

# Abstracts

## Some Characteristics of Microwave Balanced Modulators

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*R.C. Mackey. "Some Characteristics of Microwave Balanced Modulators." 1962 Transactions on Microwave Theory and Techniques 10.2 (Mar. 1962 [T-MTT]): 114-117.*

Microwave modulator characteristics pertinent to two state balanced modulation are discussed. An equivalence between balanced modulation and phase modulation is shown for rectangular modulation waveforms and experimental results are described. The characteristics of a tuned hybrid tee, untuned hybrid tee and novel circulator type of balanced modulator are compared. X-band measurements show that a carrier rejection of 70 db and modulator loss of 3 db can be achieved with carrier levels up to several hundred milliwatts. The carrier rejection of an untuned modulator is dependent on crystal match and data showing dependence of the match on orientation and temperature are presented.

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