Abstracts

Generation of Confined-Spectrum Pulses Using an Absorption p-i-n Diode Modulator (Dec. 1971 [T-MTT])

T.A. Saponas. "Generation of Confined-Spectrum Pulses Using an Absorption p-i-n Diode Modulator (Dec. 1971 [T-MTT])." 1971 Transactions on Microwave Theory and Techniques 19.12 (Dec. 1971 [T-MTT] (1971 Symposium Issue)): 938-943.

Using a digital computer the spectrum of a Gaussian envelope pulse can be evaluated to accuracies of better than 0.01 dB over a dynamic range of 100 dB. This technique was used to investigate the problems in existing microwave transmitters. From such a study a low-level absorption-type modulator followed by linear power amplification is a logical method. A commercially available p-i-n diode modulator was then measured on a microwave network analyzer, and, from the resulting amplitude and phase data, the spectrum was computed. The computed prediction of the spectrum was then compared to the measured spectrum and found to agree within 1 dB to -50 dB.

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