**Project Proposal**

**& Timeline**

**Mingle Disco Button**

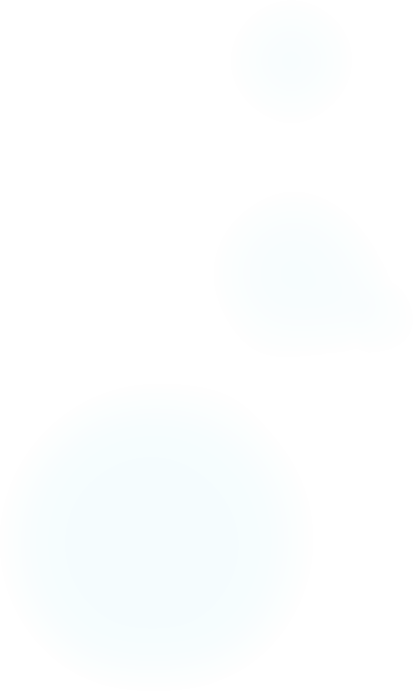


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# Revision Notes

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| --- | --- | --- | --- |
| **Revision Number** | **Comments** | **Date** | **Author** |
| 1.0 | Doc created | 6/24/15 | Kris Gibbs |
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|  |  |  |  |

# Hardware Design

Each piece can be designed in parallel. 4 weeks

## Antenna

* What kind of antenna
* Make board to place rf chip on to test s parameters for matching
* Optimize antenna for 2.4 GHz

## Power management

* Design battery system for optimal battery life
* Consider rechargeable battery

## Board design rework

* Integrate new antenna and battery design into existing board

# Enclosure Design

1 week.

## Button

* 3D printed file

## Name tag

* Laser cutter file

# Software Design

This will coincide with testing. 4 weeks total. Two test/development boards will be made just for this purpose.

## Breathing Led Synchronization

* Code to make Led “Breathe” blink in sync with others in the same room. (how many feet away?)

## Color Mingle

* Code to make led colors mix when in close proximity to another. (How many feet away?)

Other code?

# Manufacturing

1 week.

## Boards

* 3 routed boards made in EPL
* OSH park boards to compare

## Buttons

* 3d printed ( color?)

## Name Tag

* Laser cut acrylic

# Testing

Hardware and software testing to be done in parallel and iteratively. 3 weeks total

## Test Plan

* Antenna
* Power supply
* Software testing

## Test Implementation

* Separate testing boards for each test break out
* Software testing board will have only RF chip and led

# Documentation

To be done as project progresses and finalized at the end of the project. 2 weeks

## Laser Cutter

* Inkscape file

## 3D Printer

* STL file

## Plating Tank

* Basic procedure

## Board Router

* Eagle files

## Reflow Oven

* Basic procedure

## Soldering Station

* Basic procedure

## VNA

* Calibration
* S parameter measurement procedure