Abstracts

A measurement based distributed low frequency noise HEMT model: application to design of millimeter wave automotive radar chip sets

A. Laloue, A. Lyoubi, M. Camiade, J.C. Nallatamby, M. Valenza, M. Prigent and J. Obregon. "A measurement based distributed low frequency noise HEMT model: application to design of millimeter wave automotive radar chip sets." 2001 MTT-S International Microwave Symposium Digest 01.1 (2001 Vol. I [MWSYM]): 423-426 vol.1.

A fully measurement based extraction procedure of a distributed low-frequency nonlinear noise model of a PHEMT is proposed. This model describes accurately the distributed nature under the device gate which allows a good noise behavior prediction in nonlinear circuits. It is used to simulate successfully noise characteristics of MMICs for FMCW automotive radar at 77 GHz. The simulated and experimental results on two different source-chips: a VCO and DRO have been compared and we demonstrate the accuracy of the noise model which results in being independent of the application.

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