Abstracts

Spectral-Domain Analysis of Radiating Cylindrical Dielectric Resonator for Wireless Communications

T. Wang, H. An, K. Wu, J.-J. Laurin and R.G. Bosisio. "Spectral-Domain Analysis of Radiating Cylindrical Dielectric Resonator for Wireless Communications." 1995 Transactions on Microwave Theory and Techniques 43.12 (Dec. 1995, Part II [T-MTT] (1995 Symposium Issue)): 2958-2963.

A novel class of leaky-mode cylindrical dielectric resonators including mounting holder and radial-step has been recently proposed as a feed structure for omnidirectional antennas that are suitable for wireless communication systems. In this work, a spectral-domain modeling is developed and used for analysis of these composite cylindrical dielectric resonators considering single and double radiating slots. The dielectric resonators are bounded between two parallel conducting plates so that leaky-wave propagation takes place under some electrical and geometricrd conditions. Results and discussion are focused on the properties of low-order leaky TM-modes. Influences of various structural parameters on resonant frequency and quality factor of leaky dielectric resonators are presented in detail, A set of experiments are made to verify the proposed theoretical approach.

❑ Return to main document.