

Abstracts

A Microwave Linearity Test Set

G.L. Heiter. "A Microwave Linearity Test Set." 1977 MTT-S International Microwave Symposium Digest 77.1 (1977 [MWSYM]): 107-109.

A multitone intermodulation (IM) test set has been constructed which generates up to three VHF test tones with conventional accuracy (10^3) and stability ($<10^4$). Using a phase locked microwave generator as local oscillator source, these tones are up-converted, filtered and amplified individually to maintain spectral purity of the microwave test tones. High mutual isolation is provided in the combining circuitry. The detector circuit for signal and IM product tones uses selective tone attenuation to improve its linearity to $M/\text{sub } \alpha + \beta - \gamma / < -113$ dB. Tone levels are measured to -110 dBm with >80 dB discrimination outside a 20 kHz bandwidth, using a narrow band (1.7 kHz) tunable VHF receiver.

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