Abstracts

On Noise in Distributed Amplifiers at Microwave Frequencies

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Formulas for the noise figure, and the minimum noise figure of a multi-link distributed amplifier have been developed. In addition, a relatively simple approximation formula has been devised that predicts the minimum noise figure of a practical amplifier design with good accuracy up to frequencies of 9 GHz. Finally, after the dependence of the noise characteristics on the circuit parameters is discussed, the noise figures of a 2--18-GHz three-link module are computed and compared with those measured on an actual amplifier. The measured data across the 2--18-GHz band compare favorably with the computed results. Measurements and theory agree that only small improvements in noise figure may he achieved, when noise matching the module's input impedance.

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