Abstracts

Surface Wave Modes of Printed Circuits on Ferrite Substrates

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Surface waves due to a current source on a grounded ferrite slab are investigated. Electromagnetic fields of the structure are in terms of a continuous plane wave spectrum. The spectrum of each field component is obtained numerically through the exponential-matrix method. The surface waves of the structure are extracted from the continuous spectrum by using the residue theorem and the method of steepest descent. Two types of surface waves are found and their properties are described. The surface wave modes found include dynamic surface wave modes which are closely related to the surface waves of a grounded dielectric slab, and magneto-static surface wave modes which are related to the solution of Laplace's equation for the magnetic potential.

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