Abstracts

The Noise-Tee--A Lightwave Device for Microwave Noise Measurements (Short Papers)

R.F.M. van den Brink. "The Noise-Tee--A Lightwave Device for Microwave Noise Measurements (Short Papers)." 1996 Transactions on Microwave Theory and Techniques 44.3 (Mar. 1996 [T-MTT]): 490-492.

An innovative lightwave method is proposed to insert noise in electronic circuits in favor of microwave noise measurements. The proposed noise-tee has attractive additional features compared to the use of 50 Omega noise sources: 1) The inserted noise level and noise bandwidth is continuously variable over a wide dynamic range; 2) The wideband scaling accuracy of this level, relative to a pre-calibrated level, equals the accuracy of simple dc-current measurements; 3) Level-induced impedance variations are negligible, compared to the 20% impedance variation of a commonly used microwave noise source; and 4) Noise-tees enable the realization of 100% reflective noise sources, in favor of two-port noise-parameter measurements.

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