

## MPGuino – DSchmidt/JellyBeanDriver Layout

### DO NOT DRIVE DISTRACTED!

It is the sole responsibility of the driver of a vehicle to operate the vehicle in a safe manner, being aware of the driving conditions at all times. It is unsafe to operate the buttons of this device while you are driving. Failure by the driver to pay full attention to the vehicle and road conditions while the vehicle is in motion could result in an accident!

### What I am providing with your purchase

- An assembled, basic electrical tested MPGuino, with or without a display (your choice at purchase)
  - Testing consists of powering the unit and testing that all switches and inputs are ‘seen’ by the microcontroller

### What I am not providing

- Help or information on how to connect, calibrate or troubleshoot the installation of this device to your vehicle
- Help or instructions on how to operate this device
- Information on how to enclose this device, or a case that would fit

### Warnings

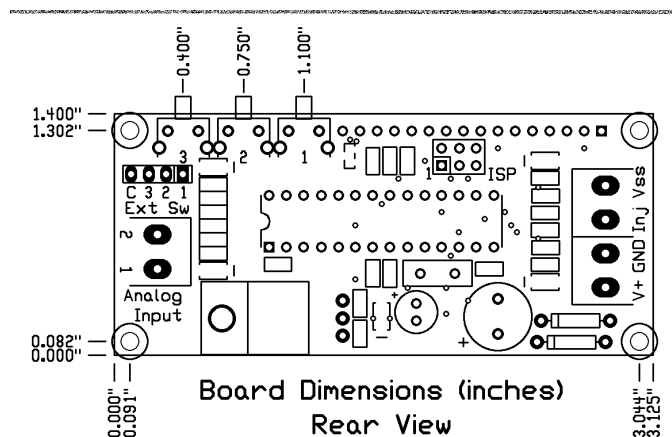
- Do not drive distracted! (see paragraph at top of page)
- Do not install this device if you are unsure of what you are doing. You can render your vehicle inoperative if you make a mistake.
- When connected and powered, circuits on the board are exposed and live. Damage to this device or to your car may occur if these circuits are inadvertently shorted to the car’s frame or other circuits. Take care to eliminate the possibility of this happening.

### General installation tips

- Very good information on installation, calibration, and troubleshooting of an MPGuino already exists both on the Ecomodder.com forum <http://ecomodder.com/forum/opengauge-mpguino-fe-computer.html> and on the MPGuino Wiki page <http://ecomodder.com/wiki/index.php/MPGuino>
- The power draw of this device is low. You do not need to make your connections with large wires. 20 – 30 ga wire is sufficient.
- Do not overtighten the terminal block screws. They need to be tight enough so your wire doesn’t pull out, but that’s it!
- The switch buttons can be trimmed shorter, or clipped off completely to suit your installation

### Features of this assembly

- Based on the work (schematic and code) done by user DCB at Ecomodder.com
- Assembled and basic electrical testing performed. Board layout based on schematic posted here: <http://opengauge.googlecode.com/svn/trunk/mpguino/mpguino.png>
- Socketed ATmega328p (ATmega328 starting 5/2/2012 due to supply shortages) programmed with 0.86 MPGuino code posted here: <http://opengauge.googlecode.com/svn/trunk/mpguino/mpguino.cpp>
  - In this application, power differences between the two chips is negligible (< than 1mA)
- If purchased with a display, display is a green backlit STN LCD and is mounted and soldered to the PCB
- Terminal blocks for making your connections
- Pads for connecting your own external switches if desired
- Unused A-D pins on ATmega pinned out for your own needs if you wish to populate and modify code
  - See schematic for details
  - Surface mount components are 0805 for resistors and capacitors, sod-80 for zeners
- ICSP header for programming



Schematic

