Abstracts

Optoelectronic Phase-Locking of Microwave Signals Up to 18 GHz by a Laser-Diode-Based GaAs:Cr Photoconductive Harmonic Mixer

H.-H. Wu, C.-S. Chang and C.-L. Pan. "Optoelectronic Phase-Locking of Microwave Signals Up to 18 GHz by a Laser-Diode-Based GaAs:Cr Photoconductive Harmonic Mixer." 1992 Microwave and Guided Wave Letters 2.1 (Jan. 1992 [MGWL]): 11-13.

A GaAs:Cr photoconductive switch activated by 30ps optical pulses from a gain-switched laser diode (lambda = 0.79 µm) was used as a harmonic mixer to optoelectronicadly phase-lock microwave signals up to 18.01 GHz. The conversion loss of the harmonic mixer was 70 dB at 16.01 GHz. The phase noise degradation of the phase-locked 16.01-GHz signal at 5-kHz offset measured with respect to the 1.0-GHz synthesizer signal for driving the laser diode was 30 dB.

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