Abstracts

A new direct millimeter wave six-port receiver (2001 Vol. III [MWSYM])

S.O. Tatu, E. Moldovan, Ke Wu and R.G. Bosisio. "A new direct millimeter wave six-port receiver (2001 Vol. III [MWSYM])." 2001 MTT-S International Microwave Symposium Digest 01.3 (2001 Vol. III [MWSYM]): 1809-1812 vol.3.

A new direct conversion wide band (23 GHz-31 GHz) six-port millimeter wave receiver suitable for integrated circuit fabrication is proposed to satisfy mass-market wireless communications. The receiver contains one multi chip module (MCM) consisting of a wide band six-port junction, four RF detectors (Schottky diodes), video amplifiers and I&Q decoder. The prototype circuits are fabricated in hybrid integrated circuits, and the receiver topology is suitable for fabrication in microwave monolithic integrated circuits (MMICs). This new hardware receiver is proposed as a robust, rugged, low cost receiver for use in wide band wireless mass market QPSK communications. Hand held and laptop terminals for future e-mail/multimedia services are a prime example of communication equipment needing such receivers. BER measurements and simulation results are presented in the presence of noise, adjacent signal interference, local oscillator (LO) phase shift and LO phase noise.

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