Abstracts

The Stabilization of Mixer Diode Performance Against L.O. Power Changes with Optimum DC Bias

J.W. Carr. "The Stabilization of Mixer Diode Performance Against L.O. Power Changes with Optimum DC Bias." 1963 Transactions on Microwave Theory and Techniques 11.2 (Mar. 1963 [T-MTT]): 123-129.

The advantages of using a particular dc forward bias in maintaining receiver sensitivity for fairly large reductions in local oscillator power are experimentally verified. Definite improvement of performance is obtained over broad band operation where L.O. power level may vary considerably. For each of the mixer diodes investigated there is a particular optimum bias for each diode type where both the input signal level and local oscillator RF impedances as well as the IF impedance are practically stationary with respect to very large changes in local oscillator power level. At optimum bias, signal frequency RF and IF impedances were found to vary by only about ten per cent for L.O. power reduced from 1 mw to 1 µw. This results in considerably less reduction in tangential signal sensitivity over that obtained in the unbiased or overbiased condition.

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