

The Dave Lawton 9XA

An adjustable duty cycle dual 555 timer using a MOSFET to drive the VIC

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Source:

<http://quanthomme.free.fr/qhsuite/2011News/imagenews11/MeyerReplicatAnglais29pages.pdf>

The Dave Lawton 9XA is a versatile pulse and gate generator with variable duty cycle on both 555 timers.

One design note that exists here, is that Pin 3 Output of timer 1 is used to provide Vcc power to Pin 4 on Timer 2. This means an inherent latency is always introduced by the 1st RC charge cycle to power up the 2nd timer. This would cause a partial leading pulse. Other than that issue, it's a pretty solid circuit.

Using a BUZ350 mosfetto pull down the B+ 12V through the cell and negative choke.

Circuit operation:

The main part of the circuit is made up of two standard 555 chip timers. These are wired to give an output waveform which switches very rapidly between a high voltage and a low voltage. The ideal waveform shape coming from this circuit is described as a "square wave" output. In this particular version of the circuit, the rate at which the circuit flips between high and low voltage (called the "frequency") can be adjusted by the user turning a knob. Also, the length of the ON time to the OFF time (called the "Mark/Space Ratio") is also adjustable.

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