**Fig. E.1:** Schematic of the wireless torque transducer box, excluding voltage regulation/power conditioning circuitry. The strain gauge sensor is amplified by a Linear Technology LT1167 instrumentation amplifier of gain ~ 100 and digitized with a Microchip MCP3553 22 bit ADC. The conversions are controlled by an Arduino microcontroller board running firmware written by the author, SPL_ADC_Xbee_v_2_0.pde, published below and available for download at [http://wave.umd.edu/axlcode/SPL_ADC_Xbee_v_2_0.pde](http://wave.umd.edu/axlcode/SPL_ADC_Xbee_v_2_0.pde) This code reads samples and transmits them in ASCII signed integer format via a Digi XBee 2.4GHz wireless serial connection to a computer in the lab frame.