

# Abstracts

## Stepped Transformers for Partially Filled Transmission Lines

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*D.J. Sullivan and D.A. Parkes. "Stepped Transformers for Partially Filled Transmission Lines." 1960 Transactions on Microwave Theory and Techniques 8.2 (Mar. 1960 [T-MTT]): 212-217.*

In recent years, partially-filled transmission lines have been used to improve the characteristics of various ferrite and garnet devices. This paper presents a generalized outline for determining the approximate effective guide wavelength and characteristic impedance of two types of (dielectric-loaded) partially-filled transmission line. The results are used to determine the geometries required for the design of optimum stepped transmission line transformers. The stepped transitions are designed to yield a Tchebycheff-type response for any given bandwidth. The measured results for stepped transitions in partially filled coaxial line and partially filled double-ridge waveguide are presented. The data are found to approximate the theory closely.

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