Abstracts

24 GHz Serrodyne Frequency Translator Using a 360° Analog CPW MMIC Phase Shifter

S. Lucyszyn, I.D. Robertson and H. Aghvami. "24 GHz Serrodyne Frequency Translator Using a 360° Analog CPW MMIC Phase Shifter." 1994 Microwave and Guided Wave Letters 4.3 (Mar. 1994 [MGWL]): 71-73.

A 360° analog CPW MMIC phase shifter is presented for the first time. The compact MMIC employs eight multilayer 3 dB quadrature couplers and was fabricated using low cost GaAs foundry processing techniques. The phase shifter was required to implement a narrow band serrodyne frequency translator at 24 GHz. With an arbitrary, small-shift, frequency translation of +5 KHz, the measured results demonstrated a carrier suppression of 30 dB and an image sideband suppression of 13 dB. This was achieved with a simple linear sawtooth signal, providhg 22% of under-modulation. In addition, a 0 dB conversion loss was achieved and almost no control power was required.

❑ Return to main document.