Abstracts

Global time-domain full-wave analysis of microwave FET oscillators and self-oscillating mixers

Min Chen, W.R. Deal, B. Houshmand and T. Itoh. "Global time-domain full-wave analysis of microwave FET oscillators and self-oscillating mixers." 1998 MTT-S International Microwave Symposium Digest 98.2 (1998 Vol. II [MWSYM]): 1135-1138.

The global time-domain nonlinear analysis of microwave FET oscillators and self-oscillating mixers using the extended FDTD technique is presented. Employing the concept of equivalent current/voltage sources, the device-wave interaction is characterized and incorporated into the FDTD time-stepping algorithm. Consequently, investigation of highly nonlinear phenomena, such as injection locking and intermodulation, can be accomplished by utilizing a large-signal device circuit model. Theoretical results are validated by experiments.

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