Abstracts

An Analog MMIC Phase Modulator for X-Band Satellite Transponder Applications

F. Ali and N. Mysoor. "An Analog MMIC Phase Modulator for X-Band Satellite Transponder Applications." 1992 Microwave and Guided Wave Letters 2.11 (Nov. 1992 [MGWL]): 445-446.

The design and measured performance of a novel GaAs MMIC analog linear phase modulator for the next generation space-borne communications systems are presented. The analog phase shifter is based on the reflection-type hybrid coupled approach and uses a novel lumped quadrature hybrid and MESFET varactors as a building block. Three cascaded sections (with tapered varactor sizes) of this building block along with two high-isolation amplifiers have been realized in a single chip (96 mils x 36 mils). This MMIC provides an X-band (8415 ± 50MHz) phase modulation with ± 2.6 radians (300°) of peak phase deviation, +2% of phase deviation linearity, 1.5-dB insertion loss and better than 12 dB input and output return loss performance.

❑ Return to main document.