Abstracts

Cerenkov Radiation in Anisotropic Ferrites

F.J. Rosenbaum and P.D. Coleman. "Cerenkov Radiation in Anisotropic Ferrites." 1963 Transactions on Microwave Theory and Techniques 11.5 (Sep. 1963 [T-MTT]): 302-311.

A numerical analysis and an experimental study of Cerenkov radiation from an anisotropic ferrite are reported in this paper. Extensive curves of the interaction resistance Rlambda, measured per unit wavelength of interaction distance, are presented as functions of the several ferrite and geometric parameters. Values in excess of 10^3 ohms per wavelength of interaction distance are noted. The conditions for Cerenkov radiation in the ferrite are derived from consideration of plane-wave propagation through the ferrite. X-band output powers of approximately one watt were observed using a 0.88 Mev bunched electron-beam with a peak current of 18 ma.

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