Abstracts

Wide-Locking Bandwidth Optically Injection-Locked Oscillators: S-Parameter Design and Modulation Effects

D. Sommer and N.J. Gomes. "Wide-Locking Bandwidth Optically Injection-Locked Oscillators: S-Parameter Design and Modulation Effects." 1995 Transactions on Microwave Theory and Techniques 43.7 (Jul. 1995, Part I [T-MTT]): 1424-1432.

An S-parameter design approach for optically injection-locked microwave oscillators is presented. The approach is verified through the design of a 2.1-GHz microstrip MESFET oscillator that is locked by the detected signal from an edge-coupled heterojunction phototransistor. Relative locking bandwidths (B/f/sub 0/) of over 10% have been measured. The effects of modulated locking signals on such wide locking bandwidth oscillators are also considered, and it is shown that they may be used as FM transmitters and as AM-to-PM converters.

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