Abstracts

High-Speed QPSK Modulator and Demodulator with Subharmonic Pumping (Dec. 1988 [T-MTT])

R. Trambarulo, M.V. Schneider and M.J. Gans. "High-Speed QPSK Modulator and Demodulator with Subharmonic Pumping (Dec. 1988 [T-MTT])." 1988 Transactions on Microwave Theory and Techniques 36.12 (Dec. 1988 [T-MTT] (1988 Symposium Issue)): 1714-1719.

High-speed modulators and demodulators which operate at gigabit transmission rates are essential components in many high-capacity communication links. We describe a subharmonically pumped QPSK modulator and demodulator using pairs of beam-leaded Schottky diodes and appropriate high-pass and low-pass filters on dielectric substrates. A modulator and a demodulator were operated in cascade at a carrier frequency of 13 GHz with a common pump at 6.5 GHz. This circuit showed clean eye diagrams of the recovered data trains up to 1.5 Gbit/s with corresponding error rates of less than 10/sup -11/. The circuits can be readily scaled to higher frequencies with a proportional increase of the information rate.

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