

# 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:

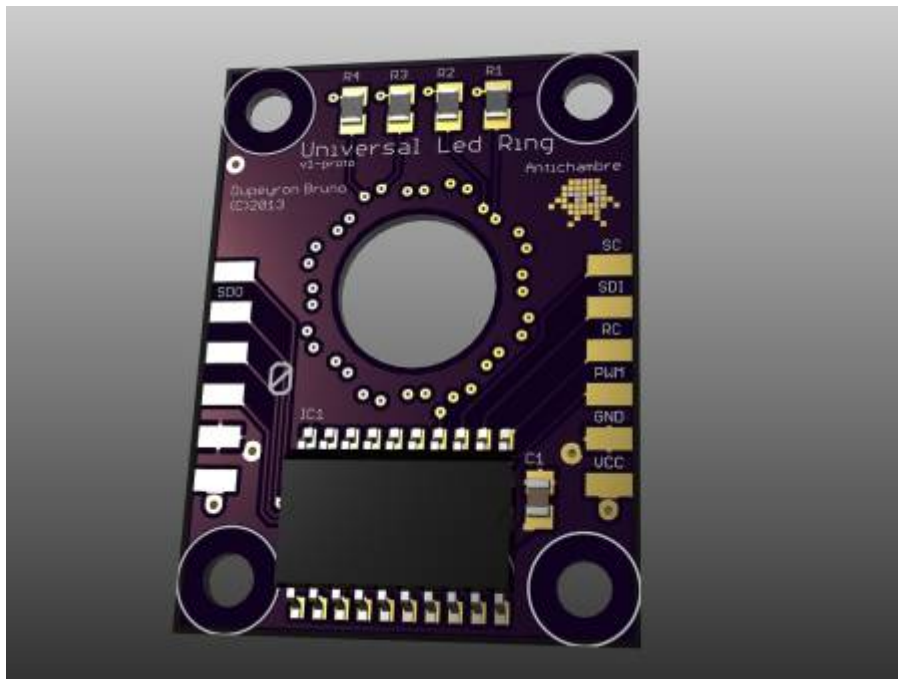
- 20mm diameter ring.
- 32 matrixed bicolor Leds on SR with PWM support.
- Width<27mm between 2 rings for 16 pots or encoders to fit in a 19" rack.
- Support encoders and potentiometers 270° and 300°.
- Low profile for integration facility.
- No component on top side except leds.

How:

I need to drive 32 leds, 4\*8. The trick was to find a register which has 12 outputs and compatible with SR line(DOUT). The [NXP HEF4894B](#) was made for it, it'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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