Abstracts

Nonradiating sources in time-domain transmission-line theory

A. Sihvola, G. Kristensson and I.V. Lindell. "Nonradiating sources in time-domain transmission-line theory." 1997 Transactions on Microwave Theory and Techniques 45.12 (Dec. 1997, Part I [T-MTT]): 2155-2159.

The concept of nonradiating (NR) sources is introduced to transmission lines in the time-domain analysis. A method is presented to construct localized voltage and current sources which do not produce any fields outside the source domain. These sources cannot, therefore, be detected by measurements made outside the source region. The importance of such sources for the uniqueness of the inverse-source problem is pointed out, and energy conditions for the uniqueness are discussed. The analysis can be advantageously used in the design and optimization of the electromagnetic compatibility (EMC) properties of transmission lines.

❑ Return to main document.