Abstracts

Broad-Band Analysis of a Coaxial Discontinuity Used for Dielectric Measurements

N.-E. Belhadj-Tahar and A. Fourrier-Lamer. "Broad-Band Analysis of a Coaxial Discontinuity Used for Dielectric Measurements." 1986 Transactions on Microwave Theory and Techniques 34.3 (Mar. 1986 [T-MTT]): 346-350.

A coaxial line terminated by a gap is considered, the gap being filled with an unknown material. This cell enables measurements of complex permittivity of dielectric materials to be made. The relationship linking the measured admittance to the dielectric properties is obtained from a theoretical analysis of the electromagnetic field in the tine. The equivalent-circuit parameters of a coaxial line terminated by a gap are obtained all higher order waves excited at the discontinuity are taken into account. The measurements show good agreement between measured and calculated data from dc to 12.4 GHz.

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