

Optimization of waveguide diplexers using shadow specifications

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This paper uses a new optimization technique for determining the frequency response of waveguide diplexers. The proposed technique is considerably more advantageous than the conventional waveguide filter optimization techniques. The technique uses only six variables in the penalty function irrespective of the orders of the two channel filters. This drastically reduces the chances of convergence to a local minimum as well as the computer storage and processing requirements. Two examples are presented to support the validity of this new technique. This technique will be extremely valuable in designing waveguide multiplexers.

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