# Abstracts

## An effective method for designing nonuniformly coupled transmission-line filters

*Gaobiao Xiao, K. Yashiro, Ning Guan and S. Ohkawa. "An effective method for designing nonuniformly coupled transmission-line filters." 2001 Transactions on Microwave Theory and Techniques 49.6 (Jun. 2001, Part I [T-MTT]): 1027-1031.*

An effective method is presented in this paper to design nonuniformly coupled transmission-line filters. This kind of filter can be used to realize almost an arbitrary filter characteristics as nonuniform transmission-line filters do. They can be cascaded directly, and no directional coupler is needed. This method begins with calculating characteristic impedance of a nonuniform transmission line by those techniques already established for designing nonuniform transmission-line filters, then determining the even- and odd-mode impedances of a nonuniformly coupled transmission line by a simple transformation. A first-order solution to the related nonlinear equations is especially proposed to calculate effective dielectric constants and line dimensions from the obtained characteristic impedances simultaneously. A device was built and tested, and the measured results verify that the proposed method is of practical use.

❑ Return to main document.