

Abstracts

Linearity Limits of the Varactor-Controlled Osc-Mod Circuits

D. Kajfez and E.J. Hwan. "Linearity Limits of the Varactor-Controlled Osc-Mod Circuits." 1985 Transactions on Microwave Theory and Techniques 33.7 (Jul. 1985 [T-MTT]): 620-625.

A method for optimum selection of the natural frequencies of a varactor-controlled oscillator (osc-mod) is developed for the purpose of providing the best modulation linearity, while still retaining practical features such as continuous tuning. Highly linear operation was found to be possible using conventional abrupt varactors if the circuit has one pole and two zeros situated below the operating frequency. The limits of the maximum realizable modulation bandwidths are established for a linearity of one percent, with and without the requirement for continuous tuning.

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