
EXC3BP121H
L35
L36
+3.3V
VA_M4
VA_M5
Title: KamLAND_FADC_Board
Size: A3
Number: CCSC60002-2110
Revision: 2.00.00
Date: 27-Jul-2007
Time: 17:44:53
Sheet: 33 of 142
File: ADC200M_M2.Sch
inrevium



Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:44:53		Sheet: 34 of 142
File: ADC200M_L2.Sch			

inrevium

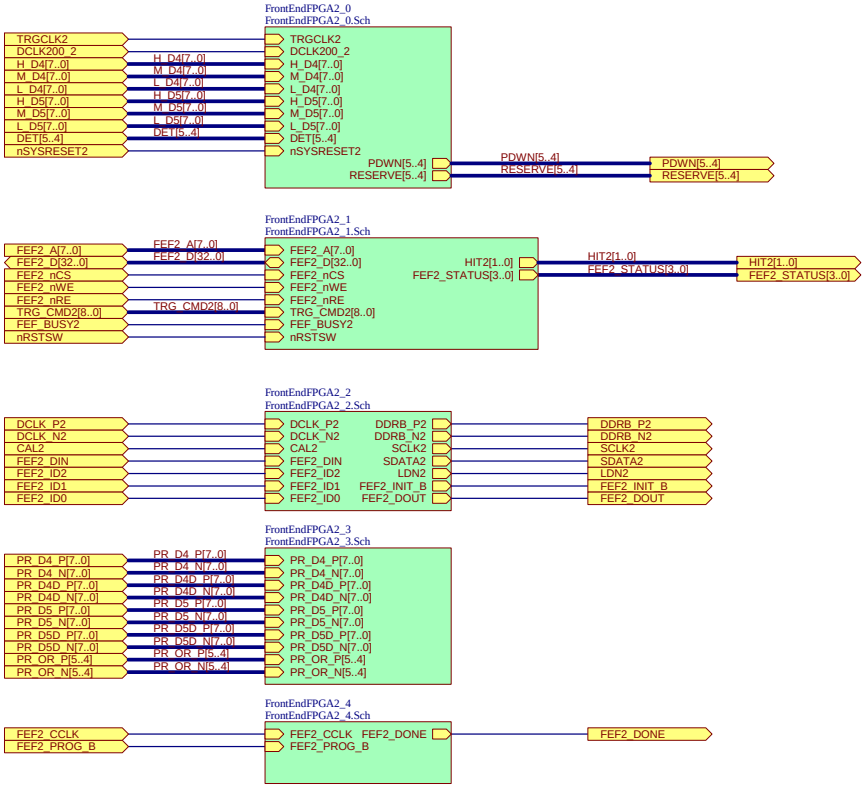
1Gsps ADC PR_AMP[5..4]



Title:	KamLAND_FADC_Board
Size: A3	Number: CCSC60002-2110
Revision: 2.00.00	
Date: 27-Jul-2007	Time: 17:44:54
Sheet: 35 of 142	
File: ADC1G_2.Sch	

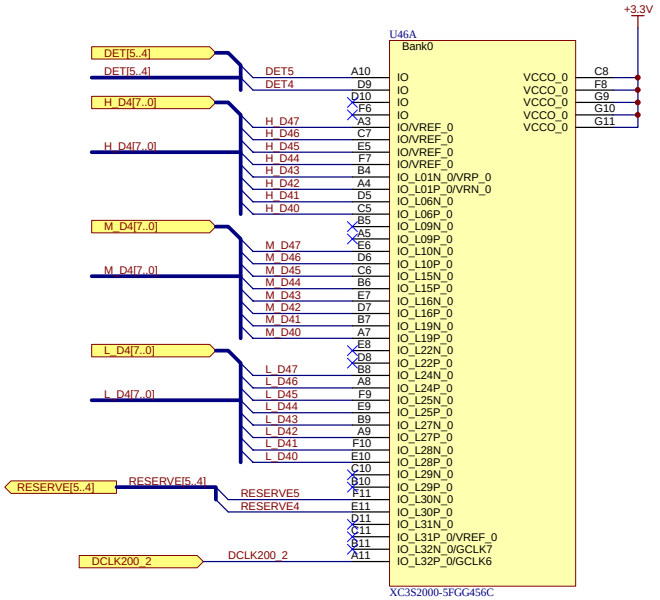
inrevium

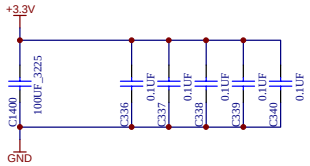
FrontEnd FPGA 2
TOP



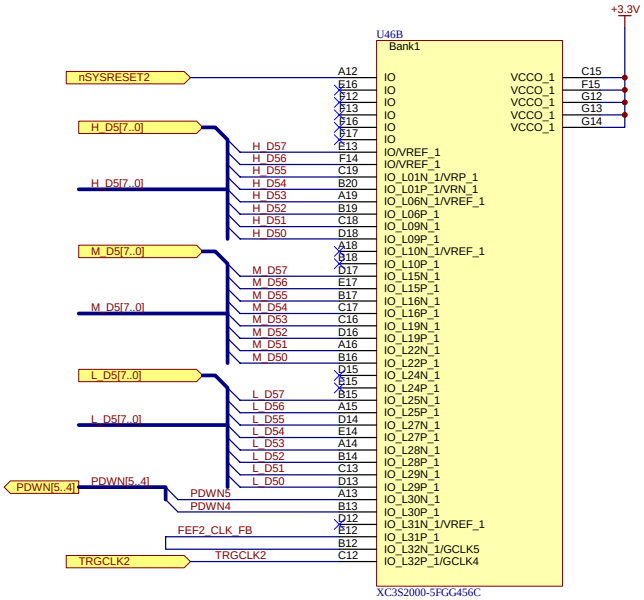
Title: KamLAND_FADC_Board			inrevium
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	
Date: 27-Jul-2007 Time: 17:44:54		Sheet: 36 of 142	
File: FEF_TOP_2.Sch			

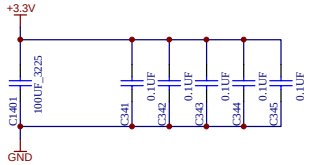
AMP I/F
200M ADC I/F
(LVCMOS33)





VME I/F
200M ADC I/F
(LVCMOS33)

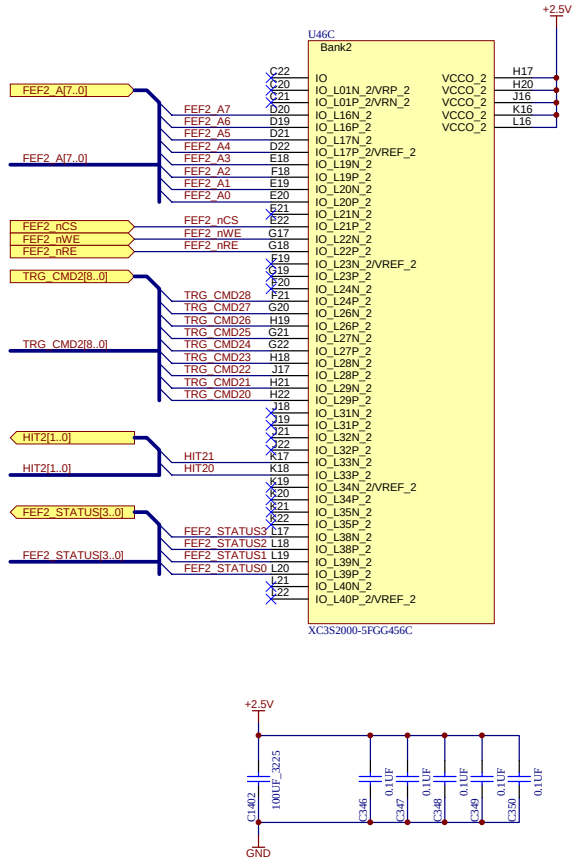




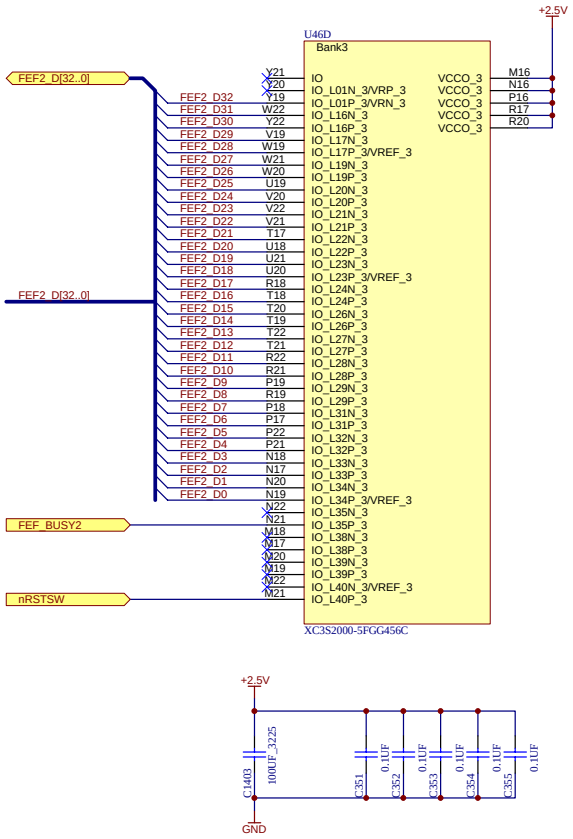
Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:44:55		Sheet: 37 of 142
File: FrontEndFPGA2_0.Sch			

inrevium

SYSTEM FPGA I/F
(LVCMOS25)

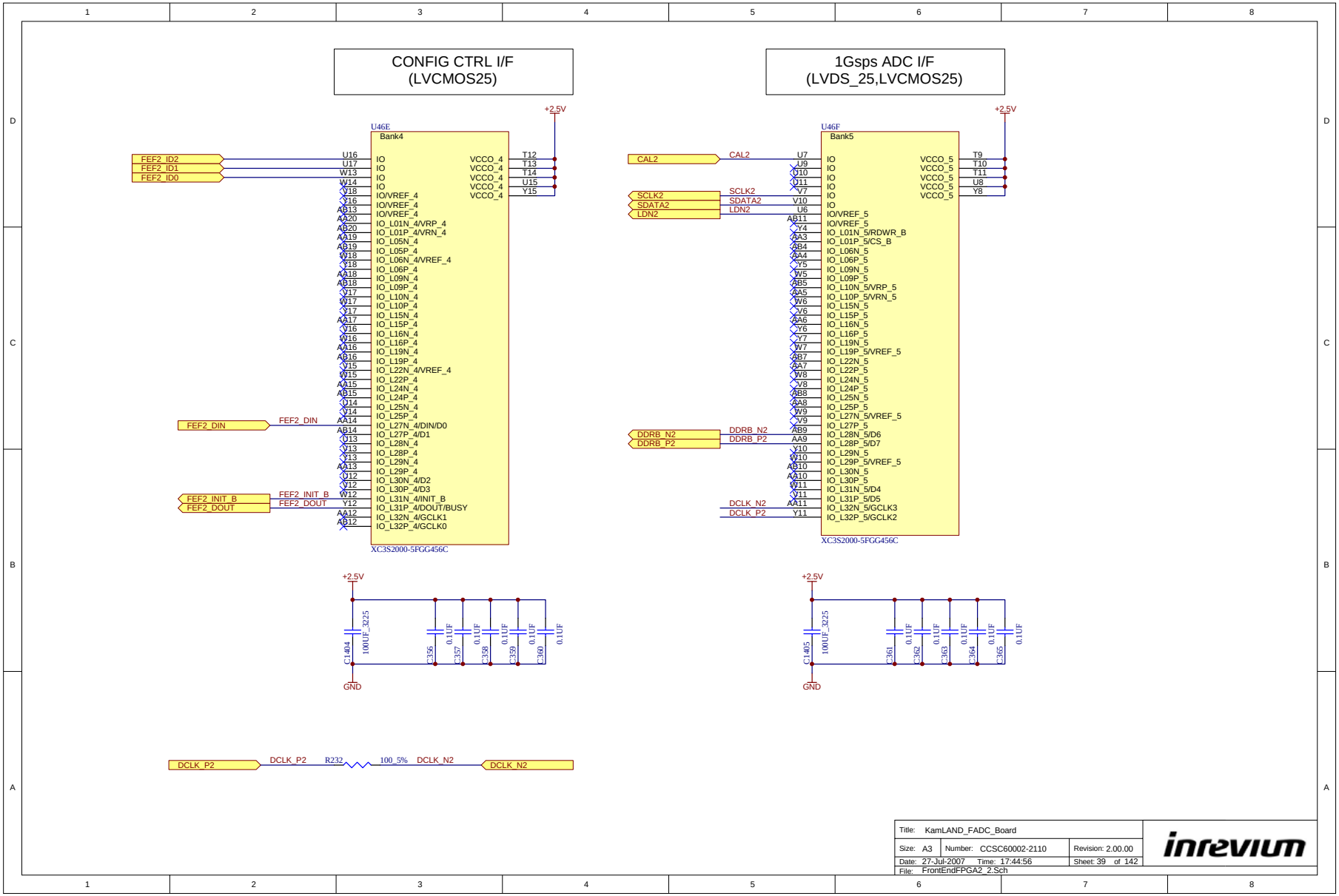


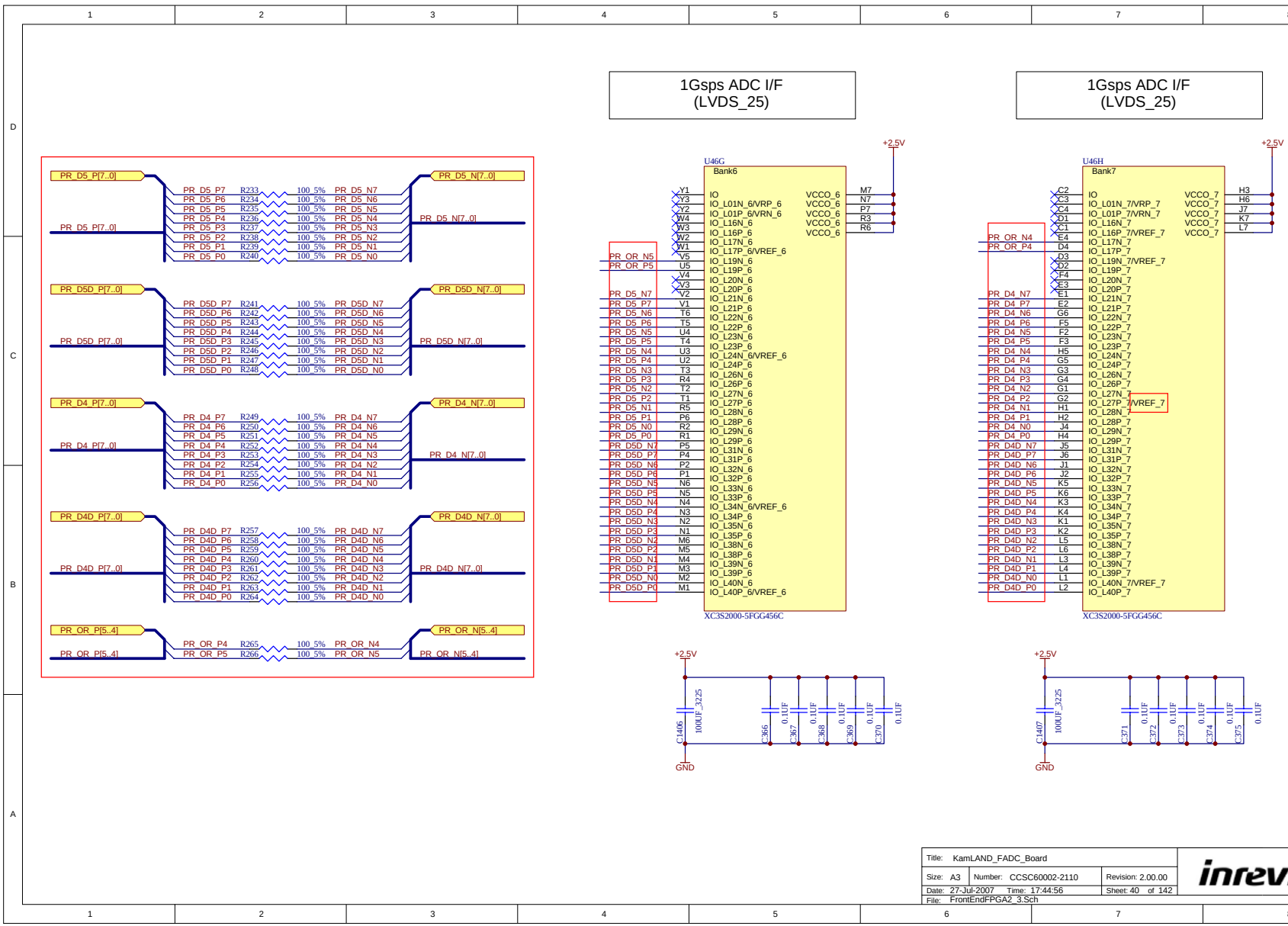
SYSTEM FPGA I/F
(LVCMOS25)

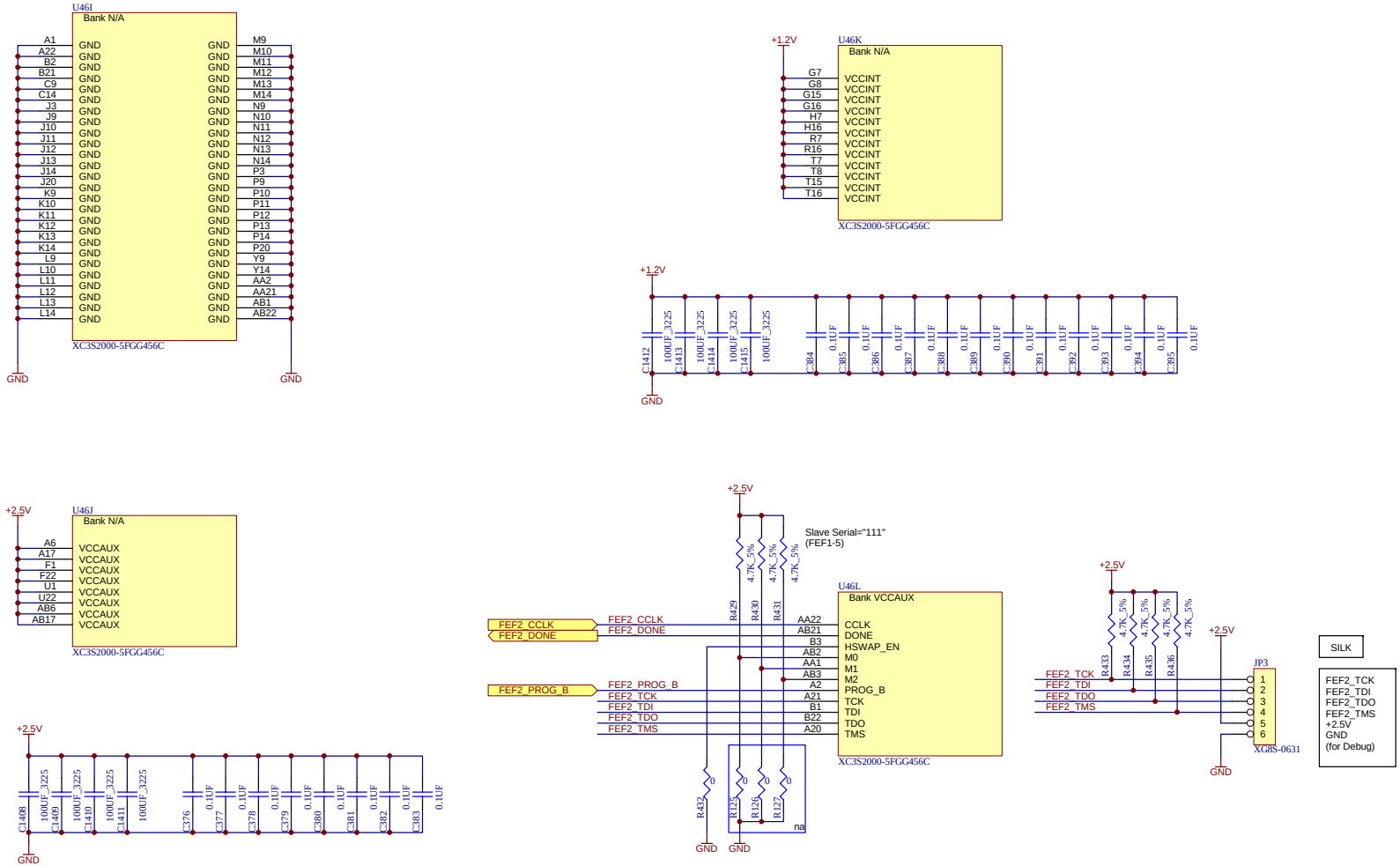


Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:44:55		Sheet: 38 of 142
File: FrontEndFPGA2_1.Sch			

inrevium

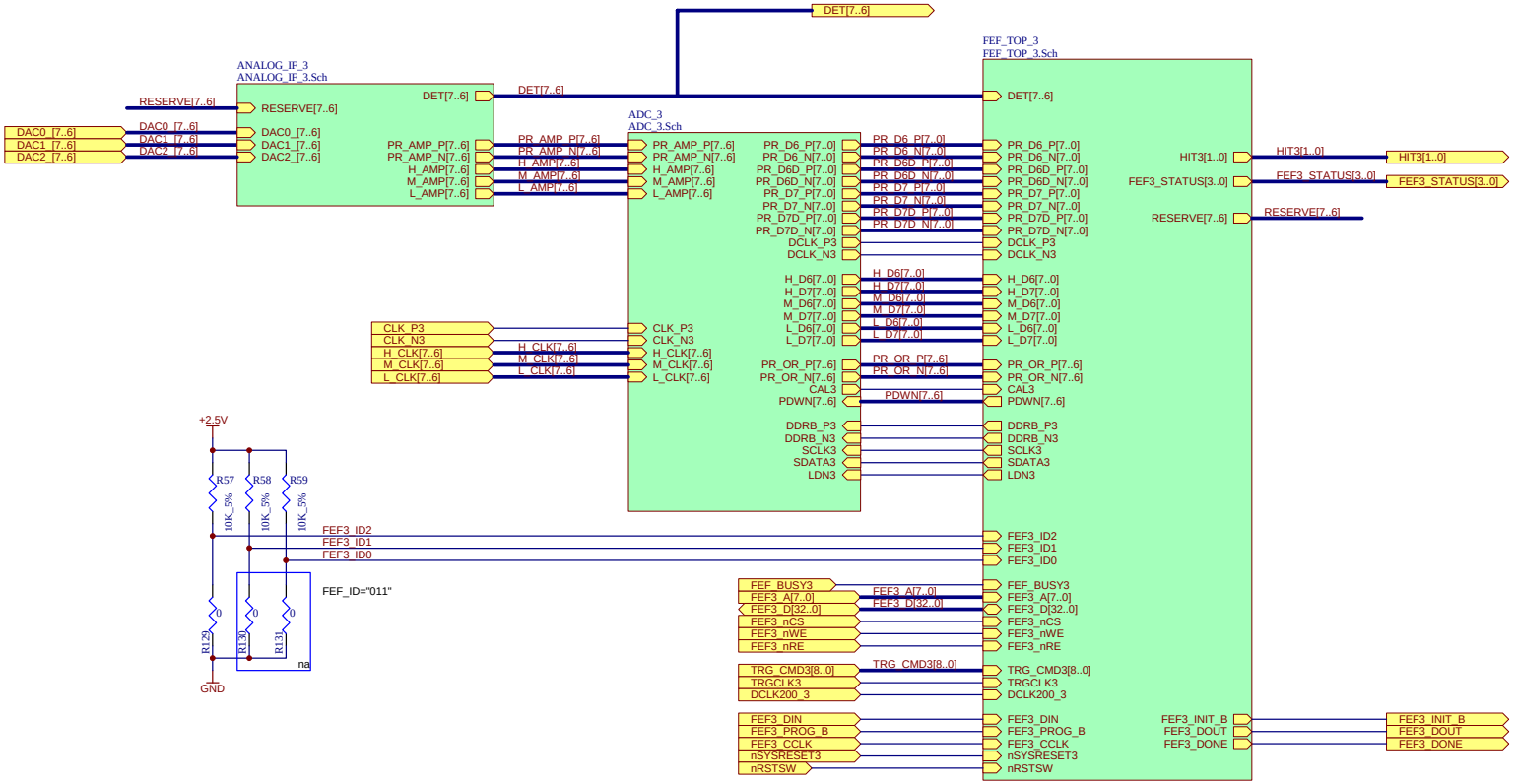

CONFIG CTRL I/F
(LVCMOS25)
1Gsps ADC I/F
(LVDS_25,LVCMOS25)
U46E
Bank4
U46F
Bank5
+2.5V
FEF2_ID2
FEF2_ID1
FEF2_ID0
FEF2_DIN
FEF2_INIT_B
FEF2_DOUT
CAL2
SCLK2
SDATA2
LDN2
DDRB_N2
DDRB_P2
DCLK_N2
DCLK_P2
XC3S2000-5FGG456C
GND
C1404
C1405
100UF_3225
C356
C357
C358
C359
C360
C361
C362
C363
C364
C365
0.1UF
R232
100_5%
Title: KamLAND_FADC_Board
Size: A3
Number: CCSC60002-2110
Revision: 2.00.00
Date: 27-Jul-2007
Time: 17:44:56
Sheet: 39 of 142
File: FrontEndFPGA2_2.Sch
inrevium


1Gsps ADC I/F
(LVDS_25)
1Gsps ADC I/F
(LVDS_25)
PR_D5_P[7..0]
PR_D5_N[7..0]
PR_D5D_P[7..0]
PR_D5D_N[7..0]
PR_D4_P[7..0]
PR_D4_N[7..0]
PR_D4D_P[7..0]
PR_D4D_N[7..0]
PR_OR_P[5..4]
PR_OR_N[5..4]
U46G
Bank6
U46H
Bank7
XC3S2000-5FGG456C
+2.5V
GND
100UF_3225
0.1UF
C1406
C1407
Title: KamLAND_FADC_Board
Size: A3
Number: CCSC60002-2110
Revision: 2.00.00
Date: 27-Jul-2007
Time: 17:44:56
Sheet: 40 of 142
File: FrontEndFPGA2_3.Sch
inrevium



Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	inrevium
Date: 27-Jul-2007 Time: 17:44:57		Sheet: 41 of 142	
File: FrontEndFPGA2_4.Sch			

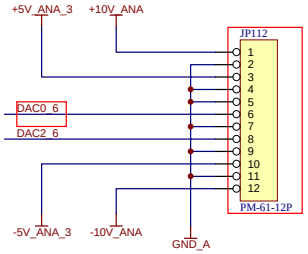
PMT[7..6] to FrontEnd FPGA 3
TOP

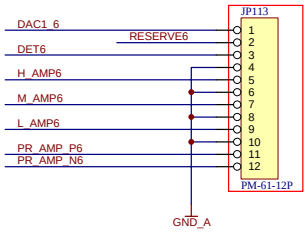


Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:44:57		Sheet: 42 of 142
File: PMT2FEF_3.Sch			

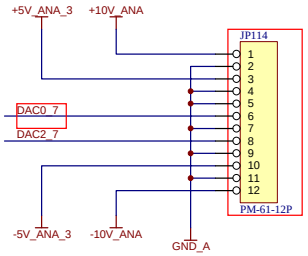
inrevium

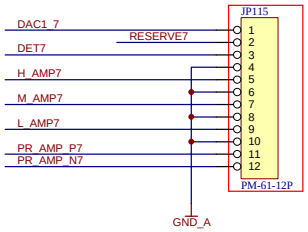
PMT[6]

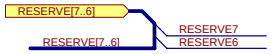


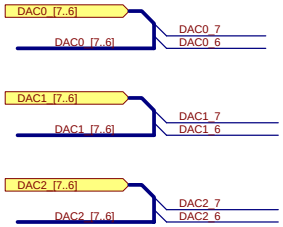


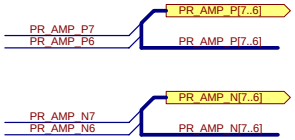
PMT[7]

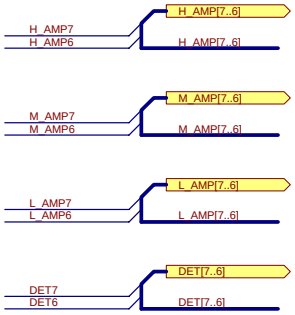






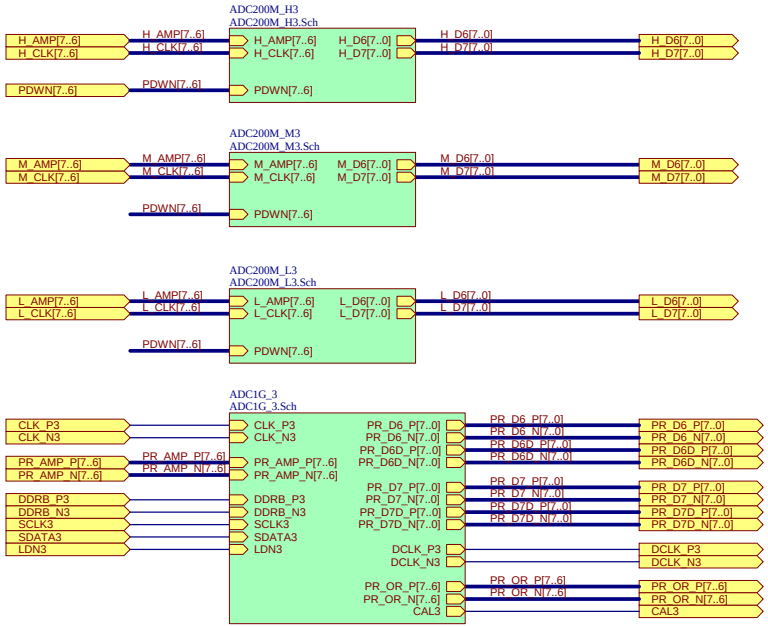




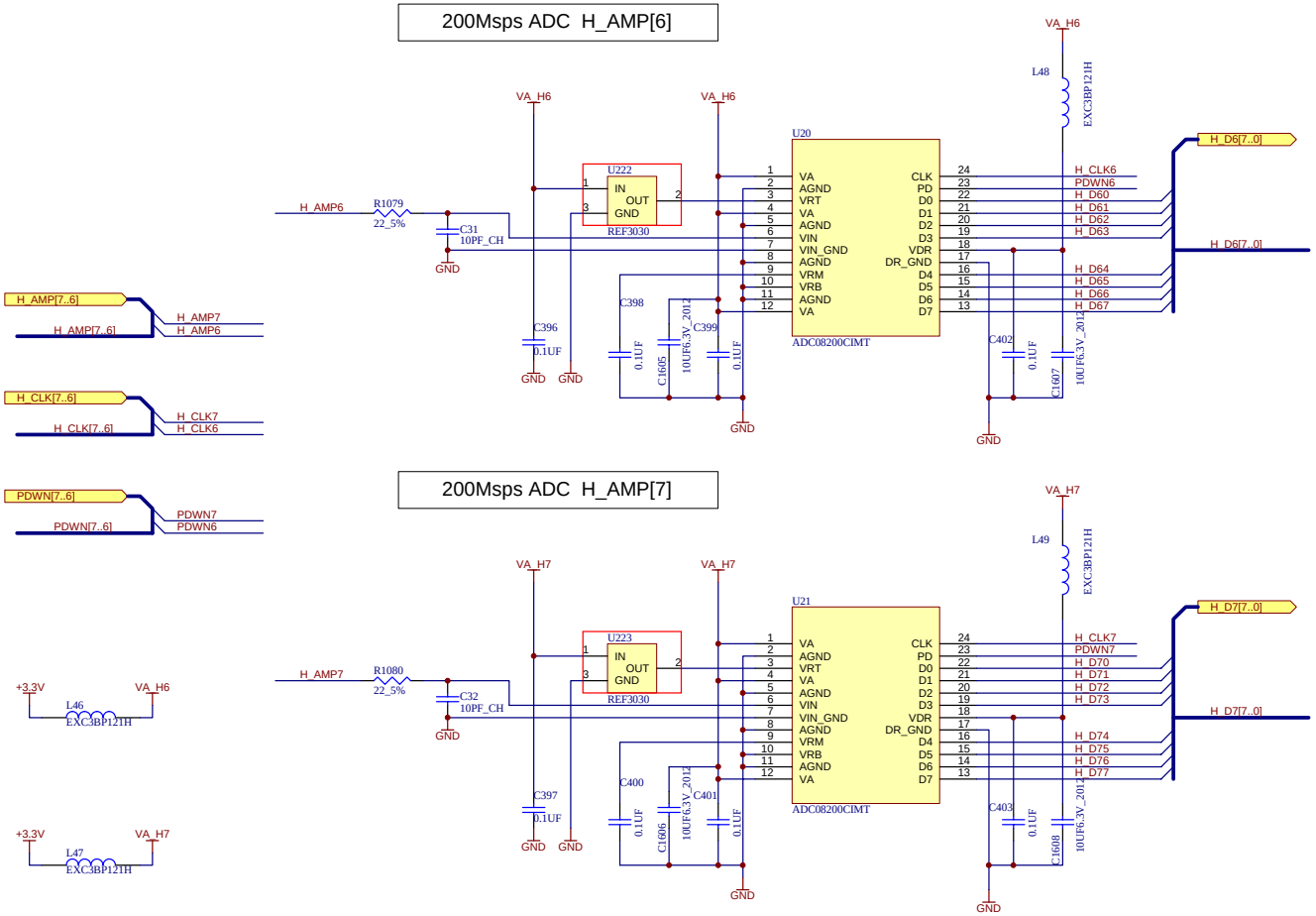


Title: KamLAND_FADC_Board			inrevium
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	
Date: 27-Jul-2007 Time: 17:44:58		Sheet: 43 of 142	
File: ANALOG_IF_3.Sch			

ADC[7..6]
TOP

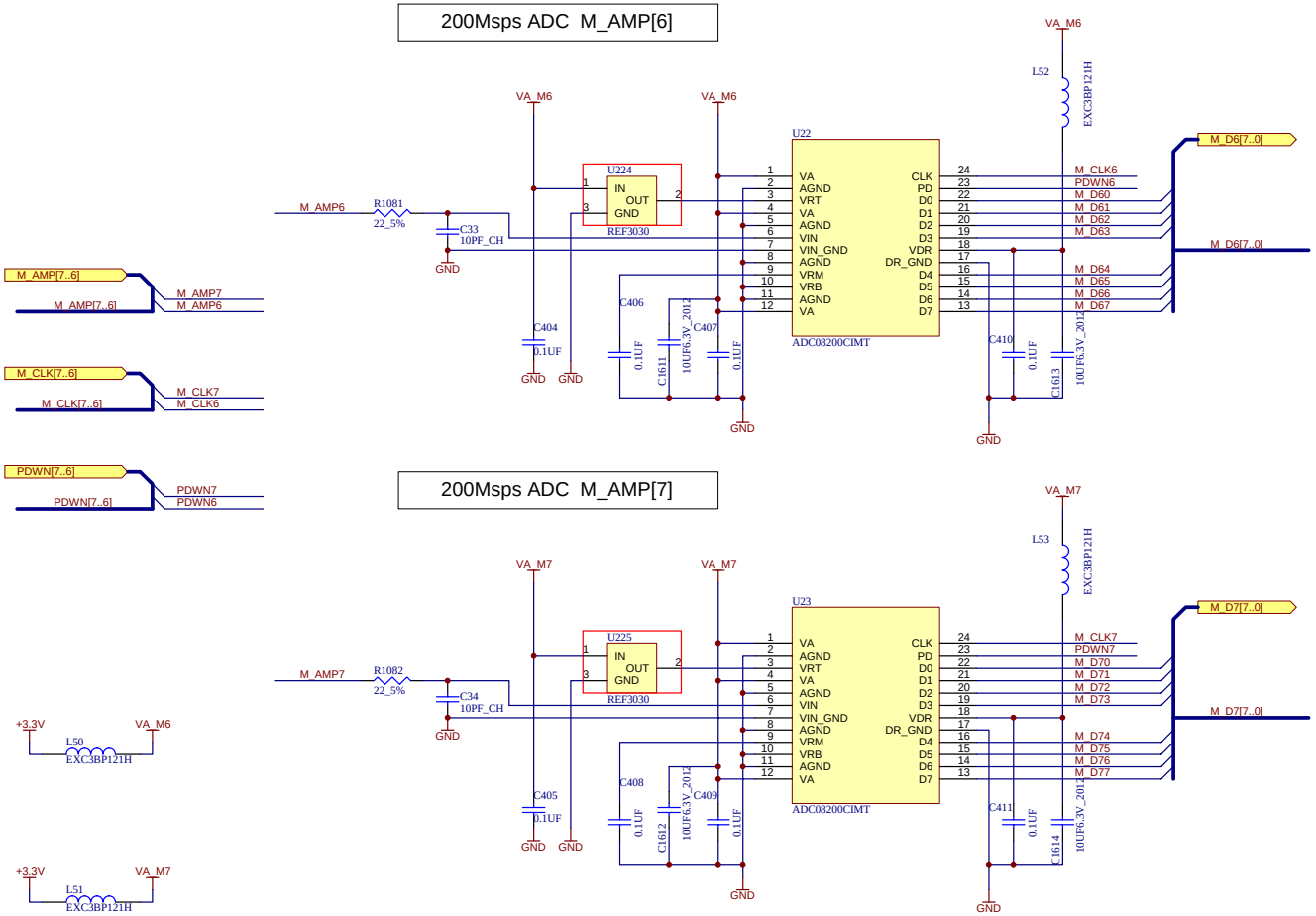


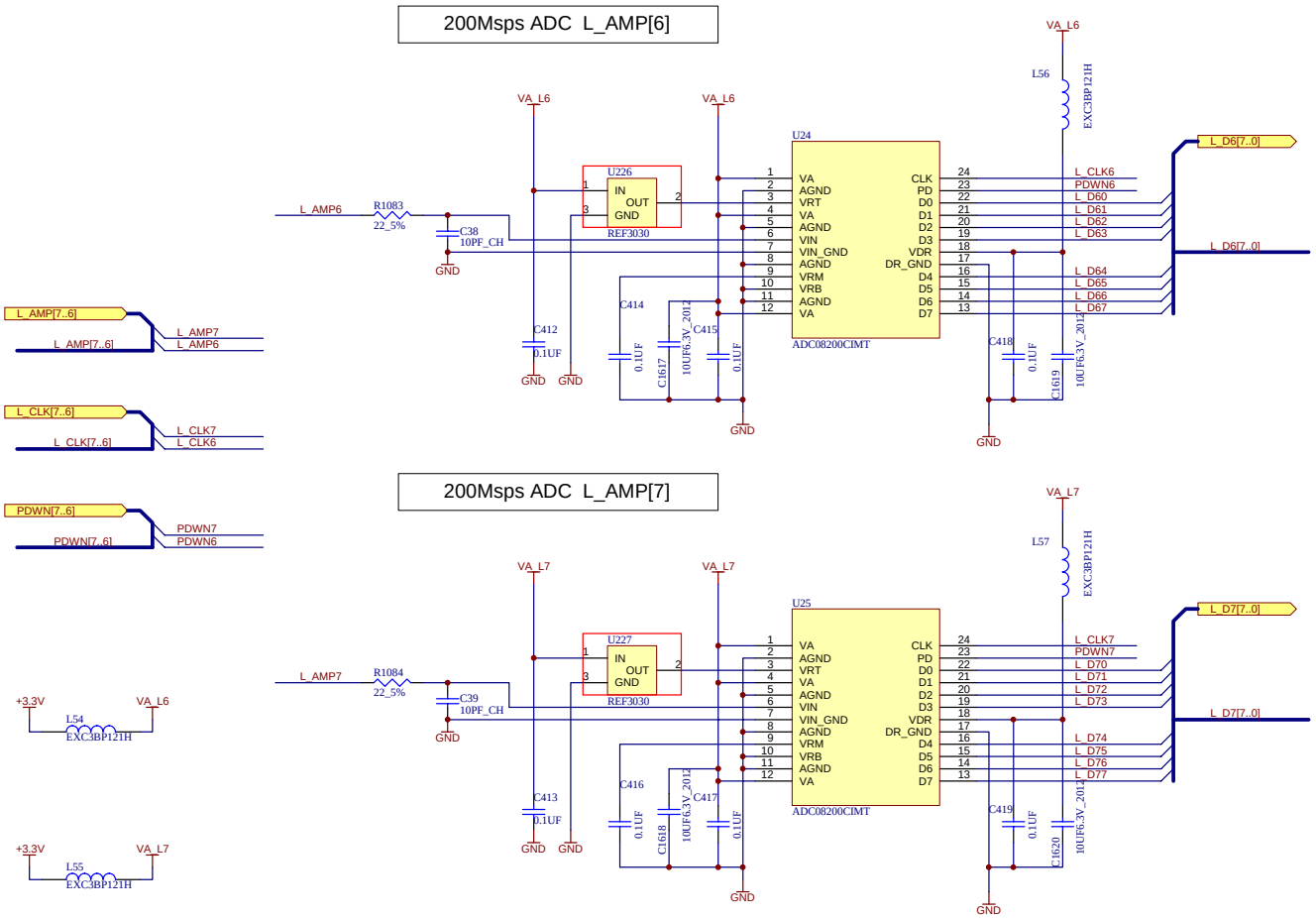
Title: KamLAND_FADC_Board			inrevium
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	
Date: 27-Jul-2007	Time: 17:44:58	Sheet: 44 of 142	
File: ADC_3.Sch			



Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:44:59		Sheet: 45 of 142
File: ADC200M_H3.Sch			

inrevium

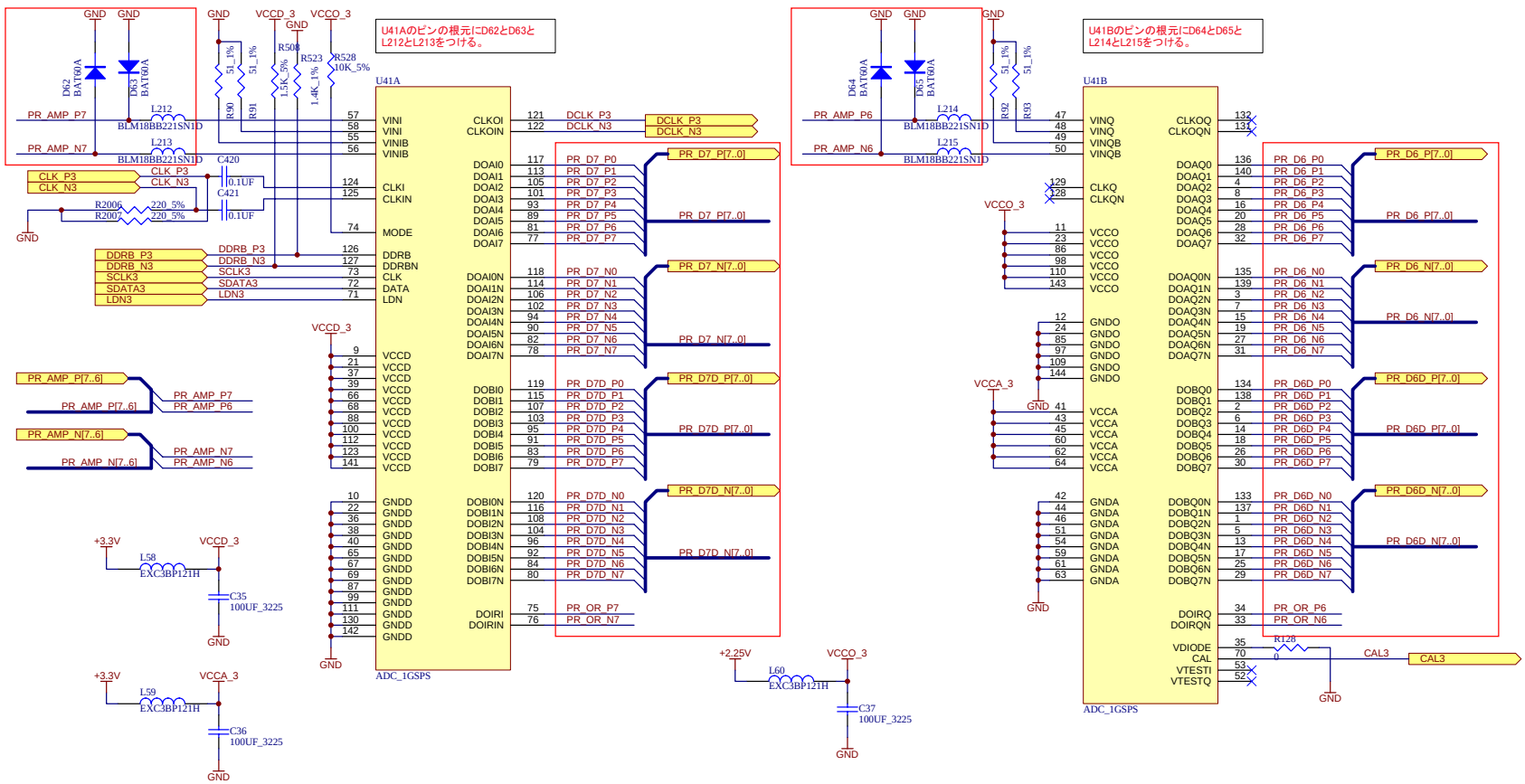

200Msps ADC M_AMP[6]
200Msps ADC M_AMP[7]
U22
U23
U224
U225
REF3030
ADC08200CIMT
M_AMP[7..6]
M_CLK[7..6]
PDWN[7..6]
M_D6[7..0]
M_D7[7..0]
VA_M6
VA_M7
GND
+3.3V
L50
L51
L52
L53
EXC3BP121H
R1081
R1082
22_5%
C33
C34
10PF_CH
C404
C405
C406
C407
C408
C409
C410
C411
0.1UF
10UF6.3V_2012
C1611
C1612
C1613
C1614
Title: KamLAND_FADC_Board
Size: A3
Number: CCSC60002-2110
Revision: 2.00.00
Date: 27-Jul-2007
Time: 17:44:59
Sheet: 46 of 142
File: ADC200M_M3.Sch
inrevium



Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	
Date: 27-Jul-2007	Time: 17:45:00	Sheet: 47 of 142	
File: ADC200M_L3.Sch			

inrevium

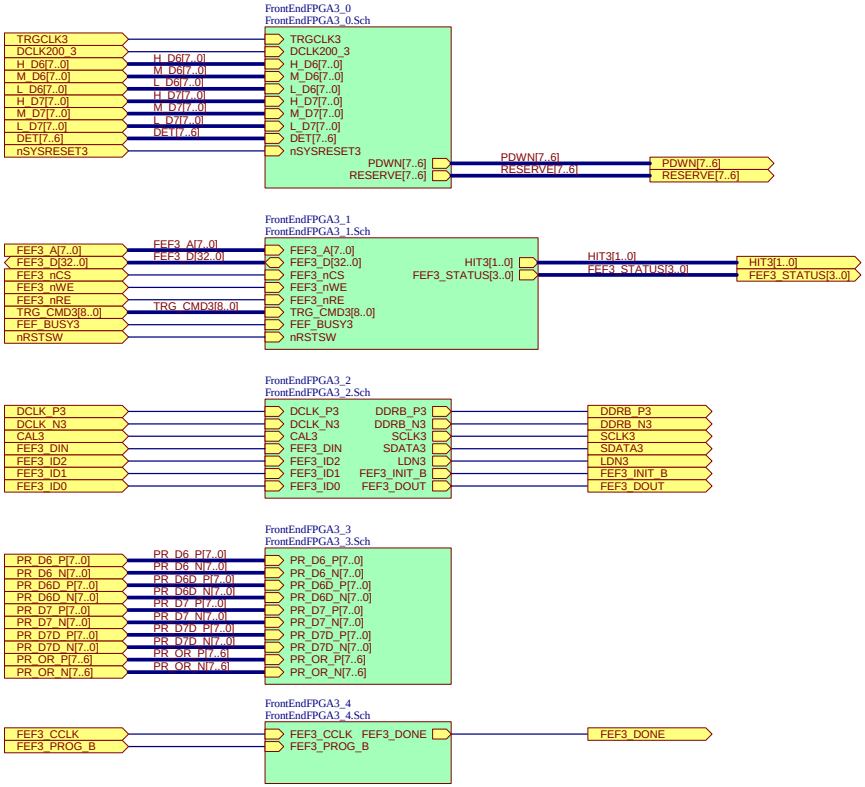
1Gsps ADC PR_AMP[7..6]



Title:	KamLAND_FADC_Board
Size: A3	Number: CCSC60002-2110
Revision: 2.00.00	
Date: 27-Jul-2007	Time: 17:45:00
Sheet: 48 of 142	
File:	ADC1G_3.Sch

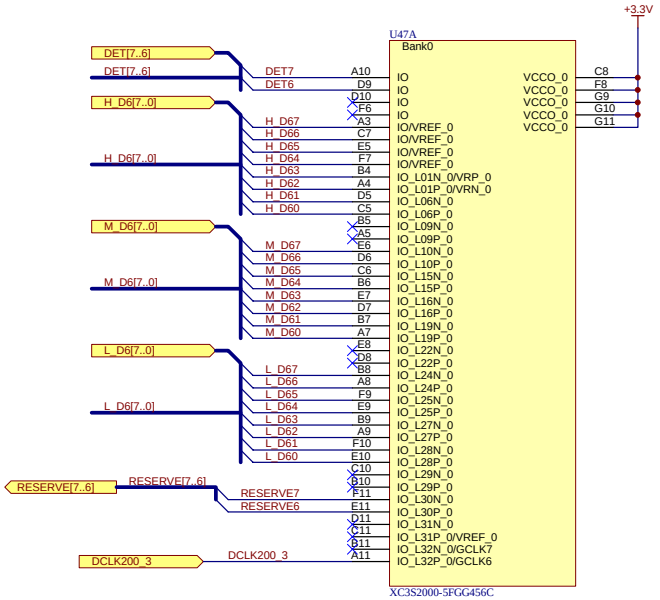
inrevium

FrontEnd FPGA 3 TOP

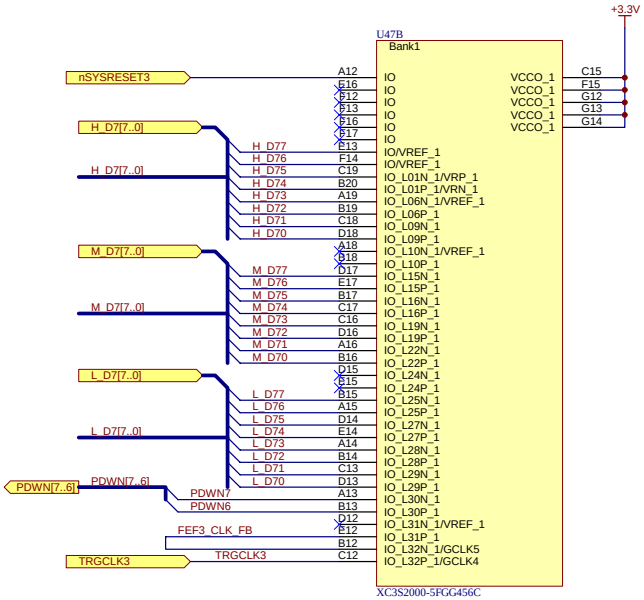


Title: KamLAND_FADC_Board			inrevium
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	
Date: 27-Jul-2007 Time: 17:45:01		Sheet: 49 of 142	
File: FEF_TOP_3.Sch			

AMP I/F
200M ADC I/F
(LVCMOS33)



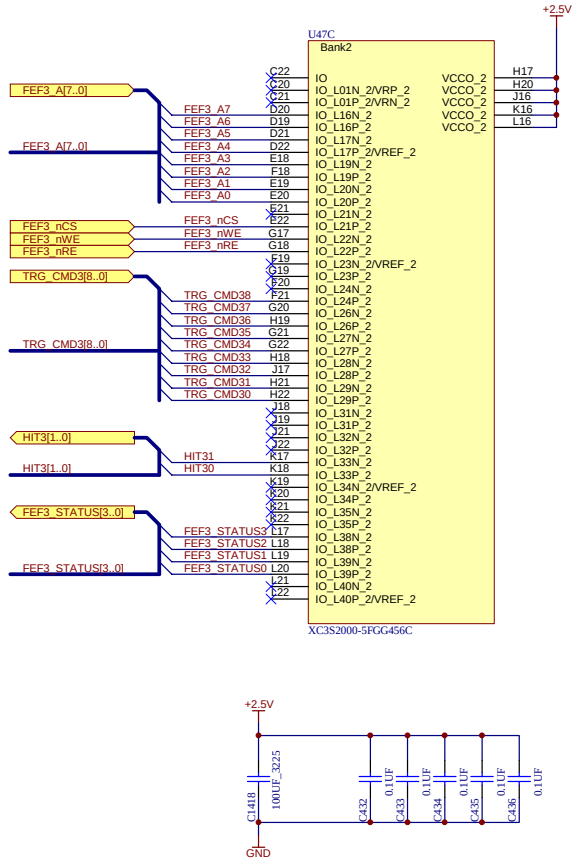
VME I/F
200M ADC I/F
(LVCMOS33)



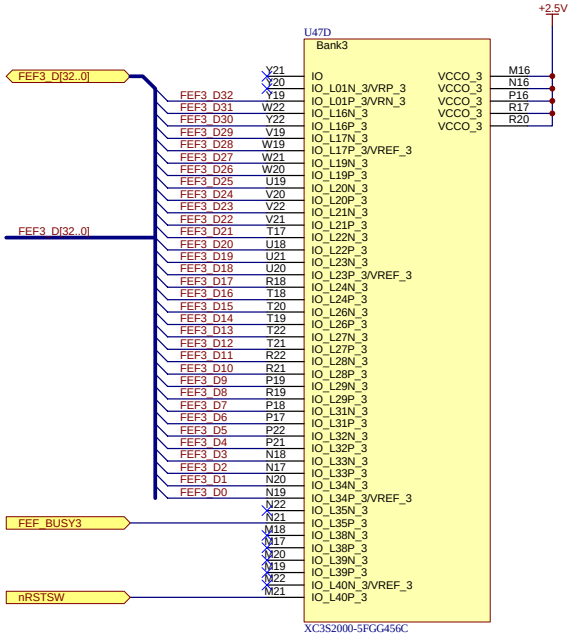
Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:45:01		Sheet: 50 of 142
File: FrontEndFPGA3_0.Sch			

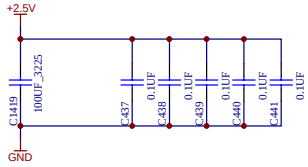
inrevium

SYSTEM FPGA I/F (LVCMOS25)



SYSTEM FPGA I/F (LVCMOS25)

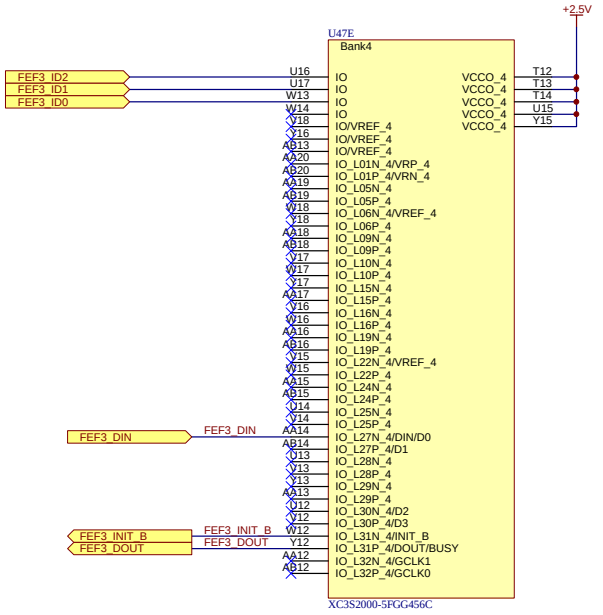


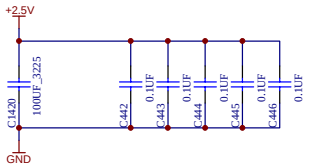


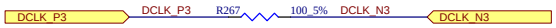
Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:45:02		Sheet: 51 of 142
File: FrontEndFPGA3_1.Sch			

inrevium

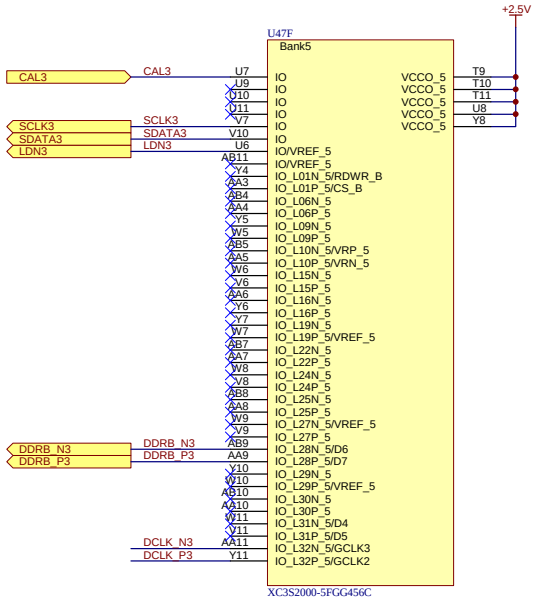
CONFIG CTRL I/F (LVCMOS25)

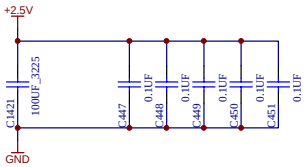




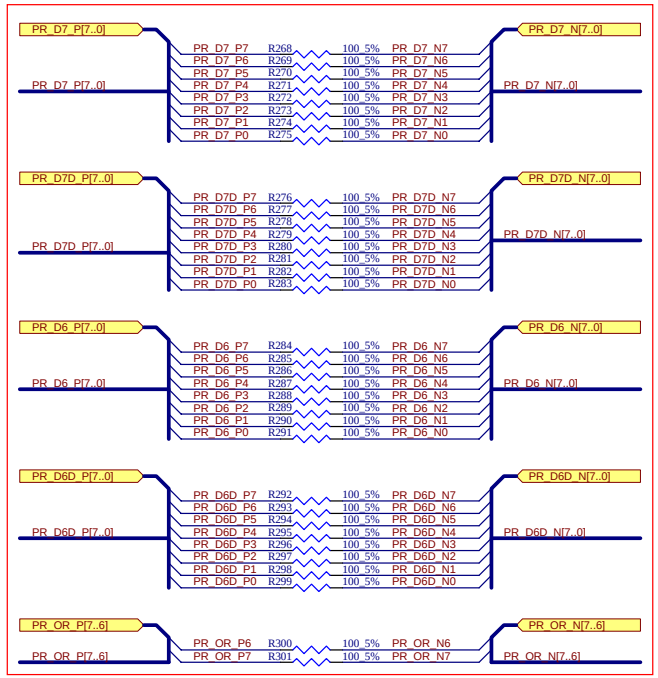


1Gsps ADC I/F (LVDS_25,LVCMOS25)

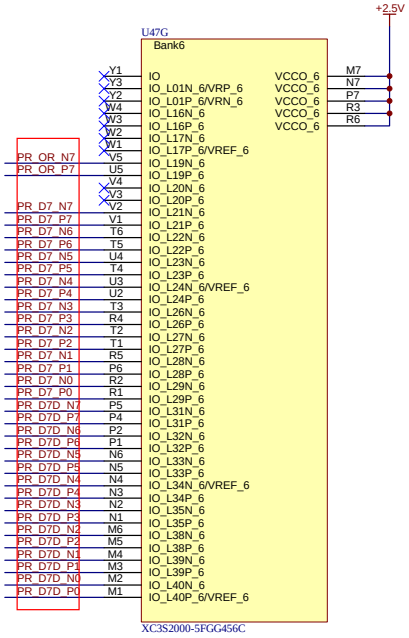


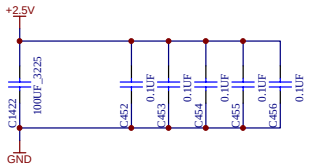


Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	inrevium
Date: 27-Jul-2007 Time: 17:45:02		Sheet: 52 of 142	
File: FrontEndFPGA3_2.Sch			

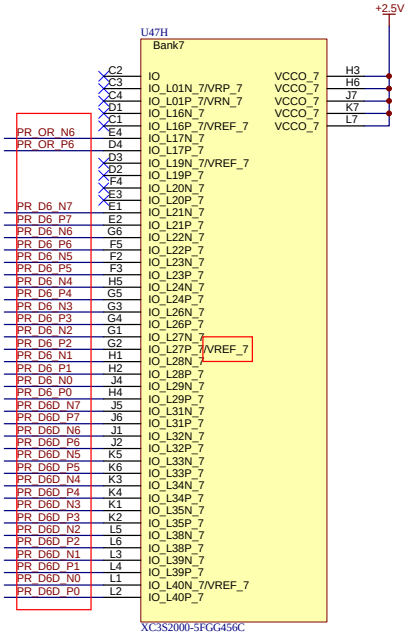


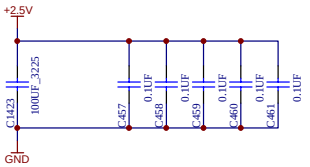
1Gsps ADC I/F
(LVDS_25)





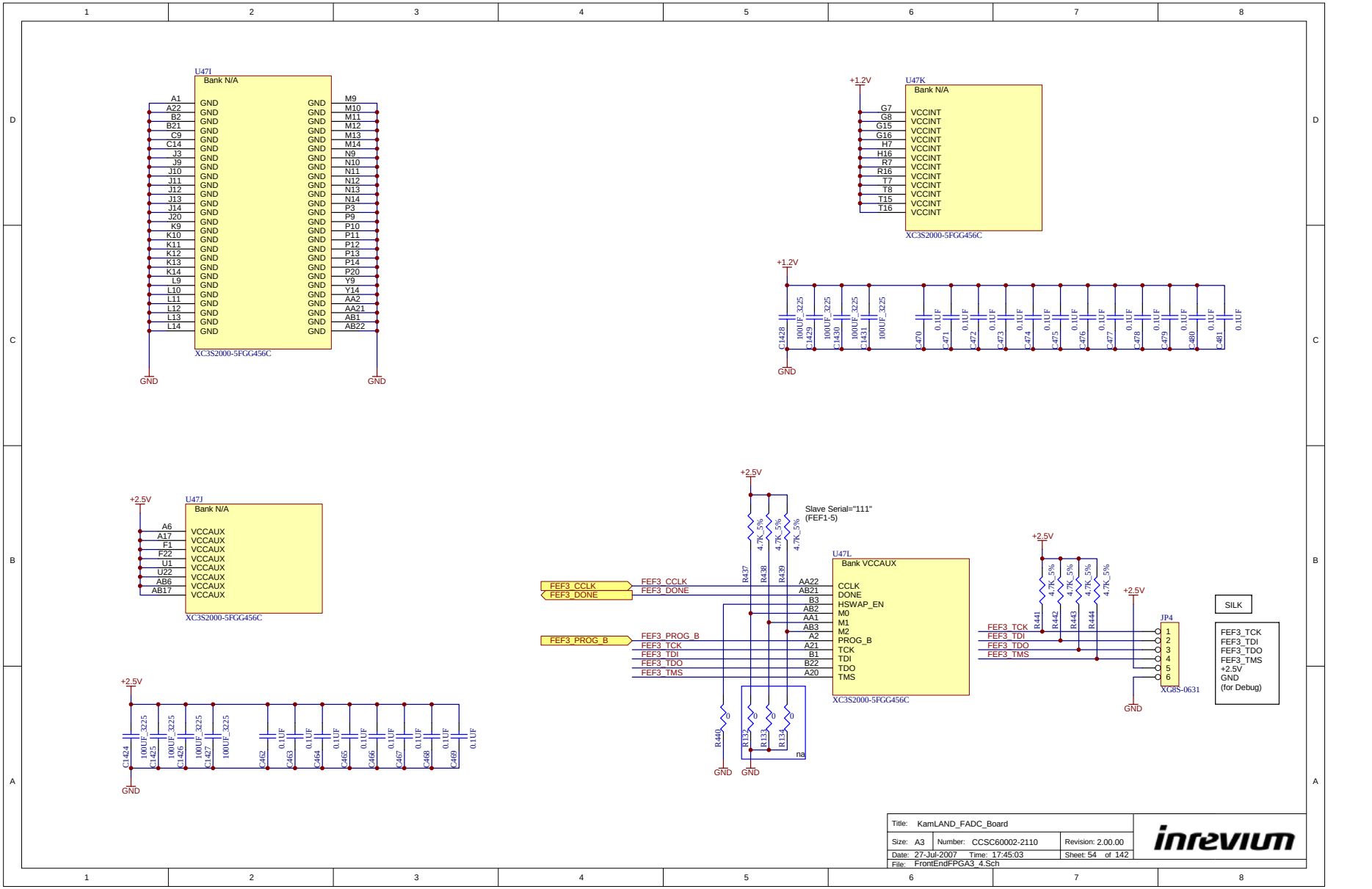
1Gsps ADC I/F
(LVDS_25)



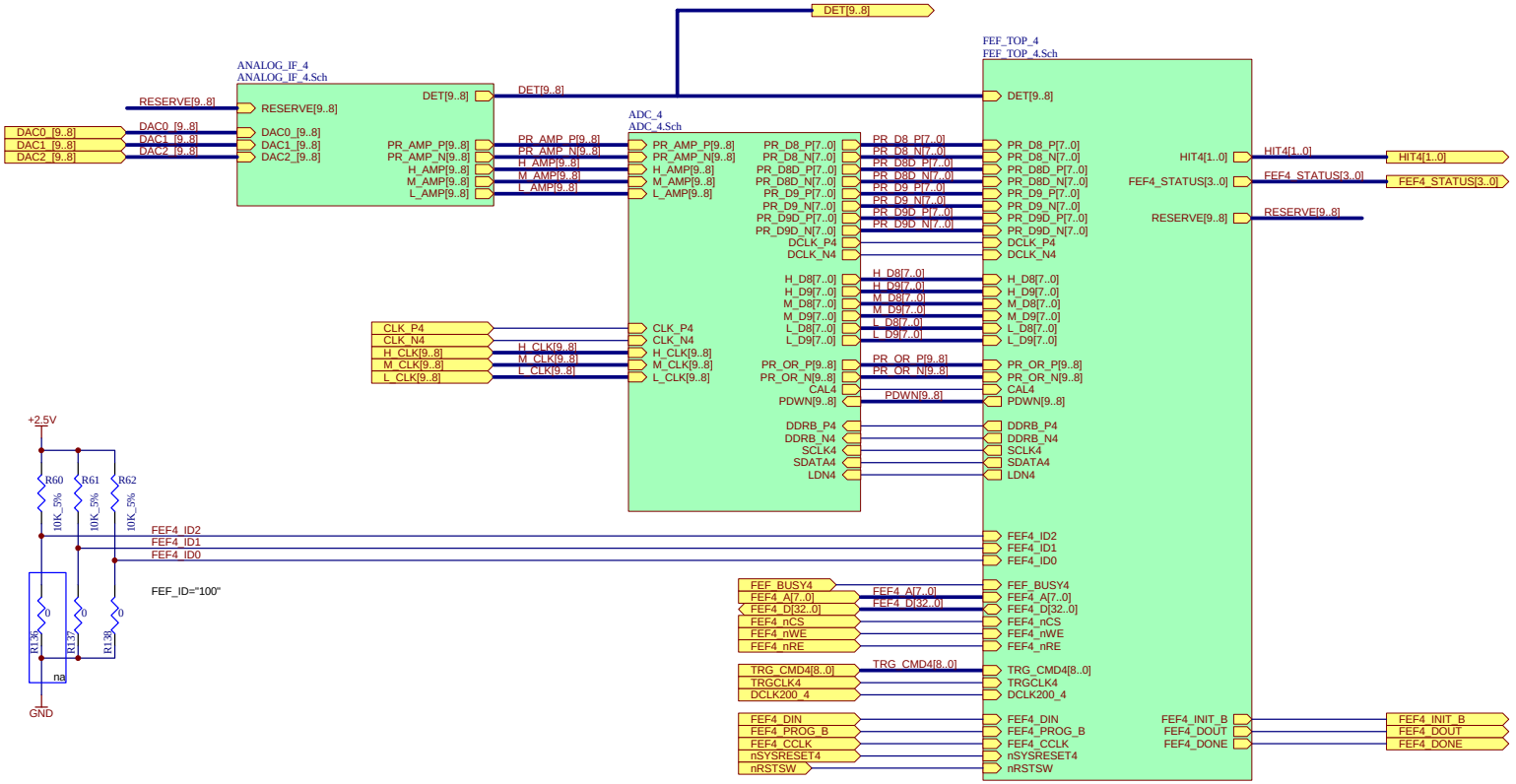


Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:45:03		Sheet: 53 of 142
File: FrontEndFPGA3_3.Sch			

inrevium


U47I
Bank N/A
XC3S2000-5FGG456C
GND
U47K
Bank N/A
VCCINT
XC3S2000-5FGG456C
+1.2V
U47J
Bank N/A
VCCAUX
XC3S2000-5FGG456C
+2.5V
U47L
Bank VCCAUX
CCLK
DONE
HSWAP_EN
M0
M1
M2
PROG_B
TCK
TDI
TDO
TMS
XC3S2000-5FGG456C
Slave Serial="111"
(FEF1-5)
FEF3_CCLK
FEF3_DONE
FEF3_PROG_B
FEF3_TCK
FEF3_TDI
FEF3_TDO
FEF3_TMS
JP4
XG8S-0631
SILK
FEF3_TCK
FEF3_TDI
FEF3_TDO
FEF3_TMS
+2.5V
GND
(for Debug)
Title: KamLAND_FADC_Board
Size: A3
Number: CCSC60002-2110
Revision: 2.00.00
Date: 27-Jul-2007
Time: 17:45:03
Sheet: 54 of 142
File: FrontEndFPGA3_4.Sch
inrevium

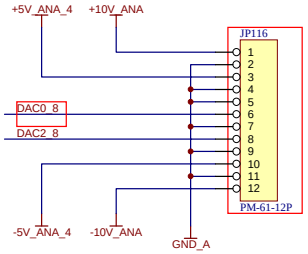
PMT[9..8] to FrontEnd FPGA 4
TOP

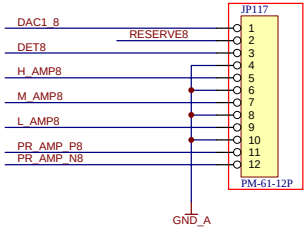


Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:45:04		Sheet: 55 of 142
File: PMT2FEF_4.Sch			

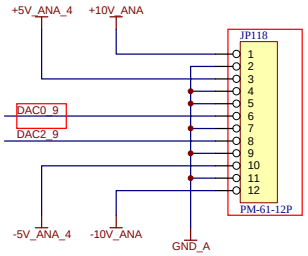
inrevium

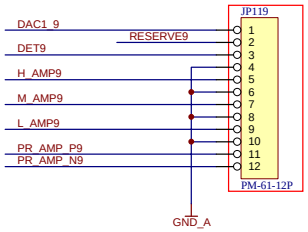
PMT[8]

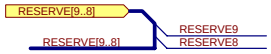


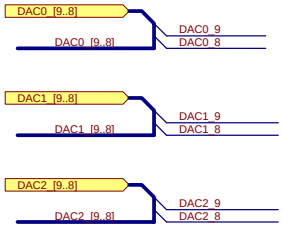


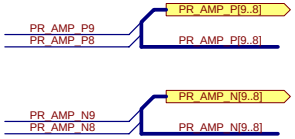
PMT[9]

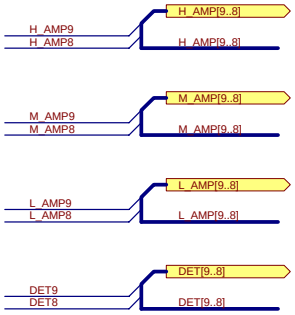






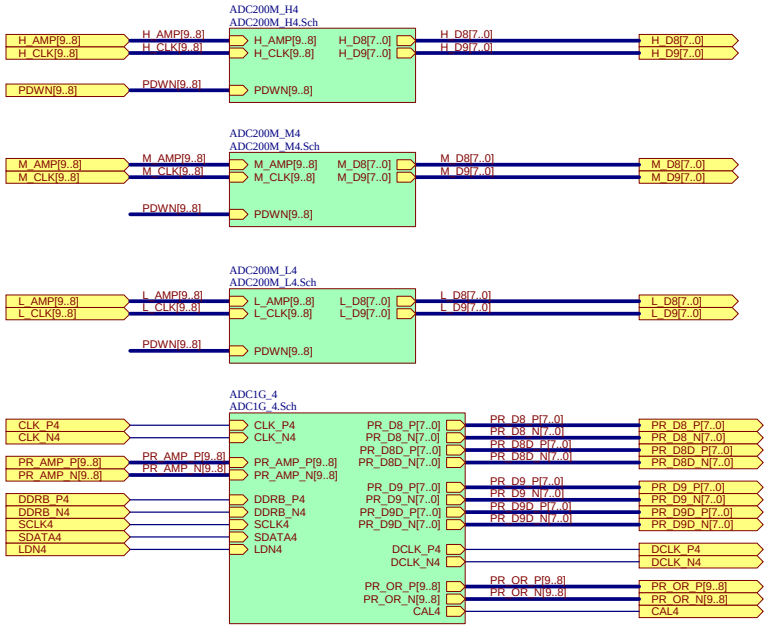




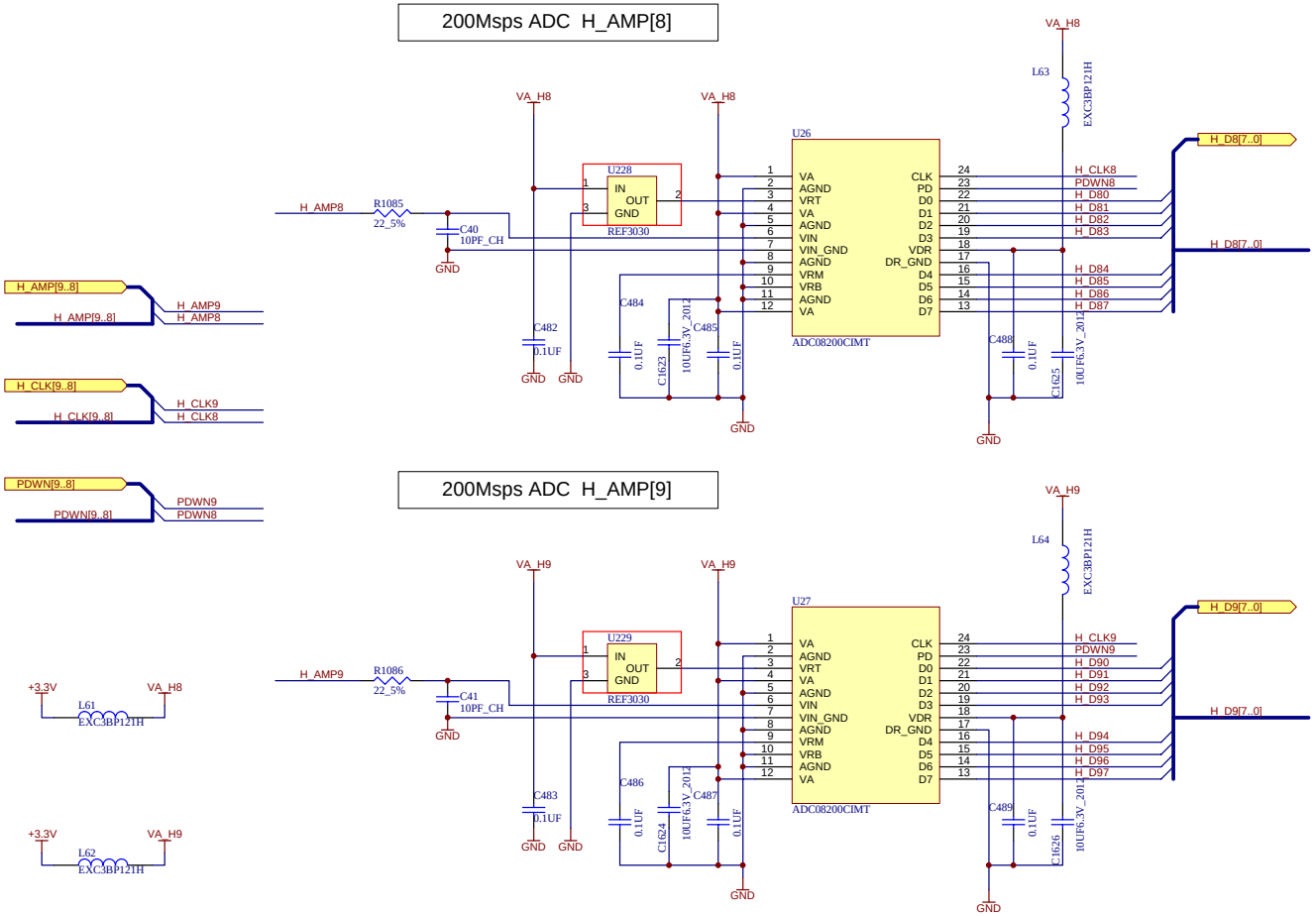


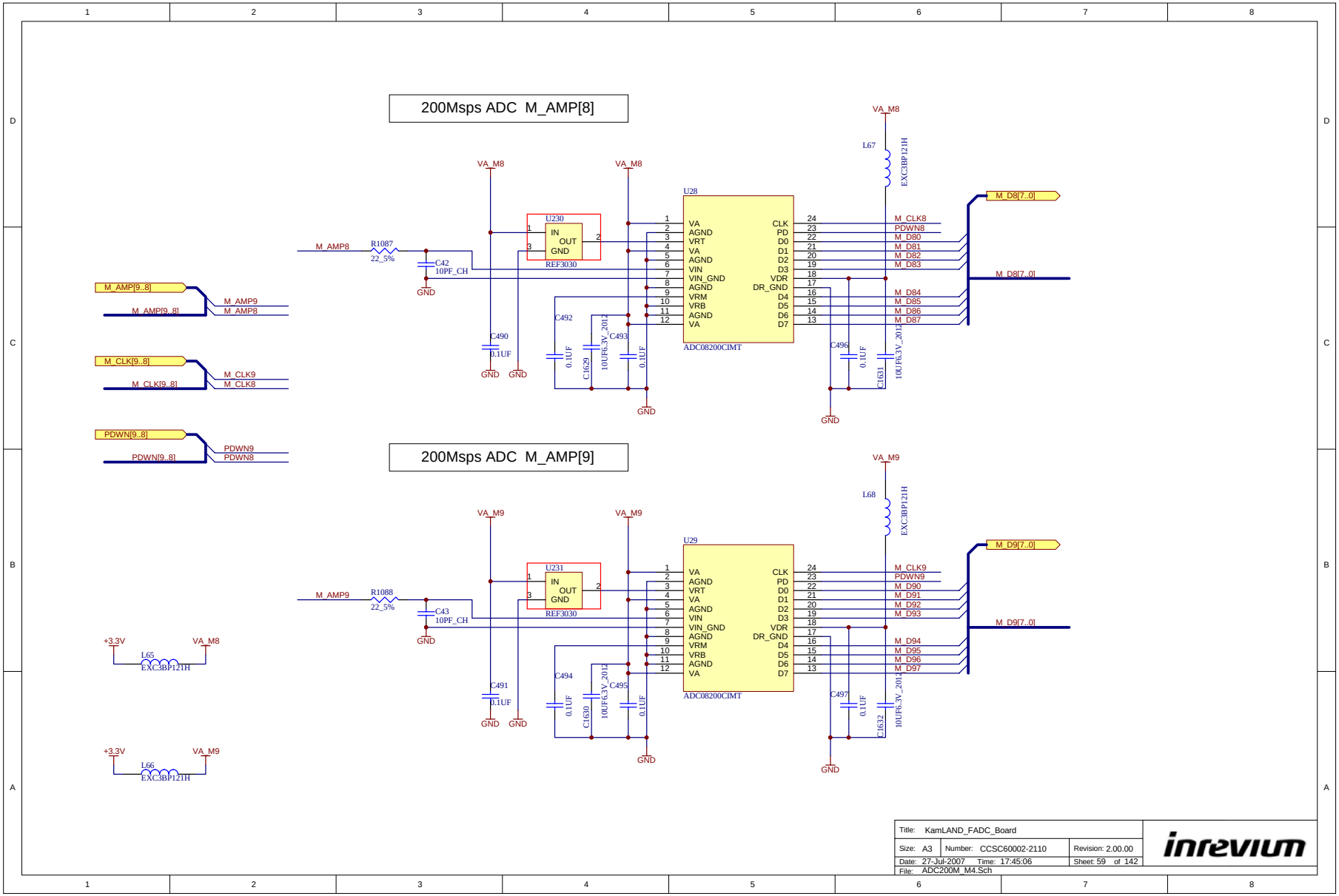
Title: KamLAND_FADC_Board			inrevium
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	
Date: 27-Jul-2007 Time: 17:45:04		Sheet: 56 of 142	
File: ANALOG_IF_4.Sch			

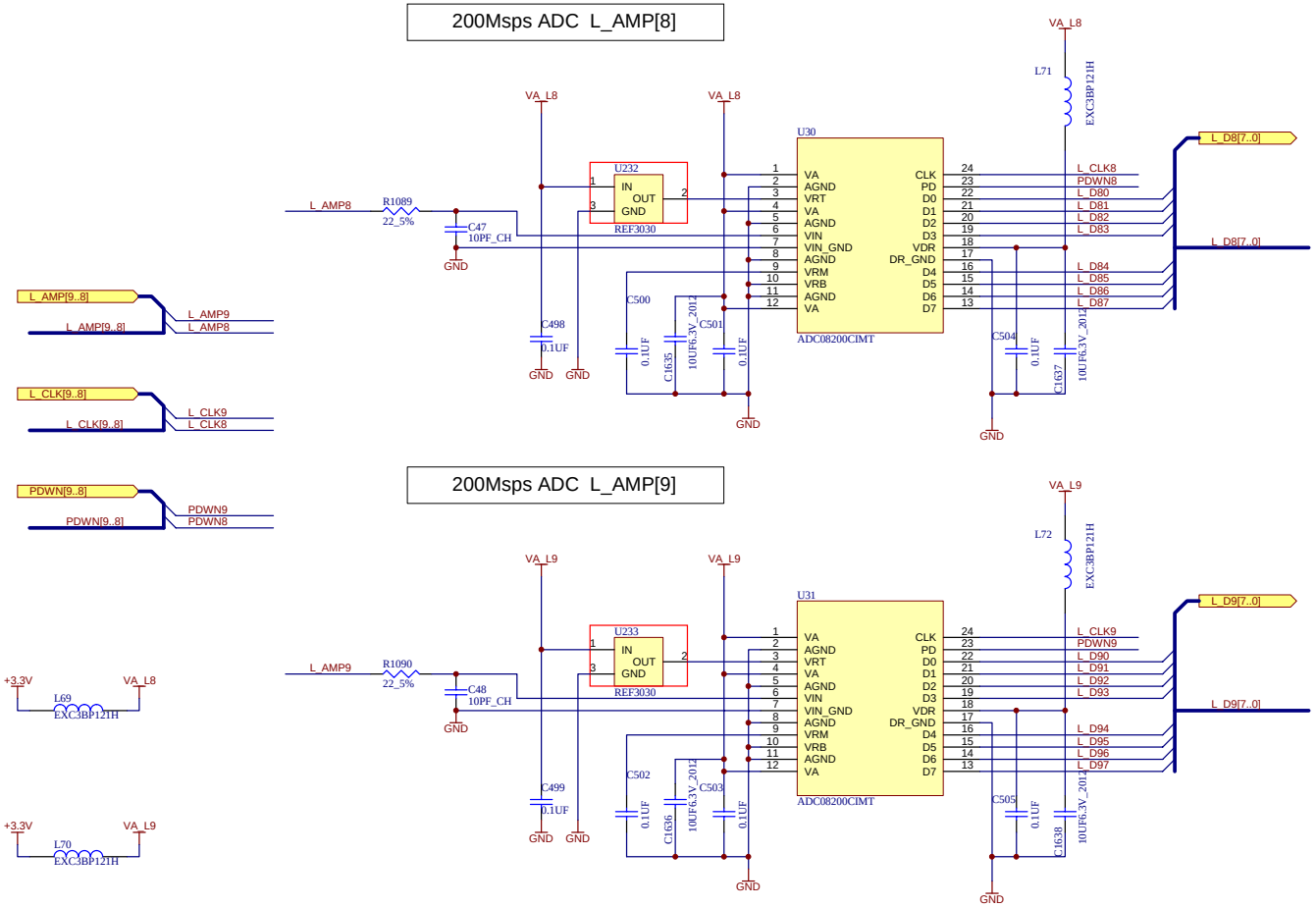
ADC[9..8]
TOP



Title: KamLAND_FADC_Board			inrevium
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	
Date: 27-Jul-2007	Time: 17:45:05	Sheet: 57 of 142	
File: ADC_4.Sch			


200Msps ADC H_AMP[8]
200Msps ADC H_AMP[9]
H_AMP[9..8]
H_AMP9
H_AMP8
H_CLK[9..8]
H_CLK9
H_CLK8
PDWN[9..8]
PDWN9
PDWN8
H_AMP8
H_AMP9
R1085
R1086
22_5%
C40
C41
10PF_CH
U228
U229
REF3030
IN
OUT
GND
U26
U27
ADC08200CIMT
VA
AGND
VRT
VRB
VIN
VIN_GND
VRM
DR_GND
CLK
PD
D0
D1
D2
D3
VDR
D4
D5
D6
D7
VA_H8
VA_H9
L63
L64
EXC3BP121H
L61
L62
+3.3V
C482
C483
C484
C485
C486
C487
C488
C489
0.1UF
10UF6.3V_2012
C1623
C1624
C1625
C1626
H_D8[7..0]
H_D9[7..0]
H_CLK8
H_CLK9
PDWN8
PDWN9
H_D80
H_D81
H_D82
H_D83
H_D84
H_D85
H_D86
H_D87
H_D90
H_D91
H_D92
H_D93
H_D94
H_D95
H_D96
H_D97
Title: KamLAND_FADC_Board
Size: A3
Number: CCSC60002-2110
Revision: 2.00.00
Date: 27-Jul-2007
Time: 17:45:05
Sheet: 58 of 142
File: ADC200M_H4.Sch
inrevium

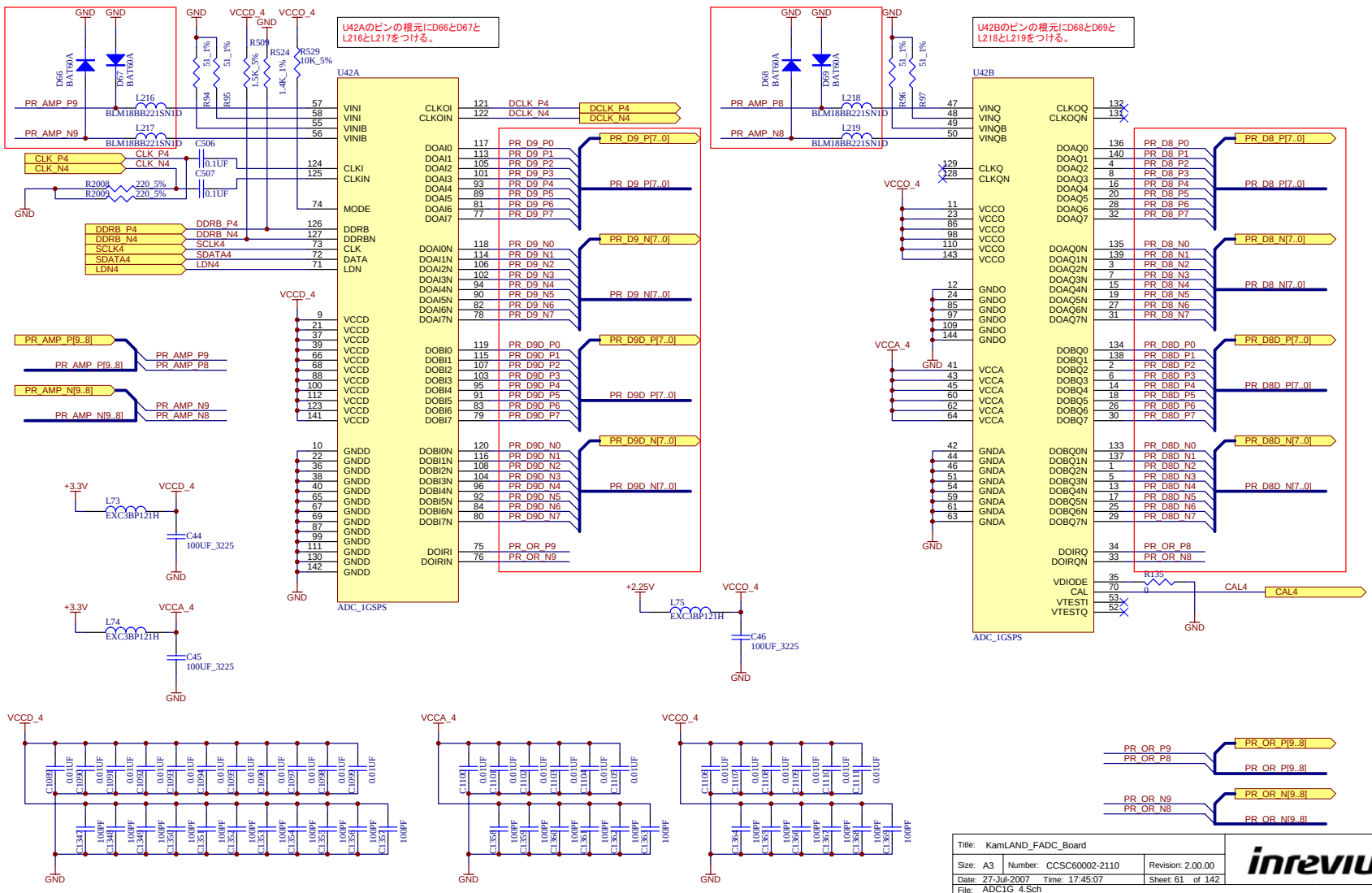

200Msps ADC M_AMP[8]
200Msps ADC M_AMP[9]
M_AMP[9..8]
M_AMP9
M_AMP8
M_CLK[9..8]
M_CLK9
M_CLK8
PDWN[9..8]
PDWN9
PDWN8
M_AMP8
M_AMP9
R1087
R1088
22_5%
C42
C43
10PF_CH
U230
U231
REF3030
IN
OUT
GND
C490
C491
C492
C493
C494
C495
C496
C497
0.1UF
10UF6.3V_2012
C1629
C1630
C1631
C1632
U28
U29
ADC08200CIMT
VA
AGND
VRT
VIN
VIN_GND
VRB
VRM
CLK
PD
D0
D1
D2
D3
VDR
DR_GND
D4
D5
D6
D7
M_CLK8
PDWN8
M_D80
M_D81
M_D82
M_D83
M_D84
M_D85
M_D86
M_D87
M_CLK9
PDWN9
M_D90
M_D91
M_D92
M_D93
M_D94
M_D95
M_D96
M_D97
M_D8[7..0]
M_D9[7..0]
VA_M8
VA_M9
L67
L68
EXC3BP121H
+3.3V
L65
L66
Title: KamLAND_FADC_Board
Size: A3
Number: CCSC60002-2110
Revision: 2.00.00
Date: 27-Jul-2007
Time: 17:45:06
Sheet: 59 of 142
File: ADC200M_M4.Sch
inrevium



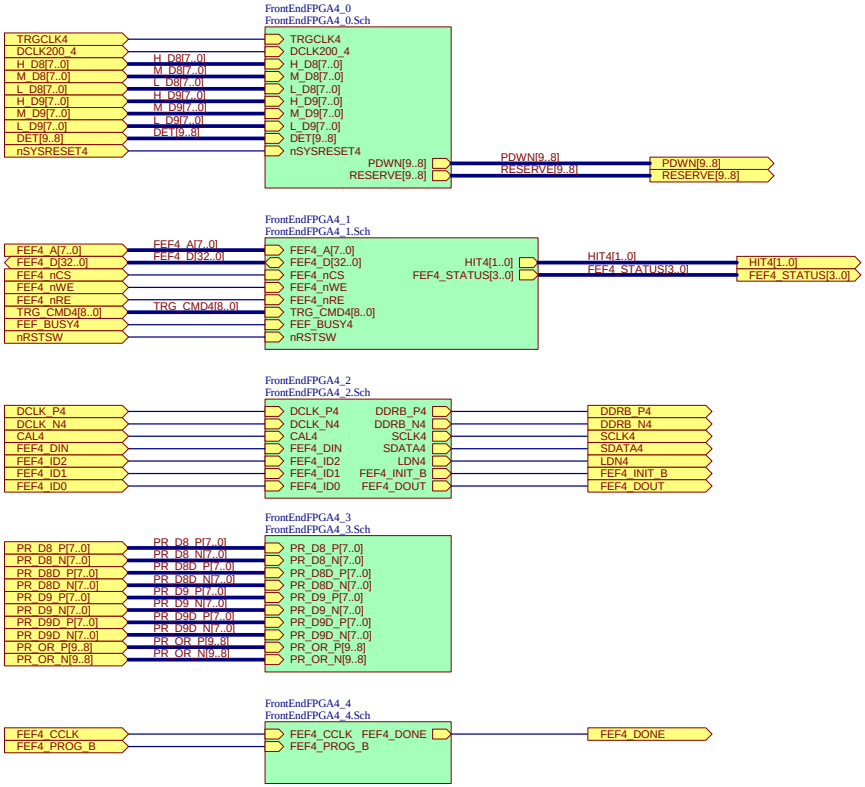
Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:45:06		Sheet: 60 of 142
File: ADC200M_L4.Sch			

inrevium

1Gsps ADC PR_AMP[9..8]

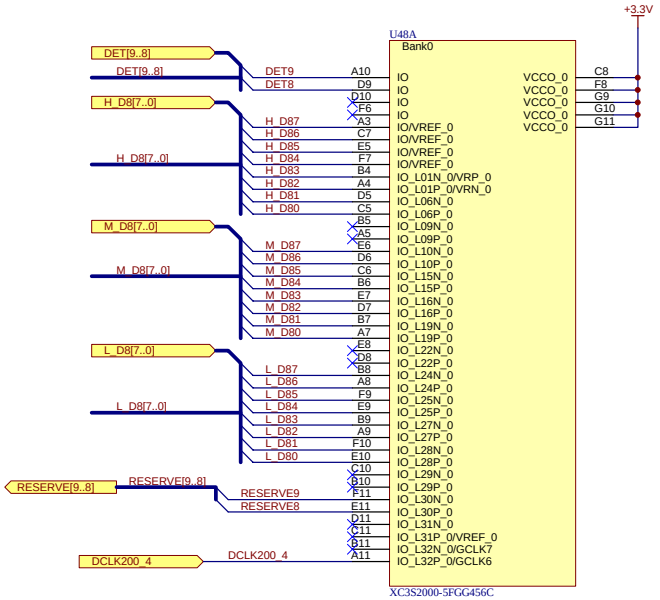


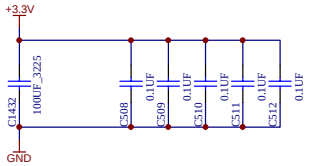
FrontEnd FPGA 4
TOP



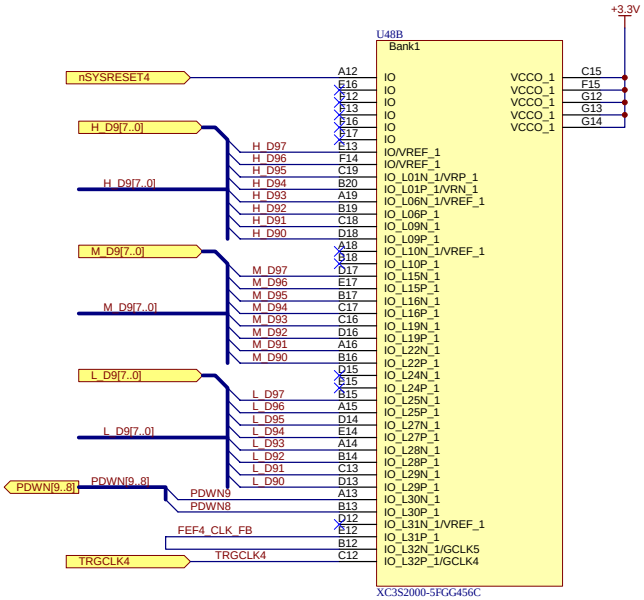
Title: KamLAND_FADC_Board			inrevium
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	
Date: 27-Jul-2007 Time: 17:45:07		Sheet: 62 of 142	
File: FEF_TOP_4.Sch			

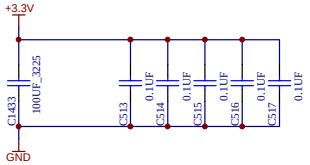
AMP I/F
200M ADC I/F
(LVCMOS33)





VME I/F
200M ADC I/F
(LVCMOS33)

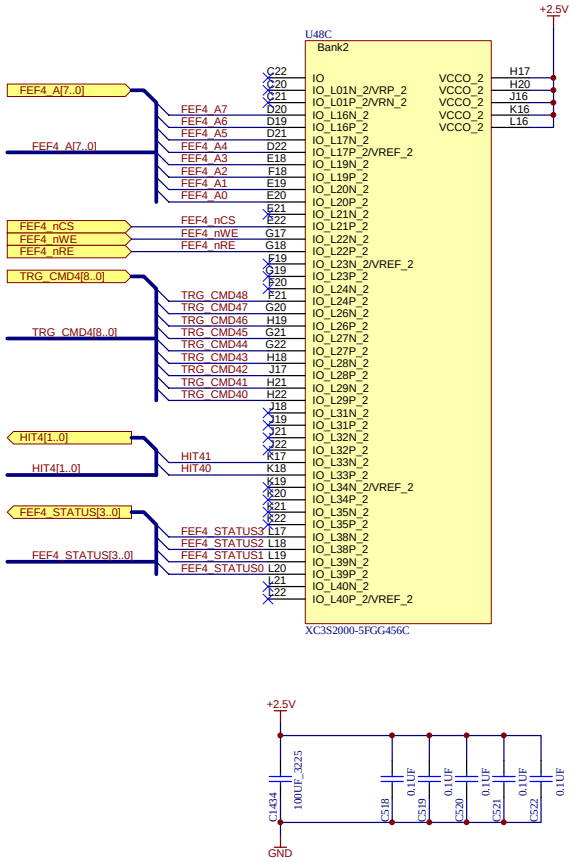




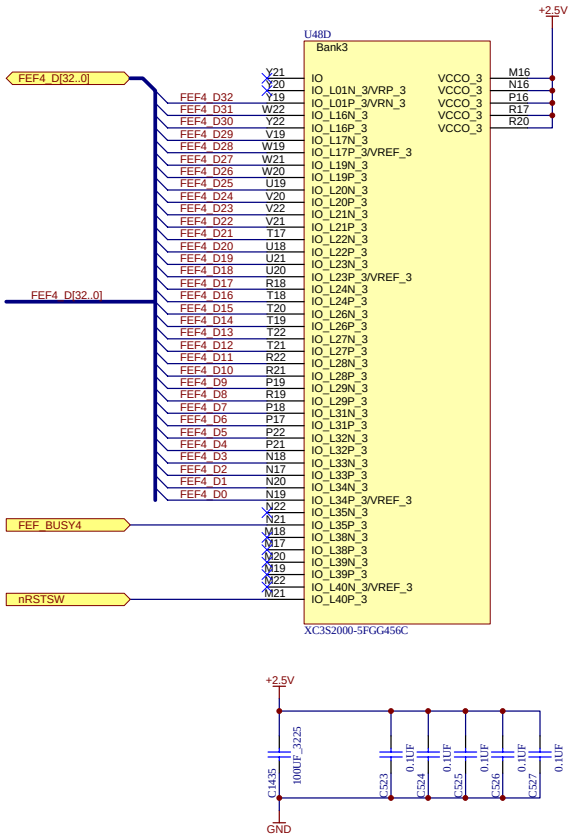
Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:45:08		Sheet: 63 of 142
File: FrontEndFPGA4_0.Sch			

inrevium

SYSTEM FPGA I/F
(LVCMOS25)



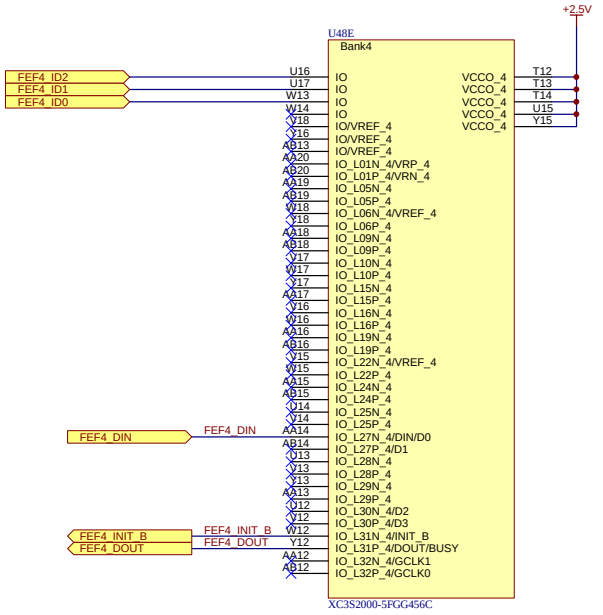
SYSTEM FPGA I/F
(LVCMOS25)

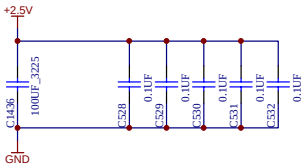


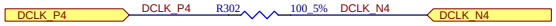
Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:45:08		Sheet: 64 of 142
File: FrontEndFPGA4_1.Sch			

inrevium

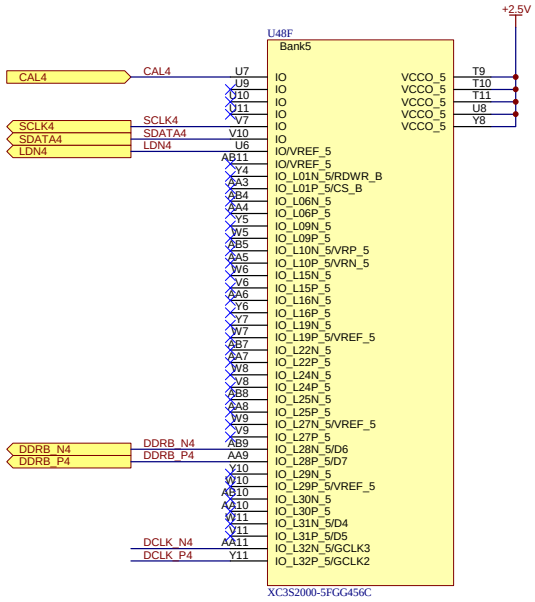
CONFIG CTRL I/F (LVCMOS25)

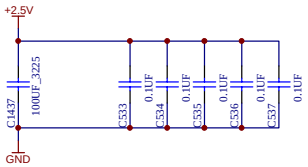




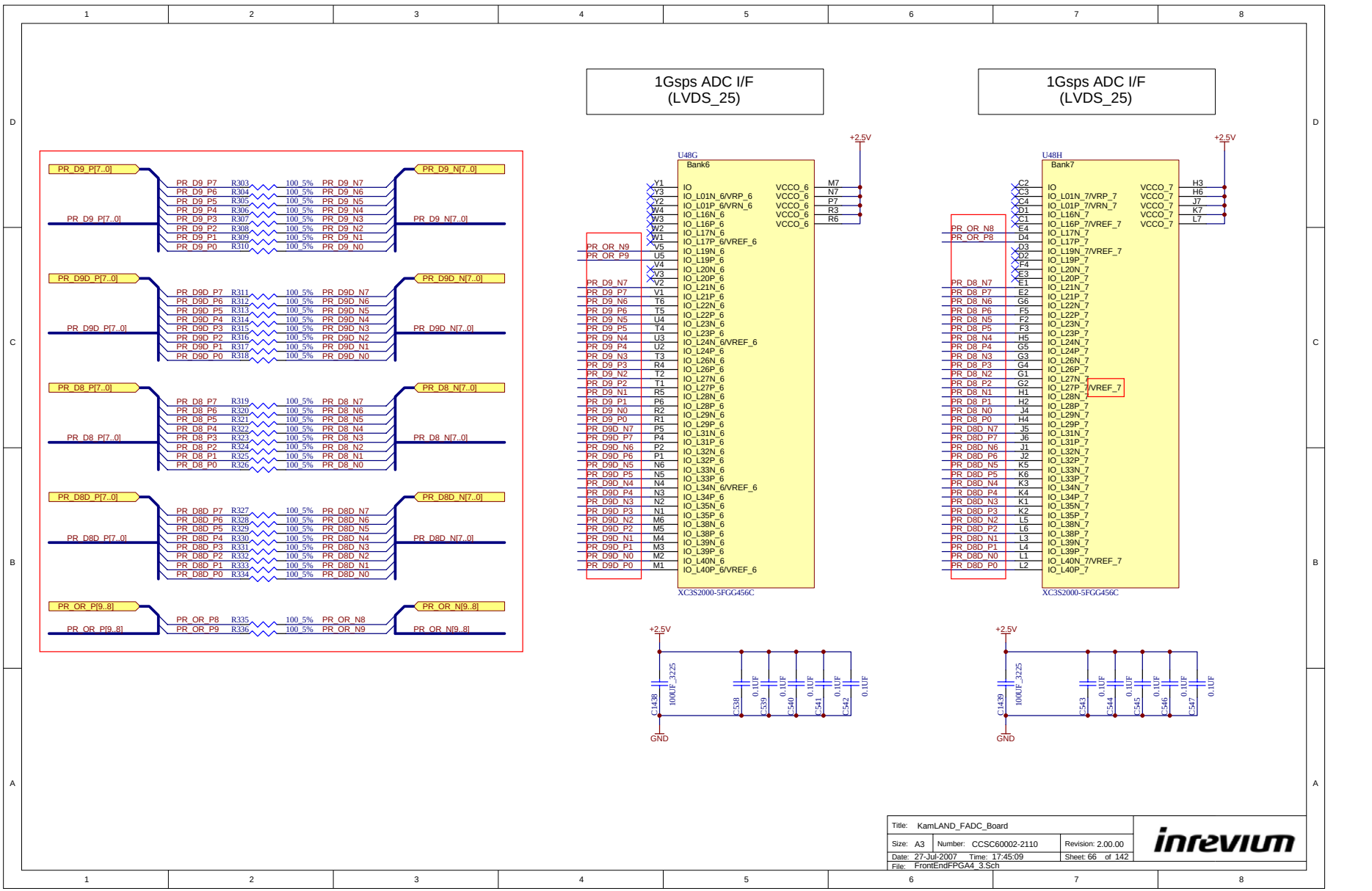


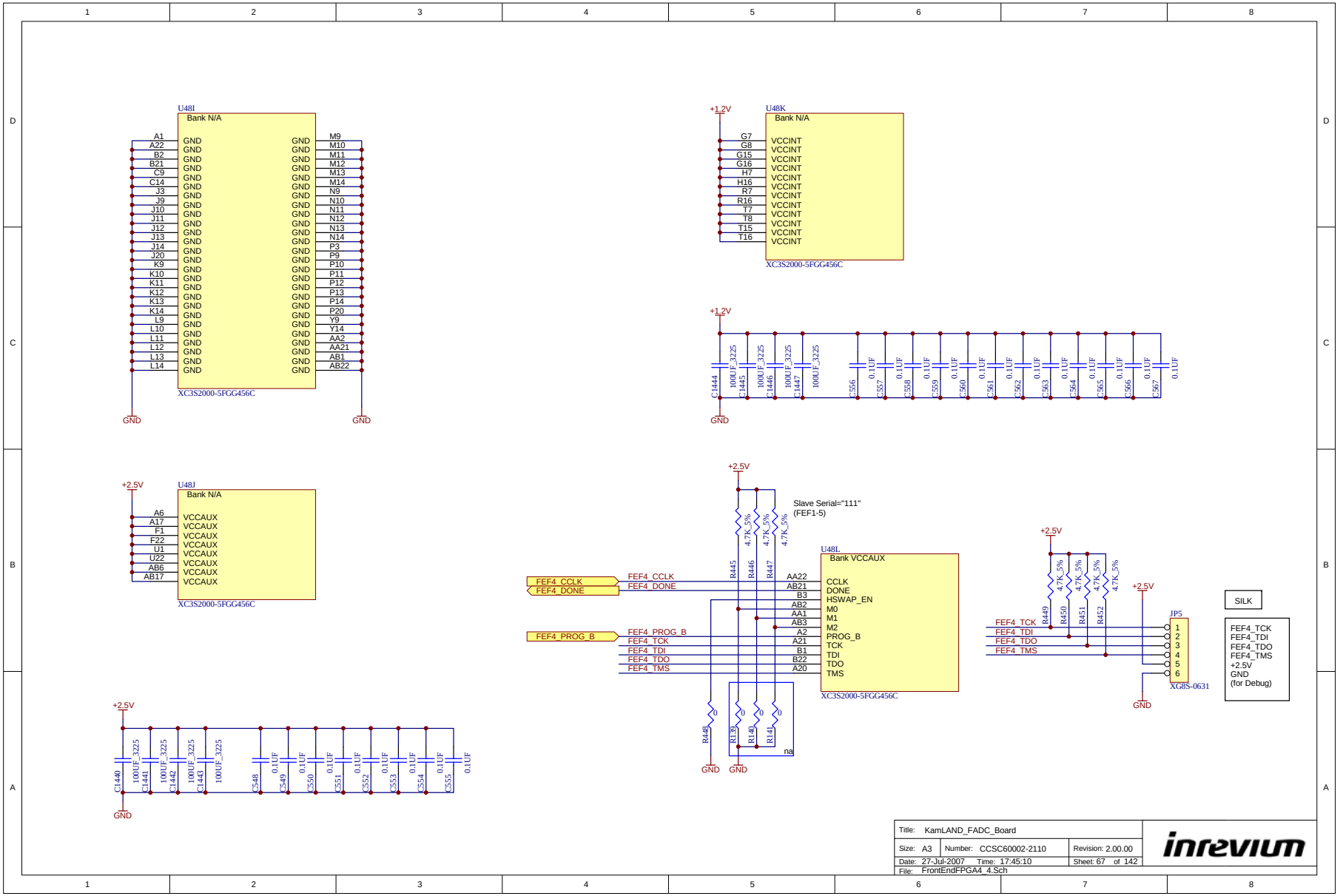
1Gsps ADC I/F (LVDS_25,LVCMOS25)



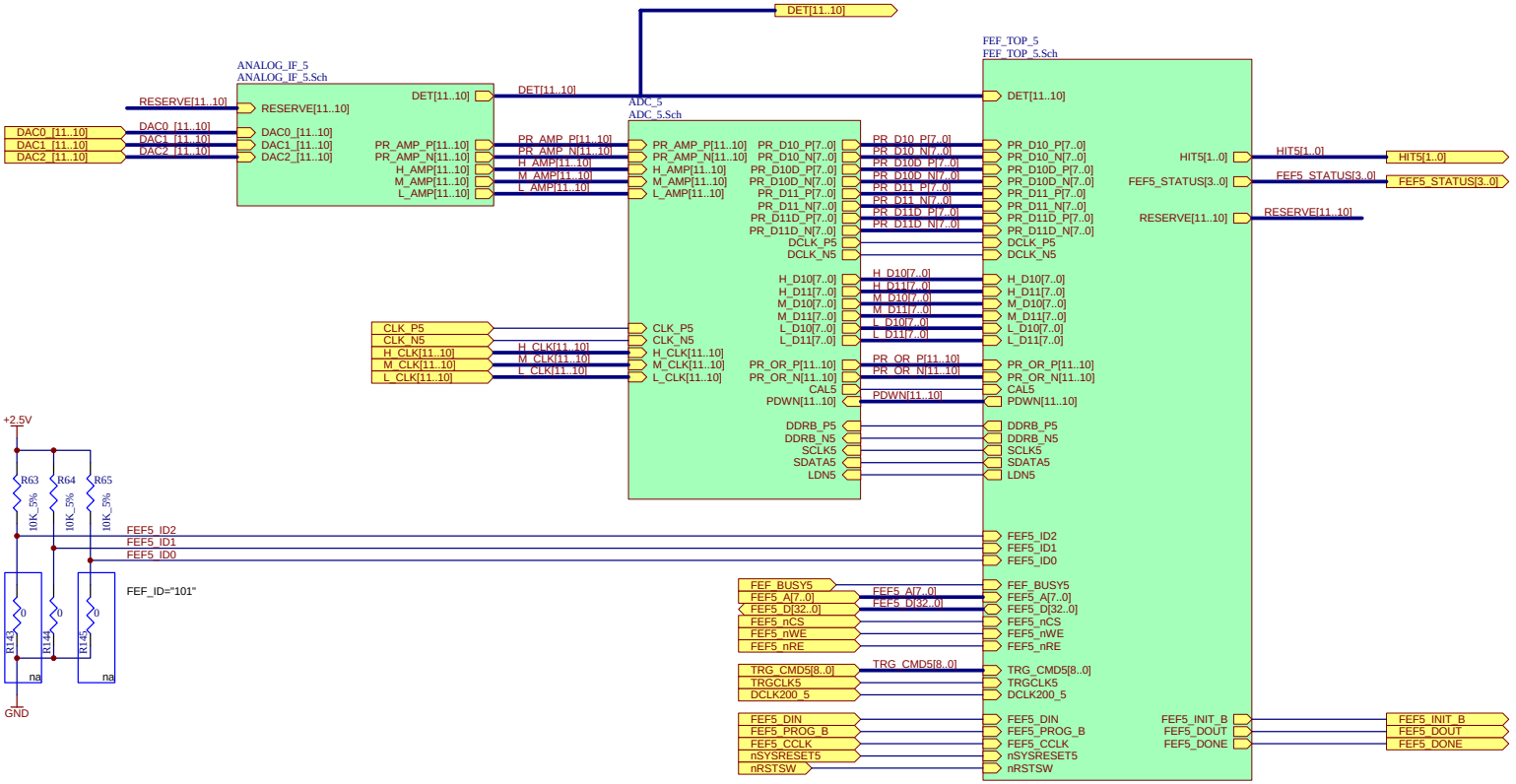


Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	inrevium
Date: 27-Jul-2007 Time: 17:45:09		Sheet: 65 of 142	
File: FrontEndFPGA4_2.Sch			


1Gsps ADC I/F
(LVDS_25)
1Gsps ADC I/F
(LVDS_25)
PR_D9_P[7..0]
PR_D9_N[7..0]
PR_D9D_P[7..0]
PR_D9D_N[7..0]
PR_D8_P[7..0]
PR_D8_N[7..0]
PR_D8D_P[7..0]
PR_D8D_N[7..0]
PR_OR_P[9..8]
PR_OR_N[9..8]
U48G
Bank6
U48H
Bank7
XC3S2000-5FGG456C
+2.5V
GND
100UF_3225
0.1UF
C1438
C1439
C538
C539
C540
C541
C542
C543
C544
C545
C546
C547
Title: KamLAND_FADC_Board
Size: A3
Number: CCSC60002-2110
Revision: 2.00.00
Date: 27-Jul-2007
Time: 17:45:09
Sheet: 66 of 142
File: FrontEndFPGA4_3.Sch
inrevium


U48I
Bank N/A
XC3S2000-5FGG456C
GND
U48K
Bank N/A
VCCINT
XC3S2000-5FGG456C
+1.2V
U48J
Bank N/A
VCCAUX
XC3S2000-5FGG456C
+2.5V
U48L
Bank VCCAUX
CCLK
DONE
HSWAP_EN
M0
M1
M2
PROG_B
TCK
TDI
TDO
TMS
XC3S2000-5FGG456C
Slave Serial="111"
(FEF1-5)
FEF4_CCLK
FEF4_DONE
FEF4_PROG_B
FEF4_TCK
FEF4_TDI
FEF4_TDO
FEF4_TMS
JP5
XG8S-0631
SILK
FEF4_TCK
FEF4_TDI
FEF4_TDO
FEF4_TMS
+2.5V
GND
(for Debug)
Title: KamLAND_FADC_Board
Size: A3
Number: CCSC60002-2110
Revision: 2.00.00
Date: 27-Jul-2007
Time: 17:45:10
Sheet: 67 of 142
File: FrontEndFPGA4_4.Sch
inrevium

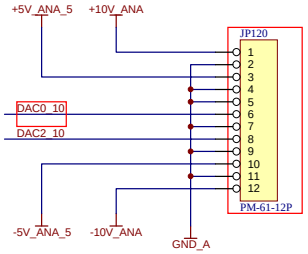
PMT[11..10] to FrontEnd FPGA 5
TOP

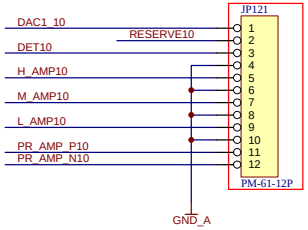


Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	
Date: 27-Jul-2007	Time: 17:45:11	Sheet: 68 of 142	
File: PMT2FEF_5.Sch			

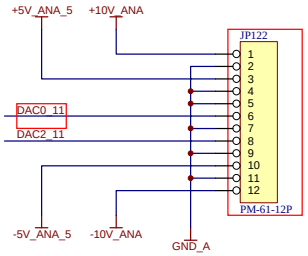
inrevium

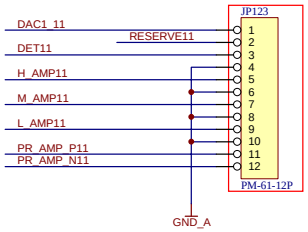
PMT[10]

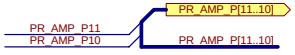


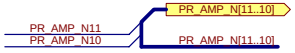


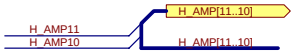
PMT[11]

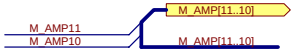


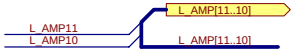


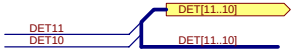








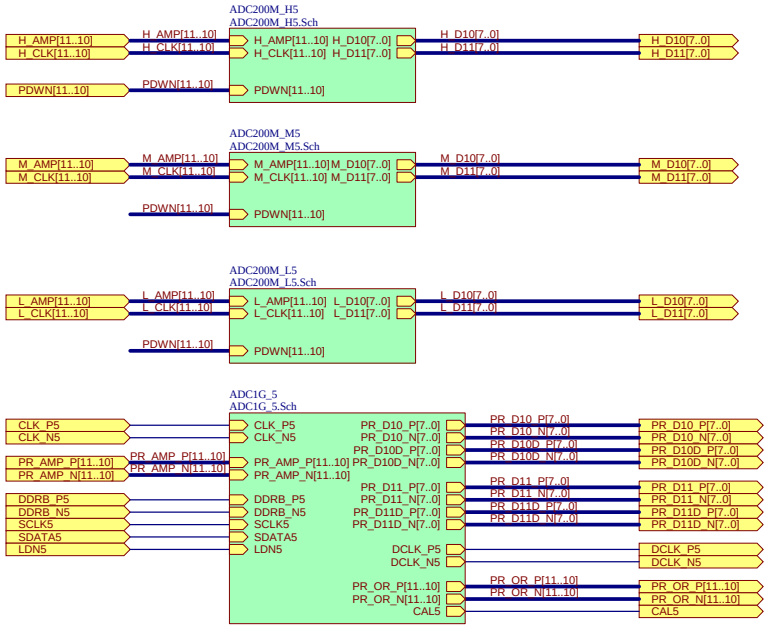




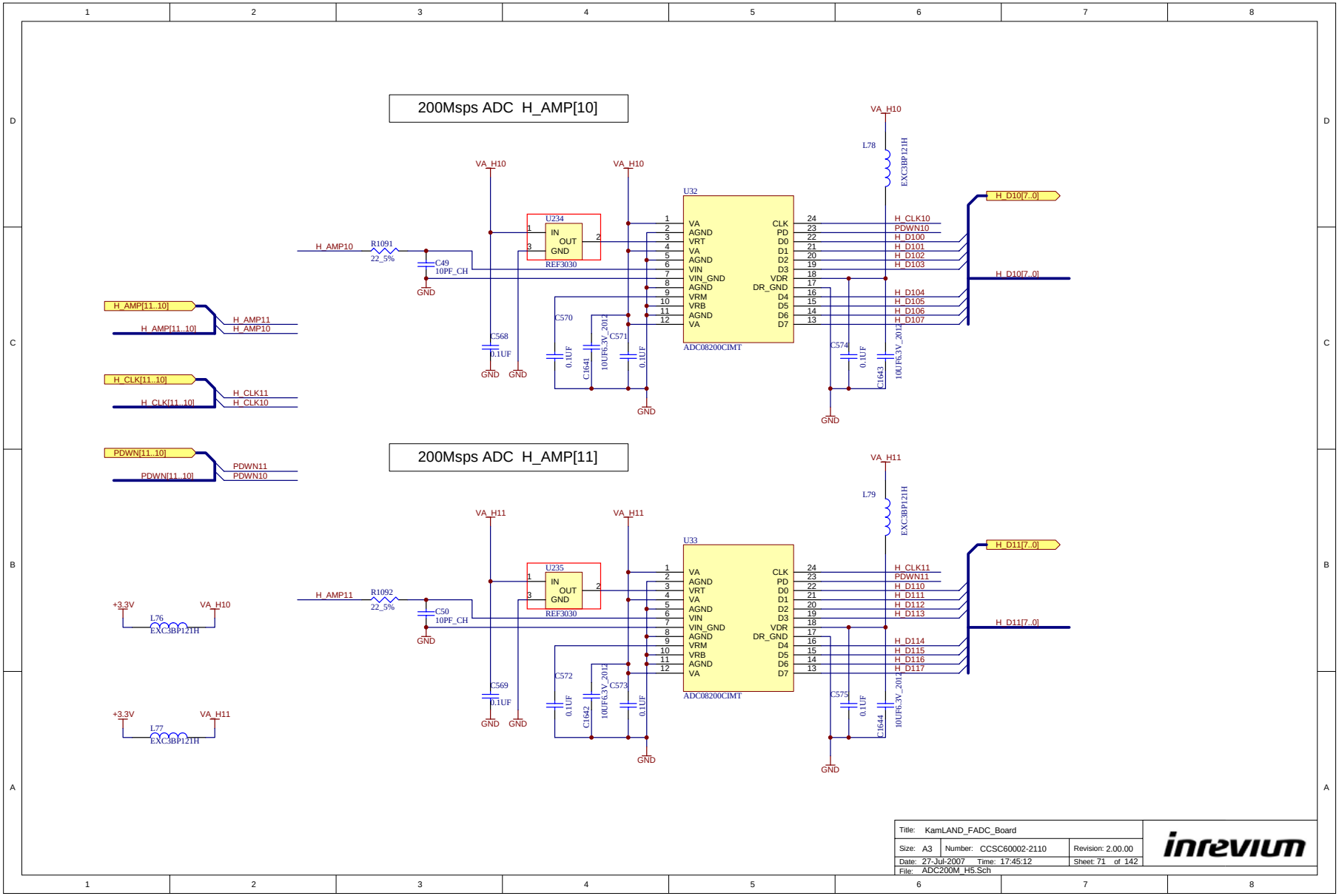
Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:45:11		Sheet: 69 of 142
File: ANALOG_IF_5.Sch			

inrevium

ADC[11..10]
TOP

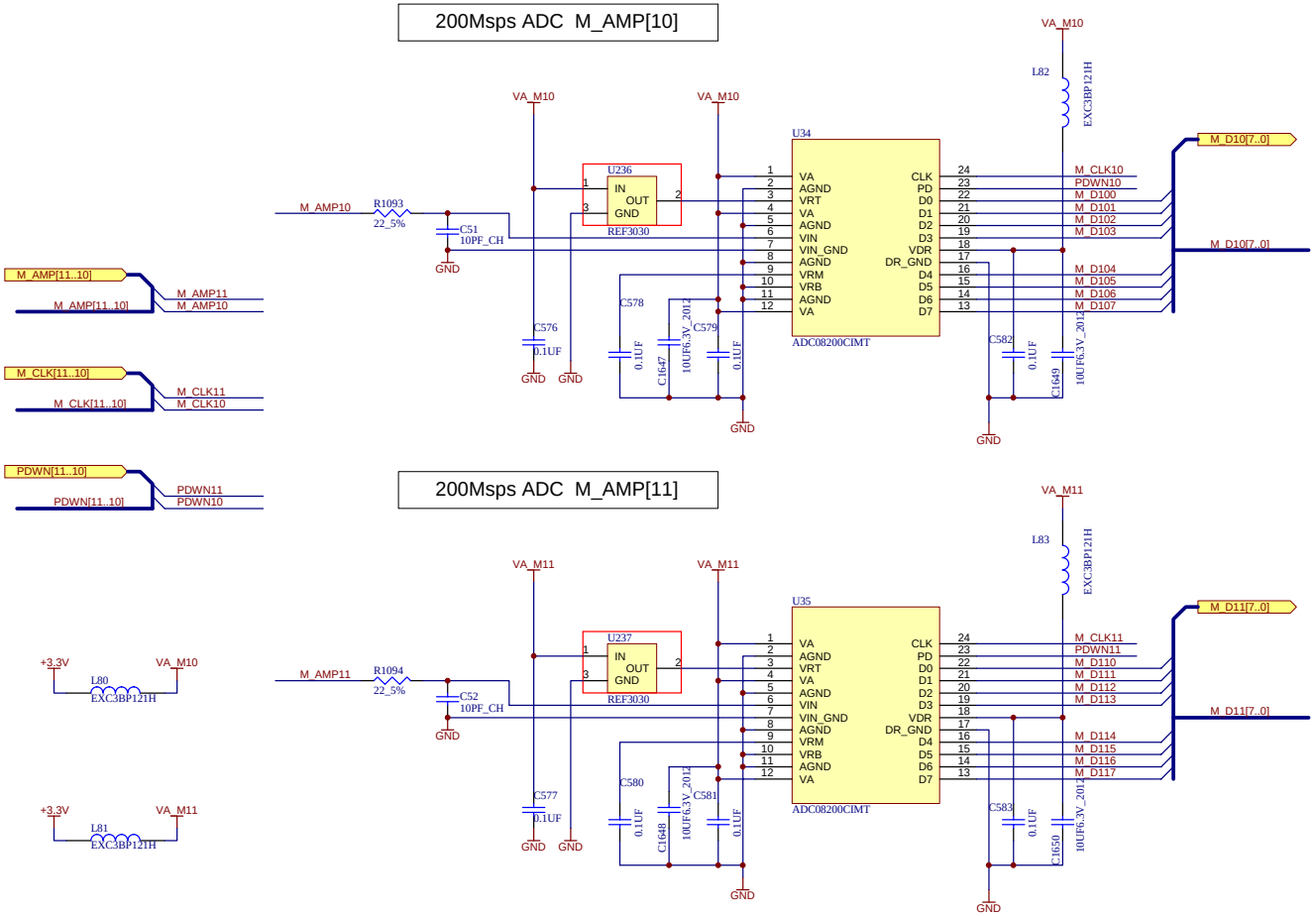


Title: KamLAND_FADC_Board			inrevium
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	
Date: 27-Jul-2007	Time: 17:45:11	Sheet: 70 of 142	
File: ADC_5.Sch			



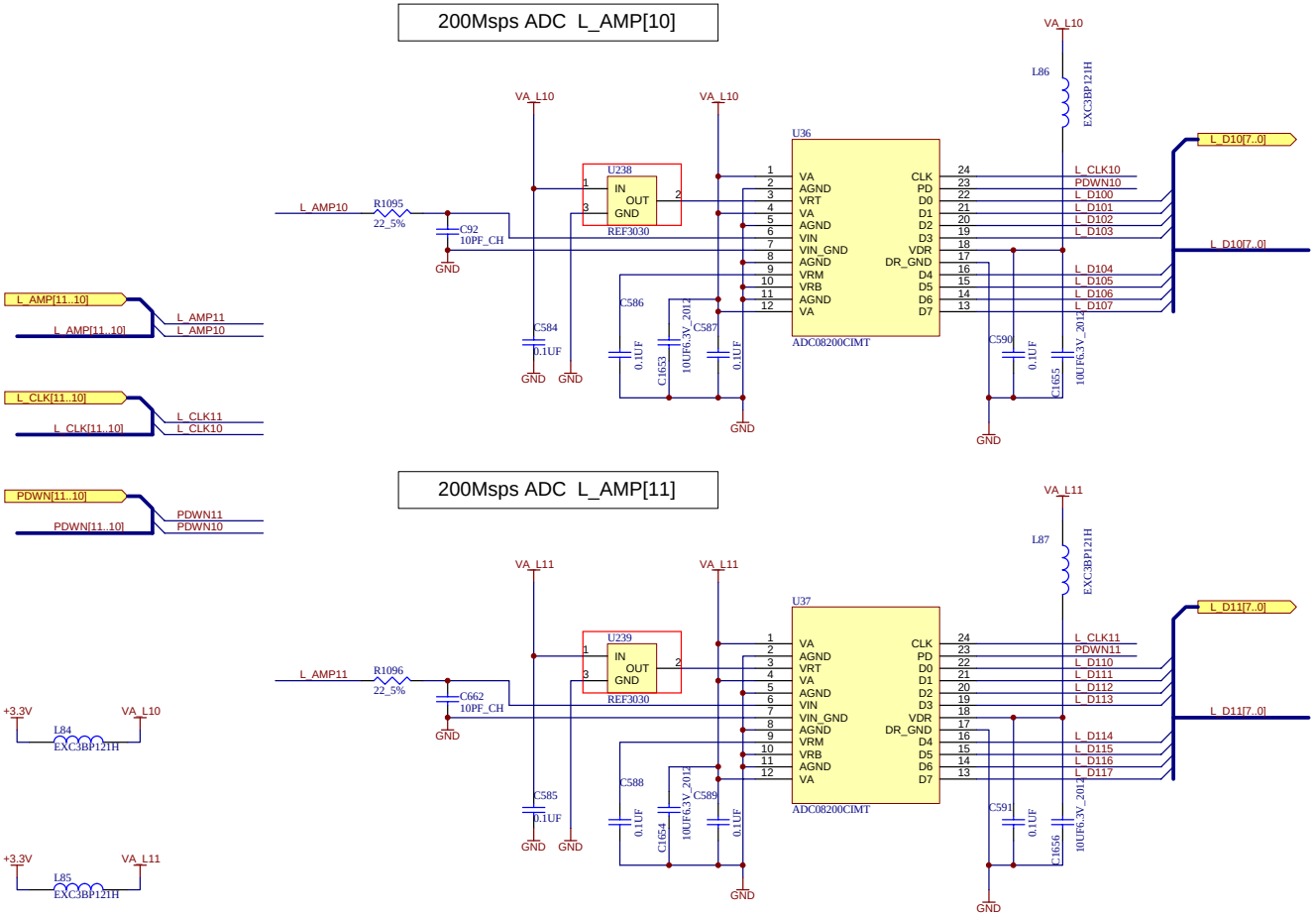
Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:45:12		Sheet: 71 of 142
File: ADC200M_H5.Sch			

inrevium



Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:45:12		Sheet: 72 of 142
File: ADC200M_M5.Sch			

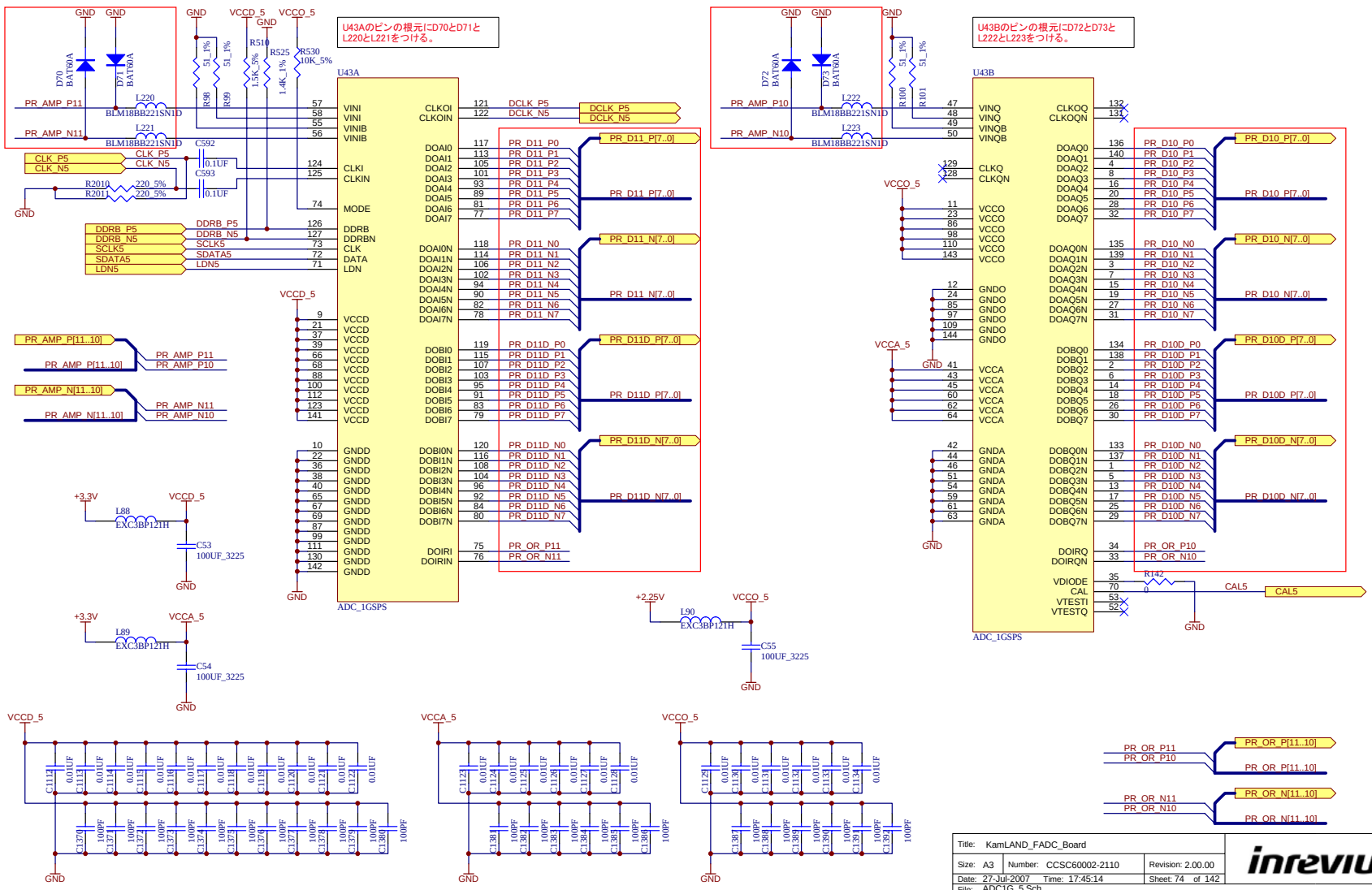
inrevium



Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:45:13		Sheet: 73 of 142
File: ADC200M_L5.Sch			

inrevium

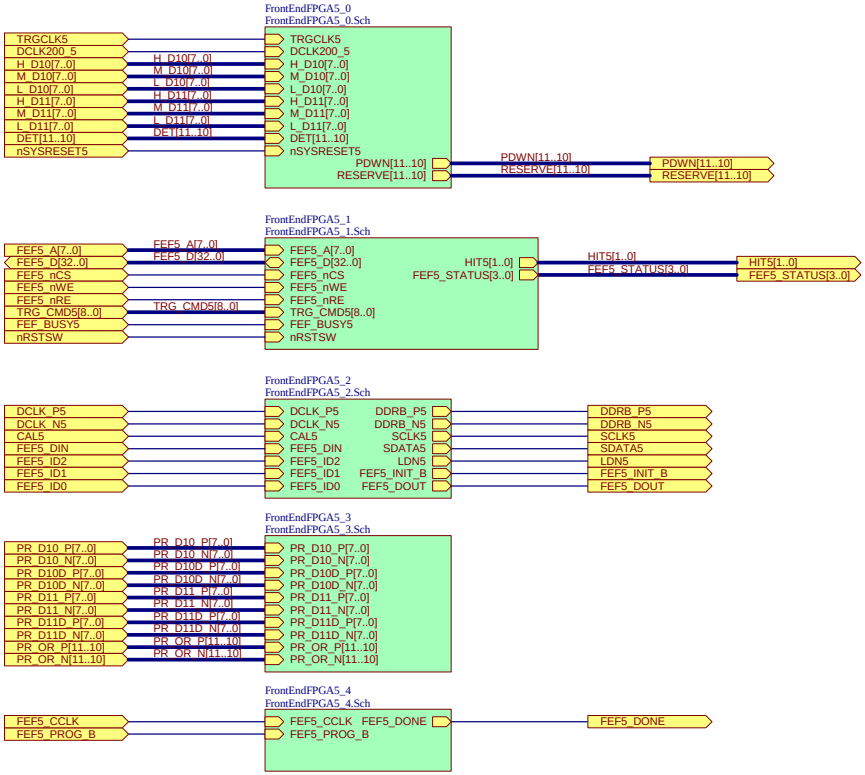
1Gsps ADC PR_AMP[11..10]



Title:	KamLAND_FADC_Board
Size: A3	Number: CCSC60002-2110
Revision: 2.00.00	
Date: 27-Jul-2007	Time: 17:45:14
Sheet: 74 of 142	
File: ADC1G_5.Sch	

inrevium

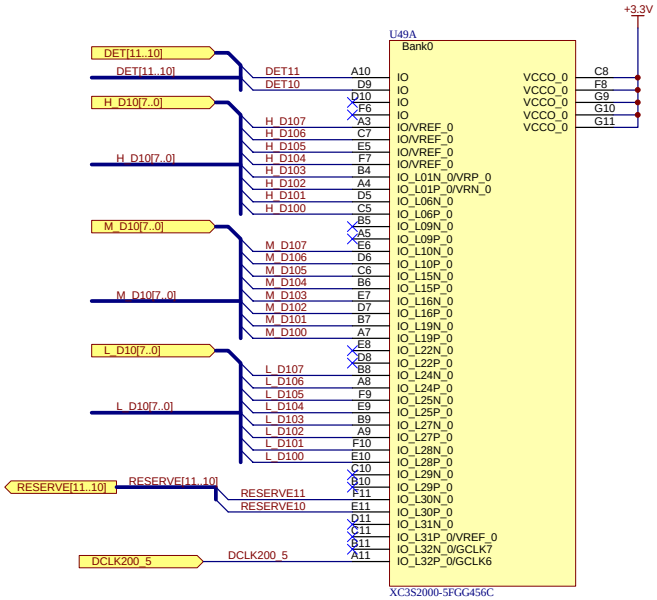
FrontEnd FPGA 5 TOP



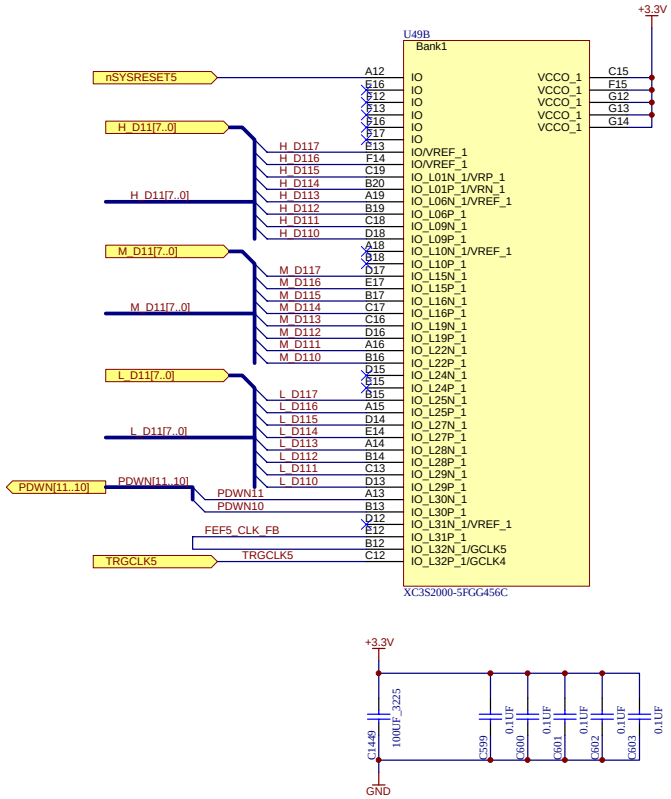
Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	
Date: 27-Jul-2007	Time: 17:45:14	Sheet: 75 of 142	
File: FEF_TOP_5.Sch			

inrevium

AMP I/F
200M ADC I/F
(LVCMOS33)



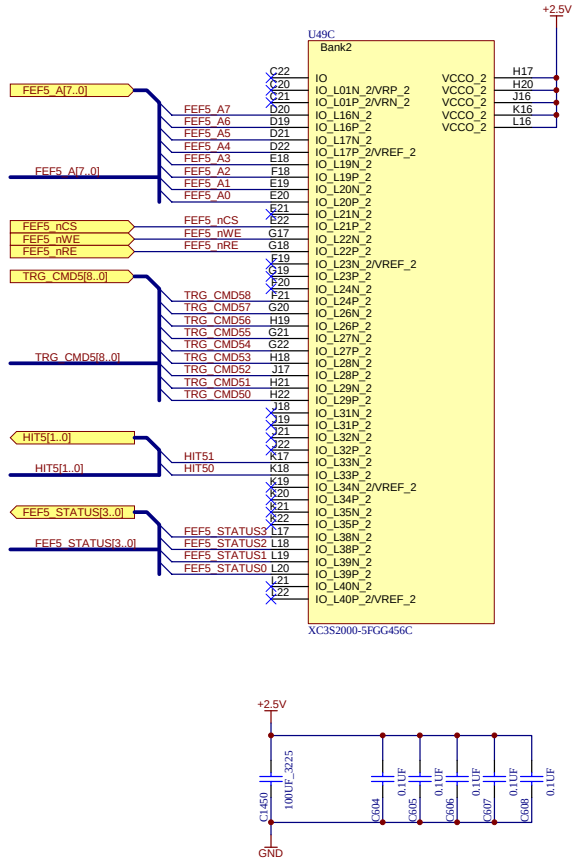
VME I/F
200M ADC I/F
(LVCMOS33)



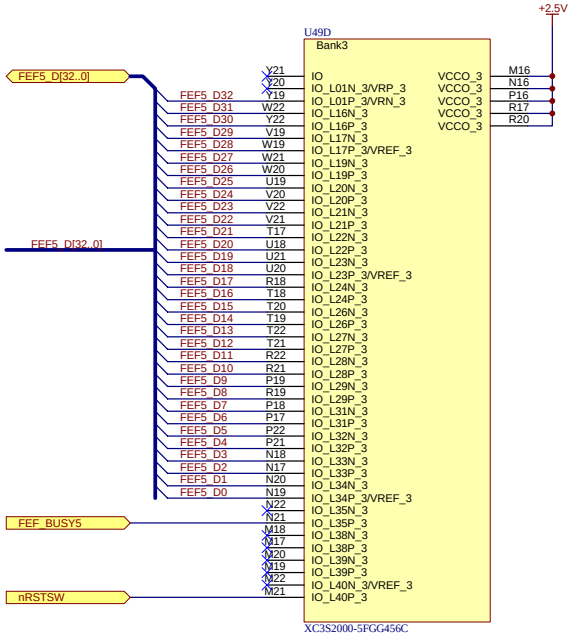
Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:45:15		Sheet: 76 of 142
File: FrontEndFPGA5_0.Sch			

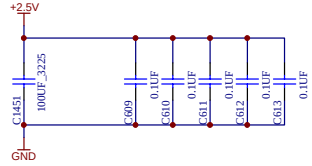
inrevium

SYSTEM FPGA I/F (LVCMOS25)



SYSTEM FPGA I/F (LVCMOS25)

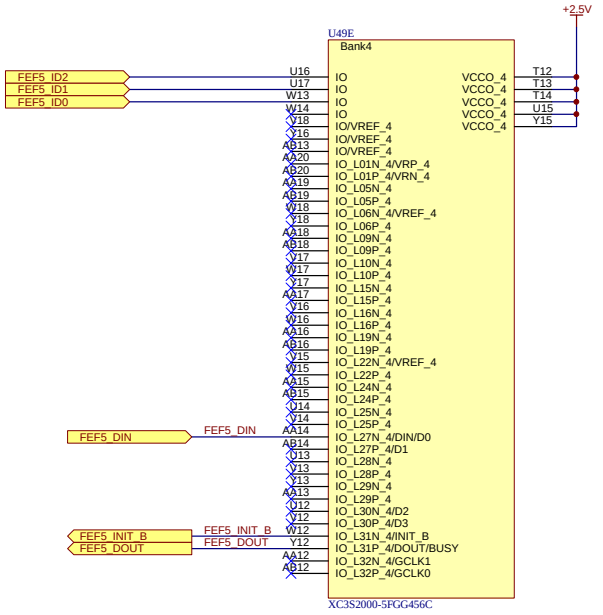


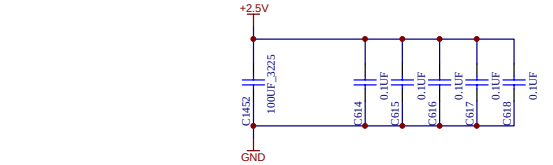


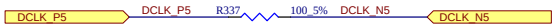
Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	
Date: 27-Jul-2007	Time: 17:45:15	Sheet: 77 of 142	
File: FrontEndFPGA5_1.Sch			

inrevium

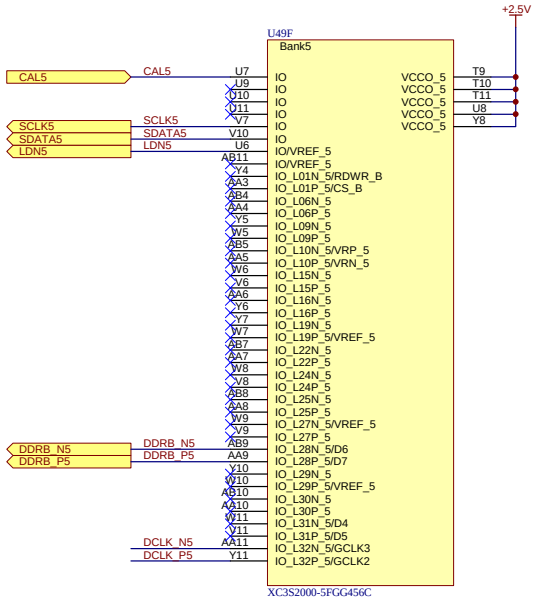
CONFIG CTRL I/F (LVCMOS25)

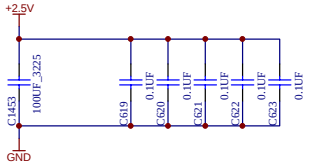






1Gsps ADC I/F (LVDS_25,LVCMOS25)





Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	
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File: FrontEndFPGA5_2.Sch			

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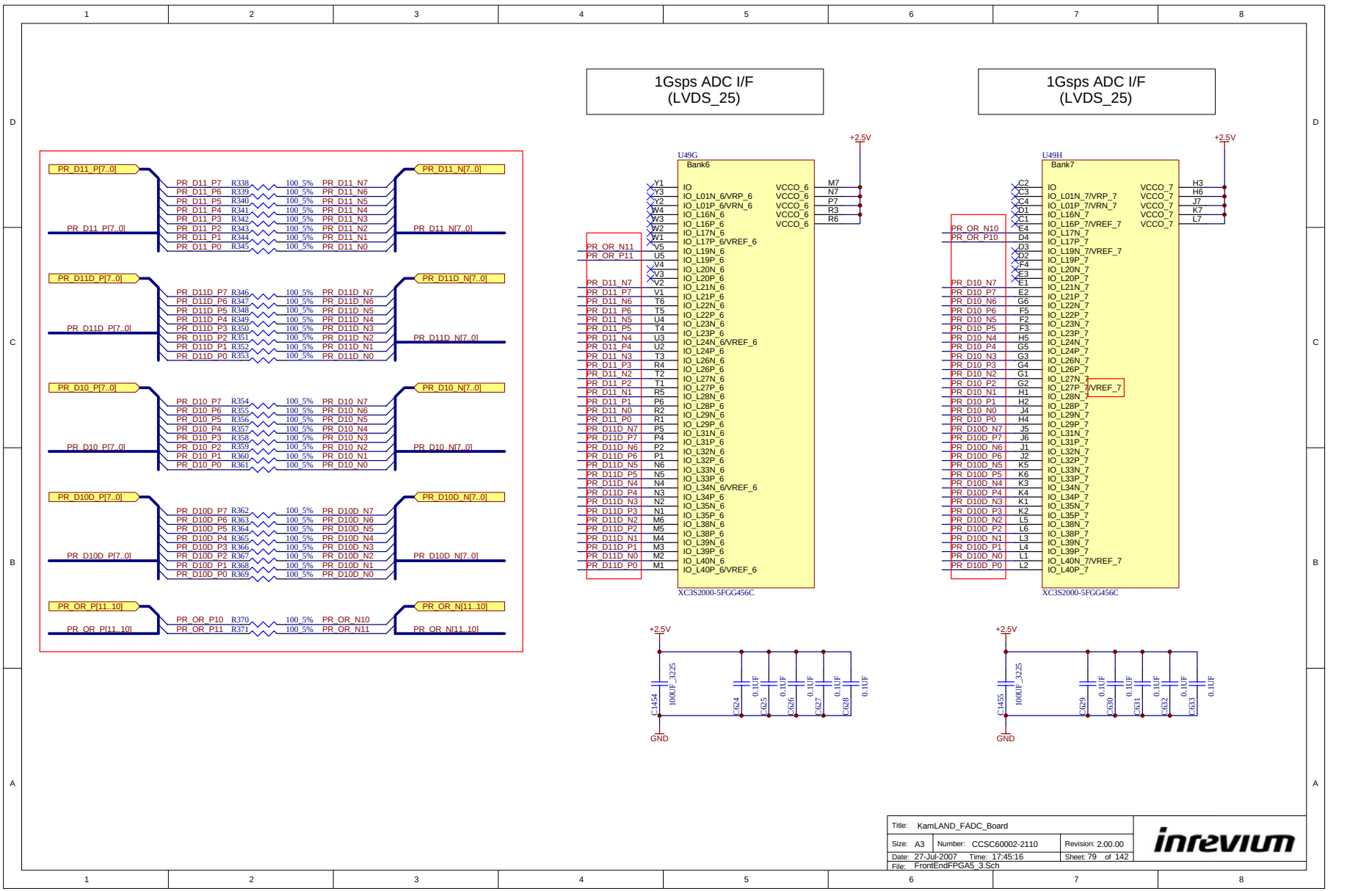
1Gsps ADC I/F
(LVDS_25)
1Gsps ADC I/F
(LVDS_25)
PR_D11_P[7..0]
PR_D11_N[7..0]
PR_D11D_P[7..0]
PR_D11D_N[7..0]
PR_D10_P[7..0]
PR_D10_N[7..0]
PR_D10D_P[7..0]
PR_D10D_N[7..0]
PR_OR_P[11..10]
PR_OR_N[11..10]
U49G
Bank6
U49H
Bank7
XC3S2000-5FGG456C
+2.5V
GND
100UF_3225
0.1UF
C1454
C1455
Title: KamLAND_FADC_Board
Size: A3
Number: CCSC60002-2110
Revision: 2.00.00
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File: FrontEndFPGA5_3.Sch
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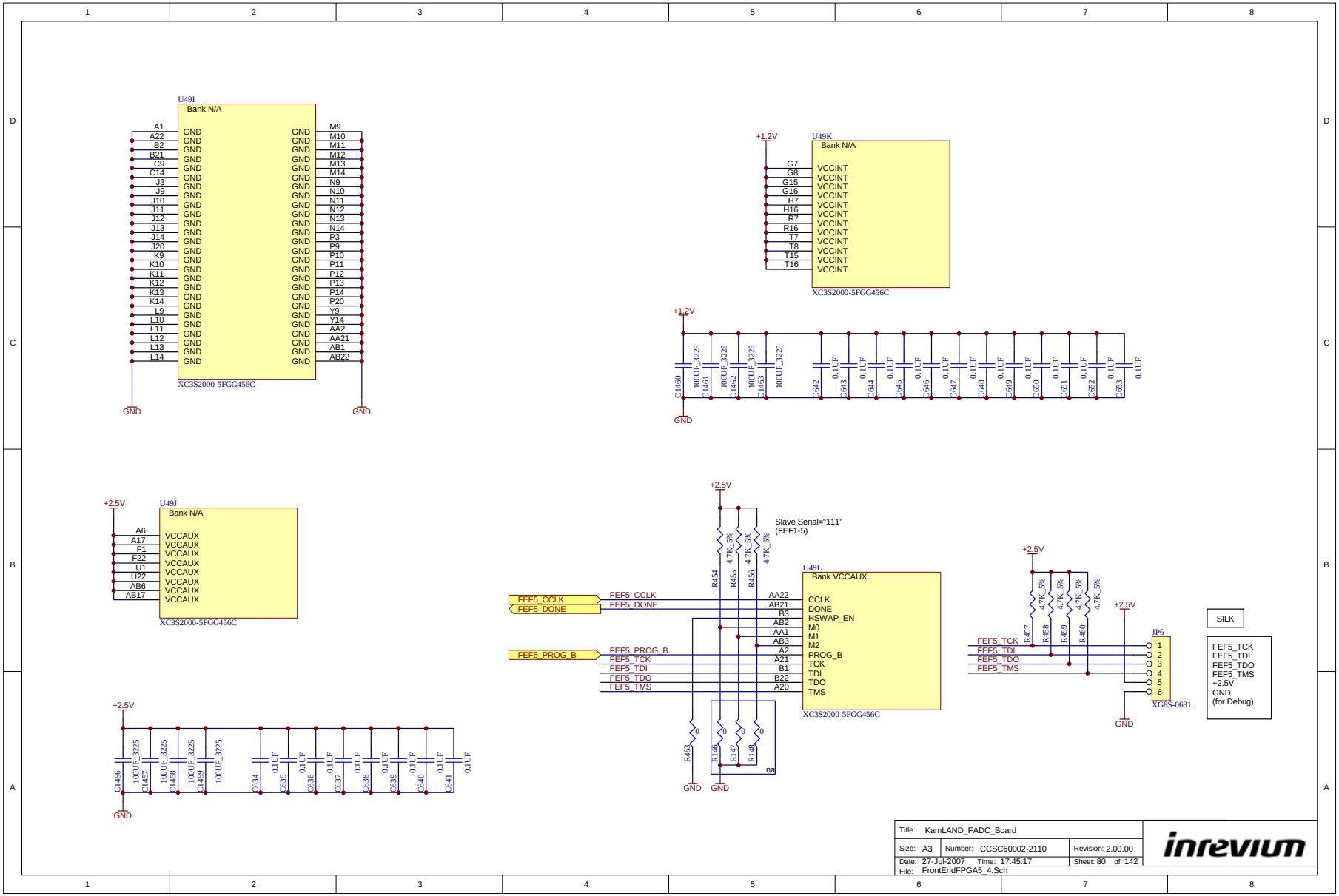
U49I
Bank N/A
XC3S2000-5FGG456C
GND
U49K
Bank N/A
VCCINT
XC3S2000-5FGG456C
+1.2V
U49J
Bank N/A
VCCAUX
XC3S2000-5FGG456C
+2.5V
U49L
Bank VCCAUX
CCLK
DONE
HSWAP_EN
M0
M1
M2
PROG_B
TCK
TDI
TDO
TMS
XC3S2000-5FGG456C
Slave Serial="111"
(FEF1-5)
FEF5_CCLK
FEF5_DONE
FEF5_PROG_B
FEF5_TCK
FEF5_TDI
FEF5_TDO
FEF5_TMS
JP6
XG8S-0631
SILK
FEF5_TCK
FEF5_TDI
FEF5_TDO
FEF5_TMS
+2.5V
GND
(for Debug)
Title: KamLAND_FADC_Board
Size: A3
Number: CCSC60002-2110
Revision: 2.00.00
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File: FrontEndFPGA5_4.Sch
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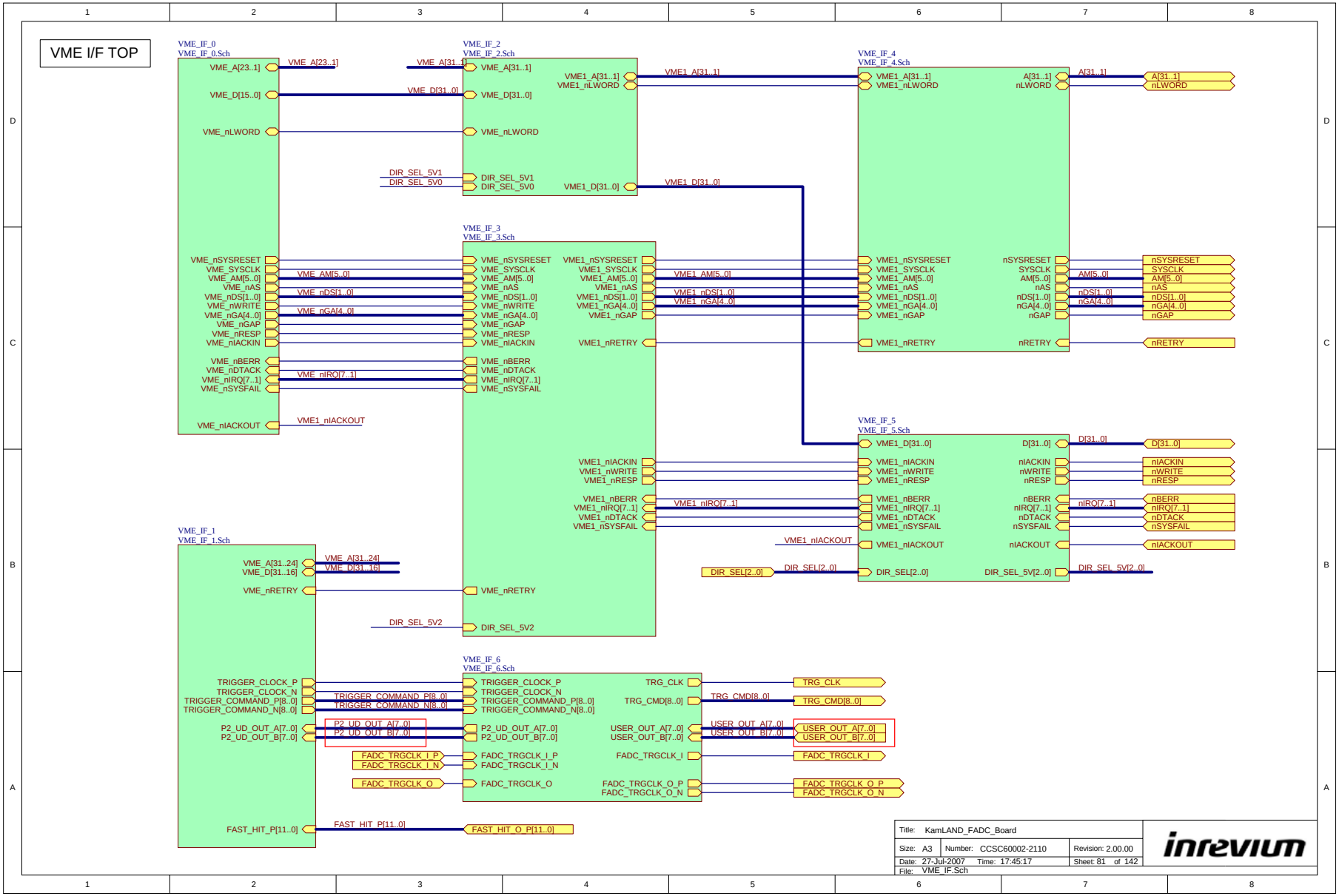
VME I/F TOP
VME_IF_0
VME_IF_0.Sch
VME_A[23..1]
VME_D[15..0]
VME_nLWORD
VME_nSYSRESET
VME_SYSCLK
VME_AM[5..0]
VME_nAS
VME_nDS[1..0]
VME_nWRITE
VME_nGA[4..0]
VME_nGAP
VME_nRESP
VME_nIACKIN
VME_nBERR
VME_nDTACK
VME_nIRQ[7..1]
VME_nSYSFAIL
VME_nIACKOUT
VME_IF_2
VME_IF_2.Sch
VME_A[31..1]
VME_D[31..0]
VME_nLWORD
DIR_SEL_5V1
DIR_SEL_5V0
VME1_A[31..1]
VME1_nLWORD
VME1_D[31..0]
VME_IF_3
VME_IF_3.Sch
VME_nSYSRESET
VME_SYSCLK
VME_AM[5..0]
VME_nAS
VME_nDS[1..0]
VME_nWRITE
VME_nGA[4..0]
VME_nGAP
VME_nRESP
VME_nIACKIN
VME_nBERR
VME_nDTACK
VME_nIRQ[7..1]
VME_nSYSFAIL
VME_nRETRY
DIR_SEL_5V2
VME1_nSYSRESET
VME1_SYSCLK
VME1_AM[5..0]
VME1_nAS
VME1_nDS[1..0]
VME1_nGA[4..0]
VME1_nGAP
VME1_nRETRY
VME1_nIACKIN
VME1_nWRITE
VME1_nRESP
VME1_nBERR
VME1_nIRQ[7..1]
VME1_nDTACK
VME1_nSYSFAIL
VME1_nIACKOUT
VME_IF_4
VME_IF_4.Sch
VME1_A[31..1]
VME1_nLWORD
VME1_nSYSRESET
VME1_SYSCLK
VME1_AM[5..0]
VME1_nAS
VME1_nDS[1..0]
VME1_nGA[4..0]
VME1_nGAP
VME1_nRETRY
A[31..1]
nLWORD
nSYSRESET
SYSCLK
AM[5..0]
nAS
nDS[1..0]
nGA[4..0]
nGAP
nRETRY
VME_IF_5
VME_IF_5.Sch
VME1_D[31..0]
VME1_nIACKIN
VME1_nWRITE
VME1_nRESP
VME1_nBERR
VME1_nIRQ[7..1]
VME1_nDTACK
VME1_nSYSFAIL
VME1_nIACKOUT
DIR_SEL[2..0]
DIR_SEL_5V[2..0]
D[31..0]
nIACKIN
nWRITE
nRESP
nBERR
nIRQ[7..1]
nDTACK
nSYSFAIL
nIACKOUT
DIR_SEL_5V[2..0]
VME_IF_1
VME_IF_1.Sch
VME_A[31..24]
VME_D[31..16]
VME_nRETRY
P2_UD_OUT_A[7..0]
P2_UD_OUT_B[7..0]
FAST_HIT_P[11..0]
VME_IF_6
VME_IF_6.Sch
TRIGGER_CLOCK_P
TRIGGER_CLOCK_N
TRIGGER_COMMAND_P[8..0]
TRIGGER_COMMAND_N[8..0]
FADC_TRGCLK_I_P
FADC_TRGCLK_I_N
FADC_TRGCLK_O
FAST_HIT_O_P[11..0]
TRG_CLK
TRG_CMD[8..0]
USER_OUT_A[7..0]
USER_OUT_B[7..0]
FADC_TRGCLK_I
FADC_TRGCLK_O_P
FADC_TRGCLK_O_N
Title: KamLAND_FADC_Board
Size: A3
Number: CCSC60002-2110
Revision: 2.00.00
Date: 27-Jul-2007
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File: VME_IF.Sch
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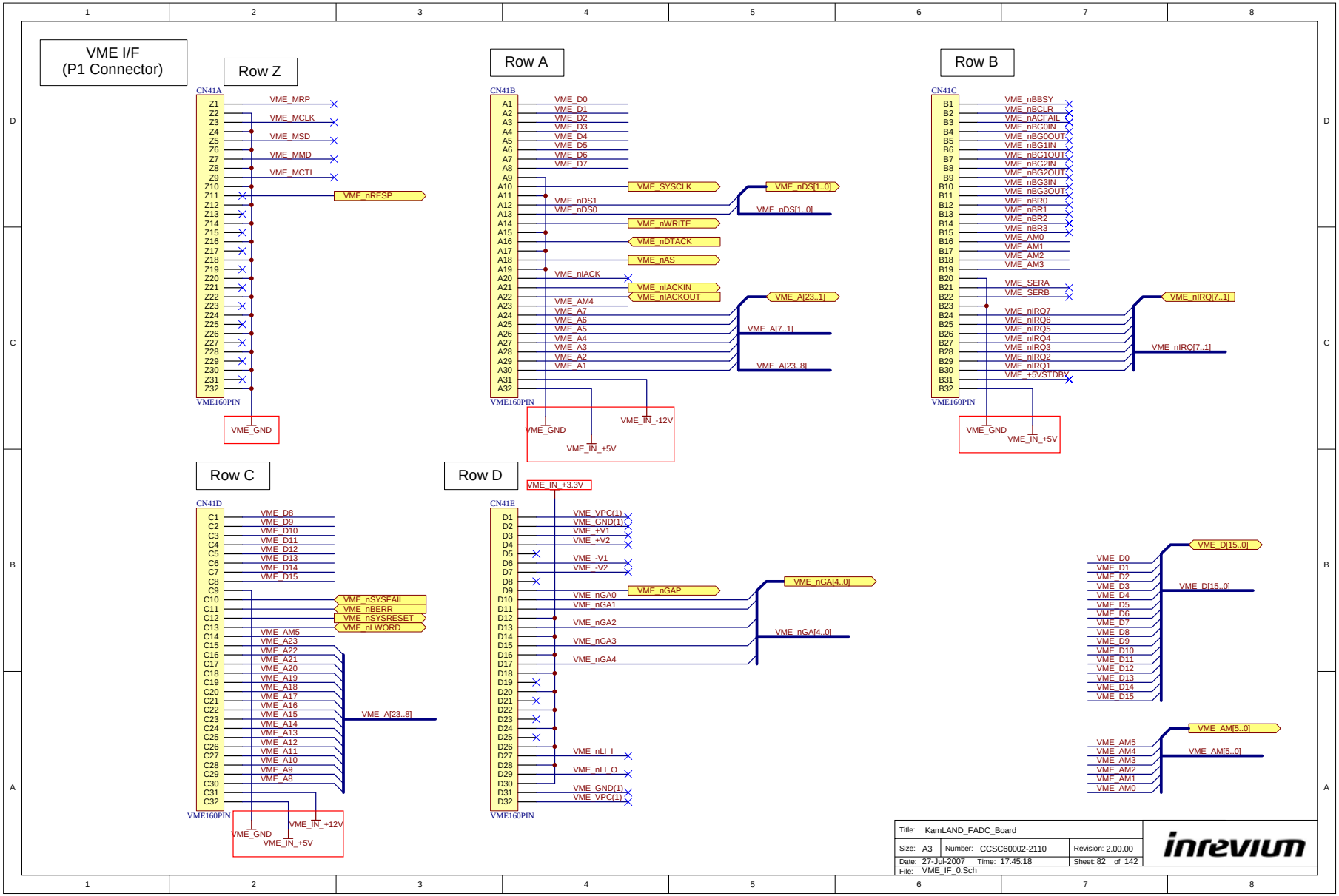
VME I/F
(P1 Connector)
Row Z
CN41A
VME160PIN
VME_MRP
VME_MCLK
VME_MSD
VME_MMD
VME_MCTL
VME_nRESP
VME_GND
Row A
CN41B
VME160PIN
VME_D0
VME_D1
VME_D2
VME_D3
VME_D4
VME_D5
VME_D6
VME_D7
VME_SYSCLK
VME_nDS[1..0]
VME_nDS1
VME_nDS0
VME_nWRITE
VME_nDTACK
VME_nAS
VME_nIACK
VME_nIACKIN
VME_nIACKOUT
VME_A[23..1]
VME_AM4
VME_A7
VME_A6
VME_A5
VME_A4
VME_A3
VME_A2
VME_A1
VME_A[7..1]
VME_A[23..8]
VME_GND
VME_IN_-12V
VME_IN_+5V
Row B
CN41C
VME160PIN
VME_nBBSY
VME_nBCLR
VME_nACFAIL
VME_nBG0IN
VME_nBG0OUT
VME_nBG1IN
VME_nBG1OUT
VME_nBG2IN
VME_nBG2OUT
VME_nBG3IN
VME_nBG3OUT
VME_nBR0
VME_nBR1
VME_nBR2
VME_nBR3
VME_AM0
VME_AM1
VME_AM2
VME_AM3
VME_SERA
VME_SERB
VME_nIRQ7
VME_nIRQ6
VME_nIRQ5
VME_nIRQ4
VME_nIRQ3
VME_nIRQ2
VME_nIRQ1
VME_+5VSTDBY
VME_nIRQ[7..1]
VME_GND
VME_IN_+5V
Row C
CN41D
VME160PIN
VME_D8
VME_D9
VME_D10
VME_D11
VME_D12
VME_D13
VME_D14
VME_D15
VME_nSYSFAIL
VME_nBERR
VME_nSYSRESET
VME_nLWORD
VME_AM5
VME_A23
VME_A22
VME_A21
VME_A20
VME_A19
VME_A18
VME_A17
VME_A16
VME_A15
VME_A14
VME_A13
VME_A12
VME_A11
VME_A10
VME_A9
VME_A8
VME_A[23..8]
VME_GND
VME_IN_+12V
VME_IN_+5V
Row D
CN41E
VME160PIN
VME_IN_+3.3V
VME_VPC(1)
VME_GND(1)
VME_+V1
VME_+V2
VME_-V1
VME_-V2
VME_nGAP
VME_nGA0
VME_nGA1
VME_nGA2
VME_nGA3
VME_nGA4
VME_nGA[4..0]
VME_nLI_I
VME_nLI_O
VME_GND(1)
VME_VPC(1)
VME_D[15..0]
VME_AM[5..0]
Title: KamLAND_FADC_Board
Size: A3
Number: CCSC60002-2110
Revision: 2.00.00
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File: VME_IF_0.Sch
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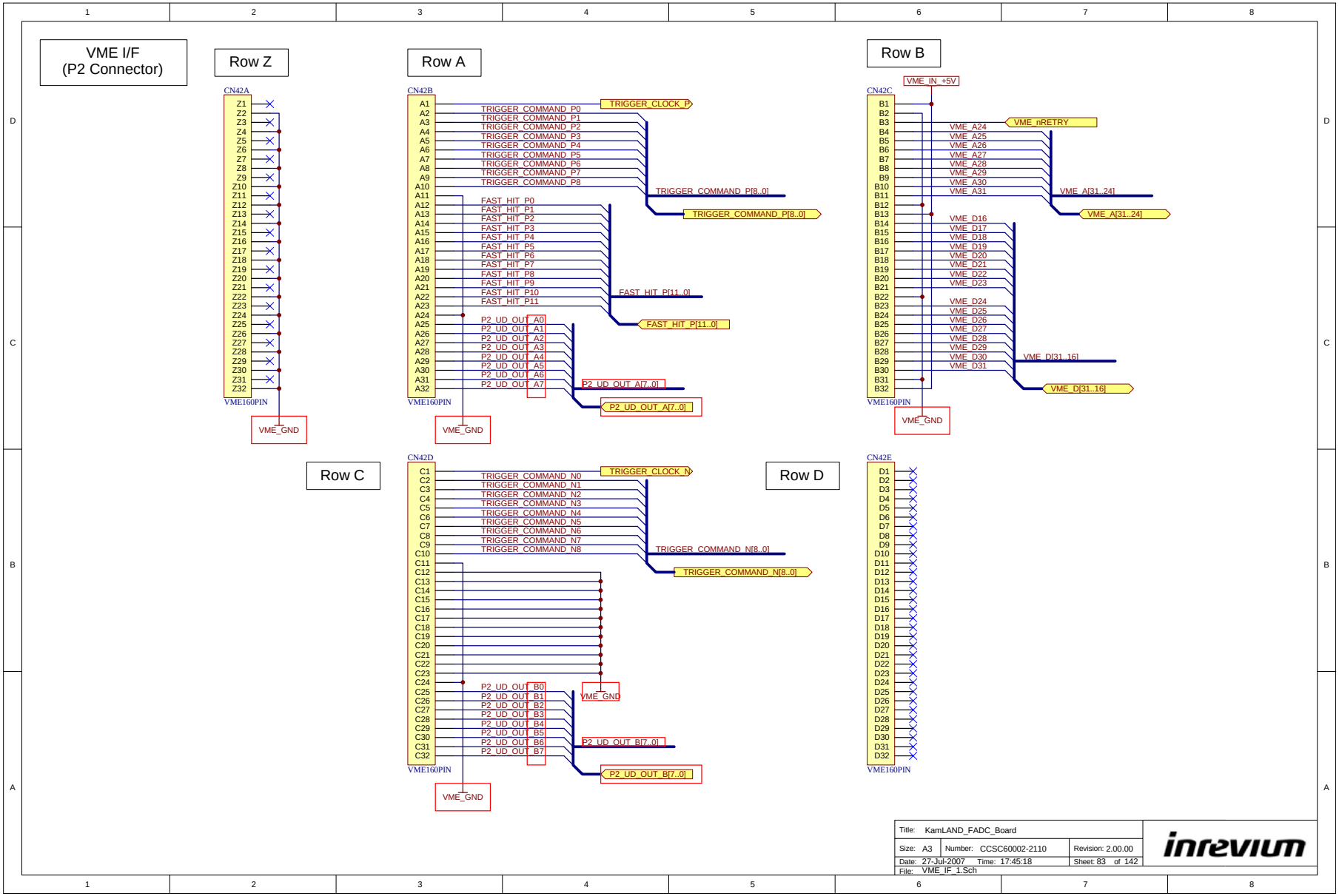
VME I/F
(P2 Connector)
Row Z
Row A
Row B
Row C
Row D
CN42A
CN42B
CN42C
CN42D
CN42E
VME160PIN
VME_GND
VME_IN_+5V
TRIGGER_CLOCK_P
TRIGGER_COMMAND_P0
TRIGGER_COMMAND_P1
TRIGGER_COMMAND_P2
TRIGGER_COMMAND_P3
TRIGGER_COMMAND_P4
TRIGGER_COMMAND_P5
TRIGGER_COMMAND_P6
TRIGGER_COMMAND_P7
TRIGGER_COMMAND_P8
TRIGGER_COMMAND_P[8..0]
FAST_HIT_P0
FAST_HIT_P1
FAST_HIT_P2
FAST_HIT_P3
FAST_HIT_P4
FAST_HIT_P5
FAST_HIT_P6
FAST_HIT_P7
FAST_HIT_P8
FAST_HIT_P9
FAST_HIT_P10
FAST_HIT_P11
FAST_HIT_P[11..0]
P2_UD_OUT_A0
P2_UD_OUT_A1
P2_UD_OUT_A2
P2_UD_OUT_A3
P2_UD_OUT_A4
P2_UD_OUT_A5
P2_UD_OUT_A6
P2_UD_OUT_A7
P2_UD_OUT_A[7..0]
VME_nRETRY
VME_A24
VME_A25
VME_A26
VME_A27
VME_A28
VME_A29
VME_A30
VME_A31
VME_A[31..24]
VME_D16
VME_D17
VME_D18
VME_D19
VME_D20
VME_D21
VME_D22
VME_D23
VME_D24
VME_D25
VME_D26
VME_D27
VME_D28
VME_D29
VME_D30
VME_D31
VME_D[31..16]
TRIGGER_CLOCK_N
TRIGGER_COMMAND_N0
TRIGGER_COMMAND_N1
TRIGGER_COMMAND_N2
TRIGGER_COMMAND_N3
TRIGGER_COMMAND_N4
TRIGGER_COMMAND_N5
TRIGGER_COMMAND_N6
TRIGGER_COMMAND_N7
TRIGGER_COMMAND_N8
TRIGGER_COMMAND_N[8..0]
P2_UD_OUT_B0
P2_UD_OUT_B1
P2_UD_OUT_B2
P2_UD_OUT_B3
P2_UD_OUT_B4
P2_UD_OUT_B5
P2_UD_OUT_B6
P2_UD_OUT_B7
P2_UD_OUT_B[7..0]
Title: KamLAND_FADC_Board
Size: A3
Number: CCSC60002-2110
Revision: 2.00.00
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File: VME_IF_1.Sch
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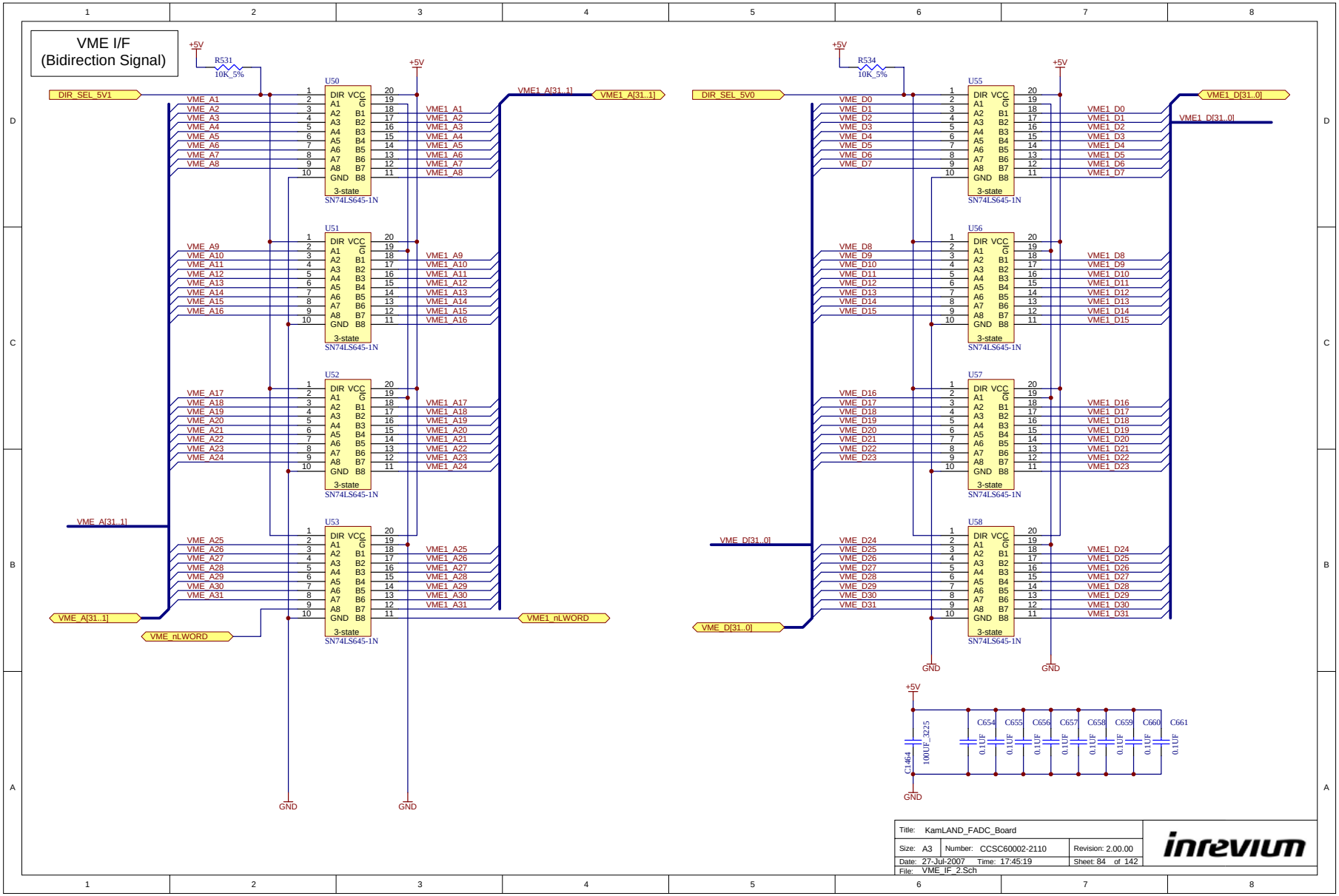
VME I/F
(Bidirection Signal)
DIR_SEL_5V1
DIR_SEL_5V0
R531
10K_5%
R534
10K_5%
+5V
GND
U50
U51
U52
U53
U55
U56
U57
U58
SN74LS645-1N
3-state
VME_A[31..1]
VME_D[31..0]
VME_nLWORD
VME1_A[31..1]
VME1_D[31..0]
VME1_nLWORD
C1464
100UF_3225
C654
C655
C656
C657
C658
C659
C660
C661
0.1UF
Title: KamLAND_FADC_Board
Size: A3
Number: CCSC60002-2110
Revision: 2.00.00
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Time: 17:45:19
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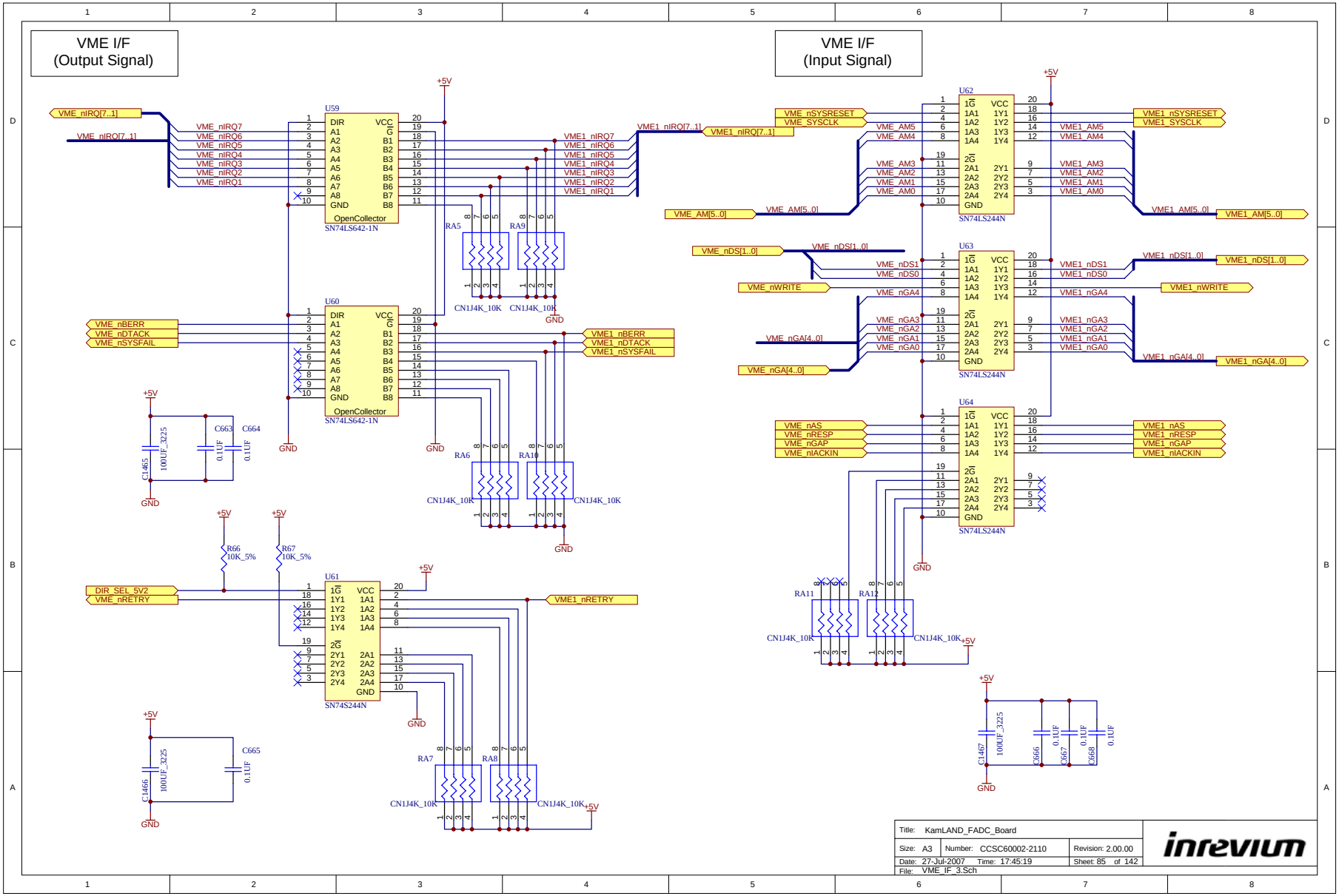
File: VME_IF_2.Sch
inrevium


VME I/F
(Output Signal)
VME I/F
(Input Signal)
VME_nIRQ[7..1]
VME_nIRQ7
VME_nIRQ6
VME_nIRQ5
VME_nIRQ4
VME_nIRQ3
VME_nIRQ2
VME_nIRQ1
U59
SN74LS642-1N
OpenCollector
VME1_nIRQ7
VME1_nIRQ6
VME1_nIRQ5
VME1_nIRQ4
VME1_nIRQ3
VME1_nIRQ2
VME1_nIRQ1
VME1_nIRQ[7..1]
RA5
RA9
CN1J4K_10K
+5V
GND
VME_nBERR
VME_nDTACK
VME_nSYSFAIL
U60
VME1_nBERR
VME1_nDTACK
VME1_nSYSFAIL
C1465
100UF_3225
C663
C664
0.1UF
RA6
RA10
R66
10K_5%
R67
10K_5%
DIR_SEL_5V2
VME_nRETRY
U61
SN74S244N
VME1_nRETRY
C1466
C665
RA7
RA8
U62
VME_nSYSRESET
VME_SYSCLK
VME_AM5
VME_AM4
VME_AM3
VME_AM2
VME_AM1
VME_AM0
VME_AM[5..0]
VME1_nSYSRESET
VME1_SYSCLK
VME1_AM5
VME1_AM4
VME1_AM3
VME1_AM2
VME1_AM1
VME1_AM0
VME1_AM[5..0]
U63
VME_nDS[1..0]
VME_nDS1
VME_nDS0
VME_nWRITE
VME_nGA4
VME_nGA3
VME_nGA2
VME_nGA1
VME_nGA0
VME_nGA[4..0]
VME1_nDS1
VME1_nDS0
VME1_nDS[1..0]
VME1_nWRITE
VME1_nGA4
VME1_nGA3
VME1_nGA2
VME1_nGA1
VME1_nGA0
VME1_nGA[4..0]
U64
VME_nAS
VME_nRESP
VME_nGAP
VME_nIACKIN
VME1_nAS
VME1_nRESP
VME1_nGAP
VME1_nIACKIN
RA11
RA12
C1467
C666
C667
C668
Title: KamLAND_FADC_Board
Size: A3
Number: CCSC60002-2110
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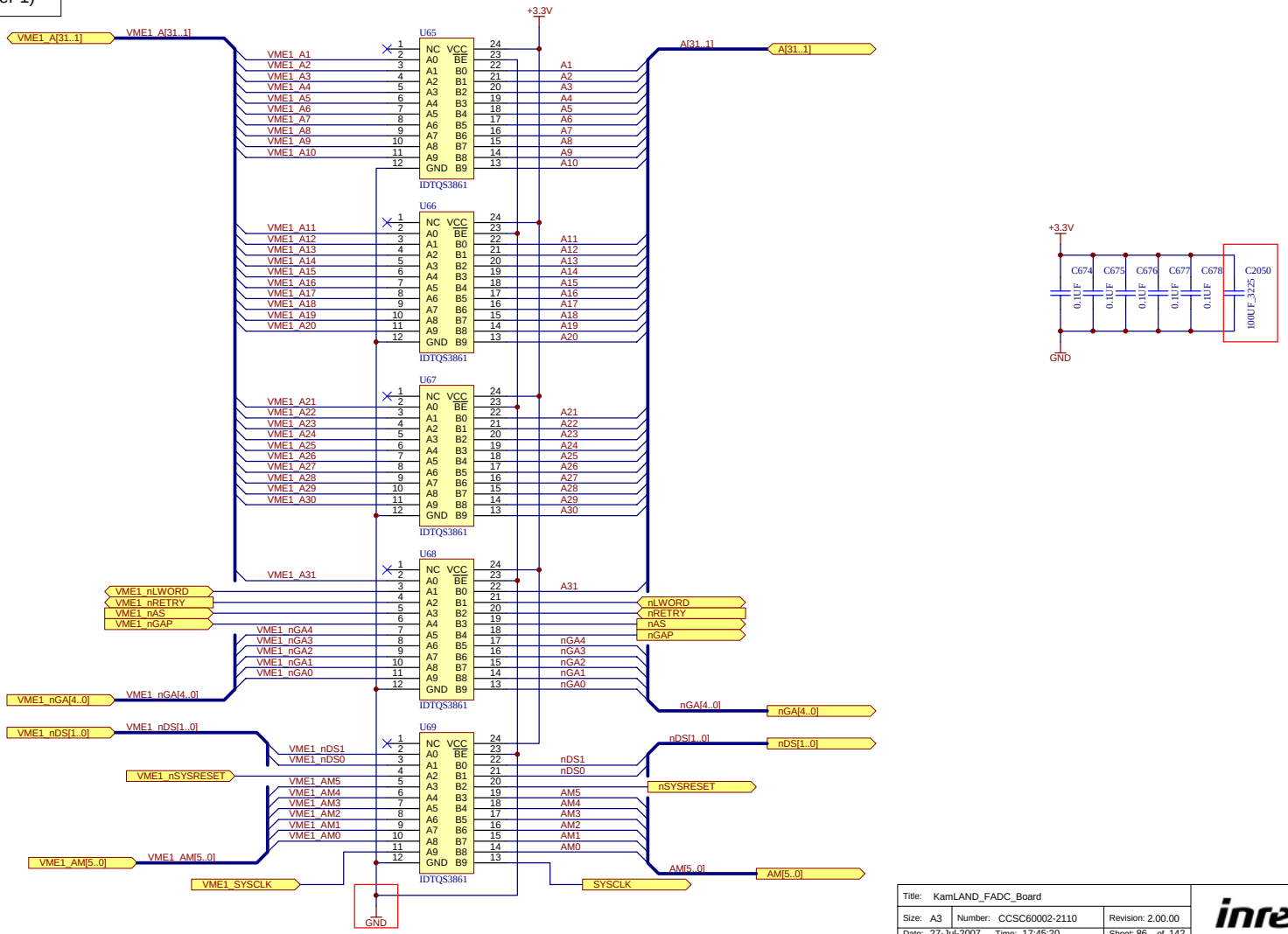
VME I/F
(Level Shifter 1)



Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	
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File: VME_IF_4.Sch			

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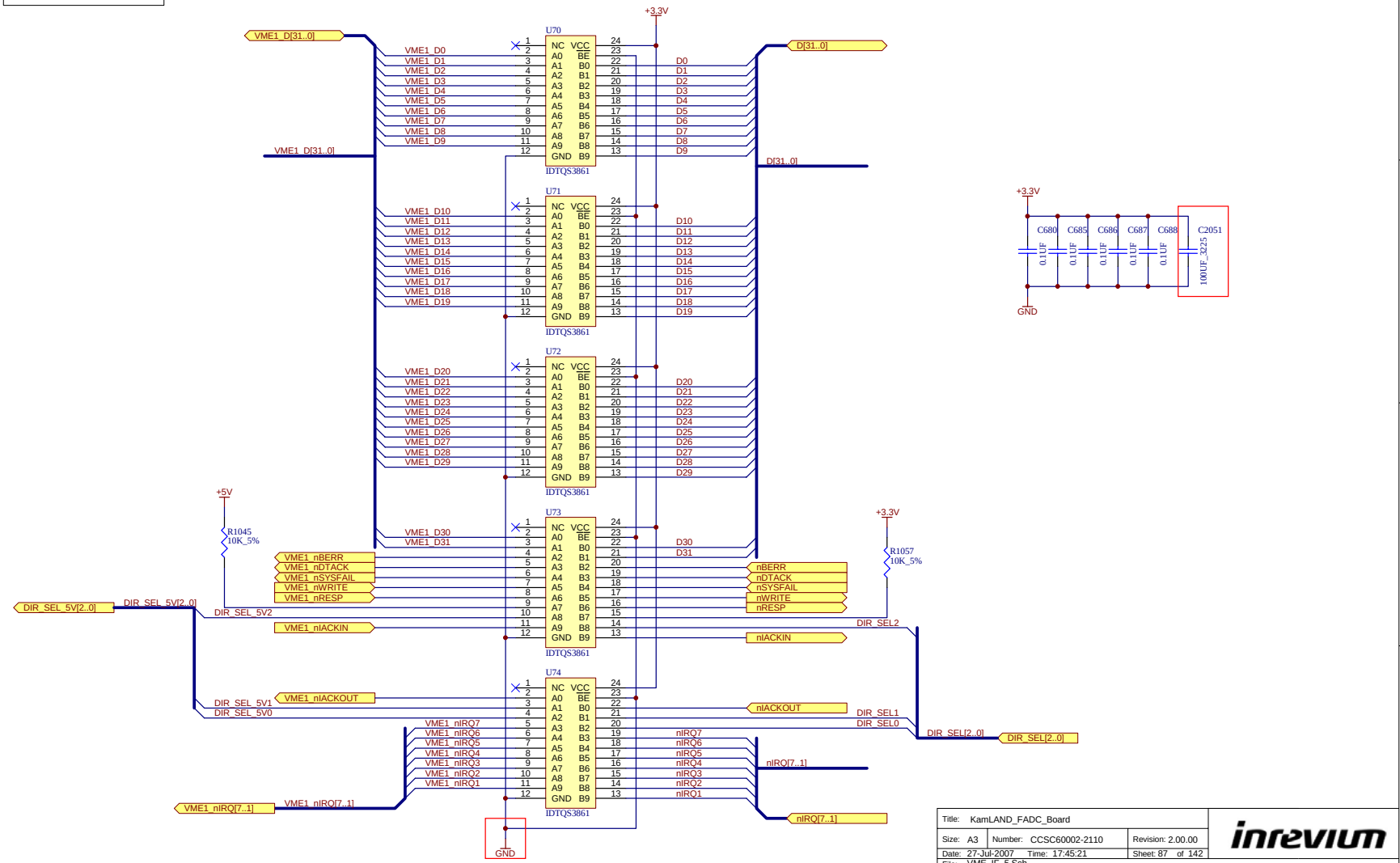
VME I/F
(Level Shifter 2)



Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
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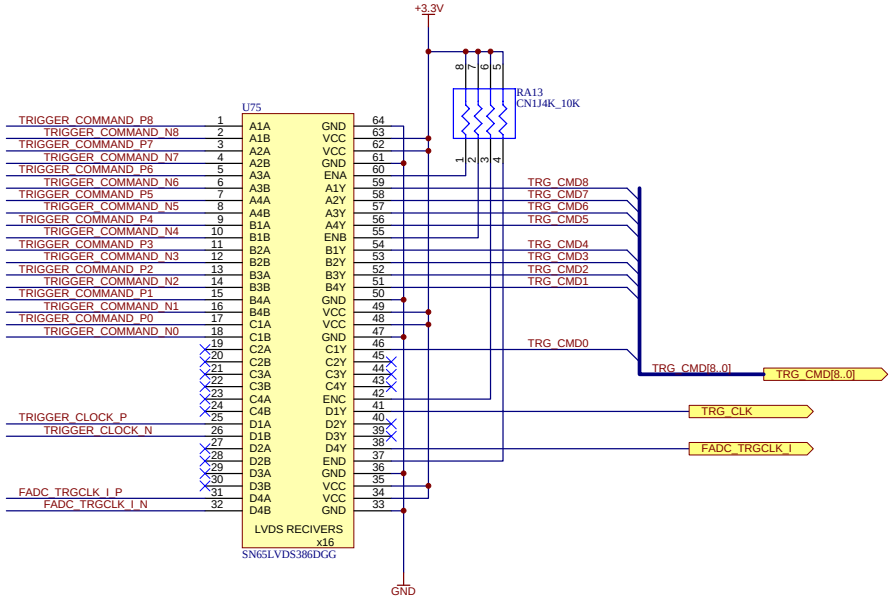
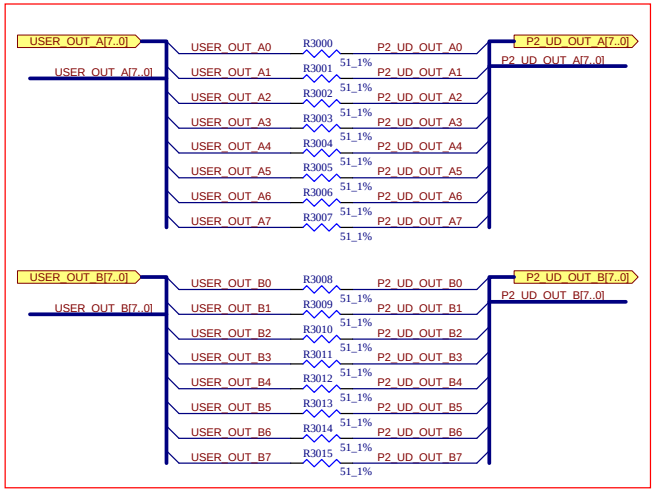
File: VME_IF_5.Sch			

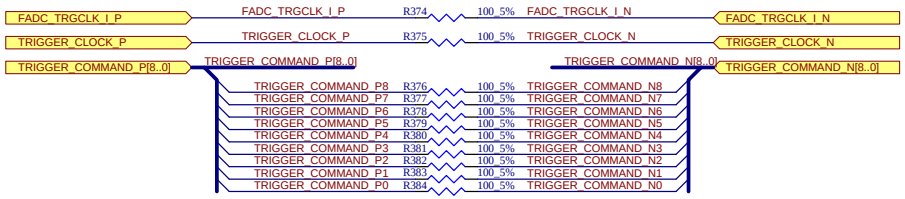
inrevium

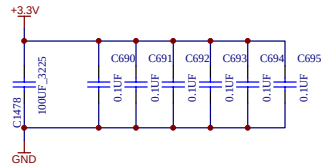
VME I/F (LVDS INPUT)



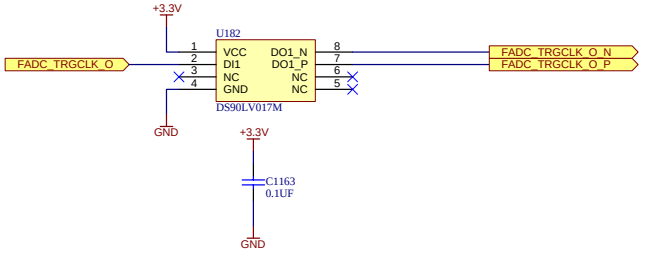
VME I/F (Single end OUTPUT)







VME I/F (LVDS OUTPUT)



Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:45:21		Sheet: 88 of 142
File: VME_IF_6.Sch			

inrevium

POWER TOP

JP227 MJP-0.2 na — GND_A — GND

JP228 MJP-0.2 na — GND_A — GND

JP229 MJP-0.2 na — GND_A — GND

JP230 MJP-0.2 na — GND_A — GND

JP231 MJP-0.2 na — GND_A — GND

JP232 MJP-0.2 na — GND_A — GND

JP100,JP104,JP108,JP112,JP116,JP120
付近に配置すること

Power_vme12_0
Power_vme12_0.Sch

Power_vme12_1
Power_vme12_1.Sch

Power_vme5_0
Power_vme5_0.Sch

Power_vme5_1
Power_vme5_1.Sch

Power_vme5_2
Power_vme5_2.Sch

Power_vme5_3
Power_vme5_3.Sch

Power_vme33_0
Power_vme33_0.Sch

Power_vme33_1
Power_vme33_1.Sch

Power_vme33_2
Power_vme33_2.Sch

Power_vme33_3
Power_vme33_3.Sch

Power_vme-12_0
Power_vme-12_0.Sch

Power_IN_vme
Power_IN_vme.Sch

JP218 MJP-0.2 na — FG — GND

SILK | FG - GND

FGは前面パネルにビス止め

P35 HEADER-SOCKET

JP88 XG8S-0331 (1 2 3)

C1878 0.1UF

GND_A — GND — GND

SILK

GND - GND_A
1-2:DC Coupling
2-3:AC Coupling

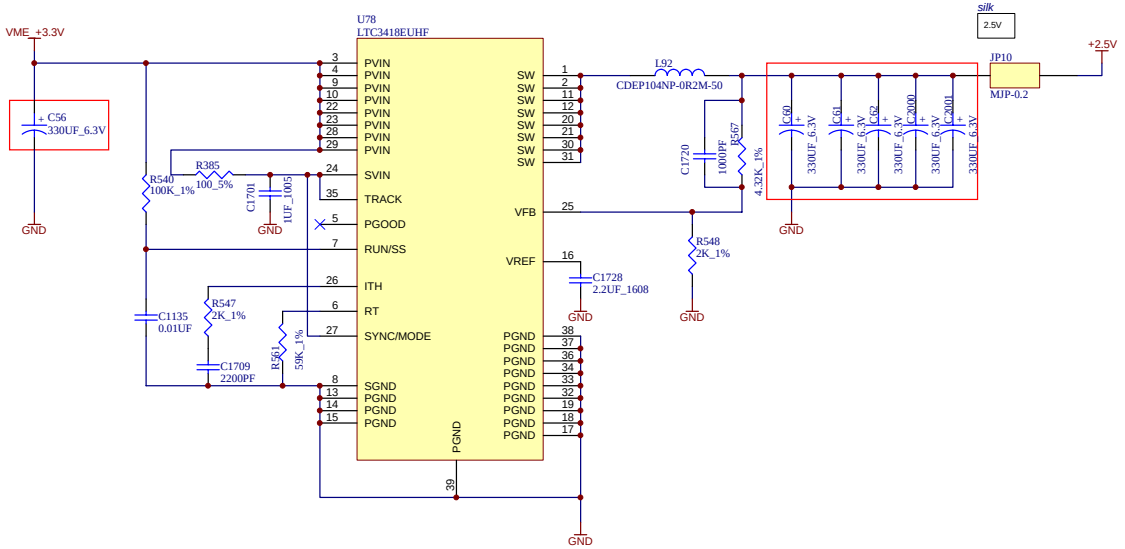
Default:1-2

silk GND

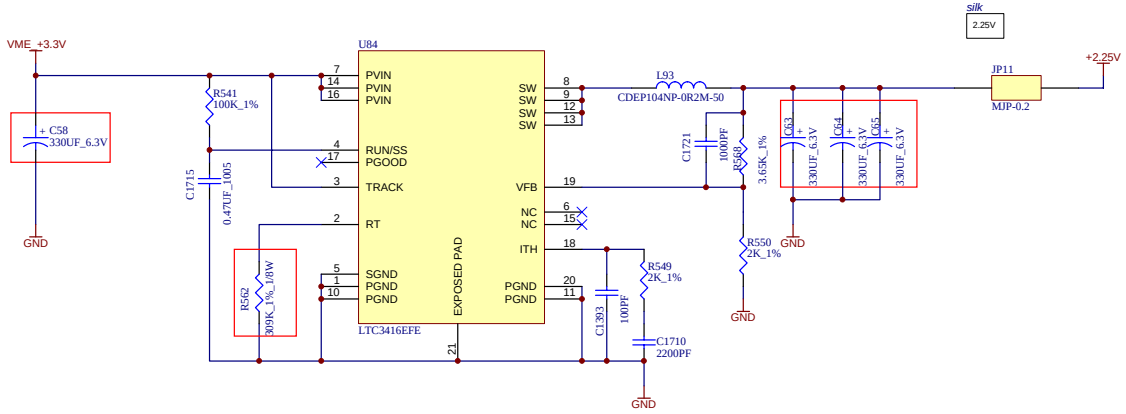
TP24 TP-BLK — GND
TP25 TP-BLK — GND
TP26 TP-BLK — GND
TP27 TP-BLK — GND
TP28 TP-BLK — GND
TP29 TP-BLK — GND
TP30 TP-BLK — GND
TP31 TP-BLK — GND
TP32 TP-BLK — GND
TP33 TP-BLK — GND
TP34 TP-BLK — GND
TP35 TP-BLK — GND
TP36 TP-BLK — GND
TP37 TP-BLK — GND
TP38 TP-BLK — GND
TP39 TP-BLK — GND
TP40 TP-BLK — GND
TP41 TP-BLK — GND
TP42 TP-BLK — GND
TP43 TP-BLK — GND

Title: KamLAND_FADC_Board			inrevium
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	
Date: 27-Jul-2007 Time: 17:45:22		Sheet: 89 of 142	
File: Power_TOP.Sch			

VME_+3.3V -> +2.5V

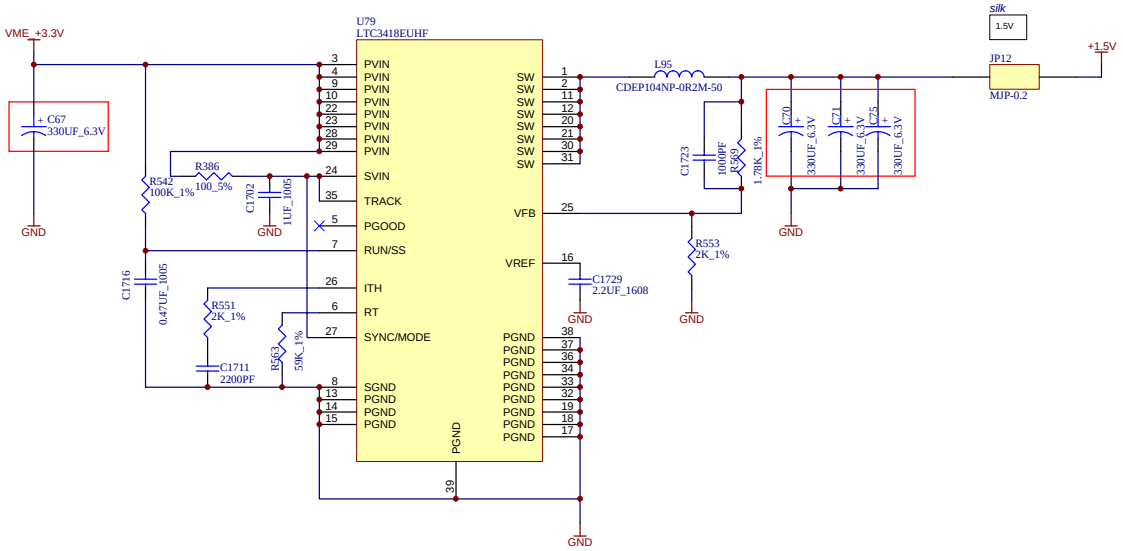


VME_+3.3V -> +2.25V

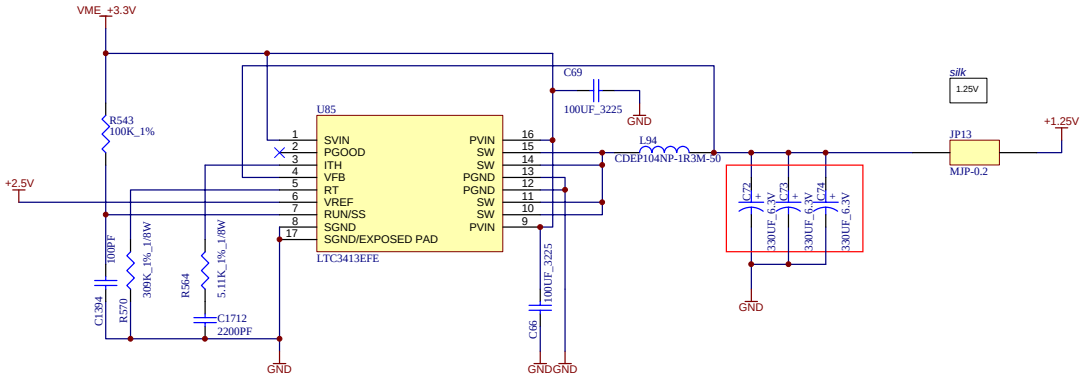


Title: KamLAND_FADC_Board			inrevium
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	
Date: 27-Jul-2007	Time: 17:45:22	Sheet: 90 of 142	
File: Power_vme33_0.Sch			

VME_+3.3V -> +1.5V

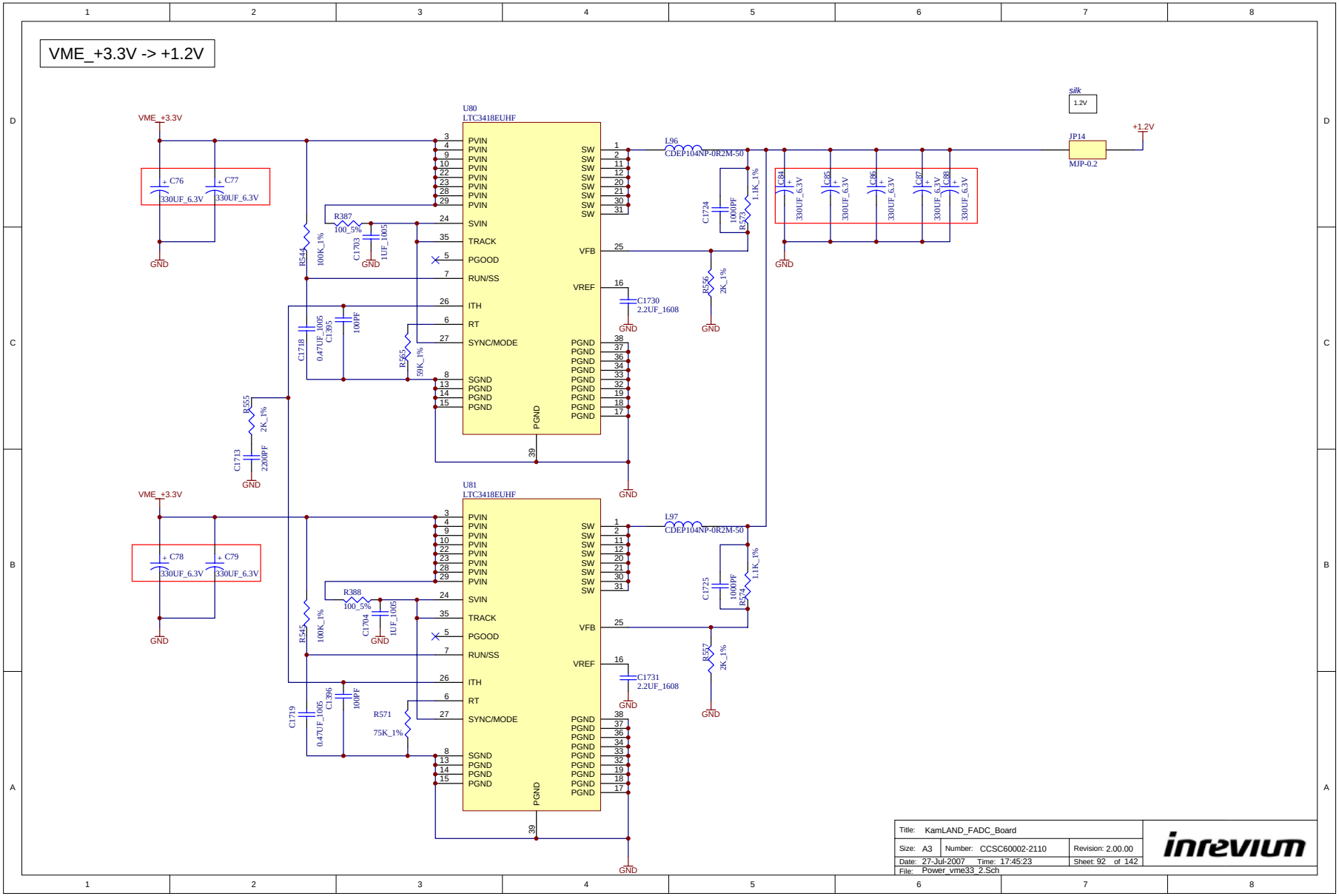


VME_+3.3V -> +1.25V

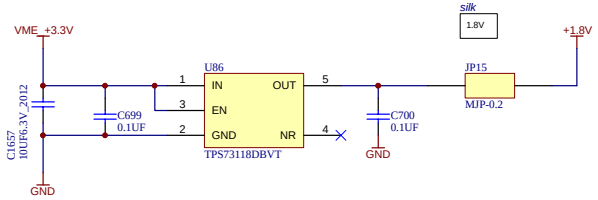


Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	
Date: 27-Jul-2007	Time: 17:45:23	Sheet: 91 of 142	
File: Power_vme33_1.Sch			

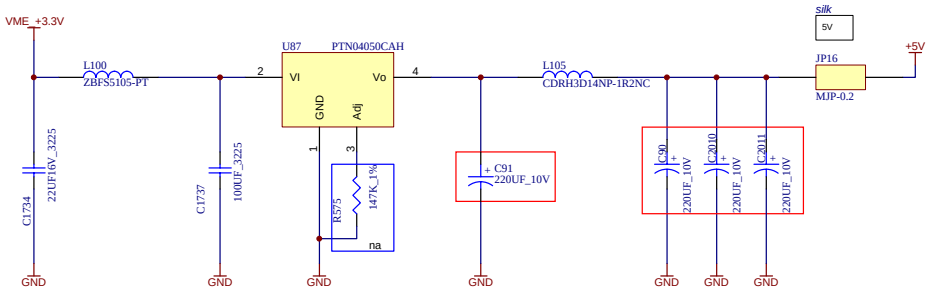
inrevium


VME_+3.3V -> +1.2V
U80
LTC3418EUHF
U81
LTC3418EUHF
VME_+3.3V
GND
C76
330UF_6.3V
C77
330UF_6.3V
C78
330UF_6.3V
C79
330UF_6.3V
R387
100_5%
C1703
1UF_1005
R388
100_5%
C1704
1UF_1005
R544
100K_1%
R545
100K_1%
C1718
0.47UF_1005
C1395
100PF
C1396
100PF
R555
2K_1%
C1713
2200PF
R565
59K_1%
R571
75K_1%
C1719
0.47UF_1005
PVIN
SVIN
TRACK
PGOOD
RUN/SS
ITH
RT
SYNC/MODE
SGND
PGND
SW
VFB
VREF
L96
CDEP104NP-0R2M-50
L97
CDEP104NP-0R2M-50
C1724
1000PF
R572
1.1K_1%
C1725
1000PF
R574
1.1K_1%
R556
2K_1%
R557
2K_1%
C1730
2.2UF_1608
C1731
2.2UF_1608
C84
330UF_6.3V
C85
330UF_6.3V
C86
330UF_6.3V
C87
330UF_6.3V
C88
330UF_6.3V
silk
1.2V
JP14
MJP-0.2
+1.2V
Title: KamLAND_FADC_Board
Size: A3
Number: CCSC60002-2110
Revision: 2.00.00
Date: 27-Jul-2007
Time: 17:45:23
Sheet: 92 of 142
File: Power_vme33_2.Sch
inrevium

VME_+3.3V -> +1.8V

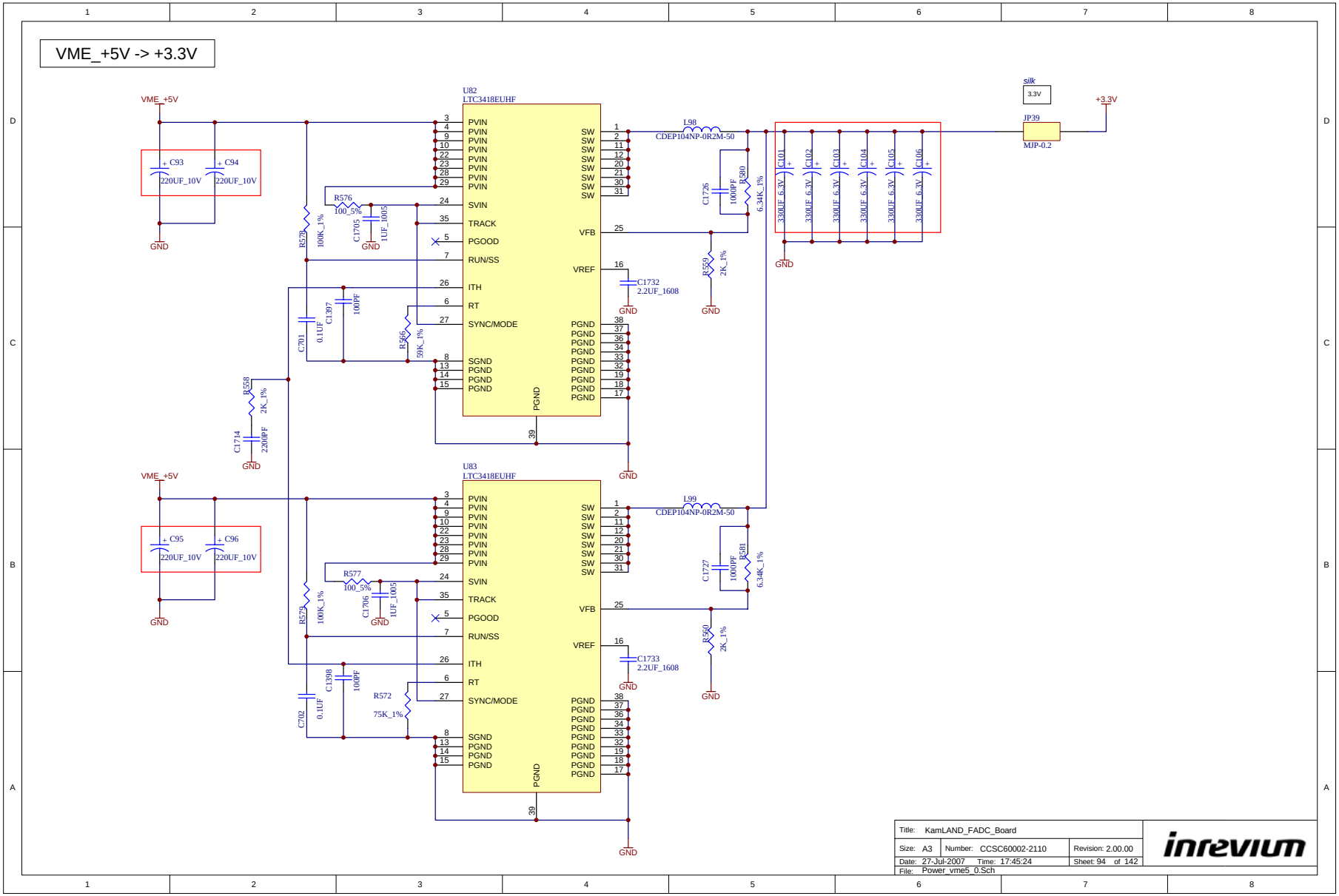


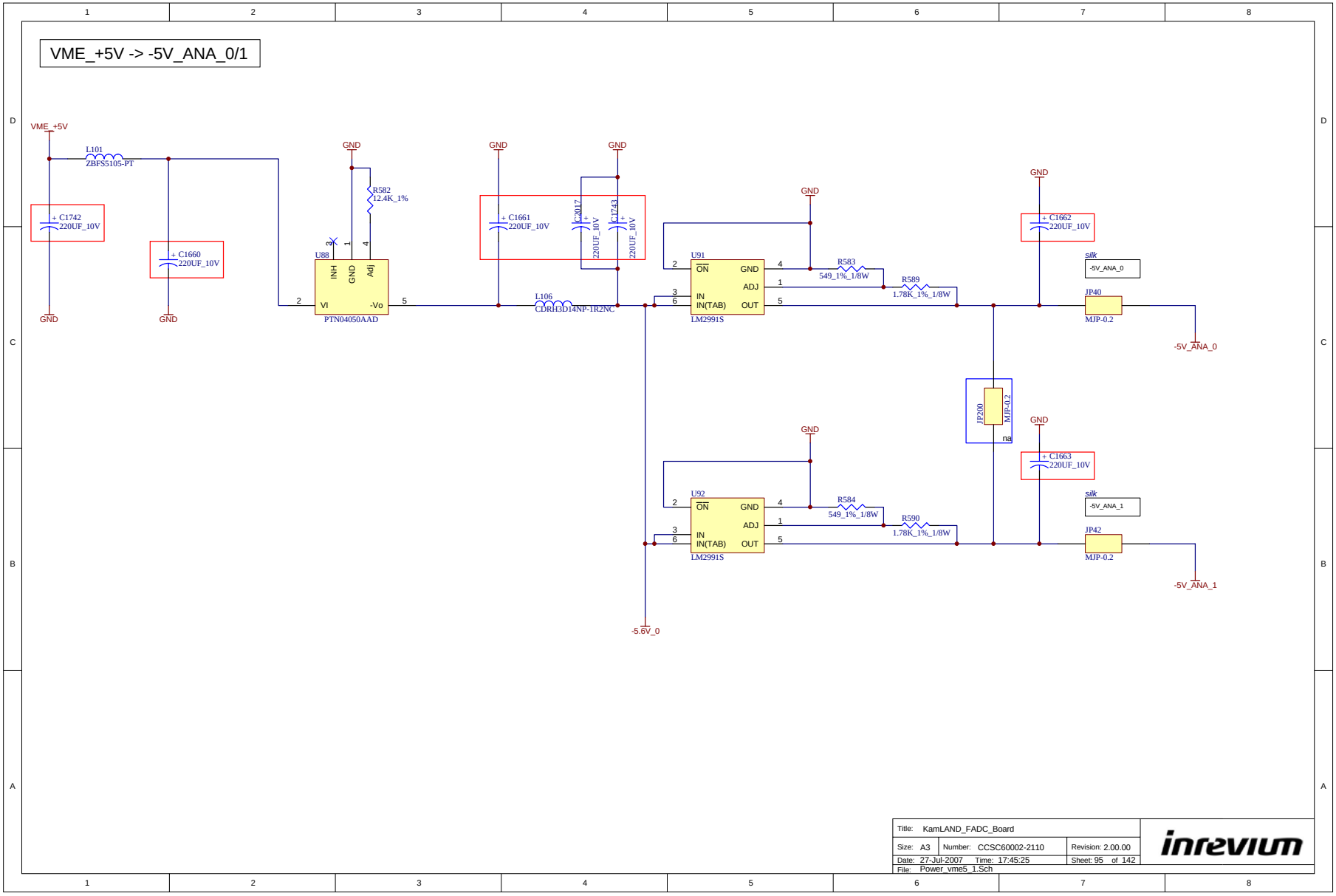
VME_+3.3V -> +5V

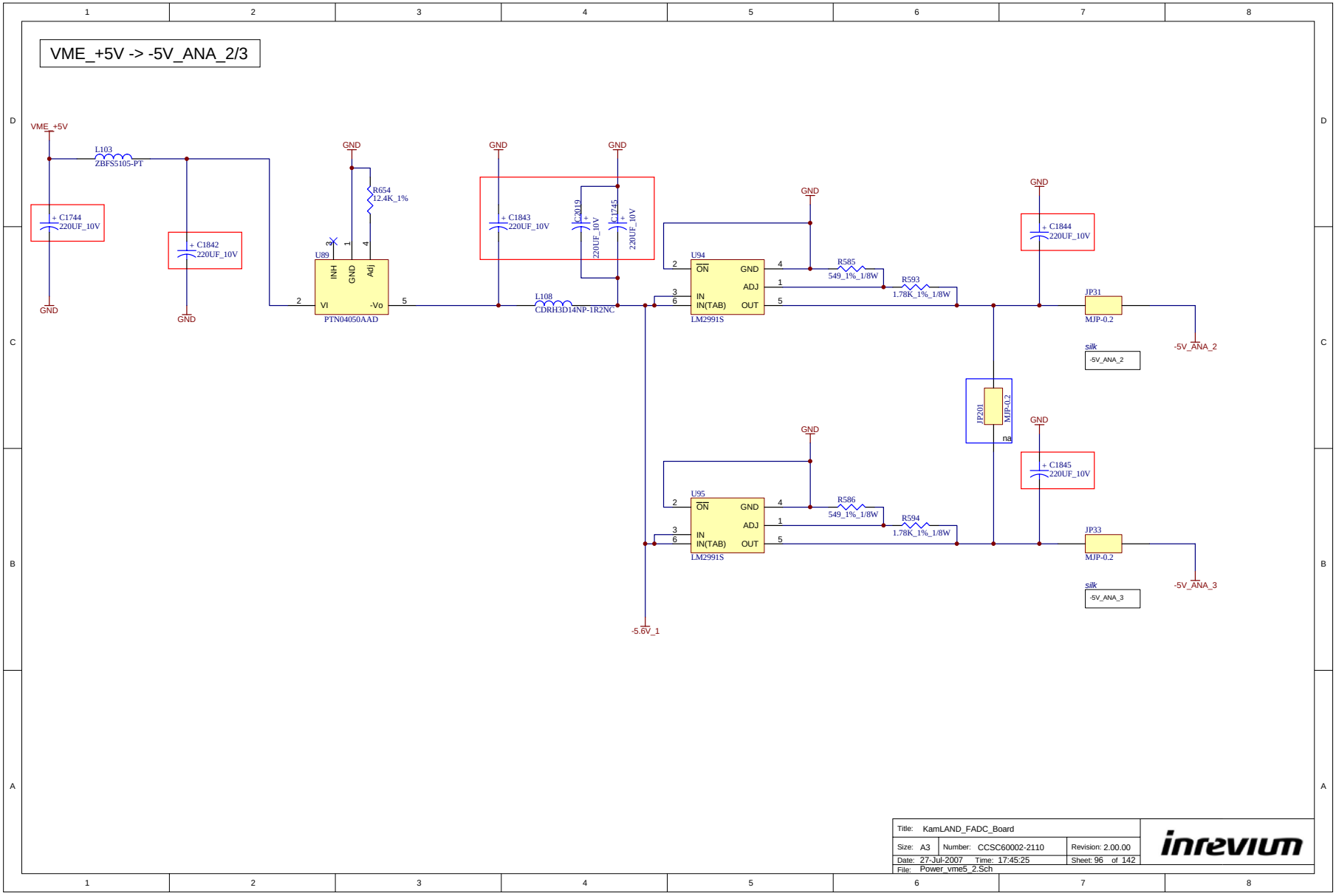


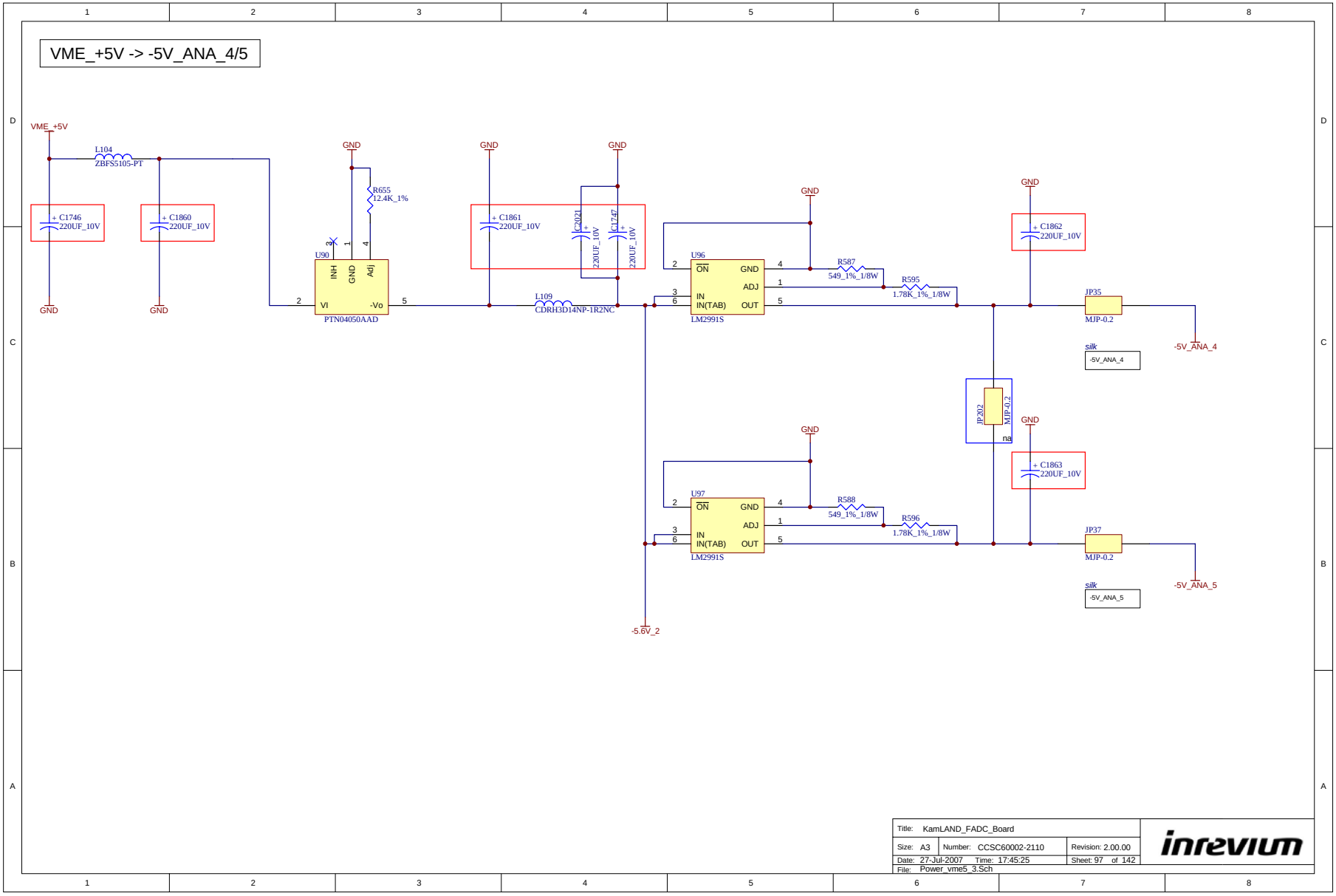
Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:45:24		Sheet: 93 of 142
File: Power_vme33_3.Sch			

inrevium

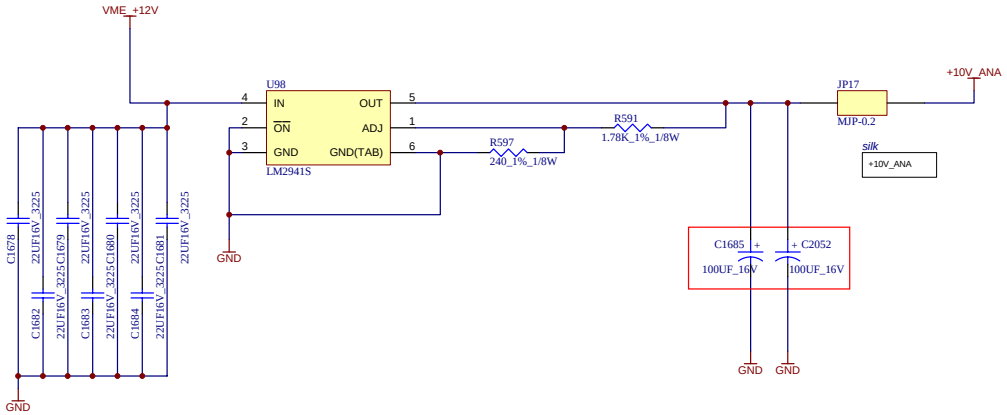

VME_+5V -> +3.3V
U82
LTC3418EUHF
U83
LTC3418EUHF
VME_+5V
GND
C93
220UF_10V
C94
220UF_10V
C95
220UF_10V
C96
220UF_10V
R576
100_5%
C1705
1UF_1005
R578
100K_1%
C1397
100PF
C701
0.1UF
R566
59K_1%
R558
2K_1%
C1714
220PF
R577
100_5%
C1706
1UF_1005
R579
100K_1%
C1398
100PF
C702
0.1UF
R572
75K_1%
PVIN
SVIN
TRACK
PGOOD
RUN/SS
ITH
RT
SYNC/MODE
SGND
PGND
SW
VFB
VREF
L98
CDEP104NP-0R2M-50
L99
CDEP104NP-0R2M-50
C1726
1000PF
R580
6.34K_1%
C1727
1000PF
R581
6.34K_1%
R559
2K_1%
R560
2K_1%
C1732
2.2UF_1608
C1733
2.2UF_1608
C101
330UF_6.3V
C102
330UF_6.3V
C103
330UF_6.3V
C104
330UF_6.3V
C105
330UF_6.3V
C106
330UF_6.3V
silk
3.3V
JP39
MJP-0.2
+3.3V
Title: KamLAND_FADC_Board
Size: A3
Number: CCSC60002-2110
Revision: 2.00.00
Date: 27-Jul-2007
Time: 17:45:24
Sheet: 94 of 142
File: Power_vme5_0.Sch
inrevium


VME_+5V -> -5V_ANA_0/1
VME_+5V
L101
ZBFS5105-PT
C1742
220UF_10V
C1660
220UF_10V
GND
R582
12.4K_1%
U88
INH
GND
Adj
VI
-Vo
PTN04050AAD
C1661
220UF_10V
C2017
220UF_10V
C1743
220UF_10V
L106
CDRH3D14NP-1R2NC
U91
ON
GND
ADJ
IN
IN(TAB)
OUT
LM2991S
R583
549_1%_1/8W
R589
1.78K_1%_1/8W
C1662
220UF_10V
silk
-5V_ANA_0
JP40
MJP-0.2
-5V_ANA_0
JP200
MJP-0.2
na
U92
R584
549_1%_1/8W
R590
1.78K_1%_1/8W
C1663
220UF_10V
silk
-5V_ANA_1
JP42
MJP-0.2
-5V_ANA_1
-5.6V_0
Title: KamLAND_FADC_Board
Size: A3
Number: CCSC60002-2110
Revision: 2.00.00
Date: 27-Jul-2007
Time: 17:45:25
Sheet: 95 of 142
File: Power_vme5_1.Sch
inrevium


VME_+5V -> -5V_ANA_2/3
VME_+5V
L103
ZBFS5105-PT
C1744
220UF_10V
C1842
220UF_10V
GND
R654
12.4K_1%
U89
INH
GND
Adj
VI
-Vo
PTN04050AAD
C1843
220UF_10V
C2019
220UF_10V
C1745
220UF_10V
L108
CDRH3D14NP-1R2NC
U94
ON
GND
ADJ
IN
IN(TAB)
OUT
LM2991S
R585
549_1%_1/8W
R593
1.78K_1%_1/8W
C1844
220UF_10V
JP31
MJP-0.2
-5V_ANA_2
silk
-5V_ANA_2
JP201
MJP-0.2
na
U95
R586
549_1%_1/8W
R594
1.78K_1%_1/8W
C1845
220UF_10V
JP33
MJP-0.2
-5V_ANA_3
silk
-5V_ANA_3
-5.6V_1
Title: KamLAND_FADC_Board
Size: A3
Number: CCSC60002-2110
Revision: 2.00.00
Date: 27-Jul-2007
Time: 17:45:25
Sheet: 96 of 142
File: Power_vme5_2.Sch
inrevium

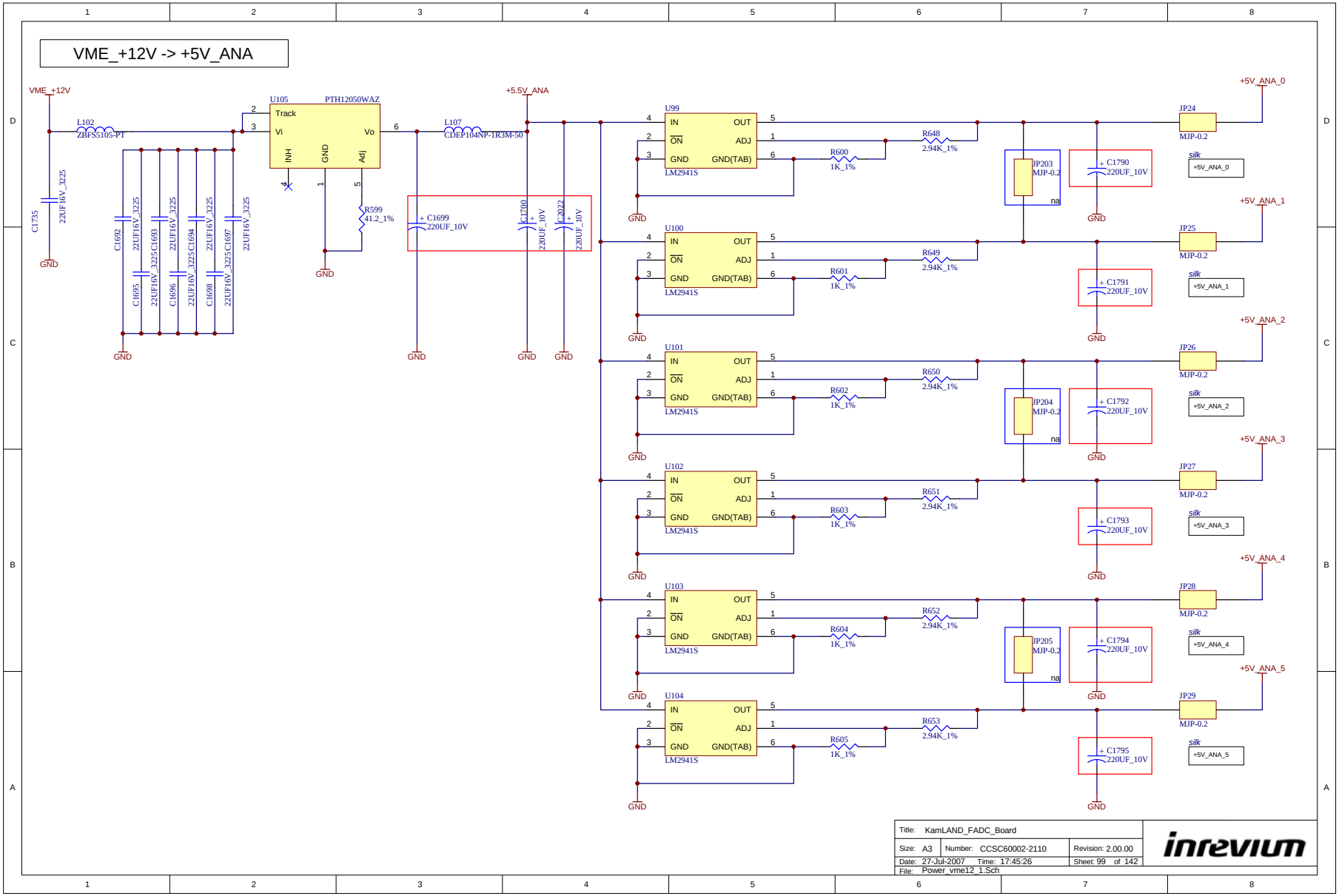

VME_+5V -> -5V_ANA_4/5
VME_+5V
L104
ZBFS5105-PT
C1746
220UF_10V
C1860
220UF_10V
GND
R655
12.4K_1%
U90
INH
GND
Adj
VI
-Vo
PTN04050AAD
C1861
220UF_10V
C1021
220UF_10V
C1747
220UF_10V
L109
CDRH3D14NP-1R2NC
U96
ON
GND
ADJ
IN
IN(TAB)
OUT
LM2991S
R587
549_1%_1/8W
R595
1.78K_1%_1/8W
C1862
220UF_10V
JP35
MJP-0.2
-5V_ANA_4
silk
-5V_ANA_4
JP202
MJP-0.2
na
C1863
220UF_10V
U97
R588
549_1%_1/8W
R596
1.78K_1%_1/8W
JP37
MJP-0.2
-5V_ANA_5
silk
-5V_ANA_5
-5.6V_2
Title: KamLAND_FADC_Board
Size: A3
Number: CCSC60002-2110
Revision: 2.00.00
Date: 27-Jul-2007
Time: 17:45:25
Sheet: 97 of 142
File: Power_vme5_3.Sch
inrevium

VME_+12V -> +10V_ANA

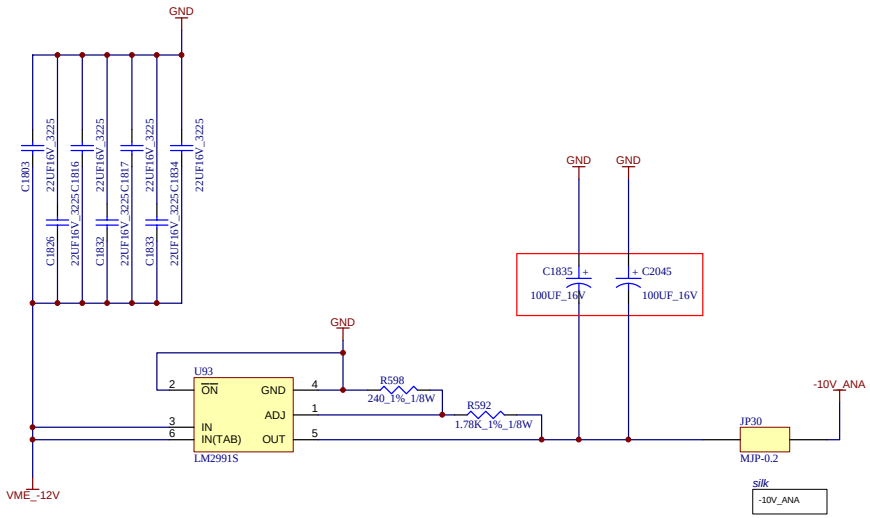


Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	
Date: 27-Jul-2007 Time: 17:45:26		Sheet: 98 of 142	
File: Power_vme12_0.Sch			

inrevium


VME_+12V -> +5V_ANA
VME_+12V
L102
ZBFS5105-PT
C1735
22UF16V_3225
GND
C1692
C1695
C1696
C1698
C1697
C1693
C1694
U105
PTH12050WAZ
Track
Vi
Vo
INH
GND
Adj
R599
41.2_1%
L107
CDEP104NP-1R3M-50
+5.5V_ANA
C1699
220UF_10V
C1700
C2022
U99
U100
U101
U102
U103
U104
IN
OUT
ON
ADJ
GND
GND(TAB)
LM2941S
R600
R601
R602
R603
R604
R605
1K_1%
R648
R649
R650
R651
R652
R653
2.94K_1%
JP203
JP204
JP205
MJP-0.2
na
C1790
C1791
C1792
C1793
C1794
C1795
220UF_10V
JP24
JP25
JP26
JP27
JP28
JP29
+5V_ANA_0
+5V_ANA_1
+5V_ANA_2
+5V_ANA_3
+5V_ANA_4
+5V_ANA_5
silk
Title: KamLAND_FADC_Board
Size: A3
Number: CCSC60002-2110
Revision: 2.00.00
Date: 27-Jul-2007
Time: 17:45:26
Sheet: 99 of 142
File: Power_vme12_1.Sch
inrevium

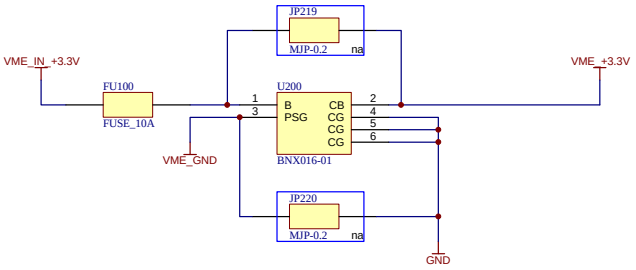
VME_-12V -> -10V_ANA



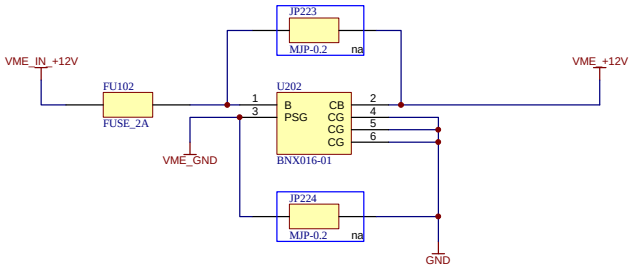
Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	
Date: 27-Jul-2007	Time: 17:45:27	Sheet: 100 of 142	
File: Power_vme-12_0.Sch			

inrevium

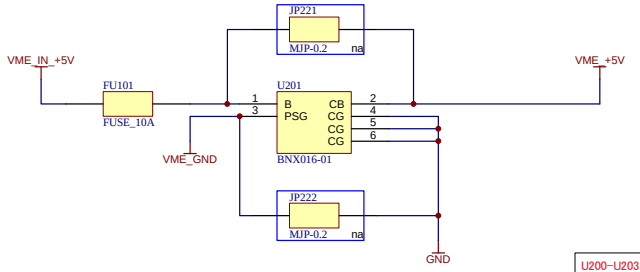
VME_IN_+3.3V -> VME_+3.3V



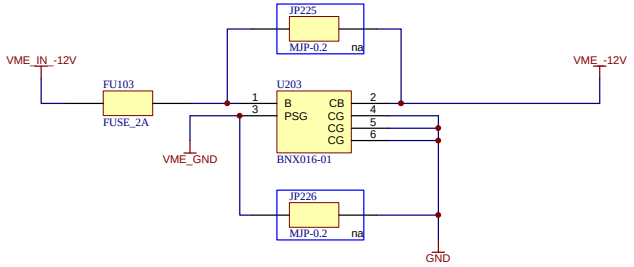
VME_IN_+12V -> VME_+12V



VME_IN_+5V -> VME_+5V



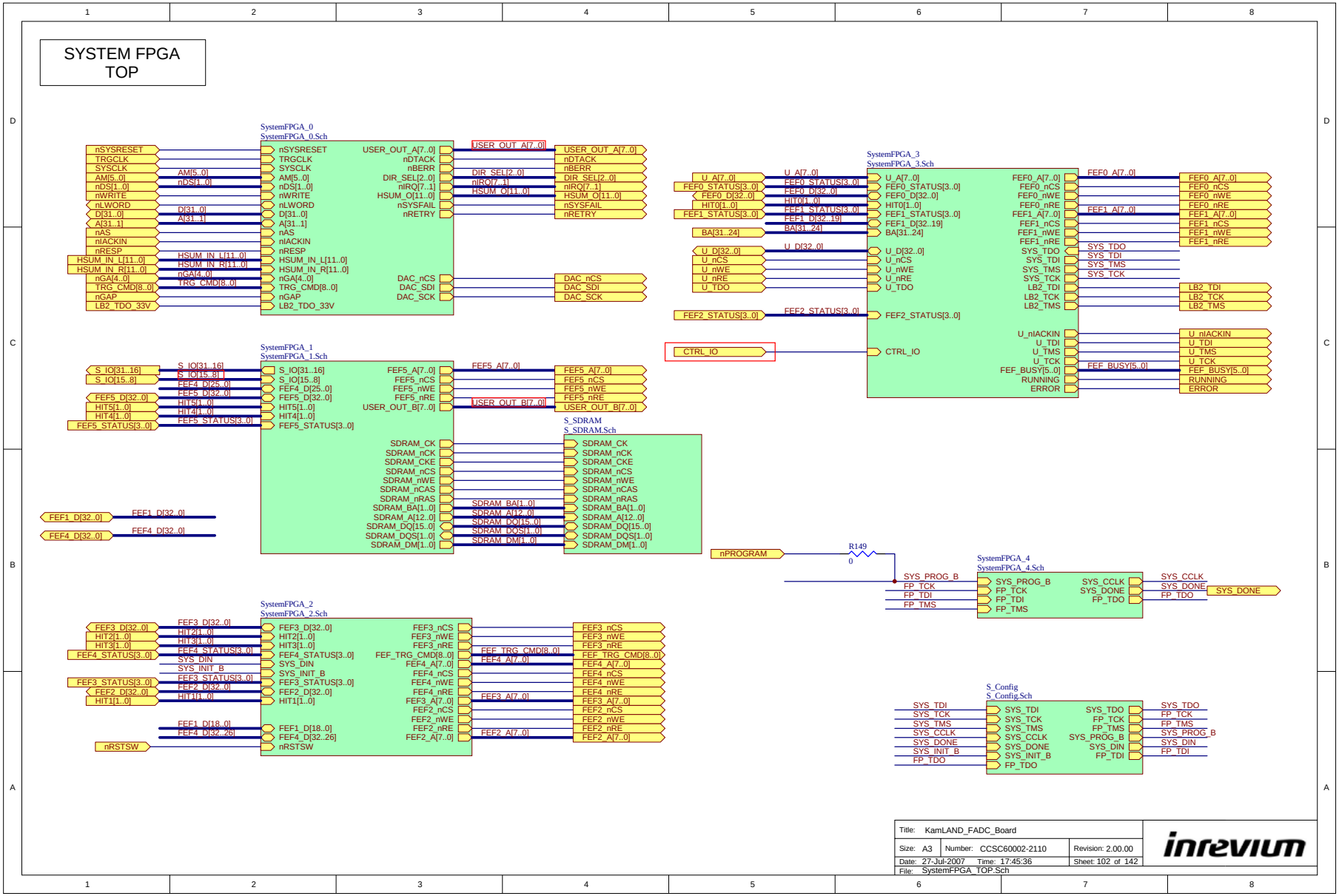
VME_IN_-12V -> VME_-12V

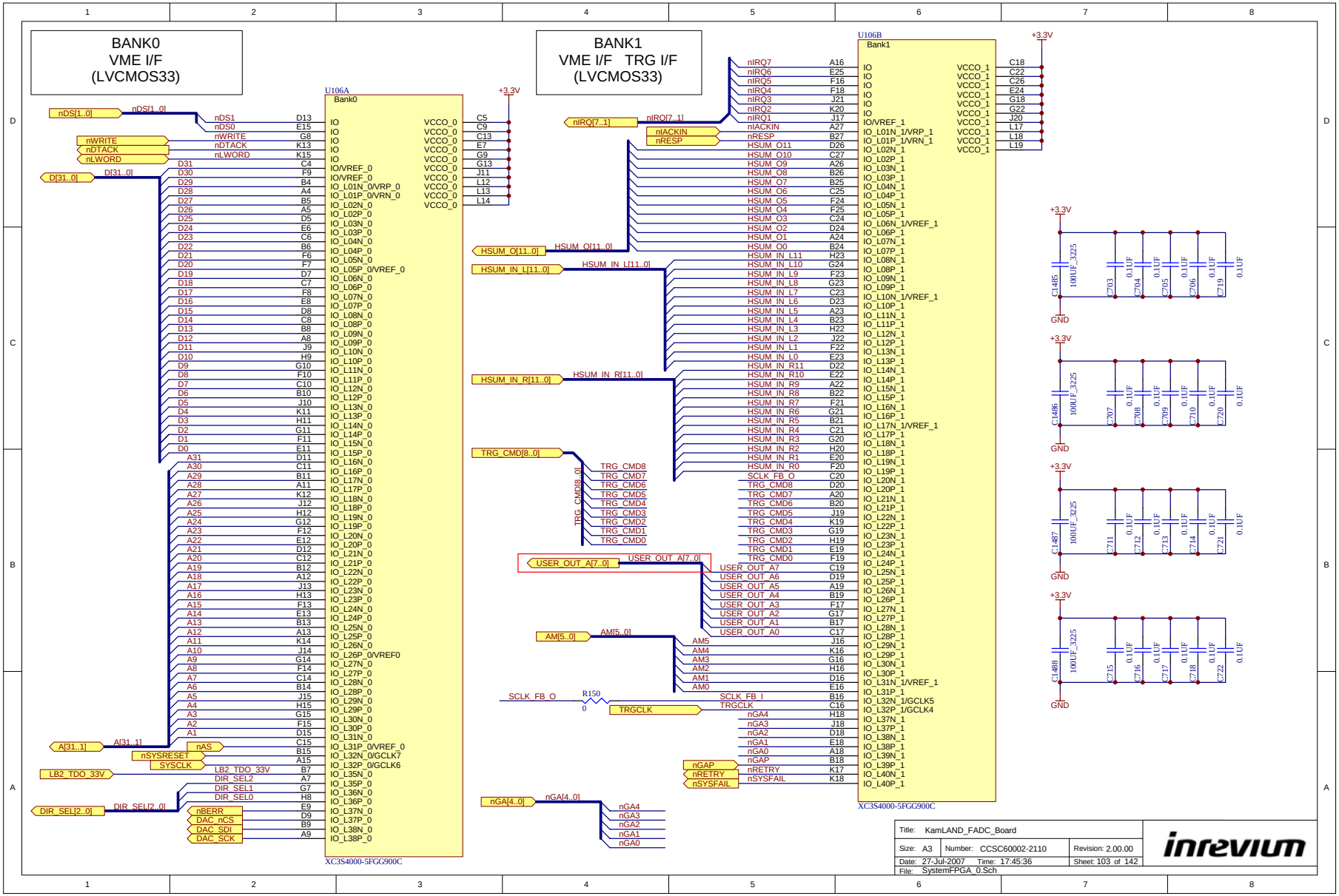


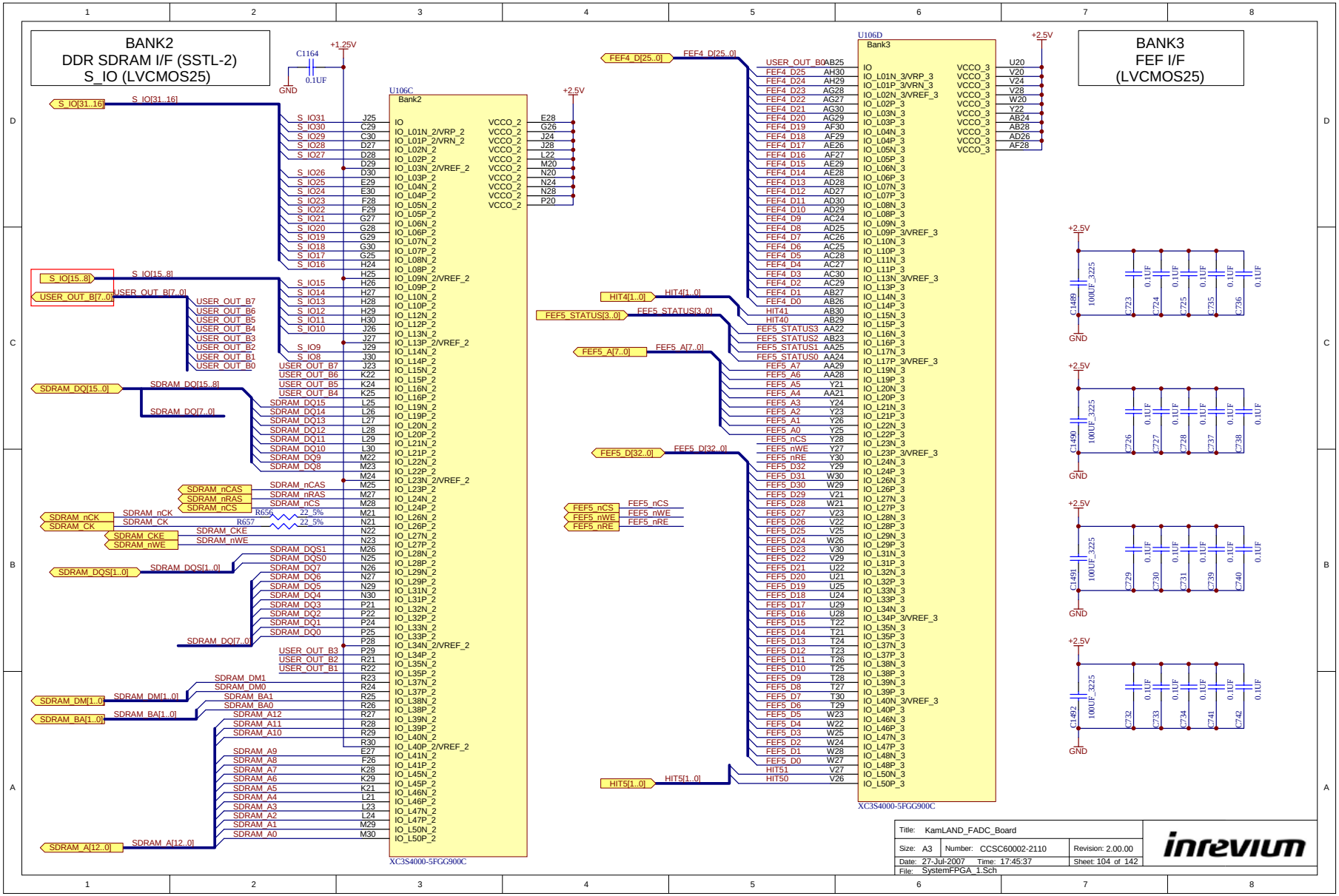
U200-U203の代わりに
MJP-02を実装できるようにしておく

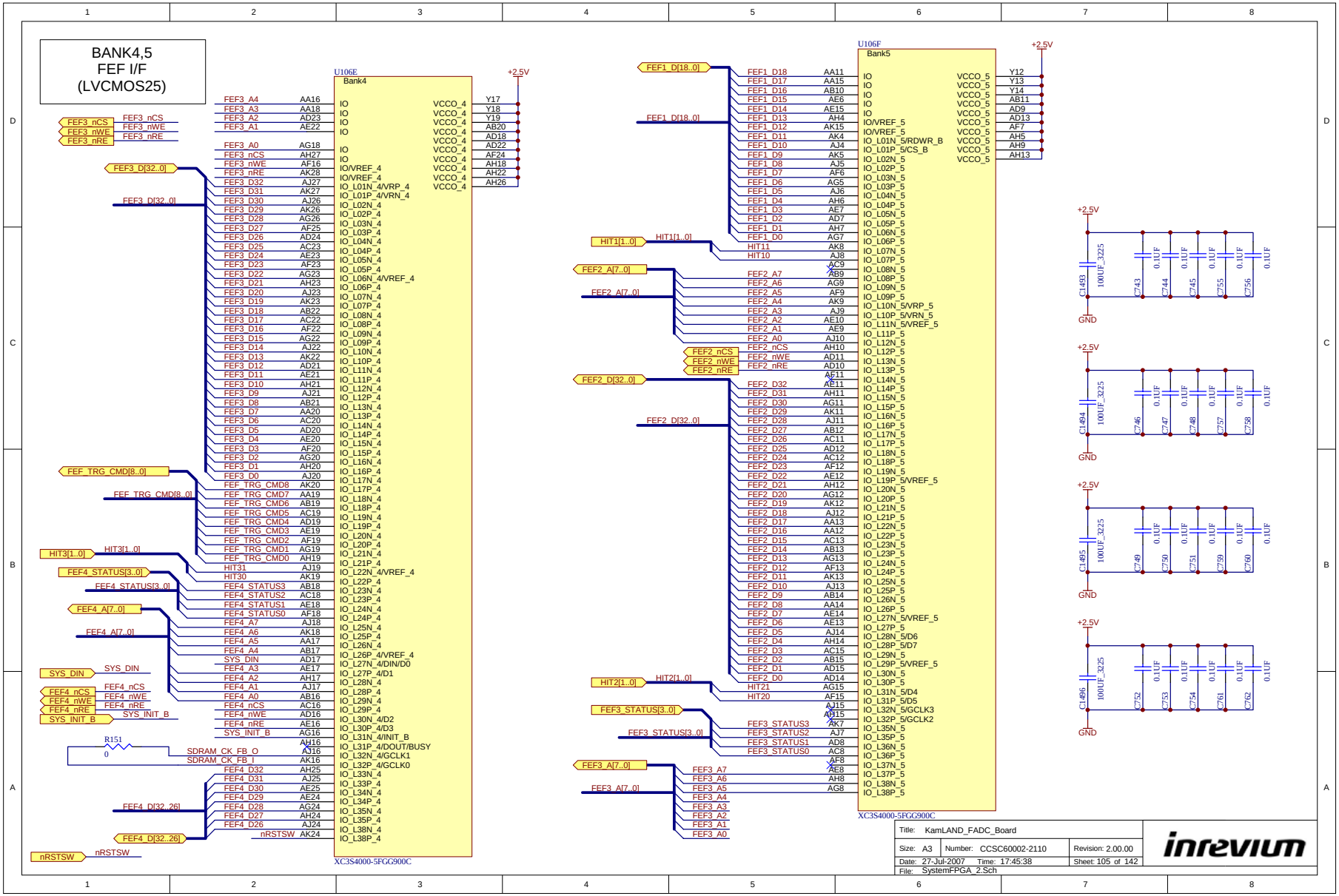
Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	
Date: 27-Jul-2007	Time: 17:45:27	Sheet: 101 of 142	
File: Power_IN_vme.Sch			

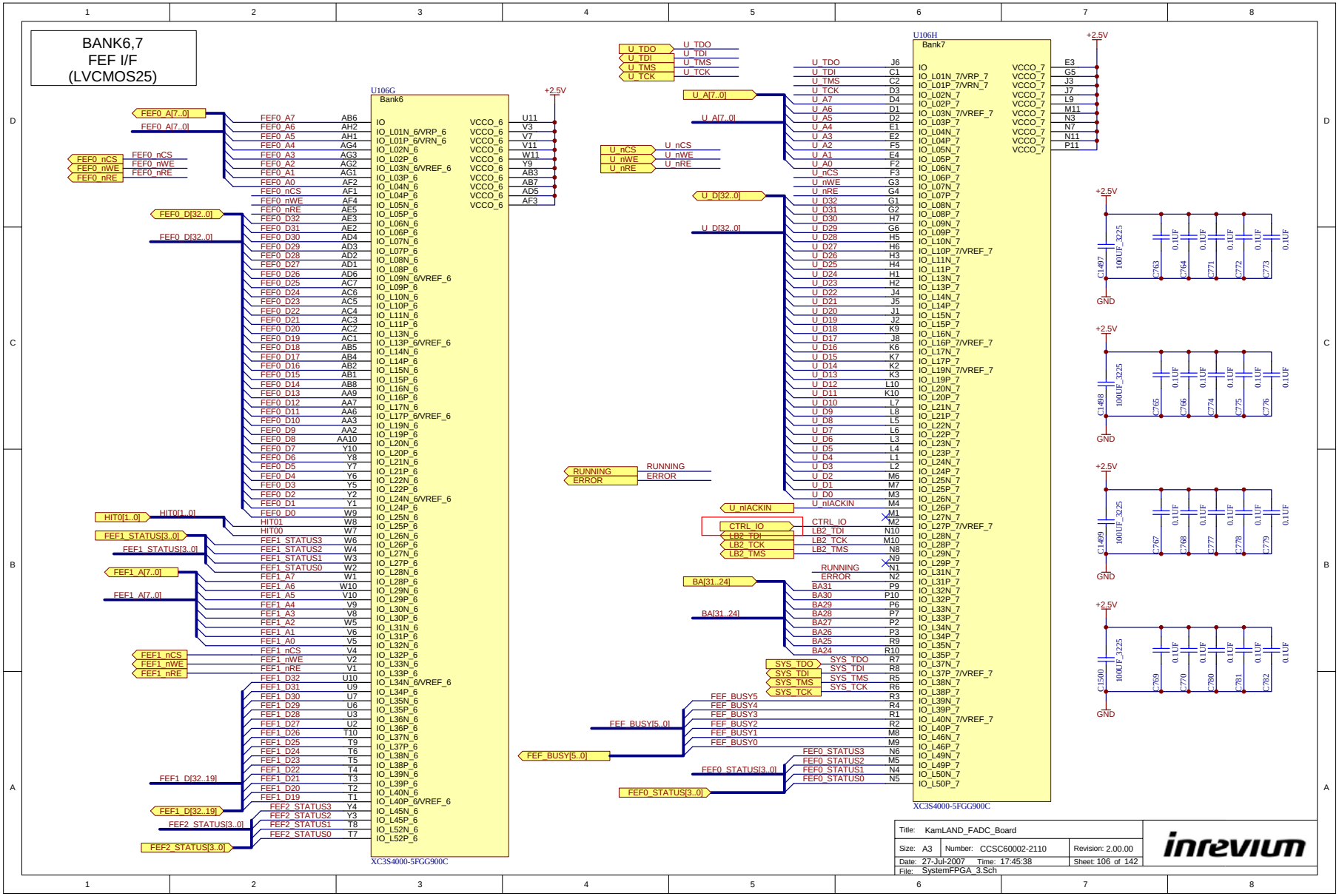
inrevium


SYSTEM FPGA TOP
SystemFPGA_0
SystemFPGA_0.Sch
SystemFPGA_1
SystemFPGA_1.Sch
SystemFPGA_2
SystemFPGA_2.Sch
SystemFPGA_3
SystemFPGA_3.Sch
S_SDRAM
S_SDRAM.Sch
SystemFPGA_4
SystemFPGA_4.Sch
S_Config
S_Config.Sch
R149
0
Title: KamLAND_FADC_Board
Size: A3
Number: CCSC60002-2110
Revision: 2.00.00
Date: 27-Jul-2007
Time: 17:45:36
Sheet: 102 of 142
File: SystemFPGA_TOP.Sch
inrevium

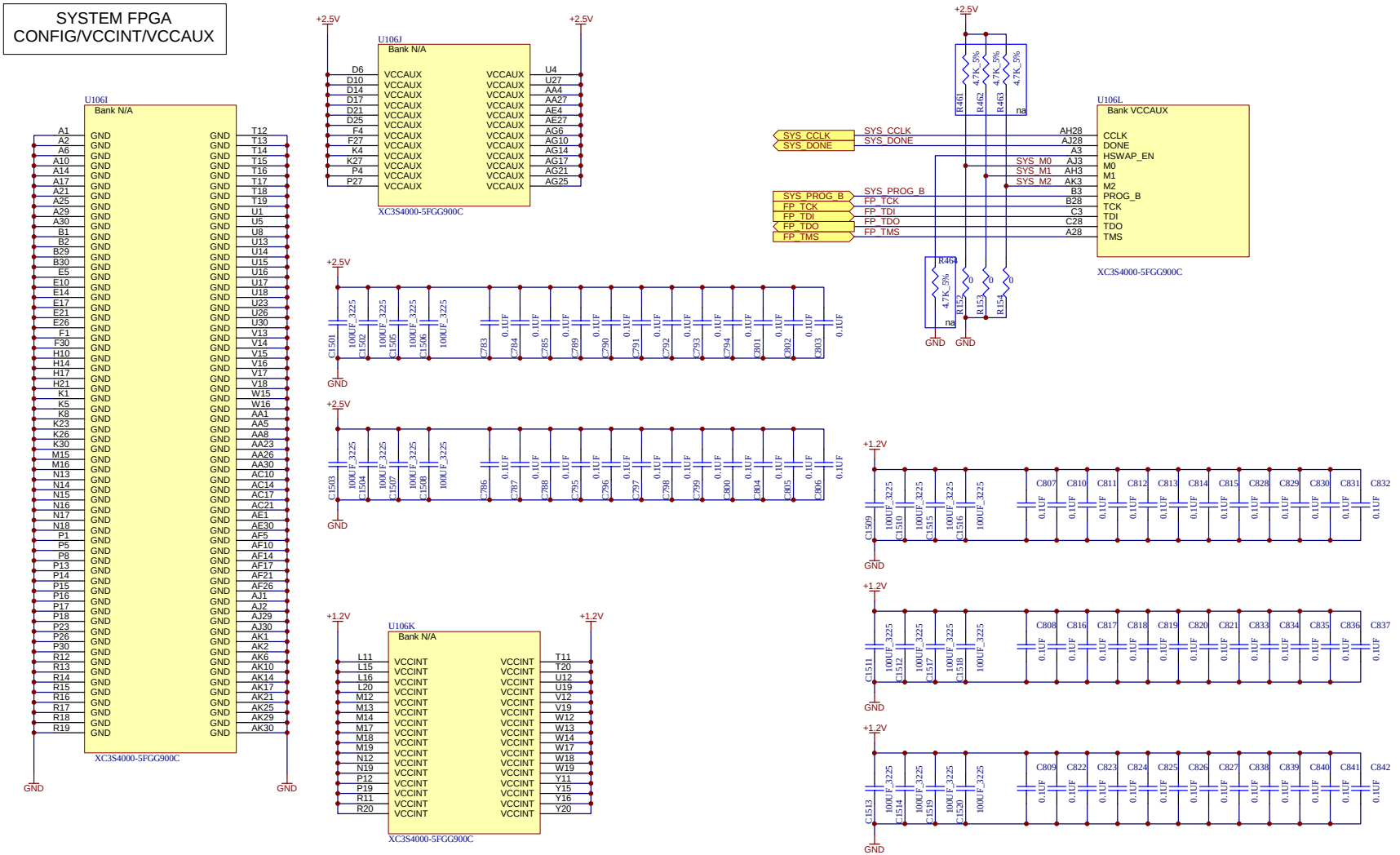

BANK0
VME I/F
(LVCMOS33)
BANK1
VME I/F TRG I/F
(LVCMOS33)
U106A
Bank0
U106B
Bank1
XC3S4000-5FGG900C
XC3S4000-5FGG900C
+3.3V
GND
nDS[1..0]
nWRITE
nDTACK
nLWORD
D[31..0]
A[31..1]
nAS
nSYSRESET
SYSCLK
LB2_TDO_33V
DIR_SEL[2..0]
nBERR
DAC_nCS
DAC_SDI
DAC_SCK
nIRQ[7..1]
nIACKIN
nRESP
HSUM_O[11..0]
HSUM_IN_L[11..0]
HSUM_IN_R[11..0]
TRG_CMD[8..0]
USER_OUT_A[7..0]
AM[5..0]
SCLK_FB_O
R150
0
TRGCLK
nGA[4..0]
nGAP
nRETRY
nSYSFAIL
C1485 100UF_3225
C1486 100UF_3225
C1487 100UF_3225
C1488 100UF_3225
C703 C704 C705 C706 C719
C707 C708 C709 C710 C720
C711 C712 C713 C714 C721
C715 C716 C717 C718 C722
0.1UF
Title: KamLAND_FADC_Board
Size: A3
Number: CCSC60002-2110
Revision: 2.00.00
Date: 27-Jul-2007
Time: 17:45:36
Sheet: 103 of 142
File: SystemFPGA_0.Sch
inrevium


BANK2
DDR SDRAM I/F (SSTL-2)
S_IO (LVCMOS25)
BANK3
FEF I/F
(LVCMOS25)
U106C
Bank2
XC3S4000-5FGG900C
U106D
Bank3
XC3S4000-5FGG900C
C1164
0.1UF
+1.25V
GND
+2.5V
S_IO[31..16]
S_IO[15..8]
USER_OUT_B[7..0]
SDRAM_DQ[15..0]
SDRAM_DQ[15..8]
SDRAM_DQ[7..0]
SDRAM_DQS[1..0]
SDRAM_nCAS
SDRAM_nRAS
SDRAM_nCS
SDRAM_nCK
SDRAM_CK
SDRAM_CKE
SDRAM_nWE
R656
R657
22_5%
SDRAM_DM[1..0]
SDRAM_BA[1..0]
SDRAM_A[12..0]
FEF4_D[25..0]
HIT4[1..0]
FEF5_STATUS[3..0]
FEF5_A[7..0]
FEF5_D[32..0]
FEF5_nCS
FEF5_nWE
FEF5_nRE
HIT5[1..0]
C1489
C1490
C1491
C1492
100UF_3225
0.1UF
C723
C724
C725
C735
C736
C726
C727
C728
C737
C738
C729
C730
C731
C739
C740
C732
C733
C734
C741
C742
Title: KamLAND_FADC_Board
Size: A3
Number: CCSC60002-2110
Revision: 2.00.00
Date: 27-Jul-2007
Time: 17:45:37
Sheet: 104 of 142
File: SystemFPGA_1.Sch
inrevium


BANK4,5
FEF I/F
(LVCMOS25)
U106E
Bank4
XC3S4000-5FGG900C
U106F
Bank5
XC3S4000-5FGG900C
+2.5V
GND
FEF3_nCS
FEF3_nWE
FEF3_nRE
FEF3_D[32..0]
FEF_TRG_CMD[8..0]
HIT3[1..0]
FEF4_STATUS[3..0]
FEF4_A[7..0]
SYS_DIN
FEF4_nCS
FEF4_nWE
FEF4_nRE
SYS_INIT_B
R151
SDRAM_CK_FB_O
SDRAM_CK_FB_I
FEF4_D[32..26]
nRSTSW
FEF1_D[18..0]
HIT1[1..0]
FEF2_A[7..0]
FEF2_nCS
FEF2_nWE
FEF2_nRE
FEF2_D[32..0]
HIT2[1..0]
FEF3_STATUS[3..0]
FEF3_A[7..0]
C1493
C1494
C1495
C1496
100UF_3225
0.1UF
C743
C744
C745
C755
C756
C746
C747
C748
C757
C758
C749
C750
C751
C759
C760
C752
C753
C754
C761
C762
Title: KamLAND_FADC_Board
Size: A3
Number: CCSC60002-2110
Revision: 2.00.00
Date: 27-Jul-2007
Time: 17:45:38
Sheet: 105 of 142
File: SystemFPGA_2.Sch
inrevium


BANK6,7
FEF I/F
(LVCMOS25)
U106G
Bank6
XC3S4000-5FGG900C
U106H
Bank7
XC3S4000-5FGG900C
+2.5V
GND
FEF0_A[7..0]
FEF0_nCS
FEF0_nWE
FEF0_nRE
FEF0_D[32..0]
HIT0[1..0]
FEF1_STATUS[3..0]
FEF1_A[7..0]
FEF1_nCS
FEF1_nWE
FEF1_nRE
FEF1_D[32..19]
FEF2_STATUS[3..0]
U_TDO
U_TDI
U_TMS
U_TCK
U_A[7..0]
U_nCS
U_nWE
U_nRE
U_D[32..0]
RUNNING
ERROR
U_nIACKIN
CTRL_IO
LB2_TDI
LB2_TCK
LB2_TMS
BA[31..24]
SYS_TDO
SYS_TDI
SYS_TMS
SYS_TCK
FEF_BUSY[5..0]
FEF_BUSY5
FEF_BUSY4
FEF_BUSY3
FEF_BUSY2
FEF_BUSY1
FEF_BUSY0
C1497
C1498
C1499
C1500
100UF_3225
0.1UF
C763
C764
C771
C772
C773
C765
C766
C774
C775
C776
C767
C768
C777
C778
C779
C769
C770
C780
C781
C782
Title: KamLAND_FADC_Board
Size: A3
Number: CCSC60002-2110
Revision: 2.00.00
Date: 27-Jul-2007
Time: 17:45:38
Sheet: 106 of 142
File: SystemFPGA_3.Sch
inrevium

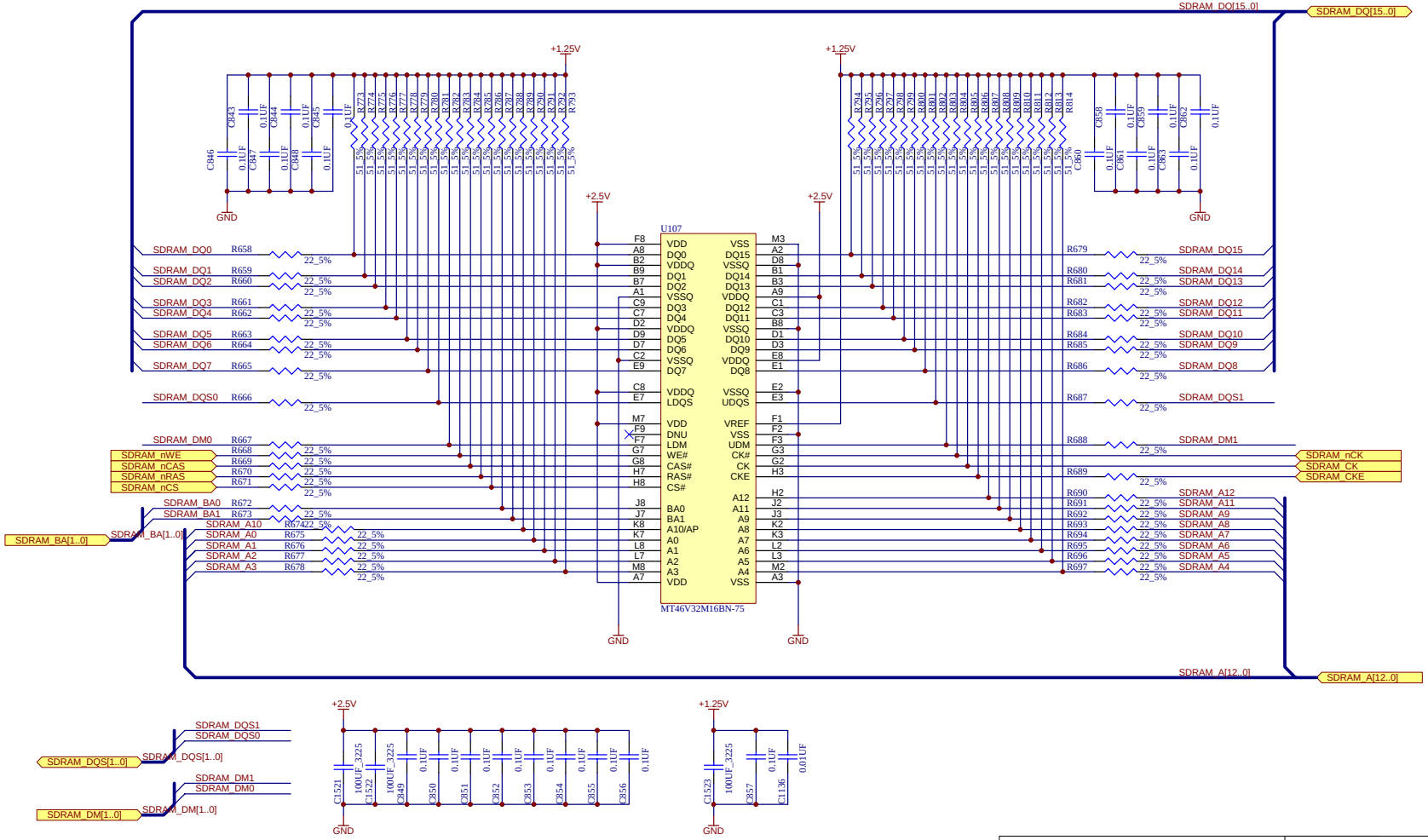
SYSTEM FPGA CONFIG/VCCINT/VCCAUX



Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:45:39		Sheet: 107 of 142
File: SystemFPGA_4.Sch			

inrevium

DDR SDRAM (SYSTEM FPGA)



Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	
Date: 27-Jul-2007	Time: 17:45:39	Sheet: 108 of 142	
File: S_SDRAM.Sch			

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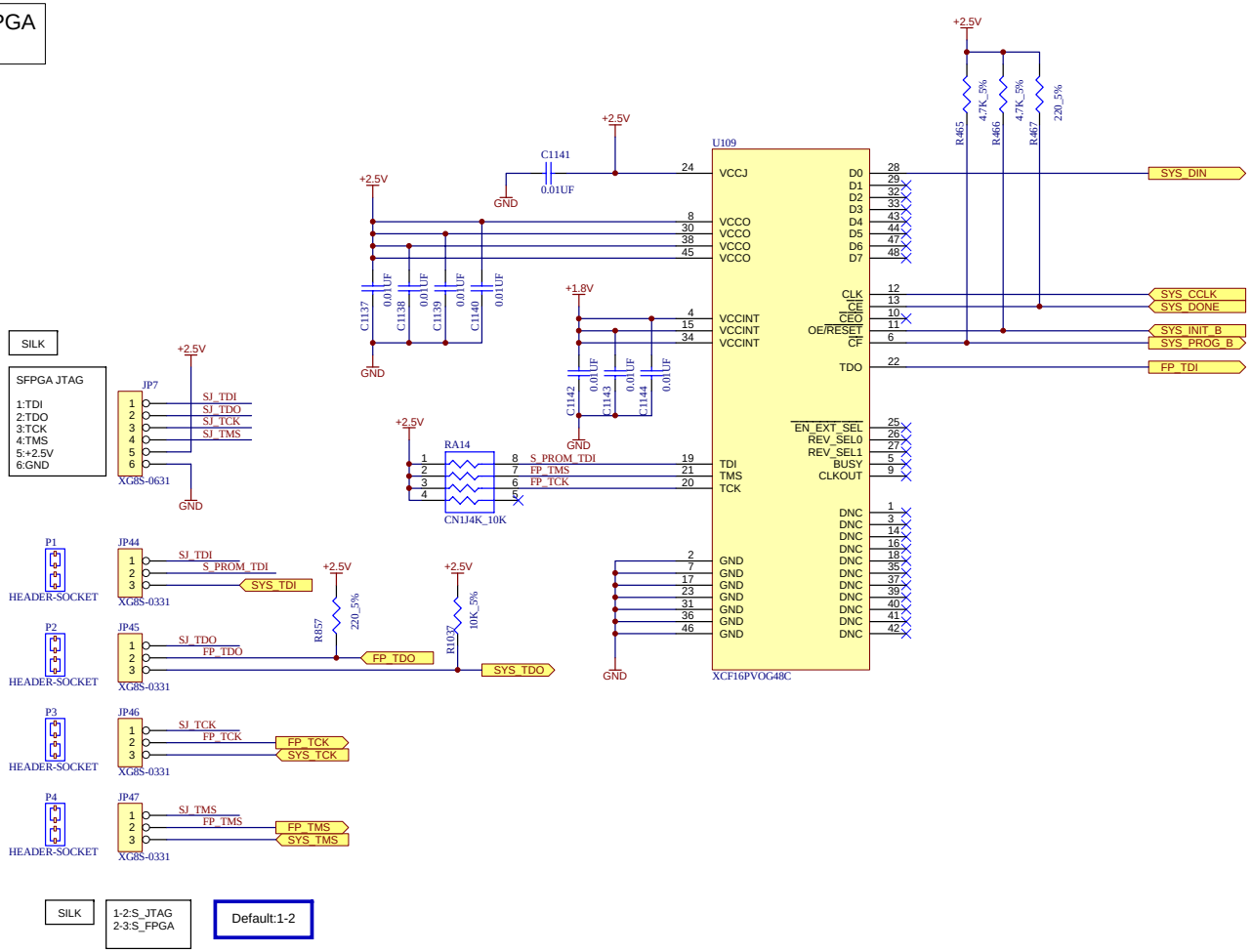
SYSTEM FPGA PROM



Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:45:40		Sheet: 109 of 142
File: S_Config.Sch			

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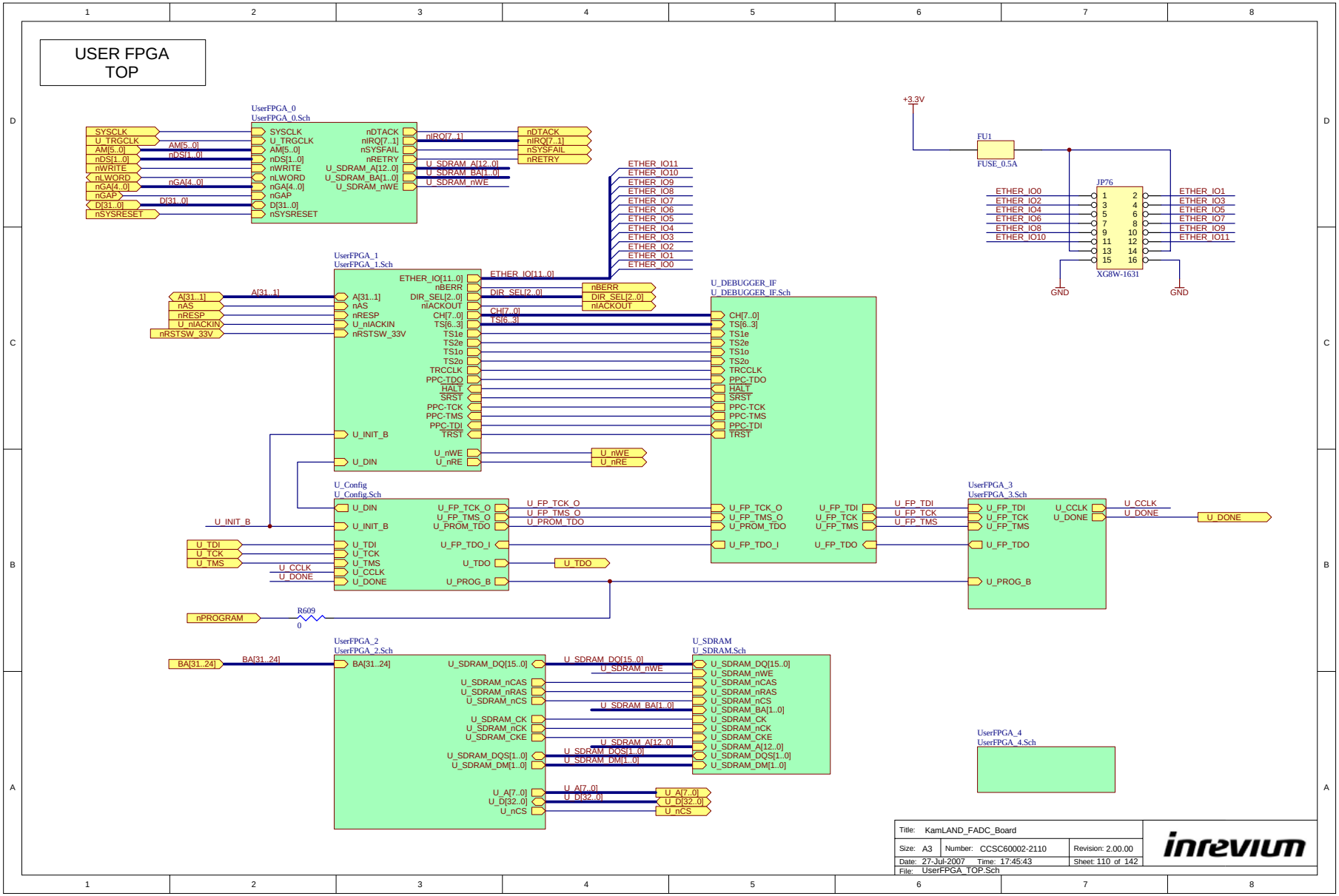
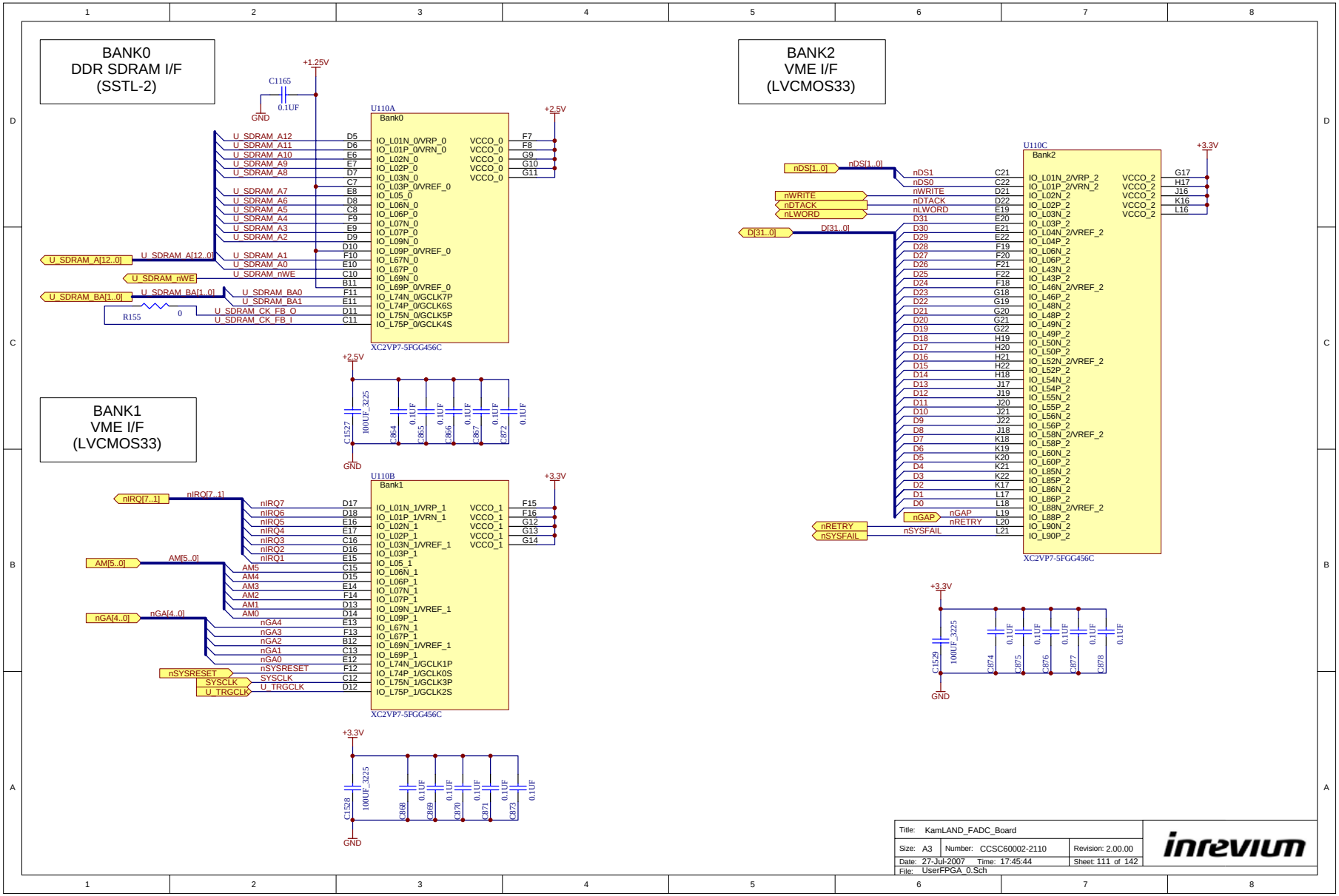
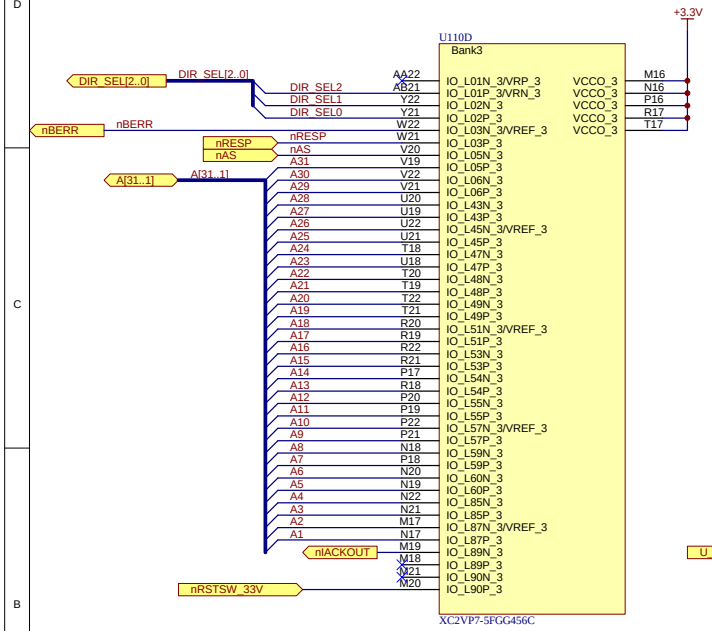

USER FPGA TOP
UserFPGA_0
UserFPGA_0.Sch
SYSCLK
U_TRGCLK
AM[5..0]
nDS[1..0]
nWRITE
nLWORD
nGA[4..0]
nGAP
D[31..0]
nSYSRESET
nDTACK
nIRQ[7..1]
nSYSFAIL
nRETRY
U_SDRAM_A[12..0]
U_SDRAM_BA[1..0]
U_SDRAM_nWE
ETHER_IO11
ETHER_IO10
ETHER_IO9
ETHER_IO8
ETHER_IO7
ETHER_IO6
ETHER_IO5
ETHER_IO4
ETHER_IO3
ETHER_IO2
ETHER_IO1
ETHER_IO0
+3.3V
FU1
FUSE_0.5A
JP76
XG8W-1631
GND
UserFPGA_1
UserFPGA_1.Sch
A[31..1]
nAS
nRESP
U_nIACKIN
nRSTSW_33V
ETHER_IO[11..0]
nBERR
DIR_SEL[2..0]
nIACKOUT
CH[7..0]
TS[6..3]
TS1e
TS2e
TS1o
TS2o
TRCCLK
PPC-TDO
HALT
SRST
PPC-TCK
PPC-TMS
PPC-TDI
TRST
U_INIT_B
U_DIN
U_nWE
U_nRE
U_DEBUGGER_IF
U_DEBUGGER_IF.Sch
U_Config
U_Config.Sch
U_FP_TCK_O
U_FP_TMS_O
U_PROM_TDO
U_TDI
U_TCK
U_TMS
U_CCLK
U_DONE
U_FP_TDO_I
U_TDO
U_PROG_B
nPROGRAM
R609
0
UserFPGA_3
UserFPGA_3.Sch
U_FP_TCK
U_FP_TMS
U_FP_TDO
UserFPGA_2
UserFPGA_2.Sch
BA[31..24]
U_SDRAM_DQ[15..0]
U_SDRAM_nCAS
U_SDRAM_nRAS
U_SDRAM_nCS
U_SDRAM_CK
U_SDRAM_nCK
U_SDRAM_CKE
U_SDRAM_DQS[1..0]
U_SDRAM_DM[1..0]
U_A[7..0]
U_D[32..0]
U_nCS
U_SDRAM
U_SDRAM.Sch
U_SDRAM_nWE
U_SDRAM_BA[1..0]
U_SDRAM_A[12..0]
UserFPGA_4
UserFPGA_4.Sch
Title: KamLAND_FADC_Board
Size: A3
Number: CCSC60002-2110
Revision: 2.00.00
Date: 27-Jul-2007
Time: 17:45:43
Sheet: 110 of 142
File: UserFPGA_TOP.Sch
inrevium

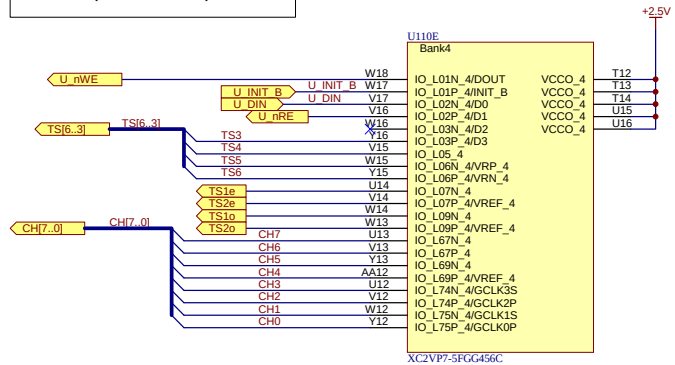

BANK0
DDR SDRAM I/F
(SSTL-2)
BANK1
VME I/F
(LVCMOS33)
BANK2
VME I/F
(LVCMOS33)
U110A
Bank0
U110B
Bank1
U110C
Bank2
XC2VP7-5FGG456C
+1.25V
+2.5V
+3.3V
GND
C1165
0.1UF
R155
U_SDRAM_A[12..0]
U_SDRAM_nWE
U_SDRAM_BA[1..0]
U_SDRAM_CK_FB_O
U_SDRAM_CK_FB_I
nIRQ[7..1]
AM[5..0]
nGA[4..0]
nSYSRESET
SYSCLK
U_TRGCLK
nDS[1..0]
nWRITE
nDTACK
nLWORD
D[31..0]
nGAP
nRETRY
nSYSFAIL
C1527
C1528
C1529
100UF_3225
0.1UF
Title: KamLAND_FADC_Board
Size: A3
Number: CCSC60002-2110
Revision: 2.00.00
Date: 27-Jul-2007
Time: 17:45:44
Sheet: 111 of 142
File: UserFPGA_0.Sch
inrevium

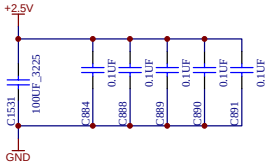
BANK3
VME I/F
(LVCMOS33)

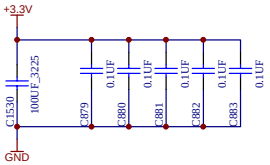
BANK4
SYSTEM FPGA I/F
U_I/O
(LVCMOS25)

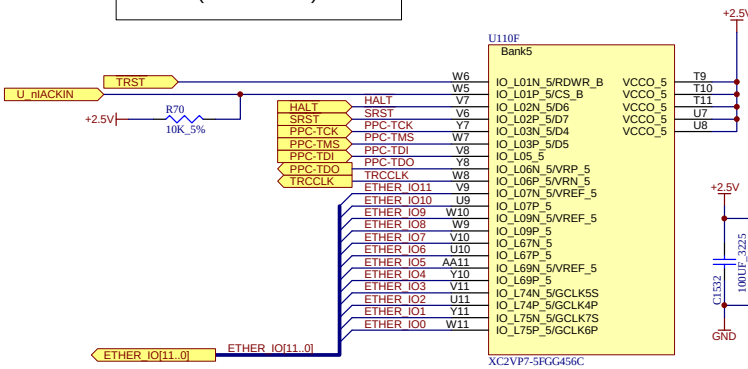
BANK5
SYSTEM FPGA I/F
U_I/O
(LVCMOS25)

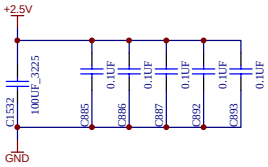












Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:45:45		Sheet: 112 of 142
File: UserFPGA_1.Sch			

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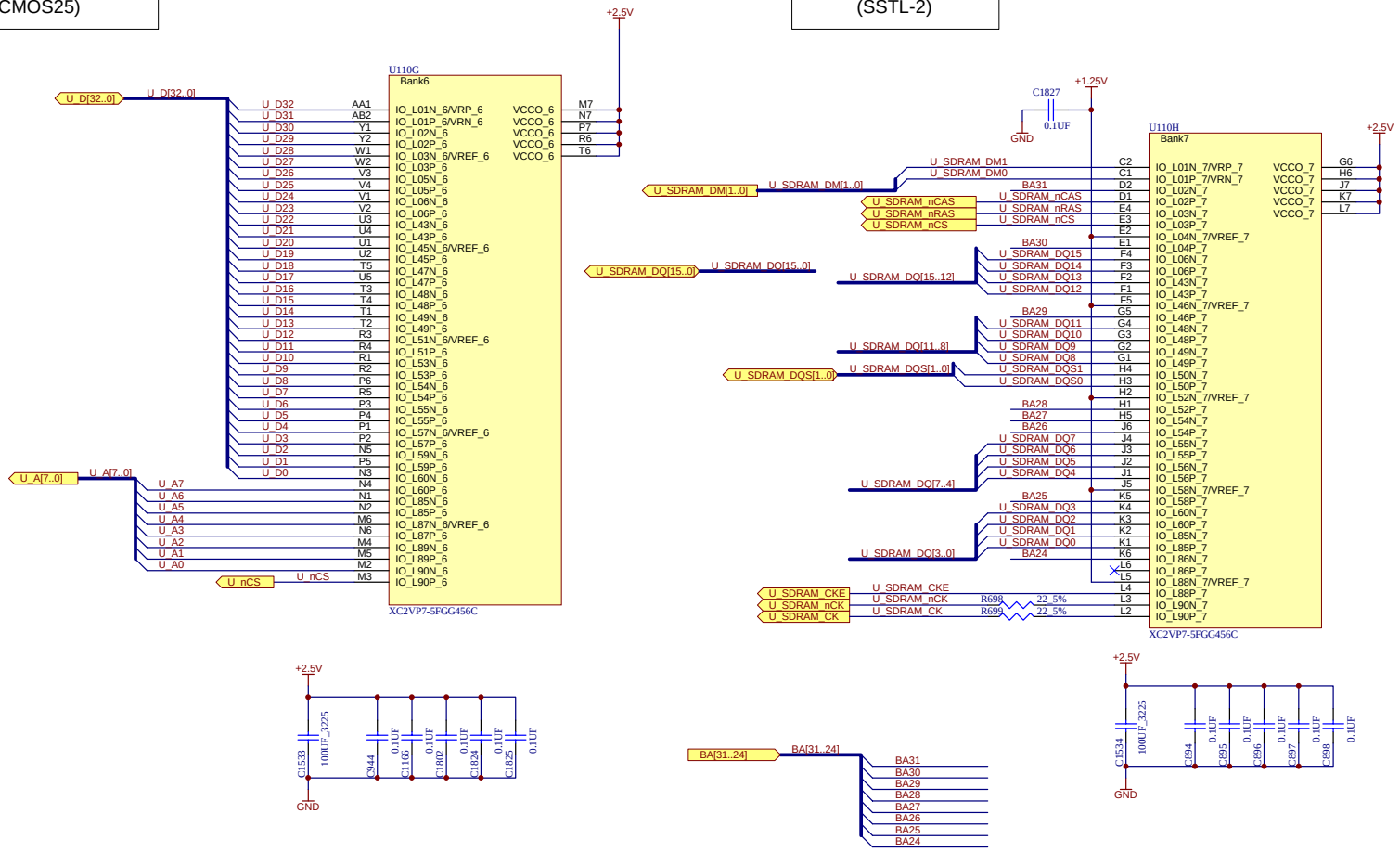
BANK6
SYSTEM FPGA I/F
(LVCMOS25)

BANK7
DDR SDRAM I/F
(SSTL-2)



Title:	KamLAND_FADC_Board
Size:	A3
Number:	CCSC60002-2110
Revision:	2.00.00
Date:	27-Jul-2007 Time: 17:45:45
Sheet:	113 of 142
File:	UserFPGA_2.Sch

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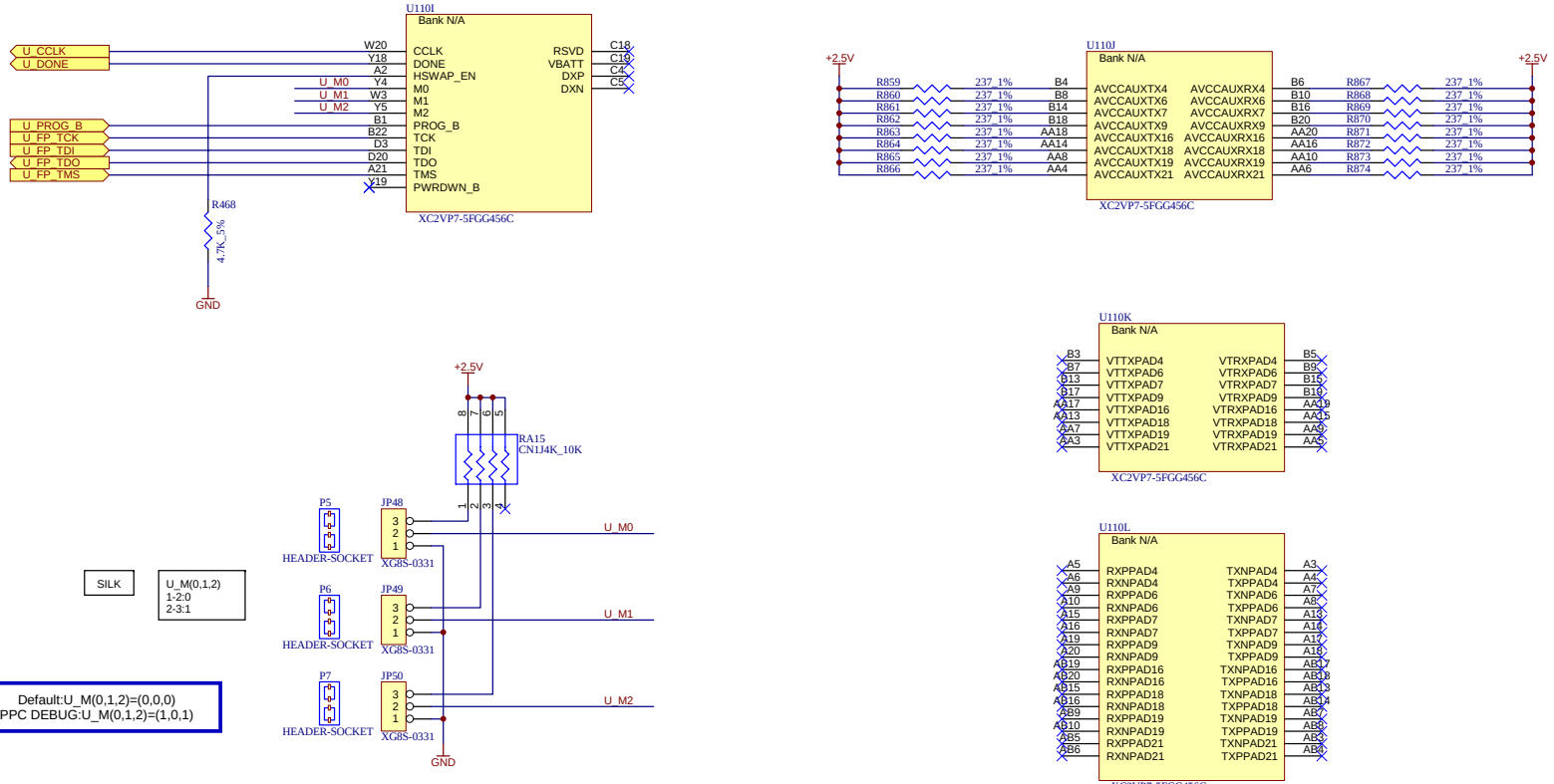
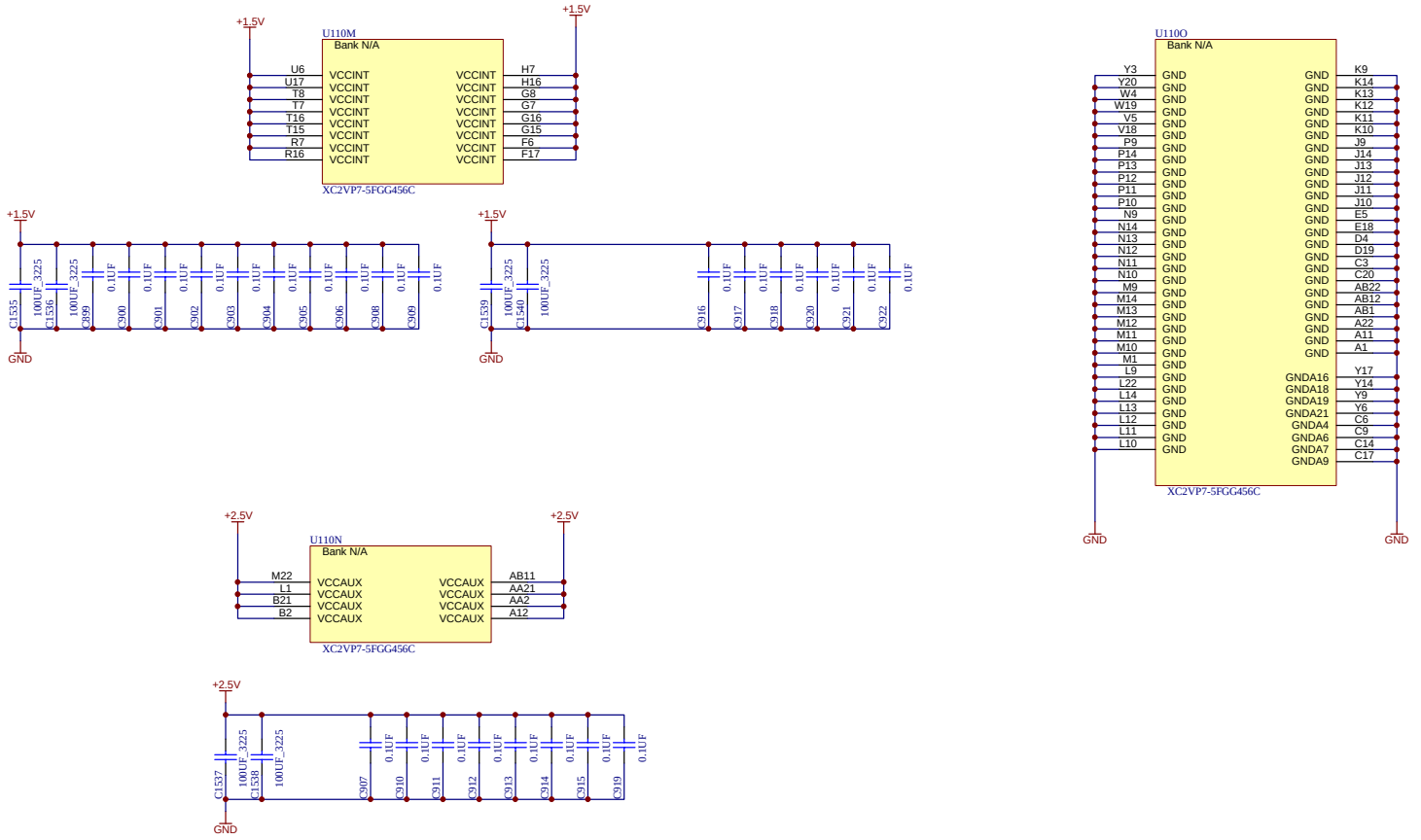
USER FPGA CONFIG/JTAG



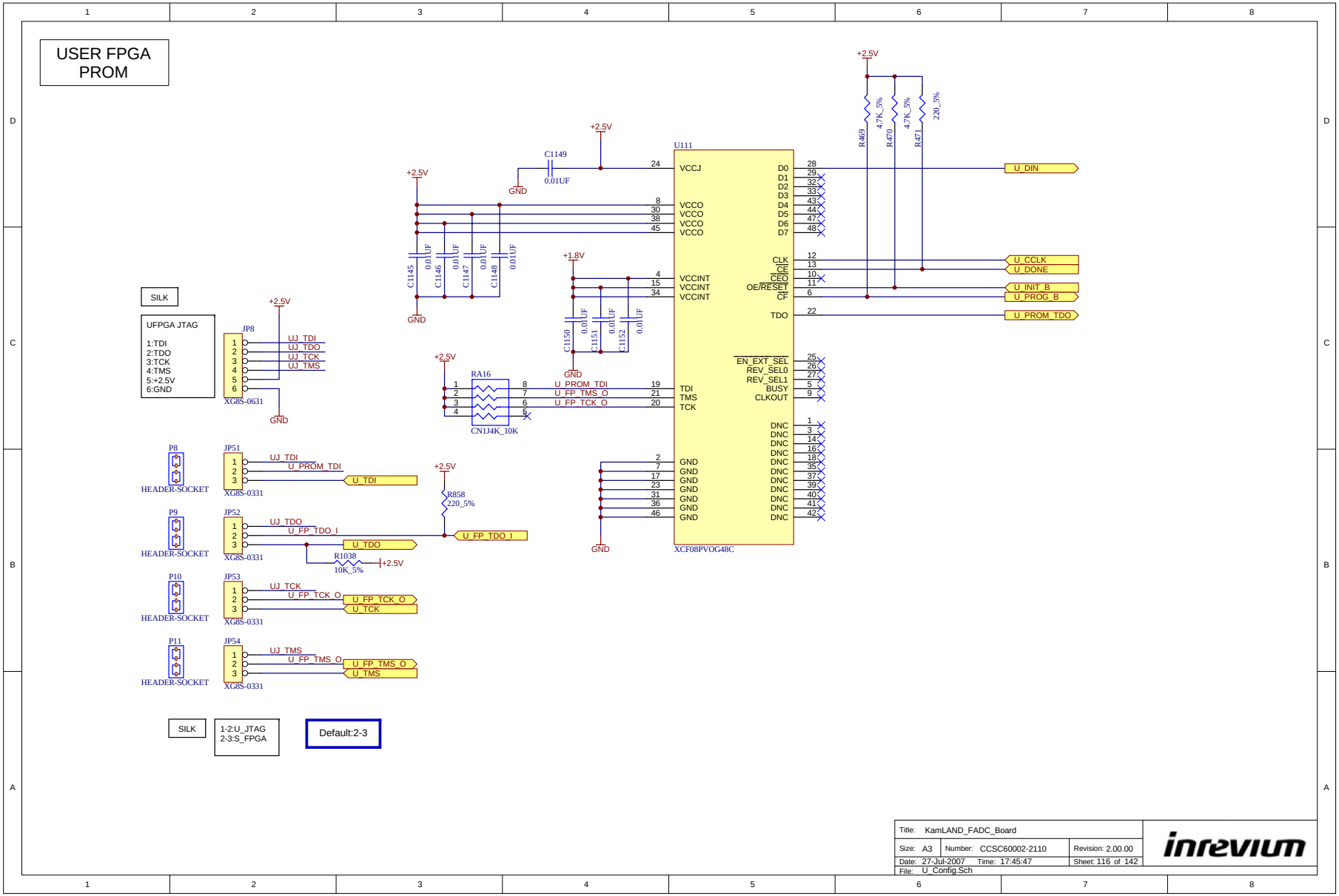
Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:45:46		Sheet: 114 of 142
File: UserFPGA_3.Sch			

inrevium

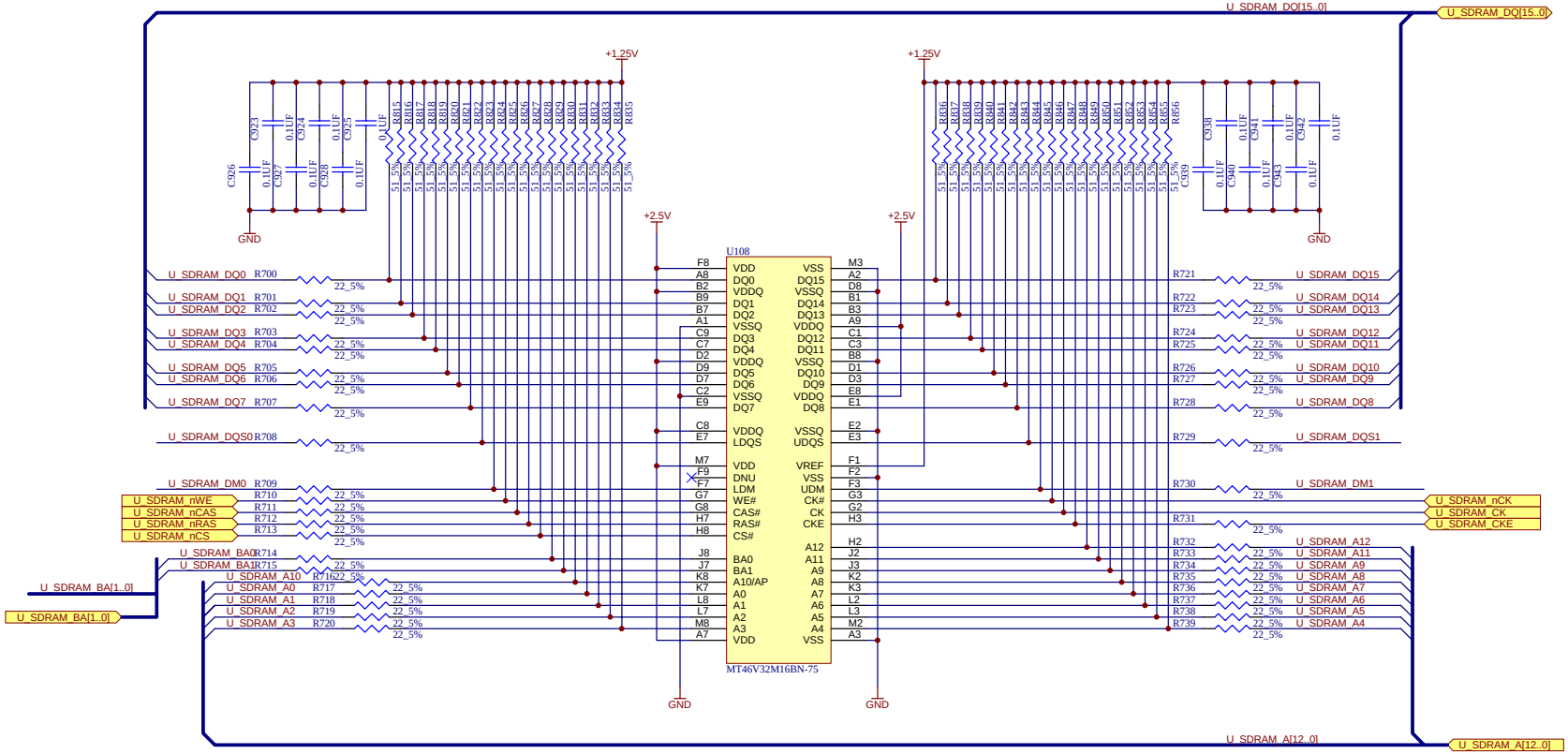
USER FPGA
VCCINT/VCCAUX



Title: KamLAND_FADC_Board			inrevium
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	
Date: 27-Jul-2007	Time: 17:45:46	Sheet: 115 of 142	
File: UserFPGA_4.Sch			


USER FPGA PROM
SILK
UFPGA JTAG
1:TDI
2:TDO
3:TCK
4:TMS
5:+2.5V
6:GND
JP8
XG8S-0631
UJ_TDI
UJ_TDO
UJ_TCK
UJ_TMS
GND
+2.5V
P8
P9
P10
P11
HEADER-SOCKET
JP51
JP52
JP53
JP54
XG8S-0331
U_PROM_TDI
U_TDI
U_FP_TDO_I
U_TDO
U_FP_TCK_O
U_TCK
U_FP_TMS_O
U_TMS
R858
220_5%
R1038
10K_5%
SILK
1-2:U_JTAG
2-3:S_FPGA
Default:2-3
U111
XCF08PVOG48C
C1149
0.01UF
C1145
C1146
C1147
C1148
C1150
C1151
C1152
0.0UF
+1.8V
RA16
CN1J4K_10K
R469
R470
R471
4.7K_5%
220_5%
VCCJ
VCCO
VCCINT
TDI
TMS
TCK
TDO
CLK
CE
CEO
OE/RESET
CF
EN_EXT_SEL
REV_SEL0
REV_SEL1
BUSY
CLKOUT
D0
D1
D2
D3
D4
D5
D6
D7
DNC
GND
U_DIN
U_CCLK
U_DONE
U_INIT_B
U_PROG_B
U_PROM_TDO
Title: KamLAND_FADC_Board
Size: A3
Number: CCSC60002-2110
Revision: 2.00.00
Date: 27-Jul-2007
Time: 17:45:47
Sheet: 116 of 142
File: U_Config.Sch
inrevium

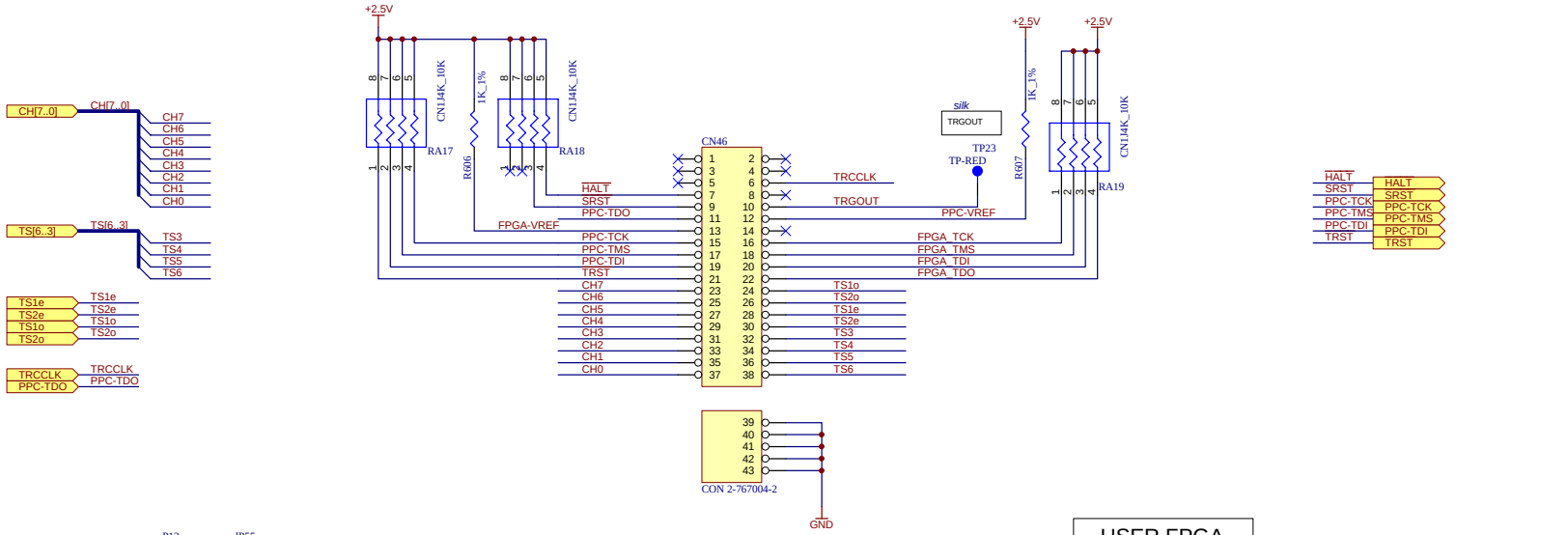
DDR SDRAM (USER FPGA)

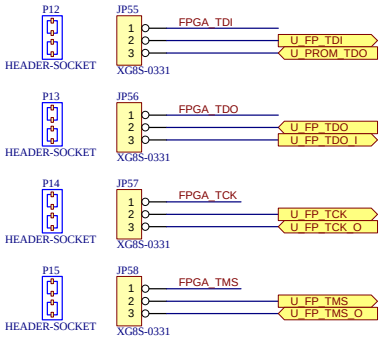


Title:	KamLAND_FADC_Board
Size: A3	Number: CCSC60002-2110
Revision:	2.00.00
Date: 27-Jul-2007	Time: 17:45:47
Sheet: 117 of 142	
File:	U_SDRAM.Sch

inrevium

USER FPGA(Power PC)
F-Sight Debugger I/F



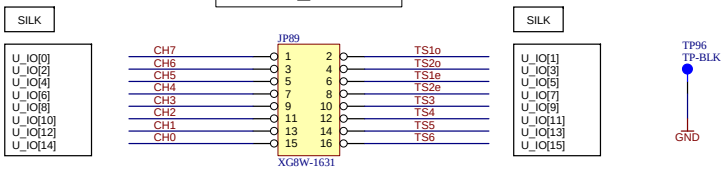


SILK

1-2:PPC DEBUG
2-3:NORMAL

Default:2-3

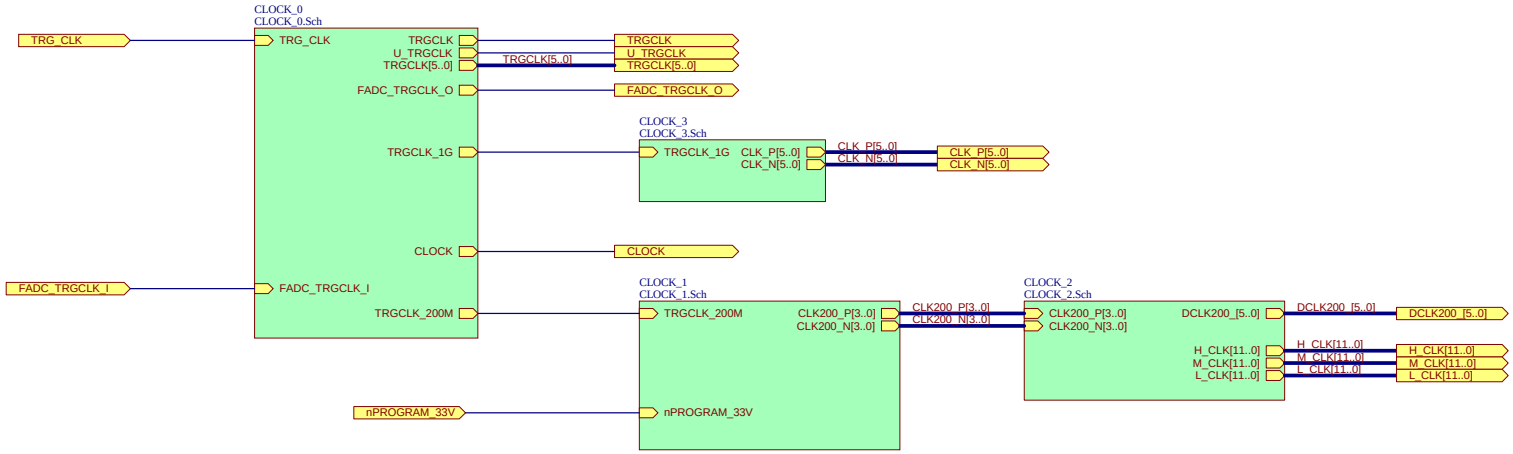
USER FPGA
U_IO



Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:45:48		Sheet: 118 of 142
File: U_DEBUGGER_IF.Sch			

inrevium

CLOCK TOP



Title: KamLAND_FADC_Board			inrevium
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	
Date: 27-Jul-2007 Time: 17:45:40		Sheet: 119 of 142	
File: CLOCK_TOP.Sch			

CLOCK (TRGCLK)

silk
TRG_CLK SELECT1
1-2:TRG_UNIT
2-3:Other FADC BOARD

Default:1-2

silk
TRG_CLK SELECT2
1-2:TRG_CLK
2-3:Xtal

Default:1-2

P33 HEADER-SOCKET
JP77 XG8S-0331
P16 HEADER-SOCKET
JP59 XG8S-0331

TRG_CLK
FADC_TRGCLK_I

+3.3V
R3072 100_1%
R3073 100_1%
GND

U112
CLK
F_SEL
PLL_SEL
MR
VDD
VDDO
VDDO
VDDA
Q0
Q1
Q2
Q3
GND
GND
GND
FB_IN
ICS86004

R7 12_1%
C1524 100UF_3225
C1158 0.01UF

R740 51_5% TRGCLK_200M
R741 51_5%
R742 51_5% TRGCLK_1G
R743 51_5%

R72 4.7K_5%
C1154 0.01UF
X1 EN VDD GND OUT CLK_50M

C1155 0.01UF
C1156 0.01UF
C1157 0.01UF
C2023 100UF_3225

U113
IN
VCC
VCC
VCC
VCC
O1
O2
O3
O4
O5
O6
O7
O8
O9
O10
GND
GND
GND
GND
GND
IDT74FCT3807PYGI

R744 22_5% TRGCLK0
R745 22_5% TRGCLK1
R746 22_5% TRGCLK2
R747 22_5% TRGCLK3
R748 22_5% TRGCLK4
R749 22_5% TRGCLK5
TRGCLK[5..0]
TRGCLK[5..0]

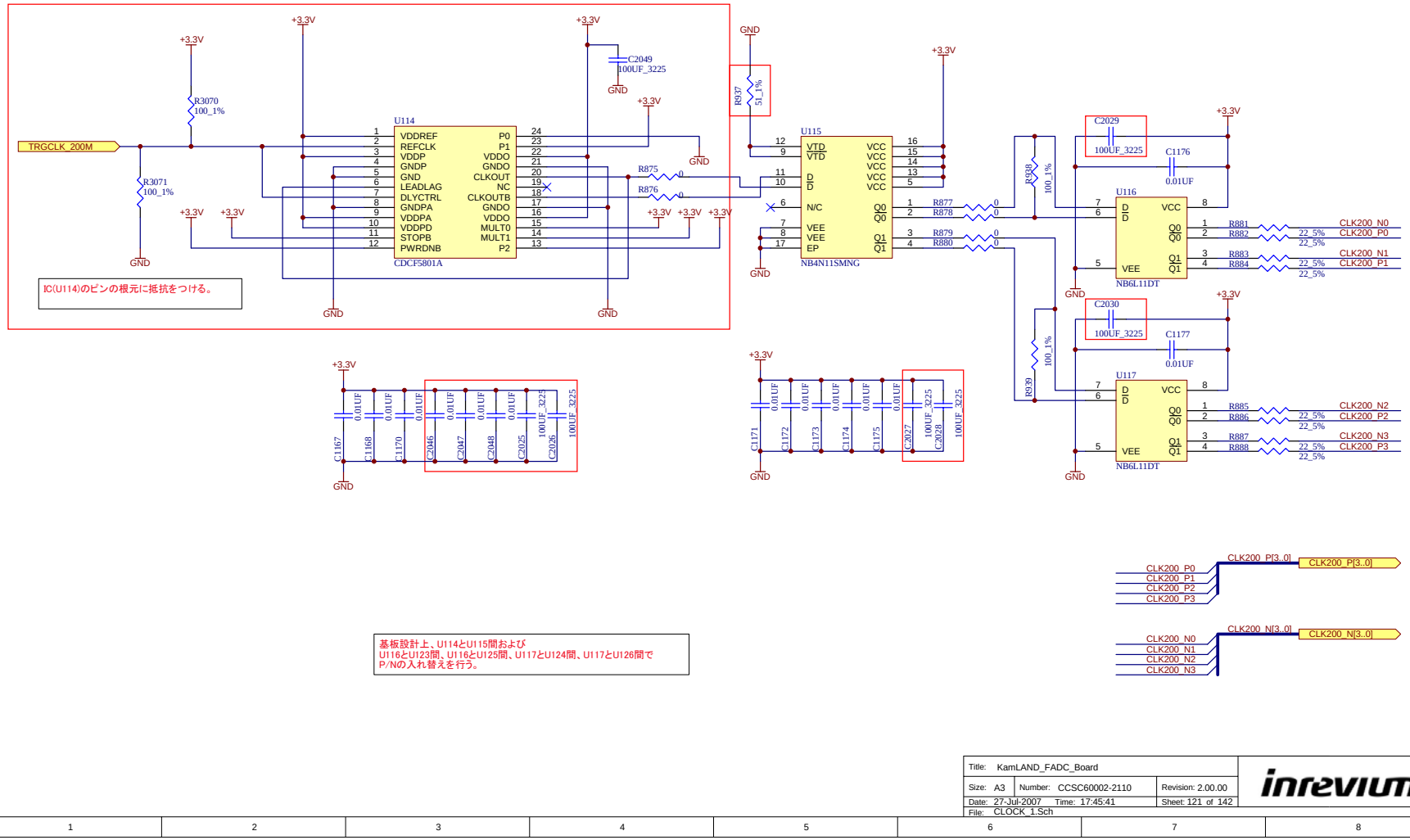
R750 22_5% TRGCLK
R751 22_5% U_TRGCLK
R752 22_5% FADC_TRGCLK_O
R8 22_5% CLOCK

C1159 0.01UF
C1160 0.01UF
C1161 0.01UF
C1162 0.01UF
C2024 0.01UF
100UF_3225

Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:45:41		Sheet: 120 of 142
File: CLOCK_0.Sch			

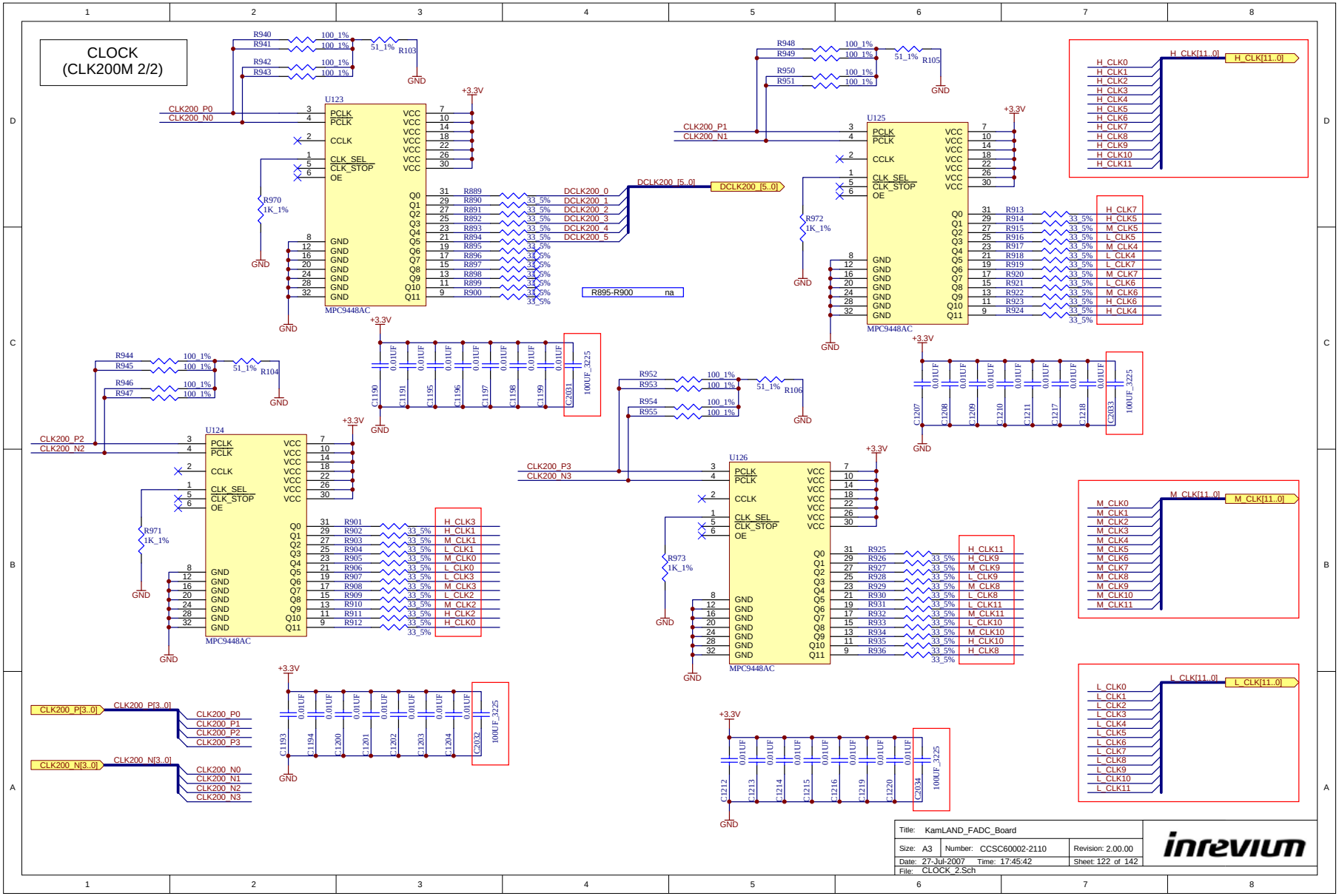
inrevium

CLOCK
(CLK200M 1/2)

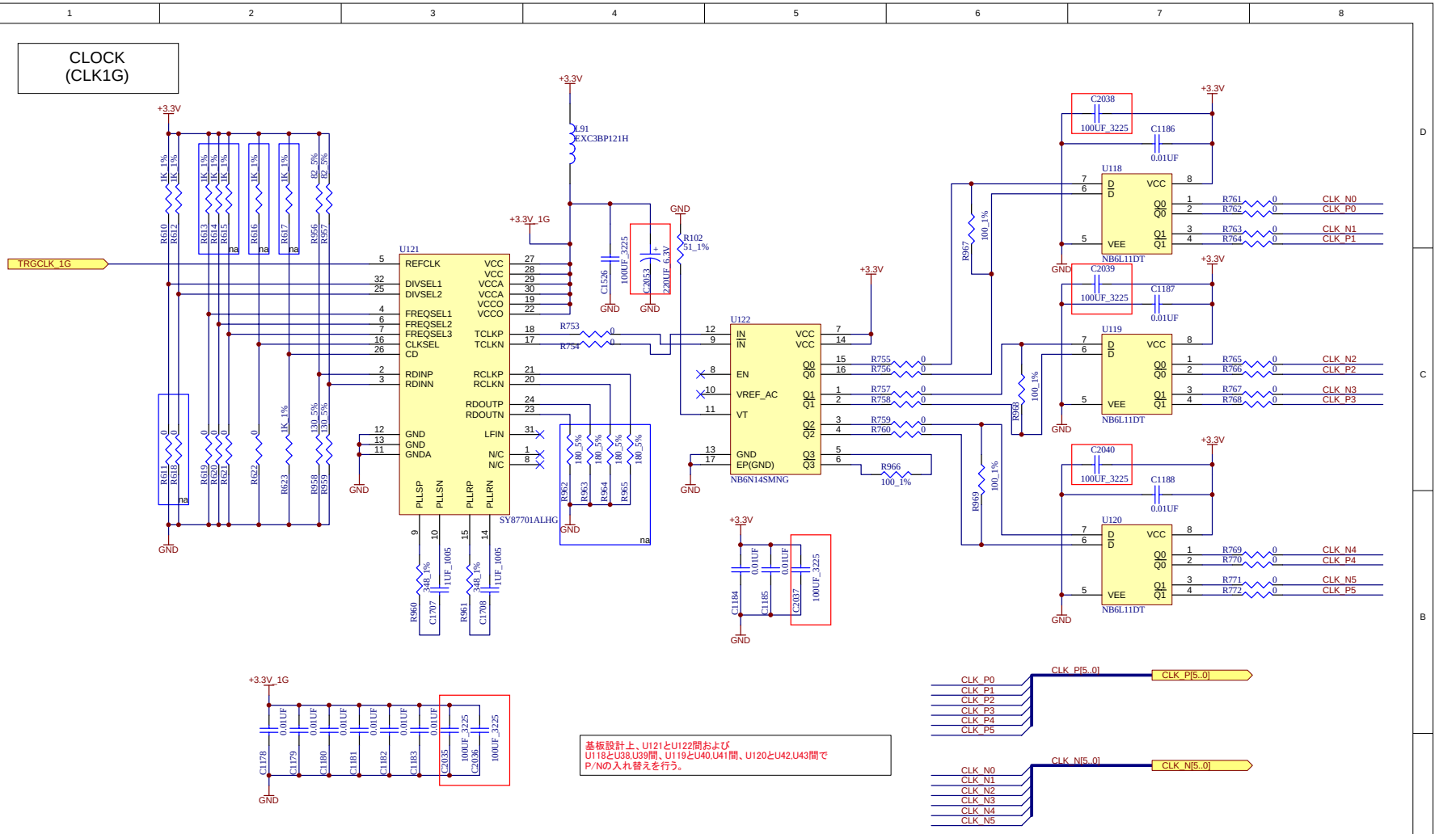


Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	
Date: 27-Jul-2007	Time: 17:45:41	Sheet: 121 of 142	
File: CLOCK_1.Sch			

inrevium


CLOCK
(CLK200M 2/2)
U123
U124
U125
U126
MPC9448AC
CLK200_P0
CLK200_N0
CLK200_P1
CLK200_N1
CLK200_P2
CLK200_N2
CLK200_P3
CLK200_N3
DCLK200_[5..0]
R895-R900 na
H_CLK[11..0]
M_CLK[11..0]
L_CLK[11..0]
Title: KamLAND_FADC_Board
Size: A3
Number: CCSC60002-2110
Revision: 2.00.00
Date: 27-Jul-2007
Time: 17:45:42
Sheet: 122 of 142
File: CLOCK_2.Sch
inrevium

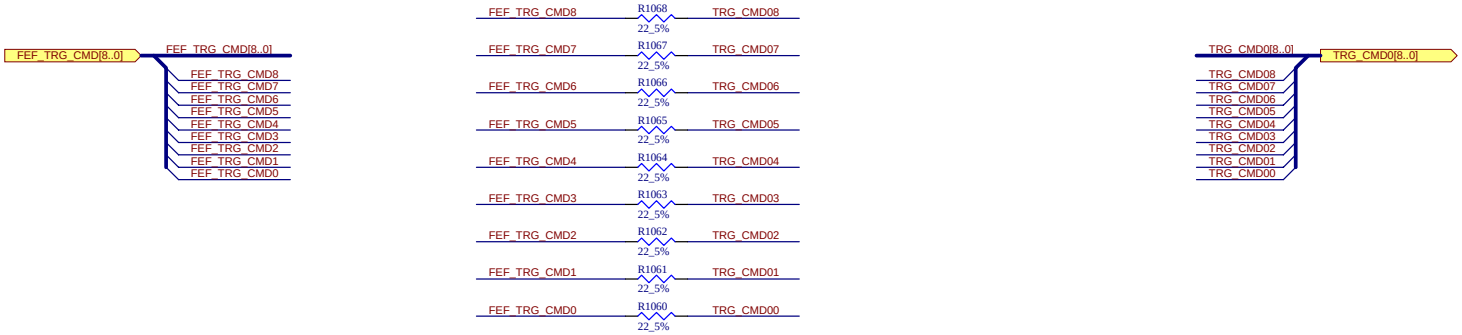
CLOCK (CLK1G)



Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:45:43		Sheet: 123 of 142
File: CLOCK_3.Sch			

inrevium

TRIGGER COMMAND DIVIDER

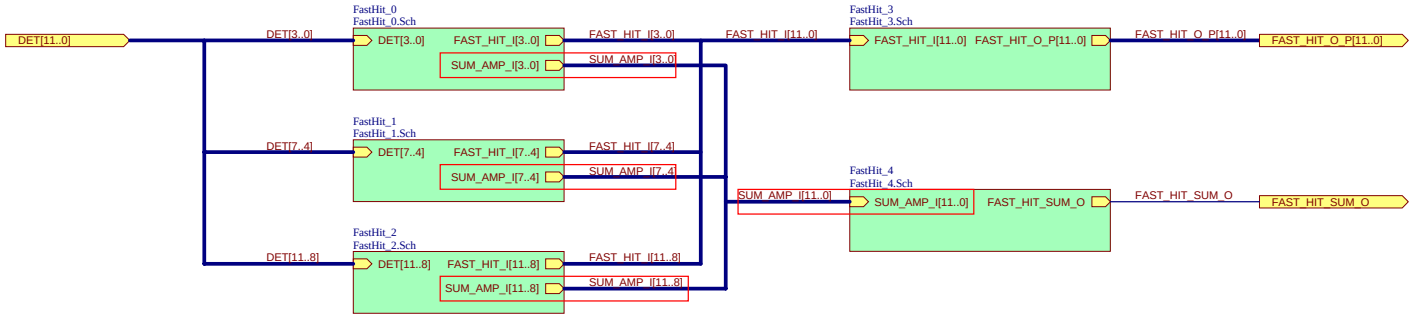


TRG_CMD00はR1060端からFEF0(U44)、FEF1(U45)、FEF2(U46)、FEF3(U47)、FEF4(U48)、FEF5(U49)に反射を考慮した配線とすること。
TRG_CMD08..01も同様。
R1060～R1068はU106近くに配置すること。

Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	
Date: 27-Jul-2007	Time: 17:45:28	Sheet: 124 of 142	
File: TRGCMD_DIV.Sch			

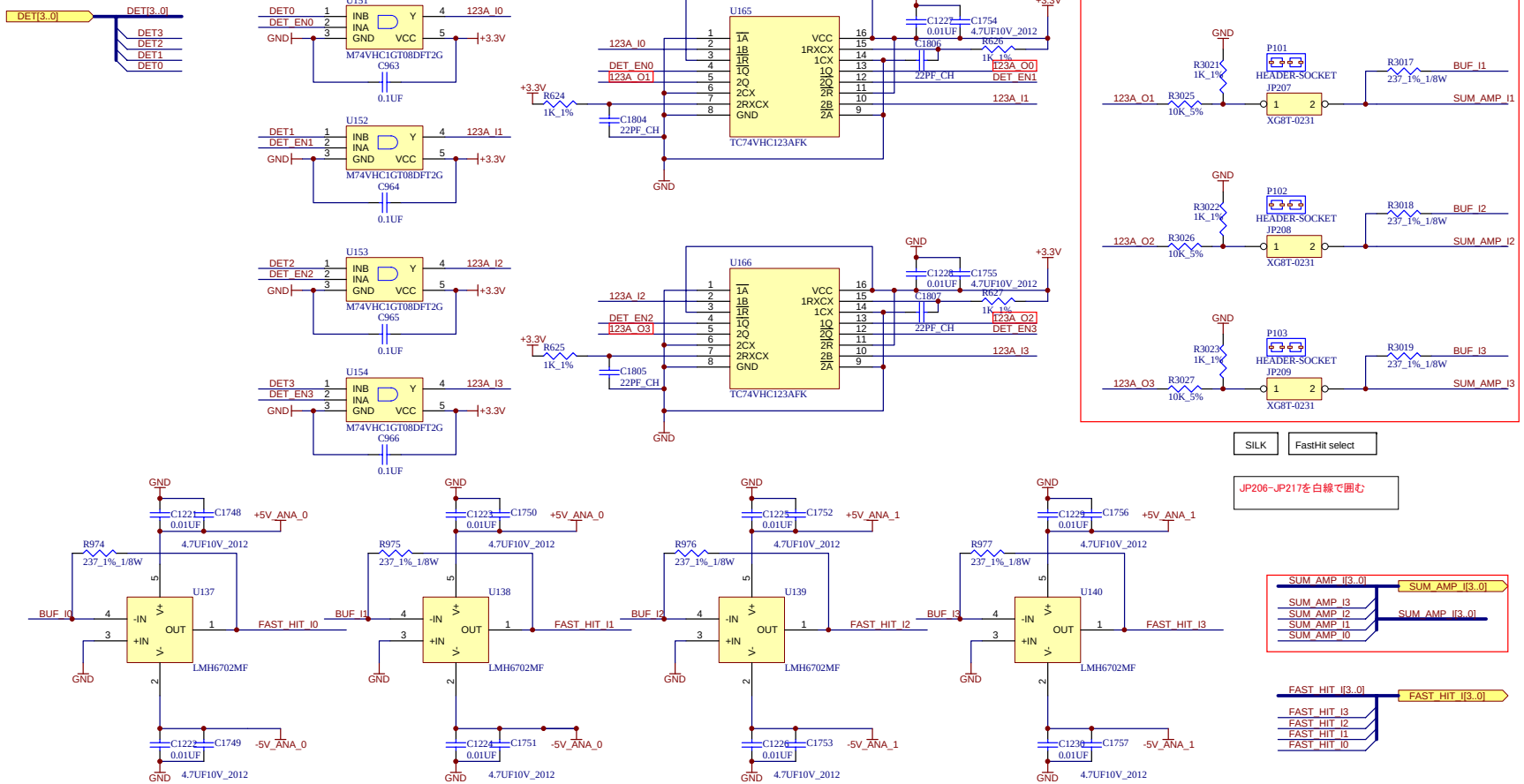
inrevium

FAST HIT TOP



Title: KamLAND_FADC_Board			inrevium
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	
Date: 27-Jul-2007 Time: 17:45:28		Sheet: 125 of 142	
File: FastHit_Top.Sch			

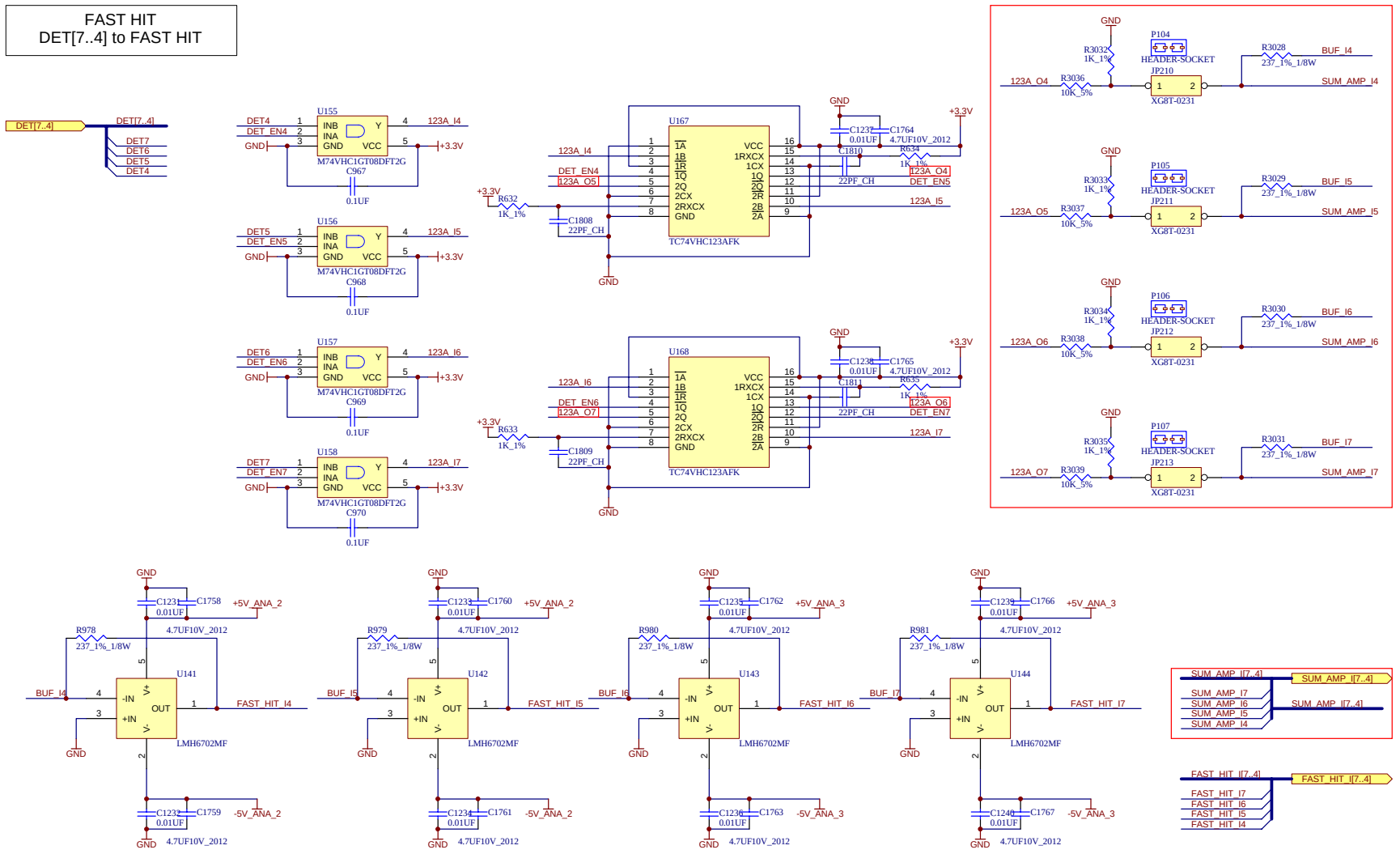
FAST HIT
DET[3..0] to FAST HIT



Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:45:29		Sheet: 126 of 142
File: FastHit_0.Sch			

inrevium

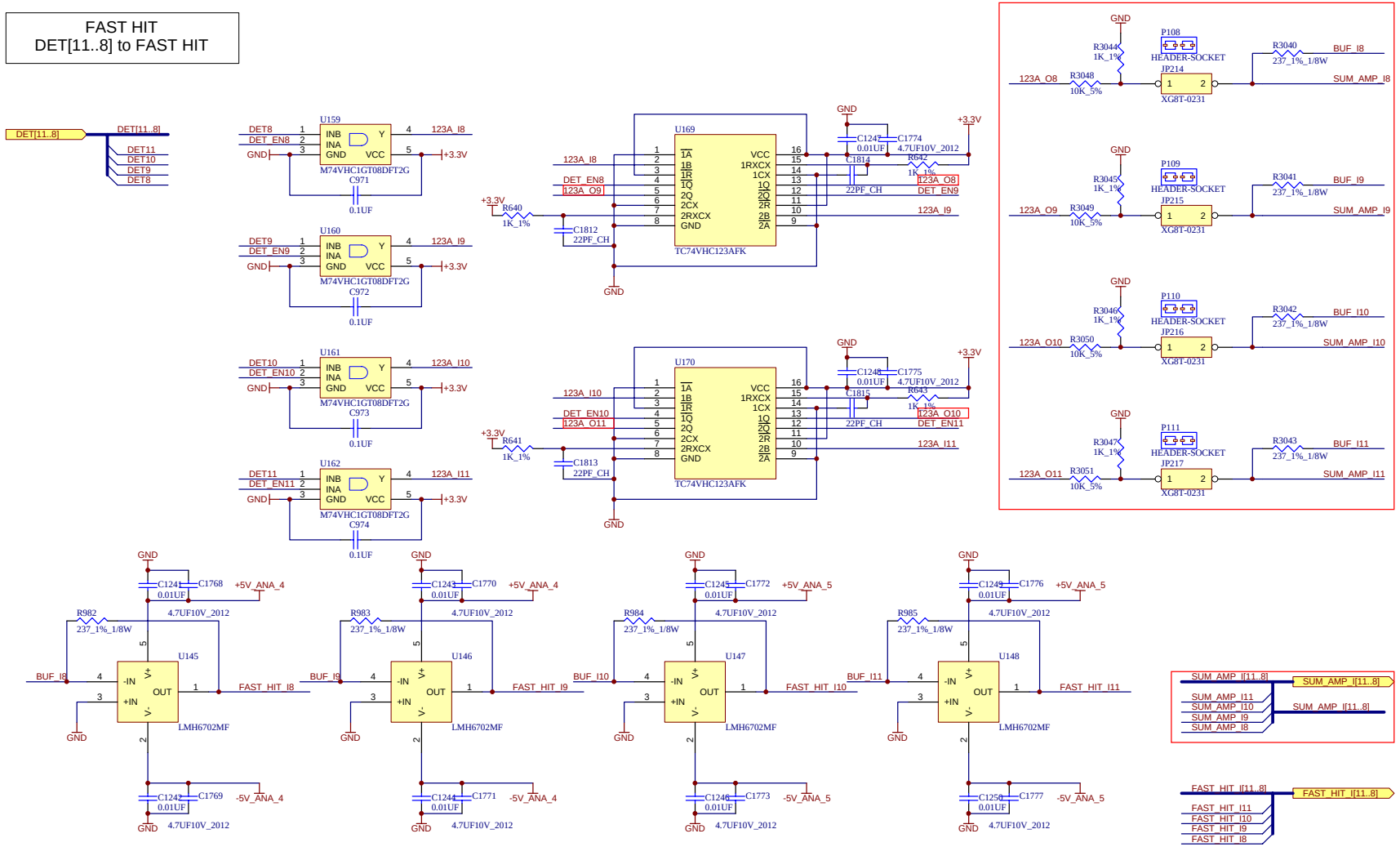
FAST HIT
DET[7..4] to FAST HIT



Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:45:29		Sheet: 127 of 142
File: FastHit_1.Sch			

inrevium

FAST HIT
DET[11..8] to FAST HIT

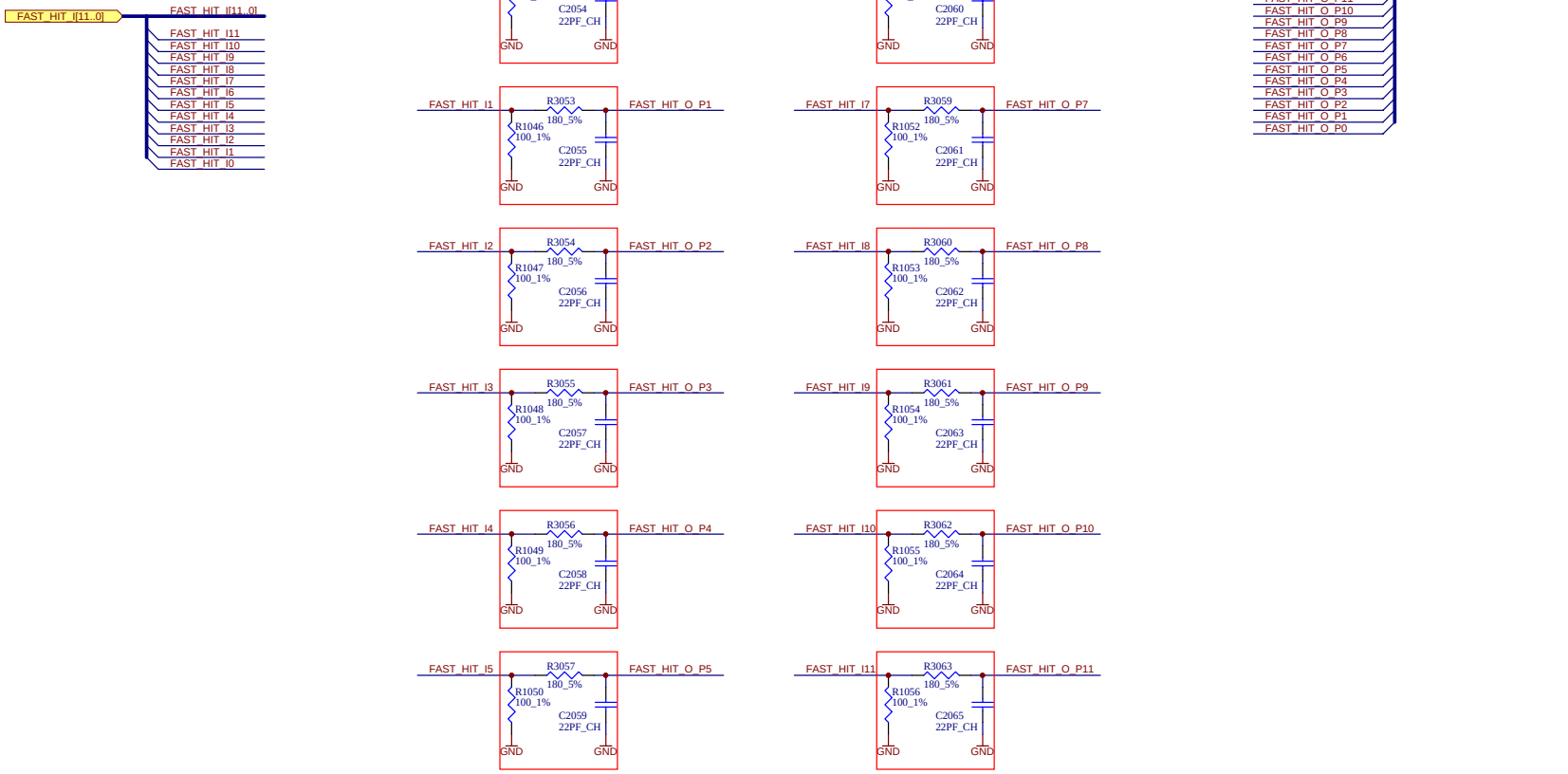


Title: KamLAND_FADC_Board		
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00
Date: 27-Jul-2007 Time: 17:45:30		Sheet: 128 of 142
File: FastHit_2.Sch		

inrevium

FAST HIT
FAST HIT OUT
(SingleEnd to Balance)

外部50Ω受時
50mV

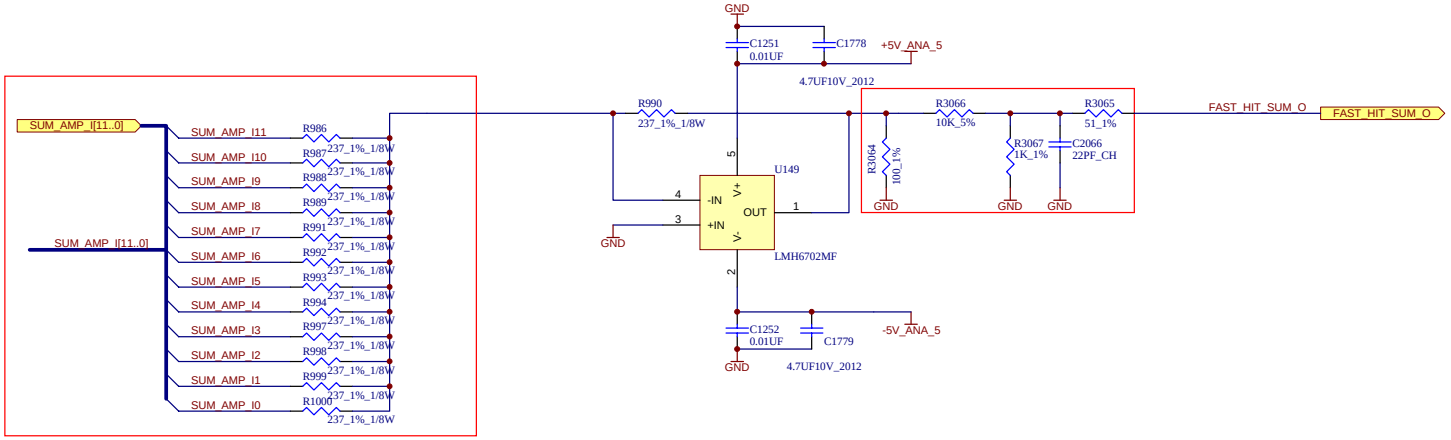


Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:45:30		Sheet: 129 of 142
File: FastHit_3.Sch			

inrevium

FAST HIT
FAST HIT SUM

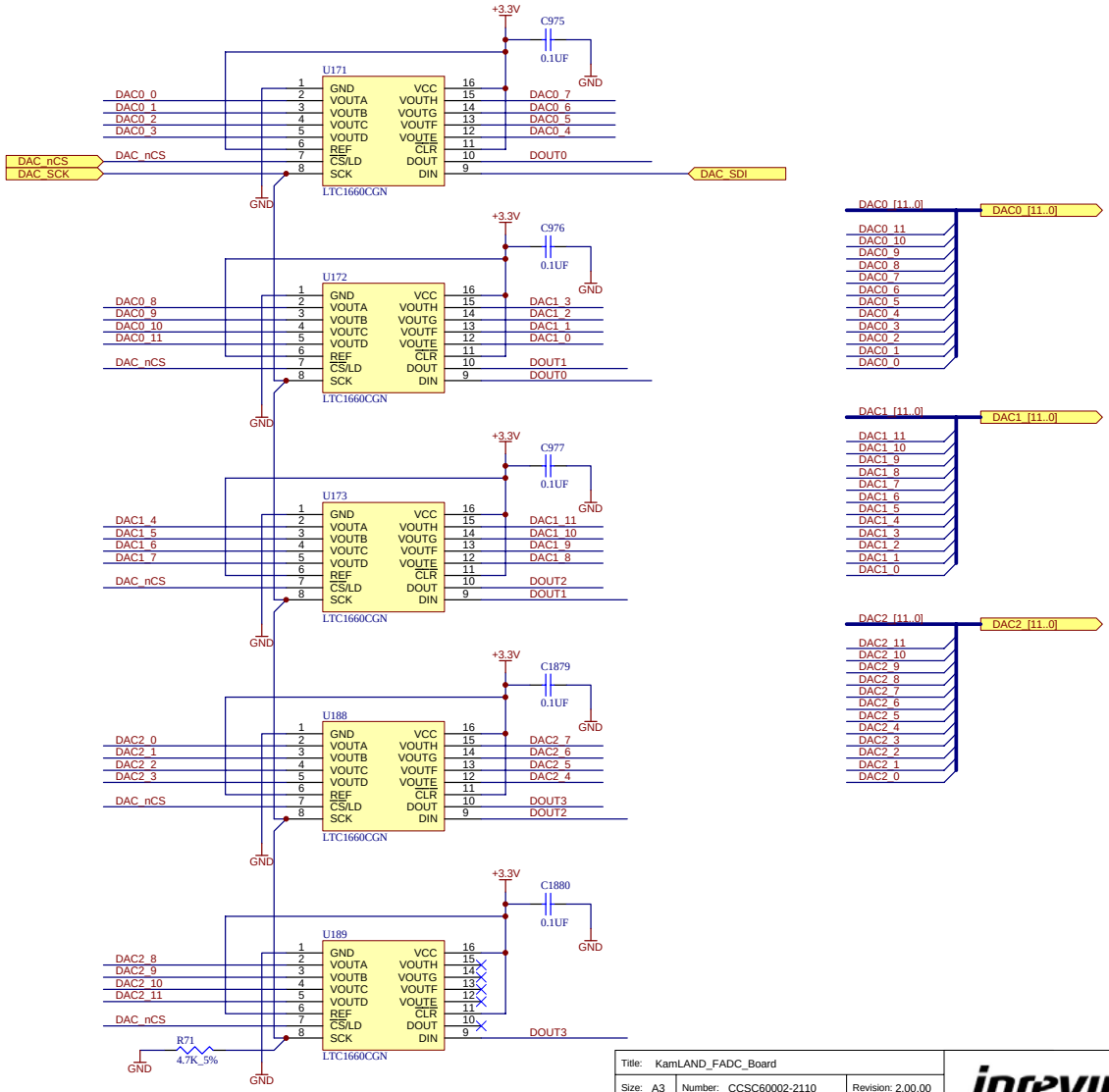
外部50Ω受時
10mV/ch



Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:45:31		Sheet: 130 of 142
File: FastHit_4.Sch			

inrevium

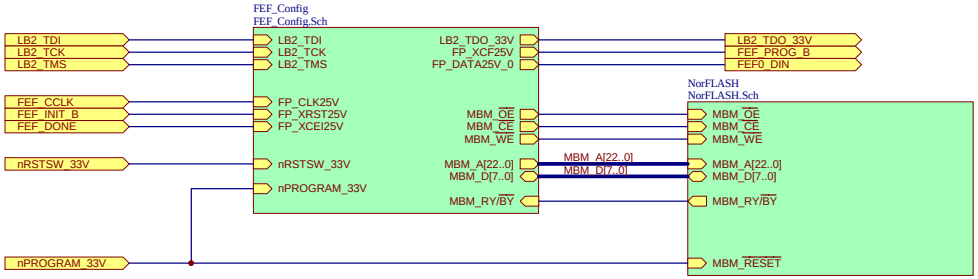
DAC



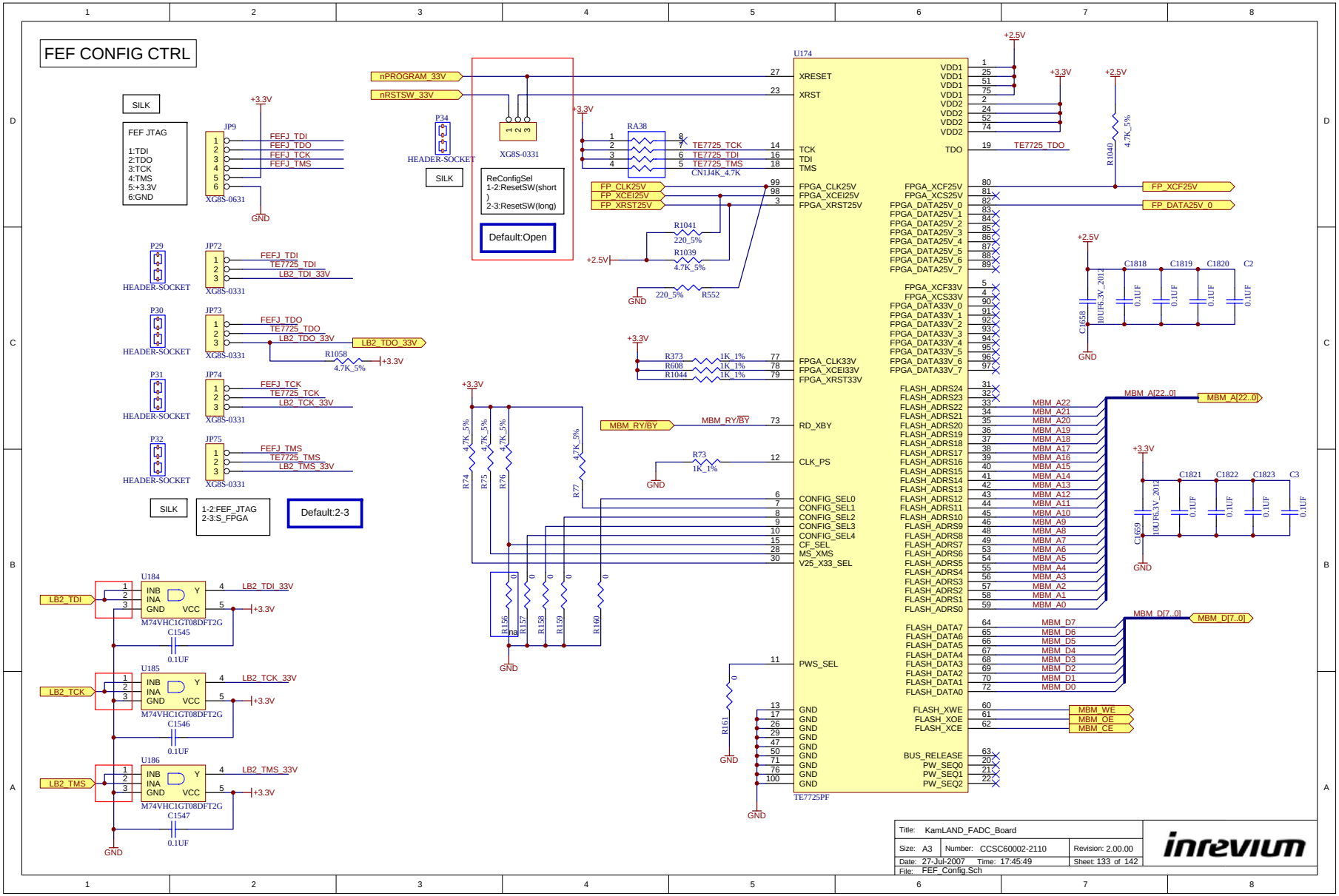
Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:45:31		Sheet: 131 of 142
File: DAC.Sch			

inrevium

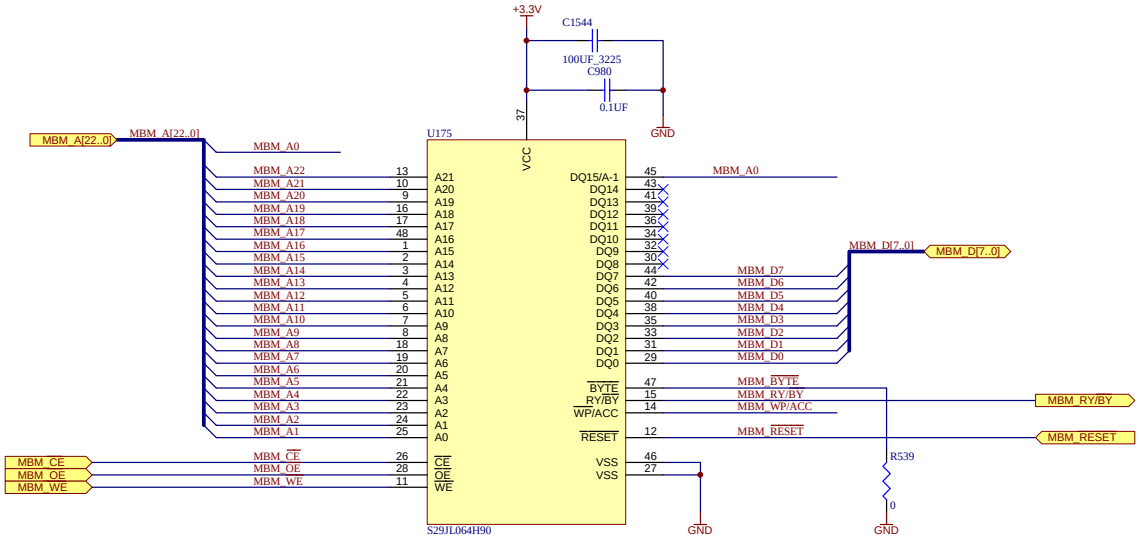
FrontEnd FPGA
CONFIG
TOP

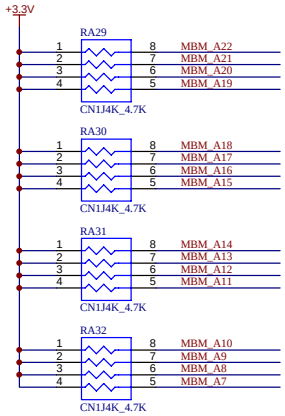


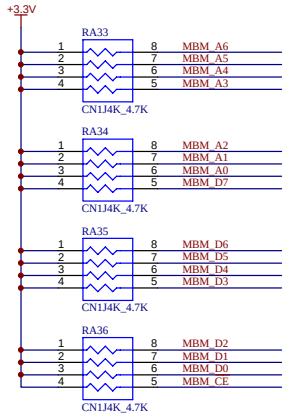
Title: KamLAND_FADC_Board			inrevium
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	
Date: 27-Jul-2007 Time: 17:45:48		Sheet: 132 of 142	
File: FEF_Config_Top.Sch			

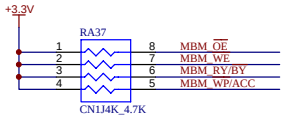

FEF CONFIG CTRL
SILK
FEF JTAG
1:TDI
2:TDO
3:TCK
4:TMS
5:+3.3V
6:GND
JP9
FEFJ_TDI
FEFJ_TDO
FEFJ_TCK
FEFJ_TMS
XG8S-0631
GND
P34
HEADER-SOCKET
XG8S-0331
nPROGRAM_33V
nRSTSW_33V
SILK
ReConfigSel
1-2:ResetSW(short)
2-3:ResetSW(long)
Default:Open
RA38
CN1J4K_4.7K
TE7725_TCK
TE7725_TDI
TE7725_TMS
FP_CLK25V
FP_XCEI25V
FP_XRST25V
R1041
220_5%
R1039
4.7K_5%
R552
P29
JP72
TE7725_TDI
LB2_TDI_33V
P30
JP73
TE7725_TDO
LB2_TDO_33V
R1058
P31
JP74
TE7725_TCK
LB2_TCK_33V
P32
JP75
TE7725_TMS
LB2_TMS_33V
SILK
1-2:FEF_JTAG
2-3:S_FPGA
Default:2-3
U174
TE7725PF
XRESET
XRST
TCK
TDI
TMS
TDO
FPGA_CLK25V
FPGA_XCEI25V
FPGA_XRST25V
FPGA_XCF25V
FPGA_XCS25V
FPGA_DATA25V_0
FPGA_DATA25V_1
FPGA_DATA25V_2
FPGA_DATA25V_3
FPGA_DATA25V_4
FPGA_DATA25V_5
FPGA_DATA25V_6
FPGA_DATA25V_7
FPGA_XCF33V
FPGA_XCS33V
FPGA_DATA33V_0
FPGA_DATA33V_1
FPGA_DATA33V_2
FPGA_DATA33V_3
FPGA_DATA33V_4
FPGA_DATA33V_5
FPGA_DATA33V_6
FPGA_DATA33V_7
FPGA_CLK33V
FPGA_XCEI33V
FPGA_XRST33V
RD_XBY
CLK_PS
CONFIG_SEL0
CONFIG_SEL1
CONFIG_SEL2
CONFIG_SEL3
CONFIG_SEL4
CF_SEL
MS_XMS
V25_X33_SEL
PWS_SEL
GND
VDD1
VDD2
FLASH_ADRS24
FLASH_ADRS23
FLASH_ADRS22
FLASH_ADRS21
FLASH_ADRS20
FLASH_ADRS19
FLASH_ADRS18
FLASH_ADRS17
FLASH_ADRS16
FLASH_ADRS15
FLASH_ADRS14
FLASH_ADRS13
FLASH_ADRS12
FLASH_ADRS11
FLASH_ADRS10
FLASH_ADRS9
FLASH_ADRS8
FLASH_ADRS7
FLASH_ADRS6
FLASH_ADRS5
FLASH_ADRS4
FLASH_ADRS3
FLASH_ADRS2
FLASH_ADRS1
FLASH_ADRS0
FLASH_DATA7
FLASH_DATA6
FLASH_DATA5
FLASH_DATA4
FLASH_DATA3
FLASH_DATA2
FLASH_DATA1
FLASH_DATA0
FLASH_XWE
FLASH_XOE
FLASH_XCE
BUS_RELEASE
PW_SEQ0
PW_SEQ1
PW_SEQ2
MBM_RY/BY
MBM_A[22..0]
MBM_D[7..0]
MBM_WE
MBM_OE
MBM_CE
U184
U185
U186
M74VHC1GT08DFT2G
LB2_TDI
LB2_TCK
LB2_TMS
LB2_TDI_33V
LB2_TCK_33V
LB2_TMS_33V
C1545
C1546
C1547
0.1UF
C1658
C1659
10UF6.3V_2012
C1818
C1819
C1820
C1821
C1822
C1823
C2
C3
R1040
4.7K_5%
R373
R608
R1044
1K_1%
R73
R74
R75
R76
R77
R156
R157
R158
R159
R160
R161
0
+3.3V
+2.5V
Title: KamLAND_FADC_Board
Size: A3
Number: CCSC60002-2110
Revision: 2.00.00
Date: 27-Jul-2007
Time: 17:45:49
Sheet: 133 of 142
File: FEF_Config.Sch
inrevium

FLASH MEMORY





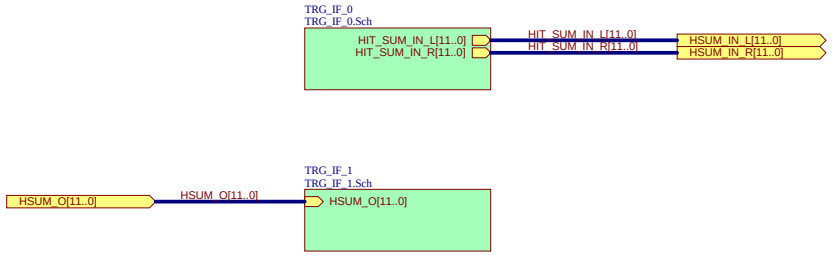




Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	
Date: 27-Jul-2007	Time: 17:45:49	Sheet: 134 of 142	
File: NorFLASH.Sch			

inrevium

TRG I/F



Title: KamLAND_FADC_Board			inrevium
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	
Date: 27-Jul-2007 Time: 17:45:32		Sheet: 135 of 142	
File: TRG_IF_TOP.Sch			

TRG I/F
HIT_SUM_IN(LVDS)

IN L

CN43

HIT_SUM_IN_L_P0	1	2	HIT_SUM_IN_L_N0
HIT_SUM_IN_L_P1	3	4	HIT_SUM_IN_L_N1
HIT_SUM_IN_L_P2	5	6	HIT_SUM_IN_L_N2
HIT_SUM_IN_L_P3	7	8	HIT_SUM_IN_L_N3
HIT_SUM_IN_L_P4	9	10	HIT_SUM_IN_L_N4
HIT_SUM_IN_L_P5	11	12	HIT_SUM_IN_L_N5
HIT_SUM_IN_L_P6	13	14	HIT_SUM_IN_L_N6
HIT_SUM_IN_L_P7	15	16	HIT_SUM_IN_L_N7
HIT_SUM_IN_L_P8	17	18	HIT_SUM_IN_L_N8
HIT_SUM_IN_L_P9	19	20	HIT_SUM_IN_L_N9
HIT_SUM_IN_L_P10	21	22	HIT_SUM_IN_L_N10
HIT_SUM_IN_L_P11	23	24	HIT_SUM_IN_L_N11
	25	26	
	27	28	
	29	30	
	31		

FX15

GND GND

HIT_SUM_IN_L_P0	R389	100_5%	HIT_SUM_IN_L_N0
HIT_SUM_IN_L_P1	R390	100_5%	HIT_SUM_IN_L_N1
HIT_SUM_IN_L_P2	R391	100_5%	HIT_SUM_IN_L_N2
HIT_SUM_IN_L_P3	R392	100_5%	HIT_SUM_IN_L_N3
HIT_SUM_IN_L_P4	R393	100_5%	HIT_SUM_IN_L_N4
HIT_SUM_IN_L_P5	R394	100_5%	HIT_SUM_IN_L_N5
HIT_SUM_IN_L_P6	R395	100_5%	HIT_SUM_IN_L_N6
HIT_SUM_IN_L_P7	R396	100_5%	HIT_SUM_IN_L_N7
HIT_SUM_IN_L_P8	R397	100_5%	HIT_SUM_IN_L_N8
HIT_SUM_IN_L_P9	R398	100_5%	HIT_SUM_IN_L_N9
HIT_SUM_IN_L_P10	R399	100_5%	HIT_SUM_IN_L_N10
HIT_SUM_IN_L_P11	R400	100_5%	HIT_SUM_IN_L_N11

IN R

CN44

HIT_SUM_IN_R_P0	1	2	HIT_SUM_IN_R_N0
HIT_SUM_IN_R_P1	3	4	HIT_SUM_IN_R_N1
HIT_SUM_IN_R_P2	5	6	HIT_SUM_IN_R_N2
HIT_SUM_IN_R_P3	7	8	HIT_SUM_IN_R_N3
HIT_SUM_IN_R_P4	9	10	HIT_SUM_IN_R_N4
HIT_SUM_IN_R_P5	11	12	HIT_SUM_IN_R_N5
HIT_SUM_IN_R_P6	13	14	HIT_SUM_IN_R_N6
HIT_SUM_IN_R_P7	15	16	HIT_SUM_IN_R_P7
HIT_SUM_IN_R_P8	17	18	HIT_SUM_IN_R_N8
HIT_SUM_IN_R_P9	19	20	HIT_SUM_IN_R_N9
HIT_SUM_IN_R_P10	21	22	HIT_SUM_IN_R_N10
HIT_SUM_IN_R_P11	23	24	HIT_SUM_IN_R_N11
	25	26	
	27	28	
	29	30	
	31		

FX15

GND GND

HIT_SUM_IN_R_P0	R401	100_5%	HIT_SUM_IN_R_N0
HIT_SUM_IN_R_P1	R402	100_5%	HIT_SUM_IN_R_N1
HIT_SUM_IN_R_P2	R403	100_5%	HIT_SUM_IN_R_N2
HIT_SUM_IN_R_P3	R404	100_5%	HIT_SUM_IN_R_N3
HIT_SUM_IN_R_P4	R405	100_5%	HIT_SUM_IN_R_N4
HIT_SUM_IN_R_P5	R406	100_5%	HIT_SUM_IN_R_N5
HIT_SUM_IN_R_P6	R407	100_5%	HIT_SUM_IN_R_N6
HIT_SUM_IN_R_P7	R408	100_5%	HIT_SUM_IN_R_N7
HIT_SUM_IN_R_P8	R409	100_5%	HIT_SUM_IN_R_N8
HIT_SUM_IN_R_P9	R410	100_5%	HIT_SUM_IN_R_N9
HIT_SUM_IN_R_P10	R411	100_5%	HIT_SUM_IN_R_N10
HIT_SUM_IN_R_P11	R412	100_5%	HIT_SUM_IN_R_N11

+3.3V

C1480 100UF_3225 C981 0.1UF C982 0.1UF C983 0.1UF C984 0.1UF C985 0.1UF C986 0.1UF

GND

U76

HIT_SUM_IN_L_P0	1	A1A	GND 64
HIT_SUM_IN_L_N0	2	A1B	VCC 63
HIT_SUM_IN_L_P1	3	A2A	VCC 62
HIT_SUM_IN_L_N1	4	A2B	GND 61
HIT_SUM_IN_L_P2	5	A3A	ENA 60
HIT_SUM_IN_L_N2	6	A3B	A1Y 59
HIT_SUM_IN_L_P3	7	A4A	A2Y 58
HIT_SUM_IN_L_N3	8	A4B	A3Y 57
HIT_SUM_IN_L_P4	9	B1A	A4Y 56
HIT_SUM_IN_L_N4	10	B1B	ENB 55
HIT_SUM_IN_L_P5	11	B2A	B1Y 54
HIT_SUM_IN_L_N5	12	B2B	B2Y 53
HIT_SUM_IN_L_P6	13	B3A	B3Y 52
HIT_SUM_IN_L_N6	14	B3B	B4Y 51
HIT_SUM_IN_L_P7	15	B4A	GND 50
HIT_SUM_IN_L_N7	16	B4B	VCC 49
HIT_SUM_IN_L_P8	17	C1A	VCC 48
HIT_SUM_IN_L_N8	18	C1B	GND 47
HIT_SUM_IN_L_P9	19	C2A	C1Y 46
HIT_SUM_IN_L_N9	20	C2B	C2Y 45
HIT_SUM_IN_L_P10	21	C3A	C3Y 44
HIT_SUM_IN_L_N10	22	C3B	C4Y 43
HIT_SUM_IN_L_P11	23	C4A	ENC 42
HIT_SUM_IN_L_N11	24	C4B	D1Y 41
HIT_SUM_IN_R_P0	25	D1A	D2Y 40
HIT_SUM_IN_R_N0	26	D1B	D3Y 39
HIT_SUM_IN_R_P1	27	D2A	D4Y 38
HIT_SUM_IN_R_N1	28	D2B	END 37
HIT_SUM_IN_R_P2	29	D3A	GND 36
HIT_SUM_IN_R_N2	30	D3B	VCC 35
HIT_SUM_IN_R_P3	31	D4A	VCC 34
HIT_SUM_IN_R_N3	32	D4B	GND 33

LVDS RECIVERS x16

SN65LVDS386DGG

+3.3V

RA20 CN1J4K_10K

HIT_SUM_IN_L0 HIT_SUM_IN_L1 HIT_SUM_IN_L2 HIT_SUM_IN_L3 HIT_SUM_IN_L4 HIT_SUM_IN_L5 HIT_SUM_IN_L6 HIT_SUM_IN_L7 HIT_SUM_IN_L8 HIT_SUM_IN_L9 HIT_SUM_IN_L10 HIT_SUM_IN_L11

HIT_SUM_IN_L[11..0] HIT_SUM_IN_L[11..0]

HIT_SUM_IN_R[11..0] HIT_SUM_IN_R[11..0]

RA21 CN1J4K_10K

HIT_SUM_IN_R0 HIT_SUM_IN_R1 HIT_SUM_IN_R2 HIT_SUM_IN_R3

U176

HIT_SUM_IN_R_P4	1	1A	EN1_2 16
HIT_SUM_IN_R_N4	2	1B	1Y 15
HIT_SUM_IN_R_P5	3	2A	2Y 14
HIT_SUM_IN_R_N5	4	2B	VCC 13
HIT_SUM_IN_R_P6	5	3A	GND 12
HIT_SUM_IN_R_N6	6	3B	3Y 11
HIT_SUM_IN_R_P7	7	4A	4Y 10
HIT_SUM_IN_R_N7	8	4B	EN3_4 9

LVDS RECIVERS x4

SN65LVDS390PW

HIT_SUM_IN_R4 HIT_SUM_IN_R5 HIT_SUM_IN_R6 HIT_SUM_IN_R7

U177

HIT_SUM_IN_R_P8	1	1A	EN1_2 16
HIT_SUM_IN_R_N8	2	1B	1Y 15
HIT_SUM_IN_R_P9	3	2A	2Y 14
HIT_SUM_IN_R_N9	4	2B	VCC 13
HIT_SUM_IN_R_P10	5	3A	GND 12
HIT_SUM_IN_R_N10	6	3B	3Y 11
HIT_SUM_IN_R_P11	7	4A	4Y 10
HIT_SUM_IN_R_N11	8	4B	EN3_4 9

LVDS RECIVERS x4

SN65LVDS390PW

HIT_SUM_IN_R8 HIT_SUM_IN_R9 HIT_SUM_IN_R10 HIT_SUM_IN_R11

GND

+3.3V

C1481 100UF_3225 C987 0.1UF

GND

+3.3V

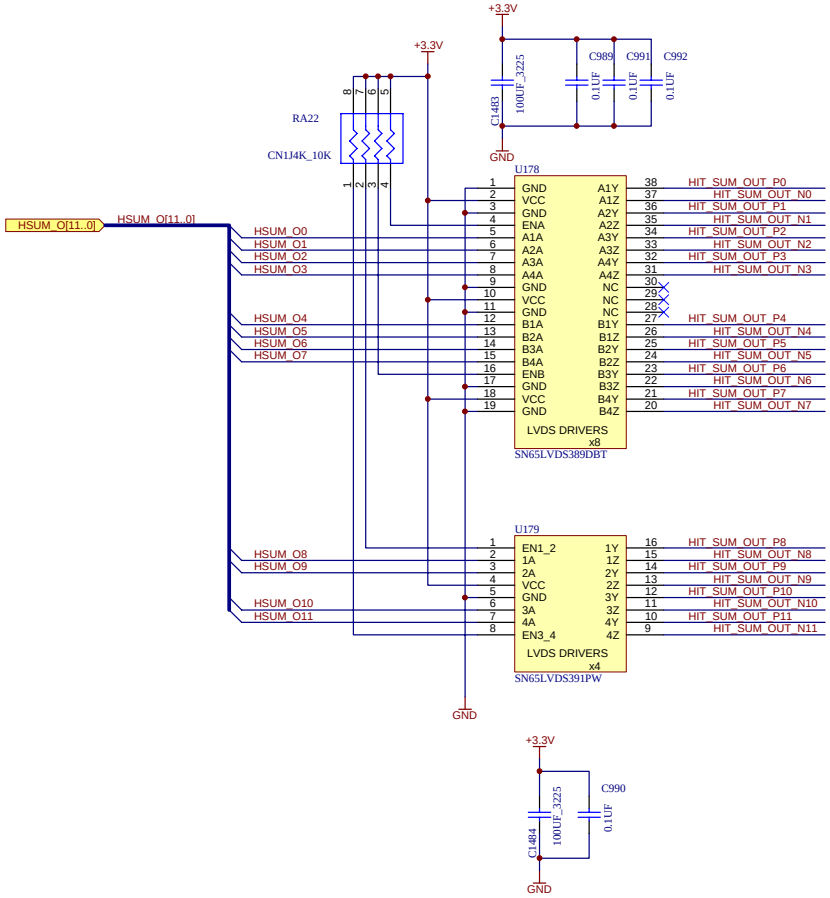
C1482 100UF_3225 C988 0.1UF

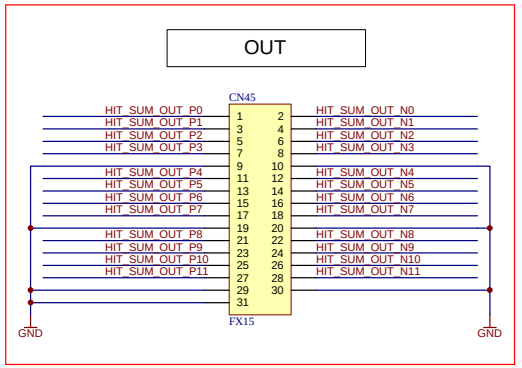
GND

Title:	KamLAND_FADC_Board		
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	
Date: 27-Jul-2007	Time: 17:45:32	Sheet: 136 of 142	
File:	TRG_IF_0.Sch		

inrevium

TRG I/F
HIT_SUM_OUT(LVDS)

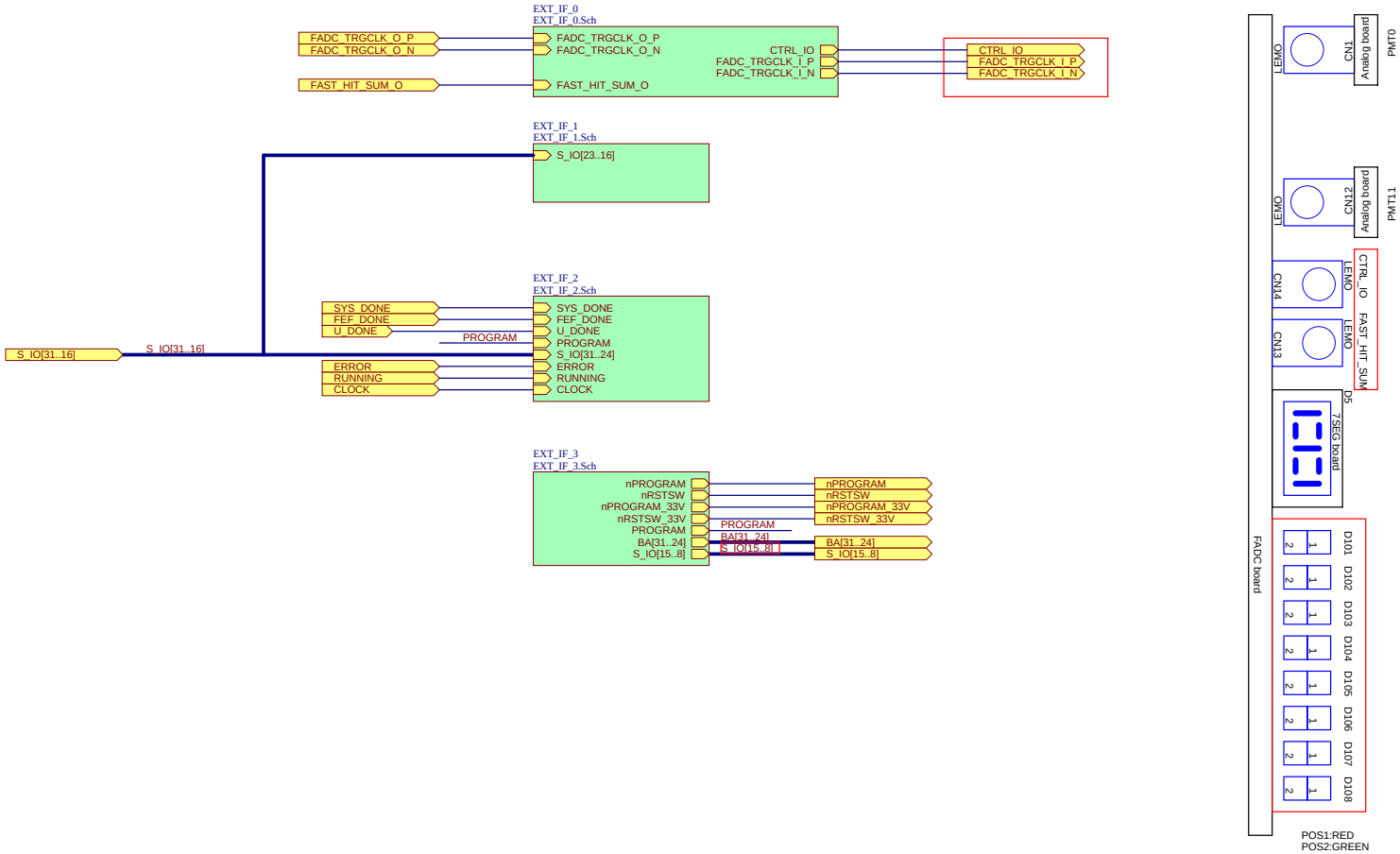




Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:45:33		Sheet: 137 of 142
File: TRG_IF_1.Sch			

inrevium

EXTERNAL I/F



Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110		Revision: 2.00.00
Date: 27-Jul-2007	Time: 17:45:33		Sheet: 138 of 142
File: EXT_IF_TOP.Sch			

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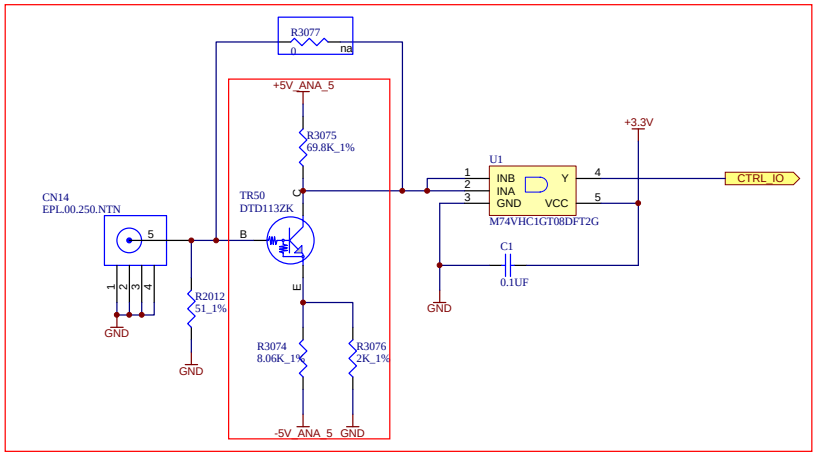
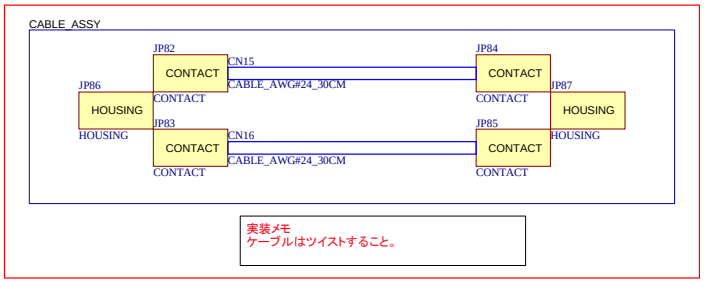
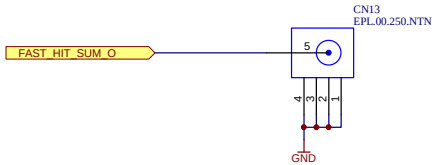
CTRL_IO



EXT CLOCK IO



FAST_HIT_SUM(Analog)



Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	
Date: 27-Jul-2007	Time: 17:45:34	Sheet: 139 of 142	
File: EXT_IF_0.Sch			

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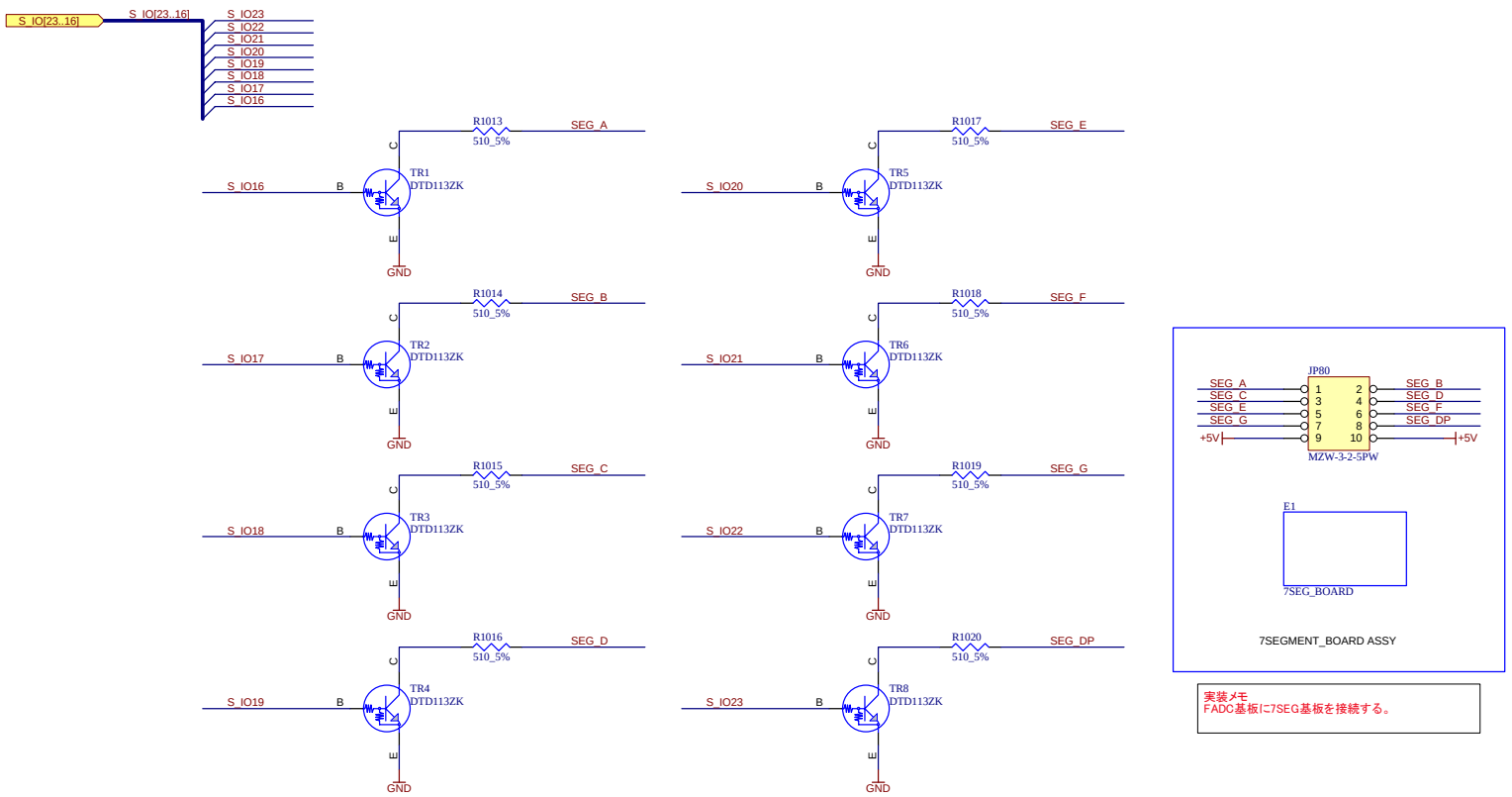
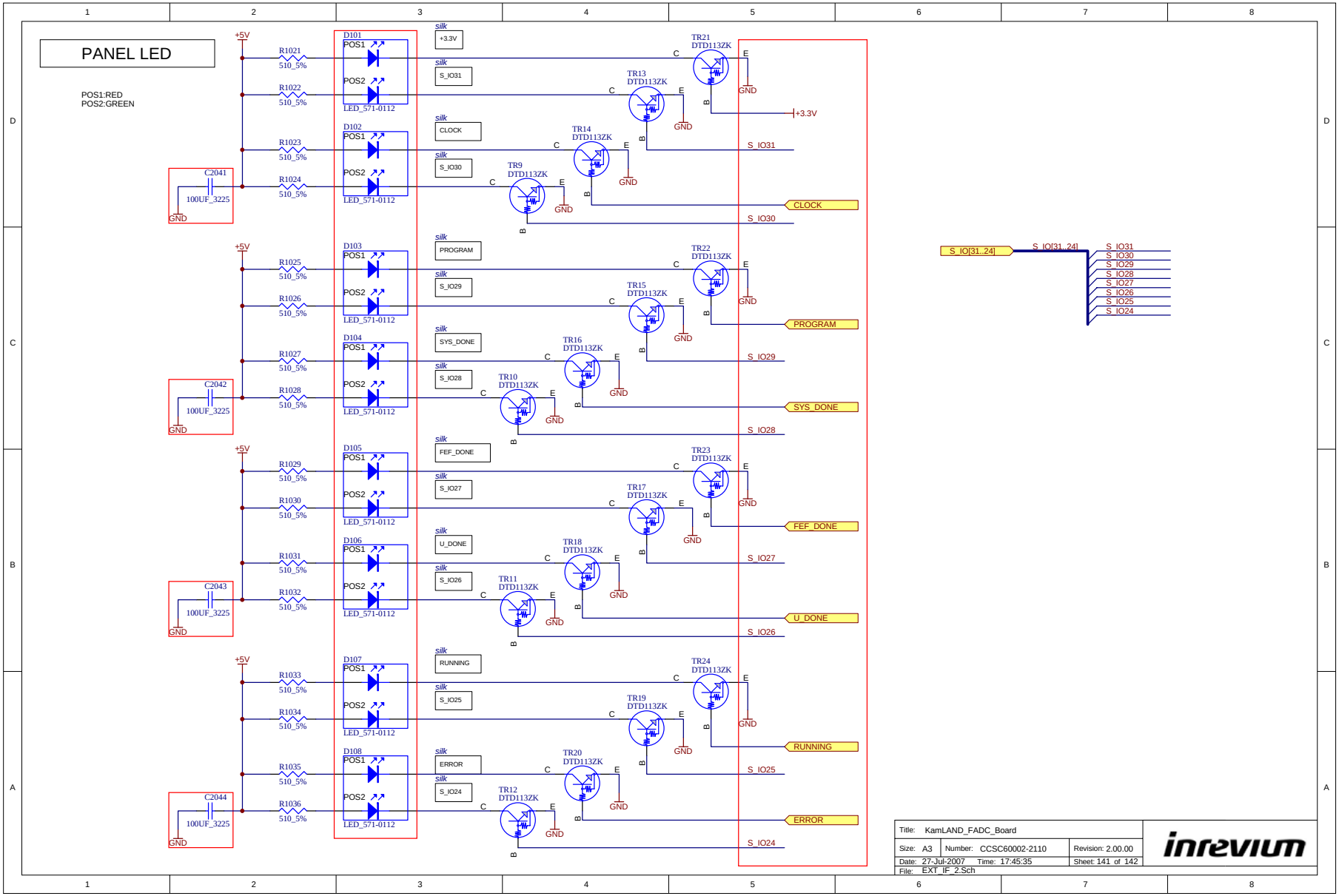
PANEL LED



Title: KamLAND_FADC_Board			inrevium
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	
Date: 27-Jul-2007 Time: 17:45:34		Sheet: 140 of 142	
File: EXT_IF_1.Sch			


PANEL LED
POS1:RED
POS2:GREEN
+5V
R1021
R1022
R1023
R1024
510_5%
C2041
100UF_3225
GND
D101
D102
POS1
POS2
LED_571-0112
silk
+3.3V
S_IO31
CLOCK
S_IO30
TR21
TR13
TR14
TR9
DTD113ZK
C
B
E
+3.3V
S_IO31
CLOCK
S_IO30
R1025
R1026
R1027
R1028
C2042
D103
D104
PROGRAM
S_IO29
SYS_DONE
S_IO28
TR22
TR15
TR16
TR10
PROGRAM
S_IO29
SYS_DONE
S_IO28
R1029
R1030
R1031
R1032
C2043
D105
D106
FEF_DONE
S_IO27
U_DONE
S_IO26
TR23
TR17
TR18
TR11
FEF_DONE
S_IO27
U_DONE
S_IO26
R1033
R1034
R1035
R1036
C2044
D107
D108
RUNNING
S_IO25
ERROR
S_IO24
TR24
TR19
TR20
TR12
RUNNING
S_IO25
ERROR
S_IO24
S_IO[31..24]
S_IO31
S_IO30
S_IO29
S_IO28
S_IO27
S_IO26
S_IO25
S_IO24
Title: KamLAND_FADC_Board
Size: A3
Number: CCSC60002-2110
Revision: 2.00.00
Date: 27-Jul-2007
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File: EXT_IF_2.Sch
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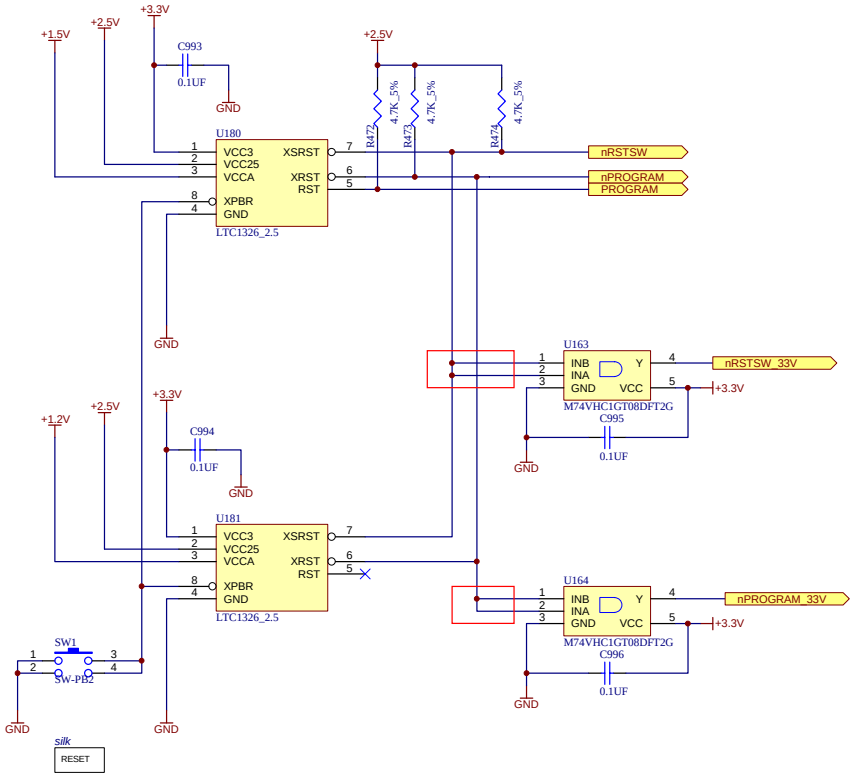
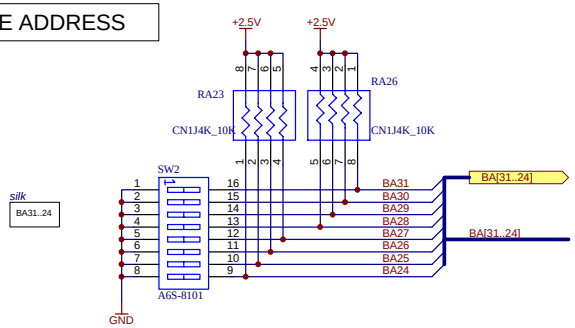
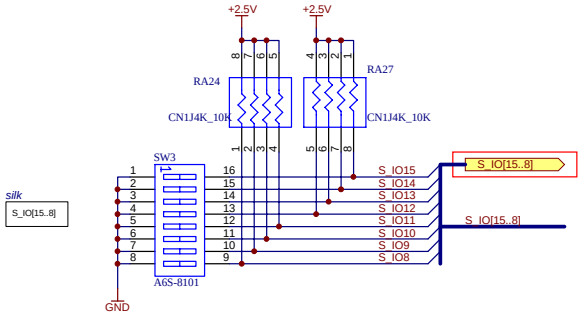
Reset SW



BASE ADDRESS



SYSTEM DEBUG



Title: KamLAND_FADC_Board			
Size: A3	Number: CCSC60002-2110	Revision: 2.00.00	
Date: 27-Jul-2007	Time: 17:45:35	Sheet: 142 of 142	
File: EXT_IF_3.Sch			

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