Abstracts

Time Domain Characterization of Lossy Arbitrary Characteristic Impedance Transmission Lines

P. Ferrari, B. Flechet and G. Angenieux. "Time Domain Characterization of Lossy Arbitrary Characteristic Impedance Transmission Lines." 1994 Microwave and Guided Wave Letters 4.6 (Jun. 1994 [MGWL]): 177-179.

This paper deals with the characterization of lossy transmission lines. The method developed here delivers the complex propagation constant gamma of any arbitrary length and characteristic impedance transmission line, embedded in an arbitrary environment. This approach is based upon time domain analysis of short pulse propagation. Measurements are done with a commercial digital sampling oscilloscope. Only two transmission lines of different lengths are required in order to extract gamma and to correct systematic errors of the measurement system. The problem of random errors is also addressed. The method is demonstrated with microstrip lines. A comparison of the developed technique with an other existing time domain approach and a classical frequency domain extraction is also carried out.

❑ Return to main document.