Abstracts

Bilayered Dielectric Measurement with an Open-Ended Coaxial Probe

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An equivalent circuit of an open-ended coaxial line used as a probe for bilayered dielectric measurement which consists of three parallel capacitances C/sub f/, C/sub 0epsilon1/ and C/sub 1(epsilon2-epsilon1)/ is presented. The measurement method, based on both the analytical expression of the probe's equivalent circuit and the bilinear transformation relationships between the equivalent admittance of the probe and the reflection coefficient and between the real reflection coefficient and the measured reflection coefficient, is described. With using this method, the measurements were made in 0.6-2.6 GHz. The results show that the permittivity of either layer of bilayered dielectrics can be determined by using the measured reflection coefficients without knowledge of equivalent capacitances C/sub f/, C/sub 0/ and C/sub 1/(t) or the thickness of the first layer medium.

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