Abstracts

A 2.5 V CMOS switched-capacitor channel-select filter with image rejection and automatic gain control

Yi-Huei Chen, Jenn-Chyou Bor and Po-Chiun Huang. "A 2.5 V CMOS switched-capacitor channel-select filter with image rejection and automatic gain control." 2001 Radio Frequency Integrated Circuits (RFIC) Symposium 01. (2001 [RFIC]): 111-114.

This paper presents a channel-select filter for 2.4 GHz, low-IF Bluetooth transceiver application. Besides of channel selection, image signal rejection, automatic gain control (AGC) and signal strength indication functions are all integrated. High frequency accuracy and large signal dynamic range is given as the switched-capacitor (SC) structure. Circuit techniques like multiple clock rate, filter capacitance scaling, and simplified op-amp structure are employed for power minimization. Measurement results indicate that the image rejection and the adjacent channel selectivity are better than 40 dB and 60 dB respectively. With a 0.25 /spl mu/m 1P5M CMOS technology the proposed filter dissipates 11.8 mA from a single 2.5 V supply voltage.

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