Abstracts

A compact, planar, eight-port waveguide power divider/combiner: the cross potent superhybrid

C.D. Nantista and S.G. Tantawi. "A compact, planar, eight-port waveguide power divider/combiner: the cross potent superhybrid." 2000 Microwave and Guided Wave Letters 10.12 (Dec. 2000 [MGWL]): 520-522.

We present a novel four-way divider/combiner in rectangular waveguide. The design is completely two-dimensional (2-D) in the h-plane, with eight-fold mirror symmetry, and is based on a recent four-port hybrid design. In combining mode, it can function as a phased array with four inputs and four outputs. The planar nature of this design provides advantages, such as the freedom to increase the waveguide height beyond the over-moding limit in order to reduce field strengths. Along with its open geometry, this makes it ideal for high-power applications where RF breakdown is a concern. Design criteria, field-solver simulation results, and prototype measurements are presented.

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