Abstracts

Accurate and Automatic Noise Figure Measurements with Standard Equipment

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Noise figure measures the amount of noise a receiver or a component adds to a system. Minimizing such noise, because it obscures low-level signals, is an important concern in most of today's microwave systems. Noise figure measurements are necessary at the device level, the component level and the system level. They are necessary during design, manufacture and maintenance. Yet noise measurements have been fraught with non-repeatability. If, for example, a vendor and his customer are to independently measure noise figure so they agree within 0.2 dB, they each must usually use a specially calibrated noise source and tediously and manually remove several insidious effects that must otherwise be accepted as measurement errors. Even then, they often go through a time-consuming and expensive period of exchanging components and measurement equipment to achieve repeatability from system to system.

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