Abstracts

Microwave Phase Detectors for PSK Demodulators

G. Ohm and M. Alberty. "Microwave Phase Detectors for PSK Demodulators." 1981 Transactions on Microwave Theory and Techniques 29.7 (Jul. 1981 [T-MTT]): 724-731.

The simplest circuits for microwave phase detectors and their operation are described. Approximate analytical expressions for the output characteristic of the various circuits are given. Accurate prediction of detector performance is achieved with a large-signal nonlinear analysis using simultaneously the time- and frequency-domain approach. Applying the theory developed, the effects which cause deformation of the detector characteristic are investigated. Results of practical circuits operating in the 14-GHz range are given and compared with regard to phase-demodulator applications. A low-level phase detector is presented which permits 20-dB level variation with less than 2° phase error.

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