

BIG3GIG EVALUATION BOARD

ADC083000, ADC08B3000

MANUFACTURING KIT / REFERENCE DESIGN

National Semiconductor GHz 8 bit ADC + XILINX Virtex 4

SPECIAL NOTES

These schematics reflect the current state of product development. This design had NOT yet been fully tested at the time these schematics were generated.

Since this product is in development, the user of this document is strongly advised to check for the latest revision.

National Semiconductor reserves the right to make changes to this product.

ALL parts labeled "NA" are NOT ASSEMBLED.

Print Instructions:

- To create a readable printout, we recommend to use A3 or 11x17" paper size.
- When printing from this PDF file, make sure to check the "Shrink to fit" box.


SYSTEM CONFIGURATION

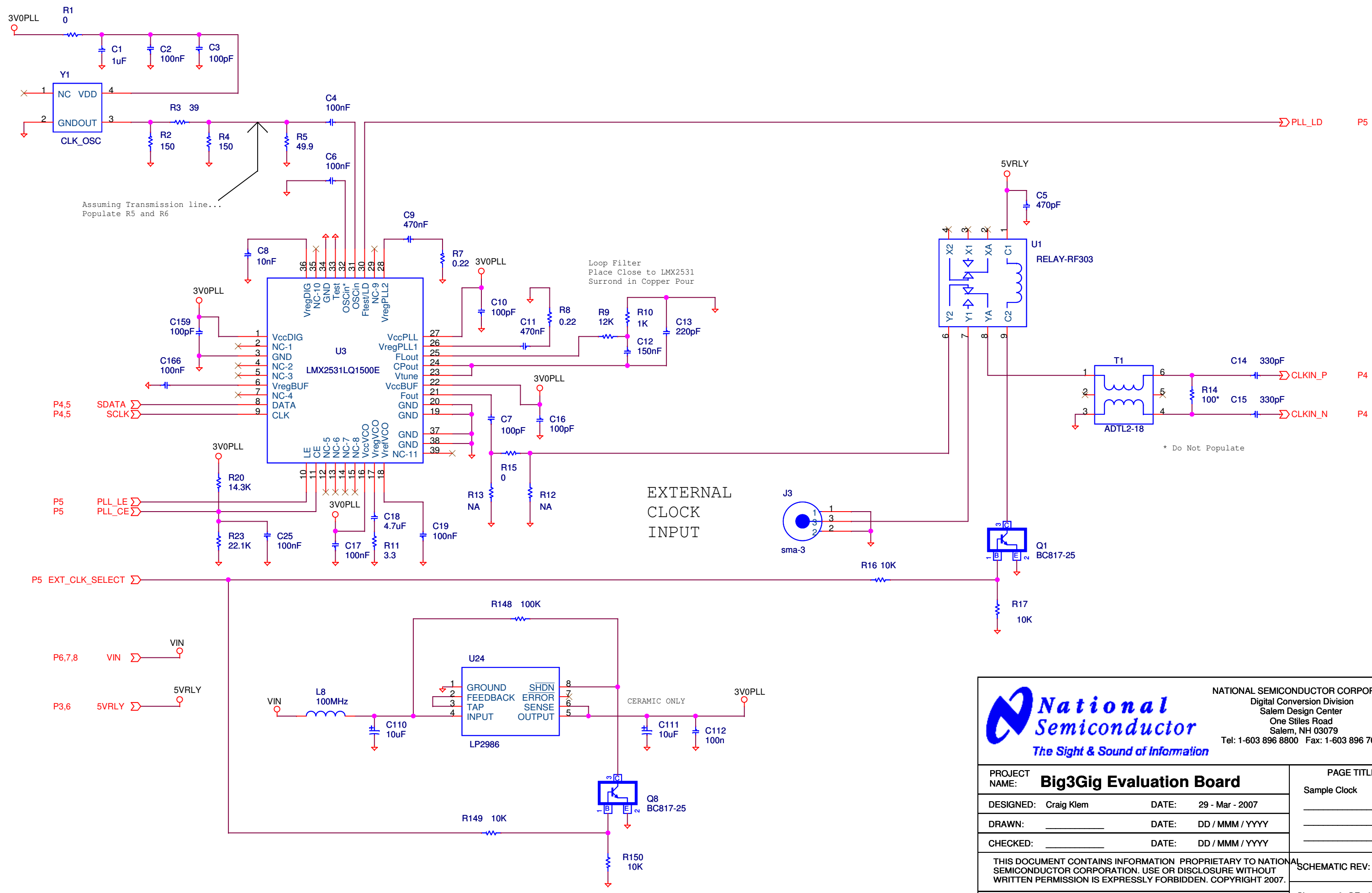
Module	Configuration	Description
FRONT END	1 channel DIFF. / SINGLE ENDED	AC AND DC COUPLING OF SIGNAL PATH
CLOCK SOURCE	SINGLE ENDED	LMX2531LQ1500E
FPGA		XC4VLX15-10SFG363C - 363 PIN BGA
USB I/F		CY7C68013A EZ USB


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PRELIMINARY

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PROJECT NAME: Big3Gig Evaluation Board		
DESIGNED: Craig Klem	DATE: 29 - Mar - 2007	LAYOUT JOB#: _____
DRAWN: _____	DATE: DD / MMM / YYYY	LAYOUT REV: _____
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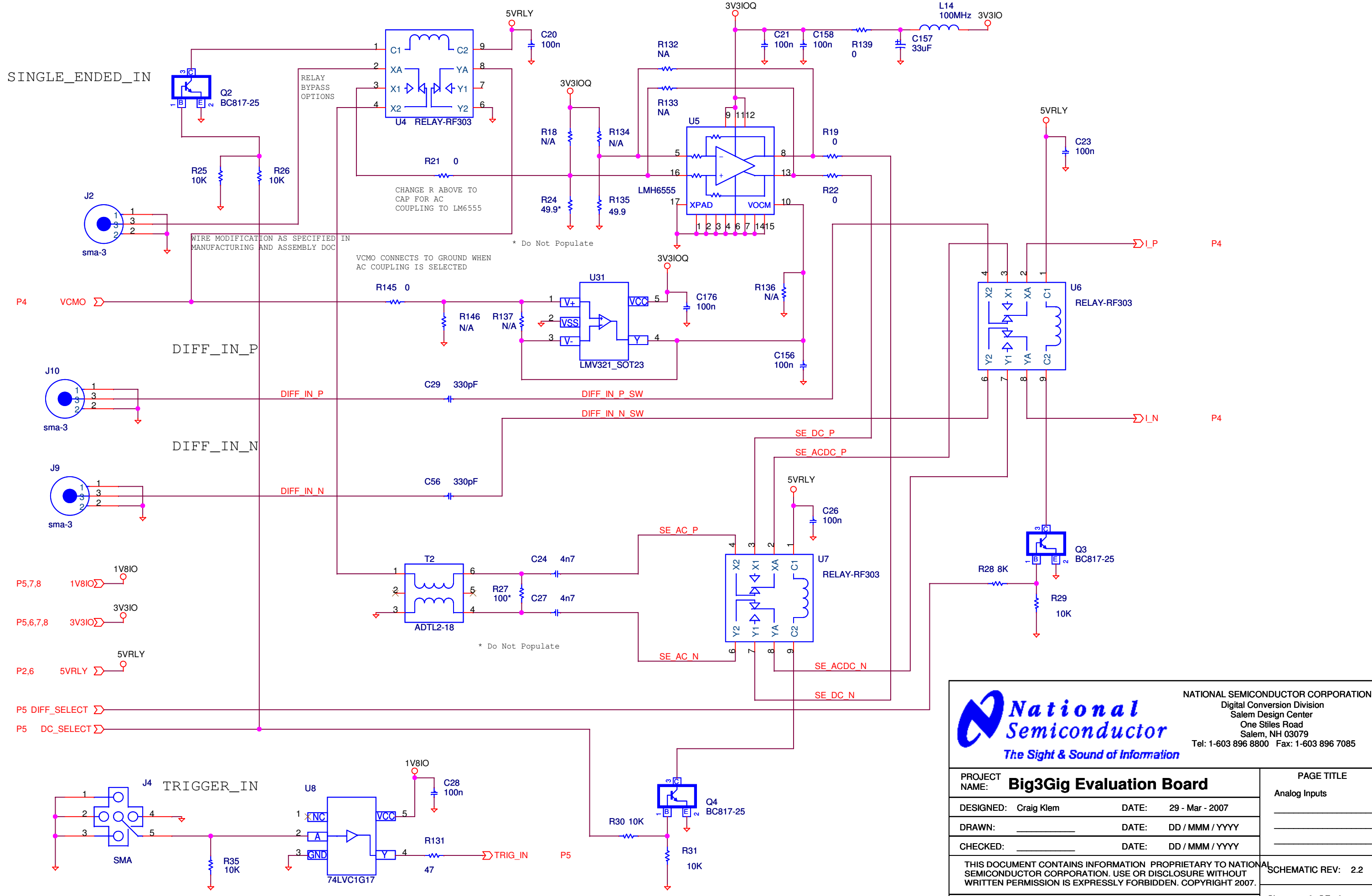




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PROJECT NAME: Big3Gig Evaluation Board		PAGE TITLE: Sample Clock
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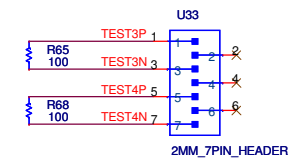
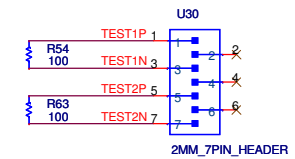
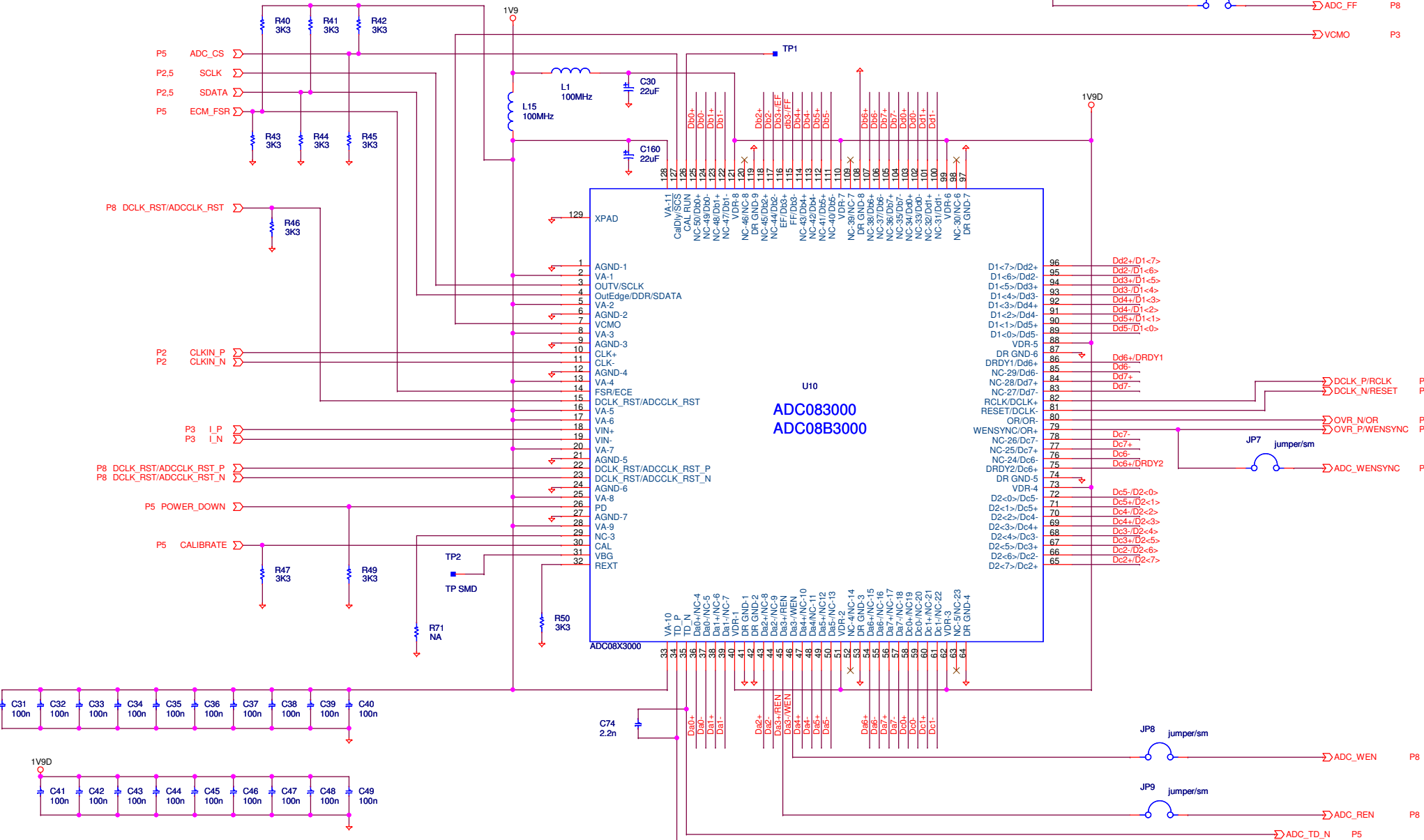
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PROJECT NAME: Big3Gig Evaluation Board		PAGE TITLE Analog Inputs
DESIGNED: Craig Klem	DATE: 29 - Mar - 2007	_____
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B15	IO_L1P_5
A15	IO_L1N_5
D07+	IO_L2P_5
D07-	IO_L2N_5
C18	IO_L3P_5
C18	IO_L3N_5
D18	IO_L4N_VREF_5
D18	IO_L5P_5
D18	IO_L5N_5
D18	IO_L6P_5
D18	IO_L7N_5
D18	IO_L7P_5
D18	IO_L8N_CC_LC_5
D18	IO_L8P_CC_LC_5
D18	IO_L8N_VREF_5
D18	IO_L17P_5
D18	IO_L17N_5
D18	IO_L18P_5
D18	IO_L18N_5
D18	IO_L19P_5
D18	IO_L19N_5
D18	IO_L20N_VREF_5
D18	IO_L21P_5
D18	IO_L21N_5
D18	IO_L22P_5
D18	IO_L22N_VREF_5
D18	IO_L23N_VREF_5
D18	IO_L24P_CC_LC_5
D18	IO_L24N_CC_LC_5
D18	IO_L24N_VREF_5
D18	IO_L25P_CC_LC_5
D18	IO_L25N_CC_LC_5
D18	IO_L26P_5
D18	IO_L26N_5
D18	IO_L27P_5
D18	IO_L27N_5
D18	IO_L28P_5
D18	IO_L28N_VREF_5
D18	IO_L29N_5
D18	IO_L30P_5
D18	IO_L30N_5
D18	IO_L31P_5
D18	IO_L31N_5
D18	IO_L32P_5
D18	IO_L32N_5

1.9V ADC SUPPLY MUST BE CONTROLLED BY FPGA SO THAT TRI STATE PINS ARE CONFIGURED CORRECTLY AT POWER UP

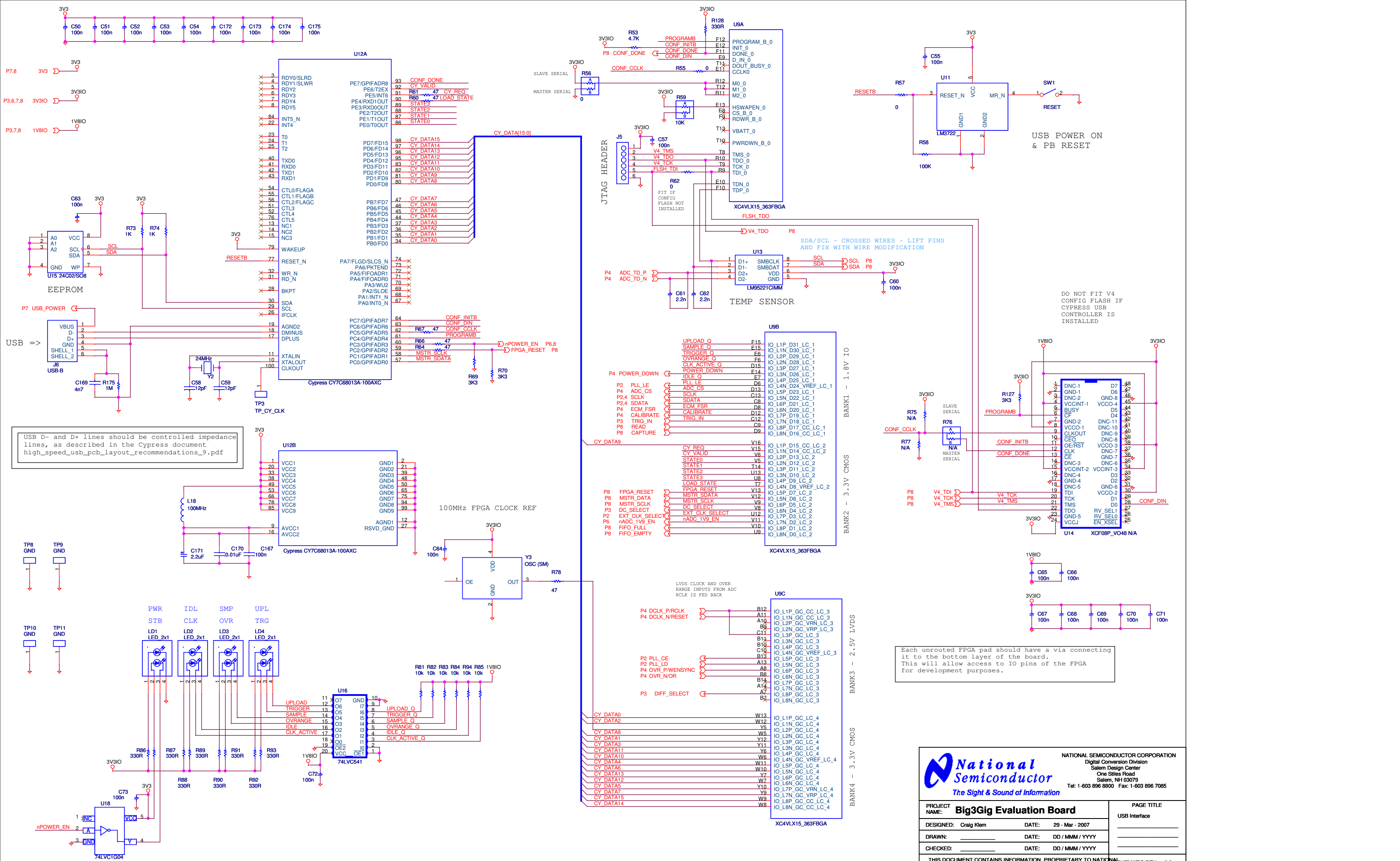


B6	IO_L1P_6
A6	IO_L1N_6
D07+	IO_L2P_6
D07-	IO_L2N_6
C18	IO_L3P_6
C18	IO_L3N_6
D18	IO_L4N_VREF_6
D18	IO_L5P_6
D18	IO_L5N_6
D18	IO_L6P_6
D18	IO_L7N_6
D18	IO_L7P_6
D18	IO_L8N_CC_LC_6
D18	IO_L8P_CC_LC_6
D18	IO_L8N_VREF_6
D18	IO_L17P_6
D18	IO_L17N_6
D18	IO_L18P_6
D18	IO_L18N_6
D18	IO_L19P_6
D18	IO_L19N_6
D18	IO_L20N_VREF_6
D18	IO_L21P_6
D18	IO_L21N_6
D18	IO_L22P_6
D18	IO_L22N_VREF_6
D18	IO_L23N_VREF_6
D18	IO_L24P_CC_LC_6
D18	IO_L24N_CC_LC_6
D18	IO_L24N_VREF_6
D18	IO_L25P_CC_LC_6
D18	IO_L25N_CC_LC_6
D18	IO_L26P_6
D18	IO_L26N_6
D18	IO_L27P_6
D18	IO_L27N_6
D18	IO_L28P_6
D18	IO_L28N_VREF_6
D18	IO_L29N_6
D18	IO_L30P_6
D18	IO_L30N_6
D18	IO_L31P_6
D18	IO_L31N_6
D18	IO_L32P_6
D18	IO_L32N_6

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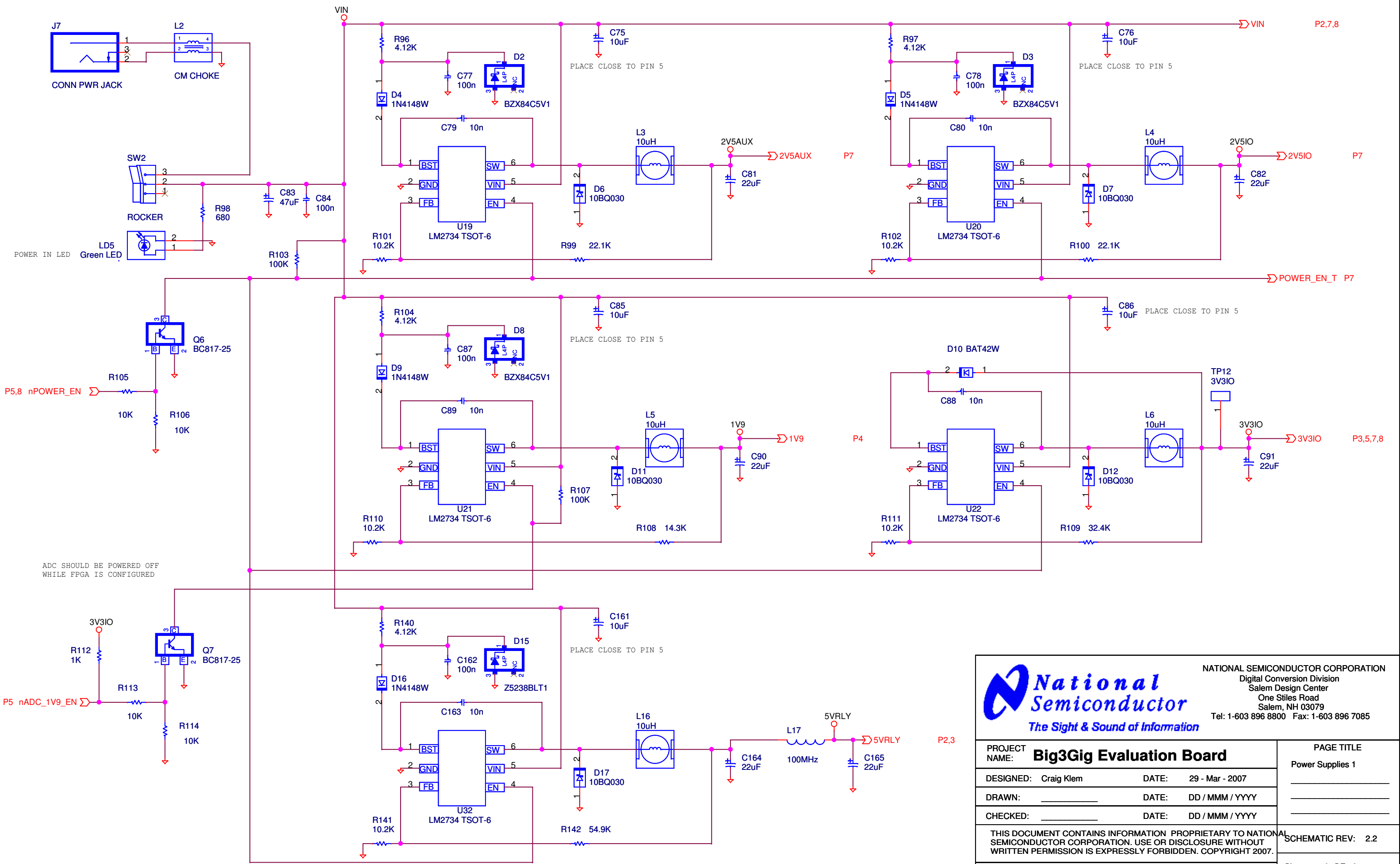
USB D- and D+ lines should be controlled impedance lines, as described in the Cypress document [high_speed_usb_pcb_layout_recommendations_9.pdf](#)

Each unrouted FPGA pad should have a via connecting it to the bottom layer of the board. This will allow access to IO pins of the FPGA for development purposes.

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nPOWER_EN = 1 - SWITCH REGS SHUTDOWN (STANDBY)
nPOWER_EN = 0 - SWITCH REGS ARE ON

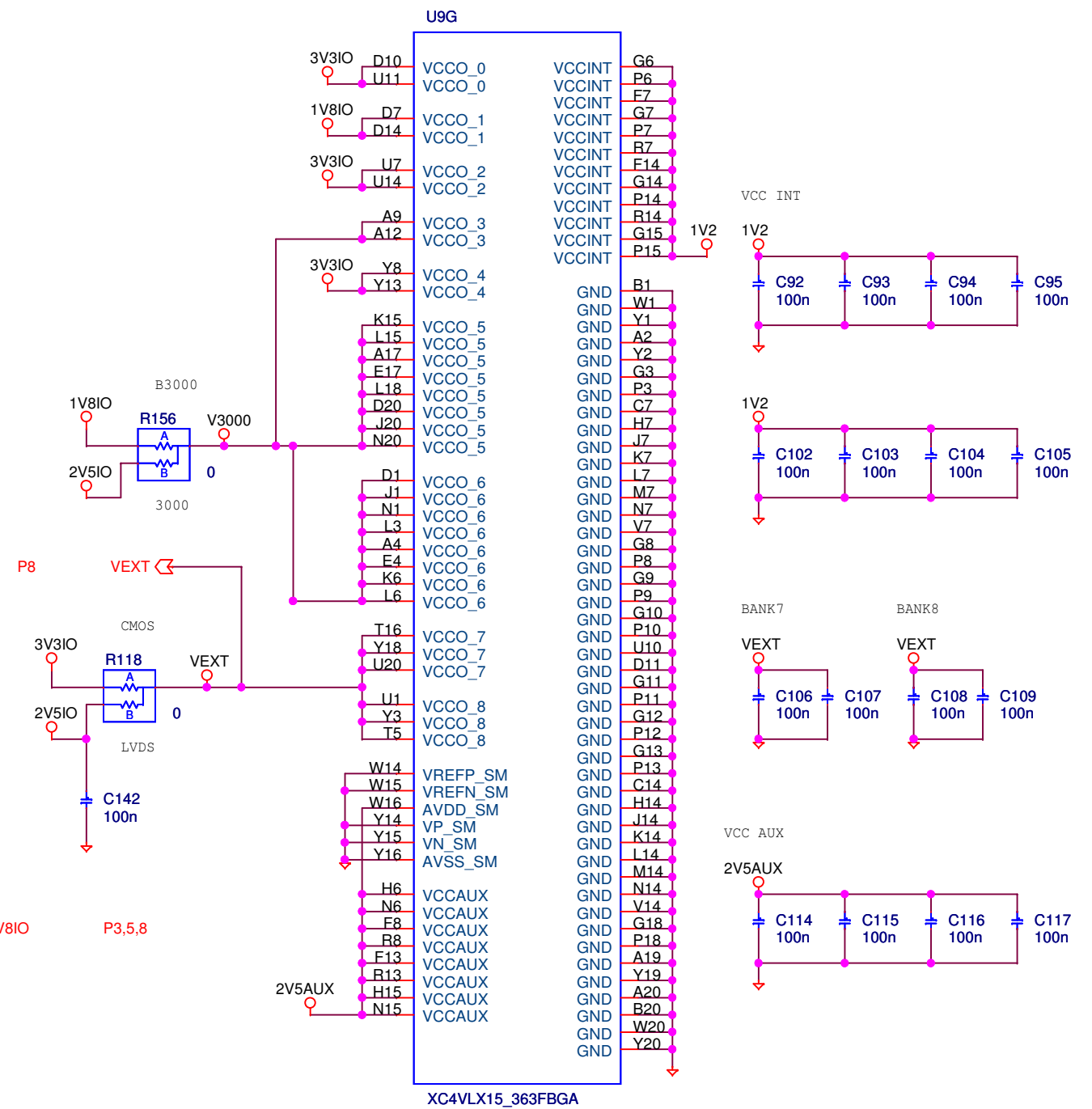
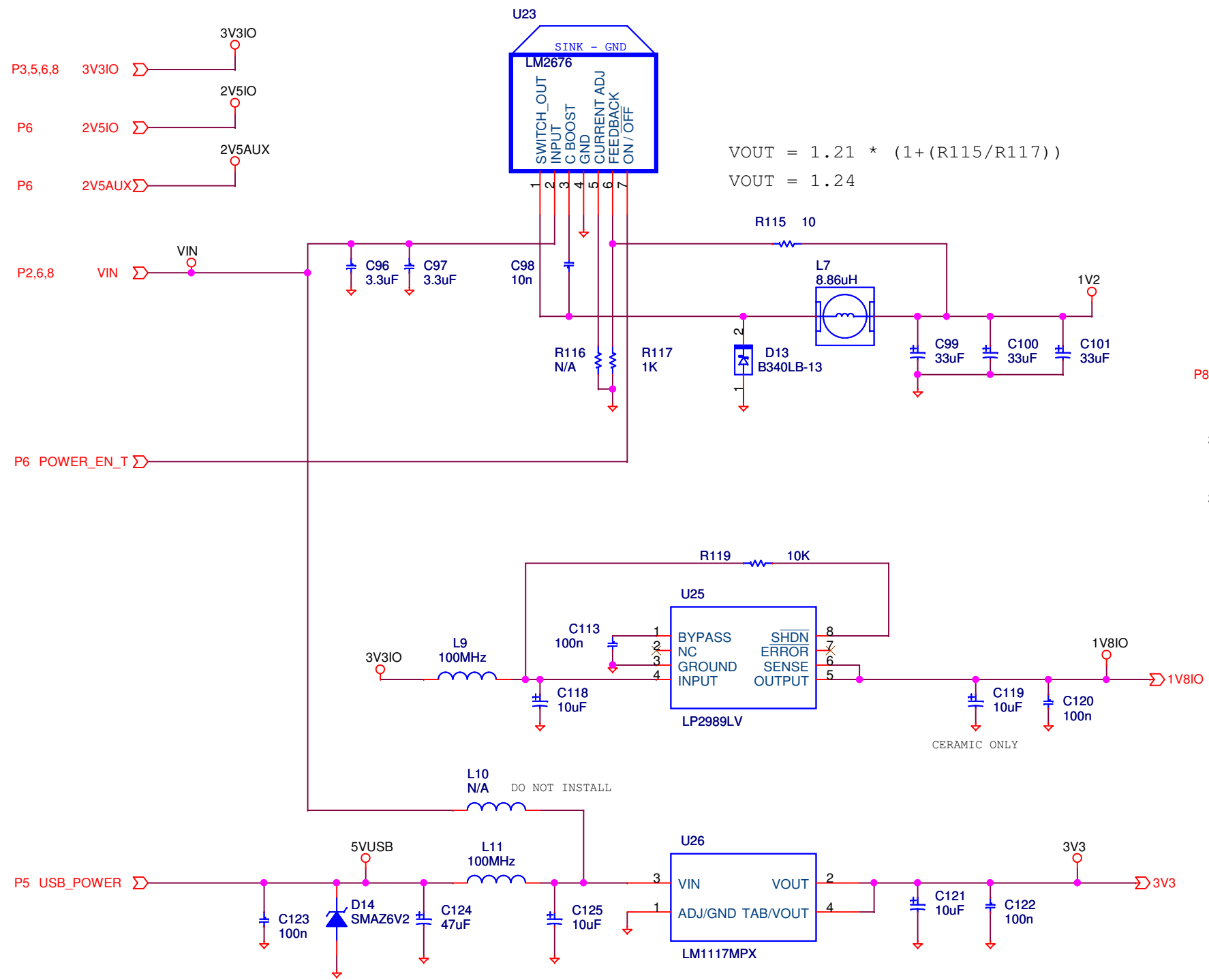


ADC SHOULD BE POWERED OFF WHILE FPGA IS CONFIGURED

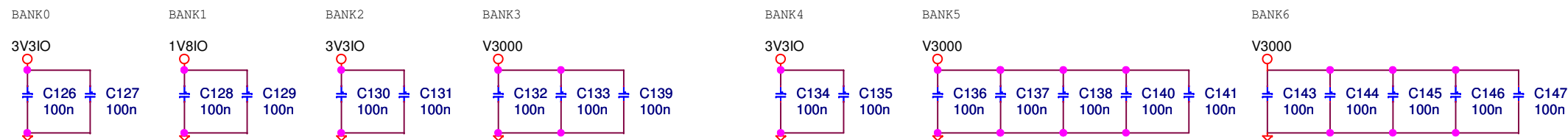
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PROJECT NAME: Big3Gig Evaluation Board		PAGE TITLE Power Supplies 1
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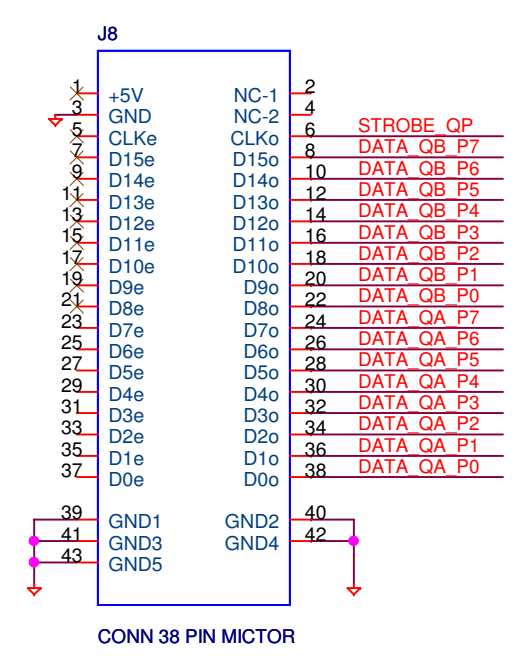
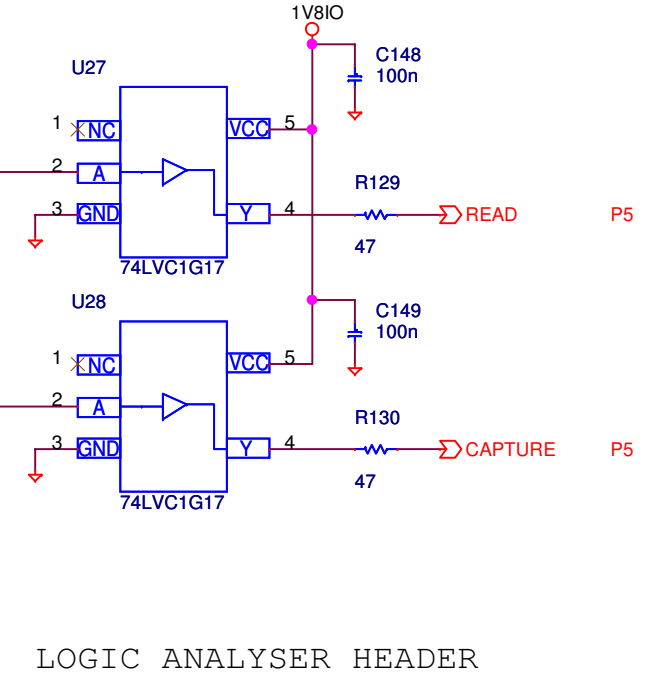
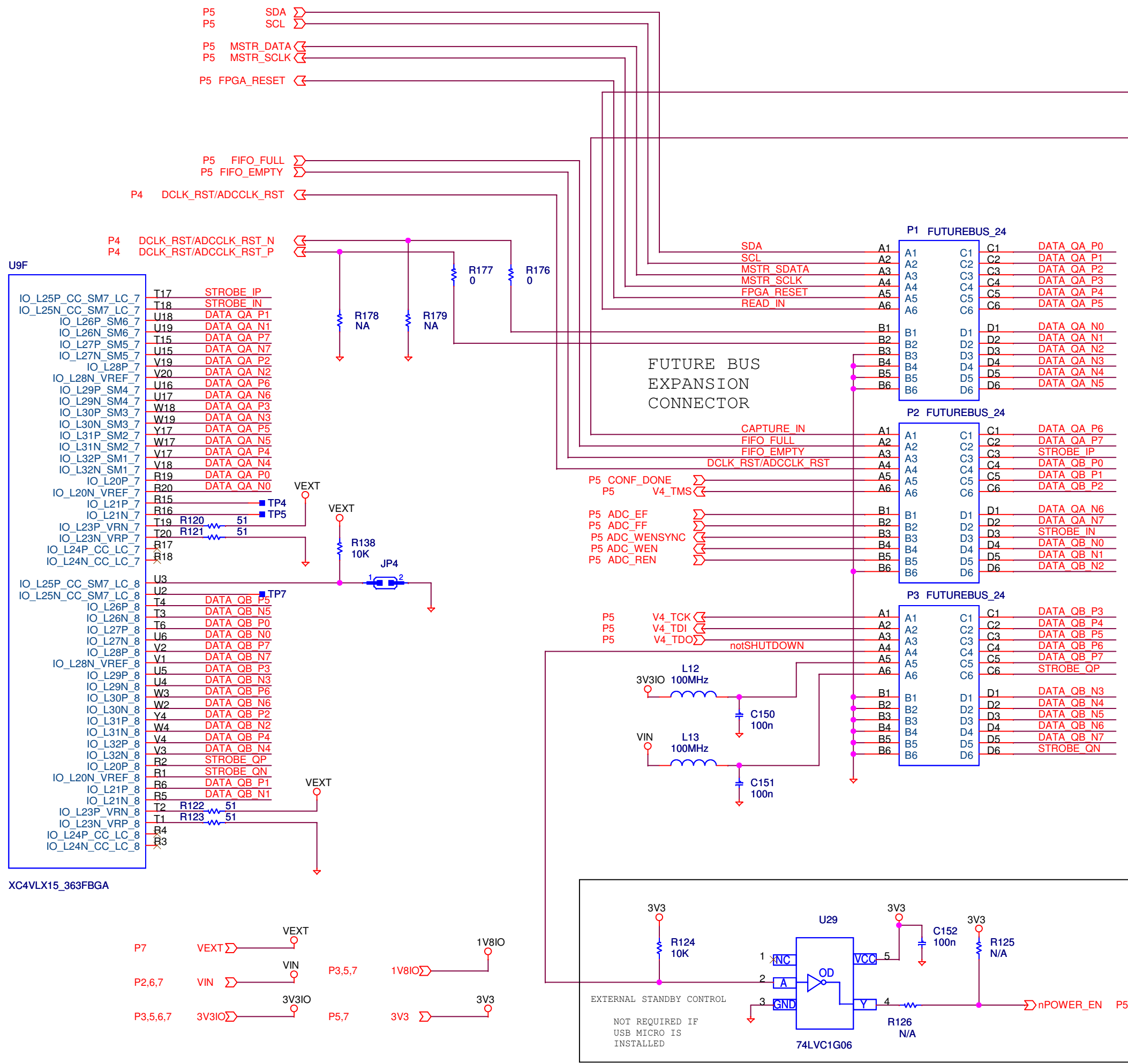
0402 FPGA Decouplers





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PROJECT NAME: Big3Gig Evaluation Board		PAGE TITLE: Expansion Port	
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