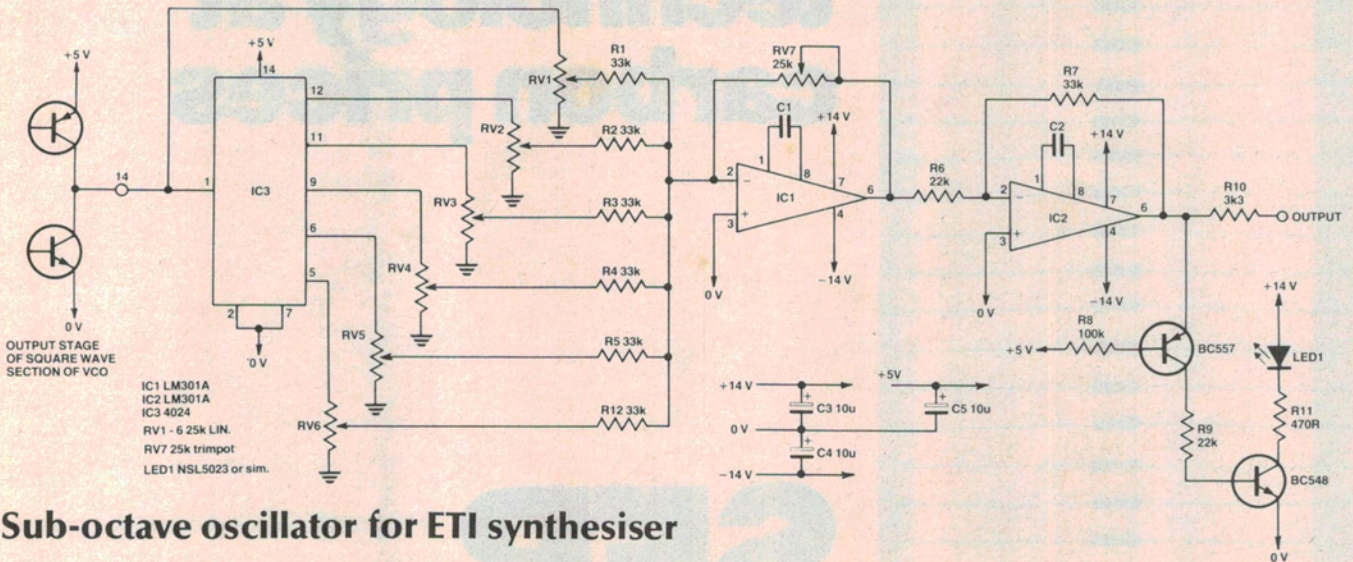


Ideas for Experimenters



Sub-octave oscillator for ETI synthesiser

Ken Stone, of Cheltenham in Victoria, devised this sub-octave oscillator for his ETI synthesiser and passes it on for other ETI synth owners.

Each sub-octave is created in the 4024 (IC3) by the division of the original frequency. Five sub-octaves are created and mixed together, along with the orig-

inal square wave, in a mixer which is based on the synthesiser's mixer (board 601b). No level control is put on the front panel; level can be adjusted by RV7. This is because the unit is installed between one VCO's square wave position on the waveform selection switch of the VCO, allowing the volume

to be controlled by the existing mixer.

When using the unit, switch the VCO 'range' control to one of the higher frequencies.

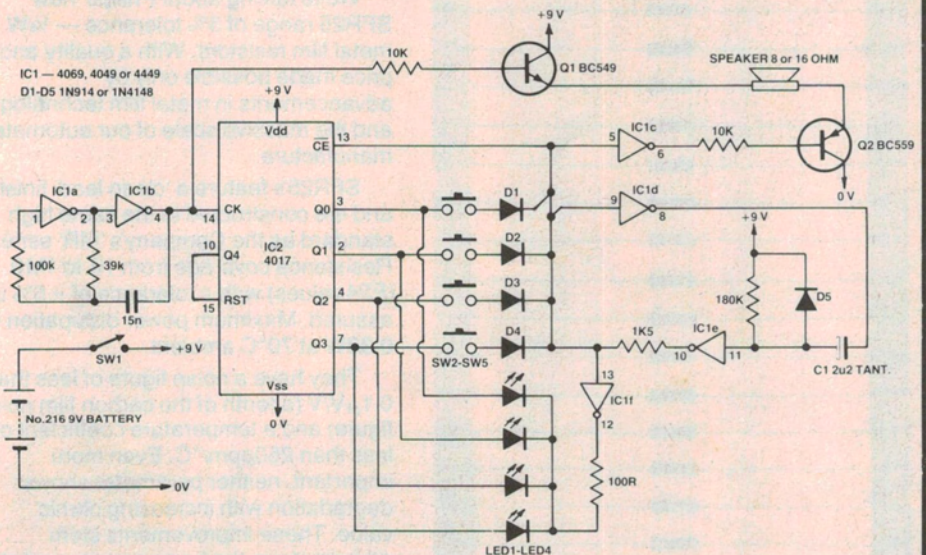
The sub-octave unit could be mounted in a utility box bolted to the top of the synthesiser. It can be used to create 'warm' and deep 'feelable' sounds.

Pick the winner!

This idea, from J. Gallant of Tasmania, is useful in competition situations to provide an impartial method of determining which competitor pressed a button first.

The circuit operates as follows. IC1a and b operate as a square wave oscillator with a frequency of about 1 kHz. This clocks the 4017, causing it to scan the switches. If one is closed, the high from the 4017 output will be fed through that switch to the 4017 CE input, which then keeps that output high. At the same time, the appropriate LED is turned on, and the speaker emits a 1 kHz tone.

Now, IC1d and e form a monostable with the input to IC1d normally kept low by IC1e, which has its input pulled high by the 180k resistor on its input. Thus the output of IC1d is normally high, so C1 is discharged. When the input to IC1d is pulled high by the closed switch, its output goes low, pulling down the input to IC1e through C1. C1 now starts to charge up through the 180k resistor. When the voltage across



it reaches the inverter input threshold, the monostable reverts to its original state and C1 discharges through D1. The LEDs and speaker are then turned off; the monostable period is about two seconds.

Current drain is fairly low in the

quiescent state and a 216 type 9 V battery will power this circuit for a fairly long time, as it is normally only used intermittently. None of the components are critical, and the oscillator frequency and monostable period could be changed if desired.