Abstracts

Synthesis of Octave-Band Quarter-Wave Coupled Semi-Tracking Stripline Junction Circulators

J. Helszajn. "Synthesis of Octave-Band Quarter-Wave Coupled Semi-Tracking Stripline Junction Circulators." 1995 Transactions on Microwave Theory and Techniques 43.3 (Mar. 1995 [T-MTT]): 573-581.

The complex gyrator circuit of stripline circulators using tracking junctions which satisfy the physical and magnetic variables of the Wu and Rosenbaum boundary conditions, is a nearly frequency independent octave-band resistive network. Such a junction may exhibit two minimas in its reflection coefficient when matched by a two section impedance transformer. However, a third minima may be realised by utilizing a complex rather than a real gyrator circuit. This paper summarises this class of semi-tracking solution in a simple way as a preamble to the design of a degree-3 quarter wave coupled circulator. The overall frequency behaviour of this class of junction has been separately evaluated by combining the electromagnetic and network problems (in conjunction with a two step impedance matching network).

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