

Re: Infrared RC oscillator

Source: <http://sci.tech--archive.net/Archive/sci.electronics.design/2006-01/msg04580.html>

- *From:* Ben Bradley <ben_nospam_bradley@xxxxxxxxxxxxxxxx>
 - *Date:* Wed, 25 Jan 2006 22:48:59 GMT
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On Wed, 11 Jan 2006 23:09:16 GMT, Mike Harrison <mike@xxxxxxxxxxxxxxxx> wrote:

>On Wed, 11 Jan 2006 15:05:22 -0500, "Michael" <newszz10@xxxxxxxx> wrote:

>

>>So many of the xmtr circuits I've seen for infrared remote control use a
>>crystal or ceramic resonator in a cmos oscillator.

>>

>>Is there any reason why an R/C network oscillator using low tolerance parts
>>wouldn't be accurate enough at such a low frequency?

>>(38 or 40 khz).

>

>Just because the frequency is low doesn't mean the accuracy required is any less. In practice it
>gets tricky getting RC repeatability better than about 5%, especially where supply voltage is likely
>to be variable, partly due to the high pulse currents driving the IR LED.

Actually a circuit using a 555 timer will have pretty good immunity to voltage variations, OTOH the 555 may cost as much as a ceramic resonator, and the frequency is still dependent on high-tolerance and temperature-varying resistors and capacitors.

>A 5% frequency error will

>put the carrier far enough out of band for some IR sensors to reduce range noticeably.

>Resonators are cheap and stable and provide the best solution for this application – the proof of
>this is simply that it's what's almost universally used in an extremely price-sensitive market.

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• *References:*

◆ ***Re: Infrared RC oscillator***

◇ *From:* Mike Harrison

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