

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

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- *From:* JosephKK <quiettechblue@xxxxxxxx>
 - *Date:* Sat, 06 Sep 2008 11:42:49 -0700
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On Sat, 6 Sep 2008 07:32:27 -0700 (PDT), George Herold <gherold@xxxxxxxxxxxxxxxx> wrote:

On Sep 4, 2:55 am, Robert Baer <robertb...@xxxxxxxxxxxxxxxx> wrote:

Jan Panteltje wrote:

On a sunny day (Wed, 03 Sep 2008 09:42:57 -0400) it happened Steve <st...@xxxxxxxxxxxx> wrote in <205tb41td5tfa5n3esvim42940ikvhh...@xxxxxxx>:

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.

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

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. – Hide quoted text –

– Show quoted text –

I was going to suggest a ramp generator also... as a analog solution..But I don't know if you can build the filter to work at 0.05 Hz! How much distortion can you handle?

George

Diode ladder waveshaping can handle triangle to sine conversion, down to about 0.1 % THD. OP does not seem to be all that distortion sensitive.

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