# Abstracts

## A Design Method for Lumped Broad-Band MMIC Matching Networks with Semiuniform Frequency-Dependent Losses (Short Paper)

*Q. Lin, H. Aghvami and I. Robertson. "A Design Method for Lumped Broad-Band MMIC Matching Networks with Semiuniform Frequency-Dependent Losses (Short Paper)." 1993 Transactions on Microwave Theory and Techniques 41.5 (May 1993 [T-MTT]): 873-876.*

A new design method for broad-band MMIC matching networks, which consist of lumped inductors and capacitors, is presented in this paper. Based on the fictitious transformation between the lossy network and the lossless one the transducer power gain (TPG) of the lossy network is calculated using impedance matrix and transmission parameter matrix methods. Then, on the basis of the result of TPG optimization, the matching network can be synthesized. Since only the complexity of the matching network needs to be specified, so the advantage of the "real frequency technique" is retained. In this design procedure the frequency-dependent losses of lumped elements can be considered. Thus the actual gain response tends to coincide with the desired performance more than when the losses of elements are neglected. An example is given to show the application of the new method to broad-band GaAs FET amplifier design.

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