Abstracts

Optical Control of a Digital Phase Shifter

W.D. Jemison, T. Berceli, A. Paolella, P.R. Herczfeld, D. Kasemset and A.W. Jacomb-Hood. "Optical Control of a Digital Phase Shifter." 1990 MTT-S International Microwave Symposium Digest 90.1 (1990 Vol. I [MWSYM]): 233-236.

A method for the optical control of digital phase shifters which significantly reduces the number of control lines required is described. The technique uses a simple cost effective LED source along with a MESFET detector and an A/D converter to generate the digital phase shifter command. The approach is independent of the phase shifter operating frequency and is compatible with MMIC technology and parallel optical signal processing. Experimental results are presented for the optical control of a 6-bit digital phase shifter. To provide 360° of phase shift, 310µW of optical power are required.

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