Low power BPSK modulator for the application of capsule endoscope

ABSTRACT

This paper presents the Binary Phase Shift Keying (BPSK) modulator for high data rate medical imaging for capsule endoscope. The BPSK modulator consists of a mixer and a ring oscillator. The ring oscillator provides carrier frequency of 433MHz and mix with the mixer to produce BPSK modulated signal. The modulator is designed using Silterra 0.13εm CMOS process. For supply voltage of 1.2 V, data rate of 3.5Mbps the mixer has power consumption of 1.2mW and at output power of -10.7 dBm.

Keyword: BPSK; Capsule endoscope; Low power; Mixer; Modulator