8x8 RGB LED Arduino Matrix

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1 Overview

The purpose of this project is to build a "large" LED matrix controlled by an Arduino microcontroller. The LED matrix will be used as a backdrop for a DJ to provide a light show. The LED matrix should provide patterns that are manually controlled or synced to music.

2 Background Research/Information

Provide some research or information on existing projects.

3 System Requirements and Desired Features

1. The LED matrix should be at least 3 feet by 3 feet in size.
2. The LED matrix should use 64 RGB individually controllable LEDs.
3. The LED matrix should be movable and able to balance itself when sitting up.
4. The LED matrix should be controlled by an Arduino device.
5. The LED matrix should be able to produce at least 3 different patterns each consisting of at least 5 different LED configurations of at least 2 colors at a time.
6. The LED matrix should determine pattern stepping either manually or by sound detection.

4 Testing Procedures

1. Measure the size of the LED matrix to check if it exceeds 3 feet by 3 feet in size.
2. Individually iterate through each LED and produce 4 different colors: white, red, green, and blue.
3. Set the LED matrix on top of a stable surface so that the LED matrix is viewable and let it stand for one hour without any outside support.
4. Turn on all LEDs using an Arduino.
5. Produce at least 3 different patterns each consisting of at least 5 different LED configurations of at least 2 colors at a time.
6. Manually toggle patterns or have iterate through patterns using music as input.

5 Project Timeline

Specification Completion: 6/15/12 Design Completion: 6/29/12 Construction Completion: 7/13/12 Software Completion: 7/27/12 Expected Testing: 7/31/12 Documentation Completion: 8/10/12 Must be completed by: 9/1/12

6 Version History

Date - ver 1.0 - Initial Revision