Abstracts

Millimeter-Wave Generation and Characterization of a GaAs FET by Optical Mixing

D.C. Ni, H.R. Fetterman and W. Chew. "Millimeter-Wave Generation and Characterization of a GaAs FET by Optical Mixing." 1990 Transactions on Microwave Theory and Techniques 38.5 (May 1990 [T-MTT] (Special Issue on Applications of Lightwave Technology to Microwave Devices, Circuits, and Systems)): 608-614.

Coherent mixing of optical radiation from a tunable CW dye laser and a stabilized He-Ne laser was used to generate millimeter-wave signals in GaAs FET's attached to printed circuit millimeter-wave antennas. The generated signal was further down-converted to a 2 GHz lF by an antenna-coupled millimeter-wave LO at 62 GHz. Detailed characterizations of power and S/N under different bias conditions have been performed. This technique is expected to allow signal generation and frequency-response evaluation of millimeter-wave devices at frequencies as high as 100 GHz.

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