Abstracts

Multiplexing and Double Band Filtering with Common-Multimode Cavities

U. Rosenberg. "Multiplexing and Double Band Filtering with Common-Multimode Cavities." 1990 Transactions on Microwave Theory and Techniques 38.12 (Dec. 1990 [T-MTT] (1990 Symposium Issue)): 1862-1871.

A new multiplexing and "double band filtering" (DBF) method is established. DBF refers to two-port equipment which serves two transmit frequency channels simultaneously. The new methods build on frequency-independent resonance modes, excited within a common multimode cavity (CMC), which are assigned to different channel filters. The design principles are presented for cylindrical CMC's by way of example. It is shown that combining CMC's with advanced coupling methods produces a multitude of new design variants. Initial experimental results are presented for a diplexer and DBF equipment that are both realized with only two "double-dual" TE/sub 112/ /TM/sub 110/ CMC's and a novel iris-providing four intercavity couplings--to perform two four-pole elliptic function filter responses.

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