

# Abstracts

## Theoretically Zero-Loss Design of Planar Dielectric Waveguide Y-Branch: Amazing Effect of Surpentine-Shaped Taper

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*H. Shigesawa, M. Tsuji and O. Tanaka. "Theoretically Zero-Loss Design of Planar Dielectric Waveguide Y-Branch: Amazing Effect of Surpentine-Shaped Taper." 1989 MTT-S International Microwave Symposium Digest 89.2 (1989 Vol. II [MWSYM]): 795-798.*

A new methodology is proposed for designing planar dielectric-waveguide Y-branch with theoretical zero-loss due to radiation, which designs its taper section so as to control intentionally the intensive power conversion and reconversion between the surface-wave mode and the radiation wave, thereby transforming the input surface-wave mode only into the desired surface-wave mode on the output waveguide, while suppressing the undesired reflection at the input end. The effectiveness of our idea is confirmed by comparing numerical results with those of usual type of Y-branches and also with some measurements that we took.

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