

0.13- μm CMOS Vector Modulator for Wireless Backhaul System

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Abstract : In this paper, a CMOS vector modulator designed for wireless backhaul system based on 802.11ac is presented. A poly phase filter and sign select switches yield two orthogonal signal paths. Two variable gain amplifiers with strongly reduced phase shift of only $\pm 5^\circ$ are used to weight these paths. It has a phase control range of 360° and a gain range of -10 dB to 10 dB. The current drawn from a 1.2 V supply amounts 20.4 mA. Using a 0.13 μm technology, the chip die area amounts $1.47 \times 0.75 \text{ mm}^2$.

Keywords : CMOS, phase shifter, backhaul, 802.11ac

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