

## Re: Can PLL Freq Error be zero?

**Source:** <http://sci.tech-archive.net/Archive/sci.electronics.design/2005-03/3233.html>

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**From:** Terry Given (*my\_name\_at\_ieee.org*)

**Date:** 03/18/05

Date: Fri, 18 Mar 2005 14:49:03 +1300

John Larkin wrote:

> *On Thu, 17 Mar 2005 22:44:33 GMT, "Genome" <ilike\_spam@yahoo.co.uk>*

> *wrote:*

>

>

>> *"John Larkin" <jjlarkin@highNOTlandTHIStechnologyPART.com> wrote in message*

>> *news:jkvj311eeujkg4gu2nqctaqdlems2nusmc@4ax.com...*

>>

>>> *On Thu, 17 Mar 2005 20:03:50 GMT, "Genome" <ilike\_spam@yahoo.co.uk>*

>>> *wrote:*

>>>

>>>

>>>> *"John Larkin" <jjlarkin@highNOTlandTHIStechnologyPART.com> wrote in*

>>

>> *message*

>>

>>>> *news:rnmj3195n36dh5cqhcrqkimbmkjoef3m2p@4ax.com...*

>>>>

>>>>> *On Thu, 17 Mar 2005 18:44:31 GMT, "Genome" <ilike\_spam@yahoo.co.uk>*

>>>>> *wrote:*

>>>>>

>>>>> *But sure, if the divider delay is significant, then it's significant.*

>>>>>

>>>>> *Is that better?*

>>>>>

>>>>> *John*

>>>>>

>>>>>

>>>>

>>>> *OK.*

>>>>

>>>> *Being thick I miss the meaning of,*

>>>>

>>>> *U' = U / S*

>>>>

>>>> *and*

>>>>

>>>> *W' = W / S*

>>>>

>>>>DNA

>>>>

>>>>

>>>

>>>Oh. I meant that the 'new' VCO frequency (after substituting the black  
>>>box) is the old one scaled by the divisor thing, and likewise W' is  
>>>the effective new VCO constant (Hz/volt or whatever) after the  
>>>substitution. It's just like wrapping a dotted line around the  
>>>VCO+divider and replacing the whole mess with a slower, scaled VCO.

>>>

>>>I'm sort of used to a notation where

>>>

>>> G' is the new/scaled/denormalized/fudged value of G

>>>

>>>which is what the filter folks do. But maybe that's not an accepted  
>>>convention.

>>>

>>>

>>>John

>>>

>>

>>Oh, so S is the number by which things are divided, the divisor, and has  
>>nothing to do with that Laplace stuff?

>>

>>DNA

>>

>

>

> Well, I did specify that Somethingorother was the divider in the loop,  
> so it was perfectly obvious to me that S = divider ratio. There's only  
> 26 letters on my keyboard, and it's not my fault that some lunatic  
> Frenchman decided to use S for something else.

>

> Actually, I never use that Laplace stuff. I must have learned it once  
> in ancient times, because I didn't flunk very many of my EE courses,  
> but nowadays a quickie Bode plot is enough to stabilize simple loops,  
> and if it gets more complicated, or gets nonlinear, I just simulate.

>

> I had an engineer a while back who was a whiz at this stuff... pages  
> of equations, root locus, polynomials in s-domain, all neatly solved.  
> But the answers usually made no sense, and when I pointed it out to  
> him he got pissed off (ie, angry in American.) As soon as I finished  
> paying for the legal fees to get him a green card, he quit.

>

> John

I aint your brother, so I p all over my equations.

(perhaps too cryptic?)

sci.electronics.design: Re: Can PLL Freq Error be zero?

Cheers  
Terry