

Abstracts

A Directional Coupler with Very Flat Coupling

G.P. Riblet. "A Directional Coupler with Very Flat Coupling." 1978 *Transactions on Microwave Theory and Techniques* 26.2 (Feb. 1978 [T-MTT]): 70-74.

A reciprocal 4-port device is a directional coupler if any input port is matched and the device possesses either 180° rotational symmetry about two perpendicular axes, or 180° rotational symmetry about an axis combined with reflection symmetry in a plane either containing or perpendicular to the axis. In this paper an expression is derived for the equivalent admittance of such a device considered as a directional coupler. This expression is used to determine the equivalent admittance of the simplest symmetrical 2 branch coupler. Furthermore, it is shown that the coupling must be the same for all frequencies for which this junction is matched by identical 2-port matching networks connected at each port. These facts were used to build a 90° hybrid in stripline with maximum power division unbalance of 0.05 dB over the 3.7- to 4.2-GHz band.

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