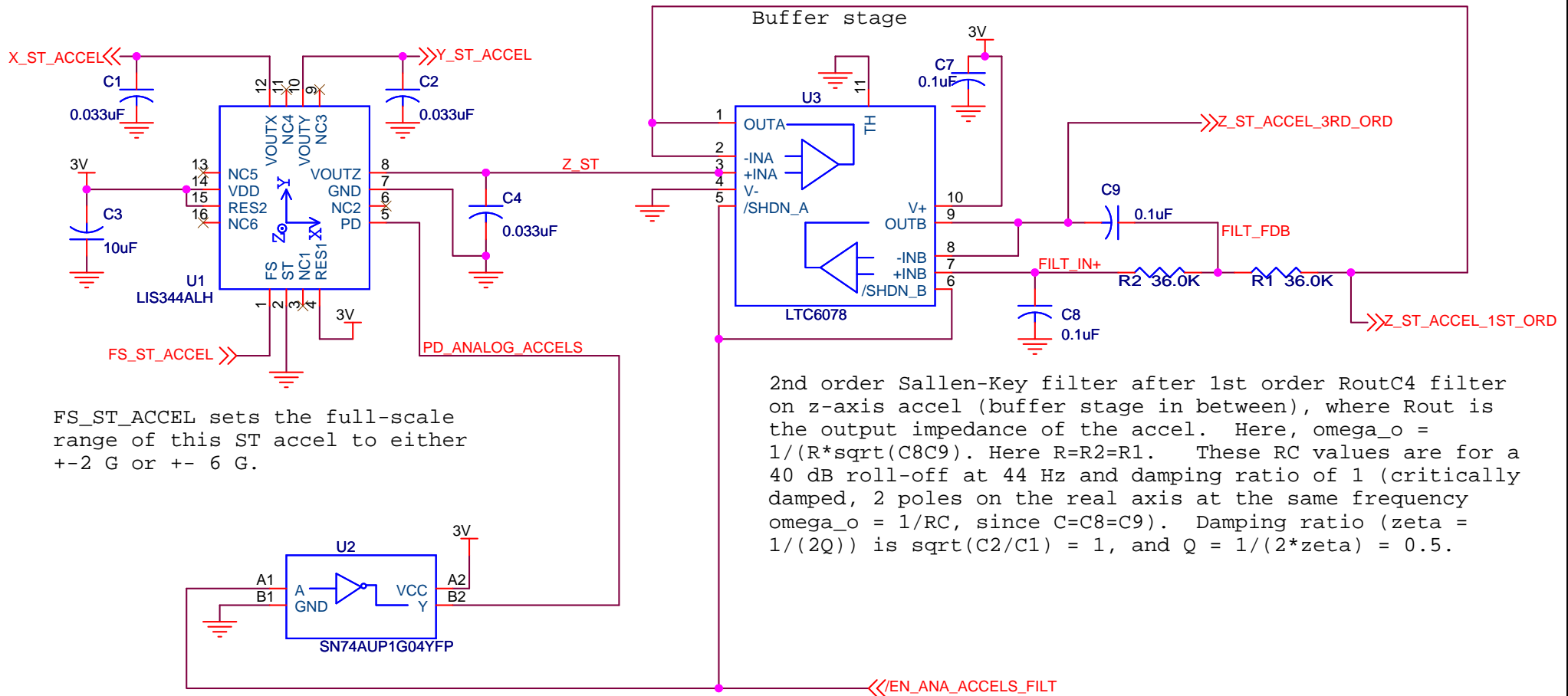


Footstep Detection Accelerometers with 3rd Order Filter

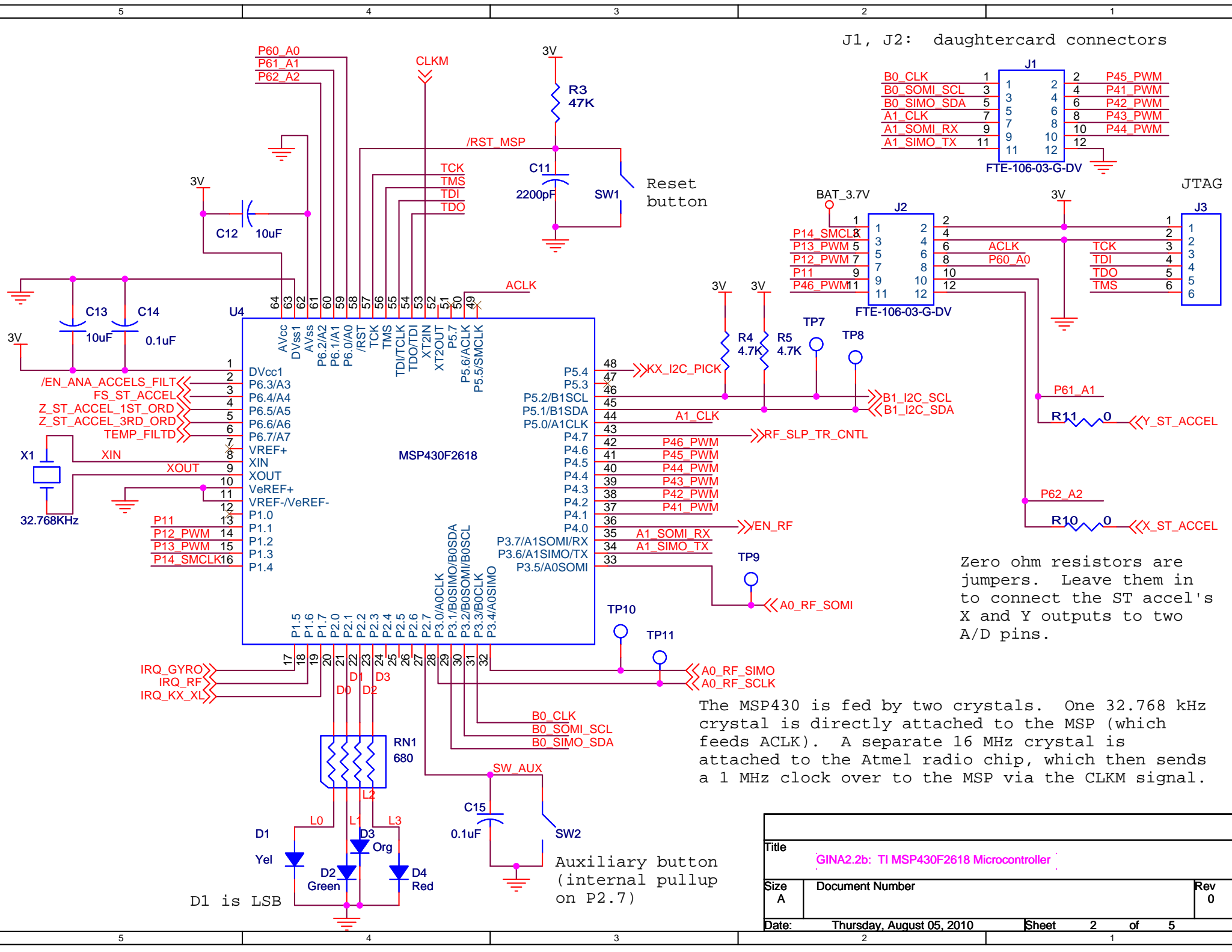
3-axis analog accel (+- 2 G or +- 6 G). R_{out} is 110 kohms. Caps of 0.033uF give 1st order filters on all 3 axes, with corner frequencies of 44 Hz.



PD should be hi to power-off the LIS344ALH.

/SHDN should be lo to power-off the LTC6078 op-amps

Title		
GINA2.2b: Analog Accelerometer and Anti-Aliasing Filters for Footstep/Fall Detection		
Size	Document Number	Rev
A		0
Date:	Thursday, August 05, 2010	Sheet 1 of 5



J1, J2: daughtercard connectors

B0_CLK	1	2	P45_PWM
B0_SOMI_SCL	3	4	P41_PWM
B0_SIMO_SDA	5	6	P42_PWM
A1_CLK	7	8	P43_PWM
A1_SOMI_RX	9	10	P44_PWM
A1_SIMO_TX	11	12	

FTE-106-03-G-DV

BAT_3.7V	1	2	3V
P14_SMCLK	3	4	ACLK
P13_PWM	5	6	TCK
P12_PWM	7	8	TDI
P11	9	10	TDO
P46_PWM	11	12	TMS

FTE-106-03-G-DV

J3	1	2	3	4	5	6
	1	2	3	4	5	6

Zero ohm resistors are jumpers. Leave them in to connect the ST accel's X and Y outputs to two A/D pins.

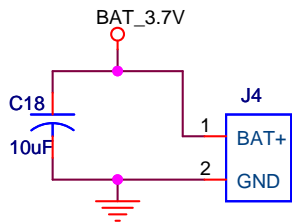
The MSP430 is fed by two crystals. One 32.768 kHz crystal is directly attached to the MSP (which feeds ACLK). A separate 16 MHz crystal is attached to the Atmel radio chip, which then sends a 1 MHz clock over to the MSP via the CLKM signal.

D1 is LSB

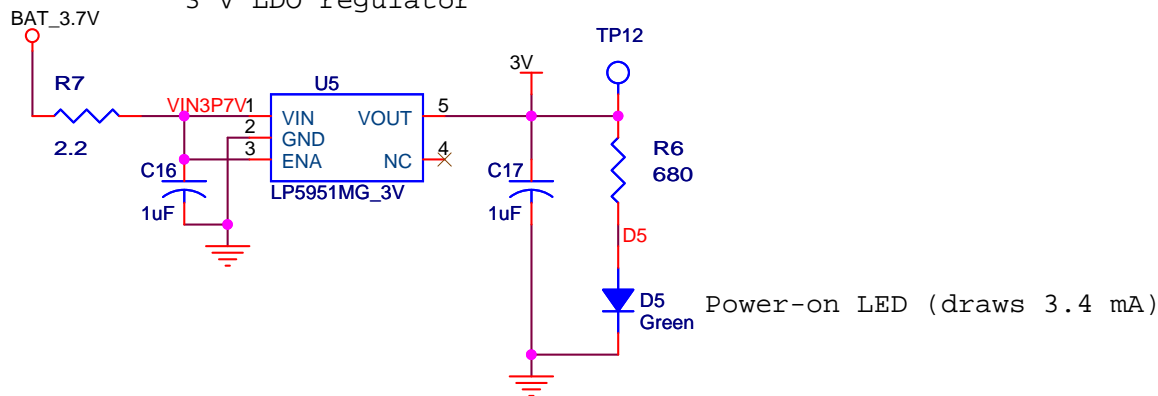
Auxiliary button (internal pullup on P2.7)

Title		
GINA2.2b: TI MSP430F2618 Microcontroller		
Size A	Document Number	Rev 0
Date:	Thursday, August 05, 2010	Sheet 2 of 5

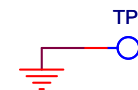
Battery connector



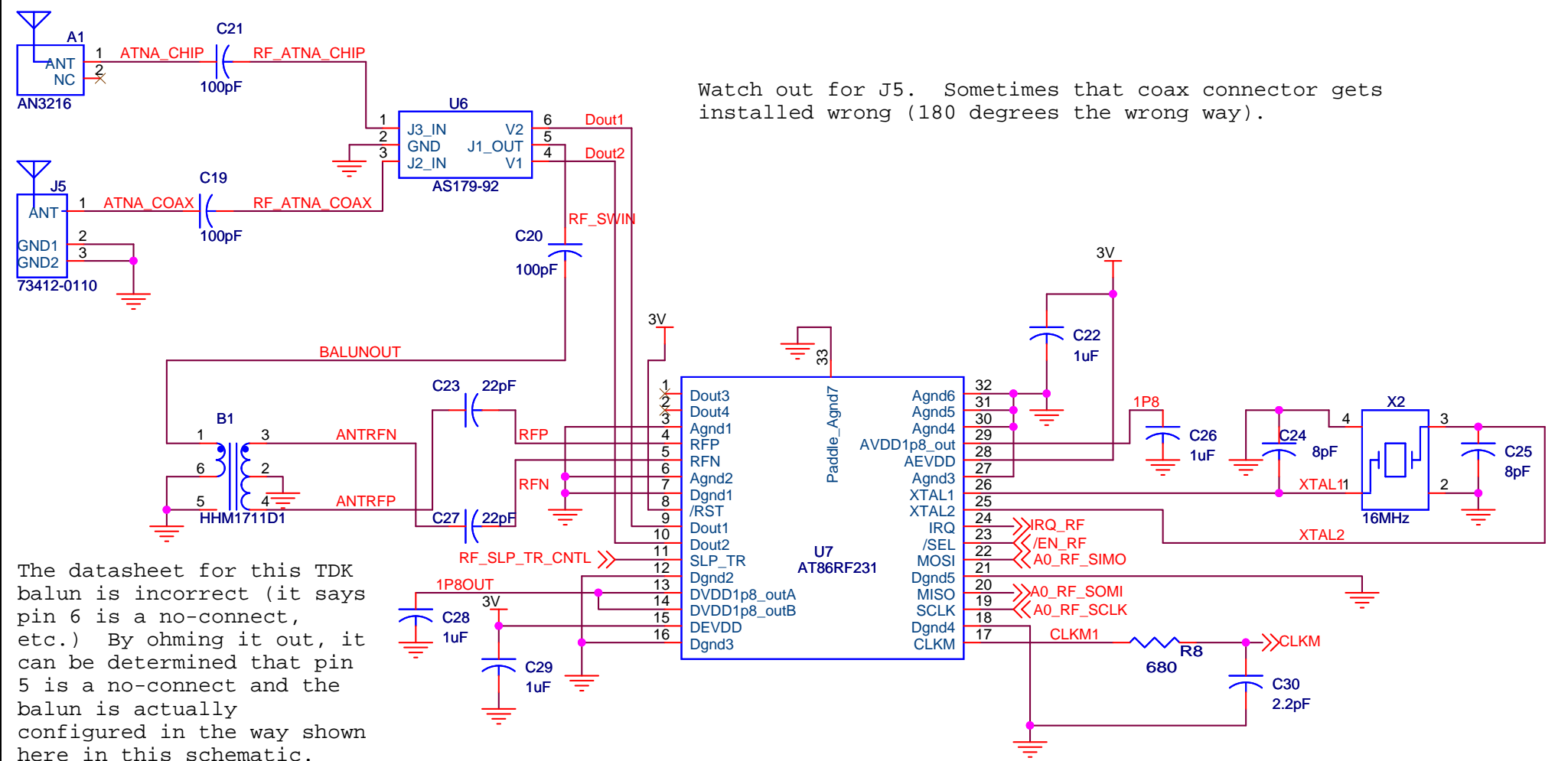
3 V LDO regulator



Thru-hole pad for scope probe ground connection



Title		
GINA2.2b: Battery Power, Voltage Regulator and Hole for Scope Gnd Attach		
Size	Document Number	Rev
A		0
Date:	Thursday, August 05, 2010	Sheet 3 of 5

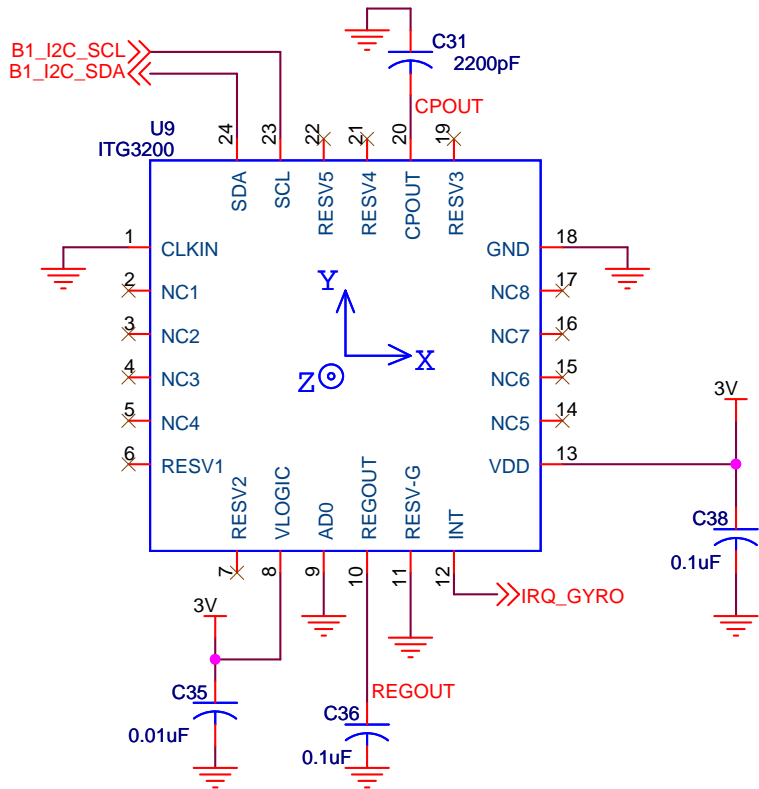


Watch out for J5. Sometimes that coax connector gets installed wrong (180 degrees the wrong way).

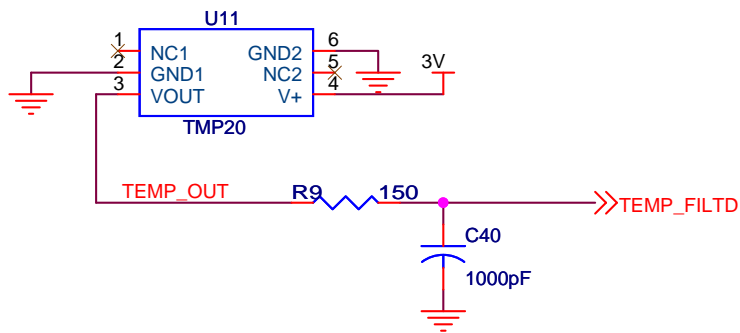
The datasheet for this TDK balun is incorrect (it says pin 6 is a no-connect, etc.) By ohming it out, it can be determined that pin 5 is a no-connect and the balun is actually configured in the way shown here in this schematic. Pin 5 is grounded here b/c it makes the pads work out with other baluns that are similarly screwed up, but in different ways (e.g. the Murata LDB182G4510C-110).

Title		
GINA2.2b: Atmel 802.15.4 Radio		
Size A	Document Number	Rev 0
Date:	Thursday, August 05, 2010	Sheet 4 of 5

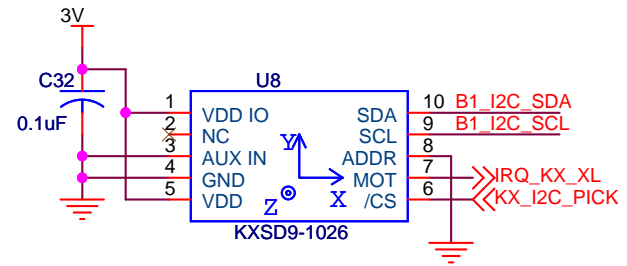
I2C 3-axis digital gyro



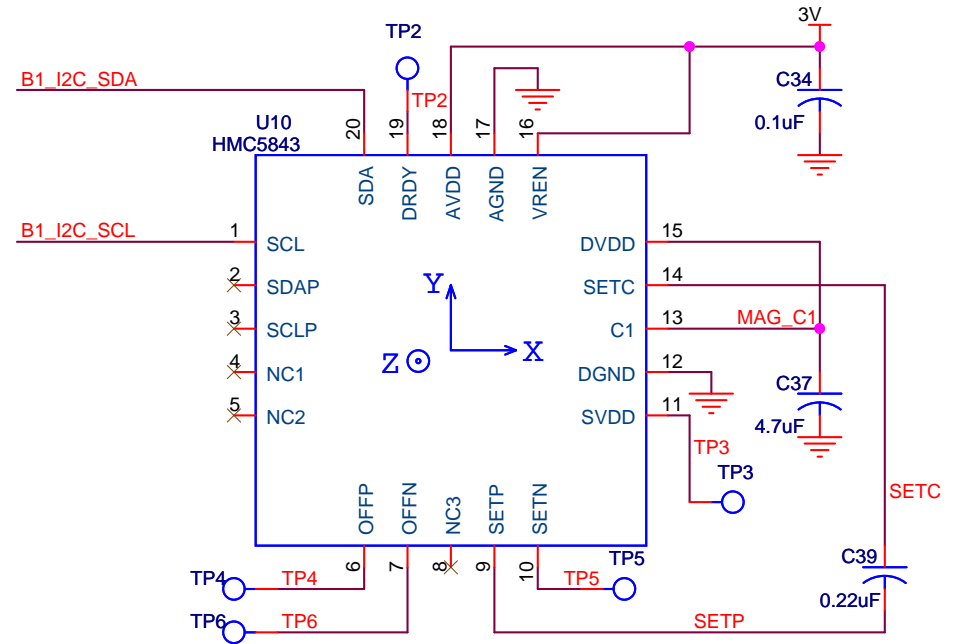
Analog temp sensor



I2C 3-axis digital accel (+- 8 G)



I2C 3-axis magnetometer



Title		
GINA2.2b: Sensors		
Size	Document Number	Rev
A		0
Date:	Thursday, August 05, 2010	Sheet 5 of 5