Abstracts

Analysis of the Oscillation Conditions in Distributed Amplifiers (Short Papers)

P. Gamand. "Analysis of the Oscillation Conditions in Distributed Amplifiers (Short Papers)." 1989 Transactions on Microwave Theory and Techniques 37.3 (Mar. 1989 [T-MTT]): 637-640.

It has been shown that under certain conditions oscillation phenomena in distributed amplifiers can occur. It has also been demonstrated, using a simplified transistor model and a symmetrical amplifier with lumped circuit elements, that the oscillation depends directly on the transconductance g/sub m/ of the active devices. The origin of this oscillation was found to be the "loop" formed in the distributed amplifier structure. The analysis has been experimentally verified in a practical 1-20 GHz monolithic MESFET amplifier. Finally, design guidelines have been established in order to avoid stability problems and to improve the capabilities of high-gain distributed amplifiers.

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