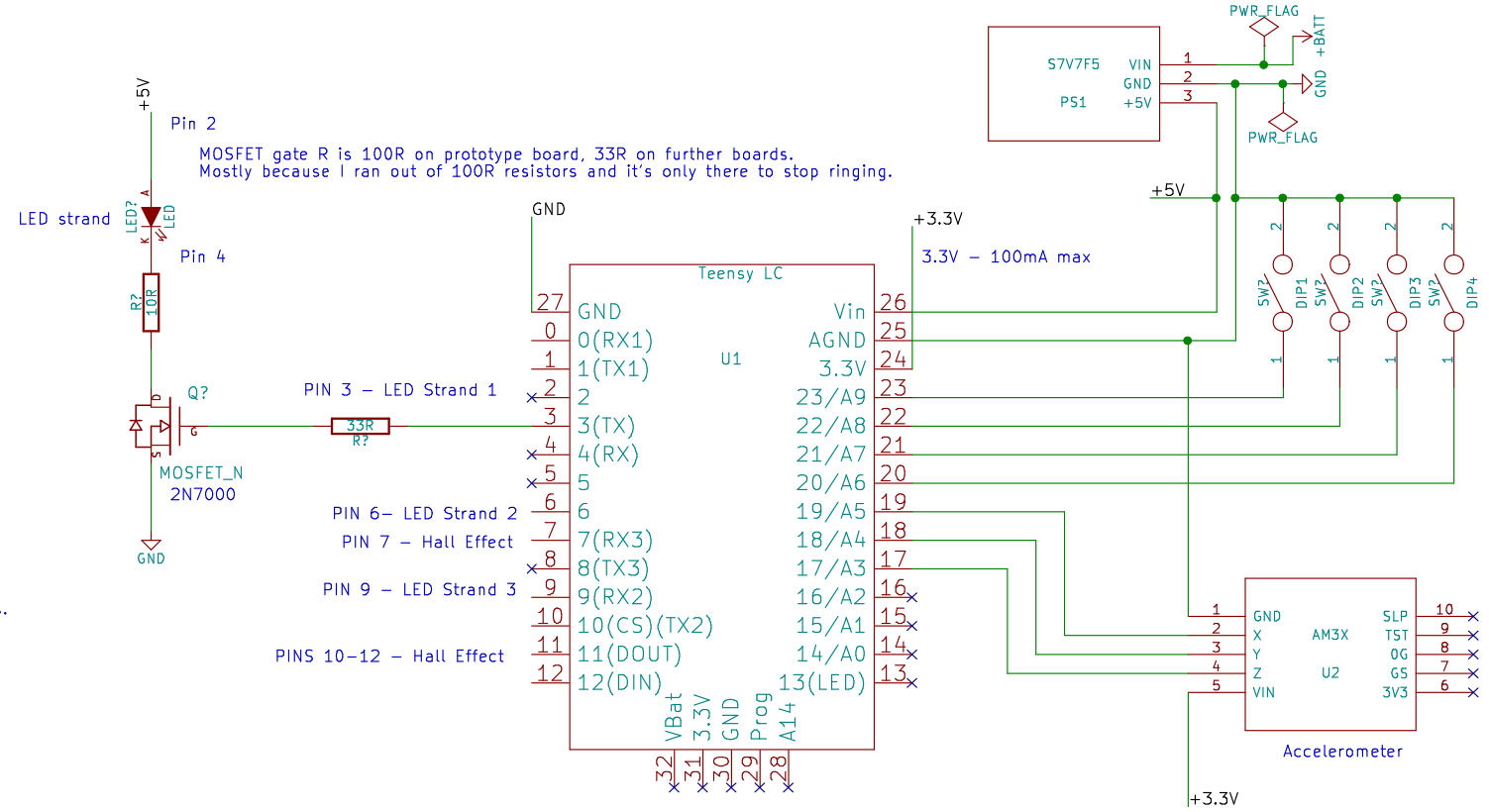

LED strands are three pins:
– +5V (to LEDs)
– GND (unused)
– Return (to MOSFET_N)

Hall effect strands are three pins:

– +3.3V
– GND
– Sensor output

3 LED strands
4 Hall effect strands
= 7 strands = 21 pin connector required

Max LED stand mA with 33ohm resistor = 50mA
With 16ohm resistor = 100mA
Native LED strand runs at 220mA
Our mosfets can handle up to 400mA continuous.

All odd–numbered pins are ground.
Start counting from PIN 1.

2 – VIN
4 – Lights 1 control
6 – +5V
8 – Lights 2 control
10 – +5V
12 – Lights 3 control
14 – +5V
16 – Sensor 1
18 – +3.3V
20 – Sensor 2
22 – +3.3V
24 – Sensor 3
26 – +3.3V

NB: LED strands go from +5V to control. They do *not* use GND pins.

Hall effect controls have 33k internal pull–up resistors to prevent line floating.

On Gen 3 boards, pins 20–23 are connected to dip switches, floating off, GND on.

PIN 20 – DIP 4
PIN 21 – DIP 3
PIN 22 – DIP 2
PIN 23 – DIP 1

DIPless boards:
– Big Board: PIN 0 is shorted to GND
– Little Baord: PIN 1 is shorted to GND

Total power budget:
800mA @ 5V when running off 3.6V LiPos
1250mA @ 5V running off a 5V source.
1600mA @ 5V running off a 6V source.

Switch ideas:
– Performer / Dancer
– Photography mode (sensors up/down/rotate)
– Sonar select
– ??

3.3V power budget: 100mA from Teensy LC.
Hall effect sensors require 10mA each, and *must* run on 3.3V
Accel requires 0.6mA, and can run on either 5 or 3.3V.
Microphone can run on either, unknown power consumption.

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Title: Clockwork Butterfly Masters Board – V3

Size: A4 | Date: | **Rev:**

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