Abstracts

Simulation of HF Circuits with FDTD Technique Including Non-Ideal Lumped Elements

P. Ciampolini, P. Mezzanotte, L. Roselli, D. Sereni, R. Sorrentino and P. Torti. "Simulation of HF Circuits with FDTD Technique Including Non-Ideal Lumped Elements." 1995 MTT-S International Microwave Symposium Digest 95.2 (1995 Vol. II [MWSYM]): 361-364.

An extension of the FDTD algorithm is devised, accounting for high-frequency models of lumped elements. Bipolar transistors, junction and Schottky diodes are considered, as well as their associated non linear capacitances. Several validation examples are given. In particular, a simple, yet complete, structure has been simulated, consisting of an L-band unbalanced mixer and including a microstrip stub, a microstrip to microstrip TEE junction, a microstrip gap and a shielding package. Results favourably compare with alternative simulation techniques.

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