Abstracts

A 2.45GHz fully-differential CMOS image-reject mixer for Bluetooth application (2002 Vol. I [MWSYM])

P.B. Khannur and Koh Soo Ling. "A 2.45GHz fully-differential CMOS image-reject mixer for Bluetooth application (2002 Vol. I [MWSYM])." 2002 MTT-S International Microwave Symposium Digest 02.1 (2002 Vol. I [MWSYM]): 549-552 vol.1.

The design of a 2.45GHz image-reject mixer (IRM) for Bluetooth application using low-cost 0.35um, double-poly four-metal standard CMOS process with the metal-insulator-metal (MIM) capacitor option is described. The proposed design uses Hartley architecture with temperature compensation to significantly reduce the gain variation with temperature (-40/spl deg/C to +85/spl deg/C). In-house extracted models were used for active and passive components to achieve image rejection ratio (IRR) better than 45dB, input referred third-order intercept point (IIP3) better than -7dBm, voltage conversion gain better than 20dB and noise figure less than 20dB under all process, temperature, and voltage supply conditions. The intermediate frequency (IF) is 2MHz. The circuit operates from a 3V/spl plusmn/10% supply and draws 10.4mA.

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