Abstracts

Direct carrier modulation for wireless digital communications using an improved microwave-photonic vector modulator (MPVM) approach

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This paper presents a demonstration of direct carrier modulation via the use of an improved microwave/photonic vector modulator (MPVM). This modulation approach is suitable for direct digital modulation of microwave and millimeter-wave signals and allows for tuning of the carrier frequency over wide bandwidths and dynamic reconfiguration of the modulation format. An all-optical control approach is used to achieve faster data rates and better carrier tunability than previously reported work in this area. Specifically, experimental results showing direct QPSK and 16 QAM modulation of carrier frequencies between 1.0 and 2.0 GHz with data rates to 8 Mbs are presented.

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