Abstracts

Determination of the Characteristic Impedance of Single and Coupled Lines in Layered Dielectric Media

A. Janhsen and V. Hansen. "Determination of the Characteristic Impedance of Single and Coupled Lines in Layered Dielectric Media." 1991 MTT-S International Microwave Symposium Digest 91.2 (1991 Vol. II [MWSYM]): 765-768.

A method is presented by which the characteristic impedances of lines in layered dielectric media can be calculated in a new way. Lines of semi-infinite extend (e.g. microstrip lines or a coupled line system) which are connected by picewise sinusodial basisfunctions are fed by Delta - gap sources. Spectral domain analysis is used to solve the eigenvalue problem of the lines and to determine the transverse current distribution. The characteristic impedance is defined as the quotient of voltage of the Delta - gap source and the total current on the lines which is calculated using the method of moments. Thus, neither the voltage between a line and the ground nor the power transported by the coupled line system is used. Results for single lines, asymmetric coupled lines and coplanar lines are given.

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