Abstracts

A wide dynamic range switched-LNA in SiGe BiCMOS (2001 [RFIC])

T. Nakatani, J. Itoh, I. Imanishi and O. Ishikawa. "A wide dynamic range switched-LNA in SiGe BiCMOS (2001 [RFIC])." 2001 Radio Frequency Integrated Circuits (RFIC) Symposium 01. (2001 [RFIC]): 223-226.

A wide dynamic range, high current efficient switched-LNA has been developed by using SiGe BiCMOS technology. The low loss RF MOSFET reduced silicon substrate effect at high frequency is used as a bypass switch of LNA. The 800-900 MHz LNA is demonstrated in this work in high gain/low distortion mode for transmitting and receiving simultaneously, the amplifier achieves 15.3 dB gain, 1.4 dB noise figure and +1.6 dBm IIP3 with 5.9 mA DC current. In high gain/low current mode for receiving only, 13.3 dB gain, 1.6 dB noise figure and -0.6 dBm IIP3 are achieved with 3.0 mA. In low gain mode, 1.5 dB insertion loss and +16.1 dBm IIP3 with <10 uA are realized by the bypass switch. The switched-LNA is housed in a very small and low cost SON12 plastic package with a Down-Mixer.

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