Abstracts

Heterodyne Reception of Millimeterwave-Modulated Optical Signals with an In P-Based Transistor

C. Rauscher and K.J. Williams. "Heterodyne Reception of Millimeterwave-Modulated Optical Signals with an In P-Based Transistor." 1994 Transactions on Microwave Theory and Techniques 42.11 (Nov. 1994 [T-MTT]): 2027-2034.

High-frequency transistors are known for their ability to efficiently perform signal processing functions that reach beyond mere amplification. Among such functions are oscillation, signal mixing, frequency multiplication, and optical signal detection. The current investigation focuses specifically on these four-functions as they pertain to retrieving signal information impressed on optical carriers of 1.3-µm wavelength. The main demonstration object is a 40-GHz hybrid-integrated heterodyne receiver circuit that employs an InP-based HEMT in a four-function role to simultaneously provide carrier demodulation, self-generation of a local oscillation signal, internal frequency doubling thereof, and signal downconversion to a lower intermediate frequency band.

❑ Return to main document.