

## Re: Dual sine wave generator with variable frequency and 90 degree phase difference

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- *From:* Robert Baer <[robertbaer@xxxxxxxxxxxxx](mailto:robertbaer@xxxxxxxxxxxxx)>
  - *Date:* Wed, 03 Sep 2008 23:55:18 -0700
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Jan Panteltje wrote:

On a sunny day (Wed, 03 Sep 2008 09:42:57 -0400) it happened Steve <[steve@xxxxxxxxxxxxx](mailto:steve@xxxxxxxxxxxxx)> wrote in <[205tb41td5tfa5n3esvim42940ikvhh09l@xxxxxxxxx](mailto:205tb41td5tfa5n3esvim42940ikvhh09l@xxxxxxxxx)>:

I'm looking for a waveform generator that outputs two sine waves of the same frequency with 90 degree phase difference (sine and cosine). I need a variable frequency between 0.05 Hz and 10 Hz. Is there an analog design that uses a single potentiometer or perhaps is voltage controlled? Low distortion is not a requirement.

Steve

2 x EPROM sine and cosine lookup table,  
4046 VCO variable clock generator,  
binary counter on EPROM address lines,  
2 x 8 bits wide DA converter, 2 x lowpass.

For a 256 values per sine wave form, your clock should be max 2560 Hz.

NOT analog.

Use a ramp oscillator for constant amplitude; one stage generates a square wave for integrating to the ramp. Run a comparator off the ramp (triangle); that will be 90 degrees WRT the square wave. The 2 square waves can be filtered with a simple 3-stage phase retard filter.

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