Abstracts

Fully monolithic integrated even harmonic quadrature ring mixer with an active matched 90 degree power divider for direct conversion receivers

K. Kawakami, K. Tajima, M. Shimozawa, K. Itoh, N. Kasai and A. Iida. "Fully monolithic integrated even harmonic quadrature ring mixer with an active matched 90 degree power divider for direct conversion receivers." 1997 MTT-S International Microwave Symposium Digest 2. (1997 Vol. II [MWSYM]): 657-660.

This paper proposes a novel circuit configuration of an even harmonic quadrature mixer for direct conversion receivers. The proposed configuration employs a ring mixer concept for wide-band reception and active matching circuits for a full integration on a small sized GaAs chip. Highly stable quadrature detecting characteristics over LO power variation can be achieved by the proposed active matched 90 degree power divider. A developed 2 GHz MMIC achieves an extremely small chip size of 1.3 mm/spl times/1.85 mm, and good quadrature detecting characteristics with amplitude error within 0.5 dB and phase error within 5 degrees from 1.7 GHz to 2.3 GHz.

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