

## Re: from breadboard to hard wired

**Source:** <http://sci.tech-archive.net/Archive/sci.electronics.design/2004-08/0648.html>

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**From:** Terry Pinnell (*terrypinDELETE\_at\_THESEdial.pipex.com*)

**Date:** 08/04/04

Date: Wed, 04 Aug 2004 06:33:33 +0100

Posted this in sci.electronics.basics yesterday, but would also appreciate any comments here please.

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On 30th July

>Michael Eisenstadt <michaele@hotpop.com> wrote:

>

>>Generous readers of this forum

>>> walked me through

>>the building of a Pulse Width Modulator. This

>>was earlier in the year in January.

>>

>>The project was to reduce the speed of a small

>>12v DC motor which turns a 4 foot disk, in this

>>case a painting on canvas mounted on a round

>>laminated wooden stretcher, so fairly light.

>>The point of the PWModulator is to conserve the

>>batteries which power the motor whereas a voltage

>>regulator would discharge the batteries faster.

>>

>>Other things intervened but having returned

>>to the project I was pleased to see that the

>>electronics work and that the speed of the

>>motor can be adjusted to very slow.

>>

>>I now need to hardwire the components. As a

>>total newbie, I am not even sure which side

>>of the board the components are mounted

>>on.

>>

>>The schematic of the PWModulator and pictures

>>of the breadboard with components and of two

>>sides of boards for hardwiring is at

>><http://www.charlesumlauf.com/wiring.htm>

My reply 3rd August:

sci.electronics.design: Re: from breadboard to hard wired

You've got me puzzled. That circuit looks like a simple square wave oscillator. Its duty cycle will therefore be roughly fixed. Yet you say you can vary the speed of the motor? That's what the author claims for this 'Pulse Width Modulation' circuit too. Surely, PWM keeps the cycle period (and hence frequency) fixed, while changing the duty cycle? Can someone clarify please?

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