Abstracts

A More Accurate Analysis and Design of Coaxial-to-Rectangular Waveguide End Launcher

S.M. Saad. "A More Accurate Analysis and Design of Coaxial-to-Rectangular Waveguide End Launcher." 1990 Transactions on Microwave Theory and Techniques 38.2 (Feb. 1990 [T-MTT]): 129-134.

A new, more accurate electromagnetic model is developed for the analysis of the coaxial-to-rectangular waveguide transition of the end-launcher type. As an alternative to the well-known modeling via a coupling loop, the new model describes the coupling mechanism in terms of an excitation probe which is fed by a transmission line intermediate section. The two models have a few analytical steps in common, but expressions of the probe model are easier to derive, compute. The two models are presented together with numerical examples, experimental verification. The superiority of the probe model is illustrated, and a design method yielding a maximum VSWR of 1.035 over 13 percent bandwidth is outlined.

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