

## Re: How to design this circuit?

**Source:** <http://sci.tech-archive.net/Archive/sci.electronics.design/2005-01/4671.html>

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**Date:** 01/17/05

Date: Mon, 17 Jan 2005 16:39:46 -0700

On Mon, 17 Jan 2005 22:38:14 +0000 (UTC), Tobias Weingartner <weingart@cs.ualberta.ca> wrote:

- > *I'm looking for some way to figure out a circuit that will lock onto*
- > *a signal (0-5v, binary) in such a way that no matter what the current*
- > *frequency of the input signal (ok, within reason, 720 p/s to 21600 p/s),*
- > *the output signal would be 100 times the input frequency.*
- >
- > *In other words, I'd like to have 50 equally spaced pulses occur between*
- > *consecutive transitions of the input signal?*

How fast a lock (in terms of input cycles) before the output reflects  
100x input?

How fast/often does the input frequency change?

If the answer to the first is >3 cycles, and the answer to the second is not too often, then you could probably do it with a microcontroller. 720hz to 22khz is not very fast. Microcontroller could measure a cycle or two of input, and start producing 100x output pulses. Some have hardware that would help, but with speeds that slow, if the tolerance is fairly low, should be no problem with modern microcontroller speeds even entirely in software.

sdb

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