Abstracts

A Flow Graph Analysis of 3- and 4-Port Junction Circulators

S. Hagelin. "A Flow Graph Analysis of 3- and 4-Port Junction Circulators." 1966 Transactions on Microwave Theory and Techniques 14.5 (May 1966 [T-MTT]): 243-249.

A simple theoretical model of a lossless nonideal junction circulator is described. The model consists of a matched lossless n-port junction with a lossless two-port connected to each arm. The basic thought behind it is to separate the reflecting properties of the circulator from the other ones. For the case n=3, unsymmetrical as well as symmetrical junctions are treated. For a symmetrical three-port, the justification of the model has also been experimentally verified. In the case n=4, a symmetrical junction is treated. Flow graphs are used for visualizing the scattering matrices of combined networks and for calculating the coefficients of them.

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