Abstracts

Frequency Response of Quarter-Wave Coupled Reciprocal Stripline Junctions

J. Helszajn. "Frequency Response of Quarter-Wave Coupled Reciprocal Stripline Junctions." 1973 Transactions on Microwave Theory and Techniques 21.8 (Aug. 1973 [T-MTT]): 533-537.

The frequency response of quarter-wave coupled reciprocal 3-port symmetrical junctions for which the reference eigennetwork appears as a short circuit at the reference terminals is presented. The equivalent circuit of such reciprocal junctions is constructed in terms of the reciprocal parts of the split admittance eigenvalues of the ideal 3-port circulator. Since the two circuits are related, the element values selected for the matching networks are the ones which apply to an ideal circulator with an overall Chebyshev response. This is done for n = 1, 2, and 3. An important conclusion of this paper is that the design of wideband circulators is closely related to the design of wideband reciprocal 3-port junctions. The paper includes experimental results obtained on a stripline device in its magnetized and demagnetized states.

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