Abstracts

Derivation of Closed-Form Green's Functions for a General Microstrip Geometry

M.I. Aksun and R. Mittra. "Derivation of Closed-Form Green's Functions for a General Microstrip Geometry." 1992 Transactions on Microwave Theory and Techniques 40.11 (Nov. 1992 [T-MTT]): 2055-2062.

The derivation of the closed-form spatial domain Green's functions for the vector and scalar potentials is presented for a microstrip geometry with a substrate and a superstrata, whose thicknesses can be arbitrary. The spatial domain Green's functions for printed circuits are typically expressed as Sommerfeld integrals, that are inverse Hankel transform of the corresponding spectral domain Green's functions, and are quite time-consuming to evaluate. Closed-form representations of these Green's functions in the spatial domains can only be obtained if the integrands are approximated by a linear combination of functions that are analytically integrable. In this paper, we show we can accomplish this by approximating the spectral domain Green's functions in terms of complex exponential by using the least square Prony's method.

❑ Return to main document.