

Abstracts

Launching Efficiency of Wires and Slots for a Dielectric Rod Waveguide

R.H. DuHamel and J.W. Duncan. "Launching Efficiency of Wires and Slots for a Dielectric Rod Waveguide." 1958 Transactions on Microwave Theory and Techniques 6.3 (Jul. 1958 [T-MTT]): 277-284.

This paper describes an experimental investigation of surface wave launching efficiency. Wires, rings, and slots are considered as excitors of the HE₁₁ mode on a dielectric rod image line. A formula is derived which relates the efficiency of a launcher to its impedance as a scatterer on the surface waveguide. Efficiency is obtained by using this formula and also by applying Deschamps' method for determining the scattering matrix coefficients of a port junction. Graphs are presented which illustrate the variation of efficiency with the dimensions of the launchers and with the parameter λ_g/λ , the ratio of the guide wavelength to the free space wavelength.

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