Abstracts

Even Harmonic Quadrature Modulator with Low Vector Modulation Error and Low Distortion for Microwave Digital Radio

K. Itoh, M. Shimozawa, K. Kawakami, A. Iida and O. Ishida. "Even Harmonic Quadrature Modulator with Low Vector Modulation Error and Low Distortion for Microwave Digital Radio." 1996 MTT-S International Microwave Symposium Digest 96.2 (1996 Vol. II [MWSYM]): 967-970.

An even harmonic quadrature modulator (EHQMOD) with a low vector modulation error (VME) and low distortion characteristics is presented for small sized digital radio transmitters in microwave. Relationships between modulation characteristics and circuit parameters in the EHQMOD are described by analytical and experimental approaches. In addition, this paper presents an improved configuration of the EHQMOD for a low VME and low distortion characteristics. Developed X-band EHQMOD with root cosine roll-off shaped pi/4 DQPSK achieved 6% of VME without any adjustable circuits and -11dBm of output power with -50 dBc of leakage power at an adjacent channel. These experimental results verify the effectiveness of analyzed results, The EHQMOD technique indicated in this paper is effective for future high speed digital communications especially in millimeter wave band.

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