Theoretical Mode Conversion in Overmoded Nonlinear Coaxial Waveguide Tapers

Solymar's approach to solving the generalized Telegraphist's equations is extended to include overmoded coaxial systems. Transitions in both the inner and outer radii are considered. All possible mode coupling combinations are evaluated, and computer simulations are found to agree closely with the results from a scattering matrix code. Performance characteristics of a coaxial-to-circular waveguide adaptor are presented.

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