

Abstracts

A Simple Method for Spacing the Adjacent Passbands of a Coupled-Line Filter

G. Saulich. "A Simple Method for Spacing the Adjacent Passbands of a Coupled-Line Filter." 1980 Transactions on Microwave Theory and Techniques 28.4 (Apr. 1980 [T-MTT]): 359-362.

A bandpass filter using two coupled transmission lines is considered. Two ports of the coupled-line four port are both short-circuited (or open-circuited); the other two ports are terminated in the characteristic impedances of the lines (e.g., 50 Ω). For a constant coupling along the coupling section the attenuation poles are fixed at $l/\lambda = n/2$ ($n = 0, 1, 2, \dots$). If, however, the coupling changes along the coupling section in three steps with the coupling factors $k_{1/2}$, $k_{2/3} = k_{1/2}$, the stopband between two adjacent passbands can be extended for certain values of $k_{1/2}$ and $k_{2/3}$. A simple calculation method for the coupling factors $k_{1/2}$ and $k_{2/3}$ is described. A practical design example shows good agreement with theoretical results.

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