# Abstracts

## Optimum Quarter-Wave Transformers

*L. Young. "Optimum Quarter-Wave Transformers." 1960 Transactions on Microwave Theory and Techniques 8.5 (Sep. 1960 [T-MTT]): 478-482.*

The design of uniformly dispersive quarter-wave transformers is a well explored subject. Common examples are rectangular waveguide E-plane transformers, in which the a dimension is kept constant. In this paper, it is shown that the performance of conventional quarter-wave transformers of a single section can always be improved by making the middle section less dispersive than the input and output waveguides, and a formula for the optimum a dimension is given. The theory was verified experimentally. In this instance, the improved transformer measured 50 per cent more bandwidth than did the conventional one, and was 25 per cent shorter besides.

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