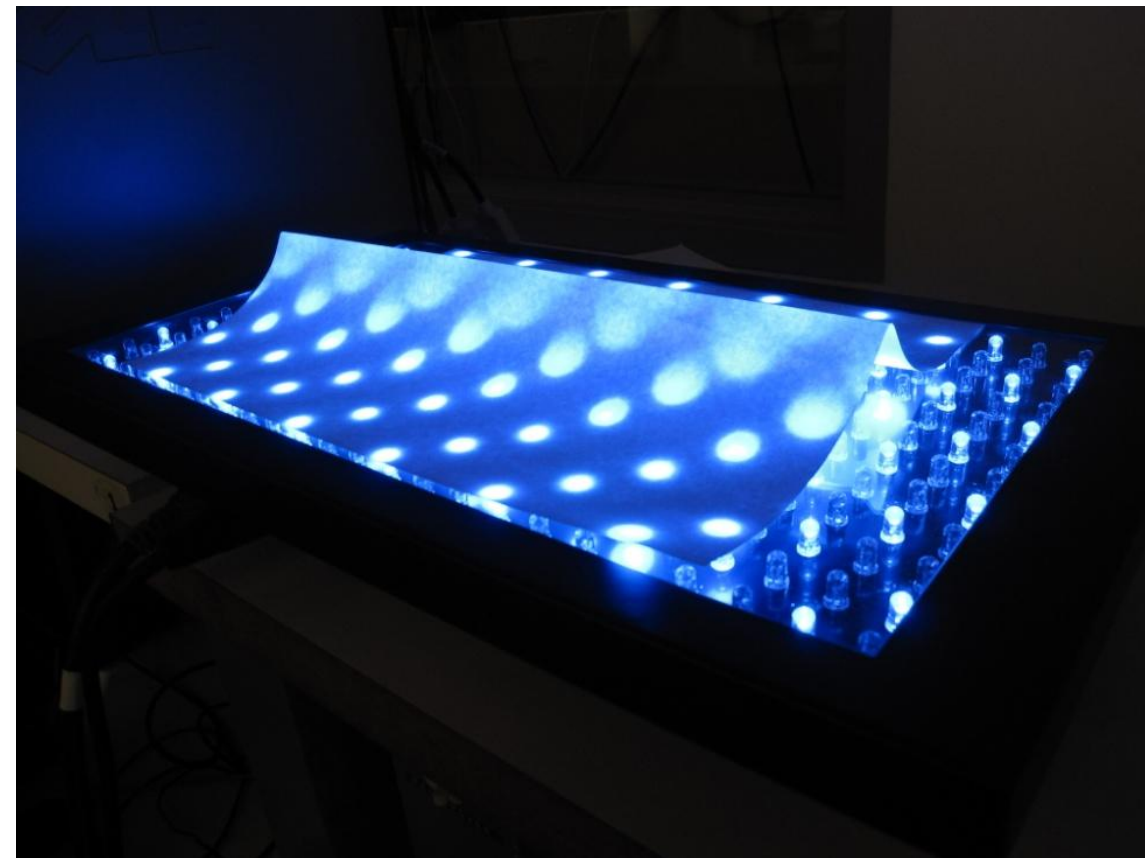


Seeing Sound!

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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 $12\text{ms} + .32\text{ms} + 20\text{ms} = \sim 33\text{ms}$

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?