Abstracts

Analysis and design of an inhomogeneous transformer with hard wall waveguide sections

M. Ozkar and A. Mortazawi. "Analysis and design of an inhomogeneous transformer with hard wall waveguide sections." 2000 Microwave and Guided Wave Letters 10.2 (Feb. 2000 [MGWL]): 55-57.

A new inhomogeneous waveguide transformer with hard walls is presented. Mode matching technique along with an optimization routine is used to design the transformer. The generalized scattering matrix (GSM) of the whole block is calculated which can be used to predict the fields at the output given the incident excitations. An example of a three-section transformer, which replaces a tapered hard horn, is shown. The transformer has better performance in the bandwidth of interest compared to the tapered hard horn having twice the length of the transformer. This type of transformer could be useful for excitation of quasi-optical amplifiers and reflector feeds.

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