

Abstract

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Neural Based Prediction of Scattering and Noise Parameters for Solid State Microwave Transistors

Abstract – In this paper a Neural based algorithm is designed to predict the scattering and noise parameters for solid state microwave devices with application to the High Electron Mobility Transistor (HEMT). This makes use of a finite number of measurements to extend the scattering and noise parameters to a wide range of applied voltages, currents and operating frequencies. The algorithm used is based on the feed-forward technique. Results show good agreement with the measured parameters which is adequate for the design of small and large signal amplifiers.

Keywords: S-parameters, Noise parameters, Neural network, HEMT