Abstracts

Noise Considerations in Broad-Band Traveling-Wave Masers

J.A. De Gruyl, S. Okwit and J.G. Smith. "Noise Considerations in Broad-Band Traveling-Wave Masers." 1968 Transactions on Microwave Theory and Techniques 16.9 (Sep. 1968 [T-MTT] (Special Issue on Noise)): 586-595.

This paper examines in detail the noise performance of broad-band masers. A brief description is given on the longitudinal and transverse-staggering techniques of broad-banding. A review of the noise equations for a homogeneous maser is presented and a base for the development of a more general theory which takes into account bandwidth, passive loss, physical temperature, etc., for broad-band masers is given. Equations are developed and graphs presented which allow the evaluation of noise performance as a function of bandwidth. Comparisons of the two staggering techniques are given. Some experimental results are compared to theory and a critical analysis of the measurement technique for broad-band masers is included.

❑ Return to main document.