

# Project Name: Tach in a Box

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**Abstract:** This is a visual LED Tachometer for automotive applications. Using the OBDII interface, the unit asks for information from the vehicle's CAN bus, specifically RPM. Based on the RPM, the Arduino uses a line of 9 LED's to visually display the RPM of the vehicle. At the car's redline, or other preprogrammed shift point, a tenth LED flashes rapidly to indicate to the driver to shift the vehicle.

### Components:

- Arduino Mega 2560
- 10 LED's, of different colors (3mm and 5mm sizes)
- Arduino CAN Bus Shield (to communicate with the CAN Bus)
- Soldering Iron + Solder, Wiring, Heatshrink, etc...

**Use cases:** I'm an avid autocrosser, but I've found that it's impossible to see the vehicle's gauges with a helmet on and adrenaline running. Having as much information about the car is important for any racer, so this system has the most direct applications in racing. The unit is especially helpful in a track setting, where frequent upshifts and downshifts are required.

**Significant contributions:** Auto manufacturers have gone beyond simple LED visuals and gone so far as to replace traditional gauges with LCD screens that keep track of hundreds of parameters at the same time. Still, LED Tachometer's found in ultra-luxury cars, such as Ferrari, use only a few methods and are also lightweight and quick to respond.

**Coolness and Novelty:** This is cool because it's something I can use personally on the weekends. It plugs right into the OBDII port under the steering wheel of most modern vehicles, and can be mounted to the dash. Afterwards, as simple as driving to the track and using it. The device is universal and works on almost any modern car as well.

Please see /documents in the submission folder for photos, videos, and README information.

**Course, semester, date (footer/header)**

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