Abstracts

Active Coplanar Up-Converter for High Gain V-Band Applications

R. Kulke, T. Sporkmann, I. Wolff, M.J. Rosario and F. Fortes. "Active Coplanar Up-Converter for High Gain V-Band Applications." 1996 MTT-S International Microwave Symposium Digest 96.1 (1996 Vol. I [MWSYM]): 269-272.

This paper reports on the design of a coplanar up-converter from C- to V-band on GaAs. An optimum conversion gain (62-64 GHz: G/sub c/ >4 dB) has been achieved from a non-linear optimisation, utilising a modified Tajima model for the PM-HFETs and an accurate library for the coplanar elements integrated into the CAD tool Libra. Due to the use of coplanar lumped elements, a very compact circuit size of 2.1 mm² has been obtained. The evaluation of the circuit demonstrates the excellent agreement of the linear and non-linear measured and simulated mixer behaviour up to 64 GHz.

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