Abstracts

Log-Periodic Transmission Line Circuits--Part I: One-Port Circuits

R.H. DuHamel and M.E. Armstrong. "Log-Periodic Transmission Line Circuits--Part I: One-Port Circuits." 1966 Transactions on Microwave Theory and Techniques 14.6 (Jun. 1966 [T-MTT]): 264-274.

A theoretical study of one-port log-periodic circuits consisting of a transmission line shunt loaded with open-circuit transmisson lines is reported. The objective was to determine the conditions under which the phase of the input reflection coefficient varies linearly with the logarithm of the frequency. Precise definitions and general analytical techniques for log-periodic circuits are given. Results of extensive numerical calculations are presented to illustrate the dependence of the input reflection coefficient on the various design parameters. It was found that phase deviations from linear on the order of one degree are quite easily achieved.

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