

Video Input Output Daughter Card Block Diagram

TESTPOINT TABLE

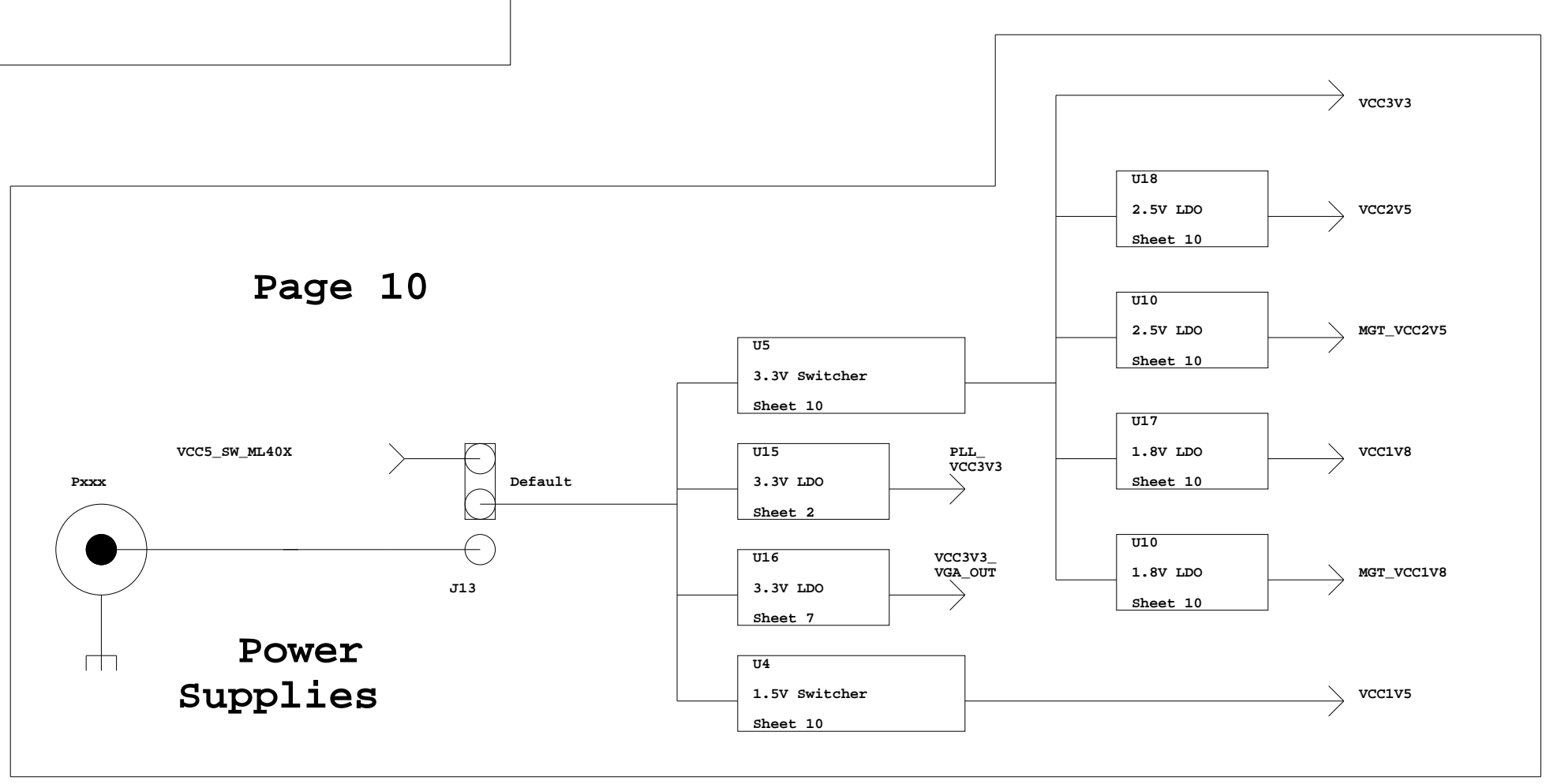
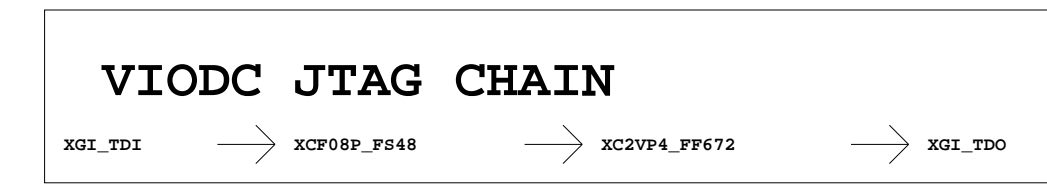
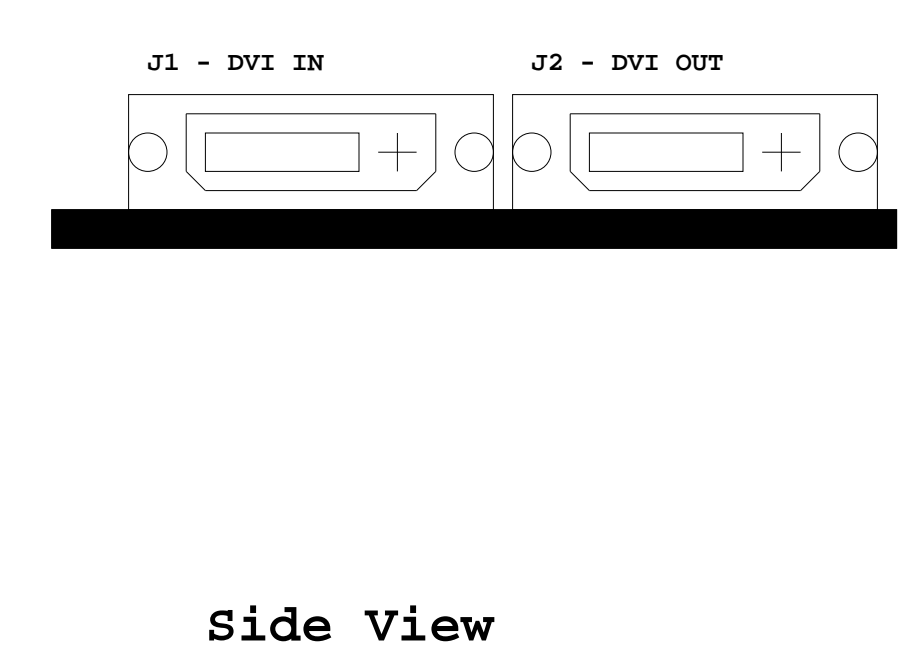
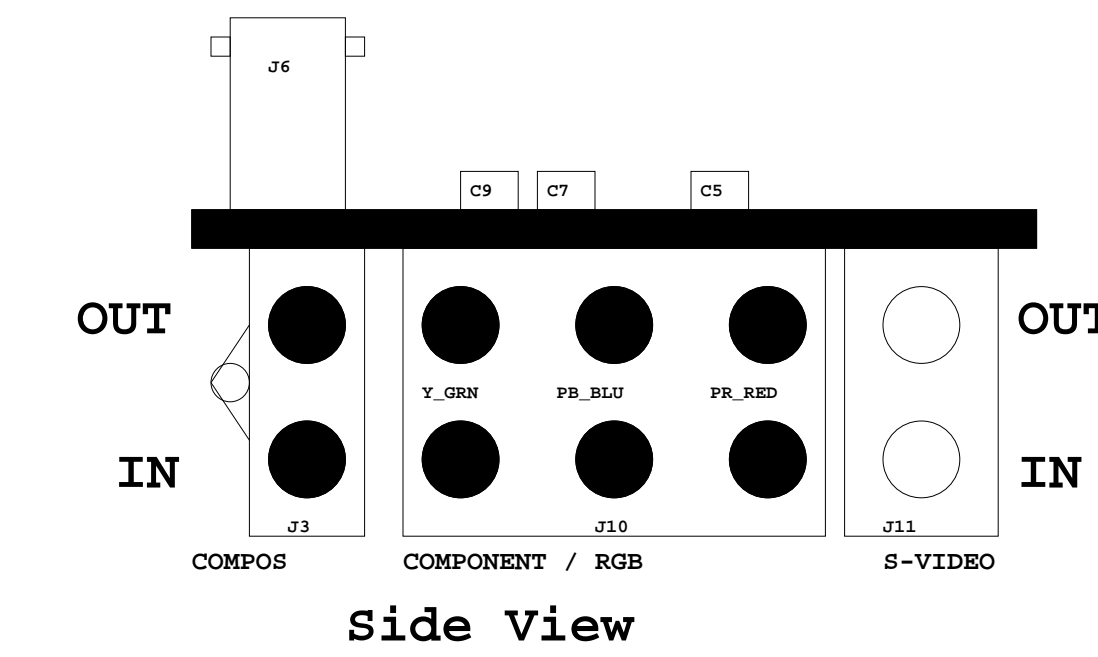
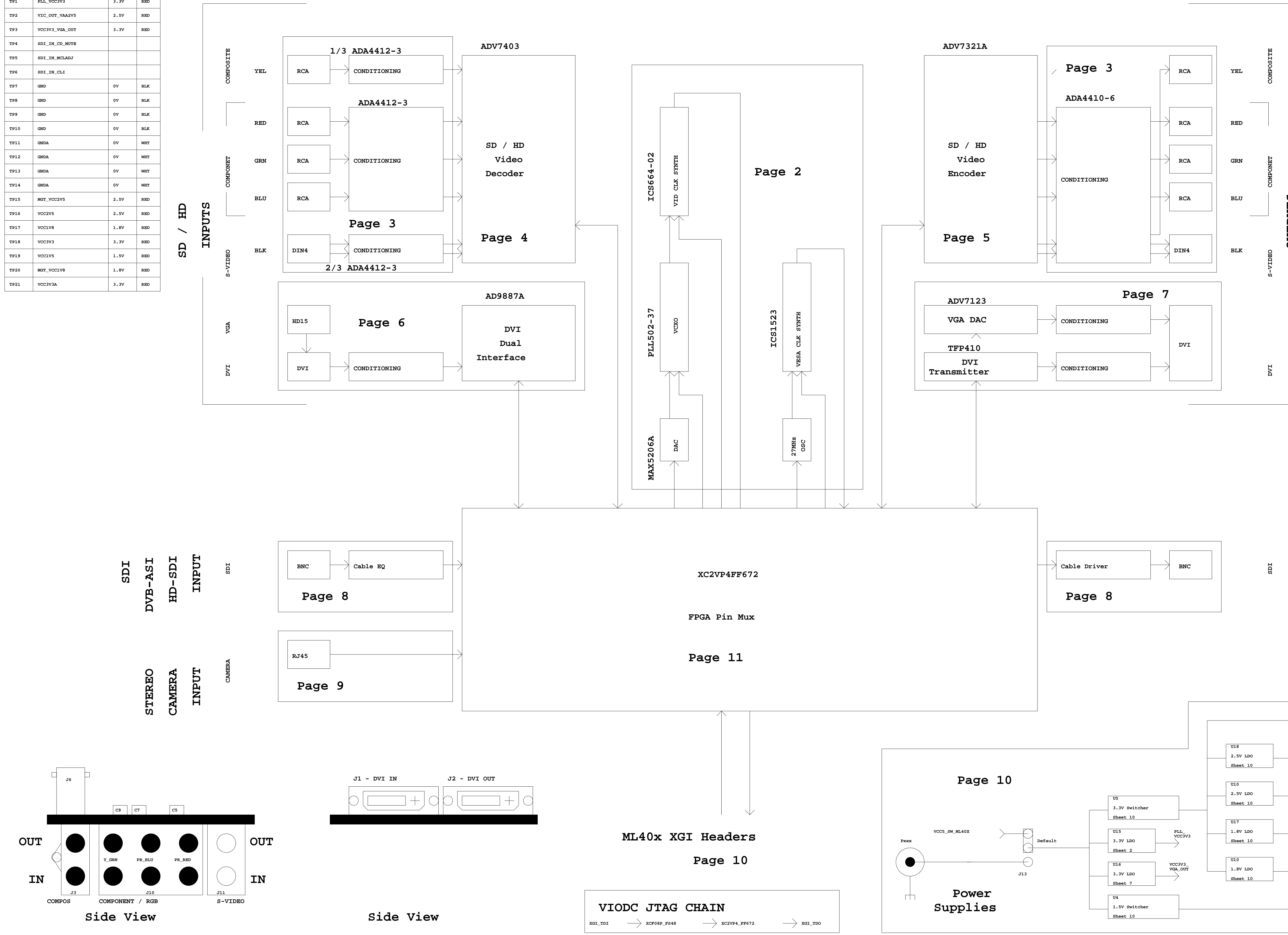
TP #	NET NAME	VOLT	CLR
TP1	PLL_VCC3V3	3.3V	RED
TP2	VIC_OUT_VAA2V5	2.5V	RED
TP3	VCC3V3_VGA_OUT	3.3V	RED
TP4	SDI_IN_CD_MUTE		
TP5	SDI_IN_MCLADJ		
TP6	SDI_IN_CLK		
TP7	GND	0V	BLK
TP8	GND	0V	BLK
TP9	GND	0V	BLK
TP10	GND	0V	BLK
TP11	GND	0V	WHT
TP12	GND	0V	WHT
TP13	GND	0V	WHT
TP14	GND	0V	WHT
TP15	MGT_VCC2V5	2.5V	RED
TP16	VCC2V5	2.5V	RED
TP17	VCC1V8	1.8V	RED
TP18	VCC3V3	3.3V	RED
TP19	VCC1V5	1.5V	RED
TP20	MGT_VCC1V8	1.8V	RED
TP21	VCC3V3A	3.3V	RED

IIC ADDR TABLE

FUNC	ADDRESS		COMPONENT
	WRITE	READ	
VID DECODE	0x20	0x21	ADV7403 VBI
VID DECODE	0x40	0x41	ADV7403 CTL
SDI PLL	0x4C	0x4D	IC61523
VID ENCODE	0x54	0x55	ADV7321B
DVI OUT	0x70	0x71	TFP410
DVI IN	0x9A	0x9B	AD9887A
DVI IN	0xA0	0xA1	HDCP ROM (AD9887A)
VGA IN HD15	0xNN	0xNN	VESA SPBC
DDC DVI OUT	0xNN	0xNN	DVI SPBC

CONNECTOR TABLE

J1	DVI & Analog Video Input
J2	DVI & Analog Video Output
J3	Composite Video In / Out
J8	XCI Recepticals
J5	
J4	
J9	
J6	HD / SD SDI Input
J7	HD / SD SDI Output
J10	Component & RGB In / Out
J11	S-Video In / Out
J12	DC Power Jack
J13	Power Source Selector
J14	IC61523 Clock Source Selector
J15	Fan Header
J16	IIC Monitor Header
J17	User Output Header
J18	PC4 Header for stand-alone use
P1	VGA Input Connector
P2	Stereo Camera Input (NOT for Ethernet)



PCB: PM-1280391
 ASSEMBLY: PM-041372
 TESTING: SPEC_NUM=TSS0093

Part Numbers
 0381221 - Schematic
 0531562 - PCB Gerber Plots
 1280391 - Printed Circuit Board part #
 041372 - PCB Assembly

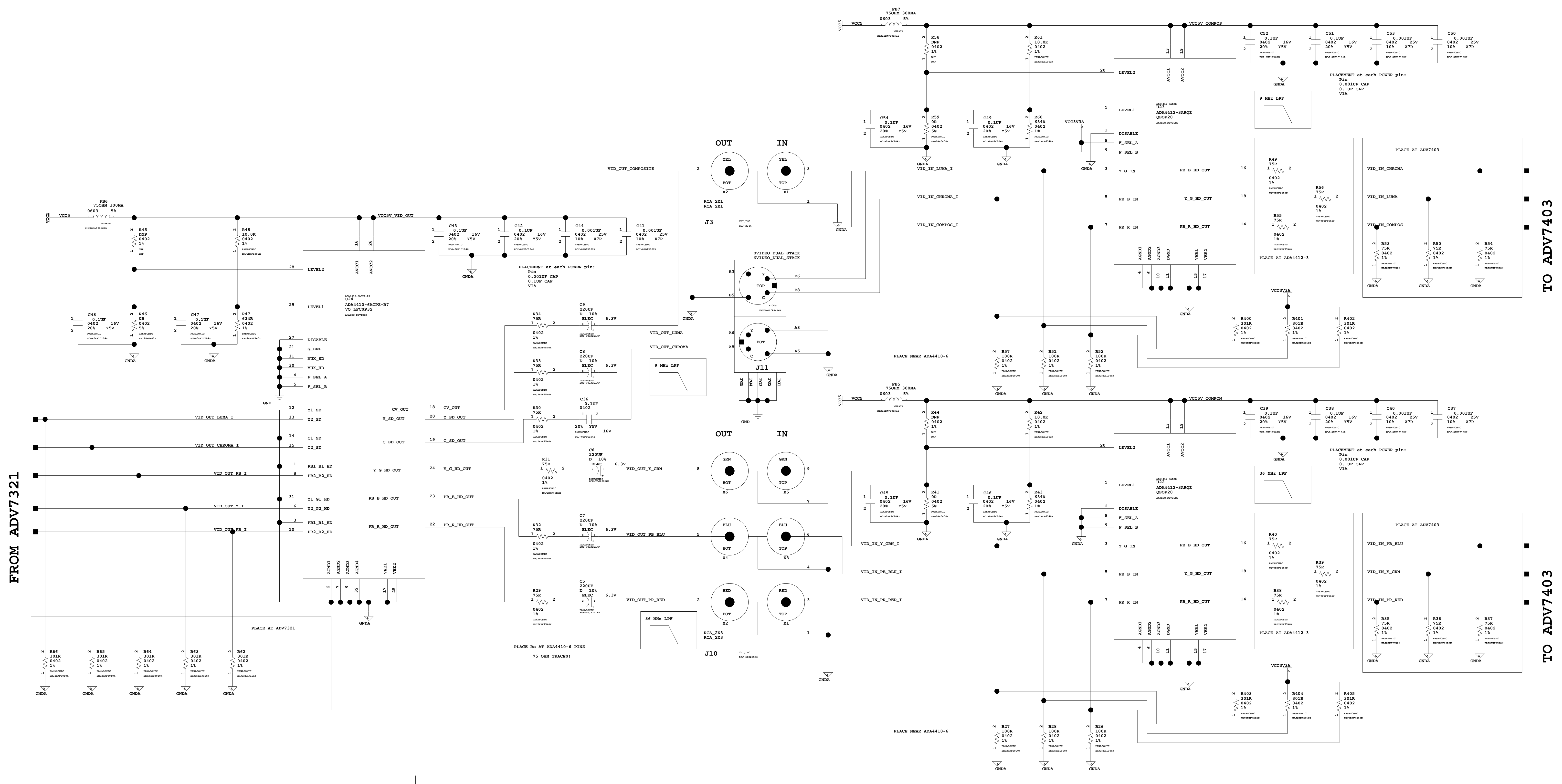
XILINX

Title: SCHEMATIC: VIODC
 Block Diagram

Date: 09-17-05	Ver: B
Sheet Size: D	Rev: 02
Sheet 1 of 13	Drawn By: GAB

SD and HD Video Input / Output Filters

NOTE:
These circuits must be near the
ADV74x2, and must follow analog
layout rules.



ALL TRACES 75 OHM HERE!!!

FROM ADV7321

TO ADV7403

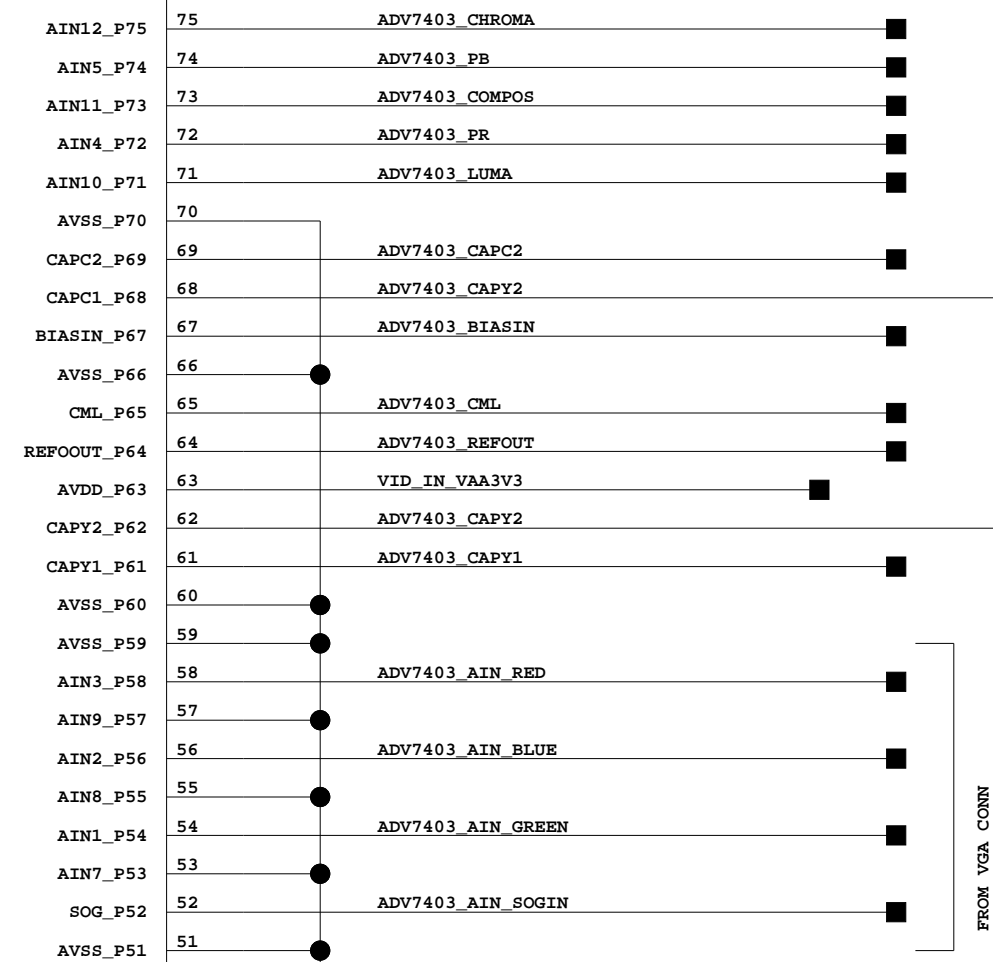
TO ADV7403

SD / HD Video Decoder



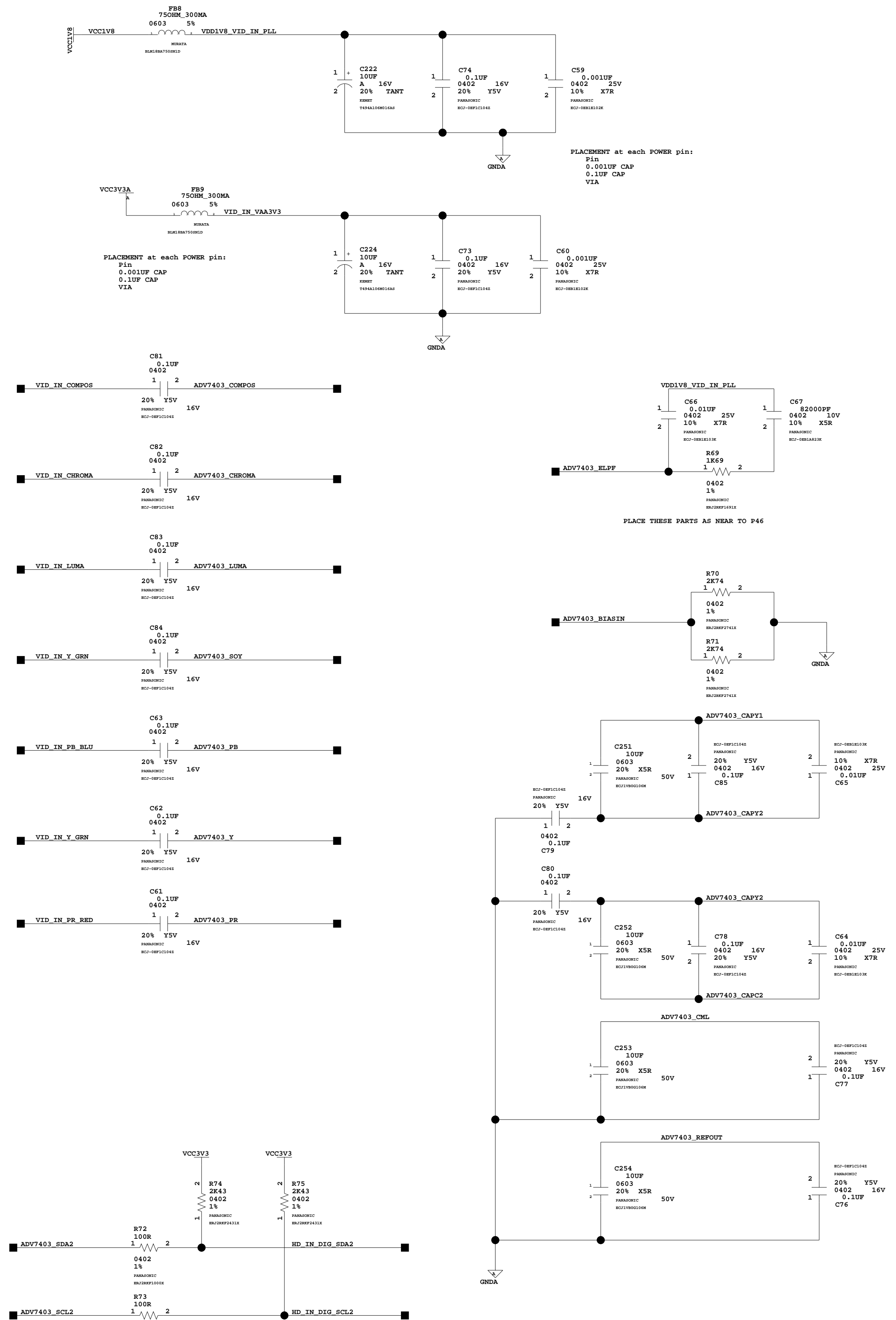
ADV7403KSTZ-140

ANALOG DEVICES
ADV7403KSTZ
U14



SHORT AT ADV7403I1

FROM VDDA COMB



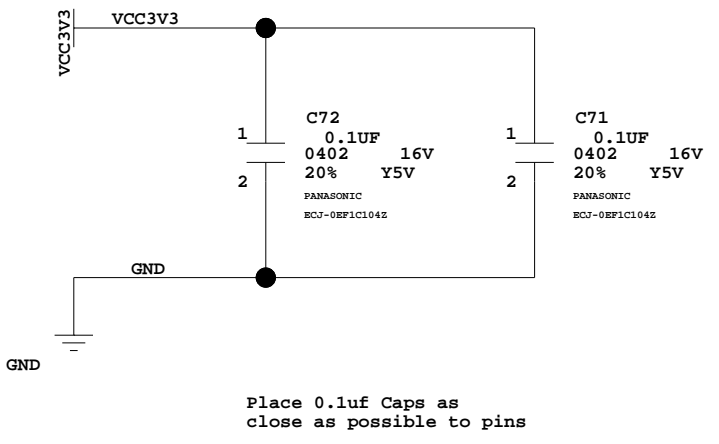
IIC ADDR:
0x40/0x41 CTL
0x20/0x21 VBI

XILINX

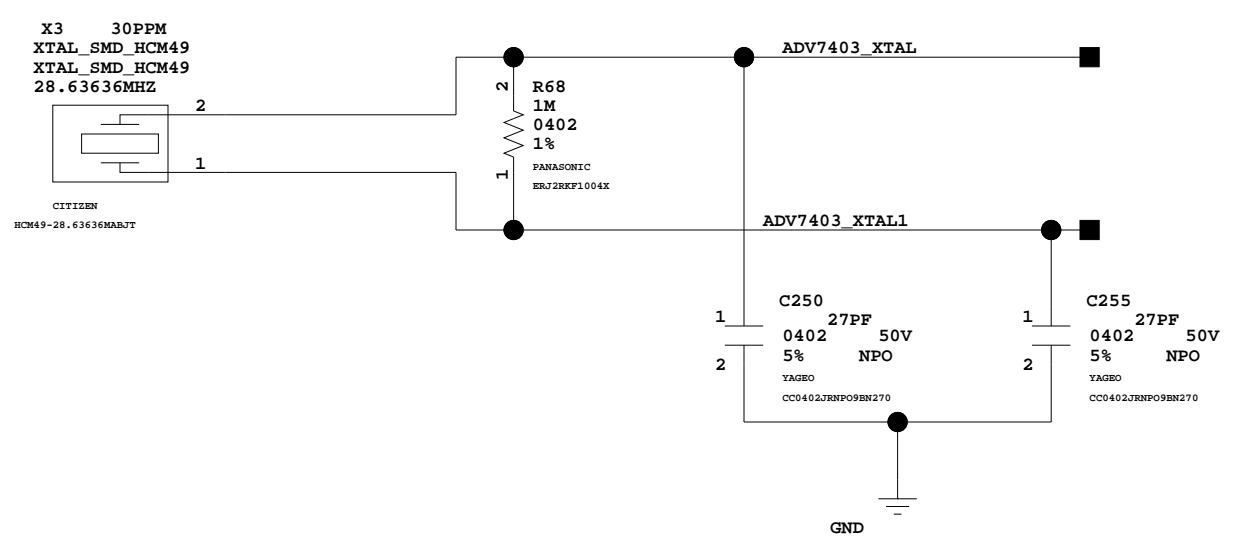
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SD / HD Video Decoder

Date: 09-17-05 Ver: B
Sheet Size: D Rev: 02
Sheet 4 of 13 Drawn By: GAB

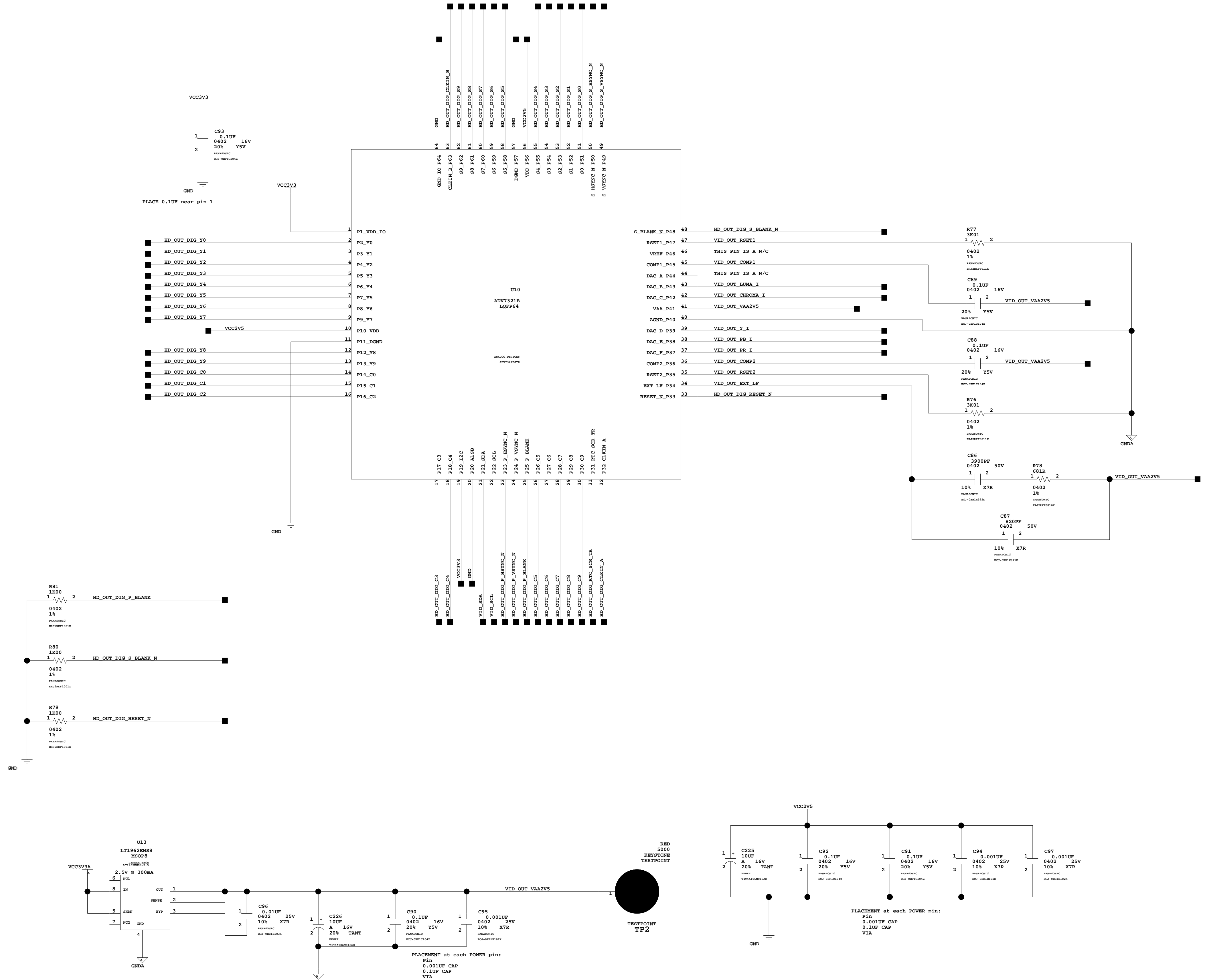
MIX FPGA # OF PINS USED = 53 I/Os (1.3V)



Place 0.1uF Caps as close as possible to pins



SD / HD Video Encoder



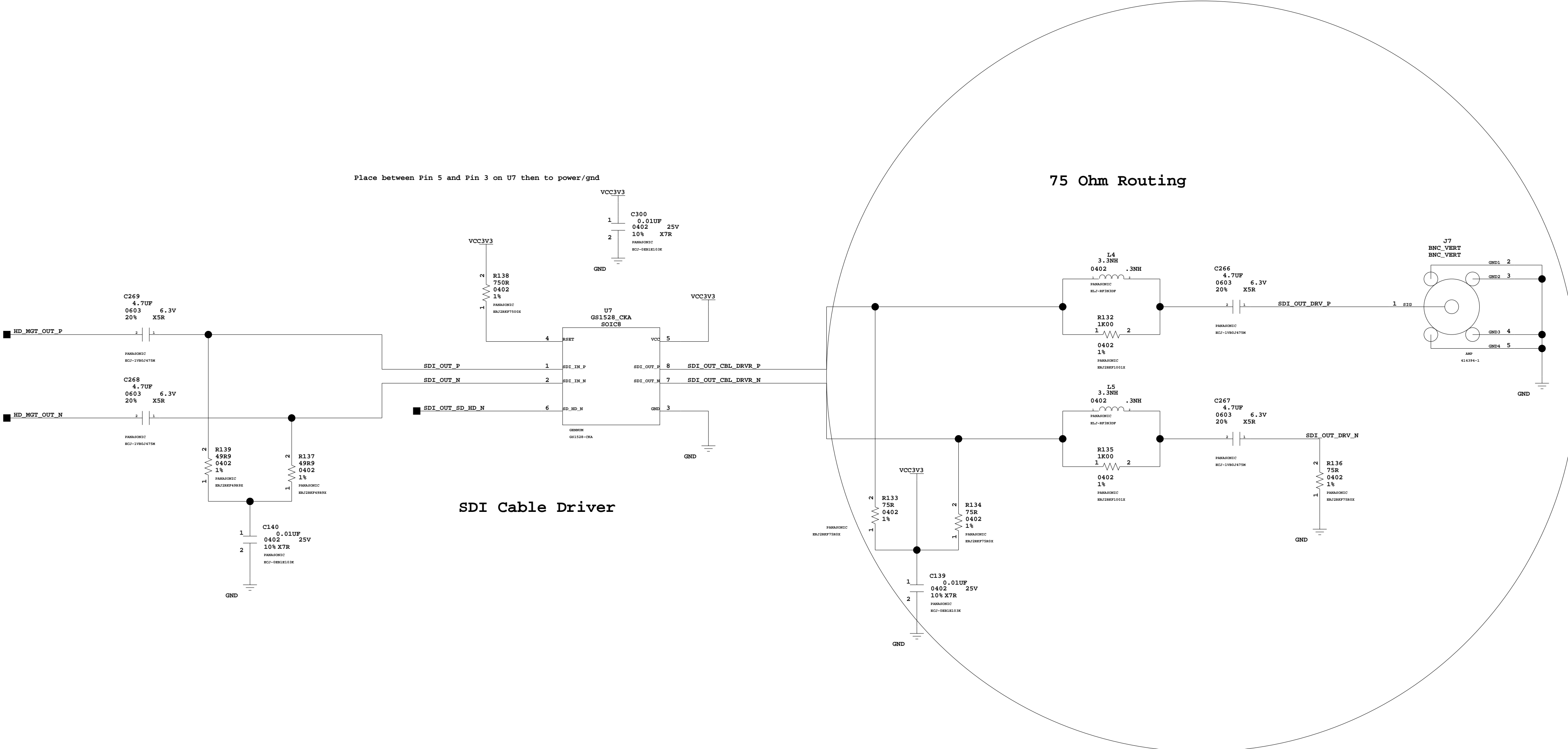
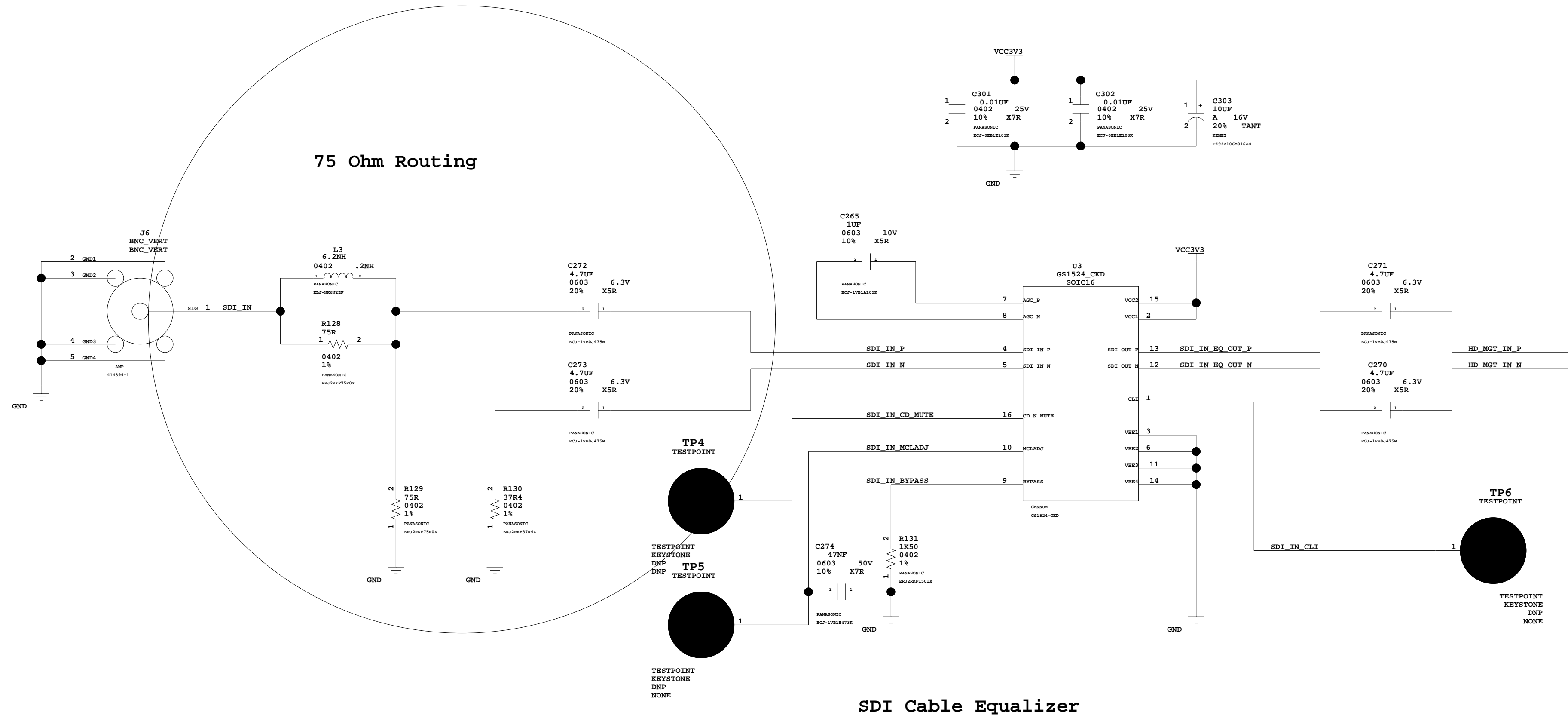
MIX FPGA # OF PINS USED = 42 I/Os (3.3V)

VIDEO ENCODER 2.5V POWER SOURCE

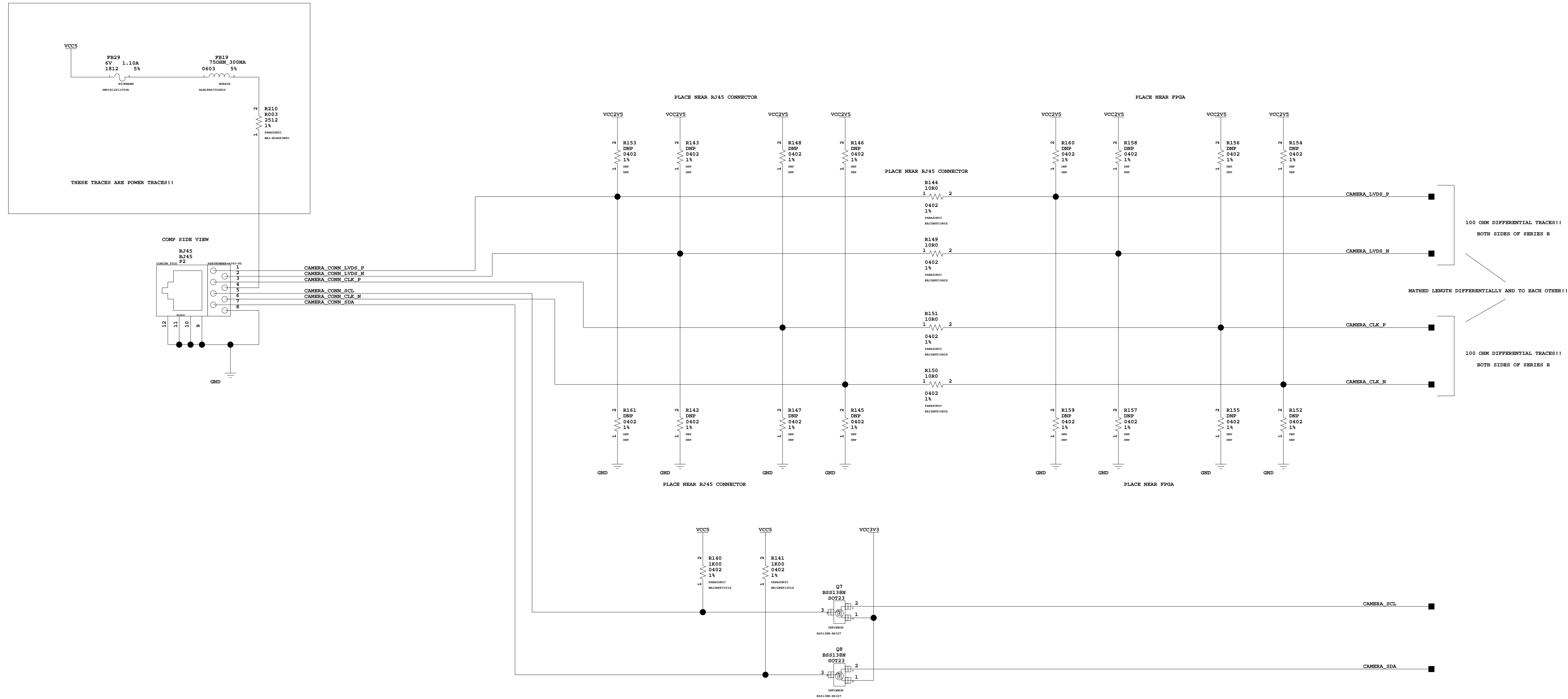
IIC ADDR:
0x54/0x55

Title: SCHEMATIC: VIODC	
SD / HD Video Encoder	
Date: 09-17-05	Ver: B
Sheet Size: D	Rev: 02
Sheet 5 of 13	Drawn By GAB

SDI Video Input and Output Circuits



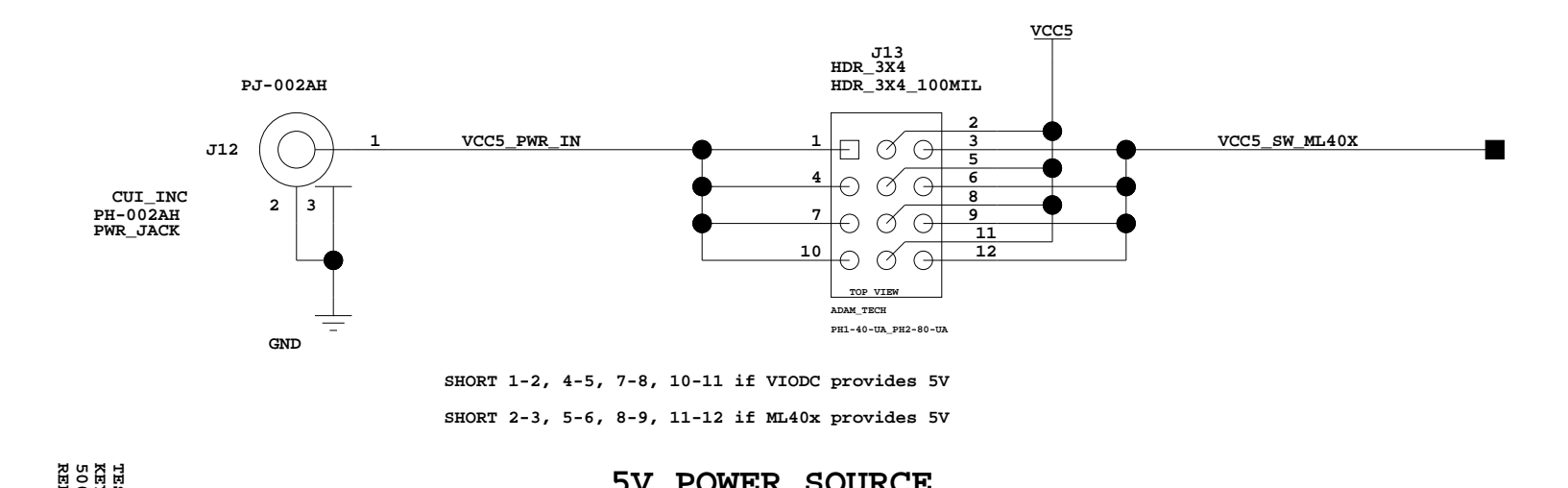
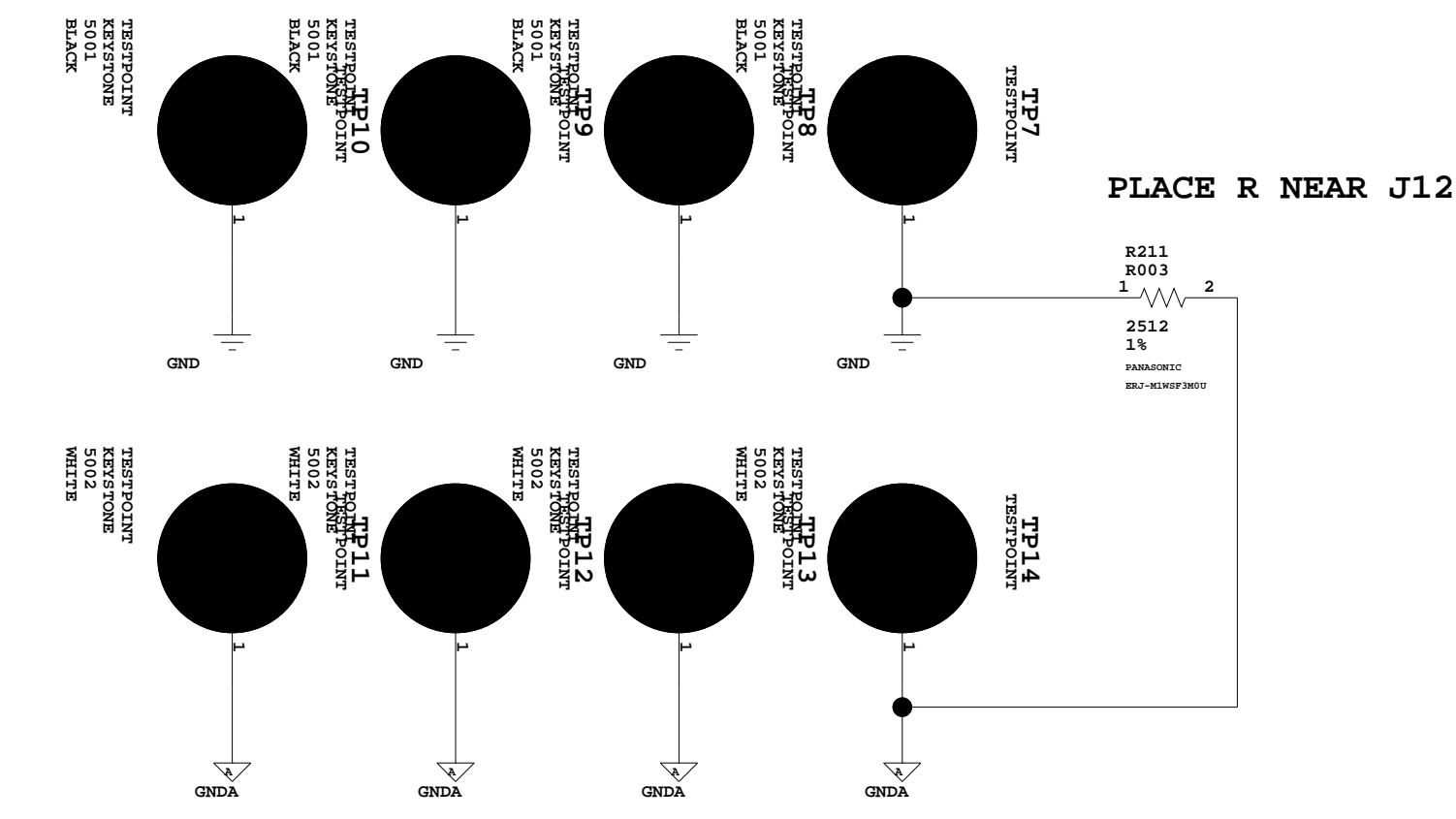
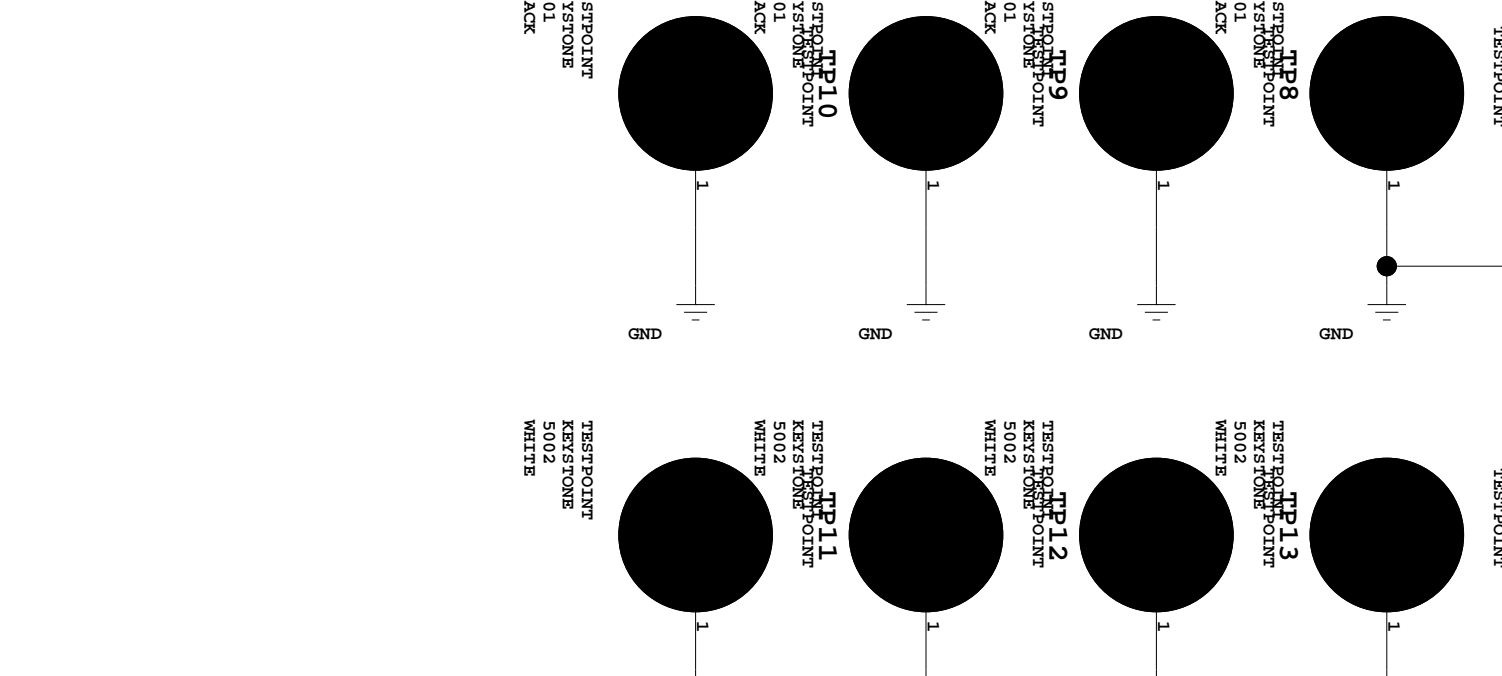
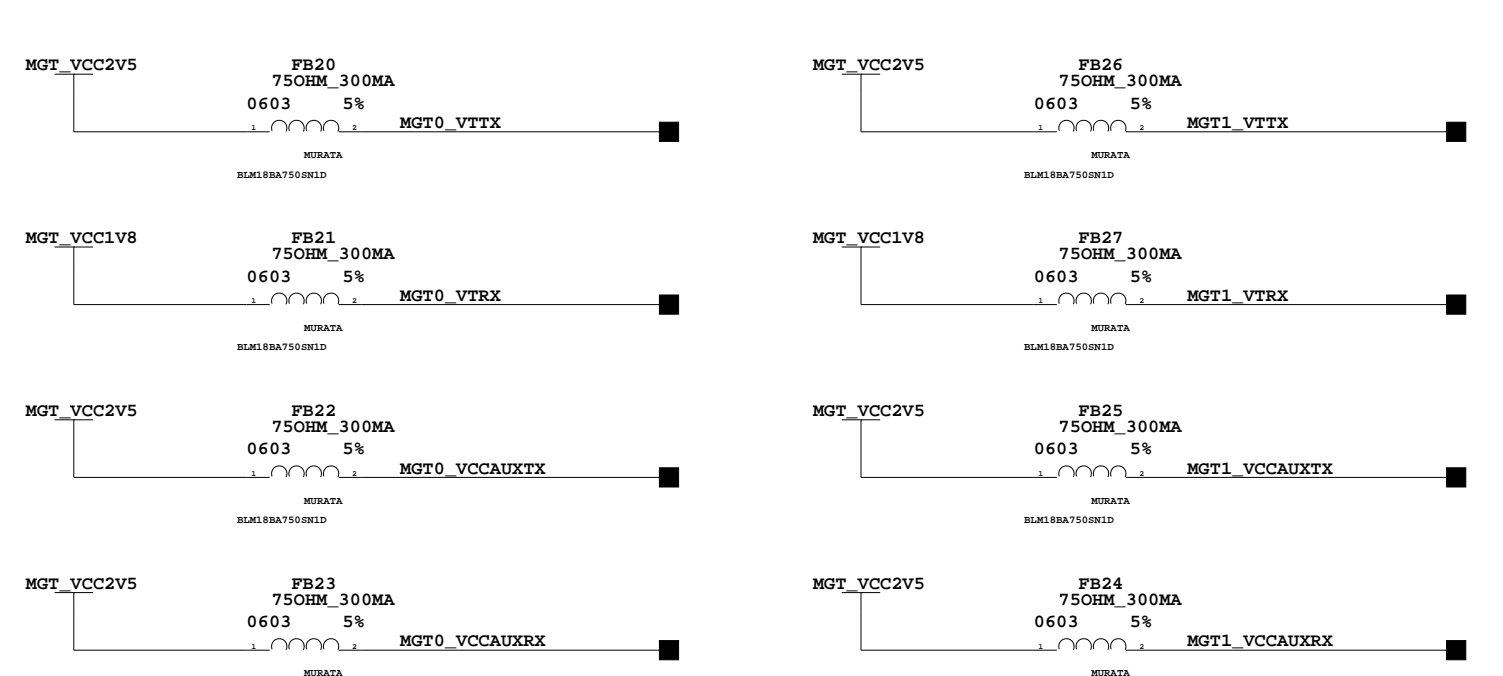
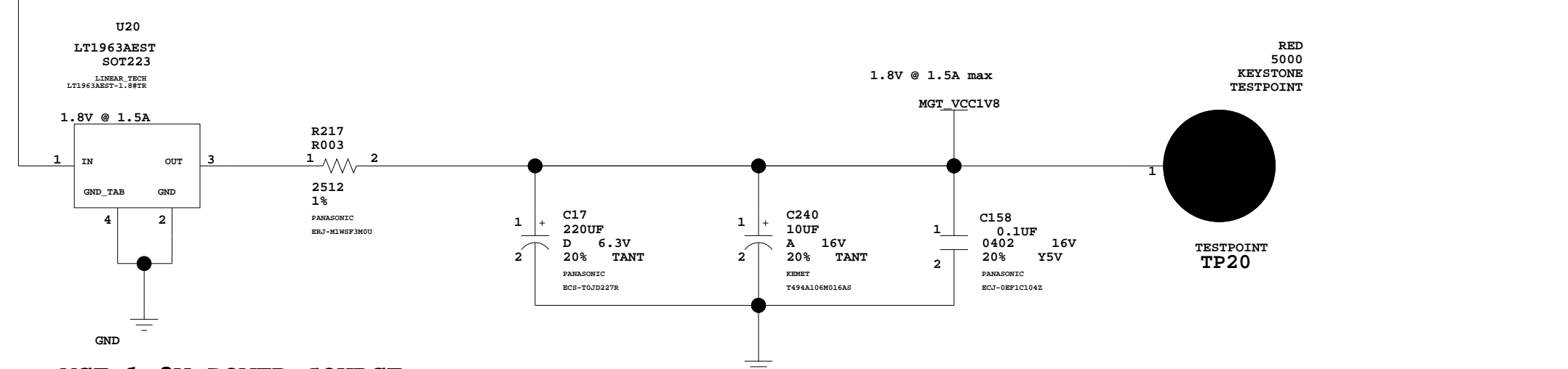
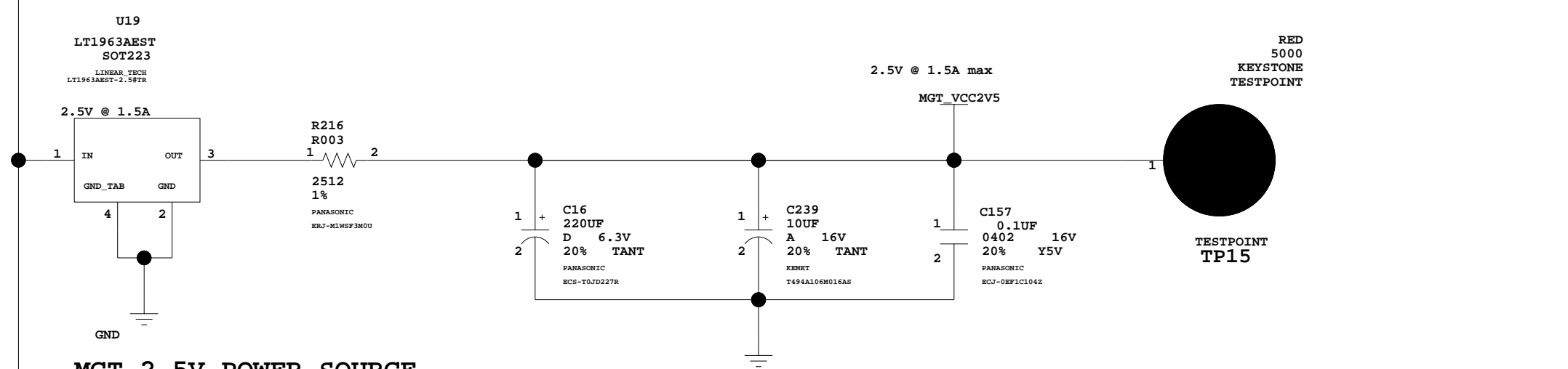
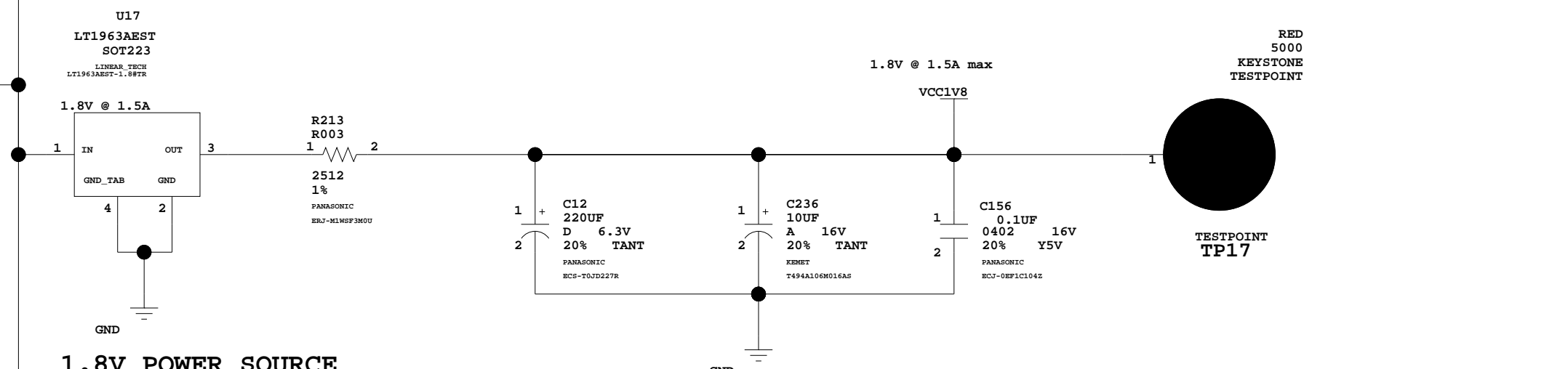
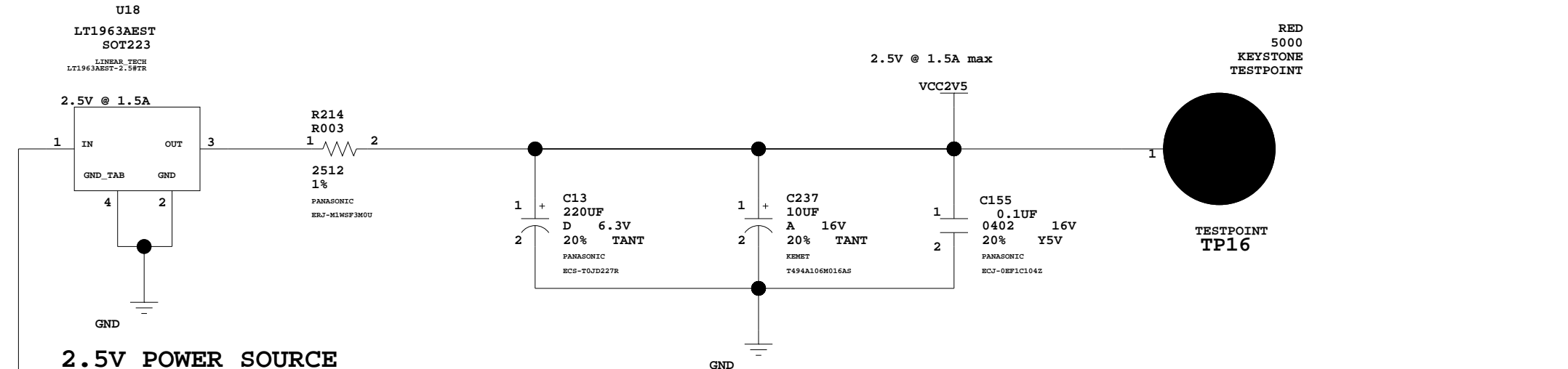
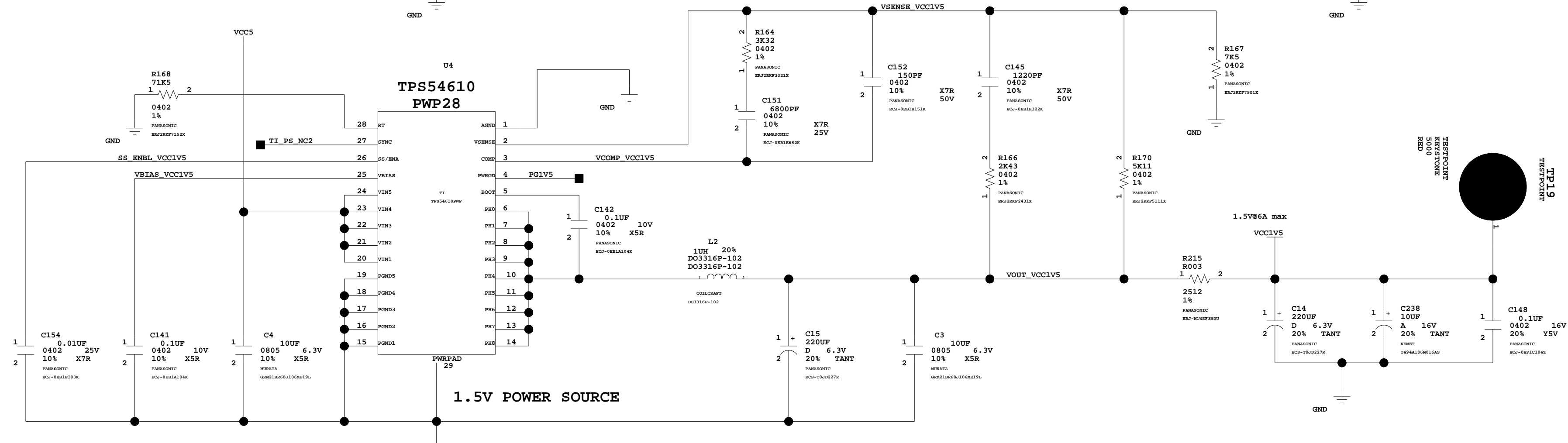
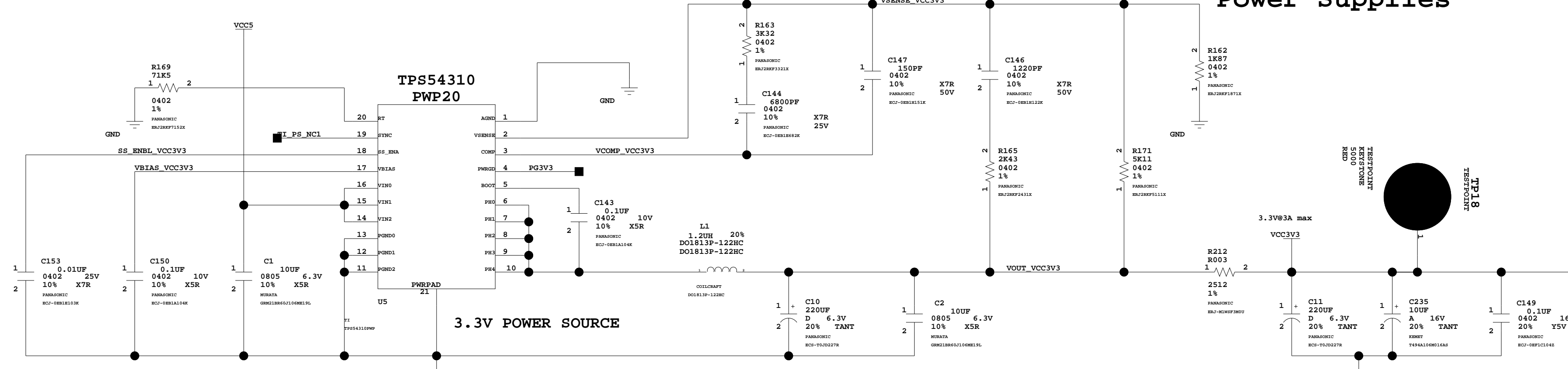
Stereo Camera Input



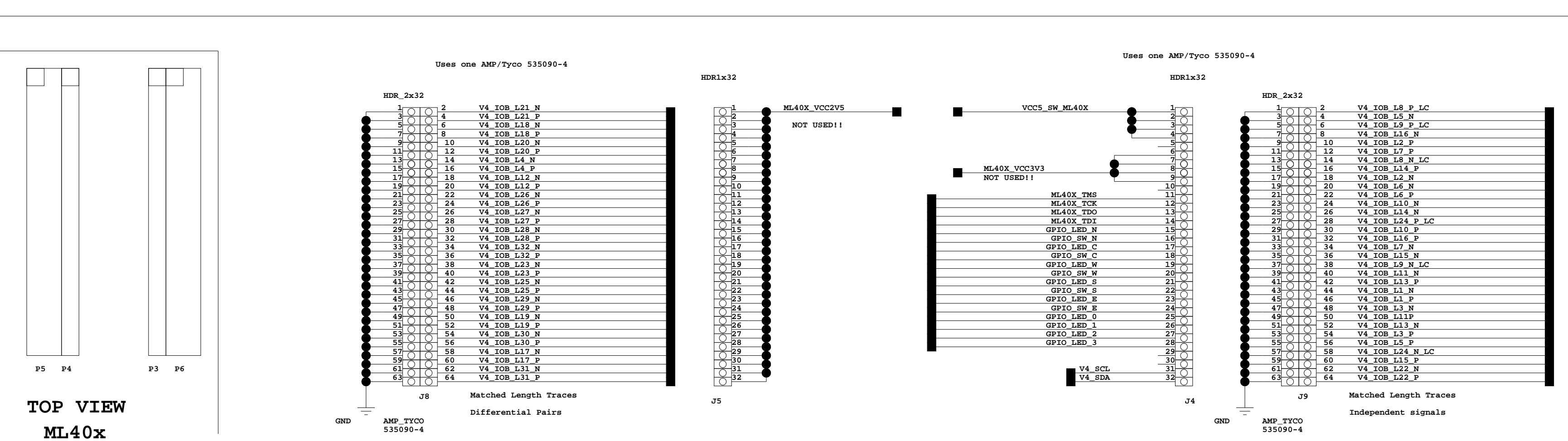
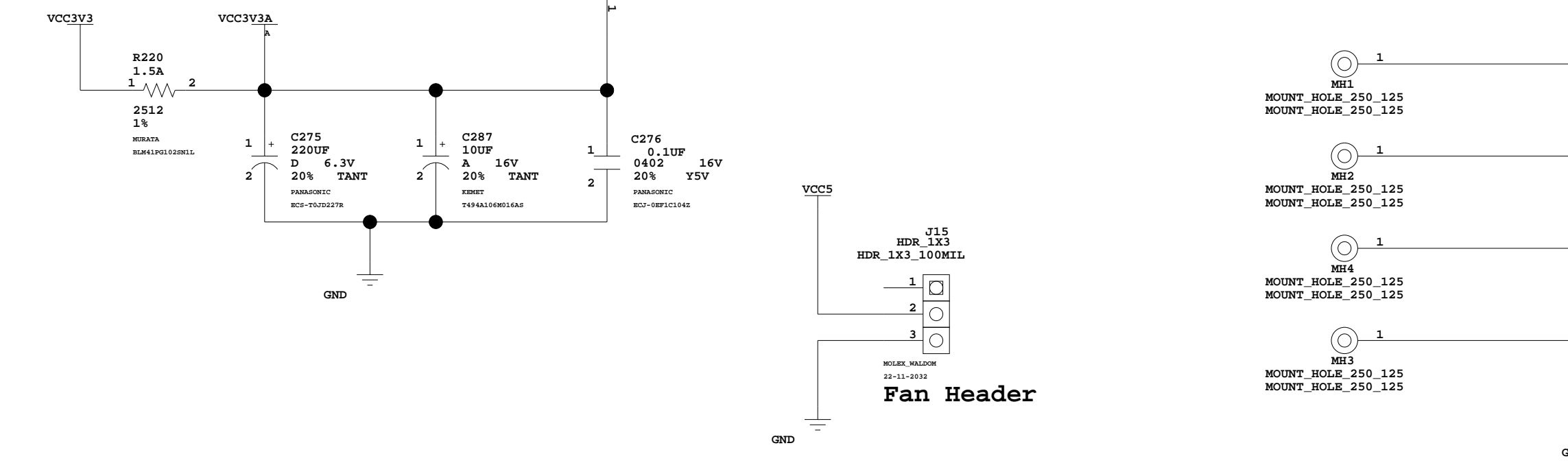
Title: SCHEMATIC: VIODC Stereo Camera Input	
Date: 09-17-05	Ver: B
Sheet Size: D	Rev: 02
Sheet: 9 of 13	Drawn By: GAB

MIX FPGA # OF PINS USED = 2 IO# (3.3V)
MIX FPGA # OF PINS USED = 4 IO# (2.5V)

Power Supplies



NOTE: R220 is an 1806 Package Ferrite Bead



TOP VIEW
ML40x

XGI Expansion Recepticals

XILINX

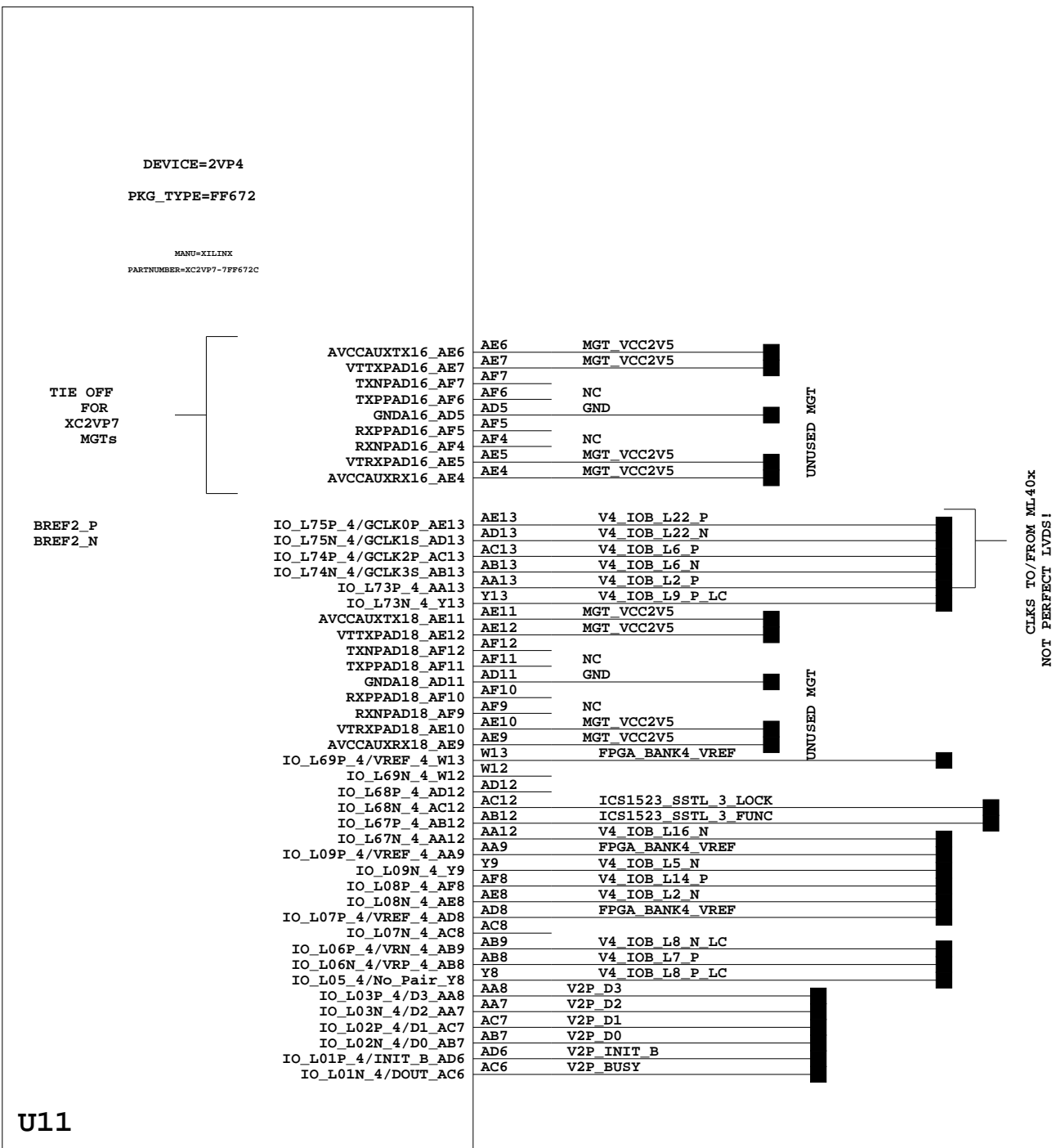
Title: SCHEMATIC: VIODC
Pwr Supplies and ML40x Expansion Header

Date: 09-17-05 Ver: B
Sheet Size: D Rev: 02
Sheet 10 of 13 Drawn By: GAB

CHECK ML40x SCHEMATICS TO MAKE SURE
3.3V I/Os REALLY ARE!!!

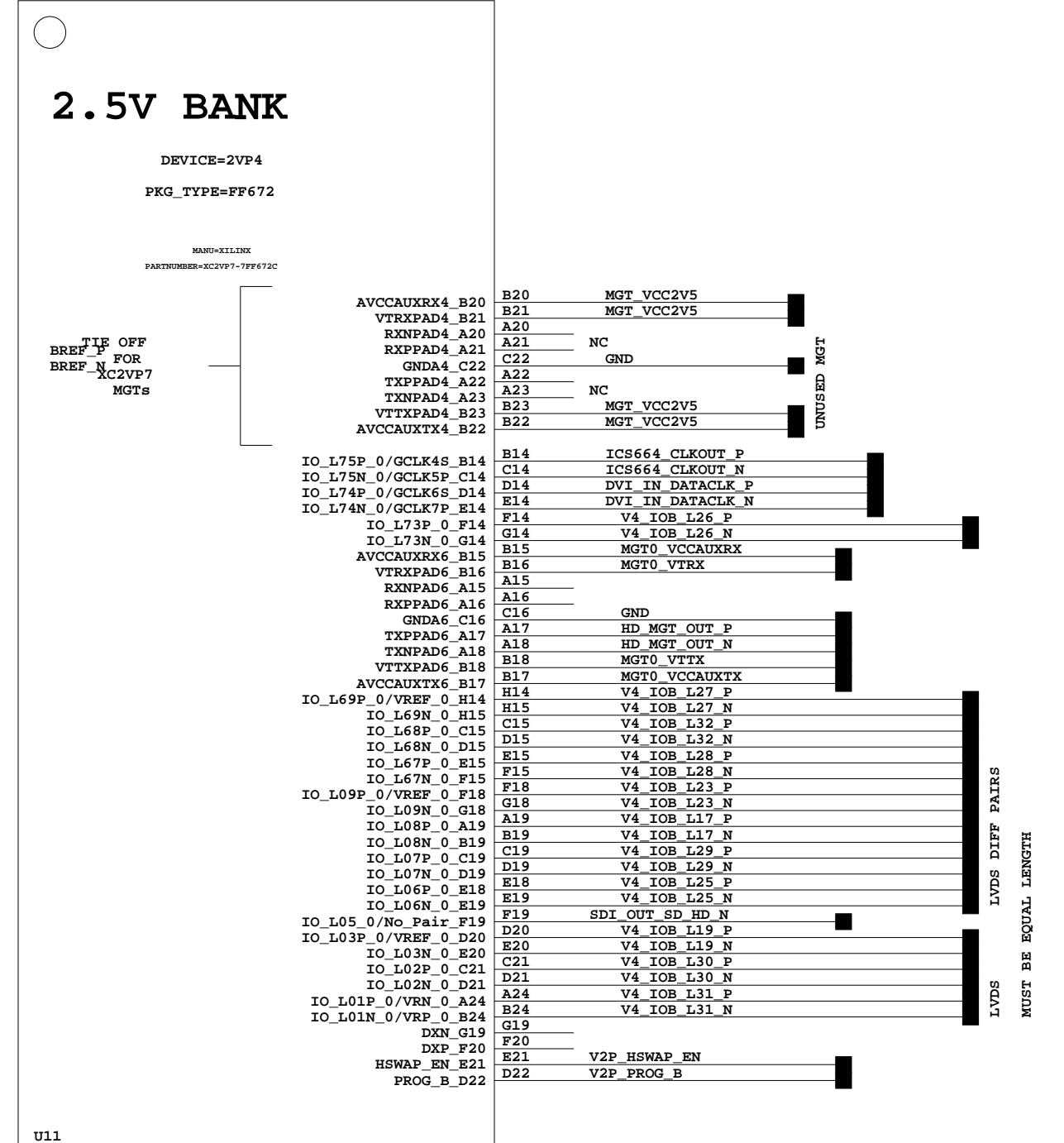
MIX FPGA # OF PINS USED = 14 I/Os (3.3V)
MIX FPGA # OF PINS USED = 64 I/Os (1.25V)

2.5V BANK

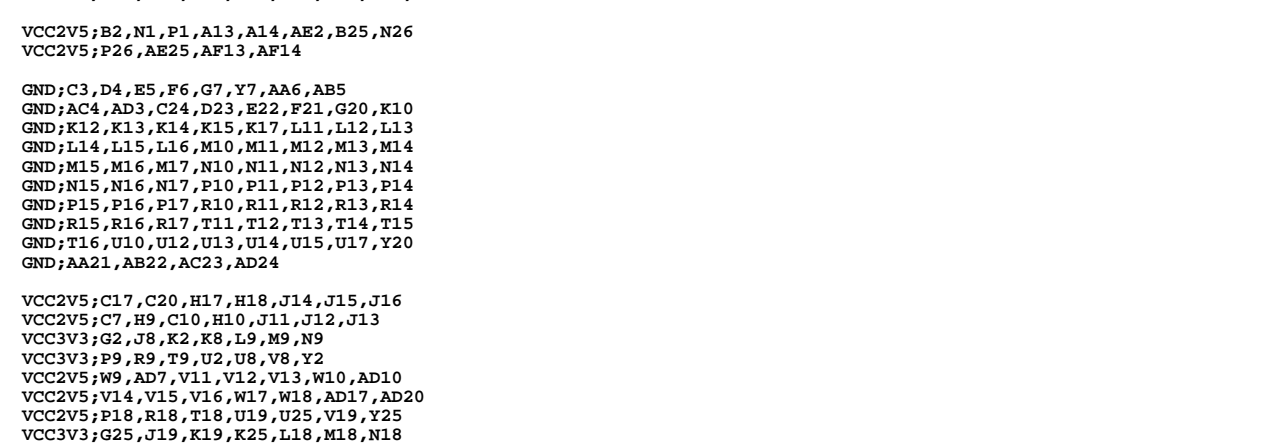


XC2VP4-bank4
FF672
(DIE DOWN)

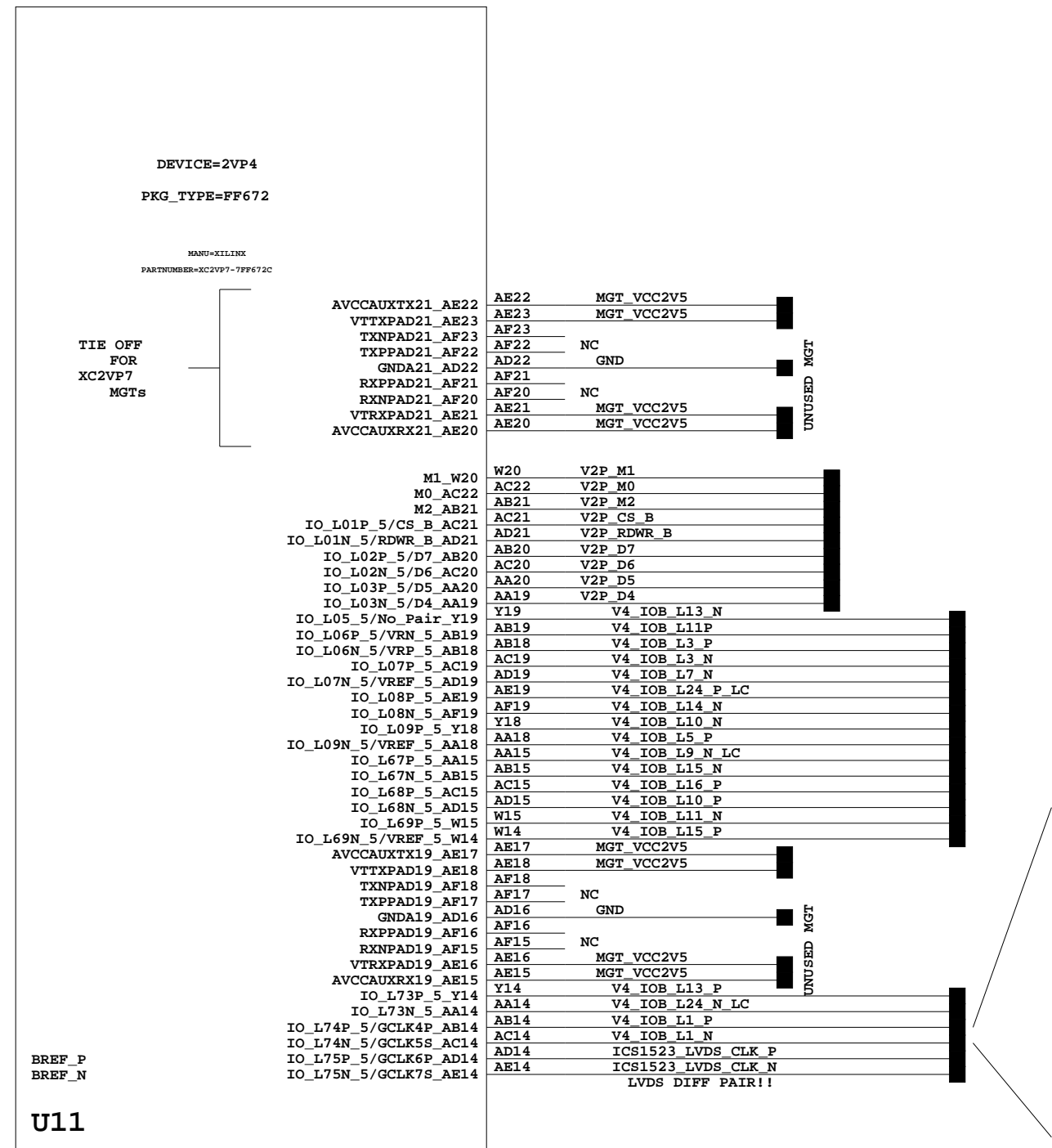
XC2VP4-bank0
FF672
(DIE DOWN)



2.5V BANK

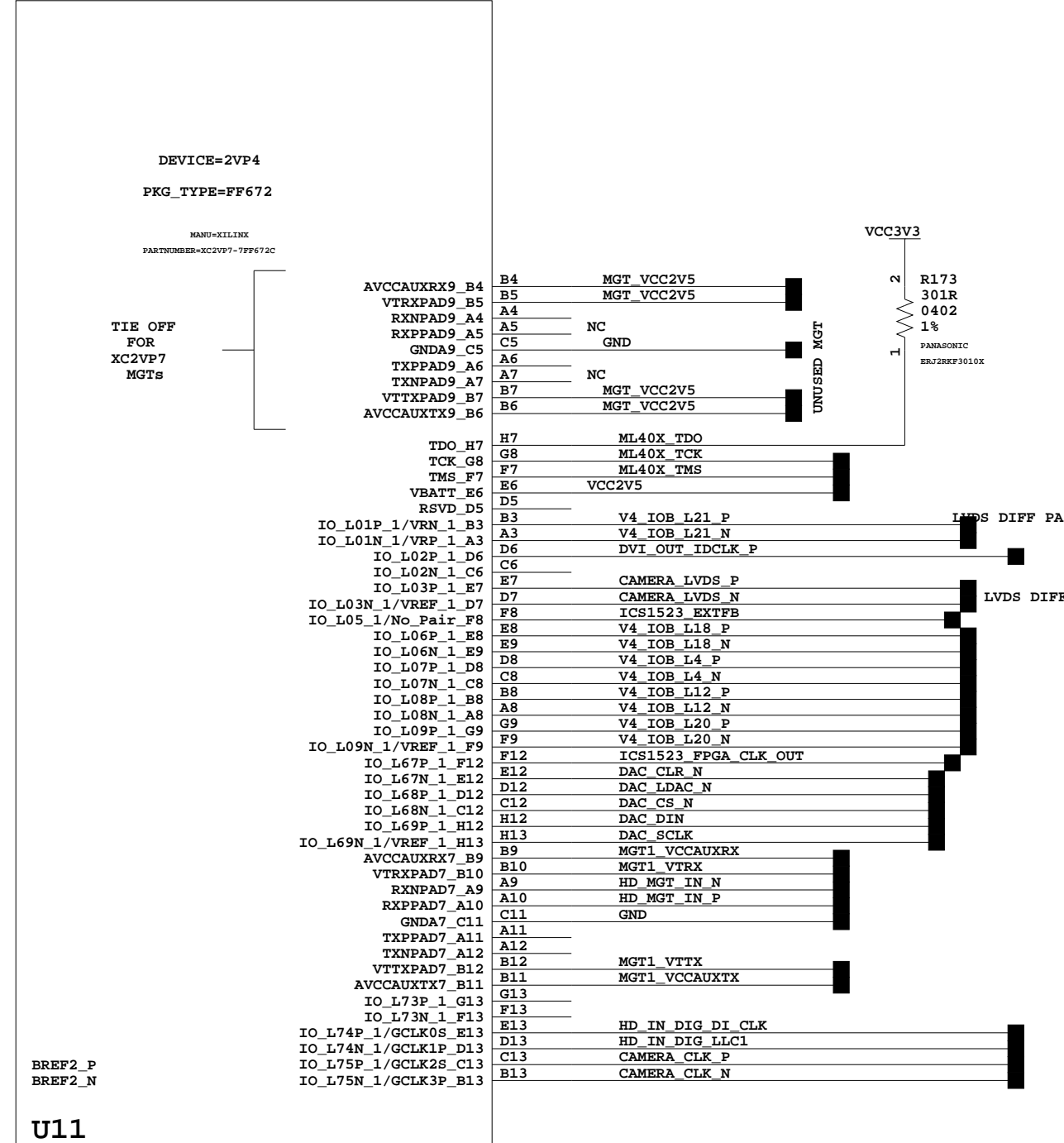


2.5V BANK



XC2VP4-bank5
FF672
(DIE DOWN)

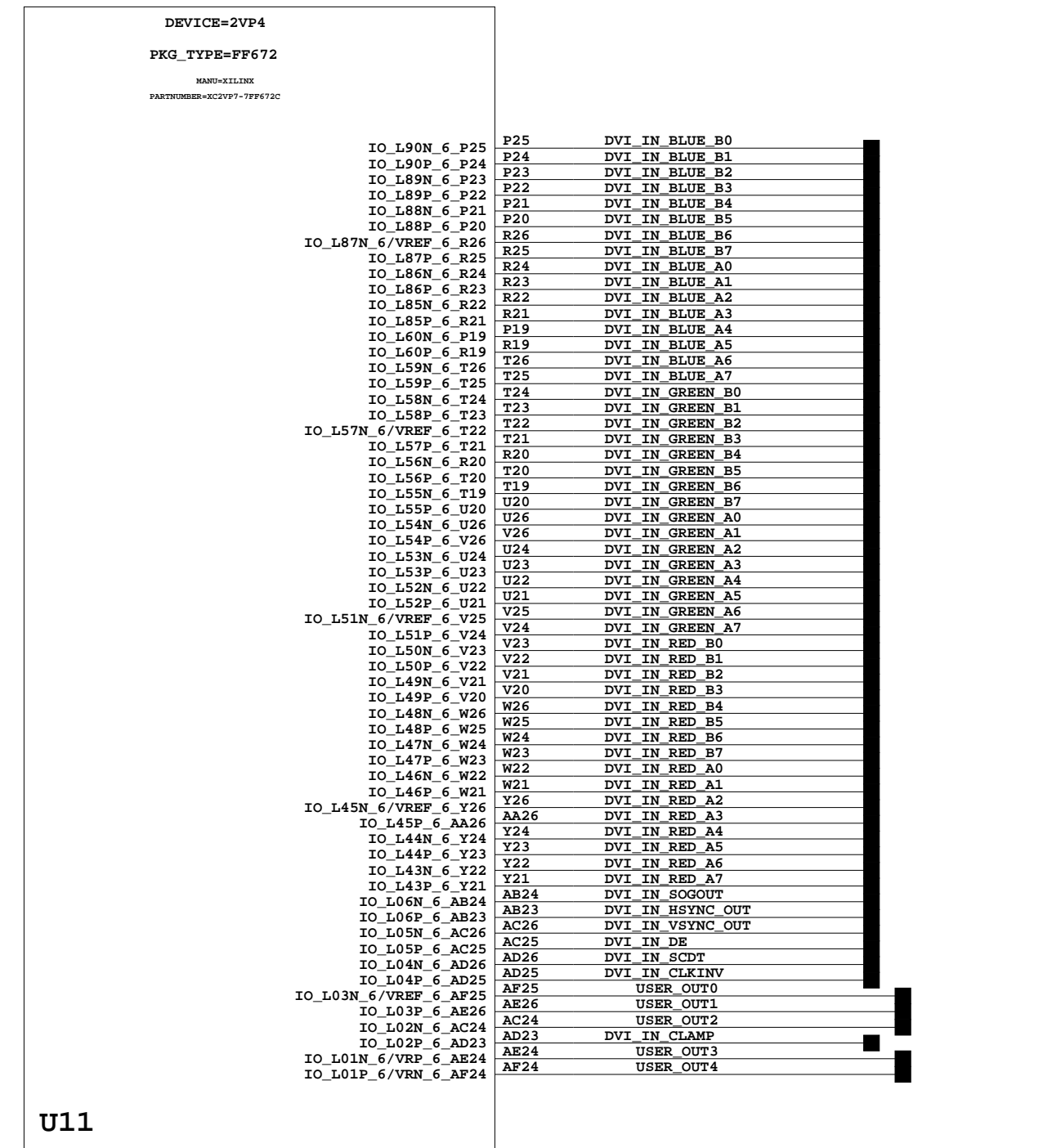
XC2VP4-bank1
FF672
(DIE DOWN)



2.5V BANK

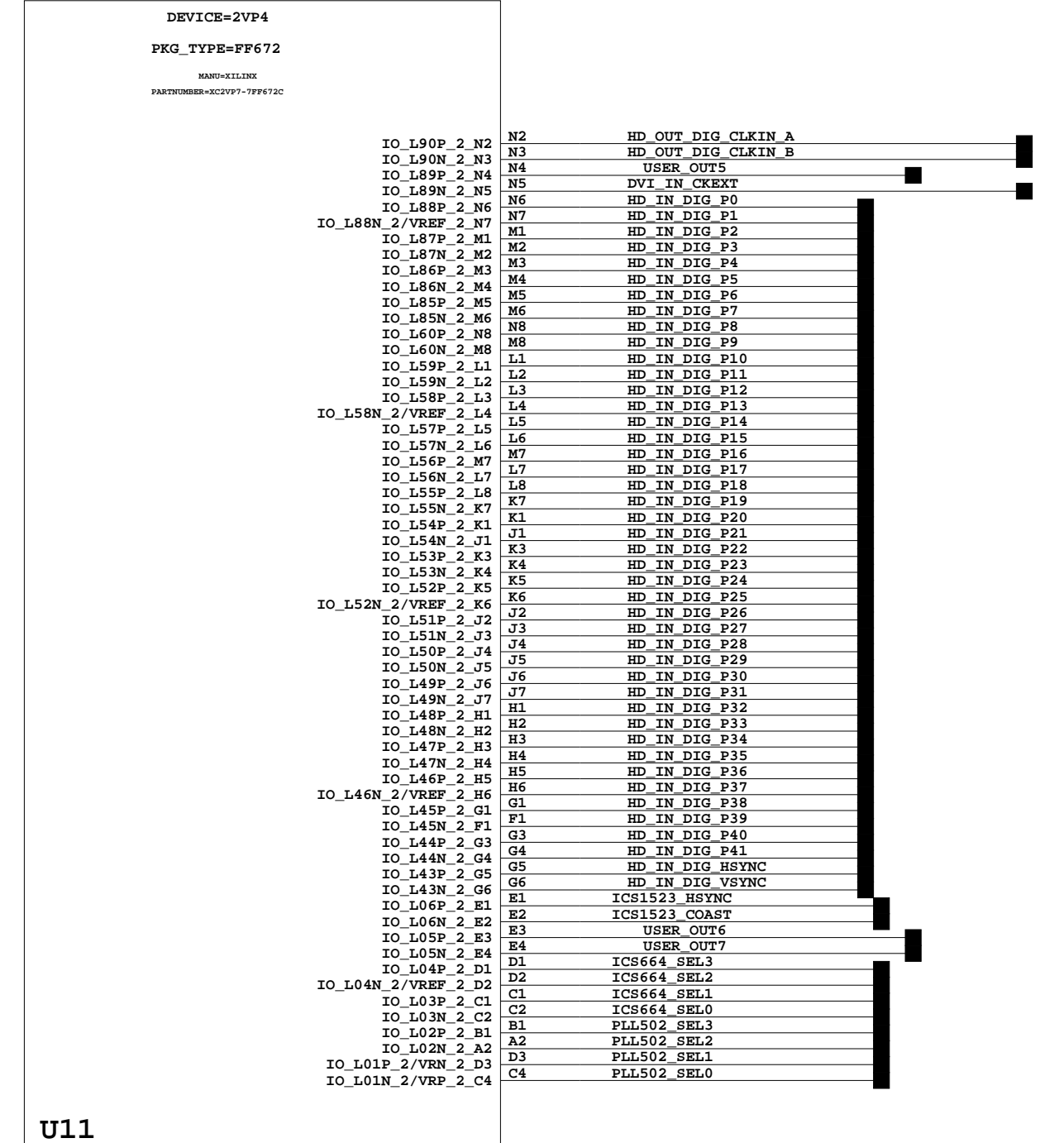


3.3V BANK

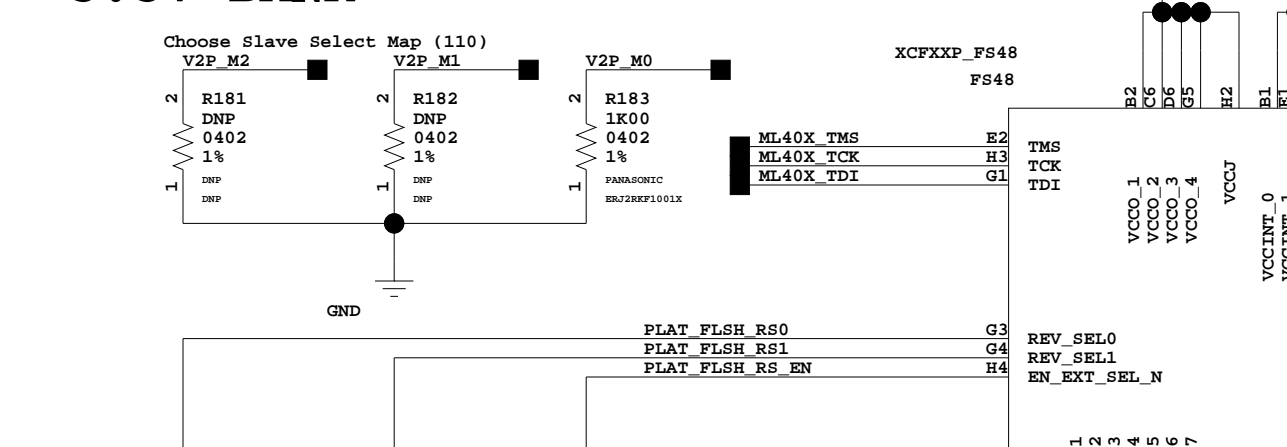


XC2VP4-bank6
FF672
(DIE DOWN)

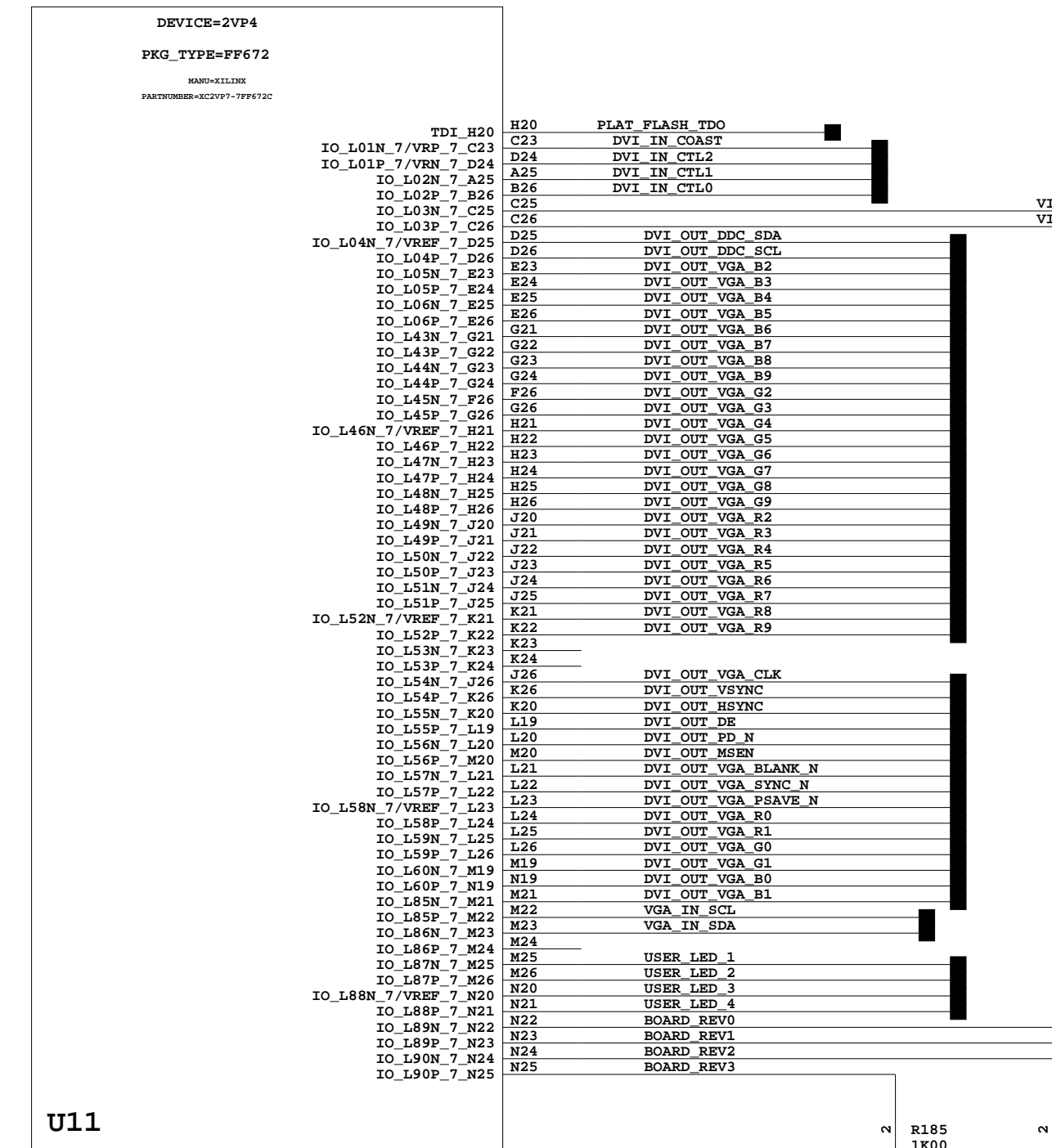
XC2VP4-bank2
FF672
(DIE DOWN)



3.3V BANK

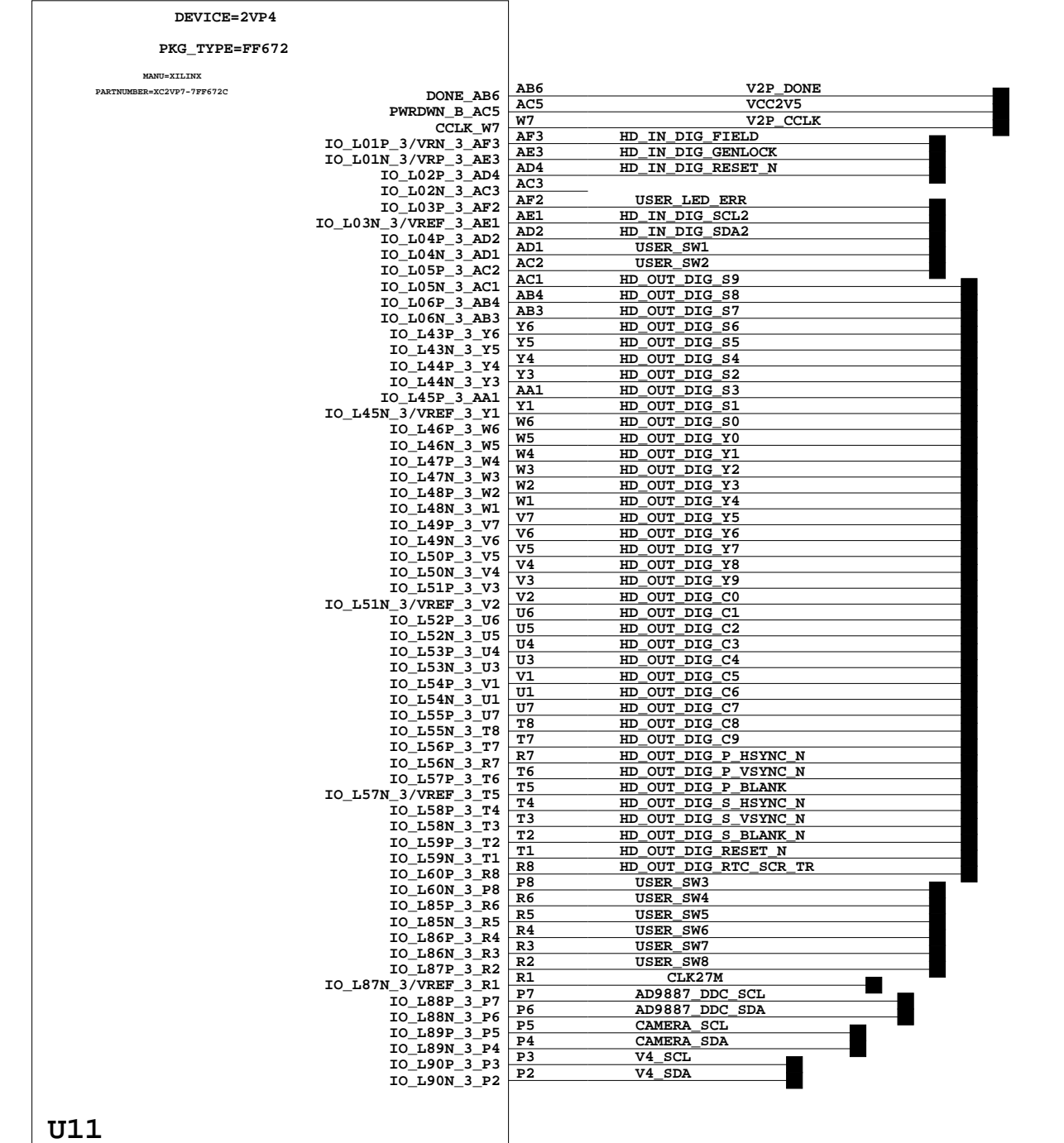


3.3V BANK

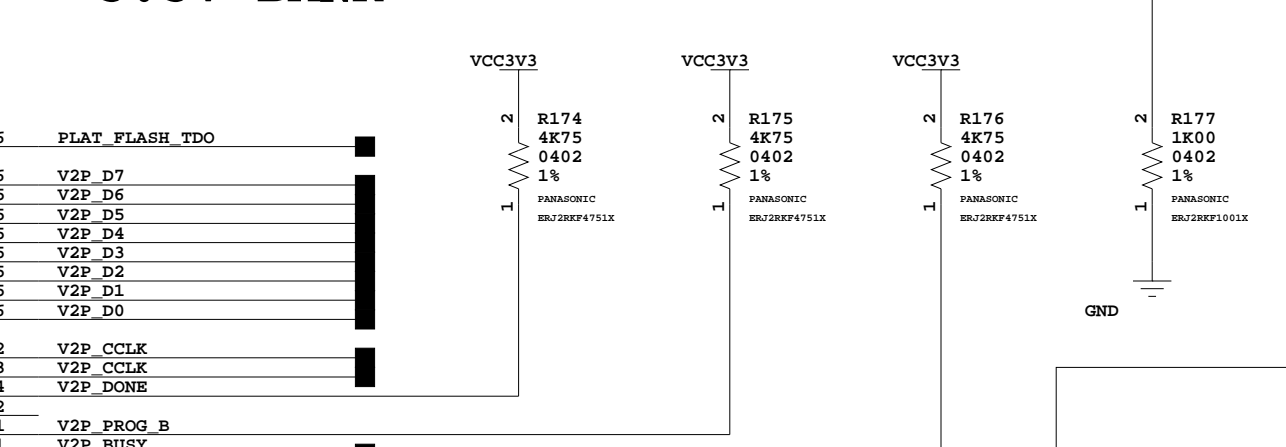


XC2VP4-bank7
FF672
(DIE DOWN)

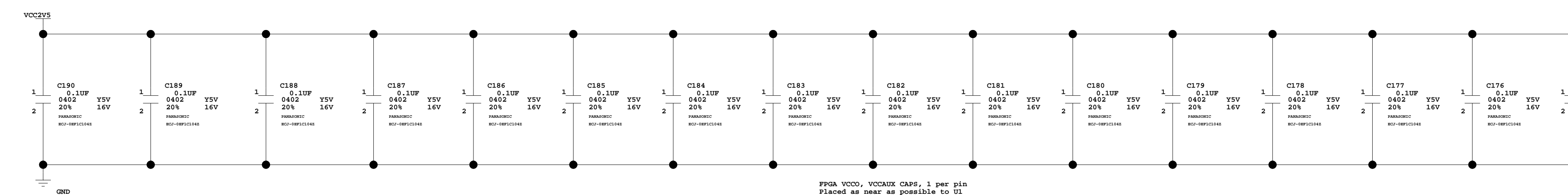
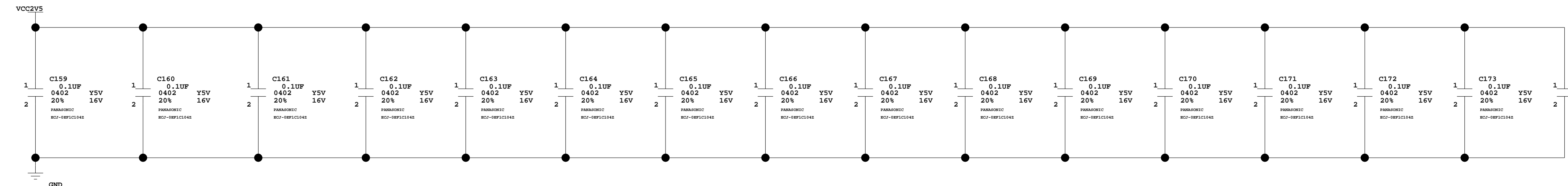
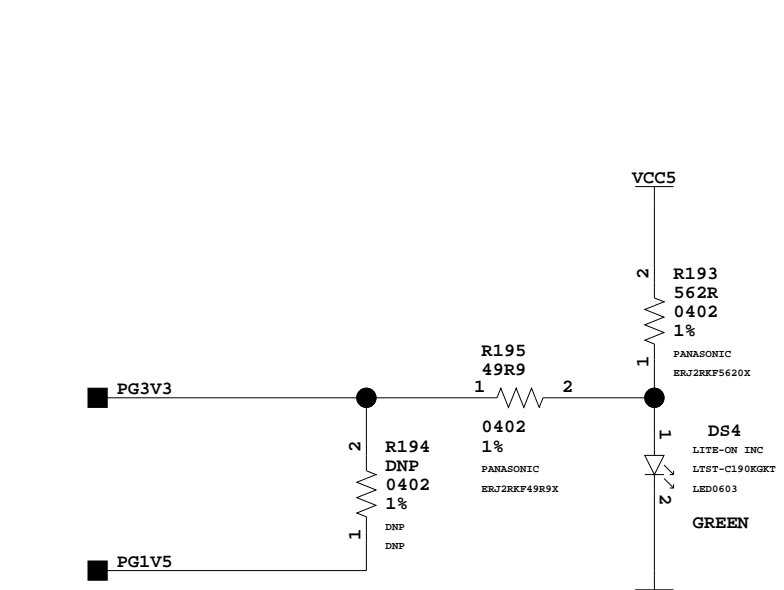
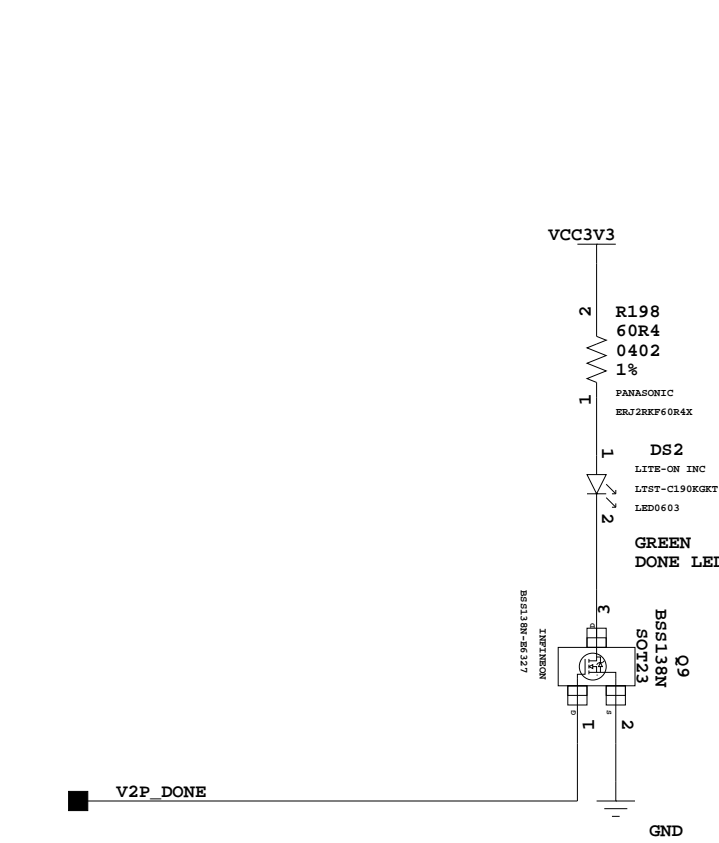
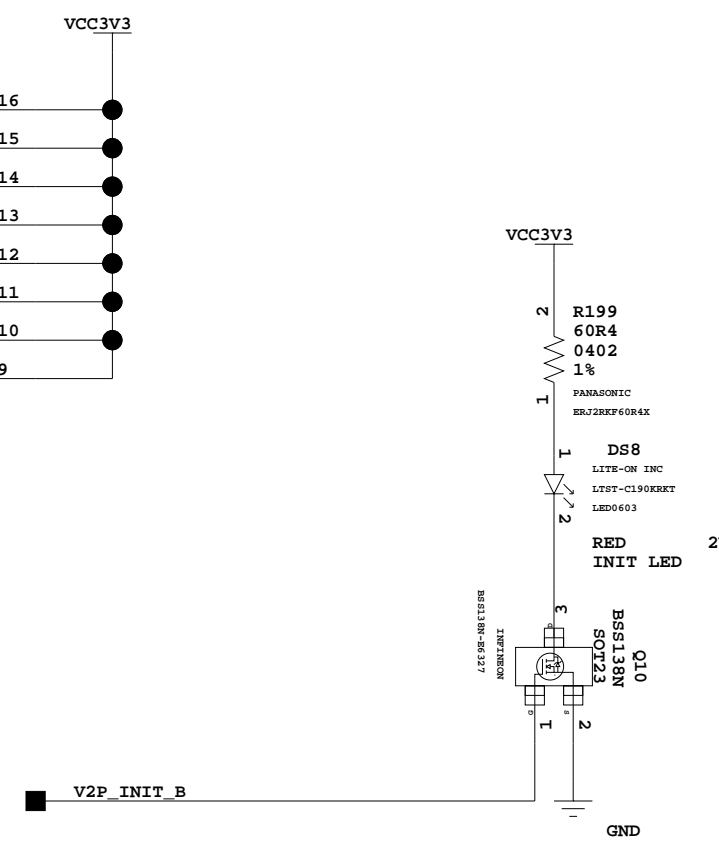
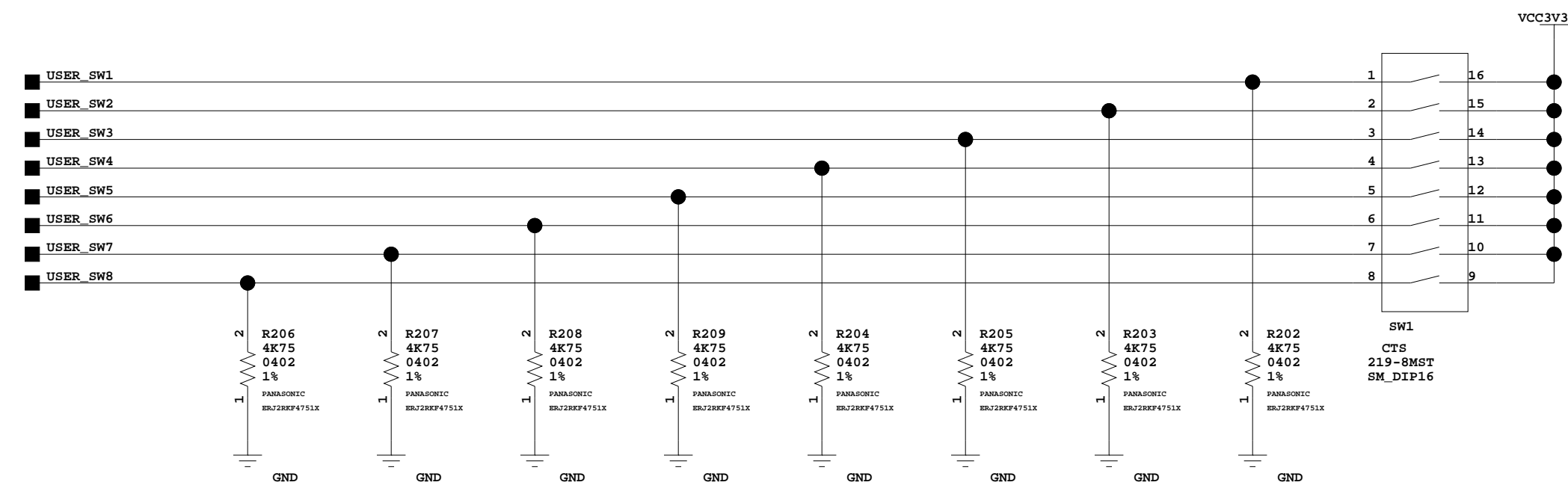
XC2VP4-bank3
FF672
(DIE DOWN)



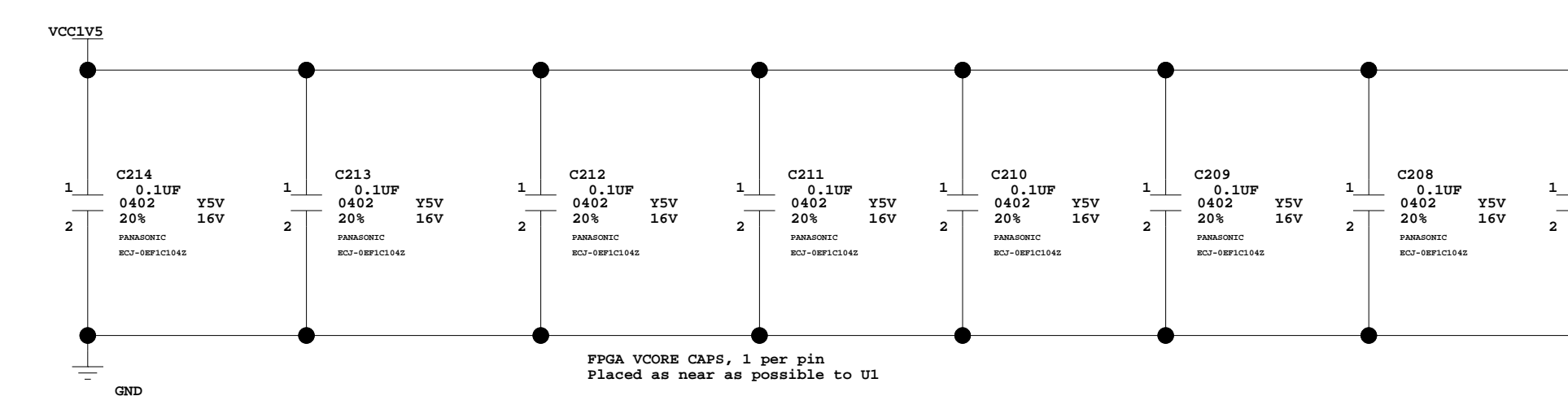
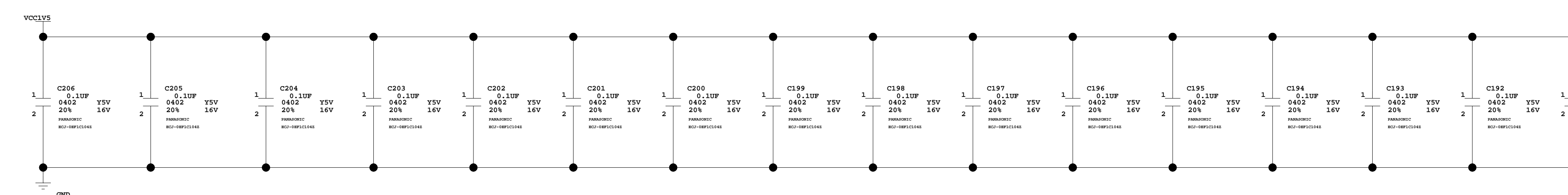
3.3V BANK



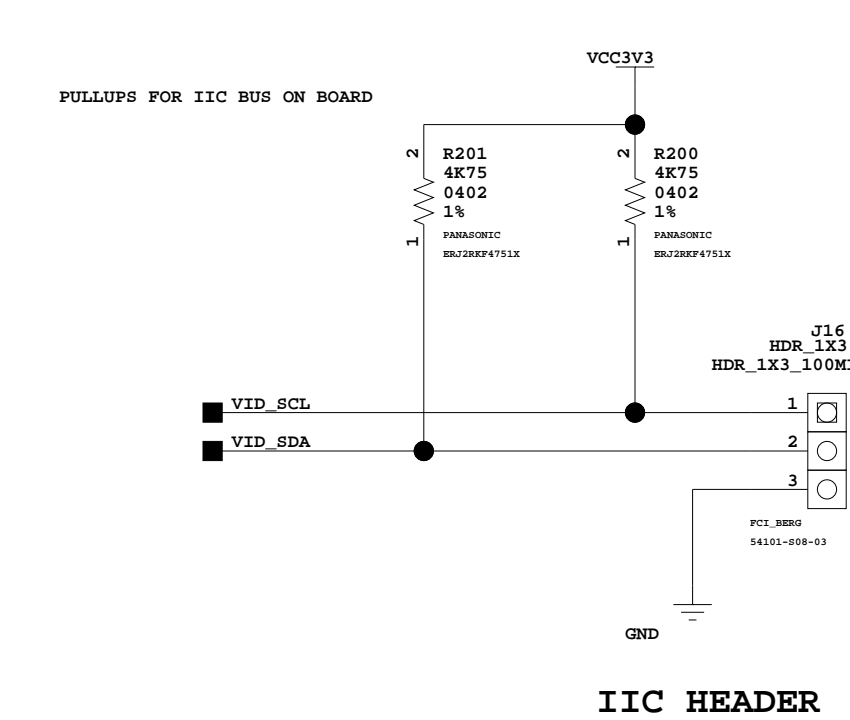
FPGA Bypass Caps, User and PWR_GOOD LEDs, PC4 Header



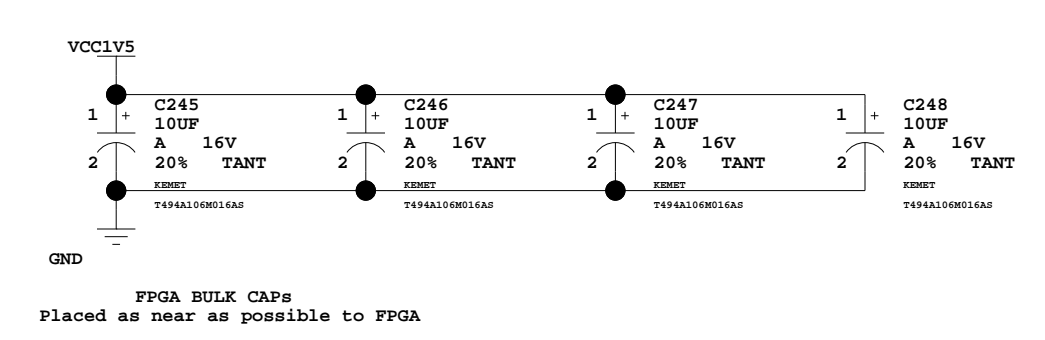
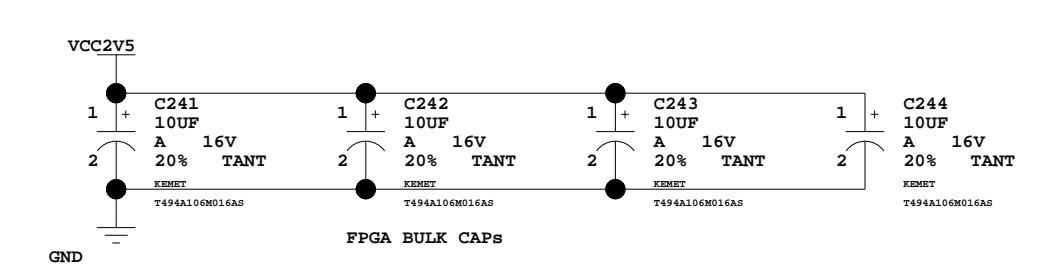
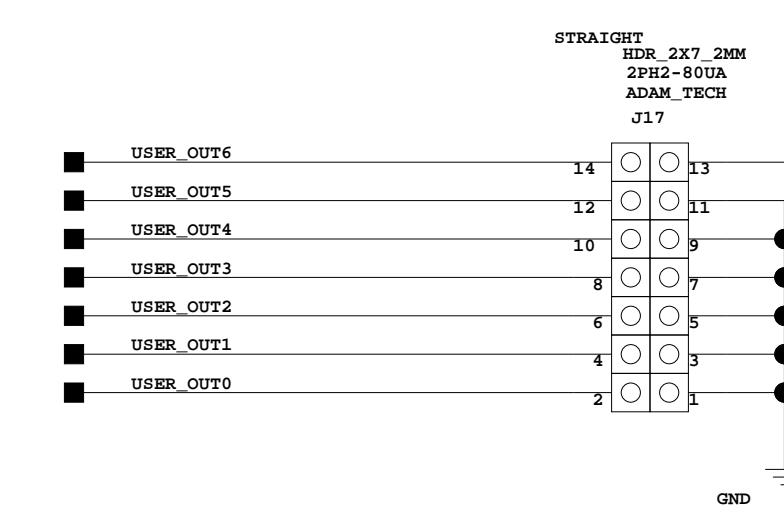
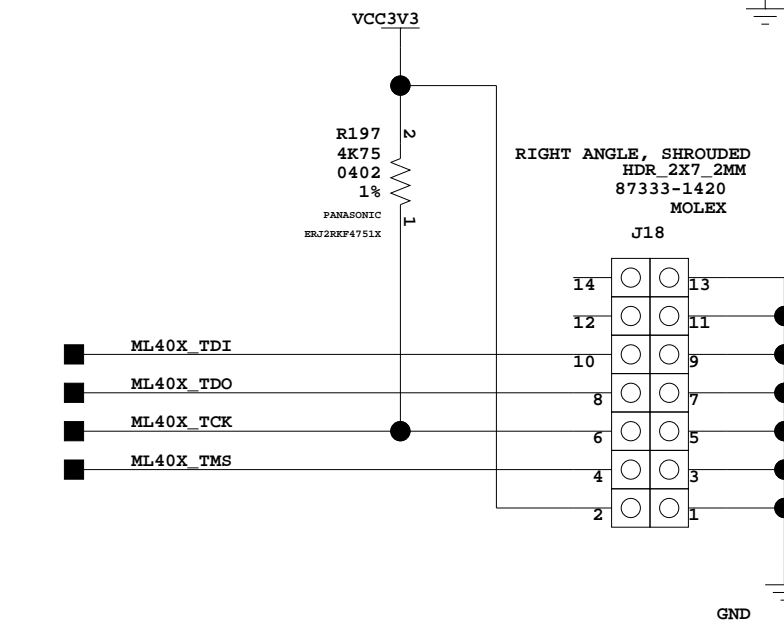
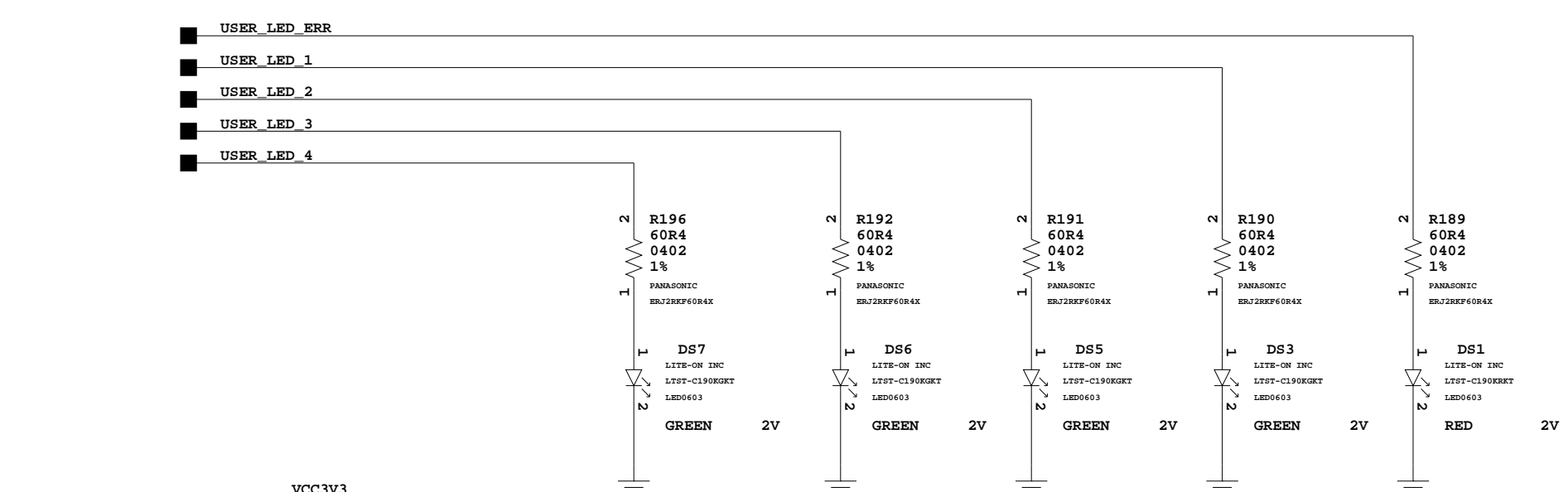
FPGA VCC0, VCCAUX CAPS, 1 per pin
Placed as near as possible to U1



FPGA VCC0E CAPS, 1 per pin
Placed as near as possible to U1



IIC HEADER



FPGA BULK CAPS
Placed as near as possible to FPGA

Video Input Output Daughter Card Bill Of Materials

ITEM	QTY	REFDES	VALUE	TOLER	VOLTS	MANUFACTURE	MANU PART NUM	DEVICE	PACKAGE
1	1	ASBY1							
2	4	C1, C2, C3, C4	100PF	10%	6.3V	MURATA	GRM21BR60J106M19L	C0805	0805
3	4	C5, C6, C7, C8, C9	2200PF	10%	6.3V	PANASONIC	EEC-V0J2200M	CAPT_D	D
4	9	C10, C11, C12, C13, C14, C15, C16, C17, C17S	2200PF	20%	6.3V	PANASONIC	ECS-T0J227R	CAPT_D	D
5	143	C18, C22, C24, C25, C26, C33, C34, C35, C36, C38, C39, C42, C43, C45, C46, C47, C48, C49, C51, C52, C54, C61, C62, C63, C68, C69, C70, C71, C72, C73, C74, C76, C77, C78, C79, C80, C81, C82, C83, C84, C85, C88, C89, C90, C91, C92, C93, C98, C99, C100, C101, C102, C103, C104, C105, C106, C107, C108, C109, C110, C111, C112, C113, C114, C115, C116, C117, C118, C119, C120, C121, C122, C123, C124, C125, C126, C127, C128, C129, C133, C134, C148, C149, C155, C156, C157, C158, C159, C160, C161, C162, C163, C164, C165, C166, C167, C168, C169, C170, C171, C172, C173, C174, C175, C176, C177, C178, C179, C180, C181, C182, C183, C184, C185, C186, C187, C188, C189, C190, C191, C192, C193, C194, C195, C196, C197, C198, C199, C200, C201, C202, C203, C204, C205, C206, C207, C208, C209, C210, C211, C212, C213, C214, C276	0.10UF	20%	16V	PANASONIC	ECJ-0EFC1042	C0402	0402
6	20	C19, C20, C21, C23, C27, C28, C29, C31, C32, C34, C35, C36, C38, C39, C42, C43, C45, C46, C47, C48, C49, C51, C52, C54, C61, C62, C63, C68, C69, C70, C71, C72, C73, C74, C76, C77, C78, C79, C80, C81, C82, C83, C84, C85, C88, C89, C90, C91, C92, C93, C98, C99, C100, C101, C102, C103, C104, C105, C106, C107, C108, C109, C110, C111, C112, C113, C114, C115, C116, C117, C118, C119, C120, C121, C122, C123, C124, C125, C126, C127, C128, C129, C133, C134, C148, C149, C155, C156, C157, C158, C159, C160, C161, C162, C163, C164, C165, C166, C167, C168, C169, C170, C171, C172, C173, C174, C175, C176, C177, C178, C179, C180, C181, C182, C183, C184, C185, C186, C187, C188, C189, C190, C191, C192, C193, C194, C195, C196, C197, C198, C199, C200, C201, C202, C203, C204, C205, C206, C207, C208, C209, C210, C211, C212, C213, C214, C276	0.010UF	10%	25V	PANASONIC	ECJ-0EHL1013K	C0402	0402
7	18	C37, C40, C41, C44, C50, C53, C55, C56, C57, C59, C60, C94, C95, C97, C135, C136, C137, C138	0.0010UF	10%	25V	PANASONIC	ECJ-0EHL1012K	C0402	0402
8	18	C37, C40, C41, C44, C50, C53, C55, C56, C57, C59, C60, C94, C95, C97, C135, C136, C137, C138	82000PF	10%	10V	PANASONIC	ECJ-0EHL1012K	C0402	0402
9	18	C37, C40, C41, C44, C50, C53, C55, C56, C57, C59, C60, C94, C95, C97, C135, C136, C137, C138	39000PF	10%	50V	PANASONIC	ECJ-0EHL1012K	C0402	0402
10	2	C86, C121	820PF	10%	50V	PANASONIC	ECJ-0EHL1012K	C0402	0402
11	1	C87	820PF	10%	50V	PANASONIC	ECJ-0EHL1012K	C0402	0402
12	7	C130, C131, C132, C141, C142, C143, C150	0.10UF	10%	10V	PANASONIC	ECJ-0EHL1014K	C0402	0402
13	2	C144, C151	8800PF	10%	25V	PANASONIC	ECJ-0EHL1012K	C0402	0402
14	2	C145, C146	12200PF	10%	50V	PANASONIC	ECJ-0EHL1012K	C0402	0402
15	36	C215, C216, C217, C218, C219, C220, C221, C222, C223, C224, C225, C226, C227, C228, C229, C230, C231, C232, C233, C234, C235, C236, C237, C238, C239, C240, C241, C242, C243, C244, C245, C246, C247, C248, C287, C303	100PF	20%	16V	KEMET	T49AL06M016AS	CAPT_A	A
16	2	C249	3300PF	5%	50V	TEK	CL690C01L32J	C0603	0603
17	2	C250, C255	27PF	5%	50V	YAGEO	CC0402JRNPO9N270	C0402	0402
18	4	C251, C252, C253, C254	100PF	20%	50V	PANASONIC	ECJ1V80106M	C0603	0603
19	8	C256, C257, C258, C259, C261, C262, C263, C264	470PF	10%	16V	KEMET	CC0402C73KARATU0	C0402	0402
20	1	C260	39000PF	10%	25V	PANASONIC	ECJ-1V81E393K	C0603	0603
21	1	C265	10PF	10%	10V	PANASONIC	ECJ-1V81A103K	C0603	0603
22	8	C266, C267, C268, C269, C270, C271, C272, C273	4.70UF	20%	6.3V	PANASONIC	ECJ-1V80J475M	C0603	0603
23	1	C274	470PF	10%	50V	PANASONIC	ECJ-1V81B473K	C0603	0603
24	1	D1	50V			FAIRCHILD	BAT54C	BAT54C	SOT23
25	2	D81, D88	RED					LED0603	LED0603
26	6	D82, D83, D84, D85, D86, D87	GREEN					LED0603	LED0603
27	27	F81, F82, F83, F84, F85, F86, F87, F88, F89, F90, F91, F92, F93, F94, F95, F96, F97, F98, F99, F100, F101, F102, F103, F104, F105, F106, F107, F108, F109, F110, F111, F112, F113, F114, F115, F116, F117, F118, F119, F120, F121, F122, F123, F124, F125, F126, F127	750UM 300MA	5%	30V	MURATA	RMU18B7500N1D	L0603	0603
28	1	F82	200MA	5%	30V	WICKMANN	SHD120000T5A	R1812	1812
29	1	F829	1.10A	5%	6V	WICKMANN	SHD1812P110T5A	R1812	1812
30	1	F850	1.00A	5%	6V	WICKMANN	SHD1812P100N1L	R1806	1806
31	2	J1, J2	1KOHM 1.5A	5%		MOLEX	74320-1004	DVI	DVI
32	1	J3				CUI_INC	RCJ-2244	NCA_2X1	NCA_2X1
33	2	J4, J5						HDR_1X12 100MIL	HDR_1X12 100MIL
34	2	J6, J7						ENC_VERT	ENC_VERT
35	1	J8						HDR_2X12 100MIL	HDR_2X12 100MIL
36	1	J10						NCA_2X3	NCA_2X3
37	1	J11						DVI80_DUAL_STACK	DVI80_DUAL_STACK
38	1	J12						PWR_JACK	PWR_JACK
39	1	J13						ADAM_TECH	ADAM_TECH
40	2	J14, J16						PCI_BRDG	PCI_BRDG
41	1	J15						MOLEX_MALDOM	MOLEX_MALDOM
42	1	J17						ADAM_TECH	ADAM_TECH
43	1	J18						MOLEX	MOLEX
44	1	J19	1.2NH	20%				COLLIDRAFT	COLLIDRAFT
45	1	L2	1UH	20%				COLLIDRAFT	COLLIDRAFT
46	1	L3	6.2NH	20%				PANASONIC	PANASONIC
47	1	L4, L5	1.3NH	20%				PANASONIC	PANASONIC
48	4	MH1, MH2, MH3, MH4						KYOCER	K66-E158-N
49	1	P1						CORCON_TYCO	RJ45-82
50	1	P2							RJ45-82
51	1	PCB1							
52	10	Q1, Q2, Q3, Q4, Q5, Q6, Q7, Q8, Q9, Q10						INFINEON	BSS138N-E6327
53	27	R1, R44, R45, R58, R142, R143, R145, R146, R147, R148, R152, R153, R154, R155, R156, R157, R158, R159, R160, R161, R172, R179, R180, R181, R182, R188, R194	DMP	1%				DMP	DMP
54	19	R2, R5, R6, R82, R87, R88, R89, R90, R97, R98, R104, R105, R122, R123, R144, R149, R150, R151, R239	10K	1%				PANASONIC	ERJ2RKF10K0X
55	6	R3, R9, R10, R41, R46, R59	0R	5%				PANASONIC	ERJ2RBF000X
56	1	R4	6K80	1%				YAGEO	YCC040216K0JF1LHP3
57	5	R7, R8, R137, R139, R195	499R	1%				PANASONIC	ERJ2RKF499XK
58	14	R11, R12, R62, R63, R64, R65, R66, R173, R400, R401, R402, R403, R404, R405	301R	1%				PANASONIC	ERJ2RKF301XK
59	2	R13, R14	908R	1%				PANASONIC	ERJ2RKF908XK
60	12	R15, R16, R26, R27, R28, R51, R52, R57, R72, R73, R92, R93	100R	1%				PANASONIC	ERJ2RKF100XK
61	4	R17, R86, R163, R164	3K12	1%				PANASONIC	ERJ2RKF3K12X
62	2	R18, R19	150R	1%				PANASONIC	ERJ2RKF150XK
63	3	R20, R21, R29, R30, R31, R32, R33, R34, R35, R36, R37, R38, R39, R40, R49, R50, R53, R54, R55, R56, R94, R95, R96, R114, R115, R116, R128, R129, R133, R134, R136	75R	1%				PANASONIC	ERJ2RKF75XK
64	9	R22, R23, R24, R25, R67, R74, R75, R165, R166	2K43	1%				PANASONIC	ERJ2RKF2431X
65	3	R42, R48, R61	10.0K	1%				PANASONIC	ERJ2RKF100XK
66	1	R43, R47, R60	634K	1%				PANASONIC	ERJ2RKF634XK
67	1	R68	1M	1%				PANASONIC	ERJ2RKF1004X
68	1	R69	1K69	1%				PANASONIC	ERJ2RKF1K69X
69	2	R70, R71	2K74	1%				PANASONIC	ERJ2RKF2741X
70	2	R76, R77	3K01	1%				PANASONIC	ERJ2RKF3011X
71	1	R78	681R	1%				PANASONIC	ERJ2RKF6810X
72	17	R79, R80, R81, R86, R91, R127, R132, R135, R140, R141, R177, R178, R183, R184, R185, R186, R187	1K50	1%				PANASONIC	ERJ2RKF1K50X
73	1	R83	499R	1%				PANASONIC	ERJ2RKF499XK
74	3	R85, R117, R193	562R	1%				PANASONIC	ERJ2RKF562XK
75	29	R99, R100, R101, R102, R103, R106, R109, R111, R118, R119, R120, R121, R124, R125, R126, R174, R175, R176, R197, R200, R201, R202, R203, R204, R205, R206, R207, R208, R209	4K75	1%				PANASONIC	ERJ2RKF4751X
76	1	R110	511R	1%				PANASONIC	ERJ2RKF5110X
77	2	R112, R113	4082	1%				PANASONIC	ERJ2RKF408XK
78	1	R130	3784	1%				PANASONIC	ERJ2RKF3784X
79	1	R131	1K50	1%				PANASONIC	ERJ2RKF1K50X
80	1	R138	750R	1%				PANASONIC	ERJ2RKF750XK
81	1	R162	1K87	1%				PANASONIC	ERJ2RKF1K87X
82	1	R167	7K5	1%				PANASONIC	ERJ2RKF7K51X
83	2	R168, R169	71K5	1%				PANASONIC	ERJ2RKF71K5X
84	2	R170, R171	5K11	1%				PANASONIC	ERJ2RKF5K11X
85	7	R189, R190, R191, R192, R196, R198, R199	60R4	1%				PANASONIC	ERJ2RKF60R4X
86	8	R210, R211, R212, R213, R214, R215, R216, R217	8003	1%				PANASONIC	ERJ2RKF8003X
87	1	R220	1.5A	1%				MURATA	RM41P0102N1L
88	1	SM1						CTS	219-8MST
89	1	TEST1							SM_SM_DIP
90	10	TP1, TP2, TP3, TP15, TP16, TP17, TP18, TP19, TP20, TP21	KEYSTONE	5000				KEYSTONE	5000
91	3	TP4, TP5, TP6	KEYSTONE	DMP				KEYSTONE	DMP
92	4	TP7, TP8, TP9, TP10	KEYSTONE	5001				KEYSTONE	5001
93	4	TP11, TP12, TP13, TP14	KEYSTONE	5002				KEYSTONE	5002
94	1	U1	ANALOG_DEVICHS	AD9878AKS-170				ANALOG_DEVICHS	AD9878AKS
95	1	U2	MAXIM	MAX5206ACUB				MAXIM	MAX5206
96	1	U3	GENNUM	GS1524-CXD				GENNUM	GS1524-CXD
97	1	U4	TI	TPS54610PWP				TI	TPS54610
98	1	U5	TI	TPS54310PWP				TI	TPS54310
99	1	U6	XILINX	XCF09P848C				XILINX	XCF09P848C
100	1	U7	GENNUM	GS1528-CKA				GENNUM	GS1528-CKA
101	1	U8	TI	TPF410PAP				TI	TPF410PAP
102	1	U9	ICS	ICS1523MLPT				ICS	ICS1523MLPT
103	1	U1							