

# Abstracts

## A MMIC Based Injection Locked Oscillator for Optically Fed Phased Array Antennas

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*T. Berceli, A.S. Daryoush, P.R. Herczfeld, W.D. Jemison and A. Paolella. "A MMIC Based Injection Locked Oscillator for Optically Fed Phased Array Antennas." 1989 MTT-S International Microwave Symposium Digest 89.1 (1989 Vol. I [MWSYM]): 131-134.*

In an optically fed phased array antenna system, the microwave carrier signal is transmitted via a modulated lightwave to each active T/R(transmit/receive) module where it must be converted back to the microwave domain. Currently, efficient optical to microwave conversion is extremely difficult as the detected microwave signal is weak and noisy. A novel circuit, containing a high gain-low noise microwave injection locked oscillator, has been developed to improve the interface between the optical and microwave components. The circuit utilizes two FET's and a dielectric resonator which serves as a frequency dependent feedback element. The circuit provides significant amplitude and phase noise suppression and is designed to operate around 10GHz. In addition the circuit realization is fully compatible with MMIC technology.

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