Abstracts

Propagation Properties of Striplines Periodically Loaded with Crossing Strips

A rigorous dyadic Green's function formulation in the spectral domain is used to study the dispersion characteristics of signal striplines in the presence of metallic crossing strips. A set of coupled vector integral equations for the current distribution on the conductors is derived. Galerkin's method is then applied to derive the matrix eigenvalue equation for the propagation constant. The dispersion properties of the signal lines are studied for the two cases of finite and infinite length crossing strips. The effects of the structure dimensions on the passband and stopband characteristics are investigated. For crossing strips of finite length, the stopband is mainly affected by the period, the crossing strip length, and the separation between the signal and the crossing strips. For crossing strips of infinite length carrying traveling waves, attenuation along the signal line exists over the whole frequency range of operation.

❑ Return to main document.