

Design of front end of a RF receiver

ABSTRACT

Radio frequency (RF) circuit is having a rapid growth in wireless telecommunication. The increasing demand for higher quality and popularity of wireless services have urged the development of low cost multi-functional and reconfigurable RF front end modules fabricated from advanced device technologies. The RF front end is generally defined as everything between antenna and the intermediate frequency (IF) stage. For a receiver, this "between" area includes filter, low noise amplifier, mixer and local oscillator. The circuit was designed based on CMOS 0.18 μm technology to input a 2.5 GHz RF signal and local oscillation of 2.25 GHz. This results in an output IF frequency of 250 MHz. The RF front end circuit had been simulated using Advanced Design System to obtain the proper output frequency and determining the system performance.

Keyword: Radio receivers; RF front end; Simulation