Abstracts

Accurate Analysis and Design of Millimeter Wave Mixers (Short Papers)

F. De Flaviis, T. Rozzi, F. Moglie, A. Sgreccia and A. Panzeri. "Accurate Analysis and Design of Millimeter Wave Mixers (Short Papers)." 1993 Transactions on Microwave Theory and Techniques 41.5 (May 1993 [T-MTT]): 870-873.

In recent years, various techniques have been developed for the study of microwave mixers. The present contribution stems from the method introduced in [1] for the nonlinear analysis, but differs in the linear part. In particular, we emphatize the circuit characterization of the mixer harmonics, removing the usual approximation of matched terminations and employing models that effectively represent network characteristics in the microwave and millimeter wave domain. This goal is achieved through the accurate knowledge of the various components occurring in the mixer and the use of accurate equivalent circuits. In order to validate the model, two subharmonic mixers operating at K-band (18-26 GHz) were realized. Reasonable agreement is achieved between theoretical and experimental results.

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