Abstracts

DIPNET: A General Distributed Parameter Network Analysis Program

W.N. Parker. "DIPNET: A General Distributed Parameter Network Analysis Program." 1969 Transactions on Microwave Theory and Techniques 17.8 (Aug. 1969 [T-MTT] (Special Issue on Computer-Oriented Microwave Practices)): 495-505.

The DIPNETcomputer program makes practical the simple and rapid solution of elaborate microwave networks on a time-sharing computer. Given a file of input data describing a DIstributed Parameter NET-work of electrical sections, the program finds the complex voltage and current phasors along the network over a prescribed range of frequencies. Sections may consist of a variety of transmission lines, lumped constants, sources, and active devices. Network configurations may include chains, side stubs, and two-path sections. The network size is practically unlimited, and may easily comprise hundreds of sections. Output data at selected points along the network may include phasors, their absolute magnitude and phase shift, and power flow. Normalization to designated phasors is provided for by the program. The output data may also include input resistance, reactance, impedance, and the admittance counterparts. Repeated sequences may be handled automatically. Network parameters may also be modified automatically, both those which depend on frequency and frequency-independent parameters.

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