Abstracts

Full-wave optimum design of millimeter-wave rectangular waveguide narrow-wall branch couplers

Tao Shen, Yu Rong and K.A. Zaki. "Full-wave optimum design of millimeter-wave rectangular waveguide narrow-wall branch couplers." 1999 MTT-S International Microwave Symposium Digest 99.4 (1999 Vol. IV [MWSYM]): 1729-1732 vol.4.

A full-wave optimum design of rectangular waveguide narrow-wall branch couplers is presented. The coupler is decomposed into the cascade connection of three types of building blocks whose generalized scattering matrices are obtained by mode-matching method. The overall generalized scattering matrix is obtained by cascading procedure. The optimization procedure is employed for coupler design. A WR28-band 6-dB coupler is designed, machined, and tested. Measured results agree well with computed results.

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