Abstracts

A wide-band multiport planar power-divider design using matched sectorial components in radial arrangement

Yung-Jinn Chen and Ruey-Beei Wu. "A wide-band multiport planar power-divider design using matched sectorial components in radial arrangement." 1998 Transactions on Microwave Theory and Techniques 46.8 (Aug. 1998 [T-MTT]): 1072-1078.

This paper proposes a new multiport planar power-divider design by radially combining the sectorial components and the input and output matching networks. This design can achieve good input match over a wide bandwidth without resorting to transformer sections of high-impedance lines, which are difficult to realize. This approach is applied to the design of 4-and 14-way center-fed power dividers in microstrip structures with good input match (voltage standing-wave ratio (VSWR) <1.5) over a bandwidth of 30% and 15%, respectively. The return loss of output ports and the isolation among them in the 14-way divider are less than -13 dB. A simple analysis method using the radial transmission-line theory to model the microstrip sectorial components is employed to characterize the power dividers. The calculated scattering parameters are found to be in good agreement with the measured data.

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