Abstracts

General Solution for Excitation by Slotted Aperture Source in Conducting Cylinder with Concentric Layering

J.R. Wait. "General Solution for Excitation by Slotted Aperture Source in Conducting Cylinder with Concentric Layering." 1987 Transactions on Microwave Theory and Techniques 35.3 (Mar. 1987 [T-MTT]): 321-325.

We present a general matrix analysis for the electromagnetic fields produced by an aperture source on the inner metallic snrface of a concentrically layered structure. Each layer is homogeneous and characterized by arbitrary permittivity, conductivity and magnetic permeability. The structure itself is assumed to be of infinite length so Maxwell's equations yield separable solutions. An explicit result is given for the electric current density on the inner metallic cylindrical surface which could model the mandrel in a borehole logging tool.

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