Abstracts

Artificial Neural Networks for Accurate Microwave CAD Applications

G.L. Creech, B. Paul, C. Lesniak, T. Jenkins, R. Lee and M. Calcatera. "Artificial Neural Networks for Accurate Microwave CAD Applications." 1996 MTT-S International Microwave Symposium Digest 96.2 (1996 Vol. II [MWSYM]): 733-736.

A unique approach for applying neurocomputing technology for accurate CAD of microwave circuits is described. In our proposed method, a multilayer perception neural network (MLPNN) is trained to predict the scattering parameters of MMIC passive elements based on the element's physical dimensions. The s-parameters were obtained by performing a full-wave electromagnetic (EM) analysis of these elements. An X-band MLPNN spiral inductor model is developed. The MLPNN computed s-parameter values are in excellent agreement with those obtained from EM simulations with correlations greater than 0.99 for all modeled parameters.

❑ Return to main document.