

ABSTRACT

NOVEL TECHNIQUE TO GENERATE NEGATIVE CONDUCTANCE IN CMOS TUNED CASCODE RF AMPLIFIERS

In this invention a single additional capacitor is added to a tuned cascode LNA which boosts the circuit Q and the gain of the amplifier. The added capacitor creates a negative real part of the impedance which when combined with the impedance of the LC tank circuit improves both the Q and the gain of the amplifier. The capacitor does not dissipate any power, and being a passive device the capacitor does not add additional noise to the circuit. With an improved gain there is a much improved signal to noise ratio. The higher Q allows the amplifier to provide some additional bandpass and reduce image reduction requirements in subsequent amplifier stages.

(FIGURE 1 IS SUGGESTED FOR PUBLICATION)