

# Dummy Load Project Boards

## The Workbench Podcast





## Introduction

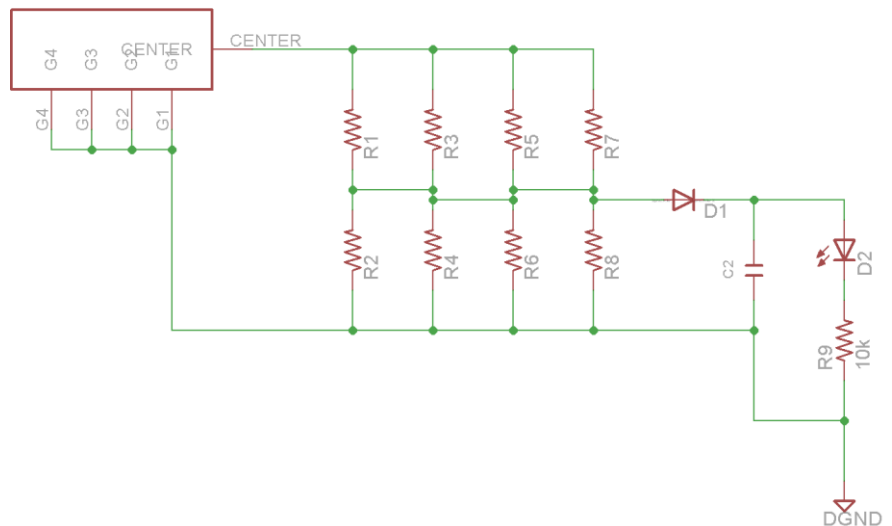
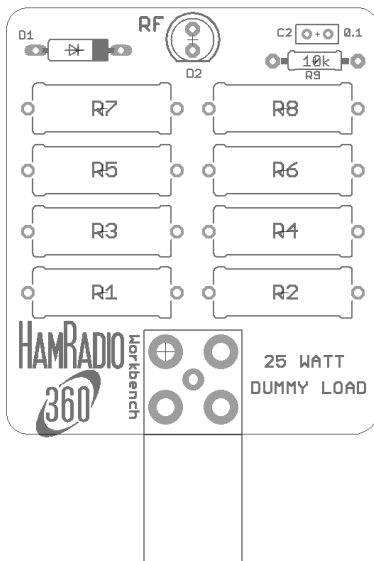
- This is a simple 50 ohm QRP dummy load. While the maximum rated power is 24 watts, the device will get quite hot at that power level. We recommend running lower power for short periods.
- The board has a diode that will rectify the RF energy and cause the LED to glow brighter as the power increases.

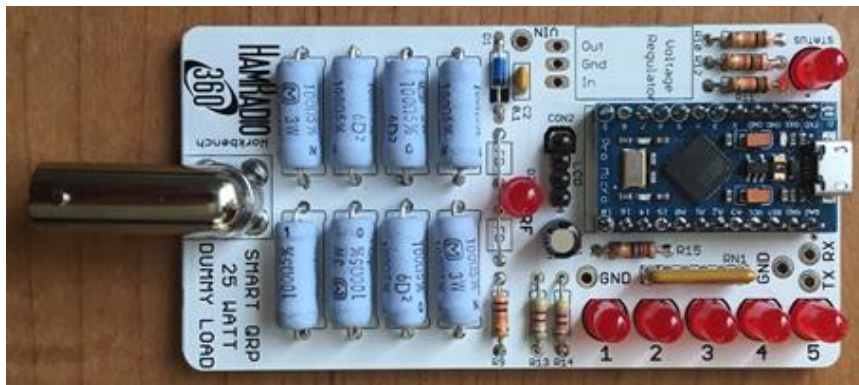
## Assembly

- Simply place the components according to the silkscreen printed on the board.
- If you are running very low power and want the LED to glow brighter, reduce the value of the resistor.

## Parts list

- The latest parts list and all documentation is on the web at [www.360workbench.com](http://www.360workbench.com)





## Introduction

- We call this a “smart” QRP dummy load because we have included an Arduino Pro Micro processor in the design. You can do various things with the Arduino. The rectified RF energy is presented to the input of the Arduino’s analog to digital converter (ADC). The Arduino can measure this voltage and resolve that into a number between 0 and 1023.
- The Arduino can output the value of the power measurement in multiple ways depending on the firmware that is loaded into it. The power can be sent as a number to the USB port or the serial UART on the Arduino. We have also included a row of 5 LEDs that can be turned on to show the relative power output. As the power goes up, the detected voltage goes up and the firmware can light up more LEDs.
- The load is a simple 50 ohm resistive load with a maximum rated power of 24 watts. The device will get quite hot at that power level. We recommend running lower power for short periods.
- The board can be used as a simple dummy load and relative power can be seen with the “RF” LED lighting up. If you want to use the Arduino you will have to power it somehow. You can either power the Arduino through the USB jack or you can apply power to the VIN and GND pins and use the onboard voltage regulator.
- Important note #1 – When connecting a PC to the USB jack and transmitting into the dummy load, it is possible for RF to cause the USB port to disconnect. This can happen at high power levels and higher frequencies. This should not occur with the typical QRP HF or 2m radio.
- Important note #2 – This is not a precision watt meter. The intent is to show a relative power reading. The voltage produced by the diode is somewhat frequency dependent so you will see a slight difference in measured voltage on 10m vs 80m. This is normal. You can calibrate the firmware for your favorite band to get more accuracy.

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