Abstracts

Higher-Order Cylindrical Surface-Wave Modes

J.Y. Savard. "Higher-Order Cylindrical Surface-Wave Modes." 1967 Transactions on Microwave Theory and Techniques 15.3 (Mar. 1967 [T-MTT]): 151-155.

A general theory of the propagation of higher-order modes on cylindrical surface-wave structures is examined and applied to the dielectric-clad rod. A theory is developed in which the boundary conditions at the guide are specified by an impedance dyadic. The characteristic equation for the structure is then obtained in terms of the elements of the dyadic. The equation is solved and yields a set of conditions which are satisfied by the values of the dyadic elements at the cutoff points for each of the higher-order modes. A mode without a cutoff frequency is shown to exist on the structure used. The relationship between the guide wavelength and frequency has been verified experimentally.

❑ Return to main document.