

PERSONAL AIR BAG

8/27/07

Two versions:

- 1) Low FALL (e.g. Skateboard)
 - hoodie sweatshirt - "cool" looking
 - manual button trigger or voice recognition

- 2) HIGH FALL
 - 30ft. ideal
 - will prevent fatal accident
 - discrete electronics for highest speed?
(accelerometer, timer, comparator, mosfet)

Possible sensing mechanisms

- Altitude/pressure sensor
- Ultrasonic
- Accelerometer
- Gyroscope

* BAG

* BAG EXPLODE MECHANISM

* SENSING ELECTRONICS

3.4.4 Sensor Board schematics

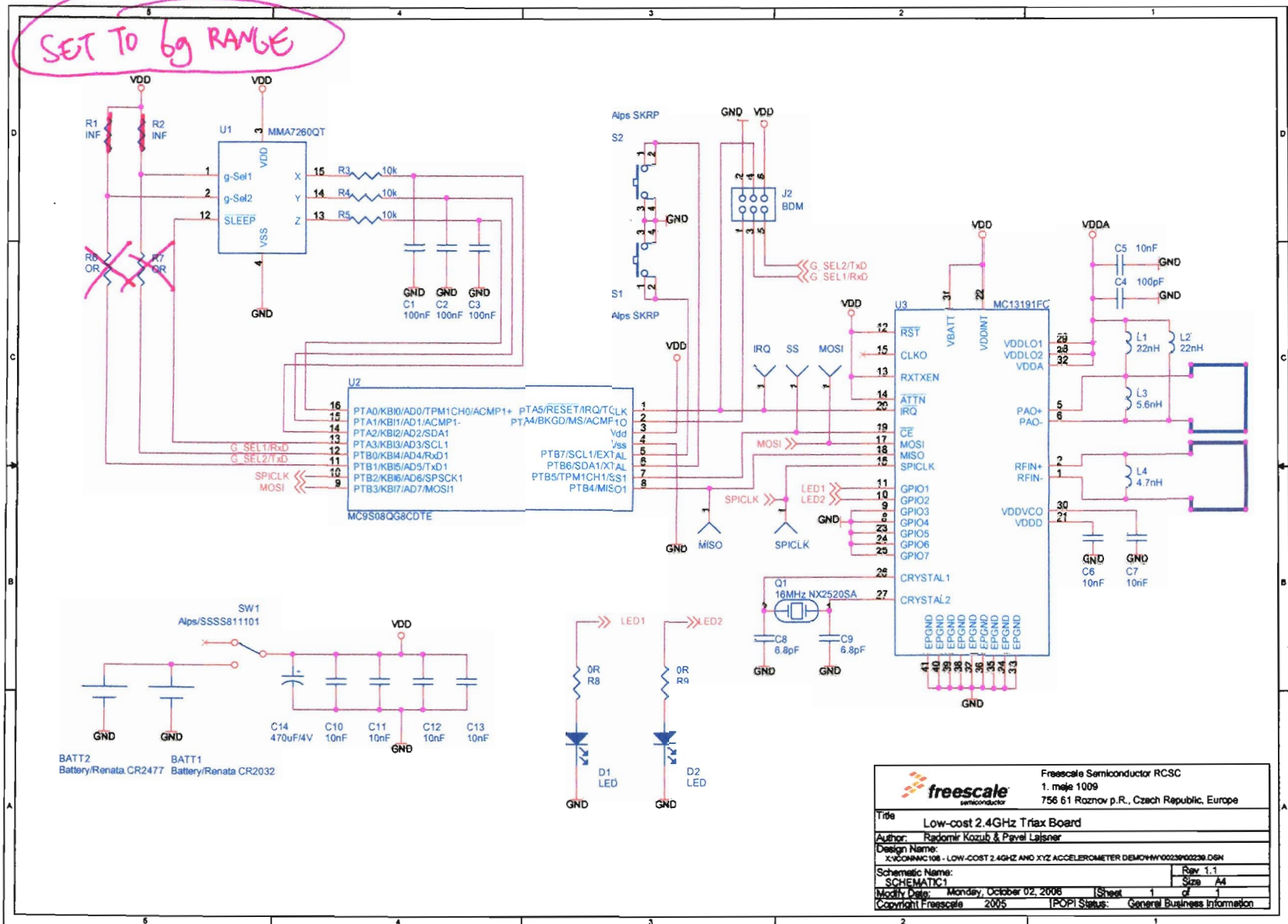


Figure 3-6. Sensor Board Schematics

Prototype This! Episode 9: Wearable Airbag, Joe Grand's Engineering Development Notes, www.grandideastudio.com

Airbag-research.mov

9/9/07

0 - 1:41
1:42 - 1:44
1:44 - 3:25

Jeremy 1
Jeremy 2
Jeremy 3

2:11 - 2:14
~~2:11~~ good air

3:26 - 4:02

Jeremy 4

36 - 3:39
3:39 bail (1800-1800)
0:11-14

4:03 - 7:14
14

Jeremy 5-6

good m
5:58 drop in & cruise

7:15 - 18:53
15

Z02 1-9

13:01 bail

9:35

Z02 2

~~10:58~~

10:58

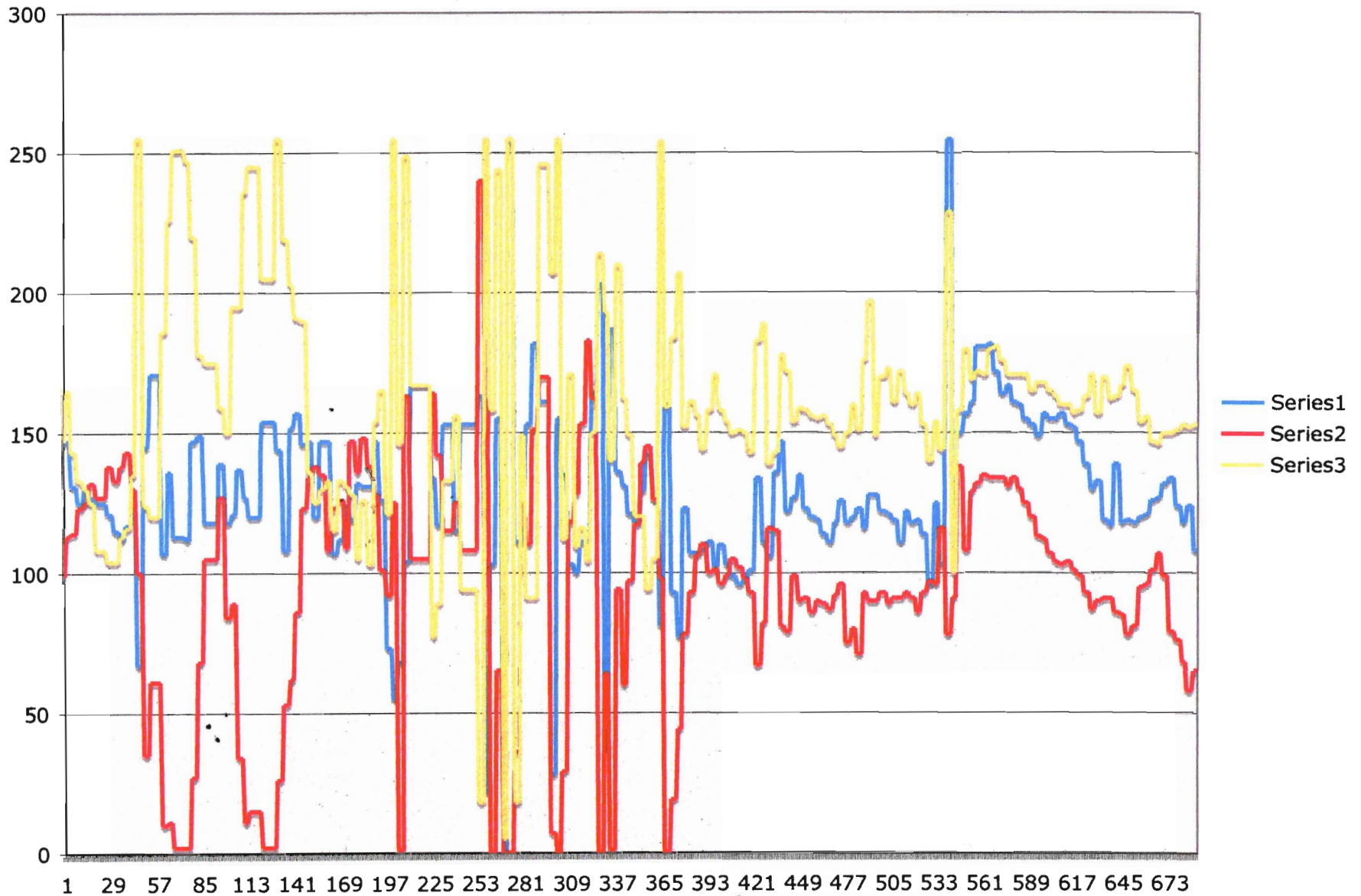
Z02 3

12:26

Z02 4

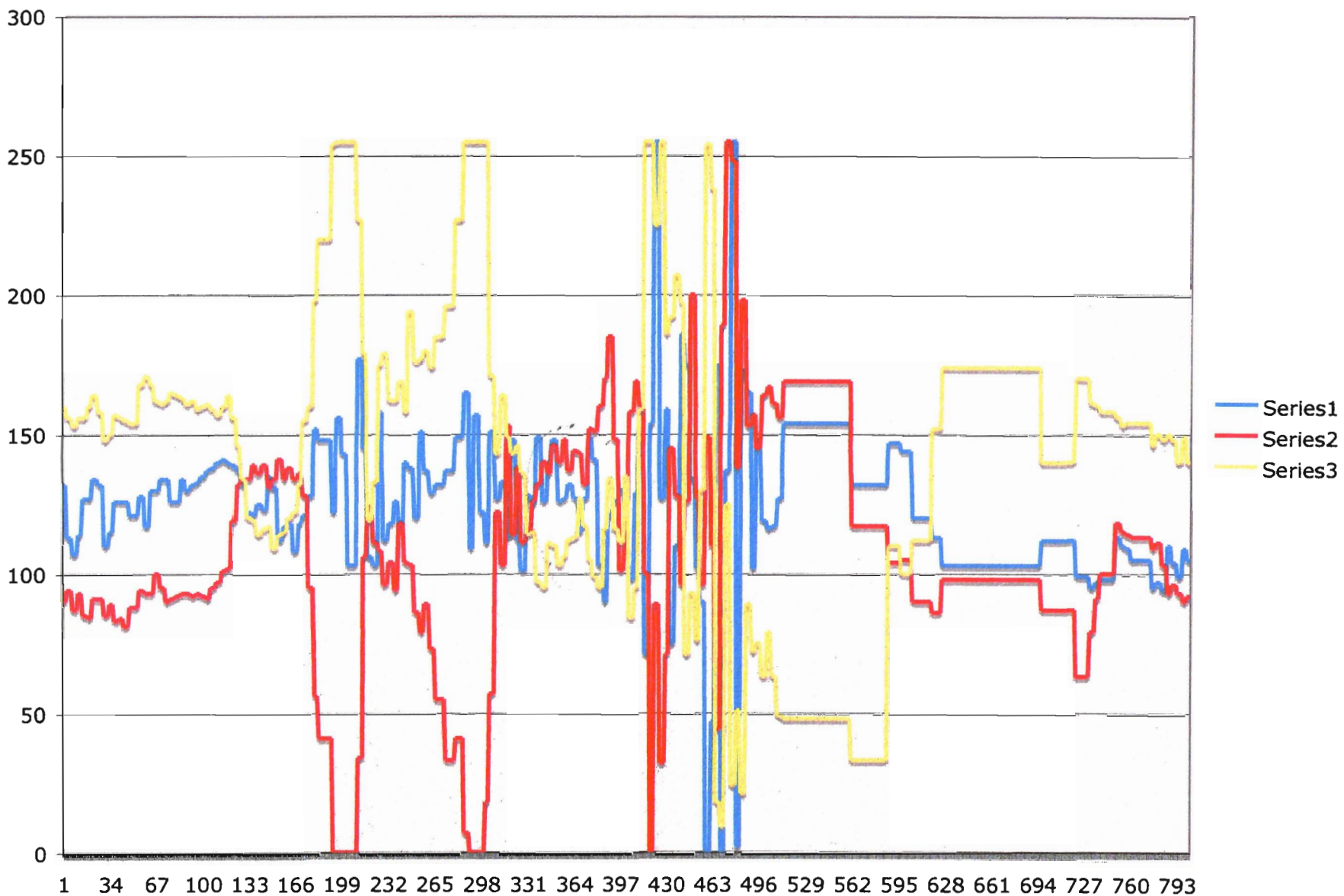
13:01 - 13:05 bail
(600 - 1100)

Jeremy



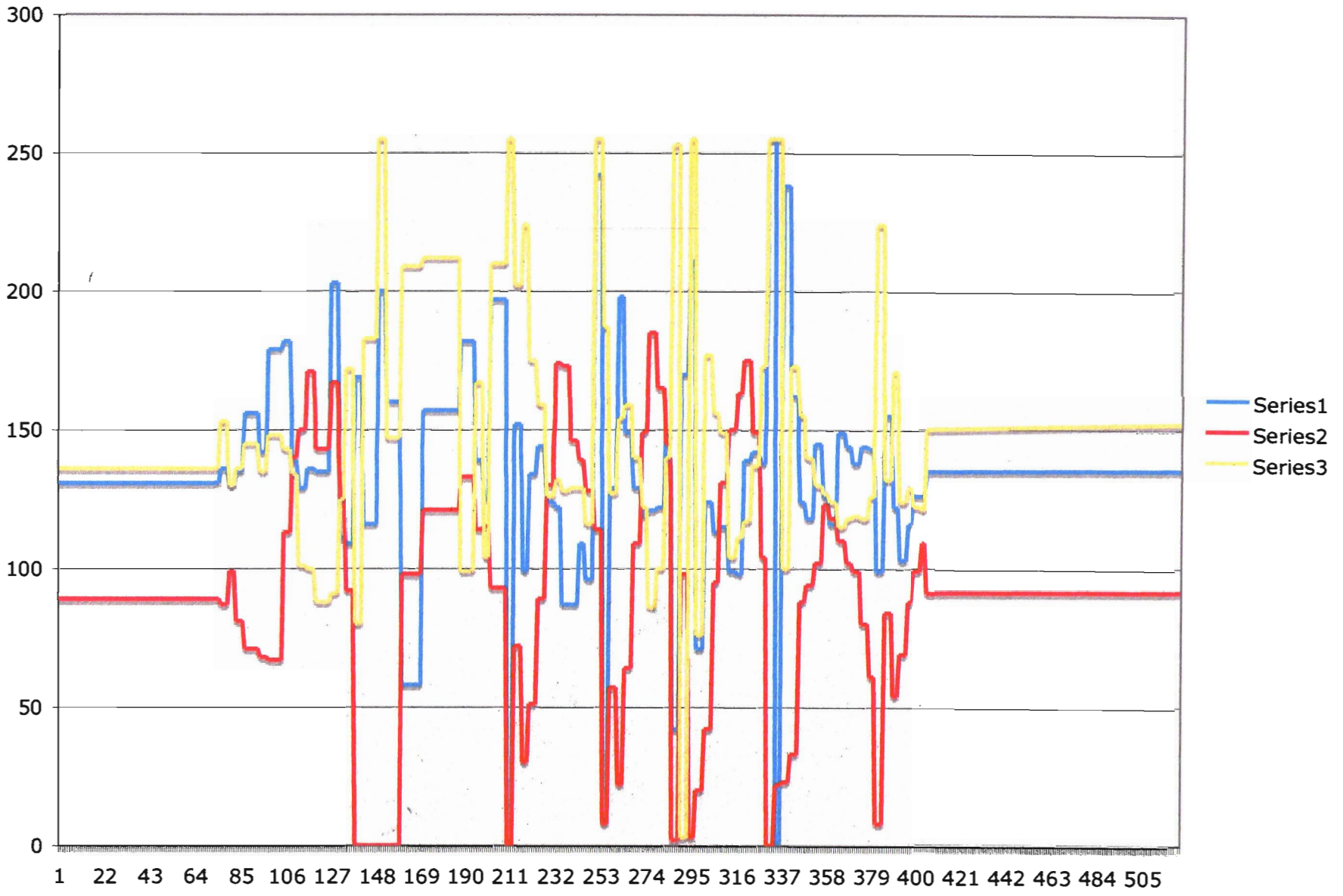
GOOD TRICK

Jeremy



BAIL

Zoz

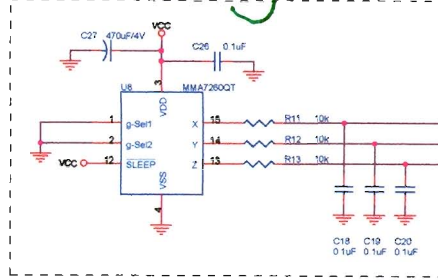


BAIL

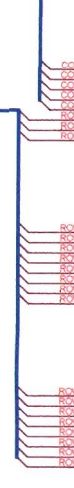
SILLY STRIP TEST

3-Axis Accelerometer:
DO NOT POPULATE!

+1.5g



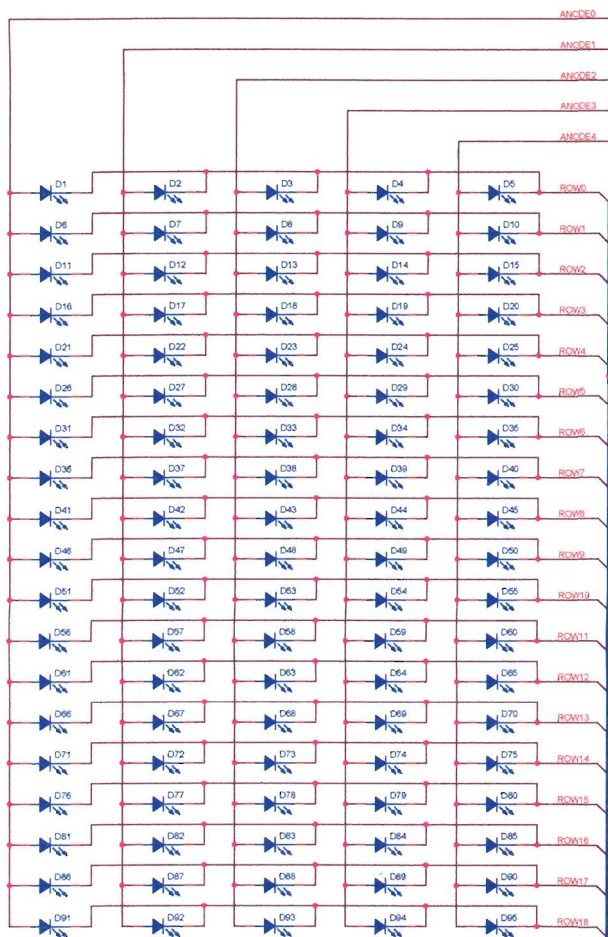
VCC



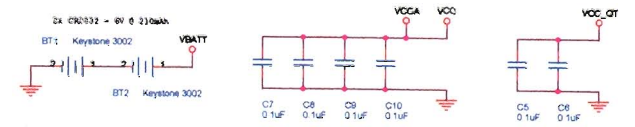
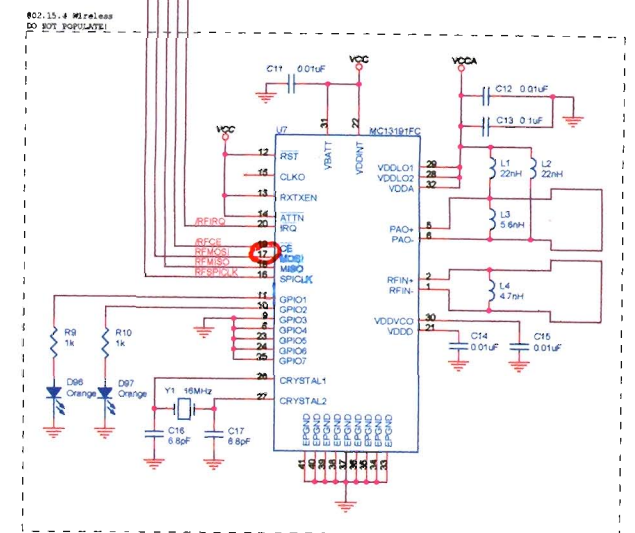
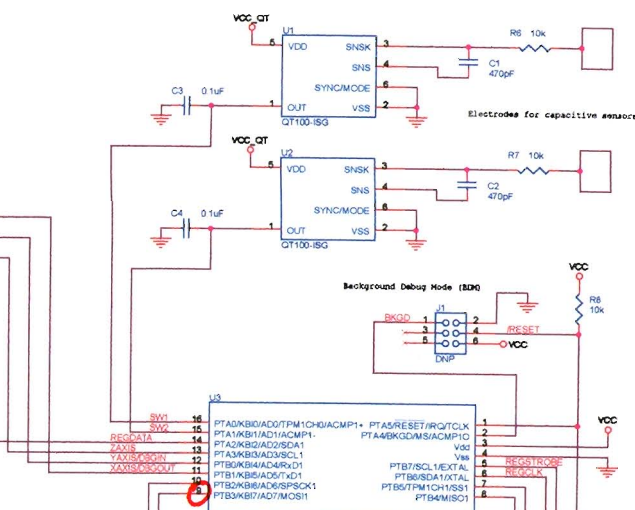
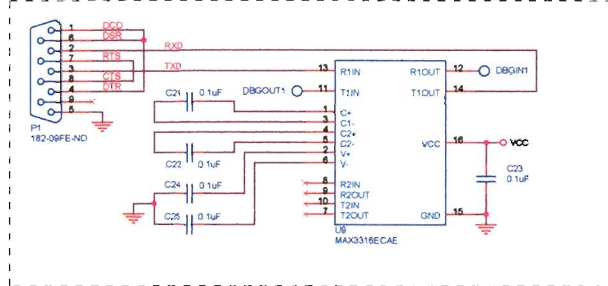
VCC



VCC_OT



PC Serial Port Interface (Optional)
DO NOT POPULATE!



NOTE: RESISTORS ARE 1% OHMS +/- 5% AND CAPACITORS ARE 1% MICROPARADIS +/- 20% UNLESS OTHERWISE NOTED. SEE BOM FOR ACTUAL VOLTAGE.



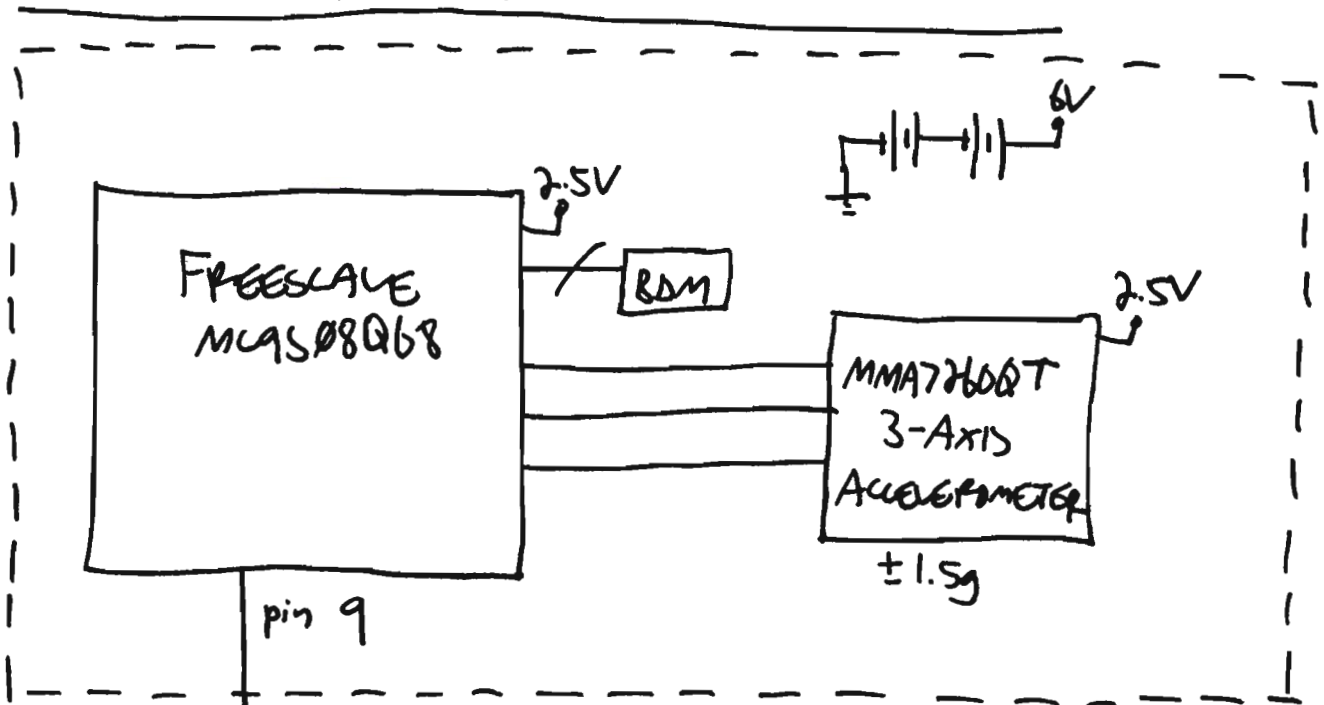
Prototype This! Episode 9: Wearable Airbag, Joe Grand's Engineering Development Notes, www.grandideastudio.com

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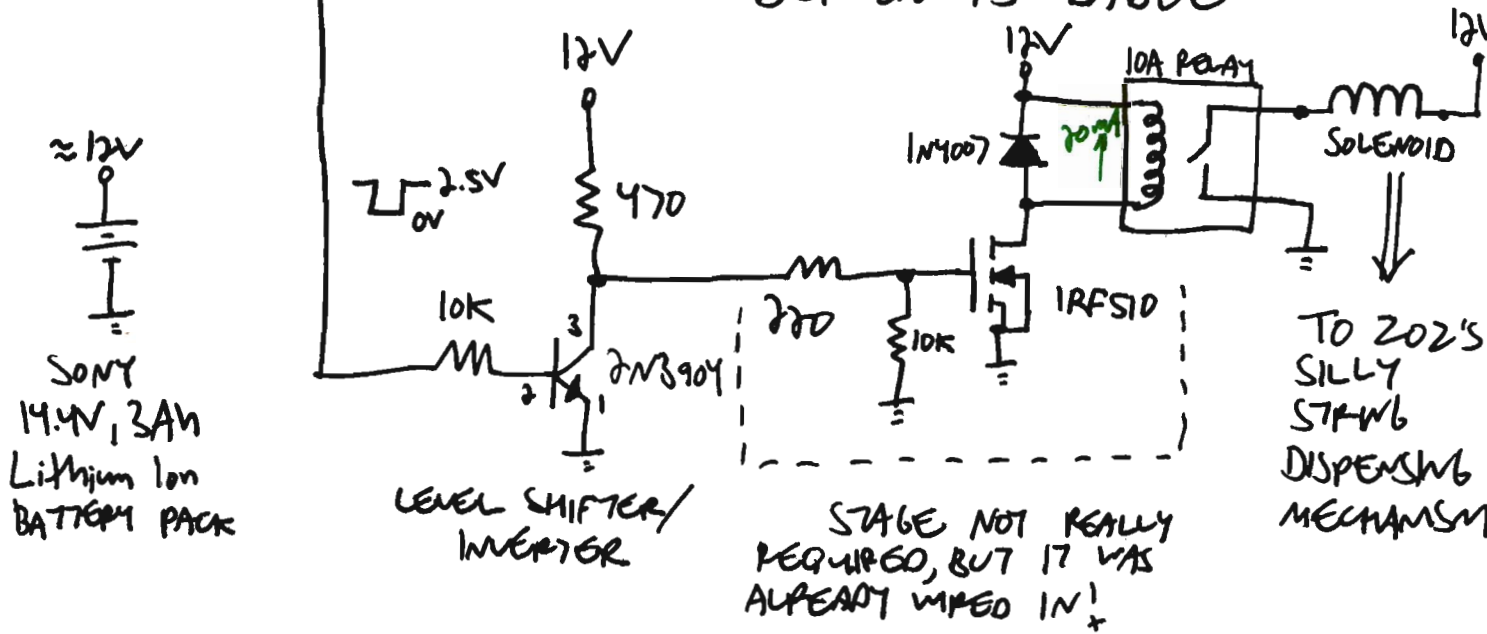
DATE	SIZE	DRAWN BY	REV
Monday, June 25, 2007	C	J. Grand	2.1

ACCELEROMETER-BASED LOW-DRAW DETECTION TEST UNIT

8/21/07
9/5/07

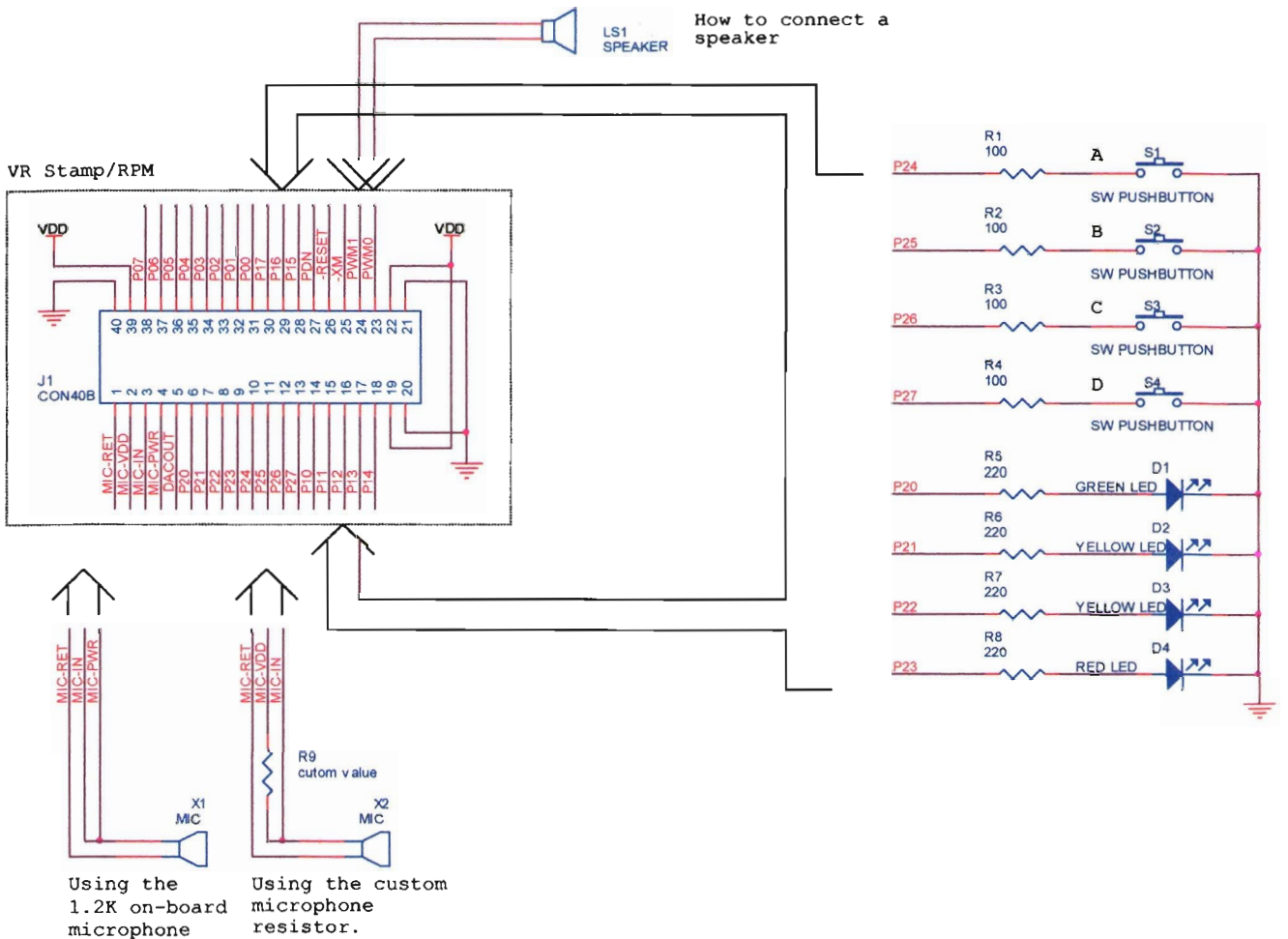
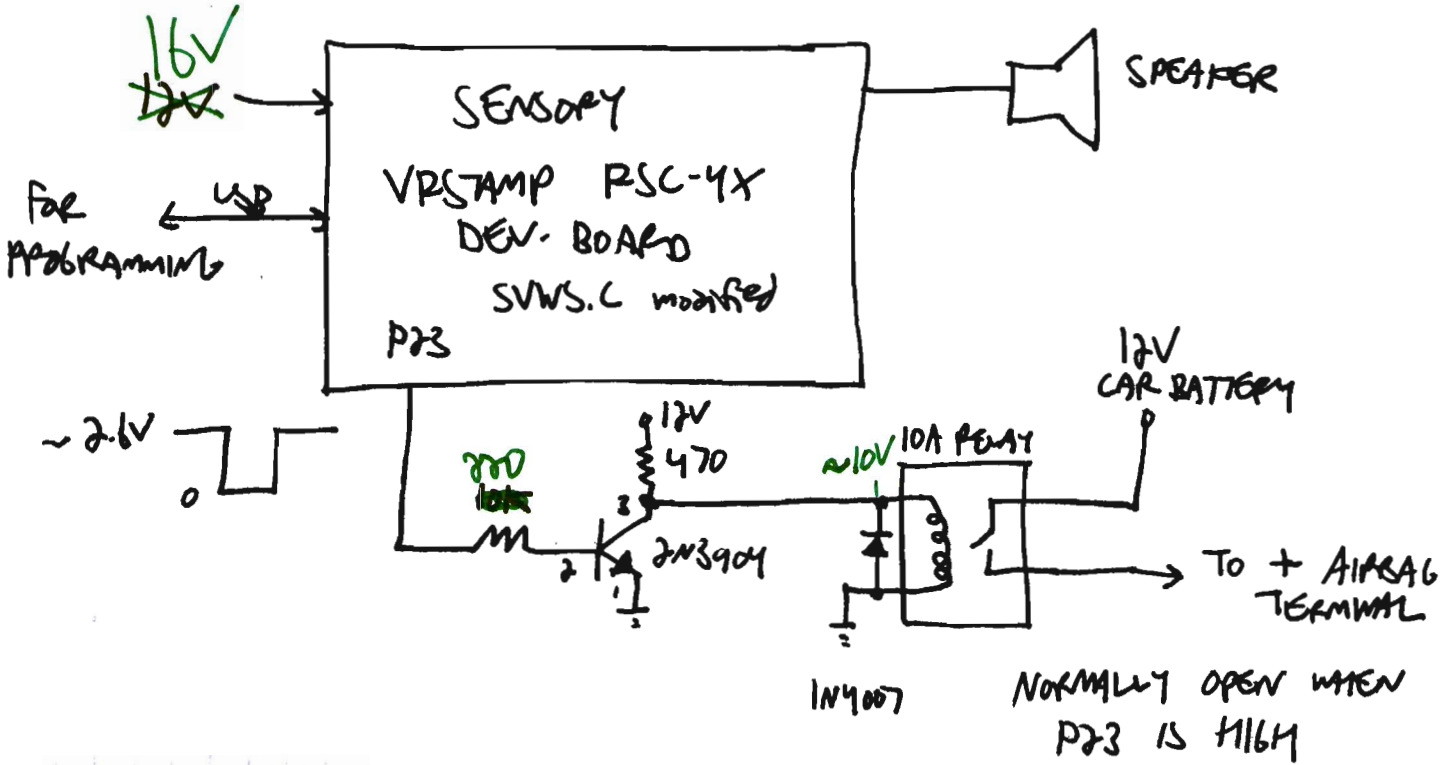


DEFCON IS BADGE



VOICE-ACTIVATED AIR BAG TRIGGER UNIT

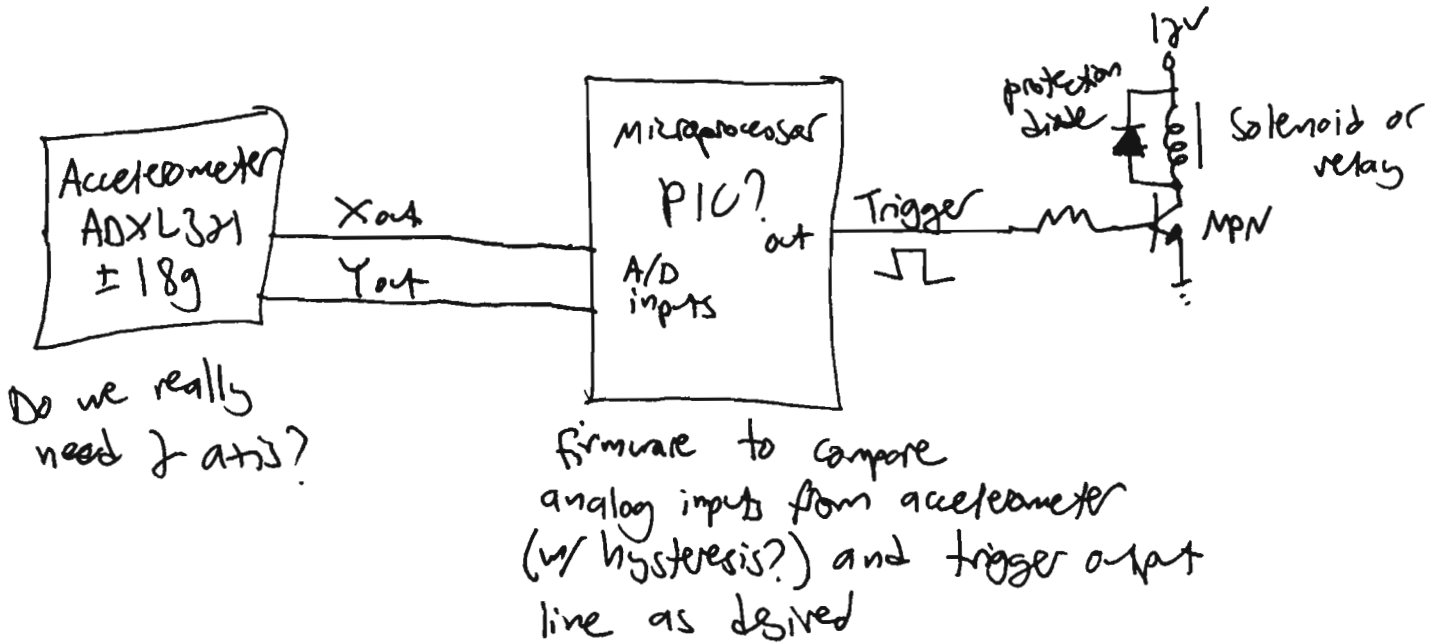
9/7/07



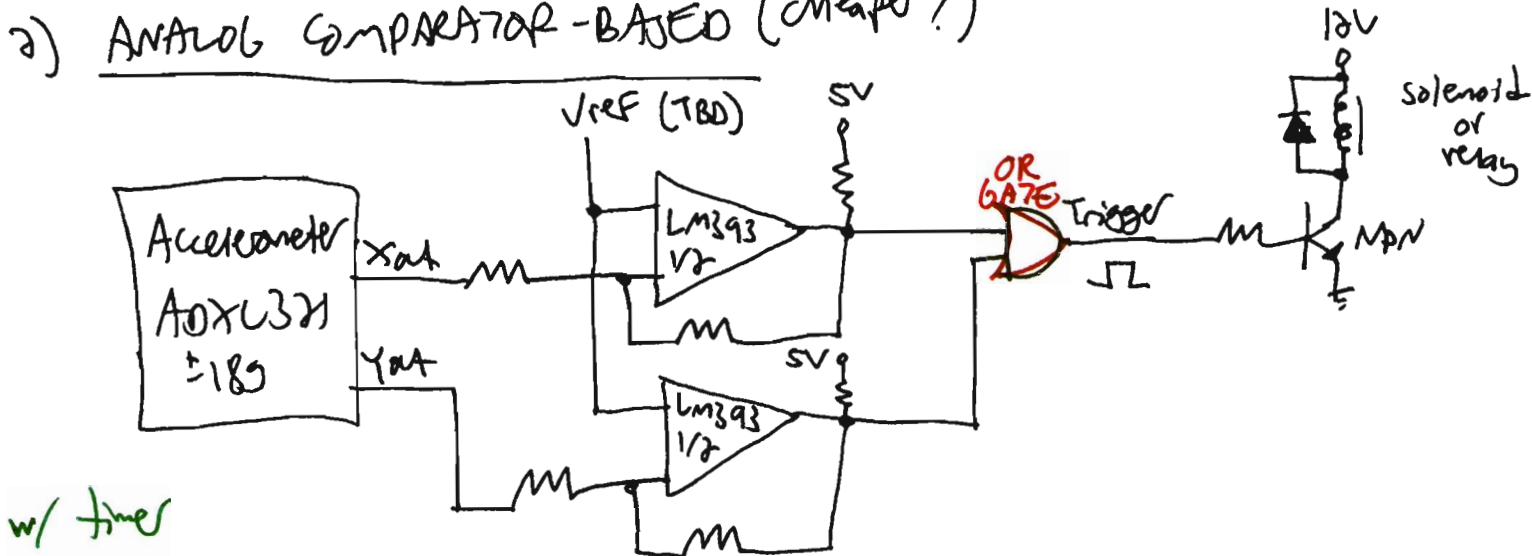
PERSONAL AIRBAG SYSTEM (ELECTRONICS BLOCK DIAGRAM ONLY)

J. GRAND
9/21/06

1) MICROPROCESSOR-BASED



2) ANALOG COMPARATOR-BASED (cheaper?)



"You've fallen for x seconds." Comparator output go high if input voltage is above reference voltage. resistors control hysteresis.