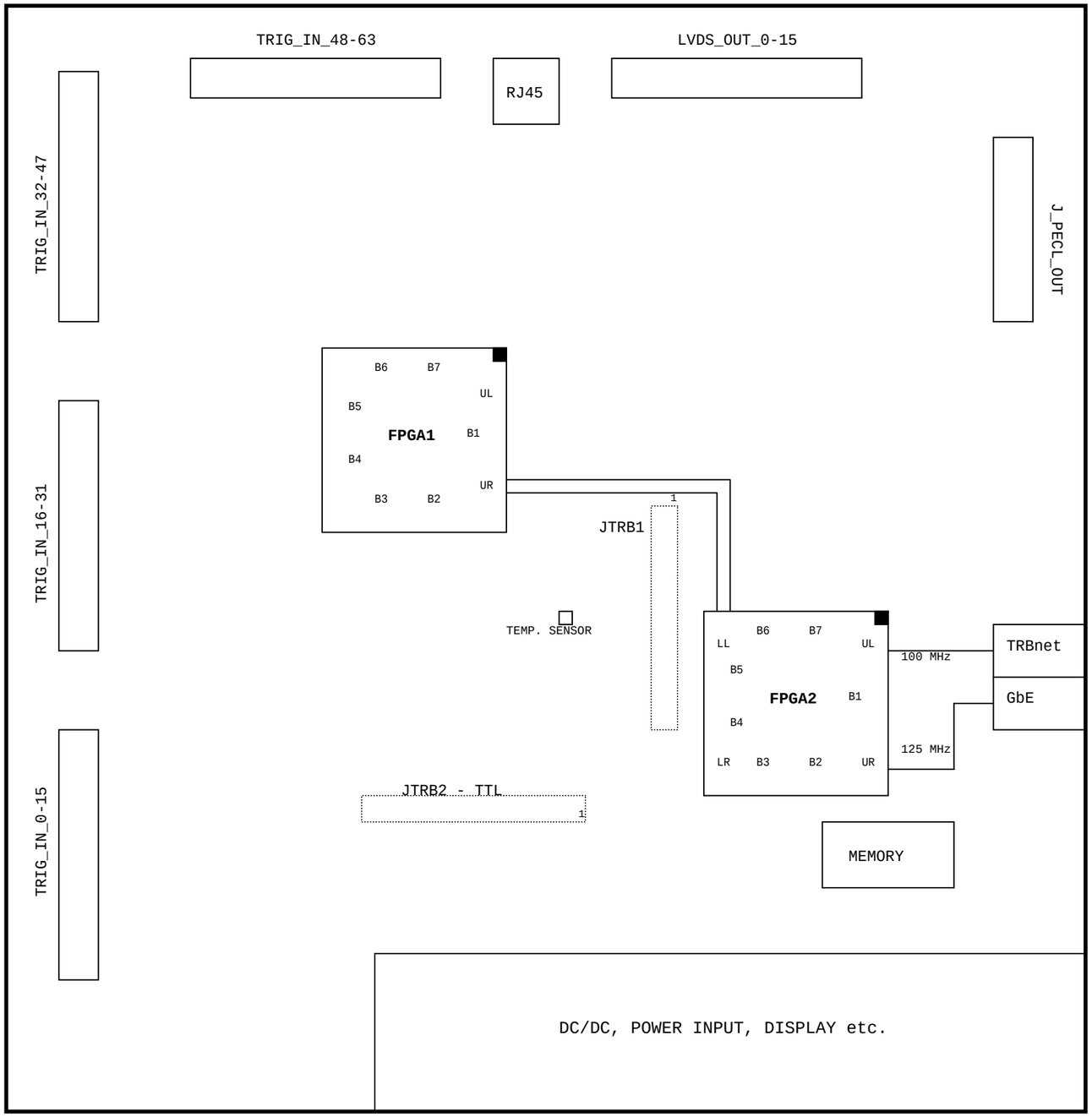
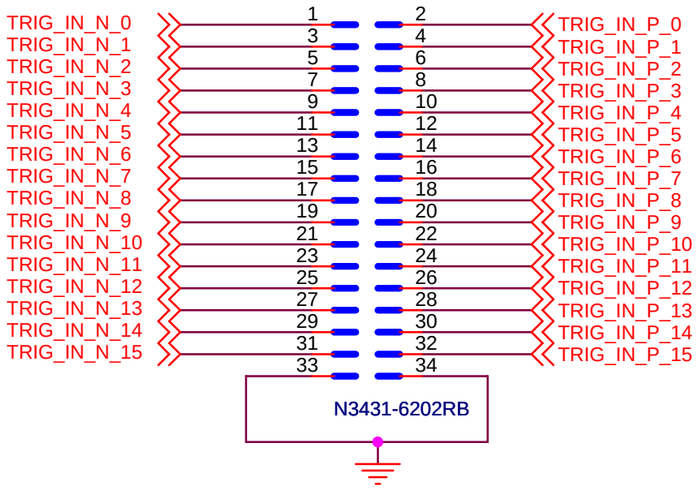
TOP VIEW (COMPONENT SIDE)

(on PCB design most likely bottom view...)

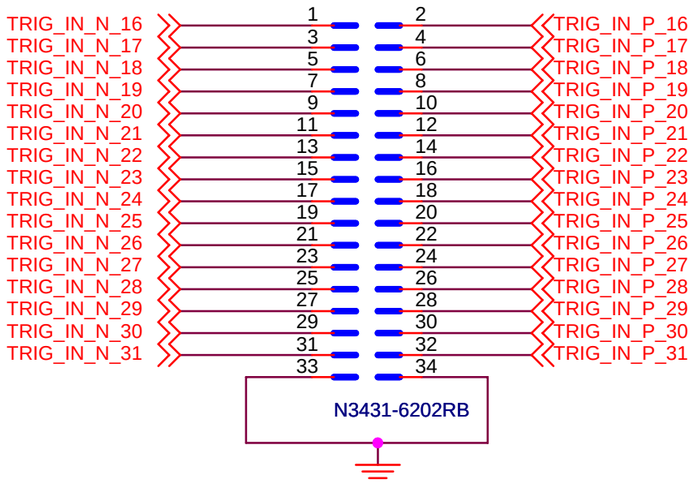


Title	**00_LAYOUT**	
Size A3	Document Number <Doc>	Rev <RevCo
Date: Monday, April 19, 2010	Sheet 1 of 16	

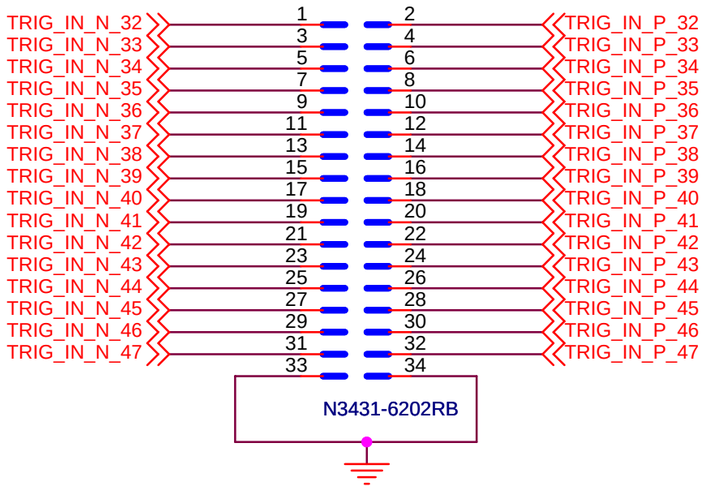
JTRIGGER1



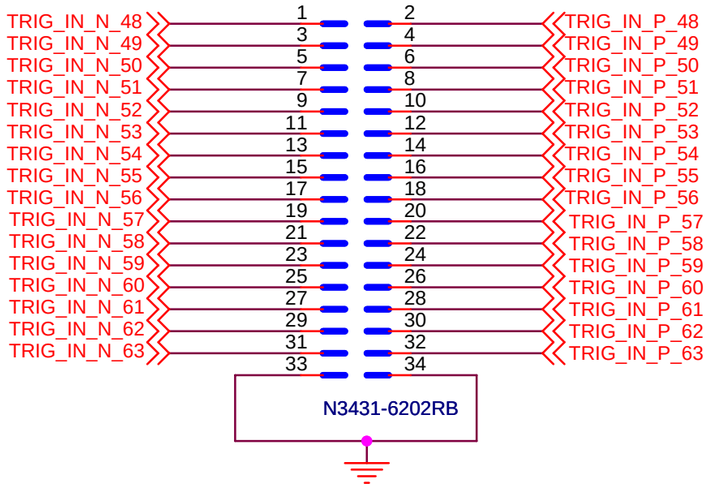
JTRIGGER2



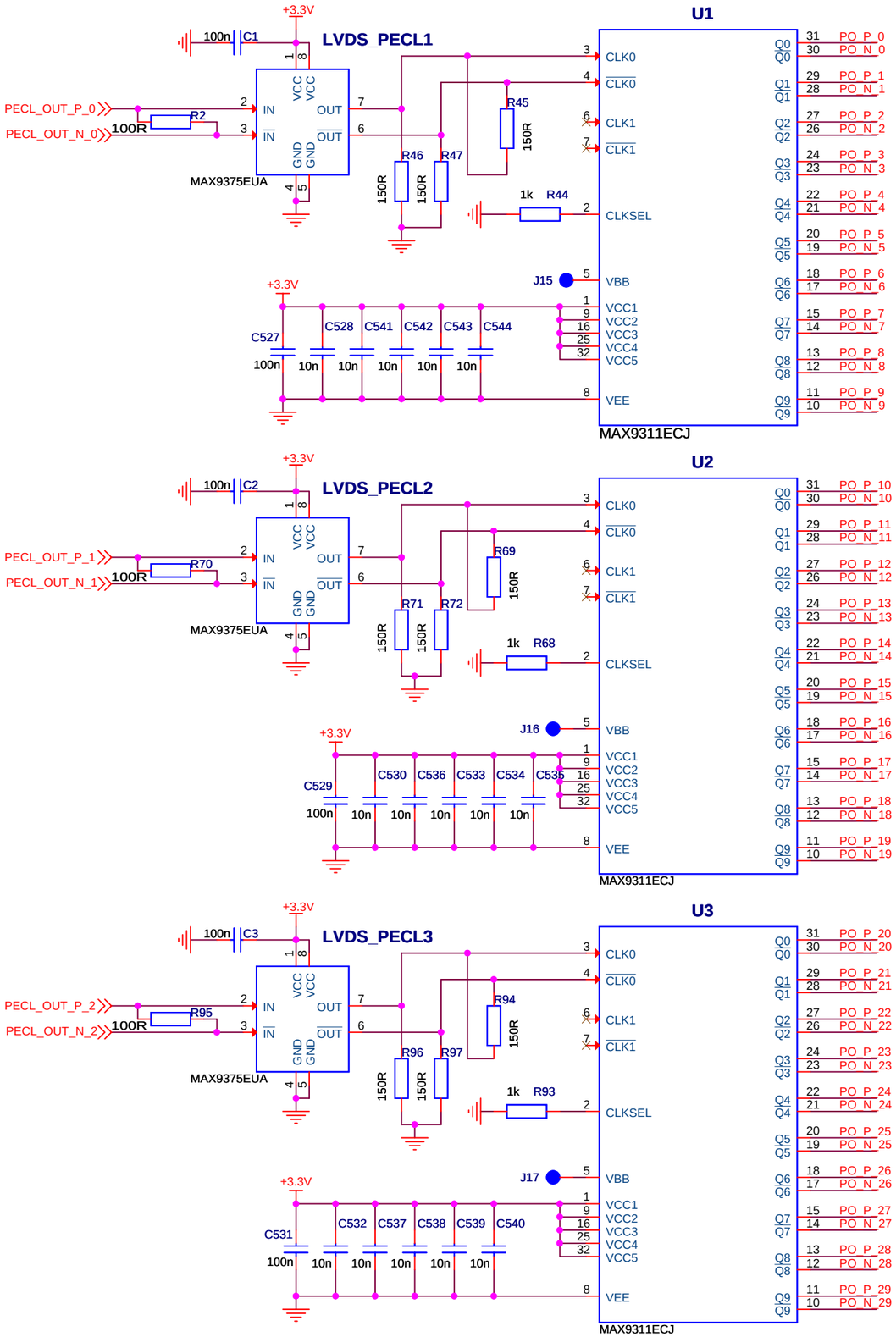
JTRIGGER3



JTRIGGER4



Title	**01_INPUTS**	
Size A4	Document Number <Doc>	Rev <RevCo
Date: Monday, April 19, 2010	Sheet 2 of 16	



Title	02_OUTPUTS	
Size A3	Document Number <Doc>	Rev <RevCo
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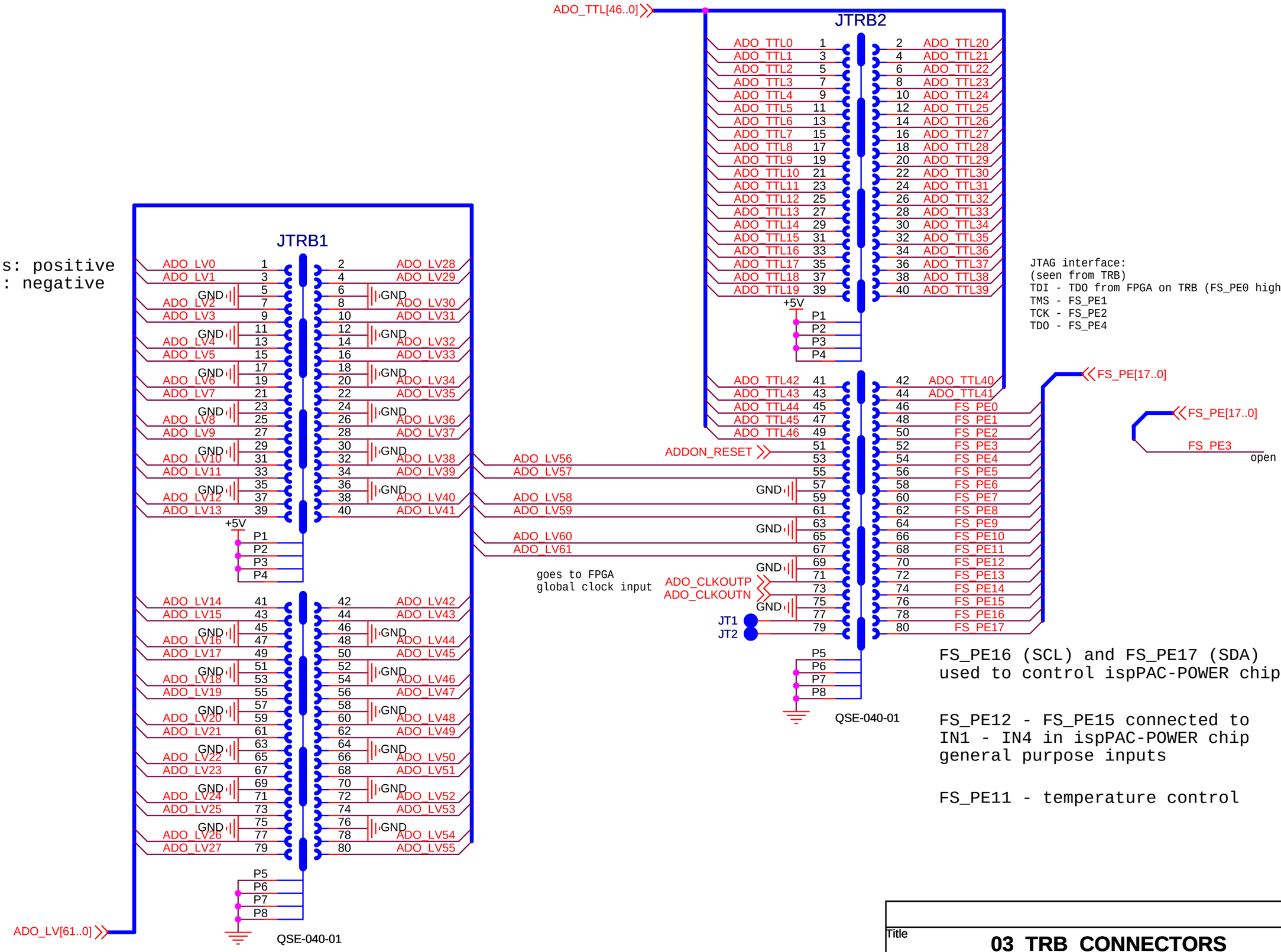
Even numbers: positive
Odd numbers: negative



JTAG interface:
(seen from TRB)
TDI - TDO from FPGA on TRB (FS_PE0 high Z)
TMS - FS_PE1
TCK - FS_PE2
TDO - FS_PE4

FS_PE16 (SCL) and FS_PE17 (SDA)
used to control ispPAC-POWER chip

FS_PE12 - FS_PE15 connected to
IN1 - IN4 in ispPAC-POWER chip
general purpose inputs

FS_PE11 - temperature control

Title	03_TRB_CONNECTORS	
Size A4	Document Number <Doc>	Rev <RevCo
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FPGA1A — LVTTL

TOP CENTER — BANK 1

DIS1
1 DIS1_0
2 DIS1_1
3 DIS1_2
4
103906-3

DIS2
1 DIS2_0
2 DIS2_1
3 DIS2_2
4
103906-3

	F20	PT27A/D15/MPI_DATA15
	E20	PT27B/A21/MPI_BURST
	K18	PT27C/DP1/MPI_PAR1
	J18	PT27D/D14/MPI_DATA14
	F19	PT30A/MPI_TEA
	E19	PT30B/A18/MPI_TSIZ0
	G20	PT30C/A20/MPI_BDIP
	H20	PT30D/A19/MPI_TSIZ1
	D19	PT33A/A17/MPI_ADDR31
	D20	PT33B/A15MPI_ADDR29
	G19	PT33C/D13/MPI_DATA13
	H19	PT33D/A16/MPI_ADDR30
LED_RED	C19	PT35A/A14MPI_ADDR28
LED_YELLOW	C20	PT35B/A13/MPI_ADDR27
LED_GREEN	E18	PT35C/D12/MPI_DATA12
LED_ORANGE	E17	PT35D/D11/MPI_DATA11
TRB2_OK_LED	B20	PT37A/A12/MPI_ADDR26
TRB2_RX_LED	B19	PT37B/A11/MPI_ADDR25
TRB2_TX_LED	D18	PT38A/A10/MPI_ADDR24
TRB3_OK_LED	C18	PT38B/A9/MPI_ADDR23
TRB3_RX_LED	K17	PT39A/A8/MPI_ADDR22
TRB3_TX_LED	J17	PT39B/A7/MPI_ADDR21
	L20	PT39C/VREF1_1
LOGIC_SPI_CS	A20	PT41A/A6/MPI_ADDR20
LOGIC_SPI_CLK	A19	PT41B/A5/MPI_ADDR19
LOGIC_SPI_IN	H18	PT41C/D26/PCLKT1_5/MPI_DATA26
LOGIC_SPI_OUT	H17	PT41D/D25/PCLKC1_5/MPI_DATA25
OR R324	B18	PT42A/A4/MPI_ADDR18
PROGRAMN	B17	PT42B/A3/MPI_ADDR17
TRB3_RATE_SEL	G17	PT42C/A2/MPI_ADDR16
TRB3_MOD2	F17	PT42D/A1/MPI_ADDR15
TRB3_MOD1	A18	PT43A/A0/MPI_ADDR14
TRB3_MOD0	A17	PT43B/MPI_RETRY
TRB3_TX_DIS	L17	PT43C/D24/PCLKT1_4/MPI_DATA24
TRB3_TX_FAUL	A15	PT45A/PCLKT1_0/MPI_CLK
TRB3_LOS	A16	PT45B/PCLKC1_0
	L16	PT45C/DP2/MPI_PAR2
	B15	PT46A/MPI_TA
SPI_CLK	B16	PT46B/DP0/MPI_PAR0
TRB2_RATE_SEL	F16	PT46C/BUSY/RCLK/SCK
TRB2_MOD2	G16	PT46D/MCA_DONE_OUT
TRB2_MOD1	A13	PT47A/MCA_CLK_P2_IN
TRB2_MOD0	A14	PT47B/MCA_CLK_P2_OUT
TRB2_TX_DIS	H16	PT47C/D22/PCLKT1_1/MPI_DATA22
TRB2_TX_FAUL	H15	PT47D/D21/PCLKC1_1/MPI_DATA21
TRB2_LOS	K16	PT49A/MCA_CLK_P1_IN
	J16	PT49B/MCA_CLK_P1_OUT
	D15	PT50A/MCA_DONE_IN
	C15	PT50B/DOUT
	L13	PT50D/VREF2_1
	B13	PT51A/QOUT/CEON
SPI_OUT	B14	PT51B/D0/MPI_DATA0
	C14	PT53A/D1/MPI_DATA1
	C13	PT53B/D2MPI_DATA2
	E16	PT54C/D3/MPI_DATA3
	E15	PT54D/D4/MPI_DATA4
	D14	PT55A/D5/MPI_DATA5
	D13	PT55B/D6/MPI_DATA6
	G14	PT55C/D7/MPI_DATA7
WRN	H14	PT55D/WRN/MPI_WR_N
	F14	PT57A/RDN/MPI_STRB_N
CS0N	E14	PT57B/CS0N/MPI_CS0N
	G13	PT58C/D10/MPI_DATA10
	H13	PT58D/D9/MPI_DATA9
CS1	F13	PT59A/CS1/MPI_CS1
	E13	PT59B/D8/MPI_DATA8
SPI_CS	K15	PT61C/LDCN/SCS
SPI_IN	J15	PT61D/HDC/SI

+3.3V
R119 10k R120 10k R121 10k

near FPGA

LFSCM3GA40EP1-7FFN1020C

ADO_TTL[46..0]

FPGA1D — LVTTL

BOTTOM RIGHT — BANK 4

ADO_TTL0	AM16	PB45A	
ADO_TTL1	AL16	PB45B	
ADO_TTL2	AF16	PB45C	
ADO_TTL3	AE16	PB45D	
ADO_TTL4	AM15	PB46A	
ADO_TTL5	AL15	PB46B	
ADO_TTL6	AD16	PB46C	
ADO_TTL7	AC16	PB46D	
ADO_TTL8	AM14	PB47A	
ADO_TTL9	AL14	PB47B	
ADO_TTL10	AG16	PB47C	
ADO_TTL11	AH16	PB47D	
ADO_TTL12	AK15	PB49A	
ADO_TTL13	AJ15	PB49B	
ADO_TTL14	AH15	PB49C	
ADO_TTL15	AH14	PB49D	
ADO_TTL16	AM13	PB50A	
ADO_TTL17	AM12	PB50B	
ADO_TTL18	AH13	PB50C	
ADO_TTL19	AH12	PB50D	
ADO_TTL20	AK14	PB51A	
ADO_TTL21	AJ14	PB51B	
ADO_TTL22	AE15	PB51C	
ADO_TTL23	AD15	PB51D	
ADO_TTL24	AL13	PB53A/PCLKT4_2	
ADO_TTL25	AL12	PB53B/PCLKC4_2	
ADO_TTL26	AG14	PB53C/PCLKT4_7	
ADO_TTL27	AG13	PB53D/PCLKC4_7	
ADO_TTL28	AM11	PB54A/PCLKT4_1	
ADO_TTL29	AM10	PB54B/PCLKC4_1	
ADO_TTL30	AH11	PB54C/PCLKT4_6	
ADO_TTL31	AH10	PB54D/PCLKC4_6	
ADO_TTL32	AK12	PB55A/PCLKT4_0	
ADO_TTL33	AJ12	PB55B/PCLKC4_0	
ADO_TTL34	AF14	PB55C/VREF2_4	
ADO_TTL35	AE14	PB55D	
ADO_TTL36	AL11	PB57A/PCLKT4_5	
ADO_TTL37	AL10	PB57B/PCLKC4_5	
ADO_TTL38	AH9	PB57C	
ADO_TTL39	AH8	PB57D	
ADO_TTL40	AK11	PB58A/PCLKT4_3	
ADO_TTL41	AJ11	PB58B/PCLKC4_3	
ADO_TTL42	AH7	PB58C/PCLKT4_4	
ADO_TTL43	AH6	PB58D/PCLKC4_4	

FS_PE[17..0]

	AM9	PB61A	ADO_TTL44
	AM8	PB61B	ADO_TTL45
	AF13	PB61C	ADO_TTL46
FS_PE5	AE13	PB61D	
FS_PE6	AL9	PB62A	
FS_PE7	AL8	PB62B	
FS_PE8	AG6	PB62C	
FS_PE9	AK9	PB63A	
FS_PE10	AJ9	PB63B	
FS_PE11	AG10	PB63C	
	AG11	PB63D	
RESET_FPGA1	AM7	PB66A	
ADDON_RESET	AL7	PB66B	
RS1_0	AD13	PB66C	
RS1_1	AC13	PB66D	
RS1_2	AK8	PB67A	
RS1_3	AJ8	PB67B	
RS2_0	AF11	PB67C	
RS2_1	AD12	PB69A	
RS2_2	AE12	PB69B	
RS2_3	AM6	PB70A	
	AM5	PB70B	
	AC12	PB70C	
TEST_LINE0	AL6	PB73A	
TEST_LINE1	AL5	PB73B	
TEST_LINE2	AG7	PB74A	
TEST_LINE3	AG8	PB74B	
TEST_LINE4	AK6	PB75A	
TEST_LINE5	AJ6	PB75B	
TEST_LINE6	AF10	PB75C	
TEST_LINE7	AE11	PB75D	
TEST_LINE8	AM4	PB77A	
TEST_LINE9	AM3	PB77B	
TEST_LINE10	AH5	PB78A	
TEST_LINE11	AH4	PB78B	
TEST_LINE12	AK5	PB79A	
TEST_LINE13	AJ5	PB79B	
TEST_LINE14	AF8	PB79C	
TEST_LINE15	AF7	PB79D	
TEST_LINE16	AL4	PB81A	
TEST_LINE17	AL3	PB81B	
TEST_LINE18	AG5	PB81C	
TEST_LINE19	AF6	PB81D	
TEST_LINE20	AK3	PB82A	
TEST_LINE21	AJ3	PB82B	
TEST_LINE22	AE10	VREF1_4/PB82C	
TEST_LINE23	AD10	PB82D	
TEST_LINE24	AL2	LRC_DLLT_IN_C/LRC_DLLT_FB_D/PB83A	
TEST_LINE25	AK2	LRC_DLLC_IN_C/LRC_DLLC_FB_D/PB83B	
TEST_LINE26	AE9	PB83C	
TEST_LINE27	AE8	PB83D	
TEST_LINE28	AJ1	LRC_PLLT_IN_A/LRC_PLLT_FB_B/PB85A	
TEST_LINE29	AK1	LRC_PLLC_IN_A/LRC_PLLC_FB_B/PB85B	
TEST_LINE30	AJ2	LRC_DLLT_IN_D/LRC_DLLT_FB_C/PB85C	
TEST_LINE31	AH3	LRC_DLLC_IN_D/LRC_DLLC_FB_C/PB85D	

LFSCM3GA40EP1-7FFN1020C

HPLA1

HPLA: 3 CK; 19 CH0; 18 CH1; 17 CH2; 16 CH3; 15 CH4; 14 CH5; 13 CH6; 12 CH7; 11 CH8; 10 CH9; 9 CH10; 8 CH11; 7 CH12; 6 CH13; 5 CH14; 4 CH15; GND 20

NC1 1
NC2 2

ZF5-20-01

HPLA3

HPLA: 3 CK; 19 CH0; 18 CH1; 17 CH2; 16 CH3; 15 CH4; 14 CH5; 13 CH6; 12 CH7; 11 CH8; 10 CH9; 9 CH10; 8 CH11; 7 CH12; 6 CH13; 5 CH14; 4 CH15; GND 20

NC1 1
NC2 2

ZF5-20-01

L1 BLM15HG102
L2 BLM15HG102

SPI_CLK
LOGIC_SPI_CLK

SWITCH1

SN74CB3Q3257DGVR

+3.3V
C5 100n

DONE 1
SPI_CS 2
LOGIC_SPI_CS 3
SPI_IN 11
LOGIC_SPI_IN 10
SPI_OUT 14
LOGIC_SPI_OUT 13

BLM15HG102 L3

MEM_SPI_CS
MEM_SPI_CLK
MEM_SPI_IN
MEM_SPI_OUT

R124 10k R125 10k
R132 10k
R134 10k
R136 10k

FLASH1

AT25DF321-SU

C6 100n

FPGA1J

JTAG

FS_PE0 J13 TDI
FS_PE1 K9 TMS
FS_PE2 J12 TCK
TDO_FS J9 TDO

CONF (BANK1)

SPI mode: M3 M2 M1 M0 = 0 1 0 1

FPGA_M0	K23	M0
FPGA_M1	J23	M1
FPGA_M2	J24	M2
FPGA_M3	K24	M3
	K10	CCLK
R129 DONE	K20	DONE
R130 INITN	K21	INITN
R131 PROGRAMN	K12	PROGRAMN
	K13	MPIIRQN
R133 RESETN	J21	RESETN
R135 RDCFGN	J20	TSALLN
OPEN R137	F28	RESP_ULC
4.02k R138	F5	RESP_URC

R122 10k R123 10k

LFSCM3GA40EP1-7FFN1020C

Place LED close to FPGA

DONE1 SML-310PT 750R R126
Q1 MMBT3904
R128 22k DONE

LED_RED	DERROR2 SML-311UT	330R R302
LED_YELLOW	DWAIT2 SML-311YT	330R R303
LED_GREEN	DOK2 SML-310PT	220R R304
LED_ORANGE	DACTIVE2 SML-311DT	330R R305

Title	04_FPGA1_LVTTL
Size A3	Document Number <Doc>
Rev	<RevC
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FPGA1B LVDS

UPPER RIGHT
BANK 2

TRIG_IN_P_0	K8	PR16A/URC_PLLT_IN_A/URC_PLLT_FB_B
TRIG_IN_N_0	J8	PR16B/URC_PLLC_IN_A/URC_PLLC_FB_B
	K7	PR16C
	K6	PR16D
TRIG_IN_P_1	D1	PR17A/URC_DLLT_IN_C/URC_DLLT_FB_D
TRIG_IN_N_1	D2	PR17B/URC_DLLC_IN_C/URC_DLLC_FB_D
	M10	PR17C/URC_PLLT_IN_B/URC_PLLT_FB_A
	N10	PR17D/URC_PLLC_IN_B/URC_PLLC_FB_A
TRIG_IN_P_2	E1	PR18A/URC_DLLT_IN_D/URC_DLLT_FB_C
TRIG_IN_N_2	E2	PR18B/URC_DLLC_IN_D/URC_DLLC_FB_C
	J5	PR18C
	K5	PR18D/VREF2_2
TRIG_IN_P_3	F1	PR21A
TRIG_IN_N_3	F2	PR21B
	L8	PR21C
	L7	PR21D
TRIG_IN_P_4	G2	PR22A
TRIG_IN_N_4	G1	PR22B
	L6	PR22C
	L5	PR22D
TRIG_IN_P_5	H2	PR23A
TRIG_IN_N_5	H1	PR23B
	M9	PR23C/VREF1_2
	N9	PR23D/DIFFR_2
TRIG_IN_P_6	J4	PR25A
TRIG_IN_N_6	H4	PR25B
	M8	PR25C
	N8	PR25D
TRIG_IN_P_7	J3	PR26A
TRIG_IN_N_7	H3	PR26B
	M5	PR26C
	N5	PR26D
TRIG_IN_P_8	J1	PR27A
TRIG_IN_N_8	J2	PR27B
	N7	PR27C
	N6	PR27D
TRIG_IN_P_9	K2	PR29A
TRIG_IN_N_9	K1	PR29B
	P8	PR29C
	P7	PR29D
PECL_OUT_P_0	M4	PR30A
PECL_OUT_N_0	L4	PR30B
PECL_OUT_P_1	M3	PR31A
PECL_OUT_N_1	L3	PR31B
PECL_OUT_P_2	L2	PR34A
PECL_OUT_N_2	M2	PR34B
	L1	PR35A/PCLKT2_1
	M1	PR35B/PCLKC2_1
	R8	PR35C/PCLKT2_3
	R9	PR35D/PCLKC2_3
TRIG_IN_P_10	N2	PR36A/PCLKT2_0
TRIG_IN_N_10	N1	PR36B/PCLKC2_0
	P6	PR36C/PCLKT2_2
	P5	PR36D/PCLKC2_2

LFSCM3GA40EP1-7FFN1020C

R37 1k

100R R164

+2.5V +2.5V

C9 68n C10 100n

J2 Jumper2P

VDD NC CLK+ OE CLK- GND

531FB200M000BG

LVDS_OSC1

TRIG_IN_P_0	100R	R139	TRIG_IN_N_0
TRIG_IN_P_1	100R	R140	TRIG_IN_N_1
TRIG_IN_P_2	100R	R141	TRIG_IN_N_2
TRIG_IN_P_3	100R	R143	TRIG_IN_N_3
TRIG_IN_P_4	100R	R145	TRIG_IN_N_4
TRIG_IN_P_5	100R	R147	TRIG_IN_N_5
TRIG_IN_P_6	100R	R150	TRIG_IN_N_6
TRIG_IN_P_7	100R	R152	TRIG_IN_N_7
TRIG_IN_P_8	100R	R153	TRIG_IN_N_8
TRIG_IN_P_9	100R	R155	TRIG_IN_N_9
TRIG_IN_P_10	100R	R157	TRIG_IN_N_10
TRIG_IN_P_11	100R	R159	TRIG_IN_N_11
TRIG_IN_P_12	100R	R142	TRIG_IN_N_12
TRIG_IN_P_13	100R	R144	TRIG_IN_N_13
TRIG_IN_P_14	100R	R146	TRIG_IN_N_14
TRIG_IN_P_15	100R	R148	TRIG_IN_N_15
TRIG_IN_P_16	100R	R149	TRIG_IN_N_16
TRIG_IN_P_17	100R	R151	TRIG_IN_N_17
TRIG_IN_P_18	100R	R154	TRIG_IN_N_18
TRIG_IN_P_19	100R	R156	TRIG_IN_N_19
TRIG_IN_P_20	100R	R158	TRIG_IN_N_20
TRIG_IN_P_21	100R	R160	TRIG_IN_N_21
TRIG_IN_P_22	100R	R161	TRIG_IN_N_22
TRIG_IN_P_23	100R	R162	TRIG_IN_N_23
TRIG_IN_P_24	100R	R307	TRIG_IN_N_24
TRIG_IN_P_25	100R	R308	TRIG_IN_N_25
TRIG_IN_P_26	100R	R309	TRIG_IN_N_26
TRIG_IN_P_27	100R	R310	TRIG_IN_N_27
TRIG_IN_P_28	100R	R311	TRIG_IN_N_28
TRIG_IN_P_29	100R	R312	TRIG_IN_N_29
TRIG_IN_P_30	100R	R313	TRIG_IN_N_30
TRIG_IN_P_31	100R	R314	TRIG_IN_N_31
TRIG_IN_P_32	100R	R306	TRIG_IN_N_32
TRIG_IN_P_33	100R	R315	TRIG_IN_N_33

100R

TRIG_IN_P_34	100R	R169	TRIG_IN_N_34
TRIG_IN_P_35	100R	R171	TRIG_IN_N_35
TRIG_IN_P_36	100R	R173	TRIG_IN_N_36
TRIG_IN_P_37	100R	R175	TRIG_IN_N_37
TRIG_IN_P_38	100R	R177	TRIG_IN_N_38
TRIG_IN_P_39	100R	R179	TRIG_IN_N_39
TRIG_IN_P_40	100R	R181	TRIG_IN_N_40
TRIG_IN_P_41	100R	R183	TRIG_IN_N_41
TRIG_IN_P_42	100R	R192	TRIG_IN_N_42
TRIG_IN_P_43	100R	R195	TRIG_IN_N_43
TRIG_IN_P_44	100R	R198	TRIG_IN_N_44
TRIG_IN_P_45	100R	R200	TRIG_IN_N_45
TRIG_IN_P_46	100R	R202	TRIG_IN_N_46
TRIG_IN_P_47	100R	R204	TRIG_IN_N_47

100R

FPGA1C LVDS

LOWER RIGHT
BANK 3

TRIG_IN_P_11	P3	PR38A/PCLKT3_0	W5
TRIG_IN_N_11	P4	PR38B/PCLKC3_0	Y5
	T10	PR38C/PCLKT3_1	Y7
	T9	PR38D/PCLKC3_1	W8
TRIG_IN_P_12	P1	PR39A	W1
TRIG_IN_N_12	P2	PR39B	Y1
	R5	PR39C/PCLKT3_3	AB5
	T5	PR39D/PCLKC3_3	AA5
TRIG_IN_P_13	R3	PR40A	AA4
TRIG_IN_N_13	R4	PR40B	AA3
	T8	PR40C/PCLKT3_2	AB2
	T7	PR40D/PCLKC3_2	AA2
TRIG_IN_P_14	R2	PR43A	AG3
TRIG_IN_N_14	R1	PR43B	AG4
	U10	PR43C/VREF1_3	AB4
	U9	PR43D	AB3
TRIG_IN_P_15	T2	PR44A	Y8
TRIG_IN_N_15	T1	PR44B	AA8
	T6	PR44C	AB1
	U5	PR44D	AA1
TRIG_IN_P_16	U1	PR45A	AB6
TRIG_IN_N_16	U2	PR45B	AC6
	U7	PR45C	AD2
	U8	PR45D	AC2
TRIG_IN_P_17	V1	PR47A	Y9
TRIG_IN_N_17	V2	PR47B	Y10
	V9	PR47C	AD4
	V10	PR47D	AD3
TRIG_IN_P_18	V4	PR48A	AF5
TRIG_IN_N_18	V3	PR48B	AE5
	U6	PR48C	AC5
	V5	PR48D	PR65A AD5
TRIG_IN_P_19	W3	PR49A	PR65B AB7
TRIG_IN_N_19	W4	PR49B	PR65C AC7
	V8	PR49C	VREF2_3/PR65D AC1
	W7	PR49D	PR66A AD1
	W2	PR51A	PR66B AA9
TRIG_IN_P_20	Y2	PR51B	PR66C AA10
TRIG_IN_N_20	W6	PR51C	PR66D AE3
	Y6	PR51D/DIFFR_3	PR67A AE4
			PR67B AC8
			PR67C AB8
			PR67D AE2
			PR69A AE1
			PR69B AE7
			LRC_DLLT_IN_E/LRC_DLLT_FB_F/PR69C AE6
			LRC_DLLC_IN_E/LRC_DLLC_FB_F/PR69D AF1
			PR70A AF2
			PR70B AC9
			PR70C AD8
			PR70D AG1
			LRC_DLLT_IN_F/LRC_DLLT_FB_E/PR71A AG2
			LRC_DLLC_IN_F/LRC_DLLC_FB_E/PR71B AC10
			LRC_PLLT_IN_B/LRC_PLLT_FB_A/PR71C AD9
			LRC_PLLC_IN_B/LRC_PLLC_FB_A/PR71D

TRIG_IN_P_21	W5	PR52A	
TRIG_IN_N_21	Y5	PR52B	
	Y7	PR52C	
	W8	PR52D	
TRIG_IN_P_22	W1	PR53A	
TRIG_IN_N_22	Y1	PR53B	
	AB5	PR53C	
	AA5	PR53D	
	AA4	PR56A	
	AA3	PR56B	
TRIG_IN_P_23	AB2	PR57A	
TRIG_IN_N_23	AA2	PR57B	
	AG3	PR57C	
	AG4	PR57D	
TRIG_IN_P_24	AB4	PR58A	
TRIG_IN_N_24	AB3	PR58B	
	Y8	PR58C	
	AA8	PR58D	
TRIG_IN_P_25	AB1	PR60A	
TRIG_IN_N_25	AA1	PR60B	
	AB6	PR60C	
	AC6	PR60D	
TRIG_IN_P_26	AD2	PR61A	
TRIG_IN_N_26	AC2	PR61B	
	Y9	PR61C	
	Y10	PR61D	
TRIG_IN_P_27	AD4	PR62A	
TRIG_IN_N_27	AD3	PR62B	
	AF5	PR62C	
	AE5	PR62D	
TRIG_IN_P_28	AC5	PR65A	
TRIG_IN_N_28	AD5	PR65B	
	AB7	PR65C	
	AC7	VREF2_3/PR65D	
TRIG_IN_P_29	AC1	PR66A	
TRIG_IN_N_29	AD1	PR66B	
	AA9	PR66C	
	AA10	PR66D	
TRIG_IN_P_30	AE3	PR67A	
TRIG_IN_N_30	AE4	PR67B	
	AC8	PR67C	
	AB8	PR67D	
TRIG_IN_P_31	AE2	PR69A	
TRIG_IN_N_31	AE1	PR69B	
	AE7	LRC_DLLT_IN_E/LRC_DLLT_FB_F/PR69C	
	AE6	LRC_DLLC_IN_E/LRC_DLLC_FB_F/PR69D	
	AF1	PR70A	
	AF2	PR70B	
	AC9	PR70C	
	AD8	PR70D	
	AG1	LRC_DLLT_IN_F/LRC_DLLT_FB_E/PR71A	
	AG2	LRC_DLLC_IN_F/LRC_DLLC_FB_E/PR71B	
	AC10	LRC_PLLT_IN_B/LRC_PLLT_FB_A/PR71C	
	AD9	LRC_PLLC_IN_B/LRC_PLLC_FB_A/PR71D	

R38 1k

LFSCM3GA40EP1-7FFN1020C

FPGA1E LVDS

BOTTOM LEFT
BANK 5

TRIG_IN_P_32	AJ32	PB3A/LLC_PLLT_IN_A/LLC_PLLT_FB_B
TRIG_IN_N_32	AK32	PB3B/LLC_PLLC_IN_A/LLC_PLLC_FB_B
	AF27	PB3C/LLC_DLLT_IN_C/LLC_DLLT_FB_D
	AG28	PB3D/LLC_DLLC_IN_C/LLC_DLLC_FB_D
TRIG_IN_P_33	AK31	PB4A/LLC_DLLT_IN_D/LLC_DLLT_FB_C
TRIG_IN_N_33	AL31	PB4B/LLC_DLLC_IN_D/LLC_DLLC_FB_C
	AE25	PB4C
	AE24	PB4D
TRIG_IN_P_34	AK30	PB5A
TRIG_IN_N_34	AL30	PB5B
	AD23	PB5C
	AE23	PB5D/VREF1_5
TRIG_IN_P_35	AK29	PB7A
TRIG_IN_N_35	AL29	PB7B
	AF26	PB7C
	AF25	PB7D
	AJ28	PB8A
	AK28	PB8B
	AJ31	PB9A
	AH30	PB9B
TRIG_IN_P_36	AM30	PB11A
TRIG_IN_N_36	AM29	PB11B
	AH29	PB11C
	AH28	PB11D
TRIG_IN_P_37	AJ27	PB13A
TRIG_IN_N_37	AK27	PB13B
	AE22	PB13C
	AF23	PB13D
TRIG_IN_P_38	AL28	PB15A
TRIG_IN_N_38	AL27	PB15B
	AC21	PB15C
	AD21	PB15D
TRIG_IN_P_39	AM28	PB17A
TRIG_IN_N_39	AM27	PB17B
	AG23	PB17C
	AF22	PB17D
	AG26	PB19A
	AG25	PB19B
	AJ25	PB21A
	AK25	PB21B
TRIG_IN_P_40	AL26	PB22A
TRIG_IN_N_40	AM26	PB22B
	AC20	PB22C
	AD20	PB22D
TRIG_IN_P_41	AJ24	PB25A
TRIG_IN_N_41	AK24	PB25B
	AE21	PB25C
	AE20	PB25D
TRIG_IN_P_42	AL25	PB26A
TRIG_IN_N_42	AL24	PB26B
	AG27	PB26C
	AH27	PB26D
	AM25	PB27A
	AM24	PB27B
	AF20	PB27C

	AJ22	PCLKT5_3/PB30A	TRIG_IN_P_43
	AK22	PCLKC5_3/PB30B	TRIG_IN_N_43
	AG22	PCLKT5_4/PB30C	
	AH22	PCLKC5_4/PB30D	
	AL23	PCLKT5_5/PB31A	TRIG_IN_P_44
	AL22	PCLKC5_5/PB31B	TRIG_IN_N_44
	AH23	PB31C	
	AH24	PB31D	
	AJ21	PCLKT5_0/PB33A	TRIG_IN_P_45
	AK21	PCLKC5_0/PB33B	TRIG_IN_N_45
	AE19	PB33C	
	AF19	VREF2_5/PB33D	
	AM23	PCLKT5_1/PB34A	TRIG_IN_P_46
	AM22	PCLKC5_1/PB34B	TRIG_IN_N_46
	AH25	PCLKT5_6/PB34C	
	AH26	PCLKC5_6/PB34D	
	AL21	PCLKT5_2/PB35A	TRIG_IN_P_47
	AL20	PCLKC5_2/PB35B	TRIG_IN_N_47
	AG20	PCLKT5_7/PB35C	
	AG19	PCLKC5_7/PB35D	
	AJ19	PB37A	FFC_P_0
	AK19	PB37B	FFC_N_0
	AD18	PB37C	FFC_P_1
	AE18	PB37D	FFC_N_1
	AM21	PB38A	FFC_P_2
	AM20	PB38B	FFC_N_2
	AH21	PB38C	FFC_P_3
	AH20	PB38D	FFC_N_3
	AJ18	PB39A	FFC_P_4
	AK18	PB39B	FFC_N_4
	AH19	PB39C	FFC_P_5
	AH18	PB39D	FFC_N_5
	AL19	PB41A	FFC_P_6
	AM19	PB41B	FFC_N_6
	AH17	PB41C	FFC_P_7
	AG17	PB41D	FFC_N_7
	AL18	PB42A	FFC_P_8
	AM18	PB42B	FFC_N_8
	AC17	PB42C	FFC_P_9
	AD17	PB42D	FFC_N_9
	AL17	PB43A	FFC_P_10
	AM17	PB43B	FFC_N_10
	AE17	PB43C	FFC_P_11
	AF17	PB43D	FFC_N_11

LFSCM3GA40EP1-7FFN1020C

FFC_P_1		R327	FFC_N_1
FFC_P_3	100R	R328	FFC_N_3
FFC_P_5	100R	R329	FFC_N_5
FFC_P_7	100R	R330	FFC_N_7
FFC_P_9	100R	R331	FFC_N_9
FFC_P_11	100R	R332	FFC_N_11
	100R		

Optional resistors do not solder

Title	05_FPGA1_LVDS_1		
Size A3	Document Number <Doc>		Rev <RevCo
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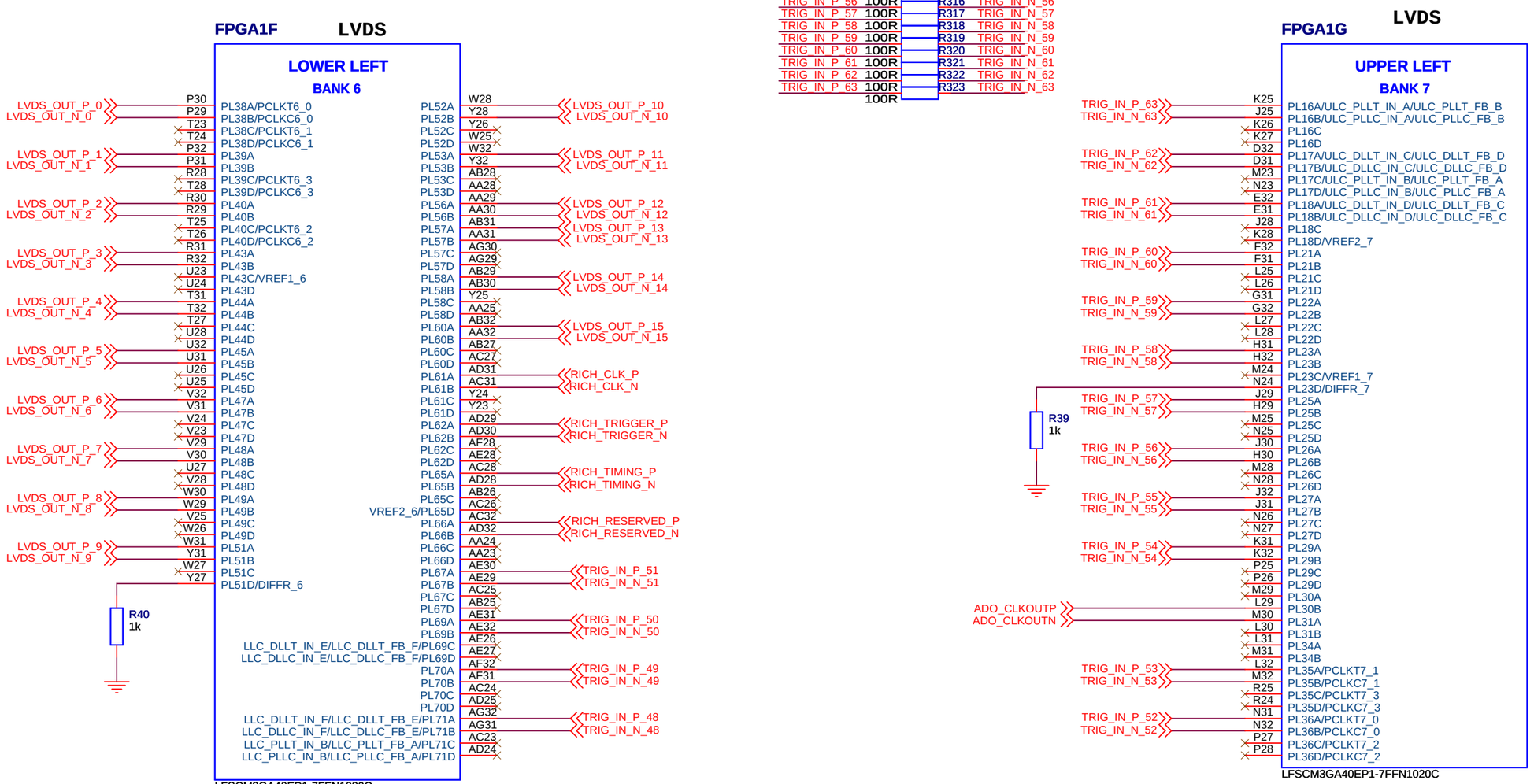

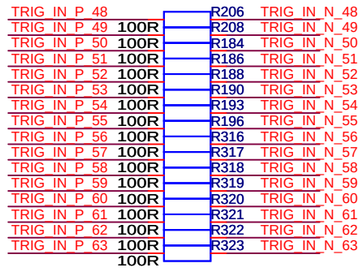

Title: **06_FPGA1_LVDS_2**

Size	Document Number	Rev
A3	<Doc>	<RevCo

Date: Monday, April 19, 2010 Sheet 7 of 16

C243 C244 C245 C246 C247 C248 C249 C250 C251 C252 C253 C254 C255 C256 C257 C258
100n 100n 100n 100n 33n 33n 33n 33n 68n 68n 68n 68n 10n 10n 10n 10n

+1.2V

BLM18EG601SN L4

BLM18EG601SN L32

+1.2V_IO_L

BLM18EG601SN L33

+1.2V_IO_R

BLM18EG601SN L5

C13 100u

FPGA1I

ANALOG POWER

B31	A_VDDIB0_L	A_VDDIB0_R	B2
F29	A_VDDIB1_L	A_VDDIB1_R	F4
H27	A_VDDIB2_L	A_VDDIB2_R	H6
H26	A_VDDIB3_L	A_VDDIB3_R	H7
D30	A_VDDOB0_L	A_VDDOB0_R	D3
D29	A_VDDOB1_L	A_VDDOB1_R	D4
D27	A_VDDOB2_L	A_VDDOB2_R	D6
D26	A_VDDOB3_L	A_VDDOB3_R	D7
H25	B_VDDIB0_L	B_VDDIB0_R	H8
H24	B_VDDIB1_L	B_VDDIB1_R	H9
H22	B_VDDIB2_L	B_VDDIB2_R	H11
H21	B_VDDIB3_L	B_VDDIB3_R	H12
D25	B_VDDOB0_L	B_VDDOB0_R	D8
D24	B_VDDOB1_L	B_VDDOB1_R	D9
D22	B_VDDOB2_L	B_VDDOB2_R	D11
D21	B_VDDOB3_L	B_VDDOB3_R	D12
A28	VDDAX25_L	VDDAX25_R	A5

LFSCM3GA40EP1-7FFN1020C

+2.5V BLM18EG601SN L7 +2.5V_AUX_L

C18 1u C19 68n

+2.5V_AUX_R BLM18EG601SN +2.5V L8

C20 68n C21 1u

C259 C260 C261 C262 C263 C264 C265 C266 C267 C268 C269 C270 C271 C272 C273 C274
100n 100n 100n 100n 33n 33n 33n 33n 68n 68n 68n 68n 10n 10n 10n 10n

FPGA1H

SERDES

TOP LEFT

TRB2_RXP	C32	A_HDINP0_L
TRB2_RXN	C31	A_HDINN0_L
	G28	A_HDINP1_L
	H28	A_HDINN1_L
	F27	A_HDINP2_L
	G27	A_HDINN2_L
	F26	A_HDINP3_L
	G26	A_HDINN3_L
TRB2_TXP	A30	A_HDOUTP0_L
TRB2_TXN	B30	A_HDOUTN0_L
	A29	A_HDOUTP1_L
	B29	A_HDOUTN1_L
	A27	A_HDOUTP2_L
	B27	A_HDOUTN2_L
	A26	A_HDOUTP3_L
	B26	A_HDOUTN3_L
TRB3_RXP	F25	B_HDINP0_L
TRB3_RXN	G25	B_HDINN0_L
	G23	B_HDINP1_L
	H23	B_HDINN1_L
	F22	B_HDINP2_L
	G22	B_HDINN2_L
	F21	B_HDINP3_L
	G21	B_HDINN3_L
TRB3_TXP	A25	B_HDOUTP0_L
TRB3_TXN	B25	B_HDOUTN0_L
	A24	B_HDOUTP1_L
	B24	B_HDOUTN1_L
	A22	B_HDOUTP2_L
	B22	B_HDOUTN2_L
	A21	B_HDOUTP3_L
	B21	B_HDOUTN3_L
	C28	A_REFCLKP_L
	D28	A_REFCLKN_L
	C23	B_REFCLKP_L
	D23	B_REFCLKN_L

TOP RIGHT

C1	A_HDINP0_R	F2_TO_F1_AP
C2	A_HDINN0_R	F2_TO_F1_AN
G5	A_HDINP1_R	F2_TO_F1_BP
H5	A_HDINN1_R	F2_TO_F1_BN
F6	A_HDINP2_R	
G6	A_HDINN2_R	
F7	A_HDINP3_R	
G7	A_HDINN3_R	
A3	A_HDOUTP0_R	F1_TO_F2_AP
B3	A_HDOUTN0_R	F1_TO_F2_AN
A4	A_HDOUTP1_R	F1_TO_F2_BP
B4	A_HDOUTN1_R	F1_TO_F2_BN
A6	A_HDOUTP2_R	
B6	A_HDOUTN2_R	
A7	A_HDOUTP3_R	
B7	A_HDOUTN3_R	
F8	B_HDINP0_R	
G8	B_HDINN0_R	
G10	B_HDINP1_R	
H10	B_HDINN1_R	
F11	B_HDINP2_R	
G11	B_HDINN2_R	
F12	B_HDINP3_R	
G12	B_HDINN3_R	
A8	B_HDOUTP0_R	
B8	B_HDOUTN0_R	
A9	B_HDOUTP1_R	
B9	B_HDOUTN1_R	
A11	B_HDOUTP2_R	
B11	B_HDOUTN2_R	
A12	B_HDOUTP3_R	
B12	B_HDOUTN3_R	
C5	A_REFCLKP_R	
D5	A_REFCLKN_R	
C10	B_REFCLKP_R	
D10	B_REFCLKN_R	

LFSCM3GA40EP1-7FFN1020C

+1.8V +1.8V

J18 Jumper2P

C565 68n C566 100n

RCLK125

VDD NC CLK+ OE CLK- GND

531KB125M000BG

+1.8V +1.8V

J19 Jumper2P

C567 68n C568 100n

RCLK100

VDD NC CLK+ OE CLK- GND

531KB100M000BG

Title	07_FPGA1_SERDES	
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RAM_A[1..0]
RAM_AI[18..1]
RAM_DQA[8..1]
RAM_DQB[8..1]

FPGA2J CMOS25
TOP LEFT
BANK0
LFE2M100E-5FN900C

RAM_DQPA C15 PT64B (PCLKC0_0) PT52B F7
RAM_DQPB D15 PT64A (PCLKT0_0) PT52A D8
RAM_CEb C14 PT63B (VREF2_0) PT50B J13
RAM_CE2 E15 PT63A (VREF1_0) PT50A G11
RAM_OEb G14 PT62B PT49B H13
RAM_ADVb J14 PT62A PT49A H12
RAM_ADSCb F14 PT61B PT48B E8
RAM_ADSPb H14 PT61A PT48A D9
A14 PT60B PT46B D12
B14 PT60A PT46A E13
D13 PT59B PT31B J12
F13 PT59A PT31A H10
G13 PT58B PT30B E12
J11 PT58A PT30A D11
D4 PT57B PT29B H11
D5 PT56A PT29A D10
E5 PT55B F11
F6 PT55A

FPGA2D LVTTL
BOTTOM RIGHT
BANK4
LFE2M100E-5FN900C

PROGRAMN_F2 OR R325
AJ14 PB67A (PCLKT4_0)_T PB76A_T AD17
AK14 PB67B (PCLKC4_0)_C PB76B_C AF19
AK15 PB68A (VREF2_4)_T PB80A_T AH17
AK16 PB68B (VREF1_4)_C PB80B_C AJ17
AF18 PB69A/BDQS69_T PB82A_T AF26
AD16 PB69B_C PB82B_C AE25
AJ15 PB70A_T PB92A_T AD24
AG16 PB70B_C PB92B_C AE24
AE17 PB71A_T PB93A_T AD18
AC17 PB71B_C PB93B_C AC18
AH16 PB72A_T PB94A_T AE18
AK17 PB72B_C PB94B_C AG19
AG20 PB73A_T BDQS96/PB96A_T AC19
AG21 PB73B_C PB96B_C AD20
AG18 PB74A_T PB97A_T AB18
AJ16 PB74B_C PB97B_C AC20
AF21 PB75A_T PB98A_T AE20 LOGIC_SPI_CS_F2
AG22 PB75B_C PB98B_C AE21 LOGIC_SPI_CLK_F2
PB99A_T AC23 LOGIC_SPI_IN_F2
PB99B_C AD23 LOGIC_SPI_OUT_F2

TEMPSENSOR1
+3.3V
R118 4.7k
C4 100n
NC1 VDD
NC2
NC3 DQ
NC4
NC5 GND
DS18B20U+

FPGA2C LVTTL
BOTTOM LEFT
BANK5
LFE2M100E-5FN900C

AF10 PB30A_T PB49A_T AF12 GbE_TX_FAULT
AE8 PB30B_C PB49B_C AD14 GbE_TX_DIS
AE11 PB31A_T PB50A_T AG8 GbE_LOS
AD9 PB31B_C PB50B_C AF8 GbE_MOD0
AE10 PB32A_T BDQS51/PB51A_T AE15 GbE_MOD1
AD10 PB32B_C PB51B_C AC15 GbE_MOD2
AE13 PB33A/BDQS33_T PB56A_T AD15 GbE_RATE_SEL
AC12 PB33B_C PB56B_C AF15 TRB_TX_FAULT
AG2 PB34A_T PB57A_T AG10 TRB_TX_DIS
AG3 PB34B_C PB57B_C AG9 TRB_LOS
AD13 PB35A_T PB58A_T AH14 TRB_MOD0
AC13 PB35B_C PB58B_C AG12 TRB_MOD1
AE14 PB36A_T PB59A_T AG15 TRB_MOD2
AC14 PB36B_C PB59B_C AG13 TRB_RATE_SEL
AF3 PB37A_T BDQS60/PB60A_T AF16
AF4 PB37B_C PB60B_C AH15
AG4 PB38A_T (VREF2_5) PB61A_T AC16 ADDON_RESET
AG5 PB38B_C (VREF1_5) PB61B_C AE16
AD11 PB48A_T (PCLKT5_0) PB62A_T AG11 RESET_FPGA2
AF13 PB48B_C (PCLKC5_0) PB62B_C AF11

FPGA2I CMOS25
TOP RIGHT
BANK1
LFE2M100E-5FN900C

RAM_TDI D23 PT75B J18 RAM_A0
RAM_TMS E21 PT100B PT75A J19 RAM_A1
RAM_TCK D26 PT100A PT74B H17 RAM_AI1
RAM_TDO E26 PT99B PT74A J17 RAM_AI2
RAM_DQA1 E23 PT99A PT73B F18 RAM_AI3
RAM_DQA2 G22 PT98B PT73A F17 RAM_AI4
RAM_DQA3 D22 PT98A PT72B A16 RAM_AI5
RAM_DQA4 F21 PT97B PT72A B16 RAM_AI6
RAM_DQA5 G18 PT97A PT71B G17 RAM_AI7
RAM_DQA6 H18 PT96B PT71A G16 RAM_AI8
RAM_DQA7 D20 PT96A PT70B H16 RAM_AI9
RAM_DQA8 D21 PT95B PT70A F16 RAM_AI10
RAM_DQB1 E20 PT95A PT69B J16 RAM_AI11
RAM_DQB2 E19 PT94B PT69A G15 RAM_AI12
RAM_DQB3 D19 PT94A PT68B C16 RAM_AI13
RAM_DQB4 E18 PT93B PT68A D16 RAM_AI14
RAM_DQB5 D18 PT93A PT67B J15 RAM_AI15
RAM_DQB6 C17 PT92B PT67A H15 RAM_AI16
RAM_DQB7 A17 PT92A (VREF2_1) PT66B A15 RAM_AI17
RAM_DQB8 B17 PT91B (VREF1_1) PT66A B15 RAM_AI18
PT91A (PCLKC1_0) PT65B F15 RAM_GWb
(PCLKT1_0) PT65A E16 RAM_CLK

+3.3V
C275 100n

FPGA2K
JTAG
CONFIG (BANK8)

TDO_F1 AE1 TDI
FS_PE1 AF2 TMS
FS_PE2 AE2 TCK
TDO_F2 AF1 TDO
AG1 VCCJ

F2_CFG0 AG28 CFG0
F2_CFG1 AD25 CFG1
F2_CFG2 AG27 CFG2
SPI_CLK_F2 AG29 CCLK
DONE_F2 AF27 DONE
PROGRAMN_F2 AG30 PROGRAMN
INITN_F2 AC24 INITN

SPI_IN_F2 AA23 BUSY
JT68 AC26 DOUT_CSON
SPI_CS_F2 AA22 DI
SPI_OUT_F2 AD30 D7
JT69 AC25 D6
JT70 AD29 D5
JT71 AE30 D4
JT72 AE29 D3
JT73 AD26 D2
JT74 AF30 D1
AF29 D0
JT75 AB23 CSN
JT76 AE26 CS1N
JT77 AF28 WRITEN

AB22 RLM0_PLLCAP
AB8 LLM0_PLLCAP
G23 XRES

LFE2M100E-5FN900C

+3.3V
R252 2.7k
R253 2.7k
R254 2.7k

+3.3V
Jumper2B11
Jumper2B12
Jumper2B13
F2_CFG0
F2_CFG1
F2_CFG2
R260 0R
R261 0R
R262 0R

+3.3V
Jumper2B14
SPI_FAST
R263 0R
C278 5.6n
C279 5.6n
R264 10k

Place LED close to FPGA
+3.3V
DONE2
750R R255
SML-310PT
R257
Q2 MMBT3904
DONE_F2
22k

near FPGA
L12 BLM15HG102
SPI_CLK_F2
LOGIC_SPI_CLK_F2
BLM15HG102 L13

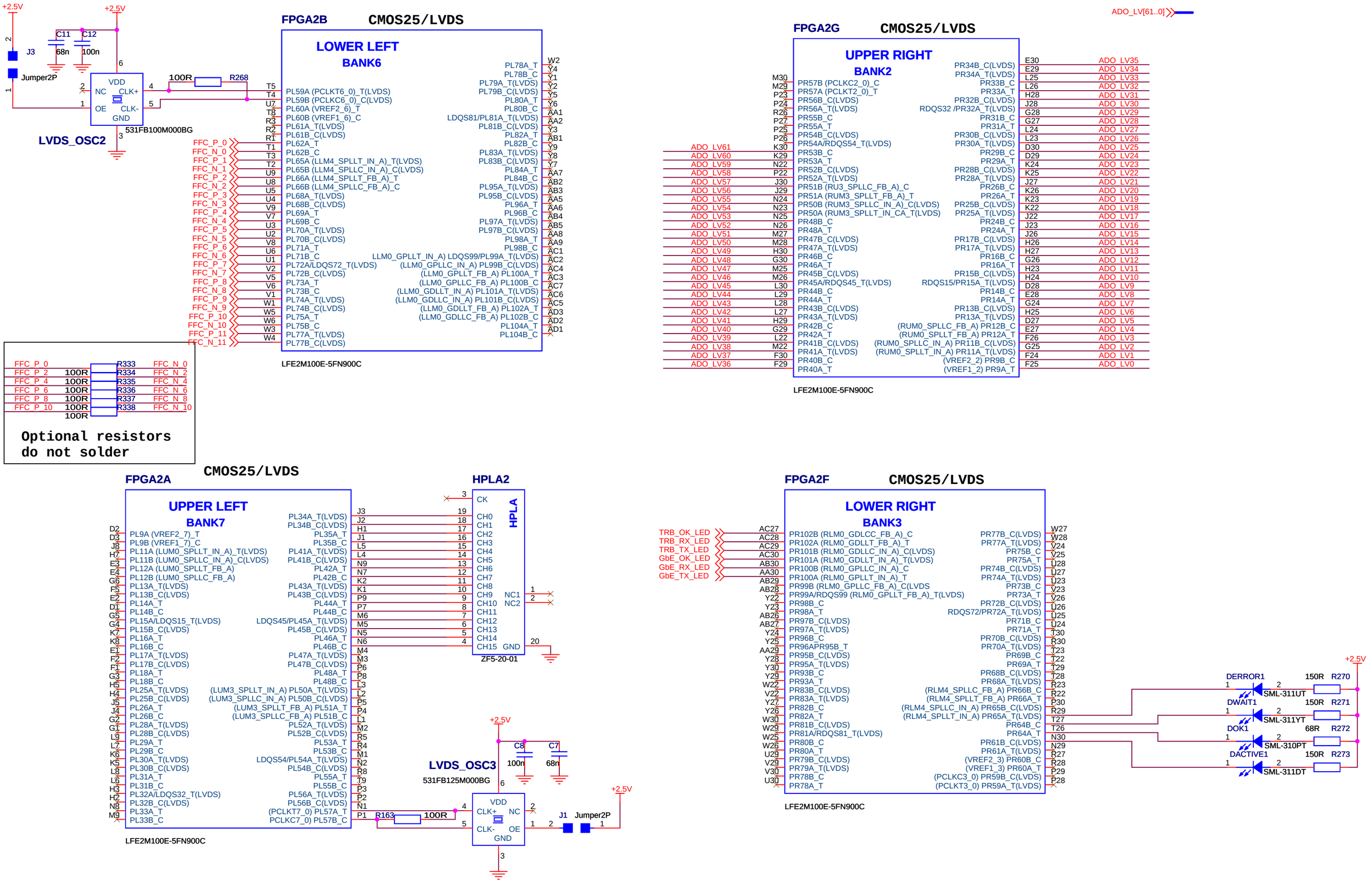
+3.3V
C276 100n
SWITCH2
SN74CB3Q3257DGVR

DONE_F2
SPI_CS_F2
LOGIC_SPI_CS_F2
SPI_IN_F2
LOGIC_SPI_IN_F2
SPI_OUT_F2
LOGIC_SPI_OUT_F2
BLM15HG102 L14
MEM_SPI_CS_F2
MEM_SPI_CLK_F2
MEM_SPI_IN_F2
MEM_SPI_OUT_F2

+3.3V
R258 10k
R259 10k
10k R265
10k R266
R267 10k

+3.3V
C277 100n
FLASH2
AT25DF321-SU

Title	08_FPGA2_JTAG
Size A3	Document Number <Doc>
Rev	<RevCo
Date: Monday, April 19, 2010	Sheet 9 of 16



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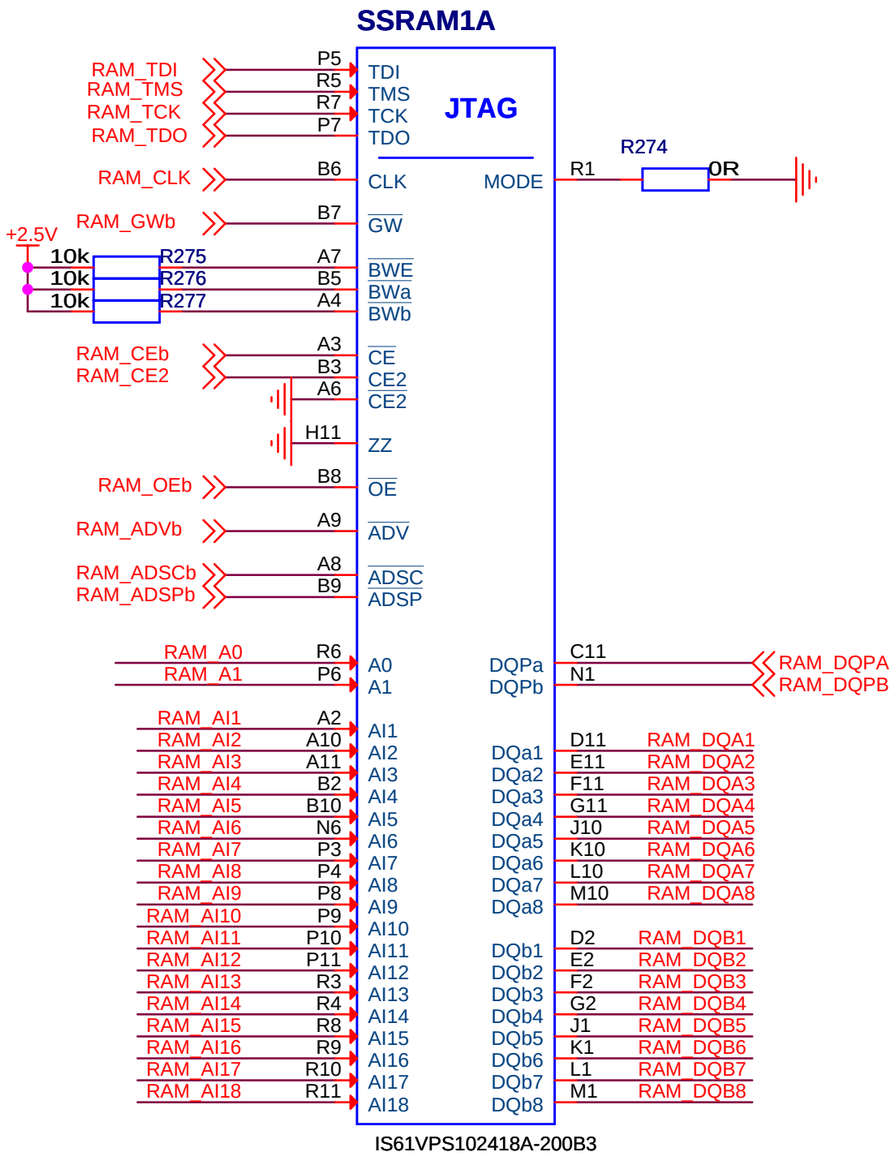
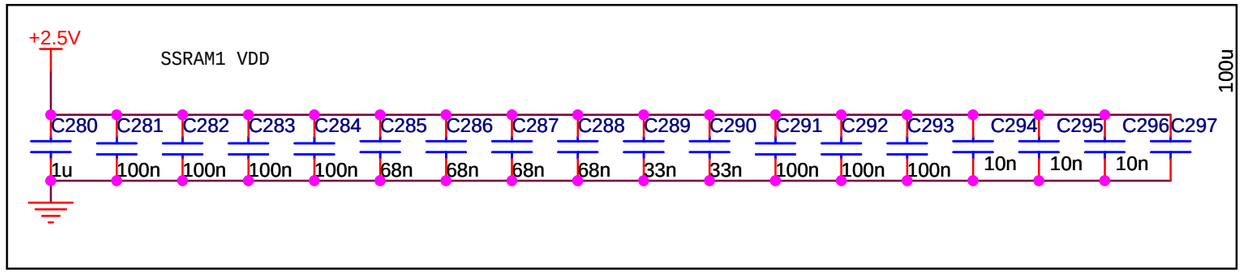
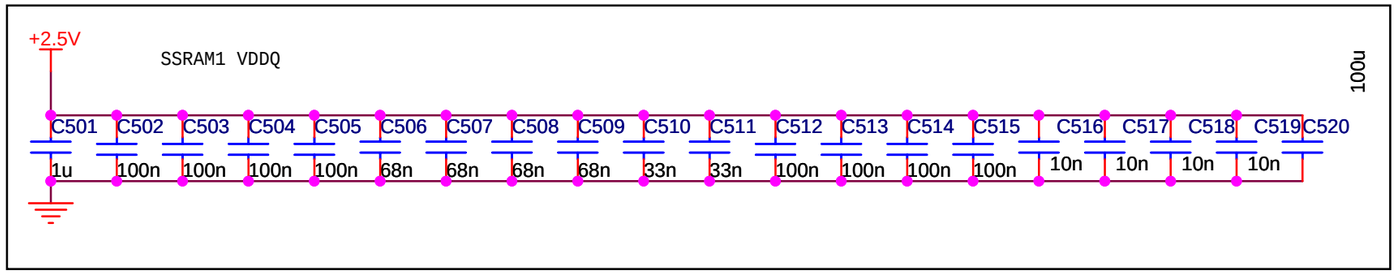
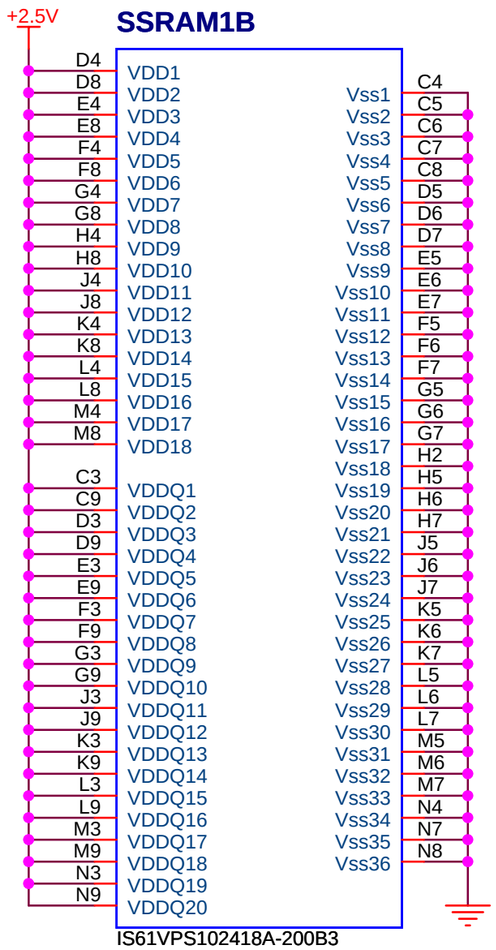
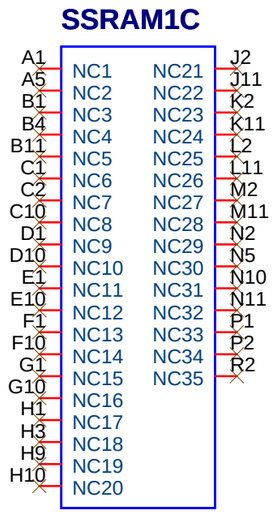
Size	A3
Document Number	<Doc>
Rev	<RevC
Date:	Monday, April 19, 2010
Sheet	10 of 16







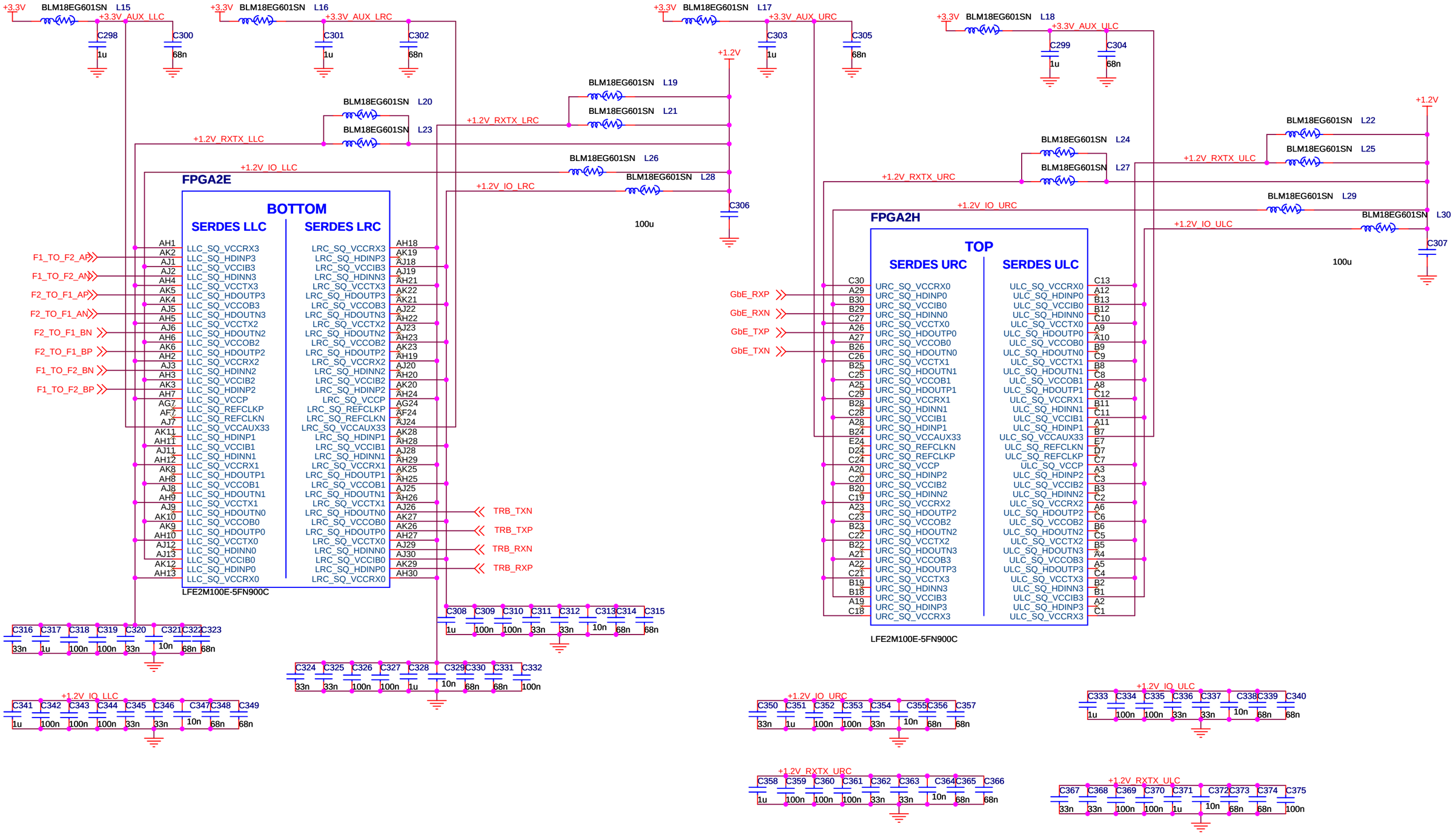




Title: **10_FPGA2_MEMORY**

Size	Document Number	Rev
A4	<Doc>	<RevCo

Date: Monday, April 19, 2010 Sheet 11 of 16



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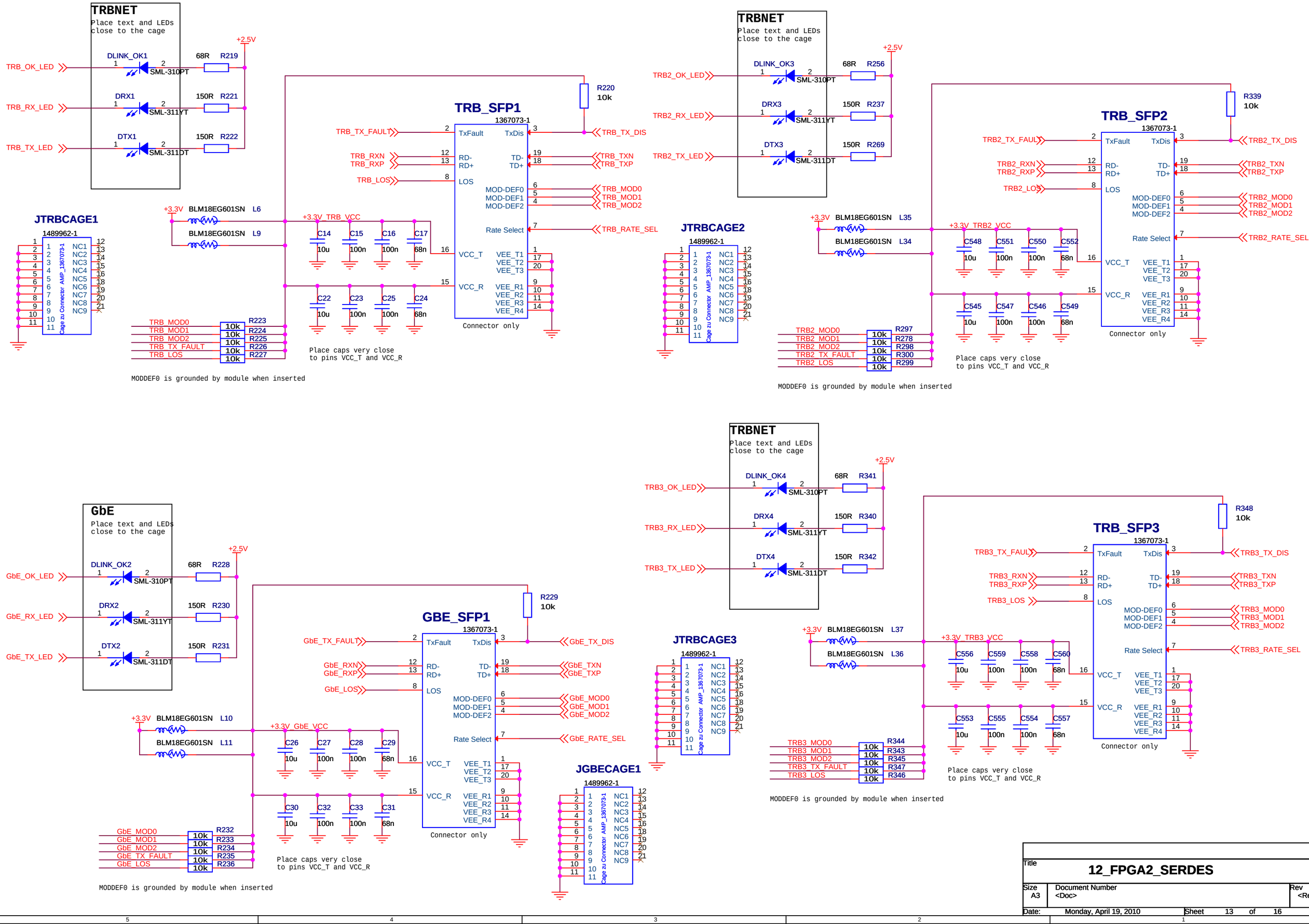
Size A3	Document Number <Doc>	Rev <RevCo
Date: Monday, April 19, 2010	Sheet 12 of 16	


TRBNET
Place text and LEDs close to the cage
TRB_OK_LED
TRB_RX_LED
TRB_TX_LED
DLINK_OK1
DRX1
DTX1
SML-310PT
SML-311YT
SML-311DT
68R R219
150R R221
150R R222
+2.5V
TRB_SFP1
1367073-1
TRB_TX_FAULT
TRB_RXN
TRB_RXP
TRB_LOS
TRB_TX_DIS
TRB_TXN
TRB_TXP
TRB_MOD0
TRB_MOD1
TRB_MOD2
TRB_RATE_SEL
R220 10k
Connector only
JTRBCAGE1
1489962-1
Cage zu Connector AMP_1367073-1
+3.3V BLM18EG601SN L6
BLM18EG601SN L9
+3.3V_TRB_VCC
C14 C15 C16 C17
C22 C23 C25 C24
10u 100n 100n 68n
R223 R224 R225 R226 R227
Place caps very close to pins VCC_T and VCC_R
MODDEF0 is grounded by module when inserted
TRBNET
Place text and LEDs close to the cage
TRB2_OK_LED
TRB2_RX_LED
TRB2_TX_LED
DLINK_OK3
DRX3
DTX3
68R R256
150R R237
150R R269
TRB_SFP2
1367073-1
TRB2_TX_FAULT
TRB2_RXN
TRB2_RXP
TRB2_LOS
TRB2_TX_DIS
TRB2_TXN
TRB2_TXP
TRB2_MOD0
TRB2_MOD1
TRB2_MOD2
TRB2_RATE_SEL
R339 10k
Connector only
JTRBCAGE2
1489962-1
+3.3V BLM18EG601SN L35
BLM18EG601SN L34
+3.3V TRB2_VCC
C548 C551 C550 C552
C545 C547 C546 C549
R297 R278 R298 R300 R299
Place caps very close to pins VCC_T and VCC_R
MODDEF0 is grounded by module when inserted
GbE
Place text and LEDs close to the cage
GbE_OK_LED
GbE_RX_LED
GbE_TX_LED
DLINK_OK2
DRX2
DTX2
SML-310PT
SML-311YT
SML-311DT
68R R228
150R R230
150R R231
+2.5V
GBE_SFP1
1367073-1
GbE_TX_FAULT
GbE_RXN
GbE_RXP
GbE_LOS
GbE_TX_DIS
GbE_TXN
GbE_TXP
GbE_MOD0
GbE_MOD1
GbE_MOD2
GbE_RATE_SEL
R229 10k
Connector only
JGBECAGE1
1489962-1
+3.3V BLM18EG601SN L10
BLM18EG601SN L11
+3.3V_GbE_VCC
C26 C27 C28 C29
C30 C32 C33 C31
10u 100n 100n 68n
R232 R233 R234 R235 R236
Place caps very close to pins VCC_T and VCC_R
MODDEF0 is grounded by module when inserted
TRBNET
Place text and LEDs close to the cage
TRB3_OK_LED
TRB3_RX_LED
TRB3_TX_LED
DLINK_OK4
DRX4
DTX4
SML-310PT
SML-311YT
SML-311DT
68R R341
150R R340
150R R342
+2.5V
TRB_SFP3
1367073-1
TRB3_TX_FAULT
TRB3_RXN
TRB3_RXP
TRB3_LOS
TRB3_TX_DIS
TRB3_TXN
TRB3_TXP
TRB3_MOD0
TRB3_MOD1
TRB3_MOD2
TRB3_RATE_SEL
R348 10k
Connector only
JTRBCAGE3
1489962-1
+3.3V BLM18EG601SN L37
BLM18EG601SN L36
+3.3V TRB3_VCC
C556 C559 C558 C560
C553 C555 C554 C557
R344 R343 R345 R347 R346
Place caps very close to pins VCC_T and VCC_R
MODDEF0 is grounded by module when inserted
Title
12_FPGA2_SERDES
Size A3
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All currents from
DS1004 v02.2
page 3-3

FPGA1K

max 3.3V

C17	VCCIO1_0	
D16	VCCIO1_1	
F15	VCCIO1_2	
F24	VCCIO1_3	
G18	VCCIO1_4	
G9	VCCIO1_5	
J11	VCCIO1_6	VCCIO5_0 AC19
J19	VCCIO1_7	VCCIO5_1 AD22
K14	VCCIO1_8	VCCIO5_2 AF21
K22	VCCIO1_9	VCCIO5_3 AG18
		VCCIO5_4 AG24
AC11		VCCIO5_5 AJ17
AD14	VCCIO4_0	VCCIO5_6 AJ23
AF15	VCCIO4_1	VCCIO5_7 AJ30
AF9	VCCIO4_2	VCCIO5_8 AK20
AG12	VCCIO4_3	VCCIO5_9 AK26
AJ13	VCCIO4_4	
AJ7	VCCIO4_5	
AK10	VCCIO4_6	
AK16	VCCIO4_7	
AK4	VCCIO4_8	
	VCCIO4_9	

max 2.5V

G4	VCCIO2_0	VCCIO6_0 AA27
J7	VCCIO2_1	VCCIO6_1 AB23
K3	VCCIO2_2	VCCIO6_2 AC30
L10	VCCIO2_3	VCCIO6_3 AD26
M6	VCCIO2_4	VCCIO6_4 AF29
N4	VCCIO2_5	VCCIO6_5 T29
P9	VCCIO2_6	VCCIO6_6 U30
R7	VCCIO2_7	VCCIO6_7 V26
		VCCIO6_8 W24
AA7		VCCIO6_9 Y29
AB9	VCCIO3_0	
AC4	VCCIO3_1	
AD6	VCCIO3_2	VCCIO7_0 G30
AF3	VCCIO3_3	VCCIO7_1 J27
T3	VCCIO3_4	VCCIO7_2 K29
U4	VCCIO3_5	VCCIO7_3 L24
V6	VCCIO3_6	VCCIO7_4 M26
W10	VCCIO3_7	VCCIO7_5 N30
Y3	VCCIO3_8	VCCIO7_6 P23
	VCCIO3_9	VCCIO7_7 R27

1.2V
2006 mA

N13	VCC_0	VCC_20 U13
N15	VCC_1	VCC_21 U14
N16	VCC_2	VCC_22 U16
N17	VCC_3	VCC_23 U17
N18	VCC_4	VCC_24 U19
N20	VCC_5	VCC_25 U20
P14	VCC_6	VCC_26 V13
P16	VCC_7	VCC_27 V15
P17	VCC_8	VCC_28 V18
P19	VCC_9	VCC_29 V20
R13	VCC_10	VCC_30 W14
R15	VCC_11	VCC_31 W16
R18	VCC_12	VCC_32 W17
R20	VCC_13	VCC_33 W19
T13	VCC_14	VCC_34 Y13
T14	VCC_15	VCC_35 Y15
T16	VCC_16	VCC_36 Y16
T17	VCC_17	VCC_37 Y17
T19	VCC_18	VCC_38 Y18
T20	VCC_19	VCC_39 Y20

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FPGA1L

133 mA

B10	VCC12_0	VCCAUX_0 AA11
B23	VCC12_1	VCCAUX_1 AA12
B28	VCC12_2	VCCAUX_2 AA21
B5	VCC12_3	VCCAUX_3 AA22
E11	VCC12_4	VCCAUX_4 AB11
E12	VCC12_5	VCCAUX_5 AB12
E30	VCC12_6	VCCAUX_6 AB15
E29	VCC12_7	VCCAUX_7 AB16
E27	VCC12_8	VCCAUX_8 AB17
E26	VCC12_9	VCCAUX_9 AB18
E25	VCC12_10	VCCAUX_10 AB21
E24	VCC12_11	VCCAUX_11 AB22
E22	VCC12_12	VCCAUX_12 L11
E21	VCC12_13	VCCAUX_13 L12
E3	VCC12_14	VCCAUX_14 L14
E4	VCC12_15	VCCAUX_15 L15
E6	VCC12_16	VCCAUX_16 L18
E7	VCC12_17	VCCAUX_17 L19
E8	VCC12_18	VCCAUX_18 L21
E9	VCC12_19	VCCAUX_19 L22
M14	VCC12_20	VCCAUX_20 M11
M16	VCC12_21	VCCAUX_21 M12
M17	VCC12_22	VCCAUX_22 M21
M19	VCC12_23	VCCAUX_23 M22
P12	VCC12_24	VCCAUX_24 P11
P21	VCC12_25	VCCAUX_25 P22
T12	VCC12_26	VCCAUX_26 R11
T21	VCC12_27	VCCAUX_27 R22
U12	VCC12_28	VCCAUX_28 V11
U21	VCC12_29	VCCAUX_29 V22
W12	VCC12_30	VCCAUX_30 W11
W21	VCC12_31	VCCAUX_31 W22
AA14	VCC12_32	
AA16	VCC12_33	VTT_2_0 N11
AA17	VCC12_34	VTT_2_1 R10
AA19	VCC12_35	VTT_3_0 T11
		VTT_3_1 U11
J10	VCCJ	VTT_3_2 Y11
		VTT_4_0 AB13
AH1	PROBE_VCC	VTT_4_1 AB14
AH2	PROBE_GND	VTT_4_2 AC15
		VTT_5_0 AB19
AH32	XRES	VTT_5_1 AB20
		VTT_5_2 AC18
AH31	TEMP	VTT_6_0 T22
		VTT_6_1 U22
		VTT_6_2 Y22
		VTT_7_0 N22
		VTT_7_1 R23

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39 mA

FPGA1N

E5	NC1
E10	NC2
E23	NC3
E28	NC4
F10	NC5
F23	NC6

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FPGA1M

A23	GND_0	GND_67 G3
A31	GND_1	GND_68 J14
AA13	GND_2	GND_69 J22
AA15	GND_3	GND_70 J26
AA18	GND_4	GND_71 J6
AA20	GND_5	GND_72 K11
AA26	GND_6	GND_73 K19
AA6	GND_7	GND_74 K30
AB10	GND_8	GND_75 K4
AB24	GND_9	GND_76 L23
AC14	GND_10	GND_77 L9
AC22	GND_11	GND_78 M13
AC29	GND_12	GND_79 M15
AC3	GND_13	GND_80 M18
AD11	GND_14	GND_81 M20
AD19	GND_15	GND_82 M27
AD27	GND_16	GND_83 M7
AD7	GND_17	GND_84 N12
AF12	GND_18	GND_85 N14
AF18	GND_19	GND_86 N19
AF24	GND_20	GND_87 N21
AF30	GND_21	GND_88 N29
AF4	GND_22	GND_89 N3
AG15	GND_23	GND_90 P10
AG21	GND_24	GND_91 P13
AG9	GND_25	GND_92 P15
AJ10	GND_26	GND_93 P18
AJ16	GND_27	GND_94 P20
AJ20	GND_28	GND_95 P24
AJ26	GND_29	GND_96 R12
AJ29	GND_30	GND_97 R14
AJ4	GND_31	GND_98 R16
AK13	GND_32	GND_99 R17
AK17	GND_33	GND_100 R19
AK23	GND_34	GND_101 R21
AK7	GND_35	GND_102 R26
AL1	GND_36	GND_103 R6
AL32	GND_37	GND_104 T15
AM2	GND_38	GND_105 T18
AM31	GND_39	GND_106 T30
B1	GND_40	GND_107 T4
B32	GND_41	GND_108 U15
C11	GND_42	GND_109 U18
C12	GND_43	GND_110 U29
C16	GND_44	GND_111 U3
C21	GND_45	GND_112 V12
C22	GND_46	GND_113 V14
C24	GND_47	GND_114 V16
C25	GND_48	GND_115 V17
C26	GND_49	GND_116 V19
C27	GND_50	GND_117 V21
C29	GND_51	GND_118 V27
C3	GND_52	GND_119 V7
C30	GND_53	GND_120 W13
C4	GND_54	GND_121 W15
C6	GND_55	GND_122 W18
C7	GND_56	GND_123 W20
C8	GND_57	GND_124 W23
C9	GND_58	GND_125 W9
D17	GND_59	GND_126 Y12
F18	GND_60	GND_127 Y14
F3	GND_61	GND_128 Y19
F30	GND_62	GND_129 Y21
F9	GND_63	GND_130 Y30
G15	GND_64	GND_131 Y4
G24	GND_65	GND_132 A2
G29	GND_66	GND_133 A10

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Title	13_DECOUPLING
Size A3	Document Number <Doc> Rev <RevCo
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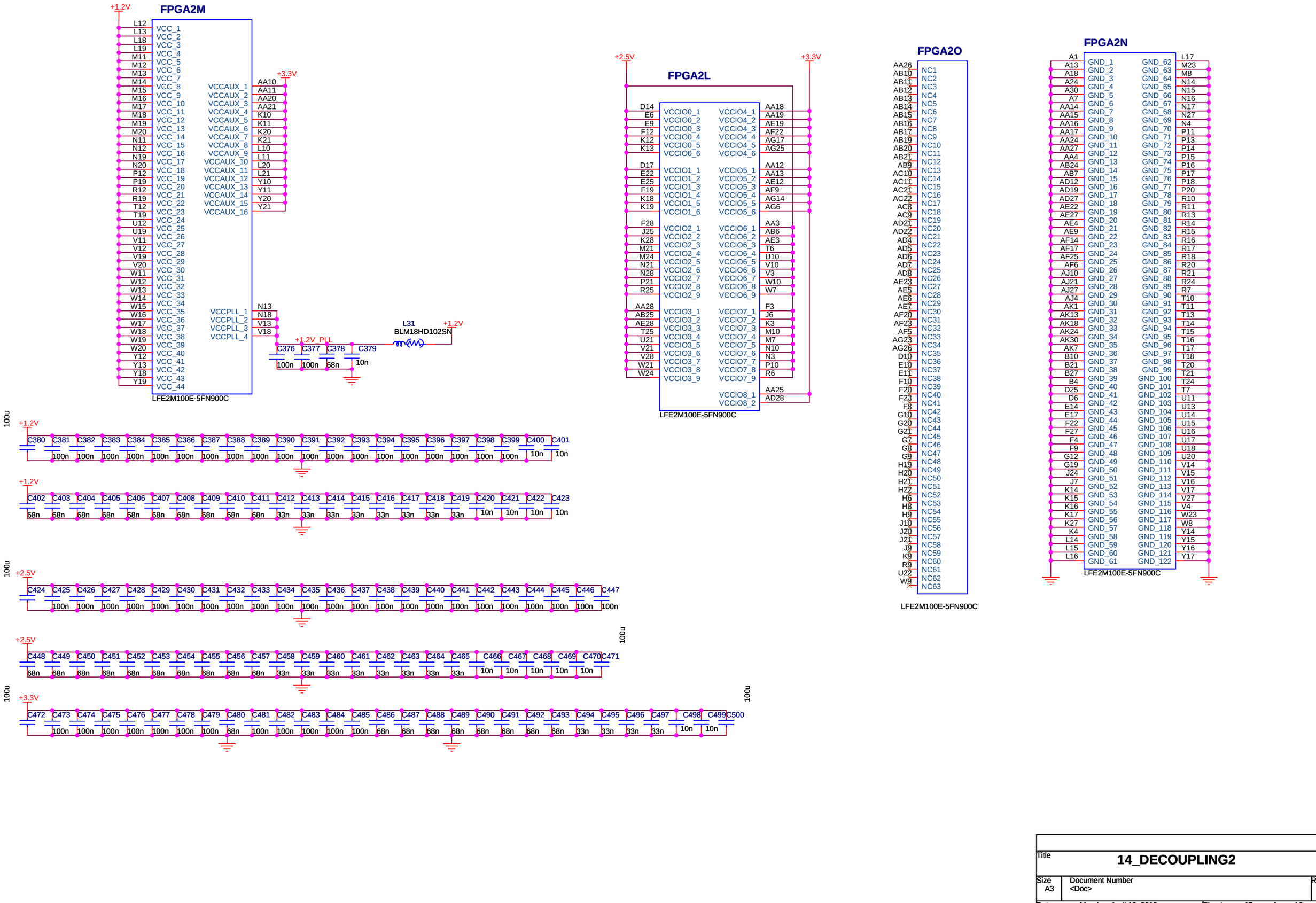

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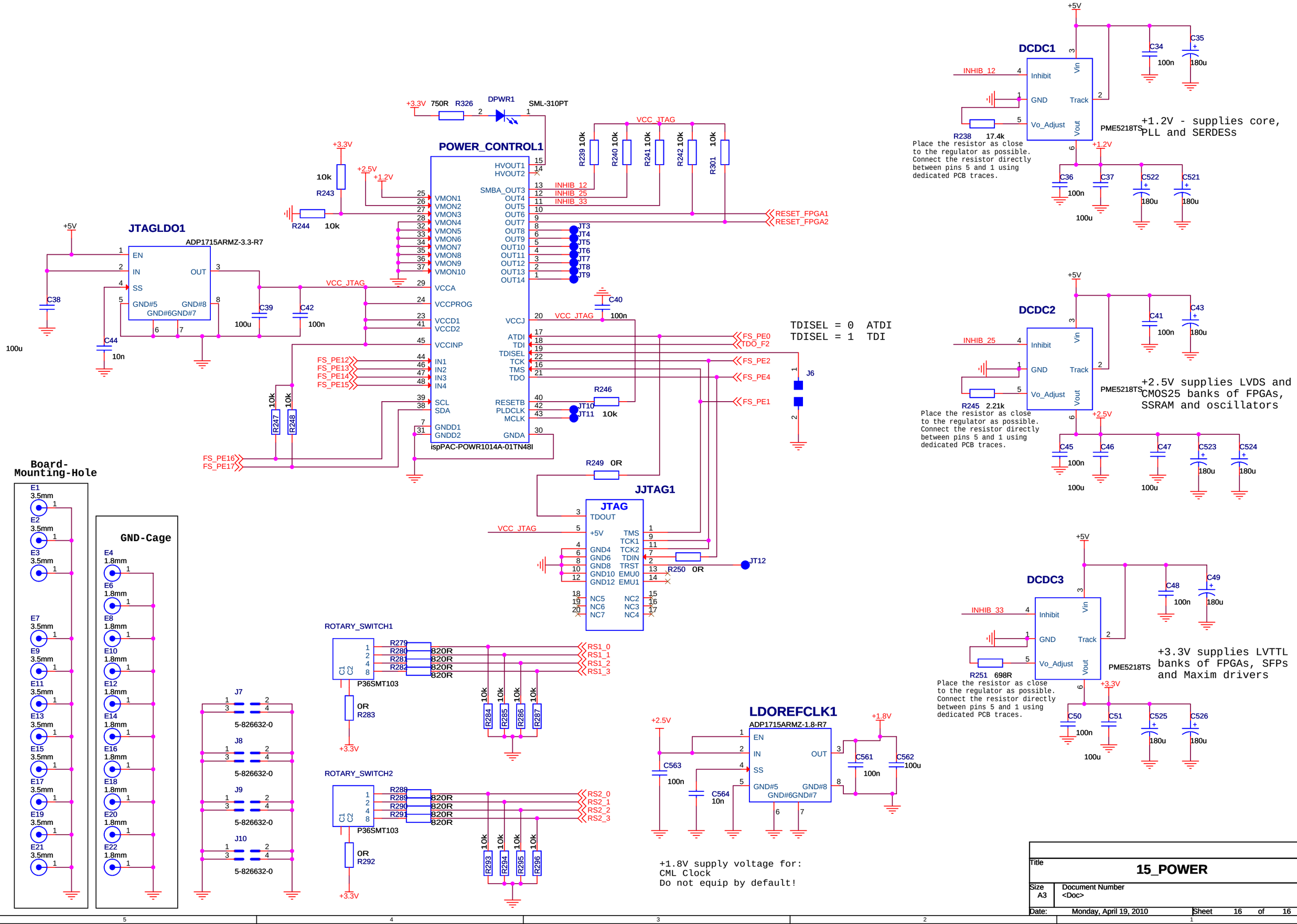
Size A3	Document Number <Doc>	Rev <RevCo
Date: Monday, April 19, 2010	Sheet 15 of 16	


POWER_CONTROL1
ispPAC-POWR1014A-01TN48I
DPWR1
SML-310PT
750R R326
JTAGLDO1
ADP1715ARMZ-3.3-R7
LDOREFCLK1
ADP1715ARMZ-1.8-R7
DCDC1
DCDC2
DCDC3
PME5218TS
JJTAG1
JTAG
ROTARY_SWITCH1
ROTARY_SWITCH2
P36SMT103
J6
J7
J8
J9
J10
5-826632-0
Board-Mounting-Hole
GND-Cage
TDISEL = 0 ATDI
TDISEL = 1 TDI
+1.2V - supplies core, PLL and SERDESs
Place the resistor as close to the regulator as possible. Connect the resistor directly between pins 5 and 1 using dedicated PCB traces.
+2.5V supplies LVDS and CMOS25 banks of FPGAs, SSRAM and oscillators
+3.3V supplies LVTTL banks of FPGAs, SFPs and Maxim drivers
+1.8V supply voltage for: CML Clock
Do not equip by default!
RESET_FPGA1
RESET_FPGA2
VCC_JTAG
INHIB_12
INHIB_25
INHIB_33
FS_PE0
FS_PE1
FS_PE2
FS_PE4
FS_PE12
FS_PE13
FS_PE14
FS_PE15
FS_PE16
FS_PE17
TDO_F2
Title
15_POWER
Size A3
Document Number <Doc>
Rev <RevCo
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