Abstracts

An Ultra-High Precision Benchmark for Validation of Planar Electromagnetic Analyses

J.C. Rautio. "An Ultra-High Precision Benchmark for Validation of Planar Electromagnetic Analyses." 1994 Transactions on Microwave Theory and Techniques 42.11 (Nov. 1994 [T-MTT]): 2046-2050.

A stripline standard is applied to the validation of planar electromagnetic analysis. Since an exact theoretical expression is available for stripline, a benchmark can be specified to the accuracy to which the expression can be evaluated. Data for the benchmark accurate to about 10/sup-8/ is provided. A definition for an error metric appropriate for use with the benchmark is illustrated. A means of calculating a precise value of analysis error using the error metric is described. A first order numerical value for the residual analysis error can also be obtained from the calculated S-parameters by inspection. The benchmark can be applied to any planar electromagnetic analysis capable of analyzing stripline. Example results, illustrating absolute convergence of an analysis to 0.05%, are provided.

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