

5

4

3

2

1

D

D

C

C

B

B

A

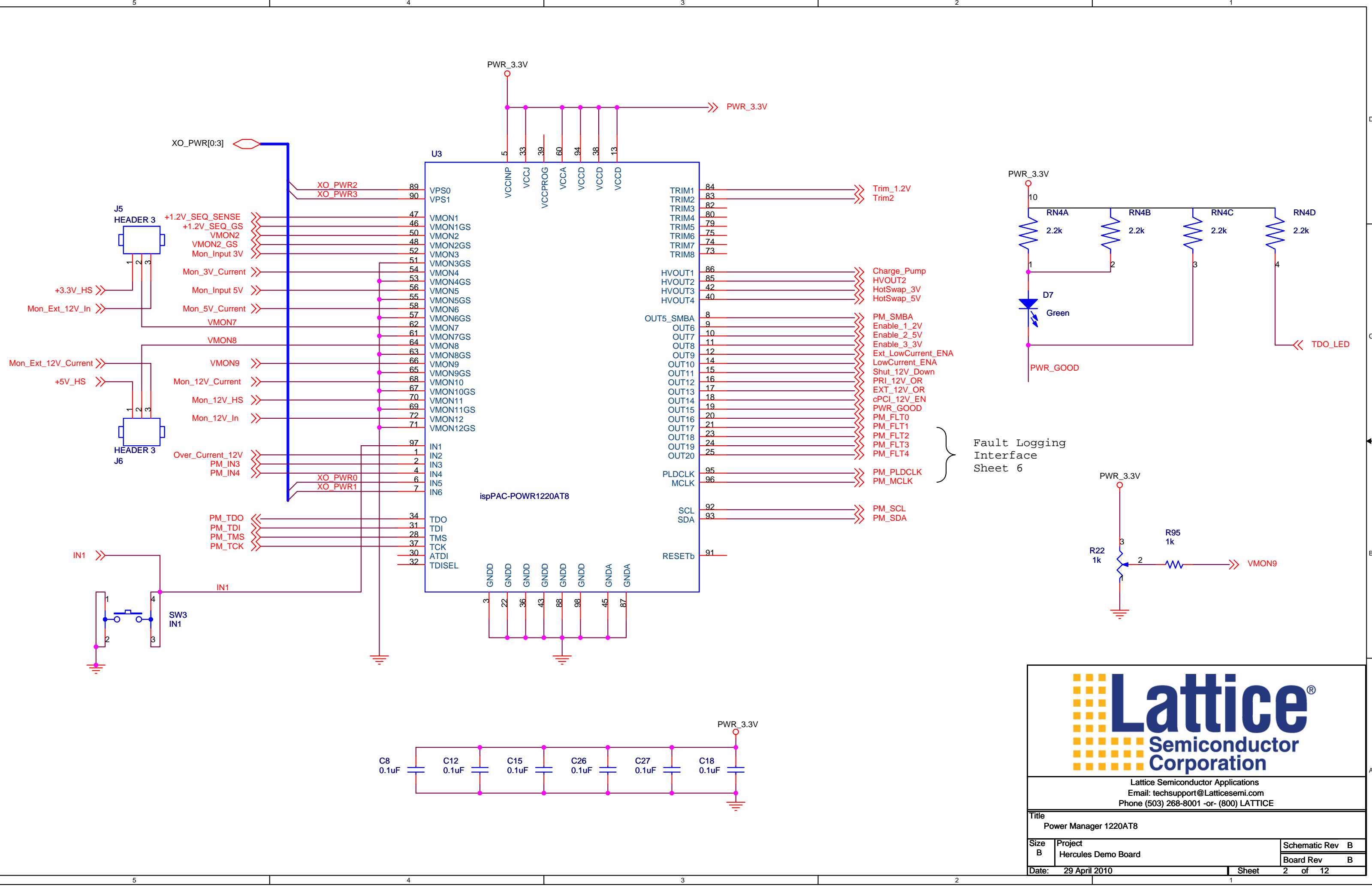
A

Block Diagrams to go on this page



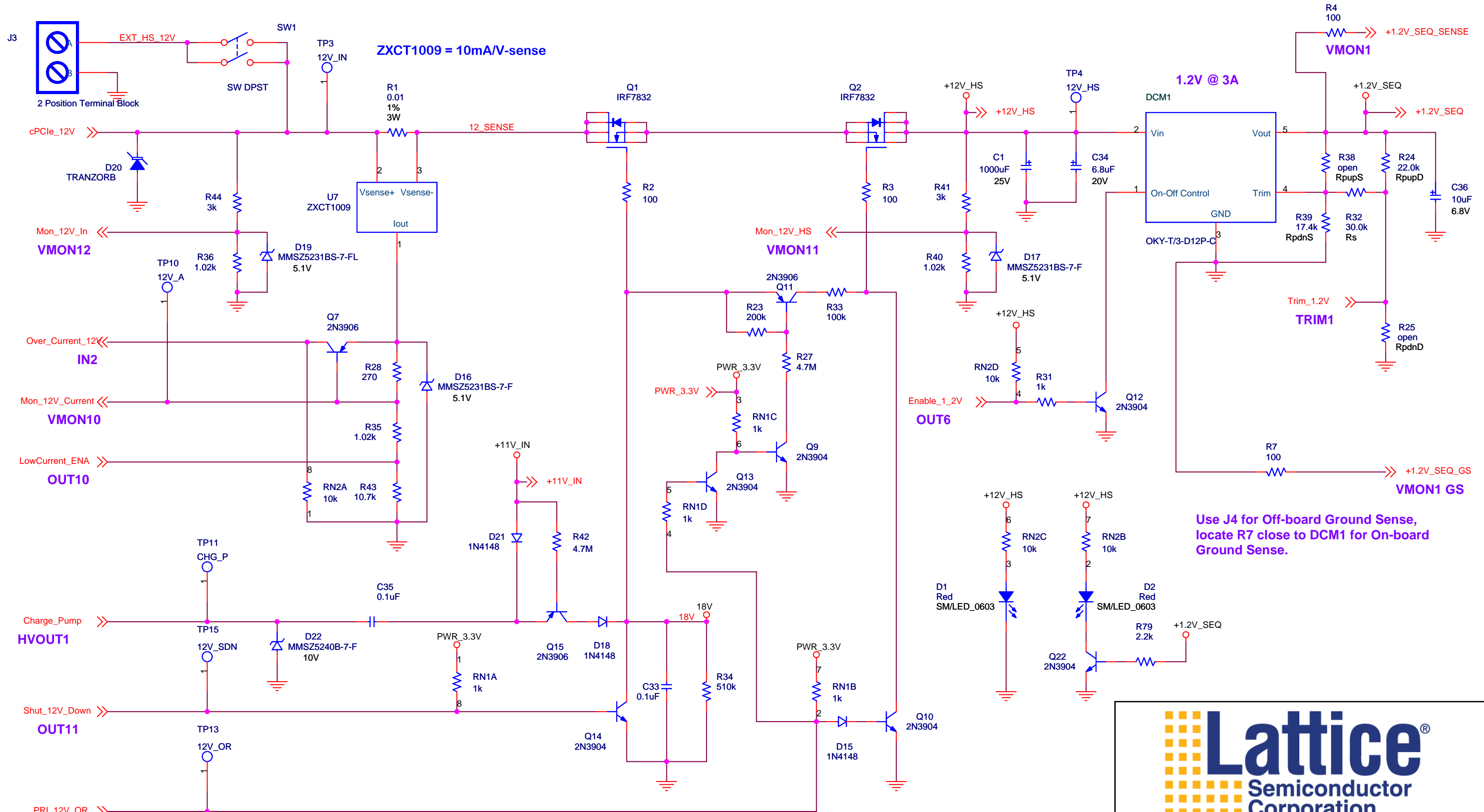
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Title		Sytem Block Diagram	
Size	Project	Schematic Rev	
B	Hercules Demo Board	B	
Date: 29 April 2010		Sheet	1 of 12



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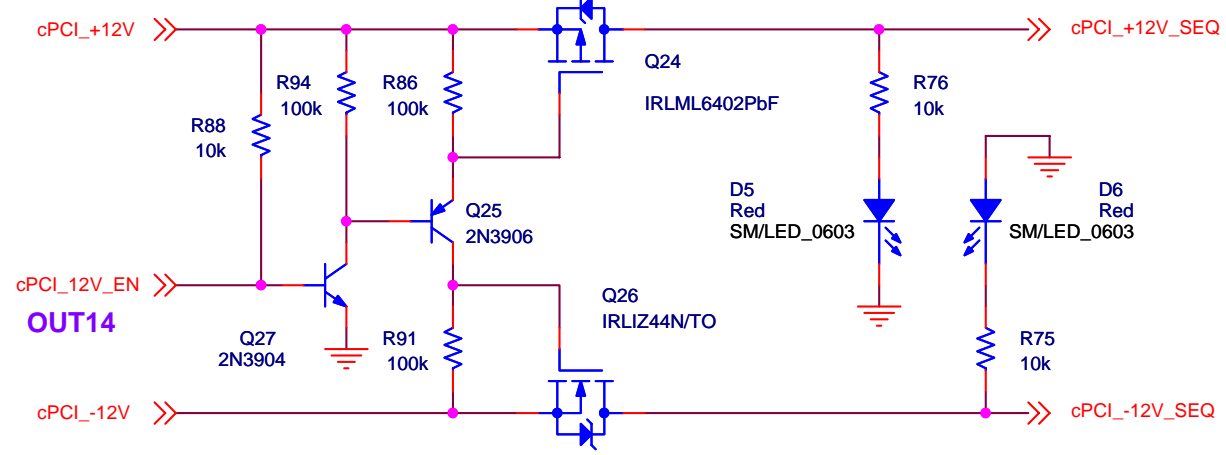
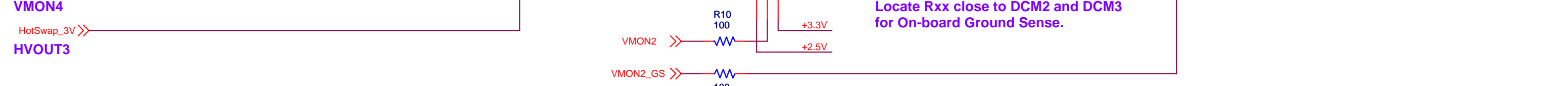
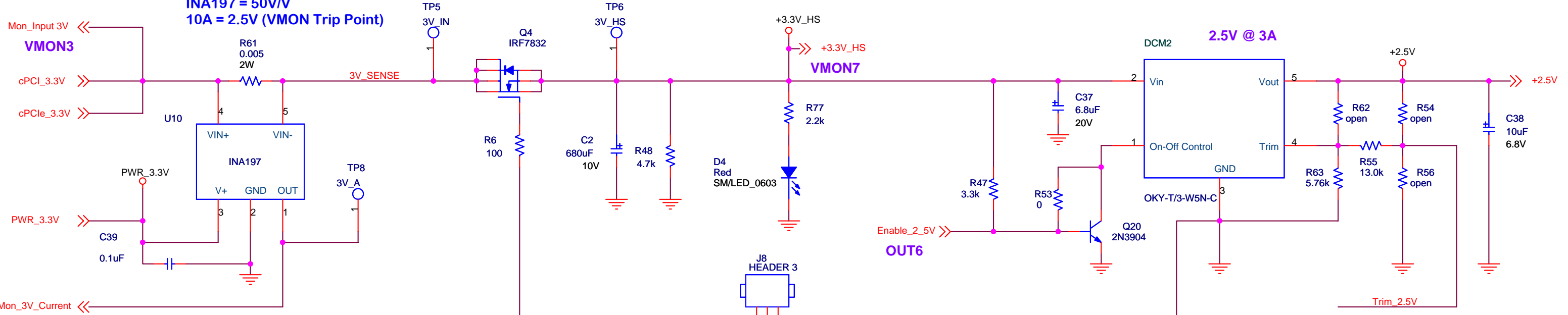
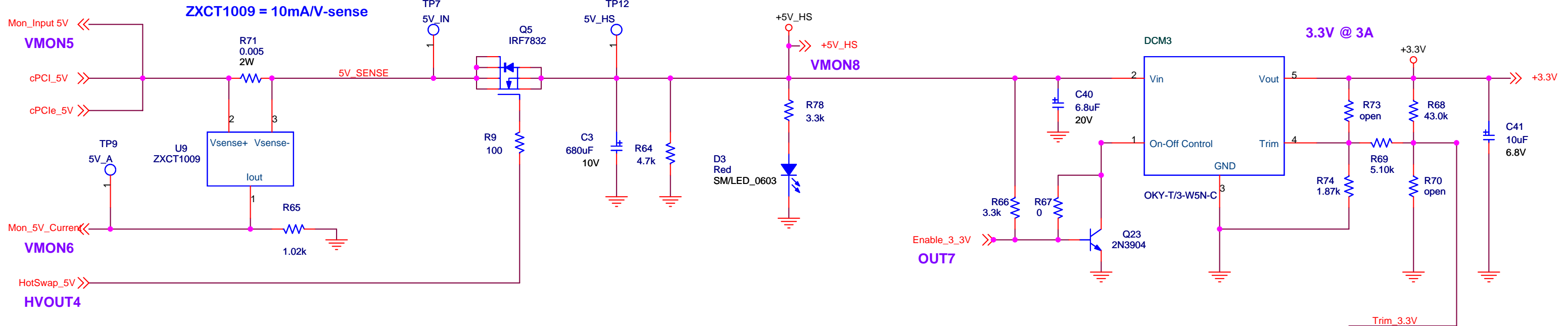
Title		
Power Manager 1220AT8		
Size	Project	Schematic Rev
B	Hercules Demo Board	B
Date:		Board Rev
29 April 2010		B
Sheet		2 of 12



Use J4 for Off-board Ground Sense, locate R7 close to DCM1 for On-board Ground Sense.

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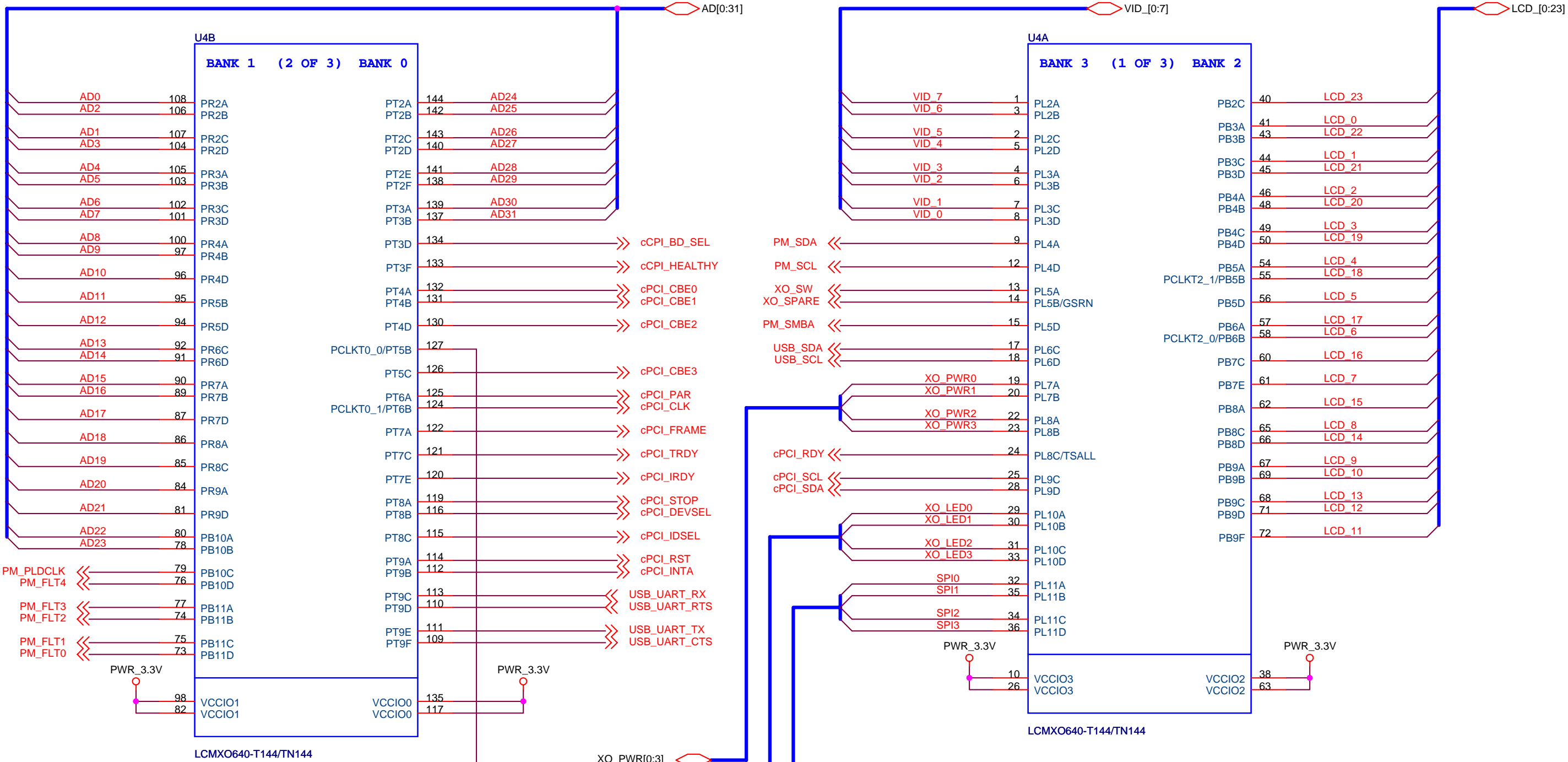
Title		Hot Swap 12V	
Size	Project	Schematic Rev B	
B	Hercules Demo Board	Board Rev B	
Date:	29 April 2010	Sheet	3 of 12



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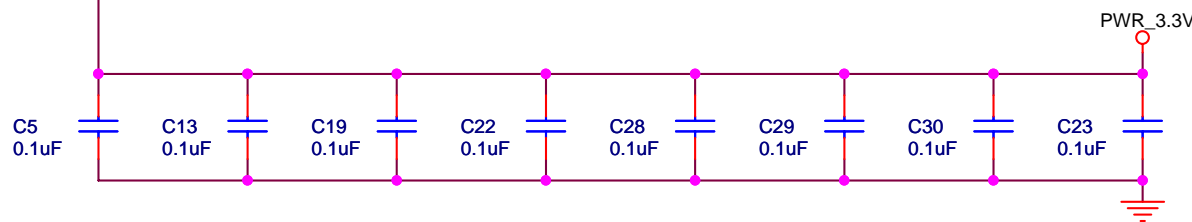
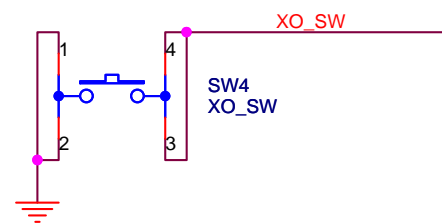
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Title		Hot Swap 3.3V and 5V	
Size	Project	Schematic Rev B	
B	Hercules Demo Board	Board Rev B	
Date:	29 April 2010	Sheet	5 of 12



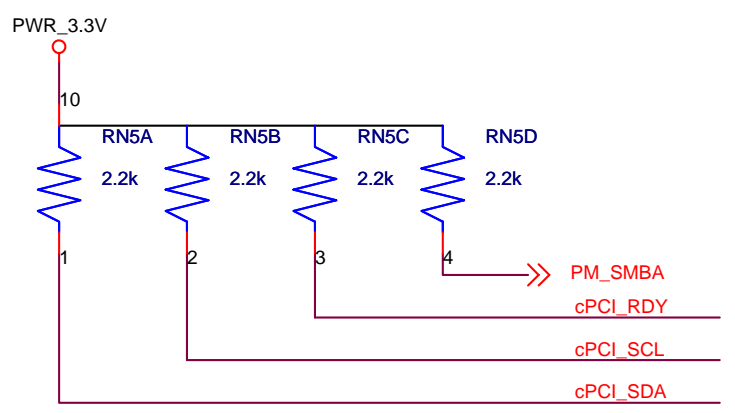
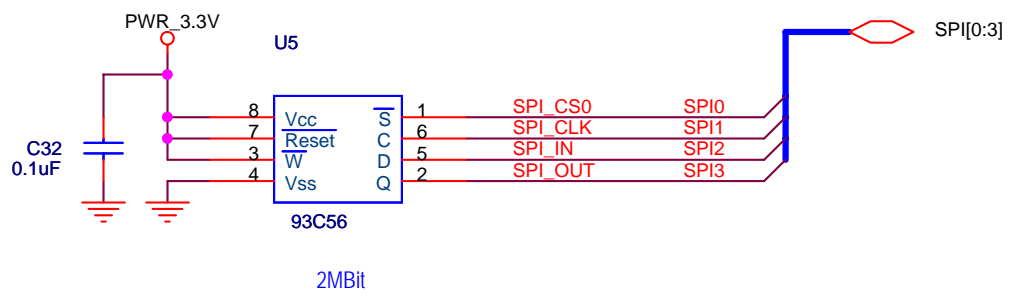
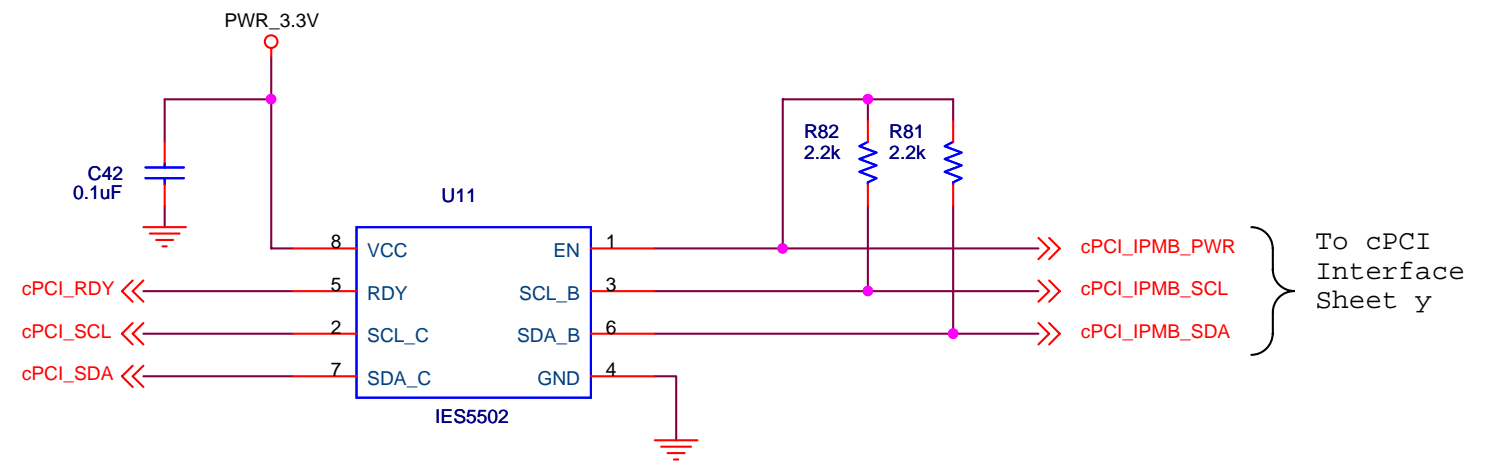
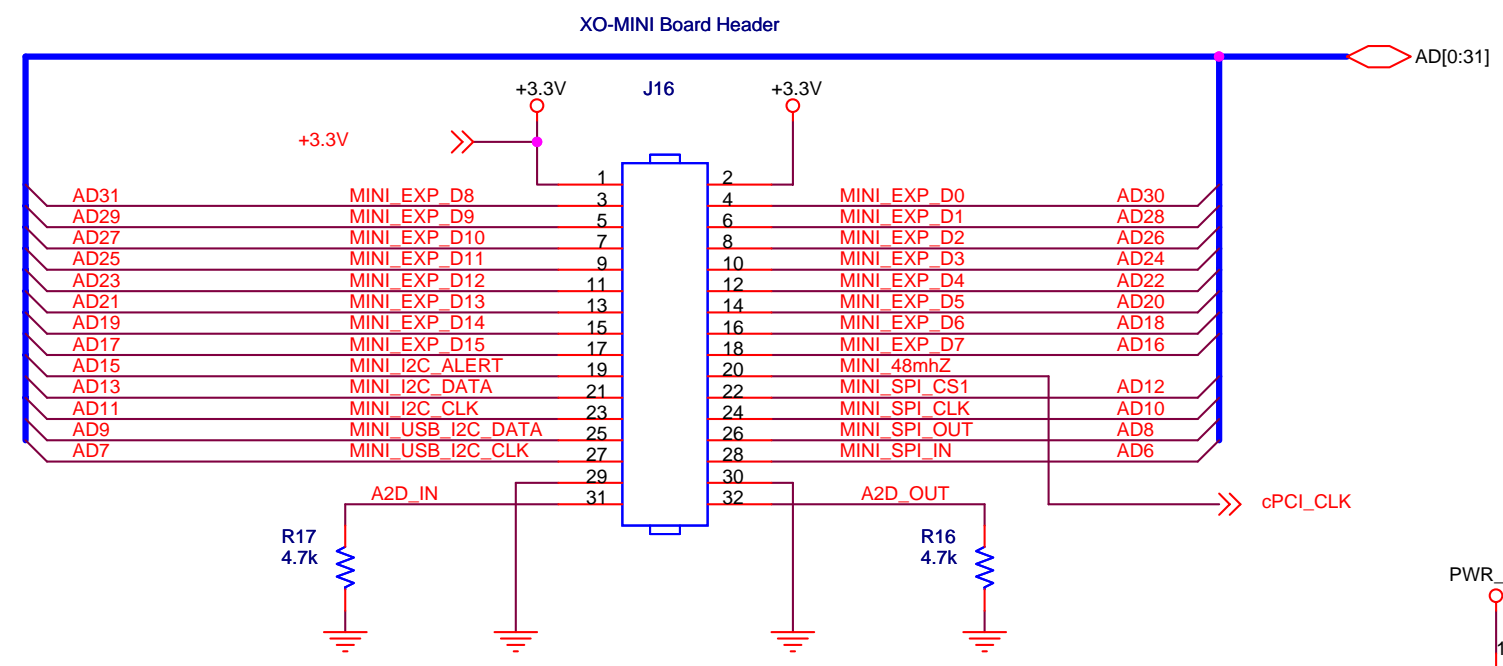
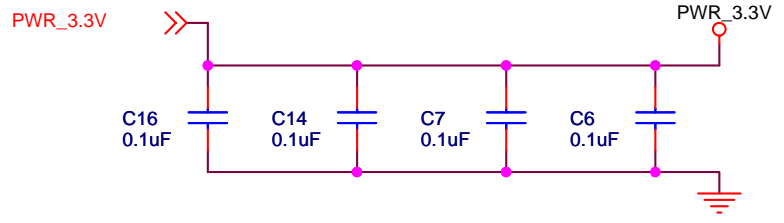
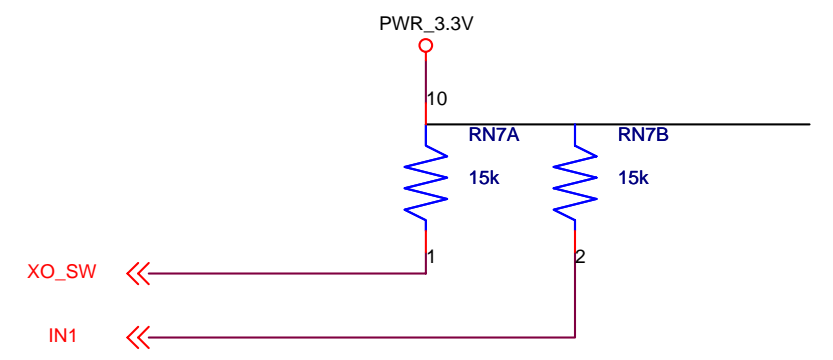
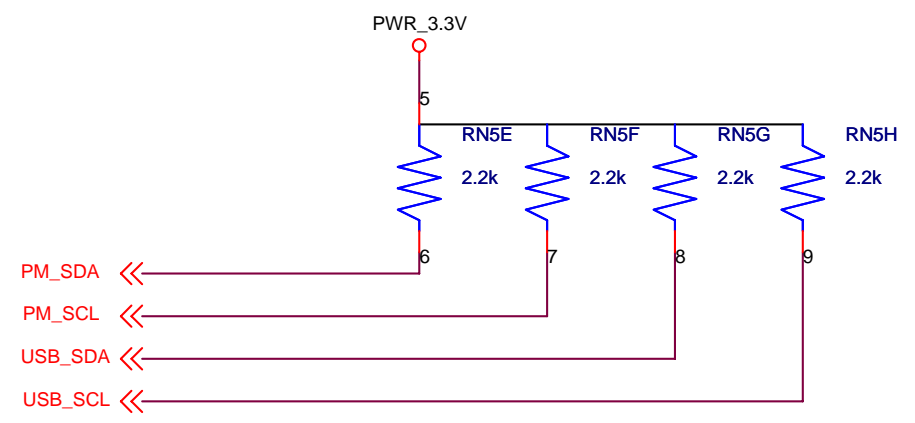
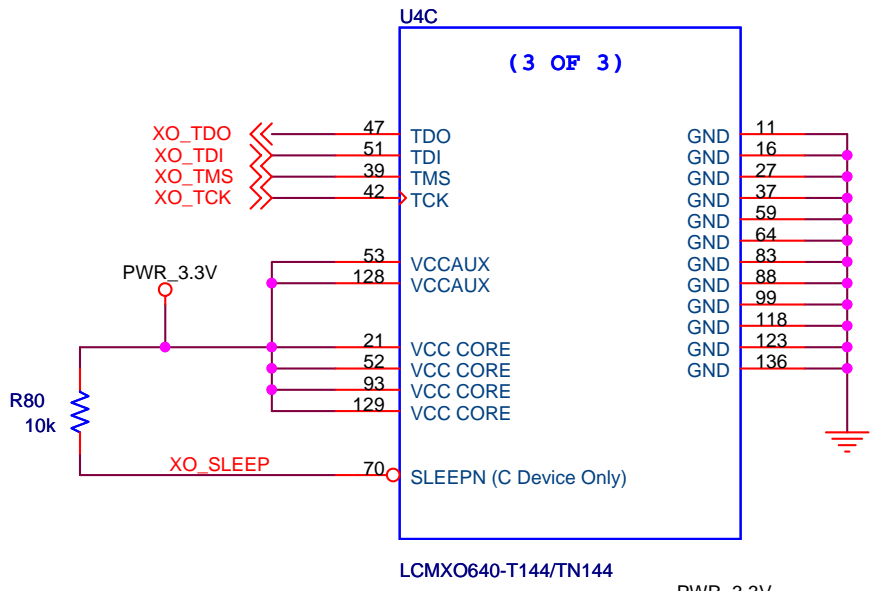
Fault Logging Interface Sheet 2

PM_MCLK << 8MHz



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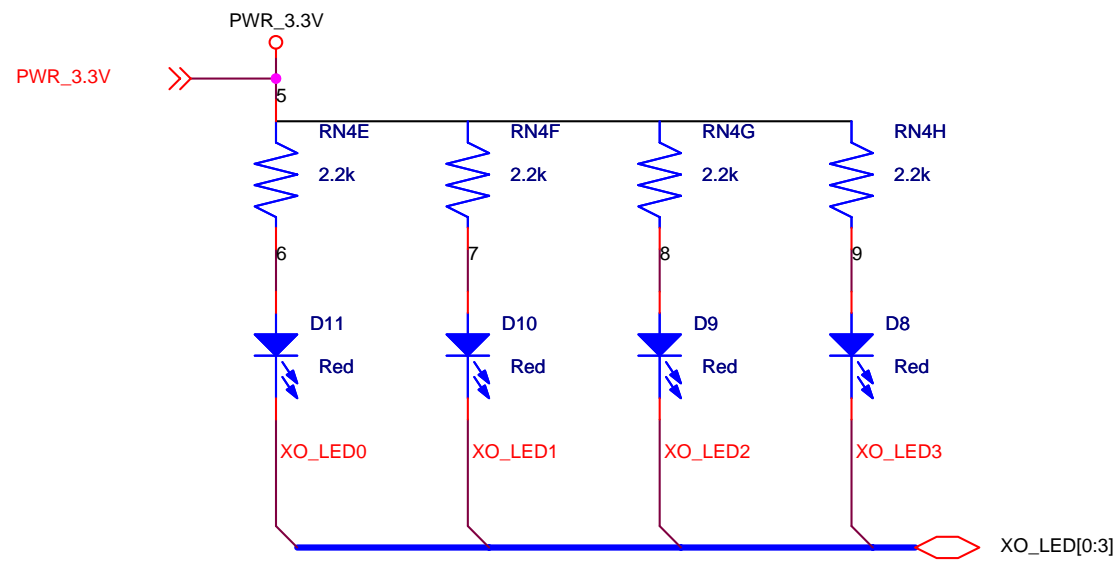
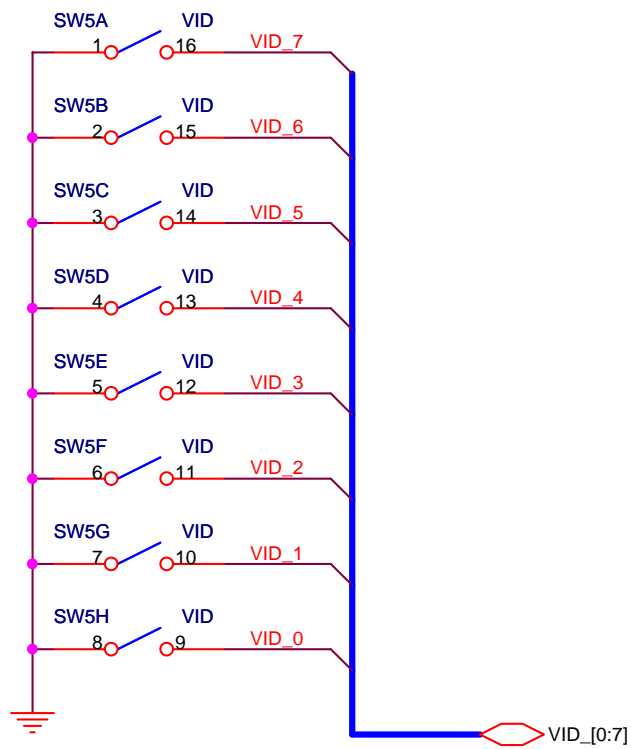
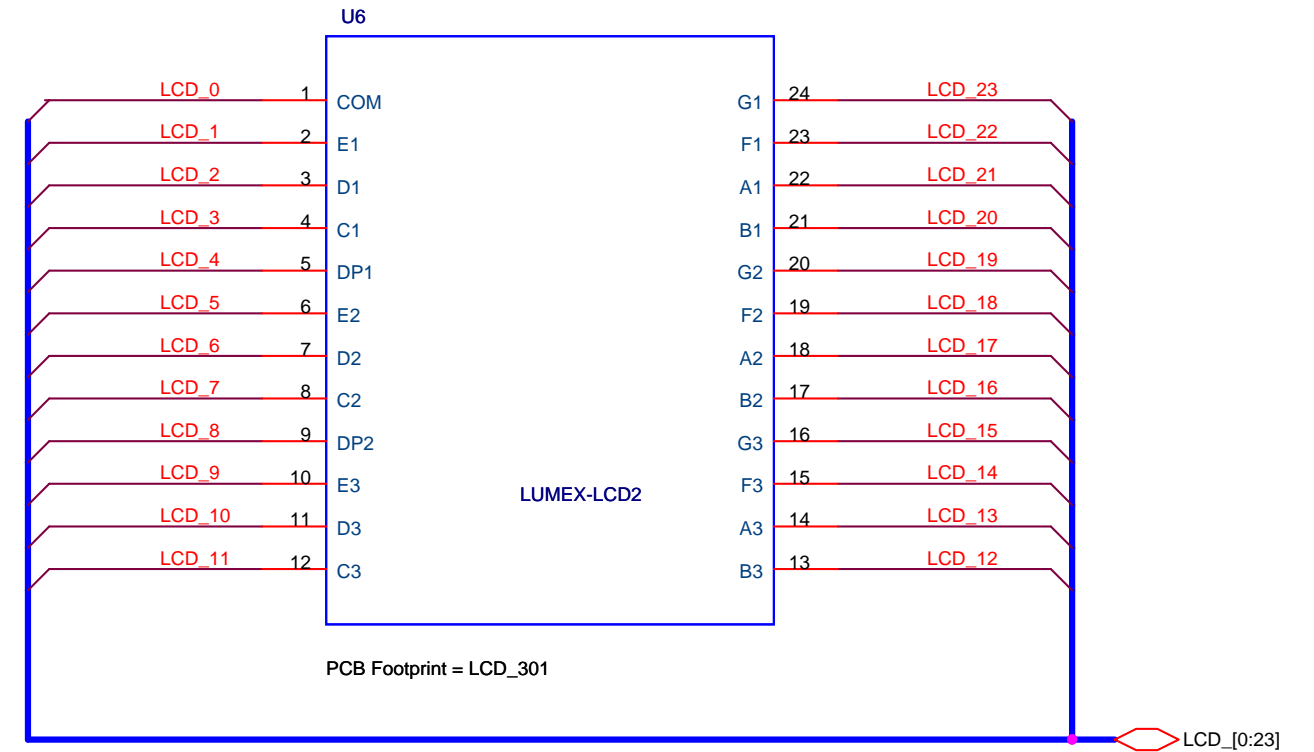
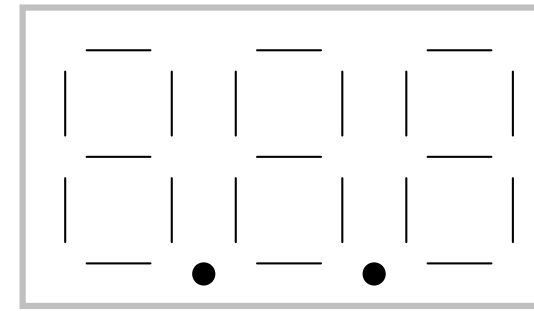
Title		MachXO I/O	
Size	Project	Schematic Rev B	
B	Hercules Demo Board	Board Rev B	
Date:	29 April 2010	Sheet	6 of 12



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Title		MachXO-Bottom JTAG & Power	
Size	Project	Schematic Rev B	
B	Hercules Demo Board	Board Rev B	
Date:	29 April 2010	Sheet	7 of 12

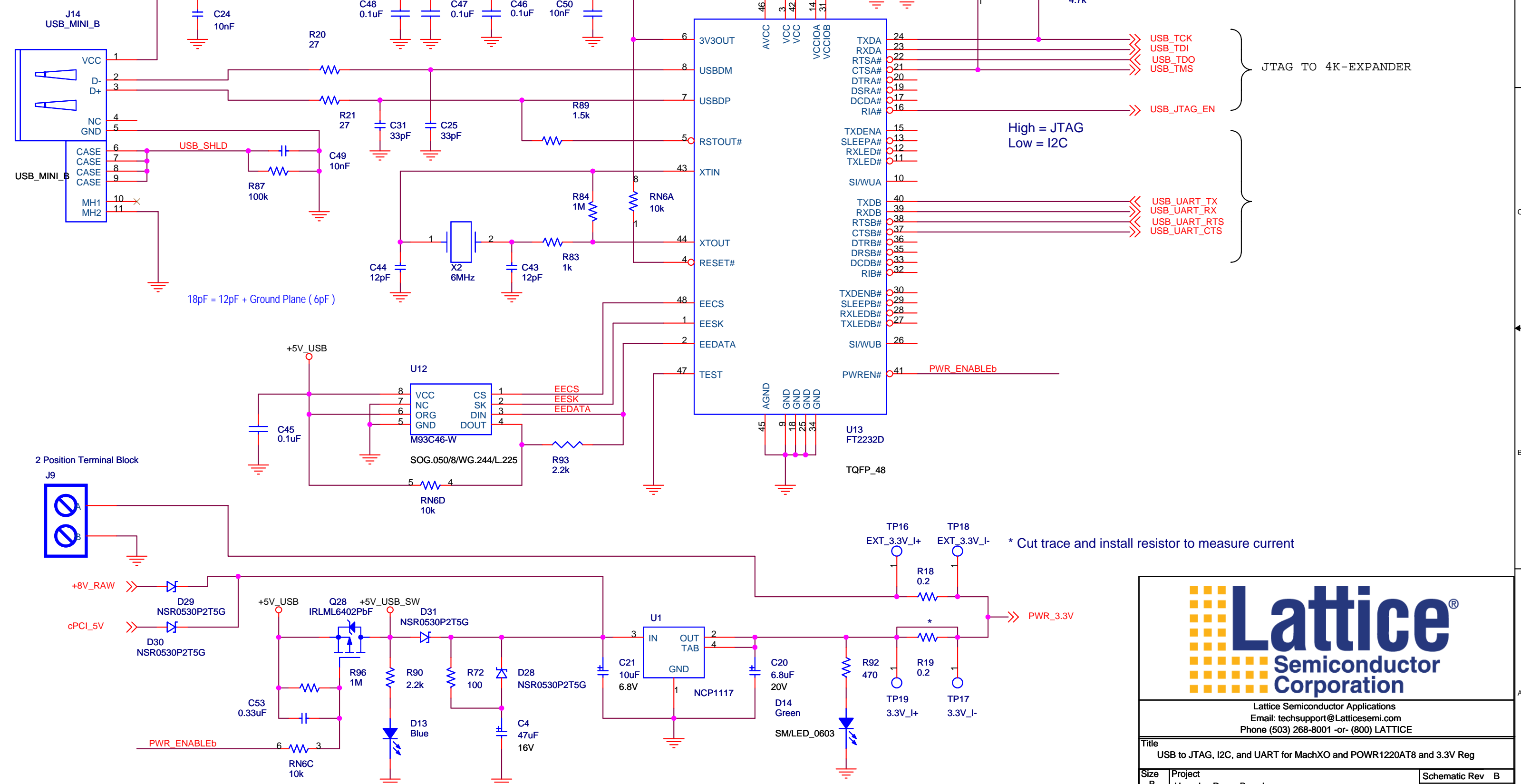


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Title LED & LCD Display, & Voltage Identification Digital		
Size B	Project Hercules Demo Board	Schematic Rev B
Date: 29 April 2010	Sheet 8 of 12	Board Rev B

USB Connection



JTAG TO 4K-EXPANDER

High = JTAG
Low = I2C

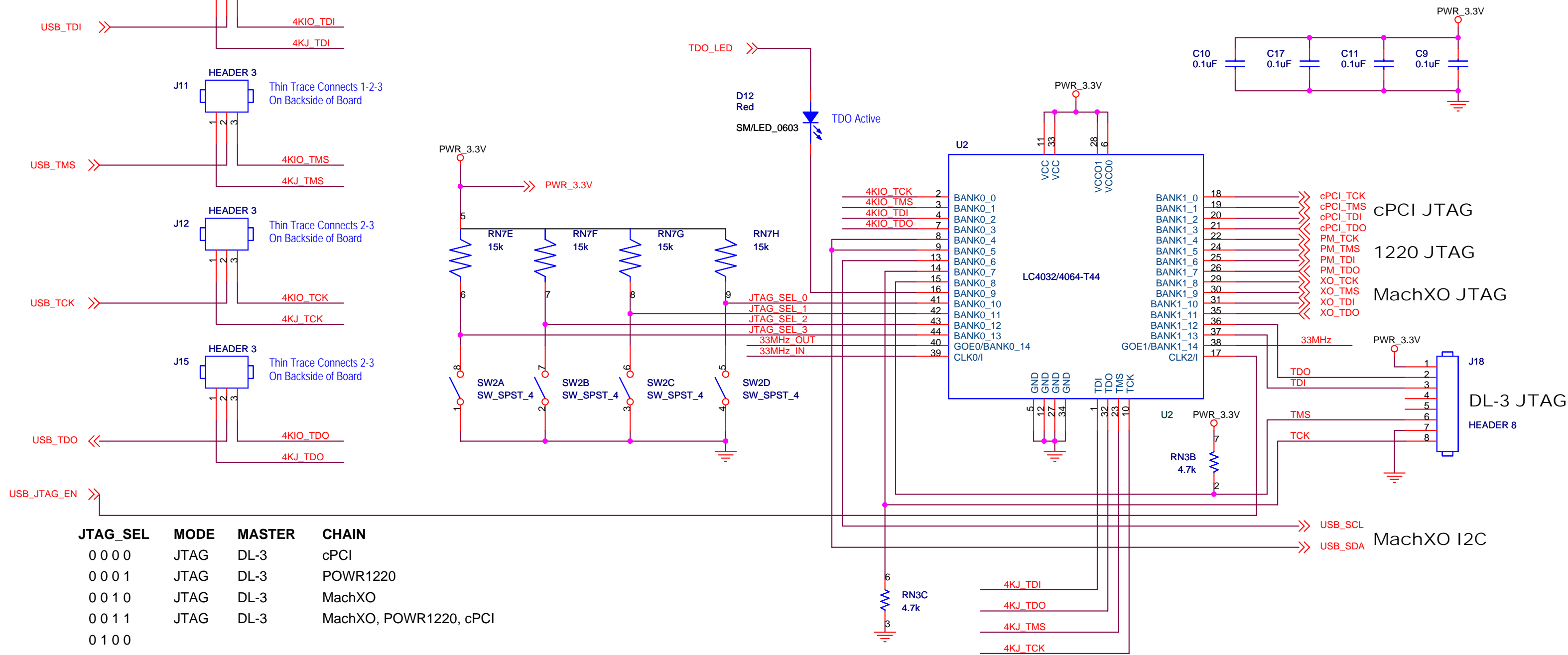
USB_UART_TX
USB_UART_RX
USB_UART_RTS
USB_UART_CTS

* Cut trace and install resistor to measure current

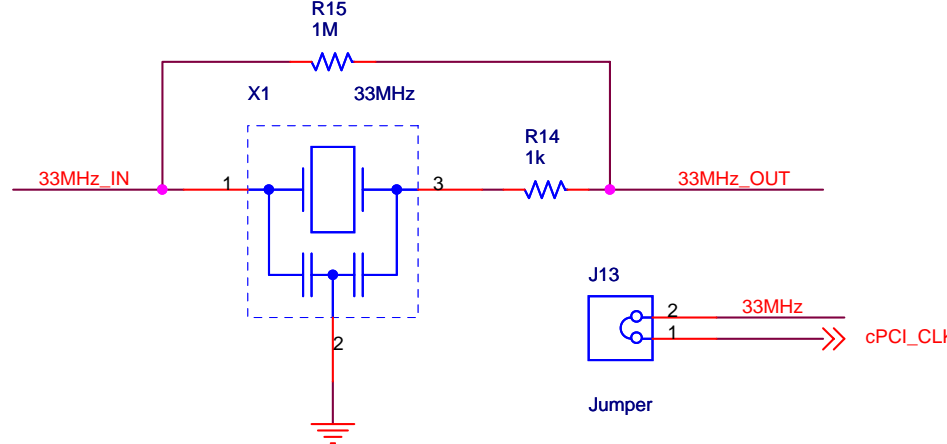
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Title		USB to JTAG, I2C, and UART for MachXO and POWR1220AT8 and 3.3V Reg	
Size	Project	Schematic Rev B	
B	Hercules Demo Board	Board Rev B	
Date:	29 April 2010	Sheet	9 of 12



JTAG_SEL	MODE	MASTER	CHAIN
0 0 0 0	JTAG	DL-3	cPCI
0 0 0 1	JTAG	DL-3	POWR1220
0 0 1 0	JTAG	DL-3	MachXO
0 0 1 1	JTAG	DL-3	MachXO, POWR1220, cPCI
0 1 0 0			
0 1 0 1	JTAG	cPCI	POWR1220
0 1 1 0	JTAG	cPCI	MachXO
0 1 1 1	JTAG	cPCI	MachXO, POWR1220
1 0 0 0			
1 0 0 1			
1 0 1 0	JTAG	FTDI	cPCI
1 0 1 1	JTAG	FTDI	POWR1220
1 1 0 0	JTAG	FTDI	MachXO
1 1 0 1	JTAG	FTDI	MachXO, POWR1220, cPCI
1 1 1 0	JTAG	FTDI	MachXO, POWR1220
1 1 1 1	I2C	FTDI	MachXO



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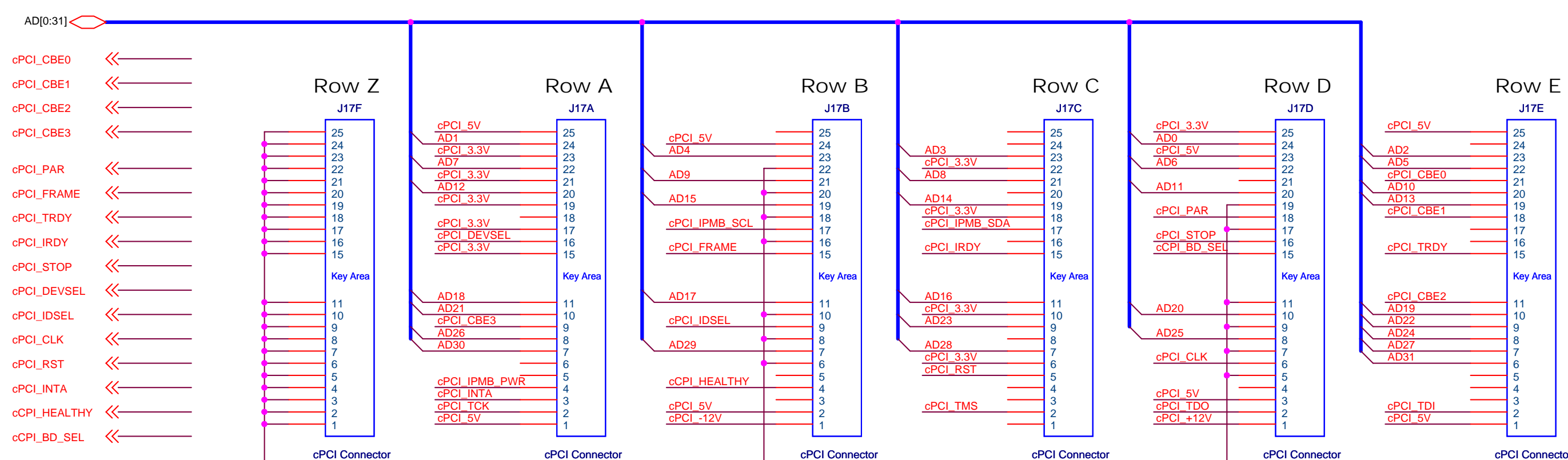
Title		JTAG Chain Configuration	
Size	Project	Schematic Rev B	
B	Hercules Demo Board	Board Rev B	
Date:	29 April 2010	Sheet	10 of 12

Compact PCI Interface Sheet x

Hot Swap Control Sheet x

JTAG Selection Sheet 1

Intelligent Power Management Bus Sheet x



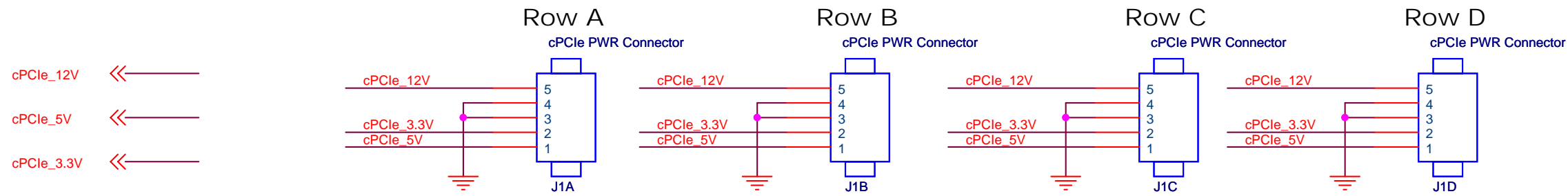
Unused PCI Signals	Row	Pin(s)
BRSVP1A5	A	5
REQ	A	6
SERR	A	18
INTB	B	3
BRSVP1B5	B	5
REQ64	B	25
TRST	C	1
INTC	C	3
V(I/O)	C	4, 8, 16, 20, 24
ENUM	C	25
INTP	D	4
M66EN	D	21
INTD	E	3
INTS	E	4
GNT	E	4
LOCK	E	16
PERR	E	17
ACK64	E	24

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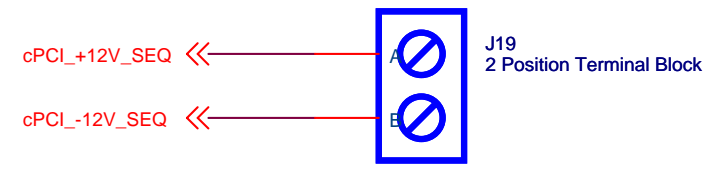
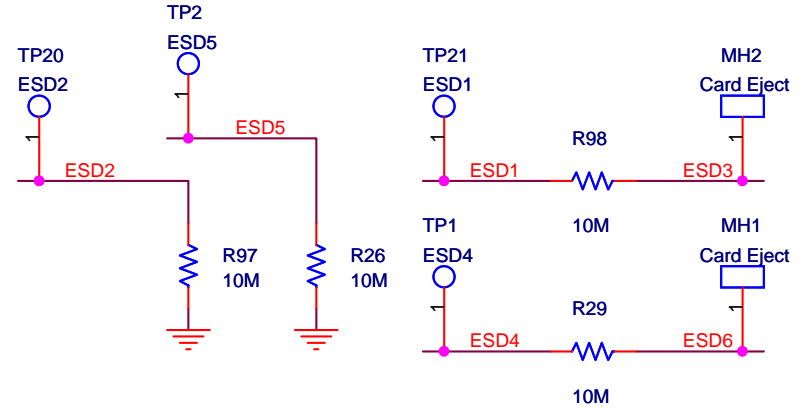
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Title		Compact PCI Connector	
Size	Project	Schematic Rev B	
B	Hercules Demo Board	Board Rev B	
Date:	29 April 2010	Sheet	11 of 12

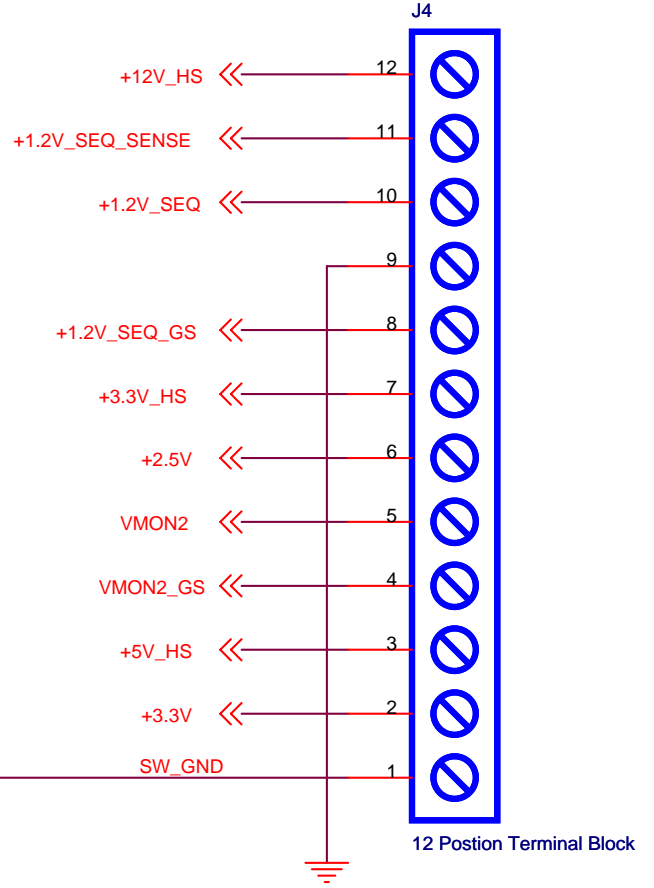
Switch Card Power Connector



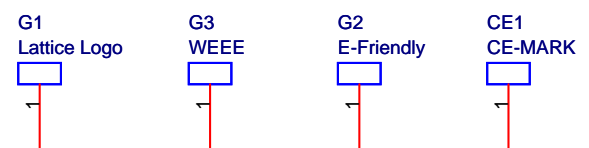
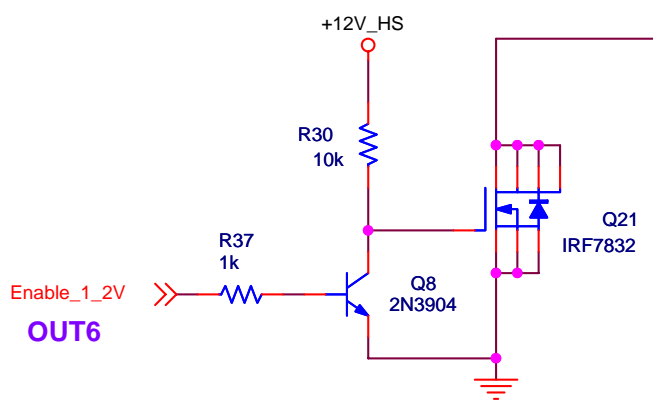
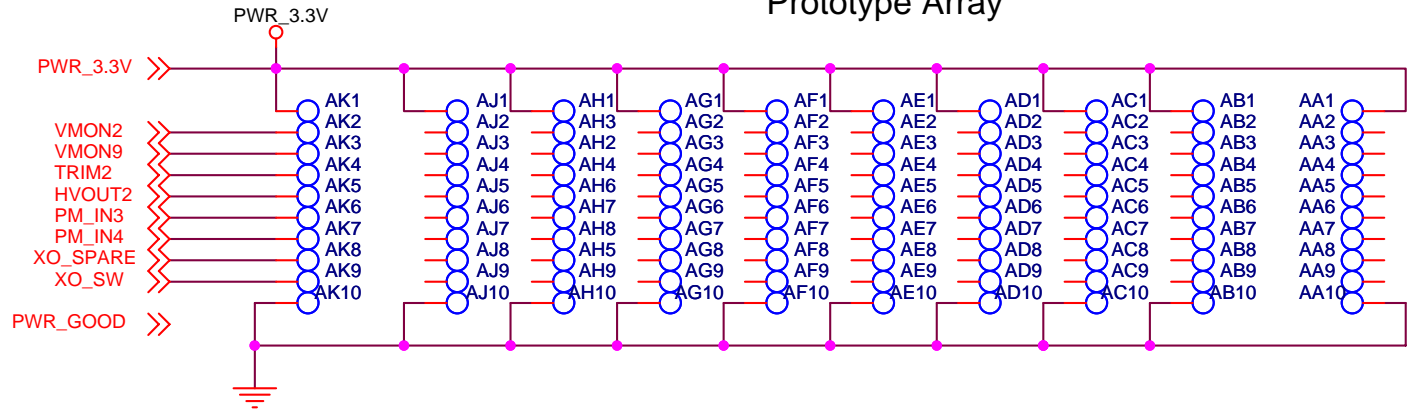
ESD Circuits



External Load Connections



Prototype Array



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Title cPCIe Interface, Prototype, and External Load connections		
Size B	Project Hercules Demo Board	Schematic Rev B
Date: 29 April 2010	Sheet 12 of 12	Board Rev B