Seeing Sound!

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Status Update

• Convert sound input to light display
• Beat for iPod, frequency for microphone
• Better beat detection, better light sequences.
• Doing timing tests for setup and reaction time.
Test Plans

• Setup Time
  – How long user has to wait to start

• DMX Send Speed
  – How quickly Arduino sends out a light command to LED panel

• Response Time
  – Time from beat to LED display response

• Timestamps are from using the Serial.print(micros()) functionality
Timing Results

• Setup Time Results: 6ms
• DMX Command Send Timing: 20ms
• Response Time for Beats
  – ISR runs at 64kHz, calls beat code every 80 overflows, therefore beat code runs every 12ms
  – Beat code takes .32ms to run
  – When Beat code finds a beat it sends a DMX command
    • Worst case response is 12ms + .32ms + 20ms = ~33ms
Looking Forward

• Beat works best with iPod and frequency with microphone
  – Switch between based off input switch to be added
• Look for ways to speed up response
  – DMX send already improved from 140ms to 20ms
• Test frequency timing response
• Improve the lighting sequences
  – Different for beat vs. frequency.
• Packaging of the Arduino
Questions?