

Re: designing a laser rangefinder

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- *From:* Don Foreman <dforeman@xxxxxxxxxxxxxxxxxxxxxxxx>
 - *Date:* Mon, 19 Dec 2005 12:12:52 -0600
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On 15 Dec 2005 19:58:27 -0800, "erique82" <eric_rsaup@xxxxxxxx> wrote:

>I hope to achieve range of tens of metres. Most probably less than 30
>metres. I'm using a normal laser pointer, trying to cut cost here.

You didn't mention accuracy goal. You might be able to do this with triangulation.

Triangulation includes use of things like camera autofocus chips.

At 30 meters, round trip distance is 60 meters so max modulation frequency without phase redundancy in the range of interest is 5 MHz. One degree of phase resolution is then 2 inches total distance, or 1 inch of range. It's also about half a nanosecond at carrier frequency — but phase is preserved thru hetrodyning so you could down-convert before you do the phase measurement. You'll need a pretty stable master oscillator with low phase noise. This need not be costly if you have the time to fool with it.

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◇ *From:* quietguy
 - ◆ **[Re: designing a laser rangefinder](#)**
◇ *From:* erique82
 - *References:*
 - ◆ **[designing a laser rangefinder](#)**
◇ *From:* erique82
 - ◆ **[Re: designing a laser rangefinder](#)**
◇ *From:* Ingeniur
 - ◆ **[Re: designing a laser rangefinder](#)**
◇ *From:* erique82
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