

General Conventions:

Signal names beginning with a '/' are active low

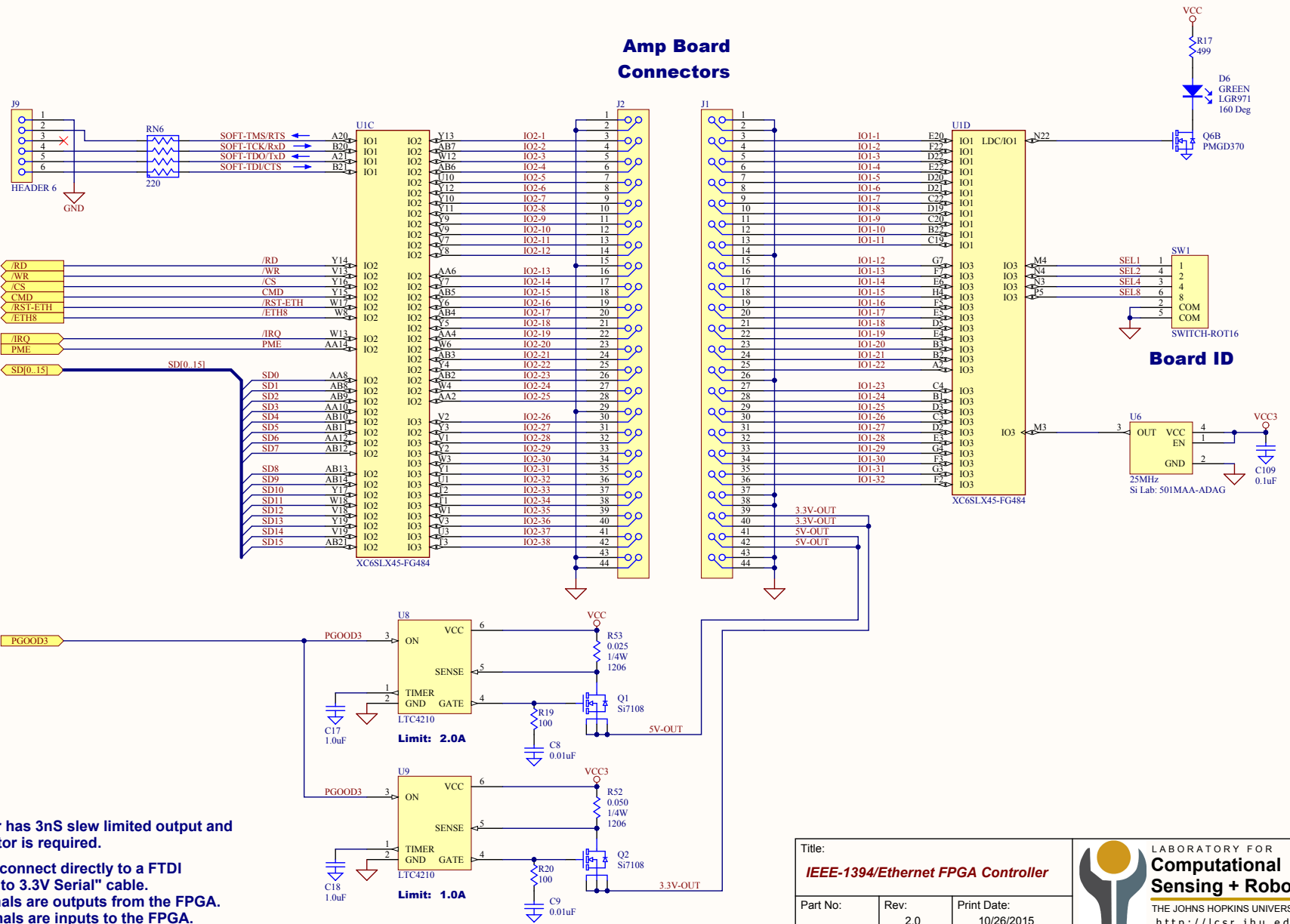
Unless Specified Otherwise:

- All resistors are 1% metal film, 1/10W, in 0603 or 0402 package
- All non-polarized capacitors are ceramic, in 0603 or 0402 package
- All ceramic capacitors up to and including 1,000pF are NPO, 50V or higher, 5% or better
- All ceramic capacitors over 1,000pF up to and including 1.0uF are X7R, 16V or higher, 10% or better
- All ceramic capacitors over 1.0uF up to and including 10uF are X5R, 6.3V or higher, 20% or better
- All ceramic capacitors over 10uF are of type X5R and the specified voltage, 20% or better
- All polarized capacitors are Organic Tantalum, of the specified manufacturer/family and voltage, 20% or better

Amp Board Connector




Soft JTAG & Serial Debug Port

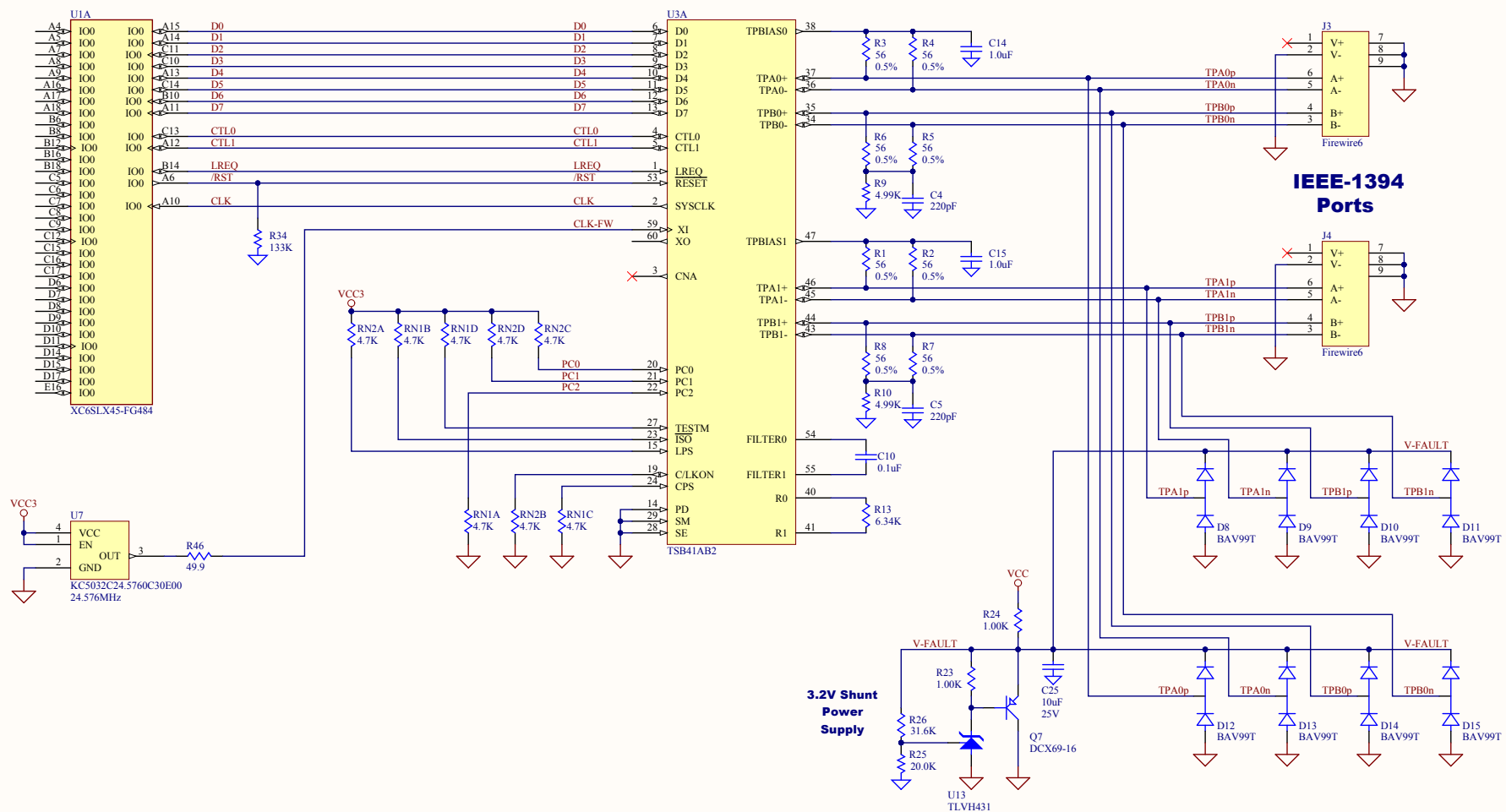


Note:

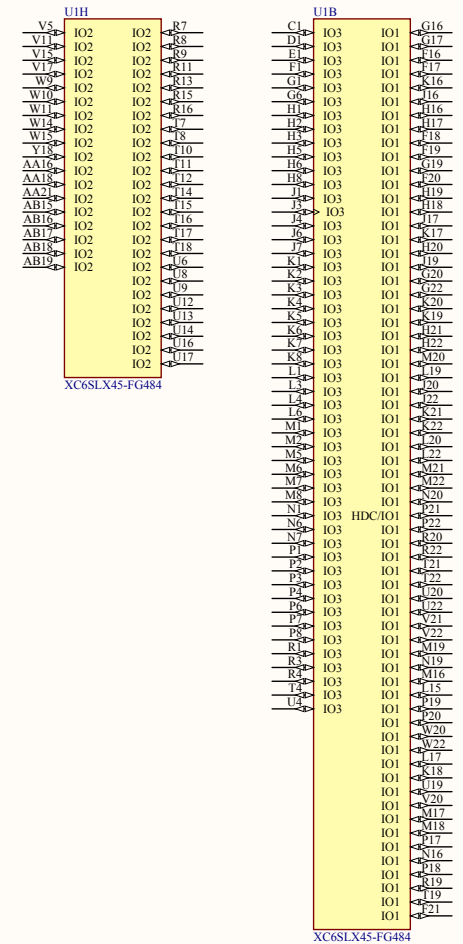
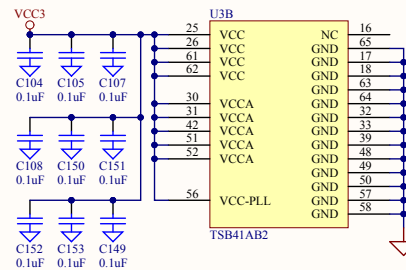
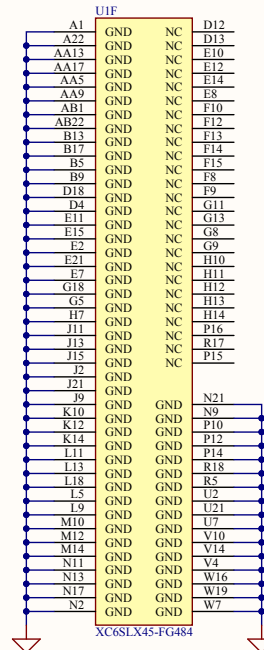
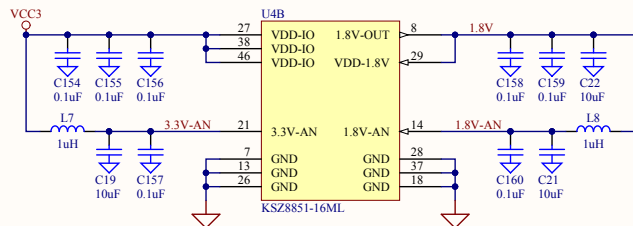
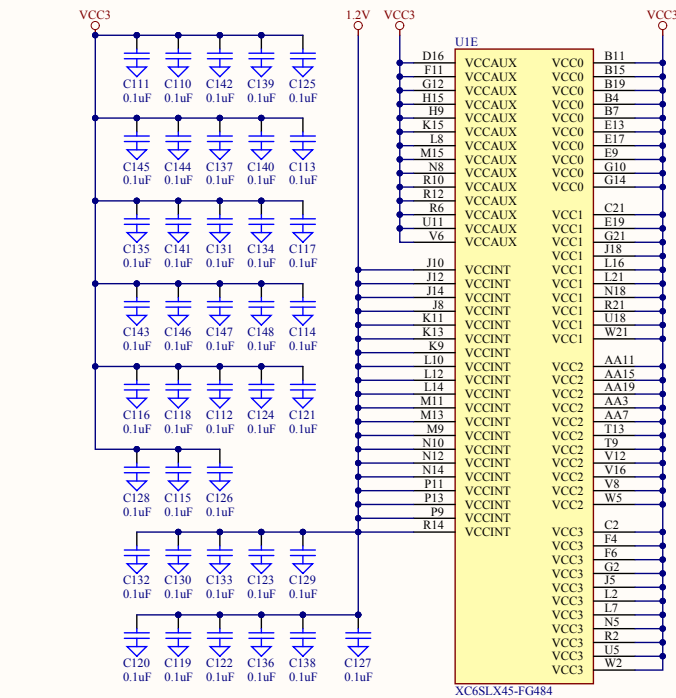
- 1) The 25MHz Oscillator has 3nS slew limited output and no termination resistor is required.
- 2) The Debug Port can connect directly to a FTDI TTL-232R-3V3 "USB to 3.3V Serial" cable.
The Tx and RTS signals are outputs from the FPGA.
The Rx and CTS signals are inputs to the FPGA.

| | | | |
|---|-------------|---------------------------|---|
| Title: IEEE-1394/Ethernet FPGA Controller | | |  <p>LABORATORY FOR Computational Sensing + Robotics</p> <hr/> <p>THE JOHNS HOPKINS UNIVERSITY http://lcsr.jhu.edu</p> |
| Part No: | Rev: 2.0 | Print Date: 10/26/2015 | |
| File Name: S02.SchDoc | | | |
| Sheet 2 of 6 | | | |

FireWire Controller & Connectors



A



B

C

E

F

A

B

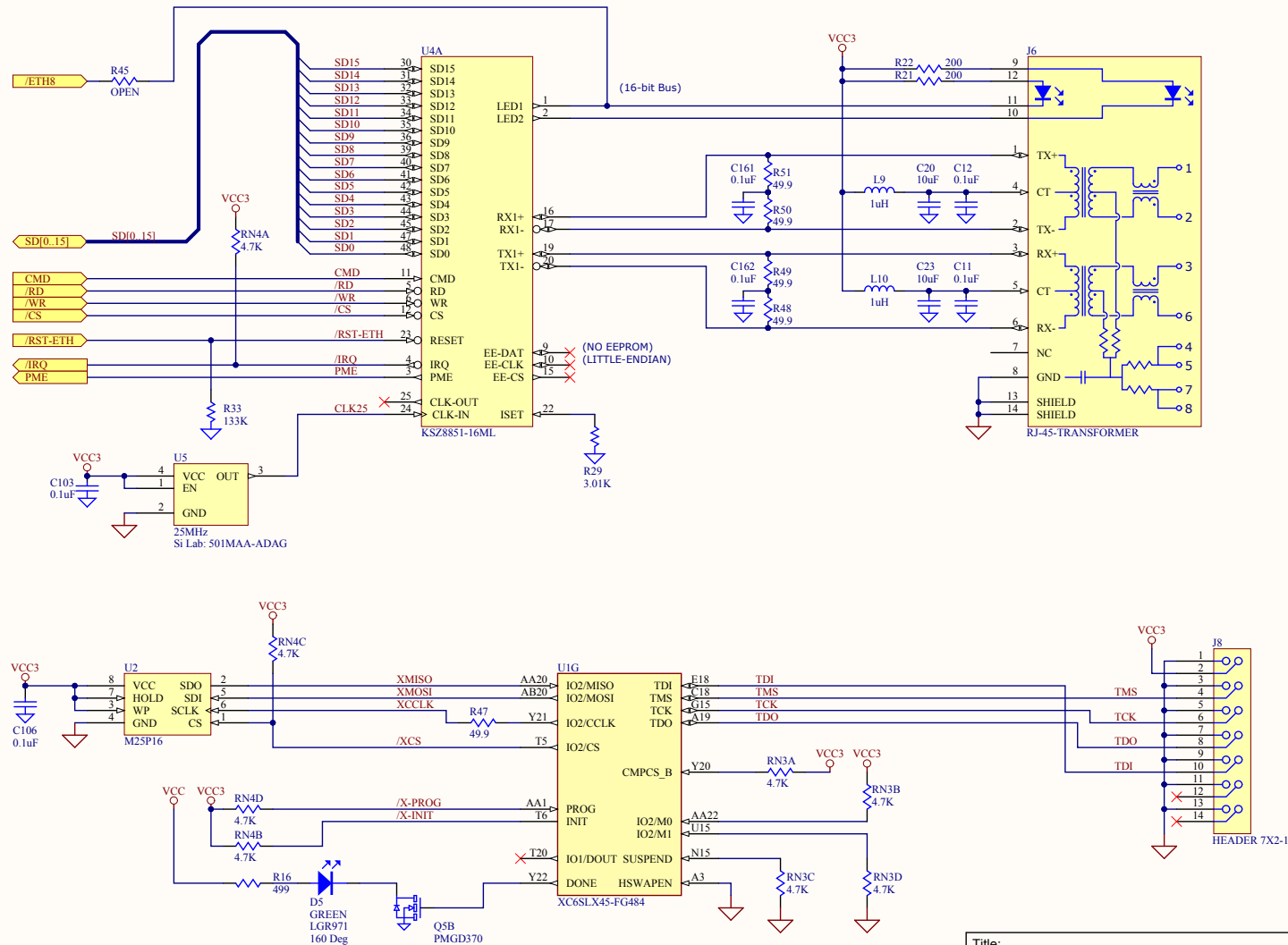
C

er

III

F


Ethernet/FPGA Init



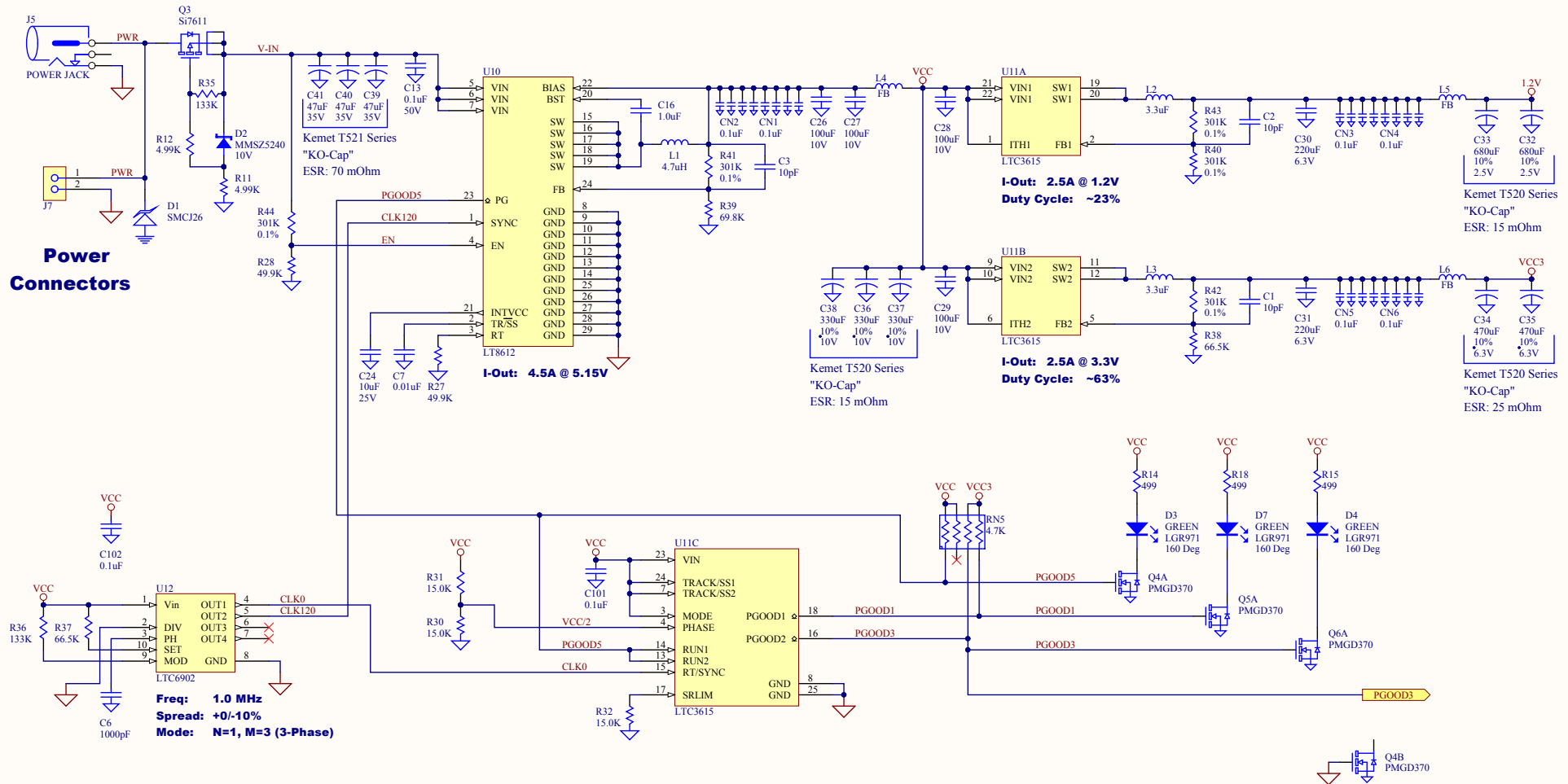
**Xilinx
JTAG
Port**

Note:

- 1) The 25MHz Oscillator has 3nS slew limited output and no termination resistor is required.

| | | | | |
|---|-------------|---------------------------|---|--|
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| Part No: | Rev: 2.0 | Print Date: 10/26/2015 | | |
| File Name: S05.SchDoc | | | Sheet 5 of 6 | |

Power Supplies



Note:

- 1) Even though the power supply chips are rated for higher current, the power supplies, including the inductors and traces, are designed for and tested to the specified current.
- 2) The clock uses spread spectrum to reduce EMI and noise. The nominal frequency is 1.0MHz which is spread down by 10% The two DC-DC converter chips are synchronized 120° out of phase.
- 3) The two DC-DC converters in the LTC3615 are 90° out of phase with respect to each other. This results in the top switches in the three DC-DC converters getting enabled at 0°, 90° and 120°