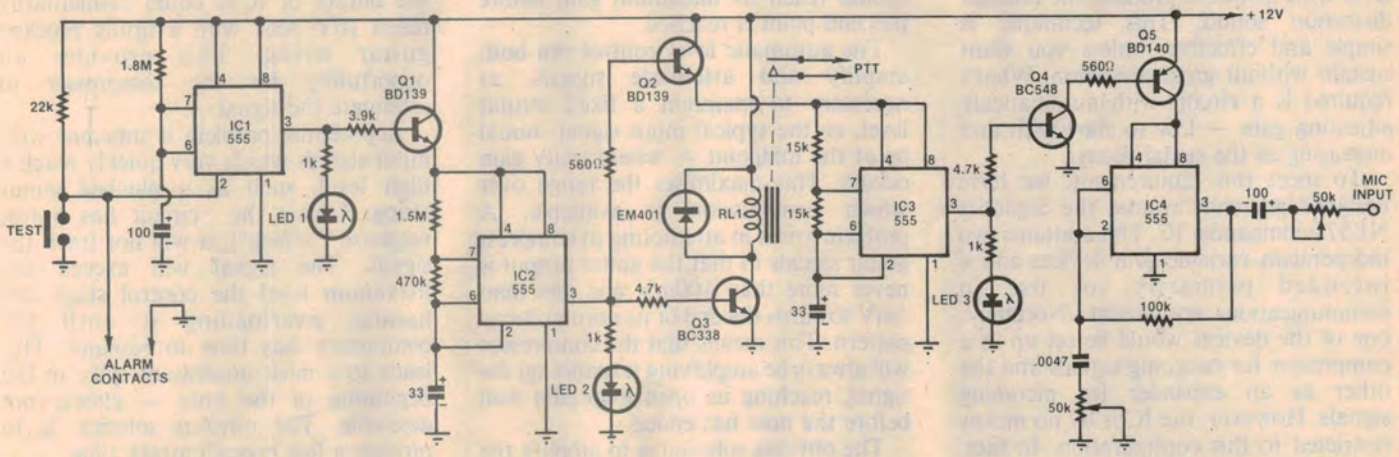

Two-way radio alarm tone generator

There is sometimes a need for an alarm tripped tone to be transmitted via radio to a receiver or paging unit. This circuit uses just four ICs, five transistors and a handful of other components.

IC1 is wired as a one shot monostable, being triggered by PB1, a test button, or the alarm contacts in parallel with it. This switches high at its output, pin 3, for approximately three minutes with the values shown. This turns on Q1 via its 3.9kΩ base resistor and also LED 1.

When Q1 turns on it connects the 12V rail to IC2, which is wired as a square wave generator with an "on" time of approximately 45s and an "off" time of 10s. When IC2's output (pin 3) goes high, it turns on Q2, Q3 and LED 2.

When Q2 turns on it connects the 12V rail to IC3, while Q3 activates the PTT relay RL1. IC3 operates at approximately 1Hz and, when its pin 3 output goes high, turns on Q4, Q5 and LED 3.

When Q5 turns on it connects the 12V rail to IC4, which is wired as an audio oscillator. Its output from pin 3, is fed to the radio transmitter microphone circuit via a 50kΩ trimpot which controls the level. A second 50kΩ variable resistor, in conjunction with the .0047μF capacitor, controls the oscillator frequency.

In summary, activating the alarm turns the circuit on for three minutes, during which time IC2 turns the transmitter on for 45s periods with 10s intervals in between. At the same time, IC3 and IC4 apply a 1Hz modulated audio tone to the microphone input to produce a siren-like effect.

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