Abstracts

Automated design of a novel dual mode coupler for compact dual polarization beam forming networks

F. Alessandri, R. Sorrentino, M. Schioccola and L. Vanni. "Automated design of a novel dual mode coupler for compact dual polarization beam forming networks." 1998 MTT-S International Microwave Symposium Digest 98.1 (1998 Vol. I [MWSYM]): 241-244.

A new dual mode coupler has been recently proposed. This component functions as two independent directional couplers for the TE/sub 10/ and the TE/sub 01/ modes of a rectangular waveguide. The component is very attractive for the realization of compact dual polarization beam forming networks for satellite applications. In order to provide an effective tool for the design of such a device an equivalent circuit and synthesis formulas are presented here. The equivalent circuit has been used to obtain a program for the automatic design of the structure. A number of different designs of the component showing the good performance of this novel component are presented in this paper.

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