Abstracts

Accurate Measurement of Signals Close to the Noise Floor on a Spectrum Analyzer (Short Papers)

A.A. Moulthrop and M.S. Muha. "Accurate Measurement of Signals Close to the Noise Floor on a Spectrum Analyzer (Short Papers)." 1991 Transactions on Microwave Theory and Techniques 39.11 (Nov. 1991 [T-MTT]): 1882-1885.

Because most spectrum analyzers are calibrated to read the true power of a sinusoidal signal, a correction factor is necessary to read the true power of a nonsinusoidal signal, such as noise. Consequently, when noise and a sine wave are both present, a correction factor that is a function of the signal-to-noise ratio is necessary to find the true signal power. For some spectrum analyzers the correction factor for pure noise is incorporated into the software, but the correction factor for signal plus noise is generally ignored. This article derives this correction factor, which is significant where the signal-to-noise ratio is near unity.

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