December 1969

Brief 69-10725

NASA TECH BRIEF

Pocket-Sized Tone-Modulated FM Transmitter

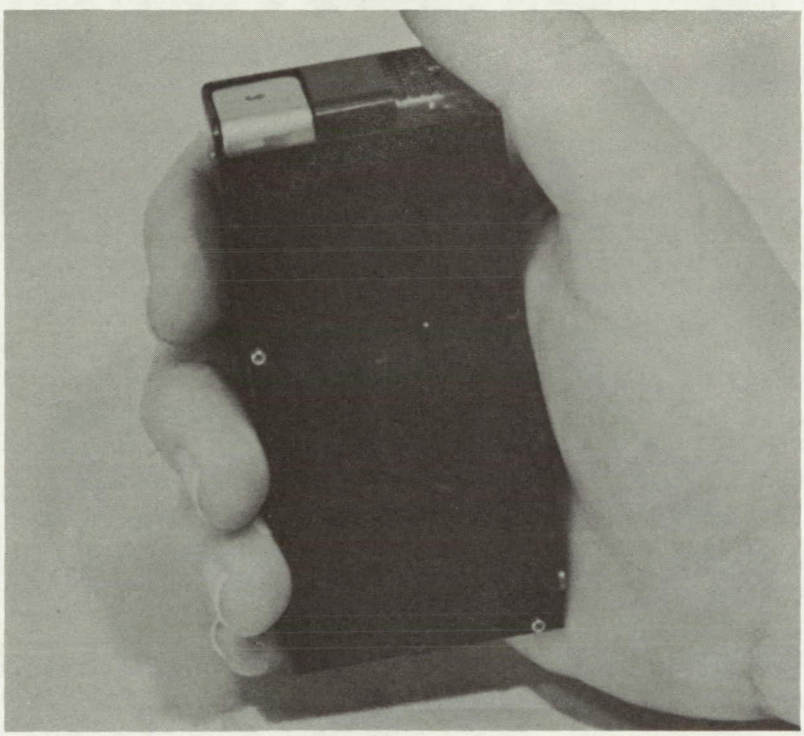

Figure 1. Remote Transmitter

The problem:

To provide an individual with an easily operated means of communicating a choice of simple signals to a nearby receiver.

The solution:

A pocket-sized crystal-controlled transmitter, as shown in Figures 1 and 2, with an integral loop antenna, is frequency-modulated by crystal-derived tones. It transmits the tone-modulated frequency-modulation (FM) to a narrow-band receiver/detector.

How it's done:

Pressure of a button on the transmitter causes generation of a tone. The tone modulates the FM transmitter which in turn radiates, by way of the enclosed loop antenna, through the radio-frequency-transparent wall of the transmitter's case to the receiver. The

(continued overleaf)

unit is powered by a 9.8-v. mercury battery housed in the case. The signals are so extremely stable that a very narrow detector bandwidth may be used. The advantage over a voice channel is significant.

Notes:

1. Designers and users of miniature remote radio-control systems may be interested.
2. Requests for further information may be directed to:

Technology Utilization Officer
NASA Pasadena Office
4800 Oak Grove Drive
Pasadena, California 91103
Reference TSP69-10725

Patent status:

Inquiries about rights for commercial use of this invention may be made to NASA, Code GP, Washington, D. C. 20546.

Source: L. A. Couvillon et al. of
Caltech/JPL
under contract to
NASA Pasadena Office
(NPO-11180)

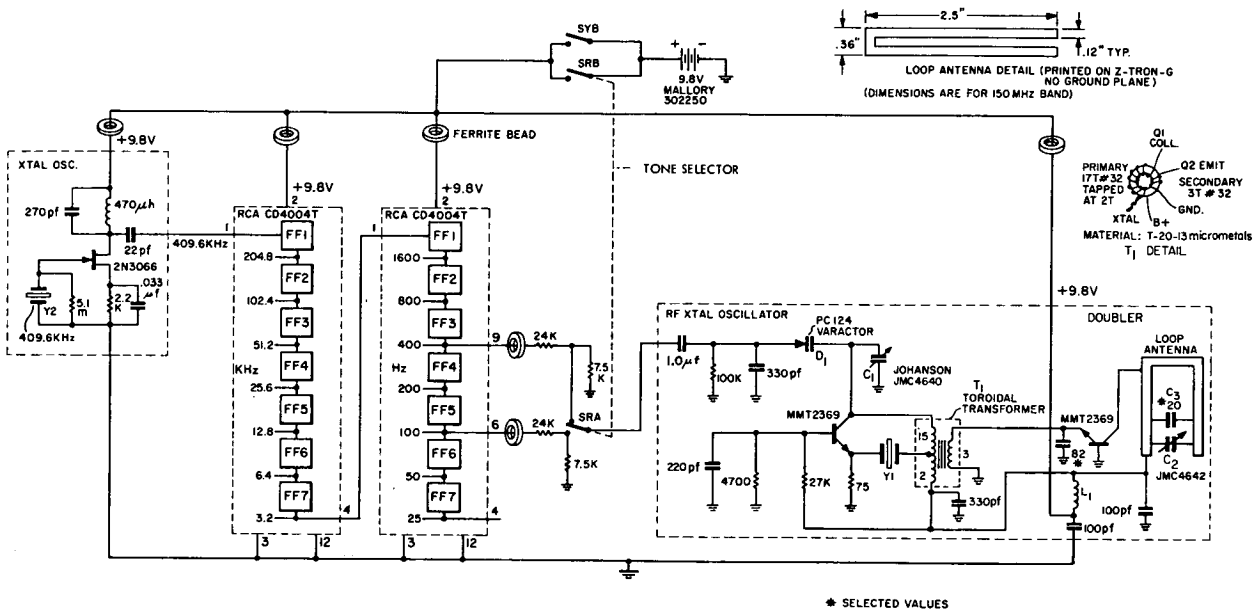

Figure 2. Transmitter and Modulator Circuits