Abstracts

A Proposed Lumped-Element Switching Circulator Principle

R.H. Knerr. "A Proposed Lumped-Element Switching Circulator Principle." 1972 Transactions on Microwave Theory and Techniques 20.6 (Jun. 1972 [T-MTT]): 396-401.

Two different analytical methods, the complex conjugate input admittance approach and the eigenvalue analysis, show the possibility of building a fast switching lumped-element circulator. In conventional switching circulators, switching is achieved by changing the required magnetic biasing field. The proposed principle, which is valid for circulators of all types, is especially interesting for lumped-element circulators where the switching may be accomplished by simply changing two capacitor values. The capacitors could be switched by varying voltages on semiconductors thus permitting very fast switching. The analysis has been experimentally verified. No attempt to obtain optimization of a specific design was made.

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