Abstracts

Identification of Cascaded Microwave Circuits with Moderate Reflections Using Reflection and Transmission Measurements

A method for identifying the component values of a cascaded microwave circuit with the aid of the time-domain reflection and transmission coefficients is presented. The model proposed is composed of commensurate nondispersive transmission lines separated by either lumped series or shunt resistances. The line delays are equal to the sampling interval. The algorithm takes into account the third-order multiple reflections, thus allowing identification of circuits with moderate internal reflections (reflection coefficient smaller than about 0.2). The method can be applied to the modelling of connectors, discontinuities, transitions, jigs, and even impedance transformers. A numerical example is given to demonstrate the ability of the algorithm.

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