

Abstracts

Short-Step Chebyshev Impedance Transformers

G.L. Matthaei. "Short-Step Chebyshev Impedance Transformers." 1966 Transactions on Microwave Theory and Techniques 14.8 (Aug. 1966 [T-MTT]): 372-383.

Impedance transforming networks are described which consist of short lengths of relatively high impedance transmission line alternating with short lengths of relatively low impedance line. The sections of transmission line are all exactly the same length (except for corrections for fringing capacitances), and the lengths of the line sections are typically short compared to a quarter wavelength throughout the operating band of the transformer. Tables of designs are presented which give exactly Chebyshev transmission characteristics between resistive terminations having ratios ranging from 1.5 to 10, and for fractional bandwidths ranging from 0.10 to 1.20. These impedance-transforming networks should have application where very compact transmission-line or dielectric-layer impedance transformers are desired.

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