

## 0.13- $\mu$ m 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  $360^\circ$  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  $\mu$ m technology, the chip die area amounts  $1.47 \times 0.75 \text{ mm}^2$ .

**Keywords :** CMOS, phase shifter, backhaul, 802.11ac

**Conference Title :** ICECE 2016 : International Conference on Electronics and Communication Engineering

**Conference Location :** Paris, France

**Conference Dates :** April 25-26, 2016