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# A 1.2 V, 2.4 GHZ LOW POWER 120 NM CMOS ASK TRANSCEIVER FOR WSN

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## Abstract

This paper describes the design and analysis of Amplitude shift keying (ASK) transceiver targeted for wireless sensor networks (WSN).The proposed architecture uses ASK modulator in order to transmit the signals and the receiver is based on the low-IF topology, which uses an inductive shunt feedback common gate LNA and a Gilbert cell for driving a second order all active resistor less BPF. The low power architecture consumes a power of 0.41mW during transmission and 2.18 mW during reception including the frequency synthesizer from the 1.2 V supply. The receiver chain gives 10.54 dB noise figure and 39.34 dB **g**ain at 2.4 GHz frequency. It gives a sensitivity of –66.02 dBm at a data rate of 840 bps.

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**Keyword** : Common Gate LNA, Mixer, BPF, ASK, modulator, demodulator, Wireless sensor nodes, Power consumption.