Abstracts

Time-Domain Measurements with the Hewlett-Packard Network Analyzer HP 8510 Using the Matrix Pencil Method

Z.A. Maricevic, T.K. Sarkar, Y. Hua and A.R. Djordjevic. "Time-Domain Measurements with the Hewlett-Packard Network Analyzer HP 8510 Using the Matrix Pencil Method." 1991 Transactions on Microwave Theory and Techniques 39.3 (Mar. 1991 [T-MTT]): 538-547.

The HP 8510 time-domain network measurements are frequency-domain measurements transformed to the time domain using the inverse Fourier transform, the objective being to discriminate various scattering centers. This computational technique benefits from the wide dynamic range and the error correction of the frequency-domain data, but requires a frequency-domain response measured over a wide frequency range to give useful resolution in the time domain. The generalized pencil of function (GPOF) method, also known as the matrix pencil method, provides for much higher resolution than the Fourier techniques. A comparison of the two methods is given for the example of the Beatty standard.

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