Abstracts

Nonlinear analysis of microwave frequency synthesizers: stability and incidental FM

S. Sancho, A. Suarez and T. Fernandez. "Nonlinear analysis of microwave frequency synthesizers: stability and incidental FM." 2000 MTT-S International Microwave Symposium Digest 00.1 (2000 Vol. I [MWSYM]): 497-500.

The nonlinear dynamics of microwave synthesizers based on type-II loops has been analyzed, with a realistic description of the loop devices. In this way it has been possible to simulate incidental frequency modulation and predict hysteresis and chaotic responses, which are commonly observed in practice. A 2-3 GHz synthesizer with a JK flip-flop phase detector has been simulated and measured with very good agreement.

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