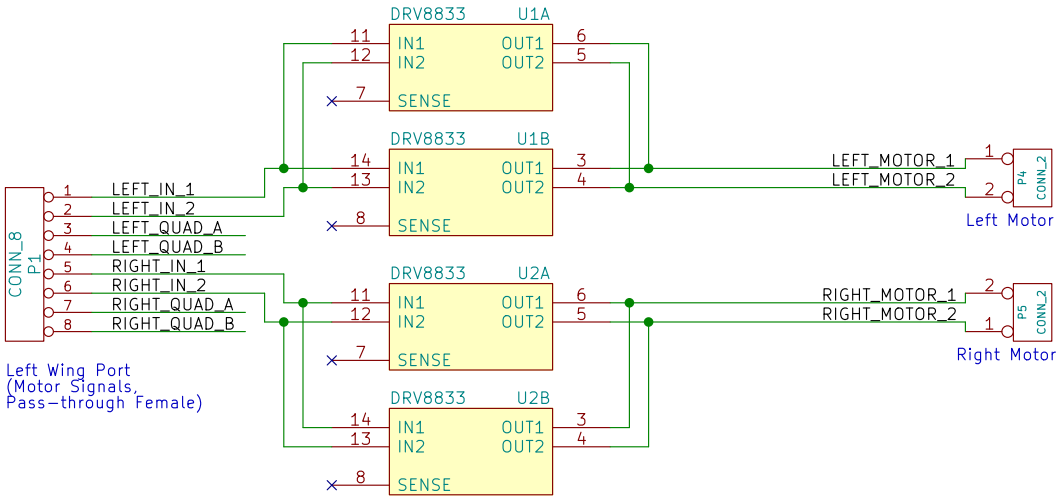
Core Motor Control

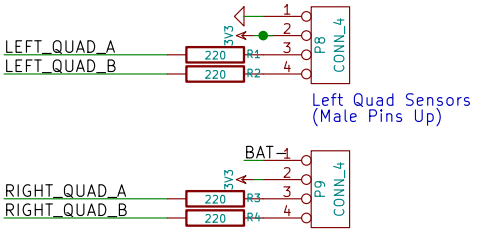
Motor drivers are paralleled, as to be able to provide the recommended 3A (RMS) stall current.



Left Wing Port
(Motor Signals,
Pass-through Female)

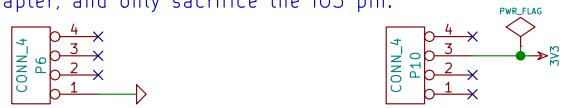
Encoder Connections

The motor's Quadrature Encoders are connected to the FPGA via 220-ohm resistors, which protect the encoders and FPGA if the relevant pins are accidentally configured as outputs.



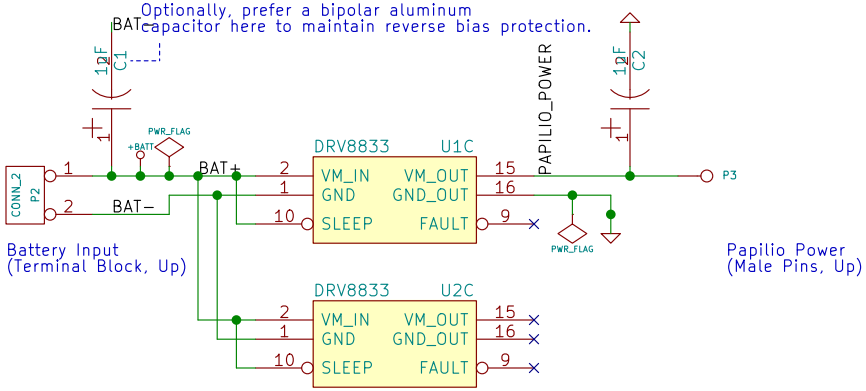
Wing Power Connections

The wing power connections are mainly used for structural support. The 3V3 rail is used on the right wing to power the quadrature encoders. The right wing is used as this allows one to breadboard the adapter, and only sacrifice the IO3 pin.



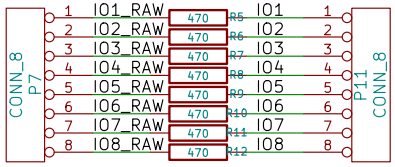
Motor & Papilio Power

Battery power is provided to the motor drivers directly, which provide some limited reverse bias protection. The protected output is then delivered to the papilio.



Current Limited IO

Each of the I/O is current limited using a modereate resistor, which should protect them from shorts and some limited overvoltages. Due to the added resistance (which form a "filter" with the board's parasitic capacitance) this port should should not be used for signals above approximately 80kHz in frequency.



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Sheet: /
File: papilio_drv8833_wing.sch

Title: Motor Adapter Board

Size: USLetter	Date: Fri 18 Jul 2014	**Rev: Pre-release**
KiCad E.D.A. kicad (2014-08-15 BZR 5075)-product		Id: 1/1