Boston University

Electrical & Computer Engineering

EC464 Senior Design Project

Second Prototype Testing Plan

OptiSync

by

Team 9

OptiSync

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1.0 Required Materials

Hardware:

- LED light
- Arduino Nano microcontroller
- Adafruit Trinket M0 microcontroller
- Circuitry Board
- Wires
- Buttons

Software:

- Arduino IDE
    - Arduino script to generate 40Hz light frequency.
    - Take buttons as input to write into LED output, acting as power source.

2.0 Set Up

Have the prototype where the circuitry board will be placed and stuck on the back of the LED panel. The wires will then connect from the Arduino Nano microcontroller into the LED that is placed at the front of our panel, We will also place a phone holder at the front that is glued onto it. Next, we will upload our code embedded into the Nano, plug it into a wall outlet and we are done with the setup.

3.0 Pre-Testing Setup Procedure

Pre-testing setup procedure is fairly simple. Please refer to the figures below to ensure that the setup is correct. All that is needed to do is connect the microcontroller into a wall plug and upload the

Figure 1. Front of LED Panel T0 Model

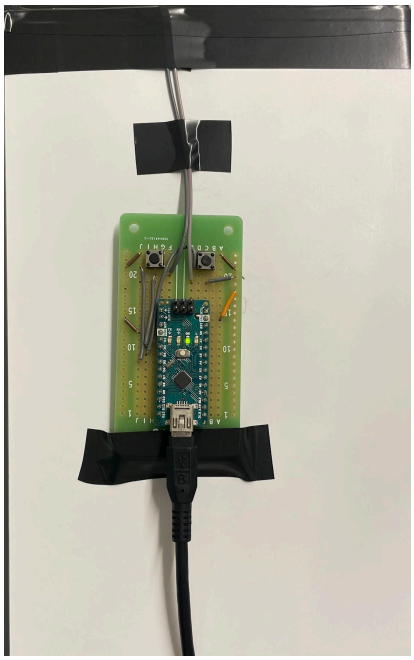

Figure 2. Back of LED Panel T0 Model

4.0 Testing Procedure

For the T0 model:

1. Ensure Arduino is connected to a wall outlet power source.
2. Verify that the LED status on the Arduino is lit up.
3. Press the button multiple times to verify the LED is receiving an ON/OFF signal.
4. Ensure that the phone holder is able to support the phone by placing the phone onto the holder attached to the panel.

5.0 Measurable Criteria

The criteria for having a successful running prototype are as follows

I. The circuit board should be intact with the LED panel.
II. The LED should be at the front of the panel connected to the circuit board.
III. Upon plugging in the microcontroller and pressing down the button, the LED should start flashing.
IV. When toggling with the button, the LED should turn on and off within <1 second.

6.0 Hardware Pinout

T0 model:

Pin Number	**Usage/Description**
3	White LED Output
4	LED ON/OFF Button Input