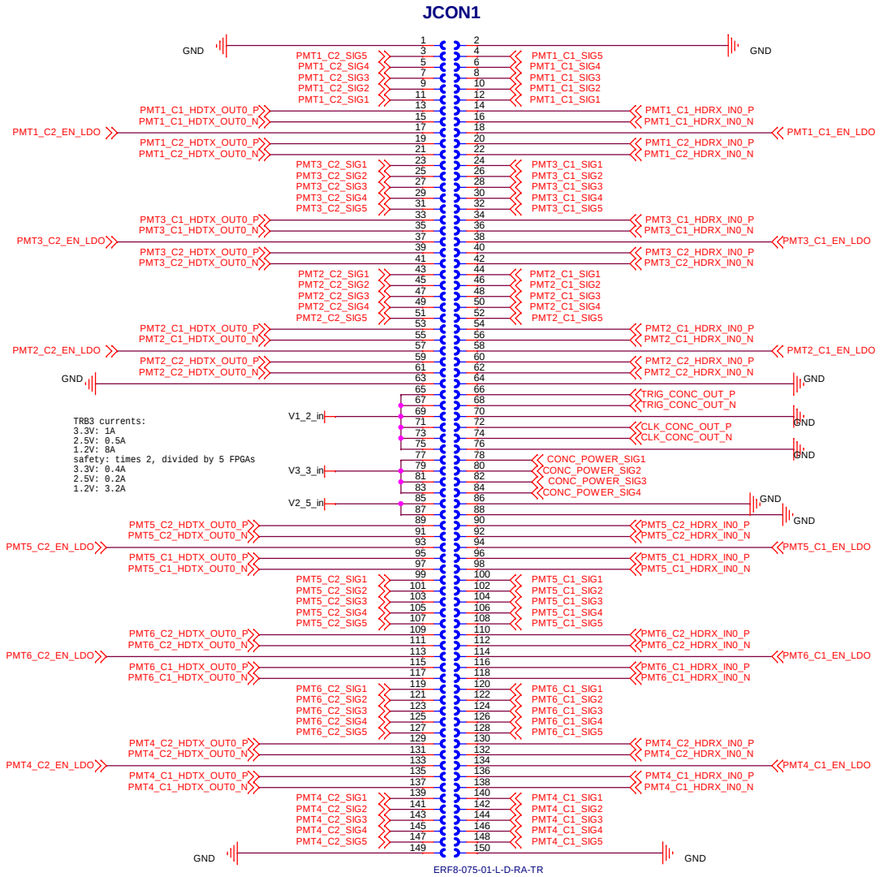

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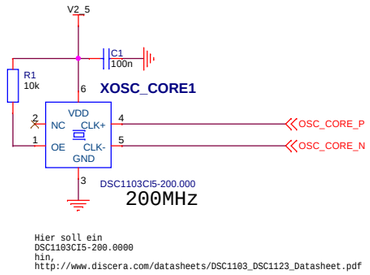
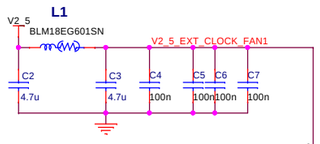
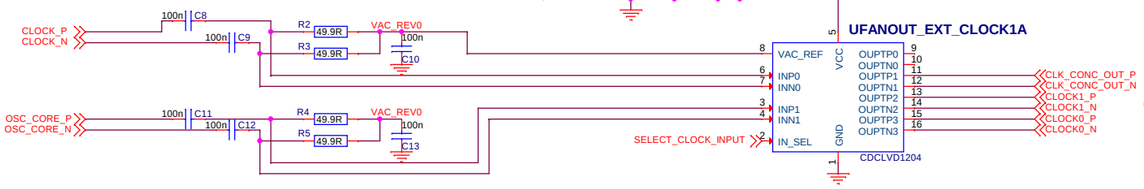
<Title>

Design: K:\GSI\JOB\COME_AND_KISS\DIRICH\DIRICH_CONCENTRATOR\DIRICH_CONCENTRATOR1\DIRICH_CONCE	
Modified: Monday, March 14, 2016	Size: A2 Page: 1 / 7
Designer: <Designer>	Layouter: <Layouter>

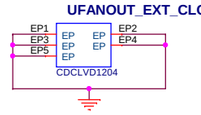


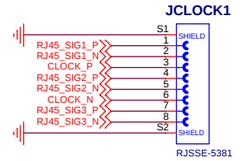
Hier soll ein
DSC1103CI5-200.0000
hin,
http://www.discera.com/datasheets/DSC1103_DSC1123_Datasheet.pdf

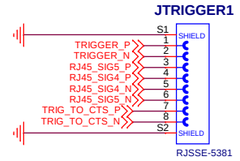




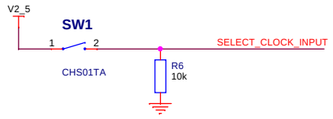
CLOCK to backplane

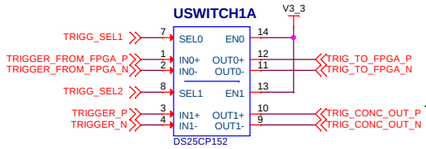




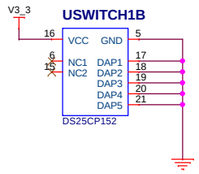


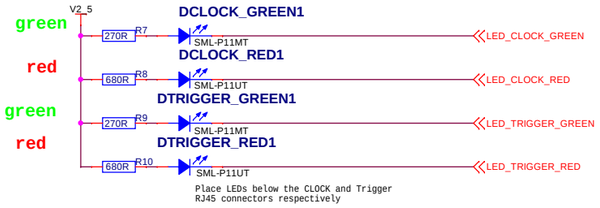
Mark Switch well on board!
Text:
CLOCK-SOURCE:
OPEN => from RJ45
CLOSED => from on board Oscillator





Trigger to backplane





Place LEDs below the CLOCK and Trigger
RJ45 connectors respectively

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<Title>

Design: K:\GSI\JOB\COME_AND_KISS\DIRICH\DIRICH_CONCENTRATOR\DIRICH_CONCENTRATOR1\DIRICH_CONCE	
Modified: Monday, March 14, 2016	Size: A2 Page: 2 / 7
Designer: <Designer>	Layouter: <Layouter>

Bank 0,8: 3.3V

UFPGA1F

PCLK

BANK1-1

PT92A_IO_1_T_TDQ97	A17
PT92B_IO_1_C_TDQ97	B17
PT94A_IO_1_PCLKT1_0_T_TDQ97	E19
PT94B_IO_1_PCLKC1_0_C_TDQ97	E20
PT95A_IO_1_T_TDQ97	A18
PT95B_IO_1_C_TDQ97	B18
PT97A_IO_1_T_TDQS97_P	J18
PT97B_IO_1_C_TDQS97_N	H18
PT98A_IO_1_T_TDQ97	D18
PT98B_IO_1_C_TDQ97	E18
PT100A_IO_1_T_TDQ97	G19
PT100B_IO_1_C_TDQ97	H19
PT101A_IO_1_T_TDQ106	A19
PT101B_IO_1_C_TDQ106	B19
PT103A_IO_1_T_TDQ106	K20
PT103B_IO_1_C_TDQ106	L19
PT104A_IO_1_T_TDQ106	C19
PT104B_IO_1_C_TDQ106	D19
PT106A_IO_1_T_TDQS106_P	J19
PT106B_IO_1_C_TDQS106_N	K19
PT107A_IO_1_T_TDQ106	A20
PT107B_IO_1_C_TDQ106	B20
PT109A_IO_1_T_TDQ106	G20
PT109B_IO_1_C_TDQ106	G21
PT113A_IO_1_T_TDQ115	C20
PT113B_IO_1_C_TDQ115	D20
PT115A_IO_1_T_TDQS115_P	F21
PT115B_IO_1_C_TDQS115_N	F22
PT116A_IO_1_T_TDQ115	A21
PT116B_IO_1_C_TDQ115	B21
PT118A_IO_1_T_TDQ115	F16
PT118B_IO_1_C_TDQ115	E16
PT119A_IO_1_T_TDQ124	D21
PT119B_IO_1_C_TDQ124	E21
PT121A_IO_1_T_TDQ124	H20
PT121B_IO_1_C_TDQ124	J20
PT122A_IO_1_T_TDQ124	A22
PT122B_IO_1_C_TDQ124	B22
PT124A_IO_1_T_TDQS124_P	J22
PT124B_IO_1_C_TDQS124_N	J23
PT125A_IO_1_T_TDQ124	C22
PT125B_IO_1_C_TDQ124	D22
PT127A_IO_1_T_TDQ124	J21
PT127B_IO_1_C_TDQ124	H22
PT128A_IO_1_T_TDQ133	A23
PT128B_IO_1_C_TDQ133	B23
PT130A_IO_1_T_TDQ133	E22
PT130B_IO_1_C_TDQ133	E23
PT131A_IO_1_T_TDQ133	C23
PT131B_IO_1_C_TDQ133	D23
PT133A_IO_1_T_TDQS133_P	K22
PT133B_IO_1_C_TDQS133_N	K21
PT134A_IO_1_T_TDQ133	A24
PT134B_IO_1_C_TDQ133	B24
PT136A_IO_1_T_TDQ133	G23
PT136B_IO_1_C_TDQ133	H23

LFE3-150EA-8FN1156C

UFPGA1G

BANK1-2

PT137A_IO_1_T_TDQ142	D24	LED_GREEN
PT137B_IO_1_C_TDQ142	E24	LED_ORANGE
PT139A_IO_1_T_TDQ142	K23	LED_RED
PT139B_IO_1_C_TDQ142	K24	LED_YELLOW
PT140A_IO_1_T_TDQ142	A25	
PT140B_IO_1_C_TDQ142	B25	
PT142A_IO_1_T_TDQS142_P	C28	
PT142B_IO_1_C_TDQS142_N	D28	
PT143A_IO_1_T_TDQ142	C25	LED_CLOCK_GREEN
PT143B_IO_1_C_TDQ142	D25	LED_CLOCK_RED
PT145A_IO_1_T_TDQ142	G26	LED_TRIGGER_GREEN
PT145B_IO_1_C_TDQ142	G25	LED_TRIGGER_RED
PT157A_IO_1_T_TDQ160	C26	LED_SFP_GREEN
PT157B_IO_1_C_TDQ160	D26	LED_SFP_RED
PT158A_IO_1_T_TDQ160	B27	
PT158B_IO_1_C_TDQ160	C27	
PT161A_IO_1_T_TDQ160	D27	
PT161B_IO_1_C_TDQ160	E27	
PT164A_IO_1_T_TDQ169	B28	
PT164B_IO_1_C_TDQ169	A28	
PT166A_IO_1_T_TDQ169	A26	
PT166B_IO_1_C_TDQ169	A27	
PT167A_IO_1_T_TDQ169	A29	
PT167B_IO_1_C_TDQ169	A30	
PT169A_IO_1_T_TDQS169_P	H26	
PT169B_IO_1_C_TDQS169_N	H25	
PT170A_IO_1_T_TDQ169	A31	
PT170B_IO_1_C_TDQ169	B31	
PT172A_IO_1_VREF1_1_T_TDQ169	C29	
PT172B_IO_1_VREF2_1_C_TDQ169	C30	

IO-BANK8

PT176A_IO_8_T	A32	
PT176B_IO_8_C	A33	
PT178A_IO_8_T	D30	
PT178B_IO_8_C	D29	
PT179A_IO_8_T	B32	
PT179B_IO_8_C	C32	
PT181A_IO_8_T	D31	
PT181B_IO_8_C	C31	PROGRAMN
PR5A_IO_8_T	D33	
PR5B_IO_8_DI/CSSPI0N/CSSPIN_C	D34	SPI_CS
PR7A_IO_8_CS1N/HOLDN/CONT2N_T	G30	
PR7B_IO_8_CSN/SN/CONT1N_C	F31	
PR8A_IO_8_DOUT/CSON/CSSPI1N_T	E34	SPI_CLK
PR8B_IO_8_MCLK_C	F34	
PR10A_IO_8_WRITEN_T	E31	
PR10B_IO_8_D0/SPIFASTN_C	E32	
PR11A_IO_8_D1_T	G34	
PR11B_IO_8_D2_C	H33	
PR13A_IO_8_D3/SI_T	G33	
PR13B_IO_8_D4/SO_C	G32	
PR14A_IO_8_D5_T	H34	
PR14B_IO_8_D6/SPID1_C	J34	
PR16A_IO_8_D7/SPID0_T	F32	SPI_OUT
PR16B_IO_8_BUSY/SISPI_C	F33	SPI_IN

LFE3-150EA-8FN1156C

Bank 0,8: 3.3V

Bank 3,6: 2.5V

UFPGA1L

IO-BANK6

PB2A_IO_6_T	AH7
PB2B_IO_6_C	AJ7
PB4A_IO_6_T	AE9
PB4B_IO_6_C	AD10
PB5A_IO_6_T	AK6
PB5B_IO_6_C	AL6
PB7A_IO_6_T	AF9
PB7B_IO_6_C	AG9
PB8A_IO_6_T	AK7
PB8B_IO_6_C	AL7
PB10A_IO_6_T	AK8
PB10B_IO_6_C	AL8
PB11A_IO_6_T	AM7
PB11B_IO_6_C	AM8
PB13A_IO_6_T	AH9
PB13B_IO_6_C	AJ8
PB14A_IO_6_T	AN7
PB14B_IO_6_C	AP7
PB16A_IO_6_T	AN8
PB16B_IO_6_C	AP8

LFE3-150EA-8FN1156C

UFPGA1R

IO-BANK3

PB167A_IO_3_T	AP28
PB167B_IO_3_C	AN28
PB169A_IO_3_T	AP27
PB169B_IO_3_C	AN27
PB170A_IO_3_T	AM27
PB170B_IO_3_C	AL27
PB172A_IO_3_T	AH26
PB172B_IO_3_C	AG26
PB173A_IO_3_T	AM28
PB173B_IO_3_C	AL28
PB175A_IO_3_T	AK27
PB175B_IO_3_C	AJ27
PB176A_IO_3_T	AK28
PB176B_IO_3_C	AJ28
PB178A_IO_3_T	AH27
PB178B_IO_3_C	AH28
PB179A_IO_3_T	AL29
PB179B_IO_3_C	AK29
PB181A_IO_3_T	AF28
PB181B_IO_3_C	AE28

LFE3-150EA-8FN1156C

V3_3 / C14 / R11 / TEMP_SENSOR1

100n C14 — R11 4.7k — TEMP_OWB

TEMP_SENSOR1

VDD	8	
NC1	2	
NC2	3	
NC3	5	
NC4	6	
NC5	7	
DQ	1	TEMP_OWB
GND	4	

DS18B20U+

ADC und Temperatursensor DS18B20
an weit auseinander liegenden, aber warmen
stellen positionieren,

V2_5 / DGREEN1 / DORANGE1 / DRED1 / DYELLOW1

R12 680R	DGREEN1	green	LED_GREEN
R13 1.8k	DORANGE1	orange	LED_ORANGE
R14 1.8k	DRED1	red	LED_RED
R17 1.8k	DYELLOW1	yellow	LED_YELLOW

SML-P11MT / SML-P11DT / SML-P11UT / SML-P11YT

adjust currents to equalize brightness

V3_3 / J1 / R24 / R25

J1 Jumper2P

R24 100R — R25 0R

SPI fast mode

UFLASH_MEMORY1

V3_3 / R20 10k / R21 10k / R22 10k / R23 10k / C20 100n

SPI_IN	5	SI	
SPI_CLK	6	SCLK	
SPI_CS	1	CS	
	3	WP	
	7	HOLD	
	8	Vcc	
SPI_OUT	2	SO	
	4	GND	

MX25L6405DZNI-12G

R26 10k — near FPGA

Bank 0,8: 3.3V

UFPGA1D

VREF

BANK0-1

PT2A_IO_0_T_TDQ7	C3	
PT2B_IO_0_C_TDQ7	C4	
PT4A_IO_0_VREF1_0_T_TDQ7	D3	
PT4B_IO_0_VREF2_0_C_TDQ7	C2	
PT5A_IO_0_T_TDQ7	B1	
PT5B_IO_0_C_TDQ7	B2	
PT7A_IO_0_T_TDQS7_P	E4	
PT7B_IO_0_C_TDQS7_N	D4	
PT8A_IO_0_T_TDQ7	B3	
PT8B_IO_0_C_TDQ7	A2	
PT10A_IO_0_T_TDQ7	D5	
PT10B_IO_0_C_TDQ7	C6	
PT11A_IO_0_T_TDQ16	B4	
PT11B_IO_0_C_TDQ16	A3	SFP_LOS
PT13A_IO_0_T_TDQ16	D6	SFP_TX_FAULT
PT13B_IO_0_C_TDQ16	C5	SFP_MOD0
PT14A_IO_0_T_TDQ16	A4	SFP_MOD1
PT14B_IO_0_C_TDQ16	A5	SFP_MOD2
PT16A_IO_0_T_TDQS16_P	B7	SFP_RATE_SEL
PT16B_IO_0_C_TDQS16_N	A7	SFP_TX_DIS
PT17A_IO_0_T_TDQ16	B6	
PT17B_IO_0_C_TDQ16	A6	
PT19A_IO_0_T_TDQ16	A8	
PT19B_IO_0_C_TDQ16	A9	
PT20A_IO_0_T_TDQ25	B8	
PT20B_IO_0_C_TDQ25	C8	TRIGG_SEL2
PT22A_IO_0_T_TDQ25	K11	TRIGG_SEL1
PT22B_IO_0_C_TDQ25	J11	
PT26A_IO_0_T_TDQ25	D9	
PT26B_IO_0_C_TDQ25	C9	
PT28A_IO_0_T_TDQ25	H11	POWER_GOOD12
PT28B_IO_0_C_TDQ25	H12	
PT38A_IO_0_T_TDQ43	A10	
PT38B_IO_0_C_TDQ43	B10	
PT40A_IO_0_T_TDQ43	J12	
PT40B_IO_0_C_TDQ43	K12	
PT41A_IO_0_T_TDQ43	C11	
PT41B_IO_0_C_TDQ43	D11	
PT43A_IO_0_T_TDQS43_P	G11	
PT43B_IO_0_C_TDQS43_N	G12	
PT44A_IO_0_T_TDQ43	A11	
PT44B_IO_0_C_TDQ43	B11	
PT46A_IO_0_T_TDQ43	K13	
PT46B_IO_0_C_TDQ43	J13	TEMP_OWB

LFE3-150EA-8FN1156C

UFPGA1E

BANK0-2

PT47A_IO_0_T_TDQ52	E11	
PT47B_IO_0_C_TDQ52	F12	
PT49A_IO_0_T_TDQ52	F10	
PT49B_IO_0_C_TDQ52	E10	
PT50A_IO_0_T_TDQ52	A12	TEST11
PT50B_IO_0_C_TDQ52	B12	TEST12
PT52A_IO_0_T_TDQS52_P	J14	
PT52B_IO_0_C_TDQS52_N	H13	
PT53A_IO_0_T_TDQ52	D12	
PT53B_IO_0_C_TDQ52	E12	
PT55A_IO_0_T_TDQ52	K14	
PT55B_IO_0_C_TDQ52	K15	
PT56A_IO_0_T_TDQ61	E13	
PT56B_IO_0_C_TDQ61	F13	
PT58A_IO_0_T_TDQ61	G13	
PT58B_IO_0_C_TDQ61	H14	
PT59A_IO_0_T_TDQ61	A13	
PT59B_IO_0_C_TDQ61	B13	
PT61A_IO_0_T_TDQS61_P	D10	TEST14
PT61B_IO_0_C_TDQS61_N	C10	TEST13
PT62A_IO_0_T_TDQ61	C13	
PT62B_IO_0_C_TDQ61	D13	
PT64A_IO_0_T_TDQ61	J15	
PT64B_IO_0_C_TDQ61	H15	
PT68A_IO_0_T_TDQ70	C14	TEST9
PT68B_IO_0_C_TDQ70	D14	TEST10
PT74A_IO_0_T_TDQ79	A14	
PT74B_IO_0_C_TDQ79	B14	
PT76A_IO_0_T_TDQ79	G16	
PT76B_IO_0_C_TDQ79	G17	
PT77A_IO_0_T_TDQ79	D15	
PT77B_IO_0_C_TDQ79	E15	
PT79A_IO_0_T_TDQS79_P	J16	
PT79B_IO_0_C_TDQS79_N	H16	
PT80A_IO_0_T_TDQ79	A15	TEST8
PT80B_IO_0_C_TDQ79	B15	TEST7
PT82A_IO_0_T_TDQ79	E17	
PT82B_IO_0_C_TDQ79	F18	
PT83A_IO_0_T_TDQ88	C16	
PT83B_IO_0_C_TDQ88	D16	
PT85A_IO_0_T_TDQ88	K16	
PT85B_IO_0_C_TDQ88	L16	
PT86A_IO_0_T_TDQ88	A16	TEST6
PT86B_IO_0_C_TDQ88	B16	TEST5
PT88A_IO_0_T_TDQS88_P	G18	
PT88B_IO_0_C_TDQS88_N	F19	
PT89A_IO_0_T_TDQ88	C17	TEST4
PT89B_IO_0_C_TDQ88	D17	TEST3
PT91A_IO_0_PCLKT0_0_T_TDQ88	J17	TEST1
PT91B_IO_0_PCLKC0_0_C_TDQ88	H17	TEST2

PCLK

LFE3-150EA-8FN1156C

V2_5 / V3_3_in / V2_5_in / V1_2_in / I_MON_1_2 / UADC1

R15 4.7k — R16 4.7k — R18 4.7k — R19 4.7k

C16 100n — C17 100n — C15 100n — C18 100n — C19 100n

AIN0	4	SCLK	1
AIN1	5	CS	2
AIN2	6	DOUT	9
AIN3	7	DIN	10
VDD		GND	3

ADS1018IRUGT

ADC_SCLK / ADC_CS / ADC_DOUT / ADC_DIN

ADC und Temperatursensor DS18B20
an weit auseinander liegenden, aber warmen
stellen positionieren,

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Modified: Monday, March 14, 2016	Size: A2 Page: 3 / 7
Designer: <Designer>	Layouter: <Layouter>

UFPGA1M

POWER1

LFE3-150EA-8FN1156C

UFPGA1O

GND1

LFE3-150EA-8FN1156C

UFPGA1P

GND2

LFE3-150EA-8FN1156C

UFPGA1Q

LFE3-150EA-8FN1156C

UFPGA1N

POWER2

LFE3-150EA-8FN1156C

leave floating

UFPGA1A

JTAG

LFE3-150EA-8FN1156C

Caps distributed evenly,
as close to device as possible

BLM41PG181SN1L
should be:
BLM41PG181SN1
(180Ohm, 0.020hm)

more caps, as signals are now single ended

BLM18HD102SN

JGND1

1002-161-080

Place JTAG connector close to the upper edge

JTAG1

sd-52892

RESET1

KMR223GCT-ND

RESET_OR1

SN74LVC1G57YZPR

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Planckstrasse 1
D-64291 Darmstadt
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<Title>

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Modified: Monday, March 14, 2016
Designer: <Designer>
Size: A2 Page: 4 / 7
Layouter: <Layouter>

BANK 6+7, 2+3: VIO=2.5V

left

UFPGA1S

IO-BANK6-1

PCLK

VREF

U2 PL62A_IO_6_T_LDQ67 → MT1_C1_SIG5
U1 PL62B_IO_6_C_LDQ67 → MT1_C2_SIG5
V9 PL64A_IO_6_PCLKT6_0_T_TLVDS_LDQ67
V8 PL64B_IO_6_PCLKC6_0_C_TLVDS_LDQ67
V2 PL65A_IO_6_T_LDQ67 → MT1_C1_SIG4
V1 PL65B_IO_6_C_TLVDS_LDQ67 → MT1_C2_SIG4
V6 PL67A_IO_6_T_LDQS67_P
W6 PL67B_IO_6_C_LDQS67_N
V4 PL68A_IO_6_T_LDQ67
V3 PL68B_IO_6_C_LDQ67
V7 PL70A_IO_6_VREF1_6_T_TLVDS_LDQ67
W7 PL70B_IO_6_VREF2_6_C_TLVDS_LDQ67
W2 PL71A_IO_6_T_LDQ76 → MT1_C1_SIG3
W1 PL71B_IO_6_C_LDQ76 → MT1_C2_SIG3
W5 PL73A_IO_6_T_TLVDS_LDQ76
W4 PL73B_IO_6_C_TLVDS_LDQ76
W3 PL74A_IO_6_T_TLVDS_LDQ76
W8 PL74B_IO_6_C_TLVDS_LDQ76
Y6 PL76A_IO_6_T_LDQS76_P
Y2 PL76B_IO_6_C_LDQS76_N
Y1 PL77A_IO_6_T_LDQ76 → MT1_C1_SIG2
Y8 PL77B_IO_6_C_LDQ76 → MT1_C2_SIG2
AA8 PL79A_IO_6_T_TLVDS_LDQ76
Y5 PL79B_IO_6_C_TLVDS_LDQ76
Y4 PL79E_A_I_6_LLM1_GPLLT_FB_A_T
Y9 PL79E_B_I_6_LLM1_GPLLT_FB_B_C
Y10 PL79E_C_I_6_LLM1_GPLLT_IN_A_T
Y7 PL79E_D_I_6_LLM1_GPLLT_IN_B_C
AA2 PL80A_IO_6_T_LDQ85 → MT1_C1_SIG1
AA1 PL80B_IO_6_C_LDQ85 → MT1_C2_SIG1
AA7 PL82A_IO_6_T_TLVDS_LDQ85
AA6 PL82B_IO_6_C_TLVDS_LDQ85
AA3 PL83A_IO_6_T_TLVDS_LDQ85 → ADC_SCLK
AA10 PL83B_IO_6_C_TLVDS_LDQ85 → ADC_CS
AB8 PL85A_IO_6_T_LDQS85_P
AB9 PL85B_IO_6_C_LDQS85_N
AB1 PL86A_IO_6_T_LDQ85 → MT3_C1_SIG1
AB2 PL86B_IO_6_C_LDQ85 → MT3_C2_SIG1
AB6 PL88A_IO_6_T_TLVDS_LDQ85
AB5 PL88B_IO_6_C_TLVDS_LDQ85
AB4 PL89A_IO_6_T_LDQ94 → ADC_DOUT
AB3 PL89B_IO_6_C_LDQ94 → ADC_DIN
AB7 PL91A_IO_6_T_TLVDS_LDQ94
AB10 PL91B_IO_6_C_TLVDS_LDQ94
AC3 PL92A_IO_6_T_TLVDS_LDQ94 → MT3_C1_SIG2
AC1 PL92B_IO_6_C_TLVDS_LDQ94 → MT3_C2_SIG2
AD6 PL94A_IO_6_T_LDQS94_P
AE6 PL94B_IO_6_C_LDQS94_N
AC2 PL95A_IO_6_T_LDQ94
AC4 PL95B_IO_6_C_LDQ94
AA9 PL97A_IO_6_T_TLVDS_LDQ94
AA8 PL97B_IO_6_C_TLVDS_LDQ94

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from trigger input

UFPGA1T

IO-BANK6-2

PL97E_A_I_6_LLM3_GPLLT_FB_A_T AD2 → MT3_C1_SIG3
PL97E_B_I_6_LLM3_GPLLT_FB_B_C AD1 → MT3_C2_SIG3
PL97E_C_I_6_LLM3_GPLLT_IN_A_T AC6
PL97E_D_I_6_LLM3_GPLLT_IN_B_C AC7
PL98A_IO_6_T_LDQ103 AD4
PL98B_IO_6_C_LDQ103 AD3
PL100A_IO_6_T_TLVDS_LDQ103 AB10
PL100B_IO_6_C_TLVDS_LDQ103 AC10
PL101A_IO_6_T_TLVDS_LDQ103 AE1 → MT3_C1_SIG4
PL101B_IO_6_C_TLVDS_LDQ103 AF1 → MT3_C2_SIG4
PL103A_IO_6_T_LDQS103_P AJ1 → MT3_C1_SIG5
PL103B_IO_6_C_LDQS103_N AK1 → MT3_C2_SIG5
PL104A_IO_6_T_LDQ103 AE4 → CONC_POWER_SIG2
PL104B_IO_6_C_LDQ103 AE3 → CONC_POWER_SIG1
PL106A_IO_6_T_TLVDS_LDQ103 AC9 → CONC_POWER_SIG4
PL106B_IO_6_C_TLVDS_LDQ103 AC8 → CONC_POWER_SIG3
PL106E_A_I_6_LLM4_GPLLT_FB_A_T AM1
PL106E_B_I_6_LLM4_GPLLT_FB_B_C AM2
PL106E_C_I_6_LLM4_GPLLT_IN_A_T AL1
PL106E_D_I_6_LLM4_GPLLT_IN_B_C AL2
PL107A_IO_6_T_LDQ112 AN1 → MT2_C1_SIG4
PL107B_IO_6_C_LDQ112 AN2 → MT2_C2_SIG4
PL109A_IO_6_T_TLVDS_LDQ112 AD8
PL109B_IO_6_C_TLVDS_LDQ112 AD9
PL110A_IO_6_T_TLVDS_LDQ112 AP1 → MT2_C1_SIG5
PL110B_IO_6_C_TLVDS_LDQ112 AP2 → MT2_C2_SIG5
PL112A_IO_6_T_LDQS112_P AJ3 → MT1_C1_EN_LDO
PL112B_IO_6_C_LDQS112_N AJ2 → MT1_C2_EN_LDO
PL113A_IO_6_T_LDQ112 AK3
PL113B_IO_6_C_LDQ112 AJ4
PL115A_IO_6_T_TLVDS_LDQ112 AK4 → MT2_C1_SIG1
PL115B_IO_6_C_TLVDS_LDQ112 AM3 → MT2_C2_SIG1
PL116A_IO_6_T_LDQ121 AM3 → MT2_C1_SIG3
PL116B_IO_6_C_LDQ121 AL5 → MT2_C2_SIG3
PL118A_IO_6_T_TLVDS_LDQ121 AJ6
PL118B_IO_6_C_TLVDS_LDQ121 AL6
PL119A_IO_6_T_TLVDS_LDQ121 AM5 → MT3_C1_EN_LDO
PL119B_IO_6_C_TLVDS_LDQ121 AM6 → MT3_C2_EN_LDO
PL121A_IO_6_T_LDQS121_P AN6
PL121B_IO_6_C_LDQS121_N AL7
PL122A_IO_6_T_LDQ121 AM4 → MT2_C1_SIG2
PL122B_IO_6_C_LDQ121 AP5 → MT2_C2_SIG2
PL124A_IO_6_T_TLVDS_LDQ121 AP6 → MT2_C1_EN_LDO
PL124B_IO_6_C_TLVDS_LDQ121 → MT2_C2_EN_LDO

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communication between concentrator and power board

left

UFPGA1U

IO-BANK7-1

PL2A_IO_7_T G4
PL2B_IO_7_C G5
PL5A_IO_7_T H5
PL5B_IO_7_C H4
PL8A_IO_7_T_LDQ13 F2 → TRIG_TO_FPGA_P
PL8B_IO_7_C_LDQ13 F1 → TRIG_TO_FPGA_N
PL10A_IO_7_T_TLVDS_LDQ13 F3 → TRIGGER_FROM_FPGA_P
PL10B_IO_7_C_TLVDS_LDQ13 E3 → TRIGGER_FROM_FPGA_N
PL11A_IO_7_T_TLVDS_LDQ13 G2 → RJ45_SIG3_P
PL11B_IO_7_C_TLVDS_LDQ13 G1 → RJ45_SIG3_N
PL13A_IO_7_T_LDQS13_P H3
PL13B_IO_7_C_LDQS13_N H1
PL14A_IO_7_T_LDQ13 J1
PL14B_IO_7_C_LDQ13 J3
PL16A_IO_7_T_TLVDS_LDQ13 H2 → RJ45_SIG2_P
PL16B_IO_7_C_TLVDS_LDQ13 → RJ45_SIG2_N
PL17A_IO_7_T_LDQ22 K4
PL17B_IO_7_C_LDQ22 K3
PL19A_IO_7_T_TLVDS_LDQ22 K7 → RJ45_SIG5_P
PL19B_IO_7_C_TLVDS_LDQ22 J6 → RJ45_SIG5_N
PL20A_IO_7_T_TLVDS_LDQ22 K2 → RJ45_SIG1_P
PL20B_IO_7_C_TLVDS_LDQ22 K1 → RJ45_SIG1_N
PL22A_IO_7_T_LDQS22_P L10
PL22B_IO_7_C_LDQS22_N L9
PL23A_IO_7_T_LDQ22 L2
PL23B_IO_7_C_LDQ22 L1
PL25A_IO_7_T_TLVDS_LDQ22 M8 → TRIG_TO_CTS_P
PL25B_IO_7_C_TLVDS_LDQ22 L7 → TRIG_TO_CTS_N
PL26A_IO_7_T_LDQ31 L5
PL26B_IO_7_C_LDQ31 L4
PL28A_IO_7_T_TLVDS_LDQ31 K6 → RJ45_SIG4_P
PL28B_IO_7_C_TLVDS_LDQ31 M4 → RJ45_SIG4_N
PL29A_IO_7_T_TLVDS_LDQ31 M3
PL29B_IO_7_C_TLVDS_LDQ31 N9
PL31A_IO_7_T_LDQS31_P M9
PL31B_IO_7_C_LDQS31_N M2
PL32A_IO_7_T_TLVDS_LDQ31 M1 → SELECT_CLOCK_INPUT
PL32B_IO_7_C_TLVDS_LDQ31 M7
PL34A_IO_7_T_TLVDS_LDQ31 L6
PL34B_IO_7_C_TLVDS_LDQ31

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to RJ45 back to CTS

UFPGA1V

IO-BANK7-2

PL35A_IO_7_T_LDQ40 N4
PL35B_IO_7_C_LDQ40 N3
PL37A_IO_7_T_TLVDS_LDQ40 N5
PL37B_IO_7_C_TLVDS_LDQ40 N2
PL38A_IO_7_T_TLVDS_LDQ40 N1
PL38B_IO_7_C_TLVDS_LDQ40 M10
PL40A_IO_7_T_LDQS40_P N10
PL40B_IO_7_C_LDQS40_N P5
PL41A_IO_7_T_LDQ40 P4
PL41B_IO_7_C_LDQ40 N8
PL43A_IO_7_T_TLVDS_LDQ40 P8
PL43B_IO_7_C_TLVDS_LDQ40
PL43E_A_I_7_LUM2_GPLLT_FB_A_T P2
PL43E_B_I_7_LUM2_GPLLT_FB_B_C N7
PL43E_C_I_7_LUM2_GPLLT_IN_A_T P1
PL43E_D_I_7_LUM2_GPLLT_IN_B_C N6
PL44A_IO_7_T_LDQ49 R7
PL44B_IO_7_C_LDQ49 P9
PL46A_IO_7_T_TLVDS_LDQ49 P10
PL46B_IO_7_C_TLVDS_LDQ49 R2
PL47A_IO_7_T_TLVDS_LDQ49 R1
PL47B_IO_7_C_TLVDS_LDQ49 P7
PL49A_IO_7_T_LDQS49_P P6
PL49B_IO_7_C_LDQS49_N R4
PL50A_IO_7_T_LDQ49 R3
PL50B_IO_7_C_LDQ49 R5
PL52A_IO_7_VREF1_7_T_TLVDS_LDQ49 R10
PL52B_IO_7_VREF2_7_C_TLVDS_LDQ49
PL53A_IO_7_T_LDQ58 T6
PL53B_IO_7_C_LDQ58 T5
PL55A_IO_7_LUM0_GDLLT_IN_A_T_TLVDS_LDQ58 R8
PL55B_IO_7_LUM0_GDLLT_IN_B_C_TLVDS_LDQ58 T7
PL56A_IO_7_LUM0_GDLLT_FB_A_T_TLVDS_LDQ58 T4
PL56B_IO_7_LUM0_GDLLT_FB_B_C_TLVDS_LDQ58 T3
PL58A_IO_7_T_LDQS58_P T9
PL58B_IO_7_C_LDQS58_N T8
PL59A_IO_7_T_LDQ58 T2
PL59B_IO_7_C_LDQ58 T1
PL61A_IO_7_PCLKT7_0_T_TLVDS_LDQ58 U9 → CLOCK0_P
PL61B_IO_7_PCLKC7_0_C_TLVDS_LDQ58 U8 → CLOCK0_N
PL61E_A_I_7_LUM0_GPLLT_FB_A_T U5
PL61E_B_I_7_LUM0_GPLLT_FB_B_C U4
PL61E_C_I_7_LUM0_GPLLT_IN_A_T U6 → CLOCK1_P
PL61E_D_I_7_LUM0_GPLLT_IN_B_C U7 → CLOCK1_N

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PCLK

from clock fanout to primary clock

from clock fanout to PLL

VREF

right

UFPGA1H

IO-BANK2-1

PR17A_IO_2_T_RDQ22 K34 TEST_LINE14
PR17B_IO_2_C_RDQ22 K33 TEST_LINE15
PR19A_IO_2_T_TLVDS_RDQ22 L26 TEST_LINE2
PR19B_IO_2_C_TLVDS_RDQ22 M25 TEST_LINE1
PR20A_IO_2_T_TLVDS_RDQ22 L32 TEST_LINE10
PR20B_IO_2_C_TLVDS_RDQ22 L31 TEST_LINE16
PR22A_IO_2_T_RDQS22_P M26 TEST_LINE0
PR22B_IO_2_C_RDQS22_N M27 TEST_LINE3
PR23A_IO_2_T_RDQ22 L34 TEST_LINE12
PR23B_IO_2_C_RDQ22 L33 TEST_LINE17
PR25A_IO_2_T_TLVDS_RDQ22 K29 TEST_LINE5
PR25B_IO_2_C_TLVDS_RDQ22 K30 TEST_LINE7
PR26A_IO_2_T_RDQ31 M31 TEST_LINE8
PR26B_IO_2_C_RDQ31 M30 TEST_LINE9
PR28A_IO_2_T_TLVDS_RDQ31 L28 TEST_LINE4
PR28B_IO_2_C_TLVDS_RDQ31 M28 TEST_LINE13
PR29A_IO_2_T_TLVDS_RDQ31 M34 TEST_LINE11
PR29B_IO_2_C_TLVDS_RDQ31 M33 TEST_LINE18
PR32A_IO_2_T_RDQ31 K31
PR32B_IO_2_C_RDQ31 M29
PR34A_IO_2_T_TLVDS_RDQ31 L30
PR34B_IO_2_C_TLVDS_RDQ31
PR35A_IO_2_T_RDQ40 N30
PR35B_IO_2_C_RDQ40 N29
PR37A_IO_2_T_TLVDS_RDQ40 N26
PR37B_IO_2_C_TLVDS_RDQ40 P29
PR38A_IO_2_T_TLVDS_RDQ40 N32
PR38B_IO_2_C_TLVDS_RDQ40 N31
PR40A_IO_2_T_RDQS40_P N27
PR40B_IO_2_C_RDQS40_N N28
PR41A_IO_2_T_RDQ40 N34
PR41B_IO_2_C_RDQ40 N33
PR43A_IO_2_T_TLVDS_RDQ40 P28
PR43B_IO_2_C_TLVDS_RDQ40 P27
PR43E_A_I_2_RUM2_GPLLT_FB_A_T_RDQ40 P33
PR43E_B_I_2_RUM2_GPLLT_FB_B_C_RDQ40 P32
PR43E_C_I_2_RUM2_GPLLT_IN_A_T_RDQ40 R29
PR43E_D_I_2_RUM2_GPLLT_IN_B_C_RDQ40

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UFPGA1I

IO-BANK2-2

PR44A_IO_2_T_RDQ49 P34
PR44B_IO_2_C_RDQ49 P33
PR46A_IO_2_T_TLVDS_RDQ49 R27
PR46B_IO_2_C_TLVDS_RDQ49 R31
PR47A_IO_2_T_TLVDS_RDQ49 R30
PR47B_IO_2_C_TLVDS_RDQ49 R26
PR49A_IO_2_T_RDQS49_P R25
PR49B_IO_2_C_RDQS49_N R34
PR50A_IO_2_T_RDQ49 R33
PR50B_IO_2_C_RDQ49 T29
PR52A_IO_2_VREF1_2_T_TLVDS_RDQ49 T28
PR52B_IO_2_VREF2_2_C_TLVDS_RDQ49
PR53A_IO_2_T_RDQS58 T32
PR53B_IO_2_C_RDQS58 T31
PR55A_IO_2_RUM0_GDLLT_IN_A_T_TLVDS_RDQS58 T26
PR55B_IO_2_RUM0_GDLLT_IN_B_C_TLVDS_RDQS58 T27
PR56A_IO_2_RUM0_GDLLT_FB_A_T_TLVDS_RDQS58 T34
PR56B_IO_2_RUM0_GDLLT_FB_B_C_TLVDS_RDQS58 T33
PR58A_IO_2_T_RDQS58 T30
PR58B_IO_2_C_RDQS58 U30
PR59A_IO_2_T_RDQ58 U32
PR59B_IO_2_C_RDQ58 U31
PR61A_IO_2_PCLKT2_0_T_TLVDS_RDQS58 U26
PR61B_IO_2_PCLKC2_0_C_TLVDS_RDQS58 U27
PR61E_A_I_2_RUM0_GPLLT_FB_A_T_RDQS58 U34
PR61E_B_I_2_RUM0_GPLLT_FB_B_C_RDQS58 V34
PR61E_C_I_2_RUM0_GPLLT_IN_A_T_RDQS58 V33
PR61E_D_I_2_RUM0_GPLLT_IN_B_C_RDQS58

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PCLK

right

UFPGA1J

IO-BANK3-1

PCLK

VREF

PR62A_IO_3_T_RDQ67 V31 → MT4_C1_SIG5
PR62B_IO_3_C_RDQ67 V30 → MT4_C2_SIG5
PR64A_IO_3_PCLKT3_0_T_TLVDS_RDQ67 U28
PR64B_IO_3_PCLKC3_0_C_TLVDS_RDQ67 V28
PR65A_IO_3_T_TLVDS_RDQ67 W34 → MT4_C1_SIG4
PR65B_IO_3_C_TLVDS_RDQ67 W33 → MT4_C2_SIG4
PR67A_IO_3_T_RDQS67_P V27
PR67B_IO_3_C_RDQS67_N V26
PR68A_IO_3_T_RDQ67 W32
PR68B_IO_3_C_RDQ67 V29
PR70A_IO_3_VREF1_3_T_TLVDS_RDQ67 W28
PR70B_IO_3_VREF2_3_C_TLVDS_RDQ67
PR71A_IO_3_T_RDQ76 W30
PR71B_IO_3_C_RDQ76 W29
PR73A_IO_3_T_TLVDS_RDQ76 W27
PR73B_IO_3_C_TLVDS_RDQ76 Y34 → MT4_C1_SIG3
PR74A_IO_3_T_TLVDS_RDQ76 Y33 → MT4_C2_SIG3
PR74B_IO_3_C_TLVDS_RDQ76 Y30
PR76A_IO_3_T_RDQS76_P AA28
PR76B_IO_3_C_RDQS76_N Y32
PR77A_IO_3_T_RDQ76 Y31
PR77B_IO_3_C_RDQ76 Y29
PR79A_IO_3_T_TLVDS_RDQ76 Y25
PR79B_IO_3_C_TLVDS_RDQ76
PR79E_A_I_3_RLM1_GPLLT_FB_A_T_RDQ76 AA34
PR79E_B_I_3_RLM1_GPLLT_FB_B_C_RDQ76 Y35
PR79E_C_I_3_RLM1_GPLLT_IN_A_T_RDQ76 Y28
PR79E_D_I_3_RLM1_GPLLT_IN_B_C_RDQ76 Y27
PR80A_IO_3_T_RDQ85 AB34 → MT4_C1_SIG1
PR80B_IO_3_C_RDQ85 AB33 → MT4_C2_SIG1
PR82A_IO_3_T_TLVDS_RDQ85 AA29
PR82B_IO_3_C_TLVDS_RDQ85 AA30
PR83A_IO_3_T_TLVDS_RDQ85 AA31 → MT4_C1_SIG2
PR83B_IO_3_C_TLVDS_RDQ85 AA32 → MT4_C2_SIG2
PR85A_IO_3_T_RDQS85_P AC30
PR85B_IO_3_C_RDQS85_N AC31
PR86A_IO_3_T_RDQ85 AC33 → MT6_C1_SIG5
PR86B_IO_3_C_RDQ85 AC32 → MT6_C2_SIG5
PR88A_IO_3_T_TLVDS_RDQ85 AA27
PR88B_IO_3_C_TLVDS_RDQ85
PR89A_IO_3_T_RDQ94 AB32
PR89B_IO_3_C_RDQ94 AB31
PR91A_IO_3_T_TLVDS_RDQ94 AD30
PR91B_IO_3_C_TLVDS_RDQ94 AE34
PR92A_IO_3_T_TLVDS_RDQ94 AE33 → MT6_C1_SIG4
PR92B_IO_3_C_TLVDS_RDQ94 AE32 → MT6_C2_SIG4
PR94A_IO_3_T_RDQS94_P AB29
PR94B_IO_3_C_RDQS94_N AC34
PR95A_IO_3_T_RDQ94 AG34 → MT6_C1_SIG3
PR95B_IO_3_C_RDQ94 AG33 → MT6_C2_SIG3
PR97A_IO_3_T_TLVDS_RDQ94 AD32
PR97B_IO_3_C_TLVDS_RDQ94
PR97E_A_I_3_RLM3_GPLLT_FB_A_T_RDQ94 AC37
PR97E_B_I_3_RLM3_GPLLT_FB_B_C_RDQ94 AC35
PR97E_C_I_3_RLM3_GPLLT_IN_A_T_RDQ94 AB28
PR97E_D_I_3_RLM3_GPLLT_IN_B_C_RDQ94

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UFPGA1K

IO-BANK3-2

PR98A_IO_3_T_RDQ103 AE37
PR98B_IO_3_C_RDQ103 AE31
PR100A_IO_3_T_TLVDS_RDQ103 AC29
PR100B_IO_3_C_TLVDS_RDQ103 AB37
PR101A_IO_3_T_TLVDS_RDQ103 AE35 → MT4_C1_EN_LDO
PR101B_IO_3_C_TLVDS_RDQ103 AC28 → MT4_C2_EN_LDO
PR103A_IO_3_T_RDQS103_P AC27
PR103B_IO_3_C_RDQS103_N AF37
PR104A_IO_3_T_RDQ103 AF31 → MT6_C1_SIG2
PR104B_IO_3_C_RDQ103 AD29 → MT6_C2_SIG2
PR106A_IO_3_T_TLVDS_RDQ103 AD27
PR106B_IO_3_C_TLVDS_RDQ103 AD26
PR106E_A_I_3_RLM4_GPLLT_FB_A_T_RDQ103 AM34
PR106E_B_I_3_RLM4_GPLLT_FB_B_C_RDQ103 AJ35
PR106E_C_I_3_RLM4_GPLLT_IN_A_T_RDQ103 AK34
PR106E_D_I_3_RLM4_GPLLT_IN_B_C_RDQ103 AJ34
PR107A_IO_3_T_RDQ112 AN33 → MT5_C1_SIG2
PR107B_IO_3_C_RDQ112 AH31 → MT5_C2_SIG2
PR109A_IO_3_T_TLVDS_RDQ112 AJ33 → MT5_C1_SIG1
PR109B_IO_3_C_TLVDS_RDQ112 AP33 → MT5_C2_SIG1
PR110A_IO_3_T_TLVDS_RDQ112 AP32 → MT5_C1_SIG3
PR110B_IO_3_C_TLVDS_RDQ112 AL34 → MT5_C2_SIG3
PR112A_IO_3_T_RDQS112_P AL33 → MT5_C1_SIG4
PR112B_IO_3_C_RDQS112_N AL32 → MT5_C2_SIG4
PR113A_IO_3_T_RDQ112 AK32 → MT5_C1_SIG5
PR113B_IO_3_C_RDQ112 AJ31 → MT5_C2_SIG5
PR115A_IO_3_T_TLVDS_RDQ112 AK31 → MT5_C1_EN_LDO
PR115B_IO_3_C_TLVDS_RDQ112 → MT5_C2_EN_LDO
PR116A_IO_3_T_RDQ121 AN32
PR116B_IO_3_C_RDQ121 AM33 → MT5_C1_SIG3
PR118A_IO_3_T_TLVDS_RDQ121 AL30 → MT5_C2_SIG3
PR118B_IO_3_C_TLVDS_RDQ121 AM30
PR119A_IO_3_T_TLVDS_RDQ121 AP31
PR119B_IO_3_C_TLVDS_RDQ121 AN31 → MT5_C1_EN_LDO
PR121A_IO_3_T_RDQS121_P AP29 → MT5_C2_EN_LDO
PR121B_IO_3_C_RDQS121_N AL31
PR122A_IO_3_T_RDQ121 AM32
PR122B_IO_3_C_RDQ121 AN28
PR124A_IO_3_T_TLVDS_RDQ121 AN29
PR124B_IO_3_C_TLVDS_RDQ121

LFE3-150EA-8FN1156C

@PETER:
CLOCK and TRIGGER:
100Ohm differential

Der Rest:
single ended,
keine Impedanzanforderung

Alle PMT*_SIG* sowie *EN_LDO
können überall an 2.5V Bänke
(aber nicht an P[LR]???E_*)
angeschlossen werden.

JTEST1

TEST_LINE0 1
TEST_LINE1 2
TEST_LINE2 3
TEST_LINE3 4
TEST_LINE4 5
TEST_LINE5 6
TEST_LINE6 7
TEST_LINE7 8
TEST_LINE8 9
TEST_LINE9 10
TEST_LINE10 11
TEST_LINE11 12
TEST_LINE12 13
TEST_LINE13 14
TEST_LINE14 15
TEST_LINE15 16
TEST_LINE16 17
TEST_LINE17 18
19
20

V3_3

sd-52892

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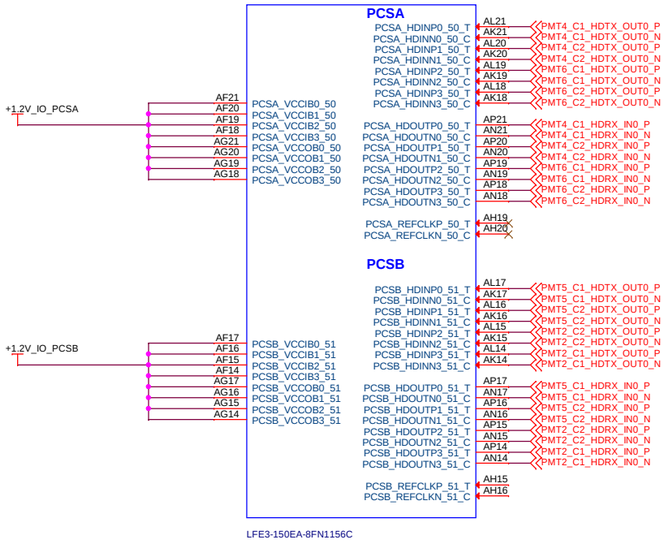
<Title>	
Design: KXGSXDRCOMP_AND_KISSDRICHDRICH_CONCENTRATORDRICH_CONCENTRATORSDRICH_CONCENTRATOR	
Modified: Monday, March 14, 2016	Size: A1 Page: 5 / 7
Designer: <Designer>	Layouter: <Layouter>

UFPGA1B



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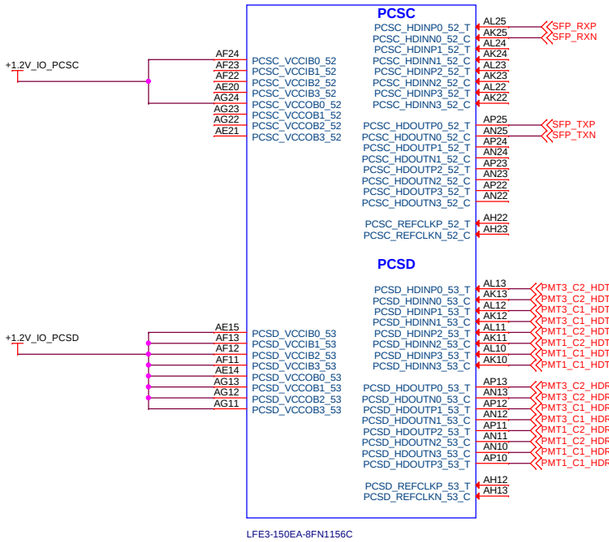

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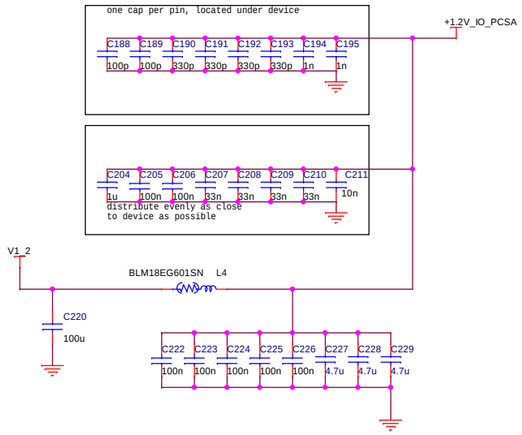
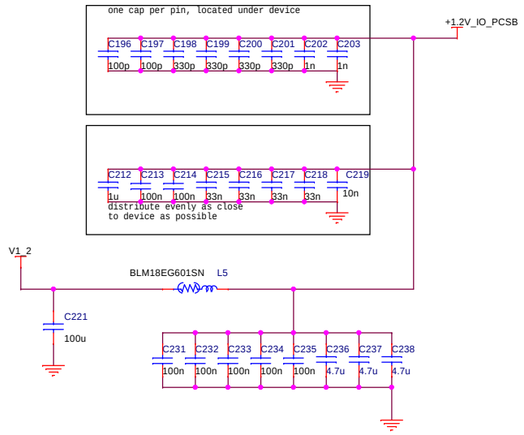
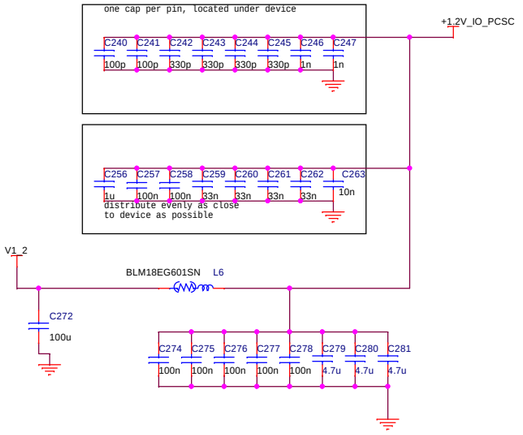
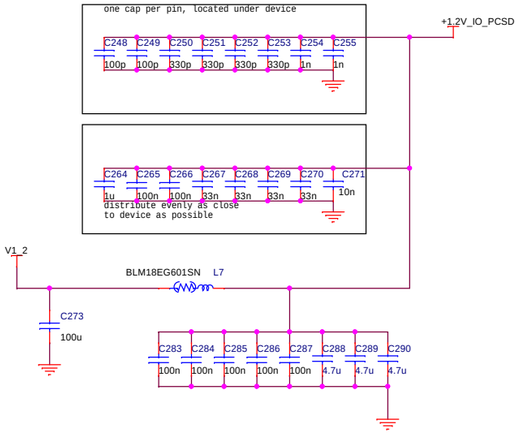
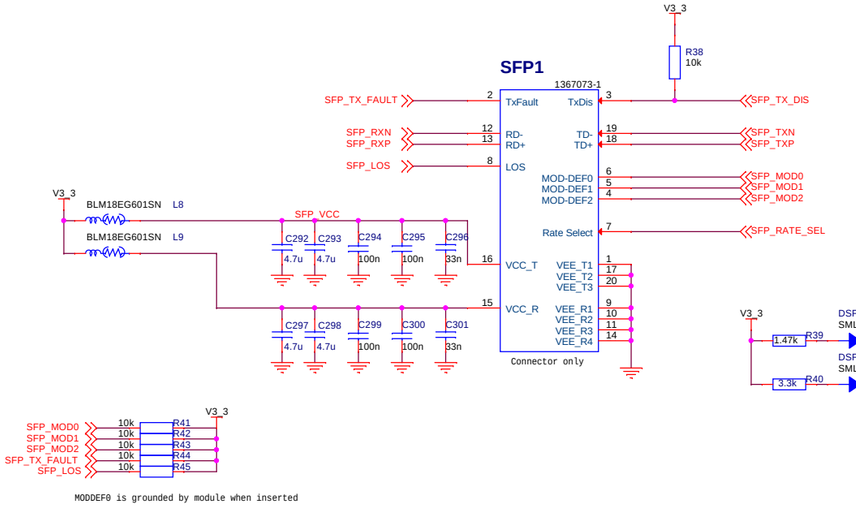


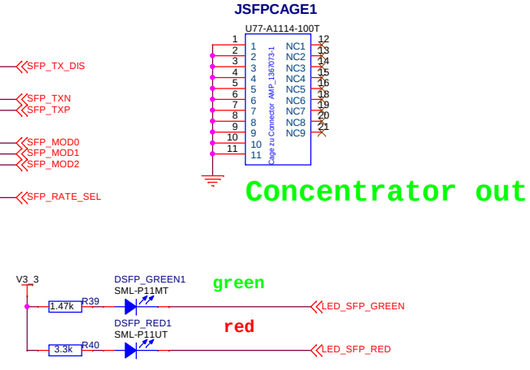








MODDEF0 is grounded by module when inserted



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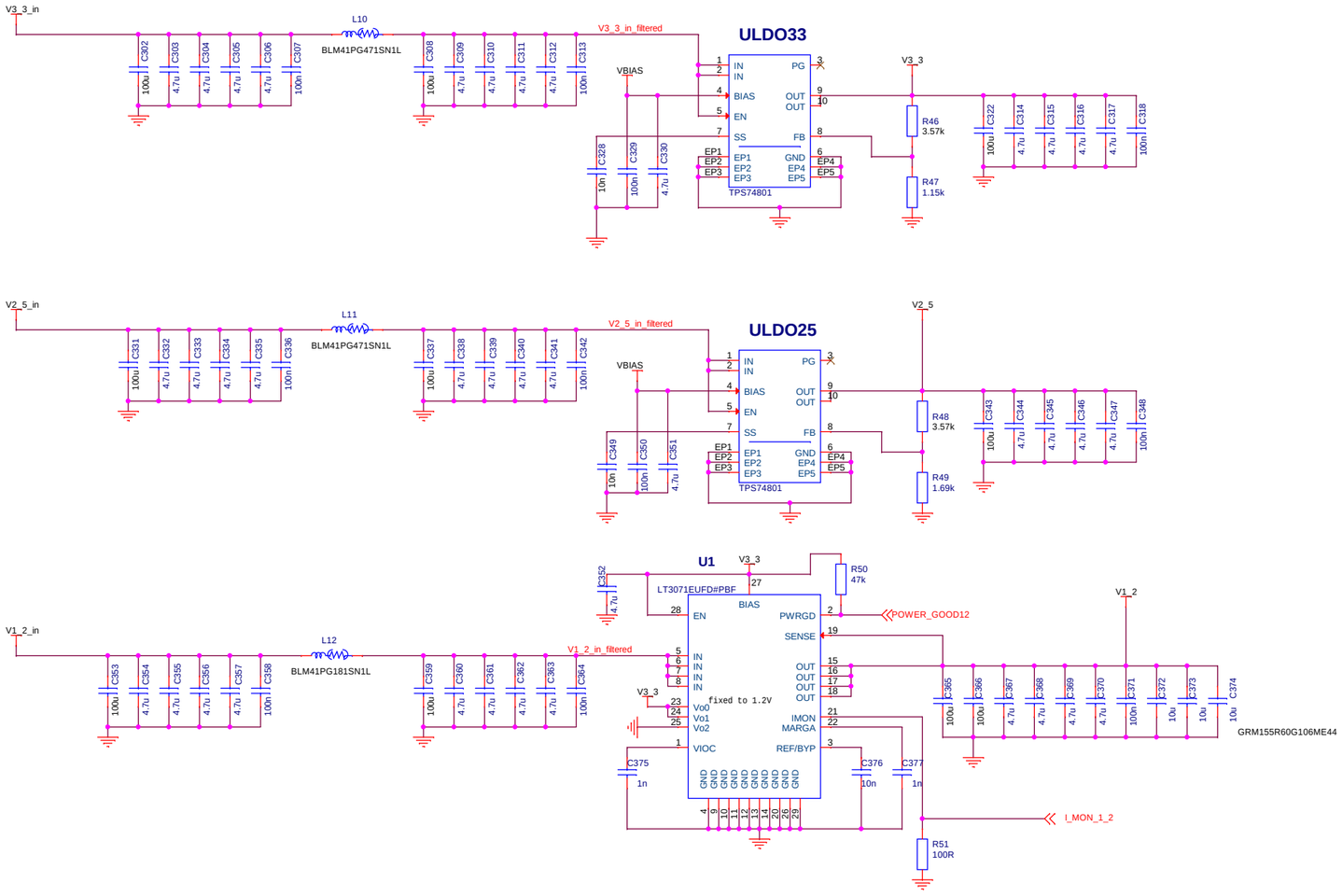

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