Abstracts

Elimination of Ringing Signals for a Lossless, Multiple-Section Transmission Line

C.-W. Hsue. "Elimination of Ringing Signals for a Lossless, Multiple-Section Transmission Line." 1989 Transactions on Microwave Theory and Techniques 37.8 (Aug. 1989 [T-MTT]): 1178-1182.

Transient processes are examined for a lossless, multiple-section transmission line terminated with resistive load. The signal components of the transmitted wave at the load end are examined in detail. The ringing effect is primarily due to two factors (1) the voltage difference between the first arriving wave and the quasi-steady voltage and (2) the voltage signals generated by internal reflection-transmission processes. By properly choosing the values of the characteristic impedances of the signal line, we find that a multiple-section line in which the sections are of equal length can provide high-quality signals to the load. Several examples are given to illustrate this new methodology.

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