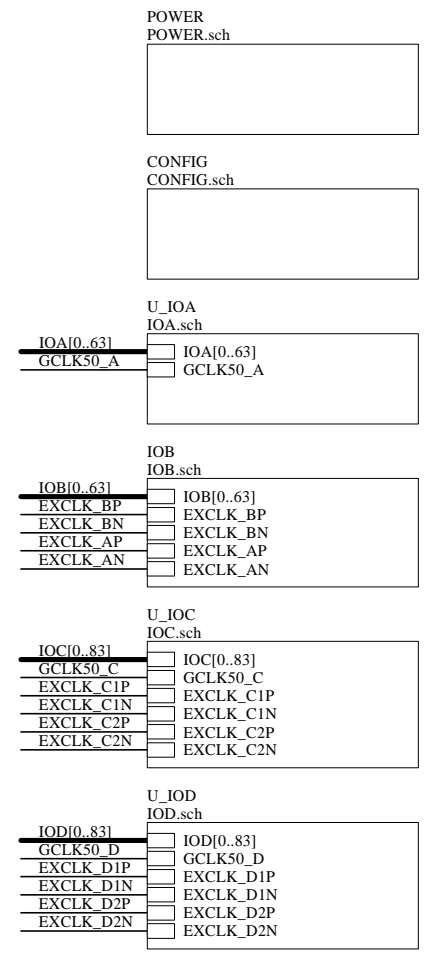
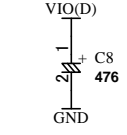
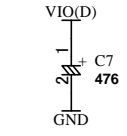
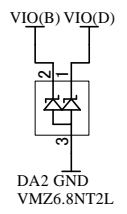
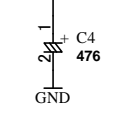
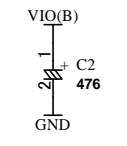


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IOA1	IOA33	IOB1	IOB33
IOA2	IOA34	IOB2	IOB34
IOA3	IOA35	IOB3	IOB35
IOA4	IOA36	IOB4	IOB36
IOA5	IOA37	IOB5	IOB37
IOA6	IOA38	IOB6	IOB38
IOA7	IOA39	IOB7	IOB39
IOA8	IOA40	IOB8	IOB40
IOA9	IOA41	IOB9	IOB41
IOA10	IOA42	IOB10	IOB42
IOA11	IOA43	IOB11	IOB43
IOA12	IOA44	IOB12	IOB44
IOA13	IOA45	IOB13	IOB45
IOA14	IOA46	IOB14	IOB46
IOA15	IOA47	IOB15	IOB47
IOA16	IOA48	IOB16	IOB48
IOA17	IOA49	IOB17	IOB49
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IOA19	IOA51	IOB19	IOB51
IOA20	IOA52	IOB20	IOB52
IOA21	IOA53	IOB21	IOB53
IOA22	IOA54	IOB22	IOB54
IOA23	IOA55	IOB23	IOB55
IOA24	IOA56	IOB24	IOB56
IOA25	IOA57	IOB25	IOB57
IOA26	IOA58	IOB26	IOB58
IOA27	IOA59	IOB27	IOB59
IOA28	IOA60	IOB28	IOB60
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IOA31	IOA63	IOB31	IOB63

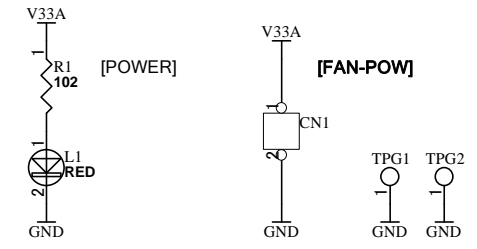
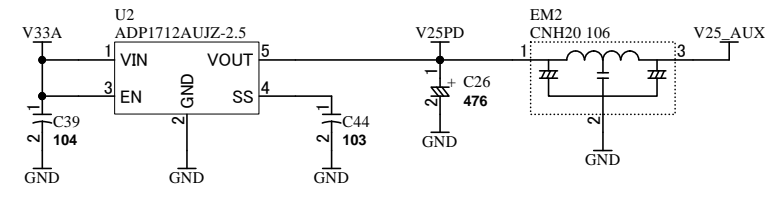
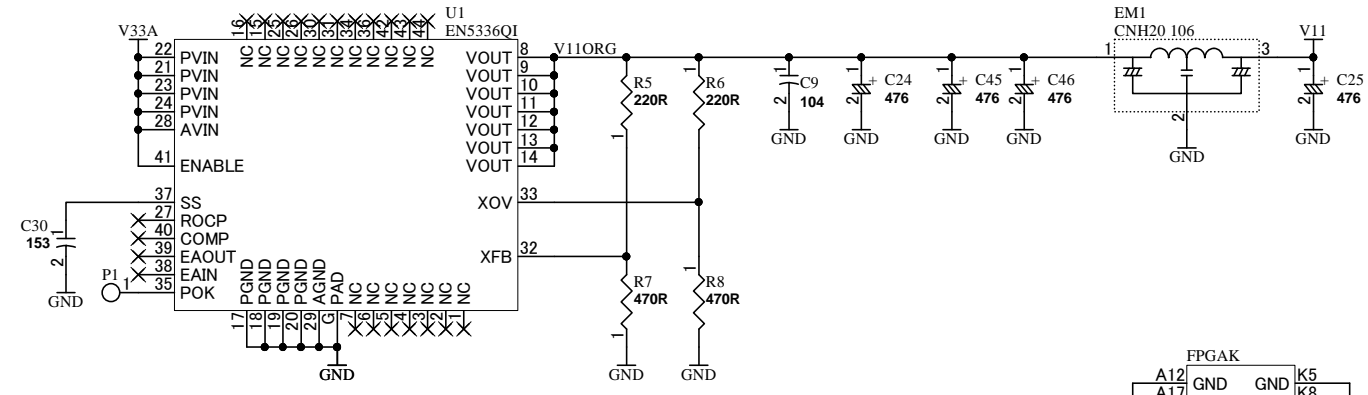
CNA		CNB	
IO	IO	IO	IO
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IOA1	IOA33	IOB1	IOB33
IOA2	IOA34	IOB2	IOB34
IOA3	IOA35	IOB3	IOB35
IOA4	IOA36	IOB4	IOB36
IOA5	IOA37	IOB5	IOB37
IOA6	IOA38	IOB6	IOB38
IOA7	IOA39	IOB7	IOB39
IOA8	IOA40	IOB8	IOB40
IOA9	IOA41	IOB9	IOB41
IOA10	IOA42	IOB10	IOB42
IOA11	IOA43	IOB11	IOB43
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IOA15	IOA47	IOB15	IOB47
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IOA17	IOA49	IOB17	IOB49
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IOA19	IOA51	IOB19	IOB51
IOA20	IOA52	IOB20	IOB52
IOA21	IOA53	IOB21	IOB53
IOA22	IOA54	IOB22	IOB54
IOA23	IOA55	IOB23	IOB55
IOA24	IOA56	IOB24	IOB56
IOA25	IOA57	IOB25	IOB57
IOA26	IOA58	IOB26	IOB58
IOA27	IOA59	IOB27	IOB59
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IOA29	IOA61	IOB29	IOB61
IOA30	IOA62	IOB30	IOB62
IOA31	IOA63	IOB31	IOB63

CNA		CNB	
IO	IO	IO	IO
IOA0	IOA32	IOB0	IOB32
IOA1	IOA33	IOB1	IOB33
IOA2	IOA34	IOB2	IOB34
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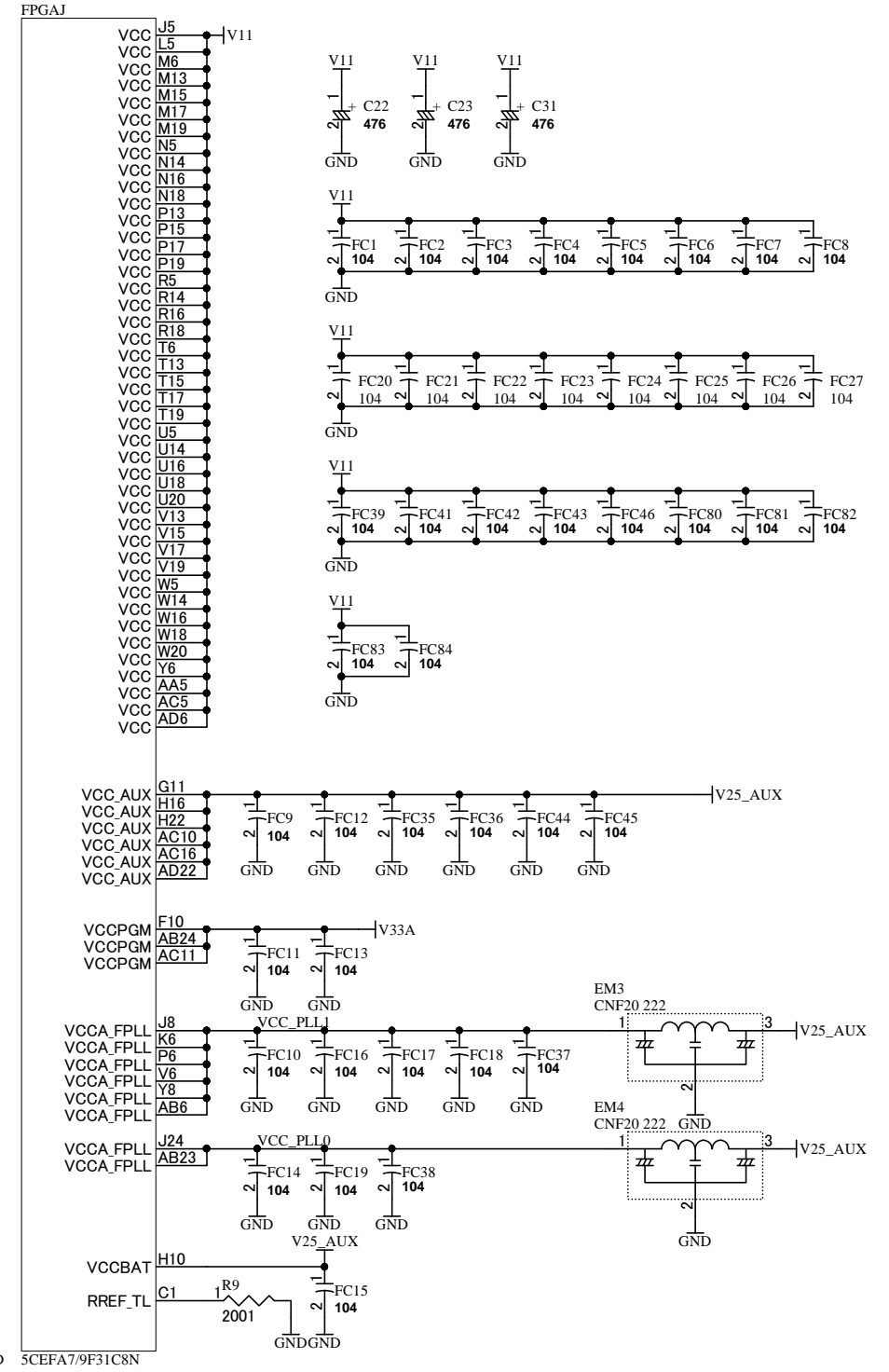
Altera Cyclone V F31 FPGA board
 DOC. No. ACM-206 B

V33A	V33A
V11	V11
V25_AUX	V25_AUX
V25PD	V25PD
VIO(B)	VIO(B)
VIO(C)	VIO(C)
VIO(D)	VIO(D)
GND	GND



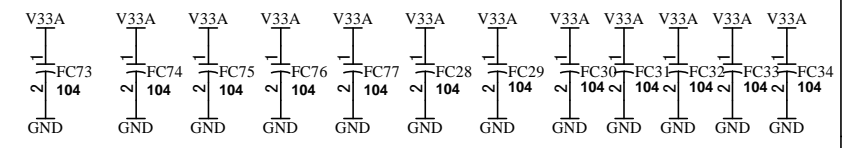
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X	B4	DNU	DNU
X	D3	DNU	DNU
X	D4	DNU	DNU
X	D15	DNU	DNU
X	F3	DNU	DNU
X	F4	DNU	DNU
X	F24	DNU	DNU
X	H3	DNU	DNU
X	H4	DNU	DNU
X	K3	DNU	DNU
X	K4	DNU	DNU
X	M3	DNU	DNU
X	M4	DNU	DNU
X	P3	DNU	DNU
X	P4	DNU	DNU
X	T3	DNU	DNU
X	T4	DNU	DNU
X	V3	DNU	DNU
X	V4	DNU	DNU
X	Y3	DNU	DNU
X	Y4	DNU	DNU
X	AB3	DNU	DNU
X	AD3	DNU	DNU
X	AD4	DNU	DNU
X	AD8	DNU	DNU
X	AD14	DNU	DNU
X	AF3	DNU	DNU
X	AF4	DNU	DNU

FPGAK		FPGAL	
A12	GND	K5	GND
A17	GND	K8	GND
A27	GND	K9	GND
B1	GND	K14	GND
B2	GND	K24	GND
B10	GND	L1	GND
B20	GND	L2	GND
B30	GND	L3	GND
C2	GND	L4	GND
C3	GND	L6	GND
C4	GND	L7	GND
C13	GND	L17	GND
C23	GND	L27	GND
D1	GND	M1	GND
D2	GND	M2	GND
D5	GND	M5	GND
D16	GND	M10	GND
D26	GND	M14	GND
E1	GND	M16	GND
E2	GND	M18	GND
E3	GND	M20	GND
E4	GND	M30	GND
E5	GND	N1	GND
E9	GND	N2	GND
E19	GND	N3	GND
E29	GND	N4	GND
F1	GND	N6	GND
F2	GND	N7	GND
F5	GND	N8	GND
F12	GND	N13	GND
F22	GND	N15	GND
G1	GND	N17	GND
G2	GND	N19	GND
G3	GND	N23	GND
G4	GND	P1	GND
G15	GND	P2	GND
G24	GND	P5	GND
G25	GND	P8	GND
H1	GND	P11	GND
H2	GND	P14	GND
H5	GND	P16	GND
H8	GND	P18	GND
H11	GND	P19	GND
H18	GND	P26	GND
H28	GND	R1	GND
J1	GND	R2	GND
J2	GND	R3	GND
J3	GND	R4	GND
J4	GND	R6	GND
J6	GND	R7	GND
J11	GND	R8	GND
J21	GND	R9	GND
K1	GND	R13	GND
K2	GND	R15	GND
K2	GND	R17	GND

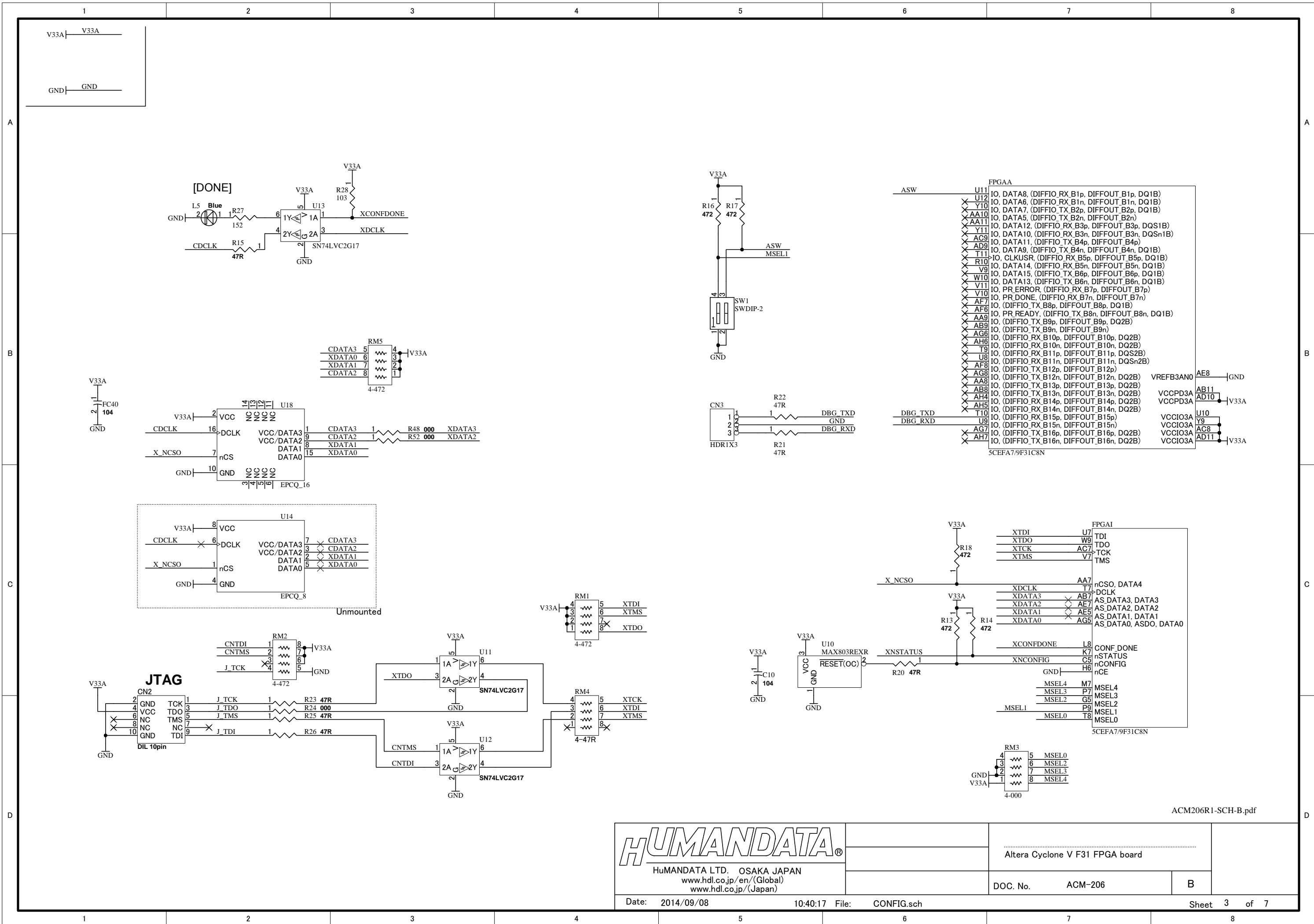


Power sense point

GND	1	GND
GND	2	GND
GND	3	GND
VIO(D)	4	VIO(D)
VIO(C)	5	VIO(C)
VIO(B)	6	VIO(B)
V25_AUX	7	V25_AUX
V33A	8	V33A
V11	9	V11
GND	10	GND



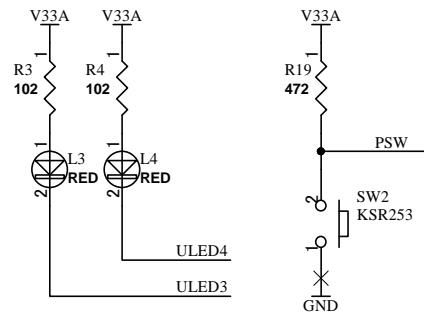
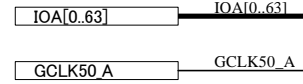
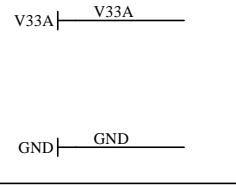
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 www.hdl.co.jp/(Japan)



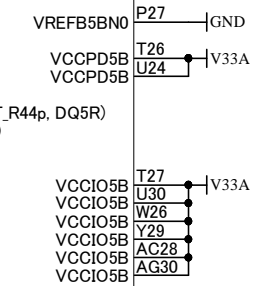
Altera Cyclone V F31 FPGA board

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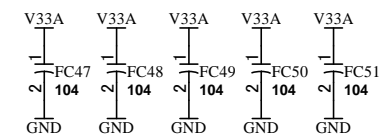
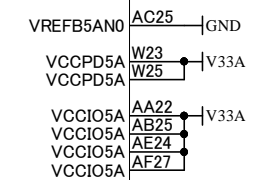
Bank Group A(3.3V)



FPGA	
IOA16	V24 IO. (DIFFIO_RX_R25p, DIFFOUT_R25p)
IOA17	V25 IO. (DIFFIO_RX_R25n, DIFFOUT_R25n)
IOA47	AJ28 IO. (DIFFIO_TX_R26p, DIFFOUT_R26p, DQ3R, DQ1R)
IOA46	AJ29 IO. (DIFFIO_TX_R26n, DIFFOUT_R26n, DQ3R, DQ1R)
IOA55	AA28 IO. (DIFFIO_RX_R27p, DIFFOUT_R27p, DQ3R, DQ1R)
IOA54	Y28 IO. (DIFFIO_RX_R27n, DIFFOUT_R27n, DQ3R, DQ1R)
IOA45	AH29 IO. (DIFFIO_TX_R28p, DIFFOUT_R28p, DQ3R, DQ1R)
IOA44	AG29 IO. (DIFFIO_TX_R28n, DIFFOUT_R28n, DQ3R, DQ1R)
IOA51	V26 IO. (DIFFIO_RX_R29p, DIFFOUT_R29p, DQS3R, DQS1R)
IOA50	U26 IO. (DIFFIO_RX_R29n, DIFFOUT_R29n, DQS3R, DQS1R)
IOA15	AJ30 IO. (DIFFIO_TX_R30p, DIFFOUT_R30p)
IOA14	AH30 IO. (DIFFIO_TX_R30n, DIFFOUT_R30n, DQ3R, DQ1R)
IOA11	AE30 IO. (DIFFIO_RX_R31p, DIFFOUT_R31p, DQ3R, DQ1R)
IOA10	AD30 IO. (DIFFIO_RX_R31n, DIFFOUT_R31n, DQ3R, DQ1R)
IOA27	AG28 IO. (DIFFIO_TX_R32p, DIFFOUT_R32p, DQ3R, DQ1R)
IOA26	AF28 IO. (DIFFIO_TX_R32n, DIFFOUT_R32n)
	U21 IO. (DIFFIO_TX_R32n, DIFFOUT_R32n)
	X U22 IO. CLK7p, FPLL_BR_FBp, (DIFFIO_RX_R33p, DIFFOUT_R33p)
	X U22 IO. CLK7n, FPLL_BR_FBn, (DIFFIO_RX_R33n, DIFFOUT_R33n)
IOA13	AF29 IO. (DIFFIO_TX_R34p, DIFFOUT_R34p, DQ4R, DQ1R)
IOA12	AF30 IO. (DIFFIO_TX_R34n, DIFFOUT_R34n, DQ4R, DQ1R)
IOA53	V27 IO. (DIFFIO_RX_R35p, DIFFOUT_R35p, DQ4R, DQ1R)
IOA52	V28 IO. (DIFFIO_RX_R35n, DIFFOUT_R35n, DQ4R, DQ1R)
IOA43	AE28 IO. (DIFFIO_TX_R36p, DIFFOUT_R36p, DQ4R, DQ1R)
IOA42	AD28 IO. (DIFFIO_TX_R36n, DIFFOUT_R36n, DQ4R, DQ1R)
IOA34	U27 IO. (DIFFIO_RX_R37p, DIFFOUT_R37p, DQS4R, DQ1R)
IOA35	U28 IO. (DIFFIO_RX_R37n, DIFFOUT_R37n, DQS4R, DQ1R)
IOA41	AD29 IO. (DIFFIO_TX_R38p, DIFFOUT_R38p)
IOA40	AC29 IO. (DIFFIO_TX_R38n, DIFFOUT_R38n, DQ4R, DQ1R)
IOA7	AA29 IO. (DIFFIO_RX_R39p, DIFFOUT_R39p, DQ4R, DQ1R)
IOA6	AA30 IO. (DIFFIO_RX_R39n, DIFFOUT_R39n, DQ4R, DQ1R)
IOA38	AB27 IO. (DIFFIO_TX_R40p, DIFFOUT_R40p, DQ4R, DQ1R)
IOA39	AB28 IO. (DIFFIO_TX_R40n, DIFFOUT_R40n)
	U23 IO. (DIFFIO_TX_R40n, DIFFOUT_R40n)
	T24 IO. CLK6p, (DIFFIO_RX_R41p, DIFFOUT_R41p)
	X AB29 IO. CLK6n, (DIFFIO_RX_R41n, DIFFOUT_R41n)
IOA8	AC30 IO. (DIFFIO_TX_R42p, DIFFOUT_R42p, DQ5R)
IOA9	AC30 IO. (DIFFIO_TX_R42n, DIFFOUT_R42n, DQ5R)
IOA32	T28 IO. (DIFFIO_RX_R43p, DIFFOUT_R43p, DQ5R)
IOA33	T29 IO. (DIFFIO_RX_R43n, DIFFOUT_R43n, DQ5R)
IOA5	Y30 IO. FPLL_BR_CLKOUT0, FPLL_BR_CLKOUTp, FPLL_BR_FB, (DIFFIO_TX_R44p, DIFFOUT_R44p, DQ5R)
IOA4	W30 IO. FPLL_BR_CLKOUT1, FPLL_BR_CLKOUTn, (DIFFIO_TX_R44n, DIFFOUT_R44n, DQ5R)
IOA49	T25 IO. (DIFFIO_RX_R45p, DIFFOUT_R45p, DQS5R)
IOA48	R26 IO. (DIFFIO_RX_R45n, DIFFOUT_R45n, DQS5R)
IOA36	V29 IO. (DIFFIO_TX_R46p, DIFFOUT_R46p)
IOA37	W29 IO. (DIFFIO_TX_R46n, DIFFOUT_R46n, DQ5R)
IOA1	T30 IO. (DIFFIO_RX_R47p, DIFFOUT_R47p, DQ5R)
IOA0	R30 IO. (DIFFIO_RX_R47n, DIFFOUT_R47n, DQ5R)
IOA2	U29 IO. (DIFFIO_TX_R48p, DIFFOUT_R48p, DQ5R)
IOA3	V30 IO. (DIFFIO_TX_R48n, DIFFOUT_R48n)



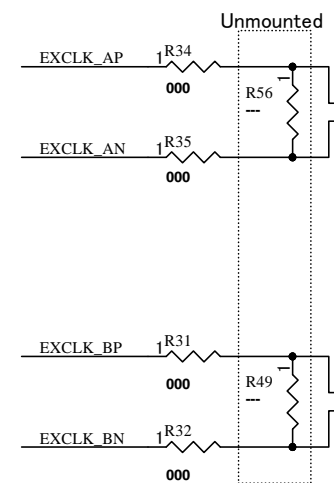
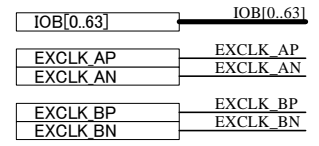
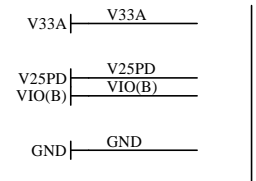
FPGA	
	AD23 IO. RZQ_1, (DIFFIO_TX_R1p, DIFFOUT_R1p, DQ1R)
	X AC24 IO. PR_REQUEST, (DIFFIO_TX_R1n, DIFFOUT_R1n, DQ1R)
ULED4	W22 IO. INIT_DONE, (DIFFIO_RX_R2p, DIFFOUT_R2p)
ULED3	Y21 IO. CRC_ERROR, (DIFFIO_RX_R2n, DIFFOUT_R2n)
IOA25	AD24 IO. nCEO, (DIFFIO_TX_R3p, DIFFOUT_R3p, DQ1R)
IOA24	AD25 IO. Cvp_CONFDONE, (DIFFIO_TX_R3n, DIFFOUT_R3n, DQ1R)
IOA21	Y25 IO. (DIFFIO_RX_R4p, DIFFOUT_R4p, DQ1R)
IOA20	Y26 IO. (DIFFIO_RX_R4n, DIFFOUT_R4n, DQ1R)
IOA57	AB26 IO. DEV_OE, (DIFFIO_TX_R5p, DIFFOUT_R5p)
IOA56	AA26 IO. DEV_OE, (DIFFIO_TX_R5n, DIFFOUT_R5n, DQ1R)
IOA19	Y23 IO. nPERSTL0, (DIFFIO_RX_R6p, DIFFOUT_R6p, DQS1R)
IOA18	W24 IO. nPERSTL1, (DIFFIO_RX_R6n, DIFFOUT_R6n, DQS1R)
IOA23	AC26 IO. (DIFFIO_TX_R7p, DIFFOUT_R7p, DQ1R)
IOA22	AC27 IO. (DIFFIO_TX_R7n, DIFFOUT_R7n)
IOA61	Y22 IO. (DIFFIO_RX_R8p, DIFFOUT_R8p, DQ1R)
IOA60	AA23 IO. (DIFFIO_RX_R8n, DIFFOUT_R8n, DQ1R)
IOA59	AA24 IO. (DIFFIO_RX_R17p, DIFFOUT_R17p)
IOA58	AA25 IO. (DIFFIO_RX_R17n, DIFFOUT_R17n)
IOA31	AE23 IO. (DIFFIO_TX_R18p, DIFFOUT_R18p, DQ2R)
IOA30	AF24 IO. (DIFFIO_TX_R18n, DIFFOUT_R18n, DQ2R)
	X AE27 IO. (DIFFIO_RX_R19p, DIFFOUT_R19p, DQ2R)
	X AD27 IO. (DIFFIO_RX_R19n, DIFFOUT_R19n, DQ2R)
	X AE25 IO. (DIFFIO_TX_R20p, DIFFOUT_R20p, DQ2R)
	X AE25 IO. (DIFFIO_TX_R20n, DIFFOUT_R20n, DQ2R)
	X AE26 IO. (DIFFIO_RX_R21p, DIFFOUT_R21p, DQS2R)
	X V21 IO. (DIFFIO_RX_R21n, DIFFOUT_R21n, DQS2R)
IOA29	AF25 IO. (DIFFIO_TX_R22n, DIFFOUT_R22n, DQ2R)
IOA28	AF26 IO. (DIFFIO_TX_R22p, DIFFOUT_R22p)
	Y27 IO. (DIFFIO_TX_R22n, DIFFOUT_R22n, DQ2R)
	X W27 IO. (DIFFIO_RX_R23p, DIFFOUT_R23p, DQ2R)
	X AH27 IO. (DIFFIO_RX_R23n, DIFFOUT_R23n, DQ2R)
IOA63	AG27 IO. (DIFFIO_TX_R24p, DIFFOUT_R24p, DQ2R)
IOA62	AG27 IO. (DIFFIO_TX_R24n, DIFFOUT_R24n)



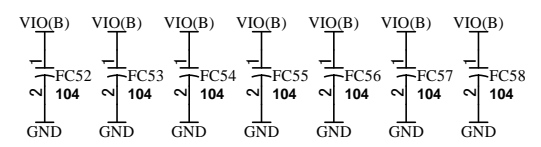
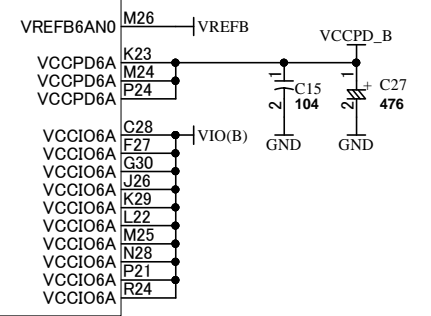
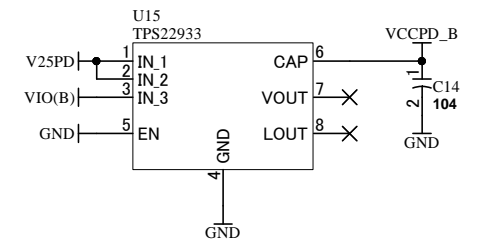
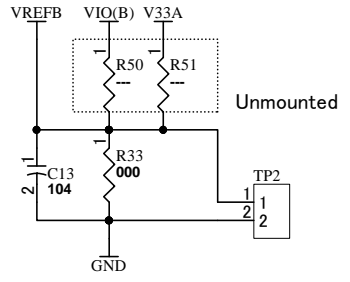
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Bank Group B



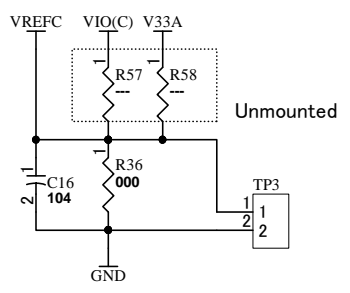
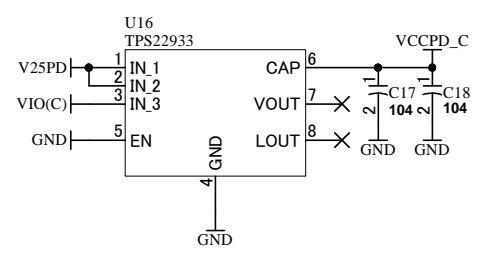
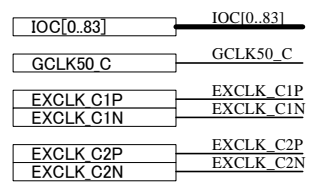
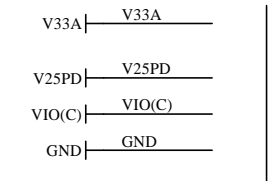
IOB	IOB	FPGA
IOB2	T23	IO, CLK5p, (DIFFIO_RX_R49p, DIFFOUT_R49p)
IOB3	R23	IO, CLK5n, (DIFFIO_RX_R49n, DIFFOUT_R49n)
IOB32	P28	IO, (DIFFIO_TX_R50p, DIFFOUT_R50p, DQ6R)
IOB33	N29	IO, (DIFFIO_TX_R50n, DIFFOUT_R50n, DQ6R)
IOB35	P30	IO, (DIFFIO_RX_R51p, DIFFOUT_R51p, DQ6R)
IOB34	M29	IO, (DIFFIO_RX_R51n, DIFFOUT_R51n, DQ6R)
IOB17	N30	IO, FPLL_TR_CLKOUT0, FPLL_TR_CLKOUTp, FPLL_TR_FB, (DIFFIO_TX_R52p, DIFFOUT_R52p, DQ6R)
IOB16	P25	IO, (DIFFIO_RX_R53p, DIFFOUT_R53p, DQS6R)
IOB6	R25	IO, (DIFFIO_RX_R53n, DIFFOUT_R53n, DQS6R)
IOB7	L28	IO, (DIFFIO_TX_R54p, DIFFOUT_R54p)
IOB0	K28	IO, (DIFFIO_TX_R54n, DIFFOUT_R54n, DQ6R)
IOB1	R27	IO, (DIFFIO_RX_R55p, DIFFOUT_R55p, DQ6R)
IOB4	R28	IO, (DIFFIO_RX_R55n, DIFFOUT_R55n, DQ6R)
IOB5	M27	IO, (DIFFIO_TX_R56p, DIFFOUT_R56p, DQ6R)
	M28	IO, (DIFFIO_TX_R56n, DIFFOUT_R56n)
	P22	IO, CLK4p, FPLL_TR_FBp, (DIFFIO_RX_R57p, DIFFOUT_R57p)
	P23	IO, CLK4n, FPLL_TR_FBn, (DIFFIO_RX_R57n, DIFFOUT_R57n)
IOB57	K25	IO, (DIFFIO_TX_R58p, DIFFOUT_R58p, DQ7R, DQ2R)
IOB56	K26	IO, (DIFFIO_TX_R58n, DIFFOUT_R58n, DQ7R, DQ2R)
IOB21	N26	IO, (DIFFIO_RX_R59p, DIFFOUT_R59p, DQ7R, DQ2R)
IOB20	N27	IO, (DIFFIO_RX_R59n, DIFFOUT_R59n, DQ7R, DQ2R)
IOB37	L29	IO, (DIFFIO_TX_R60p, DIFFOUT_R60p, DQ7R, DQ2R)
IOB36	L30	IO, (DIFFIO_TX_R60n, DIFFOUT_R60n, DQ7R, DQ2R)
IOB18	N24	IO, (DIFFIO_RX_R61p, DIFFOUT_R61p, DQS7R, DQS2R)
IOB19	N25	IO, (DIFFIO_RX_R61n, DIFFOUT_R61n, DQS7R, DQS2R)
IOB38	K30	IO, (DIFFIO_TX_R62p, DIFFOUT_R62p)
IOB39	J30	IO, (DIFFIO_TX_R62n, DIFFOUT_R62n, DQ7R, DQ2R)
IOB22	L25	IO, (DIFFIO_RX_R63p, DIFFOUT_R63p, DQ7R, DQ2R)
IOB23	L26	IO, (DIFFIO_RX_R63n, DIFFOUT_R63n, DQ7R, DQ2R)
IOB27	G27	IO, (DIFFIO_TX_R64p, DIFFOUT_R64p, DQ7R, DQ2R)
IOB26	G28	IO, (DIFFIO_TX_R64n, DIFFOUT_R64n)
IOB51	R21	IO, (DIFFIO_RX_R65p, DIFFOUT_R65p)
IOB50	R22	IO, (DIFFIO_RX_R65n, DIFFOUT_R65n)
IOB8	J28	IO, (DIFFIO_TX_R66p, DIFFOUT_R66p, DQ8R, DQ2R)
IOB9	J29	IO, (DIFFIO_TX_R66n, DIFFOUT_R66n, DQ8R, DQ2R)
IOB24	K27	IO, (DIFFIO_RX_R67p, DIFFOUT_R67p, DQ8R, DQ2R)
IOB25	J27	IO, (DIFFIO_RX_R67n, DIFFOUT_R67n, DQ8R, DQ2R)
IOB41	H29	IO, (DIFFIO_TX_R68p, DIFFOUT_R68p, DQ8R, DQ2R)
IOB40	H30	IO, (DIFFIO_TX_R68n, DIFFOUT_R68n, DQ8R, DQ2R)
IOB52	N22	IO, (DIFFIO_RX_R69p, DIFFOUT_R69p, DQS8R, DQ2R)
IOB53	M23	IO, (DIFFIO_RX_R69n, DIFFOUT_R69n, DQS8R, DQ2R)
IOB28	H27	IO, (DIFFIO_TX_R70p, DIFFOUT_R70p)
IOB29	G26	IO, (DIFFIO_TX_R70n, DIFFOUT_R70n, DQ8R, DQ2R)
IOB31	F25	IO, (DIFFIO_RX_R71p, DIFFOUT_R71p, DQ8R, DQ2R)
IOB30	F26	IO, (DIFFIO_RX_R71n, DIFFOUT_R71n, DQ8R, DQ2R)
IOB42	F30	IO, (DIFFIO_TX_R72p, DIFFOUT_R72p, DQ8R, DQ2R)
IOB43	E30	IO, (DIFFIO_TX_R72n, DIFFOUT_R72n)
	R20	IO, (DIFFIO_RX_R73p, DIFFOUT_R73p)
	T21	IO, (DIFFIO_RX_R73n, DIFFOUT_R73n)
IOB10	G29	IO, (DIFFIO_TX_R74p, DIFFOUT_R74p, DQ9R, DQ3R)
IOB11	F29	IO, (DIFFIO_TX_R74n, DIFFOUT_R74n, DQ9R, DQ3R)
IOB54	L23	IO, (DIFFIO_RX_R75p, DIFFOUT_R75p, DQ9R, DQ3R)
IOB55	L24	IO, (DIFFIO_RX_R75n, DIFFOUT_R75n, DQ9R, DQ3R)
IOB44	D30	IO, (DIFFIO_TX_R76p, DIFFOUT_R76p, DQ9R, DQ3R)
IOB45	C30	IO, (DIFFIO_TX_R76n, DIFFOUT_R76n, DQ9R, DQ3R)
IOB59	N21	IO, (DIFFIO_RX_R77p, DIFFOUT_R77p, DQS9R, DQS3R)
IOB58	M22	IO, (DIFFIO_RX_R77n, DIFFOUT_R77n, DQS9R, DQS3R)
IOB12	F28	IO, (DIFFIO_TX_R78p, DIFFOUT_R78p)
IOB13	E28	IO, (DIFFIO_TX_R78n, DIFFOUT_R78n, DQ9R, DQ3R)
IOB61	K21	IO, (DIFFIO_RX_R79p, DIFFOUT_R79p, DQ9R, DQ3R)
IOB60	K22	IO, (DIFFIO_RX_R79n, DIFFOUT_R79n, DQ9R, DQ3R)
IOB46	C29	IO, (DIFFIO_TX_R80p, DIFFOUT_R80p, DQ9R, DQ3R)
IOB47	B29	IO, (DIFFIO_TX_R80n, DIFFOUT_R80n)
IOB63	M21	IO, (DIFFIO_RX_R81p, DIFFOUT_R81p)
IOB62	L21	IO, (DIFFIO_RX_R81n, DIFFOUT_R81n)
IOB48	B28	IO, (DIFFIO_TX_R82p, DIFFOUT_R82p, DQ10R, DQ3R)
IOB49	A29	IO, (DIFFIO_TX_R82n, DIFFOUT_R82n, DQ10R, DQ3R)
	H25	IO, (DIFFIO_RX_R83p, DIFFOUT_R83p, DQ10R, DQ3R)
	H26	IO, (DIFFIO_RX_R83n, DIFFOUT_R83n, DQ10R, DQ3R)
IOB15	D28	IO, (DIFFIO_TX_R84p, DIFFOUT_R84p, DQ10R, DQ3R)
IOB14	D29	IO, (DIFFIO_TX_R84n, DIFFOUT_R84n, DQ10R, DQ3R)
	P20	IO, (DIFFIO_RX_R85p, DIFFOUT_R85p, DQS10R, DQ3R)
	N20	IO, (DIFFIO_RX_R85n, DIFFOUT_R85n, DQS10R, DQ3R)
	E27	IO, (DIFFIO_TX_R86p, DIFFOUT_R86p)
	D27	IO, (DIFFIO_TX_R86n, DIFFOUT_R86n)
	J22	IO, (DIFFIO_TX_R87p, DIFFOUT_R87p, DQ10R, DQ3R)
	J23	IO, (DIFFIO_RX_R87n, DIFFOUT_R87n, DQ10R, DQ3R)
	H24	IO, (DIFFIO_TX_R88p, DIFFOUT_R88p, DQ10R, DQ3R)
	J25	IO, (DIFFIO_TX_R88n, DIFFOUT_R88n)



HUMAN DATA
HuMANDATA LTD. OSAKA JAPAN
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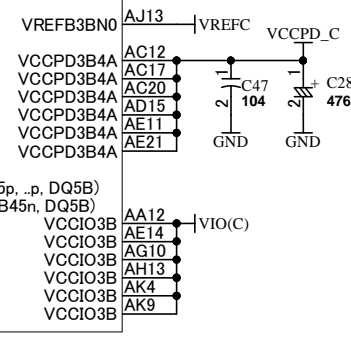
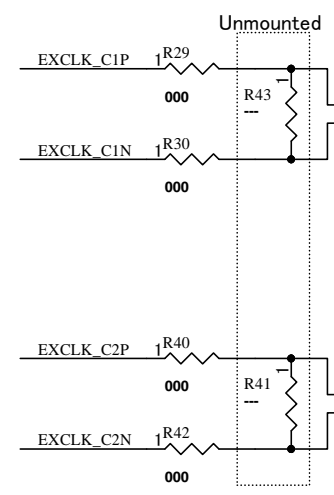
Altera Cyclone V F31 FPGA board
DOC. No. ACM-206 B

Bank Group C



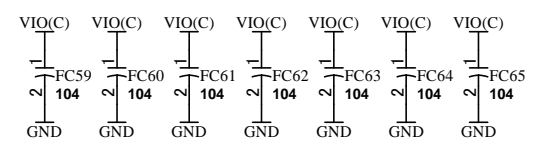
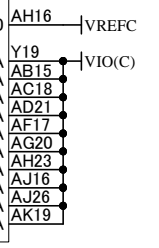
FPGA

IOC56	AE10	IO (DIFFIO_TX_B25p, DIFFOUT_B25p, DQ3B, DQ1B)
IOC57	AF10	IO (DIFFIO_TX_B25n, DIFFOUT_B25n)
IOC62	AD12	IO (DIFFIO_RX_B26p, DIFFOUT_B26p, DQ3B, DQ1B)
IOC63	AD13	IO (DIFFIO_RX_B26n, DIFFOUT_B26n, DQ3B, DQ1B)
IOC41	V12	IO (DIFFIO_RX_B27p, DIFFOUT_B27p, DQS3B, DQ1B)
IOC40	W12	IO (DIFFIO_RX_B27n, DIFFOUT_B27n, DQS3B, DQ1B)
IOC15	AJ1	IO (DIFFIO_TX_B28p, DIFFOUT_B28p)
IOC14	AJ2	IO (DIFFIO_TX_B28n, DIFFOUT_B28n, DQ3B, DQ1B)
IOC13	AJ3	IO (DIFFIO_TX_B29p, DIFFOUT_B29p, DQ3B, DQ1B)
IOC12	AK3	IO (DIFFIO_TX_B29n, DIFFOUT_B29n, DQ3B, DQ1B)
IOC60	AE12	IO (DIFFIO_RX_B30p, DIFFOUT_B30p, DQ3B, DQ1B)
IOC61	AE13	IO (DIFFIO_RX_B30n, DIFFOUT_B30n, DQ3B, DQ1B)
	AB12	IO (DIFFIO_RX_B31p, DIFFOUT_B31p)
	AB13	IO (DIFFIO_RX_B31n, DIFFOUT_B31n)
IOC79	AJ4	IO (DIFFIO_TX_B32p, DIFFOUT_B32p, DQ3B, DQ1B)
IOC78	AJ5	IO (DIFFIO_TX_B32n, DIFFOUT_B32n, DQ3B, DQ1B)
IOC11	AK5	IO (DIFFIO_TX_B33p, DIFFOUT_B33p, DQ4B, DQ1B)
IOC10	AK6	IO (DIFFIO_TX_B33n, DIFFOUT_B33n)
IOC26	AF13	IO (DIFFIO_RX_B34p, DIFFOUT_B34p, DQ4B, DQ1B)
IOC27	AG12	IO (DIFFIO_RX_B34n, DIFFOUT_B34n, DQ4B, DQ1B)
IOC38	Y12	IO (DIFFIO_RX_B35p, DIFFOUT_B35p, DQS4B, DQS1B)
IOC39	AA13	IO (DIFFIO_RX_B35n, DIFFOUT_B35n, DQS4B, DQS1B)
IOC9	AJ7	IO (DIFFIO_TX_B36p, DIFFOUT_B36p)
IOC8	AK7	IO (DIFFIO_TX_B36n, DIFFOUT_B36n, DQ4B, DQ1B)
IOC7	AJ8	IO (DIFFIO_TX_B37p, DIFFOUT_B37p, DQ4B, DQ1B)
IOC6	AK8	IO (DIFFIO_TX_B37n, DIFFOUT_B37n, DQ4B, DQ1B)
IOC29	AF11	IO (DIFFIO_RX_B38p, DIFFOUT_B38p, DQ4B, DQ1B)
IOC28	AG11	IO (DIFFIO_RX_B38n, DIFFOUT_B38n, DQ4B, DQ1B)
	AB14	IO (DIFFIO_RX_B39p, DIFFOUT_B39p, DQ4B, DQ1B)
	AC14	IO (DIFFIO_RX_B39n, DIFFOUT_B39n, DQ4B, DQ1B)
IOC83	AF9	IO (DIFFIO_TX_B40p, DIFFOUT_B40p, DQ4B, DQ1B)
IOC82	AG9	IO (DIFFIO_TX_B40n, DIFFOUT_B40n, DQ4B, DQ1B)
IOC81	AH9	IO (DIFFIO_TX_B41p, DIFFOUT_B41p, DQ5B)
IOC80	AJ9	IO (DIFFIO_TX_B41n, DIFFOUT_B41n)
IOC76	AH10	IO (DIFFIO_RX_B42p, DIFFOUT_B42p, DQ5B)
IOC77	AJ10	IO (DIFFIO_RX_B42n, DIFFOUT_B42n, DQ5B)
IOC37	Y13	IO (DIFFIO_RX_B43p, DIFFOUT_B43p, DQS5B)
IOC36	AA14	IO (DIFFIO_RX_B43n, DIFFOUT_B43n, DQS5B)
IOC5	AK10	IO (DIFFIO_TX_B44p, DIFFOUT_B44p)
IOC4	AK11	IO (DIFFIO_TX_B44n, DIFFOUT_B44n, DQ5B)
IOC74	AH11	IO (DIFFIO_TX_B45p, DIFFOUT_B45p, DQ5B)
IOC75	AH12	IO (DIFFIO_TX_B45n, DIFFOUT_B45n, DQ5B)
IOC55	AG13	IO (DIFFIO_RX_B46p, DIFFOUT_B46p, DQ5B)
IOC54	AG14	IO (DIFFIO_RX_B46n, DIFFOUT_B46n, DQ5B)
	Y15	IO (DIFFIO_RX_B47p, DIFFOUT_B47p)
	AA15	IO (DIFFIO_RX_B47n, DIFFOUT_B47n)
IOC3	AJ12	IO (DIFFIO_TX_B48p, DIFFOUT_B48p, DQ5B)
IOC2	AK12	IO (DIFFIO_TX_B48n, DIFFOUT_B48n, DQ5B)



FPGA

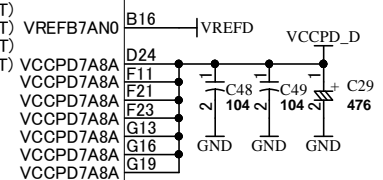
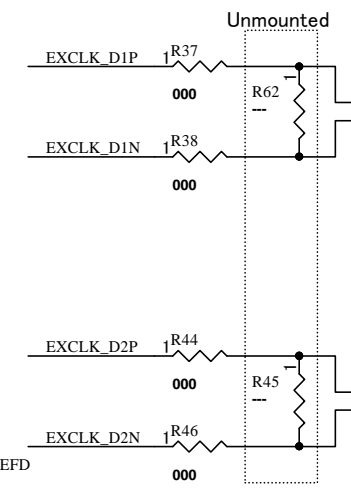
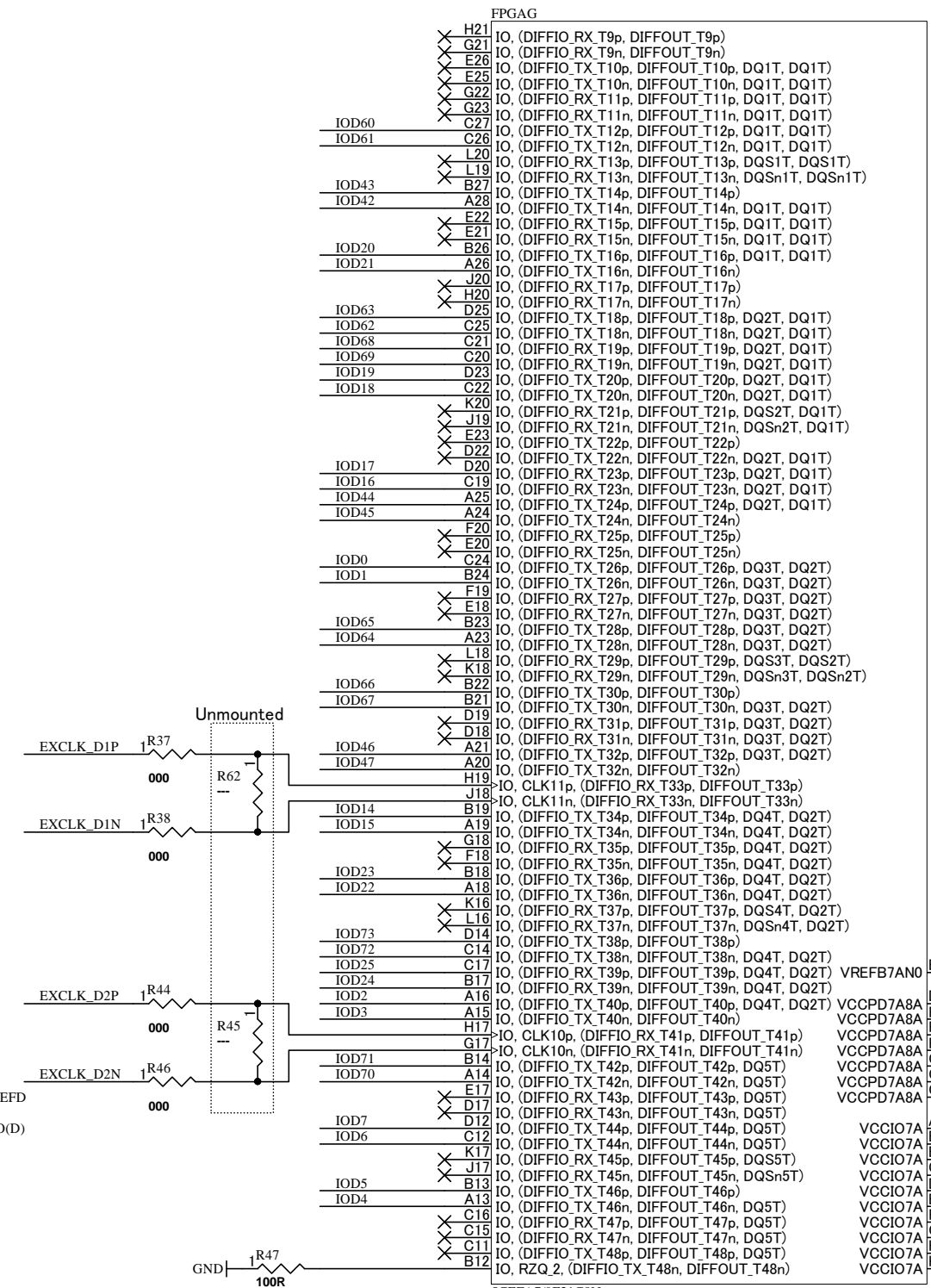
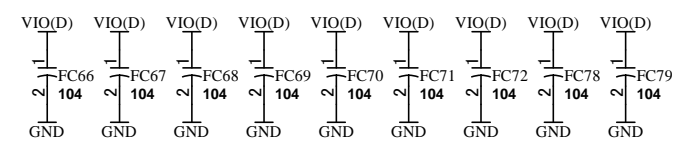
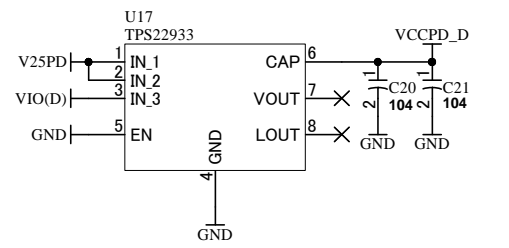
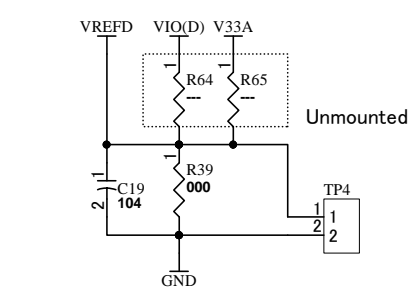
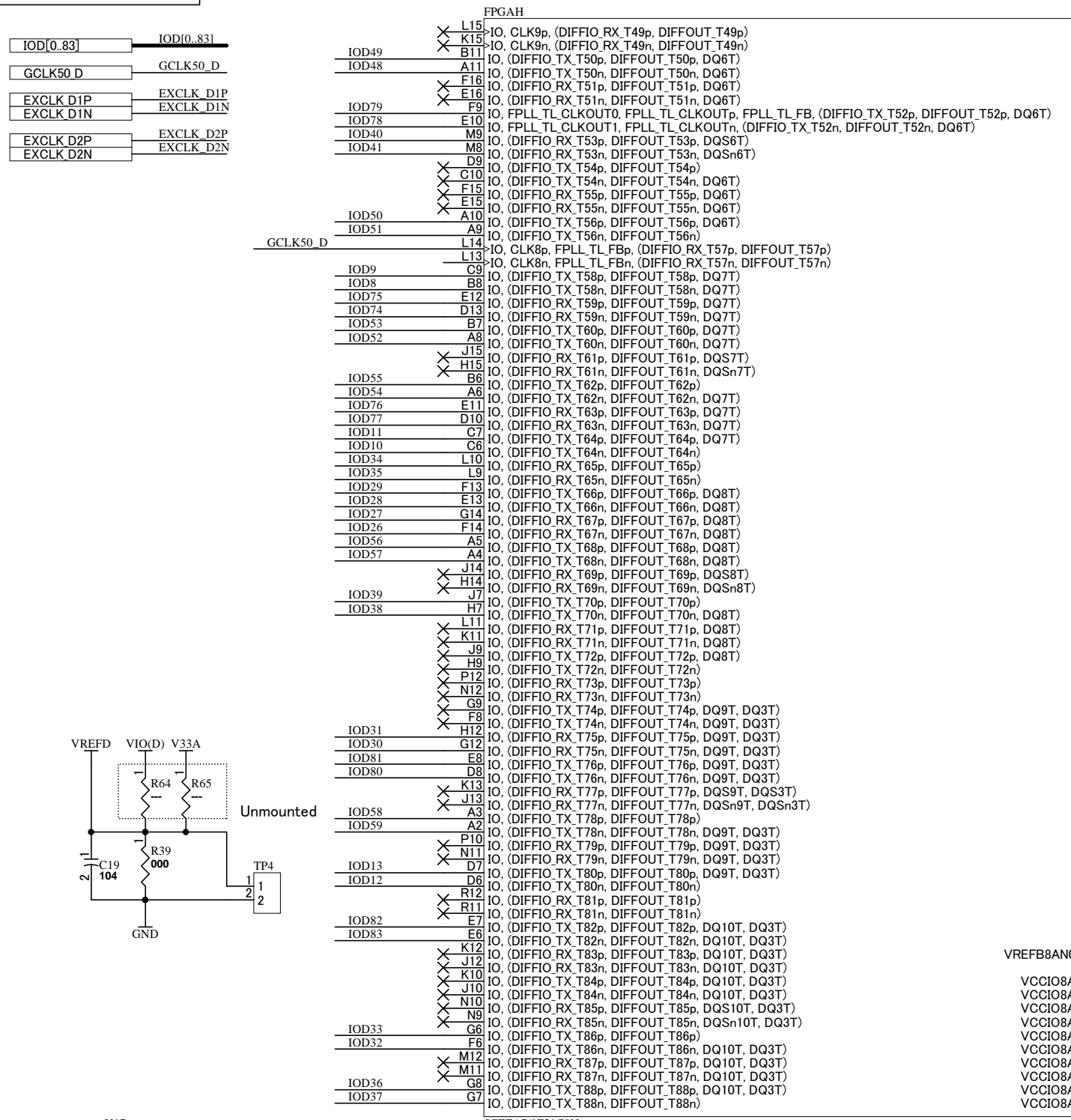
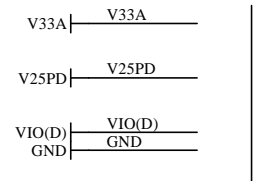
IOC0	AK15	IO (DIFFIO_TX_B52n, DIFFOUT_B52n, DQ6B)
IOC1	AK15	IO (DIFFIO_TX_B53n, DIFFOUT_B53n, DQ6B)
IOC32	AD17	IO (DIFFIO_RX_B54p, DIFFOUT_B54p, DQ6B)
IOC33	AE17	IO (DIFFIO_RX_B54n, DIFFOUT_B54n, DQ6B)
	AB16	IO (DIFFIO_TX_B52p, DIFFOUT_B52p)
	AC15	IO (DIFFIO_TX_B53p, DIFFOUT_B53p, DQ6B)
	AE15	IO (DIFFIO_TX_B53n, DIFFOUT_B53n, DQ6B)
IOC31	AF14	IO (DIFFIO_TX_B56p, DIFFOUT_B56p, DQ6B)
IOC30	AG17	IO (DIFFIO_TX_B56n, DIFFOUT_B56n, DQ6B)
IOC47	AG17	IO (DIFFIO_TX_B57p, DIFFOUT_B57p, DQ7B, DQ2B)
IOC46	AH17	IO (DIFFIO_TX_B57n, DIFFOUT_B57n)
IOC66	AK16	IO (DIFFIO_RX_B58p, DIFFOUT_B58p, DQ7B, DQ2B)
IOC67	AK17	IO (DIFFIO_RX_B58n, DIFFOUT_B58n, DQ7B, DQ2B)
IOC65	Y17	IO (DIFFIO_RX_B59p, DIFFOUT_B59p, DQS7B, DQ2B)
IOC64	Y18	IO (DIFFIO_RX_B59n, DIFFOUT_B59n, DQS7B, DQ2B)
IOC45	AJ17	IO (DIFFIO_TX_B60p, DIFFOUT_B60p)
IOC44	AJ18	IO (DIFFIO_TX_B60n, DIFFOUT_B60n, DQ7B, DQ2B)
IOC69	AJ19	IO (DIFFIO_TX_B61p, DIFFOUT_B61p, DQ7B, DQ2B)
IOC68	AK18	IO (DIFFIO_TX_B61n, DIFFOUT_B61n, DQ7B, DQ2B)
	AF16	IO (DIFFIO_RX_B62p, DIFFOUT_B62p, DQ7B, DQ2B)
	AG16	IO (DIFFIO_RX_B62n, DIFFOUT_B62n, DQ7B, DQ2B)
IOC35	AB17	IO (DIFFIO_TX_B63p, DIFFOUT_B63p)
IOC34	AB18	IO (DIFFIO_TX_B63n, DIFFOUT_B63n)
IOC43	AH19	IO (DIFFIO_TX_B64p, DIFFOUT_B64p, DQ7B, DQ2B)
IOC42	AH20	IO (DIFFIO_TX_B64n, DIFFOUT_B64n, DQ7B, DQ2B)
IOC70	AJ20	IO (DIFFIO_TX_B65p, DIFFOUT_B65p, DQ8B, DQ2B)
IOC71	AK20	IO (DIFFIO_TX_B65n, DIFFOUT_B65n)
IOC53	AD18	IO (DIFFIO_RX_B66p, DIFFOUT_B66p, DQ8B, DQ2B)
IOC52	AE18	IO (DIFFIO_RX_B66n, DIFFOUT_B66n, DQ8B, DQ2B)
	Y20	IO (DIFFIO_RX_B67p, DIFFOUT_B67p, DQS8B, DQS2B)
	AA20	IO (DIFFIO_RX_B67n, DIFFOUT_B67n, DQS8B, DQS2B)
IOC25	AK21	IO (DIFFIO_TX_B68p, DIFFOUT_B68p)
IOC24	AK22	IO (DIFFIO_TX_B68n, DIFFOUT_B68n, DQ8B, DQ2B)
IOC72	AH21	IO (DIFFIO_TX_B69p, DIFFOUT_B69p, DQ8B, DQ2B)
IOC73	AJ22	IO (DIFFIO_TX_B69n, DIFFOUT_B69n, DQ8B, DQ2B)
IOC51	AF18	IO (DIFFIO_RX_B70p, DIFFOUT_B70p, DQ8B, DQ2B)
IOC50	AF19	IO (DIFFIO_RX_B70n, DIFFOUT_B70n, DQ8B, DQ2B)
	AA18	IO (DIFFIO_RX_B71p, DIFFOUT_B71p)
	AA19	IO (DIFFIO_RX_B71n, DIFFOUT_B71n)
IOC23	AJ23	IO (DIFFIO_TX_B72p, DIFFOUT_B72p, DQ8B, DQ2B)
IOC22	AK23	IO (DIFFIO_TX_B72n, DIFFOUT_B72n, DQ8B, DQ2B)
IOC20	AH24	IO (DIFFIO_TX_B73p, DIFFOUT_B73p, DQ9B, DQ3B)
IOC21	AJ24	IO (DIFFIO_TX_B73n, DIFFOUT_B73n)
IOC48	AG18	IO (DIFFIO_RX_B74p, DIFFOUT_B74p, DQ9B, DQ3B)
IOC49	AG19	IO (DIFFIO_RX_B74n, DIFFOUT_B74n, DQ9B, DQ3B)
	AB19	IO (DIFFIO_RX_B75p, DIFFOUT_B75p, DQS9B, DQ3B)
	AC19	IO (DIFFIO_RX_B75n, DIFFOUT_B75n, DQS9B, DQ3B)
IOC18	AJ25	IO (DIFFIO_TX_B76p, DIFFOUT_B76p)
IOC19	AK25	IO (DIFFIO_TX_B76n, DIFFOUT_B76n, DQ9B, DQ3B)
IOC16	AG24	IO (DIFFIO_TX_B77p, DIFFOUT_B77p, DQ9B, DQ3B)
IOC17	AH25	IO (DIFFIO_TX_B77n, DIFFOUT_B77n, DQ9B, DQ3B)
IOC58	AD19	IO (DIFFIO_RX_B78p, DIFFOUT_B78p, DQ9B, DQ3B)
IOC59	AE20	IO (DIFFIO_RX_B78n, DIFFOUT_B78n, DQ9B, DQ3B)
	AA21	IO (DIFFIO_RX_B79p, DIFFOUT_B79p)
	AB21	IO (DIFFIO_RX_B79n, DIFFOUT_B79n)
	AJ27	IO (DIFFIO_TX_B80p, DIFFOUT_B80p, DQ9B, DQ3B)
	AK26	IO (DIFFIO_TX_B80n, DIFFOUT_B80n, DQ9B, DQ3B)
	AK27	IO (DIFFIO_TX_B81p, DIFFOUT_B81p, DQ10B, DQ3B)
	AK28	IO (DIFFIO_TX_B81n, DIFFOUT_B81n)
	AF20	IO (DIFFIO_RX_B82p, DIFFOUT_B82p, DQ10B, DQ3B)
	AG21	IO (DIFFIO_RX_B82n, DIFFOUT_B82n, DQ10B, DQ3B)
	AD15	IO (DIFFIO_RX_B83p, DIFFOUT_B83p, DQS10B, DQS3B, VREFB4A0)
	AE11	IO (DIFFIO_RX_B83n, DIFFOUT_B83n, DQS10B, DQS3B)
	AD20	IO (DIFFIO_RX_B83p, DIFFOUT_B83p, DQS10B, DQS3B)
	AG26	IO (DIFFIO_TX_B84p, DIFFOUT_B84p)
	AH26	IO (DIFFIO_TX_B84n, DIFFOUT_B84n, DQ10B, DQ3B)
	AE22	IO (DIFFIO_TX_B85p, DIFFOUT_B85p, DQ10B, DQ3B)
	AF23	IO (DIFFIO_TX_B85n, DIFFOUT_B85n, DQ10B, DQ3B)
	AF21	IO (DIFFIO_RX_B86p, DIFFOUT_B86p, DQ10B, DQ3B)
	AG22	IO (DIFFIO_RX_B86n, DIFFOUT_B86n, DQ10B, DQ3B)
	AB22	IO (DIFFIO_RX_B87p, DIFFOUT_B87p)
	AC22	IO (DIFFIO_RX_B87n, DIFFOUT_B87n)
	AG23	IO (DIFFIO_TX_B88p, DIFFOUT_B88p, DQ10B, DQ3B)
	AH22	IO (DIFFIO_TX_B88n, DIFFOUT_B88n, DQ10B, DQ3B)



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