Abstracts

On a Class of Electromagnetic Wave Functions for Propagation Along the Circular Gyrotropic Waveguide

K.P. Ivanov and G.N. Georgiev. "On a Class of Electromagnetic Wave Functions for Propagation Along the Circular Gyrotropic Waveguide." 1986 Transactions on Microwave Theory and Techniques 34.8 (Aug. 1986 [T-MTT]): 853-862.

The properties of confluent hypergeometric functions as exact electromagnetic wave functions for propagation in a circular waveguide containing azimuthally magnetized remanent ferrite are investigated. Two different forms of solutions of the propagation problem for angular symmetric transverse electric modes are constructed-one in terms of Kummer and Tricomi confluent hypergeometric functions of complex parameter and variable and a second in terms of Whittaker functions. An evaluation of this class of wave functions is performed to sufficient extent, followed by tabulation of their imaginary zeros, providing computation of eigenvalue spectrum and phase characteristics of the gyrotropic guide.

❑ Return to main document.