

Abstracts

Reciprocity Relations in Waveguide Junctions

D.F. Williams and R.B. Marks. "Reciprocity Relations in Waveguide Junctions." 1993 Transactions on Microwave Theory and Techniques 41.6 (Jun./Jul. 1993 [T-MTT]): 1105-1110.

The Lorentz reciprocity condition is applied to junctions composed of reciprocal media which connect uniform but otherwise arbitrary waveguides. An expression relating the forward and reverse transmission coefficients is derived and factored into two terms: the first involving the phase of the reference impedance in the guide, and the second a new reciprocity factor. The usual condition equating the forward and reverse transmission coefficients is shown not to hold in the general case. Experimental evidence supporting the theoretical results is presented.

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