Universal Led Ring

Introduction

Cause i can not find precise led ring.
There's no existing solution to get 16 pots in line with its rings which fits in a 19“ rack face.
So i tried to design it.

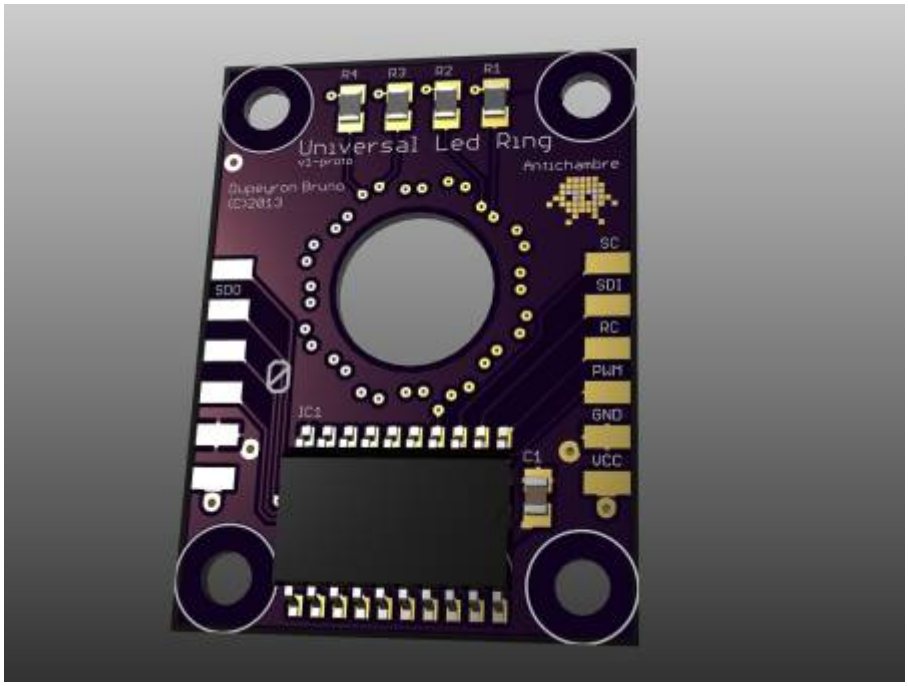
The goal:

- 20mm diameter ring.
- 32 matriced bicolor Leds on SR with PWM support.
- Width<27mm between 2 rings for 16 pots or encoders to fit in a 19” rack.
- Support encoders and potentiometers 270° and 300°.
- Low profile for integration facility.
- No component on top side except leds.

How:
I need to drive 32 leds, 4*8. The trick was to find a register which has 12 ouputs and compatble with SR line(DOUT). The NXP HEF4894B was made for it, i's a 12-stage shift-and-store register, its operation is very similar to that of the 74HC595(serial I/O, serial clock, parallel load) except that it has a strobe input for PWM function.

Autocad design rendering:





In fab at Osh Park ...

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