

On the Theory of Transparent Antennas

N. Yudis, D. Kanyas, A. Gamliel, M. Adgo, M. Haridim

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Abstract

Theoretical analysis of the current distribution along thin film transparent antennas is presented and analyzed. It is shown that as the conductivity of the radiating element decreases the current distribution along the antenna shifts from cosinusoidal distribution to exponential decay.

The critical conductivity at which the current distribution law changes is determined for different values of the antenna's width and thickness. The theoretical results are validated by numerical simulations.