Abstracts

A 900 MHz 16-QAM direct carrier modulation transmitter using feedforward linearization

M. Chongcheawchamnan, M.J. Blewett, K.S. Ang and I.D. Robertson. "A 900 MHz 16-QAM direct carrier modulation transmitter using feedforward linearization." 2000 MTT-S International Microwave Symposium Digest 00.3 (2000 Vol. III [MWSYM]): 1495-1498.

A feedforward system for direct carrier modulation transmitters is proposed and experimental results are presented. The advantage of this architecture over the conventional one using a feedforward amplifier is that the overall distortion resulting from the modulator is also reduced. The feedforward structure needs a reference signal to compare and cancel distortions: this is achieved using a second modulator which is operated at very low input level to obtain a signal with a negligible distortion. The 16-QAM simulation results suggest that the effect of LO feedthrough which can deteriorate the signal quality is also reduced. Experimental results on a 900 MHz feedforward transmitter with 16-QAM signal show that adjacent channel interference is reduced by as much as 15 dB.

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