

LED Spinnable Prop

The plan is to build a board with the encasing around it that is able to act as a fully functioning LED Prop. This involves the following:

The Board will have an internal rechargeable battery, and a set of functions for different light modes for spinning with different sub-modes depending on acceleration, and a set of big LEDs that will be visible during the night.

Big features:

- Bright LEDs for display
- Different modes that can be changed using a easy-to-access button
- Rechargeable Battery
- Reaction to Accelerometer on light modes

Basically, this would be a board similar to the one in MP3 that has the following major components:

- USB-C Port
 - Data transfer and maybe charging the battery?
- Microcontroller
 - We can use the RP2040, might have to do some fun transistor things for LEDs
- An internal Singular Lipo battery
 - 3.5-4.3V, 750mAh (or something close, this are the specs of existing LED props) (also hopefully rechargeable with the same USB-C port)
- An extra button that has two different types of clicks (hopefully, or at least two functionalities in press and hold)
 - Or worst case one button and one switch, button for modes, switch for on/off
- A bigger set of RGB LEDs that have much higher illumination and can hopefully have different settings of brightness
 - Dialight RBG Surface Mount LEDs probably, may use Neopixel instead, need to do some extra research before choosing
- A accelerometer that is able to differentiate between stable and moving poi so that the light modes will change
 - 3 axis - Brad has a set of them we could use (Analog Devices)
- Stretch: Having a wireless module to communicate/sync two sets of poi
 - RN4871