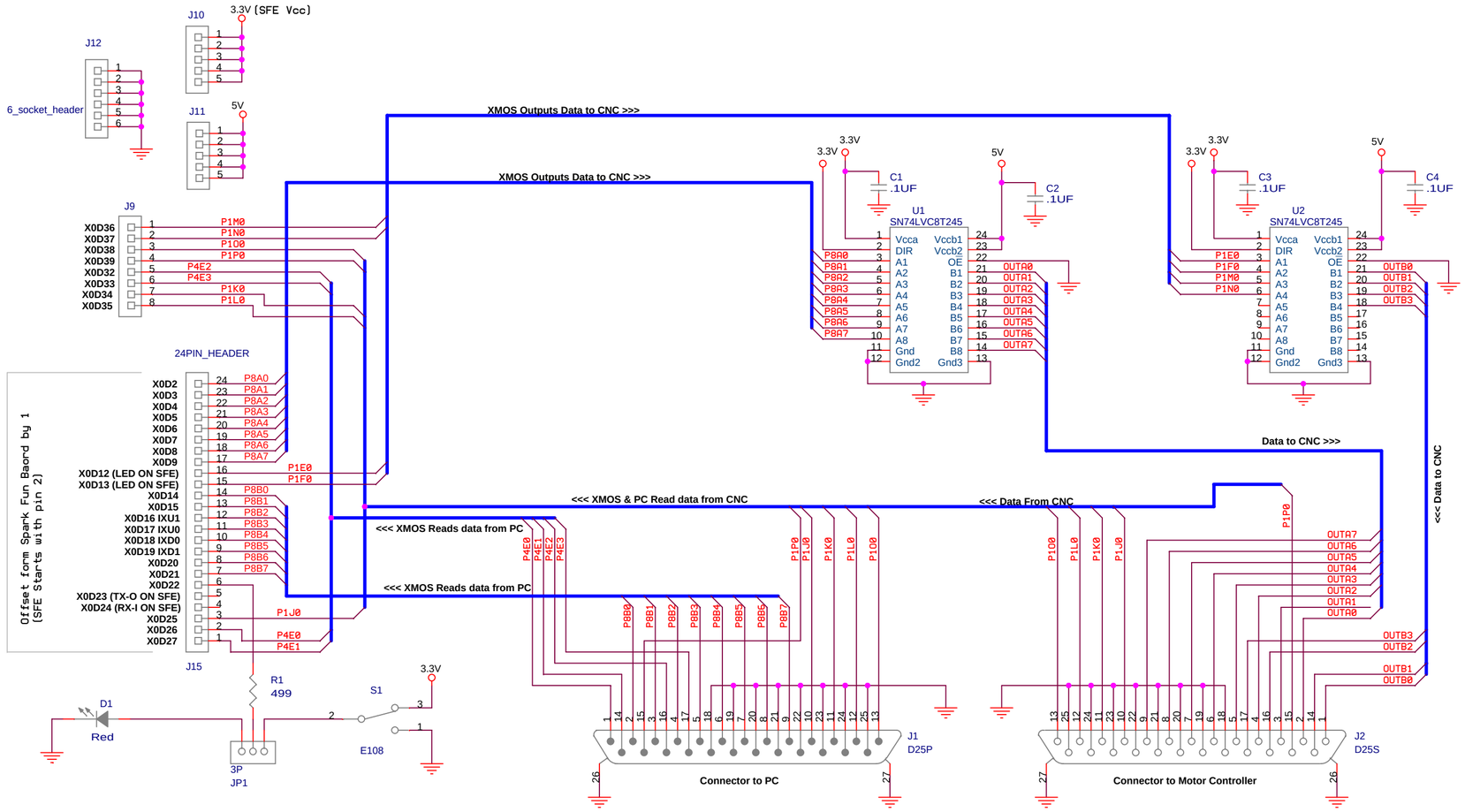
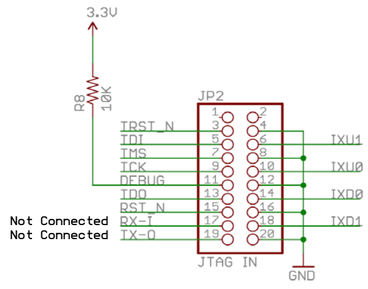


Package		XMOS LINKS		PORTS			
Pin Name	Pin ID	5bit	2bit	1b	4b	8b	16b
X0D0	16			P1A0			
X0D1	15	XLA4out		P1B0			
X0D2	14	XLA3out			P4A0	P8A0	P16A0
X0D3	12	XLA2out			P4A1	P8A1	P16A1
X0D4	11	XLA1out	XLA1out		P4B0	P8A2	P16A2
X0D5	10	XLA0out	XLA0out		P4B1	P8A3	P16A3
X0D6	7	XLA0in	XLA0in		P4B2	P8A4	P16A4
X0D7	5	XLA1in	XLA1in		P4B3	P8A5	P16A5
X0D8	3	XLA2in			P4A2	P8A6	P16A6
X0D9	2	XLA3in			P4A3	P8A7	P16A7
X0D10	1	XLA4in		P1C0			
X0D11	64			P1D0			
X0D12	63			P1E0			
X0D13	62	XLB4out		P1F0			
X0D14	59	XLB3out			P4C0	P8B0	P16A8
X0D15	58	XLB2out			P4C1	P8B1	P16A9
X0D16	57	XLB1out	XLB1out		P4D0	P8B2	P16A10
X0D17	56	XLB0out	XLB0out		P4D1	P8B3	P16A11
X0D18	55	XLB0in	XLB0in		P4D2	P8B4	P16A12
X0D19	54	XLB1in	XLB1in		P4D3	P8B5	P16A13
X0D20	51	XLB2in			P4C2	P8B6	P16A14
X0D21	50	XLB3in			P4C3	P8B7	P16A15
X0D22	49	XLB4in		P1G0			
X0D23	48			P1H0			
X0D24	47			P1I0			
X0D25	46			P1J0			
X0D26	45				P4E0		
X0D27	44				P4E1		
X0D32	36				P4E2		
X0D33	35				P4E3		
X0D34	34			P1K0			
X0D35	33			P1L0			
X0D36	42			P1M0			
X0D37	41			P1N0			
X0D38	39			P1O0			
X0D39	38			P1P0			

Parallel Port Pins & Direction

1 > Stobe
2 > Data Bit 0
3 > Data Bit 1
4 > Data Bit 2
5 > Data Bit 3
6 > Data Bit 4
7 > Data Bit 5
8 > Data Bit 6
9 > Data Bit 7
10 < Acknowledge
11 < Busy
12 < Papaer out
13 < Select
14 > Autofeed
15 < Error
16 > Reset
17 > Select
18 - Gnd
19 - Gnd
20 - Gnd
21 - Gnd
22 - Gnd
23 - Gnd
24 - Gnd
25 - Gnd



Sparkfun JTAG Conn. (Ref Only)
Note: RX-I, TX-O not connected (cut traces)

DESIGN NOTES:
- Voltage level convertors are only to take 3.3V outputs from XMOS and converting them to 5V.
  5V is needed on CNC to drive possible opto isolators and PWMs that are referenced to 5V.
- XMOS is 5V compatible so reading from either 'D' connector is not a problem.
  Signals from PC Parallel are 5V and Sensor outputs from CNC are 5V.
- JP1 Allows pin to be an input from switch or output to LED. Resistor position chosen so output to either position won't hurt I/O pin.
- Header connectors use same designators as Spark Fun Board.
- Spark Fun board should be powered by a stable 5V source so its Vcc is 5V and can be used by this board.

- Operating Modes
- - CNC Mode XMOS only reads data from PC and echos it on the CNC connector
- - XMOS Mode. XMOS directly controls output to CNC connector. It listens to data from both PC and CNC.

XMOS Pins Not Used:

(Spark Fun USB)
X0D0 SPI_MISO
X0D1 SPI_SS
X0D10 SPI_SCK
X0D11 SPI_MOSI

Title	XMOS CNC Sheild		
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Date: Sunday, February 14, 2010		Sheet 1 of 1	