Abstracts

Broad-Band Simultaneous Measurement of Complex Permittivity and Permeability Using a Coaxial Discontinuity

N.-E. Belhadj-Tahar, A. Fourrier-Lamer and H. de Chanterac. "Broad-Band Simultaneous Measurement of Complex Permittivity and Permeability Using a Coaxial Discontinuity." 1990 Transactions on Microwave Theory and Techniques 38.1 (Jan. 1990 [T-MTT]): 1-7.

A technique is presented for simultaneously measuring the real and imaginary parts of both permittivity and permeability of a given material. A gap in a coaxial line is filled with the material under test. Complex permittivity and permeability are computed from the S-parameter (S/sub 11/ and S/sub 21/) measurement made on the gap taking into account higher order modes excited at the discontinuity. Measured epsilon/sub r/ and μ/sub r/ data for several materials are presented from 45 MHz up to 18 GHz. This technique shows good agreement between calculated and generally accepted values.

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