

Re: Random timer!

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Source: <http://sci.tech-archive.net/Archive/sci.electronics.basics/2007-06/msg00088.html>

- *From:* Jasen <jasen@xxxxxxxxxxxx>
 - *Date:* 3 Jun 2007 00:03:14 GMT
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On 2007-06-01, Baron <baron.nospam@xxxxxxxxxxxxxxxxxxxxxxxxxxxx> wrote:

Hi Jasen, inscribed thus:

On 2007-05-31, Baron <baron.nospam@xxxxxxxxxxxxxxxxxxxxxxxxxxxx> wrote:

I'm looking for ideas here. I am trying to figure out how to make a random interval timer! Something that will trigger an indicator after a random period of time. Ideally 1 to 15 seconds after a button is pushed.

have a fast oscillator the becomes a slow oscillator when the button is pressed. (period of 14 seconds) add a 1 second delay

I like that idea... but how would you implement it ?

I'd probably do it software, but if pressed to do it in hardware it'd be based around this:

here's the variable-rate bit done using a LM555 timer chip,

(it's not perfect one time in 1000 (or so) it'll fire immediately instead of waiting "randomly" 0-14 seconds but I'm guessing from your description that's not an issue...

| This is an ascii schematic, if the diagram appears garbled |
| try switching to a fixed-pitch font (courier works well) |
| pasting it into notepad works well on ms-windows. |
| or in google groups "view source" (found under options) |

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```
\
-----'
500K slow rate
\
^
.-\/\--+-----+--- +5V
|/||
/|...|. ...
\|. VCC(8) .
/ 1.2M |..
\`--RES(4) OUT(3)----->
|. 555 .
go-fast ----\/\-->|+-----+---TH(6) DIS(7)-----.
10K 1N914 |..|
+---TR(2) CV(5)--|
|..|
|. GND(1) .|
|...|. ...|
|||
+-----|-----\/\-'
|| 33
=====|
10uF ||
--+-----+--- 0V
```

+5V on go fast will make it run at about 100Hz – faster than human reactions.

pur 0V on go fast and the rate is determined by the trimmer at the top, set that so that the circuit pulses once every 14 seconds with go-fast held low. (best way to detect the pulses may be cheap headphones in series with a 1K resistor on the output, the pulse will it'll probably be too short to easily see on a LED)

the rest of the circuit depends on exactly what you want.

assuming the start switch is a momentary push button, is it acceptable to require that the operator to hold it down until the random trigger ?

can I use a two pole switch to make the design easier or is only single pole available, can the switch be floating or must one end be ground or +5v

what sort of output do you need is a floating LED acceptable or must it be ground referenced ?

what behavior do you want from the output?

Bye.
Jasen

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