Abstracts

Design of Impedance Transformers by the Method of Least Squares

H. Oraizi. "Design of Impedance Transformers by the Method of Least Squares." 1996 Transactions on Microwave Theory and Techniques 44.3 (Mar. 1996 [T-MTT]): 389-399.

The method of least squares is applied to the theory of small reflections of transmission lines to develop numerical algorithms for the design of stepline and tapered line impedance transformers to match two impedances over a frequency band. The transformer characteristic impedance function is expanded by polynomials, pulse functions, approximate operators, and piecewise linear functions to construct an error function for the input reflection coefficient which, after minimization, gives the line impedance and length. The computer programs could be used to design a transformer under the specified conditions and then to optimize the design under the constraints of a problem.

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