

Abstracts

The Design of Linearizing Networks for High-Power Varactor-Tuned Frequency Modulators

E. Marazzi and V. Rizzoli. "The Design of Linearizing Networks for High-Power Varactor-Tuned Frequency Modulators." 1980 Transactions on Microwave Theory and Techniques 28.7 (Jul. 1980 [T-MTT]): 767-773.

The problem of linearizing the tuning varactor of a microwave frequency modulator is still a hard one to solve, and actual designs must often be carried out by trial-and-error techniques. A possible systematic approach to the solution of this problem, taking advantage of modern computer-aided design methods, is presented in this paper. It is shown that a suitable use of a general-purpose optimization program makes it possible to find a tuning network providing both FM linearity and protection of the varactor junction against an excess of RF voltage. This is of considerable importance in the case of medium- or high-power circuits, since the diode must then be prevented from being drawn into forward conduction or reverse breakdown for proper operation of the modulator.

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