Abstracts

A self calibrating quadrature generator with wide frequency range

D. Lovalace and J. Durec. "A self calibrating quadrature generator with wide frequency range." 1997 Radio Frequency Integrated Circuits (RFIC) Symposium 97. (1997 [RFIC]): 147-151.

A quadrature local oscillator generator that produces 0/spl deg/ and 90/spl deg/ amplitude matched signals over a wide frequency range was fabricated using a high performance bipolar technology. This circuit employs a unique phase shifting circuit combined with an improved high frequency phase detector to produce quadrature outputs. RC based circuits, which have typically been used to generate high frequency quadrature signals, can operate only over a narrow frequency range. Other quadrature generation methods such as frequency dividers, use a reference LO frequency at least twice that of the desired quadrature signal and require a duty cycle adjustment circuit which has bandwidth limitations. The circuit described in this paper operates over a frequency range of 400 MHz through 700 MHz with low amplitude and phase imbalance.

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