Abstracts

Propagation Characteristics of Picosecond Electrical Pulses on a Periodically Loaded Coplanar Waveguide

C. Shu, X. Wu, E.S. Yang, X.-C. Zhang and D.H. Auston. "Propagation Characteristics of Picosecond Electrical Pulses on a Periodically Loaded Coplanar Waveguide." 1991 Transactions on Microwave Theory and Techniques 39.6 (Jun. 1991 [T-MTT]): 930-936.

We have developed a theoretical model to investigate the propagation charcteristics of picosecond electrical pulses on a coplanar waveguide capacitively coupled to periodically spaced sampling channels. Various factors which affect the signal waveform were analyzed in both the frequency and the time domain. The results showed that in addition to modal dispersion, conductor loss, and radiation loss of the electrical signals, multiple reflections among the sampling gaps constitute another feature of the signal transfer along the waveguide. We have measured the picosecond pulse dispersion using the optoelectronic correlation technique. The experimental data were compared with the theoretical results.

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