Abstracts

Microwave photonic vector modulator for high-speed wireless digital communications

W.D. Jemison, A.J. Kreuzberger and E. Funk. "Microwave photonic vector modulator for high-speed wireless digital communications." 2002 Microwave and Wireless Components Letters 12.4 (Apr. 2002 [MWCL]): 125-127.

The authors present the design, realization, and experimental results of a microwave/photonic circuit suitable for high-speed direct digital modulation of microwave signals. The modulator employs a combination of microwave, photonic, and digital techniques to produce a discrete phase and amplitude (i.e., vector) modulated carrier signal. The proof-of-concept demonstration presented in this paper was performed using a carrier frequency of 1 GHz and supports BPSK, QPSK, and 16-QAM. The authors also discuss ways to modify the modulator to simultaneously achieve data rates on the order of several hundreds of Mbs and wideband frequency hopping.

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