Abstracts

Synthesis of Quarter-Wave Coupled Junction Circulators with Degrees 1 and 2 Complex Gyrator Circuits

J. Helszajn. "Synthesis of Quarter-Wave Coupled Junction Circulators with Degrees 1 and 2 Complex Gyrator Circuits." 1985 Transactions on Microwave Theory and Techniques 33.5 (May 1985 [T-MTT]): 382-390.

The complex gyrator immittance of circulators for which the in-phase eigennetwork is commensurate with those of the degenerate counter-rotating ones, and which may be idealized by a frequency-independent open- or short-circuited boundary condition, may be realized as a 1-port STUB-resistor network of degree 1. If the frequency variation of this eigennetwork cannot be neglected compared to those of the other two, the gyrator circuit is of degree 2. There are altogether eight possible complex gyrator circuits, each of which explicitly exhibits the eigennetworks of the device. A knowledge of that, applicable in any given situation, is mandatory for design.

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