Wavelengths

If you have any comments, suggestions, subjects you think should be aired, write to PE

After seeing yet another flashing light circuit for Christmas – in your December issue, I noticed that once again, only binary (ON-OFF) pulses were given. Though this is adequate – and on par with the average Japanese product available in the shops – it does not give the soothing, twinkly "peace on Earth" feel that is wanted at Christmas.

The circuit I made for my Christmas tree lights last year is relatively cheap,. will work from a wide range of supply voltages (I have used it on supplies from 3 to 12V) and is much more Christmassy.

The circuit uses one half of an LM324 quad op-amp, and drives 4 (well, between 3 and 5) LED's. The speed of the "twinkle" is controlled by R3-C1 and the difference between max and min brightness can be altered by the resistor R4. The output produced is of the form shown in Fig. 2.

The op-amp IC1a is used as a comparator. Resistors R1, R2 and R4 give the circuit hysteresis, C1 charges and discharges through the op-amp output, via R3 and as the mid-point of R3-C1 is connected to the inverting input of the op-amp, IC1a oscillates merrily (well, it is Christmas). IC1b is simply a buffer for the signal and provides the current required for the LEDs.

As a quad op-amp is used, two circuits can be made with a single chip. By using two slightly different time constants (values for R3-C1), two different flash speeds can be set and a pleasant effect (ask my girl-friend, she agrees with me). For the board I made last year, 3 LM324s were used giving six phases of colours, red, green and tri-colour.

I realise your next issue will be dated January but the circuit does provide an elegant alternative to the Christmas tree lights featured annually in a certain electronic retailer's own magazine (for the past decade or so) and I think it may be worth squeezing it onto the bottom of a page, for those of us who buy your magazine as it comes out.

Richard B Sagar
Dewsbury
W Yorks

I'm afraid it was just too late for the Jan issue so it is "squeezed" in here instead – it may be that some people still have their Christmas trees still in place.

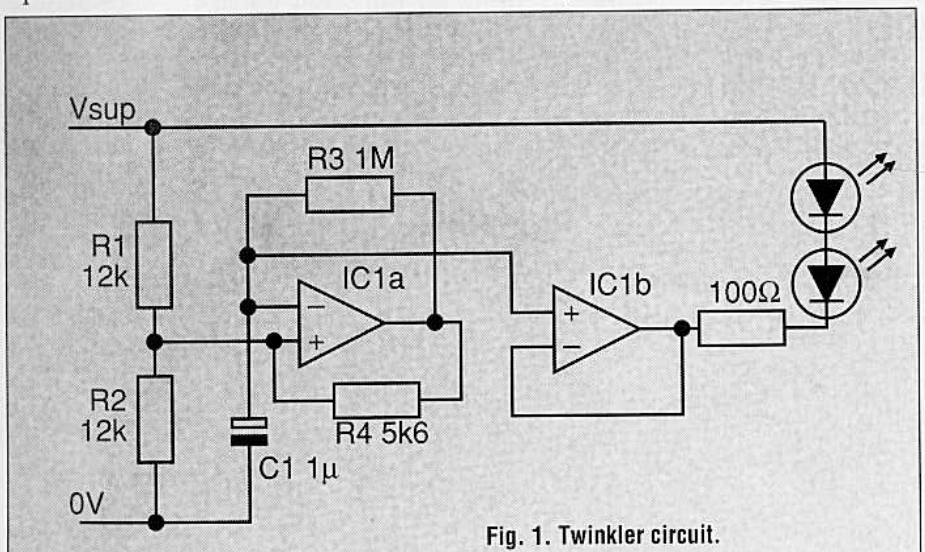

Fig. 1. Twinkler circuit.

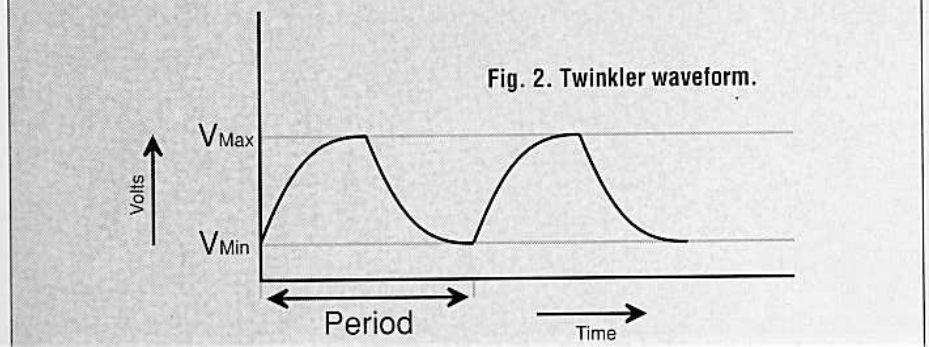

Fig. 2. Twinkler waveform.

Noisy World

I am a regular listener to BBC Radio 4 as I drive around London and one thing that is most annoying is the amount of interference with the signal.

The particularly bad places are around the West End with all of the neon signs; I presume it is these signs since they seem to be the only common denominator.

I think that the trouble lies with the fact that Radio 4 is broadcast on long wave since I don't get the same trouble with Radio 1 on medium wave. Is there any easy solution to get rid of, or at least reduce, the noise?

James Higgins
Wimbledon
London

I think the only real solution is to get an FM radio which shouldn't suffer quite so much. Other possibilities, such as getting the sign makers to silence their signs or Radio 4 to broadcast on medium wave are unlikely to be practical – unless other readers have some ideas?