Abstracts

Inhomogeneous Quarter-Wave Transformers of Two Sections

An inhomogeneous transformer is defined as one in which the guide wavelength is a function of position; for a homogeneous transformer, the guide wavelength is independent of position. A previous paper has dealt with inhomogeneous transformers of one section; the existence of an optimum design (which is never homogeneous) was demonstrated. The mathematical tools for inhomogeneous transformers of two or more sections have been presented in another paper. Our purpose here is to apply these results to the solution of the two-section inhomogeneous transformer. The maximally flat ideal transformer was solved exactly and the design equations verified by subsequent numerical analysis. An approximate procedure to improve the performance over a finite bandwidth (similar to the Tchebycheff response of homogeneous transformers) is also explained.

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