Abstracts

Indirect optically injection-locked oscillator for millimeter-wave communication system

Xu Wang, N.J. Gomes, L. Gomez-Rojas, P.A. Davies and D. Wake. "Indirect optically injection-locked oscillator for millimeter-wave communication system." 2000 Transactions on Microwave Theory and Techniques 48.12 (Dec. 2000 [T-MTT] (Special Issue on 2000 International Microwave Symposium)): 2596-2603.

A millimeter-wave optically injection-locked oscillator has been designed and fabricated. It represents the first millimeter-wave hybrid transistor oscillator locked to a long-wavelength optical signal. The oscillator could be used as a photoreceiver in remote base stations in future picocellular communication systems employing fiber-optic backbones; its high "gain" (output relative to input locking signal) and relative flatness in output power may make it attractive compared to simple millimeter-wave amplifier configurations. Measurement results show the output signal exhibits little variation (less than 0.7 dB) with input optical power changes of 6 dB. A locking bandwidth of 2.6 MHz has also been achieved.

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