Abstracts

A Full Wave Analysis of a Conductor Post Insert Reentrant Coaxial Resonator in Rectangular Waveguide Combline Filters

K.-L. Wu, R.R. Mansour and H. Wang. "A Full Wave Analysis of a Conductor Post Insert Reentrant Coaxial Resonator in Rectangular Waveguide Combline Filters." 1996 MTT-S International Microwave Symposium Digest 96.3 (1996 Vol. III [MWSYM]): 1639-1642.

Due to its wide tunability region in performance and compactness in size, a conductor post insert reentrant coaxial resonators are widely used in combline filters for mobile communications. This paper, for the first time, presents a full wave electromagnetic model for the reentrant coaxial resonator in rectangular waveguide combline filters. The model is based on the orthogonal expansion method and provides a formally exact modal solution to the problem. The model has been extensively verified by experiments and can be used in calculating resonant frequency, coupling values, or in constructing a key building block in full electromagnetic design of waveguide combline filters.

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